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Micus Alarm and Control System (MACS)

User's Manual Supplement for

Miteq Uplink Power Control (UPC) Unit

Revision 1.0

1 Revision History

Revision	Date	Comments	Author
1.0	Feb. 14, 2006	First Document Release	Michael Bankovitch

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2 Reference Documents

1. *Micus Alarm and Control System (MACS) Installation Procedure*, Revision 1.9, May 21, 2000, Michael Bankovitch.
2. *Micus Alarm and Control System (MACS) User's Manual*, Revision 3.8, September 15, 2005, Michael Bankovitch.
3. *Operation and Maintenance Manual, Uplink Power Control Unit*, DUPCXE REV. E, December 15, 2004, MITEQ Inc.

3 Introduction

This document is a supplement for the *Micus Alarm And Control System (MACS) User's Manual* [Ref. 2]. For details on the MACS features and components please refer to the MACS user manual. This supplement describes MACS features that specifically support the *MITEQ Uplink Power Control (UPC) Unit*, referred within this document as *UPC*.

The remaining part of this document is structured as follows:

- *Section 4: Monitor and Control Windows* presents specific windows that monitor and control the UPC equipment.
- *Section 5: Configuration* describes the configuration process specific to the software used to monitor and control the UPC equipment.

Please note that this supplement does not contain information on the equipment itself. For details on the equipment features and how to install and operate it, please refer to the MITEQ documentation [Ref. 3].

4 Monitor and Control Windows

This chapter presents in detail monitor and control windows specifically used to control the UPC equipment, available through the MACS graphical user interface. These equipment- specific windows are:

Miteq UPC Monitor and Control
: window shows you the overall equipment status and key parameters for the power supplies, receivers and attenuator channels. The window also allows you to open equipment-specific setup, history and event log windows.

Miteq UPC Setup
: window allows you to setup UPC configurable parameters.

Miteq UPC History
: window shows the receivers input levels for the last 24 hours.

Miteq UPC Event Log
: window allows you to download and to view the event log stored in the UPC unit.

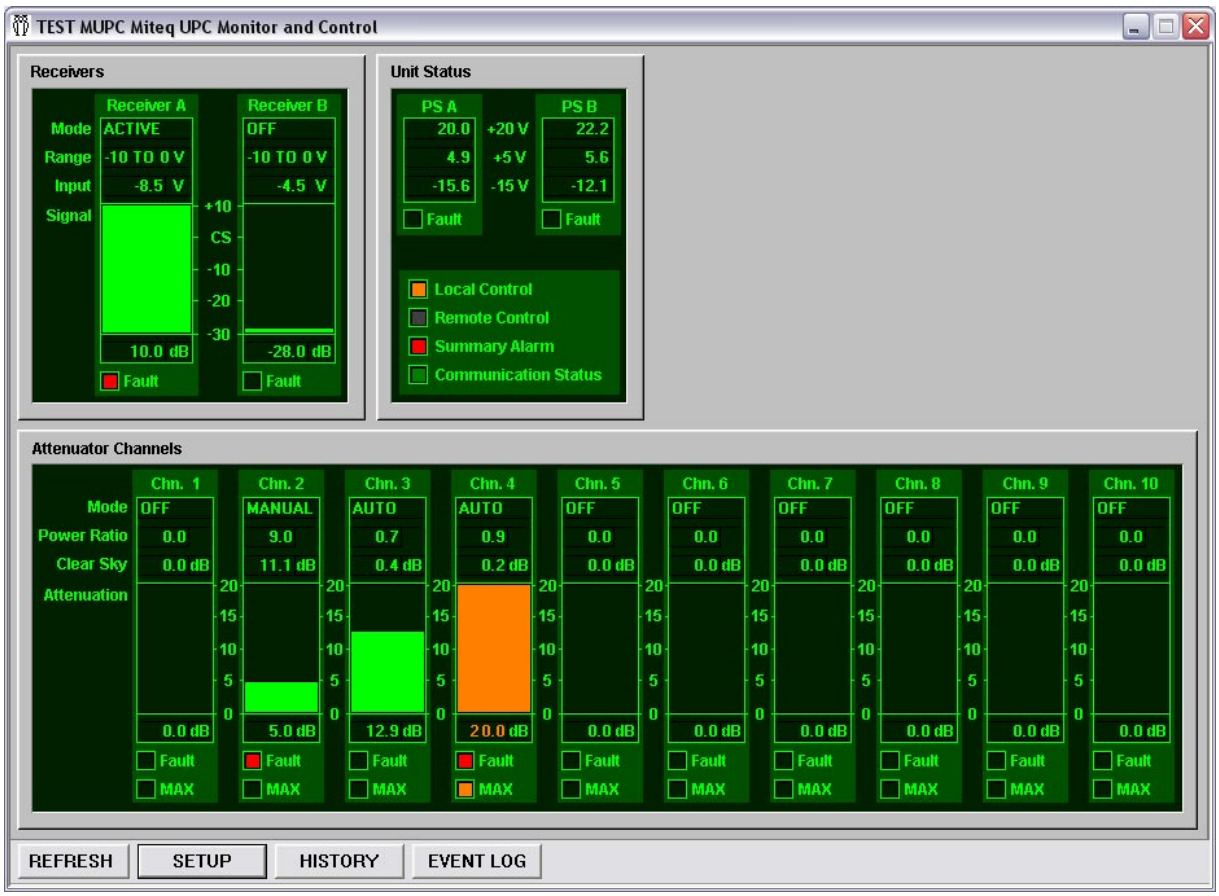
Command Line
: window allows you to use the low level set of commands available through the equipment-specific communication protocol.

The following pages present all equipment-specific windows in more detail.

4.1 Miteq UPC Monitor and Control

The *Miteq UPC Monitor and Control* window allows you to view equipment main parameters, and to open other equipment-specific windows.

You can start the *Miteq UPC Monitor and Control* window from the MACS GUI either from the *Monitors* pull-down menu, or by clicking the *Equipment Specific Monitors* push button in the toolbar. For details on the equipment-specific monitors please refer to [Ref. 2]. In either case, you have to select which UPC unit you want to monitor or control. When you select the equipment, the following dialog box will pop up on the screen:



The UPC equipment has two receivers, referred to as receiver A and receiver B. In the top left corner, the window shows the current status and parameters for each receiver:

Mode indicator shows the receiver input mode, which may be *ACTIVE*, *STANDBY* or *OFF*.

Range indicator shows the receiver input voltage range, which is either -10 to 0 Volts, or 0 to +10 Volts.

Input indicator shows the receiver present input voltage.

Signal indicators show the prevailing downlink signal strength relative to to the clear sky condition. The signal strength is shown as a numerical value and a graph.

Fault indicator is shown in red when there is a receiver fault.

The next group of indicators shows the status and parameters for the two power supplies, and the summary status of the unit itself. Power supply status is shown as follows:

+20 V indicator shows the current voltage for the +20 V power line.

+5 V indicator shows the current voltage for the +5 V power line.

-15 V indicator shows the current voltage for the -15 V power line.

Fault indicator is shown in red when there is a power supply fault.

The unit summary status is presented as follows:

Local Control indicator is shown in amber when the unit is switched to the local control from the equipment front panel.

Remote Control indicator is shown in bright green when the unit is switched to the remote control via the computer interface (CIF).

Summary Alarm indicates the summary fault condition. When summary fault is detected, the point is shown in red color.

Communication Status

indicates the present communication status of the selected equipment unit. The flashing red color indicates that the computer is unable to communicate with the equipment. Normally, this indicator is shown as dark green.

The bottom part of the screen shows the status and parameters for the UPC attenuator channels. The UPC chassis may be populated with up to 10 attenuator channels, numbered from 1 to 10. Each attenuator channel is presented as follows:

Mode	indicator shows the attenuator channel operating mode, which may be *OFF*, *MANUAL* or *AUTO*.
Power Ratio	indicator shows the UPC power ratio. The valid range depends on the selected uplink power correction algorithm. Please refer to the equipment-specific documentation [Ref. 3] for details.
Clear Sky	indicates the clear sky attenuation. Valid range is from 0.2 to 20 dB.
Attenuation	indicators show the presently applied attenuation as a numerical value and as a graph. Both indicators are normally presented in green color. If the attenuation reaches the preconfigured UPC-MAX level, the indicators are shown in amber.
Fault	indicator is shown in red when there is an attenuator channel fault.
MAX	indicator is shown in amber when the UPCMAX attenuation level is reached.

