



Calibration Laboratory Cert: 5518.01

ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994

## Accredited Calibration Certificate

Customer Address: Rental

Order / RMA:

Certificate: A24092001DR

Product: Amplifier  
 Manufacturer: The EMC Shop  
 Model: 5155F  
 Serial: 1002

Notes: Frequency Range: 800MHz to 2.5GHz  
 CSV files available upon request

Date of Report: 9/20/2024  
 Date of Calibration: 9/20/2024  
 Next Calibration:

***The next calibration date is defined by the equipment user/owner.***

The above instrument was tested and found to be within the Manufacturer's specifications at the tested parameters. The results of the tests performed are held on file at The EMC Shop. The calibration was carried out in accordance with the general requirements of ISO/IEC 17025-2017 and ANSI Z-540-1 using laboratory standards which are traceable to the SI International System of Quantities through the National Institute of Standards and Technology (NIST), and or other Accredited bodies except where none exist. Tests are carried out in environmental conditions controlled to the extent appropriate to the instrument's specification. This certificate shall not be reproduced except in full without the written approval of the laboratory. The uncertainty results meet the requirements of the ISO/IEC 17025-2017 standard and ILAC Doc.P14. Statements of conformity (e.g. Pass or Fail) are made in accordance with Simple Acceptance decision rules as defined in ILAC G8 with a TUR of 4:1 or greater. The customer is responsible for considering whether the inclusion of the uncertainties shown on the certificate would prevent their use of the equipment based on their risk evaluations. Results are accredited unless annotated with an asterisk "\*". The results presented are only applicable to the Model/Serial number shown above.

### Ambient Conditions of Laboratory

Temperature (°C): **21**  
 Relative Humidity (%): **36**

Technician: **Dan Raines**

Technician Signature: \_\_\_\_\_



Calibration Equipment				
Model	Description	Serial Number	Certificate #	Due Date
ZNB 8	Rohde&Schwarz Vect. Netw. Ana.	102017	S220805-021	8/9/2025
ZV-Z21	Calibration Kit (50Ω)	100800	0001A300706445	7/27/2025

Calibration method used: IEC 61000-4-3

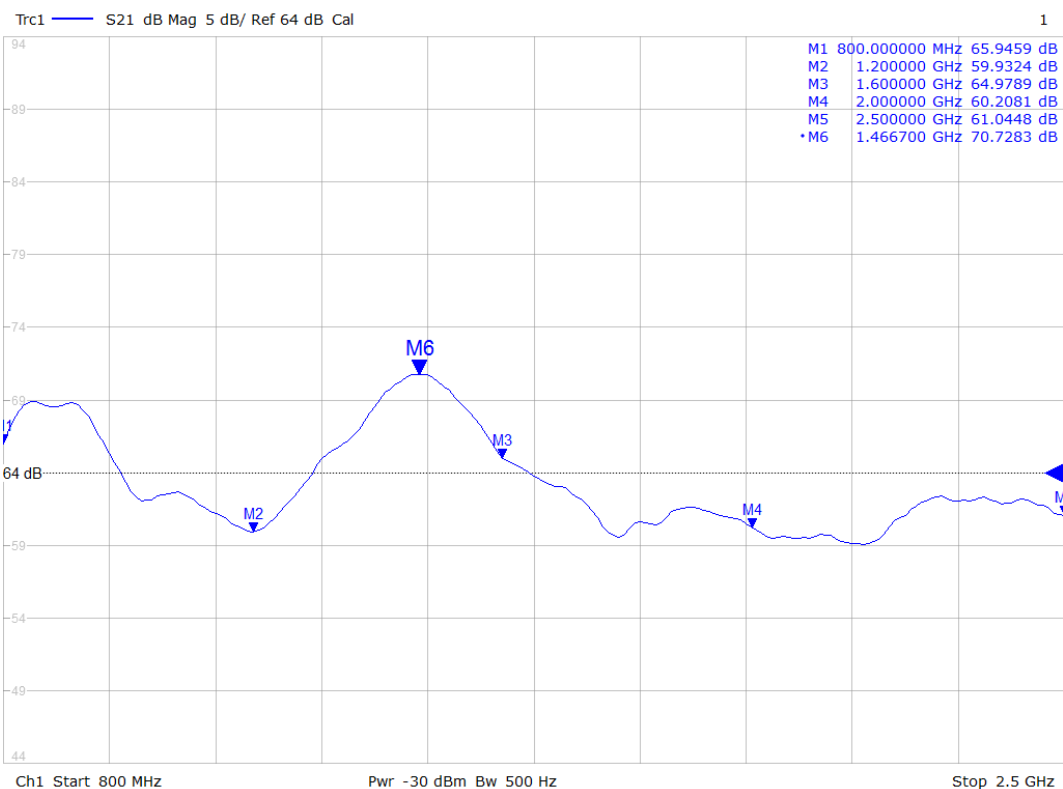
<b>Condition as found:</b>	<b>IN tolerance</b>
<b>Condition as left:</b>	<b>IN tolerance</b>

