



**SUMMARY TEST DATA
ON
HADA-D2002**

12	Input VSWR:	3.0:1 Max @ +23 dBm	1.63:1 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. Lister

Date: 7.25.24



SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C
 MODEL: HADA-D2002
 SERIAL NO: PL46536
 TESTED BY: D. Weinrob
 DATE: 7/3/2024



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

GRAPH #1

Output Voltage Offset= 0.108 Volts

Frequency		-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
2 GHz	INTERCEPT (m)	2192										Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	50.5										Error (mV)	MAX MIN
												LINEARITY ERROR (dB)	0.40 -0.17
												LOGGING ACCURACY (dB)	1.12 0.40
6 GHz	INTERCEPT (m)	2172										Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	50.1										Error (mV)	MAX MIN
												LINEARITY ERROR (dB)	0.40 -0.14
												LOGGING ACCURACY (dB)	0.82 0.26
10 GHz	INTERCEPT (m)	2146										Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	50.9										Error (mV)	MAX MIN
												LINEARITY ERROR (dB)	0.18 -0.18
												LOGGING ACCURACY (dB)	0.18 -0.68
14 GHz	INTERCEPT (m)	2165										Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	50.2										Error (mV)	MAX MIN
												LINEARITY ERROR (dB)	0.23 -0.17
												LOGGING ACCURACY (dB)	0.48 0.10
18 GHz	INTERCEPT (m)	2131										Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	49.2										Error (mV)	MAX MIN
												LINEARITY ERROR (dB)	0.26 -0.16
												LOGGING ACCURACY (dB)	0.14 -0.56
	Flatness +/- dB	0.498	0.488	0.568	0.538	0.677	0.638	0.488	0.588	0.648			
	Max Video Output V	0.370	0.623	0.873	1.122	1.398	1.656	1.882	2.137	2.387			
	Min Video Output V	0.320	0.574	0.816	1.068	1.330	1.592	1.833	2.078	2.322			

Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.40 -0.18

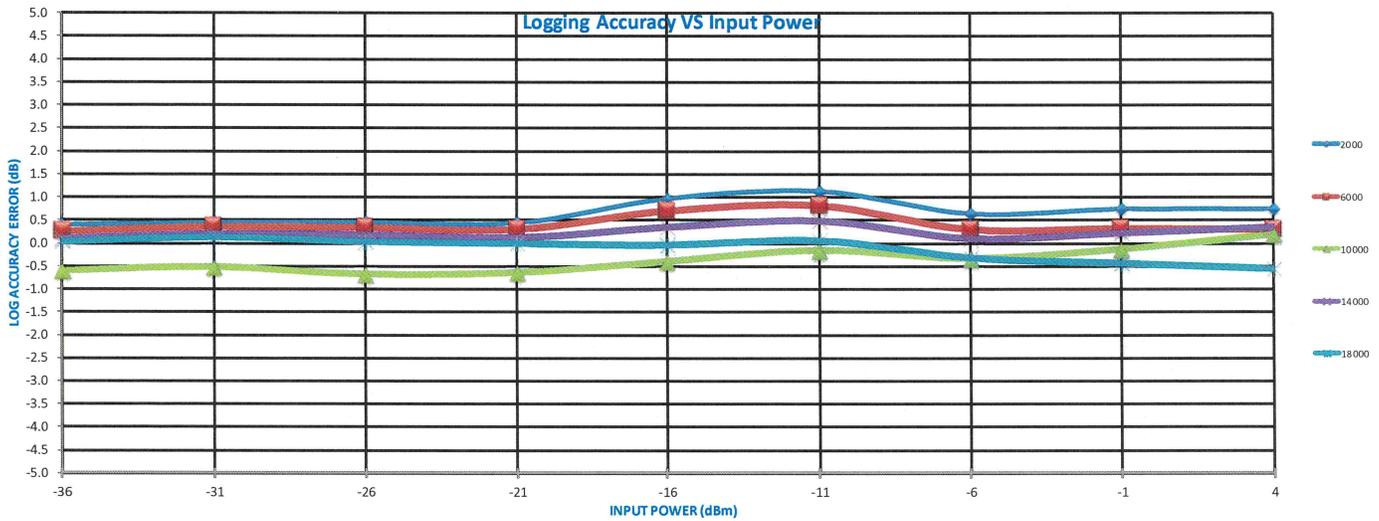
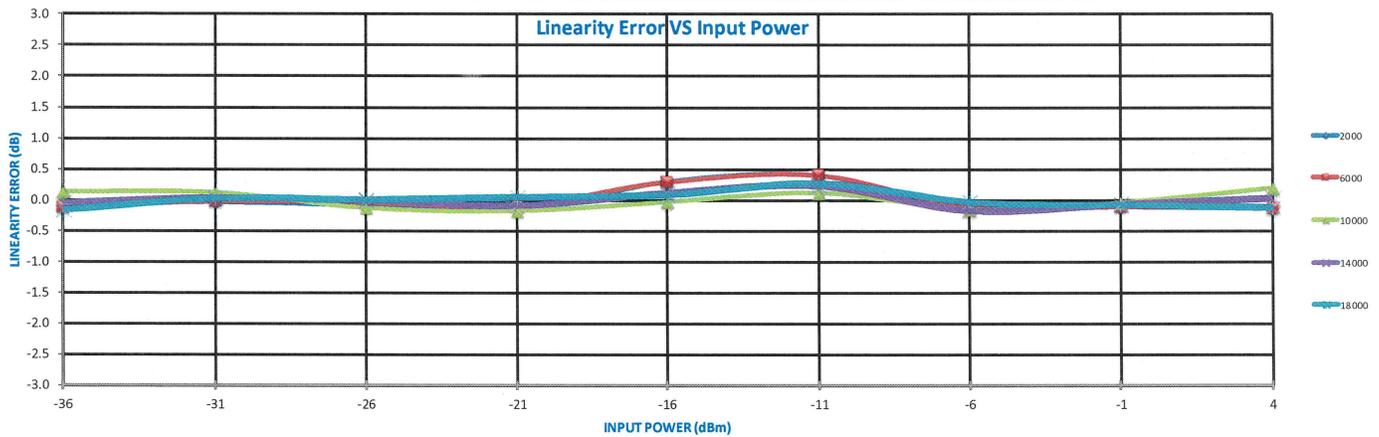
Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	1.12 -0.68

