

PLANAR MONOLITHICS INDUSTRIES  
 7311-G GROVE ROAD, FREDERICK, MD 21704  
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## SUMMARY TEST DATA

ON

## SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)

CUSTOMER: NRL JOB NO: P705024  
 MODEL NO: SDLVA-2020-70 TESTED BY: Loc Chau  
 OPTION NO: 218 TEMPERATURE: 0°C TO +60°C  
 SERIAL NO: PM707935 DATE: 7/17/2007

TEST ITEM NO:	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	REMARKS QA/QC
1	INPUT VSWR (2 - 18 GHz)	3.0:1 MAXIMUM	2.09:1	✓
2	TYPICAL OUTPUT VOLTAGE @ -65 dBm TO +10 dBm	PLOT ATTACHED	0.136 VDC TO 1.740 VDC	✓
4	TSS (2 - 18 GHz)	-65 dBm MINIMUM	-67 dBm	✓
4	LOG SLOPE (±10% TOL)	20 mV/Db	21.2 mV/dB TO 21.5 mV/dB	✓
5	LOG LINEARITY @ -65 dBm TO +10 dBm	±1.75 dB MAXIMUM	±1.54 dB	✓
6	FREQUENCY FLATNESS (2 - 18 GHz) @ -20 dBm	±2.0 dB MAXIMUM	±0.16 dB	✓
7	RECOVERY TIME (MAX) -65 dBm TO +5 dBm	200 nSec MAXIMUM	200 nS	✓
8	OUTPUT STABILITY (0° C to +60°C)	±1.75 dB MAXIMUM	±0.68 dB	✓
9	RISE TIME (10% TO 90%POINTS)	20 nSec MAXIMUM	12 nS	✓
10	DC POWER @ +15 V	600 mA MAXIMUM	588 mA	✓
11	DC POWER @ -15 V	200 mA MAXIMUM	102 mA	✓
12	LIMITED RF OUTPUT	+10 dBm ±2.5 dB	+12.5 dBm	✓

QA / QC APPROVAL:

DATED:



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LVD-218-70 S/N: PM707935  
 LOG TRANSFER WITH FREQUENCY 07/17/07 +25 C

FREQUENCY	2 GHz
SLOPE	21.3 mv/db
INTERCEPT	1522.37 mv

-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
147	246	353	460	567	661	752	900	995	1102	1205	1312	1422	1522	1623	1734
7	0	0	1	2	-11	-26	16	4	5	2	2	6	0	-6	-1

Rf input power (dbm)

Measured Values (mv)  
 Error (mv)

FREQUENCY	6 GHz
SLOPE	21.3 mv/db
INTERCEPT	1513.7 mv

139	239	344	449	555	649	743	890	986	1091	1194	1300	1410	1514	1618	1730
9	3	1	0	-1	-13	-26	15	5	3	0	-1	3	0	-2	3

Measured Values (mv)  
 Error (mv)

FREQUENCY	10 GHz
SLOPE	21.4 mv/db
INTERCEPT	1520.08 mv

136	235	342	449	556	651	747	903	988	1093	1196	1303	1413	1518	1626	1740
8	0	0	0	0	-12	-23	26	3	1	-3	-3	0	-2	-1	6

Measured Values (mv)  
 Error (mv)