Measuring Uncertainties	
Insertion Loss	<b>0.44 dB</b>

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95%

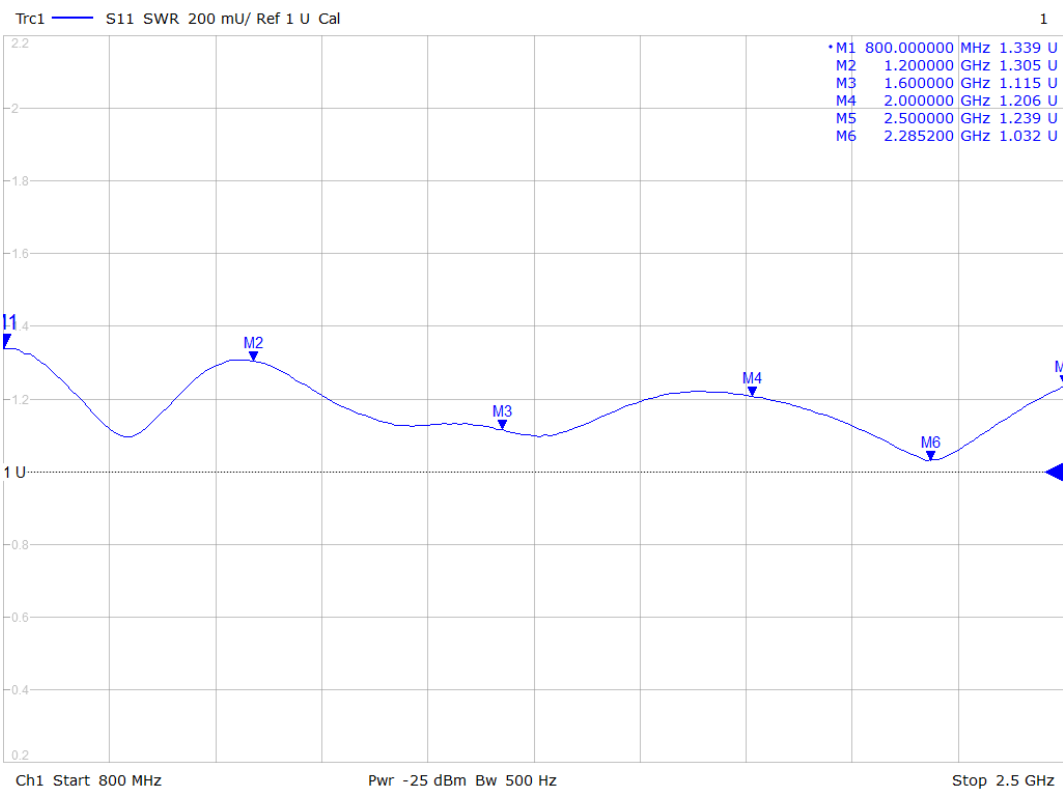


### Gain Through Band



### Input VSWR

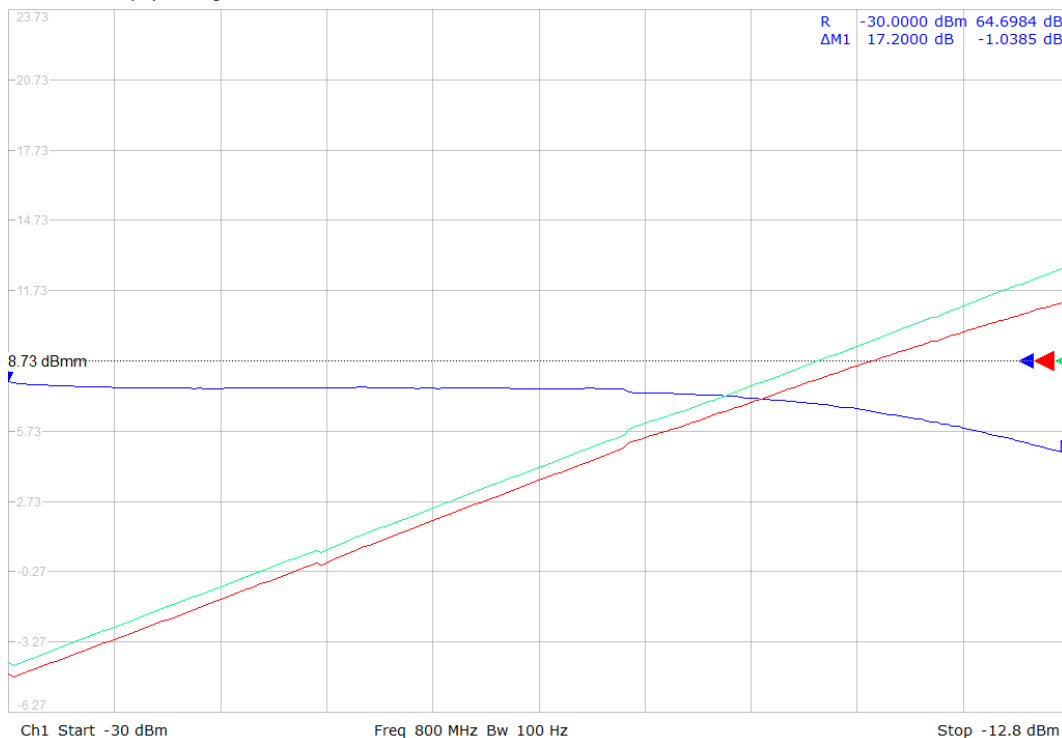
Tolerance:  $\leq 2.0:1$





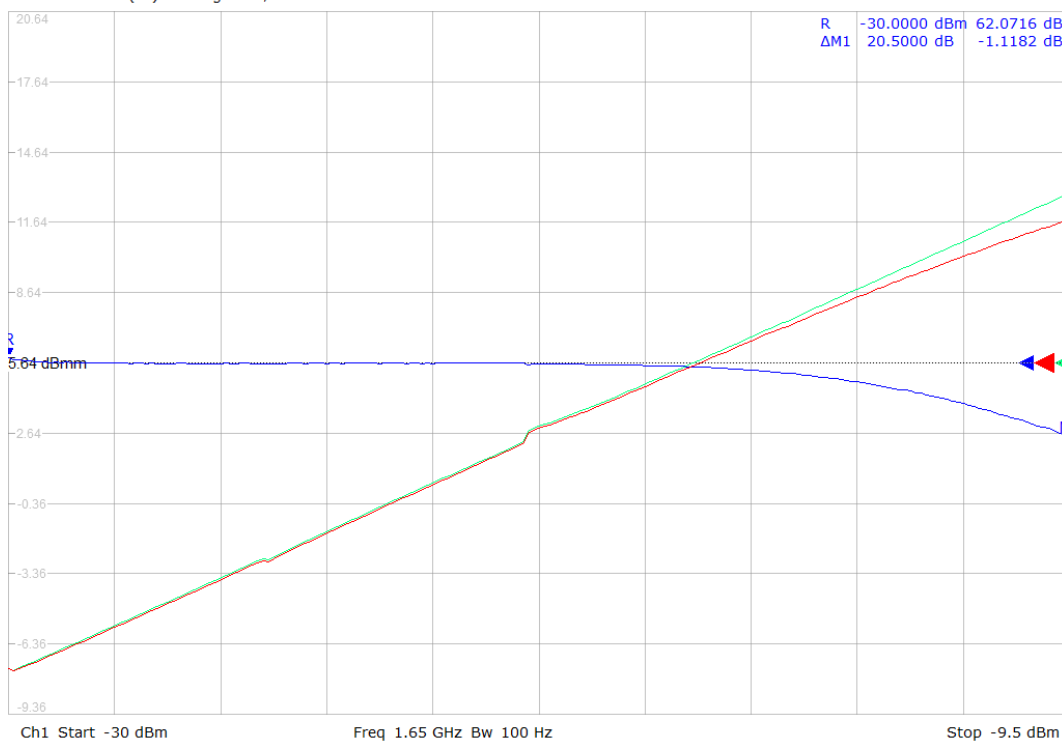
