

MODEL: GMDA-D1004

S/N: PL51134

DATE: 2/26/2025

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 -65.4 dBm Pass X Fail       

2. LOG SLOPE AND LINEARITY

Video Load Measured: 75.2 Ohms

Video Cable Measured: 0.2 Ohms

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	24.9	0.65	X	
8	25.0	0.42	X	
12	25.3	0.52	X	
16	24.1	0.79	X	
18	24.2	0.84	X	

@ -54 deg C ( See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	24.2	0.90	X	
8	24.7	0.49	X	
12	24.8	1.01	X	
16	24.0	0.78	X	
18	23.6	1.01	X	

@ +85 deg C ( See attached Plot)

Frequency (GHz)	Log Slope (mV / dB)	Log linearity (dB)	Pass	Fail
4	25.3	0.70	X	
8	25.2	0.53	X	
12	25.6	0.71	X	
16	24.1	1.27	X	
18	25.0	1.06	X	

	SIZE A	CAGE CODE 71A34	DWG. NO. 27600005	REVISION B3
	SCALE			SHEET 2 OF 10

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3. FLATNESS

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

System Flatness = 0.83 dB (See attached plot)  
Vp-p = 36 mV (See attached plot)  
Flatness = Vp-p - (System Flatness x 25)  
Flatness = 15.25 mV Pass X Fail \_\_\_\_\_

4. MAXIMUM OUTPUT VOLTAGE

Specification: +2.5v Max  
Measurement: 1.808v Pass X Fail \_\_\_\_\_

5. INPUT VSWR

Specification: 2.3:1 Max  
Measurement @-20dBm input ( See attached plot)  
VSWR: 1.40:1 Pass X Fail \_\_\_\_\_

6. VIDEO RISE TIME

Specification: 30ns Max  
Measurement: Freq = 10.0 GHz, RF Input -35dBm, PW = 1us, PRF 100KHz  
Rise Time: 19.2ns Pass X Fail \_\_\_\_\_

7. LEADING AND TRAILING 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: 0.086us Pass X Fail \_\_\_\_\_

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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: -37 mV Pass X Fail \_\_\_\_\_

