Down East Microwave Inc.

Design Note

DEMI

To: Owners of AOS-144 and microwave transverters with WTR Option

From: DEMI R&D Dept.

DN#: 006

Date: August 15, 2002

Re: Recommendations for Use

Problem

The DEM AOS-144 is designed to interface 10 watt and higher 144 MHz. transceivers to any of our microwave transverters. Being that it is a RF sensing device, it will generated a "Transmit on" signal when it senses RF input. When using this signal as a "Push -to talk" signal to key any microwave transverter with a external 24 volt RF relay that is driven by a RVD-1 driver or TC Board, the delay circuitry will cause problems with the switching functions of the RF relay . The problem can vary from locking in any state, neutral, transmit, or receive to damaging the RVD or TC it's self.

Cause

The purpose of the RVD or TC is to switch a 12V signal in series with charged capacitor of 12 volts to produce a spike that kicks the relay into the transmit position. When using a AOS with a transverter, since it is RF sensed, the AOS will send keying voltages according to RF power output. If used on SSB or CW, the power output will vary enough to cause many relay transfers during a single transmission. This places stress on both the relay and the RVD-1 or TC by sometimes not charging the capacitor full enough to switch the 24 volt relay. The transverter could transmit into an open or the relay my not come back to receive.

Solution

Do not use the " Control output" signal of the AOS to key your transverter. Use the PTT circuitry that is in the 144 MHz. transceiver to key the transverter. Use the AOS as it was designed and it will still RF sense to control the attenuator and automatically switch between transmit and receive functions. This will protect the transverter no matter what happens. If you transceiver doesn't have a PTT output, we suggest installing a manual transmit switch to control the transverter. A simple toggle switch that will connect the input to ground is required. It can be connected to the MIC switch, a foot switch or an external switching scheme to "Hard Key" everything in the system.

With the AOS in line as an attenuator, the transceiver can not damage the transverter if the system is switched out of sequence. The AOS RF senses!!! Following these suggestions will add extended life to all of your switching circuitry, preserving the microwave characteristics of the RF relay and allow you to enjoy you microwave operation in a more trouble free environment.

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