IXP220
SOFTWARE

SOFTWARE MANUAL

impro technologies®
ACCESS CONTROL

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At a Glance

- **Part 1 – Hardware**—provides a limited overview of related Hardware compatible with the IXP220 System. This section also includes a breakdown of the available Hardware combinations and System size limits.
- **Part 2 – Software**—provides an overview of the IXP220 System, including the basic steps for installation and pre-configuration.
- **Part 3 – General Configuration**—provides the nuts-and-bolts procedures for IXP220 Software configuration. The numbered headings indicate the steps critical to the initial configuration as well as the performance sequence. Everyday tasks are also described in detail in this section.
- **Part 4 – Reports**—provides an overview of the Reports available in the IXP220 System, the application of these to single or multiple Sites, and the basic steps for running the Reports.
- **Part 5 – Advanced Configuration**—outlines “advanced” tasks not covered in Parts 1, 2, 3 and 4. Much of the information in this Part is not required for everyday configuration.
- **Part 6 – IXP220 Software Modules**—Software Modules form the core of the IXP220 Software and provide control of everyday and other important functions. Part 6 contains information on the various additional Software Modules not covered in Parts 1, 2, 3 and 4.
- **Part 7 – Utilities**—contains information on the IXP220 Utilities that let you to perform administrative and maintenance tasks for the core IXP220 components.
- **Part 8 – Integration Modules**—outlines the steps required when integrating other supported systems with IXP220.

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Introduction

This manual is intended to assist the installer during the installation and configuration stages of the IXP220 System. It is not designed as an operational manual for the end-user.
This manual is structured to assist the installer with configuring the basic components of the System first, followed by advanced features and functions.

Document Conventions

The following conventions are used in this document:

Note—indicates additional information about a topic

Tip—indicates suggestions and alternative methods to perform tasks

Important—indicates important information

Warning—indicates potential danger to you or the product

Terminology

The following terminology is used in this document:

Impro-Specific Terminology

- **IXP220**—the commonly used name of the **IXP220** Series Software Suite. The term describes an access solution as a whole; it encompasses all Hardware, Software, and third-party applications.
- **ImproX Hardware**—the hardware units comprising an IXP220 System. The major ImproX components are Controllers, Terminals, and Tag Readers.
- **Tag**—the passive, proximity component used as a unique identifier in an IXP220 Access Control System.

Country-specific Terminology

Different countries use different words to name or describe the same thing. **Table 1** lists the International terms and their American equivalents used in this document.

International	American	British
Lift	Elevator	Lift
Ground/Grounding	Ground/Grounding	Earth/Earthing
Tag	Card	Tag
Registration	Enrollment	Registration
Registration Reader	Enrollment Reader	Registration Reader
Screen/Screening	Shield/Shielding	Screen/Screening

Table 1 – Area-specific Terminology

In some cases, terms are used inter-changeably.

Supported Software and Firmware Versions

This release of the **IXP220 Software Installation Guide** applies to the following Impro Software and Firmware versions, as well as any later versions that do not affect the contents of the Guide. This Guide will be updated when significant changes occur.

IXP220 Software Suite V1.86
ImproX IXP220 Controller V5.00
ImproX (ISR) IXP220 Registration Interface V1.18
ImproX (ISR) IXP220 USB Registration Reader V1.18
ImproX (RS) Registration Interface V1.18
ImproX (iTT) Intelligent Twin Antenna Terminal V4.02
ImproX (iTRT) Intelligent Twin Reader Terminal V4.02
ImproX (MfT) Multi-function Terminal V7.24
ImproX (MDTA) Multi-discipline Time Attendance Terminal V1.12
ImproX (TA) Time Attendance Terminal V7.26
ImproX (DBv) 125 kHz Vertical Mount Drop Box V7.18
ImproX (DBv) 13.56 MHz Vertical Mount Drop Box V7.24
ImproX (LR) Long Range Terminal V7.16
ImproX I16 Input Terminal V7.24
ImproX O16 Output Terminal V7.24
ImproX (XFM) Multi-mode 13.56 MHz Remote V3.08
ImproX (TAR) Time Attendance Remote Reader V3.06
ImproX Multi-discipline Readers V2.14
ImproX B-SHO USB Fingerprint Enrollment Reader V1.04
ImproX B-SHO Fingerprint Terminal V1.26
Wiegand 125 kHz Passive Proximity Readers V1.08

