



**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL47266/2435

<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>PL47266/2435</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	<b>0.5 GHz – 2.0 GHz</b> See Plot	PMI QA3
2	TSS:	-44 dBm Min @ -40°C to +85°	<b>-44.4 dBm</b> See Plot	
3	Frequency Flatness:	±0.75 dB Max	<b>±0.1 dB</b> See Plot	
4	Input / Output Characteristics: (93 Ω)	Y = 2350 + 50X [X: Input (dBm), Y: Output (mv)]	<b>Pass</b>	
5	Logging Accuracy	±1.5 dB Max (@ +25°C, 1.0 GHz) [-40 dBm ≤ INPUT ≤ 0 dBm] ±2.2 dB Max (Note)	<b>+0.26 / -1.00 dB</b> <b>-0.62 / -2.00 dB</b> See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	<b>+0.24 / -0.31 dB</b> <b>+0.51 / -0.69 dB</b> See Plot	
7	Maximum Input Power (CW):	+23 dBm	<b>Pass</b>	
8	Duty Cycle:	100%	<b>Pass</b>	
9	Rise Time:	30 ns Max (10% to 90%)	<b>24.5 ns</b> See Plot	
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	<b>111 ns</b> See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55/-100 mV (@ -40°C to +85°C)	<b>+71 mV @ +25°C</b> <b>+32 mV @ -40°C</b> <b>+98 mV @ +85°C</b>	
12	Input VSWR:	2.5:1 Max @ +23 dBm	<b>1.27:1</b> See Plot	
13	Propagation Delay:	60 ns Max	<b>40 ns</b>	

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

\*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: 8-30-29



**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL47266/2435

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: PL47266  
TEST TEMP: +25C

Graph #1

DC Offset= 0.071 V



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Frequency		
0.5 GHz	INTERCEPT (mV)	2311
	SLOPE (mV/dB)	49.7

1 GHz	INTERCEPT (mV)	2318
	SLOPE (mV/dB)	49.7

2 GHz	INTERCEPT (mV)	2315
	SLOPE (mV/dB)	50

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	318	581	822	1059	1327	1578	1800	2081	2314
	-7	8	1	-10	9	12	-14	-2	3
	-0.13	0.16	0.02	-0.21	0.19	0.24	-0.29	-0.03	0.06
	-0.64	-0.38	-0.56	-0.82	-0.46	-0.44	-1.00	-0.78	-0.72
	323	587	827	1064	1333	1583	1806	2069	2321
	-6	9	1	-11	9	11	-16	0	3
	-0.13	0.18	0.01	-0.22	0.19	0.22	-0.31	0.00	0.07
	-0.54	-0.26	-0.46	-0.72	-0.34	-0.34	-0.90	-0.62	-0.58
	313	577	816	1053	1322	1574	1800	2065	2321
	-4	11	0	-10	6	9	-10	0	6
	-0.07	0.21	0.00	-0.26	0.13	0.17	-0.30	0.00	0.13
	-0.74	-0.46	-0.68	-0.94	-0.56	-0.52	-1.00	-0.70	-0.66
	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	0.32	0.59	0.83	1.06	1.33	1.58	1.81	2.07	2.32
	0.31	0.58	0.82	1.05	1.32	1.57	1.80	2.06	2.31

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.24	-0.29
LOGGING ACCURACY (dB)	-0.38	-1.00

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.22	-0.31
LOGGING ACCURACY (dB)	-0.26	-0.90

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.21	-0.30
LOGGING ACCURACY (dB)	-0.46	-1.00

Logging Linearity vs Frequency	Error(dB)	
TOTAL LOG LINEARITY (dB)	MAX	MIN
	0.24	-0.31

Logging Accuracy vs Frequency	Error(dB)	
TOTAL LOGGING ACCURACY (dB)	MAX	MIN
	-0.26	-1.00

