

Power Divider, 4-way, 0.2-2.2 GHz, SMA Female

WM4PD-0.2-2.2-S



The Werbel Microwave 2-Way Wilkinson Power Divider covering 200 to 2200 MHz is designed for applications where traditional ferrite core and wire constructions fall short—either due to power handling limits or the need for a completely non-magnetic solution. Built using a planar architecture, this design eliminates magnetic materials entirely, making it ideal for environments sensitive to magnetic interference or where consistent performance is required across temperature and field conditions. Recessed cover mitigates interference and RF leakage.

This model delivers excellent amplitude and phase balance with solid port-to-port isolation, while maintaining reliable

operation under higher power levels than typical core-based designs in this frequency range. It is well suited for broadband systems, test and measurement setups, and RF distribution networks where stability and repeatability matter more than theoretical edge-case performance.

Proudly designed and manufactured in the USA, this divider reflects Werbel Microwave's focus on practical, honest specifications and rugged construction. Each unit is built for real-world use—where performance consistency, durability, and lead time reliability are just as important as the numbers on the datasheet.

Specifications

Parameter	Min.	Typ.	Max.	Unit
Frequency Range	200		2200	MHz
Impedance		50		Ω
Return Loss Port S (VSWR)	11.7 (1.70:1)	16		dB
Return Loss Port 1-4 (VSWR)	17.7 (1.30:1)	29		dB
Insertion Loss above 6.02dB splitting loss	200-1000MHz 1000-2200MHz	1.0 1.7	1.4 2.4	dB
Isolation	18	25		dB
Amplitude Unbalance ($\pm$) ¹		0.04	0.6	dB
Phase Unbalance ($\pm$) ¹		1.8	8	Degree
Input Power (CW) ²			20	W
Combining Power (CW) ²			0.5	W/port

Connector Interface SMA Female

Operating Temperature³ -55 to +85 °C

Storage Temperature -55 to +100 °C

Nominal Weight 170 g (6.0 oz)

Operating Humidity 10-90% (non-condensing)

Operating Environment Indoor Use Only

HTSUS Code 8548.00.0000

ECCN EAR99

RoHS Status⁴

REACH Status⁴

Enclosure Material

Connectors Material

Contacts Material

Insulators Material

Finish

Country of Origin

RoHS3 Compliant

REACH Unaffected

Aluminum

Brass, Gold Plated

Beryllium Copper, Gold Plated

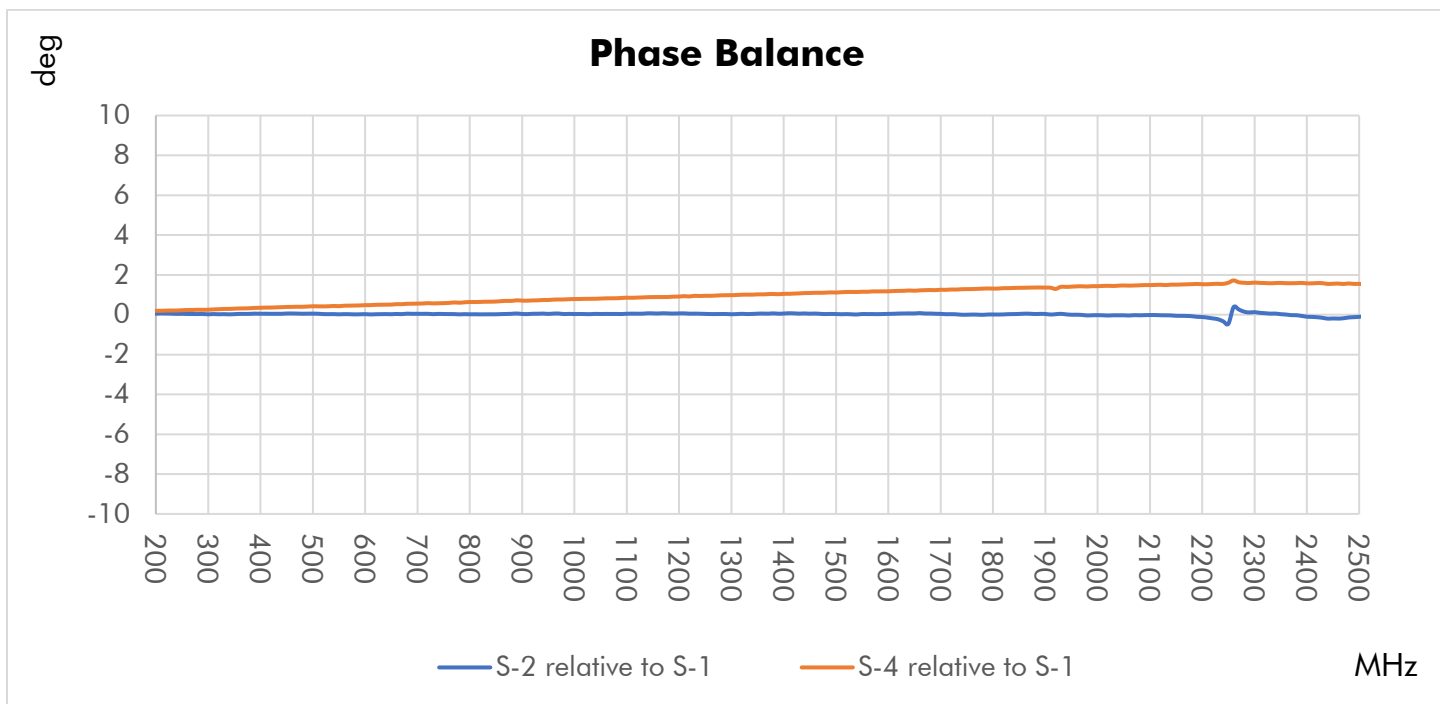
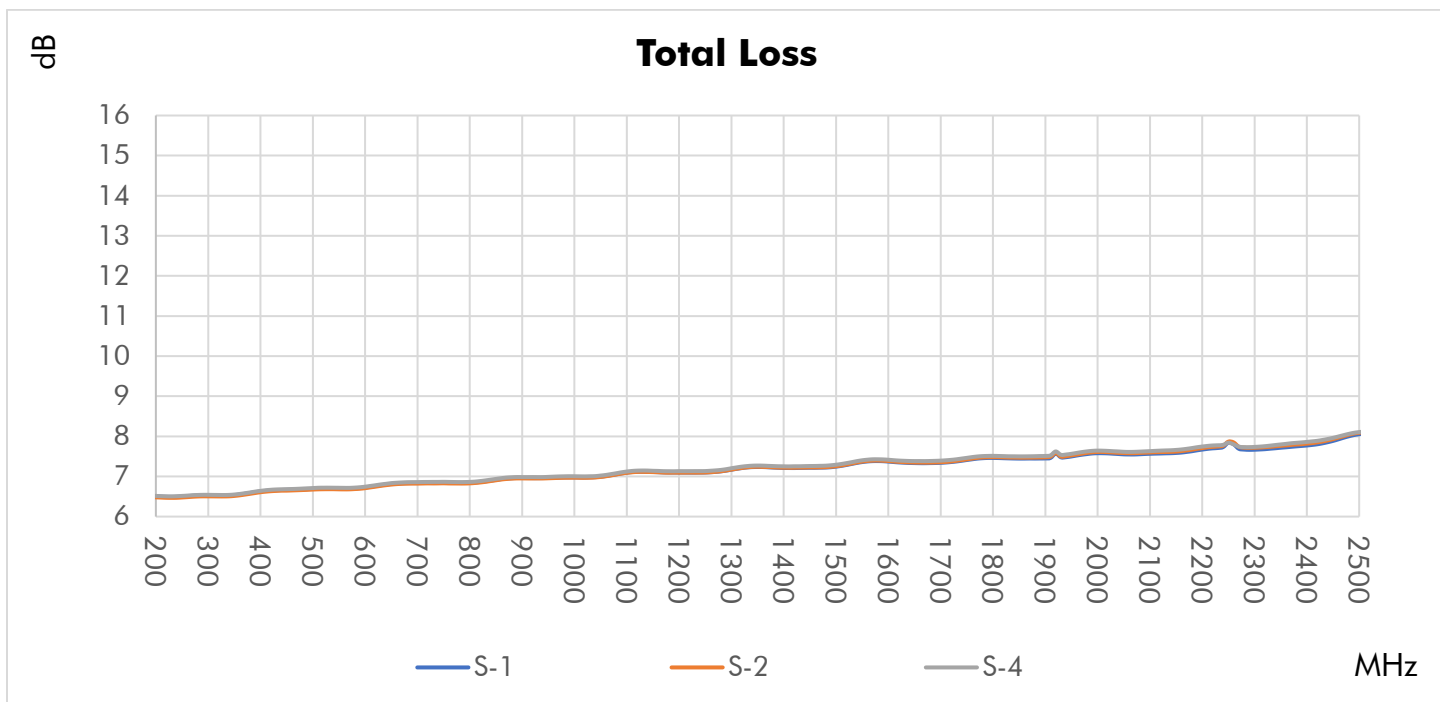
Virgin PTFE

