



**SUMMARY TEST DATA
ON
HADA-D2001**

PL42788/2346

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>11/17/23</u>
Serial No: <u>PL42788/2346</u>	Drawing No: <u>27620201</u> Rev: <u>A1</u>

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC PMI QA3
1	Frequency Range:	0.5 GHz – 2.0 GHz	0.5 GHz – 2.0 GHz See Plot	
2	TSS:	-44 dBm Min @ -40°C to +85°	-45 dBm See Plot	
3	Frequency Flatness:	±0.75 dB Max	±0.60 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)	+0.16 / -0.34 dB +0.88 / -0.90 dB See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	+0.24 / -0.29 dB +0.43 / -0.35 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 ns See Plot	
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	300 ns See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55/-100 mV (@ -40°C to +85°C)	+55 mV @ +25°C +82 mV @ -40°C +124 mV @ +85°C	
12	Input VSWR:	2.5:1 Max @ +23 dBm	1.20:0 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 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. Intan* Date: 11-29-23



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Log Linearity and Log Accuracy @ +25°C

DC Offset= 0.055 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2317
	SLOPE (mV/dB)	49.9

1 GHz	INTERCEPT (mV)	2344
	SLOPE (mV/dB)	49.8

2 GHz	INTERCEPT (mV)	2352
	SLOPE (mV/dB)	50.1

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	305	568	824	1076	1327	1574	1819	2055	2313
	-14	-1	5	8	9	6	2	-12	-4
	-0.28	-0.02	0.11	0.16	0.18	0.13	0.03	-0.24	-0.07
	-0.90	-0.64	-0.52	-0.48	-0.46	-0.52	-0.62	-0.90	-0.74
	336	596	858	1106	1353	1608	1843	2083	2340
	-14	-4	9	8	6	12	-2	-11	-4
	-0.29	-0.07	0.19	0.16	0.12	0.24	-0.05	-0.23	-0.07
	-0.28	-0.08	0.16	0.12	0.06	0.16	-0.14	-0.34	-0.20
	336	596	858	1105	1355	1609	1849	2091	2351
	-12	-2	9	6	6	8	-2	-11	-1
	-0.24	-0.05	0.18	0.11	0.10	0.17	-0.04	-0.21	-0.02
	-0.28	-0.05	0.16	0.10	0.10	0.18	-0.02	-0.18	0.02
	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.40	0.40
	0.34	0.60	0.86	1.11	1.36	1.61	1.85	2.09	2.35
	0.31	0.57	0.82	1.08	1.33	1.57	1.82	2.06	2.31

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.18	-0.28
LOGGING ACCURACY (dB)	-0.46	-0.90

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.24	-0.29
LOGGING ACCURACY (dB)	0.16	-0.34

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.18	-0.24
LOGGING ACCURACY (dB)	0.18	-0.28

