

# T4000 Ultralite Security Communicator by Inner Range

P/N: 998536

Installation & Operation Manual. Rev: 1.0



## INTRODUCTION

The Inner Range T4000 Ultralite security communicator provides two-way communication between a monitored site and the Monitoring Centre to allow highly secure polled alarm communications. The T4000 Ultralite is capable of interfacing with alarm systems using an RS-232 or TTL serial connection or dialer capture of contact-ID signals.

### T4000 Ultralite Features

- Simple Plug and Play installation.
- Ultra-fast 4G LTE polled communications path.
- Bi-directional polling meets Australian standard AS2201.5 Class 2.
- Secure 128Bit AES Encrypted data transmission.
- Dialer Capture port to receive communications from any alarm panel equipped with a dialer and programmed to report Contact-ID.
- High level Integration with Inner Range Integriti, Infiniti, Inception and Concept 3/4000 systems. See *“Alarm Panel Connection Guide”* later in this document for details.
- Three open-collector outputs for control of external devices. e.g. Remotely Arm/Disarm connected alarm panel. \*
- Three general purpose security inputs. e.g. Cabinet tamper if installed in separate enclosure.
- Smartphone application that allows the end user to control the alarm system. e.g. Arm/disarm, aux control & automation.\* Available on Google Play and web: <https://skycommand.com.au>
- Send alarm and event notifications to mobile devices with the SkyCommand App.
- Over-the-air upload/download to compatible alarm systems using modem dial up and serial pass-through methods.
- Remote Firmware upgrade capability.
- Contact-ID, IRFast and IRFast+text formats.
- Compact and versatile form factor.
- Easy to read functional LED status display.
- 12-24V DC Supply Voltage.

\* Requires external wiring. See *wiring diagrams* later in this document.

### Parts List

#### Main Parts:

- T4000 Security Communicator.
- Antenna 3.5dBi with magnetic base & 2m cable.
- Installation manual (This document).

- 1 x Self-adhesive Hook and Loop tape. 80 x 50mm
- 1 x 2-way 3.5mm Screw Terminal connector.
- 1 x 5-way 3.5mm Screw Terminal connector.
- 1 x 6-way 3.5mm Screw Terminal connector.
- 1 x Dialer interface cable. 611 socket to RJ12 plug.

◦ Accessory Kit. See *list opposite*.

#### Optional Accessories:

- Concept/Integriti Port 0 interface cable.
- Concept/Integriti UART interface cable.
- Inception USB interface cable.
- Small Metal Enclosure with Tamper Switch
- High-gain Antennae:
  - 6.5dBi. 5m cable.
  - 4.5dBi. 10m cable.
  - 9dBi 6-element Directional Yagi. 10m cable.

#### Accessory Part Number:

- 996795. See *pages 6 & 9 for details*.
- 996796. See *pages 6 & 9 for details*.
- 996797. See *pages 6 & 9 for details*.
- 995200XS
- 994093.
- 994094.
- 994097.

## INSTALLATION

### Power Supply

The T4000 Ultralite has connections for an External Power Supply. Connect 12 to 24V DC from a battery-backed power supply to “VIN”.

e.g. A 13.75V output from an Alarm Panel with on-board battery-backed power supply, or a separate battery-backed power supply.

Ensure that the T4000 Ultralite power requirements will not cause the power supply's current limit to be exceeded. Remember to allow for the current required by battery charging and by other devices that may be powered from the same supply. See “Specifications” on the last page of this document for details.

Refer to the wiring diagrams and specifications later in this document for more details.

### Installation Procedure

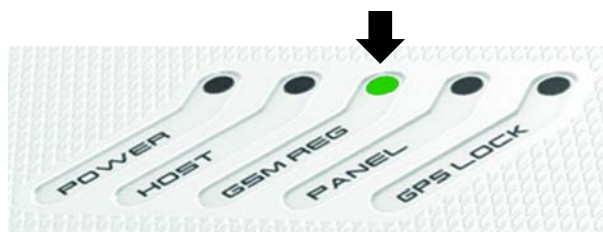
1. Place the Security Communicator and the supplied antenna in the location where you intend it to be installed. Apply power and screw the antenna cable connector to the threaded antenna socket.

