

Multi-Channel Directional Coupler, Ku-Band (27.5-31GHz), 10dB, 2.92mm Female Monitor or Injector Ports

WM2DC-27.5-31-10dB-K-AB

WM3DC-27.5-31-10dB-K-ABC

WM4DC-27.5-31-10dB-K-ABCD



Parameter		Min.	Typ.	Max.	Unit
Frequency Range		27500		31000	MHz
Impedance			50		Ω
Coupling			10 ± 1.2		dB
Frequency Sensitivity (Flatness)			± 0.25	± 0.80	dB
Mainline Loss ¹	2-channel model		2.4	3.0	dB
	3-channel model		3.6	4.5	dB
	4-channel model		4.8	6.0	dB
Directivity			5		dB
Mainline Return Loss		11.7			dB
Secondary Line Return Loss		11.7			dB
Isolation			15		dB
Forward Power (CW) ²				10	W
Reverse Power (CW) ²				4	W
Termination Power ⁵			1		W
DC Current (Input-Output)			0.5		A

Connector Interface	2.92mm Female
Operating Temperature ³	-40 to +85 °C
Storage Temperature	-55 to +100 °C
Nominal Weight	150 g (5.3 oz)
Operating Humidity	10-90% (non-condensing)
Operating Environment	Indoor Use Only
HTSUS Code	8525.50.3035
ECCN	EAR99

RoHS Status ⁴	RoHS3 Compliant
REACH Status ⁴	REACH Unaffected
Enclosure Material	Aluminum
Connectors Material	Stainless Steel
Contacts Material	Beryllium Copper, Gold Plated
Insulators Material	Virgin PTFE
Finish	Green Paint

1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications are tested at +25 °C.
4. To the best of our knowledge at the time of publication.
5. Up to +50 °C; derate linearly to 350mW at 100 °C.

Explanation of Part Numbers

Product Code	Frequency Start (GHz)	Frequency Stop (GHz)	Coupling Factor	Connector	Channel Configuration				
WM2DC	27.5	31	10	DB	K	A	B	C	D

