IMPROX TRT

ImproX (TRT) Twin Remote Terminal
INSTALLATION MANUAL

SPECIFICATIONS

Working Environment

XRT910-0-0-GB-XX .... (Aluminium Extruded Cabinet)	Designed to work in an indoor (dry) environment, similar to IP40. The Terminal is not sealed against water.
XRT911-0-0-GB-XX .... (Open Frame Construction)	Designed to work in an indoor (dry) environment. The Terminal is not sealed against water.

Input Voltage............................... 10 V DC to 30 V DC, polarity sensitive.

Power Requirements	**Current (mA)**	**Power (W)**
Input Voltage 10 V DC	110	1.10 (max)
Input Voltage 30 V DC	40	1.20 (max)

Relays

Relay Output	2 Relays, each with NO, COM and NC contacts.
Relay Contact Ratings	10 A at 28 V DC, 5 A at 220 V AC, 12 A at 120 V AC.

Digital Inputs

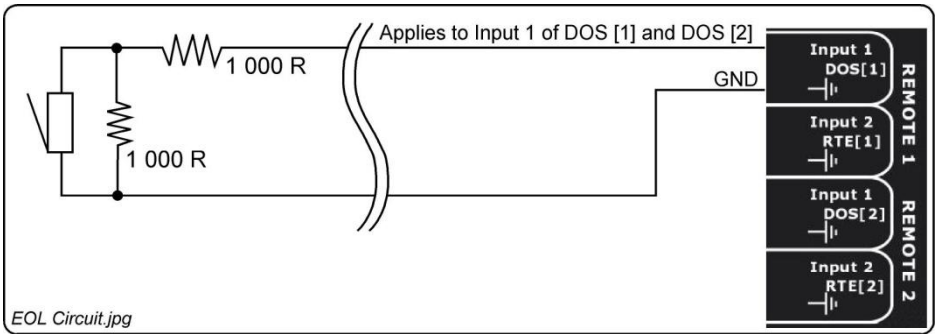|	
Type	4 Dry-contact inputs.
Protection Range	+50 V to -50 V continuous, +80 V to -80 V surge.

Figure 1: End of Line (EOL) Sensing Circuit

NOTE: *End of Line (EOL) Sensing enables the Terminal to raise an alarm when somebody tampers with the circuit (that is, cutting or shorting the wires) between Input 1 (of DOS [1] or DOS [2]) and '⊣⊩' GROUND (GND). In other words the Terminal distinguishes between tampering on the circuit, and the door being in an actual 'Normally Open' state.*

By placing Resistors into the circuit between the Input 1 (of DOS [1] or DOS [2]) and '⊣⊩' GROUND (GND), the Terminal's Digital Input monitors a constant resistance through the circuit. When the circuit is tampered with, the Resistors are bypassed; the Terminal detects the resistance change raising an alarm.

LED "Diagnostic Indicators"

Status LED

Power On........................	Continuous Red.
Upgrade Mode................	Flashing Red (Steady).
RS485 Communications Failure	Flashing Red (Intermittent).
Incoming RS485 Data	Flashing Green LED.
Outgoing RS485 Data	Flashing Red LED.
Digital Inputs (1-4)..................	Continuous Green on detected contact closure.
Relays (1 and 2)....................	Continuous Red on activation of the Relay.

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INSTALLATION INFORMATION

Accessories

Find the following when unpacking the ImproX TRT Terminal:

- Either an ImproX (TRT) Twin Remote Terminal with an open frame construction. The construction consists of a Trivalent Passivated Mild Steel Mounting Plate and a Biaxially-oriented Polypropylene Cover Plate.
- Or an ImproX (TRT) Twin Remote Terminal housed in a Black, Aluminium extruded Cabinet. The Cabinet consists of a Top Cover, a Base and two End Plates. Each End Plate is attached with four Thread Cutter Screws (2.2 x 5 mm).

CAUTION: **DO NOT use the Metal-oxide Varistors (25 Vrms, 500 A, 77 V max clamping) with mains power applications.**

- Two Metal-Oxide Varistors, 25 Vrms, 500 A, 77 V max clamping.
- Four Brass Wood Screws (3.5 mm x 25 mm).
- Four Wall Plugs (7 mm).
- An extra Fixed Address Label.

