

**SUMMARY TEST DATA
 ON
 HADA-D2002**

Customer: _____
 SO No: _____
 Model No: HADA-D2002
 Serial No: PL56748/2551

Tested By: Justen Gayduchik
 Temperature: +25°C (Unless otherwise specified)
 Date: 2/10/2026
 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	-41.5 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 0.58 dB	± 0.56 dB	± 0.57 dB	
4	Input / Output Characteristics: (93 Ω)	Y = 2150 + 50X [X: Input (dBm), Y: Output (mw)]	Pass	Pass	Pass	
5	Logging Accuracy	±1.5 dB Max (@ +25°C, 10 GHz)* [-36 dBm ≤ INPUT ≤ +4 dBm] ±3.1 dB Max (Note)	-0.14 dB / -0.78 dB @ 10GHZ 0.54 dB / -0.78 dB @ ALL OTHER FREQUENCY	0.42 dB / -1.36 dB	0.34 dB / -1.28 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	0.32 dB / -0.25 dB	0.46 dB / -0.44 dB	0.47 dB / -0.33 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%)	74 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/-100mV	96 mV @ +25°C	119 mV @ -40°C	96 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.

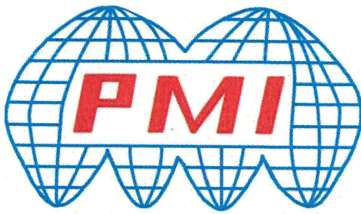
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Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA
			+25°C	-40°	+85°C	QC
12	Input VSWR:	3.0:1 Max @ +23 dBm	1.38:1	NA	NA	PMI QA?
13	Propagation Delay:	60 ns Max	Pass	Pass	Pass	
14	Power Supply:	+12 ± 1VDC @ 125 mA Max -12 ± 1VDC @ 75 mA Max	+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. Hanning

Date: 2-10-26



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
 MODEL: HADA-D2002
 SERIAL NO: PL56748
 TESTED BY: Justen Gayduchik
 DATE: 12/18/2025



PLANAR MONOLITHICS INDUSTRIES
 4921 Robert J. Mathews Parkway Suite 1
 El Dorado Hills, CA 95762
 TEL: 916-542-1401 FAX: 916-265-2597
 EMAIL: SALES@PMI-RF.COM

GRAPH #1

Output Voltage Offset= 0.096 Volts

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
2 GHz	2143	50.6

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
6 GHz	2170	50.1

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
10 GHz	2130	50.7

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
14 GHz	2137	50.6

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
18 GHz	2143	50.1

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

RF Input Power (dBm)	Measured Value (mV)	Error(dB)
-36	326	0.27
-31	574	-0.20
-26	820	0.00
-21	1070	-0.11
-16	1339	0.09
-11	1600	-0.11
-6	1834	0.09
-1	2097	-0.11
4	2340	-0.20
5	0	0.00
0.10	0.00	0.02
-0.48	-0.52	-0.60
365	613	0.18
0	-2	0.05
0.00	-0.05	0.18
0.30	0.26	0.38
314	564	0.19
8	4	0.19
0.15	0.08	0.19
-0.72	-0.72	-0.78
318	569	0.16
4	2	0.10
0.08	0.04	0.10
-0.64	-0.62	-0.70
337	587	0.12
-2	-3	0.12
-0.04	-0.05	0.12
-0.26	-0.26	-0.38
0.506	0.486	0.347
0.365	0.613	0.347
0.314	0.564	0.347