4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax:
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SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C
 MODEL: HADA-D2002
 SERIAL NO: PL46536
 TESTED BY: D. Weinrob
 DATE: 7/3/2024



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GRAPH #2

Output Voltage Offset= 0.075 Volts

Frequency

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

6 GHz	INTERCEPT (m)	2163
	SLOPE (mV/dB)	49.8

10 GHz	INTERCEPT (m)	2138
	SLOPE (mV/dB)	50.6

14 GHz	INTERCEPT (m)	2153
	SLOPE (mV/dB)	50

18 GHz	INTERCEPT (m)	2120
	SLOPE (mV/dB)	49.1

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

	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
	373	616	873	1125	1402	1661	1886	2135	2362	Measured Value (mV)	Error(dB)	
	-3	-12	-6	-5	21	28	2	0	-24	Error (mV)	MAX	MIN
	-0.07	-0.23	-0.12	-0.10	0.41	0.56	0.04	0.00	-0.49	LINEARITY ERROR (dB)	0.56	-0.49
	0.46	0.32	0.46	0.50	1.04	1.22	0.72	0.70	0.24	LOGGING ACCURACY (dB)	1.22	0.24
	362	608	864	1114	1387	1645	1866	2113	2336	Measured Value (mV)	Error(dB)	
	-8	-11	-4	-3	21	30	2	0	-27	Error (mV)	MAX	MIN
	-0.15	-0.22	-0.08	-0.06	0.42	0.60	0.03	-0.01	-0.53	LINEARITY ERROR (dB)	0.60	-0.53
	0.24	0.16	0.28	0.28	0.74	0.90	0.32	0.26	-0.28	LOGGING ACCURACY (dB)	0.90	-0.28
	317	567	815	1064	1333	1598	1832	2093	2329	Measured Value (mV)	Error(dB)	
	2	-1	-6	-10	5	17	-2	6	-11	Error (mV)	MAX	MIN
	0.05	-0.02	-0.12	-0.20	0.11	0.34	-0.04	0.11	-0.23	LINEARITY ERROR (dB)	0.34	-0.23
	-0.66	-0.66	-0.70	-0.72	-0.34	-0.04	-0.36	-0.14	-0.42	LOGGING ACCURACY (dB)	-0.04	-0.72
	350	597	852	1102	1365	1626	1852	2106	2334	Measured Value (mV)	Error(dB)	
	-5	-7	-2	-2	11	22	-1	3	-19	Error (mV)	MAX	MIN
	-0.09	-0.15	-0.04	-0.04	0.22	0.45	-0.03	0.06	-0.38	LINEARITY ERROR (dB)	0.45	-0.38
	0.00	-0.06	0.04	0.04	0.30	0.52	0.04	0.12	-0.32	LOGGING ACCURACY (dB)	0.52	-0.32
	344	591	843	1091	1343	1601	1828	2075	2295	Measured Value (mV)	Error(dB)	
	-8	-7	0	2	8	21	2	4	-22	Error (mV)	MAX	MIN
	-0.17	-0.14	-0.01	0.04	0.17	0.42	0.05	0.07	-0.45	LINEARITY ERROR (dB)	0.42	-0.45
	-0.12	-0.18	-0.14	-0.18	-0.14	0.02	-0.44	-0.50	-1.10	LOGGING ACCURACY (dB)	0.02	-1.10
	0.560	0.490	0.580	0.611	0.691	0.631	0.580	0.600	0.671			
	0.373	0.616	0.873	1.125	1.402	1.661	1.886	2.135	2.362			
	0.317	0.567	0.815	1.064	1.333	1.598	1.828	2.075	2.295			

