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Cable Round Robin –2

Aug 13<sup>th</sup> 01

Umesh Chandra

Himanshu R. Desai

**T10/01-256r0**

# Set Up

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- HP 4396-A Network Spectrum Analyzer was used for measurements.
- M/A-COM TP-101 Wide-Band Balun Test Fixture was used with 68 Ohm shunt and 47 Ohm series resistors.
- Calibration is done before each measurements to remove insertion loss of the fixtures.
- IF BW was set to 30 Hz & data was collected from 1 MHz to 1 GHz.
- Attenuation values at 80, 160, 200 and 600 MHz were tabulated.

# Round Robin 2 Cable Attenuation

**Hitachi round shielded cable with no connector, 28 AWG 7-36 TC:  
25 Meter.**

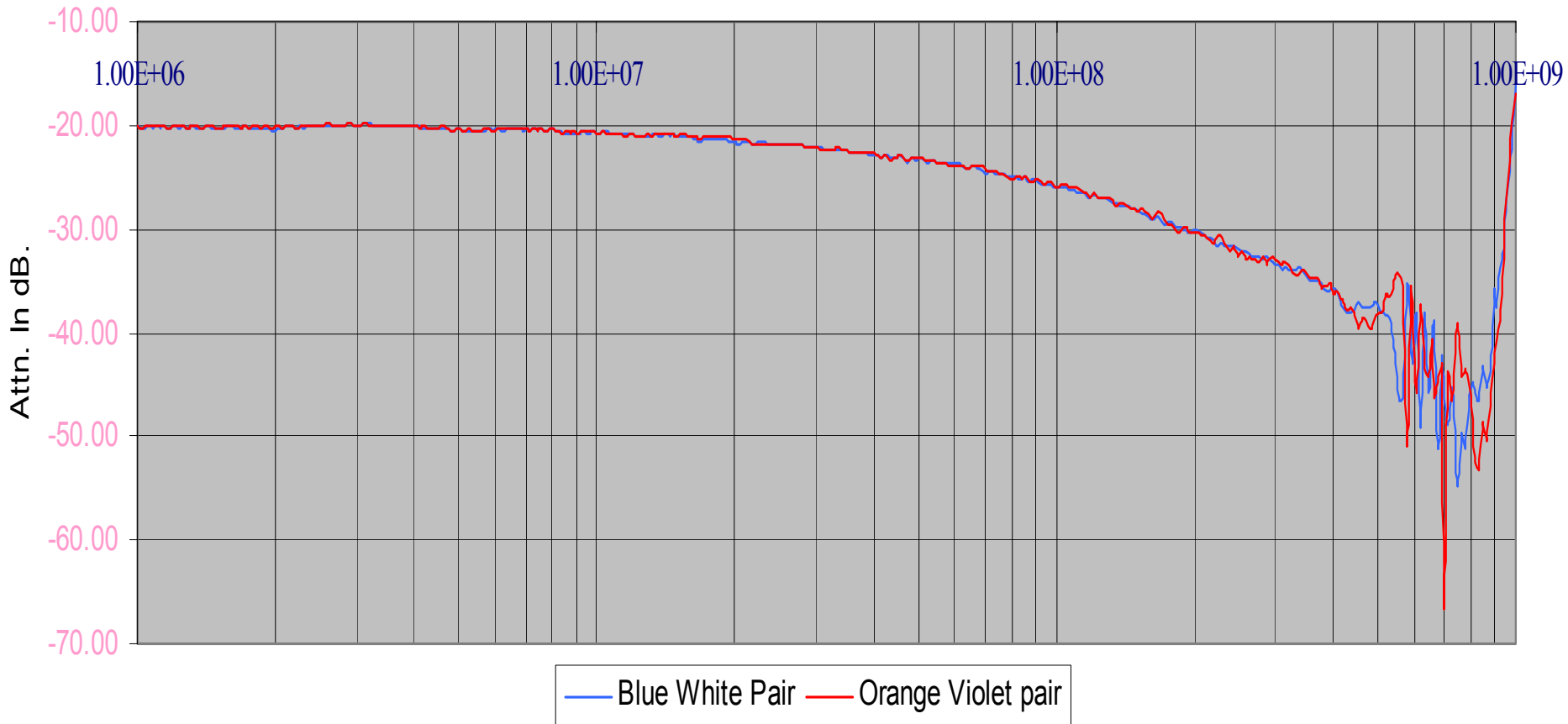
<b>Blue White pair</b>	
<b>Frequency</b>	<b>Attn. In dB.</b>
<b>80 MHz</b>	<b>-24.962</b>
<b>160 MH</b>	<b>-28.843</b>
<b>200 MHz</b>	<b>-30.053</b>

