



**SUMMARY TEST DATA
ON
HADA-D2001**

PL47262/2435

Customer: _____	Tested By: <u>Joshua Monley</u>
SO No: _____	Temperature: <u>+25°C -40°C +85°C</u>
Model No: <u>HADA-D2001</u>	Date: <u>8/28/2024</u>
Serial No: <u>PL47262/2435</u>	Drawing No: <u>27620201</u> Rev: <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°	-44.9 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)	+0.42 / -0.40 dB +0.40 / -1.04 dB See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	+0.24 / -0.36 dB +0.48 / -0.44 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%)	26.3 ns See Plot	
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	141 ns See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55/-100 mV (@ -40°C to +85°C)	+82 mV @ +25°C +73 mV @ -40°C +121 mV @ +85°C	
12	Input VSWR:	2.5:1 Max @ +23 dBm	1.26:1 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	85 mA 40 mA	PMI QA3
15	Warm Up Time:	2 Minutes Max	2 Minutes	

*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: *H. Huter*

Date: 8.30.24



SUMMARY TEST DATA ON HADA-D2001

PL47262/2435

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: PL47262
 TEST TEMP: +25C

Graph #1

DC Offset= 0.082 V



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Frequency		
0.5 GHz	INTERCEPT (mV)	2346
	SLOPE (mV/dB)	49.9

1 GHz	INTERCEPT (mV)	2357
	SLOPE (mV/dB)	49.9

2 GHz	INTERCEPT (mV)	2356
	SLOPE (mV/dB)	50.1

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	340	610	854	1093	1359	1610	1830	2091	2353
	-11	9	4	-6	10	12	-18	-6	7
	-0.23	0.19	0.08	-0.13	0.20	0.23	-0.35	-0.12	0.13
	-0.20	0.20	0.08	-0.14	0.18	0.20	-0.40	-0.18	0.06
	351	620	865	1103	1370	1621	1840	2103	2362
	-11	9	4	-7	11	12	-18	-4	5
	-0.22	0.17	0.09	-0.14	0.21	0.24	-0.36	-0.09	0.10
	0.02	0.40	0.30	0.06	0.40	0.42	-0.20	0.06	0.24
	344	614	858	1096	1364	1616	1838	2101	2363
	-10	10	4	-9	9	13	-17	-5	7
	-0.19	0.20	0.07	-0.17	0.18	0.22	-0.35	-0.09	0.14
	0.10	0.28	0.16	0.08	0.20	0.32	-0.24	0.02	0.28
	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	0.35	0.62	0.87	1.10	1.37	1.62	1.84	2.10	2.36
	0.34	0.61	0.85	1.09	1.36	1.61	1.83	2.09	2.35

RF Input Power (dBm)

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.23 -0.35
LOGGING ACCURACY (dB)	0.20 -0.40

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.24 -0.36 x
LOGGING ACCURACY (dB)	0.42 -0.20

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.22 -0.35
LOGGING ACCURACY (dB)	0.32 -0.24

Logging Linearity vs Frequency	Error(dB)
	MAX MIN
TOTAL LOG LINEARITY (dB)	0.24 -0.36

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
TOTAL LOGGING ACCURACY (dB)	0.42 -0.40

