STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Petition of Mitsubishi Electric Cooling & Heating, a division of Mitsubishi Electric & Electronics USA, Inc., for a Declaratory Ruling Concerning Tenant Billing

Case # ___ - __ - _____

NATURE OF THE ACTION

Mitsubishi Electric Cooling & Heating, a division of Mitsubishi Electric & Electronics USA, Inc., petitions the New York State Public Service Commission pursuant to 16 NYCRR Part 8, and its incorporated 16 NYCRR § 3.5, to bring clarity to the uncertainty of the Commission's jurisdiction to regulate Mitsubishi Electric Cooling & Heating's split-ductless VRF Technology™ tenant billing system.

RELEVANT FACTS

1.

On or about June 7, 2011, a New York building owner, Mr. Yoel Sabel, by and through his legal representative, Mr. David Yudelson, Esq., submitted a *Proposed Submetering Petition* (hereinafter referred to as the "Petition") to the New York State Public Service Commission (hereinafter referred to as the

"Commission"). [A true and correct copy of the Petition is attached hereto as Exhibit "A"].

2.

The Petition outlined proposed installation of the Mitsubishi Electric Cooling & Heating split-ductless VRF Technology™ tenant billing system (hereinafter referred to as the "MEUS System").

3.

Unfortunately, the Petition did not accurately and sufficiently explain the full functionality of the MEUS System and perhaps created confusion amongst the members of the Commission, namely because it was assessing the viability of the MEUS System as a submeterer under the Commission's rules and regulations.

4.

The MEUS System is set for installation at Mr. Sabel's newly constructed residential apartment building located at 958 Nostrand Avenue, Brooklyn, NY.

5.

The MEUS System utilizes INVERTER-driven compressors which automatically adjust to changing conditions to use only the energy that is needed resulting in increased energy efficiency.

6.

The MEUS System as applied also includes MEUS's tenant billing software to calculate the heating and cooling usage for each residential unit.

7.

On or about August 29, 2011, MEUS received electronic communication from members of the Commission *unofficially* indicating that the MEUS System was "unacceptable to meet commission regulations and national standards." [A true and correct copy of the email from Mr. Kenneth Resca is attached hereto as Exhibit "B"].

8.

The Commission's chief objections to the Petition concerned the use of a time-interval method, the lack of a revenue-grade meter and installing two meters in each unit. Of note, these initial findings were based on the Commission's understanding of the MEUS System at that time. *See generally* Exhibit B attached hereto.

9.

In response, certain members of MEUS established communication with Ms. LuAnn Scherer, Chief of Consumer Advocacy at the Commission, to provide a more thorough explanation of the functionality of the MEUS System.

10.

The MEUS System is a split-ductless system capable of providing simultaneous cooling and heating. The MEUS System consists of a (outdoor) condensing unit and an (indoor) air-handling unit which uses refrigerant lines plus power and control wiring to connect the condensing unit to one or more air-handling units. For the avoidance of confusion, the condensing unit(s) will be installed outside; the air-handling unit will be installed in the residential unit(s).

11.

When utilizing MEUS's tenant billing software in conjunction with the MEUS System a watt-hour meter (WHM) is installed at the condensing unit to monitor the electrical power used by the condensing unit(s). No meters are installed in individual residential units.

12.

This MEUS System WHM is downstream of the utility company WHM, e.g. Con Ed. The utility company WHM monitors power for the non-tenant common areas for the building owner.

13.

The MEUS System WHM has the capability to monitor one or more condensing units depending on the electrical layout for the building.

14.

In Mr. Sabel's building, for example, the MEUS System will achieve even greater energy efficiency since a single condensing unit will serve multiple residential units, rather than one condensing unit per residential unit.

15.

The MEUS System tenant billing software will calculate the heating and cooling usage for each residential unit and apportion that usage to the Kilowatt-hours (KWH) used by the condensing unit(s).

16.

The MEUS System tenant billing software does not use WHMs to measure the electrical power at the residential unit.

17.

Based on extensive, explanatory discussions with MEUS representatives regarding the full functionality and application of the MEUS System, the Commission, namely Ms. Scherer, sent electronic communication *unofficially* opining that the Commission did not have jurisdiction over the Mitsubishi Electric Cooling & Heating split-ductless VRF Technology™ tenant billing system. [A true and correct copy of the email from Ms. Scherer is attached hereto as Exhibit "C"].

18.

Ms. Scherer further reiterated *unofficially* that the Commission did not regulate cooling and heating systems, but only "oversees electricity and approves meters". [A true and correct copy of the email from Ms. Scherer is attached hereto as Exhibit "D"].

19.

Thus, there is a real and actual controversy regarding whether the Commission has jurisdiction over the Mitsubishi Electric Cooling & Heating split-ductless VRF Technology™ tenant billing system.

20.

Petitioner seeks a declaratory judgment pursuant to 16 NYCRR Part 8 for the purpose of determining and adjudicating this "uncertainty".

21.

Wherefore, Petitioner respectfully requests that the Commission determine and adjudge that it does not have jurisdiction over the Mitsubishi Electric Cooling & Heating split-ductless VRF Technology™ tenant billing system described herein.

22.

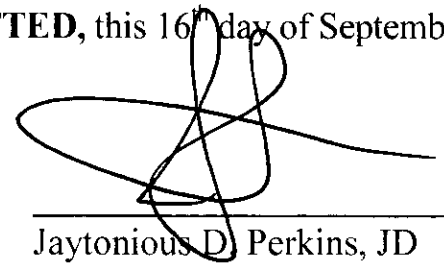
Petitioner respectfully notes to the Commission that time is of the essence. The *Proposed Submetering Petition* was originally submitted to the Commission by Mr. Sabel roughly 101 days ago from the date herein. Though the Petitioner's prayer for

relief is general in nature it will consequently allow Mr. Sabel to move forward and complete the construction of his building.

