



**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL30791/2051

Customer: _____	Tested By: <u>Simon K.</u>
SO No: _____	Temperature: <u>+25°C</u>
Model No: <u>HADA-D2001</u>	Date: <u>12/17/2020</u>
Serial No: <u>PL30791/2051</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 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)	+0.26 / -0.20 dB (Room Temp)  +0.86 / -1.14 dB (Over Temp) See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C  ±0.75 dB Max @ -40°C to +85°C	+0.28 / -0.34 dB (Room Temp)  +0.29 / -0.50 dB (Over Temp) See Plot	
7	Maximum Input Power (CW):	+23 dBm	Pass	
8	Duty Cycle:	100%	Pass	PMI QA3

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](mailto:sales@pmi-rf.com)



**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL30791/2051

9	Rise Time:	30 ns Max (10% to 90%)	19 ns See Plot	PMI QA3
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	143 ns See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55 / -100 mV (@ -40°C to +85°C)	100 mV 55 mV	
12	Input VSWR:	2.5:1 Max @ +23 dBm	1.54:1 See Plot	
13	Propagation Delay:	60 ns Max	40 ns See Plot	
14	Power Supply:	+12 ± 1VDC @ 125 mA Max -12 ± 1VDC @ 75 mA Max	90 mA 40 mA	
15	Warm Up Time:	2 Minutes Max	2 Minutes	PMI QA3

\*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: Arthur Zimmerman

Date: 1-21-21

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](mailto:sales@pmi-rf.com)



# SUMMARY TEST DATA ON HADA-D2001

PL30791/2051

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: Simon K.  
TEST DATE: 12/09/20  
SERIAL NO: PL30791  
TEST TEMP: +25C

Graph #1

DC Offset= 0.100 V



PLANAR MONOLITHICS INDUSTRIES  
4921 Robert J. Mathews Parkway Suit 1  
El Dorado Hills, CA 95762  
TEL: 916-542-1401 FAX: 916-265-2597  
EMAIL: SALES@PMI-RF.COM

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
0.5 GHz	2411	50.8

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
1 GHz	2407	50.2

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
2 GHz	2421	50.1

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
388	627	893	1143	1401	1638	1865	2159	2425	
7	-7	5	1	5	-11	-17	2	14	
0.15	-0.14	0.10	0.02	0.11	-0.22	-0.34	0.04	0.28	
-0.24	-0.46	-0.14	-0.14	0.02	-0.24	-0.28	0.18	0.50	
402	640	909	1159	1411	1647	1893	2158	2413	
2	-11	7	6	7	-7	-12	2	6	
0.04	-0.22	0.14	0.13	0.15	-0.15	-0.25	0.03	0.12	
0.04	-0.20	0.18	0.18	0.22	-0.06	-0.14	0.16	0.26	
417	654	924	1174	1427	1662	1910	2170	2425	
2	-12	7	7	9	-7	-9	0	4	
0.03	-0.24	0.14	0.13	0.18	-0.14	-0.19	0.00	0.08	
0.34	0.05	0.16	0.18	0.54	0.29	0.20	0.40	0.60	
0.30	0.30	0.30	0.30	0.30	0.20	0.20	0.10	0.10	
0.42	0.55	0.92	1.17	1.43	1.66	1.91	2.17	2.43	
0.39	0.53	0.89	1.14	1.40	1.64	1.89	2.16	2.41	

