MODEL: GMDA-D1004 **S/N: PL26305** **DATE: 9/12/2019**

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 -65.6 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	0.39	X	
8	25.1	0.46	X	
12	25.3	0.54	X	
16	25.0	0.43	X	
18	24.4	0.29	X	

@ -54 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	24.4	0.39	X	
8	24.8	0.46	X	
12	25.1	0.59	X	
16	25.0	0.95	X	
18	24.3	0.39	X	

@ +85 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	25.7	0.69	X	
8	25.8	0.71	X	
12	25.8	0.57	X	
16	25.6	0.69	X	
18	25.5	0.78	X	

MODEL: GMDA-D1004 **S/N: PL26305** **DATE: 9/12/2019**

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3. FLATNESS

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

System Flatness = 0.31 dB (See attached plot)
Vp-p = 40 mV (See attached plot)
Flatness = Vp-p – (System Flatness x 25)
Flatness = 32.25 mV Pass ___X___ Fail _____

4. MAXIMUM OUTPUT VOLTAGE

Specification: +2.5v Max
Measurement: 1.788v 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: 24ns 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: 0.163us Pass ___X___ Fail _____

MODEL: GMDA-D1004 **S/N: PL26305** **DATE: 9/12/2019**

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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: 9 mV Pass X Fail _____

12. DC POWER

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

-12V to -15.5V, 165mA Max

Measurement: +15.5V @ 303 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: 9/12/2019

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

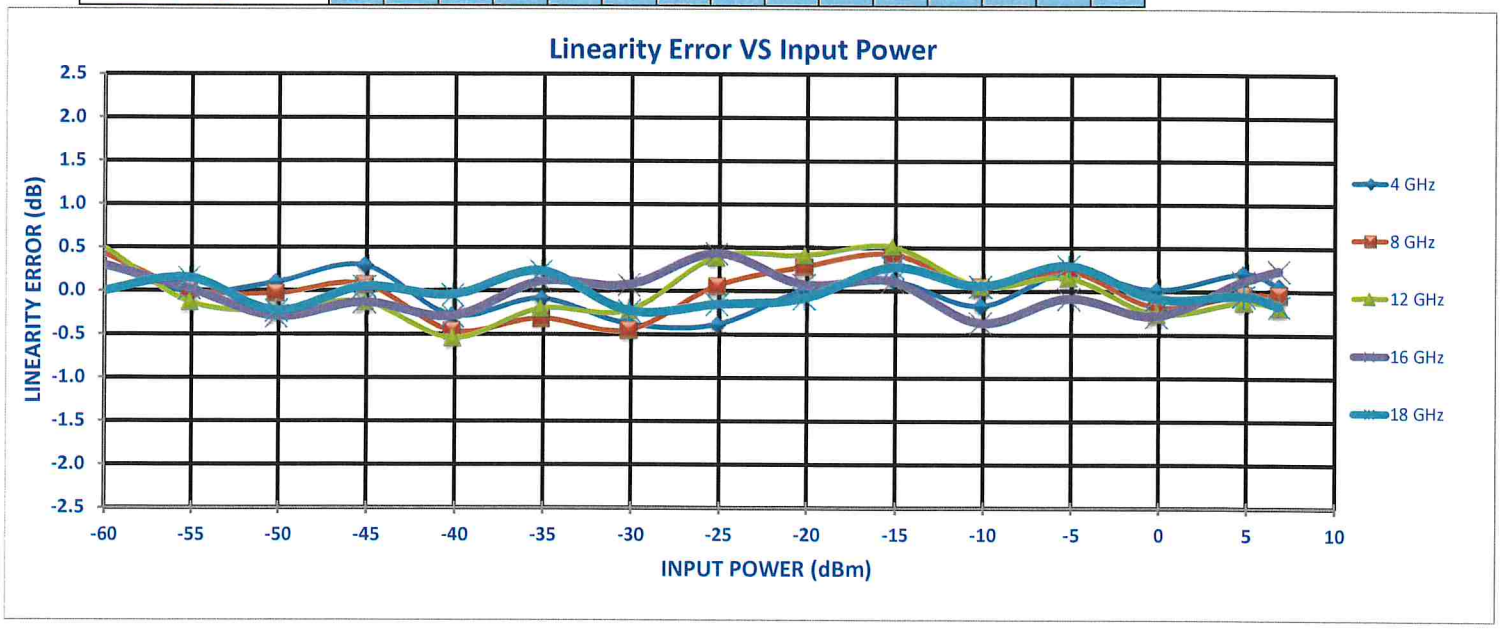
PMI	SIZE A	CAGE CODE 71A34	DWG. NO. ETD000005	REVISION B2
	SCALE			SHEET 4 OF 10

