

FORM: 356-SD 05/30/03



PLANAR MONOLITHICS INDUSTRIES  
 7311-G GROVE ROAD, FREDERICK, MD 21704  
 TEL: 301-631-1579 FAX: 301-662-2029  
 URL: WWW.PLANARMONOLITHICS.COM  
 EMAIL: SALES@PLANARMONOLITHICS.COM

## SUMMARY TEST DATA ON SUCCESSIVE DETECTION LOG VIDEO AMPLIFIED--SDLVA

CUSTOMER: <u>NORTHROP GRUMMAN</u>	NORTHROP PART NO: <u>990754-1 REV. C</u>
MODEL NO: <u>SLVAC-06135M-A08-LA</u>	JOB NO: <u>P507164</u>
OPTION NO: _____	TESTED BY: <u>R.AFABLE</u>
SERIAL NO: <u>PM507164</u>	TEMPERATURE: <u>25 °C</u>
	DATE: <u>07/08/2005</u>

TEST ITEM NO:	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	REMARKS QA/QC
1	FREQUENCY RANGE	600 TO 1350 MHz	600 TO 1.35 GHz	✓
2	INPUT VSWR	1.8:1 (MAX)	1.15:1	✓
3	LOGGING RANGE	-65 dB TO +5 dB (MIN) PLOTS ATTACHED	-65 dB TO +5 dB	✓
4	TSS	-65 dBm (MIN)	-66 dBm	✓
5	LOG SLOPE VARIATION WITH FREQUENCY	±0.7 mV/dB MAX (over any 80 MHz RF bandwidth from 750 MHz to 1350 MHz) ±1.0 mV/dB MAX (over any 80 MHz RF bandwidth from 600 MHz to 750 MHz) PLOTS ATTACHED	0.68 mV/dB  0.50 mV/dB	✓
6	LOG LINEARITY: @ -60 TO 0 dBm @ -65 TO +5 dBm	±1.2 dB (MAX) ±1.5 dB (MAX)	-0.91 dB -1.44 dB	✓
7	RISE TIME (10% TO 90% POINTS)	25 nSec (MAX)	14 nS	✓
8	FALL TIME (90% TO 10% POINTS)	30 nSec (MAX)	20 nS	✓
9	SETTLING TIME	40 nSEC (MAX)	39 nS	✓
10	LIMITED IF OUTPUT	-14 dBm (TYPICAL)	-16.19 dBm TO -17.49 dBm	✓
11	MINIMUM VIDEO OUTPUT VOLTAGE @ 5dBm (Slope connected to ground with 511 Ohm resistor) (Offset connected to ground with 511 Ohm resistor)	2 Volts (MIN)	2.18 VDC	✓
12	DC POWER @ +5 VDC (NO LOAD)	30 mA (MAX)	13 mA	✓
13	DC POWER @ -5 VDC (NO LOAD)	170 mA (MAX)	119 mA	✓

PRODUCTION MANAGER APPROVAL: *Scott H. Clague*

DATED: 7/11/05

QA / QC APPROVAL: *W. H. H.*

DATED: 7/11/05

TABULATED TEST DATA @ 840 MHz, 920 MHz AND 1000 MHz @ +25 DEGREES C

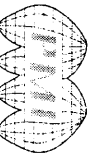


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TECHNICIAN: RAFABLE MODEL NUMBER: SDLVAC-0613M-A08-LA  
 DATE: 07/07/2005 SERIAL NUMBER: PM507164