You will find the following when unpacking the Security Accessory Pack (XTT911-0-0-NN-XX):

- Two TORX® Fasteners (M3.5 x 10 mm).
- A T10 TORX® Key.

General

Remember the following when installing the ImproX TRT Terminal:

NOTE: *Where we specify a Remote Reader in this Manual, we imply that the same details apply to the Multi-mode Remotes.*

Communications Distance

The RS485 communications distance between the ImproX Controller and the LAST ImproX TRT in a cable run, MUST NOT exceed 1 km (1 090 yd). Achieve this by using good quality screened, twisted 2-pair cable, with the screen EARTHED at one end.

Distance between the ImproX TRT and its Remote Readers

The maximum cable distance between the ImproX TRT and its Remote Readers MUST NOT exceed 10 m (33 ft). Achieve this by using good quality screened, twisted pair cable.

Distance between ImproX Units

You can mount ImproX TRT's directly next to each other. To avoid mutual interference, install the ImproX Remotes alongside each other at least 500 mm (20 in) apart.

Jumper Links

Long transmission lines or multiple "star" connections, may cause communication problems. Placing a Jumper Link across the jumper [TR1] in the LAST UNIT AT THE END OF THE CABLE RUN should solve the problem.

EARTH Connection

Connect the ImproX TRT Terminal to a good EARTH point. Using the RS485 Port, connect the EARTH Lead to the 'ᴵᴴ' Terminal. Mains EARTH can be used, but electrical noise may exist.

CAUTION: **When using the ImproX TRT with FCC approved accessories, ensure that the RS485 cable is routed through a separate grommet to the power cable. Also ensure that you use a CE approved Power Supply Unit.**

Arc Suppression

Snubber devices are recommended for EMF Flyback and Arc Suppression when driving an inductive load with the Relay, see Figure 2.
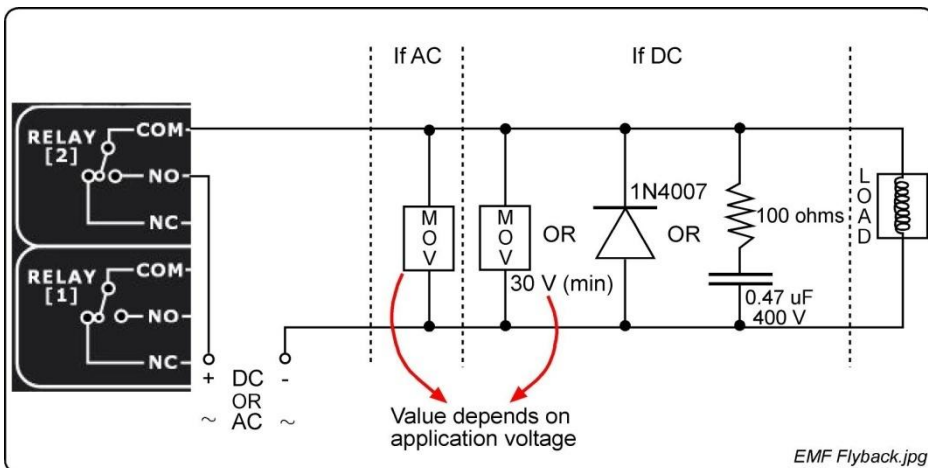
Figure 2: EMF Flyback and Arc Suppression

Mounting the ImproX TRT

CAUTION: **Make certain that you mount the Terminal on a vibration-free surface.**

NOTE: *You can mount the ImproX TRT onto virtually any surface including metal.*

Select the mounting position of the ImproX TRT Terminal, considering accessibility, routing of wires and visibility of the LEDs.

XRT910-0-0-GB-XX

Secure the Base to the mounting surface, using four suitable screws and wall plugs (supplied), nuts and bolts or rivets.

XRT911-0-0-GB-XX

Secure the Mounting Plate to the mounting surface, using four suitable screws and wall plugs (supplied), nuts and bolts or rivets.

