



**SOLEDAD-KFMB FM SYSTEM
COMBINER RE-CHANNELIZATION**

Soledad Mt.
La Jolla, CA
(Transmit Facility)

Combiner:
9-Channel, Re-Channelized and Converted to 7-Channels
with Input Directional Couplers

Line:
3-inch Input
6-inch EIA Output

Antenna: Dielectric

Electric Test Date: 19May21 – 23May21

Prepared by:
Derek J. Small
7June21



Summary of Tests

The following statements and attached exhibit have been prepared to document the conditions of the KFMB transmission system measured at its transmitting facilities, Soledad Mt, La Jolla, California on 19-May to 23-May 1921.

All the measurements contained in this report were taken with a 4-port Copper Mountain Network Analyzer calibrated on site according to the manufacturer's instructions. Calibration states were 4-port, with the 2001 points selected for maximum accuracy and detail. S-parameters were captured and saved as touchstone s4p files for both broadband and narrowband sweeps. The files may have been recalled and manipulated later for this report. The recalled files are calibrated and accurate, however, VNA will not indicate a calibration existed on *recalled* s4p data.

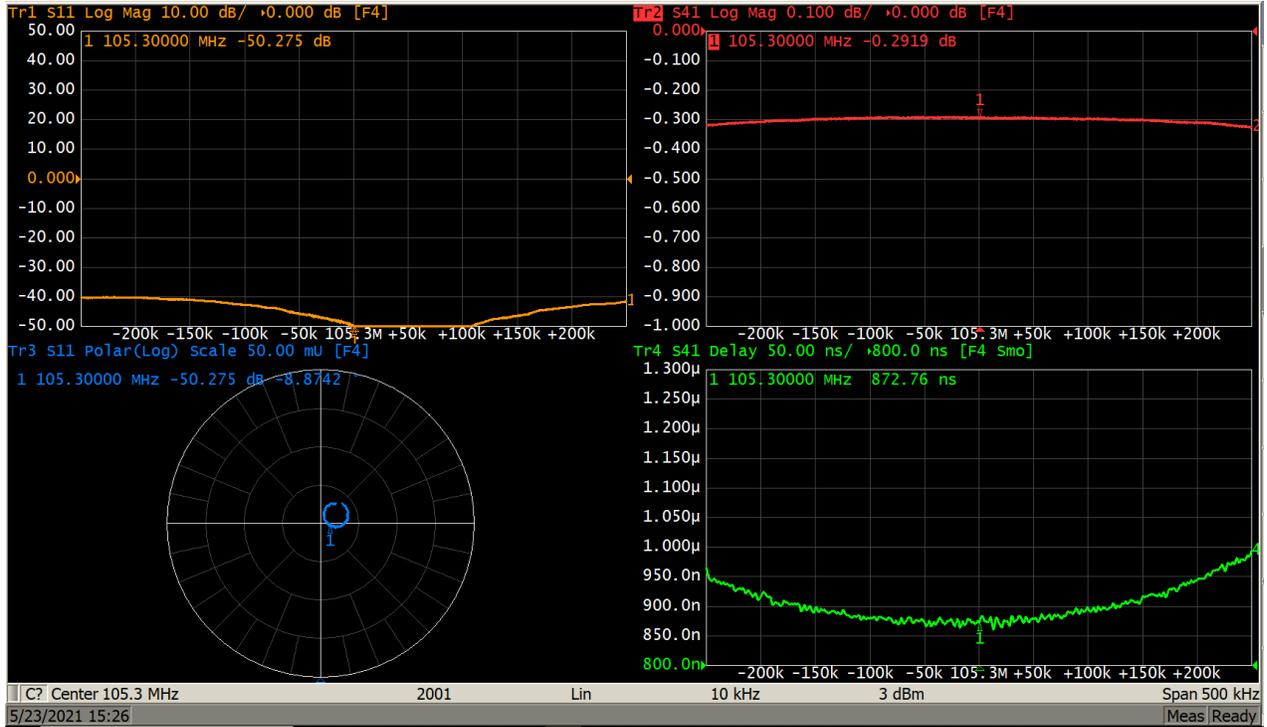
The RF system consisted of a 9 channel FM combiner with only 4 channels being occupied. The system was entirely re-channelized to include the 4 original occupants in addition to 3 future occupants, the two unused modules were removed from the system. The system included Dielectric patch panels and directional couplers at the inputs, some with Bird couplers added. Directional couplers and Bird units (if included) of the 4 occupied channels were removed and placed to the new combiner locations so as to keep their current coupling levels. The remaining units were measured, data is included in this report. The six-inch output was re-routed to accommodate a larger output hybrid that was installed to meet total combined power requirements. All data was measured from each input at the patch panel through to the output patch panel. The output splitter was not included in the data since it will be removed

Conclusion

All channels meet performance specifications, existing channels operated into the combiner without any problem. Data for each channel follows along with an updated print of the current channel layout.

