

APPLICATION NOTE (AN-49-020)

REFERENCE GUIDE FOLLOWING A REDESIGN FOR:

RCDAT-6000-60
RUDAT-6000-60

EFFECT OF CHANGE:

Redesigned parts are Form, Fit compatible.
 Following is a summary of changes/improvements:

Parameters	Conditions	Old design	New design
Atten. Accuracy @ 0.25 dB	0.001 - 2 GHz	±0.20 dB Typ ±0.26 dB Max	±0.25 dB Typ ±0.46 dB Max
	2 - 4 GHz	±0.20 dB Typ ±0.26 dB Max	±0.35 dB Typ ±0.46 dB Max
	4 - 6 GHz	±0.15 dB Typ ±0.32 dB Max	±0.25 dB Typ ±0.51 dB Max
Atten. Accuracy @ 10 dB	0.001 - 2 GHz	±0.20 dB Typ ±0.75 dB Max	±0.25 dB Typ ±0.90 dB Max
	2 - 4 GHz	±0.20 dB Typ ±0.70 dB Max	±0.35 dB Typ ±0.90 dB Max
	4 - 6 GHz	±0.15 dB Typ ±0.90 dB Max	±0.25 dB Typ ±0.95 dB Max
Atten. Accuracy @ 20 dB	0.001 - 2 GHz	±0.20 dB Typ ±1.25 dB Max	±0.25 dB Typ ±1.35 dB Max
	2 - 4 GHz	±0.20 dB Typ ±1.15 dB Max	±0.35 dB Typ ±1.35 dB Max
	4 - 6 GHz	±0.15 dB Typ ±1.50 dB Max	±0.25 dB Typ ±1.40 dB Max
Atten. Accuracy @ 30 dB	0.001 - 2 GHz	±0.45 dB Typ ±1.50 dB Max	±0.85 dB Typ ±1.35 dB Max
	2 - 4 GHz	±0.25 dB Typ ±1.30 dB Max	±0.70 dB Typ ±1.30 dB Max
	4 - 6 GHz	±0.30 dB Typ ±1.50 dB Max	±0.55 dB Typ ±1.45 dB Max
Atten. Accuracy @ 40 dB	0.001 - 2 GHz	±0.45 dB Typ ±1.70 dB Max	±0.85 dB Typ ±1.55 dB Max
	2 - 4 GHz	±0.25 dB Typ ±1.50 dB Max	±0.70 dB Typ ±1.45 dB Max
	4 - 6 GHz	±0.30 dB Typ ±1.85 dB Max	±0.55 dB Typ ±1.70 dB Max

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Parameters	Conditions	Old design	New design
Atten. Accuracy @ 50 dB	0.001 - 2 GHz	±0.45 dB Typ ±1.90 dB Max	±0.85 dB Typ ±1.75 dB Max
	2 - 4 GHz	±0.25 dB Typ ±1.70 dB Max	±0.70 dB Typ ±1.60 dB Max
	4 - 6 GHz	±0.30 dB Typ ±2.20 dB Max	±0.55 dB Typ ±1.95 dB Max
Atten. Accuracy @ 60 dB	0.001 - 2 GHz	±0.45 dB Typ ±2.10 dB Max	±0.85 dB Typ ±1.95 dB Max
	2 - 4 GHz	±0.25 dB Typ ±1.90 dB Max	±0.70 dB Typ ±1.75 dB Max
	4 - 6 GHz	±0.30 dB Typ ±2.55 dB Max	±0.55 dB Typ ±2.20 dB Max
Insertion Loss	0.001 - 2 GHz	3.2 dB Typ 5.0 dB Max	3.0 dB Typ 5.0 dB Max
	2 - 4 GHz	4.5 dB Typ 7.0 dB Max	4.7 dB Typ 6.5 dB Max
	4 - 6 GHz	5.6 dB Typ 7.5 dB Max	6.2 dB Typ 7.5 dB Max
Isolation In-Out	---	68 dB Typ	67 dB Typ
IP3 Input	0.001 - 3 GHz	+56 dBm Typ	+53 dBm Typ
	3 - 6 GHz	+53 dBm Typ	+51 dBm Typ
Return Loss in @ 0 - 40 dB	0.001 - 0.5 GHz	23.1 dB Typ	20 dB Typ
	4 - 6 GHz	15.6 dB Typ	16 dB Typ
Return Loss in @ 40.25 - 60 dB	0.001 - 0.5 GHz	23.1 dB Typ	25 dB Typ
	4 - 6 GHz	15.6 dB Typ	14 dB Typ
Return Loss out @ 0 - 20 dB	0.001 - 4 GHz	23.1 dB Typ	19 dB Typ
	4 - 6 GHz	15.6 dB Typ	16 dB Typ
Return Loss out @ 20.25 - 60 dB	0.001 - 4 GHz	23.1 dB Typ	15 dB Typ
	4 - 6 GHz	15.6 dB Typ	14 dB Typ
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

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

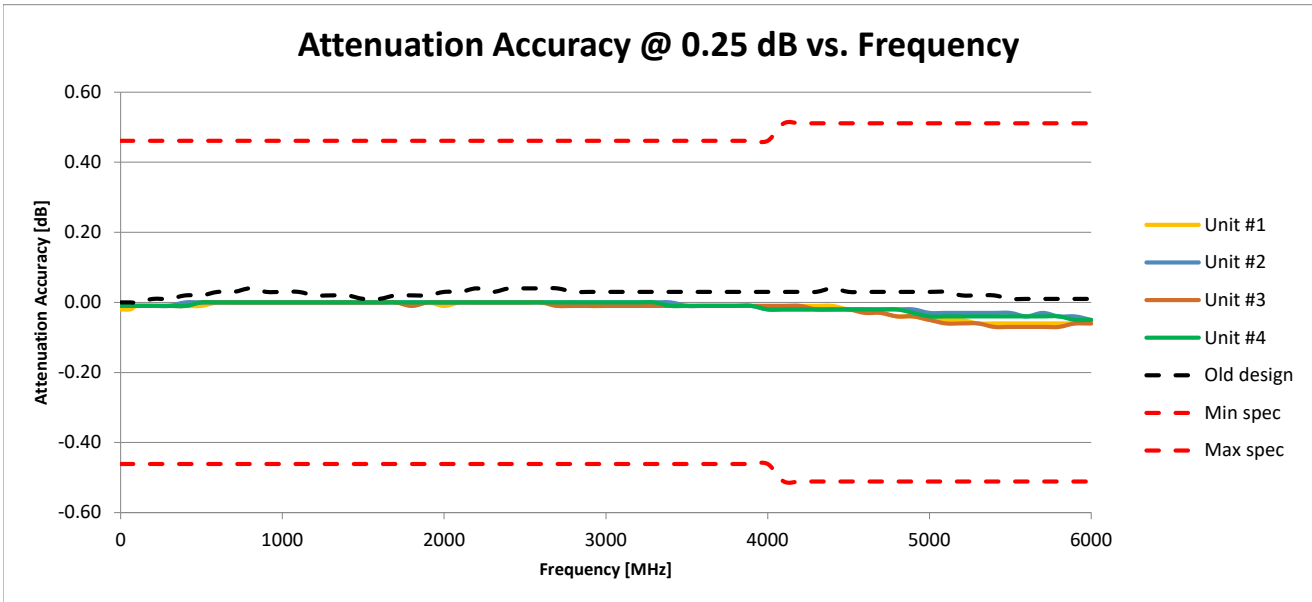
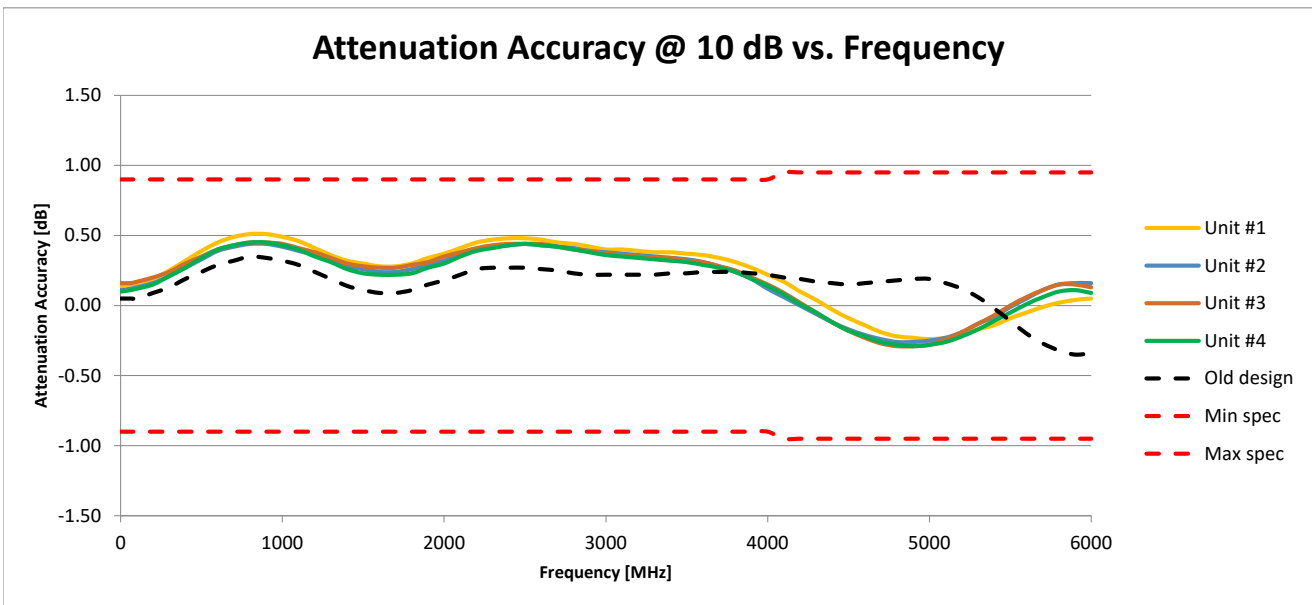


