

INVIXIUM
ACCESS



IXM TITAN Installation Guide



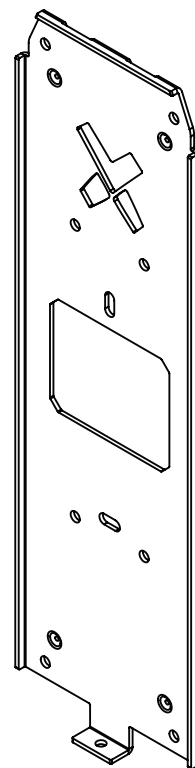
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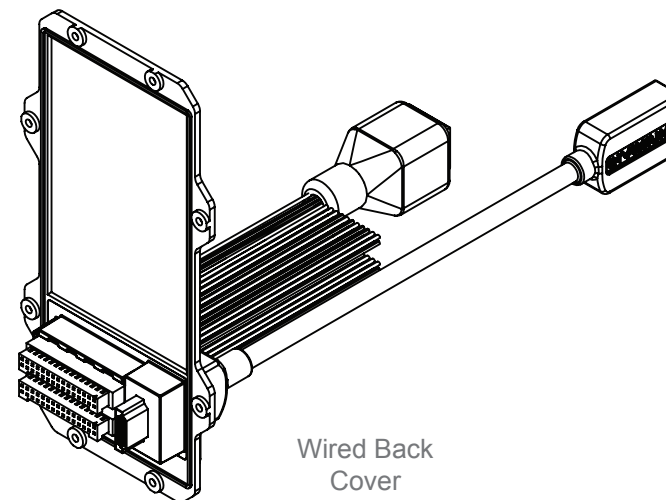


Glossary

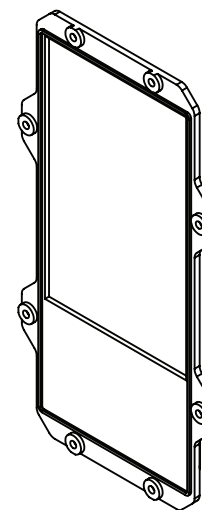
ACP	Access Control Panel
COM	Common
DAC	Door Access Control
DOS	Door Open Schedule
DSP	Door Strike Power
EGND	Earth Ground
ESD	Electrostatic Discharge
GND	Ground
IXM	INVIXIUM
LED	Light Emitting Diode
NC	Normally Closed
NO	Normally Open
OTG	On-the-Go
RLY	Relay
RX	Receive
SGND	Signal Ground
SPI	Specific Purpose Input
SPO	Specific Purpose Output
TX	Transmit
USB	Universal Serial Bus
WDATA	Wiegand Data
WGND	Wiegand Ground
VDC	Volts Direct Current
VIN+	Power Positive (12-24 VDC)
VIN-	Power Return



Metal Mounting Plate



Wired Back Cover



Temporary Back Cover

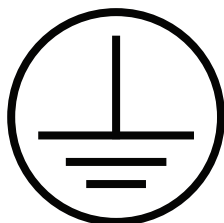


Earth Ground

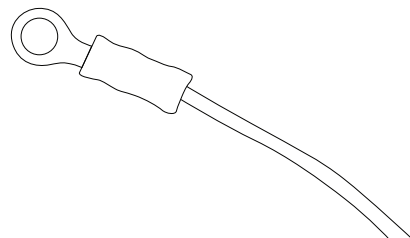
For protection against ESD, which may cause damage or malfunction to the IXM device, Inxium recommends the use of the ground connections between each IXM device and a high quality Earth Ground available at the install site. Please note that installation of any IXM device should be performed by licensed electricians.

An Earth Ground wire with lug is provided in the IXM Install Kit. The lug of the Earth Ground wire should be fastened with a screw to the front of the mounting plate. The other end of the Earth Ground wire should be connected to the high quality Earth Ground connection on site. When the IXM device is installed onto the mounting plate, this Earth Ground lug will make direct contact with the Metal Back plate of the IXM device, thus allowing for proper grounding.

Please refer to page 12 onwards for step-by-step instructions for mounting plate, device and Earth Ground wire installation.



Earth Ground



Earth Ground Wire



Device Handling Do's

Handle with care, ensure not to drop or step on the device.

Perform occasional cleaning to eliminate a build-up of dust, dirt, oil and residual grime.

Device Handling Don'ts

Do not install in areas with direct sunlight, high levels of humidity, extreme dust or flammable vapours.

Do not allow magnetic objects to come in close contact to any device.

Do not install near any heating elements or equipment.

Do not attempt to open or disassemble the device, as this will void the product warranty.

Do not deploy for any use other than its intended purpose.

Do not insert anything other than the correct fitting USB plug into the USB port, located at the bottom of the device.

Device Cleaning

The component that will require most frequent cleaning is the sensor, as it experiences the most contact. The cleaning should be performed with care and attention, as improper cleaning may damage the sensor or surrounding components.

Follow the steps below for proper sensor cleaning procedure:

1. Lightly moisten a new cotton swab or lint free polishing cloth with water or isopropyl alcohol.
2. Gently wipe the surface of the sensor with the moistened cotton swab or cloth.
3. Finish wiping the sensor again with a dry cotton swab or cloth.



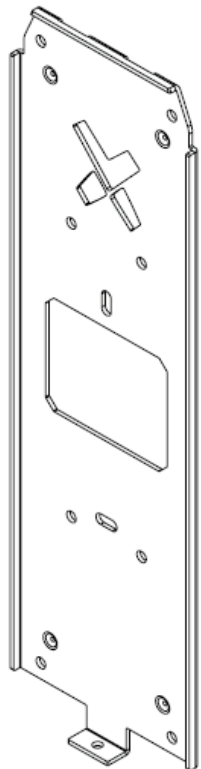
WARNING

Do not use harsh or abrasive chemicals to clean the surface of the sensor, as this may cause permanent damage to the device.
Do not use sandpaper, steel wool, scouring pads, chlorine, ammonia, bleach, or any inappropriate products for cleaning.

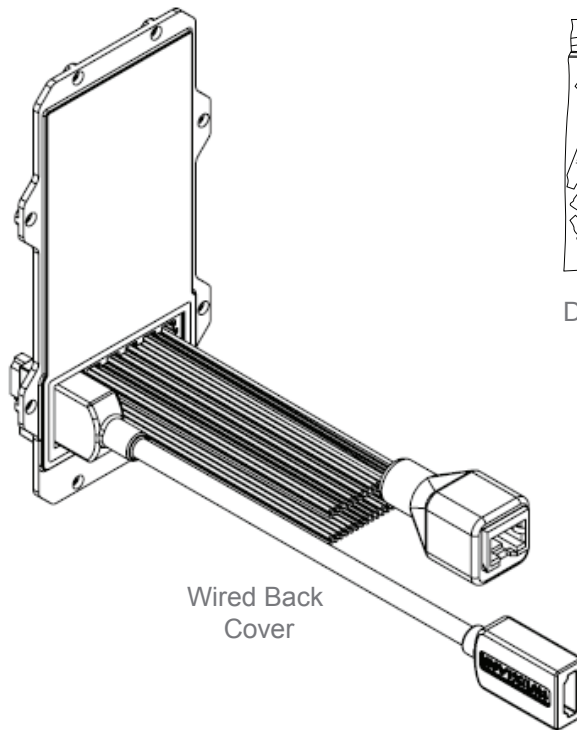


The IXM Install Kit for TITAN includes:

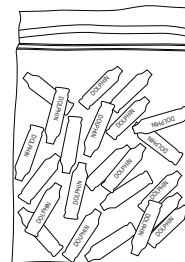
IXM INSTALL KIT



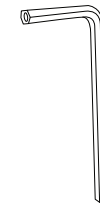
Metal Mounting Plate



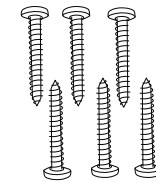
Wired Back Cover



Dolphin Crimps (qty 12)



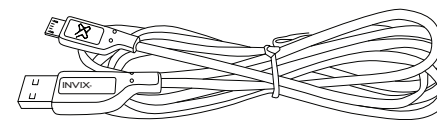
Hex Key



Wall Mounting Screws (qty 6)



Metal Mounting Plate Screw (qty 2)