12. DC POWER

Specification: +12V to +15.5V, 400mA Max  
-12V to -15.5V, 165mA Max

Measurement: +15.5V @ 290 mA Pass X Fail \_\_\_\_\_

-15.5V @ 60 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: Joshua Monley

Date: 2/26/2025

QA: <sup>PMI</sup>~~QAS~~ K. Klamm

Date: 2-28-25

	SIZE	CAGE CODE	DWG. NO.	REVISION
	A	71A34	27600005	B3
	SCALE			SHEET 4 OF 10

LOG TRANSFER WITH FREQUENCY

MODEL: GMDA-D1004

TESTED BY: Joshua Monley

TEST DATE: 2/26/2025

SERIAL NO: PL51134

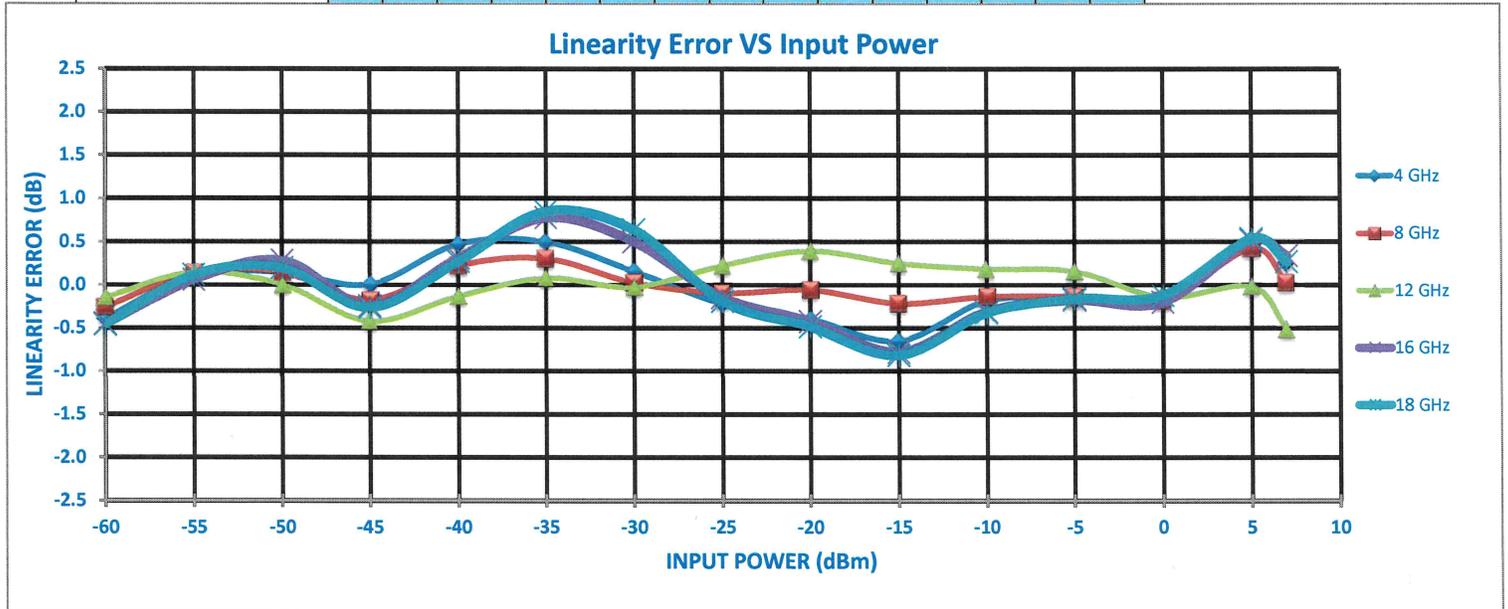
TEST TEMP: +25C



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= -0.025

Frequency		-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	83 220 345 466 602 727 843 958 1078 1196 1332 1457 1582 1723 1766															Measured Value (mV)
	SLOPE (mV/dB)	-10 3 3 0 12 12 4 -6 -10 -16 -5 -4 -3 13 6															Error (mV)
		-0.39 0.11 0.14 0.00 0.47 0.49 0.16 -0.22 -0.40 -0.65 -0.19 -0.16 -0.14 0.53 0.26															LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	101 236 361 478 613 740 858 980 1106 1227 1354 1479 1603 1743 1783															Measured Value (mV)
	SLOPE (mV/dB)	-6 4 4 -4 6 8 1 -2 -1 -5 -3 -3 -4 11 1															Error (mV)
		-0.26 0.14 0.14 -0.18 0.22 0.30 0.02 -0.10 -0.06 -0.22 -0.14 -0.14 -0.18 0.42 0.02															LINEARITY ERROR (dB)
12 GHz	INTERCEPT (mV)	92 226 349 465 599 731 855 988 1119 1242 1367 1493 1612 1742 1780															Measured Value (mV)
	SLOPE (mV/dB)	-4 4 0 -11 -3 2 -1 6 10 6 5 4 -4 0 -13															Error (mV)
		-0.15 0.14 0.00 -0.42 -0.13 0.08 -0.03 0.22 0.39 0.25 0.18 0.15 -0.15 -0.02 -0.52															LINEARITY ERROR (dB)
16 GHz	INTERCEPT (mV)	116 249 375 483 617 749 863 968 1082 1194 1326 1450 1570 1708 1752															Measured Value (mV)
	SLOPE (mV/dB)	-11 1 7 -6 7 19 12 -4 -10 -19 -8 -4 -5 12 8															Error (mV)
		-0.45 0.06 0.28 -0.25 0.31 0.78 0.50 -0.15 -0.43 -0.79 -0.32 -0.18 -0.21 0.51 0.34															LINEARITY ERROR (dB)
18 GHz	INTERCEPT (mV)	104 239 362 472 606 741 857 958 1072 1185 1318 1443 1565 1702 1744															Measured Value (mV)
	SLOPE (mV/dB)	-11 3 5 -6 7 20 15 -5 -12 -20 -8 -4 -3 13 6															Error (mV)
		-0.46 0.11 0.19 -0.26 0.27 0.84 0.63 -0.19 -0.49 -0.82 -0.33 -0.17 -0.13 0.53 0.27															LINEARITY ERROR (dB)
Flatness +/-dB		0.7	0.6	0.6	0.4	0.4	0.4	0.4	0.6	0.9	1.1	1	1	0.9	0.8	0.8	



