



**SUMMARY TEST DATA
ON
HADA-D2002**

12	Input VSWR:	3.0:1 Max @ +23 dBm	1.74:1 See Plot	PMI QA3
13	Propagation Delay:	60 ns Max	45 ns	
14	Power Supply:	+12 ± 1VDC @ 125 mA Max -12 ± 1VDC @ 75 mA Max	+12 ± 1VDC @ 90mA -12 ± 1VDC @ 50mA	
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-62 (or equivalent), 5 meter, 93±0.5 Ohms terminated.

QA/QC Approval:

K. Luter

Date:

7-25-24



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
 MODEL: HADA-D2002
 SERIAL NO: PL46537
 TESTED BY: D. Weinrob
 DATE: 7/3/2024



PLANAR MONOLITHICS INDUSTRIES
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GRAPH #1

Output Voltage Offset= 0.094 Volts

Frequency		-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
2 GHz	INTERCEPT (m)	377	631	888	1138	1413	1666	1889	2148	2395	Measured Value (mV)		Error(dB)
	SLOPE (mV/dB)	-7	-5	-1	-3	19	20	-10	-4	-9	Error (mV)		MAX MIN
		-0.13	-0.10	-0.02	-0.07	0.38	0.39	-0.20	-0.07	-0.18	LINEARITY ERROR (dB)		0.39 -0.20
		0.54	0.62	0.76	0.76	1.26	1.32	0.78	0.96	0.90	LOGGING ACCURACY (dB)		1.32 0.54
6 GHz	INTERCEPT (m)	368	624	879	1128	1397	1649	1870	2121	2372	Measured Value (mV)		Error(dB)
	SLOPE (mV/dB)	-10	-4	1	0	18	20	-9	-8	-7	Error (mV)		MAX MIN
		-0.20	-0.08	0.01	-0.01	0.37	0.40	-0.18	-0.16	-0.15	LINEARITY ERROR (dB)		0.40 -0.20
		0.36	0.48	0.58	0.56	0.94	0.98	0.40	0.42	0.44	LOGGING ACCURACY (dB)		0.98 0.36
10 GHz	INTERCEPT (m)	311	566	809	1063	1324	1582	1821	2076	2342	Measured Value (mV)		Error(dB)
	SLOPE (mV/dB)	3	4	-6	-5	2	7	-7	-5	7	Error (mV)		MAX MIN
		0.05	0.08	-0.12	-0.10	0.05	0.14	-0.14	-0.11	0.14	LINEARITY ERROR (dB)		0.14 -0.14
		-0.78	-0.68	-0.82	-0.74	-0.52	-0.36	-0.58	-0.48	-0.16	LOGGING ACCURACY (dB)		-0.16 -0.82
14 GHz	INTERCEPT (m)	331	587	836	1087	1346	1602	1832	2087	2347	Measured Value (mV)		Error(dB)
	SLOPE (mV/dB)	-4	1	-1	-1	7	11	-10	-6	3	Error (mV)		MAX MIN
		-0.07	0.02	-0.02	-0.03	0.13	0.23	-0.20	-0.12	0.06	LINEARITY ERROR (dB)		0.23 -0.20
		-0.38	-0.26	-0.28	-0.26	-0.08	0.04	-0.36	-0.26	-0.06	LOGGING ACCURACY (dB)		0.04 -0.38
18 GHz	INTERCEPT (m)	336	592	840	1090	1340	1596	1831	2081	2318	Measured Value (mV)		Error(dB)
	SLOPE (mV/dB)	-8	0	0	2	4	12	-1	1	-10	Error (mV)		MAX MIN
		-0.16	0.00	0.00	0.04	0.08	0.24	-0.02	0.02	-0.21	LINEARITY ERROR (dB)		0.24 -0.21
		-0.28	-0.16	-0.20	-0.20	-0.20	-0.08	-0.38	-0.38	-0.64	LOGGING ACCURACY (dB)		-0.08 -0.64
	Flatness +/- dB	0.657	0.647	0.787	0.747	0.886	0.836	0.677	0.717	0.767			
	Max Video Output V	0.377	0.631	0.888	1.138	1.413	1.666	1.889	2.148	2.395			
	Min Video Output V	0.311	0.566	0.809	1.063	1.324	1.582	1.821	2.076	2.318			

Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.40 -0.21

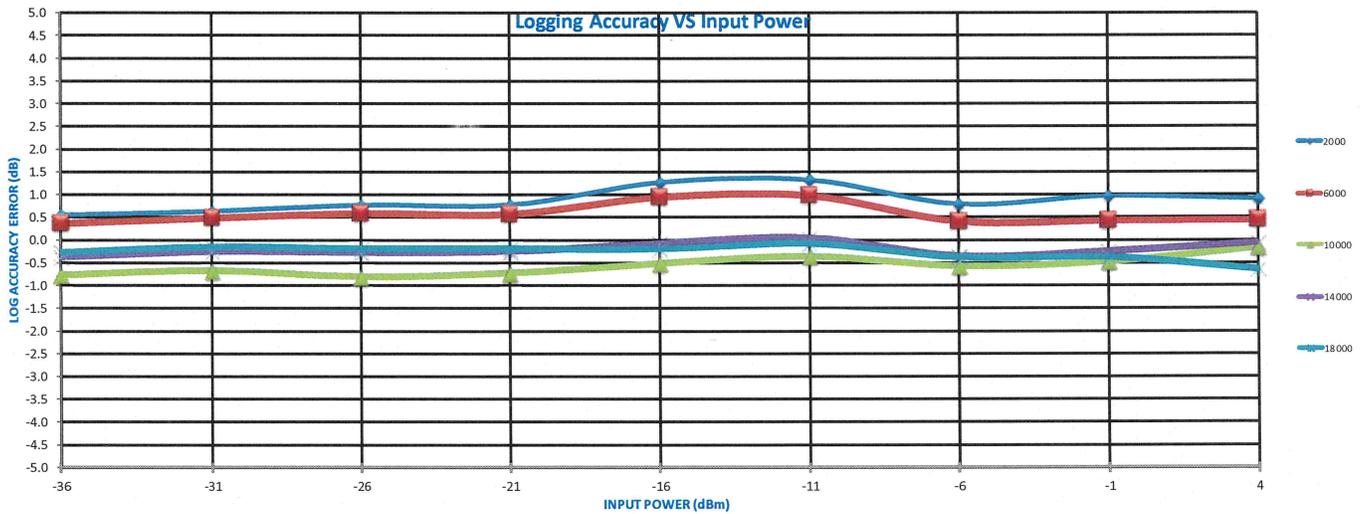
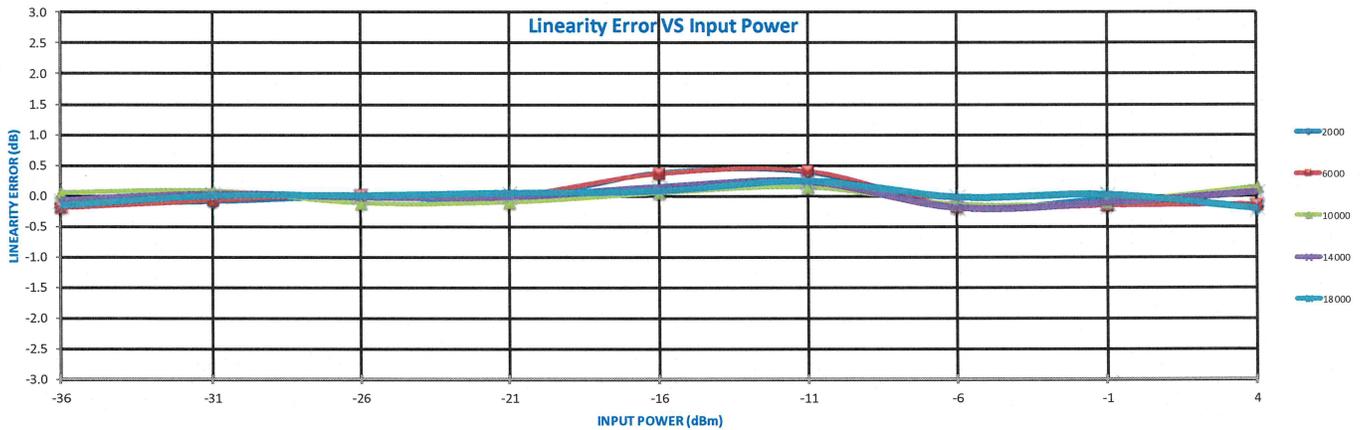
Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	1.32 -0.82

