



ANTENNA READERS

Impro 125 kHz Antenna Readers INSTALLATION MANUAL

SPECIFICATIONS

Working Environment

XTT901, HRL900, XTT906,
XTT908

Designed to work in an indoor or outdoor environment similar to IP66. The Antenna Readers are, therefore, sealed (potted) against water.

XTT902, HRL901, XTT903,
HRL902, XTT904, XTT907,
HRL906

Designed to work in an indoor or outdoor environment similar to IP53. The Antenna Readers are, therefore, sealed (potted) against water.

XTT905

Designed to work in an indoor or protected outdoor environment similar to IP42. The Antenna Reader is, therefore, not sealed against water.

XTT909

The IP rating for this Antenna Reader is equivalent to the selected Cabinet's rating.

XTT950, HRL905, XTT951,
HRL903, XTT952, HRL904

Designed to work in an indoor or protected outdoor environment similar to IP54.

NOTE: *Certain plastic Readers (XTT901, HRL900, XTT902, HRL901, XTT905, XTT907, XTT908, XTT951, HRL903, XTT952 and HRL904) are RoHS compliant and do not contain any UV stabilizer.*

Buzzer

Volume and Tone.....

Single tone, 4-step adjustable volume.

NOTE: *The Impro MMA (XTT901& HRL900) does not include a Buzzer.*

Keypad

- XTT904, HRL906 XTT907 12 Alphanumeric keys.
- XTT905, XTT952 & HRL904.. 12 Numeric keys.

Status Indicators

- Status LED Bi-coloured Red or Green (externally visible).

INSTALLATION INFORMATION

Accessories

Find the following when unpacking the Antenna Reader:

XTT901 to XTT904, HRL906, HRL900 to HRL 902, XTT907, XTT951, HRL903, XTT952 and HRL904

- Either an Impro MMA Antenna Reader (XTT901-1-0-GB-XX, HRL900-1-0-GB-XX) housed in a Dark Grey, ABS Plastic housing. The Impro MMA consists of a Front Cover and a Backing Plate. The Front Cover (including the potted electronic components) assembly includes 8 m (26 ft) of 4-core, 0.5 mm solid strand Communications Cable.
- Or an Impro MA Antenna Reader (XTT902-1-0-GB-XXI, HRL901-1-0-GB-XX) housed in a Dark Grey, ABS Plastic housing. The Impro MA consists of a Front Cover and a Backing Plate (the Backing Plate is attached with a Self-tapping Screw (M2 x 6 mm)).
- Or an Impro MHA Antenna Reader (XTT903-1-0-GB-XX, HRL902-1-0-GB-XX) housed in a Zinc alloy die-cast housing. The Impro MHA consists of a Front Cover and a Backing Plate (the Backing Plate is attached with an M3 x 8 mm screw).
- Or an Impro KHA Antenna Reader (XTT904-1-0-GB-XX, HRL906-1-0-GB-XX) housed in a Zinc alloy die-cast housing. The Impro KHA consists of a Front Cover and a Backing Plate (the Backing Plate is attached with an M8 x 8 mm screw).
- Or an Impro KA Antenna Reader (XTT907-1-0-GB-XX) housed in a Dark Grey, ABS Plastic housing. The Impro KA consists of a Front Cover and a Backing Plate (the Backing Plate is attached with a Self-tapping Screw (M3 x 8 mm)).
- Or an Impro AMR Antenna Metal Reader (XTT951-1-0-GB-XX, HRL903-1-0-GB-XX) housed in an ABS Plastic and 304 Stainless Steel housing. The Antenna Reader consists of a Front Cover assembly and a Backing Plate (the Backing Plate is attached with an M8 x 8 mm screw).
- Or an Impro AMK Antenna Metal Keypad Reader (XTT952-1-0-GB-XX, HRL904-1-0-GB-XX) housed in an ABS Plastic and 304 Stainless Steel housing. The Antenna Reader consists of a Front Cover assembly and a Backing Plate (the Backing Plate is attached with an M8 x 8 mm screw).
- An extra an M8 x 8 mm screw (XTT903-1-0-GB-XX, HRL902-1-0-GB-XX XTT904-1-0-GB-XX, HRL906-1-1-GB-XX, XTT951-1-0-GB-XX, HRL903-1-0-GB-XX, XTT952-1-0-GB-XX and HRL904-1-0-GB-XX models only).
- An extra Serial Number Label.

