

SUMMARY

TEST DATA

ON

700 TO 1,300 MHz
(0.3 TO 2.0 GHz UNITS ALSO AVAILABLE)

25nS HIGH SPEED

≥78dB ULTRA-HIGH DYNAMIC RANGE

LOW AM/PM CONVERSION

**SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER COMPACT
(SDLVAC)**

**PMI MODEL No:
SDLVAC-0120-70LM**

WITH OPTIONS: 07103 & JS
SERIAL No: PM911143, PM911144 AND PM911146

**DESIGNED
BY
FRANK RETHMEIER & DANIEL J. VESCUSO**

**TESTED
BY
FRANK RETHMEIER**

**REPORT
BY
PETER WOOD**

NOVEMBER 22th, 2000

**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



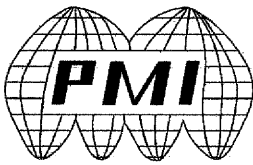
PMI MODEL No : SDLVAC-0120-70LM -07103-JS
TEST ENGINEER : FRANK RETHMEIER
SERIAL NUMBERS : PM911143, PM911144 AND PM911146

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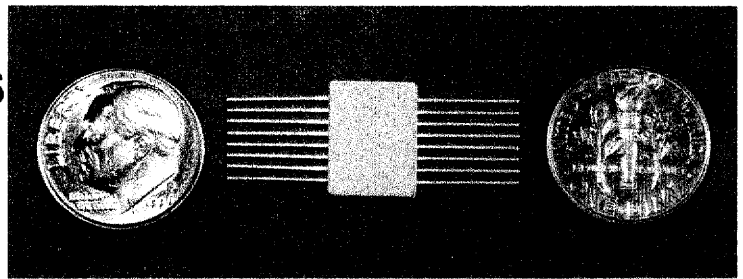
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NOVEMBER 22th, 2000

PLANAR MONOLITHICS INDUSTRIES, INC., 7311-G Grove Road, Frederick, MD 21704
Tel: 301-662-4700 Fax: 301-662-4938 Website: www.AMWAVE.com E-mail: amcpmi@aol.com



PLANAR MONOLITHICS INDUSTRIES



FEATURES:

- 700 TO 1300 MHz FREQUENCY RANGE
- 78dB HIGH DYNAMIC RANGE

SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)

PMI MODEL NO: SDLVAC-0120-70LM

WITH OPTIONS: 07103 & JS

SPECIFICATIONS:

● INPUT FREQUENCY		: 700 TO 1300 MHz (0.3 TO 2.0 GHz AVAILABLE)
● INPUT FREQUENCY		: 100 MHz WIDE SUBBAND
● DYNAMIC RANGE		: 78 dB MINIMUM (80dB TYPICAL)
● INPUT & OUTPUT VSWR		: 1.8:1 MAXIMUM (1.5:1 TYPICAL)
● TANGENTIAL SIGNAL SENSITIVITY (TSS)		: -76 dBm MAXIMUM (-82 dBm TYPICAL)
● LOGGING RANGE		: -75dBm TO +3dBm
● LOG LINEARITY		: ± 1.5dB MAXIMUM (± 1.0dB TYPICAL)
● LOG SLOPE (± 5%)		: 25mV/dB (OTHER SLOPES AVAILABLE)
● LOG SLOPE VARIATION OVER FREQUENCY		: ± 1.5mV/dB (OVER 100 MHz RF BANDWIDTH)
● LOG SLOPE VARIATION OVER TEMPERATURE		: ± 2.5mV/dB MAXIMUM
● LOG LINEARITY OVER TEMPERATURE		: ± 2.5 dB MAXIMUM
● UNIT TO UNIT PHASE TRACKING		: ± 2.5° MAXIMUM
● RISE TIME (10% TO 90% POINTS)		: 25nS MAXIMUM, 20nS TYPICAL
● FALL TIME (90% TO 10% POINTS)		: 30nS MAXIMUM, 20nS TYPICAL
● SETTLING TIME		: 40nS MAXIMUM (10% INPUT PULSE TO WITHIN 0.5 dB)
● RECOVERY TIME		: 50nS MAXIMUM (90% INPUT PULSE TO WITHIN 0.5 dB)
● LIMITED IF OUTPUT	(INPUT: ≥ -60, 50Ω)	: -20 dBm MINIMUM
● AM/PM	(INPUT: -65 TO -55dBm)	: 1.2° /dB MAXIMUM
	(INPUT: -55 TO 0dBm)	: 0.75° /dB MAXIMUM
	(INPUT: 0 TO + 5dBm)	: 2.0° /dB MAXIMUM
● OUTPUT COUPLING		: DC
● PROPAGATION DELAY		: 10nS MAXIMUM (7nS TYPICAL)
● NOISE FIGURE		: ≤ 8 dB
● VIDEO BANDWIDTH		: 20 MHz MINIMUM
● VIDEO LOAD		: 100Ω MINIMUM
● DC POWER SUPPLIES		: +5vdc @ 115mA (NO LOAD)
		: -5vdc @ 145mA (NO LOAD)
● SIZE	16 PIN "FLAT-PACK"	: 0.50"(L) X 0.375"(W) X 0.075"(H) (PINS EXCLUDED)

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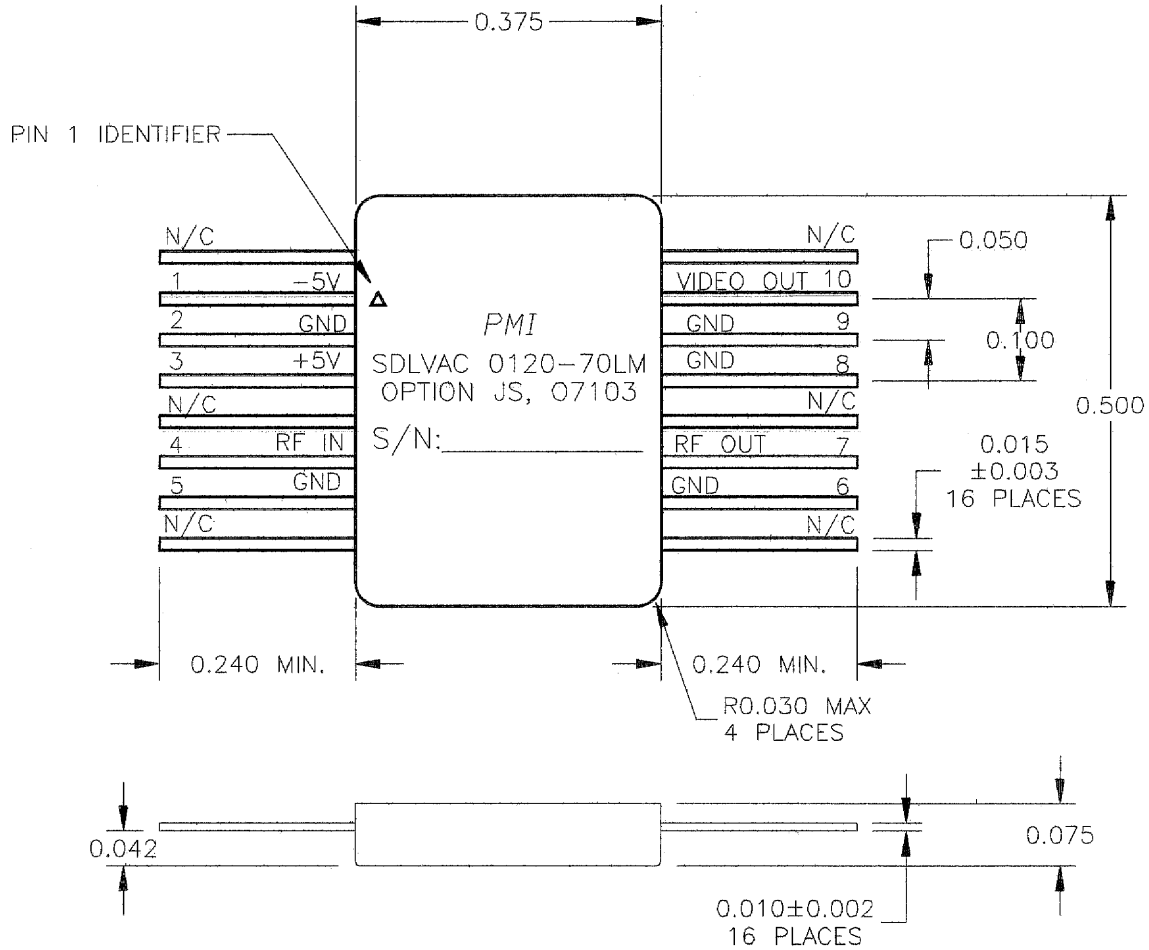
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SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

MECHANICAL OUTLINE



ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE	: -55°C to +85°C Operating
	: -65°C to +125°C Non-Operating
HUMIDITY	: MIL-STD-202F, Method 103B Cond. B
SHOCK	: MIL-STD-202F, Method 213B Cond. B
VIBRATION	: MIL-STD-202F, Method 204D Cond. B
ALTITUDE	: MIL-STD-202F, Method 105C Cond. B
TEMPERATURE CYCLE	: MIL-STD-202F, Method 107D Cond. A

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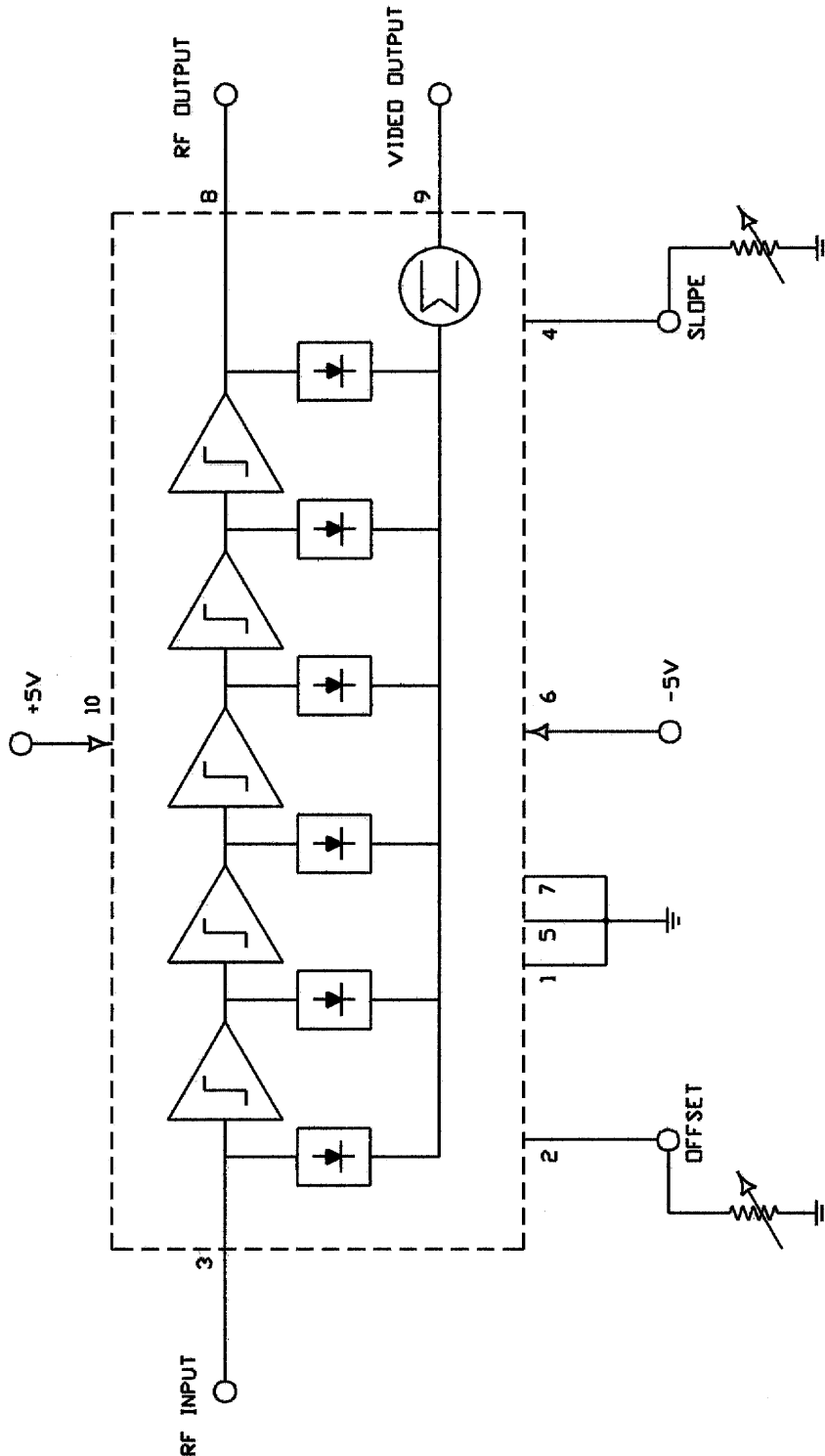
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FUNCTIONAL SCHEMATIC



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PRODUCT FEATURE

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:10%;">REV.</th> <th style="width:40%;">DESCRIPTION</th> <th style="width:10%;">DATE</th> <th style="width:10%;">APPROVED</th> </tr> <tr> <td>1</td> <td>ORIGINAL RELEASE</td> <td>6/23/99</td> <td></td> </tr> </table>	REV.	DESCRIPTION	DATE	APPROVED	1	ORIGINAL RELEASE	6/23/99		<p>MECHANICAL OUTLINE</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES: X.XX ±0.020 X.XXX ±0.010 3) WEIGHT: 0.2 OZ 	<p style="text-align: center;">PLANAR MONOLITHICS INDUSTRIES FREDERICK, MARYLAND</p> <p style="text-align: center;">PRODUCT FEATURE SDLVAC-0120-70LM OPTION 07103, JS</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:10%;">REV.</th> <th style="width:40%;">DESCRIPTION</th> <th style="width:10%;">DATE</th> <th style="width:10%;">APPROVED</th> </tr> <tr> <td>1</td> <td>W/APP</td> <td>6/23/99</td> <td></td> </tr> </table>	REV.	DESCRIPTION	DATE	APPROVED	1	W/APP	6/23/99	
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DESCRIPTION

THE MODEL SDLVAC-0120-70LM OPTION JS, OPTION 07103 IS A MINIATURE SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SOLVA) OPERATES OVER THE 700 MHz TO 1.3 GHz USING 2 (TWO) HYBRID MIC/MMIC CHIPS OF OUR EXISTING SDLVAC-0120-70M UNITS.