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SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
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GRAPH #2

Output Voltage Offset= 0.132 Volts

Frequency

2 GHz	INTERCEPT (m)	2257
	SLOPE (mV/dB)	50.1

6 GHz	INTERCEPT (m)	2230
	SLOPE (mV/dB)	49.6

10 GHz	INTERCEPT (m)	2185
	SLOPE (mV/dB)	50.3

14 GHz	INTERCEPT (m)	2201
	SLOPE (mV/dB)	50

18 GHz	INTERCEPT (m)	2188
	SLOPE (mV/dB)	49.5

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

	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
	448	688	950	1206	1480	1733	1956	2206	2431	Measured Value (mV)	Error(dB)	
	-6	-16	-4	1	25	27	0	-1	-26	Error (mV)	MAX	MIN
	-0.11	-0.32	-0.09	0.02	0.49	0.54	0.00	-0.01	-0.52	LINEARITY ERROR (dB)	0.54	-0.52
	1.96	1.76	2.00	2.12	2.60	2.66	2.12	2.12	1.62	LOGGING ACCURACY (dB)	2.66	1.62
	436	678	939	1192	1461	1714	1932	2179	2402	Measured Value (mV)	Error(dB)	
	-9	-15	-2	3	24	29	-1	-2	-27	Error (mV)	MAX	MIN
	-0.19	-0.31	-0.04	0.06	0.48	0.59	-0.02	-0.04	-0.54	LINEARITY ERROR (dB)	0.59	-0.54
	1.72	1.56	1.78	1.84	2.22	2.28	1.64	1.58	1.04	LOGGING ACCURACY (dB)	2.28	1.04
	374	621	872	1123	1389	1649	1881	2137	2373	Measured Value (mV)	Error(dB)	
	0	-4	-5	-5	9	18	-2	3	-13	Error (mV)	MAX	MIN
	0.00	-0.09	-0.10	-0.11	0.18	0.35	-0.04	0.05	-0.25	LINEARITY ERROR (dB)	0.35	-0.25
	0.48	0.42	0.44	0.46	0.78	0.98	0.62	0.74	0.46	LOGGING ACCURACY (dB)	0.98	0.42
	399	644	901	1151	1415	1673	1897	2153	2385	Measured Value (mV)	Error(dB)	
	-4	-9	-1	-1	13	21	-4	2	-16	Error (mV)	MAX	MIN
	-0.08	-0.18	-0.03	-0.03	0.26	0.43	-0.09	0.04	-0.32	LINEARITY ERROR (dB)	0.43	-0.32
	0.98	0.88	1.02	1.02	1.30	1.46	0.94	1.06	0.70	LOGGING ACCURACY (dB)	1.46	0.70
	398	645	901	1151	1404	1663	1891	2145	2364	Measured Value (mV)	Error(dB)	
	-7	-8	0	3	8	20	0	6	-22	Error (mV)	MAX	MIN
	-0.15	-0.16	0.01	0.06	0.17	0.40	0.00	0.13	-0.45	LINEARITY ERROR (dB)	0.40	-0.45
	0.96	0.90	1.02	1.02	1.08	1.26	0.82	0.90	0.28	LOGGING ACCURACY (dB)	1.26	0.28
	0.742	0.672	0.782	0.832	0.912	0.842	0.752	0.692	0.672			
	0.448	0.688	0.950	1.206	1.480	1.733	1.956	2.206	2.431			
	0.374	0.621	0.872	1.123	1.389	1.649	1.881	2.137	2.364			