LOG TRANSFER WITH FREQUENCY
MODEL: GMDA-D1004
TESTED BY: J.Emperador
TEST DATE: 9/12/2019
SERIAL NO: PL26305
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= -0.006

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)	1550	63	179	306	435	545	674	791	915	1049	1176	1293	1427	1546	1675	1721	Measured Value (mV)
	SLOPE (mV/dB)	24.8	8	0	2	7	-7	-2	-9	-10	0	3	-4	6	0	5	1	Error (mV)
			0.31	-0.02	0.10	0.29	-0.28	-0.09	-0.38	-0.39	0.01	0.12	-0.17	0.22	0.01	0.21	0.06	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1560	62	177	301	429	541	670	792	930	1061	1190	1306	1436	1551	1680	1730	Measured Value (mV)
	SLOPE (mV/dB)	25.1	11	0	-1	2	-12	-8	-11	1	7	11	1	6	-5	-1	-1	Error (mV)
			0.43	0.02	-0.04	0.07	-0.46	-0.32	-0.45	0.05	0.27	0.42	0.05	0.23	-0.18	-0.04	-0.04	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1567	58	168	292	421	537	672	798	940	1067	1196	1311	1440	1556	1686	1735	Measured Value (mV)
	SLOPE (mV/dB)	25.3	13	-3	-6	-3	-14	-5	-6	10	10	13	1	4	-7	-3	-5	Error (mV)
			0.52	-0.13	-0.23	-0.13	-0.54	-0.21	-0.23	0.39	0.41	0.51	0.05	0.15	-0.26	-0.12	-0.19	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1564	67	185	302	431	552	687	811	945	1061	1187	1300	1432	1552	1687	1740	Measured Value (mV)
	SLOPE (mV/dB)	25.0	8	1	-7	-3	-7	3	2	11	2	3	-9	-2	-7	3	6	Error (mV)
			0.30	0.02	-0.30	-0.14	-0.29	0.11	0.07	0.43	0.07	0.11	-0.37	-0.09	-0.29	0.12	0.24	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1549	78	204	317	446	566	695	806	930	1054	1185	1302	1430	1543	1666	1712	Measured Value (mV)
	SLOPE (mV/dB)	24.4	0	4	-6	1	-1	6	-6	-4	-2	7	1	7	-2	-1	-4	Error (mV)
			-0.01	0.15	-0.23	0.05	-0.04	0.23	-0.23	-0.16	-0.08	0.27	0.06	0.29	-0.08	-0.05	-0.17	LINEARITY ERROR (dB)
	Flatness +/-dB		0.4	0.7	0.5	0.5	0.6	0.5	0.4	0.6	0.4	0.4	0.4	0.3	0.3	0.4	0.6	