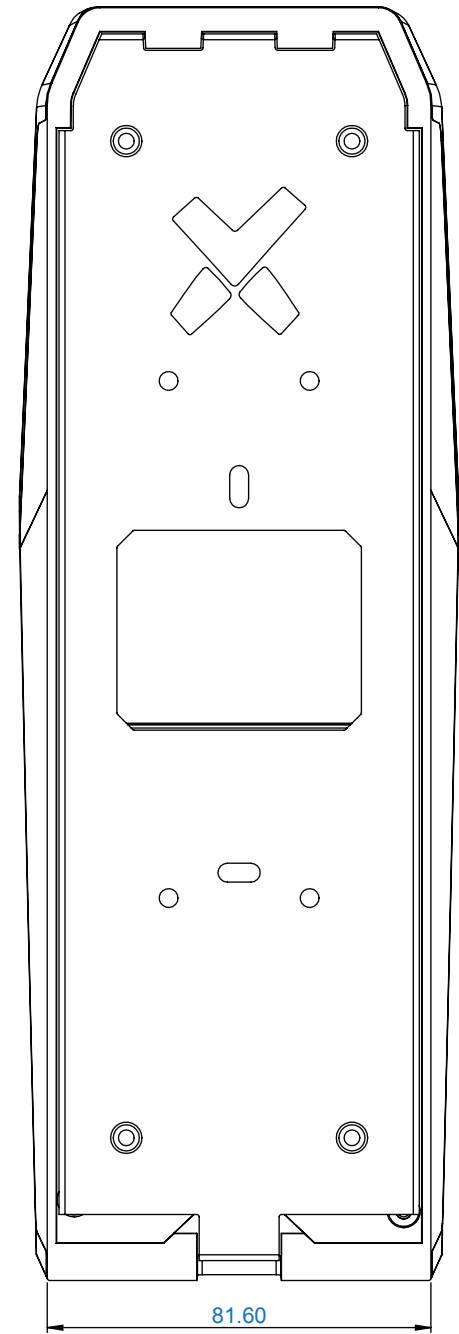
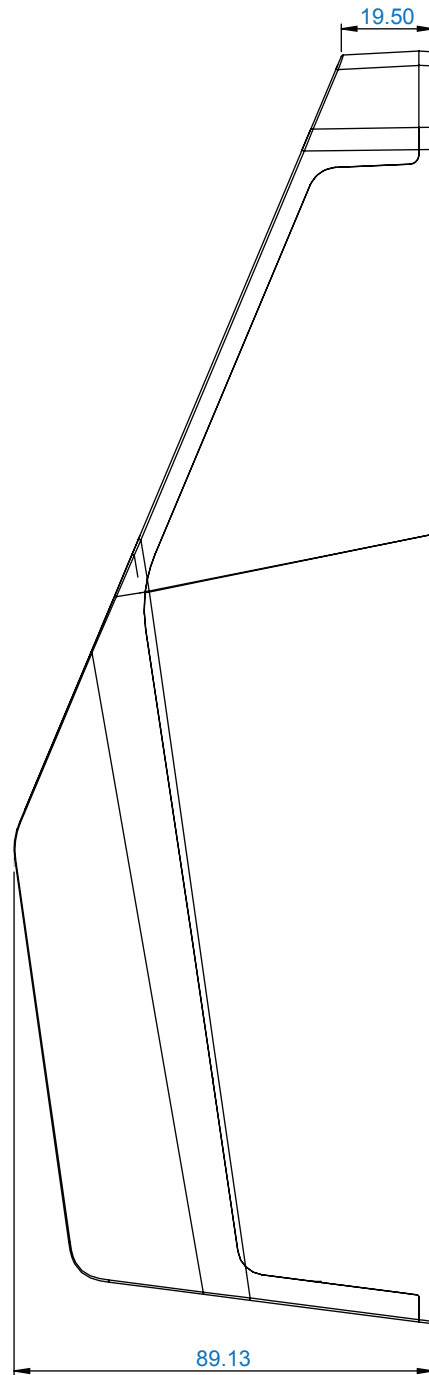
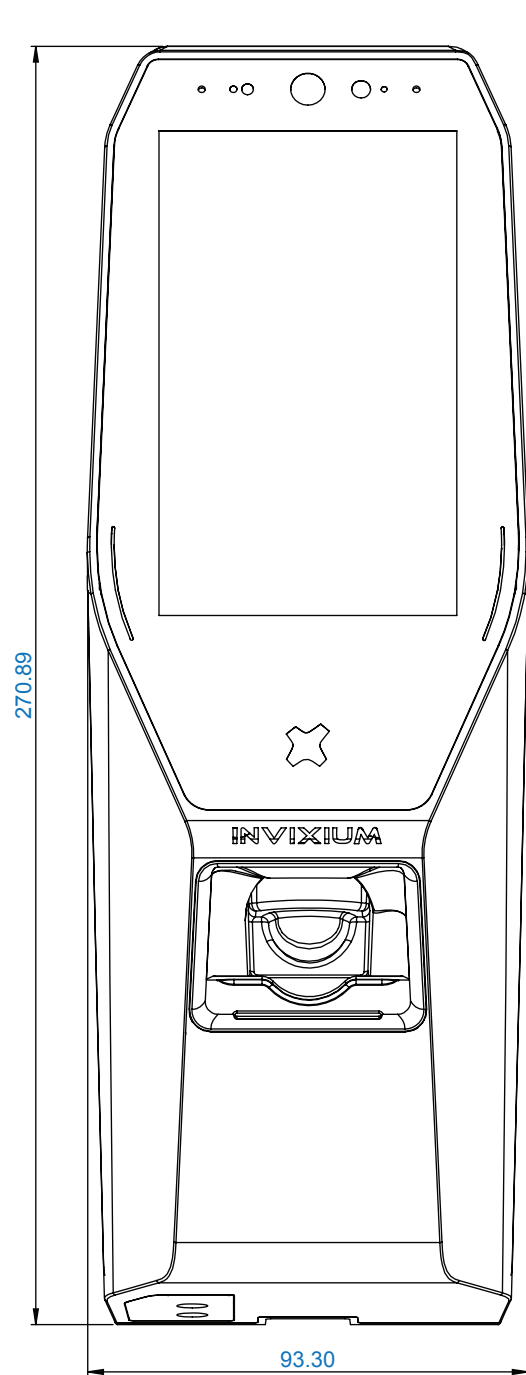
Micro USB Extension Cable

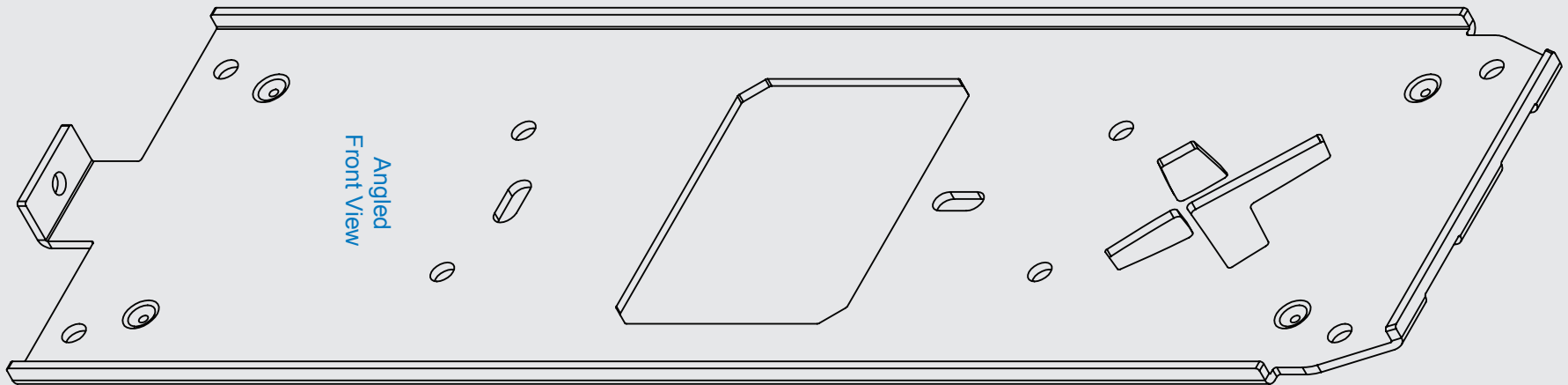
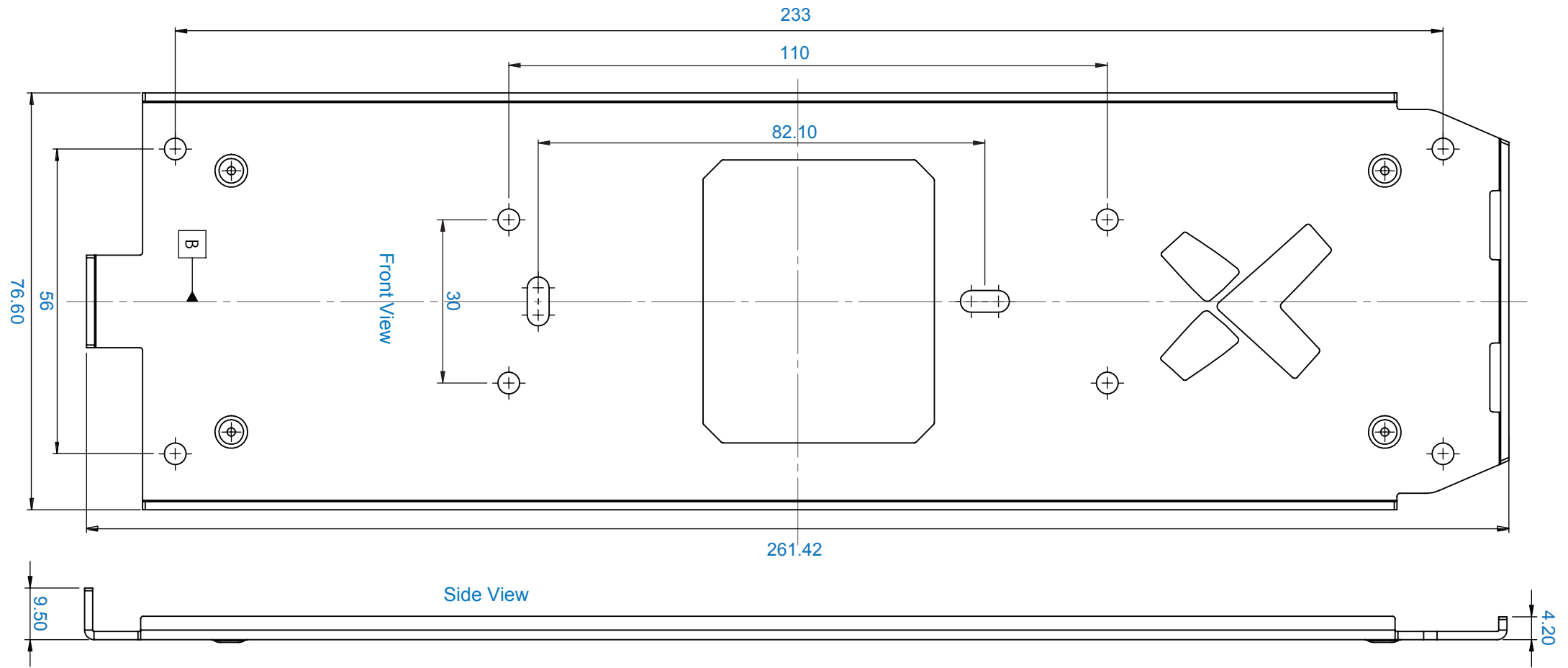


Earth Ground Wire

TITAN



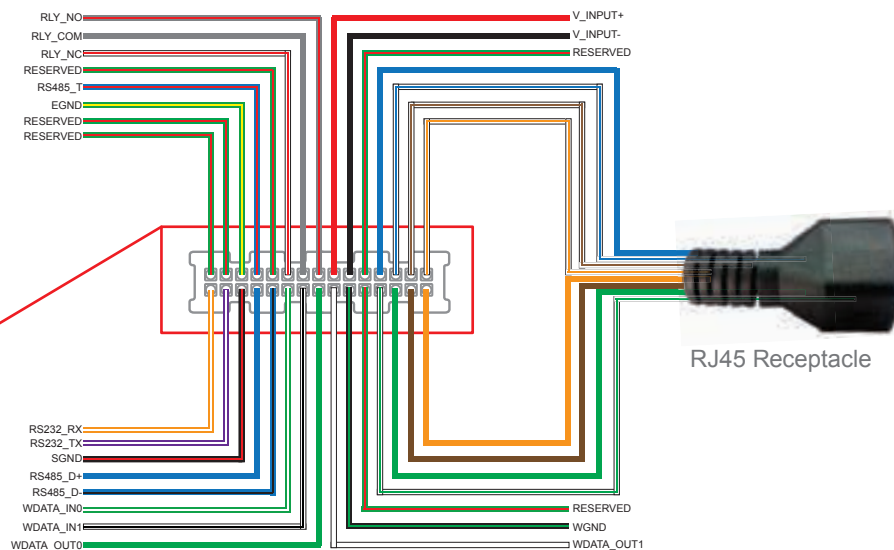
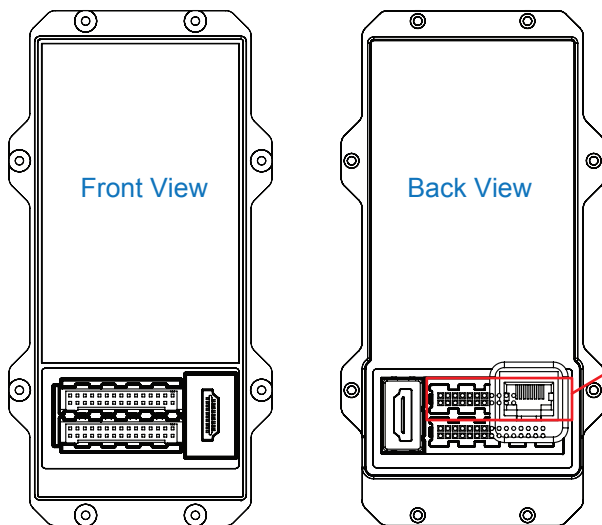






