



# MDSM

## SSA PH2

### High Frequency Characteristics

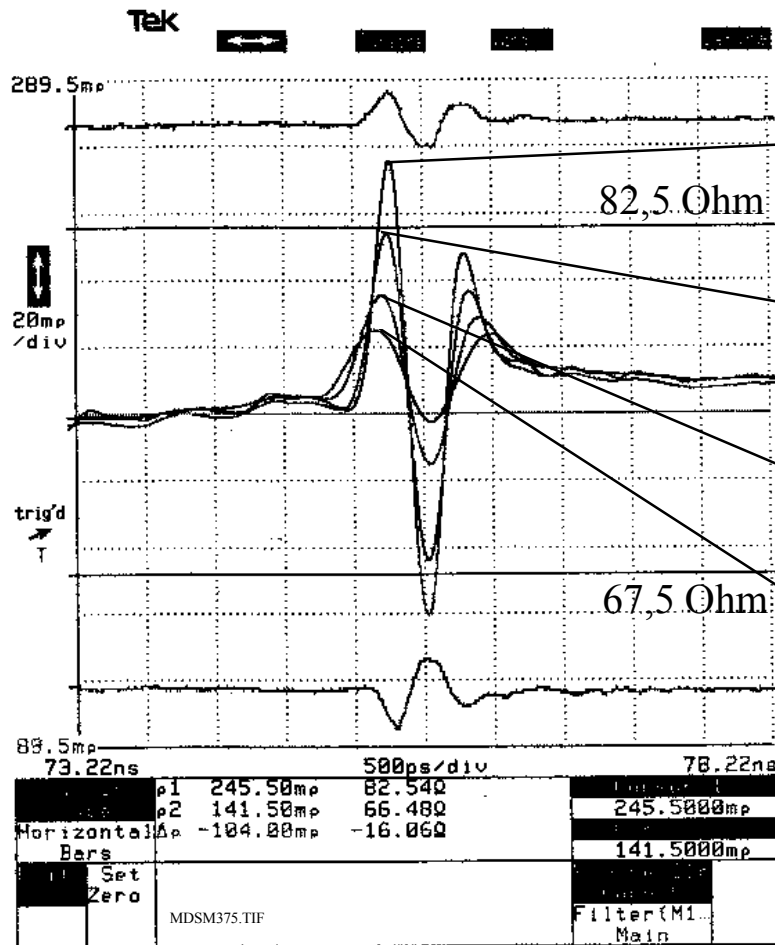
# MDSM SSA PH2 Impedance Measurement Details

- Verify impedance at 375 ps
- Impedance target : 150 Ohm  $\pm$ 10%
- TDR Tektronic 11802
- Resistor connected to pcb tails of external device connector .
- External cable connector harnessed with Madison cable 6702 .

# MDSM SSA PH2 Impedance Measurement Details

- 50 Ohm coaxial cable connected between Madison cable and TDR
- Differential signal applied
- Measurement single ended
- Cable on input side

