

**SUMMARY TEST DATA
ON
HADA-D2002**

Customer: _____
SO No: _____
Model No: HADA-D2002
Serial No: PL55886/2548

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
			+25°C	-40°	+85°C	QC
1	Frequency Range:	2.0 GHz – 18.0 GHz	2.0 GHz – 18.0 GHz			PMI QA?
2	TSS:	-40 dBm Min	-42.7 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 0.57 dB	± 0.79 dB	± 0.6 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)	0.04 dB / -0.64 dB @ 10GHZ 0.76 dB / -0.68 dB @ ALL OTHER FREQUENCY	0.72 dB / -1.32 dB	0.5 dB / -1.7 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	0.24 dB / -0.37 dB	0.44 dB / -0.39 dB	0.37 dB / -0.36 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%)	15.5 ns			
10	Fall Time:	500 ns Max (@ Pulse width 100µs input) (90% to 10%)	105.5 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/-100 mV	102 mV @ +25°C	83 mV @ -40°C	54 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.

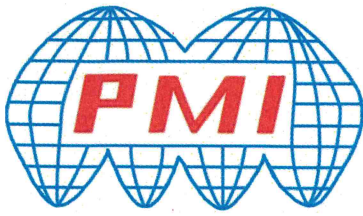
**SUMMARY TEST DATA
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PL55886/2548

Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA
			+25°C	-40°	+85°C	QC
12	Input VSWR:	3.0:1 Max @ +23 dBm	1.61:1	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: 2-6-26



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
 MODEL: HADA-D2002
 SERIAL NO: PL55886
 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
 EMAIL: SALES@PMI-RF.COM

GRAPH #1

Output Voltage Offset= 0.102 Volts

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
2 GHz	2138	50.3

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
6 GHz	2181	50.1

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
10 GHz	2144	50.5

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
14 GHz	2168	50.2

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
18 GHz	2158	50.9

Flatness +/- dB
Max Video Output V
Min Video Output V

RF input Power (dBm)	Measured Value (mV)	Error(dB)
-36	334	7
-31	586	7
-26	822	-8
-21	1066	-16
-16	1332	-1
-11	1586	1
-6	1847	11
-1	2091	3
4	2336	-4
	0.14	0.15
	-0.16	-0.31
	-0.03	0.02
	0.21	0.06
	-0.07	-0.07
	-0.32	-0.28
	-0.56	-0.68
	-0.36	-0.28
	-0.06	-0.18
	-0.28	-0.28
	381	632
	879	1117
	1377	1634
	1888	2129
	2381	3
	4	0
	-12	-3
	4	7
	-2	-1
	0.06	0.07
	0.00	-0.25
	-0.06	0.08
	0.15	-0.04
	-0.01	-0.01
	0.62	0.64
	0.58	0.34
	0.54	0.68
	0.76	0.58
	0.62	0.62
	336	589
	826	1068
	1331	1583
	1847	2095
	2352	9
	10	-6
	-16	-5
	-6	6
	2	6
	0.18	0.19
	-0.11	-0.32
	-0.11	-0.11
	0.12	0.03
	0.13	0.13
	-0.28	-0.22
	-0.48	-0.64
	-0.38	-0.34
	-0.06	-0.10
	0.04	0.04
	363	616
	861	1099
	1360	1615
	1874	2118
	2369	4
	6	0
	-14	-4
	0	8
	1	0
	0.08	0.11
	-0.01	-0.27
	-0.08	0.00
	0.15	0.01
	0.01	0.01
	0.26	0.32
	0.22	-0.02
	0.20	0.30
	0.48	0.36
	0.38	0.38
	338	592
	830	1071
	1334	1588
	1885	2116
	2364	11
	11	-5
	-19	-10
	-11	12
	9	2
	0.22	0.21
	-0.11	-0.37
	-0.20	-0.21
	0.24	0.17
	0.04	0.04
	-0.24	-0.16
	-0.40	-0.58
	-0.32	-0.24
	0.30	0.32
	0.32	0.28
	0.466	0.456
	0.566	0.506
	0.456	0.506
	0.407	0.377
	0.446	0.381
	0.632	0.879
	1.117	1.377
	1.634	1.888
	2.129	2.381
	0.334	0.586
	0.822	1.066
	1.331	1.583
	1.847	2.091
	2.336	

