



**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL42789/2346

<b>Customer:</b> _____	<b>Tested By:</b> <u>Anton L.</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>11/17/23</u>
<b>Serial No:</b> <u>PL42789/2346</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°	-46 dBm See Plot	
3	Frequency Flatness:	±0.75 dB Max	±0.40 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)	+1.18 / -0.08 dB +1.40 / -0.80 dB See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	+0.44 / -0.37 dB +0.44 / -0.46 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%)	23.5 ns See Plot	
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	213 ns See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55/-100 mV (@ -40°C to +85°C)	+99 mV @ +25°C +38 mV @ -40°C +49 mV @ +85°C	
12	Input VSWR:	2.5:1 Max @ +23 dBm	1.18:0 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	120 mA 70 mA	PMI QAS
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: *K. [Signature]* Date: 11-29-23

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Log Linearity and Log Accuracy @ +25°C

DC Offset= 0.099 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2330
	SLOPE (mV/dB)	49.1

1 GHz	INTERCEPT (mV)	2349
	SLOPE (mV/dB)	48.9

2 GHz	INTERCEPT (mV)	2360
	SLOPE (mV/dB)	49.3

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	386	596	846	1096	1346	1601	1834	2088	2332
	22	-14	-10	-6	-1	8	-5	4	-2
	0.44	-0.29	-0.20	-0.11	-0.02	0.16	-0.09	0.08	0.04
	0.72	-0.08	-0.08	-0.08	-0.08	0.02	-0.32	-0.24	-0.36
	409	618	873	1124	1372	1624	1857	2106	2346
	18	-18	-8	-1	2	9	-2	2	-3
	0.36	-0.37	-0.15	-0.02	0.04	0.19	-0.05	0.04	-0.05
	1.18	0.36	0.46	0.48	0.44	0.48	0.14	0.12	-0.08
	409	618	873	1124	1375	1627	1866	2116	2361
	21	-17	-8	-4	1	6	-1	2	1
	0.42	-0.34	-0.17	-0.08	0.01	0.12	-0.03	0.04	0.01
	1.18	0.36	0.46	0.48	0.50	0.54	0.32	0.32	0.22
	0.20	0.20	0.30	0.30	0.30	0.30	0.30	0.30	0.30
	0.41	0.62	0.87	1.12	1.38	1.63	1.87	2.12	2.36
	0.39	0.60	0.85	1.10	1.35	1.60	1.83	2.09	2.33

**RF Input Power (dBm)**

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.44	-0.29
LOGGING ACCURACY (dB)	0.72	-0.36

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.36	-0.37
LOGGING ACCURACY (dB)	1.18	-0.08

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.42	-0.34
LOGGING ACCURACY (dB)	1.18	0.22