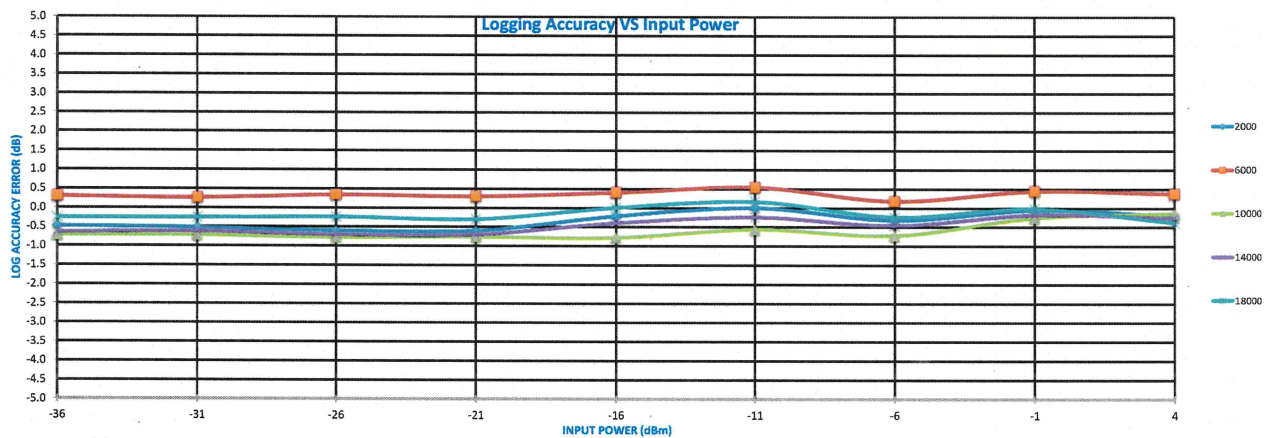
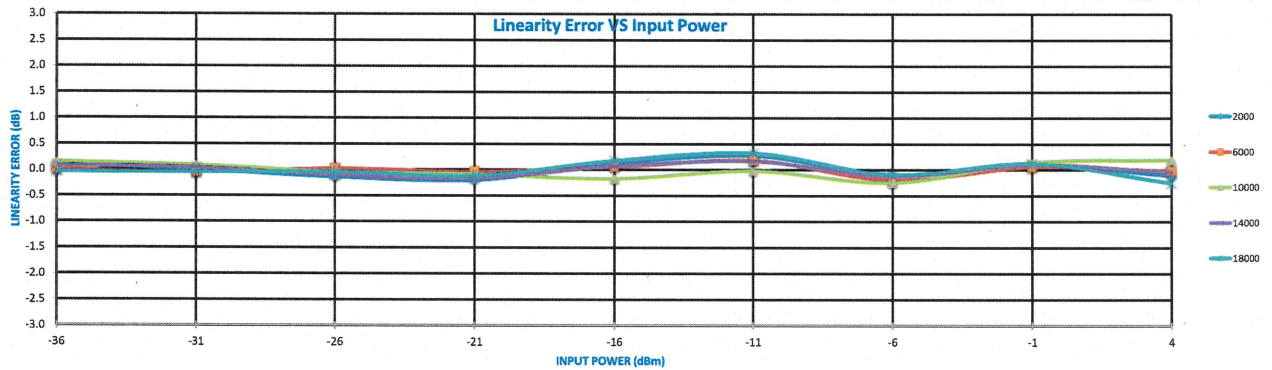
Logging Linearity vs Frequency	Error(dB)
MAX	0.32
MIN	-0.25

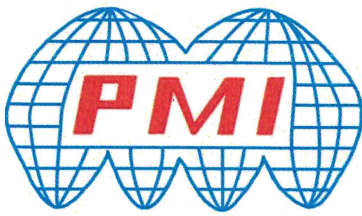
Logging Accuracy vs Frequency	Error(dB)
MAX	0.54
MIN	-0.78



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL56748
TESTED BY: Justen Gaydchik





SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
 MODEL: HADA-D2002
 SERIAL NO: PL58748
 TESTED BY: Justen Gayduchik
 DATE: 12/16/2025



