MODEL: GMDA-D1004 **S/N: PL25967** **DATE: 7/25/2019**

NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD

1. TSS

Specification: -65dBm Maximum
Measurement @ 18.0GHz, 2uS PW, 100KHz PRF

TSS -66 dBm Pass ___X___ Fail _____

2. LOG SLOPE AND LINEARITY

Specification: Log slope 25 +/- 1mV / dB @ 25 deg. C
25 +/- 2mV / dB Over Temperature

Log Linearity +/-1.5 dB Max. @ 25 deg C
+/-2.0 dB Over Temperature

Measurement: Logging Range = -60dBm to +7dBm

@ 25 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	24.8	0.53	X	
8	25.0	0.38	X	
12	25.2	0.47	X	
16	24.8	0.74	X	
18	24.5	0.57	X	

@ -54 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	24.7	0.44	X	
8	24.9	0.60	X	
12	25.3	0.87	X	
16	24.8	0.83	X	
18	24.1	0.76	X	

@ +85 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	25.7	0.56	X	
8	25.8	0.26	X	
12	25.6	0.38	X	
16	25.3	0.75	X	
18	26.3	1.03	X	

MODEL: GMDA-D1004 **S/N: PL25967** **DATE: 7/25/2019**

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3. FLATNESS

Specification: 100mV Max
Measurement: @-35dBm Input

System Flatness = 0.36 dB (See attached plot)
Vp-p = 38 mV (See attached plot)
Flatness = Vp-p – (System Flatness x 25)
Flatness = 29 mV Pass ___X___ Fail _____

4. MAXIMUM OUTPUT VOLTAGE

Specification: +2.5v Max
Measurement: 1.82v Pass ___X___ Fail _____

5. INPUT VSWR

Specification: 2.3:1 Max
Measurement @-20dBm input (See attached plot)
VSWR: 1.81:1 Pass ___X___ Fail _____

6. VIDEO RISE TIME

Specification: 30ns Max
Measurement: Freq = 10.0 GHz, RF Input –35dBm, PW = 1us, PRF 100KHz

Rise Time: 21.7ns Pass ___X___ Fail _____

7. LEADING AND TRAILINGE EDGE

Specification: Per figure 5 on product feature DWG000005

Pass___X___ Fail_____

8. REVERSE SHOOT AND SLOPE REVERSE

Specification: Per figure 6 on product feature DWG000005

Pass___X___ Fail_____

9. RECOVERY TIME

Specification: 1us
Measurement: 0.16us Pass ___X___ Fail _____

MODEL: GMDA-D1004 **S/N: PL25967** **DATE: 7/25/2019**

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10. THROUGHPUT TIME

Specification: 30ns Max

Measurement: Freq 18.0GHz, PW = 100ns, PRF = 100KHz

-35dBm Input: 23ns Pass X Fail _____

11. OFFSET VOLTAGE

Specification: +/- 50mV Max

Measurement: -22 mV Pass X Fail _____

12. DC POWER

Specification: +12V to +15.5V, 400mA Max

-12V to -15.5V, 165mA Max

Measurement: +15.5V @ 301 mA Pass X Fail _____

-15.5V @ 67 mA Pass X Fail _____

13. VISUAL AND MECHANICAL INSPECTION

Specification: Per PMI product feature DWG000005

Finish: Pass X Fail _____

Dimensions: Pass X Fail _____

Marking and Identification: Pass X Fail _____

Torque Cover Screws to 1.2 in/lb. Inspect screws per criteria in Figure 1-A on TRV000002: Pass X Fail _____

