

PENDING PETITION MEMO

Date: 9/21/2007

TO : Office of Telecommunications  
FROM: CENTRAL OPERATIONS  
UTILITY: TIME WARNER CABLE  
SUBJECT: 05-V-0708

Petition of Time Warner Entertainment - Advance/Newhouse Partnership  
for Renewal of its Franchise with the Village of Weedsport, Cayuga  
County.



FD-36 (Rev. 5-22-64)  
ENCL.

2007 SEP 21 AM 11:12



August 28, 2007

**VIA CERTIFIED MAIL/**  
**RETURN RECEIPT REQUESTED**

Secretary Jaclyn Brilling  
N.Y.S. Department of Public Service  
Three Empire State Plaza - 19th Floor  
Albany, New York 12223

Re: Franchise Renewal Application

Dear Ms. Brilling:

Enclosed please find an original and 4 (four) copies of the application for renewal of the cable television franchise agreement between Time Warner Entertainment – Advance/Newhouse Partnership and the Village of Weedsport (Cayuga County).

If you have any questions, please do not hesitate to contact me at (315) 634-6107.

Sincerely,

Thomas P. Doheny  
Manager of Government Reporting

Enclosures



**CABLE TELEVISION  
FRANCHISE RENEWAL AGREEMENT**

**VILLAGE OF WEEDSPORT**

**THIS AGREEMENT**, executed in triplicate this 23 day of May, 2007, by and between the **VILLAGE OF WEEDSPORT**, (hereinafter referred to as the Municipality) by the Mayor acting in accordance with the authority of the duly empowered local governing body, (hereinafter referred to as the Board) and **TIME WARNER ENTERTAINMENT-ADVANCE/NEWHOUSE PARTNERSHIP**, a New York General Partnership, organized and existing under the laws of the State of New York, the local place of business of which is located at 6005 Fair Lakes Road, P.O. Box 4733, East Syracuse, NY 13221, hereinafter referred to as "Franchisee."

**WITNESSETH**

**WHEREAS**, Pursuant to the Village Law the Board has the exclusive power on behalf of the Municipality to grant franchises providing for or involving the use of the Streets (as defined in Section 1 hereof) and to give the consent of the Municipality to any franchisee for or relating to the occupation of the Streets; and

**WHEREAS**, Pursuant to the Communications Act of 1934, as amended, (the "Communications Act") the Board has the authority to grant cable television franchises and renewals thereof on behalf of the Municipality and whereas the Board and Franchisee pursuant to said Federal Law and pursuant to applicable State laws and the regulations promulgated thereunder, have complied with the franchise procedures required of Municipalities and cable operators in the grant of cable television franchises or their renewal; and

**WHEREAS**, The Municipality has conducted negotiations with Franchisee and has conducted one or more public hearings on Franchisee's franchise renewal proposal affording all interested parties due process including notice and the opportunity to be heard; said deliberations included consideration and approval of Franchisee's technical ability, financial condition and character; said public hearing also included consideration and approval of Franchisee's plans for constructing and operating the cable television system; and

**WHEREAS**, Following such public hearings and such further opportunity for review, negotiations and other actions as the Board deemed necessary and that is required by law, the Board decided to renew Franchisee's franchise as provided hereinafter; and

**WHEREAS**, The Board, in granting this franchise renewal, embodied in the agreement the results of its review and any negotiations with Franchisee and has determined that said franchise agreement and Franchisee respectively, fulfills and will fulfill the needs of the Municipality with respect to cable television service and complies with the standards and requirements of the New York State Public Service Commission ("NYSPSC");

**NOW, THEREFORE**, In consideration of the foregoing clauses, which clauses are hereby made a part of this franchise agreement, and the mutual covenants and agreements herein contained, the parties hereby covenant and agree:



## **SECTION 1 - DEFINED TERMS**

Unless the context clearly indicates that a different meaning is intended:

- (a) "Basic Service" means any service tier which includes the retransmission of local broadcast signals.
- (b) "Board" means the Board of Trustees of the Municipality.
- (c) "Cable Television Service" means
  - (1) The one way transmission to Subscribers of Video Programming, or other programming service, and
  - (2) Subscriber interaction, if any, which is required for the selection or use of such Video Programming, or other programming service.
- (d) "Cable Television System" means a facility, consisting of a set of closed transmission paths, including (without limitation) fiber optic wires or lines, and associated signal generation, reception and control equipment that provides Cable Television Service to multiple subscribers within a community.
- (e) "Franchisee" means Time Warner Entertainment-Advance/Newhouse Partnership.
- (f) "Effective Date" of this agreement shall be that date subsequent to confirmation of the Franchise, by the New York State Public Service Commission ("NYSPSC") agreed to by the parties, which date is (calendar date).
- (g) "Franchise" means the grant or authority given hereunder to Franchisee to construct and operate a Cable Television System in the Municipality in accordance with the terms hereof.
- (h) "FCC" means the Federal Communications Commission, its designees and any successor thereto.
- (i) "Gross Revenues" means all revenues, actually received by and paid to Franchisee by subscribers residing within the Municipality for Cable Television Service purchased by subscribers on a regular, recurring monthly basis. Gross Revenues shall not include (1) excise taxes; or (2) sales taxes; or (3) bad debt or late fees; or any other taxes or fees, which are imposed on Time Warner Cable or any subscriber or government unit and collected by Time Warner Cable for such governmental unit.
- (j) "May" is permissive.
- (k) "Municipality" means the Village of Weedsport. Wherever the context shall permit, Board, Council and Municipality shall be used interchangeably and shall have the same meaning under this Franchise.



- (l) "NYSPSC" means New York State Public Service Commission.
- (m) "Person" means an individual, partnership, association, corporation, joint stock company trust, corporation, or organization of any kind.
- (n) "Service Tier" means a category of Cable Television Service provided by Franchisee over the Cable Television System for which a separate rate is charged for such category by Franchisee.
- (o) "Shall" or "will" are mandatory.
- (p) "Streets" means the surface of, as well as the space above and below, any and all streets, avenues, highways, boulevards, concourses, driveways, bridges, tunnels, parks, parkways, waterways, docks and public grounds and waters within or belonging to the Municipality.
- (q) "Subscriber" means any person lawfully receiving any Cable Television Service in the Municipality provided over the Cable Television System.
- (r) "Video Programming" means any and all programming services provided by, or generally considered comparable to programming provided by a television broadcast station.

## **SECTION 2 - CONSENT TO FRANCHISE AND CONDITION PRECEDENT**

- (a) The Municipality hereby grants to Franchisee the non-exclusive right to construct, erect, operate and maintain a Cable Television System and to provide Cable Television Service within the Municipality as it now exists and may hereafter be changed, and in so doing to use the Streets of the Municipality by erecting, installing, constructing, repairing, replacing, reconstructing, maintaining and retaining in, on, over, under, upon and across any and all said Streets such facilities (e.g., poles, wires, cables, conductors, ducts, conduits, vaults, pedestals, manholes, amplifiers, appliances, attachments and other property) as is deemed necessary or useful by Franchisee, for the operation of its cable system. Additionally, the Municipality, insofar as it may have the authority to so grant, hereby authorizes Franchisee to use any and all easements dedicated to compatible uses, such as electric, gas, telephone or other utility transmissions, for the purposes of erecting, installing, constructing, repairing, replacing, reconstructing, maintaining and retaining in, on, over, under, upon and across such easements such facilities of the Cable Television System as is deemed necessary or useful by Franchisee, for the operation of its cable system. Upon request by Franchisee and at Franchisee's sole expense, the Municipality hereby agrees to assist Franchisee in gaining access to and using such easements.
- (b) Nothing in this Franchise shall limit the right of Franchisee to transmit any kind of signal, frequency, or provide any type of service now in existence or which may come into existence and which is capable of being lawfully transmitted and distributed by those facilities owned and operated by Franchisee. The provision by Franchisee of any service other than cable service shall be subject to all applicable laws and regulations and to any right the Municipality may have to



require fair and reasonable compensation for Franchisee's use of the rights-of-way to provide such service, provided that such requirement is non-discriminatory and competitively neutral.

- (c) Without waiver or restriction of the rights available to the parties hereto under applicable law, this Franchise and the attachments hereto constitute the entire agreement between the parties and supersede any and all prior cable television agreements and other agreements or instruments by or between the parties hereto or their predecessors in interest as well as all rights, obligations and liabilities arising thereunder concerning or in any way relating to Cable Television Service.
- (d) In the event the Municipality grants to any other Person (being referred to as "Grantee" in the below quoted paragraph) a franchise, consent or other right to occupy or use the Streets, or any part thereof, for the construction, operation or maintenance of all or part of a cable television system or any similar system or technology, the Municipality shall insert the following language into any such franchise, consent or other document and/or promptly pass a resolution, conditioning the use of the Streets or any part thereof by any such Person, as follows:

"Grantee agrees that it will not move, damage, penetrate, replace or interrupt any portion of the Cable Television System of Franchisee without the prior written consent of Franchisee. Grantee shall indemnify Franchisee against any damages or expenses incurred by Franchisee as a result of any removal, damage, penetration, replacement or interruption of the services of Franchisee caused by the Grantee." As used immediately above in the above quoted paragraph, the term "Franchisee" shall mean Franchisee Entertainment-Advance/Newhouse Partnership, as defined in this Franchise, and its successors, assigns and transferees.

- (e) This Franchise is non-exclusive. No municipality may award or renew a franchise for cable television service which contains economic or regulatory burdens which when taken as a whole are greater or lesser than those placed upon another cable television franchise operating in the same franchise area."

As used in this Section, the phrase, "occupancy or use of Streets," or any similar phrase, shall not be limited to the physical occupancy or use thereof but shall include any use above or below the Streets by any technology including but not limited to infrared transmissions.

### **SECTION 3 - APPROVAL OF COMPANY BY MUNICIPALITY**

- (a) This Franchise is subject to and complies with all applicable Federal and State laws and regulations, including, without limitation, the rules of the NYSPSC concerning franchise standards. The Municipality hereby acknowledges and agrees that this Franchise has been entered into by it in accordance with and pursuant to the Communications Act of 1934, as amended, 47 U.S.C. Sec. 521 et seq. (hereinafter referred to as the "Communications Act"). The Municipality



hereby represents and warrants that this Franchise has been duly entered into in accordance with all applicable local laws. The Municipality hereby acknowledges that it, by duly authorized members thereof, has met with Franchisee for the purposes of evaluating Time Warner Cable and negotiating and consummating this Franchise.

- (b) In a full and public proceeding, affording due process, the Municipality has considered and approved Franchisee's technical ability and character and has considered and found adequate Franchisee's plans for constructing and operating the cable system.
- (c) Review of Franchisee's Performance. At any time during the Franchise term, at the request of the Village or the Company, the Village and the Company shall participate in a review of the Company's operations hereunder. Any changes in this franchise suggested, as a result of this review shall only be effected by mutual consent.

#### **SECTION 4 - FRANCHISE TERM**

The term of this Franchise shall be ten (10) years.

#### **SECTION 5 - ASSIGNMENT OR TRANSFER OF FRANCHISE**

- (a) Franchisee shall not transfer this Franchise to any person, firm, company, corporation or any other entity without the prior written consent of the Municipality, which consent shall not be unreasonably withheld or denied.
- (b) Notwithstanding the above, this Section 5 shall not be applicable and no prior approval shall be required if Franchisee shall transfer this Franchise to any of its principal partners, to any parent, subsidiary or affiliate of any of the principal partners of Franchisee, or to any other firms or entities controlling, controlled, by or under the same common control as Franchisee.
- (c) In the event that the Municipality refuses to grant such consent, it shall set forth specific reasons for its decision in writing by municipal resolution.

#### **SECTION 6 – REVOCATION**

- (a) The Municipality may revoke this Franchise and all rights afforded Franchisee hereunder in any of the following events or for any of the following reasons:
  - (i) Franchisee fails to pay within thirty (30) business days of its due date; or
  - (ii) Franchisee fails to substantially comply or to take reasonable steps to comply with a material provision of this Franchise agreement; or
  - (iii) Franchisee is adjudged a bankrupt; or



- (iv) Franchisee knowingly and willfully attempts or does practice a material fraud or deceit in its securing of this Franchise.
- (b) Notwithstanding the above, no revocation shall be effective unless and until, the Municipality shall provide written notice to Franchisee describing in reasonable detail the alleged violation so as to afford the Franchisee an opportunity to remedy the same. Franchisee shall have sixty (60) days subsequent to receipt of the notice in which to correct the violation or if such violation is of such a nature or character as to require more than sixty (60) days within which to correct, such time period shall be extended, provided, however, Franchisee has commenced corrective action within thirty (30) days and thereafter exercises due diligence to correct the same. If Franchisee fails to correct the violation or to commence corrective action in the time period set forth, the Municipality may revoke the Franchise.
- (c) Franchisee may notify the Municipality that there is a dispute as to whether a violation or failure has, in fact, occurred. Such notice by Franchisee shall specify with particularity the matters disputed by Franchisee. Upon receipt of said notice from Franchisee, the Municipality shall, following no less than fifteen (15) days prior written notice to Franchisee, schedule a **Village Board of Trustees** meeting to determine whether a violation has occurred.
- The Municipality shall hear Franchisee's dispute at the **Village Board of Trustees** meeting at which Franchisee and public will be afforded a full and fair opportunity to be heard. The **Village Board of Trustees** shall determine if Franchisee has committed any of the violations as outlined in (i) through (iv) above and shall make written findings of fact relative to its determination. In the event the Town Board determines that a violation has occurred, Franchisee shall correct the violation or commence corrective action in the time period set forth in subsection (b).
- (d) The Municipality may revoke the Franchise or impose any other penalty hereunder only after a public hearing of which Franchisee has been given at least fifteen (15) days notice and at which Franchisee has a right to be heard and present evidence.
- (e) Franchisee shall have the right to challenge any determination of non-compliance or revocation or imposition of other penalty to a state or federal district court as Franchisee may choose and any revocation or imposition of other penalty shall not become effective until any such challenge has been finally determined or the time for instituting such challenge shall have expired.

## SECTION 7 - INDEMNIFICATION & INSURANCE

- (a) Time Warner Cable shall indemnify and hold harmless the Municipality from all liability, damage and cost or expense **including reasonable attorneys fees and court costs** arising from claims of injury to persons or damage to property occasioned by reason of any conduct of Time Warner Cable its employees or agents undertaken pursuant to this Franchise. The Municipality shall promptly notify Time Warner Cable of any claim for which it seeks indemnification; afford Time Warner Cable the opportunity to fully control the defense of such claim and any compromise, settlement, resolution or other disposition of such claim, including by making available to Time Warner Cable all relevant information under its control.



- (b) Time Warner Cable shall as of the Effective Date of this Franchise obtain liability insurance in the minimum amount set forth within and shall furnish to the Municipality evidence of such liability insurance policy or policies, in the form of a certificate of insurance naming the Municipality as an additional named insured, which policy or policies or replacements thereof shall remain in effect throughout the term of this Franchise; said policy and replacements shall be in the combined amount of Two Million Dollars (\$2,000,000.00) for bodily injury and property damage issued by a company authorized to do business in New York State. In addition, Time Warner Cable shall carry Worker's Compensation insurance for its employees in such amounts as is required by the laws of the State of New York. The insurance coverage herein referred to above may be included in one or more policies covering other risks of Time Warner Cable or any of its affiliates, subsidiaries or assigns.
- (c) Damage to Municipal Property: Any property of the Municipality damaged or destroyed by the installation or operation of the Cable Television System shall be promptly repaired or replaced by the Company and restored to a condition that existed prior to such damage.
- (d) Worker's Compensation: ***Franchisee shall carry worker's compensation insurance as required by the laws of the State of New York.*** Time Warner Cable shall carry such insurance as it deems necessary to protect it from claims made under the applicable New York State Worker's Compensation Laws.
- (e) Notification of Claims: The Municipality shall notify Time Warner Cable or its local representative within fifteen (15) business days in case of presentation to the Municipality of any claim, demand, suit or action of any type against the Municipality caused by Time Warner Cable. Time Warner Cable may appear in and defend any and all suits, actions, or other legal proceedings, whether judicial, quasi judicial, administrative, legislative, or otherwise, brought or instituted or had by third persons or duly constituted authorities, against, or affecting Municipality, its officers, councilpersons, commissions, agents, or employees, and arising out of or pertaining to the exercise or the enjoyment of this Franchise or the granting thereof by the Municipality. Time Warner Cable shall have sole discretion to compromise, settle or defend said suits, actions or other legal proceedings.

## **SECTION 8 - USE OF EXISTING POLES AND LOCATION OF UNDERGROUND FACILITIES**

- (a) Franchisee hereby agrees that when and wherever it deems it economical and reasonably feasible, it shall enter into agreements with telephone or electric or other utilities (collectively "utilities") for the use of said utilities' poles or conduit space whereby said utilities shall provide use of and access to said poles or conduit space by Franchisee for Franchisee's lines and other equipment. Notwithstanding the above, where necessary to service Subscribers and where attachment to the pole(s) or conduit space of utilities is not economically reasonable or otherwise feasible, Franchisee may erect or authorize or permit others to erect any poles or conduit space or any other facilities within the Streets of the Municipality pursuant to the issuance by the Municipality of any necessary authorizations which shall not be unreasonably withheld or delayed.



- (b) Subject to the provisions of sub-paragraph (c) below, in such areas of the Municipality where it or any sub-division thereof shall hereafter duly require that all utility lines be installed underground, Franchisee shall install its lines underground in accordance with such requirement.
- (c) Notwithstanding the foregoing, if Franchisee shall in any instance be unable to install or locate its wires underground, then the Municipality, on being apprised of the facts thereof, shall permit such wires to be installed above the ground even though other facilities in the area may be placed, or required to be placed, underground. However, any such permission shall be on such conditions as the Municipality may reasonably require.

## **SECTION 9 - RELOCATION OF PROPERTY**

- (a) Whenever the Municipality shall require the relocation or reinstallation of any property of Time Warner Cable in or on any of the Streets of the Municipality as a result of the relocation or other improvements by the Municipality of any such Streets, it shall be the obligation of Time Warner Cable on written notice of such requirement to remove and relocate or reinstall such property as may be reasonably necessary to meet the requirements of the Municipality. In the event any other person, including a public utility, is compensated for similar relocation or reinstallation then in such case Franchisee shall be similarly compensated.
- (b) Franchisee shall, on request of a person holding a building or moving permit issued by the Municipality, temporarily raise or lower its wires or other property or relocate the same temporarily so as to permit the moving or erection of buildings. The expenses of any such temporary removal, raising or lowering of wires or other property shall be paid in advance to Franchisee by the person requesting the same. Franchisee shall be given in such cases not less than five (5) working days prior written notice in order to arrange for the changes required.

## **SECTION 10 - USE & INSTALLATION**

- (a) Franchisee or any person authorized by Franchisee to erect, construct or maintain any of the property of Franchisee used in the transmission or reception of Cable Television Service shall at all times employ due care under the facts and circumstances and shall maintain and install said property of Franchisee in accordance with commonly accepted methods and principles in the cable television industry so as to prevent failures and accidents likely to cause damage or injury to members of the public. All Cable Television System equipment shall conform to those standards of the National Electrical Code and the National Board of Fire Underwriters which exist at the time said equipment is installed and replaced.
- (b) Franchisee agrees to install all Cable Television System equipment in a manner to reasonably minimize interference to be expected with the usual use of the Streets and in no event shall any such Cable Television System equipment be located so as to substantially and regularly interfere with the usual public travel on any Street of the Municipality. Franchisee shall construct and maintain its cable system using materials of good and durable quality and shall perform all work



involved in the construction, installation, maintenance and repair of the cable system in a safe, thorough and reliable manner. Franchisee shall promptly repair or replace any municipal property damaged or destroyed by Franchisee so as to restore it to serviceable condition.

- (c) Whenever Franchisee or any person on its behalf shall cause any injury or damage to public property or Street, by or because of the installation, maintenance or operation of the Cable Television System equipment, such injury or damage shall be remedied as soon as reasonably possible after the earlier of notice to Franchisee from the Municipality or after Franchisee becomes aware of the same, in such fashion so as to restore the property or Street to serviceable condition. Franchisee is hereby granted the authority to trim trees upon and overhanging the Streets of, and abutting private property, (i.e., in the public way) in the Municipality to the extent it reasonably deems necessary so as to prevent the branches or growths from coming in contact with the wires, cable and other equipment of Franchisee's Cable Television System.

### **SECTION 11 - CONTINUOUS SERVICE**

Franchisee shall continue to provide cable service to all subscribers who meet their obligations to Franchisee with respect to such service. Franchisee shall not, without the written consent of the Municipality abandon its cable television system or any portion thereof without the written consent of the Municipality.

### **SECTION 12 - FRANCHISE AREA AND LINE EXTENSION**

- (a) Franchisee shall comply with the requirements for construction of cable television plant and provision of cable television services as set forth in Section 895.5 of the Rules of the NYSPSC. For the purpose of this calculation, the number of homes per linear mile of aerial cable shall be twenty five (25) and located within 200 feet of aerial feeder cable.
- (b) Company shall construct and maintain its cable system using materials of good and durable quality and shall perform all work involved in the construction, installation, maintenance and repair of the cable system in a safe, thorough and reliable manner.
- (c) Where, in any place within the Municipality all of the electric and telephone utilities shall be located underground, it shall be the obligation of the Company to locate or to cause its property to be located underground within such places. The Company shall have an affirmative obligation to relocate aerial lines underground at the same time as electric and telephone utilities are so required. If the Company shall in any instance be unable to locate or relocate any part of its property underground, then the Municipality, on being apprised of the facts thereof, shall permit such property to remain above the ground even though other facilities in the area may be placed underground. However, any such permission shall be on such conditions as the Municipality may reasonably require to protect the public health and safety. If the Company is required to relocate its facilities underground, it shall do so at its own expense provided utilities and other users of the rights of way do so at their own expense.



### SECTION 13 - OPERATION AND MAINTENANCE

- (a) Franchisee shall maintain and operate its cable television system at all times in compliance with the duly promulgated and lawful provisions of Section 896 of the Rules and Regulations of the NYSPSC and the technical requirements set forth by the FCC. Franchisee shall maintain staffing levels and support equipment to assure that telephone inquiries are handled promptly in order to minimize busy signals and hold time. Franchisee shall have, at all times, a person on call able to perform minor repairs or corrections to malfunctioning equipment of the cable system. Franchisee shall respond to individual requests for repair service no later than the next business day. System outages, and problems associated with channel scrambling and switching equipment, shall be acted upon promptly after notification. Franchisee shall maintain a means to receive repair service requests and notice of system outages at times when its business office is closed. The Municipality shall have the right and authority to request an inspection or test performed, all at the Municipality's expense. Franchisee shall fully cooperate in the performance of such testing.
- (b) ***Throughout the term of this Franchise, Franchisee's Cable Television System shall have a minimum channel capacity of 750 MHz. Franchisee shall exercise reasonable efforts in good faith to maximize the number of energized channels available to subscribers.***

### SECTION 14 - RATES

- (a) No rates or charges shall be regulated by or for the Municipality contrary to or inconsistent with applicable federal statutes or the rules and regulations of the FCC or Section 895.1(e) of the PSC. Rules.
- (b) The Company shall not unlawfully discriminate against individuals in the establishment and application of rates and charges for cable services available to generally all subscribers. This provision is not intended to and shall not prohibit (i) sales, promotions or other discounts which the Company deems necessary or desirable to market its cable services; (ii) the Company from providing any of its services (and at such rates) as it shall deem necessary or desirable to any or all Subscribers where cable television service or any similar service is offered or provided in competition with the Company's services; or (iii) the Company from discounting rates to persons who subscribe to any services on a seasonal basis or discounting rates to persons who subscribe to any services that provided on a bulk billed basis.

### SECTION 15 - SERVICE TO PUBLIC FACILITIES, ACCOUNTABILITY PROVISIONS AND INSPECTION OF RECORDS

- (a) At the request of the Municipality, Franchisee shall provide and maintain a single service outlet to any accredited school, police station, firehouse and municipally owned building which is occupied for governmental purposes, provided the connection point is no further than two hundred (200) feet from the closest feeder line of the Cable Television System. All such



connections shall be above ground except where all utility lines and cables in the area are underground. The Municipality shall not extend such service to additional outlets, without the express written consent of Franchisee.

- (b) Municipality, upon reasonable notice and during normal business hours, shall have the right to inspect all books, records, maps, plans, financial statements and other like materials of Time Warner Cable which are pertinent to Franchisee's compliance with the terms and conditions of this Franchise.
- (c) Records Retention: All books, records, correspondence, applications and other documentation of ongoing business relative to the operation of the Company within the Municipality shall be maintained for any period specified in the regulations of the PSC.
- (d) Reports: The Company shall submit, upon written request and within 10 business days of such request, copies of all petitions, applications and communications relating to the Municipality, which are submitted by the Company to the Federal Communications Commission, the New York State Public Service Commission, or any other Federal, or State regulatory commission or agency having jurisdiction in respect to any other matters affecting cable communications in the Municipality authorized pursuant to this Franchise.
- (e) Municipality and Franchisee agree that Franchisee's obligations hereunder are subject to any applicable law, including laws regarding the privacy of information regarding subscribers.
- (f) Municipality will maintain the confidentiality of any information obtained pursuant to this provision to the extent permitted by law, provided Franchisee has advised Municipality of the confidential nature of the information. In the event that the Municipality receives request for the disclosure of such information with which it, in good faith, believes it must under law comply, then the Municipality will give Franchisee notice of such request as soon as possible prior to disclosure in order to allow Franchisee to take such steps as it may deem appropriate to seek judicial or other remedies to protect the confidentiality of such information.
- (g) The Company shall maintain maps of suitable scale showing the location of headend, all trunk and distribution lines. Service drops need not be shown. Upon written request, within ten (10) days, the Company shall allow the Municipality to inspect all such maps for the purpose of insuring compliance with this franchise

#### **SECTION 16 - PUBLIC, EDUCATIONAL AND GOVERNMENTAL ACCESS CHANNELS**

Franchisee shall comply with the minimum standards for public, educational and governmental (PEG) access as set forth in Section 895.4 of the Rules of the NYSPSC.



## SECTION 17 - ADDITIONAL SUBSCRIBER SERVICES

- (a) Payment for cable television service rendered to subscribers is due and payable in advance. A late charge, as determined by Franchisee, may be applied to delinquent accounts.
- (b) Payment for equipment provided by Franchisee to subscribers and the installation, repairs, and removal thereof shall be paid in accordance with Franchisee's standard and customary practices and applicable rules and regulations of the FCC and NYPSC.
- (c) Franchisee shall have the right to disconnect delinquent subscribers and charge such subscribers a disconnection charge as determined by Franchisee, where:
  - (1) At least five (5) days have elapsed after written notice of discontinuance has been served personally upon a subscriber; or
  - (2) At least eight (8) days have elapsed after mailing to the subscriber written notice of discontinuance addressed to such person at the premises where the service is rendered.
- (d) Notice of Franchisee's procedures for reporting and resolving billing disputes and Franchisee's policy and the subscribers rights in regard to "personally identifiable information," as that term is defined in Section 631 of the Communications Act, will be given to each subscriber at the time of such person's initial subscription to the Cable Television System services and thereafter to all subscribers as required by Federal or State law.
- (e) Franchisee shall offer to, and shall notify in writing, the subscribers of the availability of locking program control devices which enable the subscriber to limit reception of obscene or indecent programming in the subscriber's residence. Any subscriber requesting such device shall pay Franchisee in full upon receipt of the same charge to new subscribers at the time of installation and thereafter to all subscribers as required by Federal or State law.
- (f) In accordance with the applicable requirements of Federal and State laws, Franchisee shall provide written notice of any increases in rates or charges for any Cable Television Service.
  - (g) The Administrator, as the case may be, for the Municipality for this Franchise shall be Supervisor or Mayor of the Municipality. The Administrator is responsible for the continuing administration of the Franchise on behalf of the Municipality. All correspondence and communications between Franchisee and the Municipality pursuant to this Franchise shall be addressed by Franchisee to the Administrator.
  - (h) It is agreed that all Cable Television Service offered to any subscribers under this Franchise shall be conditioned upon Franchisee having legal access to any such subscriber's dwelling units or other units wherein such service is provided.
  - (i) Franchisee shall comply with the Customer Service Consumer Protection Standards set forth in Sections 890 and 896 of the Rules and Regulations of the NYSPSC.



- (j) At least once each year, Franchisee shall provide notice to each subscriber of its procedures for reporting and resolving subscriber complaints.

## SECTION 18 - FRANCHISE FEES

- (a) *The Franchisee shall pay to the Municipality on a quarterly basis throughout the term of this Franchise a sum equal to three percent (3 %) of Gross Revenues. Franchise fees shall be paid within sixty (60) days after the end of each calendar quarter. All fees shall be accompanied by a revenue summary statement in such form as the Franchisee and Municipality shall agree.*

No acceptance of any payment shall be construed as an accord that such payment is in fact the correct amount, nor shall such acceptance of payment be construed as a release of any claim the Town may have for further or additional sums payable based upon the provisions of this franchise renewal agreement.

- (b) Subject to the approval of the NYPSC, Municipality shall have the right to seek amendment of the franchise to reduce the franchise fee paid hereunder. *Franchisee* shall use its best efforts to implement any new franchise fee percentage within 60 days of such approval.
- (c) In the event an audit concludes the *Franchisee's* payment hereunder was underpaid by an amount greater than five percent (5%) of the proper payment, then the *Franchisee* shall reimburse the Town for the cost of the audit, in addition to any other remedies available to the Town. The Town may collect interest from the *Franchisee* on the underpayment at a rate equal to the prime rate. If the *Franchisee* disputes such finding, there shall be no imposition of interest while resolution of such disputes is attempted, or during the time the *Franchisee* is challenging the Town's findings in any court of competent jurisdiction, unless the findings of the Town are upheld.
- (d) There shall be applied as a credit against the Franchise Fee the aggregate of: (i) any taxes, fees or assessments of general applicability imposed on *Franchisee* or any subscribers, or both, which are discriminatory against *Franchisee* or any subscribers, (ii) any non-capital expenses incurred by *Franchisee* in support of the PEG access requirements of this Franchise and (iii) any fees or assessments payable to the NYSPSC which when combined with all other fees and credits would exceed 5% of gross revenues. *Franchisee shall have the right to apply franchise fees paid as a credit against special franchise assessments pursuant to Section 626 of the New York State Real Property Tax Law.*

## SECTION 19 - SEVERABILITY, GOVERNING LAW, POLICE POWERS REQUESTS FOR AUTHORIZATION AND NON-DISCRIMINATION

- (a) Should any provision of this Franchise be held invalid by a court or regulatory agency of competent jurisdiction, the remaining provisions of this franchise shall remain in full force and effect.



- (b) To the extent not inconsistent with or contrary to applicable federal law, the terms of this Franchise shall be governed and construed in accordance with the laws of the State of New York. The parties hereby acknowledge and agree that any provisions of this Franchise or any existing State or local laws or rules that are inconsistent with or contrary to any applicable Federal law, including the Cable Act, as the same may be amended, are and shall be prohibited, preempted and/or superseded to the extent of any inconsistency or conflict with any applicable Federal laws.
- (c) In addition to the provisions contained in this Franchise and in existing applicable ordinances, the Municipality may adopt such additional regulations as it shall find necessary in the exercise of its police power, provided, however, that such regulations are reasonable and not materially in conflict with the privileges granted in this Franchise.
- (d) Franchisee shall file requests for any necessary operating authorization with the NYSPSC and the FCC within sixty (60) days from the date the Franchise is awarded by the Municipality.
- (e) Franchisee will not refuse to hire or employ, nor bar or discharge from employment, nor discriminate against any person in compensation or in terms, conditions or privileges of employment because of age, race, creed, color, national origin or sex.
- (f) Access to cable service will not be denied to any group of potential subscribers because of the income of the residents of the local area in which the group resides.
- (g) The terms of the franchise are subject to the approval of the Public Service Commission.

## **SECTION 20- NOTICE**

All notices required herein shall be in writing and shall be deemed delivered when received by United States certified mail, return receipt requested, or on the date of delivery to addressee when sent by express mail, or overnight, or hand delivered to the parties and locations as specified below. Both Franchisee and Municipality may change where notice is to be given by giving notice to the other.

When notices sent to

|             |  |
|-------------|--|
| Franchisee: | Time Warner Cable of Syracuse<br>Attention: General Manager<br>6005 Fair Lakes Road<br>East Syracuse, New York 13057<br>Telephone: (315) 634-6200<br>Facsimile: (315) 463-8020 |
|-------------|--|

or



Time Warner Cable  
Attention: Division President  
6005 Fair Lakes Road  
East Syracuse, New York 13057  
Telephone: (315) 634-6200  
Facsimile: (315) 463-2088

When notices sent to  
Municipality:

Village of Weedsport  
Attention: Mayor  
8892 South Street  
Weedsport, New York 13166

#### **SECTION 21- FORCE MAJEURE**

In no event, and notwithstanding any contrary provision in this Franchise, shall this Franchise be subject to revocation or termination, or Franchisee be subject to penalty or prejudice or in any way liable for non-compliance with or delay in the performance of any obligations hereunder, where its failure to cure or take reasonable steps to cure is due to reason of strike, Acts of God, acts of public enemies, order of any kind of a government of the United States of America or of the State or any of their departments, agencies, political subdivisions; riots, epidemics, landslides, lightning, earthquakes, fires, hurricanes, tornadoes, volcanic activity, storms, floods, washouts, droughts, civil disturbances, explosions, partial or entire failure of utilities or any other cause or event not reasonably within the control of Franchisee. Franchisee shall not be deemed to be in violation or default during the continuance of such inability and Franchisee shall be excused from its obligations herein during the course of any such events or conditions and the time specified for performance of Franchisee's obligations hereunder shall automatically extend for a period of time equal to the period of the existence of any such events or conditions and such reasonable thereafter as shall have been necessitated by any such events or conditions.

#### **SECTION 22- RIGHTS OF ENFORCEMENT**

Nothing contained in this Franchise is intended to or shall confer any rights or remedies on any third parties to enforce the terms of this Franchise.

#### **SECTION 23- FURTHER ASSURANCES**

The Municipality shall, without further consideration, execute and deliver such further instruments and documents and do such other acts and things as Franchisee may reasonably request in order to effect and confirm this Franchise and the rights and obligations contemplated herein.



## SECTION 24- INTEGRATION

This Franchise supersedes all prior negotiations between the parties hereto and shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors and permitted assigns. This Franchise may be amended (except as otherwise expressly provided for herein) only by agreement in writing signed by duly authorized persons on behalf of both parties. To the extent required by State law, amendments hereto shall be confirmed or approved by the NYSPSC.

This Franchise may be executed in one or more counterparts, all of which taken together shall be deemed one (1) original.

The headings of the various Sections of this Franchise are for convenience only, and shall not control or affect the meaning or construction of any of the provisions of the Franchise.

The rights and remedies of the parties pursuant to this Franchise are cumulative and shall be in addition to and not in derogation of any rights or remedies which the parties may have with respect to the subject matter of this Franchise.

## SECTION 25- NO JOINT VENTURE

Nothing herein shall be deemed to create a joint venture or any agency or employment relationship between the parties, and neither party is authorized to nor shall either party act toward any third parties or to the public in any manner which would indicate any such relationship with the other.

IN WITNESS WHEREOF, the parties hereto have executed this agreement this 23 day of May, 2007.

**TIME WARNER ENTERTAINMENT-  
ADVANCE/NEWHOUSE PARTNERSHIP**

By: Mary Cotter  
Mary Cotter

Title: Division President

**MUNICIPALITY:  
VILLAGE OF WEEDSPORT**

By: Jean B. Saroodis  
Jean B. Saroodis

Title: Mayor



**STATE OF NEW YORK**  
**Village of Weedsport**  
**County of Cayuga**

---

In the Matter of the Renewal of the Cable Television Franchise Held by  
**TIME WARNER ENTERTAINMENT-ADVANCE/NEWHOUSE**

**PARTNERSHIP** in the Village of Weedsport, Cayuga County, New York  
**RESOLUTION**

---

An application has been duly made to the Board of the Village of Weedsport, County of Cayuga, New York, by **TIME WARNER ENTERTAINMENT-ADVANCE/NEWHOUSE PARTNERSHIP** ("Time Warner"), a partnership organized under the laws of the State of New York doing business at 6005 Fair Lakes Road, East Syracuse, NY 13221, and holder of a cable television franchise in the Village of Weedsport for the approval of an agreement to renew Time Warner's cable television franchise for an additional ten (10) years commencing \_\_\_\_\_, \_\_\_\_\_. The Franchise Renewal Agreement would bring the franchise into conformity with certain provisions of the Federal Cable Communications Policy Act of 1984, as amended, and certain court rulings.

A public hearing was held in the Village of Weedsport, New York on January 25,  
2007 at 7 P.M. and notice of the hearing was published in the Citizen  
on Jan 1 & 7, 2007.

**NOW, THEREFORE,** the Board of the Village of Weedsport finds that:

1. Time Warner has substantially complied with the material terms and conditions of its existing franchise and with applicable law;  
and



2. The quality of the Time Warner service, including signal quality, response to customer complaints and billing practices has been in light of community needs; and
3. Time Warner has the financial, legal and technical ability to provide these services, facilities and equipment as set forth in its proposal attached; and
4. Time Warner can reasonably meet the future cable-related community needs and interests, taking into account the cost of meeting such needs and interests.

**BE IT FURTHER RESOLVED** that the Board of the Village of Weedsport hereby renews the cable television franchise of Time Warner in the Village of Weedsport for ten (10) years commencing February 14, 2007 and expiring February 14, 2017

**BE IT FURTHER RESOLVED** that the Board of the Village of Weedsport hereby confirms that this Franchise Renewal Agreement replaces the original franchise last amended on \_\_\_\_\_, \_\_\_\_.

The foregoing having received a unanimous vote was thereby declared adopted.

Dated: June 19, 2007

  
Village of Weedsport Clerk



**LEGAL NOTICE**

PLEASE TAKE NOTICE THAT the Village board of the Village of Weedsport, Cayuga County, New York has scheduled a joint public hearing with the Town of Brutus, the Town of Elbridge, the Village of Elbridge and the Village of Jordan, for the 25th of January, 2007, at 7:00 p.m. at the Jordan-Elbridge High School Auditorium, 5721 Hamilton Road, Jordan, New York to consider renewal of the cable television franchise held by Time Warner Entertainment-Advance/Newhouse Partnership (hereinafter referred to as "Time Warner Cable"). The purpose of the hearing is to consider a Franchise Renewal Agreement which would renew Time Warner Cable's cable television franchise for an additional ten (10) years commencing upon approval of the New York State Public Service Commission, while bringing the franchise into conformity with certain provisions of the Federal Cable Communications Policy Act of 1984, as amended.

The Agreement, if approved by the Village Board, shall not take effect without the prior approval of the New York State Public Service Commission. A copy of the Franchise Renewal Program is available for public inspection at the Office of the Village Clerk during normal business hours. Interested persons may file comments or objections with the New York State Public Service Commission, Three Empire State Plaza, Albany, New York 12223.

T2, 1/1, 1/7

# State of New York

## Cayuga County City of Auburn

Shanelle Filoso of the City of Auburn,  
in said County, being duly sworn, deposes and says:

That she is the receptionist of Lee Publications, Inc.  
publishers of The Citizen, a public newspaper printed and  
published daily in the City of Auburn, in said County, and  
duly authorized to make this affidavit, and that the  
#5482/Cable Franchise

Village of Weedsport  
of which annexed is a printed copy, was published in said  
paper

two time s namely on the  
1<sup>st</sup> and 7<sup>th</sup> day s of  
January 20 07.

Sworn to before me, this 15<sup>th</sup> day  
of January 2007.

Carol Speech  
Notary Public

**Carol Speech**  
**Notary Public**  
**State of New York**  
**01SP6139936**  
Qualified in Cayuga County  
Commission Expires 01/17/10



# State of New York

## Cayuga County City of Auburn

Stacey Church of the City of Auburn,  
in said County, being duly sworn, deposes and says:

Weedsport Franchise Renewal

### LEGAL NOTICE

PLEASE TAKE NOTICE THAT Time Warner Entertainment-Advance/Newhouse Partnership, a New York general partnership organized and existing under the laws of the State of New York d/b/a Time Warner Cable, has filed an application for renewal of its Certificate of Confirmation and Cable Television Franchise in the Village of Weedsport, Cayuga County, New York, with the New York State Public Service Commission.

The application is available for public inspection at the office of the New York State Public Service Commission and at the office of the Clerk of the Village of Weedsport, 8892 South Street, Weedsport, New York 13166, during normal business hours.

