Quantic PMI
PLANAR MONOLITHICS

SUMMARY TEST DATA ON HADA-D2002

Customer:
SO No:
Model No: HADA-D2002
Serial No: PL56749/2550

Tested By: Justen Gayduchik
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 QA.o
2	TSS:	-40 dBm Min	-42.9 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 0.84 dB	± 0.77 dB	± 0.77 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 / -0.26 dB @ 10GHZ 1.02 dB / -0.84 dB @ ALL OTHER FREQUENCY	1.16 dB / -0.6 dB	0.84 dB / -1.38 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	0.32 dB / -0.32 dB	0.42 dB / -0.64 dB	0.57 dB / -0.47 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%)	18 ns			
10	Fall Time:	500 ns Max (@ Pulse width 100µs input) (90% to 10%)	86.8 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/ -100mV	95 mV @ +25°c	72 mV @ -40°c	75 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.

4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com

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ON
HADA-D2002

PL56749/2550

Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	-40°	+85°C	
12	Input VSWR:	3.0:1 Max @ +23 dBm	1.4:1	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. Ramirez Date: 2-10-26

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SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL56749
TESTED BY: Justen Gayduchik
DATE: 12/12/2025

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= 0.095 Volts

Frequency			-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
2 GHz	INTERCEPT (mV)	2134	313	578	817	1058	1319	1580	1819	2088	2344	Measured Value (mV)
	SLOPE (mV/dB)	50.6	1	13	-1	-13	-5	3	-11	5	8	Error (mV)
			0.02	0.26	-0.02	-0.26	-0.10	0.06	-0.22	0.10	0.16	LINEARITY ERROR (dB)
			-0.74	-0.44	-0.66	-0.84	-0.62	-0.40	-0.62	-0.24	-0.12	LOGGING ACCURACY (dB)
6 GHz	INTERCEPT (mV)	2174	371	634	881	1118	1368	1625	1861	2127	2384	Measured Value (mV)
	SLOPE (mV/dB)	50	-3	10	7	-6	-6	1	-13	3	10	Error (mV)
			-0.07	0.19	0.13	-0.13	-0.13	0.01	-0.27	0.06	0.20	LINEARITY ERROR (dB)
			0.42	0.68	0.62	0.36	0.36	0.50	0.22	0.54	0.68	LOGGING ACCURACY (dB)
10 GHz	INTERCEPT (mV)	2164	340	607	853	1092	1337	1600	1845	2121	2383	Measured Value (mV)
	SLOPE (mV/dB)	50.7	1	14	7	-8	-16	-7	-15	8	16	Error (mV)
			0.01	0.28	0.13	-0.15	-0.32	-0.13	-0.30	0.15	0.32	LINEARITY ERROR (dB)
			-0.20	0.14	0.06	-0.16	-0.26	0.00	-0.10	0.42	0.66	LOGGING ACCURACY (dB)
14 GHz	INTERCEPT (mV)	2159	367	631	880	1115	1370	1623	1855	2112	2353	Measured Value (mV)
	SLOPE (mV/dB)	49.5	-11	6	8	-5	3	8	-7	2	-4	Error (mV)
			-0.22	0.12	0.15	-0.10	0.05	0.17	-0.14	0.05	-0.08	LINEARITY ERROR (dB)
			0.34	0.62	0.60	0.30	0.40	0.46	0.10	0.24	0.06	LOGGING ACCURACY (dB)
18 GHz	INTERCEPT (mV)	2157	393	651	901	1137	1390	1637	1861	2112	2337	Measured Value (mV)
	SLOPE (mV/dB)	48.6	-15	0	7	0	10	14	-5	3	-15	Error (mV)
			-0.31	0.00	0.15	0.00	0.21	0.29	-0.10	0.07	-0.31	LINEARITY ERROR (dB)
			0.86	1.02	1.02	0.74	0.80	0.74	0.22	0.24	-0.26	LOGGING ACCURACY (dB)
	Flatness +/- dB		0.802	0.732	0.842	0.792	0.712	0.571	0.421	0.391	0.471	
	Max Video Output V		0.393	0.651	0.901	1.137	1.390	1.637	1.861	2.127	2.384	
	Min Video Output V		0.313	0.578	0.817	1.058	1.319	1.580	1.819	2.088	2.337	

