

QC test procedure for Monster IPOD FM Transmitter

Rev-1, Oct 2, 2003

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UUT shall be fully assembled PCB with wires soldered to it. The CPU (U1) has already been pre-programmed. UUT has not yet been installed inside its plastic case.

Equipment needed:

- 1) Voltmeter (3ea)
- 2) CRO (1ea)
- 3) Audio signal generator (1ea)
- 4) 12vdc power supply (1ea)
- 5) EWC Chatsworth FM Tester Receiver (1ea)
- 6) Ipod connector test interface adapter (1ea).

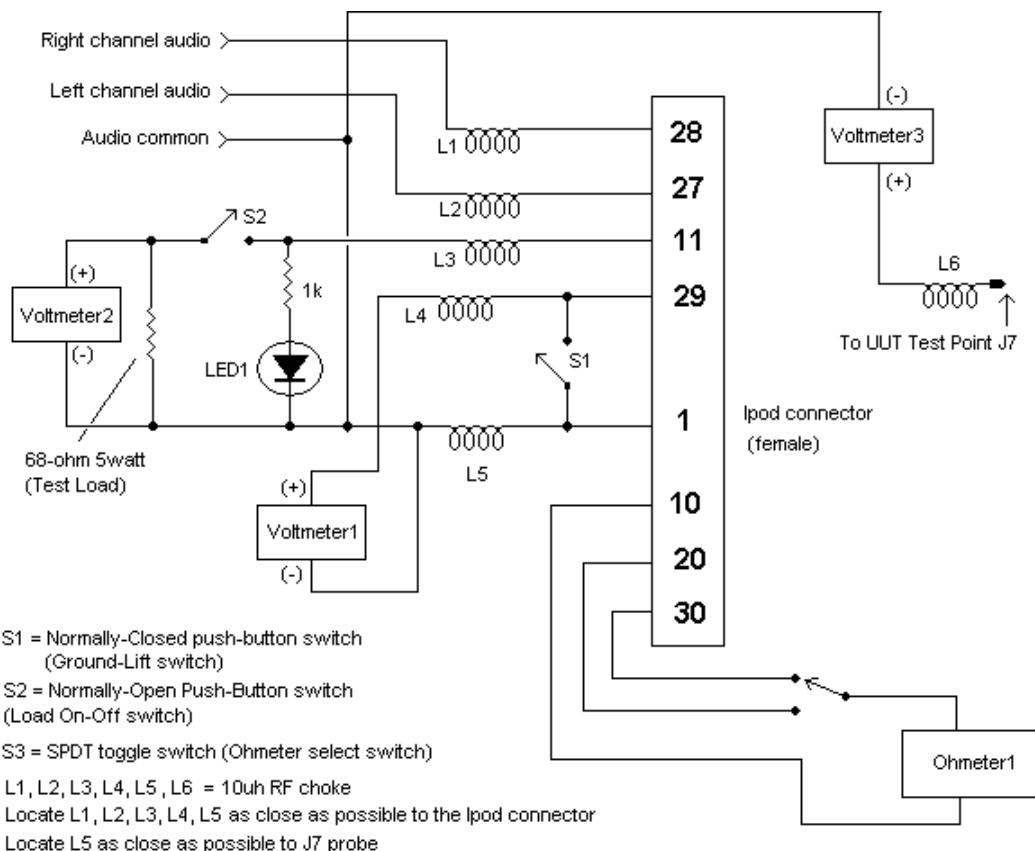


Fig.1. Schematic of Ipod connector test interface adapter.

Test setup:

- 1) Connect CRO ch-1 input to left audio output of EWC test receiver.
- 2) Connect CRO ch-2 input to right audio output of EWC test receiver.

Test procedure:

(Please see Fig. 1 above for test adapter designations used here)

Step 1: Connect UUT to test adapter (Fig. 1). Connect 12v power source to UUT. When 12v power source is applied to UUT, check that the 8 LED's of the UUT shall light up in sequence from Channel #1 to Channel #8 and then stop back at Channel#1. Check that LED1 of the test adapter goes ON and stays ON. Measure 12v current draw of UUT. Expected reading is about 47ma @ 12vdc.

