



Impro iTT

Product Specification Catalogue

The **Impro (iTT) Intelligent Twin Antenna Terminal** is the second generation of the highly successful Impro TT. Using either the RS485 Bus or the RJ45 Ethernet Connection, the Impro iTT works within the Impro range of Access Control Systems, as well as within OEM applications.

The Impro iTT is a low-cost Terminal designed to provide access control to one door in Full Anti-passback Mode (APB) or two doors in Relaxed Anti-passback Mode (APB) or single-entry mode. Impro offer a wide range of Antenna Readers suitable for most installations.

Major memory improvements allow the Impro iTT to store up to 10 000 Transactions as well as providing the added benefit of off-line validation. In this optional mode the Impro iTT allows access to Tags present in the Terminal's transaction buffer. This is valuable should communications between the Impro iTT and the Controller disrupt.

A 16-Step Auto-tune process provides improved communication range, letting you install the Terminal up to 25 m (82 ft) from its Non-keypad Antenna Reader and up to 16 m (53 ft) from its Keypad Antenna Readers.

Other new features include a Software Utility that lets you upgrade the Terminal while installed on site with zero down-time. And the iTT now interfaces with various Relay driven lock types (including Strike Locks, Magnetic Door Locks and Deadbolts).

Key Features

General

- Cost effective solution that fits seamlessly into legacy Systems.
- Support for the following **Terminal Communication** options:
 - **Ethernet**—Door Controllers (XTT920 and IPS911 only) connect to your chosen System Controller using the existing IP infrastructure.
 - **RS485**—an ultra reliable method (not affected by network problems) of connecting to your chosen System Controller.

Impro (iTT)

Intelligent Twin Antenna Terminal

XTT910-1-0-GB-XX
XTT931-1-0-GB-XX

XTT920-1-0-GB-XX
IPS910-1-0-GB-XX

XTT930-1-0-GB-XX
IPS911-1-0-GB-XX

General (Continued)

- Read/Write capability using the following Impro Tags: Slim Tags and Omega Tags (Read Only). Philips HITAG™ 1 and Philips HITAG™ 2 (Read/Write). HID 125 kHz Tags (Read Only).

NOTE: HID is a registered trademark of HID Global Corporation (an ASSA ABLOY Group Brand).

- **Onboard intelligence** allowing the Terminal to run off-line from the Controller.
- The Terminal stores up to 10 000 Transactions.
- 16-step Auto-tune that allows for increased cable distances of up to 25 m (82 ft) for Non-keypad Antenna Readers and up to 16 m (53 ft) for Keypad Antenna Readers.
- End-of-Line (EOL) Sensing on Door Open Sensor (DOS) Inputs.
- Connection to up to two Antenna Readers per Impro iTT, allowing Relaxed or Full Anti-passback (APB) access.
- An excellent user interface consisting of 9 LED "Diagnostic Indicators".
- Two independent single-pole, double-throw (SPDT) Relay Outputs which let you interface to door strikes, magnetic locks and other third-party devices (for example alarms panels or lighting).
- Four Dry Contact Digital Inputs including two Door Open Sensor (DOS) and two Request to Exit (RTE) Inputs.
- A Software utility to upgrade Firmware while installed on-site, without removal of the Terminal.

Power Supply Combo (IPS910 and IPS911)

- A 3 Amp Switch Mode Power Supply providing 13.8 V DC to charge a 12 V 7 Ahr Sealed Lead Acid Battery.
- Nominal output voltage of 13.8 V DC with a fully charged Battery.
- Automatic switch-over to Battery operation on Mains Failure.
- Compact, Mild Steel Cabinet, accommodating the Power Supply, Terminal and a Sealed Lead Acid Battery.
- Two 13.8 V Power Outputs for powering the Terminal and, for example, a lock. Together these Outputs have a maximum power output of 2 A (max) continuous at 13.8 V DC.
- Five Quick Click Glands for easy wiring.
- Fuses on mains in and low voltage out.

Use in an IXP220 or ImproNet System

- Relay functions are user configurable.
- Digital Inputs are user configurable and can perform specific tasks such as:
 - Door Open Sensing.
 - Request to Exit.
 - Scanner Inhibit.
 - Alarm Interface.
 - Action Request.

