

**SUMMARY TEST DATA
ON
HADA-D2002**

Customer: _____
SO No: _____
Model No: HADA-D2002
Serial No: PL55550/2543

Tested By: Daniel W.
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 QA3
2	TSS:	-40 dBm Min	-42.8 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 0.66 dB	± 0.64 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)	0.2 dB / -0.44 dB @ 10GHZ 1.04 dB / -0.44 dB @ ALL OTHER FREQUENCY	1.5 dB / -0.8 dB	-0.04 dB / -1.54 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	0.33 dB / -0.21 dB	0.67 dB / -0.54 dB	0.25 dB / -0.27 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%)	15.6 ns			
10	Fall Time:	500 ns Max (@ Pulse width 100µs input) (90% to 10%)	97.6 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/-100 mV	97 mV @ +25°c	119 mV @ -40°c	68 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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			+25°C	-40°	+85°C	QC
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



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
 MODEL: HADA-D2002
 SERIAL NO: PL55550
 TESTED BY: Daniel W.
 DATE: 10/23/2025



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

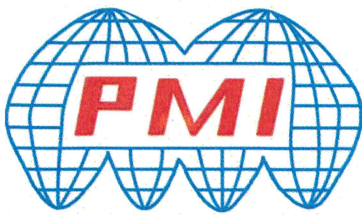
GRAPH #1

Output Voltage Offset= 0.097 Volts

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)	Measured Value (mV)	Error(dB)
2 GHz	2144	50	341	592	841	1087	1346	1608	1853	2090	2334	Measured Value (mV)	MAX	MIN
			-2	-1	-2	-6	2	14	9	-4	-10	Error (mV)	0.29	-0.21
			-0.04	-0.02	-0.04	-0.13	0.05	0.29	0.18	-0.08	-0.21	LINEARITY ERROR (dB)	0.16	-0.32
6 GHz	2181	49.6	389	638	896	1138	1390	1652	1888	2123	2372	Measured Value (mV)	MAX	MIN
			-6	-5	5	-1	3	17	5	-9	-8	Error (mV)	0.33	-0.17
			-0.12	-0.10	0.10	-0.03	0.05	0.33	0.09	-0.17	-0.15	LINEARITY ERROR (dB)	1.04	0.44
10 GHz	2158	50.9	329	583	830	1078	1341	1606	1858	2105	2360	Measured Value (mV)	MAX	MIN
			4	3	-4	-11	-2	8	6	-2	-2	Error (mV)	0.16	-0.21
			0.08	0.07	-0.08	-0.21	-0.05	0.16	0.11	-0.04	-0.03	LINEARITY ERROR (dB)	0.20	-0.44
14 GHz	2151	50	347	601	852	1095	1349	1606	1856	2098	2347	Measured Value (mV)	MAX	MIN
			-2	1	2	-5	-1	6	6	-3	-4	Error (mV)	0.11	-0.10
			-0.05	0.03	0.04	-0.10	-0.02	0.11	0.11	-0.05	-0.08	LINEARITY ERROR (dB)	0.12	-0.10
18 GHz	2171	50.9	346	599	849	1093	1347	1610	1870	2122	2380	Measured Value (mV)	MAX	MIN
			6	5	0	-10	-10	-2	4	1	5	Error (mV)	0.12	-0.20
			0.12	0.10	0.01	-0.20	-0.20	-0.03	0.08	0.03	0.10	LINEARITY ERROR (dB)	0.60	-0.14
Flatness +/- dB			0.596	0.547	0.656	0.596	0.487	0.457	0.348	0.328	0.457	Measured Value (mV)		
Max Video Output V			0.389	0.638	0.896	1.138	1.390	1.652	1.888	2.123	2.380	Error (mV)		
Min Video Output V			0.329	0.583	0.830	1.078	1.341	1.606	1.853	2.090	2.334	LINEARITY ERROR (dB)		