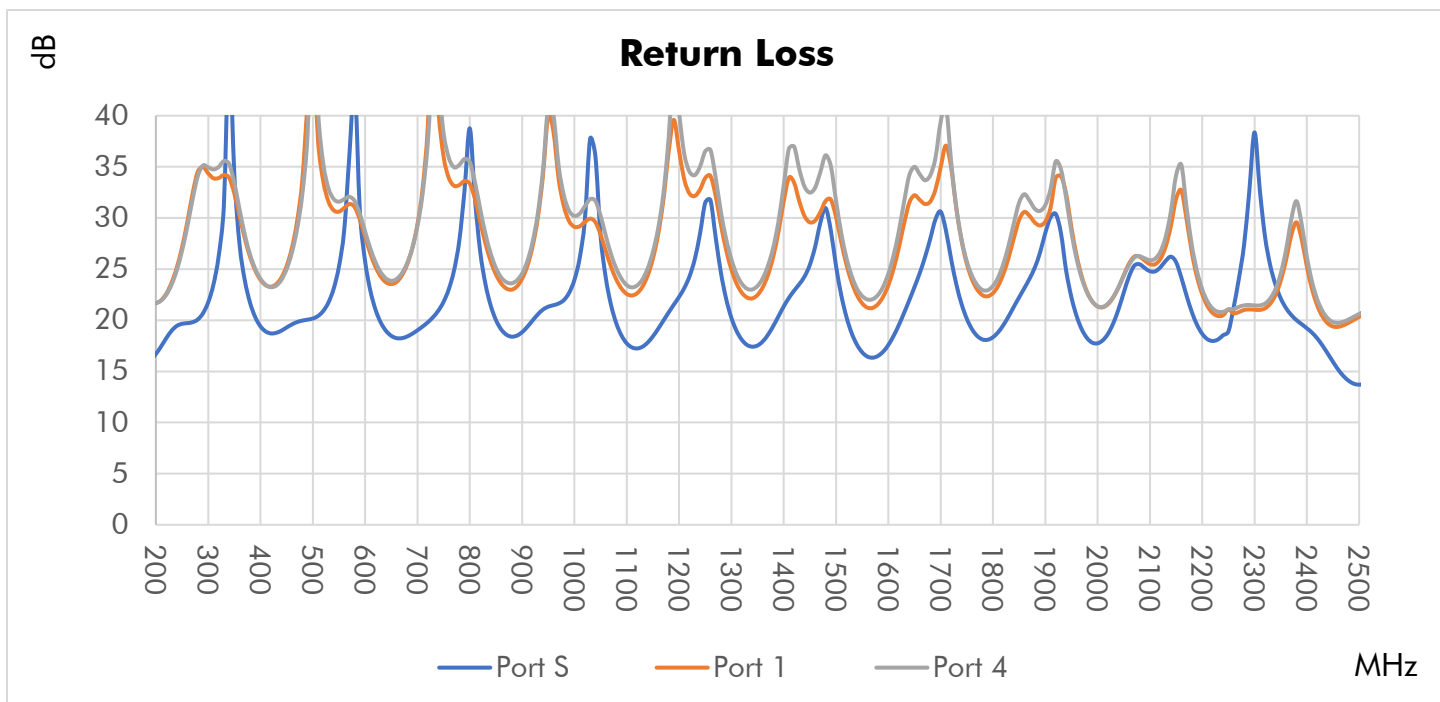
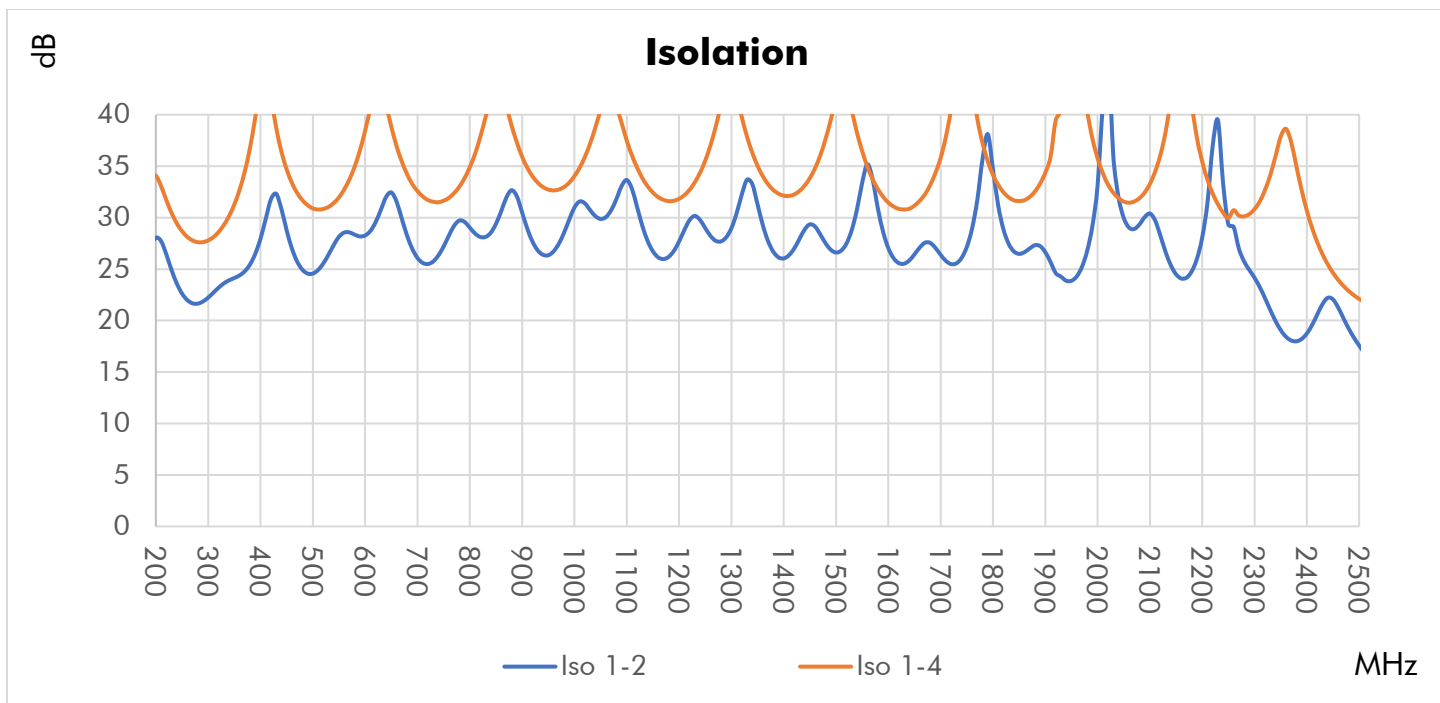
Green Paint

