SUMMARY TEST DATA ON HADA-D2001

PL30789/2051

Customer:		**Tested By:**	Simon K.
SO No:		**Temperature:**	+25°C
Model No:	HADA-D2001	**Date:**	12/17/2020
Serial No:	PL30789/2051	**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°	**-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)	**+0.32 / -0.24 dB (Room Temp)** **+1.16 / -1.02 dB (Over Temp) See Plot**	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	**+0.20 / -0.33 dB (Room Temp)** **+0.41 / -0.58 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%)	**124 ns** **See Plot**	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55 / -100 mV (@ -40°C to +85°C)	**30 mV** **112 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 Zimerman **Date:** 12-21-2020

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SUMMARY TEST DATA ON HADA-D2001

PL30789/2051

LOG TRANSFER WITH FREQUENCY
MODEL: HADA-D2001
TESTED BY: Simon K.
TEST DATE: 12/09/20
SERIAL NO: PL30789
TEST TEMP: +25C

Graph #1

DC Offset= 0.097 V

PLANAR MONOLITHICS INDUSTRIES
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Frequency		
0.5 GHz	INTERCEPT (mV)	2380
	SLOPE (mV/dB)	50.1
1 GHz	INTERCEPT (mV)	2386
	SLOPE (mV/dB)	49.6
2 GHz	INTERCEPT (mV)	2394
	SLOPE (mV/dB)	49.5

RF Input Power (dBm)	-40	-35	-30	-25	-20	-15	-10	-5	0
	383	620	884	1131	1384	1619	1863	2140	2386
	5	-8	6	2	5	-10	-16	10	6
	0.11	-0.16	0.11	0.05	0.10	-0.20	-0.33	0.20	0.12
	-0.14	-0.40	-0.12	-0.18	-0.12	-0.42	-0.54	0.00	-0.08
	402	638	906	1153	1400	1634	1878	2147	2385
	1	-11	8	7	6	-8	-12	9	-1
	0.01	-0.23	0.17	0.15	0.13	-0.16	-0.24	0.18	-0.02
	0.24	-0.04	0.32	0.26	0.20	-0.12	-0.24	0.14	-0.10
	413	648	916	1163	1412	1645	1891	2155	2390
	0	-13	8	7	8	-6	-8	8	-4
	0.00	-0.25	0.16	0.14	0.17	-0.13	-0.16	0.17	-0.09
	0.46	0.16	0.52	0.46	0.44	0.10	0.02	0.30	0.00
Flatness +/- dB	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.20	0.10
Max Video Output Volts	0.41	0.65	0.92	1.16	1.41	1.65	1.89	2.16	2.39
Min Video Output Volts	0.38	0.62	0.88	1.13	1.38	1.62	1.86	2.14	2.39

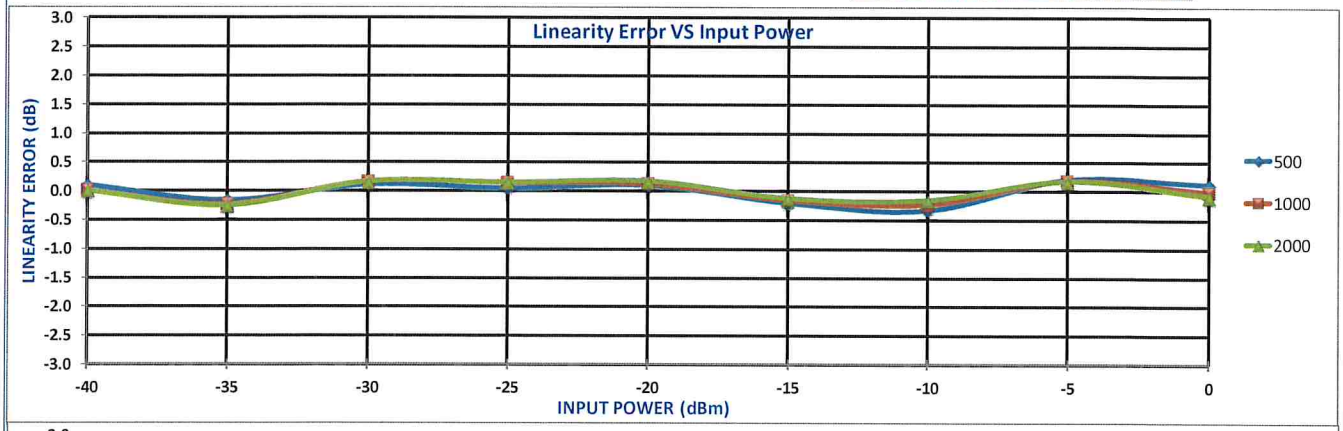
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.20	-0.33
LOGGING ACCURACY (dB)	0.00	-0.54