# MDSM SSA PH2 Impedance



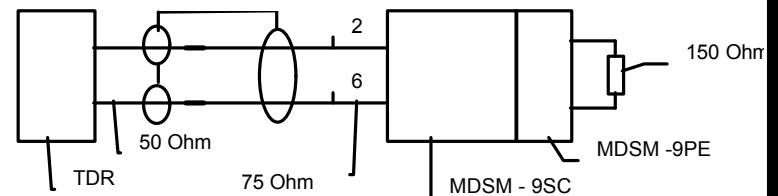
- Actual Data

150 ps  
65/ 85 Ohm

250 ps  
67,6/ 81,4 Ohm

375 ps  
70,4/ 77,8 Ohm

500 ps  
71,8/ 76,5 Ohm

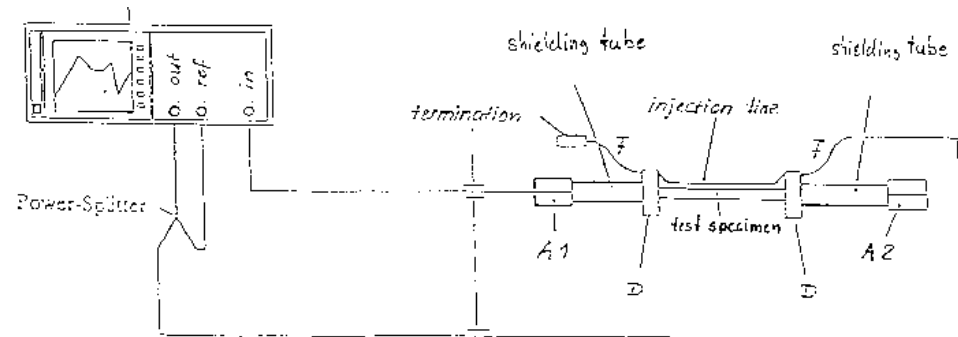


# MDSM SSA PH2 Transfer Impedance Shield Effectiveness

- Three Different Measurements Performed
  - SSA PH2 Method
  - Line Injection Method
  - GTEM Method ( for information )

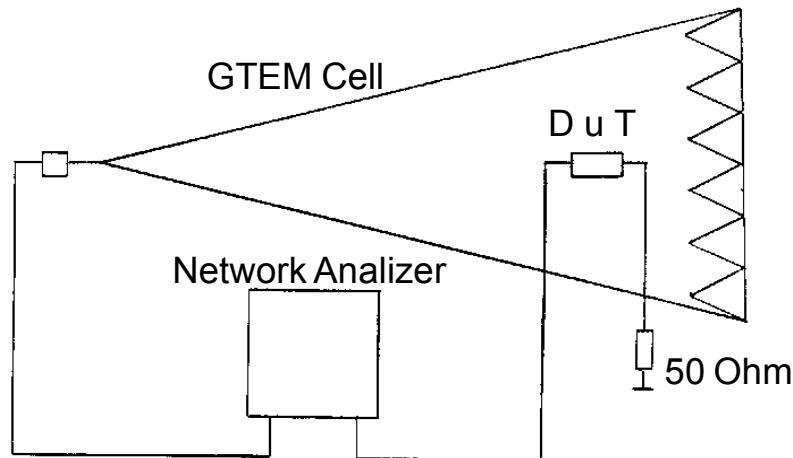
# MDSM SSA PH2 Transfer Impedance Shield Effectiveness

