

APPLICATION NOTE (AN-49-021)

REFERENCE GUIDE FOLLOWING A REDESIGN FOR:

RCDAT-6000-90

RUDAT-6000-90

EFFECT OF CHANGE:

Redesigned parts are Form, Fit compatible.

Following is a summary of changes/improvements:

| Parameters | Conditions | Old design | New design |
|---------------------------------|------------------|-------------|---|
| Input operating power | 0.001 - 0.01 GHz | +10 dBm Max | Derate linearly from +23 dBm at 50 MHz to +12 dBm at 1 MHz. |
| | 0.01 - 0.05 GHz | +20 dBm Max | |
| | 0.05 - 6 GHz | +20 dBm Max | +23 dBm Max |
| Return Loss in @ 0 - 40 dB | 0.001 - 0.5 GHz | 23.1 dB Typ | 16 dB Typ |
| | 0.5 - 4 GHz | 26.4 dB Typ | 18 dB Typ |
| | 4 - 6 GHz | 17.7 dB Typ | 15 dB Typ |
| Return Loss in @ 40.25 - 60 dB | 0.001 - 0.5 GHz | 32.2 dB Typ | 16 dB Typ |
| | 0.5 - 4 GHz | 32.2 dB Typ | 18 dB Typ |
| | 4 - 6 GHz | 17.7 dB Typ | 15 dB Typ |
| Return Loss in @ 60.25 - 90 dB | 0.001 - 0.5 GHz | 32.2 dB Typ | 22 dB Typ |
| | 0.5 - 4 GHz | 32.2 dB Typ | 15 dB Typ |
| | 4 - 6 GHz | 17.7 dB Typ | 11 dB Typ |
| Return Loss out @ 0 - 20 dB | 0.001 - 0.5 GHz | 23.1 dB Typ | 16 dB Typ |
| | 0.5 - 4 GHz | 26.4 dB Typ | 11 dB Typ |
| | 4 - 6 GHz | 17.7 dB Typ | 11 dB Typ |
| Return Loss out @ 20.25 - 40 dB | 0.001 - 0.5 GHz | 23.1 dB Typ | 13 dB Typ |
| | 0.5 - 4 GHz | 26.4 dB Typ | 8 dB Typ |
| | 4 - 6 GHz | 17.7 dB Typ | 8 dB Typ |
| Return Loss out @ 40.25 - 90 dB | 0.001 - 0.5 GHz | 32.2 dB Typ | 13 dB Typ |
| | 0.5 - 4 GHz | 32.2 dB Typ | 8 dB Typ |
| | 4 - 6 GHz | 17.7 dB Typ | 8 dB Typ |

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Figure 1: Attenuation Accuracy @ 0.25 dB vs. Frequency at 25°C

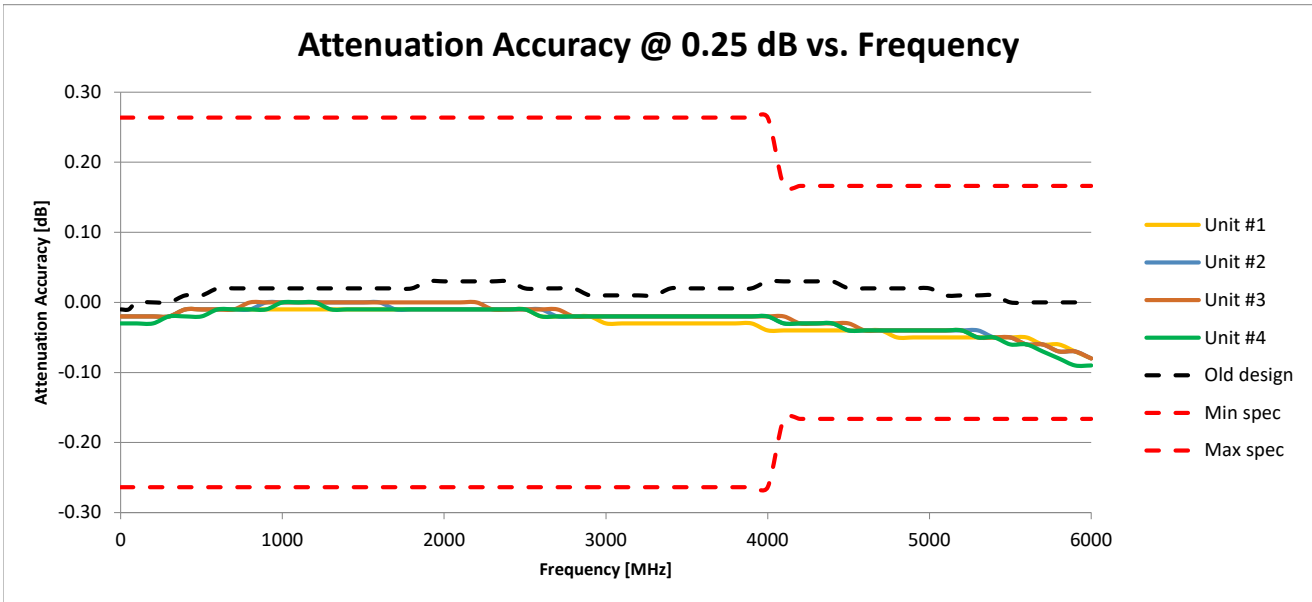
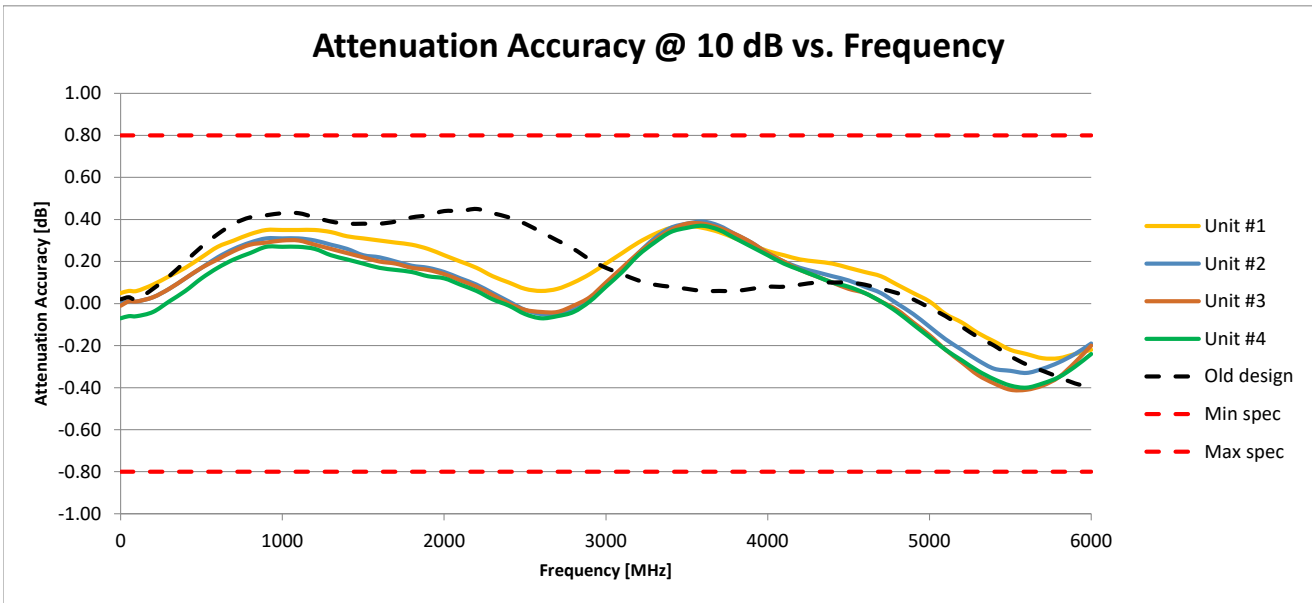


Figure 2: Attenuation Accuracy @ 10 dB vs. Frequency at 25°C



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Figure 3: Attenuation Accuracy @ 20 dB vs. Frequency at 25°C

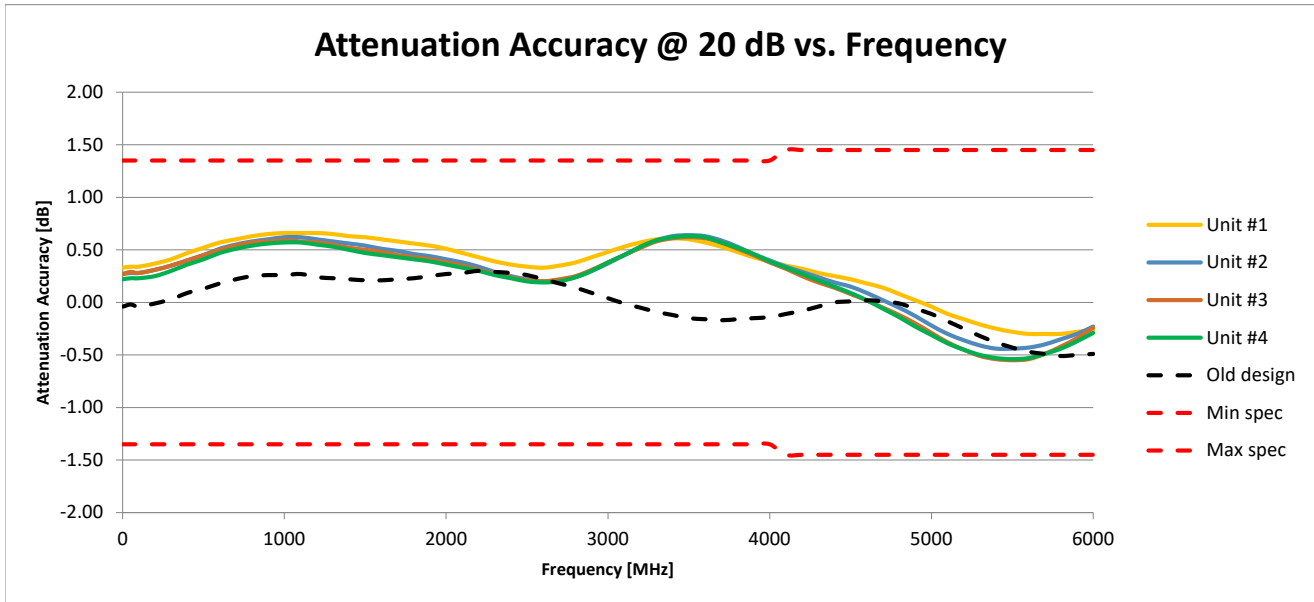
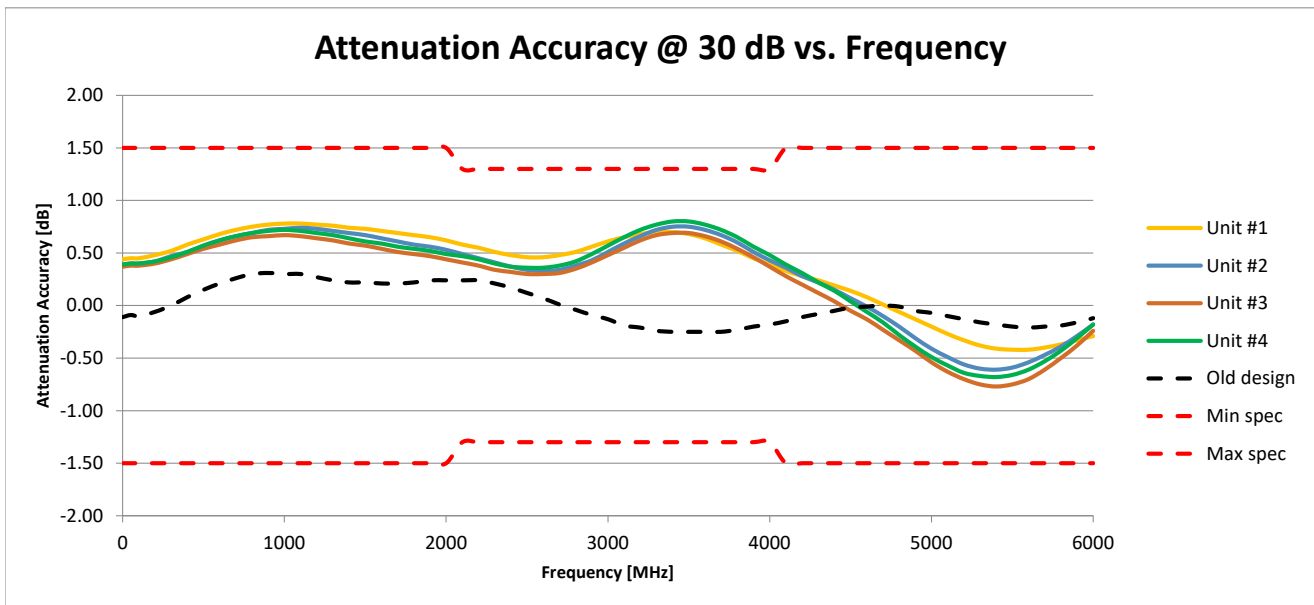


