

XMPCR DIGITAL OUT

Installation Guide



What does this board do?

Once installed in your XM Radio PCR unit (XMPCR) this little module will allow you to enjoy a completely digital audio path. The purpose of the board is to allow a TOSLINK compatible digital audio signal to be outputted along with the normal analog audio.

This board is designed to minimize installation time and effort by requiring only six connections inside the XMPCR unit. The board, including the TOSLINK interface connector, is designed to fit entirely inside the plastic case of the XMPCR unit. A small opening must be cut or nibbled into the plastic case to allow an optical cable to reach the interface connector.

Here's a bit of technical info.

The XMPCR unit contains a small metal 'can' that holds the complete radio system. This 'can' outputs four signals that are fed to a Crystal Semiconductor Digital-to-Analog (D/A) converter chip mounted on the underside of the Printed Circuit Board (PCB). This chip converts the digital stream from the satellite to audio. The board in this kit uses the same 4 signals, but uses them to convert the stream into an optical signal that can be fed into other optical equipped stereo components including 'mini-disc', DAT, and PCs. The circuit is based on the Texas Instruments/Burr-Brown DIT4096 chip. The output of this chip is sent to a Toshiba TOTX173 interface. This interface was chosen because of its low profile, allowing even the largest optical cable to easily connect to a modified XMPCR unit.

The board is attached to the XMPCR by 6 connections aligned along the rear edge of the PCB. Simply line up the board with pin 1 of the metal 'can' (pictures are provided in the guide showing this alignment) and neatly solder the necessary points. Two of these connections are to power the board, the other four handle the digital audio stream.

Installation Instructions

Disassembly

Remove the four screws in the PCR unit using a Torx T6 driver (a small Allen wrench will also work).

Remove the PCB

Turn the unit over and remove the top of the case. Don't lose the XM PCR logo (where the green LED shows through).

Line up the DIGITAL OUT Board

Using the pictures provided, locate pin 1 of the metal can. Line up the DIGITAL OUT with pin 1. Solder the 6 connections. Be careful not to let solder run down to the PCR PCB.

Extra Strength

At the connector end of the DIGITAL OUT board place a small blob of solder to help hold the board in place. Use a hobby knife or similar to scratch the solder mask off the PCR PCB. Then connect the newly exposed copper to the trace running down the edge of the DIGITAL OUT board.

Connector Cutout

Hold the PCR case halves together. While looking at the back (the connector area) of the PCR, trace the cutout of the included label. Make sure where you place the label will line up with the installed DIGITAL OUT board. This will be the area which needs to be removed. Using a nibbling tool, hobby knife or some other means, remove the material inside this traced area. Make sure you remove all material including the drawn line.

Check Fit

Place the modified PCR PCB back into the bottom half of the case. Adjust your cutout as needed.

Testing

Attach USB, Antenna, and ' Normal' Audio cables. Start the Software provided with the PCR. When you hear audio, listen for any hiss or noise. If you hear anything other than clean audio, re-check your soldering around pins 6-9 of the PCR metal can. At this time the DIGITAL OUT board should be ' Lit' . Connect to your optical equipment and make sure you are hearing audio through the digital interface. All boards are tested before being placed in a kit. If you have no digital audio, make sure you haven't shorted any of the traces on the DIGITAL OUT board while soldering to the metal can.