Any interested persons may file comments on the application with the New York State Public Service Commission, Three Empire State Plaza, Albany, New York 12223.

TIME WARNER  
CABLE  
SYRACUSE DIVISION  
T2, 8/12, 8/19

That she is the receptionist of Lee Publications, Inc. publishers of The Citizen, a public newspaper printed and published daily in the City of Auburn, and distributed in Cayuga County, and duly authorized to make this affidavit, and that the

Weedsport Franchise Renewal

Time Warner Cable

of which annexed is a printed copy, was published in said paper

two time s namely on the

12<sup>th</sup> and 19<sup>th</sup> day s of

August 20 07

Stacey Church

Sworn to before me, this 24<sup>th</sup> day  
of August 20 07

Deirdre A. Mace

Notary Public

Vicki A. Mace  
Notary Public, State of New York  
01248108201  
Qualified in Cayuga County  
Commission Expires 06/06/2008



APPLICATION FOR RENEWAL OF FRANCHISE  
OR CERTIFICATE OF CONFIRMATION  
(Form R-2):

1. The exact legal name of applicant is:

Time-Warner Entertainment-Advance/Newhouse Partnership

2. Applicant does business under the following name or names:

Time Warner Cable - Syracuse Division

3. Applicant's mailing address is:

6005 Fair Lakes Road

P.O. Box 4791

East Syracuse, NY 13221

4. Applicant's telephone number(s) is (are):

(315) 634-6100

Time Warner Cable

6005 Fair Lakes Road

East Syracuse, NY 13221

5. (a) This application is for the renewal of operating rights in the

Village of Weedsport - Cayuga County

(Municipality & County)

- (b) Applicant serves the following additional municipalities from the same headend or from a different headend but in the same or adjacent county:

See Attached List (Exhibit 1)



6. The number of subscribers in each of the municipalities noted above is:

|                                       |                           |
|---------------------------------------|---------------------------|
| - Primary residential connections     | <u>See Question #5(b)</u> |
| - Secondary residential connections   | <u>N/A</u>                |
| - Residential pay-cable subscriptions | <u>N/A</u>                |
| - Commercial connections              | <u>N/A</u>                |
| - Other                               | <u>N/A</u>                |

7. The following signals are regularly carried by the applicant's cable system (where signals are received other than by direct off-air pickup, please so indicate):

See Attached Channel Line-Up Card (Exhibit A)

8. Applicant does X does not \_\_\_\_\_ provide channel capacity and/or production facilities for local origination. If answer is affirmative, specify below the number of hours of locally originated programming carried by the system during the past twelve months and briefly describe the nature of the programming:

Applicant has carried over 100 hours of locally originated programming of various types, including PEG Access.

9. The current monthly rates for service in the municipality specified in Question 5(a) are:

|                                     |   |
|-------------------------------------|---|
| - Primary residential connections   | <u>See Attached Rate Card (Exhibit B)</u> |
| - Secondary residential connections | <u>See Attached Rate Card (Exhibit B)</u> |
| - Pay-cable subscriptions           | <u>See Attached Rate Card (Exhibit B)</u> |
| - Commercial connections            | <u>See Attached Rate Card (Exhibit B)</u> |
| - Other                             | <u>See Attached Rate Card (Exhibit B)</u> |

10. How many miles of new cable television plant were placed in operation by applicant during the past twelve months in the municipality specified in Question 5(a)? 0 miles  
In the municipalities specified in Question 5(b)? See Attached List (Exhibit 2)

11. State and describe below any significant achievements and/or improvements that took place with respect to system operation during the past twelve months:



The System is rebuilt to a minimum of 750 MHZ.

12. Indicate whether applicant has previously filed with the NYS Department of Public Service its:

(a) Current Statement of Assessment pursuant to Section 217 Chapter 83?

X  Yes   No

(b) Current Annual Financial Report?  X  Yes   No

If answer to any of the above is negative, please explain:

N/A

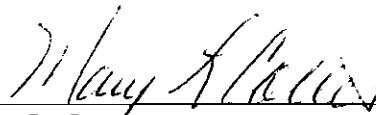
13. Has any event or change occurred during the past twelve months which has had, or could have, a significant impact upon applicant's ability to provide cable television service? If so describe below:

No event or change has occurred during the past twelve months which has had, or

could have, a significant impact upon applicant's ability to provide cable television

services.

WHEREFORE, the applicant, Time Warner Cable, requests that the New York State Public Service Commission grant this application and approve the Town of Adams Certificate of Confirmation and Franchise Agreement.



Mary L. Cotter

President

Time Warner Cable - Syracuse Division

Dated: August 16, 2007

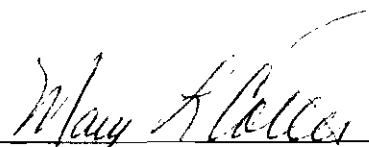
Please attach a copy of applicant's current annual performance test.



STATE OF NEW YORK     )  
                                      )     S.S.:  
COUNTY OF ONONDAGA )

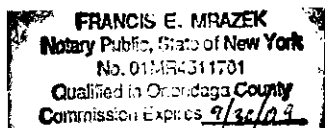
MARY L. COTTER, being sworn, says:

1.     I am President of the Syracuse Division of Time Warner Cable and  
       I am familiar with the business operations of the Company
2.     This application was prepared by me or under my direct supervision.
3.     All of the statements and information contained herein are true and  
       accurate to the best of my knowledge and belief.

  
\_\_\_\_\_  
Mary L. Cotter

Sworn to before me this

16<sup>th</sup> day of August, 2007



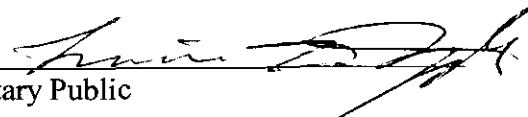
  
\_\_\_\_\_  
Notary Public



EXHIBIT A



## Basic Channel Line-up

| Channel | Channel Name | Channel | Channel Name |
|---------|--------------|---------|--------------|
| 1       | WISN-TV      | 27      | WISN-TV HD   |
| 2       | WISN-TV 2    | 28      | WISN-TV 2 HD |
| 3       | WISN-TV 3    | 29      | WISN-TV 3 HD |

## Standard Channel Line-up

| Channel | Channel Name | Channel | Channel Name  | Channel | Channel Name  | Channel | Channel Name  |
|---------|--------------|---------|---------------|---------|---------------|---------|---------------|
| 4       | WISN-TV 4    | 30      | WISN-TV 4 HD  | 31      | WISN-TV 4 HD  | 32      | WISN-TV 4 HD  |
| 5       | WISN-TV 5    | 31      | WISN-TV 5 HD  | 32      | WISN-TV 5 HD  | 33      | WISN-TV 5 HD  |
| 6       | WISN-TV 6    | 32      | WISN-TV 6 HD  | 33      | WISN-TV 6 HD  | 34      | WISN-TV 6 HD  |
| 7       | WISN-TV 7    | 33      | WISN-TV 7 HD  | 34      | WISN-TV 7 HD  | 35      | WISN-TV 7 HD  |
| 8       | WISN-TV 8    | 34      | WISN-TV 8 HD  | 35      | WISN-TV 8 HD  | 36      | WISN-TV 8 HD  |
| 9       | WISN-TV 9    | 35      | WISN-TV 9 HD  | 36      | WISN-TV 9 HD  | 37      | WISN-TV 9 HD  |
| 10      | WISN-TV 10   | 36      | WISN-TV 10 HD | 37      | WISN-TV 10 HD | 38      | WISN-TV 10 HD |
| 11      | WISN-TV 11   | 37      | WISN-TV 11 HD | 38      | WISN-TV 11 HD | 39      | WISN-TV 11 HD |
| 12      | WISN-TV 12   | 38      | WISN-TV 12 HD | 39      | WISN-TV 12 HD | 40      | WISN-TV 12 HD |
| 13      | WISN-TV 13   | 39      | WISN-TV 13 HD | 40      | WISN-TV 13 HD | 41      | WISN-TV 13 HD |
| 14      | WISN-TV 14   | 40      | WISN-TV 14 HD | 41      | WISN-TV 14 HD | 42      | WISN-TV 14 HD |
| 15      | WISN-TV 15   | 41      | WISN-TV 15 HD | 42      | WISN-TV 15 HD | 43      | WISN-TV 15 HD |
| 16      | WISN-TV 16   | 42      | WISN-TV 16 HD | 43      | WISN-TV 16 HD | 44      | WISN-TV 16 HD |
| 17      | WISN-TV 17   | 43      | WISN-TV 17 HD | 44      | WISN-TV 17 HD | 45      | WISN-TV 17 HD |
| 18      | WISN-TV 18   | 44      | WISN-TV 18 HD | 45      | WISN-TV 18 HD | 46      | WISN-TV 18 HD |
| 19      | WISN-TV 19   | 45      | WISN-TV 19 HD | 46      | WISN-TV 19 HD | 47      | WISN-TV 19 HD |
| 20      | WISN-TV 20   | 46      | WISN-TV 20 HD | 47      | WISN-TV 20 HD | 48      | WISN-TV 20 HD |
| 21      | WISN-TV 21   | 47      | WISN-TV 21 HD | 48      | WISN-TV 21 HD | 49      | WISN-TV 21 HD |
| 22      | WISN-TV 22   | 48      | WISN-TV 22 HD | 49      | WISN-TV 22 HD | 50      | WISN-TV 22 HD |
| 23      | WISN-TV 23   | 49      | WISN-TV 23 HD | 50      | WISN-TV 23 HD | 51      | WISN-TV 23 HD |
| 24      | WISN-TV 24   | 50      | WISN-TV 24 HD | 51      | WISN-TV 24 HD | 52      | WISN-TV 24 HD |
| 25      | WISN-TV 25   | 51      | WISN-TV 25 HD | 52      | WISN-TV 25 HD | 53      | WISN-TV 25 HD |
| 26      | WISN-TV 26   | 52      | WISN-TV 26 HD | 53      | WISN-TV 26 HD | 54      | WISN-TV 26 HD |

### PREMIUM CHANNELS

HD

## Digital Channel Line-up

| Channel | Channel Name | Channel | Channel Name | Channel | Channel Name | Channel | Channel Name |
|---------|--------------|---------|--------------|---------|--------------|---------|--------------|
| 101     | WISN-TV 101  | 102     | WISN-TV 102  | 103     | WISN-TV 103  | 104     | WISN-TV 104  |
| 105     | WISN-TV 105  | 106     | WISN-TV 106  | 107     | WISN-TV 107  | 108     | WISN-TV 108  |
| 109     | WISN-TV 109  | 110     | WISN-TV 110  | 111     | WISN-TV 111  | 112     | WISN-TV 112  |
| 113     | WISN-TV 113  | 114     | WISN-TV 114  | 115     | WISN-TV 115  | 116     | WISN-TV 116  |
| 117     | WISN-TV 117  | 118     | WISN-TV 118  | 119     | WISN-TV 119  | 120     | WISN-TV 120  |
| 121     | WISN-TV 121  | 122     | WISN-TV 122  | 123     | WISN-TV 123  | 124     | WISN-TV 124  |
| 125     | WISN-TV 125  | 126     | WISN-TV 126  | 127     | WISN-TV 127  | 128     | WISN-TV 128  |
| 129     | WISN-TV 129  | 130     | WISN-TV 130  | 131     | WISN-TV 131  | 132     | WISN-TV 132  |
| 133     | WISN-TV 133  | 134     | WISN-TV 134  | 135     | WISN-TV 135  | 136     | WISN-TV 136  |
| 137     | WISN-TV 137  | 138     | WISN-TV 138  | 139     | WISN-TV 139  | 140     | WISN-TV 140  |
| 141     | WISN-TV 141  | 142     | WISN-TV 142  | 143     | WISN-TV 143  | 144     | WISN-TV 144  |
| 145     | WISN-TV 145  | 146     | WISN-TV 146  | 147     | WISN-TV 147  | 148     | WISN-TV 148  |
| 149     | WISN-TV 149  | 150     | WISN-TV 150  | 151     | WISN-TV 151  | 152     | WISN-TV 152  |
| 153     | WISN-TV 153  | 154     | WISN-TV 154  | 155     | WISN-TV 155  | 156     | WISN-TV 156  |
| 157     | WISN-TV 157  | 158     | WISN-TV 158  | 159     | WISN-TV 159  | 160     | WISN-TV 160  |
| 161     | WISN-TV 161  | 162     | WISN-TV 162  | 163     | WISN-TV 163  | 164     | WISN-TV 164  |
| 165     | WISN-TV 165  | 166     | WISN-TV 166  | 167     | WISN-TV 167  | 168     | WISN-TV 168  |
| 169     | WISN-TV 169  | 170     | WISN-TV 170  | 171     | WISN-TV 171  | 172     | WISN-TV 172  |
| 173     | WISN-TV 173  | 174     | WISN-TV 174  | 175     | WISN-TV 175  | 176     | WISN-TV 176  |
| 177     | WISN-TV 177  | 178     | WISN-TV 178  | 179     | WISN-TV 179  | 180     | WISN-TV 180  |
| 181     | WISN-TV 181  | 182     | WISN-TV 182  | 183     | WISN-TV 183  | 184     | WISN-TV 184  |
| 185     | WISN-TV 185  | 186     | WISN-TV 186  | 187     | WISN-TV 187  | 188     | WISN-TV 188  |
| 189     | WISN-TV 189  | 190     | WISN-TV 190  | 191     | WISN-TV 191  | 192     | WISN-TV 192  |
| 193     | WISN-TV 193  | 194     | WISN-TV 194  | 195     | WISN-TV 195  | 196     | WISN-TV 196  |
| 197     | WISN-TV 197  | 198     | WISN-TV 198  | 199     | WISN-TV 199  | 200     | WISN-TV 200  |

This line-up subject to change. For the most up to date listing, go to [www.time Warnerable.com](http://www.time Warnerable.com)







EXHIBIT B



## Syracuse Rates & Services

Syracuse 4/07  
SYR 1811

|  |         |
|--|---------|
|  | \$6.68  |
| <b>Standard Service</b>  | 55.40   |
| <small>Standard Service includes:</small><br><small>• Comcast HD Cable Service</small><br><small>• Standard Cable Modem</small><br><small>• Standard Cable Service</small>   |         |
| <b>Home Box Office</b>   | 12.95   |
| <b>Cinemax</b>   | 9.95    |
| <b>Showtime Unlimited</b> (includes 100 hours of pay per view)   | 10.95 + |
| <b>Starz</b>   | 8.75    |
| <small>• 100 hours of pay per view</small><br><small>• 100 hours of pay per view</small>   |         |
| <b>Explorer Pak</b>  | 8.50    |
| <small>Includes:</small><br><small>• Explorer Digital Modem</small><br><small>• Explorer Cable Service</small>   |         |
| <b>Digital Movie Pak</b>   | 6.00    |
| <small>Includes:</small><br><small>• Digital Movie Modem</small><br><small>• Digital Movie Cable Service</small>   |         |
| <b>High-Definition Package</b>   | 4.95    |
| <small>Includes:</small><br><small>• High-Definition Cable Service</small><br><small>• High-Definition Cable Modem</small>   |         |
| <b>Sports Plus Package</b>   | 1.95    |
| <b>Latino Especial Package</b>   | 9.95    |
| <b>Digital Navigator Package</b>   | 1.00    |
| <small>Includes:</small><br><small>• Digital Navigator Program</small><br><small>• Digital Navigator Cable Service</small><br><small>• Digital Navigator Cable Modem</small><br><small>• Digital Navigator Cable Service</small>               |         |
| <b>Digital Video Recorder (DVR) Service</b>  | 7.95    |
| <b>Family Choice</b>   | 12.99   |
| <small>Basic Cable Service and service of a set-top box required.</small><br><small>*Standard Cable Service. Premium Channel. Go Digital service and other services are not available at this time. This offer is not available.</small>       |         |
| <small>Includes:</small><br><small>• Standard Cable Service</small><br><small>• Premium Channel</small><br><small>• Go Digital service</small><br><small>• Other services are not available at this time. This offer is not available.</small> |         |
| <b>Home Terminal / Digital Terminal / HD Terminal</b>  | 7.64    |
| <b>Remote / Digital Remote</b>   | .31     |
| <b>Cable Card</b> (for Digital Cable Modem Set-Top)  | 2.73    |
| <small>Includes:</small><br><small>• Standard Cable Service</small><br><small>• Standard Cable Modem</small><br><small>• Standard Cable Service</small>  |         |
| <b>Standard Install/Reconnect</b>  | 33.74   |
| <small>Includes:</small><br><small>• Standard Cable Service</small><br><small>• Standard Cable Modem</small><br><small>• Standard Cable Service</small>  |         |
| <b>Standard Installation</b> (one service line)  | 50.51   |
| <b>Additional Outlet(s)</b>  | 22.10   |
| <small>Includes:</small><br><small>• Standard Cable Service</small><br><small>• Standard Cable Modem</small><br><small>• Standard Cable Service</small>  |         |
| <b>Additional Outlet(s)</b> (per outlet)   | 34.06   |
| <b>Equipment Deactivation Fee</b>  | 3.99    |
| <small>Includes:</small><br><small>• Standard Cable Service</small><br><small>• Standard Cable Modem</small><br><small>• Standard Cable Service</small>  |         |
| <b>COD Fee</b> (for new service line)  | 5.95    |

Digital Terminal is required in order to receive some channels and/or services. Rates and charges apply to standard residential installations and service. The above rates for cable service packages and equipment do not include franchise fees or State and Federal regulatory fees.

6005 Fair Lakes Road • E. Syracuse, NY 13057-4259  
(315) 634-6000 • [www.twny.com](http://www.twny.com)





CURRENT ANNUAL PERFORMANCE TEST



Exhibit 1

Question 5(b): Applicant serves the following additional Municipalities from the same headend or from a different headend but in the same or adjacent county:

| <u>Municipality</u>    | <u>Subscribers</u> | <u>Municipality</u>         | <u>Subscribers</u> |
|------------------------|--------------------|-----------------------------|--------------------|
| Village of E. Carthage | 1,223              | Town of Antwerp             | 5                  |
| Town of LeRay          | 32                 | Town of Philadelphia        | 60                 |
| Town of Theresa        | 40                 | Village of Antwerp          | 210                |
| Village of Evans Mills | 237                | Village of Philadelphia     | 443                |
| Village of Theresa     | 246                | Fort Drum                   | 2,843              |
| Town of Champion       | 412                | Town of Croghan             | 209                |
| Town of Denmark        | 219                | Town of New Bremen          | 269                |
| Town of Wilna          | 456                | Village of Castorland       | 96                 |
| Village of Copenhagen  | 255                | Village of Croghan          | 300                |
| Village of Deferiet    | 101                | Village of Herrings         | 27                 |
| Village of W. Carthage | 694                | Town of Brownville          | 207                |
| Town of Cape Vincent   | 664                | Town of Clayton             | 1,030              |
| Town of Hounsfield     | 156                | Town of Lyme                | 111                |
| Town of Orleans        | 557                | Village of Cape Vincent     | 347                |
| Village of Chaumont    | 223                | Village of Clayton          | 619                |
| Village of Dexter      | 349                | Village of Sackets Harbor   | 572                |
| Town of Bangor         | 337                | Town of Bombay              | 201                |
| Town of Burke          | 119                | Town of Chateaugay          | 52                 |
| Town of Constable      | 274                | Town of Fort Covington      | 339                |
| Town of Malone         | 815                | Town of Moira               | 399                |
| Town of Westville      | 329                | Village of Brushton         | 313                |
| Village of Burke       | 83                 | Village of Chateaugay       | 340                |
| Village of Malone      | 2,334              | Town of Potsdam             | 1,097              |
| Town of Canton         | 896                | Town of Colton              | 495                |
| Town of Dekalb         | 148                | Town of Hermon              | 6                  |
| Town of Hopkinton      | 180                | Town of Madrid              | 253                |
| Town of Parishville    | 514                | Town of Pierrepont          | 521                |
| Town of Russell        | 120                | Village of Canton           | 1,320              |
| Village of Hermon      | 129                | Village of Norwood          | 608                |
| Village of Potsdam     | 1,849              | Town of Fowler              | 341                |
| Town of Gouverneur     | 426                | Village of Gouverneur       | 1,405              |
| Village of Richville   | 122                | Town of Brasher             | 454                |
| Town of Lawrence       | 223                | Town of Louisville          | 1,033              |
| Town of Massena        | 834                | Town of Norfolk             | 500                |
| Town of Stockholm      | 295                | Town of Waddington          | 21                 |
| Village of Massena     | 4,415              | City of Ogdensburg          | 3,873              |
| Town of Lisbon         | 480                | Town of Morristown          | 244                |
| Town of Oswegatchie    | 561                | Village of Heuvelton        | 295                |
| Village of Morristown  | 163                | Village of Rennselaer Falls | 140                |
| Village of Waddington  | 391                | Town of Altona              | 241                |
| Town of Champlain      | 416                | Town of Chazy               | 790                |



|                         |     |                     |     |
|-------------------------|-----|---------------------|-----|
| Town of Ellenburg       | 390 | Town of Mooers      | 205 |
| Village of Champlain    | 416 | Village of Mooers   | 205 |
| Village of Rouses Point | 852 | Town of Martinsburg | 192 |
| Town of Henderson       | 157 | Town of New Bremen  | 9   |
| Town of Watson          | 310 | Town of Grieg       | 315 |

## Exhibit 2

Question 10: The number of miles of new cable television plant placed in operation by applicant during the past twelve (12) months in the municipalities specified in Question 5(b) are:

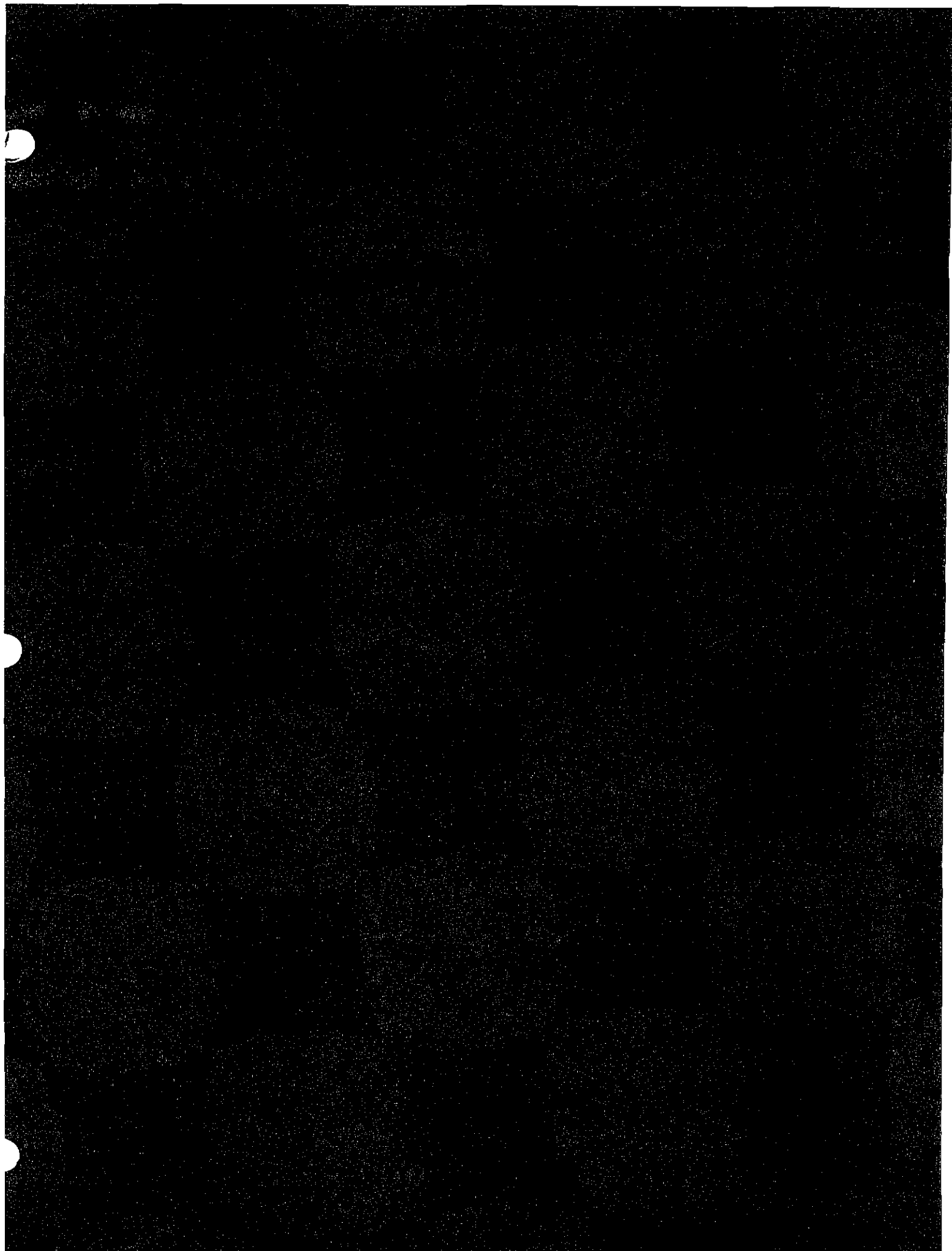
| <u>Municipality</u>     | <u>Miles of Plant</u> | <u>Municipality</u>   | <u>Miles of Plant</u> |
|-------------------------|-----------------------|-----------------------|-----------------------|
| Town of Champion        | 0.16 Miles            | Town of Hounsfield    | 0.16 Miles            |
| Town of Champlain       | 0.1 Miles             | Town of Chazy         | 0.3 Miles             |
| Town of Ellenburg       | 0.1 Miles             | Town of Mooers        | 0.1 Miles             |
| Village of Rouses Point | 0.1 Miles             | Town of Bombay        | 0.1 Miles             |
| Town of Constable       | 0.2 Miles             | Town of Malone        | 0.2 Miles             |
| Town of Westville       | 0.1 Miles             | Village of Burke      | 0.2 Miles             |
| City of Ogdensburg      | 0.3 Miles             | Town of Lisbon        | 2.3 Miles             |
| Town of Morristown      | 15.5 Miles            | Town of Oswegatchie   | 6.5 Miles             |
| Village of Heuvelton    | 0.1 Miles             | Village of Morristown | 0.1 Miles             |
| V. of Rennselaer Falls  | 0.7 Miles             | Town of Canton        | 0.6 Miles             |
| Town of Parishville     | 0.2 Miles             | Village of Norwood    | 0.7 Miles             |



# Table of Contents

|    |   |
|----|---|
| 1  | SYSTEM INFORMATION & TESTING SUMMARY      |
| 2  | CHANNEL LINEUP & NON VIDEO SERVICES       |
| 3  | STATEMENT/QUALIFICATIONS & TESTING EQUIP. |
| 4  | TERMINAL ISOLATION TEST                   |
| 5  | CONVERTER & TRAP SPECIFICATIONS           |
| 6  | HEADEND TESTS                             |
| 7  | TESTPOINT #1                              |
| 8  | TESTPOINT #2                              |
| 9  | TESTPOINT #3                              |
| 10 | TESTPOINT #4                              |
| 11 | TESTPOINT #5                              |
| 12 | TESTPOINT #6                              |
| 13 | TESTPOINT #7                              |
| 14 | TESTPOINT #8                              |
| 15 | TESTPOINT #9                              |
| 16 | TESTPOINT #10                             |
| 17 | TESTPOINT #11                             |
| 18 | TESTPOINT #12                             |
| 19 | TESTPOINT #13                             |
| 20 | TESTPOINT #14                             |
| 21 | TESTPOINT #15                             |
| 22 | TESTPOINT #16                             |
| 23 | TESTPOINT #17                             |
| 24 | TESTPOINT #18                             |
| 25 | TESTPOINT #19                             |
| 26 | TESTPOINT #20                             |
| 27 | TESTPOINT #21                             |
| 28 |   |
| 29 | SYRACUSE DIVISION TESTING PROCEDURES      |
| 30 |   |
| 31 |   |







PAGE 1

**TIME WARNER CABLE - SYRACUSE DIVISION****FCC Proof - of - Performance Tests**

|                                  |   |            |              |              |
|----------------------------------|---|------------|--------------|--------------|
| <b>System Name</b>               | : | Syracuse   |              |              |
| <b>Plant Mileage</b>             | : | 3698.1400  | <b>As of</b> | : 08/01/2006 |
| <b>Basic Subscribers</b>         | : | 177456     | <b>As of</b> | : 08/01/2006 |
| <b>System Bandwidth</b>          | : | 550.0000   |              |              |
| <b>Number of Channels Tested</b> | : | 9          |              |              |
| <b>Number of Test Points</b>     | : | 21         |              |              |
| <b>Test Start Date</b>           | : | 08/01/2006 |              |              |
| <b>Test Completion Date</b>      | : | 08/31/2006 |              |              |



PAGE 2

# **TIME WARNER CABLE - SYRACUSE DIVISION**

## **Statement of Qualifications**

**System Name** : Syracuse

**Date** : 08/01/2006

## **FCC Testing Summary**

**Changes Since Last Proof of Performance Test**

National Geographic was dropped from analog channel 66  
Fox Sports New York was dropped from analog channel 54 and added to analog channel 73  
Sports Net New York was added to analog channel 54  
Pin was added to analog channel 99  
Simulcast Qam's have been added at frequencies: 477MHz, 555MHz, 585MHz, 663MHz, 681MHz

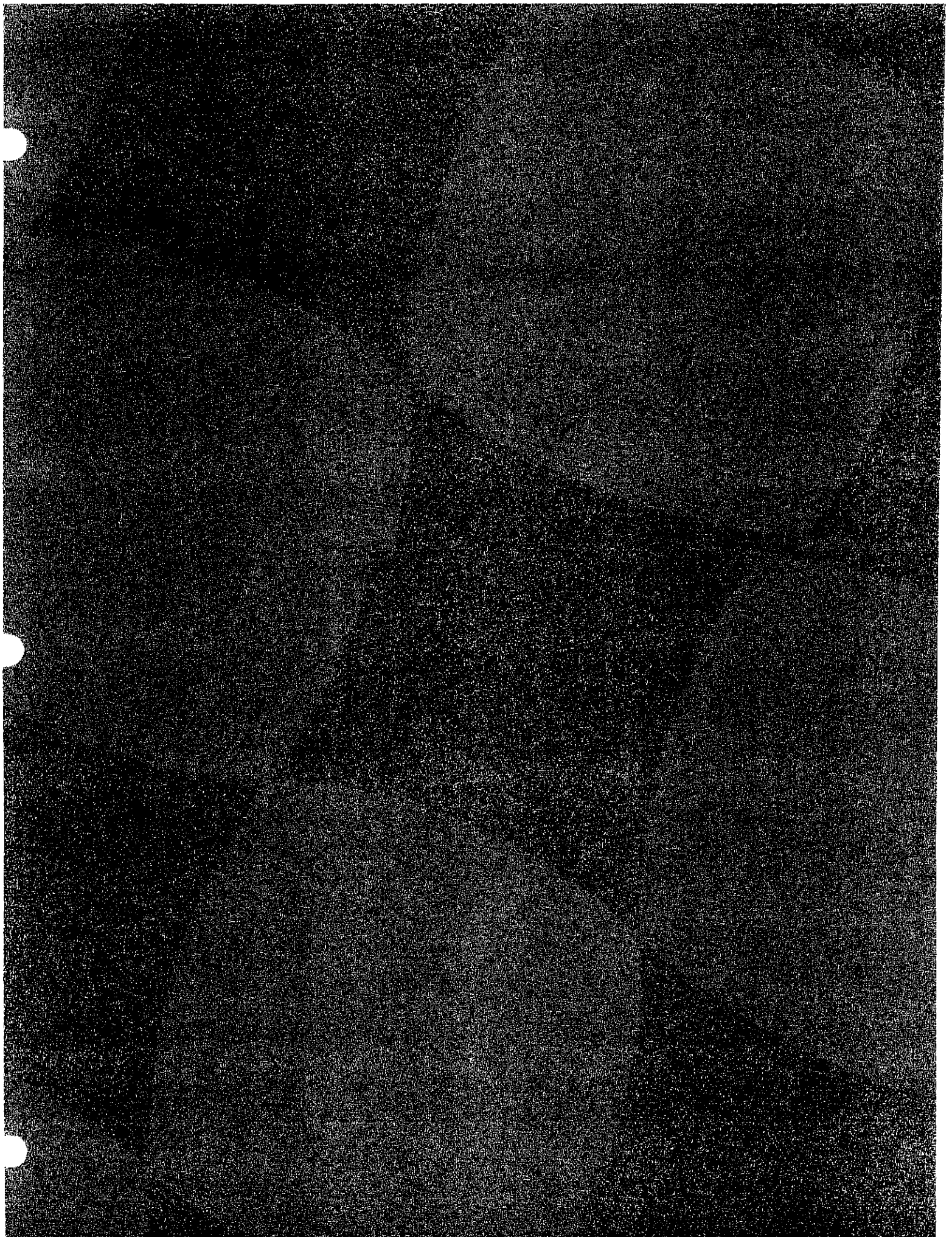
**Test Results**

All test results were favorable

**Miscellaneous**

Time Warner Cable system includes: Syracuse: Fulton, Oswego, Seneca, and Central Square.  
The following are fed from the Fairlakes headend: Geddes, Burdick, Meridian, Oswego, Fulton, Baldwinsville, Liverpool, Davis, Mapleview, Chimes, and Cuyler  
Digital services occupy frequencies from 550MHz to 747MHz







PAGE 3 MAIN

**TIME WARNER CABLE - SYRACUSE DIVISION**

System Name : Syracuse

Date : 08/01/2006

Sub System Name : Syracuse-Suburbs

| ACTUAL CHANNEL | CARRIER FREQ | CONV CH. | TYPE | SC ("Y") | VITS ("Y") | CALL LTR | PROG SOURCE | ACTUAL CHANNEL | CARRIER FREQ | CONV CH. | TYPE | SC ("Y") | VITS ("Y") | CALL LTR | PROG SOURCE |
|----------------|--------------|----------|------|----------|------------|----------|-------------|----------------|--------------|----------|------|----------|------------|----------|-------------|
| 2              | 55.2500      | 2        | TV   |          |            | TVGUID   | SAT         | DD (40)        | 319.2625     | 40       | TV   |          | Y          | TWC      | SAT         |
| 3              | 61.2500      | 3        | TV   |          | Y          | WSTM     | OFFAIR      | EE (41)        | 325.2625     | 41       | TV   |          | Y          | TRAVEL   | SAT         |
| 4              | 67.2500      | 4        | TV   |          | Y          | WSPX     | OFFAIR      | FF (42)        | 331.2750     | 42       | TV   |          | Y          | HSN      | SAT         |
| 5              | 77.2500      | 5        | TV   |          | Y          | WTVH     | OFFAIR      | GG (43)        | 337.2625     | 43       | TV   |          | Y          | HALLM    | SAT         |
| 6              | 83.2500      | 6        | TV   |          |            | WSTQ     | STUDIO      | HH (44)        | 343.2625     | 44       | TV   |          | Y          | EWTN     | SAT         |
| A-5 (95)       | 91.2500      |          |      |          |            |          |             | II (45)        | 349.2625     | 45       | TV   |          | Y          | TNT      | SAT         |
| A-4 (96)       | 97.2500      |          |      |          |            |          |             | JJ (46)        | 355.2625     | 46       | TV   |          |            | FOOD     | SAT         |
| A-3 (97)       | 103.2500     |          |      |          |            |          |             | KK (47)        | 361.2625     | 47       | TV   |          |            | TVLAND   | SAT         |
| A-2 (98)       | 109.2750     | 98       | TV   |          |            | P/A      | LOCAL       | LL (48)        | 367.2625     | 48       | TV   |          | Y          | BET      | SAT         |
| A-1 (99)       | 115.2750     | 99       | TV   |          |            | PIN      | SAT         | MM (49)        | 373.2625     | 49       | TV   |          |            | TLC      | SAT         |
| A (14)         | 121.2625     | 14       | TV   |          | Y          | WGN      | SAT         | NN (50)        | 379.2625     | 50       | TV   |          |            | COMEDY   | SAT         |
| B (15)         | 127.2625     | 15       | TV   |          |            | HBO      | SAT         | OO (51)        | 385.2625     | 51       | TV   |          | Y          | TOON     | SAT         |
| C (16)         | 133.2625     | 16       | TV   |          |            | AMER     | SAT         | PP (52)        | 391.2625     | 52       | TV   |          |            | COURT    | SAT         |
| D (17)         | 139.2500     | 17       | TV   |          | Y          | WTBS     | SAT         | QQ (53)        | 397.2625     | 53       | TV   |          |            | YES      | SAT         |
| E (18)         | 145.2500     | 18       | TV   |          | Y          | ANIMAL   | SAT         | RR (54)        | 403.2500     | 54       | TV   |          |            | SPNY     | SAT         |
| F (19)         | 151.3210     | 19       | TV   |          | Y          | QVC      | SAT         | SS (55)        | 409.2500     | 55       | TV   |          |            | OLN      | SAT         |
| G (20)         | 157.2500     | 20       | TV   |          | Y          | ABC FAM  | SAT         | TT (56)        | 415.2500     | 56       | TV   |          |            | MSG      | SAT         |
| H (21)         | 163.2500     | 21       | TV   |          |            | FXNET    | SAT         | UU (57)        | 421.2500     | 57       | TV   |          | Y          | GOLF     | SAT         |
| I (22)         | 169.2500     | 22       | TV   |          | Y          | CNN      | SAT         | VV (58)        | 427.2500     | 58       | TV   |          |            | SOAP     | SAT         |
| 7              | 175.2500     | 7        | TV   |          | Y          | WNYS     | OFFAIR      | WW (59)        | 433.2500     | 59       | TV   |          |            | DISC H   | SAT         |
| 8              | 181.2500     | 8        | TV   |          | Y          | WSYT     | OFFAIR      | XX (60)        | 439.2500     | 60       | TV   |          | Y          | HGTV     | SAT         |
| 9              | 187.2500     | 9        | TV   |          | Y          | WIXT     | OFFAIR      | YY (61)        | 445.2500     | 61       | TV   |          | Y          | SCIFI    | SAT         |
| 10             | 193.2500     | 10       | TV   |          |            | N10N     | STUDIO      | ZZ (62)        | 451.2500     | 62       | TV   |          | Y          | HIST     | SAT         |
| 11             | 199.2500     | 11       | TV   |          | Y          | WCNY     | OFFAIR      | 63             | 457.2500     | 63       | TV   |          |            | TCM      | SAT         |
| 12             | 205.2500     | 12       | TV   |          |            | WCNYII   | STUDIO      | 64             | 463.2500     | 64       | TV   |          | Y          | WE       | SAT         |
| 13             | 211.2500     | 13       | TV   |          |            | SOURCE   | LOCAL       | 65             | 469.2500     | 65       | TV   |          |            | LMN      | SAT         |
| J (23)         | 217.2500     | 23       | TV   |          | Y          | CNNHLN   | SAT         | 66             | 475.2500     | 66       |      |          |            |          |             |
| K (24)         | 223.2500     | 24       | TV   |          | Y          | ESPN     | SAT         | 67             | 481.2500     | 67       | TV   |          | Y          | AMC      | SAT         |
| L (25)         | 229.2625     | 25       | TV   |          |            | ESPN2    | SAT         | 68             | 487.2500     | 68       | TV   |          |            | PIT TV   | SAT         |
| M (26)         | 235.2625     | 26       | TV   |          |            | TWSP     | LOCAL       | 69             | 493.2500     | 69       | TV   |          | Y          | OXYGEN   | SAT         |
| N (27)         | 241.2625     | 27       | TV   |          | Y          | CMT      | SAT         | 70             | 499.2500     | 70       | TV   |          | Y          | BRAVO    | SAT         |
| O (28)         | 247.2625     | 28       | TV   |          | Y          | MTV      | SAT         | 71             | 505.2500     | 71       | TV   |          | Y          | DISNEY   | SAT         |
| P (29)         | 253.2625     | 29       | TV   |          | Y          | VH-1     | SAT         | 72             | 511.2500     | 72       | TV   |          |            | ESPNC    | SAT         |
| Q (30)         | 259.2625     | 30       | TV   |          | Y          | LIFE     | SAT         | 73             | 517.2500     | 73       | TV   |          |            | FSNY     | SAT         |
| R (31)         | 265.2625     | 31       | TV   |          | Y          | USA      | SAT         | 74             | 523.2500     | 74       | TV   |          | Y          | UNIVIS   | SAT         |
| S (32)         | 271.2625     | 32       | TV   |          | Y          | DISC     | SAT         | 75             | 529.2500     | 75       | TV   |          |            | STYLE    | SAT         |
| T (33)         | 277.2625     | 33       | TV   |          | Y          | A&E      | SAT         | 76             | 535.2500     | 76       | TV   |          |            | LEASED   | SAT         |
| U (34)         | 283.2625     | 34       | TV   |          | Y          | NICK     | SAT         | 77             | 541.2500     | 77       | TV   |          | Y          | E! TV    | SAT         |
| V (35)         | 289.2625     | 35       | TV   |          | Y          | CSPAN    | SAT         | 78             | 547.2500     | 78       | TV   |          | Y          | SPIKE    | SAT         |
| W (36)         | 295.2625     | 36       | TV   |          | Y          | CSPAN2   | SAT         | 79             | 553.2500     |          |      |          |            |          |             |
| AA (37)        | 301.2625     | 37       | TV   |          | Y          | CNBO     | SAT         | 80             | 559.2500     | 80       | TV   |          | Y          | VALUE    | SAT         |
| BB (38)        | 307.2625     | 38       | TV   |          | Y          | MSNBC    | SAT         | 81             | 565.2500     |          |      |          |            |          |             |
| CC (39)        | 313.2625     | 39       | TV   |          | Y          | FOXN     | SAT         |                |              |          |      |          |            |          |             |



