



impro®

# ImproX iTAR

Product Specifications Catalogue

[www.impro.net](http://www.impro.net)

## ImproX (iTAR) Industrial Time Attendance Remote Reader



## Overview

## Introduction

The **ImproX (iTAR) Industrial Time Attendance Remote Reader** is a compact Tag Reader. The Remote Reader includes a single tone Buzzer. You can adjust the Buzzer volume to any one of these four levels (off, low, medium and high). The Remote Reader includes a single bi-coloured Red or Green Status LED. You can set the functions of the Buzzer and Status LED to suit the needs of your application.

For the time and attendance function, the ImproX iTAR Remote Reader includes a 16-character by 1 line Liquid Crystal Display (LCD) and a 4-button numeric Keypad for entering Reason Codes. The back-lighting for the Liquid Crystal Display (LCD) remains permanently on; however, you can adjust the Liquid Crystal Display's (LCDs) contrast in 8 discrete steps.

The Remote Reader is designed for use with an ImproX (PT) Portal Terminal, an ImproX (TA) Time Attendance Terminal or an IXP121 Controller in the ImproX IXP120, 200, 300 and 400 Access Control Systems.

The Remote Reader is intended for indoor or outdoor use.

## Key Features

- Tag Read function for the following read-only Tags: Slim Tags, Omega Tags.
- Tag Read/Write function for the WriTag 128 and WriTag 2048 Read/Write Tags.
- A 16-character, single-line Liquid Crystal Display (LCD).
- A 4-button Keypad.
- A single bi-coloured Red or Green Status LED. The Status LED is software-configurable via the Communications Protocol.
- A single-tone, 4-level volume (including off) adjustable Buzzer.
- Added anti-tamper protection when you attach the enclosures Lid and Base using the TORX® Fasteners (M4 x 20 mm).

## Remote Reader Tag Read/Write Ranges

The range that the Remote Reader can read from or write to a Tag is dependent on the type of Tag and material on which the Remote Reader is mounted.

Typical ranges are shown in Table 1.

Tag Type	Typical Range (Minimum) (Remote Reader mounted on non-metallic surface)	
	(mm)	(in)
ISO Credit Card (Slim)	80	3.14
ImproX Credit Card Tag	80	3.14
ImproX Round Tag	60	2.36
ISO Credit Card WriTag 128	60	2.36
ISO Credit Card WriTag 2048	60	2.36

*NOTE: Mounting the Remote Reader on a metallic surface will reduce the Tag reading range slightly.*

**Table 1: Typical Read/Write Ranges**

## Approvals

- CE Approved.
- FCC Approval Pending.

# Specifications

## Physical

<b>Dimensions</b>	
Length	: 145 mm (5.70 in).
Width	: 220 mm (8.66 in).
Height	: 57 mm (2.24 in).
<b>Approximate Weight</b>	: 795 g (1.75 lb).
<b>Housing Material</b>	
Material	: Polycarbonate Plastic.
Colour	: Light Grey.

## Environmental

<b>Temperature</b>	
Operating	: -15°C to +60°C (+5°F to +140°F).
Storage	: -40°C to +80°C (-40°F to +176°F).
<b>Humidity Range</b>	: 0 to 95% relative humidity at +40°C (+104°F) non-condensing.
<b>Approvals (Test Information)</b>	
EMC	: EN 55022: Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment. EN 55024: Immunity Characteristics, Limits and Methods of Measurement.
Electrostatic Discharge	: IEC 61000-4-2: Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 2: Electrostatic Discharge Immunity Test. Basic EMC Publication.
Radiated Susceptibility	: IEC 61000-4-3: Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 3: Radiated, Radio-Frequency, Electromagnetic Field Immunity Test.
Electrical Fast Transients	: IEC 61000-4-4: Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 4: Electrical Fast Transients / Bursts. Basic EMC Publication.
Surge Immunity	: IEC 61000-4-5: Surge Immunity.
Conducted Susceptibility	: IEC 61000-4-6: Conducted Susceptibility.
Power Frequency Magnetic Field	: IEC 61000-4-8: Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 8: Frequency Magnetic Field Immunity Test.
<b>Dust and Splash Resistance</b>	: The Remote Reader is designed to work in an indoor or outdoor environment, similar to IP55. The Remote Reader is, therefore, sealed against water.
<b>Drop Endurance</b>	: 1 m (3.28 ft) drop (in packaging).