FREQUENCY	14 GHz
SLOPE	21.3 mv/db
INTERCEPT	1521.18 mv

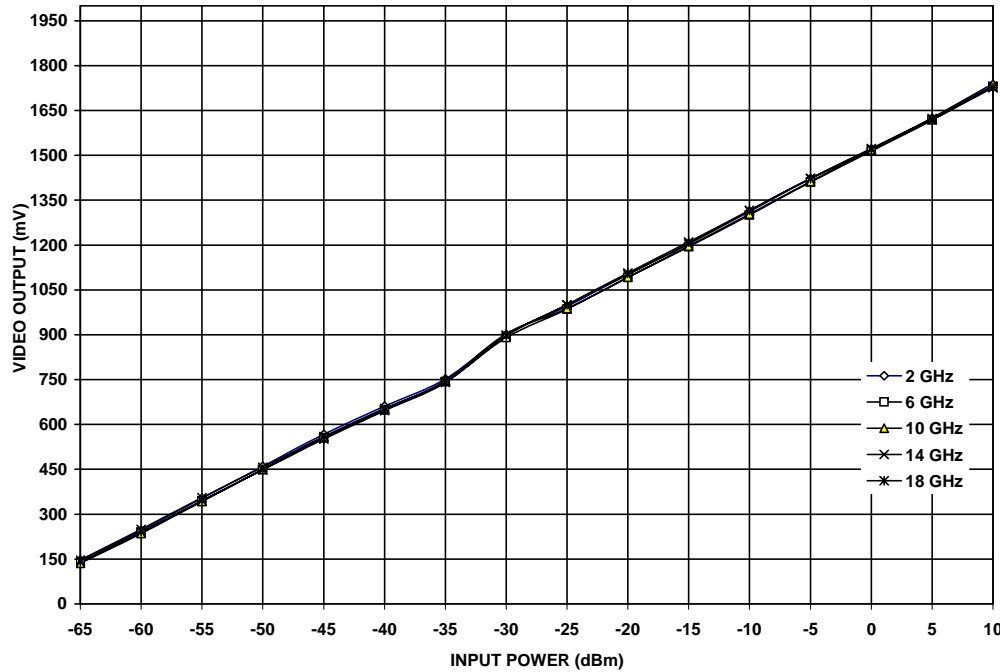
147	249	355	457	560	654	744	899	999	1101	1204	1314	1423	1523	1623	1728
8	4	4	-1	-4	-16	-33	16	10	5	2	6	8	2	-5	-6

Measured Values (mv)  
 Error (mv)

FREQUENCY	18 GHz
SLOPE	21.4 mv/db
INTERCEPT	1521.57 mv

140	241	346	448	551	646	740	897	1001	1106	1210	1316	1422	1520	1619	1726
9	3	1	-4	-8	-20	-33	17	14	12	9	8	7	-2	-10	-10

Measured Values (mv)  
 Error (mv)





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LVD-218-70 S/N: PM707935

LOG TRANSFER WITH TEMPERATURE @ 10 GHz

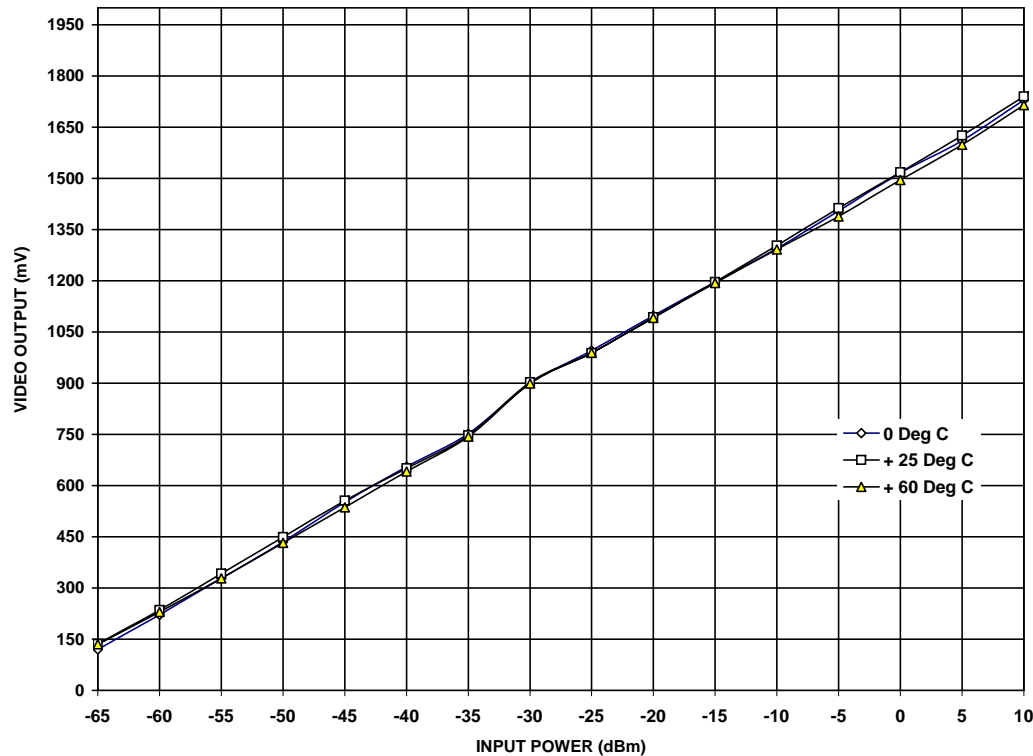
DATE: 07/17/07

-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	Rf input power (dbm)
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TEMPERATURE	0° C	120	221	328	435	551	655	752	900	996	1098	1196	1295	1405	1516	1611	1730	Measured Values (mv)
SLOPE	21.5 mv/db	0	-6	-7	-7	2	-2	-12	28	17	11	2	-7	-4	-1	-13	-1	Error (mv)
INTERCEPT	1516.53 mv																	

