

DCM Test Report

| | | |
|--------------------------------|--------------------------------------|---|
| Cable Type : 4x2x23 x PE/PVC | Factory Number : PHOENIX | Data File Name : DA116115.D3S |
| Cable I.D. : U/UTP#23X4P CABLE | Order Number : 8122 GY-265 210844898 | Specification File : SLOT C6-305M.S3S |
| Temperature : 25.00 °C | Relative Humidity : 50 % | Test Date/Time : 08/27/2021 12:17:06 PM |
| Length : 305.00 m | Number of Pairs to Test : 4 | Operator : M 210827WE303002/1 |
| Starting Position : 1 | | Analyzer Type : ENA |

Pass - Fail Test Certificate - 4 Pairs

High Frequency

| Test Type | Test Result |
|--|-------------|
| Input Impedance (Zin)(Ohms)(Terminated) | OK |
| Return Loss (RL)(dB) | OK |
| Insertion Loss (IL)(Curve Fit)(dB/100.0 m)@20C | OK |
| Near End Crosstalk Loss (NEXT)(dB) | OK |
| Power Sum NEXT(PSNEXT)(dB) | OK |

Low Frequency

| Test Type | Test Result |
|---|-------------|
| Conductor Resistance(Ohms/100.0 m)@20C | OK |
| Resistance Unbalance(%) | OK |
| Mutual Capacitance(nF/100.0 m)@1000Hz | OK |
| Cap. Unbalance to Ground(pF/100.0 m)@1000Hz | OK |

| | | |
|------------|-----------|-------|
| Signature: | Approved: | Date: |
|------------|-----------|-------|

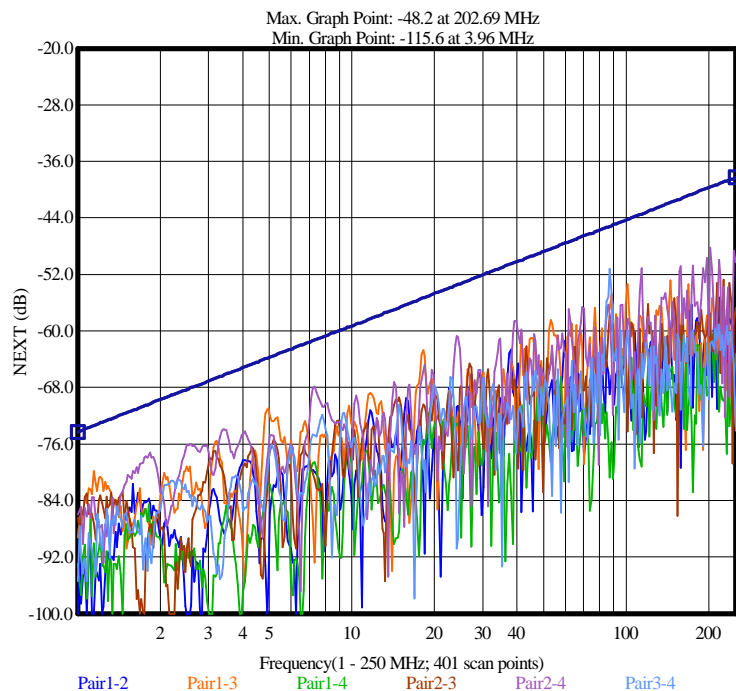
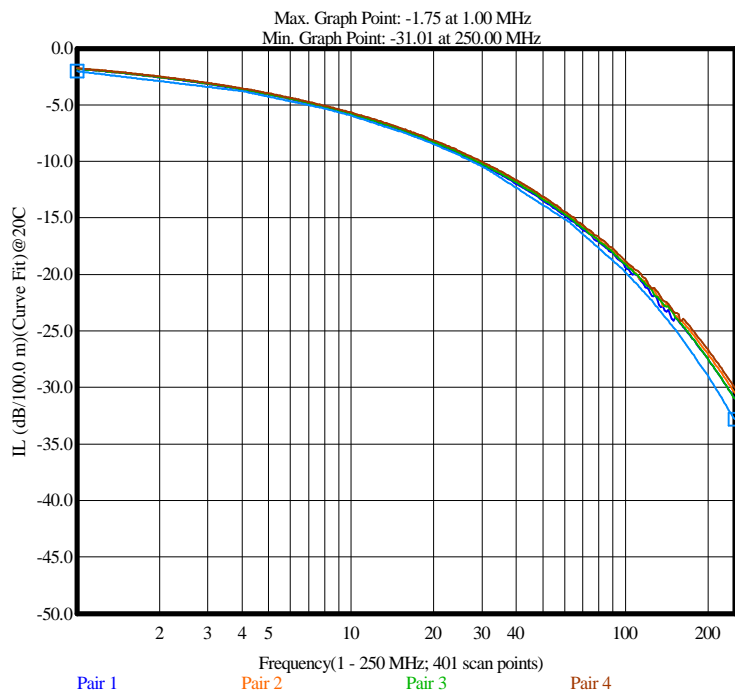
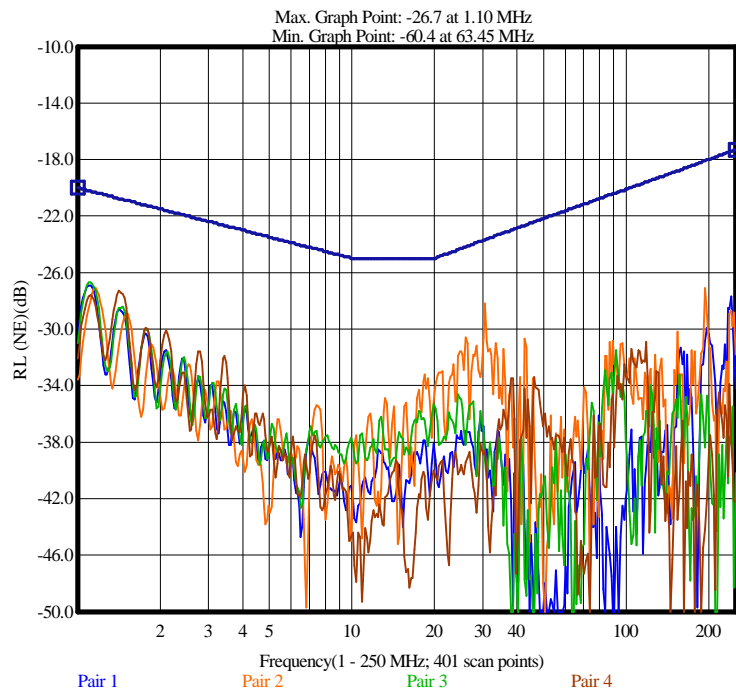
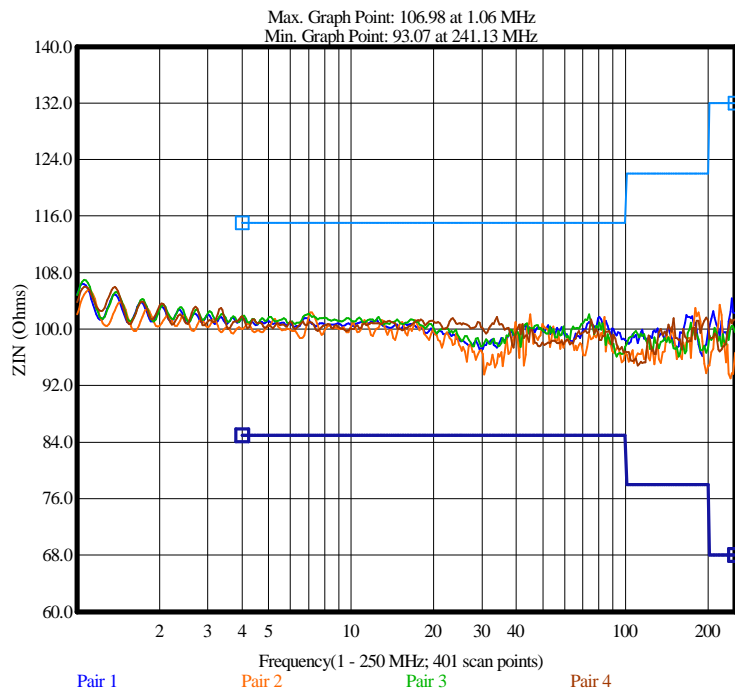
DCM Test Report

| | | |
|--------------------------------|--------------------------------------|---|
| Cable Type : 4x2x23 x PE/PVC | Factory Number : PHOENIX | Data File Name : DA116115.D3S |
| Cable I.D. : U/UTP#23X4P CABLE | Order Number : 8122 GY-265 210844898 | Specification File : SLOT C6-305M.S3S |
| Temperature : 25.00 °C | Relative Humidity : 50 % | Test Date/Time : 08/27/2021 12:17:06 PM |
| Length : 305.00 m | Number of Pairs to Test : 4 | Operator : M 210827WE303002/1 |
| Starting Position : 1 | | Analyzer Type : ENA |