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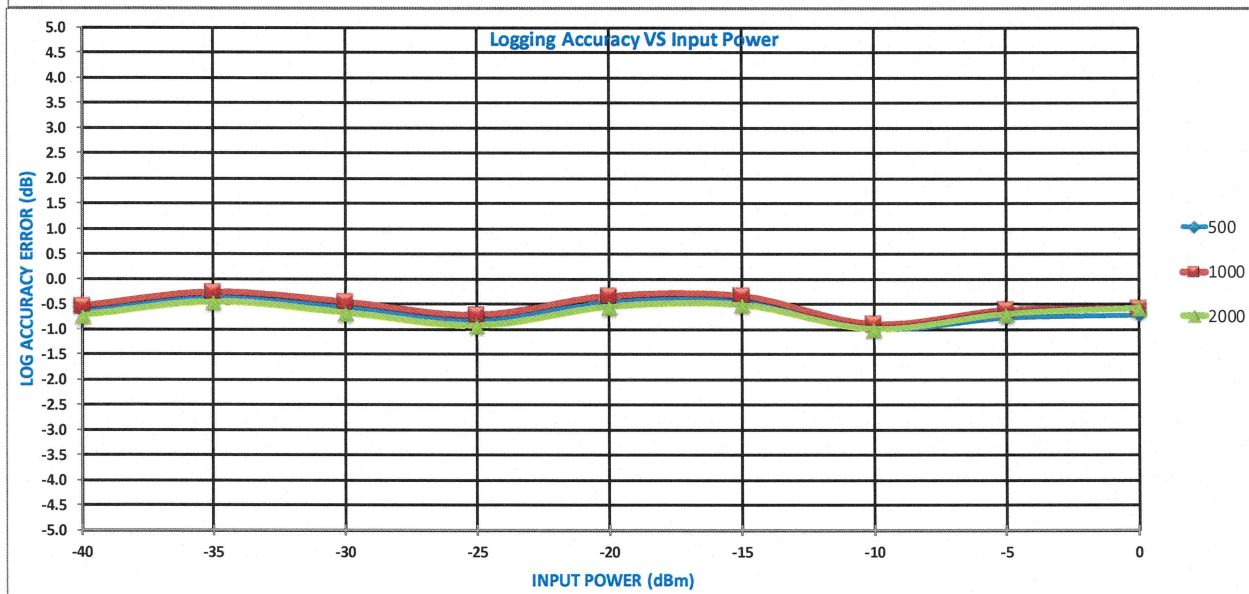
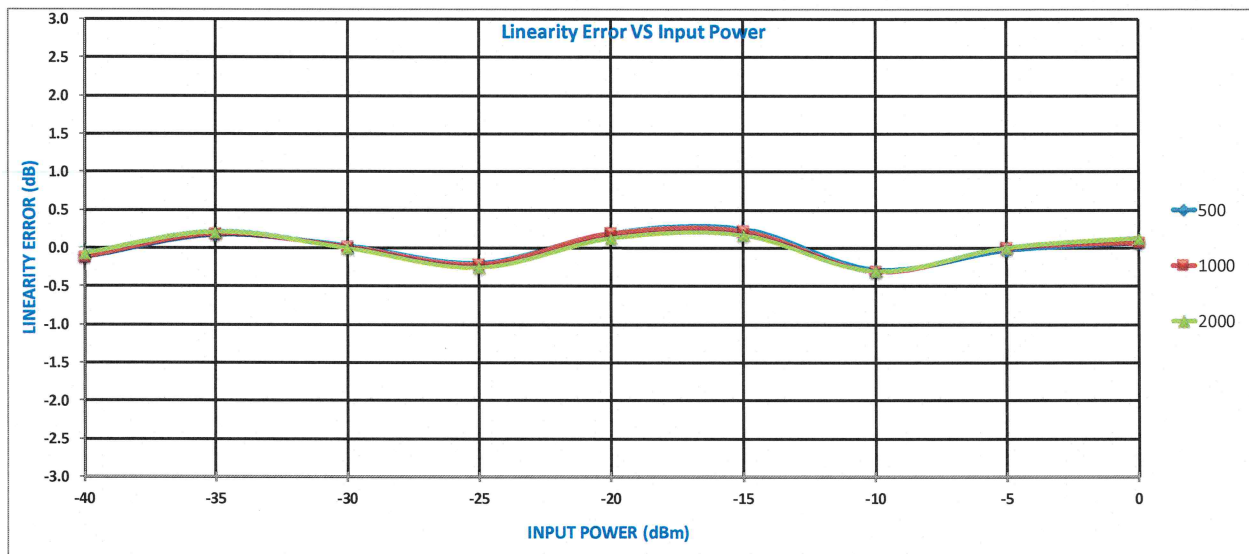