Tested by: J.Emperador Date: 7/25/2019

QA: [signature] Date: 8/1/19

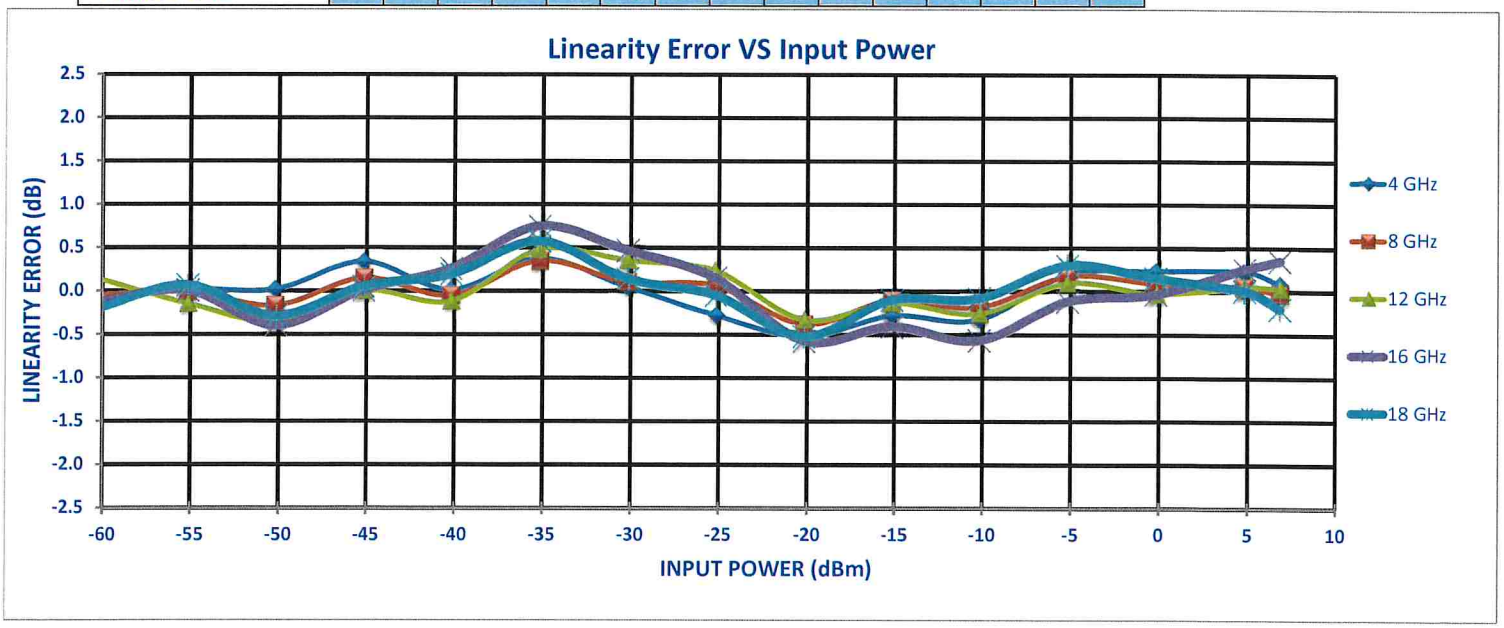
	SIZE	CAGE CODE	DWG. NO.	REVISION
PMI	A	71A34	ETD000005	B2
	SCALE			SHEET 4 OF 10

LOG TRANSFER WITH FREQUENCY
MODEL: GMDA-D1004
TESTED BY: J.Emperador
TEST DATE: 7/25/2019
SERIAL NO: PL25967
TEST TEMP: +25C

PLANAR MONOLITHICS INDUSTRIES
4921 Robert J. Mathews Parkway, Suite 1
El Dorado Hills, CA 95762
Phone: 916-542-1401 Fax: 301-662-1731
Email: sales@pmi-rf.com | www.pmi-rf.com