Figure 4: Attenuation Accuracy @ 30 dB vs. Frequency at 25°C



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Figure 5: Attenuation Accuracy @ 40 dB vs. Frequency at 25°C

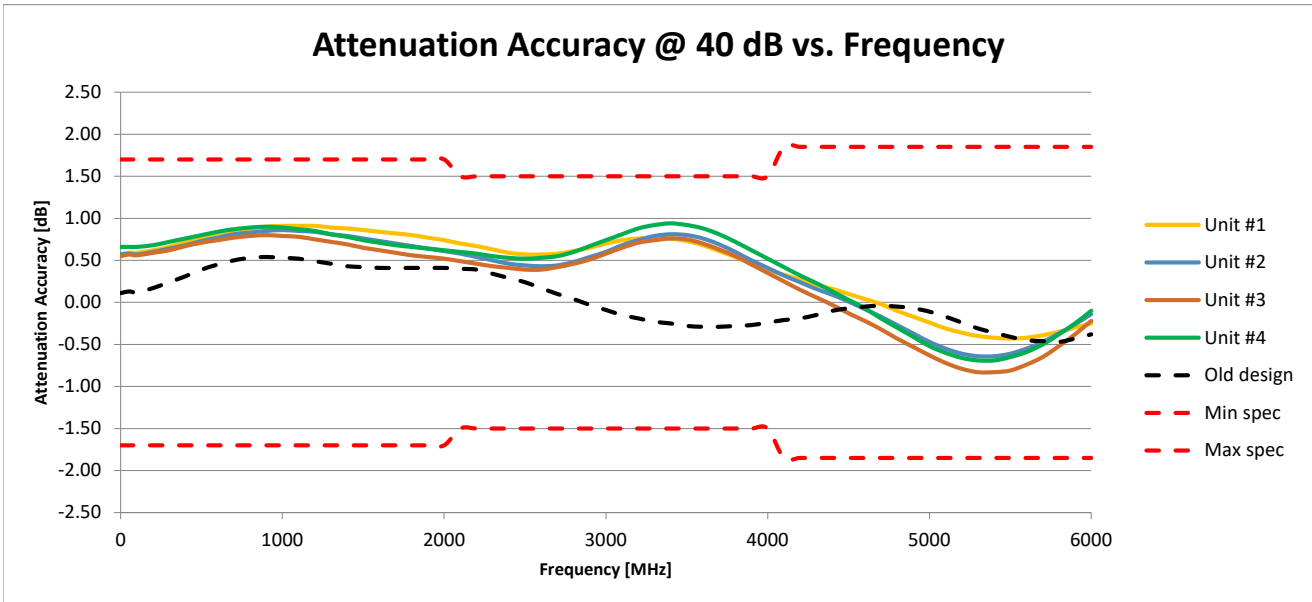
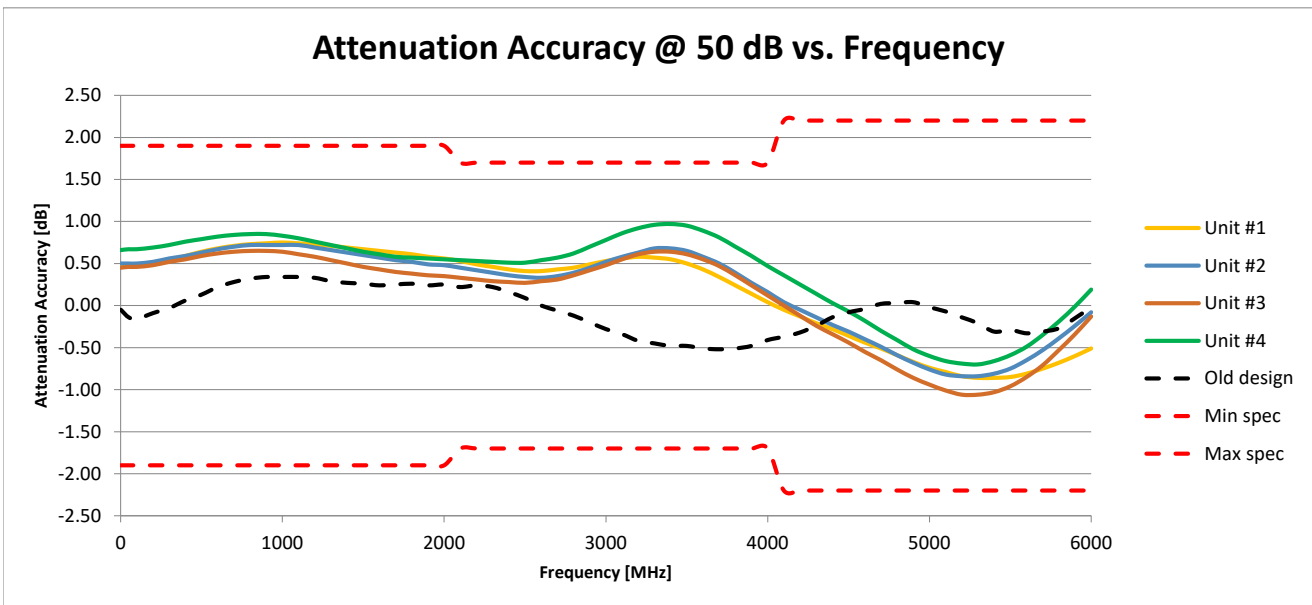


Figure 6: Attenuation Accuracy @ 50 dB vs. Frequency at 25°C



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Figure 7: Attenuation Accuracy @ 60 dB vs. Frequency at 25°C

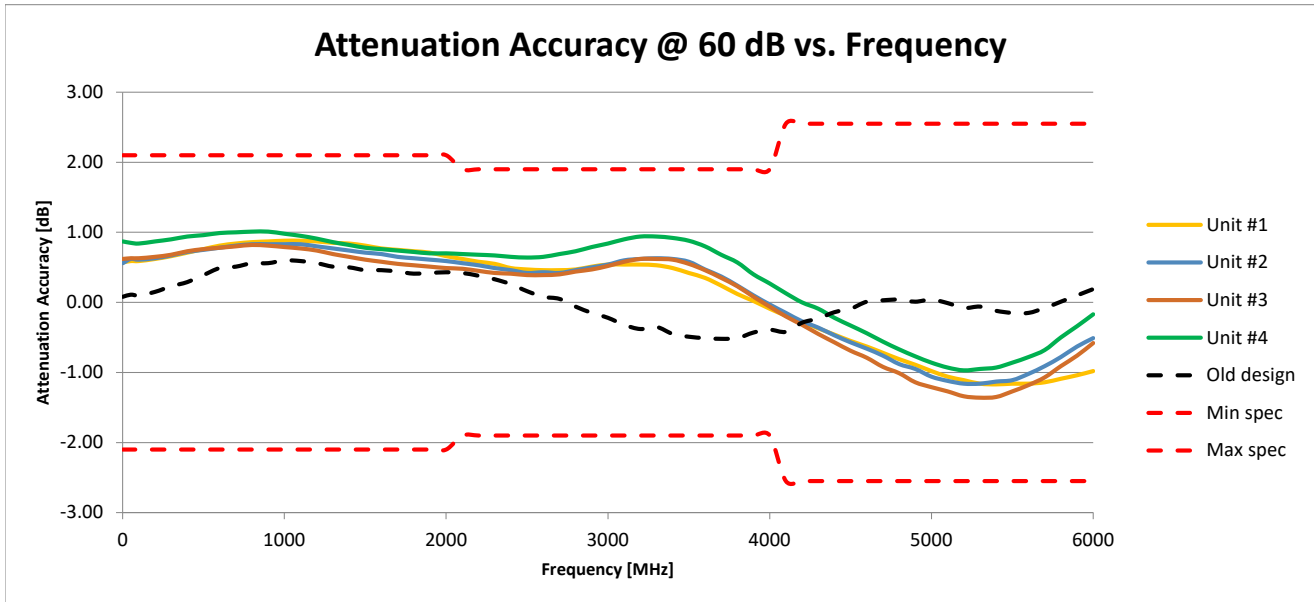
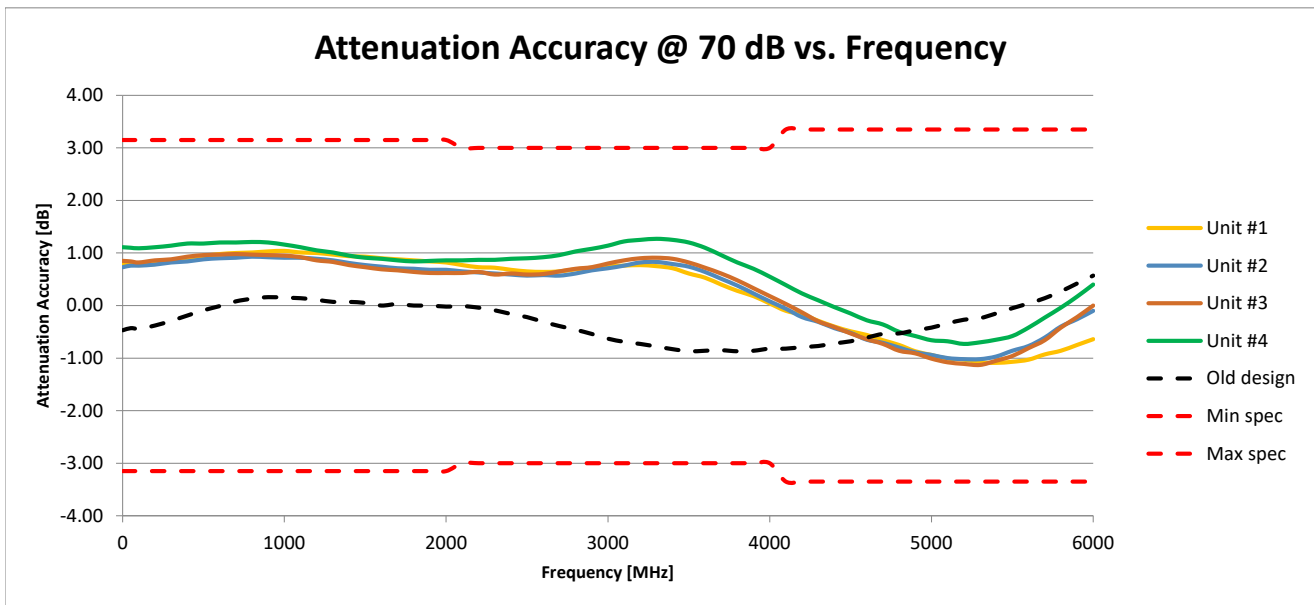