RF POWER IN (dbm)	840 MHz VIDEO OUT (VOLTS)	840 MHz		920 MHz		1000 MHz	
		LIMITED IF OUT (dbm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dbm)	VIDEO OUT (VOLTS)
5	1.359	-16.28	1.327	-16.24	1.3	-16.28	
0	1.263	-16.25	1.233	-16.22	1.206	-16.25	
-5	1.125	-16.24	1.1	-16.21	1.074	-16.24	
-10	1.014	-16.24	0.989	-16.22	0.963	-16.25	
-15	0.877	-16.24	0.856	-16.24	0.833	-16.27	
-20	0.768	-16.25	0.749	-16.25	0.727	-16.28	
-25	0.647	-16.26	0.625	-16.25	0.606	-16.28	
-30	0.526	-16.25	0.508	-16.25	0.489	-16.28	
-35	0.414	-16.24	0.397	-16.25	0.379	-16.27	
-40	0.293	-16.25	0.277	-16.24	0.259	-16.24	
-45	0.177	-16.25	0.163	-16.2	0.144	-16.17	
-50	0.074	-16.28	0.059	-16.23	0.041	-16.2	
-55	-0.046	-16.4	-0.062	-16.38	-0.079	-16.39	
-60	-0.143	-16.56	-0.162	-16.61	-0.182	-16.66	
-65	-0.249	-16.93	-0.266	-17.06	-0.284	-17.16	
DC POWER @ +5 VOLTS	+12 mA						
DC POWER @ -5 VOLTS	-119 mA						
LOG SLOPE							
BEST FIT STRAIGHT LINE	23.2786	mV/dB	23.0729	mV/dB	22.9279	mV/dB	
LOG ERROR IN DB @ -65 - +5 DB	1.11		0.95		0.88		
LOG ERROR IN DB @ -60 - 0 DB	-0.61		-0.51		-0.46		
FREQUENCY FLATNESS							
LOG VIDEO FROM THE VALUE							
@ 1 GHz IN DB							

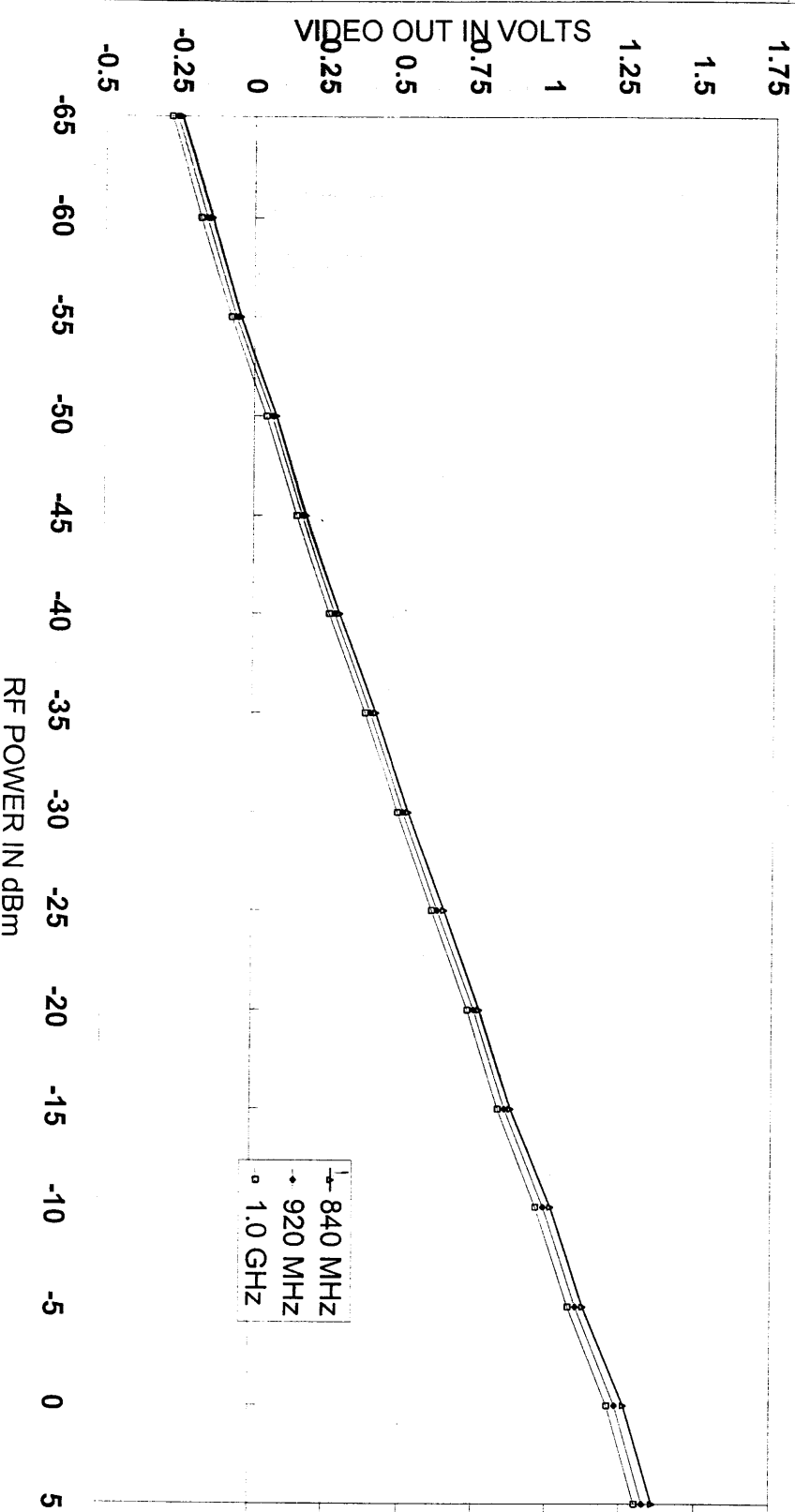
**TABULATED TEST DATA @ 840 MHz, 920 MHz AND 1000 MHz @ +25 DEGREES C**



