



**SUMMARY TEST DATA
ON
HADA-D2001**

PL45099/2413

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>3/27/23</u>
Serial No: <u>PL45099/2413</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°	-46 dBm See Plot	
3	Frequency Flatness:	±0.75 dB Max	±0.3 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)	+0.90 / 0.26 dB +0.96 / -0.44 dB See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	+0.35 / -0.32 dB +0.49 / -0.40 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%)	22.6 ns See Plot	
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	146 ns See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55/-100 mV (@ -40°C to +85°C)	+80 mV @ +25°C +67 mV @ -40°C +125 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	

4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



**SUMMARY TEST DATA
ON
HADA-D2001**

PL45099/2413

14	Power Supply:	+12 ± 1VDC @ 125 mA Max -12 ± 1VDC @ 75 mA Max	115 mA 65 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: K. Water Date: 3-27-24

4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax:
(916)265-2597
Email: sales@pmi-rf.com



**SUMMARY TEST DATA
ON
HADA-D2001**

PL45099/2413

Log Linearity and Log Accuracy @ +25°C

DC Offset= 0.080 V

Frequency

0.5 GHz	INTERCEPT (mV)	2356
	SLOPE (mV/dB)	49.7

1 GHz	INTERCEPT (mV)	2373
	SLOPE (mV/dB)	49.6

2 GHz	INTERCEPT (mV)	2366
	SLOPE (mV/dB)	49.9

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	360	626	866	1102	1373	1628	1843	2098	2363
	-8	9	1	-12	11	17	-16	-10	7
	-0.17	0.19	0.02	-0.23	0.22	0.35	-0.32	-0.19	0.14
	0.20	0.52	0.32	0.04	0.46	0.56	-0.14	-0.04	0.26
	381	644	887	1124	1391	1645	1863	2119	2377
	-8	7	2	-9	10	16	-14	-6	4
	-0.16	0.14	0.04	-0.19	0.20	0.32	-0.29	-0.13	0.07
	0.62	0.88	0.74	0.48	0.82	0.90	0.26	0.38	0.54
	364	630	870	1106	1378	1633	1852	2111	2372
	-7	10	0	-13	10	15	-15	-6	6
	-0.13	0.20	0.01	-0.26	0.19	0.30	-0.31	-0.12	0.12
	0.28	0.60	0.40	0.12	0.56	0.66	0.04	0.22	0.44
	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
	0.38	0.64	0.89	1.12	1.39	1.65	1.86	2.12	2.38
	0.36	0.63	0.87	1.10	1.37	1.63	1.84	2.10	2.36

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.35	-0.32
LOGGING ACCURACY (dB)	0.56	-0.14

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.32	-0.29
LOGGING ACCURACY (dB)	0.90	0.26

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.30	-0.31
LOGGING ACCURACY (dB)	0.66	0.04