United States of America

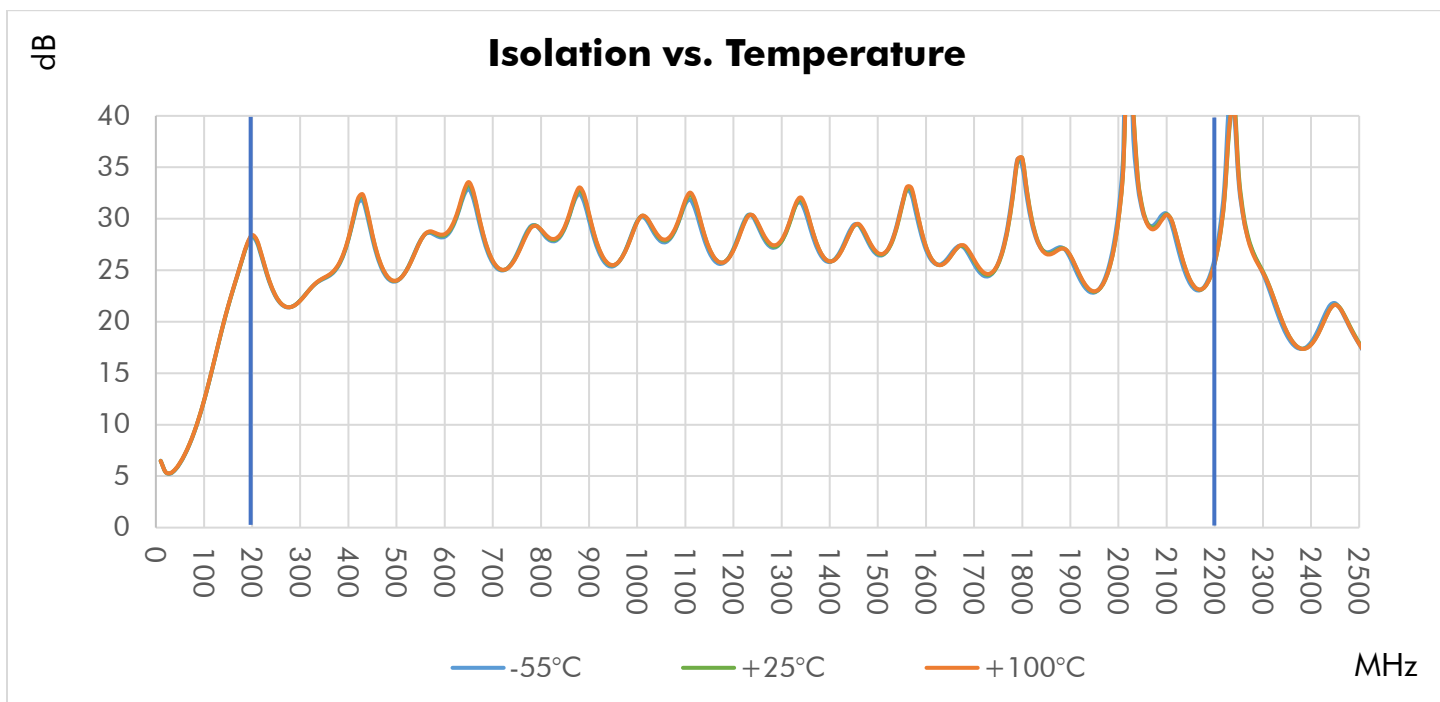
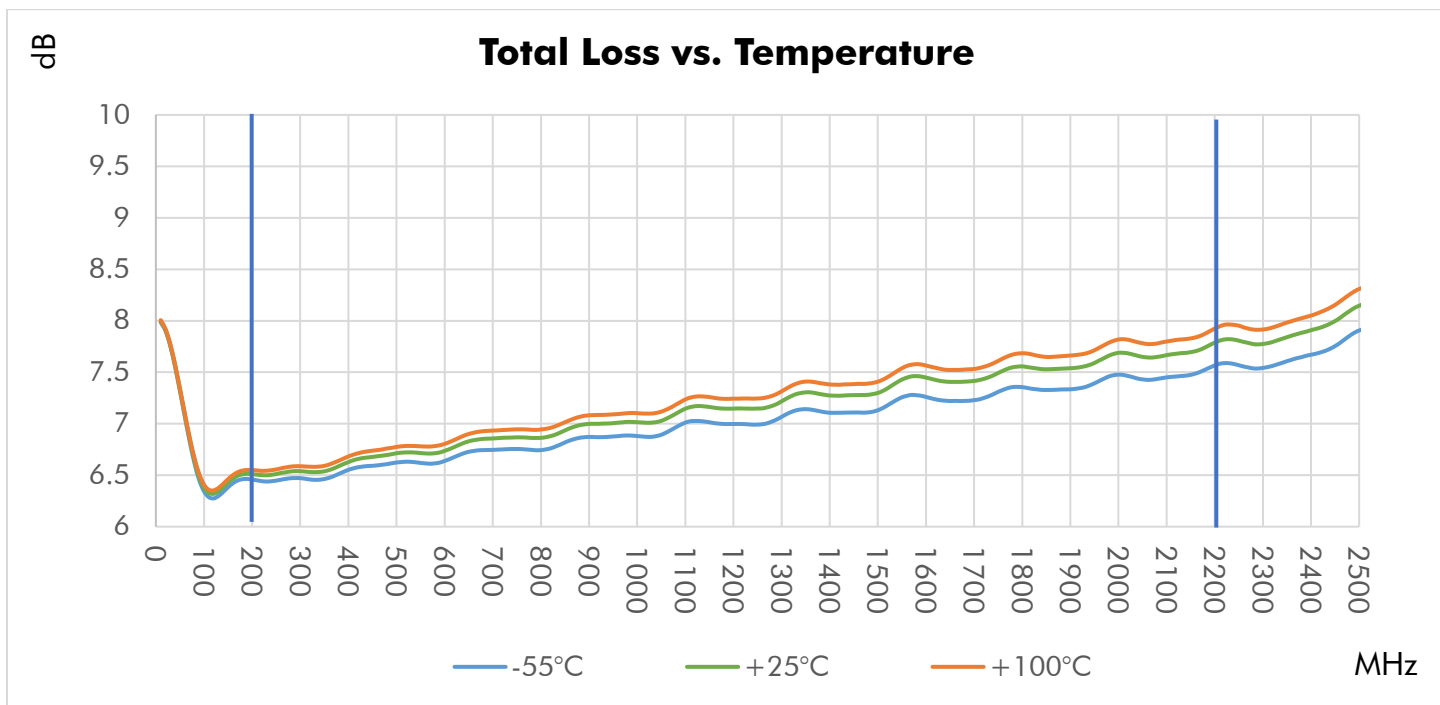
1. With reference to average.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications are tested at +25 °C.
4. To the best of our knowledge at the time of publication.