Worst Case Summary

High Frequency

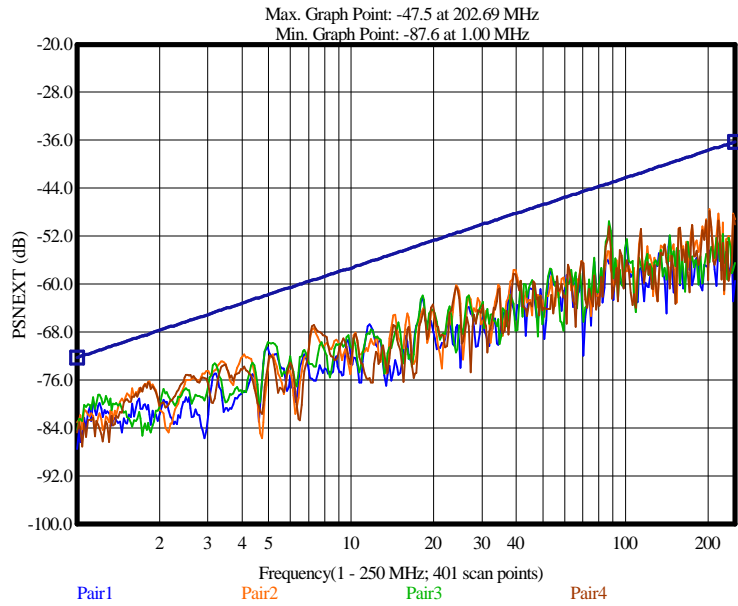
| Test Type | Specification | Measured (Pair) | Margin | @ Frequency (MHz) | Test Result |
|------------------------------------|---------------|------------------|--------|-------------------|-------------|
| Input Impedance (Zin)(Terminated) | 85.00 (Min) | 93.59 (Pair 2) | 8.59 | 30.60 | Passed |
| Input Impedance (Zin)(Terminated) | 115.00 (Max) | 102.36 (Pair 2) | 12.64 | 7.10 | Passed |
| Return Loss (RL) | 23.7 (Min) | 28.2 (Pair 2) | 4.5 | 30.60 | Passed |
| Insertion Loss (IL)(Curve Fit)@20C | 5.97 (Max) | 5.88 (Pair 1) | 0.09 | 10.07 | Passed |
| Near End Crosstalk Loss (NEXT) | 45.2 (Min) | 51.3 (Pairs 3-4) | 6.1 | 87.12 | Passed |
| Power Sum NEXT(PSNEXT) | 43.2 (Min) | 49.5 (Pair 3) | 6.3 | 87.12 | Passed |



N/A = Not Applicable.
 --- = Disable/Bypassed Pair.

* = Measured value out of spec.
 xxx = No entry.

*** = Measured value is invalid.



N/A = Not Applicable.
--- = Disable/Bypassed Pair.

* = Measured value out of spec.
xxx = No entry.

*** = Measured value is invalid.

Worst Case Summary

Low Frequency

| Statistical Parameter | Maximum | | Minimum | | Average Maximum | | Standard Deviation | | Result |
|---|------------|----------|------------|----------|-----------------|----------|--------------------|----------|--------|
| | Spec Limit | Measured | Spec Limit | Measured | Spec Limit | Measured | Spec Limit | Measured | |
| Conductor Resistance(Ohms/100.0 m)@20C | 9.38 | 7.66 | xxx | 7.38 | xxx | 7.51 | xxx | 0.111 | Passed |
| Resistance Unbalance(%) | 5.00 | 0.34 | xxx | 0.04 | xxx | 0.17 | xxx | 0.116 | Passed |
| Mutual Capacitance(nF/100.0 m)@1000Hz | 5.60 | 5.27 | xxx | 5.02 | xxx | 5.14 | xxx | 0.105 | Passed |
| Cap. Unbalance to Ground(pF/100.0 m)@1000Hz | 330.00 | 25.12 | xxx | 1.35 | xxx | 16.76 | xxx | 9.147 | Passed |

Detail: Resistance/Capacitance Measurement -Normalized

| Test Types | Conductor Resistance Ra @20C | Conductor Resistance Rb @20C | Resistance Unbalance | Mutual Capacitance @1000 Hz | Capacitance Unbalance to Ground @1000 Hz | Test Result |
|------------|------------------------------|------------------------------|----------------------|-----------------------------|--|-------------|
| Unit | Ohms/100.0 m | Ohms/100.0 m | % | nF/100.0 m | pF/100.0 m | |
| Max Spec | 9.38 | 9.38 | 5.00 | 5.60 | 330.00 | |
| Min Spec | xxx | xxx | xxx | xxx | xxx | |
| Pair 1 [1] | 7.66 | 7.63 | 0.34 | 5.27 | -25.12 | Passed |
| Pair 2 [2] | 7.42 | 7.41 | 0.21 | 5.07 | 19.15 | Passed |
| Pair 3 [3] | 7.59 | 7.60 | 0.04 | 5.22 | 21.42 | Passed |
| Pair 4 [4] | 7.38 | 7.39 | 0.09 | 5.02 | 1.35 | Passed |

