MODEL: GMDA-D1004 **S/N: PL25960** **DATE: 7/26/2019**

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	0.29	X	
8	24.7	0.35	X	
12	25.5	0.83	X	
16	24.8	0.66	X	
18	24.2	0.58	X	

@ -54 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	26.0	0.97	X	
8	25.9	1.06	X	
12	26.7	1.51	X	
16	26.1	1.41	X	
18	25.1	0.56	X	

@ +85 deg C (See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	25.3	0.38	X	
8	25.0	0.32	X	
12	25.8	0.65	X	
16	25.0	0.65	X	
18	24.9	0.36	X	

MODEL: GMDA-D1004 **S/N: PL25960** **DATE: 7/26/2019**

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3. FLATNESS

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

System Flatness = 0.28 dB (See attached plot)
Vp-p = 59 mV (See attached plot)
Flatness = Vp-p – (System Flatness x 25)
Flatness = 52 mV Pass ___X___ Fail _____

4. MAXIMUM OUTPUT VOLTAGE

Specification: +2.5v Max
Measurement: 1.818v Pass ___X___ Fail _____

5. INPUT VSWR

Specification: 2.3:1 Max
Measurement @-20dBm input (See attached plot)
VSWR: 1.86:1 Pass ___X___ Fail _____

6. VIDEO RISE TIME

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

Rise Time: 18.8ns 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: 0.182us Pass ___X___ Fail _____

MODEL: GMDA-D1004 **S/N: PL25960** **DATE: 7/26/2019**

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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: 30 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: 7/26/2019

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

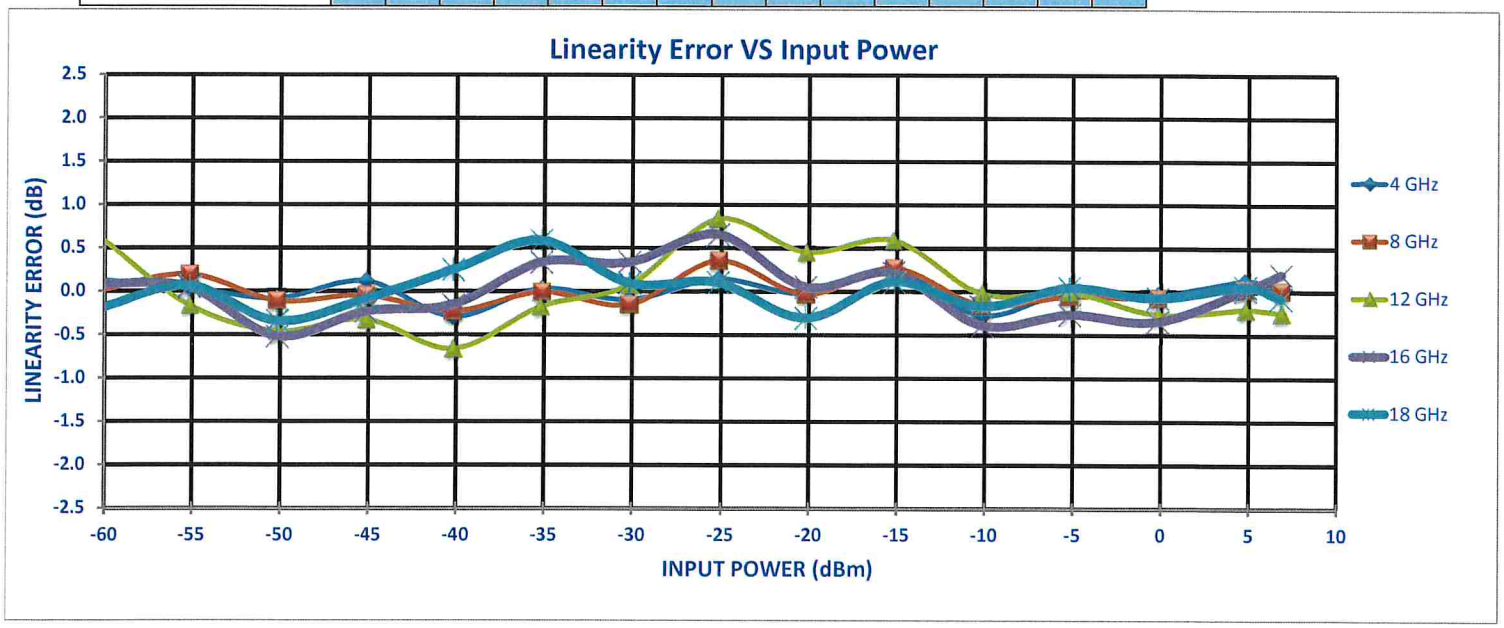
PMI	SIZE A	CAGE CODE 71A34	DWG. NO. ETD000005	REVISION B2
	SCALE			SHEET 4 OF 10