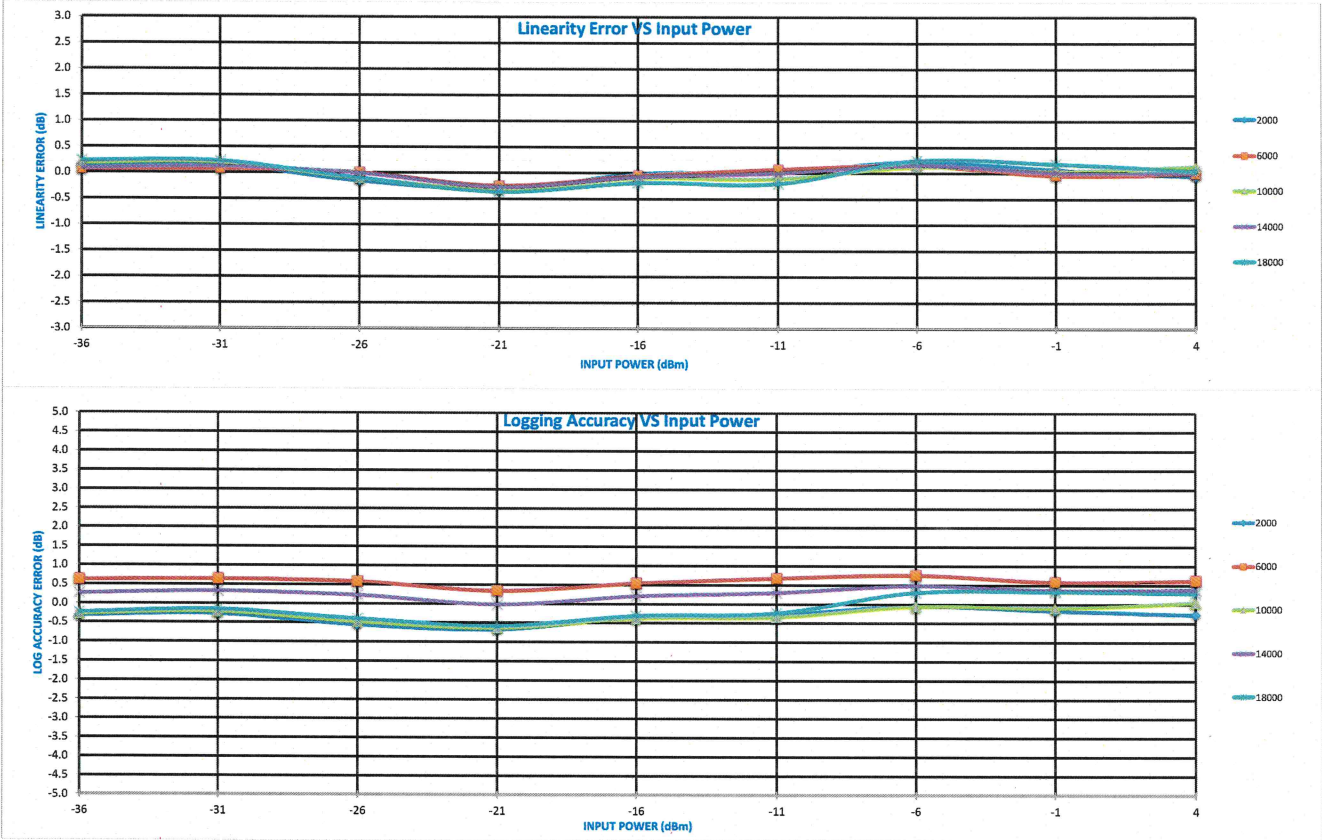
Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.24 -0.37

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	0.76 -0.68



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55886
TESTED BY: JWalker





SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
 MODEL: HADA-D2002
 SERIAL NO: PL55886
 TESTED BY: JWalker
 DATE: 11/24/2025