XTT905

- An Impro KMA Antenna Reader housed in a Black, ABS Plastic housing. The Impro KMA consists of a Front Cover and a Mounting Bracket (the Mounting Bracket is attached with a Self-tapping Screw (M2 x 6 mm)).
- Four Counter-sunk Self-tapping Screws (M2 x 6 mm).
- An extra Serial Number Label.

XTT906 and XTT908

- Either an Impro RA Antenna Reader (XTT906-1-0-GB-XX) housed in PVC sheathing. The Impro RA includes 8 m (26 ft) of 4-core cable.
- Or an Impro DPA Antenna Reader (XTT908-1-0-GB-XX) housed in a Black, ABS Plastic housing. The Impro DPA includes 8 m (26 ft) of 4-core, 0.5 mm Solid Strand Communications Cable.
- A Piezo-electric, External Drive Buzzer.
- A bi-colour Red or Green, White Diffused Lens, Hi-bright, 5 mm, 2-Terminal LED (XTT906-1-0-GB-XX model only).
- An extra Serial Number Label.

XTT909

- Ten Impro CA Antenna Reader printed circuit board assemblies.
- An extra Serial Number Label.

XTT950, HLR905

- An Impro Antenna Junction Box Reader housed in a Black, ABS Plastic housing. The Antenna Reader consists of a Front Cover and a Backing Plate Assembly (the Front Cover is attached with a Combi Screw (6 mm x 2.2 mm)). The Backing Plate Assembly includes 1 m (3.28 ft) of 10-core, 6.2 mm cable.
- An extra Serial Number Label.

General

Remember the following when installing the Antenna Reader:

Antenna Reader Distance

The ideal cable distance between the Terminal, Controller or Receiver and its Antenna Reader ranges between 2 m to 16 m (7 ft to 53 ft).

NOTE: When used with the Impro iTT or the IXP20 Controller (iTt Platform) the ideal cable distance between the Terminal or Controller and Non-keypad Antenna Readers ranges between 2 m to 25 m (7 ft to 82 ft). The ideal cable distance between the Terminal or Controller and Keypad Antenna Readers ranges between 2 m to 16 m (7 ft to 53 ft).

Optimal performance is not guaranteed outside of the range. Achieve optimal performance by using a good quality shielded multi-strand 3-pair twisted cable. The cross-sectional area of the cable must not be less than 0.2 mm² (0.0003 in²).

Cable Specifications

The cable specifications should be similar to the following:

Conductor Resistance:	< 2 ohms.
Capacitance, Core to Earth:	< 160 pF/m.
Capacitance, Core to Core:	< 100 pF/m.

Distance between Antenna Readers from the SAME Terminal, Controller or Receiver

To avoid mutual interference, install the Antenna Readers no closer than 150 mm (6 in) apart.

Distance between Antenna Readers from DIFFERENT Terminals, Controllers or Receivers

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

Mounting the Antenna Readers

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

CAUTION: You may install the AMR Antenna Metal Reader (XTT951-1-0-GB-XX, HRL903-1-0-GB-XX) and the AMK Antenna Metal Keypad Reader (XTT952-1-0-GB-XX, HRL904-1-0-GB-XX) in an open environment. To do this, apply a slanted strip of general-purpose, black, silicone based sealant between the mounting surface and the Backing Plate, above the cable entry point. An open environment refers to any environment affected by elements like rain or water.

CAUTION: Once clipped together, separation of the Backing Plate and Front Cover of the Impro MMA (XTT901, HRL900) is likely to cause damage to the Antenna Reader.

Select the mounting position of the Antenna Reader, considering accessibility, routing of wires and visibility of the externally visible LED.

XTT901 to XTT905, HRL900 to HRL 905 XTT907, XTT908, XTT950, XTT951 and XTT952

Secure the Antenna Reader to the mounting surface, using suitable screws and wall plugs, nuts and bolts, rivets or double-sided adhesive tape.