Product Code

WM2DC

WM3DC

WM4DC

2 Channels: A and B

3 Channels: A, B and C

4 Channels: A, B, C and D

Channel Configuration

0 = Monitor

1 = Injector

Examples

-00

-10

-110

-1110

A, B: Monitor

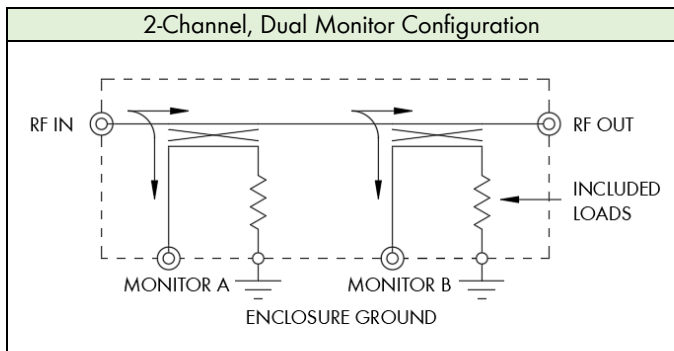
A: Injector, B: Monitor

A, B: Injector, C: Monitor

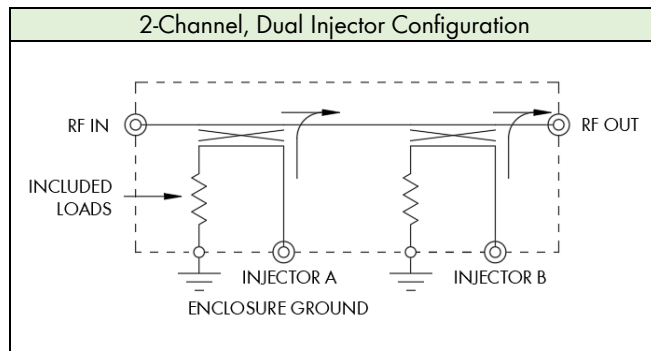
A, B, C: Injector, D: Monitor

Simplified Electrical Schematics

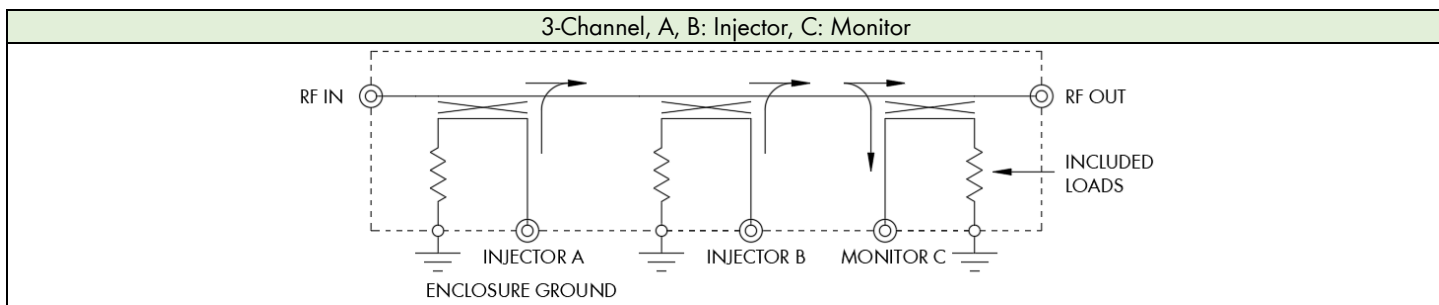