Vos= -0.007

Frequency			-60.2	-55.2	-50.2	-45.2	-40.2	-35.2	-30.2	-25.2	-20.2	-15.2	-10.2	-5.18	-0.18	4.82	6.82	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1576	80	207	331	463	579	712	828	944	1062	1192	1315	1452	1577	1701	1747	Measured Value (mV)
	SLOPE (mV/dB)	24.8	-2	0	0	8	0	9	1	-7	-13	-7	-8	5	6	6	2	Error (mV)
			-0.10	0.02	0.02	0.34	0.01	0.37	0.04	-0.28	-0.53	-0.29	-0.33	0.19	0.23	0.23	0.08	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1585	79	205	326	459	579	714	833	957	1071	1203	1326	1460	1583	1707	1755	Measured Value (mV)
	SLOPE (mV/dB)	25.0	-1	0	-4	4	-1	9	3	2	-10	-3	-5	4	2	1	-1	Error (mV)
			-0.04	-0.01	-0.17	0.15	-0.05	0.35	0.10	0.06	-0.38	-0.10	-0.19	0.17	0.09	0.05	-0.03	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1583	69	188	309	444	567	708	831	954	1066	1197	1320	1455	1578	1706	1756	Measured Value (mV)
	SLOPE (mV/dB)	25.2	3	-4	-9	0	-3	12	9	6	-8	-3	-7	2	-1	1	1	Error (mV)
			0.14	-0.15	-0.35	0.01	-0.12	0.47	0.35	0.23	-0.33	-0.14	-0.26	0.09	-0.03	0.05	0.03	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1577	83	210	324	458	588	724	841	957	1063	1191	1311	1446	1572	1703	1755	Measured Value (mV)
	SLOPE (mV/dB)	24.8	-3	0	-10	0	6	18	12	4	-14	-10	-14	-3	-1	6	9	Error (mV)
			-0.12	0.00	-0.40	0.01	0.26	0.74	0.47	0.15	-0.58	-0.41	-0.57	-0.12	-0.04	0.25	0.35	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1570	89	218	332	463	589	721	833	951	1062	1195	1318	1450	1569	1688	1732	Measured Value (mV)
	SLOPE (mV/dB)	24.5	-5	2	-7	1	5	14	3	-1	-13	-2	-2	7	4	0	-5	Error (mV)
			-0.20	0.06	-0.29	0.05	0.19	0.57	0.14	-0.05	-0.52	-0.10	-0.09	0.30	0.15	0.00	-0.21	LINEARITY ERROR (dB)
	Flatness +/-dB		0.4	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.5	



	SIZE	CAGE CODE	DWG. NO.	REVISION
PMI	A	71A34	ETD000005	B2
	SCALE			SHEET 5 OF 10

LOG TRANSFER WITH FREQUENCY
MODEL: GMDA-D1004
TESTED BY: J.Emperador
TEST DATE: 7/25/2019
SERIAL NO: PL25967
TEST TEMP: -54C

PLANAR MONOLITHICS INDUSTRIES
4921 Robert J. Mathews Parkway, Suite 1
El Dorado Hills, CA 95762
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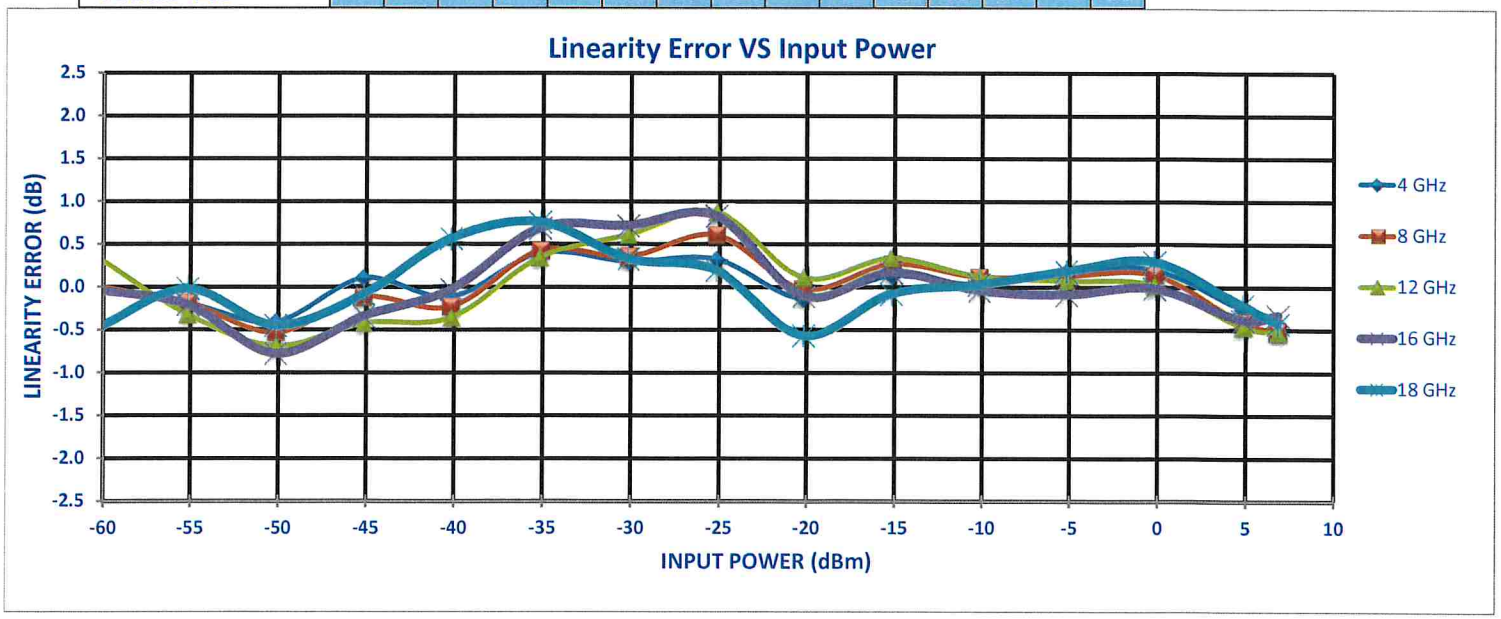
Email: sales@pmi-rf.com | www.pmi-rf.com