Figure 2: Attenuation Accuracy @ 10 dB vs. Frequency at 25°C



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

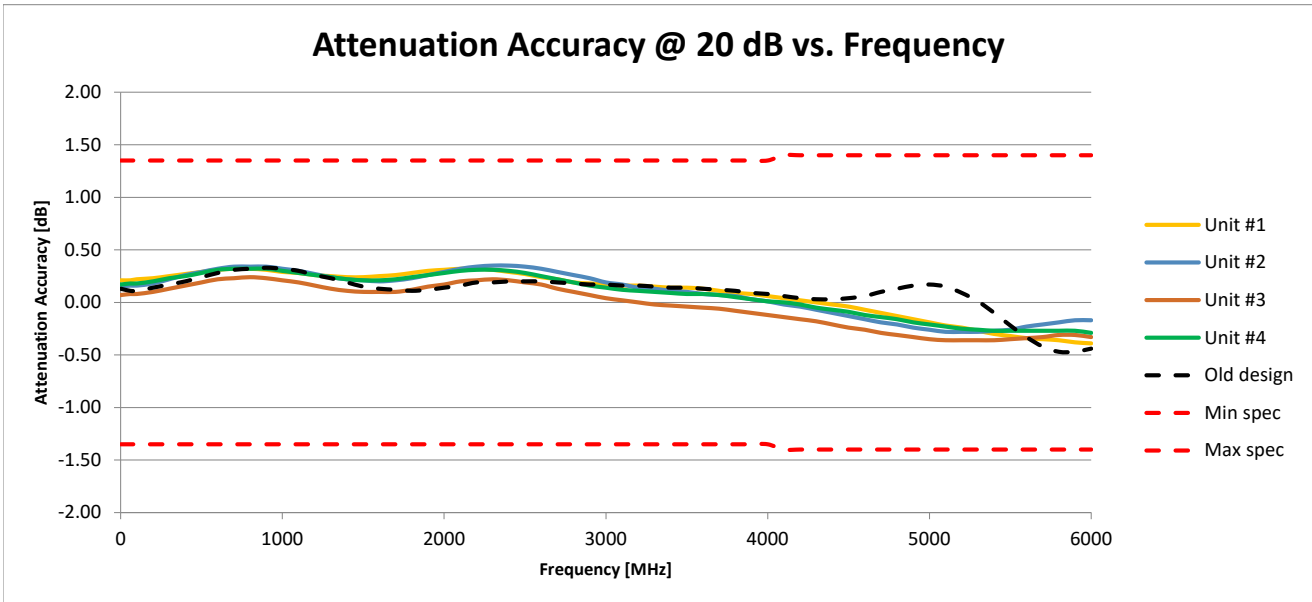
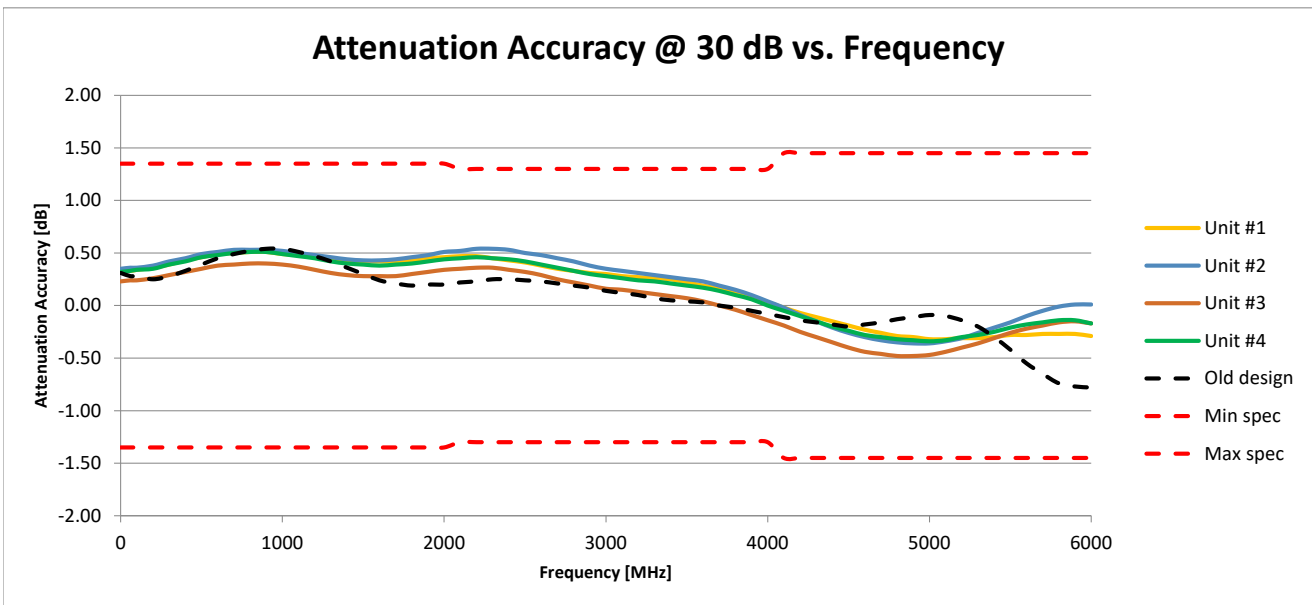