# SUMMARY TEST DATA ON HADA-D2001

PL47266/2435

Log Linearity and Log Accuracy @ +25°C

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: J. Monley  
SERIAL NO: PL47266  
TEST TEMP: +25C





**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL47266/2435

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: PL47266  
TEST TEMP: -40C

Graph #2

DC Offset= 0.032 V



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Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
0.5 GHz	2289	50.1

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
1 GHz	2295	50.1

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
2 GHz	2293	50.3

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
297	521	755	1041	1311	1560	1785	2038	2273	
12	-14	-31	5	24	23	-3	0	-16	
0.25	-0.28	-0.61	0.10	0.48	0.45	-0.06	-0.01	-0.32	
-1.06	-1.58	-1.90	-1.18	-0.78	-0.80	-1.30	-1.24	-1.54	
304	527	763	1048	1319	1567	1792	2045	2277	
12	-15	-30	5	25	23	-2	0	-18	
0.24	-0.31	-0.59	0.10	0.51	0.46	-0.05	0.01	-0.36	
-0.92	-1.46	-1.74	-1.04	-0.62	-0.66	-1.16	-1.10	-1.46	
294	519	750	1037	1309	1559	1788	2043	2277	
12	-15	-30	5	25	23	-2	0	-18	
0.29	-0.24	-0.65	0.05	0.45	0.42	-0.03	0.03	-0.32	
-1.12	-1.57	-1.90	-1.25	-0.87	-0.92	-1.24	-1.14	-1.46	
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	
0.30	0.53	0.76	1.05	1.32	1.57	1.79	2.05	2.28	
0.29	0.52	0.75	1.04	1.31	1.56	1.79	2.04	2.27	

RF Input Power (dBm)

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.48 -0.61
LOGGING ACCURACY (dB)	-0.78 -1.90

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.51 -0.59
LOGGING ACCURACY (dB)	-0.62 -1.74

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.45 -0.65 x
LOGGING ACCURACY (dB)	-0.82 -2.00