I/O Cable: Top Connector Pin Out

Wired Back Cover



Pin	Wire	Wire Color	Label	Application
1		Green/Red	RESERVED	Reserved for Future Use
2		Orange/White	RS232_RX	RS232 - Data Receive
3		Green/Red	RESERVED	Reserved for Future Use
4		Purple/White	RS232_TX	RS232 - Data Transmit
5		Green/Yellow	EGND	Earth Ground
6		Black/Red	SGND	Signal Ground
7		Blue/Red	RS485_T*	RS485 - Terminated (Optional)*
8		Blue	RS485_D+	RS485 - Non Inverting Line
9		Green/Red	RESERVED	Reserved for Future Use
10		Blue/Black	RS485_D-	RS485 - Inverting Line
11		White/Red	RLY_NC	Relay NC
12		Green/White	WDATA_IN0	Wiegand Data Input Line 0
13		Grey	RLY_COM	Relay Common
14		White/Black	WDATA_IN1	Wiegand Data Input Line 1
15		Grey/Red	RLY_NO	Relay NO

Pin	Wire	Wire Color	Label	Application
16		Green	WDATA_OUT0	Wiegand Data Output Line 0
17		Red	V_INPUT+	Power (12 to 24 VDC)
18		White	WDATA_OUT1	Wiegand Data Output Line 1
19		Black	V_INPUT-	Power Ground
20		Black/Green	WGND	Ground for Wiegand
21		Green/Red	RESERVED	Reserved for Future Use
22		Green/Red	RESERVED	Reserved for Future Use
23-30		RJ45 Receptacle	TCP/IP	Ethernet of PoE+



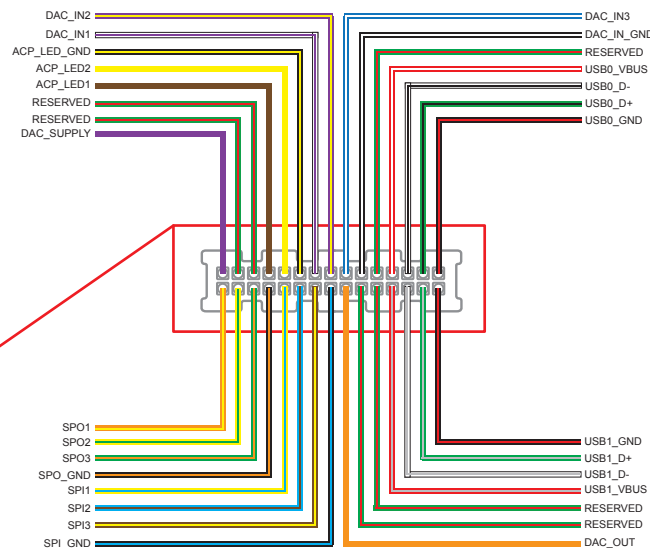
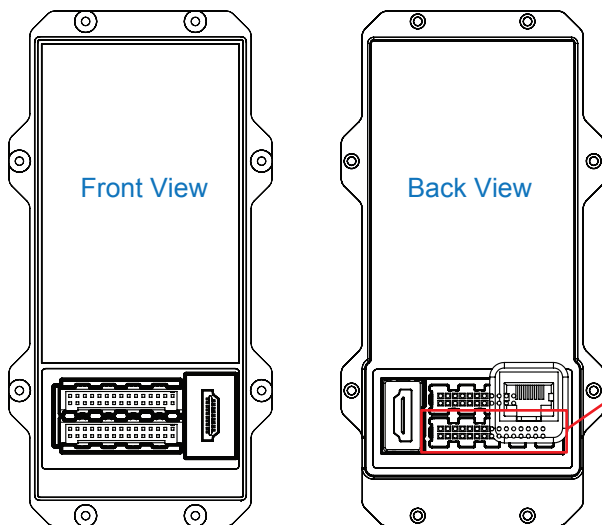
NOTE

*This pin is optional and should be used if 120Ω termination is required. To do this, short the RS485_T wire with RS485_D+ wire.



I/O Cable: Bottom Connector Pin Out

Wired Back Cover

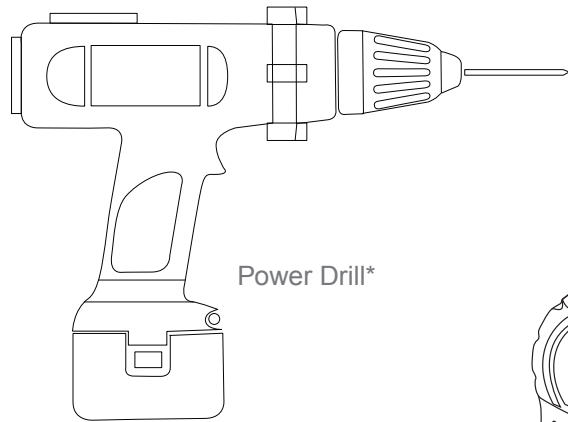


Pin	Wire	Wire Color	Label	Application
1		Purple	DAC_SUPPLY	Door Strike Power
2		Orange/Yellow	SPO1	Specific Purpose Output Line 1
3		Green/Red	RESERVED	Reserved for Future Use
4		Yellow/Green	SPO2	Specific Purpose Output Line 2
5		Green/Red	RESERVED	Reserved for Future Use
6		Green/Orange	SPO3	Specific Purpose Output Line 3
7		Brown	ACP_LED1	ACP LED 1 Feedback
8		Black/Orange	SPO_GND	Ground for SPOs
9		Yellow	ACP_LED2	ACP LED 2 Feedback
10		Yellow/Cyan	SPI1	Specific Purpose Input Line 1
11		Black/Yellow	ACP_LED_GND	Ground for ACP LED Feedback
12		Cyan/Brown	SPI2	Specific Purpose Input Line 2
13		White/Purple	DAC_IN1	DAC Input 1
14		Brown/Yellow	SPI3	Specific Purpose Input Line 3
15		Purple/Yellow	DAC_IN2	DAC Input 2

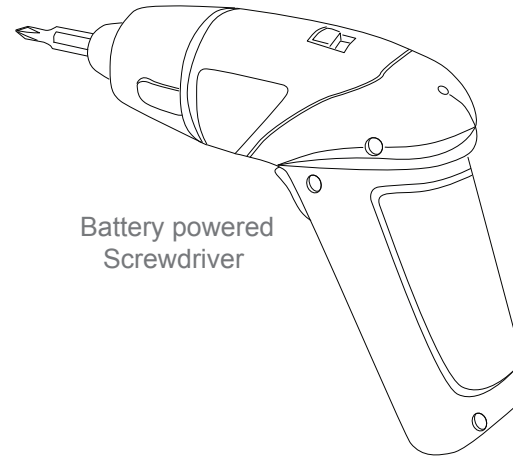
Pin	Wire	Wire Color	Label	Application
16		Black/Cyan	SPI_GND	Ground for SPI
17		Blue/White	DAC_IN3	DAC Input 3
18		Orange	DAC_OUT	DAC Output
19		Black/White	DAC_IN_GND	Ground for DAC Inputs
20		Green/Red	RESERVED	Reserved for Future Use
21		Green/Red	RESERVED	Reserved for Future Use
22		Green/Red	RESERVED	Reserved for Future Use
23		Red/White	USB0_VBUS	USB Line 0 Host interface
24		Red/Grey	USB1_VBUS	USB Line 1 Host interface
25		White/Black	USB0_D-	USB Line 0 Host interface
26		White/Grey	USB1_D-	USB Line 1 Host interface
27		Green/Black	USB0_D+	USB Line 0 Host interface
28		Green/Grey	USB1_D+	USB Line 1 Host interface
29		Black/Red	USB0_GND	USB Line 0 Host interface
30		Black/Red	USB1_GND	USB Line 1 Host interface



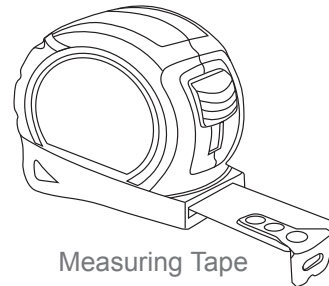
Hardware Tools Required For Installation



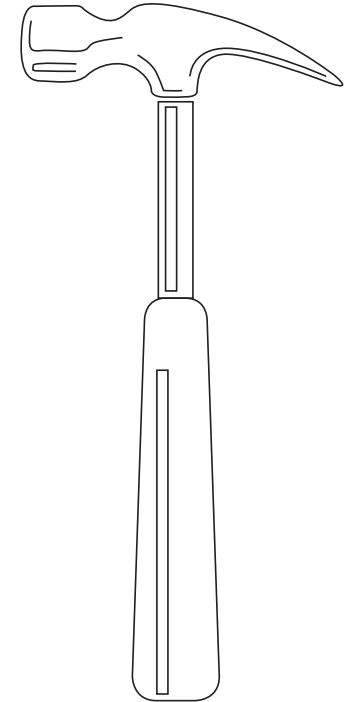
Power Drill*



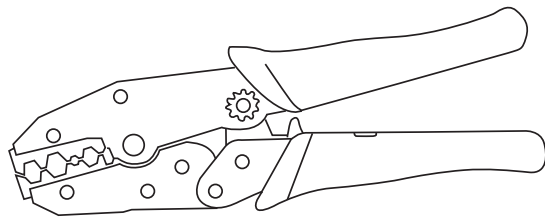
Battery powered
Screwdriver



Measuring Tape



Hammer*



Ratchet-style Crimping tool



Pencil



Manual Screwdriver



Installation of any IXM device should be performed by licensed electricians.