SPECIFICATIONS

- INPUT FREQUENCY 0.7 TO 1.30 GHz
- INPUT FREQUENCY 100 MHz WIDE SUBBAND
- DYNAMIC RANGE 77 dB
- LOG VIDEO OUTPUT:
 - SLOPE FIXED BETWEEN 10 AND 40 mV/dB
 - LOG SLOPE VARIATION WITH FREQUENCY ±0.5 dB OVER 100 MHz SUBBAND
 - LOG SLOPE VARIATION WITH TEMPERATURE ±1 dB OVER OPERATING TEMPERATURE
 - INSTANTANEOUS LOG SLOPE ±25% WITHIN DYNAMIC RANGE
 - VIDEO OUTPUT IMPEDANCE 100 Ω
 - VIDEO BANDWIDTH 20 MHz MINIMUM
 - INPUT LEVEL -70 dBm TO +8 dBm
 - OPERATING TEMPERATURE 0°C TO 85°C
 - LOG ERROR (LINEARITY) ±1.5 dB FROM BEST FIT LINE OVER DYNAMIC RANGE.
 - SUPPLY REGULATED -5V @ 250 mA MAXIMUM, +5V @ 100 mA MAXIMUM
 - NOISE FIGURE ≤ 8 dB
 - LIMITED IF OUTPUT -20 dBm MINIMUM FOR INPUT LEVELS ≥ -60 dBm, 50 OHMS
 - SIZE 0.500" x 0.400" x 0.090"

ENVIRONMENTAL RATINGS

- TEMPERATURE -0°C TO +85°C (OPERATING)
-65°C TO +100°C (STORAGE)
- HUMIDITY MIL-STD-202F, METHOD 1038 COND. B
- SHOCK MIL-STD-202F, METHOD 2138 COND. B
- VIBRATION MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE MIL-STD-202F, METHOD 107D COND. A

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

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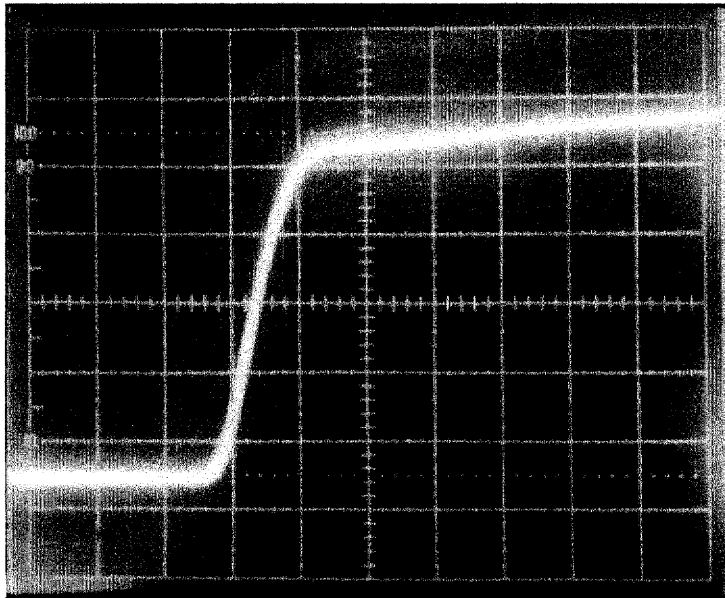
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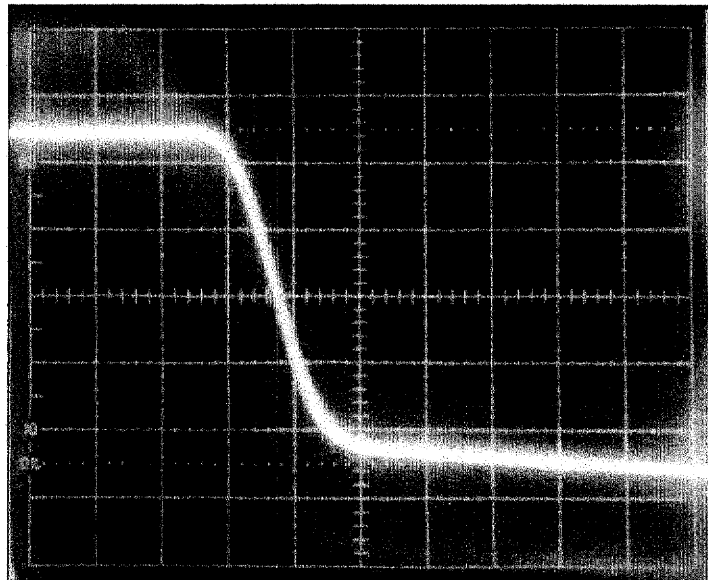


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SERIAL NUMBERS : PM911143, PM911144 AND PM911146

RESPONSE TIME (RISE & FALL)
HORIZONTAL SCALE: 20nS PER DIVISION



RISE TIME: 20nS



FALL TIME: 30nS

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SECTION 1

FINAL TEST DATA

AND

**DATA OVER
TEMPERATURE**

ON

**700 TO 1,300 MHz
(0.3 TO 2.0 GHz UNITS ALSO AVAILABLE)**

25nS HIGH SPEED

≥78dB ULTRA-HIGH DYNAMIC RANGE

LOW AM/PM CONVERSION

**SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER COMPACT
(SDLVAC)**

**PMI MODEL No:
SDLVAC-0120-70LM
WITH OPTIONS: 07103 & JS**

S/N: PM911143

NOVEMBER 22th, 2000

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FINAL TEST DATA ON S/N: PM911143

FORM: 304-SD



PLANAR MONOLITHICS INDUSTRIES
 7311-G GROVE ROAD, FREDERICK, MD, 21704
 TEL: (301)881-4700 FAX: (301)882-4938

JOB NO: 90618PE

**SUMMARY TEST DATA
ON
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER--SDLVA**

CUSTOMER:
 JOB NO:
 MODEL NO: SDLVAC-0120-70LM
 SERIAL NO: PM911143

TESTED BY: F.R.
 DATE: 11-20-99

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	REMARKS QA/QC
1	FREQUENCY RANGE	0.7 TO 1.3 Ghz (min)	OK	✓
2	DYNAMIC RANGE	77 dB (min)	OK	✓
3	LOG LINEARITY -75 to 3 dBm	±1.5 dB (min)	+0.93 dB -1.13 dB	✓
	LOG LINEARITY 0 to +85°C	±2.5dB (min)	+2.35 dB -1.36 dB	
4	LOG SLOPE	SEE PLOTS		
5	TSS (TANGENTIAL SENSITIVITY)	- 76 dBm (min)	-82 dBm	✓
6	VSWR (INPUT)	1.8:1 (max)	1.63:1	✓
7	LIMITED OUTPUT	- 20 dBm (min)	OK	✓
8	RISE TIME	25 nSEC (max)	24 nS	✓
9	FALL TIME	30 nSEC (max)	25 nS	✓
10	CURRENT DRAW + 5 Volts	115 mA (max)	+94 mA	✓
11	CURRENT DRAW - 5 Volts	145 mA (max)	-136 mA	✓

PRODUCTION MANAGER APPROVAL:

DATED: NOV 22 1999

QA/QC APPROVAL:

DATED: NOV 22 1999

NOVEMBER 22th, 2000

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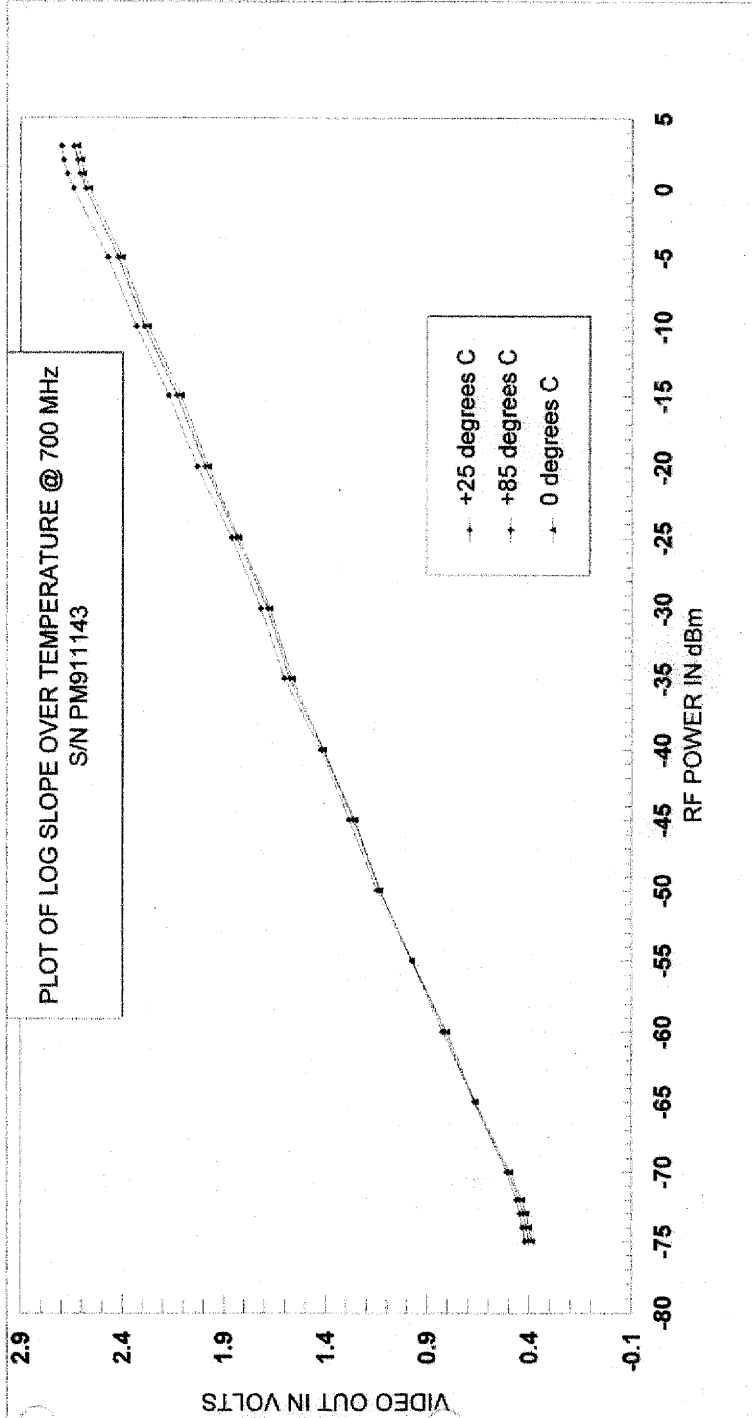
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**PLOT OF LOG SLOPE OVER TEMPERATURE @ 700 MHz
AS MEASURED @ +25°C, +85°C & 0°C S/N: PM911143**

PMI
 PLANAR MONOLITHICS INDUSTRIES, INC.
 7311-G GROVE ROAD, FREDERICK, MD 21704-4104
 TEL: 301-662-4700 FAX: 301-662-4938
 WEBSITE: www.AMWAVE.com
 E-MAIL: AMCPMI@aol.com



JOB NUMBER 90618PE
 CUSTOMER SDLVAC-0120-70LM
 MODEL NUMBER JS-07103
 OPTION NUMBER JS-07103
 TECHNICIAN S.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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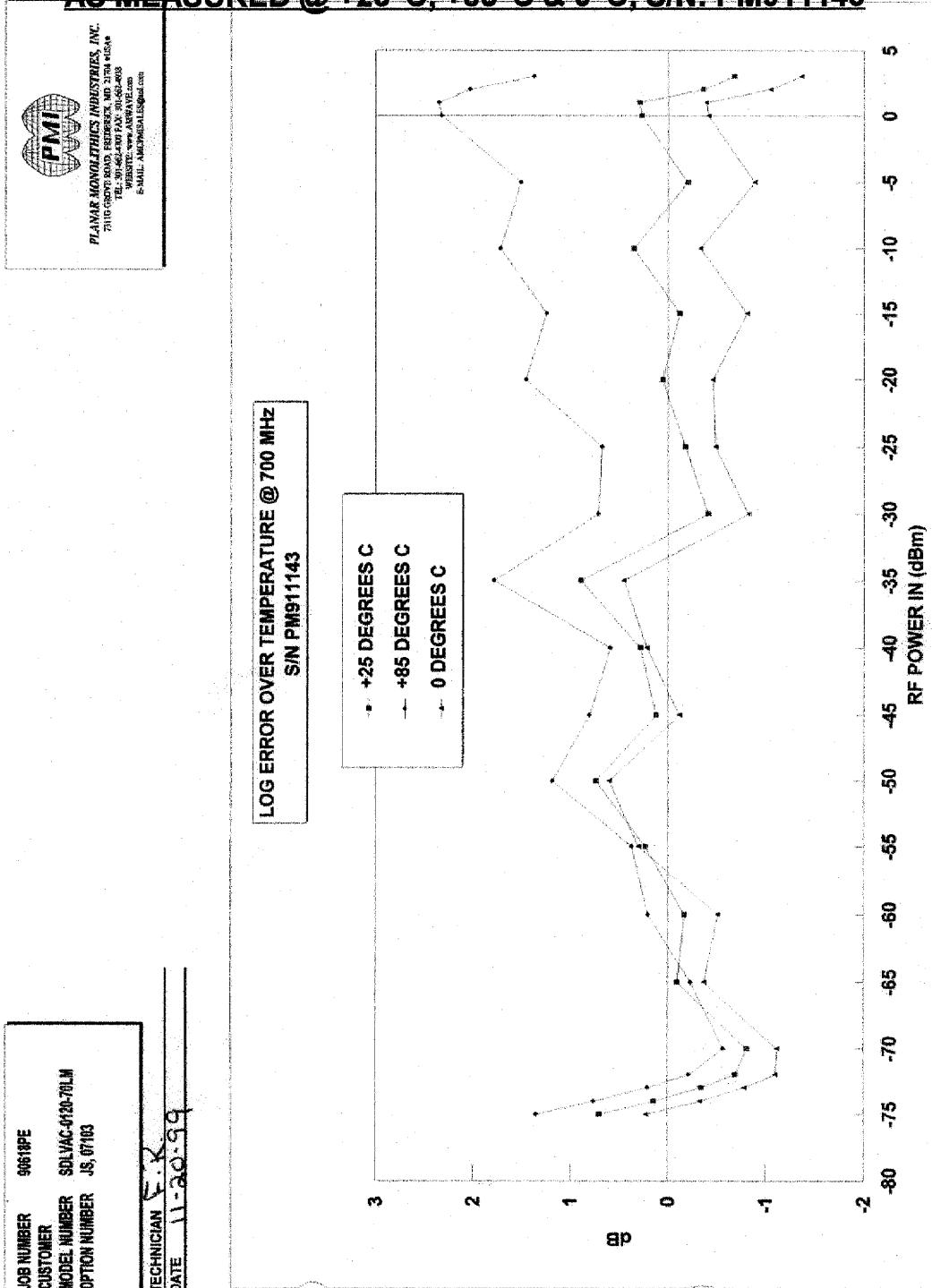
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 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

**PLOT OF LOG ERROR OVER TEMPERATURE @ 700 MHz
 AS MEASURED @ +25°C, +85°C & 0°C, S/N: PM911143**



JOB NUMBER 90618PE
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103

TECHNICIAN F.R.
 DATE 11-20-99

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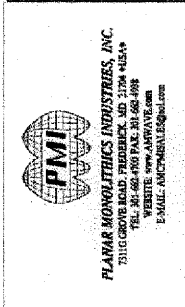
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 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

TABULATED DATA AS MEASURED FROM 0°C TO +85°C @ 700 MHz, S/N: PM911143

TABULATED TEST DATA FROM 0 TO + 85 DEGREES C @ 700 MHz
S/N: PM911143



JOB NUMBER 90618PE
 CUSTOMER QUALCOMM/AMT/DLDR
 MODEL NUMBER JS, 07103
 OPTION NUMBER

TECHNICIAN F.R.
 DATE 11-20-99

RF POWER IN (dBm)	+25 DEGREES C VIDEO OUT (VOLTS)	+25 DEGREES C LIMITED IF OUT (dBm)	+45 DEGREES C VIDEO OUT (VOLTS)	+45 DEGREES C LIMITED IF OUT (dBm)	+85 DEGREES C VIDEO OUT (VOLTS)	+85 DEGREES C LIMITED IF OUT (dBm)	9 DEGREES C LIMITED IF OUT (dBm)
3	2.64	-15.9	2.7	-15.2	2.62	-16	-16
2	2.82	-15.9	2.69	-15.2	2.6	-16	-16
1	2.61	-15.9	2.67	-15.2	2.59	-16	-16
0	2.58	-15.9	2.64	-15.2	2.56	-16	-16
-5	2.42	-15.9	2.47	-15.2	2.4	-16	-16
-10	2.29	-15.9	2.33	-15.2	2.27	-16	-16
-15	2.13	-15.9	2.17	-15.2	2.11	-16	-16
-20	1.989	-15.9	2.03	-15.2	1.974	-16	-16
-25	1.836	-15.9	1.861	-15.2	1.827	-16	-16
-30	1.683	-15.9	1.716	-15.2	1.671	-16	-16
-35	1.575	-15.9	1.601	-15.2	1.562	-16	-16
-40	1.411	-15.9	1.42	-15.2	1.409	-16	-16
-45	1.26	-15.9	1.28	-15.2	1.253	-16	-16
-50	1.132	-16.9	1.145	-15.2	1.128	-16	-16
-55	0.971	-15.9	0.975	-15.3	0.973	-16.1	-16.2
-60	0.813	-16	0.824	-15.4	0.803	-16.2	-16.5
-65	0.669	-16.3	0.665	-15.7	0.661	-16.5	-18
-70	0.502	-17.6	0.509	-16.7	0.493	-19.1	-19.6
-72	0.447	-18.6	0.461	-18.1	0.415	-20.2	-20.7
-73	0.428	-19	0.444	-18.5	0.399	-20.2	-20.7
-74	0.413	-19.5	0.431	-18.9	0.386	-20.7	-20.7
-75	0.4	-20	0.419	-18.9	0.386	-20.7	-20.7
DC POWER @ +5 VOLTS	+84 mA		+92 mA		+92 mA		
DC POWER @ -5 VOLTS	-131 mA		-136 mA		-130 mA		
LOG SLOPE							
BEST FIT STRAIGHT LINE	29.2351	mV/dB					
LOG ERROR IN dB	0.89		2.35		0.60		
LOG ERROR IN dB	-0.81		-0.57		-1.36		

