

**SUMMARY TEST DATA
ON
HADA-D2002**

Customer: _____
SO No: _____
Model No: HADA-D2002
Serial No: PL55551/2543

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	-43.1 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 0.6 dB	± 0.6 dB	± 0.64 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)	0.66 dB / -0.56 dB @ 10GHZ 1.28 dB / -0.56 dB @ ALL OTHER FREQUENCY	1.24 dB / -0.76 dB	0.66 dB / -1.76 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	0.22 dB / -0.26 dB	0.57 dB / -0.62 dB	0.27 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%)	17.4 ns			
10	Fall Time:	500 ns Max (@ Pulse width 100µs input) (90% to 10%)	104 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/-100 mV	89 mV @ +25°c	97 mV @ -40°c	51 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.

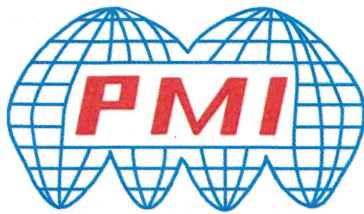
**SUMMARY TEST DATA
ON
HADA-D2002**

PL55551/2543

Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA
			+25°C	-40°	+85°C	QC
12	Input VSWR:	3.0:1 Max @ +23 dBm	1.56:1	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: PL55551
 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

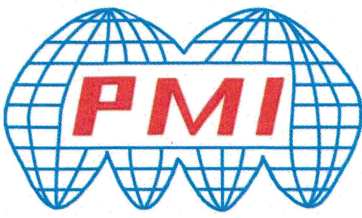
Output Voltage Offset= 0.089 Volts

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
2 GHz	2169	51.1
6 GHz	2211	50.7
10 GHz	2180	51.6
14 GHz	2183	51.2
18 GHz	2204	51.6
Flatness +/- dB		
Max Video Output V		
Min Video Output V		

	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
2 GHz	325	586	837	1090	1351	1613	1873	2121	2360	Measured Value (mV)
	-3	2	-2	-5	0	7	11	3	-13	Error (mV)
	-0.06	0.05	-0.05	-0.10	0.01	0.13	0.22	0.07	-0.26	MAX MIN
	-0.50	-0.28	-0.26	-0.20	0.02	0.26	0.46	0.42	0.20	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
6 GHz	377	637	898	1146	1399	1664	1914	2159	2402	Measured Value (mV)
	-8	-2	6	0	-1	11	7	-1	-12	Error (mV)
	-0.16	-0.03	0.11	0.00	-0.01	0.21	0.14	-0.03	-0.24	MAX MIN
	0.54	0.74	0.96	0.92	0.98	1.28	1.28	1.18	1.04	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
10 GHz	322	585	836	1089	1351	1612	1878	2132	2383	Measured Value (mV)
	1	5	-2	-7	-3	0	7	3	-4	Error (mV)
	0.01	0.10	-0.04	-0.14	-0.06	-0.01	0.14	0.06	-0.08	MAX MIN
	-0.56	-0.30	-0.28	-0.22	0.02	0.24	0.56	0.64	0.66	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
14 GHz	338	601	856	1105	1360	1621	1883	2135	2382	Measured Value (mV)
	-3	4	3	-4	-5	1	7	3	-6	Error (mV)
	-0.07	0.08	0.06	-0.07	-0.09	0.01	0.13	0.06	-0.11	MAX MIN
	-0.24	0.02	0.12	0.10	0.20	0.42	0.66	0.70	0.64	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
18 GHz	347	610	865	1114	1369	1634	1903	2160	2406	Measured Value (mV)
	0	5	2	-7	-10	-3	8	7	-5	Error (mV)
	0.01	0.11	0.05	-0.13	-0.19	-0.05	0.16	0.14	-0.09	MAX MIN
	-0.06	0.20	0.30	0.28	0.38	0.68	1.06	1.20	1.12	LINEARITY ERROR (dB)
										LOGGING ACCURACY (dB)
	0.537	0.507	0.605	0.556	0.468	0.507	0.400	0.380	0.449	
	0.377	0.637	0.898	1.146	1.399	1.664	1.914	2.160	2.406	
	0.322	0.585	0.836	1.089	1.351	1.612	1.873	2.121	2.360	

