Quantic PMI
PLANAR MONOLITHICS

SUMMARY TEST DATA ON HADA-D2002

Customer:
SO No:
Model No: HADA-D2002
Serial No: PL55884/2548

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	-43.4 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 0.61 dB	± 0.61 dB	± 0.65 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)	-0.24 dB / -0.66 dB @ 10GHZ 0.56 dB / -0.82 dB @ ALL OTHER FREQUENCY	1.6 dB / -0.6 dB	0 dB / -1.74 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	0.25 dB / -0.26 dB	0.43 dB / -0.62 dB	0.39 dB / -0.46 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%)	16.5 ns			
10	Fall Time:	500 ns Max (@ Pulse width 100µs input) (90% to 10%)	123.8 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/ -100mV	98 mV @ +25°c	42 mV @ -40°c	64 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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PL55884/2548

Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	-40°	+85°C	
12	Input VSWR:	3.0:1 Max @ +23 dBm	1.59:1	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. Hamm

Date: 2.10.26

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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55884
TESTED BY: JWalker
DATE: 11/24/2025

PLANAR MONOLITHICS INDUSTRIES
4921 Robert J. Mathews Parkway Suit 1
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TEL: 916-542-1401 FAX: 916-265-2597
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GRAPH #1

Output Voltage Offset= 0.098 Volts

Frequency		
2 GHz	INTERCEPT (mV)	2122
	SLOPE (mV/dB)	50.1
6 GHz	INTERCEPT (mV)	2167
	SLOPE (mV/dB)	49.8
10 GHz	INTERCEPT (mV)	2130
	SLOPE (mV/dB)	50.1
14 GHz	INTERCEPT (mV)	2152
	SLOPE (mV/dB)	49.9
18 GHz	INTERCEPT (mV)	2165
	SLOPE (mV/dB)	50.4
	Flatness +/- dB	
	Max Video Output V	
	Min Video Output V	

RF Input Power (dBm)	-36	-31	-26	-21	-16	-11	-6	-1	4
2 GHz	327	579	813	1059	1317	1564	1831	2079	2322
	7	9	-8	-12	-4	-8	9	7	-1
	0.14	0.18	-0.15	-0.24	-0.08	-0.15	0.18	0.13	-0.01
	-0.46	-0.42	-0.74	-0.82	-0.66	-0.72	-0.38	-0.42	-0.56
6 GHz	377	628	874	1113	1363	1616	1875	2120	2365
	2	5	2	-8	-7	-3	7	3	-1
	0.05	0.09	0.03	-0.17	-0.14	-0.06	0.14	0.07	-0.01
	0.54	0.56	0.48	0.26	0.26	0.32	0.50	0.40	0.30
10 GHz	334	588	824	1067	1321	1567	1835	2086	2337
	7	11	-4	-11	-8	-12	5	6	6
	0.14	0.21	-0.08	-0.23	-0.16	-0.24	0.11	0.12	0.13
	-0.32	-0.24	-0.52	-0.66	-0.58	-0.66	-0.30	-0.28	-0.26
14 GHz	358	611	855	1094	1347	1597	1860	2108	2352
	3	6	1	-10	-7	-6	7	5	0
	0.06	0.13	0.02	-0.20	-0.13	-0.12	0.14	0.11	0.00
	0.16	0.22	0.10	-0.12	-0.06	-0.06	0.20	0.16	0.04
18 GHz	360	612	855	1094	1346	1598	1875	2127	2364
	8	8	0	-13	-13	-13	13	13	-2
	0.16	0.16	-0.01	-0.26	-0.26	-0.25	0.25	0.25	-0.04
	0.20	0.24	0.10	-0.12	-0.08	-0.04	0.50	0.54	0.28
	0.500	0.490	0.609	0.540	0.460	0.520	0.440	0.480	0.430
	0.377	0.628	0.874	1.113	1.363	1.616	1.875	2.127	2.365
	0.327	0.579	0.813	1.059	1.317	1.564	1.831	2.079	2.322

2 GHz	Measured Value (mV)	Error(dB)	
	Error (mV)	MAX	MIN
	LINEARITY ERROR (dB)	0.18	-0.24
	LOGGING ACCURACY (dB)	-0.38	-0.82

6 GHz	Measured Value (mV)	Error(dB)	
	Error (mV)	MAX	MIN
	LINEARITY ERROR (dB)	0.14	-0.17
	LOGGING ACCURACY (dB)	0.56	0.26

10 GHz	Measured Value (mV)	Error(dB)	
	Error (mV)	MAX	MIN
	LINEARITY ERROR (dB)	0.21	-0.24
	LOGGING ACCURACY (dB)	-0.24	-0.66