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.35	-0.32

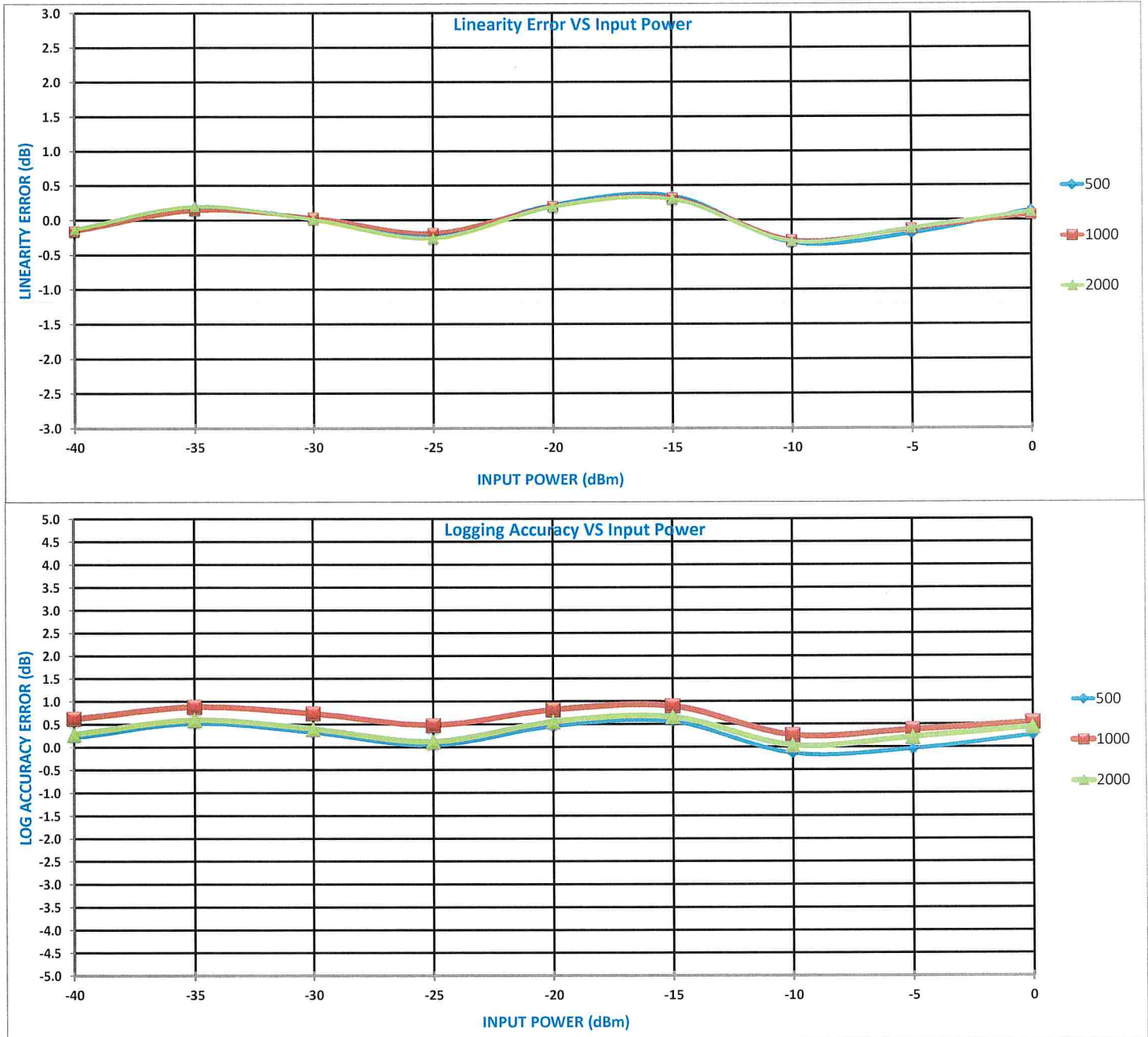
Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.90	-0.14



**SUMMARY TEST DATA
ON
HADA-D2001**

PL45099/2413

Log Linearity and Log Accuracy @ +25°C



4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



SUMMARY TEST DATA ON HADA-D2001

PL45099/2413

Log Linearity and Log Accuracy @ -40°C

DC Offset= 0.067 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2333
	SLOPE (mV/dB)	49.1

