

APPLICATION NOTE (AN-49-019)

REFERENCE GUIDE FOLLOWING A REDESIGN FOR:

RCDAT-6000-30

RUDAT-6000-30

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 +9 dBm at 1 MHz.
	0.01 - 0.05 GHz	+20 dBm Max	
	0.05 - 6 GHz	+20 dBm Max	+23 dBm Max
Atten. Accuracy @ 15 dB	0.001 - 2 GHz	±0.70 dB Typ ±1.23 dB Max	±0.30 dB Typ ±1.25 dB Max
	2 - 4 GHz	±0.45 dB Typ ±1.13 dB Max	±0.20 dB Typ ±1.23 dB Max
	4 - 6 GHz	±0.35 dB Typ ±1.20 dB Max	±0.15 dB Typ ±1.65 dB Max
Atten. Accuracy @ 20 dB	0.001 - 2 GHz	±0.70 dB Typ ±1.30 dB Max	±0.30 dB Typ ±1.55 dB Max
	2 - 4 GHz	±0.45 dB Typ ±1.20 dB Max	±0.20 dB Typ ±1.50 dB Max
	4 - 6 GHz	±0.35 dB Typ ±1.30 dB Max	±0.15 dB Typ ±2.10 dB Max
Isolation In-Out	---	34 dB Typ	31.5 dB Typ
IP3 Input	0.001 - 3 GHz	+57 dBm Typ	+53 dBm Typ
	3 - 6 GHz	+54 dBm Typ	+51 dBm Typ
Return Loss in @ 0 - 10 dB	0.001 - 4 GHz	20.8 dB Typ	19 dB Typ
	4 - 6 GHz	14.7 dB Typ	16 dB Typ
Return Loss in @ 10.25 - 30 dB	0.001 - 4 GHz	20.8 dB Typ	18 dB Typ
	4 - 6 GHz	14.7 dB Typ	20 dB Typ
Return Loss out @ 0 - 10 dB	0.001 - 0.5 GHz	20.8 dB Typ	23 dB Typ
	0.05 - 4 GHz	20.8 dB Typ	19 dB Typ
	4 - 6 GHz	14.7 dB Typ	19 dB Typ
Return Loss out @ 10.25 - 30 dB	0.001 - 0.5 GHz	20.8 dB Typ	20 dB Typ
	0.05 - 4 GHz	20.8 dB Typ	17 dB Typ
	4 - 6 GHz	14.7 dB Typ	17 dB Typ

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

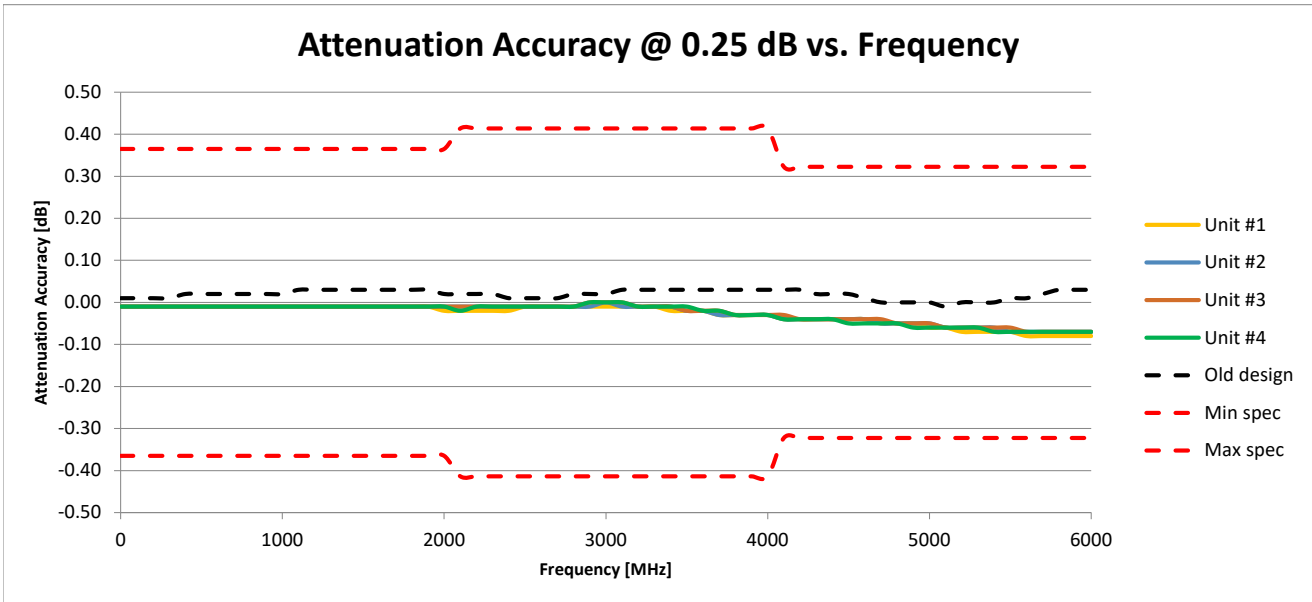
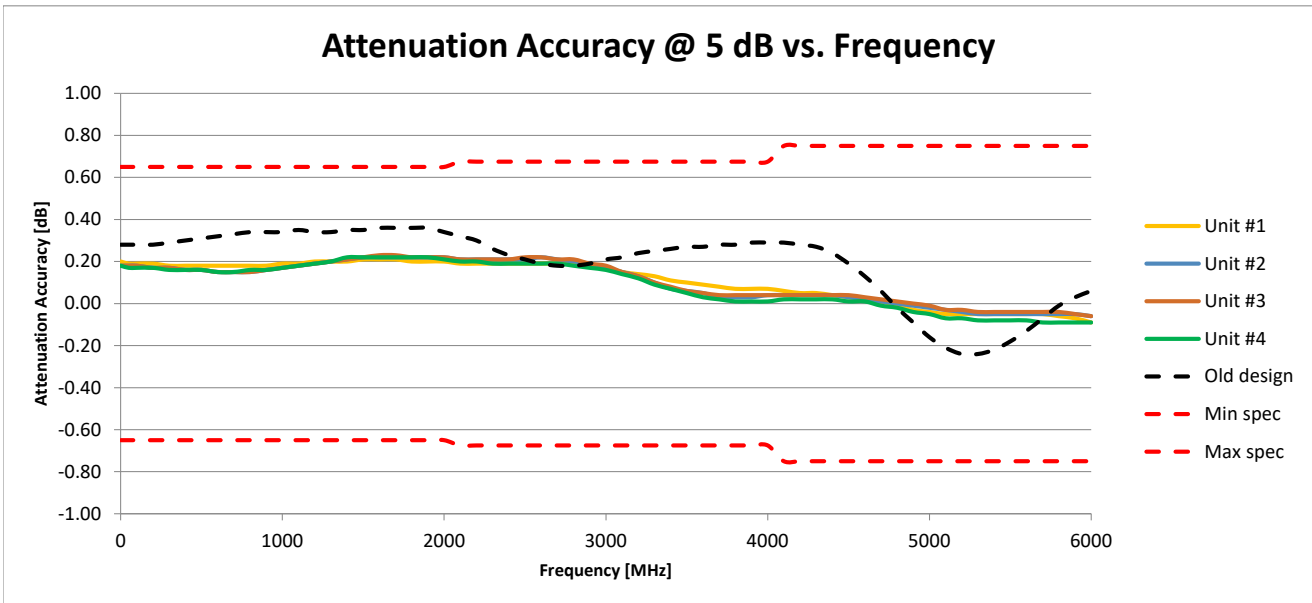


Figure 2: Attenuation Accuracy @ 5 dB vs. Frequency at 25°C



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Figure 3: Attenuation Accuracy @ 10 dB vs. Frequency at 25°C

