FORM: SD-335 REV G 04/16/04

PMI
PLANAR MONOLITICS INDUSTRIES
7311F GROVE ROAD, FREDERICK MD. 21701
TEL: (301)831-4257 FAX: (301)662-4938

JOB NO: P507034

SUMMARY TEST DATA
ON
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)

CUSTOMER:
JOB NO: P
MODEL NO: SDLVA-07103-70
SERIAL NO: PM508179

TESTED BY: R.AFABLE
TEMPERATURE: ROOM
DATE: 09/19/05
OPTION NO: LA3

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	REMARKS QA/QC
1	FREQUENCY RANGE	750-1250 MHz	750-1250 MHz	✓
2	DYNAMIC RANGE	70 dB (Minimum)	70 dB	✓
3	LOG LINEARITY (@1 GHz) ± 1.5 dB max (input -65 dBm to – 60 dBm) ± 1.2 dB max (input -60 dBm to 0 dBm) ± 2.5 dB max (input 0 dBm to +5 dBm)	± 1.5 dB (Maximum) ± 1.2 dB (Maximum) ± 2.5 dB (Maximum)	±0.17 dB ±1.15 dB ±1.39 dB	✓
4	MINIMUM LOGGING RANGE	-70 dBm Input	-70 dBm	✓
5	MAXIMUM LOGGING RANGE	+3 dBm Input (+5 dBm typical)	+5 dBm	✓
6	VSWR INPUT AND OUTPUT	2.0:1 (Maximum) 1.5:1 (Typical)	1.28:1	✓
7	MINIMUM TANGENTIAL SENSITIVITY	-76 dBm (Maximum)	-78 dBm	✓
8	LIMITED IF OUTPUT 13.0 dBm to 16.0 dBm (Input -70 dBm to +3 dBm)	13.0 dBm to 16.0 dBm	14.14 mV to 14.22 mV	✓
9	INSERTION PHASE VARIATION: $INPUT: -60 dBm to 0 dBm $INPUT: -65 dBm to -60 dBm (For any 50 MHz Segment)	± 2.5° (Maximum) ± 5.0° (Maximum)	± 2° ± 4°	✓ ✓
10	OUTPUT VOLTAGE @ 1 GHz (-67 dBm Input Power) (+3 dBm Input Power) (For nominal power supply voltages of +5V and -5.2V) (For DC voltage level tolerance per paragraph 3.1.12 the output video levels can be ±30 mV of the value measured for the nominal DC voltage)	300 mV DC ± 5% 2400 mV DC ± 2.5%	311 mV 2374 mV	✓ ✓

Note: Further Test Data Appears on Reverse

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SUMMARY TEST DATA
ON
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)

CUSTOMER: _____ TESTED BY: R.AFABLE

JOB NO:] _____ TEMPERATURE: ROOM

MODEL NO: SDLVA-07103-70 DATE: 09/19/05

SERIAL NO: PM 508179 OPTION NO: LA3

11	AM / PM: input -65 dBm to -55 dBm input -55 dBm to 0 dBm input 0 dBm to +5 dBm	 1.2° dB MAX 0.75° dB MAX 2.0° dB MAX	 0.81°/dB 0.24°/dB 1.14°/dB	✓ ✓ ✓
12	RISE TIME	25 nS (Maximum)	16 nS	✓
13	FALL TIME	35 nS (Maximum)	22 nS	✓
14	SETTLING TIME 40 nS Maximum (10% Pulse input to within 0.5 dB of final video output level)	40 nS (Maximum)	39 nS	✓
15	RECOVERY TIME (Maximum Pulse In) (90% Pulse input to within 0.5 dB of final video output level)	50 nS (Maximum)	42 nS	✓
16	SLOPE 30 mV/dB ±5% at 1 GHz 30 mV/dB ±7% at 750 MHz and 1.25 GHz	30 mV/dB ±5% at1 GHz 30 mV/dB ±7% at 750 MHz and 1.25 GHz	29.4 mV @1GHz 31.0 mV @750MHz 28.0 mV @1.25GHz	✓
17	LOG SLOPE VARIATION WITH FREQUENCY	±0.5 mV/dB (at 1 GHz ±50 MHz)	±0.3 mV/dB	✓
18	PROPAGATION DELAY	10 nS (Maximum) 7 nS (Typical)	7 nS	✓
19	VIDEO LOAD	100 OHMS (Minimum)	100 OHMS	✓
20	D.C. POWER @ +5 V (no load)	250 mA (maximum)	221 mA	✓
21	D.C. POWER @ -5.2 V (no load)	150 mA (maximum)	127 mA	✓

