Quantic PMI
PLANAR MONOLITHICS

SUMMARY TEST DATA ON HADA-D2002

Customer:
SO No:
Model No: HADA-D2002
Serial No: PL55885/2548

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 +25°C	-40°	+85°C	QA QC
1	Frequency Range:	2.0 GHz – 18.0 GHz	2.0 GHz – 18.0 GHz			PMI QA3
2	TSS:	-40 dBm Min	-44 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 1.14 dB	± 1.1 dB	± 0.67 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)	-0.52 dB / -0.96 dB @ 10GHZ 1.56 dB / -0.96 dB @ ALL OTHER FREQUENCY	1.3 dB / -1.82 dB	0.64 dB / -1.04 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	0.26 dB / -0.33 dB	0.48 dB / -0.43 dB	0.39 dB / -0.38 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%)	17.6 ns			
10	Fall Time:	500 ns Max (@ Pulse width 100µs input) (90% to 10%)	105 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/-100 mV	90 mV @ +25°c	99 mV @ -40°c	77 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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PL55885/2548

Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	-40°	+85°C	
12	Input VSWR:	3.0:1 Max @ +23 dBm	1.55:1	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. Harris Date: 2-10-26

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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55885
TESTED BY: JWalker
DATE: 11/24/2025

PLANAR MONOLITHICS INDUSTRIES
4921 Robert J. Mathews Parkway Suit 1
El Dorado Hills, CA 95762
TEL: 916-542-1401 FAX: 916-265-2597
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GRAPH #1

Output Voltage Offset= 0.09 Volts

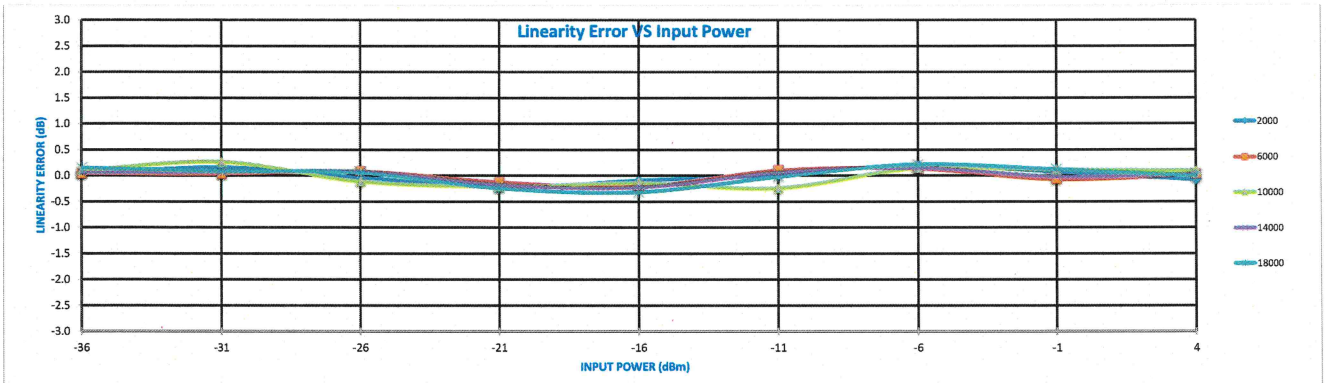
Frequency			-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
2 GHz	INTERCEPT (mV)	2159	356	613	854	1095	1352	1608	1868	2112	2355	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	50.1	1	8	-2	-11	-5	0	10	3	-4	Error (mV)	MAX	MIN
			0.03	0.15	-0.04	-0.23	-0.10	0.01	0.20	0.07	-0.09	LINEARITY ERROR (dB)	0.20	-0.23
			0.12	0.26	0.08	-0.10	0.04	0.16	0.36	0.24	0.10	LOGGING ACCURACY (dB)	0.36	-0.10
6 GHz	INTERCEPT (mV)	2209	416	665	917	1156	1401	1666	1917	2156	2410	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	49.9	2	1	4	-6	-11	5	7	-4	1	Error (mV)	MAX	MIN
			0.03	0.03	0.08	-0.13	-0.21	0.10	0.14	-0.07	0.02	LINEARITY ERROR (dB)	0.14	-0.21
			1.32	1.30	1.34	1.12	1.02	1.32	1.34	1.12	1.20	LOGGING ACCURACY (dB)	1.34	1.02
10 GHz	INTERCEPT (mV)	2116	315	574	806	1052	1306	1552	1822	2071	2321	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	50.2	5	13	-6	-10	-7	-12	7	5	5	Error (mV)	MAX	MIN
			0.10	0.26	-0.11	-0.21	-0.14	-0.24	0.14	0.11	0.09	LINEARITY ERROR (dB)	0.26	-0.24
			-0.70	-0.52	-0.88	-0.96	-0.88	-0.96	-0.56	-0.58	-0.58	LOGGING ACCURACY (dB)	-0.52	-0.96
14 GHz	INTERCEPT (mV)	2206	405	656	907	1145	1393	1658	1913	2155	2408	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	50.1	3	3	4	-9	-11	3	7	-1	1	Error (mV)	MAX	MIN
			0.06	0.06	0.07	-0.18	-0.23	0.06	0.15	-0.02	0.03	LINEARITY ERROR (dB)	0.15	-0.23
			1.10	1.12	1.14	0.90	0.86	1.16	1.26	1.10	1.16	LOGGING ACCURACY (dB)	1.26	0.86
18 GHz	INTERCEPT (mV)	2221	407	657	908	1146	1395	1663	1928	2176	2423	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	50.6	7	4	2	-12	-16	-1	11	6	0	Error (mV)	MAX	MIN
			0.15	0.09	0.05	-0.25	-0.33	-0.03	0.21	0.11	-0.01	LINEARITY ERROR (dB)	0.21	-0.33
			1.14	1.14	1.16	0.92	0.90	1.26	1.56	1.52	1.46	LOGGING ACCURACY (dB)	1.56	0.90
	Flatness +/- dB		1.007	0.907	1.106	1.037	0.947	1.136	1.056	1.046	1.017			
	Max Video Output V		0.416	0.665	0.917	1.156	1.401	1.666	1.928	2.176	2.423			
	Min Video Output V		0.315	0.574	0.806	1.052	1.306	1.552	1.822	2.071	2.321			

