Patriot M Quickstart Guide

STEP 1: Power Connections (V+ and V-)

Connect power (8VDC to 48VDC) to the RFID reader red (V+) and black (V-) wires. EMX supplies a regulated DC supply of +12VDC @ 3A for your convenience. Connect the shield wire to earth ground.

Included Power Supply with Connections

STEP 2: Mounting the Reader

The mounting bracket supplied is designed for mounting the reader on a pole, wood, or concrete structure.

- The bracket should be installed at a minimum height of 5' off the ground. Mounting the reader too low will reduce range.
- Ensure a minimum of 18" from any metal or concrete surface on all sides (excluding the bracket and mounting pole). Consider using EMX's 18" wall stanchions or 94" S-shaped post to make mounting easy.
- Anything in the reader's field of view can reduce the read range due to RF reflections. This includes barrier arm operator enclosures, bollards, kiosks, etc.
- Aim the reader toward the zone of desired coverage. To achieve maximum range do not aim it downward. Maximum range is 18-25'.
- Use an 11mm wrench to mount the reader to the bracket and a 13mm wrench to mount the U-bolt to the pole.

STEP 3: Testing the Reader

Bring a tag within a few feet of the reader. You should see the blue LED on the front of the reader light and hear an audible beep. The reader will continue to beep every 1 second and the LED will light every 2 seconds for as long as the tag is in range (this is the default configuration; if your reader has a custom configuration consult the manual).
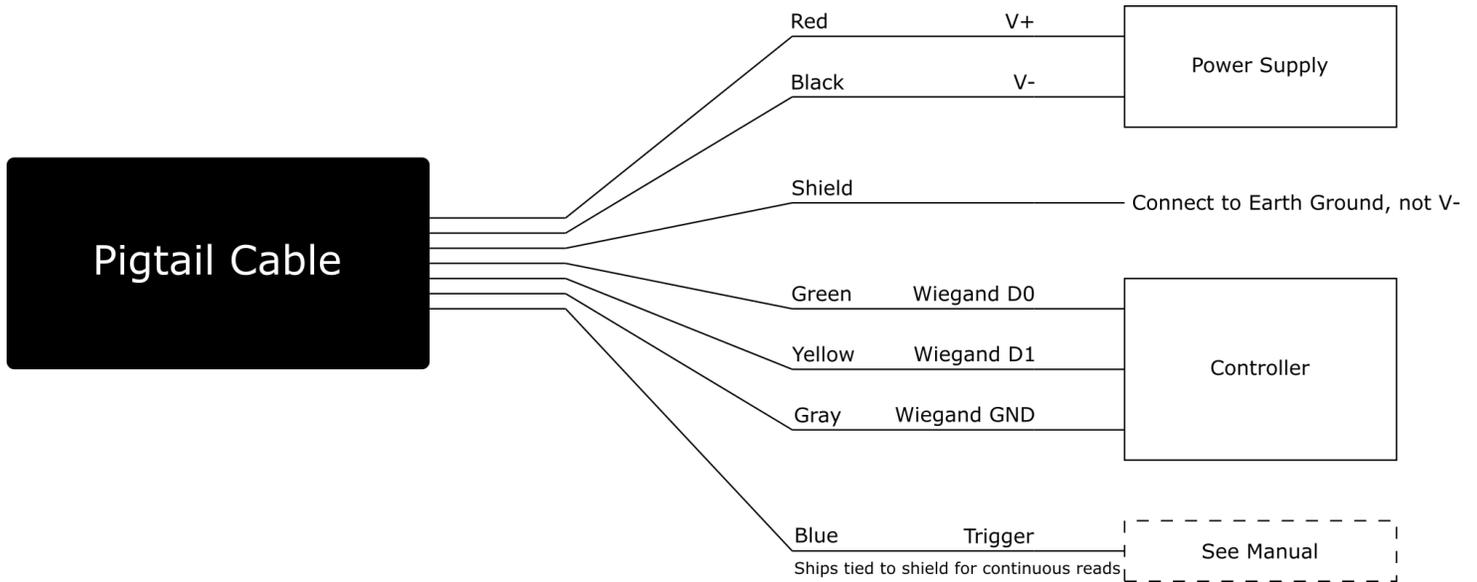
If the reader is not reading the tag, make sure that (1) the tag is vertically oriented and (2) you are holding the tag from a bottom corner since fingers on the antenna can block the signal. You may prefer to tape the tag to a piece of cardboard using masking tape. Walk a tag away from the reader until you no longer hear the beep and see the blue

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LEDs light to know the maximum distance of your zone. Test the tag at all heights where it might be installed on a vehicle.

