Quantic PMI
PLANAR MONOLITHICS

SUMMARY TEST DATA ON HADA-D2002

Customer:
SO No:
Model No: HADA-D2002
Serial No: PL55881/2548

Tested By: JW
Temperature: +25°C (Unless otherwise specified)
Date: 2/9/2026
Drawing No: 27620222 Rev: A2

Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	-40°	+85°C	
1	Frequency Range:	2.0 GHz – 18.0 GHz	2.0 GHz – 18.0 GHz			PMI QA3
2	TSS:	-40 dBm Min	-43.5 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 0.55 dB	± 0.59 dB	± 0.55 dB	
4	Input / Output Characteristics: (93 Ω)	Y = 2150 + 50X [X: Input (dBm), Y: Output (mv)]	Pass	Pass	Pass	
5	Logging Accuracy	±1.5 dB Max (@ +25°C, 10 GHz)* [-36 dBm ≤ INPUT ≤ +4 dBm] ±3.1 dB Max (Note)	-0.3 dB / -0.98 dB @ 10GHZ 0.64 dB / -0.98 dB @ ALL OTHER FREQUENCY	0.66 dB / -1.12 dB	-0.16 dB / -1.9 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	0.31 dB / -0.3 dB	0.49 dB / -0.45 dB	0.63 dB / -0.43 dB	
7	Maximum Input Power (CW):	+23 dBm	Pass	Pass	Pass	
8	Duty Cycle:	100%	Pass	Pass	Pass	
9	Rise Time:	30 ns Max (10% to 90%)	17 ns			
10	Fall Time:	500 ns Max (@ Pulse width 100µs input) (90% to 10%)	108.8 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/ -100mV	111 mV @ +25°c	116 mV @ -40°c	119 mV @ +85°c	

*Notes: Includes Frequency Flatness. Input Power, Temperature Deviation and Deviation for DC Offset. The test shall be performed using RG-62 (or equivalent), 5 meter, 93±0.5 Ohms terminated.

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Email: sales@pmi-rf.com

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PL55881/2548

Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	-40°	+85°C	
12	Input VSWR:	3.0:1 Max @ +23 dBm	1.48:1	NA	NA	PMI QA3
13	Propagation Delay:	60 ns Max	Pass	Pass	Pass	
14	Power Supply:	+12 ± 1VDC @ 125 mA Max -12 ± 1VDC @ 75 mA Max	+12 ± 1VDC @ 120 mA Max -12 ± 1VDC @ 70 mA Max	NA	NA	
15	Warm Up Time:	2 Minutes Max	<2 Minutes	<2 Minutes	<2 Minutes	

QA/QC Approval: K. Klamm

Date: 2·10·26

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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55881
TESTED BY: JWalker
DATE: 11/24/2025

GRAPH #1

PLANAR MONOLITHICS INDUSTRIES
4921 Robert J. Mathews Parkway Suit 1
El Dorado Hills, CA 95762
TEL: 916-542-1401 FAX: 916-265-2597
EMAIL: SALES@PMI-RF.COM

Output Voltage Offset= 0.111 Volts

Frequency		
2 GHz	INTERCEPT (mV)	2126
	SLOPE (mV/dB)	50.3
6 GHz	INTERCEPT (mV)	2160
	SLOPE (mV/dB)	50.1
10 GHz	INTERCEPT (mV)	2127
	SLOPE (mV/dB)	50.5
14 GHz	INTERCEPT (mV)	2129
	SLOPE (mV/dB)	50.1
18 GHz	INTERCEPT (mV)	2168
	SLOPE (mV/dB)	50.2
Flatness +/- dB		
Max Video Output V		
Min Video Output V		