22 LOG SLOPE VARIATION WITH TEMPERATURE ±1.5mV ±0.5mV OK JWB.

QA/QC APPROVAL: JWB DATED: 9/26/05

SDLVA-07103-70 OPTION LA3
LOG TRANSFER WITH FREQUENCY @ +25 DEG C

TESTED BY: R. AFABLE
DATE:SEPT. 19, 2005
SERIAL #:PM508179

PLANAR MONOLITHIC INDUSTRIES

		-67	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	3	5		Rf input power (dbm)
FREQUENCY	750 MHz	323	392	559	698	872	1011	1170	1336	1480	1639	1815	1957	2141	2255	2424	2492	2524		Measured Values (mv)
SLOPE	31.0 mv/db	-13	-6	6	-10	9	-7	-3	8	-3	1	22	9	38	-3	11	-14	-44		Error (mv)
INTERCEPT	2413 mv																			

FREQUENCY	850 MHz	325	392	547	683	857	994	1149	1314	1455	1612	1783	1923	2103	2217	2376	2445	2470		Measured Values (mv)
SLOPE	30.4 mv/db	-9	-2	1	-15	7	-7	-4	9	-2	3	23	11	39	1	8	-14	-49		Error (mv)
INTERCEPT	2368 mv																			

FREQUENCY	950 MHz	319	386	543	675	839	973	1118	1279	1418	1572	1740	1879	2052	2169	2325	2405	2424		Measured Values (mV)
SLOPE	29.7 mv/db	-8	0	9	-8	8	-7	-11	2	-8	-2	17	8	32	1	8	-1	-41		Error (mV)
INTERCEPT	2317 mv																			

FREQUENCY	1.0 GHz	311	377	532	663	828	962	1109	1268	1407	1560	1726	1864	2033	2147	2291	2374	2399		Measured Values (mV)
SLOPE	29.4 mv/db	-10	-3	5	-11	7	-6	-7	5	-3	3	22	13	34	1	-2	-7	-41		Error (mV)
INTERCEPT	2293 mv																			

FREQUENCY	1.05 GHz	310	376	530	659	818	951	1097	1256	1392	1544	1709	1848	2016	2127	2272	2347	2371		Measured Values (mV)
SLOPE	29.1 mv/db	-9	-2	7	-10	4	-9	-8	5	-4	2	21	15	37	3	2	-10	-44		Error (mV)
INTERCEPT	2270 mv																			

FREQUENCY	1.15 GHz	285	347	493	623	782	918	1063	1218	1352	1497	1659	1798	1964	2078	2213	2285	2309		Measured Values (mV)
SLOPE	28.7 mv/db	-7	-3	0	-13	2	-5	-3	8	-1	1	19	15	38	9	0	-14	-47		Error (mV)
INTERCEPT	2213 mv																			

FREQUENCY	1.25 GHz	271	335	481	610	762	891	1028	1184	1316	1462	1612	1751	1910	2023	2165	2223	2245		Measured Values (mV)
SLOPE	28.0 mv/db	-11	-3	3	-8	5	-6	-9	7	-1	6	16	15	34	8	10	-16	-50		Error (mV)
INTERCEPT	2155 mv																			

