



**TYPICAL CHARACTERISTICS
ON
SDLVA-218-71-70MV-1**

PMI MODEL NO. SDLVA-218-71-70MV-1 IS A CW IMMUNE SDLVA (SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER). THIS UNIT OPERATES FROM 2.0 TO 18.0 GHZ. IT HAS THE ABILITY TO INTERFACE WITH A LONG CABLE (250 FT), WHILE MAINTAINING HIGH SPEED FLATNESS AND ACCURACY.



December 10, 2014

**TESTED BY:
EDD BENSON**

4921 Robert J. Mathews Pkwy Suite 1 Ph: (916)542-1401 Fax: (301)662-1731
Email: sales@pmi-rf.com



TYPICAL CHARACTERISTICS ON SDLVA-218-71-70MV-1

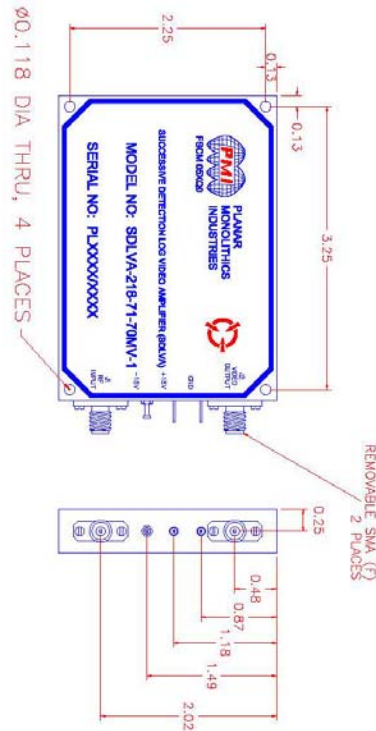
DESCRIPTION:

PMI MODEL NO. SDLVA-218-71-70MV-1 IS A CW ANALOG SDLVA (SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER). THIS UNIT OPERATES FROM 2.0 TO 18.0 GHz. IT HAS THE ABILITY TO INTERFACE WITH A LONG CABLE (250 FT), WHILE MAINTAINING HIGH SPEED, FLATNESS AND ACCURACY.

SPECIFICATIONS:

- FREQUENCY: 2.0 GHz TO 18.0 GHz
- FREQUENCY FLATNESS: ±2.0dB Typ
- SIGNAL CAPABILITY: PULSE (100ns - 300µs), PULSE ON CW
- PEAK NOISE VOLTAGE IN PRESENCE OF A CW SIGNAL: 400mV RELATIVE TO GROUND MAX (CW LEVEL UP TO -40dBm)
- PULSE PEAK AMPLITUDE LOSS: CW LEVEL: -50dBm; NO LOSS, -40dBm; 1.5dB MAX
- TSS FROM -20°C TO +85°C: -72dBm FOR 10MHz VIDEO BANDWIDTH
- LOG DYNAMIC RANGE: -66dBm TO 54Bm
- LOG SLOPE: 70mV/DB NOMINAL
- LOG LINEARITY: ±1.0dB MAX
- VIDEO OUTPUT RANGE: -66dBm; 150--400mV, 250mV (CENTER)
- DC OFFSET: ±150mV TYP
- NOISE LEVEL: 200mV Vp-P MAX, WITHOUT RF
- LOG ACCURACY FROM 70mV/DB: ±2dB MAX AT FREQUENCY 2.0 - 18.0 GHz, ±1dB MAX AT CENTER FREQUENCY
- WATCHING vs. FREQUENCY & TEMPERATURE: ±2dB MAX FOR A SET OF 6 PIECES @10GHz AND 25°C
- OUTPUT RISE TIME: 25ns MAX
- SETTLING TIME: 55ns MAX, 10% OUTPUT TO ±0.5dB OF FINAL VALUE
- RECOVERY TIME: 350ns MAX, MEASURED FROM EDGE OF 10 MICROSECOND PULSE TO LEADING EDGE OF NEXT 10 MICROSECOND PULSE TO WITHIN 1dB VOLTAGE LEVEL
- INPUT VSWR: 2.0:1 MAX
- MAX INPUT LEVEL: +20dBm CW
- VIDEO OUTPUT DRIVE: THROUGH 250 Feet, 75Ω CABLE (RG11)
- POWER SUPPLY: +15VDC @ 400mA MAX
- OPERATING TEMPERATURE: -15VDC @ 150mA MAX
- SIZE: 3.5in X (W) 2.5in X (H) 0.5in
- FINISH: MIL-SPEC EPOXY PAINT - GRAY
- COOLING: MIL-SPEC EPOXY PAINT - GRAY

ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
X.XXX ±0.005



REV		REVISIONS		DATE		APPROVED	
TITLE	REV	DESCRIPTION	DATE	APPROVED	DATE	APPROVED	DATE
A1		ORIGINAL RELEASE	01/18/78				
B1		ECN # 14-01668	10/16/78				

ENVIRONMENTAL RATINGS:

- TEMPERATURE: -20°C TO +85°C (OPERATING)
- HUMIDITY: -65°C TO +125°C (STORAGE)
- SHOCK: MIL-STD-202F, METHOD 103B COND. B
- VIBRATION: MIL-STD-202F, METHOD 213B COND. B
- ALTITUDE: MIL-STD-202F, METHOD 204D COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 105C COND. B
- NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

PMI CONFIDENTIAL AND PROPRIETARY

PLANAR MONOLITHICS INDUSTRIES, INC.
7314F GROVE ROAD
FREDERICKS, MD 21704 USA
TEL: 301-662-5019 FAX: 301-662-1731
WEBSITE: WWW.PMI-IND.COM
E-MAIL: SALES@PMI-IND.COM
ISO 9001 CERTIFIED

APPROVALS	DATE	TITLE	PRODUCT FEATURE
DESIGNED	1/18/78	SDLVA-218-71-70MV-1	
CHECKED			
SCALE	N:1	SHEET	1 OF 1



**TYPICAL CHARACTERISTICS
ON
SDLVA-218-71-70MV-1**

Customer: _____
 Job No: _____
 Model No: SDLVA-218-71-70MV-1
 Serial No: PL13704

Tested By: E. Benson
 Temperature: 25C
 Date: 9/19/2014

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	PASS	QA
			FAIL	QC
1	Frequency Range:	2 GHz – 18 GHz	2 GHz – 18 GHz	
2	CW Level: Pulse peak loss at -40 dbm	-40 dBm: 2.0 dB	0.50 dB	
4	Flatness:	± 2.0 dB Max.	+/-1.65 dB (See Plots)	
5	Log Linearity @25C	± 1.0 dB Max.	+0.61 / -0.76 dB (See Plot)	
6	Log Range:	-66 to +5 dBm	-66 to +5dBm (See Plots)	
7	Log Slope	70mV/dB nominal	70.2 mV/dB (See Plot)	
8	Log accuracy from 70mV / dB @ 25C	± 2.0 dB Max.	+1.89 / -1.71 dB (See Plot)	
9	VSWR:	2.0:1 Max.	1.755:1 (See Plot)	
10	Rise Time:	25nS Max.	19.4 nS	
11	Settling time	50nS Max	38.2 nS	
12	Recovery Time:	500nS Max.	389.0 nS	
13	Noise level	75mV RMS	59 mV RMS	
14	DC offset	± 70mV Max	27 mV	
15	Video output @ -66dBm	350± 140mV	239 mV	
16	Pulse droop @ 300uS pulse @ -65dBm	70mV Max	54 mV	



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17	Peak & baseline variation with duty cycle up 50% @ 2uS PW	70mV Max	25 mV	
18	TSS:	-72 dBm Min. @15MHz video BW	-72.1 dBm	
19	DC Supply:	+15VDC @ 400 mA -15VDC @ 150 mA	+15 VDC @ 316 mA -15 VDC @ 96 mA	

QA/QC Approval: _____ Date: _____



TYPICAL CHARACTERISTICS ON SDLVA-218-71-70MV-1

PAGE #1

MODEL: SDLVA-218-71-70MV-1
 TESTED BY: E. Benson
 DATE: 09/19/14
 SERIAL NO: PL13704
 Test Temp: +25C