-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
328	569	803	1055	1323	1572	1835	2079	2325	Measured Value (mV)
14	3	-15	-14	2	-1	11	3	-3	Error (mV)
0.27	0.06	-0.29	-0.29	0.04	-0.01	0.21	0.06	-0.05	LINEARITY ERROR (dB)
-0.44	-0.62	-0.94	-0.90	-0.54	-0.56	-0.30	-0.42	-0.50	LOGGING ACCURACY (dB)
363	606	852	1097	1360	1609	1868	2110	2359	Measured Value (mV)
7	0	-5	-11	2	0	8	0	-2	Error (mV)
0.15	0.00	-0.10	-0.21	0.04	0.00	0.17	0.00	-0.04	LINEARITY ERROR (dB)
0.26	0.12	0.04	-0.06	0.20	0.18	0.36	0.20	0.18	LOGGING ACCURACY (dB)
323	566	801	1051	1317	1563	1832	2080	2335	Measured Value (mV)
15	6	-12	-15	-2	-8	8	3	5	Error (mV)
0.30	0.11	-0.24	-0.30	-0.03	-0.17	0.16	0.06	0.11	LINEARITY ERROR (dB)
-0.54	-0.68	-0.98	-0.98	-0.66	-0.74	-0.36	-0.40	-0.30	LOGGING ACCURACY (dB)
334	577	817	1064	1329	1573	1838	2081	2329	Measured Value (mV)
10	2	-8	-12	2	-5	10	2	-1	Error (mV)
0.20	0.05	-0.17	-0.24	0.04	-0.09	0.19	0.04	-0.02	LINEARITY ERROR (dB)
-0.32	-0.46	-0.66	-0.72	-0.42	-0.54	-0.24	-0.38	-0.42	LOGGING ACCURACY (dB)
369	611	856	1100	1363	1614	1882	2126	2358	Measured Value (mV)
9	0	-6	-13	-1	-1	15	8	-11	Error (mV)
0.18	0.00	-0.12	-0.26	-0.03	-0.03	0.31	0.17	-0.22	LINEARITY ERROR (dB)
0.38	0.22	0.12	0.00	0.26	0.28	0.64	0.52	0.16	LOGGING ACCURACY (dB)
0.457	0.448	0.547	0.487	0.457	0.507	0.497	0.467	0.338	
0.369	0.611	0.856	1.100	1.363	1.614	1.882	2.126	2.359	
0.323	0.566	0.801	1.051	1.317	1.563	1.832	2.079	2.325	

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.27	-0.29
LOGGING ACCURACY (dB)	-0.30	-0.94

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.17	-0.21
LOGGING ACCURACY (dB)	0.36	-0.06

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.30	-0.30
LOGGING ACCURACY (dB)	-0.30	-0.98

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.20	-0.24
LOGGING ACCURACY (dB)	-0.24	-0.72

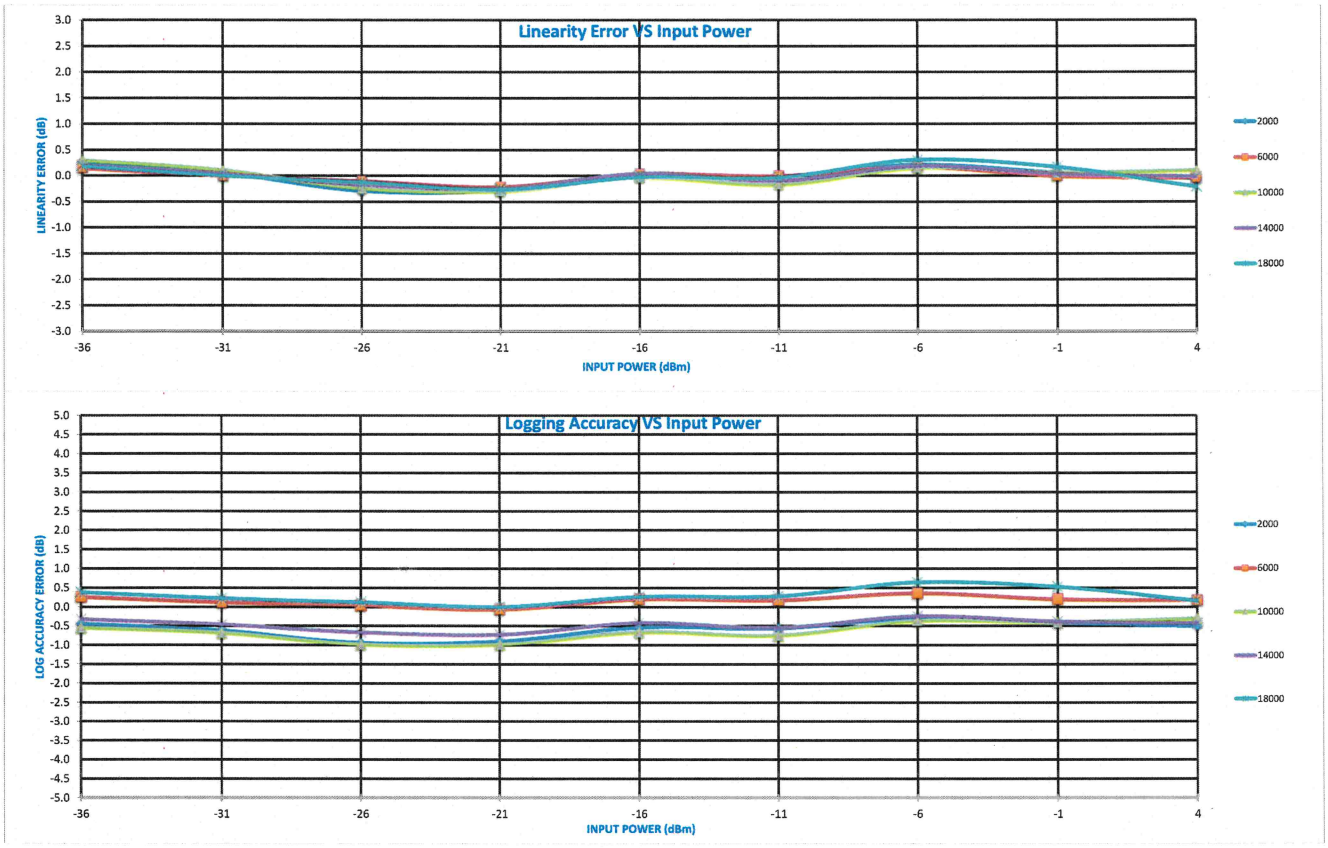
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.31	-0.26
LOGGING ACCURACY (dB)	0.64	0.00