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GRAPH #2

Output Voltage Offset= 0.083 Volts

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
2 GHz	2119	49.7

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
6 GHz	2160	49.4

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
10 GHz	2099	49.7

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
14 GHz	2136	49.6

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
18 GHz	2129	50.3

Flatness +/- dB
Max Video Output V
Min Video Output V

	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
Measured Value (mV)	335	577	817	1058	1324	1588	1841	2073	2299	Measured Value (mV)
Error (mV)	6	0	-9	-17	0	16	20	3	-19	Error (mV)
LINEARITY ERROR (dB)	0.13	-0.01	-0.18	-0.34	0.01	0.32	0.40	0.07	-0.39	MAX
LOGGING ACCURACY (dB)	-0.30	-0.46	-0.66	-0.84	-0.52	-0.24	-0.18	-0.54	-1.02	MIN
Measured Value (mV)	382	622	873	1112	1369	1636	1881	2107	2339	Measured Value (mV)
Error (mV)	1	-6	-2	-10	0	20	18	-3	-18	Error (mV)
LINEARITY ERROR (dB)	0.02	-0.12	-0.04	-0.20	0.00	0.40	0.36	-0.06	-0.37	MAX
LOGGING ACCURACY (dB)	0.64	0.44	0.46	0.24	0.38	0.72	0.62	0.14	-0.22	MIN
Measured Value (mV)	316	561	798	1040	1301	1557	1818	2055	2284	Measured Value (mV)
Error (mV)	7	3	-8	-15	-2	5	18	6	-13	Error (mV)
LINEARITY ERROR (dB)	0.14	0.06	-0.17	-0.30	-0.05	0.10	0.35	0.12	-0.27	MAX
LOGGING ACCURACY (dB)	-0.68	-0.78	-1.04	-1.20	-0.98	-0.86	-0.64	-0.90	-1.32	MIN
Measured Value (mV)	355	597	846	1084	1342	1604	1859	2089	2316	Measured Value (mV)
Error (mV)	3	-3	-2	-12	-2	13	20	2	-19	Error (mV)
LINEARITY ERROR (dB)	0.05	-0.07	-0.04	-0.24	-0.03	0.26	0.40	0.04	-0.38	MAX
LOGGING ACCURACY (dB)	0.10	-0.06	-0.08	-0.32	-0.16	0.08	0.18	-0.22	-0.68	MIN
Measured Value (mV)	330	574	815	1054	1317	1577	1849	2087	2317	Measured Value (mV)
Error (mV)	11	3	-7	-19	-7	1	22	9	-13	Error (mV)
LINEARITY ERROR (dB)	0.21	0.07	-0.14	-0.38	-0.15	0.02	0.44	0.17	-0.25	MAX
LOGGING ACCURACY (dB)	-0.40	-0.52	-0.70	-0.92	-0.66	-0.46	-0.02	-0.26	-0.66	MIN
Flatness +/- dB	0.664	0.613	0.754	0.724	0.684	0.794	0.633	0.523	0.553	Flatness +/- dB
Max Video Output V	0.382	0.622	0.873	1.112	1.369	1.636	1.881	2.107	2.339	Max Video Output V
Min Video Output V	0.316	0.561	0.798	1.040	1.301	1.557	1.818	2.055	2.284	Min Video Output V