Figure 8: Attenuation Accuracy @ 70 dB vs. Frequency at 25°C



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Figure 9: Attenuation Accuracy @ 80 dB vs. Frequency at 25°C

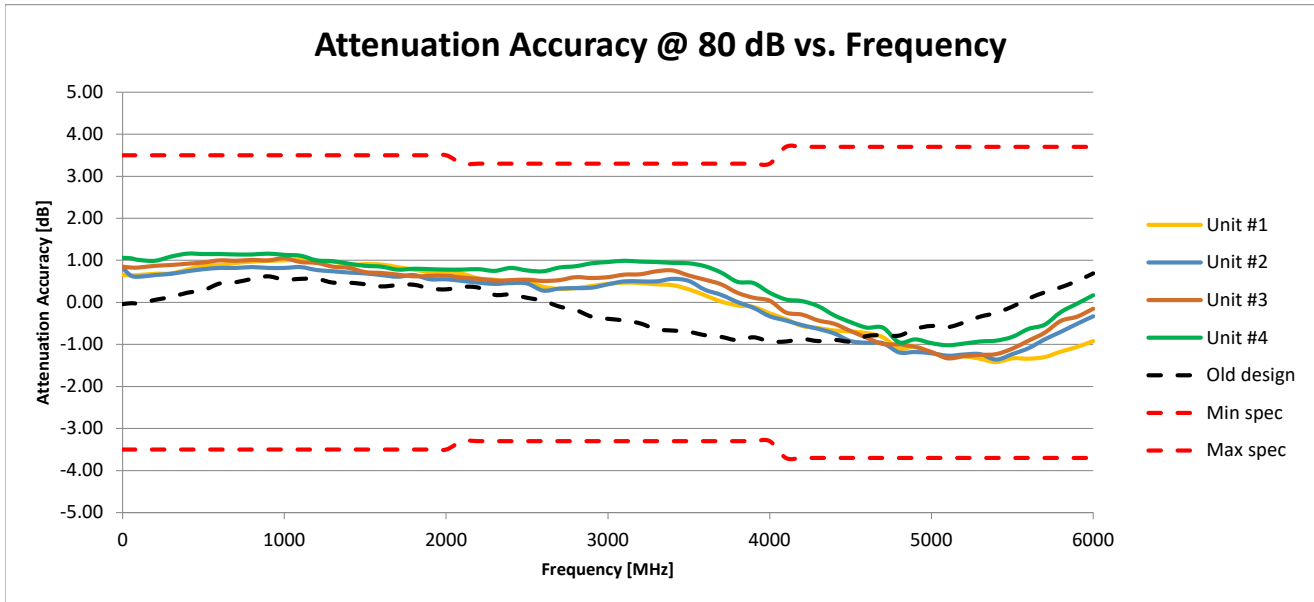
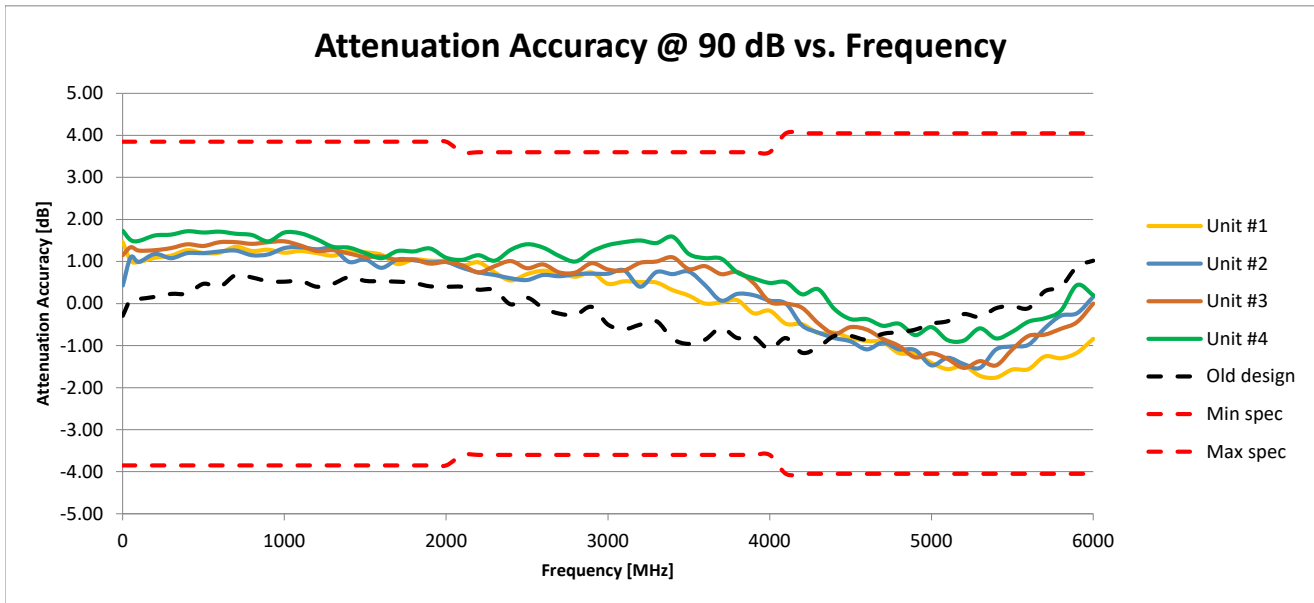


Figure 10: Attenuation Accuracy @ 90 dB vs. Frequency at 25°C



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Figure 11: Return Loss In @ 0.25 dB vs. Frequency at 25°C

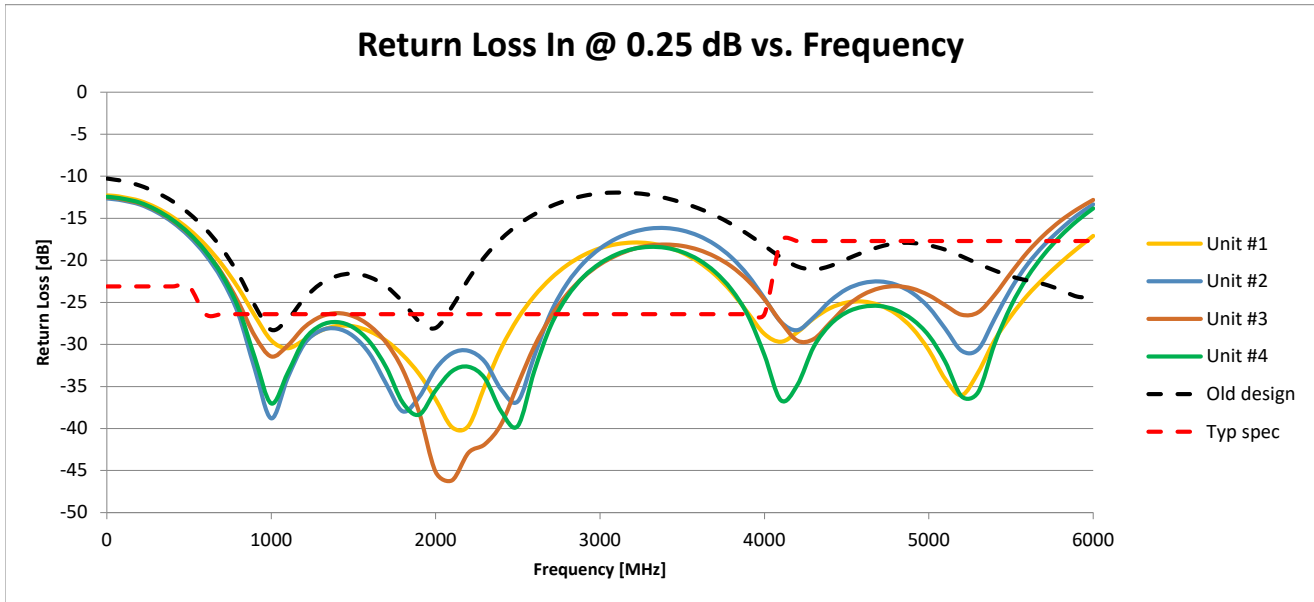
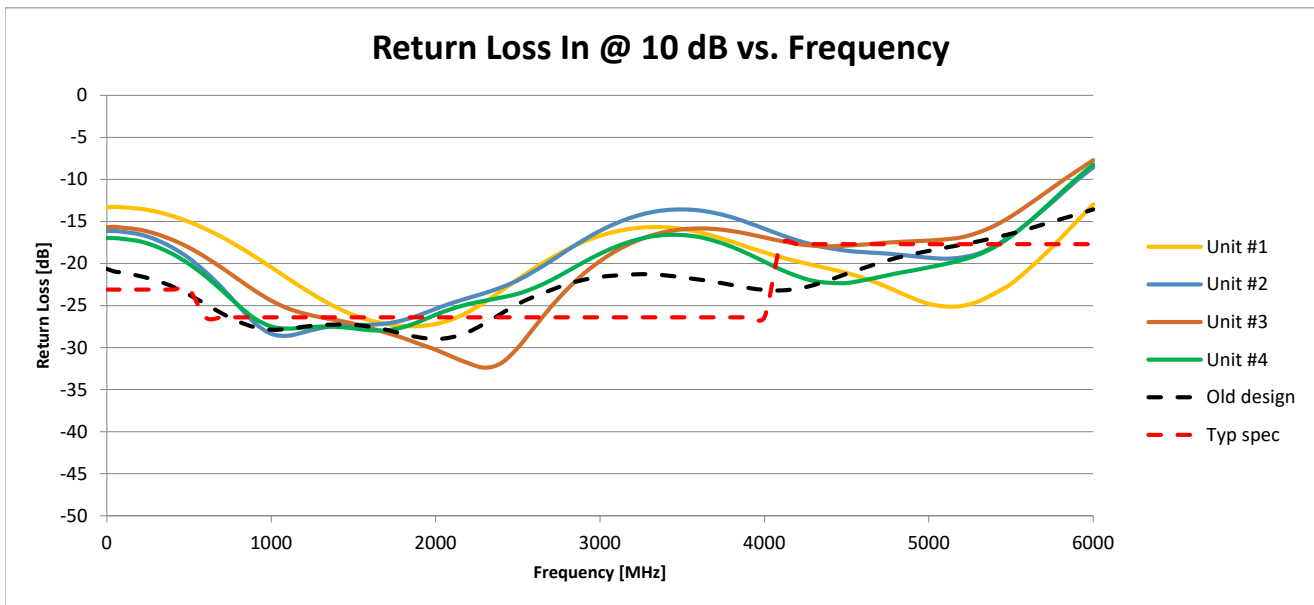