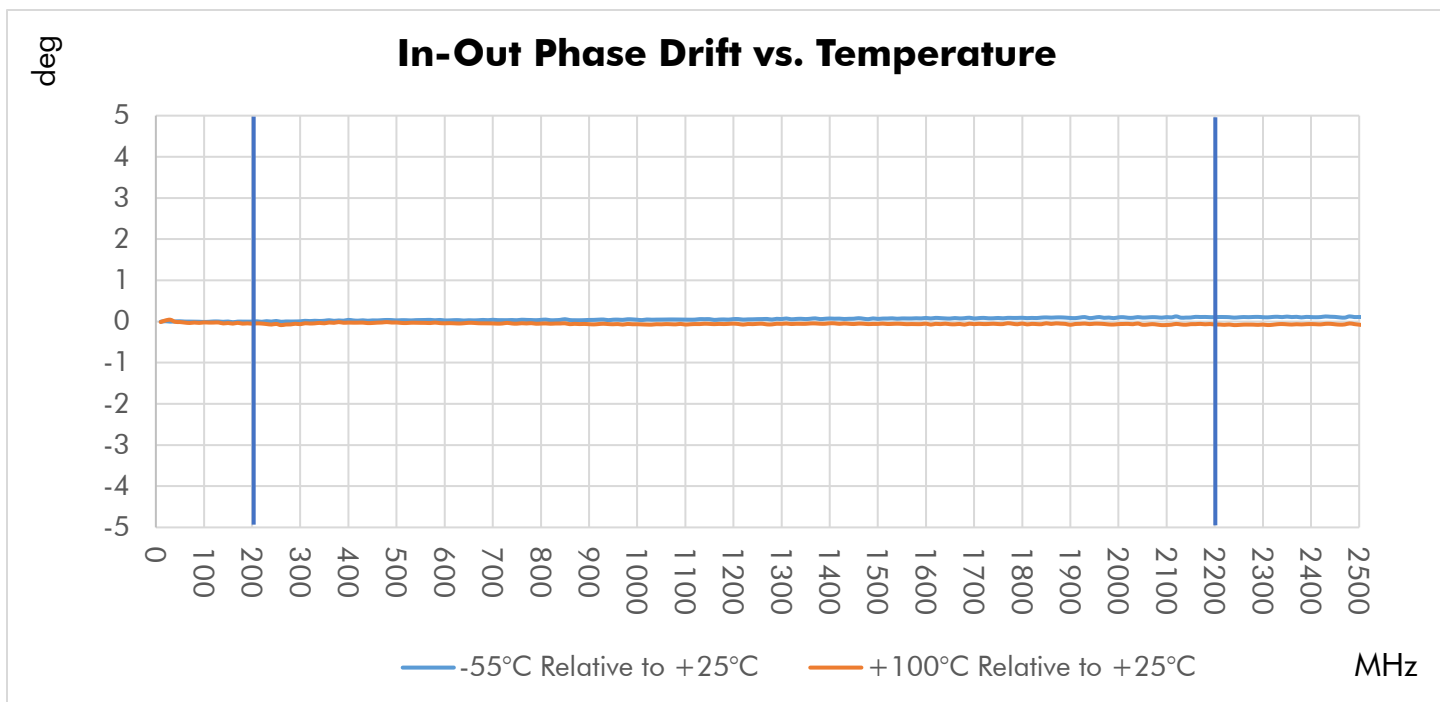
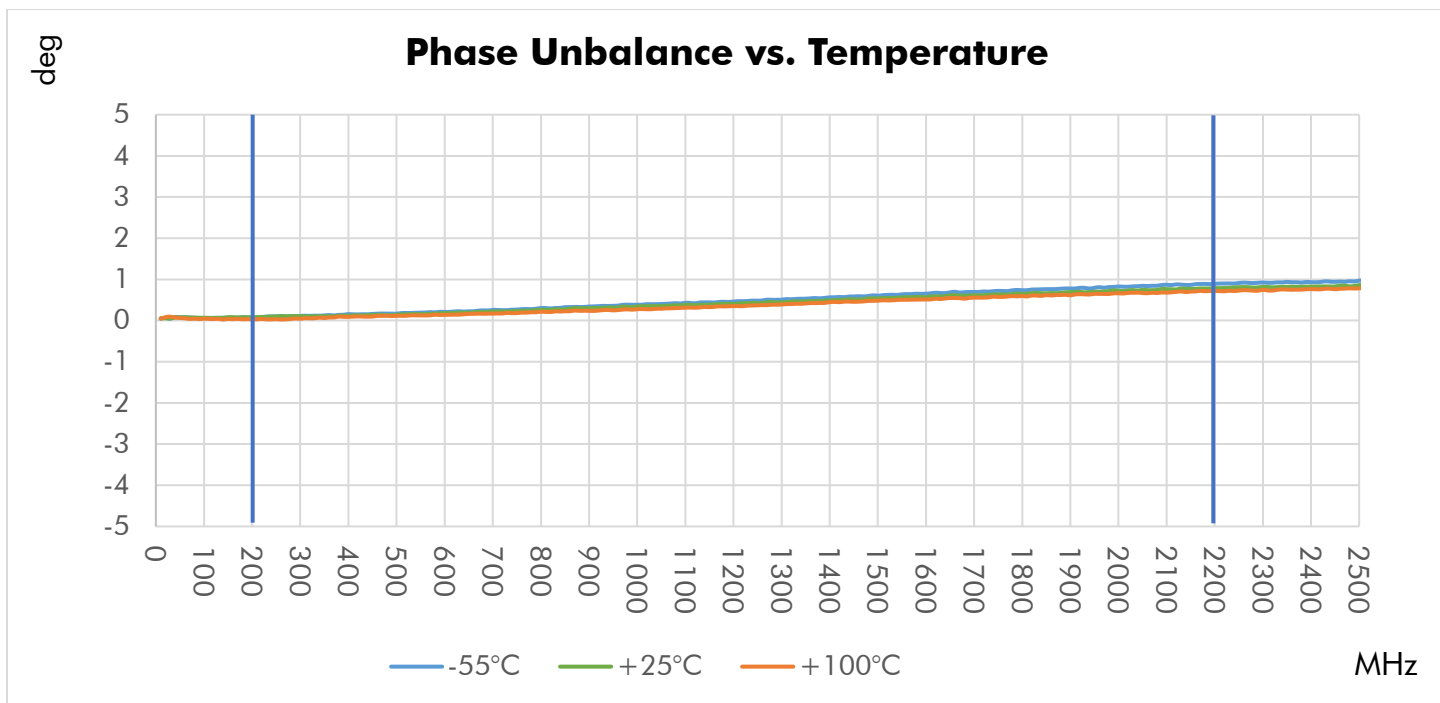
Typical Performance at +25 °C

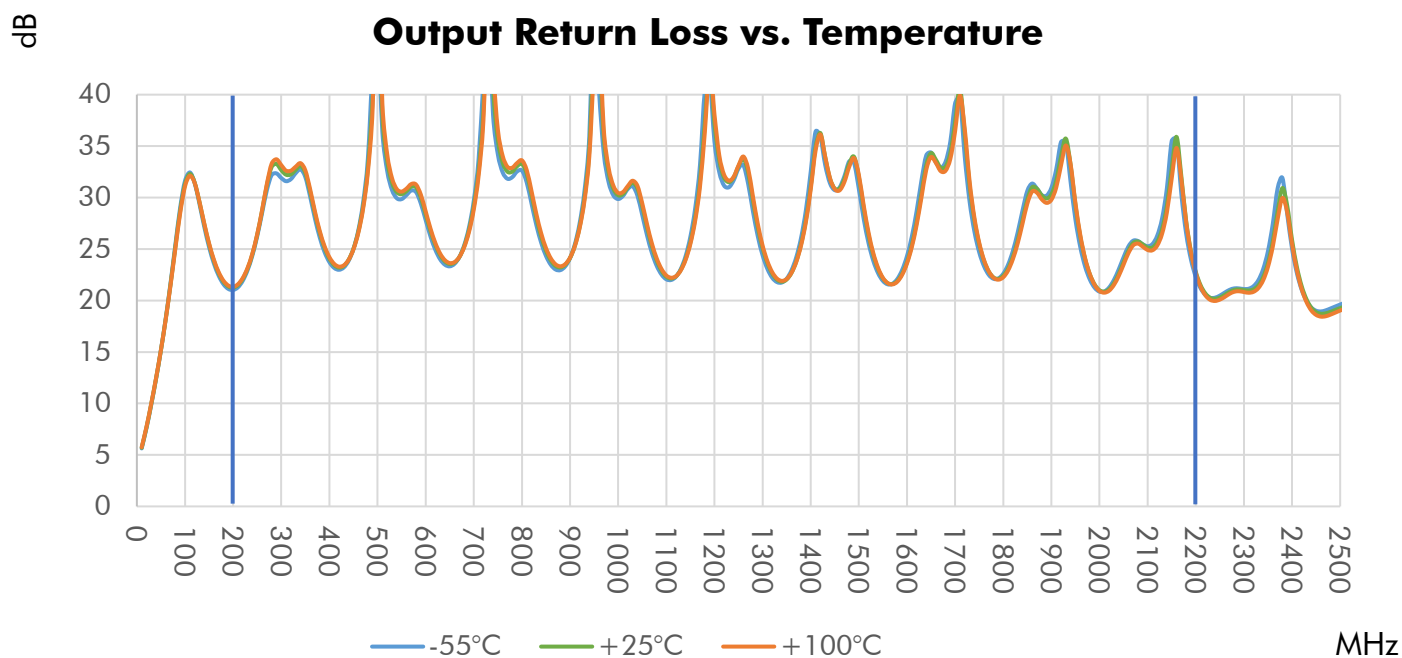
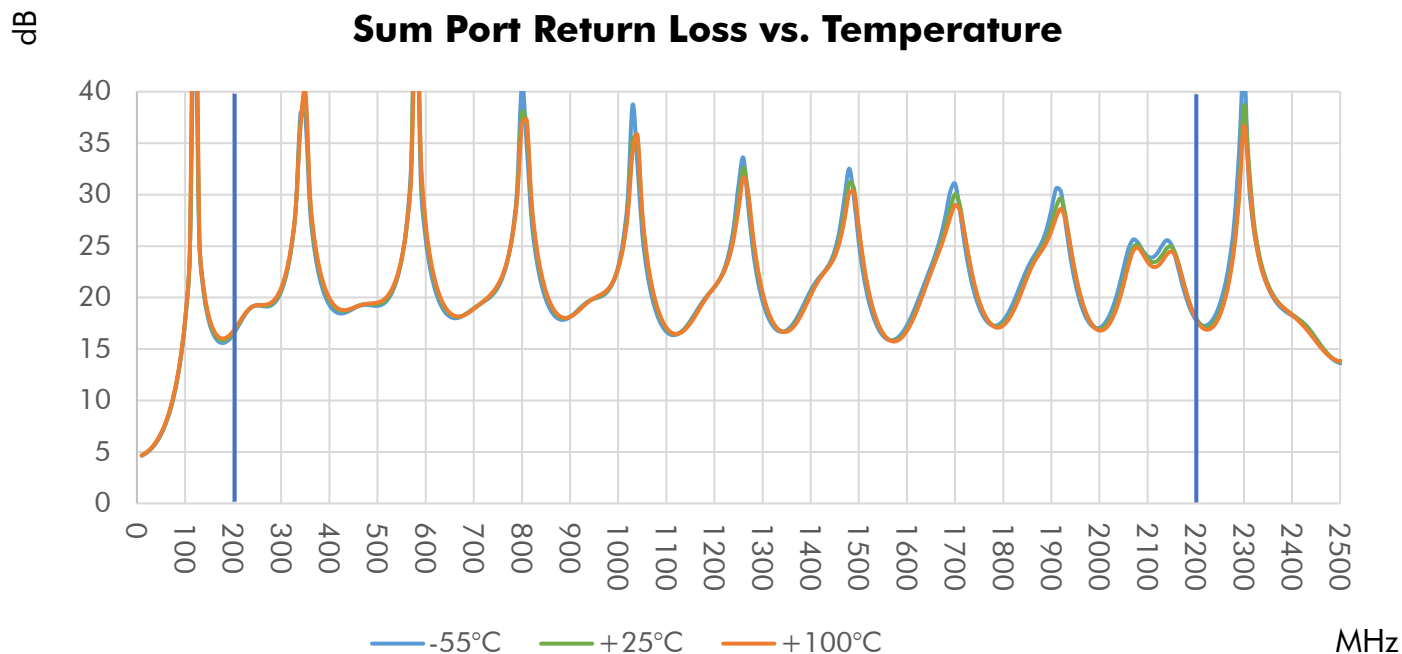