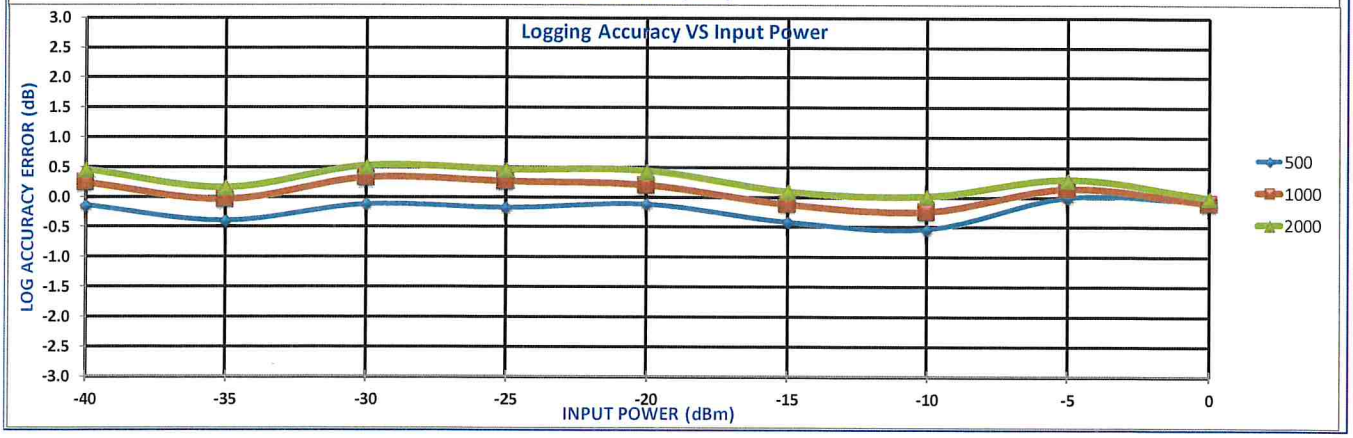
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.18	-0.24
LOGGING ACCURACY (dB)	0.32	-0.24

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.17	-0.25
LOGGING ACCURACY (dB)	0.52	0.00

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.20	-0.33

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB	0.52	-0.54





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SUMMARY TEST DATA ON HADA-D2001

PL30789/2051

LOG TRANSFER WITH FREQUENCY
MODEL: HADA-D2001
TESTED BY: Simon K.
TEST DATE: 12/09/20
SERIAL NO: PL30789
TEST TEMP: -40C

Graph #2

DC Offset= 0.030 V

PLANAR MONOLITHICS INDUSTRIES
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Frequency		
0.5 GHz	INTERCEPT (mV)	2281
	SLOPE (mV/dB)	48.4
1 GHz	INTERCEPT (mV)	2289
	SLOPE (mV/dB)	48
2 GHz	INTERCEPT (mV)	2304
	SLOPE (mV/dB)	48

