Kenwood Viking Series Auto-Test and Alignment

CX300-TPKV

Viking Series Cable Configuration

Hardware Required

Kenwood Viking	
Portable (Handheld) Radio 1. RG-223 RF Cable (2) 2. RF Adapter BNC (F) to SMA(F) (Example Pasternack PE9407) 3. KPG-36X or 835VTKVPX000 4. Battery Eliminator (listed as NX5000) www.batteryuniverse.com	**Mobile Radio** 1. RG-223 RF Cable (2) 2. UHF(M) to BNC (F) (Example Pasternack PE91328) 3. KPG-46X or 835VTKVMH00 4. KCT-23M DC Cable 5. DC Power Supply (Switching) 30A 13.8 Vdc

ATTENTION

- Items above (Portable 2-4) and (Mobile 2-5) must be purchased separately
- Links and examples above are only suggested suppliers
- 835VTKVPX000 Viking Tune Cable must be used for Alignment of RX Filters and RX Squelch and to also test Rx Sensitivity.
- To use KPG-36X as the Program/Test cable for the RX Align/Test the cable must be modified.
- To modify KPG-36X see the schematic on Page 6. The "AF Voltmeter" is the only path required.
- If using KPG-46X for Mobiles or KPG-36X for Portables the Pod switch must be in the USB position.

For Viking Mobile Radios
Switch must be in the USB Position
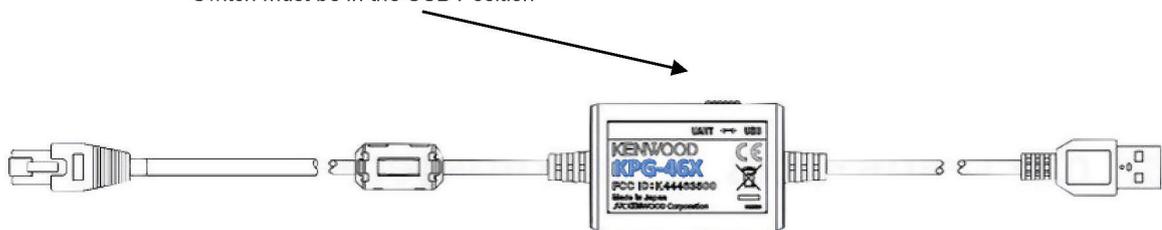
For Viking Portable Radios
Switch must be in the USB Position
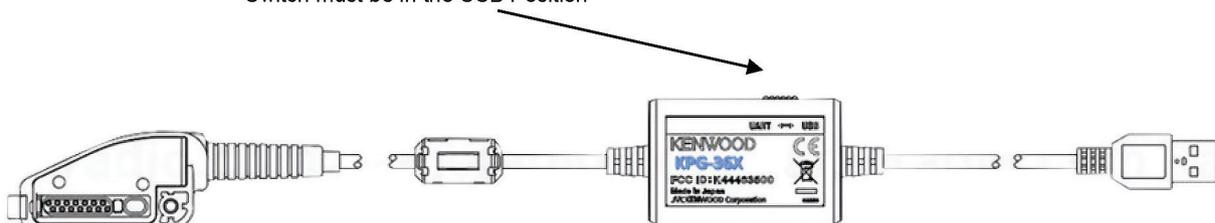
Viking Auto-Test Connection Information

Connecting the Radio to the CX300

After following the instructions in the document titled **Initial Setup Auto-Test Configuration (Including Cable Loss)** You are ready to connect the Radio to the CX300 as follows:

1. **Figure 1** shows the connection information using an unmodified KPG-36X

   a. The unmodified KPG-36X can be used to perform all Tests and Alignments **excluding** Alignment of RX Filters and RX Squelch and the Rx Sensitivity test.

2. **Figure 2** shows the connection information using a modified programming cable: KPG-36X and a user fabricated Audio Breakout box.

   a. All Alignments and Test can be performed with this configuration.

3. **Figure 3** shows the connection information using the Portable programming cable: 835VTKVPX000

   a. All Alignments and Test can be performed with this configuration.