Physical Specifications

XTT910 and XTT920 Plastic Housing

Length	: 128 mm (5 in).
Width	: 166 mm (7 in).
Height	: 55 mm (2 in).
Approximate Weight	: 302 g (11 oz).
Cabinet Material	: ABS Plastic.
Colour	: Black.



XTT930 and XTT931 PCB Only

Length	: 107 mm (4 in).
Width	: 110 mm (4 in).
Height	: 23 mm (1 in).
Approximate Weight	: 105 g (4 oz).

IPS910 and IPS911 Power Supply Combo

Length	: 305 mm (12 in).
Width	: 295 mm (11 in).
Height	: 77 mm (3 in).
Approximate Weight	: 3 kg (7 lb).
Cabinet Material	: Mild Steel.
Colour	: Black.

Environmental Specifications

Operating Temperature	: -25°C to +60°C (-13°F to +140°F).
Storage Temperature	: -40°C to +80°C (-40°F to +176°F).
Humidity Range	: 0 to 95% relative humidity at +40°C (+104°F) non-condensing.

Approvals

CE Approval	: EN301 489-1 and EN301 489-3.
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Dust & Splash Resistance (XTT910 and XTT920)	: Designed to work in an indoor (dry) environment similar to IP40. The Terminal is not sealed against water.
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Dust & Splash Resistance (XTT930 and XTT931)	: Designed to work in an indoor (dry) environment. The Terminal is not sealed against water.
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Dust & Splash Resistance (IPS910)	: Designed to work in an indoor (dry) environment similar to IP20. The Power Supply Combo is, therefore, not sealed against water.
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Drop Endurance	: 1 m (3.28 ft) drop (in packaging).
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Electrical Specifications

Power

XTT910, XTT920, XTT930, XTT931

Input Voltage	: 10 V DC to 30 V DC, polarity sensitive.
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<i>Power Requirements</i>	Current (mA)	Power (W)
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Input Voltage 12 V DC with no Antennas attached	: 90	1.08
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Input Voltage 24 V DC with no Antennas attached	: 50	1.20
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Input Voltage 12 V DC with Antennas attached	: 100	1.20
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Input Voltage 24 V DC with Antennas attached	: 60	1.44
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Permissible Input Supply Ripple Voltage (Max)	: 1 V _{pp} at 50 Hz.
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Power Input Protection	: Reverse polarity, over-voltage and over-current protection are provided on the Terminal.
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IPS910 and IPS911 Power Supply Combo

The Power Supply Combo includes a 3 A Switch Mode Power Supply which provides power for the (optional) internal unit and for charging the (optional) backup Battery. As the Power Supply Combo needs no more than 1 A, you may power extra devices using up to 2 A continuous current from the provided connector block. DO NOT exceed this 2 A limit on continuous current draw. Devices with a high in-rush current demand, such as certain maglocks and other electromechanical devices, can momentarily draw more than 3 A.

The Power Supply then effectively shuts down as directed by its built in protection as exceeding the 3 A rating is considered a short-circuit. Overcome this by installing the recommended 12 V 7 Ahr Battery to help supplement the in-rush current such a device may draw on activation.

Power Input

Input Voltage	: 85 V AC to 265 V AC at 50/60 Hz.
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Power Output

Output Voltage (Mains Power On)	: 13.8 V DC ±0.3 V DC.
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Output Current	: 2 A continuous (Power Output Terminals).
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Battery

Type	: 12 V Sealed Lead Acid Battery, 7 Ahr (Max).
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Length	: 151 mm (6 in) (Max).
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Width	: 65 mm (3 in) (Max).
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Height	: 99 mm (4 in) including the Terminals (Max).
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Charge Voltage	: 13.8 V DC.
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The following specifications are common to all models of the Impro iTT:

Relay Power Requirements	: An additional ~0.4 W per Relay in use.
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Real Time Clock Backup Battery (RTC)

Battery Type	: 1 x 3 V, CR2032, Lithium cell battery.
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Battery Life	: 1 Year with Power OFF, 5 years with power ON, 5 years storage with Battery Tab in place.
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Terminal Bus