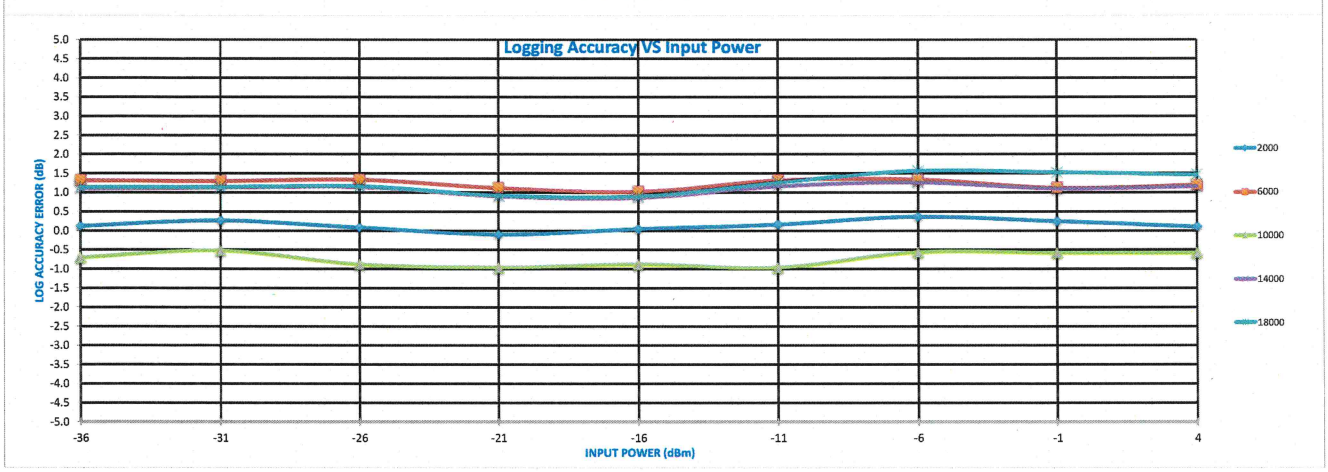
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.26	-0.33

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	1.56	-0.96

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55885
TESTED BY: JWalker





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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55885
TESTED BY: JWalker
DATE: 11/24/2025