Logging Linearity vs Frequency	Error(dB)	
TOTAL LOG LINEARITY (dB)	0.24	-0.29

Logging Accuracy vs Frequency	Error(dB)	
TOTAL LOGGING ACCURACY (dB)	0.18	-0.90

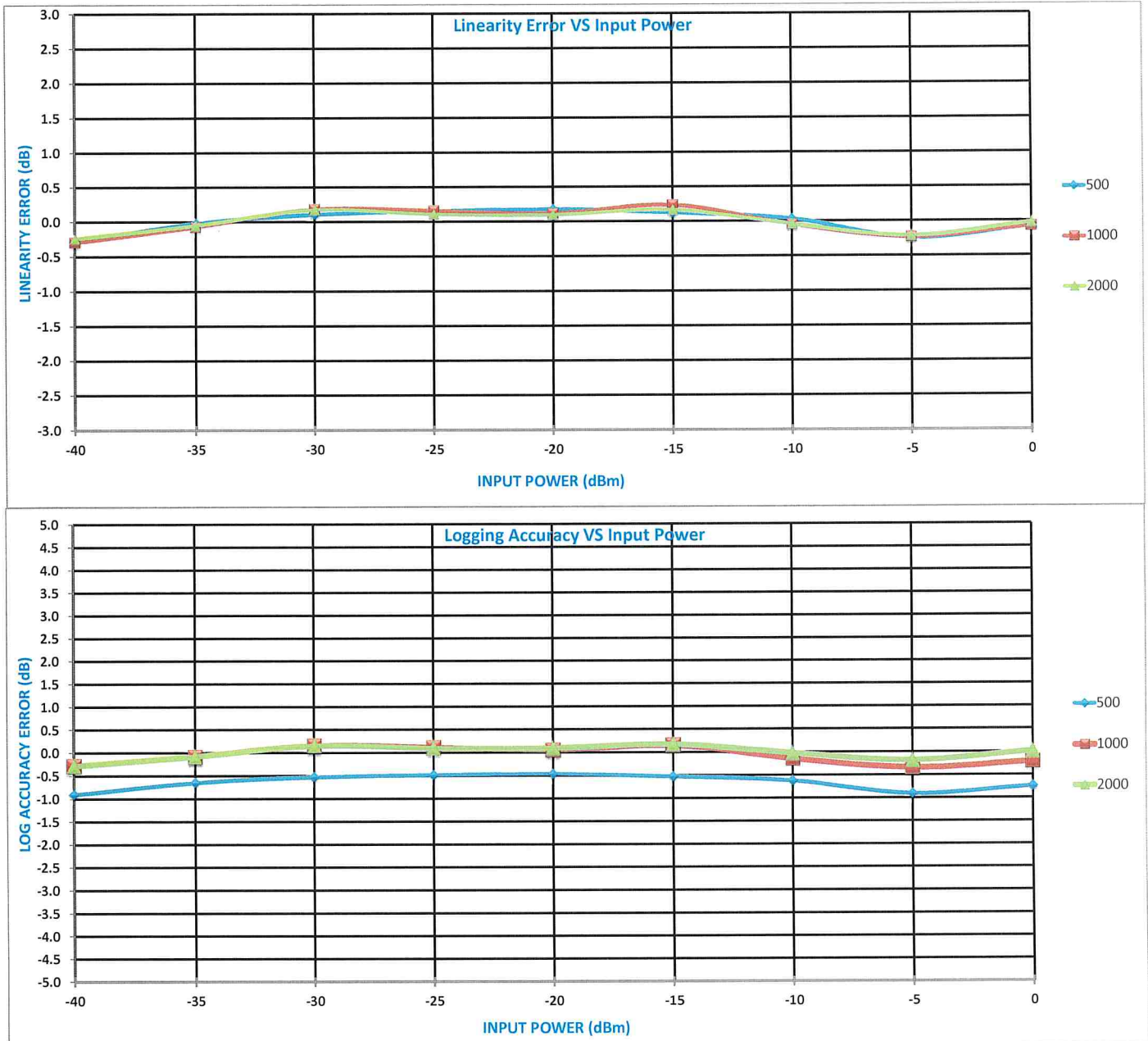
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SUMMARY TEST DATA ON HADA-D2001

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Log Linearity and Log Accuracy @ +25°C



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**SUMMARY TEST DATA
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Log Linearity and Log Accuracy @ -40°C

DC Offset= 0.082 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2329
	SLOPE (mV/dB)	49.2

1 GHz	INTERCEPT (mV)	2357
	SLOPE (mV/dB)	49.1

2 GHz	INTERCEPT (mV)	2366
	SLOPE (mV/dB)	49.5

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	352	599	860	1106	1351	1607	1842	2079	2313
	-10	-9	6	6	6	16	5	-4	-16
	-0.21	-0.18	0.13	0.13	0.11	0.32	0.10	-0.08	-0.32
	0.04	-0.02	0.20	0.12	0.02	0.14	-0.16	-0.42	-0.74
	378	626	894	1138	1377	1641	1868	2107	2340
	-14	-11	11	9	3	21	2	-4	-17
	-0.28	-0.23	0.23	0.19	0.05	0.43	0.05	-0.09	-0.35
	0.56	0.52	0.88	0.76	0.54	0.82	0.36	0.14	-0.20
	374	626	894	1138	1380	1643	1874	2115	2350
	-14	-9	11	8	3	15	2	-4	-16
	-0.28	-0.19	0.23	0.16	0.06	0.38	0.05	-0.08	-0.33
	0.45	0.52	0.88	0.76	0.69	0.86	0.48	0.30	0.00
	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.40	0.40
	0.38	0.63	0.89	1.14	1.38	1.64	1.87	2.12	2.35
	0.35	0.60	0.86	1.11	1.35	1.61	1.84	2.08	2.31

RF Input Power (dBm)		
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.32	-0.32
LOGGING ACCURACY (dB)	0.20	-0.74

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.43	-0.35
LOGGING ACCURACY (dB)	0.88	-0.20

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.38	-0.33
LOGGING ACCURACY (dB)	0.88	0.00

Logging Linearity vs Frequency	Error(dB)	
TOTAL LOG LINEARITY (dB)	MAX	MIN
	0.43	-0.35

Logging Accuracy vs Frequency	Error(dB)	
TOTAL LOGGING ACCURACY (dB)	MAX	MIN
	0.88	-0.74