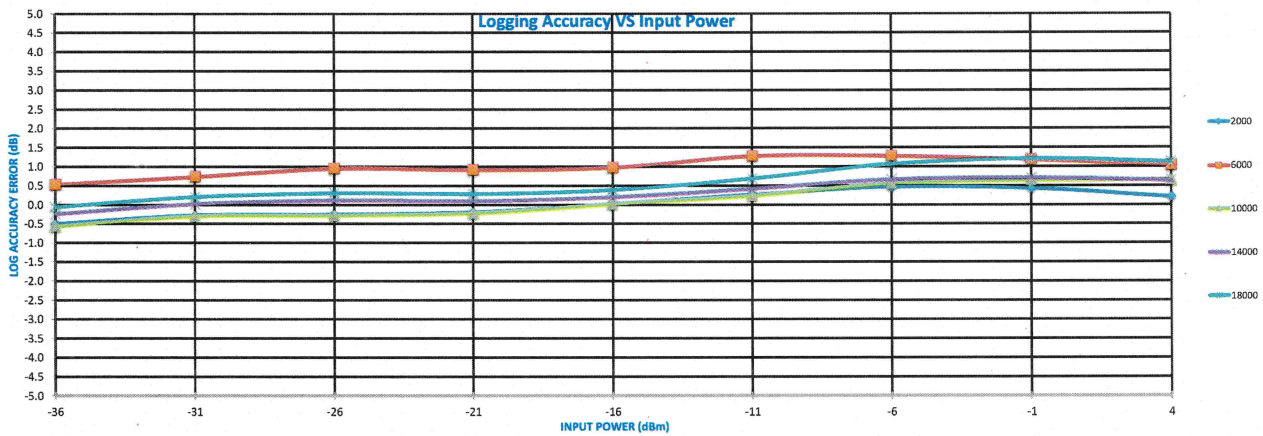
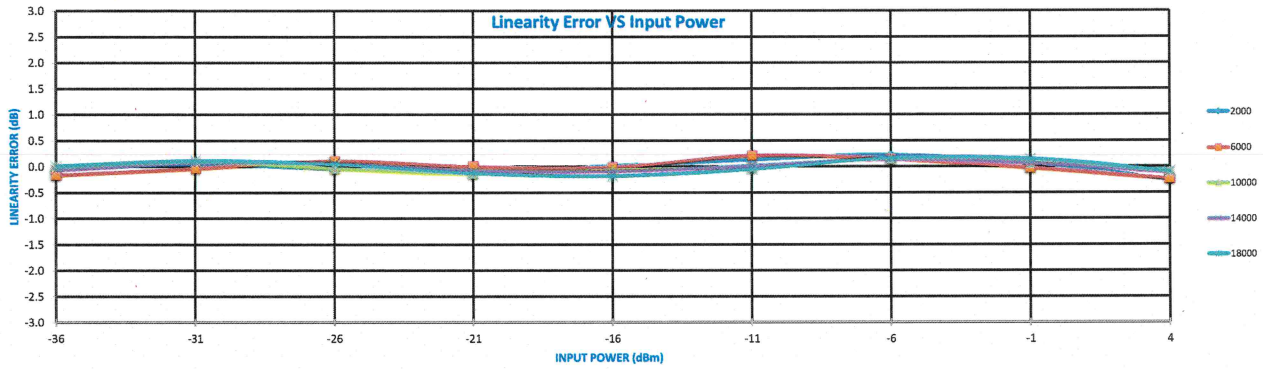
Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.22 -0.26

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	1.28 -0.56



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL55551
TESTED BY: Daniel W.





SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
 MODEL: HADA-D2002
 SERIAL NO: PL55551
 TESTED BY: Daniel W.
 DATE: 10/23/2025



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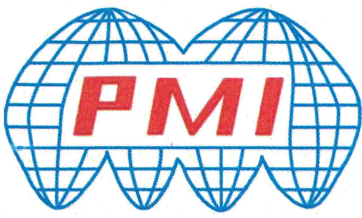
GRAPH #2

Output Voltage Offset= 0.097 Volts

Frequency		-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
2 GHz	INTERCEPT (mV)	342	575	827	1075	1336	1610	1863	2097	2312	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	8	-10	-9	-12	-1	22	24	7	-29	Error (mV)	MAX	MIN
		0.16	-0.20	-0.17	-0.23	-0.03	0.43	0.47	0.14	-0.58	LINEARITY ERROR (dB)	0.47	-0.58
		-0.16	-0.50	-0.46	-0.50	-0.28	0.20	0.26	-0.06	-0.76	LOGGING ACCURACY (dB)	0.26	-0.76
6 GHz	INTERCEPT (mV)	390	624	886	1134	1385	1662	1905	2130	2349	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	0	-15	-2	-2	0	28	23	-1	-31	Error (mV)	MAX	MIN
		-0.01	-0.30	-0.03	-0.05	0.00	0.57	0.46	-0.02	-0.62	LINEARITY ERROR (dB)	0.57	-0.62
		0.80	0.48	0.72	0.68	0.70	1.24	1.10	0.60	-0.02	LOGGING ACCURACY (dB)	1.24	-0.02
10 GHz	INTERCEPT (mV)	337	574	826	1074	1335	1608	1867	2105	2327	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	9	-7	-8	-12	-4	16	22	7	-23	Error (mV)	MAX	MIN
		0.18	-0.13	-0.15	-0.25	-0.08	0.32	0.44	0.14	-0.46	LINEARITY ERROR (dB)	0.44	-0.46
		-0.26	-0.52	-0.48	-0.52	-0.30	0.16	0.34	0.10	-0.46	LOGGING ACCURACY (dB)	0.34	-0.52
14 GHz	INTERCEPT (mV)	347	583	838	1085	1340	1612	1869	2105	2324	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	6	-9	-5	-9	-5	16	22	7	-25	Error (mV)	MAX	MIN
		0.13	-0.17	-0.09	-0.17	-0.10	0.32	0.44	0.14	-0.50	LINEARITY ERROR (dB)	0.44	-0.50
		-0.06	-0.34	-0.24	-0.30	-0.20	0.24	0.38	0.10	-0.52	LOGGING ACCURACY (dB)	0.38	-0.52
18 GHz	INTERCEPT (mV)	352	588	842	1089	1343	1619	1881	2121	2347	Measured Value (mV)	Error(dB)	
	SLOPE (mV/dB)	11	-6	-5	-11	-11	12	21	8	-19	Error (mV)	MAX	MIN
		0.22	-0.12	-0.11	-0.23	-0.21	0.24	0.42	0.16	-0.38	LINEARITY ERROR (dB)	0.42	-0.38
		0.04	-0.24	-0.16	-0.22	-0.14	0.38	0.62	0.42	-0.06	LOGGING ACCURACY (dB)	0.62	-0.24
Flatness +/- dB		0.527	0.497	0.597	0.597	0.497	0.537	0.418	0.328	0.368			
Max Video Output V		0.390	0.624	0.886	1.134	1.385	1.662	1.905	2.130	2.349			
Min Video Output V		0.337	0.574	0.826	1.074	1.335	1.608	1.863	2.097	2.312			