Logging Linearity vs Frequency	Error(dB)	
	MAX	MIN
LOGGING LINEARITY ERROR (dB)	0.60	-0.53

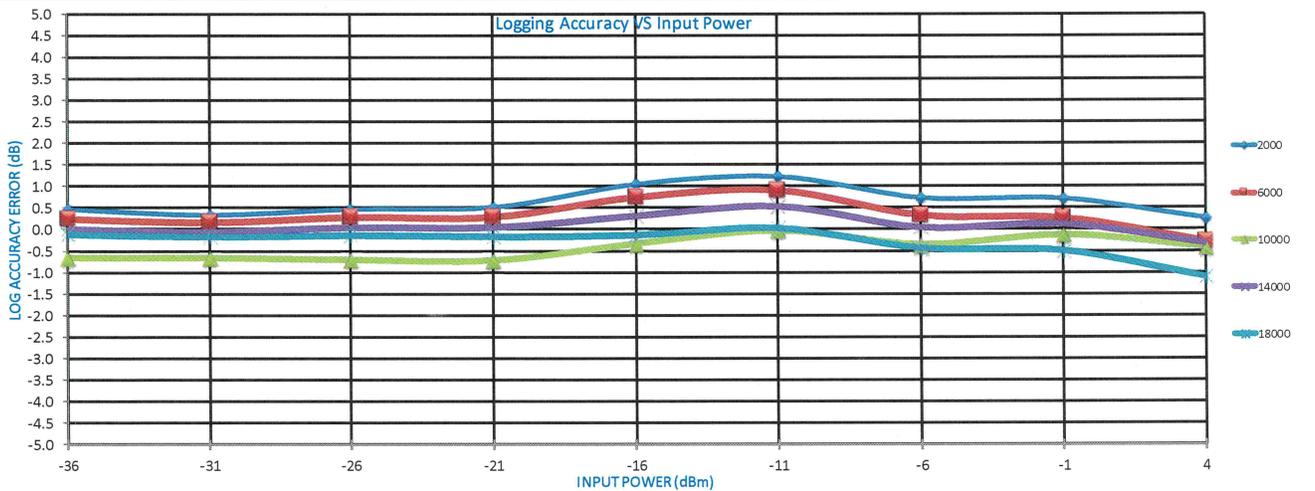
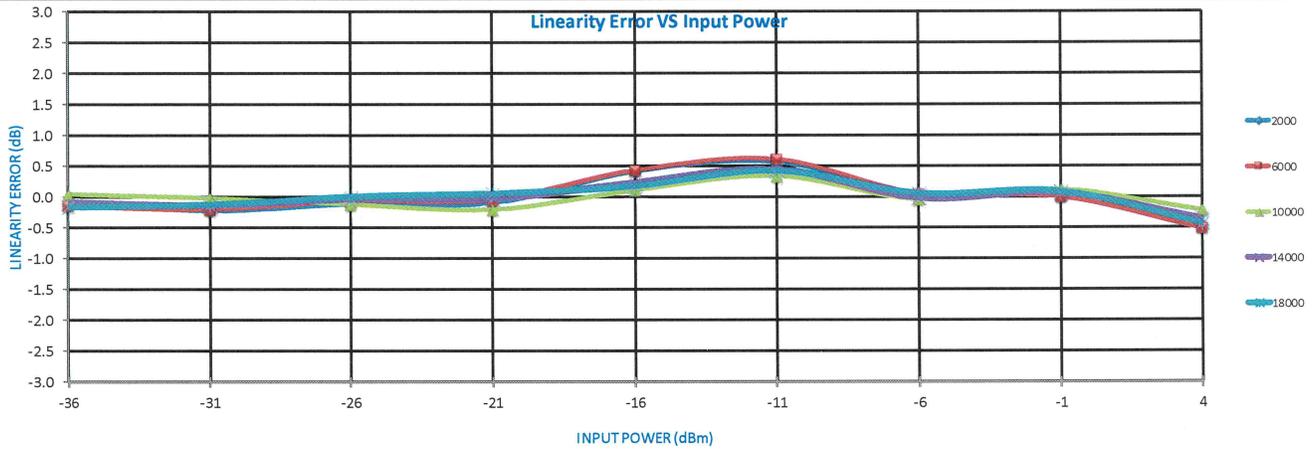
Logging Accuracy vs Frequency	Error(dB)	
	MAX	MIN
LOGGING ACCURACY ERROR (dB)	1.22	-1.10