Top Cover Release Mechanism

1. If installed, remove the two TORX® Fasteners, using the T10 TORX® Key (XTT911-0-0-NN-XX).

2. Remove the top two Thread Cutter Screws (2.2 x 5 mm) from each of the End Plates.

3. Insert a flat head screwdriver (maximum 7 mm) into the cut out in either of the two End Plates. Swivel the screwdriver until the Top Cover makes a click sound.

4. Insert the screwdriver in the gap (on the side of the ImproX TRT) between the Top Cover and the Base. Swivel the screwdriver again, to release the Top Cover from the Base.

5. Remove the remaining Thread Cutter Screws (2.2 x 5 mm) from each of the End Plates.
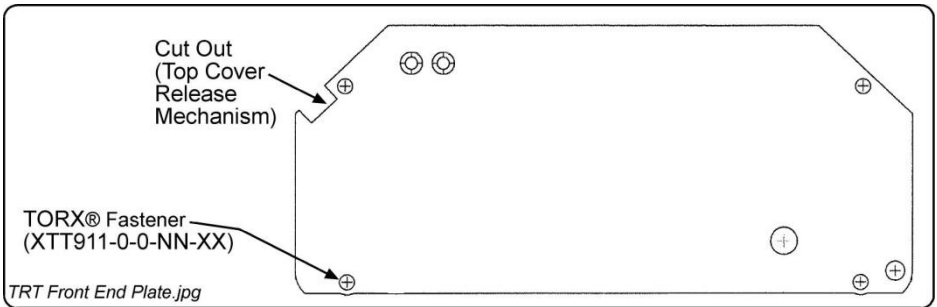
Figure 3: Front End Plate
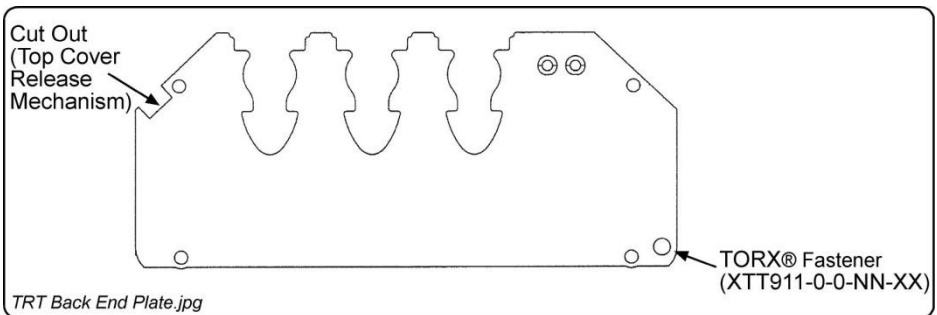
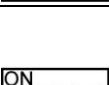**Figure 4: Back End Plate**

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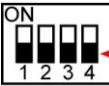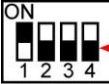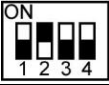
DIP-switch Settings

NOTE: *Once the DIP-switch settings are modified reset the ImproX TRT to acknowledge the new settings.*

"Remote 1 Select" and "Remote 2 Select" DIP-switch Settings

Each of the Remote Ports has a 4-way DIP-switch to select the function of that Port.

NOTE: *If you set both Remote DIP-switches to the all off position then an Auto-ID will not return any Fixed Addresses.*

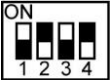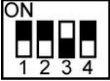| DIP-switch Position		Connections
0	ON [switches] DIP-switch 0 shows all the switches in the OFF position	Channel unused.
1	ON [switches] DIP-switch 1 shows switches 2, 3 and 4 in the OFF position	No Remote attached, the Channel is used for Relay and Digital Inputs only.
2	ON [switches]	ImproX Remote (including the ImproX Multi-mode Remote).
3	ON [switches]	ImproX RF 4-Channel Receiver or ImproX (IR) Infrared Receiver.
4	ON [switches]	Magstripe.
5	ON [switches]	Barcode (code 3 of 9) with Checksum.
6	ON [switches]	Barcode (code 3 of 9) without Checksum.
7	ON [switches]	Wiegand 26-bit, 44-bit, 40-bit, 37-bit and Tag + PIN-code or Reason Code Mode. (Sagem MA100, MA200 or MA300).
8	ON [switches]	Wiegand open format.
9	ON [switches]	If the ImproX RF is connected to Channel 1 of the TRT then Button 1 of the ImproX (QT) Quad Transmitter reports from Channel 1, Button 2, 3 and 4 do not report at all. If the ImproX RF is connected to Channel 2 of the TRT then Button 2 of the ImproX (QT) Quad Transmitter reports from Channel 2, Button 1, 3 and 4 do not report at all.