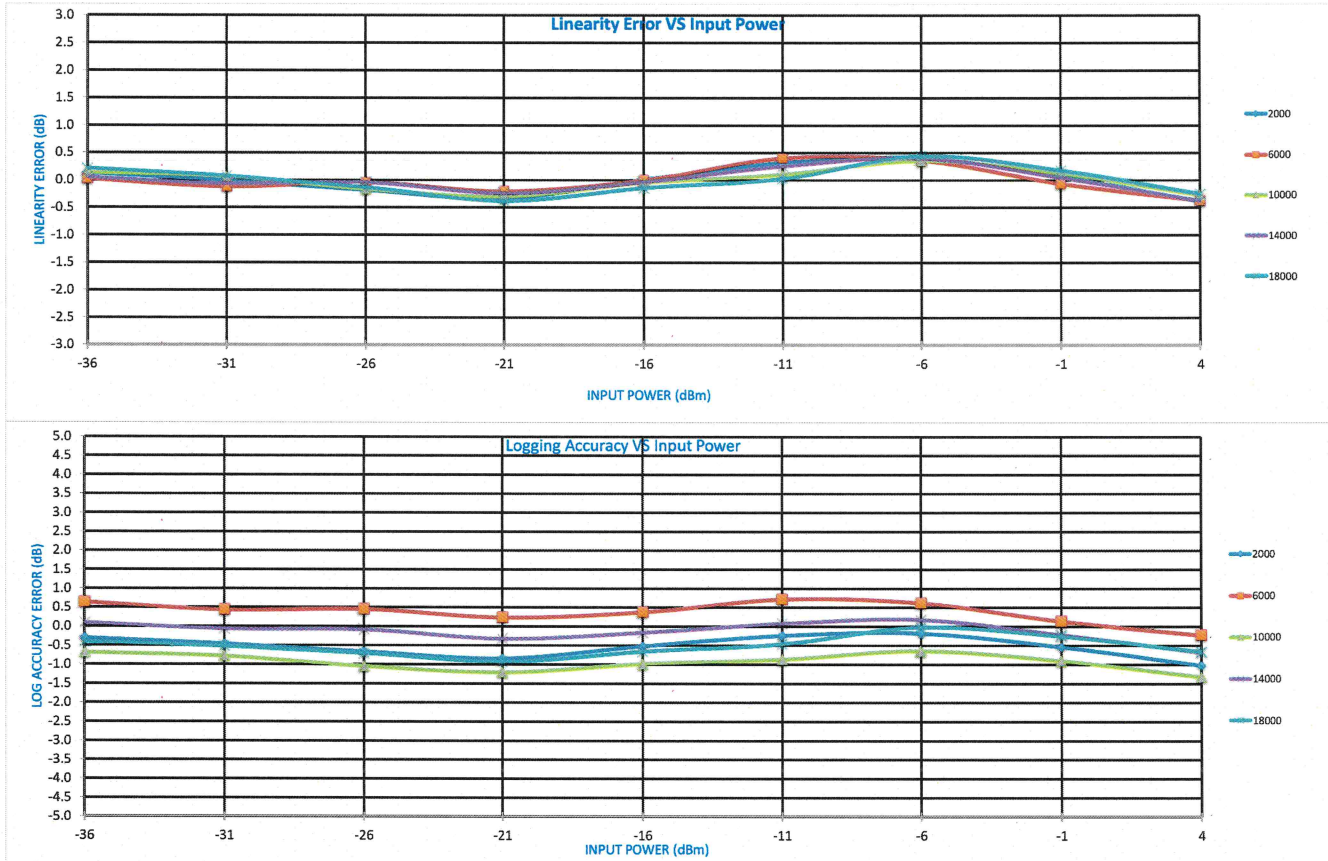
Logging Linearity vs Frequency	Error(dB)
	MAX
	MIN
LOGGING LINEARITY ERROR (dB)	0.44 -0.39

Logging Accuracy vs Frequency	Error(dB)
	MAX
	MIN
LOGGING ACCURACY ERROR (dB)	0.72 -1.32



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55886
TESTED BY: JWalker





SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
 MODEL: HADA-D2002
 SERIAL NO: PL55886
 TESTED BY: JWalker
 DATE: 11/24/2025



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GRAPH #3

Output Voltage Offset= 0.054 Volts

Frequency	INTERCEPT (mV)	2114
2 GHz	SLOPE (mV/dB)	51.2

Frequency	INTERCEPT (mV)	2161
6 GHz	SLOPE (mV/dB)	51

Frequency	INTERCEPT (mV)	2123
10 GHz	SLOPE (mV/dB)	51.5

Frequency	INTERCEPT (mV)	2139
14 GHz	SLOPE (mV/dB)	51

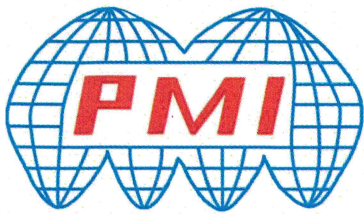
Frequency	INTERCEPT (mV)	2126
18 GHz	SLOPE (mV/dB)	51.6

