

Multi-Channel Directional Coupler, L-Band (0.95-2.45GHz), 10dB, SMA Female

Monitor or Injector Ports

WM2DC-0.95-2.45-10dB-S-AB

WM3DC-0.95-2.45-10dB-S-ABC

WM4DC-0.95-2.45-10dB-S-ABCD



Parameter	Min.	Typ.	Max.	Unit
Frequency Range	950		2450	MHz
Impedance		50		Ω
Coupling		10 ± 1.5		dB
Frequency Sensitivity (Flatness)		± 0.5	± 1.0	dB
Mainline Loss ¹				dB
2-channel model		1.4	1.8	
3-channel model		2.1	2.7	
4-channel model		2.8	3.6	
Directivity	20	>23		dB
Mainline Return Loss	20	>22		dB
Secondary Line Return Loss	20	>23		dB
Isolation		>33		dB
Forward Power (CW) ²			50	W
Reverse Power (CW) ²			4	W
Termination Power ⁵		1		W
DC Current (Input-Output)		1		A

Connector Interface	SMA Female
Operating Temperature ³	-40 to +85 °C
Storage Temperature	-55 to +100 °C
Nominal Weight	56 g (2.0 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	0.95	2.45	10	S	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

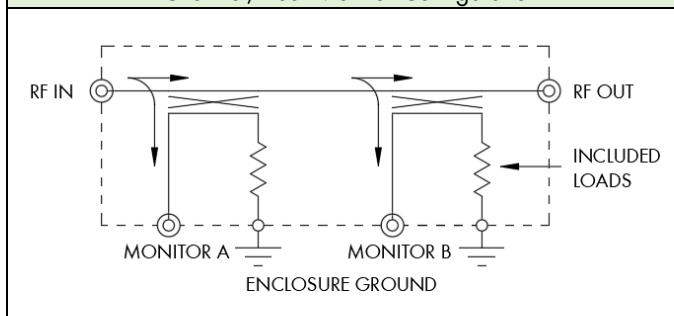
A: Injector, B: Monitor

A, B: Injector, C: Monitor