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Frequency

		-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	RF Input Power (dBm)
2 GHz	INTERCEPT (mV)	388 738 1071 1396 1774 2093 2453 2833 3181 3518 3892 4229 4616 4956 5250															Measured Value (mV)
	SLOPE (mV/dB)	27 25 6 -21 5 -27 -19 9 5 -10 12 -2 33 21 -37															Error (mV)
		0.38 0.36 0.09 -0.29 0.08 -0.39 -0.27 0.13 0.07 -0.14 0.18 -0.04 0.46 0.30 -0.53															LINEARITY ERROR (dB)
		-0.31 -0.31 -0.56 -0.91 -0.51 -0.96 -0.81 -0.39 -0.41 -0.60 -0.26 -0.44 0.09 -0.06 -0.86															ACCURACY ERROR (dB)
3 GHz	INTERCEPT (mV)	483 819 1173 1497 1866 2185 2561 2916 3280 3626 3998 4366 4678 5011 5342															Measured Value (mV)
	SLOPE (mV/dB)	22 7 10 -17 1 -31 -6 -3 10 5 26 43 4 -14 -35															Error (mV)
		0.32 0.10 0.14 -0.24 0.01 -0.45 -0.09 -0.04 0.15 0.07 0.37 0.61 0.05 -0.21 -0.49															LINEARITY ERROR (dB)
		1.04 0.84 0.90 0.53 0.80 0.36 0.73 0.80 1.00 0.94 1.26 1.51 0.97 0.73 0.46															ACCURACY ERROR (dB)
4 GHz	INTERCEPT (mV)	537 868 1222 1563 1918 2222 2610 2952 3326 3663 4014 4371 4686 5045 5389															Measured Value (mV)
	SLOPE (mV/dB)	19 2 7 -1 6 -39 1 -6 20 8 11 19 -15 -4 -9															Error (mV)
		0.27 0.02 0.10 -0.01 0.08 -0.55 0.01 -0.08 0.28 0.12 0.15 0.27 -0.21 -0.06 -0.13															LINEARITY ERROR (dB)
		1.81 1.54 1.60 1.47 1.54 0.89 1.43 1.31 1.66 1.47 1.49 1.59 1.09 1.21 1.13															ACCURACY ERROR (dB)
5 GHz	INTERCEPT (mV)	479 823 1175 1505 1881 2182 2548 2904 3263 3598 3970 4334 4663 5026 5372															Measured Value (mV)
	SLOPE (mV/dB)	20 13 15 -6 19 -30 -15 -10 -1 -17 5 18 -4 9 4															Error (mV)
		0.28 0.19 0.21 -0.09 0.28 -0.43 -0.21 -0.14 -0.02 -0.24 0.06 0.26 -0.05 0.12 0.06															LINEARITY ERROR (dB)
		0.99 0.90 0.93 0.64 1.01 0.31 0.54 0.63 0.76 0.54 0.86 1.06 0.76 0.94 0.89															ACCURACY ERROR (dB)
6 GHz	INTERCEPT (mV)	519 845 1202 1537 1908 2222 2605 2951 3319 3661 4022 4392 4711 5091 5430															Measured Value (mV)
	SLOPE (mV/dB)	35 8 11 -7 10 -30 0 -8 7 -5 3 19 -15 11 -4															Error (mV)
		0.50 0.11 0.16 -0.10 0.14 -0.42 0.00 -0.11 0.10 -0.07 0.04 0.27 -0.22 0.15 -0.05															LINEARITY ERROR (dB)
		1.56 1.21 1.31 1.10 1.40 0.89 1.36 1.30 1.56 1.44 1.60 1.89 1.44 1.87 1.71															ACCURACY ERROR (dB)
7 GHz	INTERCEPT (mV)	468 819 1165 1489 1871 2193 2568 2926 3288 3628 3992 4356 4675 5032 5372															Measured Value (mV)
	SLOPE (mV/dB)	13 11 5 -23 6 -24 -2 4 14 1 13 25 -9 -4 -17															Error (mV)
		0.18 0.16 0.07 -0.33 0.09 -0.34 -0.02 0.06 0.19 0.02 0.18 0.35 -0.13 -0.06 -0.24															LINEARITY ERROR (dB)
		0.83 0.84 0.79 0.41 0.87 0.47 0.83 0.94 1.11 0.97 1.17 1.37 0.93 1.03 0.89															ACCURACY ERROR (dB)
8 GHz	INTERCEPT (mV)	426 784 1123 1455 1840 2165 2543 2904 3265 3586 3946 4331 4666 5025 5350															Measured Value (mV)
	SLOPE (mV/dB)	10 14 -1 -23 8 -21 4 11 18 -15 -9 22 3 8 -20															Error (mV)
		0.14 0.20 -0.01 -0.32 0.12 -0.29 0.05 0.15 0.25 -0.21 -0.13 0.31 0.05 0.12 -0.29															LINEARITY ERROR (dB)
		0.23 0.34 0.19 -0.07 0.43 0.07 0.47 0.63 0.79 0.37 0.51 1.01 0.80 0.93 0.57															ACCURACY ERROR (dB)
9 GHz	INTERCEPT (mV)	379 740 1077 1414 1805 2145 2553 2913 3274 3580 3957 4325 4664 5011 5360															Measured Value (mV)
	SLOPE (mV/dB)	3 6 -14 -35 -2 -19 31 33 37 -15 4 15 -4 -14 -23															Error (mV)
		0.04 0.09 -0.20 -0.49 -0.02 -0.27 0.43 0.47 0.51 -0.21 0.06 0.21 -0.05 -0.20 -0.32															LINEARITY ERROR (dB)
		-0.44 -0.29 -0.47 -0.66 -0.07 -0.21 0.61 0.76 0.91 0.29 0.67 0.93 0.77 0.73 0.71															ACCURACY ERROR (dB)
10 GHz	INTERCEPT (mV)	309 668 990 1342 1715 2076 2466 2850 3198 3516 3914 4271 4611 4941 5350															Measured Value (mV)
	SLOPE (mV/dB)	24 22 -17 -26 -14 -15 14 37 24 -19 18 14 -8 -39 9															Error (mV)
		0.34 0.31 -0.24 -0.36 -0.20 -0.20 0.20 0.51 0.33 -0.27 0.24 0.19 -0.11 -0.54 0.12															LINEARITY ERROR (dB)
		-1.44 -1.31 -1.71 -1.69 -1.36 -1.20 -0.63 -0.14 -0.17 -0.63 0.06 0.16 0.01 -0.27 0.57															ACCURACY ERROR (dB)