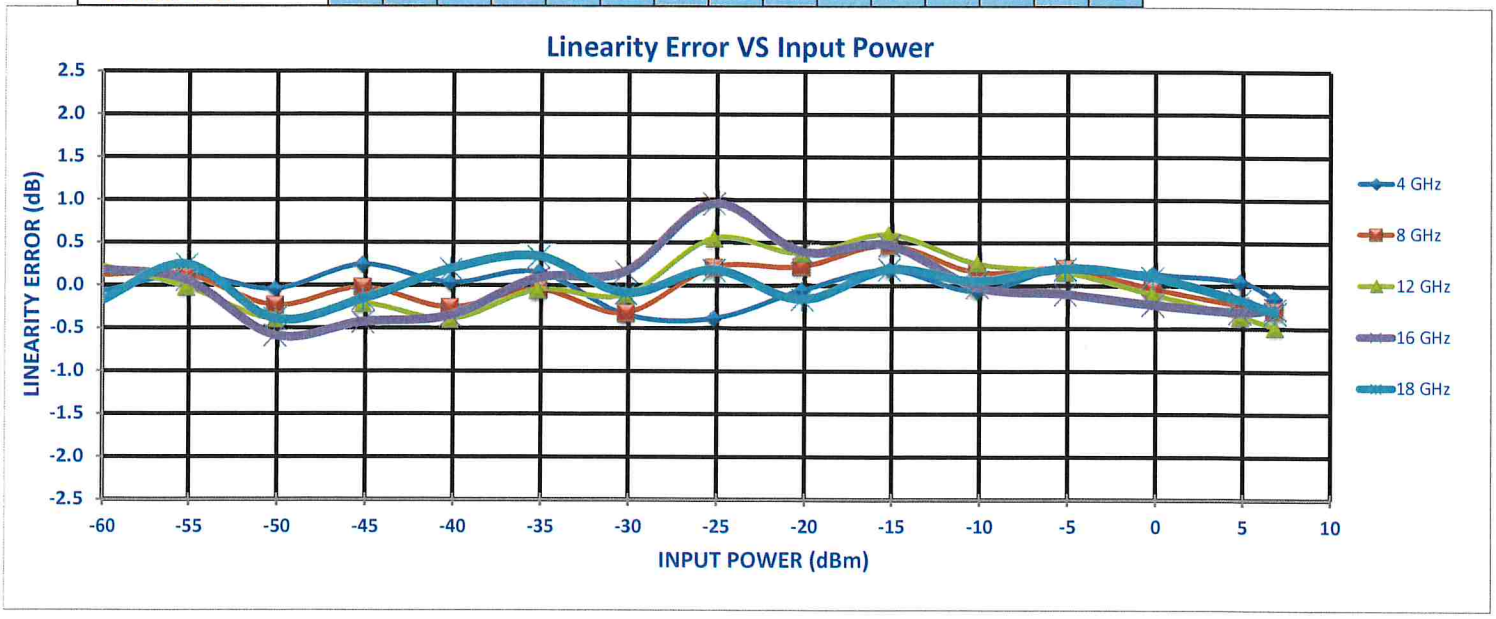
	SIZE	CAGE CODE	DWG. NO.	REVISION
PMI	A	71A34	ETD000005	B2
	SCALE			SHEET 5 OF 10

LOG TRANSFER WITH FREQUENCY
MODEL: GMDA-D1004
TESTED BY: J.Emperador
TEST DATE: 9/12/2019
SERIAL NO: PL26305
TEST TEMP: -54C

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= -0.001

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)	1556	85	212	330	459	576	701	811	932	1062	1190	1306	1435	1555	1675	1719	Measured Value (mV)
	SLOPE (mV/dB)	24.4	-2	3	-1	6	1	4	-8	-9	-1	4	-2	5	3	1	-4	Error (mV)
			-0.08	0.12	-0.04	0.24	0.03	0.15	-0.34	-0.39	-0.06	0.18	-0.07	0.22	0.13	0.05	-0.15	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1567	80	204	319	448	566	695	812	949	1073	1203	1319	1444	1562	1681	1729	Measured Value (mV)
	SLOPE (mV/dB)	24.8	3	3	-6	-1	-6	-1	-8	5	5	12	4	5	-1	-6	-7	Error (mV)
			0.11	0.12	-0.24	-0.03	-0.26	-0.05	-0.33	0.21	0.21	0.46	0.15	0.20	-0.04	-0.23	-0.29	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1577	73	192	308	438	559	693	817	959	1080	1211	1328	1451	1570	1689	1736	Measured Value (mV)
	SLOPE (mV/dB)	25.1	6	-1	-10	-5	-10	-1	-3	14	9	15	6	4	-3	-9	-12	Error (mV)
			0.23	-0.02	-0.40	-0.22	-0.40	-0.06	-0.11	0.55	0.37	0.59	0.25	0.16	-0.10	-0.36	-0.48	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1580	79	201	310	439	566	702	829	974	1085	1212	1325	1448	1570	1693	1744	Measured Value (mV)
	SLOPE (mV/dB)	25.0	4	1	-15	-11	-9	2	4	24	10	12	0	-2	-6	-8	-7	Error (mV)
			0.18	0.06	-0.59	-0.43	-0.35	0.08	0.16	0.95	0.39	0.47	-0.02	-0.10	-0.22	-0.31	-0.27	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1569	103	235	341	468	598	723	834	962	1075	1205	1323	1448	1567	1682	1727	Measured Value (mV)
	SLOPE (mV/dB)	24.3	-5	6	-10	-4	5	8	-2	4	-4	5	1	5	2	-4	-8	Error (mV)
			-0.19	0.24	-0.39	-0.16	0.19	0.34	-0.09	0.18	-0.16	0.19	0.05	0.20	0.10	-0.17	-0.31	LINEARITY ERROR (dB)
	Flatness +/-dB		0.6	0.9	0.7	0.6	0.8	0.6	0.5	0.8	0.5	0.4	0.4	0.3	0.3	0.4	0.5	