LOG TRANSFER WITH FREQUENCY
MODEL: GMDA-D1004
TESTED BY: J.Emperador
TEST DATE: 7/26/2019
SERIAL NO: PL25960
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= 0.002

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)	1577	87	209	330	459	573	705	826	956	1076	1207	1318	1449	1572	1700	1747	Measured Value (mV)
	SLOPE (mV/dB)	24.8	3	1	-2	3	-7	1	-2	3	-1	6	-7	0	-1	3	0	Error (mV)
			0.12	0.04	-0.08	0.11	-0.29	0.03	-0.10	0.14	-0.03	0.25	-0.28	0.00	-0.04	0.12	0.01	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1591	105	233	349	474	593	722	842	978	1092	1223	1336	1462	1585	1711	1760	Measured Value (mV)
	SLOPE (mV/dB)	24.7	0	5	-3	-1	-6	0	-4	9	-1	7	-4	-1	-2	1	0	Error (mV)
			0.01	0.20	-0.11	-0.05	-0.23	-0.01	-0.15	0.35	-0.03	0.27	-0.15	-0.05	-0.08	0.03	0.01	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1588	68	176	296	427	546	686	820	967	1085	1216	1328	1456	1577	1706	1756	Measured Value (mV)
	SLOPE (mV/dB)	25.5	15	-4	-12	-8	-17	-5	2	21	12	15	-1	0	-7	-5	-6	Error (mV)
			0.60	-0.16	-0.46	-0.33	-0.67	-0.18	0.07	0.83	0.46	0.59	-0.02	-0.01	-0.27	-0.21	-0.25	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1581	91	214	324	455	581	717	841	973	1082	1210	1319	1446	1568	1701	1755	Measured Value (mV)
	SLOPE (mV/dB)	24.8	2	1	-13	-6	-4	8	8	16	1	5	-10	-7	-9	0	5	Error (mV)
			0.08	0.04	-0.52	-0.24	-0.15	0.33	0.33	0.66	0.05	0.21	-0.39	-0.27	-0.35	0.02	0.19	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1567	108	235	346	473	602	731	840	961	1072	1203	1317	1443	1561	1685	1730	Measured Value (mV)
	SLOPE (mV/dB)	24.2	-5	1	-8	-2	6	14	2	2	-7	3	-4	1	-2	1	-2	Error (mV)
			-0.19	0.06	-0.35	-0.09	0.25	0.58	0.09	0.10	-0.31	0.11	-0.17	0.04	-0.08	0.05	-0.09	LINEARITY ERROR (dB)
	Flatness +/-dB		0.8	1.2	1.1	1	1.1	0.9	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	