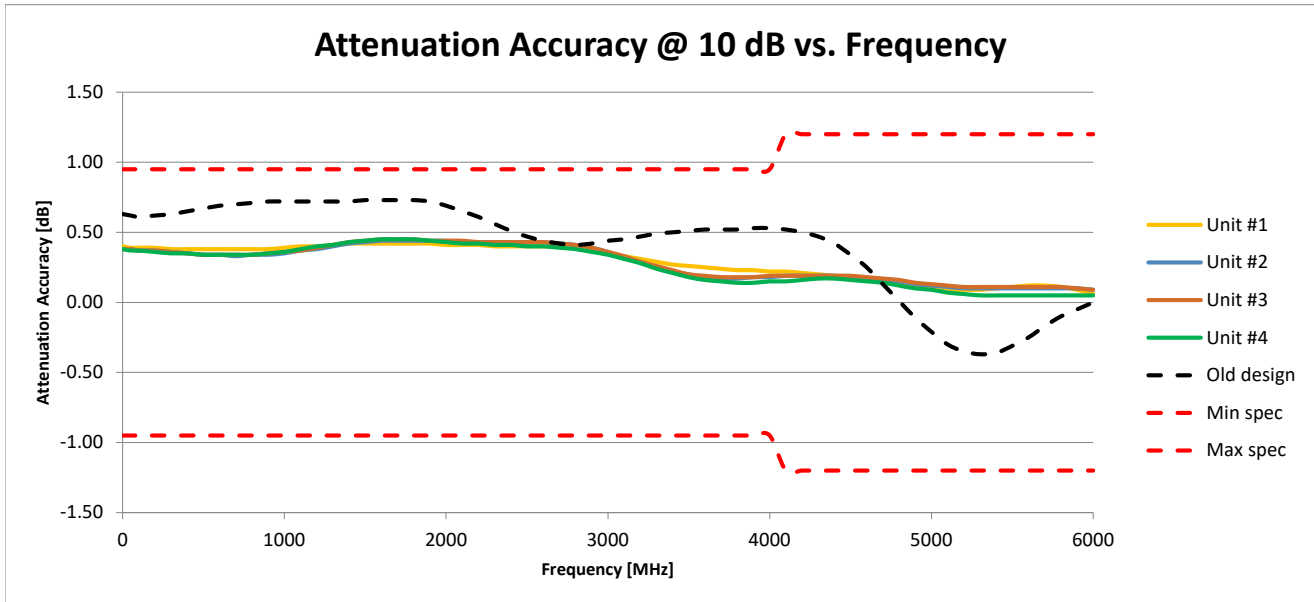
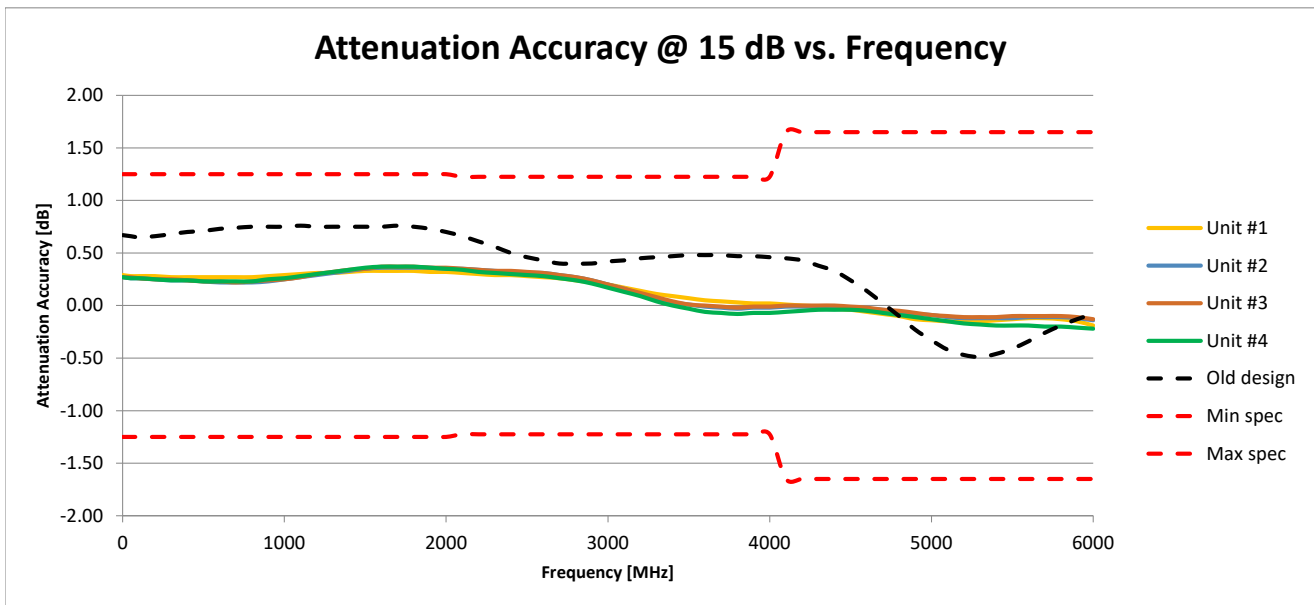


Figure 4: Attenuation Accuracy @ 15 dB vs. Frequency at 25°C



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Figure 5: Attenuation Accuracy @ 20 dB vs. Frequency at 25°C

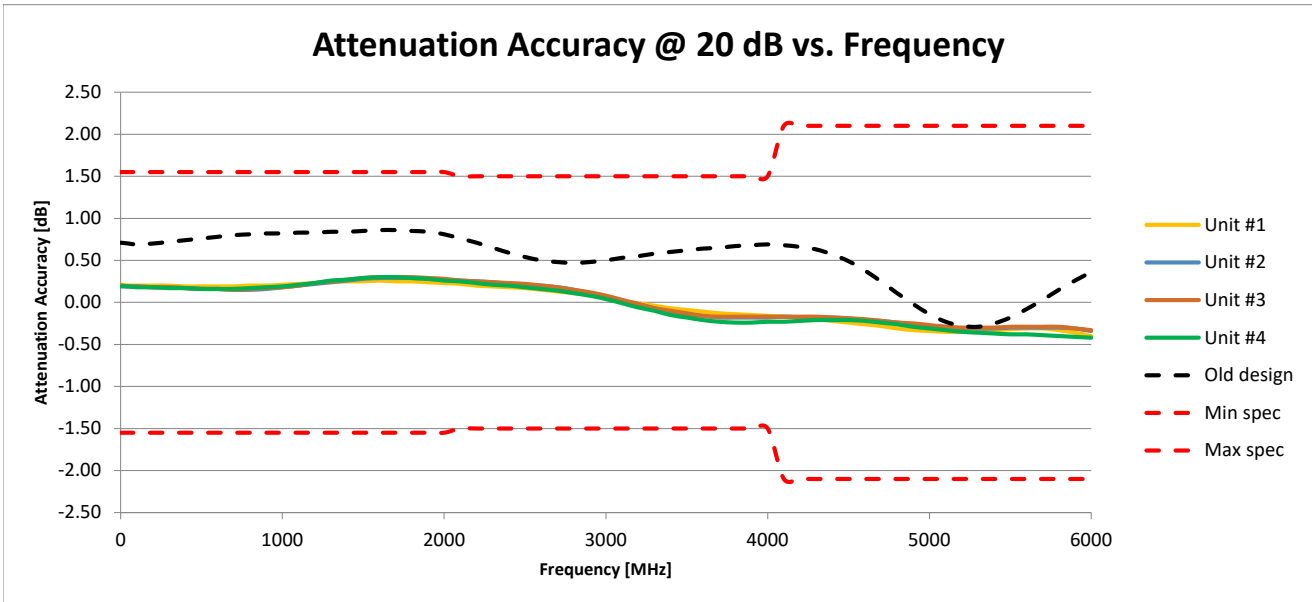
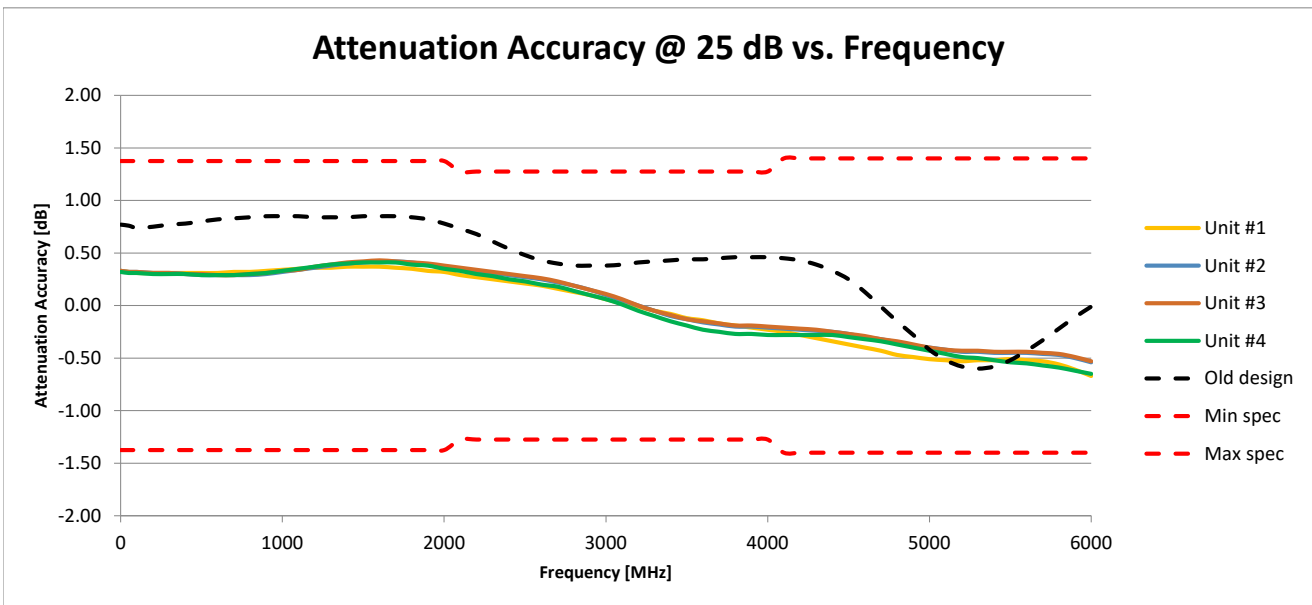