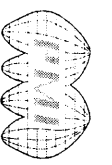
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TECHNICIAN: R.A.FABLE      MODEL NUMBER: SDLVAC-0613M-A08-LA  
 DATE: 07/07/2005      SERIAL NUMBER: PM507164

**PLOT OF LOG SLOPE OVER FREQUENCY**



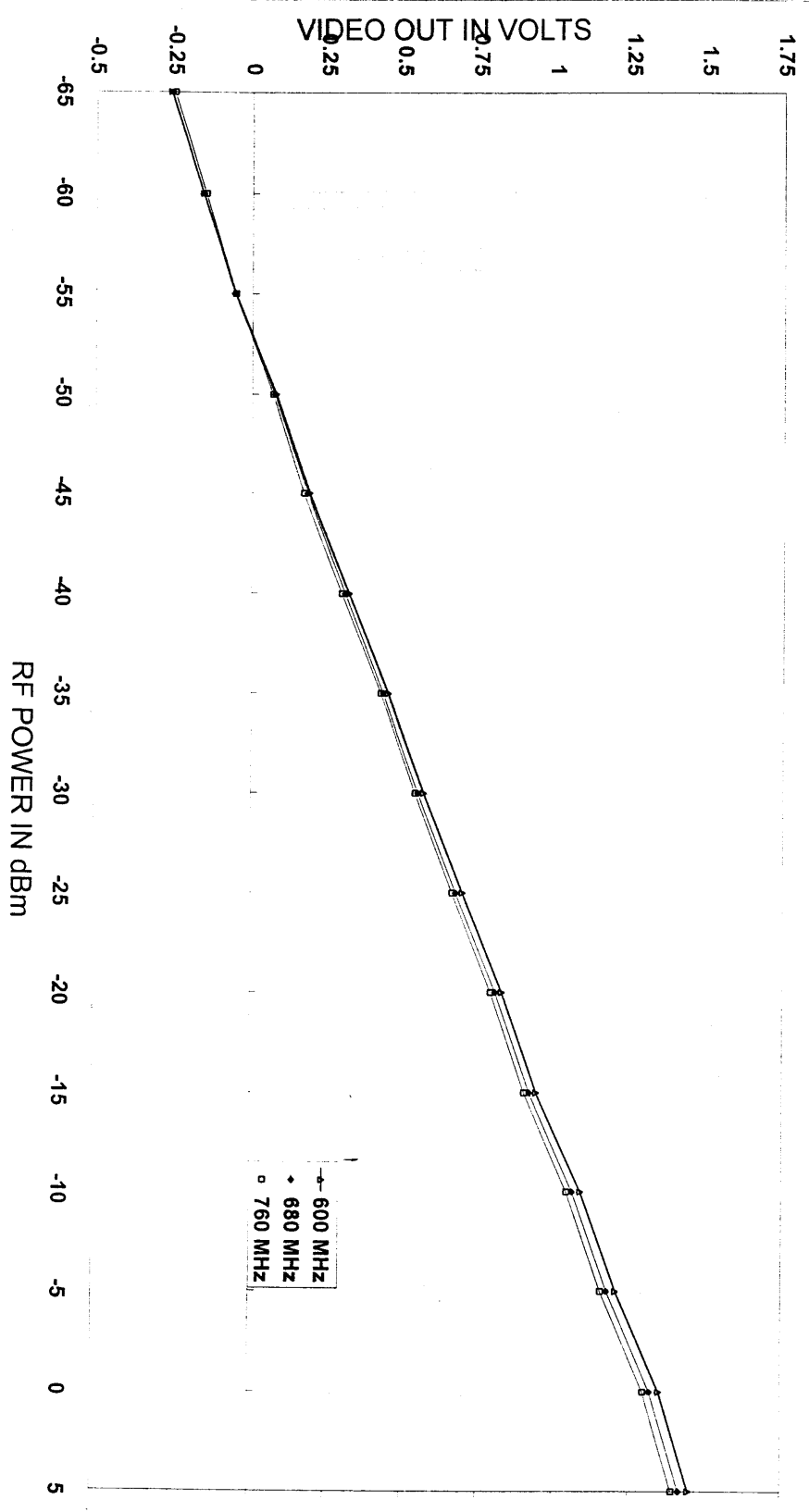
# TABULATED TEST DATA @ 600 MHz, 680 MHz AND 760 MHz @ +25 DEGREES C