4. **Figure 4** shows the connection information using the Mobile programming cable: **KGPX-46**

   a. Note the 3.5 mm Audio Jack to BNC (M) from the Speaker output of the radio to the Audio Input port of the CX300

   b. All Alignments and Test can be performed with this configuration.

   c. The mobile diagram is shown in reverse image for simplicity.

Portable Radio without Audio Breakout
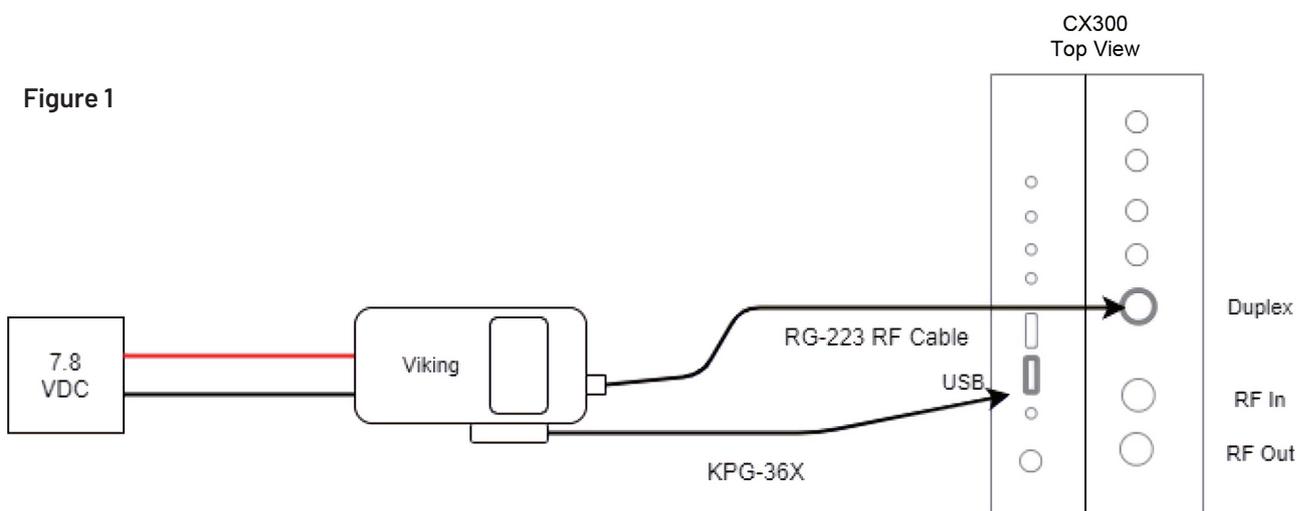
Figure 1

Portable Radio with modified KPG-36 and Audio Breakout Box

Figure 2

See Page 6 for Pinout and schematic

CX300
Top View

Demod Audio

Audio Breakout Box

Audio Input (High)