WHEREFORE, Petitioner prays for a declaratory judgment that:

1. the New York State Public Service Commission does not have jurisdiction to regulate the Mitsubishi Electric Cooling & Heating split-ductless VRF Technology™ tenant billing system; and
2. for such other and further relief as this Commission deems just, equitable, and proper.

RESPECTFULLY SUBMITTED, this 16th day of September, 2011.



Jaytonious D. Perkins, JD
Senior Government Affairs Specialist
Mitsubishi Electric Cooling & Heating
Authorized Representative for Petitioner

Mitsubishi Electric Cooling & Heating
1790 Satellite Blvd., Suite 100
Duluth, Georgia 30097
(678) 275-8803
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CERTIFICATION

Pursuant to 16 NYCRR § 3.5, I hereby certify that due to circumstance I am unable to submit this document electronically and am therefore filing an original hardcopy of the above referenced petition at the office of the Secretary in Albany, New York.

RESPECTFULLY SUBMITTED, this 16th day of September, 2011.

Jaytonious D. Perkins, JD
Senior Government Affairs Specialist
Mitsubishi Electric Cooling & Heating
Authorized Representative for Petitioner

Mitsubishi Electric Cooling & Heating
1790 Satellite Blvd., Suite 100
Duluth, Georgia 30097
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EXHIBIT "A"

David Yudelson
Direct Dial: (646) 378-7219
dyudelson@sprlaw.com

June 7, 2011

VIA E-MAIL
Honor Marie Kennedy
Office of Consumer Policy
NYS Public Service Commission
3 Empire State Plaza
Albany, New York 12223-1350
honor_kennedy@dps.state.ny.us

Re: *Proposed Sub-metering Petition for 958 Nostrand Avenue, Brooklyn, N.Y.*

Dear Ms. Kennedy:

As we discussed on the phone, this submission is made to get an indication from Commission staff of the viability of a sub-metering petition for the above-referenced property.

The property will be improved with a newly constructed rental apartment building containing 98 apartments. The building is being designed with a state of the art, extremely energy efficient split heat pump system unit for heating and air conditioning. This system is more efficient than ordinary heat and air conditioning systems. Outdoor, roof mounted condensing units ("CU") will serve a number of units. Individual air handling units ("AHU") will be in each apartment

Each Apartment unit will be directly metered for all energy used within the unit (appliances, lighting, outlets, AHUs). It is proposed that the energy consumption of the CU's be sub-metered and each apartment billed for their actual consumption.

Mitsubishi Electric manufactures the proposed system. The system measures the electric consumption of the CUs on an apartment by apartment basis. The software has the capability to produce individual bills for each apartment based on the actual amount of electric consumed by the CU for that apartment.

Attached as Exhibit "A" is a technical explanation from the mechanical engineer, Glickman Engineering, of the proposed system;

Attached as Exhibit "B" is a detailed explanation of the system, the model numbers and explanation of the how the system functions;

Attached as Exhibit "C" is an explanation of the billing function; and

Attached as Exhibit "D" is a cut sheet of the watt hour meter.

The economic benefits of this system are completely consistent with, and will forward the objectives of energy conservation and accurate and fair billing practices. First, as with all systems which bill the consumer for their actual use, tenants will be incentivized not to use the heat or air conditioning when not necessary. The proposed system also has great efficiency because a single CU serves multiple apartments. The larger CU is more efficient that multiple smaller units. It is not possible to direct meter the CU to all of those apartments.

The petition would further set forth all of the typically required elements for an approvable sub-metering plan under 16 NYCRR Part 96.

In sum, this system should not only be approvable, but should be strongly encouraged by the Commission and staff due to its state of the art energy efficiency as well as the incentive it causes for energy consumption. Please contact me if there is any further information you require. The owner is eager to proceed with this project so I look forward to hearing from you.

Very truly yours,

David Yudelson

Encls.

ecc: Yoel Sabel

A

Glickman Engineering Associates, PLLC
CONSULTING ENGINEERS

545 Eighth Avenue
New York, NY 10018
Tel: 212.643.8006
Fax: 212.643.8016

May 25, 2011

To Whom It May Concern:

Re: 958 Nostrand Avenue AKA 301 Sullivan Place, Brooklyn, NY

Dear Sir or Madam:

We are the mechanical engineers for the above referenced project. The HVAC system that is designed for the apartments is a VRV type system made by Mitsubishi, with individual air handling units (AHUs) located within the apartments and condensing units (CUs) located on the roof. This system provides both heating and air conditioning. The CUs on the roof are each connected to multiple AHUs in multiple apartments. The AHUs within the apartments are connected to the individual apartment electrical panel that is direct metered by the utility. The CUs are metered to a common panel. The power drawn by each CU will be recorded and the cost of power can be computed using the costs from the common meter. The amount of power drawn by the CU can be apportioned to each AHU, thereby allowing the power drawn to be billed to the individual apartment in which the AHU is located. This is done via the CU, whereby the electronics on the CU know how long the valve on each of the AHUs has been opened during a specified period of time and the total cost of the power drawn by the CU can be apportioned according to this amount of time that the individual valve was open. So each unit owner would get two electrical bills, one directly from the utility and one from the management company.

The VRV system and the way that the HVAC system has been designed is extremely energy efficient with very high SEER values that cannot be achieved with conventional HVAC equipment. The reason for this high energy efficiency is twofold. First, the equipment itself is inherently efficient due to variable speed compressors in the CUs and due to variable speed fans in the AHUs. Second, since larger CUs are used to feed multiple AHUs in multiple apartments, there is efficiency based on economy of scale, as opposed to providing one CU for each apartment.