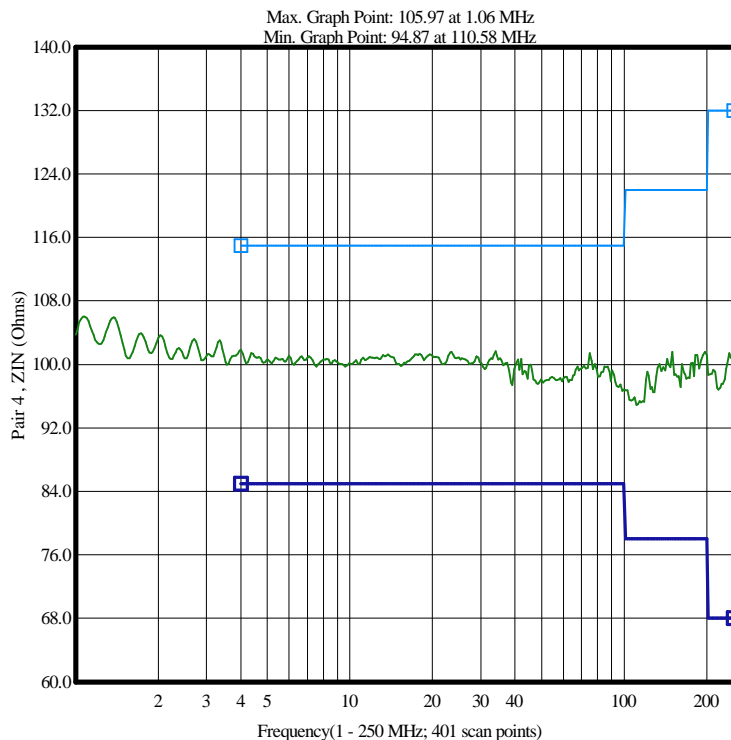
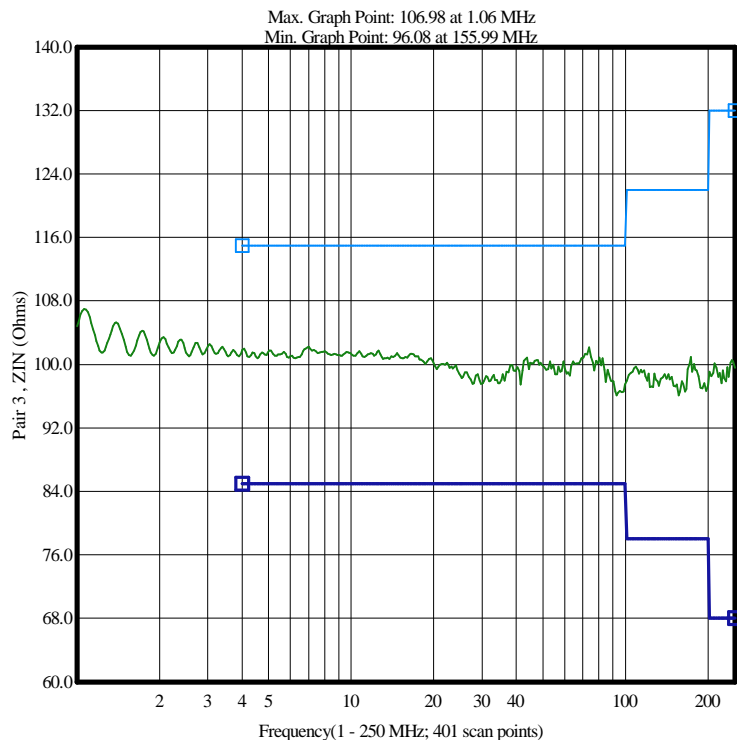
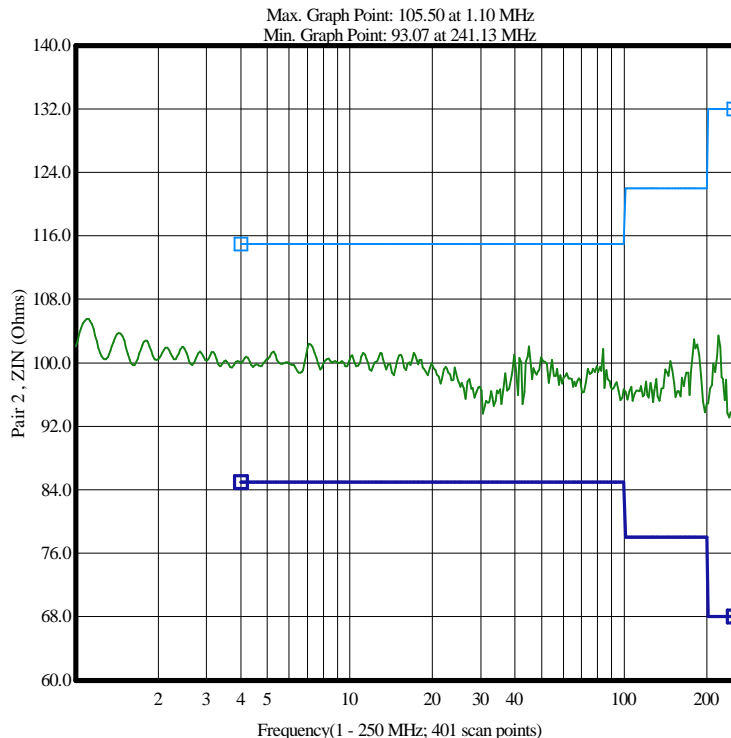
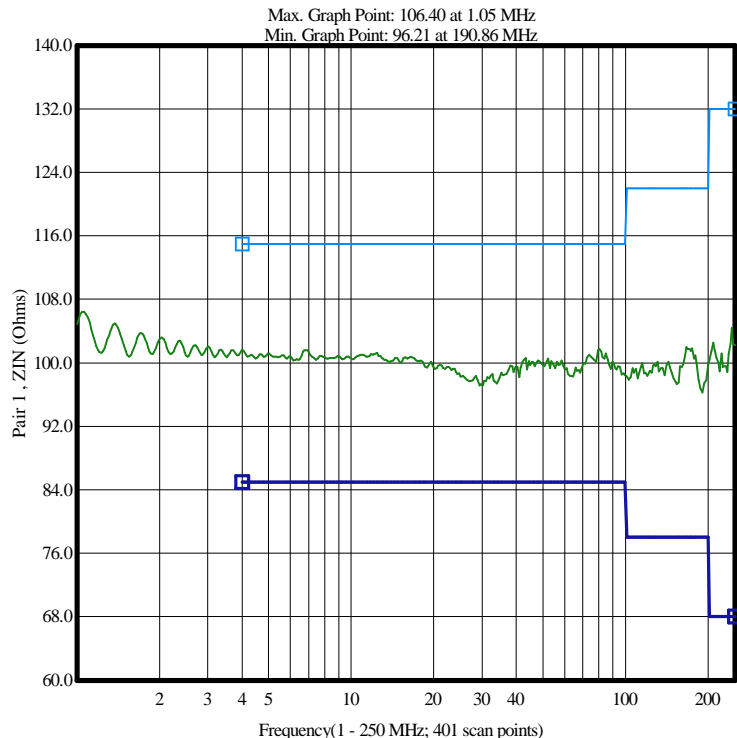
N/A = Not Applicable.
--- = Disable/Bypassed Pair.

* = Measured value out of spec.
xxx = No entry.

*** = Measured value is invalid.

Summary and Graphic: Input Impedance (Zin)(Terminated)

| Pair | Specification | | Measured(Ohms) | | Margin (Ohms) | | @ Frequency (MHz) | | Test Result |
|------------|---------------|---------|----------------|---------|---------------|---------|-------------------|---------|-------------|
| | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum | |
| Pair 1 [1] | 85.00 | 115.00 | 97.13 | 101.70 | 12.13 | 13.30 | 29.34 | 80.42 | Passed |
| Pair 2 [2] | 85.00 | 115.00 | 93.59 | 102.36 | 8.59 | 12.64 | 30.60 | 7.10 | Passed |
| Pair 3 [3] | 85.00 | 115.00 | 96.11 | 102.19 | 11.11 | 12.81 | 92.71 | 7.00 | Passed |
| Pair 4 [4] | 85.00 | 115.00 | 96.69 | 101.83 | 11.69 | 13.17 | 98.22 | 4.02 | Passed |