Logging Linearity vs Frequency	Error(dB)
TOTAL LOG LINEARITY (dB)	0.51 -0.65

Logging Accuracy vs Frequency	Error(dB)
TOTAL LOGGING ACCURACY (dB)	-0.62 -2.00

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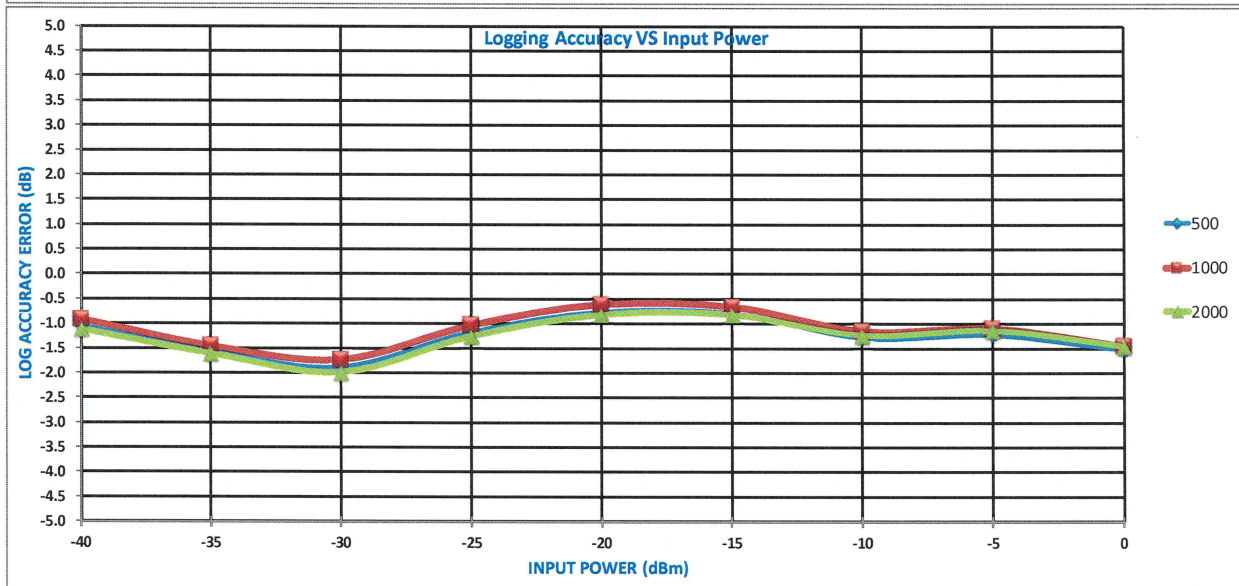
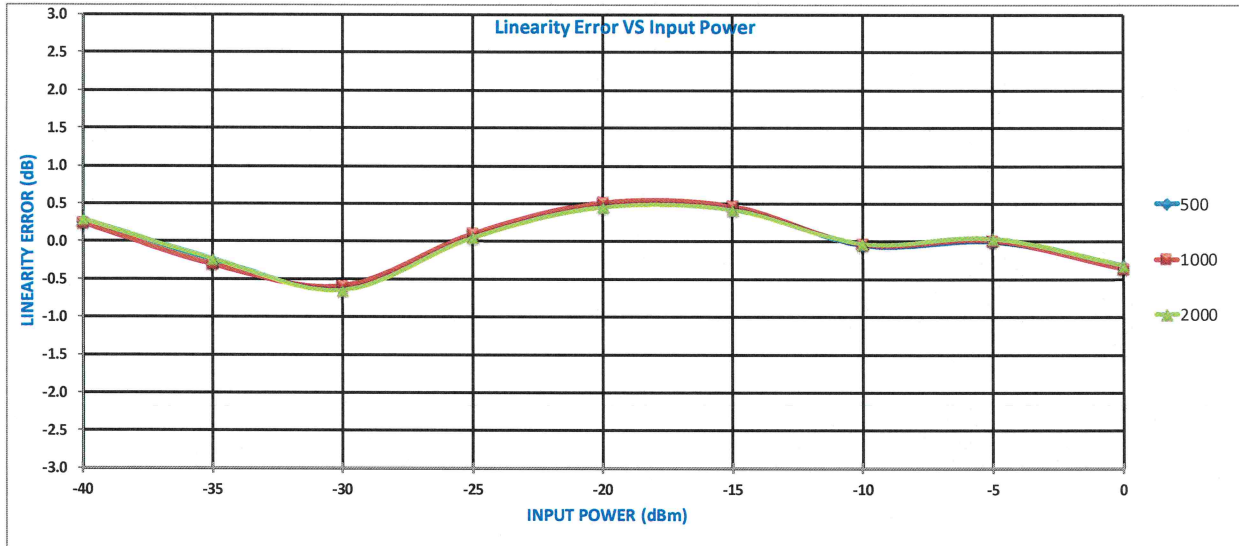


# SUMMARY TEST DATA ON HADA-D2001

PL47266/2435

## Log Linearity and Log Accuracy @ -40°C

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: J. Monley  
SERIAL NO: PL47266  
TEST TEMP: -40C



