

# Universal Communications Module

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The Universal Communications Modules (UCM) allows Comfort to connect via a serial RS232 interface or Local Area network to a computer or external equipment. The types of UCM include;

1. UCM/05 with Infrared Learner and RS232 Interface
2. UCM/Ethernet for connection to Local Area Network
3. UCM/Audio with Speaker and Microphone connectors

These UCMs all use the same firmware.

### **This manual describes the Flash-based UCMs which allow firmware to be upgraded by firmware download**

There are also Application-specific UCMs which interface to specific third party systems for example, UCM/CBUS for Clipsal's CBUS, UCM/EIB for the European Installation Bus (EIB) or Instabus. UCM/Ulti for Ulti lighting switches, UCM/Smartfit for Honeywell Smartfit Temperature control system, UCM/GSM for GSM Interface, CWM for the Comfort Webserver. These UCMs are described in their individual manuals. All user and installation manuals are available from the Cytech website <http://www.cytech.biz>

## **UCM05**

The UCM05 (replacing the UCM/IR) has the following functions

1. It allows programs on the onboard Nonvolatile Memory (NVM) ICs ("Master", "Copy") to be transferred to or from Comfort. This is a useful tool when programming, testing or troubleshooting Comfort installations.
2. Comfort's programming software Configurator requires the UCM to upload and download the configuration file to Comfort.
3. It allows a PC or other controller to communicate with Comfort using an RS232 interface, allowing third party products or software (eg Wizcomfort) to work with Comfort. The RS232 command protocol can be downloaded from [www.cytech.biz](http://www.cytech.biz) for the purpose of development of third party interfaces or software.
4. It also allows Infrared signals to be learned and saved as .ifr files which can be assigned to Comfort IR codes via Configurator.
5. Comfort Voice/Vocabulary (new version of language) can be programmed (downloaded) into Comfort using Configurator.
6. Allows other Flash-based Comfort and UCM firmware to be upgraded using Configurator Firmware download

## **UCM/Ethernet**

The UCM/Ethernet is similar to the UCM05 except that instead of an RS232 interface, it is connected to an Ethernet Local Area Network (LAN) using the TCP/IP protocol. The IR Learning and Audio

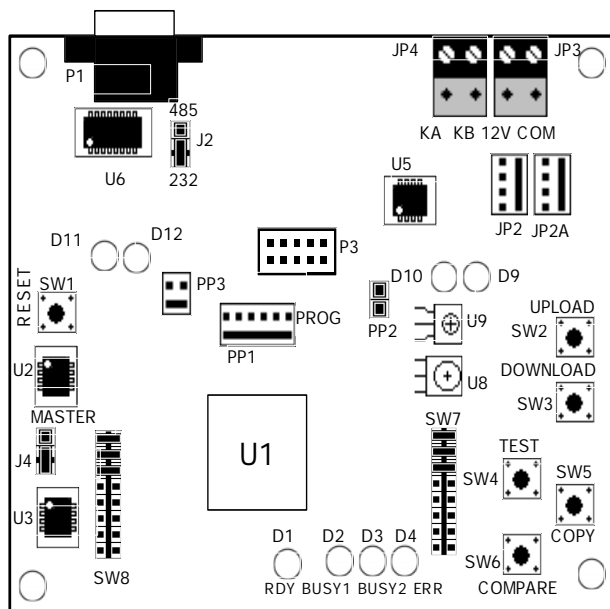
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function are **NOT** supported by the UCM/Ethernet Configurator and Wizcomfort will work with the UCM/Ethernet.

Uploading and downloading with UCM/Ethernet will be slower than for UCM05 (Rs232)

### UCM/Audio

The UCM/Audio is identical to the UCM05, except that it also provides audio (Speaker and Microphone) connections to connect an external powered speaker and microphone, or to connect to the Line In or Line Out audio connections on a personal computer. This allows software like WizComfort to act as a virtual keypad.

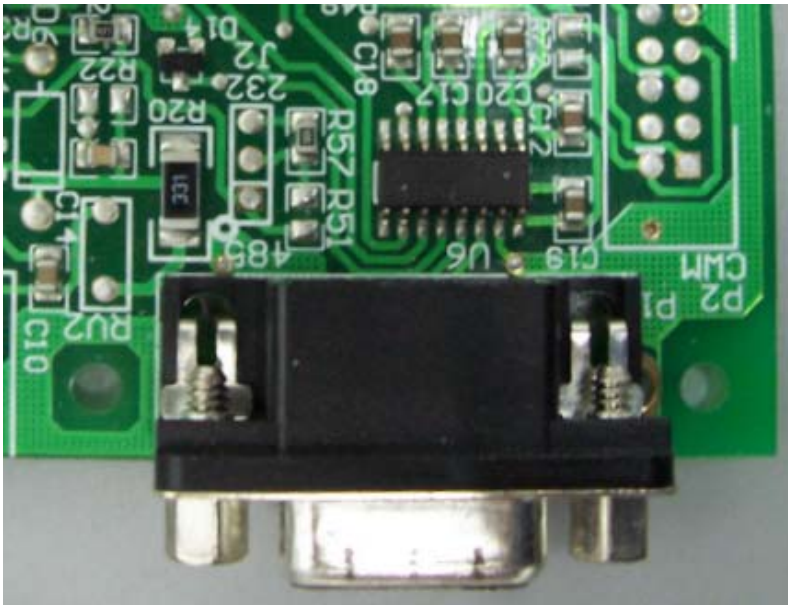


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**and ETH01 cannot be plugged in. Solder a 3 pin header at J2 and remove R57 (See picture below)**

- SW7 (RS485 ID) - set according to id of the UCM (see UCM ID settings below). **Do not insert shunts D to H if present as these will short the push buttons SW2 to SW6**
- SW8 - Pin "H" is shunted for Hardware Flow control using RTS/CTS. The shunt is removed to disable Hardware Flow control. In normal operation, this shunt should be removed to disable hardware flow control.
- SW8 - Pin "G" should be removed for normal operation. If SW8-G is inserted, Action 197 to send text to the RS232 port will not have the STX character before the message and CR to end the message. In this case, Action 197 will also disable reporting of events on RS232 port. A login will reset to the original condition where STX and CR are added to the message to allow upload and download to be used. This applies from UCM 5.45. This is used for special applications only.
- SW8 - pins "E" and "G" if both are shunted during RESET, communications is disabled. For testing purposes only
- J4 - selects U2 or U3 NVM (Nonvolatile memory) as "Master" for Copying and Upload/download operations. (older UCM PCB revisions (A,B,C) had fixed positions for "Master" and "Copy".

**Rework UCM05 PCBs without J2 so that ETH01 can be plugged in to UCM05**



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The picture shows a UCM05 before August 2007 which does not have the J2 header soldered to the UCM05. In order to add the ETH01 to the UCM05 to convert to UCM/Ethernet, a 3 pin 2.54 mm header needs to be soldered at the J2 location. The R57 surface mount resistor needs to be removed. This allows a shunt to be plugged in at the "232" position for Rs232 interface or "485" position for Ethernet interface. This should be attempted by a person with soldering experience.

### Buttons

- SW1 - RESET
- SW2 - UPLOAD
- SW3 - DOWNLOAD
- SW4 - TEST
- SW5 - COPY
- SW6 - COMPARE

### LED Indicators

LED	Label	Function
D1 (G)	RDY	UCM Ready
D2 (R)	BUSY1	Busy/In Operation
D3 (R)	BUSY2	Test/Compare
D4 (R)	ERR	Error/ Compare Failure
D9 (R)		RS485 Transmit to Comfort
D10 (G)		RS485 Receive from Comfort
D11 (G)		RS232 Receive from PC
D12 (R)		RS232 Transmit to PC

### ICs

- U1 - Microcontroller IC with Firmware marked "UCM 5.125" and above
- U2 - NVM (Nonvolatile Memory) - Master or Copy depending on J4
- U3 - NVM (Nonvolatile Memory) - Master or Copy depending on J4
- U4 - Not used
- U5 - RS485 transceiver
- U6 - RS232 transceiver
- U8, U9 are Infrared LED receivers for learning IR signals.

### UCM ID Settings

Comfort is able to support up to 8 UCMs. SW7 is a set of 3 headers which determines the UCM id, according to the table below.

ID - SW7	SW7- A	SW7 - B	SW7 - C
1	Short	Short	Short

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ID - SW7	SW7- A	SW7 - B	SW7 - C
2	Open	Short	Short
3	Short	Open	Short
4	Open	Open	Short
5	Short	Short	Open
6	Open	Short	Open
7	Short	Open	Open
8	Open	Open	Open

**Table 1.1 - RS485 ID Settings (SW7)**

**Do not insert shunts D to H in SW7 if present as these will short the push buttons SW2 to SW6**

SW8	On -Short	Off - Open
A to F	Not Used	Not Used
F	UCM/Ethernet	No Ethernet
G	Don't send STX/ETX for Action 197	Send STX/ETX for Action 197
H	Flow Control CTS/RTS	No Flow Control

**Table 1-2 - SW8 Settings**

SW8 - H shunt when inserted will enable hardware flow control for RS232 communications. If the shunt is off (default), flow control is disabled. This can normally be left off (no hardware flow control). In Configurator, Flow control can also be correspondingly disabled in Options > Connection > Serial Port > Flow Control = None.

SW8-G shunt when inserted will suppress the STX header 03 character and Carriage Return 13 character after the data sent in Action 197. This is not used normally, except for special interface applications. If SW8-G is off (default), the STX header is sent before the characters and Carriage Return (13) is sent after the characters for Action 197.

SW8-F shunt should be inserted for UCM/Ethernet. It can be left out if the UCM is not an Ethernet Module.

## Getting Started

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### Set UCM ID

SW7 (RS485 ID) should normally be set to 1 according to table 1.1 (Shunts A,B,C inserted) if this UCM is used for download/upload. By convention, UCM ID=1 is reserved for upload/download using Configurator, because when this UCM ID is disconnected, Comfort does not report "Communications Failure", while with UCM Ids 2 to 8, Communications failure will be reported (From O4.141).



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Other UCMs or types of UCM may be connected for interfacing to Honeywell Smartfit, C-Bus or EIB (European Interface Bus). These other UCMs should be set to higher-numbered IDs, up to 8. UCM IDs should be sequential, i.e. there should not be any missing ID numbers, i.e. 1,2,3,4,. and not 1,3,5,7,.

If the ID is changed while power is on, RESET the UCM by pressing the RESET switch SW1 on the UCM.