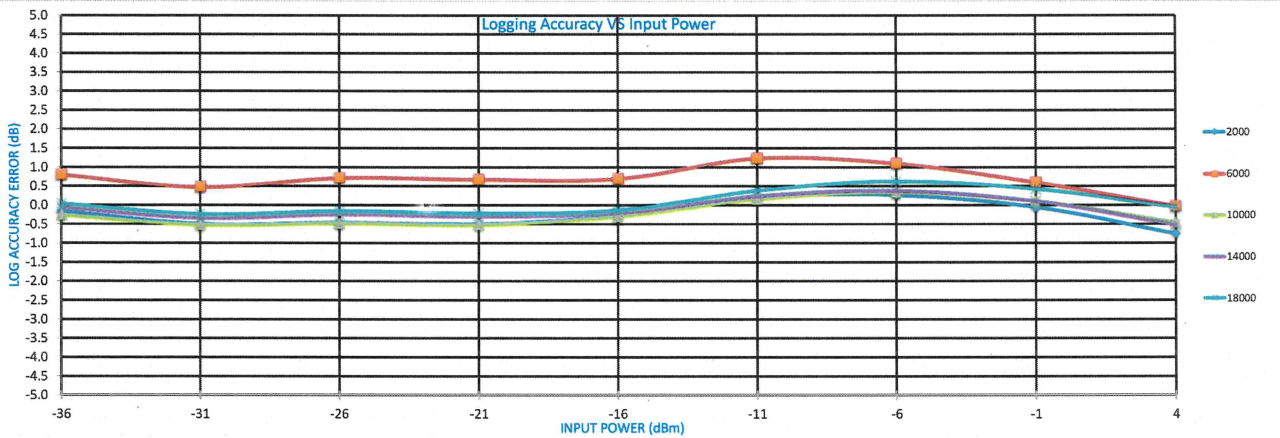
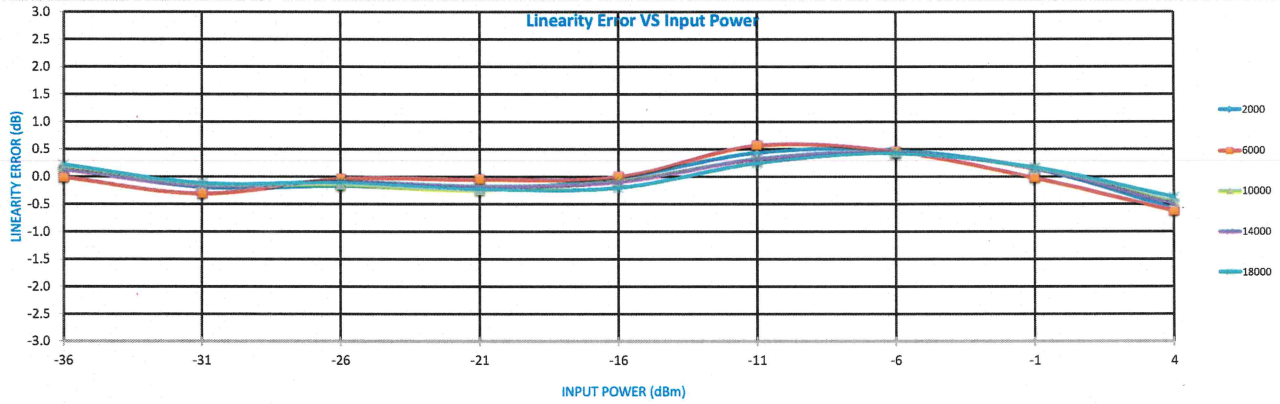
Logging Linearity vs Frequency		Error(dB)	
		MAX	MIN
LOGGING LINEARITY ERROR (dB)		0.57	-0.62

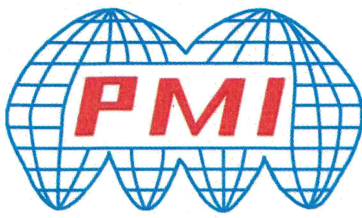
Logging Accuracy vs Frequency		Error(dB)	
		MAX	MIN
LOGGING ACCURACY ERROR (dB)		1.24	-0.76



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL55551
TESTED BY: Daniel W.





SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
 MODEL: HADA-D2002
 SERIAL NO: PL55551
 TESTED BY: Daniel W.
 DATE: 10/23/2025



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GRAPH #3

Output Voltage Offset= 0.051 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	2127	51.5	262	539	789	1044	1302	1554	1821	2076	2331			
			-9	10	2	0	0	-6	4	1	-2		MAX	MIN
			-0.18	0.20	0.05	-0.01	0.00	-0.11	0.07	0.02	-0.03		0.20	-0.18
			-1.76	-1.22	-1.22	-1.12	-0.96	-0.92	-0.58	-0.48	-0.38		0.38	-1.76
6 GHz	2176	51.2	319	599	855	1101	1355	1609	1867	2122	2383			
			-14	10	10	0	-2	-4	-2	-3	3		MAX	MIN
			-0.27	0.20	0.20	0.01	-0.03	-0.07	-0.03	-0.05	0.05		0.20	-0.27
			-0.62	-0.02	0.10	0.02	0.10	0.18	0.34	0.44	0.66		0.66	-0.62
10 GHz	2149	52.1	267	547	797	1050	1310	1563	1834	2097	2368			
			-5	14	4	-4	-5	-12	-2	0	10		MAX	MIN
			-0.10	0.27	0.07	-0.08	-0.09	-0.24	-0.04	0.00	0.20		0.27	-0.24
			-1.66	-1.06	-1.06	-1.00	-0.80	-0.74	-0.32	-0.06	0.36		0.36	-1.66
14 GHz	2145	51.6	278	558	811	1061	1315	1566	1835	2094	2358			
			-9	12	7	-1	-5	-12	-1	0	8		MAX	MIN
			-0.18	0.24	0.14	-0.01	-0.09	-0.22	-0.01	0.01	0.12		0.24	-0.22
			-1.44	-0.84	-0.78	-0.78	-0.70	-0.68	-0.30	-0.12	0.16		0.16	-1.44
18 GHz	2161	51.8	287	568	819	1069	1323	1579	1855	2117	2367			
			-8	14	6	-3	-9	-12	5	8	-1		MAX	MIN
			-0.15	0.27	0.11	-0.07	-0.17	-0.23	0.10	0.15	-0.02		0.27	-0.23
			-1.26	-0.64	-0.62	-0.62	-0.54	-0.42	0.10	0.34	0.34		0.34	-1.26
Flatness +/- dB			0.552	0.581	0.639	0.552	0.513	0.532	0.445	0.445	0.503			
Max Video Output V			0.319	0.599	0.855	1.101	1.355	1.609	1.867	2.122	2.383			
Min Video Output V			0.262	0.539	0.789	1.044	1.302	1.554	1.821	2.076	2.331			

