



**SUMMARY TEST DATA
ON
HADA-D2001**

PL44188/2409

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>PL44188/2409</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	0.5 GHz – 2.0 GHz See Plot	PMI QA3
2	TSS:	-44 dBm Min @ -40°C to +85°	-45.5 dBm See Plot	
3	Frequency Flatness:	±0.75 dB Max	±0.2 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)	+0.68 / -0.22 dB +0.82 / -0.72 dB See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	+0.40 / -0.26 dB +0.56 / -0.42 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%)	25.8 ns See Plot	
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	388 ns See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55/-100 mV (@ -40°C to +85°C)	+98 mV @ +25°C +116 mV @ -40°C +122 mV @ +85°C	
12	Input VSWR:	2.5:1 Max @ +23 dBm	1.30:0 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**

PL44188/2409

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. Vinton

Date: 2-27-28



SUMMARY TEST DATA ON HADA-D2001

PL44188/2409

Log Linearity and Log Accuracy @ +25°C

DC Offset= 0.098 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2353
	SLOPE (mV/dB)	50.1

1 GHz	INTERCEPT (mV)	2362
	SLOPE (mV/dB)	49.9

2 GHz	INTERCEPT (mV)	2368
	SLOPE (mV/dB)	50.2

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	349	597	847	1096	1363	1617	1839	2096	2355
	0	-3	-3	-5	12	16	-13	-6	2
	-0.01	-0.05	-0.06	-0.09	0.24	0.31	-0.26	-0.13	0.05
	-0.02	-0.06	-0.06	-0.08	0.26	0.34	-0.22	-0.08	0.10
	363	611	864	1114	1379	1634	1853	2109	2356
	-4	-6	-2	-1	14	20	-11	-4	-6
	-0.08	-0.11	-0.04	-0.03	0.29	0.40	-0.21	-0.08	-0.13
	0.26	0.22	0.28	0.28	0.58	0.68	0.06	0.18	0.12
	359	607	860	1109	1377	1631	1856	2115	2364
	-1	-4	-2	-4	13	19	-10	-2	-4
	-0.03	-0.09	-0.05	-0.08	0.25	0.32	-0.20	-0.04	-0.08
	0.18	0.14	0.20	0.18	0.54	0.62	0.12	0.30	0.25
	0.10	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.10
	0.36	0.61	0.86	1.11	1.38	1.63	1.86	2.12	2.36
	0.35	0.60	0.85	1.10	1.36	1.62	1.84	2.10	2.36

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.31	-0.26
LOGGING ACCURACY (dB)	0.34	-0.22

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.40	-0.21
LOGGING ACCURACY (dB)	0.68	0.06

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.32	-0.20
LOGGING ACCURACY (dB)	0.62	0.12