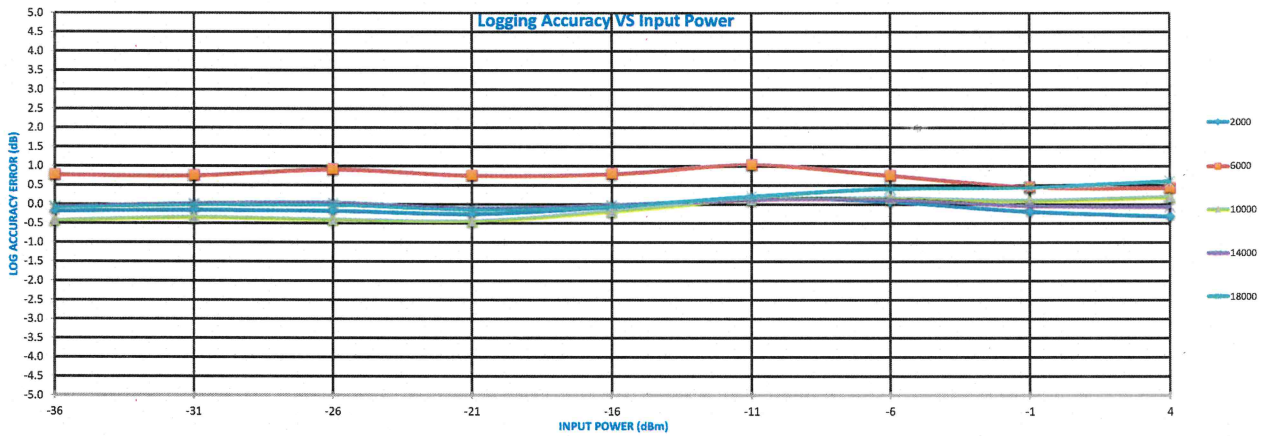
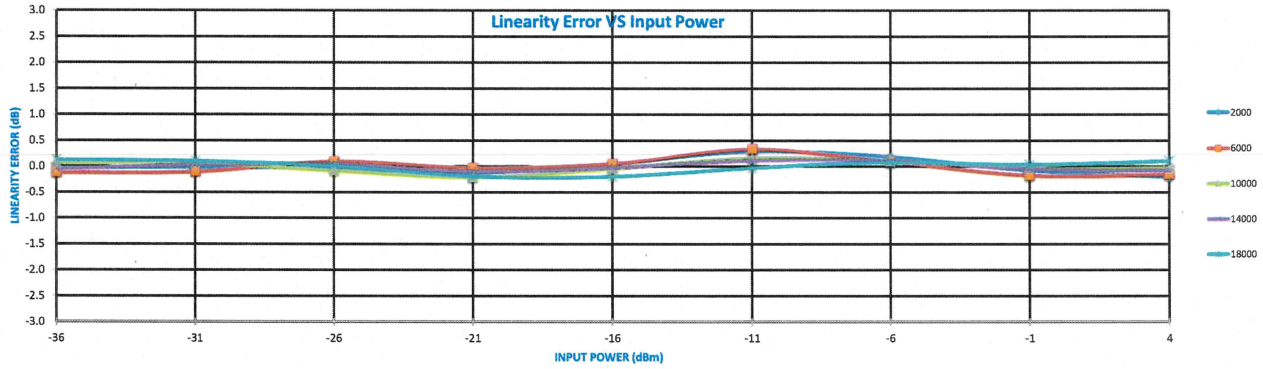
Logging Linearity vs Frequency	Error(dB)
LOGGING LINEARITY ERROR (dB)	MAX MIN
	0.33 -0.21

Logging Accuracy vs Frequency	Error(dB)
LOGGING ACCURACY ERROR (dB)	MAX MIN
	1.04 -0.44



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55550
TESTED BY: Daniel W.





SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
 MODEL: HADA-D2002
 SERIAL NO: PL55550
 TESTED BY: Daniel W.
 DATE: 10/23/2025



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GRAPH #2

Output Voltage Offset= 0.119 Volts

Frequency	INTERCEPT (mV)	2141
2 GHz	SLOPE (mV/dB)	48.9

Frequency	INTERCEPT (mV)	2175
6 GHz	SLOPE (mV/dB)	48.5

Frequency	INTERCEPT (mV)	2153
10 GHz	SLOPE (mV/dB)	49.8

Frequency	INTERCEPT (mV)	2145
14 GHz	SLOPE (mV/dB)	48.9

Frequency	INTERCEPT (mV)	2157
18 GHz	SLOPE (mV/dB)	49.7

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)	381	612	865	1106	1361	1632	1868	2088	2310	
Error (mV)	1	-12	-4	-8	3	29	21	-4	-27	
LINEARITY ERROR (dB)	0.03	-0.25	-0.08	-0.15	0.06	0.60	0.42	-0.08	-0.54	
LOGGING ACCURACY (dB)	0.62	0.24	0.30	0.12	0.22	0.64	0.36	-0.24	-0.80	
Measured Value (mV)	425	656	916	1158	1405	1674	1902	2116	2342	
Error (mV)	-5	-17	1	1	6	32	18	-10	-26	
LINEARITY ERROR (dB)	-0.11	-0.34	0.02	0.02	0.12	0.67	0.37	-0.21	-0.54	
LOGGING ACCURACY (dB)	1.50	1.12	1.32	1.16	1.10	1.48	1.04	0.32	-0.16	
Measured Value (mV)	366	602	853	1095	1356	1630	1872	2100	2333	
Error (mV)	5	-8	-5	-12	0	25	18	-3	-19	
LINEARITY ERROR (dB)	0.11	-0.15	-0.11	-0.25	-0.01	0.50	0.36	-0.06	-0.38	
LOGGING ACCURACY (dB)	0.32	0.04	0.06	-0.10	0.12	0.60	0.44	0.00	-0.34	
Measured Value (mV)	385	619	874	1114	1363	1629	1870	2094	2318	
Error (mV)	0	-11	0	-4	0	22	18	-2	-22	
LINEARITY ERROR (dB)	-0.01	-0.22	0.00	-0.09	0.00	0.44	0.37	-0.04	-0.46	
LOGGING ACCURACY (dB)	0.70	0.38	0.48	0.28	0.26	0.58	0.40	-0.12	-0.64	
Measured Value (mV)	377	611	863	1103	1354	1623	1874	2107	2346	
Error (mV)	9	-6	-2	-11	-8	13	15	0	-10	
LINEARITY ERROR (dB)	0.18	-0.11	-0.04	-0.21	-0.16	0.25	0.30	-0.01	-0.20	
LOGGING ACCURACY (dB)	0.54	0.22	0.26	0.06	0.08	0.46	0.48	0.14	-0.08	
Flatness +/- dB	0.600	0.549	0.641	0.641	0.519	0.519	0.346	0.285	0.366	
Max Video Output V	0.425	0.656	0.916	1.158	1.405	1.674	1.902	2.116	2.346	
Min Video Output V	0.366	0.602	0.853	1.095	1.354	1.623	1.868	2.088	2.310	