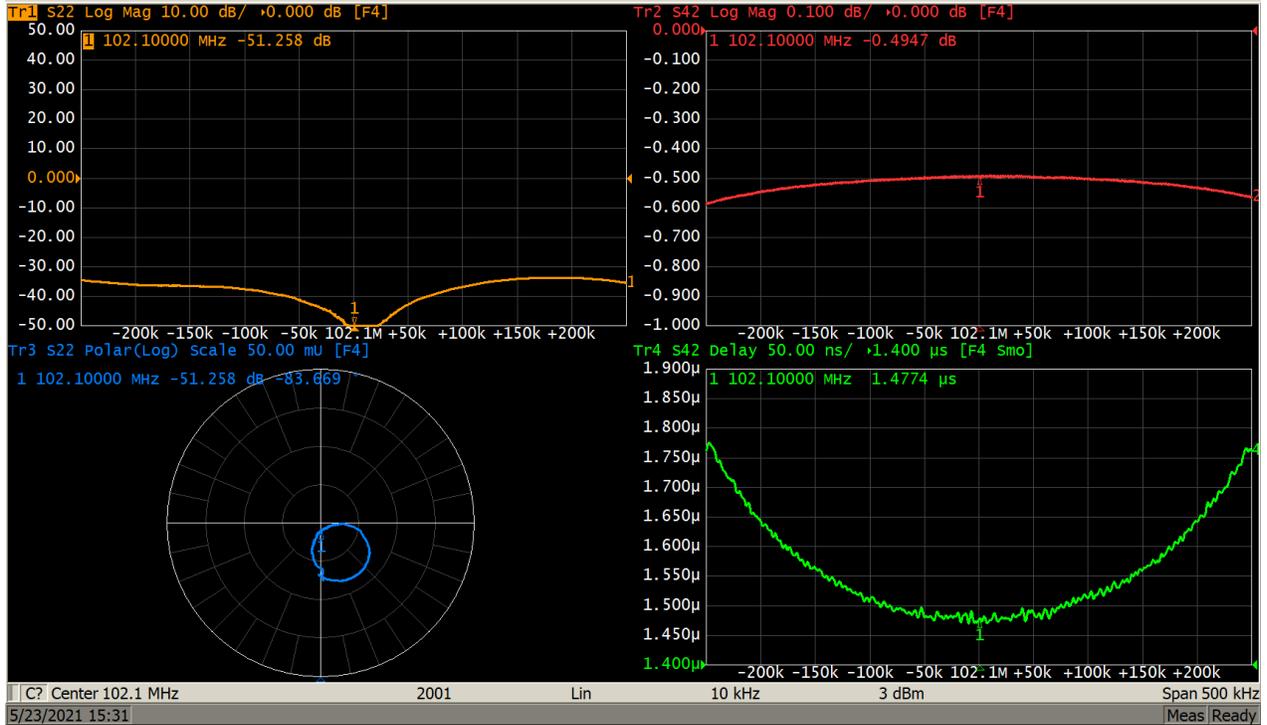


105.3MHz Return loss, Insertion Loss and Delay Variation



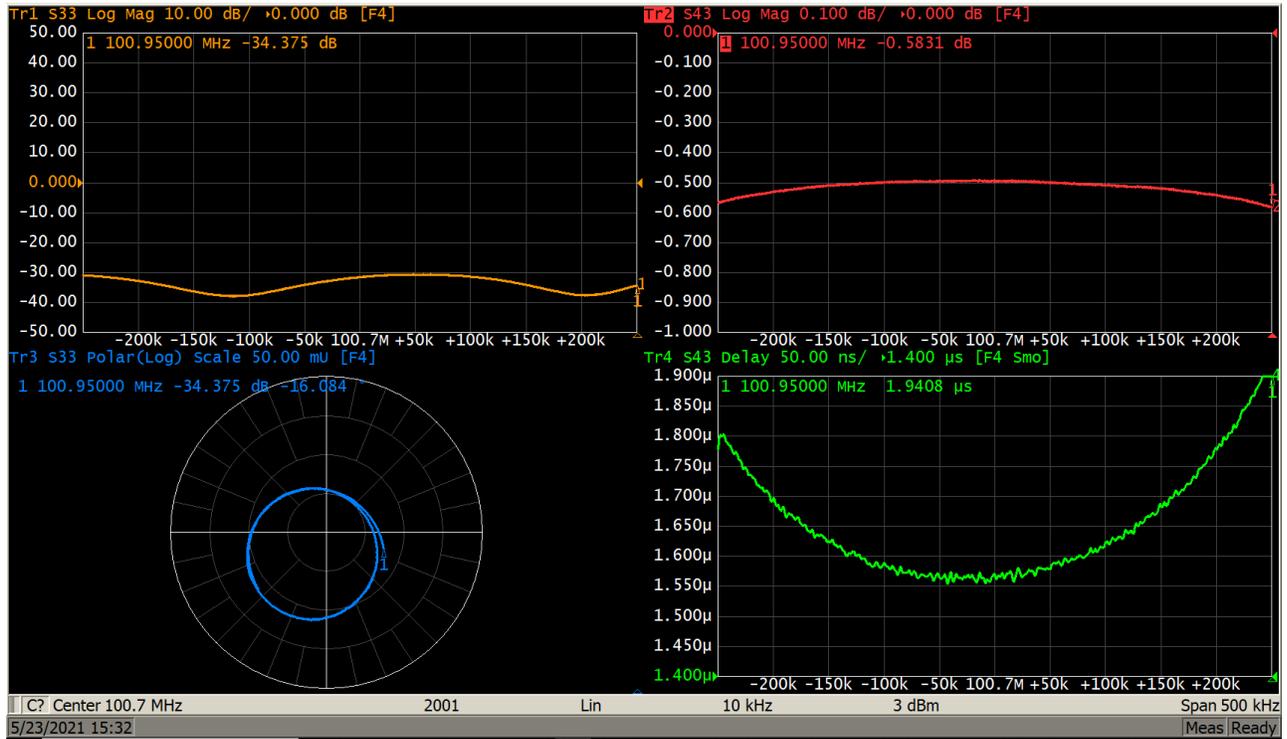


102.1MHz Return loss, Insertion