MODEL: GMDA-D1004 **S/N: PL21004** **DATE: 8/5/2020**

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 -65.5 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	0.41	X	
8	25.7	0.78	X	
12	25.4	0.61	X	
16	24.2	0.56	X	
18	24.6	0.41	X	

@ -54 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	23.9	0.93	X	
8	25.0	0.80	X	
12	24.8	0.59	X	
16	24.0	1.04	X	
18	24.0	0.81	X	

@ +85 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	24.6	0.36	X	
8	25.5	0.73	X	
12	25.1	0.60	X	
16	23.6	0.83	X	
18	24.7	0.97	X	

MODEL: GMDA-D1004 **S/N: PL21004** **DATE: 8/5/2020**

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3. FLATNESS

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

System Flatness = 0.36 dB (See attached plot)
Vp-p = 63 mV (See attached plot)
Flatness = Vp-p – (System Flatness x 25)
Flatness = 54 mV Pass ___X___ Fail _____

4. MAXIMUM OUTPUT VOLTAGE

Specification: +2.5v Max
Measurement: 1.79v Pass ___X___ Fail _____

5. INPUT VSWR

Specification: 2.3:1 Max
Measurement @-20dBm input (See attached plot)
VSWR: 1.87:1 Pass ___X___ Fail _____

6. VIDEO RISE TIME

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

Rise Time: 18ns 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: 0.1us Pass ___X___ Fail _____

MODEL: GMDA-D1004 **S/N: PL21004** **DATE: 8/5/2020**

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10. THROUGHPUT TIME

Specification: 30ns Max

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

-35dBm Input: 22ns Pass X Fail _____

11. OFFSET VOLTAGE

Specification: +/- 50mV Max

Measurement: -34 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 @ 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: 8/5/2020

QA: A Zimmerman Date: 8-11-2020

	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: 8/5/2020
SERIAL NO: PL21004
TEST TEMP: +25C

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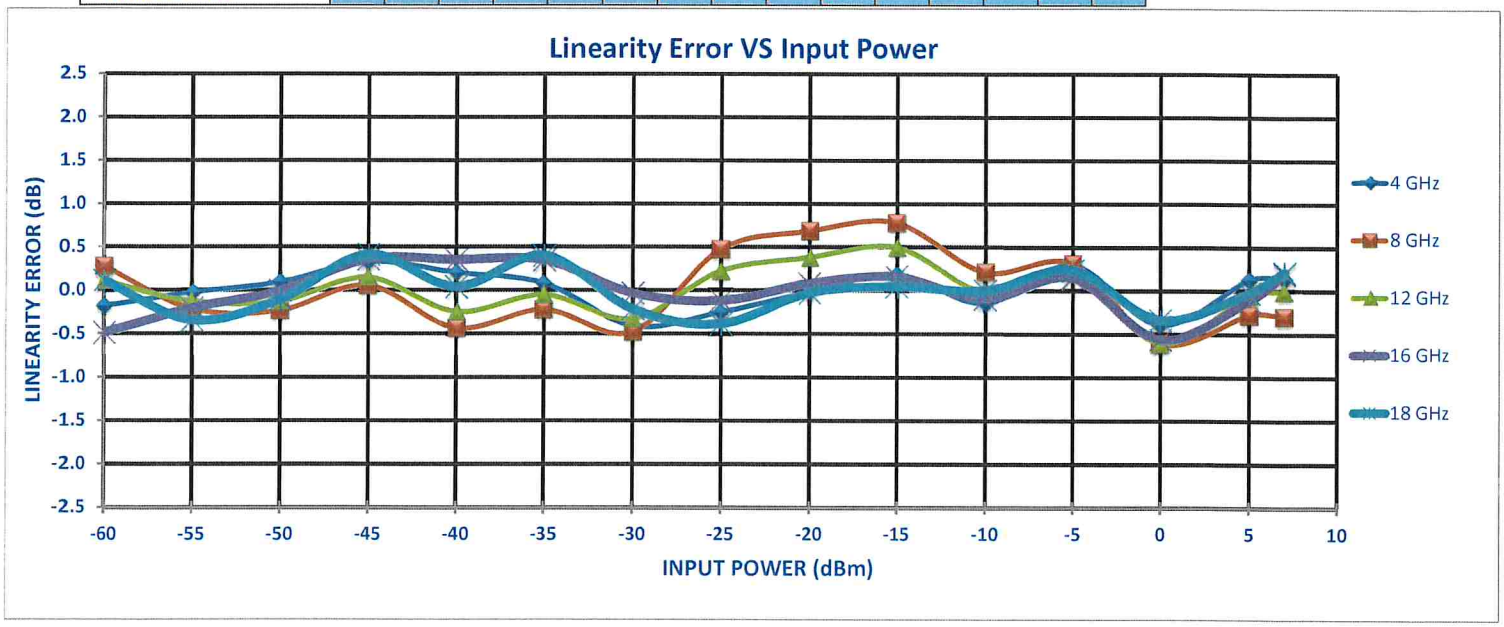
El Dorado Hills, CA 95762
Phone: 916-542-1401 Fax: 301-662-1731
Email: sales@pmi-rf.com | www.pmi-rf.com