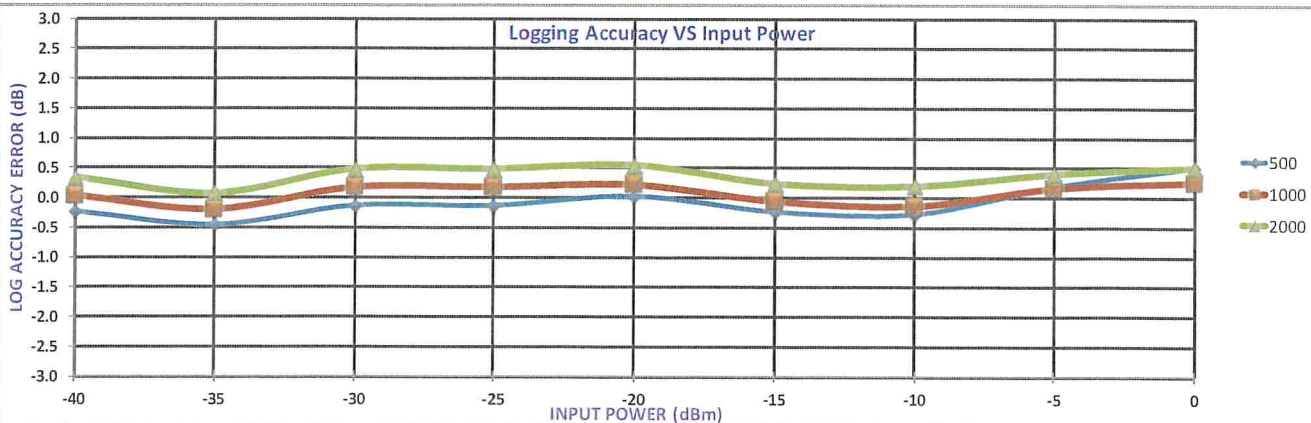
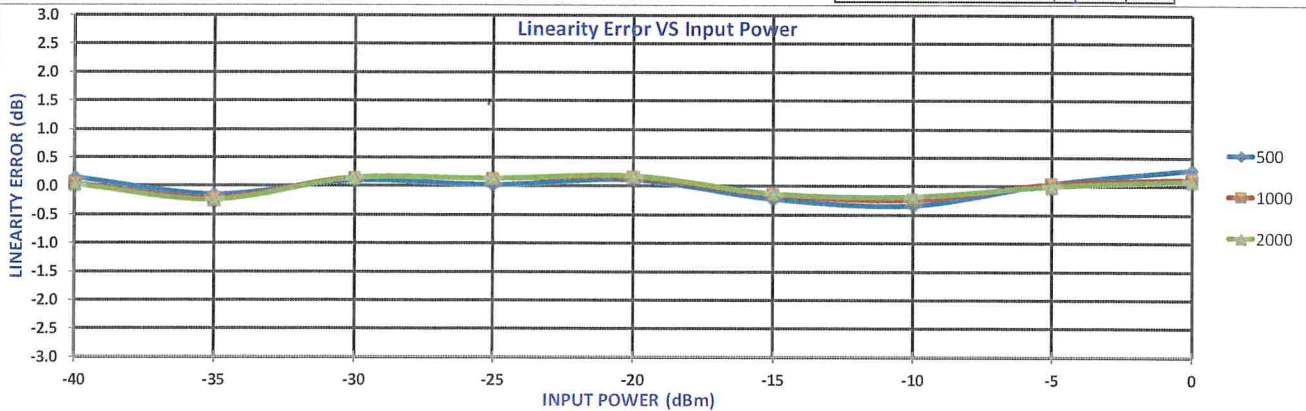
Measured Value (mV)	Error (dB)
MAX	MIN
LINEARITY ERROR (dB)	0.28 -0.34
LOGGING ACCURACY (dB)	0.50 -0.46

Measured Value (mV)	Error (dB)
MAX	MIN
LINEARITY ERROR (dB)	0.15 -0.25
LOGGING ACCURACY (dB)	0.26 -0.20

Measured Value (mV)	Error (dB)
MAX	MIN
LINEARITY ERROR (dB)	0.18 -0.24
LOGGING ACCURACY (dB)	0.54 0.08

Logging Linearity vs Frequency	Error (dB)
MAX	MIN
TOTAL LOG LINEARITY (dB)	0.28 -0.34

Logging Accuracy vs Frequency	Error (dB)
MAX	MIN
TOTAL LOGGING ACCURACY (dB)	0.54 -0.46



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

PL30791/2051

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: Simon K.  
TEST DATE: 12/09/20  
SERIAL NO: PL30791  
TEST TEMP: -40C

Graph #2

DC Offset= 0.055 V



PLANAR MONOLITHICS INDUSTRIES  
4921 Robert J. Mathews Parkway Suite 1  
El Dorado Hills, CA 95762  
TEL: 916-542-1401 FAX: 916-265-2597  
EMAIL: SALES@PMI-RF.COM

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
0.5 GHz	2304	49.1

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
1 GHz	2303	48.5

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
2 GHz	2318	48.6

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
348	570	834	1079	1328	1560	1815	2055	2307	
9	-15	4	3	4	-7	2	-3	3	
0.18	-0.30	0.07	0.06	0.09	-0.15	0.05	-0.07	0.06	
0.16	-0.40	-0.12	-0.22	-0.28	-0.60	-0.50	-0.70	-0.66	
353	585	852	1098	1338	1572	1825	2057	2295	
2	-18	6	9	6	-2	8	-3	-8	
0.05	-0.38	0.12	0.19	0.13	-0.05	0.16	-0.06	-0.16	
0.46	-0.10	0.24	0.16	-0.04	-0.36	-0.30	-0.66	-0.90	
377	600	865	1113	1355	1587	1843	2088	2312	
2	-18	4	9	8	-8	11	-7	5	
0.04	-0.37	0.09	0.19	0.17	-0.05	0.22	-0.15	-0.13	
0.74	0.20	0.30	0.46	0.30	-0.06	0.06	-0.94	-0.50	
0.30	0.30	0.30	0.40	0.30	0.30	0.10	0.20		
0.38	0.60	0.87	1.11	1.36	1.59	1.84	2.07	2.31	
0.35	0.57	0.83	1.08	1.33	1.56	1.82	2.06	2.30	