NOTE: *The Impro DPA is designed for mounting in a user supplied enclosure. The Reader has 4 mounting holes, drilled to 4 mm in diameter. The mounting holes accommodate M3 bolts and nuts.*

Blank Space

XTT906

Secure the Impro RA in the mounting surface, using a suitable filling agent.

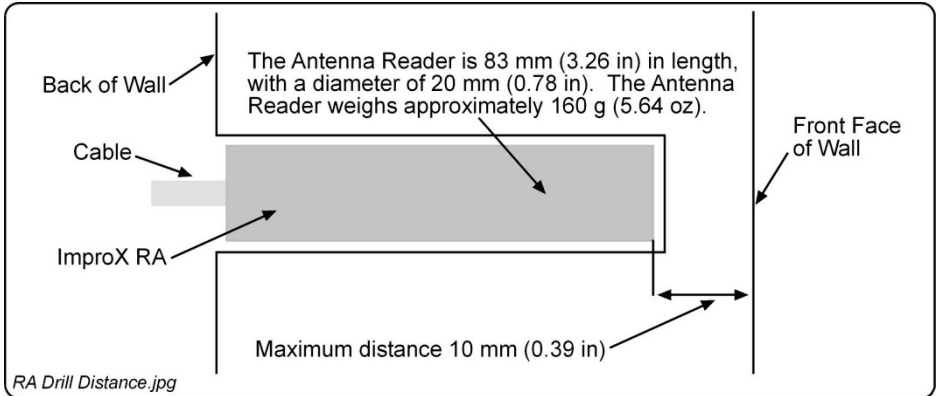


Figure 1: Mounting the Impro RA

XTT909

WARNING: DO NOT MOUNT THE IMPRO CA IN THE SAME ELECTRICAL JUNCTION BOX AS THE MAINS ELECTRICAL SUPPLY.

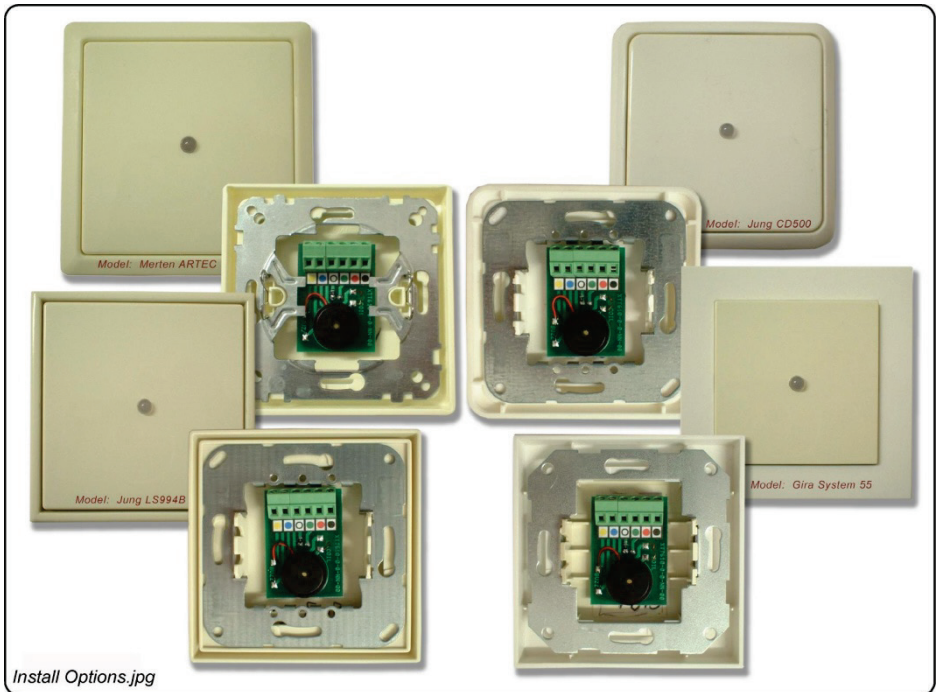


Figure 2: Electrical Conduit Blanking Plate Options

The Impro CA is approved for use with the following Electrical Conduit Blanking Plates (specific to the European Market):

- Jung LS994B.
- Jung CD500.
- Merten ARTEC.
- Gira System 55.