## Electrical

<b>Power Requirements</b>		
Input Voltage	:	5 V DC, polarity sensitive.
Power Requirements		<b>Current (mA)</b> <b>Power (W)</b>
Supply Voltage 5 V Indicators ON, Back- lighting ON.	:	130                                      0.65
Permissible Input Supply Ripple Voltage (Max)	:	1 V <sub>pp</sub> at 50 Hz.
Power Input Protection	:	Reverse polarity protection is provided on the Remote Reader.
<b>Remote Bus Port</b>		
Electrical Interface	:	TTL full duplex.
Baud Rates	:	9 600.
Data Format	:	8 data bits, no parity, 1 stop bit.
Communications Protocol	:	ImproX Proprietary Protocol.

## Operator or Installer Interfaces

<b>Buzzer</b>		
Volume	:	Software adjustable in four discrete steps (including off).
Tones	:	Single tone.
<b>Status Indicators</b>		
Status LED	:	Bi-colour Red or Green LED (externally visible). The functions are application specific.
<b>Liquid Crystal Display (LCD)</b>		
Characters	:	16 Characters by 1 line.
Character Set	:	English, Katakana.
Contrast	:	Software adjustable in 8 discrete steps via the Communications Protocol.
Back-lighting	:	Permanently on.
<b>Keypad</b>		
	:	4 Buttons, used for entering Reason Codes.

## Interface Details

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### Liquid Crystal Display (LCD)

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The Remote Reader provides a 16-character by 1-line large character Liquid Crystal Display (LCD). The standard display data is "Date" and "Time".

When a Tag is presented, the Liquid Crystal Display (LCD) will prompt the Tagholder to enter a Reason Code if applicable. The requirement for a Reason Code for a given Tagholder is configured in the System Software.

The Liquid Crystal Display (LCD) can also be used for displaying Messages when set up in the System Software.

### Reason Code Buttons

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The ImproX iTAR provides four Push-buttons for use in entering Reason Codes. These Buttons are labelled 1 to 4.

Enter Reason Codes in the ranges 1 – 4, 11 – 14, 21 – 24, 31 – 34, and 41 – 44.

### Buzzer Volume Control

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The Buzzer volume is adjustable in four discrete steps (off, low, medium and high) via the Communications Protocol (e.g. in the associated IXP200, 300 or 400 System Software).

### Status Indicator

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The ImproX iTAR provides a single Red or Green Status LED that indicates the status of the Remote Reader and the access status of a Tag presented. The following are the various states that can be configured using the Communications Protocol, (e.g. in the associated IXP200, 300 or 400 System Software).

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- Solid Red.
  - Solid Green.
  - Flashing Red.
  - Flashing Green.
  - Alternating Red/Green (this condition is preset and indicates Upgrade Mode).
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# Installation Information

## Accessories

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You will find the following when unpacking your Remote Reader:

- An ImproX (iTAR) Industrial Time Attendance Remote Reader, supplied in a Light Grey Polycarbonate Plastic housing. The housing consists of a Lid and Base held together with six M4 x 20 mm, Pozi-drive screws.
- Two Plastic Cable Glands, PG7, 12.5 mm hole.

**CAUTION:** Use the TORX® Fasteners (M4 x 20 mm) as added security when attaching the enclosures Lid and Base.

- Three TORX® Fasteners (M4 x 20 mm).
  - A T20 TORX® Key.
  - Four Brass Wood Screws (3.5 mm x 25 mm).
  - Four Wall Plugs (7 mm).
  - An extra Serial Number Label.
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## General

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Remember the following when installing your Remote Reader:

### Maximum Data Communications Distance

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The distance between the Remote Reader and the ImproX PT Terminal, ImproX TA Terminal or IXP121 Controller can be extended to a maximum of 10 m (33 ft) using a good quality shielded multi-strand 2-pair twisted cable. The individual conductor cross-sectional area of the cable must not be less than 0.2 mm<sup>2</sup> (0.0003 in<sup>2</sup>).

### Distance between Remote Readers from DIFFERENT Terminals or Controllers

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To avoid mutual interference, install the Remote Readers no closer than 500 mm (20 in) apart.



## Mounting the Remote Reader

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

**CAUTION:** Use the TORX® Fasteners (M4 x 20 mm) as added security when attaching the enclosures Lid and Base.

Select the mounting position of the Remote Reader, considering accessibility, routing of wires and visibility of the externally visible LEDs and Liquid Crystal Display (LCD).