Figure 6: Attenuation Accuracy @ 25 dB vs. Frequency at 25°C



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Figure 7: Attenuation Accuracy @ 30 dB vs. Frequency at 25°C

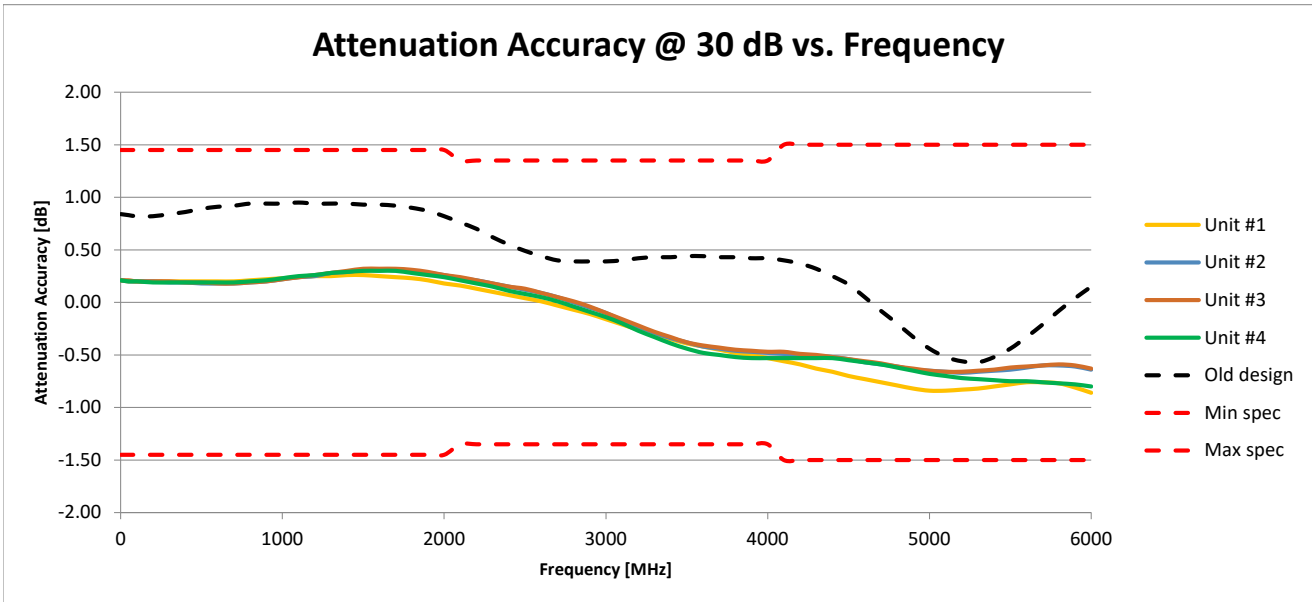
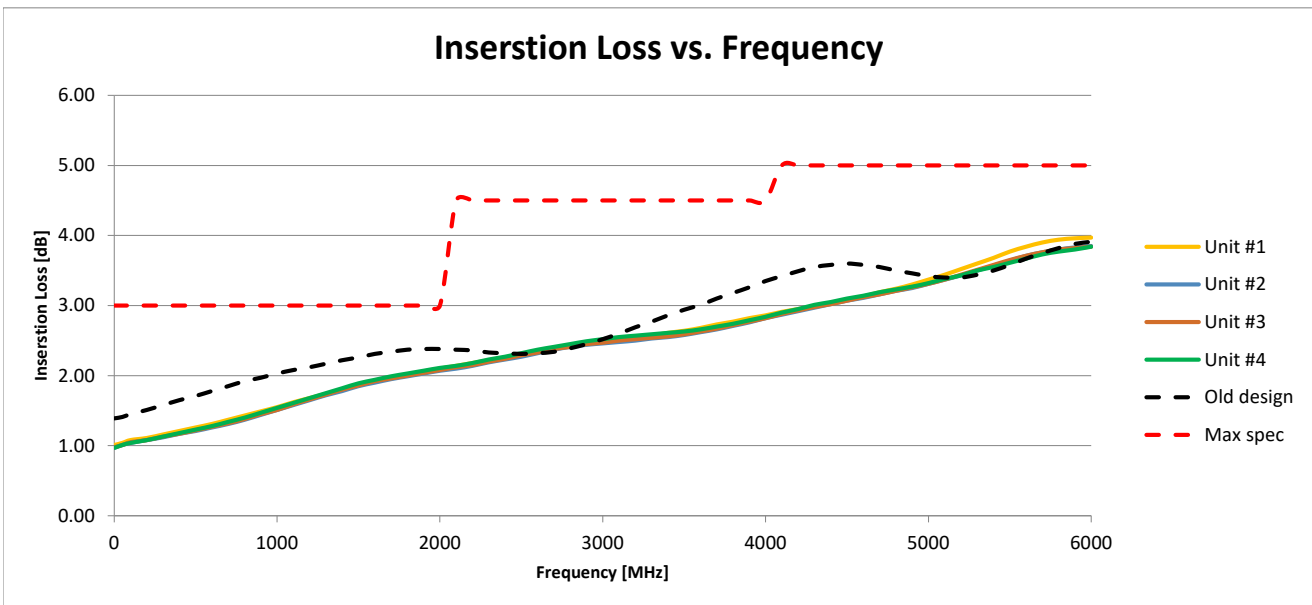


Figure 8: Insertion Loss vs. Frequency at 25°C



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Figure 9: Return Loss In @ 0.25 dB vs. Frequency at 25°C