**Make sure that no other UCM is set as ID=1 in the system, otherwise there will be a conflict which will prevent proper communication.**

### Number of UCMs

The Number of UCMs in Comfigurator > Modules and Settings is set to 1 by default. If there are more than 1 UCM in the system, enter the number of UCMs. This can also be done in Locations Menu on the keypad (Engineer Menu 7,4,1)

**Always RESET the system after** changing the number of UCMs

### Connections




Connect the UCM to Comfort using the supplied cable with 4-way IDT connector on both ends. It plugs into JP2 or JP2A on the UCM and J15 on Comfort. This supplied cable can be used for short runs (about 1 meter). If the UCM is located further from the Comfort panel, up to 100 meters, use a cable with 3 twisted pairs. 12V/GND, KA/KB are to be paired with one pair as spare. Shielding is not necessary. The UCM may also be connected from the SEM modules. Ensure that polarity is correct as this is a common cause of problems with communications.

It is not necessary to switch off power to Comfort before plugging in the UCM connections. The UCM is often connected in order to download a configuration using Comfigurator.

The UCM is connected to the PC serial port via a serial cable with a 9 way male D connector on one end and a 9 way female D connector on the other end (supplied). The best position for the UCM is near or next to the PC. This is because RS485 is a balanced line and is able to be run much longer distances without signal corruption than the RS232 signal cable. Locate an unused serial port on the PC and plug in the end with the female D connector. Older PCs may have 25 way connectors for the serial port in which case a 9 way male to 25 way female adapter (available from computer shops) is needed.

### What to Watch Out For

Once the UCM is connected with the ID setting set correctly, the LEDs D10 (Green) and D9 (red) will flash continuously, and the RDY green LED should stay on. The RDY LED indicates that the UCM firmware is running. D10 indicates RS485 data is being received from Comfort, and D9 indicates the UCM is replying with RS485 data to Comfort. The BUSY1, BUSY2, and ERROR LEDs should be off. If the LED states are not as described, see the Troubleshooting section for an explanation of the behavior of the status LED indicators.

LEDs	Behavior when idle	Remarks
RDY (G)		Steady ON
BUSY1 (R)		OFF
BUSY2 (R)		OFF
D10 (G)		Blinking Fast
D9 (R)		Blinking
D11 (G)		Off
D12 (R)		Off

If the RDY LED is not on, press the RESET button on the UCM. This may happen when connecting the UCM 4 way cable to Comfort without turning off power. RESET on the UCM usually starts the UCM operating correctly.

### Download and Upload from the PC

When downloading a configuration from Configurator to Comfort or sending commands from PC software (e.g. WizComfort), you will see the Green Red LED D11 and Red LED D12 blink quickly.

### Engineer Code for Configurator Download

When downloading or uploading to Comfort using Configurator 2.2.0, the Engineer Code is required. This is any valid user code on Comfort. **Engineer code is only valid after pressing F0 on the keypad.** This is for protection of the user against unauthorised access with Engineer code.

## The UCM and NVM (Nonvolatile Memory)

Comfort Model	File System	NVM capacity (KBits)
ENTRY I	17	32K (24C32)
PRO I	18	64K (24C64)
ULTRA I	24	256K (24C256)
OPTimum II	31	64K (24C64)
Ultra II	34	256K (24C256)

**Table 3.1 - NVM Types**

The above table shows the types of NVMs used for the various Comfort Models (Entry, Pro, and Ultra). In Comfort, the NVM in U4 contains the programmed configuration, which is downloaded from the PC using Configurator, or programmed using the keypad or telephone using the Engineer Menu.

## Configurator Download and Upload

In Configurator, select Options > Communications and select the COM port (1 to 16), (or IP Address and Port in the case of UCM/Ethernet) to which the UCM is connected.

To transfer the programmed configuration to Comfort ("download"), in Configurator, select Transfer > PC to Comfort. To transfer the programmed configuration from Comfort to the PC, select Transfer > Comfort to PC.

During Upload and Download, both D11 (Green) and D12 (Red) Leds will be blinking rapidly indicating data received and transmitted to the RS232 port. D9 and D10 LEDs will also be blinking fast simultaneously. Keypads and other modules will not be able to communicate during this process.

Refer to the Configurator Reference Manual for details on using the software. Refer to Programming with Configurator for Comfort programming concepts.

## Master and Copy NVMs

IC sockets U2 and U3 are meant for the NVMs for the COPY, COMPARE, TEST, UPLOAD and DOWNLOAD operations. The designation of "Master" depends on the J4 jumper setting. If the shunt in J4 is inserted in the position which is closer to U2, then U2 will be designated the Master and U3 the Copy. Similarly, if the shunt in J4 is inserted in the position which is closer to U3, then U3 will be designated the Master and U2 the Copy.

The NVMs should be inserted in U2 and U3 with the UCM disconnected from Comfort (i.e. with power removed).

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### Copy "Master" to "COPY"

1. With the UCM disconnected from Comfort (i.e. with power removed), insert the NVMs into Master and Copy sockets U2 and U3. The NVMS should have identical memory capacities, or the COPY NVM could have a greater capacity than the Master NVM.
2. Insert the shunt in J4 so that it is closer to the "Master" NVM and away from the "Copy" NVM.
3. Connect the 4 way cable between JP2/JP2A on the UCM and J15 on Comfort. The RDY LED should turn on and D9 and D10 leds should start flashing.
4. Press the "COPY" button. The "RDY" LED should turn off, and the BUSY1 led should turn on while the copy operation is in progress.
5. When the COPY operation is completed, the BUSY1 led turns off, and the BUSY2 led turns on during the compare phase while the MASTER and COPY NVMs are being compared.
6. When the Compare operation is completed, the RDY led turns on and the BUSY leds turn off.
7. If an error is encountered during the COPY or COMPARE operation the Error led turns on.
8. Remove power from the UCM by unplugging the 4-way cable from either Comfort or the UCM. Before removing the NVMs.

### Compare "Master" with "COPY"

1. With the UCM disconnected from Comfort (i.e. with power removed), insert the NVMs into Master and Copy sockets U2 and U3. The NVMs should have identical capacities.
2. Insert the shunt in J4 so that it is closer to the "Master" NVM and away from the "Copy" NVM.
3. Connect the 4 way cable between JP2/JP2A on the UCM and J15 on Comfort. The RDY LED should turn on and D9 and D10 leds should start flashing.
4. Press the "COMPARE" button to start the compare operation. The RDY and ERROR leds turn off and the "BUSY 2" led turns on.
5. If the compare is successful, the RDY led turns on and the BUSY2 led turns off. If the two NVMs are not identical, the ERR led turns on.

### Upload Comfort NVM (U4) to "COPY"

1. With the UCM disconnected from Comfort (i.e. with power removed), insert the NVM into either of sockets U2 and U3. The NVM should have the same or greater capacity than the NVM in U4 of Comfort.

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2. Insert the shunt in J4 so that it is away from the “Copy” NVM to which the program in Comfort is to be uploaded. Note: In this context “Upload” means to transfer from Comfort to UCM and “Download” means to transfer from UCM to Comfort.
3. Connect the 4 way cable between JP2/JP2A on the UCM and J15 on Comfort. The RDY LED should turn on and D9 and D10 leds should start flashing.
4. Press the UPLOAD button. All the data in Comfort’s U4 NVM will be uploaded into the COPY NVM. The RDY led should go off and the BUSY1 led should come on during the upload operation
5. The upload operation should take about 30 seconds for a 24LC32 (for FS17) and 60 seconds for a 24C64 (for FS31), and up to 4 minutes for 24C256 (for FS34).
6. When the upload is completed, the RDY led should come on and the BUSY1 led should go off.

### Download “Master” NVM to Comfort NVM (U4)

1. With the UCM disconnected from Comfort (i.e. with power removed), insert the Master NVM into either of sockets U2 and U3. The NVM should have the same capacity as the NVM in U4 of Comfort.
2. Insert the shunt in J4 so that it is towards the “Master” NVM containing the program is to be downloaded to Comfort: In this context “Upload” means to transfer from Comfort to UCM and “Download” means to transfer from UCM to Comfort.
3. Connect the 4 way cable between JP2/JP2A on the UCM and J15 on Comfort. The RDY LED should turn on and D9 and D10 leds should start flashing.
4. Press the DOWNLOAD button. All the data in the Master NVM will be downloaded into Comfort’s NVM. The RDY led should go off and the BUSY1 led should come on during the upload operation.
5. The download operation should take about 30 seconds for a 24LC32 (for FS17) and 60 seconds for a 24C64 (for FS31), and up to 4 minutes for 24C256 (for FS34).
6. When the download is completed, the RDY led should come on and the BUSY1 led should go off.
7. The UCM resets Comfort automatically after a DOWNLOAD.

### Test NVM

1. With the UCM disconnected from Comfort (i.e. with power removed), insert the NVM to be tested into the U2 or U3 socket and insert the shunt in J4 **AWAY** from the NVM to be tested. Do this without power applied.
2. Connect the UCM to Comfort and press the TEST button. Every location will be written and read to ensure that the device is working. After testing, the original data in the NVM is restored.

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The RDY led should go off and the BUSY1 led should come on during the TEST operation

3. When the test operation is completed, the RDY led should come on and the BUSY1 led should go off.

## Common Problems

### Serial Port

The most common problem with UCM communications is with the serial port on the computer. Make sure that the UCM is connected to the correct COM port, and that same port is specified in the Serial Port setting for Configurator.

There may be compatibility problems with certain USB to Serial and PC-Card to serial converters. These need to be tested with the UCM.

### UCM ID

Check that there is no other UCM (UCM05, UCM/Audio, UCM/Ethernet, UCM/CBUS, UCM/EIB, UCM/Smartfit) installed with the same ID as any other UCM. This will cause a conflict of addresses with more than 1 UCM responding to the poll from Comfort.

### SW8 Settings




SW8-F must be open for normal UCM, UCM05, UCM/Audio, and closed for UCM/Ethernet.

SW8-G should normally be open.

SW8-H should be open for No Flow Control

## LED Status Indications







The following describes what is regarded as normal LED indications which will be seen on the UCM module when it is connected to Comfort.

<b>D9 (Red) and D10 (green) status indications for RS485</b>	
Communications OK (Idle)	
D10 (green)	
D9 (Red)	
UCM is receiving data, but not responding.	
Cause	UCM SW7 ID shunts may be set wrongly or No of UCMs in Configurator may be wrong.
D10 (green)	
D9 (Red)	
No Communications	
Cause	KA/KB or 12V/Ground not connected
D10 (green)	

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<b>D9 (Red) and D10 (green) status indications for RS485</b>	
D9 (Red)	

The D10 (green) LED indicates RS485 data received from Comfort, and D9 (Red) indicates data transmitted to Comfort.