2-Channel, Dual Monitor Configuration



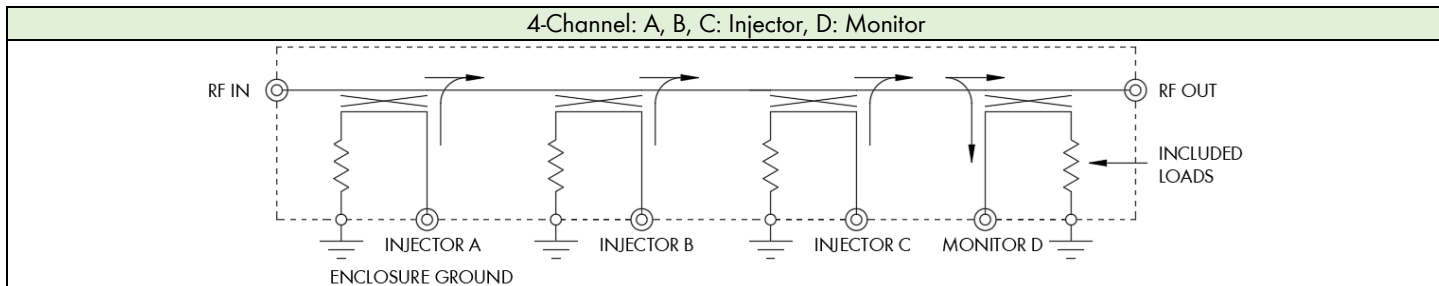
2-Channel, Dual Injector Configuration



3-Channel, A, B: Injector, C: Monitor

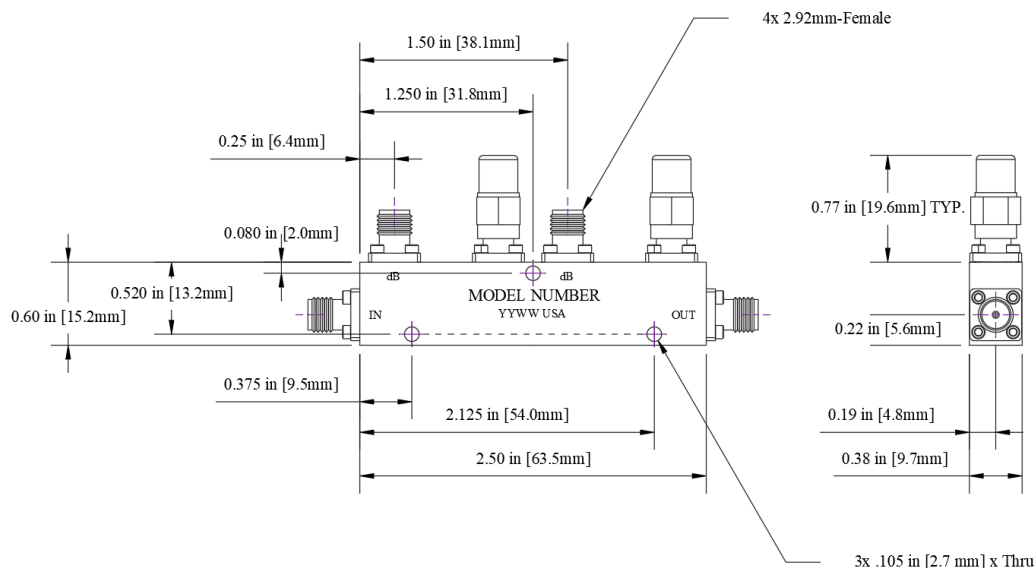


4-Channel: A, B, C: Injector, D: Monitor



Outline Dimensions

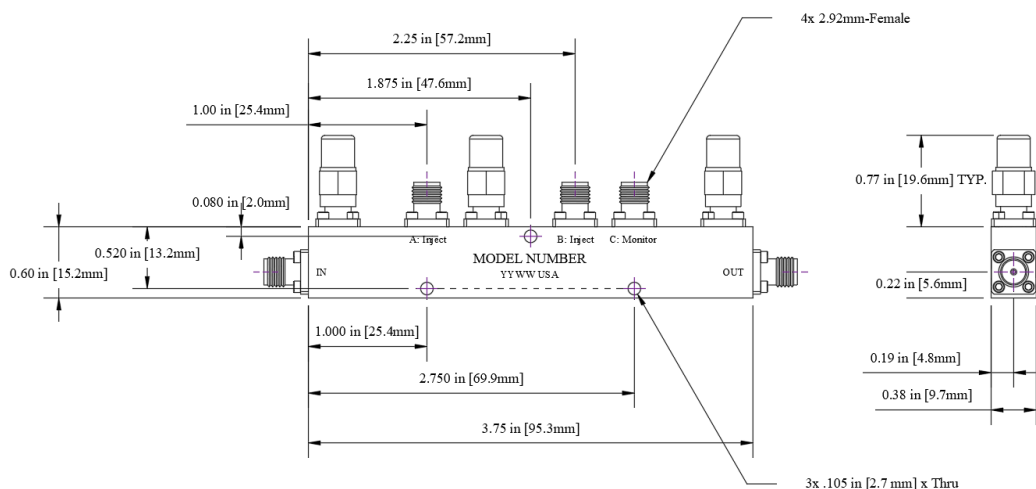
2-Channel; Dual Monitor



Outline # OL-9005-00

Dimensions are in inches, [mm] shown for convenience. Tolerances on 2-pl decimals: ± 0.03 . 3-pl decimals: ± 0.015 .