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PLOT OF LOG SLOPE OVER FREQUENCY



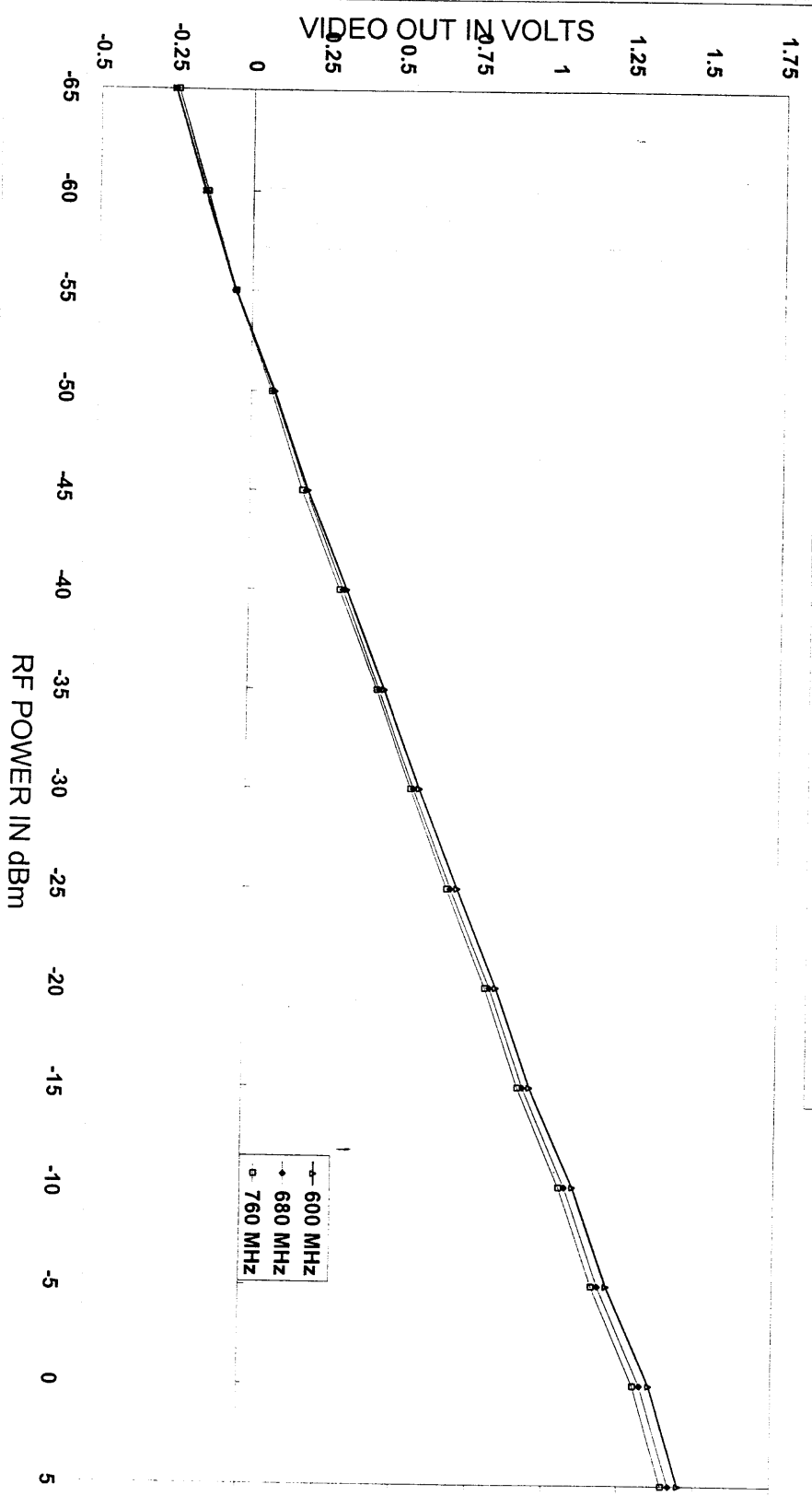
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TECHNICIAN: R.A.FABLE      MODEL NUMBER: SDLVAC-0613M-A08-LA  
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PLOT OF LOG SLOPE OVER FREQUENCY