Error(dB)		
	MAX	MIN
LINEARITY ERROR (dB)	0.26	-0.26
LOGGING ACCURACY (dB)	-0.12	-0.84

Error(dB)		
	MAX	MIN
LINEARITY ERROR (dB)	0.20	-0.27
LOGGING ACCURACY (dB)	0.68	0.22

Error(dB)		
	MAX	MIN
LINEARITY ERROR (dB)	0.32	-0.32
LOGGING ACCURACY (dB)	0.66	-0.26

Error(dB)		
	MAX	MIN
LINEARITY ERROR (dB)	0.17	-0.22
LOGGING ACCURACY (dB)	0.62	0.06

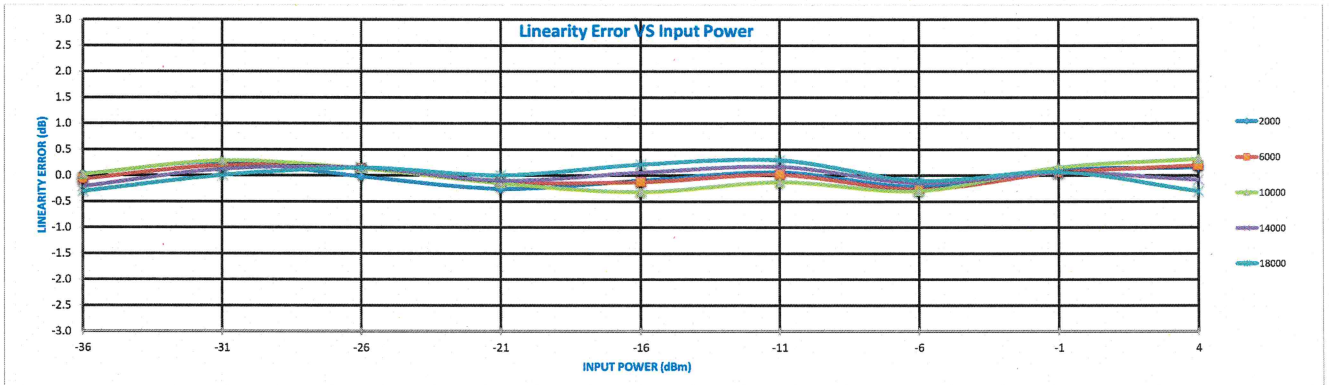
Error(dB)		
	MAX	MIN
LINEARITY ERROR (dB)	0.29	-0.31
LOGGING ACCURACY (dB)	1.02	-0.26

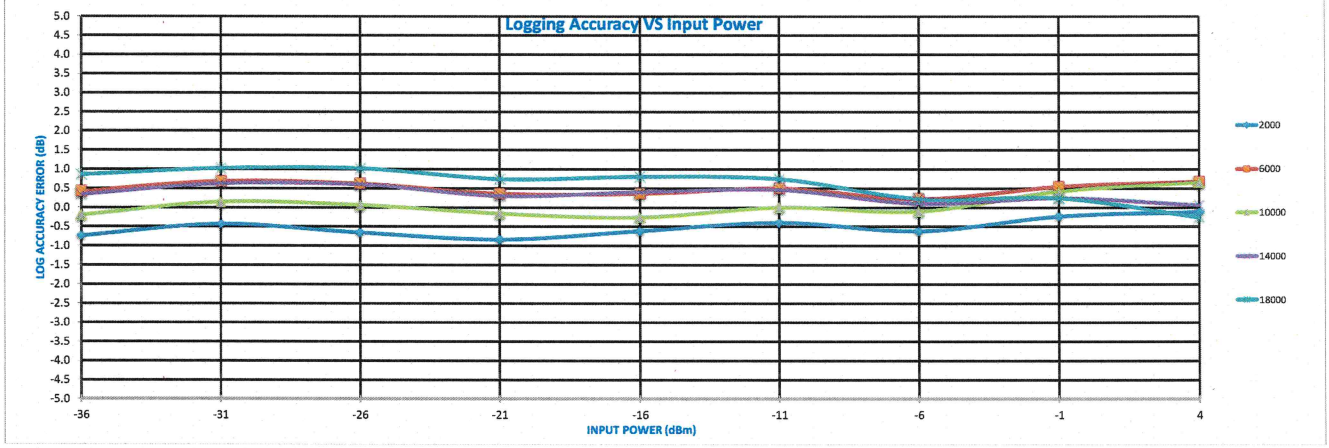
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.32	-0.32

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	1.02	-0.84

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
MODEL: HADA-D2002
SERIAL NO: PL56749
TESTED BY: Justen Gayduchik





4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL56749
TESTED BY: Justen Gayduchik
DATE: 12/11/2025