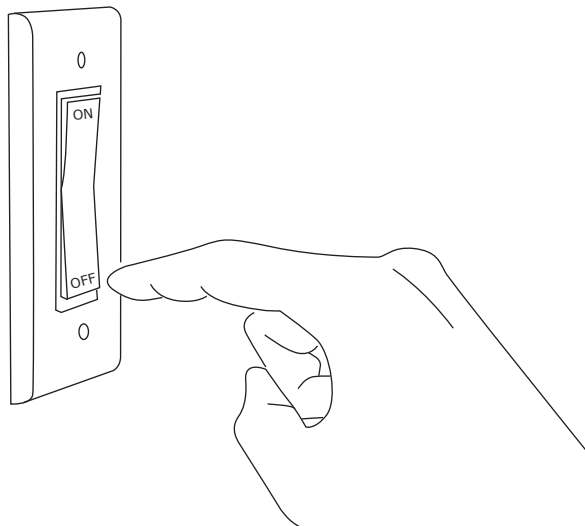
NOTE

*Depending on the mounting surface, the Power Drill and Hammer may not be required.



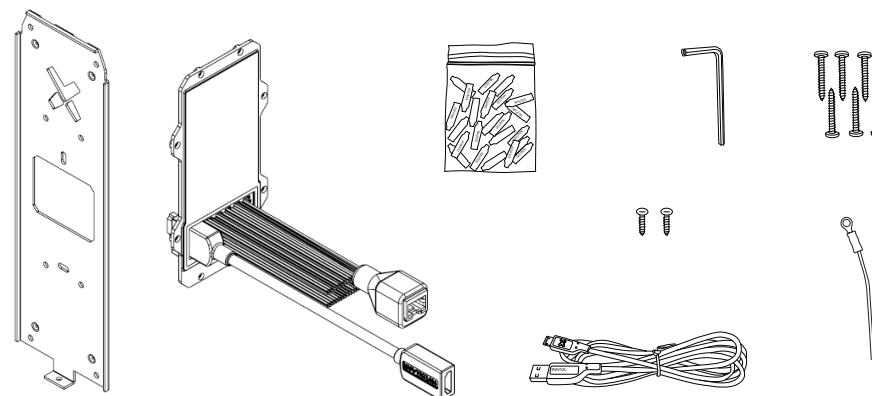
1 Ensure Power is Off

This protects the device being installed.



2 IXM Install Kit

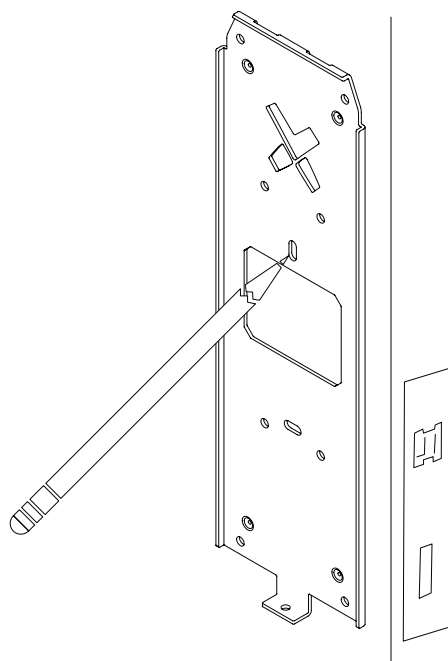
Remove the following items from the kit:



3 Mark the Screw Holes

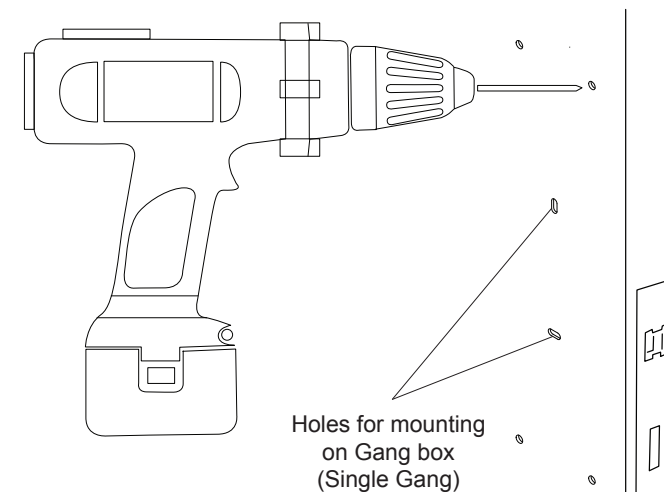
INVIXIUM recommends the use of all 6 holes for mounting. Refer to diagrams from page 9 onwards for actual dimensions.

Ideal mounting height is 115-120 cm from the ground to the bottom of the device. But also be sure to align the device in case of multiple installations.



4 Drill Holes

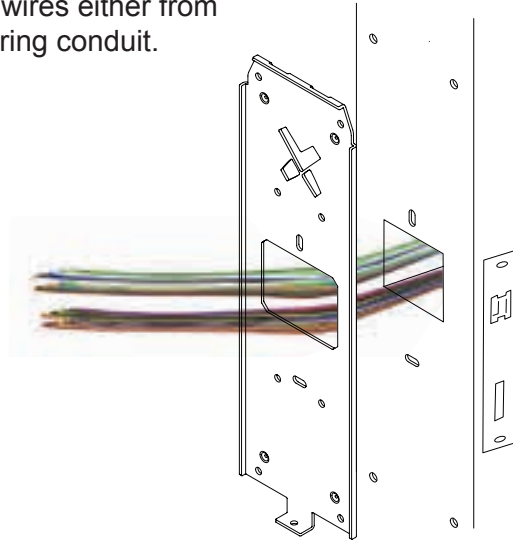
If required, drill holes where marked and install the appropriate wall anchors (not included) using the hammer.





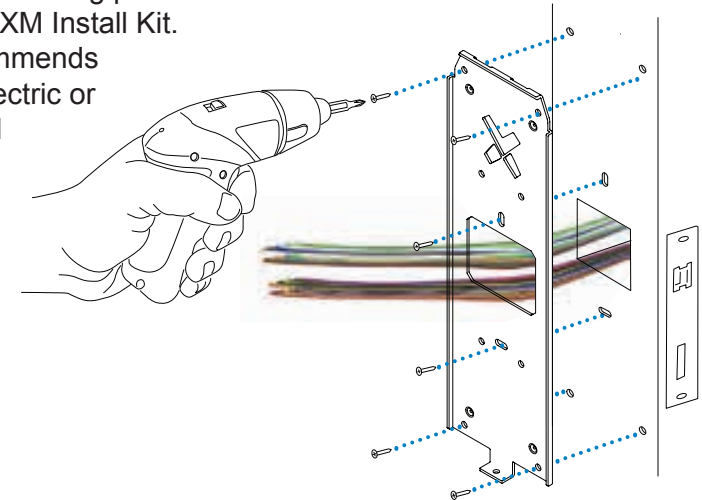
5 Get Wires

Get access to the installation wires either from behind the wall or from the wiring conduit. Feed wires through the square hole of the mounting plate.



6 Insert Screws

Align the holes of the mounting plate with the wall anchors and attach the mounting plate with the screws provided in the IXM Install Kit. INVIXIUM recommends the use of an electric or battery-powered screwdriver for this step.



7 Identify the Connections:

1 Power & Grounding

DC Power	
VIN+	
VIN-	
EGND	

OR

PoE	
RJ-45 Receptacle	
EGND	

2 Communications

RS-485	
SGND	
RS-485+	
RS-485-	

OR

Ethernet	
RJ-45 Receptacle	

OR

RS-232	
RS-232_RX	
RS-232_TX	
SGND	

OR



3 Operations

ACP	
ACP_LED1	
ACP_LED2	
ACP_LED_GND	
WDATA_OUT0	
WDATA_OUT1	
WGND	

OR

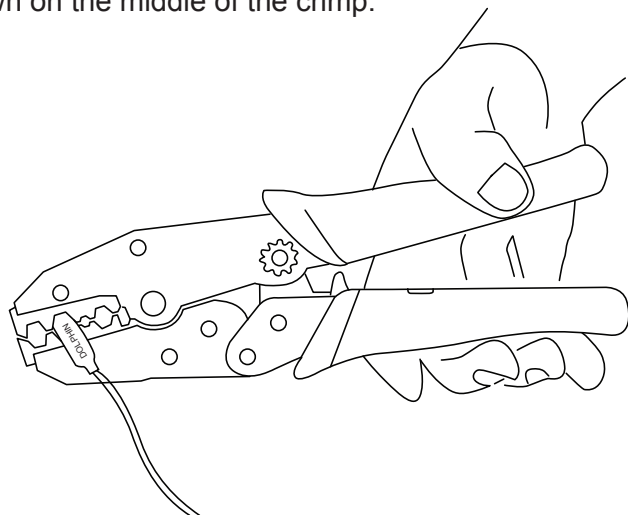
DAC	
RLY_NC	
RLY_COM	
RLY_NO	
DAC_IN1	
DAC_IN2	
DAC_OUT	
DAC_SUPPLY	

Refer to pages 17 & 18 for Power connections, pages 19-22 for Network or Serial Communication connections and pages 23-25 for Operation connections.



8A Make the Connections

Connect the required wires using the Dolphin crimps provided in the IXM Install Kit (or any similar crimps) and a ratchet style crimping tool. Insert two wires (no stripping required) into the open end of the crimp and then using the crimping tool, clamp down on the middle of the crimp.

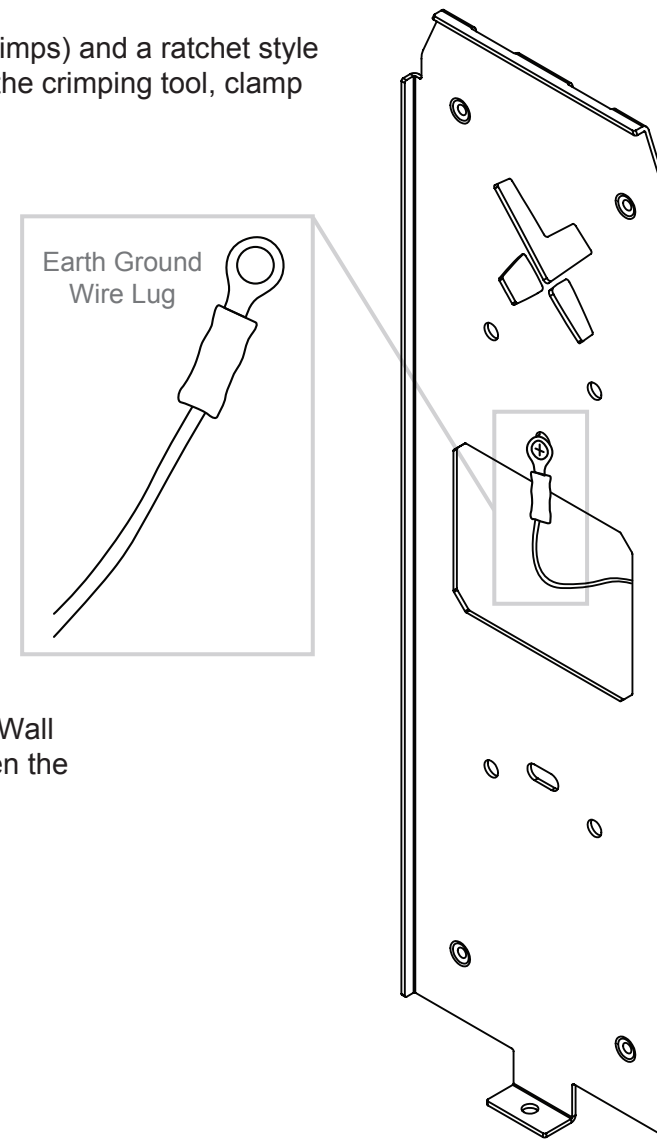


8B Connect Earth Ground

Connect the lug of the Earth Ground wire directly to the front of the mounting plate using one of the Wall mounting screws. Ensure that the lug is secured tightly so as to make the necessary contact between the device and the mounting plate. Connect the other end of the Earth Ground wire to the Earth Ground connection of the install site with a crimp.