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## SUMMARY TEST DATA ON HADA-D2001

PL47266/2435

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: PL47266  
TEST TEMP: +85C

Graph #3

DC Offset= 0.098 V



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Frequency		
0.5 GHz	INTERCEPT (mV)	2310
	SLOPE (mV/dB)	50.6

1 GHz	INTERCEPT (mV)	2317
	SLOPE (mV/dB)	50.6

2 GHz	INTERCEPT (mV)	2316
	SLOPE (mV/dB)	50.9

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	304	550	759	1035	1310	1562	1789	2051	2325
	17	10	-34	-10	12	11	-15	-6	15
	0.34	0.20	-0.66	-0.21	0.23	0.21	-0.30	-0.12	0.30
	-0.92	-1.00	-1.82	-1.30	-0.80	-0.76	-1.22	-0.98	-0.50
	309	555	764	1041	1317	1568	1794	2060	2331
	17	10	-34	-10	13	11	-17	-4	14
	0.34	0.20	-0.67	-0.20	0.25	0.21	-0.33	-0.08	0.28
	-0.82	-0.90	-1.72	-1.18	-0.66	-0.64	-1.12	-0.80	-0.38
	301	547	754	1031	1308	1560	1791	2058	2334
	21	12	-35	-13	10	7	-15	-4	16
	0.41	0.24	-0.69	-0.25	0.19	0.14	-0.32	-0.07	0.35
	-0.98	-1.08	-1.92	-1.38	-0.84	-0.80	-1.18	-0.84	-0.32
	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.10	0.10
	0.31	0.56	0.76	1.04	1.32	1.57	1.79	2.06	2.33
	0.30	0.55	0.75	1.03	1.31	1.56	1.79	2.05	2.33

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.34	-0.66
LOGGING ACCURACY (dB)	-0.50	-1.82

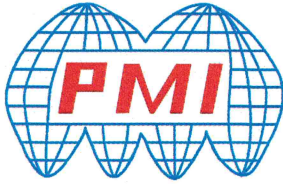
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.34	-0.67
LOGGING ACCURACY (dB)	-0.38	-1.72

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.41	-0.69
LOGGING ACCURACY (dB)	-0.32	-1.92

Logging Linearity vs Frequency	Error(dB)	
TOTAL LOG LINEARITY (dB)	MAX	MIN
	0.41	-0.69

Logging Accuracy vs Frequency	Error(dB)	
TOTAL LOGGING ACCURACY (dB)	MAX	MIN
	-0.32	-1.92

