MODEL: GMDA-D1004 **S/N: PL26310** **DATE: 9/11/2019**

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 -65.9 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	25.3	0.49	X	
8	25.3	0.58	X	
12	25.6	0.76	X	
16	24.8	0.75	X	
18	24.4	0.26	X	

@ -54 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	25.3	0.90	X	
8	25.4	1.00	X	
12	25.9	1.25	X	
16	25.4	1.42	X	
18	24.7	0.69	X	

@ +85 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	25.3	0.95	X	
8	25.2	0.92	X	
12	25.2	0.69	X	
16	24.5	0.63	X	
18	24.5	0.66	X	

MODEL: GMDA-D1004 **S/N: PL26310** **DATE: 9/11/2019**

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3. FLATNESS

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

System Flatness = 0.29 dB (See attached plot)
Vp-p = 50 mV (See attached plot)
Flatness = Vp-p – (System Flatness x 25)
Flatness = 42.75 mV Pass ___X___ Fail _____

4. MAXIMUM OUTPUT VOLTAGE

Specification: +2.5v Max
Measurement: 1.768v Pass ___X___ Fail _____

5. INPUT VSWR

Specification: 2.3:1 Max
Measurement @-20dBm input (See attached plot)
VSWR: 1.79:1 Pass ___X___ Fail _____

6. VIDEO RISE TIME

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

Rise Time: 21.3ns 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: 0.17us Pass ___X___ Fail _____

MODEL: GMDA-D1004 **S/N: PL26310** **DATE: 9/11/2019**

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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: -36 mV Pass X Fail _____

12. DC POWER

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

-12V to -15.5V, 165mA Max

Measurement: +15.5V @ 304 mA Pass X Fail _____

-15.5V @ 68 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: 9/11/2019

QA: [signature] Date: 9/19/19

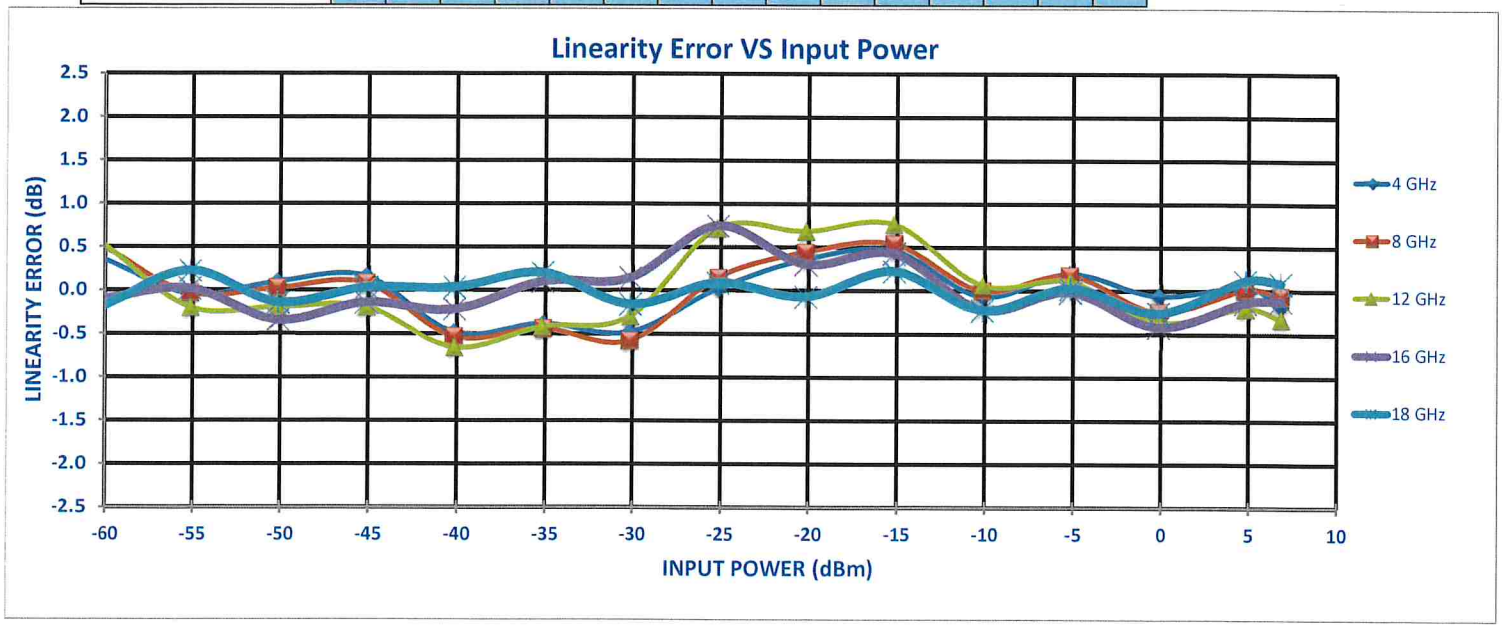
	SIZE	CAGE CODE	DWG. NO.	REVISION
PMI	A	71A34	ETD000005	B2
	SCALE			SHEET 4 OF 10