Figure 12: Return Loss In @ 10 dB vs. Frequency at 25°C



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Figure 13: Return Loss In @ 20 dB vs. Frequency at 25°C

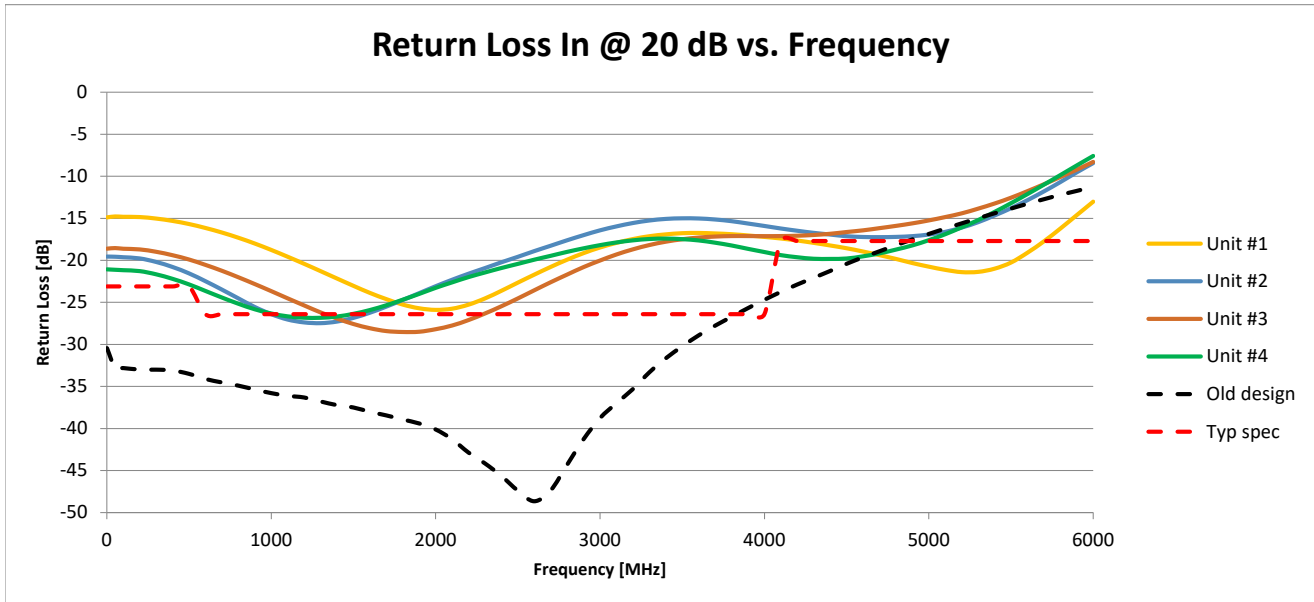
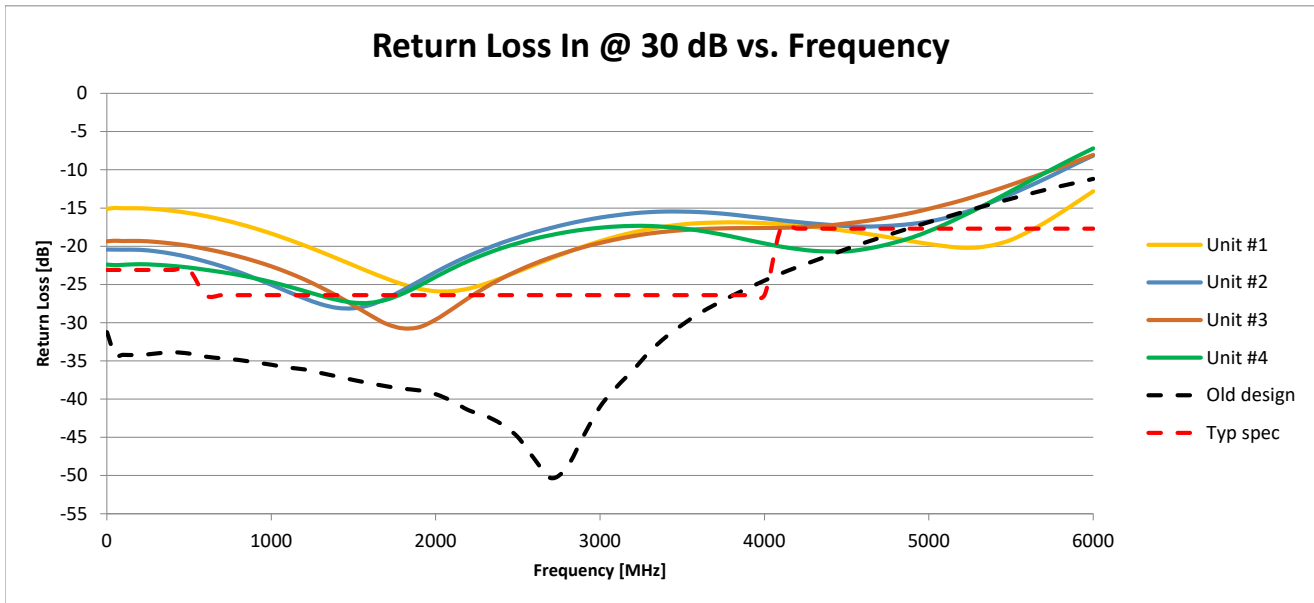


Figure 14: Return Loss In @ 30 dB vs. Frequency at 25°C



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Figure 15: Return Loss In @ 40 dB vs. Frequency at 25°C

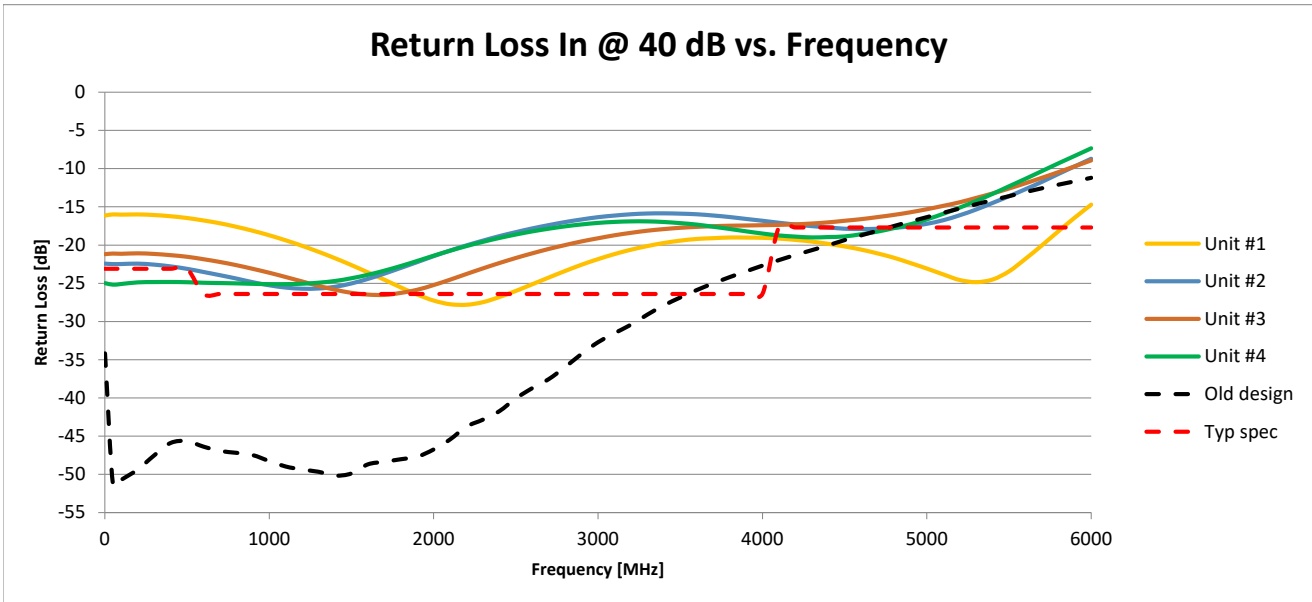
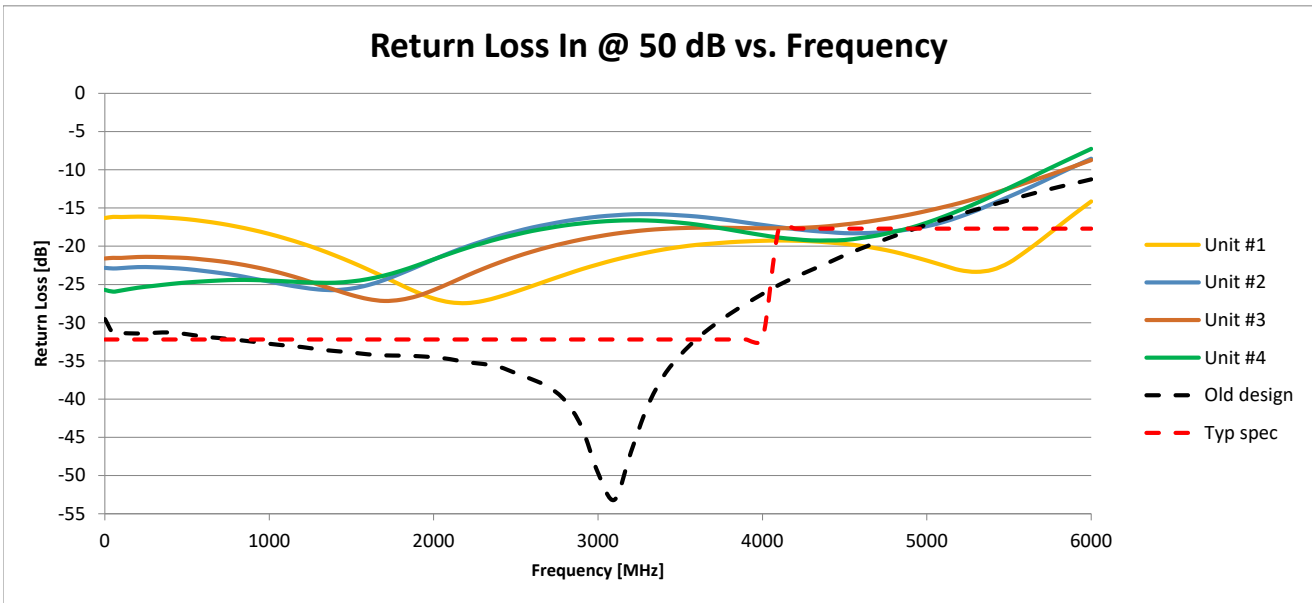