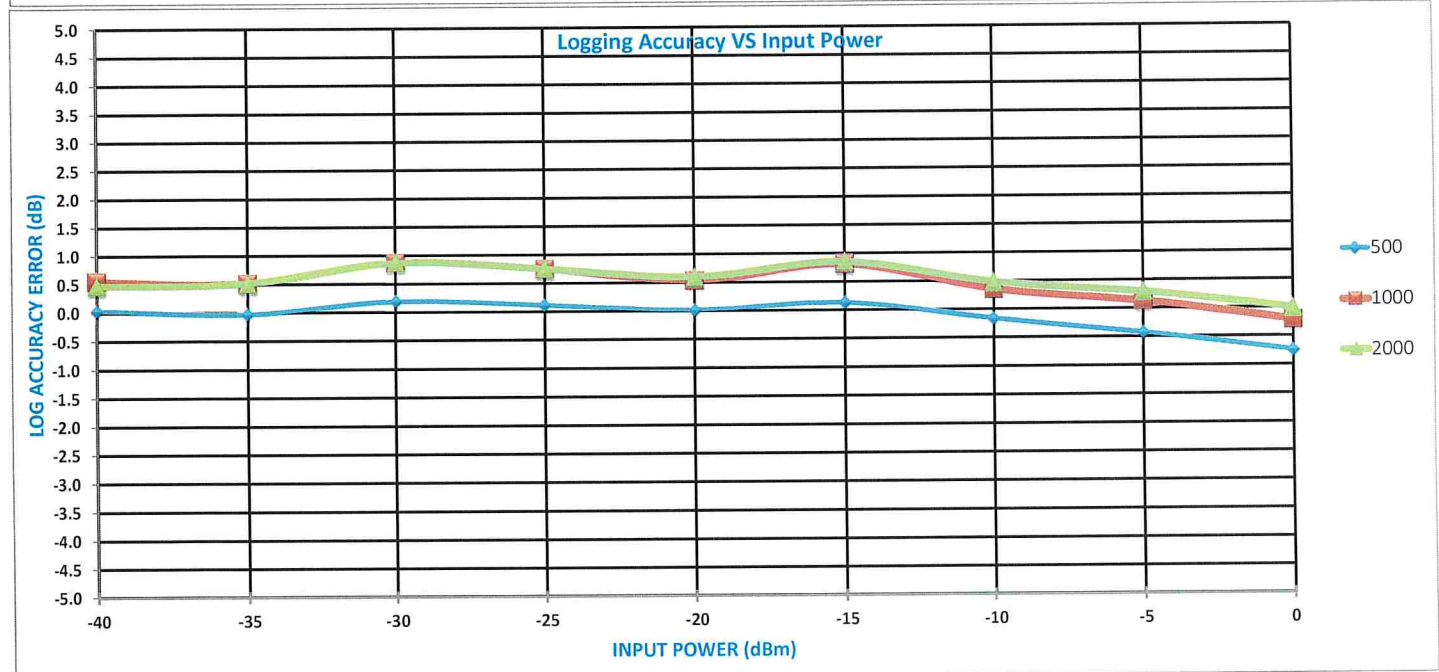
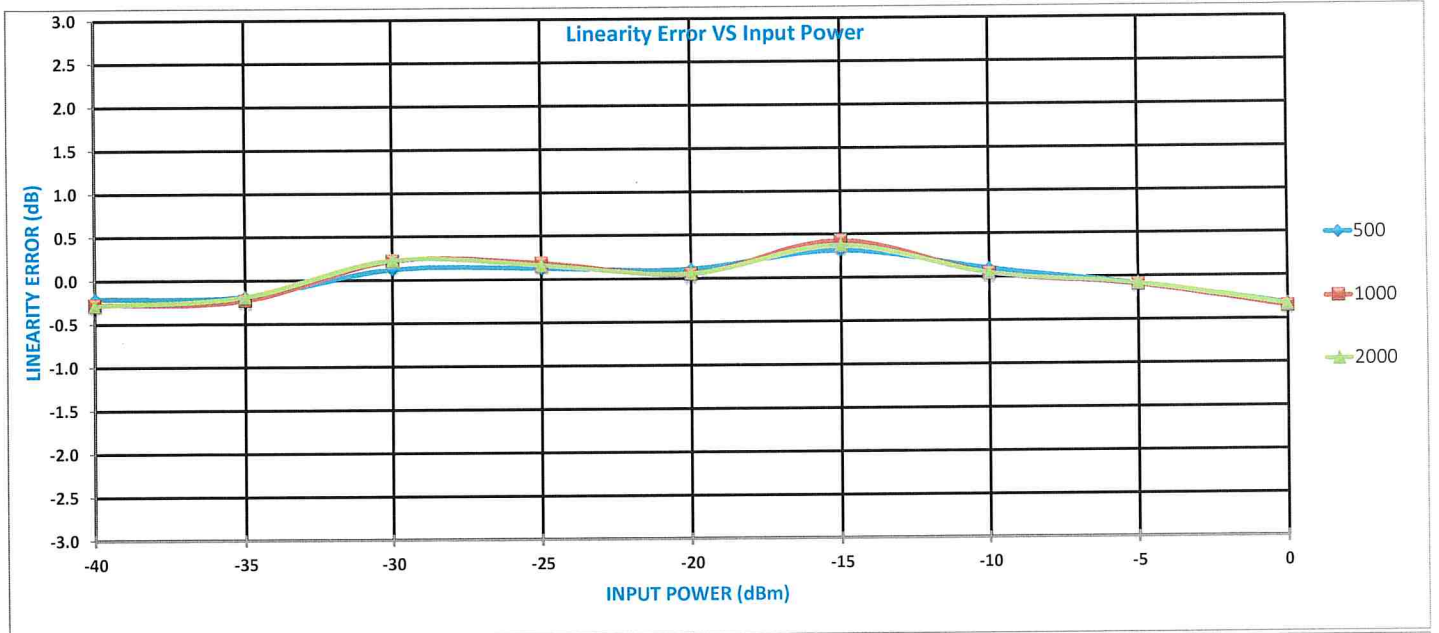
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Log Linearity and Log Accuracy @ -40°C