Loss and Delay Variation



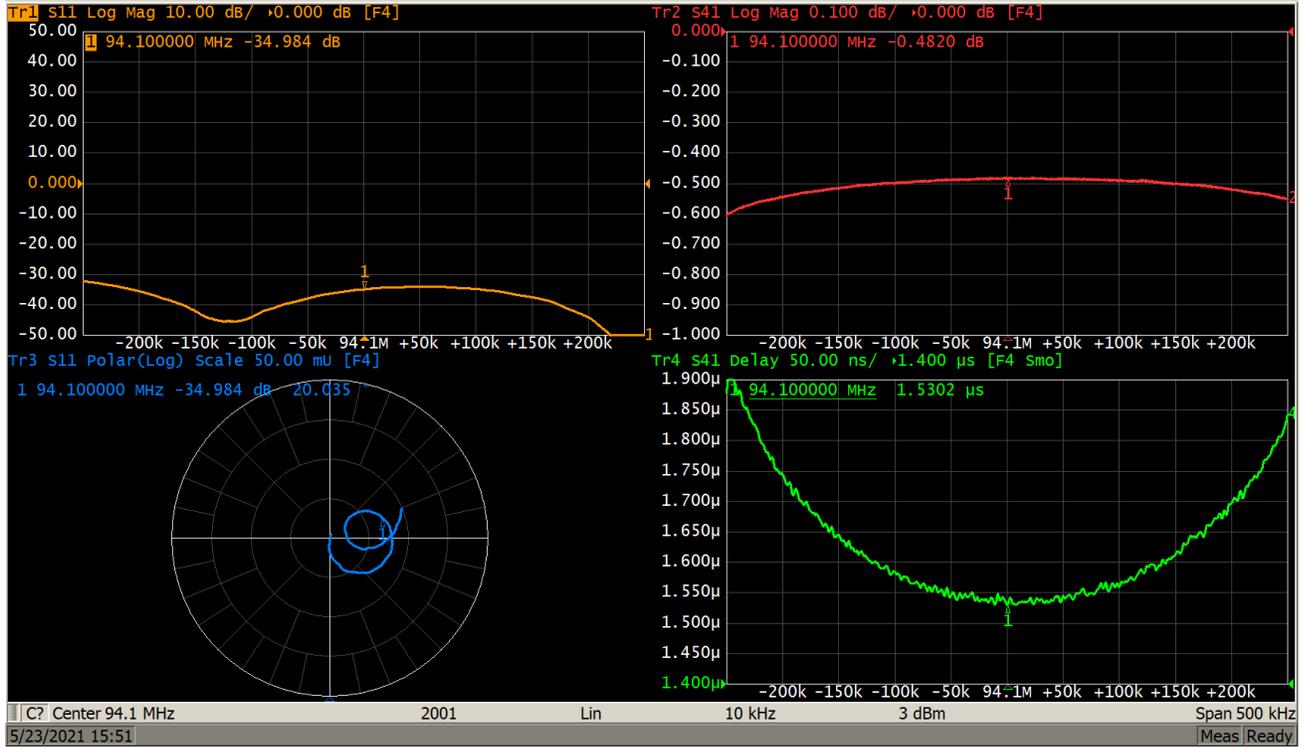
Dielectric

100.7MHz Return loss, Insertion Loss and Delay Variation



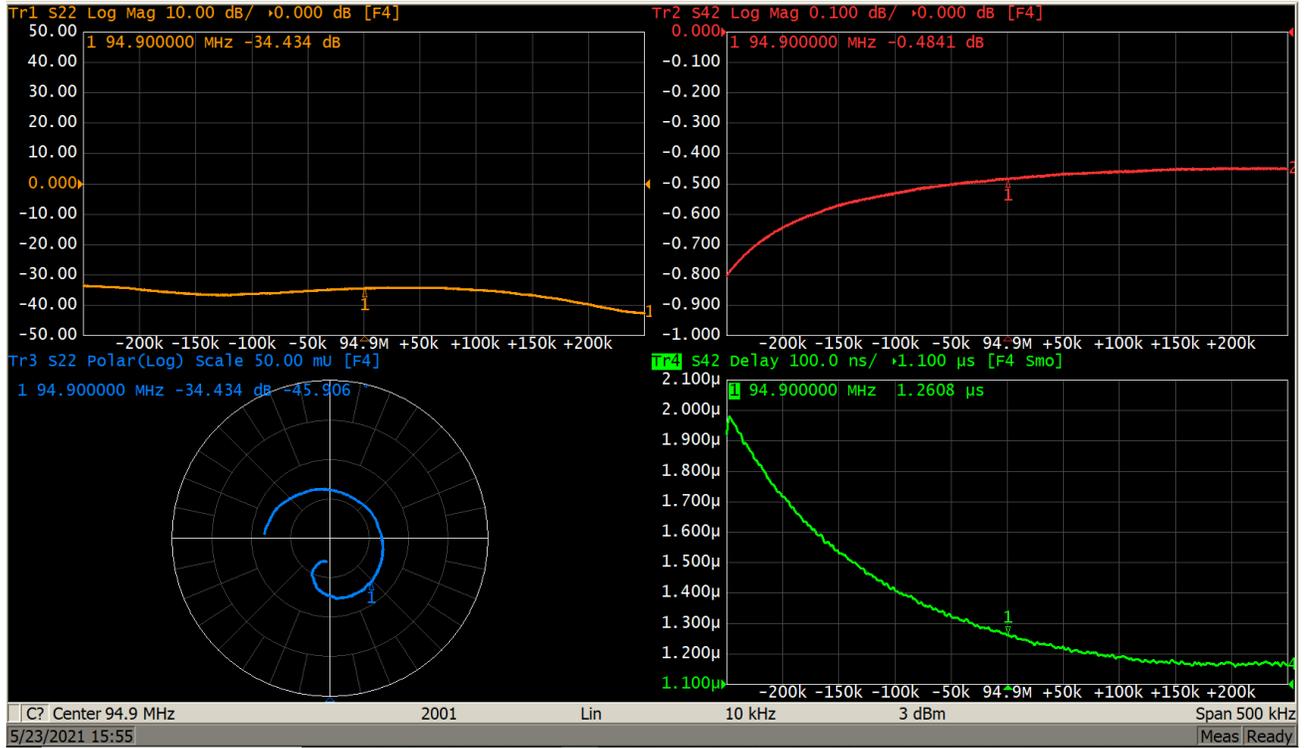