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GRAPH #2

Output Voltage Offset= 0.119 Volts

Frequency	INTERCEPT (mV)	2103
2 GHz	SLOPE (mV/dB)	49.5

6 GHz	INTERCEPT (mV)	2121
	SLOPE (mV/dB)	49

10 GHz	INTERCEPT (mV)	2088
	SLOPE (mV/dB)	49.5

14 GHz	INTERCEPT (mV)	2106
	SLOPE (mV/dB)	49.5

18 GHz	INTERCEPT (mV)	2112
	SLOPE (mV/dB)	49.3

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

	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
	341	557	799	1045	1311	1576	1812	2066	2285	Measured Value (mV)	Error(dB)	
	21	-10	-16	-18	1	18	6	13	-16	Error (mV)	MAX	MIN
	0.43	-0.21	-0.32	-0.35	0.02	0.37	0.13	0.26	-0.32	LINEARITY ERROR (dB)	0.43	-0.35
	-0.18	-0.86	-1.02	-1.10	-0.78	-0.48	-0.76	-0.68	-1.30	LOGGING ACCURACY (dB)	-0.18	-1.30
	371	590	841	1086	1338	1599	1833	2083	2300	Measured Value (mV)	Error(dB)	
	13	-13	-7	-7	0	16	5	11	-17	Error (mV)	MAX	MIN
	0.26	-0.27	-0.15	-0.14	0.00	0.33	0.11	0.21	-0.35	LINEARITY ERROR (dB)	0.33	-0.35
	0.42	-0.20	-0.18	-0.28	-0.24	-0.02	-0.34	-0.34	-1.00	LOGGING ACCURACY (dB)	0.42	-1.00
	328	548	789	1035	1283	1548	1790	2056	2282	Measured Value (mV)	Error(dB)	
	23	-5	-11	-13	-12	5	-1	18	-4	Error (mV)	MAX	MIN
	0.46	-0.09	-0.23	-0.26	-0.25	0.10	-0.01	0.36	-0.08	LINEARITY ERROR (dB)	0.46	-0.26
	-0.44	-1.04	-1.22	-1.30	-1.34	-1.04	-1.20	-0.88	-1.36	LOGGING ACCURACY (dB)	-0.44	-1.36
	342	561	806	1051	1315	1576	1817	2071	2288	Measured Value (mV)	Error(dB)	
	18	-10	-13	-15	1	15	8	14	-18	Error (mV)	MAX	MIN
	0.37	-0.21	-0.26	-0.31	0.02	0.29	0.16	0.29	-0.37	LINEARITY ERROR (dB)	0.37	-0.37
	-0.16	-0.78	-0.88	-0.98	-0.70	-0.48	-0.66	-0.58	-1.28	LOGGING ACCURACY (dB)	-0.16	-1.28
	352	571	819	1063	1326	1588	1822	2077	2287	Measured Value (mV)	Error(dB)	
	15	-12	-11	-13	3	19	6	15	-22	Error (mV)	MAX	MIN
	0.31	-0.25	-0.22	-0.27	0.07	0.38	0.13	0.30	-0.44	LINEARITY ERROR (dB)	0.38	-0.44
	0.04	-0.58	-0.62	-0.74	-0.48	-0.24	-0.56	-0.46	-1.26	LOGGING ACCURACY (dB)	0.04	-1.26
	0.436	0.425	0.527	0.517	0.557	0.517	0.436	0.273	0.182			
	0.371	0.590	0.841	1.086	1.338	1.599	1.833	2.083	2.300			
	0.328	0.548	0.789	1.035	1.283	1.548	1.790	2.056	2.282			