The bottom section of the dialog box contains the following push buttons:

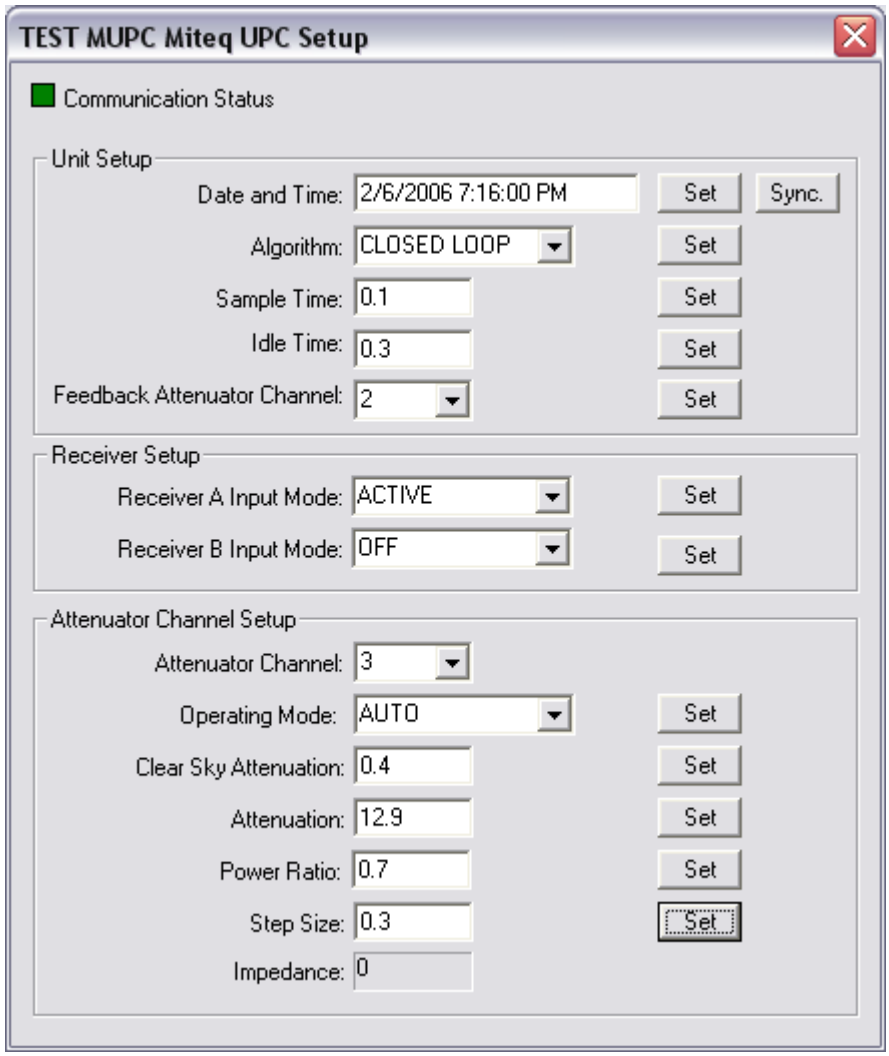
REFRESH	push button refreshes the current operational status of the selected equipment.
SETUP	push button opens the *Miteq UPC Setup* window.
HISTORY	push button opens the *Miteq UPC History* window.
EVENT LOG	push button opens the *Miteq UPC Event Log* window.

To exit the *Miteq UPC Monitor and Control* dialog box, use the exit push button in the top right corner, marked ‘X’.

4.2 Miteq UPC Setup Window

The *Miteq UPC Setup* window allows you to view the selected equipment present configuration parameters.

To open the *Miteq UPC Setup* window, start the *Miteq UPC Monitor and Control* window from the MACS GUI, and click on the *SETUP* push button. The following dialog box will pop up on the screen:



At the top, the *Miteq UPC Setup* window indicates the present communication status of the selected equipment unit. The flashing red color indicates that the computer is unable to communicate with the equipment. Normally, this indicator is shown as dark green.

The next section of the window is marked *Unit Setup*. This part of the window contains the following unit parameters:

Date and Time edit box allows you to view and to change the UPC unit date and time. To set UPC date and time, enter it into the edit box and click on the associated *Set* push button. Alternatively, to synchronize UPC and computer date and time, click on the *Sync*. push button.

Algorithm pull down list allows you to view and to select the uplink power correction algorithm. Valid choices are: *OPEN LOOP, CLOSED LOOP* and *COMPARISON*. To change the algorithm, select the desired option from the list and click on the associated *Set* push button.

Sample Time edit box allows you to view and to change the sample time. Valid range is from 1 to 10 seconds, in 0.1 increments. To change the sample time, enter the new value and click on the associated *Set* push button.

Idle Time edit box allows you to view and to change the idle time. Valid range is from 0.3 to 3 seconds, in 0.1 increments. To change the idle time, enter the new value and click on the associated *Set* push button.

Feedback Attenuator Channel

pull down list allows you to view and to select the attenuator channel used as the closed-loop feedback attenuator channel. To change the channel, select it from the list and click on the associated *Set* push button.

The next section of the window is marked *Receiver Setup*. This part of the window allows you to select the input mode for each receiver:

Receiver A Input Mode

pull down list allows you to view and to select the receiver A input mode. The mode may be *ACTIVE, STANDBY* or *OFF*. To change the mode, select the desired option from the pull down list and click on the associated *Set* push button.

Receiver B Input Mode

pull down list allows you to view and to select the receiver B input mode. The mode may be *ACTIVE, STANDBY* or *OFF*. To change the mode, select the desired option from the pull down list and

click on the associated *Set* push button.

The remaining section of the window, marked *Attenuator Channel Setup*, allows you to configure individual attenuator channels:

Attenuator Channel pull down list allows you to select the attenuator channel you are interested in. When you change the selection, the window will update other fields to show parameters for the selected channel.

Operating Mode pull down list allows you to view and to select the attenuator channel operating mode. Valid modes are *MANUAL, AUTO* and *OFF*.

Clear Sky Attenuation

edit box allows you to view and to change the clear sky attenuation for the selected attenuator channel. Valid range is from 0.2 to 20.0 dB. To change it, enter the new value and click on the associated *Set* push button.

Power Ratio edit box allows you to view and to change the uplink channel power ratio. The acceptable range depends on the selected uplink power control algorithm. Please refer to [Ref. 3] for details. To change power ratio, enter the new value and click on the associated *Set* push button.

Step Size edit box allows you to view and to change the maximum step size for the selected attenuator channel. Valid range is from 0.2 to 20.0 dB. To change it, enter the new value and click on the associated *Set* push button.

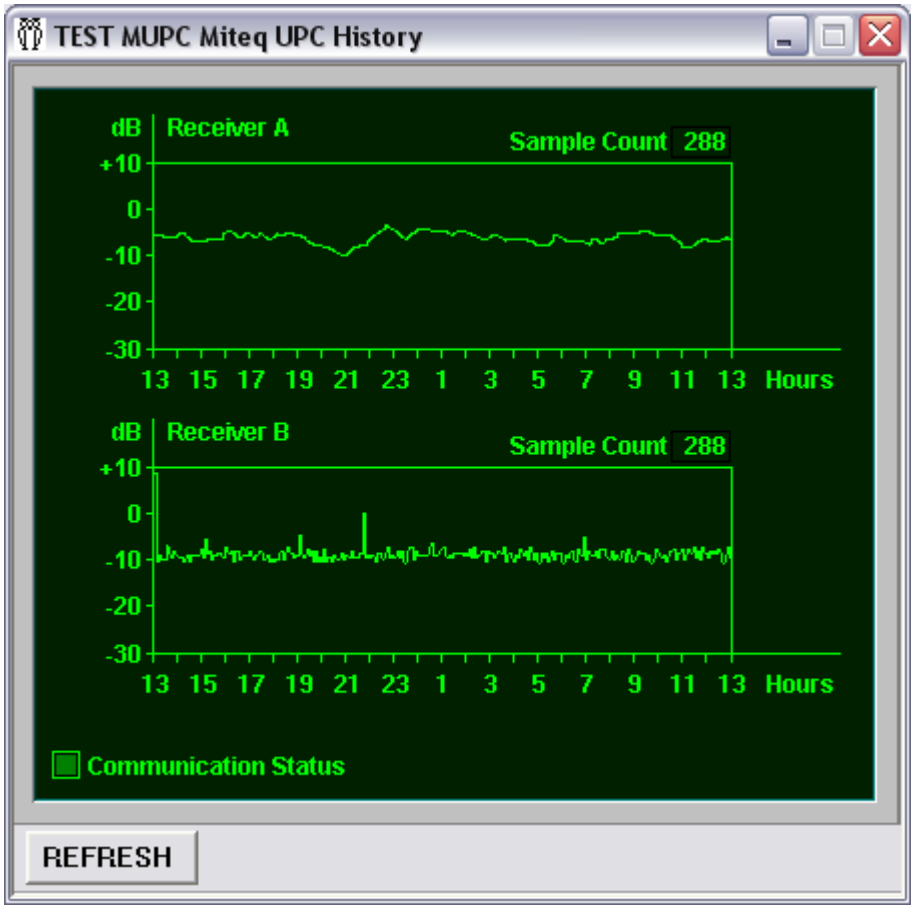
Impedance read only field indicates the operating impedance of the selected attenuator channel.

