



**SUMMARY TEST DATA
ON
SDLVA-4G8G-70dB-100dB**

**PMI MODEL NUMBER SDLVA-4G8G-70DB-100DB
IS A SDLVA (SUCCESSIVE DETECTION LOGARITHMIC VIDEO AMPLIFIER)
DESIGNED TO OPERATE OVER THE 4GHZ TO 8GHZ FREQUENCY RANGE. THIS
MODEL IS DESIGNED FOR ULTRA HIGH SPEED APPLICATIONS WHILE
MAINTAINING FLATNESS AND ACCURACY.**



January 11, 2017

**Tested By: S.Baughman
Designed by: Paul Kuhn**

PLANAR MONOLITHICS INDUSTRIES, INC.
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SUMMARY TEST DATA ON SDLVA-4G8G-70dB-100dB

DESCRIPTION:

PMI MODEL NUMBER SDLVA-4G8G-70dB-100R IS A SUCCESSIVE DETECTION LOGARITHMIC VIDEO AMPLIFIER (SDLVA) DESIGNED TO OPERATE OVER THE 4 GHz TO 8 GHz FREQUENCY RANGE. THIS MODEL IS DESIGNED FOR ULTRA HIGH SPEED APPLICATIONS WHILE MAINTAINING FLATNESS AND ACCURACY.

SPECIFICATIONS:

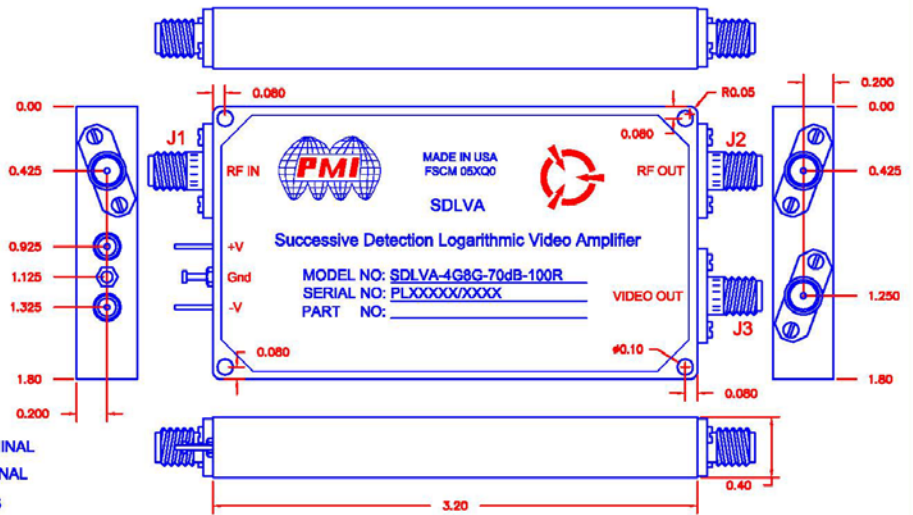
- FREQUENCY: 4.0 GHz TO 8.0 GHz
- RF GAIN (SMALL SIGNAL): 55 dB Typ
- FREQUENCY FLATNESS: ± 2 dB Max
- TSS: -73 dB Typ, -71 dB Max
- VSWR (50 Ohm): 2.0:1 Max (RF IN, RF OUT)
- PSAT: +13 dBm Typ
- POWER INPUT: +17 dBm CW Max
- LOG SLOPE: 25 mV/dB Typ, 100 Ω LOAD
- LOG RANGE: -70 to 0 dBm
- LOG LINEARITY: ±2.5 dB (-40°C TO +75°C)
- DC OFFSET: 50 ± 50 mV
- PULSE RANGE: 30 ns to CW
- RISE TIME: 10 ns Max (5 ns Typ)
- RECOVERY TIME: 60 ns Max (40 ns Typ)
- POWER SUPPLY: +15V or +12V @ 350 mA NOMINAL
-15V or -12V @ 180 mA NOMINAL
- CONNECTORS: SMA FEMALE CONNECTORS
- SIZE: 3.2" X 1.8" X 0.4"
- FINISH: GOLD

ENVIRONMENTAL RATINGS:

- TEMPERATURE: -40°C TO +75°C (OPERATING)
-65°C TO +125°C (STORAGE)
 - 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
 - SALT FOG: MIL-STD-202F, METHOD 107D COND. A
 - FUNGUS: MIL-STD-810C, METHOD 508.2
 - TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107
- NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	12/9/15	
	A1	ECN # 18-0161	11/07/18	

MECHANICAL OUTLINE



PMI CONFIDENTIAL AND PROPRIETARY

PLANAR MONOLITHICS INDUSTRIES, INC.

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E-MAIL: sales@pmi-rf.com
ISO 9001 CERTIFIED



ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
XXX ±0.020
XXXX ±0.010

APPROVALS		DATE	TITLE		REV.
DESIGN	<i>M. Barry</i>	12/9/15	PRODUCT FEATURE		
CHECKED			SDLVA-4G8G-70dB-100R		
ISSUED			SIZE	FREQ. NO.	QWG NO.
			A	05XQ0	27028161
			SCALE	N:S	SHEET 1 OF 1

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**SUMMARY TEST DATA
ON
SDLVA-4G8G-70dB-100dB**

Summary Test Data @ 25°C

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	QA QC
1	Frequency Range:	4 GHz to 8 GHz	4 GHz to 8 GHz	
2	Pulse Range:	30 ns to CW	30 ns to CW	
3	Input Power:	+17 dBm CW Max.	+17 dBm CW Max.	
4	Flatness:	± 2.0 dB Max.	± 1.5 dB	
5	Log Linearity	± 2.5 dB Max.	± 1.1 dB	
6	Log Range:	-70 to 0 dBm	-70 to 0 dBm	
7	Log Slope	25mV/dB Typ (±5%)	25.2 mV/dB	
8	VSWR:	2.0:1 Max.	1.86 :1 , 1.79 :1	
9	Rise Time:	10 ns Max.	9.1 ns	
10	Recovery Time:	60 ns Max.	55.0 ns	
11	TSS:	-73 dBm Typ.	-73 dBm	
12	DC Supply:	+15VDC @ 350 mA -15VDC @ 180 mA	+15 VDC @ 274 mA -15 VDC @ 95 mA	



