



**SUMMARY TEST DATA  
ON  
HADA-D2001**

PL38224/2245

Customer: \_\_\_\_\_ Tested By: J. Monley  
 SO No: \_\_\_\_\_ Temperature: +25°C  
 Model No: HADA-D2001 Date: 10/28/22  
 Serial No: PL38224/2245 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	±0.20 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)	+0.62 dB  +1.18 dB See Plot	
6	Log Linearity:	±0.5 dB Max @ +25°C ±0.75 dB Max @ -40°C to +85°C	-0.36 dB +0.66 dB See Plot	
7	Maximum Input Power (CW):	+23 dBm	Pass	
8	Duty Cycle:	100%	Pass	
9	Rise Time:	30 ns Max (10% to 90%)	16 nS See Plot	
10	Fall Time:	500 ns Max (@ Pulse width 100usec input) (90% to 10%)	182 nS See Plot	
11	DC Offset: (Input 50 Ω terminated):	+95 mV +55/-100 mV (@ -40°C to +85°C)	+105 mV +128 mV	
12	Input VSWR:	2.5:1 Max @ +23 dBm	1.18:1 See Plot	

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13	Propagation Delay:	60 ns Max	<b>40 nS</b>	PMI QA3
14	Power Supply:	+12 ± 1VDC @ 125 mA Max -12 ± 1VDC @ 75 mA Max	<b>90 mA 40 mA</b>	)
15	Warm Up Time:	2 Minutes Max	<b>2 Minutes</b>	

\*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: K. Hunter Date: 11-14-22



## SUMMARY TEST DATA ON HADA-D2001

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### Log Linearity and Log Accuracy @ +25°C

