

DCM Test Report

| | | |
|--------------------------------|---------------------------------------|---|
| Cable Type : 4x2x24 x PE/PVC | Factory Number : PHOENIX | Data File Name : DA124218.D3S |
| Cable I.D. : U/UTP#24X4P CABLE | Order Number : 11464 GY-265 211240908 | Specification File : S350-305M.S3S |
| Temperature : 25.00 °C | Relative Humidity : 50 % | Test Date/Time : 12/06/2021 09:04:48 PM |
| Length : 305.00 m | Number of Pairs to Test : 4 | Operator : M 211206WE303007/1 |
| Starting Position : 5 | | 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/328.1 ft)@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: |
|------------|-----------|-------|

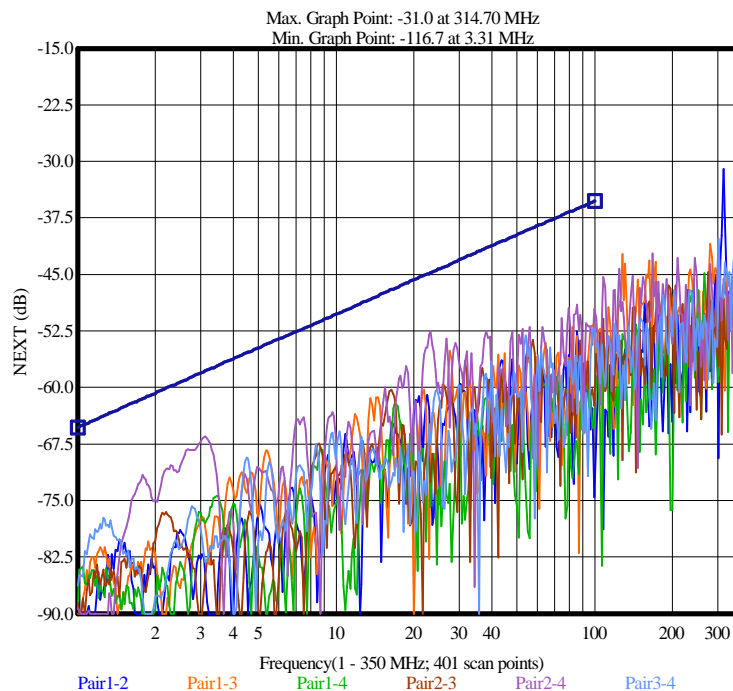
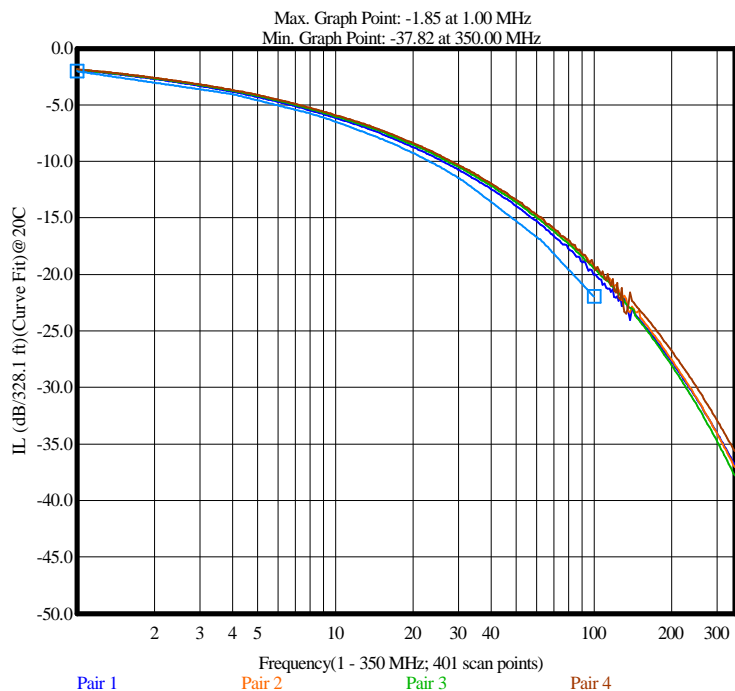
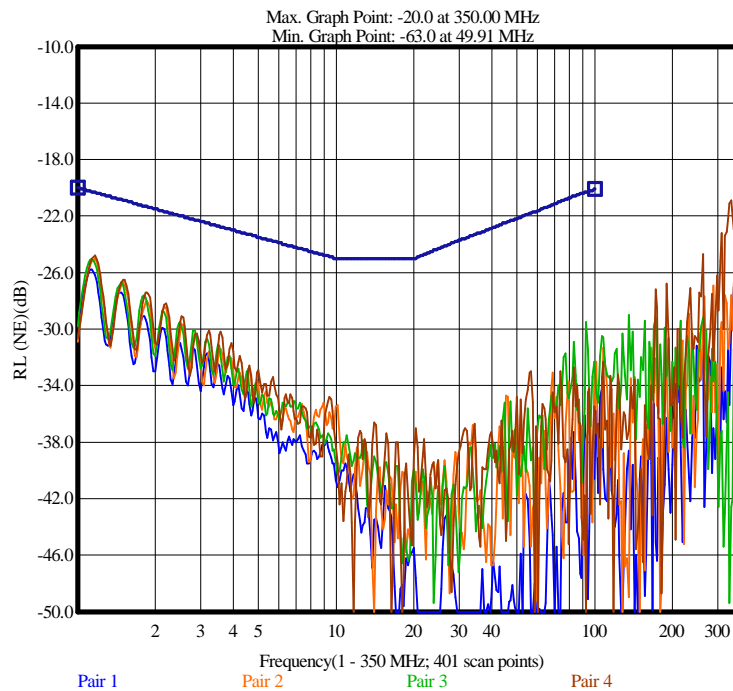
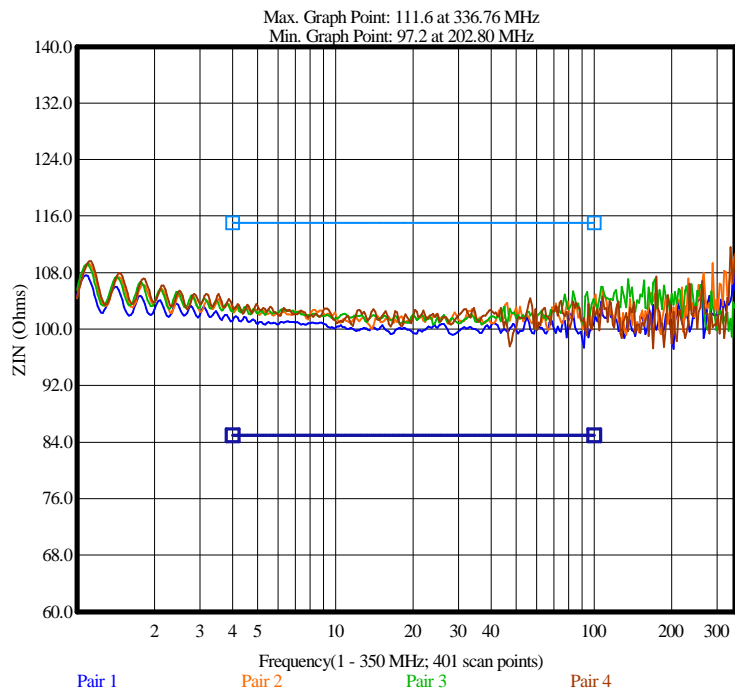
DCM Test Report

| | | |
|--------------------------------|---------------------------------------|---|
| Cable Type : 4x2x24 x PE/PVC | Factory Number : PHOENIX | Data File Name : DA124218.D3S |
| Cable I.D. : U/UTP#24X4P CABLE | Order Number : 11464 GY-265 211240908 | Specification File : S350-305M.S3S |
| Temperature : 25.00 °C | Relative Humidity : 50 % | Test Date/Time : 12/06/2021 09:04:48 PM |
| Length : 305.00 m | Number of Pairs to Test : 4 | Operator : M 211206WE303007/1 |
| Starting Position : 5 | | Analyzer Type : ENA |