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SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C
 MODEL: HADA-D2002
 SERIAL NO: PL46536
 TESTED BY: D. Weinrob
 DATE: 7/3/2024



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GRAPH #3

Output Voltage Offset= 0.123 Volts

Frequency

2 GHz	INTERCEPT (m)	2163
	SLOPE (mV/dB)	50.5

6 GHz	INTERCEPT (m)	2147
	SLOPE (mV/dB)	50.1

10 GHz	INTERCEPT (m)	2118
	SLOPE (mV/dB)	50.8

14 GHz	INTERCEPT (m)	2127
	SLOPE (mV/dB)	50.1

18 GHz	INTERCEPT (m)	2088
	SLOPE (mV/dB)	48.9

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

	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)		
	346	602	843	1090	1363	1618	1852	2105	2373		Measured Value (mV)	Error(dB)
	2	5	-6	-12	8	11	-8	-8	7		Error (mV)	MAX MIN
	0.04	0.11	-0.12	-0.24	0.16	0.21	-0.16	-0.15	0.15		LINEARITY ERROR (dB)	0.21 -0.24
	-0.08	0.04	-0.14	-0.20	0.26	0.36	0.04	0.10	0.46		LOGGING ACCURACY (dB)	0.46 -0.20
	343	599	839	1086	1353	1606	1839	2085	2356		Measured Value (mV)	Error(dB)
	0	5	-5	-9	8	10	-7	-12	9		Error (mV)	MAX MIN
	0.00	0.11	-0.10	-0.17	0.16	0.21	-0.14	-0.23	0.18		LINEARITY ERROR (dB)	0.21 -0.23
	-0.14	-0.02	-0.22	-0.28	0.06	0.12	-0.22	-0.30	0.12		LOGGING ACCURACY (dB)	0.12 -0.30
	304	550	787	1039	1293	1554	1805	2059	2347		Measured Value (mV)	Error(dB)
	16	8	-9	-11	-11	-4	-8	-8	26		Error (mV)	MAX MIN
	0.32	0.16	-0.17	-0.22	-0.22	-0.09	-0.15	-0.15	0.51		LINEARITY ERROR (dB)	0.51 -0.22
	-0.92	-1.00	-1.26	-1.22	-1.14	-0.92	-0.90	-0.82	-0.06		LOGGING ACCURACY (dB)	-0.06 -1.26
	329	581	821	1070	1323	1579	1819	2067	2344		Measured Value (mV)	Error(dB)
	5	6	-4	-6	-3	3	-8	-10	17		Error (mV)	MAX MIN
	0.09	0.13	-0.08	-0.11	-0.06	0.05	-0.15	-0.20	0.33		LINEARITY ERROR (dB)	0.33 -0.20
	-0.42	-0.38	-0.58	-0.60	-0.54	-0.42	-0.62	-0.66	-0.12		LOGGING ACCURACY (dB)	-0.12 -0.66
	325	576	812	1061	1301	1555	1797	2031	2288		Measured Value (mV)	Error(dB)
	-1	5	-4	1	-4	5	3	-8	4		Error (mV)	MAX MIN
	-0.03	0.10	-0.08	0.01	-0.08	0.11	0.05	-0.17	0.08		LINEARITY ERROR (dB)	0.11 -0.17
	-0.50	-0.48	-0.76	-0.78	-0.98	-0.90	-1.06	-1.38	-1.24		LOGGING ACCURACY (dB)	-0.48 -1.38
	0.419	0.519	0.559	0.509	0.699	0.639	0.549	0.739	0.848			
	0.346	0.602	0.843	1.090	1.363	1.618	1.852	2.105	2.373			
	0.304	0.550	0.787	1.039	1.293	1.554	1.797	2.031	2.288			