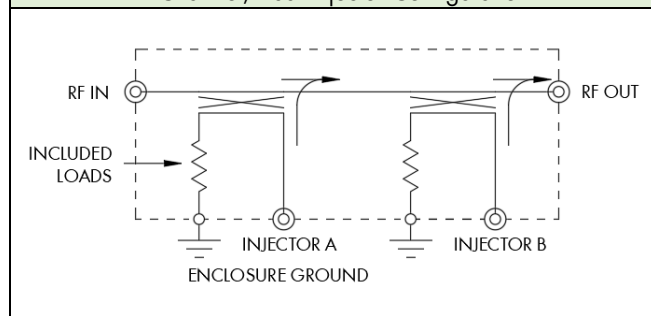
A, B, C: Injector, D: Monitor

Simplified Electrical Schematics

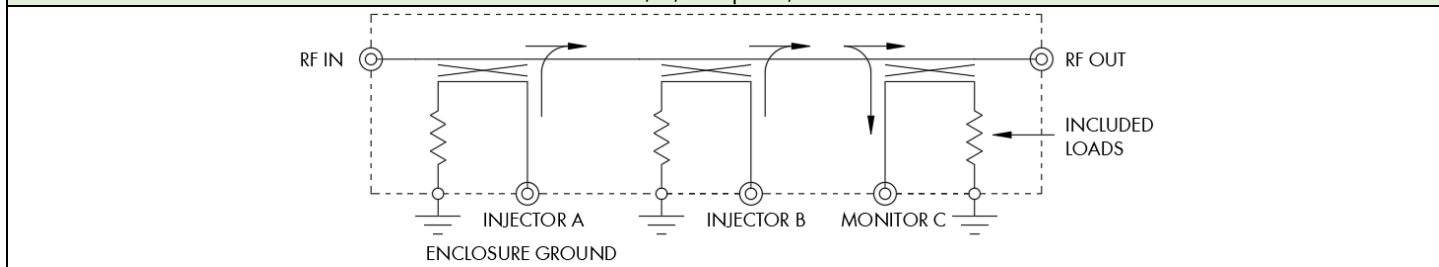
2-Channel, Dual Monitor Configuration



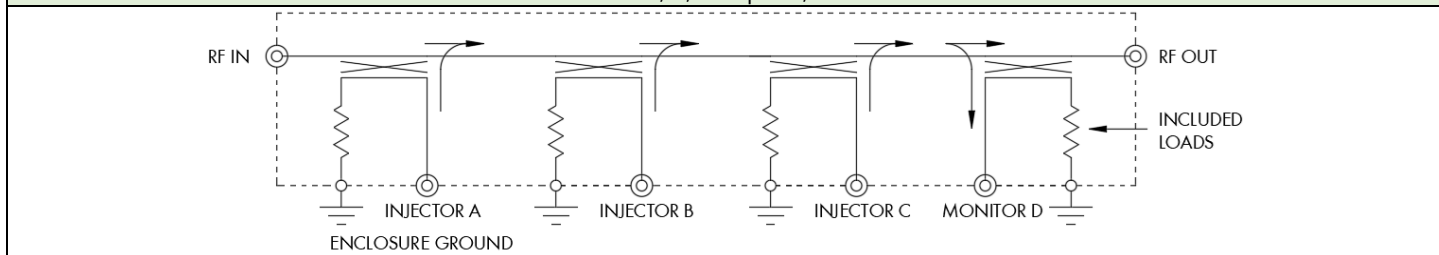
2-Channel, Dual Injector Configuration



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

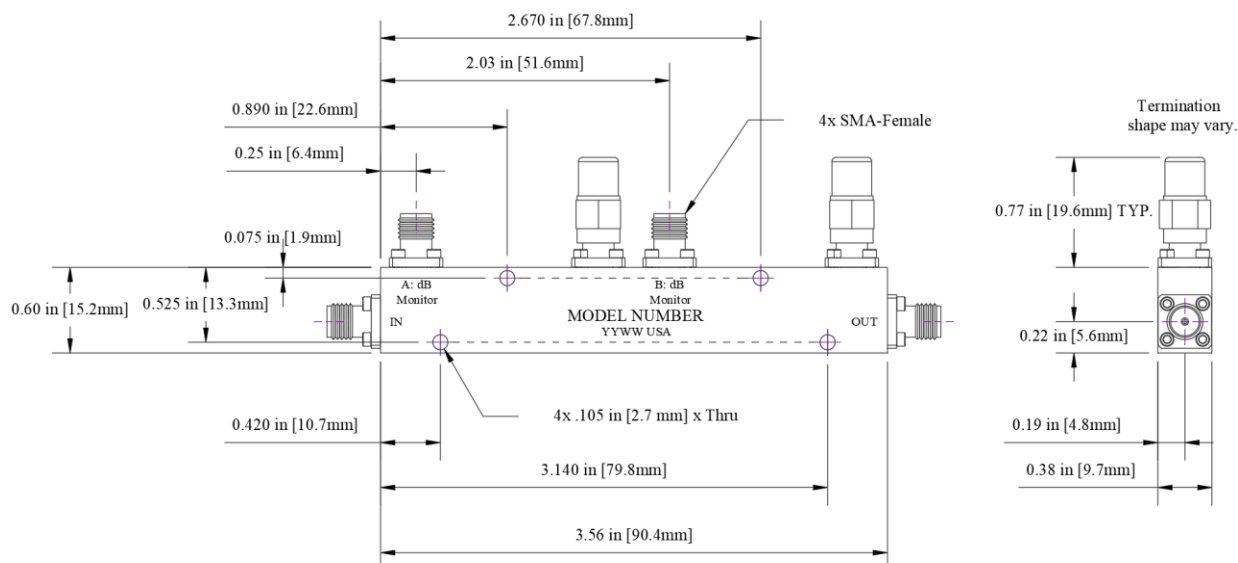


4-Channel: A, B, C: Injector, D: Monitor



Outline Dimensions

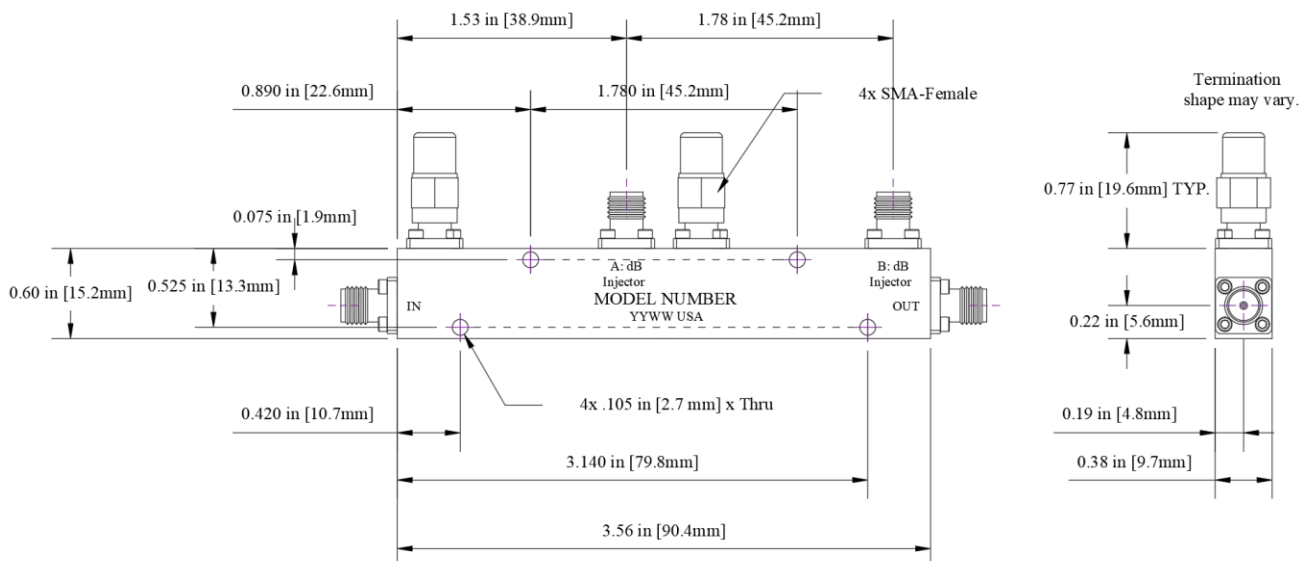
2-Channel; Dual Monitor



Outline # OL-9002-00