**SUMMARY TEST DATA
ON
SDLVA-4G8G-70dB-100dB**

Summary Test Data @ -40°C

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	QA QC
1	Frequency Range:	4 GHz to 8 GHz	4 GHz to 8 GHz	
2	Pulse Range:	30 ns to CW	30 ns to CW	
3	Input Power:	+17 dBm CW Max.	+17 dBm CW Max.	
4	Flatness:	± 2.5 dB Max.	± 2.4 dB	
5	Log Linearity	± 2.5 dB Max.	± 1.21 dB	
6	Log Range:	-70 to 0 dBm	-70 to 0 dBm	
7	Log Slope	25mV/dB Typ (±5%)	26.8 mV/dB	
8	VSWR:	2.0:1 Max.	1.93 :1 , 1.70 :1	
9	Rise Time:	10 ns Max.	8.1 ns	
10	Recovery Time:	60 ns Max.	55.0 ns	
11	TSS:	-73 dBm Typ.	-73 dBm	
12	DC Supply:	+15VDC @ 350 mA -15VDC @ 180 mA	+15 VDC @ 206 mA -15 VDC @ 80 mA	



**SUMMARY TEST DATA
ON
SDLVA-4G8G-70dB-100dB**

Summary Test Data @ 75°C

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	PASS FAIL	QA QC
1	Frequency Range:	4 GHz to 8 GHz	4 GHz to 8 GHz	
2	Pulse Range:	30 ns to CW	30 ns to CW	
3	Input Power:	+17 dBm CW Max.	+17 dBm CW Max.	
4	Flatness:	± 2.5 dB Max.	± 1.0 dB	
5	Log Linearity	± 2.5 dB Max.	± 1.0 dB	
6	Log Range:	-70 to 0 dBm	-70 to 0 dBm	
7	Log Slope	25mV/dB Typ (±5%)	25.6 mV/dB	
8	VSWR:	2.0:1 Max.	1.95 :1 , 1.78 :1	
9	Rise Time:	10 ns Max.	8.3 ns	
10	Recovery Time:	60 ns Max.	55.0 ns	
11	TSS:	-73 dBm Typ.	-73 dBm	
12	DC Supply:	+15VDC @ 350 mA -15VDC @ 180 mA	+15 VDC @ 327 mA -15 VDC @ 111 mA	



**SUMMARY TEST DATA
ON
SDLVA-4G8G-70dB-100dB**

SDLVA-4G8G-70dB-100dB @ +25°C



SUMMARY TEST DATA ON SDLVA-4G8G-70dB-100dB

LOG TRANSFER WITH FREQUENCY
 MODEL: SDLVA-0R5G4G-70dB-100R
 TESTED BY: J.Emperador
 TEST DATE: 03/16/2016
 SERIAL NO: PL18866
 TEST TEMP: +25C

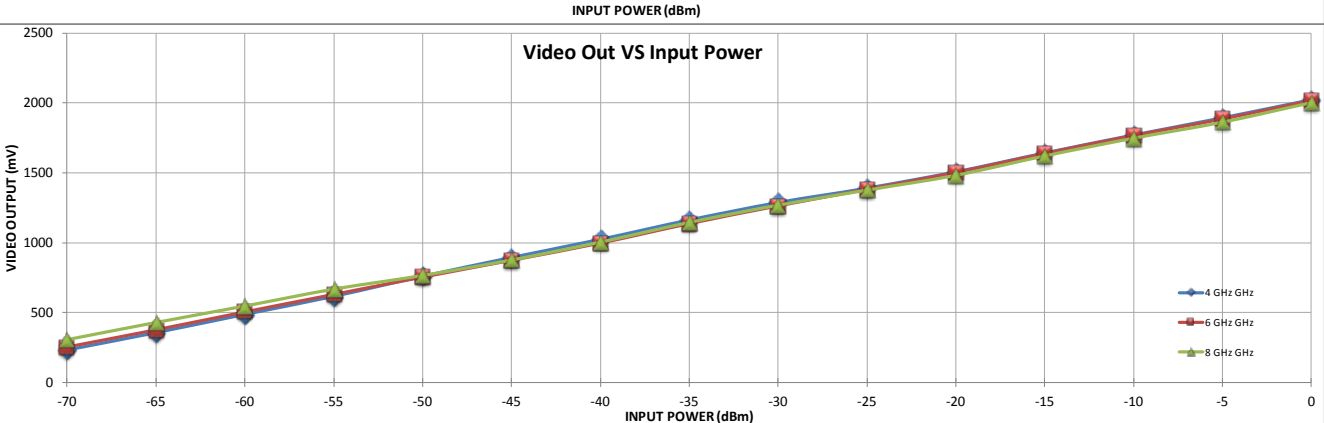
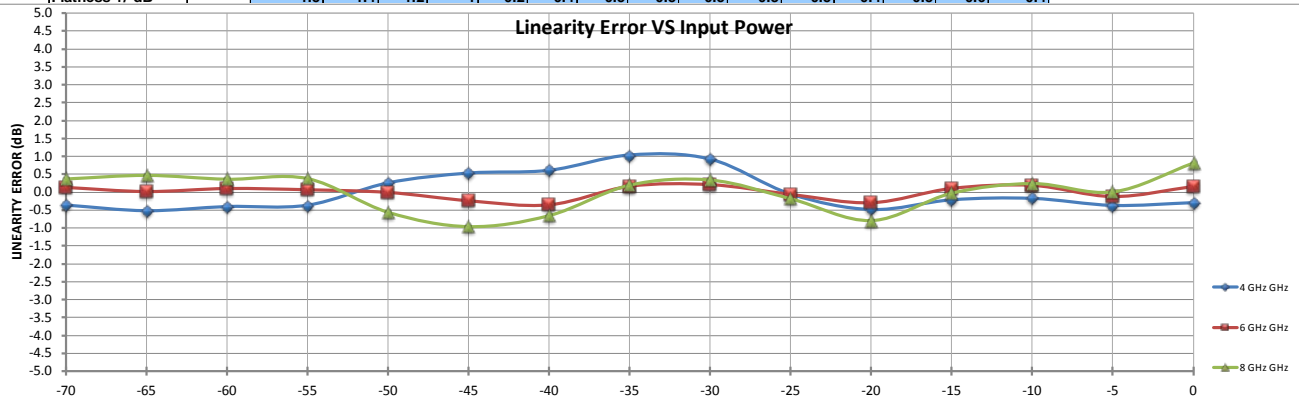
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Frequency