RF Input Power (dBm)	-40	-35	-30	-25	-20	-15	-10	-5	0
	342	571	837	1077	1318	1549	1800	2046	2269
	-1	-15	9	7	6	-5	4	7	-12
	-0.03	-0.30	0.19	0.15	0.12	-0.11	0.07	0.15	-0.24
	0.44	0.02	0.34	0.14	-0.04	-0.42	-0.40	-0.48	-1.02
	364	594	860	1103	1336	1567	1819	2055	2271
	-6	-16	10	13	6	-3	9	5	-18
	-0.13	-0.34	0.21	0.27	0.13	-0.06	0.19	0.11	-0.38
	0.88	0.48	0.80	0.66	0.32	-0.06	-0.02	-0.30	-0.98
	378	608	873	1118	1353	1583	1838	2065	2284
	-7	-17	8	13	9	-1	14	1	-20
	-0.15	-0.35	0.17	0.28	0.18	-0.03	0.29	0.02	-0.41
	1.16	0.76	1.06	0.96	0.66	0.26	0.36	-0.10	-0.72
Flatness +/- dB	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.20	0.20
Max Video Output Volts	0.38	0.61	0.87	1.12	1.35	1.58	1.84	2.07	2.28
Min Video Output Volts	0.34	0.57	0.84	1.08	1.32	1.55	1.80	2.05	2.27

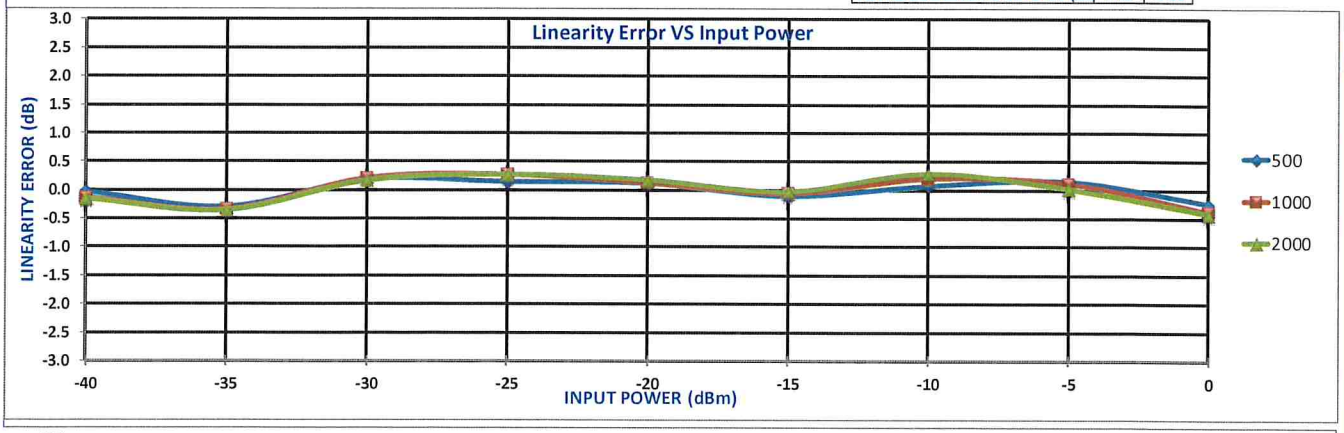
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.19	-0.30
LOGGING ACCURACY (dB)	0.44	-1.02