Housing the Impro CA

1. Drill a 5 mm hole in the centre of your chosen Electrical Conduit Blanking Plate, to accommodate the Status LED.
2. Remove the paper covering from the double-sided adhesive tape.

NOTE: *Place general purpose Silicone Sealer around the base of the Status LED for added waterproofing.*

3. Push the Status LED through the hole, in the Blanking Plate, from back to front.
4. Firmly press the Impro CA to the back of the Electrical Conduit Blanking Plate.

Blank Space

Connecting the Impro Antenna Readers

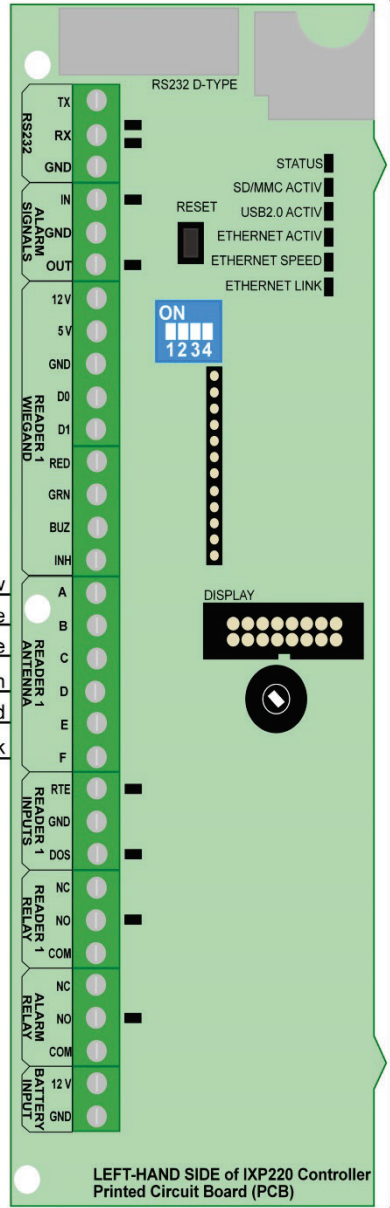
Figure 3 to Figure 7 show detailed connection diagrams for the Antenna Readers:

NOTE: Connection details remain the same for the majority of the Impro Antenna Readers. Note, however that the Impro MMA only uses connections C, D, E and F.

NOTE: When using the Impro RA or the Impro DPA, connect the Buzzer using the A and B Terminals.

NOTE: Connection details remain the same for Reader 2 Antenna.

NOTE: The ideal cable distance between the IXP220 Controller and its Antenna Reader ranges between 2 m to 16 m (7 ft to 53 ft). Optimal performance is not guaranteed outside of this range.



IXP220 Ant Connections.jpg

Figure 3: Impro Antenna Reader Connected to the IXP220 Controller

NOTE: Connection details remain the same for the majority of the Impro Antenna Readers. Note, however that the Impro MMA only uses connections C, D, E and F.

NOTE: When using the Impro RA or the Impro DPA, connect the Buzzer using the A and B Terminals.

NOTE: The ideal cable distance between the IXP20 Controller and its Non-keypad Antenna Reader ranges between 2 m to 25 m (7 ft to 82 ft). The ideal cable distance between the IXP20 and its Keypad Antenna Reader ranges between 2 m to 16 m (7 ft to 53 ft).