Logging Linearity vs Frequency	Error(dB)
	MAX MIN
LOGGING LINEARITY ERROR (dB)	0.51 -0.24

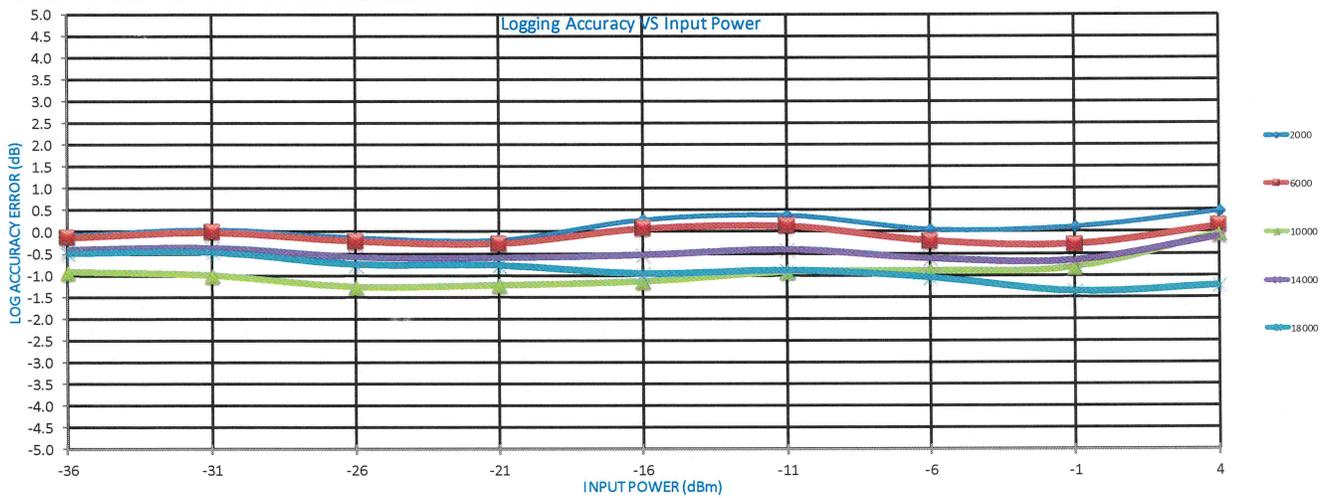
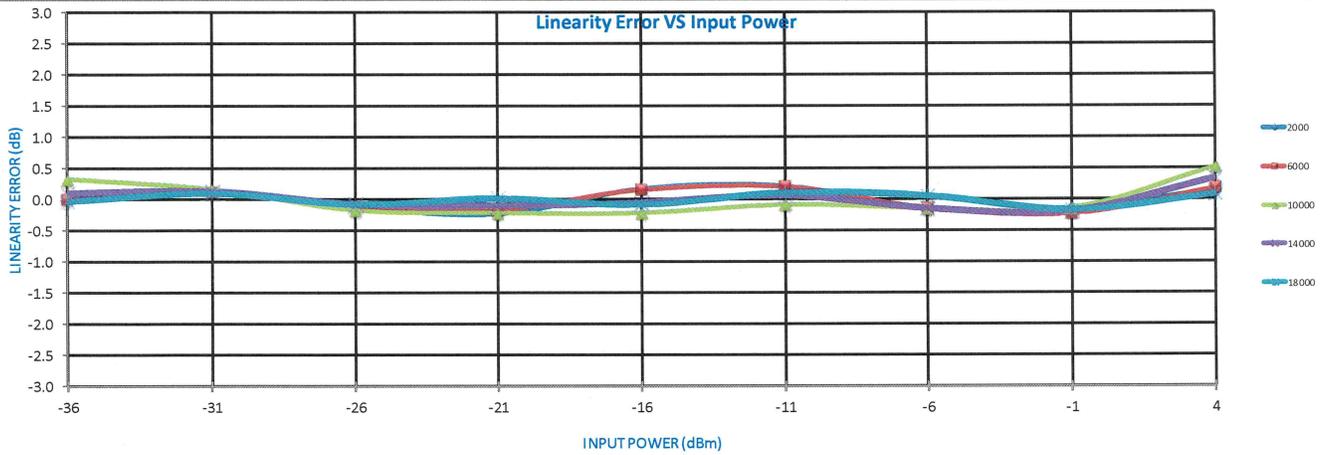
Logging Accuracy vs Frequency	Error(dB)
	MAX MIN
LOGGING ACCURACY ERROR (dB)	0.46 -1.38

