ANTENNA READERS

ImproX 125 kHz Antenna Readers
INSTALLATION MANUAL

SPECIFICATIONS

Working Environment

XTT901, XTT906, XTT908.....	Designed to work in an indoor or outdoor environment similar to IP66. The Antenna Readers are, therefore, sealed (potted) against water.
XTT902, XTT903, XTT904, XTT907	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, XTT951, XTT952.....	Designed to work in an indoor or protected outdoor environment similar to IP54.

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

Buzzer

Volume and Tone.....	Single tone, 4-step adjustable volume.

NOTE: The ImproX MMA (XTT901) does not include a Buzzer.

Keypad

XTT904 and XTT907.....	12 Alphanumeric keys.
XTT905 and XTT952.....	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, XTT907, XTT951 and XTT952

- Either an ImproX MMA Antenna Reader (XTT901-1-0-GB-XX) housed in a Dark Grey, ABS Plastic housing. The ImproX 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 ImproX MA Antenna Reader (XTT902-1-0-GB-XX) housed in a Dark Grey, ABS Plastic housing. The ImproX 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 ImproX MHA Antenna Reader (XTT903-1-0-GB-XX) housed in a Zinc alloy die-cast housing. The ImproX MHA consists of a Front Cover and a Backing Plate (the Backing Plate is attached with a Hexagonal Screw (M3 x 8 mm)).
- Or an ImproX KHA Antenna Reader (XTT904-1-0-GB-XX) housed in a Zinc alloy die-cast housing. The ImproX KHA consists of a Front Cover and a Backing Plate (the Backing Plate is attached with a Hexagonal Screw (M3 x 8 mm)).
- Or an ImproX KA Antenna Reader XTT907-1-0-GB-XX) housed in a Dark Grey, ABS Plastic housing. The ImproX 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 ImproX AMR Antenna Metal Reader (XTT951-1-0-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 a Hexagonal Screw (M3 x 8 mm)).
- Or an ImproX AMK Antenna Metal Keypad Reader (XTT952-1-0-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 a Hexagonal Screw (M3 x 8 mm)).
- An Allen Key (2 mm) (XTT903-1-0-GB-XX, XTT904-1-0-GB-XX, XTT951-1-0-GB-XX and XTT952-1-0-GB-XX models only).
- An extra Hexagonal Screw (M3 x 8 mm) (XTT903-1-0-GB-XX, XTT904-1-0-GB-XX, XTT951-1-0-GB-XX and XTT952-1-0-GB-XX models only).
- An extra Serial Number Label.

XTT905

- An ImproX KMA Antenna Reader housed in a Black, ABS Plastic housing. The ImproX 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 ImproX RA Antenna Reader (XTT906-1-0-GB-XX) housed in PVC sheathing. The ImproX RA includes 8 m (26 ft) of 4-core cable.
- Or an ImproX DPA Antenna Reader (XTT908-1-0-GB-XX) housed in a Black, ABS Plastic housing. The ImproX 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 ImproX CA Antenna Reader printed circuit board assemblies.
- An extra Serial Number Label.

XTT950

- An ImproX 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 ImproX 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 mm^2 (0.0003 in^2).

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) and the AMK Antenna Metal Keypad Reader (XTT952-1-0-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 ImproX MMA (XTT901) 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, 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 ImproX 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 ImproX RA in the mounting surface, using a suitable filling agent.

