

UCM/4G

This is the UCM/4G Quick Start Guide. Please download the full UCM/4G Manual from http://www.cytech.biz/ucmgsm_manual.html

The UCM/4G provides a 4G (LTE) cellular network connection to Comfort. This gives Comfort the following abilities;

- Acts as a backup for alarm dialout when the land line is faulty or cut. Alternately, it can be used as the primary dialler without a fixed telephone line, for installations where a telephone line is not available.
- Allows the user to dial to the GSM number instead of the fixed telephone line to access Comfort menus.
- Allows Comfort to report alarms to the users mobile phones via SMS. The SMS message will show time stamp, Text Identification, Alarm type and Zone or User name.
- Allows authorised Mobile phones to send commands to control or check the status of appliances and the security system via SMS. Each Phone can be independently authorised to arm, disarm, and access automation control.
- Allows date and time update by Internet Time servers

The UCM/4G requires a Nano SIM card to be inserted, just like with a cellular phone. This can be a prepaid card, or one which is billed monthly according to a usage plan.

Features of UCM/4G

- Zone and Alarm Names (32 characters) are stored in UCM/4G EEPROM.
- 64 Customised messages can be sent by SMS
- Help Messages are sent by SMS
- Query Security Mode and Control Status
- Home Control SMS Command will reply with Status
- Arm/Disarm Security System will reply with Security Mode status.
- Alarm SMS messages from Comfort include Time Stamp
- Alarm SMS messages from Comfort includes User Names instead of Number for user alarms e.g. Arm and disarm
- Each Phone has Permissions for SMS Arm, SMS Disarm, SMS Control
- Support for non-English character sets using UCS2 (future upgrade)

Specifications

UCM/4G

- PCB Size: 108 x 88 mm
- Power Supply (from Comfort): 12V 50 ma (idle), 250 ma (transmit)
- Operating Temperature: 0-55°C
- Frequency Bands: GSM (2G): 900/1800 Mhz, WCDMA (3G) : B1 (2100 Mhz), B5(850 Mhz) B8 (900 Mhz) , LTE (4G): FDD-B1 (2100 Mhz), FDD-B3 (1800 Mhz), FDD-B5 (850 Mhz), FDD-B7 (2600 Mhz), FDD-B8 (900 Mhz), FDD-B20 (800 Mhz), TDD-B38 (2600 Mhz), TDD-B40 (2300 Mhz), TDD-B41 (2500 Mhz)
- SIM Card Interface : 3V/1.8V
- Operating Temperature Range: 0 to 60 deg C

UCM/4G Quick Start Guide

- Relative Humidity: < 95 % RH non condensing
- U2 EEPROM 24LC256 (256 K Bits) for storage of parameters (use Configurator)

Equipment

The following equipment is required

- Comfort CM9001 with firmware version 7.153 or higher.
- Configurator version 3.13.7 and above
- UCM/4G Firmware 7.164 and above

SIM Card

A Nano- SIM Card must be used in the GSM Module. This may be a prepaid or postpaid card. However, note that a prepaid card does not inform the user when the amount remaining has been used up. The SIM card or plan must allow sending of SMS. Push/Insert the SIM Card with the edge with slanted corner head-first into the SIM Card holder. Remove by pulling the SIM Card out in the opposite direction.

Caller ID must be enabled to allow the GSM Module to accept SMS commands from a mobile phone.

If using a prepaid SIM card, check if the SIM card needs to be activated before use. Please check the instructions from the Carrier.

- **The SIM card must not be password-protected.**

The SIM card will come with a telephone number. Use this number to dial or send SMS to the system via the GSM module

What is Included

The UCM/4G package contains the following*:

- UCM/4G module with GSM submodule. T
- 5-way audio cable



- 4-way RS485 cable

UCM/4G Quick Start Guide



- Antenna (with cable of approximately 1 metre long)



*Subject to change without prior notice

Settings

Connections (on Baseboard)

- JP3 - 12V/COM terminal block. Connect to 12V/COM on Comfort if JP2/2A not used. Do not connect if JP2/2A is used to connect back to Comfort.
- JP4 - KA/KB terminal block. Connect to KA/KB on Comfort if JP2/2A not used. Do not connect if JP2/2A is used to connect to Comfort.
- JP2 and JP2A - 4 way headers (12V/COM/KA/KB). Either connector can be connected to Comfort's J6 connector via the supplied cable when JP3 and JP4 are not used. This plug-in cable connection is used when the distance between the controller and UCM/4G is less than 30 centimetres. For longer distances, use the JP3 and JP4 terminal blocks

Connections (on Daughterboard)

- J3 – 5-way connector for voice connection. The 5 way audio cable is to be connected from J3 to J54 (GSM) connector on Comfort II.
- U4 – SIM card holder.
- USB (P2) for firmware upgrade (for future use)
- J1, J2 - Antenna connectors. Connect GSM antenna to J1 only.