Worst Case Summary

High Frequency

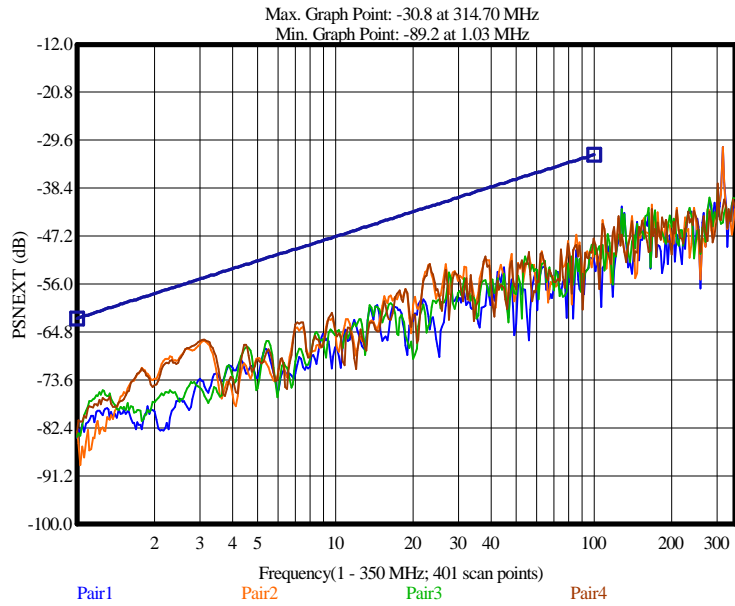
| Test Type | Specification | Measured (Pair) | Margin | @ Frequency (MHz) | Test Result |
|------------------------------------|---------------|------------------|--------|-------------------|-------------|
| Input Impedance (Zin)(Terminated) | 85.0 (Min) | 97.4 (Pair 1) | 12.4 | 91.47 | Passed |
| Input Impedance (Zin)(Terminated) | 115.0 (Max) | 105.4 (Pair 3) | 9.6 | 83.08 | Passed |
| Return Loss (RL) | 20.3 (Min) | 24.8 (Pair 4) | 4.5 | 1.17 | Passed |
| Insertion Loss (IL)(Curve Fit)@20C | 2.05 (Max) | 1.95 (Pair 1) | 0.10 | 1.02 | Passed |
| Near End Crosstalk Loss (NEXT) | 44.8 (Min) | 52.5 (Pairs 2-4) | 7.7 | 23.22 | Passed |
| Power Sum NEXT(PSNEXT) | 41.8 (Min) | 52.3 (Pair 4) | 10.5 | 23.22 | Passed |



N/A = Not Applicable.
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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 | 9.10 | xxx | 8.89 | xxx | 9.00 | xxx | 0.085 | Passed |
| Resistance Unbalance(%) | 5.00 | 0.93 | xxx | 0.01 | xxx | 0.25 | xxx | 0.396 | Passed |
| Mutual Capacitance(nF/100.0 m)@1000Hz | 5.60 | 4.99 | xxx | 4.80 | xxx | 4.89 | xxx | 0.073 | Passed |
| Cap. Unbalance to Ground(pF/100.0 m)@1000Hz | 330.00 | 38.52 | xxx | 1.89 | xxx | 14.12 | xxx | 14.352 | 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 [5] | 9.10 | 9.10 | 0.02 | 4.99 | 1.89 | Passed |
| Pair 2 [6] | 8.90 | 8.90 | 0.01 | 4.85 | -9.63 | Passed |
| Pair 3 [7] | 9.05 | 9.05 | 0.03 | 4.92 | -6.44 | Passed |
| Pair 4 [8] | 8.98 | 8.89 | 0.93 | 4.80 | -38.52 | Passed |