94.1MHz Return loss, Insertion Loss and Delay Variation



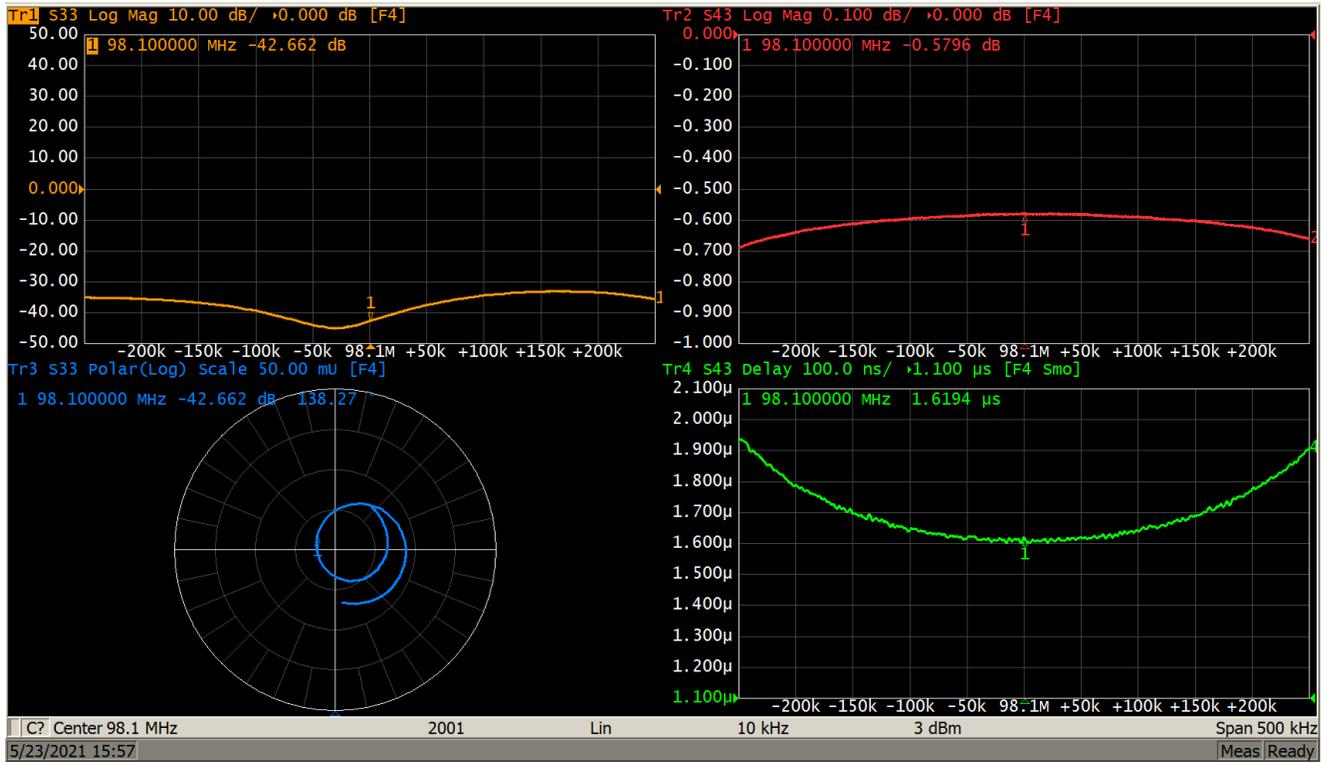


94.9MHz Return loss, Insertion Loss and Delay Variation



