



**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL47261/2435

<b>Customer:</b> _____	<b>Tested By:</b> <u>Joshua Monley</u>
<b>SO No:</b> _____	<b>Temperature:</b> <u>+25°C -40°C +85°C</u>
<b>Model No:</b> <u>HADA-D2001</u>	<b>Date:</b> <u>8/28/2024</u>
<b>Serial No:</b> <u>PL47261/2435</u>	<b>Drawing No:</b> <u>27620201</u> <b>Rev:</b> <u>A1</u>

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range:	0.5 GHz – 2.0 GHz	0.5 GHz – 2.0 GHz See Plot	PMI QA3
2	TSS:	-44 dBm Min @ -40°C to +85°	-45.1 dBm See Plot	
3	Frequency Flatness:	±0.75 dB Max	±0.1 dB See Plot	
4	Input / Output Characteristics: (93 Ω)	Y = 2350 + 50X [X: Input (dBm), Y: Output (mv)]	Pass	
5	Logging Accuracy	±1.5 dB Max (@ +25°C, 1.0 GHz) [-40 dBm ≤ INPUT ≤ 0 dBm] ±2.2 dB Max (Note)	+0.32 / -0.60 dB +0.44 / -1.36 dB See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	+0.22 / -0.35 dB +0.51 / -0.41 dB See Plot	
7	Maximum Input Power (CW):	+23 dBm	Pass	
8	Duty Cycle:	100%	Pass	
9	Rise Time:	30 ns Max (10% to 90%)	18.0 ns See Plot	
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	132 ns See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55/-100 mV (@ -40°C to +85°C)	+63 mV @ +25°C +108 mV @ -40°C +108 mV @ +85°C	
12	Input VSWR:	2.5:1 Max @ +23 dBm	1.24:1 See Plot	
13	Propagation Delay:	60 ns Max	40 ns	

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14	Power Supply:	+12 ± 1VDC @ 125 mA Max -12 ± 1VDC @ 75 mA Max	<b>85 mA</b> <b>40 mA</b>	PMI QA3
15	Warm Up Time:	2 Minutes Max	<b>2 Minutes</b>	

\*Notes: Includes Frequency Flatness. Input Power, Temperature Deviation and Deviation for DC Offset. The test shall be performed using RG-316 (or equivalent), 20cm, 93±0.5 Ohms terminated.

QA/QC Approval: K. Luter

Date: 8.30.24



**SUMMARY TEST DATA  
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PL47261/2435

Log Linearity and Log Accuracy @ +25°C

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: J. Monley  
TEST DATE: 08/28/2024  
SERIAL NO: PL47261  
TEST TEMP: +25C

Graph #1

DC Offset= 0.063 V



PLANAR MONOLITHICS INDUSTRIES  
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Frequency	INTERCEPT (mV)	2353
0.5 GHz	SLOPE (mV/dB)	50.5

1 GHz	INTERCEPT (mV)	2363
	SLOPE (mV/dB)	50.5

2 GHz	INTERCEPT (mV)	2362
	SLOPE (mV/dB)	50.6

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	320	593	841	1084	1353	1605	1831	2099	2356
	-12	9	4	-6	11	10	-17	-2	3
	-0.23	0.17	0.08	-0.11	0.21	0.19	-0.33	-0.03	0.05
	-0.60	-0.14	-0.18	-0.32	0.06	0.10	-0.38	-0.02	0.12
	331	603	852	1095	1364	1616	1840	2110	2364
	-12	8	4	-5	11	11	-18	0	1
	-0.23	0.15	0.08	-0.10	0.22	0.21	-0.35	-0.01	0.02
	-0.38	0.06	0.04	-0.10	0.28	0.32	-0.20	0.20	0.28
	326	599	847	1090	1360	1612	1840	2109	2364
	-11	9	4	-7	10	9	-15	0	-2
	-0.22	0.17	0.07	-0.13	0.20	0.18	-0.32	0.00	0.03
	-0.48	-0.02	-0.06	-0.20	0.20	0.24	-0.20	0.18	0.28
	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	0.33	0.60	0.85	1.10	1.36	1.62	1.84	2.11	2.36
	0.32	0.59	0.84	1.08	1.35	1.61	1.83	2.10	2.36