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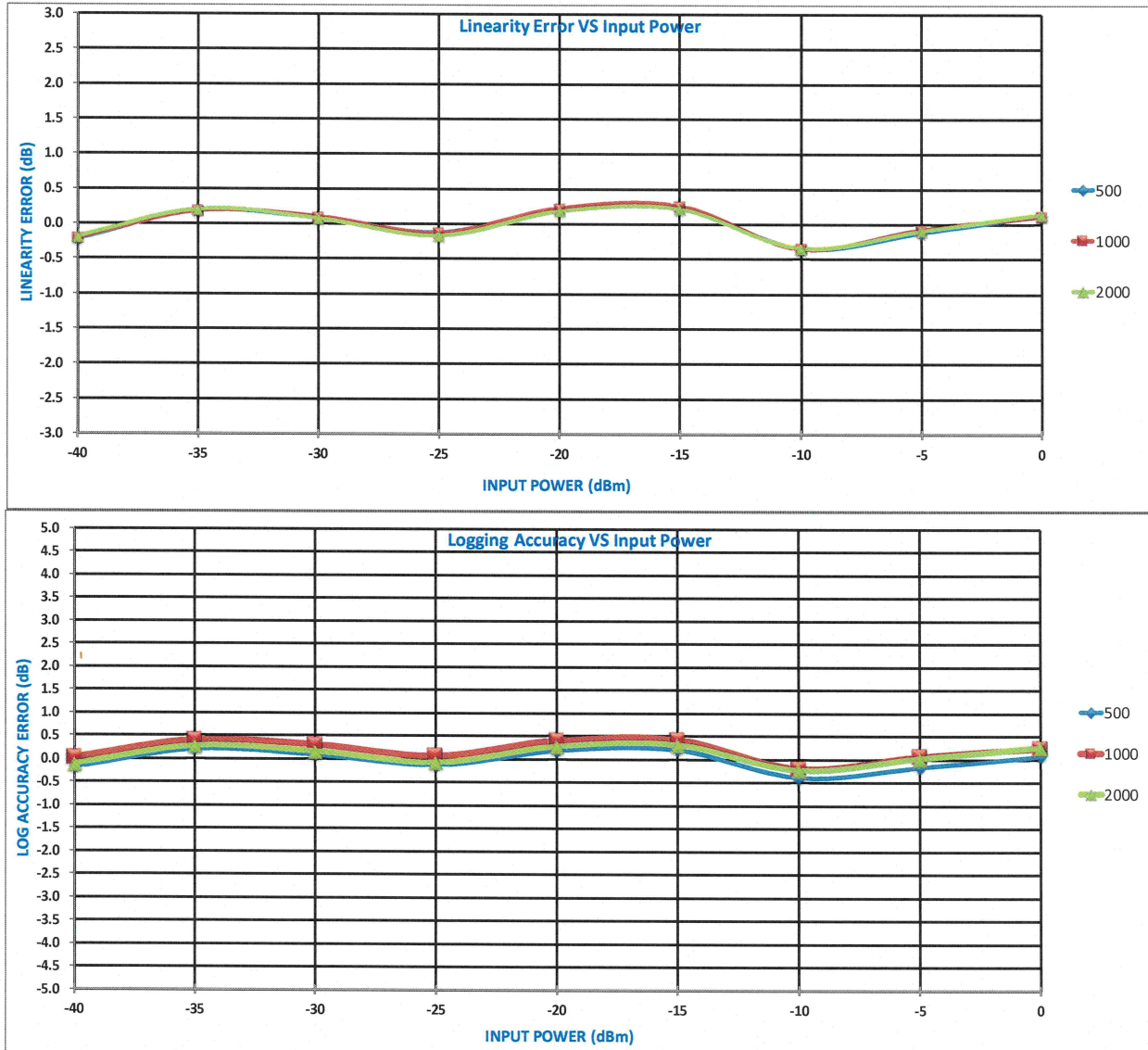


SUMMARY TEST DATA ON HADA-D2001

PL47262/2435

Log Linearity and Log Accuracy @ +25°C

LOG TRANSFER WITH FREQUENCY
MODEL: HADA-D2001
TESTED BY: J. Monley
SERIAL NO: PL47262
TEST TEMP: +25C



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SUMMARY TEST DATA ON HADA-D2001

PL47262/2435

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: PL47262
 TEST TEMP: -40C

Graph #2

DC Offset= 0.073 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2302
	SLOPE (mV/dB)	49