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

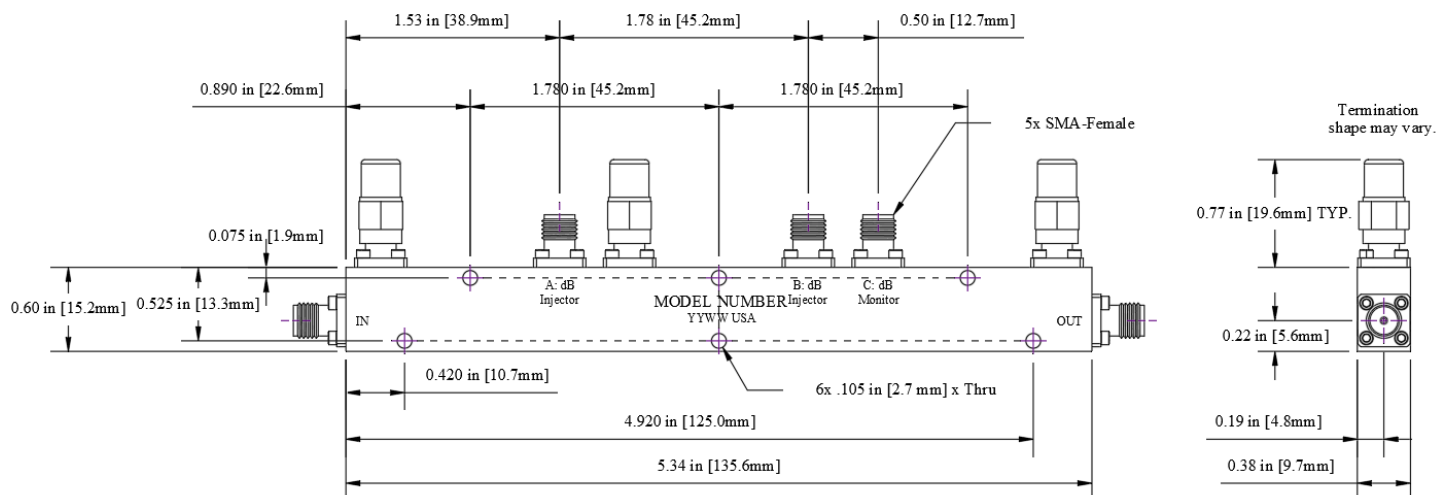
2-Channel; Dual Injector



Outline # OL-9002-11

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

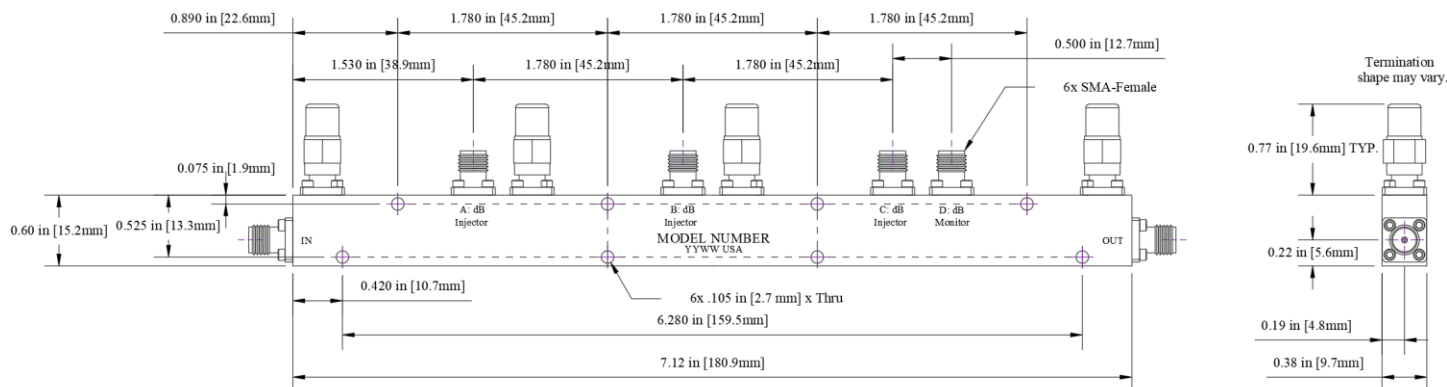
3-Channel; A, B: Injector, C: Monitor



Outline # OL-9003-110

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

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



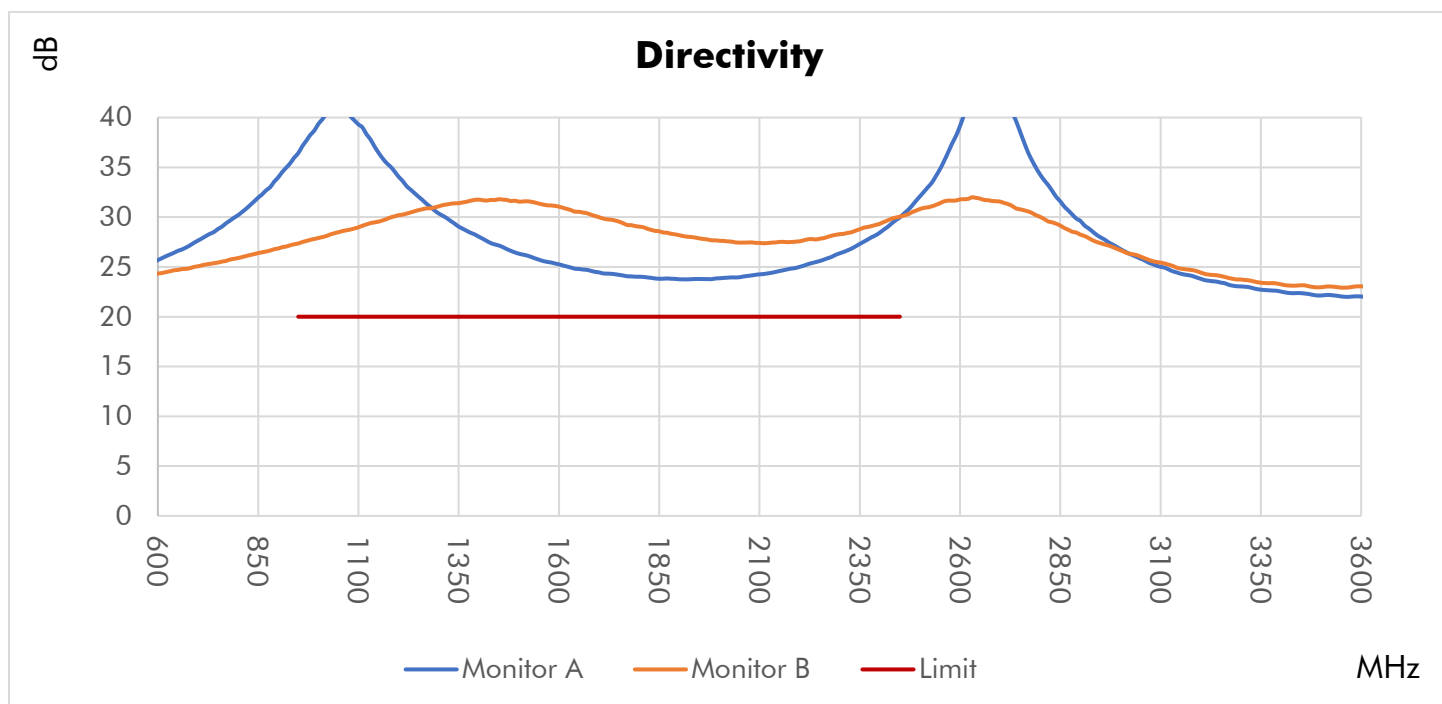
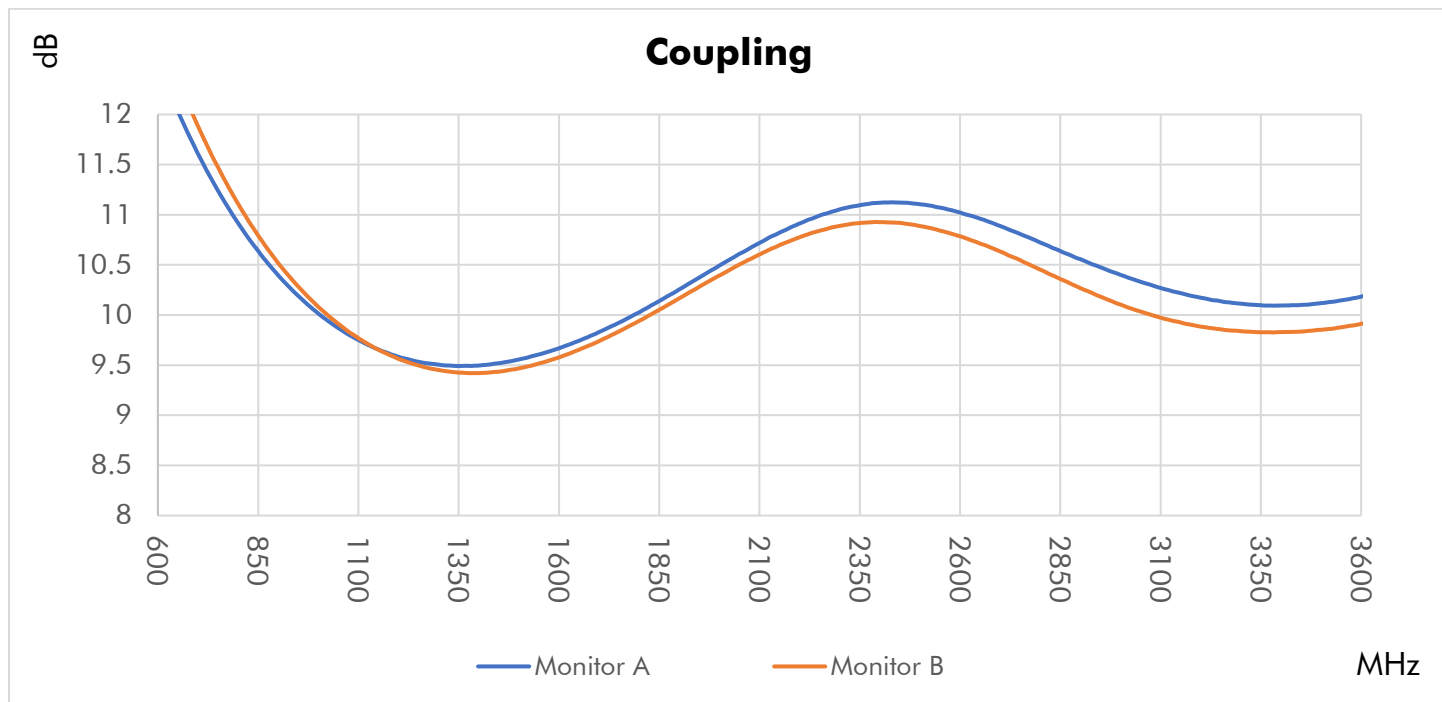
Outline # OL-9004-1110