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PAGE #2

MODEL: SDLVA-218-71-70MV-1
 TESTED BY: E. Benson
 DATE: 09/19/14
 SERIAL NO: PL13704
 Test Temp: +25C



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 ISO 9001:2000 CERTIFIED

Frequency

			-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	RF Input Power (dBm)
11 GHz	INTERCEPT (mV)	4952	365	711	1038	1390	1766	2112	2475	2855	3200	3526	3905	4247	4592	4921	5311	Measured Value (mV)
	SLOPE (mV/dB)	70.84	18	10	-17	-20	2	-6	3	29	19	-9	16	4	-5	-31	5	Error (mV)
			0.25	0.14	-0.25	-0.28	0.03	-0.08	0.04	0.40	0.27	-0.12	0.23	0.05	-0.08	-0.43	0.07	LINEARITY ERROR (dB)
			-0.64	-0.70	-1.03	-1.00	-0.63	-0.69	-0.50	-0.07	-0.14	-0.49	-0.07	-0.19	-0.26	-0.56	0.01	ACCURACY ERROR (dB)
12 GHz	INTERCEPT (mV)	4984	458	793	1141	1473	1858	2178	2540	2900	3264	3582	3958	4309	4642	4956	5311	Measured Value (mV)
	SLOPE (mV/dB)	69.79	10	-4	-4	-21	15	-14	-1	10	25	-6	21	23	7	-28	-22	Error (mV)
			0.15	-0.05	-0.06	-0.31	0.21	-0.20	-0.02	0.14	0.36	-0.09	0.30	0.33	0.10	-0.40	-0.31	LINEARITY ERROR (dB)
			0.69	0.47	0.44	0.19	0.69	0.26	0.43	0.57	0.77	0.31	0.69	0.70	0.46	-0.06	0.01	ACCURACY ERROR (dB)
13 GHz	INTERCEPT (mV)	4904	422	763	1104	1436	1826	2132	2469	2847	3193	3521	3907	4240	4571	4868	5227	Measured Value (mV)
	SLOPE (mV/dB)	68.98	1	-3	-7	-19	26	-13	-21	12	13	-4	37	25	12	-36	-22	Error (mV)
			0.02	-0.04	-0.09	-0.28	0.37	-0.19	-0.31	0.17	0.19	-0.05	0.54	0.37	0.17	-0.53	-0.32	LINEARITY ERROR (dB)
			0.17	0.04	-0.09	-0.34	0.23	-0.40	-0.59	-0.19	-0.24	-0.56	-0.04	-0.29	-0.56	-1.31	-1.19	ACCURACY ERROR (dB)
14 GHz	INTERCEPT (mV)	4933	408	764	1092	1424	1816	2111	2436	2853	3229	3532	3899	4243	4587	4906	5287	Measured Value (mV)
	SLOPE (mV/dB)	69.81	13	20	-1	-18	25	-29	-53	15	42	-4	14	9	4	-27	5	Error (mV)
			0.19	0.29	-0.02	-0.26	0.36	-0.42	-0.76	0.21	0.60	-0.06	0.20	0.12	0.05	-0.38	0.08	LINEARITY ERROR (dB)
			-0.03	0.06	-0.26	-0.51	0.09	-0.70	-1.06	-0.10	0.27	-0.40	-0.16	-0.24	-0.33	-0.77	-0.33	ACCURACY ERROR (dB)