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

# Electrical Connections

## Connecting the Remote Reader

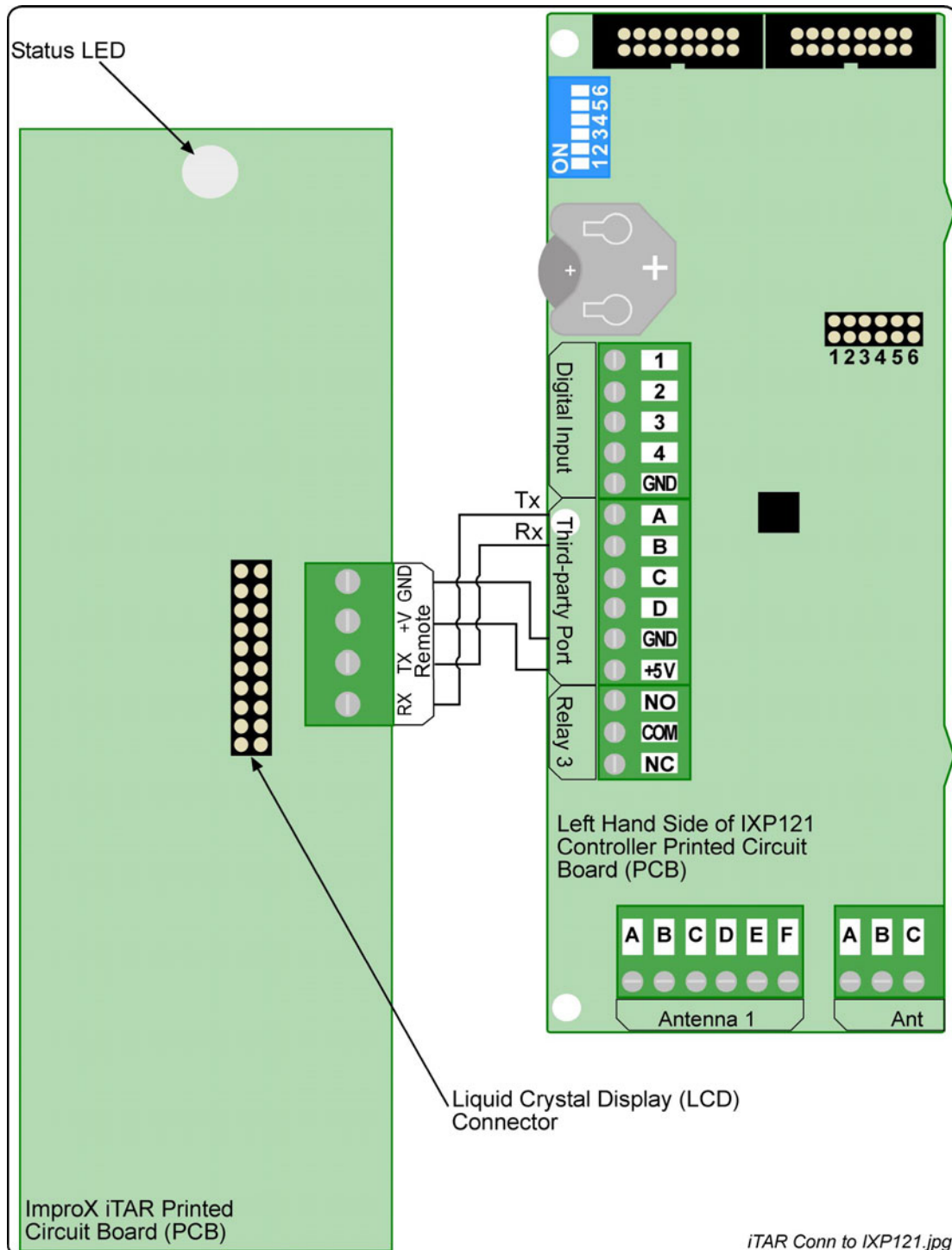


Figure 1: ImproX iTAR Connected to the IXP121 Controller

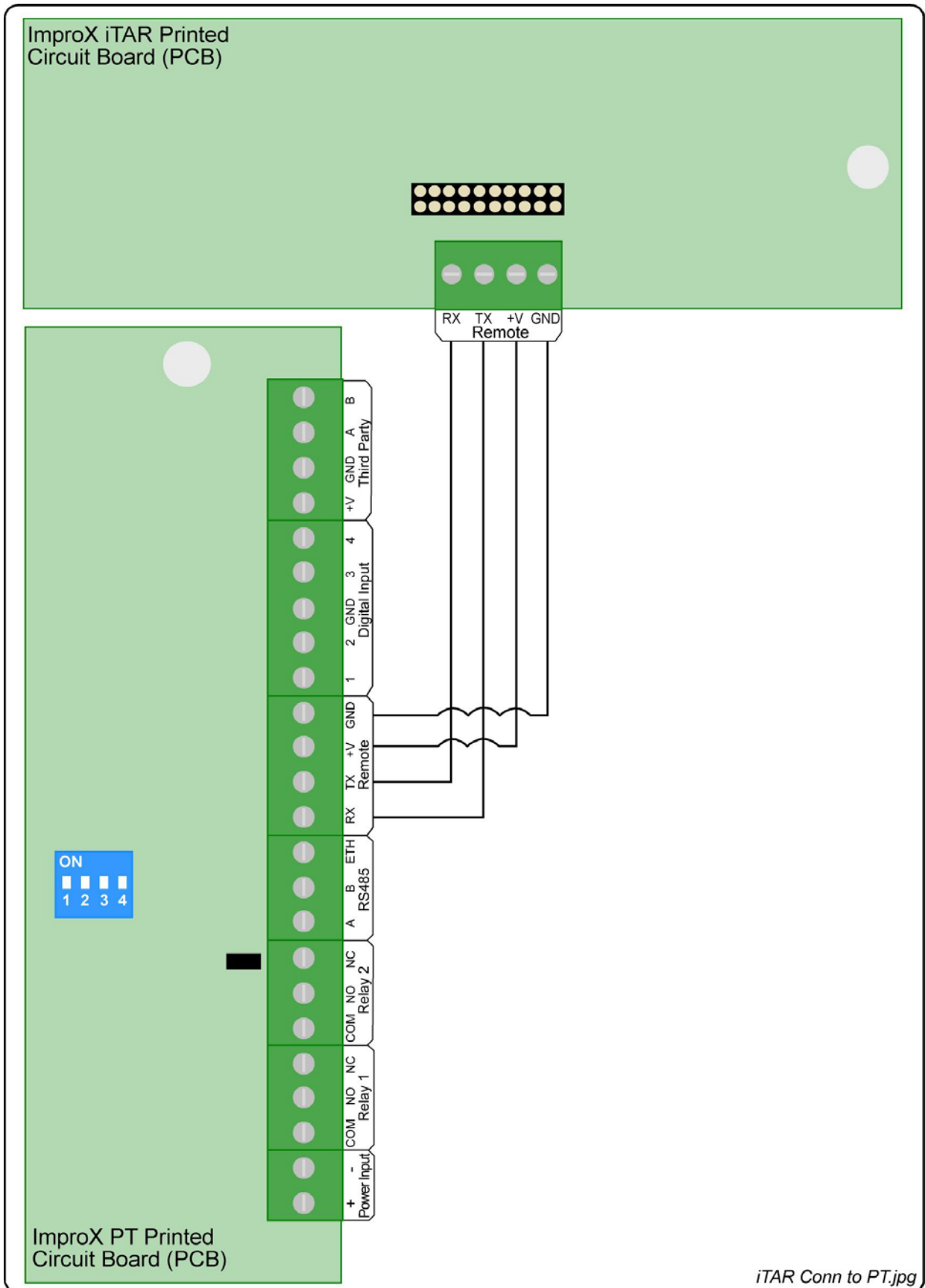


Figure 2: ImproX iTAR Connected to the ImproX PT or ImproX TA Terminal



NOTE: On powering up, the Remote Readers Status LED will illuminate solid Red, and the Buzzer will beep twice.

The Remote Reader will not read Tags until configured in the Software. Details of these procedures are located in the IXP120, 200 or 300 and 400 Software Manuals.

## Serial Number Label

Once the Remote Reader is installed, sketch a rough site plan. The loose Serial Number Label (packaged with the Remote Reader) should be used (paired) in conjunction with the ImproX PT Terminal, ImproX TA Terminal or IXP121 Controllers Fixed Address Label.

The Remote Reader does not have its own Fixed Address. When connected to an ImproX PT Terminal, ImproX TA Terminal or IXP121 Controller it is assigned one of the available Fixed Addresses.

The Serial Number Label identifies the type of Remote Reader, and the Fixed Address Label (shipped with the ImproX PT Terminal, ImproX TA Terminal or IXP121 Controller) identifies the Fixed Addresses. Both these labels should be attached to the site plan to assist in identifying the hardware once an Auto-ID is performed.

## Guarantee or Warranty

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

## Ordering Information

Order the ImproX (iTAR) Industrial Time Attendance Remote Reader using the XTA907-1-0-GB-XX product code.

This manual applies to the ImproX (iTAR) Industrial Time Attendance Remote Reader, XTA907-1-0-GB-00. (The last two digits of the Impro stock code point to the issue status of the product).			
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