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Log Linearity and Log Accuracy @ +85°C

DC Offset= 0.124 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2325
	SLOPE (mV/dB)	49.7

1 GHz	INTERCEPT (mV)	2357
	SLOPE (mV/dB)	49.8

2 GHz	INTERCEPT (mV)	2377
	SLOPE (mV/dB)	50.2

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
337	584	829	1082	1337	1576	1831	2062	2335	
2	0	-4	0	7	-3	3	-15	10	
0.03	0.00	-0.08	0.01	0.13	-0.06	0.06	-0.29	0.20	
-0.26	-0.32	-0.42	-0.36	-0.26	-0.48	-0.38	-0.76	-0.30	
362	612	864	1113	1366	1611	1857	2093	2367	
-2	-1	2	2	5	1	-2	-15	10	
-0.04	-0.02	0.03	0.03	0.11	0.03	-0.04	-0.30	0.20	
0.24	0.24	0.28	0.26	0.32	0.22	0.14	-0.14	0.34	
369	621	874	1122	1377	1624	1872	2112	2390	
-1	0	2	-1	4	0	-3	-14	13	
-0.02	0.01	0.05	-0.01	0.07	-0.01	-0.07	-0.28	0.26	
0.38	0.42	0.44	0.44	0.54	0.48	0.44	0.24	0.60	
0.30	0.40	0.50	0.40	0.40	0.50	0.40	0.50	0.60	
0.37	0.62	0.87	1.12	1.38	1.62	1.87	2.11	2.39	
0.34	0.58	0.83	1.08	1.34	1.58	1.83	2.06	2.34	

RF Input Power (dBm)		
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.20	-0.29
LOGGING ACCURACY (dB)	-0.26	-0.76

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.20	-0.30
LOGGING ACCURACY (dB)	0.34	-0.14

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.26	-0.28
LOGGING ACCURACY (dB)	0.80	0.24