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= 0.072 Volts

Frequency			-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)
2 GHz	INTERCEPT (mV)	2137	326	589	835	1073	1334	1597	1840	2093	2326	Measured Value (mV)
	SLOPE (mV/dB)	50.2	-6	7	2	-11	-1	11	4	6	-12	Error (mV)
			-0.11	0.13	0.04	-0.22	-0.02	0.23	0.07	0.12	-0.24	LINEARITY ERROR (dB)
			-0.48	-0.22	-0.30	-0.54	-0.32	-0.06	-0.20	-0.14	-0.48	LOGGING ACCURACY (dB)
6 GHz	INTERCEPT (mV)	2177	389	644	898	1138	1386	1642	1885	2126	2365	Measured Value (mV)
	SLOPE (mV/dB)	49.4	-8	0	6	-1	0	9	5	-1	-9	Error (mV)
			-0.17	-0.01	0.13	-0.02	0.00	0.18	0.10	-0.03	-0.19	LINEARITY ERROR (dB)
			0.78	0.88	0.96	0.76	0.72	0.84	0.70	0.52	0.30	LOGGING ACCURACY (dB)
10 GHz	INTERCEPT (mV)	2162	348	611	864	1103	1348	1613	1862	2117	2358	Measured Value (mV)
	SLOPE (mV/dB)	50.2	-6	6	8	-4	-10	4	2	6	-4	Error (mV)
			-0.12	0.12	0.16	-0.08	-0.20	0.07	0.03	0.11	-0.09	LINEARITY ERROR (dB)
			-0.04	0.22	0.28	0.06	-0.04	0.26	0.24	0.34	0.16	LOGGING ACCURACY (dB)
14 GHz	INTERCEPT (mV)	2158	383	639	894	1132	1385	1637	1876	2111	2328	Measured Value (mV)
	SLOPE (mV/dB)	48.9	-15	-4	7	0	9	16	11	2	-26	Error (mV)
			-0.32	-0.08	0.14	0.01	0.18	0.34	0.23	0.03	-0.53	LINEARITY ERROR (dB)
			0.66	0.78	0.88	0.64	0.70	0.74	0.52	0.22	-0.44	LOGGING ACCURACY (dB)
18 GHz	INTERCEPT (mV)	2158	402	654	908	1147	1400	1647	1879	2111	2320	Measured Value (mV)
	SLOPE (mV/dB)	48.3	-18	-7	5	3	15	20	11	1	-31	Error (mV)
			-0.37	-0.15	0.11	0.06	0.30	0.42	0.22	0.03	-0.64	LINEARITY ERROR (dB)
			1.04	1.08	1.16	0.94	1.00	0.94	0.58	0.22	-0.60	LOGGING ACCURACY (dB)
	Flatness +/- dB		0.769	0.658	0.739	0.749	0.668	0.506	0.456	0.334	0.456	
	Max Video Output V		0.402	0.654	0.908	1.147	1.400	1.647	1.885	2.126	2.365	
	Min Video Output V		0.326	0.589	0.835	1.073	1.334	1.597	1.840	2.093	2.320	

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.23	-0.24
LOGGING ACCURACY (dB)	-0.06	-0.54

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.18	-0.19
LOGGING ACCURACY (dB)	0.96	0.30

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.16	-0.20
LOGGING ACCURACY (dB)	0.34	-0.04

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.34	-0.53
LOGGING ACCURACY (dB)	0.88	-0.44

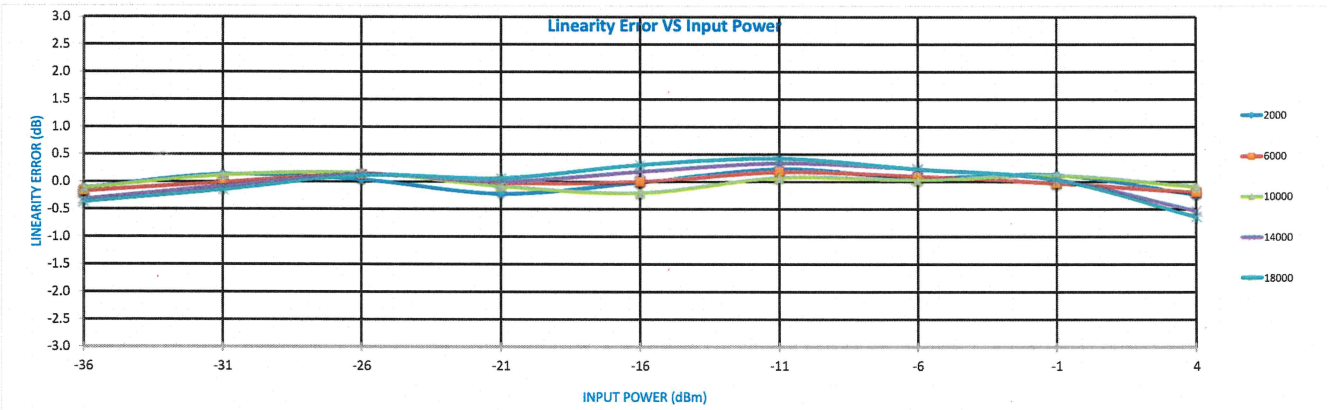
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.42	-0.64
LOGGING ACCURACY (dB)	1.16	-0.60