RF Input Power (dBm)

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.21 -0.33
LOGGING ACCURACY (dB)	0.12 -0.60

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.22 -0.35 x
LOGGING ACCURACY (dB)	0.32 -0.38

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.20 -0.32
LOGGING ACCURACY (dB)	0.28 -0.48

Logging Linearity vs Frequency	Error(dB)
	MAX MIN
TOTAL LOG LINEARITY (dB)	0.22 -0.35

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
TOTAL LOGGING ACCURACY (dB)	0.32 -0.60

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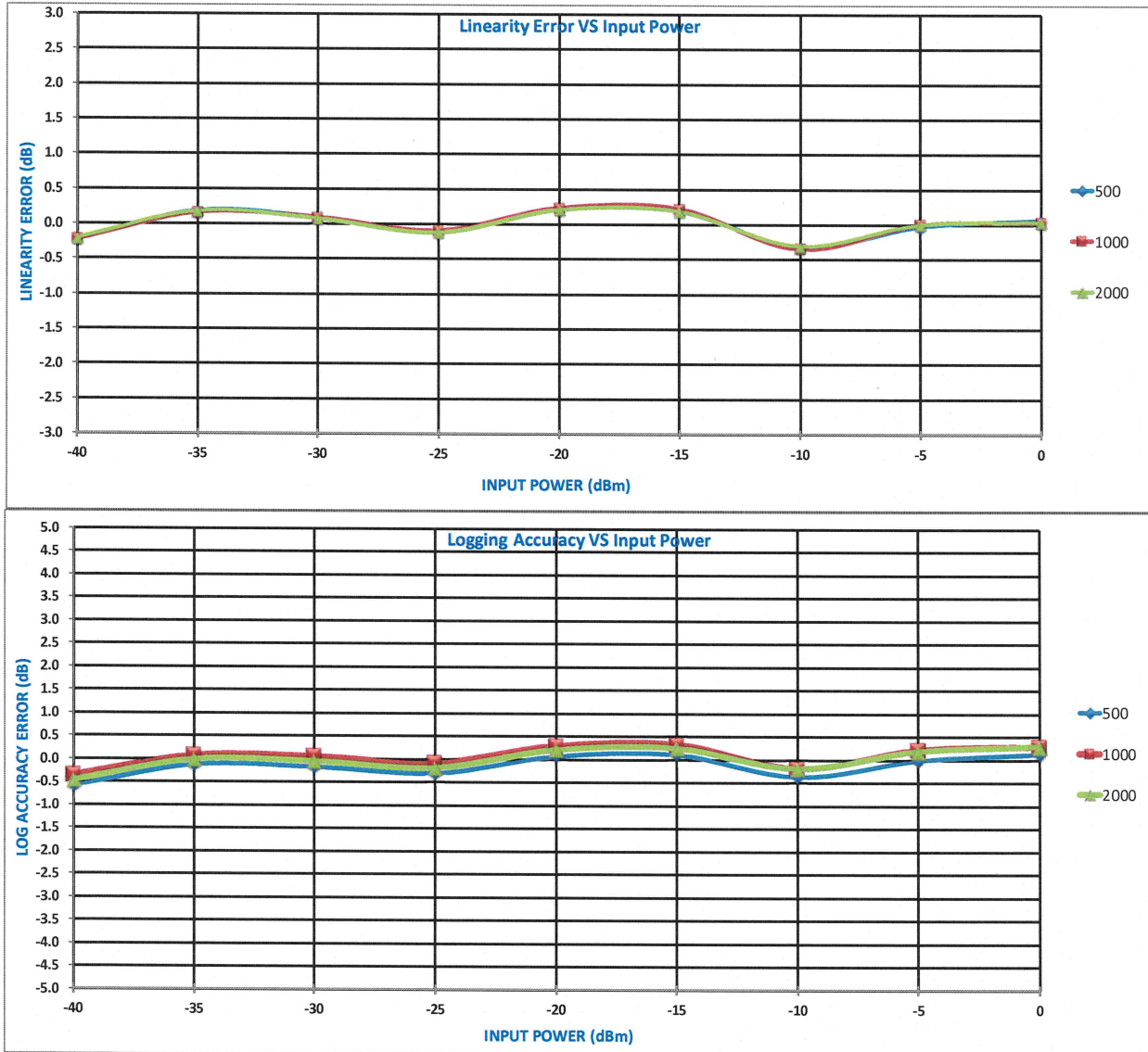