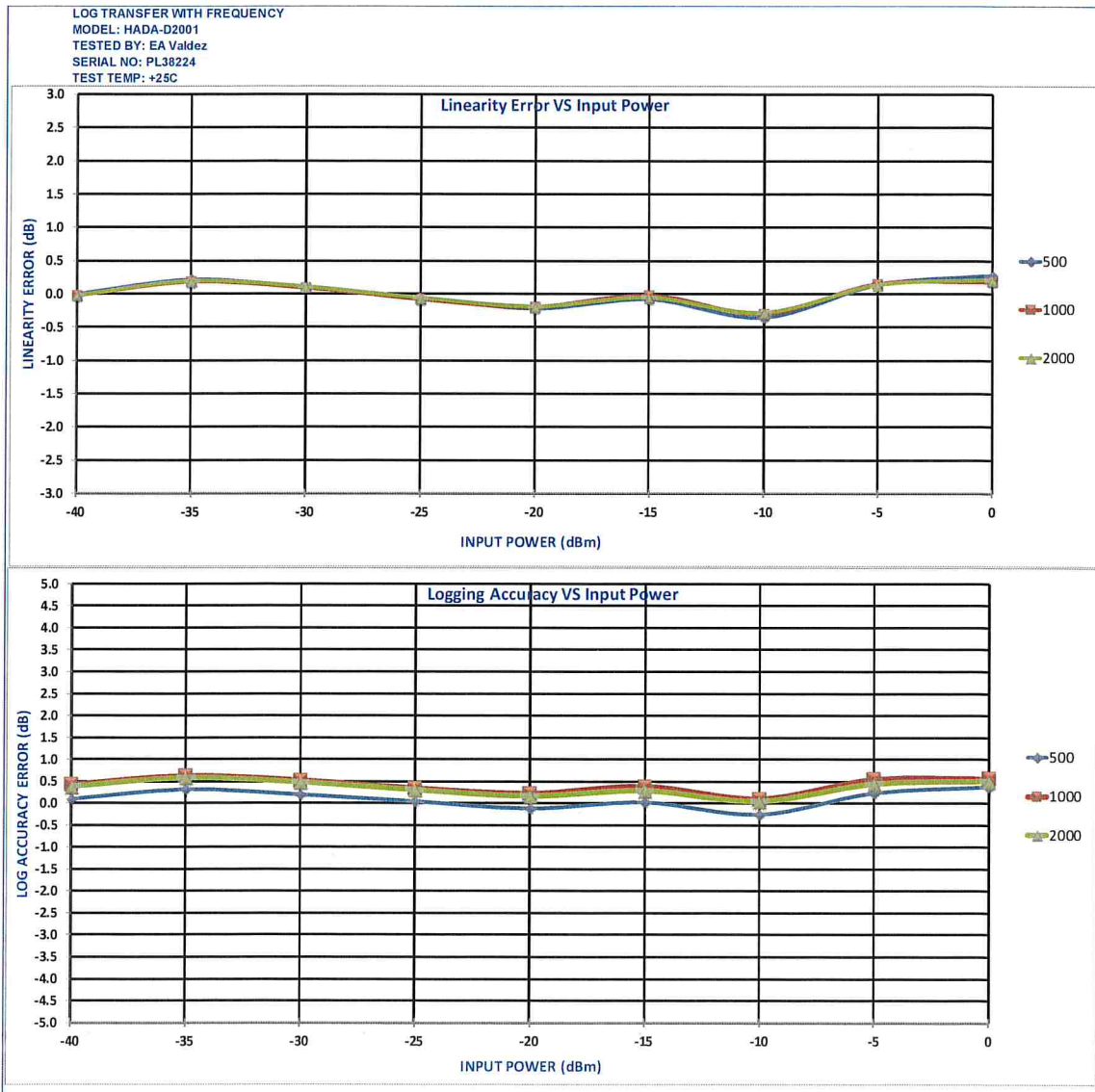
LOG TRANSFER WITH FREQUENCY			DC Offset= 0.105 V										RF Input Power (dBm)							
MODEL: HADA-D2001 TESTED BY: EA Valdez TEST DATE: 11/03/22 SERIAL NO: PL38224 TEST TEMP: +25C													PLANAR MONOLITHICS INDUSTRIES 4921 Robert J. Mathews Parkway Suit 1 El Dorado Hills, CA 95762 TEL: 916-542-1401 FAX: 916-265-2597 EMAIL: SALES@PMI-RF.COM							
Frequency	INTERCEPT (mV)	SLOPE (mV/dB)	-40	-35	-30	-25	-20	-15	-10	-5	0	Measured Value (mV)	Error(dB)	MAX	MIN					
0.5 GHz	2355	50	355	616	860	1102	1344	1601	1837	2112	2369	0	11	5	-3	-11	-4	-18	7	14
			-0.01	0.21	0.10	-0.06	-0.22	-0.08	-0.36	0.14	0.28	0.10	0.32	0.20	0.04	-0.12	0.02	-0.26	0.24	0.38
1 GHz	2369	49.9	371	631	876	1117	1361	1619	1856	2127	2378	-1	9	5	-4	-10	-1	-15	8	9
			-0.02	0.19	0.09	-0.08	-0.19	-0.02	-0.30	0.15	0.18	0.42	0.62	0.62	0.34	0.22	0.38	0.10	0.54	0.56
2 GHz	2365	49.9	369	629	874	1116	1358	1614	1852	2122	2375	-1	9	5	-3	-10	-3	-14	7	10
			-0.03	0.19	0.10	-0.07	-0.19	-0.06	-0.28	0.13	0.21	0.38	0.58	0.48	0.30	0.16	0.28	0.04	0.44	0.50
Flatness +/- dB			0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.37	0.63	0.88	1.12	1.36	1.62	1.86	2.13	2.38
Max Video Output Volts			0.36	0.62	0.86	1.10	1.34	1.60	1.84	2.11	2.37	Logging Linearity vs Frequency		MAX	MIN					
Min Video Output Volts			TOTAL LOG LINEARITY (dB)		0.28		-0.36		Logging Accuracy vs Frequency		MAX	MIN								
			TOTAL LOGGING ACCURACY (dB)		0.62		-0.26													