Very truly yours,

GLICKMAN ENGINEERING PLLC

David Glickman, P.E.
Consulting Engineer

B

MITSUBISHI ELECTRIC

Mitsubishi Electric & Electronics USA, Inc.
HVAC Advanced Products Division

CMCN-AN-029-03
TENANT BILLING with RS-485 WHM

Introduction

The CITY MULTI Controls Network (CMCN) consists of remote controllers, timers, centralized controllers, and integrated system software communicating over a high-speed communication bus with optional interconnection and control via a network PC. The CITY MULTI Controls Network can support operation monitoring, scheduling, error e-mail distribution, personal browsers, tenant billing, maintenance support, and integration with Building Management Systems (BMS) using either our LonWorks® or BACnet interfaces. All of which unite to provide the best in comfort conditioning control. Figure 1 illustrates the CMCN System Configuration.

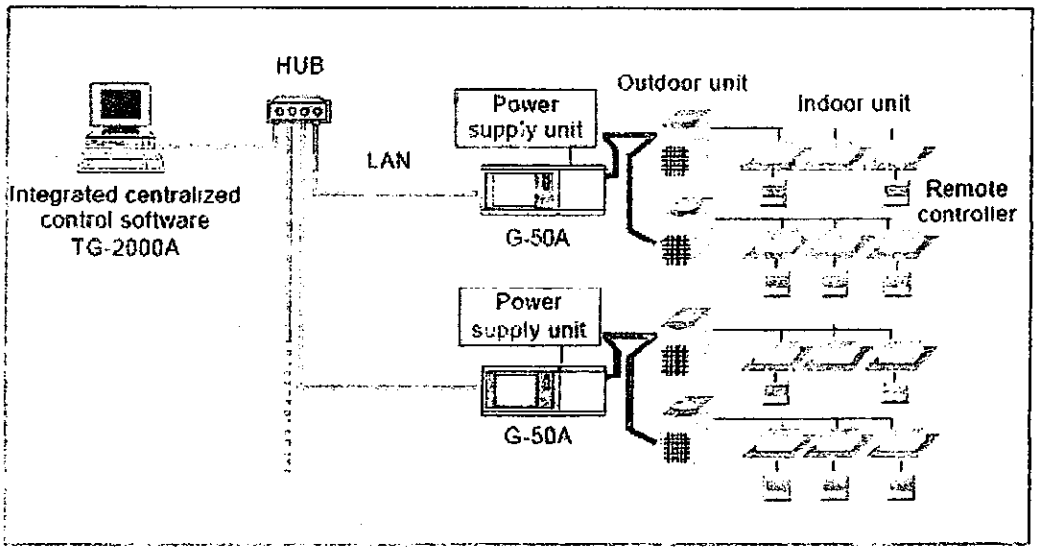


Figure 1. CMCN System Configuration

CMCN remote controllers can operate all CITY MULTI indoor units, both UL listed and non-UL listed. The wiring for the remote controllers is simple, non-polar, two-wire connections. All remote controllers are wall-mounted and contain a microprocessor that constantly monitors operation to maintain smooth indoor unit operation. By changing a dip switch setting on an indoor unit, the room temperature can be changed from sensing at the indoor unit in the return air to at the remote controller. Set temperature can be adjusted in increments of 1°F or 2°F depending on the type of remote controller. In the event of an abnormality, the remote controller will display a four-digit error code and the indoor unit address.

The G-50A Centralized Controller is capable of controlling a maximum of 50 indoor units across multiple CITY MULTI outdoor units. The G-50A Centralized Controller is approximately 5"x12" in size and is powered from a Power Supply Unit (PAC-SC50KUA). The G-50A Centralized Controller supports operation superceding that of the remote controllers, system configuration, daily/weekly scheduling, monitoring of operation status, and malfunction monitoring. The G-50A Centralized Controller has five

basic operation controls which can be applied to an individual indoor unit, a group of indoor units (up to 50 indoor units), or all indoor units (collective batch operation). The basic control set of operation controls for the G-50A Centralized Controller are on/off, operation mode selection (cool, heat, auto (R2-Series only), dry, and fan), temperature setting, fan speed setting, and airflow direction setting. Since the G-50A provides centralized control it can enable or disable operation of local remote controllers. In terms of scheduling, the G-50A Centralized Controller will allow the user to define both daily and weekly schedules with operations consisting of ON/OFF, mode selection, temperature setting (63°F – 87°F)[1], and permit/prohibit of remote controllers.

All G-50A and GB-50A Centralized Controllers are equipped with a RJ-45 Ethernet port to support interconnection with a network PC via a closed/direct Local Area Network (LAN), via an Ethernet Hub on a LAN, or via a router on a LAN. Optional software functions are available so that the building manager can securely log into each G-50A/GB-50A via the PC's web browser to support operation monitoring, scheduling, error e-mail, personal browser, and maintenance diagnostics. The optional software functions require advance purchasing and can only be activated upon receipt of a license number from Mitsubishi Electric HVAC.

The TG-2000 integrated system software enables the user to control multiple G-50A/GB-50As and provide enhanced functions such as tenant billing from a single, dedicated network PC configured with the TG-2000 software. The TG-2000 configured PC is capable of controlling up to forty G-50A/GB-50A Centralized Controllers with a maximum of 2,000 indoor units across multiple CITY MULTI outdoor units. The TG-2000 software is required if the user wants to simultaneously control more than 1 G-50A/GB-50A from a single PC source using a single software session. Optional software features are available through the TG-2000 software include tenant billing. These optional software features require the TG-2000 software, advance purchase from the customer, and licensing from Mitsubishi to enable feature activation.

The CMCN supports integration with Building Management Systems (BMS) via our LonWorks® and BACnet interfaces. The Mitsubishi Electric HVAC LonWorks® interface, LMAP03U, supports up to fifty indoor units with a variety of network variables on a per indoor unit basis. Input variables include, but are not limited to, on/off, operation mode, fan speed, prohibit remote controller, and filter sign reset. Output variables include, but are not limited to, model size, alarm state, error code, and error address. The Mitsubishi Electric HVAC BACnet interface, PAC-YG31CDA, is compliant with BACnet/IP (ANSI/ASHRAE 135-1995, 135a) and UDP/IP of Ethernet (ANSI/ASHRAE 135-1995, 135b). Our BACnet interface requires a dedicated network computer and activated BACnet software function via Mitsubishi Electric HVAC issued license. The BACnet interface supports a maximum of ten G-50A/GB-50A Centralized Controllers for a maximum of 500 indoor units.