1 GHz	INTERCEPT (mV)	2311
	SLOPE (mV/dB)	48.9

2 GHz	INTERCEPT (mV)	2311
	SLOPE (mV/dB)	49.1

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
345	585	828	1067	1333	1585	1804	2055	2298	
2	-3	-4	-10	11	18	-8	-2	-4	
0.05	-0.05	-0.09	-0.21	0.22	0.37	-0.16	-0.04	-0.08	
-0.10	-0.30	-0.44	-0.66	-0.34	-0.30	-0.92	-0.90	-1.04	
358	596	839	1079	1346	1596	1816	2066	2303	
2	-4	-6	-10	13	18	-6	0	-8	
0.04	-0.09	-0.11	-0.20	0.26	0.38	-0.12	-0.01	-0.16	
0.16	-0.08	-0.22	-0.42	-0.08	-0.08	-0.68	-0.68	-0.94	
352	591	833	1072	1340	1592	1815	2066	2304	
2	-3	-5	-12	11	17	-5	1	-7	
0.08	-0.05	-0.12	-0.25	0.22	0.35	-0.10	0.01	-0.13	
0.04	-0.13	-0.34	-0.55	-0.28	-0.16	-0.70	-0.68	-0.92	
0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
0.36	0.60	0.84	1.08	1.35	1.60	1.82	2.07	2.30	
0.35	0.59	0.83	1.07	1.33	1.59	1.80	2.06	2.30	

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.37	-0.21
LOGGING ACCURACY (dB)	-0.10	-1.04

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.38	-0.20
LOGGING ACCURACY (dB)	0.16	-0.94

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.35	-0.25
LOGGING ACCURACY (dB)	0.04	-0.92