Frequency	Intercept (mV)	Slope (mV/dB)	RF Input Power (dBm)	Measured Value (mV)	Error (mV)	Linearity Error (dB)											
4 GHz	2033	25.6	-70	231	-9	-0.37											
			-65	355	-13	-0.53											
6 GHz	2013	25.2	-60	486	-11	-0.41											
			-55	615	-10	-0.37											
8 GHz	1984	24.1	-50	759	6	0.25											
			-45	894	13	0.52											
			-40	1024	15	0.60											
			-35	1163	26	1.03											
			-30	1288	23	0.91											
			-25	1391	-2	-0.06											
			-20	1508	-13	-0.49											
			-15	1643	-6	-0.22											
			-10	1772	-5	-0.18											
			-5	1895	-10	-0.38											
			0	2025	-8	-0.30											
			-70	254	3	0.13											
			-65	377	0	0.01											
			-60	505	2	0.10											
			-55	630	2	0.06											
			-50	754	0	-0.01											
			-45	874	-6	-0.25											
			-40	997	-9	-0.36											
			-35	1136	4	0.16											
			-30	1263	5	0.21											
			-25	1382	-2	-0.07											
			-20	1502	-8	-0.30											
			-15	1638	3	0.10											
			-10	1766	5	0.19											
			-5	1884	-3	-0.13											
			0	2017	4	0.16											
			-70	305	9	0.37											
			-65	428	11	0.47											
			-60	546	9	0.36											
			-55	667	9	0.38											
			-50	765	-13	-0.56											
			-45	876	-23	-0.96											
			-40	1004	-16	-0.65											
			-35	1145	5	0.20											
			-30	1269	8	0.34											
			-25	1377	-4	-0.18											
			-20	1483	-19	-0.79											
			-15	1622	-1	-0.03											
			-10	1749	6	0.24											
			-5	1864	0	0.01											
			0	2004	20	0.81											
Flatness +/-dB			1.5	1.4	1.2	1	0.2	0.4	0.5	0.5	0.5	0.3	0.5	0.4	0.5	0.6	0.4



SDLVA-4G8G-70dB-100dB @ -40C

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SUMMARY TEST DATA ON SDLVA-4G8G-70dB-100dB

LOG TRANSFER WITH FREQUENCY
 MODEL: SDLVA-0R5G4G-70dB-100R
 TESTED BY: J.Emperador
 TEST DATE: 03/16/2016
 SERIAL NO: PL18866
 TEST TEMP: -40C

Saturday, April 16, 2016
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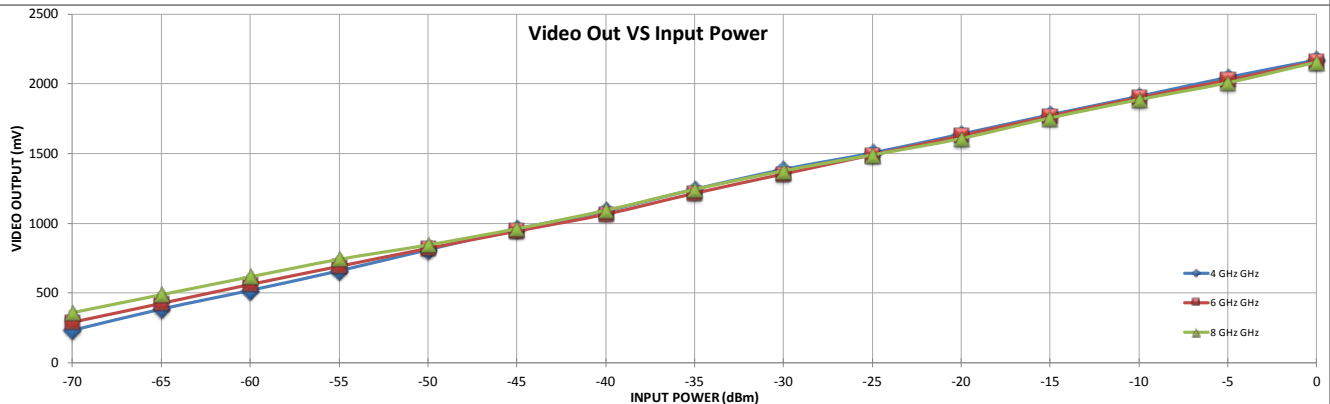
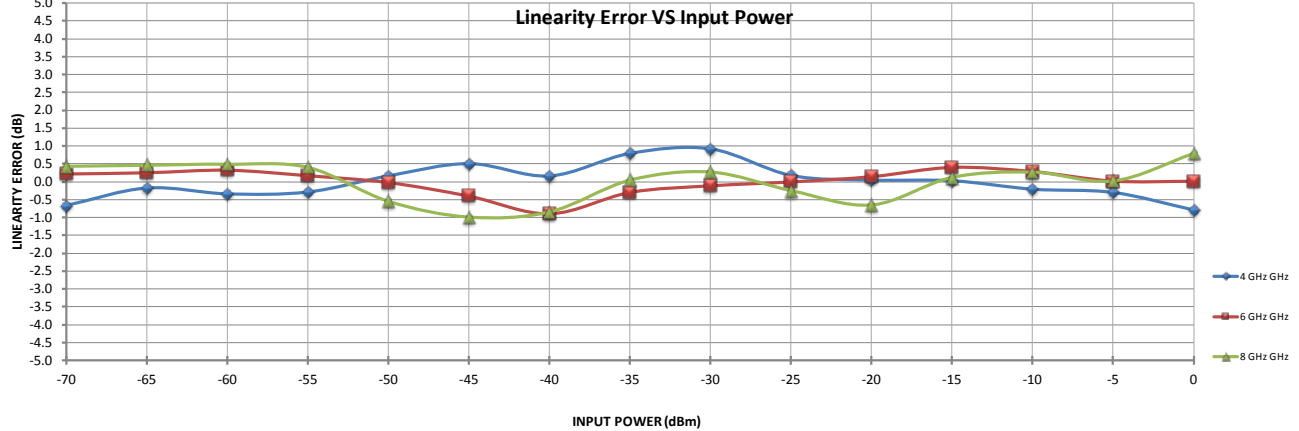
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Frequency

		-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	234	386	520	660	811	959	1088	1244	1386	1504	1639	1777	1909	2045	2170	Measured Value (mV)
	SLOPE (mV/dB)	-18	-5	-9	-8	4	14	4	22	25	5	1	1	-6	-8	-22	Error (mV)
		-0.66	-0.18	-0.34	-0.29	0.16	0.50	0.16	0.79	0.91	0.17	0.05	0.03	-0.21	-0.30	-0.79	LINEARITY ERROR (dB)
6 GHz	INTERCEPT (mV)	291	426	562	692	821	945	1066	1216	1355	1492	1630	1771	1902	2029	2163	Measured Value (mV)
	SLOPE (mV/dB)	6	7	8	4	-1	-11	-24	-8	-3	0	4	11	7	0	0	Error (mV)
		0.21	0.24	0.31	0.16	-0.03	-0.41	-0.89	-0.30	-0.12	-0.01	0.14	0.39	0.28	0.01	0.01	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	362	490	618	743	846	962	1093	1243	1376	1490	1607	1754	1885	2006	2153	Measured Value (mV)
	SLOPE (mV/dB)	11	12	12	10	-14	-25	-22	1	7	-6	-17	3	7	1	20	Error (mV)
		0.43	0.46	0.49	0.40	-0.55	-1.00	-0.85	0.04	0.27	-0.25	-0.65	0.12	0.27	0.02	0.80	LINEARITY ERROR (dB)