Typical Performance Over Temperature

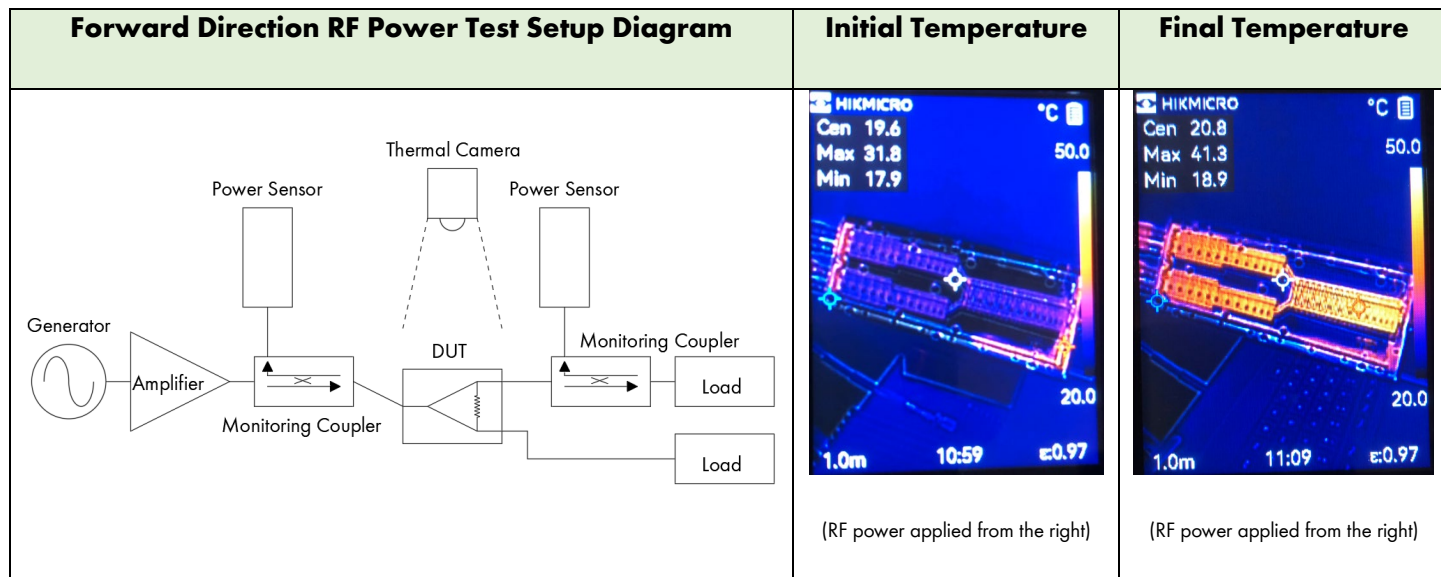




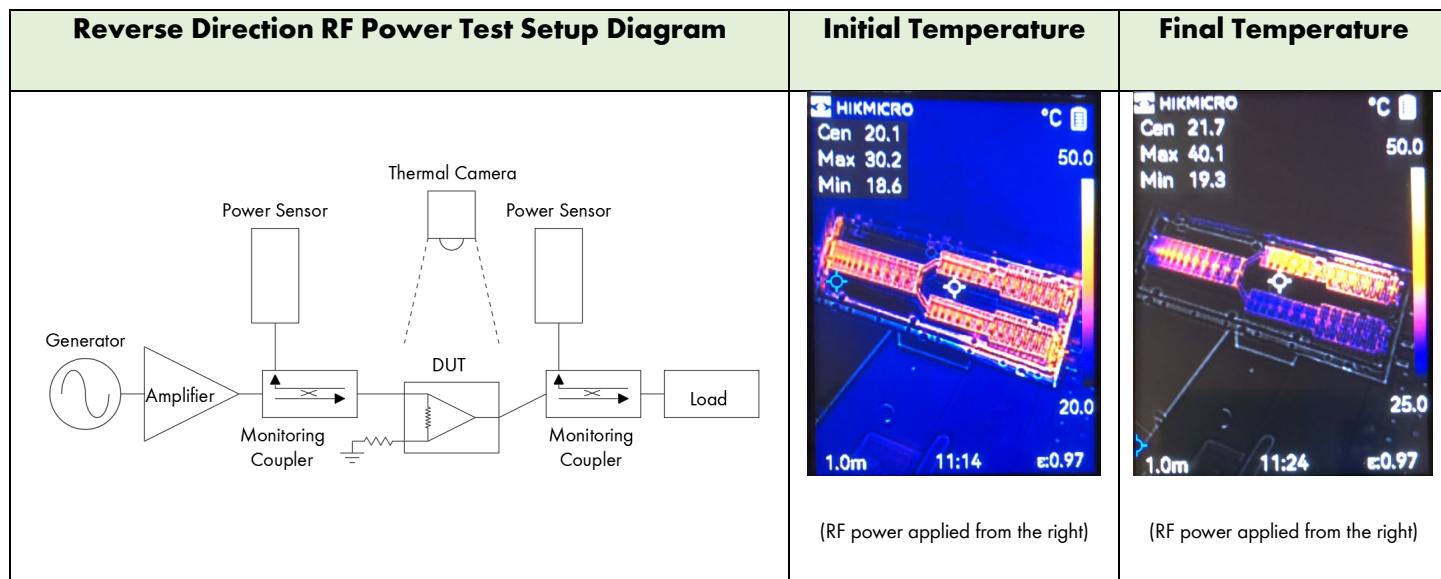


Reliability Testing

RF power test was performed to determine the input power required to produce a nominal temperature rise of 20°C at the hottest point. The test was performed at room temperature without forced air. A heatsink was not used unless it came standard with the product.