### P1dB 800MHz

Trc1 — S21 dB Mag 1 dB/ Ref 65 dB Offs Trc2 — b2(P1) dB Mag 3 dB/ Ref 8.73 dBm Offs 1  
 Trc3 — a1(P1) dB Mag 3 dB/ Ref -56.43 dBm Offs



### P1dB 1.65GHz

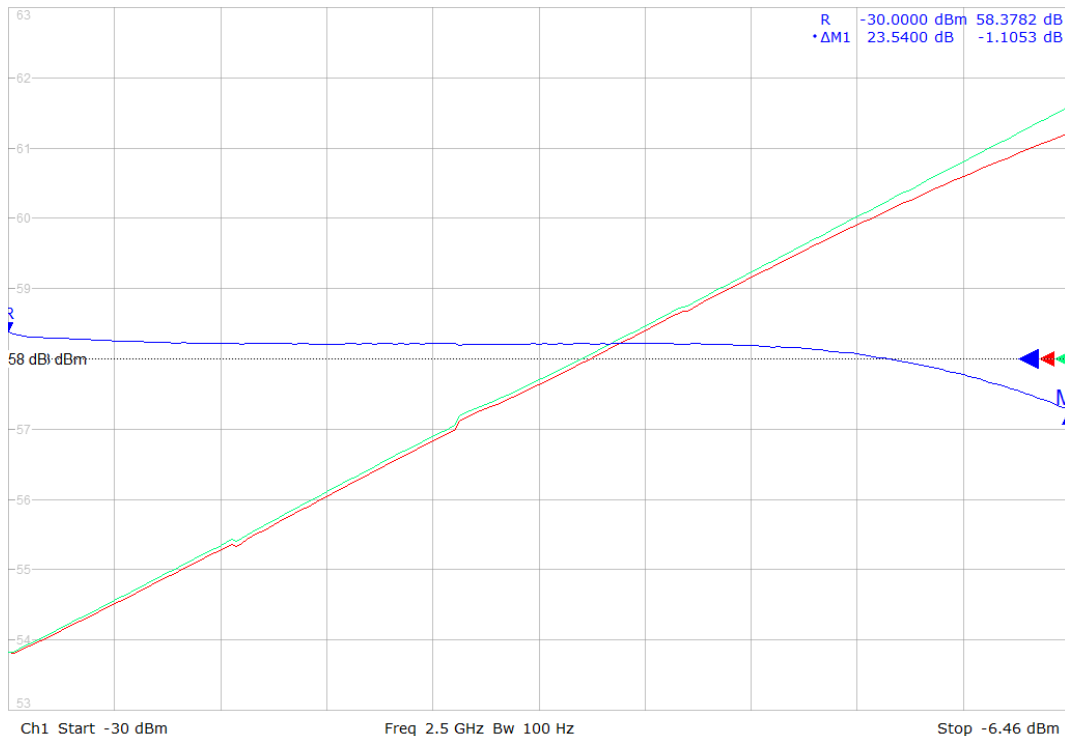
Trc1 — S21 dB Mag 1 dB/ Ref 62 dB Offs Trc2 — b2(P1) dB Mag 3 dB/ Ref 5.64 dBm Offs 1  
 Trc3 — a1(P1) dB Mag 3 dB/ Ref -56.43 dBm Offs





**P1dB 2.5GHz**

Trc1 — S21 dB Mag 1 dB/ Ref 58 dB Offs Trc2 — b2(P1) dB Mag 3 dB/ Ref 1.98 dBm Offs 1  
 Trc3 — a1(P1) dB Mag 3 dB/ Ref -56.43 dBm Offs



\*CSV Files for Characterizations are available upon request.