Flatness +/-dB

2.4	1.9	1.8	1.5	0.7	0.3	0.5	0.5	0.6	0.3	0.6	0.4	0.4	0.7	0.3
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SDLVA-4G8G-70dB-100dB @ +75C

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SUMMARY TEST DATA ON SDLVA-4G8G-70dB-100dB

LOG TRANSFER WITH FREQUENCY
 MODEL: SDLVA-0R5G4G-70dB-100R
 TESTED BY: J.Emperador
 TEST DATE: 03/16/2016
 SERIAL NO: PL18866
 TEST TEMP: +75C

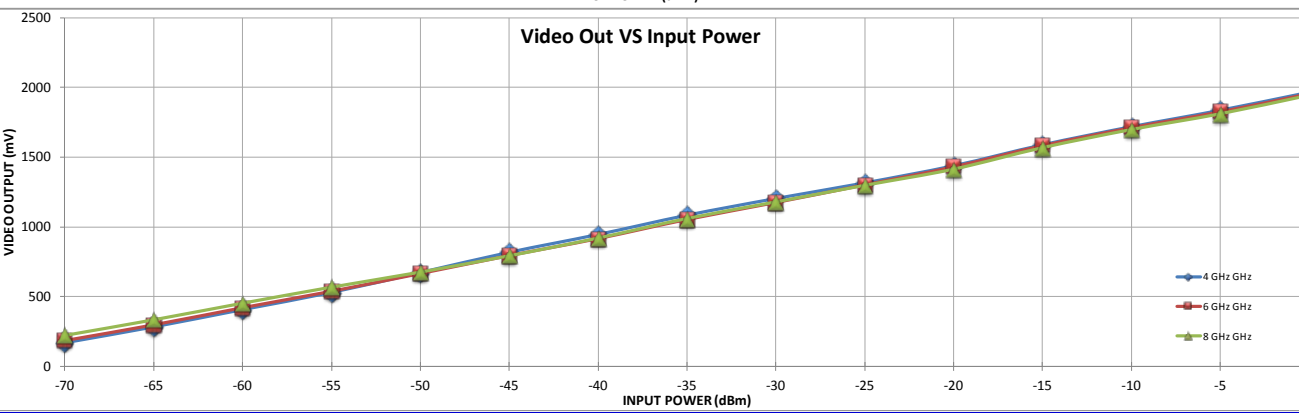
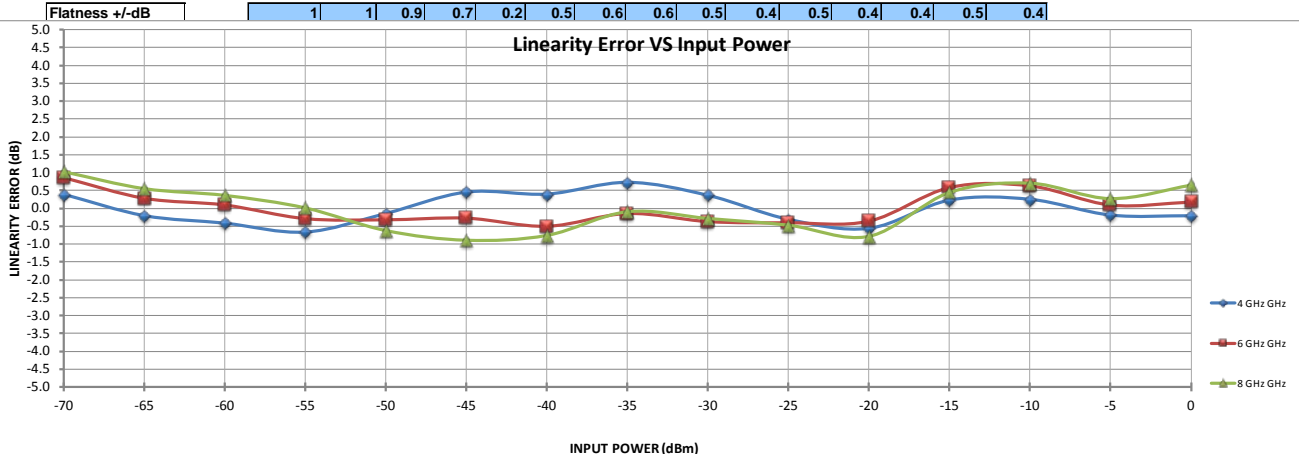
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Frequency

		-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	RF Input Power (dBm)
4 GHz	INTERCEPT (mV)	1971															Measured Value (mV)
	SLOPE (mV/dB)	25.9															Error (mV)
																	LINEARITY ERROR (dB)
6 GHz	INTERCEPT (mV)	1952															Measured Value (mV)
	SLOPE (mV/dB)	25.6															Error (mV)
																	LINEARITY ERROR (dB)
8 GHz	INTERCEPT (mV)	1926															Measured Value (mV)
	SLOPE (mV/dB)	24.7															Error (mV)
																	LINEARITY ERROR (dB)
Flatness +/-dB		1	1	0.9	0.7	0.2	0.5	0.6	0.6	0.5	0.4	0.5	0.4	0.4	0.5	0.4	

