

**SUMMARY TEST DATA  
ON  
HADA-D2002**

Customer: \_\_\_\_\_  
SO No: \_\_\_\_\_  
Model No: HADA-D2002  
Serial No: PL55553/2543

Tested By: Daniel W.  
Temperature: +25°C (Unless otherwise specified)  
Date: 2/9/2026  
Drawing No: 27620222 Rev: A2

Test. Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA
			+25°C	-40°	+85°C	QC
1	Frequency Range:	2.0 GHz – 18.0 GHz	2.0 GHz – 18.0 GHz			PMI QA3
2	TSS:	-40 dBm Min	-42.9 dBm	NA	NA	
3	Frequency Flatness:	±1.65 dB Max	± 0.56 dB	± 0.57 dB	± 0.62 dB	
4	Input / Output Characteristics: (93 Ω)	Y = 2150 + 50X [X: Input (dBm), Y: Output (mv)]	Pass	Pass	Pass	
5	Logging Accuracy	±1.5 dB Max (@ +25°C, 10 GHz)* [-36 dBm ≤ INPUT ≤ +4 dBm] ±3.1 dB Max (Note)	0.22 dB / -0.64 dB @ 10GHZ  0.82 dB / -0.64 dB @ ALL OTHER FREQUENCY	0.58 dB / -1.16 dB	1.52 dB / -1.54 dB	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	0.25 dB / -0.26 dB	0.51 dB / -0.53 dB	0.36 dB / -0.52 dB	
7	Maximum Input Power (CW):	+23 dBm	Pass	Pass	Pass	
8	Duty Cycle:	100%	Pass	Pass	Pass	
9	Rise Time:	30 ns Max (10% to 90%)	19 ns			
10	Fall Time:	500 ns Max (@ Pulse width 100µs input) (90% to 10%)	100.4 ns			
11	DC Offset: (Input 50 Ω terminated)	+95 mV +55/-100mV	90 mV @ +25°c	62 mV @ -40°c	61 mV @ +85°c	

\*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.

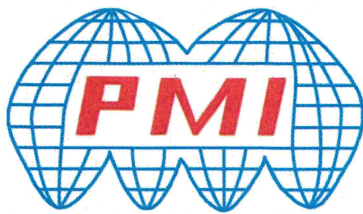
**SUMMARY TEST DATA  
ON  
HADA-D2002**

PL5553/2543

Test Item No	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA
			+25°C	-40°	+85°C	QC
12	Input VSWR:	3.0:1 Max @ +23 dBm	1.46:1	NA	NA	PMI QA3
13	Propagation Delay:	60 ns Max	Pass	Pass	Pass	
14	Power Supply:	+12 ± 1VDC @ 125 mA Max -12 ± 1VDC @ 75 mA Max	+12 ± 1VDC @ 120 mA Max -12 ± 1VDC @ 70 mA Max	NA	NA	
15	Warm Up Time:	2 Minutes Max	<2 Minutes	<2 Minutes	<2 Minutes	

QA/QC Approval: *[Signature]*

Date: 2-10-26



# SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C  
 MODEL: HADA-D2002  
 SERIAL NO: PL55553  
 TESTED BY: Daniel W.  
 DATE: 10/23/2025