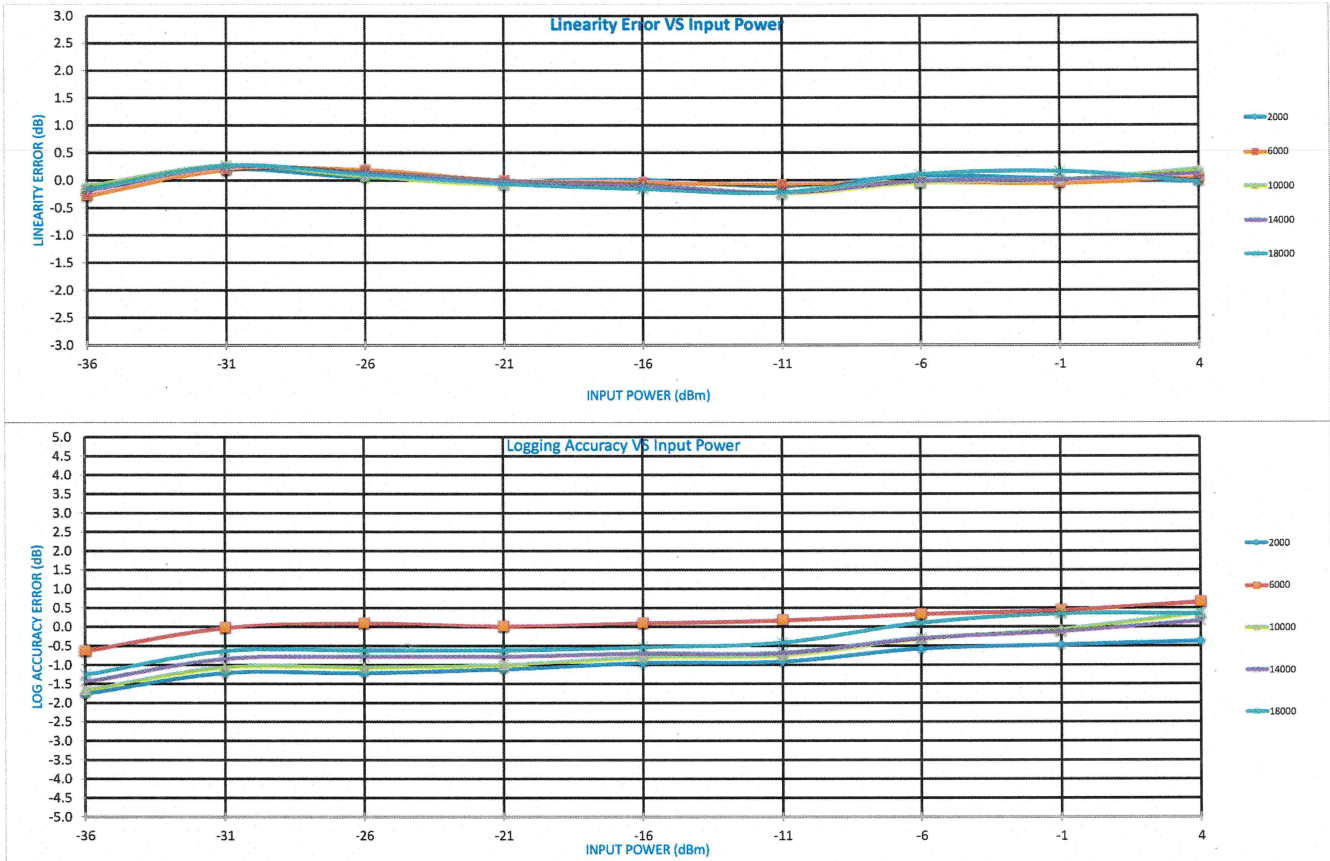
Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.27 -0.27

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	0.66 -1.76



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL55551
TESTED BY: Daniel W.