Logging Linearity vs Frequency	Error(dB)	
TOTAL LOG LINEARITY (dB)	0.26	-0.30

Logging Accuracy vs Frequency	Error(dB)	
TOTAL LOGGING ACCURACY (dB)	0.80	-0.76

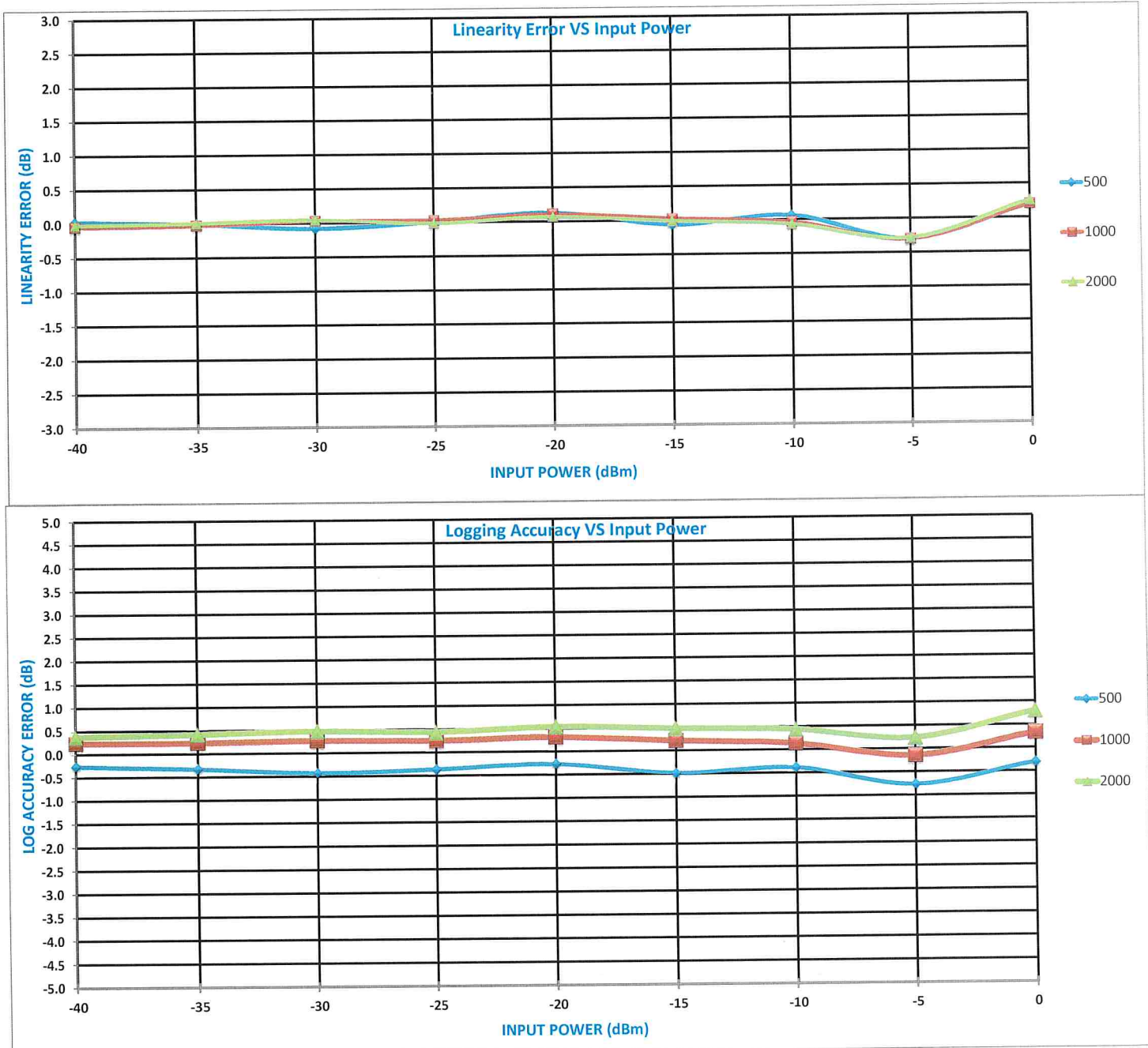
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Log Linearity and Log Accuracy @ +85°C



