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Tuning Instruction for Mobile Duplexer 450 MHz DSCP10725

Product: Motorola DSCP10725 = Combilent CP10725 Reference data sheet: DS15661

The duplexer is a PASS-REJECT type with a fixed spacing. Adjusting for the REJECT frequencies automatically aligns the PASS frequencies. It is pre-tuned to LOW 460 MHz and HIGH 465 MHz.

Equipment:

- · Spectrum analyser with tracking generator
- OR Network analyser
- Site Master capable of measuring transmission
- 50 ohm N-male load
- Two test cables
- Blade Screw driver

Tuning procedure: Tuning screws IN to move to lower frequencies and OUT to higher frequencies.

Caution:

DO NOT USE HIGH POWER, (>1W), TO TUNE APPLYING RF POWER TO A NON-TUNED DUPLEXER WILL CAUSE DAMAGE and VOID WARRANTY MAXIMUM INPUT POWER IS 50 WATTS

- 1. Set spectrum/network analyser to show both LOW and HIGH frequencies in the same sweep
- 2. Set two markers on either the spectrum or network analyser to the LOW and HIGH frequencies
- 3. Connect tracking generator (Port 1 of network analyser) to ANT
- 4. Connect spectrum analyser (Port 2 of network analyser) to LOW
- 5. Connect 50 ohm load to HIGH
- 6. Adjust screws 1, 2, and 3 for maximum attenuation at HIGH frequency
- 7. Connect spectrum analyser (Port 2 of network analyser) to HIGH
- 8. Connect 50 ohm load to LOW
- 9. Adjust screws 4, 5, and 6 for maximum attenuation at LOW frequency
- 10. Repeat steps 3 to 9 with respect to VSWR and insertion loss and also monitor the attenuation

Tuning Note:

If moving the frequency up, tune the HIGH filter first, then the LOW (steps 7 - 9 above) If moving the frequency down, tune the LOW filter first, then the HIGH (steps 4 - 6 above)

After proper adjustment, the curves should look as shown below.

Both the VSWR curve and the attenuation curve will only be visible on a network analyser.