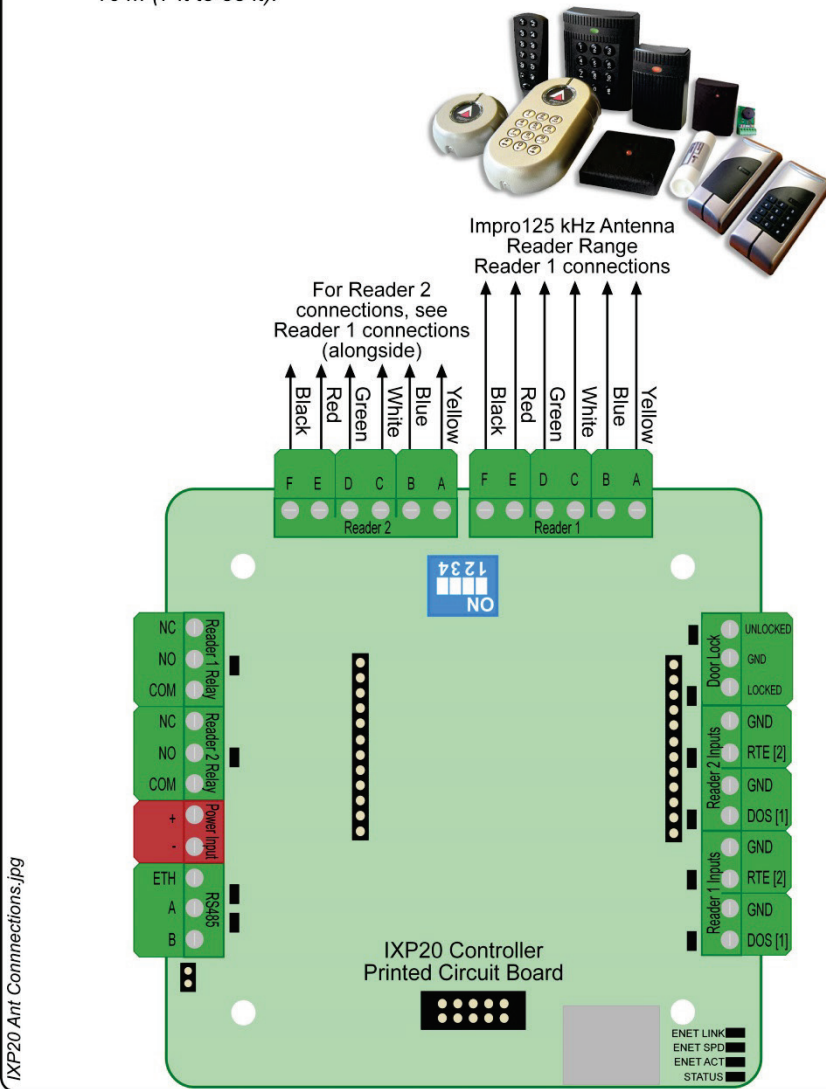


Figure 4: Impro Antenna Reader Connected