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.31	-0.30

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	0.64	-0.98

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55881
TESTED BY: JWalker



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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55881
TESTED BY: JWalker
DATE: 11/24/2025

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GRAPH #2

Output Voltage Offset= 0.116 Volts

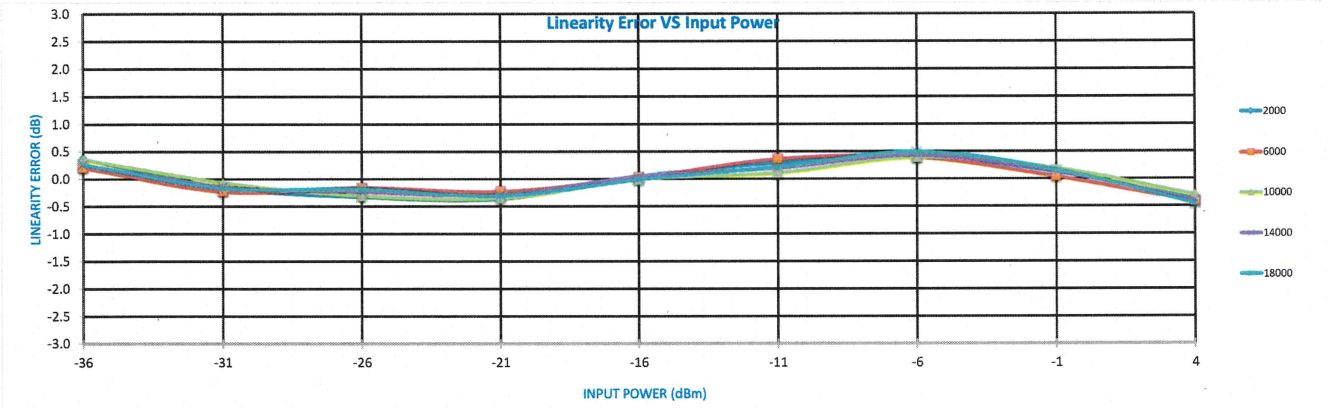
Frequency			-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
2 GHz	INTERCEPT (mV)	2124	351	574	814	1061	1330	1591	1846	2080	2304	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	49.7	18	-8	-16	-18	2	14	21	6	-19	Error (mV)	MAX	MIN
			0.36	-0.15	-0.33	-0.36	0.04	0.29	0.41	0.12	-0.38	LINEARITY ERROR (dB)	0.41	-0.38
			0.02	-0.52	-0.72	-0.78	-0.40	-0.18	-0.08	-0.40	-0.92	LOGGING ACCURACY (dB)	0.02	-0.92
6 GHz	INTERCEPT (mV)	2155	383	609	860	1104	1364	1628	1877	2107	2332	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	49.5	10	-11	-8	-11	1	18	19	2	-21	Error (mV)	MAX	MIN
			0.21	-0.23	-0.16	-0.23	0.03	0.36	0.39	0.04	-0.41	LINEARITY ERROR (dB)	0.39	-0.41
			0.66	0.18	0.20	0.08	0.28	0.56	0.54	0.14	-0.36	LOGGING ACCURACY (dB)	0.66	-0.36
10 GHz	INTERCEPT (mV)	2112	336	564	801	1048	1314	1569	1832	2071	2296	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	49.8	18	-3	-15	-17	-1	5	19	9	-15	Error (mV)	MAX	MIN
			0.36	-0.07	-0.31	-0.35	-0.01	0.11	0.39	0.19	-0.30	LINEARITY ERROR (dB)	0.39	-0.35
			-0.28	-0.72	-0.98	-1.04	-0.72	-0.62	-0.36	-0.58	-1.08	LOGGING ACCURACY (dB)	-0.28	-1.08
14 GHz	INTERCEPT (mV)	2116	346	574	817	1062	1326	1581	1840	2073	2294	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	49.5	13	-7	-12	-14	2	10	21	7	-20	Error (mV)	MAX	MIN
			0.25	-0.14	-0.23	-0.28	0.05	0.20	0.43	0.13	-0.40	LINEARITY ERROR (dB)	0.43	-0.40
			-0.08	-0.52	-0.66	-0.76	-0.48	-0.38	-0.20	-0.54	-1.12	LOGGING ACCURACY (dB)	-0.08	-1.12
18 GHz	INTERCEPT (mV)	2148	372	599	847	1089	1352	1612	1874	2106	2324	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	49.7	13	-8	-9	-15	-1	11	24	8	-23	Error (mV)	MAX	MIN
			0.26	-0.17	-0.18	-0.31	-0.02	0.22	0.49	0.16	-0.45	LINEARITY ERROR (dB)	0.49	-0.45
			0.44	-0.02	-0.06	-0.22	0.04	0.24	0.48	0.12	-0.52	LOGGING ACCURACY (dB)	0.48	-0.52
	Flatness +/- dB		0.473	0.453	0.594	0.564	0.504	0.594	0.453	0.363	0.383			
	Max Video Output V		0.383	0.609	0.860	1.104	1.364	1.628	1.877	2.107	2.332			
	Min Video Output V		0.336	0.564	0.801	1.048	1.314	1.569	1.832	2.071	2.294			