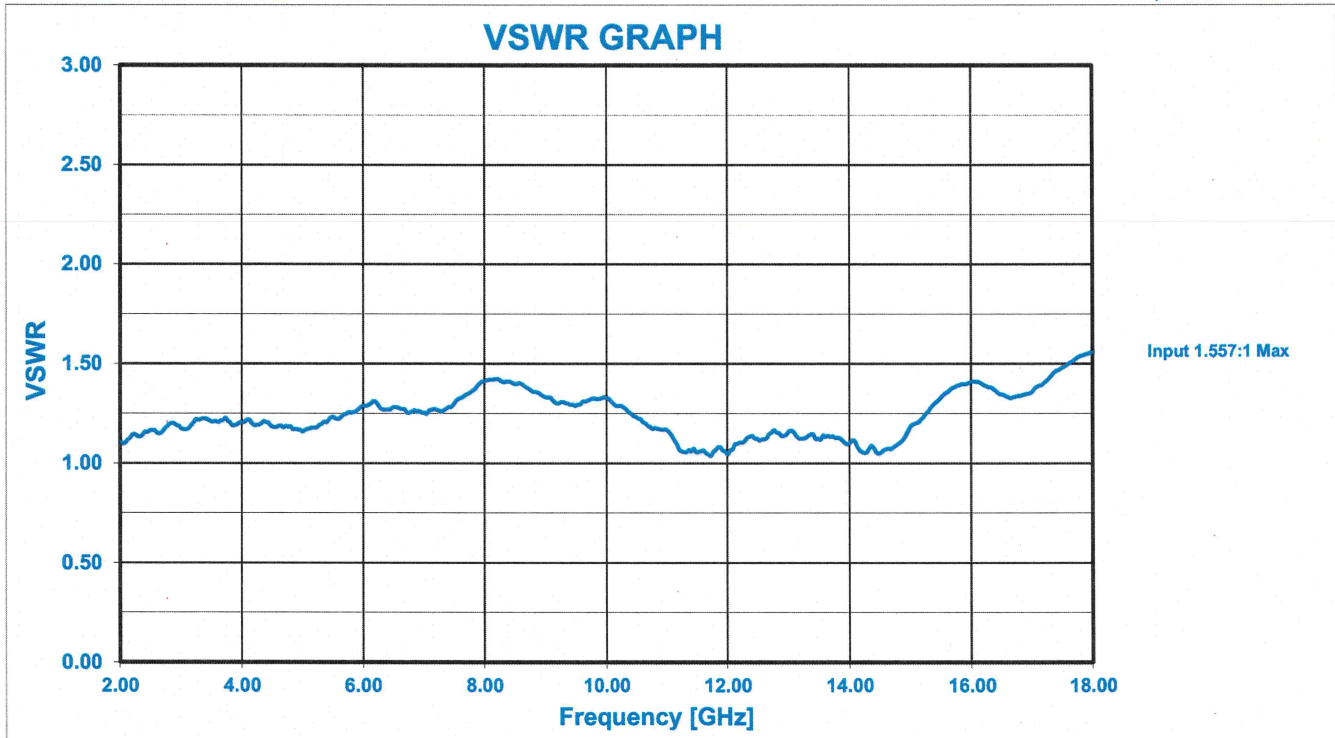




SUMMARY TEST DATA ON HADA-D2002

Model Number: HADA-D2002
Serial Number: PL55551

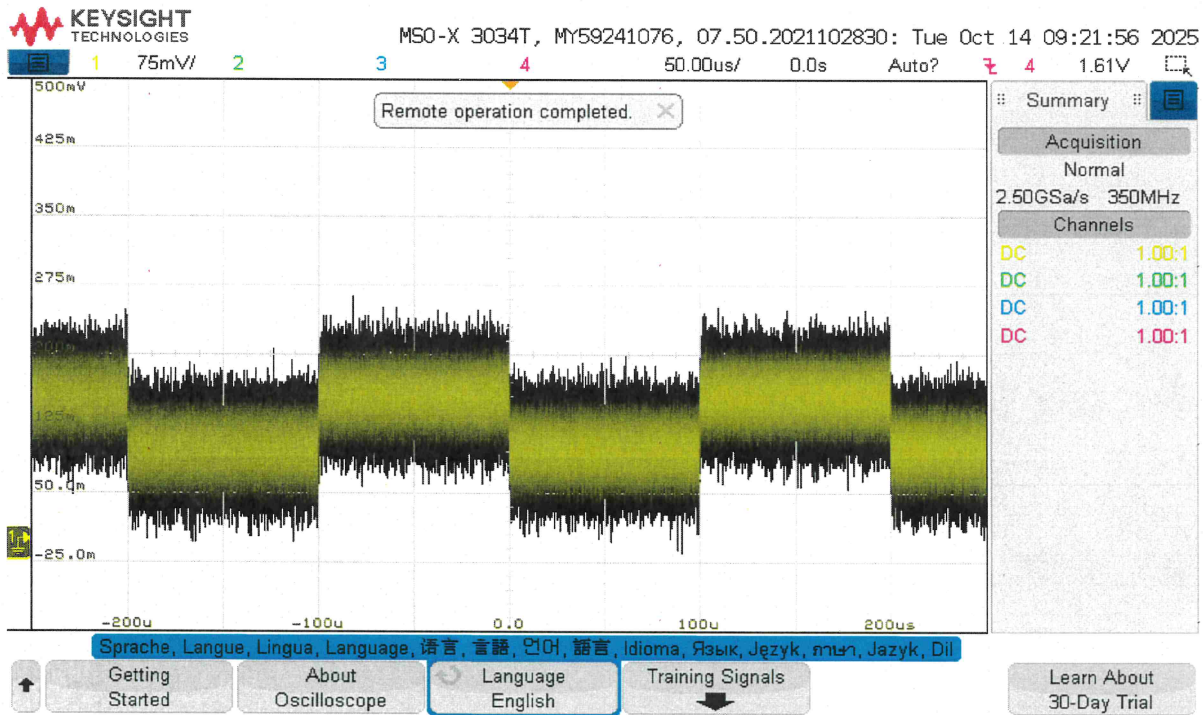
Temperature: +25C