LOG TRANSFER WITH FREQUENCY
MODEL: GMDA-D1004
TESTED BY: J.Emperador
TEST DATE: 9/11/2019
SERIAL NO: PL26310
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= -0.014

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)	1565	53	169	299	427	537	666	790	929	1064	1193	1306	1439	1559	1688	1733	Measured Value (mV)
	SLOPE (mV/dB)	25.3	9	-1	2	4	-12	-10	-12	0	9	12	-2	5	-1	1	-4	Error (mV)
			0.37	-0.05	0.10	0.16	-0.49	-0.39	-0.48	0.02	0.36	0.46	-0.07	0.19	-0.06	0.04	-0.18	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1563	52	165	293	421	532	661	784	929	1063	1192	1305	1436	1552	1685	1734	Measured Value (mV)
	SLOPE (mV/dB)	25.3	13	-1	1	2	-14	-11	-15	4	11	14	0	4	-6	0	-1	Error (mV)
			0.50	-0.03	0.02	0.08	-0.54	-0.44	-0.58	0.14	0.44	0.53	0.00	0.17	-0.25	0.01	-0.06	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1575	49	158	286	414	530	664	795	949	1076	1206	1316	1445	1561	1693	1741	Measured Value (mV)
	SLOPE (mV/dB)	25.6	14	-5	-5	-5	-17	-11	-8	18	17	20	2	3	-9	-5	-8	Error (mV)
			0.54	-0.20	-0.20	-0.19	-0.66	-0.42	-0.30	0.72	0.68	0.76	0.06	0.10	-0.36	-0.20	-0.33	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1567	72	199	314	443	565	697	822	961	1074	1201	1309	1438	1552	1683	1733	Measured Value (mV)
	SLOPE (mV/dB)	24.8	-3	0	-9	-4	-6	2	3	19	8	11	-5	0	-10	-3	-3	Error (mV)
			-0.11	0.02	-0.35	-0.14	-0.22	0.10	0.14	0.75	0.30	0.43	-0.22	-0.02	-0.42	-0.14	-0.12	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1552	80	212	325	451	573	699	812	940	1058	1187	1298	1426	1541	1672	1720	Measured Value (mV)
	SLOPE (mV/dB)	24.4	-5	5	-3	1	1	5	-4	2	-2	5	-5	1	-6	3	2	Error (mV)
			-0.19	0.23	-0.14	0.03	0.03	0.20	-0.16	0.09	-0.07	0.22	-0.22	0.03	-0.26	0.12	0.09	LINEARITY ERROR (dB)
	Flatness +/-dB		0.6	1.1	0.8	0.7	0.8	0.8	0.8	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	



	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: 9/11/2019
SERIAL NO: PL26310
TEST TEMP: -54C