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.59	-0.54

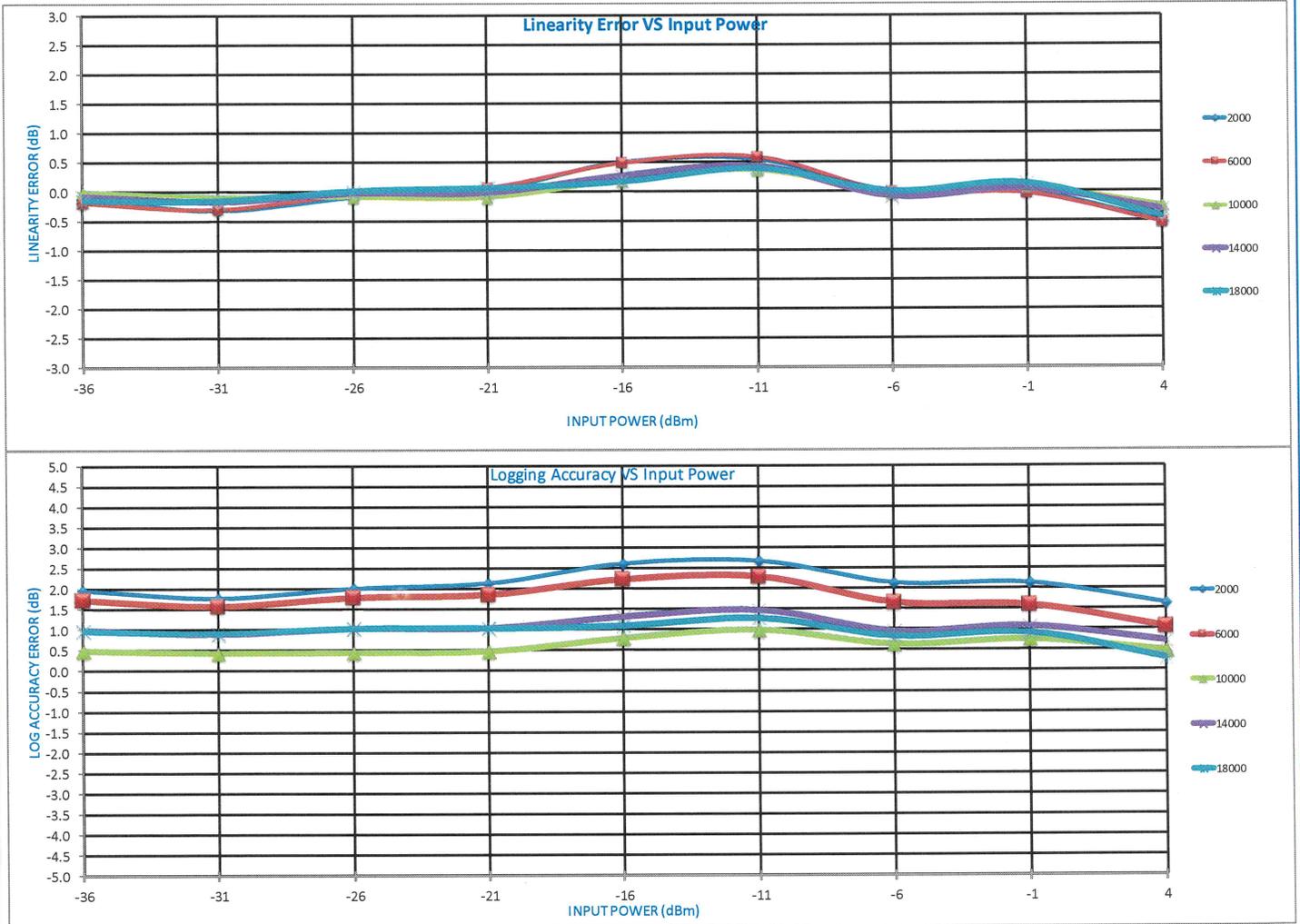
Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	2.66	0.28

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**SUMMARY TEST DATA
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LOG TRANSFER WITH FREQUENCY @ +85C
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GRAPH #3

Output Voltage Offset= 0.086 Volts

Frequency	Intercept (m)	Slope (mV/dB)	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)	Measured Value (mV)	Error(dB)	
2 GHz	2181	50.9	335	607	858	1108	1383	1634	1865	2121	2385				
6 GHz	2165	50.6	331	604	854	1103	1371	1622	1851	2100	2372				
10 GHz	2115	51.2	272	535	780	1039	1292	1552	1801	2051	2339				
14 GHz	2112	50.6	284	549	796	1052	1305	1562	1802	2047	2325				
18 GHz	2086	49.8	282	548	792	1049	1290	1548	1794	2032	2276				
Flatness +/- dB			0.622	0.711	0.770	0.682	0.919	0.849	0.701	0.879	1.077				
Max Video Output V			0.335	0.607	0.858	1.108	1.383	1.634	1.865	2.121	2.385				
Min Video Output V			0.272	0.535	0.780	1.039	1.290	1.548	1.794	2.032	2.276				

Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.36 -0.29

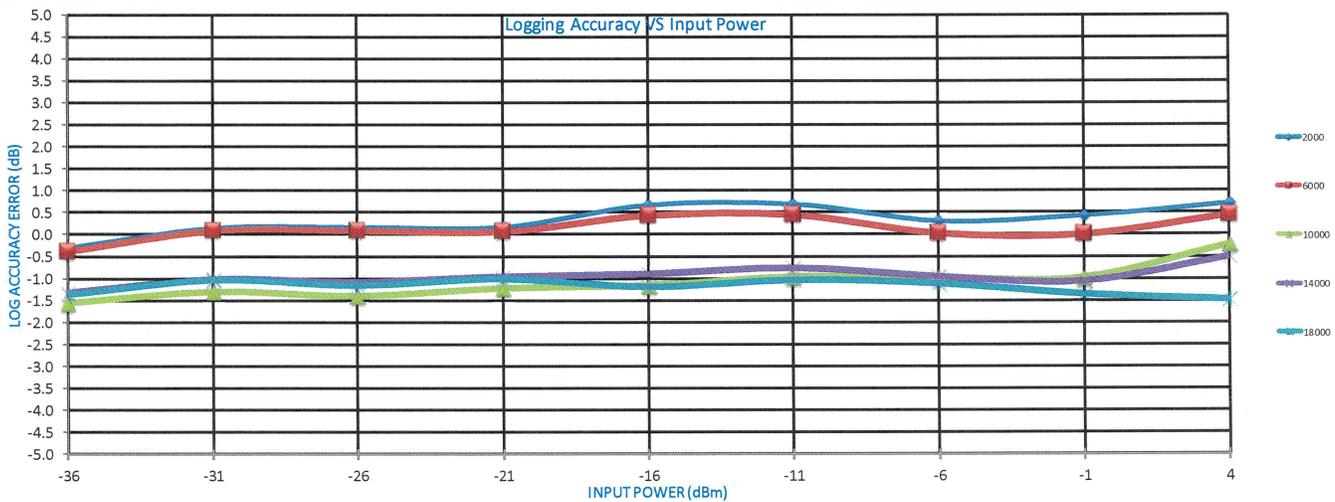
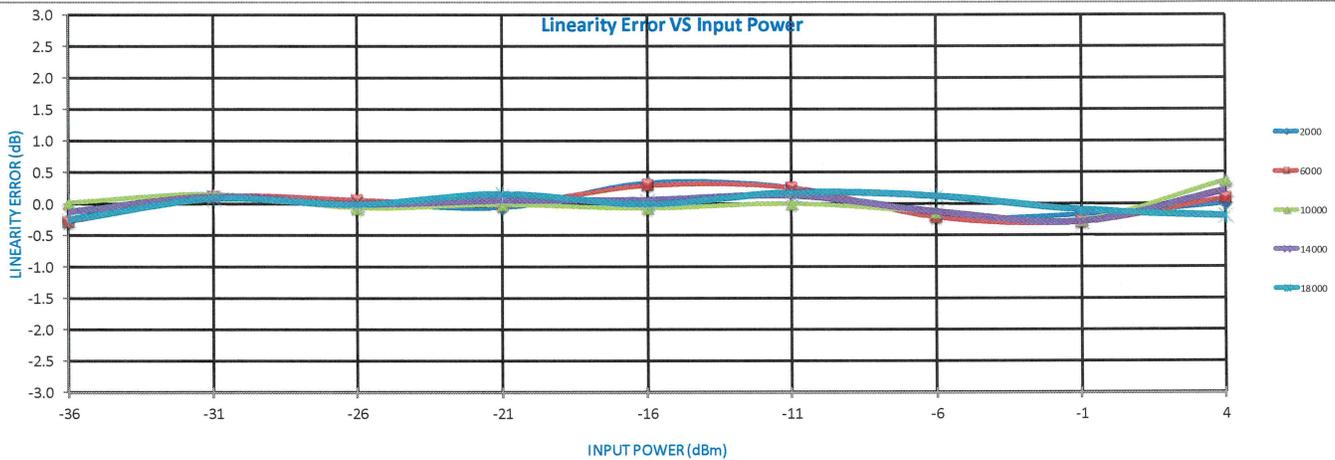
Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	0.70 -1.56