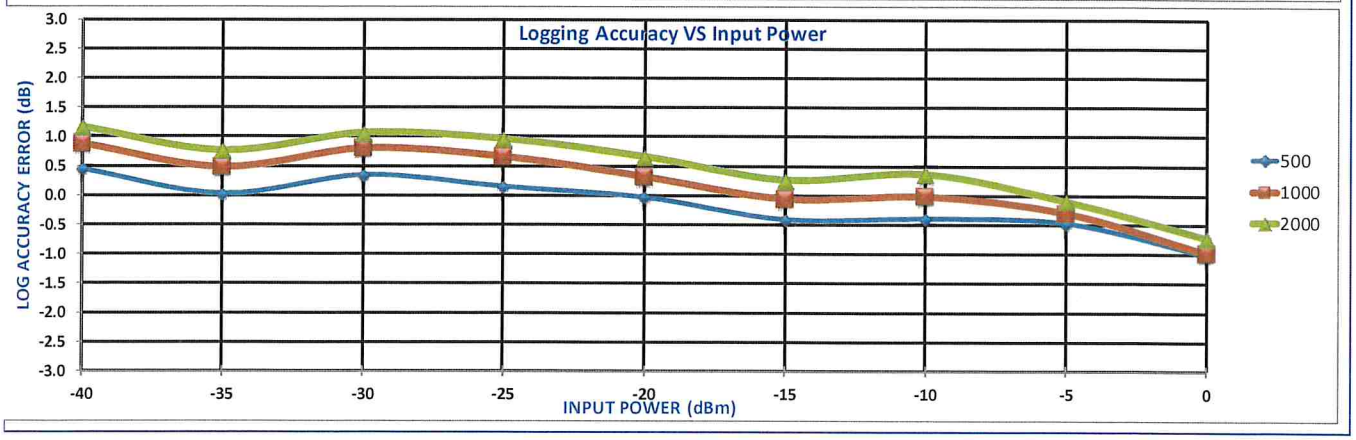
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.27	-0.38
LOGGING ACCURACY (dB)	0.88	-0.98

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.29	-0.41
LOGGING ACCURACY (dB)	1.16	-0.72

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.29	-0.41

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB	1.16	-1.02





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SUMMARY TEST DATA ON HADA-D2001

PL30789/2051

LOG TRANSFER WITH FREQUENCY
MODEL: HADA-D2001
TESTED BY: Simon K.
TEST DATE: 12/09/20
SERIAL NO: PL30789
TEST TEMP: +85C

Graph #3

DC Offset= 0.112 V

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Frequency		
0.5 GHz	INTERCEPT (mV)	2393
	SLOPE (mV/dB)	51.1
1 GHz	INTERCEPT (mV)	2403
	SLOPE (mV/dB)	50.6
2 GHz	INTERCEPT (mV)	2414
	SLOPE (mV/dB)	50.6

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

RF Input Power (dBm)	-40	-35	-30	-25	-20	-15	-10	-5	0
	363	605	862	1112	1377	1613	1853	2148	2414
	12	-1	1	-5	5	-14	-29	10	21
	0.24	-0.02	0.01	-0.09	0.10	-0.28	-0.58	0.20	0.41
	-0.54	-0.70	-0.56	-0.56	-0.26	-0.54	-0.74	0.16	0.48
	384	626	888	1137	1396	1631	1871	2160	2416
	7	-4	4	0	6	-12	-25	11	13
	0.13	-0.09	0.09	0.01	0.12	-0.24	-0.50	0.21	0.27
	-0.12	-0.28	-0.04	-0.06	0.12	-0.18	-0.38	0.40	0.52
	397	638	902	1151	1412	1646	1887	2172	2422
	5	-7	5	1	9	-10	-22	11	8
	0.10	-0.13	0.09	0.02	0.18	-0.19	-0.43	0.21	0.16
	0.14	-0.04	0.24	0.22	0.44	0.12	-0.06	0.64	0.64
	0.30	0.30	0.40	0.40	0.30	0.30	0.30	0.20	0.10
	0.40	0.64	0.90	1.15	1.41	1.65	1.89	2.17	2.42
	0.36	0.61	0.86	1.11	1.38	1.61	1.85	2.15	2.41

