



**TYPICAL CHARACTERISTICS
ON
GMDA-S4080-60**

MODEL GMDA-S4080-60 IS A DETECTOR LOG VIDEO AMPLIFIER (DLVA) THAT OPERATES BETWEEN THE 4GHz TO 8GHz FREQUENCY RANGE. IT HAS A DYNAMIC RANGE OF -55 dBm to +5dBm, A LOG SLOPE OF 25.0 +/- 1.0 mV / dB, AND A NOMINAL VIDEO BANDWIDTH OF 33 MHz. FURTHERMORE, IT HAS BEEN DESIGNED USING CUTTING EDGE TECHNOLOGY WHICH PROVIDES STUNNING PERFORMANCE AND RELIABILITY IN A COMPACT PACKAGE MAKING IT AN OPTIMUM SOLUTION FOR HIGH SPEED CHANNELIZED RECEIVER APPLICATIONS.



March 27th 2023

Prepared By: M. Ayala

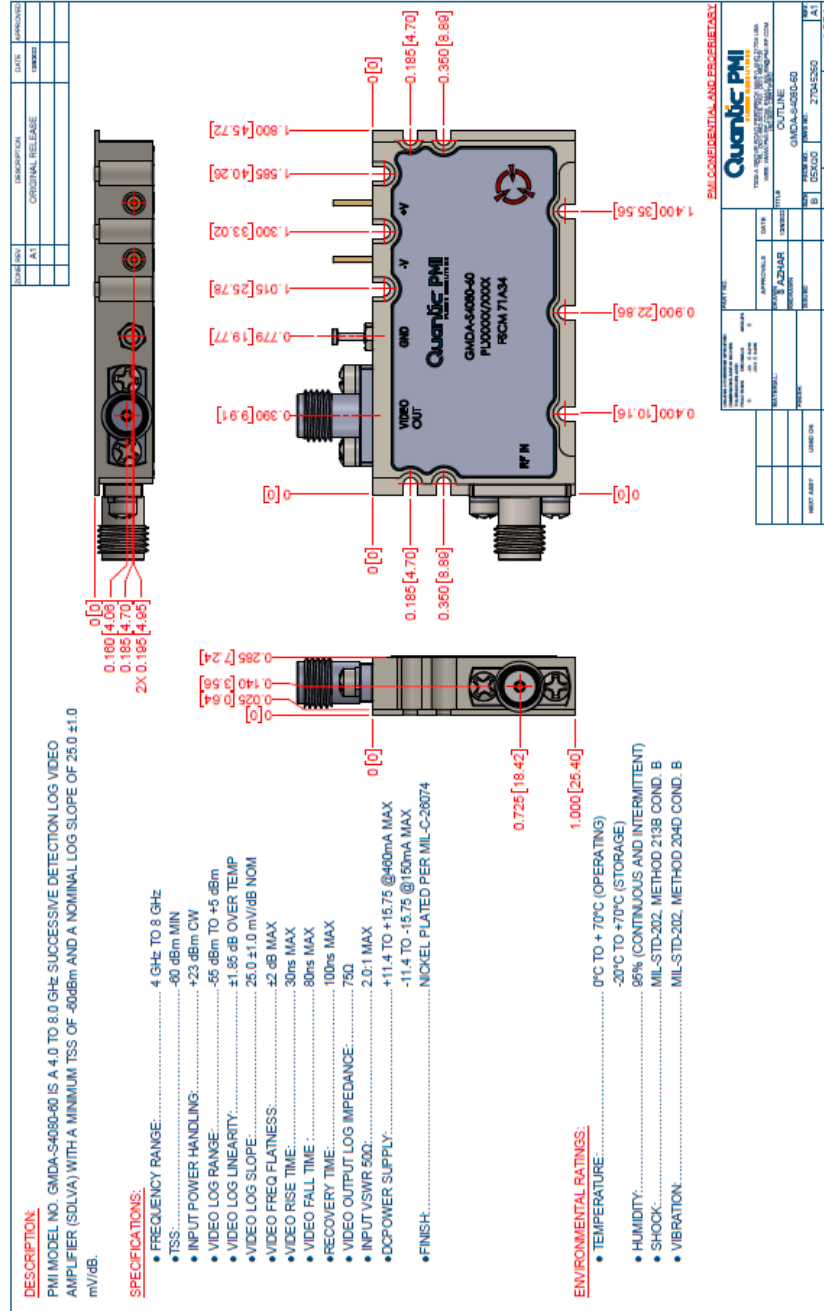
Tested By: M. Ayala

Designed By E. Benson

4921 Robert J. Mathews Pkwy Suite 1 El Dorado Hills, CA 95762
Ph: (916)542-1401 Fax: (916)265-2597
Email: sales@pmi-rf.com