- Line Injection Method



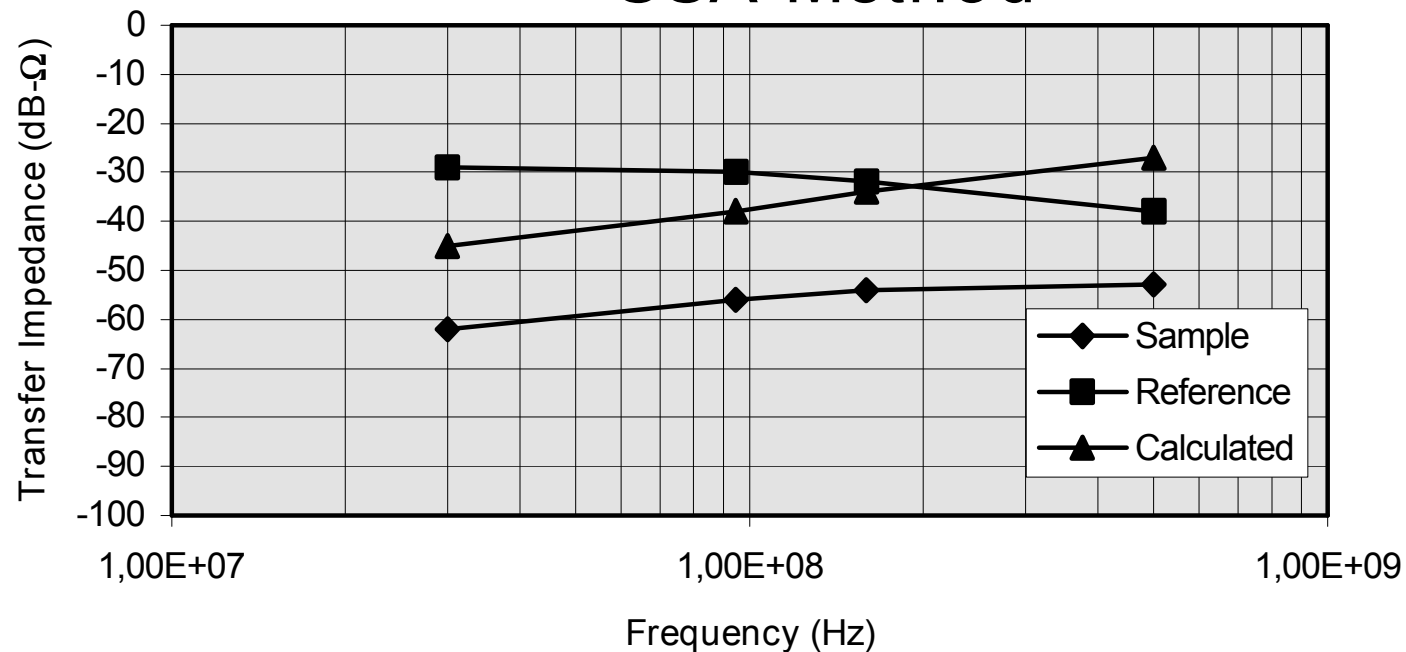
A1 = coupling line  
 A2 = terminal box  
 D = launchers for injection line  
 F = feeding cables for primary circuit