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.40	-0.26

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.68	-0.22

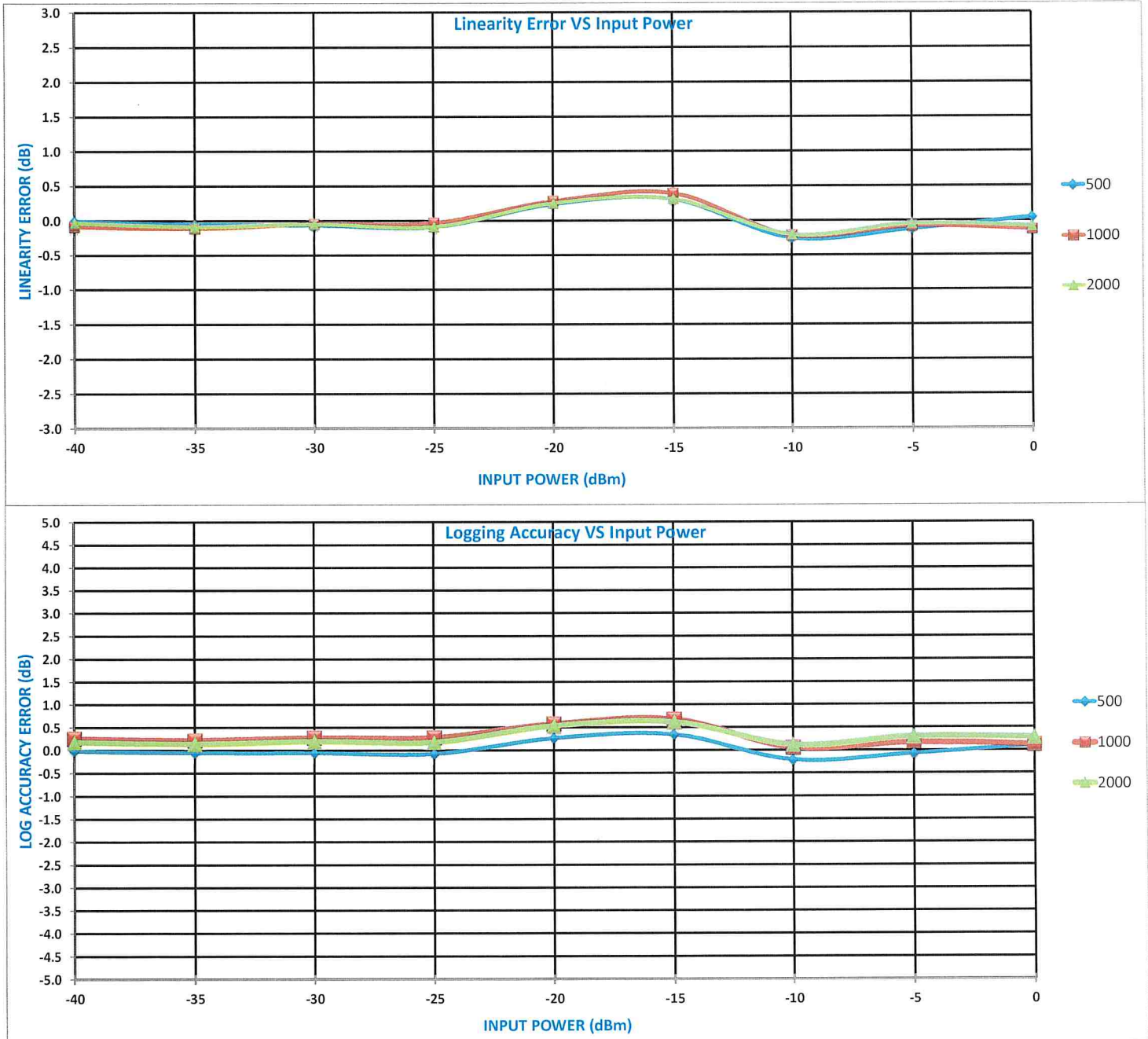
4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax:
(916)265-2597
Email: sales@pmi-rf.com



SUMMARY TEST DATA ON HADA-D2001

PL44188/2409

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

PL44188/2409

Log Linearity and Log Accuracy @ -40°C

DC Offset= 0.116 V

Frequency		
0.5 GHz	INTERCEPT (mV)	2346
	SLOPE (mV/dB)	49.7

1 GHz	INTERCEPT (mV)	2354
	SLOPE (mV/dB)	49.4

2 GHz	INTERCEPT (mV)	2359
	SLOPE (mV/dB)	49.7

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
	372	592	844	1094	1364	1623	1845	2097	2338
	14	-15	-11	-10	12	22	-4	-1	-8
	0.28	-0.29	-0.22	-0.19	0.24	0.45	-0.08	-0.01	-0.16
	0.44	-0.16	-0.12	-0.12	0.28	0.46	-0.10	-0.06	-0.24
	388	608	863	1115	1383	1641	1861	2109	2333
	8	-19	-10	-5	16	27	1	2	-21
	0.17	-0.38	-0.21	-0.10	0.33	0.56	0.01	0.04	-0.42
	0.76	0.16	0.26	0.30	0.66	0.82	0.22	0.18	-0.34
	382	603	856	1108	1379	1637	1863	2113	2341
	11	-15	-12	-8	14	24	1	3	-19
	0.23	-0.33	-0.24	-0.16	0.29	0.48	0.03	0.06	-0.35
	0.64	0.06	0.12	0.18	0.58	0.74	0.26	0.28	-0.18
	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
	0.39	0.61	0.86	1.12	1.38	1.64	1.86	2.11	2.34
	0.37	0.59	0.84	1.09	1.36	1.62	1.85	2.10	2.33

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.45	-0.29
LOGGING ACCURACY (dB)	0.46	-0.24

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.56	-0.42
LOGGING ACCURACY (dB)	0.82	-0.34

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.48	-0.35
LOGGING ACCURACY (dB)	0.74	-0.18