14 GHz	Measured Value (mV)	Error(dB)	
	Error (mV)	MAX	MIN
	LINEARITY ERROR (dB)	0.14	-0.20
	LOGGING ACCURACY (dB)	0.22	-0.12

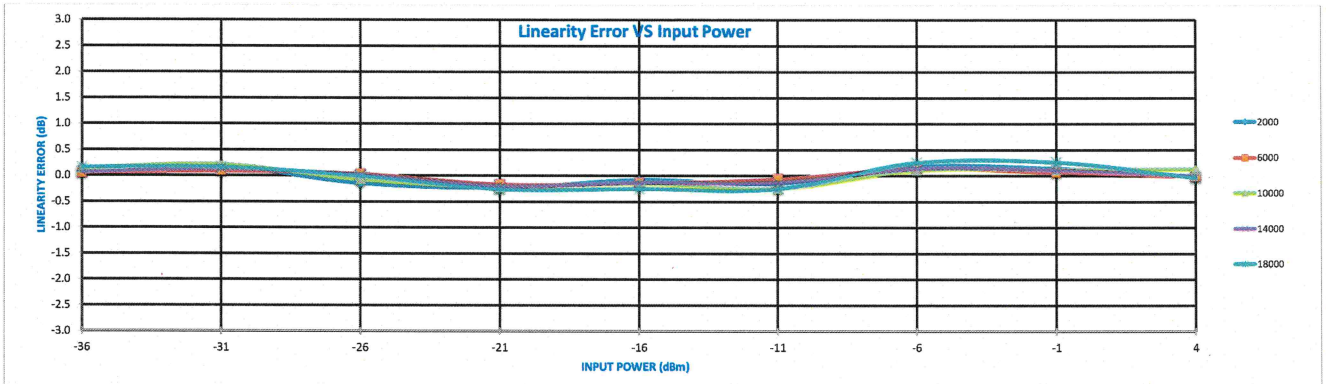
18 GHz	Measured Value (mV)	Error(dB)	
	Error (mV)	MAX	MIN
	LINEARITY ERROR (dB)	0.25	-0.26
	LOGGING ACCURACY (dB)	0.54	-0.12

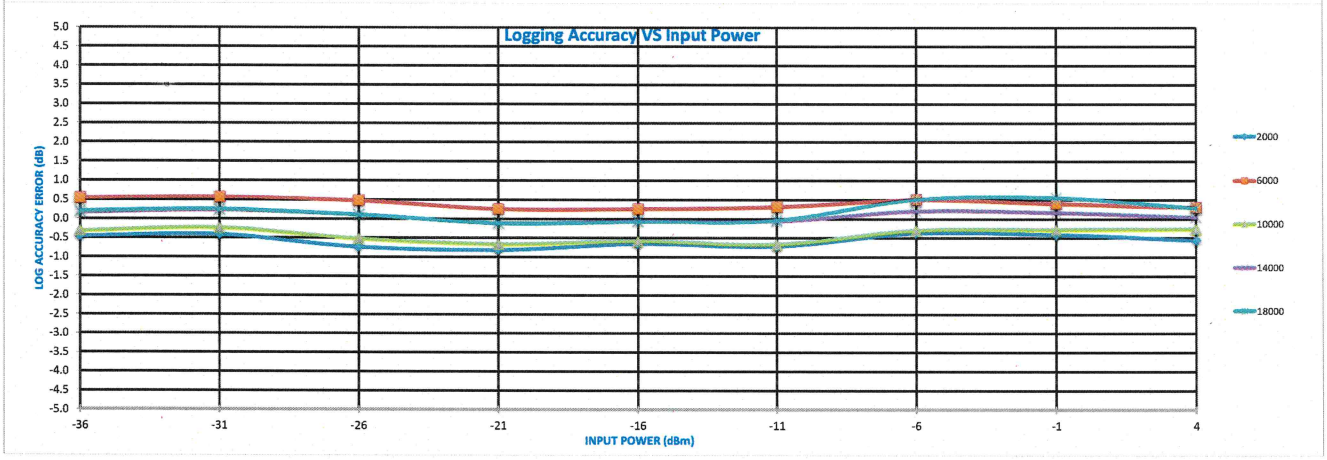
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.25	-0.26

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	0.56	-0.82

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55884
TESTED BY: JWalker





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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55884
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= 0.042 Volts