RF Input Power (dBm)

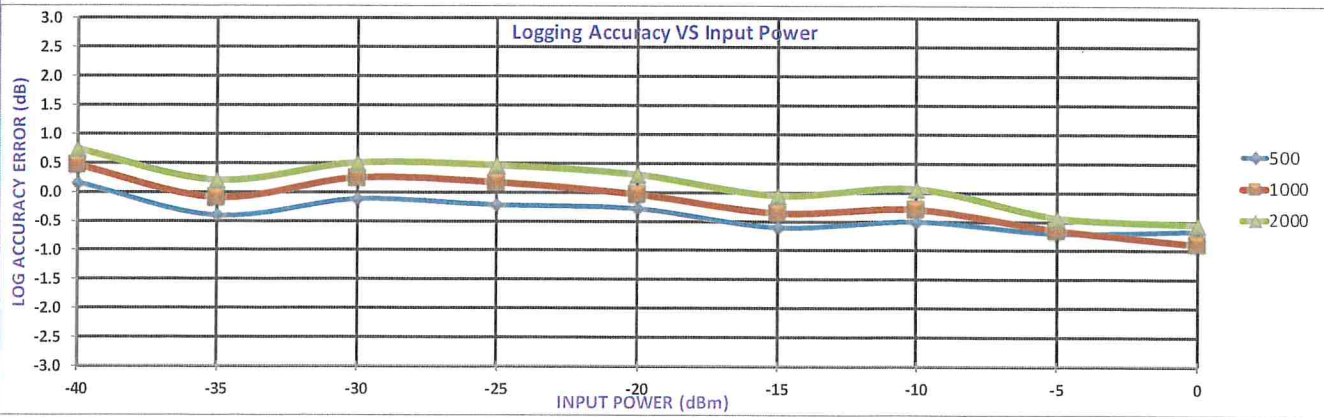
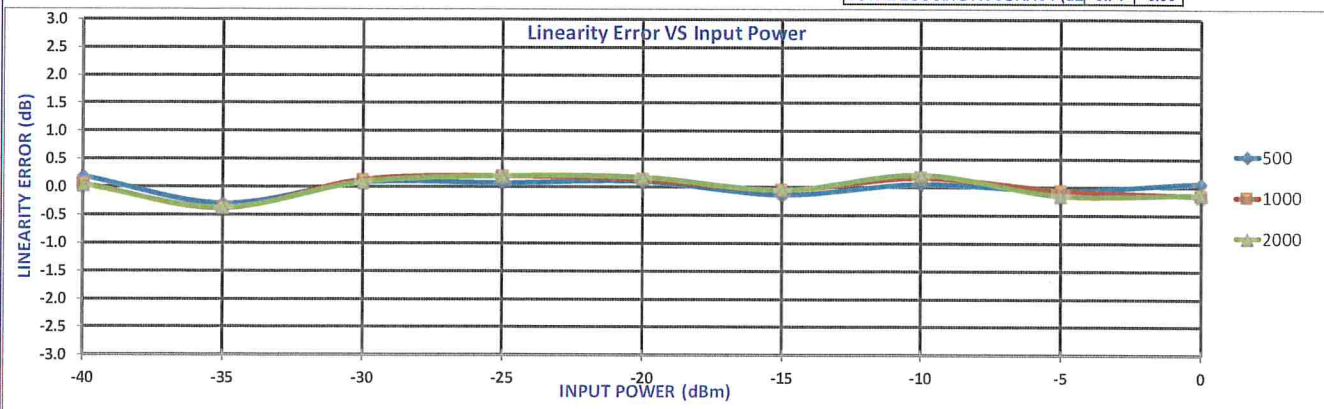
Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.18 -0.30
LOGGING ACCURACY (dB)	0.16 -0.70

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.19 -0.38
LOGGING ACCURACY (dB)	0.46 -0.90

Measured Value (mV)	Error(dB)
Error (mV)	MAX MIN
LINEARITY ERROR (dB)	0.22 -0.37
LOGGING ACCURACY (dB)	0.74 -0.56