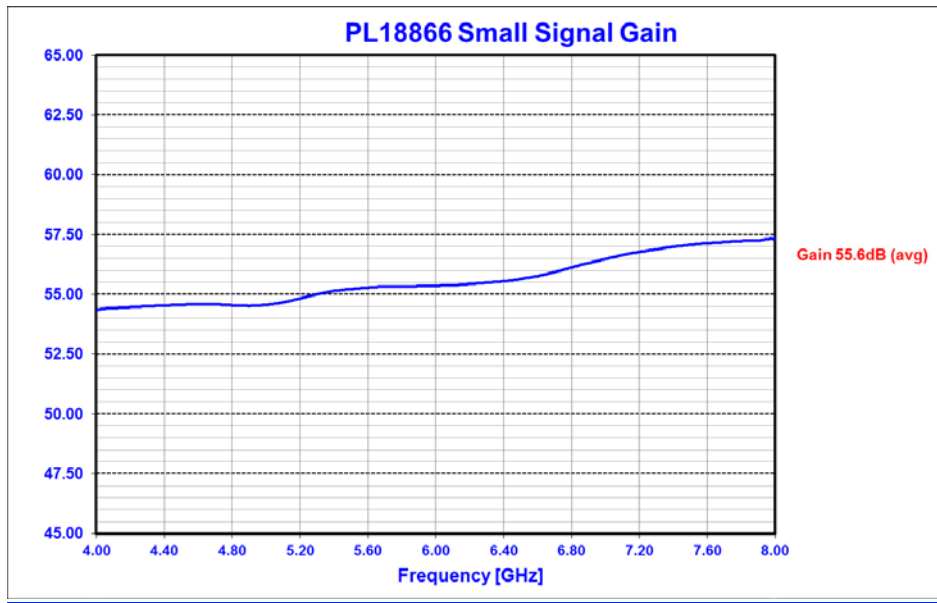


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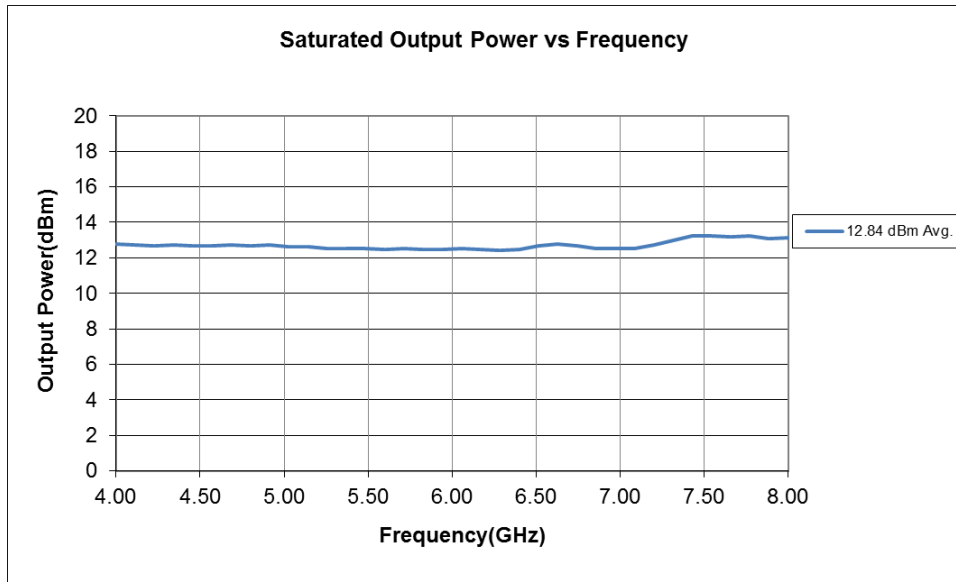


**SUMMARY TEST DATA
ON
SDLVA-4G8G-70dB-100dB**

GAIN @ 25C



SATURATED POWER @ 25C

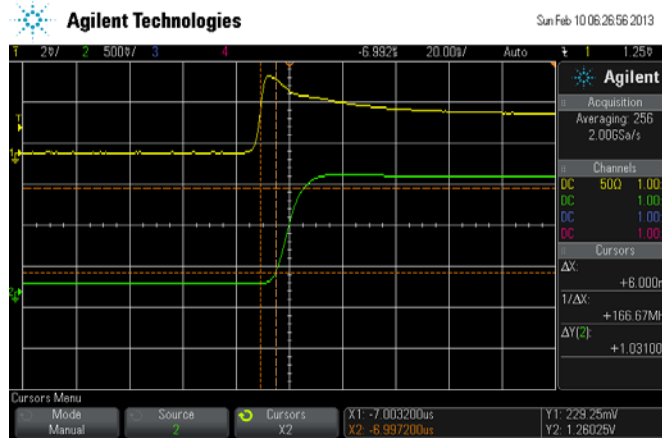


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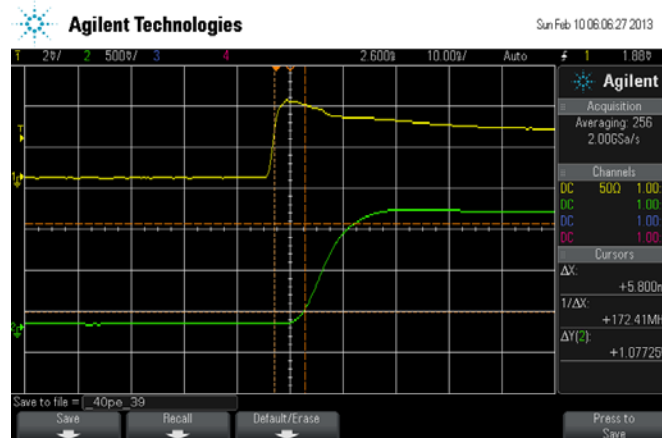


SUMMARY TEST DATA ON SDLVA-4G8G-70dB-100dB

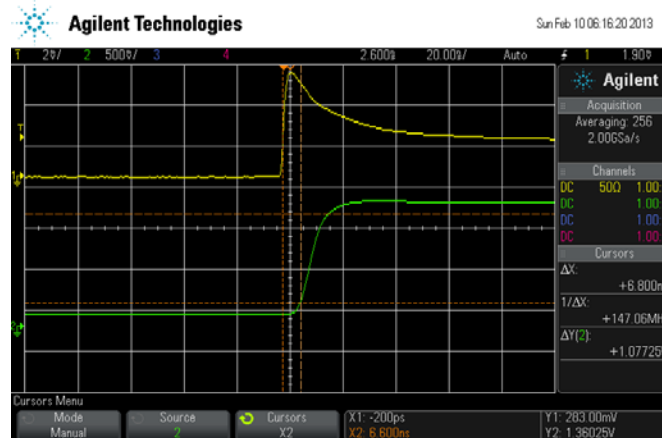
Delay Time (50%RF to 10%Video), 8GHz @ 25°C