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

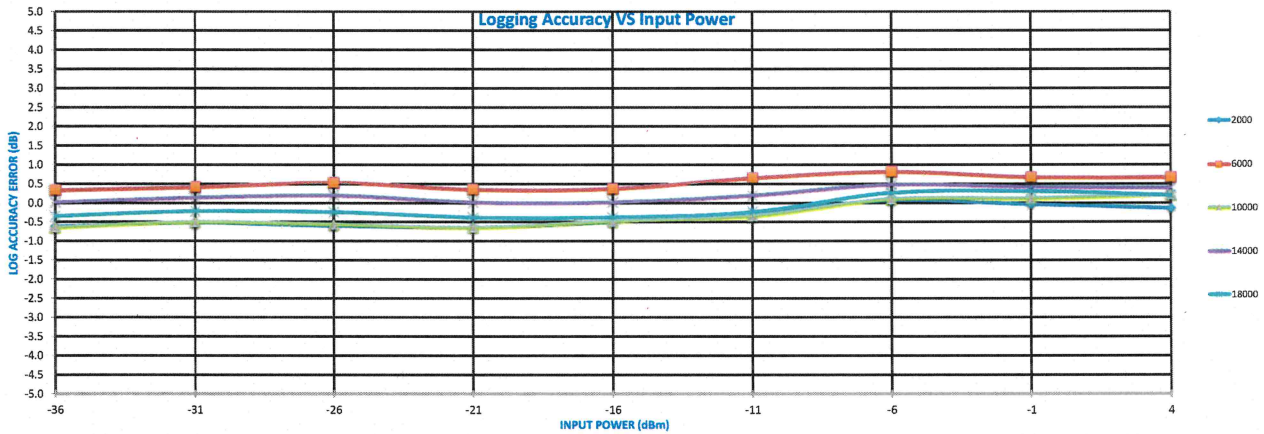
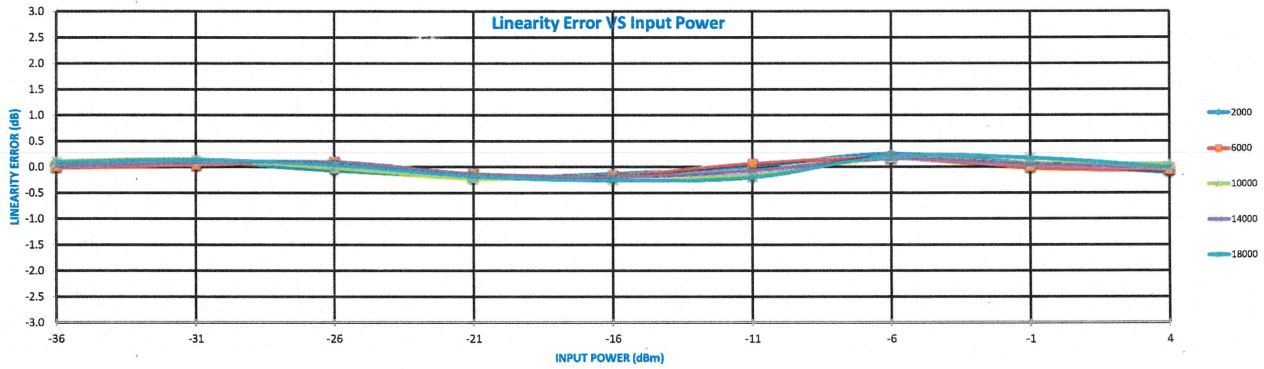
Output Voltage Offset= 0.09 Volts

Frequency		-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)	
2 GHz	INTERCEPT (mV)	319	574	820	1068	1325	1587	1853	2098	2343	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	4	5	-3	-10	-7	1	13	3	-6	Error (mV)	MAX MIN
		0.08	0.09	-0.07	-0.19	-0.14	0.02	0.25	0.07	-0.11	LINEARITY ERROR (dB)	0.25 -0.19
		-0.62	-0.52	-0.60	-0.64	-0.50	-0.26	0.06	-0.04	-0.14	LOGGING ACCURACY (dB)	0.06 -0.64
6 GHz	INTERCEPT (mV)	367	621	877	1118	1369	1633	1891	2134	2384	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	0	1	5	-7	-8	3	9	-1	-3	Error (mV)	MAX MIN
		0.00	0.03	0.10	-0.13	-0.16	0.07	0.18	-0.01	-0.06	LINEARITY ERROR (dB)	0.18 -0.16
		0.34	0.42	0.54	0.36	0.38	0.66	0.82	0.68	0.68	LOGGING ACCURACY (dB)	0.82 0.34
10 GHz	INTERCEPT (mV)	318	575	822	1068	1326	1583	1855	2106	2381	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	6	7	-1	-11	-9	-8	9	4	3	Error (mV)	MAX MIN
		0.12	0.14	-0.03	-0.22	-0.17	-0.15	0.17	0.07	0.06	LINEARITY ERROR (dB)	0.17 -0.22
		-0.64	-0.50	-0.56	-0.64	-0.48	-0.34	0.10	0.12	0.22	LOGGING ACCURACY (dB)	0.22 -0.64
14 GHz	INTERCEPT (mV)	351	607	880	1101	1351	1610	1874	2121	2370	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	1	4	5	-7	-10	-3	8	3	-1	Error (mV)	MAX MIN
		0.02	0.08	0.09	-0.14	-0.19	-0.06	0.16	0.05	-0.02	LINEARITY ERROR (dB)	0.16 -0.19
		0.02	0.14	0.20	0.02	0.02	0.20	0.48	0.42	0.40	LOGGING ACCURACY (dB)	0.48 0.02
18 GHz	INTERCEPT (mV)	333	589	838	1081	1331	1588	1863	2115	2360	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	5	7	2	-9	-13	-10	11	9	0	Error (mV)	MAX MIN
		0.10	0.14	0.04	-0.18	-0.26	-0.20	0.21	0.17	-0.01	LINEARITY ERROR (dB)	0.21 -0.26
		-0.34	-0.22	-0.24	-0.38	-0.38	-0.24	0.26	0.30	0.20	LOGGING ACCURACY (dB)	0.30 -0.38
Flatness +/- dB		0.483	0.463	0.561	0.492	0.433	0.492	0.374	0.355	0.404		
Max Video Output V		0.367	0.621	0.877	1.118	1.369	1.633	1.891	2.134	2.384		
Min Video Output V		0.318	0.574	0.820	1.068	1.325	1.583	1.853	2.098	2.343		
Logging Linearity vs Frequency											Error(dB)	
											MAX	MIN
LOGGING LINEARITY ERROR (dB)											0.25	-0.26
Logging Accuracy vs Frequency											Error(dB)	
											MAX	MIN
LOGGING ACCURACY ERROR (dB)											0.82	-0.64



# SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +25C  
MODEL: HADA-D2002  
SERIAL NO: PLS5553  
TESTED BY: Daniel W.





# SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C  
 MODEL: HADA-D2002  
 SERIAL NO: PL55553  
 TESTED BY: Daniel W.  
 DATE: 10/23/2025



PLANAR MONOLITHICS INDUSTRIES  
 4921 Robert J. Mathews Parkway Sult 1  
 El Dorado Hills, CA 95762  
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 EMAIL: SALES@PMI-RF.COM

GRAPH #2

Output Voltage Offset= 0.062 Volts

Frequency		-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)	
2 GHz	INTERCEPT (mV)	311	557	809	1053	1309	1584	1842	2072	2292	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	1	-4	-3	-10	-5	19	25	4	-27	Error (mV)	MAX MIN
		0.02	-0.08	-0.06	-0.20	-0.11	0.37	0.51	0.09	-0.53	LINEARITY ERROR (dB)	0.51 -0.53
		-0.78	-0.86	-0.82	-0.94	-0.82	-0.32	-0.16	-0.56	-1.16	LOGGING ACCURACY (dB)	-0.16 -1.16
6 GHz	INTERCEPT (mV)	357	602	863	1103	1352	1629	1877	2102	2326	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	-4	-8	4	-5	-5	23	23	-1	-26	Error (mV)	MAX MIN
		-0.09	-0.17	0.08	-0.10	-0.10	0.47	0.45	-0.03	-0.52	LINEARITY ERROR (dB)	0.47 -0.52
		0.14	0.04	0.26	0.06	0.04	0.58	0.54	0.04	-0.48	LOGGING ACCURACY (dB)	0.58 -0.48
10 GHz	INTERCEPT (mV)	304	554	806	1048	1305	1573	1839	2073	2297	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	1	-1	-1	-11	-6	10	24	6	-22	Error (mV)	MAX MIN
		0.02	-0.02	-0.02	-0.22	-0.12	0.20	0.48	0.12	-0.44	LINEARITY ERROR (dB)	0.48 -0.44
		-0.92	-0.92	-0.88	-1.04	-0.90	-0.54	-0.22	-0.54	-1.06	LOGGING ACCURACY (dB)	-0.22 -1.06
14 GHz	INTERCEPT (mV)	335	583	841	1081	1328	1599	1854	2085	2305	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	-4	-5	4	-5	-7	16	22	4	-25	Error (mV)	MAX MIN
		-0.08	-0.10	0.08	-0.09	-0.13	0.31	0.44	0.08	-0.50	LINEARITY ERROR (dB)	0.44 -0.50
		-0.30	-0.34	-0.18	-0.38	-0.44	-0.02	0.08	-0.30	-0.90	LOGGING ACCURACY (dB)	0.08 -0.90
18 GHz	INTERCEPT (mV)	323	573	827	1068	1316	1585	1850	2086	2310	Measured Value (mV)	Error(dB)
	SLOPE (mV/dB)	0	-1	2	-8	-10	8	22	7	-20	Error (mV)	MAX MIN
		0.00	-0.02	0.04	-0.15	-0.21	0.15	0.44	0.14	-0.39	LINEARITY ERROR (dB)	0.44 -0.39
		-0.54	-0.54	-0.46	-0.64	-0.68	-0.30	0.00	-0.28	-0.80	LOGGING ACCURACY (dB)	0.00 -0.80
Flatness +/- dB		0.529	0.479	0.569	0.549	0.469	0.559	0.380	0.300	0.340		
Max Video Output V		0.357	0.602	0.863	1.103	1.352	1.629	1.877	2.102	2.326		
Min Video Output V		0.304	0.554	0.806	1.048	1.305	1.573	1.839	2.072	2.292		