<b>D12 (Red) and D11 (green) status indications for RS232</b>	
Uploading or Downloading from PC (Comfigurator)	
D11 (green)	
D12 (Red)	
UCM receives command from RS232 and Responds (e.g... login)	
D11 (green)	
D12 (Red)	
UCM receives command from RS232 and does not Respond	
D11 (green)	
D12 (Red)	
UCM sends a report to RS232	
D11 (green)	
D12 (Red)	

The D11 (green) LED indicates RS232 data received from the PC and D12 (Red) indicates RS232 data transmitted to the PC.



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RDY, BUSY1, BUSY2, ERROR LED Indicators	
Uploading or Downloading from PC (Comfigurator)	
D11 (green)	
D12 (Red)	
UCM receives command from RS232 and Responds (e.g... login)	
D11 (green)	
D12 (Red)	
UCM receives command from RS232 and does not Respond	
D11 (green)	
D12 (Red)	
UCM sends a report to RS232	
D11 (green)	
D12 (Red)	

## Using Hyperterminal for Testing

This section shows how to communicate with the UCM using a PC serial port. This is useful for those who are developing applications for the UCM, or for those who have difficulty getting Comfigurator to work with the UCM. Connect the UCM to Comfort and the PC serial port as described earlier. On Windows 95/98/2000/Me, Run Hyperterminal on the PC. This can be found at Start -> Programs -> Accessories -> Communications -> Hyperterminal Folder. Double-click on the Hyperterminal.exe icon. A dialogue box for "New Connection" will appear as shown below. Enter "UCM on COM1 (or 2)" as the name and click on OK



The next screen is:

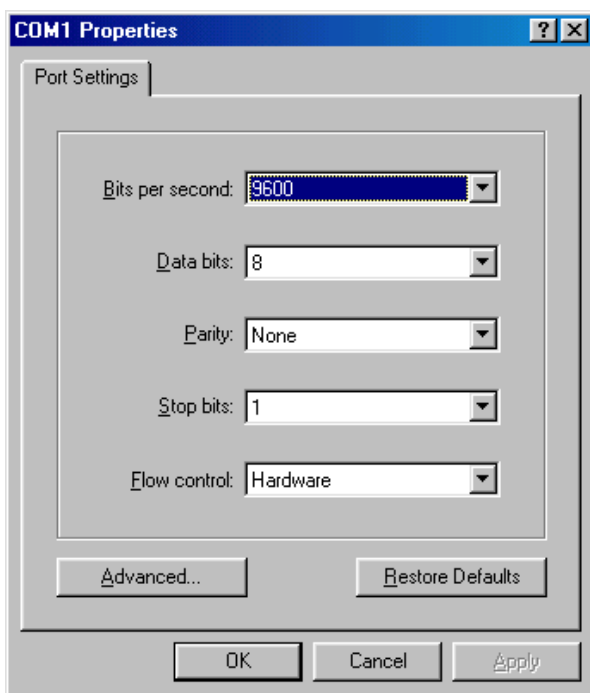
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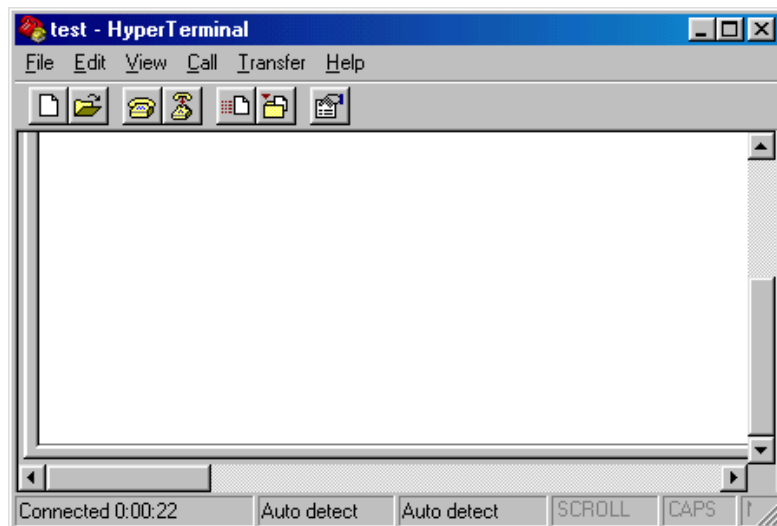
On the box "Connect using, select "Direct to COM n" (where n is your serial COM port to which you are connecting the UCM). Click on OK

The next screen defines the properties of the COM port

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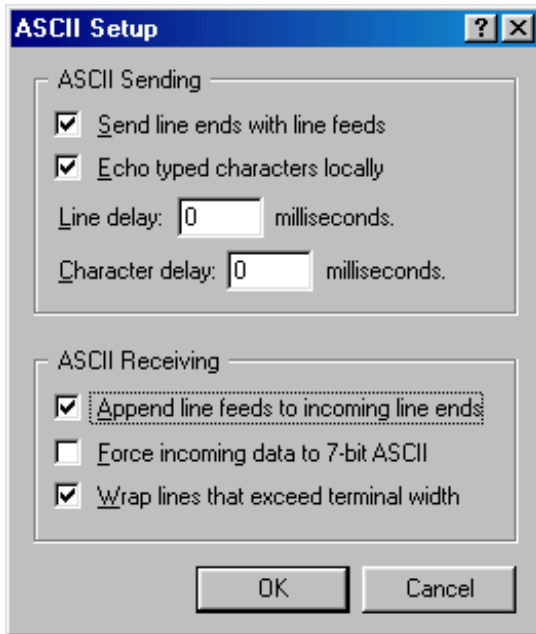


Set "Bits per second" to 9600, "Data Bits" to 8, "Parity" to one, "Stop Bits" to 1, "Flow Control" to Hardware and click on OK. This starts the Communication screen



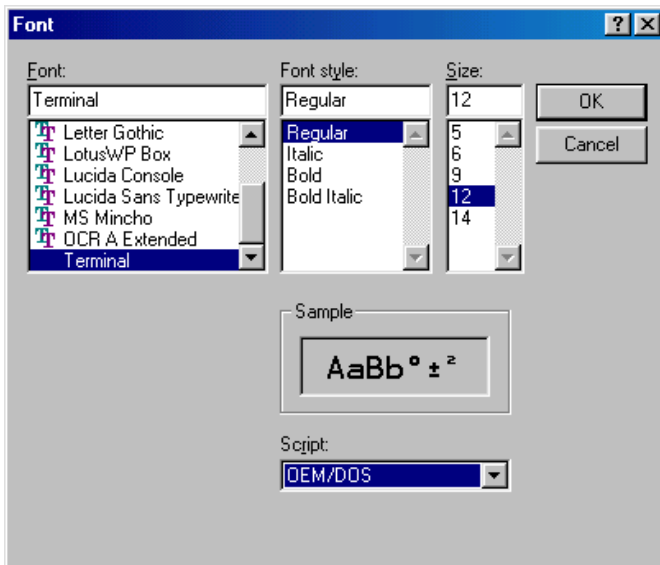
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On the Menu bar, select File -> Properties, and click on the "Settings" tab, and click on "ASCII Setup..", and check the boxes as shown below:

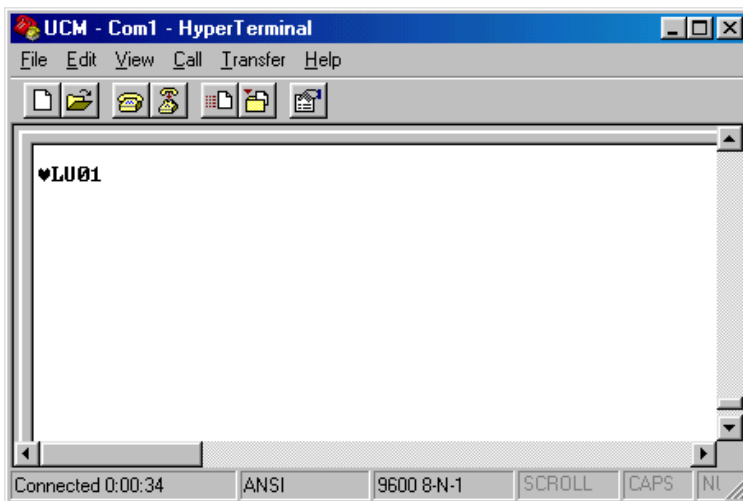


Click on OK, and OK again until you get back to the Hyperterminal window. On the Menu bar, select View -> Font, and select Font = Terminal, Font = Regular, size=9.

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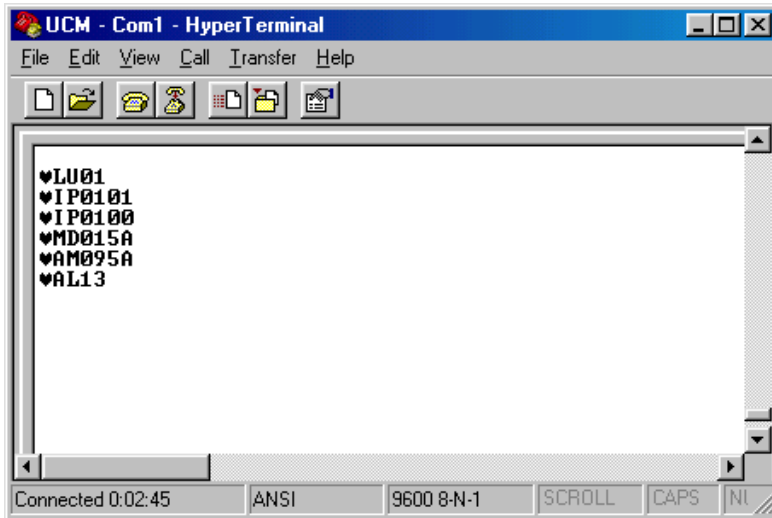


Click on OK. You can now send characters to the UCM according to the RS232 command protocol. Start with <Control-C>LI1234<Enter> which is the login code assuming 1234 is a valid user code. On Windows 95, you can see the text which you type, but on Windows 98, you are not able to see your text entry for some reason. <Control-C>, the Start character appears as a heart symbol. You should get the reply LU01, which is Login User 1



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This shows that the communications with the UCM is working. Type <Control-C>SR01<Enter> to enable status reporting from the UCM. Now arm the Comfort system by pressing the AWAY button and close the door. When Comfort arms the Hyperterminal window will show;



The meaning of the messages is as follows: IP0101 means Input 1 On (Open)

**IP0100** means Input 1 Off (Closed)

**MD015A** means Security Mode 1 (Away Mode) by user 90 (5A in hexadecimal notation). User 90 means one-touch armed by keypad without any user code

**AM095A** means System Alarm 9 (System armed) by user 90.

**AL13** means Alarm Type 19 (13 is hexadecimal notation for 19 decimal)

When you are finished, save the session (File -> Save as -> UCM.ht) so that you can recall the Hyperterminal settings without having to go through the whole procedure again.