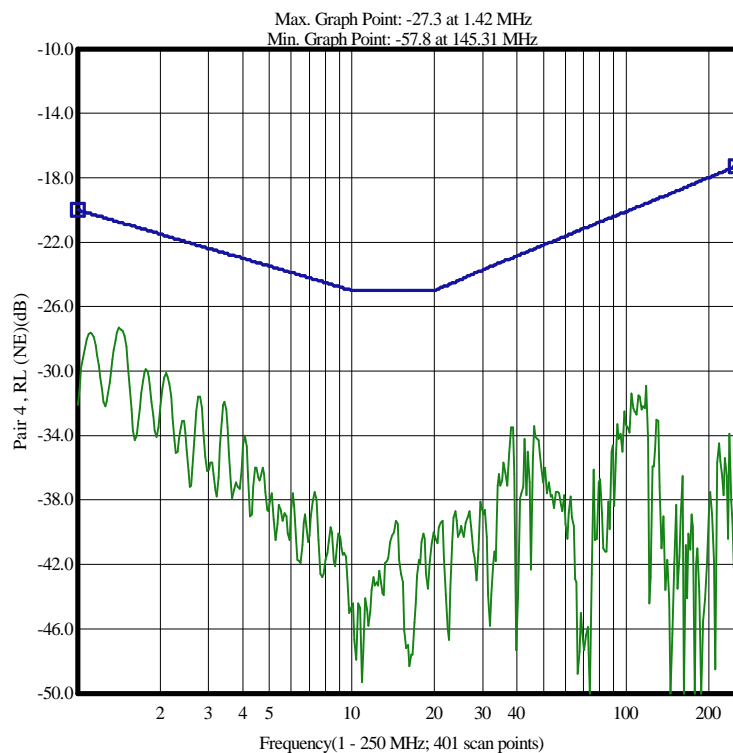
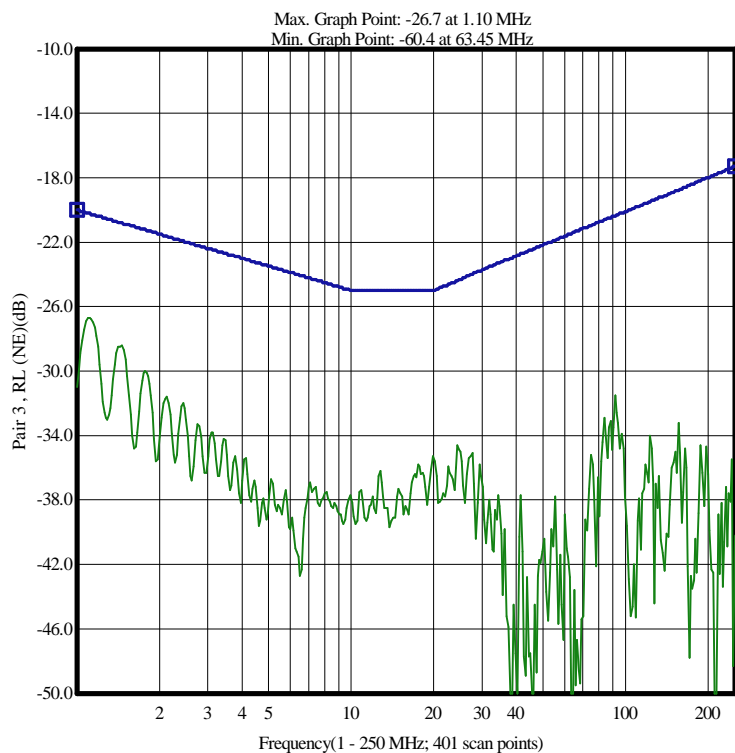
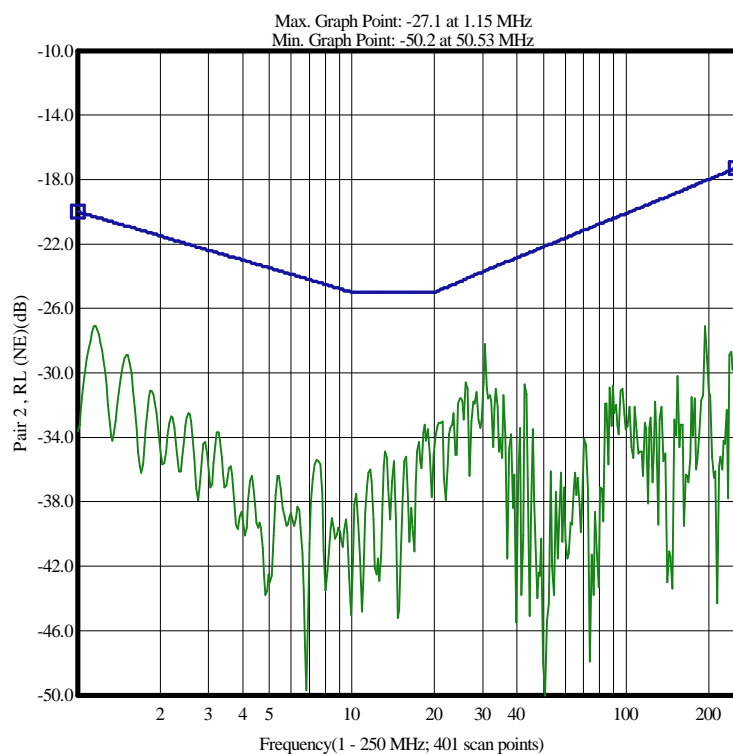
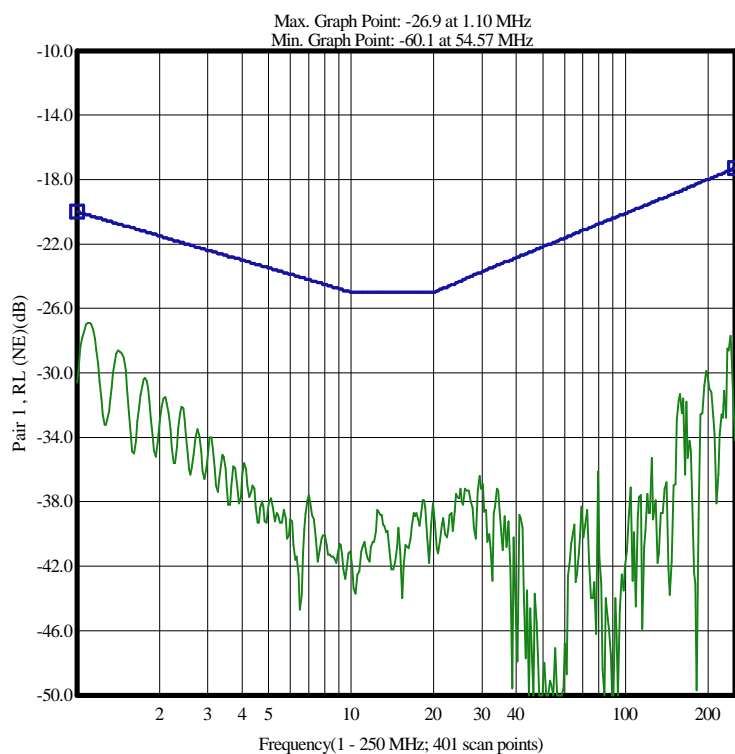
N/A = Not Applicable.
--- = Disable/Bypassed Pair.

* = Measured value out of spec.
xxx = No entry.

*** = Measured value is invalid.

Summary and Graphic: Return Loss (RL)

| Pair | Spec (Min)(dB) | Measured(dB) | Margin (dB) | @ Frequency (MHz) | Test Result |
|------------|----------------|--------------|-------------|-------------------|-------------|
| Pair 1 [1] | 20.2 | 26.9 | 6.7 | 1.10 | Passed |
| Pair 2 [2] | 23.7 | 28.2 | 4.5 | 30.60 | Passed |
| Pair 3 [3] | 20.2 | 26.7 | 6.5 | 1.10 | Passed |
| Pair 4 [4] | 20.8 | 27.3 | 6.5 | 1.42 | Passed |



