SUMMARY TEST DATA ON HADA-D2001

PL30790/2051

Customer:		**Tested By:**	Simon K.
SO No:		**Temperature:**	+25°C
Model No:	HADA-D2001	**Date:**	12/17/2020
Serial No:	PL30790/2051	**Drawing No:**	27620201 **Rev:** A1

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	**±0.30 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)	**+0.34 / -0.34 dB (Room Temp)** **+0.74 / -0.96 dB (Over Temp) See Plot**	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	**+0.38 / -0.30 dB (Room Temp)** **+0.43 / -0.41 dB (Over Temp) See Plot**	
7	Maximum Input Power (CW):	+23 dBm	**Pass**	
8	Duty Cycle:	100%	**Pass**	PMI QA3

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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%)	**152 ns** **See Plot**	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55 / -100 mV (@ -40°C to +85°C)	**10 mV** **90 mV**	
12	Input VSWR:	2.5:1 Max @ +23 dBm	**1.53:1** **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:** 12-21-20

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SUMMARY TEST DATA ON HADA-D2001

PL30790/2051

LOG TRANSFER WITH FREQUENCY
MODEL: HADA-D2001
TESTED BY: Simon K.
TEST DATE: 12/09/20
SERIAL NO: PL30790
TEST TEMP: +25C

Graph #1

DC Offset= 0.053 V

PLANAR MONOLITHICS INDUSTRIES
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Frequency		
0.5 GHz	INTERCEPT (mV)	2438
	SLOPE (mV/dB)	50.7
1 GHz	INTERCEPT (mV)	2432
	SLOPE (mV/dB)	50.1
2 GHz	INTERCEPT (mV)	2436
	SLOPE (mV/dB)	49.9

RF Input Power (dBm)	-40	-35	-30	-25	-20	-15	-10	-5	0
	405	650	924	1182	1432	1668	1928	2187	2433
	-4	-12	8	12	9	-9	-2	3	-5
	-0.07	-0.24	0.16	0.24	0.17	-0.17	-0.05	0.06	-0.09
	-0.50	-0.60	-0.12	0.04	0.04	-0.24	-0.04	0.14	0.06
	419	663	938	1197	1440	1674	1925	2178	2430
	-8	-14	10	18	11	-6	-6	-3	-2
	-0.15	-0.29	0.20	0.37	0.21	-0.12	-0.11	-0.07	-0.04
	-0.22	-0.34	0.16	0.34	0.20	-0.12	-0.10	-0.04	0.00
	430	674	947	1207	1452	1682	1935	2181	2430
	-9	-15	9	19	14	-5	-2	-5	-6
	-0.19	-0.30	0.17	0.38	0.29	-0.10	-0.03	-0.10	-0.11
	0.00	-0.12	0.34	0.54	0.44	0.04	0.10	0.02	0.00
Flatness +/- dB	0.20	0.20	0.20	0.20	0.20	0.10	0.10	0.10	0.00
Max Video Output Volts	0.43	0.67	0.95	1.21	1.45	1.68	1.94	2.19	2.43
Min Video Output Volts	0.41	0.65	0.92	1.18	1.43	1.67	1.93	2.18	2.43

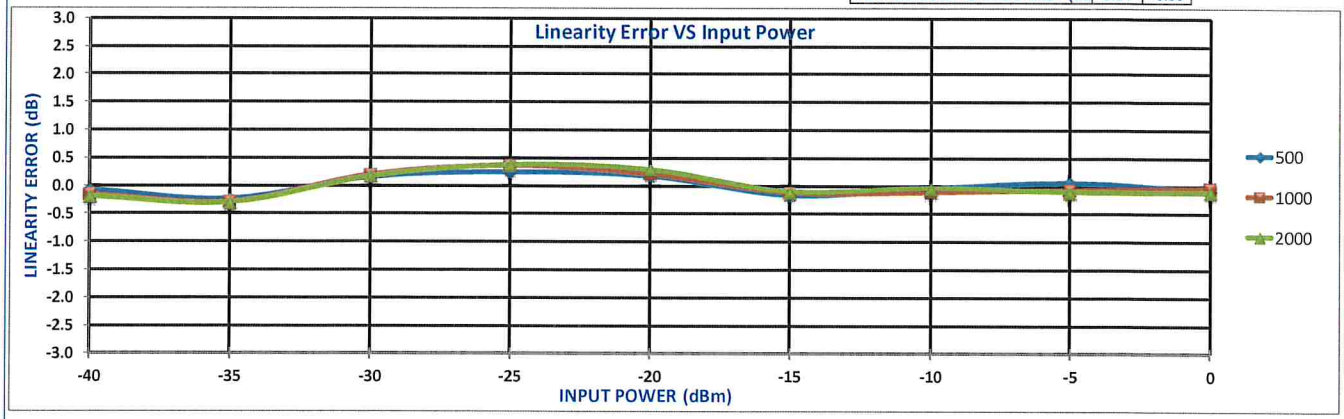
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.24	-0.24
LOGGING ACCURACY (dB)	0.14	-0.60