PLANAR MONOLITHICS INDUSTRIES
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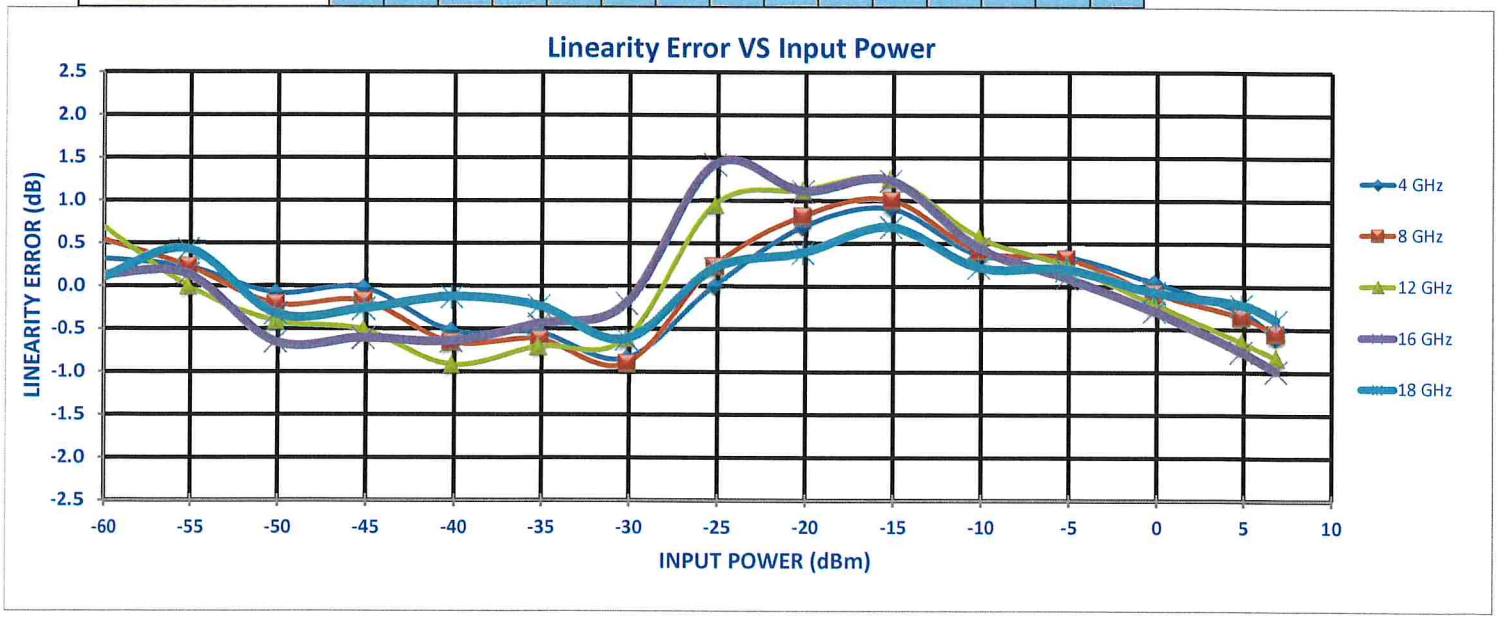
Phone: 916-542-1401 Fax: 301-662-1731
Email: sales@pmi-rf.com | www.pmi-rf.com

Vos= -0.036

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)	1557	42	166	285	413	527	653	772	920	1064	1196	1309	1435	1554	1672	1715	Measured Value (mV)
	SLOPE (mV/dB)	25.3	8	6	-2	-1	-13	-14	-21	0	17	23	9	9	1	-7	-15	Error (mV)
			0.32	0.22	-0.08	-0.02	-0.52	-0.54	-0.84	0.00	0.69	0.90	0.37	0.34	0.04	-0.29	-0.60	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1556	39	158	274	402	517	645	765	921	1063	1195	1307	1432	1549	1669	1715	Measured Value (mV)
	SLOPE (mV/dB)	25.4	14	6	-5	-5	-17	-16	-23	6	21	26	10	8	-2	-9	-14	Error (mV)
			0.55	0.23	-0.21	-0.18	-0.66	-0.62	-0.90	0.23	0.81	1.00	0.41	0.32	-0.08	-0.36	-0.55	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1571	30	141	260	387	506	641	773	943	1077	1210	1322	1443	1561	1679	1726	Measured Value (mV)
	SLOPE (mV/dB)	25.9	18	0	-11	-13	-24	-18	-16	25	29	32	15	6	-5	-17	-22	Error (mV)
			0.71	0.00	-0.41	-0.51	-0.92	-0.71	-0.61	0.95	1.12	1.25	0.57	0.24	-0.20	-0.65	-0.83	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1575	51	178	285	413	539	671	804	972	1091	1221	1328	1446	1563	1678	1723	Measured Value (mV)
	SLOPE (mV/dB)	25.4	3	3	-17	-15	-16	-11	-5	36	28	31	11	3	-7	-19	-25	Error (mV)
			0.13	0.13	-0.65	-0.61	-0.64	-0.44	-0.20	1.42	1.11	1.23	0.45	0.10	-0.29	-0.76	-0.99	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1554	69	201	306	431	558	679	793	937	1065	1196	1308	1431	1548	1668	1713	Measured Value (mV)
	SLOPE (mV/dB)	24.7	2	11	-8	-7	-3	-6	-15	5	10	17	5	5	-2	-5	-10	Error (mV)
			0.09	0.43	-0.32	-0.26	-0.12	-0.23	-0.62	0.21	0.39	0.69	0.22	0.20	-0.07	-0.21	-0.39	LINEARITY ERROR (dB)
	Flatness +/-dB		0.8	1.2	0.9	0.9	1	0.8	0.8	1	0.6	0.5	0.4	0.3	0.3	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: 9/11/2019
SERIAL NO: PL26310
TEST TEMP: +85C