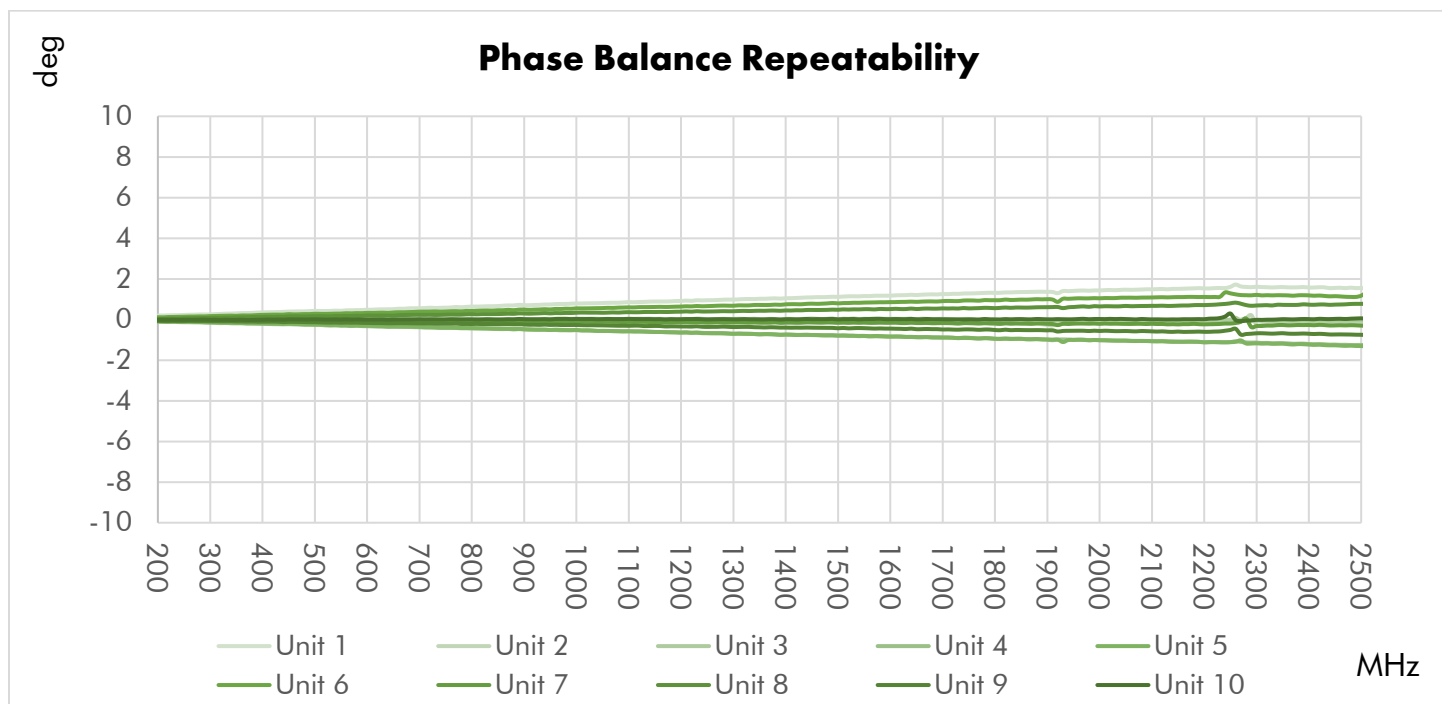
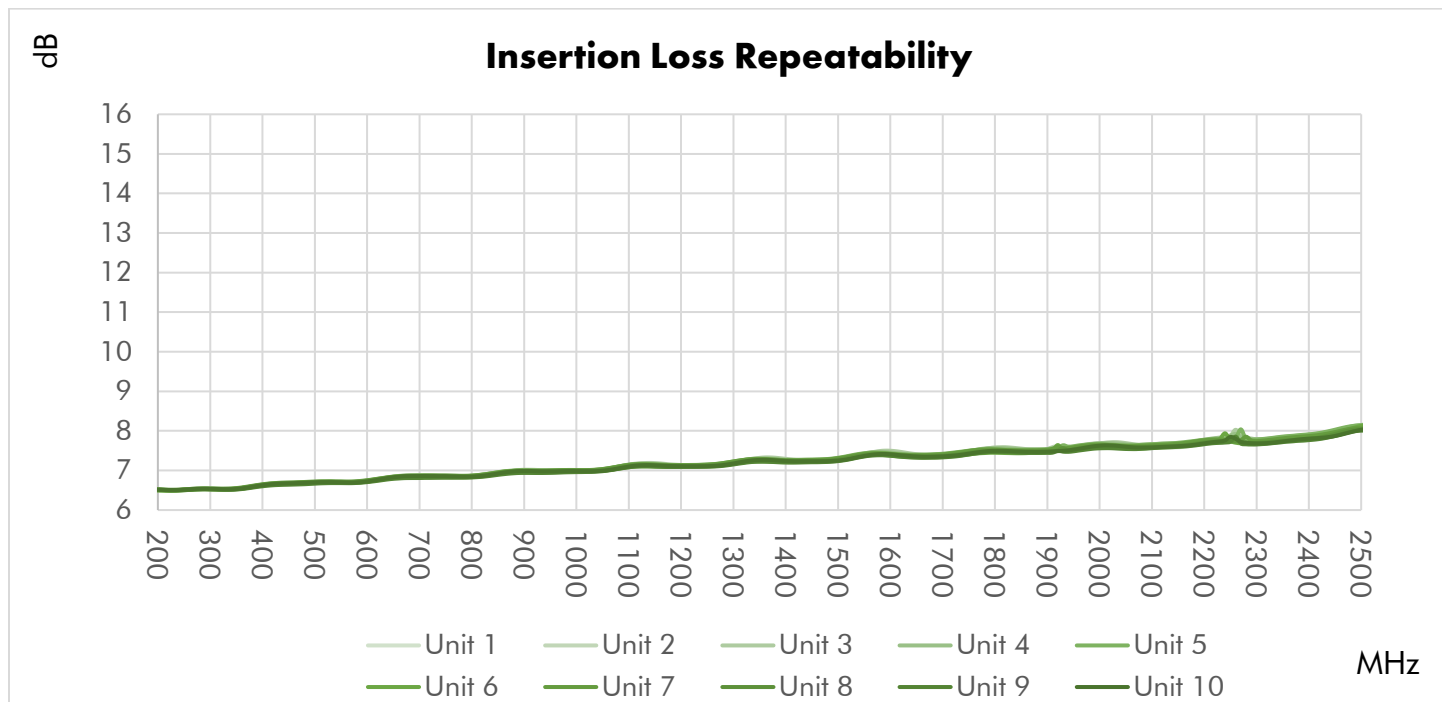