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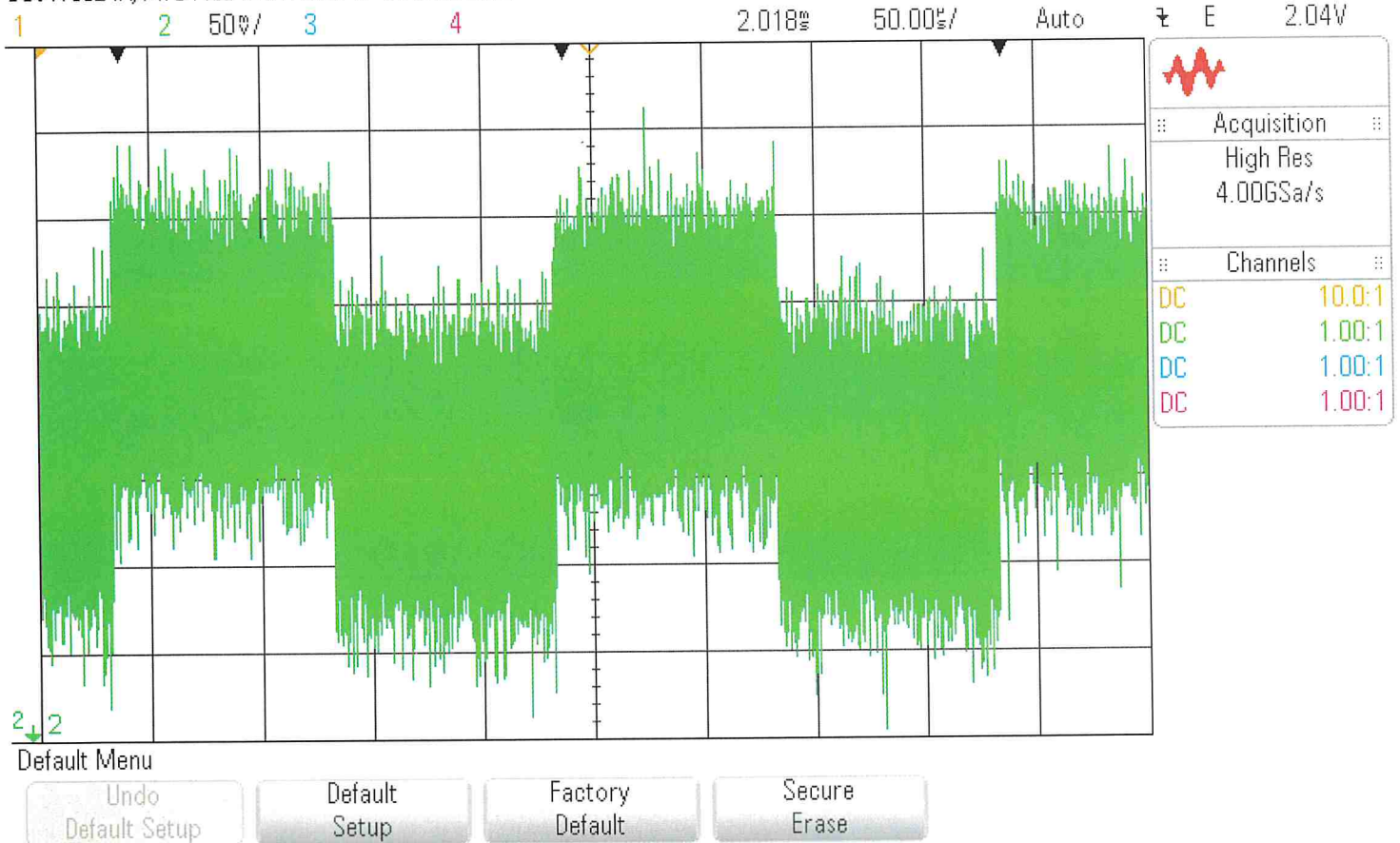


**SUMMARY TEST DATA
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TSS -45 dBm

DSO-X 3024A, MY54490369: Fri Nov 17 10:42:26 2023



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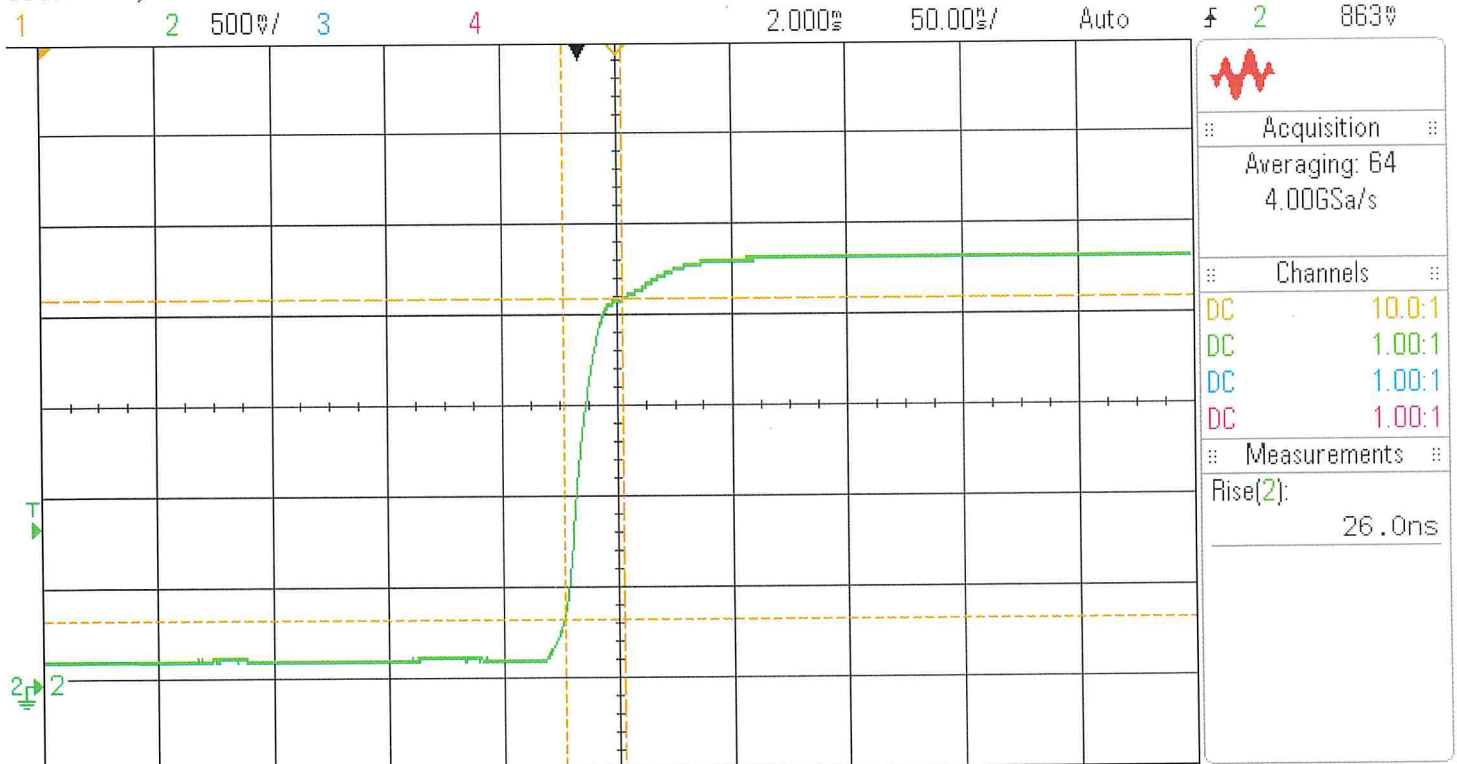