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## Log Linearity and Log Accuracy @ +25°C



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## SUMMARY TEST DATA ON HADA-D2001

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### Log Linearity and Log Accuracy @ -40°C

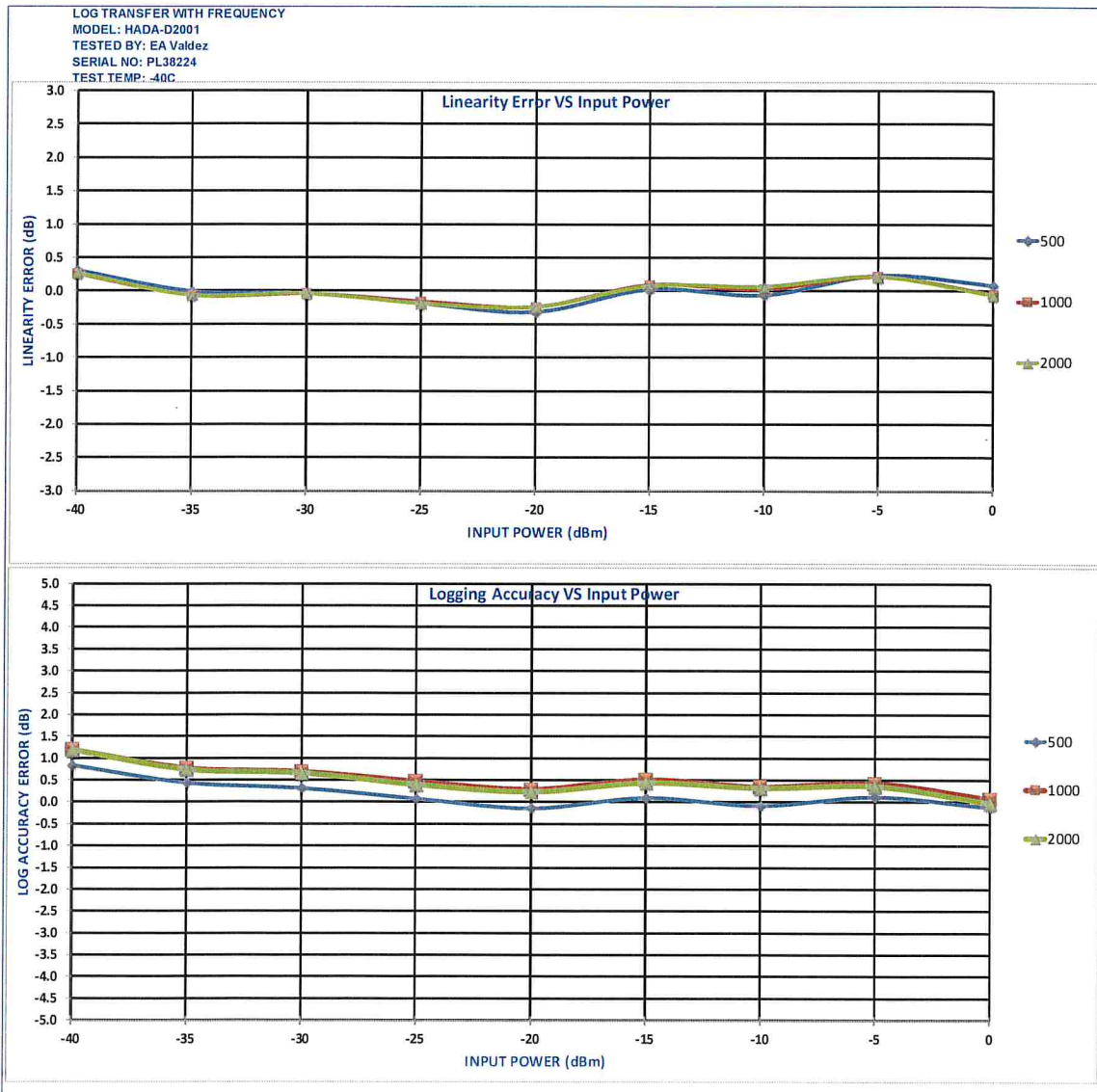
LOG TRANSFER WITH FREQUENCY			DC Offset= 0.128 V										RF Input Power (dBm)	
MODEL: HADA-D2001 TESTED BY: EA Vaklez TEST DATE: 11/03/22 SERIAL NO: PL38224 TEST TEMP: -40C													PLANAR MONOLITHICS INDUSTRIES 4921 Robert J. Mathews Parkway Suit 1 El Dorado Hills, CA 95762 TEL: 916-542-1401 FAX: 916-265-2597 EMAIL: SALES@PMI-RF.COM	
Frequency			-40	-35	-30	-25	-20	-15	-10	-5	0			
0.5 GHz	INTERCEPT (mV)	2340	392	622	866	1104	1343	1605	1846	2106	2344	Measured Value (mV) Error(dB)		
	SLOPE (mV/dB)	49.1	15	-1	-2	-9	-16	1	-3	11	4	Error (mV) MAX MIN		
			0.30	-0.01	-0.04	-0.19	-0.32	0.02	-0.07	0.23	0.08	LINEARITY ERROR (dB) 0.30 -0.32		
			0.84	0.44	0.32	0.08	-0.14	0.10	-0.08	0.12	-0.12	LOGGING ACCURACY (dB) 0.84 -0.14		