	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: 9/12/2019
SERIAL NO: PL26305
TEST TEMP: +85C

PLANAR MONOLITHICS INDUSTRIES
4921 Robert J. Mathews Parkway, Suite 1
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Phone: 916-542-1401 Fax: 301-662-1731
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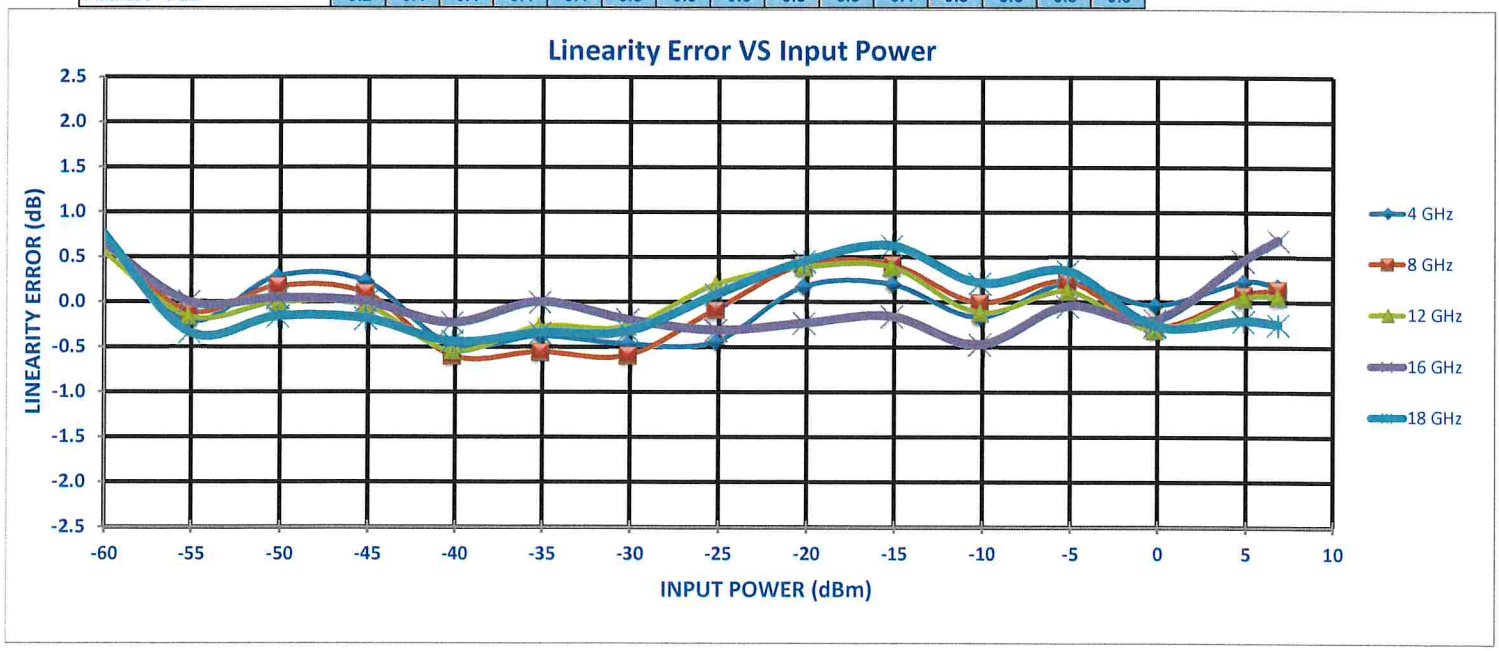
Vos= 0.009