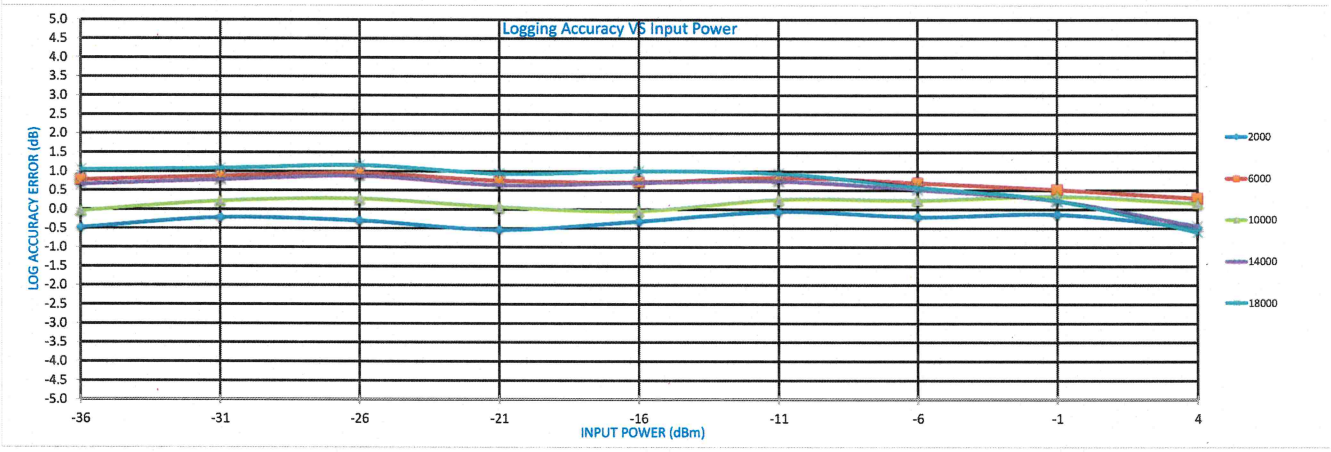
Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.42	-0.64

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	1.16	-0.60

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
MODEL: HADA-D2002
SERIAL NO: PL56749
TESTED BY: Justen Gayduchik





4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL56749
TESTED BY: Justen Gayduchik
DATE: 12/11/2025

GRAPH #3

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

Output Voltage Offset= 0.075 Volts

Frequency		
2 GHz	INTERCEPT (mV)	2117
	SLOPE (mV/dB)	51
6 GHz	INTERCEPT (mV)	2166
	SLOPE (mV/dB)	50.5
10 GHz	INTERCEPT (mV)	2153
	SLOPE (mV/dB)	51.2
14 GHz	INTERCEPT (mV)	2131
	SLOPE (mV/dB)	49.9
18 GHz	INTERCEPT (mV)	2125
	SLOPE (mV/dB)	48.8

Flatness +/- dB	0.666	0.656	0.716	0.646	0.587	0.517	0.477	0.497	0.766
Max Video Output V	0.348	0.619	0.864	1.097	1.351	1.603	1.839	2.117	2.392
Min Video Output V	0.281	0.553	0.792	1.032	1.292	1.551	1.791	2.067	2.315

RF Input Power (dBm)	-36	-31	-26	-21	-16	-11	-6	-1	4
Measured Value (mV)	281	553	792	1032	1292	1551	1791	2067	2343
Error (mV)	1	18	2	-13	-8	-4	-19	1	22
LINEARITY ERROR (dB)	0.02	0.36	0.04	-0.26	-0.16	-0.09	-0.38	0.03	0.44
LOGGING ACCURACY (dB)	-1.38	-0.94	-1.16	-1.36	-1.16	-0.98	-1.18	-0.66	-0.14

Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.44	-0.38
LOGGING ACCURACY (dB)	-0.14	-1.38

Measured Value (mV)	343	616	861	1096	1347	1603	1839	2117	2392
Error (mV)	-3	17	9	-8	-10	-7	-24	2	24
LINEARITY ERROR (dB)	-0.07	0.34	0.18	-0.17	-0.20	-0.13	-0.47	0.04	0.48
LOGGING ACCURACY (dB)	-0.14	0.32	0.22	-0.08	-0.06	0.06	-0.22	0.34	0.84

Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.48	-0.47
LOGGING ACCURACY (dB)	0.84	-0.22

Measured Value (mV)	312	588	832	1069	1315	1577	1822	2109	2387
Error (mV)	1	21	9	-10	-20	-13	-24	7	29
LINEARITY ERROR (dB)	0.02	0.41	0.18	-0.19	-0.38	-0.26	-0.47	0.13	0.57
LOGGING ACCURACY (dB)	-0.76	-0.24	-0.36	-0.62	-0.70	-0.46	-0.56	0.18	0.74

Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.57	-0.47
LOGGING ACCURACY (dB)	0.74	-0.76

Measured Value (mV)	324	599	844	1078	1333	1583	1814	2079	2342
Error (mV)	-12	14	10	-6	0	1	-17	-2	12
LINEARITY ERROR (dB)	-0.24	0.28	0.19	-0.11	0.00	0.02	-0.35	-0.03	0.24
LOGGING ACCURACY (dB)	-0.52	-0.02	-0.12	-0.44	-0.34	-0.34	-0.72	-0.42	-0.16

Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.28	-0.35
LOGGING ACCURACY (dB)	-0.02	-0.72

Measured Value (mV)	348	619	864	1097	1351	1598	1819	2077	2315
Error (mV)	-18	9	9	-2	8	11	-13	1	-5
LINEARITY ERROR (dB)	-0.37	0.17	0.19	-0.04	0.16	0.22	-0.26	0.03	-0.10
LOGGING ACCURACY (dB)	-0.04	0.38	0.28	-0.06	0.02	-0.04	-0.62	-0.46	-0.70

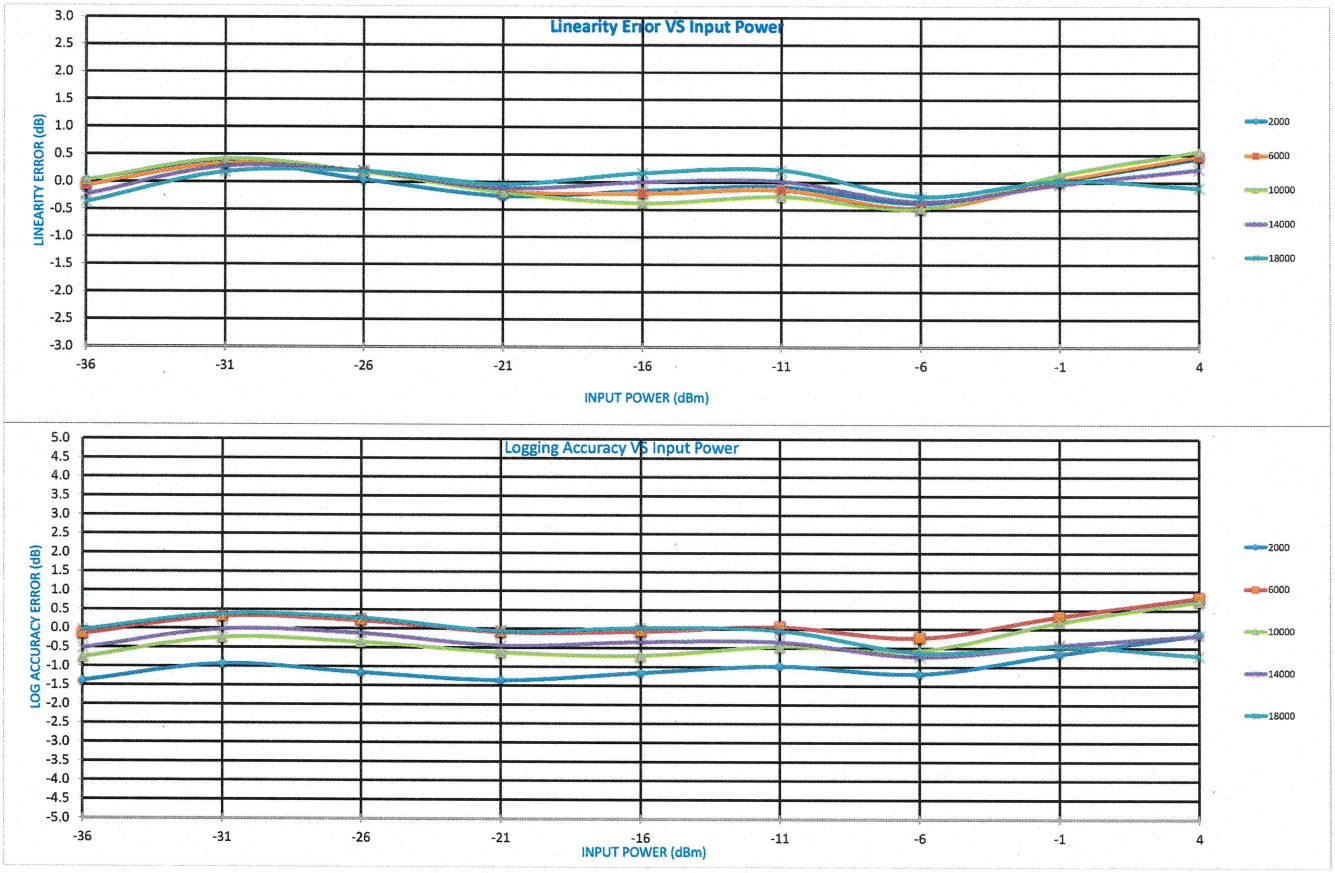
Error(dB)	MAX	MIN
LINEARITY ERROR (dB)	0.22	-0.37
LOGGING ACCURACY (dB)	0.38	-0.70