Figure 4: Attenuation Accuracy @ 30 dB vs. Frequency at 25°C



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

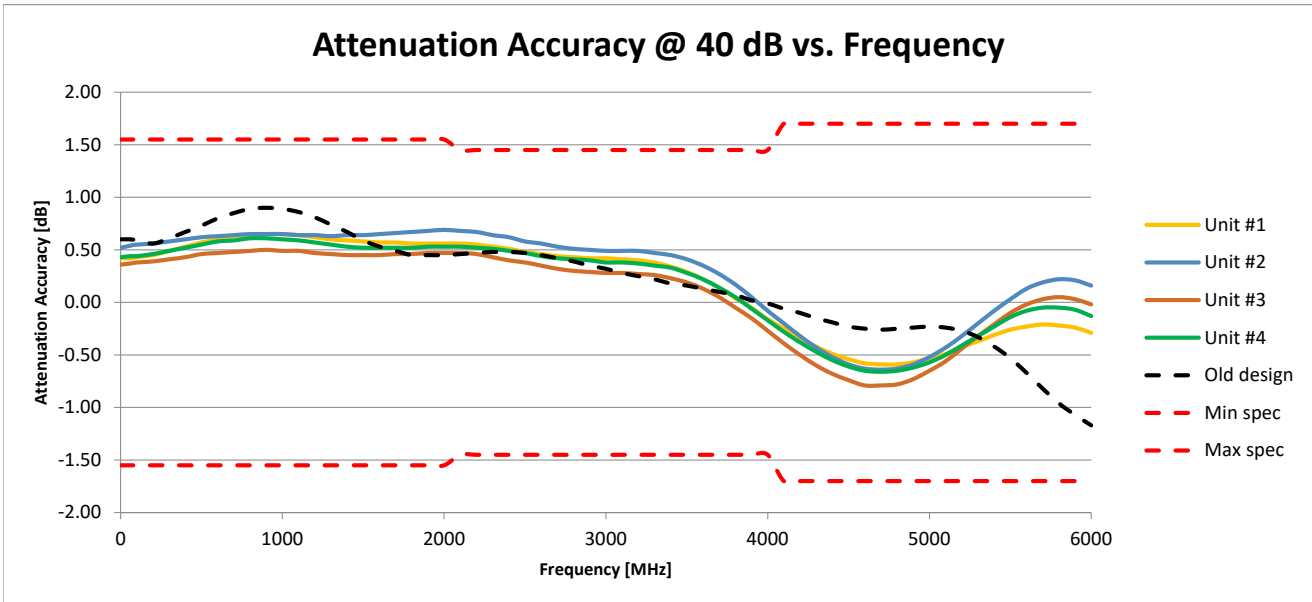
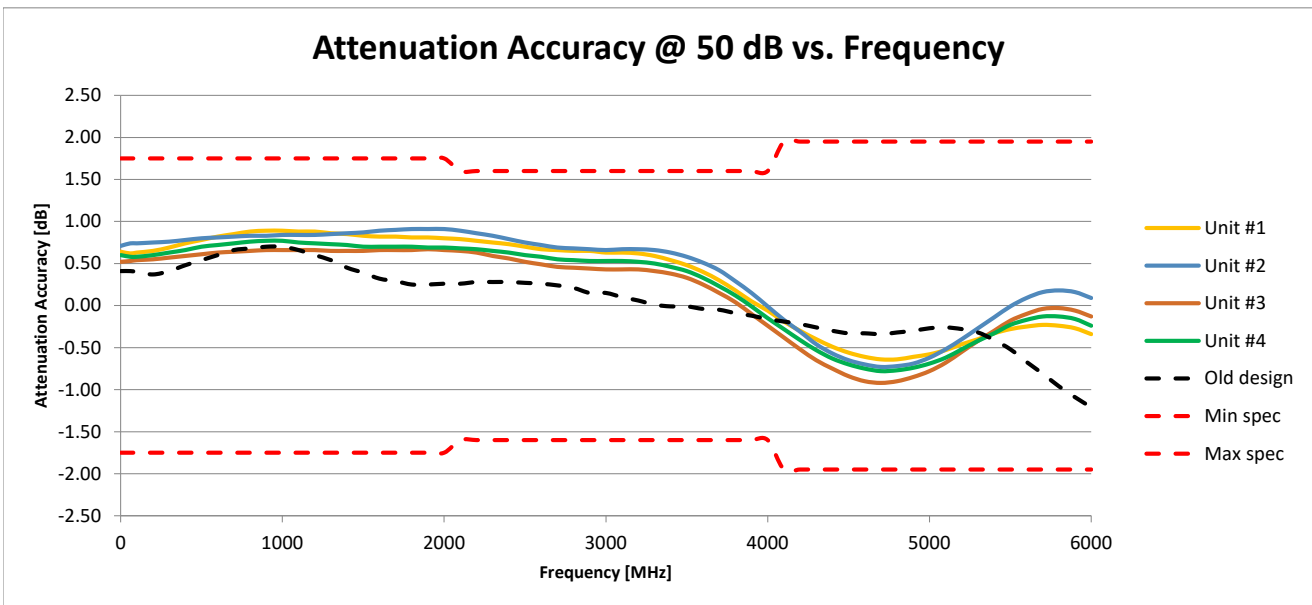


Figure 6: Attenuation Accuracy @ 50 dB vs. Frequency at 25°C



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

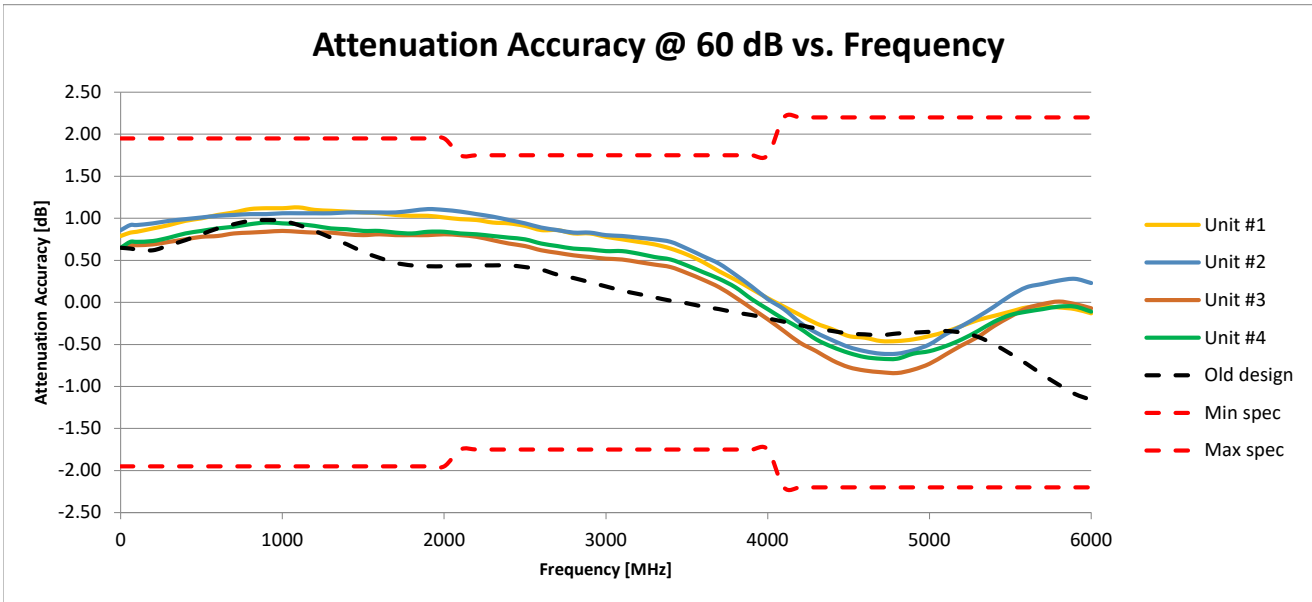
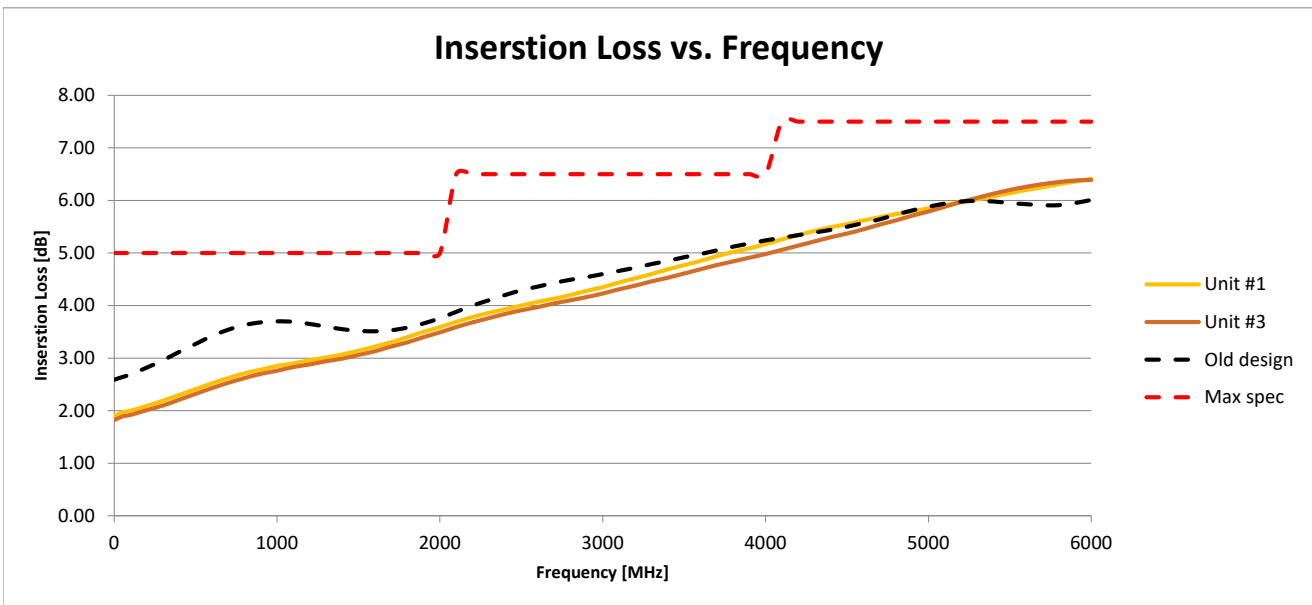