Frequency (Hz)	Gain Through Band (dBm)	VSWR at Input (U)
800,000,000	65.95	1.34
808,500,000	66.95	1.34
817,000,000	67.65	1.34
825,500,000	68.26	1.33
834,000,000	68.71	1.33
842,500,000	68.90	1.32
851,000,000	68.89	1.31
859,500,000	68.73	1.30
868,000,000	68.58	1.29
876,500,000	68.54	1.28
885,000,000	68.56	1.26
893,500,000	68.59	1.25
902,000,000	68.74	1.24
910,500,000	68.83	1.22
919,000,000	68.65	1.21
927,500,000	68.28	1.19
936,000,000	67.88	1.18
944,500,000	67.27	1.16
953,000,000	66.56	1.14
961,500,000	66.00	1.13
970,000,000	65.36	1.12
978,500,000	64.65	1.11
987,000,000	64.02	1.10
995,500,000	63.30	1.10
1,004,000,000	62.69	1.10
1,012,500,000	62.31	1.10
1,021,000,000	62.07	1.11
1,029,500,000	62.13	1.12
1,038,000,000	62.14	1.13
1,046,500,000	62.43	1.15
1,055,000,000	62.46	1.16
1,063,500,000	62.58	1.18
1,072,000,000	62.61	1.20
1,080,500,000	62.67	1.21
1,089,000,000	62.50	1.22
1,097,500,000	62.33	1.24
1,106,000,000	62.10	1.25
1,114,500,000	61.74	1.26
1,123,000,000	61.59	1.27
1,131,500,000	61.34	1.28

1,140,000,000	61.16	1.29
1,148,500,000	61.03	1.30
1,157,000,000	60.82	1.30
1,165,500,000	60.50	1.31
1,174,000,000	60.32	1.31
1,182,500,000	60.16	1.31
1,191,000,000	60.00	1.31
1,199,500,000	59.92	1.31
1,208,000,000	60.07	1.30
1,216,500,000	60.17	1.30
1,225,000,000	60.52	1.29
1,233,500,000	60.83	1.29
1,242,000,000	61.27	1.28
1,250,500,000	61.66	1.27
1,259,000,000	62.02	1.27
1,267,500,000	62.42	1.25
1,276,000,000	62.87	1.24
1,284,500,000	63.40	1.24
1,293,000,000	63.86	1.23
1,301,500,000	64.53	1.22
1,310,000,000	64.97	1.21
1,318,500,000	65.29	1.20
1,327,000,000	65.57	1.19
1,335,500,000	65.72	1.18
1,344,000,000	65.97	1.18
1,352,500,000	66.16	1.17
1,361,000,000	66.62	1.17
1,369,500,000	66.96	1.16
1,378,000,000	67.53	1.16
1,386,500,000	68.11	1.15
1,395,000,000	68.56	1.14
1,403,500,000	69.04	1.14
1,412,000,000	69.53	1.14
1,420,500,000	69.74	1.13
1,429,000,000	70.08	1.13
1,437,500,000	70.33	1.13
1,446,000,000	70.59	1.13
1,454,500,000	70.76	1.13
1,463,000,000	70.72	1.13
1,471,500,000	70.74	1.13
1,480,000,000	70.73	1.13
1,488,500,000	70.51	1.13
1,497,000,000	70.25	1.13
1,505,500,000	69.91	1.13