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.38	-0.25

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.16	-1.04

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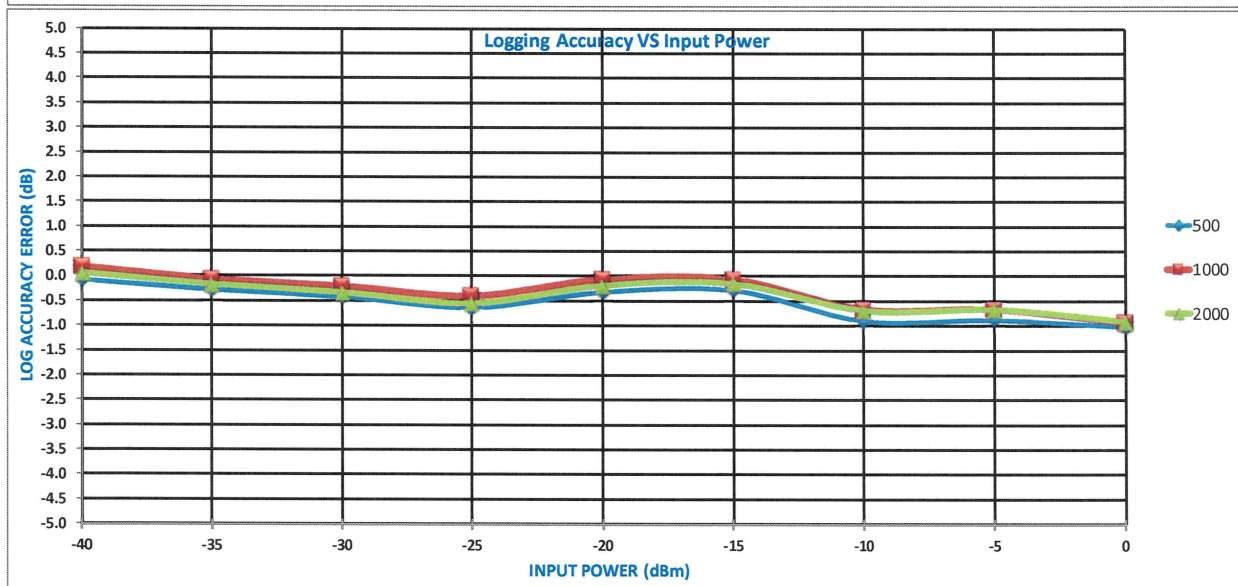
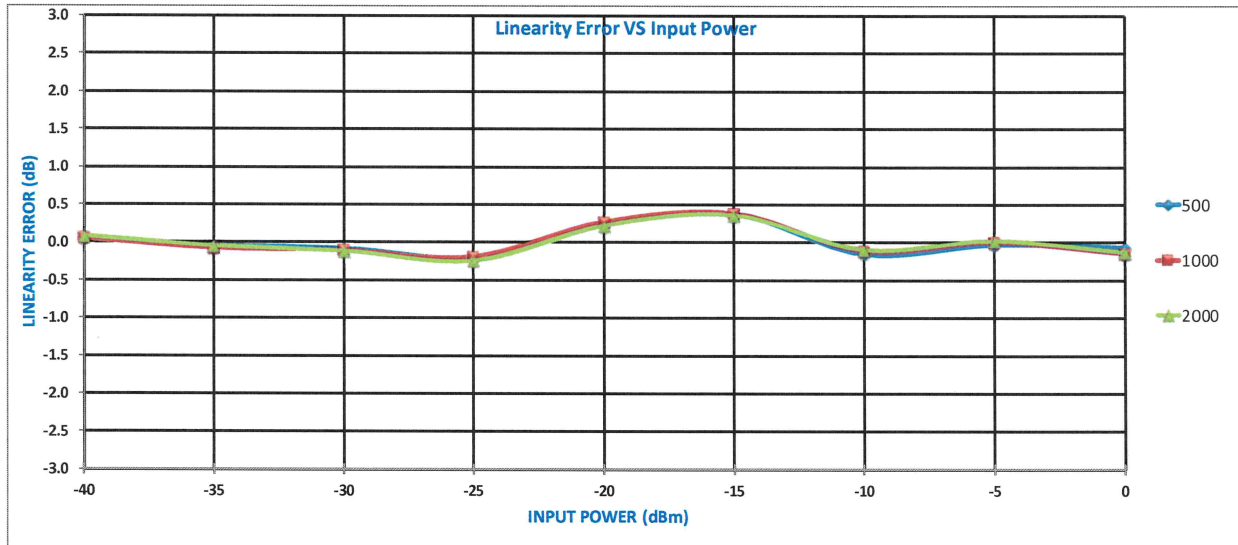


SUMMARY TEST DATA ON HADA-D2001

PL47262/2435

Log Linearity and Log Accuracy @ -40°C

LOG TRANSFER WITH FREQUENCY
MODEL: HADA-D2001
TESTED BY: J. Monley
SERIAL NO: PL47262
TEST TEMP: -40C



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**SUMMARY TEST DATA
ON
HADA-D2001**

PL47262/2435

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: PL47262
TEST TEMP: +85C

Graph #3

DC Offset= 0.121 V



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Frequency		
0.5 GHz	INTERCEPT (mV)	2334
	SLOPE (mV/dB)	49.8

1 GHz	INTERCEPT (mV)	2346
	SLOPE (mV/dB)	49.8

2 GHz	INTERCEPT (mV)	2347
	SLOPE (mV/dB)	50

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	345	605	841	1077	1341	1590	1816	2077	2358
	2	13	0	-13	2	2	-21	-8	24
	0.03	0.25	0.00	-0.26	0.04	0.05	-0.41	-0.17	0.48
	-0.10	0.10	-0.18	-0.46	-0.18	-0.20	-0.68	-0.46	0.16
	355	615	851	1087	1353	1602	1826	2091	2367
	1	12	-1	-14	3	3	-22	-6	21
	0.03	0.25	-0.01	-0.27	0.07	0.07	-0.44	-0.11	0.43
	0.10	0.30	0.02	-0.26	0.06	0.04	-0.48	-0.18	0.34
	350	611	846	1082	1348	1598	1826	2091	2370
	3	14	-1	-16	1	1	-21	-6	23
	0.06	0.28	-0.02	-0.30	0.02	0.02	-0.42	-0.11	0.47
	0.05	0.22	-0.08	-0.36	-0.04	-0.04	-0.48	-0.18	0.40
	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	0.36	0.62	0.85	1.09	1.35	1.60	1.83	2.09	2.37
	0.35	0.61	0.84	1.08	1.34	1.59	1.82	2.08	2.36