Vos= 0.004

Frequency			-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1595	101	229	356	486	607	728	840	968	1098	1227	1343	1478	1585	1722	1772	Measured Value (mV)
	SLOPE (mV/dB)	24.8	-5	-1	2	8	5	2	-10	-6	0	4	-4	7	-10	3	3	Error (mV)
			-0.18	-0.03	0.09	0.33	0.20	0.08	-0.41	-0.25	-0.02	0.18	-0.15	0.29	-0.40	0.12	0.14	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1617	81	197	325	461	577	711	833	986	1120	1251	1365	1496	1601	1738	1789	Measured Value (mV)
	SLOPE (mV/dB)	25.7	7	-5	-6	1	-11	-6	-12	12	18	20	5	8	-16	-7	-8	Error (mV)
			0.27	-0.21	-0.24	0.05	-0.44	-0.22	-0.48	0.47	0.68	0.78	0.21	0.31	-0.61	-0.28	-0.30	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1609	88	209	336	470	587	719	839	980	1111	1241	1355	1488	1594	1735	1787	Measured Value (mV)
	SLOPE (mV/dB)	25.4	3	-3	-3	4	-6	-1	-8	6	10	13	0	6	-15	-1	0	Error (mV)
			0.11	-0.13	-0.13	0.15	-0.25	-0.05	-0.33	0.22	0.38	0.50	-0.02	0.22	-0.61	-0.06	-0.01	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1571	105	233	359	489	610	731	843	962	1088	1211	1326	1453	1557	1689	1745	Measured Value (mV)
	SLOPE (mV/dB)	24.2	-12	-5	0	9	9	8	-1	-3	2	4	-2	4	-14	-3	5	Error (mV)
			-0.49	-0.21	-0.01	0.36	0.35	0.35	-0.03	-0.12	0.08	0.16	-0.10	0.14	-0.56	-0.12	0.20	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1554	79	191	320	456	570	702	810	929	1061	1186	1308	1437	1546	1677	1732	Measured Value (mV)
	SLOPE (mV/dB)	24.6	3	-8	-3	10	1	10	-5	-10	-1	1	0	6	-8	-1	5	Error (mV)
			0.11	-0.34	-0.11	0.41	0.04	0.40	-0.22	-0.39	-0.03	0.05	0.00	0.23	-0.34	-0.02	0.21	LINEARITY ERROR (dB)
	Flatness +/-dB		0.5	0.8	0.8	0.6	0.8	0.6	0.6	1.1	1.1	1.3	1.1	1.1	1.1	1.2	1.1	



	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: 8/5/2020
SERIAL NO: PL21004
TEST TEMP: -54C