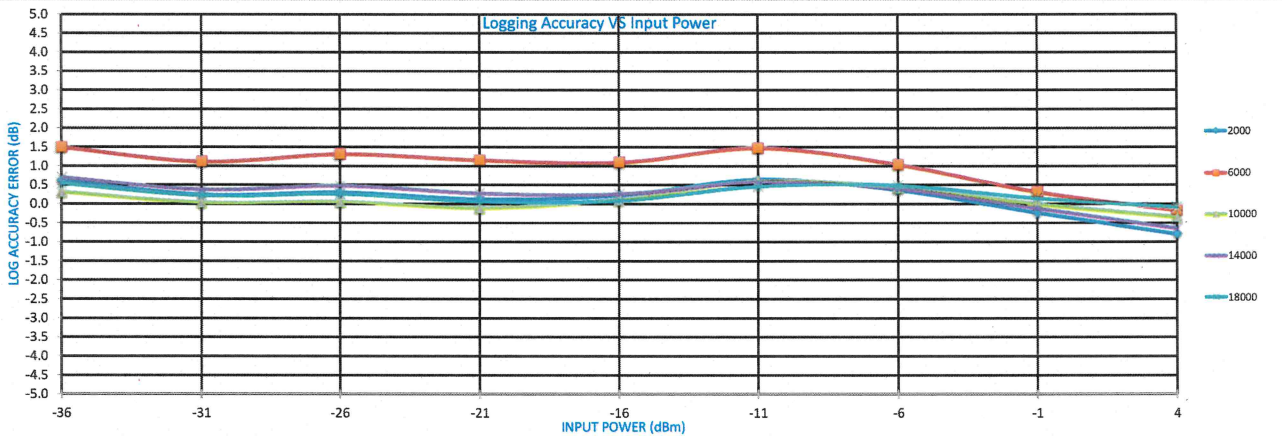
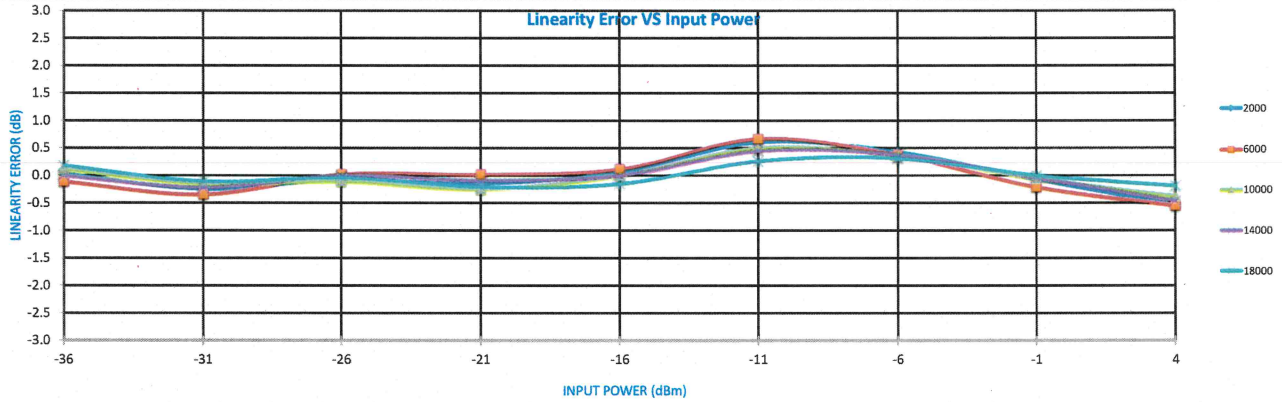
Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.67 -0.54

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	1.50 -0.80



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55550
TESTED BY: Daniel W.





SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
 MODEL: HADA-D2002
 SERIAL NO: PL55550
 TESTED BY: Daniel W.
 DATE: 10/23/2025