RF Input Power (dBm)

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.48 -0.41
LOGGING ACCURACY (dB)	0.16 -0.68

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.43 -0.44
LOGGING ACCURACY (dB)	0.34 -0.48

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.47 -0.42
LOGGING ACCURACY (dB)	0.40 -0.48

Logging Linearity vs Frequency	Error(dB)
	MAX MIN
TOTAL LOG LINEARITY (dB)	0.48 -0.44

Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
TOTAL LOGGING ACCURACY (dB)	0.40 -0.68

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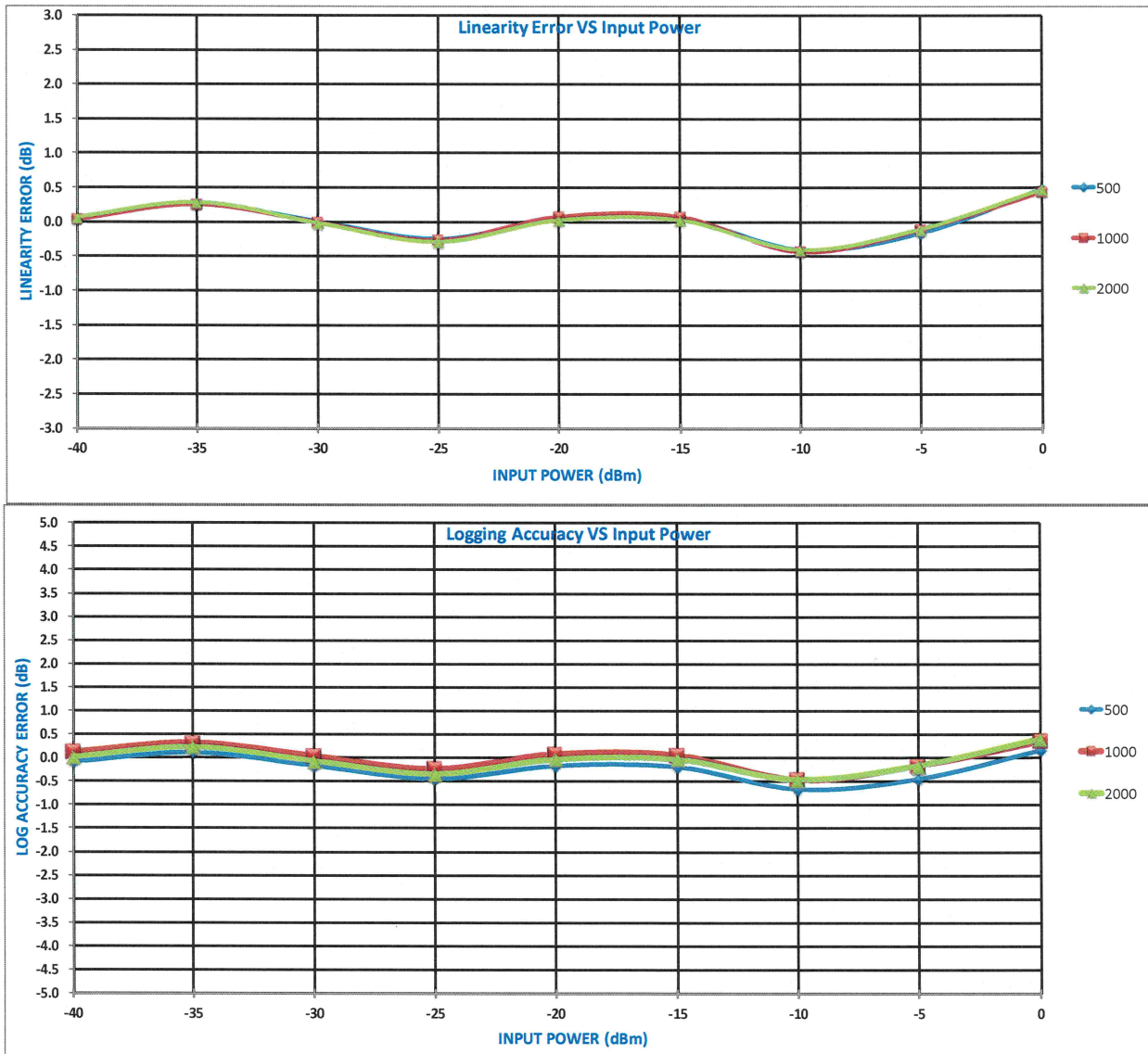