# SUMMARY TEST DATA ON HADA-D2001

PL47261/2435

Log Linearity and Log Accuracy @ +25°C

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: J. Monley  
SERIAL NO: PL47261  
TEST TEMP: +25C



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**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL47261/2435

Log Linearity and Log Accuracy @ -40°C

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: J. Monley  
TEST DATE: 08/27/2024  
SERIAL NO: PL47261  
TEST TEMP: -40C

Graph #2

DC Offset= 0.108 V

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
0.5 GHz	2284	48.8

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
1 GHz	2295	48.8

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
2 GHz	2295	48.9

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
357	566	805	1045	1313	1566	1791	2049	2282	
25	-10	-15	-19	5	14	-5	9	-2	
0.51	-0.21	-0.31	-0.39	0.10	0.28	-0.11	0.18	-0.05	
0.14	-0.68	-0.90	-1.10	-0.74	-0.68	-1.18	-1.02	-1.36	
367	577	817	1058	1326	1578	1804	2060	2288	
23	-11	-15	-18	7	15	-3	9	-7	
0.47	-0.23	-0.31	-0.36	0.13	0.30	-0.06	0.19	-0.13	
0.34	-0.46	-0.66	-0.84	-0.48	-0.44	-0.92	-0.80	-1.24	
365	574	814	1054	1323	1575	1805	2061	2289	
25	-11	-15	-18	7	13	-1	10	-8	
0.50	-0.22	-0.31	-0.40	0.11	0.26	-0.03	0.21	-0.13	
0.30	-0.52	-0.72	-0.92	-0.54	-0.90	-0.90	-0.78	-1.23	
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
0.37	0.58	0.82	1.06	1.33	1.58	1.81	2.06	2.29	
0.36	0.57	0.81	1.05	1.31	1.57	1.79	2.05	2.28	

RF Input Power (dBm)

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.51 -0.39 x
LOGGING ACCURACY (dB)	0.14 -1.36

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.47 -0.36
LOGGING ACCURACY (dB)	0.34 -1.24

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.50 -0.40
LOGGING ACCURACY (dB)	0.30 -1.22

Logging Linearity vs Frequency	Error(dB)
	MAX MIN
TOTAL LOG LINEARITY (dB)	0.51 -0.40

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
TOTAL LOGGING ACCURACY (dB)	0.34 -1.36



