

“Inet” Comms Task Format

Purpose.

The purpose of the Inet Comms Task is to allow multiple panels to communicate alarm data and a limited amount of database editing commands to and from an automation package via an RS232 based network. The Inet Comms Task is available in Control Module firmware V3.5 or later.

Overview.

Inet is a Comms Task within the Model 3000/Access 4000. Inet is designed to allow up to 65000 panels to be addressed to a central point via RS232. Although 65000 panels can be individually addressed, the amount of traffic generated on a single RS232 link would exceed the practical limits of the communications network. Therefore a general limit of 300 panels per RS232 network is advised.

Inet can communicate alarm activity in both the IRFast and Contact ID formats (4+2 format NOT supported). When reporting via IRFast format Inet also provides the ability to send the raw text review event for that alarm activation. (Note that Inet is currently only supported in English language version)

Features.

- Full Duplex communications up to 9600 baud.
- Individual Alarm reporting from multiple panels to a single point via RS232.
- Individual reporting of all modules when using IRFast.
- Panel entity Control such as Areas, Doors and Auxiliaries.
- Permanent Connection.
- Automatic Backup task to IRFast and Contact ID via Dialer.

Connection.

The Inet task was initially developed to communicate via an ULTRAK RD19 Multiplexer to a PATRIOT II (V3) automation package. Connection of the Model 3000/Access 4000 to the network is achieved via an RS232 UART (P/N. 993065, 993066, 993068). The standard PC Interface cable (P/N. 993025 or 993009) can be used to connect to RS232 devices.

No hardware flow control is used so therefore only RX, TX and GND are utilized.

Configurations.

There are basically three typical system configurations, although the first is not practical it is the simplest method of using the Inet task.

1. A single Model 3000/Access 4000 panel is connected via RS232 to a PATRIOT PC. This is the most basic configuration and is given as an example only.
2. Multiple Model 3000/Access 4000 panels can communicate to PATRIOT via an RD19 MUX. When using a single RD19 up to 8 panels may be connected via RS232.
3. Up to 8 RD19 Multiplexers each supporting up to 8 Model 3000/Access 4000 panels can be connected to another RD19 which then connects to PATRIOT. By continuing this method in a “pyramid” style layout, it is possible to connect hundreds of panels back to the one common point.

Note that any of the above configurations can be extended by the use of protocol converters as discussed under “Network design considerations” on the following page.

Network design considerations.

Traffic.

Along with limitations of the protocol being used as discussed below, communications traffic is the biggest limitation of the Inet comms task. When designing a network that will involve the use of the Inet format, considerations must be made as to the expected levels of traffic during normal, peak and worst case scenarios of operation. For example, a small network of 10 panels, with less than 100 zones on each network would have a fairly minimal normal traffic level. Assuming a power failure occurred on every system at the same time, each panel would send up to 5 alarm message (depending on the number and type of expander used) back to the automation system at the same time. This would be a total of 50 messages that would all have to be processed and acknowledged. This is an example of a worst case scenario. To help deal with such a scenario, communication devices with their own internal buffers may be necessary. In addition to this the backup comms task may also be utilized to send the information via another Task.

RS232.

The RS232 protocol has a distance limitation by nature. The maximum reliable distance for RS232 is 15 metres (50 feet) @ 300 baud. Increases in baud rate will reduce this distance. To increase the distance panels may be away from the device they are communicating with, converters are required. As to what type of converter is used depends mainly on application and cost.

Non RS232 Networks.

It is now more common for a TCP/IP network to be readily available in most installations. In this case you would require a TCP/IP to RS232 converter such as a Lantronic MSS100.

If a network is unavailable then a converter such as RS422, 485, or "short haul" type may be used. Such converters should firstly be checked for their specification and transparency for the signal they will carry. Depending on the application, either the Model 3000/Access 4000, the Software and/or the communication protocol being used may be effected by any delays or infringement on the transmitted signal.