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TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS
1	Frequency Range:	4.0GHz to 8.0GHz	4.0GHz to 8.0GHz
2	Dynamic Range:	-55dBm to 5dBm	-55 dBm to +5dBm
3	TSS (Worst Case)	-60 dBm Min	<u>-67 dBm</u>
4	Log Linearity: @+25C (See Graph #1)	± 1.85 dB Over Temp	<u>+ 0.9 dB</u> <u>+ 0.59 dB</u>
5	Log Linearity: @0C (See Graph #2)	± 1.85 dB Over Temp	<u>+ 1.01 dB</u> <u>+ 0.57 dB</u>
6	Log Linearity: @+70C(See Graph #3)	± 1.85 dB Over Temp	<u>+ 0.9 dB</u> <u>+ 0.77dB</u>
7	Video Log Slope:	25.0 +/-1.0 mV/dB NOM	<u>+24.9</u>
8	Input Power Handling:	+23 dBm CW	<u>Pass</u>
9	Video Freq Flatness:	±2 dB Max	<u>± 1 dB Max.</u>
10	Rise Time: (See Graph #4)	30ns Max.(10%-90%)	<u>8.3 ns</u>
11	Fall Time: (See Graph #5)	80ns Max. (PW 100us, 90% - 10%)	<u>69.3 ns</u>
12	Recovery Time	100ns Max.	<u>95 ns</u>
13	Input VSWR 50 ohms: (See Graph #6)	2.0:1 Max.	<u>1.56.1</u>
14	Video Output Log Impedance	75 Ohms	<u>75 Ohms</u>
15	DC Power Supply: (Worst Case)	+11.4V to+15.75 @ 460mA MAX -11.4V to -15.75@ 150mA MAX	<u>(+) 310 mA</u> <u>(-) 50 mA</u>
16	Finish:	NICKEL PLATED PER MIL-C-26074	<u>NICKEL PLATED PER</u> <u>MIL-C-26074</u>

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Log Transfer vs Frequency @+25C