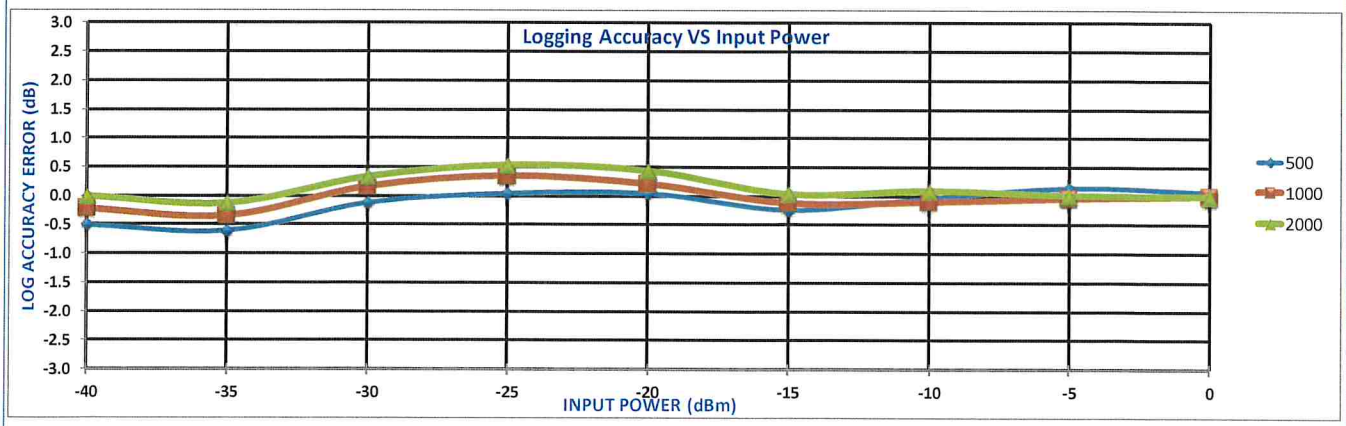
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.37	-0.29
LOGGING ACCURACY (dB)	0.34	-0.34

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.38	-0.30
LOGGING ACCURACY (dB)	0.54	-0.12

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.38	-0.30

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB	0.54	-0.60





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SUMMARY TEST DATA ON HADA-D2001

PL30790/2051

LOG TRANSFER WITH FREQUENCY
MODEL: HADA-D2001
TESTED BY: Simon K.
TEST DATE: 12/09/20
SERIAL NO: PL30790
TEST TEMP: -40C

Graph #2

DC Offset= 0.010 V

PLANAR MONOLITHICS INDUSTRIES
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TEL: 916-542-1401 FAX: 916-265-2597
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Frequency		
0.5 GHz	INTERCEPT (mV)	2315
	SLOPE (mV/dB)	48.9
1 GHz	INTERCEPT (mV)	2315
	SLOPE (mV/dB)	48.3
2 GHz	INTERCEPT (mV)	2320
	SLOPE (mV/dB)	48.1

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

RF Input Power (dBm)	-40	-35	-30	-25	-20	-15	-10	-5	0
	359	586	854	1108	1347	1580	1842	2065	2302
	-2	-19	4	14	9	-2	15	-6	-13
	-0.04	-0.39	0.09	0.29	0.18	-0.05	0.31	-0.12	-0.27
	0.18	-0.28	0.08	0.16	-0.06	-0.40	-0.16	-0.70	-0.96
	374	604	870	1127	1360	1591	1846	2062	2302
	-8	-19	5	20	12	1	14	-12	-13
	-0.16	-0.40	0.10	0.42	0.24	0.02	0.29	-0.24	-0.27
	0.48	0.08	0.40	0.54	0.20	-0.18	-0.08	-0.76	-0.96
	384	615	879	1137	1372	1600	1857	2066	2302
	-10	-20	4	21	15	2	19	-13	-18
	-0.21	-0.41	0.07	0.43	0.31	0.05	0.39	-0.27	-0.37
	0.68	0.30	0.58	0.74	0.44	0.00	0.14	-0.68	-0.96
	0.30	0.30	0.30	0.30	0.30	0.20	0.20	0.00	0.00
	0.38	0.62	0.88	1.14	1.37	1.60	1.86	2.07	2.30
	0.36	0.59	0.85	1.11	1.35	1.58	1.84	2.06	2.30