Delay Time (50%RF to 10%Video), 8GHz @ -40°C



Delay Time (50%RF to 10%Video), 8GHz @ 75°C

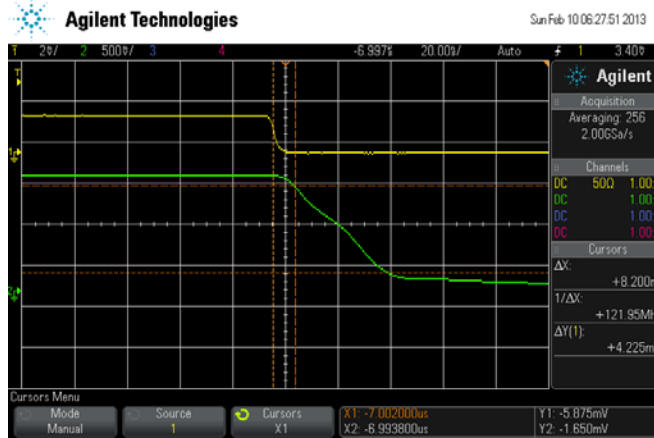


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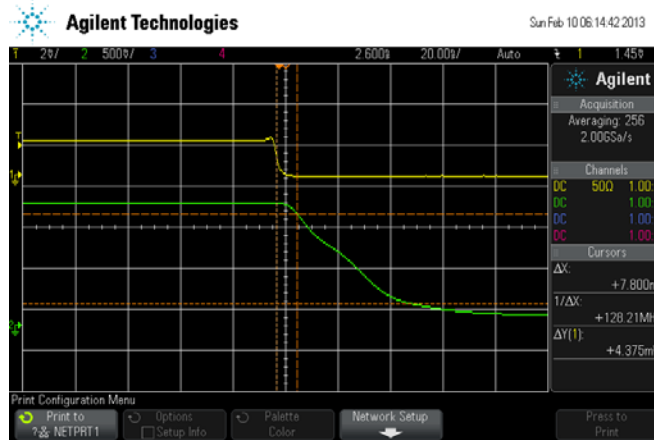


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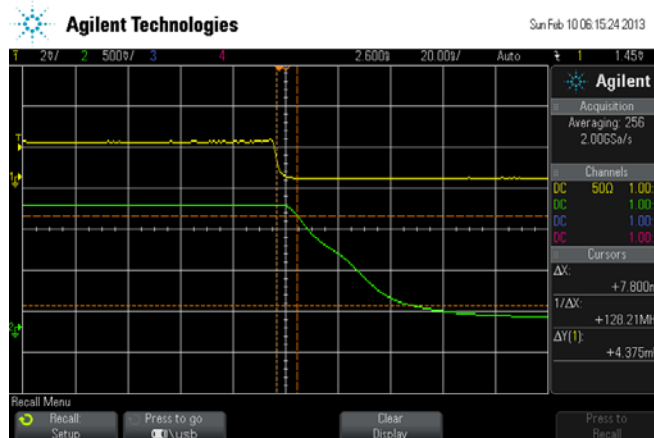
Delay Time (50%RF to 90%Video), 8GHz @ 25°C



Delay Time (50%RF to 90%Video), 8GHz @ -40°C



Delay Time (50%RF to 90%Video), 8GHz @ 75°C

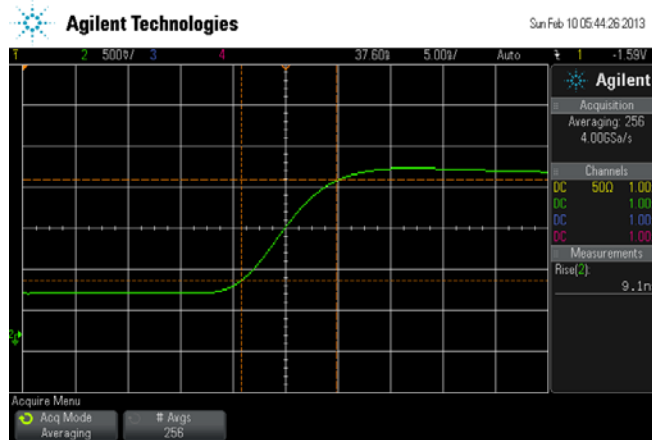


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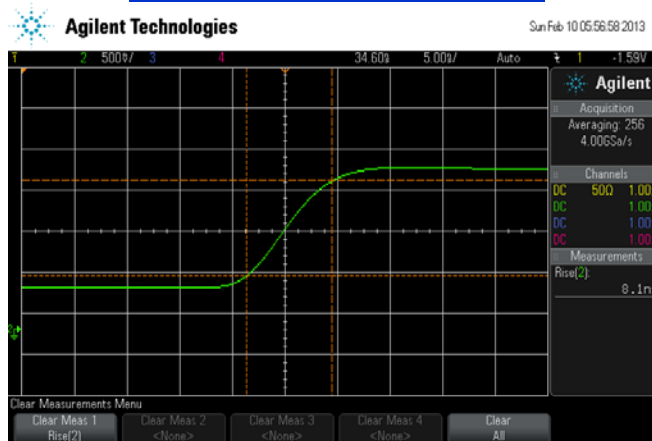