Ethernet Port (XTT920, XTT931 and IPS911)

Ethernet Port	: Standard Ethernet RJ45 connector. 10/100 Base T, half or full duplex.
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RS485 Terminal Bus

Electrical Interface	: RS485, ASCII with 16-bit CRC checking.
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Baud Rate	: 9 600, 19 200, 38 400 (default), 57 600 and 115 200 selectable via the Communications Protocol.
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Data Format	: 8 data bits, no parity, 1 stop bit.
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Communications Protocol	: Impro Secure Communications Protocol.
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Line Termination (RS485)	: Provision is made for line termination.
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Unit Status	: Slave.
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Reader Options

Antenna Port	: 2 Fully functional Antenna Reader Ports.
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Digital Inputs

Input Type	: 2 Dry-contact inputs with End-of-line (EOL) Sensing and 2 Dry-contact inputs without End-of-line (EOL) Sensing.
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Detection Resistance Range	: < 2 kOhm.
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Protection Range	: +15 V continuous.
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Relays

Relay Output	: 2 Independent, single-pole, double-throw (SPDT) Relays, each with NO, COM and NC contacts.
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Relays (Continued)

Contact Ratings	:	10 A at 28 V DC, 5 A at 220 V AC, 12 A at 120 V AC.
Operations	:	100 000 Minimum.

Processor

Type	:	32-bit ARM7TDMI operating at 72 MHz.
Total RAM	:	58 K Byte.
Flash	:	256 K Byte.

Factory Defaults

Default Baud Rate	:	Factory-set to 38 400.
Default Mode	:	Receive (Slave Mode).
Buzzer Volume	:	Level 3 (maximum).

Beep Codes

Fails Power-on Self-test	:	Continuous beep for 2 seconds.
Passes Power-on Self-test	:	Two short beeps of 200 ms duration, separated by a 200 ms inter-beep pause.

Other

Anti-tamper Switch	:	1 Internal Switch.
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User Interfaces

LED Status and Diagnostic Indicators

Status LED	:	Continuous Red.
Upgrade Mode	:	Flashing Red (Steady).
Communications Failure	:	Flashing Red (Intermittent).
Relay [2]	:	Continuous Red on activation of the Relay.
Relay [1]	:	Continuous Red on activation of the Relay.
Reader 2, RTE [2]	:	Continuous Green on detected contact closure.
Reader 2, DOS [1]	:	Continuous Green on detected contact closure.
Reader 1, RTE [2]	:	Continuous Green on detected contact closure.
Reader 1, DOS [1]	:	Continuous Green on detected contact closure.
RS485 RX	:	Flashing Green as per incoming data.
RS485 TX	:	Flashing Red as per outgoing data.

Ethernet LEDs (XTT920, XTT931 and IPS911 Only)

Ethernet Activity	:	Flashing Red LED.
Ethernet Speed	:	Continuous Red for 100 Mbps (Default) Off for 10 Mbps.
Ethernet Link	:	Continuous Red on connection to network.

Related Information

For extra information relating to this product refer to the:

- Impro iTT Hardware Installation Manual (XTT303-0-0-GB-XX).

Ordering Information

Order the Impro iTT using the following Part Numbers:

- XTT910-1-0-GB-XX: Impro (iTT) Intelligent Twin Antenna Terminal in an ABS Plastic Housing.
- XTT920-1-0-GB-XX: Impro (iTT) Intelligent Twin Antenna Terminal with Ethernet in an ABS Plastic Housing.
- XTT930-1-0-GB-XX: Impro (iTT) Intelligent Twin Antenna Terminal PCB Only.
- XTT931-1-0-GB-XX: Impro (iTT) Intelligent Twin Antenna Terminal with Ethernet PCB Only.
- IPS910-1-0-GB-XX: Impro IPS containing an Impro (iTT) Intelligent Twin Antenna Terminal.
- IPS911-1-0-GB-XX: Impro IPS containing an Impro (iTT) Intelligent Twin Antenna Terminal with Ethernet.

Warranty Details

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

This product conforms to our Warranty details on www.impro.net.