Logging Linearity vs Frequency		Error(dB)
		MAX MIN
LOGGING LINEARITY ERROR (dB)		0.51 -0.53

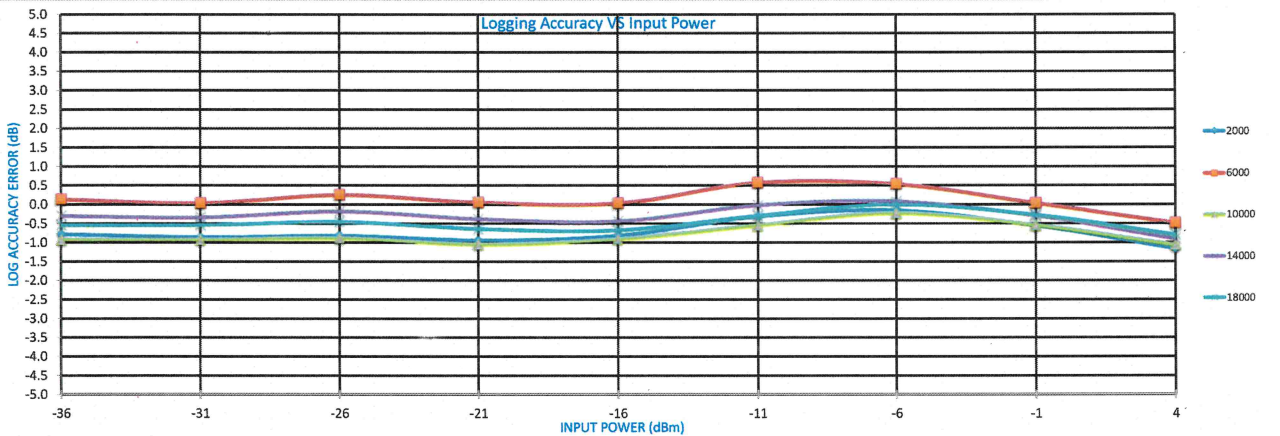
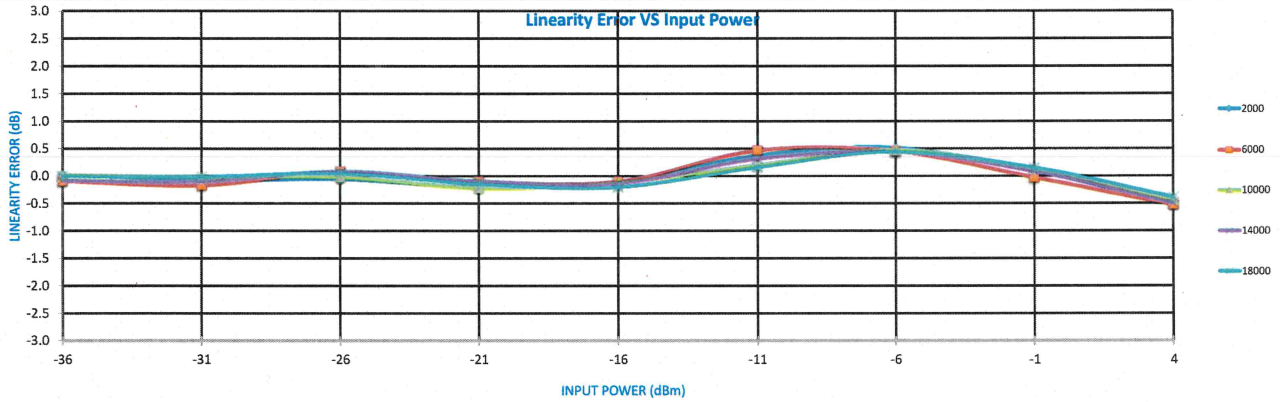
  

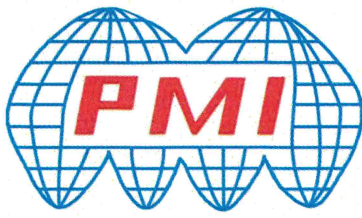
Logging Accuracy vs Frequency		Error(dB)
		MAX MIN
LOGGING ACCURACY ERROR (dB)		0.58 -1.16



# SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ -40C  
MODEL: HADA-D2002  
SERIAL NO: PL55553  
TESTED BY: Daniel W.





# SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C  
 MODEL: HADA-D2002  
 SERIAL NO: PL55553  
 TESTED BY: Daniel W.  
 DATE: 10/23/2025



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GRAPH #3

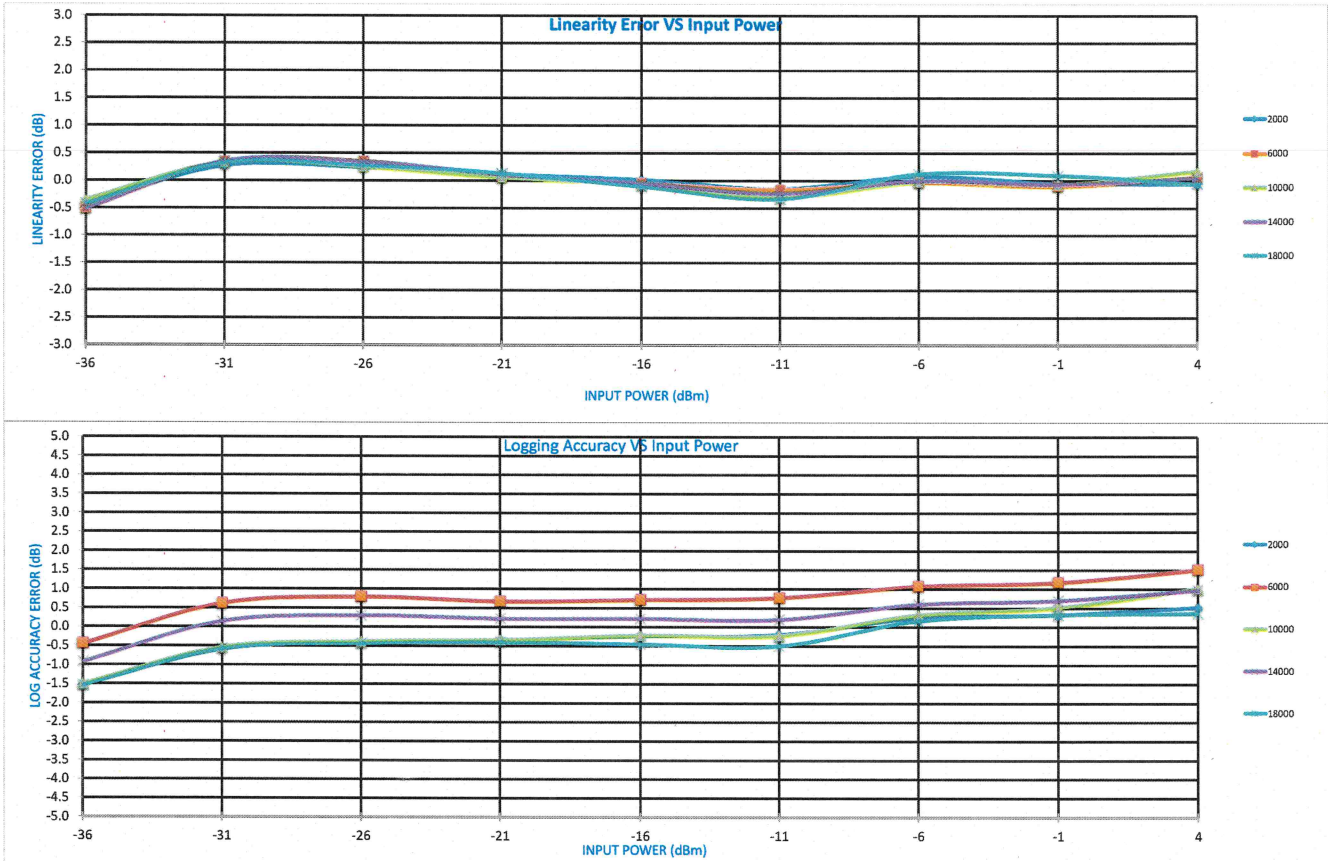
Output Voltage Offset= 0.061 Volts

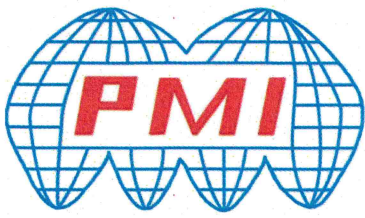
Frequency	Intercept (mV)	Slope (mV/dB)	-36	-31	-26	-21	-16	-11	-6	-1	4	RF Input Power (dBm)	Measured Value (mV)	Error(dB)
<b>2 GHz</b>	INTERCEPT (mV)	2171	273	570	829	1083	1338	1590	1862	2116	2376		Measured Value (mV)	MAX MIN
	SLOPE (mV/dB)	52.1	-23	14	12	6	1	-8	4	-3	-3		Error (mV)	0.26 -0.44
			-0.44	0.26	0.24	0.11	0.01	-0.15	0.07	-0.05	-0.06		LINEARITY ERROR (dB)	0.52 -1.54
			-1.54	-0.60	-0.42	-0.34	-0.24	-0.20	0.24	0.32	0.52		LOGGING ACCURACY (dB)	
<b>6 GHz</b>	INTERCEPT (mV)	2216	328	631	890	1134	1386	1639	1904	2159	2426		Measured Value (mV)	MAX MIN
	SLOPE (mV/dB)	51.7	-27	18	18	4	-3	-8	-2	-5	4		Error (mV)	0.36 -0.51
			-0.51	0.35	0.36	0.08	-0.05	-0.16	-0.03	-0.10	0.07		LINEARITY ERROR (dB)	1.52 -0.44
			-0.44	0.62	0.60	0.68	0.72	0.78	1.08	1.16	1.52		LOGGING ACCURACY (dB)	
<b>10 GHz</b>	INTERCEPT (mV)	2182	275	573	831	1083	1339	1589	1866	2126	2401		Measured Value (mV)	MAX MIN
	SLOPE (mV/dB)	52.5	-18	17	13	3	-4	-16	-1	-4	9		Error (mV)	0.33 -0.35
			-0.35	0.33	0.25	0.05	-0.07	-0.30	-0.02	-0.07	0.17		LINEARITY ERROR (dB)	1.02 -1.50