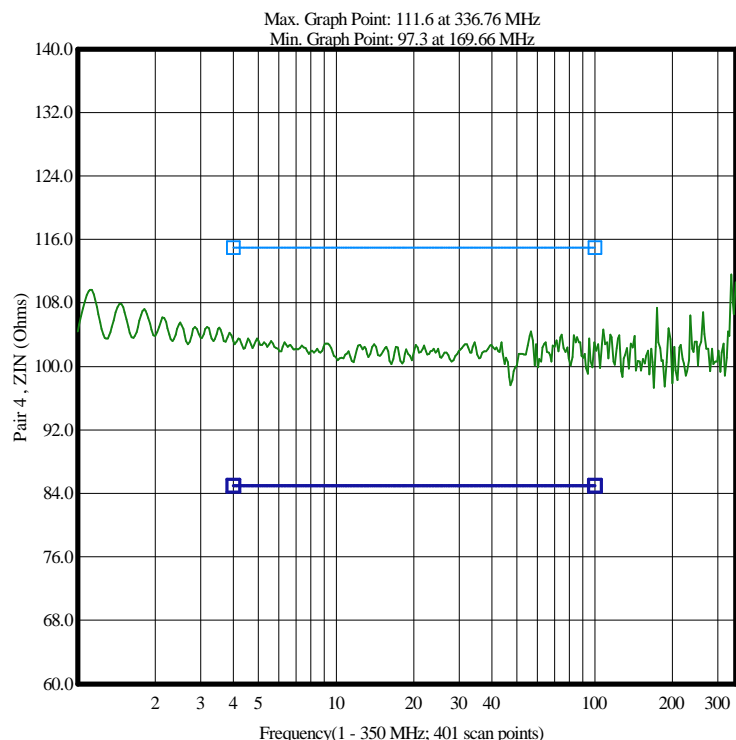
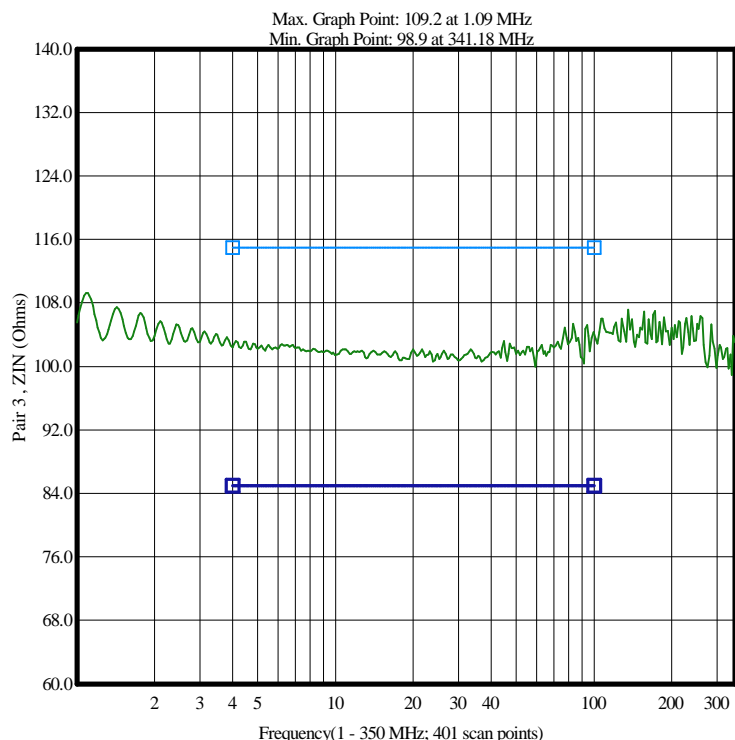
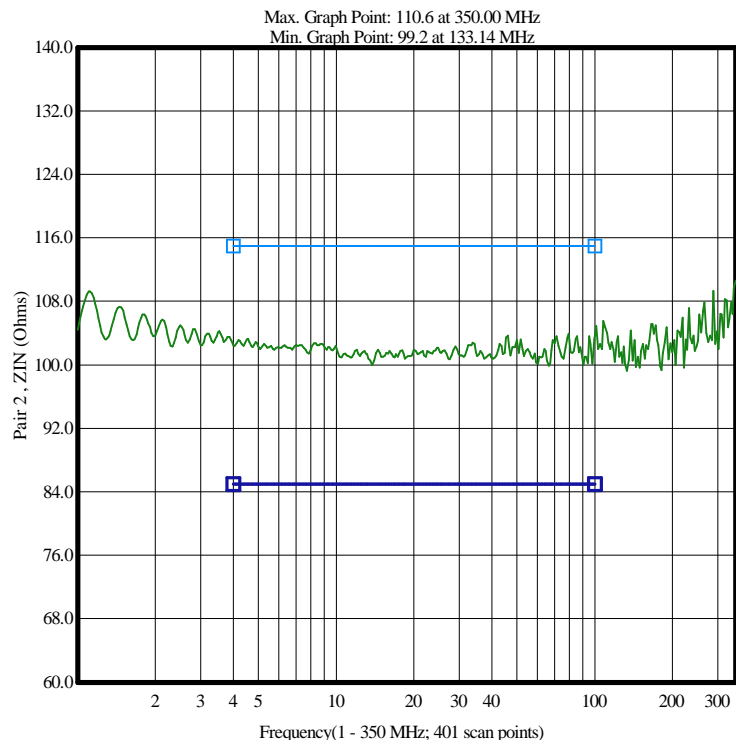
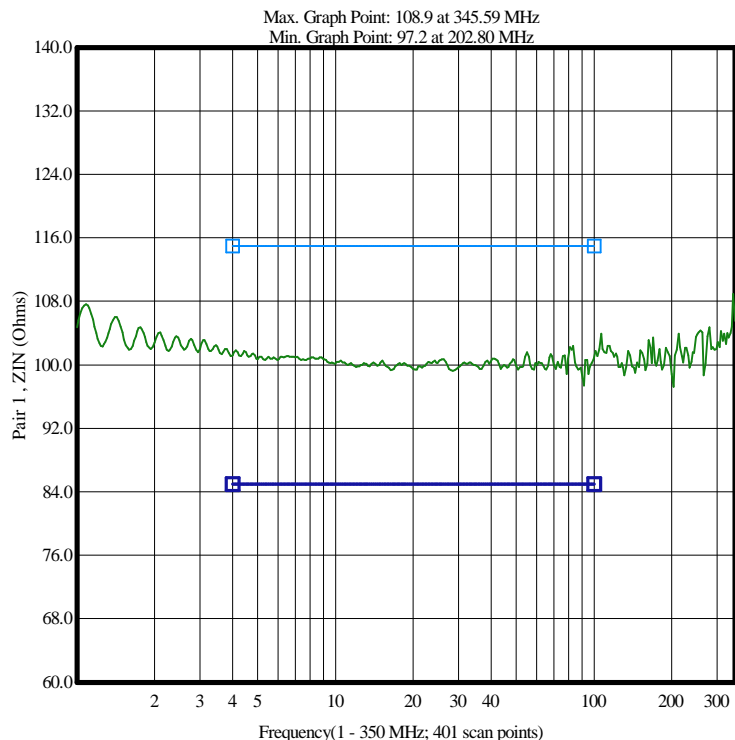
N/A = Not Applicable.
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Summary and Graphic: Input Impedance (Zin)(Terminated)

| Pair | Specification | | Measured(Ohms) | | Margin (Ohms) | | @ Frequency (MHz) | | Test Result |
|------------|---------------|---------|----------------|---------|---------------|---------|-------------------|---------|-------------|
| | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum | |
| Pair 1 [5] | 85.0 | 115.0 | 97.4 | 102.4 | 12.4 | 12.6 | 91.47 | 83.08 | Passed |
| Pair 2 [6] | 85.0 | 115.0 | 99.9 | 103.9 | 14.9 | 11.1 | 66.29 | 79.48 | Passed |
| Pair 3 [7] | 85.0 | 115.0 | 100.0 | 105.4 | 15.0 | 9.6 | 59.39 | 83.08 | Passed |
| Pair 4 [8] | 85.0 | 115.0 | 97.6 | 104.4 | 12.6 | 10.6 | 47.32 | 56.81 | Passed |