## Infrared Learning

The Comfort Infrared learning software is a Windows™ application running on the UCM05 with IR receiver to learn new infrared signals and save the codes in the .ifr file format which is used by Comfigurator.

infrared.exe runs on an IBM PC-compatible computer running on Windows 98, Windows ME, Windows NT4, Windows 2000 or Windows XP. It requires a UCM05 (Universal Communication Module) RS232 interface connected to one of the computer's COM ports to interface to the Comfort control panel.

## Installation

The program is included with the Comfigurator software which is supplied on a CD or downloaded from the Internet from the Cytech Technology web site. ([www.cytech-technology.com](http://www.cytech-technology.com)) or Comfort distributors websites. Infrared.exe is also available as a standalone program which can be downloaded from the Cytech web site.

There is no installation required. The infrared.exe program must be in the Comfigurator directory so that it can work with the ifr files.

To start the program, run infrared.exe or start it from Comfigurator in Tools > Infrared Utility

## Definitions

### **Ifr file**

A .ifr file contains the encoded infrared data for the commands for a specific appliance. For example, a TV file may have On/OFF, Channel 1, Channel 2, Mute, etc.. Each command in the ifr file can be assigned as an IR Transmit code and downloaded to Comfort via Comfigurator to be sent to any output using action 129.

The commands in an ifr file can be learned with the infrared learner software.

The .ifr files are contained in the ifr subdirectory in the Comfigurator directory.

## Specification

Infrared Carrier Frequency: 35 kHz to 50 kHz

Learning distance: 5 to 10 cm.

Angle for reception: +/- 25 degrees

Encoding: ifr format

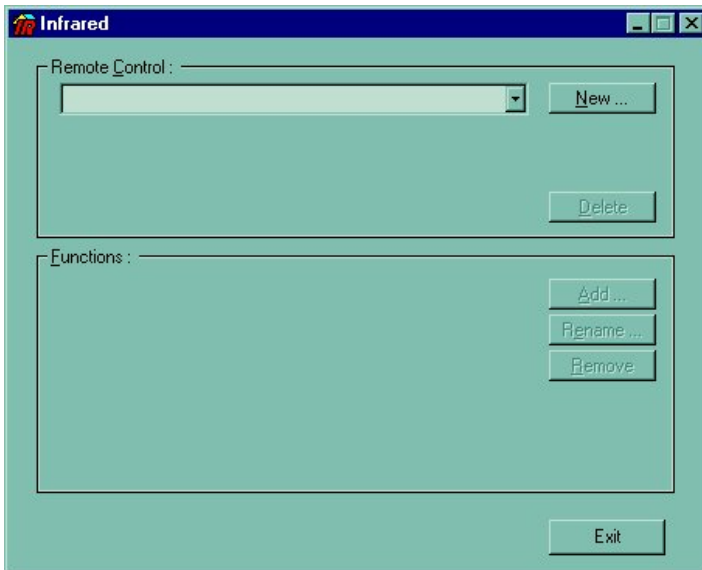
### Limitations and Disclaimer

Some infrared signals cannot be captured or encoded by the software algorithm or used by Comfort because of limitations in the encoding system. The IR learner captures and encodes the IR signals, while Comfort decodes the encoded signals to transmit from any programmed output. The process of encoding and decoding will introduce errors between the reconstructed signal and the original signal. This works well in the majority of remote control signals tested, but not for all possible remote controls.

Cytech Technology makes no claim about the efficacy of this device or software to capture, encode or transmit any specific Infrared signal.

### Operation

Run the infrared learning program by double-clicking on `infrared.exe` or from Configurator > Tools > Infrared Utility. The opening screen is shown below



To start learning IR signals for a new device which is not in the IR code library (in the `ifr` subdirectory), press `New...` You will be asked for the Brand, Device and Model number as in the screen below;

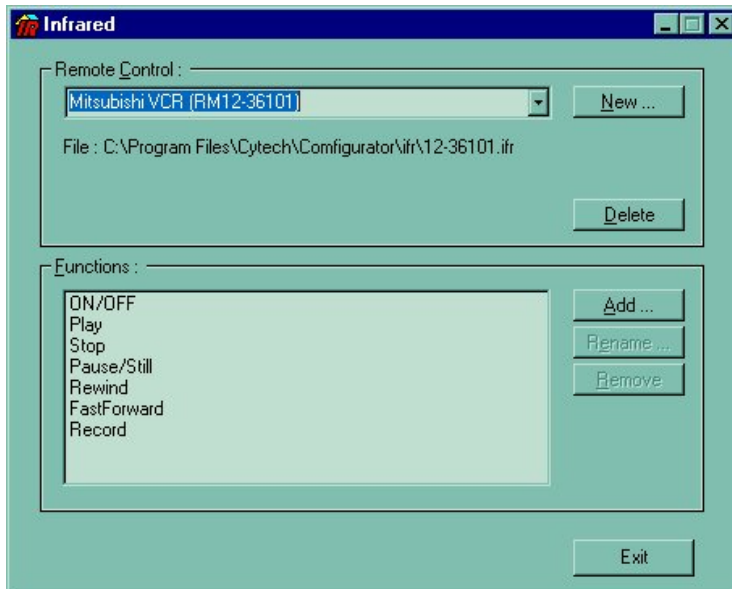


## Universal Communications Module



Press OK to confirm. This defines the filename for the ifr file which is to be generated. You can now start to learn new functions using the remote control.

To learn new IR codes for devices currently in the ifr directory click on the arrow to the side of the window and select from the drop-down list of appliances shown.



The above screen example for Mitsubishi VCR shows the learned commands for this device in the bottom screen.

### Rename

You can rename the function by selecting it with the cursor and pressing the Rename button.

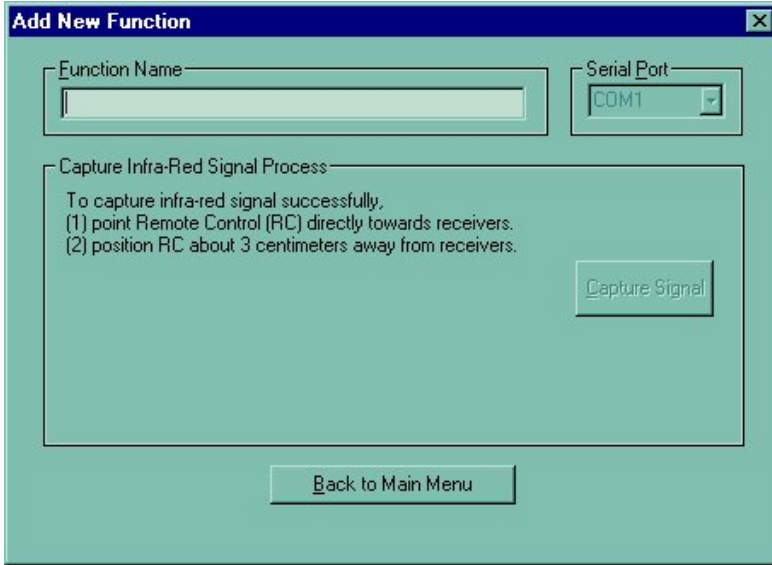
## *Universal Communications Module*

### **Remove**

You can delete the function by selecting it and pressing the Remove button.

### **Add**

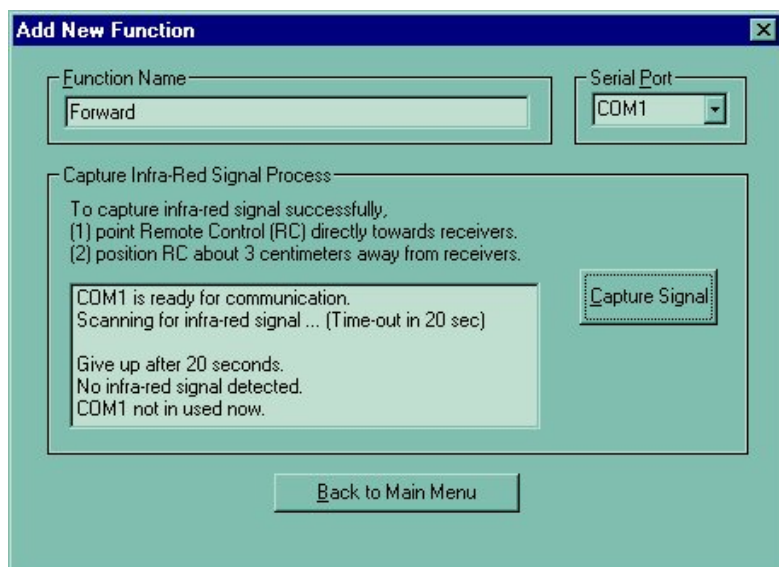
To learn a new infrared code, click on the ADD.. button



The screenshot shows a software window titled "Add New Function" with a standard Windows-style title bar (blue with a close button). The window has a light green background. At the top, there are two input fields: "Function Name" on the left and "Serial Port" on the right. The "Serial Port" field is a dropdown menu currently showing "COM1". Below these fields is a large rectangular area titled "Capture Infra-Red Signal Process". Inside this area, there is instructional text: "To capture infra-red signal successfully, (1) point Remote Control (RC) directly towards receivers. (2) position RC about 3 centimeters away from receivers." To the right of this text is a button labeled "Capture Signal". At the bottom center of the window is a button labeled "Back to Main Menu".

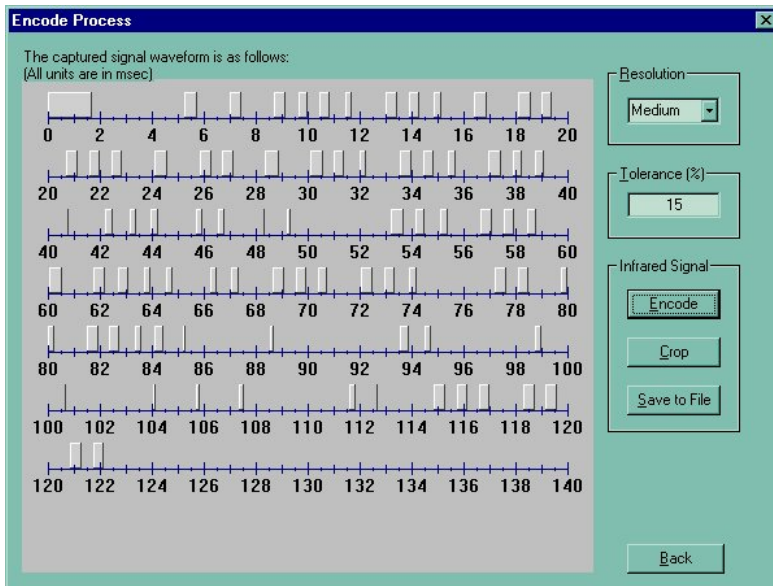
Enter the Function Name for the command, e.g.. Play, Stop, On, Off etc.. The SERIAL PORT field will become visible. Change the COM port number if necessary. Click on "Capture Signal" to start the capture.