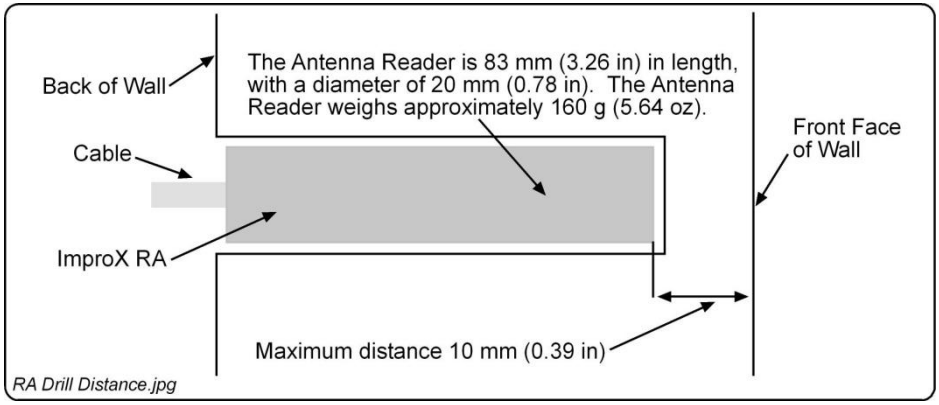


Figure 1: Mounting the ImproX RA

XTT909

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

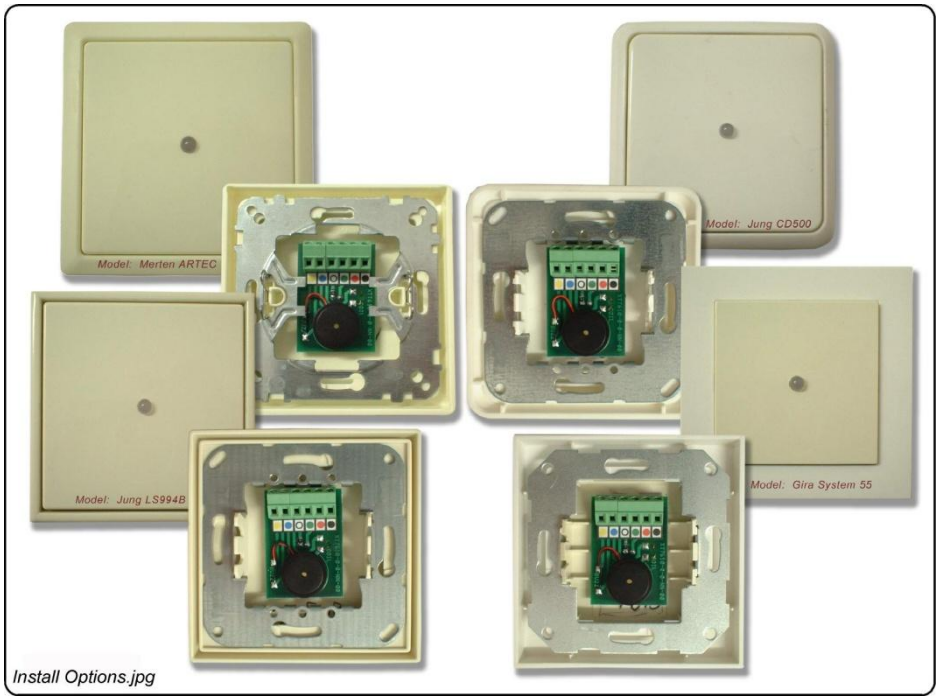


Figure 2: Electrical Conduit Blanking Plate Options

The ImproX 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 ImproX 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 ImproX CA to the back of the Electrical Conduit Blanking Plate.