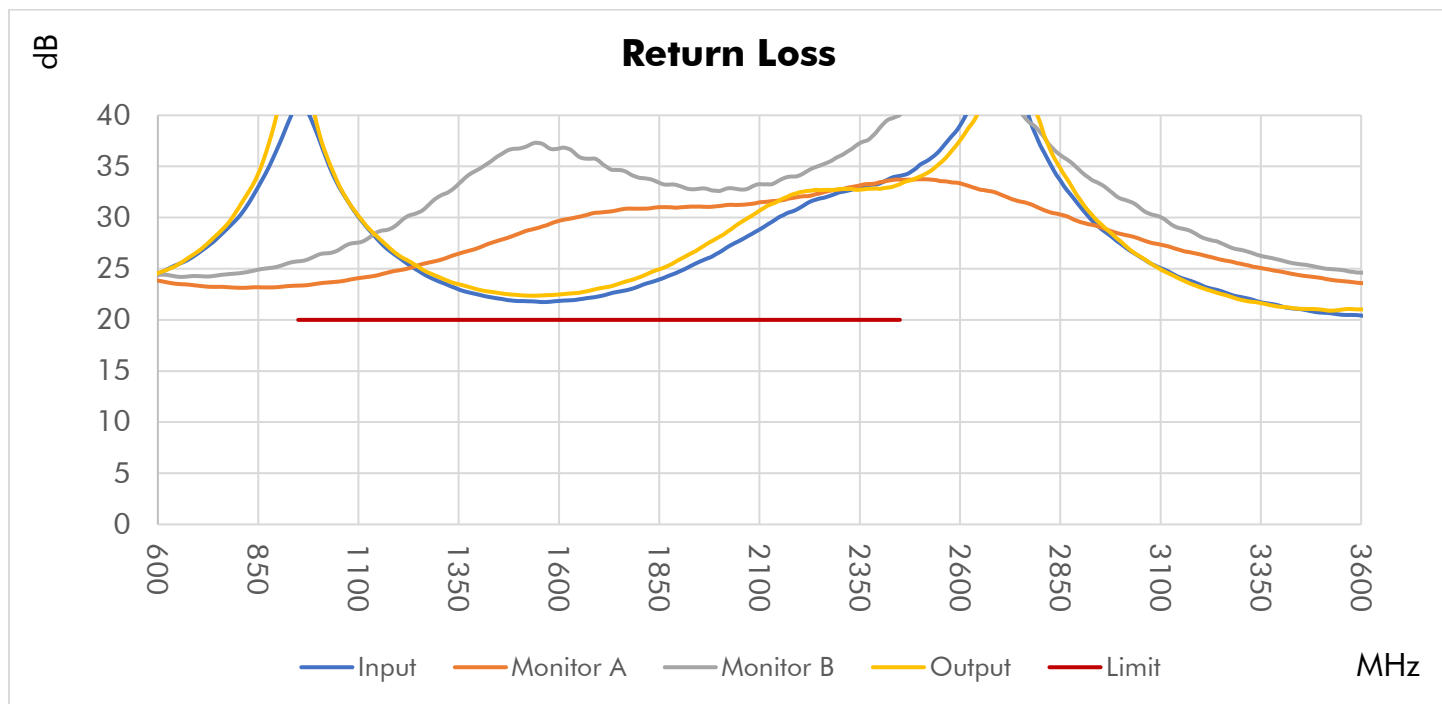
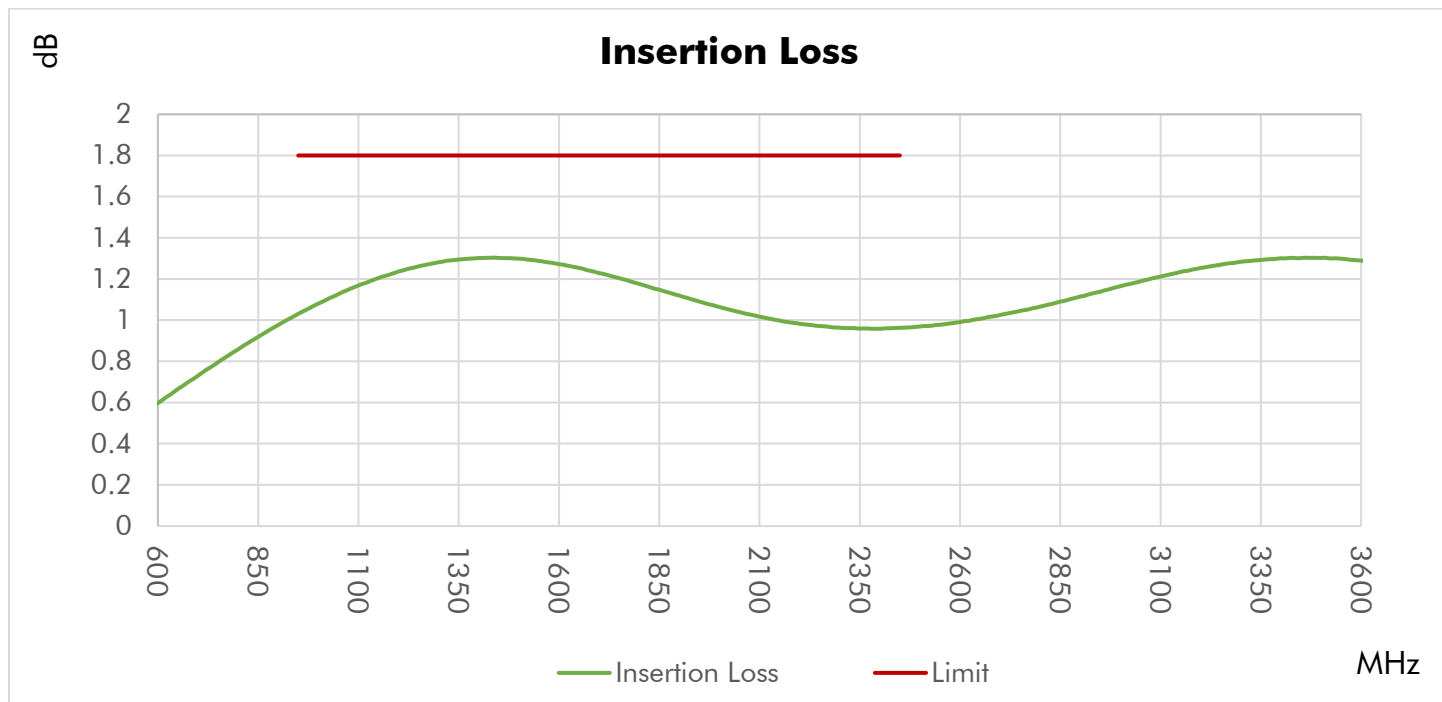
Dimensions are in inches, [mm] shown for convenience. Tolerances on 2-pl decimals: ± 0.03 . 3-pl decimals: ± 0.015 .