1 GHz	INTERCEPT (mV)	2356	409	638	884	1123	1364	1625	1867	2121	2353	Measured Value (mV) Error(dB)		
	SLOPE (mV/dB)	49	13	-3	-2	-8	-12	4	1	10	-3	Error (mV) MAX MIN		
			0.26	-0.07	-0.05	-0.17	-0.25	0.08	0.03	0.21	-0.05	LINEARITY ERROR (dB) 0.26 -0.25		
			1.18	0.76	0.88	0.46	0.28	-0.50	0.34	0.42	0.06	LOGGING ACCURACY (dB) 1.18 0.06		
2 GHz	INTERCEPT (mV)	2352	409	637	883	1120	1362	1622	1866	2118	2349	Measured Value (mV) Error(dB)		
	SLOPE (mV/dB)	48.9	13	-3	-2	-9	-12	3	3	10	-3	Error (mV) MAX MIN		
			0.27	-0.07	-0.04	-0.19	-0.25	0.07	0.06	0.21	-0.06	LINEARITY ERROR (dB) 0.27 -0.25		
			1.18	0.74	0.86	0.40	0.24	-0.44	0.32	0.36	-0.02	LOGGING ACCURACY (dB) 1.18 -0.02		
Flatness +/- dB			0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10			
Max Video Output Volts			0.41	0.64	0.88	1.12	1.36	1.63	1.87	2.12	2.35			
Min Video Output Volts			0.39	0.62	0.87	1.10	1.34	1.61	1.85	2.11	2.34			
											Logging Linearity vs Frequency Error(dB)			
											TOTAL LOG LINEARITY (dB) 0.30 -0.32			
											Logging Accuracy vs Frequency Error(dB)			
											TOTAL LOGGING ACCURACY (dB) 1.18 -0.14			