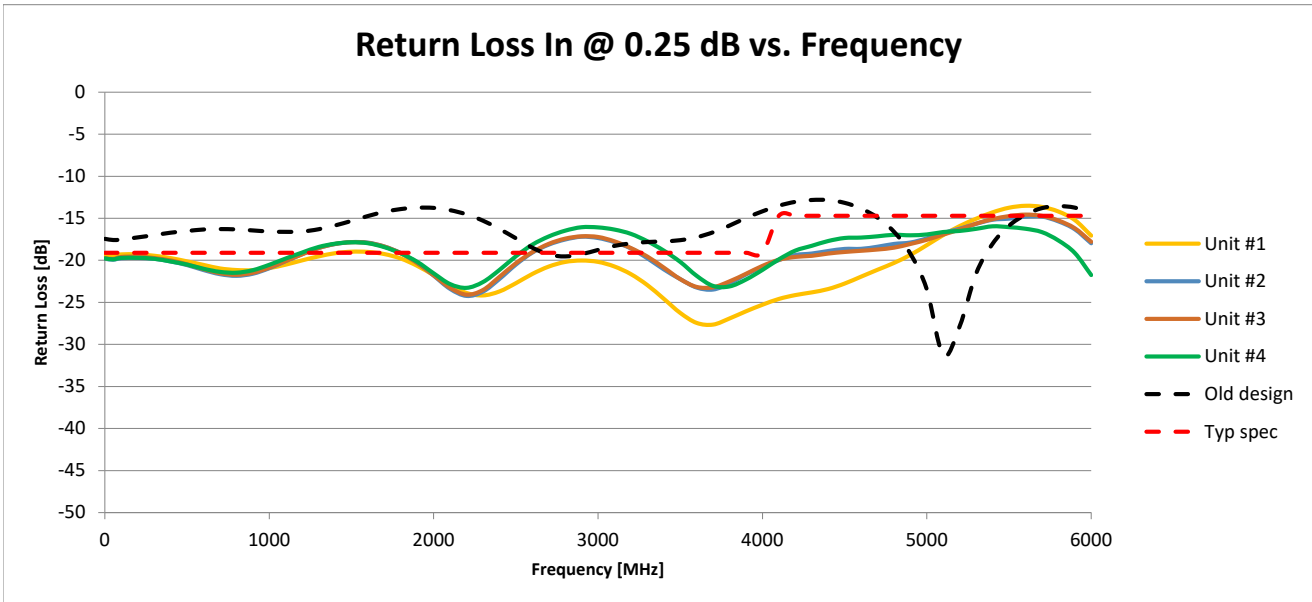
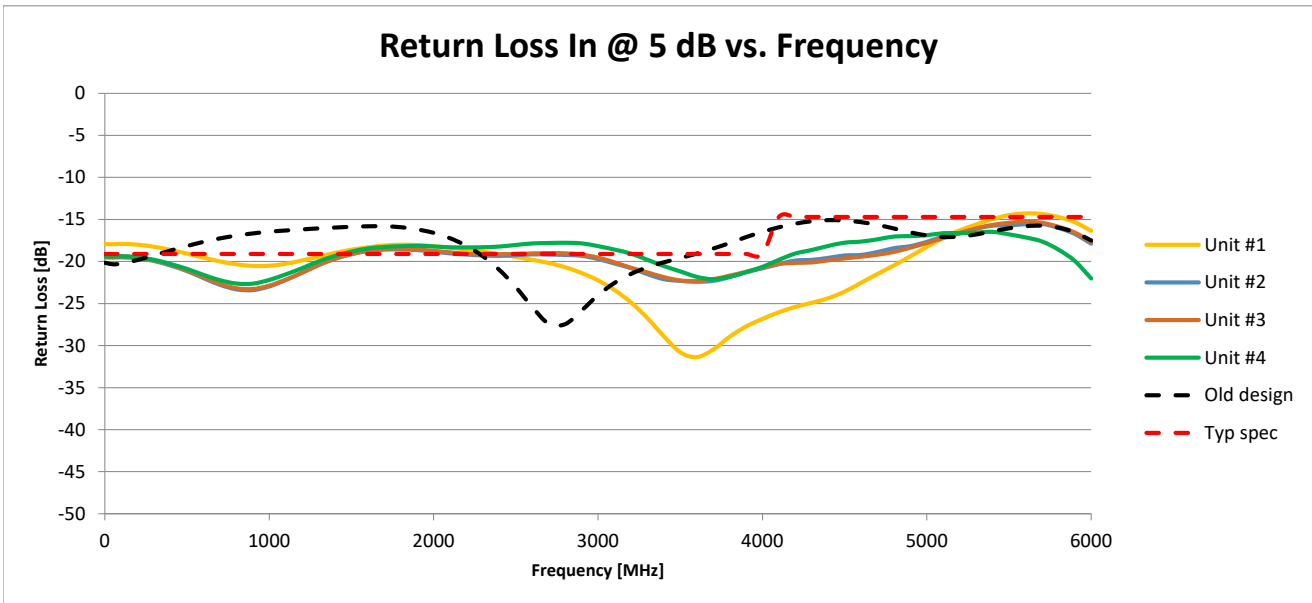


Figure 10: Return Loss In @ 5 dB vs. Frequency at 25°C



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Figure 11: Return Loss In @ 10 dB vs. Frequency at 25°C

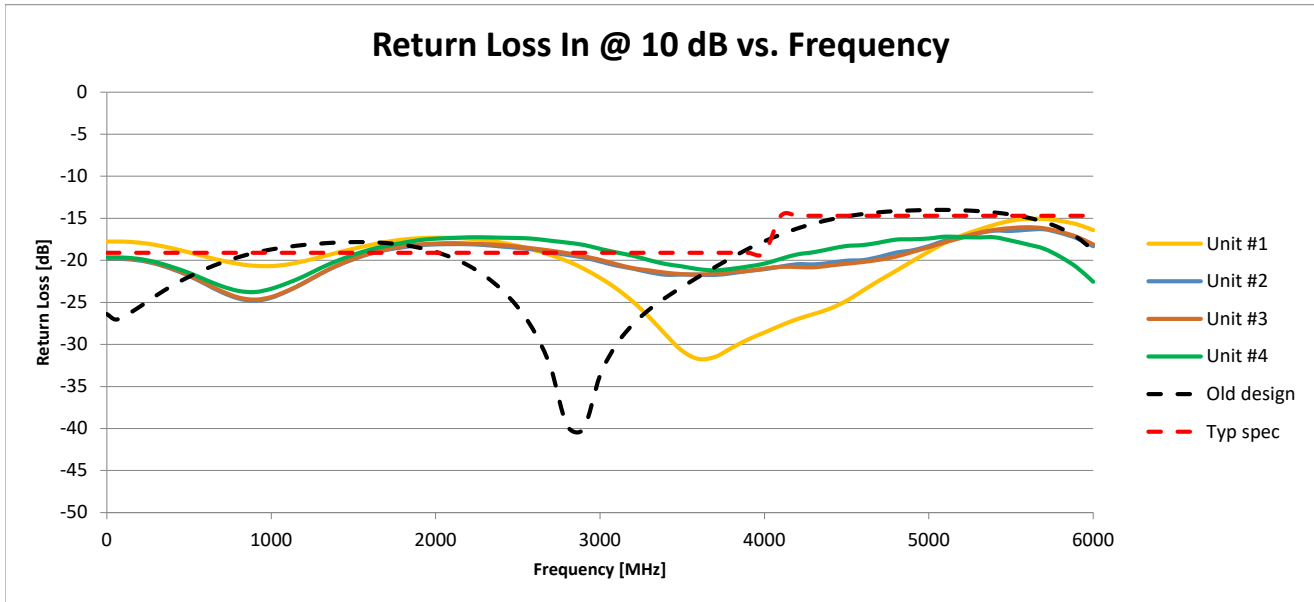
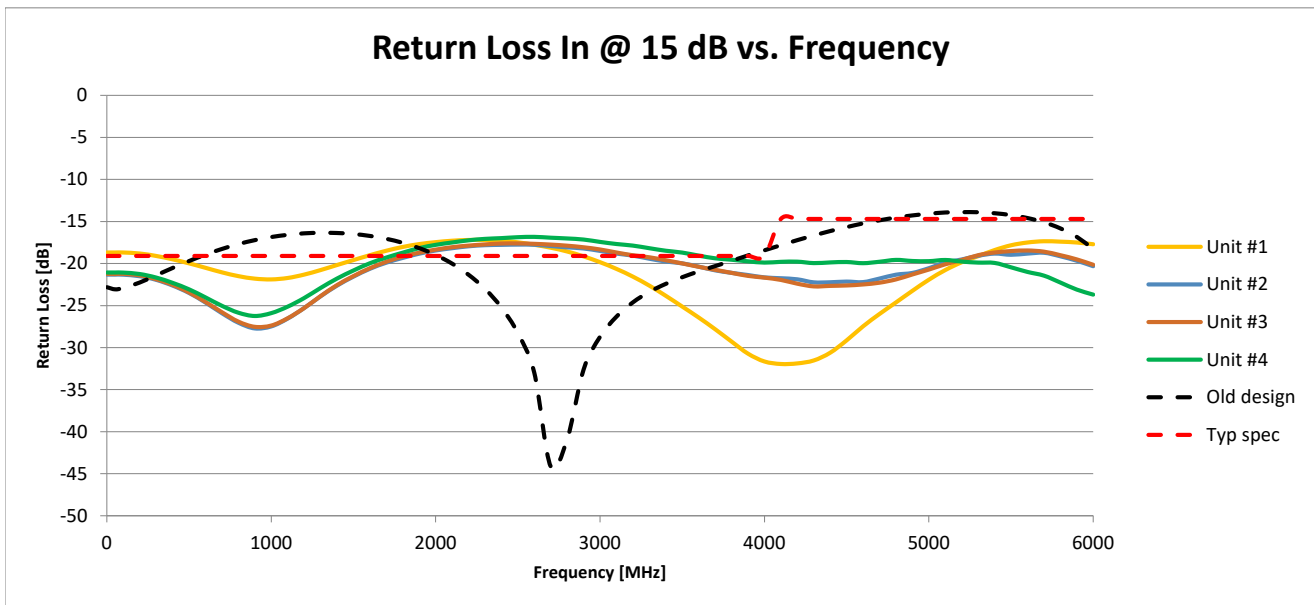