Logging Linearity vs Frequency	Error(dB)	
TOTAL LOG LINEARITY (dB)	0.44	-0.37

Logging Accuracy vs Frequency	Error(dB)	
TOTAL LOGGING ACCURACY (dB)	1.18	-0.36

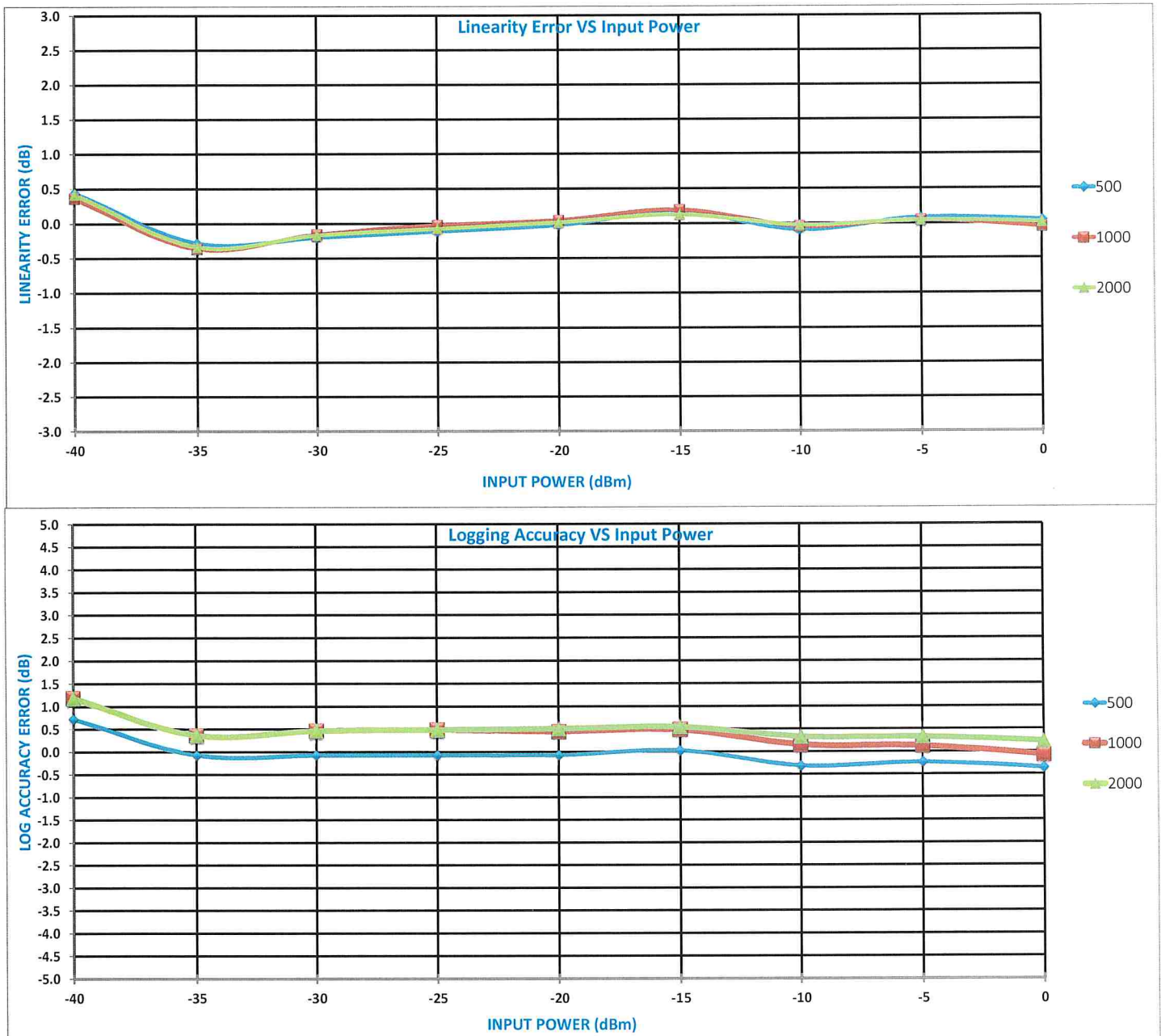
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# SUMMARY TEST DATA ON HADA-D2001

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Log Linearity and Log Accuracy @ +25°C



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**SUMMARY TEST DATA  
ON  
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PL42789/2346

Log Linearity and Log Accuracy @ -40°C

DC Offset= 0.038 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2322
	SLOPE (mV/dB)	48.3

1 GHz	INTERCEPT (mV)	2340
	SLOPE (mV/dB)	48

2 GHz	INTERCEPT (mV)	2352
	SLOPE (mV/dB)	48.3

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	390	612	873	1123	1366	1610	1848	2070	2310
	0	-19	0	9	10	13	9	-10	-12
	0.01	-0.40	0.01	0.18	0.21	0.26	0.19	-0.21	-0.25
	0.80	0.24	0.46	0.46	0.32	0.20	-0.04	-0.60	-0.80
	418	639	901	1153	1396	1636	1874	2088	2322
	-3	-22	0	12	15	15	13	-12	-18
	-0.07	-0.46	0.00	0.25	0.32	0.32	0.28	-0.26	-0.38
	1.36	0.78	1.02	1.06	0.92	0.72	0.48	-0.24	-0.56
	420	640	902	1153	1399	1638	1883	2097	2339
	1	-21	-1	9	13	11	14	-13	-13
	0.01	-0.43	-0.01	0.18	0.28	0.22	0.29	-0.28	-0.27
	1.40	0.80	1.04	1.06	0.88	0.76	0.65	-0.06	-0.22
	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.30
	0.42	0.64	0.90	1.15	1.40	1.64	1.88	2.10	2.34
	0.39	0.61	0.87	1.12	1.37	1.61	1.85	2.07	2.31

