Quantic PMI
PLANAR MONOLITHICS

SUMMARY TEST DATA ON HADA-D2002

Customer:
SO No:
Model No: HADA-D2002
Serial No: PL55883/2548

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	-42.9 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 0.61 dB	± 0.65 dB	± 0.63 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)	0.8 dB / -0.14 dB @ 10GHZ 1.74 dB / -0.14 dB @ ALL OTHER FREQUENCY	1.38 dB / -0.4 dB	1.06 dB / -0.86 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0. 75dB Max @ -40°C to +85°C	0.25 dB / -0.31 dB	0.36 dB / -0.42 dB	0.55 dB / -0.5 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%)	16.8 ns			
10	Fall Time:	500 ns Max (@ Pulse width 100µs input) (90% to 10%)	103.3 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/-100 mV	112 mV @ +25°c	78 mV @ -40°c	115 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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SUMMARY TEST DATA
ON
HADA-D2002

PL55883/2548

Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	-40°	+85°C	
12	Input VSWR:	3.0:1 Max @ +23 dBm	1.46:1	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: PL55883
TESTED BY: JWalker
DATE: 11/24/2025

PLANAR MONOLITHICS INDUSTRIES
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GRAPH #1

Output Voltage Offset= 0.112 Volts

Frequency			-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
2 GHz	INTERCEPT (mV)	2186	359	620	864	1112	1374	1627	1889	2136	2387	Measured Value (mV)
	SLOPE (mV/dB)	50.8	0	7	-3	-8	0	-1	7	1	-2	Error (mV)
			0.00	0.14	-0.05	-0.17	0.00	-0.02	0.14	0.01	-0.04	LINEARITY ERROR (dB)
			0.18	0.40	0.28	0.24	0.48	0.54	0.78	0.72	0.74	LOGGING ACCURACY (dB)
6 GHz	INTERCEPT (mV)	2218	398	659	912	1155	1408	1663	1920	2165	2419	Measured Value (mV)
	SLOPE (mV/dB)	50.4	-5	4	5	-4	-3	0	5	-2	0	Error (mV)
			-0.09	0.09	0.10	-0.08	-0.06	0.00	0.10	-0.05	-0.01	LINEARITY ERROR (dB)
			0.96	1.18	1.24	1.10	1.16	1.26	1.40	1.30	1.38	LOGGING ACCURACY (dB)
10 GHz	INTERCEPT (mV)	2178	343	608	850	1099	1358	1606	1875	2129	2390	Measured Value (mV)
	SLOPE (mV/dB)	51	2	11	-2	-8	-4	-11	3	2	7	Error (mV)
			0.03	0.22	-0.03	-0.15	-0.08	-0.22	0.05	0.03	0.15	LINEARITY ERROR (dB)
			-0.14	0.16	0.00	-0.02	0.16	0.12	0.50	0.58	0.80	LOGGING ACCURACY (dB)
14 GHz	INTERCEPT (mV)	2204	364	628	877	1122	1380	1631	1901	2154	2415	Measured Value (mV)
	SLOPE (mV/dB)	51.1	1	9	3	-8	-6	-10	4	1	7	Error (mV)
			0.02	0.18	0.05	-0.16	-0.11	-0.20	0.08	0.02	0.13	LINEARITY ERROR (dB)
			0.28	0.56	0.54	0.44	0.60	0.62	1.02	1.08	1.30	LOGGING ACCURACY (dB)
18 GHz	INTERCEPT (mV)	2224	366	631	877	1123	1382	1638	1921	2181	2437	Measured Value (mV)
	SLOPE (mV/dB)	51.8	7	13	0	-13	-13	-16	8	9	6	Error (mV)
			0.13	0.25	0.00	-0.25	-0.25	-0.31	0.15	0.17	0.12	LINEARITY ERROR (dB)
			0.32	0.62	0.54	0.46	0.64	0.76	1.42	1.62	1.74	LOGGING ACCURACY (dB)
	Flatness +/- dB		0.539	0.500	0.608	0.549	0.490	0.559	0.451	0.510	0.490	
	Max Video Output V		0.398	0.659	0.912	1.155	1.408	1.663	1.921	2.181	2.437	
	Min Video Output V		0.343	0.608	0.850	1.099	1.358	1.606	1.875	2.129	2.387	

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.14	-0.17
LOGGING ACCURACY (dB)	0.78	0.18

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.10	-0.09
LOGGING ACCURACY (dB)	1.40	0.96

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.22	-0.22
LOGGING ACCURACY (dB)	0.80	-0.14