PLANAR MONOLITHICS INDUSTRIES
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Phone: 916-542-1401 Fax: 301-662-1731
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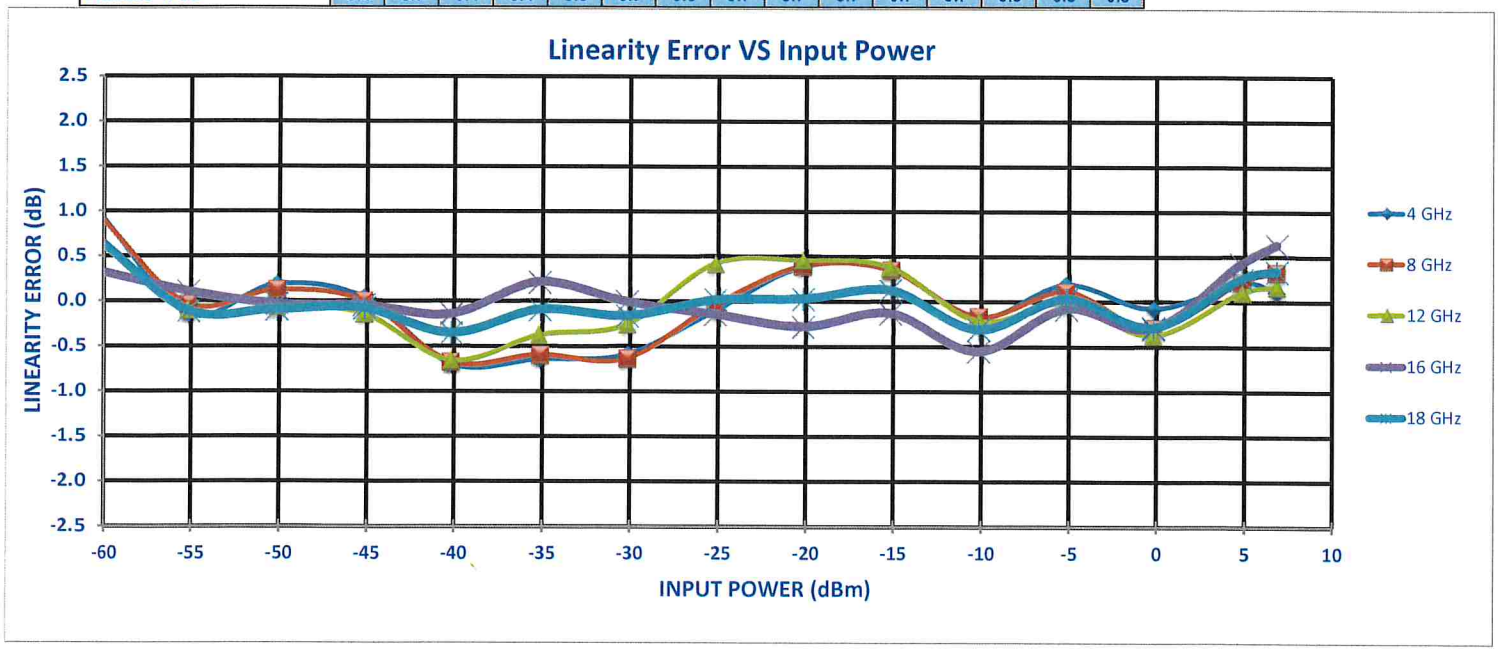
Vos= 0.032