Figure 16: Return Loss In @ 50 dB vs. Frequency at 25°C



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Figure 17: Return Loss In @ 60 dB vs. Frequency at 25°C

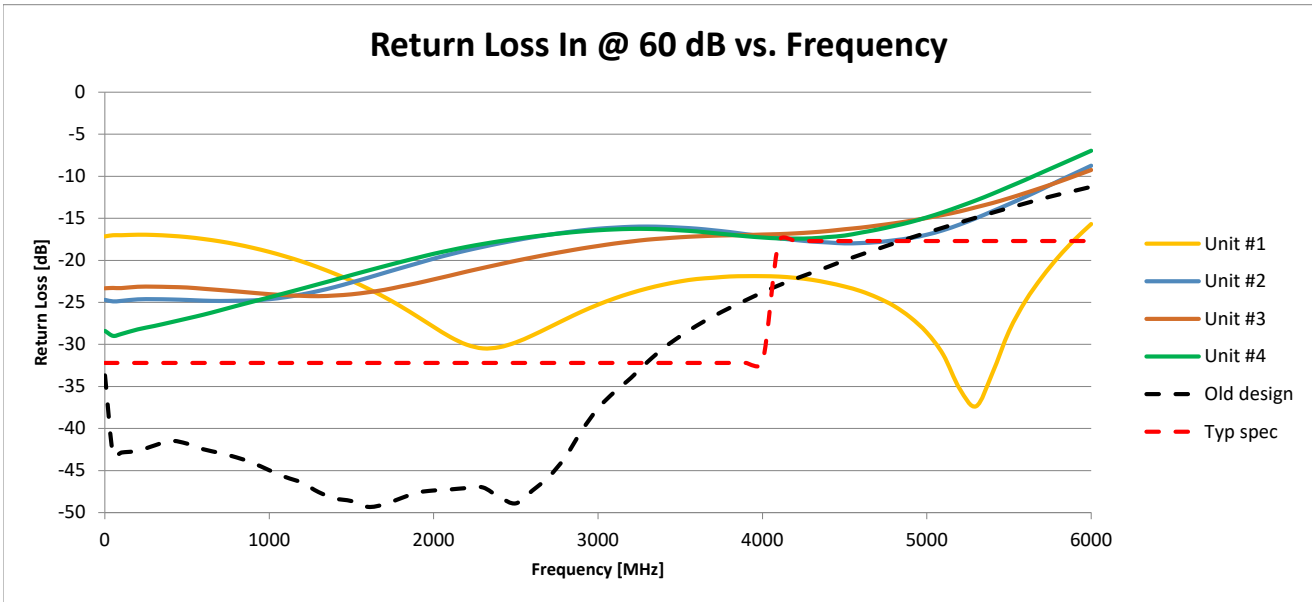
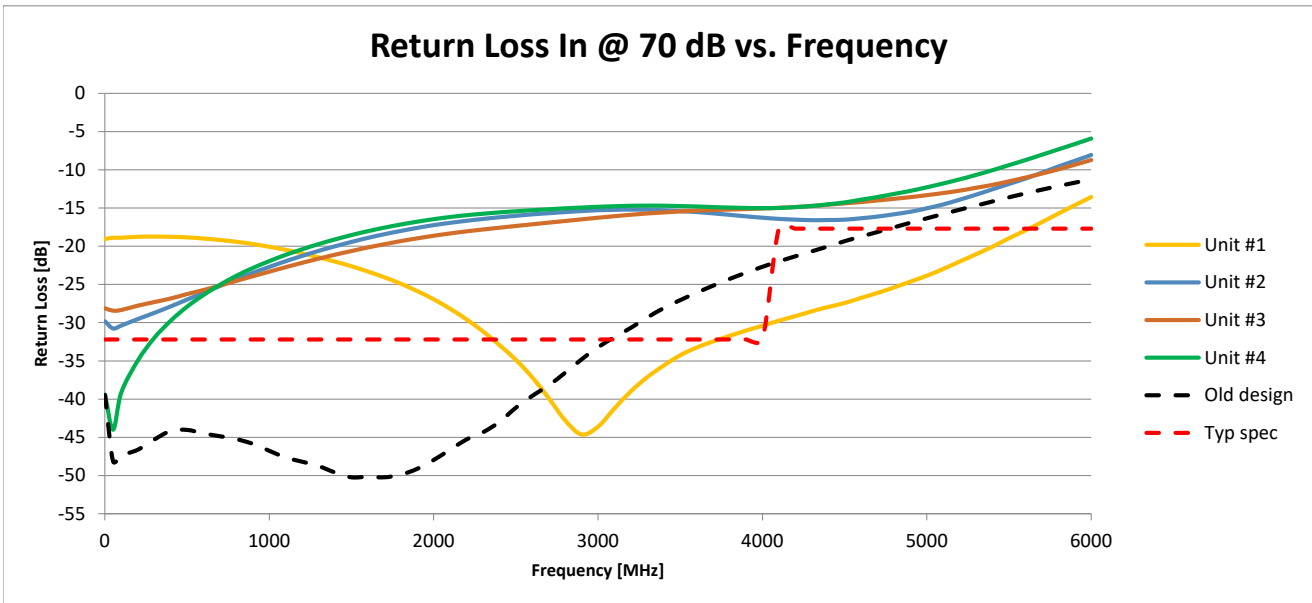


Figure 18: Return Loss In @ 70 dB vs. Frequency at 25°C



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Figure 19: Return Loss In @ 80 dB vs. Frequency at 25°C

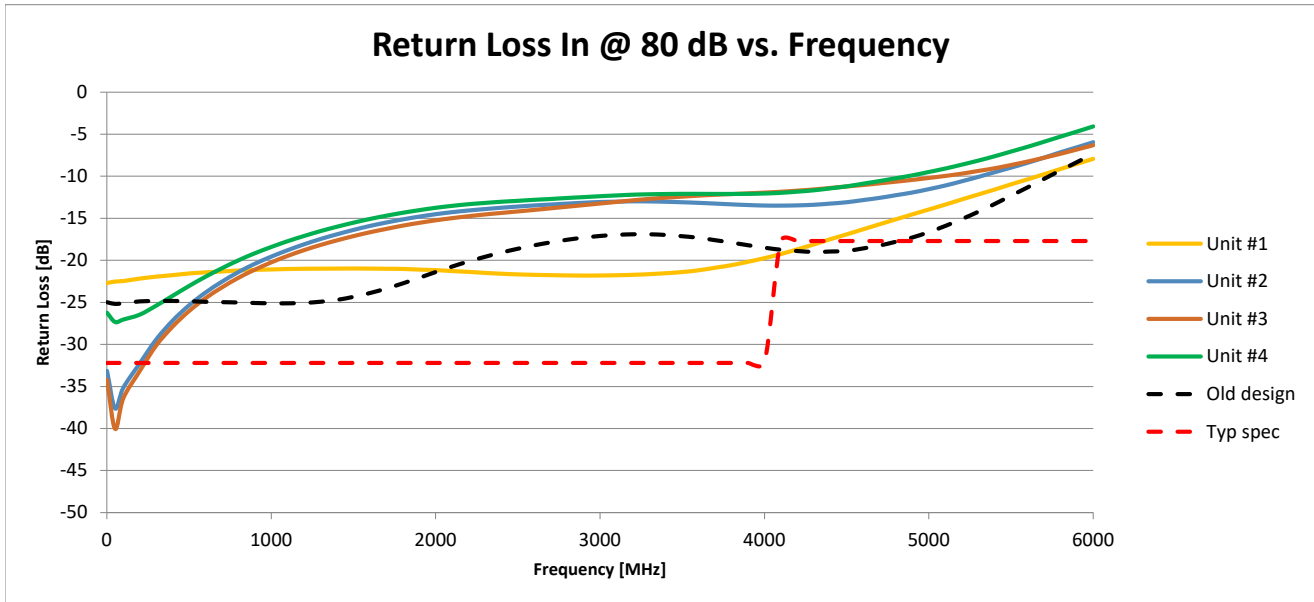
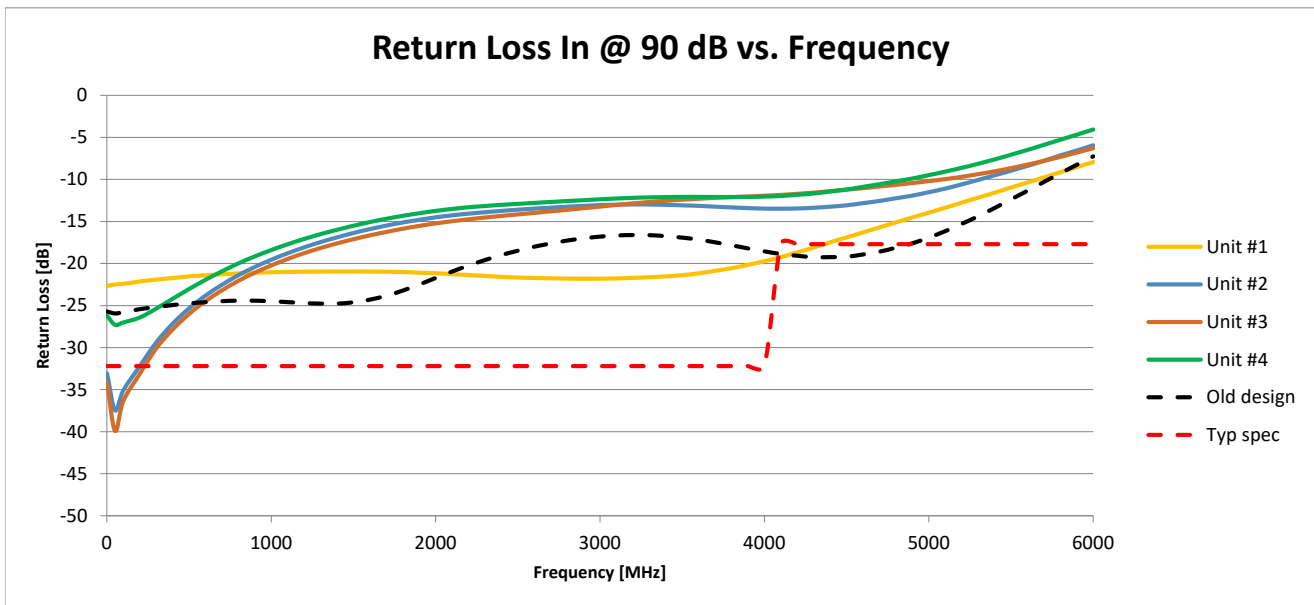