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.18	-0.20
LOGGING ACCURACY (dB)	1.30	0.28

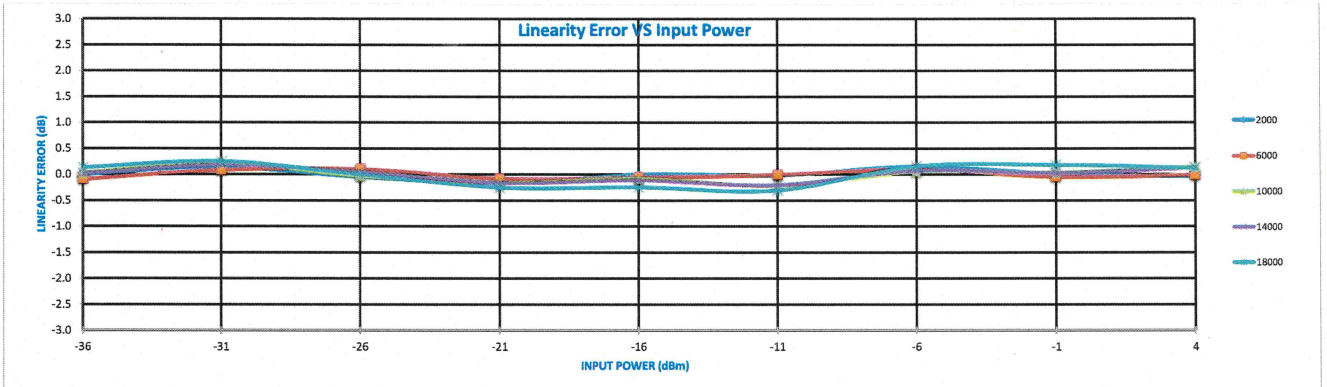
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.25	-0.31
LOGGING ACCURACY (dB)	1.74	0.32

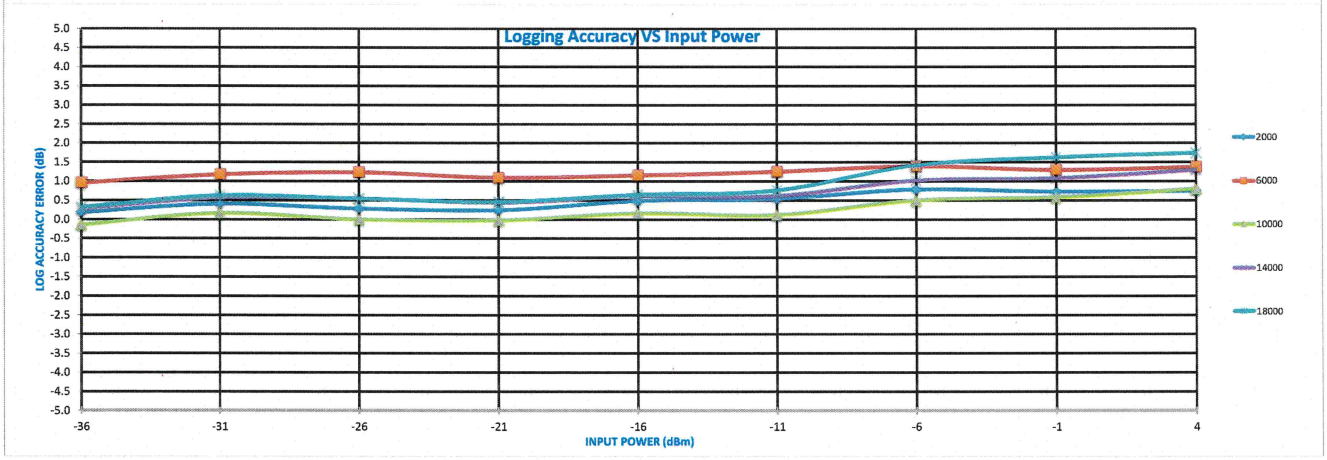
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.25	-0.31

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	1.74	-0.14

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55883
TESTED BY: JWalker





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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55883
TESTED BY: JWalker
DATE: 11/24/2025

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GRAPH #2

Output Voltage Offset= 0.078 Volts

Frequency		
2 GHz	INTERCEPT (mV)	2172
	SLOPE (mV/dB)	50.4
6 GHz	INTERCEPT (mV)	2201
	SLOPE (mV/dB)	50
10 GHz	INTERCEPT (mV)	2159
	SLOPE (mV/dB)	50.7
14 GHz	INTERCEPT (mV)	2181
	SLOPE (mV/dB)	50.7
18 GHz	INTERCEPT (mV)	2203
	SLOPE (mV/dB)	51.4
Flatness +/- dB		
Max Video Output V		
Min Video Output V		