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.56	-0.42

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.82	-0.34

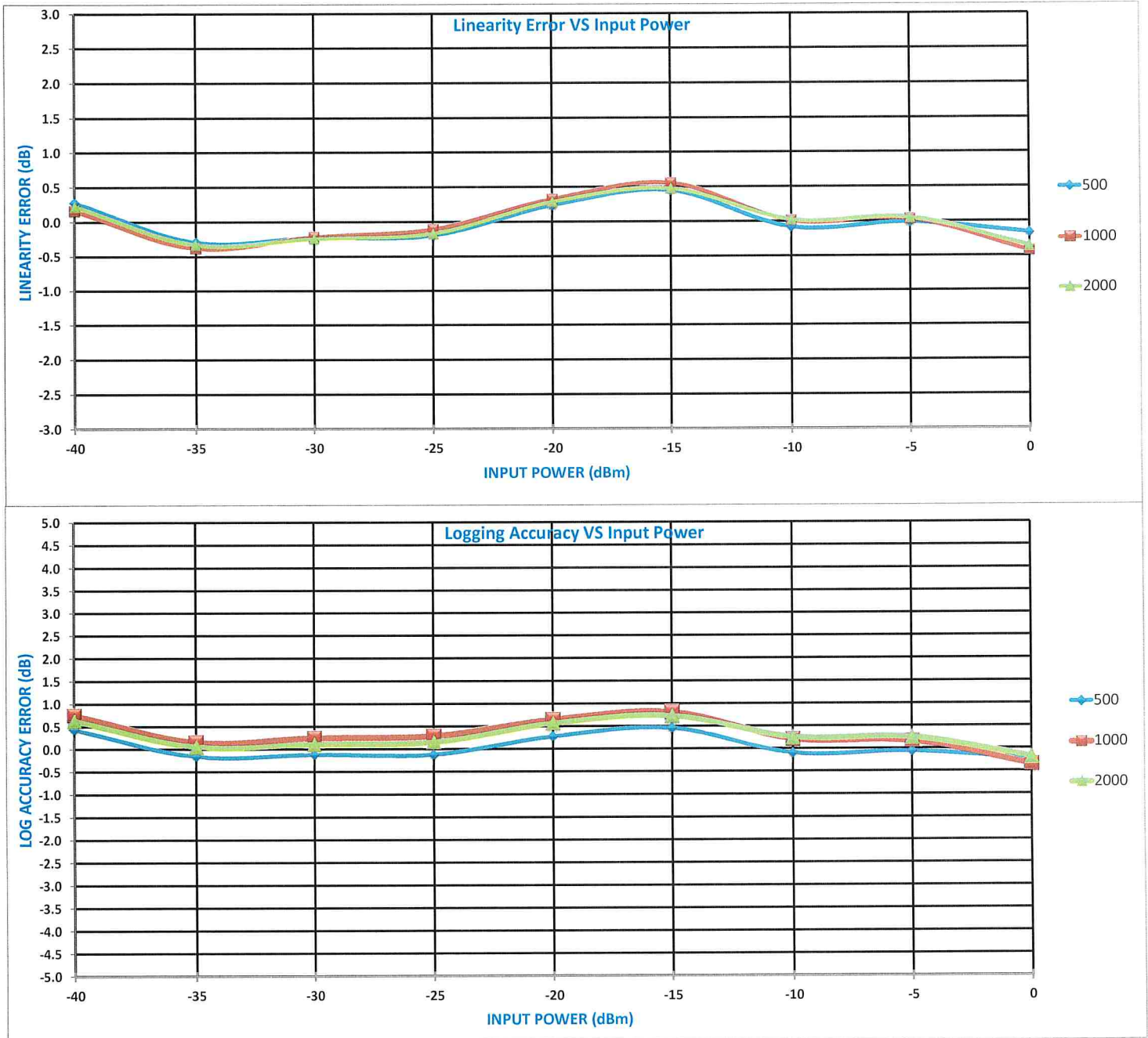
4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax:
(916)265-2597
Email: sales@pmi-rf.com