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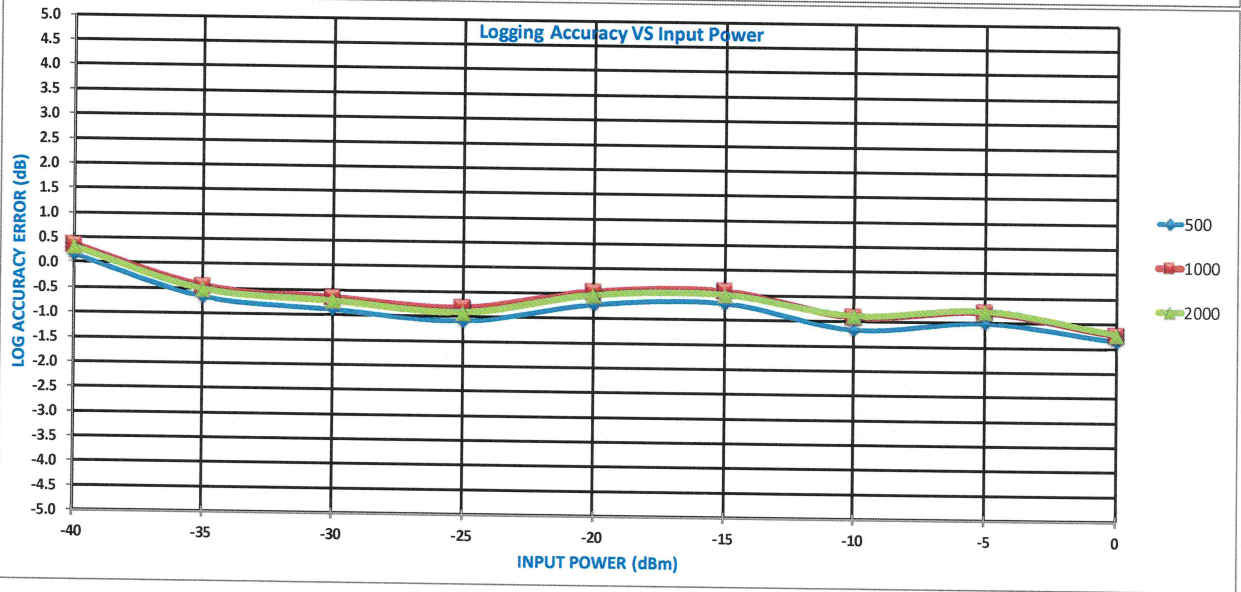
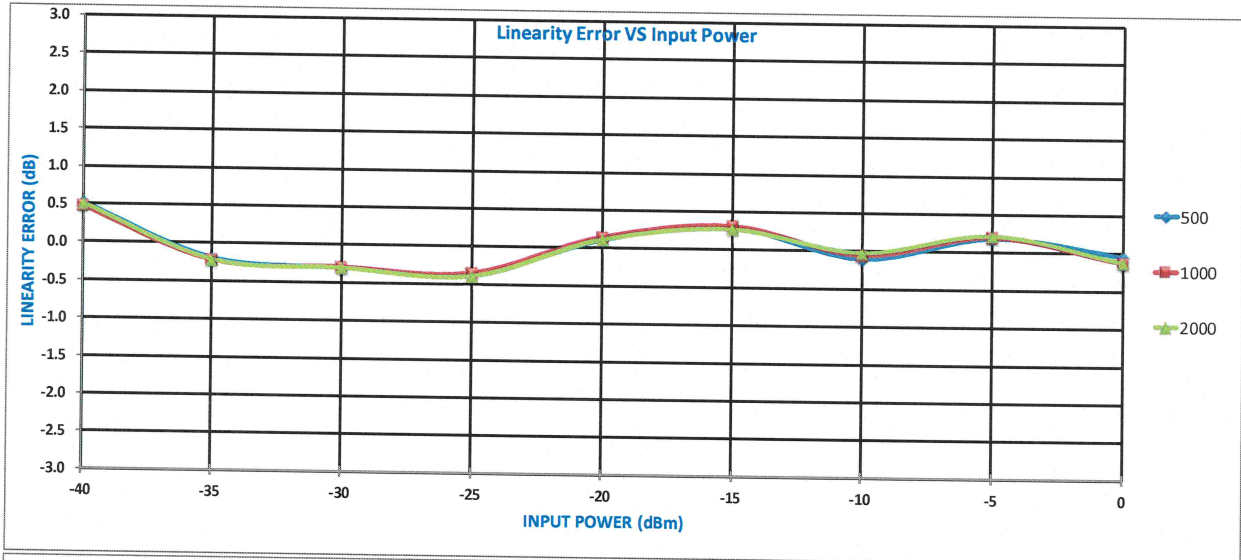


# SUMMARY TEST DATA ON HADA-D2001

PL47261/2435

Log Linearity and Log Accuracy @ -40°C

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: J. Monley  
SERIAL NO: PL47261  
TEST TEMP: -40C



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**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL47261/2435

Log Linearity and Log Accuracy @ +85°C

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: J. Monley  
TEST DATE: 08/27/2024  
SERIAL NO: PL47261  
TEST TEMP: +85C