Duplex

RG-223 RF Cable

USB

RF IN

RF OUT

7.8 VDC

Viking

KPG-36X
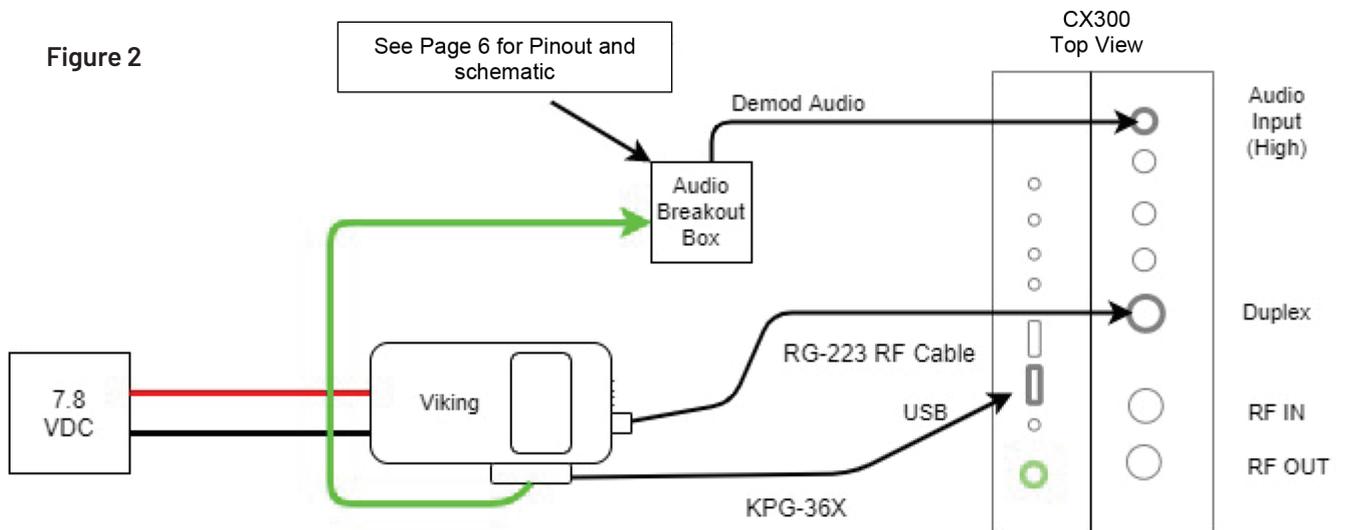
Portable Radio with 835VTK

Figure 3

CX300
Top View

Audio Input (High)