**Always use new batteries on the remote control, as this gives the best chance of successfully capturing the signal.**



When the screen above appears, point the remote control directly at the IR receiver LEDs U8 and U9 about **5 to 10 cm** away. **Do not place the remote control too close to the UCM board because the exact location infrared transmitting LED of the remote control behind the lens may not be known.** Press and release the button on the remote control which is to be learned. Do not keep pressing the button unless it is required, e.g., for dimming lights. The BUSY1 Red LED will turn on when the UCM05 is waiting for an infrared signal to learn. If a valid infrared signal is not received within 20 seconds, the screen will time-out. If the capture is complete, the BUSY2 Red LED will blink, followed by the D12 Red LED (to indicate that the information was sent to Comfigurator) and the following screen will appear.

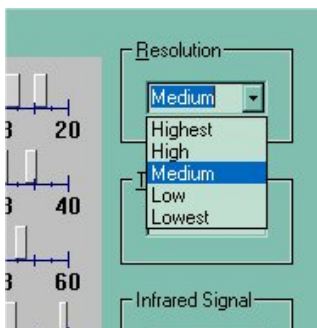
# Universal Communications Module



This shows the waveform of the captured IR code. The numbers on the horizontal scale show the time in milliseconds.

## Resolution

The Resolution window on the top right allows you to specify different scales to observe the infrared signal. The selection does not change the signal in any way, just the magnification of the signal on the screen.



## Tolerance

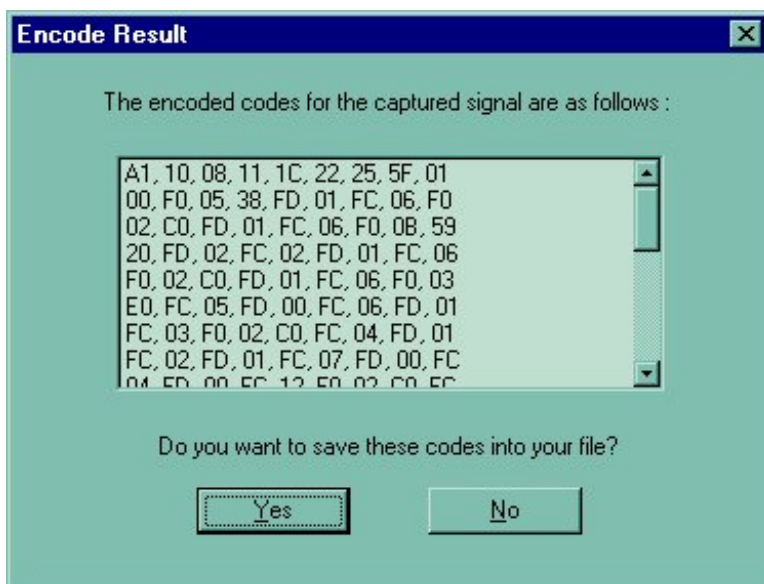
The Tolerance window allows you to specify the tolerance which the encoding algorithm uses. The IR signal is encoded in the Comfort ifr format, so that the space required in Comfort's memory is minimized. In encoding the signal using the IR learner and decoding

## Universal Communications Module

the encoded code in Comfort, there will be differences between the original IR signal and the reconstructed signal transmitted from Comfort. These differences are in the length of the pulses and the gaps in the captured waveforms as well as the carrier frequency. Specifying a larger tolerance may allow the algorithm to encode the signal more efficiently, resulting in fewer bytes required for the signal. Comfort imposes a limit on the size of the encoded IR signal due to memory limitations. For Outside firmware the limit is 96 bytes while for Entry firmware, the limit is 50 bytes. Although the IR Learner software is able to capture and encode signals which are greater than 96 bytes, Comfort will not be able to decode and transmit these signals. Specifying a larger tolerance may result in a code which is less than the limit allowed. However, applying too large a tolerance could result in incorrect encoding of the signal.

### Encode

Press the ENCODE button to initiate the encoding process. The screen below shows a typical result;



The number of encoded bytes is shown at the end of the data in the above window. To save the code into the .ifr file, click on the YES button. The encoded data is saved as an ifr file. The filename is automatically generated from the equipment type, manufacturer, and model number which was entered earlier. Clicking on the NO button will return to the previous screen where a different tolerance can be specified.

### Crop

## *Universal Communications Module*

The Crop button on the waveform display screen allows you to delete the last part of the signal in order to achieve a code size within the limit. Some IR codes have single or repeated pulses at the end of the signal which may not be needed to achieve the function. The presence of these pulses defeats the algorithm which looks for repetitions of patterns in the signal. If a pattern is repeated in the signal, but followed by some pulses which are part of the pattern, then the entire signal cannot be coded as a repetition. To crop a signal, click on the point in the signal after which the signal is to be cropped. The remaining part of the signal before the cursor will be acted upon by the encoding algorithm.

### **Save To File**

This button saves the waveform in .raw format. This file can then be sent to Cytech Technology (email: techsupport@cytech-technology.com with full details) for analysis in case of problems with encoding. **This does not save the encoded file in the .ifr format**

## Infrared Learning Errors

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### **“Infrared Signal is too long”**

If this message appears **before** the remote control button is pressed during learning, it means that random IR signals are being received. This could be due to certain types of fluorescent lights. Try again with the lights off or in another room.

If the error message is seen after the infrared signal is sent, it means that the signal being learned is too long for the system to encode, probably because it has an unusual format. The UCM05 is not able to encode all types of remote controls

### **“Erroneous signal or Out of Frequency Range Detected”**

This message may be received if the remote control is not pointed directly at the receivers or is too far away. The remote control should be pointed directly at the infrared receivers U8 and U9 at a distance of 5 to 10 cm away.

Some remote controls operate outside the frequency range of 35 to 50 kHz in which the receiver can detect. Such infrared signals cannot be learned by the UCM05.

### **“Infrared Signal is Too Long”**

This may be caused by pressing and holding the remote control button. Try again after clicking the “Capture” button, by pressing and releasing the button.

However a small percentage of infrared signals are really too long to be learned by the UCM05.

### **“Error Encountered during Encoding - Exceeded Bytes”**

## *Universal Communications Module*

This message is received when the infrared signal is not one of the known formats which requires too many bytes to encode. Such infrared signals cannot be learned by the UCM

### Problems with Learned IR Codes

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Sometimes, the infrared signals can be captured and encoded successfully, but when transmitted through an Infrared LED connected to an output, it does not activate the device. The possible causes and solutions are

#### **Encoding Errors**

The UCM05 may encode the signal incorrectly if the remote control is not pointed correctly at the receivers. The remote control should be pointed directly at the infrared receivers U8 and U9 at a distance of 5 to 10 cm away. The remote control should not be too close to the receivers because the actual location of the transmitter LED behind the infrared lens is not known. The transmitter may not be at the center of the lens so it may be pointing at the wrong angle. Positioning the remote control 5 to 10 cm away will reduce the effect of the uncertainty of the location of the transmitter.

#### **Programming Errors**

The infrared code is sent to any output using Action 129 (or using the Response Wizard in Comfigurator). Check that the correct infrared code number is sent to the designated output. A useful diagnostic tool is to plug in a Test Lamp terminal Block into the output header.



This consists of two 12V DC lamps which light up when the output is turned on. When an infrared signal is sent to the output, the lamp will briefly blink. It should not be permanently turned on. This shows that the output is receiving an infrared signal, but it does not mean that the IR signal is the correct one. A useful tool in any installation where infrared transmission is needed is a long length of wire, about 30 meters with an IRM01 transmitter on one end and a terminal block on the other. This can be quickly connected to any output and the transmitter pointed at the appliance to operate it. This will show if the programming is correct.

## *Universal Communications Module*

### **Wiring Errors**

The most common cause of infrared signals not working is wiring errors. The infrared IRM01 transmitter may not be connected to the designated output, or the polarity of the IRM01 may be reversed. Use the long length of wire with IRM01 at one end and a terminal block at the other to determine if the programming is correct or the wiring is correct.



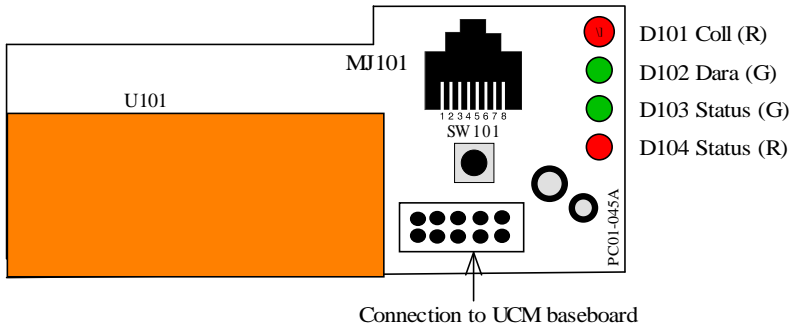


**Figure 5.1 Photograph of UCM/Ethernet (Flash)**

The UCM/Ethernet module allows the Comfort system to be connected to a Local Area Network. This module converts the serial data of the UCM to the industry-standard TCP/IP protocol over the Ethernet. This allows the Comfigurator software to upload and download Comfort configuration and allows WizComfort which is a stand-alone user software to access Comfort, over the LAN instead of using a serial port on the PC. One advantage of network access is the RS232 cable is limited to about 5 to 10 meters from the PC thus requiring the UCM to be located close to the PC. The UCM/Ethernet can be located in or next to the Comfort panel, and far from the PCs on the network (up to 100 meters away).

The serial protocol of the UCM can be used by third party developers to develop customized applications for Comfort over the network or Internet.

# Universal Communications Module



**Figure 5.2 View of Ethernet Daughterboard**

The UCM/Ethernet consists of a daughter board (ETH01) shown in the diagram attached to a UCM05 Baseboard via a 10 way connector. A UCM05 can be converted to a UCM/Ethernet by adding the ETH01 daughterboard, and setting the shunt J2 to the "RS485" position.