Frequency			-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
2 GHz	INTERCEPT (mV)	2170	320	608	860	1107	1364	1626	1885	2122	2342	Measured Value (mV)
	SLOPE (mV/dB)	50.7	-26	9	7	1	5	13	19	3	-31	Error (mV)
			-0.51	0.17	0.14	0.02	0.09	0.26	0.38	0.05	-0.60	LINEARITY ERROR (dB)
			-0.60	0.16	0.20	0.14	0.28	0.52	0.70	0.44	-0.16	LOGGING ACCURACY (dB)
6 GHz	INTERCEPT (mV)	2212	379	661	922	1164	1411	1680	1929	2160	2381	Measured Value (mV)
	SLOPE (mV/dB)	50.1	-28	3	14	5	1	20	18	-1	-31	Error (mV)
			-0.57	0.06	0.27	0.10	0.03	0.39	0.36	-0.03	-0.62	LINEARITY ERROR (dB)
			0.58	1.22	1.44	1.28	1.22	1.60	1.58	1.20	0.62	LOGGING ACCURACY (dB)
10 GHz	INTERCEPT (mV)	2176	326	618	871	1115	1368	1628	1889	2128	2351	Measured Value (mV)
	SLOPE (mV/dB)	50.6	-28	11	11	2	2	9	17	3	-27	Error (mV)
			-0.55	0.22	0.22	0.04	0.04	0.18	0.34	0.06	-0.53	LINEARITY ERROR (dB)
			-0.48	0.36	0.42	0.30	0.36	0.56	0.78	0.56	0.02	LOGGING ACCURACY (dB)
14 GHz	INTERCEPT (mV)	2193	348	636	896	1138	1389	1653	1908	2144	2363	Measured Value (mV)
	SLOPE (mV/dB)	50.4	-30	6	14	4	3	15	18	2	-31	Error (mV)
			-0.59	0.12	0.28	0.08	0.06	0.29	0.35	0.03	-0.62	LINEARITY ERROR (dB)
			-0.04	0.72	0.92	0.76	0.78	1.06	1.16	0.88	0.26	LOGGING ACCURACY (dB)
18 GHz	INTERCEPT (mV)	2202	348	635	893	1134	1385	1649	1919	2157	2378	Measured Value (mV)
	SLOPE (mV/dB)	50.8	-24	9	13	0	-4	6	22	6	-28	Error (mV)
			-0.47	0.18	0.25	-0.01	-0.07	0.12	0.43	0.11	-0.54	LINEARITY ERROR (dB)
			-0.04	0.70	0.86	0.68	0.70	0.98	1.38	1.14	0.56	LOGGING ACCURACY (dB)
	Flatness +/- dB		0.584	0.524	0.614	0.564	0.465	0.534	0.435	0.376	0.386	
	Max Video Output V		0.379	0.661	0.922	1.164	1.411	1.680	1.929	2.160	2.381	
	Min Video Output V		0.320	0.608	0.860	1.107	1.364	1.626	1.885	2.122	2.342	

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.38	-0.60
LOGGING ACCURACY (dB)	0.70	-0.60

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.39	-0.62
LOGGING ACCURACY (dB)	1.60	0.58

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.34	-0.55
LOGGING ACCURACY (dB)	0.78	-0.48

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.35	-0.62
LOGGING ACCURACY (dB)	1.16	-0.04

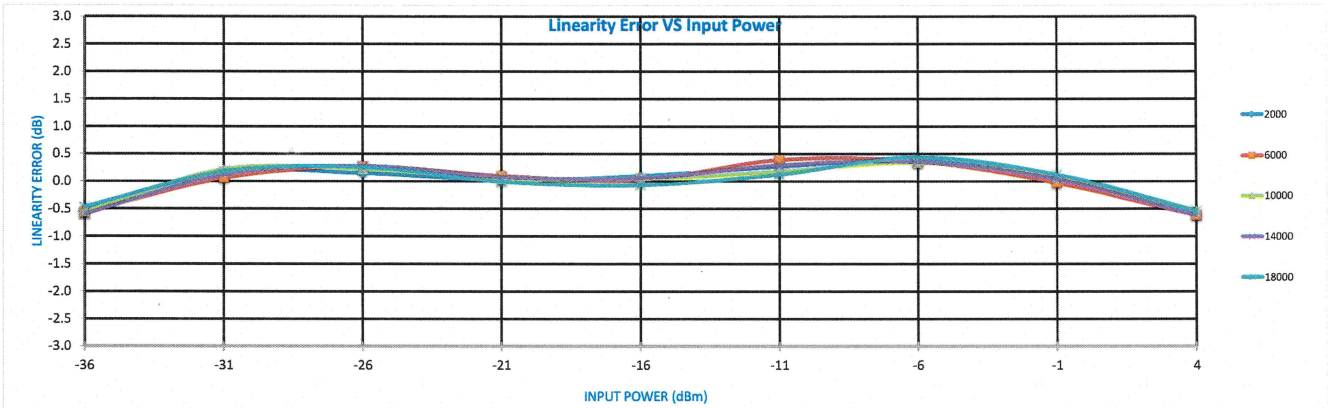
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.43	-0.54
LOGGING ACCURACY (dB)	1.38	-0.04