**System Name** : Syracuse

**Date** : 08/01/2006

**Sub System Name** : Syracuse-City

| ACTUAL CHANNEL | CARRIER FREQ | CONV CH. | TYPE | SC ("Y") | VITS ("Y") | CALL LTR | PROG SOURCE | ACTUAL CHANNEL | CARRIER FREQ | CONV CH. | TYPE | SC ("Y") | VITS ("Y") | CALL LTR | PROG SOURCE |
|----------------|--------------|----------|------|----------|------------|----------|-------------|----------------|--------------|----------|------|----------|------------|----------|-------------|
| 2              | 55.2500      | 2        | TV   |          |            | HBO      | SAT         | DD (40)        | 319.2625     |          |      |          |            |          |             |
| 3              | 61.2500      | 3        | TV   |          | Y          | WSPX     | SAT         | EE (41)        | 325.2625     |          |      |          |            |          |             |
| 4              | 67.2500      | 4        | TV   |          | Y          | WSTM     | SAT         | FF (42)        | 331.2750     |          |      |          |            |          |             |
| 5              | 77.2500      |          |      |          |            |          |             | GG (43)        | 337.2625     |          |      |          |            |          |             |
| 6              | 83.2500      |          |      |          |            |          |             | HH (44)        | 343.2625     |          |      |          |            |          |             |
| A-5 (95)       | 91.2500      |          |      |          |            |          |             | II (45)        | 349.2625     |          |      |          |            |          |             |
| A-4 (96)       | 97.2500      |          |      |          |            |          |             | JJ (46)        | 355.2625     |          |      |          |            |          |             |
| A-3 (97)       | 103.2500     |          |      |          |            |          |             | KK (47)        | 361.2625     |          |      |          |            |          |             |
| A-2 (98)       | 109.2750     |          |      |          |            |          |             | LL (48)        | 367.2625     |          |      |          |            |          |             |
| A-1 (99)       | 115.2750     |          |      |          |            |          |             | MM (49)        | 373.2625     |          |      |          |            |          |             |
| A (14)         | 121.2625     |          |      |          |            |          |             | NN (50)        | 379.2625     |          |      |          |            |          |             |
| B (15)         | 127.2625     | 15       | TV   |          |            | TVGUID   | SAT         | OO (51)        | 385.2625     |          |      |          |            |          |             |
| C (16)         | 133.2625     |          |      |          |            |          |             | PP (52)        | 391.2625     |          |      |          |            |          |             |
| D (17)         | 139.2500     |          |      |          |            |          |             | QQ (53)        | 397.2625     |          |      |          |            |          |             |
| E (18)         | 145.2500     |          |      |          |            |          |             | RR (54)        | 403.2500     |          |      |          |            |          |             |
| F (19)         | 151.3210     |          |      |          |            |          |             | SS (55)        | 409.2500     |          |      |          |            |          |             |
| G (20)         | 157.2500     |          |      |          |            |          |             | TT (56)        | 415.2500     |          |      |          |            |          |             |
| H (21)         | 163.2500     |          |      |          |            |          |             | UU (57)        | 421.2500     |          |      |          |            |          |             |
| I (22)         | 169.2500     |          |      |          |            |          |             | VV (58)        | 427.2500     |          |      |          |            |          |             |
| 7              | 175.2500     |          |      |          |            |          |             | WW (59)        | 433.2500     |          |      |          |            |          |             |
| 8              | 181.2500     |          |      |          |            |          |             | XX (60)        | 439.2500     |          |      |          |            |          |             |
| 9              | 187.2500     |          |      |          |            |          |             | YY (61)        | 445.2500     |          |      |          |            |          |             |
| 10             | 193.2500     |          |      |          |            |          |             | ZZ (62)        | 451.2500     |          |      |          |            |          |             |
| 11             | 199.2500     |          |      |          |            |          |             | 63             | 457.2500     |          |      |          |            |          |             |
| 12             | 205.2500     |          |      |          |            |          |             | 64             | 463.2500     |          |      |          |            |          |             |
| 13             | 211.2500     |          |      |          |            |          |             | 65             | 469.2500     |          |      |          |            |          |             |
| J (23)         | 217.2500     |          |      |          |            |          |             | 66             | 475.2500     |          |      |          |            |          |             |
| K (24)         | 223.2500     |          |      |          |            |          |             | 67             | 481.2500     |          |      |          |            |          |             |
| L (25)         | 229.2625     |          |      |          |            |          |             | 68             | 487.2500     |          |      |          |            |          |             |
| M (26)         | 235.2625     |          |      |          |            |          |             | 69             | 493.2500     |          |      |          |            |          |             |
| N (27)         | 241.2625     |          |      |          |            |          |             | 70             | 499.2500     |          |      |          |            |          |             |
| O (28)         | 247.2625     |          |      |          |            |          |             | 71             | 505.2500     |          |      |          |            |          |             |
| P (29)         | 253.2625     |          |      |          |            |          |             | 72             | 511.2500     |          |      |          |            |          |             |
| Q (30)         | 259.2625     |          |      |          |            |          |             | 73             | 517.2500     |          |      |          |            |          |             |
| R (31)         | 265.2625     |          |      |          |            |          |             | 74             | 523.2500     |          |      |          |            |          |             |
| S (32)         | 271.2625     |          |      |          |            |          |             | 75             | 529.2500     |          |      |          |            |          |             |
| T (33)         | 277.2625     |          |      |          |            |          |             | 76             | 535.2500     |          |      |          |            |          |             |
| U (34)         | 283.2625     |          |      |          |            |          |             | 77             | 541.2500     |          |      |          |            |          |             |
| V (35)         | 289.2625     |          |      |          |            |          |             | 78             | 547.2500     |          |      |          |            |          |             |
| W (36)         | 295.2625     |          |      |          |            |          |             | 79             | 553.2500     |          |      |          |            |          |             |
| AA (37)        | 301.2625     |          |      |          |            |          |             | 80             | 559.2500     |          |      |          |            |          |             |
| BB (38)        | 307.2625     |          |      |          |            |          |             | 81             | 565.2500     |          |      |          |            |          |             |
| CC (39)        | 313.2625     |          |      |          |            |          |             |                |              |          |      |          |            |          |             |



**PAGE 3 B**

**TIME WARNER CABLE - SYRACUSE DIVISION**

**System Name** : Syracuse

**Date** : 08/01/2006

**Sub System Name** : Syracuse-Fulton

| ACTUAL CHANNEL | CARRIER FREQ | CONV CH. | TYPE | SC ("Y") | VTTS ("Y") | CALL LTR | PROG SOURCE | ACTUAL CHANNEL | CARRIER FREQ | CONV CH. | TYPE | SC ("Y") | VTTS ("Y") | CALL LTR | PROG SOURCE |
|----------------|--------------|----------|------|----------|------------|----------|-------------|----------------|--------------|----------|------|----------|------------|----------|-------------|
| 2              | 55.2500      | 2        | TV   |          |            | TVGUID   | SAT         | DD (40)        | 319.2625     |          |      |          |            |          |             |
| 3              | 61.2500      |          |      |          |            |          |             | EE (41)        | 325.2625     |          |      |          |            |          |             |
| 4              | 67.2500      |          |      |          |            |          |             | FF (42)        | 331.2750     |          |      |          |            |          |             |
| 5              | 77.2500      |          |      |          |            |          |             | GG (43)        | 337.2625     |          |      |          |            |          |             |
| 6              | 83.2500      | 6        | TV   |          |            | HBO      | SAT         | HH (44)        | 343.2625     |          |      |          |            |          |             |
| A-5 (95)       | 91.2500      |          |      |          |            |          |             | II (45)        | 349.2625     |          |      |          |            |          |             |
| A-4 (96)       | 97.2500      | 96       | TV   |          |            | P/A      | LOCAL       | JJ (46)        | 355.2625     |          |      |          |            |          |             |
| A-3 (97)       | 103.2500     |          |      |          |            |          |             | KK (47)        | 361.2625     |          |      |          |            |          |             |
| A-2 (98)       | 109.2750     |          |      |          |            |          |             | LL (48)        | 367.2625     |          |      |          |            |          |             |
| A-1 (99)       | 115.2750     |          |      |          |            |          |             | MM (49)        | 373.2625     |          |      |          |            |          |             |
| A (14)         | 121.2625     |          |      |          |            |          |             | NN (50)        | 379.2625     |          |      |          |            |          |             |
| B (15)         | 127.2625     | 15       | TV   |          |            | WSTQ     | STUDIO      | OO (51)        | 385.2625     |          |      |          |            |          |             |
| C (16)         | 133.2625     |          |      |          |            |          |             | PP (52)        | 391.2625     |          |      |          |            |          |             |
| D (17)         | 139.2500     |          |      |          |            |          |             | QQ (53)        | 397.2625     |          |      |          |            |          |             |
| E (18)         | 145.2500     |          |      |          |            |          |             | RR (54)        | 403.2500     |          |      |          |            |          |             |
| F (19)         | 151.3210     |          |      |          |            |          |             | SS (55)        | 409.2500     |          |      |          |            |          |             |
| G (20)         | 157.2500     |          |      |          |            |          |             | TT (56)        | 415.2500     |          |      |          |            |          |             |
| H (21)         | 163.2500     |          |      |          |            |          |             | UU (57)        | 421.2500     |          |      |          |            |          |             |
| I (22)         | 169.2500     |          |      |          |            |          |             | VV (58)        | 427.2500     |          |      |          |            |          |             |
| 7              | 175.2500     |          |      |          |            |          |             | WW (59)        | 433.2500     |          |      |          |            |          |             |
| 8              | 181.2500     |          |      |          |            |          |             | XX (60)        | 439.2500     |          |      |          |            |          |             |
| 9              | 187.2500     |          |      |          |            |          |             | YY (61)        | 445.2500     |          |      |          |            |          |             |
| 10             | 193.2500     |          |      |          |            |          |             | ZZ (62)        | 451.2500     |          |      |          |            |          |             |
| 11             | 199.2500     |          |      |          |            |          |             | 63             | 457.2500     |          |      |          |            |          |             |
| 12             | 205.2500     |          |      |          |            |          |             | 64             | 463.2500     |          |      |          |            |          |             |
| 13             | 211.2500     |          |      |          |            |          |             | 65             | 469.2500     |          |      |          |            |          |             |
| J (23)         | 217.2500     |          |      |          |            |          |             | 66             | 475.2500     |          |      |          |            |          |             |
| K (24)         | 223.2500     |          |      |          |            |          |             | 67             | 481.2500     |          |      |          |            |          |             |
| L (25)         | 229.2625     |          |      |          |            |          |             | 68             | 487.2500     |          |      |          |            |          |             |
| M (26)         | 235.2625     |          |      |          |            |          |             | 69             | 493.2500     |          |      |          |            |          |             |
| N (27)         | 241.2625     |          |      |          |            |          |             | 70             | 499.2500     |          |      |          |            |          |             |
| O (28)         | 247.2625     |          |      |          |            |          |             | 71             | 505.2500     |          |      |          |            |          |             |
| P (29)         | 253.2625     |          |      |          |            |          |             | 72             | 511.2500     |          |      |          |            |          |             |
| Q (30)         | 259.2625     |          |      |          |            |          |             | 73             | 517.2500     |          |      |          |            |          |             |
| R (31)         | 265.2625     |          |      |          |            |          |             | 74             | 523.2500     |          |      |          |            |          |             |
| S (32)         | 271.2625     |          |      |          |            |          |             | 75             | 529.2500     |          |      |          |            |          |             |
| T (33)         | 277.2625     |          |      |          |            |          |             | 76             | 535.2500     |          |      |          |            |          |             |
| U (34)         | 283.2625     |          |      |          |            |          |             | 77             | 541.2500     |          |      |          |            |          |             |
| V (35)         | 289.2625     |          |      |          |            |          |             | 78             | 547.2500     |          |      |          |            |          |             |
| W (36)         | 295.2625     |          |      |          |            |          |             | 79             | 553.2500     |          |      |          |            |          |             |
| AA (37)        | 301.2625     |          |      |          |            |          |             | 80             | 559.2500     |          |      |          |            |          |             |
| BB (38)        | 307.2625     |          |      |          |            |          |             | 81             | 565.2500     |          |      |          |            |          |             |
| CC (39)        | 313.2625     |          |      |          |            |          |             |                |              |          |      |          |            |          |             |







**System Name : Syracuse**

**Date : 08/01/2006**

**Sub System** : Syracuse-Suburbs

### ***Non Video Services***

[illegible]



**System Name** : Syracuse  
**Sub System** : Syracuse-City

**Date :** 08/01/006

[illegible]



PAGE 4 B

**TIME WARNER CABLE - SYRACUSE DIVISION**

**System Name** : Syracuse

**Date :** 08/01/2006

**Sub System** : Syracuse-Ful/Osw

### ***Non-Video Services***

[illegible]



| MUX                      | QAM NAME                        | QAM FREQUENCY     | ANALOG CHANNEL | MOD. TYPE | SESSION NUMBER | MPEG IN  | MPEG OUT | BMR MPEG | SERVICE                 | QAM SOURCE                         | DIGITAL CHANNEL |
|--------------------------|---------------------------------|-------------------|----------------|-----------|----------------|----------|----------|----------|-------------------------|------------------------------------|-----------------|
| RT 1                     | QAM1<br>18 sessions             | 567MHz<br>BIG QAM | 81             | 64        | 2              | vpci 258 |          | 128      | In-Band                 | 1 Mbps                             | N/A             |
|                          |                                 |                   |                |           | 4              | vpci 257 |          | 129      | Cam IB                  | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 6              | vpci 258 |          | 130      | IP3 IB                  | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 8              | vpci 259 |          | 131      | PPV IB                  | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 10             | vpci 280 |          | 132      | IP32 IB                 | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 12             | vpci 281 |          | 133      | IP33 IB                 | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 14             | vpci 282 |          | 134      | IP34 IB                 | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 16             | vpci 293 |          | 135      | IP35 IB                 | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 18             | vpci 284 |          | 136      | IP36 IB                 | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 20             | vpci 285 |          | 137      | IP37 IB                 | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 22             | vpci 288 |          | 138      | PPV IB2                 | 1 Mbps                             |                 |
|                          |                                 |                   |                |           | 222            | vpci 287 |          | 139      | VCS BFS source          | .5 Mbps                            |                 |
|                          |                                 |                   |                |           | 4022           | vpci 286 |          | 140      | Saixod                  | 2.0 Mbps                           |                 |
|                          |                                 |                   |                |           | 4024           | vpci 289 |          | 141      | Saixod IB LG            | 2.0 Mbps                           |                 |
|                          |                                 |                   |                |           | 4028           | vpci 270 |          | 142      | Saixod IB SM            | 2.0 Mbps                           |                 |
|                          |                                 |                   |                |           | 4028           | vpci 271 |          | 143      | BstIB                   | 2.0 Mbps                           |                 |
|                          |                                 |                   |                |           | 4034           | vpci 272 |          | 144      | hgats                   | 2.0 Mbps                           |                 |
|                          |                                 |                   |                |           | 4038           |          |          |          | SDV                     | 1 Mbps                             |                 |
| IT 2                     |                                 |                   |                |           | 199            |          |          | 145      | OSM                     | 3.0 Mbps                           |                 |
| AD<br>SI<br>IT 1<br>IT 1 | QAM2<br>12 SD                   | 591 MHz<br>BMR 1  | 85             | 256       | 1911           | 12       | 12       | 12       | INDemand 1              | AMC11 T3 BB 10-5 BB 9-12           | 401             |
|                          |                                 |                   |                |           | 1916           | 8        | 8        | 8        | INDemand 2              | AMC11 T3 BB 10-5 BB 9-12           | 402             |
|                          |                                 |                   |                |           | 1913           | 3        | 3        | 3        | INDemand 3              | AMC11 T3 BB 10-5 BB 9-12           | 415             |
|                          |                                 |                   |                |           | 1914           | 4        | 14       | 14       | INDemand 4              | AMC11 T3 BB 10-5 BB 9-12           | 416             |
|                          |                                 |                   |                |           | 1915           | 5        | 5        | 15       | INDemand 5              | AMC11 T3 BB 10-5 BB 9-12           | 417             |
|                          |                                 |                   |                |           | 1917           | 7        | 7        | 7        | INDemand 6              | AMC11 T3 BB 10-5 BB 9-12           | 418             |
|                          |                                 |                   |                |           | 1918           | 10       | 10       | 10       | INDemand 7              | AMC11 T3 BB 10-5 BB 9-12           | 419             |
|                          |                                 |                   |                |           | 3108           | 124      | 124      | 124      | TEST 9                  | BB 7-7 BB 9-12                     |                 |
|                          |                                 |                   |                |           | 8029           | 125      | 125      | 5        | CH996 - Info            | BB 7-7 BB 9-12                     | 896             |
|                          |                                 |                   |                |           | 1117           | 1        | 11       | 11       | ESPN News               | G10T20 BB2-3 - BB9-12              | 107             |
|                          |                                 |                   |                |           | 1218           | 3        | 8        | 8        | GAC                     | AMC11 T20Q - RTE - BB3-7 - BB 9-12 | 141             |
|                          |                                 |                   |                |           | 1116           | 4        | 4        | 4        | Toon Disney             | G10T20 BB2-3 - BB9-12              | 172             |
|                          | QAM3<br>13 SD<br>4 Music        | 597 MHz<br>BMR 2  | 86             | 256       | 1300           | 1        | 1        | 1        | HBO East                | Galaxy 1 T23(I) BB 10-7 BB 3-14    | 300             |
|                          |                                 |                   |                |           | 1301           | 2        | 2        | 2        | HBO Plus East           | Galaxy 1 T23(I) BB 10-7 BB 3-14    | 302             |
|                          |                                 |                   |                |           | 1302           | 3        | 3        | 3        | HBO Signature East      | Galaxy 1 T23(I) BB 10-7 BB 3-14    | 304             |
|                          |                                 |                   |                |           | 1303           | 4        | 4        | 4        | HBO Family East         | Galaxy 1 T23(I) BB 10-7 BB 3-14    | 308             |
|                          |                                 |                   |                |           | 1307           | 8        | 8        | 8        | HBO Latino East         | Galaxy 1 T23(I) BB 10-7 BB 3-14    | 312             |
|                          |                                 |                   |                |           | 1310           | 21       | 21       | 21       | Max East                | Galaxy 1 T23(I) BB 10-7 BB 3-14    | 320             |
|                          |                                 |                   |                |           | 1311           | 22       | 22       | 22       | More Max East           | Galaxy 1 T23(I) BB 10-7 BB 3-14    | 322             |
|                          |                                 |                   |                |           | 1313           | 23       | 23       | 23       | Action Max East         | Galaxy 1 T23(I) BB 10-7 BB 3-14    | 328             |
|                          |                                 |                   |                |           | 1370           | 7        | 7        | 7        | WMAX East               | Galaxy 1 T18(Q) BB 10-8 BB3-14     | 328             |
|                          |                                 |                   |                |           | 1371           | 27       | 27       | 27       | OMAX East               | Galaxy 1 T18(Q) BB 10-8 BB3-14     | 329             |
|                          |                                 |                   |                |           | 1372           | 44       | 44       | 44       | 5 StarMAX East          | Galaxy 1 T18(Q) BB 10-8 BB3-14     | 330             |
|                          |                                 |                   |                |           | 1373           | 30       | 30       | 30       | OuterMAX East           | Galaxy 1 T18(Q) BB 10-8 BB3-14     | 331             |
|                          |                                 |                   |                |           | 3025           | 1        | 5        | 5        | Daystar TV              | IA 13 T20 BB 4-7 BB4-11            | 189             |
|                          |                                 |                   |                |           | 1583           | 24       | 24       | 24       | Hlt Jet MUS19           | G5 T10 BB 10-1 BB 3-14             | 719             |
|                          |                                 |                   |                |           | 1585           | 25       | 25       | 25       | 80's MUS21              | G5 T10 BB 10-1 BB 3-14             | 721             |
|                          |                                 |                   |                |           | 1586           | 22       | 222      | 222      | Power Rock MUS12        | G5 T10 BB 10-1 BB 3-14             | 712             |
|                          |                                 |                   |                |           | 1587           | 23       | 233      | 233      | Soft Rock MUS18         | G5 T10 BB 10-1 BB 3-14             | 718             |
| AD<br>SI<br>IT 5<br>IT 2 | QAM4<br>13 SD<br>7 Music        | 603 MHz<br>BMR 2  | 87             | 256       | 1312           | 24       | 24       | 24       | Thriller Max East       | Galaxy 1 T18(Q) BB 10-8 BB 4-12    | 324             |
|                          |                                 |                   |                |           | 1305           | 26       | 26       | 26       | HBO Zone East           | Galaxy 1 T18(Q) BB 10-8 BB 4-12    | 310             |
|                          |                                 |                   |                |           | 1304           | 8        | 11       | 11       | HBO Comedy East         | Galaxy 1 T18(Q) BB 10-8 BB 4-12    | 308             |
|                          |                                 |                   |                |           | 1113           | 7        | 7        | 7        | Encore                  | Galaxy 1 T13 BB 10-5 BB 4-12       | 200             |
|                          |                                 |                   |                |           | 1201           | 8        | 8        | 8        | Encore West             | Galaxy 1 T13 BB 10-5 BB 4-12       | 201             |
|                          |                                 |                   |                |           | 1208           | 9        | 9        | 9        | WAM!                    | Galaxy 1 T13 BB 10-5 BB 4-12       | 207             |
|                          |                                 |                   |                |           | 1330           | 1        | 1        | 1        | Starz!                  | Galaxy 1 T13 BB 10-5 BB 4-12       | 380             |
|                          |                                 |                   |                |           | 1357           | 2        | 2        | 2        | Starz! West             | Galaxy 1 T13 BB 10-5 BB 4-12       | 381             |
|                          |                                 |                   |                |           | 1331           | 3        | 3        | 3        | Starz!2                 | Galaxy 1 T13 BB 10-5 BB 4-12       | 382             |
|                          |                                 |                   |                |           | 1332           | 4        | 4        | 4        | Starz!4 Family          | Galaxy 1 T13 BB 10-5 BB 4-12       | 384             |
|                          |                                 |                   |                |           | 1333           | 6        | 6        | 6        | Starz!5 Cinema          | Galaxy 1 T13 BB 10-5 BB 4-12       | 386             |
|                          |                                 |                   |                |           | 1358           | 10       | 10       | 10       | Starz!5 Cinema West     | Galaxy 1 T13 BB 10-5 BB 4-12       | 387             |
|                          |                                 |                   |                |           | 1334           | 5        | 5        | 5        | Bst Movies              | Galaxy 1 T13 BB 10-5 BB 4-12       | 389             |
|                          |                                 |                   |                |           | 1548           | 28       | 28       | 28       | Today's Country MUS2    | G5 T10 BB 10-1 BB 4-12             | 702             |
|                          |                                 |                   |                |           | 1547           | 29       | 29       | 29       | Classic Country MUS3    | G5 T10 BB 10-1 BB 4-12             | 703             |
|                          |                                 |                   |                |           | 1570           | 30       | 30       | 30       | Big Band & Swing MUS26  | G5 T10 BB 10-1 BB 4-12             | 728             |
|                          |                                 |                   |                |           | 1588           | 31       | 31       | 31       | Singers & Stars MUS25   | G5 T10 BB 10-1 BB 4-12             | 725             |
|                          |                                 |                   |                |           | 1571           | 32       | 32       | 32       | Easy Listening MUS27    | G5 T10 BB 10-1 BB 4-12             | 727             |
| AD<br>SI<br>IT 1<br>IT 2 | QAM5<br>5 SD<br>2 HD<br>8 Music | 699 MHz<br>BMR 2  | 90             | 256       | 1587           | 28       | 288      | 286      | 70's MUS23              | G5 T10 BB 10-1 BB 4-12             | 723             |
|                          |                                 |                   |                |           | 1588           | 27       | 27       | 27       | Solid Gold Oldies MUS24 | G5 T10 BB 10-1 BB 4-12             | 724             |
|                          |                                 |                   |                |           | 2088           | 1        | 1        | 1        | Movie HD MUS25          | AMC10 T14 BB4-6 BB4-11             | 820             |
|                          |                                 |                   |                |           | 10080          | 1        | 2        | 2        | Movie HD MUS26          | BB 8-1 BB 4-11                     | 808             |
|                          |                                 |                   |                |           | 1554           | 18       | 18       | 18       | Metal MUS10             | G5 T10 BB 10-1 BB4-11              | 710             |
|                          |                                 |                   |                |           | 1558           | 19       | 19       | 19       | Alternative MUS14       | G5 T10 BB 10-1 BB4-11              | 714             |
|                          |                                 |                   |                |           | 1561           | 20       | 20       | 20       | Progressive MUS17       | G5 T10 BB 10-1 BB4-11              | 717             |
|                          |                                 |                   |                |           | 1557           | 21       | 21       | 21       | Classic Rock MUS13      | G5 T10 BB 10-1 BB4-11              | 713             |
|                          |                                 |                   |                |           | 1551           | 14       | 141      | 141      | Classic R&B MUS7        | G5 T10 BB 10-1 BB4-11              | 707             |
|                          |                                 |                   |                |           | 1550           | 15       | 15       | 15       | R&B and Hip Hop MUS6    | G5 T10 BB 10-1 BB4-11              | 706             |
|                          |                                 |                   |                |           | 1560           | 16       | 16       | 16       | Dance MUS16             | G5 T10 BB 10-1 BB4-11              | 718             |
|                          |                                 |                   |                |           | 9085           | 1        | 11       | 11       | Legislative Ch          | IP TO est BB7-1 BB4-11             | 131             |
|                          |                                 |                   |                |           | 9084           | 1        | 10       | 10       | NY1                     | IP TO est BB7-5 BB4-11             | 111             |
|                          |                                 |                   |                |           | 1553           | 17       | 17       | 17       | Rap MUS9                | G5 T10 BB 10-1 BB4-11              | 709             |
|                          | QAM6<br>2 HD<br>3 SD            | 705 MHz<br>BMR 1  | 91             | 256       | 9035           | 2        | 2        | 2        | Movie HD MUS27          | Galaxy 9 T19 BB9-3 BB7-11          | 811             |
|                          |                                 |                   |                |           | 9036           | 3        | 3        | 3        | Movie HD MUS28          | Galaxy 9 T19 BB9-3 BB7-11          | 812             |
|                          |                                 |                   |                |           | 1887           | 6        | 6        | 6        | Movie HD MUS29          | IA13 T15 BB2-6 BB7-11              | 491             |
|                          |                                 |                   |                |           | 1898           | 3        | 7        | 7        | Movie HD MUS30          | IA13 T5 BB 10-2 BB7-11             | 496             |
| IT 3                     |                                 |                   |                |           | 1085           | 8        | 8        | 8        | Lifetime Real Women     | G10 T20 BB 2-3 - BB 7-11           | 112             |

Private Data/Teletext PID needs to be mapped on as AC3



|                       |                       |                    |          |     |       |     |     |     |                        |                                 |     |
|-----------------------|-----------------------|--------------------|----------|-----|-------|-----|-----|-----|------------------------|---------------------------------|-----|
| IT 3                  | QAM7                  | 839 MHz            | 93 / 126 | 256 | 1382  | 11  | 11  | 11  | HBO West               | Galaxy 1 T23(Q) BB 10-6 BB 4-13 | 301 |
|                       | 11 SD                 | 807 Burlington RF1 |          |     | 1383  | 12  | 12  | 12  | HBO Plus West          | Galaxy 1 T23(Q) BB 10-6 BB 4-13 | 303 |
|                       | 9 Music               | BMR 2              |          |     | 1384  | 13  | 13  | 13  | HBO Signature West     | Galaxy 1 T23(Q) BB 10-6 BB 4-13 | 305 |
|                       |                       |                    |          |     | 1385  | 14  | 14  | 14  | HBO Family West        | Galaxy 1 T23(Q) BB 10-6 BB 4-13 | 307 |
|                       |                       |                    |          |     | 1386  | 18  | 18  | 18  | HBO Latino West        | Galaxy 1 T23(Q) BB 10-6 BB 4-13 | 313 |
|                       |                       |                    |          |     | 1387  | 31  | 31  | 31  | Max West               | Galaxy 1 T23(Q) BB 10-6 BB 4-13 | 321 |
|                       |                       |                    |          |     | 1388  | 32  | 32  | 32  | More Max West          | Galaxy 1 T23(Q) BB 10-6 BB 4-13 | 323 |
|                       |                       |                    |          |     | 1389  | 33  | 33  | 33  | Action Max West        | Galaxy 1 T23(Q) BB 10-6 BB 4-13 | 327 |
|                       |                       |                    |          |     | 1374  | 15  | 15  | 15  | HBO Crmly West         | Galaxy 1 T23(Q) BB 10-3 BB 4-13 | 308 |
|                       |                       |                    |          |     | 1375  | 16  | 16  | 16  | HBO Zone West          | Galaxy 1 T23(Q) BB 10-3 BB 4-13 | 311 |
|                       |                       |                    |          |     | 1376  | 34  | 34  | 34  | Thriller Max West      | Galaxy 1 T23(Q) BB 10-3 BB 4-13 | 325 |
|                       |                       |                    |          |     | 1579  | 34  | 344 | 344 | Light Classical MUS35  | G5 T10 BB 10-1 BB 4-13          | 735 |
|                       |                       |                    |          |     | 1576  | 35  | 35  | 35  | Soundscapes MUS32      | G5 T10 BB 10-1 BB 4-13          | 732 |
|                       |                       |                    |          |     | 1572  | 36  | 36  | 36  | Smooth Jazz MUS28      | G5 T10 BB 10-1 BB 4-13          | 728 |
|                       |                       |                    |          |     | 1573  | 37  | 37  | 37  | Jazz MUS29             | G5 T10 BB 10-1 BB 4-13          | 729 |
|                       |                       |                    |          |     | 1574  | 38  | 38  | 38  | Blues MUS30            | G5 T10 BB 10-1 BB 4-13          | 730 |
|                       |                       |                    |          |     | 1582  | 39  | 39  | 39  | Gospel MUS38           | G5 T10 BB 10-1 BB 4-13          | 738 |
|                       |                       |                    |          |     | 1581  | 40  | 40  | 40  | Contm Christian MUS37  | G5 T10 BB 10-1 BB 4-13          | 737 |
|                       |                       |                    |          |     | 1585  | 41  | 41  | 41  | Musica Latina MUS41    | G5 T10 BB 10-1 BB 4-13          | 741 |
|                       |                       |                    |          |     | 1577  | 33  | 333 | 333 | Classical Master MUS33 | G5 T10 BB 10-1 BB 4-13          | 733 |
| AD<br>H<br>T 3<br>T 1 | QAM8                  | 845 MHz            | 94 / 127 | 256 | 1202  | 1   | 1   | 1   | Encore Action          | Galaxy 1 T3 BB 9-7 BB 3-13      | 202 |
|                       | 13 SD                 | 813 Burlington RF2 |          |     | 1203  | 3   | 3   | 3   | Encore Love            | Galaxy 1 T3 BB 9-7 BB 3-13      | 203 |
|                       | 11 Music              | BMR 2              |          |     | 1204  | 5   | 5   | 5   | Encore Mystery         | Galaxy 1 T3 BB 9-7 BB 3-13      | 204 |
|                       |                       |                    |          |     | 1205  | 9   | 9   | 9   | Encore Westerns        | Galaxy 1 T3 BB 9-7 BB 3-13      | 205 |
|                       |                       |                    |          |     | 1207  | 7   | 7   | 7   | Encore True            | Galaxy 1 T3 BB 9-7 BB 3-13      | 208 |
|                       | City of Syracuse only |                    |          |     | 2096  | 1   | 11  | 11  | Syr Fire Dept          | BB 9-6 BB3-13                   | 88  |
|                       |                       |                    |          |     | 1996  | 4   | 4   | 4   |                        | IA 13 T15 BB 3-8 BB 3-13        | 488 |
|                       |                       |                    |          |     | 2497  | 7   | 17  | 17  |                        | IA 13 T24 BB 3-8 BB 3-13        | 483 |
|                       |                       |                    |          |     | 2498  | 3   | 14  | 14  |                        | IA 13 T24 BB 3-2 BB 3-13        | 485 |
|                       |                       |                    |          |     | 2495  | 4   | 15  | 15  |                        | IA 13 T24 BB 3-2 BB 3-13        | 484 |
|                       |                       |                    |          |     | 1353  | 1   | 1   | 10  | Showtime Next          | AMC11 T19 BB 9-1 BB 8-11        | 345 |
|                       |                       |                    |          |     | 1355  | 3   | 3   | 13  | Showtime Women         | AMC11 T19 BB 9-1 BB 8-11        | 346 |
|                       |                       |                    |          |     | 1354  | 2   | 2   | 12  | Showtime Family        | AMC11 T19 BB 9-1 BB 8-11        | 347 |
|                       |                       |                    |          |     | 1591  | 51  | 51  | 51  | Americana MUS 47       | G5 T10 BB 10-1 BB 3-13          | 704 |
|                       |                       |                    |          |     | 1580  | 50  | 50  | 50  | Mexicana MUS 46        | G5 T10 BB 10-1 BB 3-13          | 478 |
|                       |                       |                    |          |     | 1583  | 11  | 111 | 111 | For Kids Only MUS39    | G5 T10 BB 10-1 BB 3-13          | 739 |
|                       |                       |                    |          |     | 1575  | 12  | 121 | 121 | Raggae MUS31           | G5 T10 BB 10-1 BB 3-13          | 731 |
|                       |                       |                    |          |     | 1552  | 13  | 131 | 131 | Smooth R&B MUS8        | G5 T10 BB 10-1 BB 3-13          | 708 |
|                       |                       |                    |          |     | 1545  | 5   | 55  | 55  | Showcase MUS1          | G5 T10 BB 10-1 BB 3-13          | 701 |
|                       |                       |                    |          |     | 1546  | 6   | 66  | 66  | Bluegrass MUS4         | G5 T10 BB 10-1 BB 3-13          | 704 |
| T 2                   |                       |                    |          |     | 1559  | 7   | 77  | 77  | Electronica MUS15      | G5 T10 BB 10-1 BB 3-13          | 715 |
|                       |                       |                    |          |     | 1555  | 8   | 86  | 86  | Rock MUS11             | G5 T10 BB 10-1 BB 3-13          | 711 |
|                       |                       |                    |          |     | 1549  | 9   | 99  | 99  | R&B Hip Hop MUS5       | G5 T10 BB 10-1 BB 3-13          | 705 |
|                       |                       |                    |          |     | 1584  | 10  | 101 | 101 | Snds of Season MUS40   | G5 T10 BB 10-1 BB 3-13          | 740 |
|                       | QAM9                  | 857 MHz            | 101      | 256 | 9066  | 31  | 31  | 31  | SNL HD                 | BB 4-3 BB 8-12                  | 813 |
|                       | 13 SD                 |                    |          |     | 9037  | 300 | 300 | 300 | SNL HD                 | G9 (Gal 10R) T23V BB 7-3 BB8-12 | 821 |
|                       | 2 HD                  | BMR 2              |          |     | 1948  | 3   | 9   | 9   | iControl Barker        | AMC 10 T18 BB 9-2 BB8-12        | N/A |
|                       |                       |                    |          |     | 1947  | 2   | 37  | 37  | PPV Barker             | AMC 10 T18 BB 9-2 BB8-12        | 400 |
|                       |                       |                    |          |     | 10059 | 4   | 4   | 4   | TWC FOD Barker         | AMC 10 T18 BB 9-2 BB8-12        | N/A |
|                       |                       |                    |          |     |       |     |     |     |                        |                                 |     |
| AD<br>H<br>T 3<br>T 3 | QAM10                 | 747 / 663 MHz      | 102      | 256 | 1183  | 1   | 59  | 59  | SLEUTH                 | G1RT24 - BB3-4 - BB2-11         | 152 |
|                       | 12 SD                 |                    |          |     | 1185  | 8   | 80  | 80  | Current                | G7T8 - BB6-7 - BB2-11           | 134 |
|                       |                       |                    |          |     | 2106  | 212 | 54  | 54  | FOX Sports World       | G7/G11-T8V BB2-8 - BB2-11       | 108 |
|                       |                       | BMR 1              |          |     | 1141  | 1   | 56  | 56  | Bet on Jazz            | G11T3 - BB2-1 - BB2-11          | 145 |
|                       |                       |                    |          |     | 1150  | 3   | 57  | 57  | Ovation                | G11T13 - BB3-4 - BB2-11         | 150 |
|                       |                       |                    |          |     | 7777  | 2   | 255 | 255 | AonD Looping Barker    | Bbus 1/7 Path1 BB7-7 BB2-11     | N/A |
|                       |                       |                    |          |     | 1127  | 9   | 9   | 9   | Fine Living            | AMC11 T3 BB 10-5 BB8-12         | 159 |
|                       |                       |                    |          |     | 1180  | 3   | 3   | 3   | CSPAN-3                | G10T20 BB2-3 - BB8-12           | 133 |
|                       |                       |                    |          |     | 1217  | 1   | 1   | 1   | TBN                    | C3T12-RTE -BB3-6 - BB 2-11      | 190 |
|                       |                       |                    |          |     | 1182  | 2   | 58  | 58  | Game Show Network      | AMC11 T6 BB3-4 - BB2-11         | 182 |
|                       |                       |                    |          |     | 1351  | 1   | 53  | 53  | Disnev W               | G1T7 - BB3-3 - BB2-11           | 171 |
|                       |                       |                    |          |     | 1106  | 1   | 2   | 2   | Outdoor Channel        | G10T24 - BB2-4 - BB2-11         | 105 |