			-1.50	-0.54	-0.38	-0.34	-0.22	-0.22	0.32	0.52	1.02		LOGGING ACCURACY (dB)	
<b>14 GHz</b>	INTERCEPT (mV)	2190	304	607	865	1111	1361	1610	1880	2135	2399		Measured Value (mV)	MAX MIN
	SLOPE (mV/dB)	51.6	-27	18	18	6	-3	-12	0	-3	3		Error (mV)	0.35 -0.52
			-0.52	0.35	0.35	0.11	-0.05	-0.23	0.00	-0.06	0.05		LINEARITY ERROR (dB)	0.98 -0.92
			-0.92	0.14	0.30	0.22	0.22	0.20	0.60	0.70	0.98		LOGGING ACCURACY (dB)	
<b>18 GHz</b>	INTERCEPT (mV)	2163	273	571	828	1080	1327	1575	1858	2116	2368		Measured Value (mV)	MAX MIN
	SLOPE (mV/dB)	51.9	-22	17	14	7	-6	-17	6	5	-3		Error (mV)	0.32 -0.42
			-0.42	0.32	0.27	0.13	-0.11	-0.34	0.12	0.09	-0.06		LINEARITY ERROR (dB)	0.36 -1.54
			-1.54	-0.58	-0.44	-0.40	-0.46	-0.50	0.16	0.32	0.36		LOGGING ACCURACY (dB)	
Flatness +/- dB		0.529	0.587	0.597	0.520	0.568	0.616	0.443	0.414	0.558				
Max Video Output V		0.328	0.631	0.890	1.134	1.386	1.639	1.904	2.159	2.426				
Min Video Output V		0.273	0.570	0.828	1.080	1.327	1.575	1.858	2.116	2.368				
Logging Linearity vs Frequency													MAX MIN	
LOGGING LINEARITY ERROR (dB)													0.36	-0.52
Logging Accuracy vs Frequency													MAX MIN	
LOGGING ACCURACY ERROR (dB)													1.52	-1.54



# SUMMARY TEST DATA ON HADA-D2002

LOG TRANSFER WITH FREQUENCY @ +85C  
MODEL: HADA-D2002  
SERIAL NO: PL55553  
TESTED BY: Daniel W.