When connecting the antenna, ensure that the connector is finger tight and has not been over-tightened, the antenna has not been cut or modified in any way and the cable is free of any kinks or sharp bends.



2. Before you mount the T4000 Ultralite you will need to test the signal strength in your chosen location. If the signal strength is poor you will need to install a high gain antenna or find a more suitable location for the in order to obtain greater signal strength.
3. The 'GSM REG' LED indicates LTE cellular network connectivity. When the 'GSM REG' LED is On solid the colour of the LED will indicate the current level of GSM signal strength. The T4000's Ultralite's GSM modem should take less than 1 minute to register onto the LTE cellular network.

Green = Good signal strength.  
Yellow = Acceptable strength.  
Red = Poor signal strength.

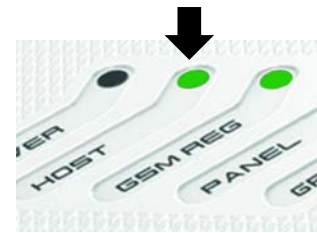


4. The 'GSM REG' LED will also indicate whether the modem is operational or experiencing any issues.

Green flashing = Currently registering on the GSM network.  
On = Has GSM registration.

5. Connection to the Multipath network or the SkyTunnel server is indicated by the 'HOST' LED

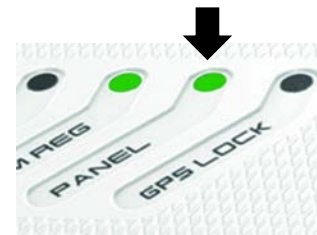
Green = Connected to Multipath-IP or SkyTunnel Server.  
 Green flashing = Not connected.



6. Once you have tested that the signal strength is adequate in the location that the T4000 Ultralite is going to be installed in, it can be securely mounted.

Mount in a suitable Inner Range Concept or 3<sup>rd</sup> party product enclosure (e.g. the Alarm Panel enclosure if space permits) using the self-adhesive hook and loop tape provided.

7. The T4000 Ultralite requires a four wire connection to the Alarm Panel. See "Wiring Diagrams" on page 9. The T4000 Ultralite tests the continuity of the connection. If the return line is not connected, the 'Panel' LED will flash 'YELLOW' indicating a fault with Dialer capture comms. This will cause a 'Panel Comms Fail' event to be sent to the Monitoring Centre. This will let the monitoring centre know that the T4000 has lost connectivity with the alarm panel.



8. Enroll the T4000 Ultralite by contacting the central station that will be monitoring the system. You will need to provide the serial number of the T4000 Ultralite to begin the enrolment process.

The Serial Number is printed on a label on the front of the unit as shown in this example.

The Monitoring Centre will ask for the communications type and the format that the T4000 Ultralite will be reporting in, and the enrollment will be finalised.



9. Test alarm panel alarm event delivery via dialer capture or serial communications and the panel disconnection alarm.

## LED Status Indicators

The T4000 Ultralite has five functional status LED's to quickly identify the current power and connection status.

LED	LED Colour / Notes	Behavior
PWR	Green.	When "V IN" is connected. * Off = No power. Flashing = Problem with Input power. On = Power OK with one flash every 5 seconds to indicate system is running.
PANEL *	Green = Serial comms mode. Yellow = Dialler Capture mode. Red = Upload/download in progress.	On = External Panel connection OK. Flashing = External Panel Disconnected. Red flashing = Panel upload/download in progress.
GSM REG	Green = Good signal strength. Yellow = Acceptable strength. Red = Poor signal strength.	Green flashing = Registering on GSM network. Green On = Has GSM registration.
HOST	Green.	On = Connected to Multipath-IP or SkyTunnel Server Host. Flashing = Not connected.

\* See Wiring Diagrams on page 9 for Power Supply wiring options and Alarm Panel connection options.