|                          |                           |         |           |           |      |      |     |                     |                         |                              |                            |
|--------------------------|---------------------------|---------|-----------|-----------|------|------|-----|---------------------|-------------------------|------------------------------|----------------------------|
| AD<br>SI<br>IT 5<br>IT 3 | QAM11                     | 660 MHz | 103       | 256       | 1120 | 2    | 2   | 2                   | Discovery Kids          | AMC11 T 22 BB 3-5 BB 8-13    | 120                        |
|                          | 11 SD                     |         |           |           | 1121 | 3    | 3   | 3                   | Discovery Science       | AMC11 T 22 BB 3-5 BB 8-13    | 121                        |
|                          |                           |         |           |           | 1104 | 215  | 48  | 48                  | Speed Channel           | G7/G11-T6V BB2-6 - BB8-13    | 103                        |
|                          |                           | BMR 1   |           |           | 1122 | 7    | 4   | 4                   | Military Channel        | AMC11 T 22 BB 3-5 BB 8-13    | 122                        |
|                          |                           |         |           |           | 1213 | 5    | 55  | 55                  | Discovery Civilizations | AMC11 T 22 BB 3-5 BB 8-13    | 124                        |
|                          |                           |         |           |           | 1212 | 4    | 54  | 54                  | Discovery Home & L.     | AMC11 T 22 BB 3-5 BB 8-13    | 125                        |
|                          |                           |         |           |           | 1124 | 8    | 50  | 50                  | BBC America             | AMC11 T 22 BB 3-5 BB 8-13    | 128                        |
|                          |                           |         |           |           | 2113 | 214  | 7   | 7                   | FUEL                    | G7/G11-T6V BB 2-6 BB 8-13    | 240                        |
|                          |                           |         |           |           | 1377 | 8    | 8   | 8                   | Sundance                | BB 10-8 BB 8-13              | 115                        |
|                          |                           |         |           |           | 1350 | 1    | 1   | 1                   | Sundance                | BB 2-5 BB 8-13               | 1906                       |
|                          |                           |         |           |           | 5081 | 40   | 43  | 43                  | IFC                     | IA 13 T14V BB3-6 BB8-13      | 208                        |
|                          |                           | QAM12   | 675 MHz   | 104       | 256  | 1341 | 7   | 7                   | 7                       | TMC 2                        | AMC11 T19 BB 10-8 BB 9-11  |
| AD<br>SI<br>IT 5<br>IT 3 | 12 SD                     |         |           |           | 1340 | 4    | 4   | 4                   | TMC                     | AMC11 T19 BB 10-8 BB 9-11    | 350                        |
|                          |                           | BMR 1   |           |           | 1352 | 8    | 8   | 8                   | Showtime Beyond         | AMC11 T19 BB 10-8 BB 9-11    | 344                        |
|                          |                           |         |           |           | 1323 | 9    | 9   | 9                   | Showtime Extreme        | AMC11 T19 BB 10-8 BB 9-11    | 343                        |
|                          |                           |         |           |           | 1322 | 3    | 3   | 3                   | Showtime 3              | AMC11 T19 BB 10-8 BB 9-11    | 342                        |
|                          |                           |         |           |           | 1321 | 2    | 2   | 2                   | Showtime Too            | AMC11 T19 BB 10-8 BB 9-11    | 341                        |
|                          |                           |         |           |           | 1320 | 1    | 1   | 1                   | Showtime East           | AMC11 T19 BB 10-8 BB 9-11    | 340                        |
|                          |                           |         |           |           | 1324 | 5    | 5   | 5                   | FLIX                    | AMC11 T19 BB 10-8 BB 9-11    | 18 Wtwn                    |
|                          |                           |         |           |           | 1846 | 1    | 11  | 11                  | SOD ICONTROL Barker     | C3 T18 BB 7-6 BB 9-11        | N/A                        |
|                          |                           |         |           |           | 1190 | 50   | 50  | 50                  | Fuse                    | IA 13 T14V BB3-6 - BB 9-11   | 143                        |
|                          |                           |         |           |           | 1181 | 4    | 109 | 109                 | Bloomberg               | AMC11 T8 BB3-1 - BB 9-11     | 135                        |
|                          |                           |         |           |           | 1112 | 7    | 45  | 45                  | FXM                     | G7/G11-T6V BB2-7 - BB 9-11   | 208                        |
|                          | AD<br>SI<br>IT 14<br>IT 1 |         |           | 121 / 110 | 256  | 1471 | 2   | 2                   | 2                       | ESPN sports pkg 1            | G9 (G10R) T21 BB7-8 BB7-13 |
|                          |                           |         |           |           | 1472 | 3    | 3   | 3                   | ESPN sports pkg 2       | G9 (G10R) T21 BB7-8 BB7-13   | 473                        |
|                          |                           | BMR 2   |           |           | 1473 | 4    | 4   | 4                   | ESPN sports pkg 3       | G9 (G10R) T21 BB7-8 BB7-13   | 474                        |
|                          |                           |         |           |           | 1474 | 5    | 5   | 5                   | ESPN sports pkg 4       | G9 (G10R) T21 BB7-8 BB7-13   | 475                        |
|                          |                           |         |           |           | 1475 | 6    | 6   | 6                   | ESPN sports pkg 5       | G9 (G10R) T21 BB7-8 BB7-13   | 476                        |
|                          |                           |         |           |           | 1477 | 8    | 6   | 6                   | ESPN sports pkg 6       | G9 (G10R) T21 BB7-8 BB7-13   | 477                        |
| AD<br>SI<br>IT 2<br>IT 2 |                           |         | 120 / 111 | 256       | 9001 | 1    | 1   | 1                   | NHL / MLB 1             | GE 1 T13 BB 9-5 BB 9-11      | 480                        |
|                          |                           |         |           |           | 9002 | 2    | 2   | 2                   | NHL / MLB 2             | GE 1 T13 BB 9-5 BB 9-11      | 481                        |
|                          | 8 Music                   | BMR2    |           |           | 9003 | 3    | 3   | 3                   | NHL / MLB 3             | GE 1 T13 BB 9-5 BB 9-11      | 482                        |
|                          |                           |         |           |           | 9004 | 4    | 4   | 4                   | NHL / MLB 4             | GE 1 T13 BB 9-5 BB 9-11      | 483                        |
|                          |                           |         |           |           | 9005 | 5    | 5   | 5                   | NHL / MLB 5             | GE 1 T13 BB 9-5 BB 9-11      | 484                        |
|                          |                           |         |           |           | 9006 | 6    | 6   | 6                   | NHL / MLB 6             | GE 1 T13 BB 9-5 BB 9-11      | 485                        |
|                          |                           |         |           |           | 9007 | 7    | 7   | 7                   | NHL / MLB 7             | GE 1 T13 BB 9-5 BB 9-11      | 486                        |
|                          |                           |         |           |           | 9008 | 8    | 8   | 8                   | NHL / MLB 8             | GE 1 T13 BB 9-5 BB 9-11      | 487                        |
|                          |                           |         |           |           | 9009 | 9    | 9   | 9                   | NHL / MLB 9             | GE 1 T13 BB 9-5 BB 9-11      | 488                        |
|                          |                           |         |           |           | 9010 | 10   | 10  | 10                  | NHL / MLB 10            | GE 1 T13 BB 9-5 BB 9-11      | 489                        |
|                          |                           |         |           |           | 1581 | 40   | 40  | 40                  | HOD Barker              | G9 (G10R) T21 BB 9-4 BB 9-11 | n/a                        |
|                          |                           |         |           |           | 1586 | 43   | 43  | 43                  | Mexicana                | G5 T10 BB 10-1 BB 9-11       | 745                        |
| AD<br>IT 7<br>IT 1       |                           |         |           |           | 1588 | 44   | 44  | 44                  | Latin Love Songs        | G5 T10 BB 10-1 BB 9-11       | 744                        |
|                          |                           |         |           |           | 1564 | 45   | 45  | 45                  | Party Favorites         | G5 T10 BB 10-1 BB 9-11       | 720                        |
|                          |                           |         |           |           | 1580 | 46   | 46  | 46                  | Show Tunes              | G5 T10 BB 10-1 BB 9-11       | 736                        |
|                          |                           |         |           |           | 1576 | 47   | 47  | 47                  | Opera                   | G5 T10 BB 10-1 BB 9-11       | 734                        |
|                          |                           |         |           |           | 1596 | 48   | 48  | 48                  | New Wave                | G5 T10 BB 10-1 BB 9-11       | 722                        |
|                          |                           |         |           |           | 1587 | 49   | 49  | 49                  | Rock en Espanol         | G5 T10 BB 10-1 BB 9-11       | 743                        |
|                          |                           |         |           |           | 1586 | 42   | 42  | 42                  | Salsa Merengue          | G5 T10 BB 10-1 BB 9-11       | 742                        |
|                          | QAM16                     | 735 MHz | 114       | 256       | 1359 | 5    | 6   | 6                   | Starz2 West             | G5 T12 BB10-4 BB3-12         | 369                        |
|                          | 10 SD                     |         |           |           | 1381 | 8    | 8   | 8                   | Starz14 Family West     | G5 T12 BB10-4 BB3-12         | 385                        |
|                          | 1 Data                    | BMR 1   |           |           | 1126 | 20   | 20  | 20                  | Biography               | IA 13 T14V BB3-6 BB3-12      | 130                        |
|                          |                           |         |           |           | 1125 | 30   | 30  | 30                  | History Int             | IA 13 T14V BB3-6 BB3-12      | 127                        |
|                          |                           |         |           |           | 3201 | 3    | 3   | 3                   | Fox Sports Central      | G7/G11-T6V BB2-7 BB3-12      | 236                        |
|                          |                           |         |           | 3203      | 213  | 213  | 213 | Fox Sports Espanol  | G7/G11-T6V BB2-6 BB3-12 | 238                          |                            |
|                          |                           |         |           | 3202      | 4    | 4    | 4   | Fox Sports Pacific  | G7/G11-T6V BB2-7 BB3-12 | 237                          |                            |
|                          |                           |         |           | 3200      | 2    | 2    | 2   | Fox Sports Atlantic | G7/G11-T6V BB2-7 BB3-12 | 235                          |                            |
|                          |                           |         |           | 1380      | 7    | 7    | 7   | Best Movies West    | G5 T12 BB10-4 BB3-12    | 369                          |                            |
|                          |                           |         |           | 4036      | 1    | 1    | 1   | Navic Info Services | BB9-6 BB3-12            |                              |                            |
|                          |                           |         |           | 9050      | 2224 | 9    | 9   | HERE I TV           | IA13 T15 BB3-6 BB3-12   | 380                          |                            |



|                           |       |                              |           |     |      |      |     |     |                      |                              |      |
|---------------------------|-------|------------------------------|-----------|-----|------|------|-----|-----|----------------------|------------------------------|------|
| IAD                       | QAM16 | 741MHz                       | 115       | 256 | 2114 | 12   | 12  | 12  | College Sports TV    | G1R T22 BB4-5 BB8-11         | 242  |
|                           | 2 HD  | BMR 2                        |           |     | 1378 | 3    | 4   | 4   | Goodlife             | G1R T22 BB4-5 BB8-11         | 119  |
|                           | 3 SD  |                              |           |     | 2112 | 7    | 7   | 7   | NBA TV               | BB 4-4 BB 8-11               | 241  |
|                           |       |                              |           |     | 1308 | 51   | 51  | 51  | SHOWTIME HDN         | G9 (G10R) T21 BB 8-4 BB 8-11 | 800  |
| IAD<br>SI<br>T 7<br>RT 2  | QAM17 | 633 MHz                      | 92        | 256 | 1208 | 4    | 1   | 1   | VH1 Classic          | AMC11 T15 BB10-3 BB3-11      | 144  |
|                           | 12 SD |                              |           |     | 1209 | 8    | 2   | 2   | Nick GAS             | AMC11 T15 BB10-3 BB3-11      | 175  |
|                           |       | BMR1                         |           |     | 1210 | 10   | 3   | 3   | Nick Too             | AMC11 T15 BB10-3 BB3-11      | 174  |
|                           |       |                              |           |     | 9048 | 51   | 11  | 11  | Galavision           | BB4-7 BB8-11                 | 622  |
|                           |       |                              |           |     | 1214 | 5    | 8   | 8   | Boomerang            | Galaxy 1R T15 BB7-4 BB3-11   | 176  |
|                           |       |                              |           |     | 1215 | 70   | 10  | 10  | Do-It-Yourself       | IA 13 T14V BB3-6 BB3-11      | 138  |
|                           |       |                              |           |     | 1216 | 60   | 9   | 9   | Tech TV              | IA 13 T14V BB3-6 BB3-11      | 137  |
|                           |       |                              |           |     | 1225 | 9    | 6   | 6   | Nick Toons           | AMC11 T15 BB10-3 BB3-11      | 177  |
|                           |       |                              |           |     | 1183 | 4    | 14  | 14  | America's Store      | G1T24 - BB3-4 - BB3-11       | 163  |
|                           |       |                              |           |     | 1182 | 1    | 5   | 5   | MTV2                 | C8T15 BB10-3 BB3-11          | 142  |
|                           |       |                              |           |     | 1184 | 7    | 7   | 7   | Noggin               | C3T16 BB10-3 BB3-11          | 173  |
|                           |       |                              |           |     | 1221 | 80   | 80  | 80  | CNBC World           | IA 13 T14V BB3-6 BB3-11      | 136  |
|                           |       |                              |           |     | 3103 | 1    | 4   | 4   | IMC Concerts - RTE   | G5 T12 BB8-1 - BB3-14        | 254  |
|                           |       |                              |           |     | 8031 | 1    | 5   | 5   | Weather Now          | BB8-3 - BB3-14               | 210  |
| IAD<br>SI<br>T 15<br>RT 2 |       |                              |           |     | 7778 | 126  | 254 | 254 | AOLMU looping Barker | Bbus1/7 Path1 BB7-7 BB3-14   |      |
|                           |       |                              |           |     | 1800 | 1    | 11  | 11  | NBA Preview Ch       | GE 1 T14 BB 7-4 BB 3-14      | 480  |
|                           |       |                              |           |     | 1801 | 3    | 13  | 13  | NBA / WNBA PPV 1     | GE 1 T14 BB 7-4 BB 3-14      | 481  |
|                           |       |                              |           |     | 1802 | 5    | 15  | 15  | NBA / WNBA PPV 2     | GE 1 T14 BB 7-4 BB 3-14      | 482  |
|                           |       |                              |           |     | 1803 | 7    | 17  | 17  | NBA / WNBA PPV 3     | GE 1 T14 BB 7-4 BB 3-14      | 483  |
|                           |       |                              |           |     | 1804 | 8    | 19  | 19  | NBA / WNBA PPV 4     | GE 1 T14 BB 7-4 BB 3-14      | 484  |
|                           |       |                              |           |     | 1805 | 11   | 111 | 111 | NBA / WNBA PPV 5     | GE 1 T14 BB 7-4 BB 3-14      | 485  |
|                           |       |                              |           |     | 1806 | 13   | 113 | 113 | NBA / WNBA PPV 6     | GE 1 T14 BB 7-4 BB 3-14      | 486  |
|                           |       |                              |           |     | 1807 | 15   | 115 | 115 | NBA / WNBA PPV 7     | GE 1 T14 BB 7-4 BB 3-14      | 487  |
|                           |       |                              |           |     | 1808 | 17   | 117 | 117 | NBA / WNBA PPV 8     | GE 1 T14 BB 7-4 BB 3-14      | 488  |
|                           |       |                              |           |     | 1809 | 19   | 119 | 119 | NBA / WNBA PPV 9     | GE 1 T14 BB 7-4 BB 3-14      | 489  |
|                           | QAM18 | 693MHz                       | 107       |     | 2085 | 3    | 1   | 1   | WCNY                 | BB 8-8 BB 7-14               | 850  |
|                           | 2 HD  | BMR1                         |           |     | 2086 | 4    | 2   | 2   | UWCNY KIDS           | BB 8-8 BB 7-14               | 851  |
|                           | 3 SD  |                              |           |     | 2087 | 5    | 3   | 3   | WCNY YOU             | BB 8-8 BB 7-14               | 852  |
| AD<br>SI<br>T 14<br>RT 2  |       |                              |           |     | 2088 | 8    | 8   | 8   | WCNY HDN             | BB 8-8 BB 7-14               | 853  |
|                           |       |                              |           |     | 7003 | 3    | 4   | 4   | WCNY HDN             | BB 8-8 BB 7-14               | 855  |
|                           | QAM20 | 687 Mhz                      | 106       |     | 1005 | 2    | 2   | 2   | WCNY HDN             | BB 7-5 BB 7-12               | 863  |
|                           | 2 HD  | BMR1                         |           |     | 7001 | 2    | 3   | 3   | WCNY HDN             | BB8-1 BB 7-12                | 889  |
| IT 4<br>IT 3              | 2 SD  |                              |           |     | 9046 | 6    | 6   | 6   | The Tube             | BB 7-5 BB 7-12               | 864  |
|                           |       |                              |           |     | 9047 | 5    | 5   | 5   | Weather Plus         | BB 7-5 BB 7-12               | 133  |
|                           | QAM23 | 728MHz                       | 113       |     | 9033 | 1    | 1   | 1   | ESRNDN               | AMC10 T7                     | 815  |
|                           | 2 HD  |                              |           |     | 9034 | 2    | 2   | 2   | ESRNDN               | AMC10 T7                     | 816  |
| IT 2                      | QAM24 | 723MHz                       | 112       |     | 9038 | 1    | 1   | 1   | ESRNDN               | BB4-5 BB7-13                 | 810  |
|                           | 2 HD  | BMR 1                        |           |     | 9039 |      |     | 2   | ESRNDN               | BB4-6 BB7-13                 | 809  |
|                           |       |                              |           |     | 1219 | 6    | 6   | 6   | Nat Geo              | BB2-7 BB7-13                 | 128  |
|                           | 1 HD  | 651 Ikon                     | 100       |     | 7038 | 3    | 3   | 3   | WCNY HDN             | BB 3-1 BB 3-13               | 875  |
| IT 1                      | 2 HD  | 579 Potsdam and<br>Watertown | 83        |     | 7004 | 2    | 3   | 3   | WCNY HDN             | BB 3-2 BB 3-11               | 869  |
|                           |       |                              |           |     | 7002 | 4    | 2   | 2   | WCNY HDN             | BB 3-1 BB 3-11               | 875  |
|                           | QAM25 | 728MHz                       | 122 / 84  |     | 3101 |      |     | 37  | test barker          |                              | 260  |
|                           | 10 SD | BMR1                         |           |     | 3222 | 8    | 8   | 8   | SBN - Saigon         | G11 T24Q BB8-5 BB9-13        | 672  |
| AD<br>SI<br>T 14<br>IT 3  |       |                              |           |     | 3220 | 3    | 8   | 3   | CCTV-4- Chinese      | G11 T24Q BB8-5 BB9-13        | 665  |
|                           |       |                              |           |     | 3216 | 5    | 5   | 5   | RTN - Russian        | G11 T24I BB7-3 BB9-13        | 658  |
|                           |       |                              |           |     | 3215 | 7    | 7   | 7   | TV5 - French         | G11 T24I BB7-3 BB9-13        | 653  |
|                           |       |                              |           |     | 3219 | 12   | 12  | 12  | Zee TV - Hindi       | IA13 T12 BB6-7 BB8-13        | 683  |
|                           |       |                              |           |     | 3217 | 13   | 13  | 13  | RAI - Italian        | G11 T24I BB7-3 BB9-13        | 659  |
|                           |       |                              |           |     | 3223 | 14   | 14  | 14  | ART - Arabic         | G11 T24I BB7-3 BB9-13        | 675  |
|                           |       |                              |           |     | 3225 | 1    | 2   | 2   | ESRNDN               | BB 8-2 BB8-13                | 1901 |
|                           |       |                              |           |     | 1161 | 1    | 1   | 1   | ESRNDN               | BB 8-2 BB8-13                | 1908 |
|                           | QAM26 | 728MHz                       | 117 / 106 | 256 | 3211 | 26   | 2   | 2   | Mun 2 - Spanish      | AMC11 T20I BB7-2 BB2-12      | 614  |
|                           | 12 SD | BMR1                         |           |     | 8049 | 48   | 15  | 15  | Telefuturo           | BB7-1 BB2-12                 | 624  |
|                           |       |                              |           |     | 3204 | 7    | 6   | 6   | Tennis               | IA13 T15 BB2-6 BB2-12        | 239  |
|                           |       |                              |           |     | 3208 | 9    | 9   | 9   | Disc Espanol         | AMC11 T22 BB3-5 BB2-12       | 608  |
|                           |       |                              |           |     | 3210 | 3    | 10  | 10  | MTV Espanol          | AMC11 T15 BB10-3 BB2-12      | 612  |
|                           |       |                              |           |     | 3209 | 7    | 11  | 11  | VH Uno               | Satcom C3 T15 BB8-4 BB2-12   | 810  |
| AD<br>SI<br>T 15<br>IT 3  |       |                              |           |     | 3206 | 1111 | 1   | 1   | Sopressa             | IA13 T18 BB8-6 BB2-12        | 602  |
|                           |       |                              |           |     | 3207 | 3    | 18  | 18  | CNN Espanol          | G1 T16 BB7-4 BB2-12          | 604  |
|                           |       |                              |           |     | 3213 | 4    | 5   | 5   | Video Role           | IA13 T12 BB8-7 BB 2-12       | 618  |
|                           |       |                              |           |     | 3212 | 9    | 19  | 19  | Puma                 | IA13 T6 BB8-6 BB2-12         | 616  |
|                           |       |                              |           |     | 3205 | 3    | 3   | 3   | Cine Latino          | IA13 T12 BB8-6 BB2-12        | 600  |
|                           |       |                              |           |     | 3214 | 4    | 4   | 4   | LaFamilia            | IA13 T6BB8-6 BB2-12          | 620  |
|                           |       |                              |           |     |      |      |     |     |                      |                              |      |
|                           |       |                              |           |     |      |      |     |     |                      |                              |      |

Open Freq's 585, 681, 711, 717 and 747





| QAM Name | Qam Frequency | Session ID              | MPEG OUT | BMR MPEG                | SERVICE          | Channel Number |
|----------|---------------|-------------------------|----------|-------------------------|------------------|----------------|
|          |               | 00:00:00:00:00:00 9051  |          | program 1               | TBS              | 17             |
|          |               | 00:00:00:00:00:00 9052  |          | program 2               | TNT              | 45             |
|          |               | 00:00:00:00:00:00 9053  |          | program 3               | SPIKE TV         | 78             |
|          |               | 00:00:00:00:00:00 9054  |          | program 4               | VH-1             | 29             |
|          |               | 00:00:00:00:00:00 9055  |          | program 5               | HISTORY          | 62             |
|          |               | 00:00:00:00:00:00 9056  |          | program 6               | SNY              | 54             |
|          |               | 00:00:00:00:00:00 9057  |          | program 7               | ABC FAM          | 20             |
|          |               | 00:00:00:00:00:00 9058  |          | program 8               | ANIMAL PLANET    | 18             |
|          |               | 00:00:00:00:00:00 9059  |          | program 9               | HALLMARK         | 43             |
|          |               | 00:00:00:00:00:00 9060  |          | program 10              | HDLN             | 23             |
|          |               | 00:00:00:00:00:00 9061  |          | program 11              | TRAVEL           | 41             |
|          |               | 00:00:00:00:00:00 9062  |          | program 12              | WE               | 64             |
|          |               | 00:00:00:00:00:00 9063  |          |                         |                  |                |
|          |               | 00:00:00:00:00:00 9068  |          | program 1               | ESPN-C           | 72             |
|          |               | 00:00:00:00:00:00 9069  |          | program 2               | WSP              | 26             |
|          |               | 00:00:00:00:00:00 9070  |          | program 3               | SCI-FI           | 61             |
|          |               | 00:00:00:00:00:00 9071  |          | program 4               | AMC              | 67             |
|          |               | 00:00:00:00:00:00 9072  |          | program 5               | GOLF             | 57             |
|          |               | 00:00:00:00:00:00 9073  |          | program 6               | NICK             | 34             |
|          |               | 00:00:00:00:00:00 9074  |          | program 7               | A&E              | 33             |
|          |               | 00:00:00:00:00:00 9075  |          | program 8               | CNBC             | 37             |
|          |               | 00:00:00:00:00:00 9076  |          | program 9               | FOX NEWS         | 39             |
|          |               | 00:00:00:00:00:00 9077  |          | program 10              | HGTV             | 60             |
|          |               | 00:00:00:00:00:00 9078  |          | program 11              | SOAPNET          | 58             |
|          |               | 00:00:00:00:00:00 9088  |          | program 12              | FOOD             | 46             |
|          |               | 00:00:00:00:00:00 9080  |          | program 1               | ESPN2            | 25             |
|          |               | 00:00:00:00:00:00 9081  |          | program 2               | YES              | 53             |
|          |               | 00:00:00:00:00:00 9082  |          | program 3               | MTV              | 28             |
|          |               | 00:00:00:00:00:00 9083  |          | program 4               | BET              | 48             |
|          |               | 00:00:00:00:00:00 9084  |          | program 5               | DISC             | 32             |
|          |               | 00:00:00:00:00:00 9085  |          | program 6               | OLN              | 55             |
|          |               | 00:00:00:00:00:00 9086  |          | program 7               | USA              | 31             |
|          |               | 00:00:00:00:00:00 9087  |          | program 8               | CNN              | 22             |
|          |               | 00:00:00:00:00:00 9079  |          | program 9               | COURT TV         | 52             |
|          |               | 00:00:00:00:00:00 9099  |          | program 10              | LIFETIME         | 30             |
|          |               | 00:00:00:00:00:00 10000 |          | program 11              | OXYGEN           | 69             |
|          |               | 00:00:00:00:00:00 10001 |          | program 12              | MSNBC            | 38             |
|          |               | 00:00:00:00:00:00 10004 |          | program 1               | ESPN             | 24             |
|          |               | 00:00:00:00:00:00 10005 |          | program 2               | CMT              | 27             |
|          |               | 00:00:00:00:00:00 10006 |          | program 3               | FX               | 21             |
|          |               | 00:00:00:00:00:00 10007 |          | program 4               | BRAVO            | 70             |
|          |               | 00:00:00:00:00:00 10008 |          | program 5               | CARTOON          | 51             |
|          |               | 00:00:00:00:00:00 10009 |          | program 6               | TV LAND          | 47             |
|          |               | 00:00:00:00:00:00 10011 |          |                         |                  | 50             |
|          |               | 00:00:00:00:00:00 10012 |          |                         |                  | 77             |
|          |               | 00:00:00:00:00:00 10013 |          |                         |                  | 65             |
|          |               | 00:00:00:00:00:00 10014 |          |                         |                  | 10             |
|          |               | 00:00:00:00:00:00 10015 |          | program 12              | TLC              | 49             |
|          |               | 00:00:00:00:00:00 10010 |          |                         |                  | 40             |
|          |               | 00:00:00:00:00:00 10016 |          | program 1               | WSTN             |                |
|          |               | 00:00:00:00:00:00 10017 |          | program 2               | WHEB             |                |
|          |               | 00:00:00:00:00:00 10018 |          | program 3               | WVXI             |                |
|          |               | 00:00:00:00:00:00 10019 |          | program 4               | WVTV             |                |
|          |               | 00:00:00:00:00:00 10020 |          | program 5               | WVIA             |                |
|          |               | 00:00:00:00:00:00 10021 |          | program 6               | WVIR             |                |
|          |               | 00:00:00:00:00:00 10022 |          | program 7               | WVPS             |                |
|          |               | 00:00:00:00:00:00 10023 |          | program 8               | WVAB             |                |
|          |               | 00:00:00:00:00:00 10024 |          | program 9               | WSTX             |                |
|          |               | 00:00:00:00:00:00 10049 |          | program 10              | WGNX             |                |
|          |               | 00:00:00:00:00:00 10025 |          | program 11              | DISCOVERY HEALTH | 59             |
|          |               | 00:00:00:00:00:00 10026 |          | program 12              | DISCOVERY HEALTH | 75             |
|          |               |                         |          | passing through 225 MHz |                  |                |
|          |               |                         |          | passing through 225 MHz |                  |                |



| QAM Nam            | Qam Frequency | Session ID              | MPEG OUT | BMR MPEG   |
|--------------------|---------------|-------------------------|----------|------------|
| SCS-FL 47.1412 MHz |               | 00:00:00:00:00:03 9051  |          | program 1  |
|                    |               | 00:00:00:00:00:03 9052  |          | program 2  |
|                    |               | 00:00:00:00:00:03 9053  |          | program 3  |
|                    |               | 00:00:00:00:00:03 9054  |          | program 4  |
|                    |               | 00:00:00:00:00:03 9055  |          | program 5  |
|                    |               | 00:00:00:00:00:03 9056  |          | program 6  |
|                    |               | 00:00:00:00:00:03 9057  |          | program 7  |
|                    |               | 00:00:00:00:00:03 9058  |          | program 8  |
|                    |               | 00:00:00:00:00:03 9059  |          | program 9  |
|                    |               | 00:00:00:00:00:03 9060  |          | program 10 |
|                    |               | 00:00:00:00:00:03 9061  |          | program 11 |
|                    |               | 00:00:00:00:00:03 9062  |          | program 12 |
| SCS-FL 47.1412 MHz |               | 00:00:00:00:00:03 9068  |          | ESPN-C     |
|                    |               | 00:00:00:00:00:03 9069  |          | ESPN       |
|                    |               | 00:00:00:00:00:03 9070  |          | SCI-FI     |
|                    |               | 00:00:00:00:00:03 9071  |          | AMC        |
|                    |               | 00:00:00:00:00:03 9072  |          | GOLF       |
|                    |               | 00:00:00:00:00:03 9073  |          | NICK       |
|                    |               | 00:00:00:00:00:03 9074  |          | A&E        |
|                    |               | 00:00:00:00:00:03 9075  |          | CNBC       |
|                    |               | 00:00:00:00:00:03 9076  |          | FOX NEWS   |
|                    |               | 00:00:00:00:00:03 9077  |          | HGTV       |
|                    |               | 00:00:00:00:00:03 9078  |          | SOAPNET    |
|                    |               | 00:00:00:00:00:03 9088  |          | FOOD       |
| SCS-FL 47.1412 MHz |               | 00:00:00:00:00:03 9080  |          | ESPN2      |
|                    |               | 00:00:00:00:00:03 9081  |          | YES        |
|                    |               | 00:00:00:00:00:03 9082  |          | MTV        |
|                    |               | 00:00:00:00:00:03 9083  |          | BET        |
|                    |               | 00:00:00:00:00:03 9084  |          | DISC       |
|                    |               | 00:00:00:00:00:03 9085  |          | OLN        |
|                    |               | 00:00:00:00:00:03 9086  |          | USA        |
|                    |               | 00:00:00:00:00:03 9087  |          | CNN        |
|                    |               | 00:00:00:00:00:03 9079  |          | COURT TV   |
|                    |               | 00:00:00:00:00:03 9099  |          | LIFETIME   |
|                    |               | 00:00:00:00:00:03 10000 |          | OXYGEN     |
|                    |               | 00:00:00:00:00:03 10001 |          | MSNBC      |
| SCS-FL 47.1412 MHz |               | 00:00:00:00:00:03 10004 |          | ESPN       |
|                    |               | 00:00:00:00:00:03 10005 |          | CMT        |
|                    |               | 00:00:00:00:00:03 10006 |          | FX         |
|                    |               | 00:00:00:00:00:03 10007 |          | BRAVO      |
|                    |               | 00:00:00:00:00:03 10008 |          | CARTOON    |
|                    |               | 00:00:00:00:00:03 10009 |          | TV LAND    |
|                    |               | 00:00:00:00:00:03 10011 |          |            |
|                    |               | 00:00:00:00:00:03 10012 |          |            |
|                    |               | 00:00:00:00:00:03 10013 |          |            |
|                    |               | 00:00:00:00:00:03 10014 |          |            |
|                    |               |                         |          |            |



|          |                         |  |           |
|----------|-------------------------|--|-----------|
|          | 00:00:00:00:00:03 10015 |  | TLC       |
|          | 00:00:00:00:00:03 10010 |  |           |
| SPOT 102 |                         |  |           |
|          | 00:00:00:00:00:03 10016 |  | WSTW      |
|          | 00:00:00:00:00:03 10017 |  | WPXI      |
|          | 00:00:00:00:00:03 10018 |  | WXXI      |
|          | 00:00:00:00:00:03 10019 |  | WVON      |
|          | 00:00:00:00:00:03 10020 |  | WAVY      |
|          | 00:00:00:00:00:03 10021 |  | WSTO      |
|          | 00:00:00:00:00:03 10022 |  | WVNS      |
|          | 00:00:00:00:00:03 10023 |  | WSTW      |
|          | 00:00:00:00:00:03 10024 |  | WSPX      |
|          | 00:00:00:00:00:03 10049 |  | WVON2     |
|          | 00:00:00:00:00:03 10025 |  | DISCOVERY |
|          | 00:00:00:00:00:03 10026 |  | STYLE     |

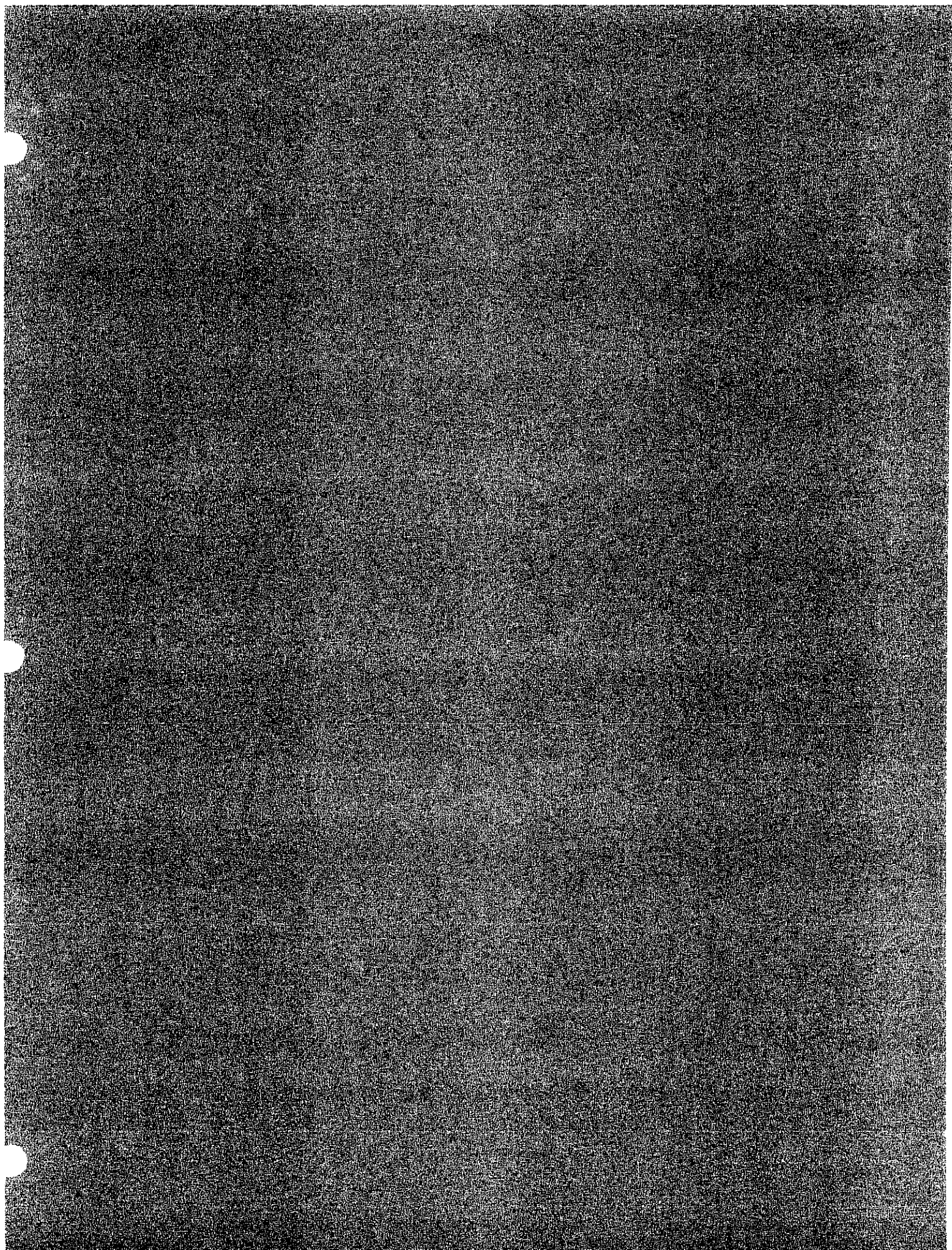


TIME WARNER CABLE- SYRACUSE DIVISION

Digital MQAM Frequencies

|                                   |
|-----------------------------------|
|                                   |
| 609 MHZ                           |
| 615 MHz                           |
| 621 MHz                           |
| 627 MHz                           |
|                                   |
| These are for I-Control services. |







PAGE 5

**TIME WARNER CABLE - SYRACUSE DIVISION**

**Statement of Qualifications**

**System Name** : Syracuse

**Employee Name** : Don Palmer

**Title** : Headend  
Technician

**System** : Syracuse

**Qualifications** :

Total years of services- 12 1/2  
Service Technician- 9 years  
Maintenance Technician- 1 years  
Headend Technician- 1 1/2 years

**Employee Name** : Benny LaRocca

**Title** : Senior Network  
Technician

**System** : Syracuse

**Qualifications** :

Senior Network Technician- 6 1/2 years  
Service Technician- 10 years  
Technology and Communications Schooling

**Employee Name** : Rich Wilmot

**Title** : Headend  
Technician

**System** : Syracuse

**Qualifications** :

Total years of service- 4  
Service Technician- 3 1/2 years  
Headend- 1/2 Years



PAGE 5

**TIME WARNER CABLE - SYRACUSE DIVISION****Statement of Qualifications****System Name** : Syracuse**Employee Name** : Don Singleton**Title** : Maintenance  
Technician**System** : Syracuse**Qualifications** :

Total years of service- 22  
installer- 4  
service- 11  
Maintenance- 6

**Employee Name** : Melvin Johnson**Title** : Maintenance  
Technician**System** : Syracuse**Qualifications** :

Total years of service- 25  
installer- 2 years  
Service- 2 years  
Maintenance- 21 years

**Employee Name** : Neil Rader**Title** : Maintenance  
Technician**System** : Syracuse**Qualifications** :

Total years of service- 12 1/2  
Installer- 4  
Service Technician- 4  
Maintenance Technician- 4 1/2

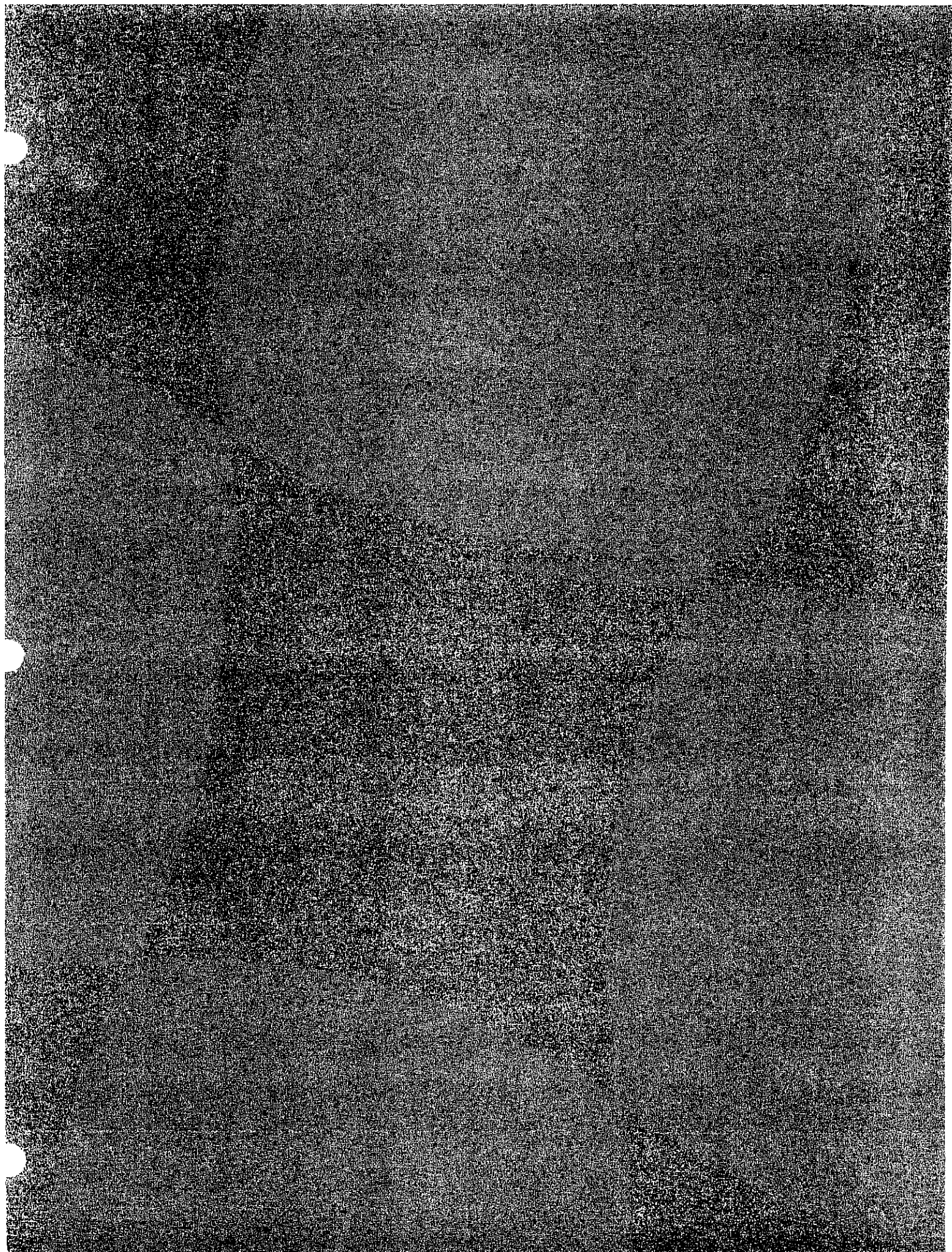


### Test Equipment Listings

**Date** : 08/01/2006

[illegible]







PAGE 7

***TIME WARNER CABLE - SYRACUSE DIVISION***

***Terminal Isolation Test***

***System Name*** : Syracuse

***Date*** : 08/01/2006

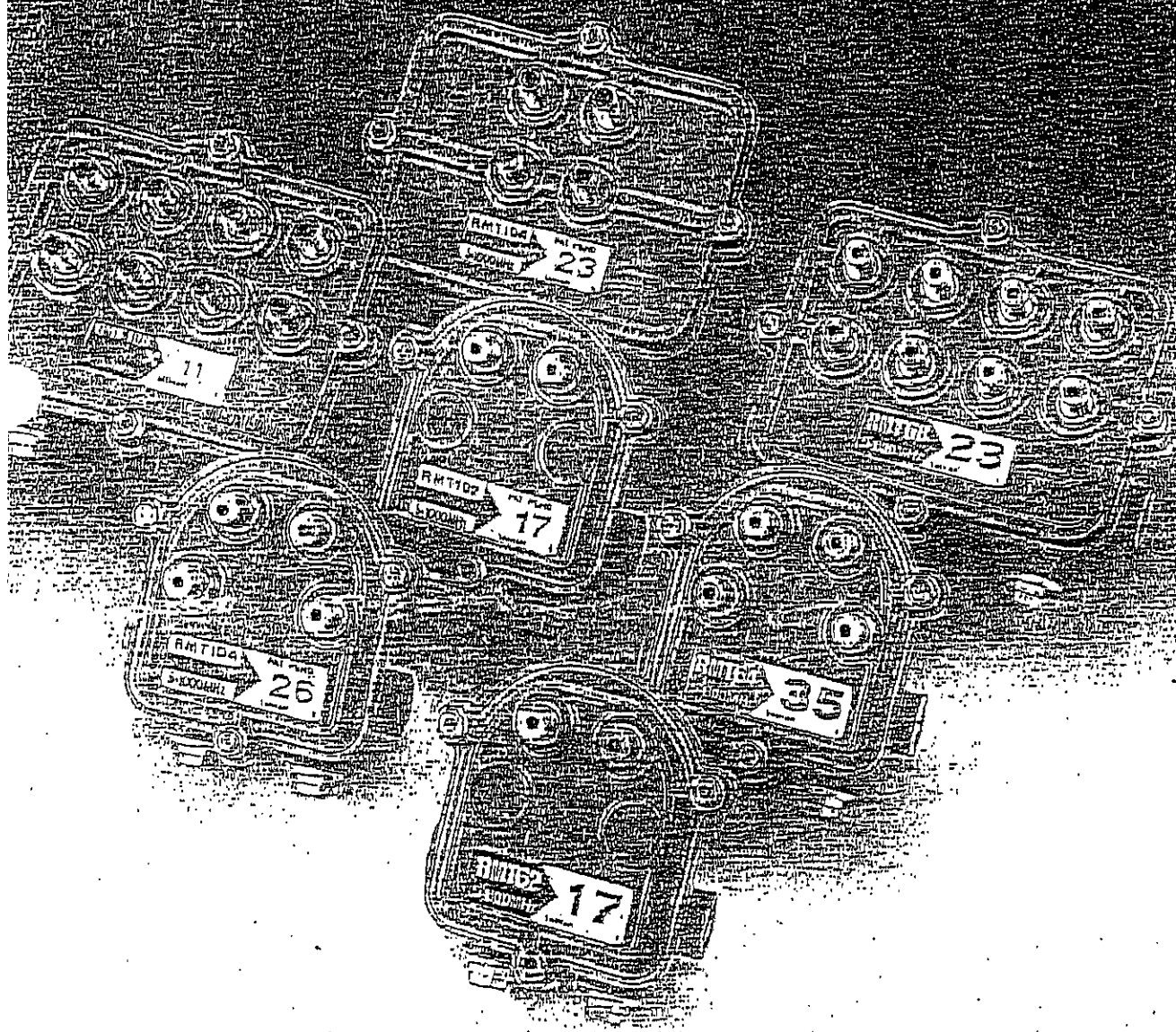
The terminal isolation provided to each subscriber terminal shall not be less than 18 decibels. In lieu of periodic testing, the cable operator may use specifications provided by the manufacturer for the terminal isolation equipment to meet this standard.