3-Channel; A, B: Injector, C: Monitor



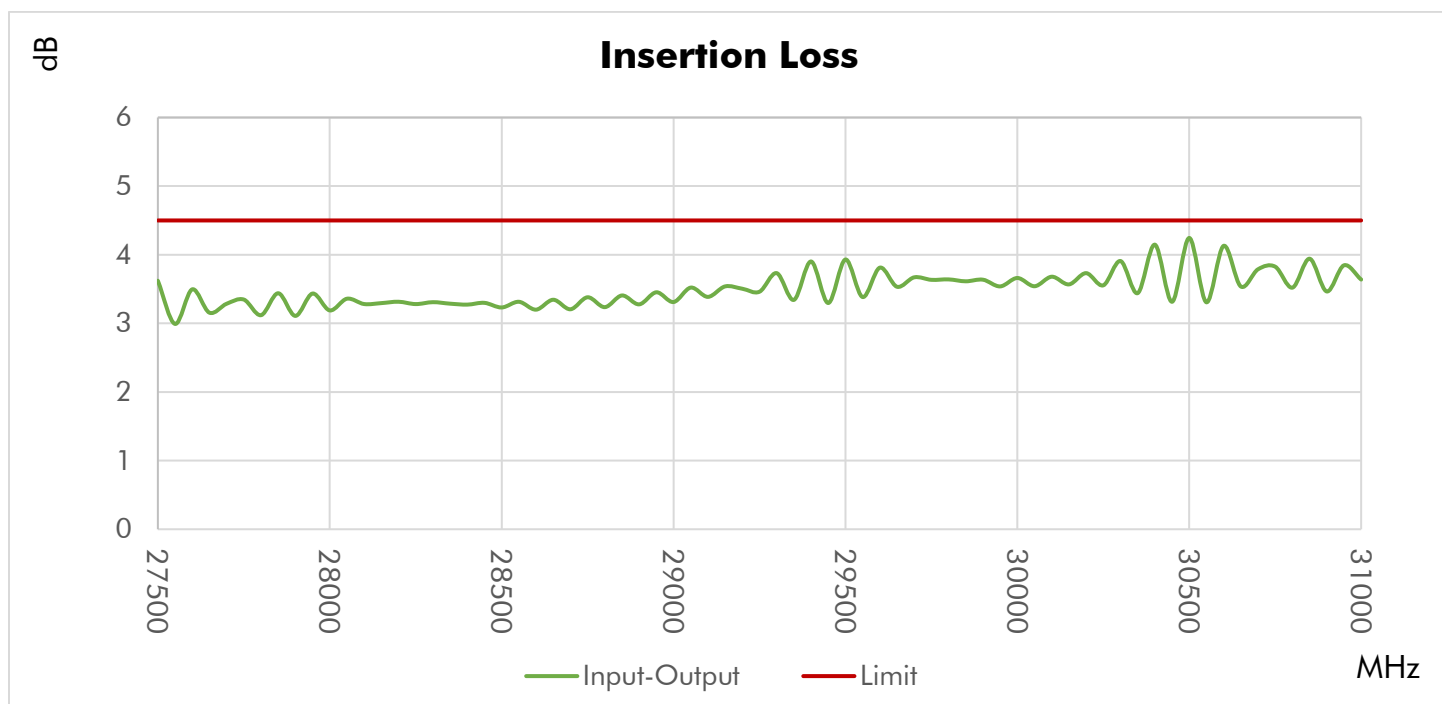
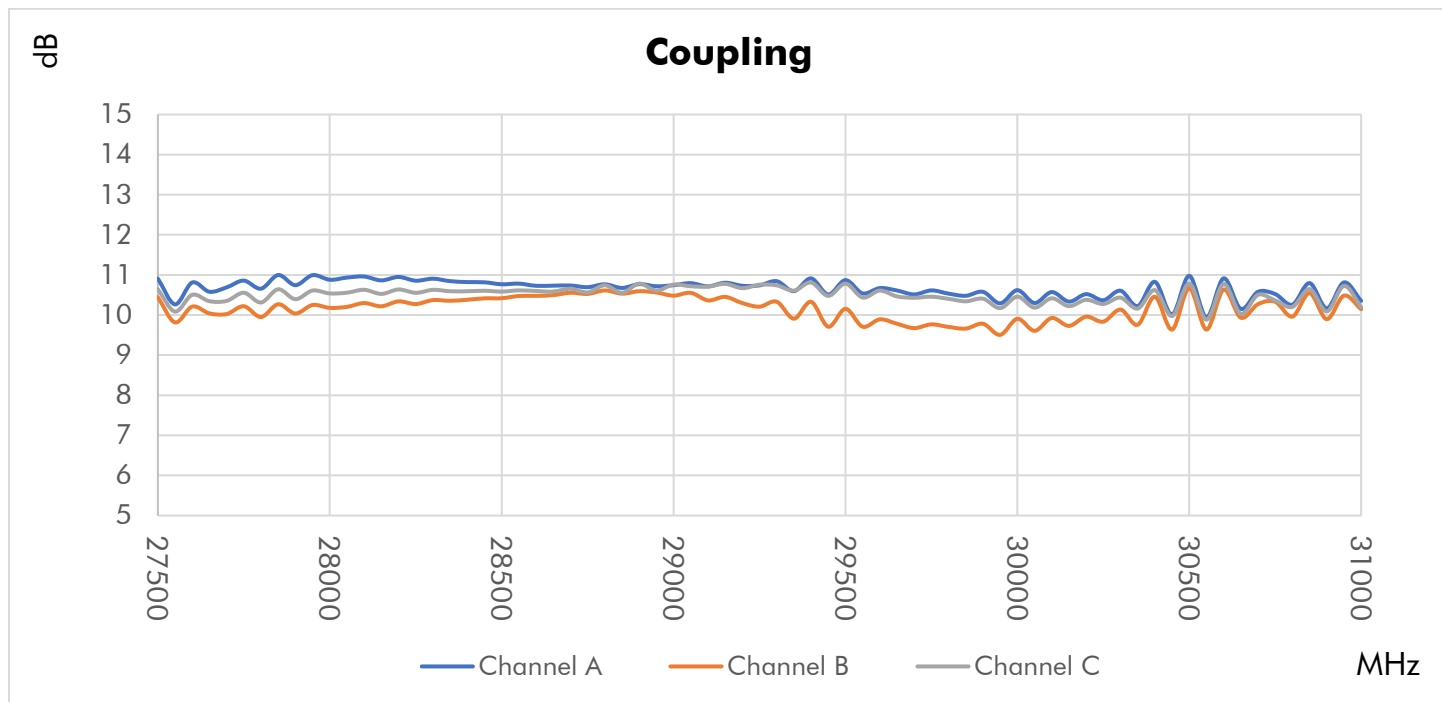
Outline # OL-9006-110