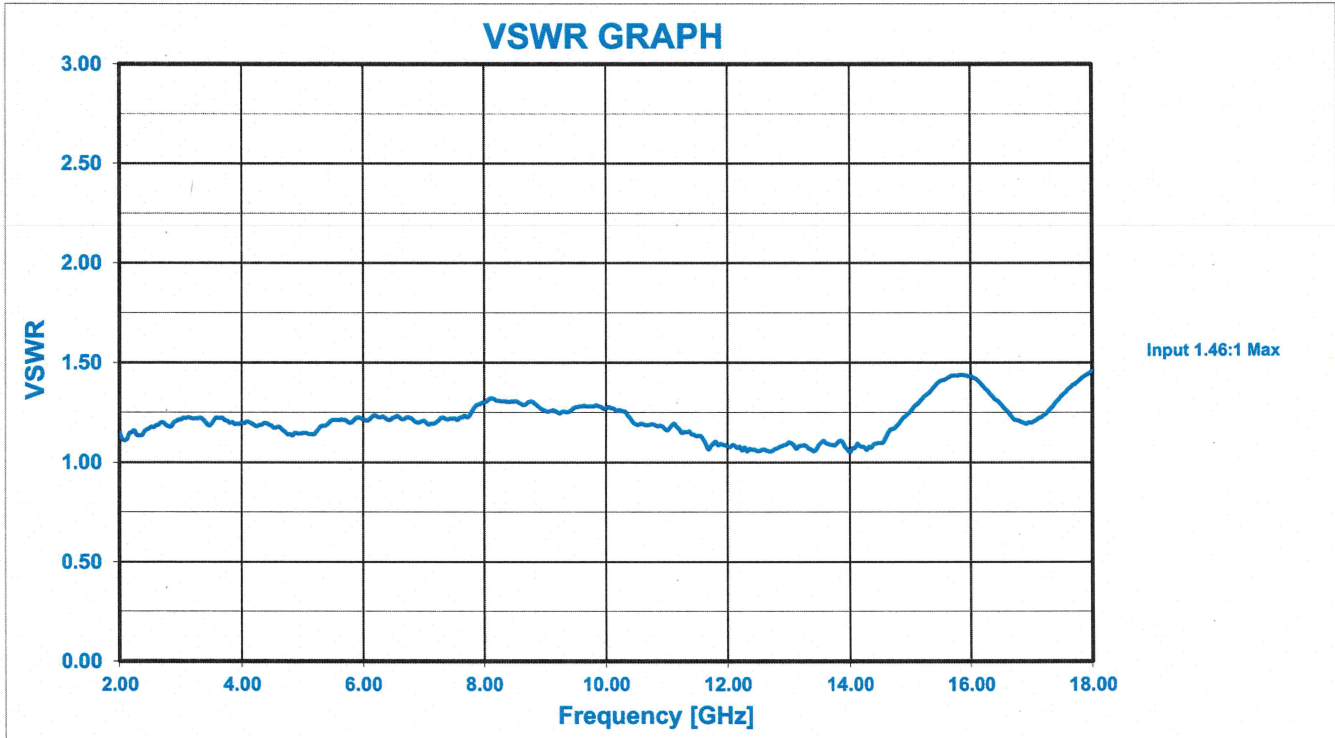




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HADA-D2002**

Model Number: HADA-D2002  
Serial Number: PL55553

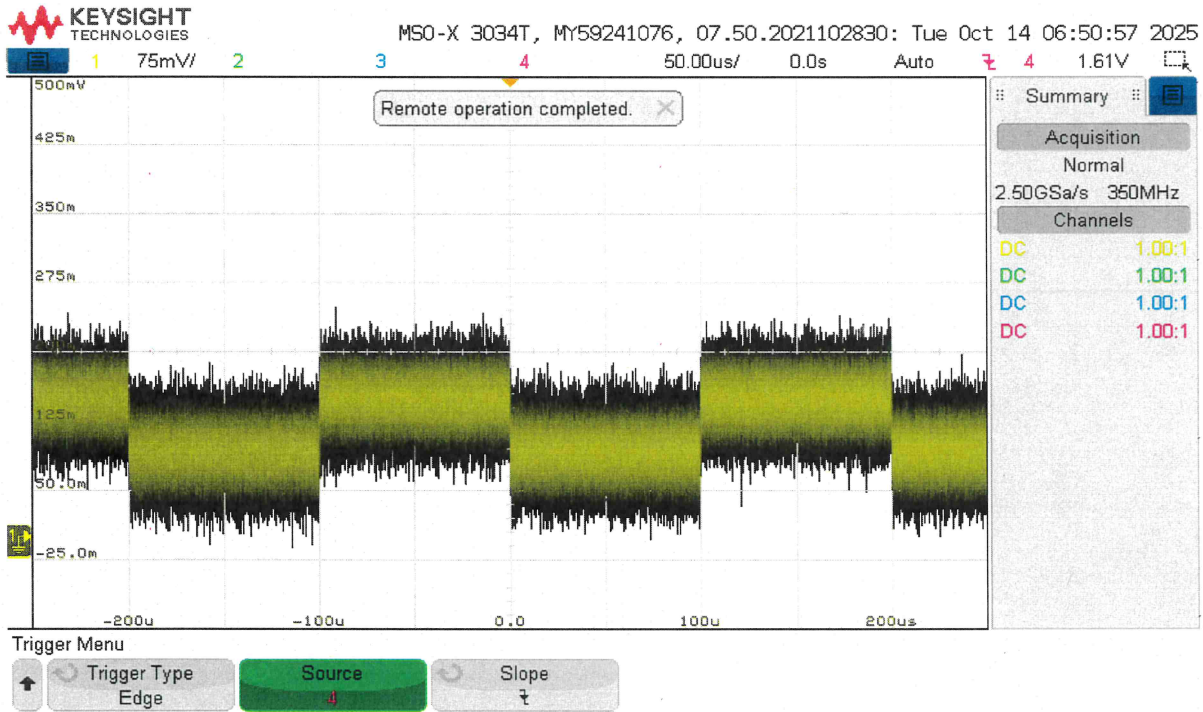
Temperature: +25C