STEP 4: Connect the reader to the controller

Connect the reader to your controller per the wiring diagram below. The typical connection is just power and Wiegand. Optionally, wire the relay output to a relay or controller input for gate control. Refer to the manual if more information is needed.

Reader Pigtail Cable Wiring Diagram:

Pigtail Cable			
Red	V+		Power Supply
Black	V-		
Shield			Connect to Earth Ground, not V-
Green	Wiegand D0		Controller
Yellow	Wiegand D1		
Gray	Wiegand GND		
Blue	Trigger		See Manual
Ships tied to shield for continuous reads			

Full Instruction Manual:

Reader Setup Software:

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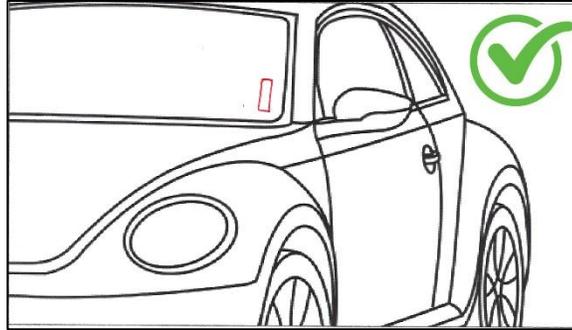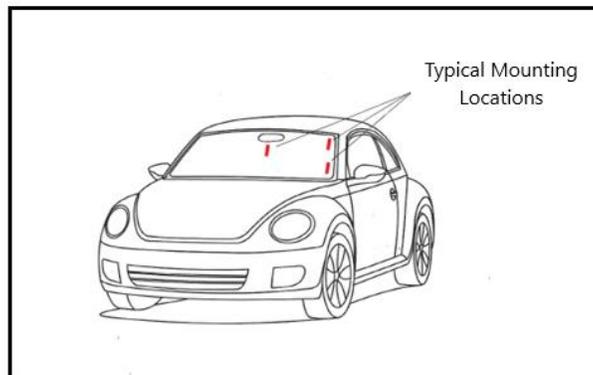**Determine Proper Tag Mounting Location:**

1. **Always mount tags vertically whenever possible.** This will guarantee the best read range for **ALL Patriot readers**. Note: Patriot-E readers (round) can read tags both vertical and horizontal orientation, but the best read range will always be vertical orientation. Patriot-L readers (square) are specifically designed to read vertical oriented tags only.

Vertical Tag

2. Best practice is to test the mounting location first. Use painters' tape or other masking tape to temporarily affix the tag and test the read range with that tag location. Drive the vehicle into the detection zone and make sure the tag is read.
3. Once a good tag read is confirmed, remove the masking tape and the backing material on the tag and attach the tag to the vehicle in the confirmed location.
4. Once the tag is attached to glass, the tag cannot be removed and repositioned without destroying the tag. Attempting to move the tag will reduce read range. A slightly crooked tag is better than trying to reposition a tag after it has been adhered to the glass.

Possible Mounting Locations:

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Always mount tags vertically whenever possible. This will guarantee the best read range for **ALL Patriot readers**. Tags should generally be mounted in one of the locations listed below:

- The most common location is **inside** the lower driver's side corner of the windshield. Mount the tag 2" away from any metal. If the reader is on the passenger side instead of the driver's side, mount the tag on the passenger side.
- Mounting in the upper corners of the windshield is possible but be aware that some windshields have antennas or metal oxide coating for UV tinting in this location that can reduce read range. Test the location using the recommended steps above prior to adhering tag to glass.
- Center mounting near the rear-view mirror is also possible for windshield stickers. Some cars have a "window" here where no metallic oxide coatings is present specifically for mounting RFID tags. Test the location using the recommended steps above prior to adhering tag to glass.
- Hang tags are always hung vertically from the rear-view mirror.
- Less common mounting locations include underneath a side view mirror or on a headlight. Test the location using the recommended steps above prior to adhering tag to vehicle.

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