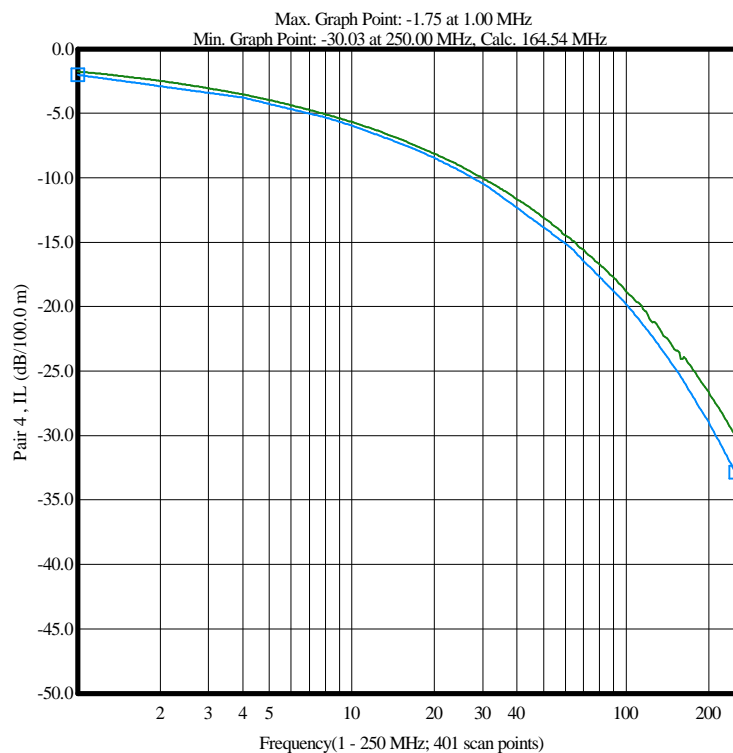
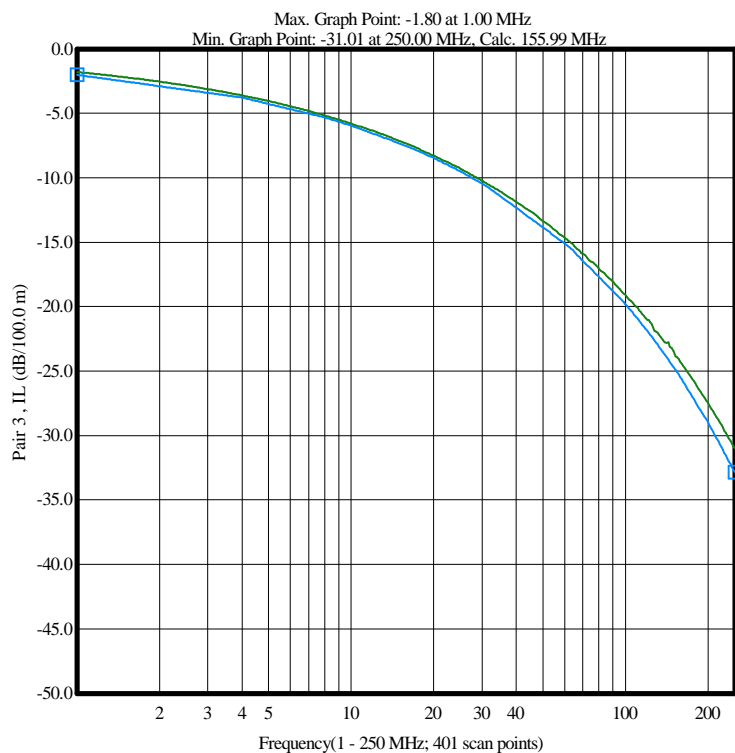
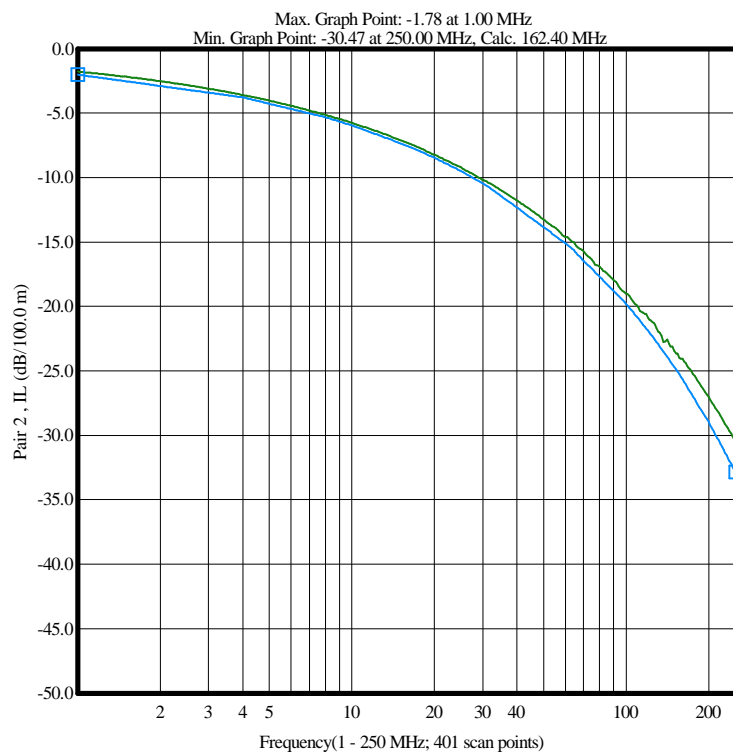
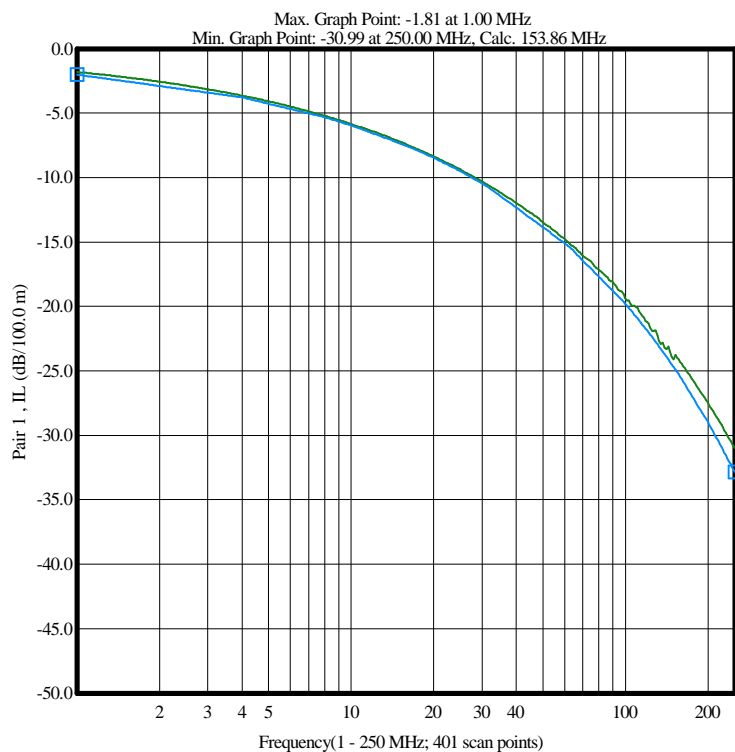
N/A = Not Applicable.
--- = Disable/Bypassed Pair.

* = Measured value out of spec.
xxx = No entry.

*** = Measured value is invalid.

Summary and Graphic: Insertion Loss (IL)(Curve Fit)@20C

| Pair | Spec (Max)(dB/100.0 m) | Measured(dB/100.0 m) | Margin (dB/100.0 m) | @ Frequency (MHz) | Test Result |
|------------|------------------------|----------------------|---------------------|-------------------|-------------|
| Pair 1 [1] | 5.97 | 5.88 | 0.09 | 10.07 | Passed |
| Pair 2 [2] | 5.29 | 5.11 | 0.18 | 7.90 | Passed |
| Pair 3 [3] | 5.92 | 5.78 | 0.14 | 9.91 | Passed |
| Pair 4 [4] | 3.77 | 3.52 | 0.25 | 3.96 | Passed |