Figure 8: Insertion Loss vs. Frequency at 25°C



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

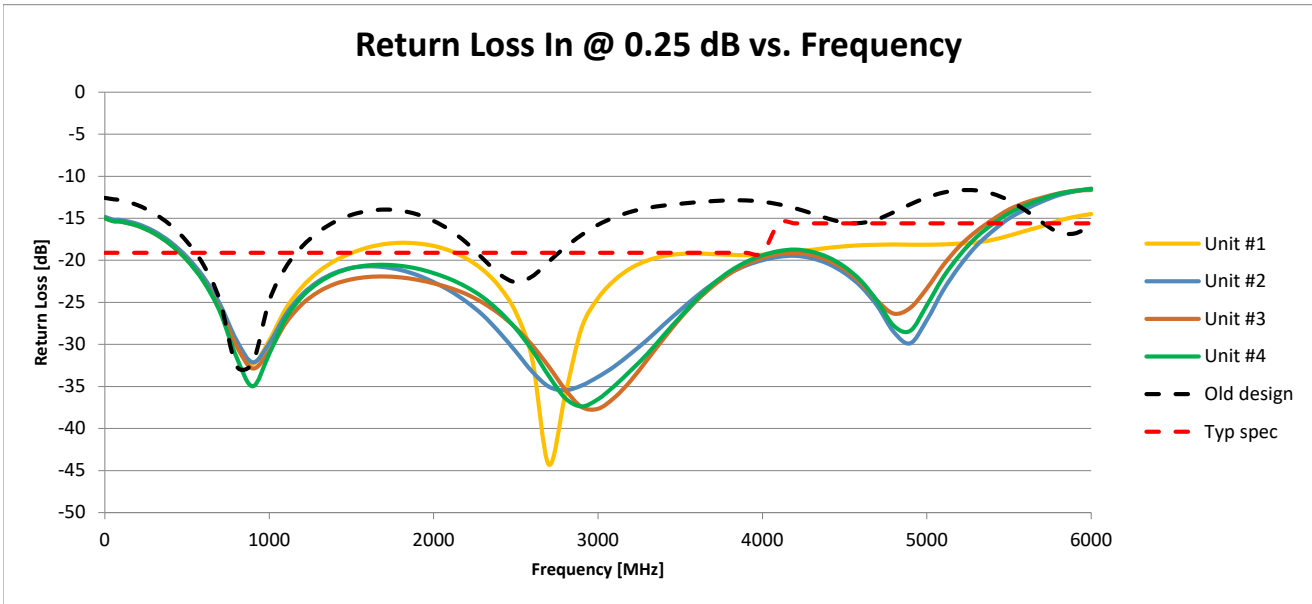
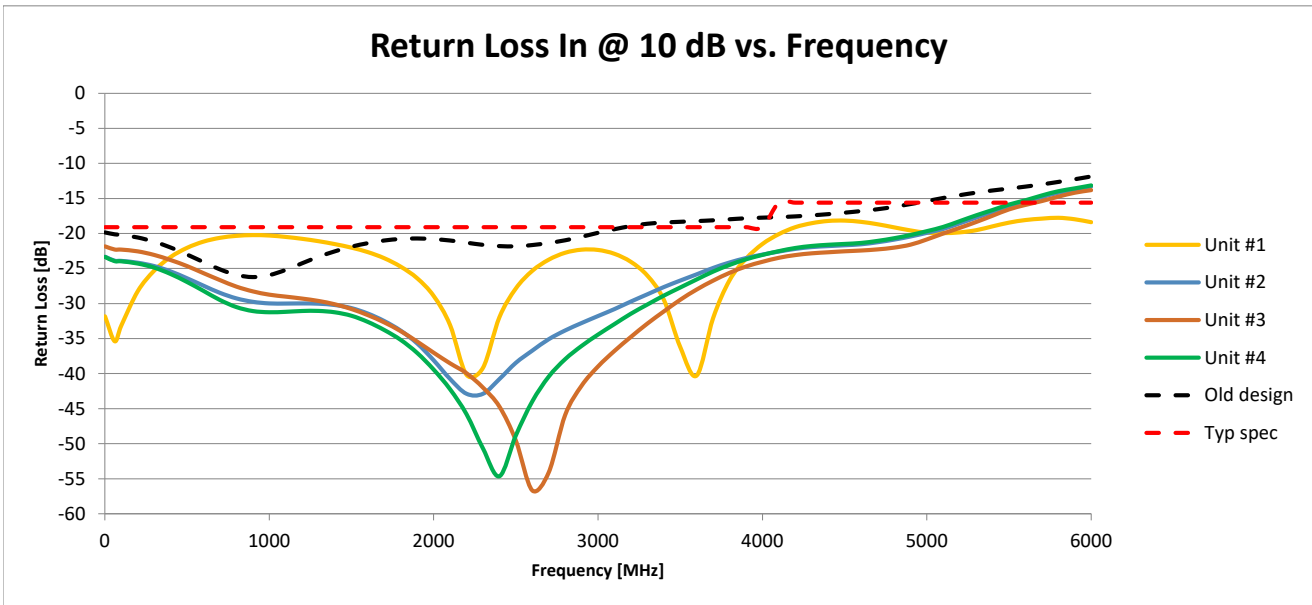


Figure 10: Return Loss In @ 10 dB vs. Frequency at 25°C



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Figure 11: Return Loss In @ 20 dB vs. Frequency at 25°C