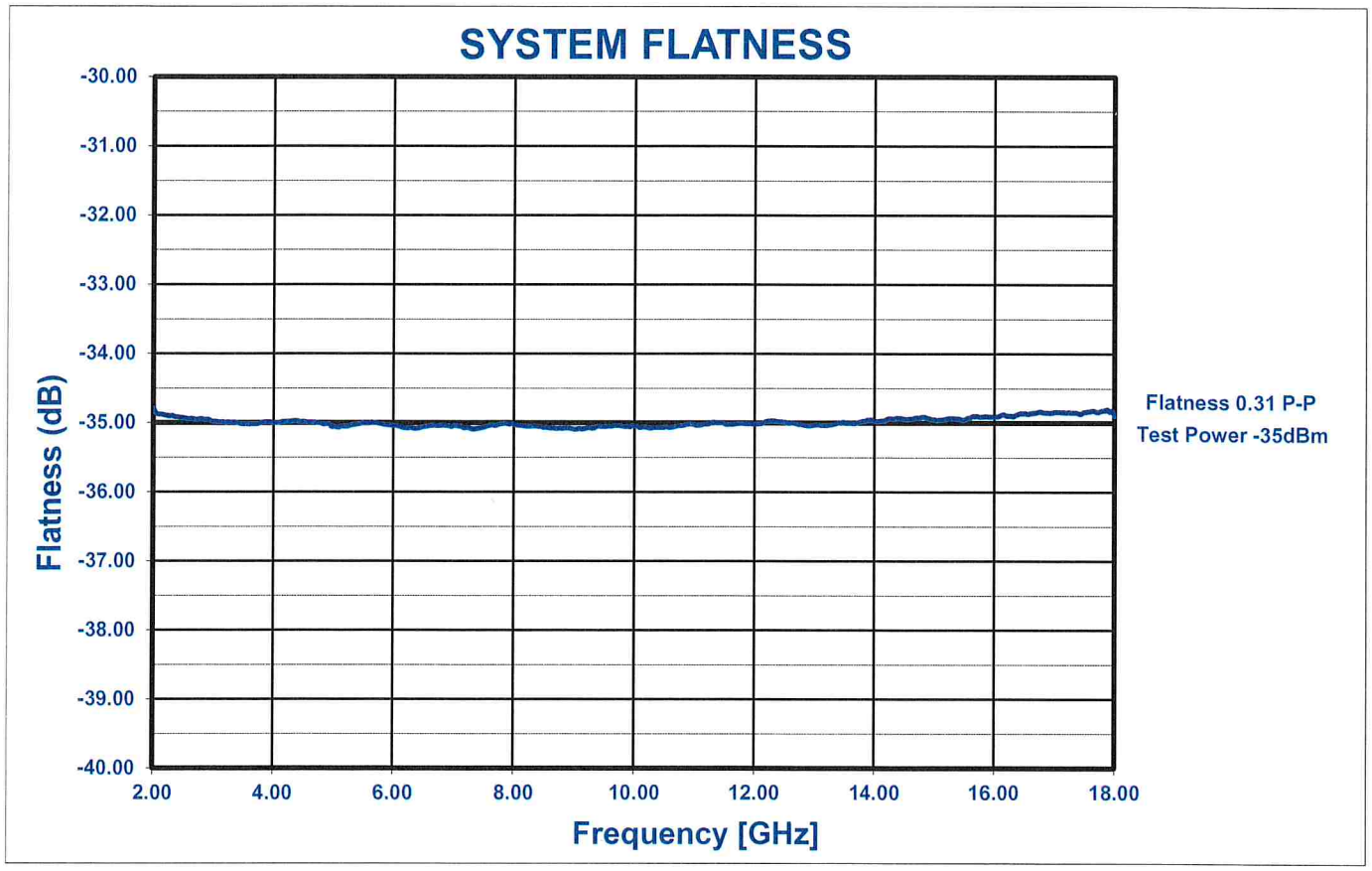
Frequency			-60.2	-55.2	-50.2	-45.2	-40.2	-35.2	-30.2	-25.2	-20.2	-15.2	-10.2	-5.18	-0.18	4.82	6.82	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1593	67	172	313	440	550	681	807	936	1080	1209	1328	1466	1588	1723	1773	Measured Value (mV)
	SLOPE (mV/dB)	25.7	18	-5	7	6	-12	-10	-12	-11	4	5	-4	5	-1	6	4	Error (mV)
			0.69	-0.21	0.28	0.23	-0.48	-0.38	-0.47	-0.44	0.17	0.20	-0.17	0.21	-0.03	0.23	0.18	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1604	70	178	314	441	552	682	810	952	1094	1223	1341	1476	1592	1730	1783	Measured Value (mV)
	SLOPE (mV/dB)	25.8	18	-3	4	2	-16	-14	-15	-2	11	11	0	6	-7	2	3	Error (mV)
			0.71	-0.10	0.17	0.09	-0.60	-0.56	-0.60	-0.09	0.41	0.42	-0.01	0.23	-0.28	0.08	0.13	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1609	71	181	314	442	558	694	823	964	1098	1227	1343	1478	1596	1734	1786	Measured Value (mV)
	SLOPE (mV/dB)	25.8	15	-4	0	-1	-14	-7	-7	5	10	10	-3	3	-8	1	1	Error (mV)
			0.57	-0.16	-0.01	-0.05	-0.55	-0.28	-0.28	0.19	0.38	0.39	-0.12	0.12	-0.31	0.04	0.06	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1596	72	183	312	439	561	695	818	943	1073	1203	1323	1462	1586	1731	1788	Measured Value (mV)
	SLOPE (mV/dB)	25.6	17	0	1	0	-6	0	-5	-8	-6	-4	-12	-1	-5	12	18	Error (mV)
			0.67	0.00	0.04	0.00	-0.23	0.00	-0.20	-0.31	-0.24	-0.16	-0.47	-0.04	-0.20	0.46	0.69	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1578	63	162	294	421	542	672	800	938	1075	1207	1324	1455	1567	1696	1746	Measured Value (mV)
	SLOPE (mV/dB)	25.5	20	-9	-4	-5	-11	-9	-8	2	12	16	5	9	-7	-5	-6	Error (mV)
			0.78	-0.34	-0.16	-0.18	-0.44	-0.34	-0.33	0.08	0.45	0.63	0.21	0.35	-0.26	-0.21	-0.25	LINEARITY ERROR (dB)
	Flatness +/-dB		0.2	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.5	0.4	0.5	0.6	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: PL26305** **DATE: 9/12/2019**