## Specifications

Ethernet Interface: 10BaseT 10 Mbits per second  
Network Protocols: TCP, UDP, ICMP (ping), ARP  
Serial Interface baud rate: 9600 bits per second  
Current Consumption: 65 ma (typical), 100 ma max from Comfort  
12V auxiliary output.

## Connectors

MJ101 - RJ45 connector for Ethernet Local Area Network.

## Shunt Settings on UCM05

J2 (RS232/RS485) should be in the "485" position  
SW8-F (Ethernet) should be inserted  
SW8-G (Action 197 STX/ETX) should be left open for use with Configurator and WizComfort  
SW8-H (RTS/CTS Flow control) can be open (No RTS/CTS Flow Control) or inserted (Flow control). This must correspond with the software setting with Device Server Manager. It is recommended that Flow control be enabled.

## SW101

Pushbutton switch for Setup - Not in use.

## Ethernet LED Indicators

D101 - Collision (Red) - This blinks when there is a data collision on the Ethernet Network

D102 - Data Received (Green) - This is normally on and is blinks off when Ethernet data packets are received.

D103 - Status (Green) and D104 - Status (red) provide status of operating modes and error conditions, as shown in the table.

<b>D103 (Green) and D104 (Red) Status Indications</b>	
Serial Programming Mode (Not in Use)	
D104	
D103	
Error Mode	
D104	
D103	
Ethernet Port Failure	
D104	
D103	
DHCP Enabled but IP address not obtained yet	
D104	
D103	
Connection is Closed	
D104	
D103	
Device Server sending ARP to get MAC address of destination	
D104	
D103	
Connection is being established	
D104	
D103	
Connection established, no data, no overrun	
D104	
D103	
Connection established. data transfer, no overrun	
D104	
D103	
Connection established, no data transfer, data overrun	
D104	
D103	
TCP connection has been reset (rejected) by remote host	
D104	
D103	

## Comfort System Requirements

Comfort firmware: Outside 4.166 (older versions can be used for upload/download via Configurator). Comfort Entry can be used for upload/download only.

UCM Firmware: UCM 5.62 and above

Configurator: 1.1.6 (implementing support for Network Connection.)

## Getting Started

---

This assumes that the person doing the configuration and Setup is a technical specialist with a knowledge of Ethernet and TCP/IP networking.

### **Set UCM ID and Number of UCMs**

Set the UCM ID on SW7 according to Table 1.1. By default, the ID is set to 1. If the ID is not 1, set the number of UCMs in Configurator accordingly, and download the setting to Comfort.

### **Connect UCM/Ethernet to Network and Comfort**

Connect the Ethernet port MJ101 to the Local Area Network (LAN) by means of a hub or switch using a parallel CAT 5 cable.

Plug in the 4-way cable from JP2/JP2A on the UCM to J15 on Comfort, and press the RESET button on the UCM. It is assumed that Comfort is already running. The RDY LED on the UCM should turn on steady and the LEDs D10 and D9 should be flashing continuously. On the Ethernet module, D103 (G) and D104 (R) should flash 3 times initially. After that, D103 (G) will blink twice every few seconds and D102 (G) should be on.

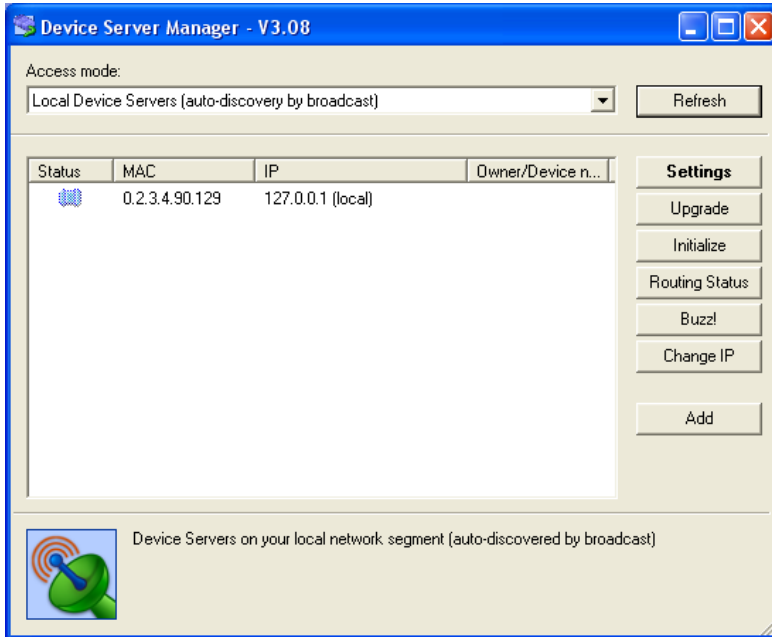
### **Device Server Software**

To set up the IP address and the other network and serial port settings, install the Device Server Manager Software. This is available from our website as a zipped archive.

<http://www.cytech-technology.com/software.html>. Unzip the file and install the software. The Device Server Manager opening screen

## Universal Communications Module

is shown below;



The IP address of the UCM/Ethernet is found by the auto-discovery process, 127.0.0.1 by default. The IP address must be changed to one which resides on the same subnet as the computers which will be accessing the UCM/Ethernet through the network. For example, if one of the computers on the network has an address like 10.0.0.1 and the subnet mask 255.255.255.0, the IP address of the UCM/Ethernet can be set to any address in the range 10.0.0.2 to 10.0.0.254, making sure that it does not conflict with any assigned IP address on the network. Click on the "Change IP" button. Enter the new IP address of the UCM/Ethernet. This is not necessary if the DHCP feature is enabled in the Network Settings page. On the DS Manager screen, the new IP address should be shown. The UPGRADE button is used to upgrade the firmware on the Ethernet board (NOT the UCM firmware U1) over the network. Firmware upgrades will be available from the Cytech Technology Website. To upgrade, press the Upgrade button and select the name of the firmware file. The current firmware is CYTEM312.BIN. Upgrading takes only a few seconds. The INITIALIZE button initialized all settings back to factory default, except for the IP address. The ROUTING STATUS button shows the status of Routing buffers, Network Connection and Serial Port, as shown in the screenshot below.

## Universal Communications Module



The DS Status window displays the following information:

Routing Buffers	
Ethernet -> Serial (data/capacity)	0/510
Serial -> Ethernet (committed/data/capacity)	0/0/510

Network Connection	
Connection state	Connection is closed
Local port	1001
Remote IP	10.0.0.5
Remote port	1254

Serial Port	
Port state	Closed
Comm mode	Full-duplex
Baud rate	9600 bps
Flow control	None
Parity	None
Data bits	8
CTS	High
DSR	Low
RTS	Low
DTR	High

Buttons: Refresh, Close

The BUZZ button causes the RED and GREEN Status LEDs to blink for a few seconds so that the UCM/Ethernet module which is being accessed can be identified. This is useful if you have several UCM/Ethernet modules connected (Comfort can be connected to 8 UCMs of various types)

### UCM/Ethernet Settings

Select the IP address using the cursor and click on the Settings button. The Settings screen is shown below;

Label	Value
Owner name	
Device name	
MAC-address	0.2.3.4.90.129
DHCP	0- Disabled
IP-address	10.0.0.9
Port	1001
Transport protocol	1- TCP
Connection timeout (min)	5
RTS/CTS flow control	0- Disabled or remote

Owner Name and Device Name are for description only.

MAC Address is the physical Ethernet Address of the device. It should not be changed

DHCP If enabled, it allows the device to be automatically assigned an IP address if there is a DHCP sever in the network.

IP Address is the current IP address of the device.

Port is the network port through which the data is sent and received from the UCM. By default, the port is set to 1001.

Transport Protocol: You can choose TCP or UDP. For Comfigurator, TCP should be selected.

Connection Time-out: This is the time in minutes (0 to 255) for which the TCP connection will remain open if there is no data in either direction. A value of 0 means the connection will never time-out.

## *Universal Communications Module*

RTS/CTS Flow Control: 0 disables Flow control while 1 enables it. This must correspond with the shunt setting on the UCM SW8-H. It is recommended that RTS/CTS Flow control should be enabled to avoid loss of data.

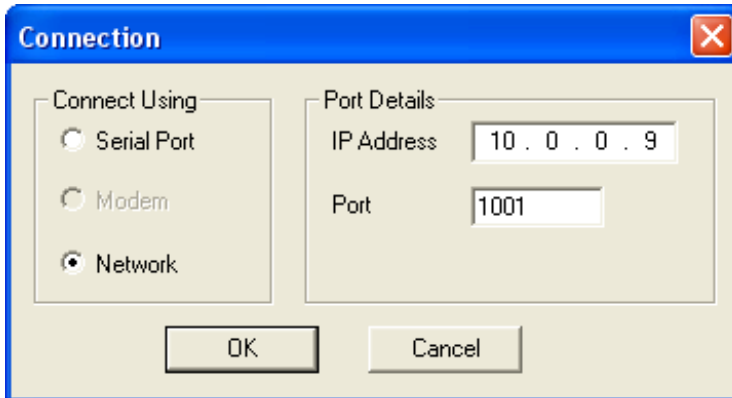
The button SAVE at the bottom saves the profile under a file name that you specify with the extension .ds. The button LOAD allows you to load a previously saved profile.

The PASSWORD button is not used. Ignore it.

The TAB called ALL displays the same settings as the Settings screen. The use of this screen is thus not needed, but it may be used for future expansion of settings.

### Comfigurator Network Connection

To use Comfigurator to connect to Comfort over the network instead of the serial port, select Menu Options > Connection..



In Connect Using, select Network. In Port Details, enter the IP Address and the Port number which was set for the UCM/Ethernet and click OK.

Upload and download (especially Upload) over the network will be slower than for direct serial connection because of the additional communications overhead incurred on the Ethernet.

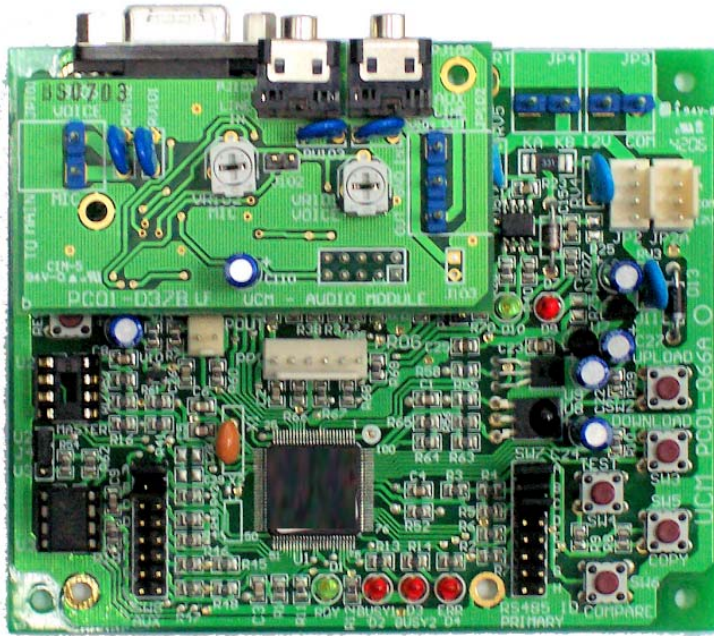


## **CHAPTER 7     UCM/AUDIO**

The function of the UCM/Audio module is to allow voice to be played on an external powered speaker or PC and to allow intercom and recording functions from a PC running software like WizComfort. It also allows a virtual keypad simulation with WizComfort.