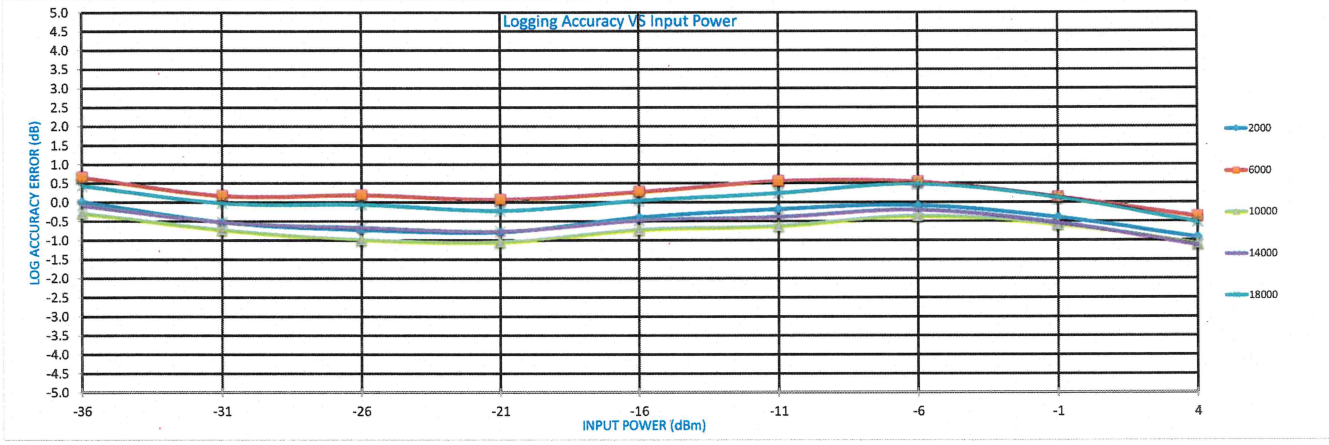
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.49	-0.45

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	0.66	-1.12

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55881
TESTED BY: JWalker





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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55881
TESTED BY: JWalker
DATE: 11/24/2025

GRAPH #3

PLANAR MONOLITHICS INDUSTRIES
4921 Robert J. Mathews Parkway Suit 1
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TEL: 916-542-1401 FAX: 916-265-2597
EMAIL: SALES@PMI-RF.COM

Output Voltage Offset= 0.119 Volts

Frequency		
2 GHz	INTERCEPT (mV)	2077
	SLOPE (mV/dB)	49.9
6 GHz	INTERCEPT (mV)	2119
	SLOPE (mV/dB)	49.9
10 GHz	INTERCEPT (mV)	2082
	SLOPE (mV/dB)	50.3
14 GHz	INTERCEPT (mV)	2080
	SLOPE (mV/dB)	49.8
18 GHz	INTERCEPT (mV)	2113
	SLOPE (mV/dB)	49.7

Flatness +/- dB	0.390	0.441	0.551	0.481	0.501	0.481	0.501	0.441	0.451
Max Video Output V	0.342	0.577	0.811	1.053	1.315	1.555	1.829	2.076	2.337
Min Video Output V	0.303	0.533	0.756	1.005	1.265	1.507	1.779	2.032	2.292