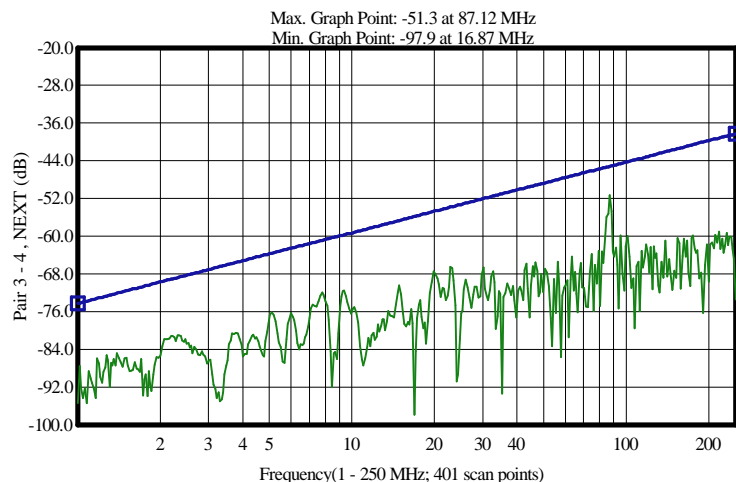
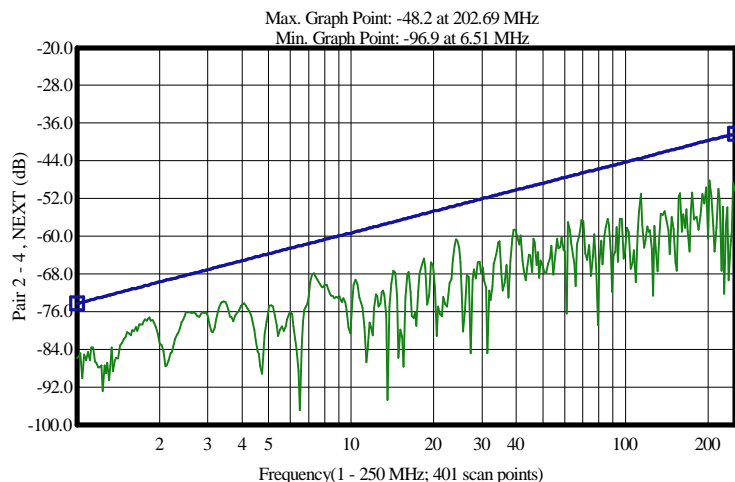
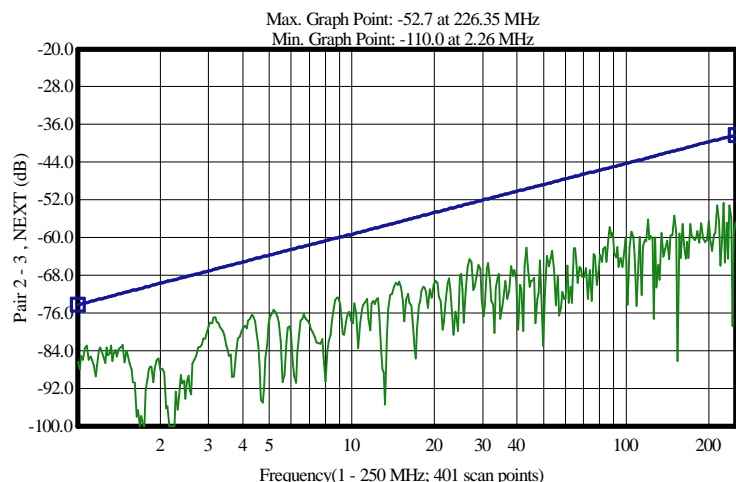
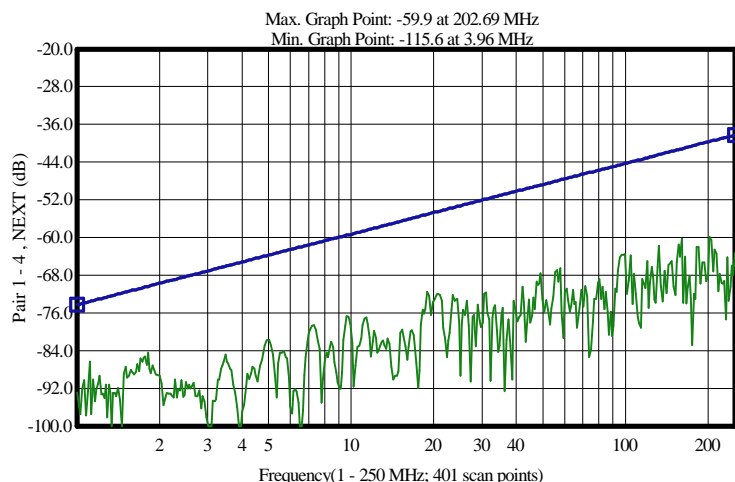
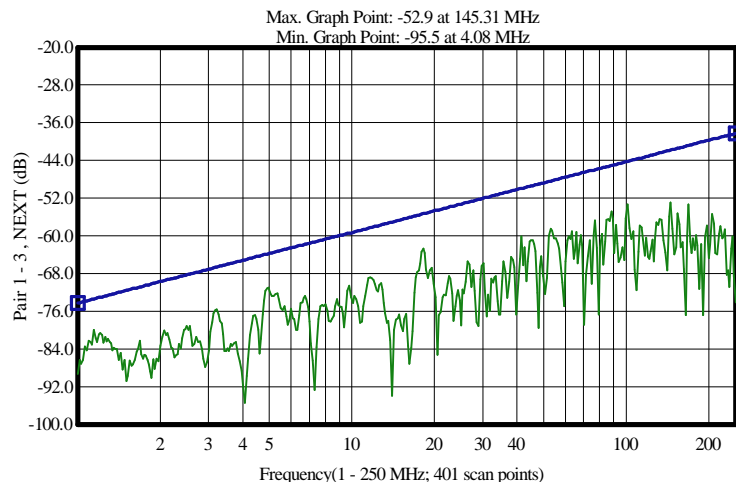
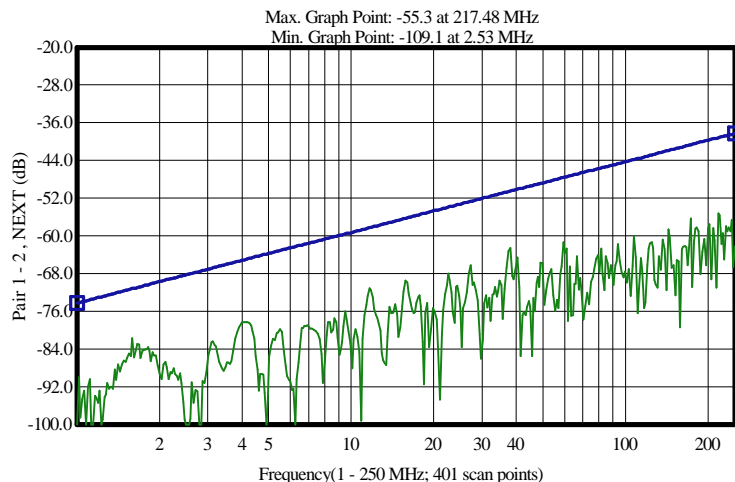
N/A = Not Applicable.
--- = Disable/Bypassed Pair.

* = Measured value out of spec.
xxx = No entry.

*** = Measured value is invalid.

Summary and Graphic: Near End Crosstalk Loss (NEXT)

| Pair | Spec (Min)(dB) | Measured(dB) | Margin (dB) | @ Frequency (MHz) | Test Result |
|------------|----------------|--------------|-------------|-------------------|-------------|
| Pair 1 - 2 | 71.2 | 81.7 | 10.5 | 1.59 | Passed |
| Pair 1 - 3 | 73.4 | 79.9 | 6.5 | 1.15 | Passed |
| Pair 1 - 4 | 73.6 | 86.4 | 12.8 | 1.11 | Passed |
| Pair 2 - 3 | 73.8 | 83.0 | 9.2 | 1.08 | Passed |
| Pair 2 - 4 | 61.3 | 67.9 | 6.6 | 7.33 | Passed |
| Pair 3 - 4 | 45.2 | 51.3 | 6.1 | 87.12 | Passed |