DIP-switch Position	Connections
10	If the ImproX RF is connected to Channel 1 of the TRT then Button 3 of the ImproX (QT) Quad Transmitter reports from Channel 1, Button 1, 2 and 4 do not report at all. If the ImproX RF is connected to Channel 2 of the TRT then Button 4 of the ImproX (QT) Quad Transmitter reports from Channel 2, Button 1, 2 and 3 do not report at all.
11	If the ImproX RF is connected to EITHER channel of the TRT then Button 1 of the ImproX (QT) Quad Transmitter reports only on Channel 1 and Button 2 reports only on Channel 2.
12	If the ImproX RF is connected to EITHER channel of the TRT then Button 3 of the ImproX (QT) Quad Transmitter reports only on Channel 1 and Button 4 reports only on Channel 2.

Table 1: "Remote 1 Select" and "Remote 2 Select" DIP-switch Settings

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Wiegand Modes

Mode	Terminal Action
Tag Only:	Treats all codes received as tag codes.
Tag + PIN:	Treats the first Wiegand code received as the tag code, and the second Wiegand code received as the PIN-code.
Tag + Reason:	Treats the first Wiegand code received as the tag code, and the second Wiegand code received as the Reason Code.
Tag + PIN + Reason:	Treats the first Wiegand code received as the tag code. The second and third Wiegand codes received are treated as the PIN-code and Reason Code respectively.

Table 2: Wiegand Modes

Wiegand Mode Rules

- Enter PIN-codes or Reason Codes on the Reader within 10 seconds otherwise the Terminal discards the tag code.

- The System allows 10 seconds each for the entry of the PIN-code and the Reason Code in Tag + PIN + Reason Mode.

- If the ImproX TRT expects a PIN-code and receives a number greater than 65535, then the Terminal assumes the number to be a tag code. The Terminal discards the previously read Tag for the current one and the Terminal will still expect a PIN-code.

- If the ImproX TRT expects a Reason Code and receives a number greater than 65535, then the Terminal assumes the number to be a tag code. The Terminal discards the previously read Tag for the current one and the Terminal will still expect a PIN-code or Reason Code, depending on the mode.

- If the Terminal expects a Reason code and instead receives a number in the range 100 to 65535, the Terminal assumes this is an error. The Terminal discards the entire transaction, entering a new tag code starts the process again.

- A Wiegand Keypad Reader connected to an ImproX TRT cannot be configured to read PAC-codes or special key codes.

- If using PIN codes and Reason Codes set the ImproX TRT switches for Wiegand 26-bit, 37-bit, 40-bit and 44-bit, not Wiegand open format.
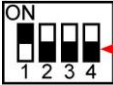
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"Door Lock Select" DIP-switch Settings

DIP-switch Position		Connections
0	DIP-switch 0 shows all the switches in the **OFF** position	Normal Lock.
1	DIP-switch 1 shows switches 2, 3 and 4 in the **OFF** position	Motor Lock.
2		Pulse or Repeating Lock.
3		Fail Safe or Fail Secure with Locked or Unlocked Status (Solenoid Lock).
4		Normal Lock, no Lock or Unlock Sensors, only Emergency Mode support.

