



Calibration Laboratory Cert: 5518.01

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

Customer Address: Rental Unit

Certificate #: A24080602DR

Product: Solid State Amplifier

Manufacturer: Amplifier Research
Model: 2W1000
Serial #: 0508376

Notes: Amplifier Range: 20MHz to 1GHz
Power: 2 Watts
CSV Files available upon request

Date of Report: 8/6/2024
Date of Calibration: 8/6/2024
Next Calibration:

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 (%): **38**

Technician: **Dan Raines**

Technician Signature: _____



Calibration Equipment				
Model	Description	Serial Number	Certificate #	Due Date
ZNB 8	Rohde&Schwarz Vect. Netw. Ana.	102017	S220805-021	9/9/2024
ZV-Z21	Calibration Kit (50Ω)	100800	0001A300706445	7/27/2025

Calibration method used: IEC 61000-4-6

VSWR measurements made are not accredited

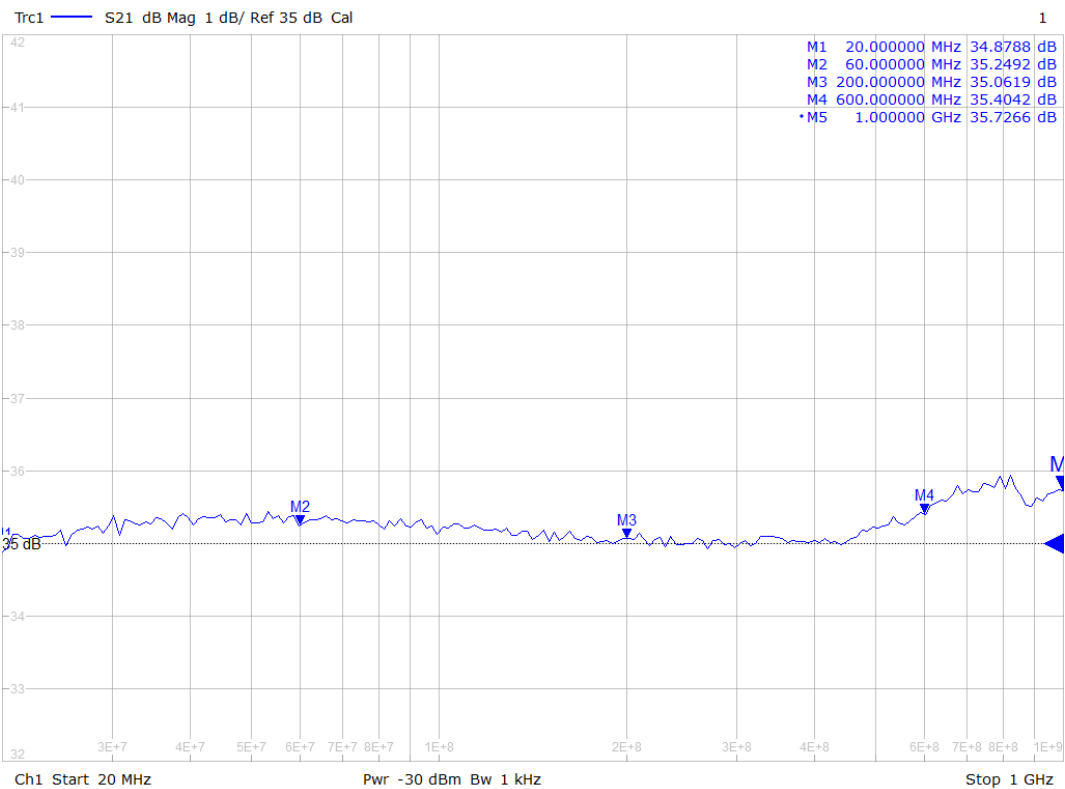
Condition as found:	IN tolerance
Condition as left:	IN tolerance

Measuring Uncertainties	
Insertion Loss	± 0.2 dB
RF Power Level	± 0.3 dB
Power Amplifier Gain Linearity	± 0.44 dB