GRAPH #2

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= 0.099 Volts

Frequency		
2 GHz	INTERCEPT (mV)	2111
	SLOPE (mV/dB)	49
6 GHz	INTERCEPT (mV)	2157
	SLOPE (mV/dB)	48.8
10 GHz	INTERCEPT (mV)	2072
	SLOPE (mV/dB)	49
14 GHz	INTERCEPT (mV)	2150
	SLOPE (mV/dB)	49
18 GHz	INTERCEPT (mV)	2164
	SLOPE (mV/dB)	49.6
	Flatness +/- dB	
	Max Video Output V	
	Min Video Output V	

-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
366	585	827	1064	1317	1589	1838	2066	2292	Measured Value (mV)
18	-7	-10	-18	-10	17	21	4	-15	Error (mV)
0.38	-0.15	-0.21	-0.37	-0.21	0.35	0.43	0.09	-0.30	LINEARITY ERROR (dB)
0.32	-0.30	-0.46	-0.72	-0.66	-0.22	-0.24	-0.68	-1.16	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.43	-0.37
LOGGING ACCURACY (dB)	0.32	-1.16

415	634	882	1123	1366	1643	1884	2103	2340
14	-11	-7	-10	-11	22	20	-5	-12
0.28	-0.23	-0.14	-0.20	-0.22	0.46	0.40	-0.11	-0.25
1.30	0.68	0.64	0.46	0.32	0.86	0.68	0.06	-0.20

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.46	-0.25
LOGGING ACCURACY (dB)	1.30	-0.20

332	552	785	1022	1275	1535	1798	2034	2259
24	-1	-13	-21	-13	2	20	11	-9
0.48	-0.03	-0.27	-0.43	-0.27	0.04	0.41	0.23	-0.17
-0.36	-0.96	-1.30	-1.56	-1.50	-1.30	-1.04	-1.32	-1.82

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.48	-0.43
LOGGING ACCURACY (dB)	-0.36	-1.82

401	620	869	1107	1353	1629	1876	2099	2334
16	-10	-6	-13	-12	19	21	-2	-12
0.33	-0.21	-0.13	-0.27	-0.25	0.38	0.42	-0.03	-0.24
1.02	0.40	0.38	0.14	0.06	0.58	0.52	-0.02	-0.32

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.42	-0.27
LOGGING ACCURACY (dB)	1.02	-0.32

402	621	868	1106	1352	1631	1890	2114	2357
22	-7	-8	-17	-19	12	23	-1	-5
0.44	-0.14	-0.15	-0.35	-0.39	0.24	0.47	-0.01	-0.11
1.04	0.42	0.36	0.12	0.04	0.62	0.80	0.28	0.14

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.47	-0.39
LOGGING ACCURACY (dB)	1.04	0.04

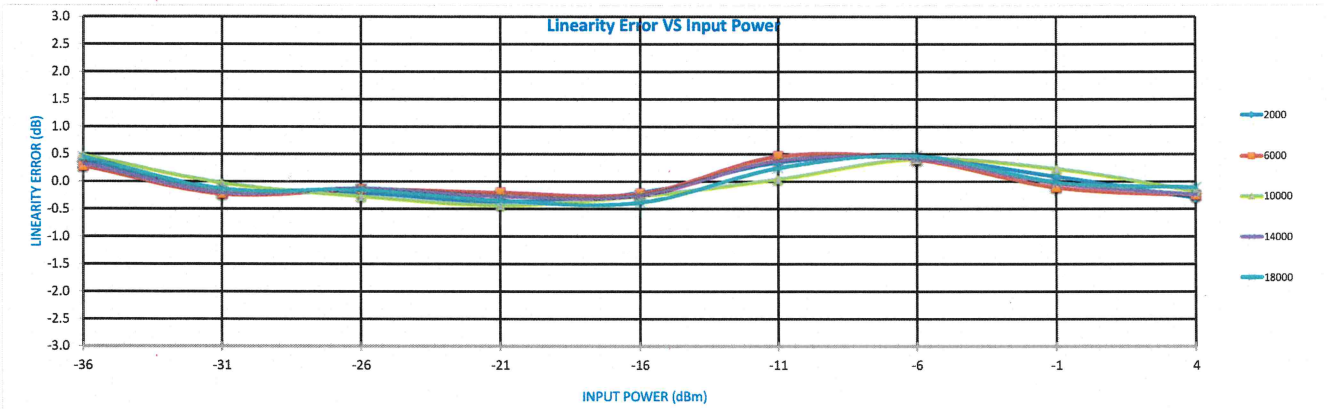
0.846	0.836	0.989	1.029	0.927	1.101	0.938	0.815	0.999
0.415	0.634	0.882	1.123	1.366	1.643	1.890	2.114	2.357
0.332	0.552	0.785	1.022	1.275	1.535	1.798	2.034	2.259