Duplex

RG-223 RF Cable

USB

RF IN

RF OUT

7.8 VDC

Viking

835VTKVPX000
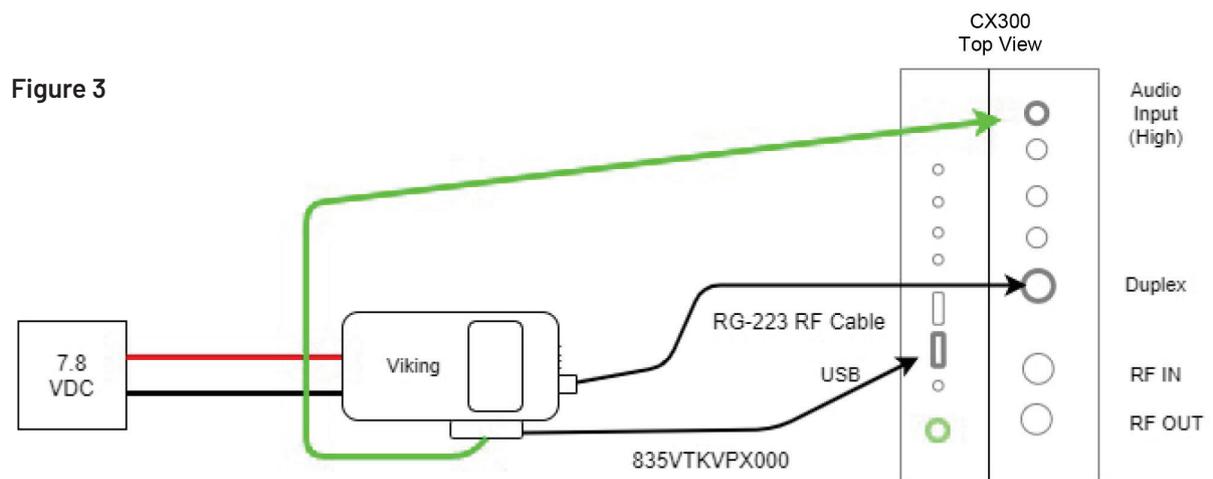
Mobile with Audio Out

Figure 4
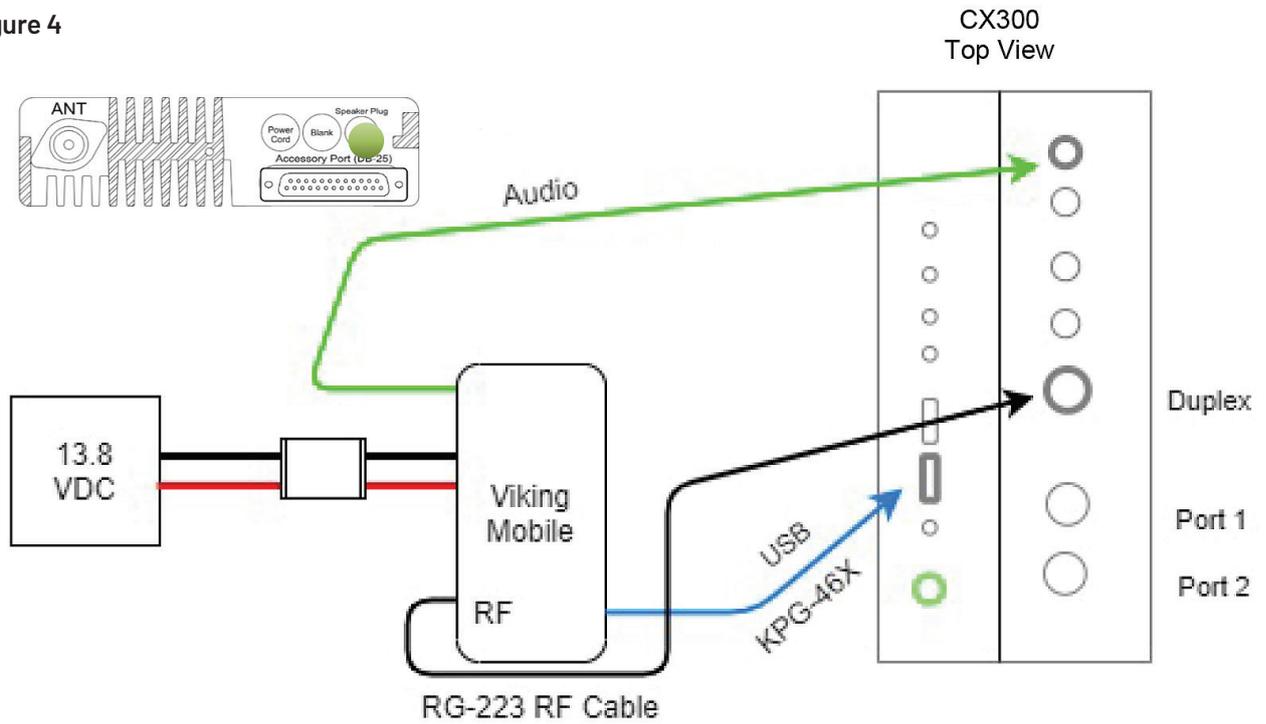
Mobile with Balanced Audio Out

Figure 4
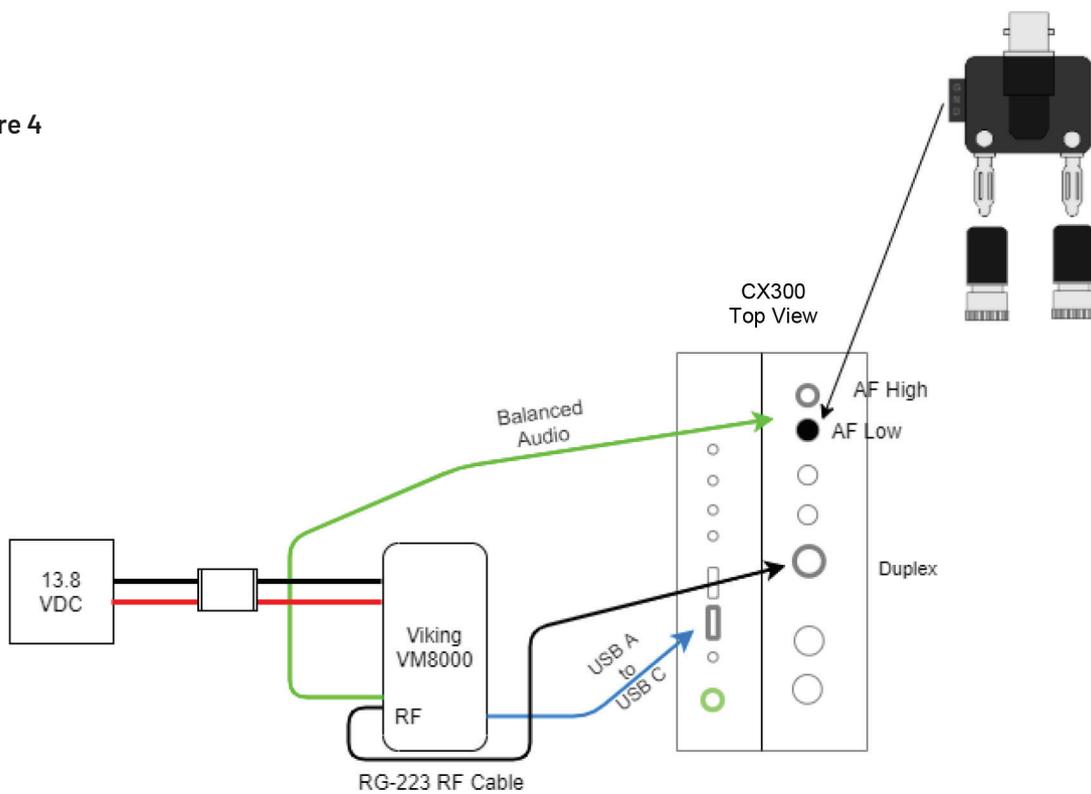
Auto-Test Sequence

With your choice of connection shown in the previous page proceed with the following:

1. With the connected radio turned 'ON" tap **Read Device**.   **Figure 5**

   a. This will bring up unique parameters for the Model of radio identified.

2. Tap the **Test Type** and select **Test** or **Align and Test**.   **Figure 6**

   a. Selecting **Test** allows all tests enabled in the left column to be executed.

   b. By tapping the **Enable** tab in the left column allows the user to enable a subset of tests.

   c. Selecting **Align and Test** will align all parameters selected in the Left column.

   d. The user can also select a subset of parameters by tapping the **Enable** tab.

3. At this point the user is ready to Start the "Test" or "Align and Test".   **Figure 7**

   a. At the Run tab select **Start**.

   b. Upon the Test completion Tap the **Reports** tab/highlight the **Report**/select **View Report**.   **Figure 8**