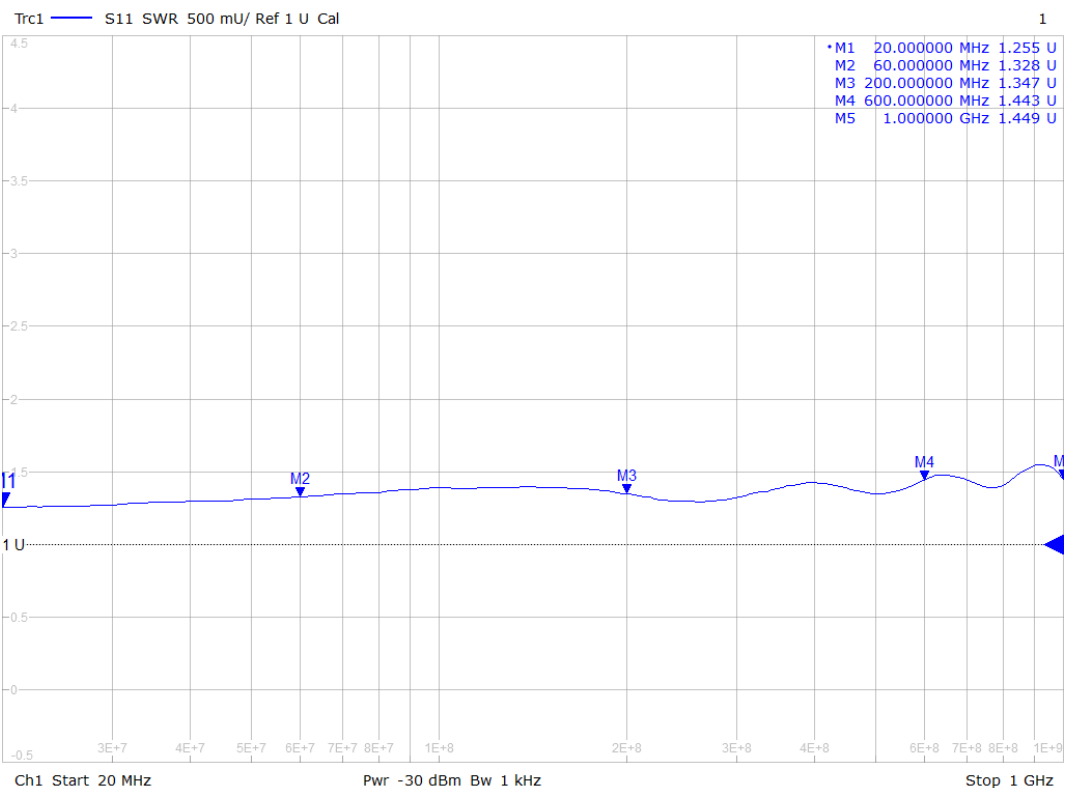
The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95%