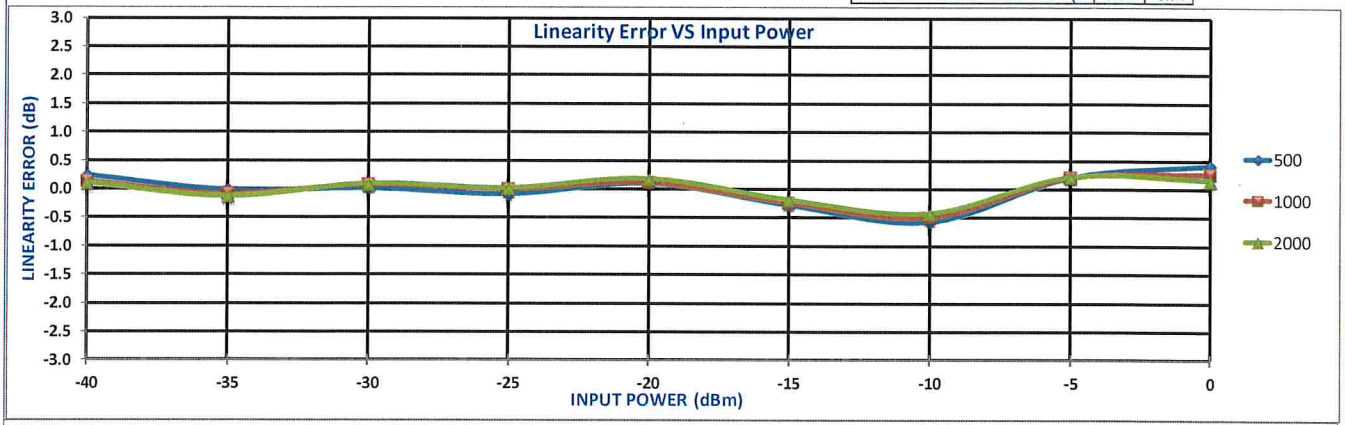
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.41	-0.58
LOGGING ACCURACY (dB)	0.48	-0.74

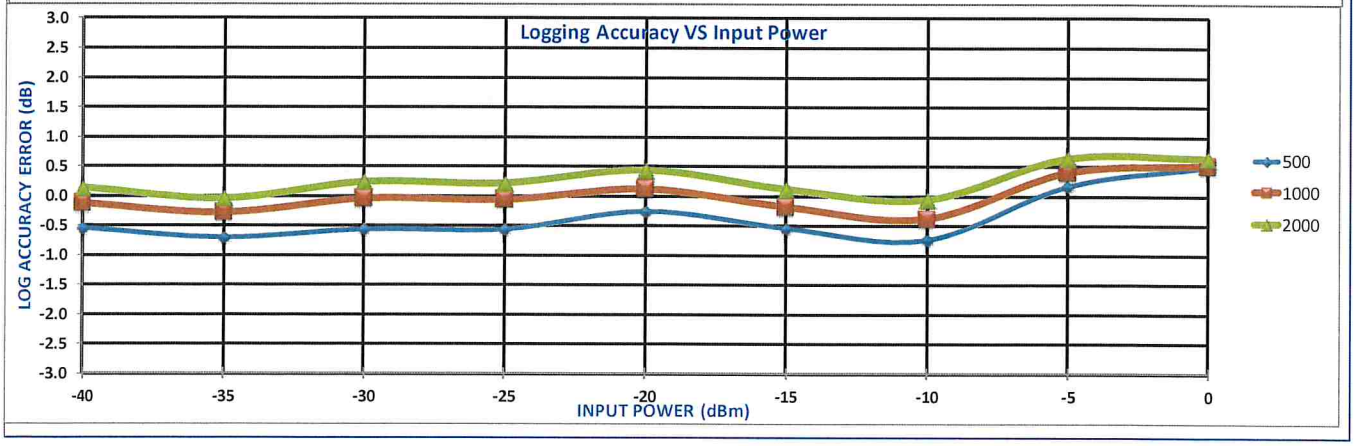
Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.27	-0.50
LOGGING ACCURACY (dB)	0.52	-0.38

Measured Value (mV)	Error(dB)	
Error (mV)	MAX	MIN
LINEARITY ERROR (dB)	0.21	-0.43
LOGGING ACCURACY (dB)	0.64	-0.06

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOG LINEARITY (dB)	0.41	-0.58

Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
TOTAL LOGGING ACCURACY (dB	0.64	-0.74





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SUMMARY TEST DATA
ON
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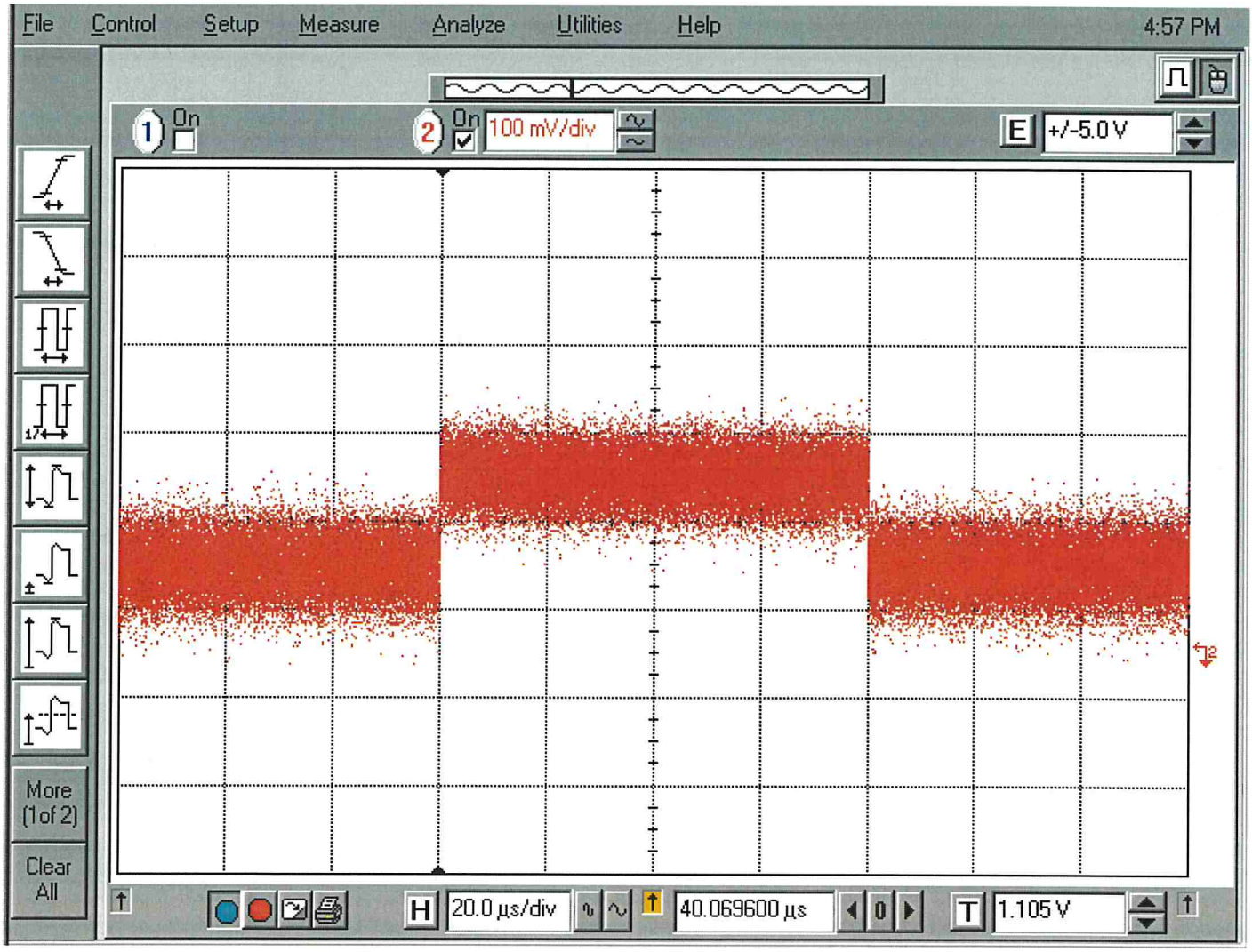
PL30789/2051

