
Cable Attenuation Testing

SCSI PIP Committee

August 14-15, 2000

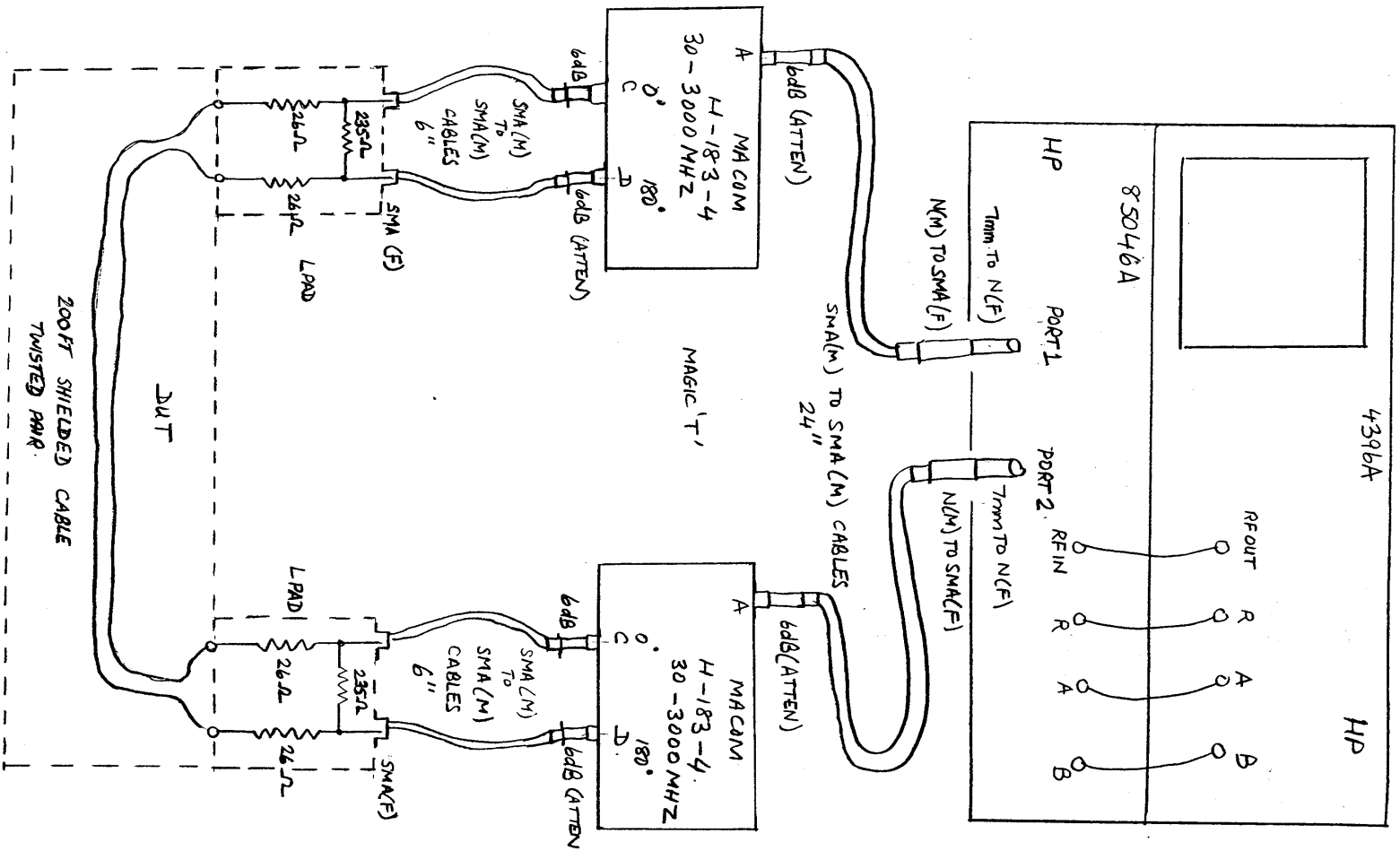
Umesh Chandra

T10 00-386

Round Robin Cable Testing

- Received two different cables from Hitachi
 - 28 AWG Stranded (Round)
 - 30 AWG Solid (Round)
- Developed test procedure using HP4396A
 - Adaptable to other Network Analyzers
- Measured Attenuation of Various Cables