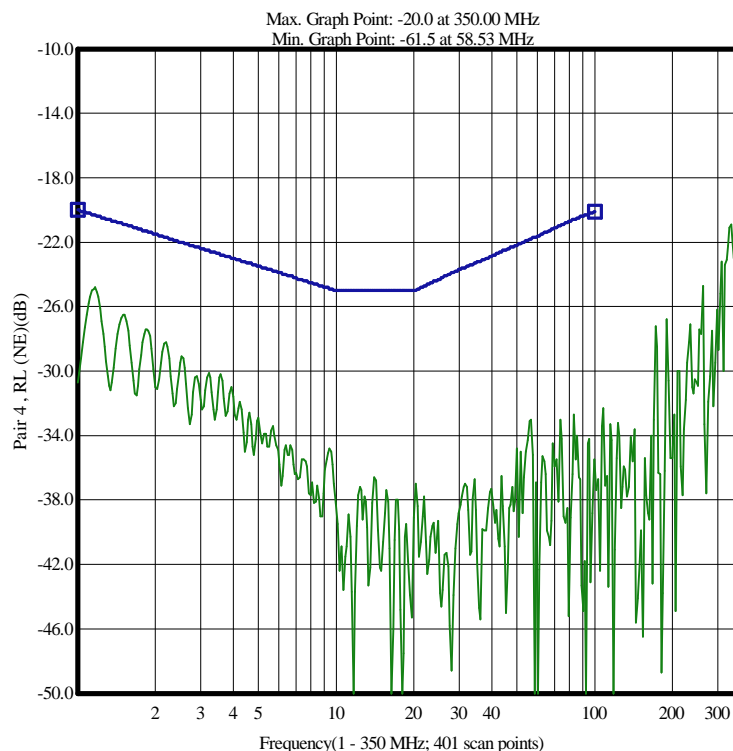
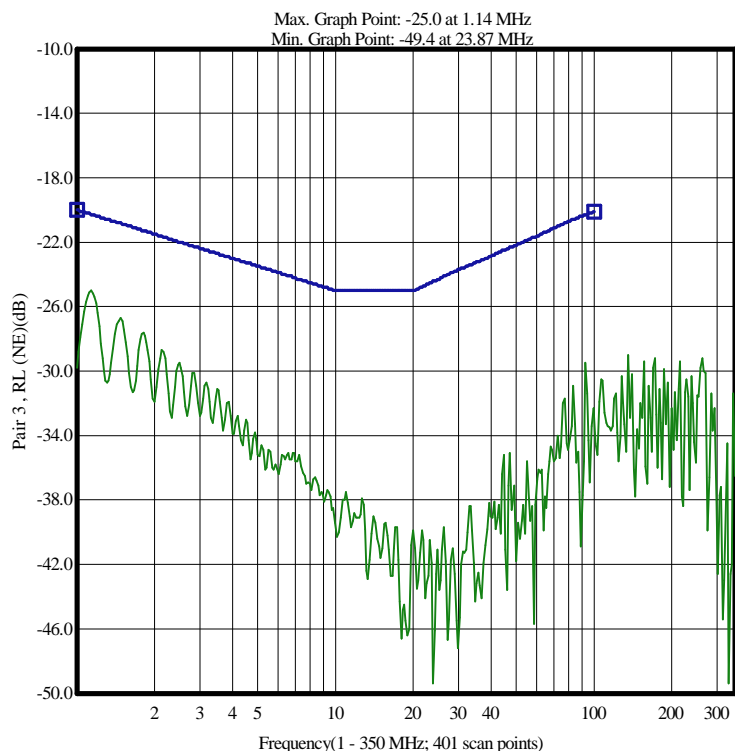
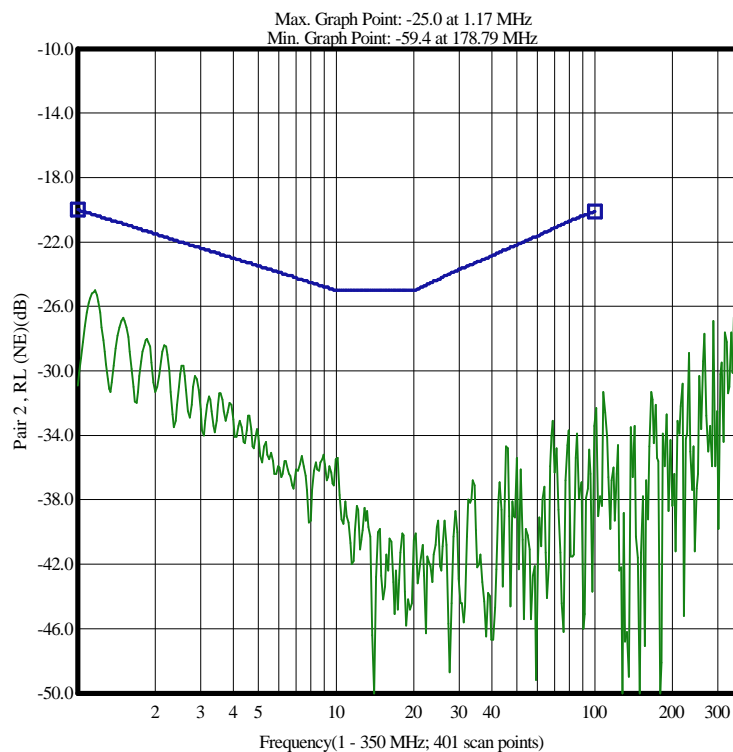
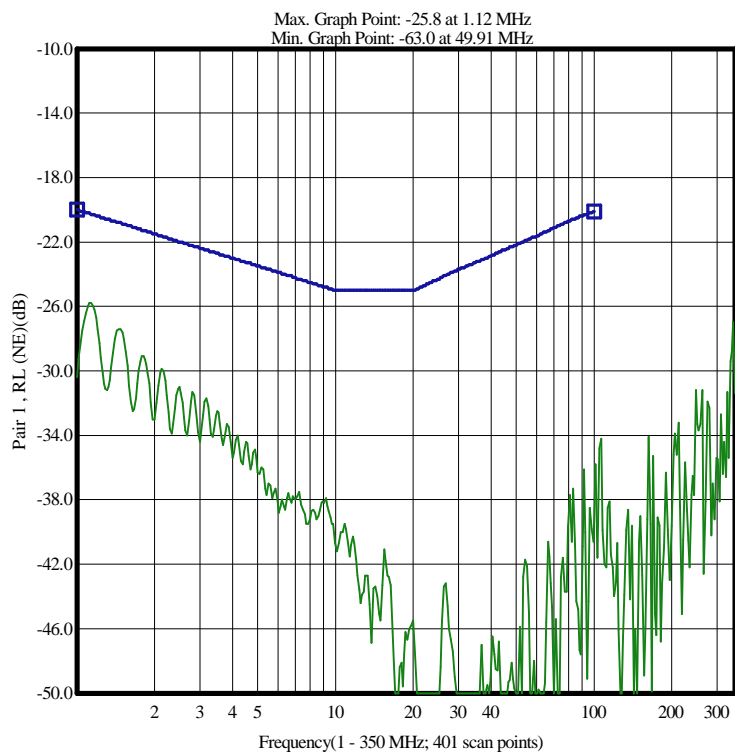
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Summary and Graphic: Return Loss (RL)

| Pair | Spec (Min)(dB) | Measured(dB) | Margin (dB) | @ Frequency (MHz) | Test Result |
|------------|----------------|--------------|-------------|-------------------|-------------|
| Pair 1 [5] | 20.3 | 25.8 | 5.5 | 1.14 | Passed |
| Pair 2 [6] | 20.3 | 25.0 | 4.7 | 1.17 | Passed |
| Pair 3 [7] | 20.3 | 25.0 | 4.7 | 1.14 | Passed |
| Pair 4 [8] | 20.3 | 24.8 | 4.5 | 1.17 | Passed |