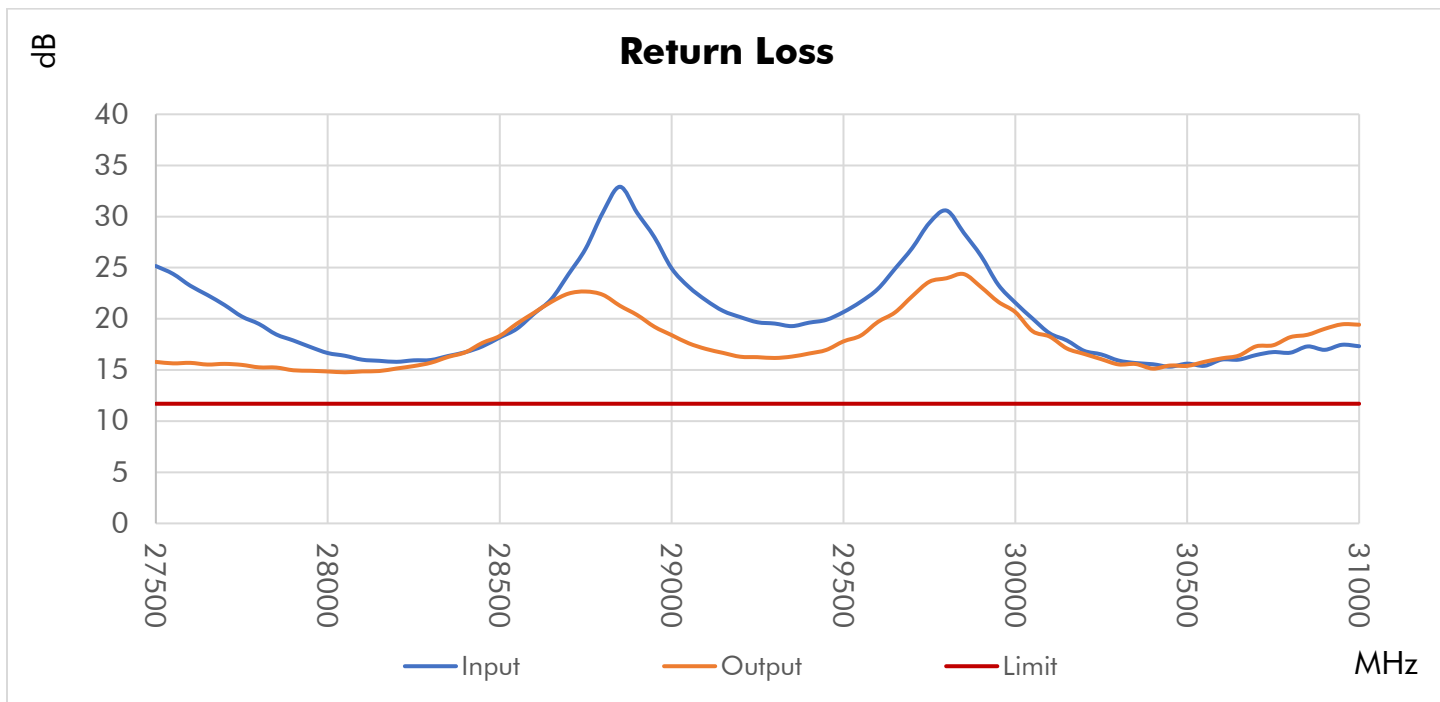
Dimensions are in inches, [mm] shown for convenience. Tolerances on 2-pl decimals: ± 0.03 . 3-pl decimals: ± 0.015 .