**RF Input Power (dBm)**

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.26	-0.40
LOGGING ACCURACY (dB)	0.80	-0.80

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.32	-0.46
LOGGING ACCURACY (dB)	1.36	-0.56

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.29	-0.43
LOGGING ACCURACY (dB)	1.40	-0.22

Logging Linearity vs Frequency	Error(dB)	
TOTAL LOG LINEARITY (dB)	0.32	-0.46

Logging Accuracy vs Frequency	Error(dB)	
TOTAL LOGGING ACCURACY (dB)	1.40	-0.80

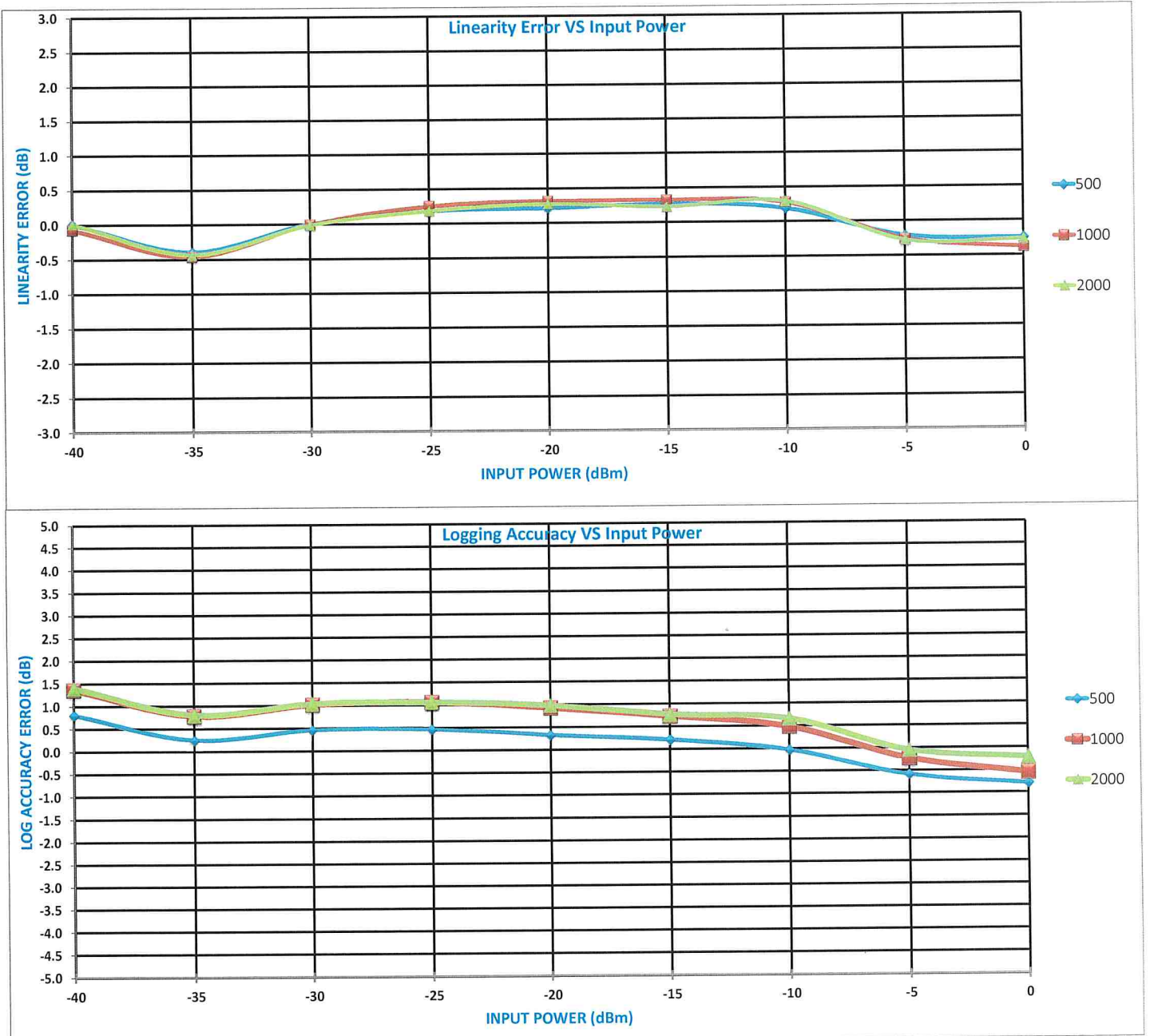
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# SUMMARY TEST DATA ON HADA-D2001