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	SCALE			SHEET 5 OF 10

LOG TRANSFER WITH FREQUENCY

MODEL: GMDA-D1004

TESTED BY: Joshua Monley

TEST DATE: 2/26/2025

SERIAL NO: PL51134

TEST TEMP: -54C



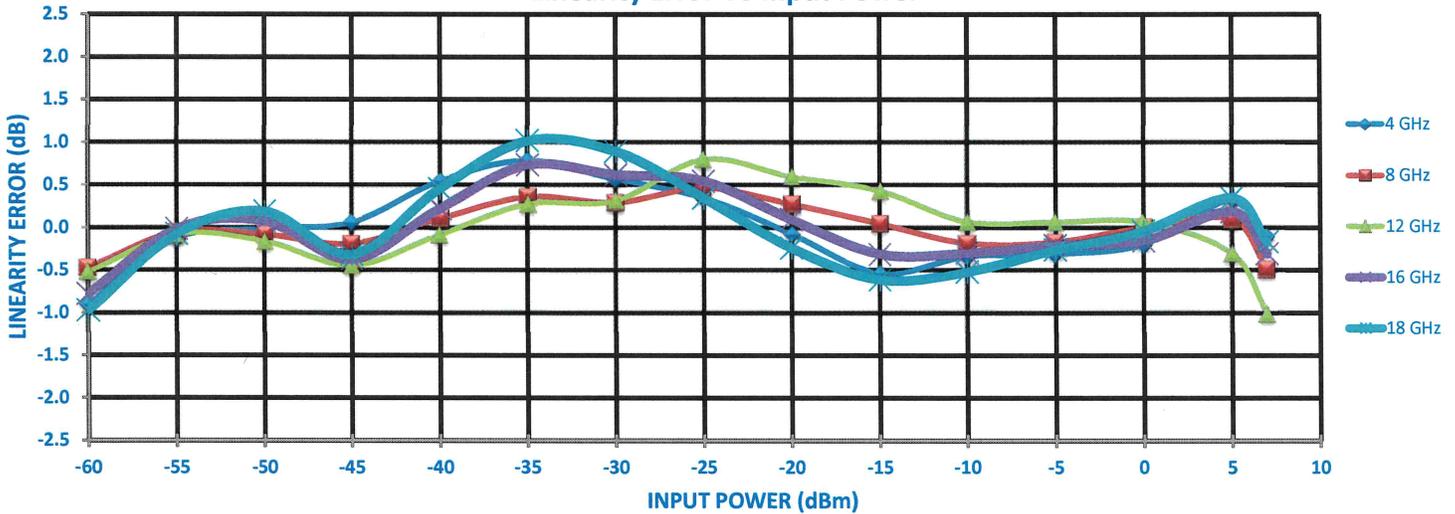
PLANAR MONOLITHICS INDUSTRIES  
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Vos= -0.037