PART 1 – HARDWARE

IXP220 Hardware Components

ImproX Units for use in an IXP220 System

Interface Devices

Unit	Description	Part Number
ImproX ISR	IXP220 Registration Interface	ISR901-1-0-GB-XX
ImproX ISR	IXP220 USB Registration Reader	ISR900-1-0-GB-XX
ImproX RS	Registration Interface	XRS902-1-0-GB-XX
ImproX RRA	125 kHz Registration Antenna Reader	XRR901-1-0-GB-XX
ImproX RRM	MIFARE® 13.56 MHz Registration Remote Reader	XRM901-4-0-GB-XX
Wiegand Registration Reader	Wiegand 125 kHz Passive Proximity Deskmount Registration Reader	WRR900-1-0-GB-XX
ImproX MDE	Multi-discipline Enrollment Reader	MDE900-5-0-GB-XX
ImproX B-SHO	USB Fingerprint Enrollment Reader	IBT900-4-0-GB-XX
ImproX B-SHO	USB BioMini Fingerprint Enrollment Reader	IBT902-0-0-GB-XX

Controllers

Unit	Description	Part Number
IXP220 Stand-alone Controller	Controller in the IXP220 System	ISC960-1-0-GB-XX IPS960-1-0-GB-XX IPS961-1-0-GB-XX
IXP220 System Controller	Controller in the IXP220 System	ISC962-1-0-GB-XX IPS962-1-0-GB-XX IPS963-1-0-GB-XX

Terminals

Unit	Description	Part Number
ImproX LR	Long Range Terminal	XLR900-1-0-GB-XX
ImproX MfT	Multi-function Terminal	XEA931-1-0-GB-XX IPS930-1-0-GB-XX
ImproX iTRT	Intelligent Twin Reader Terminal	XRT910-0-0-GB-XX XRT920-0-0-GB-XX IPS920-0-0-GB-XX IPS921-0-0-GB-XX
ImproX iTT	Intelligent Twin Antenna Terminal	XTT910-1-0-GB-XX XTT920-1-0-GB-XX IPS910-1-0-GB-XX IPS911-1-0-GB-XX
ImproX MDTA	Multi-discipline Time Attendance Terminal	XTA920-5-0-GB-XX XTA291-5-0-GB-XX

Unit	Description	Part Number
ImproX DBv	125 kHz Vertical Mount Drop Box	XDB902-1-0-GB-XX XDB903-1-0-GB-XX
ImproX DBv	13.56 MHz Vertical Mount Drop Box	XDB904-4-0-GB-XX XDB905-4-0-GB-XX
ImproX I16	Input Terminal	XIT900-0-0-GB-XX
ImproX O16	Output Terminal	XOT900-0-0-GB-XX
ImproX B-SHO	Fingerprint Terminal	IBT910-4-0-GB-XX
ImproX B-SHO	Keypad Fingerprint Terminal	IBT920-4-0-GB-XX

Antenna Readers

These Readers are also used with other compatible units – see the section entitled Remote Reader and Antenna Reader Compatibility.

Unit	Description	Part Number
ImproX MMA	Mullion Antenna Reader	XTT901-1-0-GB-XX
ImproX MA	Micro Antenna Reader	XTT902-1-0-GB-XX
ImproX MHA	Metal Antenna Reader	XTT903-1-0-GB-XX
ImproX KHA	Metal Keypad Antenna Reader	XTT904-1-0-GB-XX
ImproX KMA	Mullion Keypad Antenna Reader	XTT905-1-0-GB-XX
ImproX RA	Rod Antenna Reader	XTT906-1-0-GB-XX
ImproX KA	Keypad Antenna Reader	XTT907-1-0-GB-XX
ImproX DPA	Door Entry Panel Antenna Reader	XTT908-1-0-GB-XX
ImproX CA	Conduit Antenna Reader	XTT909-1-0-GB-XX

Remote Readers

These Remote Readers are for use with the ImproX iTRT, ImproX TA and ImproX MfT – see the section entitled Reader Compatibility for more information.