Customizable Configuration

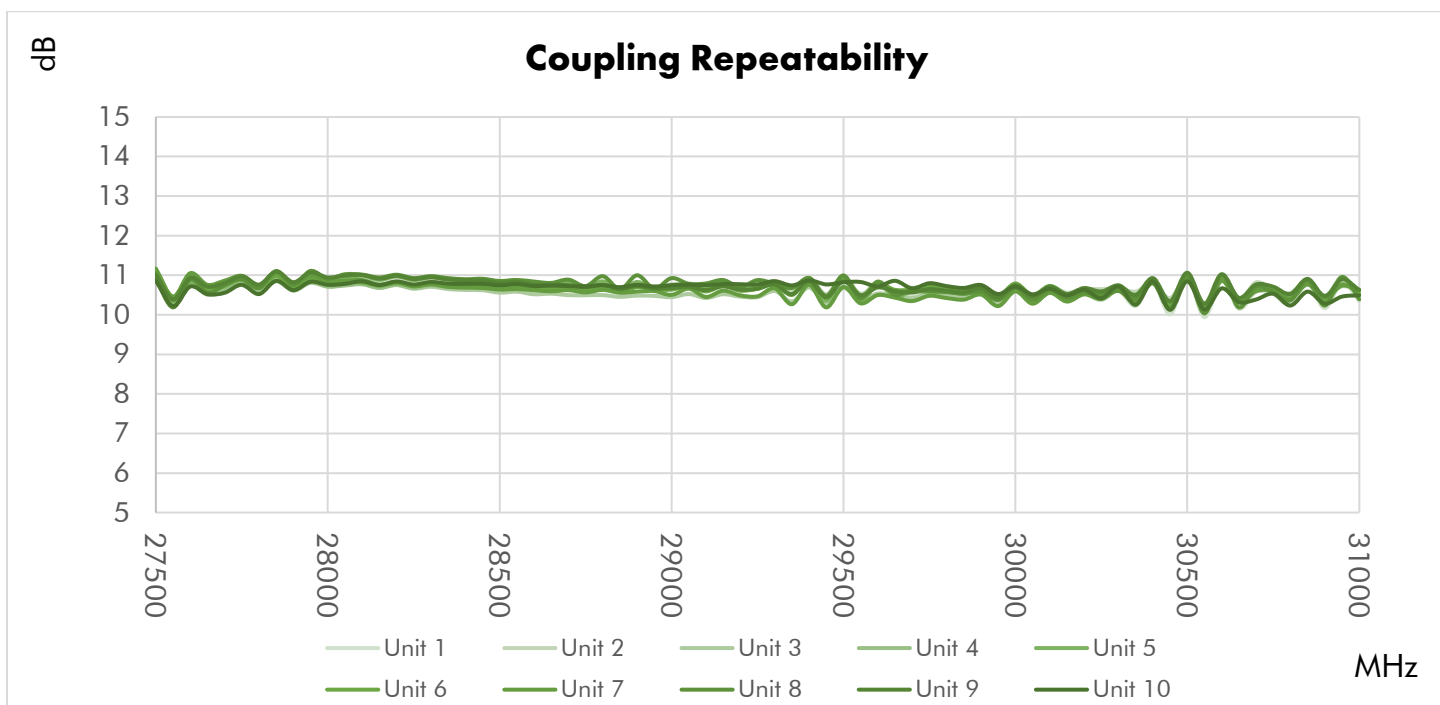
The configurations shown within this datasheet are to serve as examples. Please contact a Werbel Microwave applications engineer to discuss specific requirements.