Gain Through Band 20MHz to 1GHz



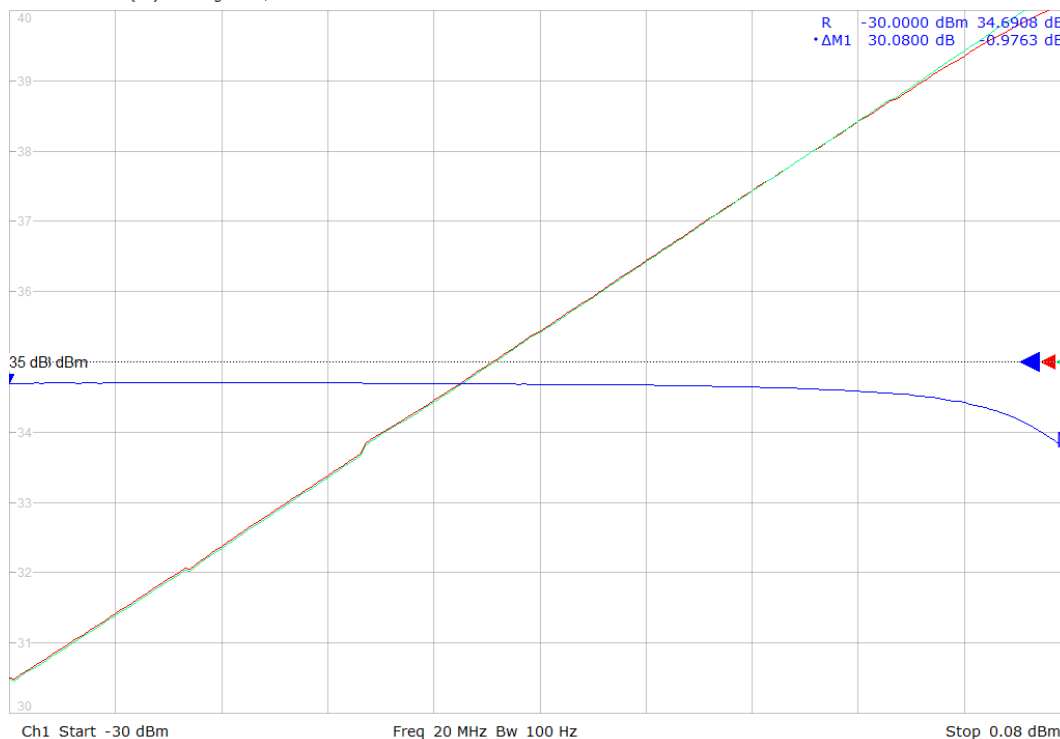
VSWR on Amplifier Input





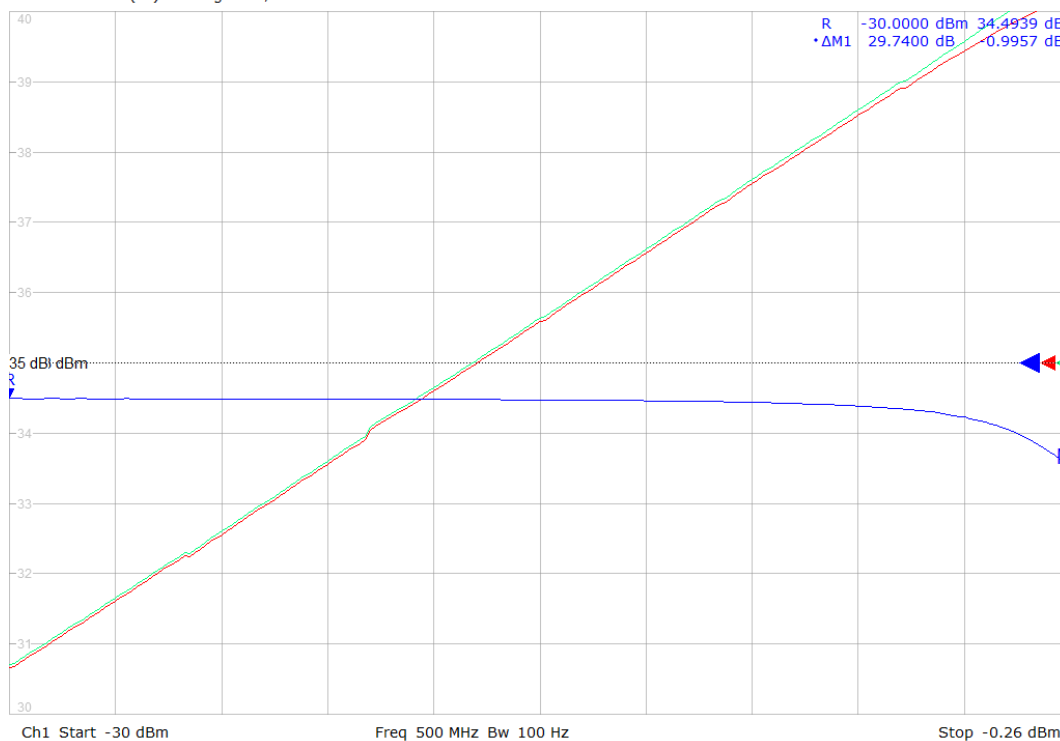
P1dB at 20MHz

Trc1 — S21 dB Mag 1 dB/ Ref 35 dB Offs Trc2 — b2(P1) dB Mag 3 dB/ Ref -21.81 dBm Offs 1
 Trc3 — a1(P1) dB Mag 3 dB/ Ref -56.43 dBm Offs