-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
353	610	861	1107	1366	1633	1888	2123	2353	Measured Value (mV)
-5	0	-1	-7	0	15	18	1	-21	Error (mV)
-0.10	0.00	-0.02	-0.14	0.00	0.30	0.36	0.02	-0.42	LINEARITY ERROR (dB)
0.06	0.20	0.22	0.14	0.32	0.66	0.76	0.46	0.06	LOGGING ACCURACY (dB)
392	648	908	1151	1400	1669	1918	2148	2381	Measured Value (mV)
-10	-4	6	-1	-2	17	17	-3	-20	Error (mV)
-0.20	-0.08	0.12	-0.02	-0.03	0.35	0.33	-0.07	-0.41	LINEARITY ERROR (dB)
0.84	0.96	1.16	1.02	1.00	1.38	1.36	0.96	0.62	LOGGING ACCURACY (dB)
330	594	842	1089	1347	1606	1871	2113	2347	Measured Value (mV)
-5	5	0	-6	-2	4	16	4	-15	Error (mV)
-0.11	0.10	0.00	-0.13	-0.04	0.08	0.31	0.08	-0.30	LINEARITY ERROR (dB)
-0.40	-0.12	-0.16	-0.22	-0.06	0.12	0.42	0.26	-0.06	LOGGING ACCURACY (dB)
351	612	868	1112	1367	1630	1893	2133	2369	Measured Value (mV)
-6	2	4	-5	-4	6	16	2	-15	Error (mV)
-0.12	0.03	0.08	-0.10	-0.07	0.12	0.31	0.05	-0.30	LINEARITY ERROR (dB)
0.02	0.24	0.36	0.24	0.34	0.60	0.86	0.66	0.38	LOGGING ACCURACY (dB)
353	615	869	1113	1369	1637	1913	2157	2400	Measured Value (mV)
1	6	3	-11	-12	-1	18	5	-9	Error (mV)
0.01	0.11	0.05	-0.21	-0.23	-0.01	0.35	0.10	-0.18	LINEARITY ERROR (dB)
0.06	0.30	0.38	0.26	0.38	0.74	1.26	1.14	1.00	LOGGING ACCURACY (dB)
0.612	0.533	0.652	0.612	0.523	0.622	0.464	0.435	0.523	
0.392	0.648	0.908	1.151	1.400	1.669	1.918	2.157	2.400	
0.330	0.594	0.842	1.089	1.347	1.606	1.871	2.113	2.347	

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.36	-0.42
LOGGING ACCURACY (dB)	0.76	0.06

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.35	-0.41
LOGGING ACCURACY (dB)	1.38	0.62

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.31	-0.30
LOGGING ACCURACY (dB)	0.42	-0.40

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.31	-0.30
LOGGING ACCURACY (dB)	0.86	0.02

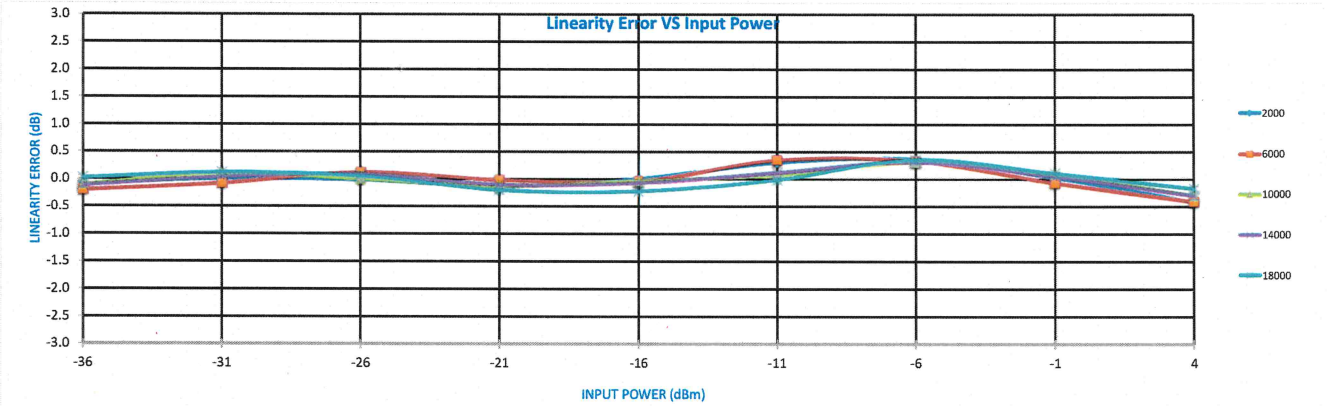
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.35	-0.23
LOGGING ACCURACY (dB)	1.26	0.06