# SUMMARY TEST DATA ON HADA-D2002

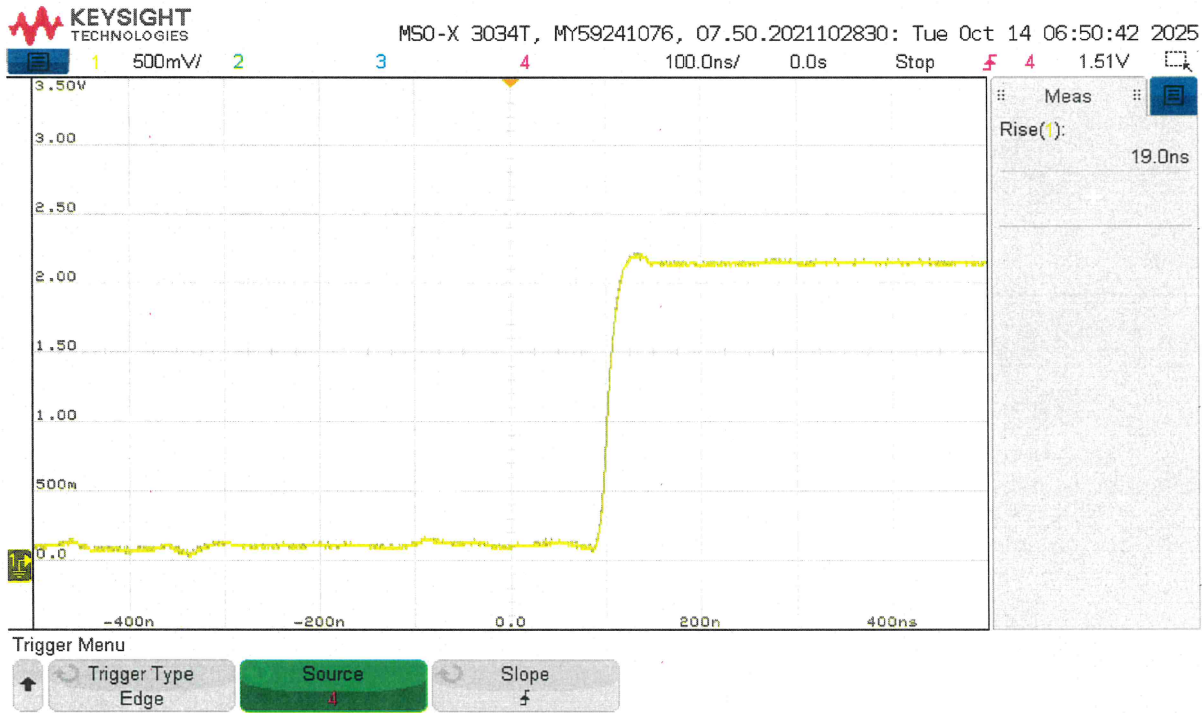
TSS = -42.9 dBm





**SUMMARY TEST DATA  
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Rise Time = 19 ns





**SUMMARY TEST DATA  
ON  
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Fall Time = 100.4 ns