Ensure all required connections are made to each device in the setup prior to turning on the power.

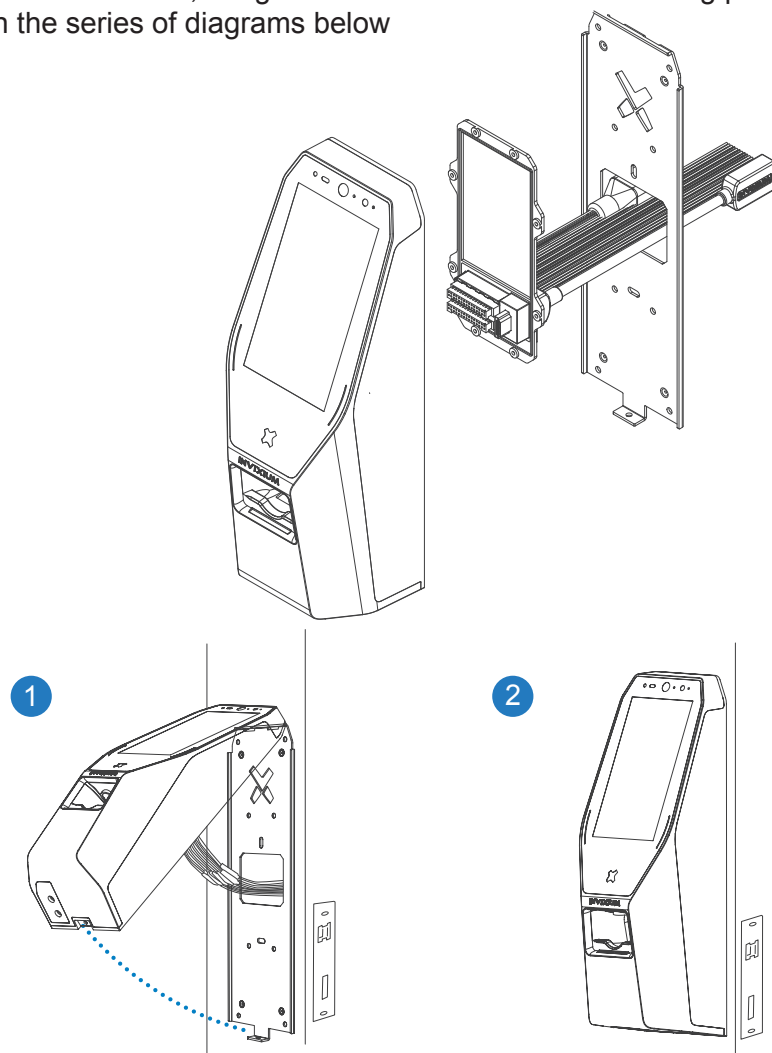
- Checklist:
- Connections for Power & Ground (DC or PoE+)
 - Connections for Communications (Ethernet, RS-485, RS-232 or USB)
 - Connections for Operation (ACP or DAC)
 - Any other connections that may be required based on the application (SPO or SPI)





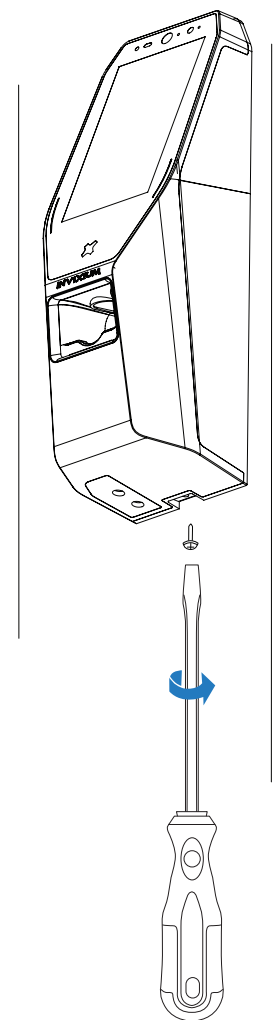
9 Attach the Device

Take the IXM device and unscrew the Temporary Back Cover, keeping the screws handy. Connect the Wired Back Cover to the back of the device by lining up the connectors. Secure the Wired Back Cover with the same screws. Next, hang the IXM device onto the mounting plate as shown in the series of diagrams below



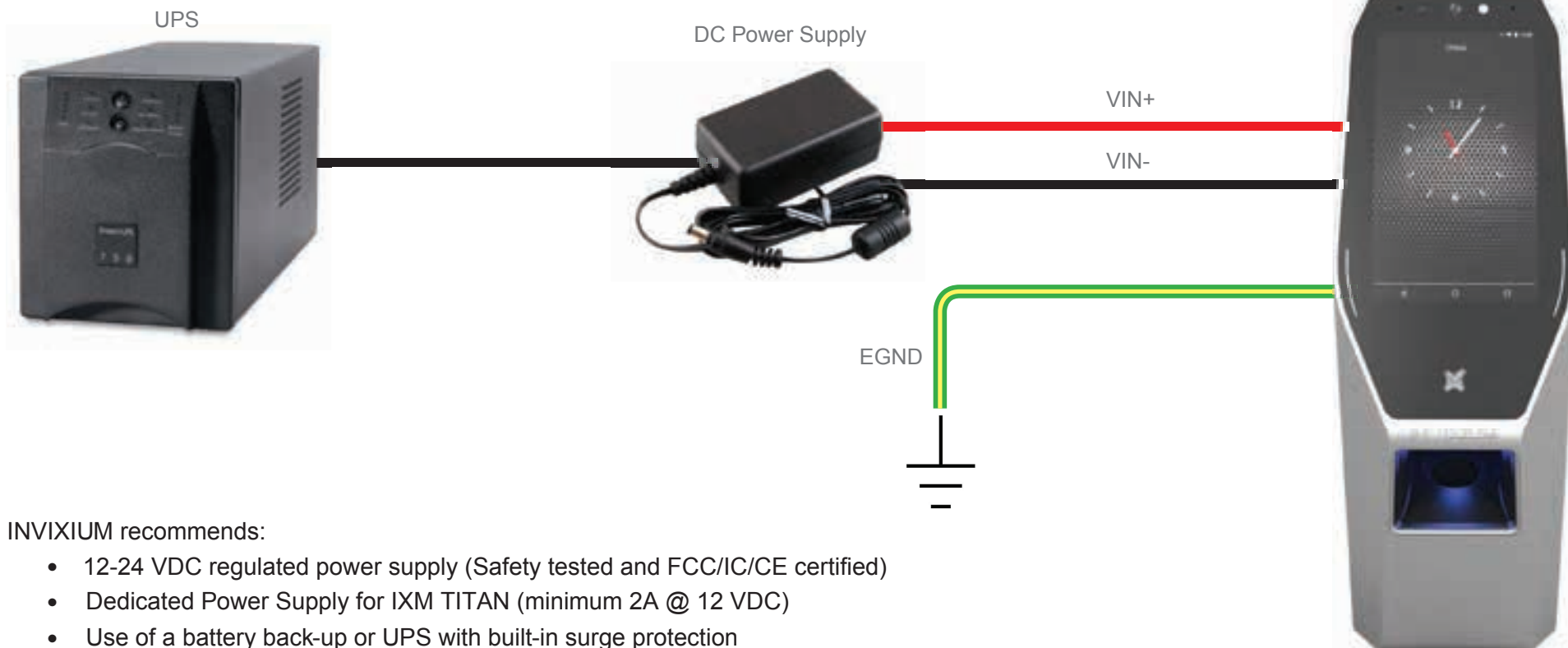
10 Secure the Device

Finally, secure the device on the bottom to the mounting plate with the Metal Mounting Plate screw provided in the IXM Install Kit.





Connections for Power



INVIXIUM recommends:

- 12-24 VDC regulated power supply (Safety tested and FCC/IC/CE certified)
- Dedicated Power Supply for IXM TITAN (minimum 2A @ 12 VDC)
- Use of a battery back-up or UPS with built-in surge protection
- If sharing power supplies, ensure that each TITAN is supplied with minimum 2A per device (i.e. Powering 2 devices will require a supply with output current of 4A)



WARNING

Product Warranty is void if improper power (under or over) is supplied to the device.