<b>Orange Violet pair</b>	
<b>Frequency</b>	<b>Attn. In dB.</b>
<b>80 MHz</b>	<b>-25.217</b>
<b>160 MH</b>	<b>-28.764</b>
<b>200 MHz</b>	<b>-30.433</b>

<b>Tan White pair</b>	
<b>Frequency</b>	<b>Attn. In dB.</b>
<b>80 MHz</b>	<b>-25.077</b>
<b>160 MH</b>	<b>-28.96</b>
<b>200 MHz</b>	<b>-30.532</b>

# Round Robin 2 Cable Attenuation

Hitachi round shielded cable with no connector, 28 AWG 7-36 TC:  
Log f.



# Round Robin 2 Cable Attenuation

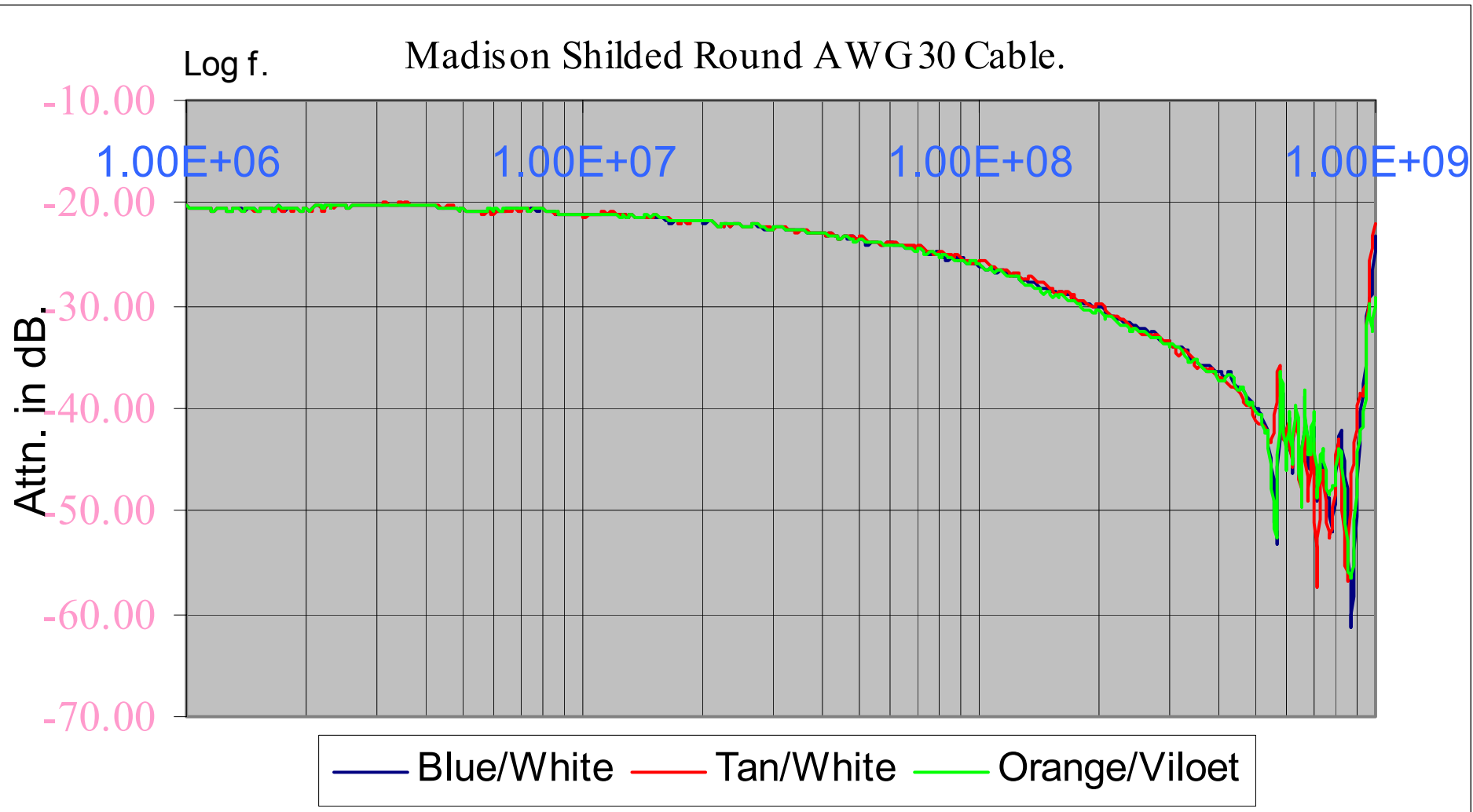
Madison Round twisted pair cable with overall shield, 30 AWG solid TC:  
25 Meter.