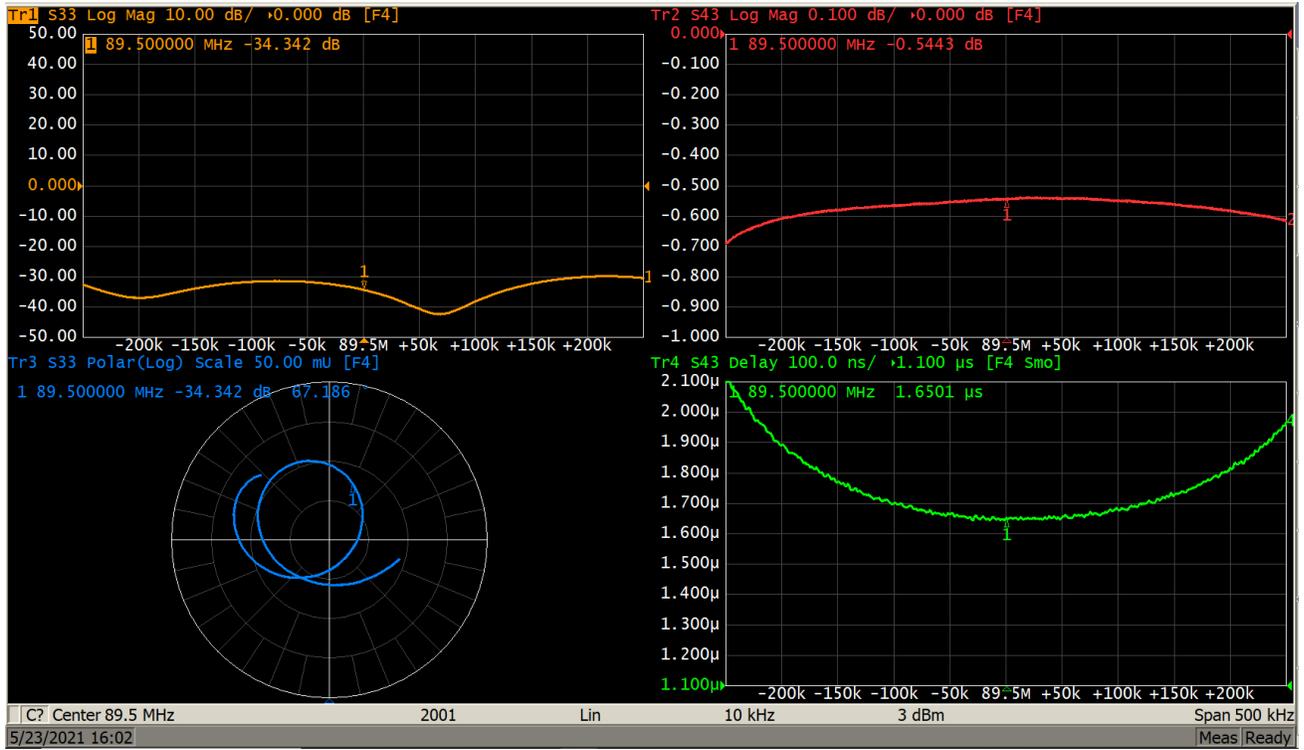


98.1MHz Return loss, Insertion Loss and Delay Variation



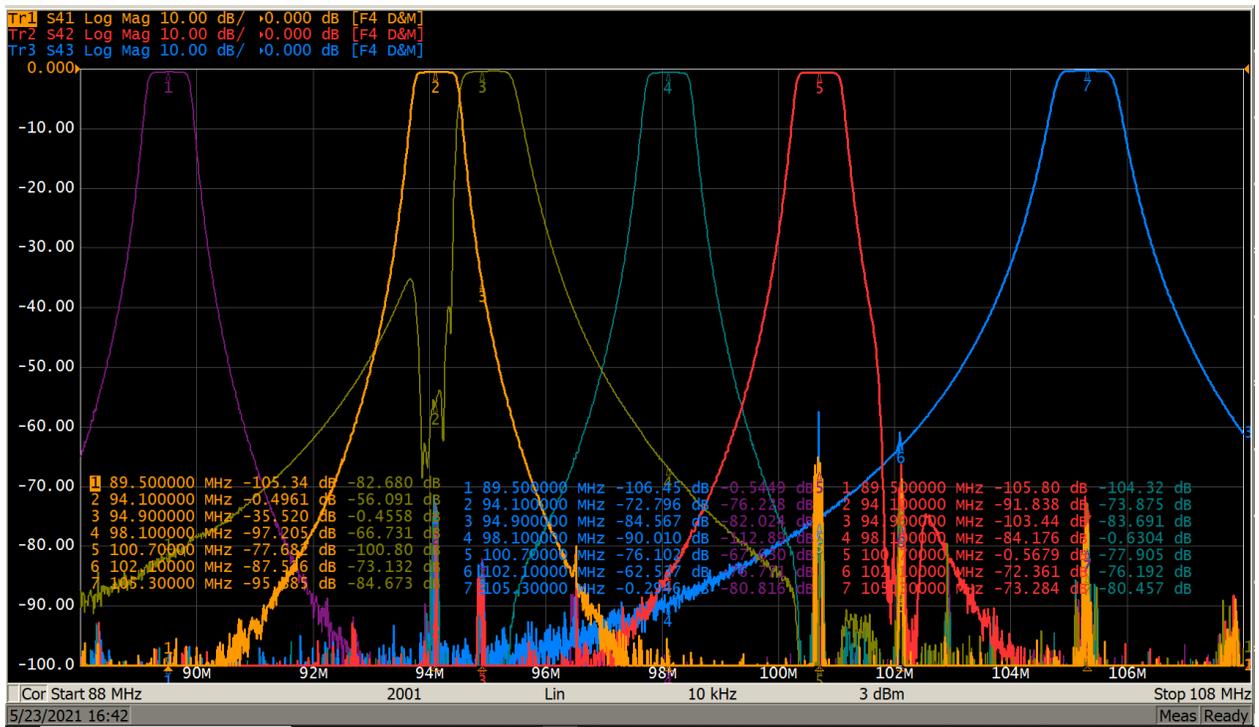
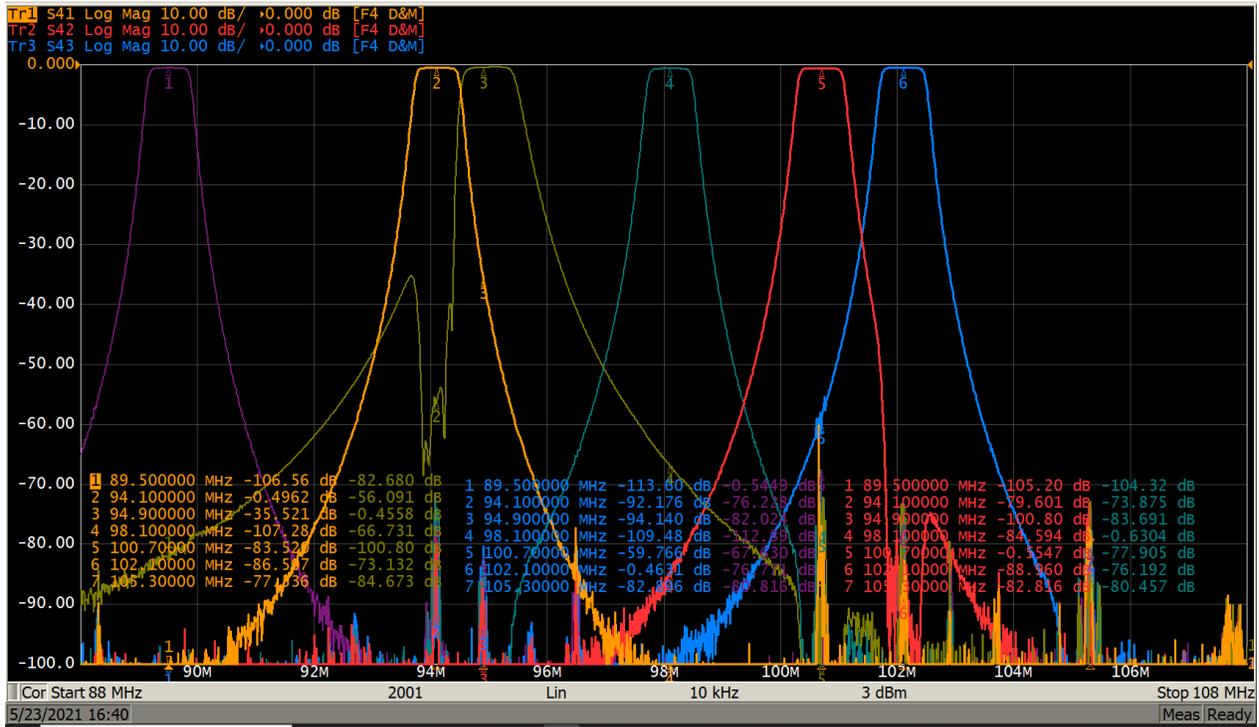