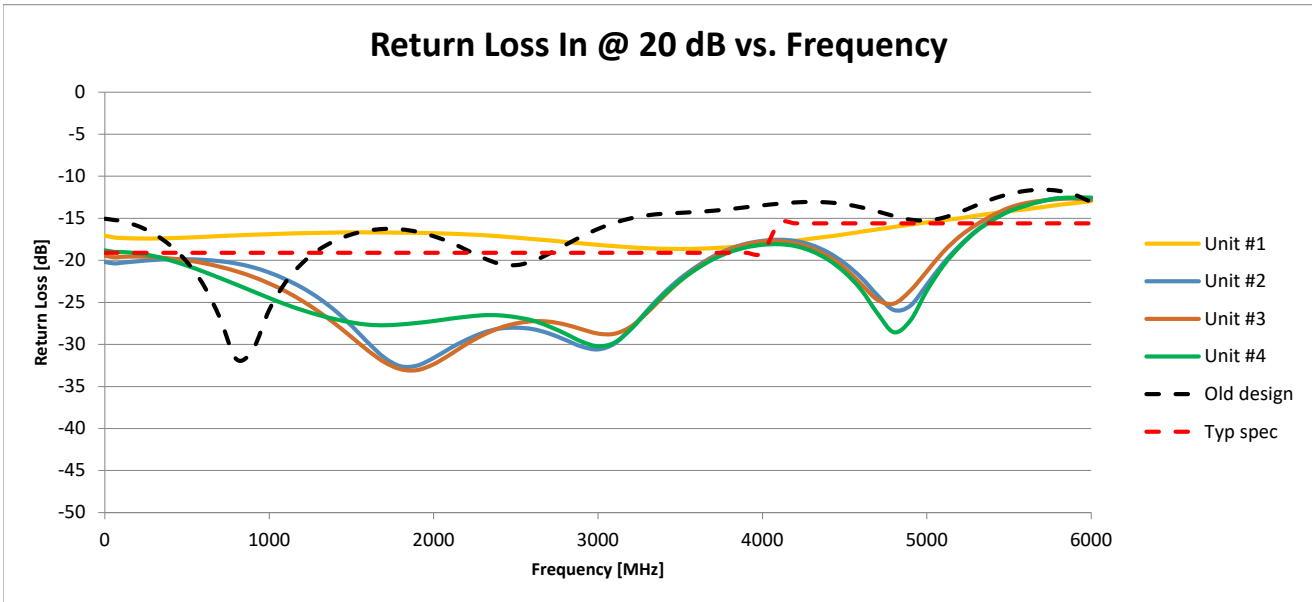
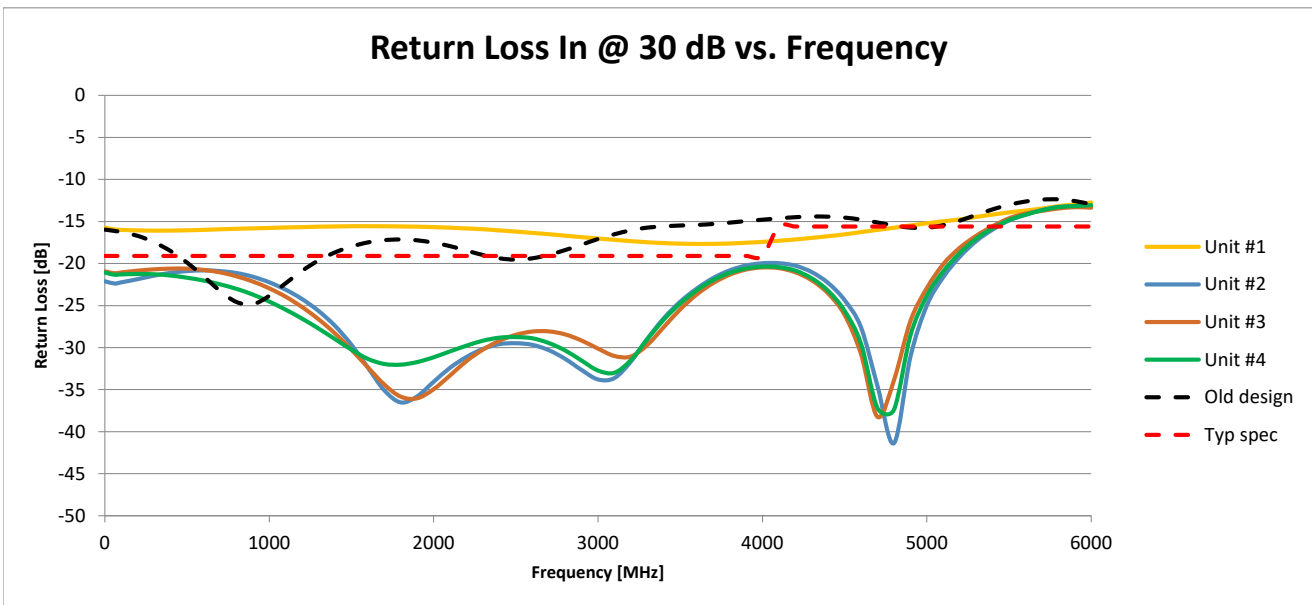


Figure 12: Return Loss In @ 30 dB vs. Frequency at 25°C



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Figure 13: Return Loss In @ 40 dB vs. Frequency at 25°C

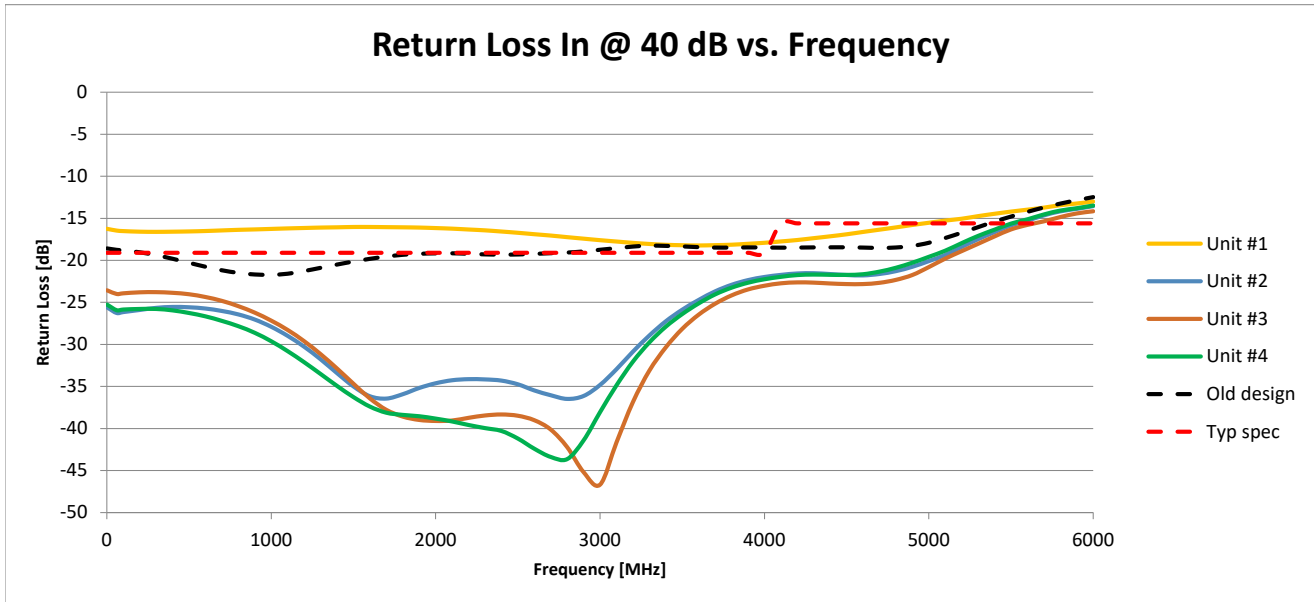
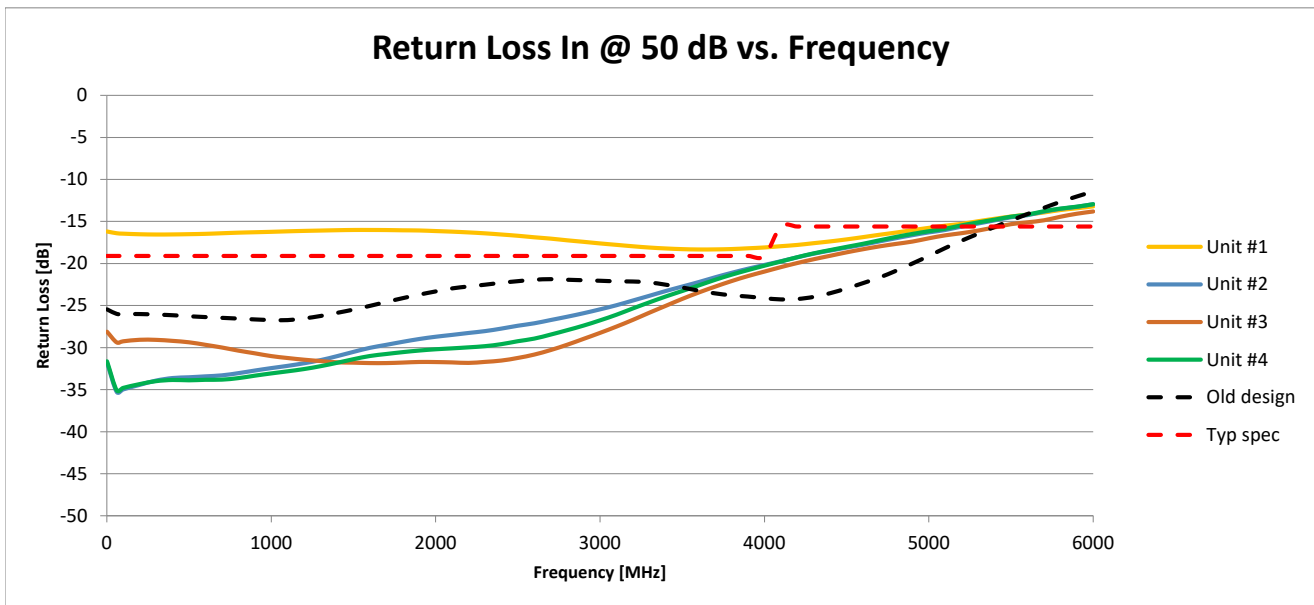