Fiatness +/- dB	
Max Video Output V	
Min Video Output V	

	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
2 GHz	265	543	782	1031	1294	1541	1809	2063	2323	Measured Value (mV)
	-6	16	-1	-8	-1	-9	3	1	5	Error (mV)
	-0.11	0.32	-0.01	-0.15	-0.01	-0.19	0.05	0.01	0.09	MAX MIN
	-1.70	-1.14	-1.36	-1.38	-1.12	-1.18	-0.82	-0.74	-0.54	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
6 GHz	318	598	843	1082	1343	1591	1854	2108	2375	Measured Value (mV)
	-9	17	7	-9	-3	-10	-1	-2	10	Error (mV)
	-0.17	0.33	0.13	-0.18	-0.05	-0.19	-0.03	-0.04	0.20	MAX MIN
	-0.64	-0.04	-0.14	-0.36	-0.14	-0.18	0.08	0.16	0.50	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
10 GHz	269	547	787	1034	1294	1541	1812	2070	2347	Measured Value (mV)
	-2	19	1	-9	-6	-16	-3	-2	18	Error (mV)
	-0.04	0.37	0.03	-0.17	-0.12	-0.32	-0.05	-0.04	0.34	MAX MIN
	-1.62	-1.06	-1.26	-1.32	-1.12	-1.18	-0.76	-0.60	-0.06	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
14 GHz	293	573	817	1059	1320	1565	1833	2086	2352	Measured Value (mV)
	-8	17	5	-8	-2	-12	1	-2	9	Error (mV)
	-0.16	0.33	0.11	-0.15	-0.04	-0.24	0.01	-0.03	0.18	MAX MIN
	-1.14	-0.54	-0.66	-0.82	-0.60	-0.70	-0.34	-0.28	0.04	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
18 GHz	268	545	785	1032	1293	1540	1825	2083	2336	Measured Value (mV)
	-1	18	0	-11	-8	-19	8	9	4	Error (mV)
	-0.02	0.35	0.00	-0.21	-0.15	-0.36	0.16	0.17	0.07	MAX MIN
	-1.64	-1.10	-1.30	-1.36	-1.14	-1.20	-0.50	-0.34	-0.26	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
	0.517	0.537	0.595	0.498	0.488	0.498	0.439	0.439	0.507	
	0.318	0.598	0.843	1.082	1.343	1.591	1.854	2.108	2.375	
	0.265	0.543	0.782	1.031	1.293	1.540	1.809	2.063	2.323	