SUMMARY TEST DATA ON HADA-D2001

PL47262/2435

Log Linearity and Log Accuracy @ +85°C

LOG TRANSFER WITH FREQUENCY
MODEL: HADA-D2001
TESTED BY: J. Monley
SERIAL NO: PL47262
TEST TEMP: +85C



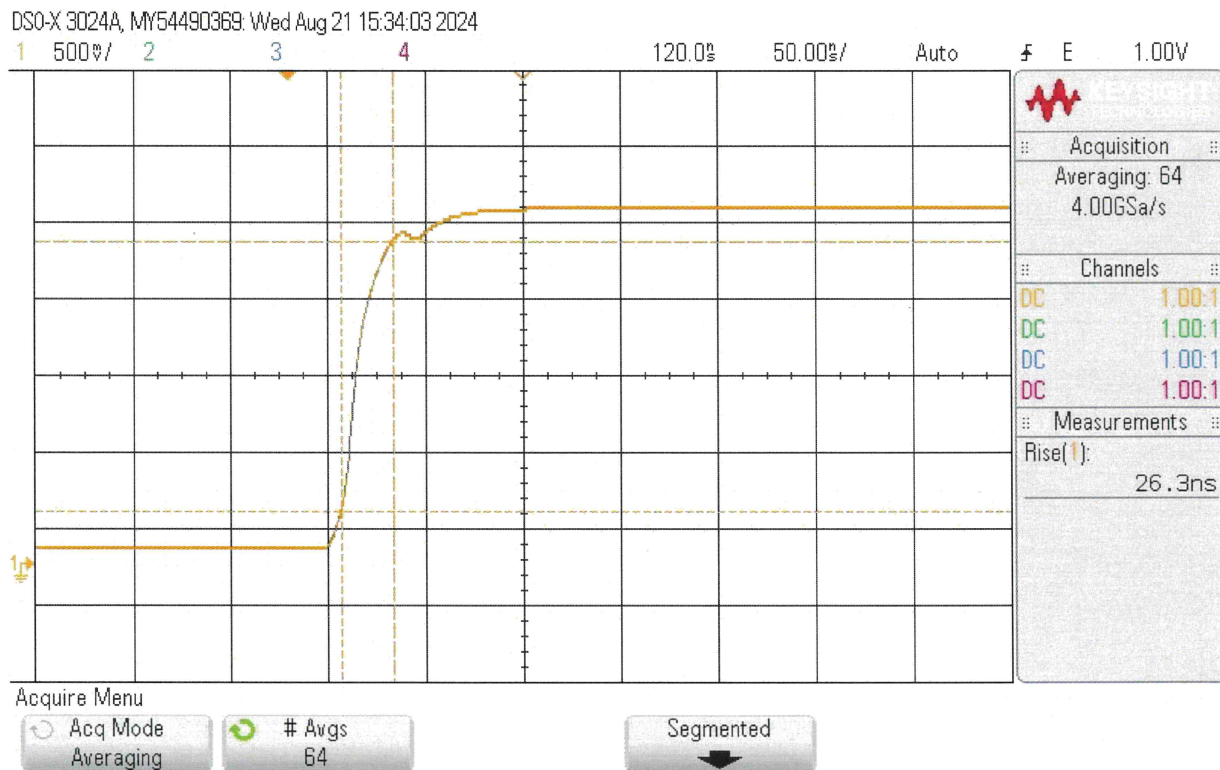
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SUMMARY TEST DATA ON HADA-D2001