TG-2000 Software Option: Tenant Billing for HVAC Energy Consumption
The TG-2000 integrated system software controls up to 2,000 indoor units (or up to forty G-50A/GB-50A Centralized Controllers) from a single, dedicated, network PC. An optional software function available through the TG-2000 software is tenant billing for the HVAC energy consumption. The tenant billing software function requires advance purchase from Mitsubishi Electric HVAC and a software activation license per G-50A/GB-50A issued by Mitsubishi Electric HVAC.

[1] Temperature setting range is dependent on operation mode.
Cool: 67°F - 87°F. Heat: 63°F - 83°F. Auto (R2-Series only): 67°F - 83°F.

The tenant billing software will output the HVAC energy consumption in kWh and monetary amount for the CITY MULTI outdoor unit(s) divided among defined blocks of indoor units. The tenant billing software requires that a RS-485 WHM monitor the energy consumption of one or more CITY MULTI outdoor units and be interconnected to the TG-2000 computer via a RS-485/RS-232C or RS-485/USB converter. The tenant billing output can be sent directly to a network printer and/or to a destination folder on the TG-2000 PC as an Excel file. This tenant billing output can then be inputted into an Excel-based support tool, "AirConCharge.xls" to generate an individual "HVAC Energy Fee Statement" per tenant. The format of the "HVAC Energy Fee Statement" can be customized by the building manager.

Please note that each tenant's indoor units and other apparatus (such as lighting, alarms, etc) are monitored on an individual WHM that is not connected to the TG-2000 PC; therefore, the indoor units' energy consumption is not included in the "HVAC Energy Fee Statement". However, the indoor units' energy consumption is included on the tenant's energy bill, as specified on the individual WHM. The energy consumption of the indoor units is minimal.

Installation and site adjustment details for the TG-2000 Software and activation of the tenant billing function are contained in the "TG-2000 Site Adjustment Manual" entitled OpenManSA.pdf. Operation and management details for the TG-2000 Software and the tenant billing software option are described in the "TG-2000 Operation Manual for Managers" entitled OpenManMA.pdf.

Tenant Billing and RS-485 Watt Hour Meters (WHMs)
The "TG-2000 Site Adjustment Manual" in Section 2.4 lists approved manufacturers and devices that are compatible with CITY MULTI systems. Approved RS-485 WHM manufacturers and models for interconnection with a PC configured with TG-2000 and tenant billing software are listed below.

- Circutor, Model CVM-BC-ITF-RS485-C2
- Northern Design (Electronics) Ltd., Model Power Rail 323 + RS485 Module
- Elcomponent Limited, Model AEM31D/485
- Elcontrol Energy, Model ED39din 485

Circutor offers the Model CVM-BC-ITF-RS485-C2 WHM with an RS-232 or USB converter available in the U.S. requiring 230 VAC single phase, 50/60 hz which is applicable for both US and Bermuda installations of CITY MULTI via Measurlogic, Inc. Measurlogic, Inc contact information is as follows:

Measurlogic, Inc (www.measurlogic.com)
10235 S, Progress Way, Unit 1, Parker, CO 80134
Contact: John Stratford
Tele: 1-877-777-6567 or 303-805-5252
Fax: 425-799-4780
E-mail: sales@measurlogic.com

Northern Design offers the Power Rail 323 WHM with RS-485 option module available in the U.S. requiring 208/230/60 which is applicable for both US and Bermuda installations of CITY MULTI via Selco USA.

The CT to use with the WHM needs to be sized 1.5 times or more of the total rated current for all the outdoor units. For example, if there are four outdoor units monitored by one WHM and each outdoor unit has a rated capacity of 10 Amps. The CT needs to be sized at 60 Amps (CT = 10 A x 1.5 x 4 = 60 Amps)

To interconnect the RS-485 WHM monitoring the CITY MULTI outdoor unit(s) to the TG-2000 PC with tenant billing software, a RS-485/RS-232C or RS-485/USB converter will need to be locally procured and permanently installed onsite. Figure 2 illustrates the site configuration for the tenant billing environment.