Blank Space

Connecting the ImproX Antenna Readers

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

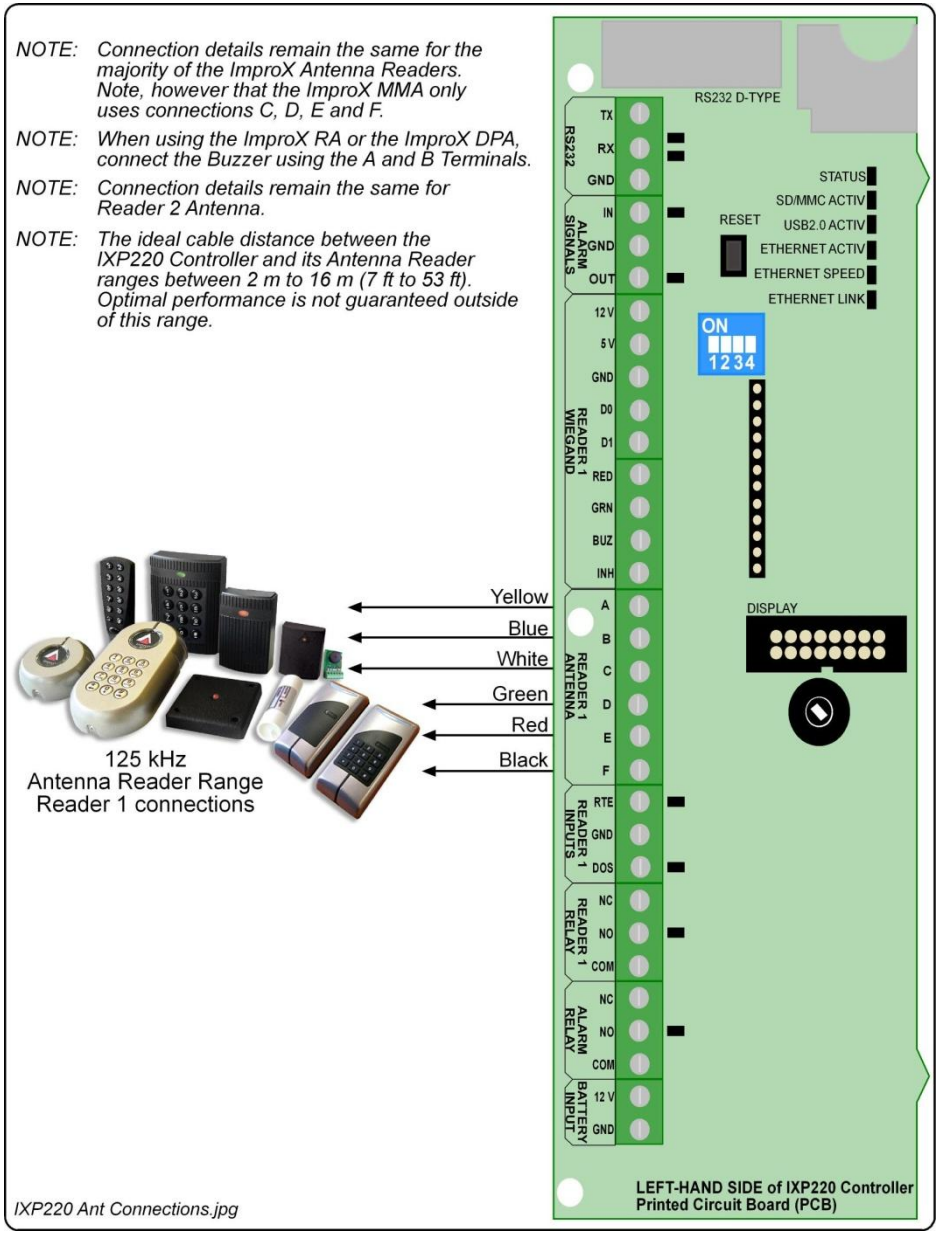


Figure 3: ImproX Antenna Reader Connected to the IXP220 Controller

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

NOTE: *When using the ImproX RA or the ImproX 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).*