Customizable Configuration

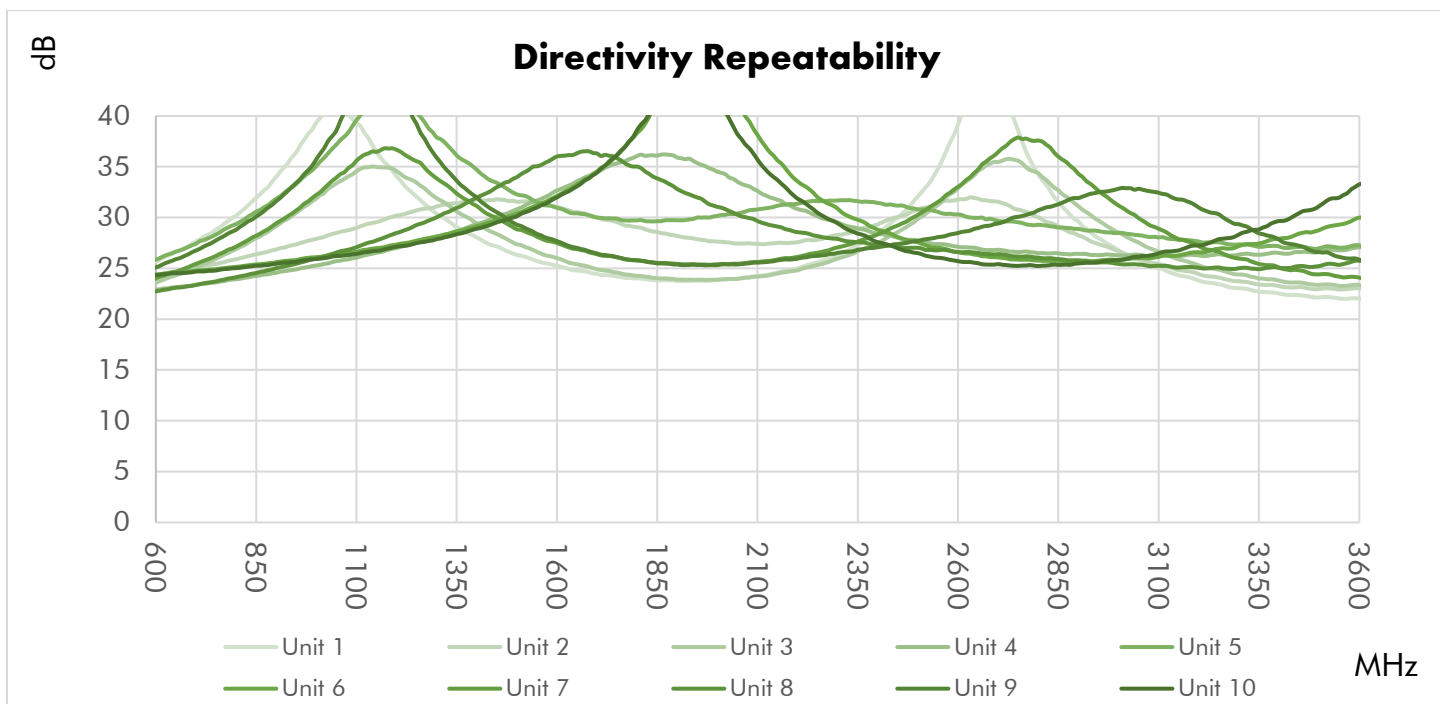
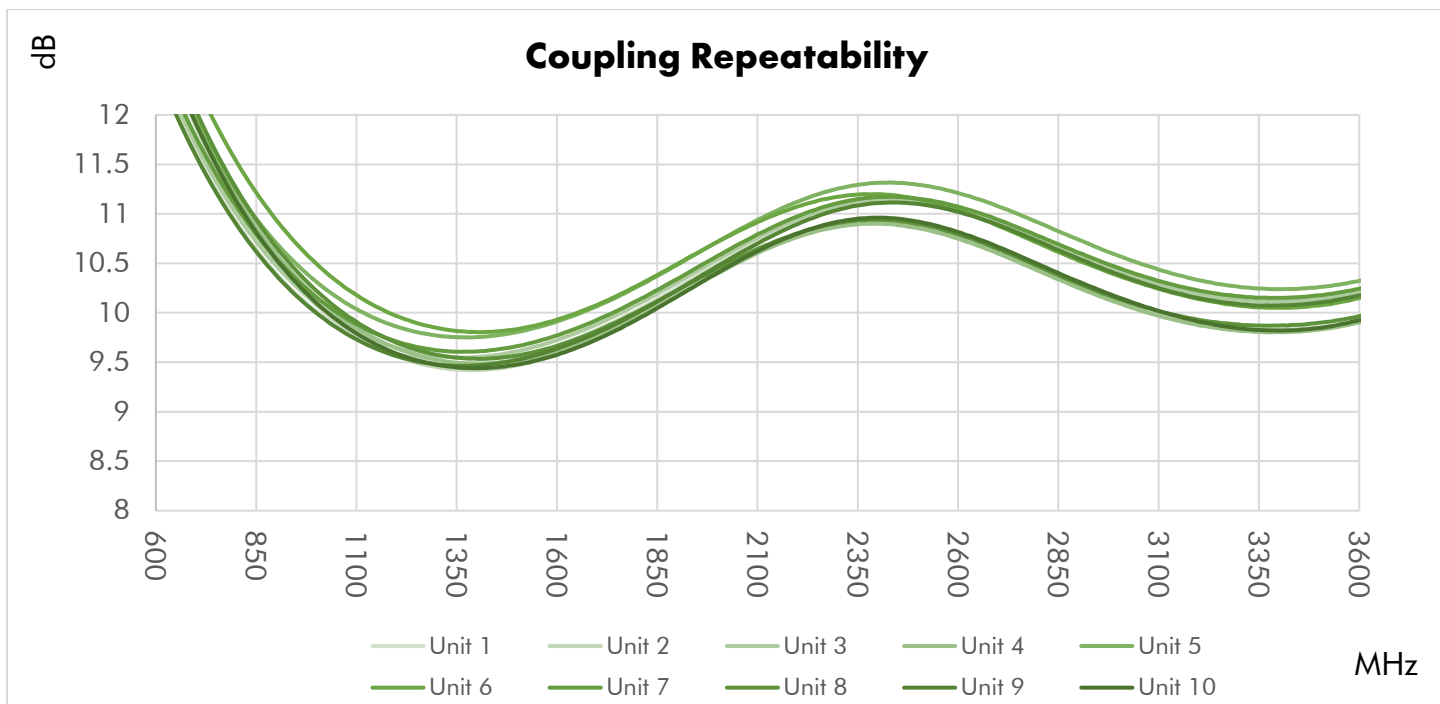
The configurations shown within this datasheet are to serve as examples. Please contact a Werbel Microwave applications engineer to discuss specific requirements.