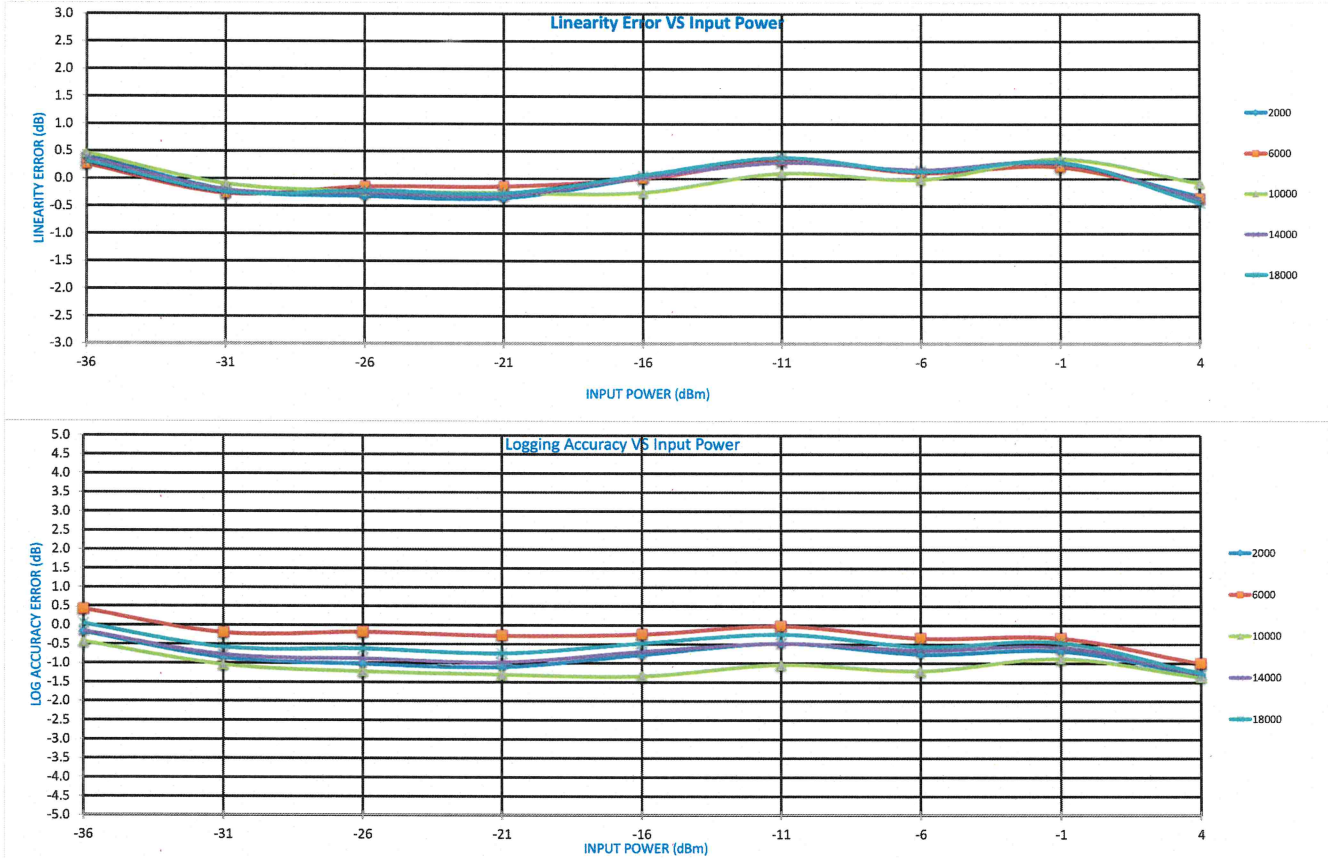
Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.46 -0.44

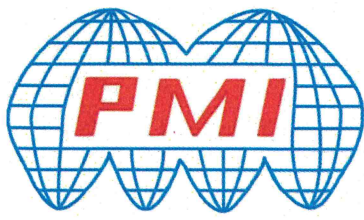
Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	0.42 -1.36



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL56748
TESTED BY: Justen Gayduchik





SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
 MODEL: HADA-D2002
 SERIAL NO: PL58748
 TESTED BY: Justen Gayduchik
 DATE: 12/16/2025