SUMMARY TEST DATA
ON
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PL42788/2346

Rise Time 26 ns

DSO-X 3024A, MY54490369: Fri Nov 17 10:33:23 2023



Trigger Menu

Trigger Type: Edge
Source: 2
Slope: f

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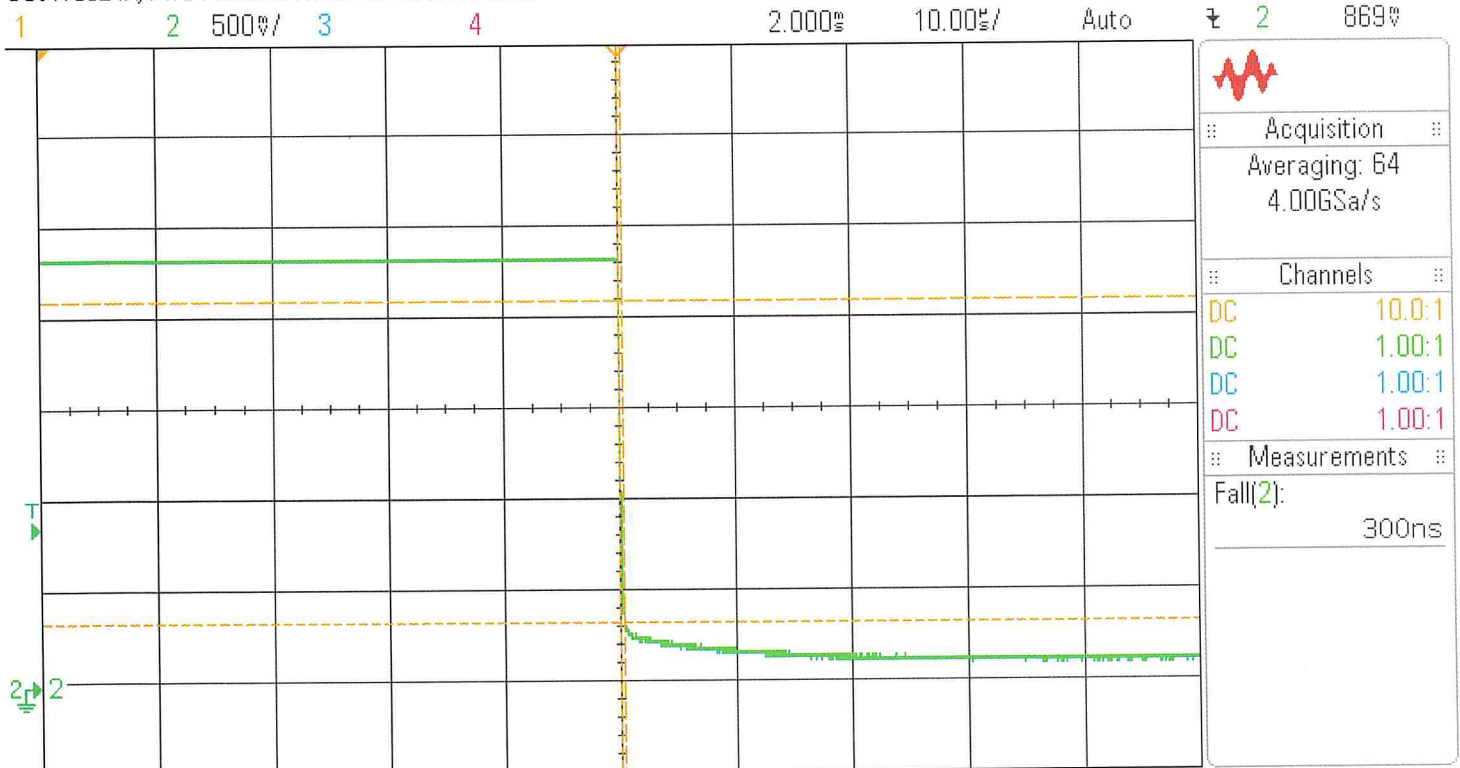