- GTEM Method



# MDSM SSA PH2 Transfer Impedance Shield Effectiveness

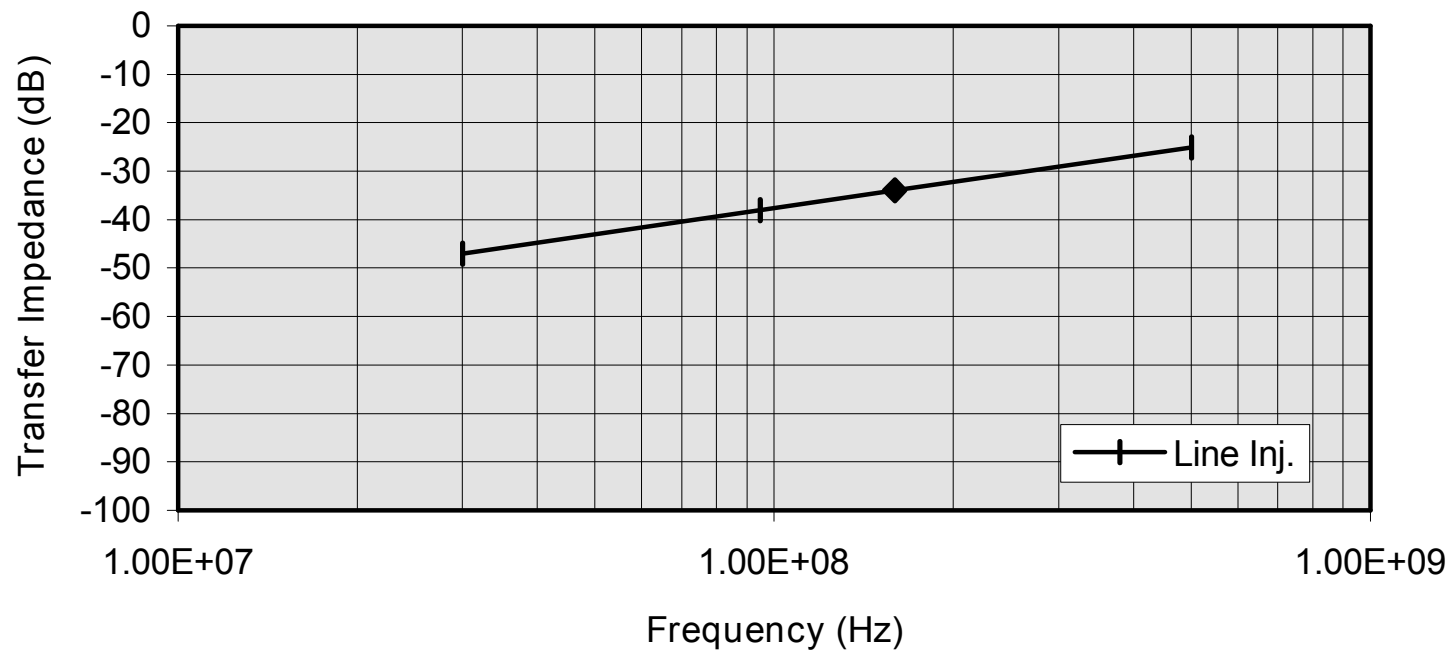
## SSA Method



Calculated = Sample - Reference +(-)CF  
Where CF =  $20 \log(2/(1-p))$ ,  $p = 0.5$