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GRAPH #3

Output Voltage Offset= 0.068 Volts

Frequency

2 GHz	INTERCEPT (mV)	2095
	SLOPE (mV/dB)	50.4

6 GHz	INTERCEPT (mV)	2140
	SLOPE (mV/dB)	50.1

10 GHz	INTERCEPT (mV)	2113
	SLOPE (mV/dB)	51.3

14 GHz	INTERCEPT (mV)	2105
	SLOPE (mV/dB)	50.4

18 GHz	INTERCEPT (mV)	2118
	SLOPE (mV/dB)	51

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

-36	-31	-26	-21	-16	-11	-6	-1	4
284	539	780	1027	1287	1541	1796	2042	2302
4	7	-4	-10	-2	0	3	-3	5
0.08	0.13	-0.09	-0.19	-0.03	0.00	0.06	-0.06	0.10
-1.32	-1.22	-1.40	-1.46	-1.26	-1.18	-1.08	-1.16	-0.96
335	591	841	1081	1336	1591	1837	2084	2348
-1	4	4	-7	-2	2	-2	-6	8
-0.02	0.09	0.08	-0.13	-0.04	0.04	-0.05	-0.12	0.15
-0.30	-0.18	-0.18	-0.38	-0.28	-0.18	-0.26	-0.32	-0.04
278	534	775	1023	1286	1543	1805	2062	2331
10	10	-5	-14	-7	-6	-1	0	13
0.20	0.19	-0.11	-0.27	-0.14	-0.12	-0.01	0.00	0.25
-1.44	-1.32	-1.50	-1.54	-1.28	-1.14	-0.90	-0.76	-0.38
294	551	795	1039	1293	1545	1803	2052	2318
3	8	0	-8	-6	-6	0	-3	11
0.06	0.16	0.00	-0.16	-0.12	-0.12	0.00	-0.06	0.22
-1.12	-0.98	-1.10	-1.22	-1.14	-1.10	-0.94	-0.96	-0.64
292	549	790	1035	1290	1547	1815	2073	2332
9	11	-3	-13	-13	-10	3	6	10
0.18	0.22	-0.05	-0.25	-0.25	-0.21	0.05	0.11	0.19
-1.16	-1.02	-1.20	-1.30	-1.20	-1.06	-0.70	-0.54	-0.36
0.563	0.563	0.652	0.573	0.494	0.494	0.405	0.415	0.454
0.335	0.591	0.841	1.081	1.336	1.591	1.837	2.084	2.348
0.278	0.534	0.775	1.023	1.286	1.541	1.796	2.042	2.302

RF Input Power (dBm)

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.13 -0.19
LOGGING ACCURACY (dB)	-0.96 -1.46

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.15 -0.13
LOGGING ACCURACY (dB)	-0.04 -0.38

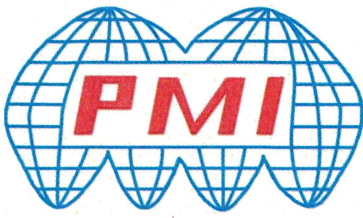
Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.25 -0.27
LOGGING ACCURACY (dB)	-0.38 -1.54

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.22 -0.16
LOGGING ACCURACY (dB)	-0.64 -1.22

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.22 -0.25
LOGGING ACCURACY (dB)	-0.36 -1.30