Frequency

			RF Input Power (dBm)																	
			-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7			
4 GHz	INTERCEPT (mV)	1530															Measured Value (mV)			
	SLOPE (mV/dB)	24.2															Error (mV)			
			53	193	317	440	573	700	816	932	1043	1153	1279	1401	1525	1659	1697			
			-22	-3	0	1	13	19	14	8	-2	-13	-8	-8	-5	8	-3			
			-0.90	-0.13	-0.01	0.06	0.54	0.78	0.56	0.35	-0.08	-0.54	-0.34	-0.31	-0.20	0.33	-0.11	LINEARITY ERROR (dB)		
			X																	
8 GHz	INTERCEPT (mV)	1558															Measured Value (mV)			
	SLOPE (mV/dB)	24.7															Error (mV)			
			62	196	319	440	571	701	823	951	1070	1188	1306	1430	1558	1684	1719			
			-12	-1	-2	-5	3	9	7	12	7	1	-5	-4	0	2	-12			
			-0.47	-0.05	-0.08	-0.19	0.11	0.36	0.29	0.47	0.28	0.05	-0.18	-0.17	0.00	0.09	-0.49	LINEARITY ERROR (dB)		
			X																	
12 GHz	INTERCEPT (mV)	1568															Measured Value (mV)			
	SLOPE (mV/dB)	24.8															Error (mV)			
			67	202	324	441	574	707	832	968	1087	1207	1322	1446	1570	1685	1717			
			-13	-2	-4	-11	-2	7	8	20	15	11	2	2	2	-8	-25			
			-0.52	-0.08	-0.16	-0.45	-0.08	0.28	0.32	0.80	0.59	0.43	0.07	0.06	0.06	-0.30	-1.01	LINEARITY ERROR (dB)		
			X																	
16 GHz	INTERCEPT (mV)	1541															Measured Value (mV)			
	SLOPE (mV/dB)	24.0															Error (mV)			
			85	223	345	454	588	720	837	955	1064	1174	1294	1416	1537	1665	1701			
			-19	0	2	-9	5	18	15	13	2	-8	-7	-5	-4	4	-7			
			-0.78	-0.02	0.08	-0.37	0.22	0.73	0.62	0.54	0.09	-0.31	-0.30	-0.21	-0.16	0.19	-0.31	LINEARITY ERROR (dB)		
			X																	
18 GHz	INTERCEPT (mV)	1539															Measured Value (mV)			
	SLOPE (mV/dB)	23.6															Error (mV)			
			102	241	365	471	607	738	853	958	1062	1171	1291	1415	1538	1665	1700			
			-23	-2	4	-7	11	24	21	8	-6	-15	-12	-6	-1	8	-4			
			-0.97	-0.08	0.18	-0.32	0.45	1.01	0.89	0.35	-0.24	-0.62	-0.52	-0.26	-0.04	0.34	-0.17	LINEARITY ERROR (dB)		
			X																	
Flatness +/-dB			1	1	1	0.6	0.7	0.8	0.7	0.7	0.9	1.1	0.9	0.9	0.9	0.5	0.4			

Linearity Error VS Input Power



LOG TRANSFER WITH FREQUENCY  
 MODEL: GMDA-D1004  
 TESTED BY: Joshua Monley  
 TEST DATE: 2/26/2025  
 SERIAL NO: PL51134  
 TEST TEMP: +85C