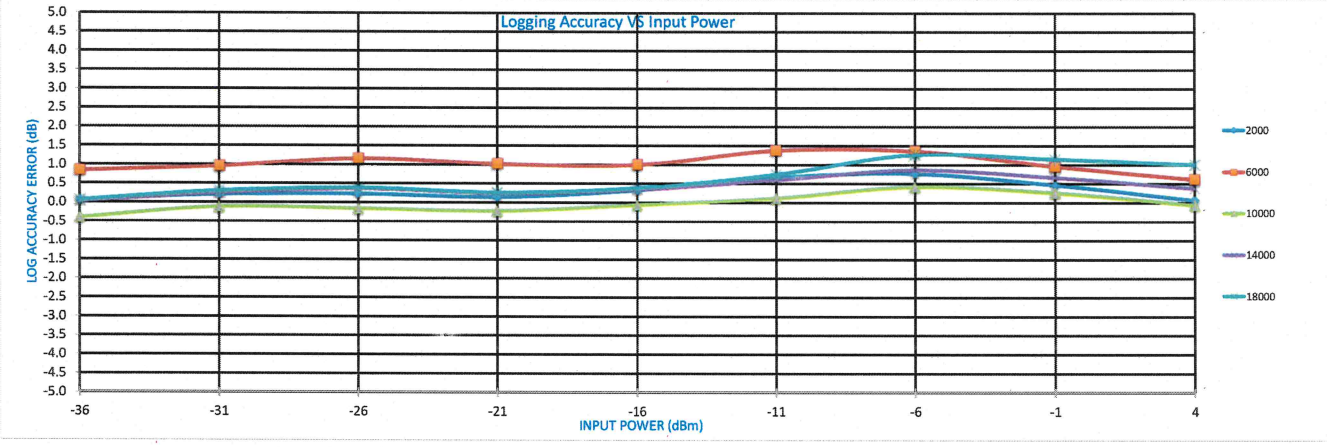
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.36	-0.42

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	1.38	-0.40

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55883
TESTED BY: JWalker





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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55883
TESTED BY: JWalker
DATE: 11/24/2025

GRAPH #3

PLANAR MONOLITHICS INDUSTRIES
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El Dorado Hills, CA 95762
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EMAIL: SALES@PMI-RF.COM