89.5MHz Return loss, Insertion Loss and Delay Variation





Filter Rejection



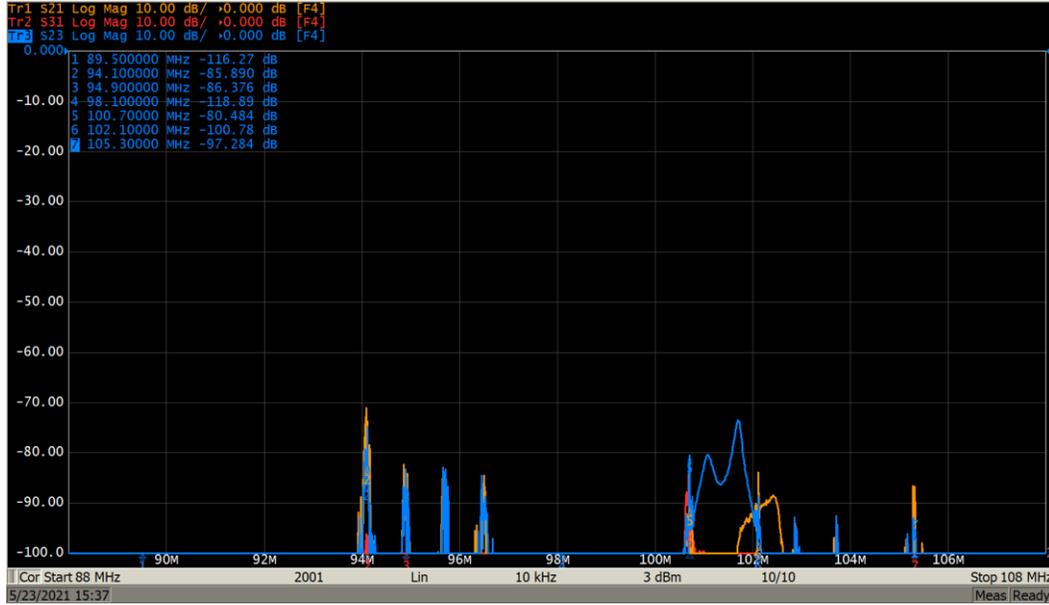


Isolation

Port1: 105.3MHz

Port2: 102.1MHz

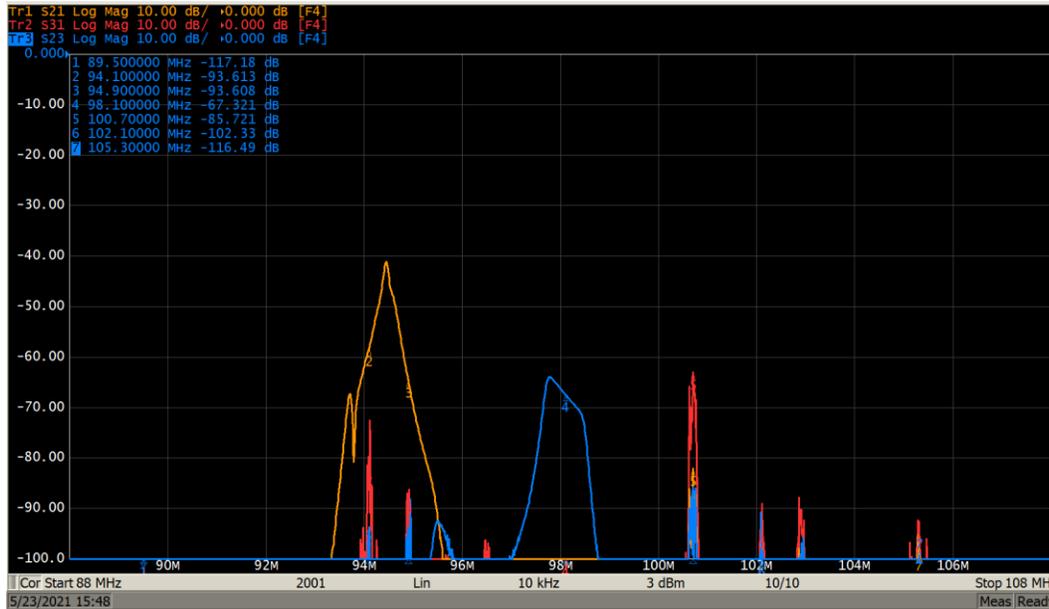
Port3: 100.7MHz



Port1: 94.1MHz

Port2: 94.9MHz

Port3: 98.1MHz



