

“Ext. Modem” Comms Task Format

External Modem Comms Task

A Comms Task option is available which allows a high speed external modem to be connected to an external UART port for the purposes of upload/download via a telephone line.

External Modem Operations

When the Comms Task is started the RTS and DTR lines are placed in the high state and the modem is initialised to answer a ringing telephone line according to the programmed “Rings to answer” setting.
When a valid connection is made, a path through to the interpreter is established. At the end of the call the modem is instructed to hang up and await another call.

Modem Re-initialisation

If the modem is powered down, accidentally disconnected, or placed in the wrong state, you will probably need to re-initialise the modem.
All Versions: Abort and Re-start the Comms Task to re-initialise the modem.
V4 or later: Modem Initialisation string is automatically re-sent 5 seconds after the Control Module detects that the CTS line has gone High again. (The CTS line from the modem is normally High when the connection is OK.)
Note: The Ext Modem cable-993027 must be used and CTS must be High. If a modem or cable is used that does not support hardware flow control, then the Modem’s CTS line must be tied High in the interface cable.

Typical Review Messages:

CT001 Modem Connect	Modem has just connected at its preferred baud rate. The baud rate is a function of the UART Port Baud rate setting and the type of modem is not displayed.																								
CT001 Hang-up	The modem has hung up because of an error or because the remote PC has instructed that the connection be terminated.																								
CT001 Lost Carrier	The CD line on the modem has gone low, indicating the connection has been broken.																								
CT001 Modem Status nn	In detail mode only, the modem has returned a result code to the 3000. These codes are modem dependent but common ones are: <table><tr><td>00</td><td>Modem is idle</td><td>01</td><td>Modem OK</td></tr><tr><td>02</td><td>Ring Signal detected</td><td>03</td><td>No Carrier</td></tr><tr><td>04</td><td>Command string problem (Contact ID)</td><td></td><td></td></tr><tr><td>06</td><td>No dial tone</td><td>07</td><td>Busy</td></tr><tr><td>08</td><td>No Answer</td><td></td><td></td></tr><tr><td>90</td><td>Init string has been sent to the Modem.</td><td>99</td><td>CTS has gone Low.</td></tr></table>	00	Modem is idle	01	Modem OK	02	Ring Signal detected	03	No Carrier	04	Command string problem (Contact ID)			06	No dial tone	07	Busy	08	No Answer			90	Init string has been sent to the Modem.	99	CTS has gone Low.
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External Modem Options

Options are reached by pressing HELP, “9” at the Active/Idle screen. Options are divided into common options and less common or Special options. Usually, only common options need be programmed.

Special options are reached by pressing HELP, “9” twice at the Active/Idle screen.

CT001Rings to
Answer: 000

This screen sets the number of rings to answer an incoming call. Legal values are between 001 and 015 rings.

**CT001 Port ->
to use: 0**

This screen sets the external port to be used in conjunction with the appropriate modem accessory cable. Legal port settings are 1 to 4 depending on the type of external UART Expander installed on the Control Module. Port 0 is not allowed. The port number is selected by scrolling through the available options using the right arrow key.

**CT001 Baud ->
Rate: 9600**

This screen allows selection of the Baud Rate (Dataspeed) at which the UART will communicate with the modem. Depending on the modem type however, it is not necessarily the Baud rate of a modem connection. The setting will be chosen according to the type of modem being used and is selected by scrolling through the available options using the right arrow key. It is recommended that the Baud rate be set no higher than 9600 Baud.

See "Comms Task Baud Rates" in Comms Task Programming [MENU 7,3,1]

External Modem Special Options

Special options are reached by pressing HELP, "9" twice at the Active / Idle screen, or by pressing HELP, "9" from any common options screen. HELP, "0" will take you back to the common options, when programming of special options is complete.

**CT001 Dial PpDF
Options -> nnnn**

This screen sets various dialling options:

P	Pulse Dial (Tel)	Selects Pulse ("decadic") dial when dialling the main Telephone Number.
p	Pulse Dial (PABX)	Selects Pulse ("decadic") dial when dialling the PABX phone number if present.
D	Dumb Dialling	Selects Dumb dialling. If "n" then Smart dialling is selected (default).
F	Not Answer Call	Not used in "Ext. Modem" Comms Task.
T	Test Mode	Not used in "Ext. Modem" Comms Task.
M	Max Count	Not used in "Ext. Modem" Comms Task.
.	Spare	Spare for future development.
6	60 sec Redial	This option forces the Comms Task to wait 60 seconds between any redial attempt. This option must be set to comply with Singapore Telecom regulations.