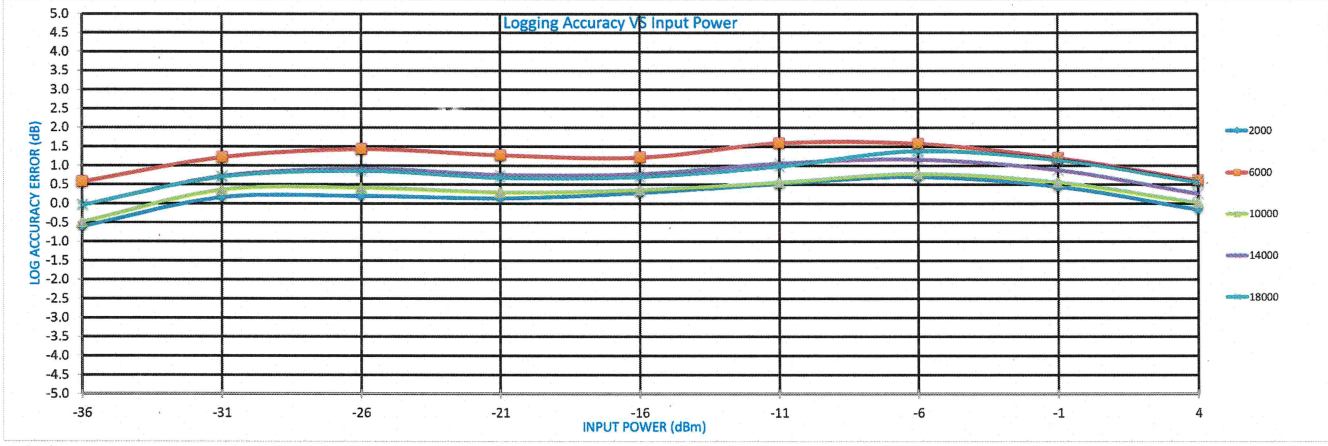
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.43	-0.62

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	1.60	-0.60

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55884
TESTED BY: JWalker





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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55884
TESTED BY: JWalker
DATE: 11/24/2025

GRAPH #3

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= 0.064 Volts

Frequency		
2 GHz	INTERCEPT (mV)	2086
	SLOPE (mV/dB)	50.4
6 GHz	INTERCEPT (mV)	2137
	SLOPE (mV/dB)	50.2
10 GHz	INTERCEPT (mV)	2105
	SLOPE (mV/dB)	50.6
14 GHz	INTERCEPT (mV)	2116
	SLOPE (mV/dB)	50.2
18 GHz	INTERCEPT (mV)	2119
	SLOPE (mV/dB)	50.5

RF Input Power (dBm)	-36	-31	-26	-21	-16	-11	-6	-1	4
Measured Value (mV)	271	539	774	1022	1276	1513	1784	2040	2298
Error (mV)	-1	15	-2	-6	-4	-19	0	4	10
LINEARITY ERROR (dB)	-0.01	0.31	-0.03	-0.11	-0.07	-0.37	0.01	0.08	0.20
LOGGING ACCURACY (dB)	-1.58	-1.22	-1.52	-1.56	-1.48	-1.74	-1.32	-1.20	-1.04

Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.31	-0.37
LOGGING ACCURACY (dB)	-1.04	-1.74

Measured Value (mV)	326	597	839	1077	1328	1568	1835	2089	2350
Error (mV)	-5	15	7	-6	-6	-17	-1	2	12
LINEARITY ERROR (dB)	-0.09	0.31	0.13	-0.13	-0.13	-0.34	-0.02	0.04	0.24
LOGGING ACCURACY (dB)	-0.48	-0.06	-0.22	-0.46	-0.44	-0.64	-0.30	-0.22	0.00

Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.31	-0.34
LOGGING ACCURACY (dB)	0.00	-0.64

