



**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL44192/2409

Customer: _____	Tested By: <u>Anton L.</u>
SO No: _____	Temperature: <u>+25°C -40°C +85°C</u>
Model No: <u>HADA-D2001</u>	Date: <u>2/26/23</u>
Serial No: <u>PL44192/2409</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	<b>0.5 GHz – 2.0 GHz</b> See Plot	PMI QA3
2	TSS:	-44 dBm Min @ -40°C to +85°	<b>-46 dBm</b> See Plot	
3	Frequency Flatness:	±0.75 dB Max	<b>±0.30 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>+0.62 / -0.30 dB</b> <b>+0.62 / -1.04 dB</b> See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	<b>+0.29 / -0.36 dB</b> <b>+0.48 / -0.36 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>26.8 ns</b> See Plot	
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	<b>300 ns</b> See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55/-100 mV (@ -40°C to +85°C)	<b>+77 mV @ +25°C</b> <b>+75 mV @ -40°C</b> <b>+83 mV @ +85°C</b>	
12	Input VSWR:	2.5:1 Max @ +23 dBm	<b>1.28:0</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	<b>120 mA</b> <b>70 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. Hunter*

Date: 2.27.24



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Log Linearity and Log Accuracy @ +25°C

DC Offset= 0.077 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2354
	SLOPE (mV/dB)	50.1

1 GHz	INTERCEPT (mV)	2364
	SLOPE (mV/dB)	49.9

2 GHz	INTERCEPT (mV)	2372
	SLOPE (mV/dB)	50.2

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	339	605	855	1099	1361	1613	1835	2093	2364
	-10	5	5	-2	9	11	-18	-10	10
	-0.20	0.11	0.09	-0.04	0.19	0.22	-0.36	-0.21	0.20
	-0.22	0.10	0.10	-0.02	0.22	0.26	-0.30	-0.14	0.28
	357	621	874	1119	1379	1631	1850	2109	2364
	-13	2	5	1	12	15	-16	-6	0
	-0.26	0.03	0.11	0.02	0.24	0.29	-0.31	-0.12	0.00
	0.14	0.42	0.48	0.38	0.58	0.62	0.00	0.18	0.28
	354	618	871	1115	1378	1630	1855	2116	2374
	-10	3	5	-2	10	11	-15	-5	2
	-0.20	0.06	0.10	-0.04	0.20	0.22	-0.29	-0.09	0.05
	0.08	0.35	0.42	0.30	0.56	0.60	0.10	0.32	0.48
	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
	0.36	0.62	0.87	1.12	1.38	1.63	1.86	2.12	2.37
	0.34	0.61	0.86	1.10	1.36	1.61	1.84	2.09	2.36

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.22	-0.36
LOGGING ACCURACY (dB)	0.28	-0.30

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.29	-0.31
LOGGING ACCURACY (dB)	0.62	0.00

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.22	-0.29
LOGGING ACCURACY (dB)	0.60	0.08