To exit the *Miteq UPC Setup* dialog box, use the exit push button in the top right corner, marked ‘X’.

4.3 Miteq UPC History Window

The *Miteq UPC History* window allows you to view the selected unit five-minute averaged downlink signal strength for the last 24 hours.

To open the *Miteq UPC History* window, start the *Miteq UPC Monitor and Control* window from the MACS GUI, and click on the *HISTORY* push button. The following dialog box will pop up on the screen:



The window shows two graphs, one for each receiver. At the bottom of each graph, it shows the time scale for the last 24 hours. When you open the window, the graphs will be empty. When you click on the *REFRESH* push button, the system will query the selected unit and populate the graphs.

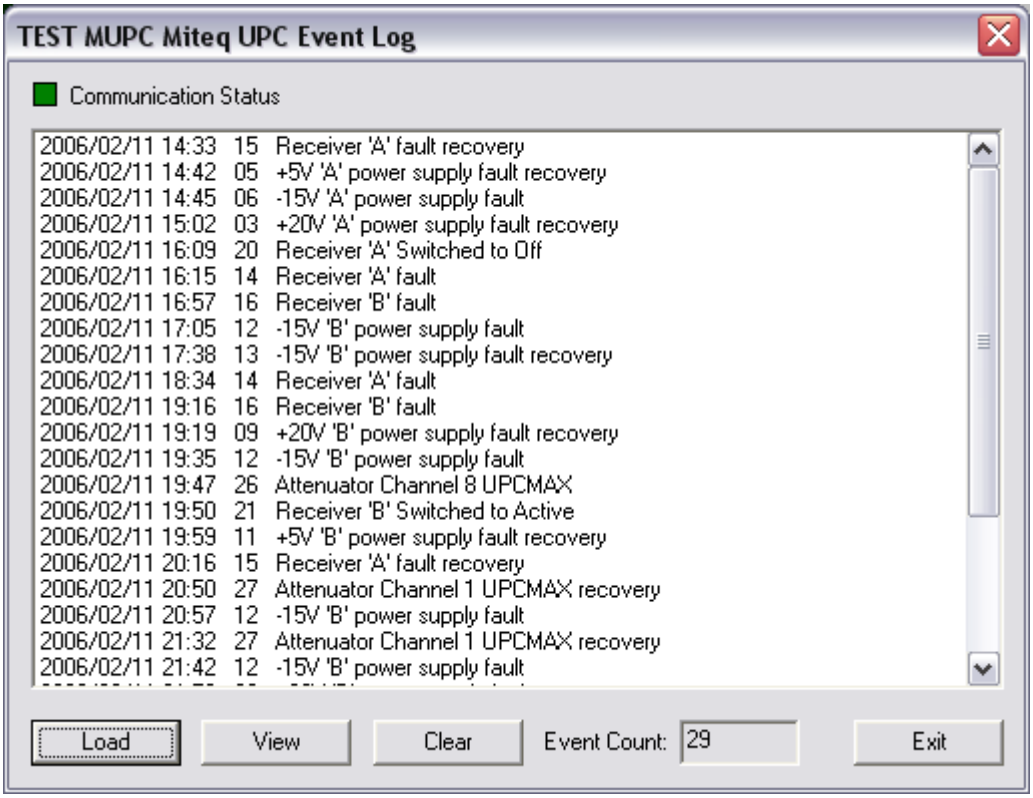
UPC units store their historical data for one day, in 5 minute increments. Therefore, your graph will contain 288 samples for the last 24 hours.

To exit the *Miteq UPC History* dialog box, use the exit push button in the top right corner, marked ‘X’.

4.4 Miteq UPC Event Log Window

The *Miteq UPC Event Log* window allows you to download and to view the selected unit event log. You can also save the event log as a text file.

To open the *Miteq UPC Event Log* window, start the *Miteq UPC Monitor and Control* window from the MACS GUI, and click on the *EVENT LOG* push button. The following dialog box will pop up on the screen:



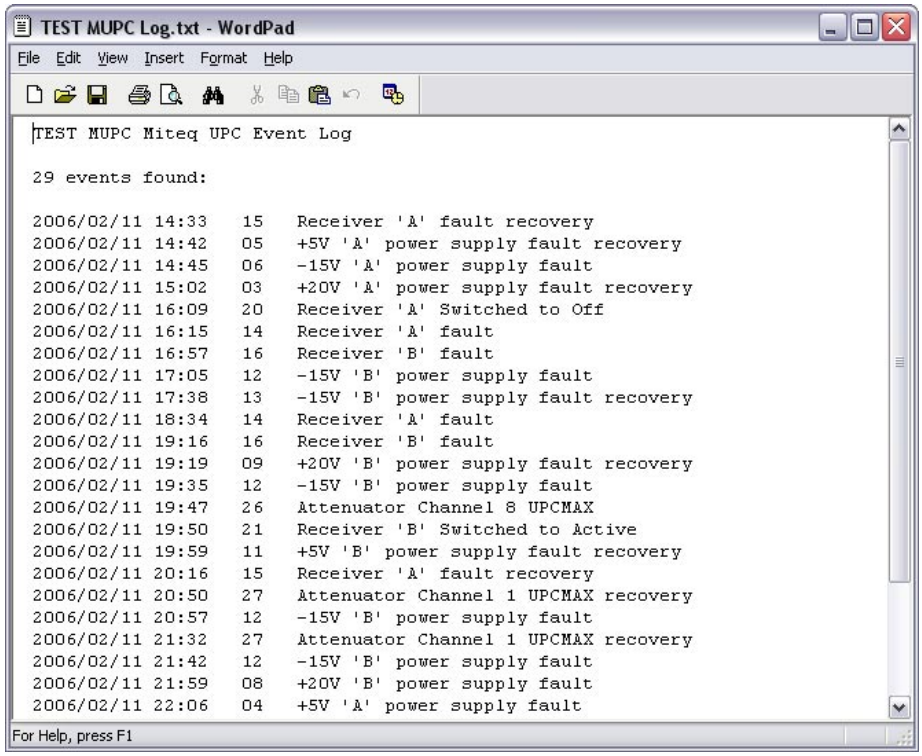
When you open the window, the working area of the screen will be empty. When you click on the *LOAD* push button, the system will query the selected unit and populate the screen.

At the top, the *Miteq UPC Event Log* window indicates the present communication status of the selected equipment unit. The flashing red color indicates that the computer is unable to communicate with the equipment. Normally, this indicator is shown as dark green.

The remaining part of the *Miteq UPC Event Log* window consists of the following elements:

Load push button initiates the event log download from the selected UPC unit.

View push button creates a text report and presents the downloaded event log using the WordPad text editor. From within the editor, you can save the report into a text file, print it, search for key-words, cut and paste report contents, and so on. A typical report layout is depicted in the following picture.



Clear push button clears the event log in the selected UPC unit.

Event Count read only field shows the actual number of downloaded event log records.

Exit push button closes the *Miteq UPC Event Log* window.