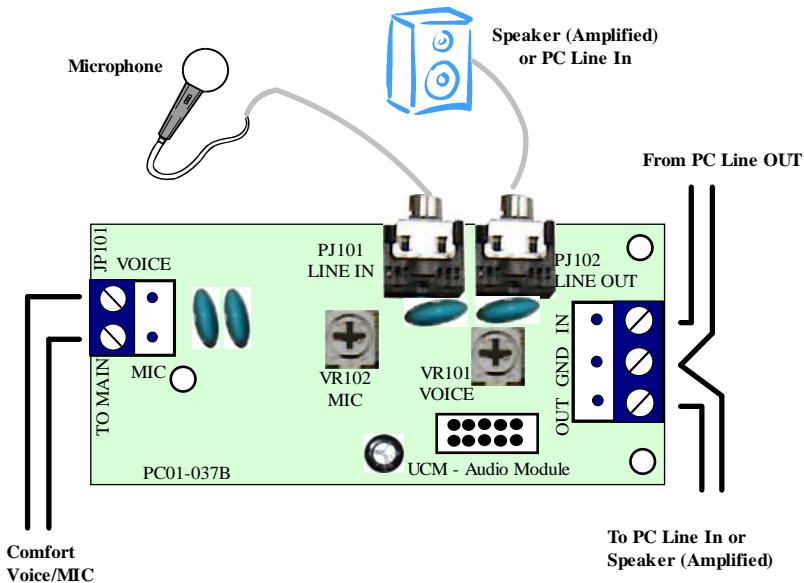
The Audio function is a daughter board which fits on a standard UCM01 connected by a 10 pin connector and is secured by 3 screws. The UCM/Audio will also function as a normal UCM for upload/download with Comfigurator, and Copy/Upload/Download functions involving the Nonvolatile memories (NVM) and Infrared learner if the base board is a UCM05.

The firmware is the same as a regular UCM05.



**Figure 7.1 - Photo of UCM/Audio (Flash)**

## Universal Communications Module



**Figure 7.2 Audio Module and Connections**

### Connections

- JP101 (VOICE/MIC): Connected to VOICE and MIC from Comfort Main Board.
- JP102 (OUT/IN): OUT is to be connected to the PC LINE IN or to a Speaker with built-in amplifier. This is the same signal as in PJ102. IN is to be connected from the Line OUT jack of a PC.
- PJ101 Audio socket: This is for connection to a dynamic microphone of the type used in PCs. Use a 3.5 mm mono audio jack. This path has a higher amplification than the JP102 IN connector. LINE OUT from a PC can be connected to this jack, but VR102 must be tuned to reduce the gain.
- PJ102 Audio socket: This is to be connected to the PC LINE IN or to a Speaker with built-in amplifier. Use a 3.5 mm mono audio jack. This is the same signal as in JP102 OUT.

### Adjustments

- VR101 (VOICE): This adjusts the volume of the Voice signal to the speaker or PC LINE IN
- VR102 (MIC): This adjusts the gain of the Microphone Input signal from PJ101 or the PC LINE IN signal from JP102

## Universal Communications Module

### Operation with WizComfort

This section shows how to set up and use WizComfort to test the audio functions on the UCM/Audio.

Connect a dynamic microphone to PJ101 and a computer-type speaker to PJ102 as shown in figure 6.2

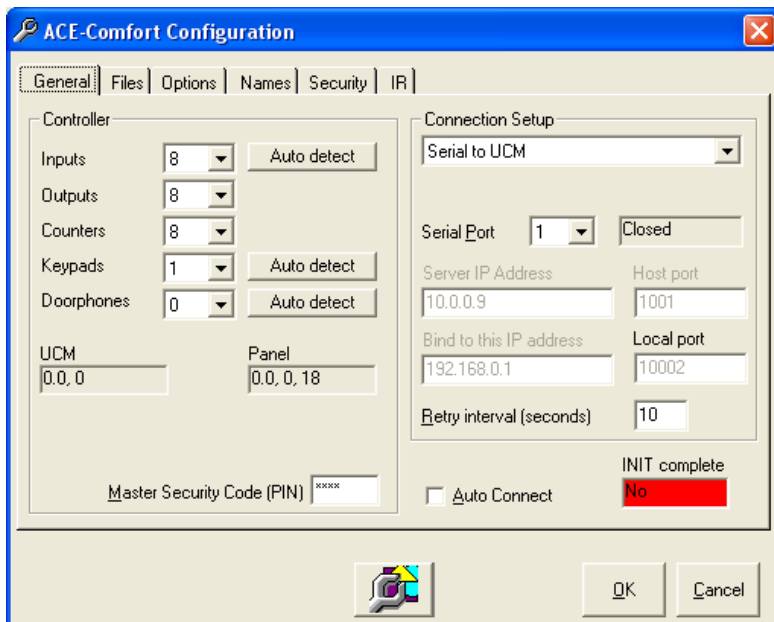
Connect MIC and VOICE from JP101 to Comfort terminal block JP15 (MIC and VOICE). This is for the audio signals.

Connect the serial RS232 cable between the PC Serial Port and the RS232 connector P1 on the UCM.

Run WizComfort (free download from

<http://www.cytch-technology.com/software.html>.) The version

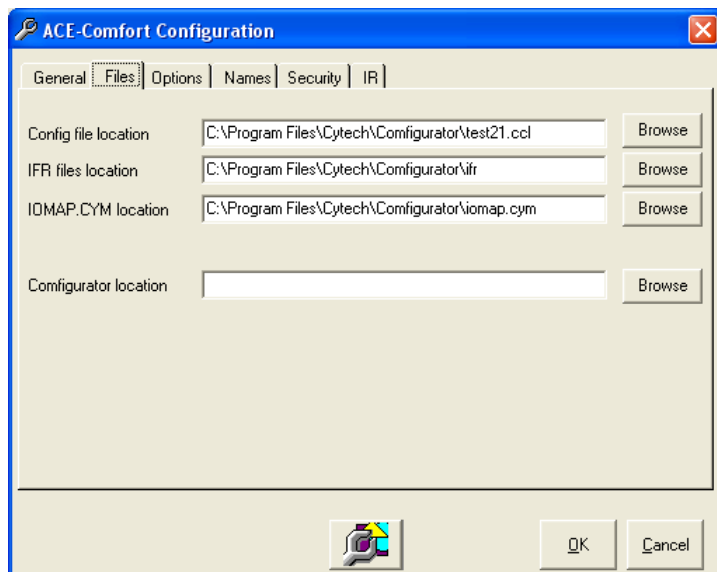
used should be 1.30 and above. Run the program and click on Setup > Options..



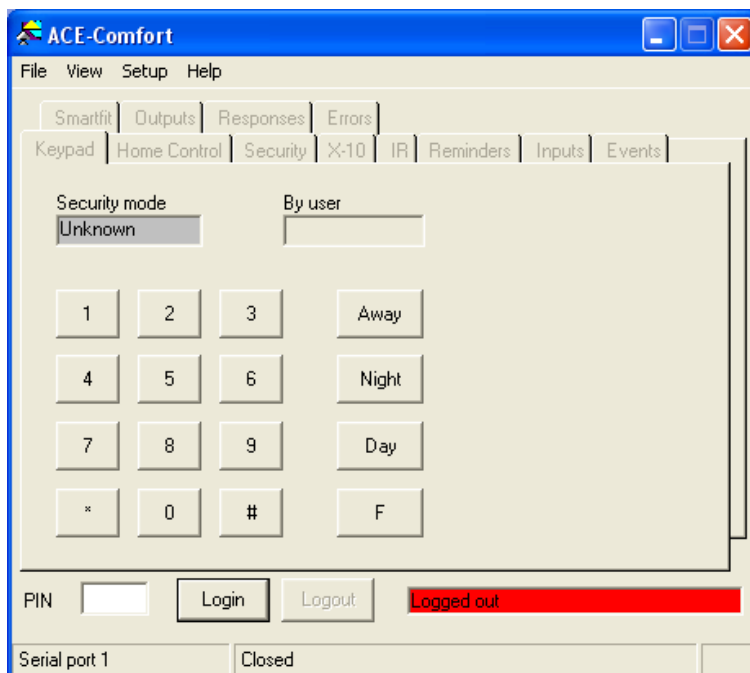
In Connection Setup, select Serial to UCM, and select the serial port used to connect to the UCM.

In the Files tab shown below, select the Configurator filename used to program the Comfort system, the location of the IFR infrared files, and the location of the iomap.cym. The usual locations are given in the figure below.

## Universal Communications Module



Click OK to return to the main WizComfort page.



## *Universal Communications Module*

Enter your user code (default 1234) in the PIN box, and click on Login. If the code is correct, the status box will turn green and will show that you are logged in. To use the virtual keypad, press the digits for user code to enter the user menu, or press F 2 for Home Control menu or any other function that you can use with a real keypad. The voice menu will be heard on the speaker. Adjust the VR101 trimmer to change the volume. The volume of the voice will vary depending on the speaker used. There will usually be a volume control on the speaker as well.

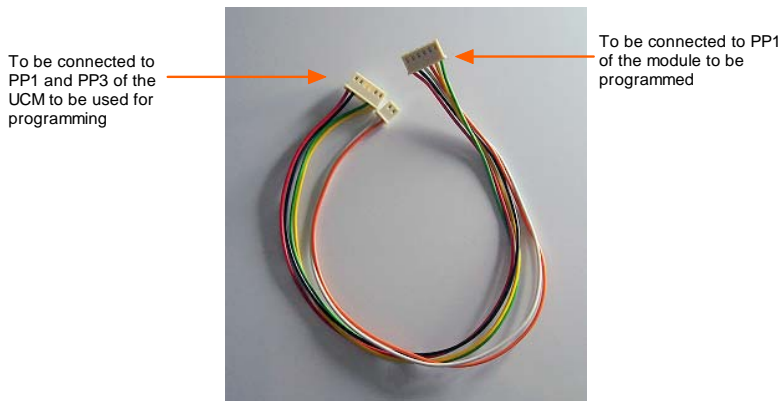
Press F8 to enter Intercom Mode, and talk into the microphone connected to PJ101. This will be heard on all other keypads in the usual way.