Graph #3

DC Offset= 0.108 V



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Frequency	INTERCEPT (mV)	2341
0.5 GHz	SLOPE (mV/dB)	50.3

1 GHz	INTERCEPT (mV)	2352
	SLOPE (mV/dB)	50.3

2 GHz	INTERCEPT (mV)	2353
	SLOPE (mV/dB)	50.5

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
330	590	830	1071	1337	1587	1818	2085	2361	
2	11	-1	-12	3	1	-20	-4	20	
0.05	0.21	-0.02	-0.23	0.05	0.02	-0.39	-0.09	0.40	
-0.40	-0.20	-0.40	-0.58	-0.26	-0.26	-0.64	-0.30	0.22	
340	602	842	1082	1350	1599	1828	2098	2369	
1	11	0	-12	4	2	-21	-2	17	
0.01	0.22	-0.01	-0.24	0.09	0.04	-0.41	-0.04	0.34	
-0.20	0.04	-0.16	-0.36	0.00	-0.02	-0.44	-0.04	0.38	
337	599	838	1079	1347	1597	1829	2099	2372	
2	12	-1	-13	3	1	-20	-2	19	
0.04	0.24	-0.03	-0.25	0.06	0.01	-0.39	-0.04	0.37	
-0.28	-0.02	-0.24	-0.44	-0.06	-0.06	-0.42	-0.02	0.44	
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
0.34	0.60	0.84	1.08	1.35	1.60	1.83	2.10	2.37	
0.33	0.59	0.83	1.07	1.34	1.59	1.82	2.09	2.36	

RF Input Power (dBm)
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Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.40 -0.39
LOGGING ACCURACY (dB)	0.22 -0.64

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.34 -0.41
LOGGING ACCURACY (dB)	0.38 -0.44

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.37 -0.39
LOGGING ACCURACY (dB)	0.44 -0.42

Logging Linearity vs Frequency	Error(dB)
	MAX MIN
TOTAL LOG LINEARITY (dB)	0.40 -0.41

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
TOTAL LOGGING ACCURACY (dB)	0.44 -0.64

