

Echo[®] Wireless Receiver Installation and Operation Manual



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FCC NOTICE

FCC ID: ZOC-IMI673A01

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

INDUSTRY CANADA (IC) NOTICE

IC: 9732A-IMI673A01

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Introduction

The Echo[®] Receiver is a one-way communication wireless receiver operating in the 902-928 MHz ISM Band used for the condition monitoring of plant equipment. The receiver continuously awaits the receipt of intermittent transmissions from Echo[®] Wireless Vibration Sensors and EchoPlus[®] Wireless Junction Boxes. The Echo[®] Receiver is connected to a computer or network running Microsoft[®] SQL database and Echo[®] Data Server Software. Information received by the receiver is placed into the Microsoft[®] SQL Database where it can be manipulated by the Echo[®] Data Server software. For information on the setup and installation of the Echo[®] Wireless Vibration Sensors, EchoPlus[®] Wireless Vibration Junction Boxes, or the Echo[®] Data Server please consult their respective manuals.

Proper Handling

Proper handling of the Echo[®] Receiver is critical to preventing damage. The following should be avoided:

- Removing the cover of the receiver.
- Dropping the receiver.
- Submersing or spraying the receiver with fluids of any kind.
- Using excessive torque when mounting the unit.
- Placing the unit in strong magnetic fields.
- Exposing the unit to temperatures above 158° F or below -4° F.



Warning

Do not attempt to remove the cover of the Echo[®] Wireless Receiver. There are no customer serviceable components inside. Removing the cover will void the warranty.

Receiver Connections

The Echo[®] Wireless Receiver is equipped with 4 connectors including 2 MIL, 1 industrial Ethernet, and 1 N antenna connector. Labels for these connector are found on the bottom of the receiver.



Both MIL connectors can be used interchangeably for power or data transmission.

Location	Connector Type	Function	Quantity
A	MIL	Power Cable or Programming Cable	2
B	Industrial Ethernet	Network Cable	1
C	N	Antenna	1



Connection A – MIL Connector

The MIL connections are completely interchangeable. These connections are used for two purposes. The first is the power for the Receiver unit. A supplied power adaptor has a mating MIL connector and **powers the unit with 110-220VAC line power**. If power is connected to the receiver the blue LED will light indicating the unit is on.

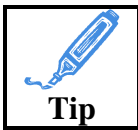


Caution DO NOT USE ANY POWER SUPPLY OTHER THAN THE ONE INCLUDED WITH THE RECEIVER! DO NOT SUPPLY POWER OTHER THAN 110-220 VAC OR DAMAGE WILL OCCUR.

The MIL connector is also used for programming and updating the Echo[®] Receiver. A special RS232 to MIL connector cable (optional) connects a computer to the receiver. For specific information on how to program or update the receiver, consult the “Programming the Receiver” section of this manual.

Connection B – Industrial Ethernet

The Ethernet connector is used to connect the receiver to your network or stand alone computer. An industrial Ethernet connector is optional but might be ideal for dirty industrial environments because the boot will provide some additional protection.



If a standalone computer is used a crossover cable is NOT needed. When connecting the computer to your network, the MAC address is conveniently located on the top of the unit.

Connection C – N Antenna Connection

The receiver’s N connection is used for the antenna input. The antenna may either be directly mounted to the receiver or connected with low loss antenna cable. For specific instructions on locating and mounting a remote antenna, please consult the Echo[®] System Installation Manual.

Locating and Installing the Receiver

The receiver must be located near a source of 110-220VAC power and an Ethernet network connection. The antenna should be located centrally to the area of interest. A good strategy is to map out your facility and mark possible locations of the receivers. Based on location and survey testing choose the optimal location. For specific information on this process, please consult the “Echo[®] Wireless System Manual”.

The receiver is included with mounting hardware which may be useful for installing it at your location. The receiver should be physically located where it can be accessed with the programming cable should settings need to be adjusted.

You may use the short antenna provided with the receiver for testing, setup, and in cases where the sensors are close to the receiver. To improve the performance, a 6 dBi gain antenna is recommended and mounted in an elevated location. In some cases a higher gain antenna, generally not to exceed 8 dBi, can be used. The antenna should be connected to the receiver using low loss antenna (add spec) cable. For specific information consult the “Echo[®] Wireless System Manual”.



Proper planning and locating the receiver in the best location can cause drastic performance enhancement. Remember – you will need to access the box with the programming cable.

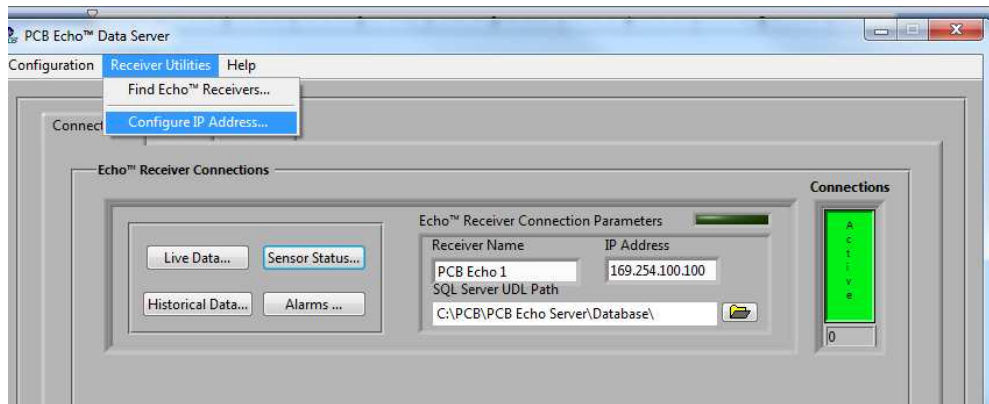
Programming the Receiver

The receiver can be programmed to a static or dynamic IP address and one of 12 independent RF frequency bands. Firmware updates can also be installed. The following equipment is required for programming the receiver:

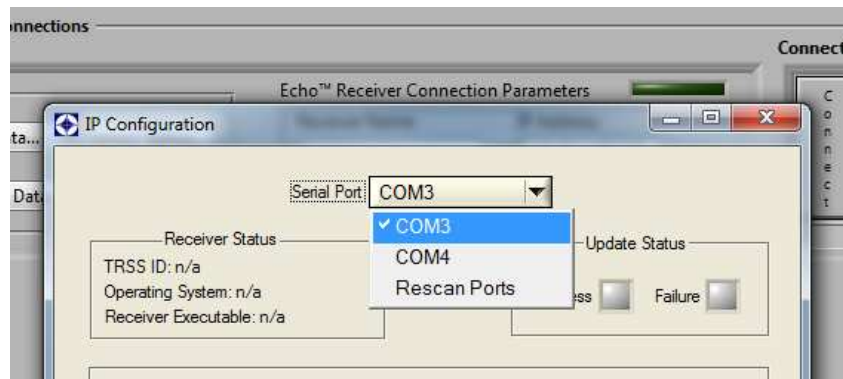
- Echo[®] Wireless Receiver
- Power supply
- Receiver programming cable
- Computer with the Echo[®] Wireless Data Server software installed

Setting a static or dynamic IP

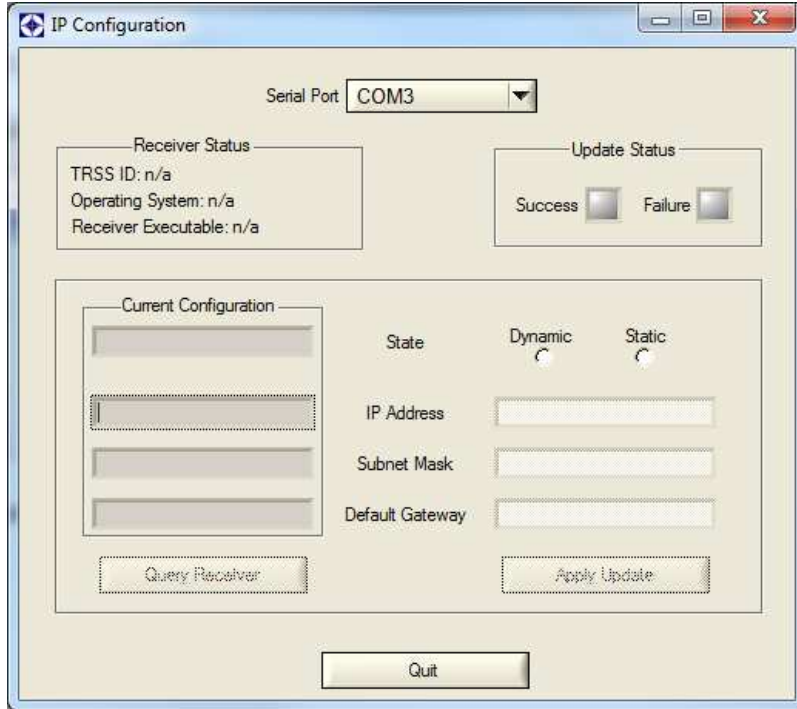
To check the status of the IP configuration, open the Echo[®] Wireless Data Server Software and click the Configure IP address button.



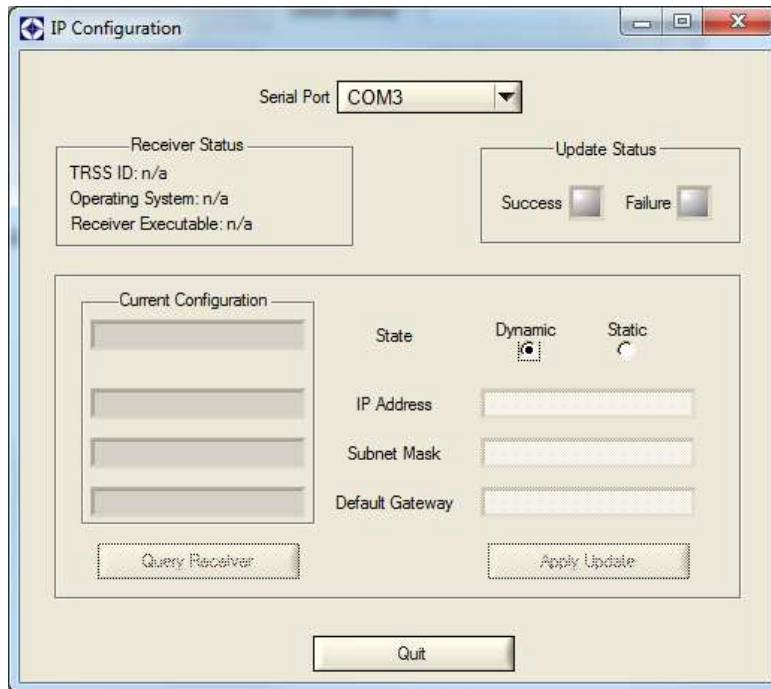
Select the COM port the receiver programming cable is connected to.



To check the current status of the receiver, click the “Query Receiver” button.



To set a Dynamic IP, click the Dynamic IP button and hit Apply Update.



To set a static IP, click the Static IP button and enter the desired IP address, subnet mask, and default gateway. Hit apply update to program the receiver.

After the receiver has been programmed hit Quit to close the programming menu.