SUMMARY TEST DATA ON HADA-D2001

PL44188/2409

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

PL44188/2409

Log Linearity and Log Accuracy @ +85°C

DC Offset= 0.122 V

Frequency

0.5 GHz	INTERCEPT (mV)	2320
	SLOPE (mV/dB)	49.6

1 GHz	INTERCEPT (mV)	2333
	SLOPE (mV/dB)	49.5

2 GHz	INTERCEPT (mV)	2338
	SLOPE (mV/dB)	49.8

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
0.5 GHz	342	584	823	1070	1336	1585	1814	2067	2328
	7	1	-8	-10	8	9	-10	-5	8
	0.14	0.02	-0.17	-0.19	0.17	0.18	-0.20	-0.10	0.15
	-0.16	-0.32	-0.54	-0.60	-0.28	-0.30	-0.72	-0.66	-0.44
1 GHz	358	600	844	1090	1355	1604	1829	2085	2333
	3	-2	-6	-7	11	12	-10	-1	0
	0.06	-0.05	-0.11	-0.14	0.22	0.25	-0.20	-0.02	-0.01
	0.16	0.00	-0.12	-0.20	0.10	0.08	-0.42	-0.30	-0.34
2 GHz	353	595	838	1084	1352	1601	1832	2091	2337
	6	-1	-7	-10	9	10	-9	2	-1
	0.11	-0.02	-0.14	-0.20	0.19	0.19	-0.16	0.04	-0.02
	0.06	-0.10	-0.24	-0.32	0.04	0.02	-0.36	-0.18	-0.26
	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
	0.36	0.60	0.84	1.09	1.36	1.60	1.83	2.09	2.34
	0.34	0.58	0.82	1.07	1.34	1.59	1.81	2.07	2.33

RF Input Power (dBm)

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.18	-0.20
LOGGING ACCURACY (dB)	-0.16	-0.72

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.25	-0.20
LOGGING ACCURACY (dB)	0.16	-0.42

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.19	-0.20
LOGGING ACCURACY (dB)	0.06	-0.36

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.25	-0.20

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.16	-0.72

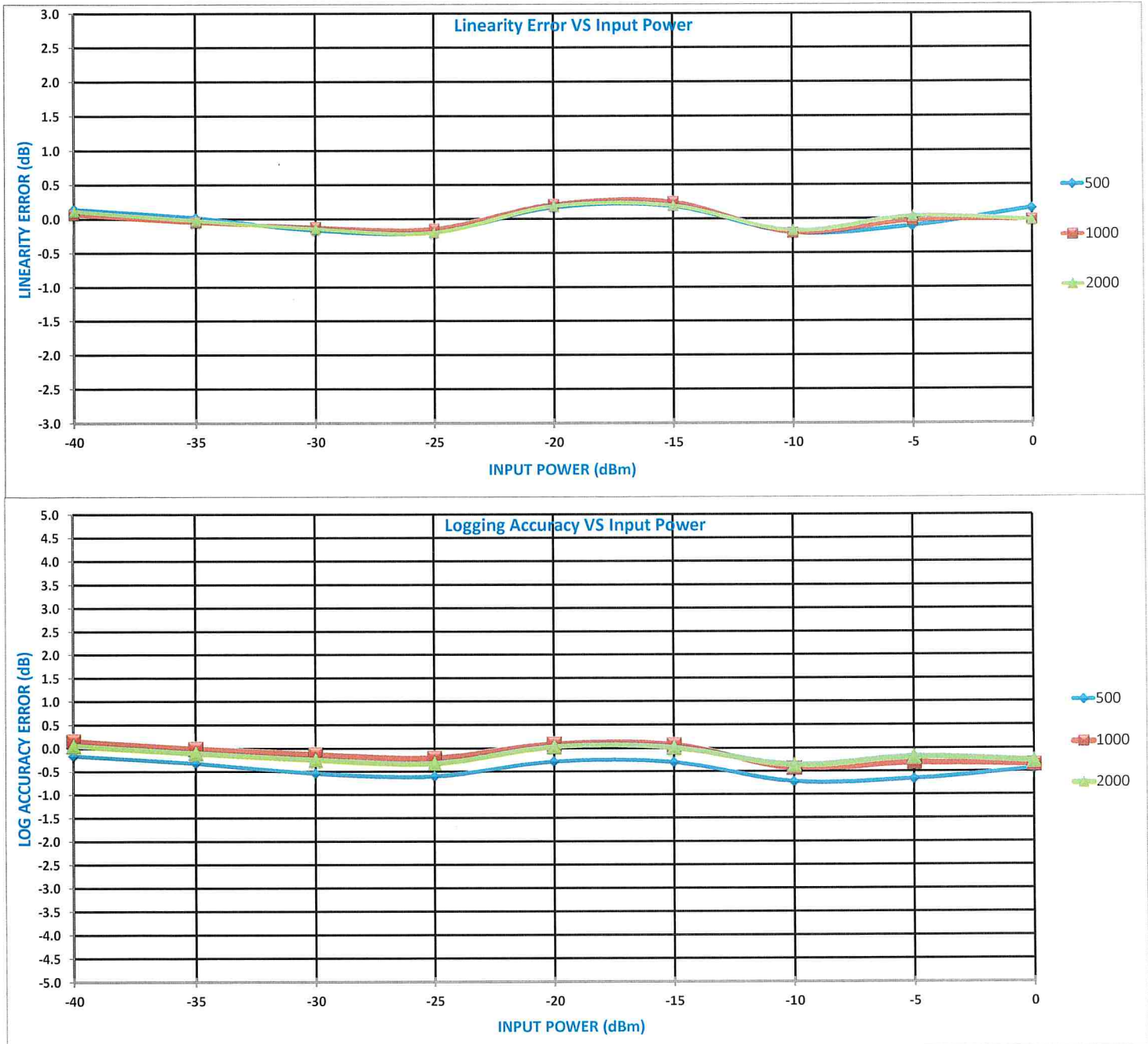
4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