PLANAR MONOLITHICS INDUSTRIES
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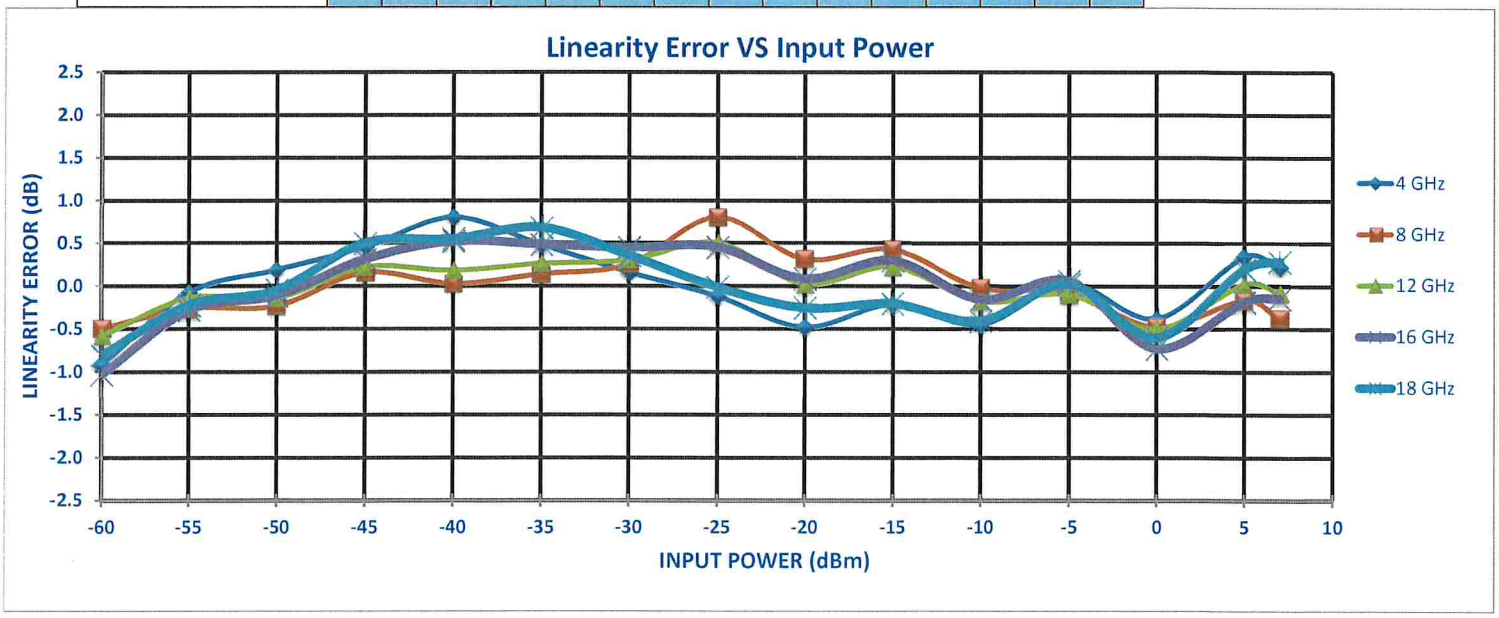
Vos= -0.034

Frequency			-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1546	88	228	354	480	608	720	832	945	1056	1182	1296	1427	1537	1674	1719	Measured Value (mV)
	SLOPE (mV/dB)	23.9	-22	-2	4	11	19	11	4	-3	-12	-5	-11	0	-9	8	5	Error (mV)
			-0.93	-0.08	0.19	0.45	0.80	0.48	0.16	-0.12	-0.48	-0.22	-0.45	0.02	-0.38	0.34	0.22	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1573	58	189	315	450	572	700	828	967	1080	1208	1322	1446	1561	1694	1739	Measured Value (mV)
	SLOPE (mV/dB)	25.0	-12	-7	-6	4	1	3	6	20	8	11	-1	-2	-12	-4	-9	Error (mV)
			-0.50	-0.27	-0.23	0.16	0.03	0.14	0.25	0.80	0.31	0.42	-0.02	-0.07	-0.48	-0.17	-0.37	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1568	66	201	325	458	581	707	832	961	1073	1202	1316	1442	1556	1693	1740	Measured Value (mV)
	SLOPE (mV/dB)	24.8	-15	-4	-4	5	4	6	8	13	1	6	-4	-2	-12	1	-2	Error (mV)
			-0.59	-0.14	-0.14	0.22	0.18	0.26	0.30	0.50	0.02	0.22	-0.18	-0.10	-0.50	0.02	-0.08	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1539	75	213	337	467	592	711	830	950	1061	1186	1295	1420	1521	1654	1703	Measured Value (mV)
	SLOPE (mV/dB)	24.0	-25	-7	-3	7	13	12	11	11	2	7	-4	1	-18	-4	-3	Error (mV)
			-1.04	-0.28	-0.11	0.31	0.52	0.49	0.45	0.45	0.08	0.30	-0.16	0.05	-0.73	-0.19	-0.14	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1523	66	200	324	457	578	701	813	924	1038	1159	1274	1404	1509	1648	1698	Measured Value (mV)
	SLOPE (mV/dB)	24.0	-19	-5	-1	12	13	16	9	0	-6	-5	-10	0	-14	5	7	Error (mV)
			-0.81	-0.22	-0.05	0.50	0.55	0.68	0.35	-0.01	-0.26	-0.21	-0.41	0.01	-0.60	0.20	0.28	LINEARITY ERROR (dB)
	Flatness +/-dB		0.6	0.8	0.8	0.6	0.7	0.4	0.4	0.8	0.8	1	0.9	0.8	1	0.9	0.8	