TABULATED TEST DATA @ 1080 MHz, 1160 MHz AND 1240 MHz @ +25 DEGREES C

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TECHNICIAN: R.A.FABLE MODEL NUMBER: SDLVAC-0613M-A08-LA  
 DATE: 07/07/2005 SERIAL NUMBER: PM507164

RF POWER IN (dbm)	1080 MHz VIDEO OUT (VOLTS)	1080 MHz LIMITED IF OUT (dbm)	1160 MHz VIDEO OUT (VOLTS)	1160 MHz LIMITED IF OUT (dbm)	1240 MHz VIDEO OUT (VOLTS)	1240 MHz LIMITED IF OUT (dbm)
5	1.259	-16.26	1.22	-16.23	1.188	-16.19
0	1.169	-16.23	1.132	-16.24	1.098	-16.22
-5	1.039	-16.23	1.006	-16.25	0.977	-16.23
-10	0.93	-16.23	0.901	-16.26	0.874	-16.24
-15	0.804	-16.24	0.778	-16.27	0.754	-16.24
-20	0.701	-16.25	0.678	-16.27	0.653	-16.24
-25	0.583	-16.26	0.562	-16.26	0.539	-16.23
-30	0.468	-16.26	0.452	-16.25	0.43	-16.21
-35	0.359	-16.24	0.346	-16.21	0.324	-16.18
-40	0.243	-16.18	0.23	-16.14	0.208	-16.16
-45	0.132	-16.08	0.114	-16.12	0.096	-16.19
-50	0.03	-16.17	-0.001	-16.34	-0.008	-16.25
-55	-0.094	-16.44	-0.119	-16.58	-0.124	-16.43
-60	-0.202	-16.77	-0.221	-16.86	-0.238	-16.89
-65	-0.298	-17.29	-0.313	-17.4	-0.324	-17.49
DC POWER @ + 5 VOLTS	+12 mA					
DC POWER @ - 5 VOLTS	-119 mA					
LOG SLOPE						
BEST FIT STRAIGHT LINE	22.5329	mV/dB	22.2757	mV/dB	21.9371	mV/dB
LOG ERROR IN dB @ -65 + 65 dB	0.81		0.70		0.64	
LOG ERROR IN dB @ -60 - 0 dB	-0.39		-0.59		-0.44	
FREQUENCY FLATNESS						
LOG VIDEO FROM THE VALUE @ 1 GHz IN DB						

