

## GenWatch3 and 53SL Triage Guide

Use this guide to diagnose connection issues between GenWatch3 and the EF Johnson 53xx Mobile Radio. If issues suddenly appear on an existing installation, remember to ask “What has recently changed?” GenWatch3 relies on a 3-step process to receive data from the EF Johnson 53SL Mobile Radio.

1. **Receiving Control Channel Data**
2. **Transmitting this data to the GenWatch3 Host.**
3. **GenWatch3 settings and license restrictions.**

### *Determine which step has failed*

If you suspect an issue in data reception, check the **connection icon** and the **GW\_Activity** module to learn which step(s) in the process might have failed.

#### **Connection Icon**

The fastest way to see if data is being received from the radio is the connection icon in the system tray. The icon is green under normal conditions and flashes red and white when data is not being received. This icon is only displayed when GW\_Alerts is running. If you do not see the connection icon or the alerts icon, open alerts from the desktop using the GenWatch3 shortcut.



Packets are being received from the radio. Steps 1 and 3 are suspect.



Packets are not being received. Steps 1 and 2 are suspect.

#### **GW\_Activity**

Open the GW\_Activity module and look for incoming packets. If you see packet scrolling down the screen, Step 2 is not suspect. If the packets are all corrupt, **Step 1** may be failing. To learn more, double click on a packet and check the Corrupt Reason. This value will give you better explanation about the error. If no packets are displayed but the connection icon is green, **Step 3** is suspect.

### *Step 1 - Receiving Control Channel Data*

Take a look at the radio’s display. Each section below defines the problem and solution based on common display messages.

#### **The System’s ID or Alias**

This is what should appear in the display under normal operating conditions. This means the radio is receiving control channel data; however, if the signal strength is low, it

is possible to see a large amount of corruption. Please take all steps possible to increase the signal strength.

## **CNTRL CHAN**

This is what should appear in the display if the selector “tick” is switched to the channel number. Push the selector knob to switch between channel and zone markers. This means the radio is receiving control channel data; however, if the signal strength is low, it is possible to see a large amount of corruption. Please take all steps possible to increase the signal strength.

## **OUT OF RNG**

This means the control channel is not being received. This display message is accompanied by an audible tone.

1. Ensure the radio is properly connected to an antenna.



2. Check for possible interference sources.
3. Take steps to increase signal reception. Consider using a yagi style directional antenna.

NOTE: The audible tone is a good way to get immediate feed back from the radio regarding signal reception.

## **A Version number (v3.XX.XX)**

This is the SEM Version. It normally displays on start up for 1-2 seconds. If this version number remains on the screen, the radio is in boot mode. This should only be displayed when a programming dongle is inserted into the PTT port.

1. Turn off the radio and power supply.
2. Ensure the pins in the PTT port are clear of obstructions



3. Turn on the power supply and then the radio.

## **BAD FL FMT or DISABLED**

Either of these display messages means the radio will need likely need to be reprogrammed.

## **Nothing is Displayed**

Does the backlight appear to be on?

**YES:** The display’s contrast setting may need to be adjusted.

**Adjust the contrast**

1. Press and hold the **left-most** function button and then press the **right-most** function button.



2. Turn the **Select** knob to the left or right to set the desired contrast.

**No:** The Radio may be powered down.

### **Turn on the Radio**

1. Ensure the main power and accessory connector are plugged in and that the power supply is powered on.
2. Push in the Power knob to power on the radio.
3. Watch the radio display for the following startup sequence:
  - SEM Version
  - Controller Version
  - “SELF TEST”
  - Home Screen

## **Step 2 - Transmitting data to the GenWatch3 Host**

The radio sends control channel data to the GenWatch3 Host via TCP/IP connection dubbed “**Topaz**.” The Topaz connection requires that the GenWatch3 Host and radio have static IP address. Thus, neither will function if connected to a local network.

### **Pinging the Radio**

If you are unable to “ping” the radio from the GenWatch3 Host machine, a Topaz connection can not be established and Step 2 will not succeed.