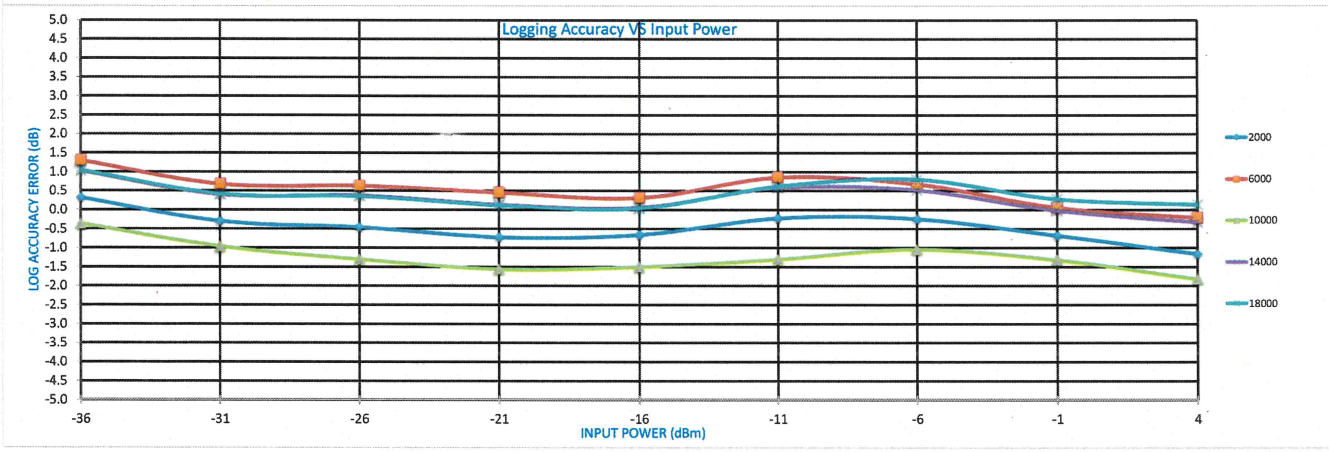
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.48	-0.43

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	1.30	-1.82

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55885
TESTED BY: JWalker





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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55885
TESTED BY: JWalker
DATE: 11/24/2025

GRAPH #3

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

Output Voltage Offset= 0.077 Volts

Frequency		
2 GHz	INTERCEPT (mV)	2114
	SLOPE (mV/dB)	50.2
6 GHz	INTERCEPT (mV)	2170
	SLOPE (mV/dB)	50
10 GHz	INTERCEPT (mV)	2132
	SLOPE (mV/dB)	50.5
14 GHz	INTERCEPT (mV)	2159
	SLOPE (mV/dB)	50.1
18 GHz	INTERCEPT (mV)	2165
	SLOPE (mV/dB)	50.4
	Flatness +/- dB	
	Max Video Output V	
	Min Video Output V	

-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
312	574	807	1048	1304	1548	1816	2069	2324	Measured Value (mV)
4	15	-3	-12	-7	-14	3	5	9	Error (mV)
0.08	0.30	-0.05	-0.25	-0.15	-0.28	0.06	0.10	0.18	LINEARITY ERROR (dB)
-0.76	-0.52	-0.86	-1.04	-0.92	-1.04	-0.68	-0.62	-0.52	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.30	-0.28
LOGGING ACCURACY (dB)	-0.52	-1.04

373	630	874	1109	1357	1609	1869	2122	2382	Measured Value (mV)
4	11	5	-10	-12	-10	-1	2	12	Error (mV)
0.07	0.21	0.09	-0.21	-0.25	-0.21	-0.01	0.05	0.25	LINEARITY ERROR (dB)
0.46	0.60	0.48	0.18	0.14	0.18	0.38	0.44	0.64	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.25	-0.25
LOGGING ACCURACY (dB)	0.64	0.14

321	583	817	1056	1311	1557	1827	2086	2354	Measured Value (mV)
8	18	-1	-15	-13	-19	-2	4	20	Error (mV)
0.16	0.35	-0.02	-0.29	-0.25	-0.38	-0.04	0.09	0.39	LINEARITY ERROR (dB)
-0.58	-0.34	-0.66	-0.88	-0.78	-0.86	-0.46	-0.28	0.08	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.39	-0.38
LOGGING ACCURACY (dB)	0.08	-0.88