Graph #1

MODEL: GMDA-S4080-60
SERIAL NO: PL40216
DATE: 04-26-2023
TESTED BY: M. Ayala
TEST TEMP: +25°C



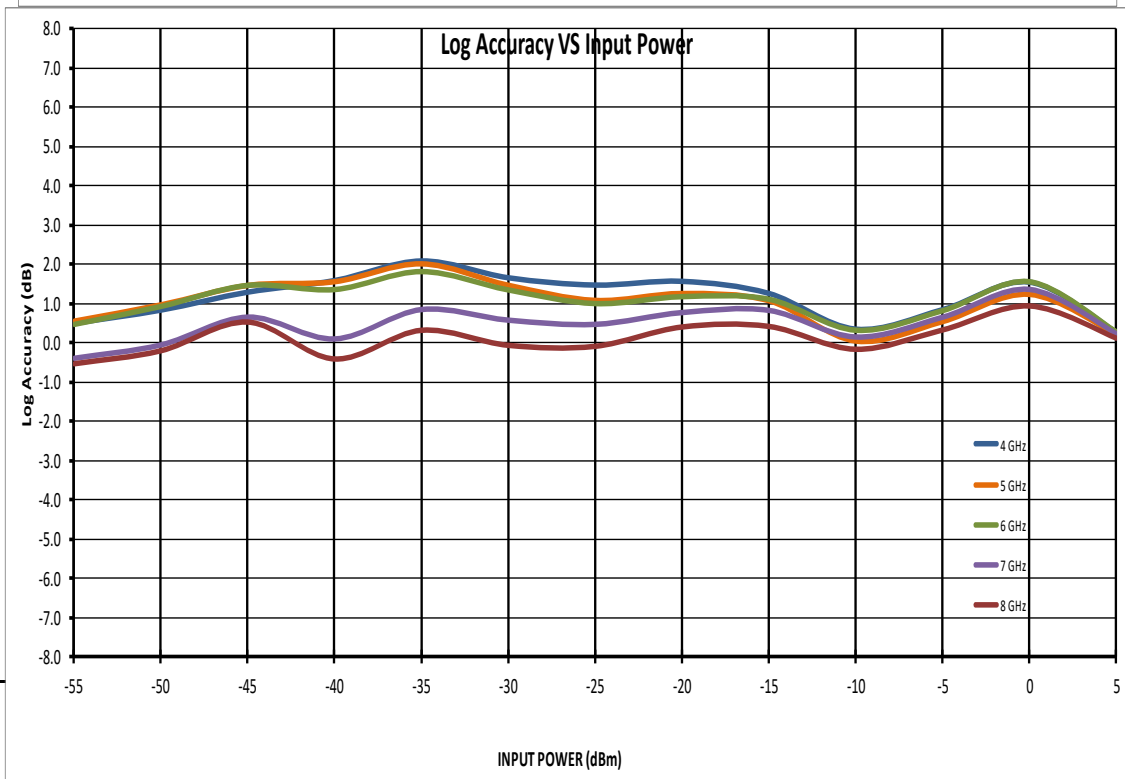
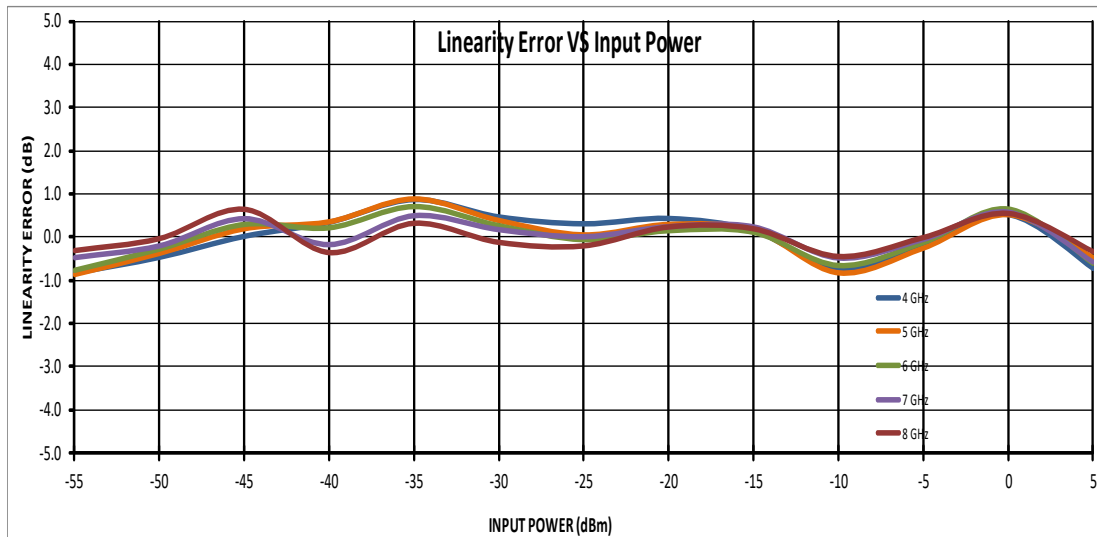
Frequency		-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	RF Input Power (dBm)	
4 GHz	INTERCEPT (mV)	1607	223	356	492	624	761	875	995	1122	1239	1341	1478	1620	1713	Measured Value (mV)
	SLOPE (mV/dB)	24.8	-21	-12	0	8	21	11	7	10	3	-18	-5	13	-18	Error (mV)
	LIN. ERR. (dB)	0.9	-0.84	-0.48	0.01	0.33	0.86	0.46	0.30	0.42	0.14	-0.74	-0.22	0.51	-0.74	LINEARITY ERROR (dB)
5 GHz	INTERCEPT (mV)	1599	224	359	496	623	759	870	985	1114	1234	1333	1470	1612	1711	Measured Value (mV)
	SLOPE (mV/dB)	24.6	-21	-9	5	8	21	9	1	7	4	-20	-6	13	-12	Error (mV)
	LIN. ERR. (dB)	0.87	-0.86	-0.38	0.19	0.35	0.87	0.38	0.05	0.29	0.16	-0.82	-0.26	0.51	-0.47	LINEARITY ERROR (dB)
6 GHz	INTERCEPT (mV)	1604	222	358	496	618	754	867	983	1112	1235	1340	1477	1620	1713	Measured Value (mV)