SUMMARY TEST DATA ON SDLVA-4G8G-70dB-100dB

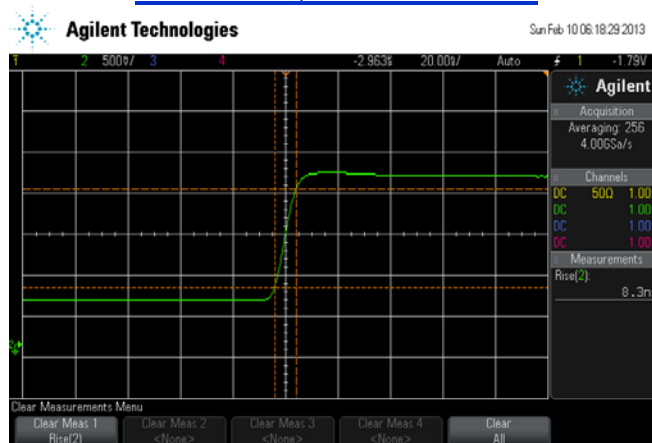
Rise Time, 8GHz @ 25°C



Rise Time, 8GHz @ -40°C



Rise Time, 8GHz @ 75°C

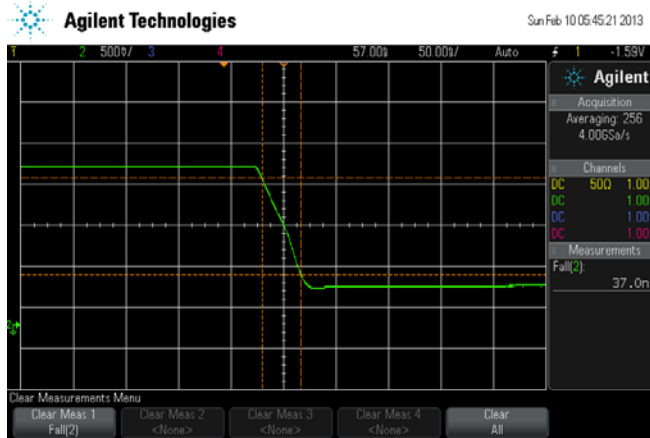


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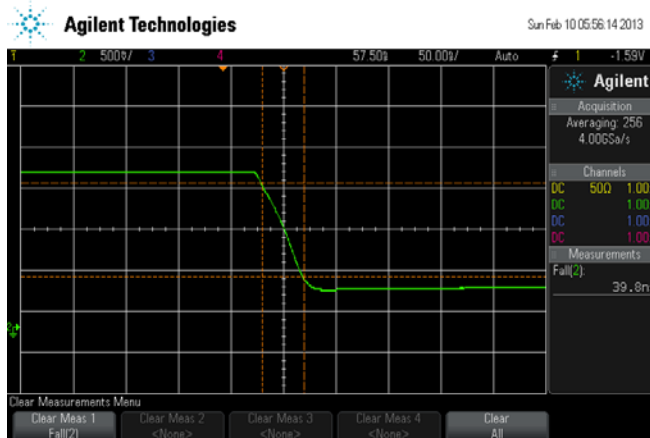


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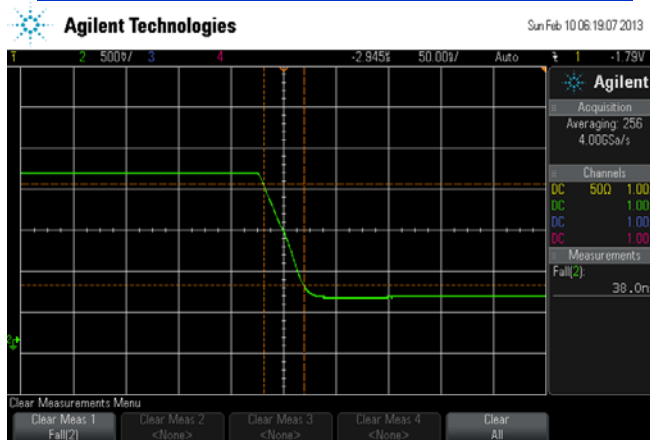
Fall & Recovery Time, 8GHz @ 25°C



Fall & Recovery Time, 8GHz @ -40°C



Fall & Recovery Time, 8GHz @ 75°C

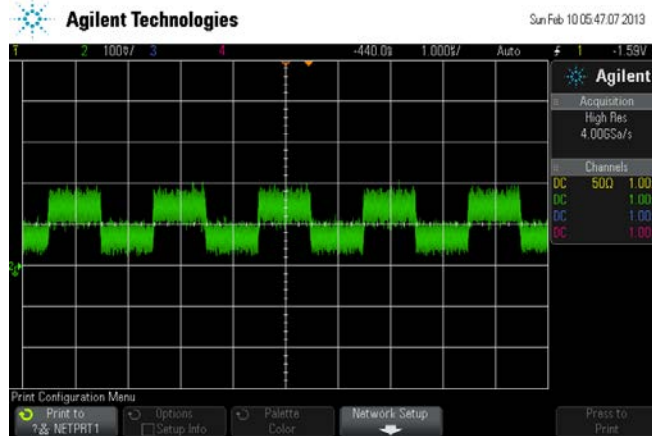


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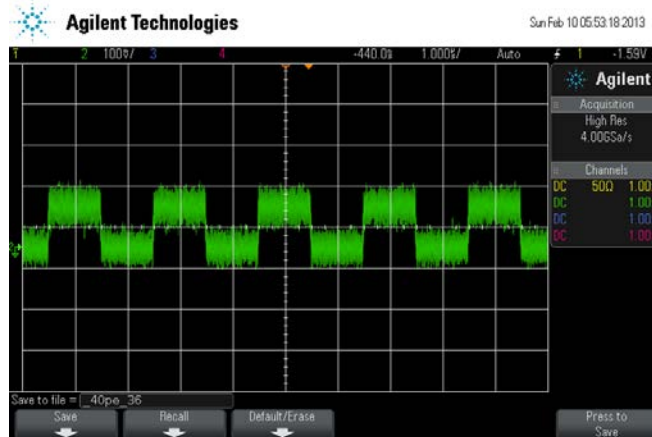


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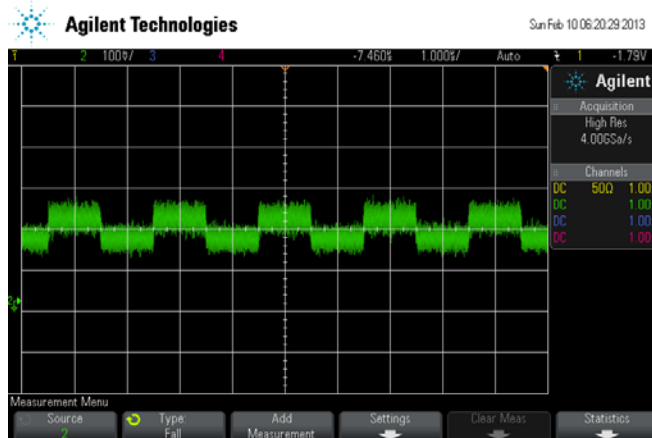
Tangential Signal Sensitivity (TSS), 8GHz, -73dBm @ 25°C