1 GHz	INTERCEPT (mV)	2354
	SLOPE (mV/dB)	48.9

2 GHz	INTERCEPT (mV)	2359
	SLOPE (mV/dB)	49.2

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	370	614	855	1094	1366	1621	1837	2081	2328
	0	-2	-6	-12	14	24	-6	-7	-5
	0.00	-0.03	-0.12	-0.25	0.29	0.49	-0.11	-0.14	-0.11
	0.40	0.28	0.10	-0.12	0.32	0.42	-0.26	-0.38	-0.44
	397	637	881	1124	1391	1643	1865	2104	2343
	-1	-6	-6	-8	15	22	0	-6	-11
	-0.02	-0.11	-0.12	-0.15	0.30	0.46	0.00	-0.12	-0.23
	0.94	0.74	0.62	0.48	0.82	0.86	0.30	0.08	-0.14
	393	634	878	1121	1391	1644	1866	2107	2351
	0	-6	-6	-8	15	22	-2	-7	-8
	0.00	-0.09	-0.13	-0.19	0.30	0.45	-0.04	-0.13	-0.17
	0.88	0.68	0.56	0.42	0.92	0.89	0.32	0.14	0.02
	0.30	0.20	0.30	0.30	0.30	0.20	0.30	0.30	0.20
	0.40	0.64	0.88	1.12	1.39	1.64	1.87	2.11	2.35
	0.37	0.61	0.86	1.09	1.37	1.62	1.84	2.08	2.33

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.49	-0.25
LOGGING ACCURACY (dB)	0.42	-0.44

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.46	-0.23
LOGGING ACCURACY (dB)	0.94	-0.14

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.45	-0.19
LOGGING ACCURACY (dB)	0.88	0.02

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.49	-0.25

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.94	-0.44

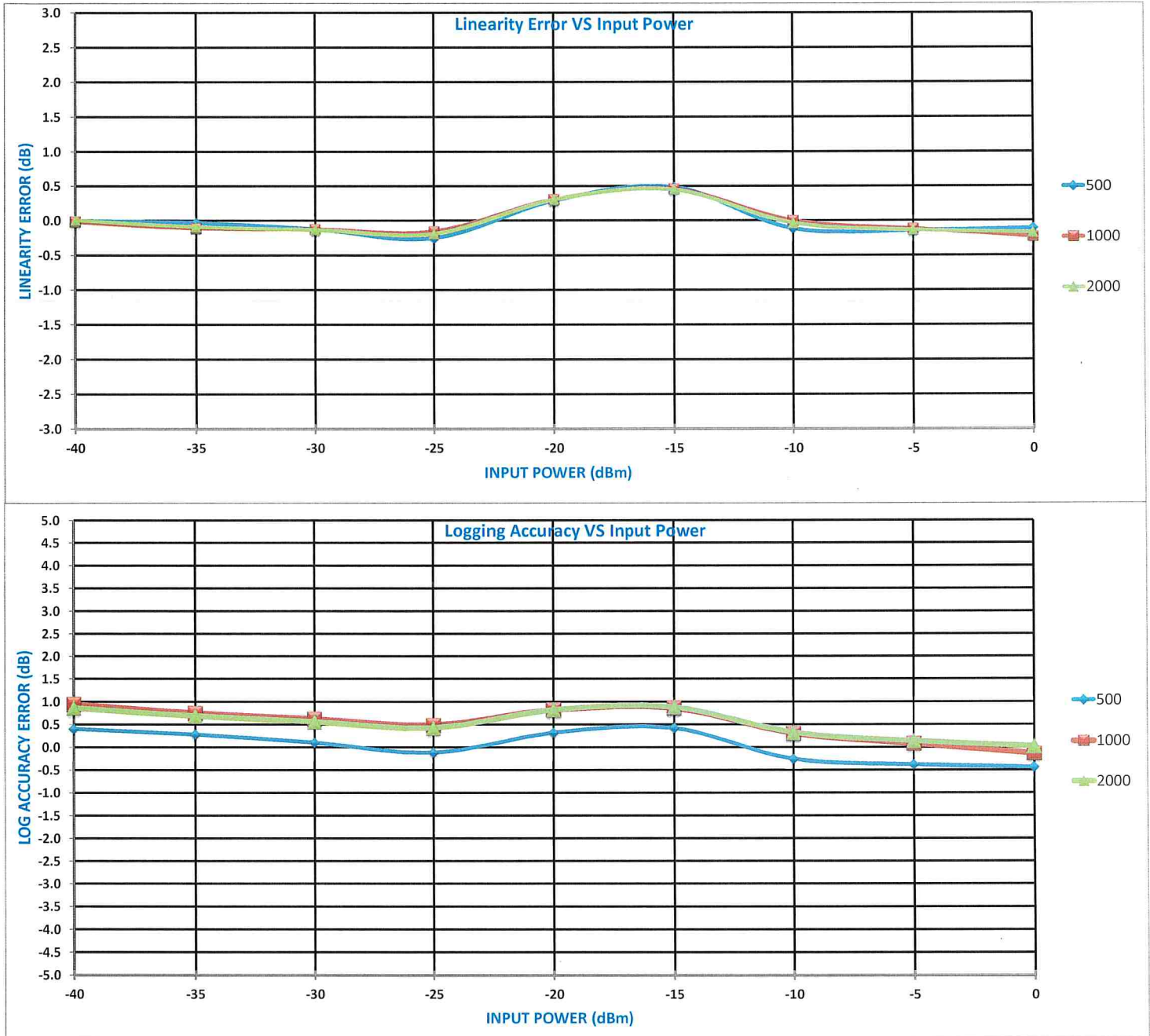
4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