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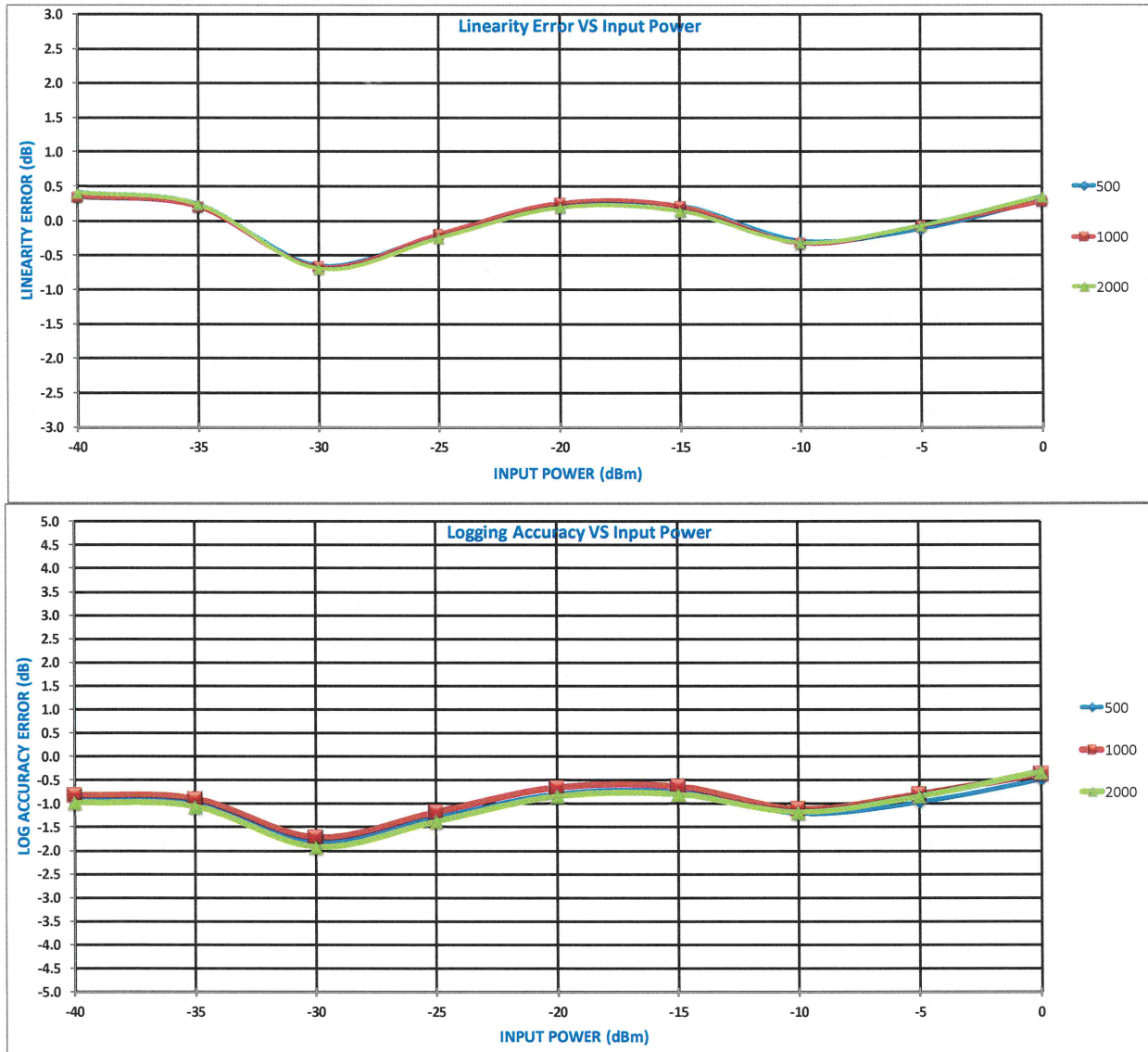


## SUMMARY TEST DATA ON HADA-D2001

PL47266/2435

Log Linearity and Log Accuracy @ +85°C

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: J. Monley  
SERIAL NO: PL47266  
TEST TEMP: +85C