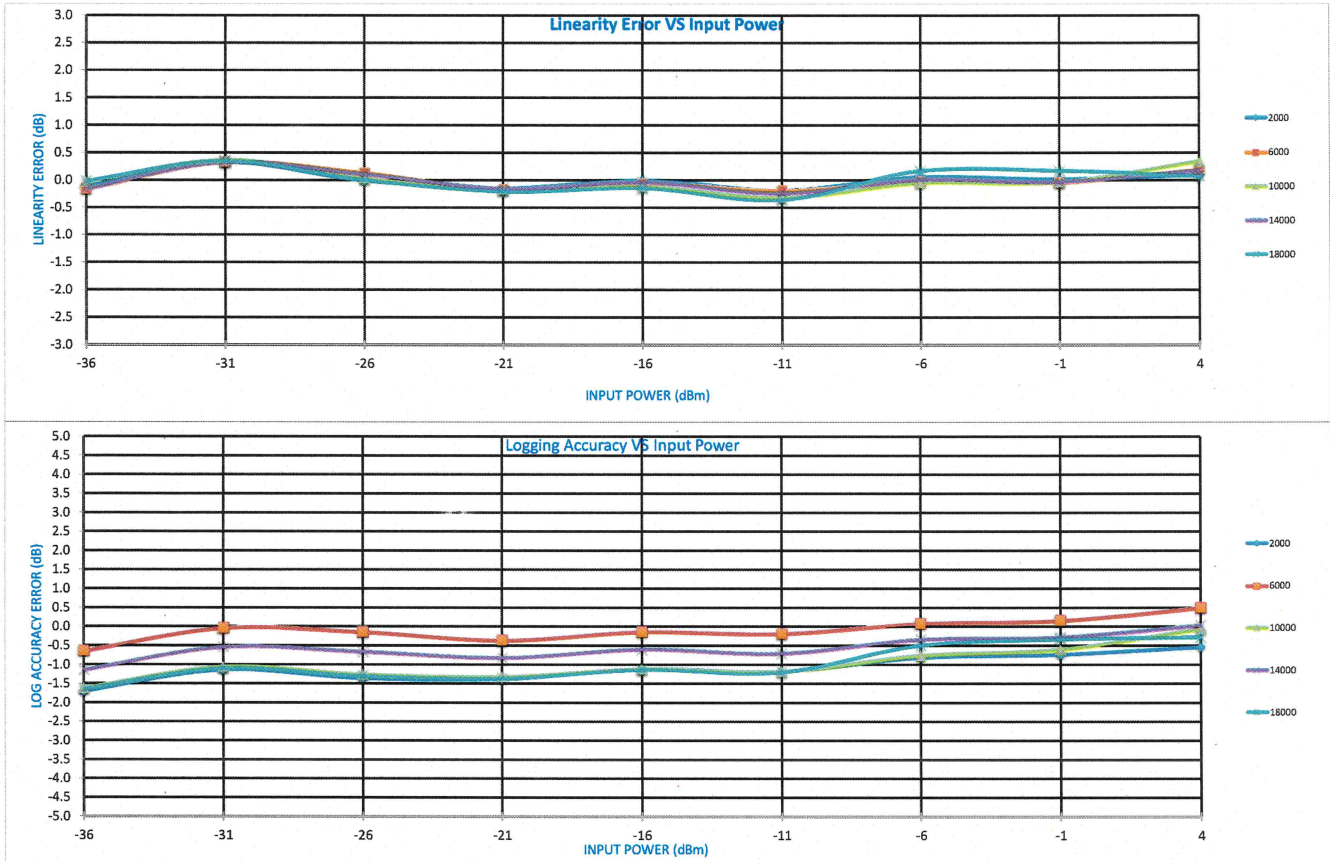
Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.37 -0.36