4921 Robert J. Mathews Pkwy Suite 1, El Dorado Hills, CA 95762 USA Phone: (916)542-1401 Fax: (916)265-2597
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SUMMARY TEST DATA ON HADA-D2002

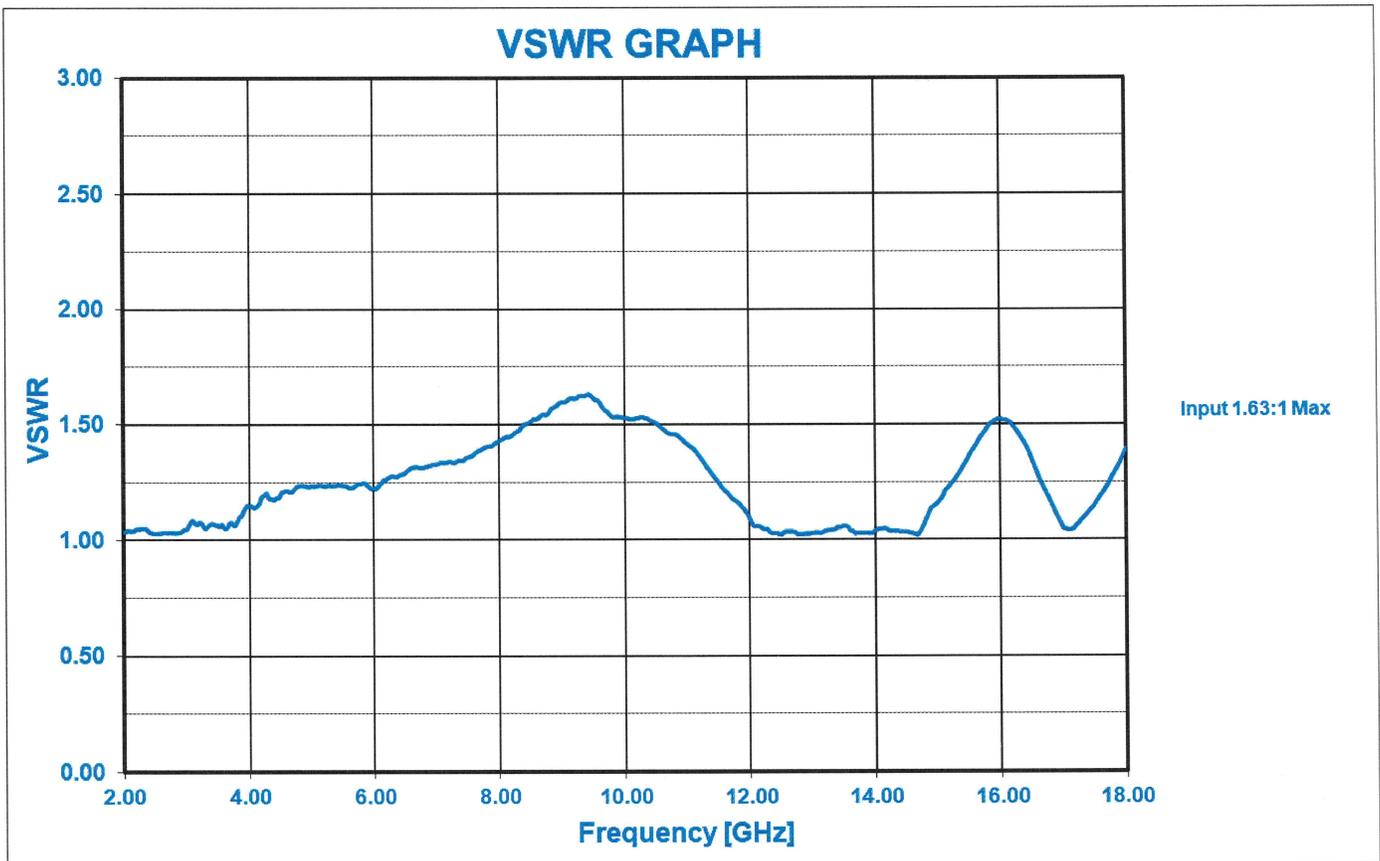
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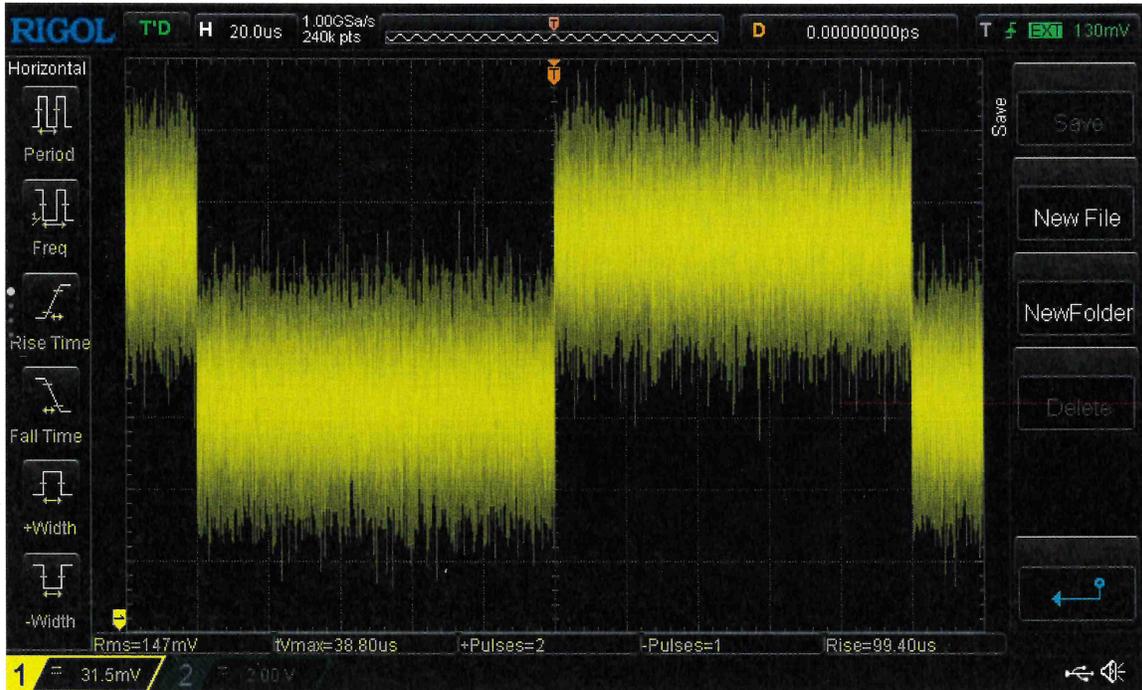