Re case

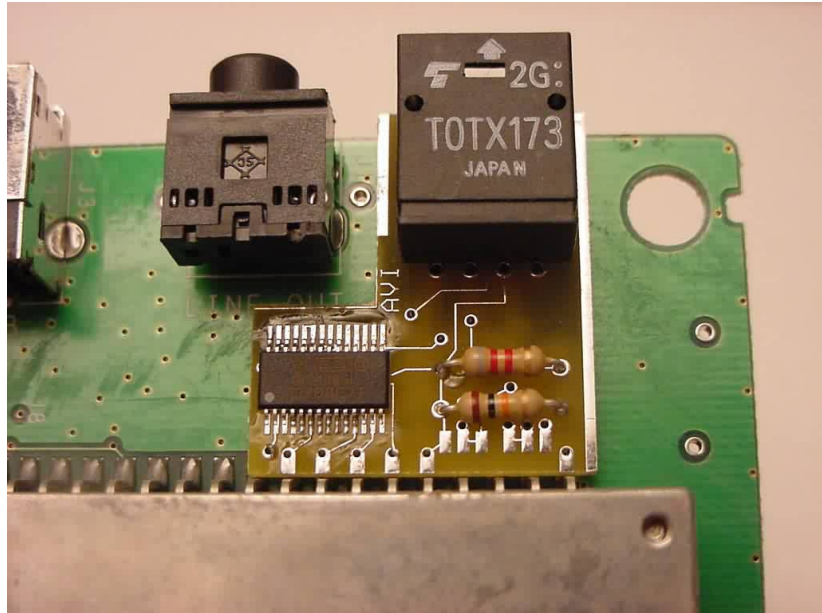
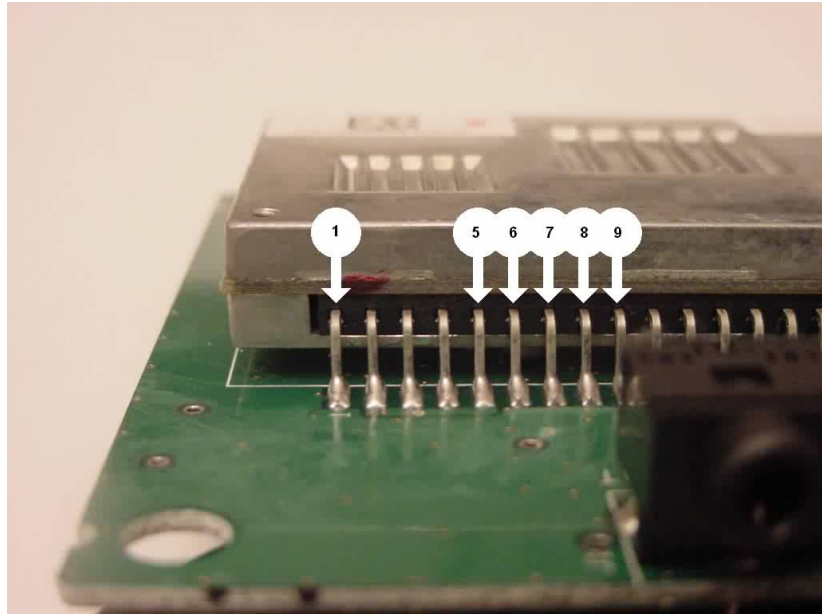
Place the top half of the PCR case onto the bottom half, making sure the new optical connector has clearance and adjust as needed. Remember to replace the XM PCR logo. Replace the four screws.

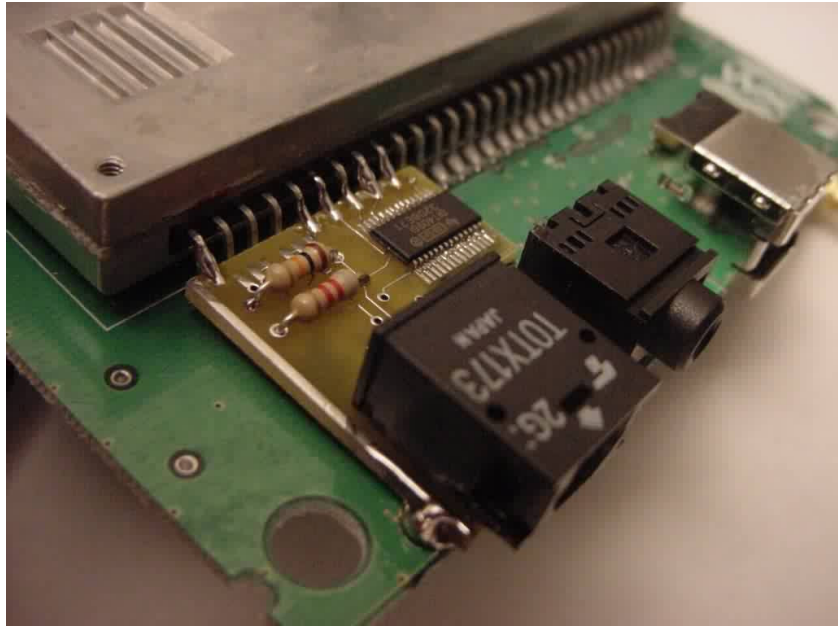
Label

The label used to trace the cutout should now be installed. Remove the paper covering the adhesive. Place around the DIGITAL OUT connector.

Enjoy!









The manufacturer of this product is not liable for misuse of this product. Misuse includes improper installation, damage to the board or radio while trying to install, and illegal use of the modified radio (i.e., to create pirated CDs or files for P2P use.) While every care has been taken to provide a quality product, the manufacturer cannot guarantee the board to function correctly if installation is not done according to the instructions in this guide.

There are no warranties expressed or implied by purchase of this product. All boards are tested and verified 100% before shipping. In addition, modifying the radio will void any outstanding warranty it may have.

This Document and Board are not affiliated with XM Satellite Radio in any way.