359	617	860	1095	1346	1597	1859	2113	2371	Measured Value (mV)
4	11	4	-12	-11	-11	0	4	11	Error (mV)
0.08	0.23	0.07	-0.24	-0.23	-0.22	0.01	0.07	0.22	LINEARITY ERROR (dB)
0.18	0.34	0.20	-0.10	-0.08	-0.06	0.18	0.26	0.42	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.23	-0.24
LOGGING ACCURACY (dB)	0.42	-0.10

358	616	857	1092	1345	1598	1873	2129	2367	Measured Value (mV)
6	12	1	-16	-14	-13	10	14	0	Error (mV)
0.12	0.24	0.03	-0.31	-0.29	-0.26	0.19	0.28	0.00	LINEARITY ERROR (dB)
0.16	0.32	0.14	-0.16	-0.10	-0.04	0.46	0.58	0.34	LOGGING ACCURACY (dB)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.28	-0.31
LOGGING ACCURACY (dB)	0.58	-0.16

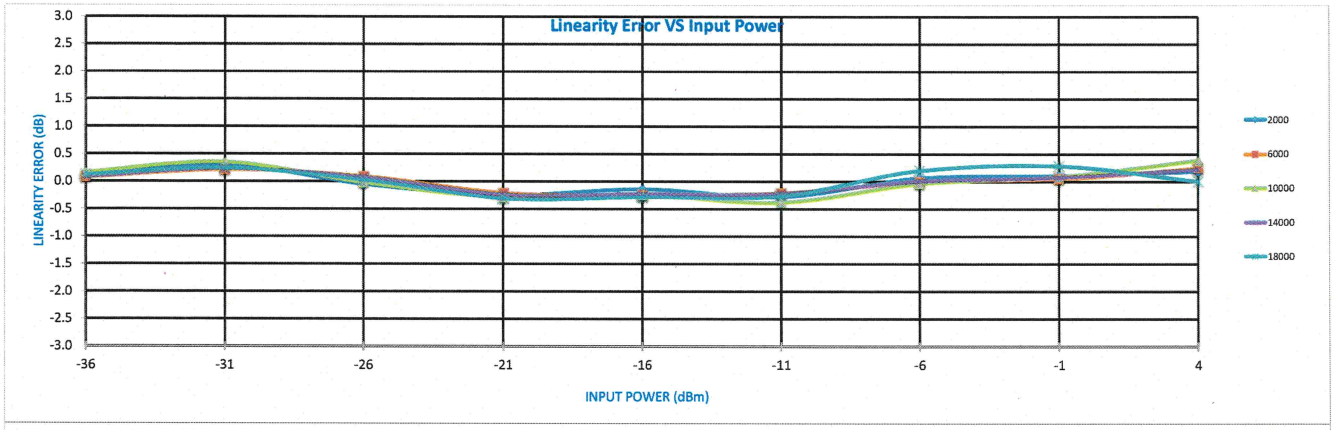
0.607	0.557	0.667	0.607	0.527	0.607	0.567	0.597	0.577
0.373	0.630	0.874	1.109	1.357	1.609	1.873	2.129	2.382
0.312	0.574	0.807	1.048	1.304	1.548	1.816	2.069	2.324

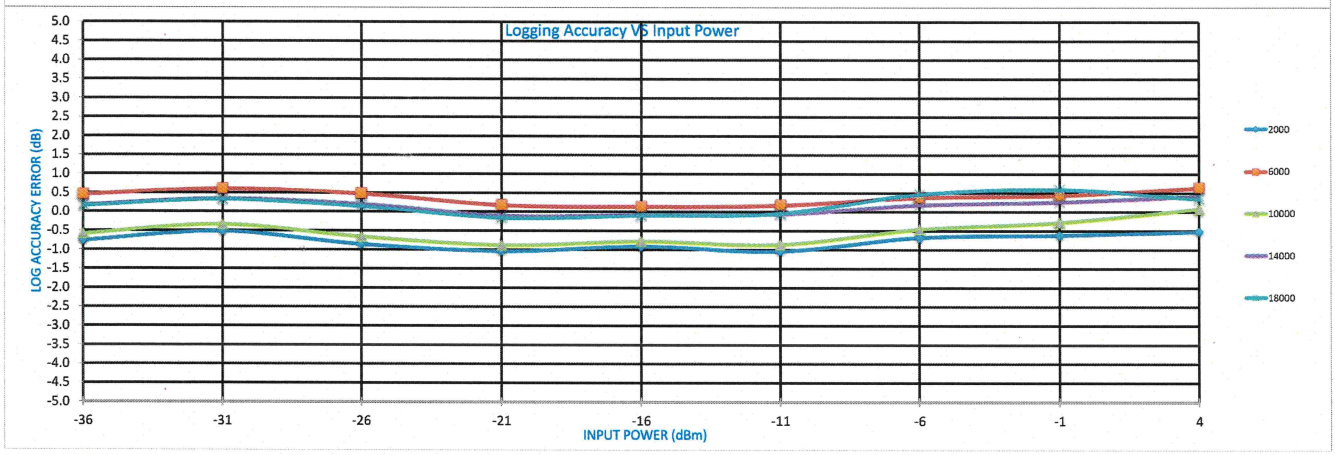
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.39	-0.38