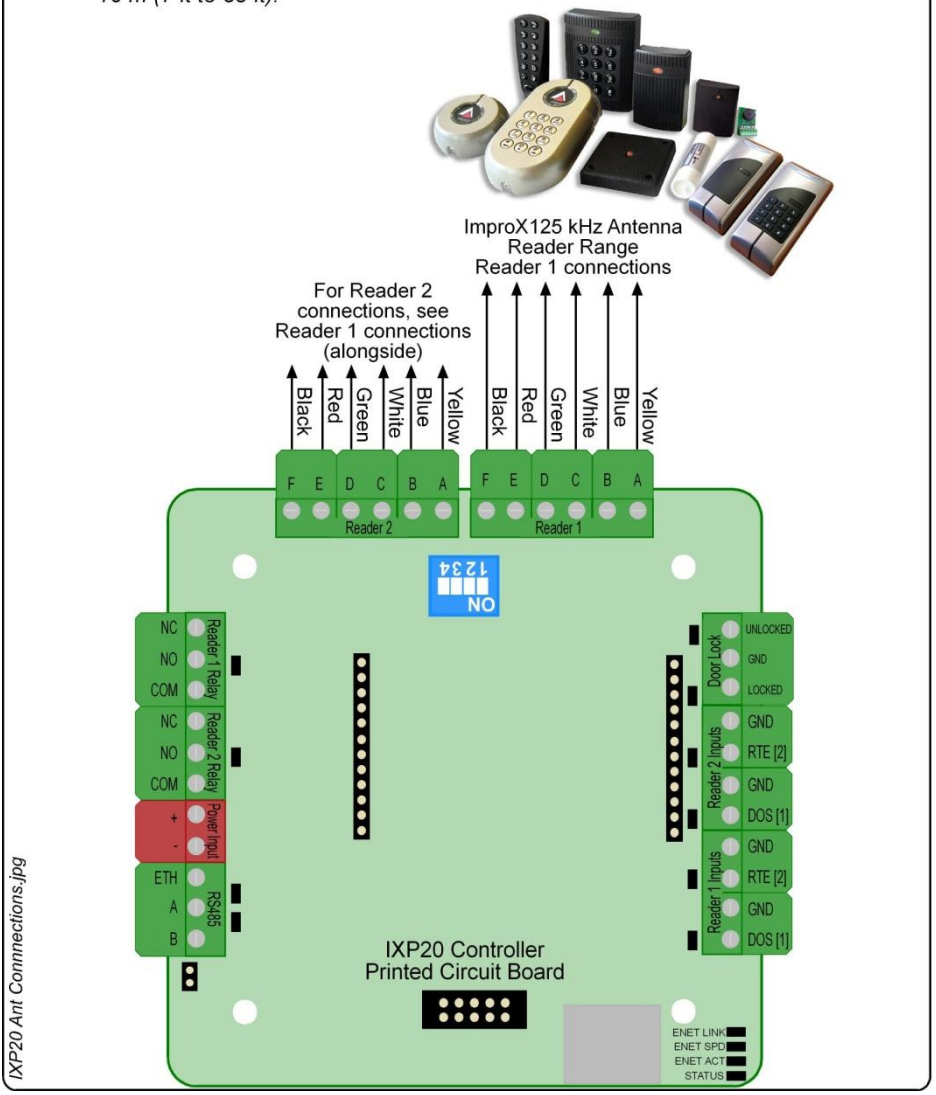
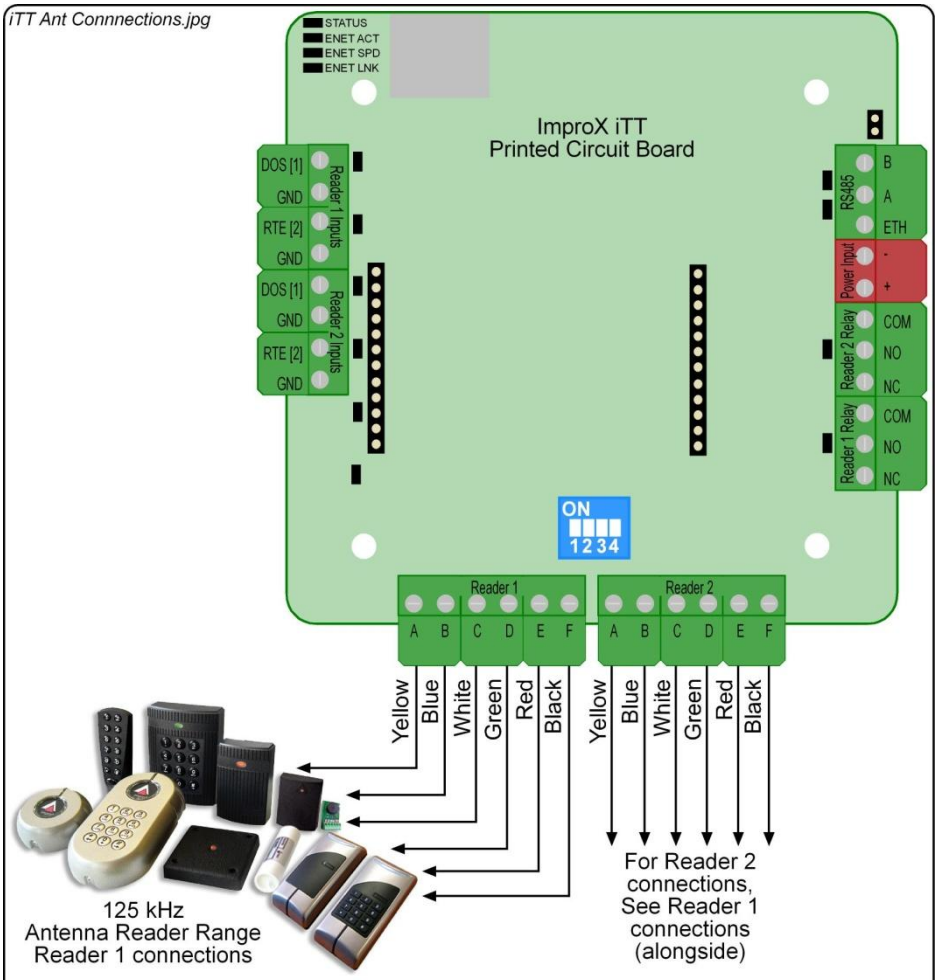


Figure 4: ImproX Antenna Reader Connected to the IXP20 Controller



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

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

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

NOTE: This diagram shows typical connections to the ImproX iTT housed in the Plastic Cabinet. Connections remain the same for all models of the ImproX iTT. Please note that the Power Supply Combo does not require an external Power Supply.