to the IXP20 Controller

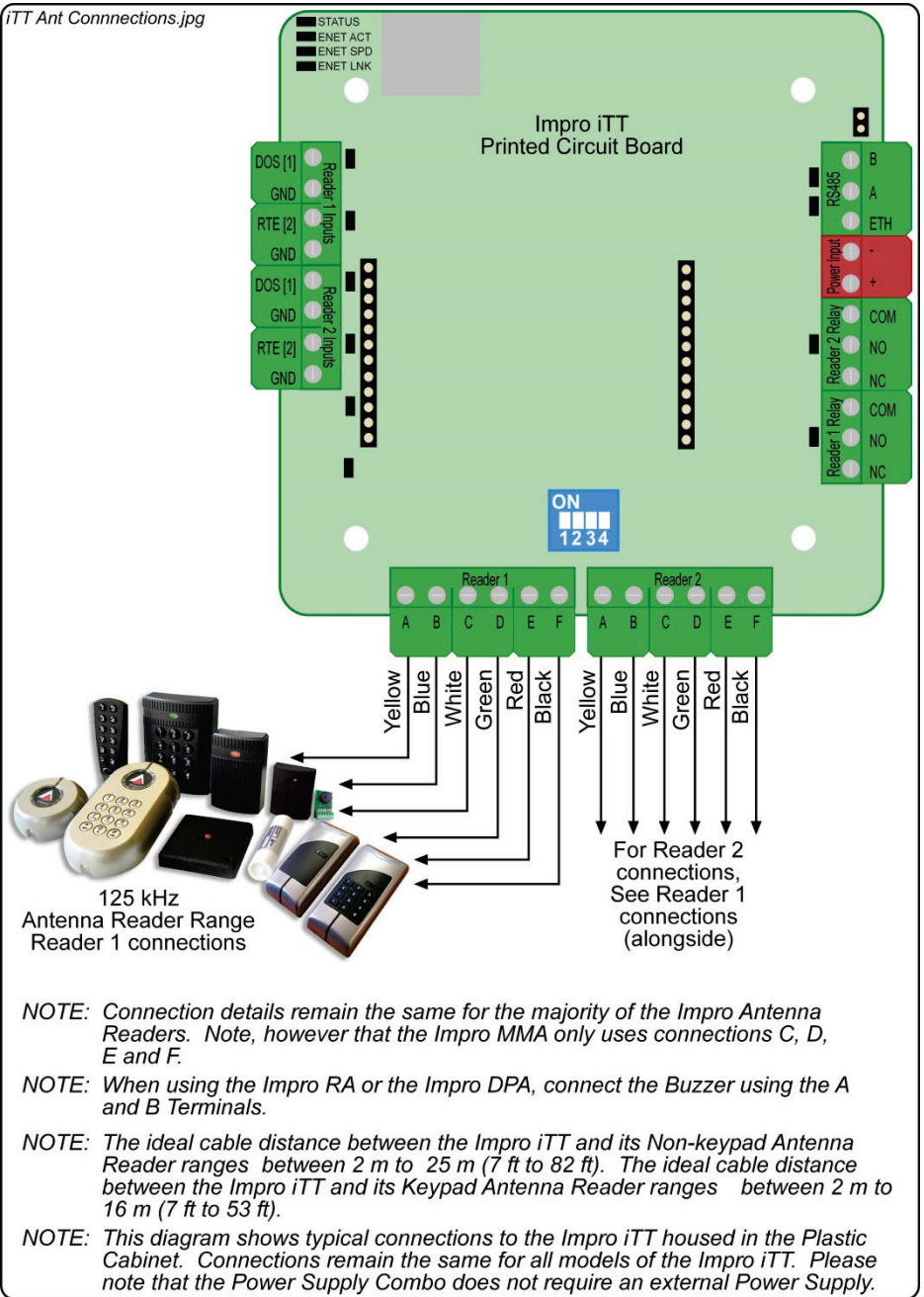