Figure 12: Return Loss In @ 15 dB vs. Frequency at 25°C



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

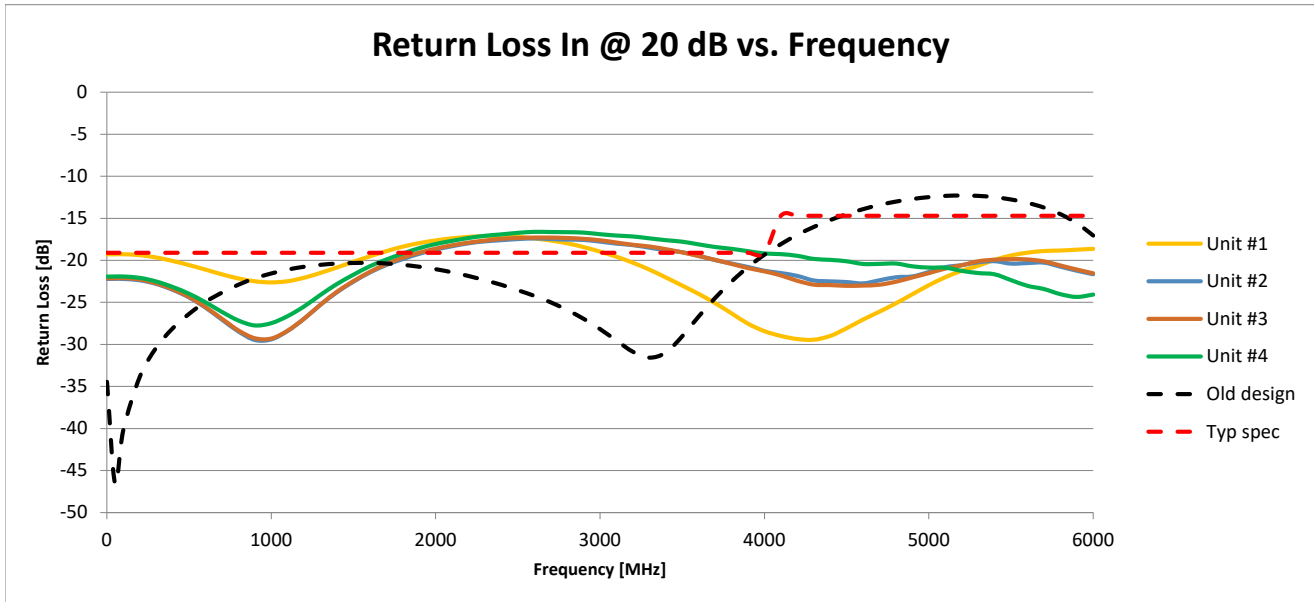
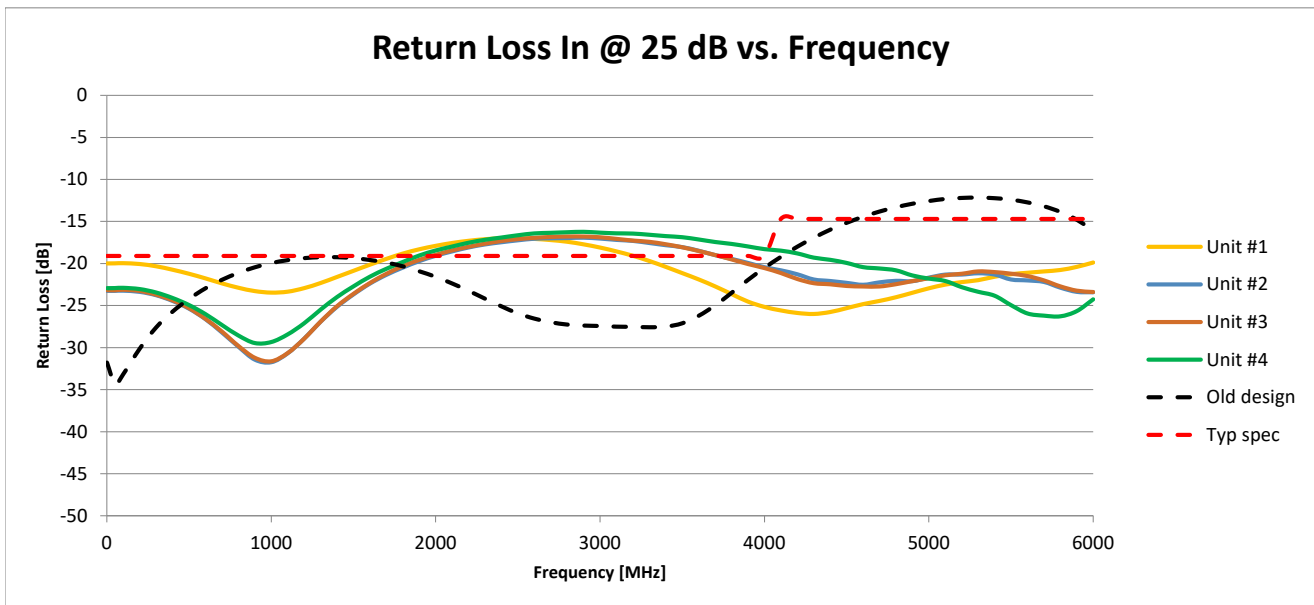


Figure 14: Return Loss In @ 25 dB vs. Frequency at 25°C



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Figure 15: Return Loss In @ 30 dB vs. Frequency at 25°C