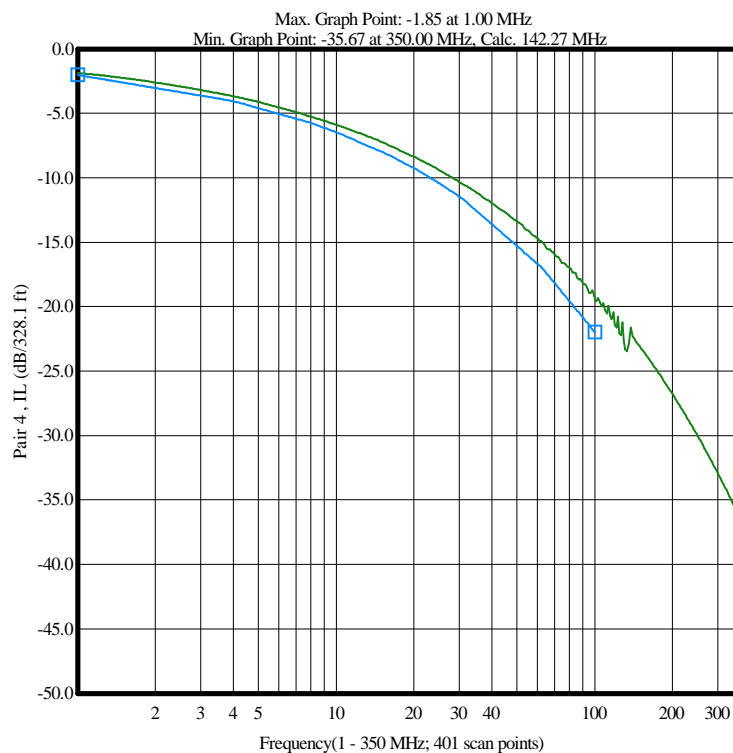
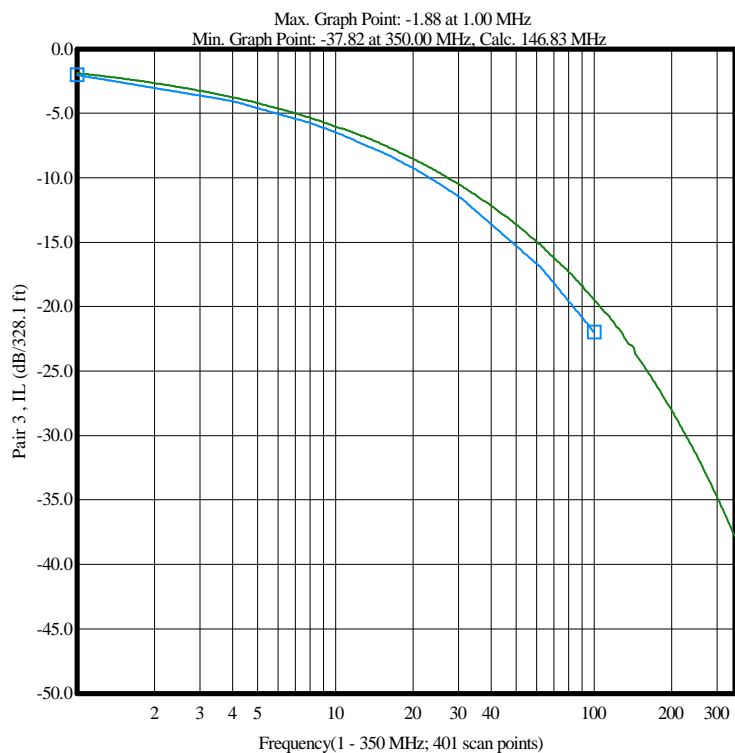
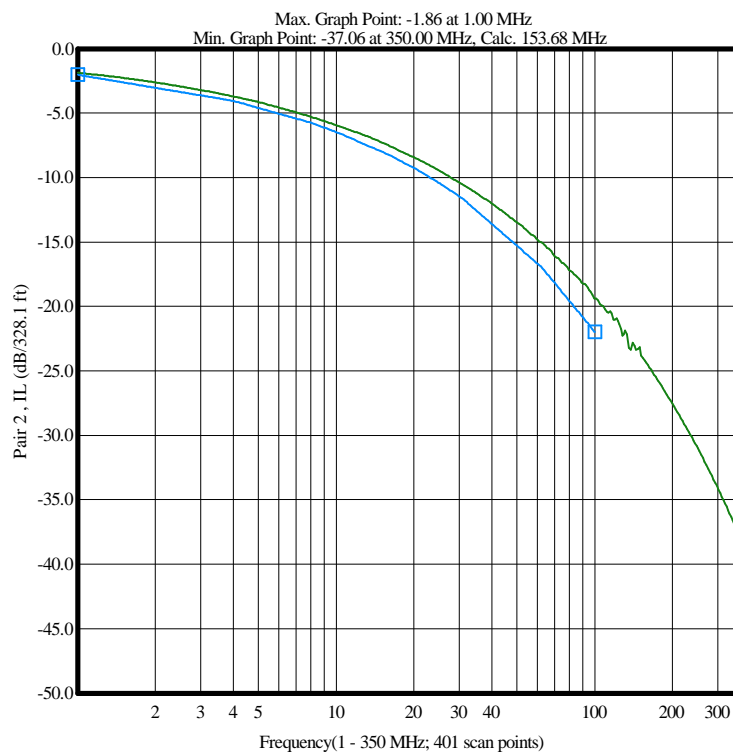
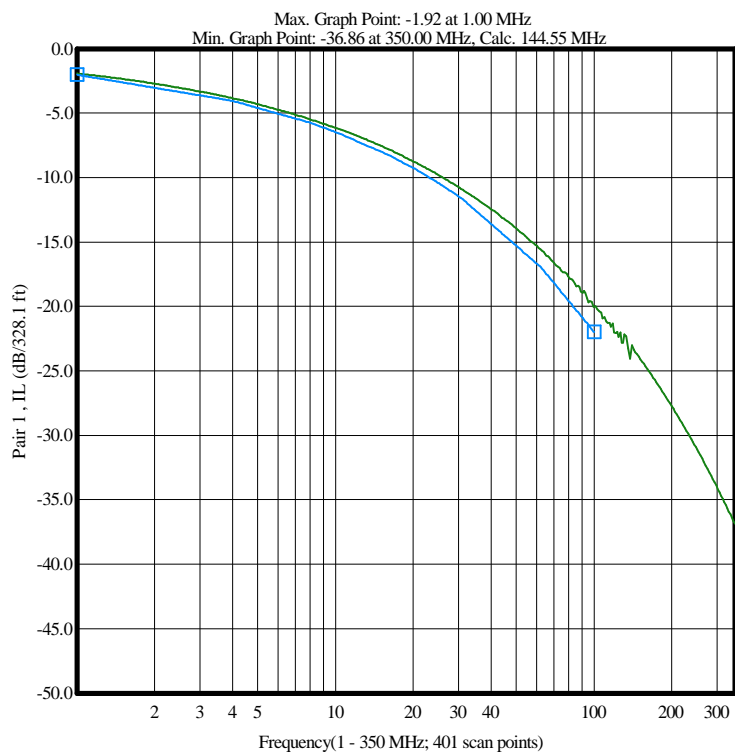
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Summary and Graphic: Insertion Loss (IL)(Curve Fit)@20C

| Pair | Spec (Max)(dB/328.1 ft) | Measured(dB/328.1 ft) | Margin (dB/328.1 ft) | @ Frequency (MHz) | Test Result |
|------------|-------------------------|-----------------------|----------------------|-------------------|-------------|
| Pair 1 [5] | 2.05 | 1.95 | 0.10 | 1.02 | Passed |
| Pair 2 [6] | 2.03 | 1.86 | 0.17 | 1.00 | Passed |
| Pair 3 [7] | 2.05 | 1.91 | 0.14 | 1.02 | Passed |
| Pair 4 [8] | 2.03 | 1.85 | 0.18 | 1.00 | Passed |