-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
307	535	758	1009	1272	1514	1781	2032	2292	Measured Value (mV)
28	6	-20	-19	-6	-13	4	5	15	Error (mV)
0.56	0.13	-0.41	-0.38	-0.12	-0.27	0.08	0.10	0.31	LINEARITY ERROR (dB)
-0.86	-1.30	-1.84	-1.82	-1.56	-1.72	-1.38	-1.36	-1.16	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.56	-0.41
LOGGING ACCURACY (dB)	-0.86	-1.84

342	577	811	1053	1315	1555	1821	2071	2337	Measured Value (mV)
21	6	-10	-17	-5	-15	1	2	18	Error (mV)
0.41	0.12	-0.20	-0.35	-0.10	-0.30	0.03	0.03	0.36	LINEARITY ERROR (dB)
-0.16	-0.46	-0.78	-0.94	-0.70	-0.90	-0.58	-0.58	-0.26	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.41	-0.35
LOGGING ACCURACY (dB)	-0.16	-0.94

303	533	756	1005	1265	1507	1779	2036	2310	Measured Value (mV)
32	10	-18	-21	-12	-22	-1	5	27	Error (mV)
0.63	0.20	-0.36	-0.41	-0.24	-0.43	-0.02	0.09	0.54	LINEARITY ERROR (dB)
-0.94	-1.34	-1.88	-1.90	-1.70	-1.86	-1.42	-1.28	-0.80	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.63	-0.43
LOGGING ACCURACY (dB)	-0.80	-1.90

311	542	770	1017	1277	1516	1784	2033	2296	Measured Value (mV)
24	6	-15	-17	-6	-16	3	3	17	Error (mV)
0.48	0.12	-0.30	-0.34	-0.12	-0.32	0.06	0.06	0.34	LINEARITY ERROR (dB)
-0.78	-1.16	-1.60	-1.66	-1.46	-1.68	-1.32	-1.34	-1.08	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.48	-0.34
LOGGING ACCURACY (dB)	-0.78	-1.68

341	575	807	1050	1313	1554	1829	2076	2308	Measured Value (mV)
19	4	-13	-18	-4	-12	15	13	-4	Error (mV)
0.37	0.08	-0.26	-0.37	-0.08	-0.23	0.30	0.26	-0.07	LINEARITY ERROR (dB)
-0.18	-0.50	-0.86	-1.00	-0.74	-0.92	-0.42	-0.48	-0.84	LOGGING ACCURACY (dB)

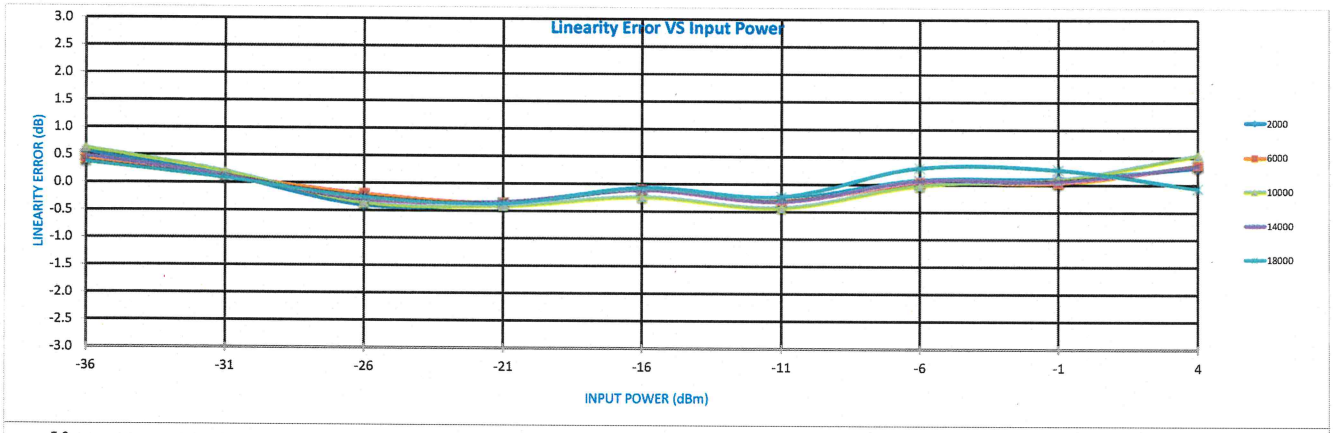
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.37	-0.37
LOGGING ACCURACY (dB)	-0.18	-1.00