***Instructions:***

Attach a copy of the manufacturer's specifications covering all directional taps used in the system. The specification sheet must show the minimum tap-to-tap isolation. In lieu of a specification sheet, attach a letter from the manufacturer(s) certifying that the directional taps used in the system do exhibit a minimum tap-to-tap isolation of 18dB.



# REGAL TECHNOLOGIES LTD



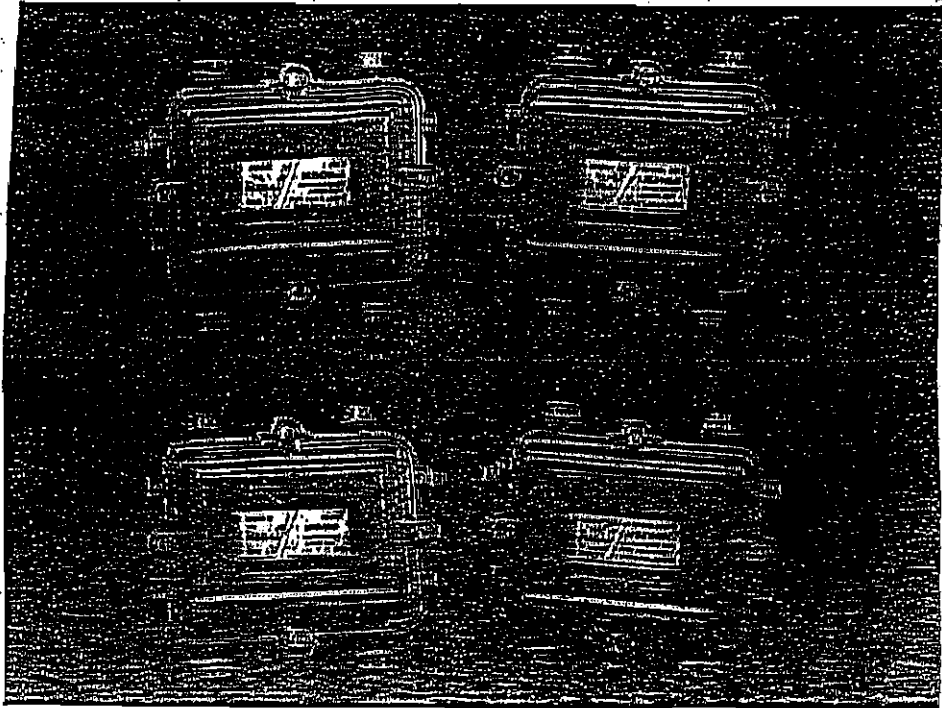


# Line Passives

Hz, 100dB EMI

10, RLDC10, RPI10 Series

Recognized as the industry  
1 GHz passive develop-  
ment now offers a full line  
line passives to comple-  
RMT10 series of 1 GHz  
all line passives feature  
components to sustain  
integrity and ensure high  
characteristics. The  
d groove keyed housing  
with woven metallic gasket  
signal ingress and egress.  
The weather gasket within  
the and groove channel  
is a watertight assembly.  
The power path makes  
diagnostics more efficient  
and safe. 360 alloy aluminum  
with double polyurethane  
years of corrosion  
protection.



RLDC10-8, RL510-5 (top); RPI-100, RL510-2SP (bottom)

## ation

erging trends such as dig-  
fiber optic deployment,  
on demand and digital  
on require increased  
a. To meet the demands  
technologies, RLS10 two  
way splitters, RLDC10  
1 couplers and RPI-100  
terminals feature unequalled  
nce to 1 GHz and long  
reliability.

## ie Options

Hz line passives may be  
to include surge protec-  
Hz faceplates, with or  
surge protection, may be  
in any existing 600 MHz  
passive.

## Features:

- Glass epoxy printed circuit board with premium components for superior RF performance
- Interlocking tongue and groove faceplate/housing design provides exceptional EMI isolation
- 360 alloy aluminum housing with double polyurethane coating resists corrosion and increases product life
- Printed power routing path to aid in system diagnostics
- Interchangeable faceplates among all 600 MHz and 1 GHz passives

## Performance and Reliability

- 1 GHz bandwidth with low loss characteristics
- 100dB minimum EMI isolation

## Installation ease

- 1/2" long entry ports allow for greater heatshrink overlap
- Field replaceable fuse clips
- Cast-in strip gauge for proper center conductor trim length
- Captive hardware prevents accidental loss during installs
- Keyed housing for proper assembly
- Circuit board comes mounted on faceplate but may be changed to housing to eliminate outages during diagnostics

## Mechanical Integrity

- Stainless steel hardware resists corrosion
- Non-rotational seizing mechanism with one seizure screw per port for aerial/underground installs





# Taps

Hz, 100dB EMI

10 Series - Two-port

Typical performance specifications

| RMT102                 | 4.0  | 8.0  | 11.0  | 14.0  | 17.0  | 20.0  | 23.0  | 26.0  | 29.0  | 32.0  | 35.0  |
|------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Tap value (dB)         |      |      |       |       |       |       |       |       |       |       |       |
| 5 - 10 MHz             | 3.40 | 7.20 | 10.34 | 14.60 | 16.50 | 20.60 | 22.50 | 25.60 | 28.50 | 31.60 | 34.70 |
| 10 - 50 MHz            | 3.40 | 7.20 | 10.70 | 14.60 | 16.50 | 20.60 | 22.60 | 25.70 | 28.50 | 31.60 | 34.70 |
| 50 - 100 MHz           | 3.40 | 7.20 | 10.78 | 14.60 | 16.50 | 20.60 | 22.60 | 25.70 | 28.60 | 31.70 | 34.80 |
| 100 - 200 MHz          | 3.50 | 7.20 | 10.82 | 14.50 | 16.50 | 20.60 | 22.60 | 25.70 | 28.60 | 31.70 | 34.90 |
| 200 - 300 MHz          | 3.50 | 7.20 | 10.78 | 14.40 | 16.50 | 20.60 | 22.60 | 25.80 | 28.70 | 31.90 | 35.20 |
| 300 - 400 MHz          | 3.60 | 7.20 | 10.70 | 14.20 | 16.60 | 20.60 | 22.60 | 25.90 | 28.90 | 32.30 | 35.30 |
| 400 - 500 MHz          | 3.50 | 7.40 | 10.68 | 14.20 | 16.70 | 21.80 | 22.60 | 26.10 | 28.90 | 32.60 | 35.70 |
| 500 - 600 MHz          | 3.60 | 7.40 | 10.74 | 13.50 | 16.70 | 21.00 | 22.90 | 26.10 | 29.10 | 32.60 | 35.70 |
| 600 - 700 MHz          | 3.70 | 7.60 | 10.72 | 13.60 | 16.80 | 21.10 | 22.90 | 26.00 | 29.10 | 32.60 | 35.60 |
| 700 - 800 MHz          | 3.80 | 7.60 | 10.76 | 13.20 | 16.80 | 21.20 | 22.80 | 25.80 | 28.90 | 32.50 | 35.50 |
| 800 - 900 MHz          | 3.80 | 7.90 | 10.80 | 12.80 | 16.80 | 21.10 | 23.00 | 25.50 | 28.60 | 32.50 | 35.50 |
| 900 - 1000 MHz         | 4.20 | 8.60 | 11.24 | 13.00 | 17.30 | 21.40 | 23.80 | 25.50 | 28.60 | 32.40 | 35.40 |
| Insertion loss<br>(dB) |      |      |       |       |       |       |       |       |       |       |       |
| 5 - 10 MHz             | T    | 3.38 | 1.57  | 1.01  | 0.72  | 0.43  | 0.44  | 0.51  | 0.43  | 0.46  | 0.42  |
| 10 - 50 MHz            | T    | 3.36 | 1.42  | 0.90  | 0.68  | 0.36  | 0.36  | 0.42  | 0.36  | 0.40  | 0.40  |
| 50 - 100 MHz           | T    | 3.55 | 1.46  | 0.90  | 0.67  | 0.36  | 0.36  | 0.47  | 0.38  | 0.42  | 0.42  |
| 100 - 200 MHz          | T    | 3.46 | 1.50  | 0.92  | 0.68  | 0.40  | 0.40  | 0.50  | 0.40  | 0.44  | 0.44  |
| 200 - 300 MHz          | T    | 3.52 | 1.57  | 0.97  | 0.71  | 0.44  | 0.42  | 0.55  | 0.45  | 0.48  | 0.48  |
| 300 - 400 MHz          | T    | 3.59 | 1.62  | 1.10  | 0.71  | 0.42  | 0.43  | 0.53  | 0.47  | 0.49  | 0.49  |
| 400 - 500 MHz          | T    | 3.78 | 1.78  | 1.29  | 0.96  | 0.65  | 0.70  | 0.79  | 0.68  | 0.74  | 0.77  |
| 500 - 600 MHz          | T    | 4.00 | 1.95  | 1.31  | 0.90  | 0.81  | 0.68  | 0.85  | 0.71  | 0.68  | 0.67  |
| 600 - 700 MHz          | T    | 4.30 | 2.28  | 1.52  | 1.25  | 1.11  | 1.57  | 1.05  | 0.72  | 0.80  | 0.82  |
| 700 - 800 MHz          | T    | 4.33 | 2.46  | 2.00  | 1.33  | 1.38  | 1.30  | 1.25  | 1.18  | 1.25  | 1.18  |
| 800 - 900 MHz          | T    | 4.35 | 2.60  | 2.15  | 1.35  | 1.35  | 1.15  | 1.18  | 1.05  | 1.10  | 1.13  |
| 900 - 1000 MHz         | T    | 4.52 | 3.00  | 2.51  | 1.51  | 1.41  | 1.11  | 1.22  | 1.08  | 1.16  | 1.06  |



# Taps

## Hz, 100dB EMI

### 10 Series - Four-port

#### Final performance specifications

| RMT104                 | 8.0  | 11.0  | 14.0  | 17.0  | 20.0  | 23.0  | 26.0  | 29.0  | 32.0  | 35.0  |
|------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| tap value (dB)         |      |       |       |       |       |       |       |       |       |       |
| 5 - 10 MHz             | 7.00 | 10.40 | 13.40 | 17.60 | 20.20 | 23.10 | 25.50 | 28.50 | 31.40 | 34.50 |
| 10 - 50 MHz            | 6.90 | 10.20 | 14.00 | 17.70 | 20.20 | 23.10 | 25.60 | 28.60 | 31.40 | 34.50 |
| 50 - 100 MHz           | 6.90 | 10.20 | 14.00 | 17.70 | 20.20 | 23.10 | 25.60 | 28.75 | 31.56 | 34.68 |
| 100 - 200 MHz          | 6.90 | 10.20 | 14.00 | 17.70 | 20.30 | 23.20 | 25.70 | 29.06 | 31.68 | 34.86 |
| 200 - 300 MHz          | 6.90 | 10.20 | 14.10 | 17.40 | 20.40 | 23.30 | 25.90 | 29.13 | 31.75 | 34.88 |
| 300 - 400 MHz          | 6.90 | 10.20 | 14.10 | 17.10 | 20.40 | 23.20 | 26.10 | 29.07 | 31.80 | 35.21 |
| 400 - 500 MHz          | 7.10 | 10.20 | 14.30 | 16.90 | 20.10 | 23.00 | 26.00 | 28.67 | 31.44 | 35.05 |
| 500 - 600 MHz          | 7.10 | 10.20 | 14.40 | 16.70 | 19.94 | 22.80 | 25.80 | 28.79 | 31.25 | 34.78 |
| 600 - 700 MHz          | 7.10 | 10.30 | 14.40 | 16.40 | 19.95 | 22.60 | 25.70 | 28.78 | 30.94 | 34.20 |
| 700 - 800 MHz          | 7.30 | 10.50 | 14.30 | 16.10 | 20.30 | 22.70 | 25.70 | 28.80 | 30.63 | 34.12 |
| 800 - 900 MHz          | 7.30 | 10.80 | 14.20 | 15.80 | 20.60 | 23.20 | 25.90 | 28.50 | 30.53 | 34.38 |
| 900 - 1000 MHz         | 7.40 | 11.70 | 14.20 | 15.50 | 21.70 | 23.80 | 26.60 | 28.30 | 31.30 | 35.70 |
| insertion loss<br>(dB) |      |       |       |       |       |       |       |       |       |       |
| 5 - 10 MHz             | T    | 3.26  | 1.55  | 0.93  | 0.75  | 0.55  | 0.52  | 0.52  | 0.55  | 0.59  |
| 10 - 50 MHz            | T    | 3.22  | 1.43  | 0.87  | 0.69  | 0.50  | 0.47  | 0.43  | 0.45  | 0.51  |
| 50 - 100 MHz           | T    | 3.29  | 1.45  | 0.91  | 0.71  | 0.51  | 0.48  | 0.46  | 0.44  | 0.41  |
| 100 - 200 MHz          | T    | 3.34  | 1.50  | 0.94  | 0.70  | 0.52  | 0.48  | 0.46  | 0.45  | 0.43  |
| 200 - 300 MHz          | T    | 3.45  | 1.61  | 1.03  | 0.72  | 0.56  | 0.49  | 0.49  | 0.47  | 0.44  |
| 300 - 400 MHz          | T    | 3.61  | 1.71  | 1.08  | 0.70  | 0.58  | 0.48  | 0.47  | 0.49  | 0.47  |
| 400 - 500 MHz          | T    | 3.70  | 1.81  | 1.18  | 0.83  | 0.67  | 0.56  | 0.50  | 0.51  | 0.52  |
| 500 - 600 MHz          | T    | 4.14  | 2.01  | 1.26  | 0.87  | 0.78  | 0.63  | 0.53  | 0.56  | 0.53  |
| 600 - 700 MHz          | T    | 4.08  | 2.32  | 1.47  | 1.03  | 0.92  | 0.75  | 0.68  | 0.65  | 0.72  |
| 700 - 800 MHz          | T    | 4.36  | 2.46  | 2.00  | 1.26  | 1.23  | 1.13  | 1.05  | 1.01  | 1.04  |
| 800 - 900 MHz          | T    | 4.40  | 2.84  | 2.55  | 1.53  | 1.17  | 1.05  | 0.96  | 0.91  | 0.91  |
| 900 - 1000 MHz         | T    | 4.27  | 3.53  | 2.58  | 1.48  | 1.09  | 0.96  | 0.92  | 0.94  | 0.90  |



# Taps

10 Series - Eight-port

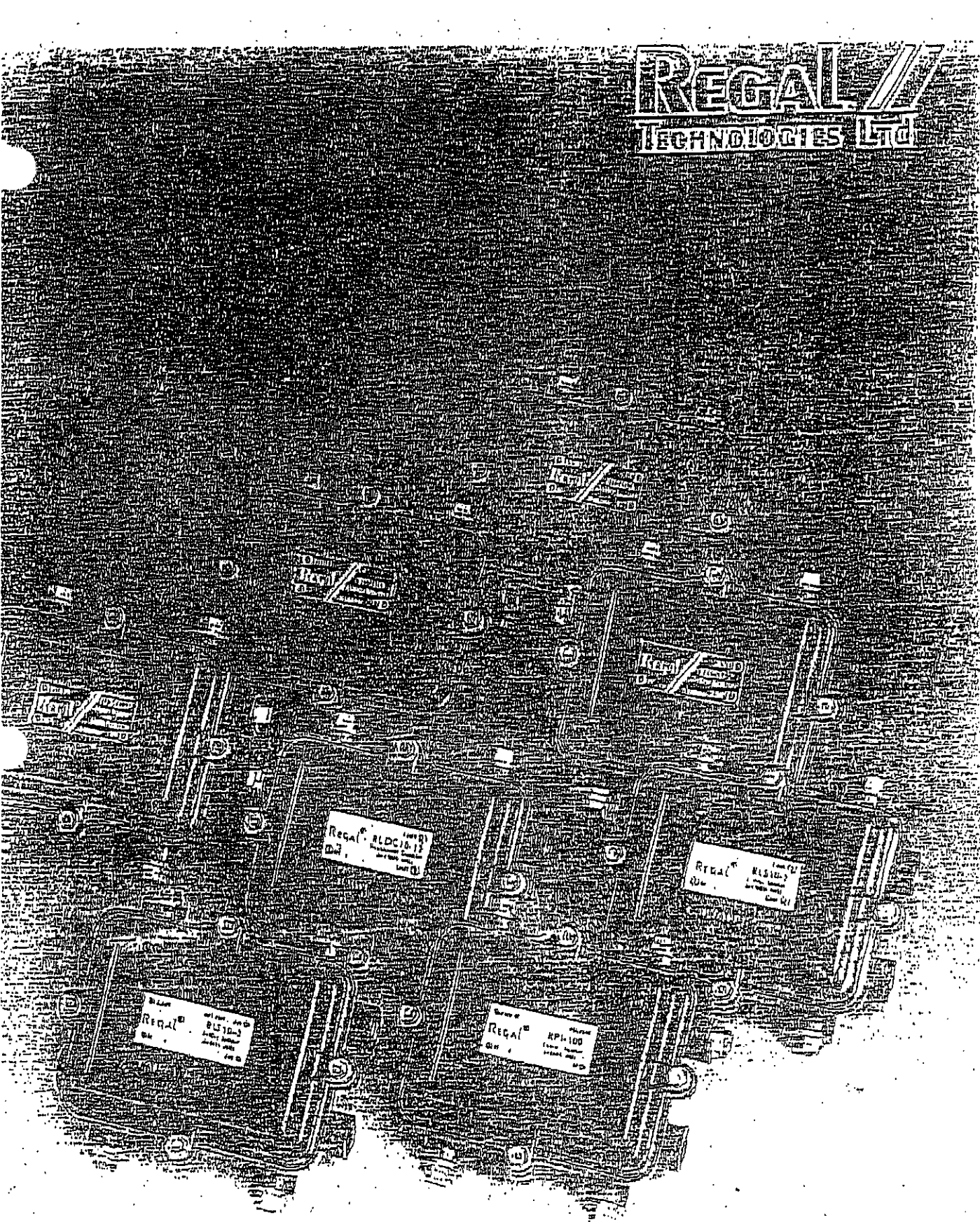
## Final performance specifications

| RMT10B-                   | 11.0  | 14.0  | 17.0  | 20.0  | 23.0  | 26.0  | 29.0  | 32.0  | 35.0  |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1-tap value (dB)          |       |       |       |       |       |       |       |       |       |
| 5 - 10 MHz                | 10.55 | 14.40 | 17.00 | 20.10 | 23.10 | 25.20 | 28.10 | 31.20 | 34.80 |
| 10 - 50 MHz               | 10.20 | 13.60 | 17.10 | 20.10 | 23.30 | 25.60 | 28.90 | 31.70 | 35.20 |
| 50 - 100 MHz              | 10.15 | 13.70 | 17.50 | 20.20 | 23.40 | 25.70 | 28.90 | 31.80 | 35.20 |
| 100 - 200 MHz             | 10.25 | 13.60 | 17.70 | 20.30 | 23.50 | 26.00 | 29.20 | 31.80 | 35.30 |
| 200 - 300 MHz             | 10.30 | 13.60 | 17.80 | 20.30 | 23.50 | 25.90 | 29.30 | 32.00 | 35.50 |
| 300 - 400 MHz             | 10.40 | 13.70 | 17.50 | 20.30 | 23.60 | 25.70 | 29.60 | 32.00 | 35.70 |
| 400 - 500 MHz             | 10.40 | 13.70 | 17.60 | 20.30 | 23.70 | 25.70 | 29.80 | 32.10 | 35.90 |
| 500 - 600 MHz             | 10.55 | 14.00 | 17.70 | 20.30 | 23.70 | 25.80 | 29.70 | 32.00 | 36.00 |
| 600 - 700 MHz             | 10.60 | 13.80 | 17.30 | 20.00 | 23.20 | 25.60 | 29.00 | 31.80 | 36.00 |
| 700 - 800 MHz             | 11.00 | 13.80 | 17.20 | 20.40 | 23.20 | 25.60 | 28.60 | 31.90 | 35.80 |
| 800 - 900 MHz             | 11.30 | 14.30 | 17.50 | 21.00 | 23.20 | 25.60 | 28.30 | 31.80 | 35.90 |
| 900 - 1000 MHz            | 11.60 | 14.90 | 18.20 | 21.30 | 23.30 | 25.10 | 28.40 | 31.70 | 35.90 |
| 2-tap insertion loss (dB) |       |       |       |       |       |       |       |       |       |
| 5 - 10 MHz                | T     | 3.22  | 1.54  | 1.05  | 0.81  | 0.77  | 0.51  | 0.52  | 0.52  |
| 10 - 50 MHz               | T     | 3.34  | 1.43  | 0.94  | 0.70  | 0.69  | 0.41  | 0.46  | 0.49  |
| 50 - 100 MHz              | T     | 3.46  | 1.44  | 0.93  | 0.72  | 0.64  | 0.43  | 0.46  | 0.44  |
| 100 - 200 MHz             | T     | 3.50  | 1.48  | 0.96  | 0.72  | 0.66  | 0.45  | 0.46  | 0.46  |
| 200 - 300 MHz             | T     | 3.60  | 1.57  | 1.03  | 0.71  | 0.68  | 0.47  | 0.49  | 0.47  |
| 300 - 400 MHz             | T     | 3.71  | 1.66  | 1.03  | 0.74  | 0.73  | 0.54  | 0.51  | 0.50  |
| 400 - 500 MHz             | T     | 3.73  | 1.96  | 1.16  | 0.86  | 0.87  | 0.77  | 0.64  | 0.61  |
| 500 - 600 MHz             | T     | 3.87  | 1.98  | 1.48  | 1.23  | 1.21  | 0.97  | 0.94  | 0.76  |
| 600 - 700 MHz             | T     | 4.19  | 1.93  | 1.35  | 1.01  | 0.95  | 0.76  | 0.68  | 0.91  |
| 700 - 800 MHz             | T     | 4.34  | 1.30  | 1.70  | 1.14  | 1.04  | 0.93  | 0.78  | 0.85  |
| 800 - 900 MHz             | T     | 4.20  | 2.43  | 1.85  | 1.20  | 1.06  | 0.93  | 0.82  | 0.85  |
| 900 - 1000 MHz            | T     | 4.24  | 2.68  | 2.42  | 1.37  | 1.16  | 1.04  | 0.84  | 0.89  |



# REGAL

TECHNOLOGIES LTD

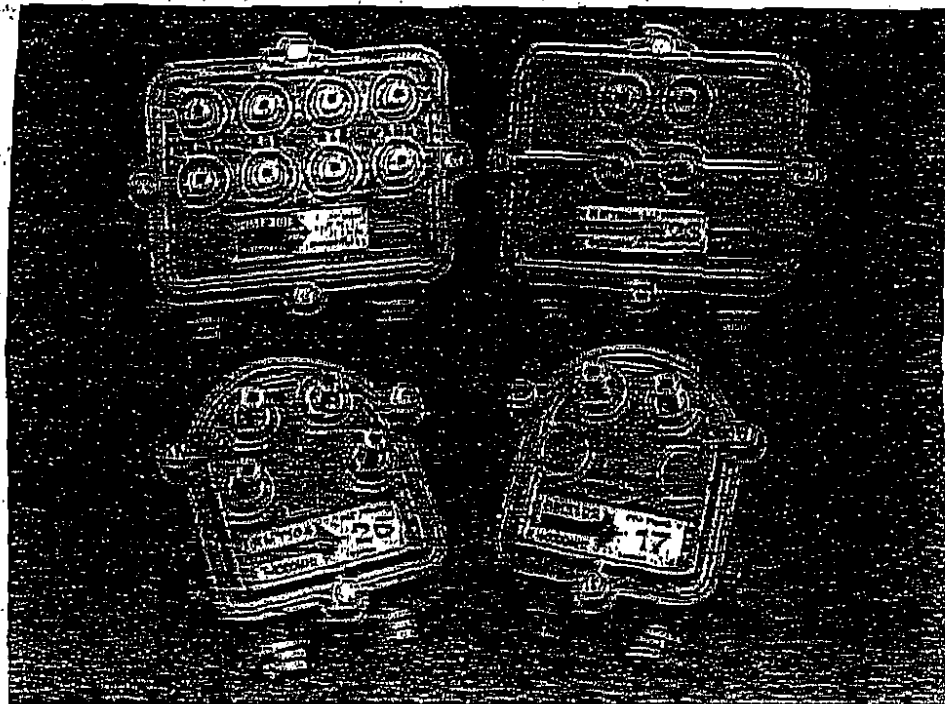




# Taps

## ±, 100dB EMI D Series

1 has developed the first and line passive product industry. 1 GHz Regal designed to optimize signal the drop. Each unit premium components to 121 integrity and ensure on characteristics. The 1 groove housing design n metallic gasket pro- al ingress and egress. A weather gasket within and groove housing establishes a watertight. To further inhibit mois- is, each "F" port is sealed t and faceplate interface arene gasket. The back is sealed with water- y, eliminating water into the circuit board.



RMT108-11, RMT104-23, RMT104-26, RMT102-17 (clockwise from top left)

### ation

elerating trends towards apacity for near video on HDTV, digital audio and oyment stimulate the 1 GHz capacity. Installing ps today futureproofs a r these emerging tech-

Advanced technology rise have enabled Regal a 1-GHz tap which is ageable with all existing Regal taps. All Regal taps as power passing. Non-assing versions of the series taps are available. your Regal representative ls and specifications.

### ie Options

MHz taps may be up- to 1 GHz with a faceplate out. 1 GHz taps are avail- wide and narrow bodies for

### Features:

- Glass epoxy printed circuit board with premium components for superior RF performance
  - Interlocking tongue and groove faceplate/housing design provides exceptional EMI isolation
  - 360 alloy aluminum housing with double polyurethane coating resists corrosion and increases product life
  - Triple sealed nickel plated brass "F" ports with drip wells inhibit water migration and resist corrosion
  - Interchangeable faceplates with all existing 600 MHz Regal taps
- Performance and Reliability
- 1 GHz bandwidth with low loss characteristics

### Installation ease

- 1/2" long numbered "F" ports for proper connector fit also allow use of sealing boots
- Small unit size (two and four-port) fits easily into pedestals
- Cast-in snip gauge for proper center conductor trim length
- Captive hardware prevents accidental loss during installs
- Color coded tap values for easy identification
- Conical center conductor guide for accurate feeder line installs

### Mechanical Integrity

- Stainless steel hardware resists corrosion
- Non-rotational seizing mechanism with four seizure screws



# 1e Passives

## Hz, 100dB EMI

### 0-2, RLS10-3 Line Splitters

**REGAL**   
TECHNOLOGIES Ltd

#### case performance specifications

#### 0-2 - Two-way splitter

| Frequency (MHz)              | 5 - 10                         | 10 - 50 | 50 - 300 | 300 - 400 | 400 - 500 | 500 - 600 | 600 - 900 | 900 - 1000 |
|------------------------------|--------------------------------|---------|----------|-----------|-----------|-----------|-----------|------------|
| Insertion loss (dB maximum)  | 4.3                            | 4.2     | 4.6      | 4.6       | 5.0       | 5.2       | 5.4       | 5.7        |
| Reflection loss (dB minimum) | 16                             | 18      | 19       | 20        | 20        | 18        | 17        | 16         |
| Isolation (dB minimum)       | 23                             | 28      | 25       | 25        | 23        | 23        | 20        | 18         |
| Shielding (dB minimum)       | 100                            | 100     | 100      | 100       | 100       | 100       | 100       | 100        |
| Modulation 10 Amp (dB min.)  | 60                             | 60      | 60       | 60        | 60        | 60        | 60        | 60         |
| Rating                       | 12 Amps AC/DC, 60 Volts, 60 Hz |         |          |           |           |           |           |            |

#### 0-3 - Three-way splitter

| Frequency (MHz)                     | 5 - 10                         | 10 - 50 | 50 - 300 | 300 - 400 | 400 - 500 | 500 - 600 | 600 - 900 | 900 - 1000 |
|-------------------------------------|--------------------------------|---------|----------|-----------|-----------|-----------|-----------|------------|
| Insertion loss (dB max.) ports 2, 3 | 4.4                            | 4.3     | 4.8      | 4.8       | 5.2       | 5.4       | 5.7       | 6.0        |
| Insertion loss (dB max.) port 4     | 8.0                            | 8.0     | 8.2      | 8.4       | 8.5       | 8.7       | 9.0       | 9.2        |
| Reflection loss (dB minimum)        | 16                             | 18      | 19       | 20        | 19        | 18        | 17        | 16         |
| Isolation (dB minimum)              | 23                             | 28      | 23       | 21        | 20        | 20        | 19        | 18         |
| Shielding (dB minimum)              | 100                            | 100     | 100      | 100       | 100       | 100       | 100       | 100        |
| Modulation 10 Amp (dB min.)         | 60                             | 60      | 60       | 60        | 60        | 60        | 60        | 60         |
| Rating                              | 12 Amps AC/DC, 60 Volts, 60 Hz |         |          |           |           |           |           |            |

#### 10-2SP - Two-way splitter with surge protection

#### 10-3SP - Three-way splitter with surge protection

|                                |   |
|--------------------------------|---|
| Trigger voltage                | 104 Vpk minimum<br>118 Vpk maximum                    |
| Trigger response               | <200 ns<br>(bi-directional voltage sensing)           |
| Current clamping<br>(capacity) | 40 Amps (steady state)<br>400 Amps (8.3 milliseconds) |

#### Recommended torque

|                          |                 |
|--------------------------|-----------------|
| Housing closure screws   | 20-30 in. lb.   |
| Center conductor seizure | 15-20 in. lb.   |
| Port plugs               | 10-15 ft. lb.   |
| Connector pull-out       | 100 lb. minimum |



# Line Passives

±Hz, 100dB EMI

## 10-2, RLS10-3 Line Splitters

Final performance specifications

O-2 - Two-way splitter

O-2SP - with surge protection

| Frequency (MHz)                | 5 - 10 | 10 - 50 | 50 - 300 | 300 - 400 | 400 - 500 | 500 - 600 | 600 - 900 | 900 - 1000 |
|--------------------------------|--------|---------|----------|-----------|-----------|-----------|-----------|------------|
| Insertion loss<br>(dB maximum) | 3.72   | 3.66    | 3.96     | 3.88      | 3.86      | 3.82      | 3.90      | 4.20       |

O-3 - Three-way splitter

O-3SP - with surge protection

| Frequency (MHz)                | 5 - 10 | 10 - 50 | 50 - 300 | 300 - 400 | 400 - 500 | 500 - 600 | 600 - 900 | 900 - 1000 |
|--------------------------------|--------|---------|----------|-----------|-----------|-----------|-----------|------------|
| Insertion loss<br>(dB maximum) | 3.78   | 3.70    | 3.96     | 3.96      | 3.98      | 4.00      | 3.90      | 4.10       |
|                                | 7.53   | 7.08    | 7.40     | 7.46      | 7.48      | 7.44      | 7.78      | 8.48       |



# 1e Passives

## Hz, 100dB EMI

### :10-\* Directional Couplers

**REGAL**   
TECHNOLOGIES Ltd

case performance specifications

:10-\* - Directional couplers

| ncy (MHz)                   | 5 - 10                         | 10 - 50 | 50 - 300 | 300 - 400 | 400 - 500 | 500 - 600 | 600 - 900 | 900 - 1000 |
|-----------------------------|--------------------------------|---------|----------|-----------|-----------|-----------|-----------|------------|
| n loss (dB maximum)         |                                |         |          |           |           |           |           |            |
| RLDC10-8                    | 2.4                            | 2.4     | 2.7      | 2.8       | 2.9       | 3.2       | 3.7       | 4.1        |
| RLDC10-12                   | 1.7                            | 1.6     | 2.0      | 2.1       | 2.4       | 2.5       | 2.9       | 3.3        |
| RLDC10-16                   | 2.2                            | 1.6     | 2.0      | 2.1       | 2.4       | 2.5       | 2.9       | 3.5        |
| loss (dB minimum)           |                                |         |          |           |           |           |           |            |
| RLDC10-8                    | 15                             | 15      | 16       | 18        | 20        | 18        | 17        | 16         |
| RLDC10-12                   | 15                             | 15      | 16       | 18        | 20        | 18        | 17        | 16         |
| RLDC10-16                   | 15                             | 15      | 17       | 18        | 20        | 18        | 17        | 16         |
| , dB minimum)               |                                |         |          |           |           |           |           |            |
| RLDC10-8                    | 28                             | 30      | 28       | 27        | 24        | 21        | 18        | 18         |
| RLDC10-12                   | 28                             | 28      | 28       | 27        | 25        | 23        | 18        | 18         |
| RLDC10-16                   | 25                             | 25      | 27       | 27        | 27        | 24        | 19        | 18         |
| ielding (dB minimum)        | 100                            | 100     | 100      | 100       | 100       | 100       | 100       | 100        |
| modulation 10 Amp (dB min.) | 60                             | 60      | 60       | 60        | 60        | 60        | 60        | 60         |
| rating                      | 12 Amps AC/DC, 60 Volts, 60 Hz |         |          |           |           |           |           |            |

OC10-\*SP - Directional couplers with surge protection

|                                |   |
|--------------------------------|---|
| Trigger voltage                | 104 Vpk minimum<br>118 Vpk maximum                    |
| Trigger response               | <200 ns<br>bi-directional voltage sensing)            |
| Current clamping<br>(capacity) | 40 Amps (steady state)<br>400 Amps (5.3 milliseconds) |

\* indicates value of directional coupler, available in 8, 12 or 16dB versions

#### Recommended torque

|                          |                 |
|--------------------------|-----------------|
| Housing closure screws   | 20-30 in. lb.   |
| Center conductor seizure | 15-20 in. lb.   |
| Port plugs               | 10-15 ft. lb.   |
| Connector pull-out       | 100 lb. minimum |



# Line Passives

## ±Hz, 100dB EMI

### C10-\* Directional Couplers

Final performance specifications

C10-\* - Directional couplers

C10-\* SP - with surge protection

| Frequency (MHz) | 5 - 10 | 10 - 50 | 50 - 300 | 300 - 400 | 400 - 500 | 500 - 600 | 600 - 900 | 900 - 1800 |
|-----------------|--------|---------|----------|-----------|-----------|-----------|-----------|------------|
| Return loss     |        |         |          |           |           |           |           |            |
| R1DC10-8        | 8.62   | 8.60    | 8.86     | 8.70      | 8.70      | 8.44      | 8.14      | 8.22       |
| R1DC10-12       | 12.26  | 12.02   | 12.22    | 12.00     | 11.94     | 11.84     | 11.62     | 11.66      |
| R1DC10-16       | 16.92  | 16.88   | 16.88    | 16.66     | 16.50     | 16.44     | 16.12     | 15.74      |
| Loss tolerance  | ±1.0   | ±1.0    | ±1.0     | ±1.0      | ±1.0      | ±1.0      | ±1.2      | ±1.3       |
| Port loss       |        |         |          |           |           |           |           |            |
| R1DC10-8        | 1.94   | 1.80    | 2.12     | 2.02      | 2.00      | 1.96      | 2.60      | 3.40       |
| R1DC10-12       | 1.32   | 1.30    | 1.44     | 1.34      | 1.36      | 1.32      | 1.42      | 1.80       |
| R1DC10-16       | 1.10   | 1.10    | 1.34     | 1.18      | 1.14      | 1.14      | 1.46      | 1.78       |

\* indicates value of directional coupler; available in 8, 12 or 16dB versions



# Line Passives

## GHz, 100dB EMI

### -100 Power Inserters

**REGAL** //

TECHNOLOGIES Ltd

at case performance specifications

-100 - Power inserter

| Frequency (MHz)              | 5 - 50                         | 50 - 300 | 300 - 400 | 400 - 500 | 500 - 600 | 600 - 1000 |
|------------------------------|--------------------------------|----------|-----------|-----------|-----------|------------|
| Insertion loss (dB maximum)  | 1.0                            | 1.0      | 1.0       | 1.2       | 1.2       | 1.5        |
| Reflection loss (dB minimum) | 16                             | 20       | 20        | 19        | 18        | 16         |
| Shielding (dB minimum)       | 60                             | 60       | 60        | 60        | 57        | 55         |
| Isolation (dB minimum)       | 100                            | 100      | 100       | 100       | 100       | 100        |
| Modulation 10 Amp (dB min.)  | 60                             | 60       | 60        | 60        | 60        | 60         |
| Power rating                 | 12 Amps AC/DC, 60 Volts, 60 Hz |          |           |           |           |            |

DDSP - Power inserter with surge protection

|                                |   |
|--------------------------------|---|
| Trigger voltage                | 104 Vpk minimum<br>118 Vpk maximum                    |
| Trigger response               | <200 ns<br>(bi-directional voltage sensing)           |
| Current clamping<br>(capacity) | 40 Amps (steady state)<br>400 Amps (8.5 milliseconds) |

#### Recommended torque

|                          |                 |
|--------------------------|-----------------|
| Housing closure screws   | 20-30 in. lb.   |
| Center conductor seizure | 15-20 in. lb.   |
| Port plugs               | 10-15 ft. lb.   |
| Connector pull-out       | 100 lb. minimum |



# Line Passives

±2, 100dB EMI

00 Power Inserters

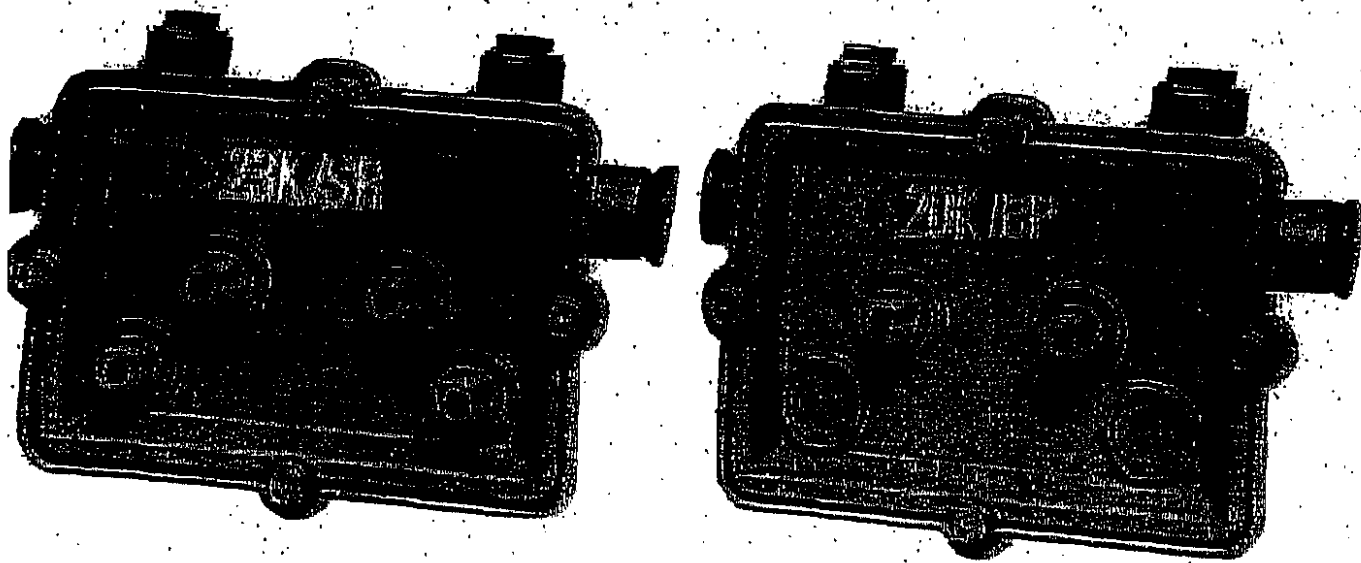
Typical performance specifications

0 - Power inserter -

DSP - with surge protection

| Frequency (MHz) | 5 - 50 | 50 - 300 | 300 - 400 | 400 - 500 | 500 - 600 | 600 - 1000 |
|-----------------|--------|----------|-----------|-----------|-----------|------------|
| Loss            |        |          |           |           |           |            |
| RPI-100         | 0.50   | 0.84     | 0.82      | 0.88      | 0.82      | 1.00       |
| RPI-100SP       | 0.50   | 0.84     | 0.82      | 0.88      | 0.82      | 1.00       |





**URES**  
- 1000 MHz BANDPASS  
MINIMAL INSERTION LOSS  
BACKWARD COMPATIBLE  
SURGE RESILIENT  
SUPERIOR HUM MODULATION  
PERFORMANCE  
12 AMPERE POWER PASSING  
RF/AC BYPASS CAPABILITY  
UPGRADABLE TO POWER  
EXTRACTING

## PRODUCTS

|              |           |       |
|--------------|-----------|-------|
| • FFT2-*K/SR | 12 Values | 4-35  |
| • FFT2-*K/BP | 12 Values | 4-35  |
| • FFT4-*K/SR | 11 Values | 7-35  |
| • FFT4-*K/BP | 11 Values | 7-35  |
| • FFT8-*K/SR | 9 Values  | 10-35 |
| • FFT8-*K/BP | 9 Values  | 10-35 |

## INTRODUCTION

STARLINE Full Feature Taps Series  
Model FFT\*-\*K/\* of 1 GHz taps pro-  
vides the latest technology while maintain-  
ing backward compatibility and allowing  
future upgradability.