	SLOPE (mV/dB)	24.8	-19	-7	7	6	18	7	-1	4	3	-16	-3	16	-15	Error (mV)
	LIN. ERR. (dB)	0.76	-0.76	-0.27	0.30	0.22	0.71	0.27	-0.05	0.16	0.12	-0.64	-0.12	0.65	-0.59	LINEARITY ERROR (dB)
7 GHz	INTERCEPT (mV)	1601	201	334	476	587	730	848	970	1102	1228	1336	1473	1615	1712	Measured Value (mV)
	SLOPE (mV/dB)	25.2	-12	-5	10	-5	12	4	0	6	6	-13	-2	14	-15	Error (mV)
	LIN. ERR. (dB)	0.59	-0.49	-0.22	0.41	-0.19	0.48	0.16	-0.01	0.23	0.22	-0.50	-0.07	0.56	-0.59	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1592	197	330	473	574	717	832	956	1093	1218	1328	1465	1605	1709	Measured Value (mV)
	SLOPE (mV/dB)	25.2	-8	-1	16	-9	8	-3	-5	6	5	-11	0	13	-9	Error (mV)
	LIN. ERR. (dB)	0.63	-0.32	-0.04	0.63	-0.36	0.31	-0.13	-0.21	0.22	0.18	-0.45	-0.02	0.53	-0.34	LINEARITY ERROR (dB)
Avg. Slope: 24.9 mV/dB		0.5	0.6	0.5	1	0.9	0.9	0.8	0.6	0.4	0.3	0.3	0.3	0.1	Flatness dB: ±1 dB	

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Graph #1 (cont.)