TEMPERATURE	+ 25° C	136	235	342	449	556	651	747	903	988	1093	1196	1303	1413	1518	1626	1740	Measured Values (mv)
SLOPE	21.4 mv/db	8	0	0	0	0	-12	-23	26	3	1	-3	-3	0	-2	-1	6	Error (mv)
INTERCEPT	1520.08 mv																	

TEMPERATURE	+ 60° C	135	230	328	432	536	641	744	899	989	1091	1194	1292	1389	1496	1599	1715	Measured Values (mV)
SLOPE	21.2 mv/db	11	0	-8	-10	-12	-13	-16	33	17	12	9	1	-8	-7	-10	0	Error (mV)
INTERCEPT	1502.91 mv																	





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**SUMMARY TEST DATA  
 ON**

**SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)**

CUSTOMER: NRL JOB NO: P705024  
 MODEL NO: SDLVA-2020-70 TESTED BY: Loc Chau  
 OPTION NO: 218 TEMPERATURE: 0°C TO +60°C  
 SERIAL NO: PM707936 DATE: 9/27/2007

TEST ITEM NO:	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	REMARKS QA/QC
1	INPUT VSWR (2 - 18 GHz)	3.0:1 MAXIMUM	1.82:1	✓
2	TYPICAL OUTPUT VOLTAGE @ -65 dBm TO +10 dBm	PLOT ATTACHED	0.270 VDC TO 1.831 VDC	✓
4	TSS (2 - 18 GHz)	-65 dBm MINIMUM	-67 dBm	✓
4	LOG SLOPE (±10% TOL)	20 mV/dB	21.2 mV/dB TO 21.6 mV/dB	✓
5	LOG LINEARITY @ -65 dBm TO +10 dBm	±1.75 dB MAXIMUM	±1.30 dB	✓
6	FREQUENCY FLATNESS (2 - 18 GHz) @ -20 dBm	±2.0 dB MAXIMUM	±0.73 dB	✓
7	RECOVERY TIME (MAX) -65 dBm TO +5 dBm	200 nSec MAXIMUM	200 nS	✓
8	OUTPUT STABILITY (0° C to +60°C)	±1.75 dB MAXIMUM	±0.25 dB	✓
9	RISE TIME (10% TO 90%POINTS)	20 nSec MAXIMUM	14 nS	✓
10	DC POWER @ +15 V	600 mA MAXIMUM	595 mA	✓
11	DC POWER @ -15 V	200 mA MAXIMUM	102 mA	✓
12	LIMITED RF OUTPUT	+10 dBm ±2.5 dB	+12.5 dBm	✓

QA / QC APPROVAL: \_\_\_\_\_

Q4

DATED: \_\_\_\_\_

9/28/07



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LVD-218-70 S/N: PM707936  
 LOG TRANSFER WITH FREQUENCY 09/27/07 +25 C

FREQUENCY	2 GHz
SLOPE	21.3 mv/db
INTERCEPT	1606.12 mv

-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
232	338	435	539	647	748	853	975	1077	1178	1276	1382	1493	1601	1721	1839
9	9	-1	-3	-1	-7	-8	7	3	-2	-11	-11	-7	-5	8	20

Rf input power (dbm)

Measured Values (mv)  
 Error (mv)

FREQUENCY	6 GHz
SLOPE	21.5 mv/db
INTERCEPT	1608.77 mv

225	333	430	530	638	740	847	968	1079	1179	1277	1381	1493	1603	1726	1846
12	12	2	-5	-5	-10	-10	3	7	0	-10	-13	-8	-6	10	23

Measured Values (mv)  
 Error (mv)

FREQUENCY	10 GHz
SLOPE	21.4 mv/db
INTERCEPT	1592.84 mv

210	322	420	519	626	729	836	962	1061	1162	1260	1363	1475	1587	1712	1831
7	12	3	-4	-4	-8	-8	11	3	-3	-12	-16	-11	-6	12	24