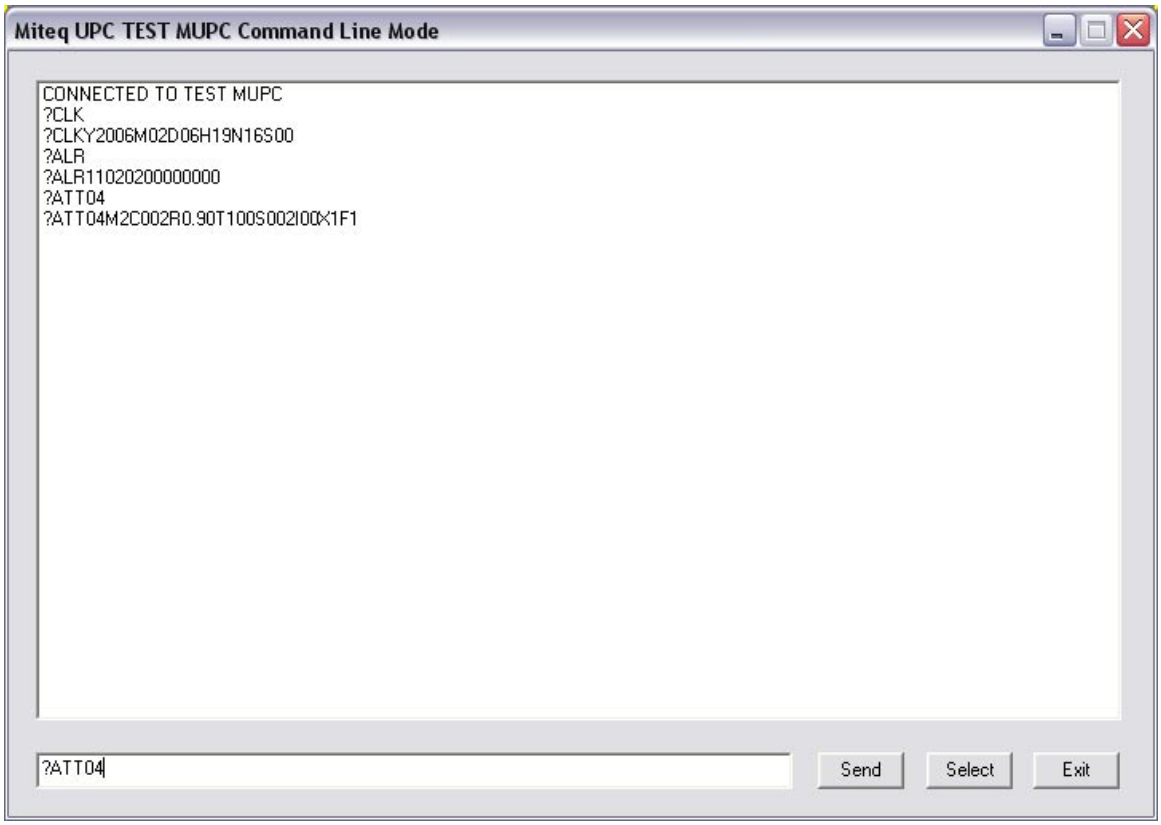
4.5 Command Line Window

The *Command Line* window allows you to send a single line command to the selected equipment unit and to receive one or more lines in response. You can use the same commands available through the Miteq UPC communication protocol. For details on the *Command Line* window itself, please refer to [Ref. 2].

When you select the UPC unit, the system will lock the selected unit for you. You will be the only operator who can operate this unit until you close the *Command Line* window, or until you select another unit.

To start your conversation with the selected UPC unit, type a command into the edit box in the bottom left corner of the dialog box. For the valid commands, please refer to [Ref. 3]. Do not enter start of packet, unit address, end of packet and checksum. The system will automatically add these for you. All you need to enter is a query, or a command followed by the required parameter values.

Once you type your command, you can send it by pressing *<ENTER>* or by clicking on the *Send* button. A typical conversation with a UPC unit is depicted in the following picture:



When you send your command to the UPC unit, the command is displayed in the large, scrollable working area of the dialog box. When the system gets the response from the unit, it displays the response below your command.

As you continue your dialogue with the equipment, the working area of the window will start to scroll. You can use the scroll bar on the right side of the window to scroll through the sequence of your commands and responses.

Note that the length of your conversation with the equipment is ultimately limited by the amount of memory your computer can allocate for the contents of the scrolling window.

5 Configuration

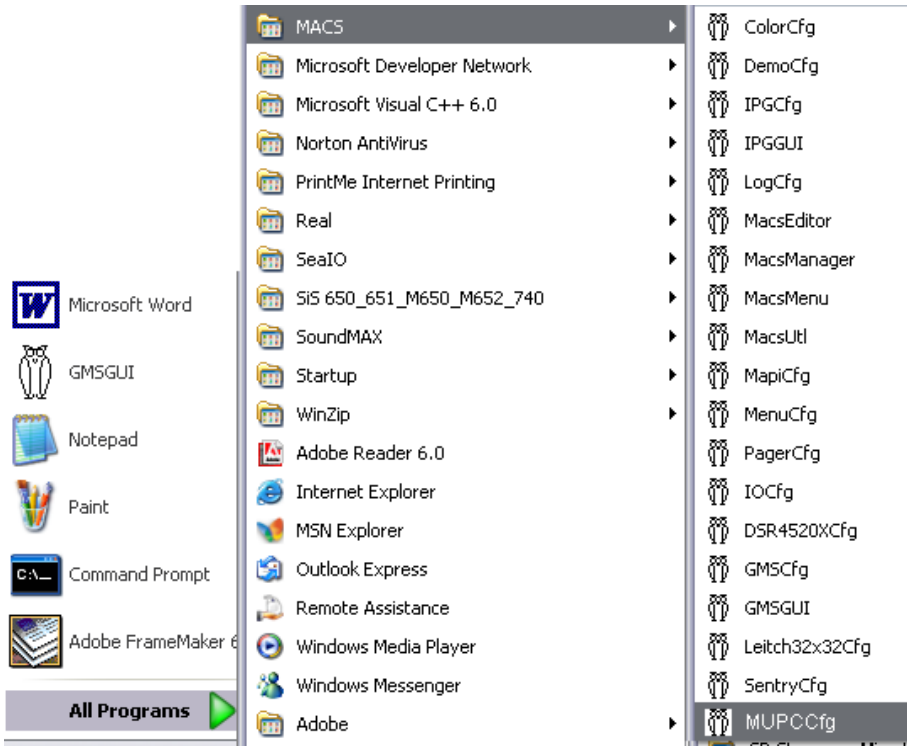
Before you start using your MACS, you need to configure it for your particular application. For configuring MACS standard components, please refer to [Ref. 2]. This section describes in detail UPC-specific configuration.

To configure MACS UPC components, you have to:

- Configure Miteq UPC Windows XP service
- Configure serial ports
- Configure UPC units

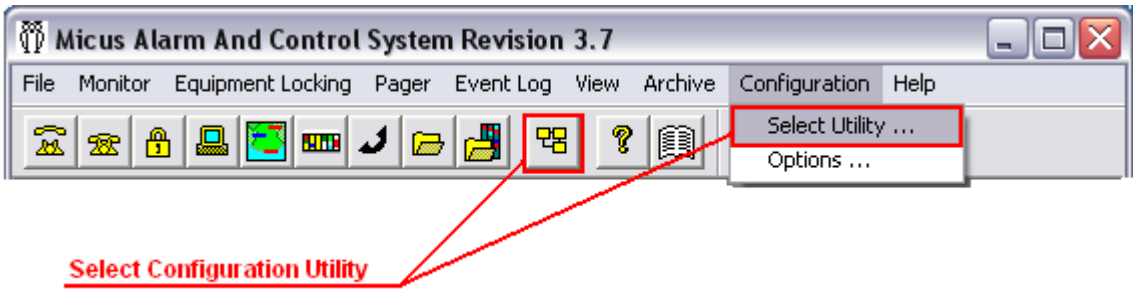
To configure your UPC MACS components, use the *Miteq UPC Configuration Utility* program *MUPCCfg*. Depending on the way your system is administered, this utility may or may not be accessible from the MACS main GUI[1].

To access the *Miteq UPC Configuration Utility* from your workstation desktop, click on *Start -> Programs -> MACS ->MUPCCfg*.

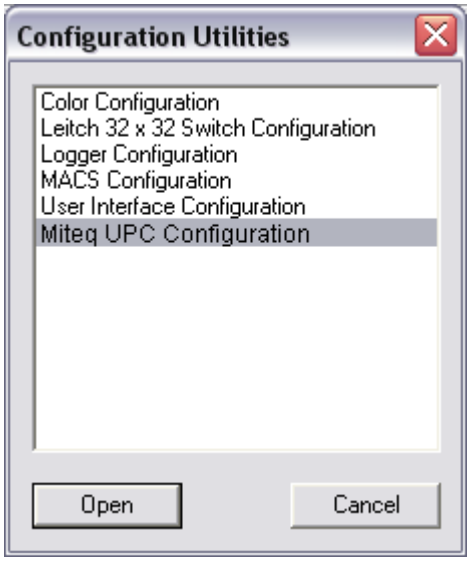


1. Some network administrators do not want to make configuration utilities accessible to all users. In such cases, these utilities are installed only on the workstations used by the system administrators. Others prefer to make configuration programs accessible from the MACS main user interface. The choice is yours, and the way you access configuration utilities is a field-configurable option.