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GRAPH #3

Output Voltage Offset= 0.096 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	2116	50.5	305	554	793	1042	1311	1566	1803	2067	2325	Measured Value (mV)	MAX	MIN
			9	5	-9	-13	4	6	-10	2	7	Error (mV)	0.17	-0.25
			0.17	0.10	-0.18	-0.25	0.07	0.12	-0.19	0.03	0.13	LINEARITY ERROR (dB)		
			-0.90	-0.92	-1.14	-1.16	-0.78	-0.68	-0.94	-0.66	-0.50	LOGGING ACCURACY (dB)	-0.50	-1.16
6 GHz	2152	50.3	348	598	845	1091	1346	1600	1834	2102	2367	Measured Value (mV)	MAX	MIN
			5	4	0	-6	-2	1	-16	0	14	Error (mV)	0.28	-0.33
			0.10	0.08	-0.01	-0.11	-0.04	0.02	-0.33	0.01	0.28	LINEARITY ERROR (dB)		
			-0.04	-0.04	-0.10	-0.18	-0.08	0.00	-0.32	0.04	0.34	LOGGING ACCURACY (dB)	0.34	-0.32
10 GHz	2114	50.8	298	548	789	1039	1288	1545	1792	2068	2341	Measured Value (mV)	MAX	MIN
			13	9	-4	-8	-13	-10	-17	5	24	Error (mV)	0.47	-0.33
			0.26	0.18	-0.07	-0.15	-0.25	-0.20	-0.33	0.10	0.47	LINEARITY ERROR (dB)		
			-1.04	-1.04	-1.22	-1.22	-1.24	-1.10	-1.16	-0.64	-0.18	LOGGING ACCURACY (dB)	-0.18	-1.24
14 GHz	2111	50.7	297	546	787	1036	1300	1554	1796	2060	2327	Measured Value (mV)	MAX	MIN
			10	6	-7	-11	0	0	-11	0	13	Error (mV)	0.27	-0.22
			0.19	0.11	-0.13	-0.22	-0.01	0.01	-0.22	0.00	0.27	LINEARITY ERROR (dB)		
			-1.06	-1.08	-1.26	-1.28	-1.00	-0.92	-1.08	-0.80	-0.46	LOGGING ACCURACY (dB)	-0.46	-1.28
18 GHz	2115	50	316	567	810	1057	1323	1577	1808	2068	2312	Measured Value (mV)	MAX	MIN
			1	2	-5	-8	8	12	-7	3	-4	Error (mV)	0.23	-0.17
			0.02	0.04	-0.10	-0.17	0.15	0.23	-0.15	0.05	-0.07	LINEARITY ERROR (dB)		
			-0.68	-0.66	-0.80	-0.86	-0.54	-0.46	-0.84	-0.64	-0.76	LOGGING ACCURACY (dB)	-0.46	-0.86
Flatness +/- dB			0.505	0.515	0.575	0.545	0.575	0.545	0.416	0.416	0.545			
Max Video Output V			0.348	0.598	0.845	1.091	1.346	1.600	1.834	2.102	2.367			
Min Video Output V			0.297	0.546	0.787	1.036	1.288	1.545	1.792	2.060	2.312			