Vos= -0.022

Frequency																	
			-60.2	-55.2	-50.2	-45.2	-40.2	-35.2	-30.2	-25.2	-20.2	-15.2	-10.2	-5.18	-0.18	4.82	6.82	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1540	53	173	291	427	545	681	802	926	1038	1168	1289	1416	1540	1652	1697	Measured Value (mV)
	SLOPE (mV/dB)	24.7	-1	-5	-10	2	-3	10	7	8	-4	3	1	4	5	-6	-11	Error (mV)
			-0.06	-0.19	-0.41	0.10	-0.12	0.39	0.29	0.32	-0.14	0.12	0.03	0.17	0.20	-0.26	-0.44	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1552	51	171	287	422	544	685	808	939	1048	1180	1301	1426	1551	1662	1709	Measured Value (mV)
	SLOPE (mV/dB)	24.9	0	-5	-13	-3	-6	11	9	15	-1	7	3	3	3	-10	-13	Error (mV)
			0.00	-0.19	-0.53	-0.12	-0.23	0.42	0.35	0.60	-0.03	0.27	0.12	0.13	0.14	-0.41	-0.53	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1553	41	151	268	401	529	673	806	939	1046	1178	1299	1424	1549	1663	1712	Measured Value (mV)
	SLOPE (mV/dB)	25.3	8	-8	-17	-11	-9	9	15	22	3	8	3	2	1	-12	-13	Error (mV)
			0.32	-0.32	-0.69	-0.43	-0.36	0.34	0.61	0.87	0.11	0.33	0.12	0.07	0.02	-0.47	-0.53	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1552	56	176	286	421	553	695	820	947	1048	1179	1298	1421	1547	1662	1713	Measured Value (mV)
	SLOPE (mV/dB)	24.8	-1	-5	-19	-9	-1	17	18	21	-3	4	-1	-2	0	-10	-8	Error (mV)
			-0.04	-0.21	-0.78	-0.35	-0.03	0.68	0.72	0.83	-0.11	0.17	-0.04	-0.09	-0.02	-0.39	-0.34	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1545	86	217	327	456	592	717	827	944	1046	1178	1301	1425	1548	1656	1699	Measured Value (mV)
	SLOPE (mV/dB)	24.1	-11	-1	-11	-2	14	18	8	5	-14	-2	1	4	7	-5	-10	Error (mV)
			-0.47	-0.02	-0.45	-0.09	0.56	0.76	0.33	0.19	-0.57	-0.08	0.03	0.18	0.29	-0.22	-0.43	LINEARITY ERROR (dB)
	Flatness +/-dB		0.9	1.3	1.2	1.1	1.3	0.9	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.3	



	SIZE	CAGE CODE	DWG. NO.	REVISION
PMI	A	71A34	ETD000005	B2
	SCALE			SHEET 6 OF 10

LOG TRANSFER WITH FREQUENCY
MODEL: GMDA-D1004
TESTED BY: J.Emperador
TEST DATE: 7/25/2019
SERIAL NO: PL25967
TEST TEMP: +85C