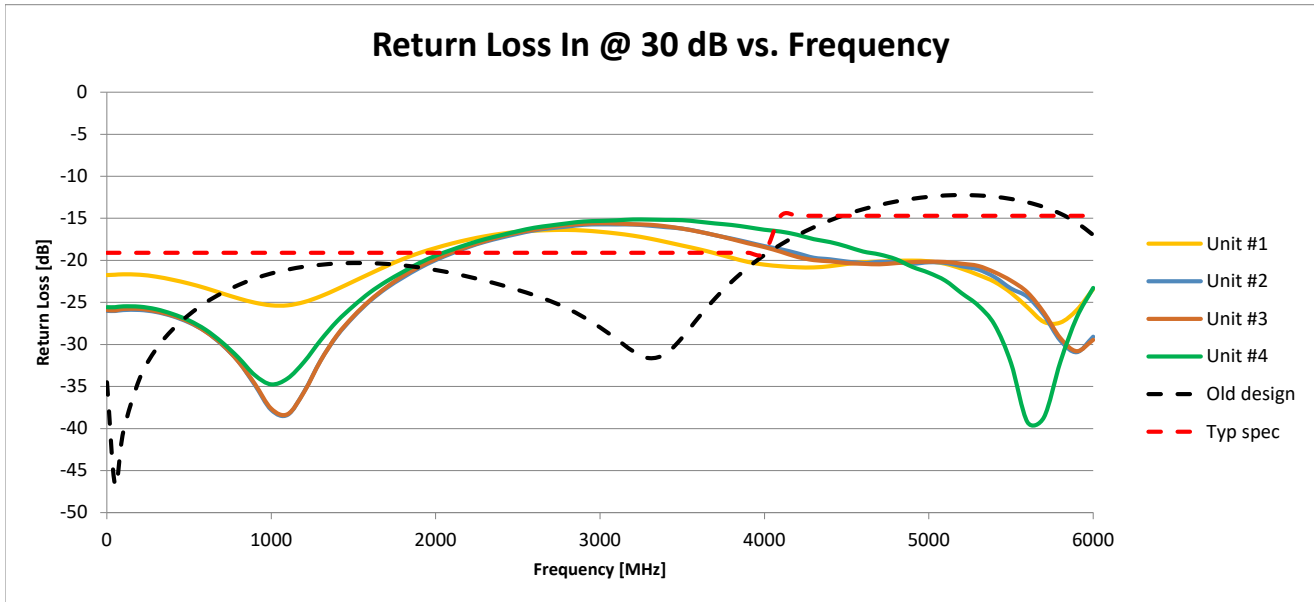
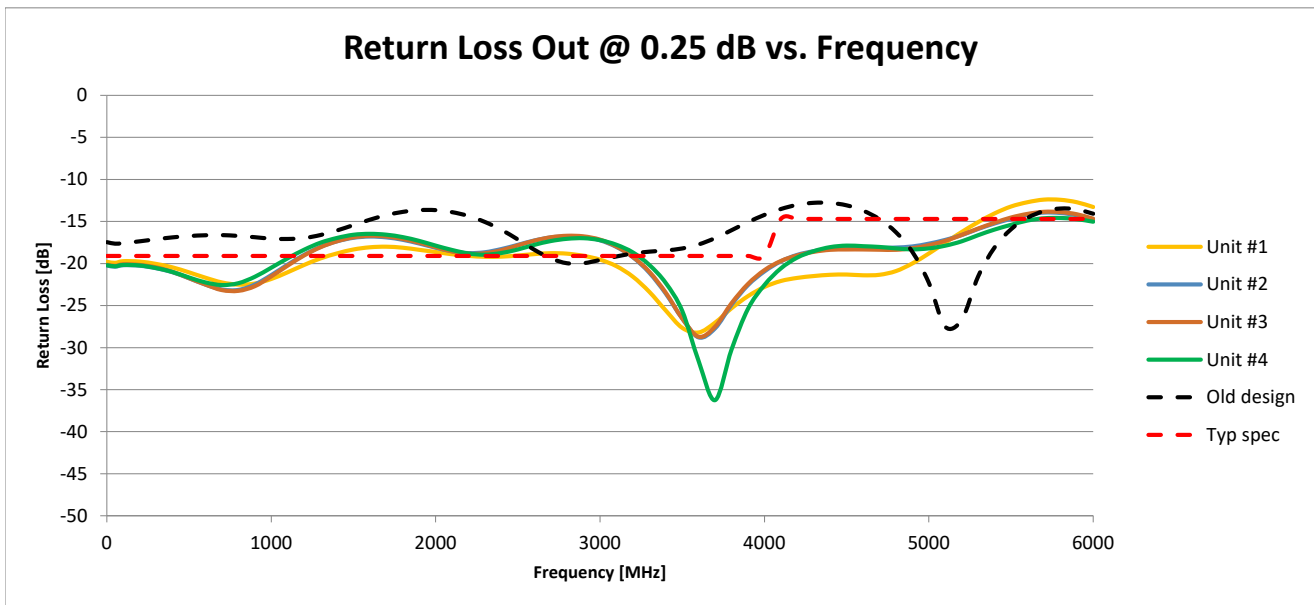


Figure 16: Return Loss Out @ 0.25 dB vs. Frequency at 25°C



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Figure 17: Return Loss Out @ 5 dB vs. Frequency at 25°C

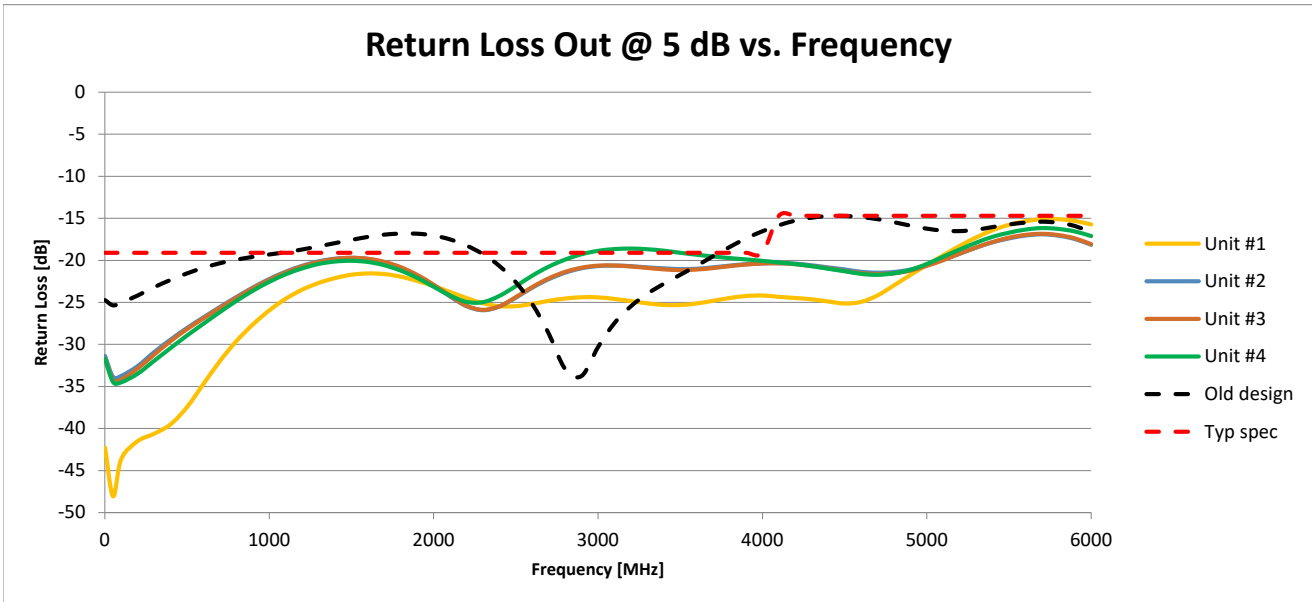
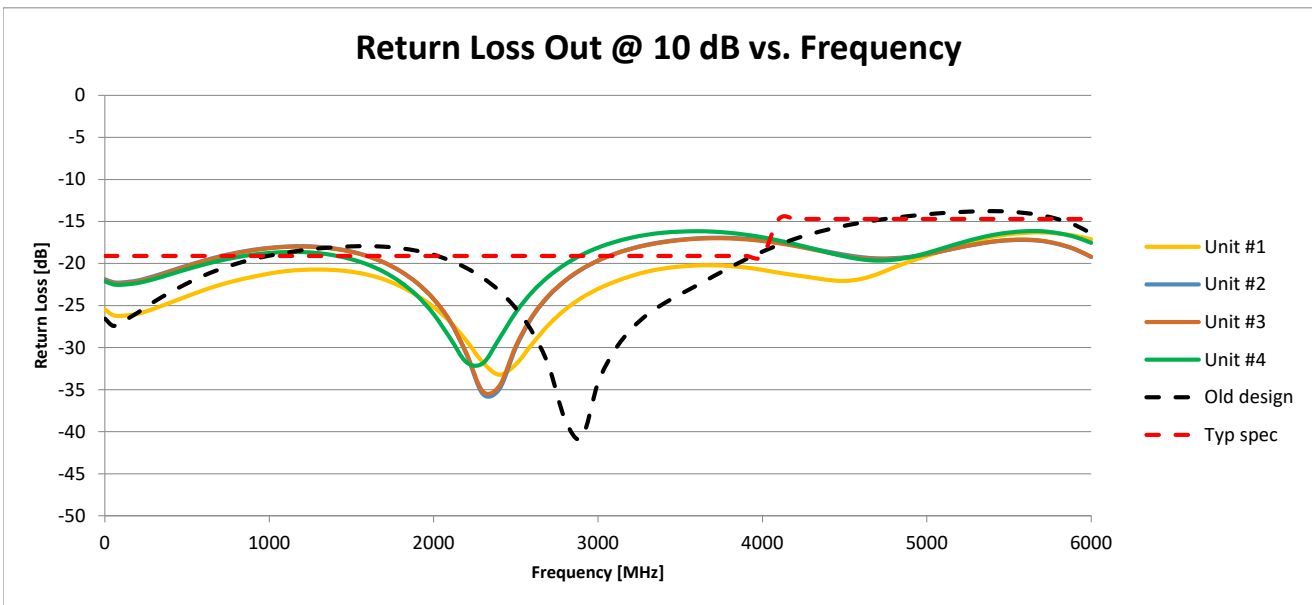