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## Log Linearity and Log Accuracy @ -40°C



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## SUMMARY TEST DATA ON HADA-D2001

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### Log Linearity and Log Accuracy @ +85°C

LOG TRANSFER WITH FREQUENCY		DC Offset= 0.122 V										RF Input Power (dBm)	
MODEL: HADA-D2001 TESTED BY: EA Valdez TEST DATE: 11/04/22 SERIAL NO: PL38224 TEST TEMP: +85C												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	
Frequency		-40	-35	-30	-25	-20	-15	-10	-5	0			
0.5 GHz	INTERCEPT (mV)	333	581	812	1052	1294	1544	1780	2066	2332	Measured Value (mV)	Error (dB)	
	SLOPE (mV/dB)	14	14	-2	-10	-16	-13	-24	4	33	Error (mV)	MAX MIN	
		0.27	0.29	-0.05	-0.20	-0.31	-0.26	-0.49	0.09	0.66	LINEARITY ERROR (dB)	0.66 -0.49	
		-0.34	-0.38	-0.76	-0.96	-1.12	-1.12	-1.40	-0.88	-0.36	LOGGING ACCURACY (dB)	-0.34 -1.40	
1 GHz	INTERCEPT (mV)	349	597	830	1069	1313	1564	1799	2076	2342	Measured Value (mV)	Error (dB)	
	SLOPE (mV/dB)	12	13	-2	-10	-14	-10	-22	7	26	Error (mV)	MAX MIN	
		0.24	0.25	-0.04	-0.21	-0.27	-0.20	-0.45	0.15	0.53	LINEARITY ERROR (dB)	0.53 -0.45	
		-0.02	-0.06	-0.40	-0.62	-0.74	-0.72	-1.02	-0.48	-0.16	LOGGING ACCURACY (dB)	-0.02 -1.02	
2 GHz	INTERCEPT (mV)	348	596	829	1067	1311	1560	1797	2071	2341	Measured Value (mV)	Error (dB)	
	SLOPE (mV/dB)	12	15	-1	-10	-13	-12	-22	5	23	Error (mV)	MAX MIN	
		0.24	0.26	-0.03	-0.21	-0.27	-0.23	-0.44	0.11	0.57	LINEARITY ERROR (dB)	0.57 -0.44	
		-0.04	-0.08	-0.42	-0.66	-0.78	-0.80	-1.06	-0.58	-0.18	LOGGING ACCURACY (dB)	-0.04 -1.06	
Flatness +/- dB		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10			
Max Video Output Volts		0.35	0.60	0.83	1.07	1.31	1.56	1.80	2.08	2.34			
Min Video Output Volts		0.33	0.58	0.81	1.05	1.28	1.54	1.78	2.06	2.33			
												Logging Linearity vs Frequency Error (dB)	
												MAX	MIN
												TOTAL LOG LINEARITY (dB)	
												0.66	-0.49
												Logging Accuracy vs Frequency Error (dB)	
												MAX	MIN
												TOTAL LOGGING ACCURACY (dB)	
												-0.02	-1.40