Output Voltage Offset= 0.115 Volts

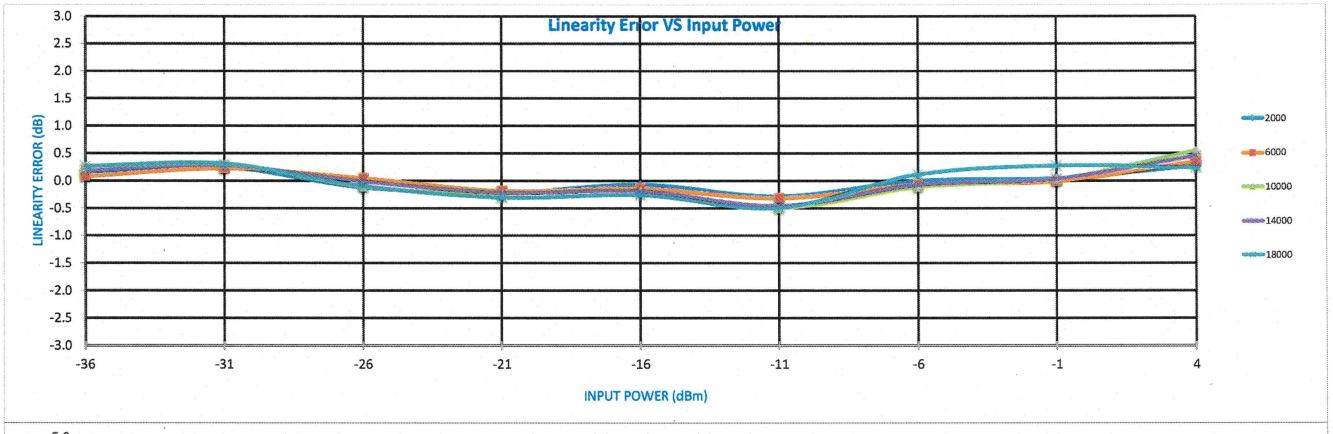
Frequency			-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
2 GHz	INTERCEPT (mV)	2145												
	SLOPE (mV/dB)	50.5	334	591	825	1073	1333	1575	1842	2097	2361	Measured Value (mV)	Error(dB)	
			8	12	-6	-11	-4	-14	0	2	13	Error (mV)	MAX	MIN
			0.16	0.24	-0.13	-0.22	-0.07	-0.29	0.00	0.04	0.27	LINEARITY ERROR (dB)	0.27	-0.29
			-0.32	-0.18	-0.50	-0.54	-0.34	-0.50	-0.16	-0.06	0.22	LOGGING ACCURACY (dB)	0.22	-0.54
6 GHz	INTERCEPT (mV)	2184												
	SLOPE (mV/dB)	50.4	375	634	877	1117	1371	1614	1878	2133	2403	Measured Value (mV)	Error(dB)	
			4	11	3	-9	-7	-16	-4	0	18	Error (mV)	MAX	MIN
			0.08	0.23	0.05	-0.18	-0.14	-0.31	-0.07	-0.01	0.35	LINEARITY ERROR (dB)	0.35	-0.31
			0.50	0.68	0.54	0.34	0.42	0.28	0.56	0.66	1.06	LOGGING ACCURACY (dB)	1.06	0.28
10 GHz	INTERCEPT (mV)	2142												
	SLOPE (mV/dB)	50.9	323	580	813	1061	1318	1557	1831	2093	2374	Measured Value (mV)	Error(dB)	
			14	16	-6	-12	-10	-25	-6	1	28	Error (mV)	MAX	MIN
			0.27	0.31	-0.11	-0.24	-0.19	-0.50	-0.12	0.03	0.55	LINEARITY ERROR (dB)	0.55	-0.50
			-0.54	-0.40	-0.74	-0.78	-0.64	-0.86	-0.38	-0.14	0.48	LOGGING ACCURACY (dB)	0.48	-0.86
14 GHz	INTERCEPT (mV)	2162												
	SLOPE (mV/dB)	50.9	339	598	838	1082	1338	1579	1853	2113	2389	Measured Value (mV)	Error(dB)	
			9	14	-1	-11	-10	-23	-4	2	23	Error (mV)	MAX	MIN
			0.19	0.27	-0.01	-0.22	-0.19	-0.46	-0.07	0.03	0.46	LINEARITY ERROR (dB)	0.46	-0.46
			-0.22	-0.04	-0.24	-0.36	-0.24	-0.42	0.06	0.26	0.78	LOGGING ACCURACY (dB)	0.78	-0.42
18 GHz	INTERCEPT (mV)	2169												
	SLOPE (mV/dB)	51.4	333	592	828	1074	1333	1578	1866	2131	2386	Measured Value (mV)	Error(dB)	
			13	16	-5	-16	-14	-26	6	14	12	Error (mV)	MAX	MIN
			0.26	0.31	-0.10	-0.31	-0.27	-0.50	0.11	0.27	0.23	LINEARITY ERROR (dB)	0.31	-0.50
			-0.34	-0.16	-0.44	-0.52	-0.34	-0.44	0.32	0.62	0.72	LOGGING ACCURACY (dB)	0.72	-0.52
	Flatness +/- dB		0.512	0.531	0.630	0.551	0.521	0.561	0.462	0.394	0.413			
	Max Video Output V		0.375	0.634	0.877	1.117	1.371	1.614	1.878	2.133	2.403			
	Min Video Output V		0.323	0.580	0.813	1.061	1.318	1.557	1.831	2.093	2.361			