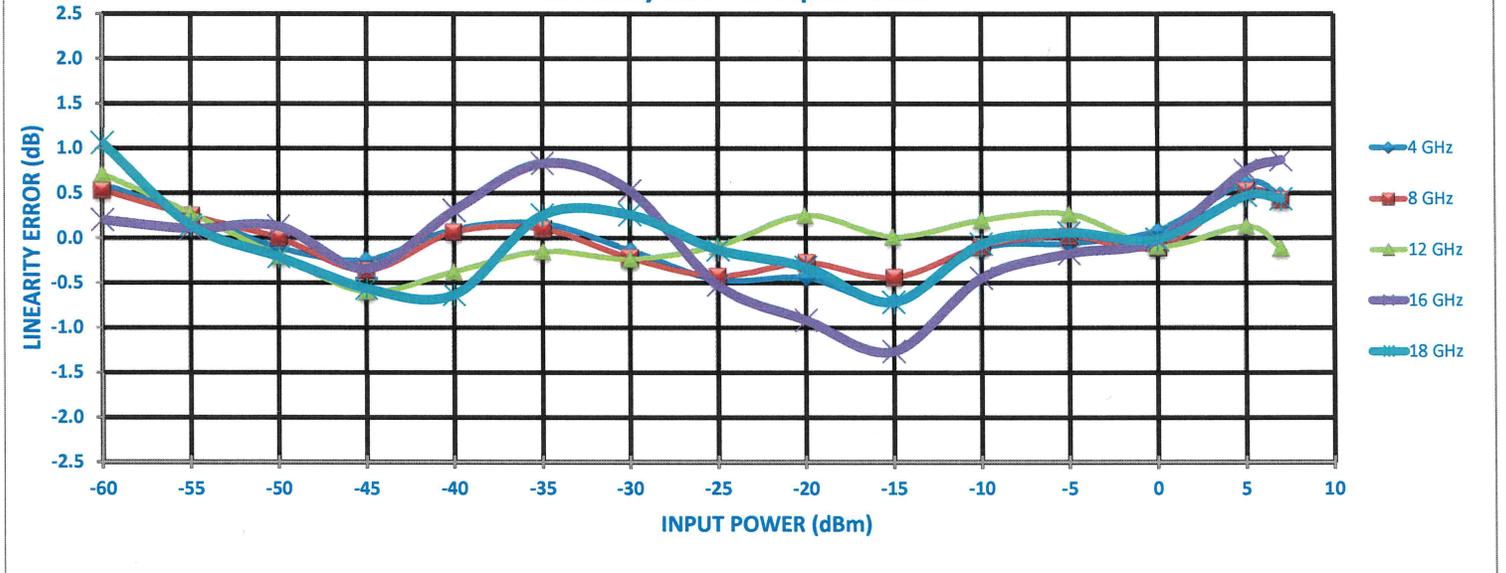
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Vos= 0.007

Frequency

			RF Input Power (dBm)																	
			-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7			
4 GHz	INTERCEPT (mV)	1603	101	219	336	459	594	722	841	959	1086	1206	1347	1475	1605	1745	1792	Measured Value (mV)		
	SLOPE (mV/dB)	25.3	15	7	-3	-6	2	4	-3	-12	-11	-18	-3	-2	2	16	12	Error (mV)		
			0.60	0.26	-0.11	-0.24	0.10	0.16	-0.14	-0.47	-0.45	-0.70	-0.12	-0.06	0.08	0.62	0.48	LINEARITY ERROR (dB)		
			X																	
8 GHz	INTERCEPT (mV)	1621	120	239	359	476	613	740	858	979	1109	1231	1366	1495	1618	1760	1808	Measured Value (mV)		
	SLOPE (mV/dB)	25.2	13	6	0	-9	2	3	-6	-11	-7	-11	-2	1	-3	13	11	Error (mV)		
			0.53	0.25	0.00	-0.36	0.07	0.10	-0.22	-0.43	-0.28	-0.44	-0.09	0.02	-0.10	0.52	0.42	LINEARITY ERROR (dB)		
			X																	
12 GHz	INTERCEPT (mV)	1626	106	223	339	457	591	725	851	983	1120	1242	1375	1505	1624	1758	1803	Measured Value (mV)		
	SLOPE (mV/dB)	25.6	18	7	-5	-15	-10	-4	-6	-2	7	0	5	7	-2	3	-3	Error (mV)		
			0.71	0.27	-0.20	-0.60	-0.37	-0.15	-0.24	-0.09	0.25	0.01	0.20	0.27	-0.09	0.13	-0.11	LINEARITY ERROR (dB)		
			X																	
16 GHz	INTERCEPT (mV)	1566	126	244	365	474	610	743	856	951	1062	1174	1314	1441	1565	1704	1755	Measured Value (mV)		
	SLOPE (mV/dB)	24.1	5	2	3	-8	7	20	13	-13	-22	-30	-11	-4	-1	18	21	Error (mV)		
			0.20	0.10	0.13	-0.34	0.31	0.83	0.52	-0.53	-0.92	-1.27	-0.45	-0.18	-0.03	0.75	0.87	LINEARITY ERROR (dB)		
			X																	
18 GHz	INTERCEPT (mV)	1546	75	177	293	409	532	679	804	919	1039	1154	1295	1423	1546	1683	1732	Measured Value (mV)		
	SLOPE (mV/dB)	25.0	26	4	-5	-14	-16	6	6	-3	-8	-18	-2	1	0	12	11	Error (mV)		
			1.06	0.14	-0.21	-0.56	-0.64	0.25	0.26	-0.13	-0.33	-0.72	-0.07	0.06	-0.02	0.47	0.44	LINEARITY ERROR (dB)		
			X																	
Flatness +/-dB			1	1.3	1.4	1.3	1.6	1.3	1.1	1.3	1.6	1.8	1.6	1.6	1.6	1.5	1.5			