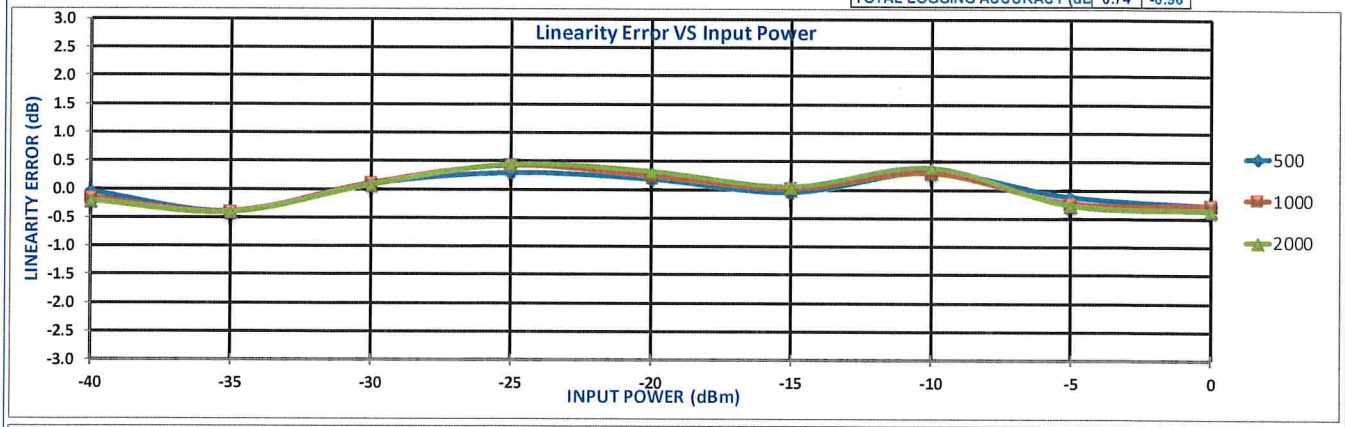
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.31	-0.39
LOGGING ACCURACY (dB)	0.18	-0.96

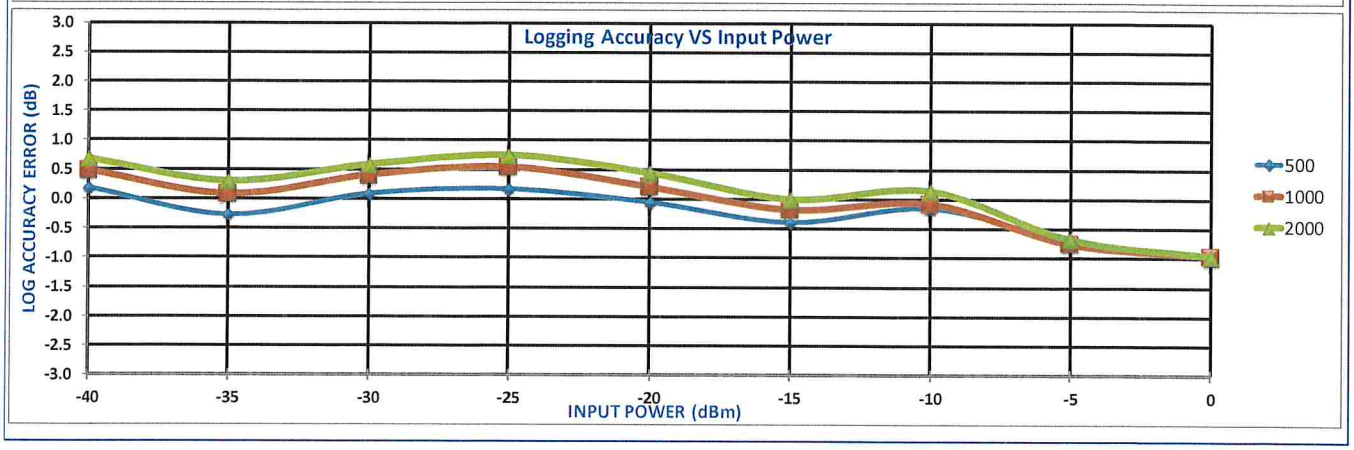
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.42	-0.40
LOGGING ACCURACY (dB)	0.54	-0.96