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.29	-0.36

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.62	-0.30

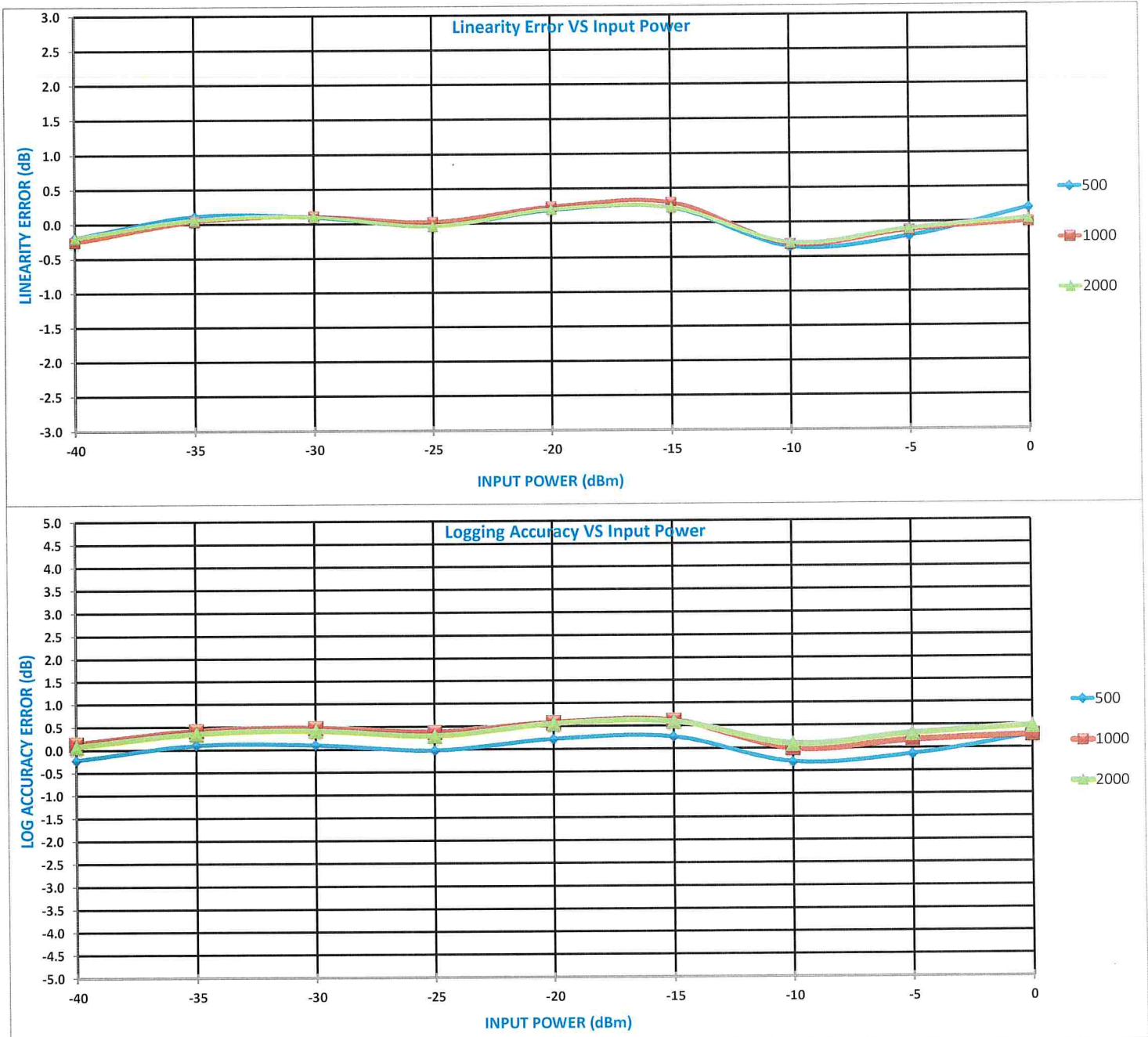
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# SUMMARY TEST DATA ON HADA-D2001

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Log Linearity and Log Accuracy @ +25°C



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## SUMMARY TEST DATA ON HADA-D2001

PL44192/2409

Log Linearity and Log Accuracy @ -40°C

DC Offset= 0.075 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2323
	SLOPE (mV/dB)	49.3