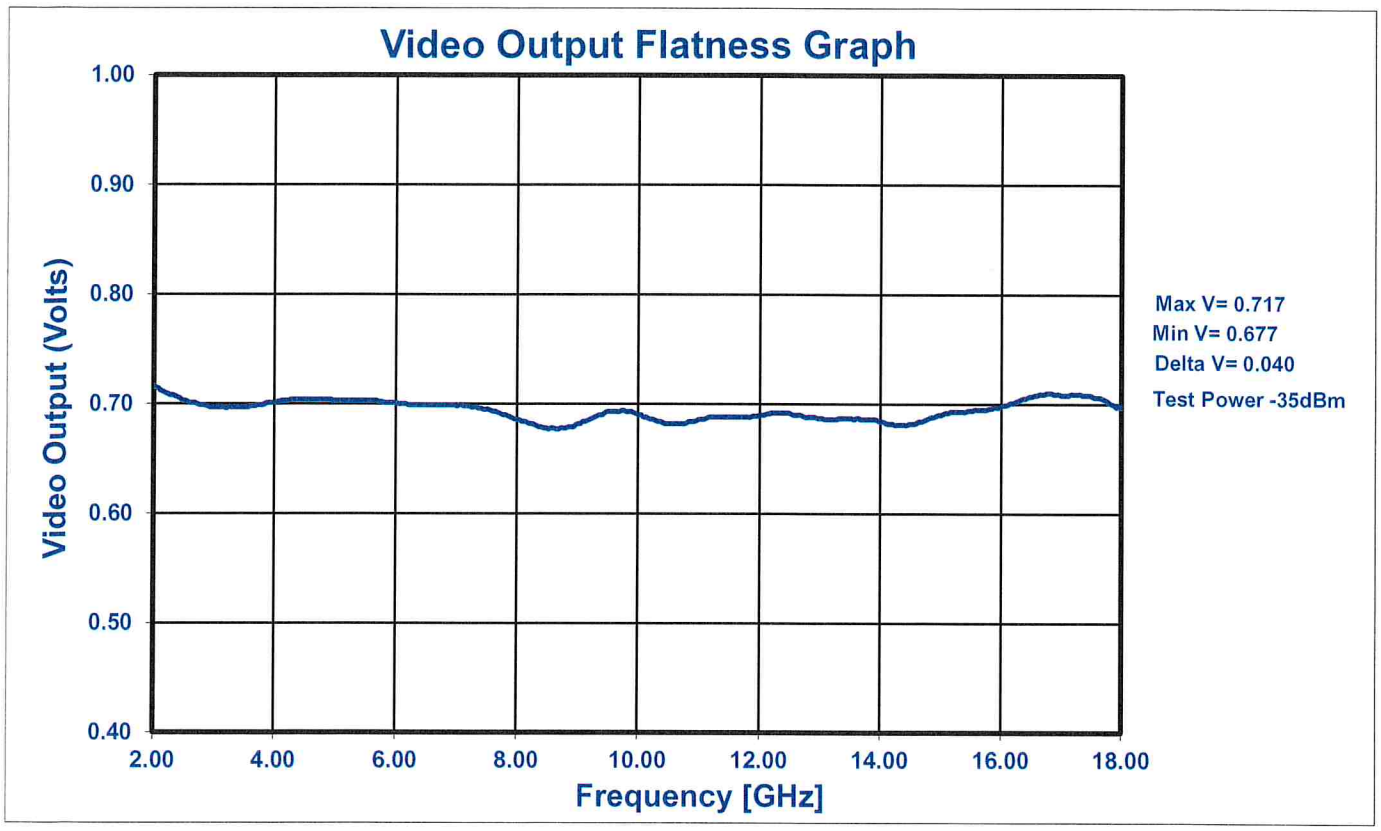
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