SUMMARY TEST DATA
ON
HADA-D2001

PL45099/2413

Log Linearity and Log Accuracy @ -40°C



4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



SUMMARY TEST DATA ON HADA-D2001

PL45099/2413

Log Linearity and Log Accuracy @ +85°C

DC Offset= 0.125 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2347
	SLOPE (mV/dB)	49.6

1 GHz	INTERCEPT (mV)	2371
	SLOPE (mV/dB)	49.6

2 GHz	INTERCEPT (mV)	2377
	SLOPE (mV/dB)	49.8

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	366	625	856	1090	1360	1613	1832	2088	2368
	2	13	-4	-17	5	10	-19	-11	21
	0.04	0.27	-0.07	-0.35	0.09	0.20	-0.38	-0.22	0.43
	0.32	0.50	0.12	-0.20	0.20	0.26	-0.36	-0.24	0.36
	390	648	882	1116	1384	1636	1857	2117	2387
	1	12	-2	-16	4	9	-18	-6	16
	0.03	0.23	-0.04	-0.32	0.09	0.17	-0.37	-0.12	0.33
	0.80	0.96	0.64	0.32	0.68	0.72	0.14	0.34	0.74
	388	647	880	1115	1385	1638	1859	2122	2396
	3	13	-3	-17	4	8	-20	-6	19
	0.06	0.26	-0.06	-0.34	0.08	0.16	-0.40	-0.12	0.38
	0.76	0.94	0.60	0.30	0.70	0.76	0.19	0.44	0.92
	0.20	0.20	0.30	0.30	0.30	0.30	0.30	0.30	0.30
	0.39	0.65	0.88	1.12	1.39	1.64	1.86	2.12	2.40
	0.37	0.63	0.86	1.09	1.36	1.61	1.83	2.09	2.37

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.43	-0.38
LOGGING ACCURACY (dB)	0.50	-0.36

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.33	-0.37
LOGGING ACCURACY (dB)	0.96	0.14

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.38	-0.40
LOGGING ACCURACY (dB)	0.94	0.18