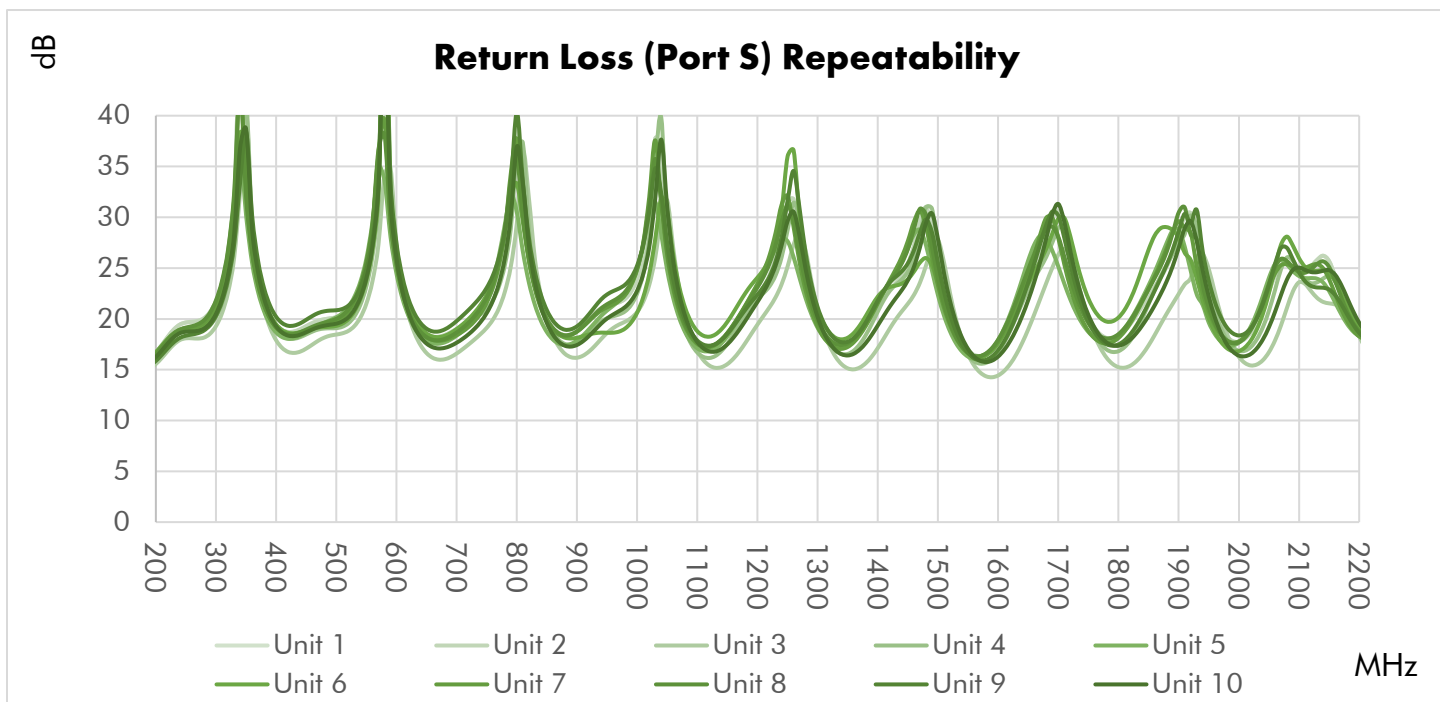
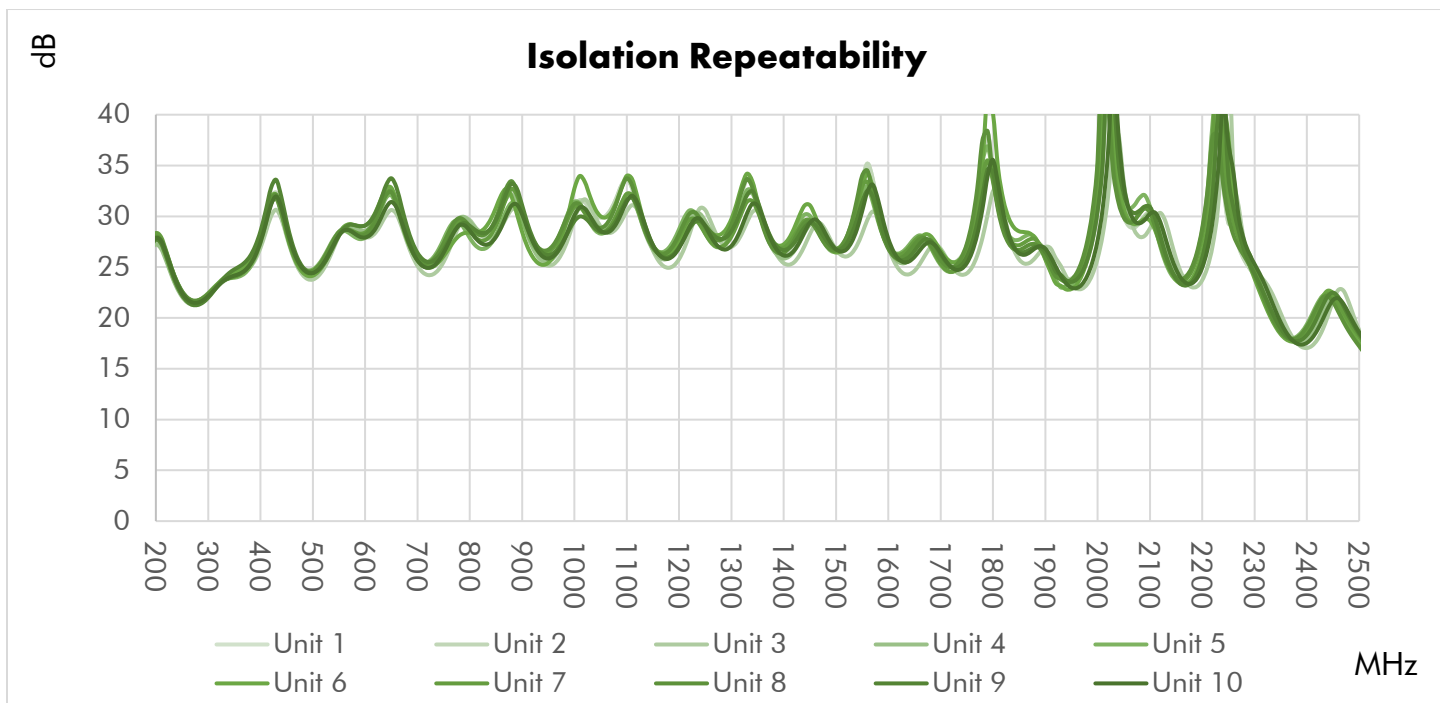
- 40 watts CW at 500MHz was applied to the DUT input for a duration of 10 minutes.
- The DUT temperature increased from 19.6°C (initial, center marker) to 41.3°C (final, max marker), resulting in a 21.7°C rise.

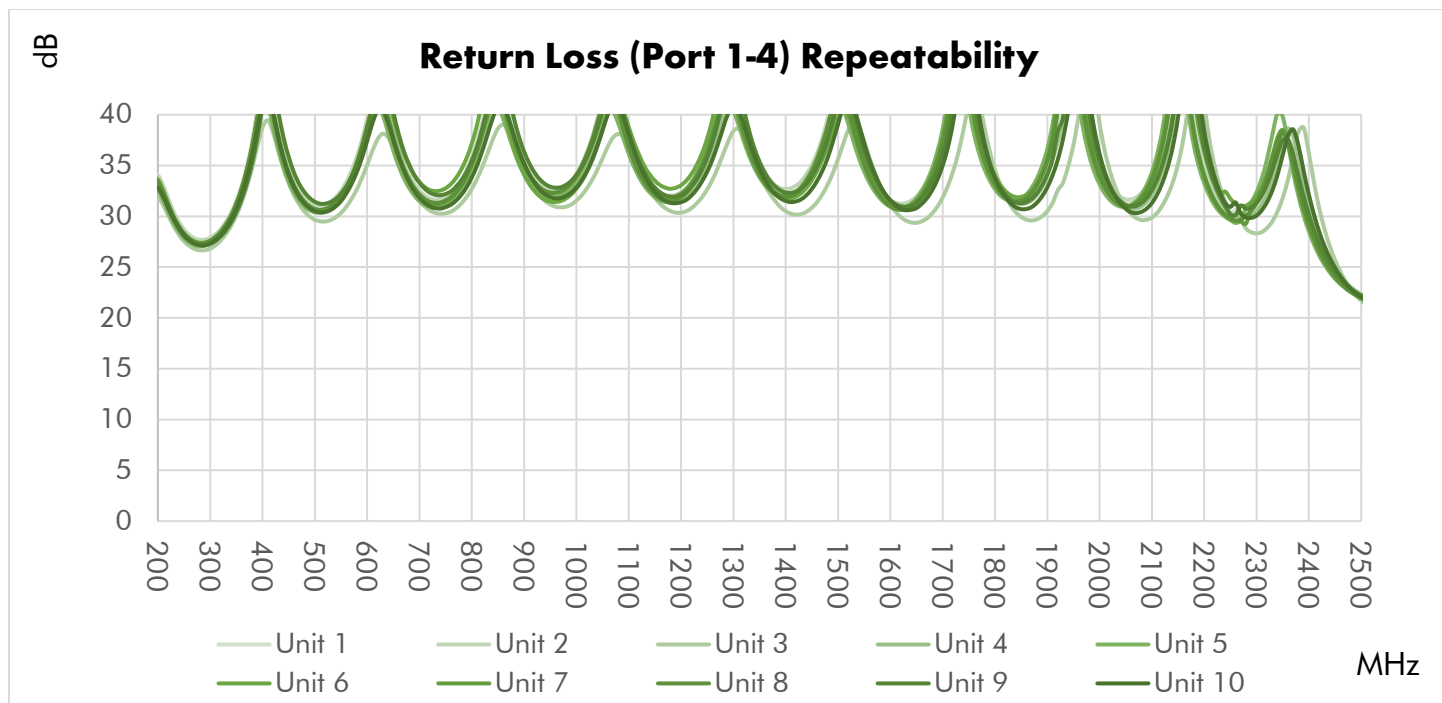


- 4 watts CW at 500MHz was applied to the DUT output for a duration of 10 minutes.
- The DUT temperature increased from 20.1°C (initial, center marker) to 40.1°C (final, max marker), resulting in a 20.0°C rise.