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**TYPICAL CHARACTERISTICS
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Log Transfer vs Frequency @0C

Graph #2

MODEL: GMDA-S4080-60
SERIAL NO: PL40216
DATE: 04-26-2023
TESTED BY: M. Ayala
TEST TEMP: 0°C



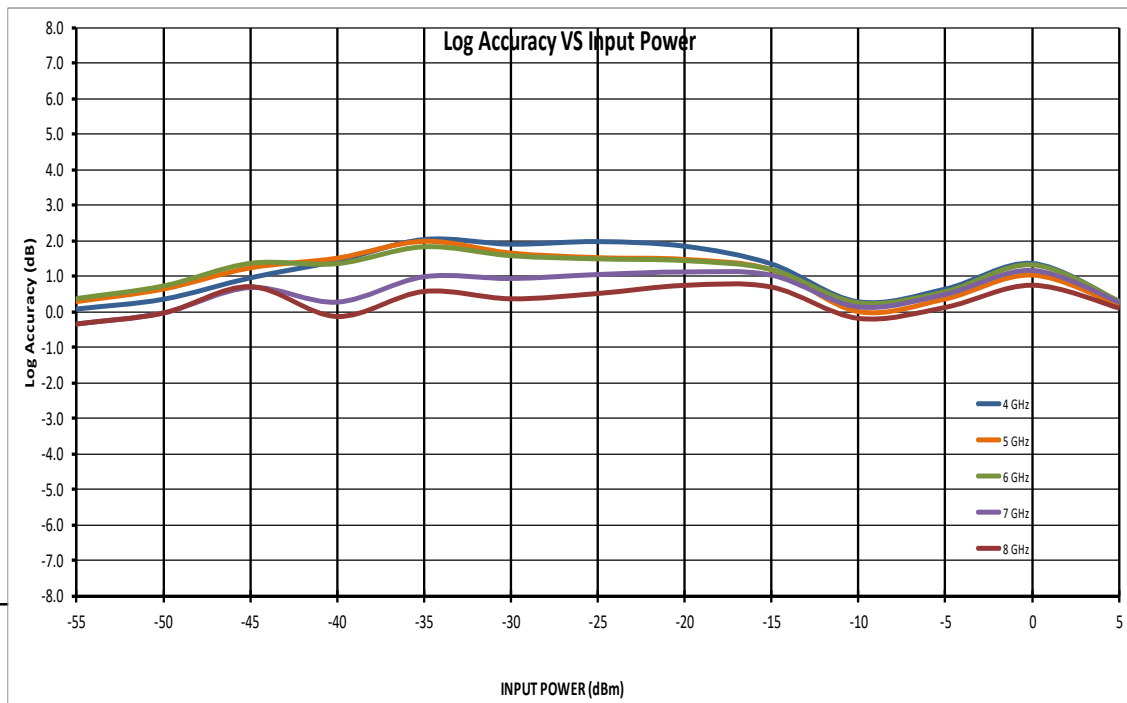
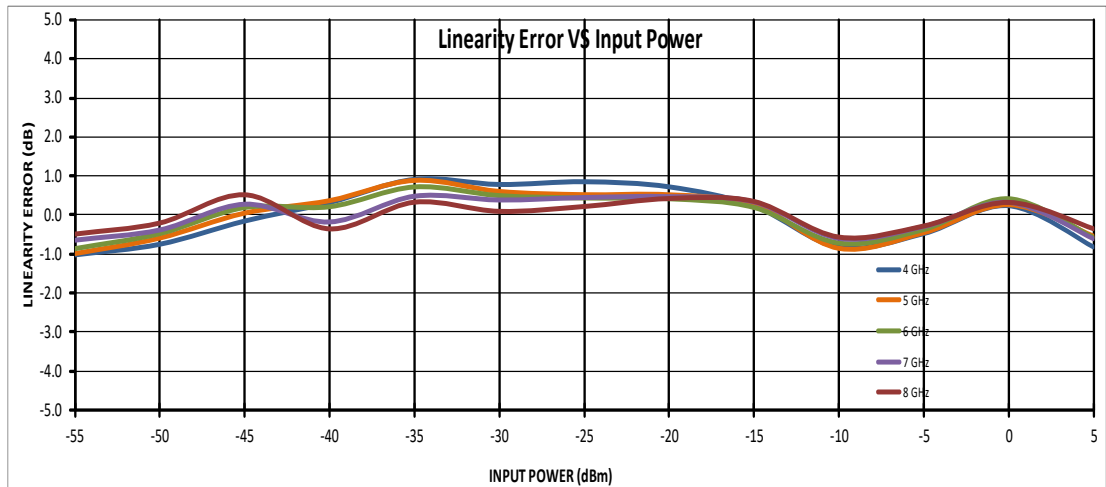
Frequency		-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	198	329	468	604	743	864	990	1111	1223	1321	1454	1596	1694	Measured Value (mV)
	SLOPE (mV/dB)	-25	-19	-4	8	23	19	21	18	6	-21	-12	6	-20	Error (mV)
	LIN. ERR. (dB)	-1.02	-0.75	-0.16	0.32	0.91	0.78	0.85	0.72	0.23	-0.83	-0.48	0.24	-0.82	LINEARITY ERROR (dB)
5 GHz	INTERCEPT (mV)	203	336	475	606	742	858	979	1102	1219	1314	1447	1588	1691	Measured Value (mV)
	SLOPE (mV/dB)	-25	-15	1	9	22	15	13	13	7	-21	-11	7	-14	Error (mV)
	LIN. ERR. (dB)	-1.01	-0.60	0.05	0.37	0.89	0.61	0.52	0.52	0.27	-0.87	-0.46	0.26	-0.55	LINEARITY ERROR (dB)
6 GHz	INTERCEPT (mV)	205	338	478	602	738	856	978	1101	1219	1320	1452	1595	1694	Measured Value (mV)
	SLOPE (mV/dB)	-21	-12	5	5	18	12	11	10	5	-18	-9	10	-14	Error (mV)
	LIN. ERR. (dB)	-0.87	-0.48	0.19	0.21	0.71	0.49	0.43	0.41	0.19	-0.72	-0.38	0.41	-0.58	LINEARITY ERROR (dB)
7 GHz	INTERCEPT (mV)	187	319	461	575	717	840	967	1093	1215	1317	1450	1591	1693	Measured Value (mV)
	SLOPE (mV/dB)	-16	-10	7	-4	12	10	11	12	8	-15	-7	8	-15	Error (mV)
	LIN. ERR. (dB)	-0.65	-0.38	0.28	-0.18	0.48	0.38	0.45	0.47	0.33	-0.60	-0.30	0.32	-0.61	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	187	319	462	565	707	826	954	1084	1207	1309	1441	1581	1689	Measured Value (mV)
	SLOPE (mV/dB)	-12	-5	13	-9	8	2	5	11	9	-14	-7	8	-9	Error (mV)
	LIN. ERR. (dB)	-0.49	-0.21	0.52	-0.36	0.33	0.09	0.22	0.42	0.35	-0.57	-0.28	0.32	-0.35	LINEARITY ERROR (dB)
Avg. Slope: 24.8 mV/dB		0.4	0.4	0.3	0.8	0.7	0.8	0.7	0.5	0.3	0.2	0.3	0.3	0.1	Flatness dB: ±0.8 dB