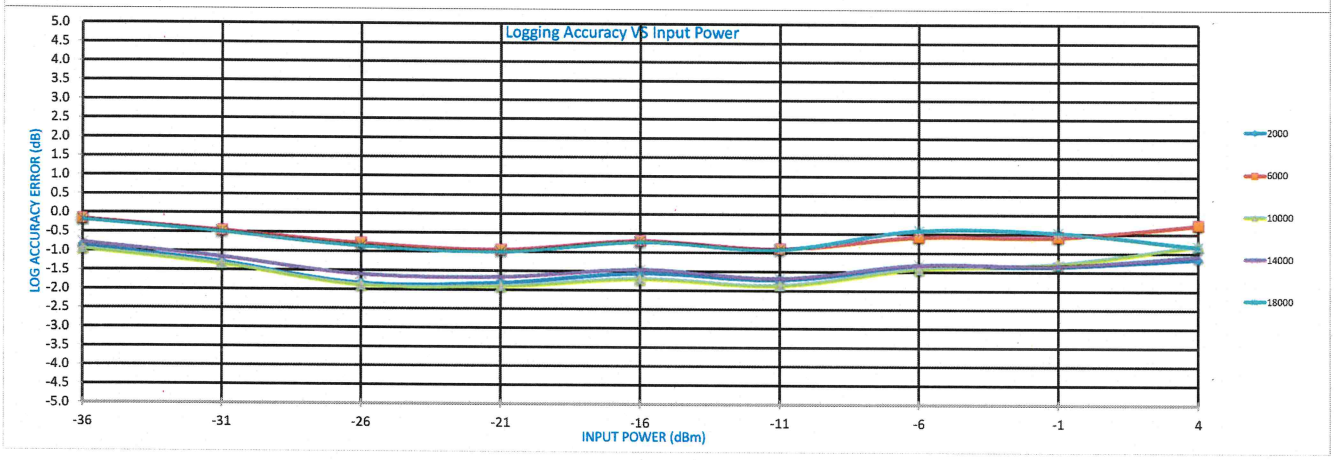
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.63	-0.43

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	-0.16	-1.90

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55881
TESTED BY: JWalker





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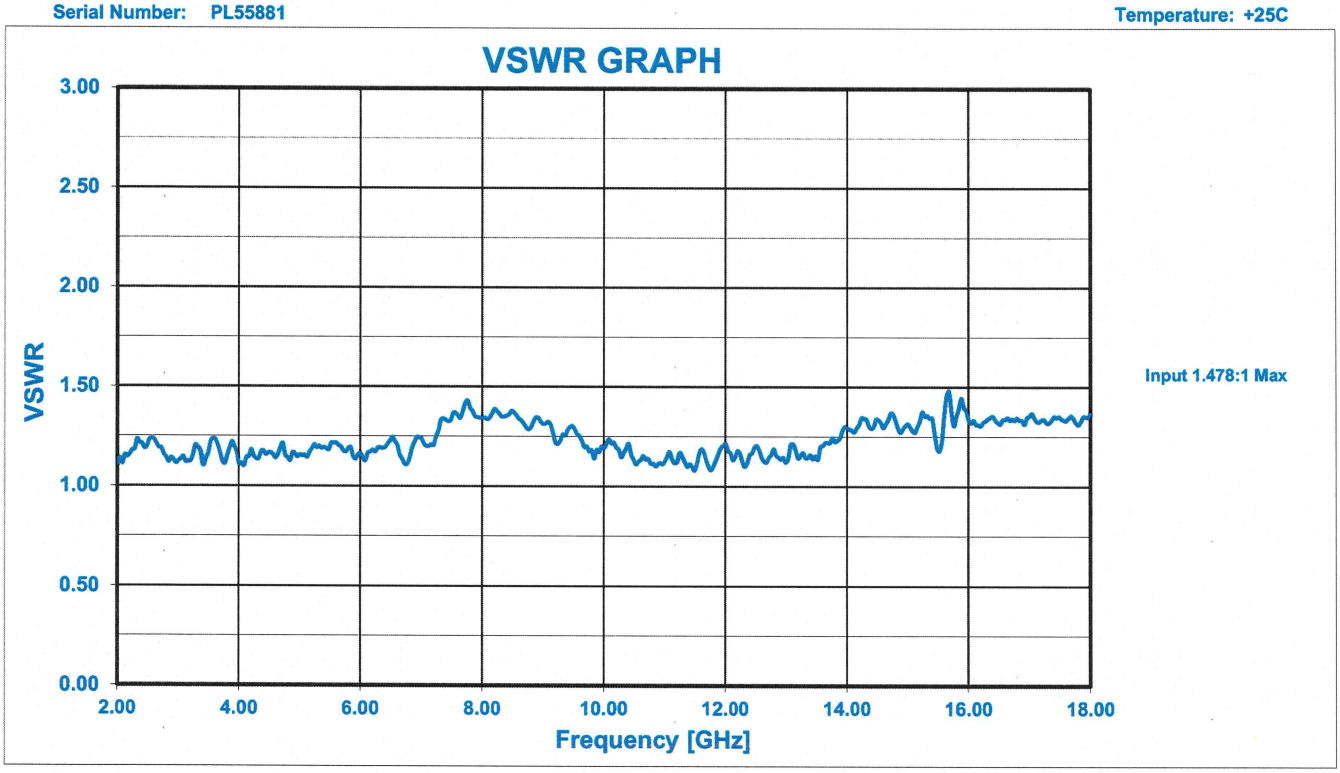
SUMMARY TEST DATA
ON
HADA-D2002