PLANAR MONOLITHICS INDUSTRIES
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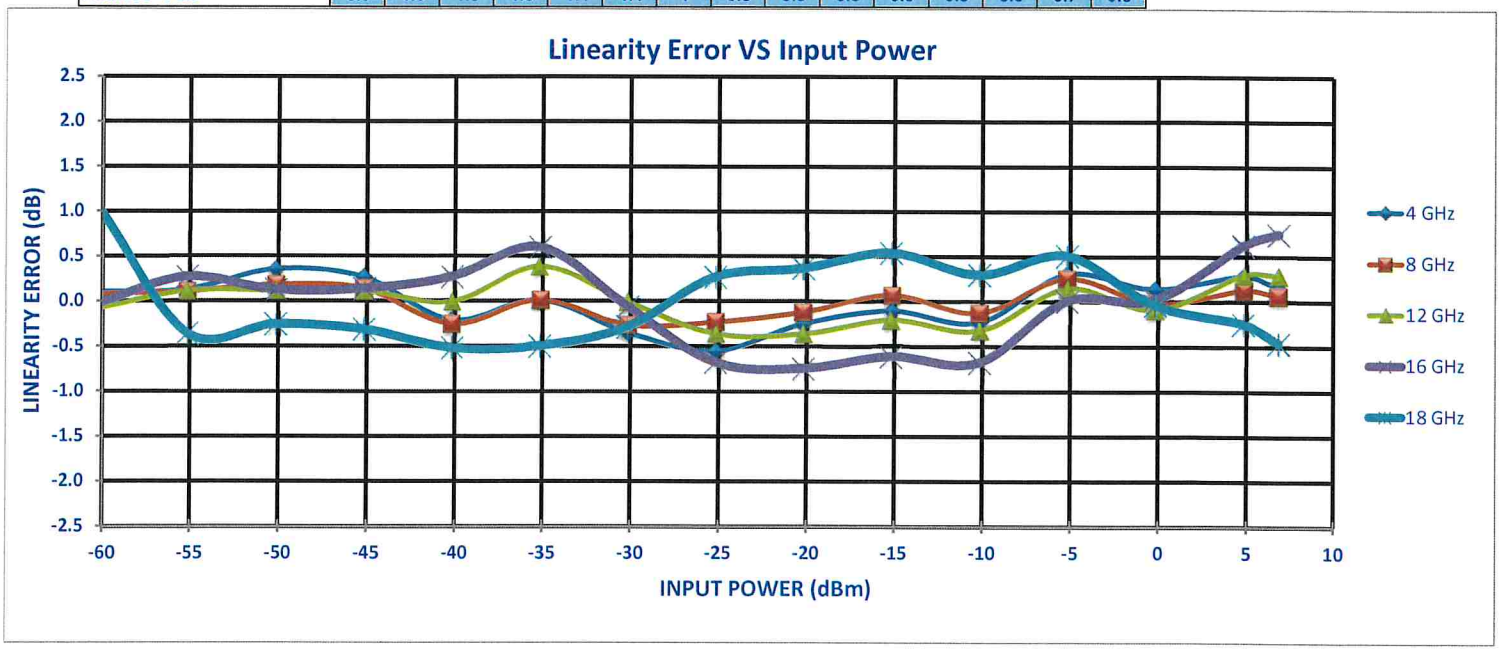
Email: sales@pmi-rf.com | www.pmi-rf.com