## BACKWARD COMPATIBILITY

All FFT\*-\*K/SR Series taps are backward  
compatible with NextLevel FFT-\*F\*,  
"G", "H", "J", and standard "K" Series  
tap housings.

## SURGE RESILIENT

FFT\*-\*K/SR Series taps offer the same  
features and performance as their prede-  
cessor the FFT\*-\*K Series tap and are a  
drop-in replacement for these taps. In  
addition, the SR taps offer the additional  
feature of surge resiliency at each P-port.  
This feature greatly reduces failures due  
to surges down the drop cable. Hum prob-  
lems associated with system grounding  
are also eliminated by this feature.

## 12 AMPERE POWER PASSING

The FFT\*-\*K/\* Series of taps is capable  
of passing a maximum of 12 Amperes  
from input to output on the feeder. These  
taps are designed for optimal hum modu-  
lation performance at high currents and  
can be used in 60 or 90 Volt systems.

## RF/AC BYPASS CAPABILITY

The FFT\*-\*K/BP RF/AC bypass tap  
offers all of the features of the FFT\*-\*  
K/SR tap, including surge resiliency. In  
addition, the FFT\*-\*K/BP offers the add-  
ed feature of feeder-line continuity when  
the faceplate is removed. This is achieved  
through the use of a make-before-break  
switch that is contained in the tap hous-  
ing. This feature allows the tap to be  
upgraded or replaced without interrupting  
service on the feeder.

For customers who own existing FFT taps  
without this feature, an external RF/AC  
bypass jumper (Model BTT-RF/AC) is  
available to perform this function. The  
jumper is installed only when the face-  
plate is being changed. The jumper is  
then removed and can be used again.

## UPGRADABLE TO POWER EXTRACTING

All FFT\*-\*K/\* taps are upgradable to  
power extracting, as required. The K-  
Series power extracting tap upgrades can  
be installed in all FFT\*-\*K/\* Series taps  
and maintain the same backward compati-  
bility as these taps. Power extracting taps  
are used for network powering of telepho-  
ny equipment.



# -T\*-\*K/ Series

## STANDARD Full Feature Taps

### FFT\*-\*K/ SERIES

Tap to Output  
Isolation Normal

| Model No. | 5-10MHz | 10-50MHz | 50-450MHz | 450-600MHz | 600-750MHz | 750-1000MHz |
|-----------|---------|----------|-----------|------------|------------|-------------|
| FFT2-4K   | -       | -        | -         | -          | -          | -           |
| FFT2-7K   | 15      | 20       | 25        | 25         | 20         | 20          |
| FFT2-10K  | 18      | 25       | 25        | 25         | 25         | 20          |
| FFT2-12K  | 20      | 25       | 25        | 25         | 25         | 25          |
| FFT2-14K  | 24      | 25       | 30        | 30         | 30         | 25          |
| FFT2-17K  | 27      | 35       | 35        | 35         | 30         | 30          |
| FFT2-20K  | 30      | 35       | 40        | 40         | 40         | 35          |
| FFT2-25K  | 30      | 37       | 40        | 40         | 40         | 35          |
| FFT2-26K  | 36      | 45       | 45        | 45         | 40         | 35          |
| FFT2-29K  | 39      | 45       | 45        | 45         | 40         | 35          |
| FFT2-32K  | 42      | 45       | 45        | 45         | 40         | 36          |
| FFT2-35K  | 45      | 45       | 45        | 45         | 45         | 38          |

| Model No.  | 5-10MHz | 10-50MHz | 50-450MHz | 450-600MHz | 600-750MHz | 750-1000MHz |
|------------|---------|----------|-----------|------------|------------|-------------|
| FFT4-K     | -       | -        | -         | -          | -          | -           |
| FFT4-7K    | -       | -        | -         | -          | -          | -           |
| FFT4-10K   | 20      | 20       | 25        | 25         | 25         | 25          |
| FFT4-14K   | 25      | 20       | 30        | 30         | 25         | 25          |
| FFT4-15.5K | 25      | 25       | 30        | 25         | 25         | 25          |
| FFT4-17K   | 27      | 27       | 30        | 30         | 30         | 25          |
| FFT4-20K   | 30      | 30       | 35        | 35         | 35         | 30          |
| FFT4-25K   | 33      | 35       | 40        | 40         | 40         | 35          |
| FFT4-26K   | 36      | 40       | 40        | 40         | 40         | 35          |
| FFT4-29K   | 39      | 40       | 45        | 45         | 45         | 40          |
| FFT4-32K   | 42      | 45       | 45        | 45         | 45         | 40          |
| FFT4-35K   | 45      | 45       | 45        | 45         | 45         | 40          |

| Model No. | 5-10MHz | 10-50MHz | 50-450MHz | 450-600MHz | 600-750MHz | 750-1000MHz |
|-----------|---------|----------|-----------|------------|------------|-------------|
| FFT8-K    | -       | -        | -         | -          | -          | -           |
| FFT8-10K  | -       | -        | -         | -          | -          | -           |
| FFT8-14K  | 20      | 25       | 25        | 25         | 25         | 25          |
| FFT8-17K  | 23      | 30       | 30        | 30         | 30         | 25          |
| FFT8-20K  | 30      | 30       | 35        | 35         | 35         | 30          |
| FFT8-25K  | 30      | 35       | 35        | 35         | 35         | 30          |
| FFT8-26K  | 38      | 40       | 40        | 40         | 40         | 35          |
| FFT8-29K  | 40      | 45       | 45        | 40         | 40         | 35          |
| FFT8-32K  | 40      | 45       | 45        | 40         | 40         | 35          |
| FFT8-35K  | 40      | 45       | 45        | 40         | 40         | 35          |

Specifications subject to change without notice.

NEXT LEVEL



# FT\*-K/\* Series

# Full Feature Taps

## FFT\*-K/\* SERIES

Tap Design Specifications 5-1000 MHz  
Insertion Loss (dB)  
MAXIMUM SPECIFICATION

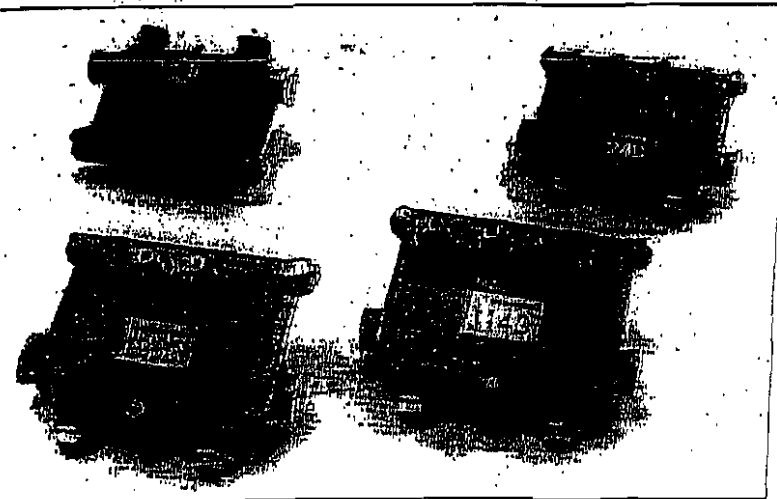
| section loss (dB) | Nom. Tap Value | 5 MHz | 10 MHz | 50 MHz | 100 MHz | 500 MHz | 750 MHz | 1000 MHz |
|-------------------|----------------|-------|--------|--------|---------|---------|---------|----------|
| FT2-4K/*          | 4.5            | -     | -      | -      | -       | -       | -       | -        |
| FT2-7K/*          | 7.5            | 3.6   | 3.5    | 3.5    | 4.1     | 4.4     | 4.5     | 5.0      |
| FT2-10K/*         | 10.5           | 2.0   | 1.5    | 1.5    | 2.0     | 2.0     | 2.4     | 3.5      |
| FT2-12K/*         | 12.0           | 1.6   | 1.3    | 1.2    | 1.7     | 1.8     | 2.1     | 2.8      |
| FT2-14K/*         | 14.0           | 1.4   | 1.1    | 1.1    | 1.5     | 1.5     | 1.8     | 2.9      |
| FT2-17K/*         | 17.0           | 1.2   | 1.1    | 1.0    | 1.3     | 1.4     | 1.7     | 2.2      |
| FT2-20K/*         | 20.0           | 0.9   | 0.7    | 0.7    | 1.1     | 1.3     | 1.5     | 1.8      |
| FT2-25K/*         | 23.0           | 0.6   | 0.5    | 0.5    | 1.0     | 1.1     | 1.4     | 2.0      |
| FT2-26K/*         | 26.0           | 0.6   | 0.5    | 0.5    | 1.0     | 1.1     | 1.4     | 2.0      |
| FT2-29K/*         | 29.0           | 0.6   | 0.5    | 0.5    | 1.0     | 1.1     | 1.4     | 2.0      |
| FT2-32K/*         | 32.0           | 0.6   | 0.5    | 0.5    | 1.0     | 1.1     | 1.4     | 2.0      |
| FT2-35K/*         | 35.0           | 0.6   | 0.5    | 0.5    | 1.0     | 1.1     | 1.4     | 2.0      |
| FT4-7K/*          | 6.8            | -     | -      | -      | -       | -       | -       | -        |
| FT4-10K/*         | 10.3           | 3.6   | 3.5    | 3.5    | 4.2     | 4.3     | 4.5     | 4.5      |
| FT4-14K/*         | 14.4           | 1.9   | 1.5    | 1.1    | 2.1     | 2.1     | 2.6     | 3.5      |
| FT4-15.5K/*       | 15.5           | 1.6   | 1.3    | 1.2    | 1.7     | 1.7     | 2.1     | 3.1      |
| FT4-17K/*         | 17.0           | 1.4   | 1.1    | 1.2    | 1.6     | 1.5     | 1.9     | 2.8      |
| FT4-20K/*         | 20.0           | 1.1   | 0.9    | 1.0    | 1.5     | 1.4     | 1.8     | 2.4      |
| FT4-23K/*         | 23.0           | 0.8   | 0.7    | 0.7    | 1.2     | 1.2     | 1.4     | 2.2      |
| FT4-26K/*         | 26.0           | 0.6   | 0.5    | 0.5    | 1.0     | 1.1     | 1.4     | 2.1      |
| FT4-29K/*         | 29.0           | 0.6   | 0.5    | 0.5    | 1.0     | 1.1     | 1.4     | 2.1      |
| FT4-32K/*         | 32.0           | 0.6   | 0.5    | 0.5    | 1.0     | 1.1     | 1.4     | 2.1      |
| FT4-35K/*         | 35.0           | 0.6   | 0.5    | 0.5    | 1.0     | 1.1     | 1.4     | 2.1      |
| FT8-10K/*         | 10.4           | -     | -      | -      | -       | -       | -       | -        |
| FT8-14K/*         | 14.2           | 4.2   | 3.6    | 3.5    | 4.3     | 4.3     | 4.6     | 5.3      |
| FT8-17K/*         | 17.8           | 2.1   | 2.0    | 1.8    | 2.3     | 2.5     | 2.9     | 3.8      |
| FT8-20K/*         | 20.0           | 1.3   | 1.2    | 1.0    | 1.5     | 1.7     | 2.1     | 2.6      |
| FT8-23K/*         | 22.5           | 1.3   | 1.1    | 1.0    | 1.4     | 1.4     | 1.7     | 2.4      |
| FT8-26K/*         | 26.1           | 0.9   | 0.7    | 0.6    | 0.9     | 1.1     | 1.4     | 2.2      |
| FT8-29K/*         | 29.2           | 0.6   | 0.5    | 0.5    | 0.9     | 1.1     | 1.4     | 2.2      |
| FT8-32K/*         | 32.2           | 0.6   | 0.5    | 0.5    | 0.9     | 1.1     | 1.4     | 2.2      |
| FT8-35K/*         | 35.0           | 0.6   | 0.5    | 0.5    | 0.9     | 1.1     | 1.4     | 2.2      |

specifications subject to change without notice

NEW LEVEL



# Conventional Multi-Taps



## 9000-C Series

The 9000-C series 1 GHz conventional multi-tap taps off part of its input RF signal but allows the rest of that signal to pass through. It divides the tapped-off signal into multiple outputs.

- Optional continuous AC and RF power passing circuits eliminate downstream service interruptions when face plates are removed.
- 90° rotating seizure mechanism makes installation easy.
- F-port capacitors eliminate hum modulation that can originate at the subscriber home.
- Environmental coating provides excellent corrosion resistance.
- Dual gaskets keep RF signals pure and protect the circuitry from extreme environments.

A multi-tap is a combination of an optional coupler and splitters designed to produce a specific level of signal loss, from the multi-tap's input to its tap ports. The 9000-C series 1 GHz multi-taps are available in two-way, four-way, and eight-way models, offering two, four, and eight tap ports respectively. We've created a compact tap which fits nicely into a 6-inch pedestal.

The 9000-C series multi-taps all are these standard features:

- 1 GHz bandwidth capacity,
- brass SC7E F-ports with drip lips and rubber boots,
- RFI and weather gaskets,
- network power capacity of 90 VAC, 0 to 60 Hz,
- strip gauges and heat-shrink ridges for easy installation,

- numbered ports for easier subscriber audits,
- 2.5 KV surge resistance meets ANSI/IEEE C62.41-1991 Class B, 2500 V surge and 12-amp current handling capability,
- interchangeable face plates, and
- face plates fit in 8000 series housings for easy upgrade to 1 GHz.

The aluminum die-cast housing is pressure tested to 10 psi and is coated with a protective finish, which provides excellent corrosion resistance. Rubber boots inside the brass SC7E F-ports help keep the 9000-C series multi-taps water-resistant. A single alloy at contact points eliminates the galvanic couple and corrosion that accompanies aluminum-to-brass

connections. So, by connecting the brass SC7E F-port to a brass F-connector, you can eliminate a weak link in your network.

All F-ports have a capacitor that blocks hum modulation that can originate in the subscriber home. This capacitor also provides additional protection from transients traveling on subscriber drop cables.

Order the 9000T-PWR-FI power bypass assembly option to prevent interruptions in power and RF service when face plates are removed. Also, order the 9000-USB-PBT for easy aerial to underground interconnections.



# Inventional Multi-Taps

## † Case Specifications\*

## 9800-C Eight-Way Series

|                           | 9812                                       | 9815  | 9818 | 9821  | 9824   | 9827   | 9830 | 9833   | 9836  | Units |
|---------------------------|--|-------|------|-------|--------|--------|------|--------|-------|-------|
| Re                        | 12.0                                       | 15.5  | 18.0 | 21.0  | 24.0   | 27.0   | 30.0 | 33.0   | 36.0  | dB    |
| th                        | 10-1000                                    |       |      |       |        |        |      |        |       |       |
| de                        | Gold                                       | White | Blue | Green | Purple | Yellow | Red  | Silver | Brown | MHz   |
| Loss (max.)               |  |       |      |       |        |        |      |        |       |       |
| 29 MHz                    | 1.7  | 2.0   | 1.5  | 2.5   | 2.5    | 2.5    | 2.5  | 2.5    | 2.5   | ± dB  |
| 599 MHz                   | 1.8  | 2.0   | 1.5  | 1.5   | 1.5    | 1.5    | 1.5  | 1.8    | 1.8   | ± dB  |
| >1000 MHz                 | 2.3  | 2.5   | 1.9  | 2.4   | 2.1    | 2.1    | 1.9  | 2.1    | 2.3   | ± dB  |
| Loss (max.)               |  |       |      |       |        |        |      |        |       |       |
| 29 MHz                    | —  | 3.8   | 1.9  | 1.2   | 1.0    | 0.8    | 0.5  | 0.5    | 0.5   | dB    |
| 599 MHz                   | —  | 3.5   | 1.5  | 1.0   | 0.9    | 0.7    | 0.4  | 0.4    | 0.4   | dB    |
| 749 MHz                   | —  | 3.5   | 1.6  | 1.0   | 0.8    | 0.7    | 0.4  | 0.4    | 0.4   | dB    |
| 899 MHz                   | —  | 4.0   | 1.9  | 1.2   | 0.9    | 0.8    | 0.6  | 0.6    | 0.6   | dB    |
| 1000 MHz                  | —  | 4.0   | 1.8  | 1.2   | 0.9    | 0.8    | 0.6  | 0.6    | 0.6   | dB    |
| 1100 MHz                  | —  | 4.1   | 2.0  | 1.3   | 1.0    | 0.8    | 0.6  | 0.6    | 0.6   | dB    |
| 1200 MHz                  | —  | 4.1   | 2.0  | 1.3   | 1.0    | 0.8    | 0.6  | 0.6    | 0.6   | dB    |
| 1300 MHz                  | —  | 4.2   | 2.1  | 1.4   | 1.0    | 0.8    | 0.6  | 0.6    | 0.6   | dB    |
| 1400 MHz                  | —  | 4.3   | 2.2  | 1.4   | 1.0    | 0.8    | 0.7  | 0.7    | 0.7   | dB    |
| 1500 MHz                  | —  | 4.4   | 2.2  | 1.4   | 1.0    | 0.8    | 0.7  | 0.7    | 0.7   | dB    |
| 1600 MHz                  | —  | 4.6   | 2.3  | 1.3   | 1.1    | 0.9    | 0.8  | 0.8    | 0.8   | dB    |
| 1700 MHz                  | —  | 4.7   | 2.4  | 1.4   | 1.1    | 1.0    | 0.9  | 0.9    | 0.9   | dB    |
| 1800 MHz                  | —  | 5.1   | 2.8  | 1.6   | 1.3    | 1.2    | 1.2  | 1.2    | 1.2   | dB    |
| 1900 MHz                  | —  | 5.3   | 3.2  | 1.8   | 1.6    | 1.3    | 1.4  | 1.4    | 1.4   | dB    |
| 2000 MHz                  | —  | 5.4   | 3.9  | 2.3   | 1.8    | 1.4    | 1.4  | 1.4    | 1.4   | dB    |
| Isolation (min.)          |  |       |      |       |        |        |      |        |       |       |
| 29 MHz                    | 0.35                                       | 0.35  | 0.35 | 0.35  | 0.35   | 0.35   | 0.35 | 0.35   | 0.35  | ± dB  |
| 599 MHz                   | —  | 21    | 24   | 27    | 30     | 34     | 34   | 36     | 38    | dB    |
| 749 MHz                   | —  | 27    | 30   | 32    | 34     | 38     | 40   | 42     | 44    | dB    |
| 899 MHz                   | —  | 25    | 28   | 30    | 33     | 36     | 38   | 40     | 41    | dB    |
| 1000 MHz                  | —  | 25    | 28   | 28    | 33     | 34     | 36   | 38     | 39    | dB    |
| Isolation (min.)          |  |       |      |       |        |        |      |        |       |       |
| 29 MHz                    | 20   | 20    | 20   | 20    | 20     | 20     | 20   | 20     | 20    | dB    |
| 599 MHz                   | 25   | 25    | 25   | 25    | 25     | 25     | 25   | 25     | 25    | dB    |
| 749 MHz                   | 23   | 23    | 23   | 23    | 23     | 23     | 23   | 23     | 23    | dB    |
| 1000 MHz                  | 20   | 20    | 20   | 20    | 20     | 20     | 20   | 20     | 20    | dB    |
| Isolation (min.)          |  |       |      |       |        |        |      |        |       |       |
| 29 MHz                    | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | 17    | dB    |
| 599 MHz                   | 18   | 18    | 18   | 18    | 18     | 18     | 18   | 18     | 18    | dB    |
| 899 MHz                   | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | 17    | dB    |
| 1000 MHz                  | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | 16    | dB    |
| Isolation (min.)          |  |       |      |       |        |        |      |        |       |       |
| 29 MHz                    | —  | 17    | 17   | 17    | 17     | 17     | 17   | 17     | 17    | dB    |
| 599 MHz                   | —  | 18    | 18   | 18    | 18     | 18     | 18   | 18     | 18    | dB    |
| 899 MHz                   | —  | 17    | 17   | 17    | 17     | 17     | 17   | 17     | 17    | dB    |
| 1000 MHz                  | —  | 16    | 16   | 16    | 16     | 16     | 16   | 16     | 16    | dB    |
| Isolation (min.)          |  |       |      |       |        |        |      |        |       |       |
| 29 MHz                    | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | 16    | dB    |
| 599 MHz                   | 18   | 18    | 18   | 18    | 18     | 18     | 18   | 18     | 18    | dB    |
| 1000 MHz                  | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | 16    | dB    |
| Isolation @ 8 amps (max.) |  |       |      |       |        |        |      |        |       |       |
| 29 MHz                    | —  | -64   | -64  | -64   | -64    | -64    | -64  | -64    | -64   | dB    |
| 599 MHz                   | —  | -70   | -70  | -70   | -70    | -70    | -70  | -70    | -70   | dB    |
| 749 MHz                   | —  | -64   | -64  | -64   | -64    | -64    | -64  | -64    | -64   | dB    |
| 1000 MHz                  | —  | -60   | -60  | -60   | -60    | -60    | -60  | -60    | -60   | dB    |
| Isolation                 | Exceeds FCC requirements                   |       |      |       |        |        |      |        |       |       |
| Isolation                 | 0  | 12    | 12   | 12    | 12     | 12     | 12   | 12     | 12    | amps  |
| Isolation                 |  |       |      |       |        |        |      |        |       |       |
| 29 MHz                    | 90   | 90    | 90   | 90    | 90     | 90     | 90   | 90     | 90    | VAC   |
| Isolation                 | ANSI/IEEE C62.41-1991, Class B, 2500 Volts |       |      |       |        |        |      |        |       |       |

Specifications are subject to change without notice.



# Conventional Multi-Taps

## Minimal Performance\*

## 9800-C Eight-Way Series

|                               | 9812    | 9815  | 9818 | 9821  | 9824   | 9827   | 9830 | 9833   | 9836  | Units |
|-------------------------------|---------|-------|------|-------|--------|--------|------|--------|-------|-------|
| Value                         | 12.0    | 15.5  | 18.0 | 21.0  | 24.0   | 27.0   | 30.0 | 33.0   | 36.0  | dB    |
| Bandwidth                     | 10-1000 |       |      |       |        |        |      |        |       | MHz   |
| Color Code                    | Gold    | White | Blue | Green | Purple | Yellow | Red  | Silver | Brown |       |
| Insertion Loss (Input/Output) |         |       |      |       |        |        |      |        |       |       |
| 10 MHz                        | —       | 3.5   | 1.4  | 1.1   | 0.9    | 0.7    | 0.3  | 0.3    | 0.3   | dB    |
| 30 MHz                        | —       | 3.4   | 1.3  | 0.9   | 0.7    | 0.6    | 0.3  | 0.3    | 0.3   | dB    |
| 54 MHz                        | —       | 3.4   | 1.3  | 0.9   | 0.7    | 0.5    | 0.3  | 0.3    | 0.3   | dB    |
| 112 MHz                       | —       | 3.8   | 1.7  | 1.0   | 0.8    | 0.7    | 0.4  | 0.5    | 0.4   | dB    |
| 150 MHz                       | —       | 3.8   | 1.7  | 1.0   | 0.8    | 0.7    | 0.4  | 0.5    | 0.4   | dB    |
| 185 MHz                       | —       | 3.9   | 1.8  | 1.0   | 0.8    | 0.7    | 0.4  | 0.5    | 0.4   | dB    |
| 222 MHz                       | —       | 3.9   | 1.8  | 1.1   | 0.8    | 0.7    | 0.4  | 0.5    | 0.4   | dB    |
| 330 MHz                       | —       | 4.0   | 1.9  | 1.1   | 0.8    | 0.7    | 0.5  | 0.5    | 0.5   | dB    |
| 400 MHz                       | —       | 4.1   | 2.0  | 1.1   | 0.8    | 0.7    | 0.5  | 0.5    | 0.5   | dB    |
| 450 MHz                       | —       | 4.1   | 2.0  | 1.1   | 0.8    | 0.7    | 0.5  | 0.5    | 0.5   | dB    |
| 550 MHz                       | —       | 4.2   | 2.0  | 1.1   | 0.8    | 0.7    | 0.5  | 0.5    | 0.5   | dB    |
| 600 MHz                       | —       | 4.5   | 2.2  | 1.2   | 0.9    | 0.8    | 0.7  | 0.7    | 0.6   | dB    |
| 750 MHz                       | —       | 4.8   | 2.6  | 1.3   | 1.0    | 0.9    | 0.8  | 0.8    | 0.8   | dB    |
| 882 MHz                       | —       | 5.0   | 2.9  | 1.5   | 1.2    | 1.1    | 1.0  | 1.0    | 1.0   | dB    |
| 1000 MHz                      | —       | 5.2   | 3.5  | 1.7   | 1.2    | 1.1    | 1.1  | 1.1    | 1.1   | dB    |
| Loss                          |         |       |      |       |        |        |      |        |       |       |
| 10-19 MHz                     | 10.7    | 13.6  | 17.8 | 19.4  | 22.3   | 25.5   | 28.8 | 32.2   | 34.5  | dB    |
| 20-899 MHz                    | 11.3    | 14.7  | 18.4 | 20.6  | 24.3   | 26.7   | 30.4 | 32.8   | 35.6  | dB    |
| 900-1000 MHz                  | 13.0    | 16.7  | 18.8 | 20.7  | 25.1   | 27.8   | 30.4 | 33.2   | 35.3  | dB    |

\* Specifications are subject to change without notice.



# ventional Multi-Taps

## Case Specifications\*

## 9400-C Four-Way Series

|                          | 940B                                       | 9411 | 9414  | 9417 | 9420  | 9423   | 9426   | 9429 | 9432   | 9435  | Units |
|--------------------------|--|------|-------|------|-------|--------|--------|------|--------|-------|-------|
|                          | 8.0  | 11.5 | 14.5  | 17.0 | 20.0  | 23.0   | 26.0   | 29.0 | 32.0   | 35.0  | dB    |
|                          | 10-1000                                    |      |       |      |       |        |        |      |        |       | MHz   |
|                          | Orange                                     | Gold | White | Blue | Green | Purple | Yellow | Red  | Silver | Brown |       |
| 1Hz                      | 1.5  | 1.5  | 1.5   | 2.1  | 1.8   | 2.2    | 2.5    | 2.5  | 2.3    | 1.9   | ± dB  |
| 1MHz                     | 1.5  | 2.0  | 1.5   | 1.5  | 1.5   | 1.5    | 1.5    | 1.5  | 1.5    | 2.0   | ± dB  |
| 100 MHz                  | 1.5  | 2.5  | 2.3   | 2.2  | 2.0   | 1.9    | 1.7    | 1.6  | 1.8    | 2.0   | ± dB  |
| (max)                    | —  | 3.6  | 1.8   | 1.2  | 1.0   | 0.8    | 0.5    | 0.4  | 0.4    | 0.4   | dB    |
|                          | —  | 3.5  | 1.5   | 0.9  | 0.8   | 0.7    | 0.4    | 0.3  | 0.3    | 0.3   | dB    |
|                          | —  | 3.5  | 1.5   | 0.9  | 0.8   | 0.7    | 0.4    | 0.3  | 0.3    | 0.3   | dB    |
| 2                        | —  | 4.0  | 1.8   | 1.0  | 1.0   | 0.8    | 0.6    | 0.6  | 0.6    | 0.6   | dB    |
| 2                        | —  | 4.1  | 1.8   | 1.0  | 1.0   | 0.8    | 0.6    | 0.6  | 0.6    | 0.6   | dB    |
| 2                        | —  | 4.1  | 1.8   | 1.0  | 1.0   | 0.8    | 0.6    | 0.6  | 0.6    | 0.6   | dB    |
| 2                        | —  | 4.2  | 1.8   | 1.0  | 1.0   | 0.8    | 0.6    | 0.6  | 0.6    | 0.6   | dB    |
| 2                        | —  | 4.3  | 1.9   | 1.0  | 1.0   | 0.9    | 0.6    | 0.6  | 0.6    | 0.6   | dB    |
| 2                        | —  | 4.3  | 2.0   | 1.1  | 1.1   | 0.9    | 0.7    | 0.7  | 0.7    | 0.7   | dB    |
| 2                        | —  | 4.3  | 2.0   | 1.1  | 1.1   | 0.9    | 0.7    | 0.7  | 0.7    | 0.7   | dB    |
| 2                        | —  | 4.4  | 2.1   | 1.2  | 1.1   | 0.9    | 0.7    | 0.7  | 0.7    | 0.7   | dB    |
| 2                        | —  | 4.7  | 2.4   | 1.4  | 1.1   | 1.0    | 0.8    | 0.8  | 0.8    | 0.8   | dB    |
| 2                        | —  | 5.1  | 2.8   | 1.6  | 1.4   | 1.3    | 1.1    | 1.1  | 1.1    | 1.1   | dB    |
| 2                        | —  | 5.2  | 3.3   | 1.8  | 1.6   | 1.5    | 1.2    | 1.2  | 1.2    | 1.2   | dB    |
| Hz                       | —  | 5.4  | 4.0   | 2.2  | 1.8   | 1.6    | 1.4    | 1.3  | 1.3    | 1.3   | dB    |
| 0 MHz                    | 0.35                                       | 0.35 | 0.35  | 0.35 | 0.35  | 0.35   | 0.35   | 0.35 | 0.35   | 0.35  | ± dB  |
| olation (min.)           | —  | 20   | 21    | 22   | 27    | 30     | 34     | 34   | 36     | 38    | dB    |
| Hz                       | —  | 24   | 27    | 30   | 33    | 36     | 38     | 40   | 42     | 44    | dB    |
| 1MHz                     | —  | 22   | 25    | 28   | 31    | 34     | 36     | 38   | 40     | 42    | dB    |
| 100 MHz                  | —  | 22   | 25    | 28   | 31    | 34     | 36     | 38   | 40     | 42    | dB    |
| olation (min.)           | 20   | 20   | 20    | 20   | 20    | 20     | 20     | 20   | 20     | 20    | dB    |
| 1Hz                      | 25   | 25   | 25    | 25   | 25    | 25     | 25     | 25   | 25     | 25    | dB    |
| 1MHz                     | 23   | 23   | 23    | 23   | 23    | 23     | 23     | 23   | 23     | 23    | dB    |
| 100 MHz                  | 20   | 20   | 20    | 20   | 20    | 20     | 20     | 20   | 20     | 20    | dB    |
| In (min.)                | 17   | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | 17    | dB    |
| 1MHz                     | 18   | 18   | 18    | 18   | 18    | 18     | 18     | 18   | 18     | 18    | dB    |
| 19 MHz                   | 17   | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | 17    | dB    |
| 100 MHz                  | 16   | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | 16    | dB    |
| Out (min.)               | —  | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | 17    | dB    |
| 1MHz                     | —  | 18   | 18    | 18   | 18    | 18     | 18     | 18   | 18     | 18    | dB    |
| 19 MHz                   | —  | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | 17    | dB    |
| 100 MHz                  | —  | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | 16    | dB    |
| TAP (min.)               | 16   | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | 16    | dB    |
| 1MHz                     | 18   | 18   | 18    | 18   | 18    | 18     | 18     | 18   | 18     | 18    | dB    |
| 100 MHz                  | 16   | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | 16    | dB    |
| ation @ 8 amps (max.)    | —  | -64  | -64   | -64  | -64   | -64    | -64    | -64  | -64    | -64   | dB    |
| 1MHz                     | —  | -70  | -70   | -70  | -70   | -70    | -70    | -70  | -70    | -70   | dB    |
| 19 MHz                   | —  | -64  | -64   | -64  | -64   | -64    | -64    | -64  | -64    | -64   | dB    |
| 100 MHz                  | —  | -60  | -60   | -60  | -60   | -60    | -60    | -60  | -60    | -60   | dB    |
| Exceeds FCC requirements |  |      |       |      |       |        |        |      |        |       |       |
| 1                        | 0  | 12   | 12    | 12   | 12    | 12     | 12     | 12   | 12     | 12    | amps  |
| 19                       | 90   | 90   | 90    | 90   | 90    | 90     | 90     | 90   | 90     | 90    | VAC   |
| 12                       | 90   | 90   | 90    | 90   | 90    | 90     | 90     | 90   | 90     | 90    | VAC   |
| 19                       | ANSI/IEEE C62.41-1991, Class B, 2500 Volts |      |       |      |       |        |        |      |        |       |       |

ations are subject to change without notice.



# Conventional Multi-Taps

## Minimal Performance\*

## 9400-C Four-Way Series

|                         | 9408    | 9411 | 9414  | 9417 | 9420  | 9423   | 9426   | 9429 | 9432   | 9435  | Units |
|-------------------------|---------|------|-------|------|-------|--------|--------|------|--------|-------|-------|
| Value                   | 8.0     | 11.5 | 14.5  | 17.0 | 20.0  | 23.0   | 26.0   | 29.0 | 32.0   | 35.0  | dB    |
| Bandwidth               | 10-1000 |      |       |      |       |        |        |      |        |       | MHz   |
| Color Code              | Orange  | Gold | White | Blue | Green | Purple | Yellow | Red  | Silver | Brown |       |
| Insertion Loss (in/out) |         |      |       |      |       |        |        |      |        |       |       |
| 10 MHz                  | —       | 3.5  | 1.3   | 1.0  | 0.9   | 0.6    | 0.3    | 0.3  | 0.3    | 0.3   | dB    |
| 30 MHz                  | —       | 3.4  | 1.3   | 0.7  | 0.7   | 0.6    | 0.3    | 0.3  | 0.3    | 0.3   | dB    |
| 54 MHz                  | —       | 3.4  | 1.3   | 0.7  | 0.7   | 0.6    | 0.3    | 0.3  | 0.3    | 0.3   | dB    |
| 112 MHz                 | —       | 3.8  | 1.7   | 0.9  | 0.8   | 0.7    | 0.5    | 0.5  | 0.5    | 0.5   | dB    |
| 160 MHz                 | —       | 3.8  | 1.7   | 0.9  | 0.8   | 0.7    | 0.5    | 0.5  | 0.5    | 0.5   | dB    |
| 186 MHz                 | —       | 3.9  | 1.8   | 0.9  | 0.9   | 0.7    | 0.5    | 0.5  | 0.5    | 0.5   | dB    |
| 222 MHz                 | —       | 3.9  | 1.8   | 0.9  | 0.9   | 0.7    | 0.5    | 0.5  | 0.5    | 0.5   | dB    |
| 330 MHz                 | —       | 4.0  | 1.8   | 0.9  | 0.9   | 0.7    | 0.5    | 0.5  | 0.5    | 0.5   | dB    |
| 400 MHz                 | —       | 4.1  | 1.8   | 1.0  | 0.9   | 0.8    | 0.5    | 0.6  | 0.6    | 0.5   | dB    |
| 450 MHz                 | —       | 4.1  | 1.8   | 1.0  | 0.9   | 0.8    | 0.5    | 0.6  | 0.6    | 0.5   | dB    |
| 550 MHz                 | —       | 4.2  | 1.9   | 1.0  | 0.9   | 0.8    | 0.6    | 0.6  | 0.6    | 0.6   | dB    |
| 600 MHz                 | —       | 4.4  | 2.1   | 1.1  | 0.9   | 0.8    | 0.6    | 0.6  | 0.7    | 0.6   | dB    |
| 750 MHz                 | —       | 4.7  | 2.6   | 1.3  | 1.1   | 1.0    | 0.8    | 0.8  | 0.8    | 0.8   | dB    |
| 862 MHz                 | —       | 4.8  | 3.0   | 1.6  | 1.3   | 1.1    | 1.1    | 1.0  | 1.0    | 1.0   | dB    |
| 1000 MHz                | —       | 4.9  | 3.6   | 1.8  | 1.3   | 1.1    | 1.1    | 1.0  | 1.0    | 1.0   | dB    |
| Loss                    |         |      |       |      |       |        |        |      |        |       |       |
| 10-19 MHz               | 6.9     | 10.3 | 14.5  | 15.8 | 19.4  | 22.1   | 24.9   | 27.9 | 31.0   | 34.2  | dB    |
| 20-999 MHz              | 7.2     | 10.7 | 14.7  | 17.6 | 21.0  | 23.6   | 26.3   | 29.2 | 32.2   | 35.3  | dB    |
| 900-1000 MHz            | 8.2     | 12.8 | 15.0  | 18.2 | 20.7  | 23.2   | 26.0   | 29.1 | 32.0   | 35.2  | dB    |

Specifications are subject to change without notice.