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Log Linearity and Log Accuracy @ -40°C



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PL42789/2346

Log Linearity and Log Accuracy @ +85°C

DC Offset= 0.049 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2371
	SLOPE (mV/dB)	50.9

1 GHz	INTERCEPT (mV)	2392
	SLOPE (mV/dB)	50.6

2 GHz	INTERCEPT (mV)	2405
	SLOPE (mV/dB)	50.9

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	332	597	845	1099	1357	1617	1849	2118	2374
	-5	6	-1	-1	3	8	-14	1	3
	-0.10	0.11	-0.01	-0.02	0.05	0.17	-0.27	0.02	0.05
	-0.36	-0.06	-0.10	-0.02	0.14	0.34	-0.02	0.36	0.48
	361	620	875	1129	1384	1643	1874	2142	2388
	-6	0	2	3	4	10	-12	3	-4
	-0.12	-0.01	0.03	0.05	0.09	0.20	-0.23	0.06	-0.08
	0.22	0.40	0.50	0.58	0.68	0.86	0.48	0.84	0.76
	366	623	878	1132	1389	1648	1886	2156	2402
	-2	6	1	0	2	7	-10	6	-3
	-0.05	0.00	0.01	0.00	0.05	0.13	-0.19	0.11	-0.06
	0.32	0.45	0.56	0.64	0.78	0.95	0.72	1.12	1.04
	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.40	0.30
	0.37	0.62	0.88	1.13	1.39	1.65	1.89	2.16	2.40
	0.33	0.60	0.85	1.10	1.36	1.62	1.85	2.12	2.37

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.17	-0.27
LOGGING ACCURACY (dB)	0.48	-0.36

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.20	-0.23
LOGGING ACCURACY (dB)	0.86	0.22

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.13	-0.19
LOGGING ACCURACY (dB)	1.12	0.32

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.20	-0.27

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	1.12	-0.36

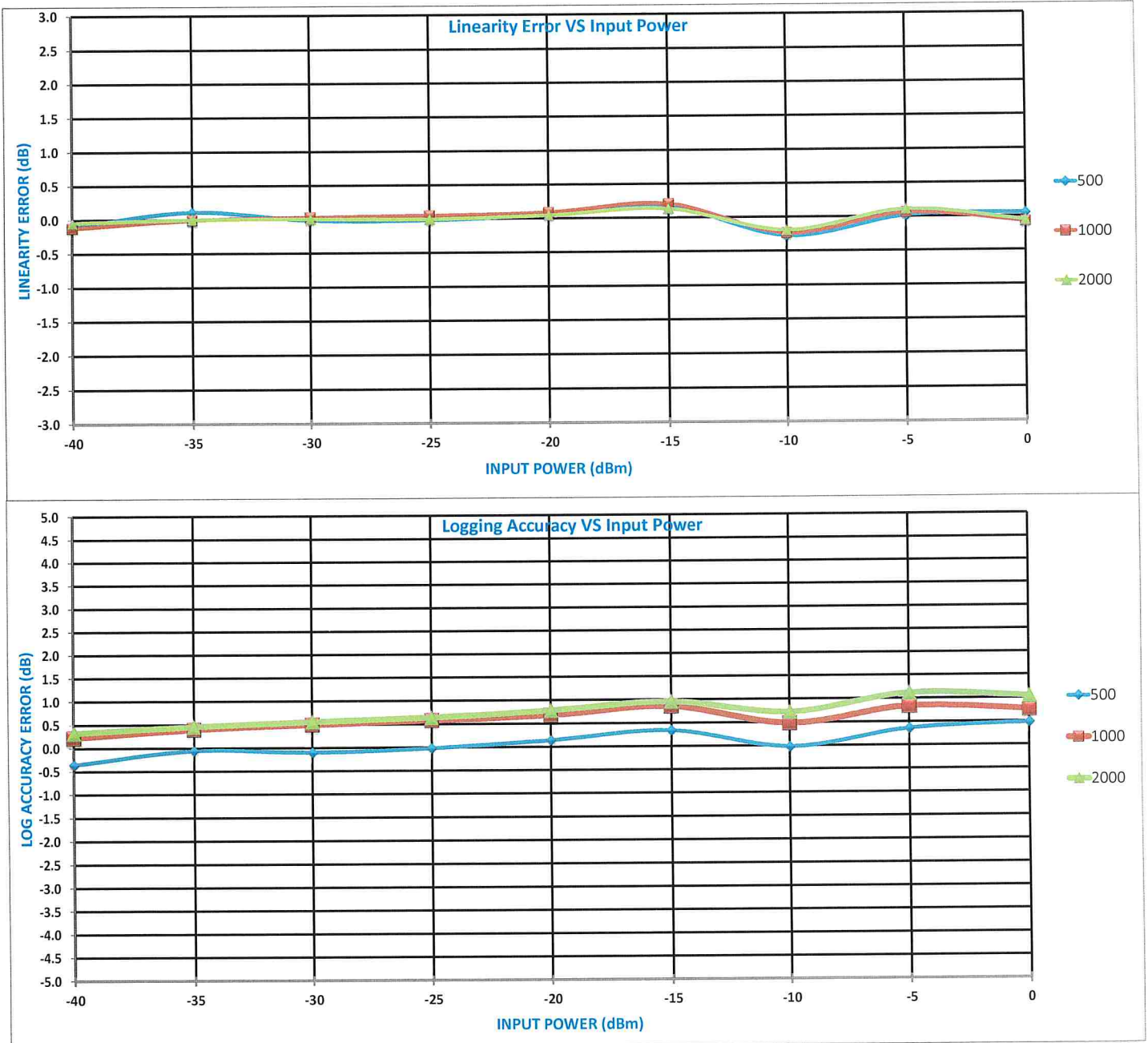
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Log Linearity and Log Accuracy @ +85°C