Blue White pair	
Frequency	Attn. In dB.
80 MHz	-24.951
160 MH	-28.734
200 MHz	-30.048

Tan White pair	
Frequency	Attn. In dB.
80 MHz	-24.787
160 MH	-28.586
200 MHz	-29.838

Orange Violet pair	
Frequency	Attn. In dB.
80 MHz	-25.266
160 MH	-28.973
200 MHz	-30.537

# Round Robin 2 Cable Attenuation



# Round Robin 2 Cable Attenuation

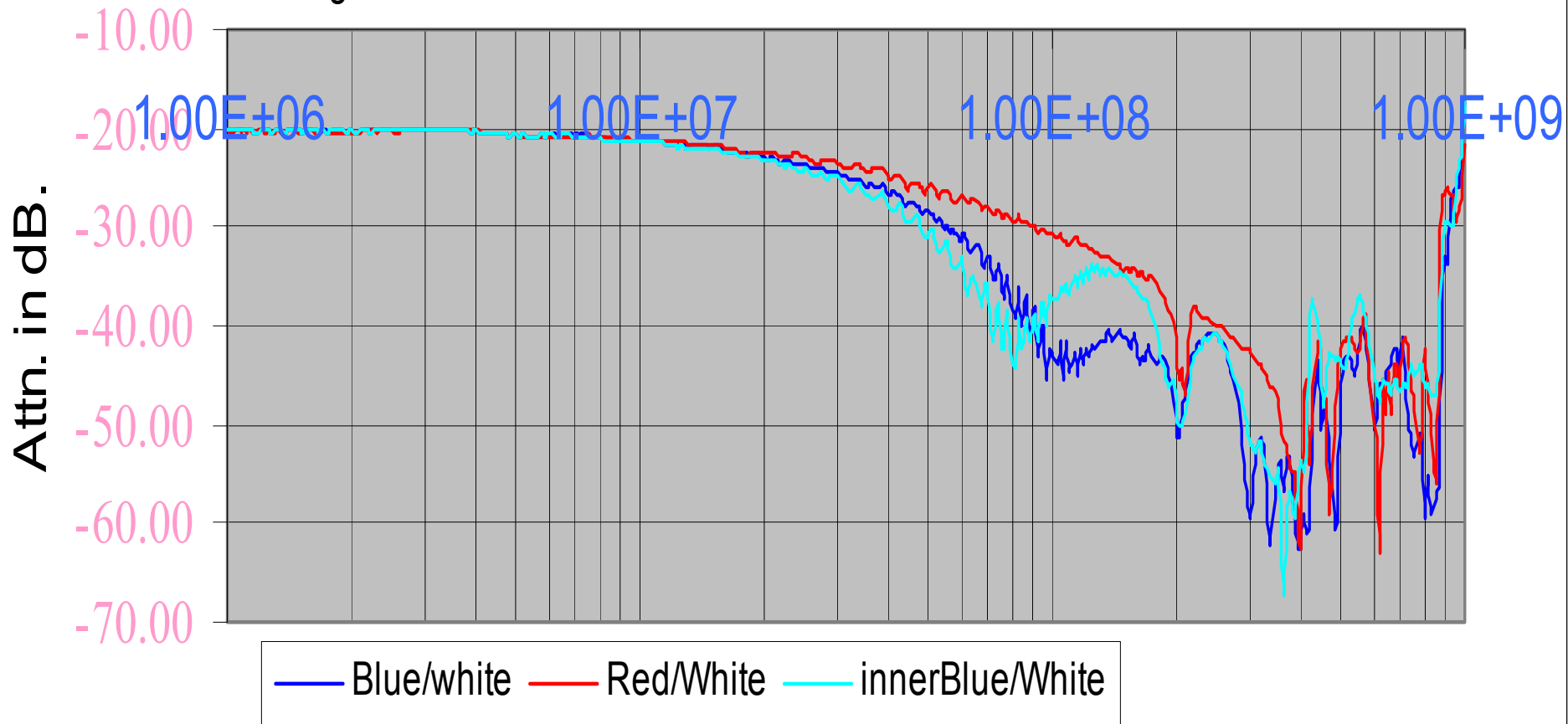
**Twisted pair ribbon Hitachi Cable. 8.10 Twist/ 1.75 Flat cable.  
25 Meter.**

<b>Blue White pair</b>	
<b>Frequency</b>	<b>Attn. In dB.</b>
<b>80 MHz</b>	<b>-37.804</b>
<b>160 MH</b>	<b>-41.326</b>
<b>200 MHz</b>	<b>-50.788</b>

<b>Red White pair</b>	
<b>Frequency</b>	<b>Attn. In dB.</b>
<b>80 MHz</b>	<b>-29.376</b>
<b>160 MH</b>	<b>-34.371</b>
<b>200 MHz</b>	<b>-43.354</b>

# Round Robin 2 Cable Attenuation

Hitachi Twisted pair ribbon cable 8.10 Twist/ 1.75 Flat cable.  
Log f.