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	0.64	-1.04

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55885
TESTED BY: JWalker





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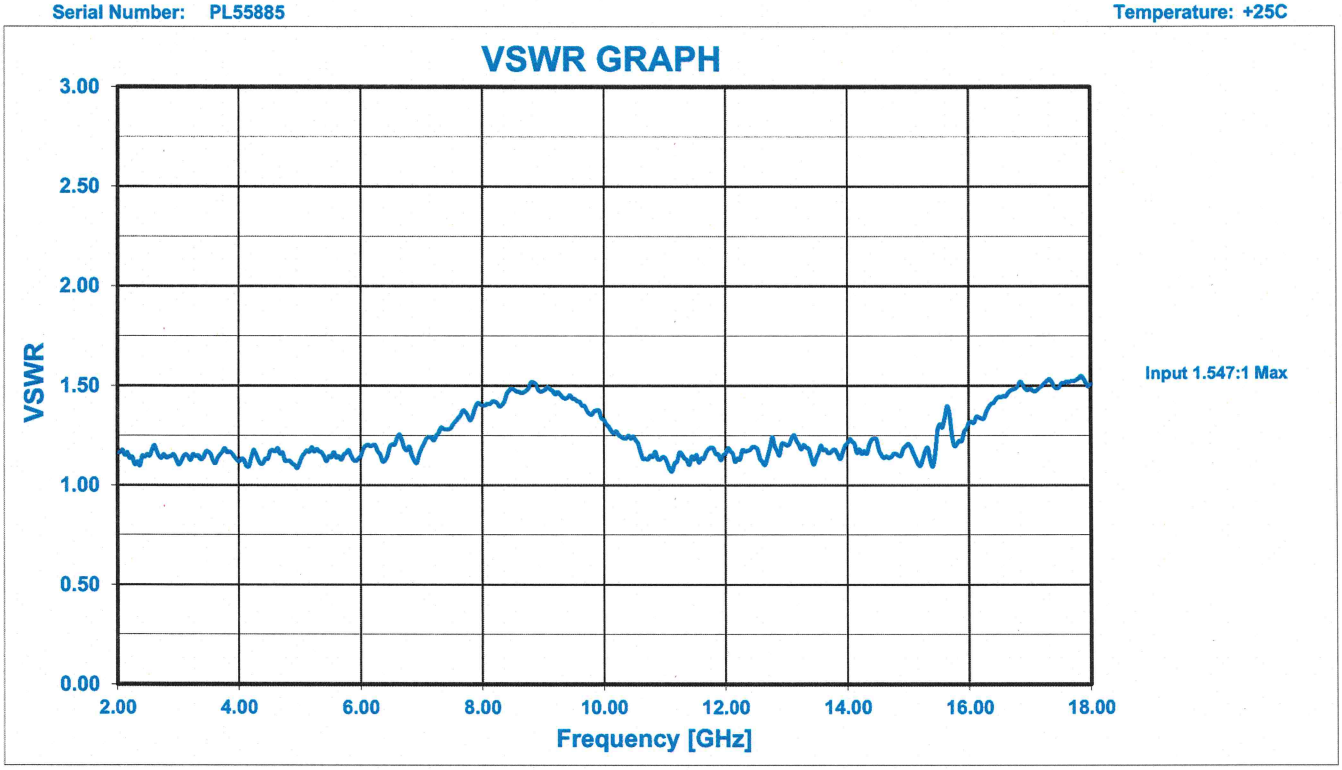
SUMMARY TEST DATA
ON
HADA-D2002