Measured Value (mV)	285	555	791	1035	1288	1525	1797	2057	2327
Error (mV)	1	18	1	-8	-8	-23	-4	3	20
LINEARITY ERROR (dB)	0.02	0.36	0.03	-0.15	-0.15	-0.46	-0.09	0.05	0.39
LOGGING ACCURACY (dB)	-1.30	-0.90	-1.18	-1.30	-1.24	-1.50	-1.06	-0.86	-0.46

Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.39	-0.46
LOGGING ACCURACY (dB)	-0.46	-1.50

Measured Value (mV)	303	575	815	1055	1308	1545	1814	2069	2327
Error (mV)	-5	16	5	-6	-4	-18	-1	3	10
LINEARITY ERROR (dB)	-0.10	0.32	0.10	-0.12	-0.09	-0.37	-0.01	0.07	0.20
LOGGING ACCURACY (dB)	-0.94	-0.50	-0.70	-0.90	-0.84	-1.10	-0.72	-0.62	-0.46

Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.32	-0.37
LOGGING ACCURACY (dB)	-0.46	-1.10

Measured Value (mV)	298	570	809	1050	1303	1541	1824	2081	2323
Error (mV)	-3	17	3	-8	-8	-23	8	12	2
LINEARITY ERROR (dB)	-0.05	0.33	0.06	-0.17	-0.16	-0.45	0.16	0.24	0.03
LOGGING ACCURACY (dB)	-1.04	-0.60	-0.82	-1.00	-0.94	-1.18	-0.52	-0.38	-0.54

Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.33	-0.45
LOGGING ACCURACY (dB)	-0.38	-1.18

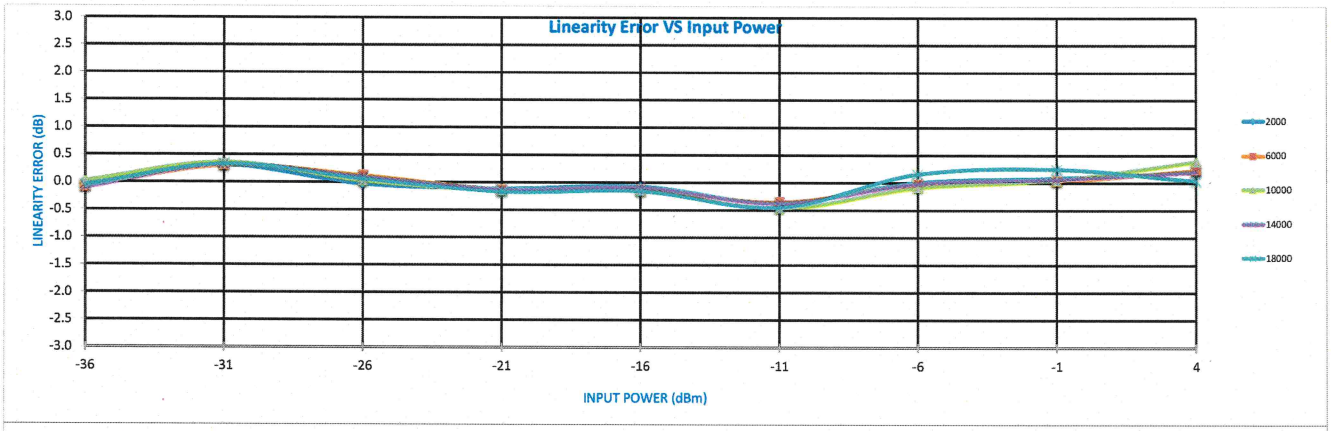
Flatness +/- dB	0.546	0.576	0.645	0.546	0.516	0.546	0.506	0.486	0.516
Max Video Output V	0.326	0.597	0.839	1.077	1.328	1.568	1.835	2.089	2.350
Min Video Output V	0.271	0.539	0.774	1.022	1.276	1.513	1.784	2.040	2.298