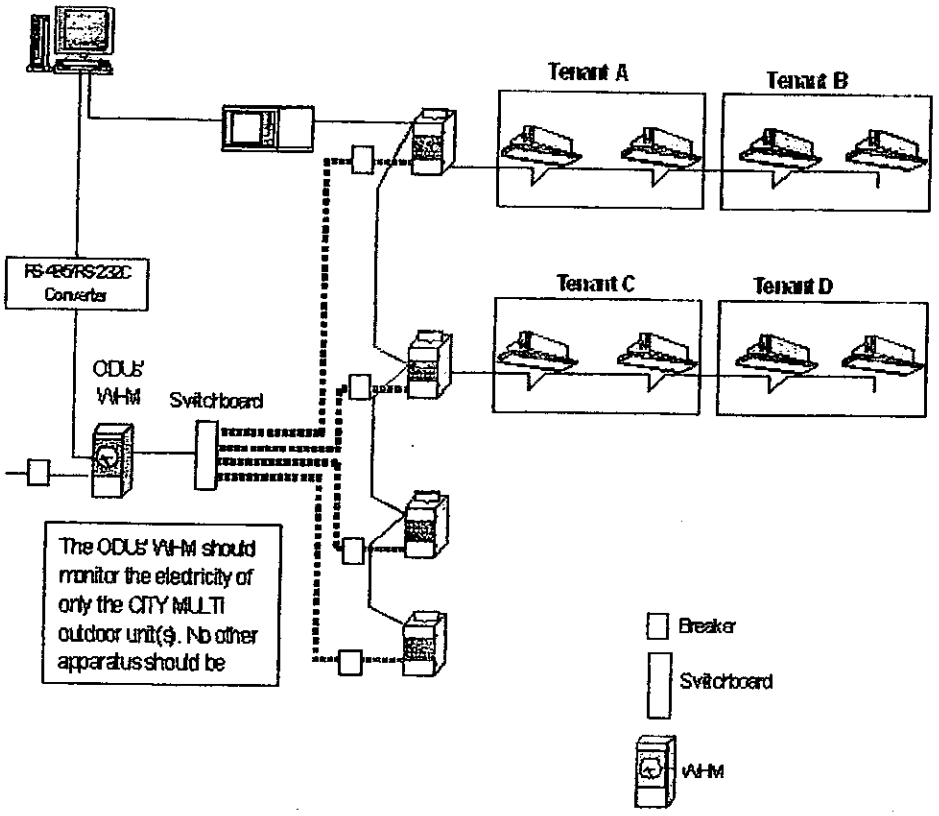


Figure 2. Site Configuration for Tenant Billing

Tenant Billing: Software Activation, System Verification, and Software Configuration
The following high-level actions are required to activate the tenant billing software.

1. Purchase tenant billing software license per G-50A/GB-50A from Mitsubishi Electric and complete Form A to register project information. Note tenant billing also requires purchase of web monitoring and web scheduling software functions per G-50A/GB-50A in order to operate.
2. Install CITY MULTI Equipment, including G-50A/GB-50A Centralized Controllers. Connect G-50A/GB-50A Centralized Controllers to PC via closed LAN, Ethernet hub, or router.

3. Upgrade G-50A/GB-50A Centralized Controllers to latest software version.
4. Install TG-2000 software on dedicated network PC.
5. Activate software licenses for web monitoring, web scheduling, and tenant billing on per G-50A/GB-50A basis by using Mitsubishi issued Form B containing license numbers and terms.

The following site configuration information must be verified.

1. Verify site configuration in terms of communication between
   a. G-50A/GB-50A Centralized Controllers and TG-2000 configured PC
   b. Outdoor unit(s) and PC via RS-485 WHM.
2. Verify TG-2000 computer requirements
3. Verify that the version is 2.70 or greater for G-50A/GB-50A Centralized Controllers.
4. Verify that the version is 4.70 or greater for TG-2000 software.
5. Verify that PC will always remain connected to G-50A/GB-50A Centralized Controllers and always powered-on.
6. Verify that TG-2000 software is properly configuration and already operating for monitoring and scheduling.

To configure the TG-2000 software for the tenant billing software and RS-485 WHM connection to the outdoor units, perform the following initialization steps as detailed in "OpenManSA.pdf".

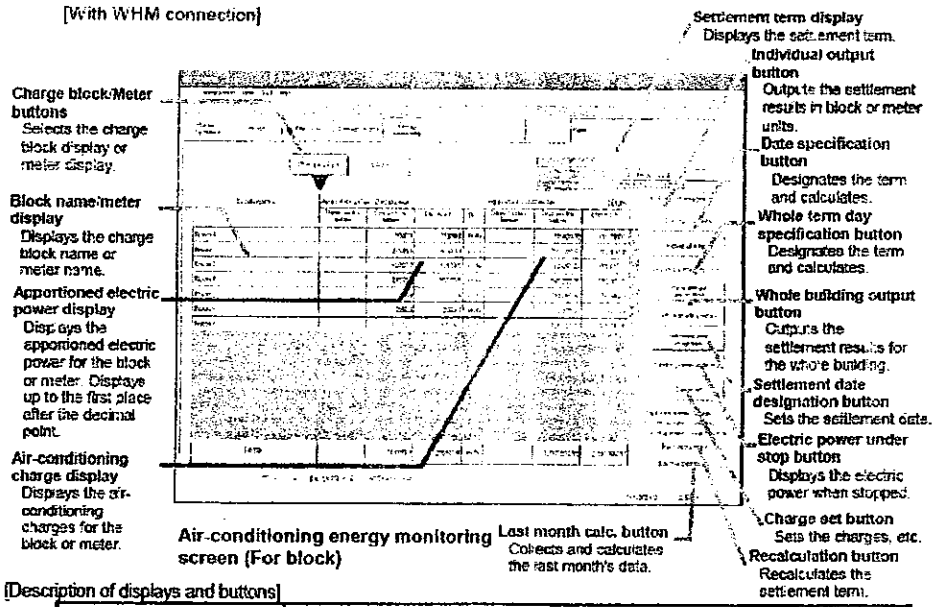
1. The "Initial Window" is divided into three functional areas: User Set Up, System Set Up and Maintenance. In the User Set Up area, select the "User Set Up" button followed by the "Go to User Setting 2" button. The User Setting Window 2 is divided into three functional areas: Connection Setting, Other Functions, and Energy Monitoring Related.
2. In the Connection Setting area,
   a. Select "Connection" to printer
   b. Select "Serial RS-485 WHM" connection
   c. Select "No Connection" for PLC and General Equipment
3. In the Energy Monitoring Related area,
   a. Select "Activate" Energy Monitoring function
   b. Select "Activate" always connection to G-50A/GB-50A system
   c. Select "Connection To" and "Activate" WHM
   d. Select "Activate" automatic output of information and destination folder
   e. Select "Numerical Order" for charge display
   f. Select "Standard" format.
4. Progress through Section 8.9 for Monitoring Set Up.
5. Progress through Sections 8.10 and 8.11 for RS-485 WHM Set Up.
6. Progress through Section 8.12 for Energy Monitoring Set Up. Make sure to define the relationship between the outdoor units and the WHM in Section 8.12.3.
7. In Section 8.13, define the currency for the tenant bill, electricity unit price, and specific zone and pattern information.

Tenant Billing: Software Operation and Output

To operate the tenant billing software, please refer to the "OpenManMA.pdf" manual, specifically Section 9 for Energy Monitoring/Tenant Billing. Figure 3 illustrates the "Energy Monitoring" screen and button menu for connection to RS-485 WHM.