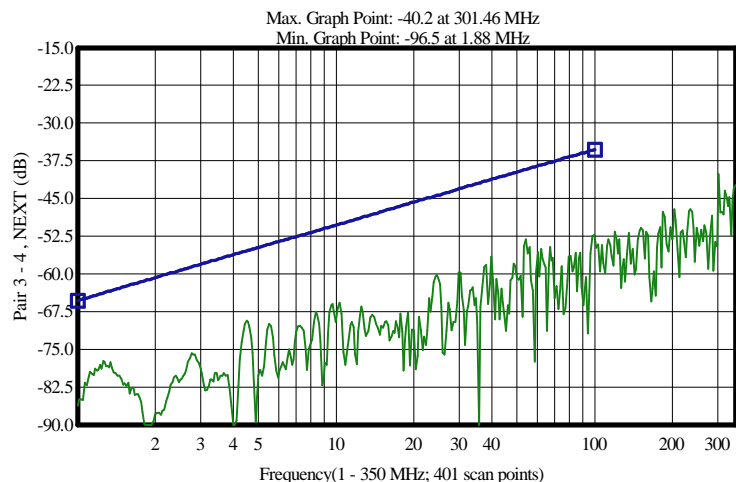
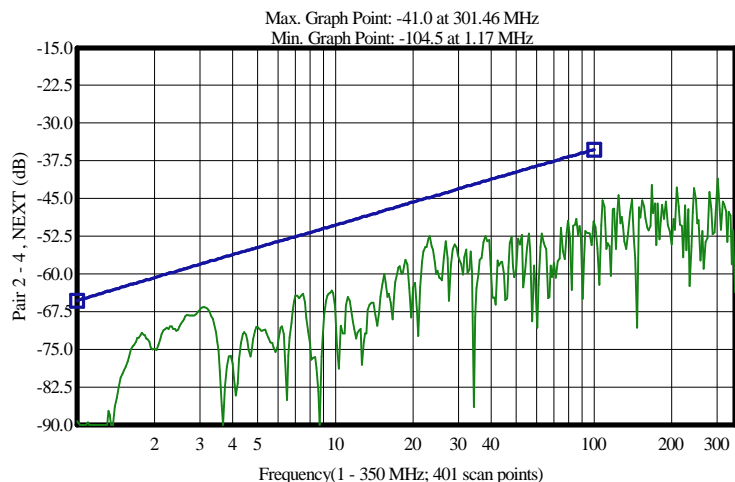
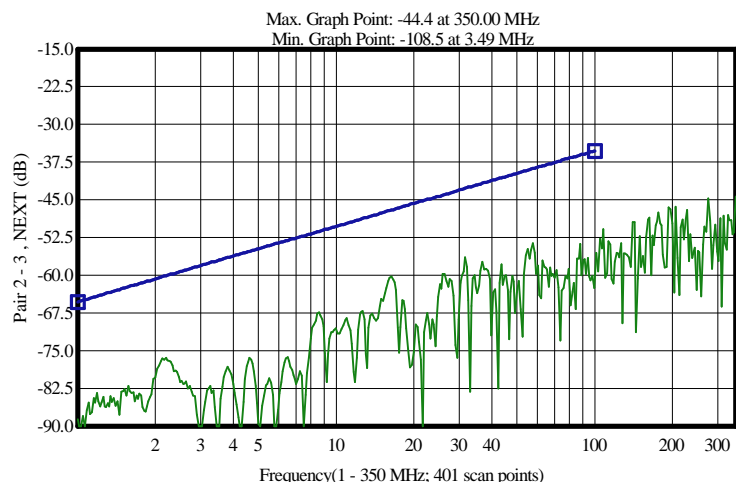
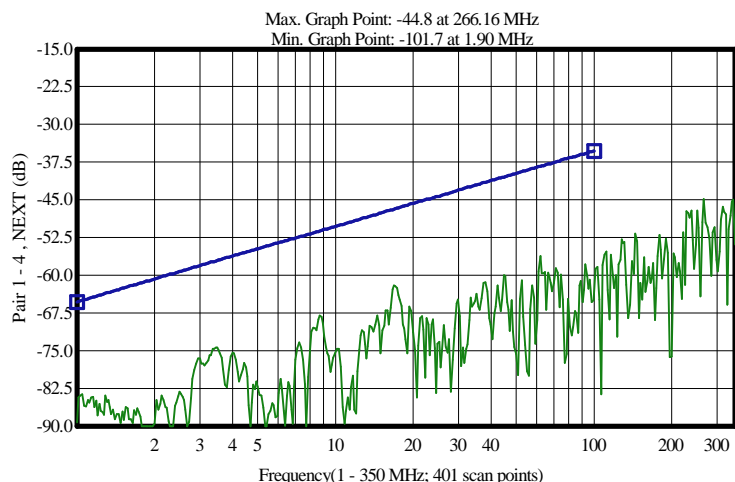
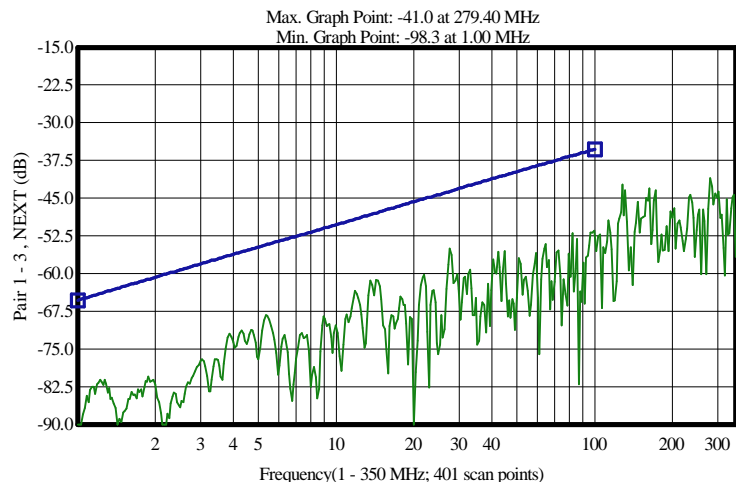
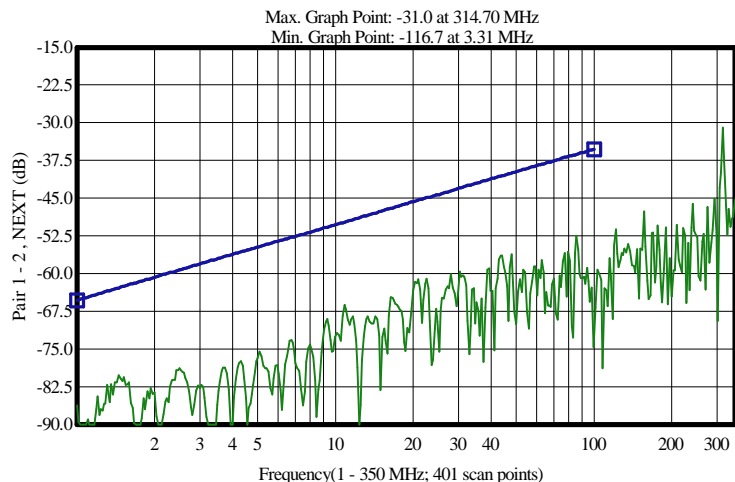
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Summary and Graphic: Near End Crosstalk Loss (NEXT)

| Pair | Spec (Min)(dB) | Measured(dB) | Margin (dB) | @ Frequency (MHz) | Test Result |
|------------|----------------|--------------|-------------|-------------------|-------------|
| Pair 1 - 2 | 45.4 | 61.2 | 15.8 | 20.94 | Passed |
| Pair 1 - 3 | 43.7 | 55.1 | 11.4 | 27.55 | Passed |
| Pair 1 - 4 | 46.9 | 62.1 | 15.2 | 16.83 | Passed |
| Pair 2 - 3 | 47.0 | 60.3 | 13.3 | 16.37 | Passed |
| Pair 2 - 4 | 44.8 | 52.5 | 7.7 | 23.22 | Passed |
| Pair 3 - 4 | 63.8 | 77.3 | 13.5 | 1.26 | Passed |