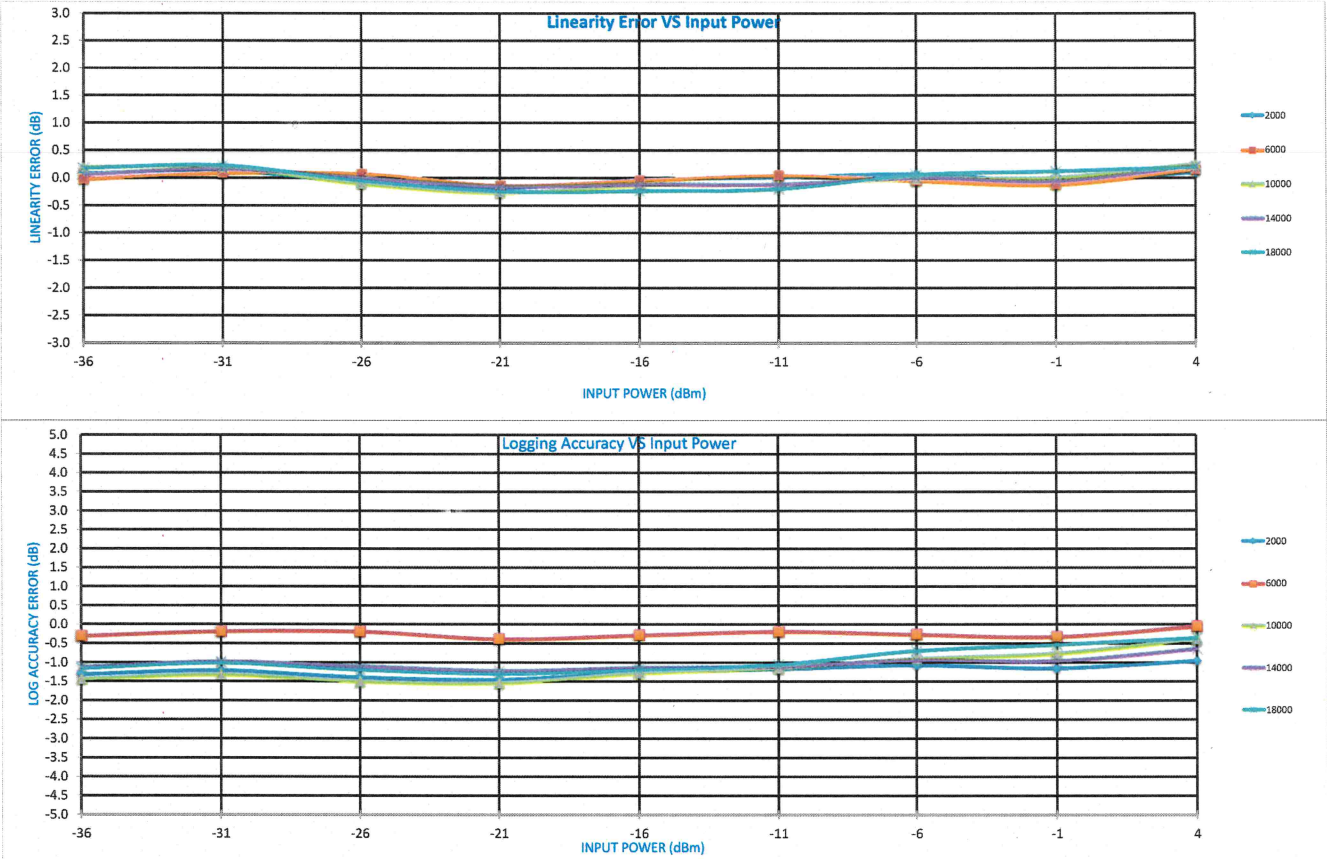
Logging Linearity vs Frequency	Error(dB)
Error (mV)	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.25 -0.27

Logging Accuracy vs Frequency	Error(dB)
Error (mV)	MAX MIN
LOGGING ACCURACY ERROR (dB)	-0.04 -1.54



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55550
TESTED BY: Daniel W.