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.43	-0.40

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.96	-0.36

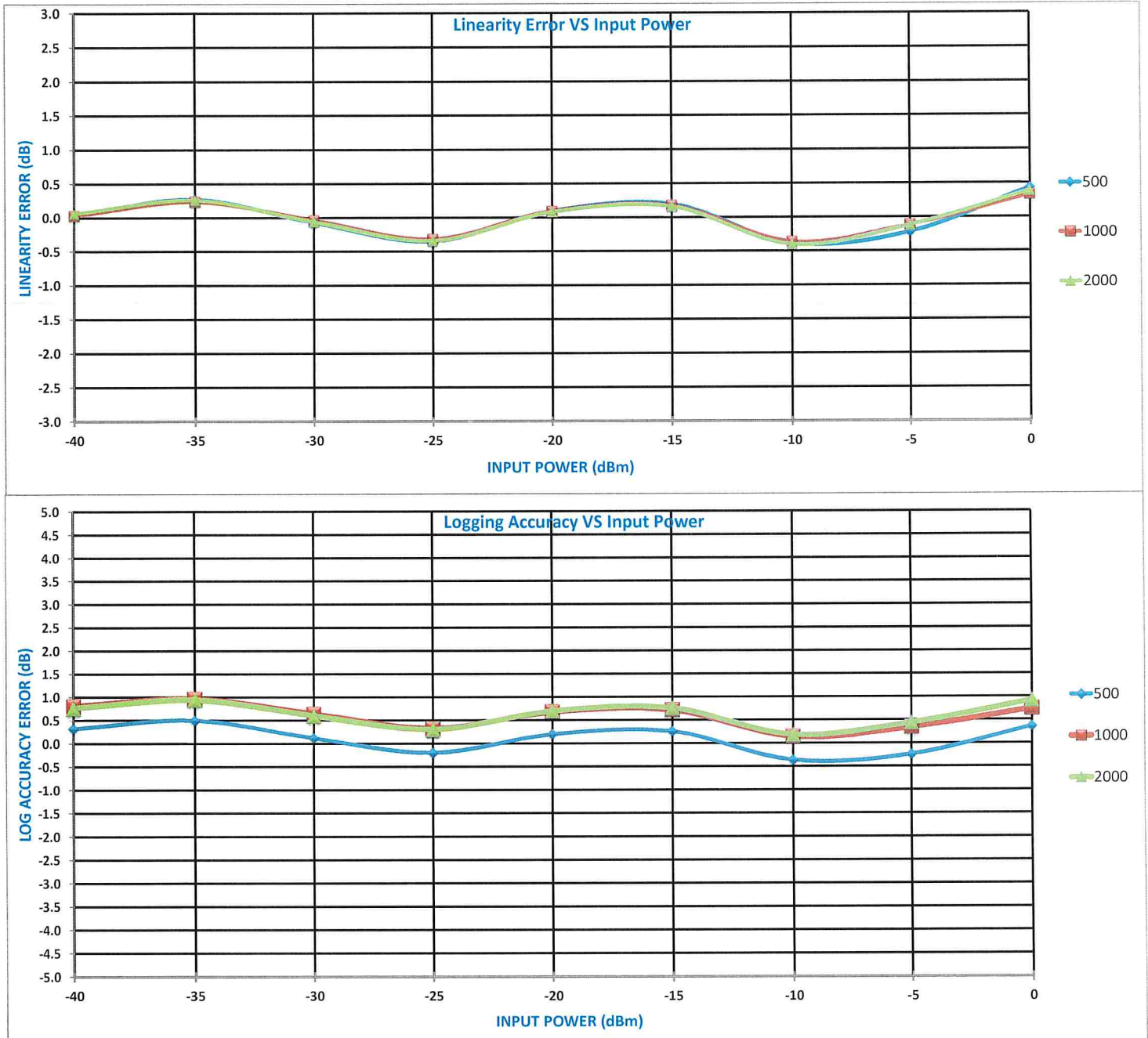
4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