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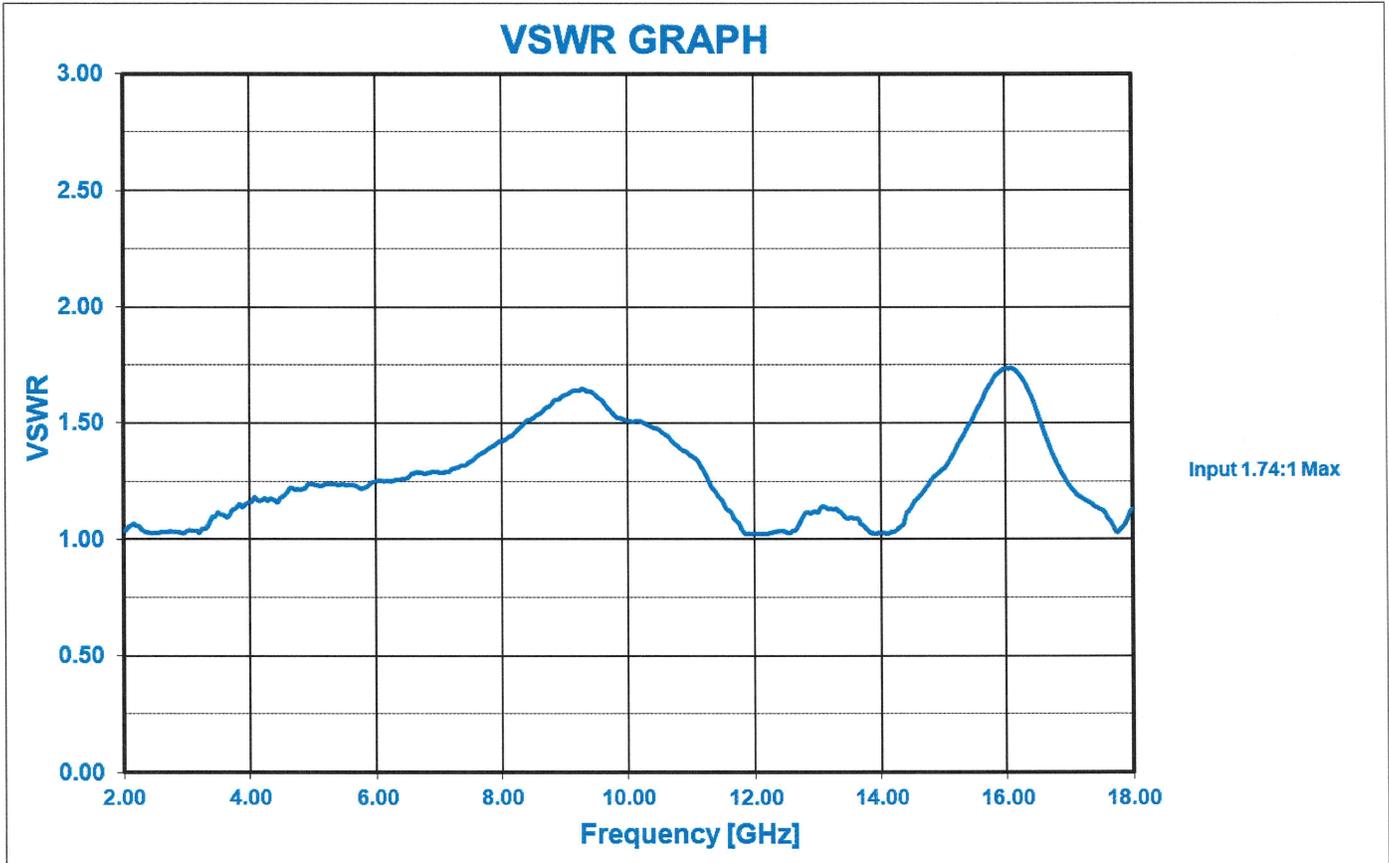
