



# ImproX BMTA

## Product Specification Catalogue

The **ImproX (BMTA) Biometric Multi-discipline Time Attendance Terminal** is a compact biometric solution supporting advanced messaging and a multitude of Tag types on IXP220 and IXP400i Systems.

In addition to reading fingerprints, new technology allows the ImproX BMTA to read both 125 kHz and 13.56 MHz frequency Tags. These Terminals therefore fit seamlessly into new or existing applications allowing you to upgrade tag technology without replacing existing Tags. Tag support includes CSN read capability from the following Tag types: Slim Tags, Omega Tags, Impro Trinary Tags (1074 and 2074), Philips HITAG™ 1, Philips HITAG™ 2, HID Tags (H10301, H10302 and H10304), ISO 15693-2 iClass Tags, ISO 18092 FeliCa Tags and ISO 14443A MIFARE® Tags.

The BMTA features both a 65 K Colour Thin Film Transistor Liquid Crystal Display (TFT-LCD) and a 12-button Keypad allowing PIN-code entry and support for time attendance applications. The BMTA also includes a 4-level, single tone Buzzer. You can control the functions of the Buzzer to suit the needs of your application.

## Key Features

- CSN read capability from various Tag types: Slim Tags, Omega Tags, Impro Trinary Tags (1074 and 2074), Philips HITAG™ 1, Philips HITAG™ 2, HID Tags (H10301, H10302 and H10304), ISO 15693-2 iClass Tags, ISO 18092 FeliCa Tags and ISO 14443A MIFARE® Tags.

**CAUTION:** The ImproX BMTA Terminal does not support the use of HID 1346 Proxkey II Tags.

**NOTE:** HID, FeliCa and MIFARE® are registered trademarks of HID Global Corporation (an ASSA ABLOY Group Brand), The Sony Corporation and Koninklijke Philips Electronics N.V. respectively.

## ImproX (MDTA)

### Multi-discipline Time Attendance Terminal

XTA930-5-0-GB-XX

XTA931-5-0-GB-XX

## Key Features (Continued)

- A cost-effective biometric solution easily scaled to fit your needs.
- Support for the following **Configuration** choices:
  - **Ethernet**—for time attendance and standard-speed template upload. Off-line support limited to transaction caching. As it is the ImproX iTRT that provides Input-output Control, no relays or inputs are available in this alternative. For the added convenience of relays or inputs, make use of the S-Bus Remote Relay in this scenario.
  - **Direct RS485**—for time attendance and standard-speed template upload. Off-line support limited to transaction caching. As it is the ImproX iTRT that provides Input-output Control, no relays or inputs are available in this alternative. For the added convenience of relays or inputs, make use of the S-Bus Remote Relay in this scenario.
  - **High-speed RS485 via the ImproX iTRT**—for full Access Control and high-speed template upload. The ImproX iTRT also provides full off-line support for up to 10 000 Tags or templates, that is 5 000 fingers, and inputs or outputs.
- A touch capable, 240 x 320 Pixel, 65 K Colour, Thin Film Transistor Liquid Crystal Display (TFT-LCD).
- 500 DPI biometric fingerprint reader.
- A 12-button Keypad.
- A single-tone, 4-level volume (including off) adjustable Buzzer.
- Operation from power inputs in the range 10 V to 30 V DC.
- A Software utility to upgrade Firmware while installed on-site, without removal of the Terminal and with zero downtime.
- Stand-alone alternative, supporting local enrollment.

## Reading Range (Tag)

Tag Type	Typical Range (Minimum) (mm)	Typical Range (Minimum) (in)
Slim Tags	25 - 50	1 - 2
Omega Tags	25 - 50	1 - 2
Impro Trinary Tags	25 - 50	1 - 2
Philips HITAG™ 1	25 - 50	1 - 2
Philips HITAG™ 2	25 - 50	1 - 2
HID 125 kHz Tags	25 - 50	1 - 2
HID iCLASS Tags	25 - 50	1 - 2
FeliCa Credit Card Tags	25 - 50	1 - 2
MIFARE® Credit Card Tags	25 - 50	1 - 2

**NOTE:** Mounting the Terminal on a metallic surface will reduce the Tag Read/Write range slightly.

## Physical Specifications

Length	:	105 mm (4 in).
Width	:	163 mm (6.4 in).
Height	:	60 mm (2.4 in).
Approximate Weight	:	320 g (11 oz).
Cabinet Material	:	ABS Plastic.
Colour	:	Black.



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ACCESS CONTROL

## Environmental Specifications

Operating Temperature	: -20°C to +60°C (-4°F to +140°F).
Storage Temperature	: -30°C to +70°C (-22°F to +158°F).
Humidity Range	: 0 to 90% relative humidity at +40°C (+104°F) non-condensing.