SUMMARY TEST DATA ON HADA-D2001

PL44188/2409

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

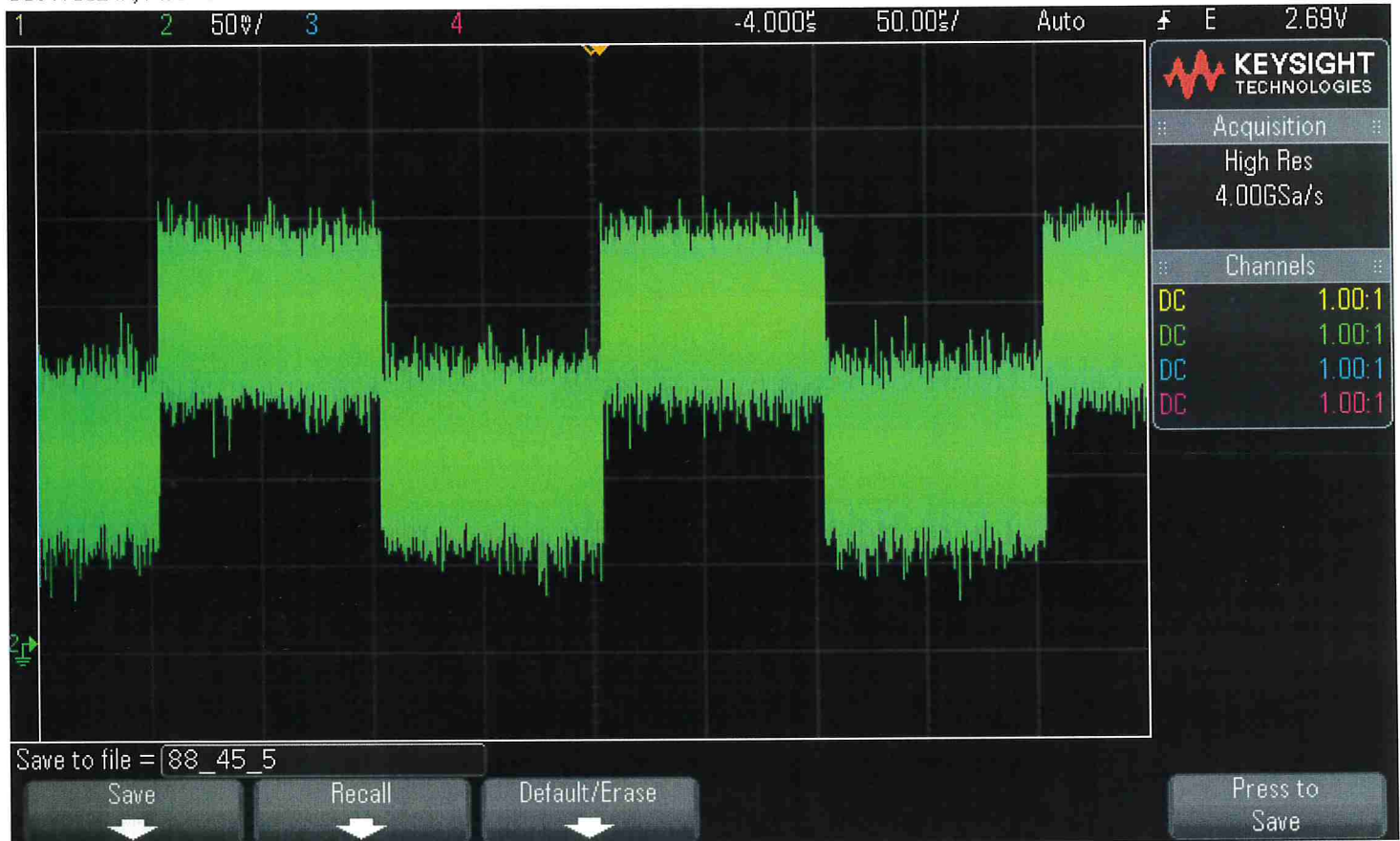


**SUMMARY TEST DATA
ON
HADA-D2001**

PL44188/2409

TSS -45.5 dBm

DSO-X 3024A, MY54490369, Fri Feb 23 14:13:27 