Logging Linearity vs Frequency	Error(dB) MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.57	-0.47

Logging Accuracy vs Frequency	Error(dB) MAX	MIN
LOGGING ACCURACY ERROR (dB)	0.84	-1.38

SUMMARY TEST DATA
ON
HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
MODEL: HADA-D2002
SERIAL NO: PL56749
TESTED BY: Justen Gayduchik



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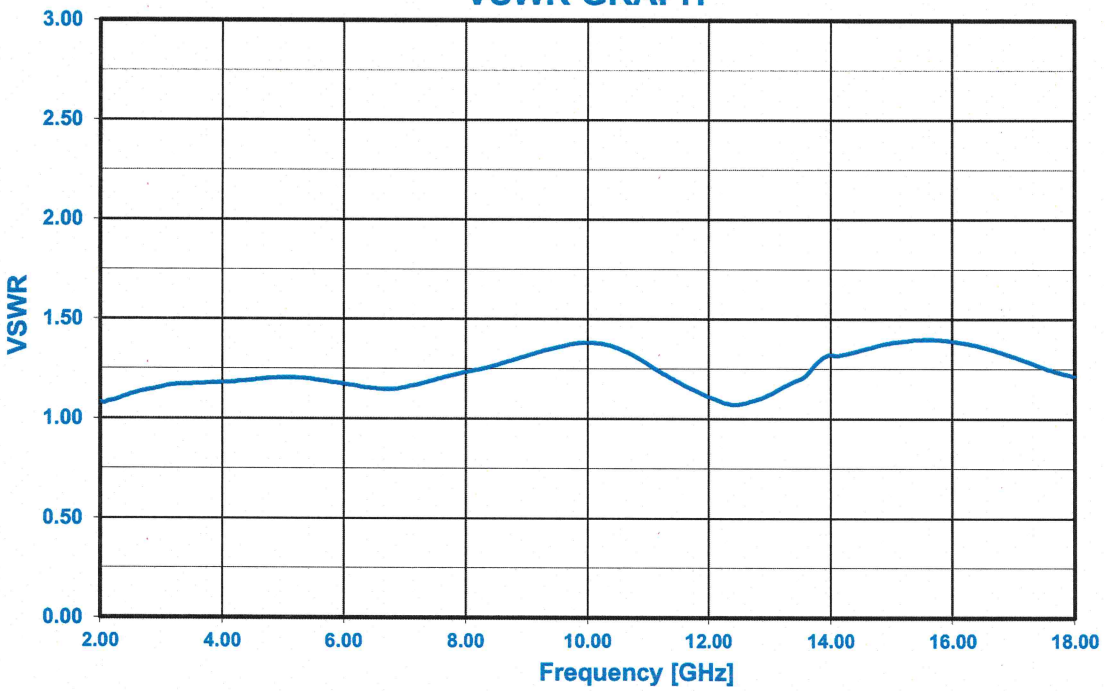
SUMMARY TEST DATA
ON
HADA-D2002