Linearity Error VS Input Power



	SIZE	CAGE CODE	DWG. NO.	REVISION
	A	71A34	27600005	B3
	SCALE			SHEET 7 OF 10

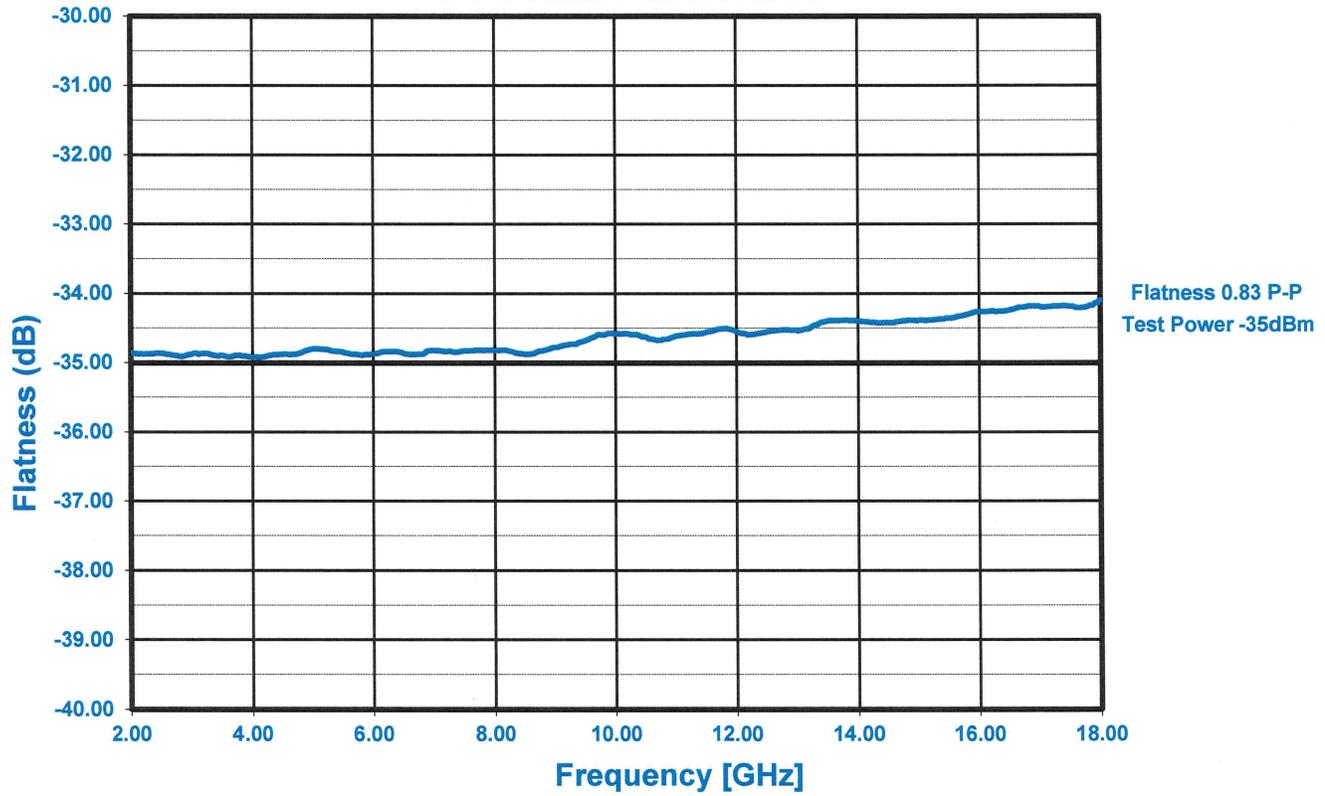
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### SYSTEM FLATNESS