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

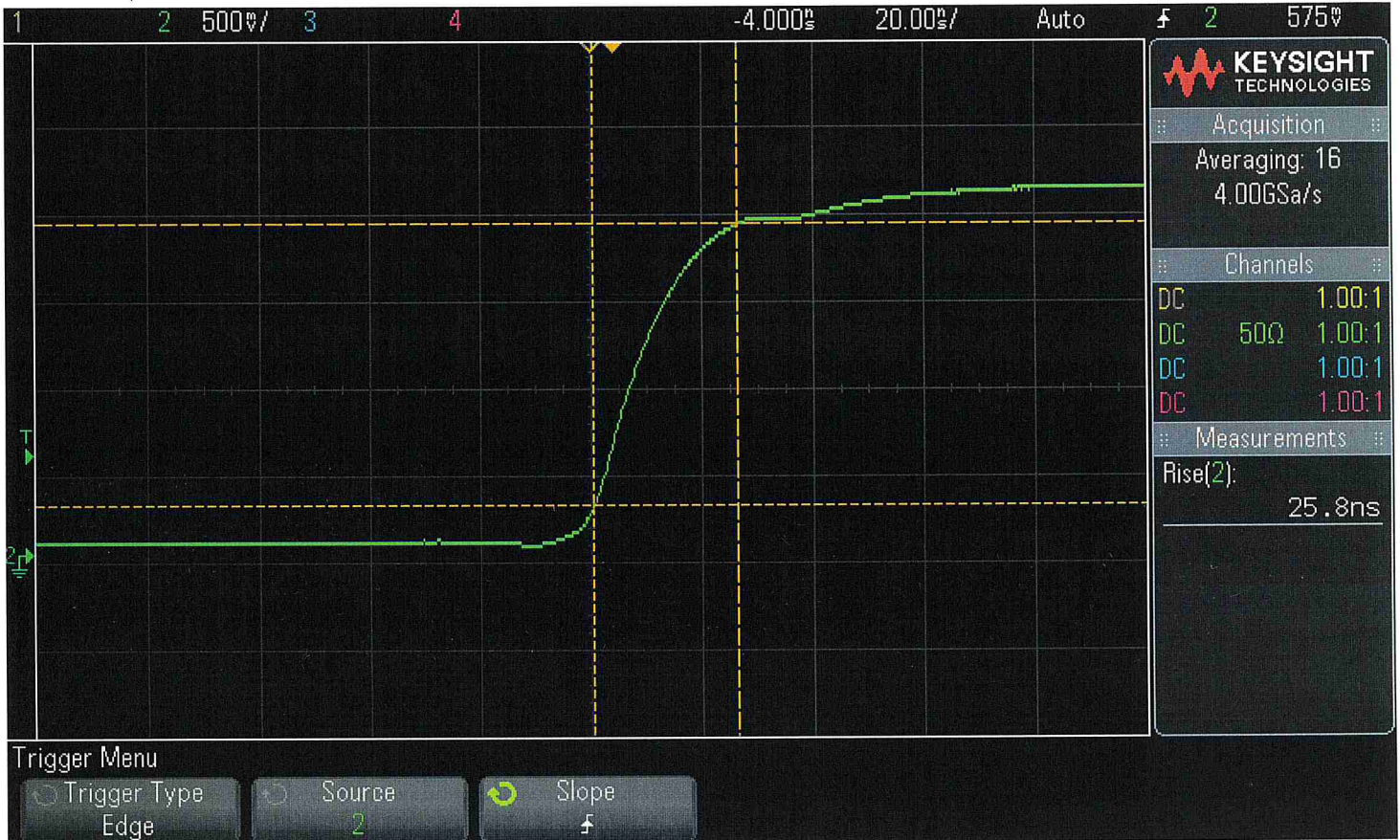


**SUMMARY TEST DATA
ON
HADA-D2001**

PL44188/2409

Rise Time 25.8 ns

DSO-X 3024A, MY54490369, Fri Feb 23 13:35:57 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