If your system is configured to provide access to the configuration utilities from the MACS main GUI[2], you can also start the *Miteq UPC Configuration Utility* by selecting configuration utilities from the *Configuration -> Select Utility* pull-down menu or by clicking the *Configuration* button on the toolbar.

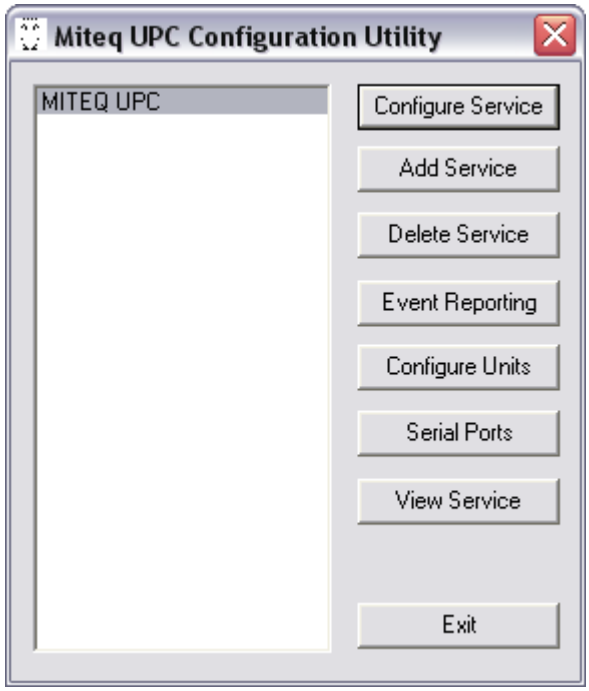


The *Configuration Utilities* dialog box will pop up, and present you with a list of all configuration utilities accessible from your GUI:



Select *Miteq UPC Configuration Utility* and click on the *Open* push button, or simply doubleclick on the *Miteq UPC Configuration Utility* name. The main *Miteq UPC Configuration Utility* dialog box, depicted in the following picture, will pop up on the screen:

2. How to add configuration utilities to the MACS main GUI is explained in [Ref. 2].



The *Miteq UPC Configuration Utility* main window has the following layout:

Configure Service	push button allows you to modify the configuration of an already configured Miteq UPC Windows XP service.
Add Service	push button allows you to add a new Miteq UPC service to your system configuration.
Delete Service	push button allows you to delete an existing service from your system configuration.
Event Reporting	push button allows you to specify the computers and programs on your network that will receive event reports from the service being configured.
Configure Units	push button allows you to add new UPC units to your configuration, and to edit the existing units parameters.
Serial Ports	push button allows you to configure one or more serial ports used by the service.
View Service	push button allows you to create a text report that contains your Miteq UPC service present configuration.
Exit	exits the *Miteq UPC Configuration Utility.*

5.1 Miteq UPC Service

Before you use your MACS to monitor and control your UPC units, you have to configure at least one Miteq UPC Windows XP service.

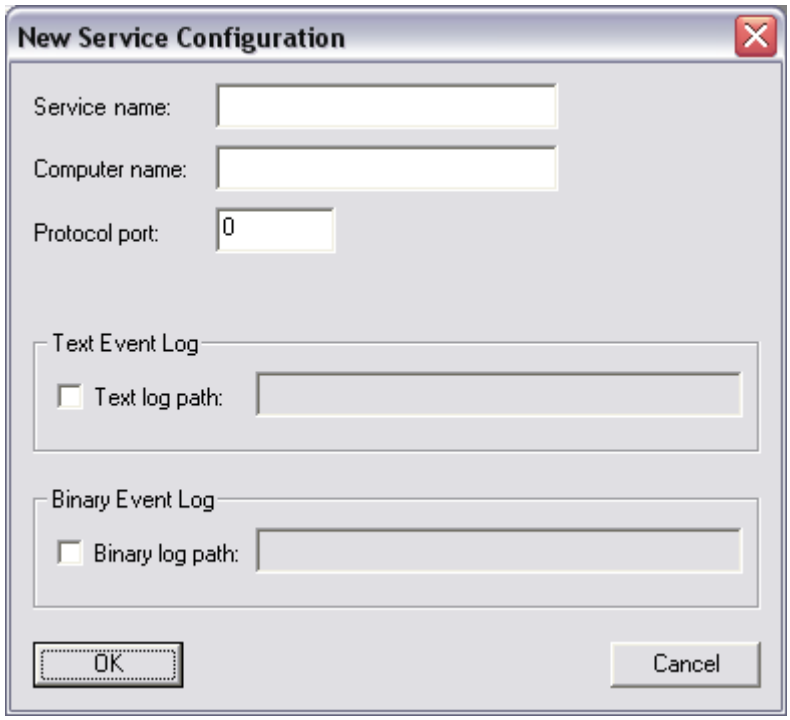
Architecturally, the MACS will allow you to configure more than a single Miteq UPC service, running on a single computer, or on several computers on your local or wide area TCP/IP network. Most applications require only a single Windows XP service.

The following pages explain how to add, modify, delete and view your service configuration.

5.1.1 Add Service

When you run the *Miteq UPC Configuration Utility* for the first time, the list of existing services will be empty, and you will have to add a new service to your system configuration.

To add a new service, click on the *Add Service* button in the *Miteq UPC Configuration Utility* main dialog box, and the *New Service Configuration* dialog box will appear:



The *New Service Configuration* dialog box has the following layout:

Service name edit box allows you to specify the name of your service. This name will appear in all event reports originated by the service.

The name you select must be the same as the name you specified while installing the Miteq UPC Windows XP service. The Windows XP service uses this name upon startup to query its configuration from the database. If there is a mismatch in names, the service will not find its configuration, and therefore will not start properly.

Computer name edit box allows you to specify the name of the computer your service will run on. This name is used, in conjunction with the protocol port, by other computers and programs on your network to establish a TCP/IP connection with the service.

Protocol port edit box allows you to specify the TCP/IP protocol port on which the service will listen to service requests from other computers and programs on your TCP/IP network.

Text Event Log checkbox allows you to select whether the service will maintain its own text event log. This box is normally unchecked, which means that the service will not create and maintain its own set of daily created event log text files. Usually, the service is configured to report its events to the event logger[3].

Text log path edit box allows you to specify the fully qualified path to the folder which will contain the event log text files. If you want this service to maintain its own event log, you must specify a folder that differs from the event log maintained by the event logger.

Binary Event Log checkbox allows you to select whether the service will maintain its own binary event log. This box is normally unchecked, which means that the service will *not* create and maintain its own set of daily created event log binary files.

Binary log path edit box allows you to specify the fully qualified path to the folder which will contain the service specific event log binary files.

For instructions on how to specify the path for the service specific event log, please refer to the chapter on *Event Logger Configuration* in [Ref. 2].

3. For details on the MACS Event Logger please refer to the [Ref. 2].

5.1.2 Configure Service

The *Configure Service* command allows you to change an existing service configuration. In the current MACS software release, configuration changes take effect on the first subsequent Windows XP service startup. Therefore, after making changes in the configuration, make sure to restart the Miteq UPC Windows XP service.

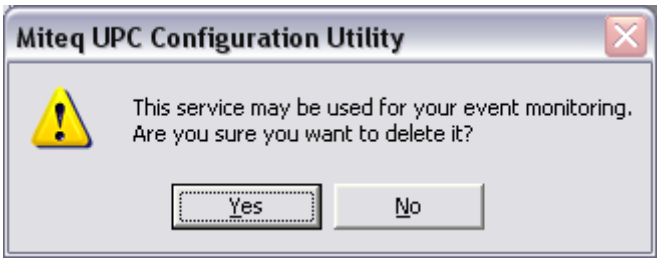
To change the configuration of an existing service, highlight the service name in the list, and click the *Configure Service* push button in the *Miteq UPC Configuration Utility* main dialog box.

The *Modify Service Configuration* dialog box has the same layout as the *Add Service Configuration* dialog box.

5.1.3 Delete Service

To delete an existing service configuration, highlight the name of the service you want to delete, and click on the *Delete Service* push button in the *Miteq UPC Configuration Utility* main dialog box.