Model Number: HADA-D2002
Serial Number: PL55881

Temperature: +25C

VSWR GRAPH



Input 1.478:1 Max

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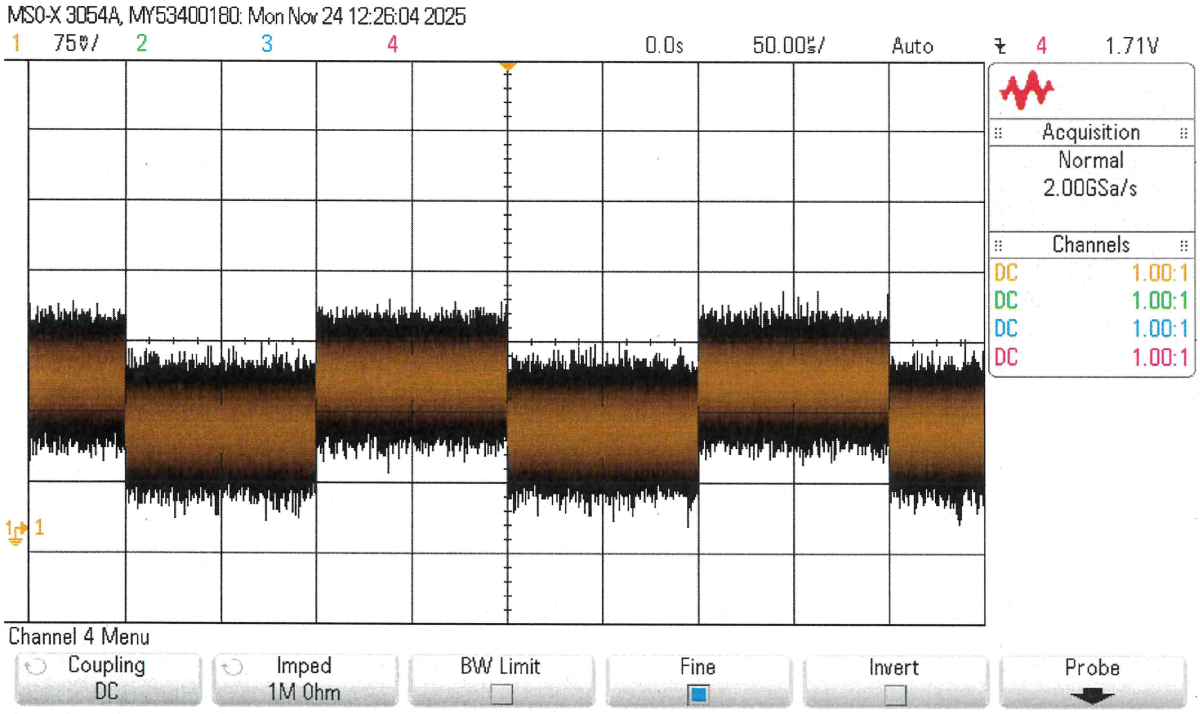
SUMMARY TEST DATA
ON
HADA-D2002