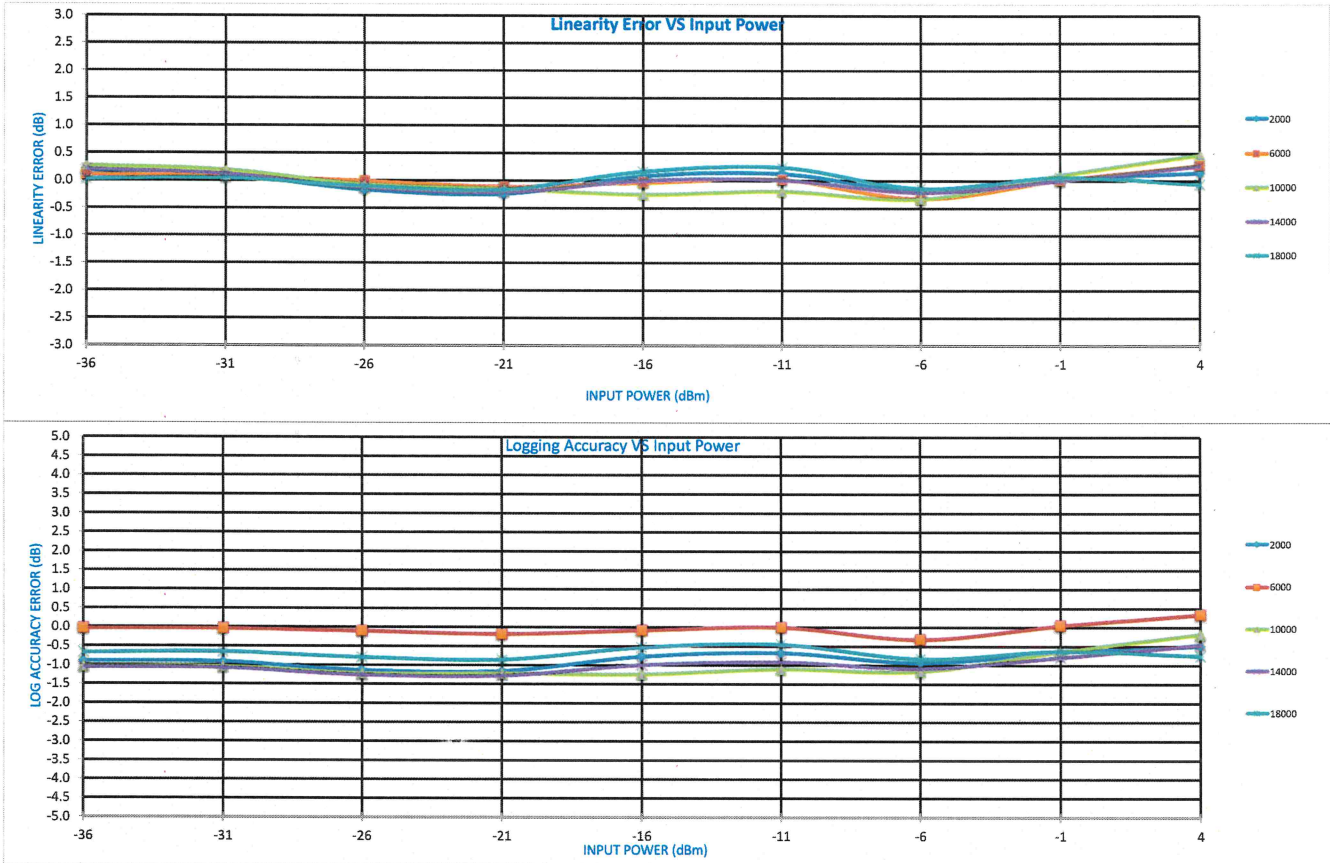
Logging Linearity vs Frequency	Error(dB)
	MAX
	MIN
LOGGING LINEARITY ERROR (dB)	0.47 -0.33

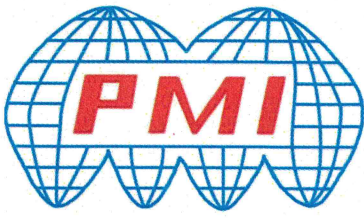
Logging Accuracy vs Frequency	Error(dB)
	MAX
	MIN
LOGGING ACCURACY ERROR (dB)	0.34 -1.28



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL56748
TESTED BY: Justen Gayduchik