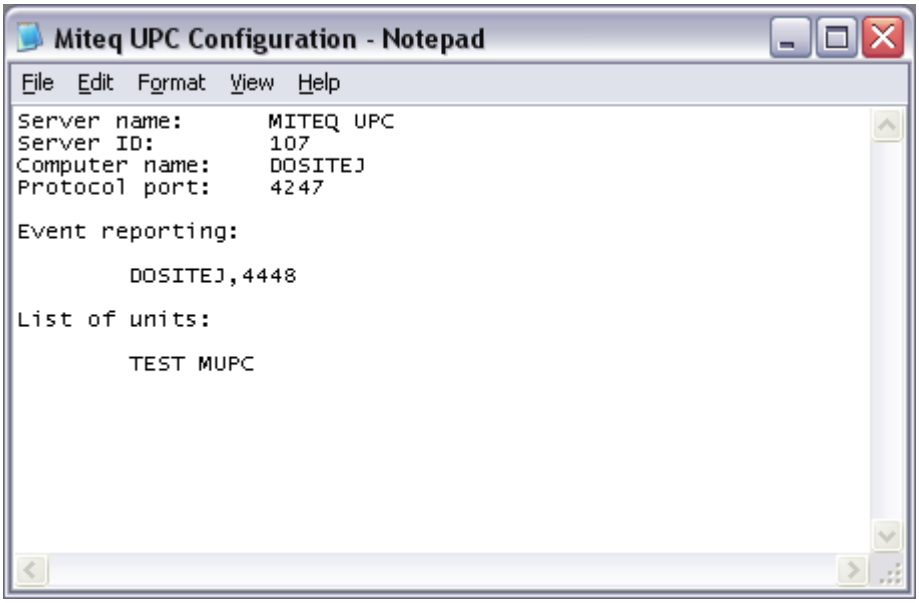
The following dialog box will pop up:



To delete the selected service, click on the *Yes* push button. To exit the dialog box without deleting the service, click on the *No* push button.

5.1.4 View Service

To create a text report with the selected service configuration, open the *Miteq UPC Configuration Utility* main dialog box, highlight the name of the service you are interested in, and click on the *View Service* push button. The system will create the report and present it using the WordPad text editor. From within the editor, you can save the report into a text file, print it, search for keywords, cut and paste report contents, and so on. The following picture illustrates a typical report layout.

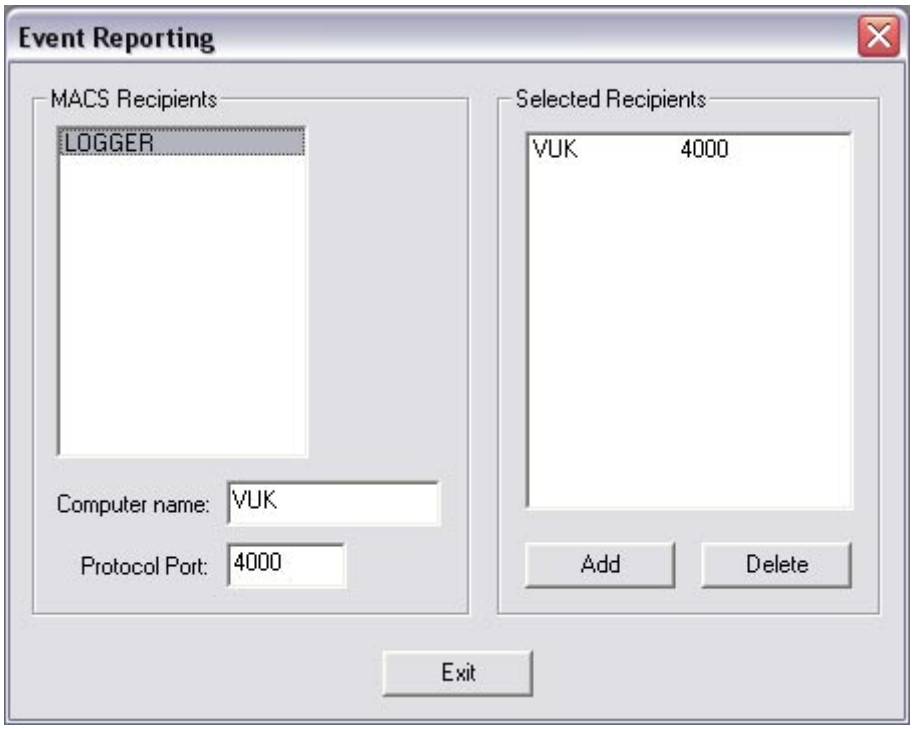


5.2 Event Reporting

During its operation your Miteq UPC service will generate a number of event reports, informing you about changes in the UPC equipment status, and about problems encountered while trying to communicate with the equipment units. Typically, the service is configured to send its event reports to the MACS event logger, which in turn forwards these reports to all other recipients.

To configure your service to send event reports to the event logger, highlight the service name in the *Miteq UPC Configuration Utility* main dialog box and click on the *Event Reporting* push button.

The *Event Reporting* dialog box will pop up on the screen. The dialog box has the following layout:



MACS Recipients is a list of all possible event report recipients known to the selected service. You can select your event report recipient from that list, or you can enter it manually in the *Computer Name* and the *Protocol Port* fields. Typically, you will configure the service to send its event reports to your event logger.

Computer name edit box allows you to enter the destination computer name. When you select your recipient from the MACS Recipients list, the *Computer Name* field is filled in automatically.

Protocol Port edit box allows you to enter the destination TCP/IP protocol port. When you select your recipient from the MACS Recipients list, the *Protocol Port* field is filled in automatically.

Selected Recipients list contains all already configured recipients. These are the destinations to which the service will sent event reports. Typically, the list will contain only your event logger.

Add push button allows you to add a new event report recipient to the *Selected Recipients* list. To add a new recipient, select it from the *MACS Recipients* list, or enter the computer name and the protocol port manually. Then click on the *Add* push button.

Delete	push button allows you to delete an entry from the *Selected Recipients* list. To delete a recipient, highlight it in the *Selected Recipients* list and click the *Delete* push button.
Exit	push button closes the *Event Reporting* dialog box.

When you add a destination to the *Selected Recipients* list, make sure that the corresponding service is actually running at the specified location on your network. If the service is not running, the Miteq UPC service will attempt to connect to the destination service on each event report, and time out after several seconds. This delay will severely impede the overall MACS performance. If you decide not to use a particular event report recipient for a period of time, make sure to take it off from the *Selected Recipients* list, and to restart your Miteq UPC Windows XP service.

5.3 Serial Port Configuration

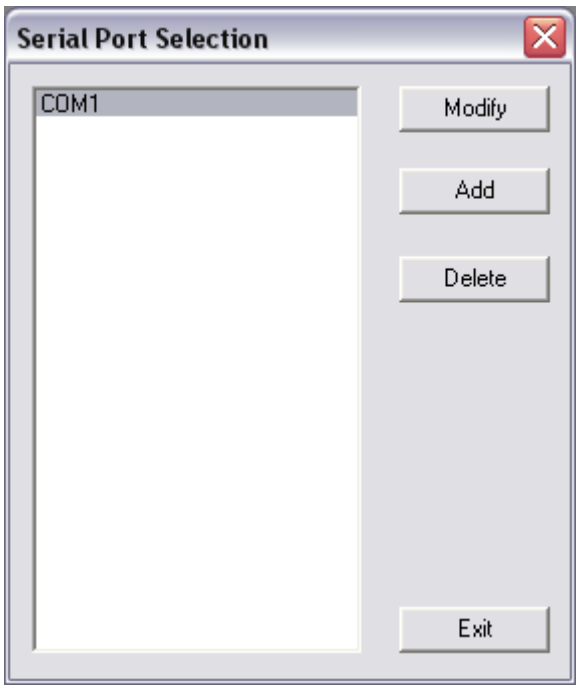
To communicate with the UPC equipment, your MACS needs at least one serial port allocated to the Miteq UPC Windows XP service. MACS allocates serial ports exclusively, which means that serial ports cannot be shared between programs on your MACS server[4].

Depending on the number of units connected to the MACS, you may want to use more than one serial port. MACS modules do not impose any limitation on the number of serial ports you use, up to the operating system imposed maximum[5].

To allocate and configure serial ports to be used for the service, highlight the service name in the list in the *Miteq UPC Configuration Utility* main dialog box. Then click on the *Serial Ports* push button. The *Serial Port Selection* dialog box will pop up on the screen. This dialog box allows you to add, modify and delete serial ports assigned to the selected service.

The *Serial Port Selection* dialog box has the following layout:

4. MACS background modules are usually implemented as Windows XP services. Windows XP services themselves cannot share allocated resources.
5. Windows XP supports up to 255 serial ports.



Modify push button allows you to modify the configuration of a serial port already allocated to the service.