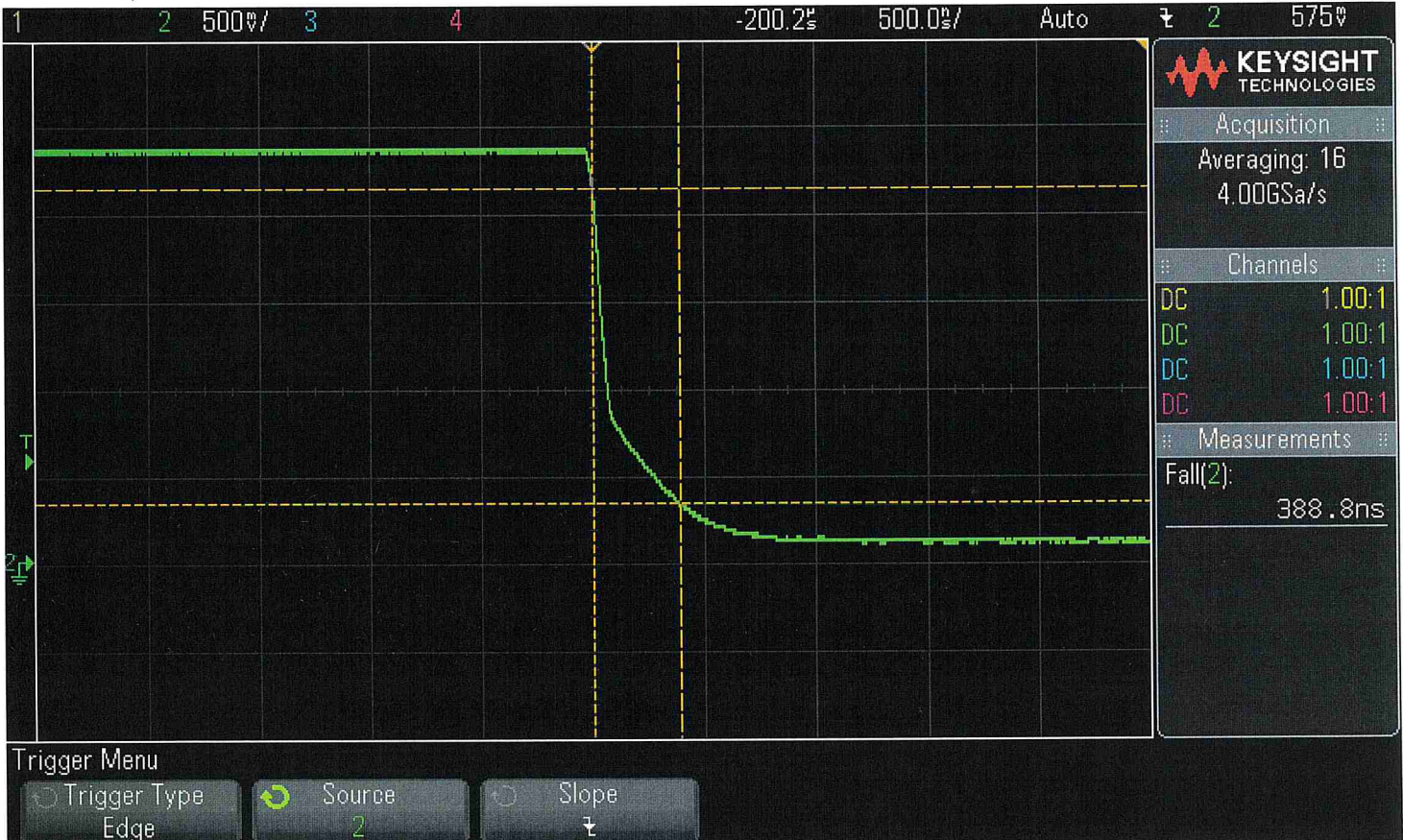


SUMMARY TEST DATA
ON
HADA-D2001

PL44188/2409

Fall Time 388 ns

DSO-X 3024A, MY54490369, Fri Feb 23 14:19:45 2024



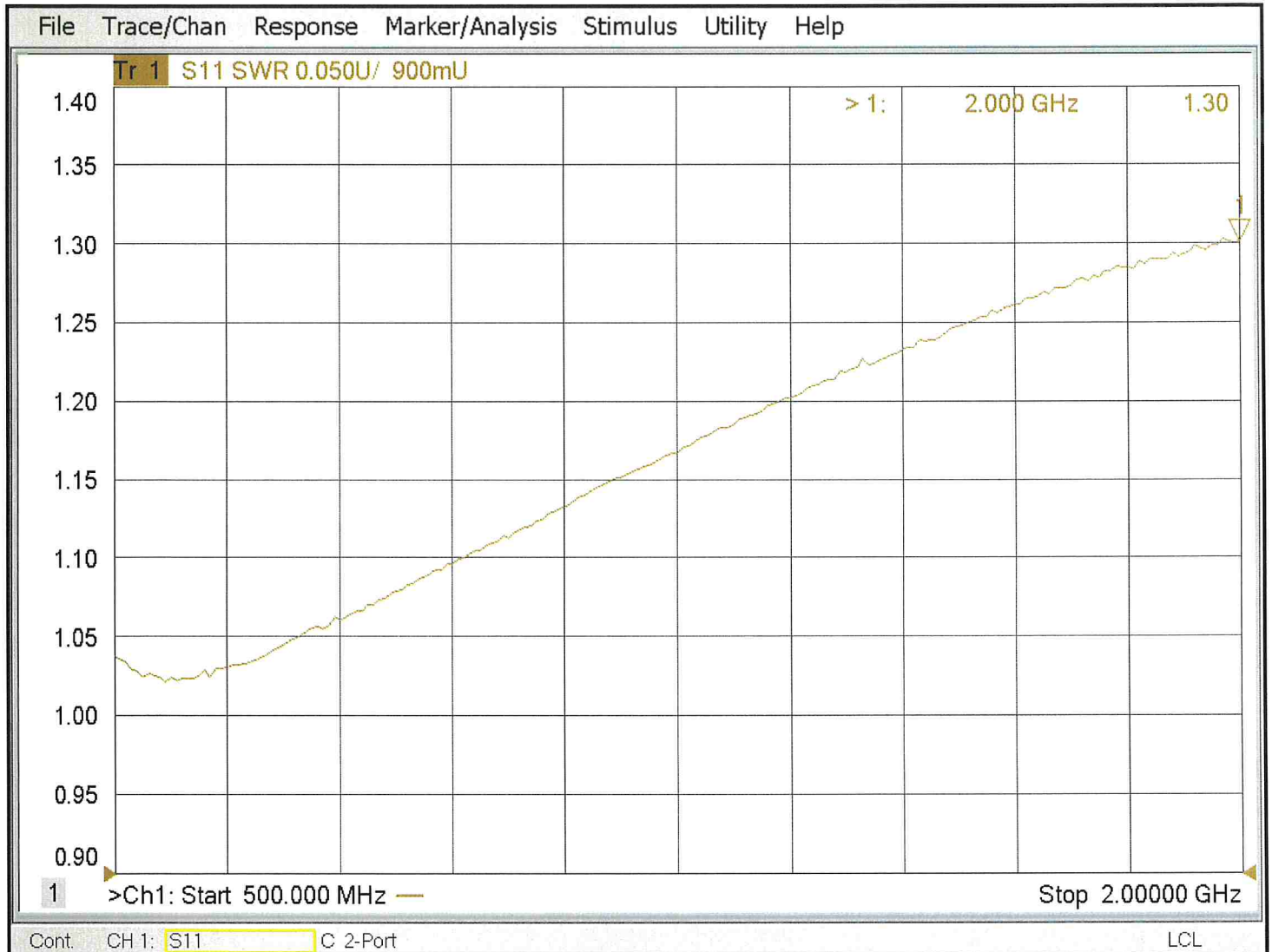
4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



**SUMMARY TEST DATA
ON
HADA-D2001**

PL44188/2409

VSWR 1.30:1



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