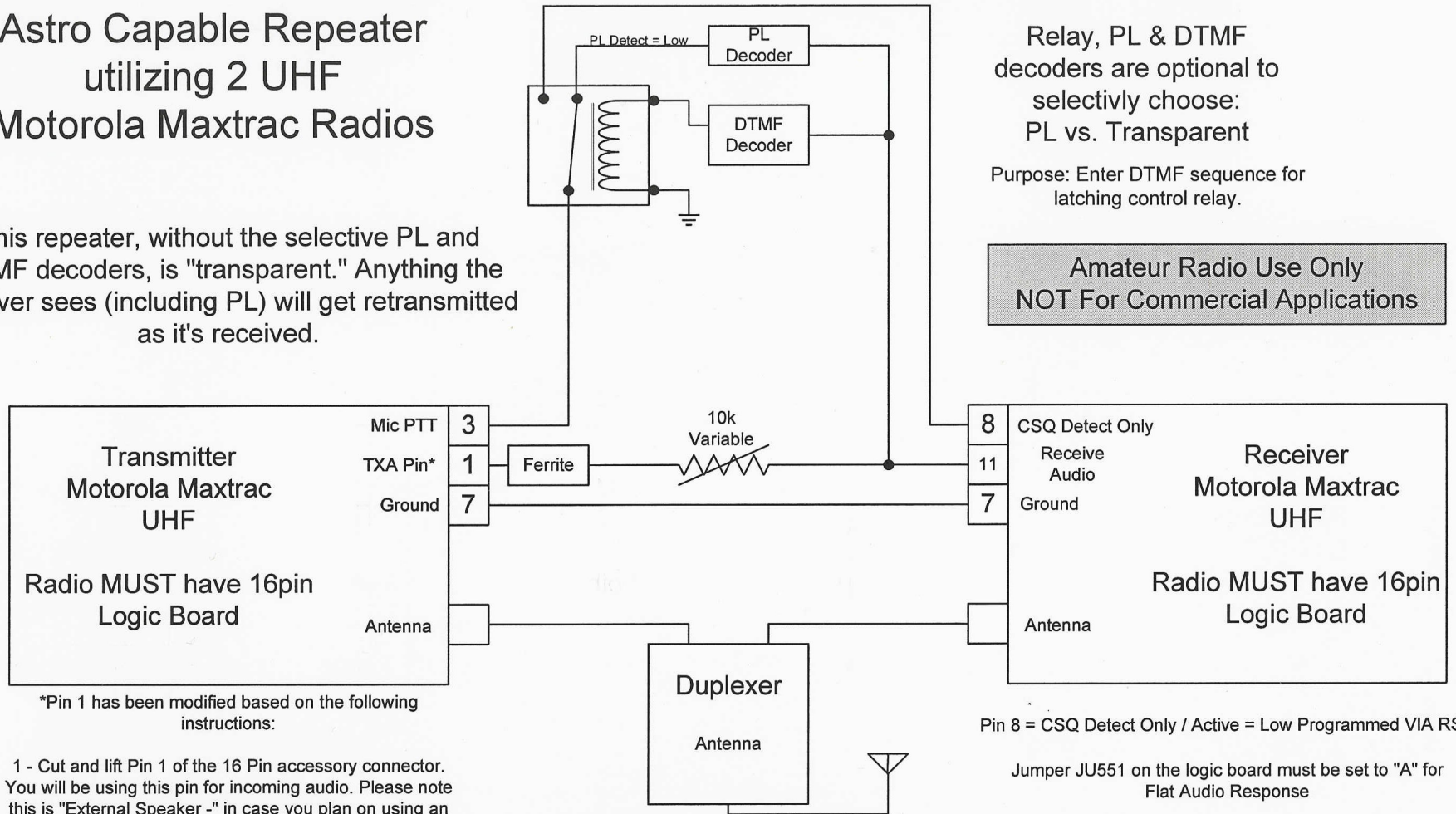


Astro Capable Repeater utilizing 2 UHF Motorola Maxtrac Radios

This repeater, without the selective PL and DTMF decoders, is "transparent." Anything the receiver sees (including PL) will get retransmitted as it's received.



Relay, PL & DTMF decoders are optional to selectively choose: PL vs. Transparent

Purpose: Enter DTMF sequence for latching control relay.

Amateur Radio Use Only
NOT For Commercial Applications

*Pin 1 has been modified based on the following instructions:

1 - Cut and lift Pin 1 of the 16 Pin accessory connector. You will be using this pin for incoming audio. Please note this is "External Speaker -" in case you plan on using an external speaker. You may have to select another unused pin if necessary.

2 - On the 9313 logic board you will find a test point labeled "TXA". Run a jumper from the lifted pin to this point.

3 - You will notice 2 solder pads adjacent to the TXA point. You will need to add a 10k Chip resistor to this spot.

4 - Retune the radio VIA RSS for maximum deviation @ 3KHz +/- 0.2KHz.

Pin 8 = CSQ Detect Only / Active = Low Programmed VIA RSS

Jumper JU551 on the logic board must be set to "A" for Flat Audio Response

For VHF to UHF Crossband use: UHF Transmitter

- 1 - Remove jumper from modified pin 1 to TXA.
 - 2 - Add jumper from modified pin 1 to the - side of the electrolytic capacitor just below TXA (C703)
 - 3 - Realign as above
- NOT 100% transparent. PL and DPL from UHF transmitted signals from the VHF radio will be REALLY high.

For revision 3: Add an inversion circuit via OP Amp to the audio path for proper audio levels while crossbanding.

Set-up and Tuning:

- 1 - Set Both the required receive and transmit radios for CSQ operation.
 - 2 - While repeating an Astro signal, adjust the 10k variable resistor to bring the Astro data level just below clipping via a service monitor.
- Astro Deviation should be 3.0KHz (2.83 exactly) +/- 0.2KHz on the output of the transmitter.

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Revision 2.1 by Tim Warth

Trademarks and Copyrights Credits:

Motorola is the company that makes the best radios, and a "Maxtrac" is one of them.
"Astro" is a Digital Voice technology also made by Motorola.