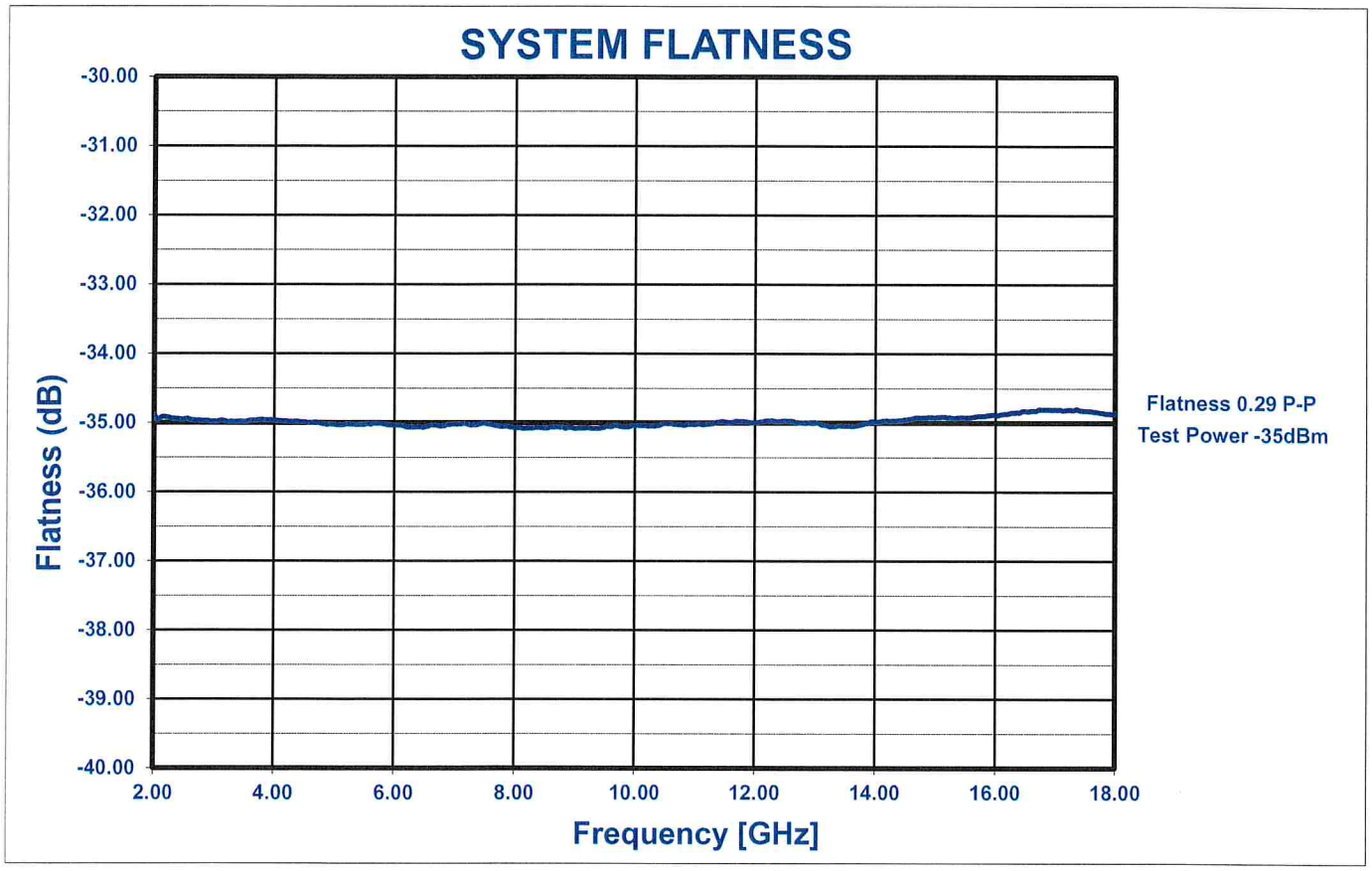
Frequency			-60.2	-55.2	-50.2	-45.2	-40.2	-35.2	-30.2	-25.2	-20.2	-15.2	-10.2	-5.18	-0.18	4.82	6.82	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1586	86	185	320	443	551	679	807	946	1085	1211	1324	1460	1580	1714	1762	Measured Value (mV)
	SLOPE (mV/dB)	25.3	24	-4	5	1	-18	-16	-15	-3	10	9	-5	5	-2	5	3	Error (mV)
			0.95	-0.14	0.19	0.04	-0.70	-0.64	-0.59	-0.10	0.38	0.36	-0.18	0.19	-0.08	0.21	0.11	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1583	89	191	321	444	553	681	806	947	1084	1209	1322	1455	1571	1710	1763	Measured Value (mV)
	SLOPE (mV/dB)	25.2	23	-1	3	0	-17	-15	-16	-1	10	9	-4	3	-7	6	8	Error (mV)
			0.92	-0.03	0.12	0.00	-0.67	-0.60	-0.64	-0.04	0.39	0.35	-0.17	0.11	-0.29	0.22	0.33	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1592	93	199	326	450	563	696	825	968	1095	1219	1330	1461	1578	1716	1768	Measured Value (mV)
	SLOPE (mV/dB)	25.2	17	-3	-2	-4	-17	-10	-7	10	12	10	-5	0	-9	3	4	Error (mV)
			0.69	-0.10	-0.06	-0.14	-0.66	-0.38	-0.26	0.42	0.46	0.38	-0.22	-0.02	-0.37	0.10	0.17	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1569	104	221	340	462	582	713	830	949	1068	1194	1306	1440	1557	1697	1751	Measured Value (mV)
	SLOPE (mV/dB)	24.5	8	3	-1	-1	-3	5	0	-3	-7	-3	-14	-2	-7	10	15	Error (mV)
			0.33	0.11	-0.03	-0.04	-0.14	0.21	-0.01	-0.14	-0.28	-0.13	-0.55	-0.08	-0.30	0.42	0.63	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1552	92	196	319	442	558	687	808	935	1058	1183	1295	1426	1541	1677	1728	Measured Value (mV)
	SLOPE (mV/dB)	24.5	16	-3	-2	-2	-9	-2	-4	0	1	3	-8	1	-7	6	8	Error (mV)
			0.66	-0.10	-0.09	-0.08	-0.35	-0.09	-0.16	0.02	0.03	0.13	-0.31	0.03	-0.28	0.26	0.34	LINEARITY ERROR (dB)
	Flatness +/-dB		0.4	0.7	0.4	0.4	0.6	0.7	0.5	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	