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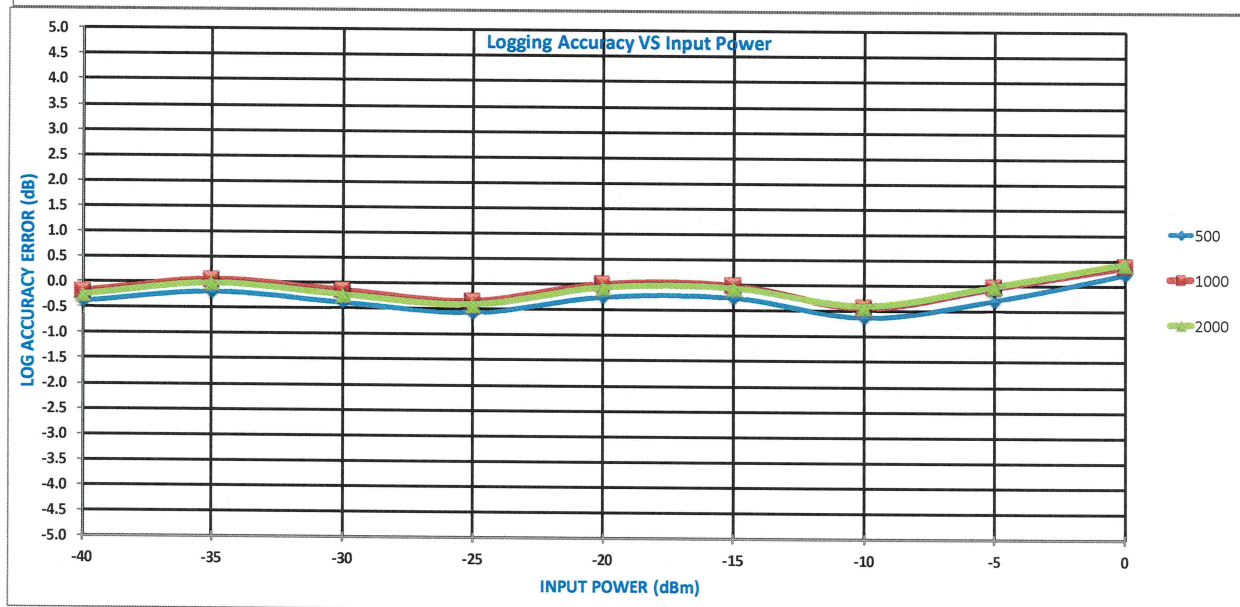
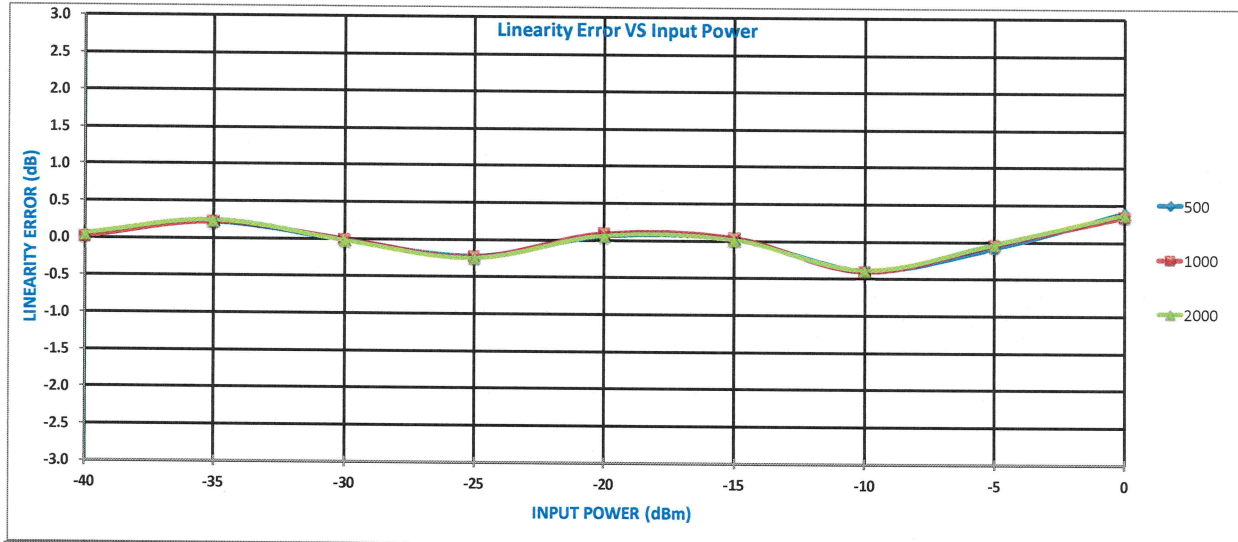


# SUMMARY TEST DATA ON HADA-D2001

PL47261/2435

## Log Linearity and Log Accuracy @ +85°C

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: J. Monley  
SERIAL NO: PL47261  
TEST TEMP: +85C