15 GHz	INTERCEPT (mV)	4892	353	707	1026	1374	1763	2092	2447	2826	3159	3487	3856	4194	4548	4863	5242	Measured Value (mV)
	SLOPE (mV/dB)	69.90	4	8	-22	-24	16	-5	1	30	14	-8	12	0	5	-29	0	Error (mV)
			0.06	0.12	-0.32	-0.34	0.23	-0.07	0.01	0.44	0.20	-0.11	0.17	0.01	0.07	-0.42	0.00	LINEARITY ERROR (dB)
			-0.81	-0.76	-1.20	-1.23	-0.67	-0.97	-0.90	-0.49	-0.73	-1.04	-0.77	-0.94	-0.89	-1.39	-0.97	ACCURACY ERROR (dB)
16 GHz	INTERCEPT (mV)	4905	368	727	1051	1395	1786	2103	2454	2833	3174	3495	3874	4208	4547	4878	5270	Measured Value (mV)
	SLOPE (mV/dB)	69.80	0	10	-15	-20	22	-10	-8	22	14	-14	16	1	-9	-27	16	Error (mV)
			0.00	0.15	-0.21	-0.28	0.32	-0.14	-0.11	0.32	0.20	-0.20	0.23	0.02	-0.13	-0.39	0.23	LINEARITY ERROR (dB)
			-0.60	-0.47	-0.84	-0.93	-0.34	-0.81	-0.80	-0.39	-0.51	-0.93	-0.51	-0.74	-0.90	-1.17	-0.57	ACCURACY ERROR (dB)
17 GHz	INTERCEPT (mV)	4975	495	840	1195	1520	1904	2187	2517	2885	3239	3565	3943	4293	4640	4971	5345	Measured Value (mV)
	SLOPE (mV/dB)	69.09	11	11	20	0	39	-24	-39	-17	-8	-28	5	9	11	-4	25	Error (mV)
			0.16	0.16	0.30	0.00	0.56	-0.35	-0.57	-0.24	-0.12	-0.40	0.07	0.14	0.16	-0.05	0.36	LINEARITY ERROR (dB)
			1.21	1.14	1.21	0.86	1.34	0.39	0.10	0.36	0.41	0.07	0.47	0.47	0.43	0.16	0.50	ACCURACY ERROR (dB)
18 GHz	INTERCEPT (mV)	5002	471	819	1169	1510	1895	2183	2537	2905	3276	3609	3977	4326	4652	4976	5349	Measured Value (mV)
	SLOPE (mV/dB)	69.72	1	0	2	-6	31	-30	-25	-5	17	2	21	21	-1	-26	-1	Error (mV)
			0.02	0.01	0.03	-0.08	0.44	-0.43	-0.35	-0.07	0.25	0.02	0.30	0.31	-0.02	-0.37	-0.02	LINEARITY ERROR (dB)
			0.87	0.84	0.84	0.71	1.21	0.33	0.39	0.64	0.94	0.70	0.96	0.94	0.60	0.23	0.56	ACCURACY ERROR (dB)
Output Vos(mV)=			27.0															
Avg Slope(mV/dB)=			70.2															
Max Slope(mV/dB)=			72.2															
Min Slope(mV/dB)=			69.0															
			537	868	1222	1563	1918	2222	2610	2952	3326	3663	4022	4392	4711	5091	5430	Max Measured (mV)
			309	668	990	1342	1715	2076	2436	2826	3159	3487	3856	4194	4547	4863	5227	Min Measured (mV)
			1.62	1.42	1.65	1.57	1.45	1.04	1.24	0.90	1.19	1.25	1.18	1.41	1.17	1.62	1.45	FLATNESS ERROR (+/-dB)