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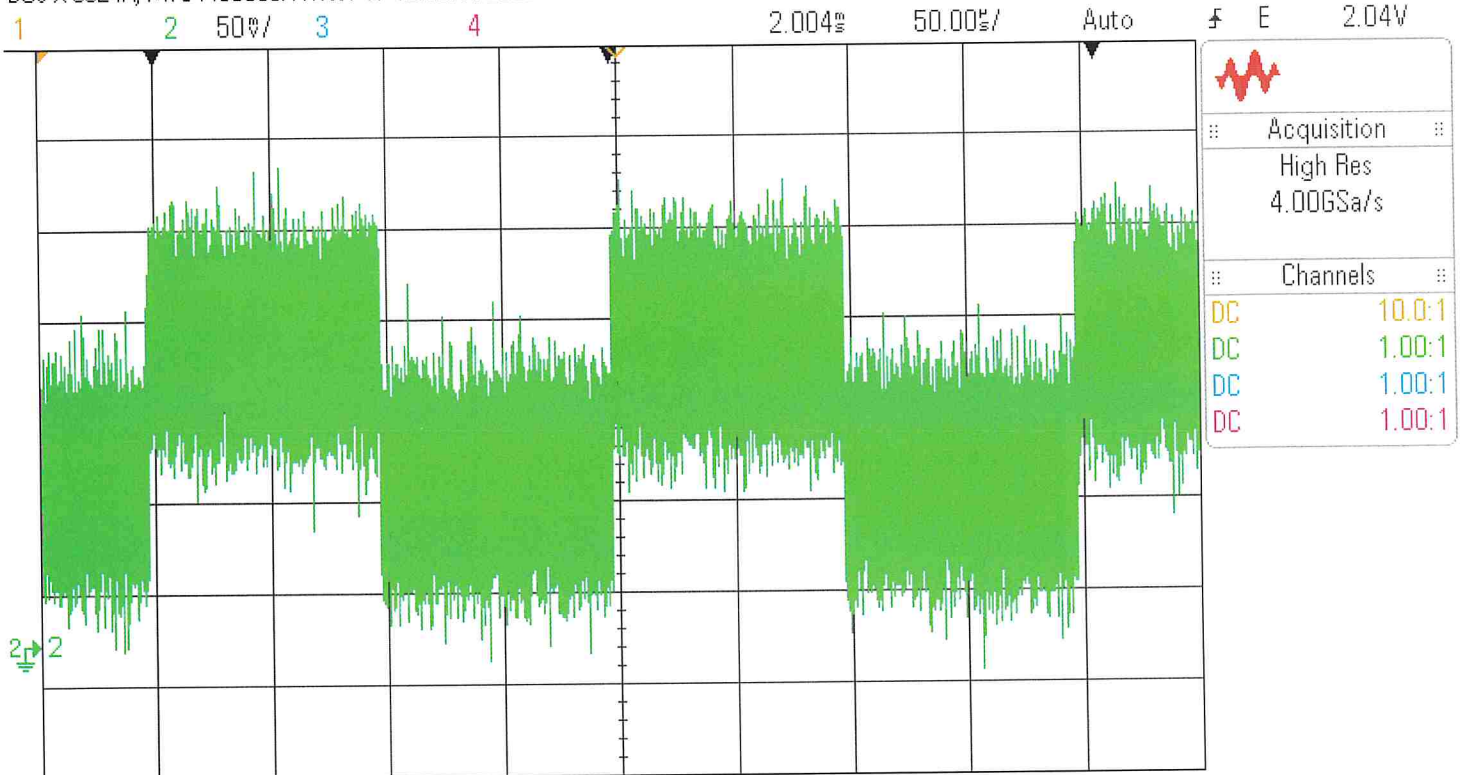