	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: 8/5/2020
SERIAL NO: PL21004
TEST TEMP: +85C

PLANAR MONOLITHICS INDUSTRIES
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Phone: 916-542-1401 Fax: 301-662-1731
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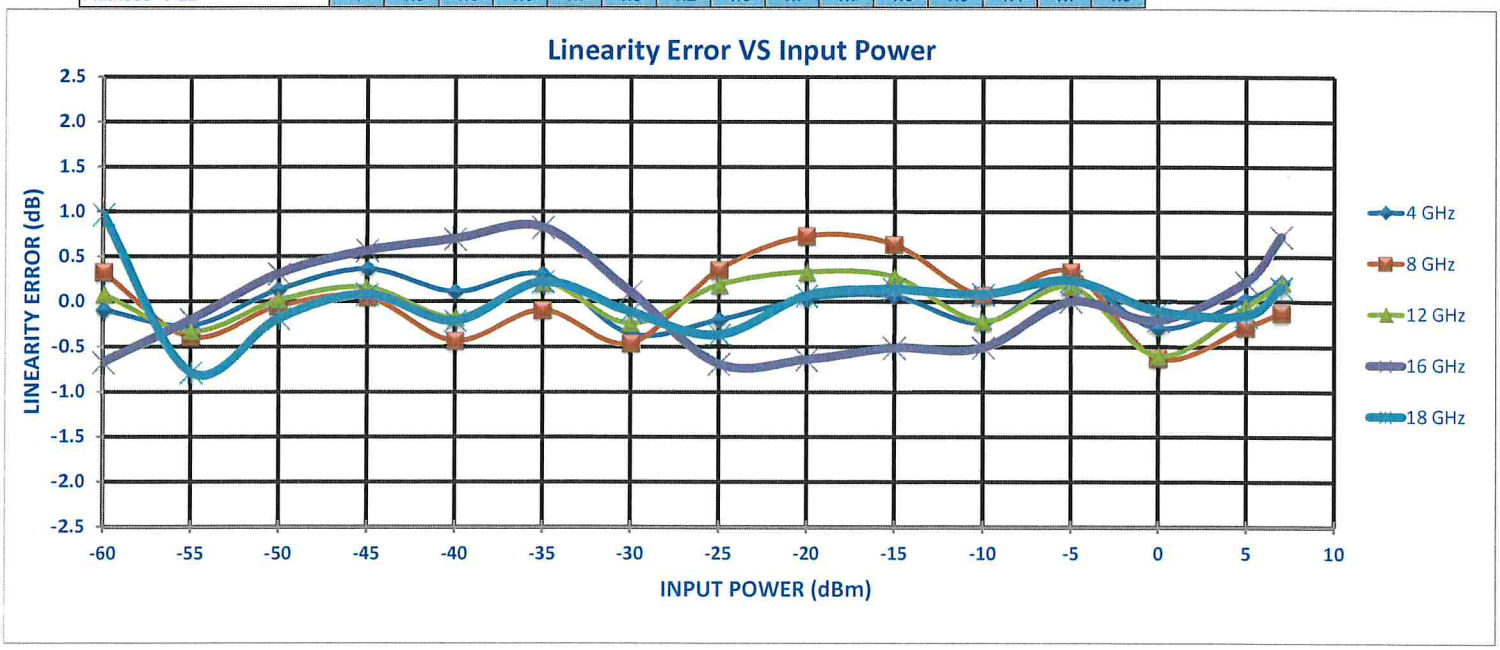
Vos= 0.029