* LOG ERROR IS CALCULATED AT 77 dB DYNAMIC RANGE (+3 dBm TO -74 dBm) USING LOG SLOPE AT +25 DEGREES C AS A REFERENCE

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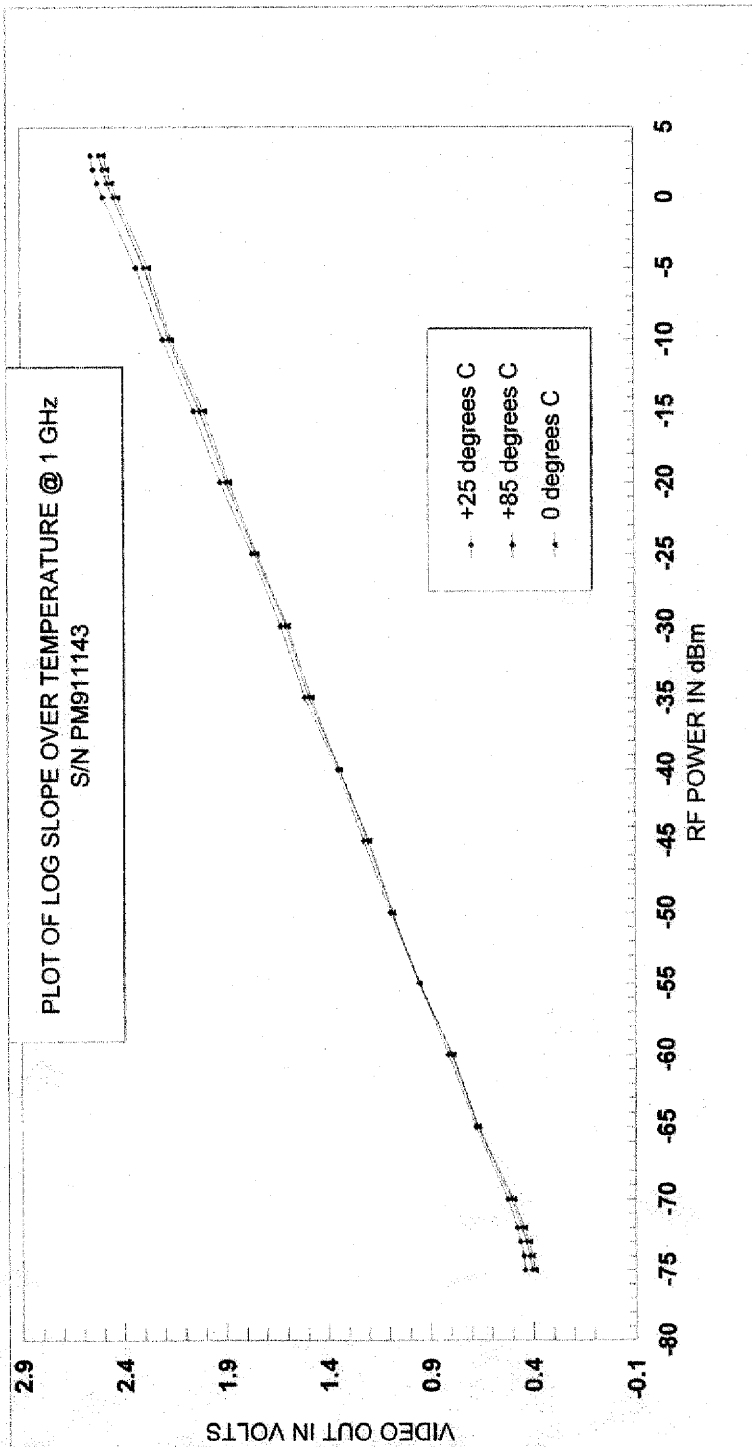
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PLOT OF LOG SLOPE OVER TEMPERATURE @ 1.0 GHz
AS MEASURED @ +25°C, +85°C & 0°C S/N: PM911143



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JOB NUMBER
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103
 TECHNICIAN S.R.
 DATE 11-20-99



NOVEMBER 22th, 2000

PLANAR MONOLITHICS INDUSTRIES, INC., 7311-G Grove Road, Frederick, MD 21704
 Tel: 301-662-4700 Fax: 301-662-4938 Website: www.AMWAVE.com E-mail: amcpmi@aol.com

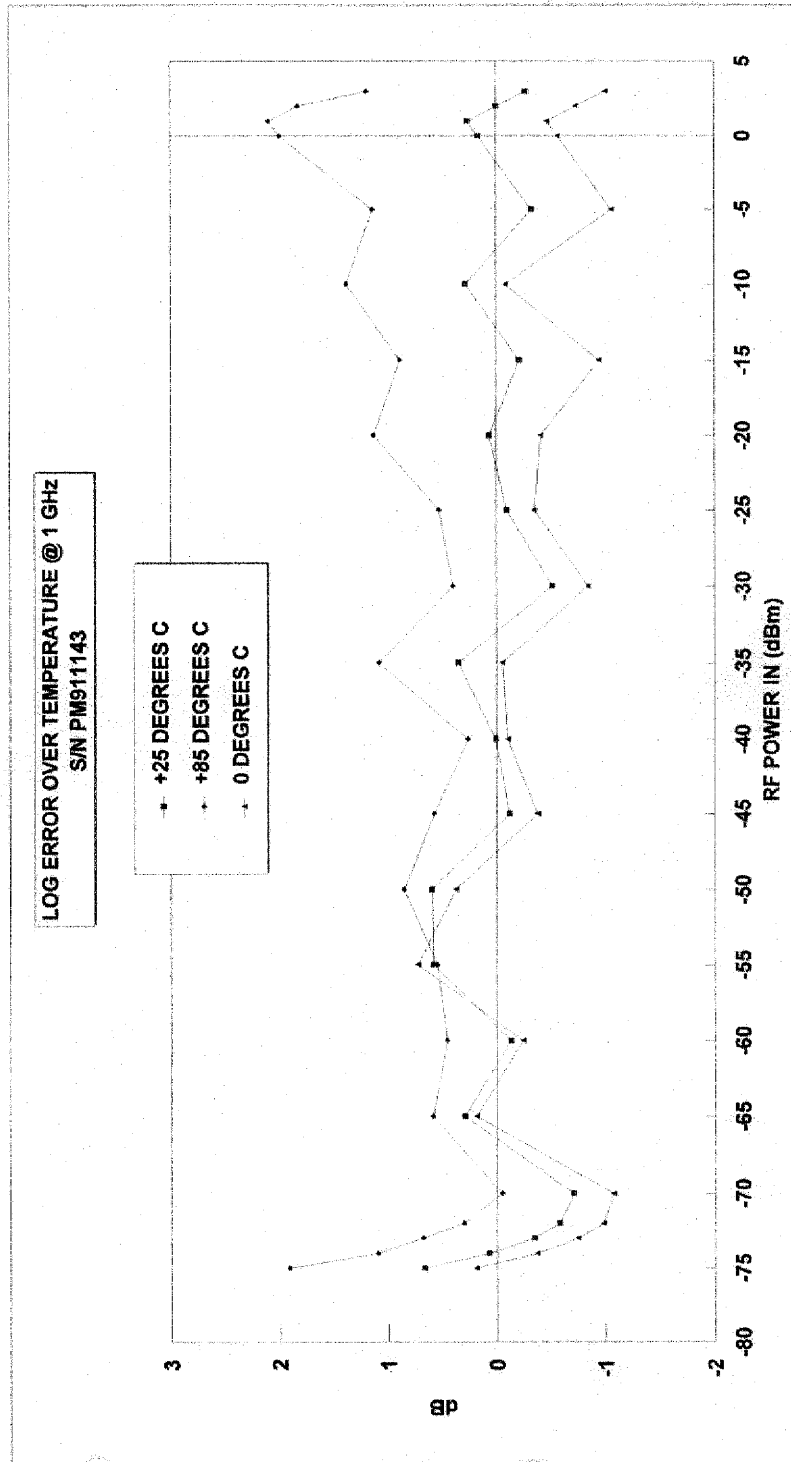
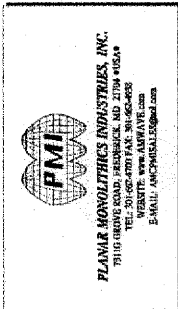
**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

**PLOT OF LOG ERROR OVER TEMPERATURE @ 1.0 GHz
AS MEASURED @ +25°C, +85°C & 0°C, S/N: PM911143**



JOB NUMBER 90610PE
 CUSTOMER LOCKHEED MARTIN
 MODEL NUMBER SDLVAC-0720-70LM
 OPTION NUMBER JS, 07103

TECHNICIAN F.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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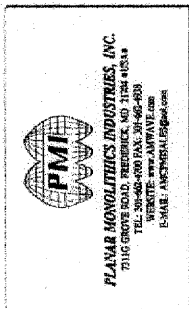
SUMMARY TEST DATA SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

TABULATED DATA AS MEASURED FROM 0°C TO +85°C @ 1.0 GHz, S/N: PM911143



TABULATED TEST DATA FROM 0 TO + 85 DEGREES C @ 1 GHz
S/N PM911143

JOB NUMBER 98010PE
 CUSTOMER SDLVAC-0120-70LM
 MODEL NUMBER JS, 07103
 OPTION NUMBER JS, 07103

TECHNICIAN F.R.
 DATE 11-20-99

RF POWER IN (dBm)	+25 DEGREES C		+45 DEGREES C		+85 DEGREES C		0 DEGREES C	
	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)
3	2.51	-16	2.55	-15.4	2.49	-16.2	2.49	-16.2
2	2.49	-16	2.54	-15.4	2.47	-16.2	2.47	-16.2
1	2.47	-16	2.52	-15.4	2.45	-16.2	2.45	-16.2
0	2.44	-16	2.49	-15.4	2.42	-16.2	2.42	-16.2
-5	2.29	-16	2.33	-15.4	2.27	-16.2	2.27	-16.2
-10	2.17	-16	2.2	-15.4	2.16	-16.2	2.16	-16.2
-15	2.02	-16	2.05	-15.4	2	-16.2	2	-16.2
-20	1.891	-16	1.92	-15.4	1.878	-16.2	1.878	-16.2
-25	1.75	-16	1.767	-15.4	1.743	-16.2	1.743	-16.2
-30	1.602	-16	1.627	-15.4	1.593	-16.2	1.593	-16.2
-35	1.489	-16	1.509	-15.4	1.478	-16.2	1.478	-16.2
-40	1.343	-16	1.35	-15.4	1.34	-16.2	1.34	-16.2
-45	1.203	-16	1.222	-15.4	1.196	-16.2	1.196	-16.2
-50	1.086	-16	1.093	-15.4	1.08	-16.2	1.08	-16.2
-55	0.949	-16	0.948	-15.5	0.953	-16.2	0.953	-16.2
-60	0.793	-16.1	0.809	-15.5	0.79	-16.3	0.79	-16.3
-65	0.668	-16.3	0.676	-15.6	0.665	-16.5	0.665	-16.5
-70	0.504	-17.5	0.522	-16.5	0.494	-17.8	0.494	-17.8
-72	0.453	-18.5	0.477	-17.1	0.442	-18.8	0.442	-18.8
-73	0.432	-18.9	0.46	-17.4	0.421	-19.3	0.421	-19.3
-74	0.416	-19.5	0.444	-17.8	0.404	-19.9	0.404	-19.9
-75	0.405	-19.9	0.439	-18.1	0.392	-20.3	0.392	-20.3
DC POWER @ +5 VOLTS	+94 mA		+92 mA		+91 mA		+91 mA	
DC POWER @ -5 VOLTS	-131 mA		-136 mA		-130 mA		-130 mA	
LOG SLOPE								
BEST FIT STRAIGHT LINE	27.3163	mV/dB	2.09		0.73		0.73	
LOG ERROR IN dB	0.60		-0.05		-1.08		-1.08	
LOG ERROR IN dB	-0.71							

*LOG ERROR IS CALCULATED AT 77 dB DYNAMIC RANGE (+3 dBm TO -74 dBm) USING LOG SLOPE AT +25 DEGREES C AS A REFERENCE

NOVEMBER 22th, 2000

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SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER

REPORT No: PT15-SDLVAC-PW-1100

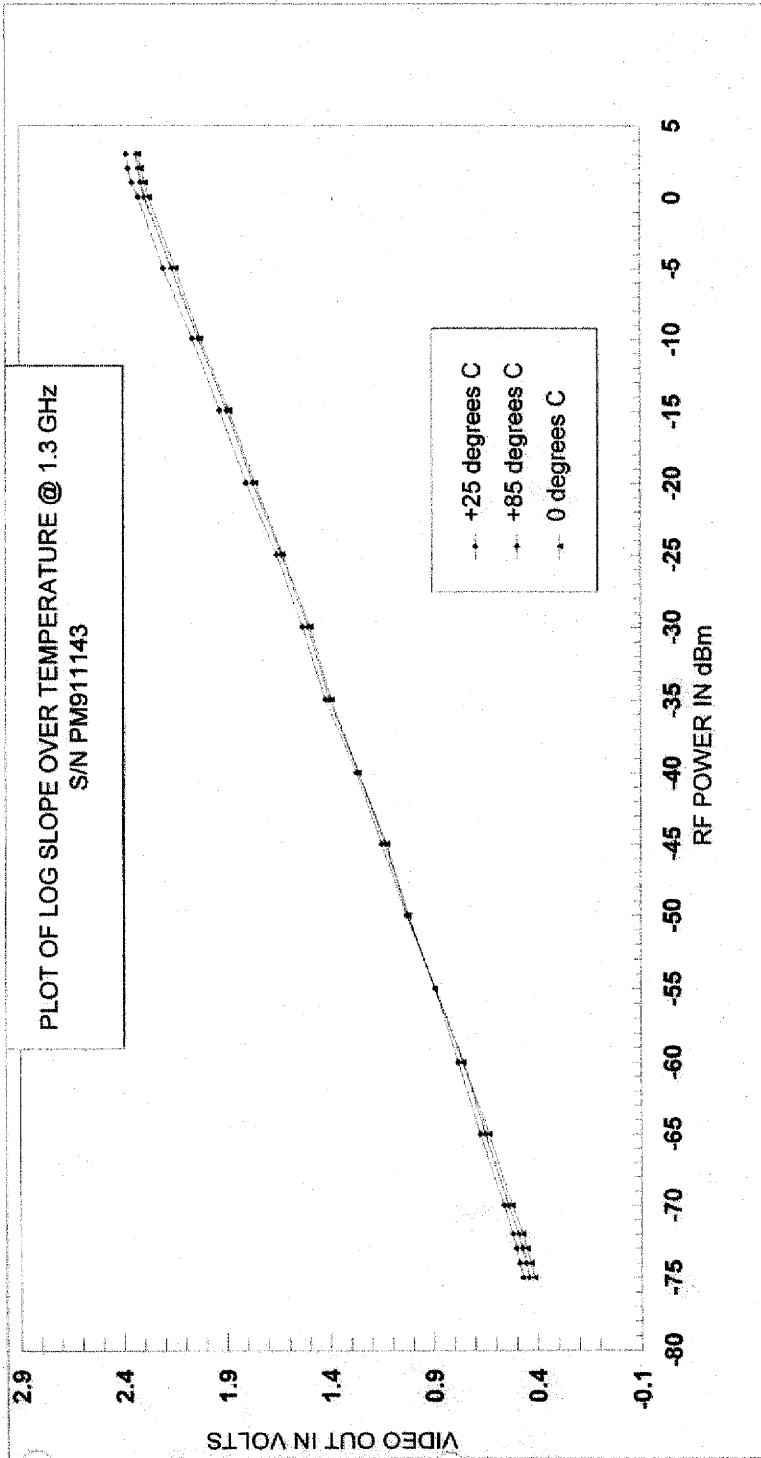


PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

PLOT OF LOG SLOPE OVER TEMPERATURE @ 1.3 GHz
AS MEASURED @ +25°C, +85°C & 0°C S/N: PM911143



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 7311 G GROVE ROAD, FREDERICK, MD 21704 • USA •
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JOB NUMBER 90618PE
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103
 TECHNICIAN FR
 DATE 11-20-99