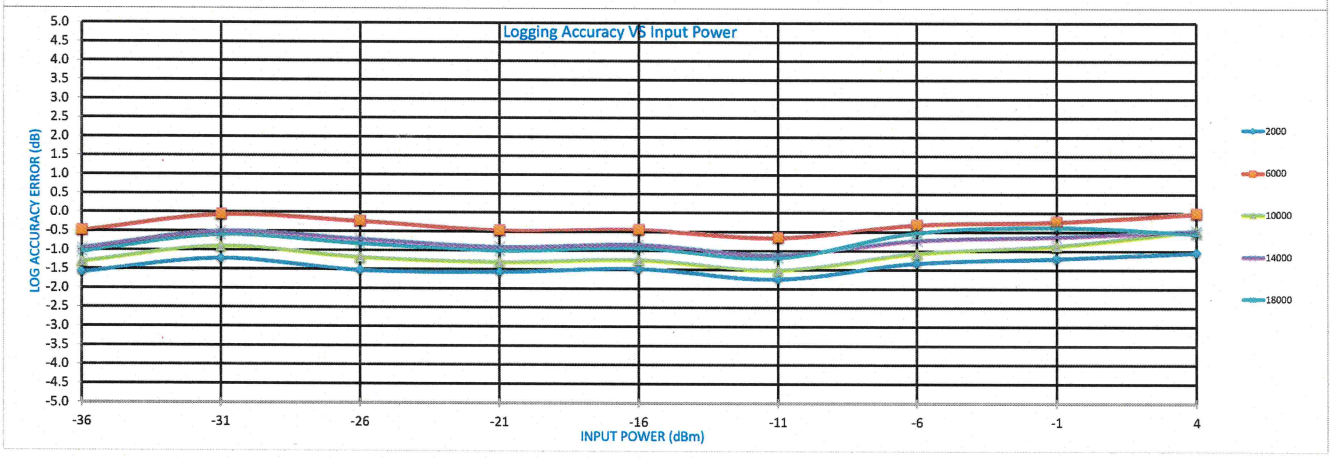
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.39	-0.46

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	0.00	-1.74

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55884
TESTED BY: JWalker





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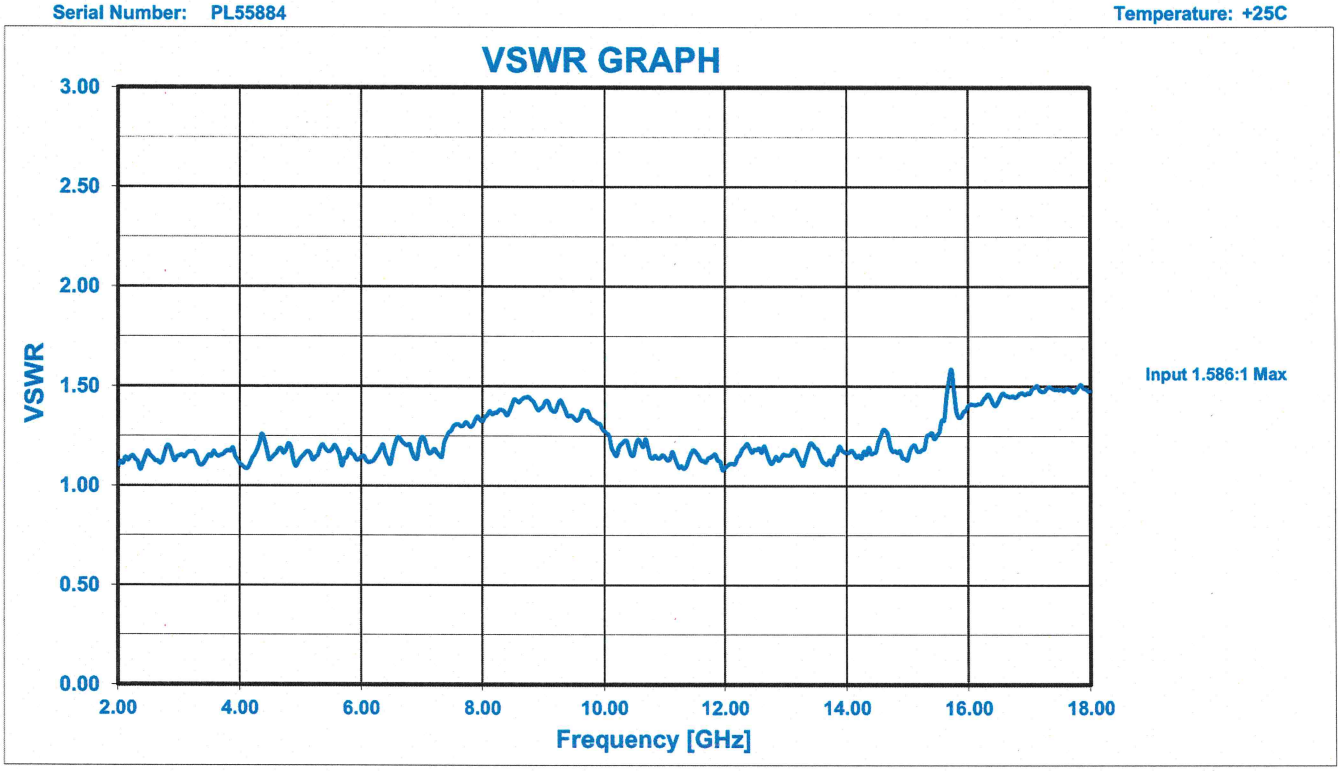
SUMMARY TEST DATA
ON
HADA-D2002