### Approvals

CE Approval	: Pending.
FCC Approval	: Pending.
Dust & Splash Resistance	: The Terminal is designed to work in an indoor (dry) environment, similar to IP54. The Terminal is, therefore, sealed against water.
Drop Endurance	: 2 m (6.56 ft) drop (in packaging).

## Electrical Specifications

### Power

Input Voltage	: 10 V DC to 30 V DC.	
<i>Power Requirements</i>	Current (mA)	Power (W)
Input Voltage 12 V DC	: 170	2.04
Input Voltage 24 V DC	: 90	2.16
Permissible Input Supply Ripple Voltage (Max)	: 1 V <sub>pp</sub> at 50 Hz.	
Power Input Protection	: Reverse polarity, over-voltage and over-current protection.	

### Ethernet Port

#### XTA931

Connection	: Standard Ethernet RJ45 connector. 10/100 Base T, half or full duplex.
Protocol	: ImproX Proprietary Protocol.

### Terminal Bus

Electrical Interface	: RS485, ASCII with 16-bit CRC checking.
Baud Rates	: 9 600, 19 200, 38 400, 57 600 and 115 200 selectable via the communications protocol.
Data Format	: 8 data bits, no parity, 1 stop bit.
Communications Protocol	: ImproX Secure Communications Protocol.

### S-Bus Terminal Bus

Electrical Interface	: Open-drain, single wire.
Baud Rate	: 9 600.
Data Format	: 8 data bits, no parity, 1 stop bit.
Communications Protocol	: ImproX S-Bus Secure Communications Protocol.

### Biometric Validation Modes

Template on Tags	: Validated by presenting finger and Tag containing template.
Template in Database (PAC-code as Index)	: Template stored in the Database and indexed by PAC-code (for rapid validation).
Template in Database (Tag Code as Index)	: Template stored in the Database and indexed by Tag Code (for rapid validation).
PAC-Code	: + PIN-code or Reason Code.

### Frequency

Passive Frequency	: 125 kHz and 13.56 MHz.
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### Processor

Type	: ARM7 TDMI.
Flash ROM	: 4 MB.

### Fingerprint Reader

Templates	: Up to 5 000 fingers.
Verification Speed	: Less than 1 second.
Image Resolution	: 500 DPI.

### Other

Anti-tamper Switch	: An optical anti-tamper inside the housing indicates an alarm if the Front Cover assembly is removed from the Backing Plate.
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## Factory Defaults

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

## User Interfaces

### Display

Type	: Touch Capable, Thin Film Transistor Liquid Crystal Display (TFT-LCD).
Resolution	: 240 x 320 Pixels.
Colour	: 65 K Colour Screen.
Back-lighting	: Permanently on.

### Buzzer

Volume	: Software adjustable in four discrete steps (including off).
Tone	: Single tone.

### Keypad

Buttons	: 12 Buttons, used for entering Reason Codes.
Reason Code Range	: 00-99.

## Related Information

For extra information relating to this product refer to the:

- Hardware Installation Manual (XTA308-0-0-GB-XX).

## Ordering Information

Order the ImproX (BMTA) Biometric Multi-discipline Time Attendance Terminal using the following Part Numbers:

- XTA930-5-0-GB-XX: ImproX (BMTA) Biometric Multi-discipline Time Attendance Terminal (RS485).
- XTA931-5-0-GB-XX: ImproX (BMTA) Biometric Multi-discipline Time Attendance Keypad Terminal (RS485 and Ethernet).

## Warranty Details

This product conforms to our Warranty details on [www.impro.net](http://www.impro.net).