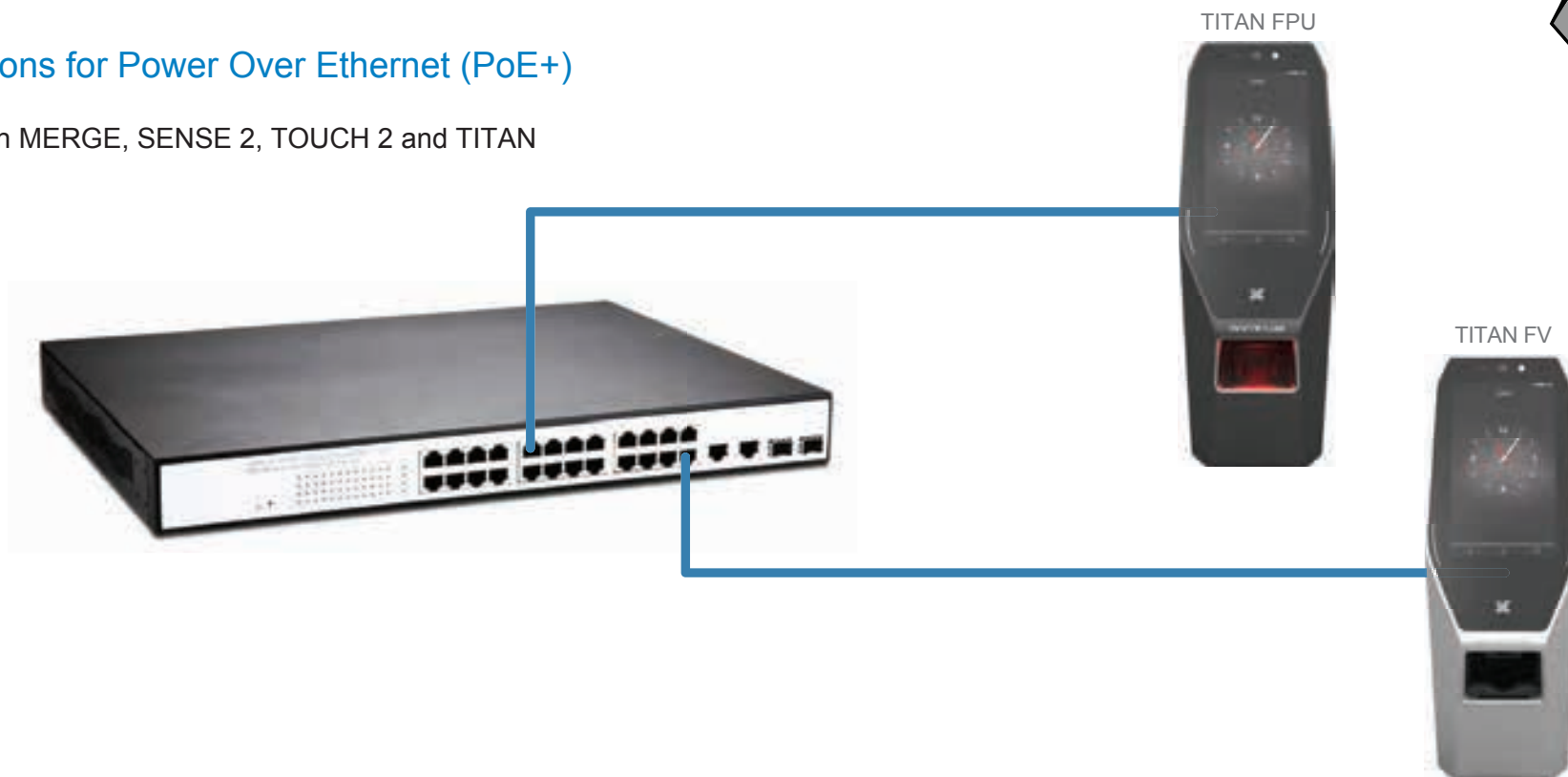
Power Connections

VIN+	
VIN-	
EGND	



Connections for Power Over Ethernet (PoE+)

Available on MERGE, SENSE 2, TOUCH 2 and TITAN



INVIXIUM recommends:

- A centralized Power Sourcing Equipment (PSE) for full PoE deployments (not included)
- Use of a battery back-up or UPS with built-in surge protection



NOTE

Both IEEE 802.3at power transmission modes (A and B) are supported.

Ethernet/PoE Connections

TX+	
TX-	
RJ45_PIN4	
RX+	
RX-	
RJ45_PIN7	



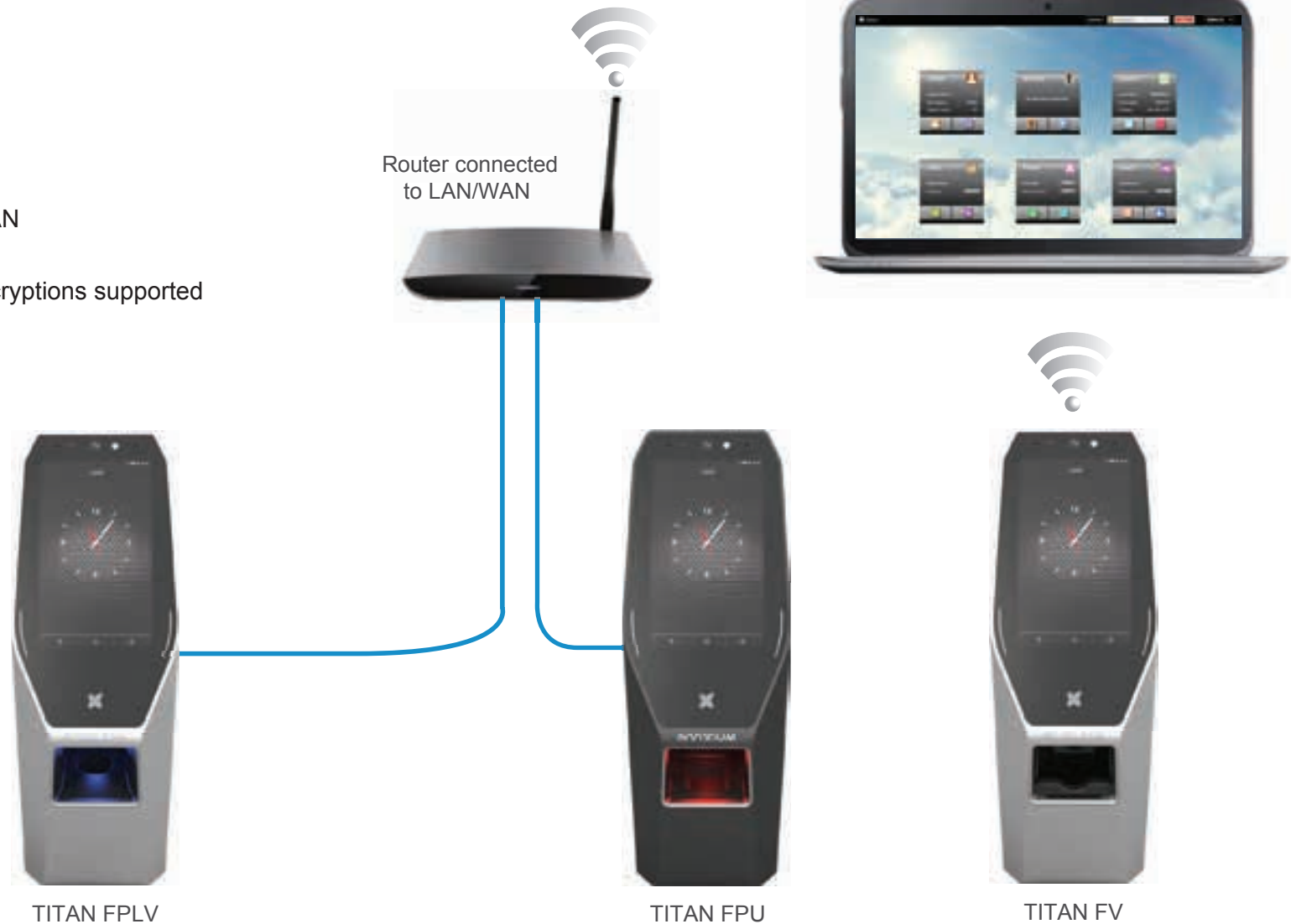
Ethernet and Wi-Fi Communication

Ethernet:

- Switch/Router required
- CAT 5 cabling or better

WiFi:

- Wireless router to LAN/WAN
- 802.11ac protocol
- WEP, WPA and WPA2 encryptions supported
- DHCP enabled by default





RS-485 Network Communication

INVIXIUM recommends:

- Daisy chain configuration
- Maximum 31 devices in the network
- Both RS-485 converter and the last device in the chain should be terminated (not included, refer to NOTE below for correct Resistor values)
- Connect the IXM device to PC via RS-485-to-Serial (RS-232 or USB) Converter
- Maximum cable length of 1200m (4000 ft.) at 9600 bps baud rate



NOTE

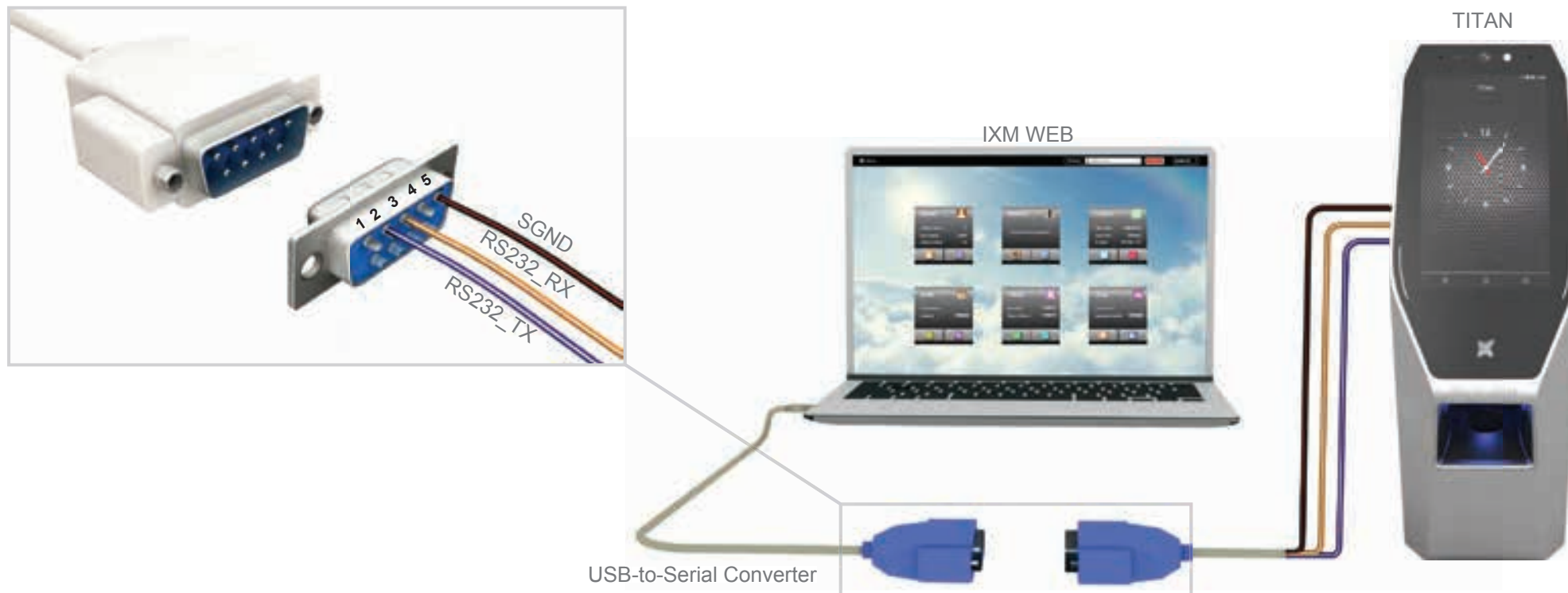
R = 120 ohms for Standard RS-485 Cabling
R = 100 ohms for CAT5/6 Cabling

RS-485 Connections

SGND		(6)
RS485_D+		(8)
RS485_D-		(10)






Serial Communication



RS-232:

- Connect IXM device directly to the DB9 Serial port of the PC (if available)
- DB9 connectors and cables are not included

RS-232 Connections

RS-232_RX		(2)
RS-232_TX		(4)
SGND		(6)



USB Communication



USB:

- Connect a Flash Drive via Micro USB OTG cable and perform functions like upgrading firmware and downloading transaction logs
- USB port can also be used to connect to a PC running IXM WEB via Micro USB cable
- Driver installation is required and will automatically initiate once the device is connected



Access Control Panel Connections for TITAN



ACP:

- LED and Wiegand connections available for ACP operation
- INVIXIUM recommends the use of Wiegand Output Data 0, 1 and GND connection






ACP_LED signals can be used if available on the Access Control Panel.