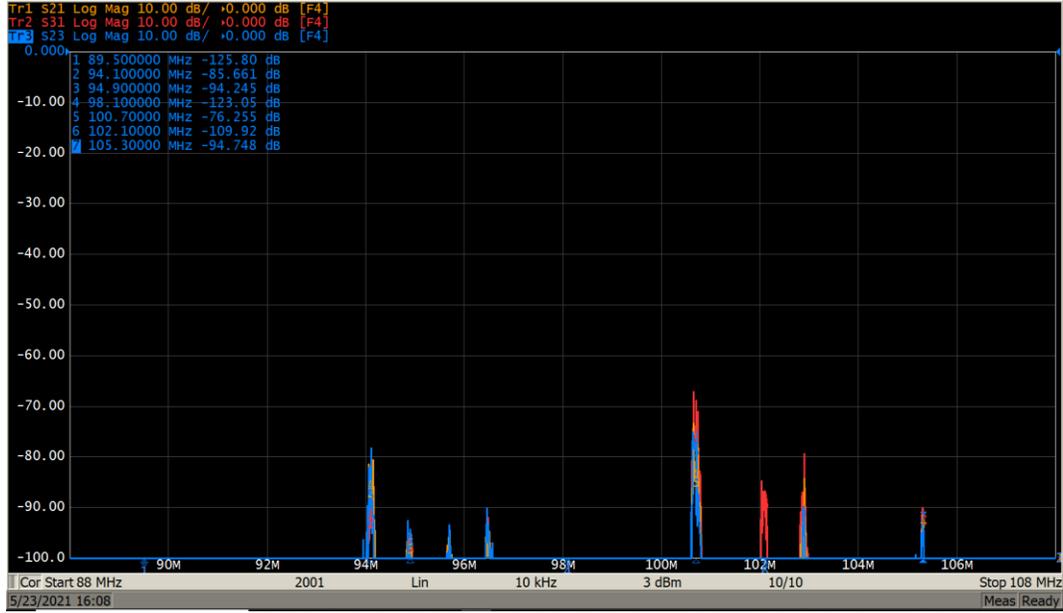


ISOLATION

Port1: 94.1MHz

Port2: 94.9MHz

Port3: 98.1MHz

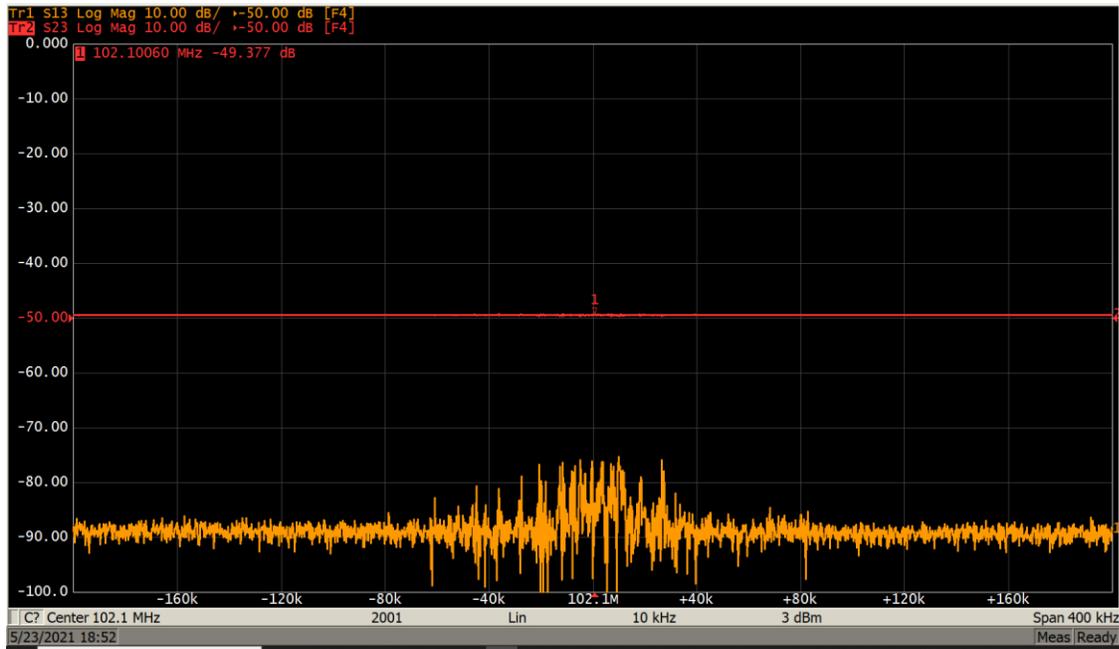


Broadband Port VSWR

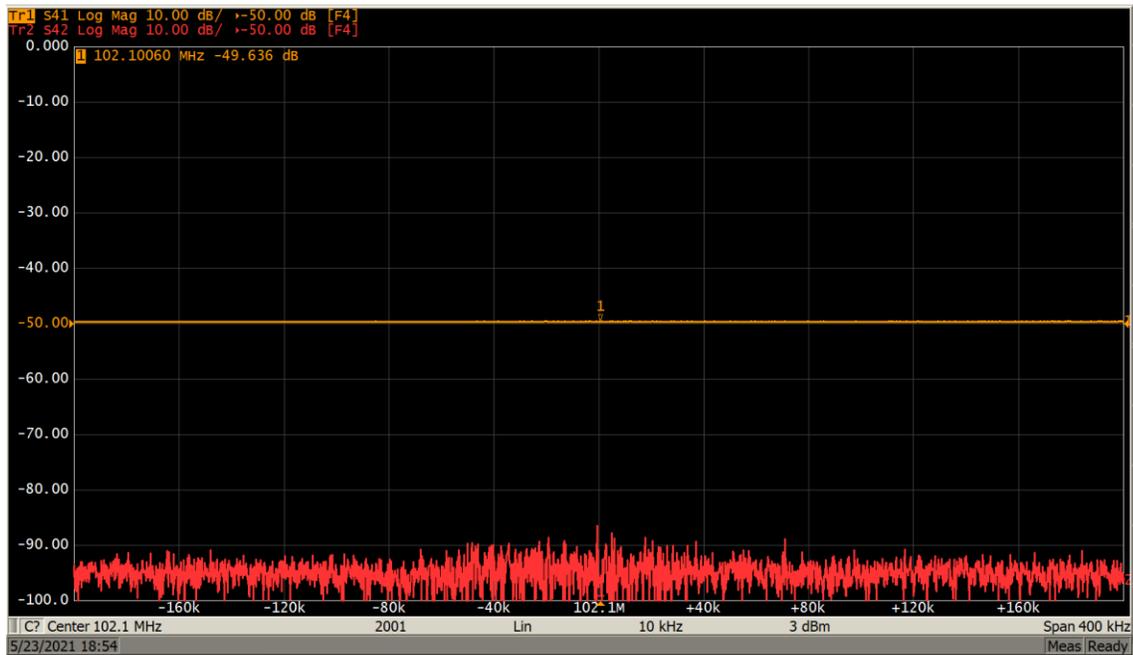




102.1 REV CPLR, Coupling and Directivity

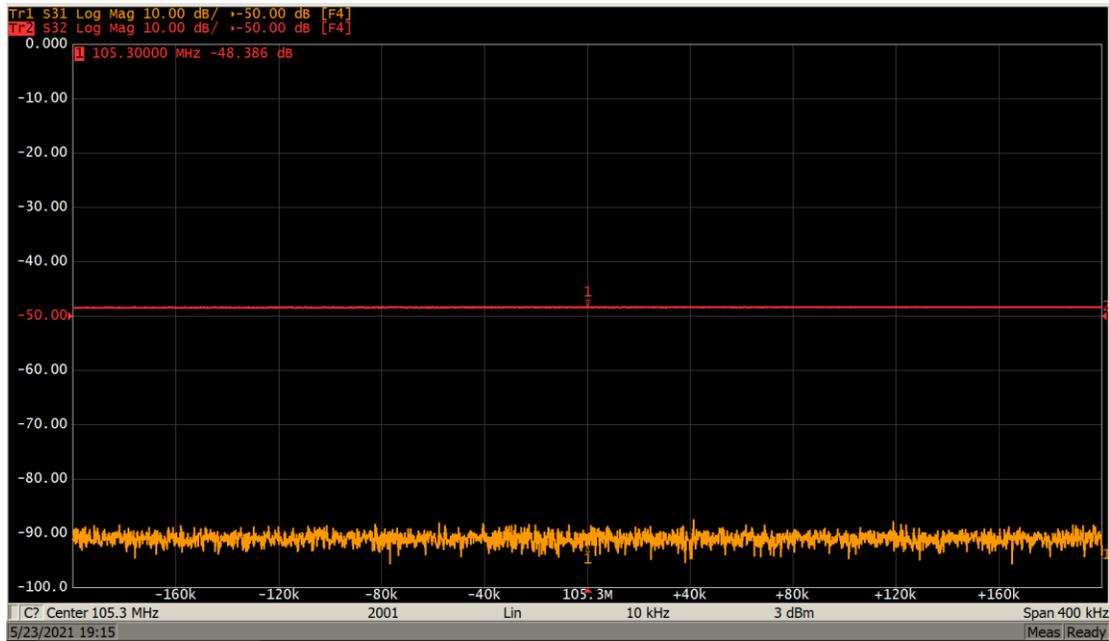