Measured Values (mv)  
 Error (mv)

FREQUENCY	14 GHz
SLOPE	21.2 mv/db
INTERCEPT	1587.9 mv

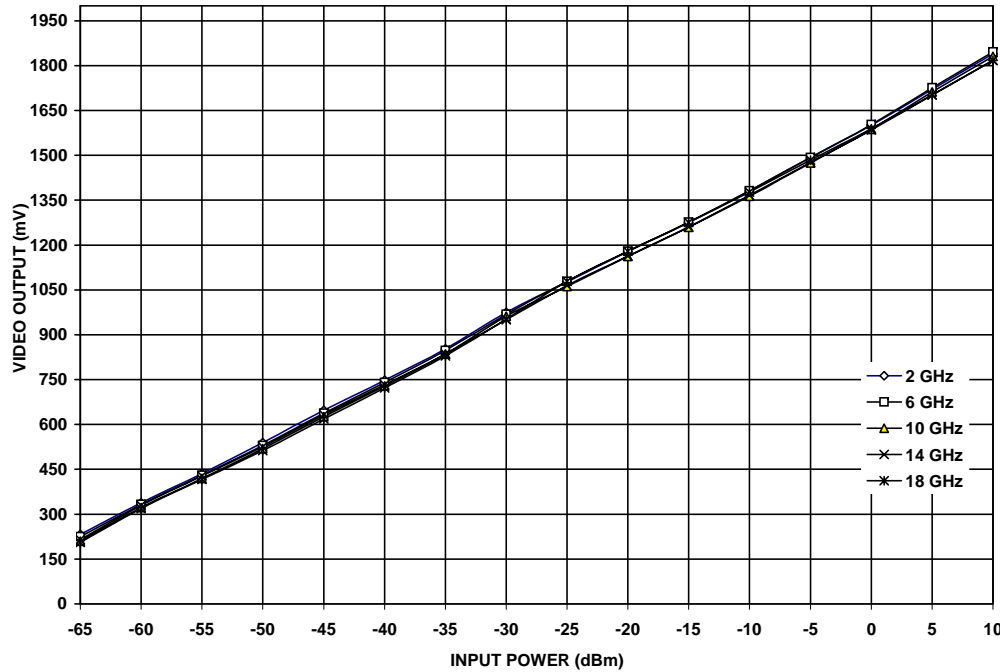
215	330	428	525	632	733	836	950	1065	1163	1261	1367	1477	1585	1701	1817
4	13	5	-4	-3	-8	-10	-2	7	-1	-9	-9	-5	-3	7	17

Measured Values (mv)  
 Error (mv)

FREQUENCY	18 GHz
SLOPE	21.5 mv/db
INTERCEPT	1596.1 mv

205	319	416	513	619	722	829	952	1079	1179	1276	1377	1484	1589	1703	1818
6	13	2	-8	-10	-14	-15	1	20	13	2	-4	-5	-7	-1	7

Measured Values (mv)  
 Error (mv)





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LVD-218-70 S/N: PM707936

LOG TRANSFER WITH TEMPERATURE @ 10 GHz

DATE: 09/27/07

-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	Rf input power (dbm)
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TEMPERATURE	0° C	200	315	415	510	616	720	834	959	1058	1155	1261	1365	1480	1591	1709	1839	Measured Values (mv)
SLOPE	21.6 mv/db	8	15	7	-6	-8	-12	-6	11	2	-9	-10	-14	-7	-4	6	28	Error (mv)
INTERCEPT	1595.23 mv																	

TEMPERATURE	+ 25° C	210	322	420	519	626	729	836	962	1061	1162	1260	1363	1475	1587	1712	1831	Measured Values (mv)
SLOPE	21.4 mv/db	7	12	3	-4	-4	-8	-8	11	3	-3	-12	-16	-11	-6	12	24	Error (mv)
INTERCEPT	1592.84 mv																	

TEMPERATURE	+ 60° C	225	338	430	530	629	732	840	968	1070	1171	1278	1372	1473	1580	1700	1825	Measured Values (mV)
SLOPE	21.1 mv/db	8	15	1	-4	-11	-14	-12	11	7	2	4	-8	-13	-11	3	22	Error (mV)
INTERCEPT	1591.36 mv																	

