

Overview

The Anterus™ RFID Solution provides a Radio Frequency Identification (RFID) solution from AMX that extends the capabilities of the integrated A/V or control system. The Anterus solution uses RF technology to allow seamless identification of people, assets, and objects.

Anterus components include:

- **ANT-RDR Reader (FG5172):** The ANT-RDR connects to the NetLink controller to initiate system events when an Anterus RF asset tag or ID badge passes into its zone.
- **ANT-TAG Device/Asset Tag (FG5172-01):** The ANT-TAG device/asset tag attaches to devices to identify and track their location, keep assets secure, and trigger system events.
- **ANT-BDG Badge Tag (FG5172-03):** The ANT-BDG badge tag is worn by personnel to identify them, track their location within a facility, and trigger system events while in proximity to an Anterus reader.
- **Anterus Duet Module:** The Anterus Duet Module interfaces ANT-RDR Readers with NetLink controllers.



FIG. 1 Anterus RFID Solution

ANT-RDR RFID Reader

The ANT-RDR (FG5172) connects to the NetLink controller to initiate system events whenever an ANT-TAG Device/Asset tag, or ANT-BDG ID badge passes into its zone (FIG. 2).

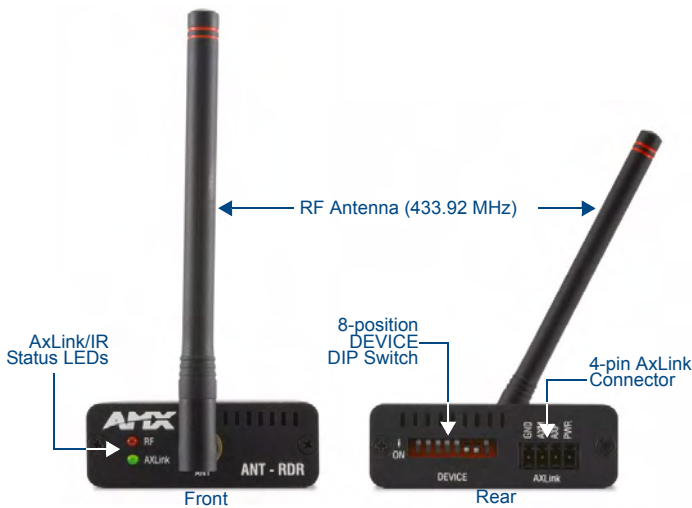


FIG. 2 ANT-RDR RFID Reader

The ANT-RDR communicates with the NetLink Master via AXLink, which supports up to 255 devices on a single AXLink bus spanning for a total distance of 3000' (915 m). The ANT-RDR uses a 4-pin 3.5 mm mini-Phoenix (male) connector to provide data and power to the ANT-RDR via the AXLink bus.

ANT-RDR Product Specifications

ANT-RDR Specifications	
Front Panel Components:	<ul style="list-style-type: none"> • RF Status LED (amber): Indicates reception from RFID tag. • AXLINK Status LED (green): Blinks to indicate the device is installed and communicating properly. Power ON, but no master connection, is indicated with a solid light. Power OFF is indicated with no light. • RF Stub Antenna (433.92 MHz)

ANT-RDR Specifications (Cont.)

Rear Panel Components:	<ul style="list-style-type: none"> • AxLink connector - 4-pin 3.5 mm mini-Phoenix (male) connector provides data and power to the ANT-RDR. • DEVICE ID 8-position DIP Switch - Used to set the unique binary device number. The device number is set by the total value of DIP switch positions that are ON (down).
RF Specifications:	<ul style="list-style-type: none"> • Transmission Frequency: 433.92 MHz Note: Anterus products are designed to not interfere with WiFi and Zigbee frequency spectrum used by other AMX products • Transmission Range: Up to 100 feet/30 meters (adjustable) Note: Tag and Reader communication distances assume optimal orientation between Tag and Reader. Read distances may also vary as a result of the presence of metal and environmental conditions.
Power Requirements:	<ul style="list-style-type: none"> • 780 mW; ±12 VDC, 90 mA (max.) • Power provided by 4-pin AxLink connector.
Environmental:	<ul style="list-style-type: none"> • Operational temperature: 32° F to 140° F (0° C to 60° C) • Storage temperature: -4° F to 158° F (-20° C to 70° C) • Humidity: 5% to 90% (non condensing)
Enclosure:	Black Metal Powder coat
Dimensions (HWD):	<ul style="list-style-type: none"> • .906 x 2.500 x 3.424 (23.01 mm x 63.50 mm x 86.96 mm) • Depth does not include antenna.
Weight:	1.59 oz. (45 grams)
Certification:	The following standards applied in accordance with Article 5 of the directive, 1999/5/EC: <ul style="list-style-type: none"> • EN 300 220-1 V1.2.1 (1997-11) • ETS 300 683 (1997-03)
Included Accessories:	<ul style="list-style-type: none"> • TBD • TBD
Other AMX Equipment:	<ul style="list-style-type: none"> • PoE Injector • TBD