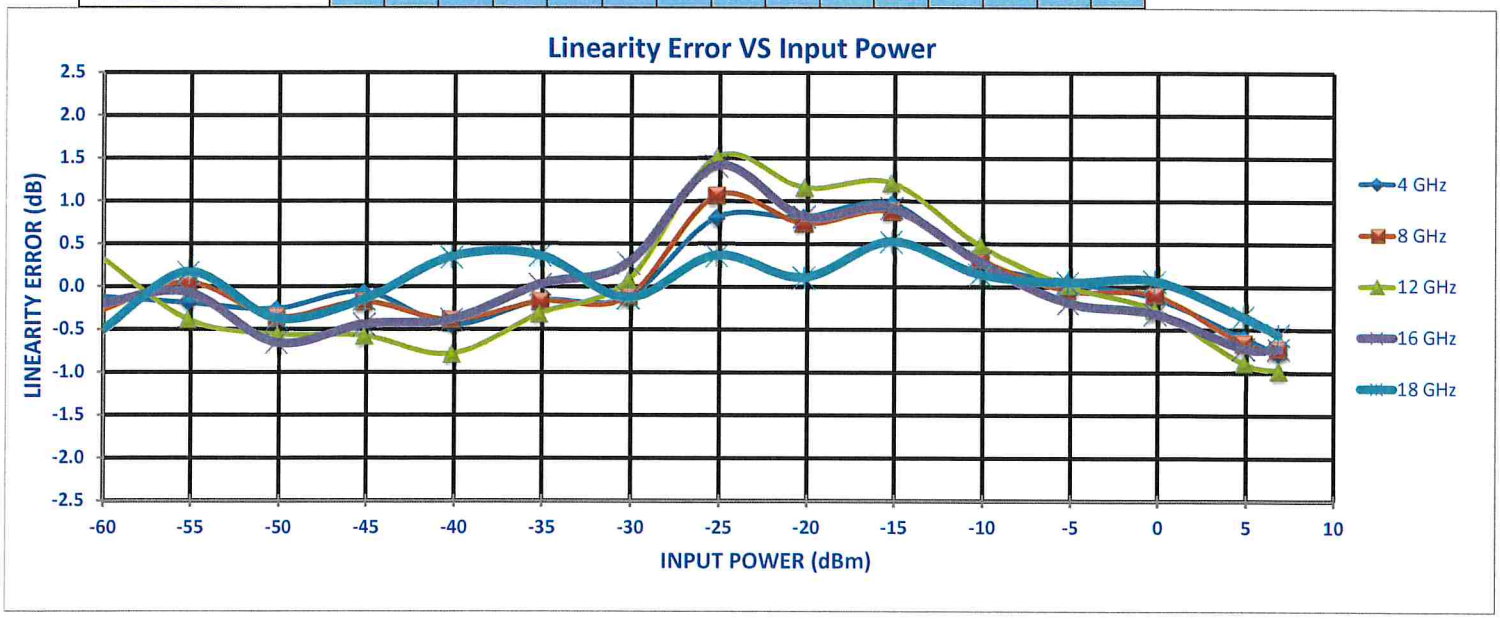
	SIZE	CAGE CODE	DWG. NO.	REVISION
PMI	A	71A34	ETD000005	B2
	SCALE			SHEET 5 OF 10

LOG TRANSFER WITH FREQUENCY
MODEL: GMDA-D1004
TESTED BY: J.Emperador
TEST DATE: 7/26/2019
SERIAL NO: PL25960
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= -0.009

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)	1634	68	196	324	459	579	716	847	1001	1131	1265	1377	1501	1626	1744	1791	Measured Value (mV)
	SLOPE (mV/dB)	26.0	-3	-5	-7	-2	-12	-4	-3	21	21	25	7	1	-3	-15	-20	Error (mV)
			-0.12	-0.19	-0.27	-0.07	-0.45	-0.17	-0.13	0.80	0.81	0.97	0.28	0.05	-0.13	-0.59	-0.78	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1651	86	224	343	477	601	736	867	1027	1148	1281	1396	1516	1644	1759	1809	Measured Value (mV)
	SLOPE (mV/dB)	25.9	-7	1	-9	-5	-10	-5	-3	28	19	23	8	-1	-3	-17	-19	Error (mV)
			-0.28	0.05	-0.36	-0.18	-0.39	-0.18	-0.12	1.06	0.74	0.88	0.32	-0.05	-0.10	-0.66	-0.73	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1650	52	166	295	428	556	702	846	1018	1142	1277	1391	1512	1638	1755	1806	Measured Value (mV)
	SLOPE (mV/dB)	26.7	9	-10	-15	-15	-21	-9	2	40	31	32	13	0	-7	-24	-26	Error (mV)
			0.34	-0.39	-0.56	-0.58	-0.79	-0.32	0.07	1.51	1.16	1.21	0.48	0.01	-0.27	-0.89	-0.98	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1651	76	210	325	461	593	734	871	1031	1146	1279	1393	1511	1638	1758	1810	Measured Value (mV)
	SLOPE (mV/dB)	26.1	-5	-2	-17	-12	-10	1	7	37	21	24	7	-5	-8	-19	-19	Error (mV)
			-0.21	-0.07	-0.66	-0.45	-0.39	0.02	0.27	1.41	0.82	0.92	0.29	-0.19	-0.32	-0.72	-0.73	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1630	106	249	361	492	630	756	869	1007	1126	1262	1378	1501	1627	1742	1787	Measured Value (mV)
	SLOPE (mV/dB)	25.1	-13	4	-9	-4	9	9	-3	9	3	13	4	1	2	-9	-14	Error (mV)
			-0.53	0.16	-0.37	-0.16	0.34	0.36	-0.13	0.36	0.10	0.52	0.14	0.04	0.06	-0.35	-0.56	LINEARITY ERROR (dB)
	Flatness +/-dB		1.1	1.7	1.3	1.3	1.5	1.1	0.5	0.6	0.4	0.4	0.4	0.3	0.4	0.3	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: 7/26/2019
SERIAL NO: PL25960
TEST TEMP: +85C