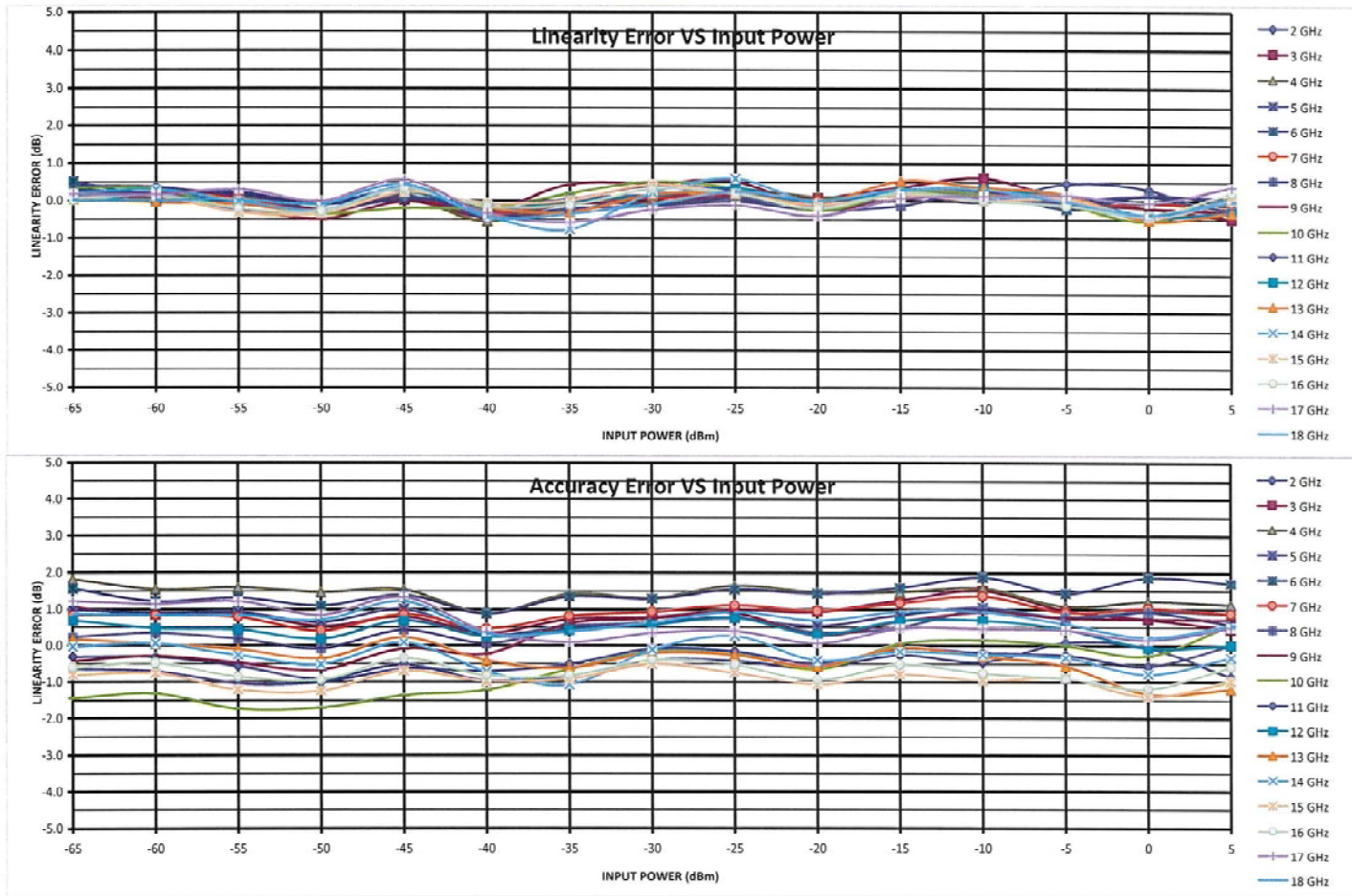
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SERIAL NO: PL13704