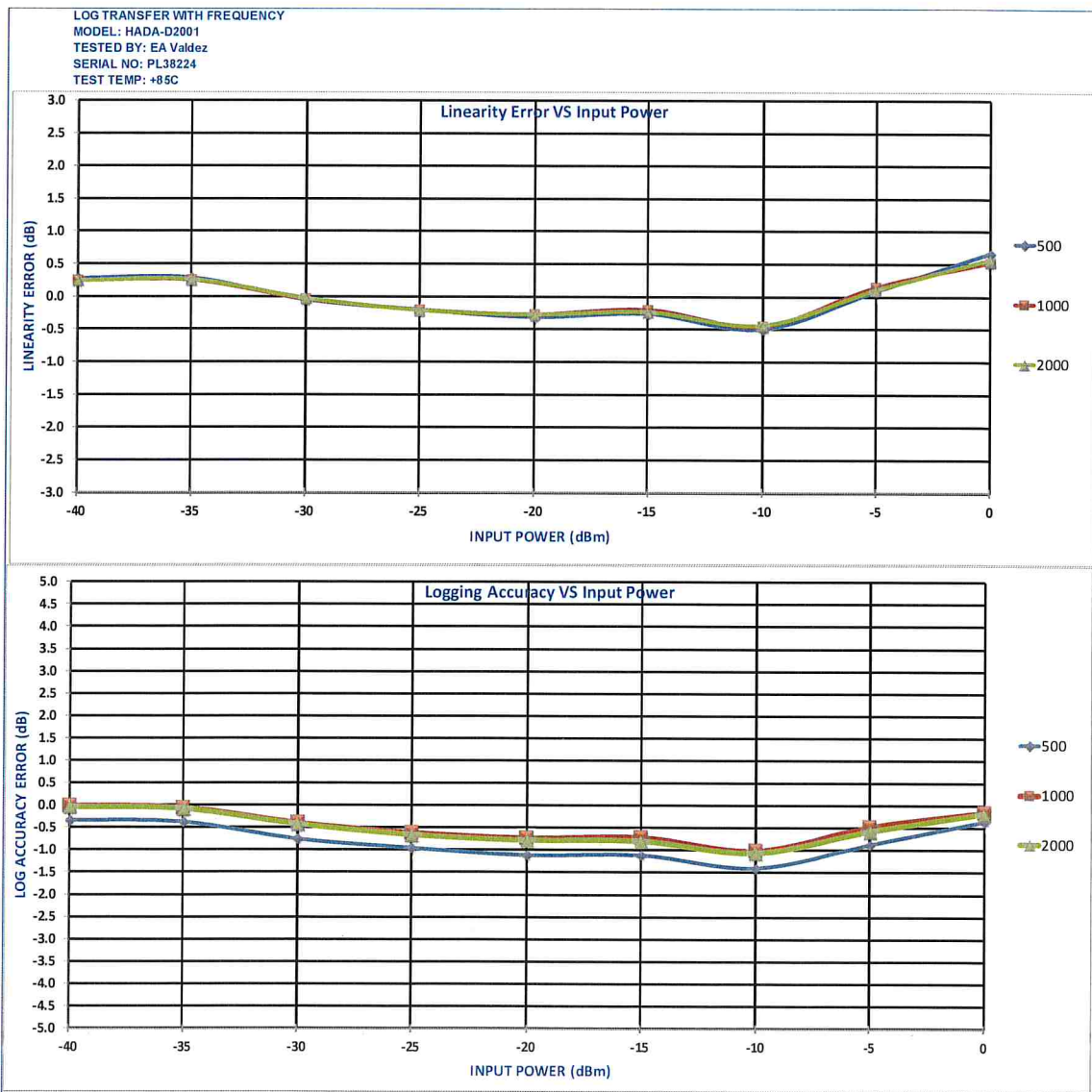
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## Log Linearity and Log Accuracy @ +85°C



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TSS -45 dBm



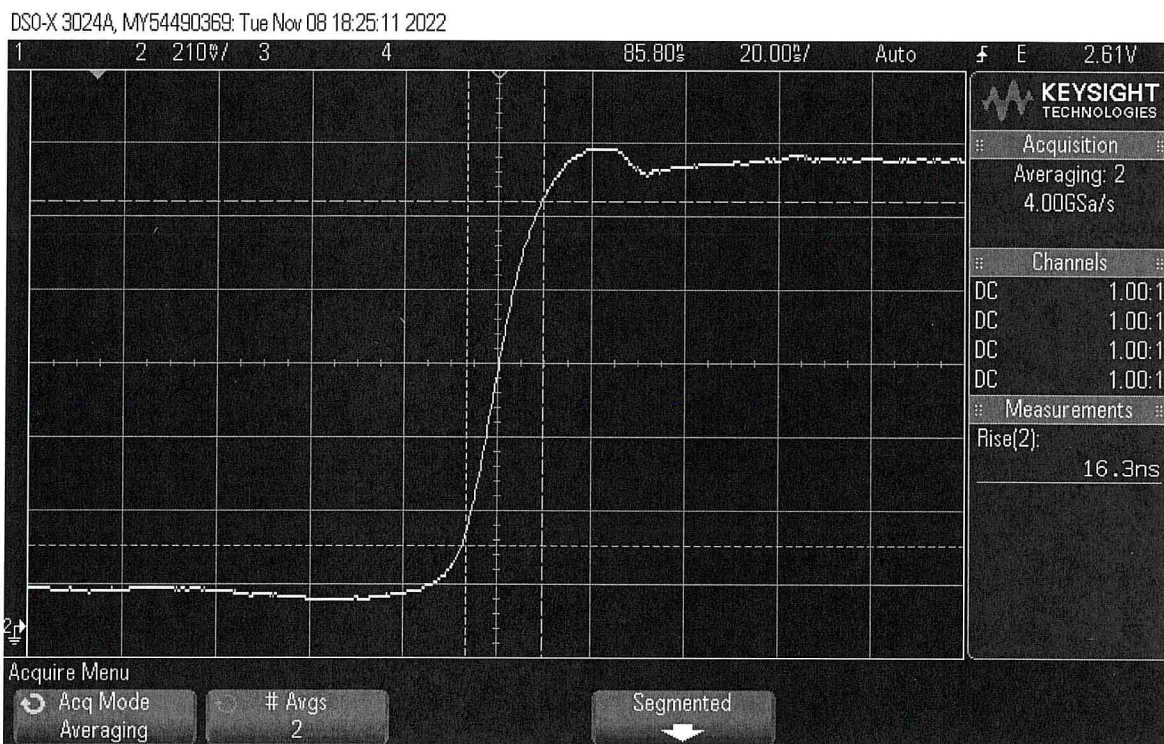
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Rise Time 16.3nS



