

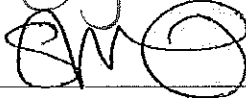


**Field Service Spares Replacement Procedure – Coax Switch, XX06RZA
& XX09 MK1**

Approval:

Approving Authority	Signature	Date
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Revision History

Rev.	ECO	Description of Change	Date
A	8795	Initial release	08-05-2011
B	9041	Clerical revisions	10-03-2011

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1. Brief Summary:

Troubleshooting document for diagnosing a fault with and replacing the coax switch assembly on the XXo6RZA & XXo9 MK1 series antennas.

2. Checklist:

- Verify DAC Settings
- Measure Voltage

3. Theory of Operation:

Co-Pol (co-polarization) and X-Pol (cross-polarization) VSAT systems have two LNBS fitted as standard. The X-Pol LNB is installed on the feed and is 90 degrees from the transmit path (waveguide), the Co-Pol LNB is installed on the waveguide, in line with the transmit path.

When using X-Pol the transmit and receive carriers are 90 degrees apart from each other, so the system will be receiving in horizontal polarity and transmitting in vertical (or vice versa). When using Co-Pol, the transmit and receive frequencies are on the same polarity, i.e. both in horizontal or both in vertical. A diplexer in the waveguide run is used to isolate the frequencies from each other.

A coax switch is installed on the equipment frame, and is used to route the desired receive path to the Below Decks Equipment. Co-Pol or X-Pol LNBS are selected from the tracking window in the DAC.

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4. Measure Voltage:

Should the coax switch fail it's possible that it will default to only one band and won't change. This can be verified by measuring the voltage output on the relevant bands. The ADE Modem will output either 13VDC or 18VDC to power the Swedish Microwave Quad LO LNB and also to switch between its bands.

Select the "Co-Pol, Band 1" option in the tracking window of the DAC (the "Track Disp" setting in the setup menu will need to be set to "0130" for a Co-Pol/X-Pol system with Quad LO LNBs).



Leave the DAC energised, power down the pedestal and disconnect the Co-Pol and X-Pol F-type cables from the coax switch using a 7/16" wrench.

Insert a paper clip into the centre path of the Co-Pol connection of the coax switch, energise the pedestal and measure the voltage on the centre pin; 13VDC should be present. Change the tracking option of the DAC to "X-Pol, Band 1" and repeat the above process, 13VDC should now be present on the X-Pol path.



If the voltage doesn't change from one path to the other when the tracking option of the DAC is switched between Co-Pol and X-Pol measure the voltage on the coax input to the coax switch.

Measure the voltage output from the pol aux relay board at the IDC connector of the coax switch, if the voltage is changing from 0 – 15VDC when the tracking settings are toggled between Co-Pol and X-Pol then it's likely the coax switch is faulty and will need replacing. If no voltage change can be measured on the IDC connector then the fault may lie with the reflector harness and/or the Pol Aux relay board.

5. Toggle Switch:

Older revisions of the tone generator had a toggle switch, which if set incorrectly would permanently output the 22KHz tone. You can verify if this is set correctly by switching between bands 1 and 2 of the LNB, and monitoring the spectrum for a change on your analyser. If there is no change in the spectrum on your analyser, or you see no jump in AGC as the band of the LNB switches then it's possible the toggle switch is set incorrectly, permanently outputting the tone & keeping the LNB stuck on band 2 (or band 4, depending on the voltage setting).

6. Replacing the XXo6RZA and XXo9 MK1 Coax Switch:

6.1. Tools.

- #1 Phillips Screwdriver
- 7/16" Wrench/Spanner
- Loctite 222

6.2. Procedure.

Procedure for replacing the XXo6RZA and XXo9 MK1 Coax Switch Assembly, Sea Tel kit part number: 135345 (coax switch assembly part number: 128010-1).

***CAUTION:** Power down the pedestal before following this procedure.

1. Disconnect the reflector harness IDC connector from the termination block.
2. Using a 7/16" wrench undo the coax connections from the coax switch, noting their orientation.
3. Using a #1 Phillips screwdriver remove the 4 screws securing the coax switch plate.
4. Install the replacement coax switch, applying Loctite 222 to the 4 screws and reconnect the coax cables and IDC connector.