Step 2: Connect Voltmeter3 to uut test point J7 via 10uh RF choke. Please ensure that the 10uh RF choke is located as close as possible to the uut J7. Observe voltage displayed by Voltmeter3. Adjust UUT trimmer capacitor C26 so that the Voltmeter3 reads as close to 1.25v as possible. Any voltage reading between 1.1v to 1.4v is acceptable.

Step 3: Press SW1 of UUT 7 times until Channel-8 LED of UUT is activated.

Step 4: Observe voltage measured by Voltmeter3. Wait for voltage reading to stabilize. Do not adjust C26. Observe Voltmeter3 reading only. UUT is GOOD if voltage is less than 2.6v and greater than 1.4v.

Step 5: Connect EWC Chatsworth FM test receiver RF input to uut. Preset the test receiver to the same channel as UUT and measure the RF output of the uut. Connection of test receiver to UUT shall be as follows:

Test receiver Common = UUT J9

Test receiver RF input = UUT J2

The EWC Chatsworth FM receiver has a bar graph display that functions as an RF voltmeter to measure the RF output of the uut. Since the RF is at 89mhz, please ensure that the jig connections are made with leads as short as possible between the coax cable RF input of receiver and the UUT. Note that the test Receiver has internal attenuator DIP switches so sensitivity can be adjusted to calibrate with test jig setup used.

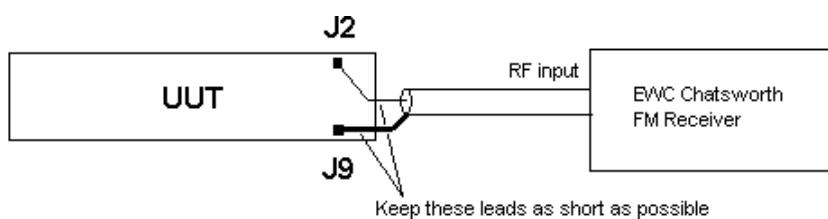


Fig.2. Connection between EWC Test receiver and UUT.

Step 6: Connect 1khz sinewave audio to Left channel input of UUT via Test adapter (Fig.1). Observe waveform displayed by CRO for Left channel output of Test receiver. Check that there is no audio on Right channel.

Step 7: Disconnect 1khz sinewave audio connection to left channel input of UUT. Connect 1khz sinewave audio to Right channel input of UUT via Test adapter (Fig.1). Observe waveform displayed by CRO for Right channel output of Test receiver. Check that there is no audio on Left channel. Check that level is the same as level observed from Left channel in the last step.

Step 8: Disconnect test receiver from UUT J2 and J9. Voltmeter3 connection to J7 may also be disconnected now.

Step 9: Press the momentary push-button switch S2 (Load On-OFF) of the Ipod connector test adapter. Observe Voltmeter2 reading. Acceptable reading is no less than about 1.0v less than 12v power supply voltage (11.0v).

Step 10: Press the momentary push button switch S1 (Ground-Lift switch) of the Ipod connector test adapter. Check that voltmeter1 reads between {0.5v - 0.75v}. UUT is bad if voltage is outside of this acceptable range.

Step 11: Measure resistance of Ipod UUT connector:

Pin 30 to pin 10 = 1.00k 1%

Pin 30 to pin 20 = zero ohms

Refer to Ohmeter1 of test adapter (Fig 1).

Final QC Check:

For assembled UUT in plastic case:

- 1) Connect to +12v supply
- 2) Check that all eight LEDS go ON one by one upon powerup.
- 3) Observe current draw from 12v power supply. Check that LED of uut CLA Plug is ON.
- 4) Connect UUT to Apple Ipod MP3 player
- 5) Activate Apple Ipod to play music. Set UUT to channel 1.
- 6) Listen for music with an FM radio tuned to 88.1 mhz. Observe quality of music: check for clean audio on both Left and Right channels operating in stereo. Check that FM radio "STEREO" indicator is ON.
- 7) Tune FM radio to 89.5 mhz. Press the push-button of UUT 7 times until UUT is at channel-8. Observe the mechanical operation of the push button switch while pressing the switch. Check that the switch movement is smooth and produces a tactile feedback.
- 8) Observe how long it takes for UUT to stabilize at 89.5mhz. Observe quality of music.