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

MODEL: GMDA-D1004 **S/N: PL26310** **DATE: 9/11/2019**

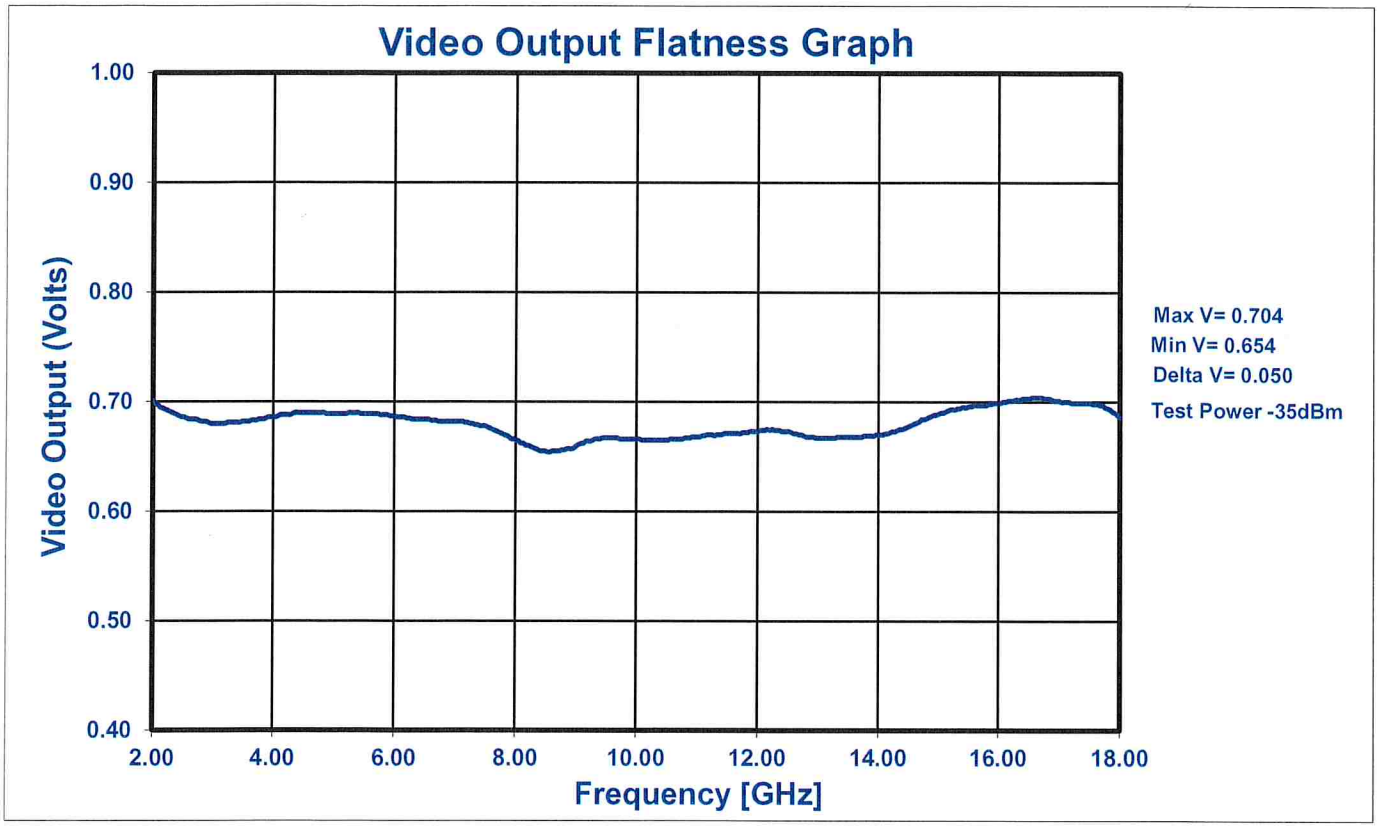
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



