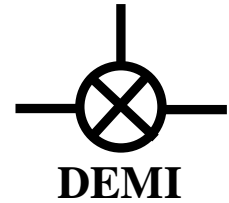


Design Note



From: DEMI R & D Dept.

DN#: 037

Date: Oct. 26, 2018

Re: Low Sink Current PTT-Low modification for DEMI transverters.

PREFACE: All DEM past and present transverters use the same PTT High and Low keying circuit. The existing problem is that some modern Solid State transceivers have external keying circuits that are current sinking challenged. This modification will reduce the current sink requirement of all DEMI transverters is applied. This design Note will address our DEMI TC (transverter control circuit) found in all of our microwave transverters 2304 MHz and higher in frequency.

EXPLANITION: This modification will require adding a small signal switching PNP transistor such as a 2N3906 or 2N2907 and a 10K resistor to complete. Actually, any PNP switching transistor will function so do be too fussy with what you have in your junk box.

THE MODIFICATION: This process will relate to any TC board manufactured within the last 20 years or so and can be utilized to modify the PTT circuit in any DEMI transverter but the component numbering and placement with picture will be of the TC board. Examine the picture and the schematic and proceed with the modification. The required components are in **RED** in the schematic.

First remove D2. This is the polarity that protects the transceiver when using PTT-low in the unmodified circuit. Next cut the trace between the two vias of PTT-L and D2. Insert a surface mount chip resistor of 10K in value or a small leaded resistor will work as long as you can solder in place. Then with the PNP transistor of choice, connect the Collector to the PTT-H via, the Base to the PTT-L via and the Emitter to the +9 VDC buss on the K2 Relay. The D2 Via connected to the 10 K resistor is now the PTT-Low connection.

RESULTS: With voltage applied to the board, cycle the PTT-L to verify operation. Then, you can use a small milliamp meter to verify the total current sink the circuit will require to operate. It will vary a bit depending on the transistor but should be well under 10 mA. A 3906 will require 5-6 mA sink. If this is not low enough, the 10 K may be increased and/or a series resistor may be inserted between the emitter and the +9 VDC buss. The only requirement will be that the transistor switches at least 2 VDC to the PTT-H via so that the on board NPN transistor will switch the relay.