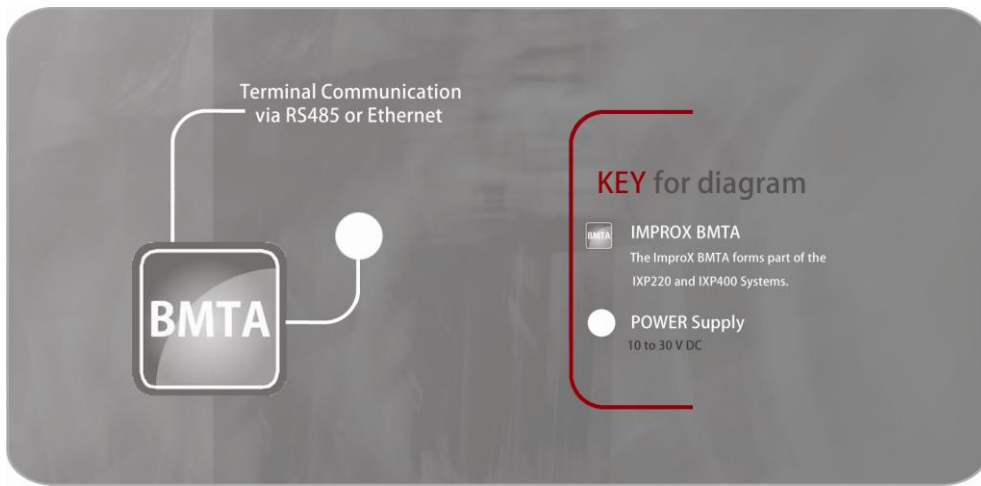


Figure 1: ImproX BMTA Overview – Time Attendance Only Application

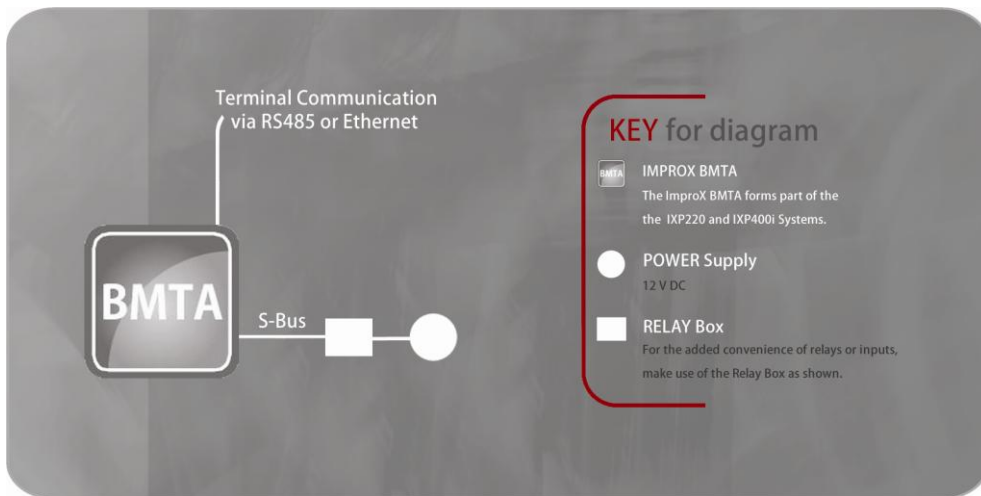


Figure 2: ImproX BMTA Overview – Access Control Application – Scenario 1

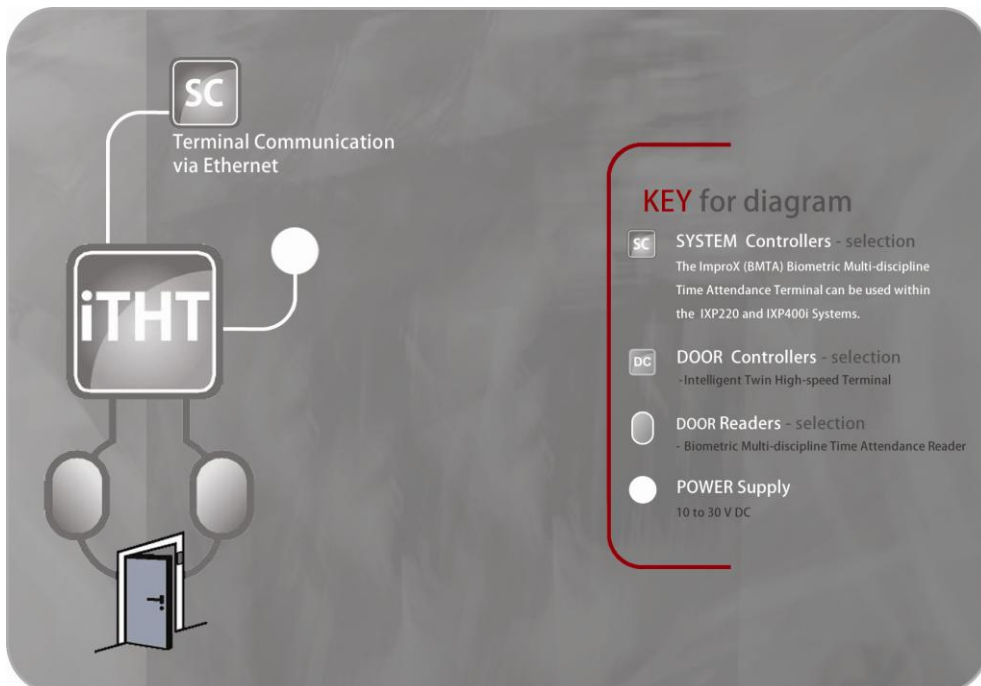


Figure 3: ImproX BMTA Overview – Access Control Application – Scenario 2

This Product Specification Catalogue applies to the ImproX (MDTA) Multi-discipline Time Attendance Terminal, XTA930-5-0-GB-01 and XTA931-5-0-GB-01.  
(The last two digits of the Impro stock code point to the issue status of the document or product).

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