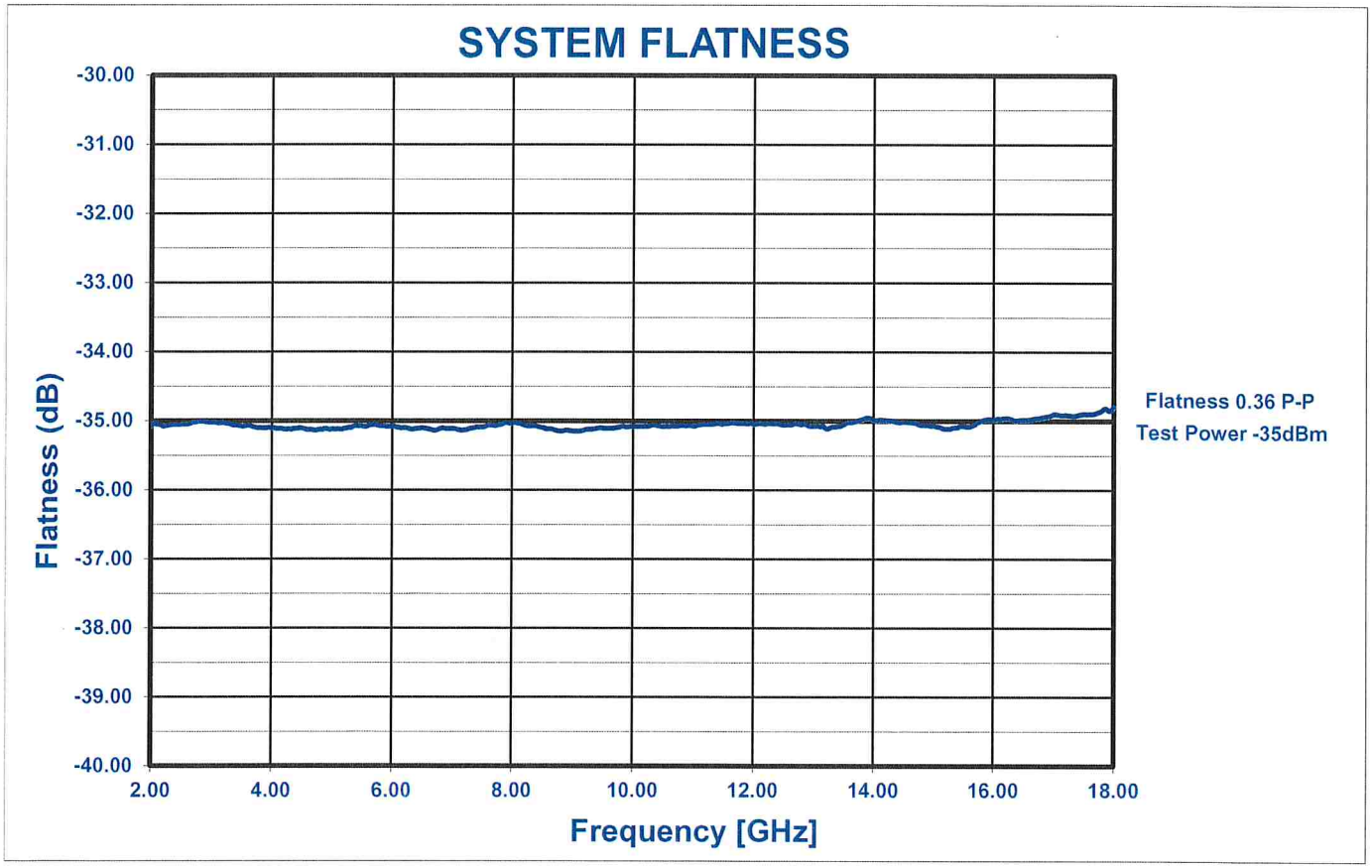
Frequency			-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1588	107	226	359	488	605	733	840	967	1096	1220	1336	1471	1581	1712	1766	Measured Value (mV)
	SLOPE (mV/dB)	24.6	-2	-7	3	9	3	7	-9	-5	1	1	-6	6	-7	0	5	Error (mV)
			-0.10	-0.27	0.13	0.36	0.11	0.30	-0.36	-0.21	0.03	0.06	-0.24	0.24	-0.30	0.02	0.21	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1615	95	204	340	470	585	721	839	987	1124	1249	1362	1496	1599	1735	1790	Measured Value (mV)
	SLOPE (mV/dB)	25.5	8	-10	-1	1	-11	-2	-12	9	18	16	2	8	-16	-7	-3	Error (mV)
			0.33	-0.39	-0.05	0.05	-0.44	-0.10	-0.46	0.35	0.73	0.63	0.07	0.33	-0.63	-0.29	-0.13	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1604	102	217	351	480	597	732	846	982	1111	1235	1348	1483	1589	1728	1785	Measured Value (mV)
	SLOPE (mV/dB)	25.1	2	-8	0	4	-4	5	-6	5	8	7	-5	4	-15	-1	5	Error (mV)
			0.08	-0.33	0.01	0.16	-0.17	0.21	-0.24	0.18	0.33	0.28	-0.22	0.17	-0.60	-0.06	0.21	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1554	123	252	382	506	627	748	849	948	1067	1188	1306	1436	1549	1677	1736	Measured Value (mV)
	SLOPE (mV/dB)	23.6	-16	-5	7	13	16	20	3	-16	-15	-12	-12	0	-5	5	17	Error (mV)
			-0.67	-0.20	0.31	0.57	0.70	0.83	0.11	-0.69	-0.65	-0.52	-0.51	0.00	-0.21	0.22	0.72	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1530	74	154	292	422	538	672	787	904	1038	1163	1285	1412	1527	1649	1706	Measured Value (mV)
	SLOPE (mV/dB)	24.7	24	-19	-5	2	-5	5	-3	-9	2	3	2	6	-3	-4	4	Error (mV)
			0.97	-0.79	-0.19	0.08	-0.21	0.22	-0.12	-0.37	0.06	0.13	0.08	0.23	-0.10	-0.15	0.16	LINEARITY ERROR (dB)
	Flatness +/-dB		1	1.9	1.8	1.6	1.7	1.5	1.2	1.6	1.7	1.7	1.5	1.6	1.4	1.7	1.6	