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Graph #2 (cont.)





TYPICAL CHARACTERISTICS ON GMDA-S4080-60

Transfer Response vs Frequency @+70C

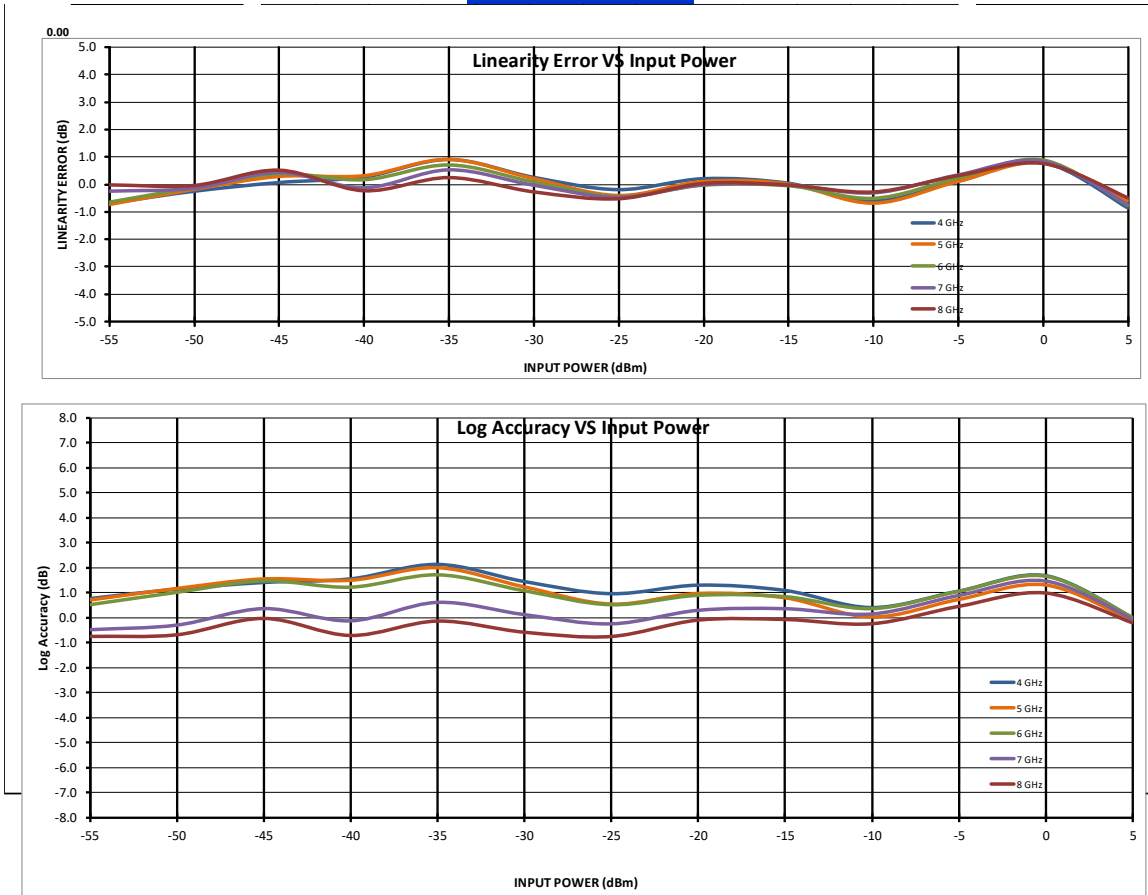
MODEL: GMDA-S4080-60 SERIAL NO: PL40216 DATE: 04-26-2023 TESTED BY: M. Ayala TEST TEMP: +70°C															
Frequency		-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)														Measured Value (mV)
	SLOPE (mV/dB)														Error (mV)
	LIN. ERR. (dB)														LINEARITY ERROR (dB)
5 GHz	INTERCEPT (mV)														Measured Value (mV)
	SLOPE (mV/dB)														Error (mV)
	LIN. ERR. (dB)														LINEARITY ERROR (dB)
6 GHz	INTERCEPT (mV)														Measured Value (mV)
	SLOPE (mV/dB)														Error (mV)
	LIN. ERR. (dB)														LINEARITY ERROR (dB)
7 GHz	INTERCEPT (mV)														Measured Value (mV)
	SLOPE (mV/dB)														Error (mV)
	LIN. ERR. (dB)														LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)														Measured Value (mV)
	SLOPE (mV/dB)														Error (mV)
	LIN. ERR. (dB)														LINEARITY ERROR (dB)
Avg. Slope: 25.3 mV/dB		0.8	0.9	0.8	1.1	1.1	1	0.9	0.7	0.6	0.3	0.3	0.3	0.1	Flatness dB: ±1.1 dB