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.43	-0.41
LOGGING ACCURACY (dB)	0.74	-0.96

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.43	-0.41

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB	0.74	-0.96





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SUMMARY TEST DATA ON HADA-D2001

PL30790/2051

LOG TRANSFER WITH FREQUENCY
MODEL: HADA-D2001
TESTED BY: Simon K.
TEST DATE: 12/09/20
SERIAL NO: PL30790
TEST TEMP: +85C

Graph #3

DC Offset= 0.090 V

PLANAR MONOLITHICS INDUSTRIES
4921 Robert J. Mathews Parkway Suit 1
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Frequency		
0.5 GHz	INTERCEPT (mV)	2464
	SLOPE (mV/dB)	51.6
1 GHz	INTERCEPT (mV)	2459
	SLOPE (mV/dB)	51
2 GHz	INTERCEPT (mV)	2463
	SLOPE (mV/dB)	50.7

RF Input Power (dBm)	-40	-35	-30	-25	-20	-15	-10	-5	0
	393	651	924	1182	1445	1684	1938	2227	2446
	-8	-8	7	8	13	-6	-10	21	-18
	-0.15	-0.15	0.14	0.15	0.25	-0.12	-0.19	0.41	-0.34
	-0.94	-0.78	-0.32	-0.16	0.10	-0.12	-0.04	0.74	0.12
	408	664	940	1198	1454	1692	1938	2221	2442
	-12	-11	10	13	14	-3	-12	16	-17
	-0.23	-0.21	0.20	0.26	0.28	-0.05	-0.23	0.32	-0.34
	-0.64	-0.52	0.00	0.16	0.28	0.04	-0.04	0.62	0.04
	420	675	949	1208	1465	1700	1947	2223	2443
	-13	-12	9	14	17	-2	-8	14	-20
	-0.25	-0.23	0.17	0.28	0.34	-0.03	-0.16	0.28	-0.39
	-0.40	-0.30	0.18	0.36	0.50	0.20	0.14	0.66	0.06
Flatness +/- dB	0.30	0.20	0.20	0.30	0.20	0.20	0.10	0.10	0.00
Max Video Output Volts	0.42	0.68	0.95	1.21	1.47	1.70	1.95	2.23	2.45
Min Video Output Volts	0.39	0.65	0.92	1.18	1.45	1.68	1.94	2.22	2.44

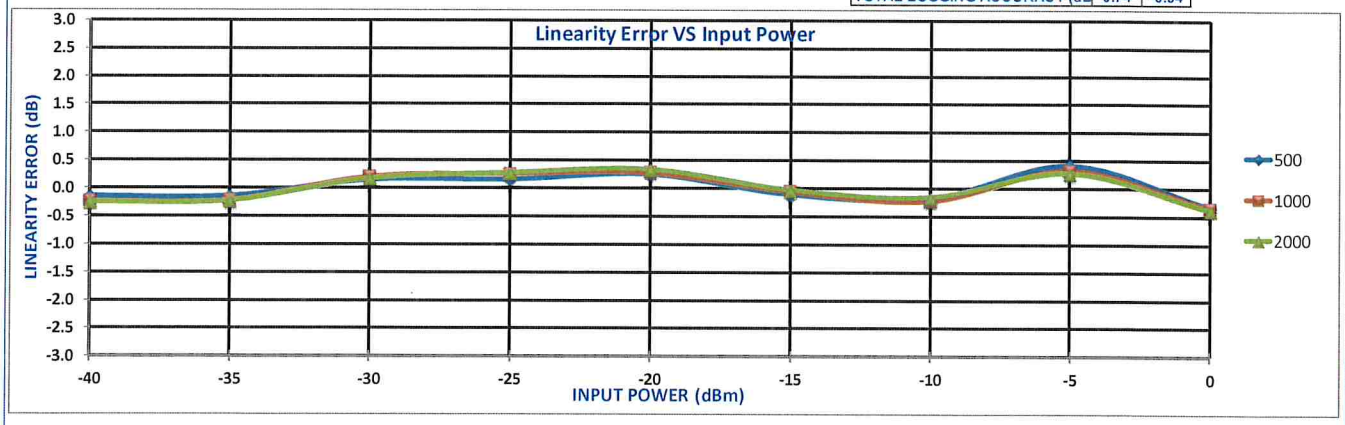
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.41	-0.34
LOGGING ACCURACY (dB)	0.74	-0.94