SUMMARY TEST DATA ON HADA-D2001

PL45099/2413

Log Linearity and Log Accuracy @ +85°C



4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



**SUMMARY TEST DATA
ON
HADA-D2001**

PL45099/2413

TSS -46 dBm



M50-X 3034T, MY59241076, 07.50.2021102830: Tue Mar 26 08:41:36 2024



4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



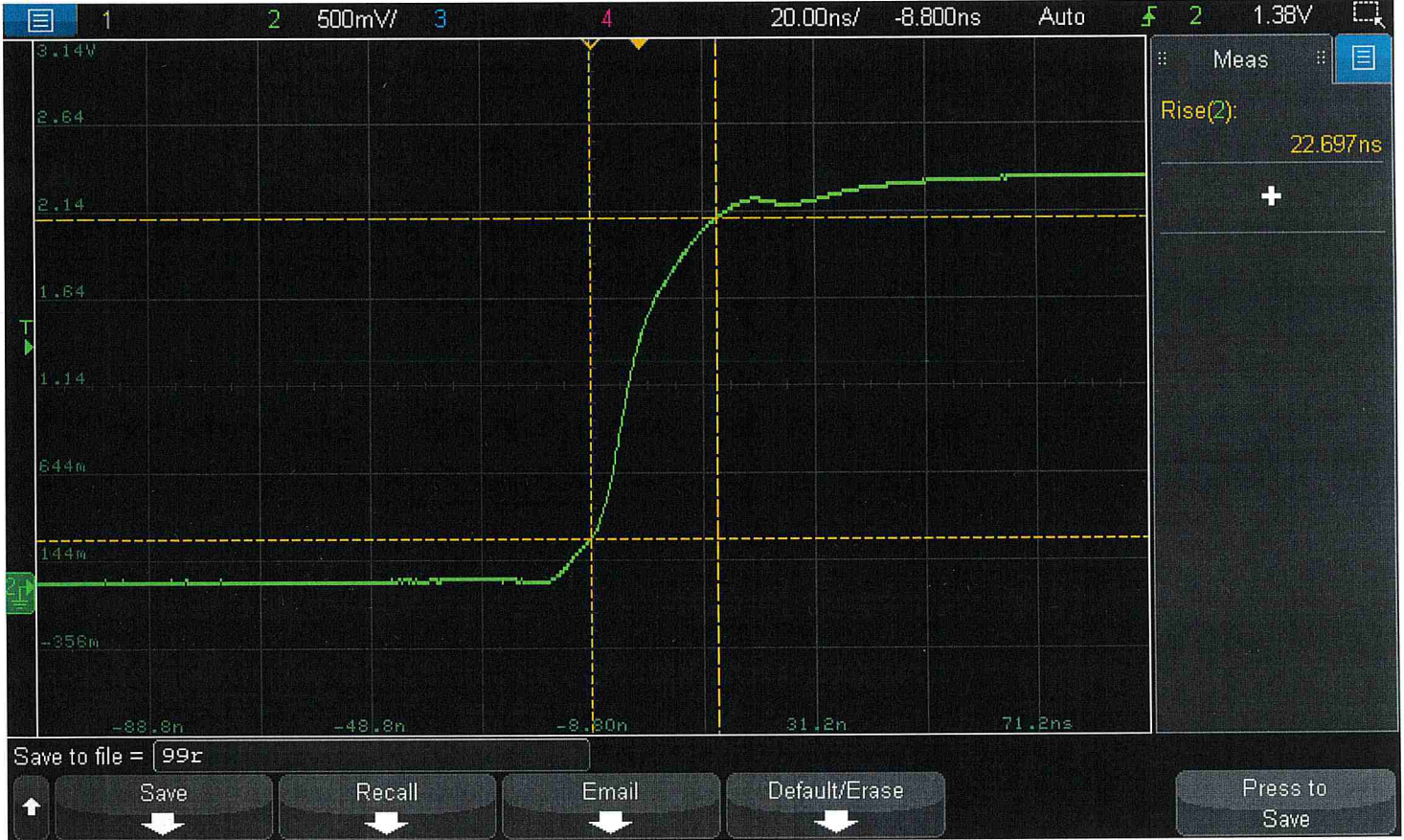
SUMMARY TEST DATA
ON
HADA-D2001

PL45099/2413

Rise Time 22.6 ns