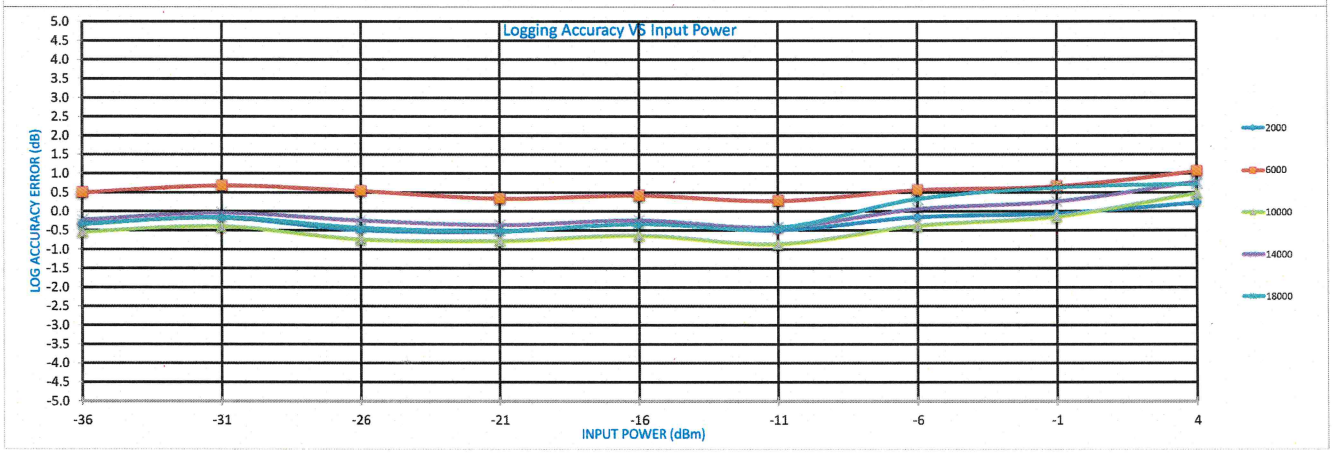
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.55	-0.50

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	1.06	-0.86

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55883
TESTED BY: JWalker





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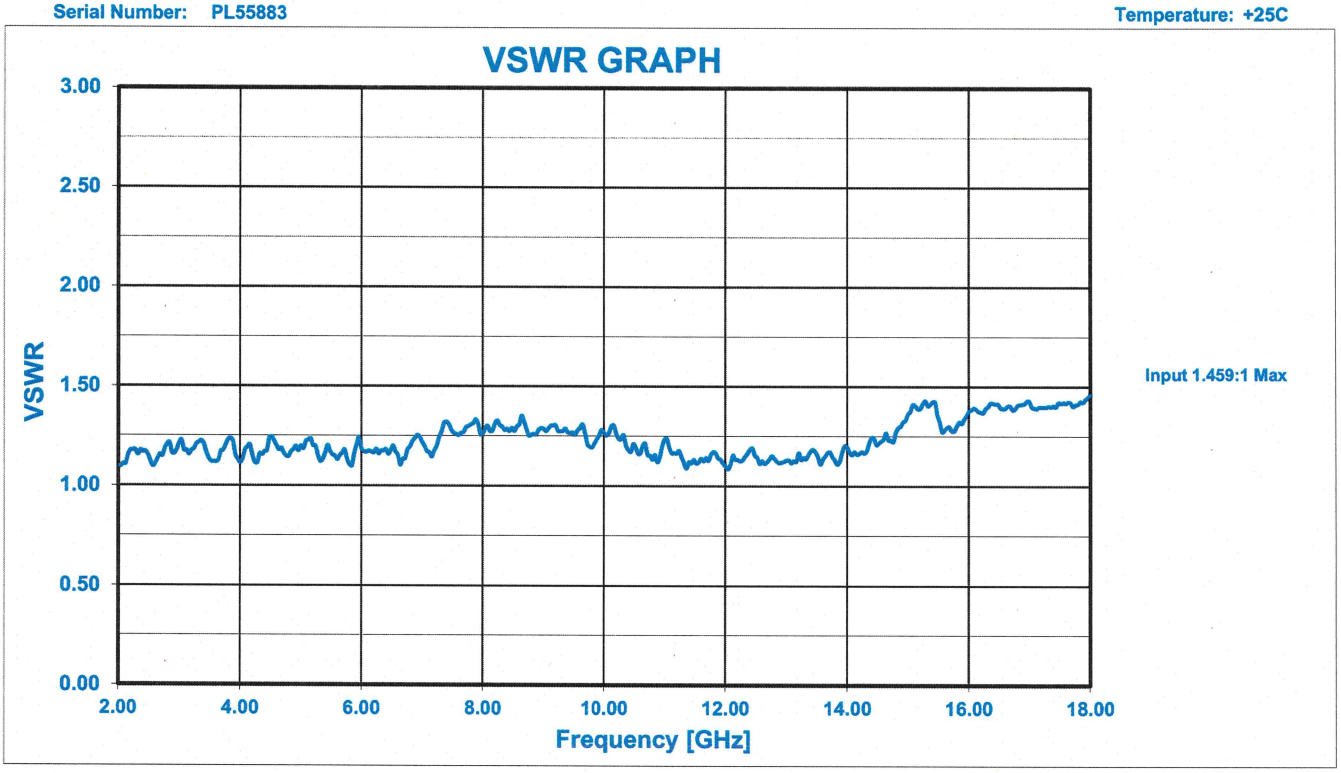
SUMMARY TEST DATA
ON
HADA-D2002