Tangential Signal Sensitivity (TSS), 8GHz, -73dBm @ -40°C



Tangential Signal Sensitivity (TSS), 8GHz, -73dBm @ 75°C

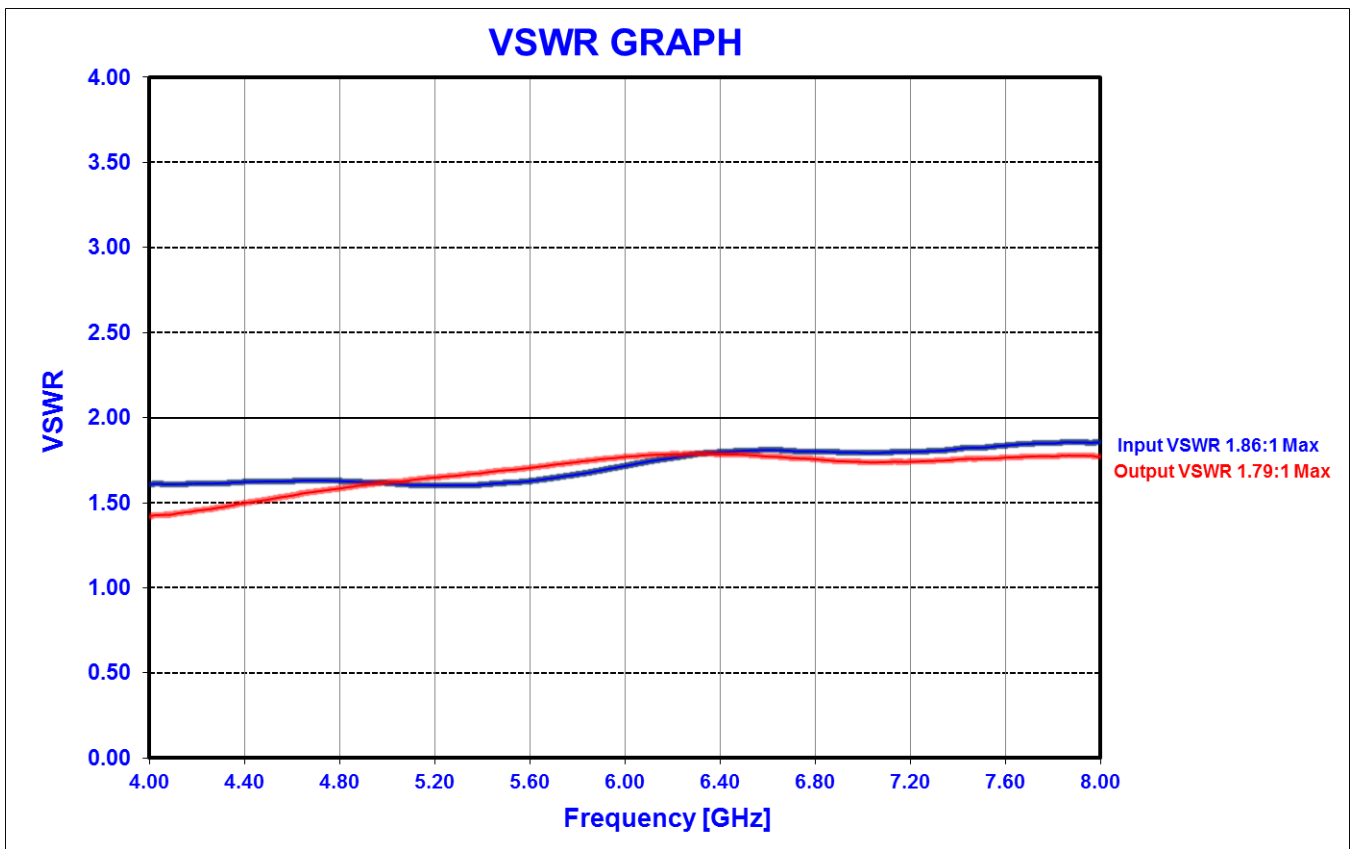


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ON
SDLVA-4G8G-70dB-100dB**

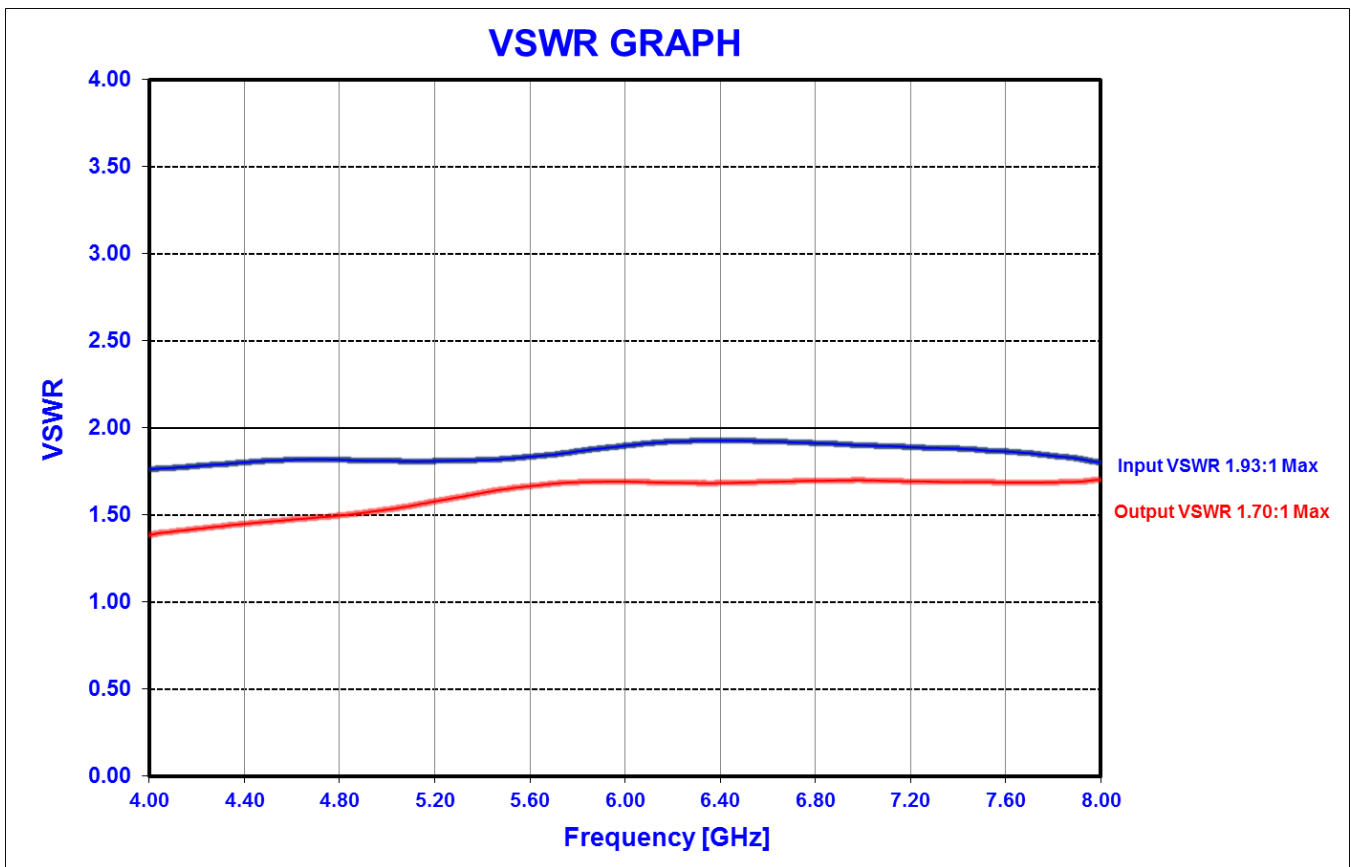
Return Loss @ 25°C





**SUMMARY TEST DATA
ON
SDLVA-4G8G-70dB-100dB**

Return Loss @ -40°C





**SUMMARY TEST DATA
ON
SDLVA-4G8G-70dB-100dB**

Return Loss @ +75°C