Figure 5: ImproX Antenna Reader Connected to the ImproX iTT

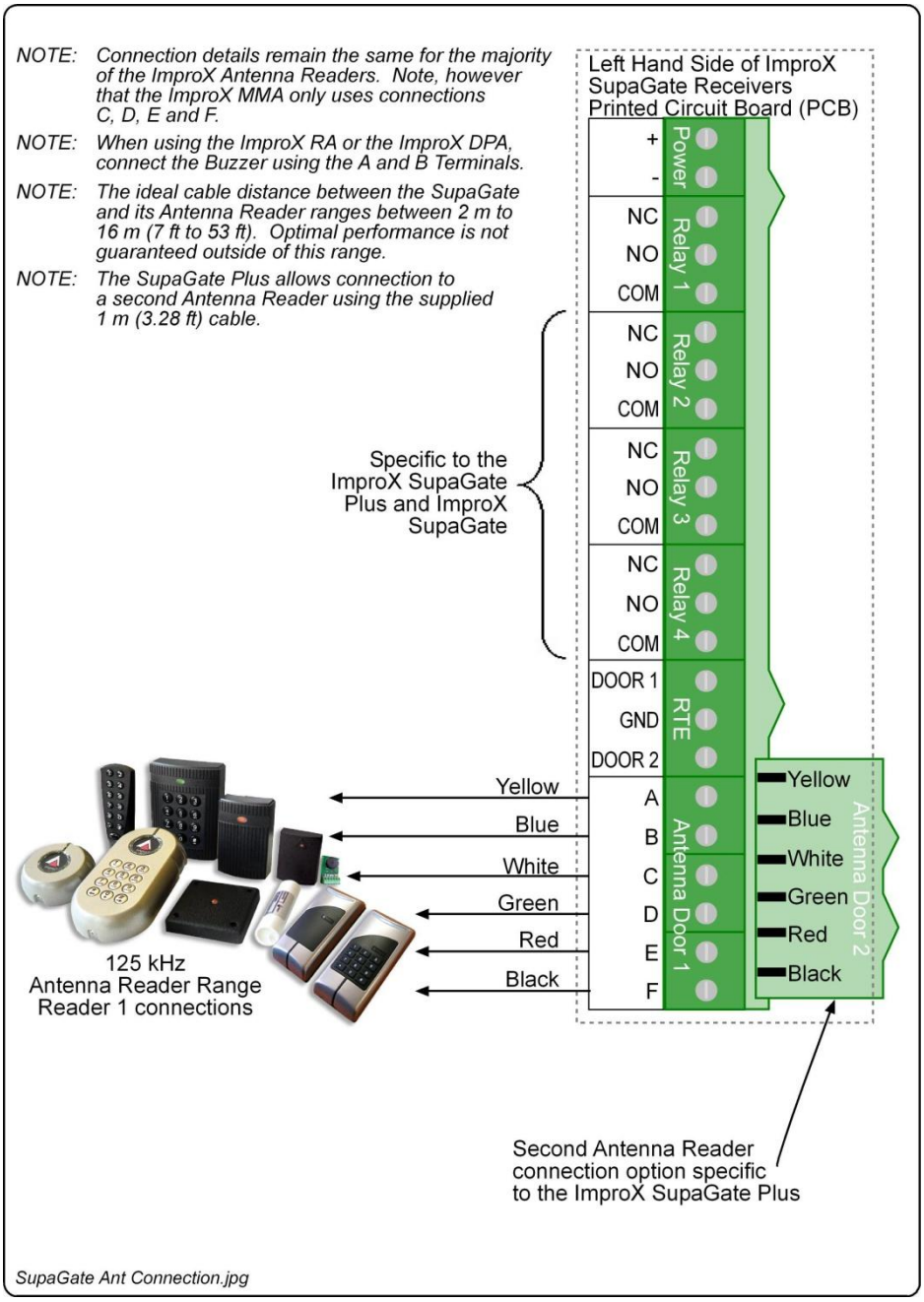


Figure 6: ImproX Antenna Reader Connected to the SupaGate Receiver

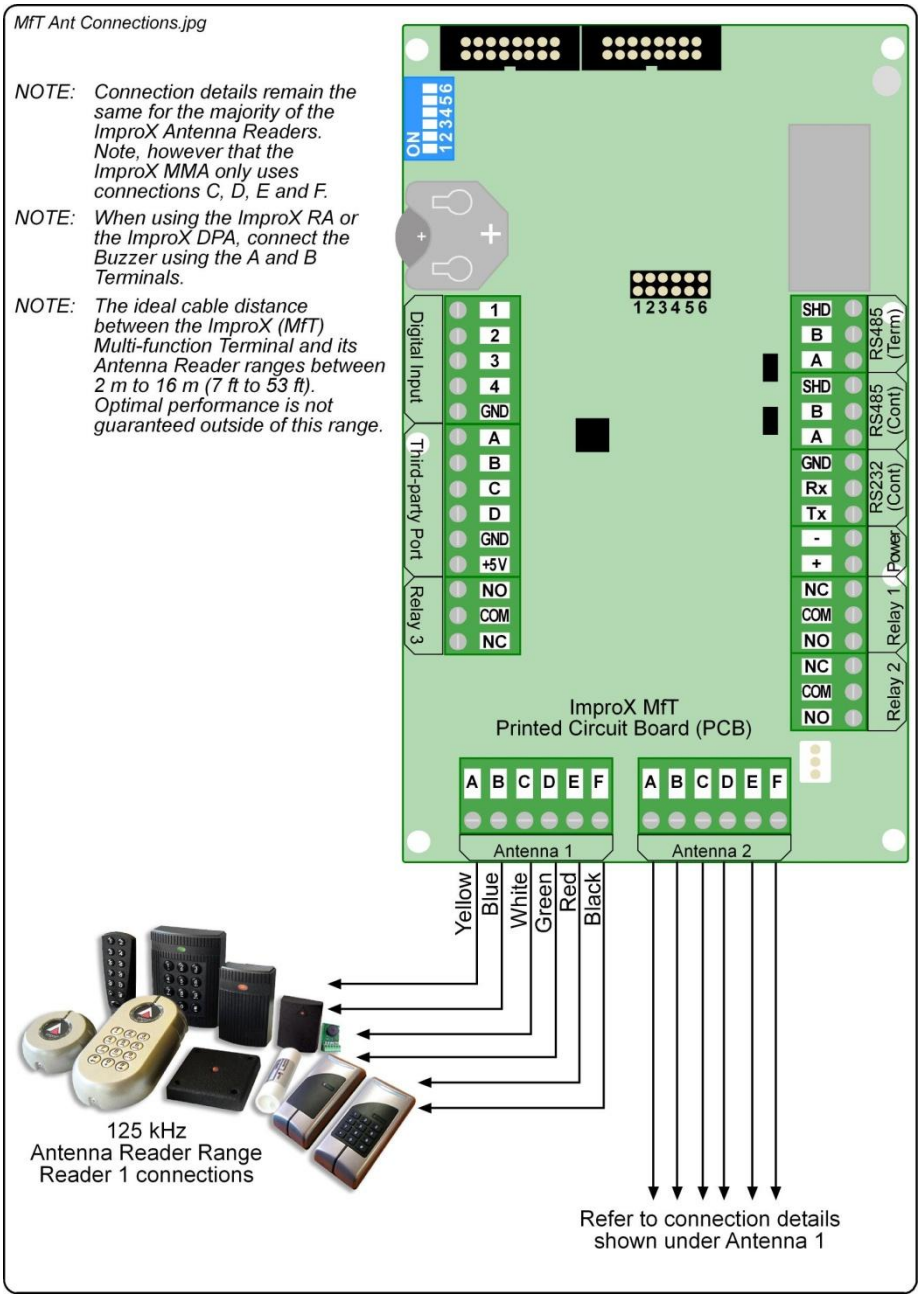


Figure 7: ImproX Antenna Reader Connected to the ImproX MfT

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.

CE

This manual applies to the ImproX 125 kHz Antenna Readers, 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, XTT951-1-0-GB-02 and XTT952-1-0-GB-02.

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

XTT301-0-0-GB-16	Issue 17	Sep 2011	ImproX Antenna Readers\English Manuals\ LATEST ISSUE\AntRdrs-insm-en-17.docx