Anterus RFID Tags

The two types of RFID Tags (ANT-TAG, and ANT-BDG) are described in the following subsections:

ANT-TAG Device/Asset Tag

The ANT-TAG Device/Asset Tag (FG5172-01) attaches to devices to identify and track location, keep assets secure and trigger system events (see FIG. 1).

Attach the ANT-TAG to a stationary or mobile asset to monitor the location of the asset. A tagged asset may be a non-controllable object not traditionally connected to a Master Control System, or a mobile device that is regularly moved throughout a facility.

ANT-BDG ID Badge Tag

The ANT-BDG Badge Tag (FG5172-03) is worn by personnel to identify them, track their location within a facility and trigger system events while in proximity to an ANT-RDR RFID Reader (see FIG. 1).

ANT-TAG / ANT-BDG Specifications

Models:	<ul style="list-style-type: none"> • ANT-TAG Device/Asset Tag (FG5172-01) • ANT-BDG ID Badge Tag (FG5172-03)
RF Specifications:	<ul style="list-style-type: none"> • Tx Frequency: 433 Mhz • Field strength: < 1600 µV/m • Modulation: ASK • Stability: Saw Stabilized • External Antenna
Electrical Specifications:	<ul style="list-style-type: none"> • Power: Internally powered Lithium Battery (non-replaceable) • Battery Life span: approximately 5 years.
Environmental:	<ul style="list-style-type: none"> • Operational temperature: 32° F to 140° F (0° C to 60° C) • Storage temperature: -4° F to 158° F (-20° C to 70° C) • Humidity: 5% to 90% (non condensing)
Enclosure:	ABS (ultrasonically sealed) IP 65 <ul style="list-style-type: none"> • ANT-TAG - Charcoal Grey • ANT-BDG - Black
Dimensions (HWD):	<ul style="list-style-type: none"> • ANT-TAG - 2.52" x 1.18" x .35" (64 mm x 30 mm x 9 mm) • ANT-BDG - 3.38" x 2.12" x .19" (86 mm x 54 mm x 5mm)
Weight:	<ul style="list-style-type: none"> • ANT-TAG - 0.53 oz. (15 grams) - <i>excluding antenna</i> • ANT-BDG - 0.53 oz. (15 grams)

ANT-TAG / ANT-BDG Specifications (Cont.)

Certifications:

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

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

The following standards applied in accordance with Article 5 of the directive, 1999/5/EC:

- EN 300 220-1 V1.2.1 (1997-11)
- ETS 300 683 (1997-03)

Any modification of this device without the express consent of the manufacturer could void the user authority to operate the equipment.

Anterus Tags - Internal Battery

An internal lithium battery powers the Anterus RFID Tags. Each RFID Tag will, for the duration of its life, transmit a Radio Frequency (RF) signal at a pre-set time interval. The Tag life is estimated at 5 years at a transmission time interval of approximately 1.5 seconds. The life span of the Tag ends when the battery life is exhausted. Battery status can be inferred by interrogating the internal Tag Age Counter Value.

Note: The internal lithium battery in the Anterus RFID Tags cannot be replaced. Additional and replacement tags are available from AMX. Contact your customer service representative for details.

Anterus Tags - Mounting/Installation

- ANT-TAG Tags can be mounted on a variety of non-metallic items. Where permanent fixing is required, VHB double-sided tape is used.
- ANT-BDG Tags can be mounted on a variety of items. Where permanent fixing is required VHB double-sided tape is used; otherwise, the tags may be worn on a necklace or clipped to clothing.

Anterus Tags - Antenna Orientation

For optimal RF reception, the tags should be mounted in the same orientation as the antenna used on the reader (FIG. 3). The system will still function if the orientations do not match; however, the range will be decreased. It is best to mount all tags in the same orientation, no matter if it matches the orientation of the antenna.