1 GHz	INTERCEPT (mV)	2332
	SLOPE (mV/dB)	48.9

2 GHz	INTERCEPT (mV)	2339
	SLOPE (mV/dB)	49.3

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	352	591	841	1085	1348	1602	1819	2071	2323
	2	-6	-3	-5	11	18	-11	-6	0
	0.03	-0.12	-0.05	-0.11	0.23	0.37	-0.23	-0.12	-0.01
	0.04	-0.18	-0.18	-0.30	-0.04	0.04	-0.62	-0.58	-0.54
	372	610	862	1109	1369	1622	1838	2086	2317
	-4	-10	-3	0	15	24	-5	-2	-15
	-0.08	-0.21	-0.06	-0.01	0.31	0.48	-0.10	-0.03	-0.31
	0.44	0.20	0.24	0.18	0.38	0.44	-0.24	-0.28	-0.66
	367	605	857	1103	1366	1620	1842	2092	2327
	0	-9	-3	-4	13	20	-4	-1	-12
	-0.01	-0.18	-0.07	-0.08	0.26	0.41	-0.08	-0.01	-0.25
	0.34	0.10	0.14	0.06	0.32	0.40	-0.16	-0.16	-0.46
	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
	0.37	0.61	0.86	1.11	1.37	1.62	1.84	2.09	2.33
	0.35	0.59	0.84	1.09	1.35	1.60	1.82	2.07	2.32

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.37	-0.23
LOGGING ACCURACY (dB)	0.04	-0.62

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.48	-0.31
LOGGING ACCURACY (dB)	0.44	-0.66

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.41	-0.25
LOGGING ACCURACY (dB)	0.40	-0.46

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.48	-0.31

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.44	-0.66

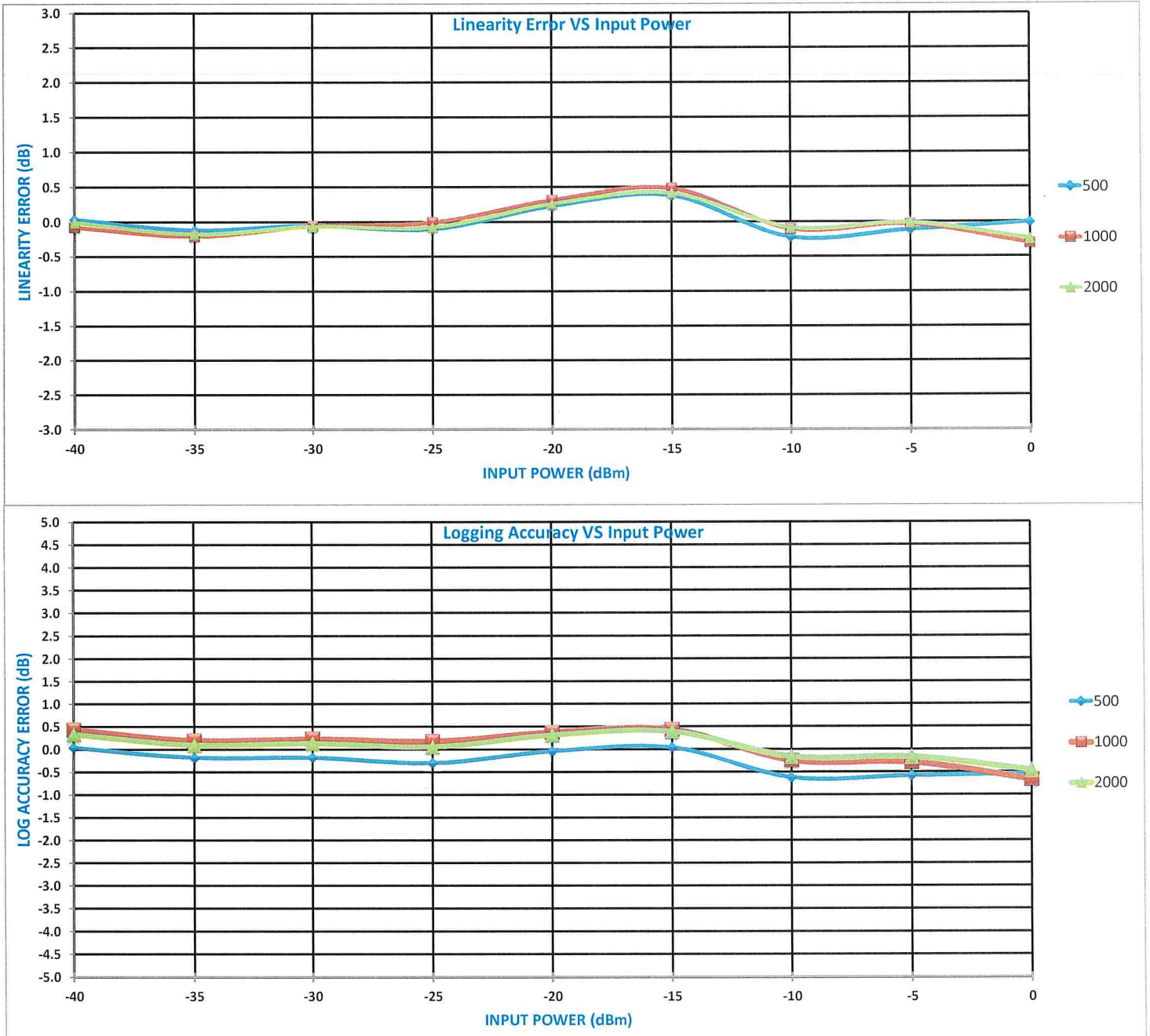
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Log Linearity and Log Accuracy @ -40°C