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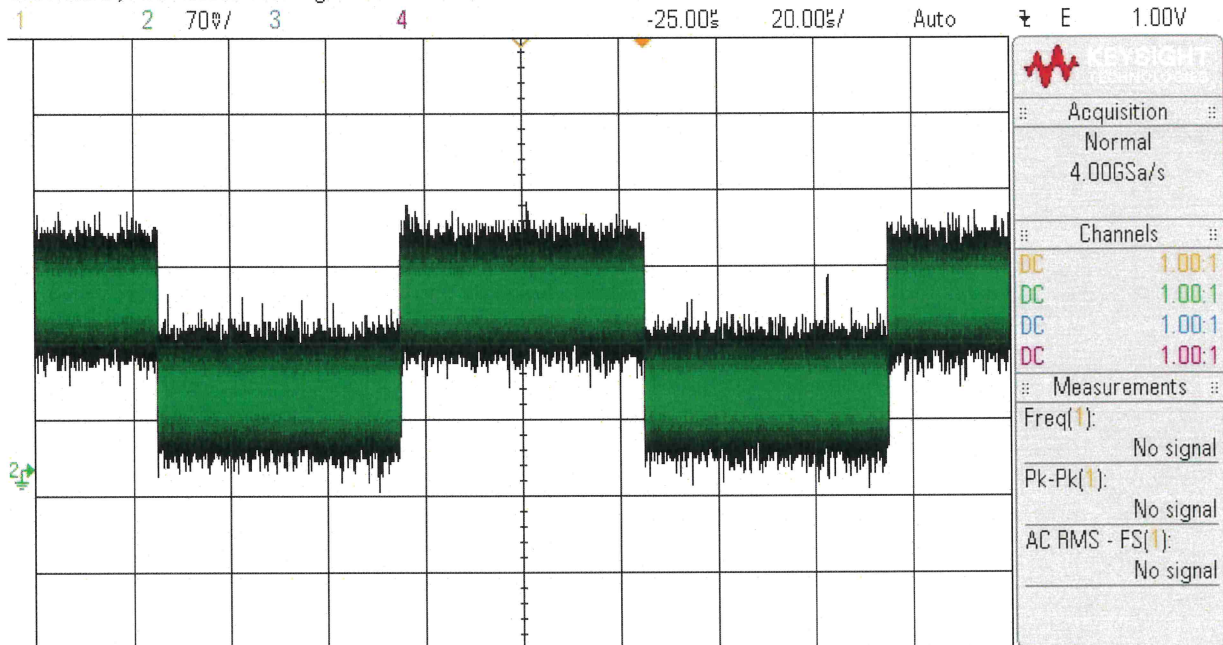