Test Setup



Test Procedure using HP4396A/45046A

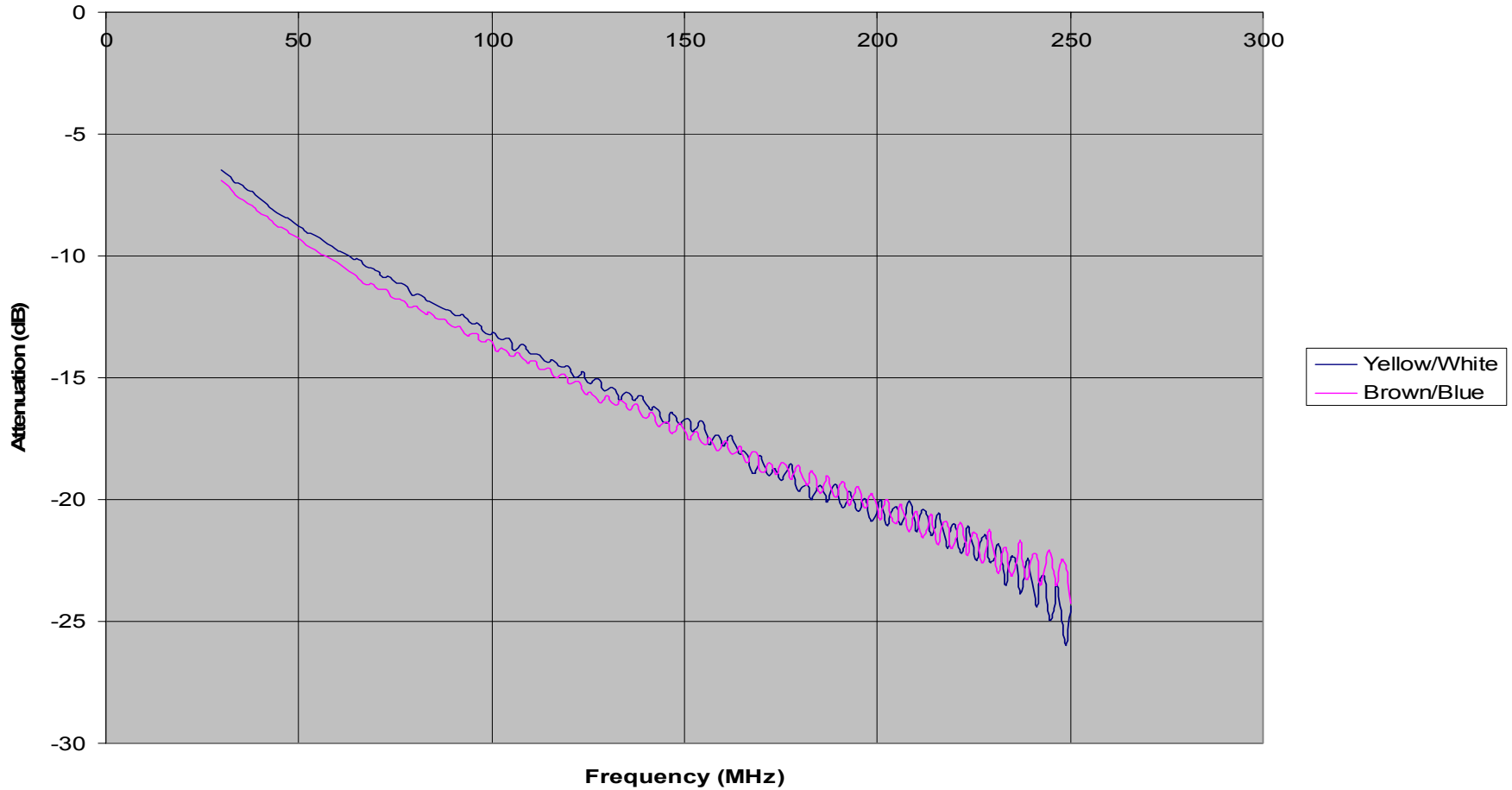
- Apply 'shorts' (thru) (2) in place of DUT
- Set 'SOURCE' level to +20 dB, 'START' to 0.5 MHz 'STOP' to 300 MHz
- 'CAL' -> 'Cal Menu' -> 'Response' -> 'Thru' -> 'Done'
- 'SAVE' -> 'State' -> 'Done'
- Replace 'shorts' with the DUT (Cable under Test)
- Collect Data
- 'SAVE' -> 'ASCII Save' -> 'Data Only (ASCII)'
- Import file into XL and create graph