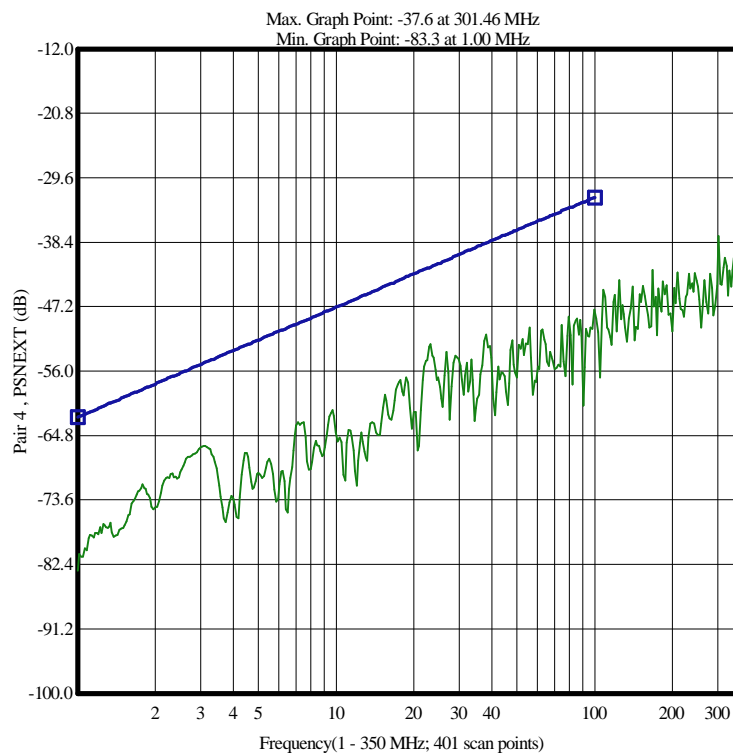
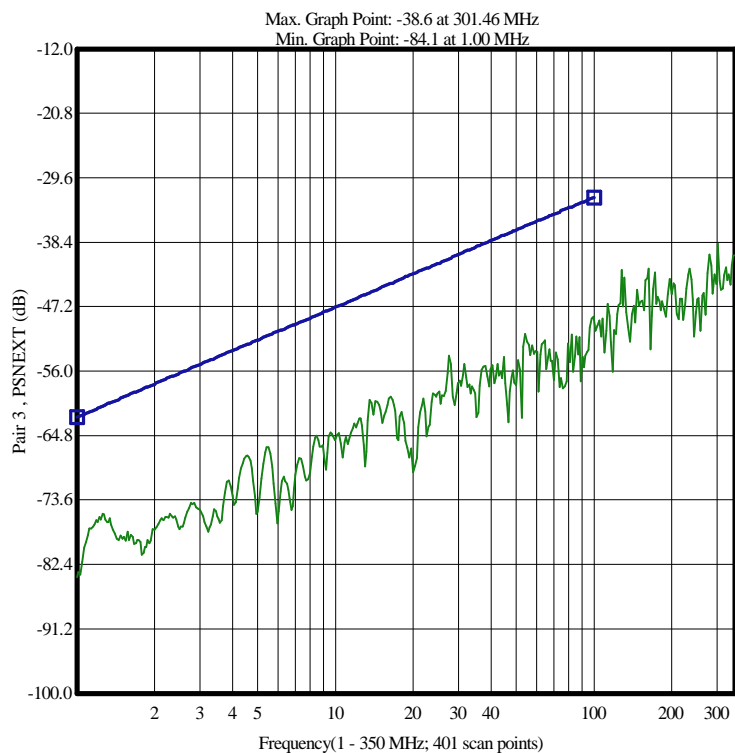
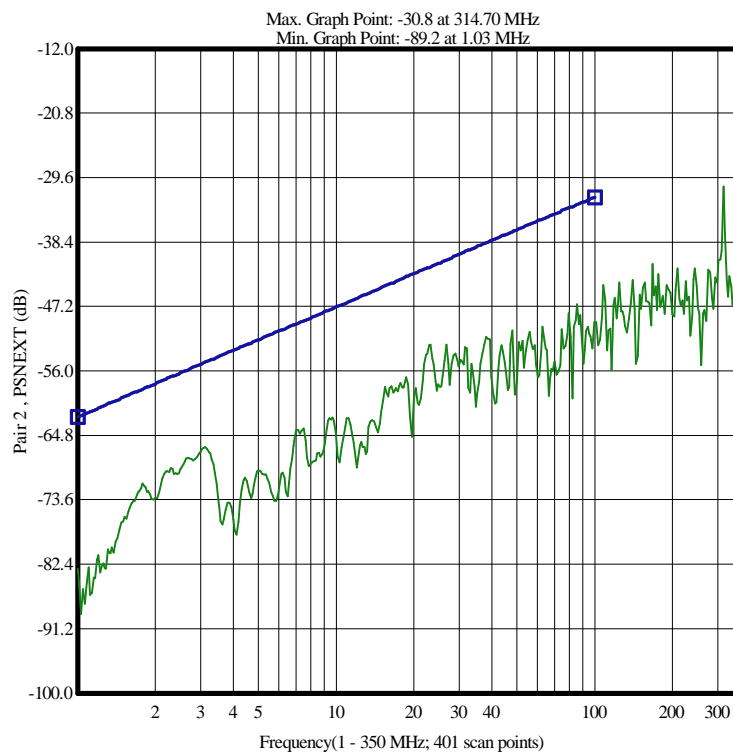
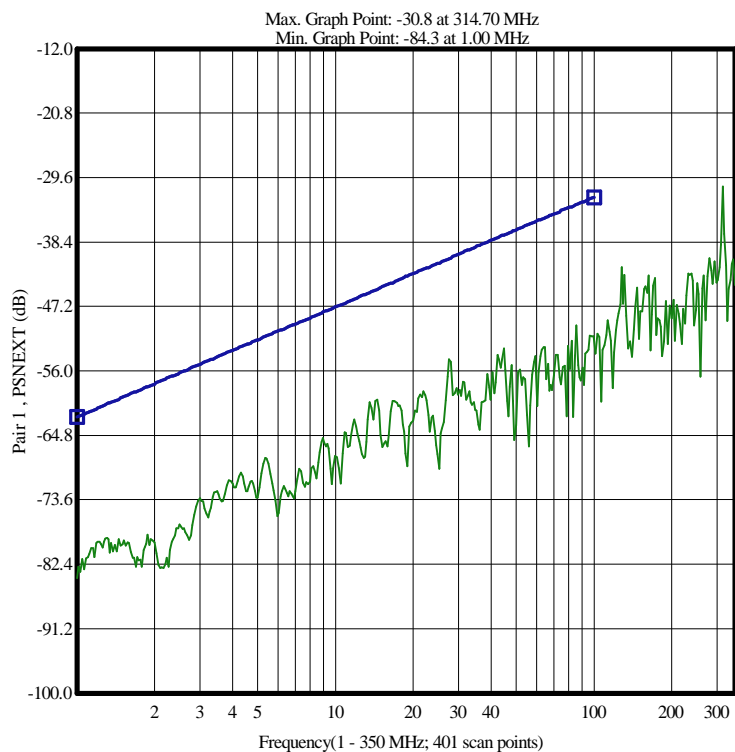
N/A = Not Applicable.
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xxx = No entry.