Figure 14: Return Loss In @ 50 dB vs. Frequency at 25°C



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Figure 15: Return Loss In @ 60 dB vs. Frequency at 25°C

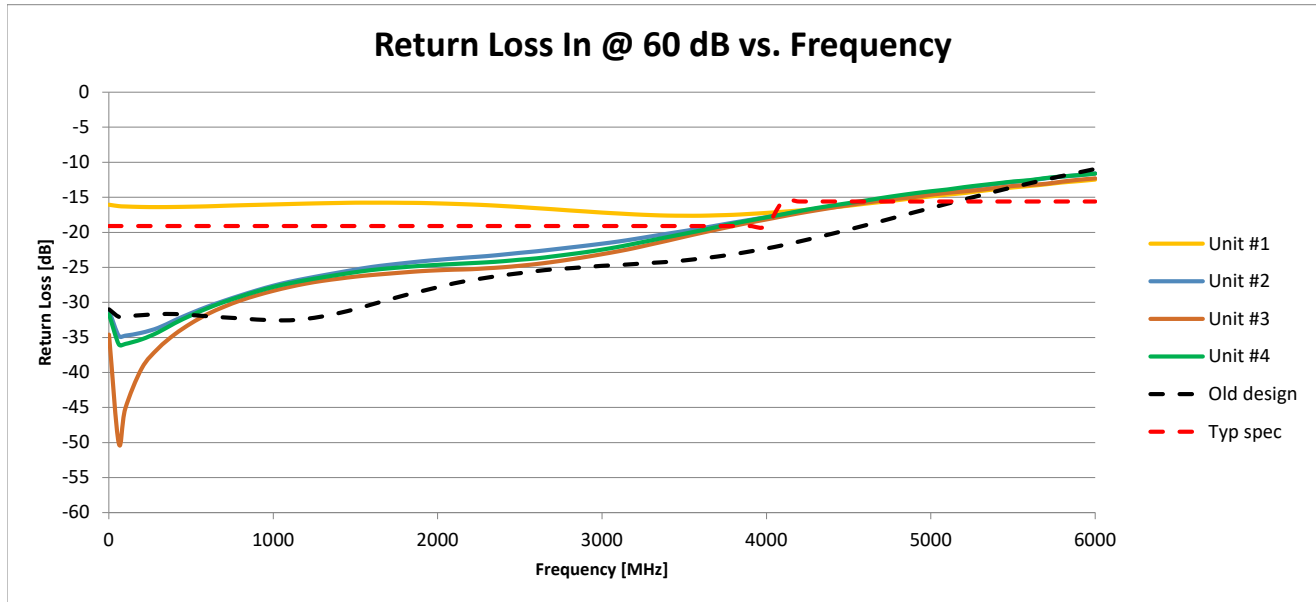
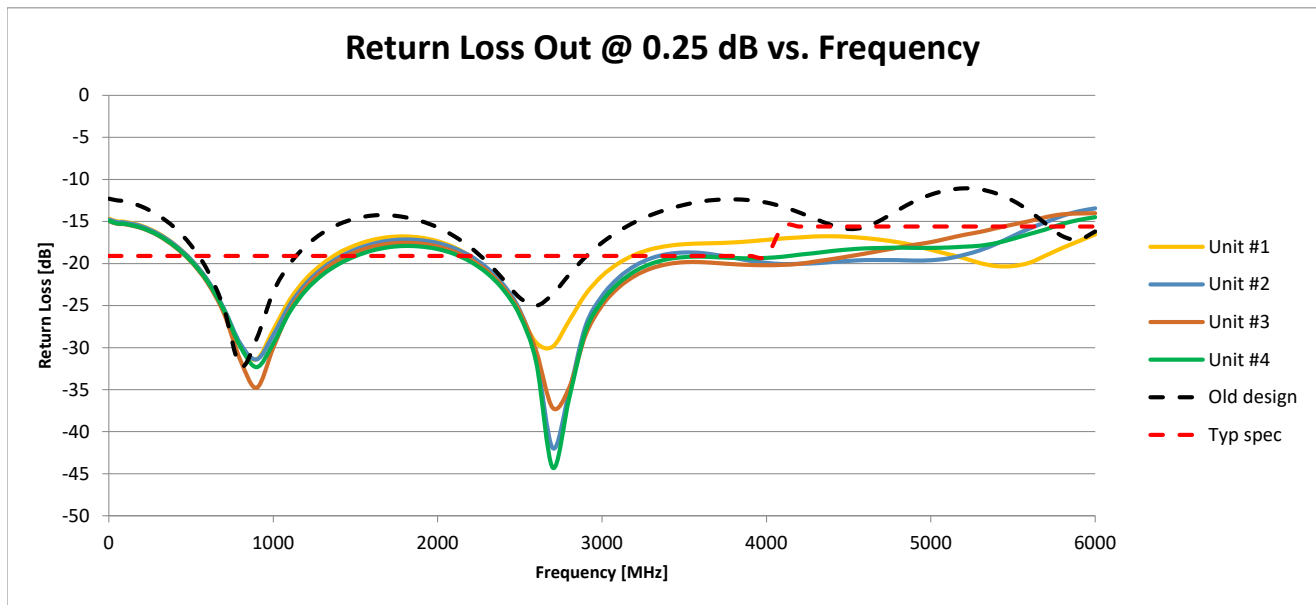


Figure 16: Return Loss Out @ 0.25 dB vs. Frequency at 25°C



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Figure 17: Return Loss Out @ 10 dB vs. Frequency at 25°C