Jumper/Switch Settings

- SW7 (RS485 ID) – set according to ID of the UCM/4G

ID	SW7-A	SW7-B	SW7-C	SW7-D
1	ON	ON	ON	ON
2	OFF	ON	ON	ON
3	ON	OFF	ON	ON
4	OFF	OFF	ON	ON
5	ON	ON	OFF	ON
6	OFF	ON	OFF	ON

UCM/4G Quick Start Guide

ID	SW7-A	SW7-B	SW7-C	SW7-D
7	ON	OFF	OFF	ON
8	OFF	OFF	OFF	ON

Table 1 - UCM ID shunt Settings

By convention, ID=1 is reserved for UCM/USB, Wifi or ETH for writing/reading configuration file. The UCM/4G should be set to ID 2 or above so that any RS485 communications failure can be reported by Comfort.

Press RESET on the UCM/4G after changing the ID settings.

Modules and Settings > Number of UCMs must be programmed according to the number of UCMs connected. Press RESET on Comfort after changing the number of UCMs or other modules.

- SW8 – positions A to G are unused. H is open for normal operations and shunted to indicate signal strength on the LEDs (refer to “Signal Strength Indicators”)

Buttons

- SW1 - RESET. This button resets the UCM/4G module. It does not change any parameters in Comfort.

LED Indicators (on UCM)

- D1 “RDY” (Green) – should be on at all times during normal operations
- D2 “BUSY1” (Red) – indicates when initialisation or communications error has occurred
- D3 “BUSY2” (Red) – indicates call in progress
- D4 “ERR” (Red) – error indicator, normally no network
- D9 (Red) – RS485 Transmit to Comfort
- D10 (Green) – RS485 Receive from Comfort

The LEDs also show the signal strength with SW8-H is shunted. Refer to the following table for the meaning of the LED combinations.

RDY	BUSY1	BUSY2	ERR	Meaning
On	On	-	-	Initialising or GSM Network Error
On	-	On	-	Call in Progress
On	-	-	On	No GSM Network
-	On	On	-	No SIM Card or SIM Error
-	On	-	On	SIM card requires PIN code
On	On	-	On	U2 EEPROM Error
On	-	-	-	Normal Operation, Idle
-	-	-	-	* Signal Strength 0 (Bad)
-	-	-	On	* Signal Strength 1 (Poor)
-	-	On	On	* Signal Strength 2 (Fair)
-	On	On	On	* Signal Strength 3 (Good)
On	On	On	On	* Signal Strength 4, 5 (Excellent)

Table 2 - LED Status

SW8-H is shunted for GSM signal strength indication, remove for normal operation.

The Signal Strength is updated every 8 seconds. Note that shunting SW8-H overrides the GSM operation LED status indication

DO NOT shunt SW8-H during reset, otherwise the UCM/4G will report signal strength of 0 to Comfort and the GSM will not be operational until a change in signal strength is detected. Also DO NOT keep SW8-H shunted permanently to avoid this problem in case the UCM is reset for any reason. Always remove the shunt after checking the signal strength.

UCM/4G Quick Start Guide

- In Configurator the GSM status and signal strength is shown on the status bar on the UCMGSM Modules screen

LED Indicators (on GSM Submodule)

- STATUS (D3) Red - flashes slowly for 3G, Fast for LTE/4G connection
- PWR (Green) – indicates power is supplied to the GSM submodule.