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## SUMMARY TEST DATA ON HADA-D2001

PL44192/2409

Log Linearity and Log Accuracy @ +85°C

DC Offset= 0.083 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2310
	SLOPE (mV/dB)	49.8

1 GHz	INTERCEPT (mV)	2325
	SLOPE (mV/dB)	49.6

2 GHz	INTERCEPT (mV)	2328
	SLOPE (mV/dB)	49.9

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	310	576	819	1062	1323	1568	1798	2052	2321
	-9	8	3	-3	9	5	-14	-9	11
	-0.17	0.17	0.05	-0.07	0.17	0.10	-0.29	-0.18	0.22
	-0.80	-0.48	-0.62	-0.76	-0.54	-0.64	-1.04	-0.96	-0.58
	329	595	841	1083	1344	1590	1816	2074	2326
	-12	6	4	-2	11	9	-13	-3	1
	-0.24	0.12	0.08	-0.04	0.22	0.18	-0.27	-0.06	0.02
	-0.42	-0.10	-0.18	-0.34	-0.12	-0.20	-0.68	-0.52	-0.48
	324	590	835	1077	1340	1587	1818	2078	2329
	-19	7	3	-5	9	7	-12	-1	1
	-0.19	0.14	0.06	-0.09	0.18	0.14	-0.23	-0.02	0.02
	-0.52	-0.20	-0.30	-0.46	-0.20	-0.28	-0.84	-0.34	-0.42
	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.10
	0.33	0.60	0.84	1.08	1.34	1.59	1.82	2.08	2.33
	0.31	0.58	0.82	1.06	1.32	1.57	1.80	2.05	2.32

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.22	-0.29
LOGGING ACCURACY (dB)	-0.48	-1.04

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.22	-0.27
LOGGING ACCURACY (dB)	-0.10	-0.68

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.18	-0.23
LOGGING ACCURACY (dB)	-0.20	-0.64