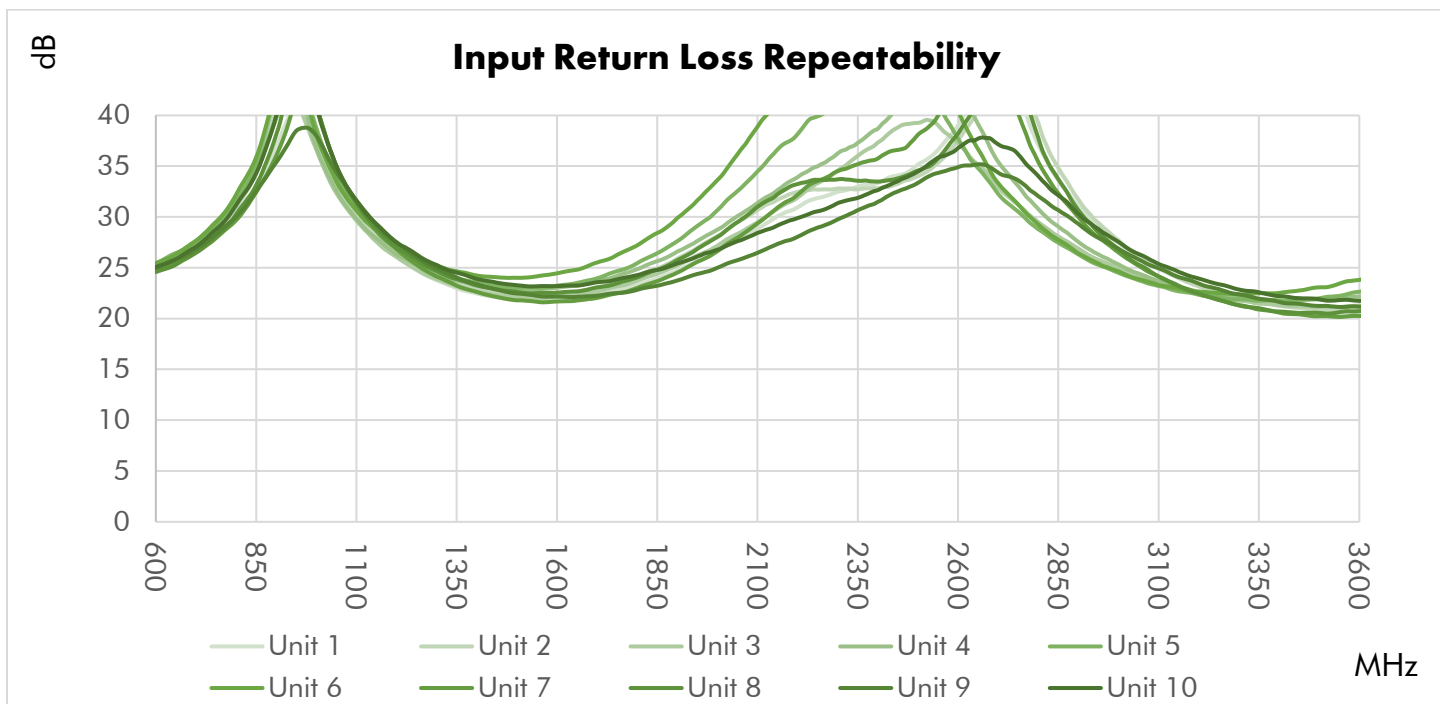
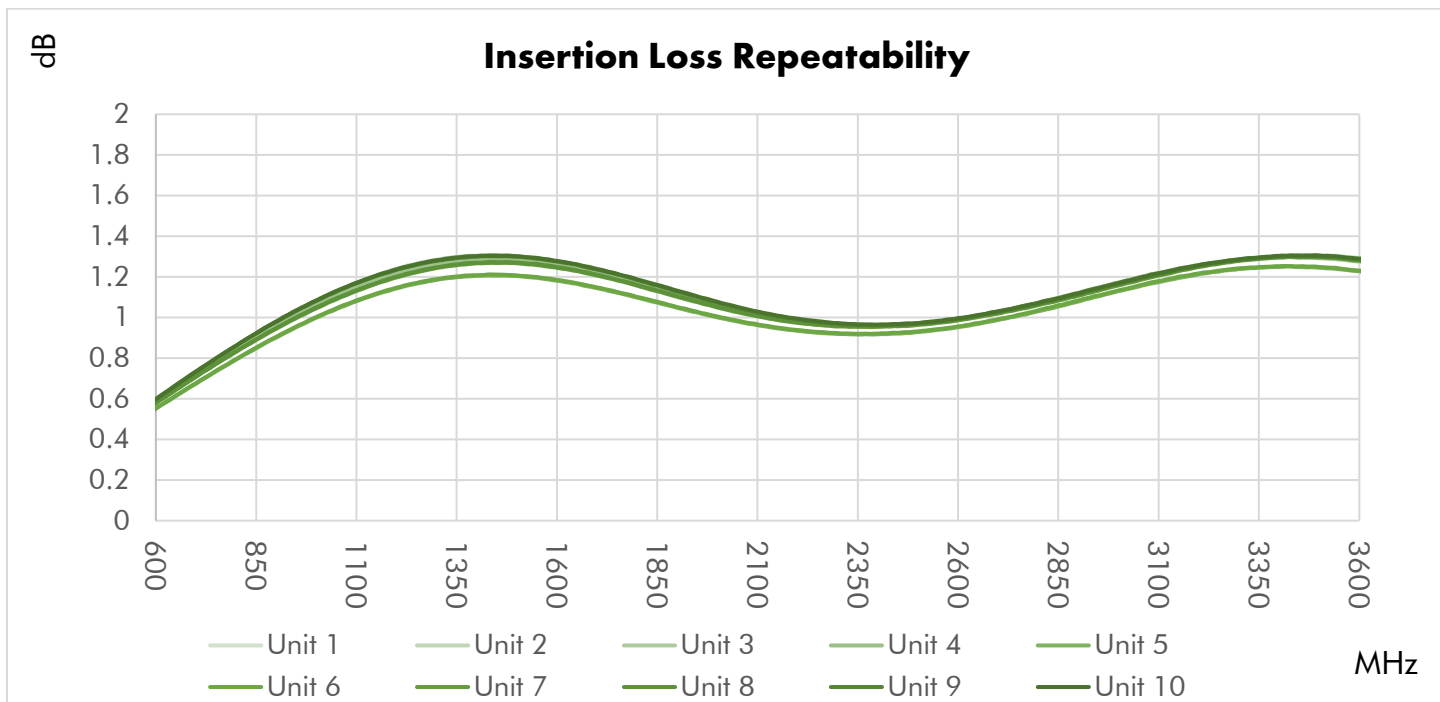
Typical Performance at +25 °C