# Conventional Multi-Taps

## Case Specifications\*

## 9200-C Two-Way Series

|                           | 9204                                       | 9208   | 9211 | 9214  | 9217 | 9220  | 9223   | 9226   | 9229 | 9232   | Units |
|---------------------------|--|--------|------|-------|------|-------|--------|--------|------|--------|-------|
|                           | 4.0  | 8.5    | 11.0 | 14.0  | 17.0 | 20.0  | 23.0   | 26.0   | 29.0 | 32.0   | dB    |
|                           | 10-1000                                    |        |      |       |      |       |        |        |      |        | MHz   |
|                           | Black                                      | Orange | Gold | White | Blue | Green | Purple | Yellow | Red  | Silver |       |
| 9 MHz                     | 1.5  | 1.5    | 1.5  | 1.5   | 2.5  | 2.5   | 2.5    | 2.5    | 2.5  | 2.5    | ± dB  |
| 99 MHz                    | 1.5  | 2.0    | 1.5  | 1.5   | 1.5  | 1.6   | 1.5    | 1.5    | 2.0  | 1.8    | ± dB  |
| 1000 MHz                  | 2.0  | 2.0    | 1.5  | 2.0   | 1.6  | 1.7   | 1.7    | 2.0    | 2.0  | 2.0    | ± dB  |
| SSS (max.)                |  |        |      |       |      |       |        |        |      |        |       |
| 1 Hz                      | —  | 3.6    | 1.9  | 1.0   | 1.0  | 0.8   | 0.5    | 0.5    | 0.4  | 0.4    | dB    |
| 1 Hz                      | —  | 3.1    | 1.5  | 0.8   | 0.8  | 0.7   | 0.5    | 0.4    | 0.3  | 0.3    | dB    |
| 1 Hz                      | —  | 3.3    | 1.5  | 0.8   | 0.8  | 0.7   | 0.4    | 0.4    | 0.3  | 0.3    | dB    |
| 1 Hz                      | —  | 3.9    | 1.8  | 1.0   | 0.9  | 0.8   | 0.5    | 0.5    | 0.5  | 0.5    | dB    |
| 1 Hz                      | —  | 3.3    | 1.8  | 1.0   | 0.9  | 0.8   | 0.5    | 0.5    | 0.5  | 0.5    | dB    |
| 1 Hz                      | —  | 3.4    | 1.9  | 1.0   | 0.9  | 0.8   | 0.5    | 0.5    | 0.5  | 0.5    | dB    |
| 1 Hz                      | —  | 3.5    | 1.9  | 1.0   | 1.0  | 0.8   | 0.5    | 0.5    | 0.5  | 0.5    | dB    |
| 1 Hz                      | —  | 3.6    | 2.0  | 1.0   | 1.0  | 0.8   | 0.6    | 0.6    | 0.6  | 0.6    | dB    |
| 1 Hz                      | —  | 3.7    | 2.1  | 1.1   | 1.0  | 0.9   | 0.7    | 0.7    | 0.6  | 0.6    | dB    |
| 1 Hz                      | —  | 3.8    | 2.1  | 1.1   | 1.0  | 0.9   | 0.7    | 0.7    | 0.6  | 0.6    | dB    |
| 1 Hz                      | —  | 3.9    | 2.1  | 1.2   | 1.1  | 0.9   | 0.7    | 0.7    | 0.7  | 0.7    | dB    |
| 1 Hz                      | —  | 4.1    | 2.4  | 1.4   | 1.2  | 1.0   | 0.8    | 0.8    | 0.8  | 0.8    | dB    |
| 1 Hz                      | —  | 4.7    | 3.0  | 1.6   | 1.4  | 1.2   | 1.0    | 1.0    | 0.9  | 0.9    | dB    |
| 1 Hz                      | —  | 5.0    | 3.5  | 1.8   | 1.6  | 1.4   | 1.2    | 1.2    | 1.1  | 1.1    | dB    |
| 1 Hz                      | —  | 5.5    | 4.1  | 2.0   | 1.8  | 1.6   | 1.4    | 1.3    | 1.3  | 1.3    | dB    |
| SSS (max.)                |  |        |      |       |      |       |        |        |      |        |       |
| 1000 MHz                  | 0.35                                       | 0.35   | 0.35 | 0.35  | 0.35 | 0.35  | 0.35   | 0.35   | 0.35 | 0.35   | ± dB  |
| Isolation (min.)          |  |        |      |       |      |       |        |        |      |        |       |
| 1 Hz                      | —  | 20     | 20   | 20    | 24   | 28    | 30     | 34     | 34   | 36     | dB    |
| 1 MHz                     | —  | 22     | 24   | 26    | 30   | 33    | 36     | 38     | 40   | 42     | dB    |
| 899 MHz                   | —  | 20     | 22   | 25    | 28   | 31    | 34     | 36     | 38   | 40     | dB    |
| 1000 MHz                  | —  | 20     | 22   | 24    | 28   | 31    | 34     | 36     | 38   | 40     | dB    |
| Isolation (min.)          |  |        |      |       |      |       |        |        |      |        |       |
| 9 MHz                     | 20   | 20     | 20   | 20    | 20   | 20    | 20     | 20     | 20   | 20     | dB    |
| 49 MHz                    | 25   | 25     | 25   | 25    | 25   | 25    | 25     | 25     | 25   | 25     | dB    |
| 749 MHz                   | 23   | 23     | 23   | 23    | 23   | 23    | 23     | 23     | 23   | 23     | dB    |
| 1000 MHz                  | 20   | 20     | 20   | 20    | 20   | 20    | 20     | 20     | 20   | 20     | dB    |
| SS In (min.)              |  |        |      |       |      |       |        |        |      |        |       |
| 29 MHz                    | 17   | 17     | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | dB    |
| 599 MHz                   | 18   | 18     | 18   | 18    | 18   | 18    | 18     | 18     | 18   | 18     | dB    |
| 899 MHz                   | 17   | 17     | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | dB    |
| 1000 MHz                  | 16   | 16     | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | dB    |
| SS Out (min.)             |  |        |      |       |      |       |        |        |      |        |       |
| 29 MHz                    | —  | 17     | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | dB    |
| 599 MHz                   | —  | 18     | 18   | 18    | 18   | 18    | 18     | 18     | 18   | 18     | dB    |
| 899 MHz                   | —  | 17     | 17   | 17    | 17   | 17    | 17     | 17     | 17   | 17     | dB    |
| 1000 MHz                  | —  | 16     | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | dB    |
| SS Tap (min.)             |  |        |      |       |      |       |        |        |      |        |       |
| 29 MHz                    | 16   | 16     | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | dB    |
| 599 MHz                   | 18   | 18     | 18   | 18    | 18   | 18    | 18     | 18     | 18   | 18     | dB    |
| 1000 MHz                  | 16   | 16     | 16   | 16    | 16   | 16    | 16     | 16     | 16   | 16     | dB    |
| Isolation @ 8 amps (max.) |  |        |      |       |      |       |        |        |      |        |       |
| 49 MHz                    | —  | -64    | -64  | -64   | -64  | -64   | -64    | -64    | -64  | -64    | dB    |
| 599 MHz                   | —  | -70    | -70  | -70   | -70  | -70   | -70    | -70    | -70  | -70    | dB    |
| 749 MHz                   | —  | -64    | -64  | -64   | -64  | -64   | -64    | -64    | -64  | -64    | dB    |
| 1000 MHz                  | —  | -60    | -60  | -60   | -60  | -60   | -60    | -60    | -60  | -60    | dB    |
| Isolation                 | Exceeds FCC requirements                   |        |      |       |      |       |        |        |      |        |       |
| Rating                    | 0  | 12     | 12   | 12    | 12   | 12    | 12     | 12     | 12   | 12     | amps  |
| Rating                    |  |        |      |       |      |       |        |        |      |        |       |
| Rating                    |  |        |      |       |      |       |        |        |      |        |       |
| Rating                    | 90   | 90     | 90   | 90    | 90   | 90    | 90     | 90     | 90   | 90     | VAC   |
| Rating                    | ANSI/IEEE C62.41-1991, Class B, 2500 Volts |        |      |       |      |       |        |        |      |        |       |

Specifications are subject to change without notice.



# Conventional Multi-Taps

## Minimal Performance\*

## 9200-C Two-Way Series

|                         | 9204    | 9208   | 9211 | 9214  | 9217 | 9220  | 9223   | 9226   | 9229 | 9232   | Units |
|-------------------------|---------|--------|------|-------|------|-------|--------|--------|------|--------|-------|
| Tap Value               | 4.0     | 8.5    | 11.0 | 14.0  | 17.0 | 20.0  | 23.0   | 25.0   | 28.0 | 32.0   | dB    |
| Bandwidth               | 10-1000 |        |      |       |      |       |        |        |      |        | MHz   |
| Color Code              | Black   | Orange | Gold | White | Blue | Green | Purple | Yellow | Red  | Silver |       |
| Insertion Loss (in/out) |         |        |      |       |      |       |        |        |      |        |       |
| 10 MHz                  | —       | 2.8    | 1.3  | 1.0   | 0.9  | 0.7   | 0.8    | 0.3    | 0.3  | 0.3    | dB    |
| 30 MHz                  | —       | 2.8    | 1.3  | 0.8   | 0.7  | 0.6   | 0.3    | 0.3    | 0.3  | 0.3    | dB    |
| 54 MHz                  | —       | 2.8    | 1.3  | 0.7   | 0.7  | 0.6   | 0.3    | 0.3    | 0.3  | 0.3    | dB    |
| 112 MHz                 | —       | 3.2    | 1.7  | 0.9   | 0.8  | 0.7   | 0.5    | 0.5    | 0.4  | 0.4    | dB    |
| 150 MHz                 | —       | 3.2    | 1.7  | 0.9   | 0.8  | 0.7   | 0.5    | 0.5    | 0.4  | 0.4    | dB    |
| 186 MHz                 | —       | 3.2    | 1.7  | 0.9   | 0.8  | 0.7   | 0.5    | 0.5    | 0.4  | 0.4    | dB    |
| 222 MHz                 | —       | 3.3    | 1.7  | 0.9   | 0.9  | 0.8   | 0.5    | 0.5    | 0.5  | 0.5    | dB    |
| 330 MHz                 | —       | 3.4    | 1.8  | 0.9   | 0.9  | 0.8   | 0.5    | 0.5    | 0.5  | 0.5    | dB    |
| 400 MHz                 | —       | 3.4    | 1.9  | 1.0   | 0.9  | 0.8   | 0.6    | 0.6    | 0.5  | 0.5    | dB    |
| 450 MHz                 | —       | 3.4    | 1.9  | 1.0   | 0.9  | 0.8   | 0.6    | 0.6    | 0.5  | 0.5    | dB    |
| 550 MHz                 | —       | 3.5    | 1.9  | 1.0   | 0.9  | 0.8   | 0.6    | 0.6    | 0.5  | 0.6    | dB    |
| 600 MHz                 | —       | 3.8    | 2.1  | 1.1   | 1.0  | 0.9   | 0.6    | 0.6    | 0.6  | 0.6    | dB    |
| 750 MHz                 | —       | 4.3    | 2.5  | 1.2   | 1.2  | 1.0   | 0.8    | 0.8    | 0.7  | 0.8    | dB    |
| 862 MHz                 | —       | 4.5    | 2.8  | 1.4   | 1.3  | 1.1   | 0.9    | 0.9    | 0.9  | 1.0    | dB    |
| 1000 MHz                | —       | 4.8    | 3.5  | 1.6   | 1.3  | 1.1   | 1.0    | 1.0    | 1.0  | 1.1    | dB    |
| Return Loss             |         |        |      |       |      |       |        |        |      |        |       |
| 10-19 MHz               | 3.4     | 7.7    | 10.8 | 13.7  | 15.7 | 18.4  | 21.2   | 24.4   | 27.2 | 30.5   | dB    |
| 20-899 MHz              | 3.7     | 8.0    | 11.1 | 14.9  | 17.4 | 20.0  | 22.6   | 25.5   | 28.1 | 31.2   | dB    |
| 900-1000 MHz            | 5.2     | 9.6    | 11.0 | 15.2  | 17.0 | 20.0  | 22.2   | 26.5   | 29.1 | 32.8   | dB    |

\* Specifications are subject to change without notice.



# Conventional Multi-Taps

Applications (continued)

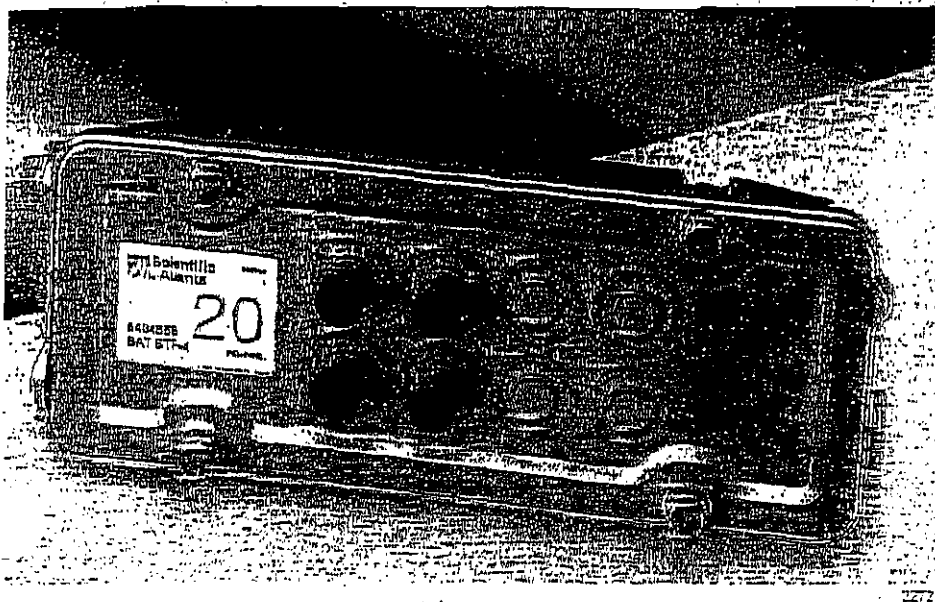
9000-C Series

|                               | Notes |   | Units        |
|-------------------------------|-------|---|--------------|
| Dimensions<br>(width x depth) | a     | 3.8 x 4.9 x 2.4<br>(9.6 x 12.5 x 6.1)                             | in.<br>(cm)  |
| Weight                        |       | 0.8<br>(0.37)   | lbs.<br>(kg) |
| Connector Type                | b     | Standard CATV KS entry connectors for cable up to 0.625" diameter |              |
| Length                        |       | 1.44<br>(3.7)   | in.<br>(cm)  |

Dimensions are subject to change without notice.

Dimension includes plug; depth dimension includes 1/2" F-ports and strand clamp/bolt in closed position.  
Cable (0.067 inch diameter) is recommended for best RF performance.





22721

Scientific Atlanta's Multimedia Stretch™ Tap is designed to support the delivery of advanced applications and services in a cost-effective platform. In addition to providing high-quality RF performance specifications that are essential to the reliable transmission of data and digital video services, the Multimedia Stretch Tap includes the capability to house other performance-enhancing options. As an example, we have developed and field-tested a version of the plug-in directional coupler that cost-effectively balances reverse path signals resulting in a marked performance improvement in this challenging portion of your networks. Nearing completion is an addressable version of the Multimedia Stretch Tap faceplate that introduces significant operating cost savings and new revenue-generation opportunities.

During system upgrades, operators are challenged to quickly install new equipment while minimizing the impact on customers. Splicing taps is a time-consuming process complicated by a widened gap in the feeder cabling. Scientific Atlanta's new

Multimedia Stretch Tap features a nine-inch housing that fills this gap — without using costly or performance-reducing extension connectors — providing operators with the fastest way to restore service and complete upgrade efforts.

## FEATURES

- Patent-pending Connection-Beam AC/RF bypass switch, providing interruption-free service to downstream customers during faceplate removal
- Faceplate-confined circuitry isolates and simplifies maintenance efforts
- Per-port power activation and protection, maximizing cost and customer service effectiveness
- Nine-inch housing, simplifying system upgrades
- Faceplate reversibility, eliminating costly re-splicing
- Plug-in directional coupler, enabling field modification without costly re-splicing
- Available in 2-, 4-, and 8-way versions
- Compatible with aerial or pedestal mounting



## Multimedia Stretch Taps

Multimedia Stretch Tap also provides an important level of flexibility by enabling reversibility. As operators add the fiber optic portion of their broadband networks, it is often a reversal of the feeder signal flow. By changing the orientation of the plug-in directional module, technicians can avoid time-consuming and expensive resplicing of the cable.

The plug-in directional coupler module further adds to the flexibility of the tap, and helps to control inventory expense. By removing and replacing the on-board device, operators are able to modify tap values — again without costly resplicing.

Most importantly, Scientific-Atlanta's Multimedia Stretch Tap is designed for the future. Our engineers have maximized available space in the device to allow for adding future advanced features.

## IFICATIONS

### Dimensions

B-way 3.5 in. H x 9 in. W x 3.5 in. D  
88.9 mm H x 228.6 mm W x 88.9 mm D

### Mechanical

Plastic housing with coating for environmental protection.  
Shielded and swaged extended F-ports for maximum resistance to moisture ingress.

Gold-plated brass F-ports to ensure a corrosion-resistant interface.

Modular housing design permits aerial, pedestal, or MDU mounting schemes.

Operating temperature from -40°C to +60°C.

Shielding minimum 100 dB.

Pressure tested at 10 psi for 60 seconds under water.

### Electrical Specifications

Continuous Current 12 amps - 60/90 V AC  
Limiting: 250 mA @ 60°C, per drop  
Resistance: 1 kV  
Impedance: 75 ohm  
Return Loss Modulation: 70 dB average @ 10 Amps  
65 dB average @ 12 Amps  
Insertion Loss Modulation: 65 dB average

### Standards Compliance

Scientific-Atlanta Multimedia Stretch Taps meet or exceed the following industry standards:

#### Mechanical

- SOTE IPS-SP-400 — F-port interface specification
- SOTE IPS-SP-420 — entry-port interface specification

#### Emissions

- FCC-Part 76, Subpart K
- EN 50083-2

#### Surge Resistance

- IEEE Category B1 C62.41-1991

#### Environmental

- ASTM G 53 — weathering specification
- ASTM B 117 — salt spray specification
- ASTM D 3170 — chip resistance specification

### AC/RF Bypass Switch Performance

|                              |                   |
|------------------------------|-------------------|
| System Open Circuit Time     | 0 ms              |
| Contact Resistance           | 10 mOhms max      |
| Current and Voltage Carrying | 12 A, 60/ 90 V AC |
| RF Frequency Range           | 5 to 1000 MHz     |
| Operating Temperature        | -40°C to +60°C    |

|                                     | 5 MHz               | 550 MHz            | 750 MHz            | 1 GHz              |
|-------------------------------------|---------------------|--------------------|--------------------|--------------------|
| Short Circuited Insertion Loss (dB) | 0.1 max<br>0.05 typ | 0.4 max<br>0.3 typ | 0.5 max<br>0.4 typ | 0.7 max<br>0.6 typ |
| Short Circuited Return Loss (dB)    | 40 max<br>53 typ    | 16 max<br>18 typ   | 16 max<br>17 typ   | 14 max<br>15 typ   |



# **Multimedia Stretch Tap** **2-Way - Revision B**

|                       |  | Tap Value |     |      |     |      |      |       |      |       |      |       |      |       |      |       |      |       |      |       |     |     |
|-----------------------|--|-----------|-----|------|-----|------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|-----|-----|
|                       |  | Frequency |     | 4 dB |     | 8 dB |      | 11 dB |      | 14 dB |      | 17 dB |      | 20 dB |      | 23 dB |      | 26 dB |      | 29 dB |     |     |
|                       |  | Typ       | Max | Typ  | Max | Typ  | Max  | Typ   | Max  | Typ   | Max  | Typ   | Max  | Typ   | Max  | Typ   | Max  | Typ   | Max  | Typ   | Max |     |
| Insertion Loss        |  | 5         | —   | —    | 3.4 | 4.4  | 2.0  | 2.0   | 1.1  | 1.1   | 0.9  | 1.0   | 0.7  | 0.9   | 0.7  | 0.9   | 0.7  | 0.9   | 0.7  | 0.9   | 0.7 | 0.9 |
|                       |  | 40        | —   | —    | 3.2 | 3.3  | 1.5  | 1.5   | 0.9  | 0.9   | 0.7  | 0.9   | 0.5  | 0.8   | 0.5  | 0.8   | 0.7  | 0.8   | 0.6  | 0.8   | 0.6 | 0.8 |
|                       |  | 50        | —   | —    | 3.2 | 3.3  | 1.5  | 1.5   | 0.9  | 0.9   | 0.7  | 0.9   | 0.5  | 0.8   | 0.5  | 0.8   | 0.7  | 0.8   | 0.6  | 0.8   | 0.6 | 0.8 |
|                       |  | 450       | —   | —    | 4.1 | 4.2  | 2.2  | 2.5   | 1.6  | 1.7   | 1.4  | 1.6   | 1.1  | 1.2   | 1.1  | 1.2   | 1.1  | 1.2   | 1.1  | 1.2   | 1.1 | 1.2 |
|                       |  | 550       | —   | —    | 3.9 | 4.0  | 2.4  | 2.5   | 1.6  | 1.7   | 1.4  | 1.6   | 1.2  | 1.3   | 1.2  | 1.3   | 1.1  | 1.2   | 1.1  | 1.2   | 1.1 | 1.2 |
|                       |  | 750       | —   | —    | 3.6 | 3.7  | 2.2  | 2.1   | 1.8  | 1.9   | 1.6  | 1.7   | 1.3  | 1.3   | 1.3  | 1.3   | 1.2  | 1.3   | 1.2  | 1.3   | 1.2 | 1.3 |
|                       |  | 860       | —   | —    | 4.1 | 4.2  | 2.5  | 2.2   | 2.0  | 2.1   | 1.8  | 1.8   | 1.4  | 1.4   | 1.4  | 1.4   | 1.3  | 1.4   | 1.3  | 1.4   | 1.3 | 1.4 |
|                       |  | 1000      | —   | —    | 4.5 | 4.6  | 2.7  | 2.2   | 2.1  | 2.2   | 1.9  | 1.9   | 1.5  | 1.5   | 1.5  | 1.5   | 1.4  | 1.5   | 1.4  | 1.5   | 1.4 | 1.5 |
| Loss                  |  | 5         | 4.5 |      | 8.0 |      | 11.5 |       | 13.5 |       | 17.0 |       | 19.5 |       | 22.5 |       | 25.5 |       | 29.0 |       |     |     |
|                       |  | 40        | 4.5 |      | 8.0 |      | 11.5 |       | 13.5 |       | 17.0 |       | 19.5 |       | 22.5 |       | 25.5 |       | 29.0 |       |     |     |
| (tolerance ±1 dB)     |  | 50        | 4.5 |      | 8.0 |      | 11.5 |       | 13.5 |       | 17.0 |       | 19.5 |       | 22.5 |       | 25.5 |       | 29.0 |       |     |     |
|                       |  | 450       | 4.5 |      | 8.0 |      | 11.5 |       | 13.5 |       | 17.0 |       | 19.5 |       | 22.5 |       | 25.5 |       | 29.0 |       |     |     |
|                       |  | 550       | 4.5 |      | 8.0 |      | 11.5 |       | 13.5 |       | 17.0 |       | 19.5 |       | 22.5 |       | 25.5 |       | 29.0 |       |     |     |
|                       |  | 750       | 4.5 |      | 8.5 |      | 11.5 |       | 13.5 |       | 17.0 |       | 19.5 |       | 22.5 |       | 25.5 |       | 29.0 |       |     |     |
|                       |  | 860       | 4.5 |      | 8.5 |      | 11.5 |       | 13.5 |       | 17.0 |       | 19.5 |       | 22.5 |       | 25.5 |       | 29.0 |       |     |     |
|                       |  | 1000      | 4.5 |      | 8.5 |      | 11.5 |       | 13.5 |       | 17.0 |       | 19.5 |       | 22.5 |       | 25.5 |       | 29.0 |       |     |     |
| Return Loss           |  | 5         | 16  |      | 16  |      | 13   |       | 13   |       | 15   |       | 15   |       | 15   |       | 15   |       | 15   |       |     |     |
| (min)                 |  | 10        | 16  |      | 16  |      | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       |     |     |
|                       |  | 50        | 16  |      | 16  |      | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       |     |     |
|                       |  | 750       | 14  |      | 16  |      | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       |     |     |
|                       |  | 860       | 16  |      | 16  |      | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       |     |     |
|                       |  | 1000      | 16  |      | 16  |      | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       | 16   |       |     |     |
| Port-to-Tap Isolation |  | 5         | 18  |      | 18  |      | 18   |       | 18   |       | 18   |       | 18   |       | 18   |       | 18   |       | 18   |       |     |     |
| (min)                 |  | 750       | 18  |      | 18  |      | 18   |       | 18   |       | 18   |       | 18   |       | 18   |       | 18   |       | 18   |       |     |     |
|                       |  | 1000      | 18  |      | 18  |      | 18   |       | 18   |       | 18   |       | 18   |       | 18   |       | 18   |       | 18   |       |     |     |
| Port-to-Tap Isolation |  | 5         | —   |      | 20  |      | 20   |       | 20   |       | 25   |       | 25   |       | 35   |       | 35   |       | 35   |       |     |     |
| (min)                 |  | 750       | —   |      | 20  |      | 20   |       | 25   |       | 25   |       | 25   |       | 35   |       | 35   |       | 35   |       |     |     |
|                       |  | 1000      | —   |      | 20  |      | 20   |       | 25   |       | 25   |       | 25   |       | 35   |       | 35   |       | 35   |       |     |     |

Unless otherwise noted, specifications are based on measurements made in accordance with NCTA practices for measurements on cable television systems and are referenced to 20°C. All ports terminated.

The Multimedia Stretch Tap consists of a housing and faceplate assemblies and a plug-in directional coupler module. Part numbers are listed below for complete taps as well as for the major components.

| Product                    | Model Number | Part Number | Description                                     |
|----------------------------|--------------|-------------|---|
| Complete Tap Assembly      | SAT ST2-4    | 562732      | Multimedia Stretch Tap 2-Way @ 4 dB             |
|                            | SAT ST2-8    | 562733      | Multimedia Stretch Tap 2-Way @ 8 dB             |
|                            | SAT ST2-11   | 562734      | Multimedia Stretch Tap 2-Way @ 11 dB            |
|                            | SAT ST2-14   | 562735      | Multimedia Stretch Tap 2-Way @ 14 dB            |
|                            | SAT ST2-17   | 562736      | Multimedia Stretch Tap 2-Way @ 17 dB            |
|                            | SAT ST2-20   | 562737      | Multimedia Stretch Tap 2-Way @ 20 dB            |
|                            | SAT ST2-23   | 562738      | Multimedia Stretch Tap 2-Way @ 23 dB            |
|                            | SAT ST2-26   | 562739      | Multimedia Stretch Tap 2-Way @ 26 dB            |
|                            | SAT ST2-29   | 562740      | Multimedia Stretch Tap 2-Way @ 29 dB            |
| Faceplate Assembly         | SAT STF-2    | 573542      | Multimedia Stretch Tap 2-Way Faceplate Assembly |
| Directional Coupler Module | SAT STM2-0   | 543487      | Multimedia Stretch Tap Module @ 0 dB            |
|                            | SAT STM2-4   | 562108      | Multimedia Stretch Tap Module @ 4 dB            |
|                            | SAT STM2-7   | 562109      | Multimedia Stretch Tap Module @ 7 dB            |
|                            | SAT STM2-10  | 562110      | Multimedia Stretch Tap Module @ 10 dB           |
|                            | SAT STM2-13  | 562111      | Multimedia Stretch Tap Module @ 13 dB           |
|                            | SAT STM2-16  | 562112      | Multimedia Stretch Tap Module @ 16 dB           |



# Multimedia Stretch Tap 4-Way - Revision B

|                              | Frequency | Tap Value |       |       |       |       |       |       |       |     |     |
|------------------------------|-----------|-----------|-------|-------|-------|-------|-------|-------|-------|-----|-----|
|                              |           | 8 dB      | 11 dB | 14 dB | 17 dB | 20 dB | 23 dB | 26 dB | 29 dB |     |     |
|                              |           | Typ       | Max   | Typ   | Max   | Typ   | Max   | Typ   | Max   | Typ | Max |
| Insertion Loss               | 5         | —         | 3.4   | 2.0   | 1.1   | 0.9   | 0.7   | 0.7   | 0.7   | 0.7 | 0.7 |
|                              | 40        | —         | 3.2   | 1.5   | 0.9   | 0.7   | 0.5   | 0.5   | 0.5   | 0.7 | 0.8 |
|                              | 50        | —         | 3.2   | 1.5   | 0.9   | 0.7   | 0.5   | 0.5   | 0.5   | 0.7 | 0.8 |
|                              | 450       | —         | 4.1   | 2.2   | 1.6   | 1.4   | 1.1   | 1.1   | 1.1   | 1.1 | 1.2 |
|                              | 550       | —         | 3.9   | 2.4   | 1.6   | 1.4   | 1.2   | 1.2   | 1.2   | 1.1 | 1.3 |
|                              | 750       | —         | 3.6   | 2.2   | 1.6   | 1.6   | 1.3   | 1.3   | 1.3   | 1.2 | 1.3 |
|                              | 860       | —         | 4.1   | 2.5   | 2.0   | 1.8   | 1.4   | 1.4   | 1.4   | 1.3 | 1.4 |
|                              | 1000      | —         | 4.5   | 2.7   | 2.1   | 1.9   | 1.5   | 1.5   | 1.5   | 1.4 | 1.5 |
| Loss                         | 5         | 8.0       | 11.0  | 15.0  | 17.0  | 20.0  | 22.5  | 25.5  | 28.5  |     |     |
| Tolerance (±1 dB)            | 40        | 8.0       | 11.0  | 15.0  | 17.0  | 20.0  | 22.5  | 25.5  | 28.5  |     |     |
|                              | 50        | 8.0       | 11.0  | 15.0  | 17.0  | 20.0  | 22.5  | 25.5  | 28.5  |     |     |
|                              | 450       | 8.0       | 11.0  | 15.0  | 17.0  | 20.0  | 22.5  | 25.5  | 28.5  |     |     |
|                              | 550       | 8.0       | 11.0  | 15.0  | 17.0  | 20.0  | 22.5  | 25.5  | 28.5  |     |     |
|                              | 750       | 8.0       | 11.5  | 15.0  | 17.0  | 20.0  | 22.5  | 25.5  | 28.5  |     |     |
|                              | 860       | 8.5       | 12.0  | 15.0  | 17.0  | 20.0  | 22.5  | 25.5  | 28.5  |     |     |
|                              | 1000      | 8.5       | 12.0  | 15.0  | 17.0  | 20.0  | 22.5  | 25.5  | 28.5  |     |     |
| Return Loss (min)            | 5         | 16        | 14    | 13    | 15    | 15    | 15    | 15    | 15    |     |     |
|                              | 10        | 14        | 16    | 15    | 16    | 16    | 16    | 16    | 16    |     |     |
|                              | 50        | 16        | 16    | 16    | 16    | 16    | 16    | 16    | 16    |     |     |
|                              | 750       | 15        | 16    | 16    | 16    | 16    | 16    | 16    | 16    |     |     |
|                              | 860       | 16        | 16    | 16    | 16    | 16    | 16    | 16    | 16    |     |     |
|                              | 1000      | 16        | 16    | 16    | 16    | 15    | 15    | 16    | 15    |     |     |
| Tap Isolation (min)          | 5         | 18        | 18    | 18    | 18    | 18    | 18    | 18    | 18    |     |     |
|                              | 750       | 18        | 18    | 18    | 18    | 18    | 18    | 18    | 18    |     |     |
|                              | 1000      | 18        | 18    | 18    | 18    | 18    | 18    | 18    | 18    |     |     |
| Port-to-Port Isolation (min) | 5         | —         | 25    | 25    | 25    | 25    | 35    | 35    | 35    |     |     |
|                              | 750       | —         | 25    | 25    | 25    | 25    | 35    | 35    | 35    |     |     |
|                              | 1000      | —         | 25    | 25    | 25    | 25    | 35    | 35    | 35    |     |     |

Otherwise noted, specifications are based on measurements made in accordance with NCTA practices for measurements in television systems and are referenced to 20°C. All ports terminated.

Multimedia Stretch Tap consists of a housing and faceplate assemblies and a plug-in directional coupler module. Numbers are listed below for complete taps as well as for the major components.

| Product                    | Model Number | Part Number | Description                                     |
|----------------------------|--------------|-------------|---|
| Complete Tap Assembly      | SAT ST4-8    | 562742      | Multimedia Stretch Tap 4-Way @ 8 dB             |
|                            | SAT ST4-11   | 562743      | Multimedia Stretch Tap 4-Way @ 11 dB            |
|                            | SAT ST4-14   | 562744      | Multimedia Stretch Tap 4-Way @ 14 dB            |
|                            | SAT ST4-17   | 562745      | Multimedia Stretch Tap 4-Way @ 17 dB            |
|                            | SAT ST4-20   | 562746      | Multimedia Stretch Tap 4-Way @ 20 dB            |
|                            | SAT ST4-23   | 562747      | Multimedia Stretch Tap 4-Way @ 23 dB            |
|                            | SAT ST4-26   | 562748      | Multimedia Stretch Tap 4-Way @ 26 dB            |
|                            | SAT ST4-29   | 562749      | Multimedia Stretch Tap 4-Way @ 29 dB            |
| Faceplate Assembly         | SAT STF-4    | 573543      | Multimedia Stretch Tap 4-Way Faceplate Assembly |
| Directional Coupler Module | SAT STM-0    | 543487      | Multimedia Stretch Tap Module @ 0 dB            |
|                            | SAT STM-4    | 562108      | Multimedia Stretch Tap Module @ 4 dB            |
|                            | SAT STM-7    | 562109      | Multimedia Stretch Tap Module @ 7 dB            |
|                            | SAT STM-10   | 562110      | Multimedia Stretch Tap Module @ 10 dB           |
|                            | SAT STM-13   | 562111      | Multimedia Stretch Tap Module @ 13 dB           |
|                            | SAT STM-16   | 562112      | Multimedia Stretch Tap Module @ 16 dB           |
|                            | SAT STM-19   | 562113      | Multimedia Stretch Tap Module @ 19 dB           |



# Multimedia Stretch Tap Eight-way – Revision B

|  | Frequency | Tap Value |      |       |      |       |      |       |      |       |      |       |      |       |     |
|--|-----------|-----------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|-----|
|  |           | 11 dB     |      | 14 dB |      | 17 dB |      | 20 dB |      | 23 dB |      | 26 dB |      | 29 dB |     |
|  |           | Typ       | Max  | Typ   | Max  | Typ   | Max  | Typ   | Max  | Typ   | Max  | Typ   | Max  | Typ   | Max |
| Insertion Loss<br>(dB)                         | 5         | —         | —    | 3.4   | 3.4  | 2.0   | 2.0  | 1.1   | 1.3  | 0.9   | 1.0  | 0.7   | 0.9  | 0.7   | 0.9 |
|  | 40        | —         | —    | 3.2   | 3.3  | 1.5   | 1.5  | 0.9   | 1.0  | 0.7   | 0.8  | 0.5   | 0.7  | 0.5   | 0.8 |
|  | 50        | —         | —    | 3.2   | 3.3  | 1.5   | 1.5  | 0.9   | 1.0  | 0.7   | 0.8  | 0.5   | 0.7  | 0.5   | 0.8 |
|  | 450       | —         | —    | 4.1   | 4.2  | 2.2   | 2.5  | 1.6   | 1.7  | 1.4   | 1.5  | 1.1   | 1.2  | 1.1   | 1.2 |
|  | 550       | —         | —    | 3.9   | 4.0  | 2.4   | 2.6  | 1.6   | 1.8  | 1.4   | 1.6  | 1.2   | 1.3  | 1.2   | 1.3 |
|  | 750       | —         | —    | 3.6   | 4.2  | 2.2   | 3.1  | 1.8   | 2.0  | 1.6   | 1.7  | 1.3   | 1.6  | 1.3   | 1.6 |
|  | 860       | —         | —    | 4.1   | 4.6  | 2.5   | 3.2  | 2.0   | 2.1  | 1.8   | 1.8  | 1.4   | 1.7  | 1.4   | 1.7 |
| 1000   | —         | —         | 4.5  | 4.9   | 2.7  | 3.2   | 2.1  | 2.2   | 1.9  | 2.0   | 1.5  | 1.7   | 1.5  | 1.7   |     |
| Tap Loss<br>(dB)<br>(max tolerance $\pm 1$ dB) | 5         | 11.5      |      | 14.5  |      | 17.0  |      | 20.0  |      | 23.0  |      | 26.0  |      | 29.0  |     |
|  | 40        | 11.5      |      | 14.0  |      | 17.5  |      | 20.0  |      | 23.0  |      | 26.0  |      | 29.0  |     |
|  | 50        | 11.5      |      | 14.0  |      | 17.5  |      | 20.0  |      | 23.0  |      | 26.0  |      | 29.0  |     |
|  | 450       | 11.5      |      | 14.0  |      | 17.5  |      | 20.0  |      | 23.0  |      | 26.0  |      | 29.0  |     |
|  | 550       | 11.5      |      | 14.0  |      | 17.5  |      | 20.0  |      | 23.0  |      | 26.0  |      | 29.0  |     |
|  | 750       | 11.5      |      | 15.5  |      | 18.0  |      | 20.0  |      | 23.0  |      | 26.0  |      | 29.0  |     |
|  | 860       | 12.0      |      | 16.0  |      | 18.5  |      | 20.5  |      | 23.0  |      | 26.0  |      | 29.0  |     |
| 1000   | 12.5      |           | 16.5 |       | 18.5 |       | 20.5 |       | 23.0 |       | 26.0 |       | 29.0 |       |     |
| Return Loss<br>(dB, min)                       | 5         | 15        |      | 15    |      | 13    |      | 14    |      | 15    |      | 14    |      | 14    |     |
|  | 10        | 14        |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |     |
|  | 50        | 16        |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |     |
|  | 750       | 16        |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |     |
|  | 860       | 16        |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |     |
|  | 1000      | 16        |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |      | 16    |     |
| Tap-to-Tap Isolation<br>(dB, min)              | 5         | 18        |      | 18    |      | 18    |      | 18    |      | 18    |      | 18    |      | 18    |     |
|  | 750       | 18        |      | 18    |      | 18    |      | 18    |      | 18    |      | 18    |      | 18    |     |
|  | 1000      | 18        |      | 18    |      | 18    |      | 18    |      | 18    |      | 18    |      | 18    |     |
| Out-to-Tap Isolation<br>(dB, min)              | 5         | —         |      | 25    |      | 25    |      | 25    |      | 30    |      | 35    |      | 35    |     |
|  | 750       | —         |      | 25    |      | 25    |      | 25    |      | 30    |      | 35    |      | 35    |     |
|  | 1000      | —         |      | 25    |      | 25    |      | 25    |      | 30    |      | 35    |      | 35    |     |

Unless otherwise noted, specifications are based on measurements made in accordance with NCTA practices for measurements on cable television systems and are referenced to 20°C. All ports terminated.