NOVEMBER 22th, 2000

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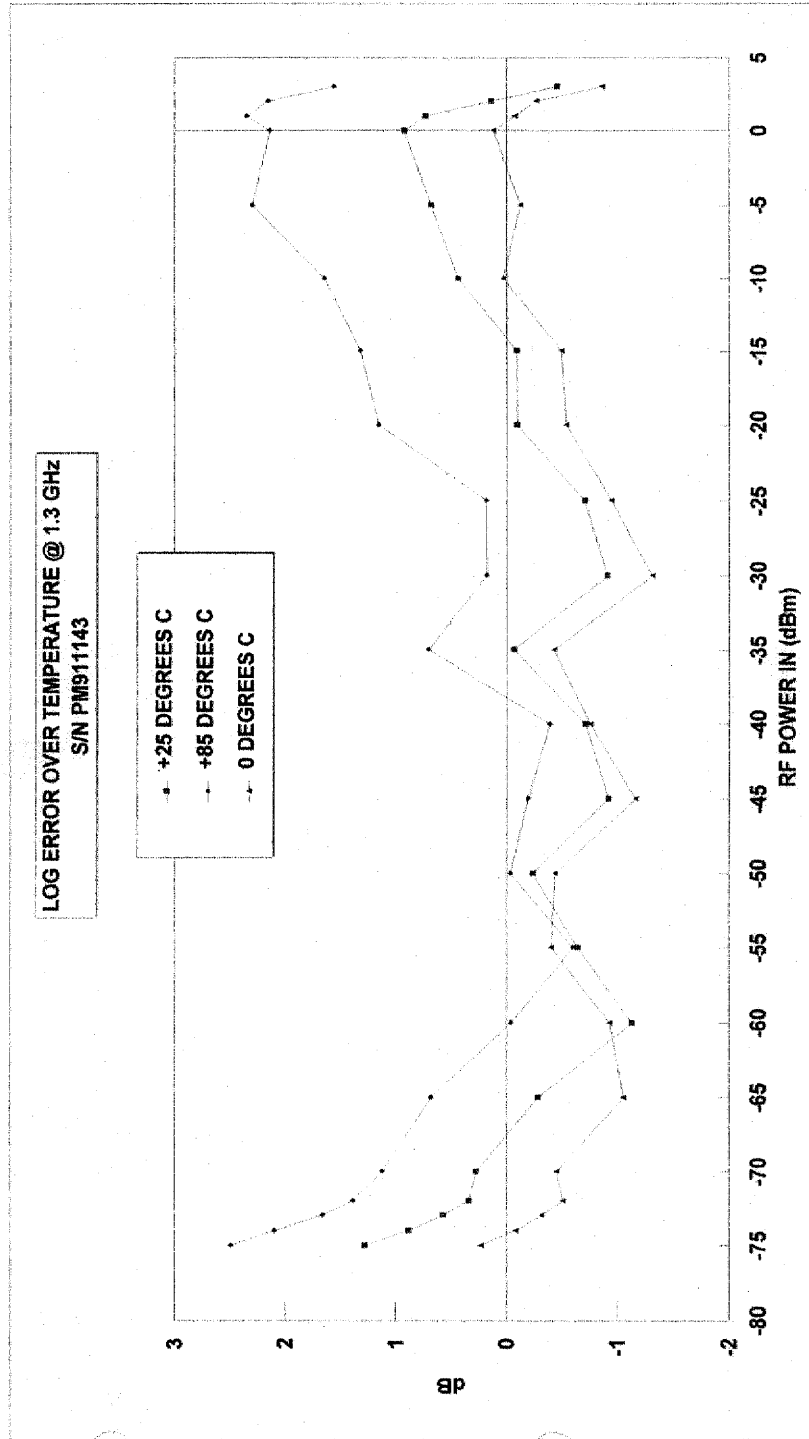
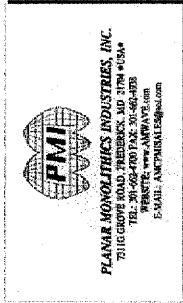
SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

LOT OF LOG ERROR OVER TEMPERATURE @ 1.3 GHz
AS MEASURED @ +25°C, +85°C & 0°C, S/N: PM911143



JOB NUMBER 9061RPF
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103

TECHNICIAN F.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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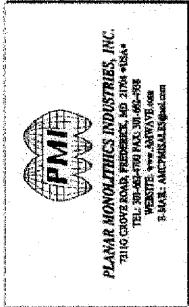
SUMMARY TEST DATA SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

TABULATED DATA AS MEASURED FROM 0°C TO +85°C @ 1.3.GHz, S/N: PM911143



TABULATED TEST DATA FROM 0 TO + 85 DEGREES C @ 1.3 GHz
S/N PM911143

JOB NUMBER 90618PE
 CUSTOMER SDLVAC-0120-70LM
 MODEL NUMBER JS, 07103
 OPTION NUMBER

TECHNICIAN F.R.
 DATE 11-20-99

RF POWER IN (dbm)	+25 DEGREES C		+48 DEGREES C		+85 DEGREES C		0 DEGREES C	
	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)
3	2.33	-16.1	2.38	-15.6	2.32	-16.2	2.32	-16.2
2	2.32	-16.1	2.37	-15.6	2.31	-16.2	2.31	-16.2
1	2.31	-16.1	2.35	-15.6	2.29	-16.2	2.29	-16.2
0	2.29	-16.1	2.32	-15.6	2.27	-16.2	2.27	-16.2
-5	2.16	-16.1	2.2	-15.6	2.14	-16.2	2.14	-16.2
-10	2.03	-16.1	2.06	-15.6	2.02	-16.2	2.02	-16.2
-15	1.893	-16.1	1.928	-15.6	1.883	-16.2	1.883	-16.2
-20	1.769	-16.1	1.8	-15.6	1.758	-16.2	1.758	-16.2
-25	1.63	-16.1	1.652	-15.6	1.624	-16.2	1.624	-16.2
-30	1.501	-16.1	1.528	-15.6	1.491	-16.2	1.491	-16.2
-35	1.398	-16.1	1.417	-15.6	1.389	-16.2	1.389	-16.2
-40	1.288	-16.1	1.286	-15.6	1.257	-16.2	1.257	-16.2
-45	1.129	-16.1	1.147	-15.6	1.123	-16.2	1.123	-16.2
-50	1.022	-16.1	1.027	-15.6	1.017	-16.2	1.017	-16.2
-55	0.888	-16.1	0.889	-15.6	0.894	-16.2	0.894	-16.2
-60	0.752	-16.3	0.779	-15.6	0.757	-16.3	0.757	-16.3
-65	0.649	-16.4	0.673	-15.7	0.63	-16.6	0.63	-16.6
-70	0.539	-16.8	0.56	-16	0.521	-17.2	0.521	-17.2
-72	0.491	-17.3	0.517	-16.3	0.47	-17.8	0.47	-17.8
-73	0.472	-12.6	0.499	-16.5	0.45	-18.1	0.45	-18.1
-74	0.455	-17.9	0.485	-16.7	0.431	-18.6	0.431	-18.6
-75	0.44	-18.2	0.47	-16.9	0.414	-19	0.414	-19
DC POWER @ +5 VOLTS	+94 mA		+92 mA		+92 mA		+92 mA	
DC POWER @ -5 VOLTS	-131 mA		-136 mA		-130 mA		-130 mA	
LOG SLOPE								
BEST FIT STRAIGHT LINE	24.7826	mV/dB	2.35		0.12		0.12	
LOG ERROR IN dB	0.93		-0.60		-1.31		-1.31	
LOG ERROR IN dB	-1.13							

* LOG ERROR IS CALCULATED AT 77 dB DYNAMIC RANGE (+3 dbm TO -74 dbm) USING LOG SLOPE AT +25 DEGREES C AS A REFERENCE

NOVEMBER 22th, 2000

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**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
TEST ENGINEER : FRANK RETHMEIER
SERIAL NUMBERS : PM911143, PM911144 AND PM911145

SECTION 2

FINAL TEST DATA

AND

**DATA OVER
TEMPERATURE**

ON

**700 TO 1,300 MHz
(0.3 TO 2.0 GHz UNITS ALSO AVAILABLE)**

25nS HIGH SPEED

≥78dB ULTRA-HIGH DYNAMIC RANGE

LOW AM/PM CONVERSION

**SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER COMPACT
(SDLVAC)**

PMI MODEL No:

SDLVAC-0120-70LM

WITH OPTIONS: 07103 & JS

S/N: PM911144

NOVEMBER 22th, 2000

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**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
TEST ENGINEER : FRANK RETHMEIER
SERIAL NUMBERS : PM911143, PM911144 AND PM911145

FINAL TEST DATA ON S/N: PM911144

FORM: 304-SD



PLANAR MONOLITHICS INDUSTRIES
7311 G ROVE ROAD, FREDERICK, MD 21704
TEL: (301)662-4938 FAX: (301)662-4938

JOB NO: 90618PE

**SUMMARY TEST DATA
ON
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER--SDLVA**

CUSTOMER: _____
JOB NO: 90618PE
MODEL NO: SDLVAC-0120-70LM
SERIAL NO: PM911144

TESTED BY: F.R.
DATE: 11-20-99

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	REMARKS QA/QC
1	FREQUENCY RANGE	0.7 TO 1.3 Ghz (min)	OK	✓
2	DYNAMIC RANGE	77 dB (min)	OK	✓
3	LOG LINEARITY -75 to 3 dBm	±1.5 dB (min)	+1.30 dB -1.04 dB	✓
	LOG LINEARITY 0 to +85°C	±2.5dB (min)	+1.60 dB -2.25 dB	
4	LOG SLOPE	SEE PLOTS		
5	TSS (TANGENTIAL SENSITIVITY)	- 76 dBm (min)	-84dBm	✓
6	VSWR (INPUT)	1.8:1 (max)	1.69:1	✓
7	LIMITED OUTPUT	- 20 dBm (min)	OK	✓
8	RISE TIME	25 nSEC (max)	22 nS	✓
9	FALL TIME	30 nSEC (max)	26 nS	✓
10	CURRENT DRAW + 5 Volts	115 mA (max)	+85 mA	✓
11	CURRENT DRAW - 5 Volts	145 mA (max)	- 137 mA	✓

PRODUCTION MANAGER APPROVAL: _____ DATED: NOV 22 2000
QA/QC APPROVAL: DATED: NOV 22 2000

NOVEMBER 22th, 2000

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**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

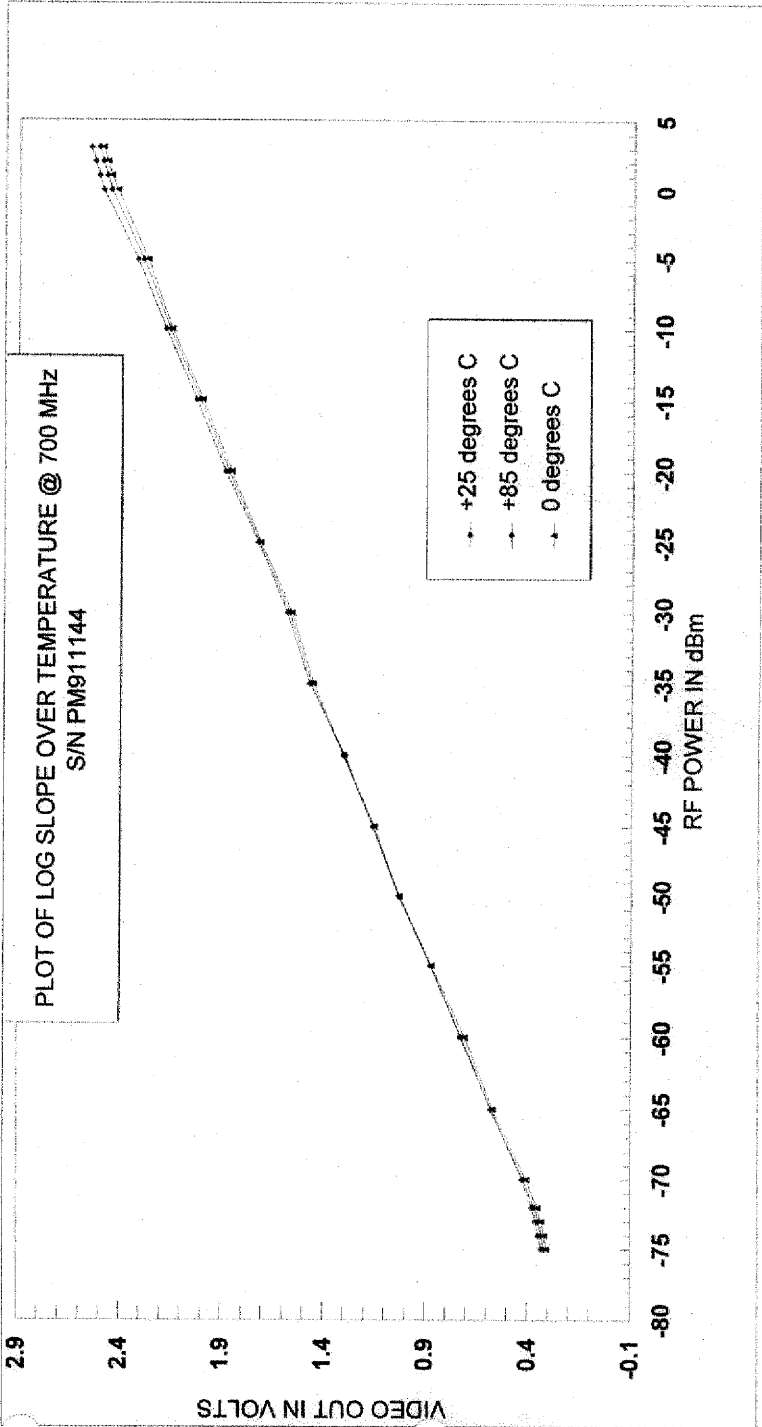
REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911145

**PLOT OF LOG SLOPE OVER TEMPERATURE @ 700 MHZ
AS MEASURED @ +25°C, +85°C & 0°C S/N: PM911144**


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 WEBSITE: WWW.AMWAVE.COM
 E-MAIL: AMCPMI@AOL.COM



JOB NUMBER 90618PE
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103
 TECHNICIAN F.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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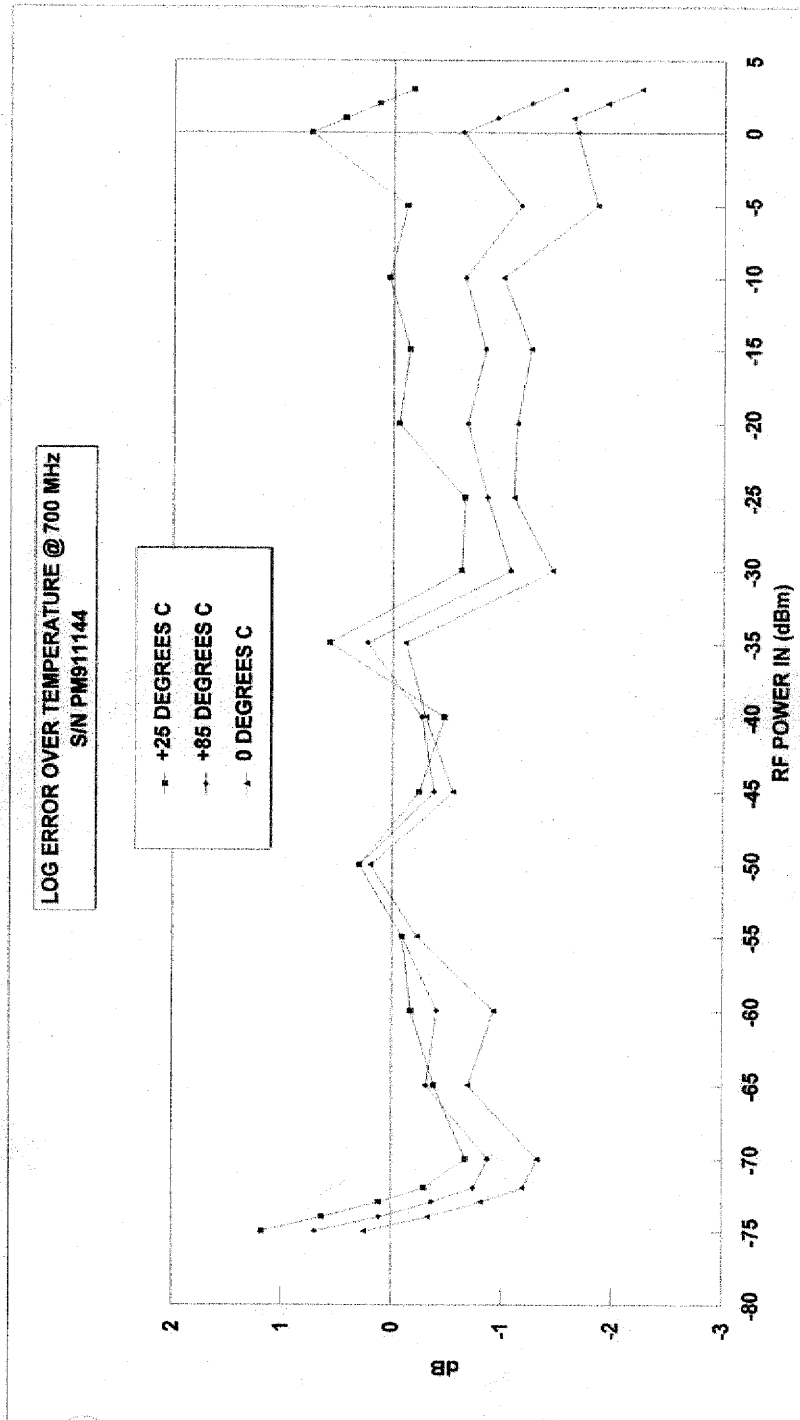
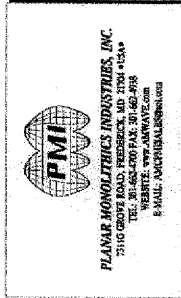
**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911145