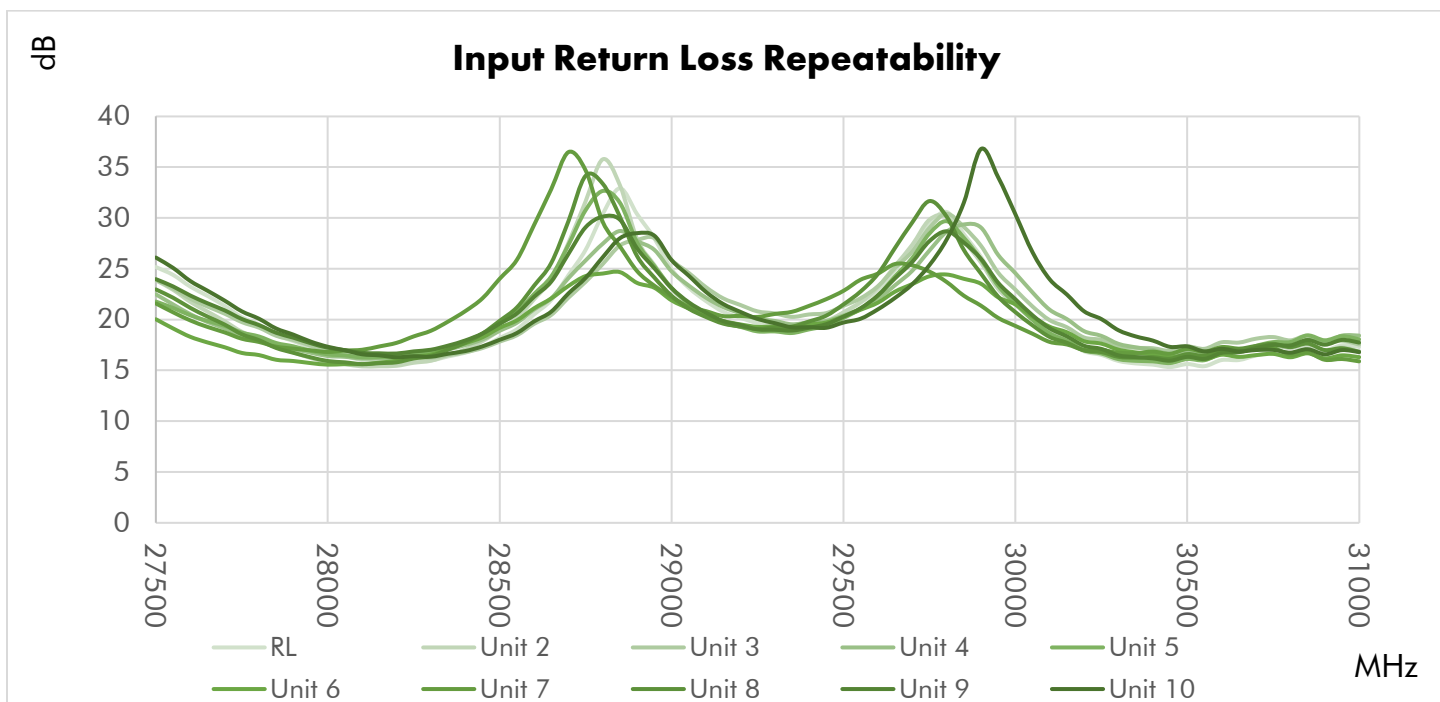
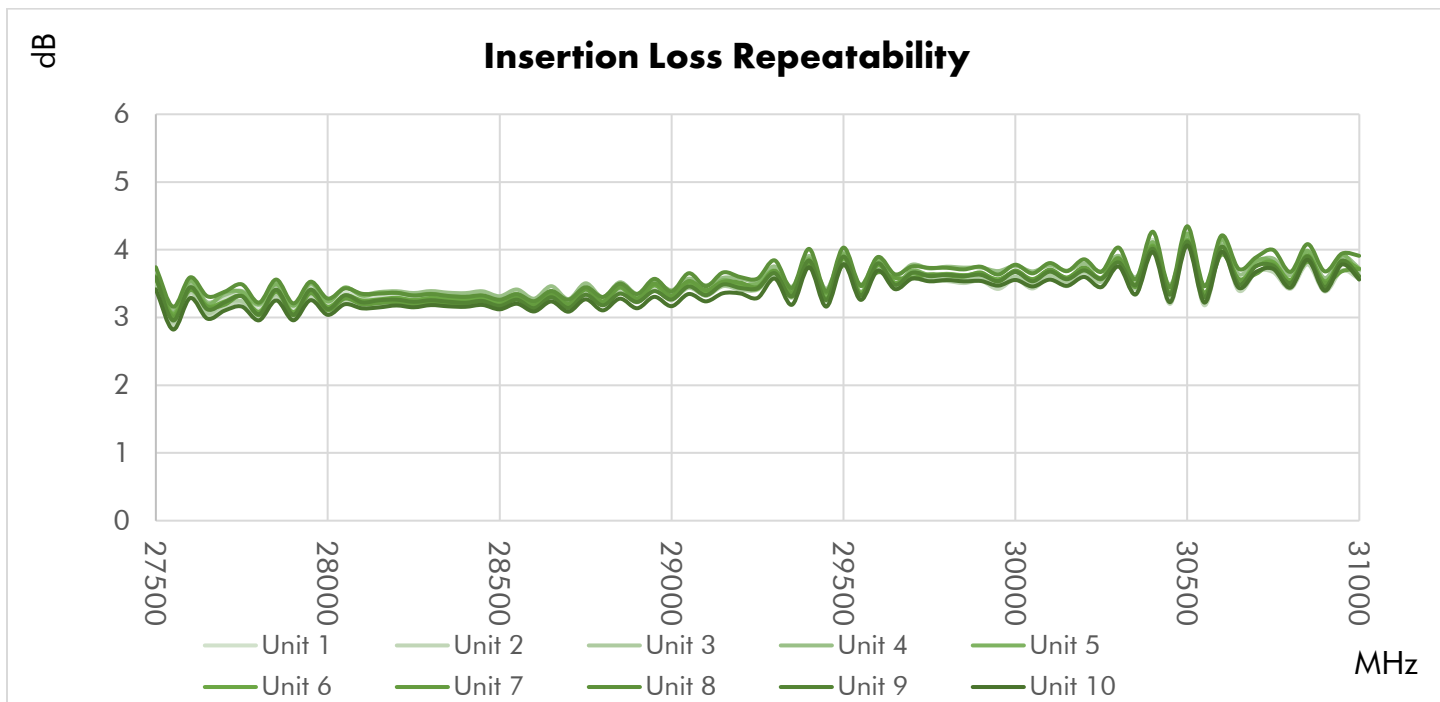
Typical Performance at +25 °C





Repeatability in Production





Typical Performance Data

Frequency (MHz)	Return Loss (dB)		Mainline Loss (dB)	Coupling (dB)		
	In	Out		Channel A	Channel B	Channel C
27500	25.16	15.79	3.62	10.91	10.44	10.64
27750	20.23	15.50	3.35	10.86	10.22	10.56
28000	16.65	14.86	3.19	10.88	10.18	10.54
28250	15.94	15.38	3.28	10.86	10.27	10.55
28500	18.18	18.32	3.23	10.77	10.42	10.58
28750	26.86	22.67	3.38	10.69	10.53	10.57
29000	24.95	18.41	3.31	10.74	10.48	10.76
29250	19.67	16.25	3.46	10.74	10.21	10.76
29500	20.66	17.80	3.93	10.87	10.15	10.78
29750	29.38	23.63	3.63	10.61	9.77	10.46
30000	21.57	20.65	3.66	10.62	9.91	10.46
30250	16.52	16.06	3.55	10.37	9.84	10.27
30500	15.62	15.40	4.25	10.98	10.67	10.78
30750	16.75	17.42	3.83	10.52	10.33	10.36
31000	17.32	19.43	3.64	10.35	10.14	10.20

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