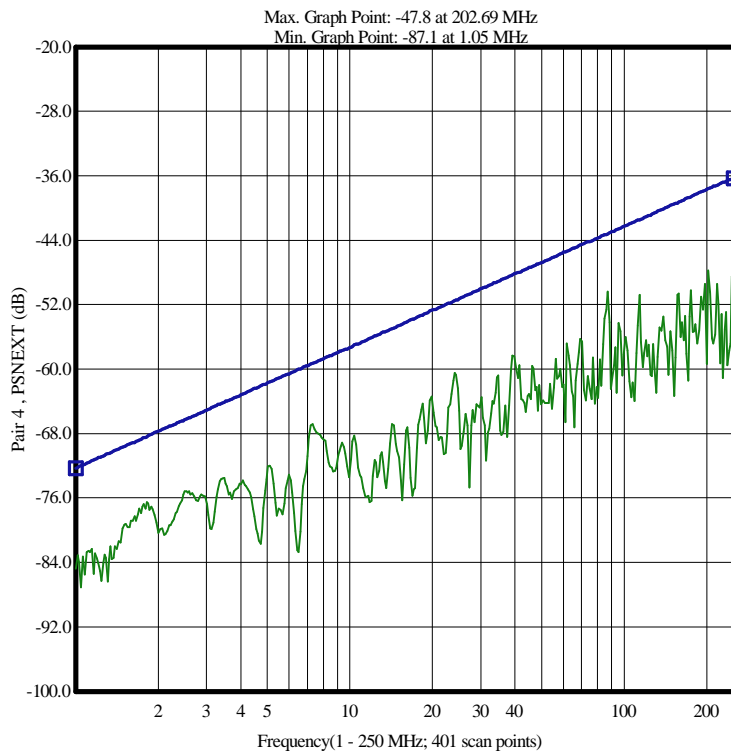
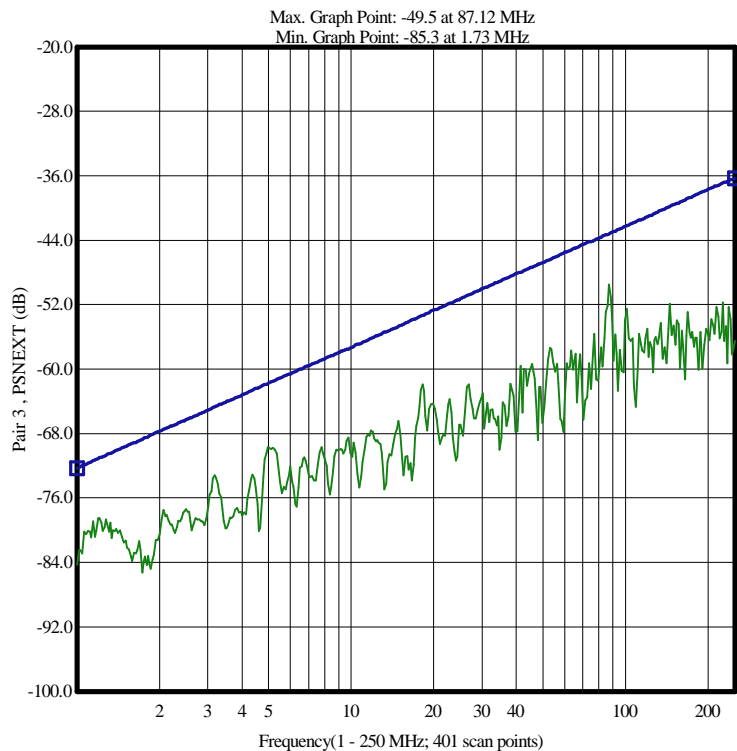
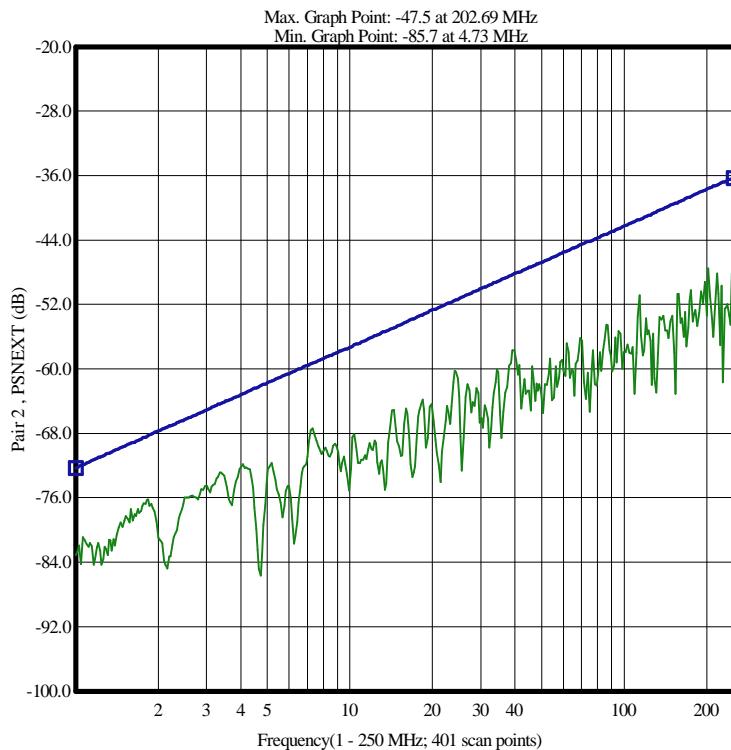
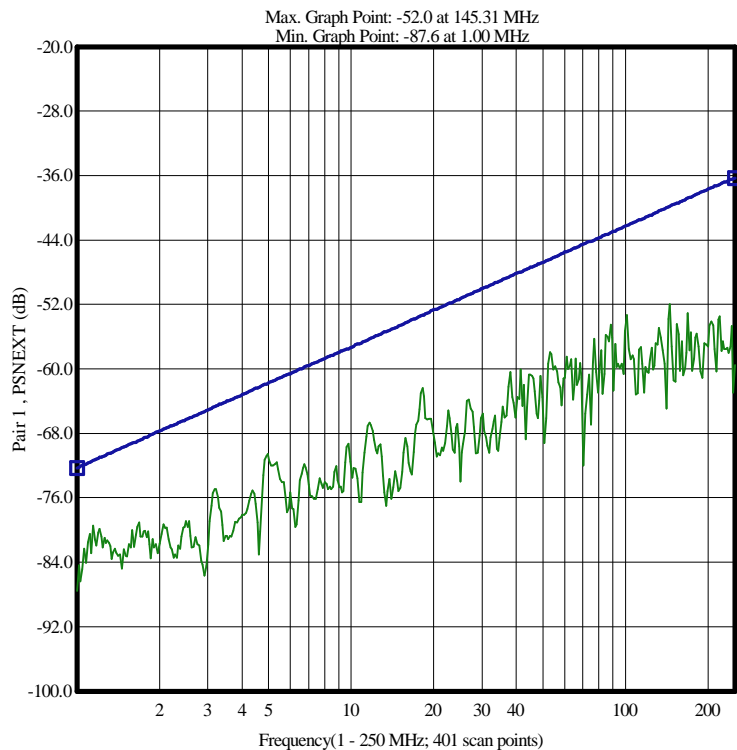
N/A = Not Applicable.
--- = Disable/Bypassed Pair.

* = Measured value out of spec.
xxx = No entry.

*** = Measured value is invalid.

Summary and Graphic: Power Sum NEXT(PSNEXT)

| Pair | Spec (Min)(dB) | Measured(dB) | Margin (dB) | @ Frequency (MHz) | Test Result |
|------------|----------------|--------------|-------------|-------------------|-------------|
| Pair 1 [1] | 71.4 | 79.5 | 8.1 | 1.15 | Passed |
| Pair 2 [2] | 68.3 | 76.2 | 7.9 | 1.84 | Passed |
| Pair 3 [3] | 43.2 | 49.5 | 6.3 | 87.12 | Passed |
| Pair 4 [4] | 43.2 | 50.4 | 7.2 | 87.12 | Passed |



N/A = Not Applicable.
--- = Disable/Bypassed Pair.

* = Measured value out of spec.
xxx = No entry.

*** = Measured value is invalid.

Detail Discrete Frequencies ---Input Impedance (Zin)(Ohms)(Terminated)

| | | | | | | | | | | |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Frequency | 4.00 | 8.00 | 10.00 | 16.00 | 20.00 | 25.00 | 31.25 | 62.50 | 99.90 | 100.00 |
| Max Spec | 115.00 | 115.00 | 115.00 | 115.00 | 115.00 | 115.00 | 115.00 | 115.00 | 115.00 | 122.00 |
| Min Spec | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 | 78.00 |
| Pair 1 [1] | 101.56 | 100.67 | 100.51 | 100.51 | 99.41 | 98.32 | 97.96 | 98.39 | 98.42 | 98.41 |
| Pair 2 [2] | 100.01 | 99.85 | 100.56 | 99.10 | 99.68 | 97.47 | 94.91 | 98.12 | 96.65 | 96.63 |
| Pair 3 [3] | 101.71 | 101.62 | 101.25 | 100.88 | 100.09 | 98.60 | 98.45 | 98.64 | 97.49 | 97.53 |
| Pair 4 [4] | 101.81 | 100.55 | 100.05 | 100.19 | 101.03 | 100.83 | 99.48 | 97.93 | 96.79 | 96.79 |

Continue:Input Impedance (Zin)(Ohms)(Terminated)

| | | | | | | | | | | |
|------------|--------|--------|--------|--------|--------|--|--|--|--|--|
| Frequency | 125.00 | 155.00 | 199.90 | 200.00 | 250.00 | | | | | |
| Max Spec | 122.00 | 122.00 | 122.00 | 132.00 | 132.00 | | | | | |
| Min Spec | 78.00 | 78.00 | 78.00 | 68.00 | 68.00 | | | | | |
| Pair 1 [1] | 99.02 | 97.45 | 99.73 | 99.75 | 102.25 | | | | | |
| Pair 2 [2] | 97.15 | 96.11 | 94.85 | 94.85 | 96.69 | | | | | |
| Pair 3 [3] | 97.21 | 96.74 | 97.45 | 97.50 | 99.57 | | | | | |
| Pair 4 [4] | 97.00 | 98.58 | 101.00 | 100.92 | 101.38 | | | | | |