## ALARM PANEL CONNECTION GUIDE

The T4000 Ultralite can be connected to an Alarm panel using two methods:

- Dialer Interface. The alarm panel's dialer lead connects to the T4000 'Panel' RJ12 socket.
- Serial Interface. The alarm panel's serial port (if available) connects to the T4000 'SERIAL' Port.

### Dialer Interface.

#### Programming the Alarm Panel for Contact ID

The alarm panel must be programmed with:

- A supported reporting format:
  - Contact ID.
  - IRfast or IRfast+Text. (May require a firmware update. See p7)
- Tone dialing.
- Four digit client code.
- 1 to 16 digit phone number. Note: The alarm panel should be programmed with the correct central station phone number if the site has access to a PSTN line.

### Serial Interface.

RS-232 connection to Inner Range Concept 3/4000, Integriti, Infiniti & Inception systems.

*The T4000 Ultralite can be connected to an Inner Range Security and access control system using the "GSM" Comms Task on the following connections:*

Controller Serial Port	Serial Mode	I/F Cable P/No.
Concept 3000/4000 Controller Port 0. Type 2. Firmware V4.07 or later.	TTL	996795.
Concept 3000/4000 Controller UART. Type 1. Controller Firmware V4.08 only. Type 2. Controller Firmware V4.00 or later.	232	996796
Integriti / Infiniti Controller Port 0. Firmware V1.00 or later.	TTL	996795.
Integriti / Infiniti UniBus RS-232 UART Port. Firmware V1.00 or later.	232	996796
Inception USB	TTL	996797

#### Interface Cable Wire Colours.

T4000 SERIAL Port	996795 (TTL)	996796 (RS232)	996797 (TTL)
RX	Blue	White or Yellow	White
TX	Yellow or White	Blue	Green
0V	Black or Green	Black or Green	Black

See "Wiring Diagrams" on page 9 for details.

GSM Comms Task programming.

- RS232 Serial communications options must be set to the following parameters.
  - Baud rate: 1200 to 115200.
  - Data settings: 8 Bits, No Parity & 1 Stop Bit.
 Note: Concept systems only require the Baud Rate to be selected.
- "Enable Alarms" must be selected. (Integriti/Infiniti only)
  - Note: The reporting format options are configured for you in the Multipath-IP enrolment process.

Note: For full details of the GSM Comms Task setup options please refer to the appropriate Integriti, Infiniti or Concept 3000/4000 Installation and Programming manuals.

## MAINTENANCE.

### Firmware updating.

It is recommended that the T4000 Ultralite is updated to the latest firmware version. The firmware update is performed 'over the air' using the Multipath-IP client software. This can be performed by the Central Station operator or Bureau technician.

Please refer to the Multipath-IP client user manual for information on remote firmware updates.

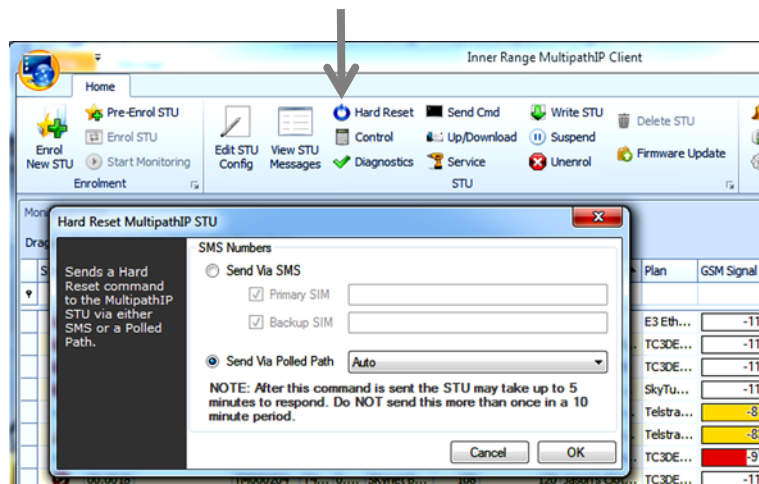
### Rebooting.