On the "Energy Monitoring" Screen when there is a RS-485 WHM monitoring the outdoor units, each block of indoor units is denoted with the kWh amount and currency amount for up to 3 months data. In

Figure 3, the currency unit had been set to Euros; however, this is user defined and can be set to variety of currency units, including U.S. Dollars and country-defined units. The settlement date is the date that the building manager desires for the calculation to occur every month. The settlement date can be a specific date or simply set to the "end of the month". The energy monitoring information can be output to a printer and/or to a destination folder on the TG-2000 configured PC. This is defined in the User Setting functional area of the Initial Setting Window. If the manager wants the energy monitoring data for a subset of a month, the building manager would select the "Whole Term Day Specification" to specify a specific date range output.



[Description of displays and buttons]

Item	Details
Block name display	Displays the block units air-conditioning charges for up to three preceding months.
Meter display	Displays the watt hour units air-conditioning charge for up to three preceding months.
Apportioned electric power display	Displays the Apportioned electric power for each unit.
Air-conditioning charge display	Displays the monthly air-conditioning charge: (electric use unit price + standard charge) for each unit.
Individual specification	Specifies an individual object and calculates and outputs the air-conditioning charge.
1) Date specification	Specifies the date and calculates and outputs the air-conditioning charge for the selected block.
2) Individual output	Calculates and outputs the air-conditioning charge for the selected block.
Whole building object	Sets, calculates and outputs the air-conditioning charge for the whole building.
1) Whole term day specification	Specifies the term day and calculates and outputs the air-conditioning charge for all blocks, or all watt hour meters.
2) Whole building output	Specifies the term day and calculates and outputs the air-conditioning charge for all blocks and all watt hour meters.
3) Settlement date designation	Specifies the air-conditioning charge settlement date.
4) Electric power under stop	Displays and outputs the electric power under stop.
5) Charge set	Calls the Air-conditioning energy monitoring basic set screen.
Recalculation	Recalculates the air-conditioning charges.
Last month calc.	Calculates the last month (collects and calculates data). (Only when "connect when needed" is selected.)

Figure 3. Energy Monitoring Screen (with WHM Connection)

Tenant Billing: Support Tool

An Excel-based support tool has been provided, entitled "AirConCharge.xls", to develop an actual tenant bill per block of indoor units that the building manager can deliver to the specific tenant. Operation of this tool is provided in Appendix 1 of "OpenManMA.pdf." Figure 4 illustrates the output of this support tool.

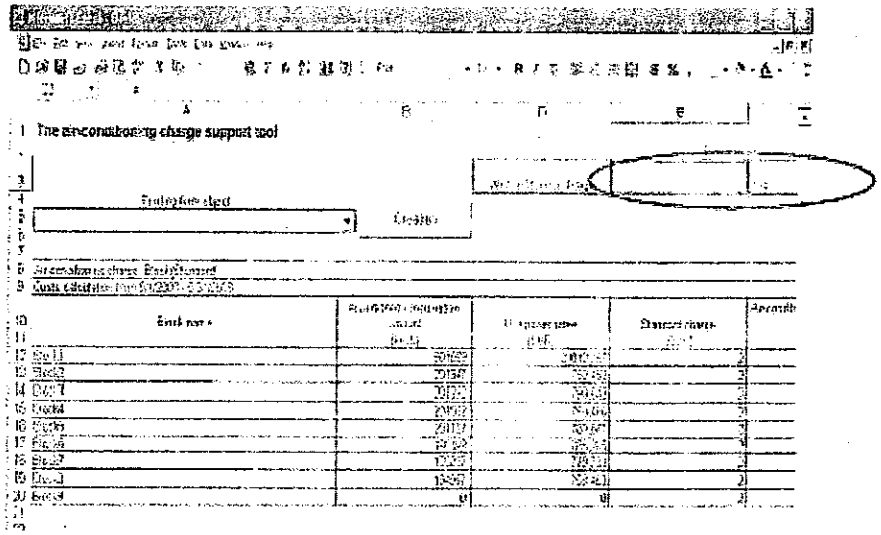


Figure 4. Support Tool for Tenant Billing

From this output, the building manager can automatically create a "HVAC Energy Bill" per tenant, as illustrated in Figure 5. Thus, the building manager will be able to deliver each tenant an individual "HVAC Energy Bill", as created by the support tool. The format of the "HVAC Energy Bill" can be customized by the billing manager to include property information and other information.

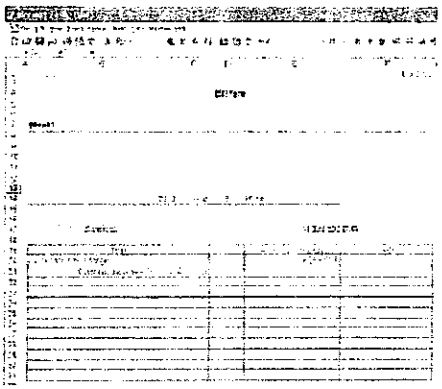


Figure 5. "HVAC Energy Fee Statement" Sample

Conclusion

The TG-2000 Tenant Billing software in combination with a RS-485 WHM monitoring the outdoor unit(s) allows the building manager to issue a per tenant bill every month. The TG-2000 Tenant Billing software will automatically calculate the amount of each tenant's energy consumption relative to the outdoor unit(s) for each month. The building manager defines the date for the calculation and tenant bill output to occur each month. The tenant bill output can be output directly to a connected printer and/or to an Excel file on the TG-2000 configured PC. The TG-2000 Tenant Billing software in combination with a RS-485 WHM enables the building manager to appropriately divide the energy consumption of the CITY MULTI outdoor unit(s) among the tenants based on each tenant's demand for conditioning.