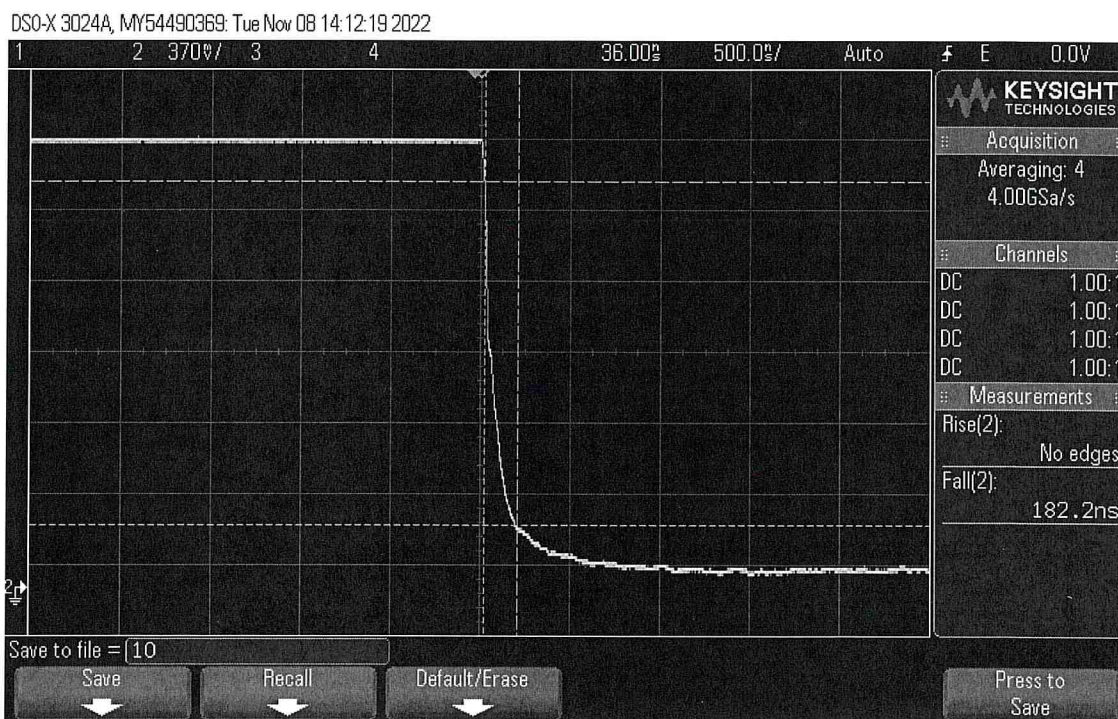
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**SUMMARY TEST DATA  
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**Fall Time 182.2nS**