**CT001 PABX No. ->
None**

These screens allow the installer to define an optional PABX Access number and Call-back Telephone Number. When the Call-back number is defined, extra security is provided by forcing the task to ring back this number on a successful log-on sequence as an added precaution against "hacking".

**CT001 PABX No. ->
TN000**

Telephone numbers are selected from a pre-programmed list of Telephone Numbers, selected alphabetically by name or by number, if desired.

**CT001 Back No. ->
None**

See Telephone Number Programming.

**CT001 Back No. ->
TN000**

NOTE: Callback **not** implemented in "Ext Modem" Comms Task Format.

**CT001 Cust No. ->
None**

This screen allows the installer to specify the Telephone Number of the dialer line connected to the panel and is useful for reference purposes.

**CT001 Cust No. ->
TN000**

**CT001 Seize Aux
C01:X08**

This screen allows an Auxiliary output to be specified that will turn on whenever the dialer line is seized and turn off whenever the dialer line is released.

**CT001 DTMF Tone
Wait: 000/10 sec**

This screen sets the time a task will wait to sense the DTMF tone when in fax bypass mode. The time is programmable from 1/10 second to 255/10ths of a second (25.5 secs). If this option is left at 000/10 then the default time of 5 seconds will be used.

The DTMF tone wait time is also used as the main dial tone wait time in Callback operation and is best left at its default value (000/10) if Callback is utilised.

If the phone is ringing whilst attempting a call back, the Model 3000 will wait till the ringing stops before trying to dial.

*NOTE: Fax Bypass **not** implemented in "Ext Modem" Comms Task Format.*

**CT002 Single
DTMF Tone: 000**

This screen allows the Installer to specify the DTMF tone which will be used to initiate the modem answer sequence in fax bypass mode and also selects the tone that will be used to initiate DTMF Control Mode. The programmed tone is the one that will initiate the modem connect sequence. The programmed tone plus one is the tone that will initiate DTMF Control Mode..

eg. if "005" is programmed, the DTMF digit 5 will be the Fax bypass tone in PC Direct and DTMF tone 6 will initiate DTMF Control Mode.

NOTE:

*DTMF Control mode **not** implemented in "Ext Modem" Comms Task Format.*

**CT001 Line Test
Count: 000**

This screen sets parameters associated with line testing and should be left at 000 unless advised by the manufacturer.

**CT001 Answer
Wait: 000/10 sec**

This screen allows an answer wait time between 0 and 255/10ths of a second (25.5 seconds) to be programmed. The default is 0 seconds. When a non-zero answer wait time is programmed, upon answering the call and accessing the interpreter for upload/download, all incoming characters will be ignored until the answer wait time has expired. This is useful when connecting with a mobile data network where unnecessary additional characters are output immediately after modem connection.

The Answer Wait time is also used as the PABX dial tone wait in Callback operation and is best left at its default value (000/10) if Callback is utilised.

CT001 . . R.
Status -> nnnn

Diagnostics

Pressing the ON Key whilst the Active/Idle screen is displayed will display the UART Port status screen. This screen can be cleared when desired by pressing the OFF Key. The following table explains the flags:

.	Spare	Spare for future development.
R	Retry	A "Y" under this flag means the receive fifo (16 bytes) has overflowed and at least one character has been lost. This will normally cause a retry of some kind.
.	Spare	Spare for future development.
.	Spare	Spare for future development.

The "R" flag may be monitored after communications via this port. In the event that the system places a "Y" flag under the "R", the Status screen should be reset and monitored further. Should a "Y" flag appear under the "R" with some regularity, a potential cause would be the baud rate at which the port is attempting to communicate. In such a case the Installer should reduce the baud rate and monitor the effect via the status screen.

In the event that lower baud rates do not solve the problem, assistance should be sought from the manufacturer's Service Technician.