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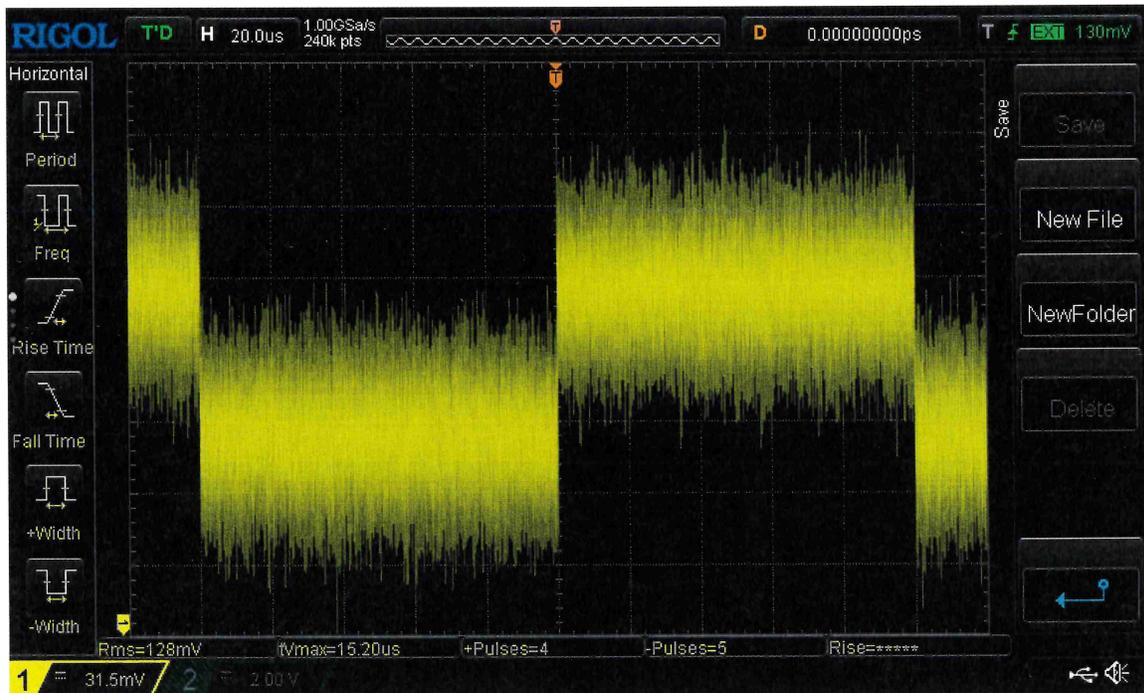