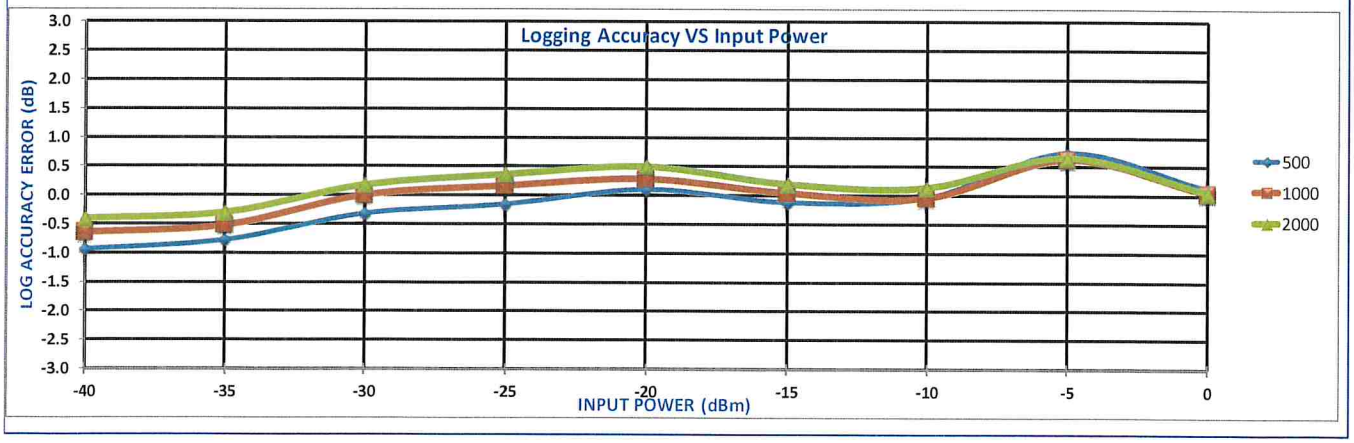
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.32	-0.34
LOGGING ACCURACY (dB)	0.62	-0.64

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.34	-0.39
LOGGING ACCURACY (dB)	0.66	-0.40

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.41	-0.39

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB	0.74	-0.94





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SUMMARY TEST DATA
ON
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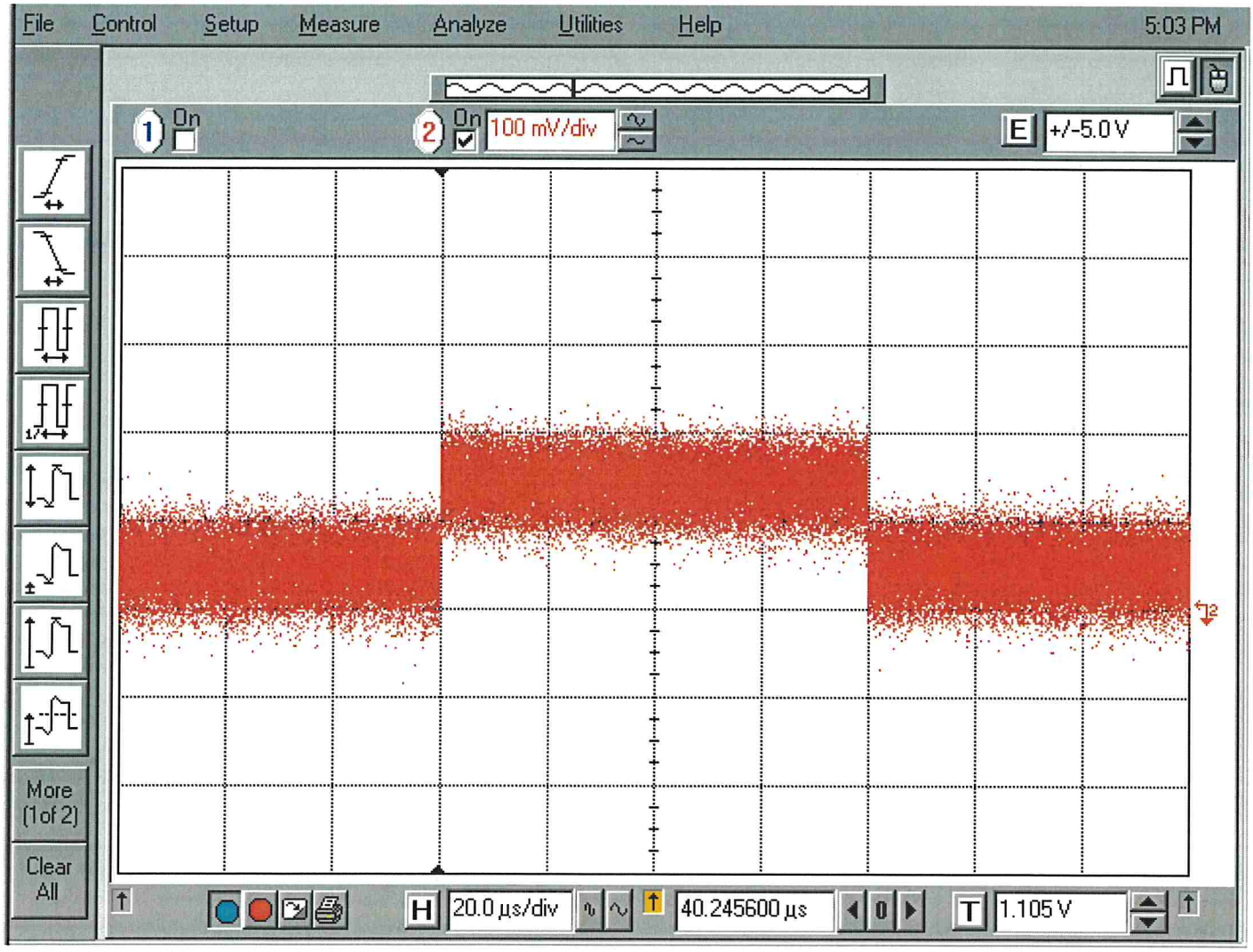
PL30790/2051