Model Number: HADA-D2002
Serial Number: PL55885

Temperature: +25C

VSWR GRAPH



Input 1.547:1 Max

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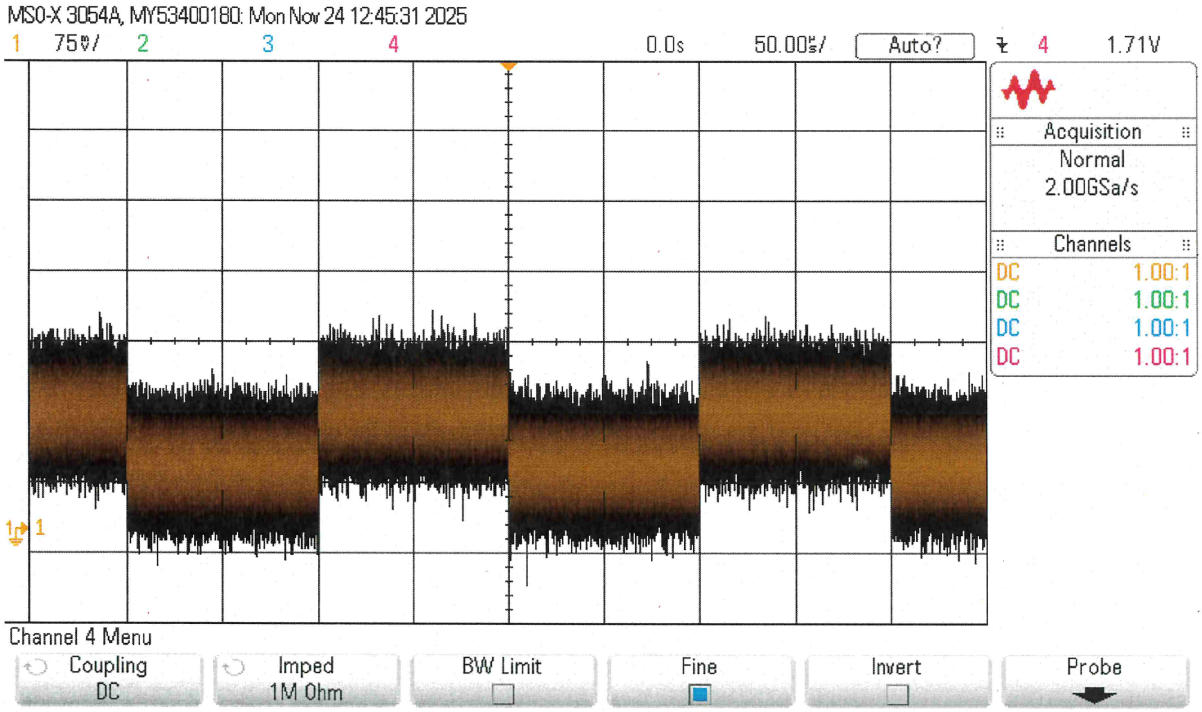
SUMMARY TEST DATA
ON
HADA-D2002