**SUMMARY TEST DATA  
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PL42789/2346

TSS -46 dBm

DSO-X 3024A, MY54490369: Fri Nov 17 12:33:44 2023



Acquire Menu

Acq Mode  
High Res

# Avgs  
1

Segmented

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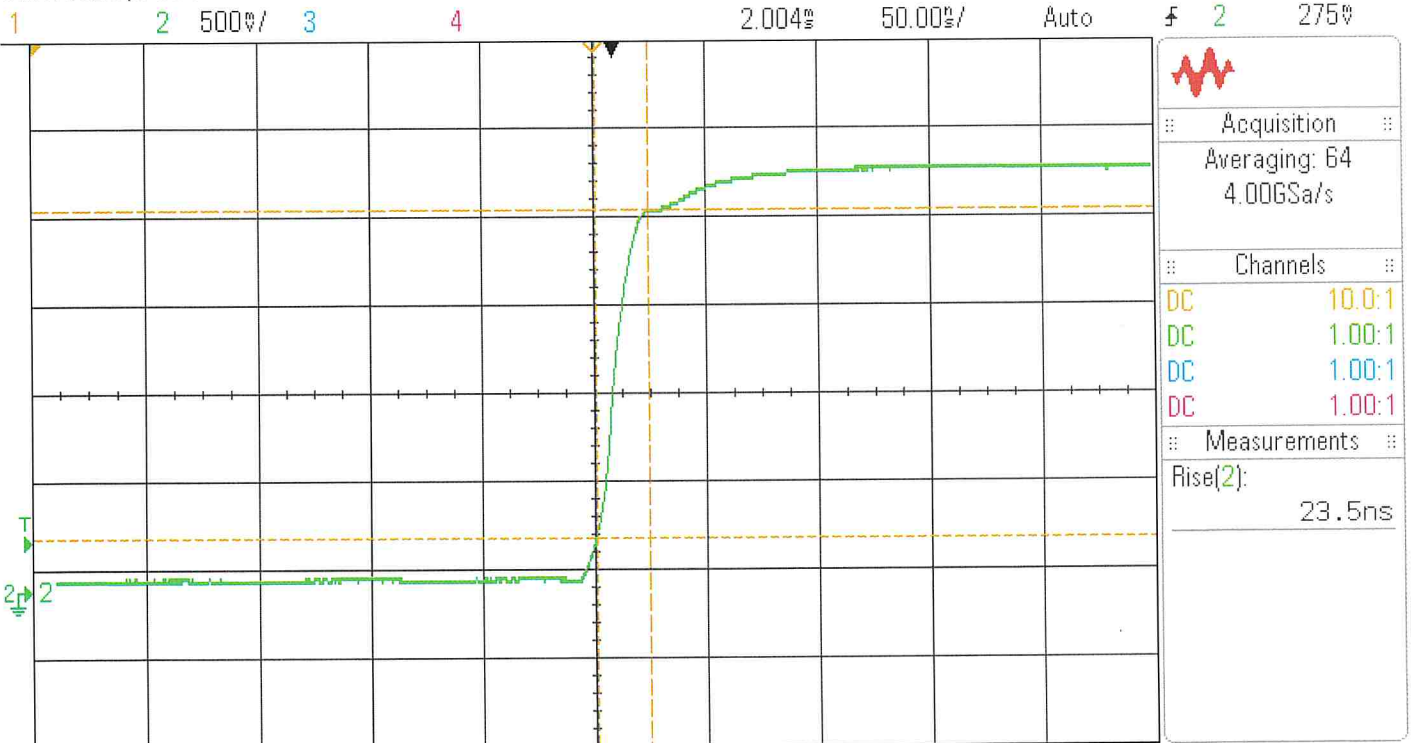