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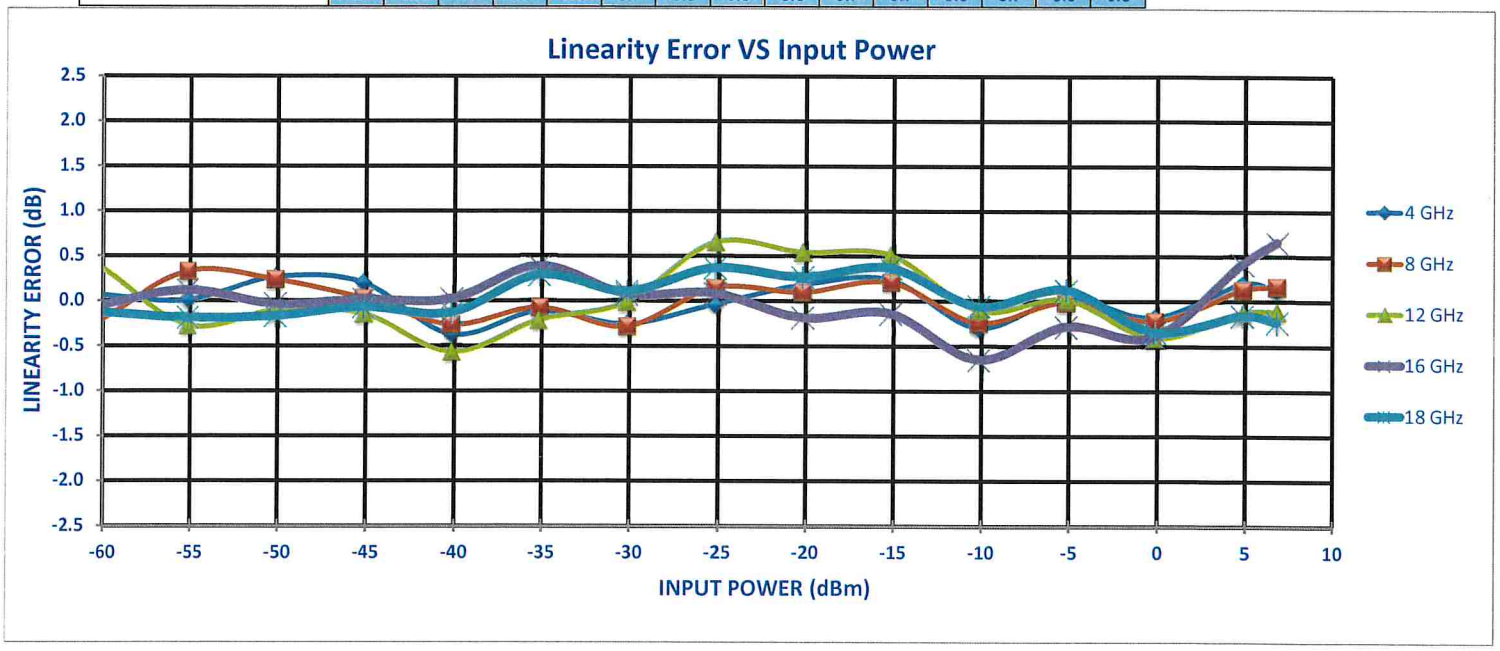
Email: sales@pmi-rf.com | www.pmi-rf.com