TSS @ -46 dBm



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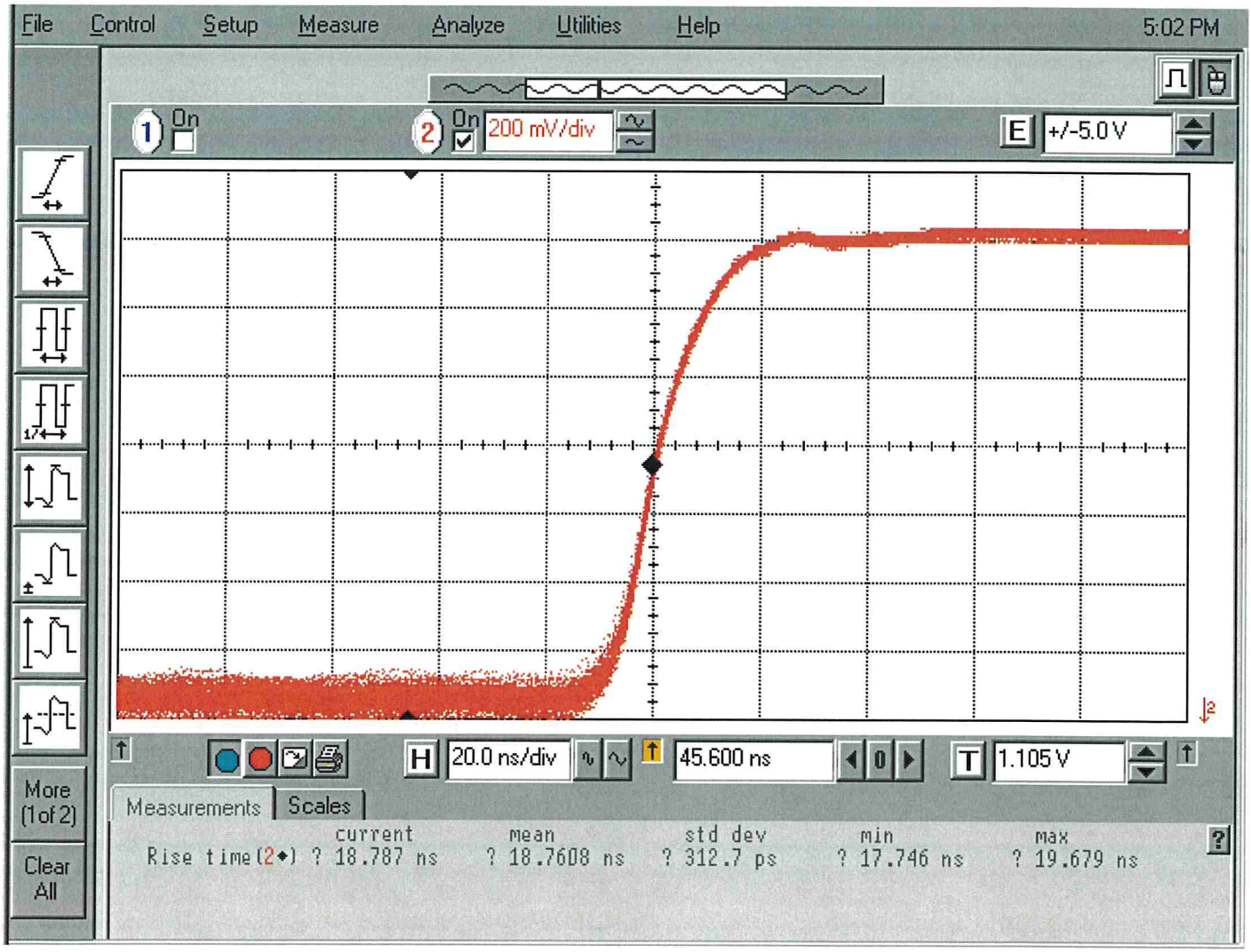
Rise Time @ 19 ns