TSS = -43.5 dBm



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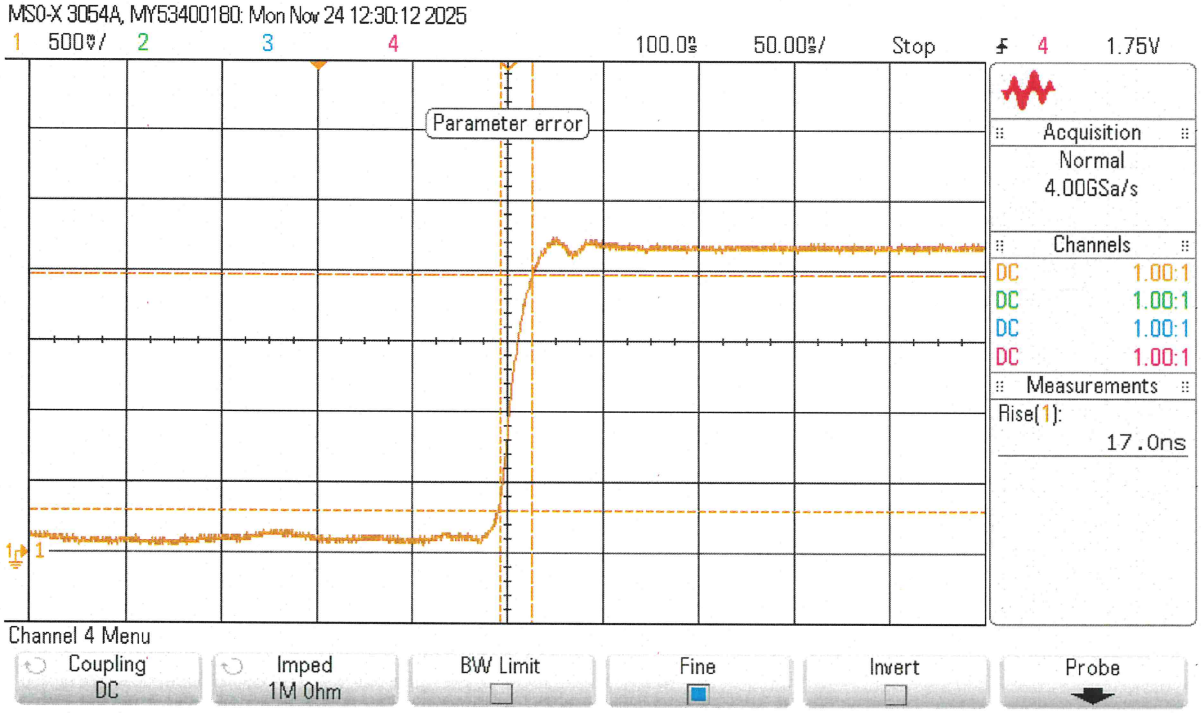
SUMMARY TEST DATA
ON
HADA-D2002

Rise Time = 17 ns



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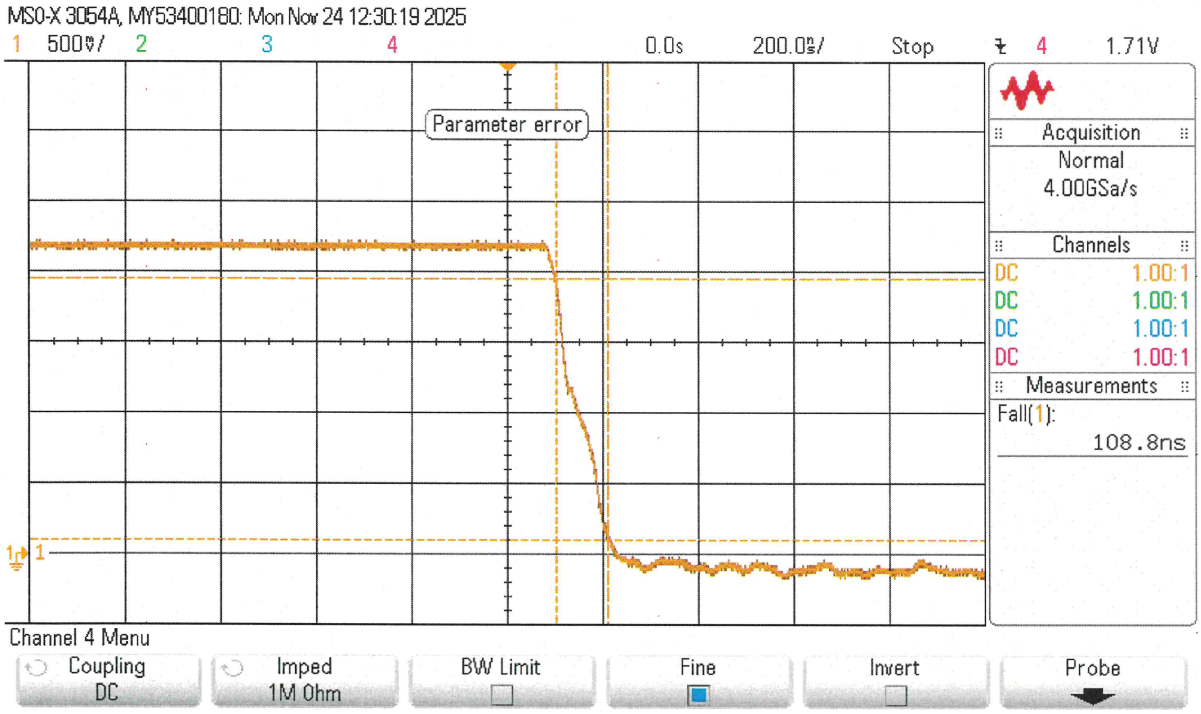
SUMMARY TEST DATA
ON
HADA-D2002

Fall Time = 108.8 ns



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