Model Number: HADA-D2002
Serial Number: PL56749

Temperature: +25C

VSWR GRAPH



Input 1.398:1 Max

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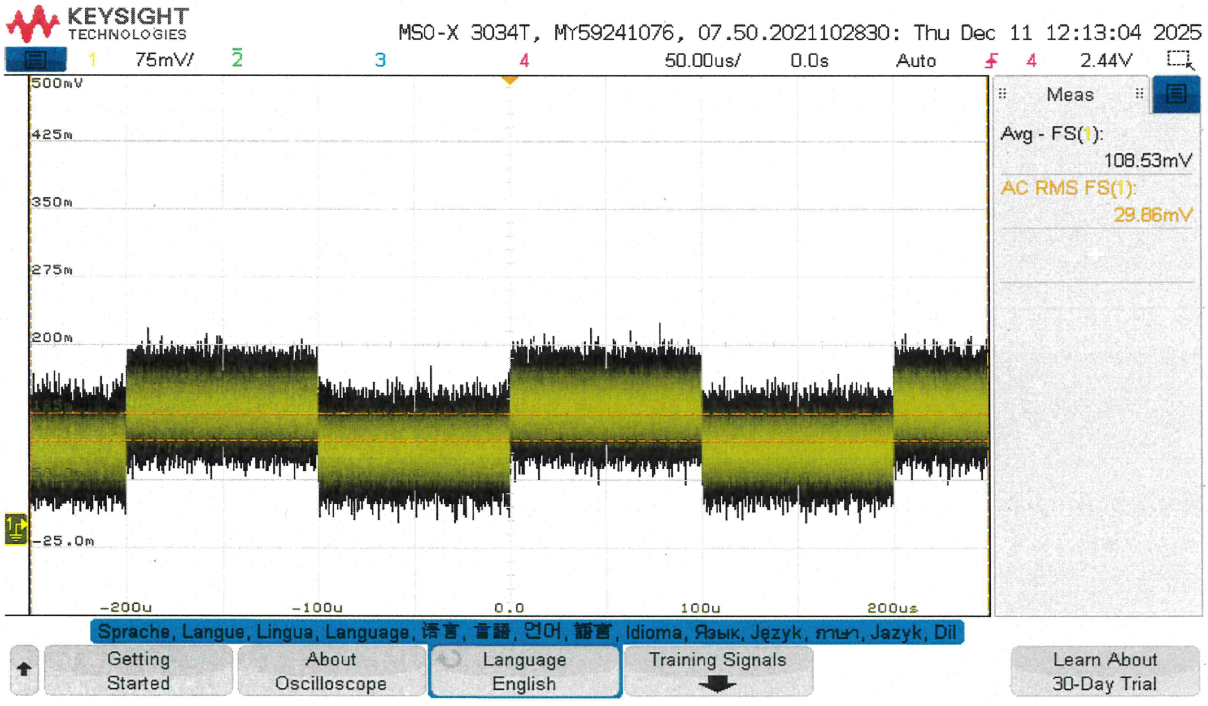
SUMMARY TEST DATA
ON
HADA-D2002