Figure 5

Figure 6
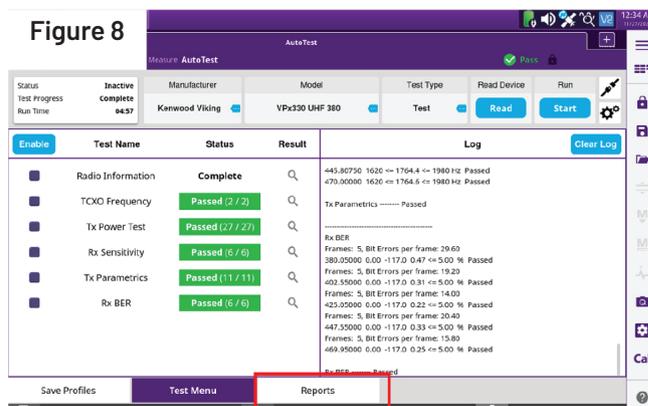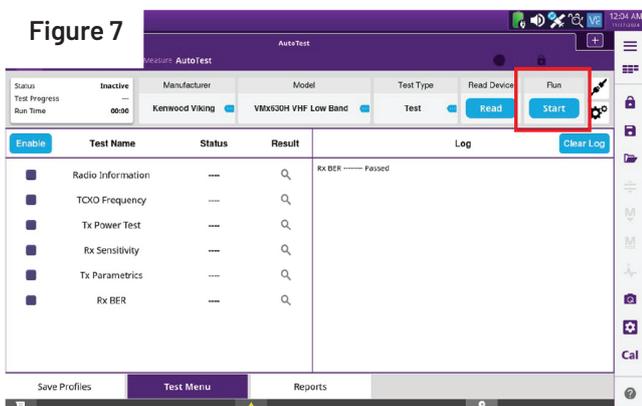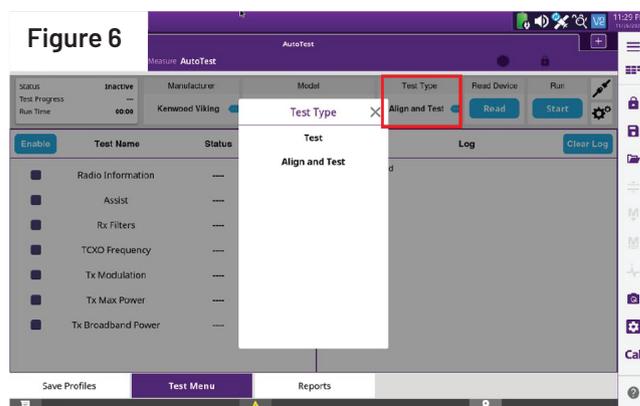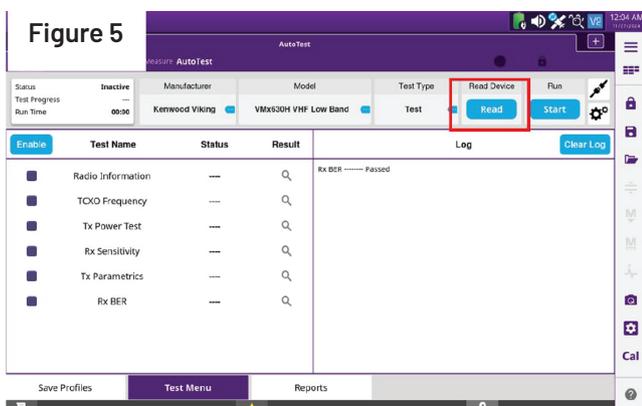
Figure 7

Figure 8

Closing the .pdf

4. To close the .pdf and return to **AutoTest Select Exit**. **Figure 9**

   a. The User can now proceed to the next Radio.

   b. If the user is testing the same model radio the user can skip **Read Radio**
      and simply select **Run**.

Figure 9
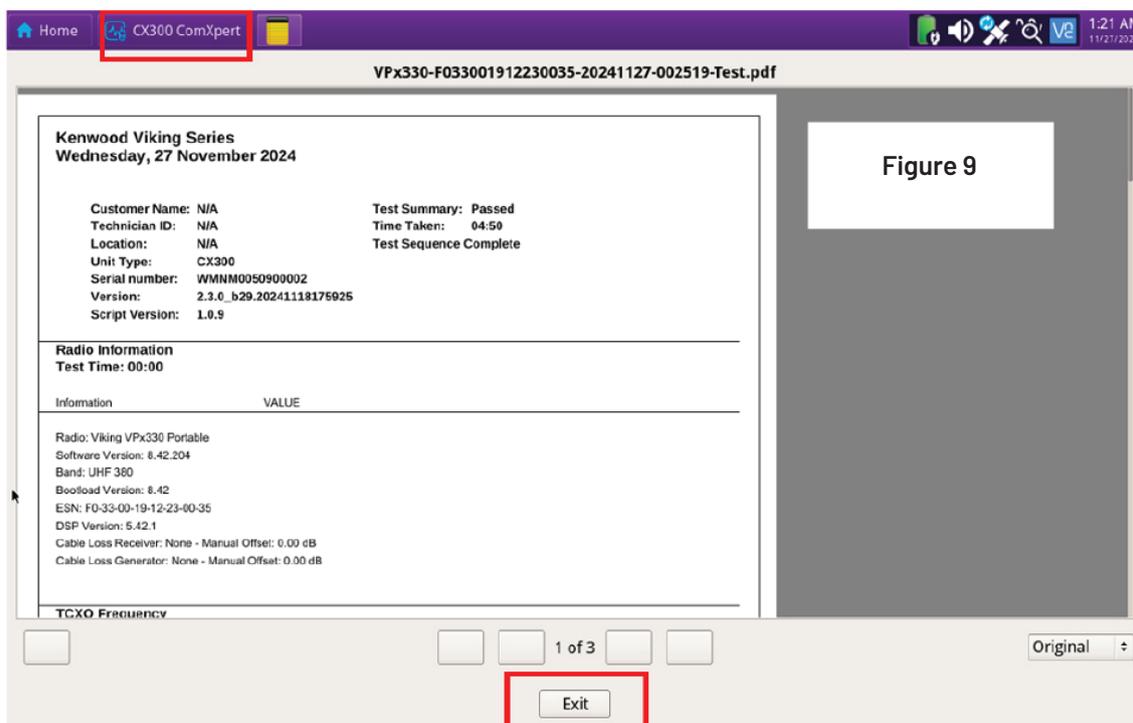
Pinout and Schematic for Audio Breakout