Repeatability in Production





Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Mainline Loss (dB)	Coupling (dB)	Directivity (dB)
	In	Out	Cpl.	In-Out	In-Cpl.	
600	24.53	24.56	23.83	0.60	12.51	25.69
700	26.50	26.69	23.34	0.73	11.61	27.64
800	29.99	30.86	23.14	0.86	10.92	30.19
900	36.94	40.71	23.20	0.98	10.40	33.99
1000	37.88	38.59	23.55	1.08	10.02	39.34
1110	29.58	29.68	24.13	1.18	9.73	39.01
1200	26.12	26.32	24.84	1.24	9.58	34.06
1300	23.77	24.20	25.82	1.28	9.51	30.37
1400	22.46	22.94	27.05	1.30	9.50	28.04
1500	21.84	22.42	28.43	1.30	9.56	26.33
1600	21.85	22.48	29.68	1.27	9.67	25.26
1700	22.30	23.07	30.49	1.23	9.83	24.45
1800	23.29	24.16	30.87	1.18	10.03	24.01
1900	24.73	25.89	30.99	1.12	10.26	23.76
2000	26.60	28.12	31.13	1.06	10.49	23.86
2100	28.83	30.68	31.49	1.02	10.72	24.26
2200	30.95	32.47	32.04	0.98	10.91	25.00
2300	32.47	32.79	32.74	0.96	11.05	26.37
2400	33.34	32.81	33.46	0.96	11.12	28.45
2500	35.16	34.01	33.75	0.97	11.10	32.09
2600	39.01	37.55	33.35	0.99	11.02	39.16
2700	46.75	48.20	32.27	1.03	10.89	46.02
2800	37.06	39.25	30.89	1.07	10.72	34.25
2900	31.04	31.72	29.56	1.12	10.56	29.62
3000	27.45	27.68	28.40	1.17	10.40	26.78
3100	25.05	24.94	27.35	1.21	10.27	25.01
3200	23.41	23.16	26.38	1.25	10.17	23.80
3300	22.23	21.96	25.48	1.28	10.11	23.04
3400	21.34	21.27	24.72	1.30	10.10	22.53
3500	20.71	21.00	24.10	1.30	10.12	22.13
3600	20.42	21.02	23.60	1.29	10.18	22.03
3700	20.46	21.55	23.33	1.26	10.29	21.96
3800	20.90	22.24	23.28	1.22	10.43	22.30
3900	21.91	23.57	23.55	1.17	10.61	22.85
4000	23.38	25.09	24.12	1.13	10.81	24.17

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