Unit Description		Part Number
ImproX MDR	Multi-discipline Reader	MDR900-5-0-GB-XX
ImproX MDK	Multi-discipline Reader	MDK900-5-0-GB-XX
ImproX XFMp	Multi-mode 13.56 MHz Plastic Remote	XRT901-4-0-GB-XX
ImproX XFMpk	Multi-mode 13.56 MHz Plastic Keypad Remote	XRT902-4-0-GB-XX
ImproX XFMm	Multi-mode 13.56 MHz Metal Remote	XRT903-4-0-GB-XX
ImproX XFMmk	Multi-mode 13.56 MHz Metal Keypad Remote	XRT904-4-0-GB-XX
ImproX TAR	Time Attendance Remote Reader	XTA905-1-0-GB-XX

Wiegand Readers

These Wiegand Readers are for use with the IXP220 Controller, the ImproX iTRT, ImproX MfT and ImproX RS – see the section entitled Reader Compatibility for more information.

Unit Description	Part Number
Wiegand Plastic Non-keypad 125 kHz Passive Proximity Reader	WPR900-1-0-GB-XX

Unit Description	Part Number
Wiegand Plastic Keypad 125 kHz Passive Proximity Reader	WPK900-1-0-GB-XX
Wiegand Metal Non-keypad 125 kHz Passive Proximity Reader	WMR900-1-0-GB-XX
Wiegand Metal Keypad 125 kHz Passive Proximity Reader	WMK900-1-0-GB-XX
Wiegand Junction Box 125 kHz Passive Proximity Reader	WJB900-1-0-GB-XX

Receivers

Unit	Description	Part Number
ImproX IR	Infrared Receiver	ITR900-0-0-GB-XX ITR901-0-0-GB-XX
ImproX RF	4-Channel UHF Receiver	UHR903-0-1-GB-XX

Other

Unit	Description	Part Number
ImproX OSCAR	ImproX OSCAR Door Control Unit	IBT930-0-0-GB-XX

Table 2 – ImproX Units Compatible with the IXP220 System

Reader Compatibility

Some ImproX units are designed to interface with several types of Readers. Details follow:

Unit	Interfaces With
IXP220 Controller	two ImproX Antenna Readers or two Wiegand Readers
ImproX MfT	one Third-party hardware device and two ImproX Antenna Readers or two ImproX Remote Readers or one Wiegand Reader and two ImproX Antenna Readers
ImproX iTRT	two ImproX Remote Readers or two ImproX Receivers or two Third-party hardware devices or two Wiegand Readers
ImproX iTT	two ImproX Antenna Readers
ImproX TA	One Remote Reader or one Receiver or one third-party hardware device or one Wiegand Reader
ImproX DBv 125 kHz	One ImproX Antenna Reader
ImproX DBv 13.56 MHz	One ImproX Remote Reader or one ImproX Receiver or one Third-party hardware device or one Wiegand Reader

Table 3 – Reader Compatibility

Other IXP220-compatible units are under development.