Logging Linearity vs Frequency	Error(dB)
TOTAL LOG LINEARITY (dB)	0.22 -0.38

Logging Accuracy vs Frequency	Error(dB)
TOTAL LOGGING ACCURACY (dB)	0.74 -0.90





# SUMMARY TEST DATA ON HADA-D2001

PL30791/2051

LOG TRANSFER WITH FREQUENCY  
MODEL: HADA-D2001  
TESTED BY: Simon K.  
TEST DATE: 12/09/20  
SERIAL NO: PL30791  
TEST TEMP: +85C

Graph #3

DC Offset= 0.073 V



PLANAR MONOLITHICS INDUSTRIES  
4921 Robert J. Mathews Parkway Suit 1  
El Dorado Hills, CA 95762  
TEL: 916-542-1401 FAX: 916-265-2597  
EMAIL: SALES@PMI-RF.COM

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)
0.5 GHz	2430	52

1 GHz	INTERCEPT (mV)	SLOPE (mV/dB)
2431	51.5	

2 GHz	INTERCEPT (mV)	SLOPE (mV/dB)
2443	51.4	

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

	-40	-35	-30	-25	-20	-15	-10	-5	0
343	610	876	1132	1401	1640	1883	2176	2440	
-5	1	7	3	12	-9	-26	7	10	
-0.11	0.03	0.14	0.06	0.23	-0.18	-0.50	0.13	0.20	
-1.14	-0.80	-0.48	-0.36	0.02	-0.20	-0.34	0.52	0.80	
360	626	895	1149	1413	1651	1892	2179	2436	
-10	-1	10	7	13	-7	-23	6	5	
-0.18	-0.02	0.20	0.13	0.25	-0.13	-0.45	0.12	0.10	
-0.80	-0.48	-0.10	-0.02	0.25	0.02	-0.16	0.58	0.72	
377	642	912	1165	1430	1667	1909	2193	2443	
-11	-3	19	7	15	-5	-20	7	0	
-0.21	-0.05	0.20	0.13	0.29	-0.10	-0.39	0.14	0.00	
-0.46	-0.16	0.24	0.30	0.80	0.34	0.19	0.30	0.86	
0.30	0.30	0.30	0.30	0.30	0.30	0.20	0.10		
0.38	0.64	0.91	1.17	1.43	1.67	1.91	2.19	2.44	
0.34	0.61	0.88	1.13	1.40	1.64	1.88	2.18	2.44	

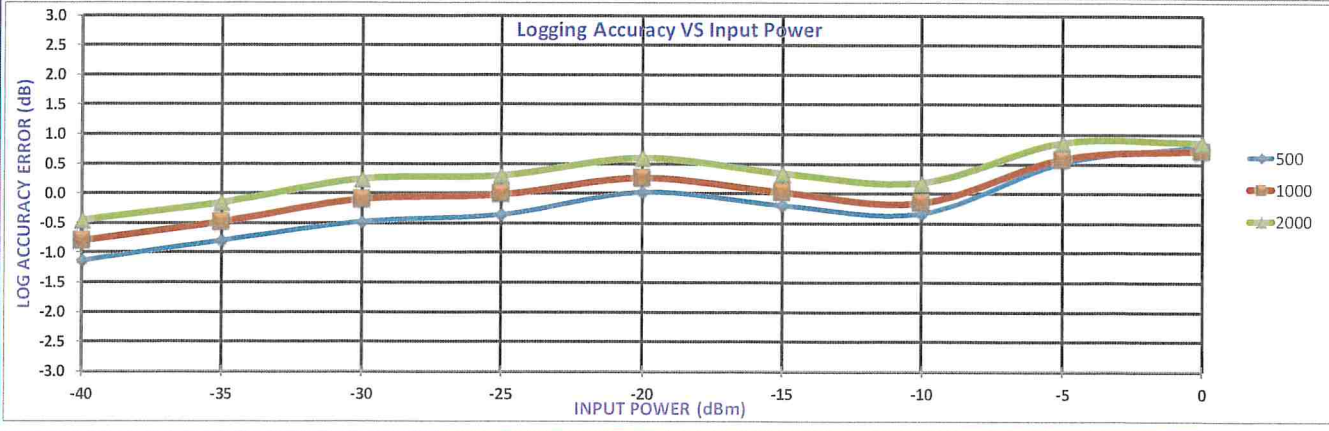
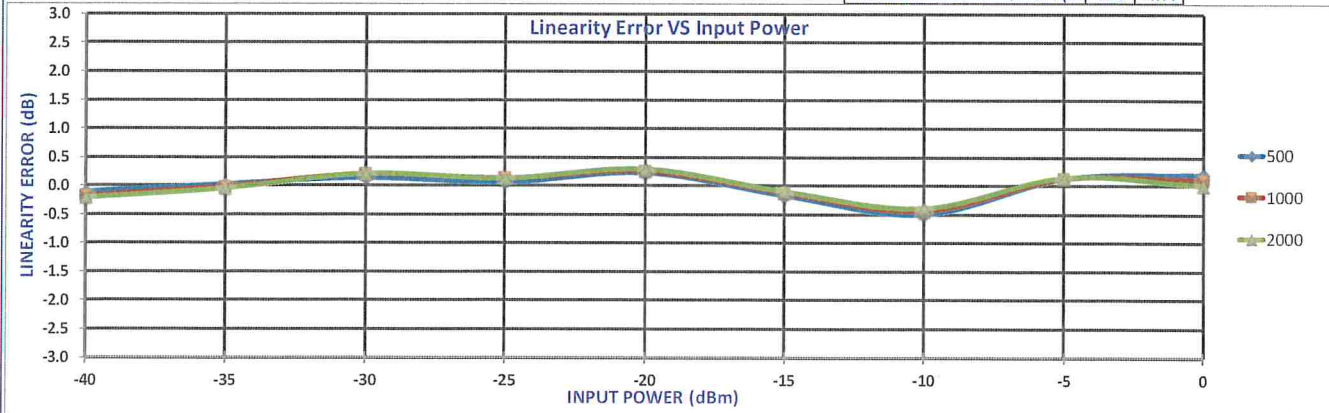
RF Input Power (dBm)	Measured Value (mV)	Error (dB)
		MAX MIN
		0.23 -0.50
		0.80 -1.14