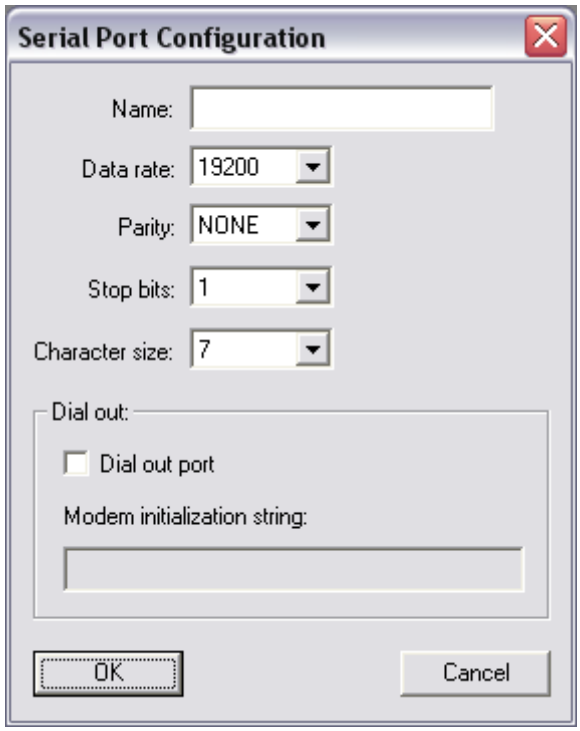
Add push button allows you to allocate a new serial port for the service.

Delete push button allows you to remove the selected serial port from the selected service configuration.

Exit push button closes the *Serial Port Selection* dialog box.

5.3.1 Add Serial Port

When you start configuring your service, the list of serial ports assigned to it will be empty. Thus, you have to start your configuration process by allocating one or more serial ports to the service configuration. To add a serial port, click on the *Add* push button. The *Serial Port Configuration* dialog box will appear.



Name edit box allows you to type in the name of the serial port. Windows XP standard names are *COM1* to *COM255*. In some cases, you may need to use a special naming convention for the serial ports above *COM10*, such as \\.*COM10*. Consult your hardware vendor manual for details.

Data rate pull down list allows you to select data rate.

Parity pull down list allows you to select parity.

Stop bits pull down list allows you to select the number of stop bits.

Character size pull down list allows you to select the number of bits per character.

Dial out port checkbox allows you to specify whether you will use the selected serial port as a dial out port. Miteq UPC equipment does not use dial-up lines, therefore this check box must be unchecked.

Modem initialization string

edit box allows you to enter a string of options to be used to initialize the modem before dialing out. Since UPC equipment does not use dial-up lines, this field is grayed out.

To add a serial port to your service configuration, click on the *OK* push button. To close the dialog box without adding a serial port, click on the *Cancel* push button.

5.3.2 Modify Serial Port

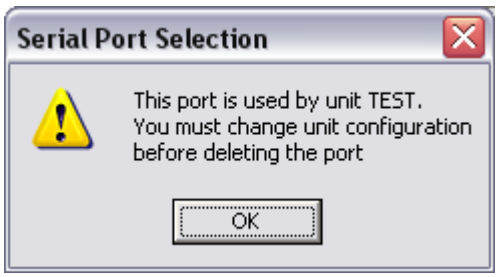
The *Modify Serial Port* dialog box allows you to modify the configuration of a serial port already configured and assigned to the service. To modify serial port configuration, highlight its name in the *Serial Port Selection* dialog box, and click on the *Modify* push button.

The *Modify Serial Port* command uses the same *Serial Port Configuration* dialog box as the *Add Serial Port* command.

5.3.3 Delete Serial Port

To delete a serial port from the selected service configuration, highlight the serial port name in the *Serial Port Selection* dialog box list, and click on the *Delete* push button.

If the serial port you want to delete is used by some of your UPC units, the following dialog box will pop up:



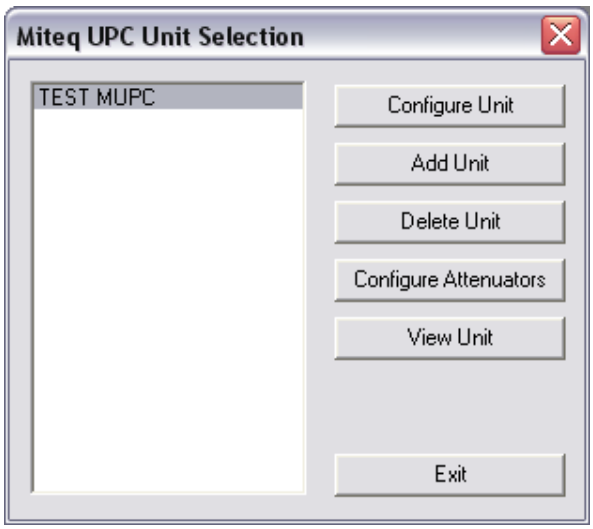
You will have to assign another serial port to all affected units before the system will allow you to delete this port. If there is no unit assigned to this port, the port will be deleted.

5.4 Miteq UPC Units

Before you start using the MACS, you have to add your UPC equipment units to the configuration database. Once the units are configured, you can always use the configuration utility to change their configuration.

You will manage your UPC units configuration using the *Units Selection* dialog box. This dialog box allows you to add, modify, view or delete UPC equipment.

To enter the *Miteq UPC Unit Selection* dialog box, highlight your service name in the *Miteq UPC Configuration Utility* main dialog box, and click on the *Configure Units* push button. The dialog box has the following layout:



This dialog box allows you to modify an existing UPC unit configuration, to add a new unit, to delete an existing unit, and to create a text report that contains the configuration parameters of the selected unit.

The *Miteq UPC Unit Selection* dialog box contains a scrollable list box with all presently configured unit names and the following push buttons:

Configure Unit push button allows you to modify an existing unit configuration.

Add Unit push button allows you to add a new unit to the configuration database.

Delete Unit push button allows you to delete an existing unit from the configuration database.

Configure Attenuators

push button allows you to configure an existing unit attenuator channels.

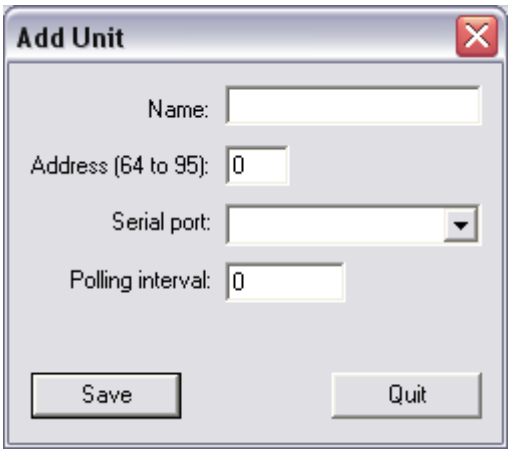
View Unit push button allows you to create a text report, containing the present configuration of the selected unit.

Exit push button closes the Miteq UPC Unit Selection dialog box.

5.4.1 Add Unit

When you add a new UPC unit to the configuration database, the configuration utility will automatically create all required status and control points for that unit. It will also add all 10 attenuator channels to the database. You can delete unused attenuator channels using the *Configure Attenuators* command.

To add a new UPC unit to the configuration database, click on the *Add Unit* push button in the *Miteq UPC Unit Selection* dialog box. The *Add Unit* dialog box will pop up on the screen.



The dialog box has the following layout:

Unit name	field allows you to type in the name of your UPC unit.
Address	field allows you to enter the unit address. Valid range is 64 to 95.
Serial port	pull down list allows you to select the serial port to which the video switch is connected.
Polling interval	field allows you to specify the time interval used to poll the UPC equipment status.
Save	push button allows you to save the new unit configuration.
Quit	push button allows you to exit the dialog box without adding a new unit.

To add a new unit to the configuration, click on the *Save* push button. To close the dialog box without adding the unit, click on the *Quit* push button.

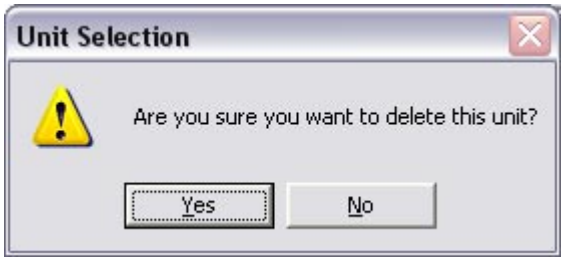
5.4.2 Configure Unit

The *Configure Unit* dialog box allows you to modify an existing UPC unit configuration. To modify unit configuration, highlight its name in the *Miteq UPC Unit Selection* dialog box and click on the *Configure Unit* push button.

The layout and operation of the *Configure Unit* dialog box is the same as the *Add Unit* dialog box, described on the previous pages.