SUMMARY TEST DATA  
ON  
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PL42789/2346

Rise Time 23.5 ns

DSO-X 3024A, MY54490369: Fri Nov 17 12:31:45 2023



Trigger Menu

Trigger Type: Edge Source: 2 Slope: f

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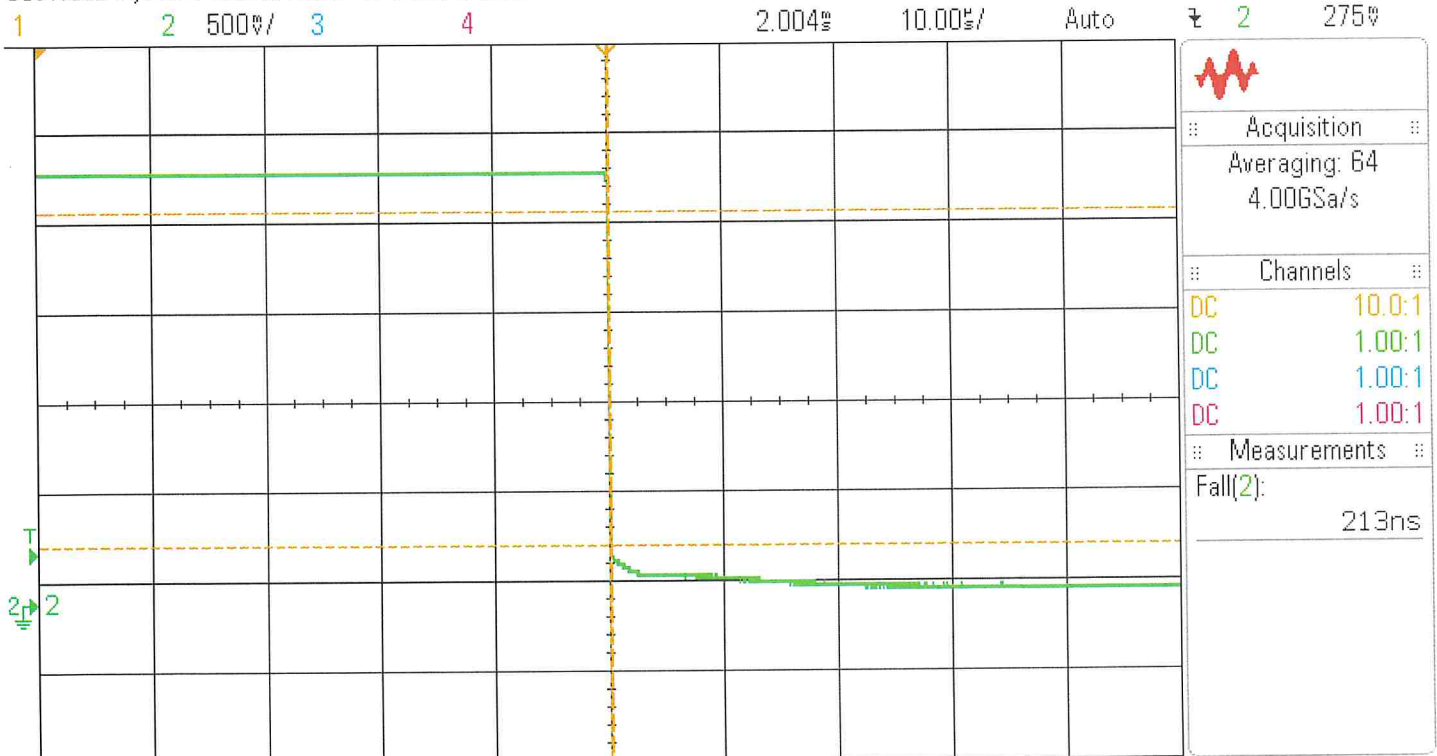