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.22	-0.29

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	-0.10	-1.04

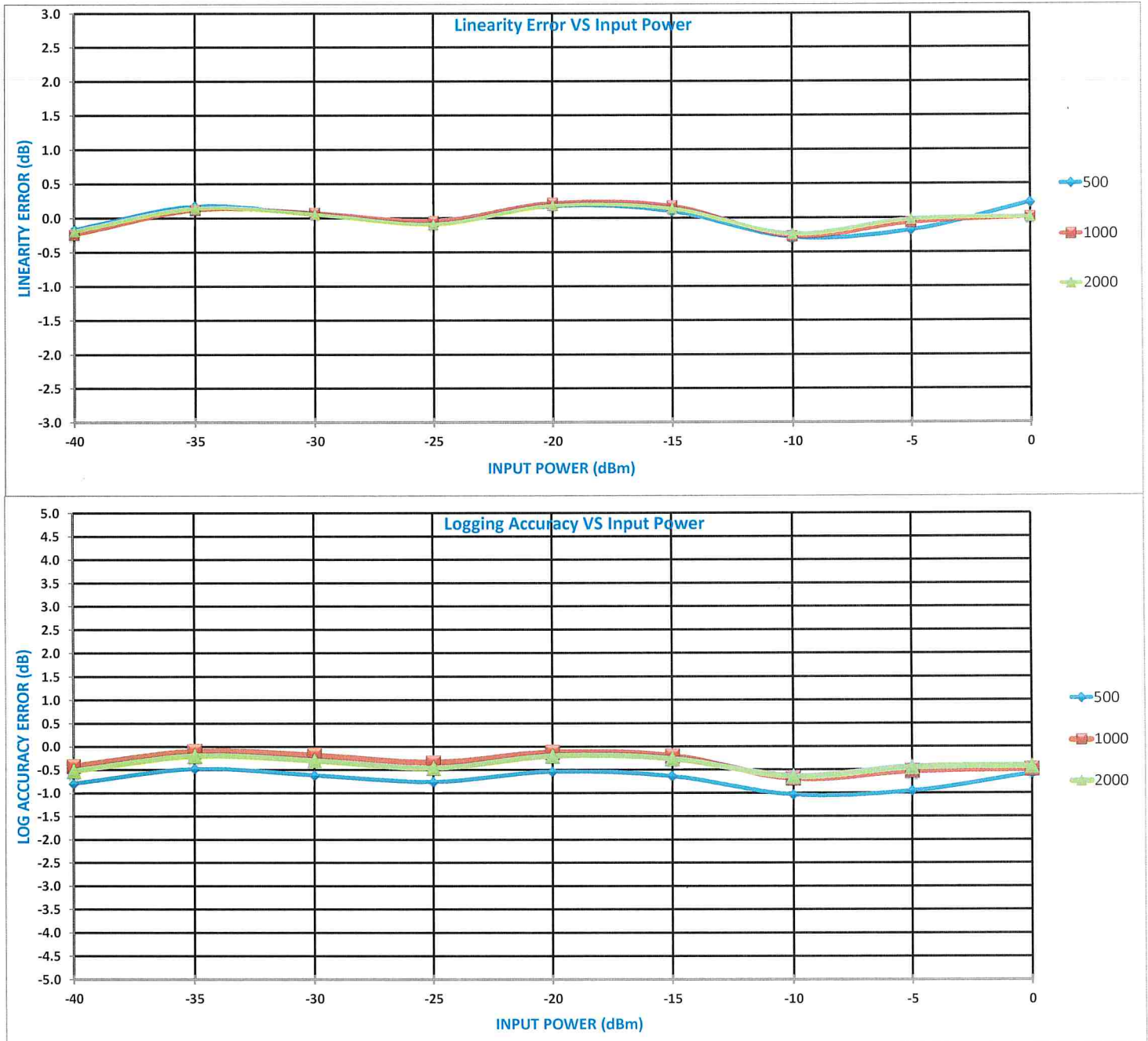
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Log Linearity and Log Accuracy @ +85°C



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TSS -46 dBm

DSO-X 3024A, MY54490369, Fri Feb 23 14:05:55 2024



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SUMMARY TEST DATA  
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PL44192/2409