# MDSM SSA PH2 Transfer Impedance Shield Effectiveness

## Line Injection Method

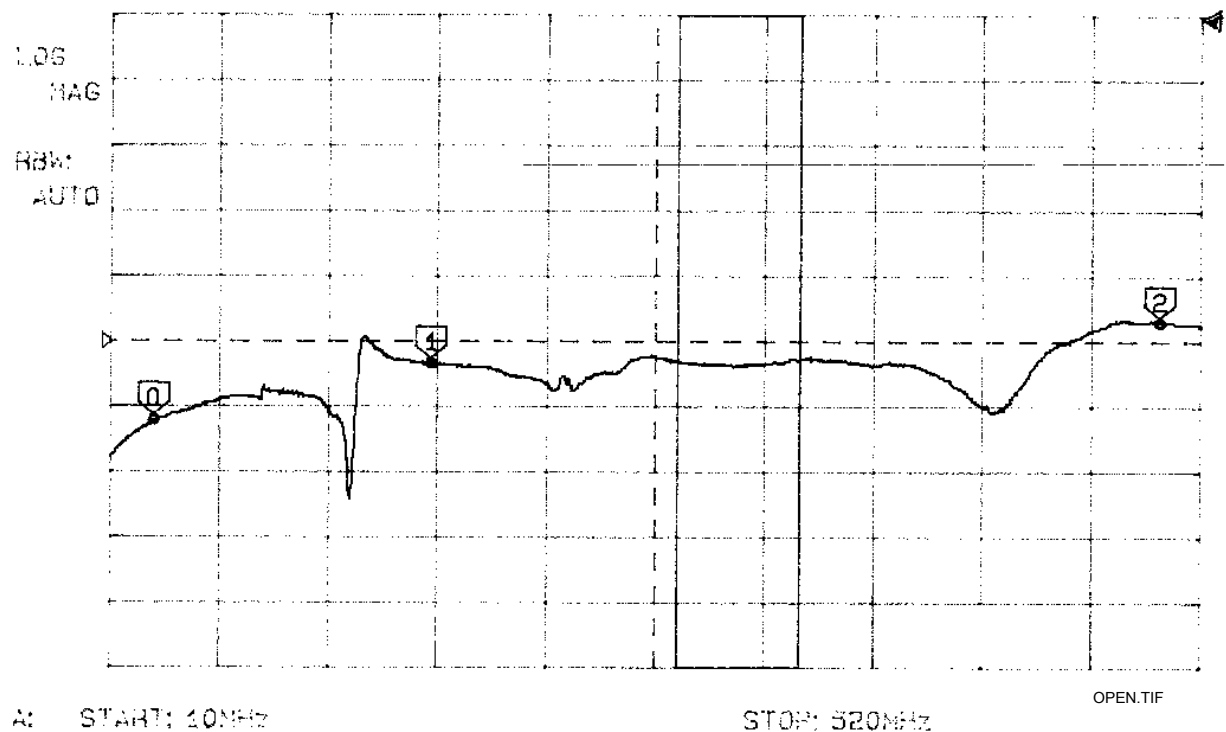




# MDSM SSA PH2 Transfer Impedance Shield Effectiveness

Sample Measurement ( Open Test Fixture)

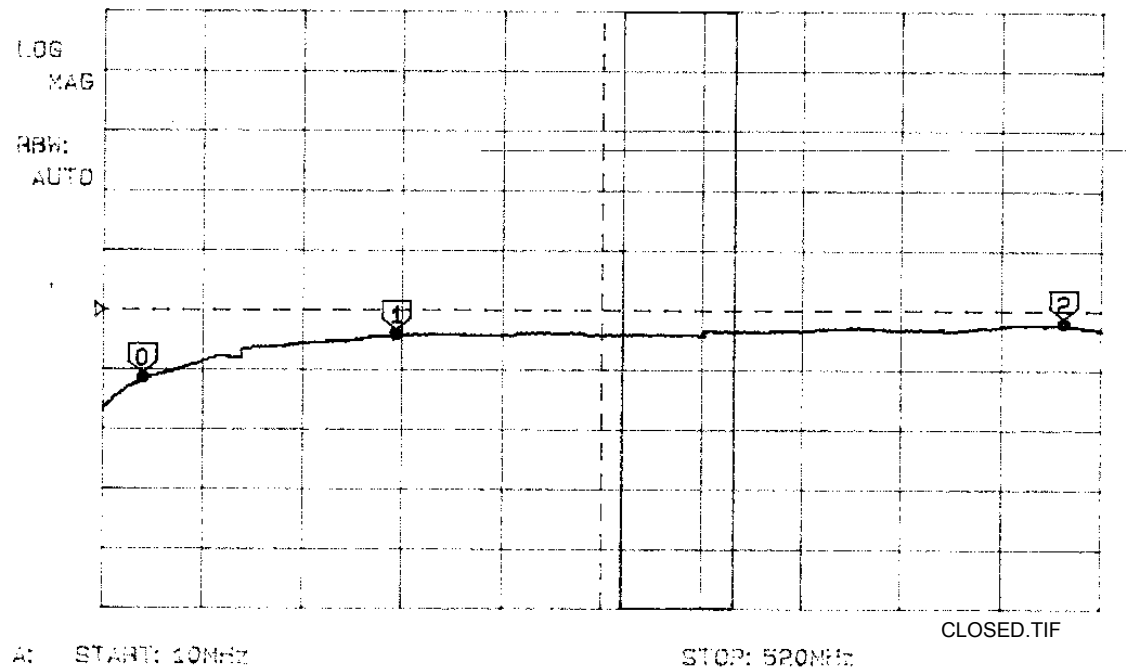
96/06/13 09:54  
10 dB, -49.987dB



# MDSM SSA PH2 Transfer Impedance Shield Effectiveness

Sample Measurement ( Closed Test Fixture )