# SUMMARY TEST DATA ON HADA-D2001

PL42789/2346

Fall Time 213 ns

DSO-X 3024A, MY54490369: Fri Nov 17 12:30:40 2023



Trigger Menu

Trigger Type: Edge  
Source: 2  
Slope:  $\downarrow$

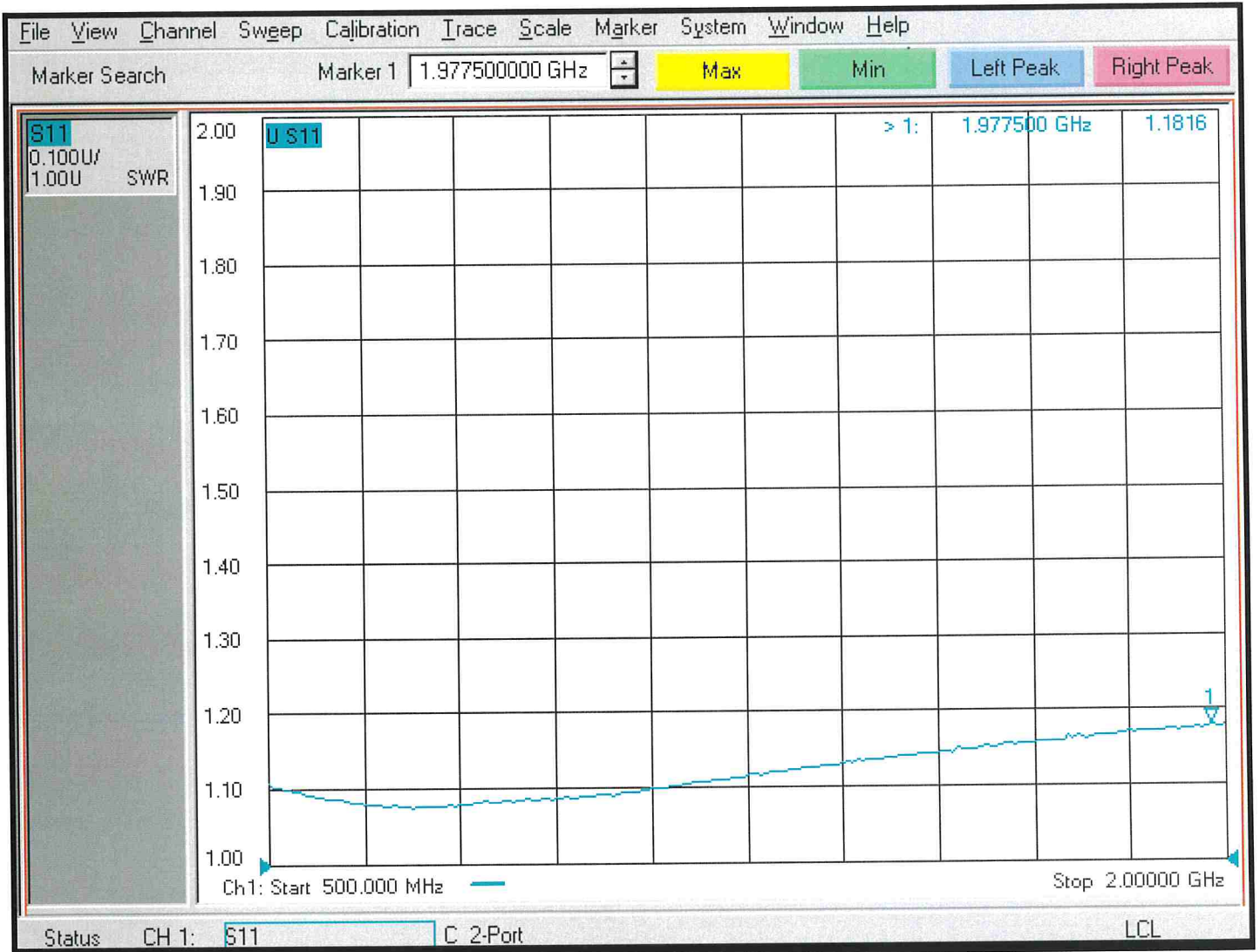
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VSWR 1.18:1



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