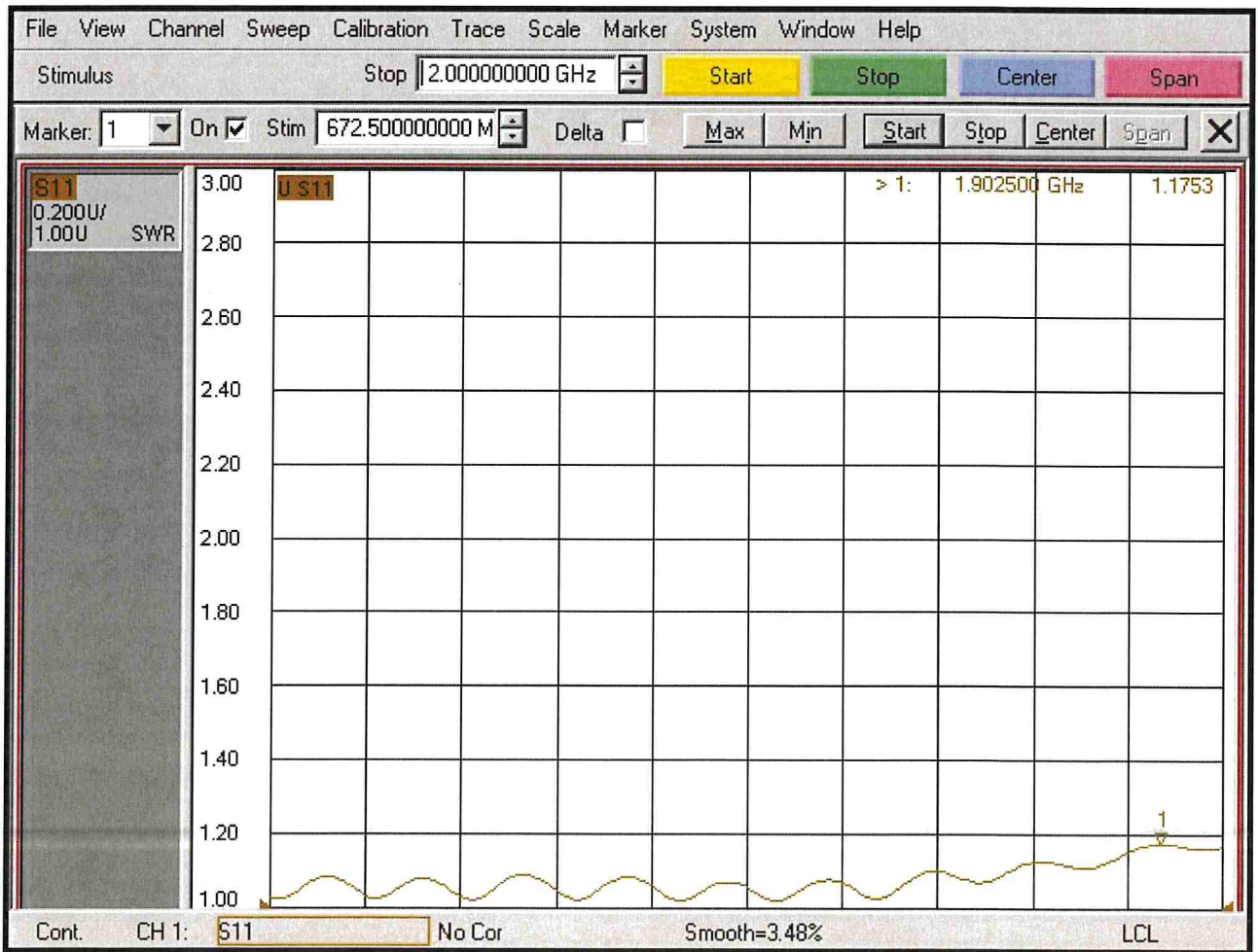
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**VSWR 1.17:1**



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