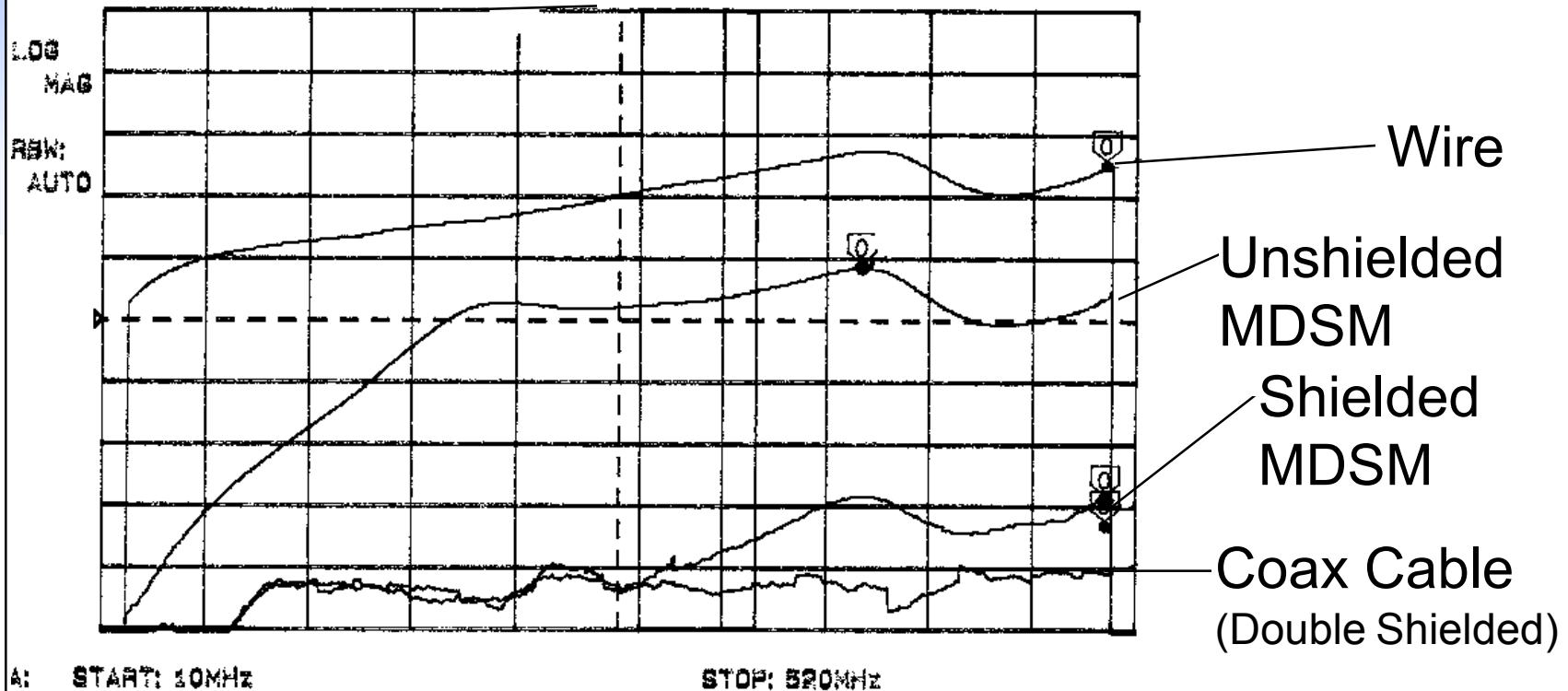
96/06/13 13:44  
10 dB, -49.987dB



# MDSM SSA PH2 Transfer Impedance Shield Effectiveness

GTEM Method

98/08/12 18:58  
10 dB/ -49.987dB



# MDSM SSA PH2 Transfer Impedance RESULTS

Frequency MHz	SSA PH2 Requirements dB - Ohm	SSA Method db - Ohm	Line Injection Method dB
30	-25	-45	-47
159	-16	-34	-34
500	-10	-27	-25

# MDSM SSA PH2 High Frequency Characteristics

## CONCLUSION

- MDSM Meets SSA PH2 Impedance Requirements at Rise Times up to 250 ps
- MDSM Meets SSA PH2 Transfer Impedance (Shield Effectiveness)
  - Recommend to Continue With SSA PH1 / 2 Test Method
  - Recommend to Use an Allside Closed Test Fixture for Transfer Impedance Measurement