P1dB at 500MHz

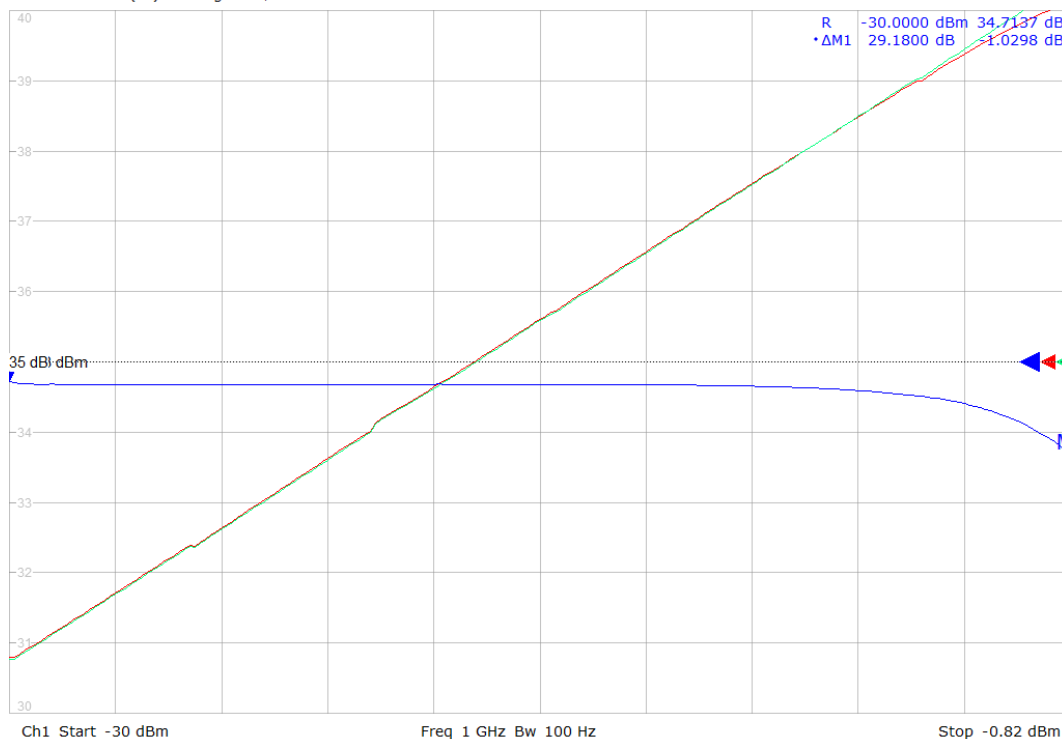
Trc1 — S21 dB Mag 1 dB/ Ref 35 dB Offs Trc2 — b2(P1) dB Mag 3 dB/ Ref -21.81 dBm Offs 1
 Trc3 — a1(P1) dB Mag 3 dB/ Ref -56.43 dBm Offs





P1dB at 1GHz

Trc1 — S21 dB Mag 1 dB/ Ref 35 dB Offs Trc2 — b2(P1) dB Mag 3 dB/ Ref -21.81 dBm Offs 1
 Trc3 — a1(P1) dB Mag 3 dB/ Ref -56.43 dBm Offs



Frequency (Hz)	GAIN (dBm)	VSWR (U)
20000000	34.88	1.25
20395053	34.94	1.25
20797910	35.12	1.26
21208724	35.12	1.25
21627653	35.06	1.26
22054857	35.06	1.26
22490499	35.11	1.26
22934747	35.08	1.26
23387769	35.09	1.26
23849740	35.09	1.26
24320836	35.11	1.26
24801237	35.19	1.26
25291128	34.97	1.26
25790695	35.11	1.26
26300130	35.18	1.26
26819628	35.20	1.26
27349387	35.22	1.26
27889610	35.19	1.27
28440505	35.23	1.27
29002280	35.13	1.27
29575153	35.23	1.27
30159341	35.38	1.27
30755068	35.11	1.27
31362563	35.32	1.28
31982057	35.31	1.28
32613788	35.26	1.28
33257997	35.26	1.28
33914932	35.29	1.29
34584842	35.27	1.29
35267985	35.35	1.29
35964622	35.34	1.29
36675019	35.27	1.29
37399448	35.19	1.29
38138187	35.35	1.29
38891518	35.41	1.29
39659729	35.36	1.30
40443115	35.26	1.30
41241974	35.34	1.30