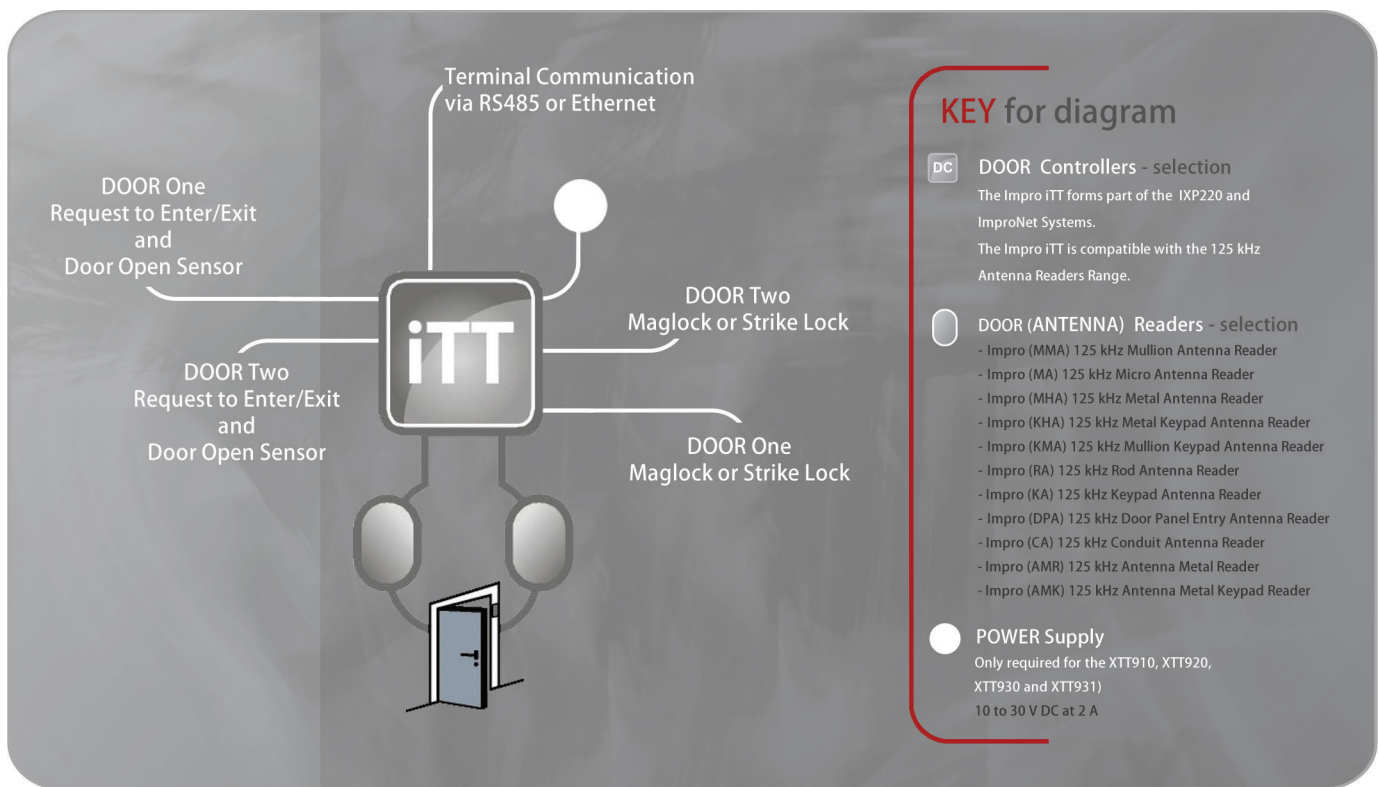


Figure 1: Impro iTT Overview

This Product Specification Catalogue applies to the Impro (iTT) Intelligent Twin Antenna Terminal, XTT910-1-0-GB-09, XTT920-1-0-GB-09, XTT930-1-0-GB-01, XTT931-1-0-GB-01, IPS910-1-0-GB-05 and IPS911-1-0-GB-05.
(The last two digits of the Impro stock code point to the issue status of the document or product).

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