1. Open a command prompt using Start → Run.



2. Type “cmd” into the open field and click OK.

3. At the command prompt, type “ping <Radio IP address>” and press enter. For this example, the IP address is 10.1.1.88.

```
C:\WINDOWS\system32>ping 10.1.1.88
```

Does the radio reply to the ping command?

```
Reply from 10.1.1.88: bytes=32 time=6ms TTL=64
```

**YES:** The physical Ethernet connection to the radio is intact. See **Ping Successful**.

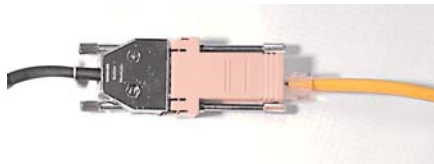
**Request timed out.**

**NO:** One or more issues could exist at the Ethernet layer. Double-check the Radio's IP Address. See **Ping Failed**.

## **Ping Failed**

If the ping command is unsuccessful, there is an error in the Ethernet connection between the GenWatch3 Host and the radio. Please take the following diagnostic steps:

1. Trace the Ethernet connection from the PC's network card to the radio's data cable making sure the DB9 to RJ45 converter (shown below) is firmly attached.



2. Ensure that any network devices used in the connection are powered on and functioning properly. Note: The radio connection is 10Mbit
  3. Ensure the Ethernet network comprised of the GenWatch3 Host and 53SL does not include any outside devices and that it is not plugged into the LAN.
- Remember if the radio is connected directly to the PC a cross-over Ethernet cable is required. Standard Ethernet cables are required if a hub or switch is used.
  - Attempt to ping the radio again after you make changes to the network configuration.

## **Ping Successful**

The ping command is successful, but data is not received on the GenWatch3 Host. It is possible that the Topaz connection was dropped by the GenWatch3 Host, but not the radio. In this event, GenWatch3 constantly tries to reconnect but the radio is not listening for a connection. Cycling the radio's power will allow the GenWatch3 Host to reconnect.

### ***Step 3 - GenWatch3 settings and license restrictions***

The GenWatch3 Host is receiving control channel data, but this data is being filtered out before it is displayed. Control channel data received by GenWatch3 Host is subject to the following criteria:

- GenWatch3 license restrictions
- Input module connection settings
- Current user restrictions
- Unique module settings

These filters may make it appear that no data is being received. For instance, a single click on the Un-Select All button in GW\_Activity will result in no packets being displayed even though valid data is being received. It is also possible to create a user restricted to a talkgroup with little or no activity. While logged in as this user, very little data will be displayed. Please see the **GenWatch3 Manual** for more information on how to resolve issues in Step 3.

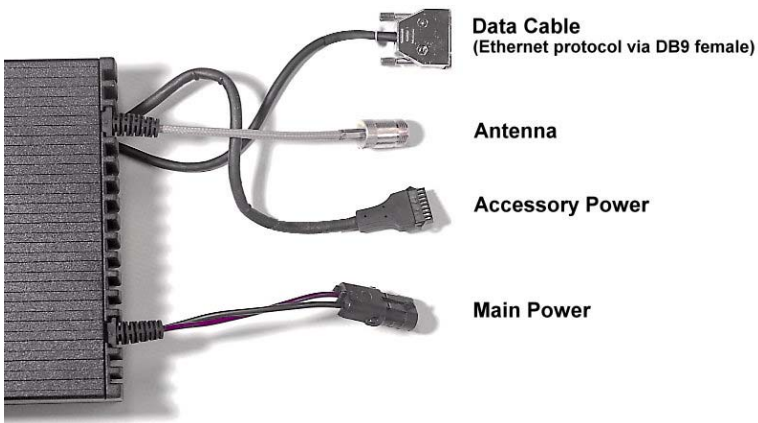
## The EF Johnson 53SL

### Front Panel



1. Power/Volume
2. Selector
3. Function Buttons
4. Display
5. PTT port

### Connections



Data Cable  
(Ethernet protocol via DB9 female)

Antenna

Accessory Power

Main Power

### 53SL w/ Power Supply