TSS @ -45 dBm



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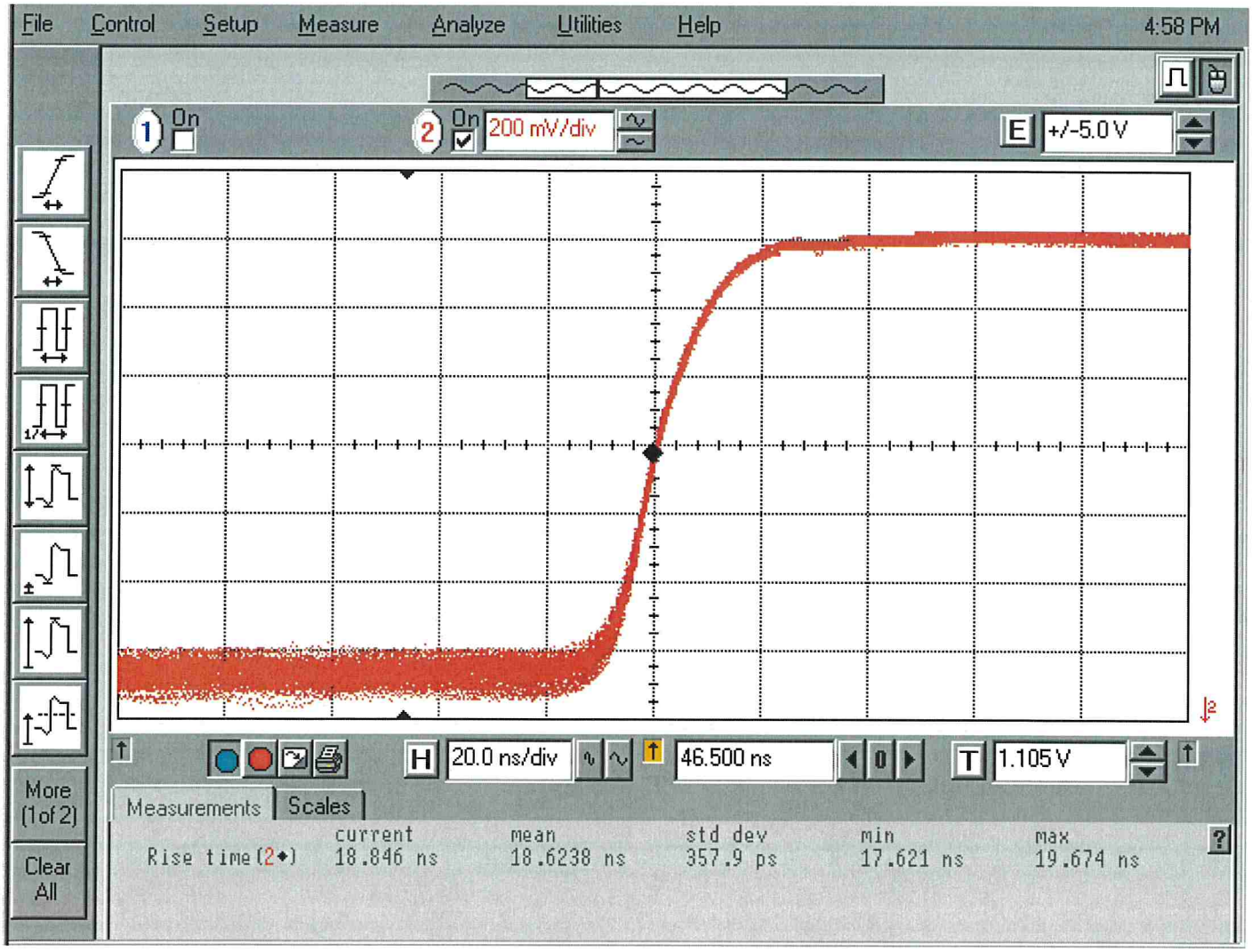
Rise Time @ 19 ns