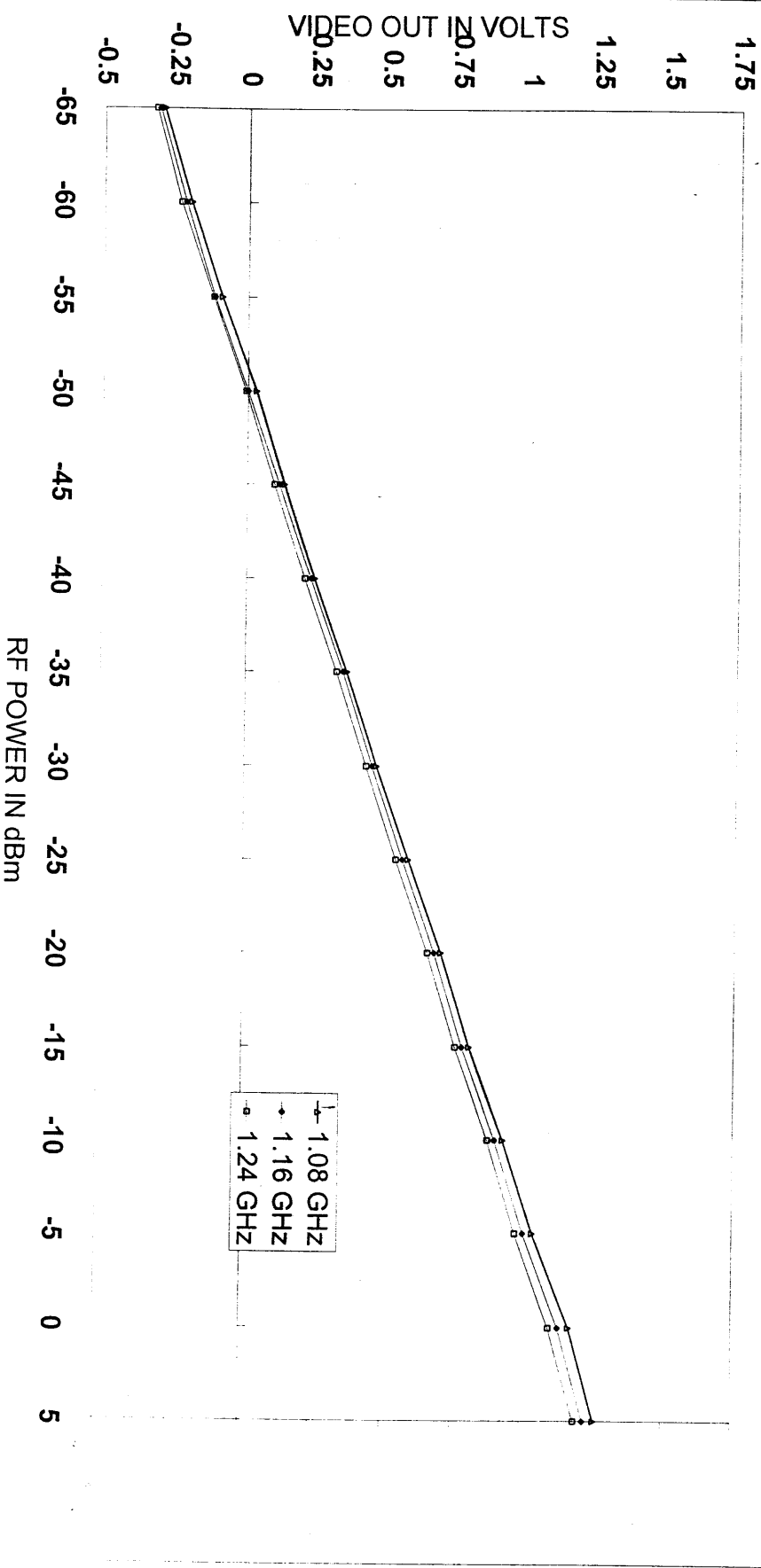
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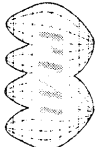
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PLOT OF LOG SLOPE OVER FREQUENCY



TABULATED TEST DATA @ 1320 MHz AND 1350 MHz @ +25 DEGREES C

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TECHNICIAN: RAFABLE MODEL NUMBER: SDLVAC-0613M-A08-LA  
 DATE: 07/07/2005 SERIAL NUMBER: PM507164

RF POWER IN (dBm)	1320 MHz	1320 MHz	1350 MHz	1350 MHz		
	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)	VIDEO OUT (VOLTS)	LIMITED IF OUT (dBm)		
6	1.163	-16.12	1.152	-16.13		
0	1.074	-16.16	1.063	-16.19		
-5	0.957	-16.18	0.949	-16.22		
-10	0.857	-16.19	0.848	-16.24		
-15	0.736	-16.2	0.729	-16.27		
-20	0.639	-16.22	0.631	-16.28		
-25	0.522	-16.22	0.515	-16.29		
-30	0.417	-16.21	0.41	-16.29		
-35	0.312	-16.21	0.306	-16.29		
-40	0.2	-16.19	0.193	-16.25		
-45	0.093	-16.11	0.087	-16.13		
-50	-0.015	-16.07	-0.025	-16.09		
-55	-0.137	-16.36	-0.144	-16.43		
-60	-0.249	-16.89	-0.257	-16.95		
-65	-0.326	-17.47	-0.33	-17.53		
DC POWER @ + 5 VOLTS	+12 MA					
DC POWER @ - 5 VOLTS	-119 MA					
LOG SLOPE						
BEST FIT STRAIGHT LINE	21.6686	mV/dB	21.6157	mV/dB		
LOG ERROR IN dB @ -85 +8 dB	0.75		0.84			
LOG ERROR IN dB @ -80 - 0 dB	-0.70		-0.79			
FREQUENCY FLATNESS						
LOG VIDEO FROM THE VALUE						
@ 1 GHz IN dB						



**TABULATED TEST DATA @ 1320 MHZ AND 1350MHZ @ +25 DEGREES C**

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**PLOT OF LOG SLOPE OVER FREQUENCY**