Model Number: HADA-D2002
Serial Number: PL55884

Temperature: +25C

VSWR GRAPH



Input 1.586:1 Max

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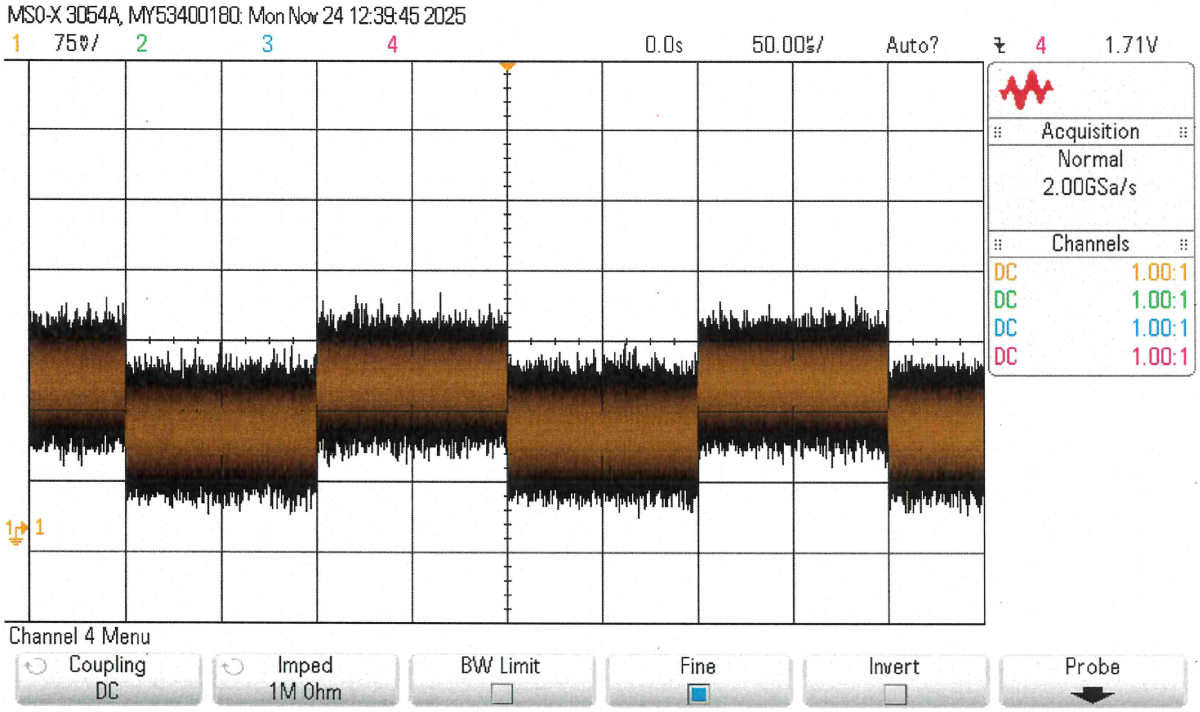
SUMMARY TEST DATA
ON
HADA-D2002