Graph # 3



TYPICAL CHARACTERISTICS ON GMDA-S4080-60

Graph #3 (cont.)

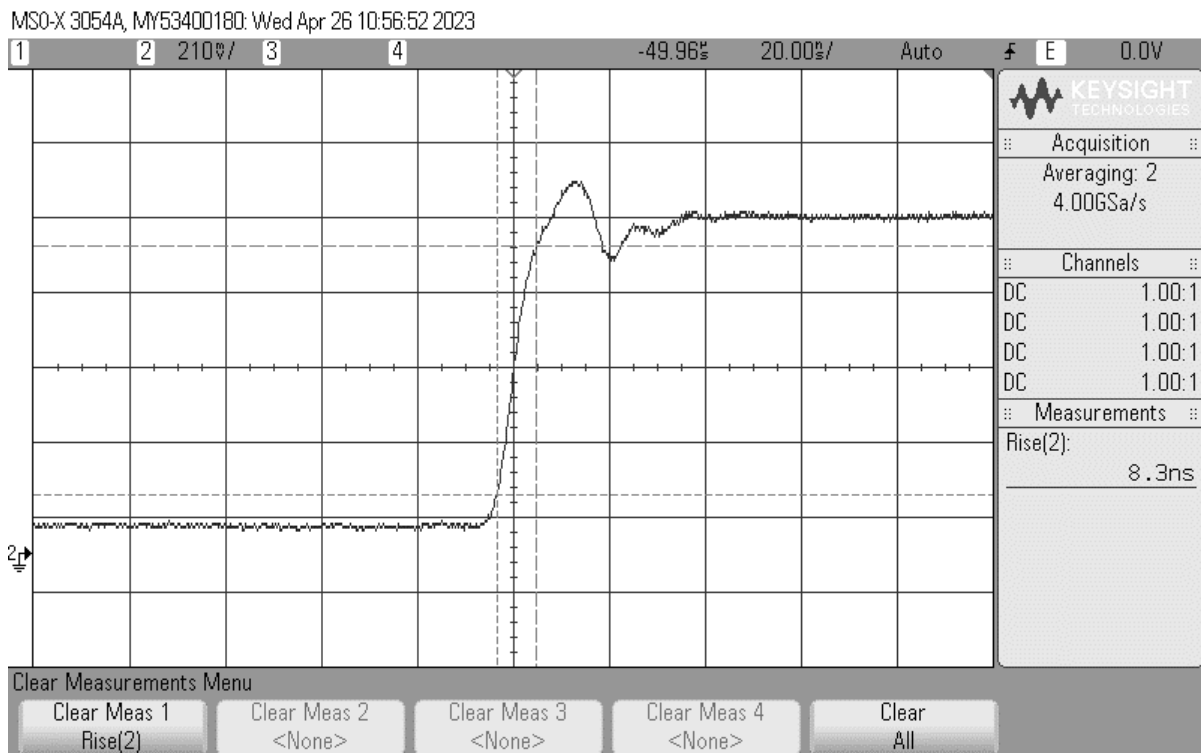




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Rise Time 8.3ns @ +25C

Graph#4



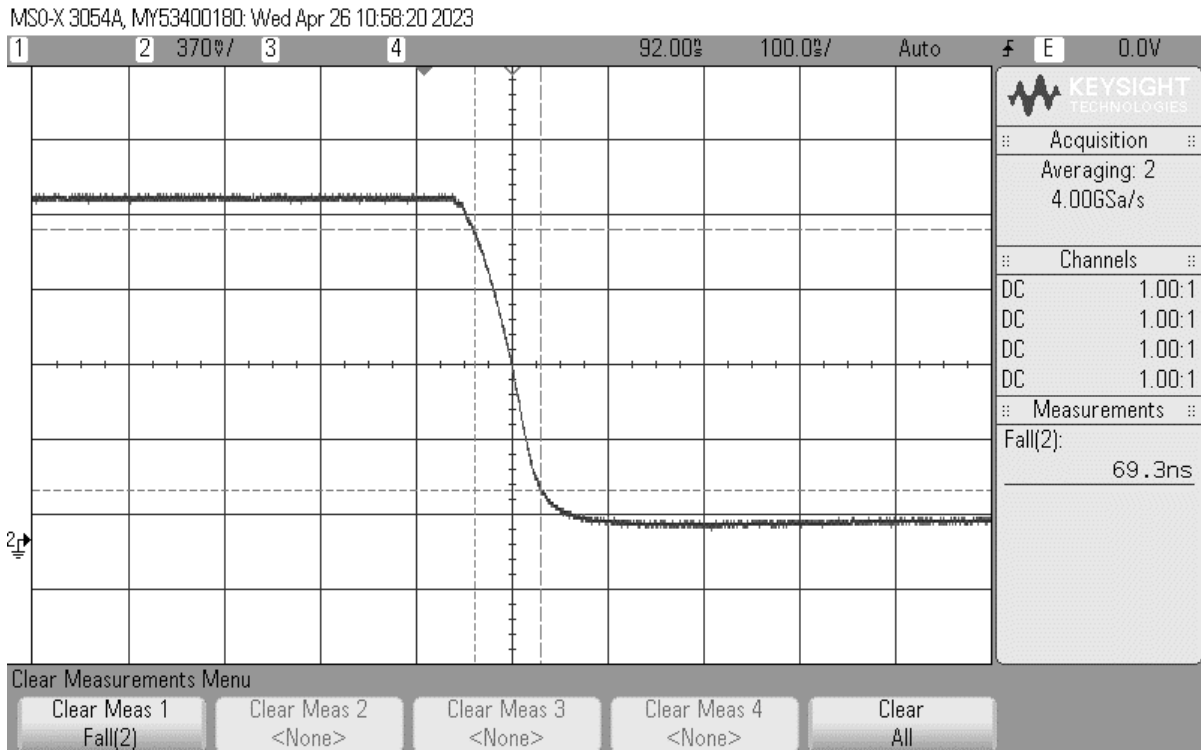
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Fall Time 69.3ns @ +25C