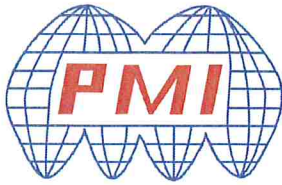
RF Input Power (dBm)	Measured Value (mV)	Error (dB)
		MAX MIN
		0.25 -0.45
		0.72 -0.80

RF Input Power (dBm)	Measured Value (mV)	Error (dB)
		MAX MIN
		0.29 -0.39
		0.86 -0.46

Logging Linearity vs Frequency	Error (dB)
	MAX MIN
TOTAL LOG LINEARITY (dB)	0.29 -0.50

Logging Accuracy vs Frequency	Error (dB)
	MAX MIN
TOTAL LOGGING ACCURACY (dB)	0.86 -1.14

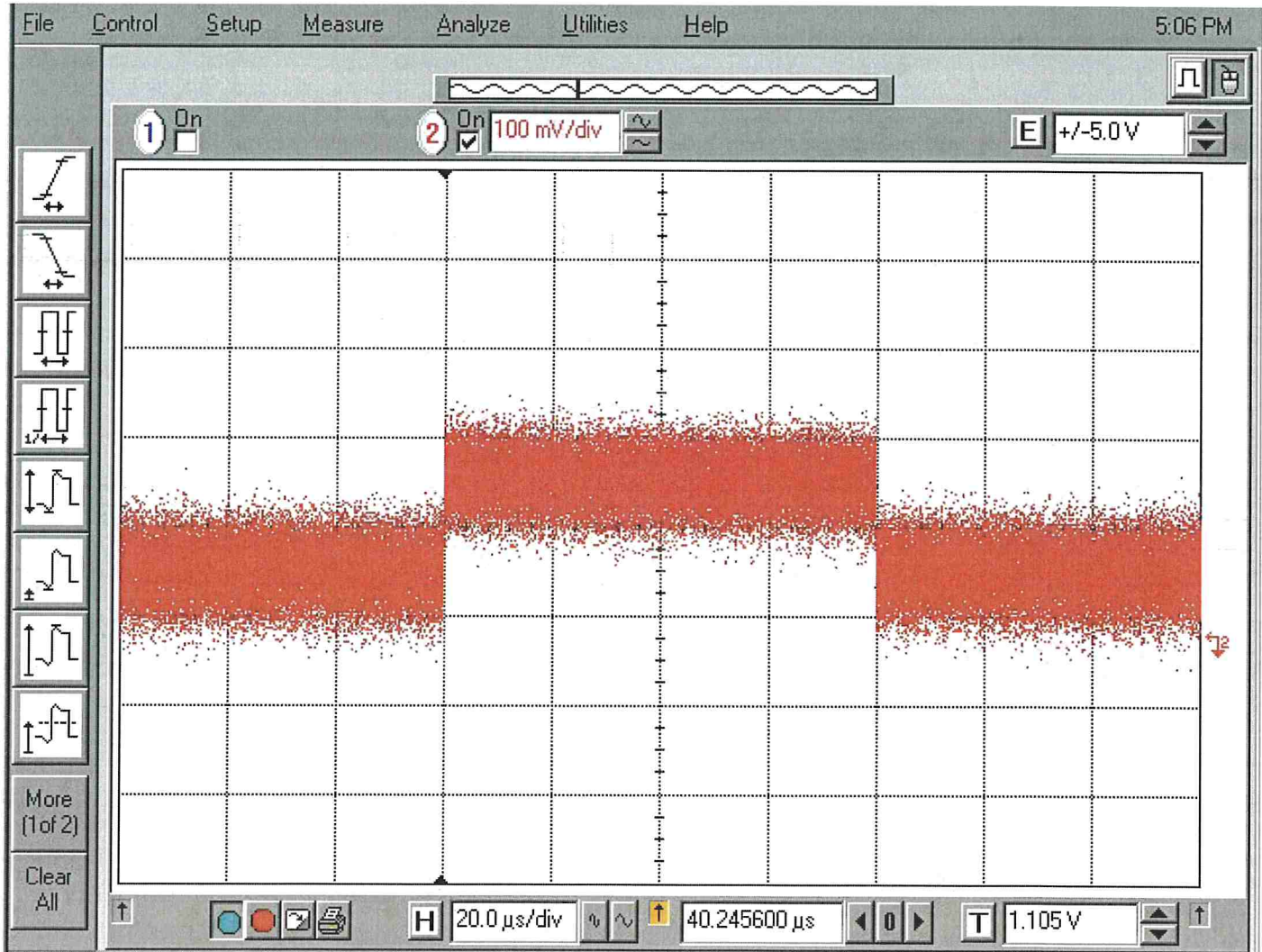




SUMMARY TEST DATA  
ON  
HADA-D2001

PL30791/2051

TSS @ -45 dBm



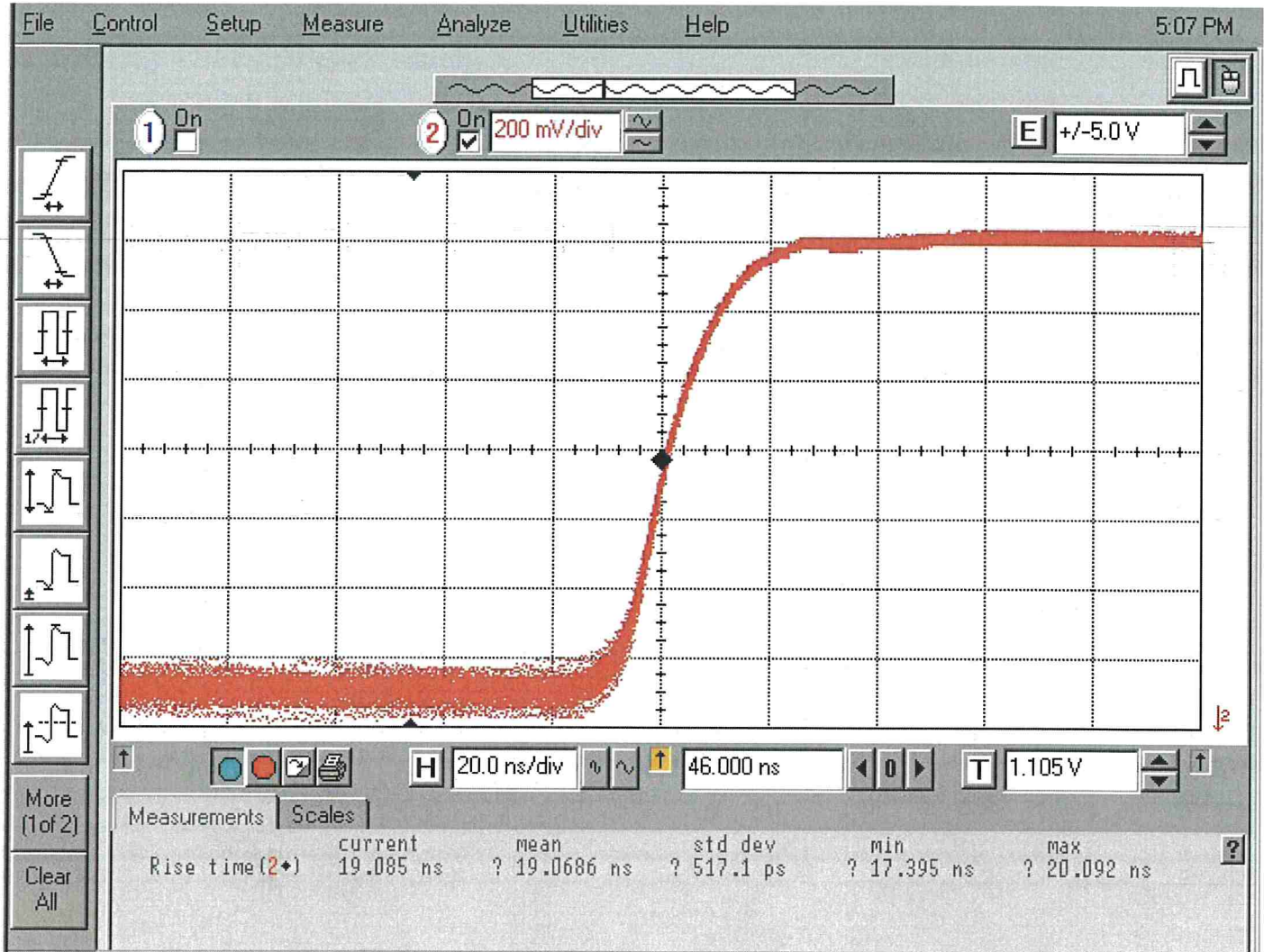
4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax:  
(916)265-2597  
Email: [sales@pmi-rf.com](mailto:sales@pmi-rf.com)