Vos= 0.030

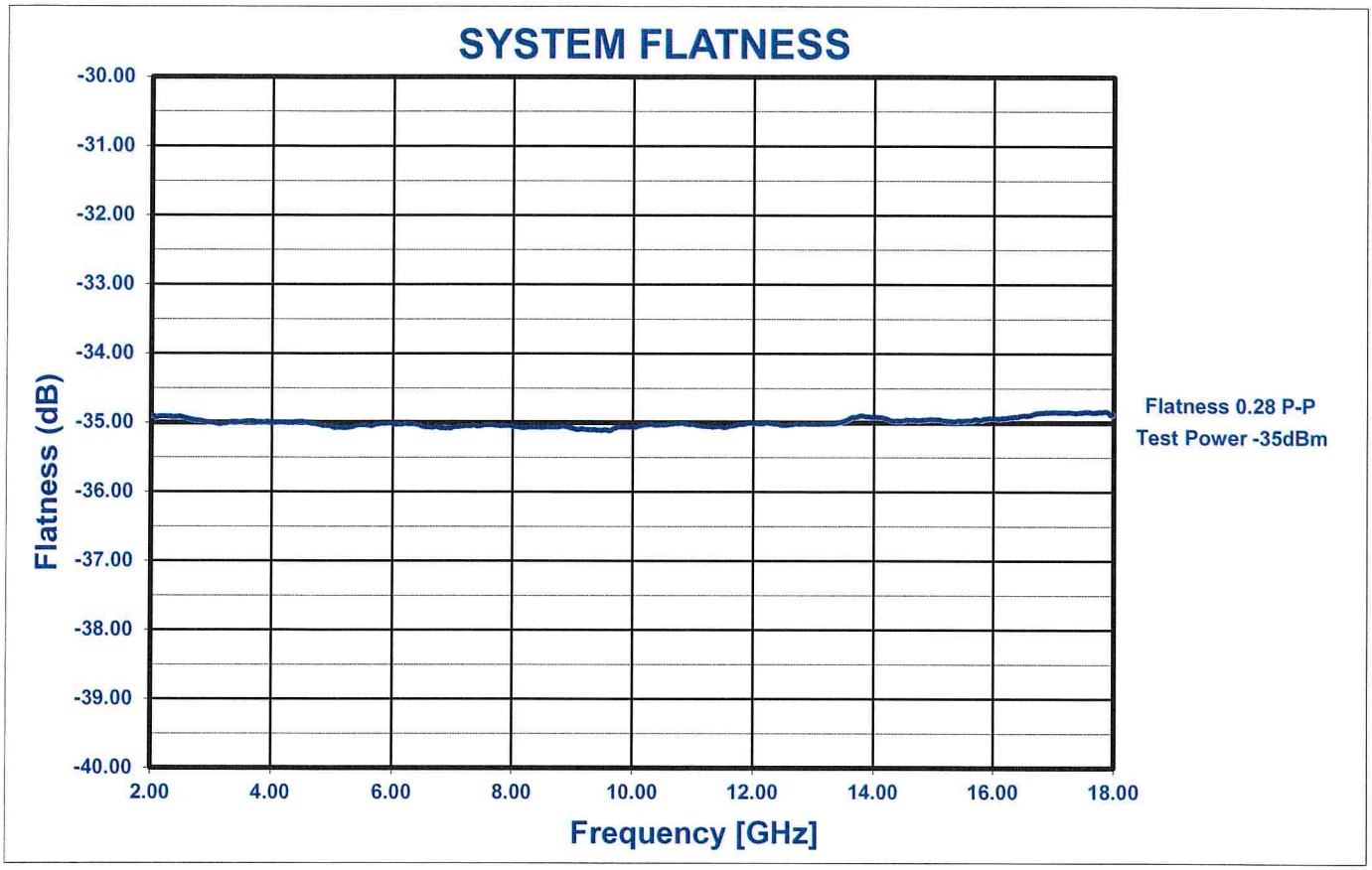
Frequency			-60.2	-55.2	-50.2	-45.2	-40.2	-35.2	-30.2	-25.2	-20.2	-15.2	-10.2	-5.18	-0.18	4.82	6.82	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1629	108	233	366	491	603	736	859	991	1123	1251	1364	1499	1620	1756	1805	Measured Value (mV)
	SLOPE (mV/dB)	25.3	2	0	7	5	-10	-3	-7	-1	4	6	-8	1	-5	5	3	Error (mV)
			0.06	0.00	0.26	0.20	-0.38	-0.12	-0.26	-0.04	0.17	0.23	-0.30	0.03	-0.18	0.19	0.13	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1643	130	269	392	512	630	760	880	1016	1140	1268	1382	1513	1633	1767	1818	Measured Value (mV)
	SLOPE (mV/dB)	25.0	-6	8	6	1	-7	-2	-7	4	2	5	-6	0	-6	3	4	Error (mV)
			-0.22	0.32	0.23	0.03	-0.26	-0.07	-0.28	0.15	0.10	0.21	-0.24	-0.01	-0.22	0.13	0.16	LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	1635	94	206	339	467	585	723	857	1003	1129	1257	1370	1502	1620	1756	1808	Measured Value (mV)
	SLOPE (mV/dB)	25.8	10	-7	-3	-4	-15	-5	0	17	14	13	-3	0	-11	-3	-3	Error (mV)
			0.38	-0.27	-0.11	-0.15	-0.57	-0.21	-0.01	0.65	0.54	0.51	-0.11	0.01	-0.41	-0.13	-0.11	LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	1617	114	243	364	490	615	749	866	991	1109	1235	1347	1481	1603	1748	1804	Measured Value (mV)
	SLOPE (mV/dB)	25.0	-1	3	-1	0	0	10	2	2	-5	-4	-16	-7	-10	10	16	Error (mV)
			-0.05	0.12	-0.04	0.01	0.02	0.39	0.08	0.08	-0.19	-0.14	-0.65	-0.29	-0.40	0.41	0.65	LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	1609	107	230	355	482	605	740	860	991	1113	1240	1354	1483	1596	1725	1773	Measured Value (mV)
	SLOPE (mV/dB)	24.9	-3	-5	-4	-2	-3	7	3	9	7	9	-1	3	-9	-4	-6	Error (mV)
			-0.13	-0.19	-0.17	-0.07	-0.13	0.29	0.10	0.36	0.26	0.36	-0.06	0.12	-0.34	-0.16	-0.24	LINEARITY ERROR (dB)
	Flatness +/-dB		0.7	1.3	1.1	0.9	0.9	0.7	0.5	0.5	0.6	0.7	0.7	0.6	0.7	0.9	0.9	