Figure 18: Return Loss Out @ 10 dB vs. Frequency at 25°C



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Figure 19: Return Loss Out @ 15 dB vs. Frequency at 25°C

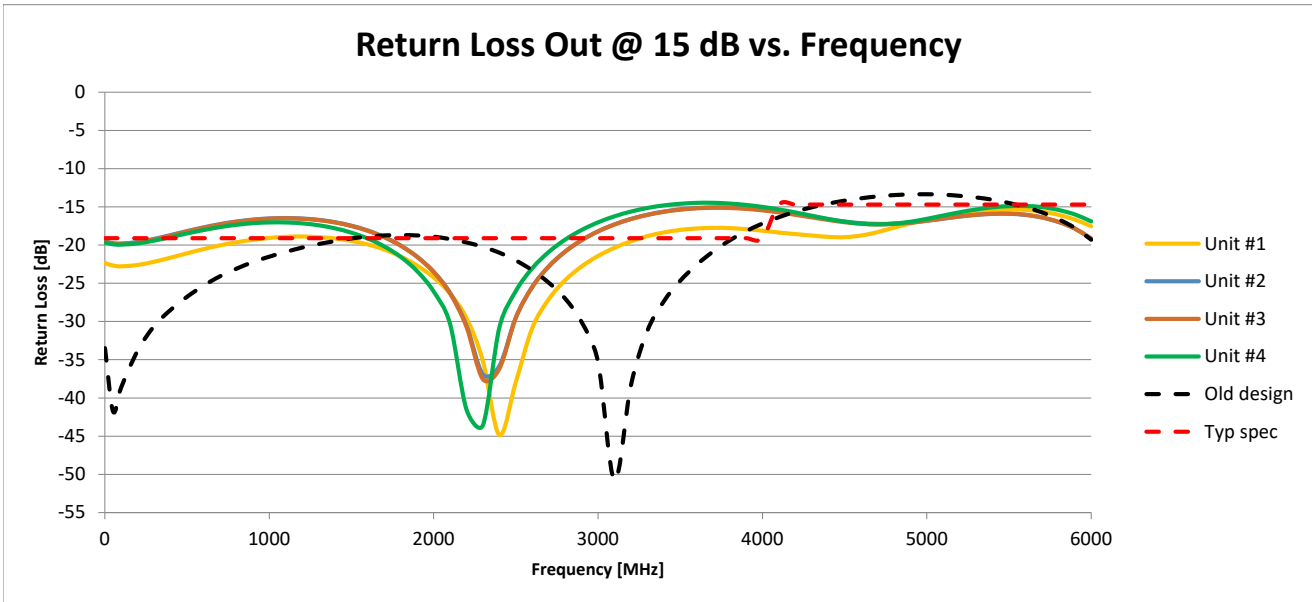
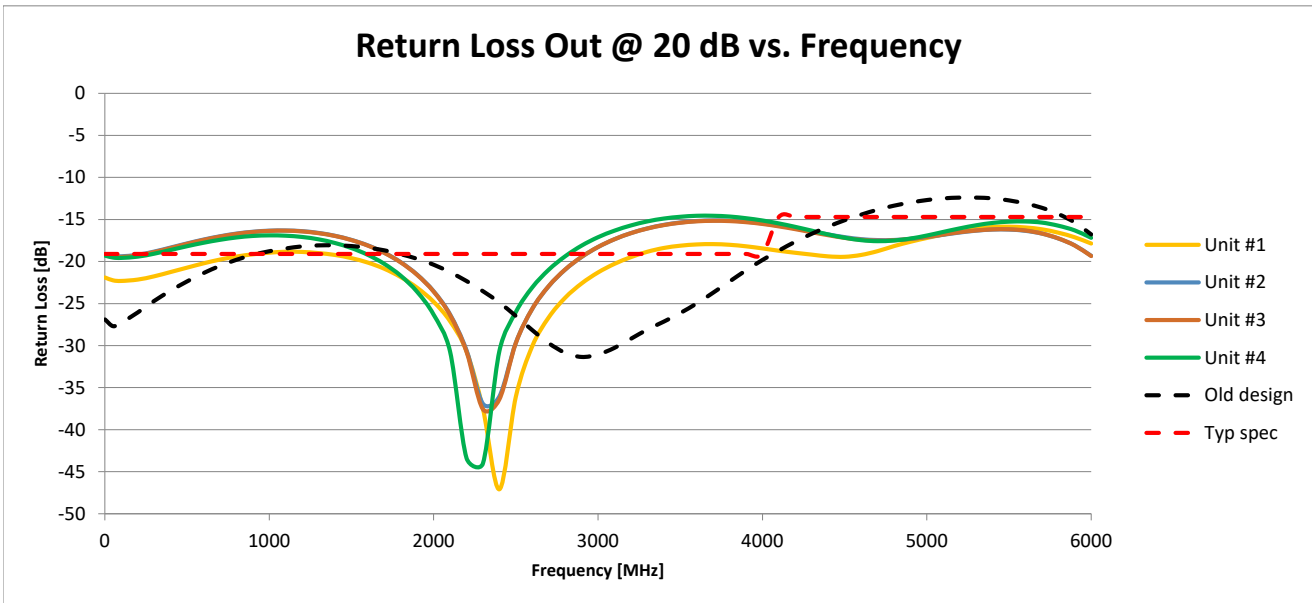