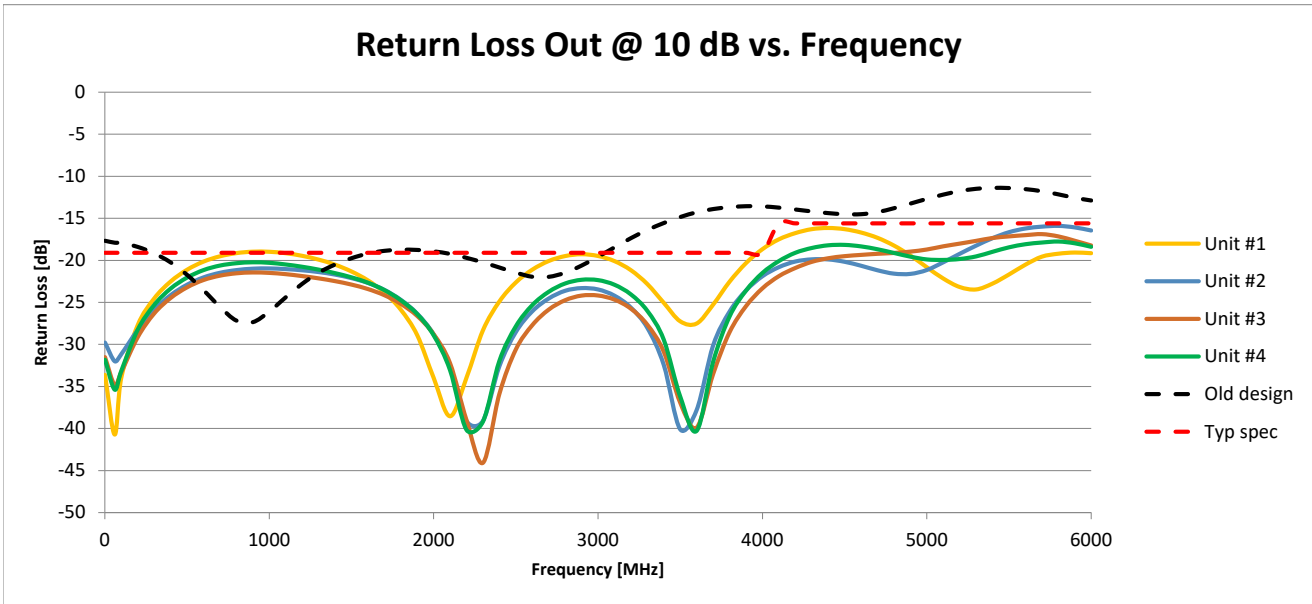
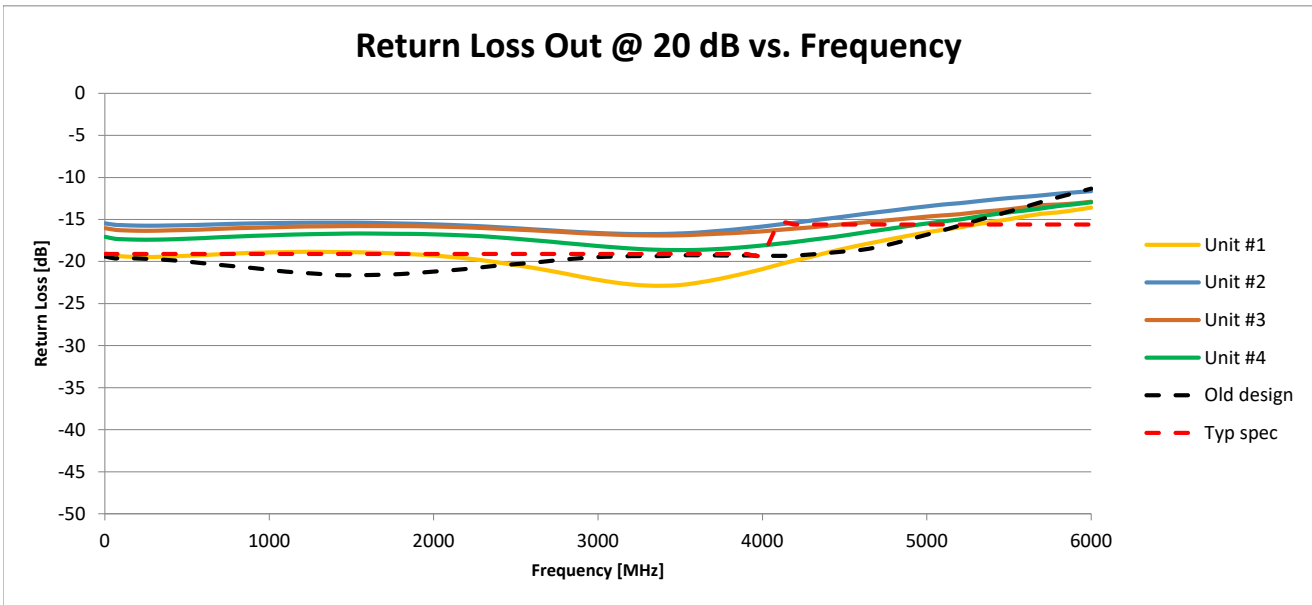


Figure 18: Return Loss Out @ 20 dB vs. Frequency at 25°C



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Figure 19: Return Loss Out @ 30 dB vs. Frequency at 25°C

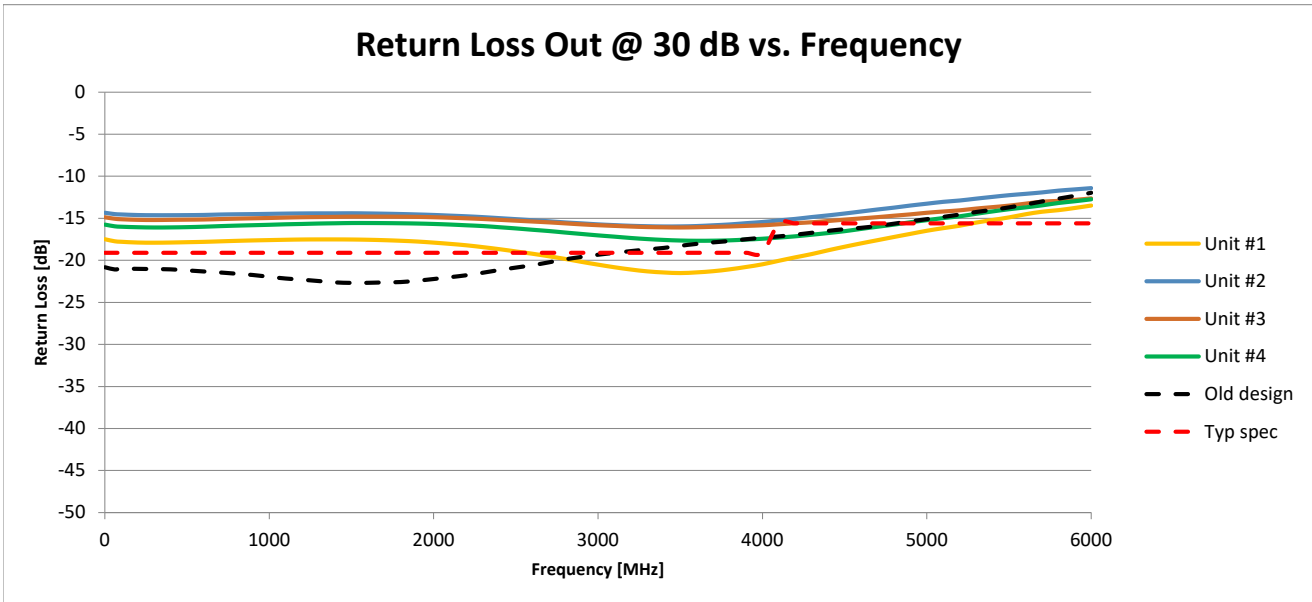
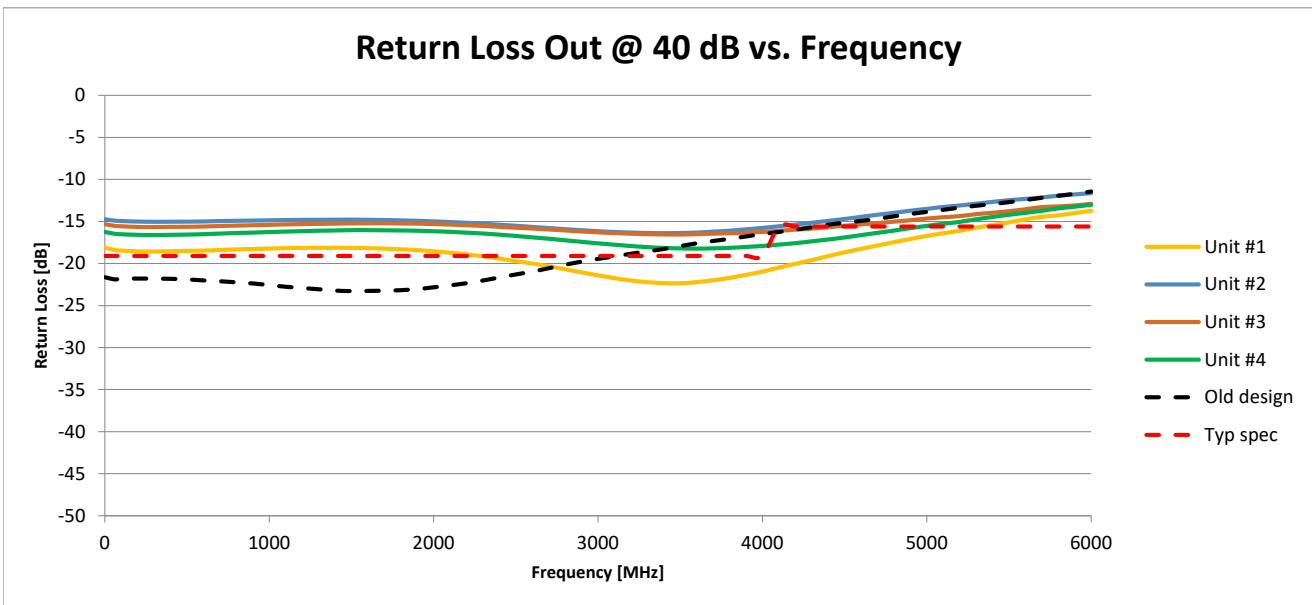