Inet Options

CT001 Idle ->
Inet

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

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

A Backup Comms Task may be programmed by pressing HELP, “9” three times at the Active/Idle screen.

CT001 Port ->
to use: 1

This screen allows the Installer to define the UART Port to which the Multiplexer or PC will be connected. Depending on the version of UART Expander fitted to the Control Module, a Port number from 1 to 4 may be used. The Port number is selected by scrolling through the available options using the right arrow key.

CT001 Baud ->
Rate: 2400

This screen allows selection of the Baud Rate (Data speed) at which the UART will communicate with the Multiplexer or PC. The Baud Rate is selected by scrolling through the available options using the right arrow key. A maximum setting of 9600 Baud may be used, however a Baud rate of 2400 is recommended.
See Comms Task Baud Rates in Comms Task Programming [MENU 7,3,1]

Inet Special Options

CT001 Client
Code: 0000

This screen sets the panels primary network address as well as the primary client code to be used for this Comms Task. The client code is programmable in decimal from 0001 to 9999. (Client codes of 0000 and 9999 should be avoided). If the “Multiple Area Client Code” is set, it is possible for a different client code to be used.

CT001 MLGPN...
Ropts -> nnnnnnnn

This screen sets various reporting options:

- M

Multiple Area Codes

If Multiple Area client codes are selected, whenever a report from an Area is performed (open/close/alarms/tampers/isolations/restores) the client code defined in Area Programming will be used if it is not “0000”. If the Area Client code is “0000”, the Comms Task client code will be used. If this option is set to “n” then the Comms Task client code will always be used. (See Area Programming for more details of this application)
- L

Look Ahead

Normally all reportable events will be sent in the order that they occur; one at a time until no more reports are required. The Comms Task will ensure the order will not alter, even if communication takes a long time to get through to the Central Station or if reports are being generated faster than they can be sent. If this option is set to “Y”, **Look Ahead** operation is selected. With Look Ahead selected, a sequence of multi-breaks on a single Zone/Input will be ignored if a restore report has already been sent for that Zone/Input and there are new alarms from a different Zone/Input that have not been sent yet. Open/Close reports do not follow this logic and are always reported. This option is useful to track intruder movement through a larger installation and ignore multi-breaking detectors.

G **General O/C** This option selects general open and close reporting. Whenever **all** Areas are turned ON a general Area close is reported. As soon as the **first** Area is turned OFF, a general Area open is reported.

In Area programming, some Areas can be nominated as “Not General Area” and are ignored in the general Area calculation. Open/Close will not be reported on these Areas in any Comms Task with this “General Open/Close” option set to YES. Another Comms Task with this option set to NO may be used to allow these Areas to trigger individual Open/Close reports. See Area Programming “Not General Area” option for details.

P **Prevents Restores** This option prevents restores being sent via this Comms Task.

N **No Area Still Open** In Area programming, it is possible to enable reporting of “Area Still Open” and “Area 24Hour Offs”. Not all reporting formats can handle these reports. Setting this option to “Y” will disable these reports for this Comms Task. If it is necessary that these events be reported, an additional Comms Task should be programmed using the IRfast format which supports them.

CT001 Area List Filter: AL002

This screen allows an optional Area List filter to be defined for this Comms Task. If a non-zero Area List is chosen, only information from Areas in the specified Area List will be sent using this Comms Task.

CT001 EOA..... Efilt-> nnnnnnnn

The “Extra Filter” screen option allows a Comms Task to only respond to certain types of events.

E **Extra Filter** This option enables Extra Filter options. If left at “n”, no extra filtering is used. ie. normal operation.

O **Opens/Closes** This option enables Opens/Closes reports to be sent via this Comms Task.

A **Alarms** This option allows Alarms/Tampers/Isolations to be sent via this Comms Task.

. **Spare** Spare options for future filters. Leave set to “n”.