Figure 20: Return Loss Out @ 20 dB vs. Frequency at 25°C



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

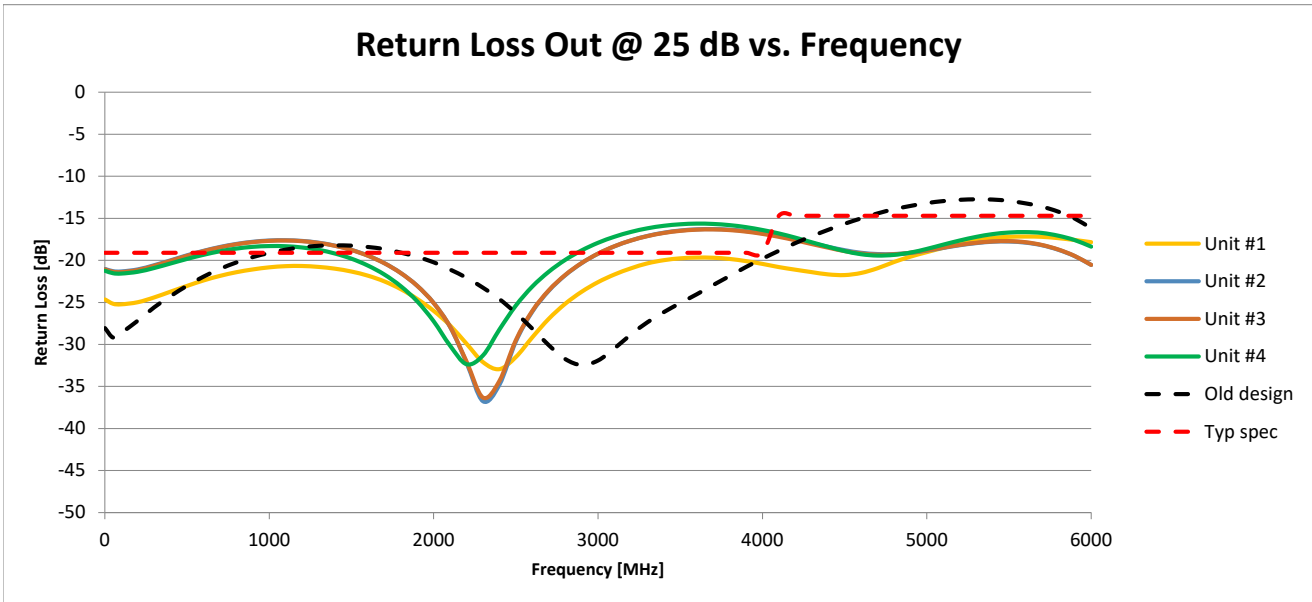
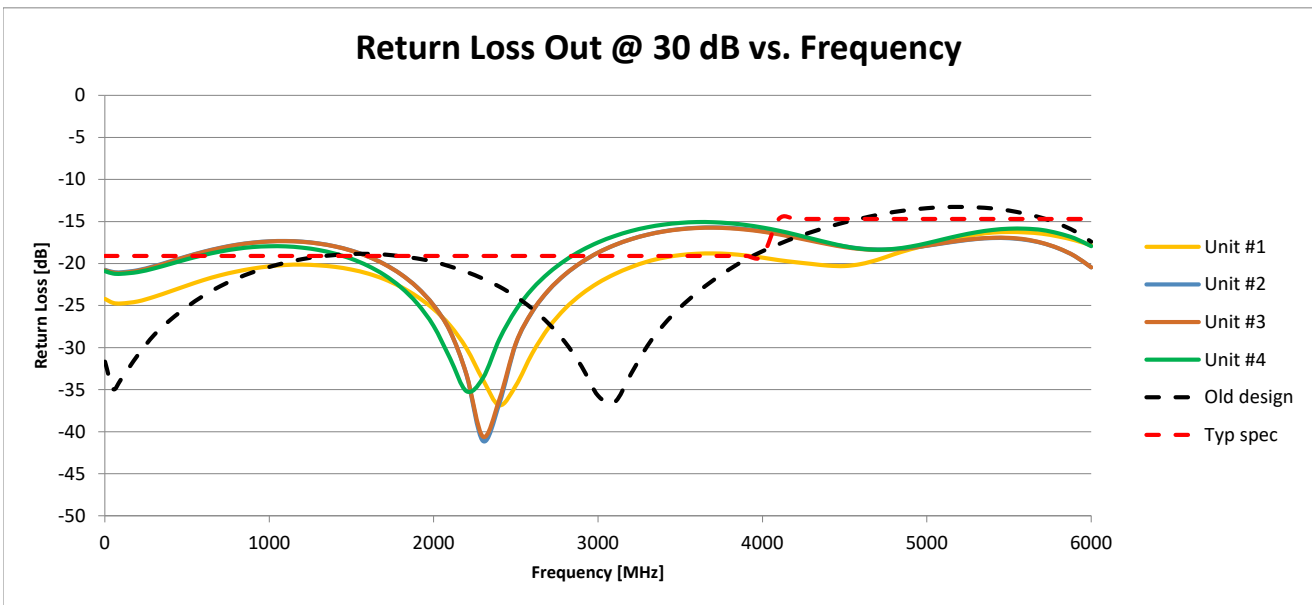


Figure 22: Return Loss Out @ 30 dB vs. Frequency at 25°C



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Figure 23: Isolation vs. Frequency at 25°C

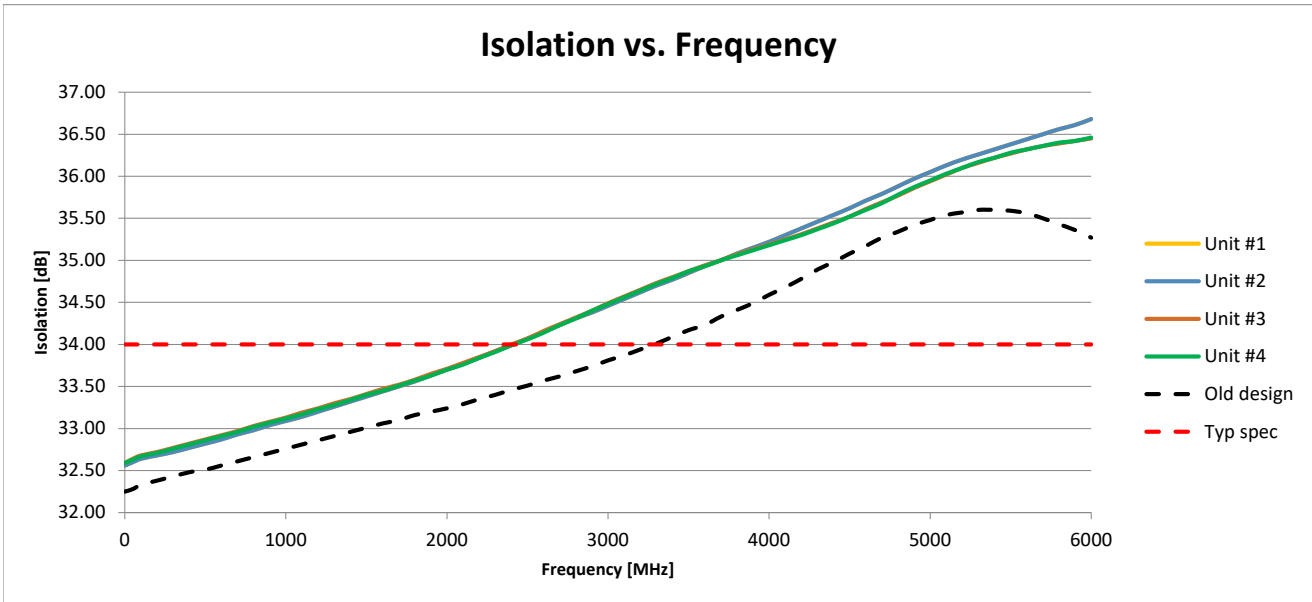


Figure 24: Input IP3 @ 0 dB vs. Frequency at 25°C