Table 3: "Door Lock Select" DIP-switch Settings

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ELECTRICAL CONNECTIONS

Connecting the ImproX TRT Terminal

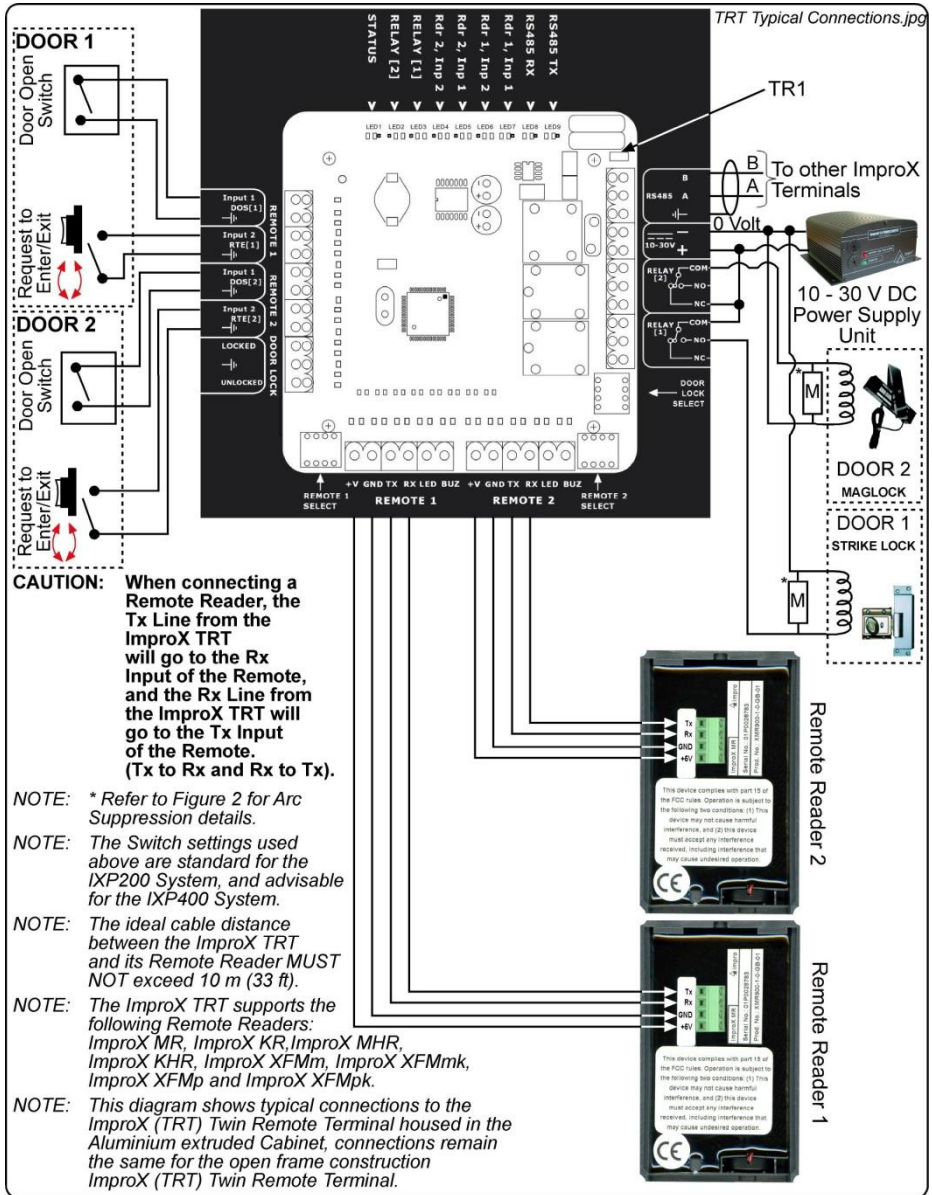Figure 5 shows a typical electrical connection diagram for the ImproX TRT Terminal.
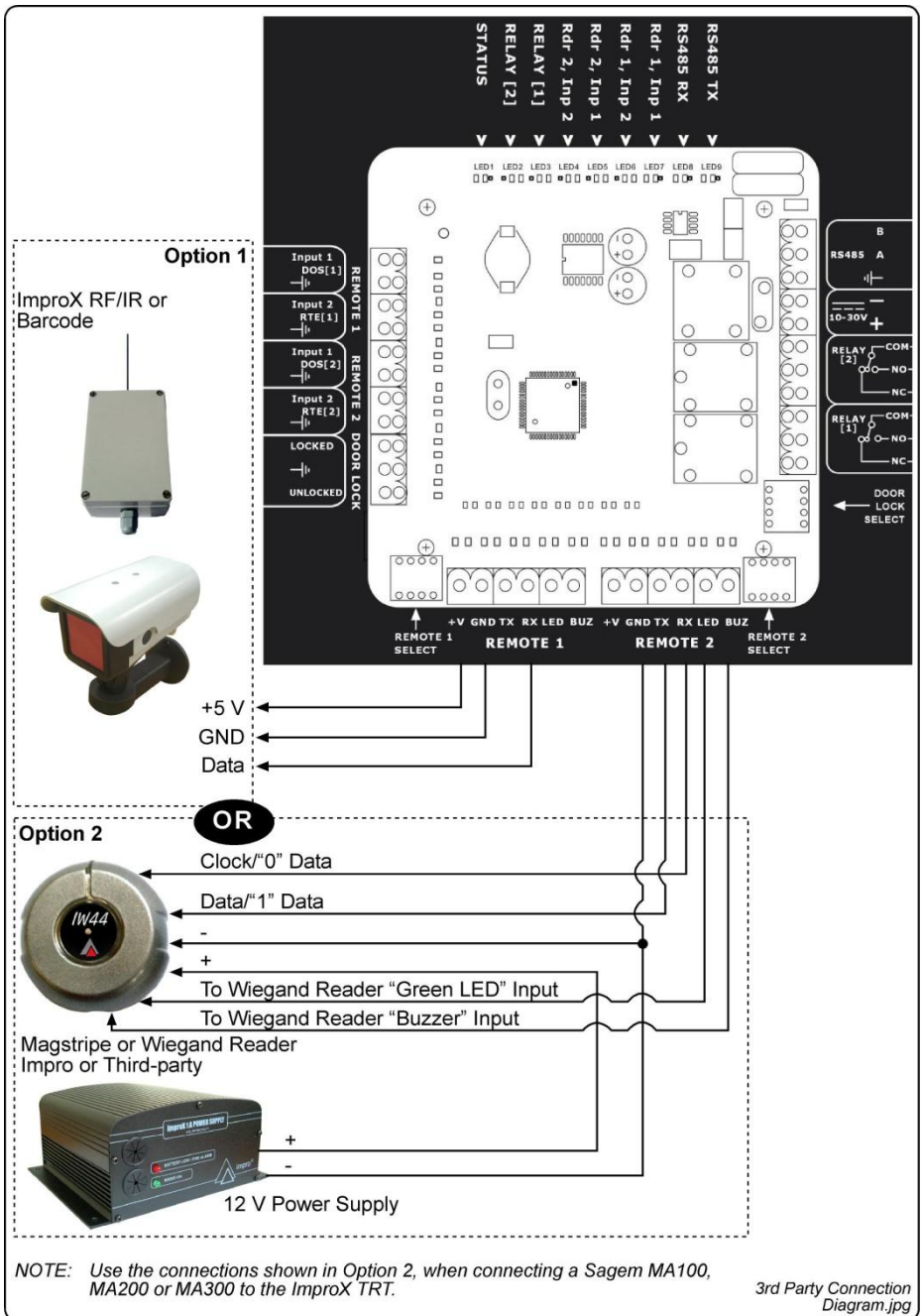

Figure 5: Typical ImproX TRT Electrical Connections

Figure 6: Remote Port Data Connections for Third-party Devices

Fixed Address Label

Once the ImproX TRT is installed, sketch a rough site plan. Attach the loose (additional Fixed Address Label packaged with the Terminal) Fixed Address Label in the position of the Terminal on the sketched site plan. When the system installation is complete and all the units are represented on the site plan by their Fixed Address Labels, file the site plan for future reference.

GUARANTEE OR WARRANTY

CAUTION: **We reserve the right to nullify the products guarantee or warranty where you have not properly installed the Metal-oxide Varistors.**

This product conforms to our Guarantee or Warranty details placed on our Web Site, to read further please go to www.impro.net.

USER NOTES

USER NOTES

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USER NOTES

access control ● **w w w . i m p r o . n e t** ● access control

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This manual is applicable to the ImproX (TRT) Twin Remote Terminal, XRT910-0-0-GB-04, XRT911-0-0-GB-02 and XTT911-0-0-NN-00. (The last two digits of the Impro stock code indicate the issue status of the product).			
XRT300-0-0-GB-04	Issue 05	Mar 2008	ImproX TRT\English Manuals\LATEST ISSUE \ImprXTRT-insm-en-05.docx