5.4.3 Delete Unit

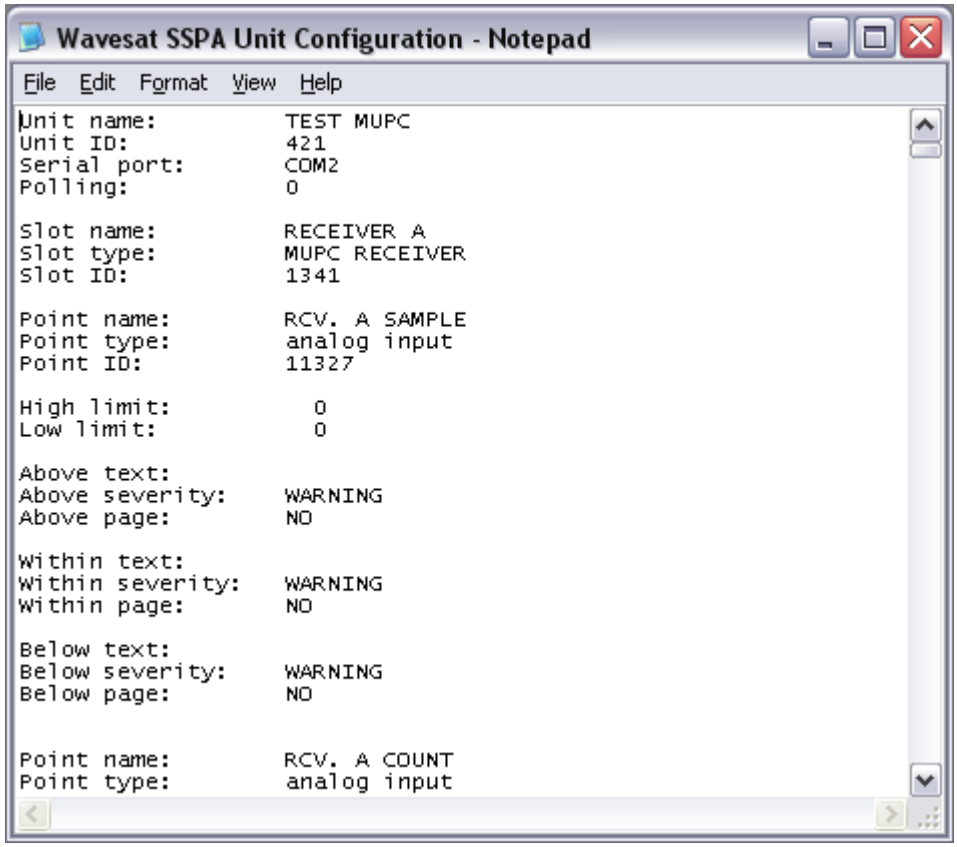
To delete a UPC unit from the configuration database, highlight its name in the *Miteq UPC Unit Selection* dialog box and click on the *Delete Unit* push button. The system will respond with the following query:



To delete the unit, click on the *Yes* push button. To exit without deleting the unit, click on the *No* push button.

5.4.4 View Unit

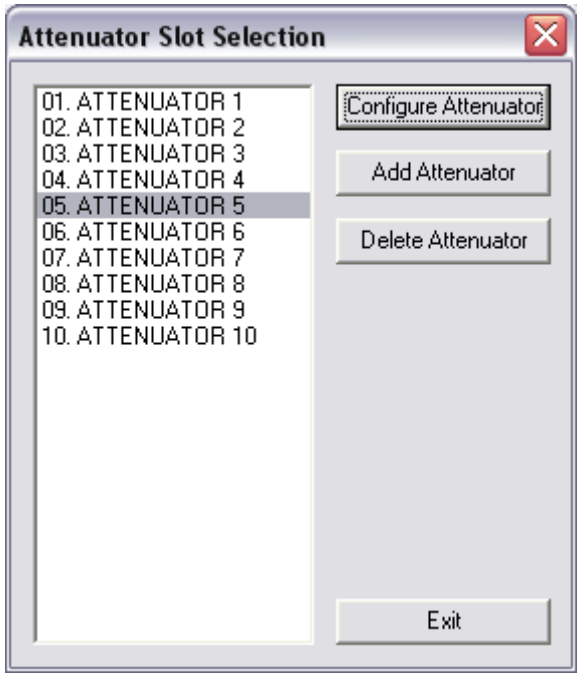
To create a text report with the selected UPC unit configuration, open the *Miteq UPC Unit Selection* dialog box, highlight the name of the unit you wish to view, and click on the *View Unit* push button. The system will create the report and present it using the WordPad text editor. From within the editor, you can save the report into a text file, print it, search for keywords, cut and paste report contents, and so on. The following picture illustrates a typical report layout.



5.5 Attenuator Channels

When you add a new UPC unit to your MACS configuration, The system automatically adds to the database a list of all status, monitoring and control points for that unit. It also adds a list of 10 attenuator channels. You can delete unused attenuators from that list, and you can rename used attenuator channels to more descriptive names.

To modify attenuator channels configuration, open the *Miteq UPC Unit Selection* dialog box, select a UPC unit and click on the *Configure Attenuators* push button. The following dialog box will pop up on the screen:



The *Attenuator Slot Selection* dialog box shows all used attenuator channel slots in the Miteq UPC chassis. As you add or remove attenuator channel modules from the chassis, you can change the UPC slot assignment by adding and deleting attenuator channels. In addition, you can also rename attenuator channels to reflect their actual use.

The *Attenuator Slot Selection* dialog box consists of the following elements:

Configure Attenuator
: push button allows you to configure an existing attenuator channel.

Add Attenuator
: push button allows you to add a new attenuator channel to the unit configuration. Note that initially all 10 attenuator channels are configured. You can add an attenuator channel only after some channels were deleted.

Delete Attenuator
: push button allows you to delete an unused attenuator channel from the list.

Exit
: push button closes the *Attenuator Slot Selection* dialog box.

5.5.1 Add Attenuator Channel

When you add a new UPC unit, the system will automatically configure all 10 attenuator channel slots. If some of the slots in the UPC chassis are not actually populated with the attenuator channel hardware, you can remove the associated definitions from the configuration database. Following that, if you add new hardware to a given slot in the UPC chassis, you can put back on the corresponding attenuator channel definition. To do so, you will use the *Add Attenuator* command.

To add an attenuator channel slot, open the *Attenuator Slot Selection* dialog box, and click on the *Add Attenuator* push button. The following dialog box will pop up on the screen:

The *Add Slot* dialog box consists of the following elements:

Name	edit box allows you to enter up to 15 characters long attenuator channel name.
Address	pull down list allows you select the physical slot within the UPC chassis. Attenuator channel slots are numbered from 1 to 10.
Save	push button saves the new attenuator channel definition in the configuration database.
Quit	push button closes the Add Slot dialog box without saving the changes.

5.5.2 Configure Attenuator Channel

When you add a new UPC unit, the system will automatically configure all 10 attenuator channel slots. These attenuator channels are named *Attenuator 1* to *Attenuator 10*. Using the *Configure Attenuator* command, you can rename your attenuator channels to more descriptive names.

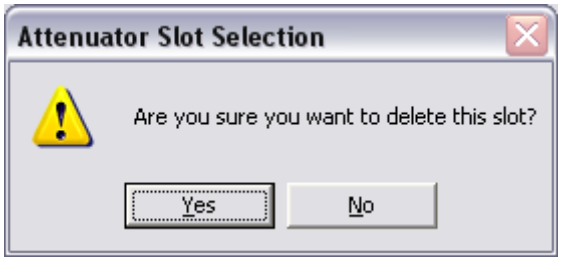
You can also decide to move attenuator channel hardware from one slot in the UPC chassis to another. If you do that, you will also need to change that channel address to a new slot number. To do so you will use the *Configure Attenuator* command.

To change any given attenuator channel configuration, open the *Attenuator Slot Selection* dialog box, highlight the attenuator channel that you want to change, and click on the *Configure Attenuator* push button. The *Configure Slot* dialog box will pop up on the screen. This dialog box has the same layout as the *Add Slot* dialog box.

5.5.3 Delete Attenuator

When you add a new UPC unit, the system will automatically configure all 10 attenuator channel slots. If some of the slots in the UPC chassis are not actually populated with the attenuator channel modules, you can remove the associated definitions from the configuration database. To do so, you will use the *Delete Attenuator* command.

To delete an attenuator channel, open the *Attenuator Slot Selection* dialog box, highlight the attenuator channel that you want to delete, and click on the *Delete Attenuator* push button. The system will respond with the following query:



To delete the attenuator channel slot, click on the *Yes* push button. To exit without deleting the slot, click on the *No* push button.