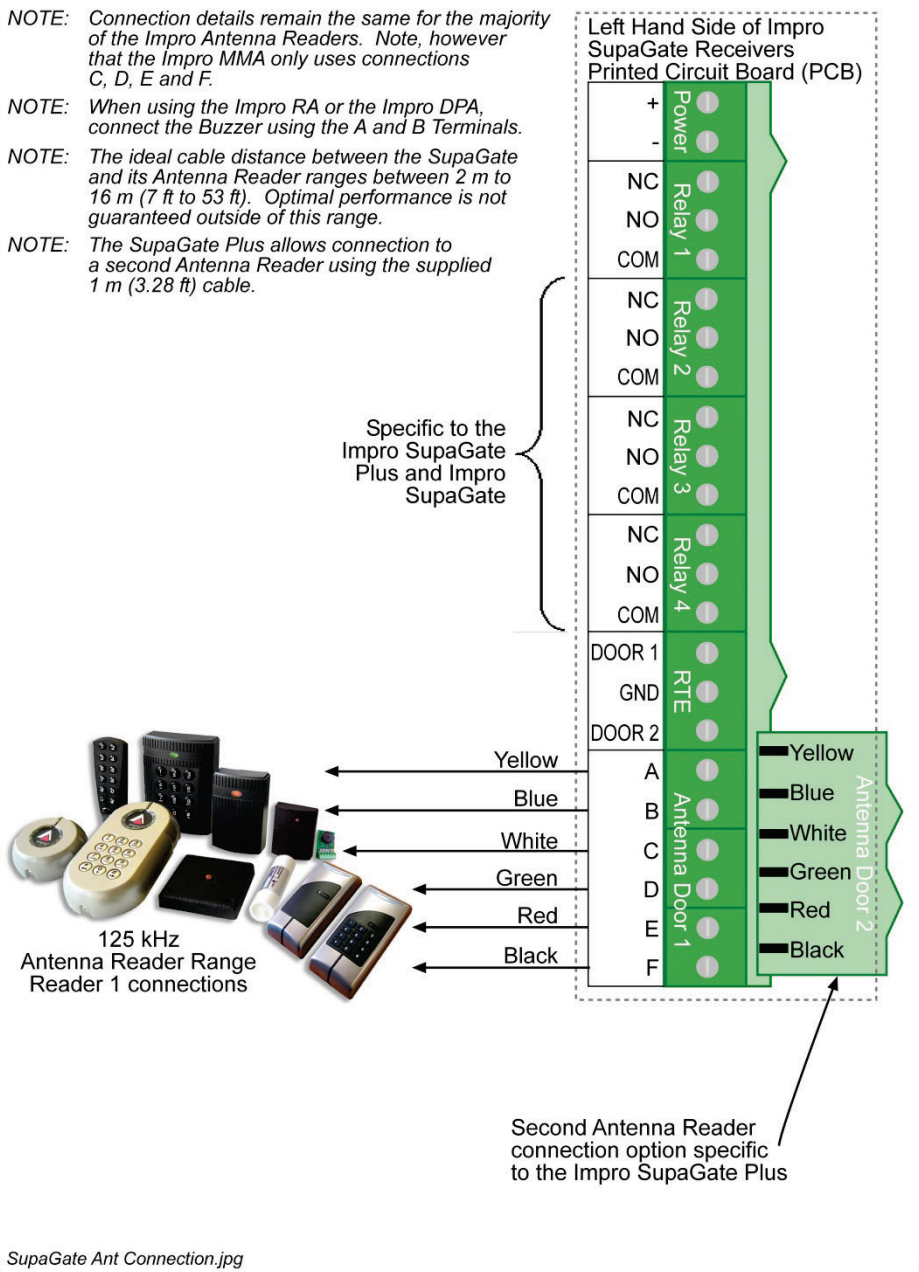
Figure 5: Impro Antenna Reader Connected to the Impro iTT