Figure 20: Return Loss In @ 90 dB vs. Frequency at 25°C



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Figure 21: Return Loss Out @ 0.25 dB vs. Frequency at 25°C

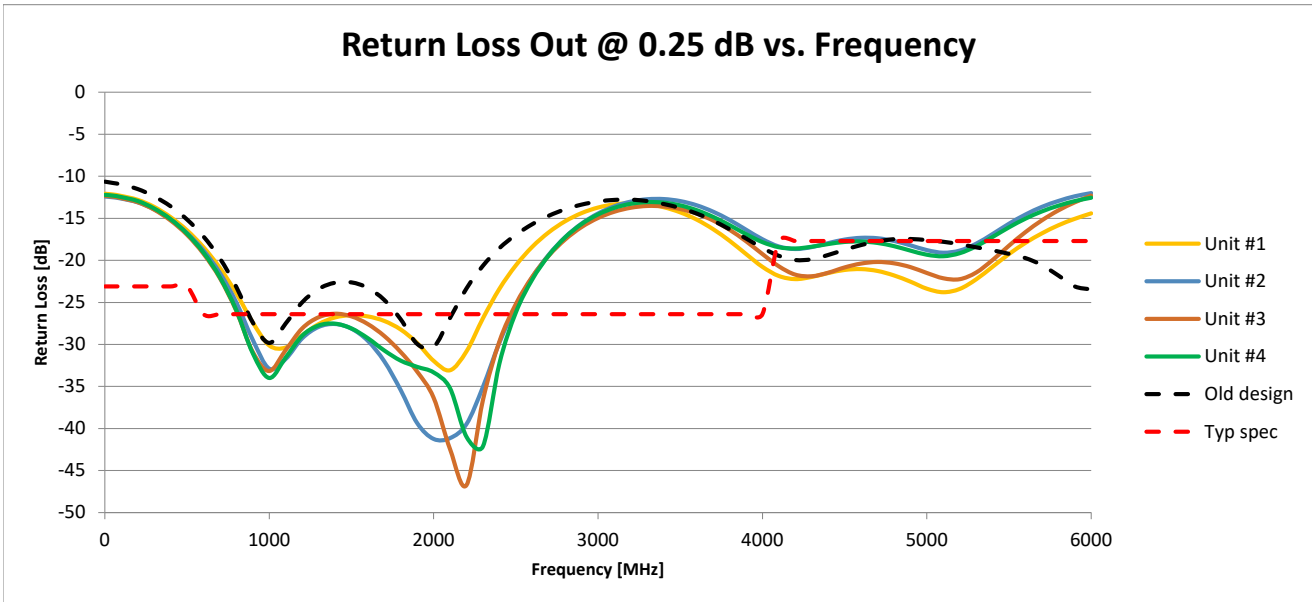
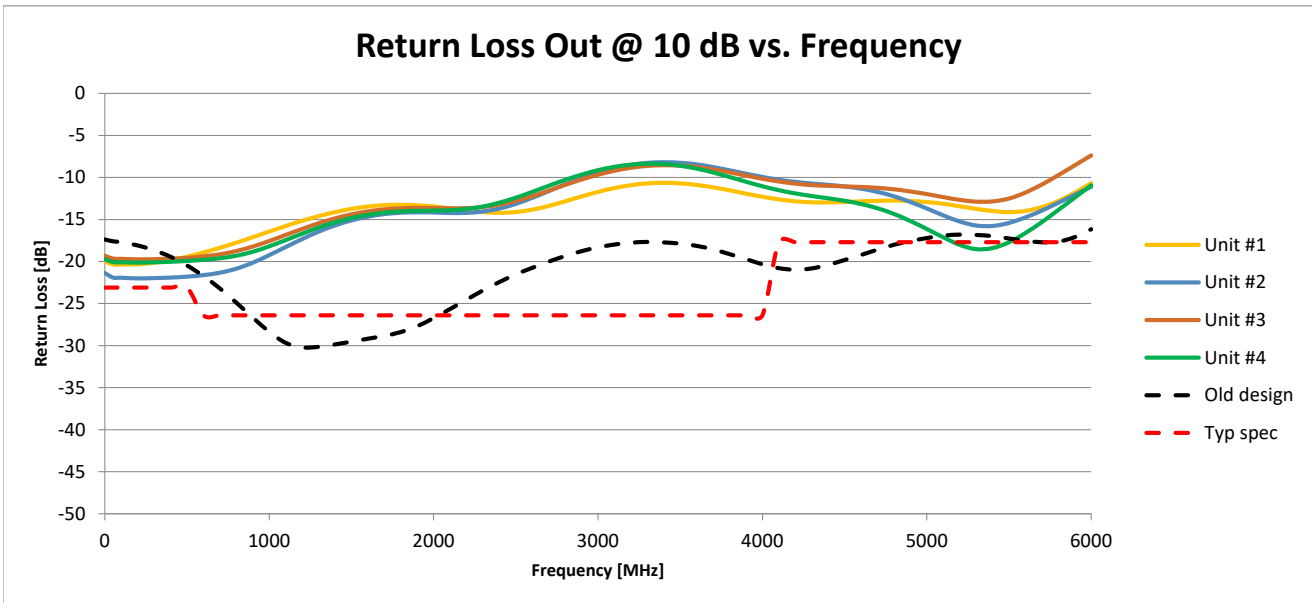


Figure 22: Return Loss Out @ 10 dB vs. Frequency at 25°C



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Figure 23: Return Loss Out @ 20 dB vs. Frequency at 25°C

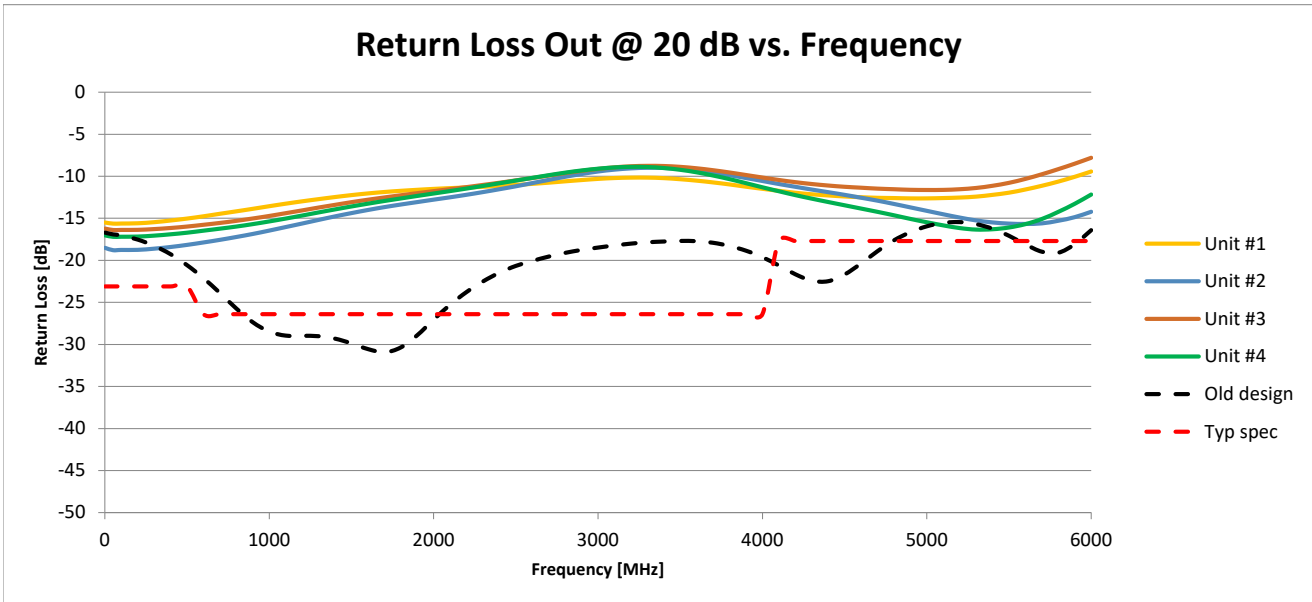
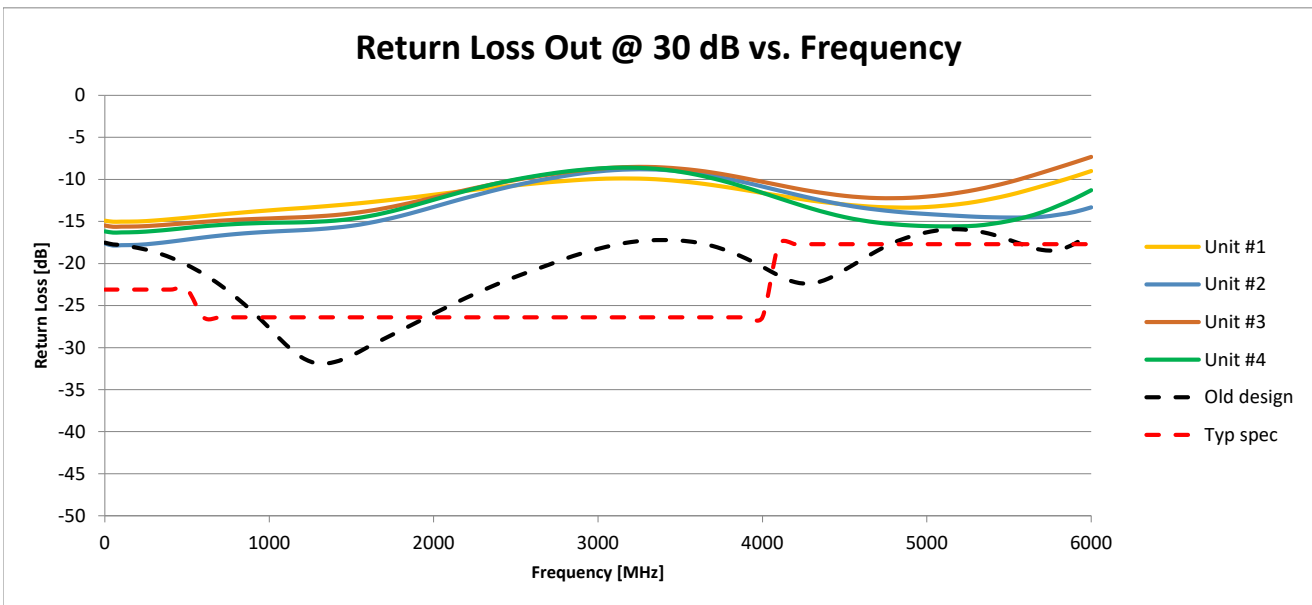