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	0.50 -1.70



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55886
TESTED BY: JWalker

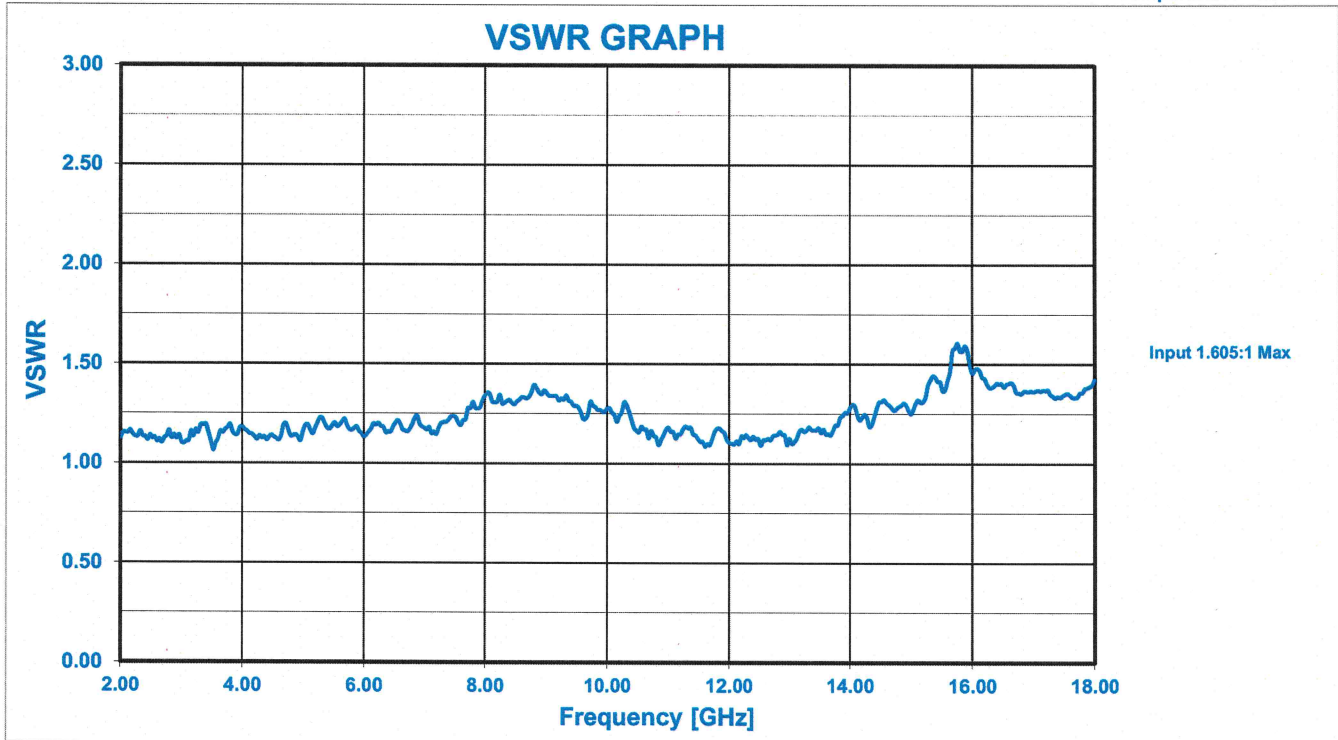


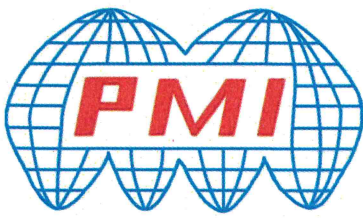


SUMMARY TEST DATA ON HADA-D2002

Model Number: HADA-D2002
Serial Number: PL55886

Temperature: +25C



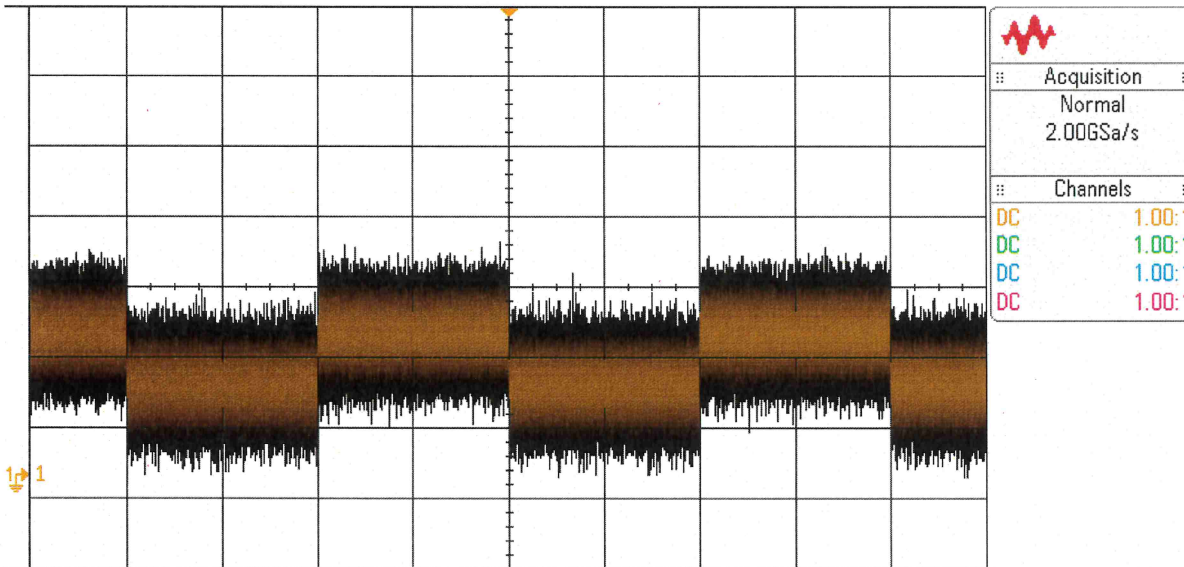


**SUMMARY TEST DATA
ON