Data

- 30 AWG Solid Hitachi #49557-068 SCSI3
- dc R = 20.5 OHMS
- CHANNEL: 1
- MEASURE TYPE: S21
- FORMAT TYPE: LOG MAG
- NUMBER of POINTS: 201
- SWEEP TIME: 70 ms
- SWEEP TYPE: LIN FREQ
- SOURCE POWER: 20 dBm
- IF BANDWIDTH: 40 kHz

190' 30 AWG Solid Hitachi #49557-068 SCSI3

190' 30 AWG Solid Hitachi #49557-068 SCSI3



Data

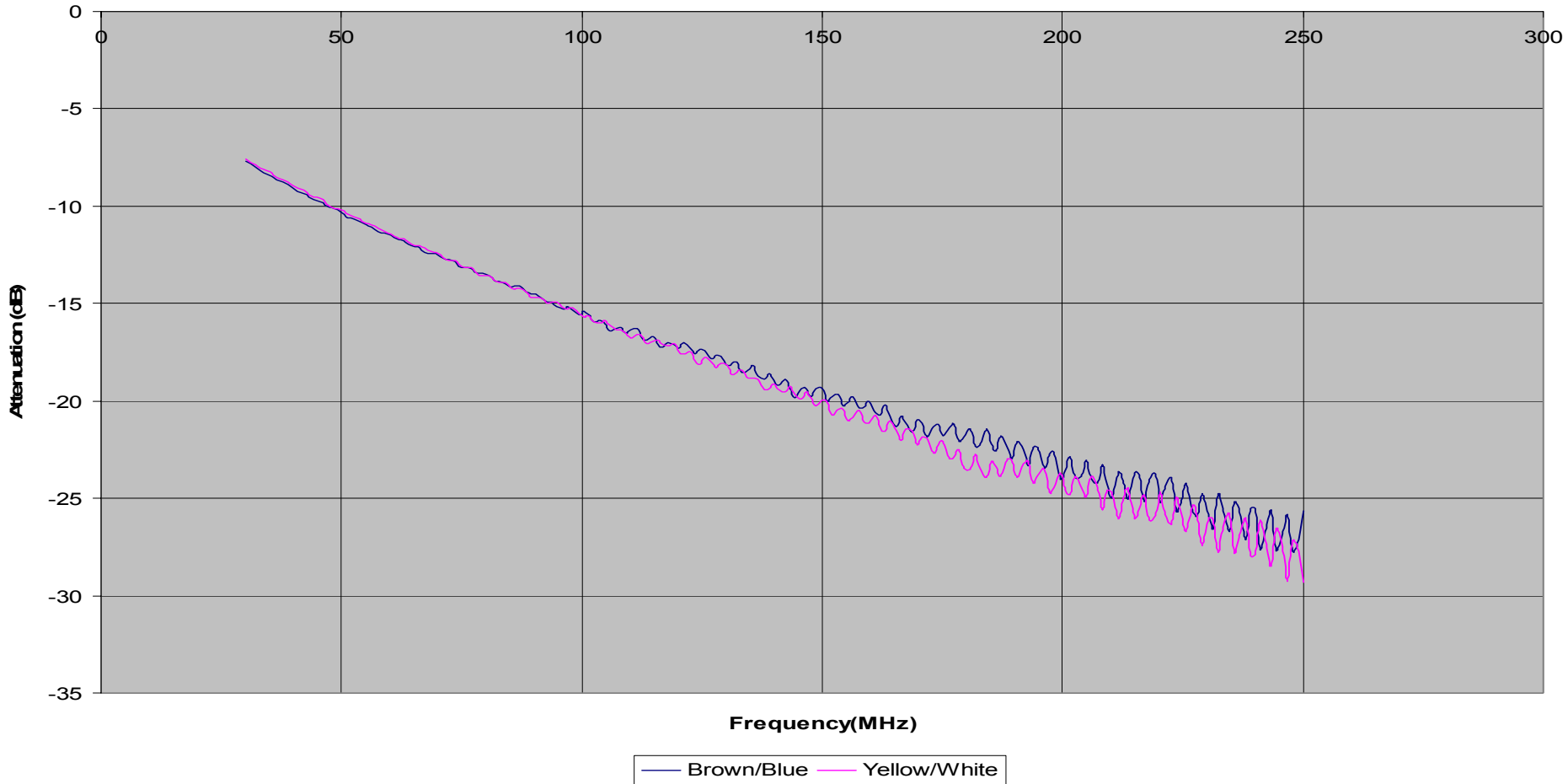
- 28 AWG Stranded Hitachi #48213-068 SCSI3
- DC Resistance = 12.4 ohms
- CHANNEL: 1
- MEASURE TYPE: S21
- FORMAT TYPE: LOG MAG, Phase, Group Delay
- NUMBER of POINTS: 201
- SWEEP TIME: 4.3 s
- SWEEP TYPE: LIN FREQ
- SOURCE POWER: 20 dBm
- IF BANDWIDTH: 100 Hz