The T4000 Ultralite can be soft reset by two methods:

- By momentarily pressing the reset button on the unit with a paper clip or pin.
- By sending a reset command from the software by clicking on the 'hard reset' icon. *See screen image below.*



Reset can also be performed by removing power from the unit, waiting 10 seconds and then re-applying the power and battery connections.



### Defaulting.

The T4000 Ultralite can be set back to factory default by using the following methods:

- by depressing the reset button on the unit with a paper clip or pin and holding it depressed for more than 10 seconds. *See picture above for location of reset button.*
- by un-enrolling the T4000 Ultralite using the Multipath software.

Note: If the T4000 Ultralite is to be moved to a new Central Station, it must be unenrolled and cancelled from the originating Central Station.

## ALARM PANEL MANAGEMENT & REMOTE CONTROL.

### Alarm Panel Upload/download feature

The T4000 Ultralite is capable of allowing a Central Station operator or Bureau technician to dial into the connected alarm panel. This feature allows remote programming and user code changes via the Multipath-IP network when a phone line is not available on site. There are two methods by which the T4000 Ultralite can connect to the alarm panel for upload/download:

1. Modem dial up. The T4000 Ultralite is capable of calling the connected alarm panel via the 'Panel' phone connection. *Refer to wiring diagrams.*
2. Direct serial connection. The T4000 Ultralite is capable of a direct RS232 'serial pass-through' connection using the RS232 port. *Refer to wiring diagrams.*

#### NOTES:

1. Alarms will not be received from the Alarm Panel while an Upload/Download session is in operation.
2. Refer to the Multipath-IP client software manual for configuring the alarm management software connectivity.

### SkyCommand End User remote control.

The SkyCommand web portal and mobile app allows an end user to control their alarm system via the T4000 Ultralite. This is achieved by using an open-collector output on the T4000 Ultralite connected to a key-switch zone on the connected alarm panel. *See wiring diagrams and 'SkyCommand Key Switch - Setup Guide' for more details.*

Alternatively using a high level RS232 connection (e.g. GSM comms task) to an Inner Range Concept, Integriti, Infiniti or Inception system, the T4000 Ultralite is capable of controlling:

- Security areas and home auxiliaries in the Concept system or
- Security areas and user controllable outputs in an Integriti, Infiniti or Inception system.

### SkyCommand End User remote control quick setup

1. Firstly the end user is required to [Register](https://skycommand.com.au) for a login on the SkyCommand web site or mobile app. <https://skycommand.com.au>
2. Once the end user has registered for a login, the bureau technician or Monitoring Centre operator is able to assign the user's email address to their T4000 Ultralite using the Multipath-IP client software or from the SkyCommand Dealer portal.
3. Finally control actions can be created by the bureau technician or Monitoring Centre operator using the Multipath-IP client software.

Please note: For a full SkyCommand setup procedure please refer to the manuals: 'SkyCommand Action Configuration - Setup Guide' or 'SkyCommand Panel Configuration - Setup Guide'.