SUMMARY TEST DATA  
ON  
HADA-D2001

PL30791/2051

Rise Time @ 19 ns

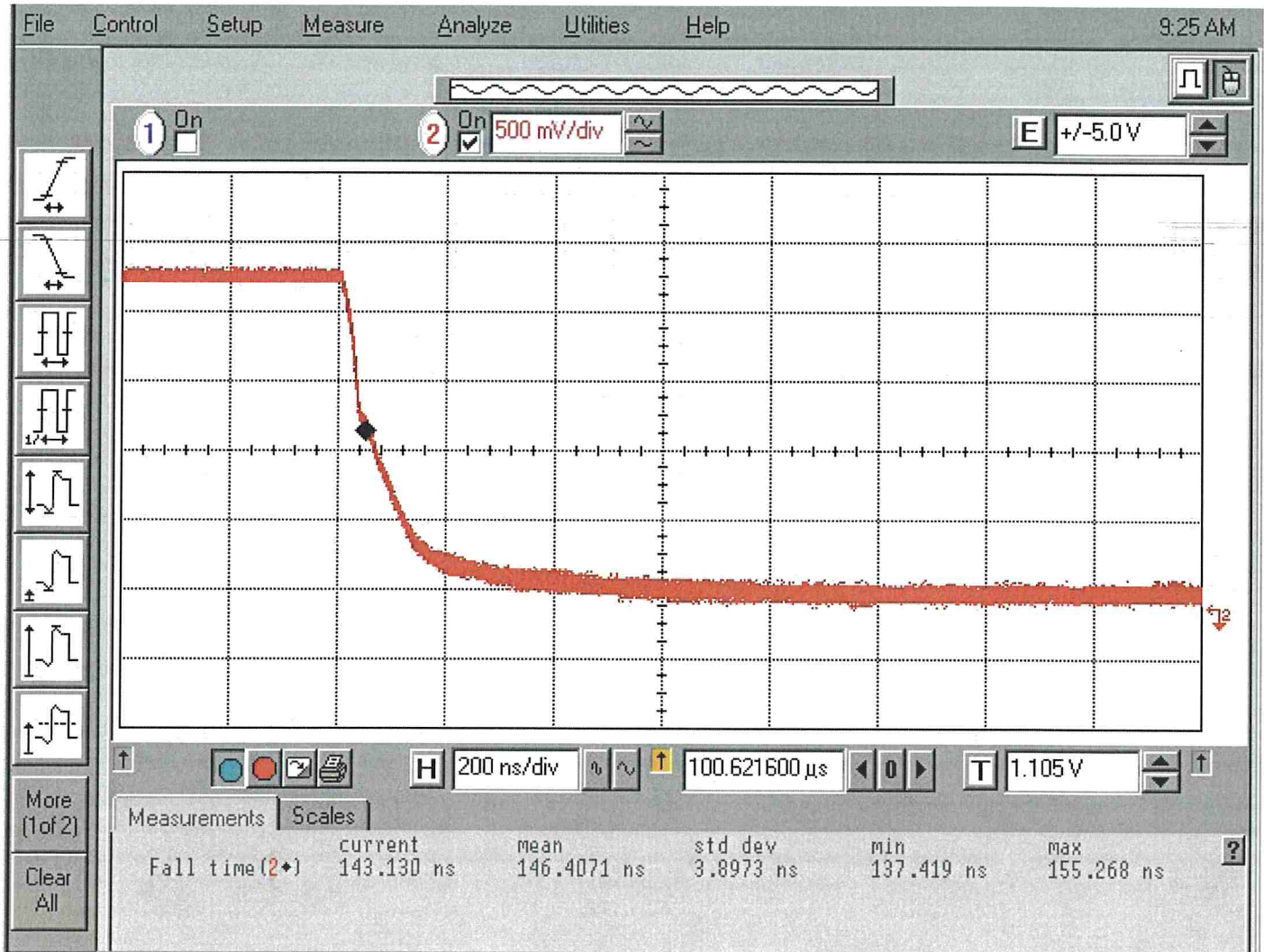




SUMMARY TEST DATA  
ON  
HADA-D2001

PL30791/2051

Fall Time @ 143 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