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

MODEL: GMDA-D1004 **S/N: PL26305** **DATE: 9/12/2019**

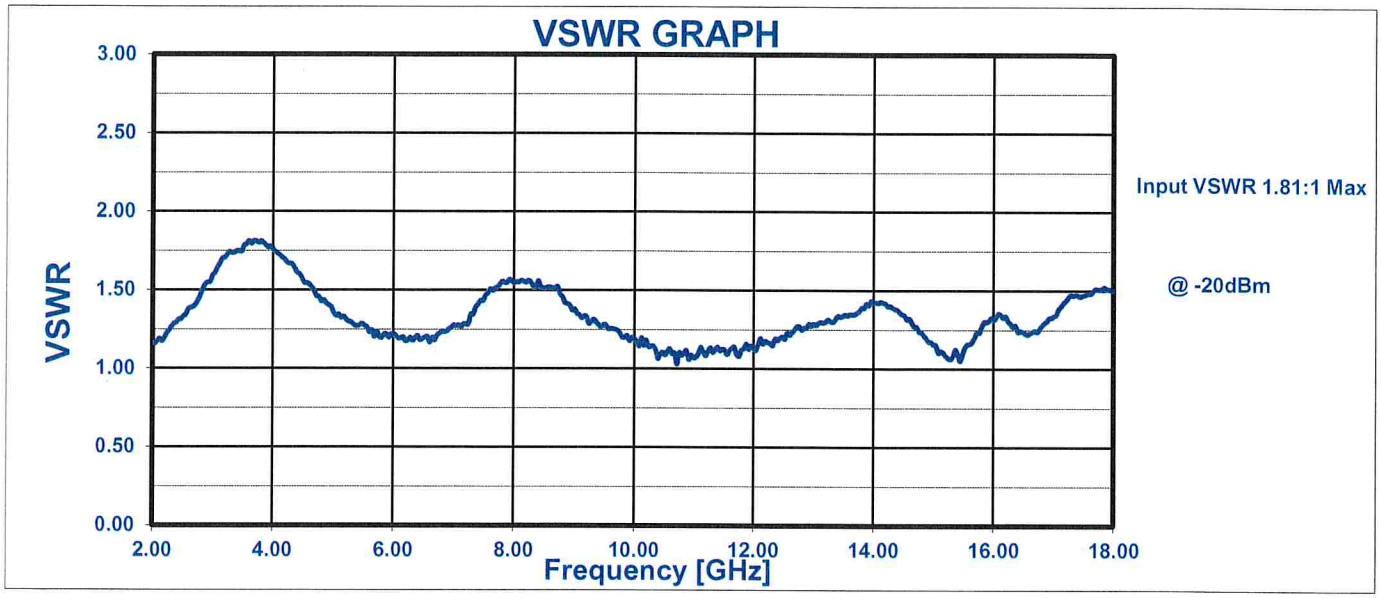
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



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

MODEL: GMDA-D1004 **S/N: PL26305** **DATE: 9/12/2019**

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