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

MODEL: GMDA-D1004 **S/N: PL25960** **DATE: 7/26/2019**

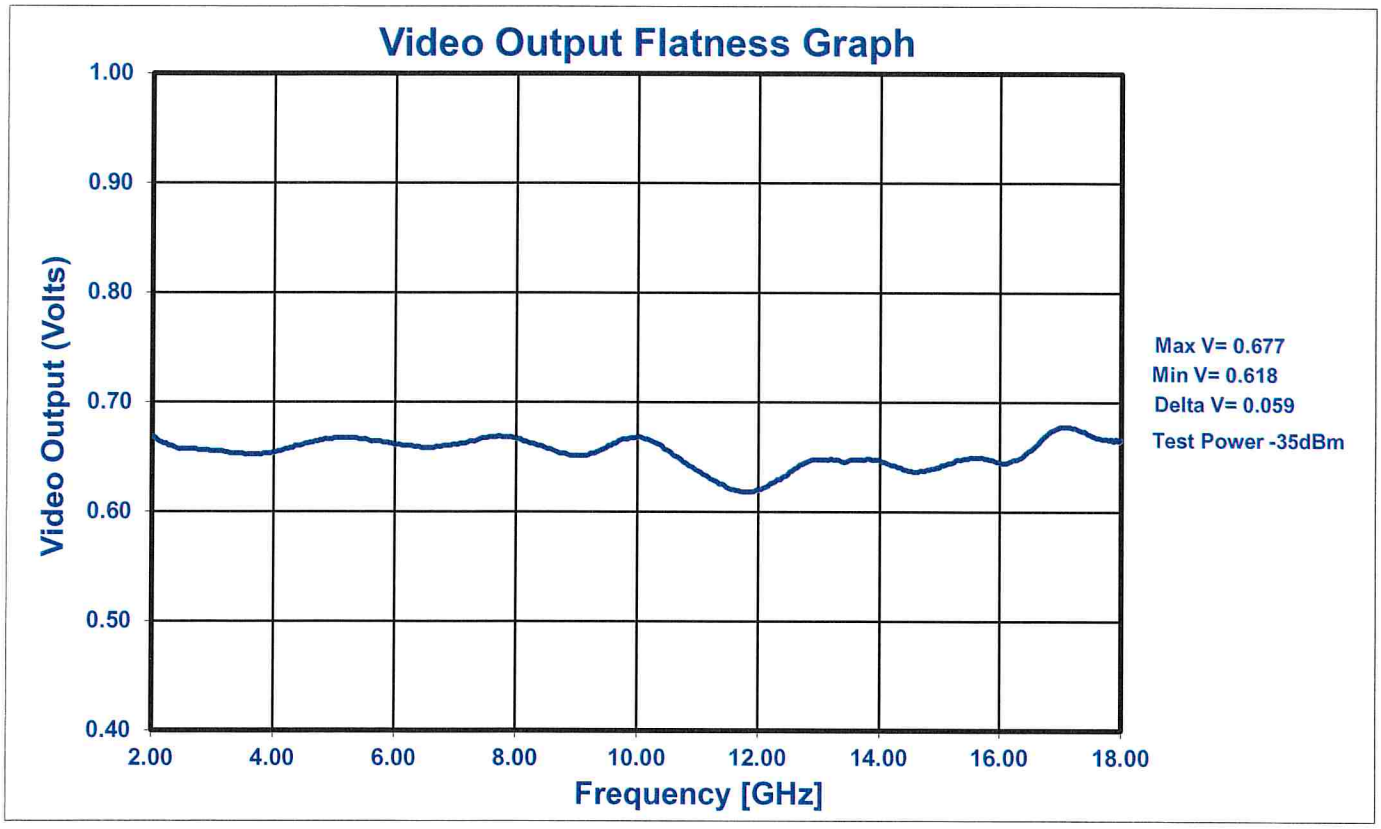
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