Model Number: HADA-D2002
Serial Number: PL55883

Temperature: +25C

VSWR GRAPH



Input 1.459:1 Max

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SUMMARY TEST DATA
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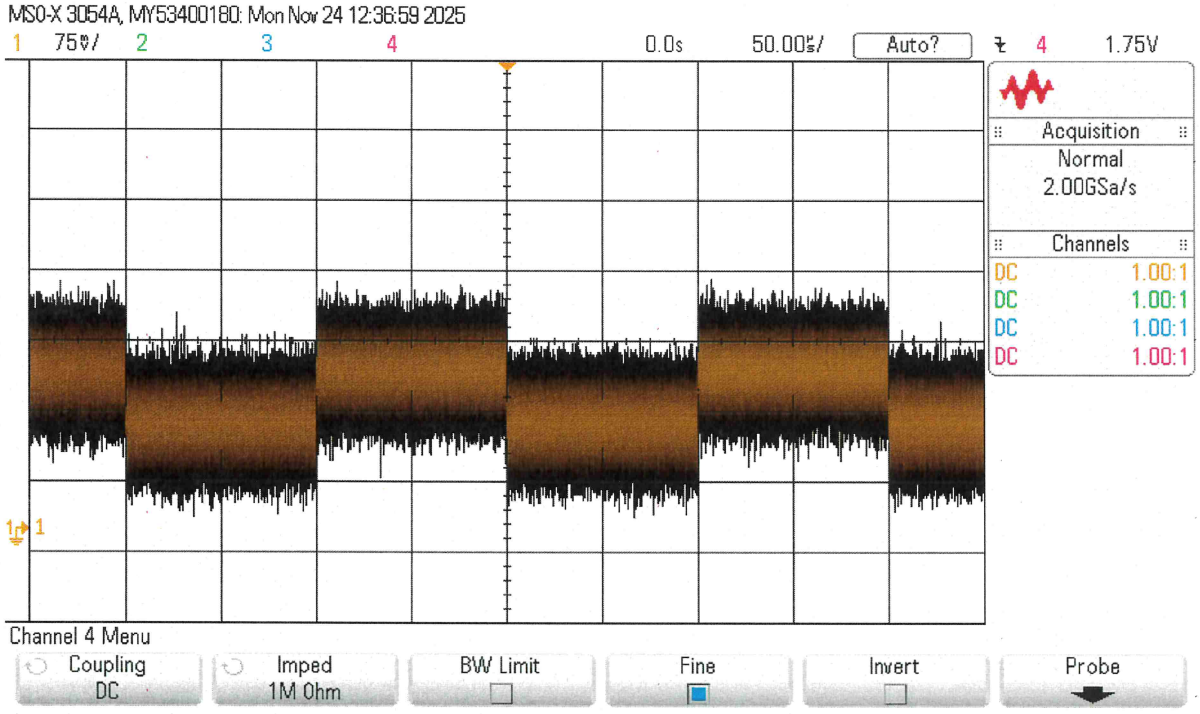
HADA-D2002