NOTE: Connection details remain the same for the majority of the Impro Antenna Readers. Note, however that the Impro MMA only uses connections C, D, E and F.

NOTE: When using the Impro RA or the Impro DPA, connect the Buzzer using the A and B Terminals.

NOTE: The ideal cable distance between the SupaGate and its Antenna Reader ranges between 2 m to 16 m (7 ft to 53 ft). Optimal performance is not guaranteed outside of this range.

NOTE: The SupaGate Plus allows connection to a second Antenna Reader using the supplied 1 m (3.28 ft) cable.



SupaGate Ant Connection.jpg

Figure 6: Impro Antenna Reader Connected to the SupaGate Receiver

NOTE: Connection details remain the same for the majority of the Impro Antenna Readers. Note, however that the Impro MMA only uses connections C, D, E and F.

NOTE: When using the Impro RA or the Impro DPA, connect the Buzzer using the A and B Terminals.

NOTE: The ideal cable distance between the Impro (MFT) Multi-function Terminal and its Antenna Reader ranges between 2 m to 16 m (7 ft to 53 ft). Optimal performance is not guaranteed outside of this range.

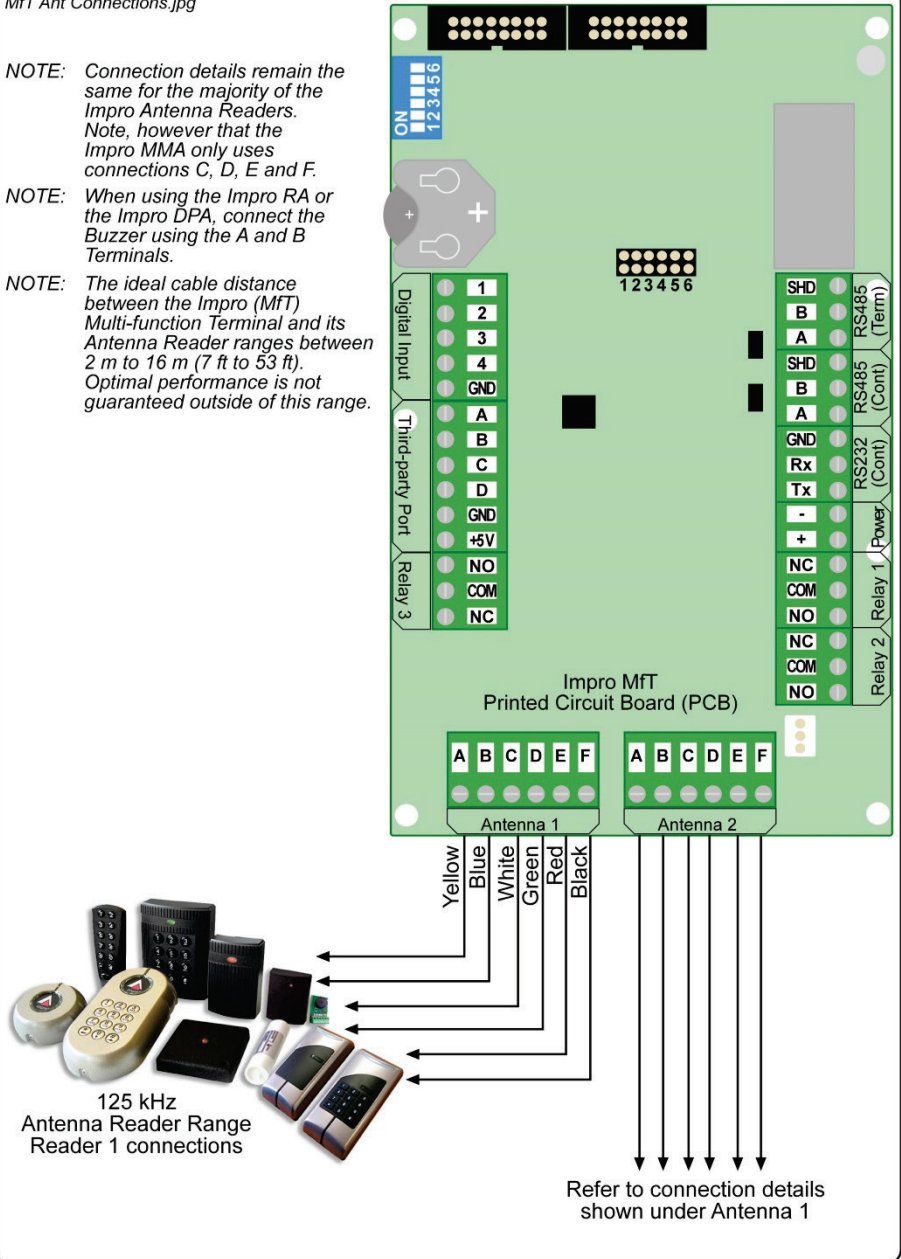


Figure 7: Impro Antenna Reader Connected to the Impro MFT

NOTE: On powering up, the Antenna Reader's Status LED will illuminate solid Red.
The Antenna Reader will not read Tags until configured in the Software.

Serial Number Label

1. Once the Antenna Reader is installed, sketch a rough site plan.
2. Attach the Antenna Reader's loose Serial Number Label and the Controller, Terminal or Receiver's Fixed Address Label, to the sketched site plan in the position of the Antenna Reader.

The Antenna Reader does not have its own Fixed Address. When connected to a Controller, Terminal or Receiver the Antenna Reader is assigned one of the available Fixed Addresses.

The Serial Number Label identifies the type of Antenna Reader, and the Fixed Address Label (shipped with the Controller, Terminal or Receiver) 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.



This manual applies to the Impro 125 kHz Antenna Readers,
HRL900-1-0-GB-XX, HRL901-1-0-GB-XX, HRL902-1-0-GB-XX, XTT901-1-0-GB-00,
XTT902-1-0-GB-01, XTT903-1-0-GB-00, XTT904-1-0-GB-03,
XTT905-1-0-GB-01, XTT906-1-0-GB-00, XTT907-1-0-GB-01,
XTT908-1-0-GB-01, XTT909-1-0-GB-00, XTT950-1-0-GB-01,
HRL905-1-0-GB-XX, XTT951-1-0-GB-02, HRL903-1-0-GB-XX,
XTT952-1-0-GB-02, HRL904-1-0-GB-XX and HRL906-1-0-GB-XX.

(The last two digits of the Impro stock code indicate the issue status of the product).

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