Figure 24: Return Loss Out @ 30 dB vs. Frequency at 25°C



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Figure 25: Return Loss Out @ 40 dB vs. Frequency at 25°C

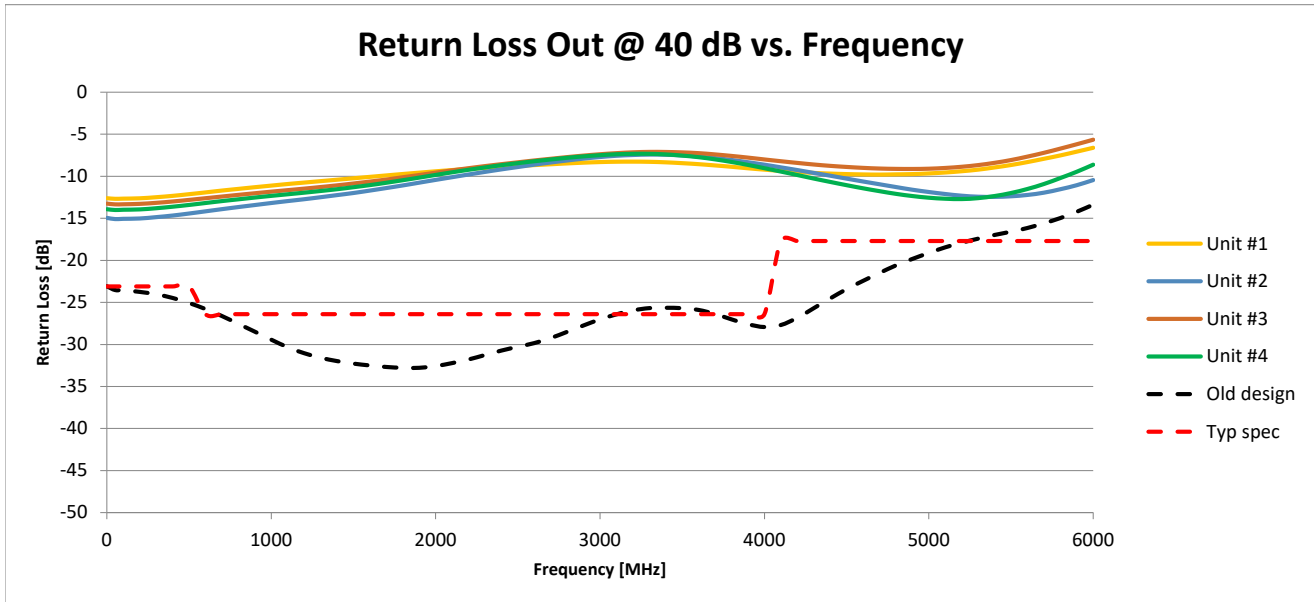
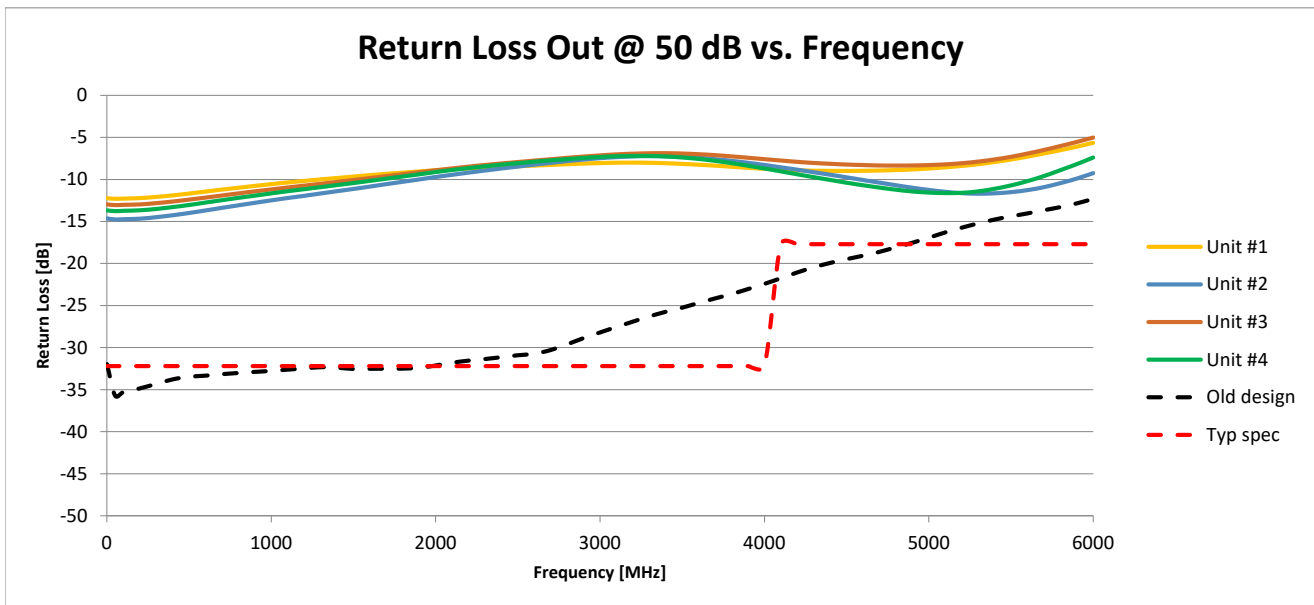


Figure 26: Return Loss Out @ 50 dB vs. Frequency at 25°C



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Figure 27: Return Loss Out @ 60 dB vs. Frequency at 25°C

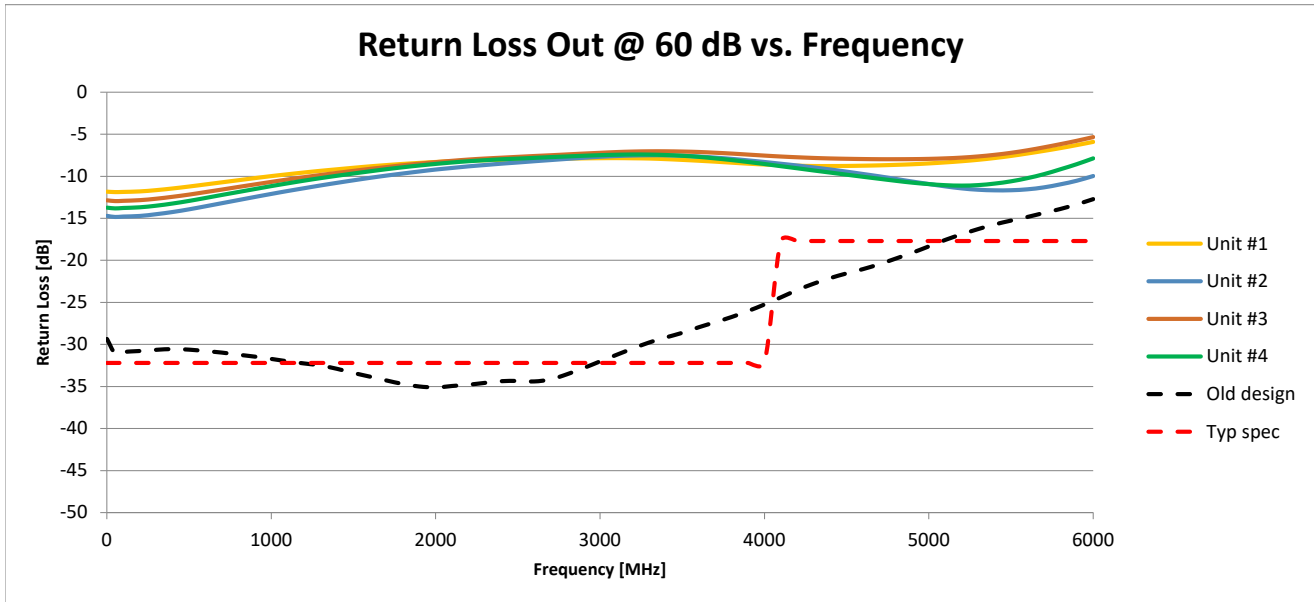
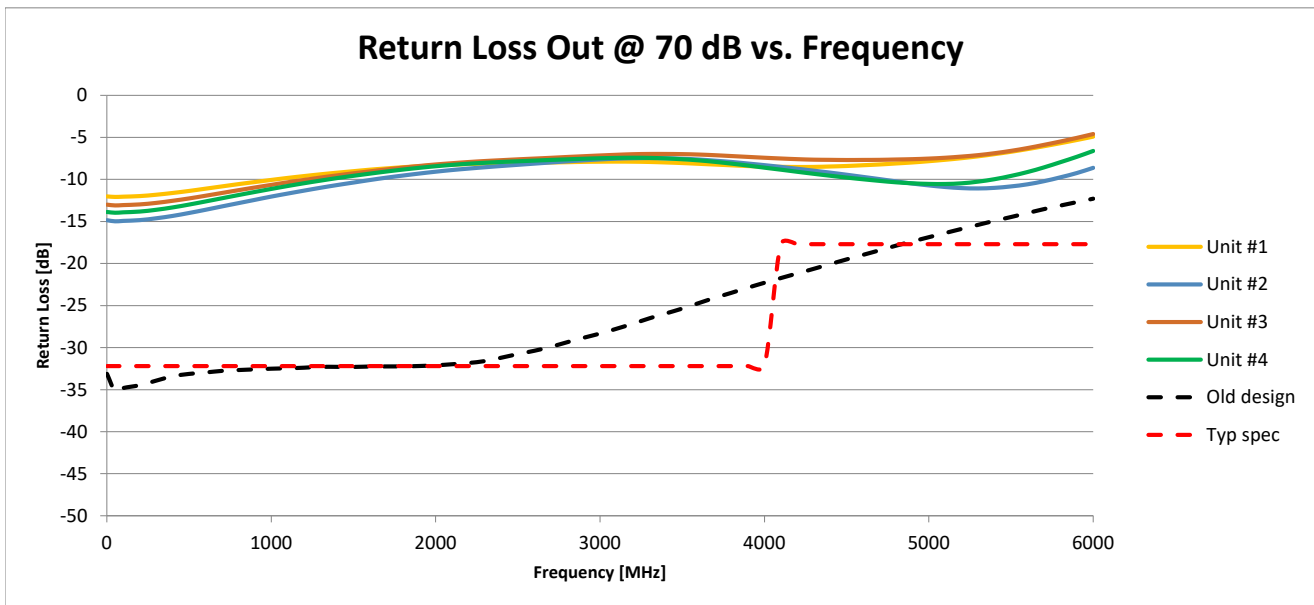