XL Format

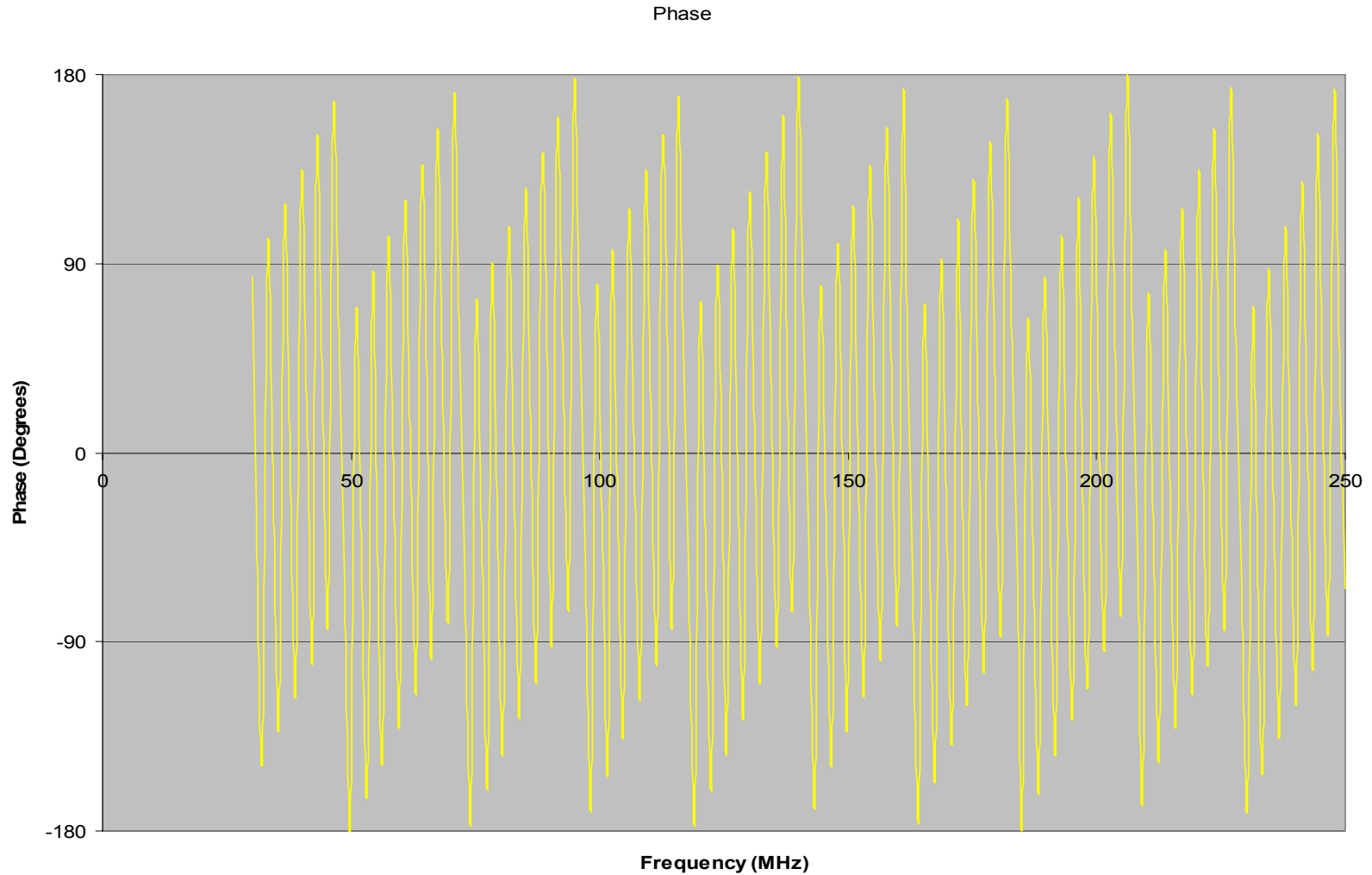
DC Resistance = 12.4 ohms				
CHANNEL: 1				
MEASURE TYPE: S21				
FORMAT TYPE: LOG MAG				
NUMBER of POINTS: 201				
SWEEP TIME: 4.3 s				
SWEEP TYPE: LIN FREQ				
SOURCE POWER: 20 dBm				
IF BANDWIDTH: 100 Hz				
Frequency	Brown/Blue	Yellow/White	Phase	Group Delay
3.00E+01	-7.69E+00	-7.55E+00	8.35E+01	2.90E+02
3.11E+01	-7.82E+00	-7.73E+00	-3.14E+01	2.90E+02
3.22E+01	-7.99E+00	-7.87E+00	-1.46E+02	2.90E+02
3.33E+01	-8.18E+00	-8.04E+00	9.92E+01	2.90E+02
3.44E+01	-8.33E+00	-8.17E+00	-1.54E+01	2.89E+02
3.55E+01	-8.47E+00	-8.30E+00	-1.30E+02	2.89E+02
3.66E+01	-8.64E+00	-8.50E+00	1.16E+02	2.90E+02
3.77E+01	-8.79E+00	-8.67E+00	6.65E-01	2.89E+02
3.88E+01	-8.89E+00	-8.75E+00	-1.14E+02	2.89E+02
3.99E+01	-9.07E+00	-8.95E+00	1.32E+02	2.90E+02
4.10E+01	-9.22E+00	-9.08E+00	1.67E+01	2.90E+02