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Rise Time

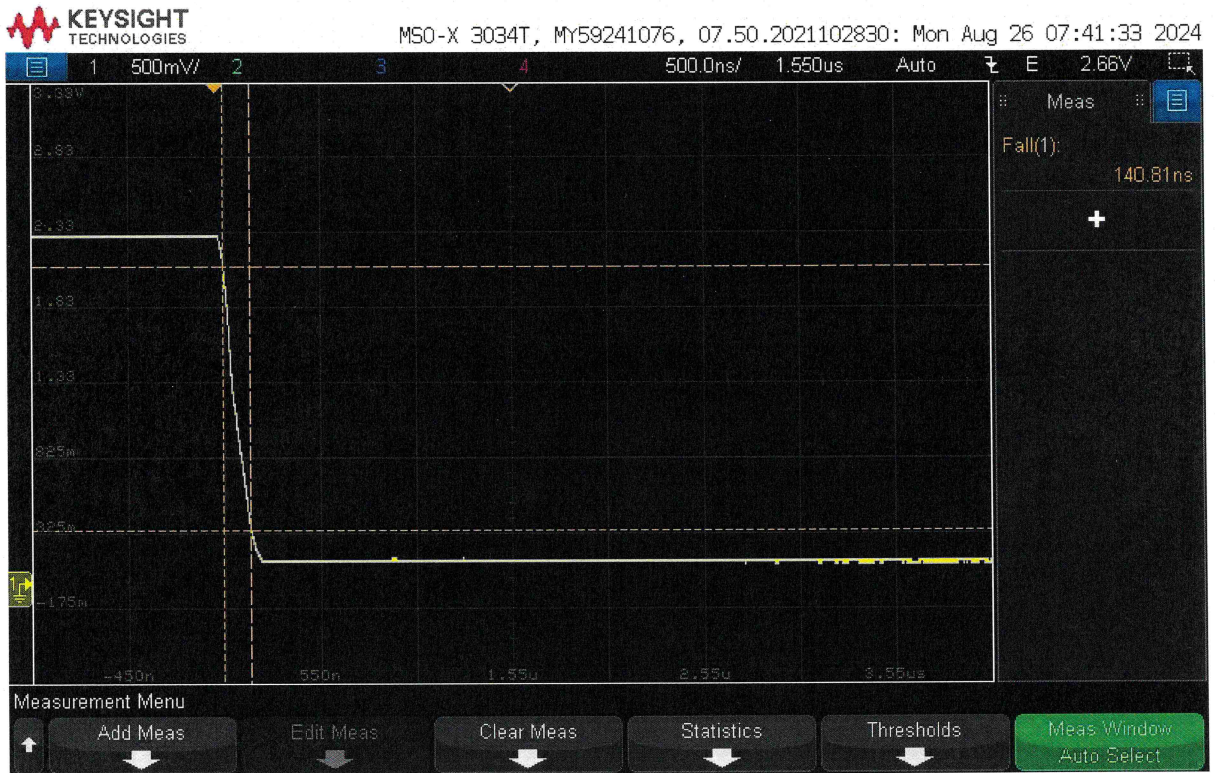




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Fall Time



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**SUMMARY TEST DATA
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VSWR