Figure 20: Return Loss Out @ 40 dB vs. Frequency at 25°C



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Figure 21: Return Loss Out @ 50 dB vs. Frequency at 25°C

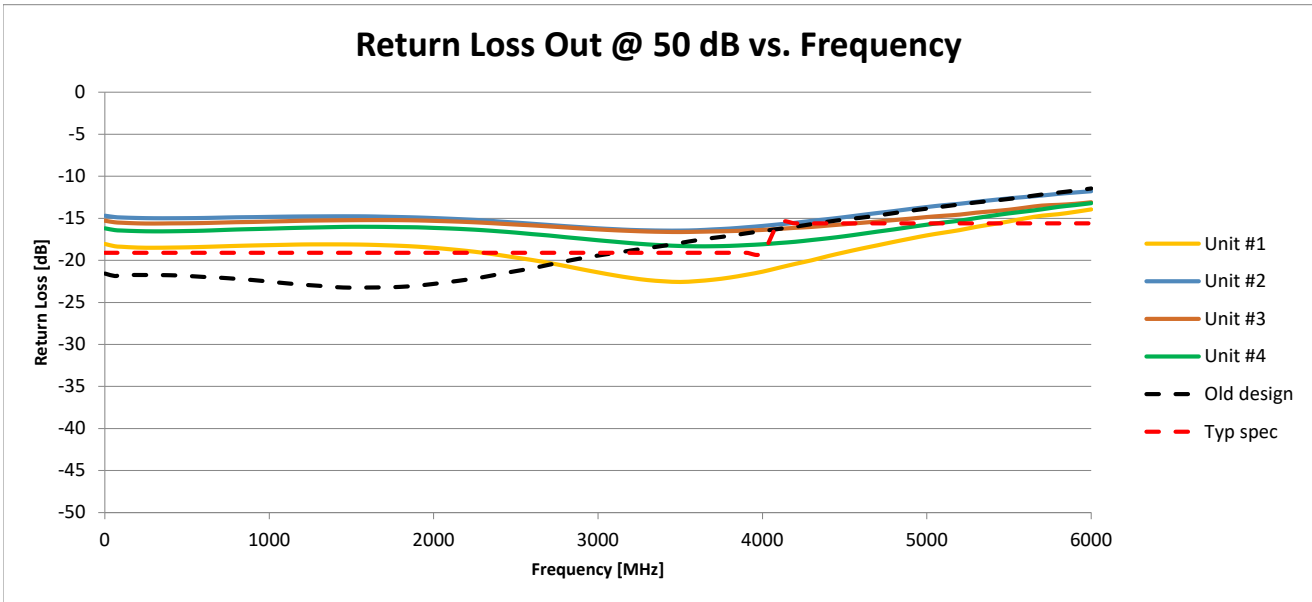
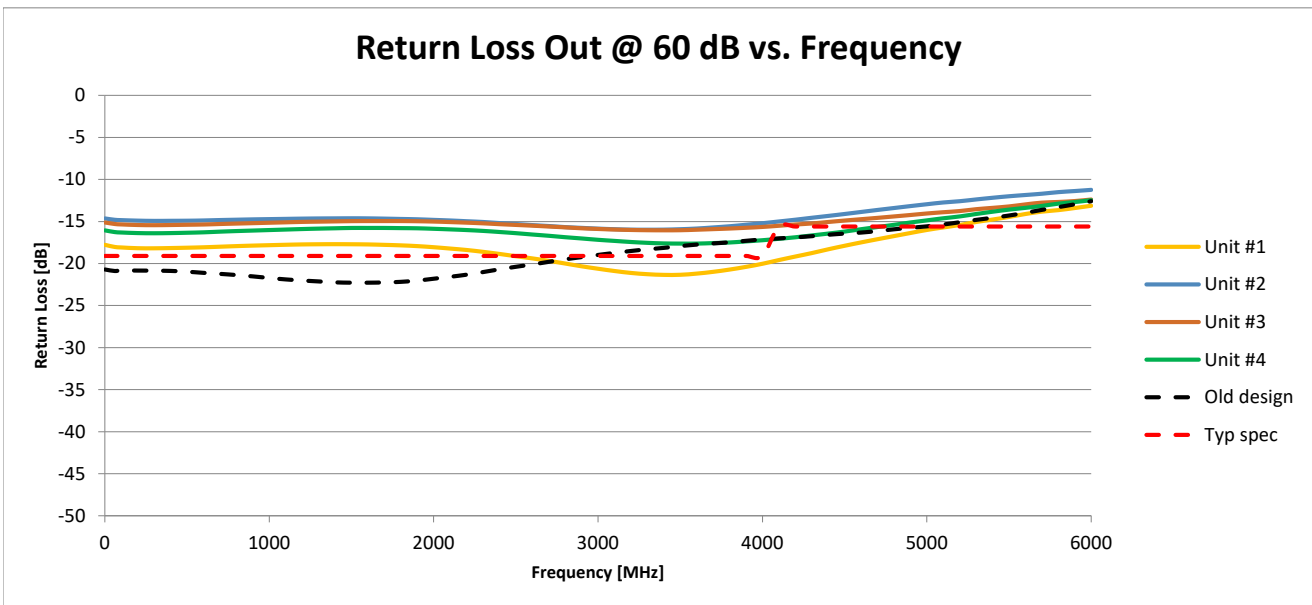


Figure 22: Return Loss Out @ 60 dB vs. Frequency at 25°C



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Figure 23: Isolation vs. Frequency at 25°C

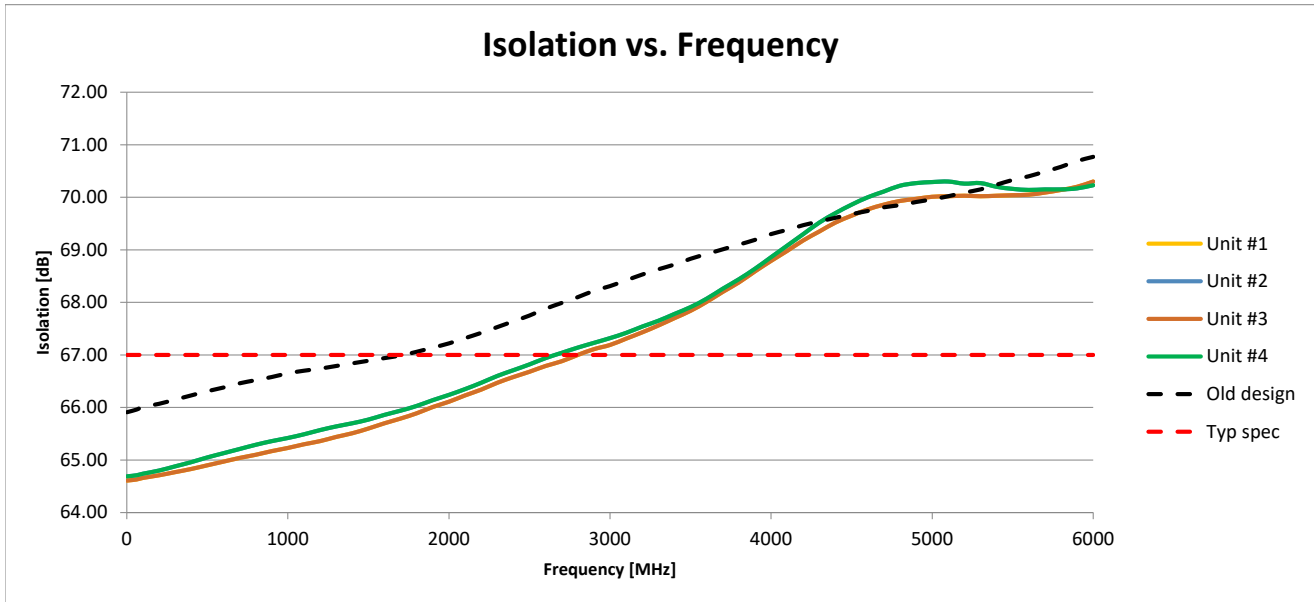


Figure 24: Input IP3 @ 0 dB vs. Frequency at 25°C