SUMMARY TEST DATA ON HADA-D2002

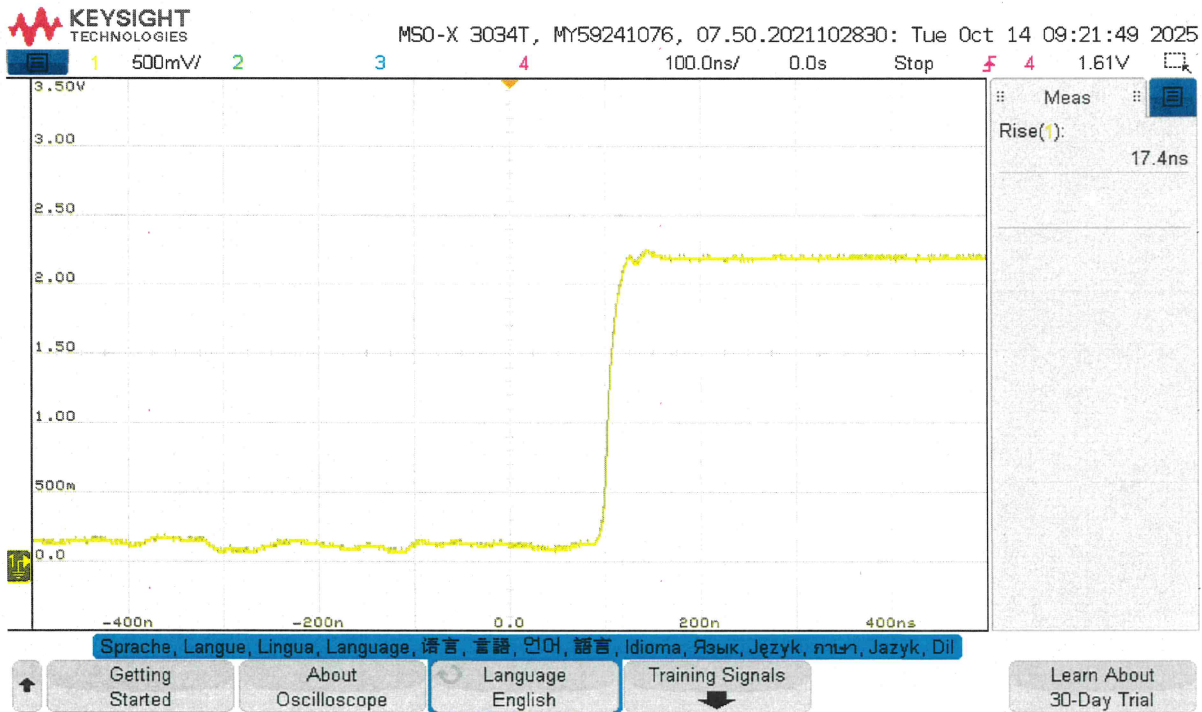
TSS = -43.1 dBm





SUMMARY TEST DATA ON HADA-D2002

Rise Time = 17.4 ns





SUMMARY TEST DATA ON HADA-D2002

Fall Time = 104 ns