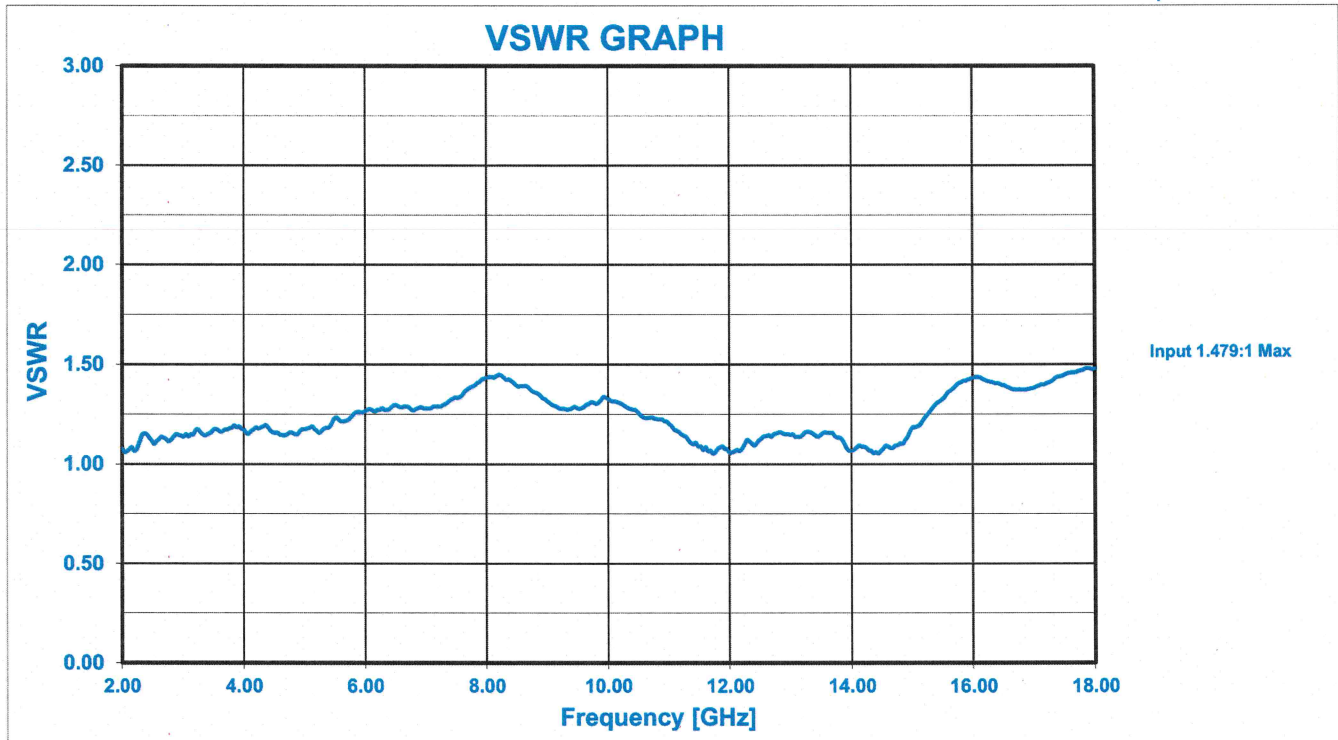




SUMMARY TEST DATA ON HADA-D2002

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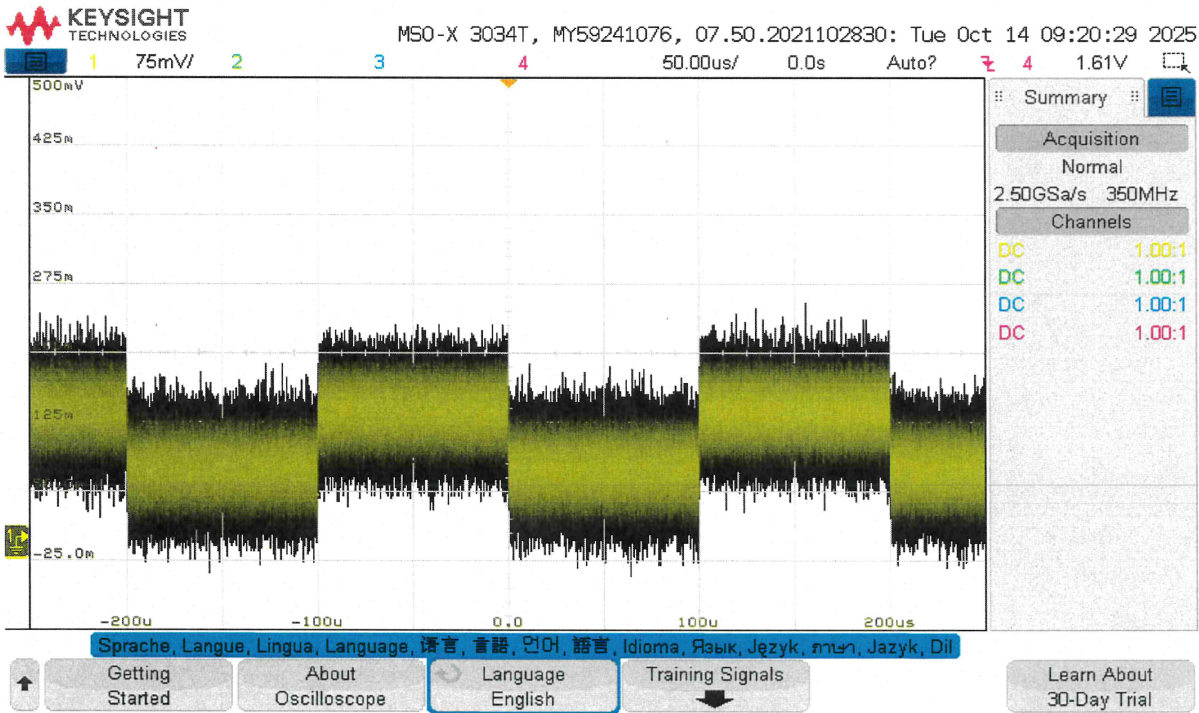
Temperature: +25C