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Fall Time @ 124 ns

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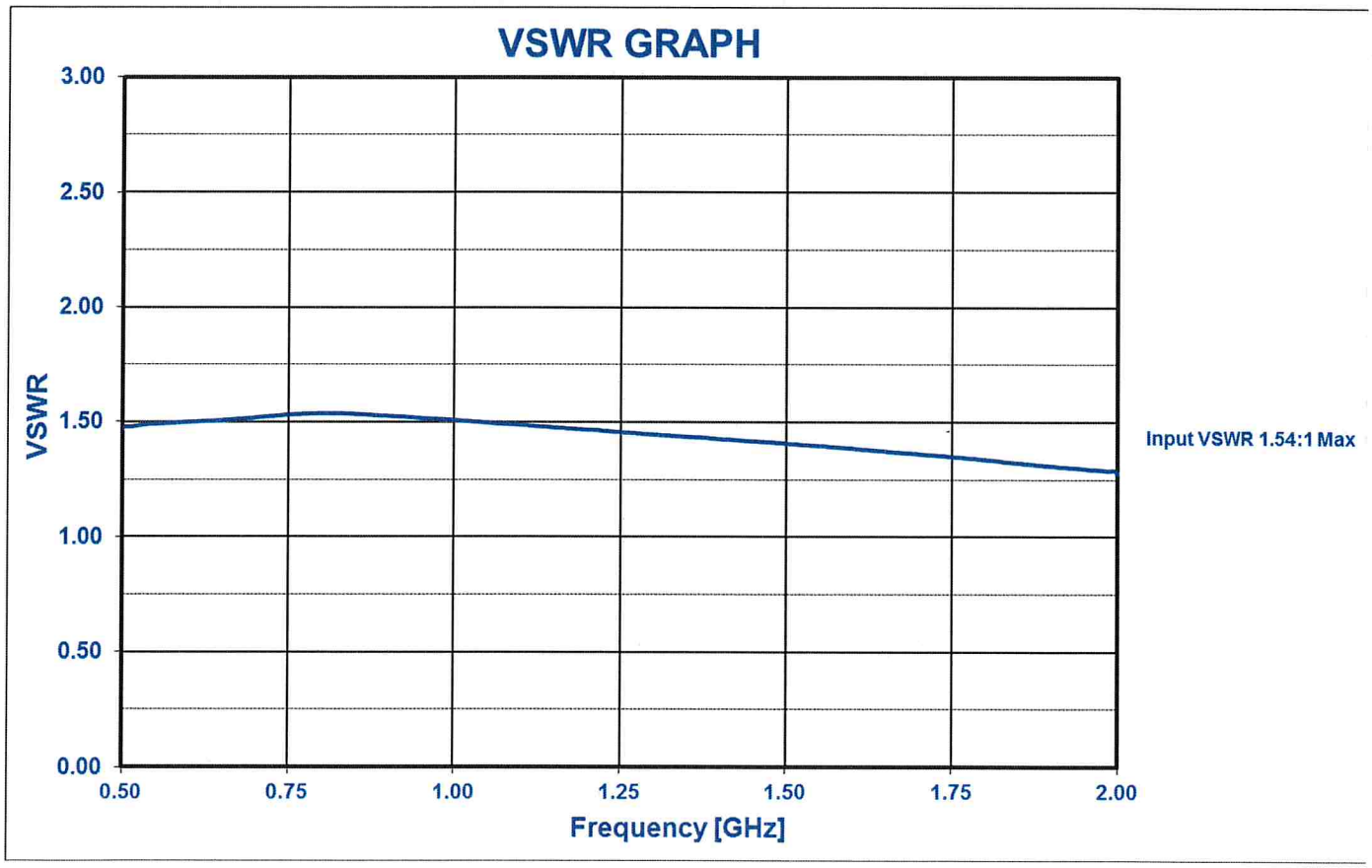
VSWR @ 1.54:1



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