PAGE# 3



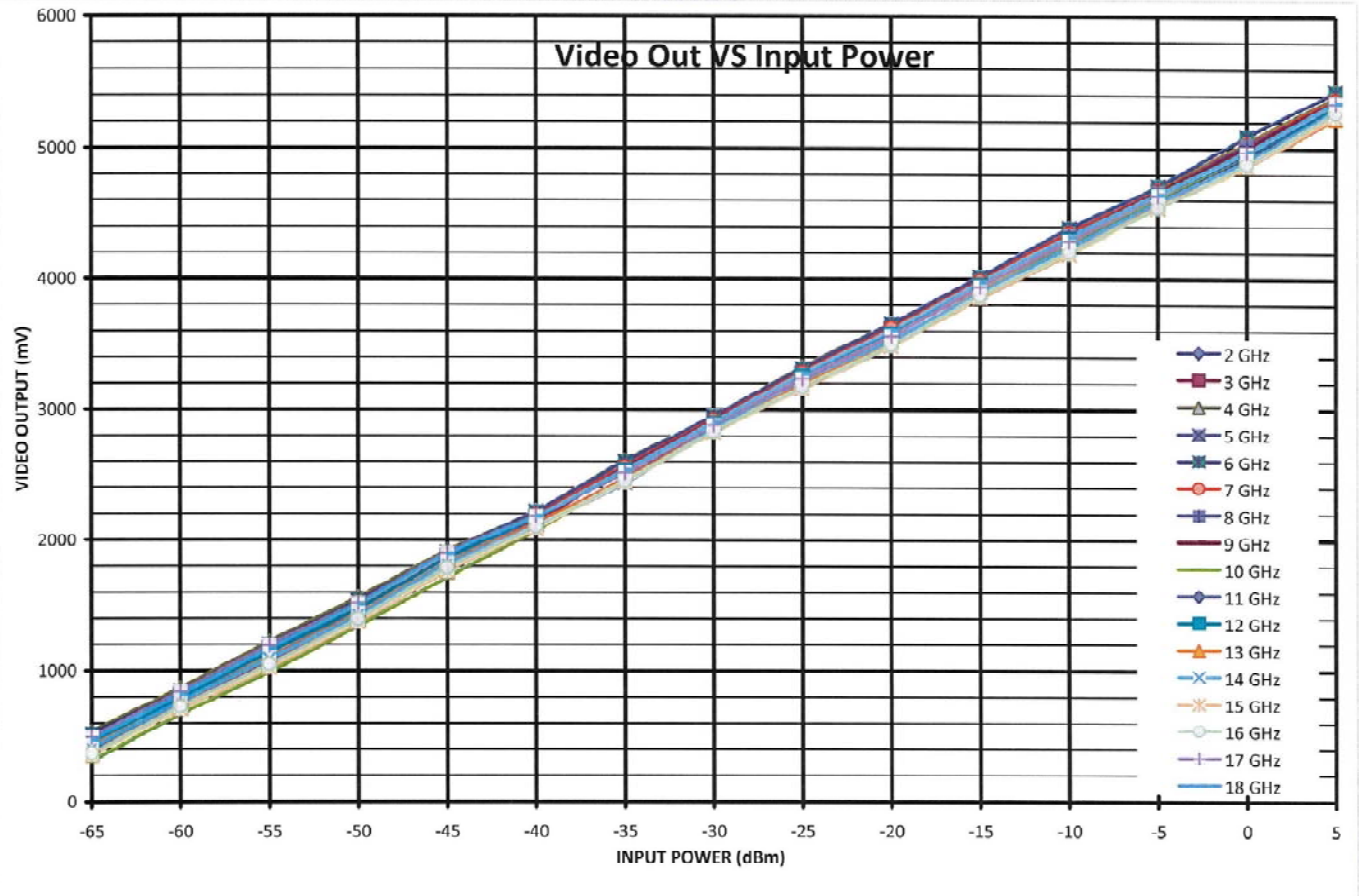
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CH2: B -M S +1.755 SWR
5.0 dB/ REF .00 dB