ICs

- U1 - Microcontroller IC. Label indicates the firmware version number GSM 7.xxx
- U5 - RS485 Interface to Comfort.
- U2 - 256K bits EEPROM 24LC256

UCM RS485 ID Switch

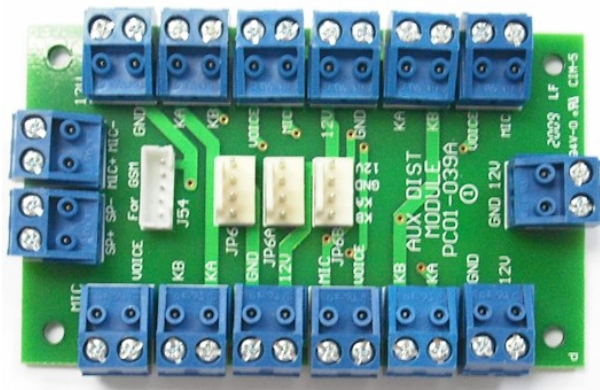
Comfort is able to support up to 8 UCMs. SW7 is a set of 3 headers which determines the UCM ID, according to Table 1.

Mounting UCM/4G

Care must be taken to ensure that the antenna is not mounted in any metal casing to ensure there is GSM coverage. The UCM/4G may be mounted internally in an enclosure with the antenna mounted outside.

Normally the UCM/4G must be mounted in the same enclosure as Comfort because of the length of the 5 way audio cable from J54 on Comfort and the UCM/4G. If this location does not have sufficient network signal, there is a way to allow the UCM/4G to be mounted in another room or location.

The ADM02 (Auxiliary Distribution Module) shown below has terminal blocks and connectors for the 4 way cable to allow more connections to be made to Comfort. There is a 5 way connector marked J54 and "GSM" on the ADM02. Connect the 5 way audio cable from this connector to J54 on Comfort. Use a shielded CAT5 cable to connect the terminal blocks marked SP+, SP-, MIC+, MIC- to the same terminals on another ADM02 in the location where the UCM/4G is to be mounted. Use another CAT5 cable to connect the 4 signals 12V, GND, KA, KB between the 2 ADM02s. From the second ADM02, connect another 5 way audio cable from this ADM02 to J54 on the UCM/4G. The ADM02 is supplied with a 4 way RS485 cable and a 5 way audio cable.



ADM02 Auxiliary Distribution Module with GSM Extension

Setup



UCM/4G - UCM Baseboard with GSM submodule

- Insert a Nano SIM card into the SIM card holder by pushing the top edge with the slanted corner facing inwards. The SIM card must not be password protected. Disable password protection if applicable.
- Connect the antenna, and connect J3 on the UCM/4G to J54 (GSM) on CM9001 via the 5-way cable provided.
- Before connecting the power to UCM/4G from Comfort, the ID on SW7 must be set according to Table 1, i.e. the ID has to be set according to the number of UCMs in the system. If there is only 1 UCM, the ID on the UCM/4G must be set to 2. By convention, ID 1 is reserved for writing and reading from Comfort, and is not reported in case of Communications Failure. Comfort supports a combination of 8 UCMs.
- The UCM/4G power is connected to Comfort via the supplied 4 way white cable from the 4 pin header JP2 Comfort II's RS485 header. This supplies power to the UCM/4G, as well as allowing communications between Comfort and the UCM/4G. It is not necessary to switch off the power to Comfort before plugging in this connection.
- The RDY LED (green) should be turned on, indicating that the UCM firmware is running. The BUSY1 LED will be on while the UCM/4G is establishing the GSM network connection.

UCM/4G Quick Start Guide

- The LEDs D9 (red) and D10 (green) on UCM/4G should blink rapidly showing that RS485 communications has been established between Comfort and the UCM.
- The red LED on the daughterboard should be steady on to indicate that there is power supplied to the daughterboard. BUSY1 LED should go off. If there is no network, BUSY1 will turn off and ERROR will turn on. The UCM/4G will periodically try to communicate with the network every 10 seconds.
- BUSY2 LED will turn on when there is a call in progress

UCM/4G Quick Start Guide

Important Note

The printed manual may not always be the most current version. The latest manual can be downloaded from http://www.cytech.biz/ucmgsm_manual.html

<i>Filename:</i>	<i>UCM4GLeaf</i>
<i>Last Modified</i>	<i>1 August 2022</i>

<i>web site:</i>	http://www.cytech.biz
<i>Email:</i>	support@cytech.biz
<i>User Group/Tech Support:</i>	http://www.comfortforums.com
<i>Manual download</i>	http://www.cytech.biz/ucmgsm_manual.html

Printing Size A6 Booklet