Vos= 0.009

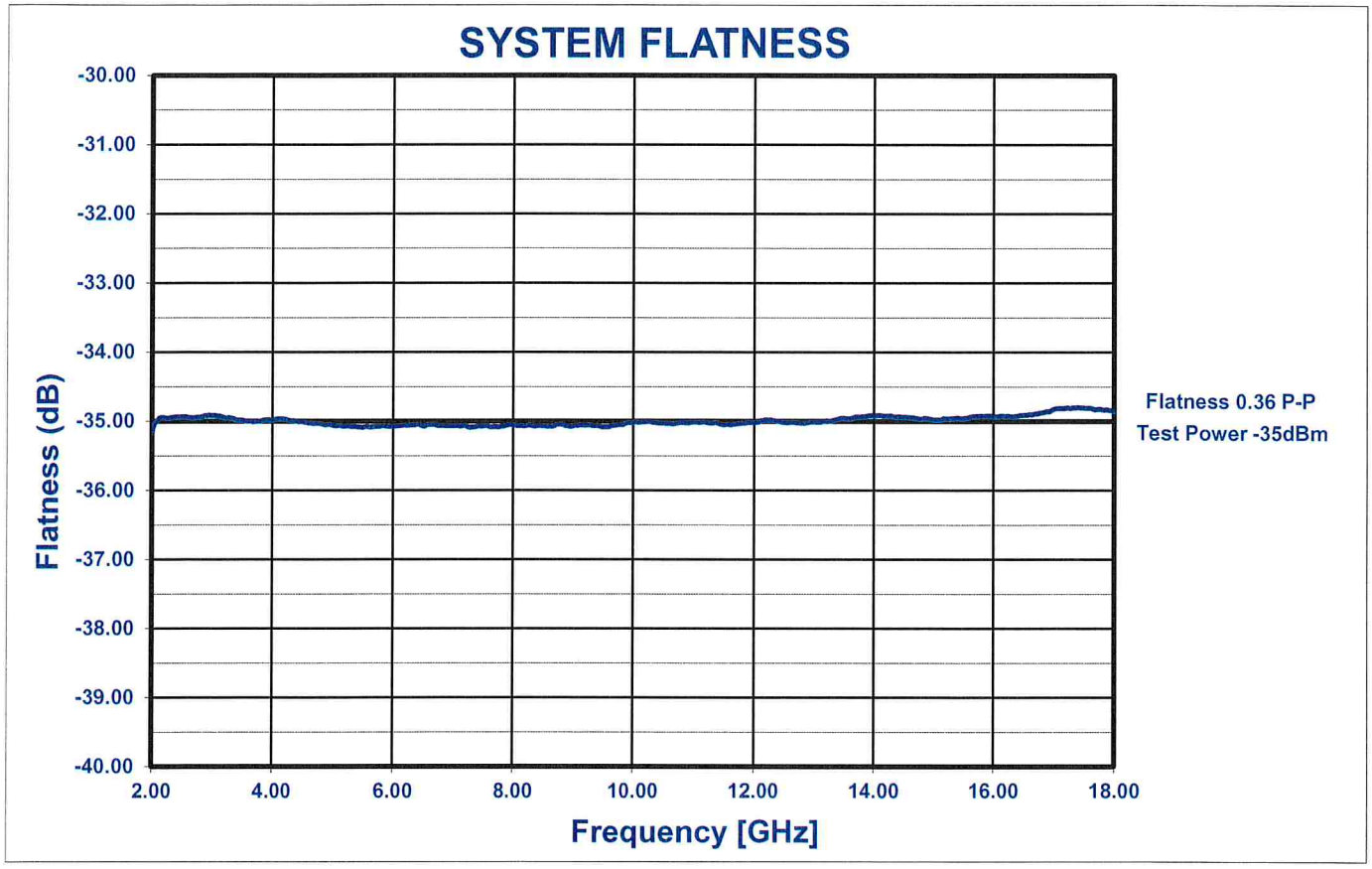
Frequency			-60.2	-55.2	-50.2	-45.2	-40.2	-35.2	-30.2	-25.2	-20.2	-15.2	-10.2	-5.18	-0.18	4.82	6.82	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1633	92	221	355	481	597	731	850	973	1109	1241	1366	1508	1632	1764	1812	Measured Value (mV)
	SLOPE (mV/dB)	25.7	3	3	9	7	-5	0	-9	-14	-7	-3	-6	8	3	7	4	Error (mV)
			0.10	0.13	0.35	0.26	-0.21	0.01	-0.35	-0.56	-0.25	-0.11	-0.24	0.30	0.13	0.28	0.15	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1642	90	220	351	479	598	734	856	986	1118	1252	1376	1515	1637	1770	1820	Measured Value (mV)
	SLOPE (mV/dB)	25.8	2	3	5	4	-7	0	-7	-6	-3	2	-3	7	-1	3	2	Error (mV)
			0.08	0.11	0.18	0.14	-0.25	0.01	-0.26	-0.23	-0.12	0.07	-0.13	0.25	-0.02	0.13	0.06	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1637	94	227	355	483	608	746	864	983	1111	1243	1368	1508	1630	1768	1819	Measured Value (mV)
	SLOPE (mV/dB)	25.6	-2	3	3	3	0	10	0	-9	-9	-5	-8	4	-2	8	7	Error (mV)
			-0.08	0.12	0.11	0.11	-0.01	0.38	-0.01	-0.36	-0.36	-0.21	-0.33	0.14	-0.10	0.29	0.29	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1623	98	232	355	482	612	747	857	968	1093	1223	1348	1492	1619	1761	1815	Measured Value (mV)
	SLOPE (mV/dB)	25.3	0	7	3	4	7	15	-2	-17	-19	-16	-17	0	0	16	19	Error (mV)
			-0.02	0.27	0.13	0.14	0.27	0.60	-0.06	-0.68	-0.75	-0.61	-0.68	0.00	0.02	0.62	0.75	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1614	59	154	288	418	544	676	813	959	1093	1229	1354	1491	1608	1734	1781	Measured Value (mV)
	SLOPE (mV/dB)	26.3	27	-9	-7	-8	-14	-13	-8	7	10	14	8	13	-1	-7	-12	Error (mV)
			1.03	-0.36	-0.26	-0.31	-0.52	-0.50	-0.29	0.27	0.36	0.54	0.29	0.51	-0.04	-0.25	-0.46	LINEARITY ERROR (dB)
	Flatness +/-dB		0.8	1.6	1.3	1.3	1.4	1.4	1	0.5	0.5	0.6	0.6	0.5	0.6	0.7	0.8	