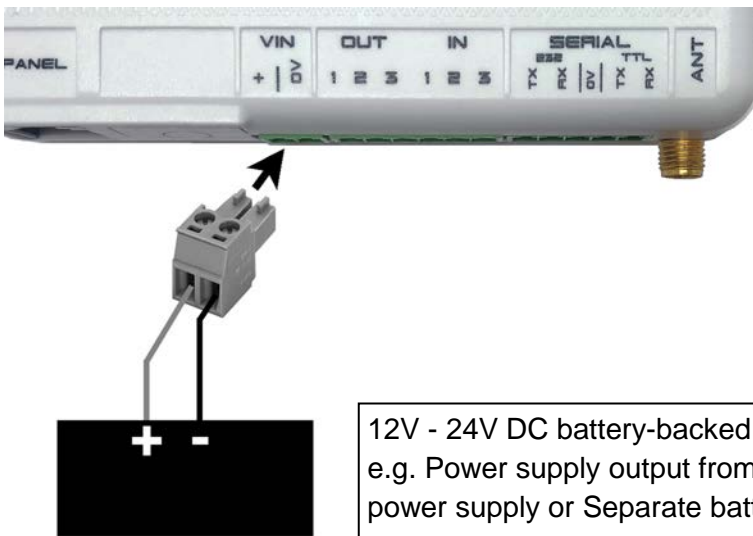
### SkyCommand Bureau Technician access

The SkyCommand web portal is capable of providing the installer/bureau technician access to view, control and diagnose their T4000 devices using a smart-phone or tablet. This can be extremely useful when initially installing the T4000 Ultralite on a client site providing useful information such as GSM signal strength, alarm throughput and fault indicators. Please contact your Central Monitoring station or Inner Range Multipath-IP tech support for information on gaining SkyCommand bureau access.