Rise Time 26.8 ns

DSO-X 3024A, MY54490369, Fri Feb 23 13:43:36 2024



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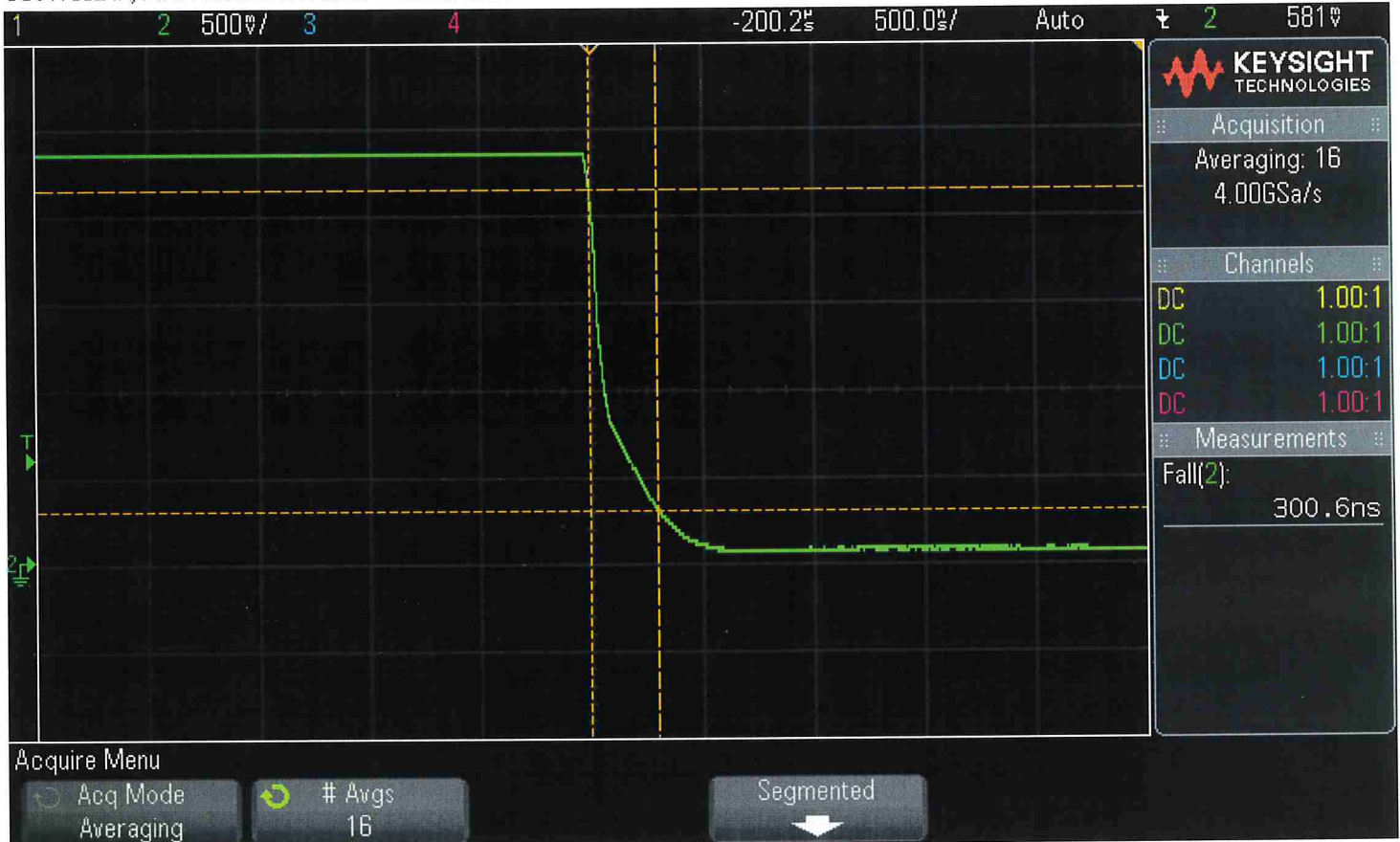


SUMMARY TEST DATA  
ON  
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PL44192/2409