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

MODEL: GMDA-D1004 **S/N: PL25960** **DATE: 7/26/2019**

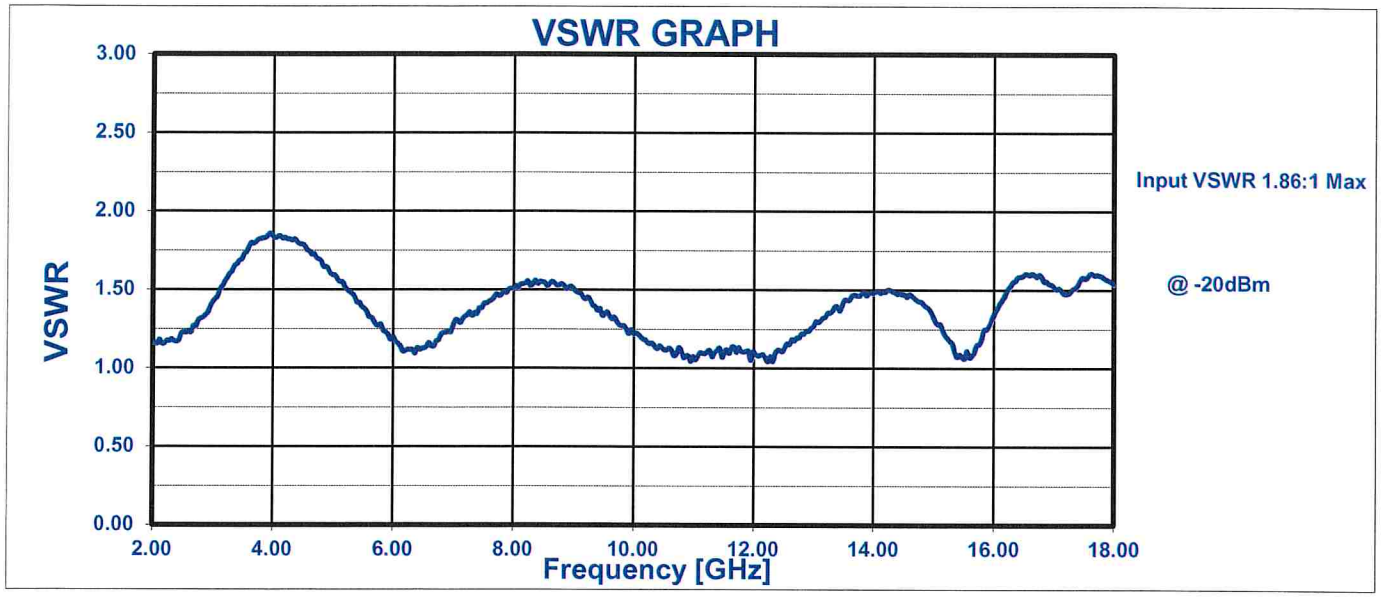
NOTE: ALL VIDEO OUTPUT MEASUREMENTS ARE MADE WITH 75 OHMS VIDEO LOAD



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

MODEL: GMDA-D1004 **S/N: PL25960** **DATE: 7/26/2019**

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