SDLVA-07103-70 OPTION LA3
LOG TRANSFER WITH FREQUENCY @ +25 DEG C

TESTED BY: R. AFABLE
DATE:SEPTEMBER 19, 2005 SERIAL #: PM508179

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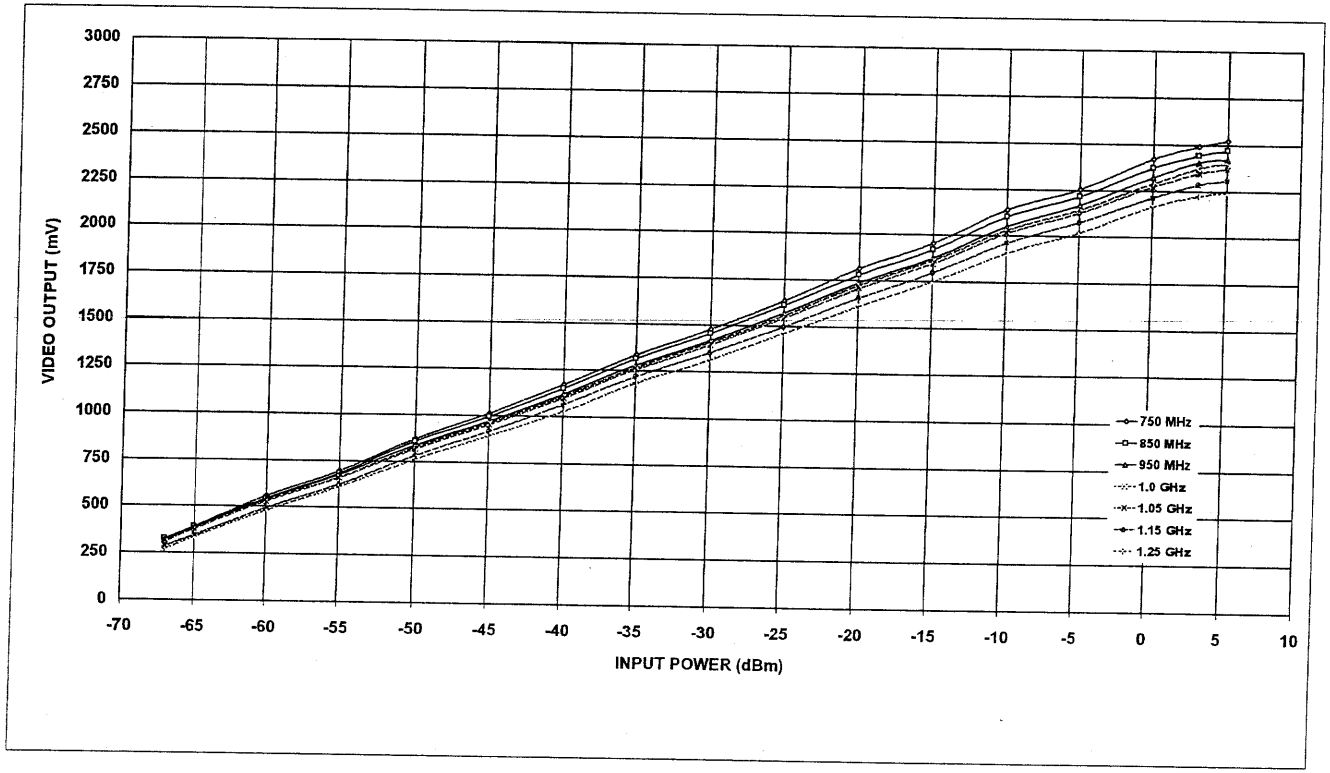
INDUSTRIES

FREQUENCY	LIMITED IF OUTPUT																		
750 MHz	14.17	14.17	14.80	14.19	14.18	14.17	14.16	14.15	14.15	14.16	14.16	14.16	14.15	14.15	14.15	14.17	14.18		Measured Values (dBm)
850 MHz	14.15	14.15	14.14	14.14	14.16	14.17	14.17	14.16	14.16	14.16	14.16	14.15	14.14	14.14	14.16	14.18	14.17		Measured Values (dBm)
950 MHz	14.16	14.16	14.18	14.17	14.16	14.16	14.16	14.17	14.17	14.17	14.17	14.17	14.17	14.17	14.18	14.20	14.14		Measured Values (dBm)
1.0 GHz	14.16	14.17	14.19	14.19	14.19	14.19	14.20	14.20	14.20	14.20	14.21	14.20	14.20	14.19	14.19	14.19	14.16		Measured Values (dBm)
1.05 GHz	14.16	14.16	14.18	14.19	14.20	14.20	14.20	14.21	14.21	14.22	14.22	14.22	14.20	14.20	14.19	14.18	14.19		Measured Values (dBm)
1.15 GHz	14.16	14.16	14.18	14.19	14.19	14.20	14.20	14.21	14.21	14.22	14.22	14.21	14.20	14.19	14.18	14.18	14.19		Measured Values (dBm)
1.25 GHz	14.15	14.15	14.15	14.15	14.15	14.15	14.15	14.17	14.17	14.17	14.16	14.15	14.14	14.14	14.12	14.11	14.11		Measured Values (dBm)



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7311F GROVE ROAD, FREDERICK MD. 21701
TEL: (301)831-4257 FAX: (301)662-4938

JOB NO: P507034

SUMMARY TEST DATA
ON
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)

CUSTOMER: [illegible]
JOB NO: P[illegible]
MODEL NO: SDLVA-07103-70
SERIAL NO: PM508181