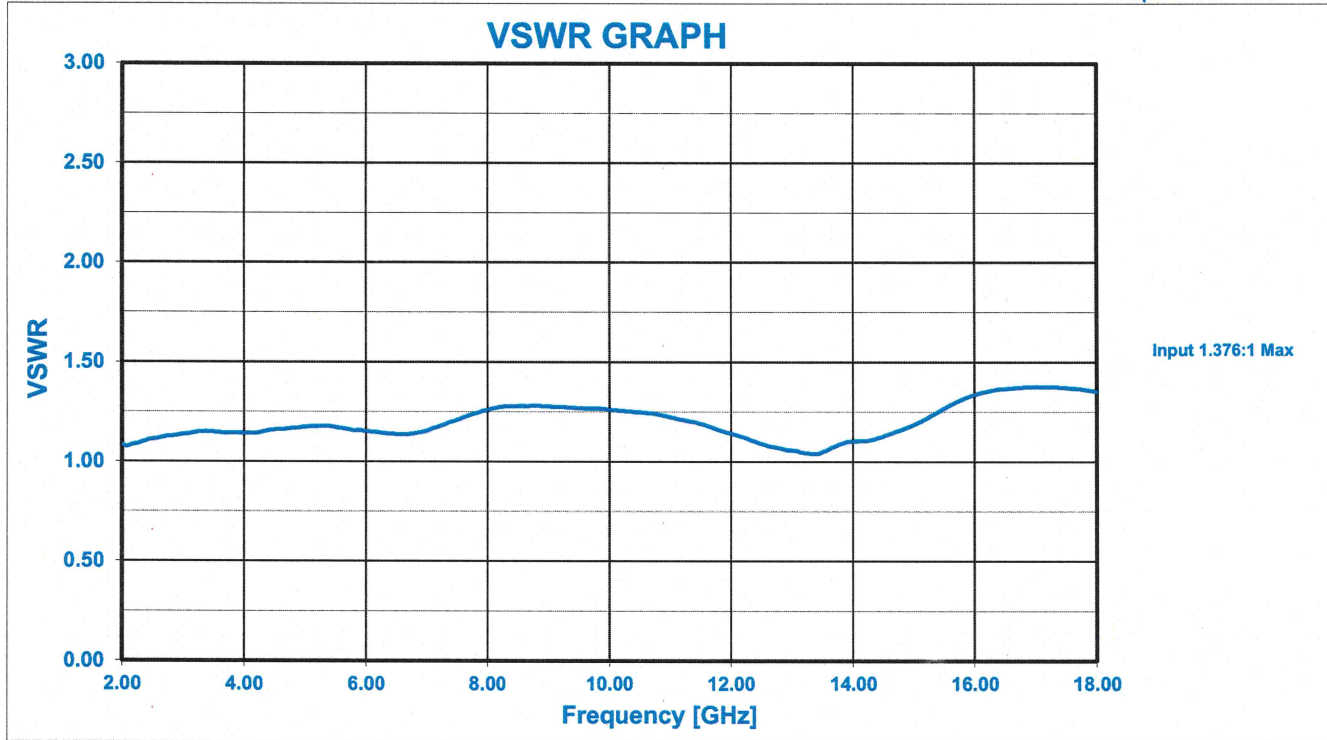


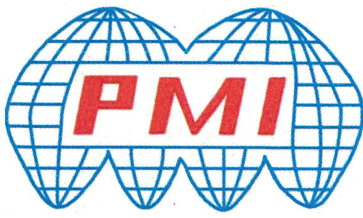


SUMMARY TEST DATA ON HADA-D2002

Model Number: HADA-D2002
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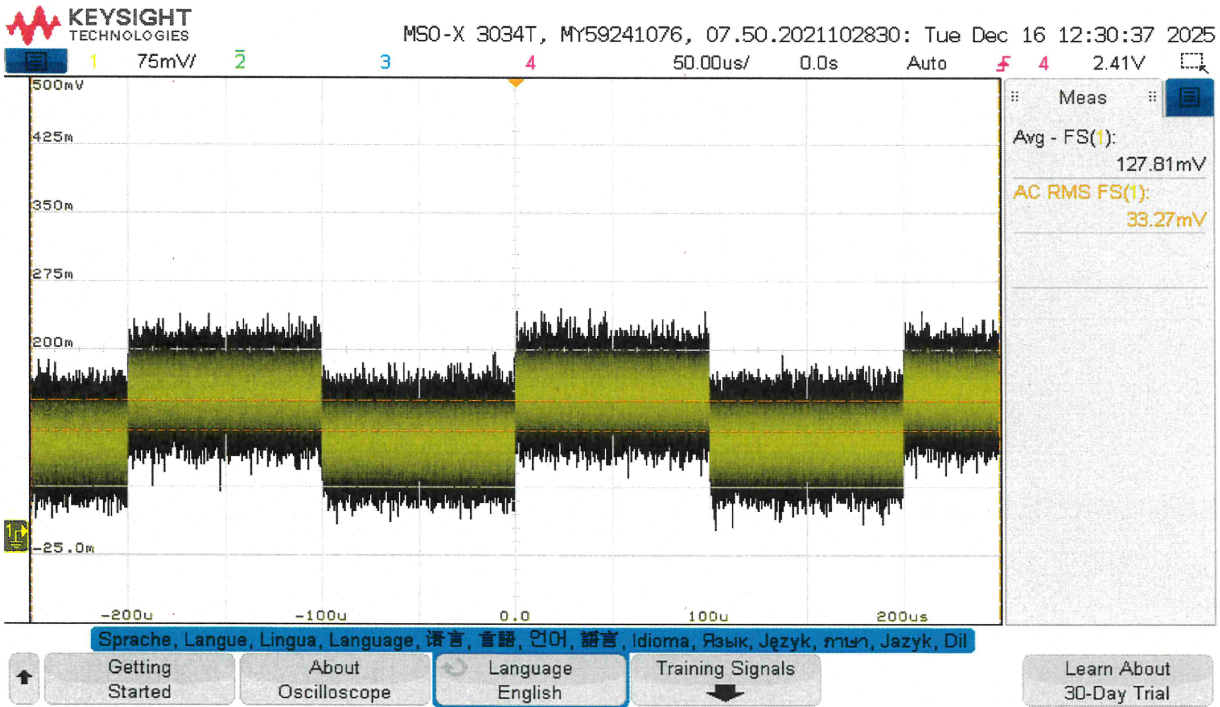
Temperature: +25C