1,514,000,000	69.66	1.13
1,522,500,000	69.20	1.13
1,531,000,000	68.81	1.13
1,539,500,000	68.45	1.13
1,548,000,000	68.11	1.13
1,556,500,000	67.66	1.13
1,565,000,000	67.24	1.13
1,573,500,000	66.67	1.12
1,582,000,000	66.07	1.12
1,590,500,000	65.45	1.12
1,599,000,000	65.00	1.12
1,607,500,000	64.83	1.11
1,616,000,000	64.64	1.11
1,624,500,000	64.50	1.10
1,633,000,000	64.25	1.10
1,641,500,000	64.08	1.10
1,650,000,000	63.75	1.10
1,658,500,000	63.53	1.10
1,667,000,000	63.32	1.10
1,675,500,000	63.17	1.10
1,684,000,000	63.02	1.10
1,692,500,000	63.07	1.11
1,701,000,000	62.99	1.11
1,709,500,000	62.59	1.12
1,718,000,000	62.36	1.12
1,726,500,000	62.10	1.13
1,735,000,000	61.76	1.13
1,743,500,000	61.32	1.14
1,752,000,000	60.91	1.15
1,760,500,000	60.26	1.15
1,769,000,000	59.87	1.16
1,777,500,000	59.68	1.17
1,786,000,000	59.53	1.17
1,794,500,000	59.67	1.18
1,803,000,000	60.18	1.18
1,811,500,000	60.52	1.19
1,820,000,000	60.65	1.19
1,828,500,000	60.54	1.20
1,837,000,000	60.45	1.20
1,845,500,000	60.37	1.21
1,854,000,000	60.56	1.21
1,862,500,000	60.89	1.21
1,871,000,000	61.30	1.21
1,879,500,000	61.48	1.21



1,888,000,000	61.57	1.22
1,896,500,000	61.59	1.22
1,905,000,000	61.59	1.22
1,913,500,000	61.58	1.22
1,922,000,000	61.43	1.22
1,930,500,000	61.32	1.22
1,939,000,000	61.18	1.22
1,947,500,000	61.05	1.22
1,956,000,000	60.97	1.22
1,964,500,000	60.91	1.21
1,973,000,000	60.84	1.21
1,981,500,000	60.75	1.21
1,990,000,000	60.50	1.21
1,998,500,000	60.24	1.21
2,007,000,000	60.06	1.20
2,015,500,000	59.83	1.20
2,024,000,000	59.55	1.20
2,032,500,000	59.49	1.19
2,041,000,000	59.51	1.19
2,049,500,000	59.60	1.19
2,058,000,000	59.53	1.19
2,066,500,000	59.48	1.18
2,075,000,000	59.50	1.18
2,083,500,000	59.53	1.17
2,092,000,000	59.46	1.17
2,100,500,000	59.61	1.16
2,109,000,000	59.74	1.16
2,117,500,000	59.72	1.16
2,126,000,000	59.67	1.15
2,134,500,000	59.43	1.14
2,143,000,000	59.28	1.14
2,151,500,000	59.19	1.13
2,160,000,000	59.10	1.13
2,168,500,000	59.11	1.12
2,177,000,000	59.02	1.11
2,185,500,000	59.10	1.11
2,194,000,000	59.25	1.10
2,202,500,000	59.37	1.09
2,211,000,000	59.73	1.09
2,219,500,000	60.26	1.08
2,228,000,000	60.67	1.07
2,236,500,000	60.88	1.06
2,245,000,000	61.08	1.05
2,253,500,000	61.47	1.05

2,262,000,000	61.66	1.04
2,270,500,000	61.96	1.03
2,279,000,000	62.02	1.03
2,287,500,000	62.26	1.03
2,296,000,000	62.31	1.03
2,304,500,000	62.40	1.04
2,313,000,000	62.21	1.04
2,321,500,000	62.06	1.05
2,330,000,000	62.01	1.06
2,338,500,000	62.08	1.07
2,347,000,000	62.04	1.08
2,355,500,000	62.15	1.09
2,364,000,000	62.29	1.10
2,372,500,000	62.31	1.11
2,381,000,000	62.12	1.12
2,389,500,000	62.08	1.13
2,398,000,000	61.84	1.14
2,406,500,000	61.91	1.15
2,415,000,000	61.91	1.16
2,423,500,000	62.13	1.16
2,432,000,000	62.21	1.17
2,440,500,000	62.12	1.18
2,449,000,000	61.97	1.19
2,457,500,000	61.79	1.20
2,466,000,000	61.77	1.21
2,474,500,000	61.54	1.22
2,483,000,000	61.20	1.22
2,491,500,000	61.10	1.23
2,500,000,000	61.04	1.24

***End of Calibration Report: Amplifier cert. rev. 1***