190' 28 AWG Stranded Hitachi #48213-068

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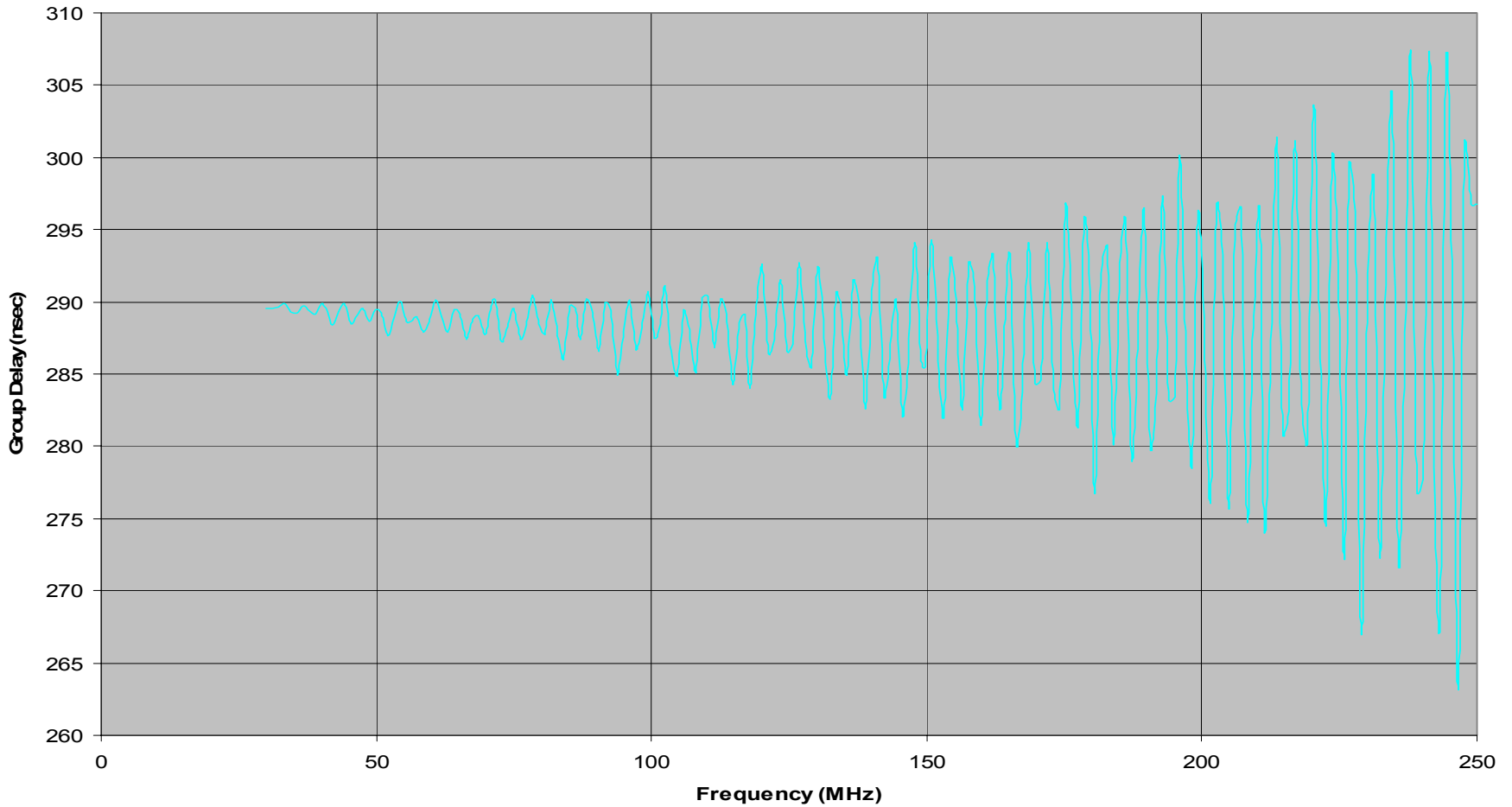


Phase-190' 28 AWG Stranded Hitachi #48213-068



Group Delay-190' 28 AWG Stranded Hitachi

Group Delay



Data

- Amphenol Spectra Strip Twist-N-Flat #LL31941
- DC Resistance = 21.4 ohms
- CHANNEL: 1
- MEASURE TYPE: S21
- FORMAT TYPE: LOG MAG
- NUMBER of POINTS: 201
- SWEEP TIME: 4.3 s
- SWEEP TYPE: LIN FREQ
- SOURCE POWER: 20 dBm
- IF BANDWIDTH: 100 Hz

Amphenol Spectra Strip #LL31941

190' Amphenol SpectraStrip TnF #LL31941
Frequency (MHz)