**PLOT OF LOG ERROR OVER TEMPERATURE @ 700 MHz
AS MEASURED @ +25°C, +85°C & 0°C, S/N: PM911144**



JOB NUMBER 90618PE
 CUSTOMER SDLVAC-0120-70LM
 MODEL NUMBER JS, 07103
 OPTION NUMBER JS, 07103

TECHNICIAN F.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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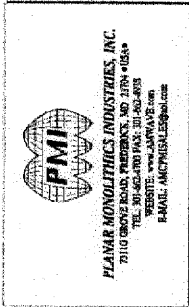
**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911145

**TABULATED DATA AS MEASURED FROM 0 °C TO +85 °C
 @ 700 MHz, S/N: PM911144**



TABULATED TEST DATA FROM 0 TO + 85 DEGREES C @ 700 MHz
 S/N PM911144

JOB NUMBER 90618PC
 CUSTOMER PLANAR MONOLITHICS INDUSTRIES, INC.
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS-07103

TECHNICIAN F.R.
 DATE 11-20-99

RF POWER IN (dBm)	+25 DEGREES C		+45 DEGREES C		+65 DEGREES C		0 DEGREES C		0 DEGREES C	
	VIDEO OUT (VOL.TS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOL.TS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOL.TS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOL.TS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOL.TS)	LIMITED IF OUT (dBm)
3	2.55	-15.6	2.51	-16.1	2.49	-16.3	2.47	-16.3	2.49	-16.3
2	2.53	-15.6	2.49	-16.1	2.47	-16.3	2.45	-16.3	2.45	-16.3
1	2.51	-15.6	2.47	-16.1	2.45	-16.3	2.42	-16.3	2.42	-16.3
0	2.49	-15.6	2.45	-16.1	2.42	-16.3	2.27	-16.3	2.27	-16.3
-5	2.32	-15.6	2.29	-16.1	2.29	-16.3	2.15	-16.3	2.15	-16.3
-10	2.18	-15.6	2.16	-16.1	2.16	-16.3	1.988	-16.3	1.988	-16.3
-15	2.03	-15.6	2.01	-16.1	2.01	-16.3	1.857	-16.3	1.857	-16.3
-20	1.888	-15.6	1.87	-16.1	1.87	-16.3	1.713	-16.3	1.713	-16.3
-25	1.726	-15.6	1.72	-16.1	1.72	-16.3	1.558	-16.3	1.558	-16.3
-30	1.582	-15.6	1.569	-16.1	1.569	-16.3	1.452	-16.3	1.452	-16.3
-35	1.472	-15.6	1.462	-16.1	1.462	-16.3	1.302	-16.3	1.302	-16.3
-40	1.297	-15.6	1.303	-16.1	1.303	-16.3	1.15	-16.3	1.15	-16.3
-45	1.159	-15.6	1.155	-16.1	1.155	-16.3	1.027	-16.3	1.027	-16.3
-50	1.03	-15.6	1.03	-16.1	1.03	-16.3	0.87	-16.3	0.87	-16.3
-55	0.874	-15.6	0.874	-16.1	0.874	-16.3	0.705	-16.3	0.705	-16.3
-60	0.727	-15.7	0.72	-16.2	0.72	-16.5	0.567	-16.5	0.567	-16.5
-65	0.576	-16	0.578	-16.6	0.578	-16.9	0.404	-18.4	0.404	-18.4
-70	0.423	-17.1	0.417	-17.9	0.417	-19.6	0.35	-19.6	0.35	-19.6
-72	0.376	-17.9	0.363	-18.5	0.363	-19.5	0.332	-20.1	0.332	-20.1
-73	0.359	-18.4	0.345	-19.5	0.345	-19.9	0.317	-20.6	0.317	-20.6
-74	0.345	-18.7	0.33	-19.9	0.33	-20.6	0.305	-21.1	0.305	-21.1
-75	0.332	-19.2	0.318	-20.4	0.318	-20.4				
DC POWER @ +5 VOLTS	+85 mA		+87 mA		+85 mA		+85 mA		+85 mA	
DC POWER @ -5 VOLTS	-134mA		-137 mA		-137 mA		-133 mA		-133 mA	
BEST FIT STRAIGHT LINE	28.9410	mV/dB	0.30		0.30		0.19		0.19	
LOG ERROR* IN dB	0.75		-1.56		-1.56		-2.25		-2.25	
LOG ERROR* IN dB	-0.68									

* LOG ERROR IS CALCULATED AT 77 dB DYNAMIC RANGE (+ 5 dBm TO - 74 dBm) USING LOG SLOPE AT + 25 DEGREES C AS A REFERENCE

NOVEMBER 22th, 2000

PLANAR MONOLITHICS INDUSTRIES, INC., 7311-G Grove Road, Frederick, MD 21704
 Tel: 301-662-4700 Fax: 301-662-4938 Website: www.AMWAVE.com E-mail: amcpmi@aol.com


**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100

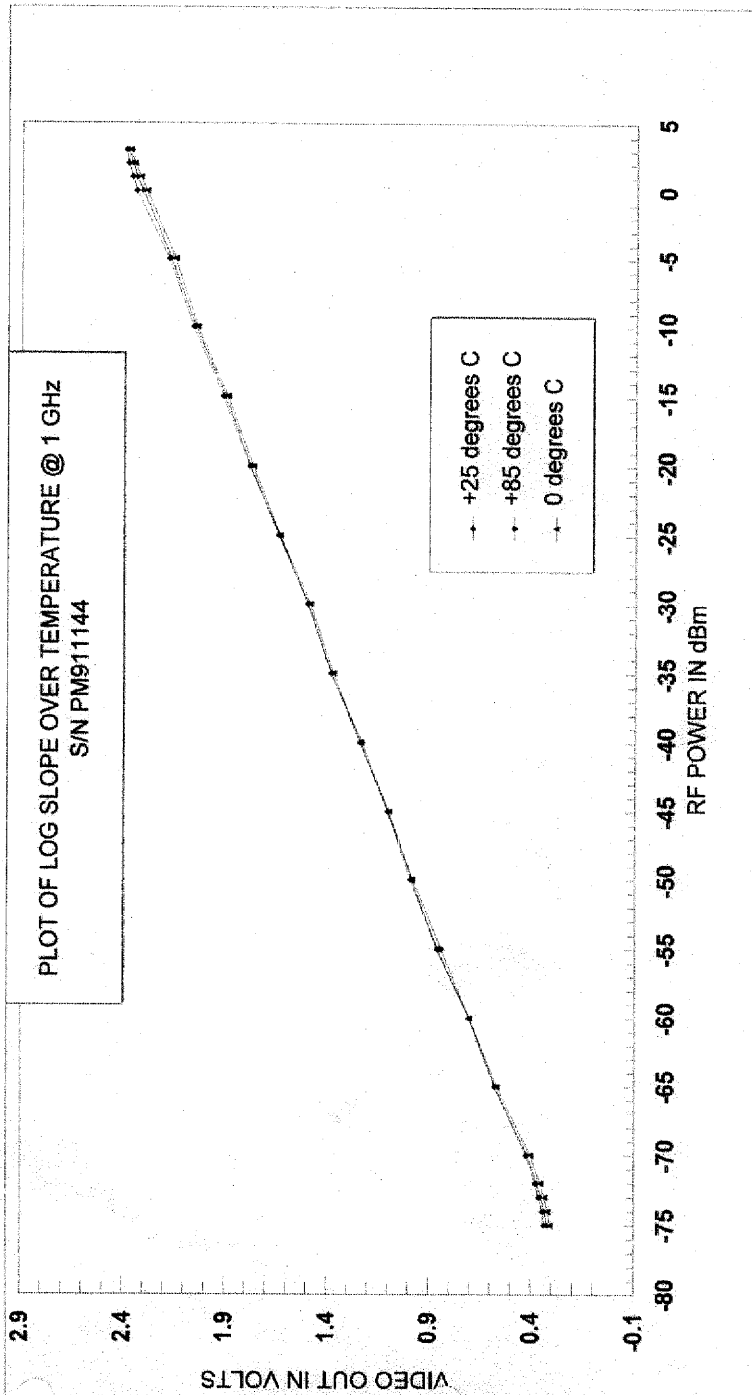


PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911145

**PLOT OF LOG SLOPE OVER TEMPERATURE @ 1.0 GHZ
 AS MEASURED @ +25°C, +85°C & 0°C S/N: PM911144**



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JOB NUMBER 90618PE
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103
 TECHNICIAN FR
 DATE 11-20-99

NOVEMBER 22th, 2000

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 Tel: 301-662-4700 Fax: 301-662-4938 Website: www.AMWAVE.com E-mail: amcpmi@aol.com

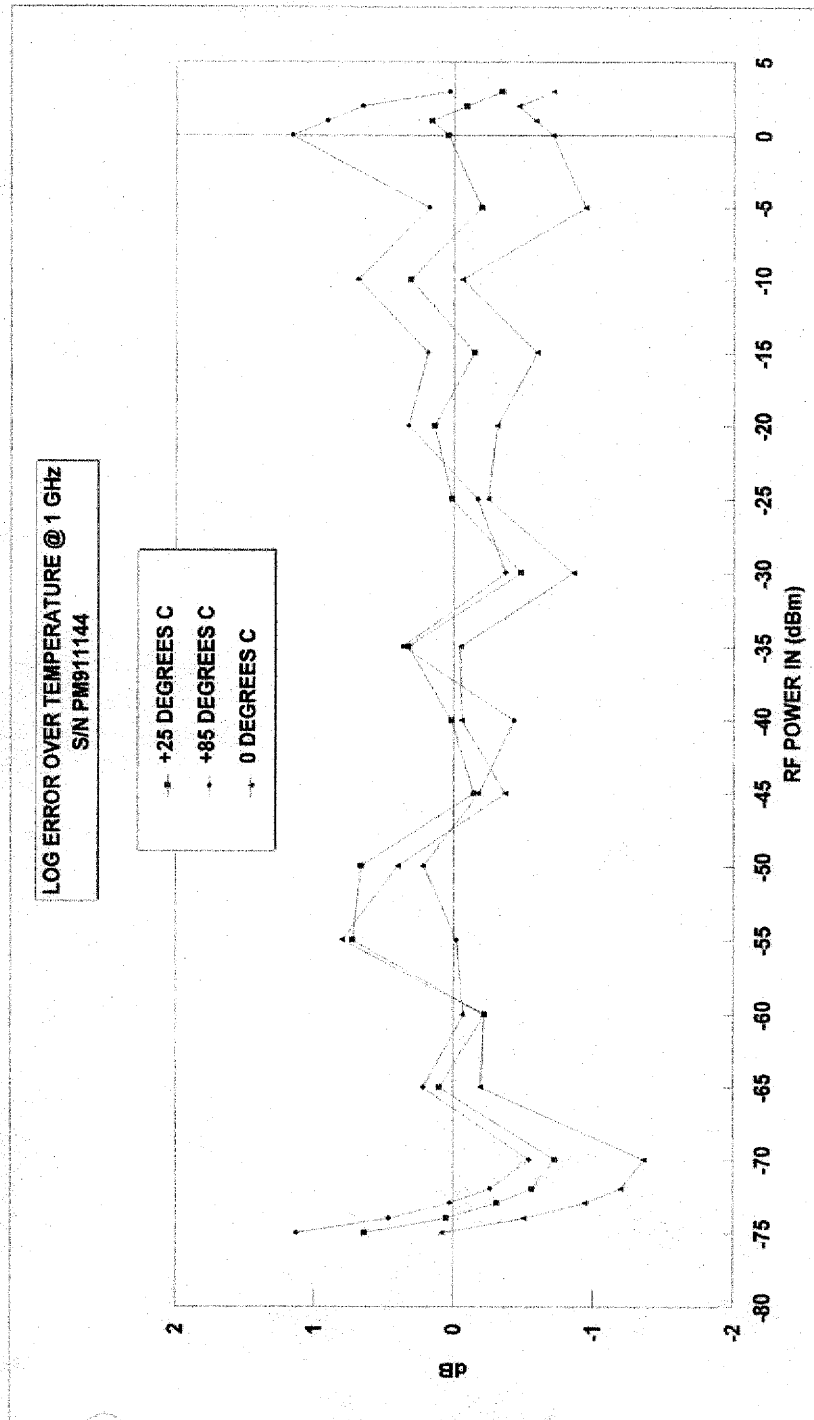
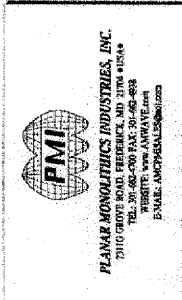
**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911145

**PLOT OF LOG ERROR OVER TEMPERATURE @ 1.0 GHz
AS MEASURED @ +25°C, +85°C & 0°C, S/N: PM911144**



JOB NUMBER 08-18DF
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103

TECHNICIAN F.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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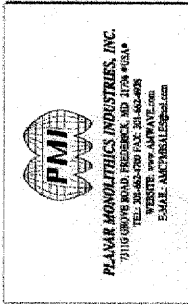
**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911145

**TABULATED DATA AS MEASURED FROM 0°C TO +85°C
@ 1.0 GHz, S/N: PM911144**



TABULATED TEST DATA FROM 0 TO + 85 DEGREES C @ 1 GHz
S/N PM911144

JOB NUMBER 90810PE
 CUSTOMER SDLVAC-0120-70LM
 MODEL NUMBER JS, 07103
 OPTION NUMBER

TECHNICIAN F.R.
 DATE 11-20-99

RF POWER IN (dBm)	+25 DEGREES C VIDEO OUT (VOLTS)	+25 DEGREES C LIMITED IF OUT (dBm)	+85 DEGREES C VIDEO OUT (VOLTS)	+85 DEGREES C LIMITED IF OUT (dBm)	0 DEGREES C VIDEO OUT (VOLTS)	0 DEGREES C LIMITED IF OUT (dBm)	0 DEGREES C LIMITED IF OUT (dBm)
3	2.38	-16.2	2.39	-15.9	2.37	-16.4	-16.4
2	2.36	-16.2	2.38	-15.9	2.35	-16.4	-16.4
1	2.34	-16.2	2.36	-15.9	2.32	-16.4	-16.4
0	2.31	-16.2	2.34	-15.9	2.29	-16.4	-16.4
-5	2.17	-16.2	2.18	-15.9	2.15	-16.4	-16.4
-10	2.05	-16.2	2.06	-15.9	2.04	-16.4	-16.4
-15	1.904	-16.2	1.913	-15.9	1.892	-16.4	-16.4
-20	1.778	-16.2	1.783	-15.9	1.766	-16.4	-16.4
-25	1.641	-16.2	1.636	-15.9	1.634	-16.4	-16.4
-30	1.494	-16.2	1.497	-15.9	1.484	-16.4	-16.4
-35	1.382	-16.2	1.383	-15.9	1.372	-16.4	-16.4
-40	1.24	-16.2	1.228	-15.9	1.238	-16.4	-16.4
-45	1.102	-16.2	1.101	-15.9	1.096	-16.4	-16.4
-50	0.99	-16.2	0.978	-15.9	0.983	-16.4	-16.4
-55	0.858	-16.3	0.838	-15.9	0.86	-16.5	-16.5
-60	0.699	-16.5	0.703	-15.9	0.699	-16.6	-16.6
-65	0.574	-16.6	0.577	-16	0.566	-16.8	-16.8
-70	0.418	-18	0.423	-16.9	0.401	-18.4	-18.4
-72	0.369	-18.7	0.377	-17.7	0.352	-19.5	-19.5
-73	0.349	-19.2	0.358	-18.1	0.332	-20	-20
-74	0.332	-19.7	0.343	-18.5	0.317	-20.6	-20.6
-75	0.321	-20.1	0.334	-18.8	0.306	-21.7	-21.7
DC POWER @ +5 VOLTS	+85 mA		+87 mA		+85 mA		
DC POWER @ -5 VOLTS	-134mA		-137 mA		-133 mA		
LOG SLOPE							
BEST FIT STRAIGHT LINE	26.7335	mV/dB	1.16		0.80		
LOG ERROR IN dB	0.73		-0.54		-1.37		
LOG ERROR IN dB	-0.73						

* LOG ERROR IS CALCULATED AT 77 dB DYNAMIC RANGE (+3 dBm TO -74 dBm) USING LOG SLOPE AT +25 DEGREES C AS A REFERENCE

NOVEMBER 22th, 2000

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SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER

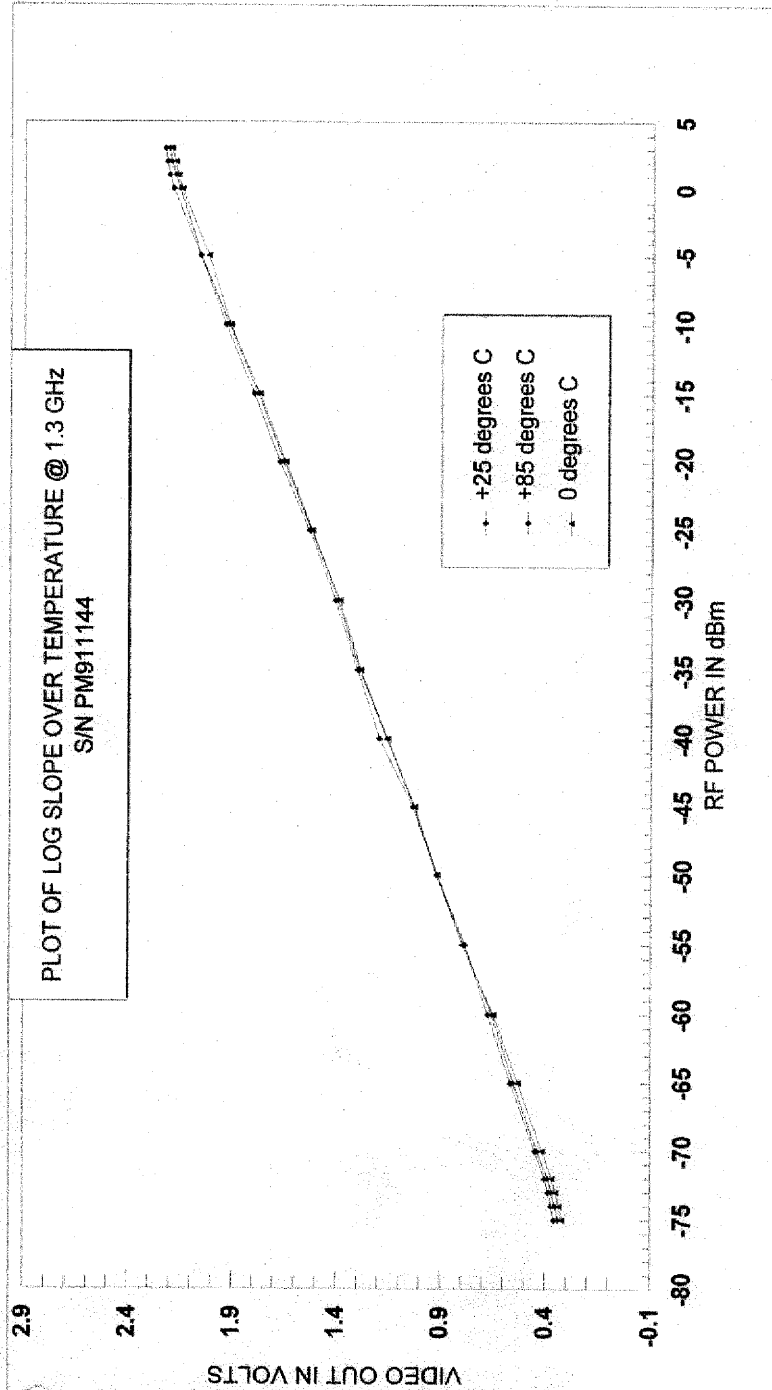
REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911145

PLOT OF LOG SLOPE OVER TEMPERATURE @ 1.3 GHZ
AS MEASURED @ +25°C, +85°C & 0°C S/N: PM911144


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 7311 G ROVE ROAD, FREDERICK, MD 21704-4158
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JOB NUMBER 90618PE
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103
 TECHNICIAN F.R.
 DATE 11-30-99

NOVEMBER 22th, 2000

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 Tel: 301-662-4700 Fax: 301-662-4938 Website: www.AMWAVE.com E-mail: amcpmi@aol.com

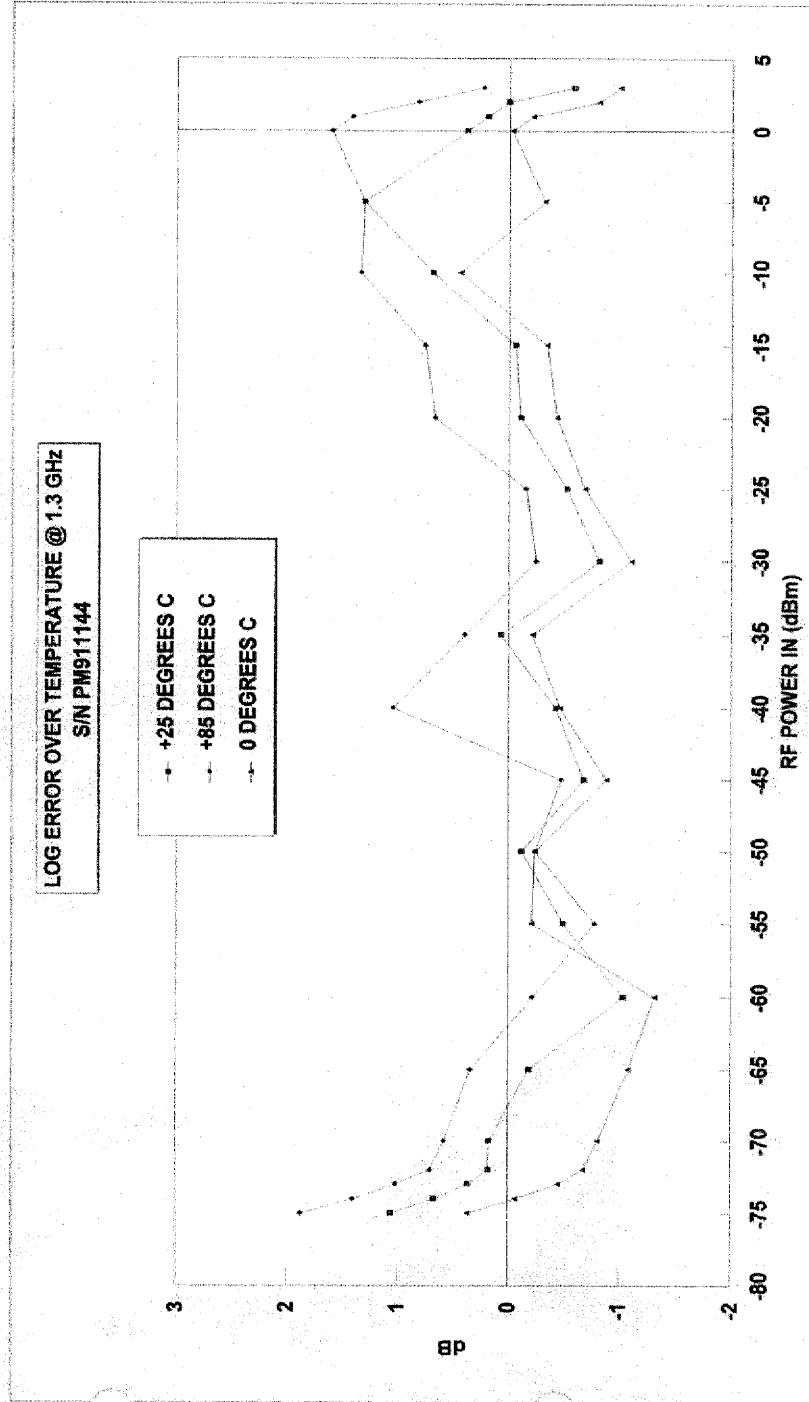
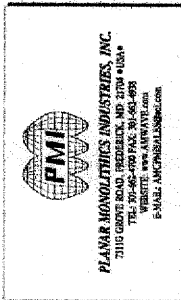
SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911145

PLOT OF LOG ERROR OVER TEMPERATURE @ 1.3 GHz
AS MEASURED @ +25°C, +85°C & 0°C, S/N: PM911144



JOB NUMBER 90618PE
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103
 TECHNICIAN F.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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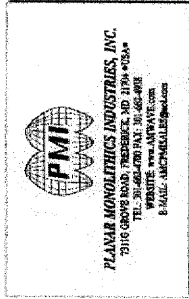
**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911145

**TABULATED DATA AS MEASURED FROM 0 °C TO +85 °C
@ 1.3.GHz, S/N: PM911144**



TABULATED TEST DATA FROM 0 TO +85 DEGREES C @ 1.3 GHz
S/N PM911144

JOB NUMBER 90610PE
 CUSTOMER PLANAR MONOLITHICS INDUSTRIES, INC.
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103

TECHNICIAN F.R.
 DATE 11-20-99

RF POWER IN (dbm)	+25 DEGREES C		+45 DEGREES C		+65 DEGREES C		+85 DEGREES C	
	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)
3	2.21	-16.2	2.23	-15.8	2.23	-15.8	2.23	-16.4
2	2.2	-16.2	2.22	-15.8	2.22	-15.8	2.18	-16.4
1	2.18	-16.2	2.21	-15.8	2.21	-15.8	2.17	-16.4
0	2.16	-16.2	2.19	-15.8	2.19	-15.8	2.15	-16.4
-5	2.06	-16.2	2.06	-15.8	2.06	-15.8	2.02	-16.4
-10	1.922	-16.2	1.938	-15.8	1.938	-15.8	1.916	-16.4
-15	1.781	-16.2	1.801	-15.8	1.801	-15.8	1.774	-16.4
-20	1.657	-16.2	1.676	-15.8	1.676	-15.8	1.649	-16.4
-25	1.524	-16.2	1.533	-15.8	1.533	-15.8	1.52	-16.4
-30	1.394	-16.2	1.408	-15.8	1.408	-15.8	1.387	-16.4
-35	1.293	-16.2	1.301	-15.8	1.301	-15.8	1.286	-16.4
-40	1.158	-16.2	1.194	-15.8	1.194	-15.8	1.157	-16.4
-45	1.029	-16.2	1.034	-15.8	1.034	-15.8	1.024	-16.4
-50	0.92	-16.2	0.917	-15.8	0.917	-15.8	0.917	-16.4
-55	0.788	-16.3	0.781	-15.8	0.781	-15.8	0.795	-16.4
-60	0.652	-16.4	0.672	-15.9	0.672	-15.9	0.645	-16.6
-65	0.55	-16.6	0.563	-16	0.563	-16	0.528	-16.9
-70	0.436	-16.8	0.446	-16.1	0.446	-16.1	0.412	-17.7
-72	0.367	-17.8	0.4	-16.1	0.4	-16.1	0.366	-18.5
-73	0.367	-18.1	0.383	-17	0.383	-17	0.347	-18.8
-74	0.35	-18.5	0.368	-17.3	0.368	-17.3	0.332	-19.2
-75	0.335	-18.9	0.355	-17.5	0.355	-17.5	0.318	-19.5
DC POWER @ +5 VOLTS	+85 mA		+87 mA		+87 mA		+85 mA	
DC POWER @ +3 VOLTS	-134mA		-137 mA		-137 mA		-133 mA	
BEST FIT STRAIGHT LINE LOG SLOPE								
LOG ERROR IN dB	24.5559	mV/dB	1.60		1.60		0.44	
LOG ERROR IN dB	1.30		-0.78		-0.78		-1.32	
LOG ERROR IN dB	-1.04							

* LOG ERROR IS CALCULATED AT 77 dB DYNAMIC RANGE (+3 dbm TO -74 dbm) USING LOG SLOPE AT +25 DEGREES C AS A REFERENCE

NOVEMBER 22th, 2000

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**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
TEST ENGINEER : FRANK RETHMEIER
SERIAL NUMBERS : PM911143, PM911144 AND PM911146

SECTION 3

FINAL TEST DATA

AND

**DATA OVER
TEMPERATURE**

ON

**700 TO 1,300 MHz
(0.3 TO 2.0 GHz UNITS ALSO AVAILABLE)**

25nS HIGH SPEED

≥78dB ULTRA-HIGH DYNAMIC RANGE

LOW AM/PM CONVERSION

**SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER COMPACT
(SDLVAC)**

**PMI MODEL No:
SDLVAC-0120-70LM
WITH OPTIONS: 07103 & JS**

S/N: PM911146

NOVEMBER 22th, 2000

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**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
TEST ENGINEER : FRANK RETHMEIER
SERIAL NUMBERS : PM911143, PM911144 AND PM911146

FINAL TEST DATA ON S/N: PM911146

FORM: 304-SD



PLANAR MONOLITHICS INDUSTRIES
7311 G ROVE ROAD, FREDERICK, MD, 21704
TEL: (301)861-4938 FAX: (301)862-4938

JOB NO: 90618PE

**SUMMARY TEST DATA
ON
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER--SDLVA**

CUSTOMER: _____
JOB NO: 90618PE
MODEL NO: SDLVAC-0120-70LM
SERIAL NO: PM911146

TESTED BY: F.R.
DATE: 11-20-99

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	REMARKS QA/QC
1	FREQUENCY RANGE	0.7 TO 1.3 Ghz (min)	OK	✓
2	DYNAMIC RANGE	77 dB (min)	OK	✓
3	LOG LINEARITY -75 to 3 dBm	±1.5 dB (min)	+1.04dB -1.28dB	✓
	LOG LINEARITY 0 to +85°C	±2.5dB (min)	+2.09dB -1.70dB	
4	LOG SLOPE	SEE PLOTS		
5	TSS (TANGENTIAL SENSITIVITY)	- 76 dBm (min)	- 81dBm	✓
6	VSWR (INPUT)	1.8:1 (max)	1.65:1	✓
7	LIMITED OUTPUT	- 20 dBm (min)	OK	✓
8	RISE TIME	25 nSEC (max)	21nS	✓
9	FALL TIME	30 nSEC (max)	-25nS	✓
10	CURRENT DRAW + 5 Volts	115 mA (max)	+91mA	✓
11	CURRENT DRAW - 5 Volts	145 mA (max)	-135mA	✓

PRODUCTION MANAGER APPROVAL: _____ DATED: NOV 22 1999
QA/QC APPROVAL: DATED: NOV 22 1999

NOVEMBER 22th, 2000

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**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

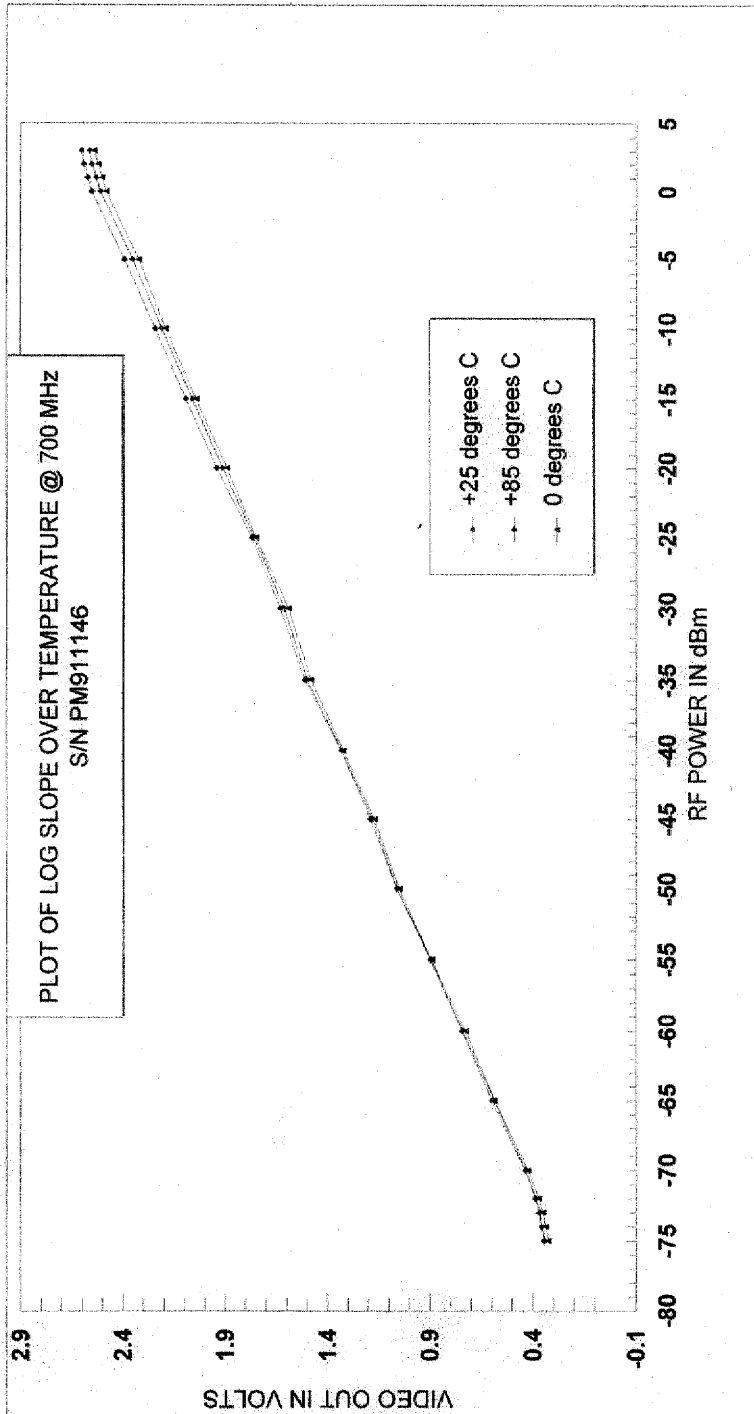
REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