TSS = -44 dBm



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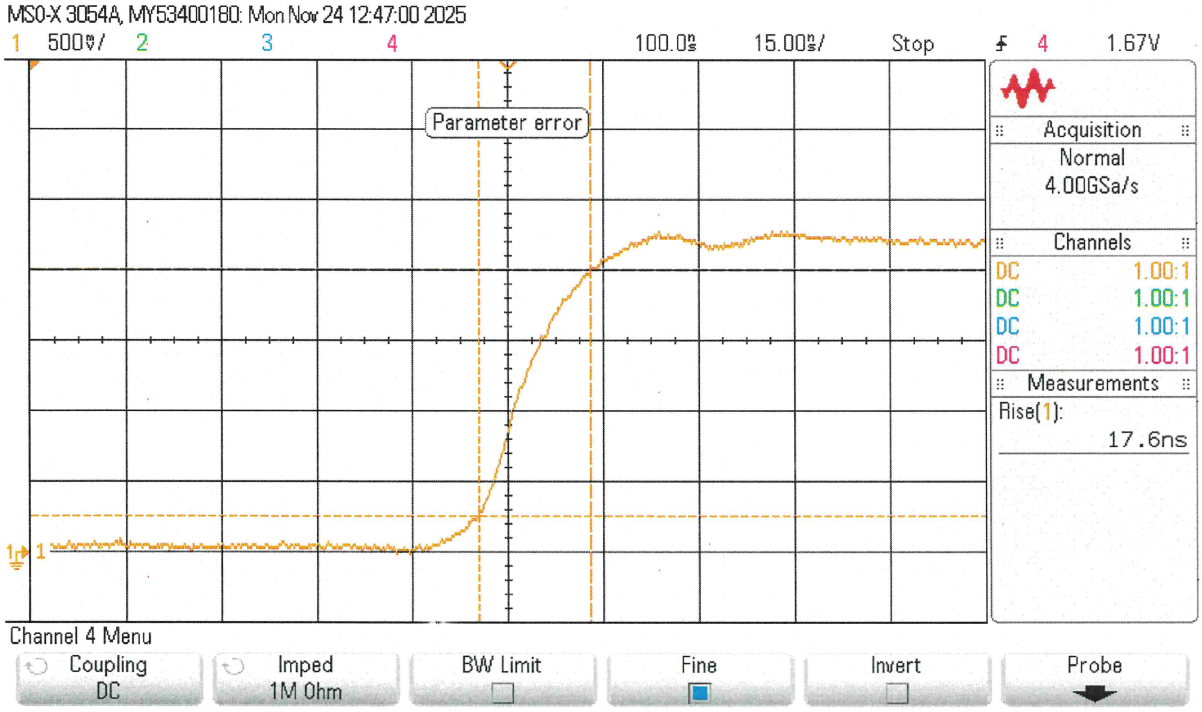
SUMMARY TEST DATA
ON
HADA-D2002

Rise Time = 17.6 ns



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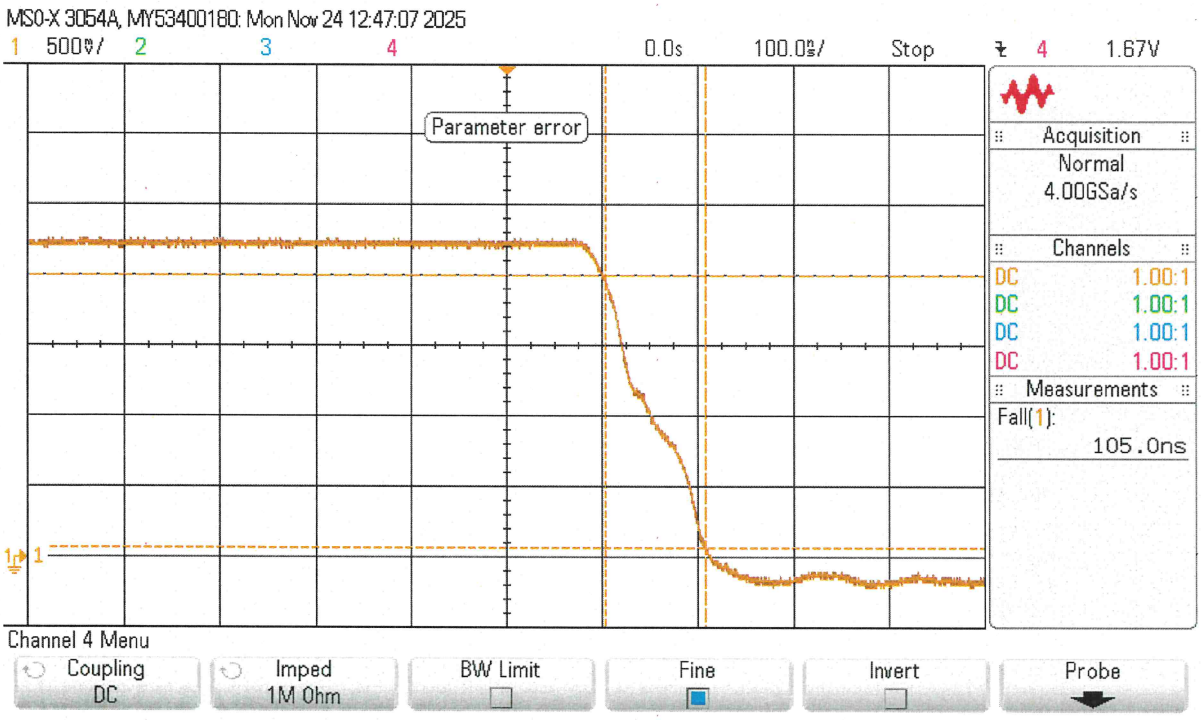
SUMMARY TEST DATA
ON
HADA-D2002

Fall Time = 105 ns



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