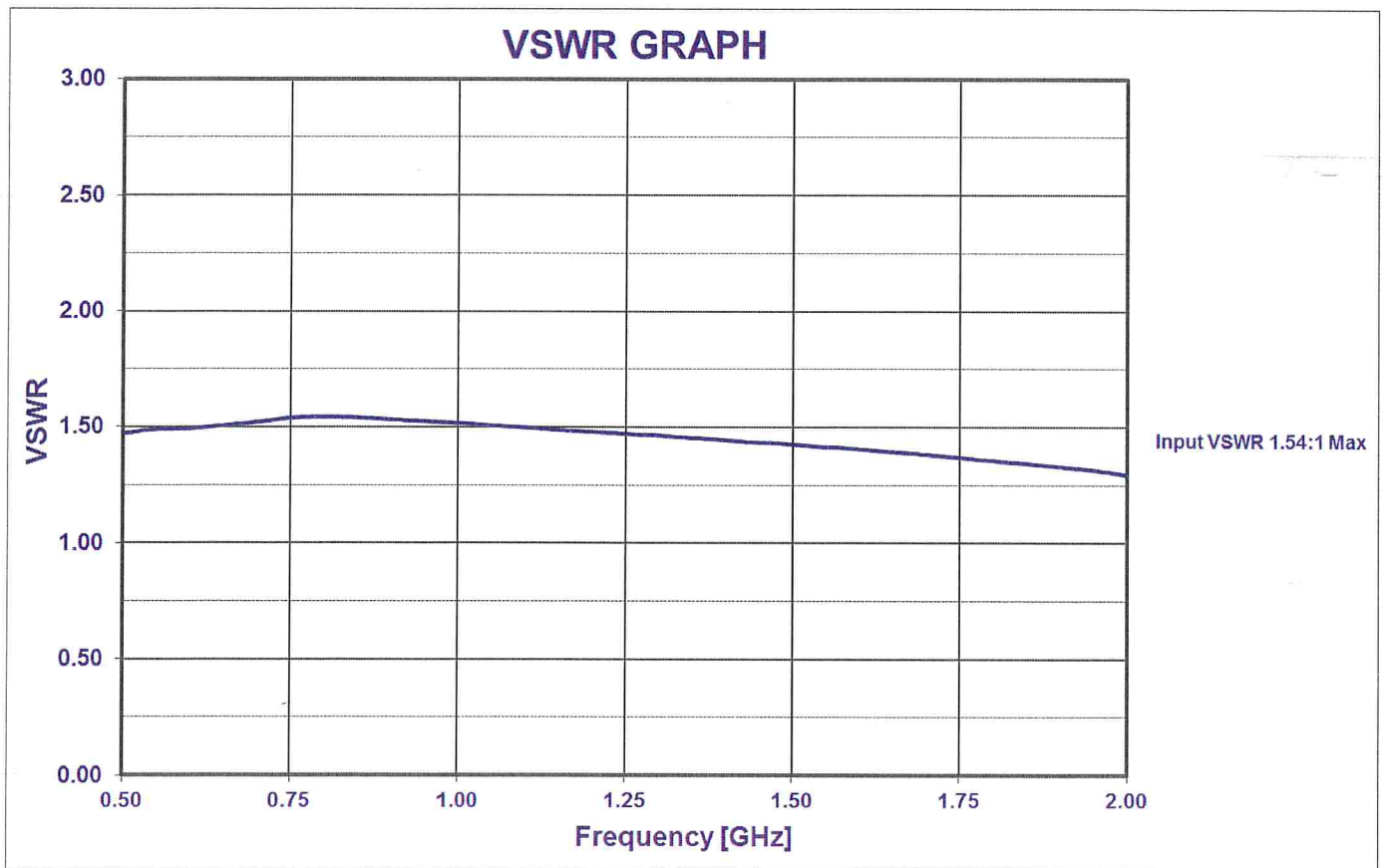




**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL30791/2051

**VSWR @ 1.54:1**



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](mailto:sales@pmi-rf.com)