**PLOT OF LOG SLOPE OVER TEMPERATURE @ 700 MHZ
AS MEASURED @ +25°C, +85°C & 0°C S/N: PM911146**

PMI
 PLANAR MONOLITHICS INDUSTRIES, INC.
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 TEL: 301-662-4700 FAX: 301-662-4938
 WWW.AMWAVE.COM
 E-MAIL: AMCPMI@AOL.COM



JOB NUMBER 90618PE
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103
 TECHNICIAN F.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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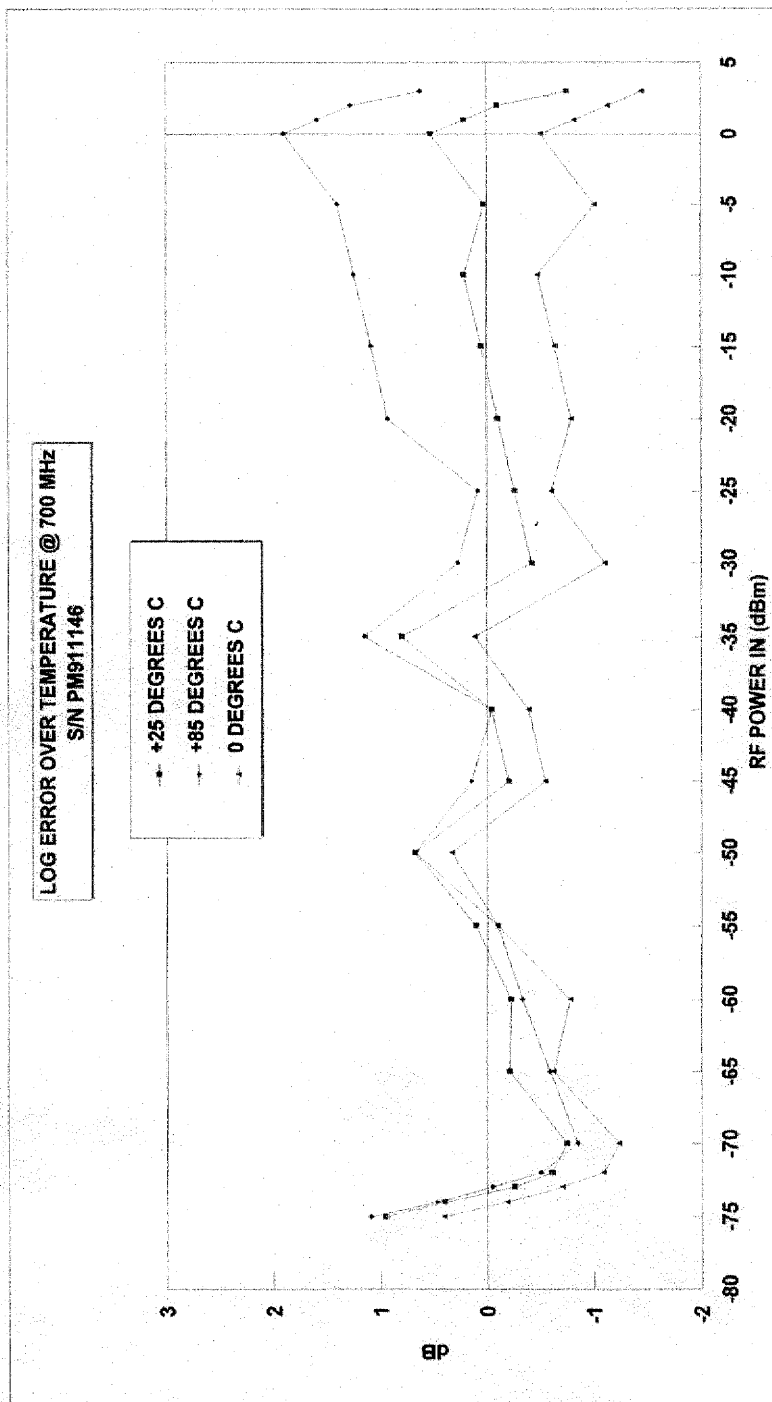
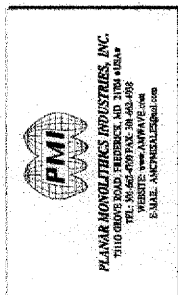
**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

**PLOT OF LOG ERROR OVER TEMPERATURE @ 700 MHz
AS MEASURED @ +25°C, +85°C & 0°C, S/N: PM911146**



JOB NUMBER 90018PE
 CUSTOMER SDLVAC-0120-70LM
 MODEL NUMBER JS, 07103
 OPTION NUMBER JS, 07103
 TECHNICIAN F.R.
 DATE 11.20.99

NOVEMBER 22th, 2000

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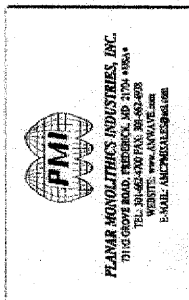
SUMMARY TEST DATA SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

TABULATED DATA AS MEASURED FROM 0°C TO +85°C @ 700 MHz, S/N: PM911146



TABULATED TEST DATA FROM 0 TO +85 DEGREES C @ 700 MHz
S/N PM911146

JOB NUMBER 9864RPF
 CUSTOMER SOLVAC-0120-70LM
 MODEL NUMBER JS, 07103
 OPTION NUMBER

TECHNICIAN F.R.
 DATE 11-20-99

RF POWER IN (dBm)	+25 DEGREES C VIDEO OUT (VOLTS)	+25 DEGREES C LIMITED IF OUT (dBm)	+48 DEGREES C VIDEO OUT (VOLTS)	+48 DEGREES C LIMITED IF OUT (dBm)	+85 DEGREES C VIDEO OUT (VOLTS)	+85 DEGREES C LIMITED IF OUT (dBm)	9 DEGREES C VIDEO OUT (VOLTS)	9 DEGREES C LIMITED IF OUT (dBm)
3	2.56	-15.8	2.6	-15.3	2.54	-16	2.52	-16
2	2.55	-15.8	2.59	-15.3	2.57	-16	2.5	-16
1	2.53	-15.8	2.57	-15.3	2.5	-16	2.48	-16
0	2.51	-15.8	2.55	-15.3	2.39	-16	2.32	-16
-5	2.36	-15.8	2.39	-15.3	2.24	-16	2.19	-16
-10	2.21	-15.8	2.24	-15.3	2.09	-16	2.04	-16
-15	2.06	-15.8	2.09	-15.3	1.94	-16	1.89	-16
-20	1.91	-15.8	1.94	-15.3	1.77	-16	1.75	-16
-25	1.76	-15.8	1.77	-15.3	1.63	-16	1.59	-16
-30	1.61	-15.8	1.63	-15.3	1.51	-16	1.48	-16
-35	1.5	-15.8	1.51	-15.3	1.33	-16	1.32	-16
-40	1.33	-15.8	1.33	-15.3	1.19	-16	1.17	-16
-45	1.18	-15.8	1.19	-15.3	1.06	-16	1.05	-16
-50	1.06	-15.8	1.06	-15.3	0.892	-16	0.892	-16
-55	0.898	-15.8	0.892	-15.4	0.74	-16.2	0.727	-16.2
-60	0.743	-16	0.74	-15.5	0.587	-16.5	0.586	-16.5
-65	0.598	-16.3	0.587	-15.8	0.434	-18.1	0.423	-18.1
-70	0.437	-17.6	0.434	-16.9	0.366	-19.3	0.369	-19.3
-72	0.383	-18.8	0.366	-17.8	0.37	-18.2	0.351	-19.9
-73	0.364	-19.5	0.37	-18.2	0.356	-20.5	0.337	-20.5
-74	0.354	-19.6	0.356	-18.7	0.345	-19.1	0.325	-21
-75	0.341	-21	0.345	-19.1				
DC POWER @ +3 VOLTS	+91 mA		+76 mA		+86 mA		+86 mA	
DC POWER @ -5 VOLTS	-129 mA		-135 mA		-129 mA		-129 mA	
LOG SLOPE								
BEST FIT STRAIGHT LINE	29.0877	mV/dB						
LOG ERROR IN dB	0.80		1.90		0.33		0.33	
LOG ERROR IN dB	-0.76		-0.85		-1.45		-1.45	

*LOG ERROR IS CALCULATED AT 77 dB DYNAMIC RANGE (+3 dBm TO -74 dBm) USING LOG SLOPE AT +25 DEGREES C AS A REFERENCE

NOVEMBER 22th, 2000

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**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

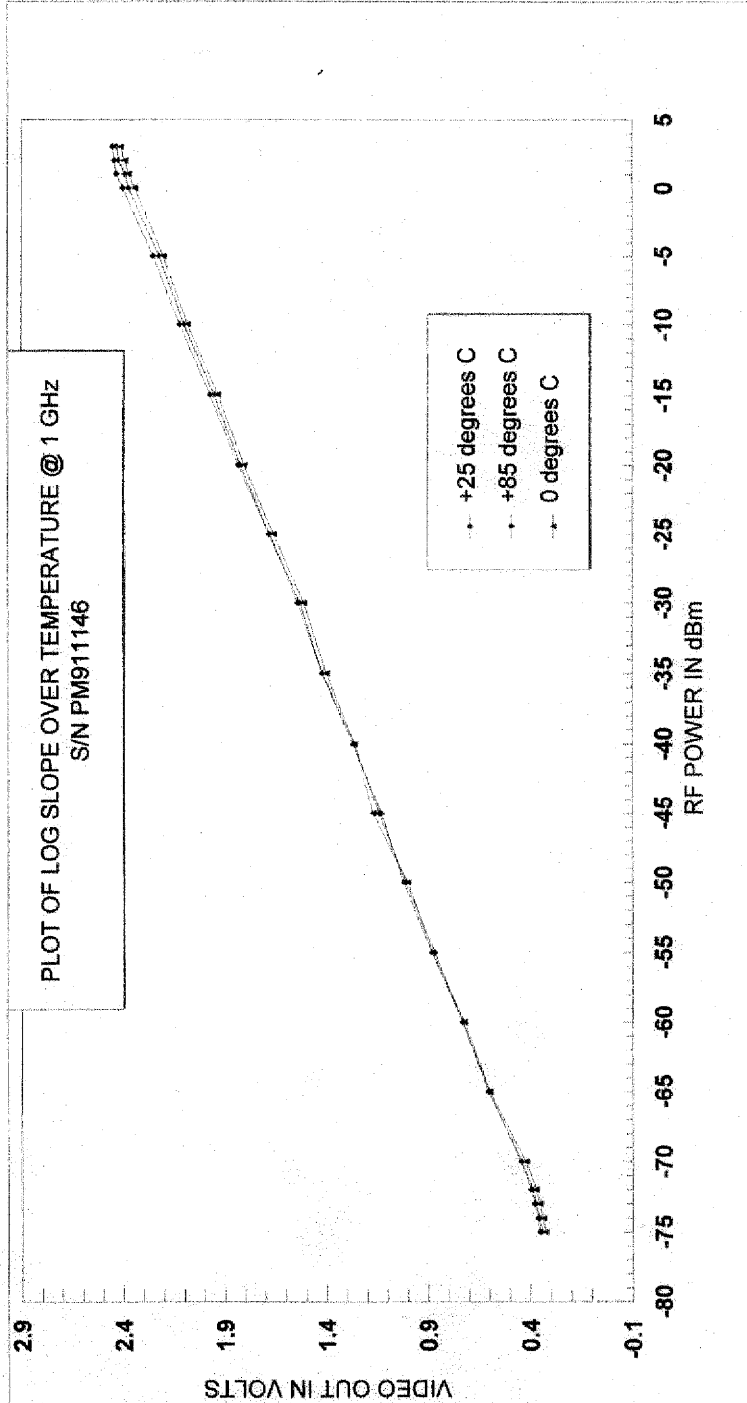
REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

**PLOT OF LOG SLOPE OVER TEMPERATURE @ 1.0 GHZ
AS MEASURED @ +25°C, +85°C & 0°C S/N: PM911146**


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JOB NUMBER 90618PE
 CUSTOMER 3DLVAC-0120-70LM
 MODEL NUMBER JS, 07103
 OPTION NUMBER
 TECHNICIAN F.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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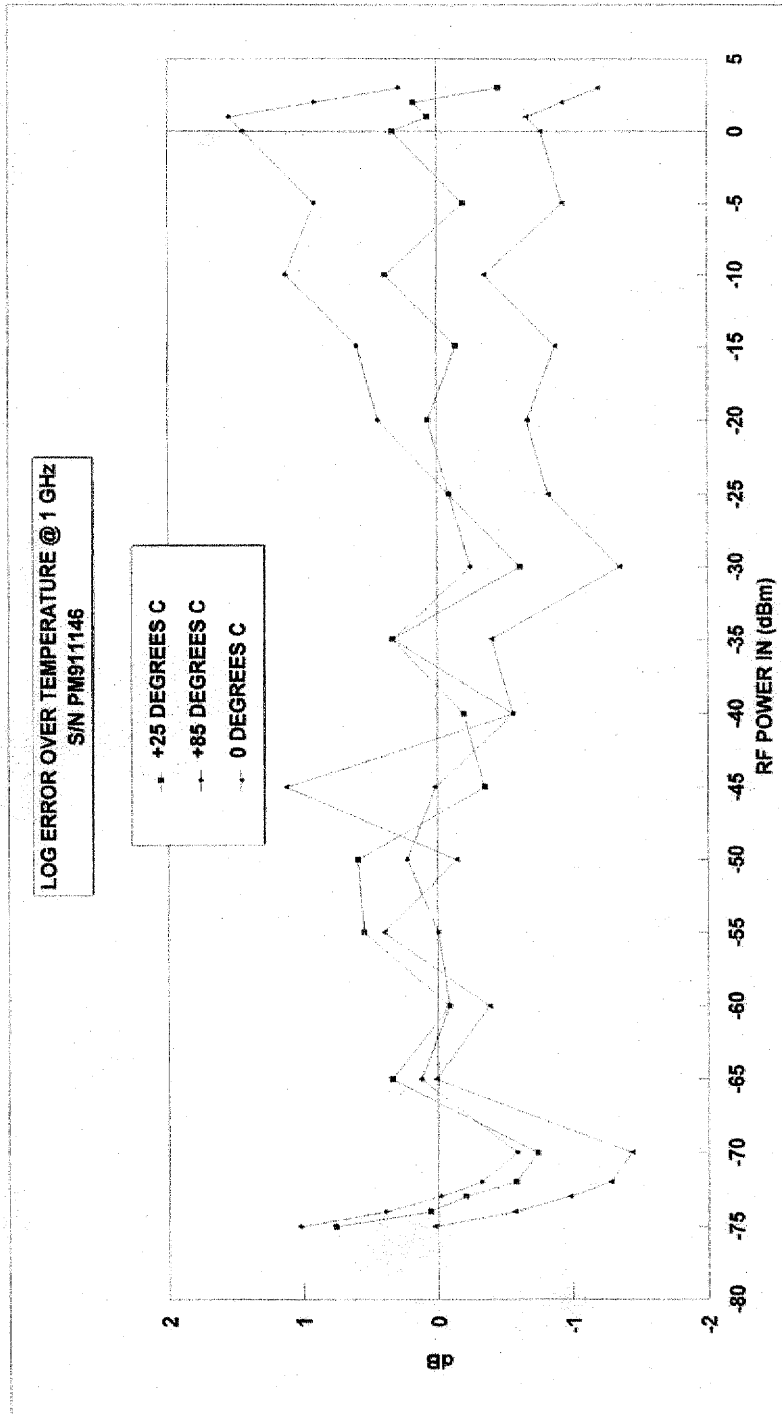
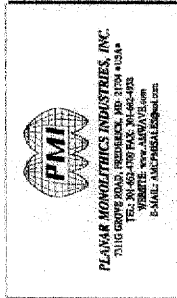
**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