102.1 FWD CPLR, Coupling and Directivity

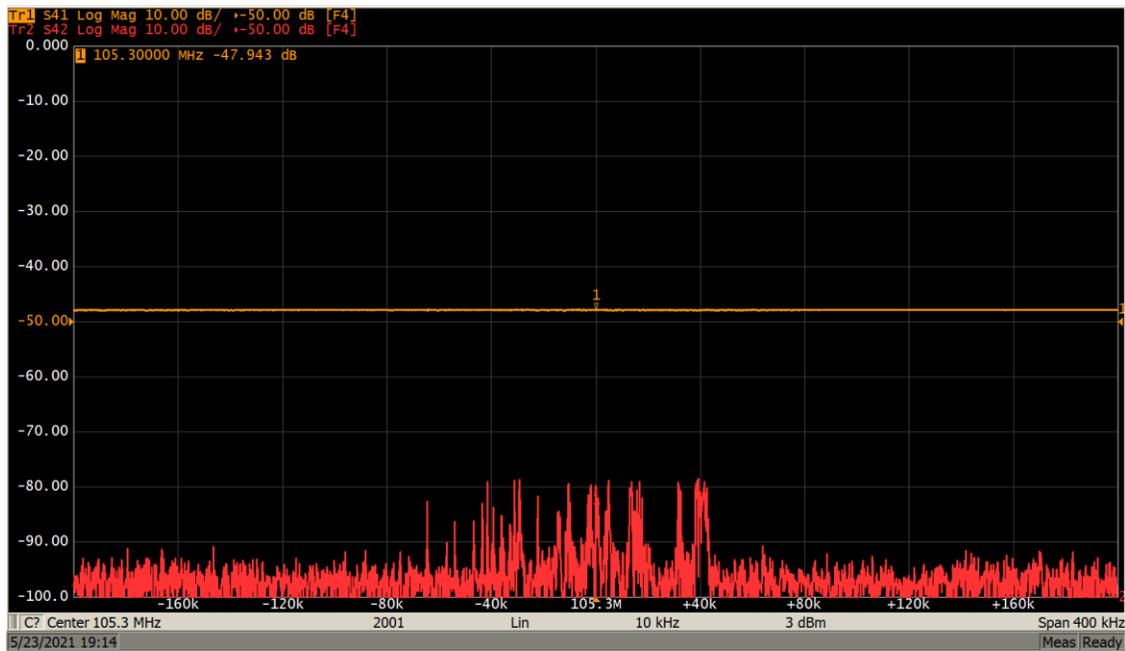




105.3 REV CPLR, Coupling and Directivity

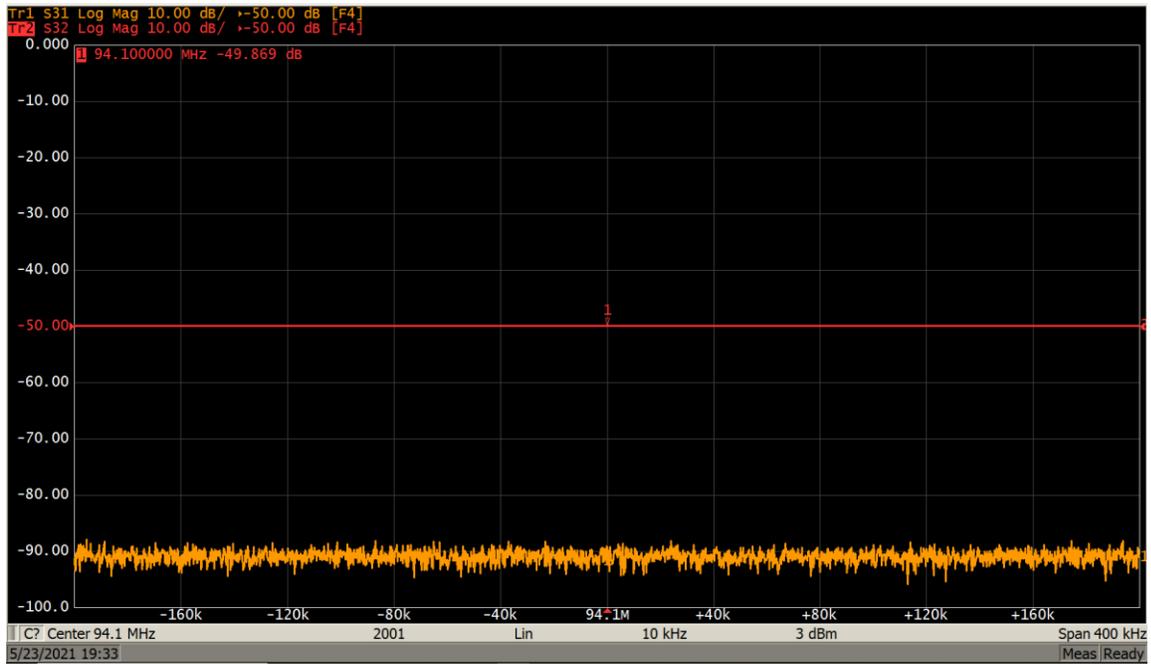


105.3 FWD CPLR, Coupling and Directivity





94.1 REV CPLR, Coupling and Directivity



94.1 FWD CPLR, Coupling and Directivity