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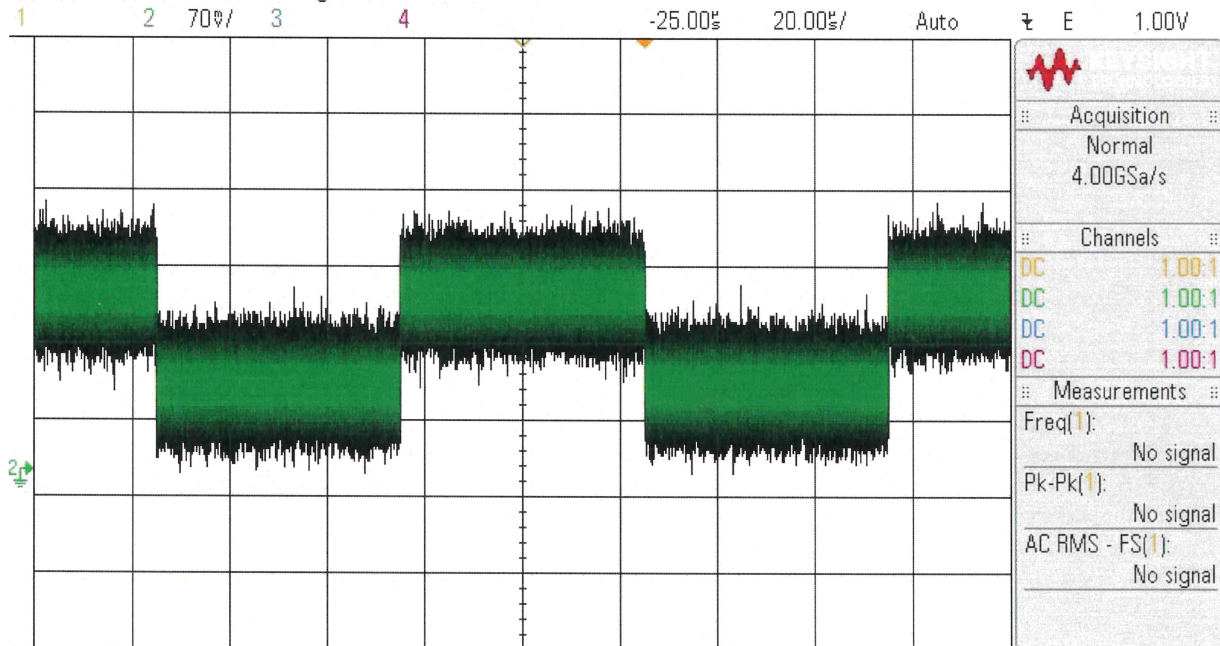


**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL47261/2435

TSS -45.1 dBm

DSO-X 3024A, MY54490369: Wed Aug 14 10:18:19 2024



Acquire Menu

Acq Mode  
Normal

# Avgs  
8

Segmented

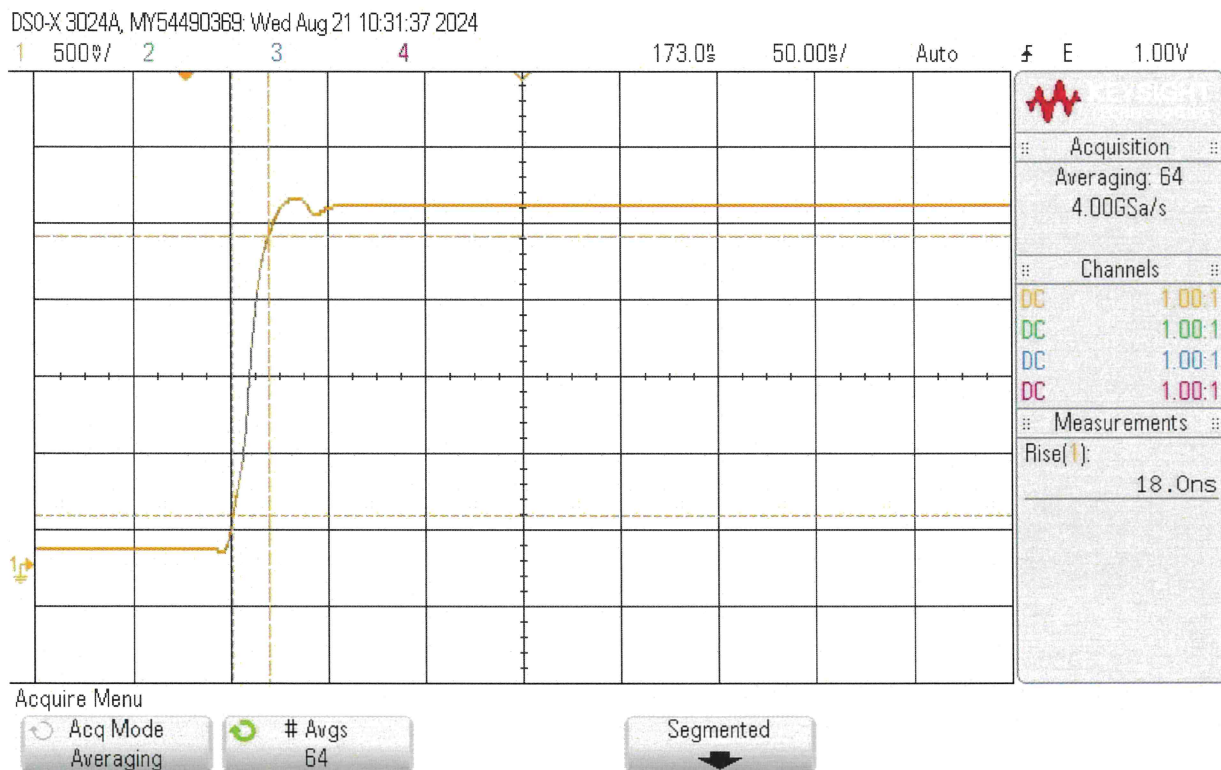
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**SUMMARY TEST DATA  
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Rise Time