IXM devices support up to 2 wires + GND for LED status.

NOTE

Top Connector Wiegand

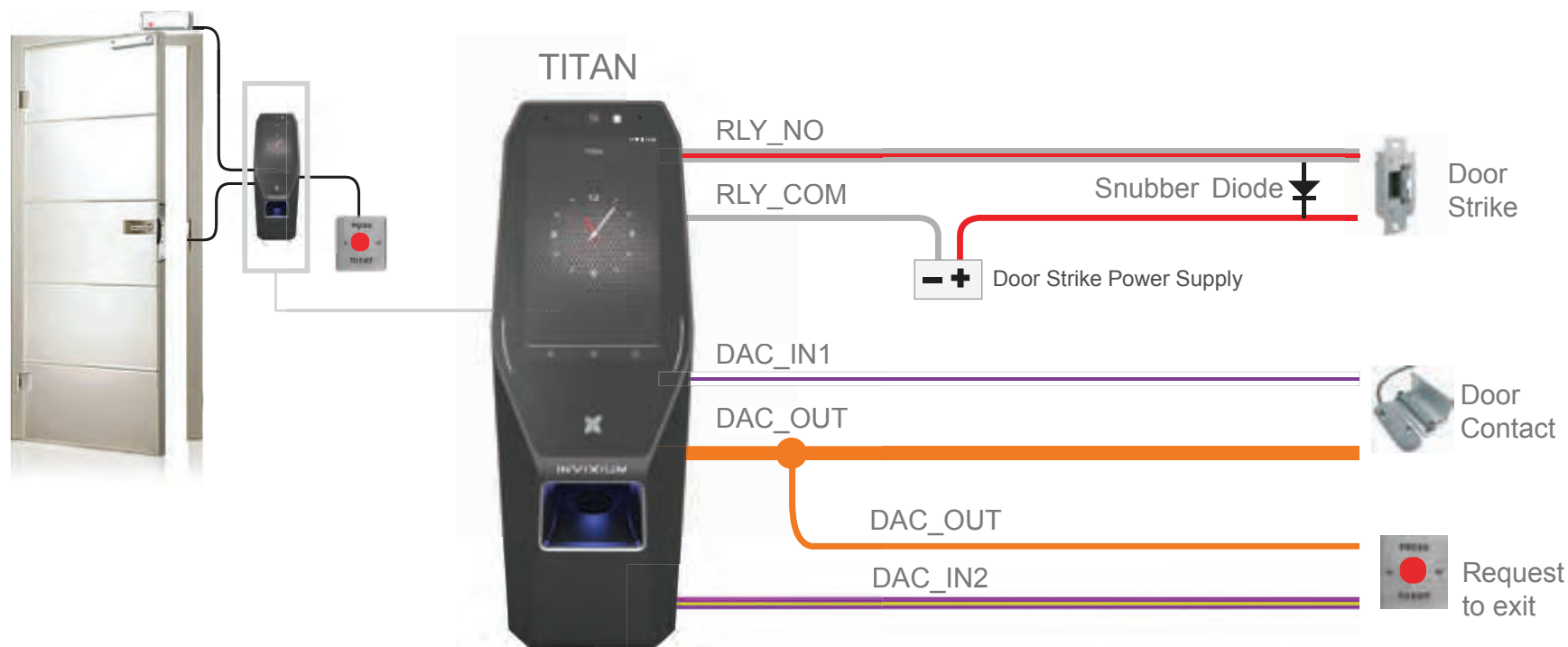
WDATA_OUT0		(16)
WDATA_OUT1		(18)
WGND		(20)

Bottom Connector LED

ACP_LED1		(7)
ACP_LED2		(9)
ACP_LED_GND		(11)



Door Access Control Connections for TITAN



DAC:

- INVIXIUM recommends a separate power supply for Door Strike (not included) for this configuration
- Snubber Diode required for Door Strike (not included)
- Example above shows use of RLY_NO, but RLY_NC may be used instead if required by the Door Strike
- Internal Relay rated upto max of 2A @ 24VDC
- For motion detector instead of Request-to-Exit-button, connect the following signals:
 (1) DAC_OUT to the COM and (2) DAC_IN2 to the Relay NO of the motion detector

DAC Connections (Top)

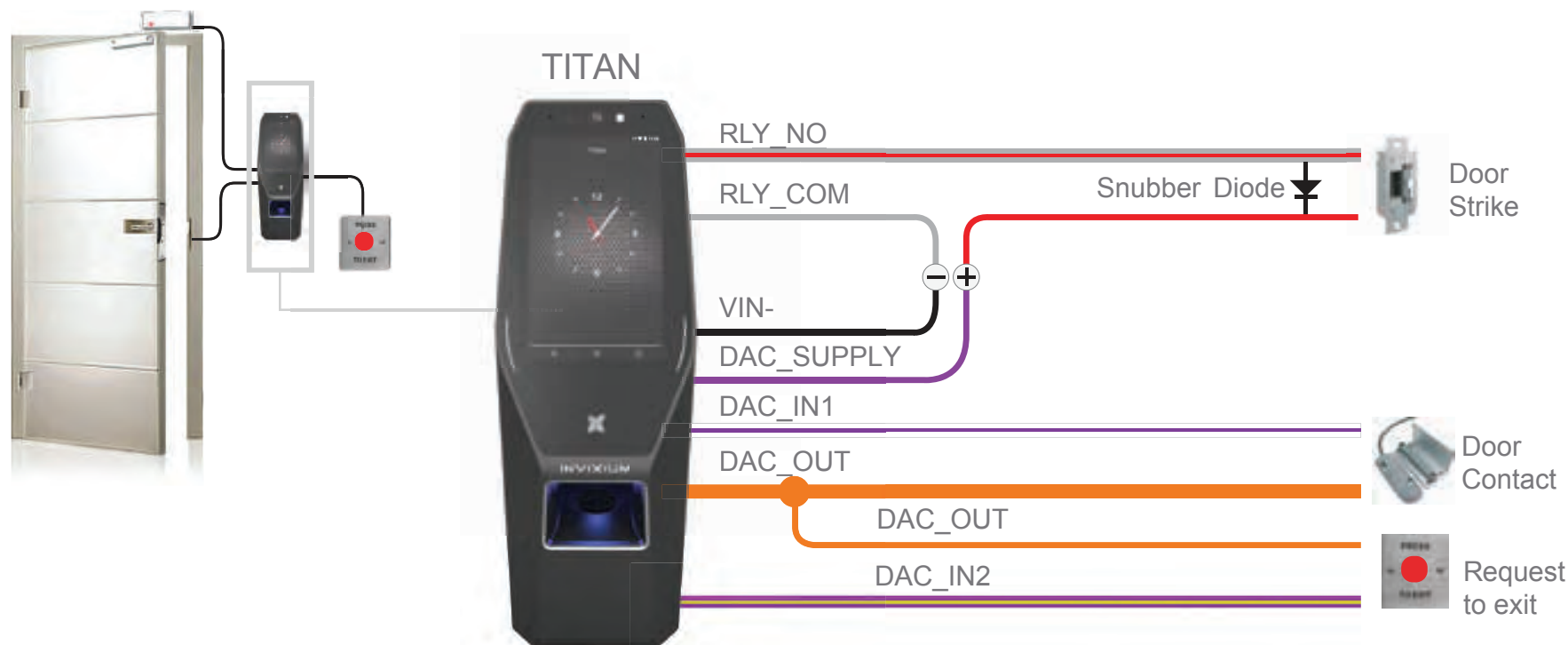
RLY_NC		(11)
RLY_COM		(13)
RLY_NO		(15)

DAC Connections (Bottom)

DAC_IN1		(13)
DAC_IN2		(15)
DAC_OUT		(18)



DAC Connections for TITAN when Device Powers Door Strike



DAC:

- IXM TITAN powers the door strike in this configuration.
- Device can supply 500mA@12V or 250mA@24V
- Snubber Diode required for Door Strike (not included)
- Example above shows use of RLY_NO, but RLY_NC may be used instead if required by the Door Strike
- Internal Relay rated upto max of 2A @ 24 VDC
- For motion detector instead of Request-to-Exit-button, connect the following signals:
(1) DAC_OUT to the COM and (2) DAC_IN2 to the Relay NO of the motion detector

DAC Connections (Top)

RLY_NC		(11)
RLY_COM		(13)
RLY_NO		(15)

DAC Connections (Bottom)