Detail Discrete Frequencies ---Return Loss (RL)(dB)

| | | | | | | | | | | |
|------------|------|------|------|-------|-------|-------|-------|-------|-------|--------|
| Frequency | 1.00 | 4.00 | 8.00 | 10.00 | 16.00 | 20.00 | 25.00 | 31.25 | 62.50 | 100.00 |
| Min Spec | 20.0 | 23.0 | 24.5 | 25.0 | 25.0 | 25.0 | 24.3 | 23.6 | 21.5 | 20.1 |
| Pair 1 [1] | 30.6 | 36.7 | 40.1 | 41.7 | 40.8 | 38.6 | 37.3 | 39.6 | 41.8 | 41.9 |
| Pair 2 [2] | 33.6 | 39.0 | 43.1 | 43.1 | 38.0 | 34.6 | 31.6 | 31.3 | 39.6 | 33.5 |
| Pair 3 [3] | 31.0 | 37.2 | 37.6 | 38.0 | 38.6 | 35.4 | 35.0 | 40.0 | 42.6 | 38.1 |
| Pair 4 [4] | 32.1 | 35.0 | 41.8 | 44.5 | 47.0 | 40.2 | 39.6 | 42.3 | 38.0 | 33.3 |

Continue:Return Loss (RL)(dB)

| | | | | | | | | | | |
|------------|--------|--------|--|--|--|--|--|--|--|--|
| Frequency | 200.00 | 250.00 | | | | | | | | |
| Min Spec | 18.0 | 17.3 | | | | | | | | |
| Pair 1 [1] | 30.5 | 34.2 | | | | | | | | |
| Pair 2 [2] | 31.2 | 31.8 | | | | | | | | |
| Pair 3 [3] | 36.7 | 40.2 | | | | | | | | |
| Pair 4 [4] | 38.7 | 42.2 | | | | | | | | |

Detail Discrete Frequencies ---Insertion Loss (IL)(dB/100.0 m)(Curve Fit)@20C

| | | | | | | | | | | |
|------------|------|------|------|-------|-------|-------|-------|-------|-------|--------|
| Frequency | 1.00 | 4.00 | 8.00 | 10.00 | 16.00 | 20.00 | 25.00 | 31.25 | 62.50 | 100.00 |
| Max Spec | 2.02 | 3.78 | 5.32 | 5.95 | 7.55 | 8.47 | 9.50 | 10.67 | 15.38 | 19.79 |
| Pair 1 [1] | 1.81 | 3.65 | 5.22 | 5.85 | 7.45 | 8.37 | 9.38 | 10.53 | 15.13 | 19.37 |
| Pair 2 [2] | 1.78 | 3.60 | 5.14 | 5.77 | 7.33 | 8.24 | 9.22 | 10.35 | 14.83 | 18.98 |
| Pair 3 [3] | 1.80 | 3.61 | 5.17 | 5.80 | 7.38 | 8.30 | 9.29 | 10.45 | 14.96 | 19.08 |
| Pair 4 [4] | 1.75 | 3.54 | 5.08 | 5.69 | 7.25 | 8.14 | 9.12 | 10.25 | 14.72 | 18.80 |

Continue:Insertion Loss (IL)(dB/100.0 m)(Curve Fit)@20C

| | | | | | | | | | | |
|------------|--------|--------|--------|--------|--|--|--|--|--|--|
| Frequency | 125.00 | 155.00 | 200.00 | 250.00 | | | | | | |
| Max Spec | 22.35 | 25.16 | 28.98 | 32.84 | | | | | | |
| Pair 1 [1] | 21.89 | 24.04 | 27.52 | 30.99 | | | | | | |
| Pair 2 [2] | 21.25 | 23.87 | 27.06 | 30.47 | | | | | | |
| Pair 3 [3] | 21.47 | 24.00 | 27.50 | 31.01 | | | | | | |
| Pair 4 [4] | 21.22 | 23.48 | 26.68 | 30.03 | | | | | | |

Detail Discrete Frequencies ---Near End Crosstalk Loss (NEXT)(dB)

| | | | | | | | | | | |
|------------|-------|-------|------|-------|-------|-------|-------|-------|-------|--------|
| Frequency | 1.00 | 4.00 | 8.00 | 10.00 | 16.00 | 20.00 | 25.00 | 31.25 | 62.50 | 100.00 |
| Min Spec | 74.3 | 65.2 | 60.7 | 59.3 | 56.2 | 54.7 | 53.3 | 51.8 | 47.3 | 44.3 |
| Pair 1 - 2 | 102.2 | 78.5 | 87.4 | 85.8 | 70.0 | 75.8 | 75.6 | 74.0 | 68.6 | 67.9 |
| Pair 1 - 3 | 89.3 | 90.8 | 74.7 | 73.7 | 83.4 | 71.4 | 78.5 | 74.6 | 60.6 | 55.8 |
| Pair 1 - 4 | 92.9 | 102.3 | 86.8 | 80.7 | 85.9 | 73.4 | 88.3 | 74.1 | 75.3 | 64.8 |
| Pair 2 - 3 | 86.4 | 79.4 | 89.8 | 78.0 | 72.0 | 69.7 | 67.8 | 66.0 | 71.1 | 62.2 |
| Pair 2 - 4 | 86.0 | 74.7 | 70.4 | 76.9 | 68.0 | 68.1 | 65.3 | 78.6 | 58.5 | 62.6 |
| Pair 3 - 4 | 95.4 | 84.9 | 73.7 | 75.9 | 78.2 | 67.7 | 76.8 | 73.2 | 71.4 | 61.9 |

N/A = Not Applicable.
--- = Disable/Bypassed Pair.

* = Measured value out of spec.
xxx = No entry.

*** = Measured value is invalid.

Continue:Near End Crosstalk Loss (NEXT)(dB)

| | | | | | | | | | | |
|------------|--------|--------|--------|--|--|--|--|--|--|--|
| Frequency | 155.00 | 200.00 | 250.00 | | | | | | | |
| Min Spec | 41.4 | 39.7 | 38.3 | | | | | | | |
| Pair 1 - 2 | 65.3 | 58.4 | 62.2 | | | | | | | |
| Pair 1 - 3 | 56.5 | 64.5 | 74.1 | | | | | | | |
| Pair 1 - 4 | 63.2 | 67.4 | 63.3 | | | | | | | |
| Pair 2 - 3 | 71.8 | 56.8 | 56.7 | | | | | | | |
| Pair 2 - 4 | 58.9 | 59.5 | 50.3 | | | | | | | |
| Pair 3 - 4 | 61.0 | 68.9 | 73.5 | | | | | | | |

Detail Discrete Frequencies ---Power Sum NEXT(PSNEXT)(dB)

| | | | | | | | | | | |
|------------|------|------|------|-------|-------|-------|-------|-------|-------|--------|
| Frequency | 1.00 | 4.00 | 8.00 | 10.00 | 16.00 | 20.00 | 25.00 | 31.25 | 62.50 | 100.00 |
| Min Spec | 72.3 | 63.2 | 58.7 | 57.3 | 54.2 | 52.7 | 51.3 | 49.8 | 45.3 | 42.3 |
| Pair 1 [1] | 87.6 | 78.2 | 74.2 | 72.6 | 69.7 | 68.3 | 73.6 | 69.1 | 59.7 | 55.0 |
| Pair 2 [2] | 83.1 | 72.3 | 70.3 | 73.6 | 64.9 | 65.2 | 63.1 | 64.8 | 57.7 | 57.9 |
| Pair 3 [3] | 84.3 | 78.1 | 71.1 | 70.7 | 70.8 | 64.6 | 66.9 | 64.7 | 59.8 | 53.8 |
| Pair 4 [4] | 84.8 | 74.3 | 68.7 | 72.2 | 67.6 | 64.2 | 65.0 | 69.4 | 58.0 | 57.9 |

Continue:Power Sum NEXT(PSNEXT)(dB)

| | | | | | | | | | | |
|------------|--------|--------|--------|--|--|--|--|--|--|--|
| Frequency | 155.00 | 200.00 | 250.00 | | | | | | | |
| Min Spec | 39.4 | 37.7 | 36.3 | | | | | | | |
| Pair 1 [1] | 55.1 | 57.0 | 59.5 | | | | | | | |
| Pair 2 [2] | 56.5 | 52.9 | 49.2 | | | | | | | |
| Pair 3 [3] | 54.2 | 55.8 | 56.5 | | | | | | | |
| Pair 4 [4] | 54.4 | 58.4 | 50.1 | | | | | | | |

N/A = Not Applicable.
--- = Disable/Bypassed Pair.

* = Measured value out of spec.
xxx = No entry.

*** = Measured value is invalid.