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

MODEL: GMDA-D1004 **S/N: PL26310** **DATE: 9/11/2019**

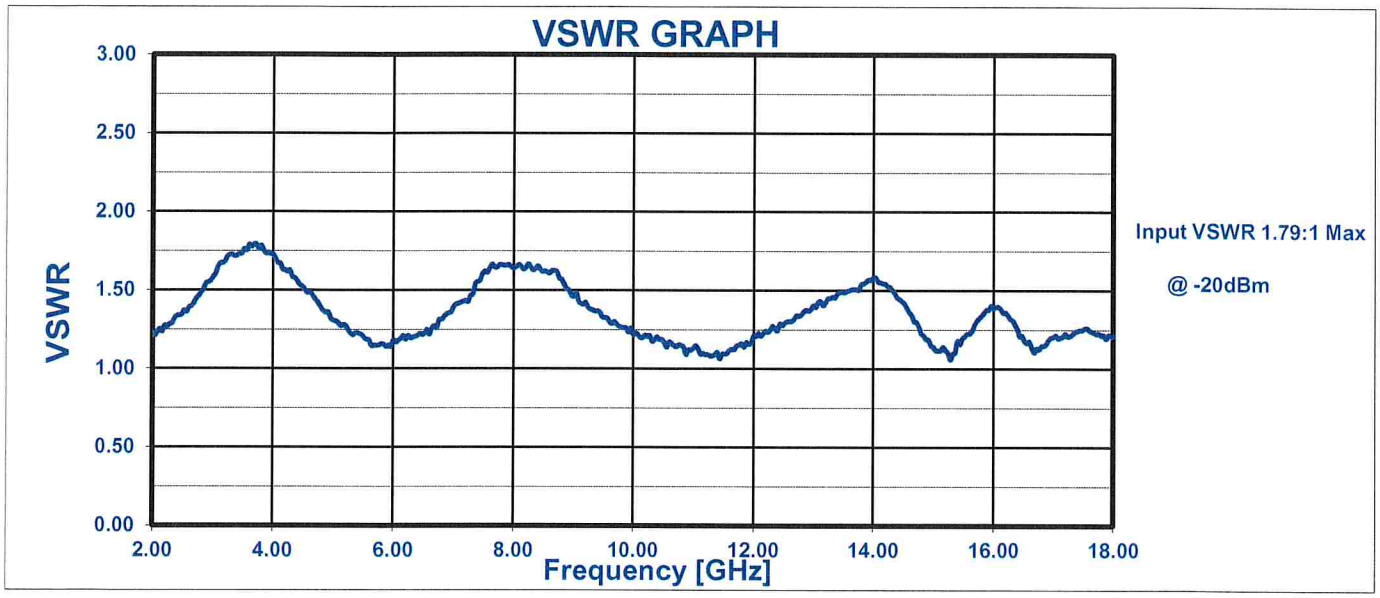
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



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

MODEL: GMDA-D1004 **S/N: PL26310** **DATE: 9/11/2019**

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