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

MODEL: GMDA-D1004 **S/N: PL21004** **DATE: 8/5/2020**

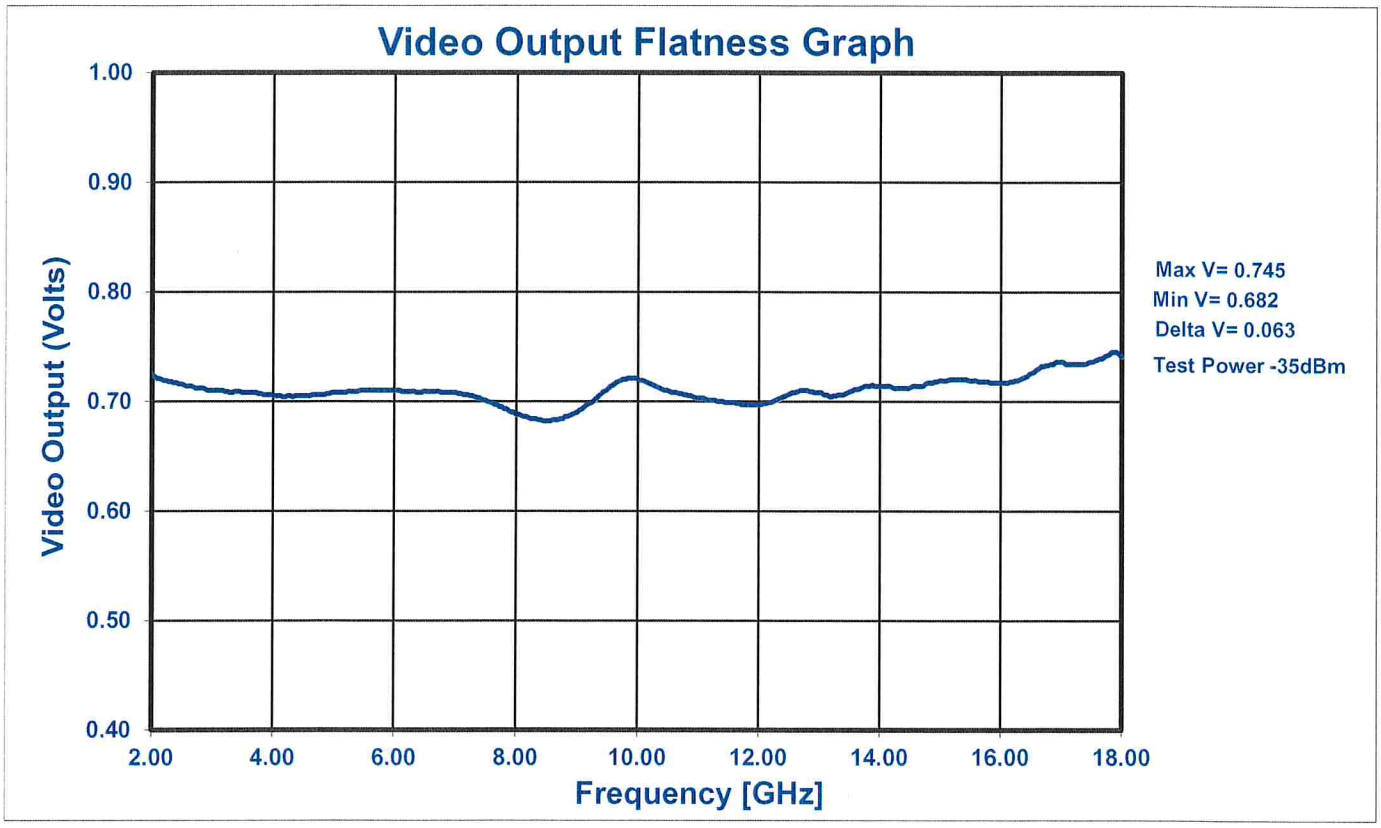
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