Fall Time 300 ns

DSO-X 3024A, MY54490369: Fri Feb 23 14:35:28 2024



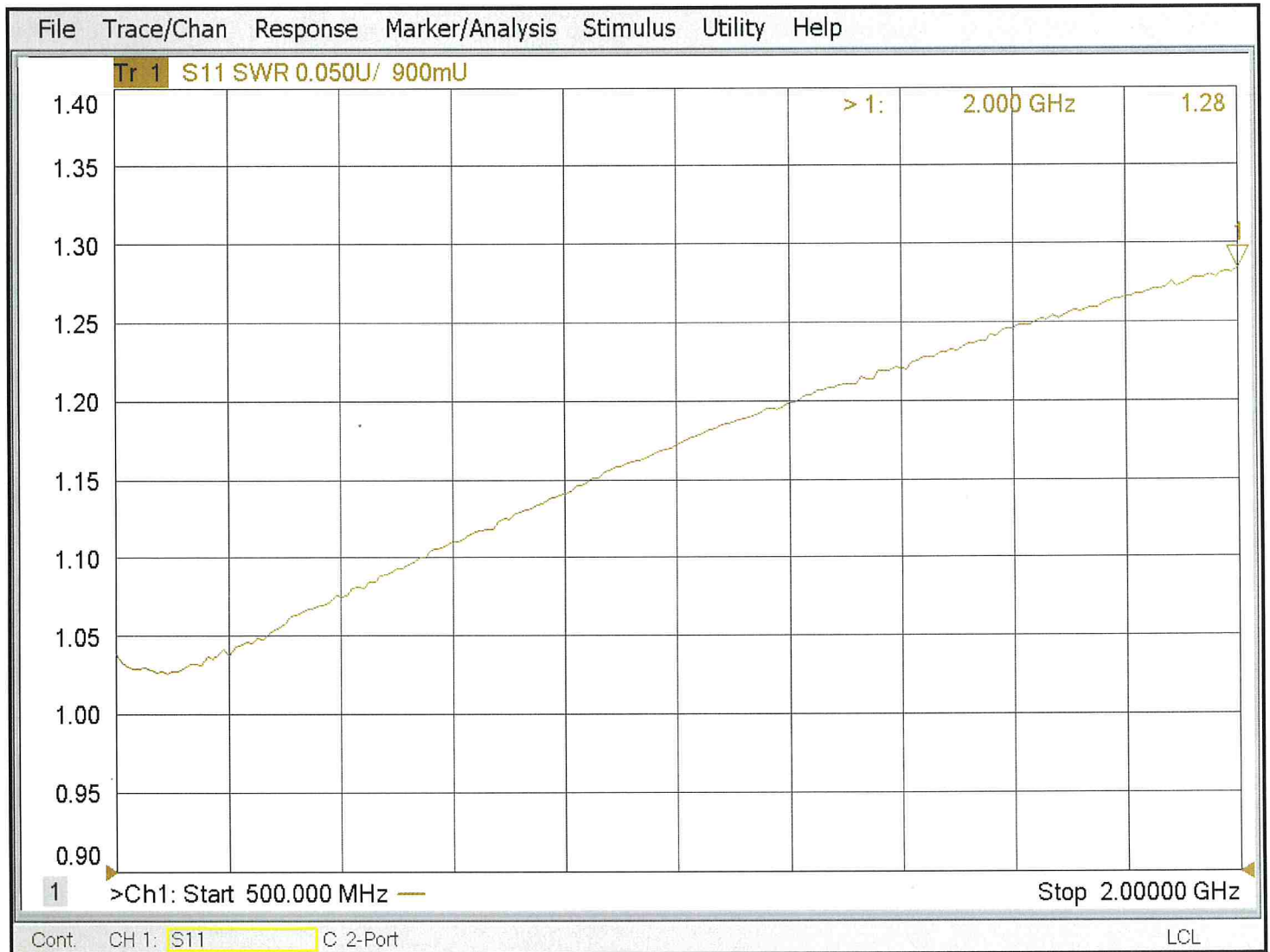
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VSWR 1.28:1



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