## WIRING DIAGRAMS

### Power Supply

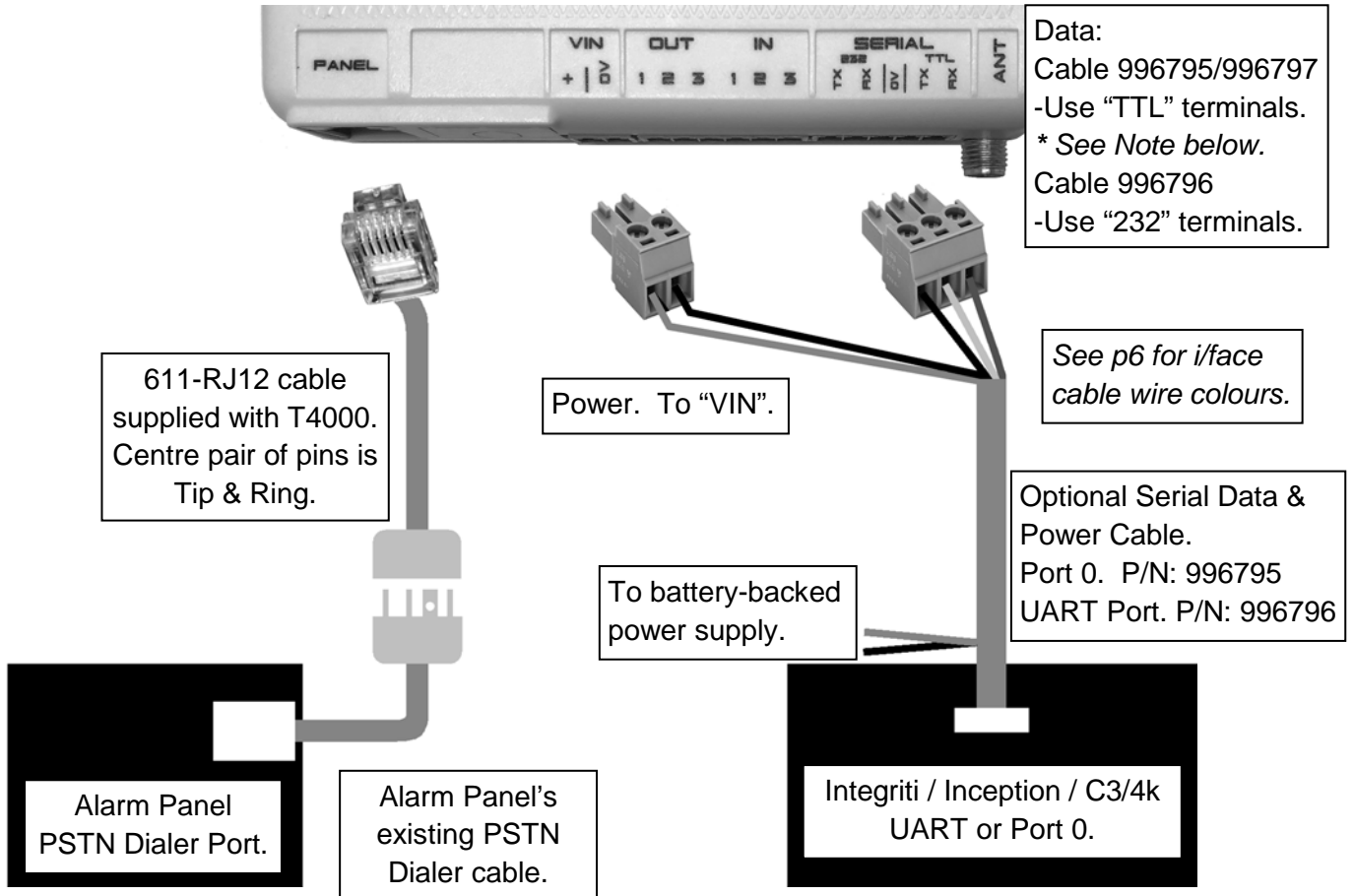


12V - 24V DC battery-backed power source.  
 e.g. Power supply output from Alarm Panel with on-board battery-backed power supply or Separate battery-backed power supply.

### Alarm Panel connection.

OPTION 1. Dialer capture.

OPTION 2. Serial. (Integrati / C3/4k / Inception)



**\* Note:** The early version of the Port0 Cable has a small interface circuit insulated with black heat-shrink sleeve, incorporated into the cable. This version of the cable must be connected to the "232" terminals.

## Input and Output connections.

### IN

Three general purpose Inputs (“IN”) are provided to allow monitoring of detection devices.

e.g. A cabinet tamper switch if the T4000 Ultralite is installed in its own enclosure.

The Inputs are configurable for EOL or non-EOL operation depending on the type and location of the detection device to be monitored.

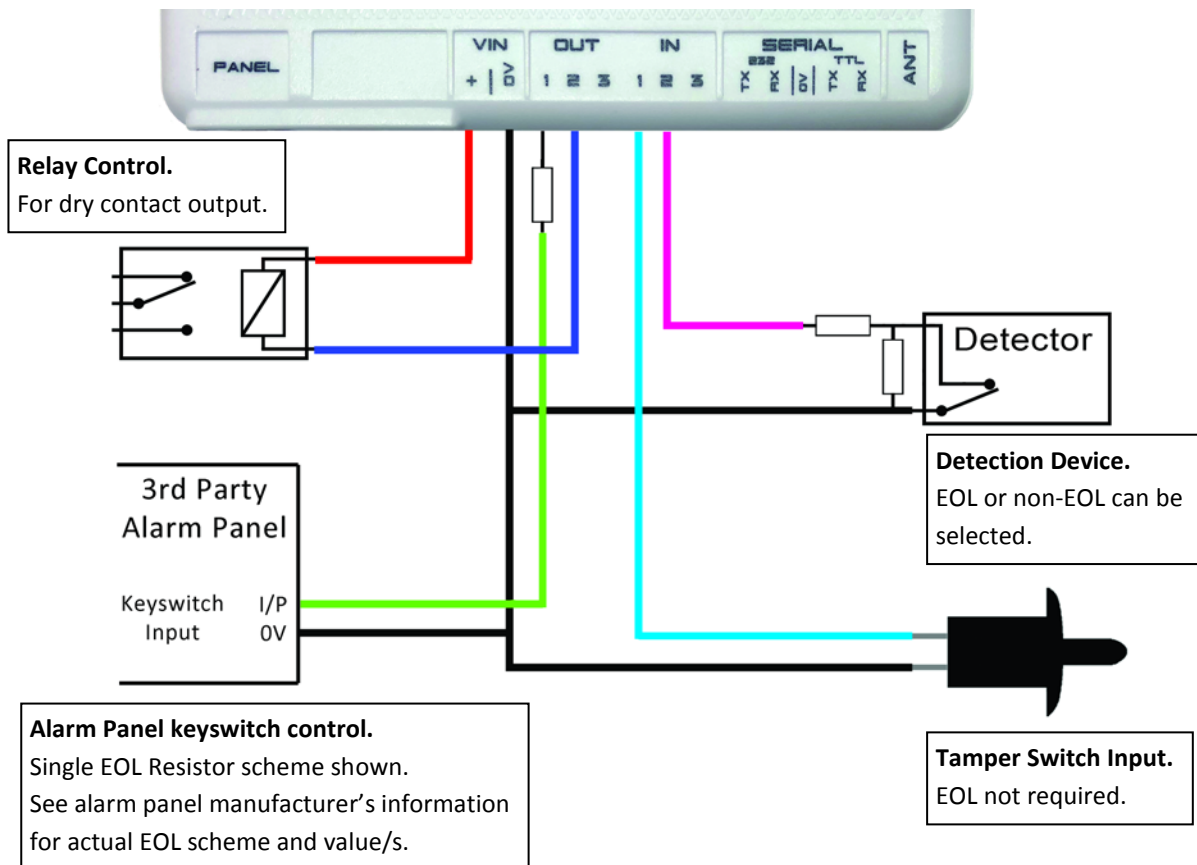
The default setting is non-EOL for Tamper switch application as shown in the diagram below.