TESTED BY: R.AFABLE
TEMPERATURE: ROOM
DATE: 09-19-05
OPTION NO: LA3

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	REMARKS QA/QC
1	FREQUENCY RANGE	750-1250 MHz	750-1250 MHz	✓
2	DYNAMIC RANGE	70 dB (Minimum)	70 dB	✓
3	LOG LINEARITY (@1 GHz) ± 1.5 dB max (input -65 dBm to – 60 dBm) ± 1.2 dB max (input -60 dBm to 0 dBm) ± 2.5 dB max (input 0 dBm to +5 dBm)	± 1.5 dB (Maximum) ± 1.2 dB (Maximum) ± 2.5 dB (Maximum)	±0.16 dB ±1.17 dB ±1.71 dB	✓
4	MINIMUM LOGGING RANGE	-70 dBm Input	-70 dBm	✓
5	MAXIMUM LOGGING RANGE	+3 dBm Input (+5 dBm typical)	+5 dBm	✓
6	VSWR INPUT AND OUTPUT	2.0:1 (Maximum) 1.5:1 (Typical)	1.26:1	✓
7	MINIMUM TANGENTIAL SENSITIVITY	-76 dBm (Maximum)	-77 dBm	✓
8	LIMITED IF OUTPUT 13.0 dBm to 16.0 dBm (Input -70 dBm to +3 dBm)	13.0 dBm to 16.0 dBm	14.11 dBm to 14.22 dBm	✓
9	INSERTION PHASE VARIATION: $INPUT: -60 dBm to 0 dBm $INPUT: -65 dBm to -60 dBm (For any 50 MHz Segment)	± 2.5° (Maximum) ± 5.0° (Maximum)	± 2° ± 4°	✓
10	OUTPUT VOLTAGE @ 1 GHz (-67 dBm Input Power) (+3 dBm Input Power) (For nominal power supply voltages of +5V and -5.2V) (For DC voltage level tolerance per paragraph 3.1.12 the output video levels can be ±30 mV of the value measured for the nominal DC voltage)	300 mV DC ± 5% 2400 mV DC ± 2.5%	303 mV 2392 mV	✓

Note: Further Test Data Appears on Reverse

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7311-F GROVE ROAD, FREDERICK MD. 21701
TEL: (301)831 4257 FAX: (301)662 4938

SUMMARY TEST DATA
ON
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)

CUSTOMER:]

TESTED BY: R.AFABLE

JOB NO:P

TEMPERATURE: ROOM

MODEL NO: SDLVA-07103-70

DATE: 09-19-05

SERIAL NO: PM 508181

OPTION NO: LA3

11	AM / PM: input -65 dBm to -55 dBm input -55 dBm to 0 dBm input 0 dBm to +5 dBm	1.2° dB MAX 0.75° dB MAX 2.0° dB MAX	0.83°/dB 0.11°/dB 1.35°/dB	✓
12	RISE TIME	25 nS (Maximum)	18 nS	✓
13	FALL TIME	35 nS (Maximum)	23 nS	✓
14	SETTLING TIME 40 nS Maximum (10% Pulse input to within 0.5 dB of final video output level)	40 nS (Maximum)	38 nS	✓
15	RECOVERY TIME (Maximum Pulse In) (90% Pulse input to within 0.5 dB of final video output level)	50 nS (Maximum)	40 nS	✓
16	SLOPE 30 mV/dB ±5% at 1 GHz 30 mV/dB ±7% at 750 MHz and 1.25 GHz	30 mV/dB ±5% at1 GHz 30 mV/dB ±7% at 750 MHz and 1.25 GHz	29.8 mV @1GHz 31.2 mV @750MHz 28.1 mV @1.25GHz	✓
17	LOG SLOPE VARIATION WITH FREQUENCY	±0.5 mV/dB (at 1 GHz ±50 MHz)	±0.4 mV/dB	✓
18	PROPAGATION DELAY	10 nS (Maximum) 7 nS (Typical)	7 nS	✓
19	VIDEO LOAD	100 OHMS (Minimum)	100 OHMS	✓
20	D.C. POWER @ +5 V (no load)	250 mA (maximum)	210 mA	✓
21	D.C. POWER @ -5.2 V (no load)	150 mA (maximum)	129 mA	✓
22	LOG SLOPE VARIATION WITH TEMPERATURE	±1.5 mV	±1.3 mV OR BMB	

QA/QC APPROVAL: BMB DATED: 9/26/05

SDLVA-07103-70 OPTION LA3
LOG TRANSFER WITH FREQUENCY @ +25 DEG C

TESTED BY: R. AFABLE
DATE:SEP. 19, 2005
SERIAL #:PM508181

PLANAR MONOLITHIC INDUSTRIES

		-67	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	3	5		Rf input power (dbm)
FREQUENCY	750 MHz	332	405	569	712	885	1025	1185	1354	1498	1664	1836	1984	2166	2276	2457	2516	2544		Measured Values (mv)
SLOPE	33.2 mv/db	-14	-4	4	-9	8	-8	-5	8	-4	6	22	14	39	-7	18	-17	-51		Error (mv)
INTERCEPT	2439 mv																			