You can also press F4 to record a message. Talk into the microphone to record your message.

This illustrates how the audio function works on the UCM/Audio.

## CHAPTER 8 FIRMWARE UPGRADING

The Flash-based UCM allows its firmware to be upgraded using Configurator 2.2.2 and above. The UCM05 is the means by which firmware upgrading of other flash-based Comfort modules is accomplished. In order to upgrade the firmware of the UCM05, another UCM05 is needed. The UCM05 cannot upgrade its own firmware. The minimum UCM05 firmware version which supports firmware download is UCM 5.147 but it is recommended that UCM firmware 5.156 and above is used, as this allows firmware download without requiring a login (see below). The UCM Programming cable shown below is supplied with the UCM05



**Figure 8.1 - UCM Programming Cable**

1. The end of the programming cable with two connectors is to be connected to the UCM05 or UCM/Ethernet to be used for programming, and the end with a single 6 way connector is connected to the module (Flash version whose firmware is to be upgraded).
2. For the module to be upgraded, shunt PP2 and connect the programming cable (with 6 cables end) to PP1.
3. Connect the other ends of the cable to the UCM05 that is used for programming to PP1 (4 way) and PP3 (2 way).
4. For the module to be programmed, ignore the RS485 ID settings, and disconnect the module from the Comfort Rs485 Bus
5. For UCM05 firmware < UCM5.156: If the Module to be programmed is a Flash-based Comfort MPU01, do not connect the MPU01 to the Comfort PCB. For UCM5.156 and above, the MPU01 can be connected to Comfort during the firmware download
6. Power up Comfort.

## *Universal Communications Module*

7. For UCM < 5.156, Login on the UCM by doing a Transfer > System Information. For UCM 5.156, this is not necessary
8. While the UCM05 is connected to the module to be programmed, and the firmware download is proceeding, the Comfort RS485 Bus will not be able to communicate with Comfort and other modules, so there will be Communications Failure with resulting beeps on keypads. Turn down the volume on keypads if necessary

### Downloading the Firmware

1. Run the Comfigurator software 2.2.2 or above. Ensure that the right connection setting is set. Go to the Transfer Menu and select "Firmware Download".
2. Note: Comfigurator 2.2.0 to 2.2.1 will prompt for Engineer Code. Press F0 on the keypad enter the Engineer Code (default 6789). Click on "OK" after that. Skip this step for Comfigurator 2.2.2 and above
3. Next, Comfigurator will prompt for the file to be downloaded. Navigate to the correct firmware file to be downloaded and select it and click "Open".
4. After doing so, Comfigurator will give a warning prompt, informing users that the firmware version will be downloaded. If the firmware file selected belongs to a different type of module, the download will be rejected, Click on "OK" to proceed with the firmware download.
5. **If the firmware download operation fails for any reason, do not reset the UCM. Check your connections and settings and repeat the process. Resetting the UCM before the completion of the firmware download may cause the flash to be erased, and the identification to be lost. The UCM05 would have to be returned to the factory to be reprogrammed.**
6. After the download has completed, disconnect the UCMs from the system. Disconnect the UCM Programming Cable and remove the shunt PP2 on the newly programmed module.

### Version History

#### **UCM 5.156 (19 September)**

1. Firmware download does not require prior login by UCM

#### **UCM 5.155 (2 August 2007)**

1. TC command to copy all characters in Rs232 to Rs485.
2. Prevent invalid RS485 messages from beng sent by firmware when RS485 buffer overflow or message not initialised or closed
3. Increased RS485 receive buffer size to 96, transmit buffer to 240

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4. Increased size of buffer for learned IR codes
5. Fixed BUG from 5.120 EEPROM write to U2 as COPY does not work,
6. Improved MO01 monitor mode so there is no corruption of data

### **UCM 5.147 (15 April 2007)**

1. Firmware Download is supported

### **UCM 5.92 (5 Oct 2005)**

1. Implemented KL message for keypad LEDS status
2. Implemented K? Command to request for keypad Led status
3. Implemented v?, v! Commands for vocabulary (Comfort II)
4. Implemented VS commands for download of Comfort II vocab
5. Implemented Download of KP data from Configurator 2.0 and download of KP text to new KP04
6. Can be used to download 32 bytes per line for Comfort II
7. Implemented SM commands (used for Companion)

### **UCM 5.79 (7March 2005)**

1. SW8-E and SW8-G shunted at RESET disables RS485/232 communications for testing purposes
2. Defined ER command for arm ready/not ready status. ERzz to RS232
3. UCM firmware and Processor upgraded to allow more memory for learning of IR codes. UCX firmware does not include IR Learning

### **UCM 5.76 (14 Oct 2004)**

1. Implemented TM command
2. Implemented B? Query, BY report - requires firmware Outside/Action 4.230
3. I! Virtual input allowed for inputs 1 to 16
4. SW8 - G shunted causes RS485 and RS232 to be disabled
5. IL command for IR code downloading implemented, not tested. Requires Outside/Action 4.228
6. KP04 Language Download function implemented

### **M 5.70 (19 May 2004)**

1. Implemented R! Which accepts 2 bytes for Ultra 2-byte response command. Requires Action 4.216 and above for compatibility.

### **UCM 5.63 (25 September 2003)**

1. PS01/PS00 is reported when there is engineer sign in and sign out. The report does not require login LIXXXX.
2. UCM identifies its own type to Comfort at startup.
3. Improvement in the handling of messages on serial port prevents corruption of a transmitted message by an invalid received message



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4. Fixed bug where if a command without the header (STX) is received, the previous reply is resent. Now, when there is no header, no reply is sent.
5. SW8-F setting for UCM/Ethernet must be shorted. For normal UCM01, open SW8-F (but shorting will have no effect)
6. Changes to RTS/CTS flow control operation. CTS was set during transmission of data to RS232 port to prevent any received characters, but this limitation has now been removed.

### **UCM 5.45 (16 November 2002)**

1. SW8-G shorted selects Action 197 with no leading STX and training CR. When Action 197 sends text to the RS232 port without STX and CR, it disables UCM Status reports to RS232. A Login will restore status reports again and allow downloads to take place.
2. Support for IR Learning

### **UCM 5.33 (17 June 2002)**

1. supports Voice Download VL, VP commands
2. Prevent potential problem where during download, PC delay causes data to be downloaded from COPY EEPROM

### **UCM 5.27/5.28/5.29 (9 April 2002)**

1. Supports new rev D1 UCM with selectable Master/Copy, can also be used with rev C UCM.

### **UCM 5.23 (26 March 2002)**

1. UCM/CF Type 10 with Configurator license

### **UCM 5.15 (17 Jan 2002)**

1. New commands Z?, Y?, z?, y? to query for no of zones, outputs RIO (remote Input/output) inputs and outputs. Requires Outside 4.48+ for these commands to work.
2. UCM will reply "OK" for commands RM, C!, I!, X!
3. Added command a? for alarm type.
4. If the COPY button is pressed and Copy or Master EEPROM not inserted, the ERROR LED turns on.
5. If Master capacity is greater than Copy, Error LED turns on. Previous behavior is copy only up to the COPY EEPROM capacity.
6. Supports up to 256KBits for MASTER and COPY sockets.

### **UCM 5.11 (4 August 2001)**

1. Added KD command to enter keypad digit for keypad simulation
2. Added SP command for keypad to ignore broadcasts similar to action 139
3. Action 197 sends text to RS232
4. Fixed bug where C? replies even when not logged in

### **UCM 5.05 (29 May 2001)**

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1. Fixed bug where if the received checksum from Comfort RS485 is wrong, UCM did not ask for retransmit
2. C! Command now allows more than 1 set of counters to be set
3. Implemented S? Command

### **UCM 5.02 (2 April 2001)**

1. Comfort Version information is obtained using V?
2. UCM Version information is obtained using the U? Command.
3. During upload and download, the UCM will automatically disable status reporting (like SR00) until another LI valid login is received. This prevents status reports from disrupting uploads and downloads. At reset, status reports are disabled until LI is received. When a login is received, status reporting is enabled, similar to SR01. When there is a logout, Status reporting is not disabled, as it may still be needed
4. Implemented DB report for doorbell press

## Manual Revision History

### **3.3.3 (23 September 2007)**

Added instructions for UCM 5.156 and warning about resetting UCM

### **3.3.2 (13 September 2007)**

Added instructions on J2 header rework for older UCM05s

### **3.3.1 (20 August 2007)**

Revised Chapter 8 details on Firmware download

### **3.3.0 (12 July 2007)**

Applies to Flash-based UCM. Added Chapter 8 on Firmware download

### **3.2.1 (16 May 2006)**

Removed UCM01, added version 5.92. Added Manual Revision History

### **3.2.0 (10 December 2005)**

Troubleshooting "IR codes too long"

### **3.1.9 (18 June 2005)**

Version history updated to 5.79. Added shunts SW8- G and E shunt at reset cause no comms for testing (Daikin)  
Changed references Ace Comfort to WizComfort

### **3.1.8 (18 July 2004)**

Removed UCM/GSM - described in UCM/GSM manual  
Added UCM 5.70 and 5.63 to version history

### **3.1.7 (3 July 2004)**

Added 3.5 mm audio jack size of audio  
Added size of module

### **3.1.6 (March 2004)**

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Added Troubleshooting - Common Problems  
Adding UCM/GSM

### **3.1.5 (20 Sept 2003 )**

Added UCM/Audio, UCM/Ethernet  
Added leds D9, D10, D11, D12 tables

### **3.1.4 (1 Sept 2003)**

Corrected mistake on RS485 primary/aux labelling

### **3.1.3 (2 May 2003 )**

PCB Rev E, new locations of Ics and IR LEDs

### **3.1.2 (6 March 2003)**

Ucmirman combined with ucmman. Removed ucmirman.

### **3.1.1 (24 Feb 2003)**

TEST COPY NVM changed to "TEST NVM" with shunt AWAY from IC  
to be tested, not towardss

### **3.1.0 (Nov 2002)**

Added IR Learning

### **3.0.3 (27 Sep 2002 )**

1. Added SW8-G for suppression of STX and CR

### **Dec 2001**

1. UCM ID 1 reserved for UPload/download

### **Sept 2001**

1. Spelling and other corrections
2. SW7, 8, changed pins to A toH
3. SW7 caution not to insert shunts in D to H

### **June 2001**

1. Corrected ID settings error for SW7

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