42056613	35.36	1.30
42887344	35.35	1.30
43734483	35.35	1.30
44598356	35.40	1.30
45479292	35.30	1.30
46377629	35.33	1.30
47293711	35.32	1.30
48227888	35.25	1.31
49180518	35.41	1.31
50151964	35.28	1.31
51142599	35.28	1.31
52152802	35.29	1.31
53182959	35.44	1.31
54233464	35.34	1.32
55304720	35.38	1.32
56397136	35.28	1.32
57511129	35.37	1.32
58647128	35.37	1.32
59805565	35.24	1.33
60986884	35.29	1.33
62191538	35.33	1.33
63419987	35.32	1.33
64672701	35.34	1.34
65950159	35.38	1.34
67252851	35.32	1.34
68581274	35.34	1.34
69935937	35.32	1.34
71317358	35.29	1.35
72726066	35.32	1.35
74162600	35.32	1.35
75627509	35.30	1.35
77121354	35.30	1.35
78644707	35.32	1.35
80198149	35.25	1.35
81782277	35.20	1.36
83397695	35.32	1.37
85045022	35.24	1.37
86724888	35.34	1.37
88437936	35.25	1.37
90184821	35.23	1.38
91966212	35.29	1.38
93782790	35.32	1.38
95635250	35.21	1.38
97524301	35.23	1.39

99450666	35.13	1.39
101415082	35.22	1.39
103418301	35.21	1.39
105461088	35.27	1.38
107544226	35.26	1.38
109668511	35.22	1.38
111834757	35.21	1.38
114043792	35.26	1.39
116296461	35.21	1.39
118593626	35.18	1.39
120936166	35.18	1.39
123324978	35.20	1.39
125760976	35.15	1.39
128245090	35.21	1.39
130778273	35.11	1.39
133361493	35.11	1.39
135995738	35.17	1.39
138682016	35.16	1.39
141421356	35.05	1.39
144214805	35.10	1.39
147063432	35.18	1.39
149968327	35.03	1.39
152930602	35.15	1.39
155951389	35.04	1.39
159031845	35.10	1.39
162173148	35.16	1.39
165376501	35.07	1.38
168643128	35.04	1.38
171974279	35.10	1.38
175371230	35.07	1.38
178835280	35.02	1.38
182367753	35.02	1.37
185970003	35.03	1.37
189643407	35.00	1.36
193389370	35.02	1.36
197209326	35.07	1.35
201104736	35.06	1.35
205077091	35.05	1.34
209127911	35.13	1.33
213258745	35.05	1.32
217471174	34.96	1.32
221766809	35.05	1.31
226147295	35.08	1.31
230614308	34.96	1.30

235169556	35.09	1.30
239814782	34.99	1.30
244551763	34.98	1.30
249382313	35.00	1.30
254308279	34.99	1.30
259331546	35.06	1.29
264454035	35.04	1.29
269677708	34.93	1.30
275004562	35.03	1.30
280436636	35.05	1.30
285976007	34.99	1.30
291624796	35.00	1.31
297385164	34.93	1.32
303259314	34.99	1.33
309249495	35.03	1.33
315357997	34.97	1.34
321587159	35.00	1.35
327939363	35.10	1.36
334417040	35.10	1.36
341022669	35.09	1.37
347758776	35.07	1.39
354627940	35.07	1.39
361632787	35.01	1.40
368776000	35.04	1.41
376060309	35.02	1.41
383488504	35.02	1.42
391063424	35.01	1.42
398787970	35.04	1.43
406665096	35.01	1.42
414697817	35.07	1.42
422889205	35.01	1.41
431242395	35.02	1.40
439760582	34.99	1.40
448447027	35.01	1.39
457305052	35.07	1.37
466338047	35.07	1.37
475549467	35.18	1.36
484942837	35.17	1.35
494521752	35.22	1.35
504289876	35.21	1.35
514250946	35.24	1.35
524408774	35.25	1.35
534767246	35.37	1.36
545330326	35.27	1.37

556102054	35.25	1.38
567086553	35.31	1.39
578288025	35.37	1.41
589710756	35.42	1.43
601359117	35.40	1.44
613237564	35.53	1.46
625350641	35.55	1.47
637702984	35.59	1.48
650299319	35.58	1.48
663144466	35.67	1.47
676243338	35.79	1.46
689600948	35.68	1.45
703222406	35.73	1.44
717112924	35.71	1.43
731277817	35.71	1.41
745722505	35.82	1.40
760452514	35.80	1.39
775473479	35.77	1.39
790791149	35.92	1.40
806411384	35.76	1.41
822340159	35.94	1.44
838583571	35.75	1.47
855147834	35.67	1.50
872039284	35.53	1.51
889264386	35.51	1.53
906829730	35.62	1.54
924742036	35.58	1.55
943008158	35.67	1.54
961635085	35.69	1.52
980629943	35.73	1.49
1000000000	35.73	1.45