FREQUENCY	850 MHz	322	392	544	682	857	1001	1156	1323	1463	1625	1794	1939	2119	2232	2402	2463	2487		Measured Values (mv)
SLOPE	30.7 mv/db	-9	0	-1	-17	5	-5	-3	10	-3	5	21	13	39	-1	15	-16	-53		Error (mv)
INTERCEPT	2387 mv																			

FREQUENCY	950 MHz	313	384	542	680	844	982	1130	1293	1431	1591	1757	1900	2072	2187	2345	2420	2435		Measured Values (mV)
SLOPE	30.0 mv/db	-14	-3	5	-7	7	-5	-7	6	-6	4	20	13	35	0	8	-7	-52		Error (mV)
INTERCEPT	2337 mv																			

FREQUENCY	1.0 GHz	303	372	528	666	829	969	1116	1279	1417	1576	1739	1883	2050	2162	2320	2392	2411		Measured Values (mV)
SLOPE	29.8 mv/db	-14	-5	2	-9	5	-4	-6	8	-2	8	22	17	35	-2	7	-11	-51		Error (mV)
INTERCEPT	2313 mv																			

FREQUENCY	1.05 GHz	304	375	530	663	822	959	1104	1266	1402	1559	1721	1866	2032	2142	2297	2366	2385		Measured Values (mV)
SLOPE	29.4 mv/db	-14	-2	6	-8	4	-6	-8	7	-5	5	20	18	37	0	8	-11	-51		Error (mV)
INTERCEPT	2289 mv																			

FREQUENCY	1.15 GHz	260	318	451	589	757	907	1062	1221	1356	1508	1667	1812	1976	2089	2233	2298	2319		Measured Values (mV)
SLOPE	29.4 mv/db	-2	-3	-17	-25	-4	-1	7	19	-7	12	24	22	39	-5	2	-22	-59		Error (mV)
INTERCEPT	2231 mv																			

FREQUENCY	1.25 GHz	266	333	485	617	768	902	1038	1191	1320	1467	1619	1757	1917	2031	2175	2235	2256		Measured Values (mV)
SLOPE	28.1 mv/db	-18	-7	4	-4	7	0	-4	8	-3	4	15	13	33	6	10	-14	-50		Error (mV)
INTERCEPT	2165 mv																			

SDLVA-07103-70 OPTION LA3
LOG TRANSFER WITH FREQUENCY @ +25 DEG C

TESTED BY: R. AFABLE
DATE:SEPTEMBER 19, 2005 SERIAL #: PM508181

PLANAR
MONOLITHIC
INDUSTRIES

FREQUENCY	LIMITED IF OUTPUT																			
750 MHz	14.17	14.17	14.80	14.19	14.18	14.17	14.16	14.15	14.15	14.16	14.16	14.16	14.15	14.15	14.15	14.17	14.18		Measured Values (dBm)
850 MHz	14.15	14.15	14.14	14.14	14.16	14.17	14.17	14.16	14.16	14.16	14.16	14.15	14.14	14.14	14.16	14.18	14.17		Measured Values (dBm)
950 MHz	14.16	14.16	14.18	14.17	14.16	14.16	14.16	14.17	14.17	14.17	14.17	14.17	14.17	14.17	14.18	14.20	14.14		Measured Values (dBm)
1.0 GHz	14.16	14.17	14.19	14.19	14.19	14.19	14.20	14.20	14.20	14.20	14.21	14.20	14.20	14.19	14.19	14.19	14.16		Measured Values (dBm)
1.05 GHz	14.16	14.16	14.18	14.19	14.20	14.20	14.20	14.21	14.21	14.22	14.22	14.22	14.20	14.20	14.19	14.18	14.19		Measured Values (dBm)
1.15 GHz	14.16	14.16	14.18	14.19	14.19	14.20	14.20	14.21	14.21	14.22	14.22	14.21	14.20	14.19	14.18	14.18	14.19		Measured Values (dBm)
1.25 GHz	14.15	14.15	14.15	14.15	14.15	14.15	14.15	14.17	14.17	14.17	14.16	14.15	14.14	14.14	14.12	14.11	14.11		Measured Values (dBm)