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Summary and Graphic: Power Sum NEXT(PSNEXT)

| Pair | Spec (Min)(dB) | Measured(dB) | Margin (dB) | @ Frequency (MHz) | Test Result |
|------------|----------------|--------------|-------------|-------------------|-------------|
| Pair 1 [5] | 40.7 | 54.4 | 13.7 | 27.55 | Passed |
| Pair 2 [6] | 41.9 | 52.5 | 10.6 | 22.89 | Passed |
| Pair 3 [7] | 40.7 | 53.9 | 13.2 | 27.55 | Passed |
| Pair 4 [8] | 41.8 | 52.3 | 10.5 | 23.22 | Passed |



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xxx = No entry.

*** = Measured value is invalid.

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

| | | | | | | | | | | |
|------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency | 1.00 | 4.00 | 10.00 | 16.00 | 20.00 | 25.00 | 30.00 | 31.25 | 62.50 | 80.00 |
| Min Spec | 20.0 | 23.0 | 25.0 | 25.0 | 25.0 | 24.3 | 23.7 | 23.6 | 21.5 | 20.7 |
| Pair 1 [5] | 30.4 | 35.4 | 40.7 | 42.7 | 45.8 | 54.4 | 52.6 | 58.8 | 58.4 | 38.8 |
| Pair 2 [6] | 30.9 | 33.0 | 35.5 | 41.5 | 40.5 | 40.6 | 43.6 | 45.4 | 39.2 | 37.1 |
| Pair 3 [7] | 29.8 | 33.9 | 39.5 | 40.6 | 40.0 | 42.3 | 46.3 | 41.2 | 36.2 | 34.6 |
| Pair 4 [8] | 30.7 | 31.6 | 38.3 | 39.4 | 38.8 | 41.5 | 38.6 | 37.2 | 35.9 | 42.6 |

Continue:Return Loss (RL)(dB)

| | | | | | | | | | | |
|------------|--------|--|--|--|--|--|--|--|--|--|
| Frequency | 100.00 | | | | | | | | | |
| Min Spec | 20.1 | | | | | | | | | |
| Pair 1 [5] | 39.9 | | | | | | | | | |
| Pair 2 [6] | 33.2 | | | | | | | | | |
| Pair 3 [7] | 32.6 | | | | | | | | | |
| Pair 4 [8] | 35.8 | | | | | | | | | |

Detail Discrete Frequencies ---Insertion Loss (IL)(dB/328.1 ft)(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 | 2.03 | 4.05 | 5.76 | 6.46 | 8.24 | 9.26 | 10.41 | 11.72 | 16.99 | 21.97 |
| Pair 1 [5] | 1.92 | 3.85 | 5.49 | 6.15 | 7.79 | 8.75 | 9.80 | 10.98 | 15.64 | 20.01 |
| Pair 2 [6] | 1.86 | 3.71 | 5.30 | 5.94 | 7.52 | 8.44 | 9.46 | 10.60 | 15.05 | 19.39 |
| Pair 3 [7] | 1.88 | 3.76 | 5.37 | 6.01 | 7.62 | 8.54 | 9.57 | 10.72 | 15.26 | 19.45 |
| Pair 4 [8] | 1.85 | 3.69 | 5.27 | 5.90 | 7.48 | 8.39 | 9.41 | 10.55 | 14.97 | 19.24 |

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

| | | | | | | | | | | |
|------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency | 1.00 | 4.00 | 10.00 | 16.00 | 20.00 | 25.00 | 30.00 | 31.25 | 62.50 | 80.00 |
| Min Spec | 65.3 | 56.2 | 50.3 | 47.2 | 45.7 | 44.3 | 43.1 | 42.8 | 38.3 | 36.7 |
| Pair 1 - 2 | 86.2 | 93.7 | 72.6 | 72.6 | 63.2 | 72.4 | 62.0 | 60.4 | 58.7 | 56.5 |
| Pair 1 - 3 | 98.3 | 73.7 | 70.4 | 75.8 | 93.3 | 75.1 | 65.9 | 60.8 | 58.7 | 58.1 |
| Pair 1 - 4 | 89.3 | 75.4 | 75.5 | 68.3 | 71.7 | 73.5 | 66.4 | 75.2 | 58.2 | 67.1 |
| Pair 2 - 3 | 88.6 | 81.8 | 70.7 | 60.9 | 74.6 | 63.1 | 65.5 | 58.5 | 60.1 | 61.9 |
| Pair 2 - 4 | 89.3 | 78.0 | 67.0 | 64.3 | 62.6 | 60.0 | 56.9 | 59.3 | 53.1 | 50.8 |
| Pair 3 - 4 | 86.3 | 90.3 | 69.4 | 71.5 | 72.2 | 61.4 | 59.8 | 68.8 | 56.2 | 56.5 |

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

| | | | | | | | | | | |
|------------|--------|--|--|--|--|--|--|--|--|--|
| Frequency | 100.00 | | | | | | | | | |
| Min Spec | 35.3 | | | | | | | | | |
| Pair 1 - 2 | 73.6 | | | | | | | | | |
| Pair 1 - 3 | 52.1 | | | | | | | | | |
| Pair 1 - 4 | 64.1 | | | | | | | | | |
| Pair 2 - 3 | 61.5 | | | | | | | | | |
| Pair 2 - 4 | 49.8 | | | | | | | | | |
| Pair 3 - 4 | 52.5 | | | | | | | | | |

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

| | | | | | | | | | | |
|------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency | 1.00 | 4.00 | 10.00 | 16.00 | 20.00 | 25.00 | 30.00 | 31.25 | 62.50 | 80.00 |
| Min Spec | 62.3 | 53.2 | 47.3 | 44.2 | 42.7 | 41.3 | 40.1 | 39.8 | 35.3 | 33.7 |
| Pair 1 [5] | 84.3 | 71.4 | 67.6 | 65.6 | 62.6 | 68.4 | 58.9 | 57.5 | 53.5 | 53.9 |
| Pair 2 [6] | 83.0 | 76.4 | 64.6 | 59.0 | 59.7 | 58.0 | 55.0 | 54.6 | 51.4 | 49.5 |
| Pair 3 [7] | 84.1 | 73.1 | 65.4 | 60.3 | 69.7 | 59.0 | 57.5 | 56.1 | 52.9 | 53.3 |
| Pair 4 [8] | 83.3 | 73.4 | 64.5 | 62.2 | 61.6 | 57.5 | 54.8 | 58.6 | 50.4 | 49.7 |

Continue:Power Sum NEXT(PSNEXT)(dB)

| | | | | | | | | | | |
|------------|--------|--|--|--|--|--|--|--|--|--|
| Frequency | 100.00 | | | | | | | | | |
| Min Spec | 32.3 | | | | | | | | | |
| Pair 1 [5] | 51.6 | | | | | | | | | |
| Pair 2 [6] | 49.4 | | | | | | | | | |
| Pair 3 [7] | 48.9 | | | | | | | | | |
| Pair 4 [8] | 47.8 | | | | | | | | | |

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