HADA-D2002**

TSS = -42.7 dBm

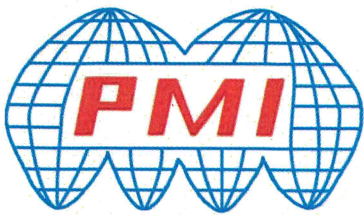
MSO-X 3054A, MY53400180: Mon Nov 24 12:52:12 2025

1 75% / 2 3 4 0.0s 50.00% / Auto 4 1.67V



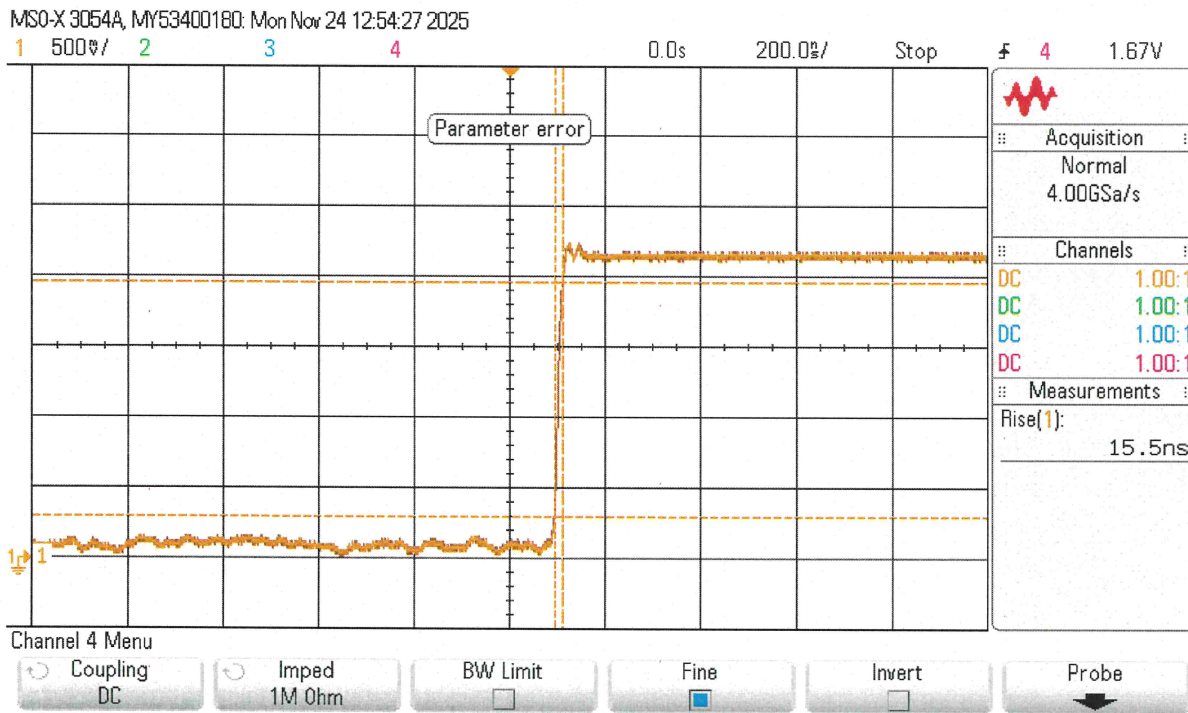
Channel 4 Menu

Coupling DC Imped 1M Ohm BW Limit Fine Invert Probe



SUMMARY TEST DATA ON HADA-D2002

Rise Time = 15.5 ns





**SUMMARY TEST DATA
ON
HADA-D2002**

Fall Time = 105.5 ns