	SIZE	CAGE CODE	DWG. NO.	REVISION
PMI	A	71A34	ETD000005	B2
	SCALE			SHEET 7 OF 10

MODEL: GMDA-D1004 **S/N: PL25967** **DATE: 7/25/2019**

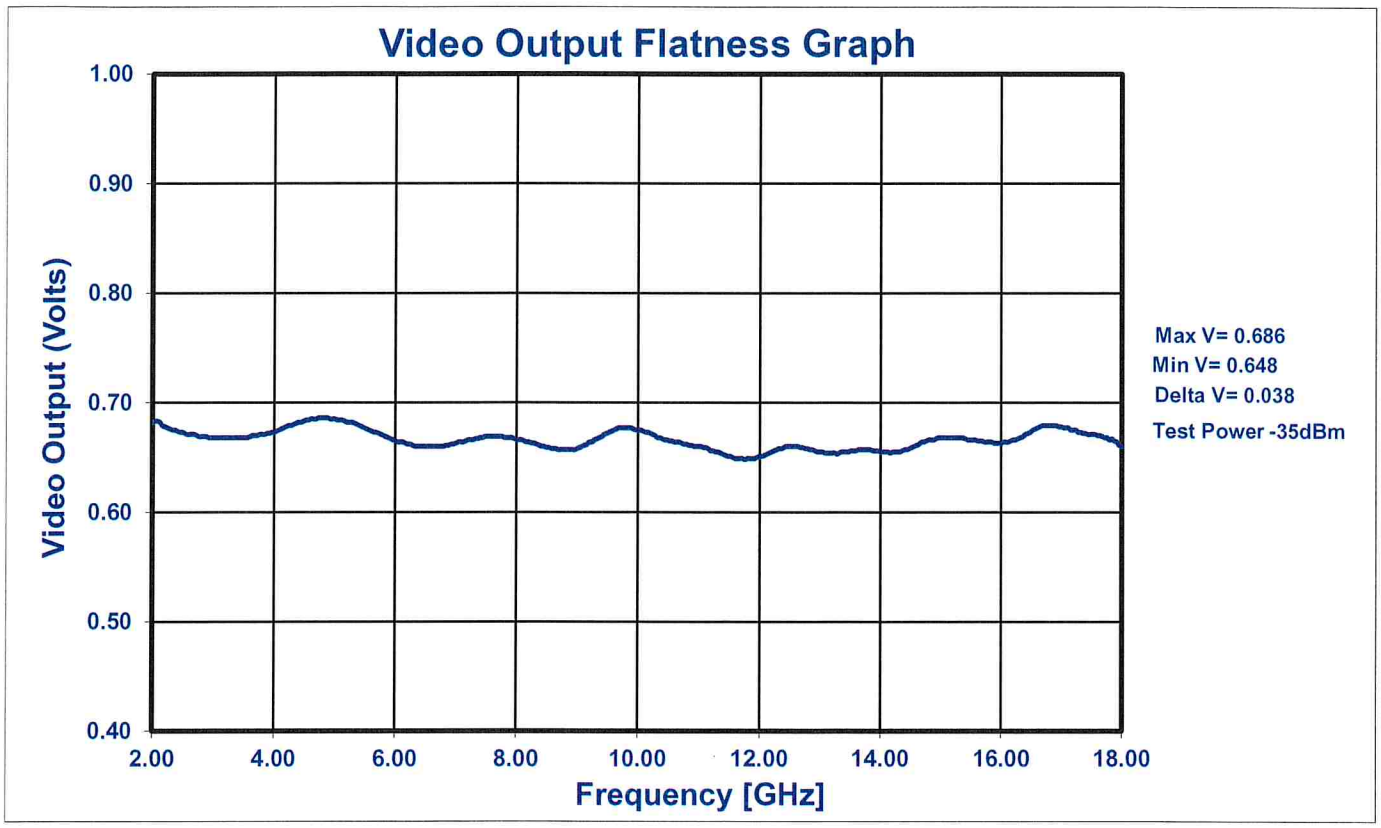
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