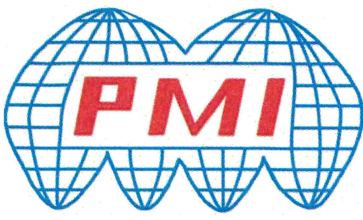




SUMMARY TEST DATA ON HADA-D2002

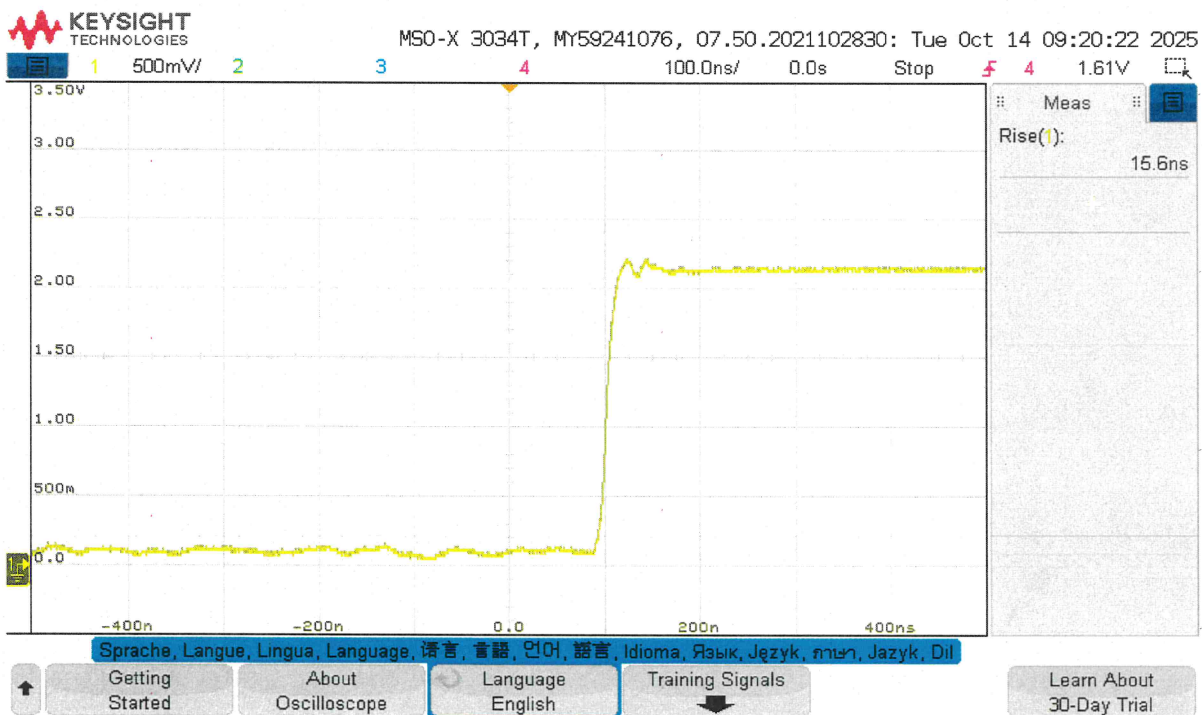
TSS = -42.8 dBm

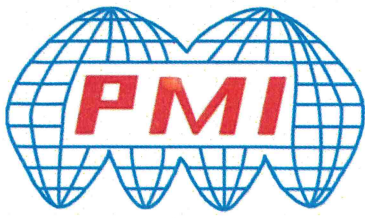




SUMMARY TEST DATA ON HADA-D2002

Rise Time = 15.6 ns





SUMMARY TEST DATA ON HADA-D2002

Fall Time = 97.6 ns