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**SUMMARY TEST DATA
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TSS = -41.5 dBm

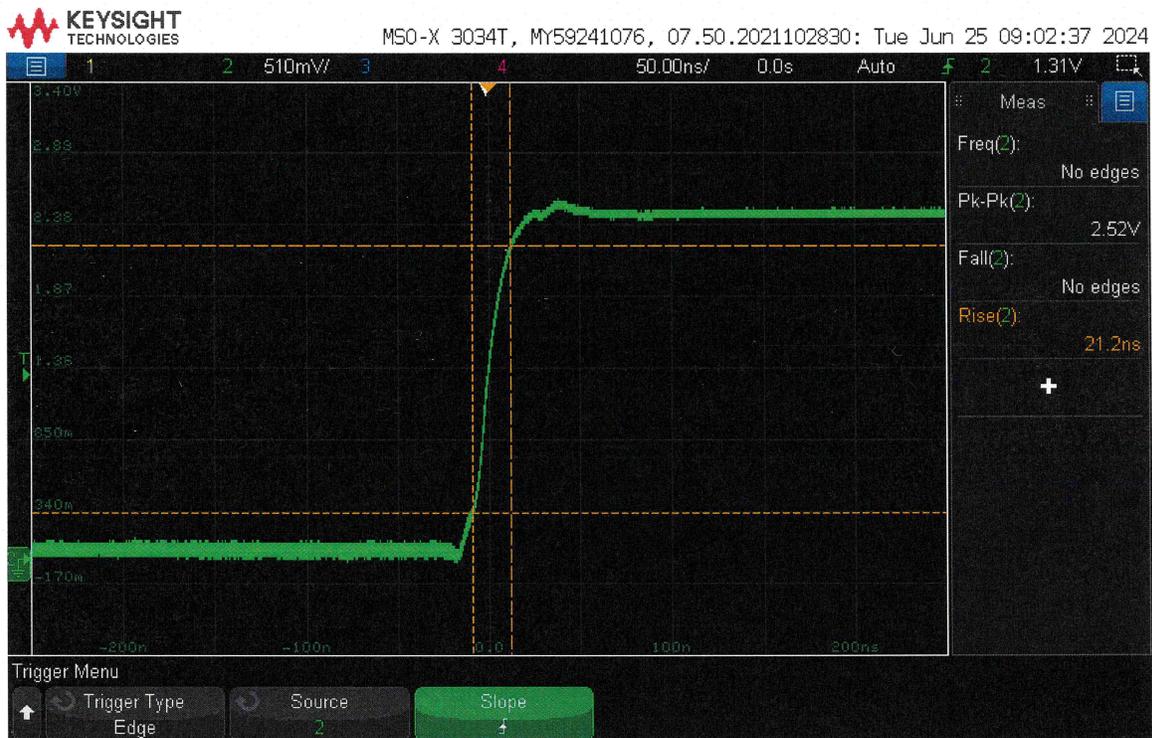


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**SUMMARY TEST DATA
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Rise Time = 21.2 ns

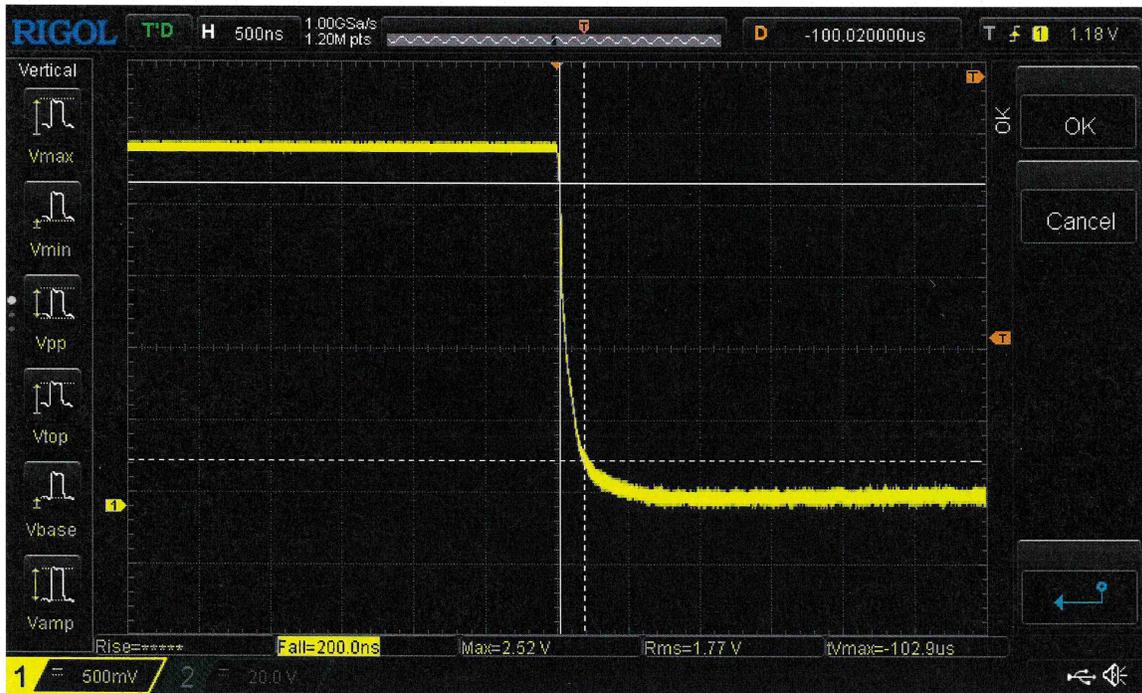


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**SUMMARY TEST DATA
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Fall Time = 200 ns



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