Hardware Combinations and System Size Limits

System Parameters

Description	IXP220-1 Single APB Door or 2 non-APB Door System	IXP220-2 4 APB Door System	IXP220-3 256 APB Door System	IXP220-4 Multi-site System (256 Doors per Site)
Total Number of Tags	1 000	2 000	10 000	10 000
Total Buffered Transactions	100 000	100 000	100 000	100 000
Sites per System	1	1	1	1 000
Controllers per Site	1	4	64	64
Terminal Fixed Addresses per Controller	2	2	2	2
Terminal Fixed Addresses per Door (Location)	2	2	2	2
Doors (Locations) per Zone	1	4	32	32
Zones per Site	1	4	32	32
Doors (Locations) per Controller	2	4	32	32
Tags per Tagholder	4	4	4	4
Tagholder Access Groups (per Site)	64	64	64	64
Operating Voltage	18 V DC – 32 V DC 16 V AC – 24 V AC	18 V DC – 32 V DC 16 V AC – 24 V AC	18 V DC – 32 V DC 16 V AC – 24 V AC	18 V DC – 32 V DC 16 V AC – 24 V AC
Controller Communications Baud Rate	100 Mbps when using TCP/IP	100 Mbps when using TCP/IP	100 Mbps when using TCP/IP	100 Mbps when using TCP/IP
Terminal Communications Baud Rate	NA	38 400	38 400	38 400
Digital Inputs – per Controller (not used for Access Control)	1	1	1	1
Digital Inputs – per Controller (used for Access Control)	4	4	4	4
Onboard Relays – per Controller	3	3	3	3
Lift (Elevator) Control (per Site) (up to 32 floors per Lift (Elevator))	NA	NA	8 (Unlock Code Required)	8 (Unlock Code Required)
Maximum Fixed Addresses Supported (per Site)	2	8	512	512
Maximum Fixed Addresses Supported - APB Doors (per Site)	2	4	256	256
Host PC Communications	RS232, RS485, USB or TCP/IP	RS232, RS485, USB or TCP/IP	RS232, RS485, USB or TCP/IP	RS232, RS485, USB or TCP/IP
Controller Bus Communications	No	RS485	RS485	RS485
Terminal Bus Communications	No	RS485	RS485	RS485
Input or Output Devices (per Site)	NA	NA	18	18
Actions	1	1	300	300
Tag Registration	USB Registration Reader or Any Reader	USB Registration Reader or Any Reader	USB Registration Reader or Any Reader	USB Registration Reader or Any Reader
Maximum Number of Holidays (per Site)	40	40	40	40

Description	IXP220-1 Single APB Door or 2 non-APB Door System	IXP220-2 4 APB Door System	IXP220-3 256 APB Door System	IXP220-4 Multi-site System (256 Doors per Site)
Access Time Patterns to each Access Group	8	8	8	8
Access Groups per Tag	1	1	1	1
Reason Codes (per Site)	99	99	99	99
Maximum Number of Tagholder Messages (per Site)	100	100	100	100
Maximum Number of Messages on Building Management	150	150	150	150
Database	Firebird 2.1	Firebird 2.1	Firebird 2.1	Firebird 2.1

Table 4 – System Configuration Parameters

IXP220-3 and IXP220-4 Systems are restricted to 10 000 Tags per System regardless of the number of Sites. In addition these Systems are also restricted to 10 000 Tags per Site. This restriction includes Tagholders (Tags) from other Sites with access to the original Site. In other words, Site A can have up to 10 000 Tags, Tagholders from Site B with access to Site A are therefore included in Site A's total Tag count.

In IXP220-3 and IXP220-4 the Input or Output Devices (per Site) figure represents the total number of input or output devices for use across Lift (Elevator) Control and Building Management.

In IXP220-1 and IXP220-2 the Actions figure represents the input and output available on the IXP220 Controller Printed Circuit Board (PCB).

In IXP220-3 and IXP220-4 of the 300 Actions allowed, you may only allocate 100 of these as Time Triggered Actions.

A Terminal with two Fixed Addresses, such as the ImproX iTT, is treated as two separate Terminals. In the same way, a Terminal with 3 Fixed Addresses (that is the ImproX MfT), is treated as three Terminals by the Software.

All figures provided are the maximum. In some cases interdependence between parameters; that is the maximum number of Zones per Controller depends on how many Terminals are used per Location.

Unlock System IXP220-3 for up to 1 000 Sites per System and 8 Lifts (Elevators) using the Multi-site and Elevator Control Licences.

USER NOTES

USER NOTES