FIG. 3 ANT-RDR / ANT-TAG Antenna Orientation

Note: ANT-BDG ID Badge tags are typically worn on a necklace or clipped to clothing, which typically results in a vertical antenna orientation. There is a horizontal orientation for the ANT-BDG Tags, but it is typically reserved for installations that use the ANT-BDG Tags as windshield-mounted vehicle tags.

Connecting the ANT-RDR To a NetLink Master

The ANT-RDR uses a single 4-pin captive-wire AxLink port to connect the ANT-RDR to a NetLink Master, and (optionally) to other ANT-RDRs. To connect the ANT-RDR to the NetLink Master via AxLink, install the AxLink data/power bus wiring as shown in FIG. 4.

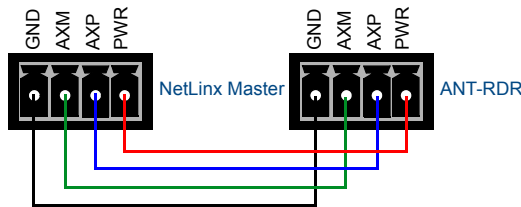


FIG. 4 AxLink data/power connections

Connecting Additional ANT-RDRs

To connect additional ANT-RDRs to create a RFID Reader Network Group, follow the standard AxLink bus wiring (FIG. 5).

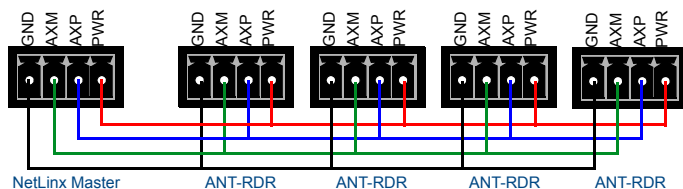


FIG. 5 Connecting Additional ANT-RDRs

Preparing And Connecting Captive Wires

1. Strip 0.25 inch of wire insulation off all wires.
2. Insert each wire into the appropriate opening on the connector according to the wiring diagrams and connector types described in this section.
3. Tighten the screws to secure the wires. Do not tighten the screws excessively; doing so may strip the threads and damage the connector.

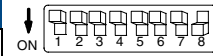
Assigning the ANT-RDR Device Address

The ANT-RDR sets its unique AxLink address via the 8-position DIP switch located on the rear panel (see FIG. 2). AxLink addresses must be in the range of 1 to 255 (address 0 belongs to the Master).

The AxLink address distinguishes a device on the AxLink bus from other devices. Care should be taken by the system integrator not to assign duplicate AxLink addresses to multiple devices.

Device DIP Switch Settings

Position	1	2	3	4	5	6	7	8
Value	1	2	4	8	16	32	64	128



Example: Device #128

Note: The device number takes effect only upon power-up. If you later change the device number, remove and reconnect the AxLink connector to enter the new device number into memory.

Anterus Tag Addressing

Use the ANT-RDR's built-in web console to add each Anterus Tag to the system, assigning each one a unique Tag ID.

Accessing the Configuration Manager

The default IP Address for the ANT-RDR is **192.XXX.XXX.XXX**.

From any PC that has access to the LAN that the ANT-RDR resides on:

1. Open a web browser and type the **IP Address** of the target ANT-RDR in the browser's Address Bar.
2. Press **Enter** to access the Configuration Manager for the specified device.
3. If prompted for a **User Name** and **Password** (FIG. 6), enter the defaults:
 - Default User Name = **Admin**
 - Default Password = **1988**
4. The initial view is the *RFID Configuration Manager* page (FIG. 6).

Name	Address	AxLink Address	Model	Errors	Status	Configure
Global Settings	0	N/A	Global Register	123456	Online	
Reader 95	95:1:1	95:1:1	ANT-READER	0	Offline	
Reader 96	Demo Reader	96:1:1	ANT-READER v0.05	123456	Online	
Reader 97	97:1:1	97:1:1	ANT-READER	0	Offline	
Reader 98	98:1:1	98:1:1	ANT-READER	0	Offline	
Reader 99	99:1:1	99:1:1	ANT-READER	0	Offline	

FIG. 6 RFID Configuration Manager - Main Page (initial view)

The options in this page allow you to view and configure the Anterus system (Readers and tags) as a whole (Global Settings), as well as view and configure each ANT-RDR Reader in the system individually. Configuration options include naming each ANT-RDR, and managing each of the RFID Tags in the system.

Additional Documentation

Refer to the Anterus RFID Solution Operation/Reference Guide (available online at www.amx.com) for additional information on installing and configuring the ANterus RFID Solution.