**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL47266/2435

TSS -44.4 dBm

DSO-X 3024A, MY54490369: Wed Aug 14 10:25:03 2024



Acquire Menu

Acq Mode  
Normal

# Avgs  
8

Segmented

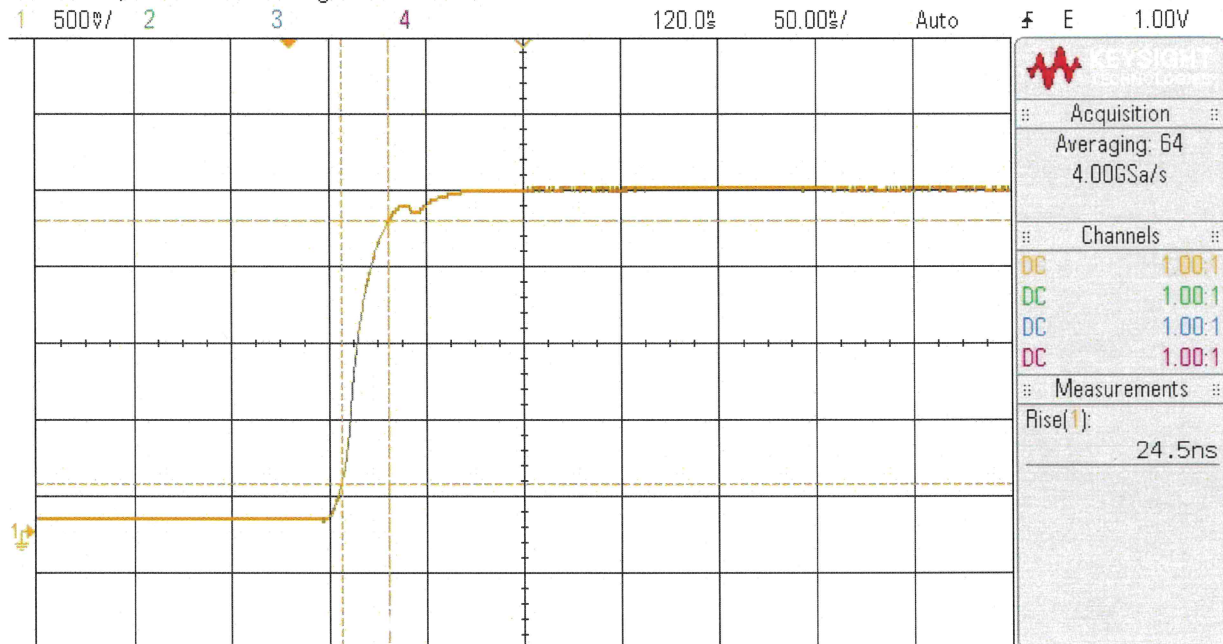


**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL47266/2435

Rise Time

DSO-X 3024A, MY54490369, Wed Aug 21 15:18:37 2024



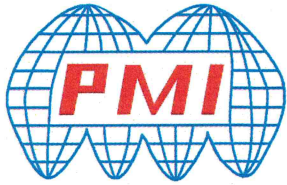
Acquire Menu

Acq Mode  
Averaging

# Avgs  
64

Segmented

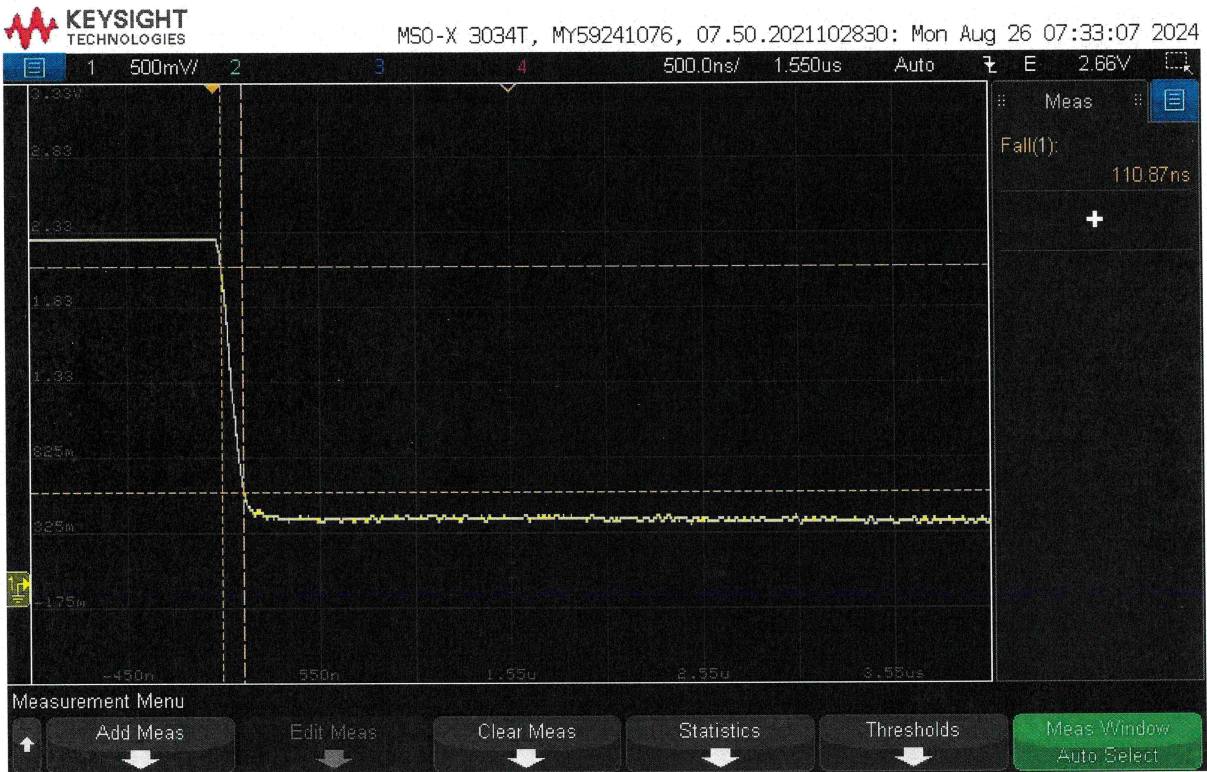
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**SUMMARY TEST DATA  
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Fall Time



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**SUMMARY TEST DATA  
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PL47266/2435

VSWR