PMI	SIZE A	CAGE CODE 71A34	DWG. NO. ETD000005	REVISION B2
	SCALE			SHEET 8 OF 10

MODEL: GMDA-D1004 **S/N: PL25967** **DATE: 7/25/2019**

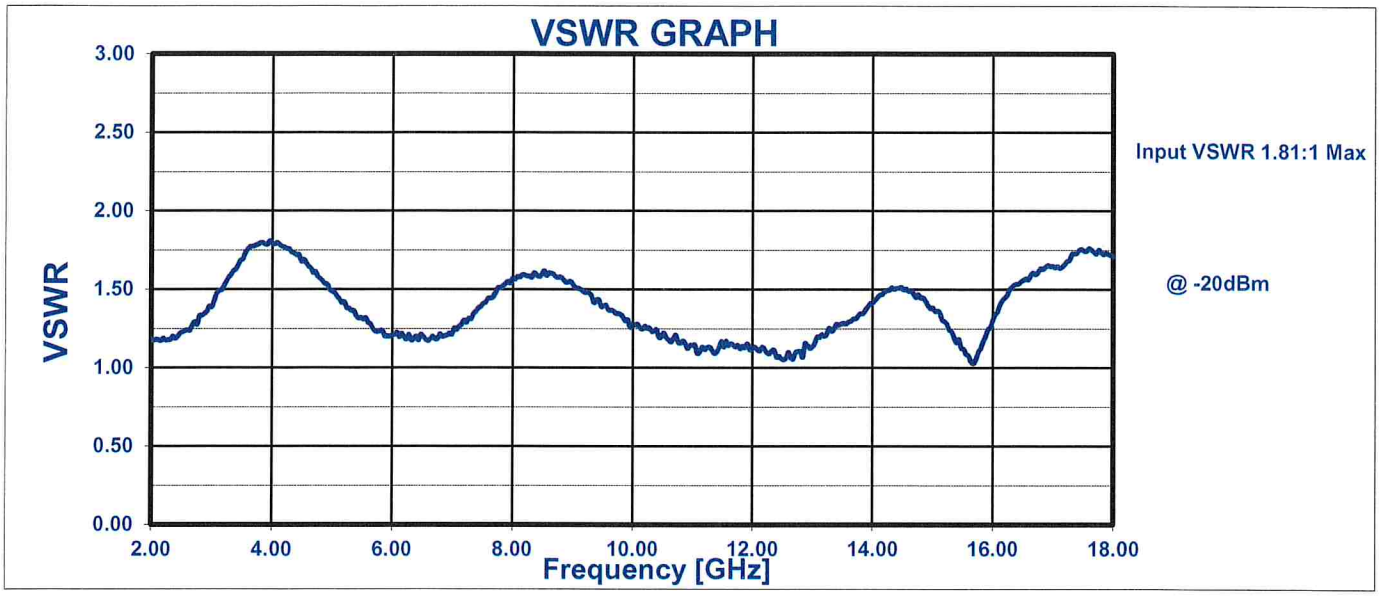
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



PMI	SIZE A	CAGE CODE 71A34	DWG. NO. ETD000005	REVISION B2
	SCALE			SHEET 9 OF 10

MODEL: GMDA-D1004 **S/N: PL25967** **DATE: 7/25/2019**

NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



PMI	SIZE A	CAGE CODE 71A34	DWG. NO. ETD000005	REVISION B2
	SCALE			SHEET 10 OF 10