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SUMMARY TEST DATA
ON
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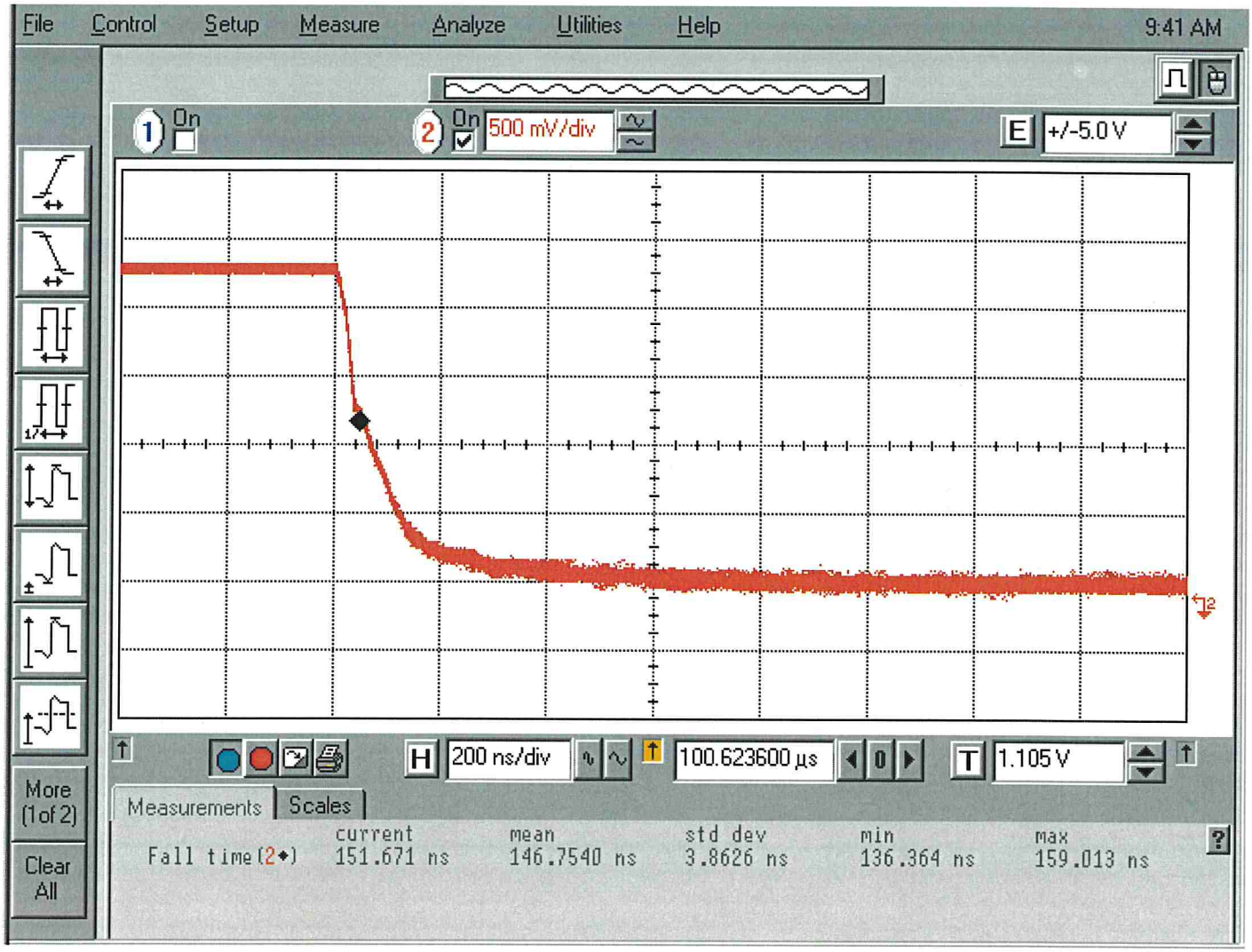
Fall Time @ 152 ns