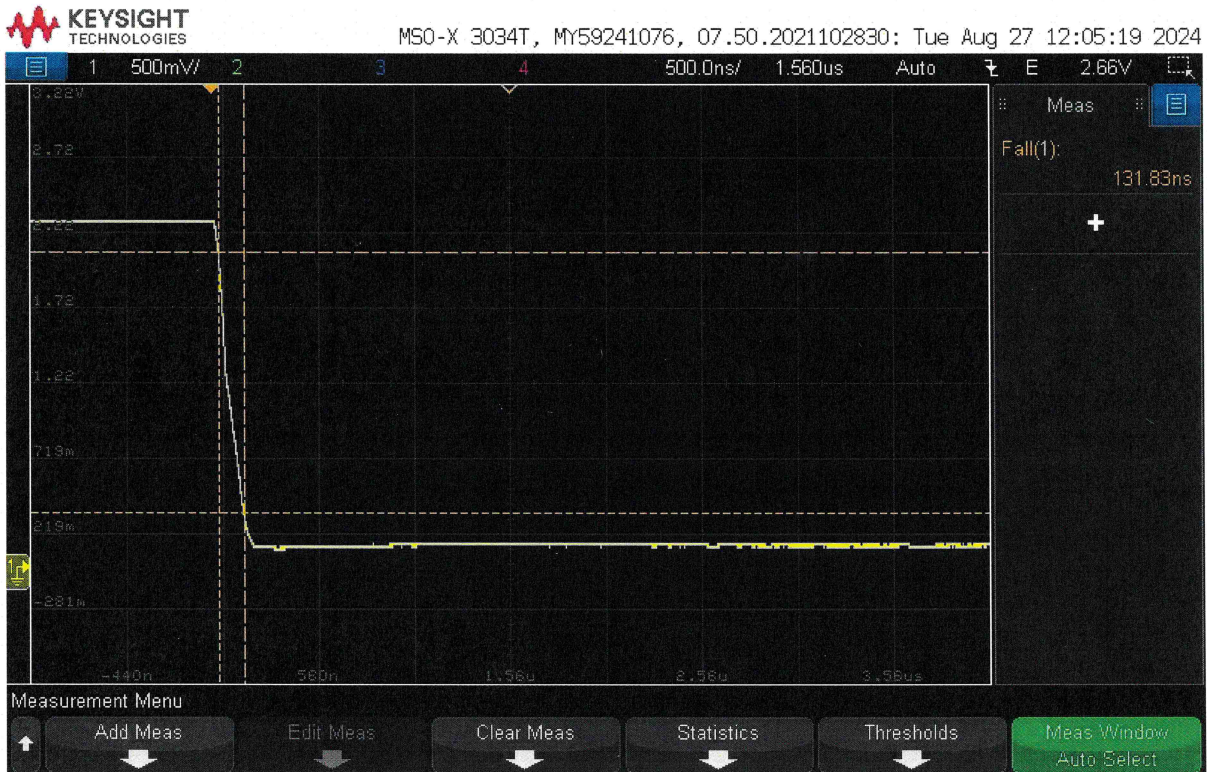




**SUMMARY TEST DATA  
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Fall Time



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**VSWR**