TSS = -42.9 dBm



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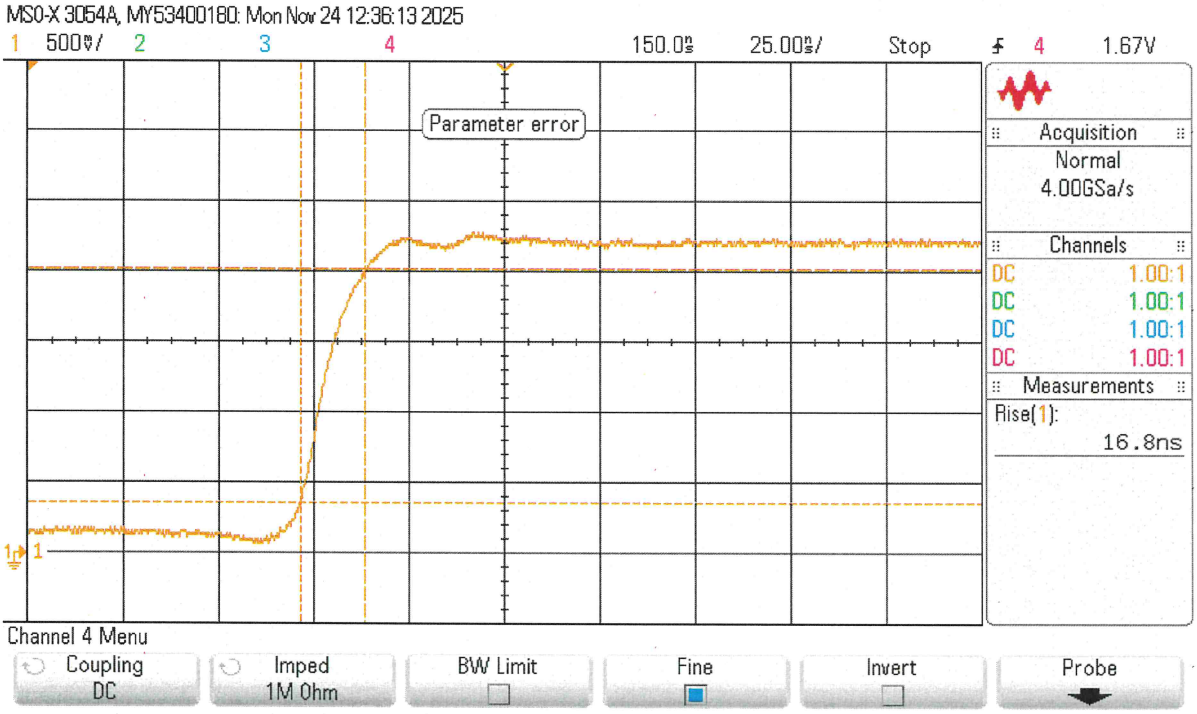
SUMMARY TEST DATA
ON
HADA-D2002

Rise Time = 16.8 ns



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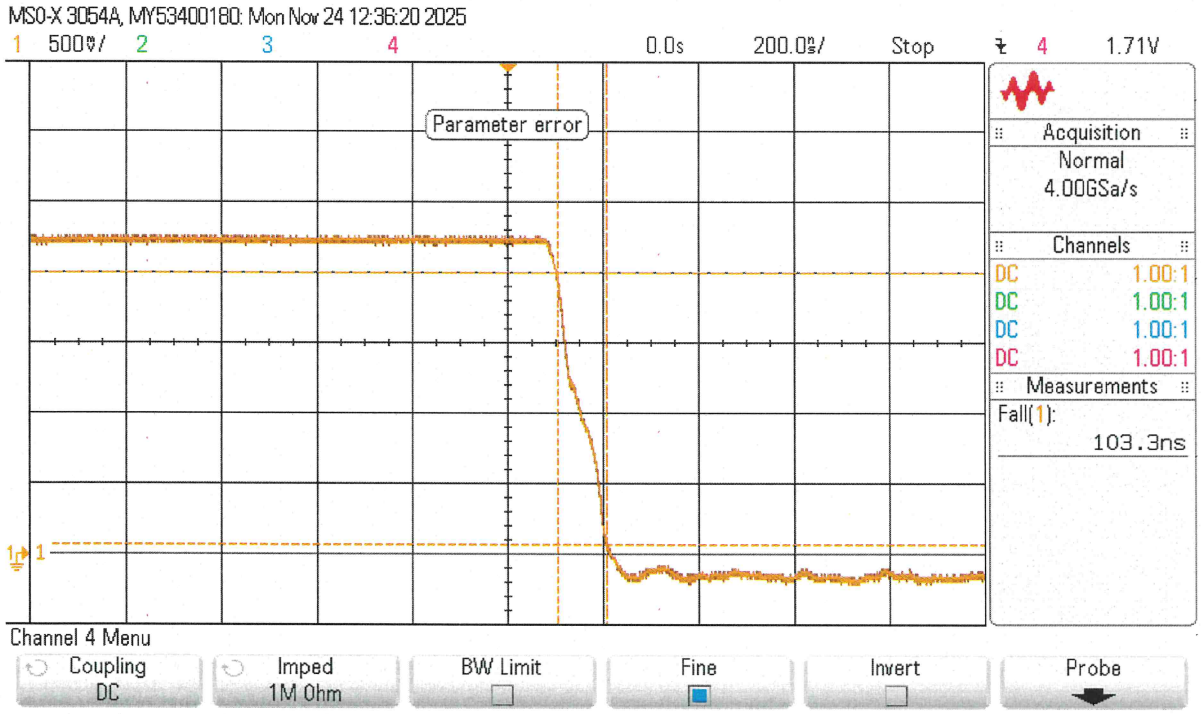
SUMMARY TEST DATA
ON
HADA-D2002

Fall Time = 103.3 ns



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