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

MODEL: GMDA-D1004 **S/N: PL21004** **DATE: 8/5/2020**

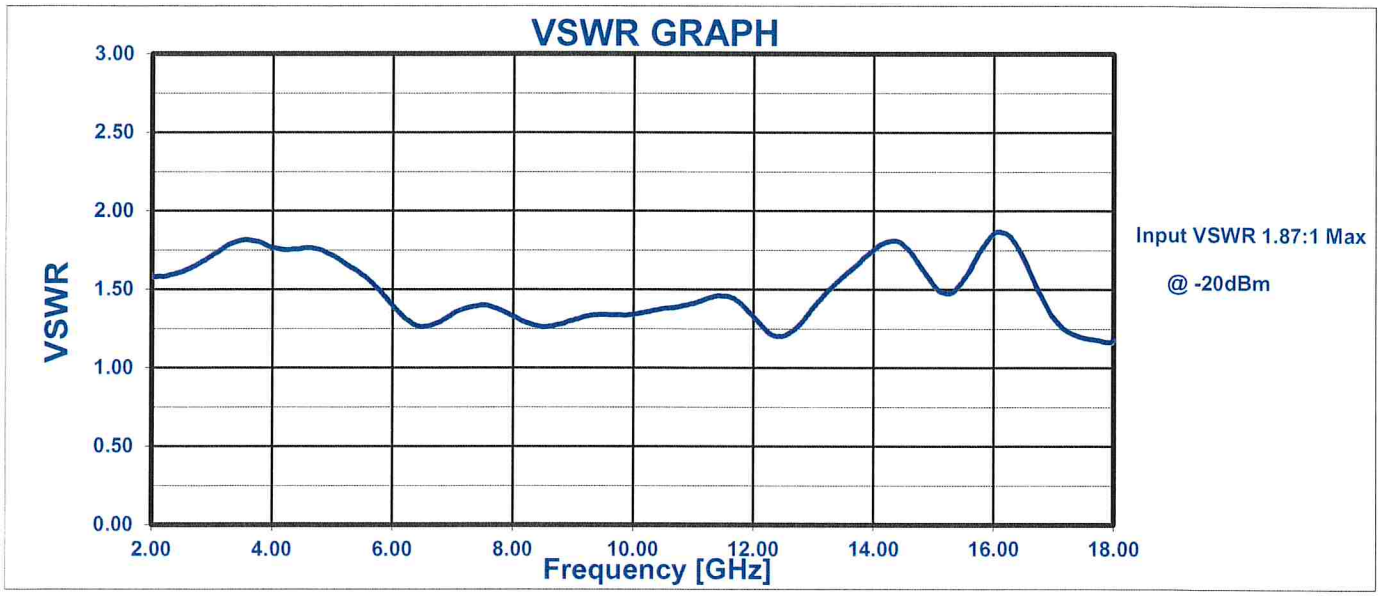
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



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

MODEL: GMDA-D1004 **S/N: PL21004** **DATE: 8/5/2020**

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