SUMMARY TEST DATA
ON
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PL42788/2346

Fall Time 300 ns

DSO-X 3024A, MY54490369: Fri Nov 17 10:37:16 2023



Trigger Menu

Trigger Type: Edge
 Source: 2
 Slope: ∇

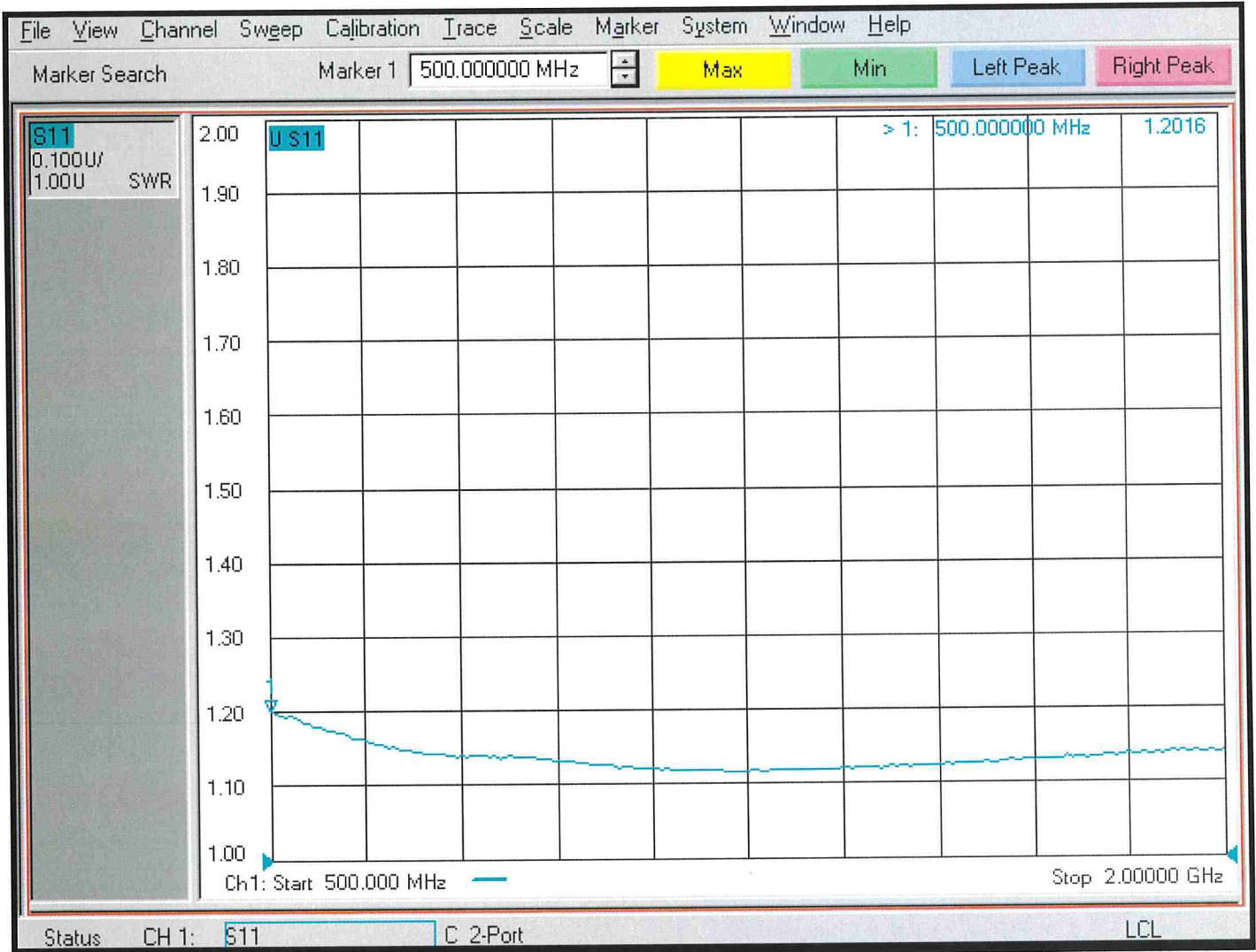
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VSWR 1.20:1



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