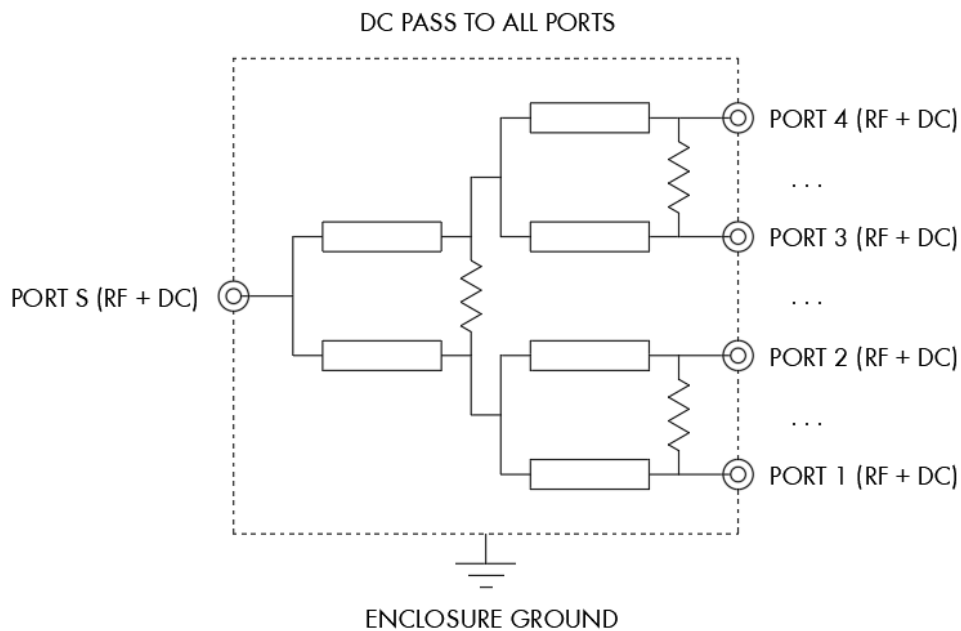
Repeatability in Production







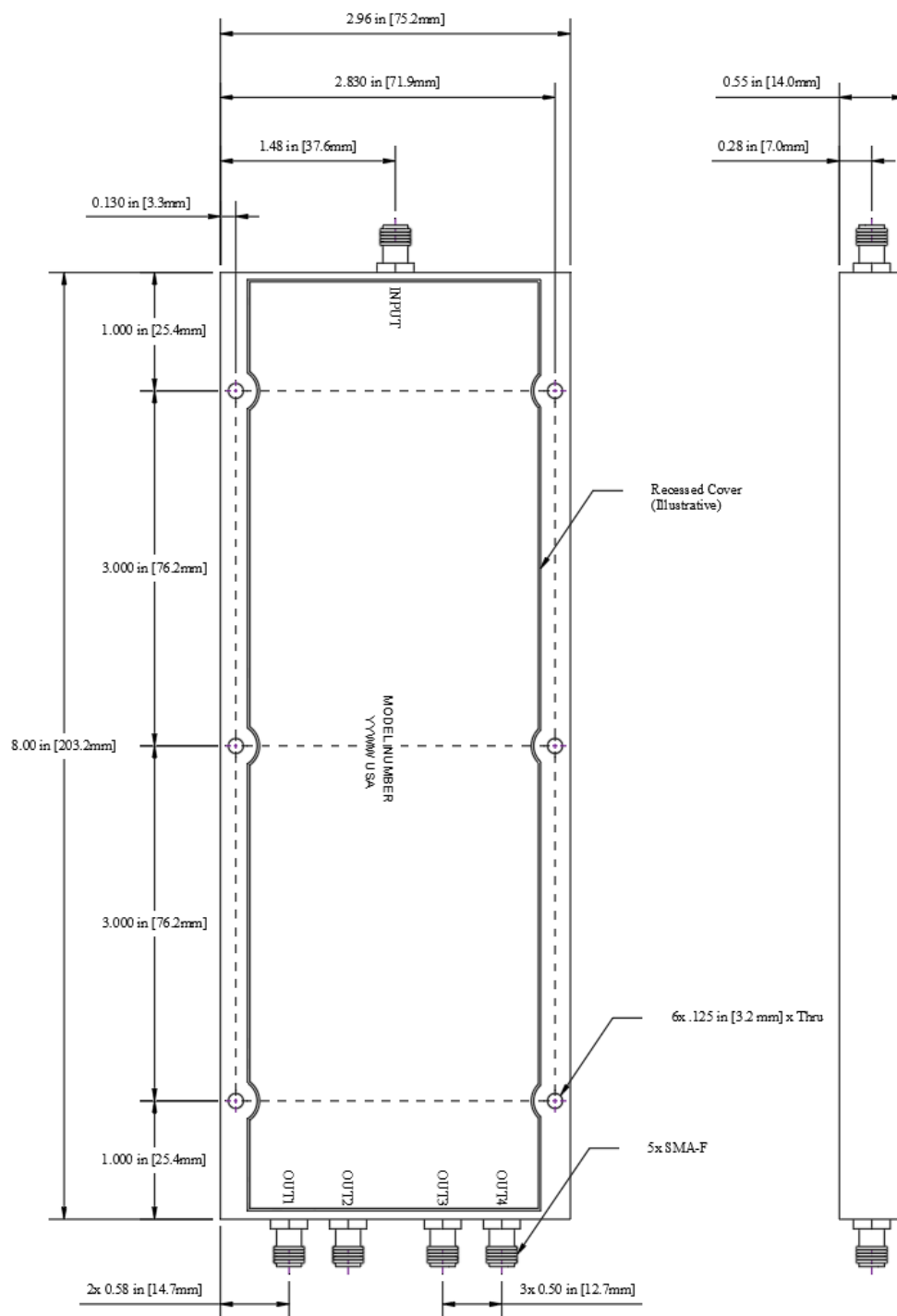
Simplified Electrical Schematic



Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Total Loss (dB)		Isolation (dB)	
	Port S	Port 1	Port 4	S-1	S-4	1-2	1-4
50	6.75	15.18	15.22	7.33	7.33	6.27	15.29
100	17.66	31.30	31.25	6.38	6.37	12.31	19.54
200	16.59	21.25	21.00	6.51	6.51	28.33	33.44
300	20.76	32.67	32.12	6.54	6.54	22.06	27.46
400	19.73	24.06	23.66	6.63	6.62	28.02	42.28
500	19.39	52.52	41.49	6.71	6.71	23.99	30.45
600	26.79	28.39	27.59	6.74	6.73	28.40	38.06
700	18.93	29.16	28.65	6.86	6.85	25.89	32.11
800	37.97	33.28	31.81	6.86	6.86	28.94	34.48
900	18.14	24.14	23.98	7.00	6.99	30.36	35.11
1000	22.84	30.22	28.36	7.01	7.00	29.71	32.85
1100	16.99	22.31	21.59	7.15	7.14	31.63	37.38
1200	21.02	37.25	35.29	7.15	7.14	26.99	31.19
1300	20.26	25.10	24.50	7.22	7.20	27.81	41.70
1400	20.36	31.05	30.36	7.27	7.26	25.86	31.70
1500	26.55	32.01	29.01	7.30	7.29	26.60	40.18
1600	16.92	23.72	22.69	7.45	7.43	27.30	31.19
1700	30.05	37.32	33.38	7.42	7.39	25.91	35.45
1800	17.46	22.40	21.77	7.56	7.53	35.89	33.71
1900	27.15	30.31	27.87	7.54	7.51	26.41	33.91
2000	16.94	21.00	20.24	7.69	7.66	29.94	34.69
2100	23.80	25.15	23.65	7.67	7.64	30.45	32.03
2200	18.06	22.80	22.01	7.79	7.76	25.72	35.24
2300	38.70	21.02	20.41	7.78	7.75	24.89	30.12
2400	18.38	25.90	25.89	7.91	7.87	17.79	30.72
2500	13.76	19.26	19.37	8.15	8.12	17.96	21.76

Outline Dimensions



Outline drawing: OL-4020

Dimensions are in inches, [mm] shown for convenience.

Tolerances on 2-pl decimals: $\pm .03$. 3-pl decimals: $\pm .015$.

The information contained in this document is accurate to the best of our knowledge and representative of the product described herein at the date of publication. It may be necessary to make modifications to the product and/or documentation of the product. Werbel Microwave LLC reserves the right to make such changes as required without notice. Unless otherwise stated, all specifications and dimensions are nominal. Werbel Microwave LLC does not make any representation or warranty regarding the suitability of the product described herein for any particular purpose or application, and Werbel Microwave LLC does not assume any liability arising out of the use of any part of documentation. This document gives only a description of the product(s) and shall not form part of any contract. Please contact a Werbel Microwave LLC Applications Engineer for the most current specification drawing.

Reliability testing was performed as an internal requalification of the product to substantiate the published specifications, which were previously arrived at by calculation and/or similarity to existing products. The results of these tests are provided as a courtesy and shall not form part of a contract or warranty. While reliability tests may depict the product being tested beyond the published specification ratings for the purpose of stress testing the product, this does not imply that the product should be operating above the rated limits for any length of time. Specifications related to reliability (e.g., performance over temperature, power handling, DC current, HI-POT) are "designed to meet" and are not individually tested in production of commercially available products. Please contact a Werbel Microwave LLC Applications Engineer if specific reliability testing is needed on a particular product.