For example: To configure a Model 3000 system so that all openings and closings are sent via Securitel and all alarms/tampers/isolates go via Inet, set the Securitel Comms Task with the “E” and “O” Extra Filter options and the Inet Comms Task with the “E” and “A” Extra Filter options.

CT001 Mapping -> Standard

This screen determines the input mapping for this Comms Task. In order to cater for different types of system configurations within the limitation of the number of points available in the Contact ID format, several input mapping options have been provided as listed in the following table:

Contact ID Mapping options:

- Standard
- MAP-1
- School 30
- School 19
- SIMS II
- Access-1 (V3 or later)
- Pacom (V3 or later)
- Standard-2 (V3.5 or later)
- School 19B (V3.59 or later)

For more details of Mapping options refer to “Comms Task Formats” at the beginning of this section and to the tables at the rear of this manual.

Because IRfast format doesn’t require mapping, this mapping selection is used to determine the Contact ID mapping to be used when Contact ID information is to be sent in addition to native IRfast information.

Inet Extra Options

The Extra options may be programmed by pressing HELP, “9” three times at the Active / Idle screen.

CT001 T.....EN
Opts -> nnnnnnnn

The “Inet Options” screen sets the following specific Inet options.

T Translate.

This option must be set to YES for the Inet Comms Task to operate correctly.

E Encrypt.

This option is set to YES to allow an Encrytion key (programmed in the next screen) to be sent with each data packet. Note that if set to Yes, encryption must be available and enabled in the Automation software that the Inet Comms Task is communication with. (V4 or later only)

N No CRC

This option is for diagnostic purposes only and should not be enabled unless instructed to do so by the manufacturer.

CT001 Encryption
Key: 00000000

This screen sets the Encryption key to be used when the “E”ncrypt option above is set to YES. The Encryption key is programmed as eight Hexadecimal digits and must be the same as the encryption key programmed in the Automation software that the Inet Comms Task is communicatint with. (V4 or later only)

CT001 Alarm
Format: 0

This screen selects the primary reporting format to be used in this Inet installation.

- 0 IRfast.
- 1 Text.
- 2 Contact ID.
- 3 Time Only (Not yet implemented)

**CT001 Ack Time
(sec) 000**

This screen sets the amount of time that Inet will wait for an acknowledge from the PC to an alarm transmission. Valid values of 5 to 255 seconds will be accepted. If left at 000, then a value of 20 seconds will be assumed.

**CT001 Test time
(sec) 000**

This screen sets the time between TEST reports that are sent to the automation system. When a valid communication is sent, this timer is reset. Valid values between 5 to 255 seconds will be accepted. If left at 000, then a value of 30 seconds will be assumed.

**CT001 Pace Time
(100mS) 000**

This screen is used for diagnostic purposes only and should be left at 000. Valid values are between 1 to 255 in 100mS increments. If left at 000, then a value of 5 seconds will be assumed.

**CT001 Backup
Task: CT000**

This screen allows the Installer to specify which Comms Task is to be used as the Backup Comms Task. A Backup Comms Task for Inet can be IRfast Backup, Contact ID Backup or GSM modem.

IMPORTANT NOTE: Whenever the Inet Comms Task is used, at least 1 spare Comms Task must be left available. Inet, when set to "Active" will automatically generate a "Buffer" Comms Task in the next available Comms Task position. While Inet is active this Task cannot be set to Idle or deleted.

Backup Tasks.

The Inet comms task allows a dialer backup task to be assigned should Inet fail to communicate successfully with the automation system. Inet will attempt to re-send any unacknowledged alarm message twice. If an acknowledge is still not received the alarm message will then be sent via the appropriate backup task if programmed. Backup Comms Tasks are available in IRFast, Contact ID and GSM modem formats. (GSM requires V3.5 or later)

Diagnostics**CT001 . . R.
Status -> nnnn**

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:

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.

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.