Figure 28: Return Loss Out @ 70 dB vs. Frequency at 25°C



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Figure 29: Return Loss Out @ 80 dB vs. Frequency at 25°C

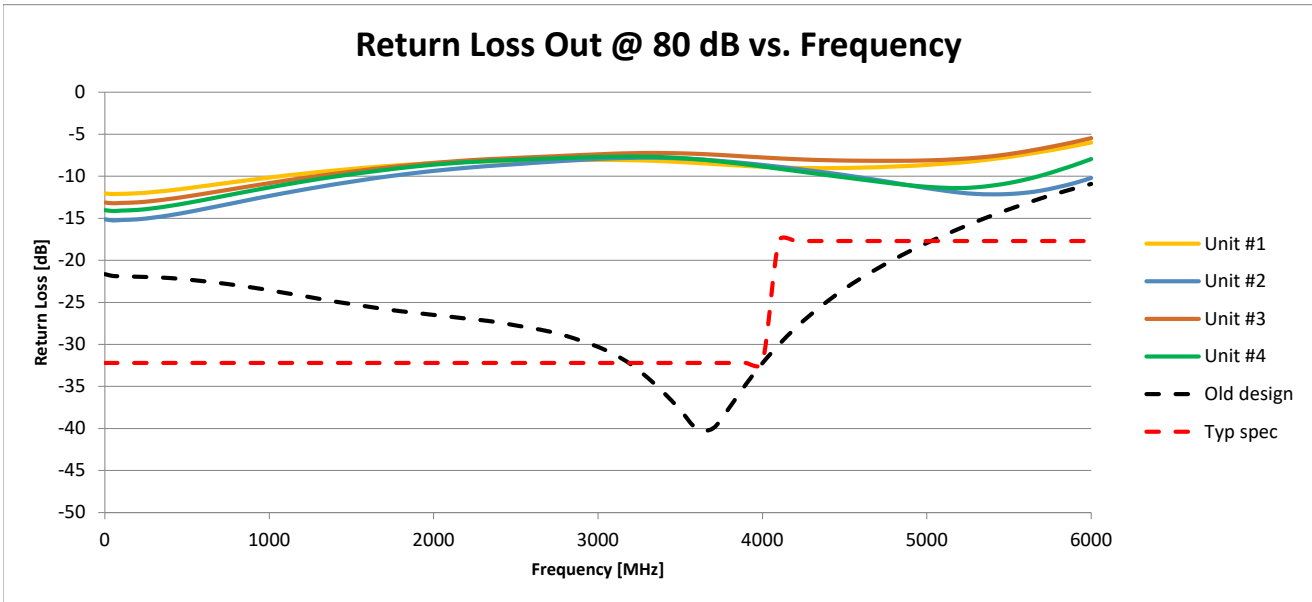
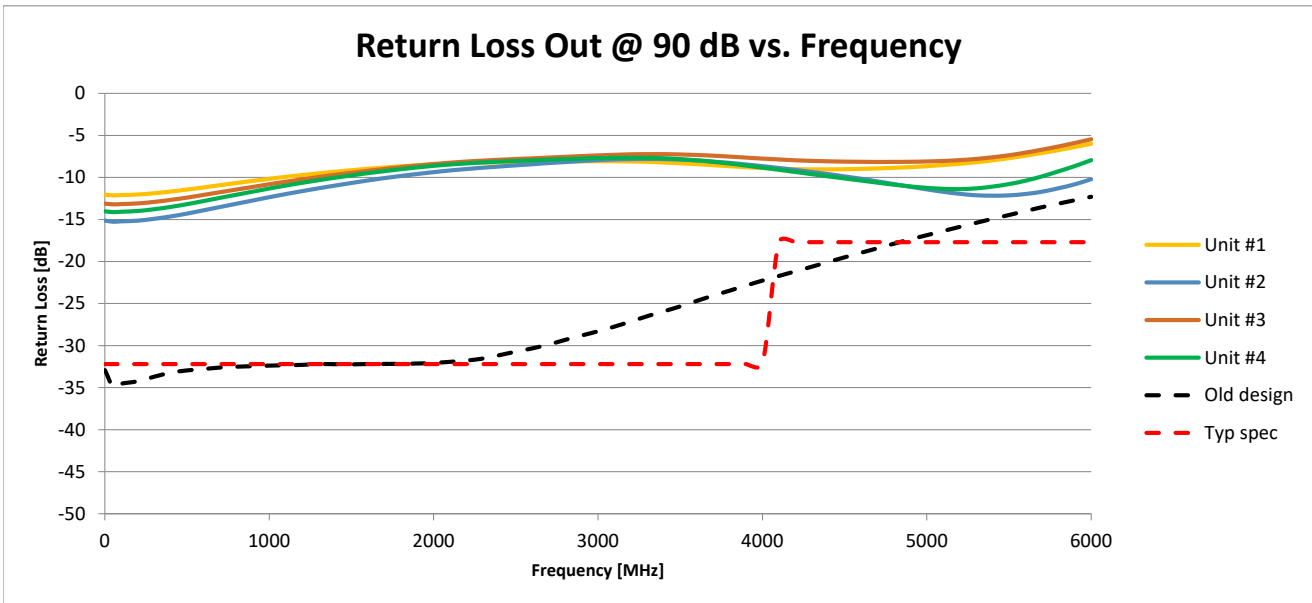


Figure 30: Return Loss Out @ 90 dB vs. Frequency at 25°C



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Figure 31: Insertion Loss vs. Frequency at 25°C

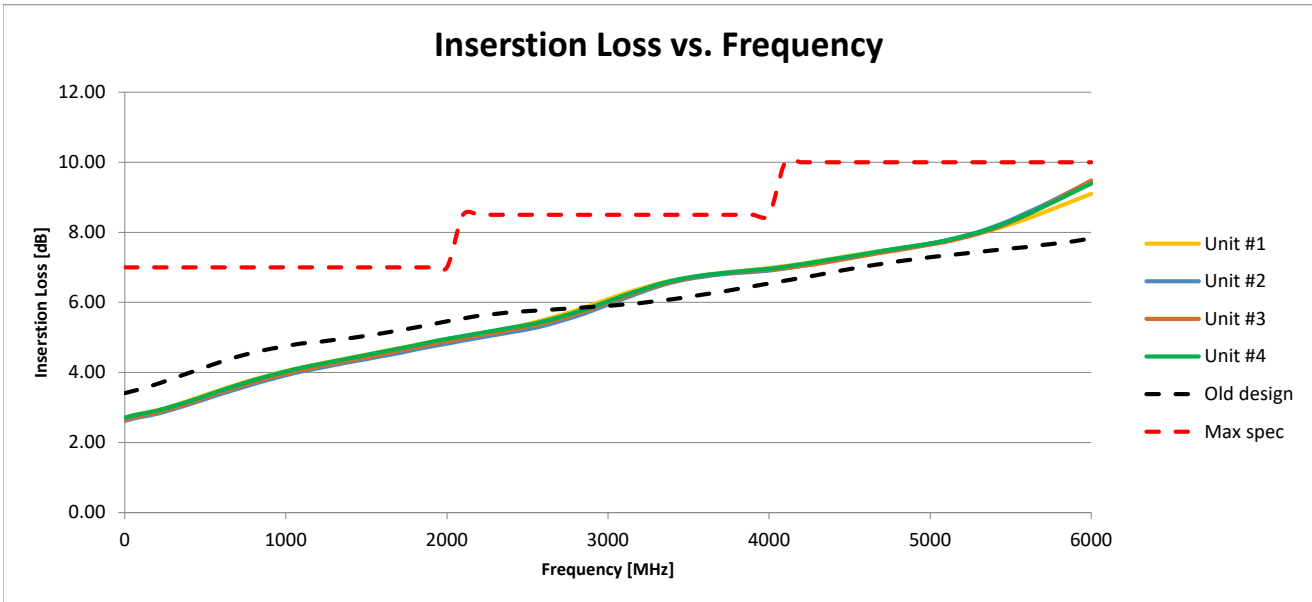
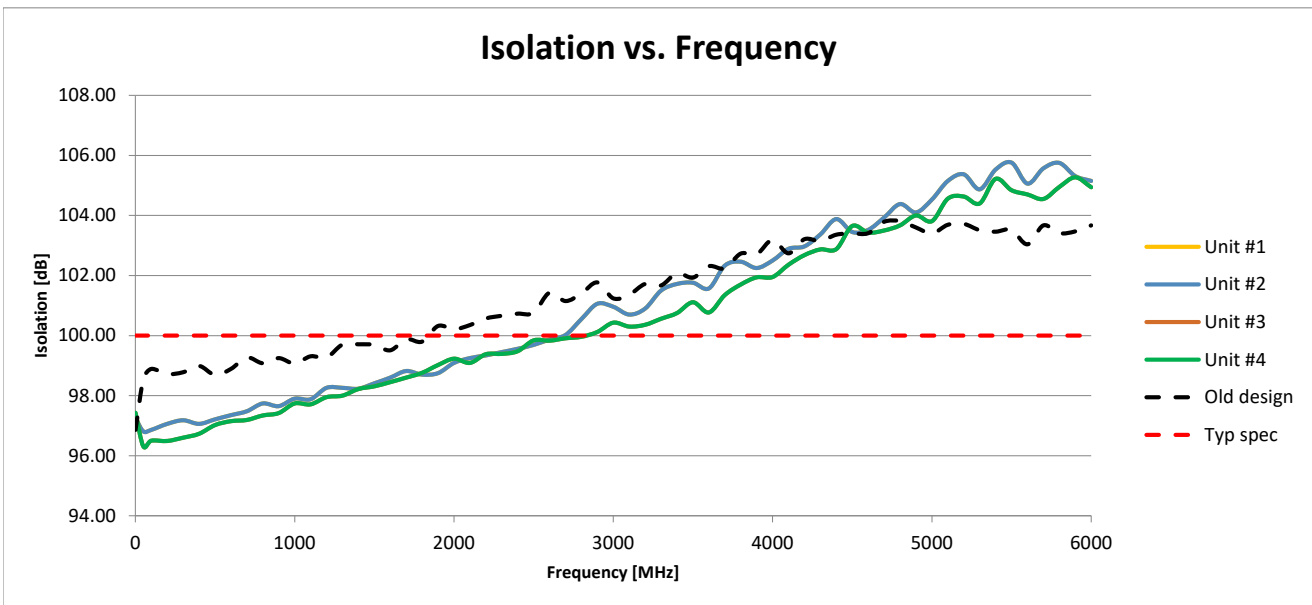


Figure 32: Isolation vs. Frequency at 25°C



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Figure 33: Input IP3 @ 0 dB vs. Frequency at 25°C