SIZE  
A

CAGE CODE  
71A34

DWG. NO.  
27600005

REVISION  
B3

SCALE

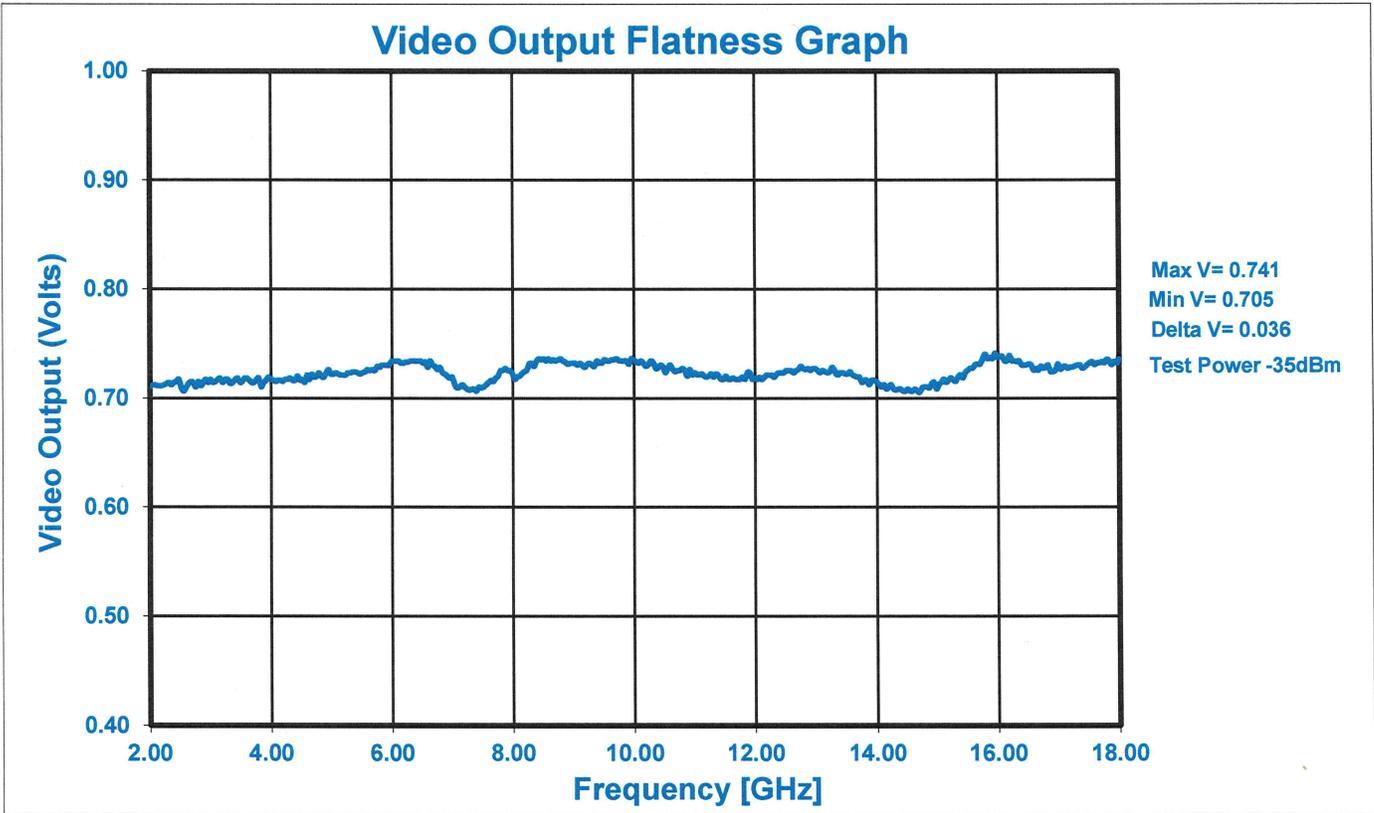
SHEET 8 OF 10

MODEL: GMDA-D1004

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