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**SUMMARY TEST DATA
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TSS = -41 dBm

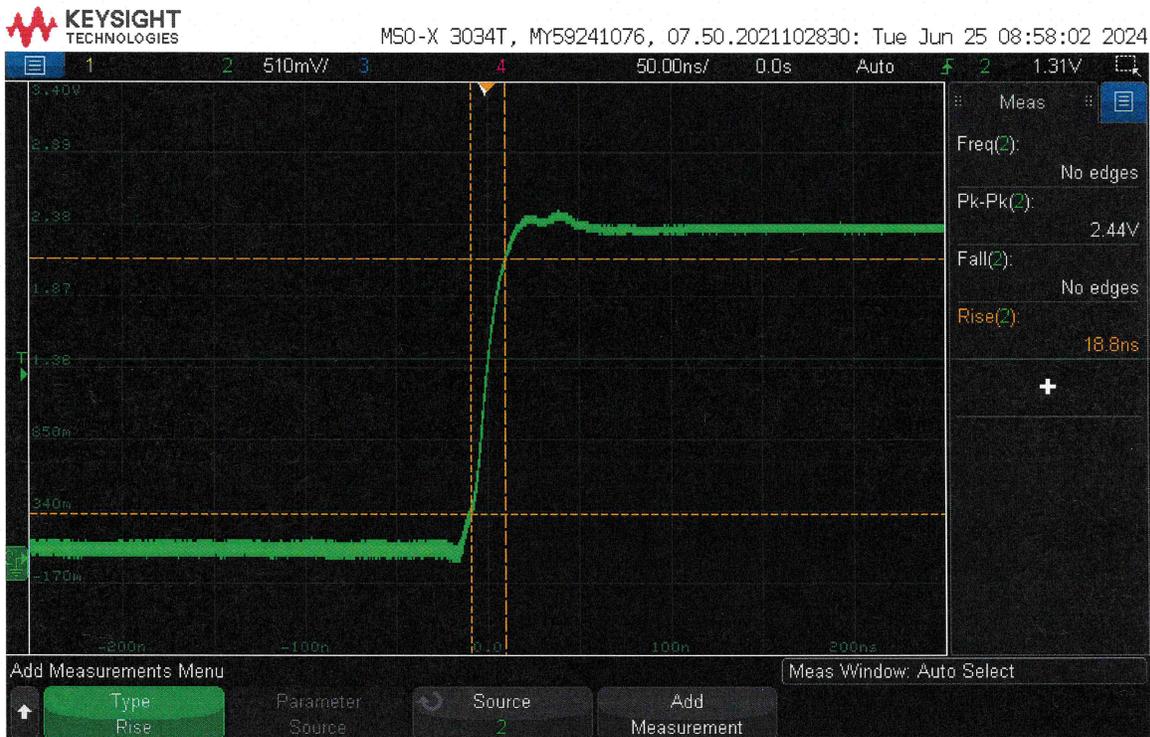


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**SUMMARY TEST DATA
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Rise Time = 18.8 ns

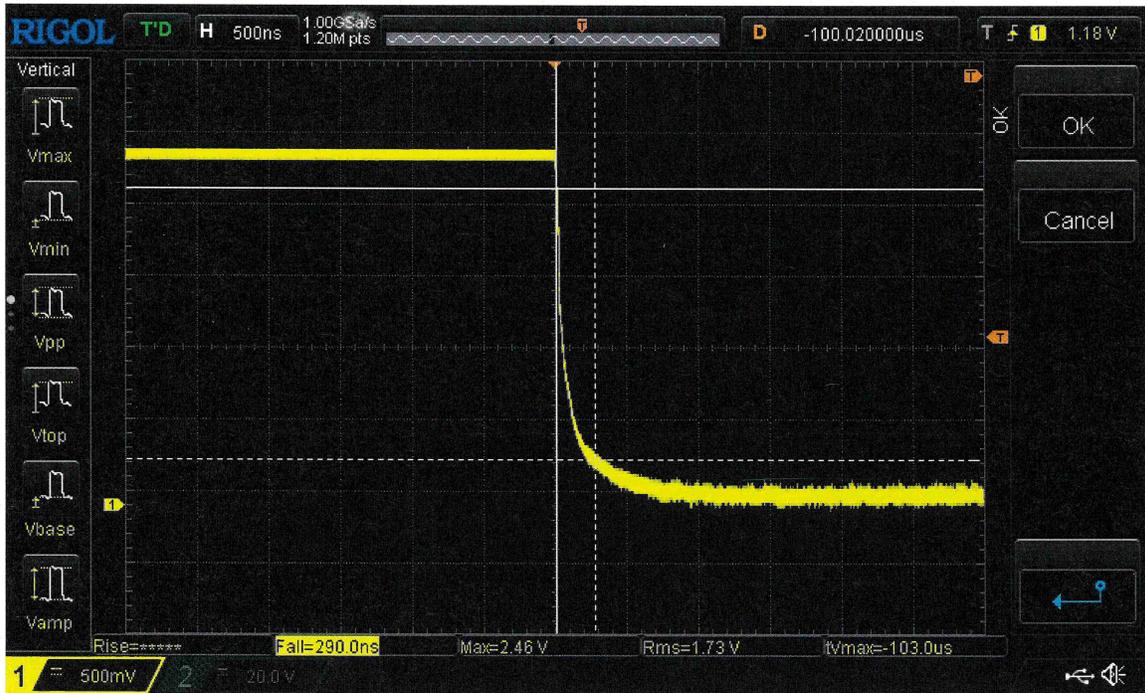


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**SUMMARY TEST DATA
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Fall Time = 290 ns



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