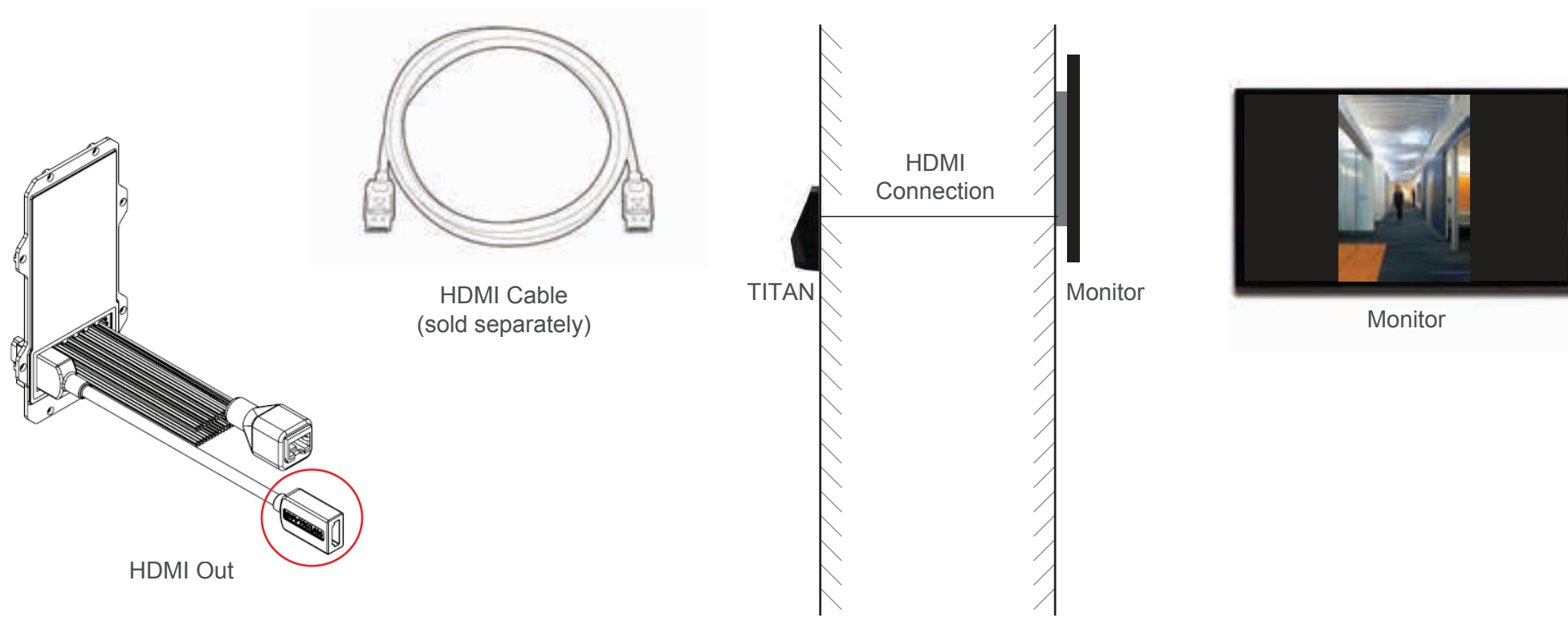
DAC_IN1		(13)
DAC_IN2		(15)
DAC_OUT		(18)
DAC_SUPPLY		(1)
DAC_IN_GND		(19)



Connections for HDMI Output

TITAN's wired back cover is equipped with an HDMI Out Port that can be used for real time Video Surveillance for standalone installations. When the HDMI out is connected to a monitor via an HDMI cable (sold separately), the monitor screen will show the user the TITAN Field of View when in surveillance mode.

For security purposes, the HDMI cable can be connected to a monitor behind the door i.e. on the inside, to see what is happening on the outside.





Software Installation System Requirements

To successfully install and run IXM WEB, the system must meet the following minimum requirements:

PC Workstation:

- 2 GHz Intel® Pentium® 4 or equivalent (2.4 GHz or higher recommended)
- 4 GB RAM (6 GB or higher recommended)
- 2 GB Free Hard Disk Space
- 850 MB Hard Disk Space for x86 systems or 2 GB Hard Disk Space for x64 systems Microsoft®.NET Version 4.0
- 2 GB Hard Disk Space recommended for SQL Server™ 2008 Express Edition SP1
- Available COM or USB Port
- Ethernet Card (10/100 Mbps Ethernet connections)
- Monitor capable of displaying at least 1024 x 786 high color resolution

IXM WEB will install the following:

Microsoft® .NET Framework (version 4.0)

SQL Server™ 2008 Express Edition Service Pack 1

Microsoft® Internet Information Services (version 7.5)

Windows® Installer (version 4.5)

One of the following Operating Systems

- Windows® 10, 8.1 and 7[†] (32-Bit & 64-Bit)
- Windows® 7 Home Premium Edition
- Windows® Server 2016, 2012, 2012 R2, 2008, 2008 R2

One of the following Web Browsers (Client):

- Internet Explorer® version 11.0
- Google Chrome™ version 40.0 and above
- Mozilla Firefox® version 40.0 and above
- Microsoft Edge® version 38.14393 and above
- Apple Safari® (MAC OS only) version 5.1.7 and above



[†] Windows Professional or Enterprise Editions



Software Installation Steps

Step 1 Go to ixmweb.invixium.com. Click Get IXM WEB. Provide the required details and Click “Submit”. An email with the latest IXM WEB Package will be sent to the email ID provided. (Contact Support if using a customized solution).

Step 2 Download and Extract the package. Run IXM WEB.exe file.



Step 3 There are two installation options: Install or Advanced. INVIXIUM recommends selecting INSTALL option for rapid installation.

The ADVANCED process allows for:

- entering a different install path
- checkbox for installing SQL Server database
- entering a specific Port number
- checkbox for installing Certificates



A Windows dialog may pop up to provide a warning about installing from an unreliable source. Click “Yes” to proceed with the install.

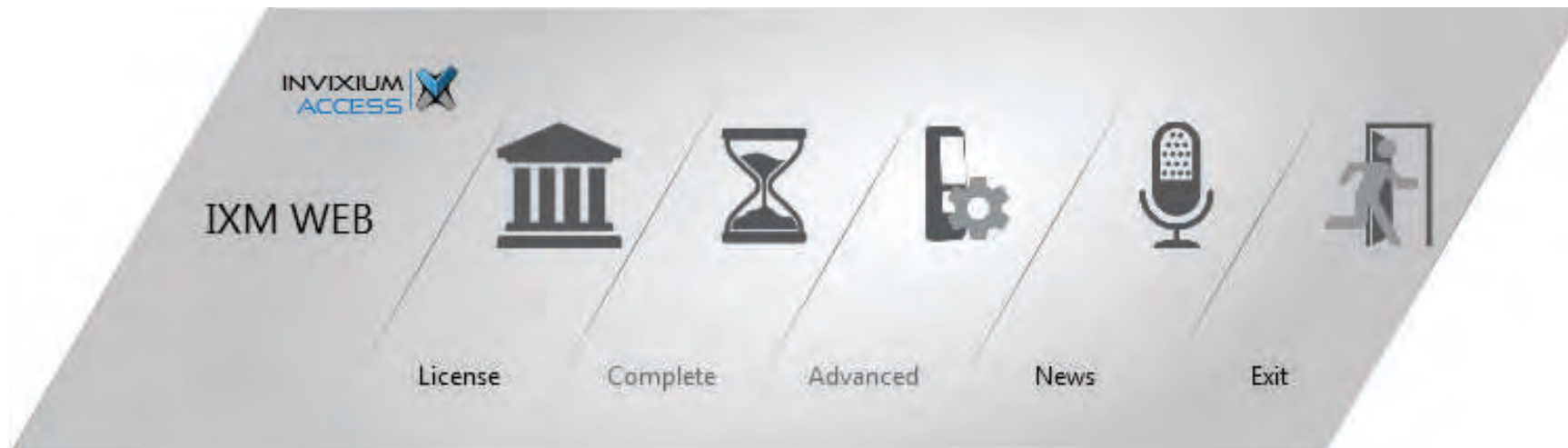
NOTE



Step 4 During the installation process, the status of the install will be shown.



Step 5 When the installation is complete, click EXIT. IXM WEB icon is now on the desktop.



Step 6 Run IXM WEB to launch the application in the default web browser to setup the Database and Admin credentials.


Step 6 Visit the InVixium Customer Portal for more detailed manuals on invixium.com.



FCC Information to Users (English)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

NOTICE	
 NOTE	<p>This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:</p> <ul style="list-style-type: none">• Reorient or relocate the receiving antenna• Increase the separation between the equipment and receiver• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected• Consult the dealer or an experienced radio/TV technician for help

Informations de la FCC aux Utilisateurs (en Français)

Cet appareil est conforme à la partie 15 des règles de la FCC. Son fonctionnement est soumis aux deux conditions suivantes:

1. Cet appareil ne doit pas provoquer d'interférences nuisibles
2. Cet appareil doit accepter toute interférence reçue, incluant toute interférence pouvant causer un fonctionnement indésirable



NOTIFICATION



NOTE

Cet équipement a été testé et s'est avéré conforme aux limites pour un appareil numérique de Classe B, conformément à la partie 15 des règles de la FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et peut émettre des fréquences radio et, s'il n'est pas installé et utilisé conformément aux instructions, il peut causer des interférences nuisibles pour les communications radio. Cependant, il n'existe aucune garantie que des interférences ne se produiront pas dans une installation particulière. Si cet équipement provoque des interférences nuisibles à la réception radio ou de télévision, ce qui peut être déterminé en l'éteignant et rallumant, l'utilisateur est encouragé à essayer de corriger l'interférence par une ou plusieurs des mesures suivantes:

- Réorienter ou déplacer l'antenne de réception
- Augmentez la distance entre l'équipement et le récepteur
- Connecter l'équipement à une sortie sur un circuit différent de celui sur lequel le récepteur est branché
- Pour obtenir de l'aide, consulter le revendeur ou un technicien radio / TV expérimenté

FCC RF Radiation Exposure Statement (English)

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 30 cm between the radiator and your body.

Industry Canada RF Radiation Exposure (English)

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 30 cm between the radiator and your body.

Industrie Canada exposition aux radiations RF (en Français)

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 30 cm de distance entre la source de rayonnement et votre corps.



CE Information to Users (English)

All INVIXIUM devices have the CE mark for conformance with EMC Directive 89/336/EEC, and Low Voltage Safety Directive 73/23/EEC. Device with RFID components are compliant with R&TTE Directive 1999/5/EC, and are Class 1 Devices.

Informations de la CE aux Utilisateurs (en Français)

Tous les dispositifs de INVIXIUM ont le marquage CE de conformité à la directive CEM 89/336/CEE et basse tension de sécurité Directive 73/23/CEE. Les appareils avec composants RFID sont conformes aux Directive R & TTE 1999/5/CE. et sont des appareils de classe 1.

Industry Canada Information to Users (English)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause interference
2. This device must accept any interference, including interference that may cause undesired operation of the device


Industrie Canada Information pour les Utilisateurs (en Français)

Cet appareil est conforme avec Industrie Canada exempts de licence standard RSS (s). Son fonctionnement est soumis aux deux conditions suivantes:


1. Cet appareil ne doit pas provoquer d'interférences
2. Cet appareil doit accepter toute interférence, y compris celles pouvant causer un mauvais fonctionnement de l'appareil



Warning to Users (English)

	WARNING	
	Changes or modifications not expressly approved by INVIXIUM could void the user's authority to operate the equipment.	

Avertissement aux Utilisateurs (en Français)

	WARNING	
	Les changements ou modifications non expressément approuvés par INVIXIUM pourraient annuler l'autorité de l'utilisateur à utiliser l'équipement.	

For Technical or Customer Support issues, please contact your Local Authorized Reseller first.

Contact Invixium Support at support@invixium.com.

For detailed information, please visit our website.



Enjoy the Experience.

Some features may vary based on device models.

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P/N XAD-00E-151-02G



INSTALLATION GUIDE



INGUIDE

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