MSO-X 3034T, MY59241076, 07.50.2021102830: Tue Mar 26 08:15:57 2024



4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



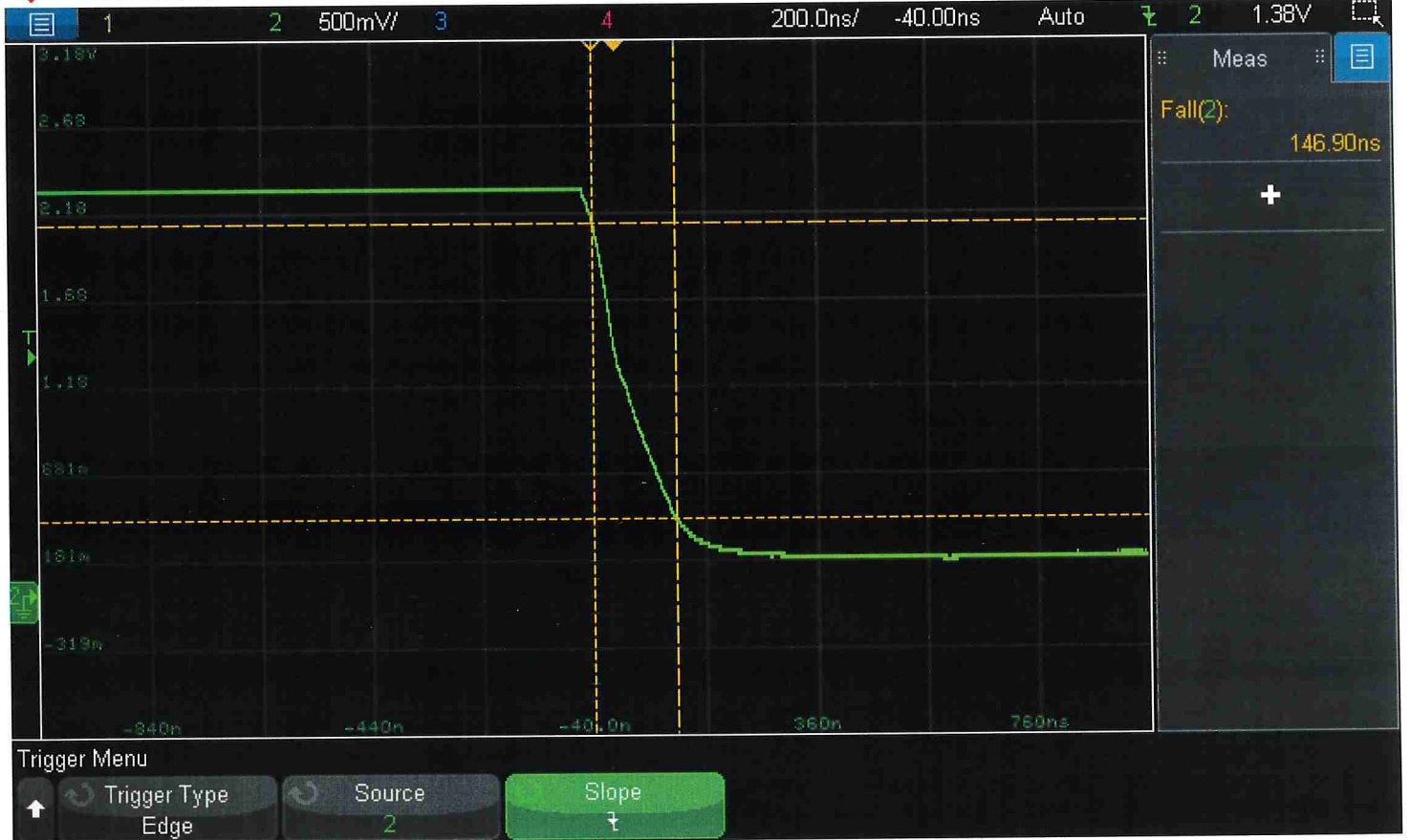
**SUMMARY TEST DATA
ON
HADA-D2001**

PL45099/2413

Fall Time 146 ns



MSO-X 3034T, MY59241076, 07.50.2021102830: Tue Mar 26 07:44:43 2024



4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



**SUMMARY TEST DATA
ON
HADA-D2001**

PL45099/2413

VSWR 1.26:1



4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com