TSS = -43.4 dBm



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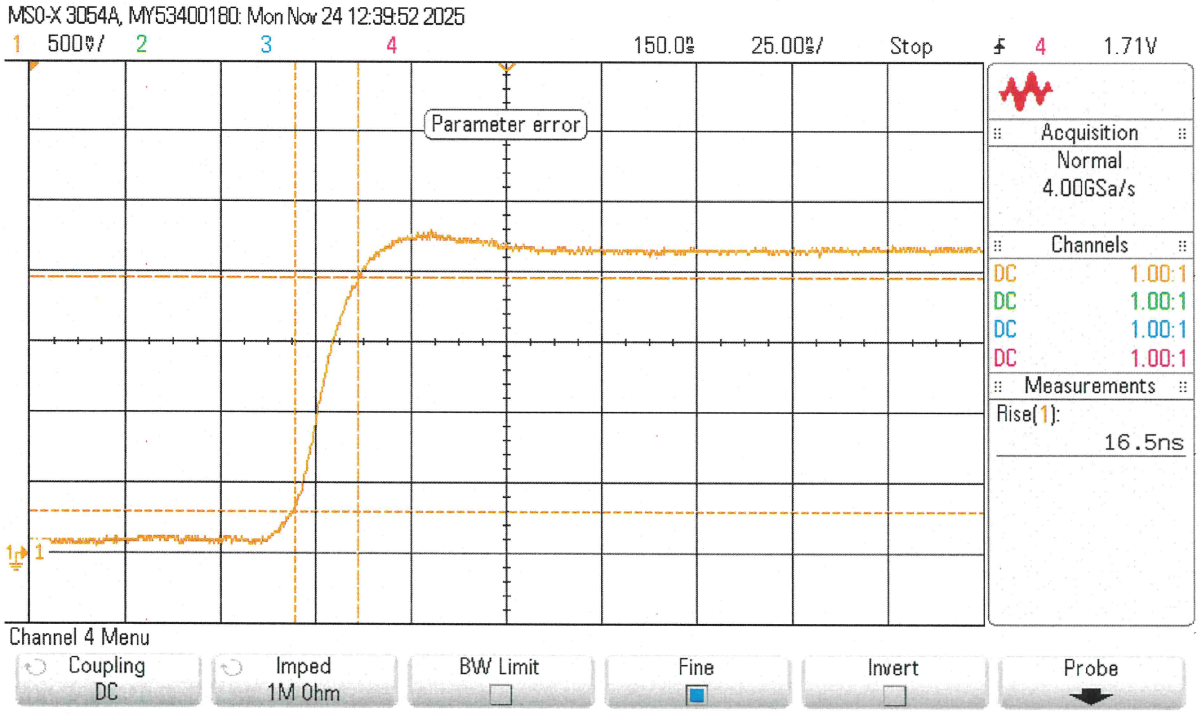
SUMMARY TEST DATA
ON
HADA-D2002

Rise Time = 16.5 ns



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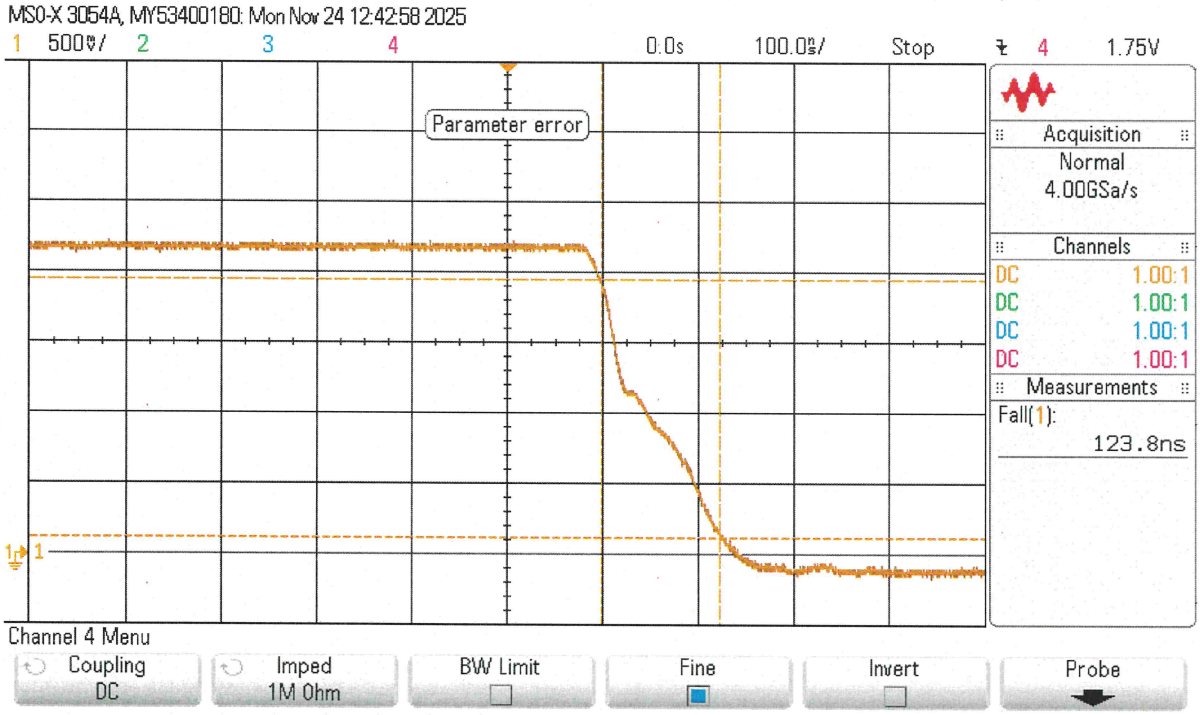
SUMMARY TEST DATA
ON
HADA-D2002

Fall Time = 123.8 ns



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