Universal Connector

Use the interface cable (KPG-36U) for PC tuning or the lead wire with plug (E30-3287-28) and screw (N0S-0535-08) for panel tuning. Connect the plug to the universal connector of the transceiver and tighten the screw.

The lead wire with plug (E30-3287-28) and screw (N08-0535- 08) terminals are as follows. Numbers are universal connector terminal numbers.

Caution

(1) When connecting the plug to the universal connector of the transceiver, a short circuit may occur. To prevent this, be sure to tum the transceiver POWER switch off.

(2) Since the RX AF output is a BTL output, there is a DC component. Isolate this with a capacitor or transformer as shown in the figure.

(3) Do not connect an instrument between red or black and GND.

Universal Connector


```
1 : SSW          2 : SP+
3 : SP-          4 : MSW
5 : EMC          6 : ME
7 : PTT          8 : PF
9 : OPT          10 : E
11 : 5V          12 : TXD
13 : RXD         14 : SMIC
```

Panel Tuning


```
2 : RED (RX AF OUTPUT)
3 : BLACK (RX AF OUTPUT)
5 : WHITE (MIC INPUT)
6 : BROWN (MIC GND)
7 : BLUE (PTT SW) GND → ON
8 : YELLOW (PF SW)
10 : BROWN (GND)
11 : GREEN (5M)
```
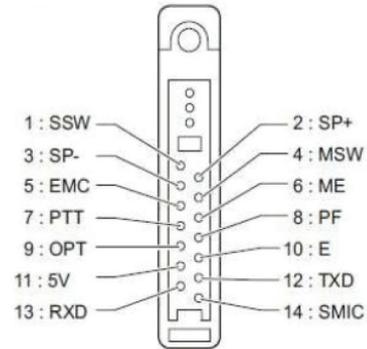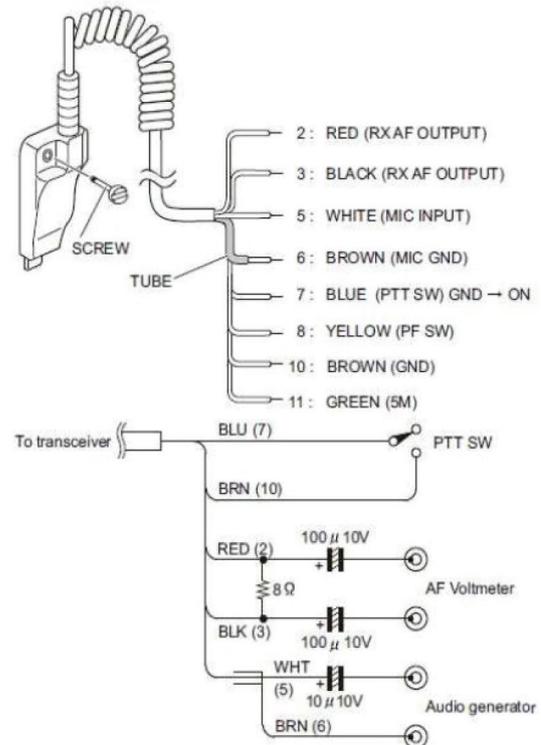
Note: Pin 1 (SSW) and Pin 4 (MSW) are connected to Pin 10 (GND) to active External SP and External MIC.