# Round Robin 2 Cable Attenuation

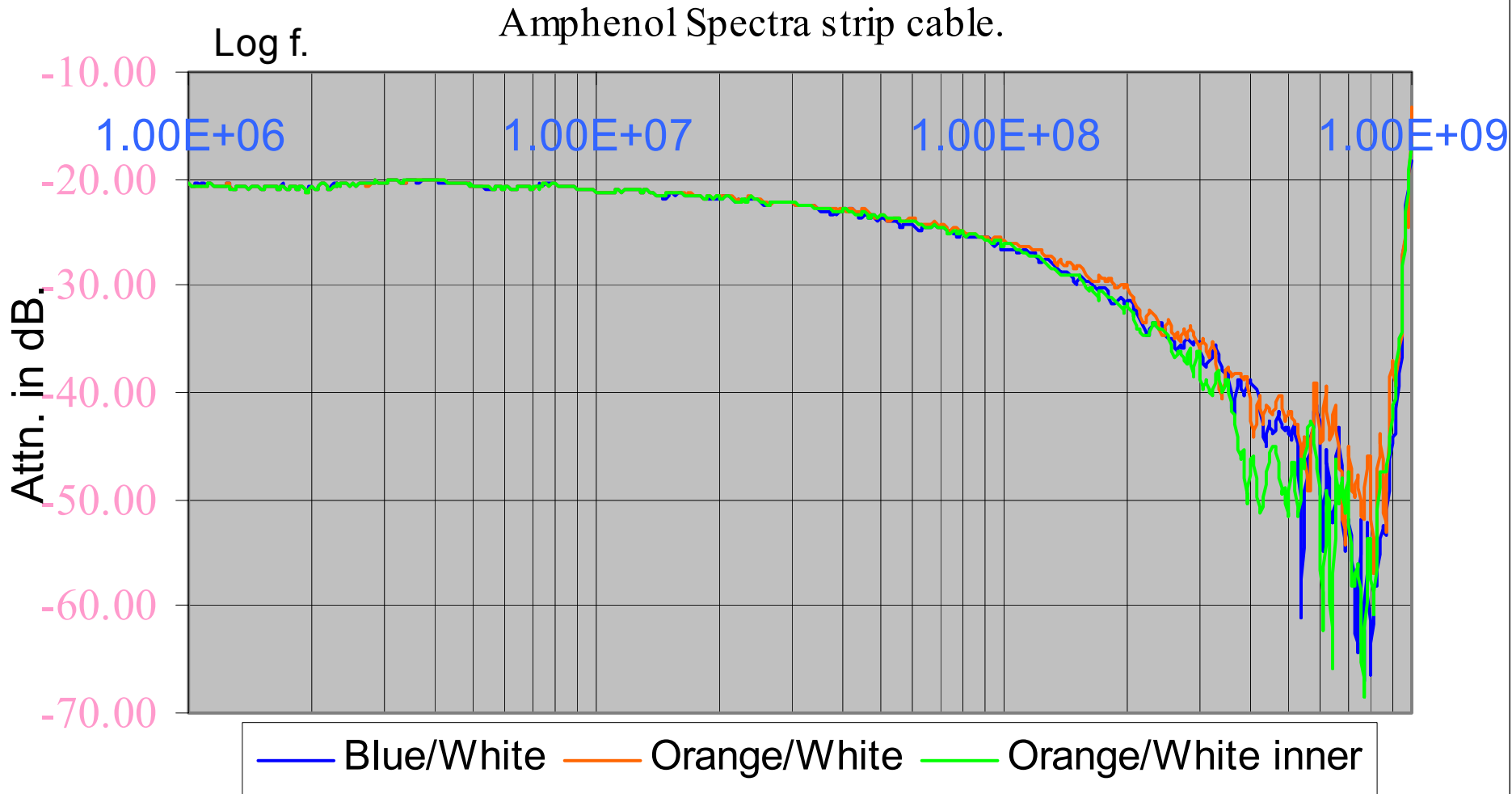
Amphenol Spectra Strip Twisted pair ribbon cable.  
25 Meter.

Blue White pair	
Frequency	Attn. In dB.
80 MHz	-25.447
160 MH	-29.677
200 MHz	-31.518

Orange White pair	
Frequency	Attn. In dB.
80 MHz	-25.116
160 MH	-30.221
200 MHz	-31.779

Orange White inner pair	
Frequency	Attn. In dB.
80 MHz	-24.831
160 MH	-29.108
200 MHz	-30.145

# Round Robin 2 Cable Attenuation



# Summary

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- Hitachi round shielded cable AWG 28 (-30.141 dB @ 200 MHz) and Madison Round shielded cable AWG 30 (-30.339 dB @ 200 MHz) has nearly the same attenuation.
- Amphenol Spectra Strip cable (no flats, -30.14 dB @ 200 MHz) has much less attenuation than Hitachi Twist and flat Cable (-47.07 dB @ 200 MHz)