TSS = -42.9 dBm



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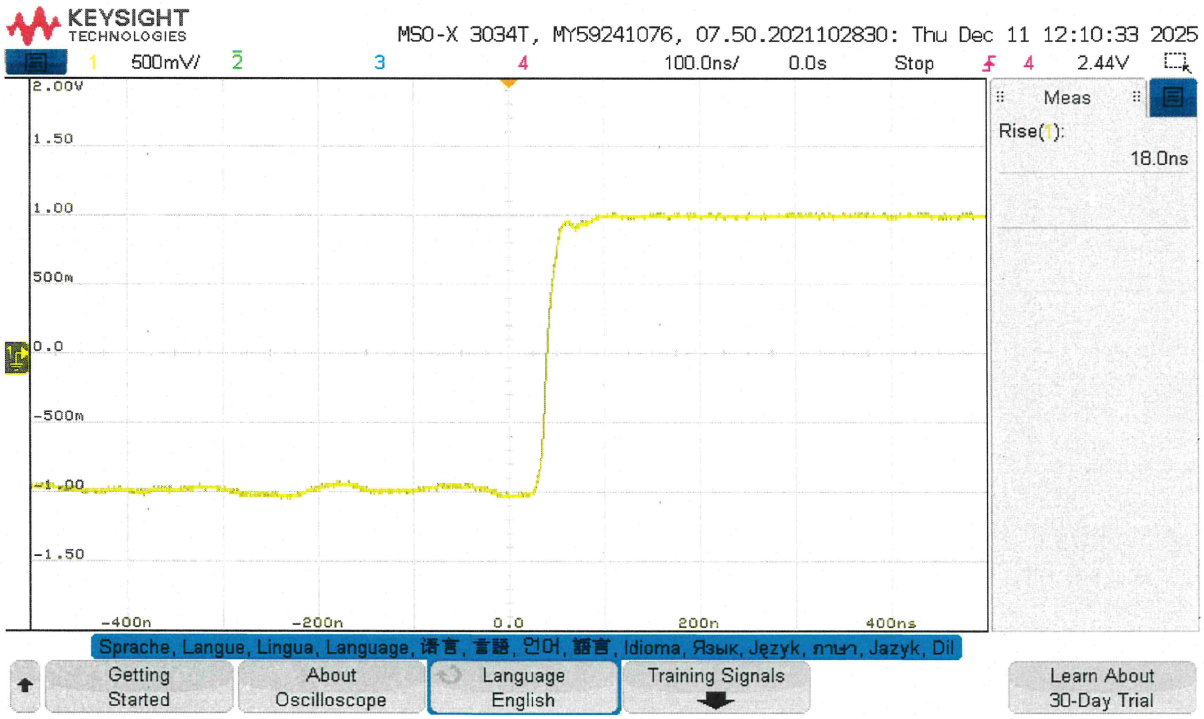
SUMMARY TEST DATA
ON
HADA-D2002

Rise Time = 18 ns



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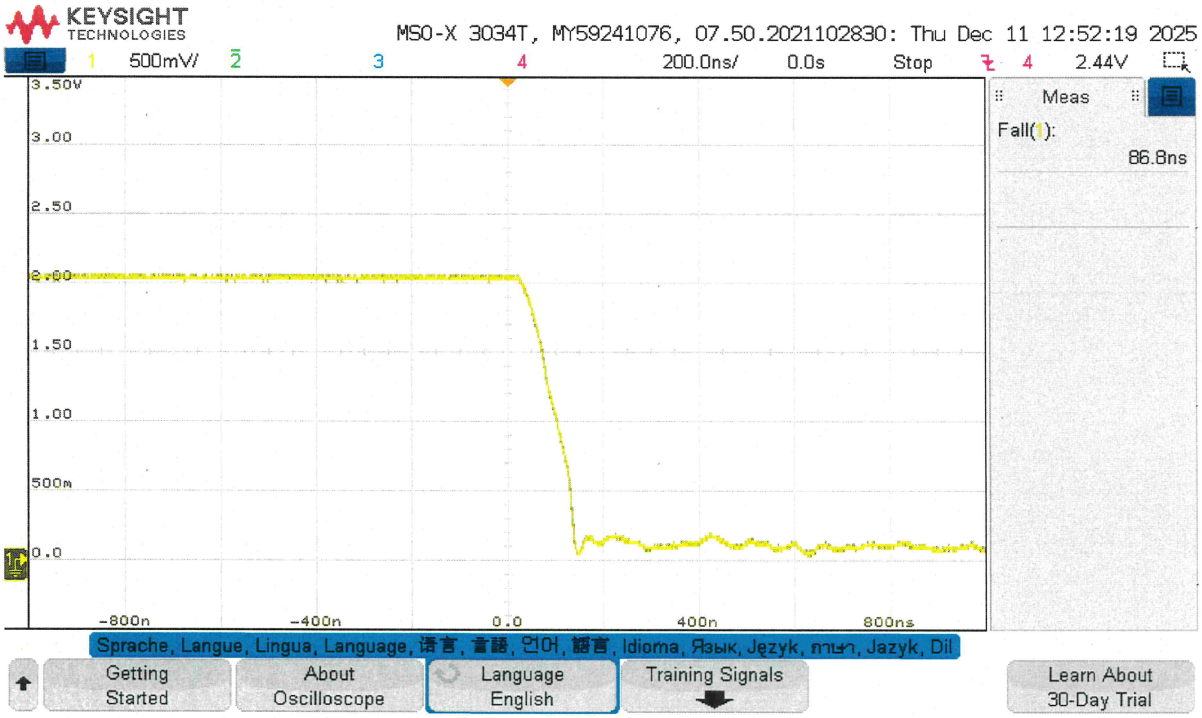
SUMMARY TEST DATA
ON
HADA-D2002

Fall Time = 86.8 ns



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