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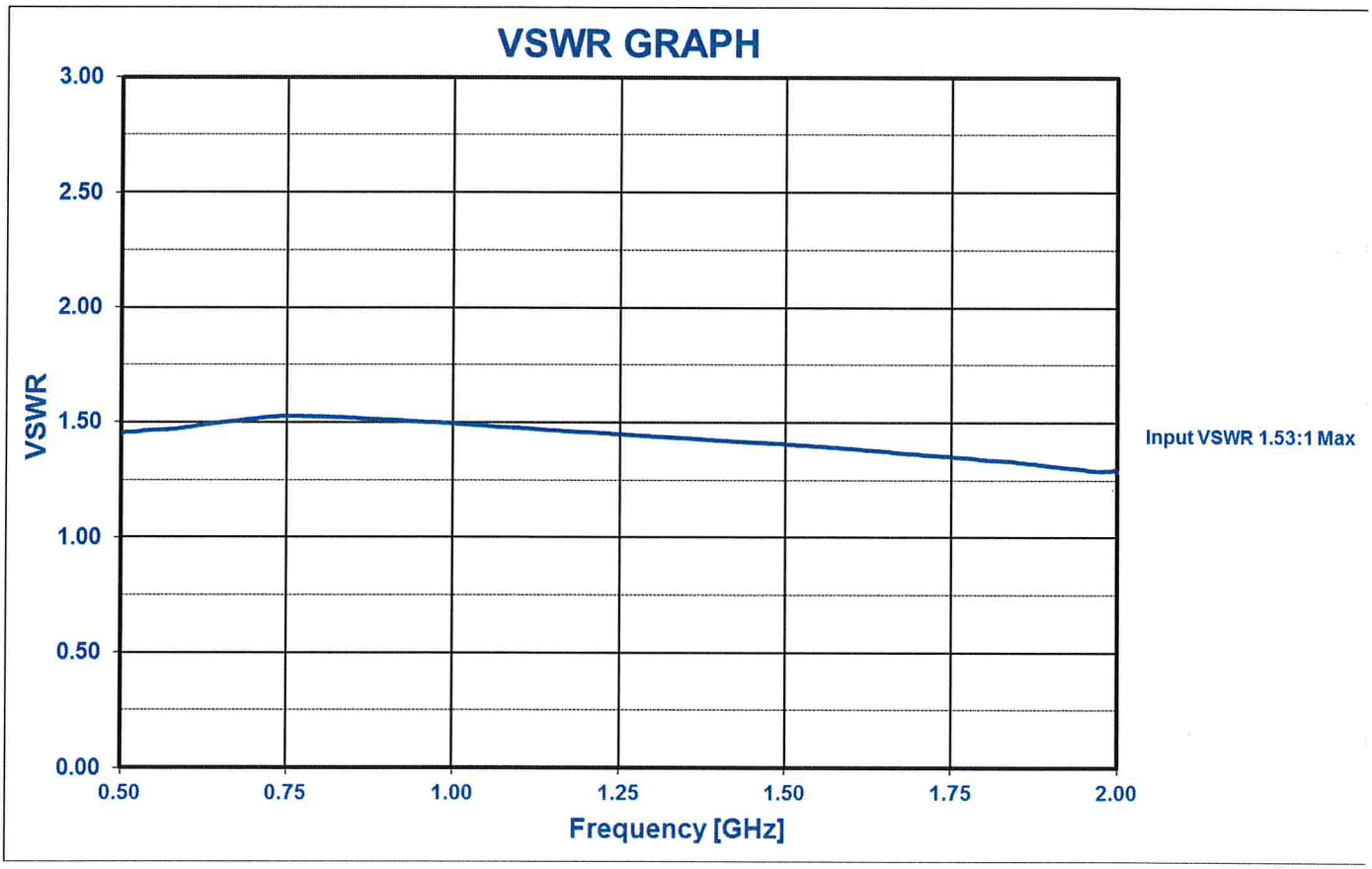
VSWR @ 1.53:1



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