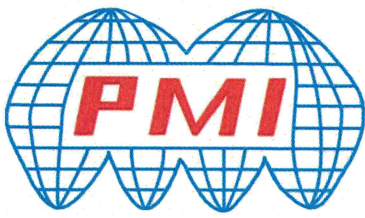




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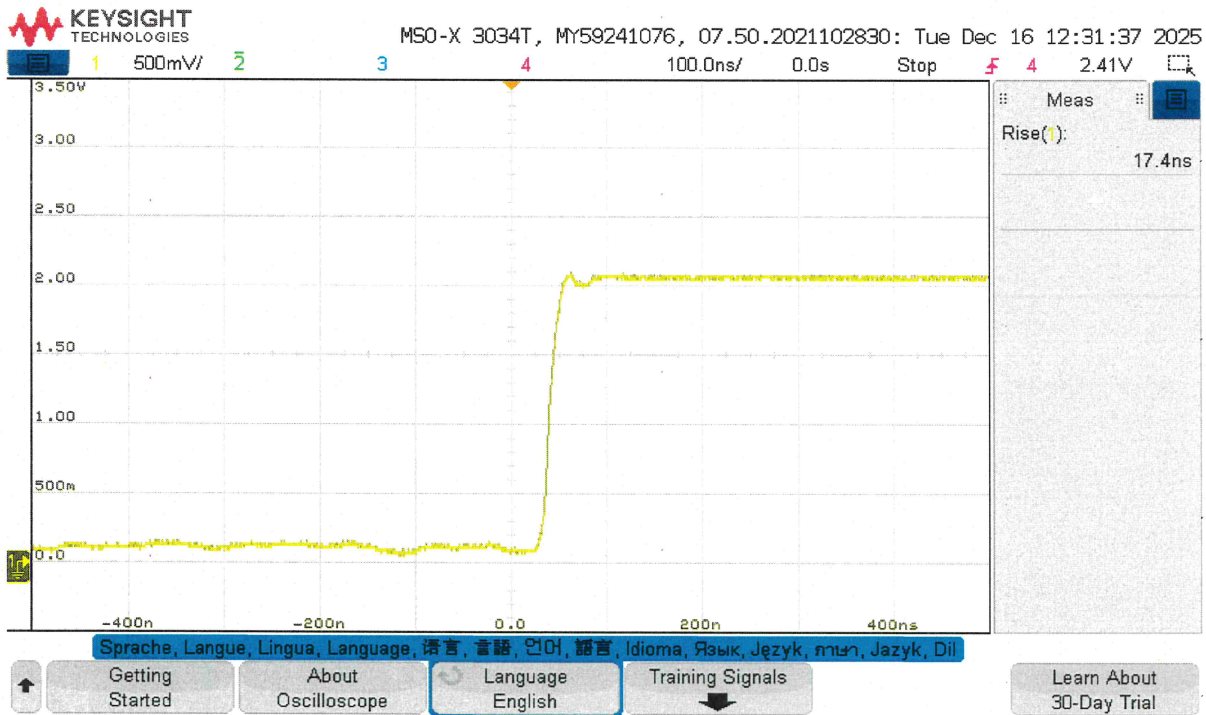
TSS = -41.5 dBm





SUMMARY TEST DATA ON HADA-D2002

Rise Time = 17.4 ns





SUMMARY TEST DATA ON HADA-D2002

Fall Time = 74 ns