If configured for EOL operation, a 2k2/2k2 or 2k2/6k8 EOL scheme may be used as in other Inner Range products.

### OUT

Three Open Collector Outputs (“OUT”) are provided to allow operations such as control of a key switch input on the Alarm Panel for remote Arm/Disarm.

NOTE: A Relay must be used if switching inductive or high current loads. See specifications on page 12.



## Multipath-IP Data Plans

The T4000 Ultralite is a Class 2-only device and is always enrolled to the P02 plan by the Central Monitoring station operator or Bureau technician using the Multipath-IP client software.

AS2201.5 Alarm Transmission plans					
AS2201.5 Transmission Supervision Period	Ethernet Only	Single SIM	Single SIM + Ethernet	Dual SIM	Dual SIM + Ethernet
Class 2. 12 Hour		P02			
Class 2. 1 Hour	P06	P07	P08	P09	P10
Class 3. 120 Seconds	P11	P12	P13	P14	P15
Class 4. 60 Seconds			P18		P20
Class 5. 20 Seconds			P23		P25

## Further Reading

The following additional documents are available from the “Technician Downloads” portal on the Inner Range website. (Website login required)

- Datasheet-T4000\_Ultralite\_Security\_Communicator
- MPIP Basic System Admin Guide
- SkyCommand Action Configuration - Setup Guide
- SkyCommand Inception Door Control - Setup Guide
- SkyCommand Key Switch - Setup Guide
- SkyCommand Notifications - Setup Guide
- SkyCommand Panel Configuration - Setup Guide
- SkyCommand T4000 Router Setup Guide
- A range of guides for the Upload/Download feature for compatible alarm panels.

## Specifications

Enclosure Type:	ABS plastic.
Dimensions:	101mm x 79mm x 23mm. (Not including connectors)
Shipping Weight (gross):	Less than 200g.
Installation environment:	0°C-50°C @ 15%-90% relative humidity (non-condensing)
Power Source (To "VIN")	12V to 24V DC.
Current consumption @ 13V DC:	115mA (Idle) + 30mA (GSM Online).
Minimum operating voltage:	8V DC
Low volts sense voltage (typical):	11.0V
Fuse:	PTC protection + onboard fuse (non-replaceable)
Zone inputs (IN):	3. Software configurable (EOL or Non-EOL) Default setting is non-EOL for Tamper switch application.
Open Collector outputs (OUT):	100mA DC per output.
Indicator LED's:	5.
Alarm formats:	Contact ID, IRFast, IRFast + Text
Max PABX line voltage:	65V RMS
Max PABX current:	30mA
PABX output level:	-10dBm
Max RF Power:	2 Watts

### Disclaimer:

1. The manufacturer and/or its agents take no responsibility for any damage, financial loss or injury caused to any equipment, property or persons resulting from the correct or incorrect use of the system or it's peripherals. The purchaser assumes all responsibility in the use of the system and its peripherals.
2. While every effort has been made to ensure the accuracy of this manual, the manufacturer assumes no responsibility or liability for any errors or omissions. Due to ongoing development, product specifications and the contents of this manual are subject to change without notice.

www.innerrange.com

Ph: +61 3 9780 4300

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