MITSUBISHI ELECTRIC
Mitsubishi Electric & Electronics USA, Inc.
HVAC Advanced Products Division

CITY MULTI Project Registration Form
"Form A" (CMCN-011-01)

Submitted By		Date	

PROJECT INFORMATION:

Project Name					
Industry Type					
Owner/Developer					
Installer/Contractor					
Distributor-Branch		PO		Date	
Consultant/Engineer					
Install Date					
Remarks					

EQUIPMENT INFORMATION:

Component	Model Number(s)	Quantity
Outdoor Unit(s)		
Indoor Units		
Other Unit(s)		
TG-2000 Software		
G/GB-50A		
Remote Controllers		
LonWorks® Interface		

SOFTWARE LICENSES (PER G/GB-50A):
For each G/GB-50A, the following needs to be provided. The G/GB-50A Serial Number will consist of 6 digits, in the form of xxxx-xx. The G/GB-50A Software Version is acquired using the G/GB-50A Initial Setting Tool and in the form of x.xx (such as 2.71). Please input the requested license term for each software function for each G/GB-50A. Software terms include 1-year, or 3-year. All software functions must be registered by Mitsubishi. Mitsubishi will issue a license number per ordered software function per G/GB-50A for the desired term. These licenses are required for software activation.

G/GB-50A Details	G/GB-50A #1	G/GB-50A #2
G/GB-50A Name		
G/GB-50A Serial Number		
G/GB-50A Software Version		
01-G-50A Web Monitor		
02-G-50A Schedule		
03-G/GB-50A Charge "Tenant Billing"		
05-G-50A Error E-mail		
06-Saving Energy Control		
07-Maintenance Tool		
08-G/GB-50A Personal Web		
09-G-GB/50A BACnet		
10-G-50A Maint. Tool		
11- Peak Cut		
12 – GB-50A Std. Software		

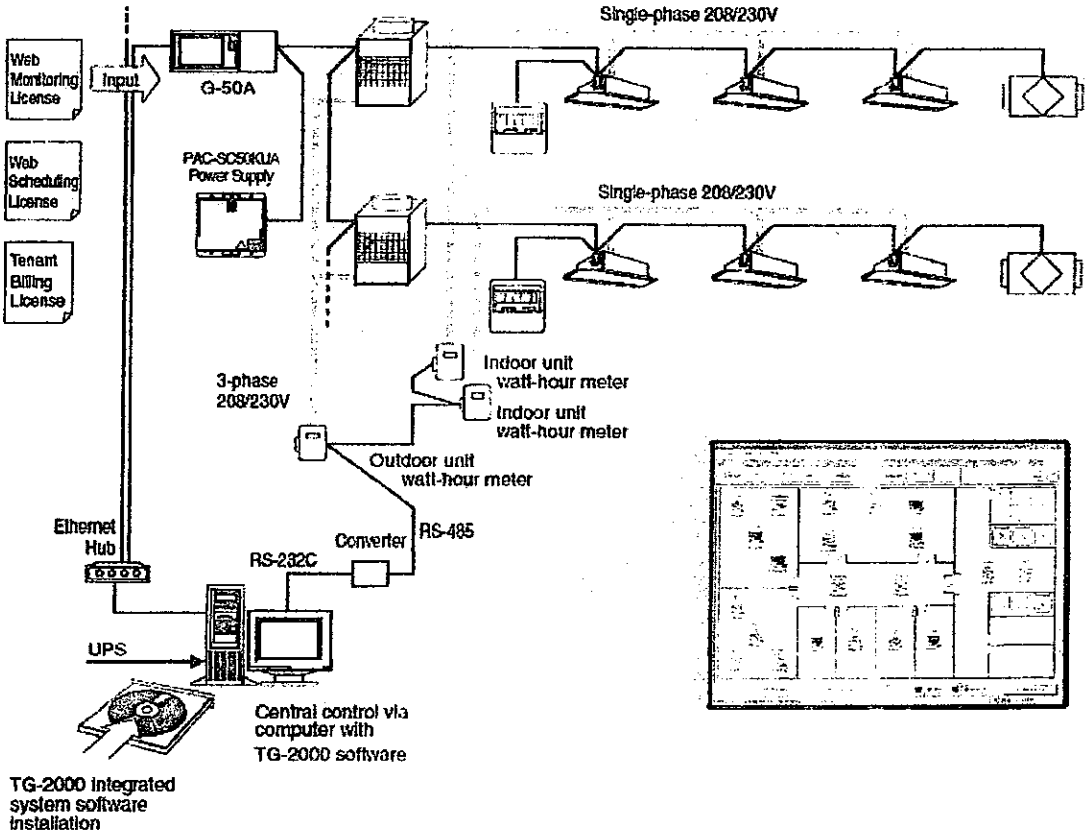
SITE CONTACT FOR RENEWAL INFORMATION:

Contacts:	Distributor	Contractor	Site Contact
Company:			
Name:			
Telephone:			
Fax:			
E-mail:			

Application Note – Tenant Billing Service for Mitsubishi Electric CITY MULTI TG-2000 Integrated Centralized control software

One of the additional software features available through the TG-2000 software suite is **Tenant Billing**.

The tenant billing function of TG-2000 outputs the energy consumption in kWh and monetary amount for the CITY MULTI outdoor unit(s) divided among defined blocks of indoor units. The tenant billing function requires one or more **RS-485 WHM meters** (Measurlogic P/N CVM-BC3-ITF-RS485-C2) to monitor the energy consumption of one or more CITY MULTI outdoor units and be interconnected to the TG-2000 computer via a RS485/RS232 converter. Depending on the number of outdoor units it may be possible to use one WHM for the energy measurement of multiple outdoor units. When implementing this strategy contact Measurlogic Inc. to ensure the correct sizing of the Current Transformers (CT's).



The tenant billing output can be sent directly to a network printer and/or to a destination folder on the TG-2000 PC as an Excel file. The tenant billing output can then be input into an Excel-based support tool to generate an individual ***HVAC Energy Bill*** per tenant. The format of this ***HVAC Energy Bill*** can be customized.