The Multimedia Stretch Tap consists of a housing and faceplate assemblies and a plug-in directional coupler module. Part numbers are listed below for complete taps as well as for the major components.

| Product                    | Model Number | Part Number | Description                                     |
|----------------------------|--------------|-------------|---|
| Complete Tap Assembly      | SAT STB-11   | 562751      | Multimedia Stretch Tap 8-Way @ 11 dB            |
|                            | SAT STB-14   | 562752      | Multimedia Stretch Tap 8-Way @ 14 dB            |
|                            | SAT STB-17   | 562753      | Multimedia Stretch Tap 8-Way @ 17 dB            |
|                            | SAT STB-20   | 562754      | Multimedia Stretch Tap 8-Way @ 20 dB            |
|                            | SAT STB-23   | 562755      | Multimedia Stretch Tap 8-Way @ 23 dB            |
|                            | SAT STB-26   | 562756      | Multimedia Stretch Tap 8-Way @ 26 dB            |
|                            | SAT STB-29   | 562757      | Multimedia Stretch Tap 8-Way @ 29 dB            |
| Faceplate Assembly         | SAT STF-8    | 573544      | Multimedia Stretch Tap 8-Way Faceplate Assembly |
| Directional Coupler Module | SAT STM-0    | 543487      | Multimedia Stretch Tap Module @ 0 dB            |
|                            | SAT STM-4    | 562108      | Multimedia Stretch Tap Module @ 4 dB            |
|                            | SAT STM-7    | 562109      | Multimedia Stretch Tap Module @ 7 dB            |
|                            | SAT STM-10   | 562110      | Multimedia Stretch Tap Module @ 10 dB           |
|                            | SAT STM-13   | 562111      | Multimedia Stretch Tap Module @ 13 dB           |
|                            | SAT STM-16   | 562112      | Multimedia Stretch Tap Module @ 16 dB           |
|                            | SAT STM-19   | 562113      | Multimedia Stretch Tap Module @ 19 dB           |





22024

Today's advanced broadband networks are being built to provide a wide variety of voice, video, and data services. Hybrid fiber coax (HFC) continues to be the transmission media of choice to provide integrated multimedia services to the home. The HFC network must now be capable of bringing AC power to the subscriber residence to support critical customer premise equipment demands. Scientific Atlanta's new family of 1 GHz Multimedia Taps and Passives have been designed to provide the higher current, power passing capability required for telephony and other interactive multimedia services.

Our unique two-step approach allows the broadband operator to deploy Multimedia Taps throughout the network during rebuilds or upgrades. These Multimedia Taps are then upgradeable to power passing

capability with the simple addition of our patent-pending Power Distribution Unit (PDU). Incremental expenses are matched with new revenues because power passing tap upgrades are performed only at locations where a revenue generating telephony subscriber is located.

## FEATURES

- Patent-pending AC/RF bypass switch to provide uninterrupted downstream-subscriber service
- 12 amp through current rating to support network powered telephony
- Economical two-step upgrade to power passing—matches incremental expenses with new revenues
- AC Blocking capacitors on each port to minimize RF Signal distortions
- Surge-resistant™ circuitry (SRC) for maximum reliability
- 2, 4, 8-way capability for maximum design flexibility
- Housing backwards compatibility supports economical faceplate upgrades



Scientific-Atlanta's Multimedia taps are rated for the 12 through current necessary to support network centering of telephony. Also standard is a unique patented AC/RF bypass switch that insures uninterrupted service to downstream subscribers when the faceplate is removed for servicing or FDU installation. Additionally, Multimedia Taps utilize F-port blocking capacitors and innovative AC bypass coil design to minimize AC degradation of RF signals.

Backward compatibility saves you money and protects your investment in Scientific-Atlanta products. Any existing Scientific-Atlanta tap may be upgraded to power passing capability with only a faceplate change and the addition of a FDU.

## IFICATIONS

### ensions

|            |  |
|------------|--|
| ay / 4-way | 3.6 in. H x 3.6 in. W x 3 in. D<br>91.44 mm H x 91.44 mm W x 76.2 mm D     |
| ay         | 4.25 in. H x 5.25 in. W x 3 in. D<br>107.95 mm H x 133.35 mm W x 76.2 mm D |

### anical

60T housing with powder coating for superior environmental protection.  
 Soldered and swaged extended F-ports for maximum resistance to moisture ingress.  
 Plated brass F-ports to ensure a corrosion-resistant drop-in face.  
 Component covers for additional protection of faceplate during maintenance.  
 Multiple housing design permits aerial, pedestal, or MDU mounting schemes.  
 Operating temperature from -40° C to +60° C.  
 Shielding minimum -100 dB.  
 Pressure test at 10 psi for 60 seconds under water.

## Standards Compliance

Scientific-Atlanta Multimedia Taps meet or exceed the following industry standards:

### Bellcore

- TR - NWT-1089 Level 1
- TA - NWT-001503 Section 4.3

### SCTE

- F-port interface specification IPS-SP-400

### Underwriters Laboratories

- Standard 1459

### NEC

- Class 3 circuits

### IEEE

- Category B3/B2 C62.41-1991

### IEC

- Standard 1000-4-5 (formerly BD1-5/D)
- Standard 65

### CENELEC

- Standards EN60065, EN50083-1

Specifications and product availability are subject to change without notice.

## AC/RF Bypass Switch Performance

|                              |                  |
|------------------------------|------------------|
| System Open Circuit Time     | 0 mS             |
| Contact Resistance           | 10 mOhms Max.    |
| Current and Voltage Carrying | 10 A, 90 V AC    |
| RF Frequency Range           | 5 to 1000 MHz    |
| Insertion Loss               | See below        |
| Return Loss                  | See below        |
| Operating Temperature        | -40° C to +60° C |

|                                     | 5 MHz                  | 550 MHz               | 750 MHz               | 1 GHz                 |
|-------------------------------------|------------------------|-----------------------|-----------------------|-----------------------|
| Short Circuited Insertion Loss (dB) | 0.05 Max.<br>0.23 Typ. | 0.2 Max.<br>0.14 Typ. | 0.4 Max.<br>0.17 Typ. | 0.4 Max.<br>0.12 Typ. |
| Short Circuited Return Loss (dB)    | 40 Max.<br>52.8 Typ.   | 15 Max.<br>17 Typ.    | 15 Max.<br>17 Typ.    | 20 Max.<br>21 Typ.    |



**Media Taps**  
**2-Way**  
**Revision E**

|                                    | Tap Value | 4   |      | 8   |      | 11  |      | 14  |      | 17   |      | 20   |      | 23   |      | 26   |      | 29   |      |
|------------------------------------|-----------|-----|------|-----|------|-----|------|-----|------|------|------|------|------|------|------|------|------|------|------|
|                                    |           | Max | Typ  | Max | Typ  | Max | Typ  | Max | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  |
| Insertion Loss<br>(In-Out)<br>(dB) | Frequency |     |      |     |      |     |      |     |      |      |      |      |      |      |      |      |      |      |      |
|                                    | 5-10      | -   | -    | 3.2 | 3.0  | 1.9 | 1.8  | 1.3 | 1.0  | 1.1  | 0.8  | 0.8  | 0.6  | 0.8  | 0.5  | 0.8  | 0.5  | 0.8  | 0.5  |
|                                    | 11-300    | -   | -    | 3.0 | 2.7  | 1.8 | 1.7  | 1.3 | 1.1  | 1.1  | 0.9  | 1.0  | 0.7  | 1.0  | 0.7  | 1.0  | 0.7  | 1.0  | 0.7  |
|                                    | 301-400   | -   | -    | 3.6 | 3.0  | 2.5 | 1.9  | 1.8 | 1.3  | 1.6  | 1.1  | 1.4  | 0.8  | 1.4  | 0.8  | 1.4  | 0.8  | 1.4  | 0.8  |
|                                    | 401-450   | -   | -    | 3.5 | 3.0  | 2.5 | 2.1  | 1.8 | 1.4  | 1.6  | 1.1  | 1.4  | 0.9  | 1.4  | 0.9  | 1.4  | 0.9  | 1.4  | 0.9  |
|                                    | 451-600   | -   | -    | 3.6 | 3.0  | 2.6 | 2.3  | 1.8 | 1.7  | 1.6  | 1.2  | 1.4  | 1.1  | 1.4  | 1.1  | 1.4  | 1.1  | 1.4  | 1.1  |
|                                    | 601-750   | -   | -    | 4.1 | 3.6  | 2.8 | 2.6  | 2.0 | 1.8  | 1.7  | 1.3  | 1.4  | 1.1  | 1.4  | 1.1  | 1.4  | 1.1  | 1.4  | 1.1  |
|                                    | 751-900   | -   | -    | 4.0 | 3.7  | 3.3 | 2.9  | 2.2 | 2.0  | 1.9  | 1.5  | 1.7  | 1.4  | 1.7  | 1.4  | 1.7  | 1.4  | 1.7  | 1.4  |
|                                    | 901-1000  | -   | -    | 4.5 | 4.0  | 3.4 | 3.1  | 2.4 | 2.2  | 2.0  | 1.8  | 1.9  | 1.6  | 1.9  | 1.6  | 1.9  | 1.6  | 1.9  | 1.6  |
| Tap Loss<br>(+/- 1.5 dB)           | 5-10      | 4   | 4    | 8.5 | 8    | 11  | 11   | 14  | 14   | 16.5 | 17   | 19.5 | 20   | 22.5 | 23   | 25.5 | 26   | 28.5 | 29   |
|                                    | 11-1000   | 4   | 4    | 8.5 | 8    | 11  | 11   | 14  | 14   | 17   | 17   | 20   | 20   | 23   | 23   | 26   | 26   | 29   | 29   |
| Insertion Loss<br>(+/- dB)         | 10-1000   | 0.5 | 0.35 | 0.5 | 0.35 | 0.5 | 0.35 | 0.5 | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 |
| Isolation<br>(Tap-Tap)<br>(dB)     | 5-10      | 20  | 23   | 20  | 25   | 20  | 23   | 20  | 23   | 20   | 23   | 20   | 23   | 20   | 23   | 20   | 23   | 20   | 23   |
|                                    | 11-750    | 22  | 25   | 20  | 25   | 22  | 25   | 22  | 25   | 22   | 25   | 22   | 25   | 22   | 25   | 22   | 25   | 22   | 25   |
|                                    | 751-1000  | 20  | 22   | 20  | 25   | 20  | 22   | 20  | 22   | 20   | 22   | 20   | 22   | 20   | 22   | 20   | 22   | 20   | 22   |
| Isolation<br>(Out-Tap)<br>(dB)     | 5-10      | -   | -    | 19  | 22   | 19  | 22   | 21  | 24   | 23   | 25   | 25   | 28   | 27   | 30   | 27   | 30   | 27   | 30   |
|                                    | 11-600    | -   | -    | 25  | 27   | 25  | 27   | 26  | 30   | 30   | 32   | 32   | 34   | 34   | 36   | 34   | 36   | 34   | 36   |
|                                    | 601-750   | -   | -    | 23  | 25   | 23  | 25   | 24  | 28   | 28   | 30   | 29   | 31   | 32   | 34   | 32   | 34   | 32   | 34   |
|                                    | 751-900   | -   | -    | 21  | 23   | 21  | 23   | 23  | 26   | 26   | 28   | 28   | 30   | 30   | 32   | 30   | 32   | 30   | 32   |
|                                    | 901-1000  | -   | -    | 20  | 24   | 20  | 24   | 21  | 24   | 24   | 26   | 26   | 28   | 28   | 30   | 28   | 30   | 28   | 30   |

Frequency Response 5 - 1000 MHz  
 Power Passing 12 Amps, 60-90 V AC  
 Impedance 75 Ohms

Tap Return Loss 16 dB max.  
 5 - 1000 MHz 18 dB typ.

Intermodulation 70 dB avg. across passband  
 @ 10 amps

In/Out Return Loss 18 dB max.  
 5 - 1000 MHz 22 dB typ.

**NOTE:** Insertion Loss specifications do not include Power Distribution Unit (PDU) contribution.

| Order Number | Part Number | Description              |
|--------------|-------------|--------------------------|
| AT MM 2-4    | 541741      | Multimedia-2 Way @ 4 dB  |
| AT MM 2-8    | 541742      | Multimedia-2 Way @ 8 dB  |
| AT MM 2-11   | 541743      | Multimedia-2 Way @ 11 dB |
| AT MM 2-14   | 541744      | Multimedia-2 Way @ 14 dB |
| AT MM 2-17   | 541745      | Multimedia-2 Way @ 17 dB |
| AT MM 2-20   | 541746      | Multimedia-2 Way @ 20 dB |
| AT MM 2-23   | 541747      | Multimedia-2 Way @ 23 dB |
| AT MM 2-26   | 541748      | Multimedia-2 Way @ 26 dB |
| AT MM 2-29   | 541749      | Multimedia-2 Way @ 29 dB |



Taps

1 11

|          | Tap Value | 8   |      | 11  |      | 14   |      | 17   |      | 20   |      | 23   |      | 26   |      | 29   |      |
|----------|-----------|-----|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|
|          |           | Max | Typ  | Max | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  |
| OSS<br>) | Frequency |     |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |
|          | 5-10      | -   | -    | 3.2 | 3.0  | 2.1  | 1.6  | 1.4  | 1.0  | 1.1  | 0.6  | 0.9  | 0.4  | 0.9  | 0.4  | 0.9  | 0.4  |
|          | 11-300    | -   | -    | 3.0 | 2.8  | 2.1  | 1.7  | 1.4  | 1.1  | 1.1  | 0.9  | 0.9  | 0.7  | 0.9  | 0.7  | 0.9  | 0.7  |
|          | 301-400   | -   | -    | 3.2 | 3.0  | 2.4  | 1.9  | 1.8  | 1.3  | 1.7  | 1.0  | 1.4  | 0.8  | 1.4  | 0.8  | 1.4  | 0.8  |
|          | 401-450   | -   | -    | 3.8 | 3.3  | 2.5  | 2.0  | 1.9  | 1.4  | 1.7  | 1.1  | 1.4  | 0.8  | 1.4  | 0.8  | 1.4  | 0.8  |
|          | 451-600   | -   | -    | 3.8 | 3.5  | 2.5  | 2.2  | 1.9  | 1.5  | 1.7  | 1.1  | 1.4  | 0.9  | 1.4  | 0.9  | 1.4  | 0.9  |
|          | 601-750   | -   | -    | 4.3 | 4.1  | 2.8  | 2.3  | 2.0  | 1.7  | 1.7  | 1.2  | 1.4  | 1.0  | 1.4  | 1.0  | 1.4  | 1.0  |
|          | 751-900   | -   | -    | 4.8 | 4.6  | 3.0  | 2.5  | 2.3  | 1.9  | 1.7  | 1.4  | 1.7  | 1.3  | 1.7  | 1.3  | 1.7  | 1.3  |
|          | 901-1000  | -   | -    | 5.1 | 4.9  | 3.3  | 2.9  | 2.5  | 2.2  | 2.2  | 1.6  | 2.0  | 1.5  | 2.0  | 1.5  | 2.0  | 1.5  |
| S<br>(B) | 5-10      | 8   | 8    | 12  | 11.5 | 14.5 | 14   | 16.5 | 17   | 18.5 | 20   | 22.5 | 23   | 25.5 | 26   | 28.5 | 29   |
|          | 11-1000   | 8   | 8    | 12  | 11.5 | 14.5 | 14   | 17   | 17   | 20   | 20   | 23   | 23   | 26   | 26   | 29   | 29   |
| L (dB)   |           | 0.5 | 0.35 | 0.5 | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 |
| n<br>p)  | 5-10      | 20  | 23   | 20  | 23   | 20   | 23   | 20   | 23   | 20   | 23   | 20   | 23   | 20   | 23   | 20   | 23   |
|          | 11-750    | 20  | 26   | 19  | 26   | 20   | 26   | 20   | 26   | 20   | 26   | 20   | 26   | 20   | 26   | 20   | 26   |
|          | 751-1000  | 20  | 27   | 19  | 27   | 20   | 27   | 20   | 27   | 20   | 27   | 20   | 27   | 20   | 27   | 20   | 27   |
| in       | 5-10      | -   | -    | 20  | 23   | 21   | 24   | 23   | 25   | 25   | 30   | 27   | 32   | 27   | 32   | 27   | 32   |
|          | 11-600    | -   | -    | 25  | 28   | 28   | 28   | 30   | 35   | 29   | 32   | 33   | 35   | 33   | 35   | 33   | 35   |
|          | 601-750   | -   | -    | 23  | 26   | 26   | 30   | 28   | 30   | 27   | 33   | 31   | 33   | 31   | 33   | 31   | 33   |
|          | 751-900   | -   | -    | 21  | 23   | 24   | 28   | 25   | 27   | 25   | 30   | 27   | 30   | 27   | 30   | 27   | 30   |
|          | 901-1000  | -   | -    | 20  | 24   | 22   | 26   | 23   | 25   | 23   | 28   | 25   | 28   | 25   | 28   | 25   | 28   |

cy Response 5 - 1000 MHz  
 assing 12 Amps, 60-90 V AC  
 108 75 Ohms  
 Tap Return Loss 16 dB max.  
 5 - 1000 MHz 18 dB typ.

odulation 70 dB avg. across passband  
 @ 10 amps  
 In/Out Return Loss 18 dB max.  
 5 - 1000 MHz 22 dB typ.

Insertion Loss specifications do not include Power Distribution Unit (PDU) contribution.

| Number  | Part Number | Description              |
|---------|-------------|--------------------------|
| VI 4-8  | 541751      | Multimedia-4 Way @ 8 dB  |
| VI 4-11 | 541752      | Multimedia-4 Way @ 11 dB |
| VI 4-14 | 541753      | Multimedia-4 Way @ 14 dB |
| M 4-17  | 541754      | Multimedia-4 Way @ 17 dB |
| 4-20    | 541755      | Multimedia-4 Way @ 20 dB |
| 4-23    | 541756      | Multimedia-4 Way @ 23 dB |
| M 4-26  | 541757      | Multimedia-4 Way @ 26 dB |
| M 4-29  | 541758      | Multimedia-4 Way @ 29 dB |



**Multimedia Taps**  
**8-Way**  
**Revision E**

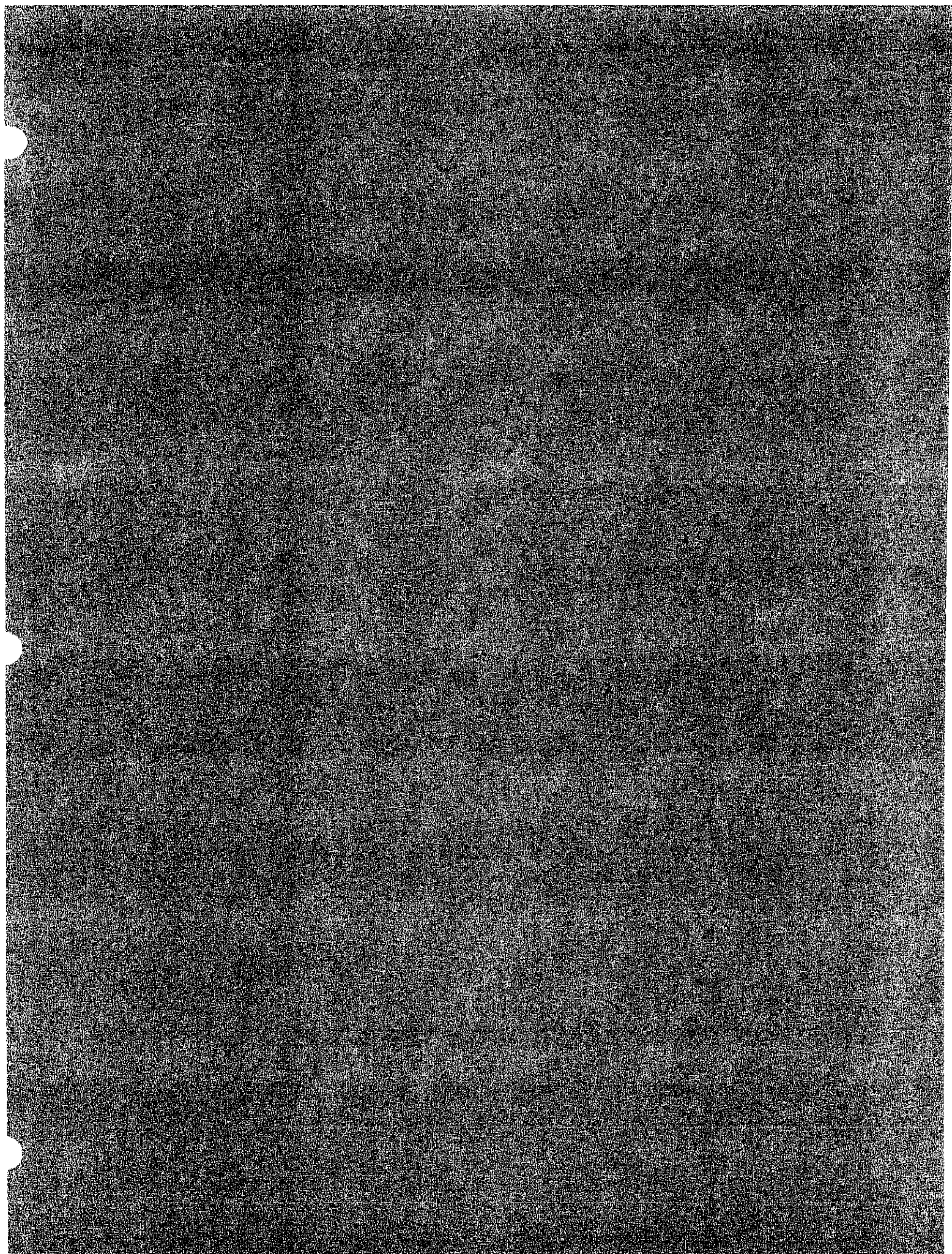
|                                    | Tap Value | 11   |      | 14   |      | 17   |      | 20   |      | 23   |      | 26   |      | 29  |      |
|------------------------------------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|
|                                    |           | Max  | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  | Max  | Typ  | Max | Typ  |
| Insertion Loss<br>(In-Out)<br>(dB) | Frequency |      |      |      |      |      |      |      |      |      |      |      |      |     |      |
|                                    | 5-10      | -    | -    | 3.7  | 3.0  | 2.2  | 1.7  | 1.3  | 1.0  | 0.9  | 0.6  | 0.9  | 0.6  | 0.9 | 0.6  |
|                                    | 11-300    | -    | -    | 3.9  | 2.8  | 2.0  | 1.6  | 1.4  | 1.0  | 1.1  | 0.8  | 1.1  | 0.8  | 1.1 | 0.8  |
|                                    | 301-400   | -    | -    | 3.9  | 3.1  | 2.5  | 1.8  | 1.7  | 1.2  | 1.5  | 0.9  | 1.5  | 0.9  | 1.5 | 0.9  |
|                                    | 401-450   | -    | -    | 4.1  | 3.3  | 2.6  | 2.0  | 1.9  | 1.4  | 1.6  | 1.1  | 1.6  | 1.1  | 1.6 | 1.1  |
|                                    | 451-600   | -    | -    | 4.6  | 3.5  | 2.7  | 2.2  | 1.9  | 1.6  | 1.6  | 1.2  | 1.6  | 1.2  | 1.6 | 1.2  |
|                                    | 601-750   | -    | -    | 5.1  | 4.4  | 2.9  | 2.5  | 1.9  | 1.8  | 1.6  | 1.4  | 1.6  | 1.4  | 1.6 | 1.4  |
|                                    | 751-900   | -    | -    | 5.4  | 4.9  | 3.2  | 3.0  | 2.4  | 2.2  | 1.9  | 1.7  | 1.9  | 1.7  | 1.9 | 1.7  |
|                                    | 901-1000  | -    | -    | 5.4  | 5.1  | 3.6  | 3.2  | 2.7  | 2.5  | 2.2  | 1.9  | 2.2  | 1.9  | 2.2 | 1.9  |
| Tap Loss<br>(+/- 1.5 dB)           | 5-900     | 11   | 11   | 15   | 15   | 17.5 | 17   | 20   | 20   | 23   | 23   | 26   | 26   | 29  | 29   |
|                                    | 901-1000  | 11.5 | 11   | 15.5 | 15   | 18   | 17   | 20.5 | 20   | 23.5 | 23   | 26.5 | 26   | 29  | 29   |
| Return Loss (+/- dB)               | 10-1000   | 0.5  | 0.35 | 0.5  | 0.35 | 0.6  | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 | 0.5  | 0.35 | 0.5 | 0.35 |
| Isolation<br>(Tap-Tap)<br>(dB)     | 5-10      | 20   | 22   | 20   | 22   | 20   | 22   | 20   | 22   | 20   | 22   | 20   | 22   | 20  | 22   |
|                                    | 11-750    | 20   | 24   | 20   | 22   | 20   | 24   | 20   | 24   | 20   | 24   | 20   | 24   | 20  | 24   |
|                                    | 751-1000  | 18   | 20   | 18   | 20   | 18   | 20   | 18   | 20   | 18   | 20   | 18   | 20   | 18  | 20   |
| Isolation<br>(Out-Tap)<br>(dB)     | 5-10      | -    | -    | 20   | 24   | 19   | 26   | 21   | 26   | 26   | 35   | 26   | 35   | 26  | 35   |
|                                    | 11-600    | -    | -    | 25   | 30   | 25   | 30   | 28   | 30   | 31   | 32   | 31   | 32   | 31  | 32   |
|                                    | 601-750   | -    | -    | 23   | 27   | 23   | 28   | 25   | 28   | 28   | 30   | 28   | 30   | 28  | 30   |
|                                    | 751-900   | -    | -    | 21   | 27   | 21   | 28   | 24   | 28   | 27   | 30   | 27   | 30   | 27  | 30   |
|                                    | 901-1000  | -    | -    | 20   | 25   | 20   | 28   | 22   | 28   | 25   | 28   | 25   | 28   | 25  | 28   |

|                    |   |                    |            |
|--------------------|---|--------------------|------------|
| Frequency Response | 5 - 1000 MHz                            | Tap Return Loss    | 15 dB max. |
| Power Passing      | 12 Amps, 60-90 V AC                     | 5 - 1000 MHz       | 17 dB typ. |
| Impedance          | 75 Ohms                                 |                    |            |
| Gain Modulation    | 70 dB avg. across passband<br>@ 10 amps | In/Out Return Loss | 16 dB max. |
|                    |   | 5 - 1000 MHz       | 18 dB typ. |

NOTE: Insertion Loss specifications do not include Power Distribution Unit (PDU) contribution.

| Model Number | Part Number | Description              |
|--------------|-------------|--------------------------|
| AT MM 8-11   | 541760      | Multimedia-8 Way @ 11 dB |
| AT MM 8-14   | 541761      | Multimedia-8 Way @ 14 dB |
| AT MM 8-17   | 541762      | Multimedia-8 Way @ 17 dB |
| AT MM 8-20   | 541763      | Multimedia-8 Way @ 20 dB |
| AT MM 8-23   | 541764      | Multimedia-8 Way @ 23 dB |
| AT MM 8-26   | 541765      | Multimedia-8 Way @ 26 dB |
| AT MM 8-29   | 541766      | Multimedia-8 Way @ 29 dB |







PAGE 8

***TIME WARNER CABLE - SYRACUSE DIVISION***

***Converter and Trap Specifications***

**System Name** : Syracuse

**Date** : 08/01/2006

All testing is done at the end of a 100ft drop cable (RG-6) without a converter. Converter specification sheets are attached for "After Converter" numbers, if so desired.

**Instructions:**

Attach a copy of the manufacturer's specifications covering all converters used in the system. The specification sheet must show the converters carrier- to- noise (C/N) and distortion figures. Attach a copy of the manufacturer's specifications covering all traps that are in use in the cable plant. This should include basic traps, individual channel traps, high pass filters, etc.

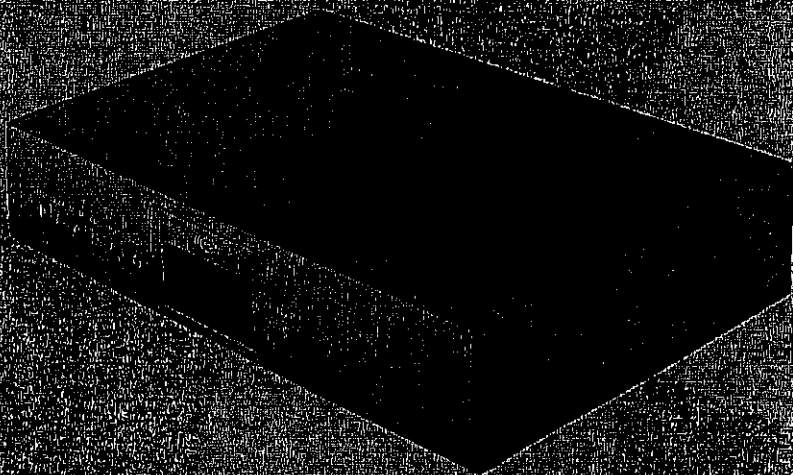




## TECHNICAL SPECIFICATION //

# PACE 500 DIGITAL CABLE GATEWAY

Delivering the future in home entertainment



### INCREASING VALUE FOR CABLE OPERATORS

- Expanding Digital Services
- Increasing Subscriber Satisfaction
- Improving Subscriber Retention
- Decreasing Subscriber Churn
- Decreasing Hardware Failure

### DEPLOYMENT EXPERTISE

- Set-top Distribution Experience
- Testing/Setup Enabled Field Design
- Smart Packaging

### INNOVATIVE HARDWARE

- Engineered for Reliability
- Designed to be Smaller and Lighter
- Optimized for Low Power and High Efficiency

### INNOVATIVE TECHNOLOGY

- Future-proof Extensible Architecture
- Non-Proprietary OS, EPC, and API

### PACE COMMITMENT

- Proven global production capability
- 24-hour Support from In-house Network Support Team
- Dedicated Account Management Teams
- Cost-Down Pricing Models

### PACE: YOUR DIGITAL PARTNER

Pace has worked with major cable operators and ISPs in the US and Europe and other markets successfully deploying their services. Pace has successfully delivered over 13 million set-top boxes to markets around the world since 1992, including the first commercially approved D-VIC equipped set-top boxes in 1991.

Pace has helped our US customers when it comes to providing solutions to real world problems. One example is our unique packaging for the Pace 500. It allows our customers to easily access an upgrade the unit without unpacking the set-top. With such attention to detail, Pace is delivering the digital television market forward. Our strategy, Pace has models and the experience to provide cable operators to deliver solutions that are right for them and not just for others.

### DIGITAL CABLE SOLUTIONS

Cable operators and ISPs are in a prime position to take advantage of digital broadcasting opportunities. With broadband connection to the home cable network can deliver a rich mix of compelling services such as digital television, interactive services, high speed internet, and telephone. Tomorrow's digital opportunities are here today's best technology. Pace continues to be a developer of the world's most advanced set-top boxes. With an extraordinary focus on hardware and software engineering, Pace consistently produces technologically advanced and reliable boxes. And with unparalleled global deployment experience, Pace partners with its customers to insure successful digital deployments.

### WHY SHOULD OPERATORS HAVE TWO SOURCES FOR SET-TOP BOXES?

- Drives Innovation and Greater Pricing Pressure
- Reduces Risk of Supply Shortage
- Improves Delivery Flexibility
- Decreases Reliance on Specific Shipments

### WHY PACE?

Justin K. King, Warner: "We are pleased to add a supplier like Pace who has a world-class reputation for innovation, quality, and on-time delivery. Pace was the obvious choice."

Timothy Hill,  
AT&T: "Pace is a leading supplier of set-top boxes."





2. 1. 2013

- 24

2000年12月29日

**THE**

Figure 1

100



Figure 1

1997

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

**Figure 6**

2000

Urbane

548

100

卷之四



## 314

100

10

11

الم

$\frac{1}{2} \Delta$



THE  
FURNITURE  
STORE  
OF  
THE  
FUTURE



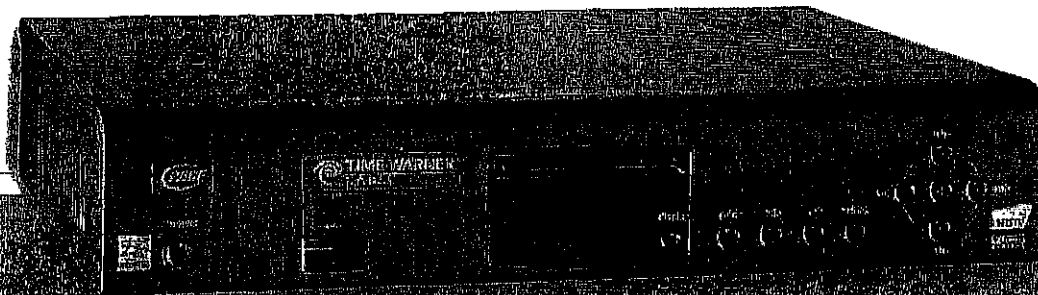


Simply better.



## Pace DC-550 HD Digital Cable Set-top

### TECHNICAL SPECIFICATION



#### Features

##### Performance

- 94.75 MIPS main processor plus 35 MIPS graphics baseband
- 260 MIPS aggregate total
- Run from RAM on baseband

**High Definition.** With the most aggressive performance the Pace DC-550 HD employs industry leading processing speed with sophisticated Sub Frame Buffer reduction and general applications memory provision for standard.

##### Compact and Understated

A sleek design and less than 12 inches wide, this will please consumers who want products that don't take up too much space in their entertainment centers, and cable operators who expect efficient use of space in their warehouses and trucks.



##### Energy Star Compliant

Set-tops that meet the Energy Star specification consume up to 20% less electricity than a conventional set-top while delivering the same quality and features saving your customers money on their energy bills.

#### Choice

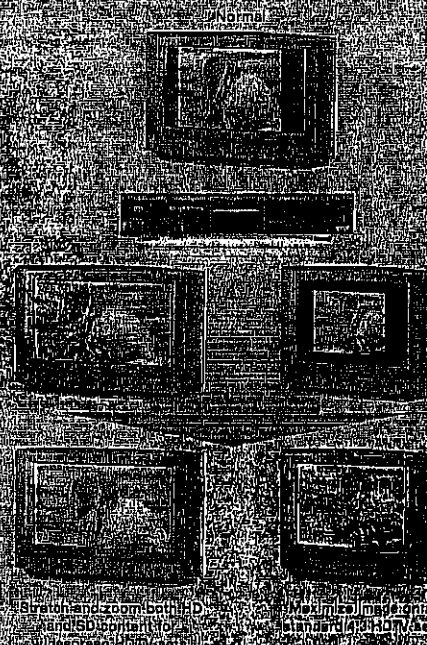
- Drives Innovation
- Creates Pricing Pressure
- Reduces Risk of Supply Shortage
- Improves Delivery/Flexibility
- Drives the Future of the Cable Industry

##### Enhance and Secure Connectivity

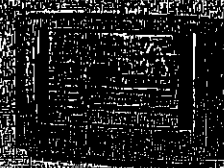
- Built-in DVI-D port with HDCP capability providing secure digital display connectivity today and the attraction for the future
- One resolution down from one set-top connection
- Supports component video up to 1080i through
- Support for 1080i optional

#### Advanced Video Scaling

The Pace DC-550 HD has powerful scaling ability allowing both Standard Definition and High Definition program content to be automatically scaled and scan rates changed to ensure the user sees a picture the way they want to watch it, avoiding bars around the picture.



The Pace DC-550 HD also scales video to the upper right corner of the program guide for both Standard Definition and High Definition video content.







Component video help: Each above monitor can display composite or digital video signals, but not both at the same time. Composite video displays a single, full picture on the TV, whereas digital displays a portion of the picture on one screen, and the rest on the other.

DM-100 highly compatible binder with 100% dry-solids content, capability and optional availability of 100% ISO 9001 compliance.

Lebanon is a highly important early Islamic home for the world's Muslims, and not only for Sunni Muslims, but for Shiites. Many important religious traditions have their connection, and within two days, for example, you can see the foundations of Islam, as well as the birthplace of the Prophet Muhammad, and the place where he was buried. It is a very important place for all Muslims, and it is a very important place for all Muslims.

The firm's 2005 financial results were also impacted by the  
 sale of the firm's 2005 financial results were also impacted by the  
 sale of the firm's 2005 financial results were also impacted by the  
 sale of the firm's 2005 financial results were also impacted by the

**Deafblind Orientation**

$\frac{1}{2} \left( \frac{1}{2} + \frac{1}{2} \right) = \frac{1}{2}$

[illegible]

## HARDWARE FEATURES

1. **PROBLEM STATEMENT**  
 2. **OBJECTIVES**  
 3. **SCOPE**  
 4. **DEFINITIONS**  
 5. **ASSUMPTIONS**  
 6. **REFERENCES**  
 7. **CONCLUSIONS**  
 8. **ACKNOWLEDGEMENTS**  
 9. **BIBLIOGRAPHY**  
 10. **APPENDICES**  
 11. **LIST OF FIGURES**  
 12. **LIST OF TABLES**  
 13. **LIST OF ABBREVIATIONS**  
 14. **LIST OF SYMBOLS**  
 15. **LIST OF EQUATIONS**  
 16. **LIST OF REFERENCES**  
 17. **LIST OF REFERENCES**  
 18. **LIST OF REFERENCES**  
 19. **LIST OF REFERENCES**  
 20. **LIST OF REFERENCES**  
 21. **LIST OF REFERENCES**  
 22. **LIST OF REFERENCES**  
 23. **LIST OF REFERENCES**  
 24. **LIST OF REFERENCES**  
 25. **LIST OF REFERENCES**  
 26. **LIST OF REFERENCES**  
 27. **LIST OF REFERENCES**  
 28. **LIST OF REFERENCES**  
 29. **LIST OF REFERENCES**  
 30. **LIST OF REFERENCES**  
 31. **LIST OF REFERENCES**  
 32. **LIST OF REFERENCES**  
 33. **LIST OF REFERENCES**  
 34. **LIST OF REFERENCES**  
 35. **LIST OF REFERENCES**  
 36. **LIST OF REFERENCES**  
 37. **LIST OF REFERENCES**  
 38. **LIST OF REFERENCES**  
 39. **LIST OF REFERENCES**  
 40. **LIST OF REFERENCES**  
 41. **LIST OF REFERENCES**  
 42. **LIST OF REFERENCES**  
 43. **LIST OF REFERENCES**  
 44. **LIST OF REFERENCES**  
 45. **LIST OF REFERENCES**  
 46. **LIST OF REFERENCES**  
 47. **LIST OF REFERENCES**  
 48. **LIST OF REFERENCES**  
 49. **LIST OF REFERENCES**  
 50. **LIST OF REFERENCES**  
 51. **LIST OF REFERENCES**  
 52. **LIST OF REFERENCES**  
 53. **LIST OF REFERENCES**  
 54. **LIST OF REFERENCES**  
 55. **LIST OF REFERENCES**  
 56. **LIST OF REFERENCES**  
 57. **LIST OF REFERENCES**  
 58. **LIST OF REFERENCES**  
 59. **LIST OF REFERENCES**  
 60. **LIST OF REFERENCES**  
 61. **LIST OF REFERENCES**  
 62. **LIST OF REFERENCES**  
 63. **LIST OF REFERENCES**  
 64. **LIST OF REFERENCES**  
 65. **LIST OF REFERENCES**  
 66. **LIST OF REFERENCES**  
 67. **LIST OF REFERENCES**  
 68. **LIST OF REFERENCES**  
 69. **LIST OF REFERENCES**  
 70. **LIST OF REFERENCES**  
 71. **LIST OF REFERENCES**  
 72. **LIST OF REFERENCES**  
 73. **LIST OF REFERENCES**  
 74. **LIST OF REFERENCES**  
 75. **LIST OF REFERENCES**  
 76. **LIST OF REFERENCES**  
 77. **LIST OF REFERENCES**  
 78. **LIST OF REFERENCES**  
 79. **LIST OF REFERENCES**  
 80. **LIST OF REFERENCES**  
 81. **LIST OF REFERENCES**  
 82. **LIST OF REFERENCES**  
 83. **LIST OF REFERENCES**  
 84. **LIST OF REFERENCES**  
 85. **LIST OF REFERENCES**  
 86. **LIST OF REFERENCES**  
 87. **LIST OF REFERENCES**  
 88. **LIST OF REFERENCES**  
 89. **LIST OF REFERENCES**  
 90. **LIST OF REFERENCES**  
 91. **LIST OF REFERENCES**  
 92. **LIST OF REFERENCES**  
 93. **LIST OF REFERENCES**  
 94. **LIST OF REFERENCES**  
 95. **LIST OF REFERENCES**  
 96. **LIST OF REFERENCES**  
 97. **LIST OF REFERENCES**  
 98. **LIST OF REFERENCES**  
 99. **LIST OF REFERENCES**  
 100. **LIST OF REFERENCES**

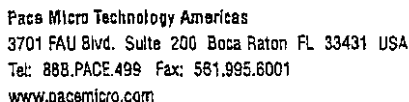
1964 FEB 11 11 01 AM

3. I have been taking vitamin B-12 supplements  
 for many years and have been feeling better.  
 I would like to know if there are any other  
 vitamins or minerals that I should be taking.

[illegible]

bioRxiv preprint doi: <https://doi.org/10.1101/000000>; this version posted November 1, 2014. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26



[ This specification is subject to improvement and change without notice ]

**High definition**