Graph #5



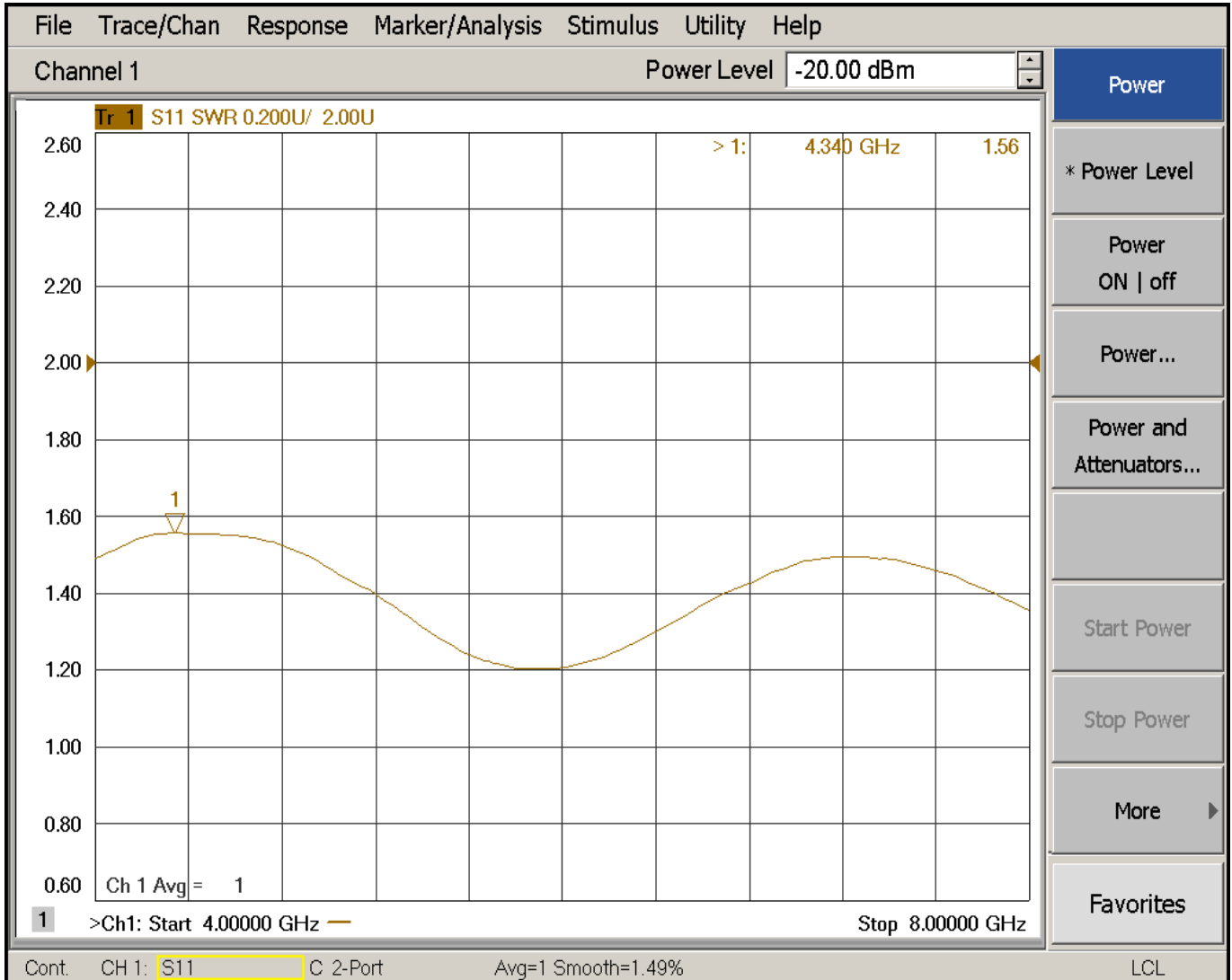
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Input VSWR 1.56:1 @ +25C

Graph #6



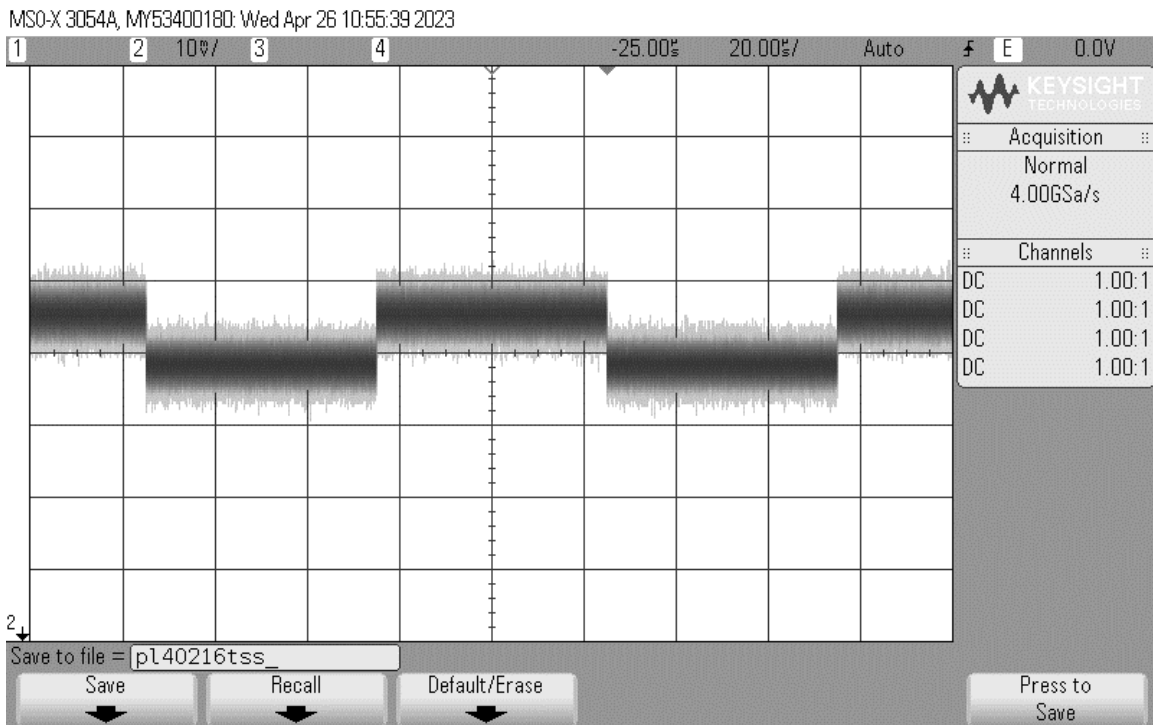
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Tangential Signal Sensivity (TSS)

-67dBm @ +25C



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