10235 S. Progress Way ,Unit 1, Parker CO 80134
Tel: 877 PQ-SOLNS (777-6567) Fax: 425-799-4780
e-mail: Info@measurlogic.com
web: www.measurlogic.com

Measurlogic Inc. offers the following billing services for customers who require tenant billing:

1. Customization of the ***HVAC Energy Bill***
2. Remote meter reading to obtain total HVAC Energy consumption on a monthly basis
3. Energy Bill formatting
4. Generation of actual bills in a PDF format
5. Emailed and/or mailing actual bills to Client

Notes:

- ✓ Measurlogic Inc. sole interest is to provide the client and / or tenants with the most reliable meter reading and energy bills at the specific location
- ✓ Measurlogic Inc. is only responsible for the downloading of meter data, generation of the bill and **NOT** the collection there-of.
- ✓ Measurlogic Inc. will perform this service with the utmost concern for any errors in the system but shall not be held liable for any financial losses to the tenants or the client
- ✓ Client is responsible for maintaining the PC Computer that will be running the TG2000 software. The PC Computer will have the ability to be connected to a High-Speed Internet connection or on a Network with a server on a High-Speed Internet connection. The Client will also provide a dedicated 15 Amp, 120 Volt UPS supplied power outlet for the computer. The Client shall protect the computer from unauthorized personnel.

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web: www.measurlogic.com

D

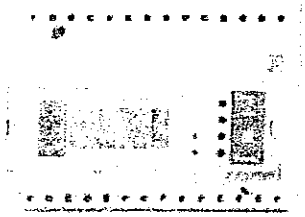
MITSUBISHI ELECTRIC
HVAC Advanced Products Division

CITY MULTI

Watt Hour Meters (WHM)

The following Watt Hour Meters (WHM) are approved for use with TG-2000 and Tenant Billing. The WHM, current transformers, RS485 to RS232 converter and any other necessary peripherals are field supplied devices.

Circutor, Model CVM-BC-ITF-RS485-C2
Measurlogic, Inc (www.measurlogic.com)
10235 S, Progress Way, Unit 1, Parker, CO 80134
Contact: John Stratford
Tele: 1-877-777-6567 or 303-805-5252
Fax: 425-799-4780
E-mail: sales@measurlogic.com



Northern Design (Electronics) Ltd., Model Power Rail 323 + RS485 Module
Selco USA (www.selcousa.com)

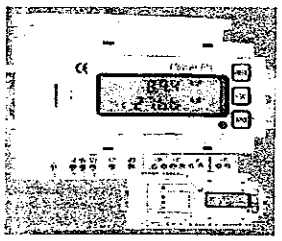


EXHIBIT "B"

You forwarded this message on 8/29/2011 1:32 PM.

Perkins, Jay D.

From: kenneth_resca@dps.state.ny.us [kenneth_resca@dps.state.ny.us] **Sent:** Mon 8/29/2011 1:15 PM
To: Perkins, Jay D.
Cc: honor_kennedy@dps.state.ny.us
Subject: RE: Mitsubishi Electric and Tenant Billing
Attachments:

Mr Perkins,

The Department of Public Service - Staff has reviewed time interval products used to measure commodity flow and found them unacceptable to meet commission regulations and national standards. Run time interval products have several obstacles - product longevity, and accuracy of the product in measuring commodity flow. Having two metered products in one dwelling may not meet the City of New York electric code nor be compatible to revenue grade meters used by the local utility that are installed in the building.

I do not want to be crass I do believe their are better ways to monitor electric flow in this building.

Traveling from Georgia and meeting with Dept. Staff may be difficult since we are located in two different offices New York City and Albany.

Ken Resca
New York State Dept of Public Service
212 417 6173
kenneth_resca@dps.state.ny.us

EXHIBIT "C"

You forwarded this message on 9/14/2011 1:03 PM.

Perkins, Jay D.

From: luann_scherer@dps.state.ny.us [luann_scherer@dps.state.ny.us] **Sent:** Tue 9/6/2011 5:08 PM
To: Perkins, Jay D.
Cc:
Subject: Proposal for 958 Nostrand Avenue, Brooklyn
Attachments:

As a follow-up to the conversation today my understanding is that your proposal is to master-meter the common load of 958 Nostrand Avenue, Brooklyn, NY. The electric use for each residential unit will be directly metered by Con Ed. In addition, you plan on installing some sort of run time metering device to determine how much electricity is used by each of the heating/cooling units (of which there are multiple units, each serving 7-8 residential units.) Once you have determined how much electricity is used by a particular unit, the usage will be the basis for a calculation which, when coupled with apartment size info, will form the basis for a customer bill for heating/cooling. My opinion is that this is outside the Commission's jurisdiction (although I question whether this concept meets the NYC construction codes) however our Office of General Counsel advises that in order to obtain a Commission opinion on whether this concept is within the Commission's jurisdiction you would have to petition for a declaratory ruling. As an alternative, you can submit the petition to submeter - if you do that please remember the metering equipment must meet ANSI c12 specs. I have you on our calendars for Friday morning at 9. Please let me know if you intend to meet with us. Thanks.

LuAnn Scherer
Chief, Consumer Advocacy
New York State Department of Public Service
(518) 486-1846

EXHIBIT "D"

You forwarded this message on 9/7/2011 11:46 AM.

Perkins, Jay D.

From: luann_scherer@dps.state.ny.us [luann_scherer@dps.state.ny.us] **Sent:** Wed 9/7/2011 11:22 AM
To: Perkins, Jay D.
Cc:
Subject: RE: Proposal for 958 Nostrand Avenue, Brooklyn
Attachments:

The Commission will not be approving a VFR. The Commission oversees electricity and approves meters not heating and cooling systems.

LuAnn Scherer
Chief, Consumer Advocacy
New York State Department of Public Service
(518) 486-1846