**PLOT OF LOG ERROR OVER TEMPERATURE @ 1.0 GHz
AS MEASURED @ +25°C, +85°C & 0°C, S/N: PM911146**



JOB NUMBER
 CUSTOMER
 MODEL NUMBER
 OPTION NUMBER

SDLVAC-0120-70LM
 JS, 07103

TECHNICIAN
 DATE

F.R.
 11-20-99

NOVEMBER 22th, 2000

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**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

**TABULATED DATA AS MEASURED FROM 0 °C TO +85 °C
@ 1.0 GHz, S/N: PM911146**

TABULATED TEST DATA FROM 0 TO +85 DEGREES C @ 1 GHz
S/N PM911146

JOB NUMBER 94618PE
 CUSTOMER SOLVAC-0120-70LM
 MODEL NUMBER JS, 87103
 OPTION NUMBER

TECHNICIAN FR
 DATE 11-20-99

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RF POWER IN (dBm)	+25 DEGREES C VIDEO OUT (VOLTS)	+25 DEGREES C LIMITED IF OUT (dBm)	+85 DEGREES C VIDEO OUT (VOLTS)	+85 DEGREES C LIMITED IF OUT (dBm)	+9 DEGREES C VIDEO OUT (VOLTS)	+9 DEGREES C LIMITED IF OUT (dBm)
3	2.43	-16	2.45	-15.5	2.41	-16.1
2	2.42	-16	2.44	-15.5	2.39	-16.1
1	2.39	-16	2.43	-15.5	2.37	-16.1
0	2.37	-16	2.4	-15.5	2.34	-16.1
-5	2.22	-16	2.25	-15.5	2.2	-16.1
-10	2.1	-16	2.12	-15.5	2.08	-16.1
-15	1.95	-16	1.97	-15.5	1.93	-16.1
-20	1.82	-16	1.83	-15.5	1.8	-16.1
-25	1.68	-16	1.68	-15.5	1.66	-16.1
-30	1.53	-16	1.54	-15.5	1.51	-16.1
-35	1.42	-16	1.42	-15.5	1.4	-16.1
-40	1.27	-16	1.26	-15.5	1.26	-16.1
-45	1.13	-16	1.14	-15.5	1.17	-16.1
-50	1.02	-16	1.01	-15.5	1	-16.1
-55	0.883	-16	0.868	-15.6	0.879	-16.1
-60	0.73	-16.1	0.73	-15.6	0.722	-16.2
-65	0.606	-16.3	0.6	-15.7	0.597	-16.5
-70	0.441	-17.5	0.445	-16.6	0.422	-18
-72	0.391	-18.5	0.398	-17.4	0.372	-19
-73	0.374	-19	0.379	-17.9	0.353	-19.5
-74	0.354	-19.6	0.363	-18.3	0.337	-20.1
-75	0.346	-20	0.353	-18.7	0.326	-20.6
DC POWER @ +3 VOLTS	+91 mA		+76 mA		+86 mA	
DC POWER @ -5 VOLTS	-129mA		-135 mA		-129 mA	
BEST FIT STRAIGHT LINE	27.1427	mV/dB				
LOG ERROR* IN dB	0.59		1.54		1.12	
LOG ERROR* IN dB	-0.74		-0.59		-1.44	

* LOG ERROR IS CALCULATED AT 77 dB DYNAMIC RANGE (+3 dBm TO -74 dBm) USING LOG SLOPE AT +25 DEGREES C AS A REFERENCE

NOVEMBER 22th, 2000

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**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100

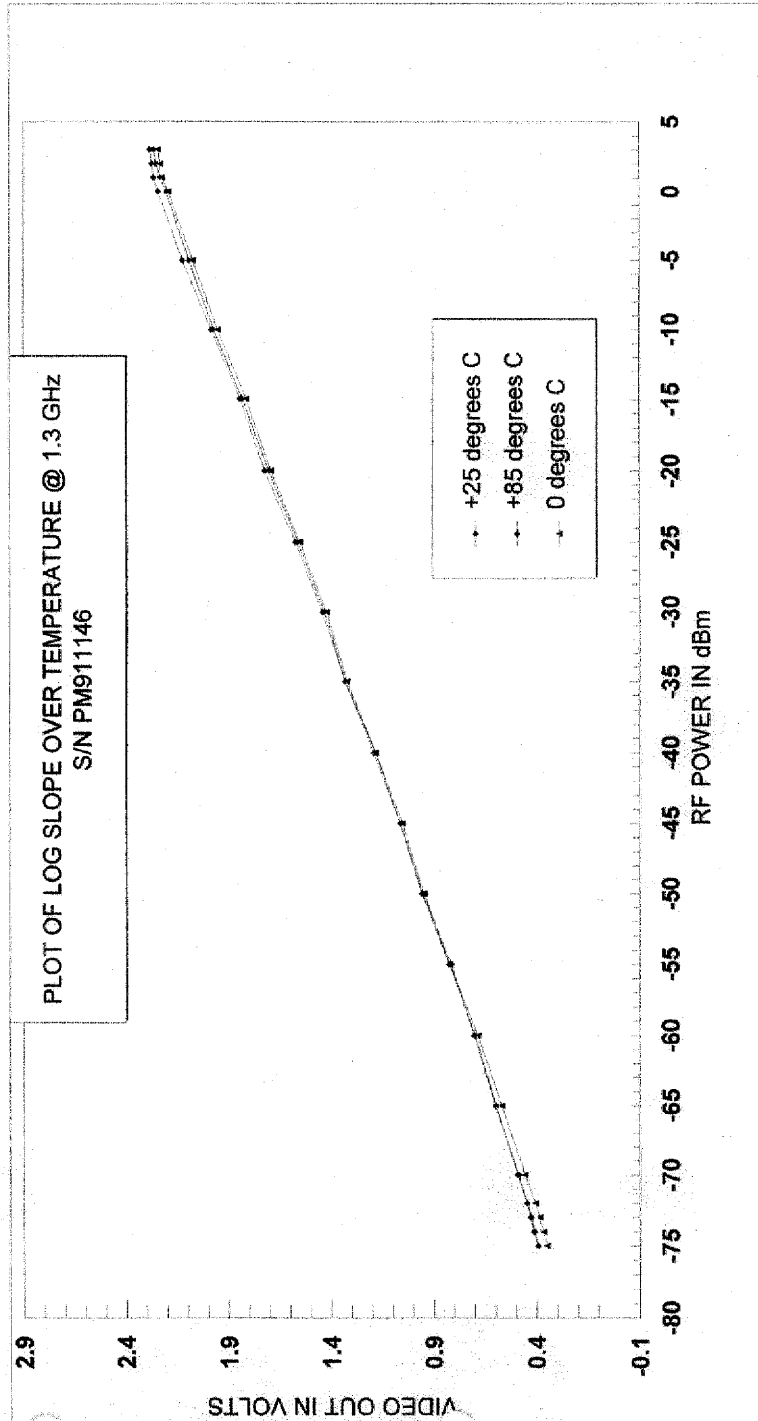


PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

**PLOT OF LOG SLOPE OVER TEMPERATURE @ 1.3 GHZ
AS MEASURED @ +25°C, +85°C & 0°C S/N: PM911146**



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JOB NUMBER 90618PE
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103
 TECHNICIAN F.R.
 DATE 11-20-99

NOVEMBER 22th, 2000

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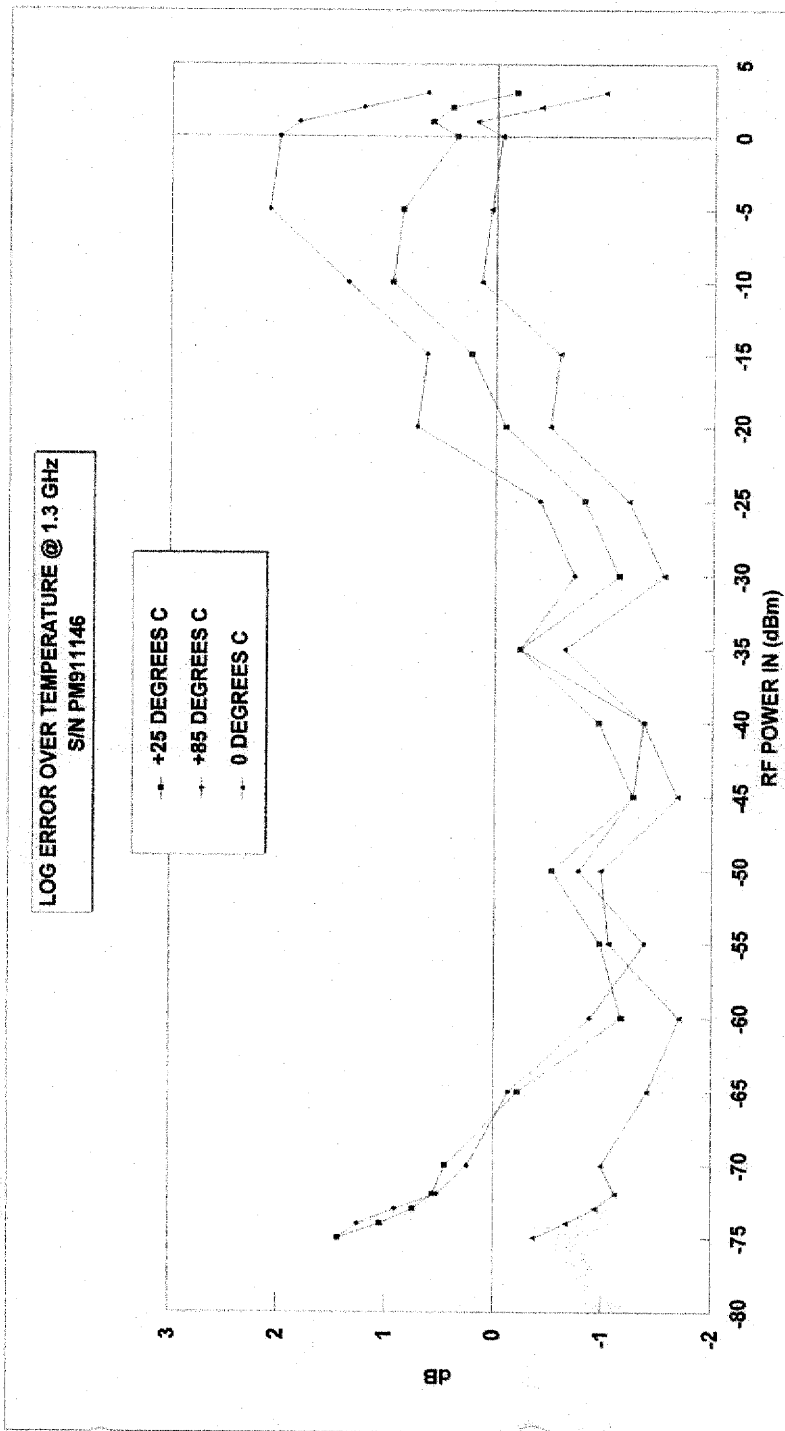
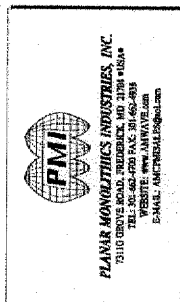
**SUMMARY TEST DATA
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER**

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

**PLOT OF LOG ERROR OVER TEMPERATURE @ 1.3 GHz
 AS MEASURED @ +25°C, +85°C & 0°C, S/N: PM911146**



JOB NUMBER: 0816RDE
 CUSTOMER: SDLVAC-0120-70LM
 MODEL NUMBER: JS, 07103
 OPTION NUMBER: JS, 07103
 TECHNICIAN: F.R.
 DATE: 11-20-99

NOVEMBER 22th, 2000

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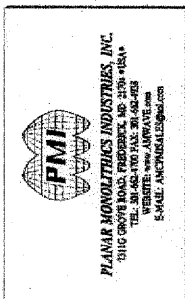
SUMMARY TEST DATA SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER

REPORT No: PT15-SDLVAC-PW-1100



PMI MODEL No : SDLVAC-0120-70LM -07103-JS
 TEST ENGINEER : FRANK RETHMEIER
 SERIAL NUMBERS : PM911143, PM911144 AND PM911146

TABULATED DATA AS MEASURED FROM 0°C TO +85°C @ 1.3 GHz, S/N: PM911146



TABULATED TEST DATA FROM 0 TO +85 DEGREES C @ 1.3 GHz
S/N PM911146

JOB NUMBER 9061RPE
 CUSTOMER
 MODEL NUMBER SDLVAC-0120-70LM
 OPTION NUMBER JS, 07103

TECHNICIAN F.R.
 DATE 11-20-99

RF POWER IN (dBm)	+25 DEGREES C		+25 DEGREES C		+66 DEGREES C		+66 DEGREES C		+85 DEGREES C		+85 DEGREES C	
	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)
3	2.25	-15.9	2.28	-15.9	2.24	-15.5	2.24	-15.5	2.24	-16.1	2.24	-16.1
2	2.25	-15.9	2.27	-15.9	2.27	-15.5	2.23	-15.5	2.23	-16.1	2.23	-16.1
1	2.23	-15.9	2.26	-15.9	2.26	-15.5	2.22	-15.5	2.22	-16.1	2.22	-16.1
0	2.2	-15.9	2.24	-15.9	2.24	-15.5	2.19	-15.5	2.19	-16.1	2.19	-16.1
-5	2.09	-15.9	2.12	-15.9	2.12	-15.5	2.07	-15.5	2.07	-16.1	2.07	-16.1
-10	1.97	-15.9	1.98	-15.9	1.98	-15.5	1.95	-15.5	1.95	-16.1	1.95	-16.1
-15	1.83	-15.9	1.84	-15.9	1.84	-15.5	1.81	-15.5	1.81	-16.1	1.81	-16.1
-20	1.7	-15.9	1.72	-15.9	1.72	-15.5	1.69	-15.5	1.69	-16.1	1.69	-16.1
-25	1.56	-15.9	1.57	-15.9	1.57	-15.5	1.55	-15.5	1.55	-16.1	1.55	-16.1
-30	1.43	-15.9	1.44	-15.9	1.44	-15.5	1.42	-15.5	1.42	-16.1	1.42	-16.1
-35	1.33	-15.9	1.33	-15.9	1.33	-15.5	1.32	-15.5	1.32	-16.1	1.32	-16.1
-40	1.19	-15.9	1.18	-15.9	1.18	-15.5	1.16	-15.5	1.16	-16.1	1.16	-16.1
-45	1.06	-15.9	1.06	-15.9	1.06	-15.5	1.05	-15.5	1.05	-16.1	1.05	-16.1
-50	0.956	-15.9	0.95	-15.9	0.95	-15.5	0.945	-15.5	0.945	-16.1	0.945	-16.1
-55	0.823	-16	0.813	-16	0.813	-15.5	0.821	-15.5	0.821	-16.1	0.821	-16.1
-60	0.696	-16.1	0.703	-16.1	0.703	-15.6	0.683	-15.6	0.683	-16.3	0.683	-16.3
-65	0.597	-16.2	0.599	-16.2	0.599	-15.8	0.568	-15.8	0.568	-16.4	0.568	-16.4
-70	0.491	-16.6	0.486	-16.6	0.486	-16	0.456	-16	0.456	-17	0.456	-17
-72	0.445	-17	0.444	-17	0.444	-16.4	0.404	-16.4	0.404	-17.7	0.404	-17.7
-73	0.425	-17.2	0.429	-17.2	0.429	-16.5	0.384	-16.5	0.384	-18.1	0.384	-18.1
-74	0.408	-17.5	0.413	-17.5	0.413	-16.6	0.366	-16.6	0.366	-18.5	0.366	-18.5
-75	0.393	-17.8	0.393	-17.8	0.393	-17	0.349	-17	0.349	-19	0.349	-19
DC POWER @ -5 VOLTS	+91 mA		+76 mA		+76 mA		+86 mA		+86 mA		+86 mA	
DC POWER @ -5 VOLTS	-129mA		-135 mA		-135 mA		-129 mA		-129 mA		-129 mA	
LOG SLOPE												
BEST FIT STRAIGHT LINE	24.4413	mV/dB	24.4413	mV/dB	24.4413	mV/dB	24.4413	mV/dB	24.4413	mV/dB	24.4413	mV/dB
LOG ERROR IN dB	1.04		2.09		2.09		0.18		0.18		0.18	
LOG ERROR IN dB	-1.28		-1.39		-1.39		-1.70		-1.70		-1.70	

*LOG ERROR IS CALCULATED AT 77 dB DYNAMIC RANGE (+3 dBm TO -74 dBm) USING LOG SLOPE AT +25 DEGREES C AS A REFERENCE

NOVEMBER 22th, 2000

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