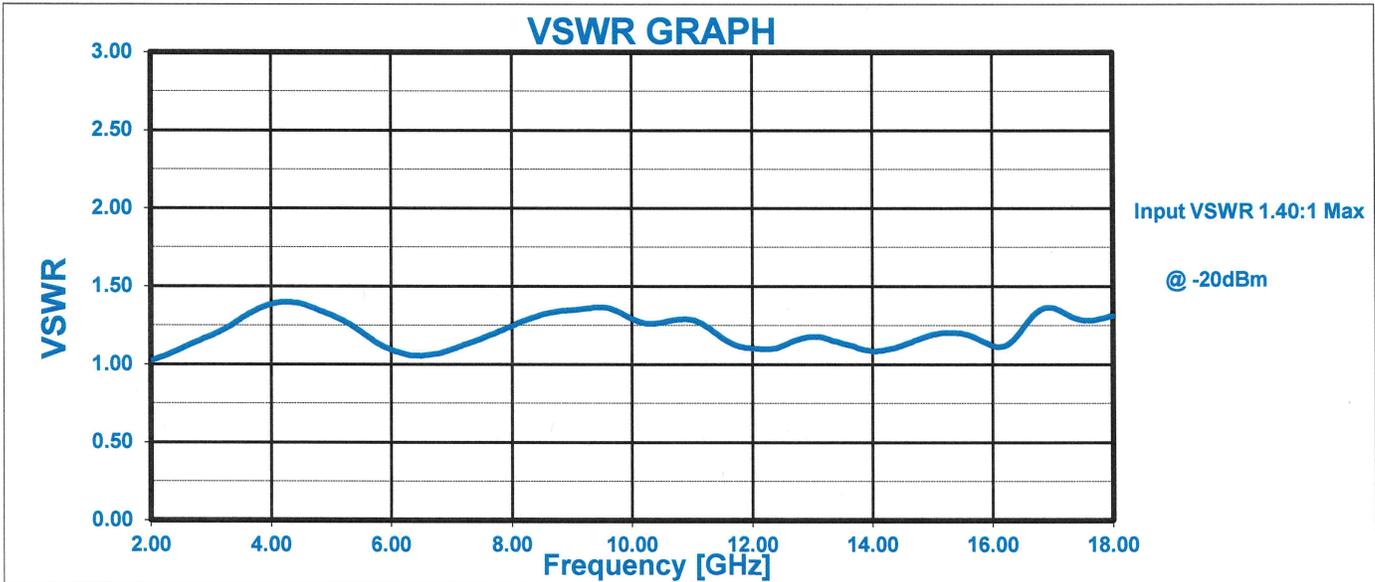
	SIZE	CAGE CODE	DWG. NO.	REVISION
	A	71A34	27600005	B3
	SCALE			SHEET 9 OF 10

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	SCALE			SHEET 10 OF 10