



CERTIFICATE OF CALIBRATION

ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994

Customer:	BAY AREA COMPLIANCE LABORATORY CORP. (BACL) 1274 ANVILWOOD AVE. SUNNYVALE CA 94089	Certificate Number:	TSV-0-238520
Manufacturer:	AGILENT	Environment:	23 ± 5 °C / 50 ± 30 %RH
Model Number:	83650B	Calibrated By:	SHIRLEY PADILLA
Description:	SYNTHESIZED SWEEPER	Calibration Interval:	12 MONTHS
Asset Number:	00183	Calibration Date:	06/04/2020
Serial #:	3614A000276	Next Due Date:	06/04/2021
P.O. #:	TEMP	As Found Condition:	IN TOLERANCE
Procedure:	SURECAL CP9983 (A)	As Left Condition:	IN TOLERANCE
Calibration Location:	In-Laboratory		

This certifies that the above instrument was calibrated in compliance with the Calibration System Requirements of ISO/IEC 17025:2017, ANSI/NCSL Z540-1-1994 in accordance with referenced procedures. Standards used to perform this calibration are traceable to SI units; their source of traceability derives from a National Metrology Institute such as NIST, CENAM, NPL, DIN, from natural physical constants, consensus standards or derived by the ratio type of calibrations. Collective uncertainties are determined as required with a distribution that corresponds to a probability of approximately 95% (k=2). Unless otherwise noted calibrations are performed to manufacturer's specifications. Compliance statements are in conformance with ILAC-G8:2019 simple acceptance decision rule. This form shall not be reproduced, except in full, without the expressed written consent of Techmaster. Contact our customer service representative for clarification of this document.

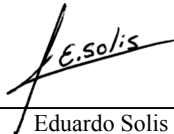
Standards Utilized

Standard #	Manufacturer	Model #	Due Date	Test Report #
5103	AGILENT	8565E	01/31/2021	TSV-0-204303
5117	AGILENT	11667C	06/30/2022	TSV-0-188660
5341	AGILENT	3458A	11/30/2020	TSV-0-173361
5362	AGILENT	8487A	12/31/2020	TSV-0-135825
5560	AGILENT	E4418B	09/30/2020	TSV-0-169427
5585	AGILENT	8482A	06/30/2021	TSV-0-142424-R1
585	AGILENT	8116A	08/31/2020	TSV-0-167134
5992	AGILENT	8447D	01/31/2021	TME-94206-R1
6143	HEWLETT PACKARD	54845A	08/31/2021	TSD-0-201700
6296	AGILENT TECHNOLOGIES	53132A	04/30/2021	TSV-0-236085
6304	HEWLETT PACKARD	11792A	02/28/2021	TSV-0-189207-R2
650	AGILENT	8902A	11/30/2021	TSV-0-236324-R3

Remarks:



Ernesto Matamoros
Quality Assurance



Eduardo Solis
Technical Manager



SHIRLEY PADILLA
Approved By

- ☐ San Diego 2453 CADES WAY, SUITE C, VISTA, CA, 92081 Phone: (760) 536-0227
- ☒ Silicon Valley 46782 LAKEVIEW BLVD, FREMONT, CA, 94538 Phone: (510) 252-9001
- ☐ Florida 6925 LAKE ELLENOR DR., SUITE 134, ORLANDO, FL, 32809 Phone: (407) 985-5104

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Manufacturer: AGILENT/HP
Model # 83650B
ID # 183

Cal Date: 6/4/2020
Certificate # TSV-0-238520
Procedure: CP9983(A)

SELF TESTS

PASS

DIAGNOSTIC RESULTS FOR		
MODEL#	SERIAL#	OPTIONS INSTALLED
83650B	3614A00761	0

No Failures Reported

MAX LEVELED POWER

PASS

FREQ RANGE	MINIMUM	MEASURED
10.0 MHz to 50.0 GHz	2.5 dBm	5.3 dBm
10.0 MHz to 40.0 GHz	5.0 dBm	11.0 dBm
10.0 MHz to 26.5 GHz	10.0 dBm	13.8 dBm
10.0 MHz to 20.0 GHz	10.0 dBm	12.9 dBm

10 MHz TIMEBASE

PASS

NOMINAL	U/M	MINIMUM	MAXIMUM	MEASURED
10000000.000	Hz	9999995.985	10000004.015	10000000.769

PWR ACCURACY .1 GHz

PASS

TAR	SET POWER	(+/-) SPEC	dB ERROR
4.0:1	-13.00 dBm	.60 dB	.04 dB
4.0:1	-12.00 dBm	.60 dB	.04 dB
4.0:1	-11.00 dBm	.60 dB	.04 dB
4.0:1	-10.00 dBm	.60 dB	.03 dB
4.0:1	-9.00 dBm	.60 dB	.03 dB
4.0:1	-8.00 dBm	.60 dB	.02 dB
4.0:1	-7.00 dBm	.60 dB	.01 dB
4.0:1	-6.00 dBm	.60 dB	.01 dB
4.0:1	-5.00 dBm	.60 dB	.01 dB
4.0:1	-4.00 dBm	.60 dB	.01 dB
4.0:1	-3.00 dBm	.60 dB	0.00 dB
4.0:1	-2.00 dBm	.60 dB	0.00 dB
4.0:1	-1.00 dBm	.60 dB	.01 dB
4.0:1	0.00 dBm	.60 dB	.01 dB
4.0:1	1.00 dBm	.60 dB	.01 dB
4.0:1	2.00 dBm	.60 dB	.01 dB
4.0:1	3.00 dBm	.60 dB	.02 dB
4.0:1	4.00 dBm	.60 dB	.02 dB
4.0:1	5.00 dBm	.60 dB	.02 dB
4.0:1	6.00 dBm	.60 dB	.02 dB
4.0:1	7.00 dBm	.60 dB	.02 dB
4.0:1	8.00 dBm	.60 dB	.01 dB
4.0:1	9.00 dBm	.60 dB	.01 dB
4.0:1	10.00 dBm	.60 dB	0.00 dB

Manufacturer: AGILENT/HP

Model # 83650B

ID # 183

PWR ACCURACY 1 GHz

PASS

Cal Date: 6/4/2020

Certificate # TSV-0-238520

Procedure: CP9983(A)

TAR	SET POWER	(+/-) SPEC	dB ERROR
= 4.0:1	-13.00 dBm	.59 dB	.06 dB
= 4.0:1	-12.00 dBm	.59 dB	.05 dB
= 4.0:1	-11.00 dBm	.59 dB	.05 dB
= 4.0:1	-10.00 dBm	.59 dB	.04 dB
= 4.0:1	-9.00 dBm	.59 dB	.03 dB
= 4.0:1	-8.00 dBm	.59 dB	.03 dB
= 4.0:1	-7.00 dBm	.59 dB	.03 dB
= 4.0:1	-6.00 dBm	.59 dB	.02 dB
= 4.0:1	-5.00 dBm	.59 dB	.02 dB
= 4.0:1	-4.00 dBm	.59 dB	.02 dB
= 4.0:1	-3.00 dBm	.59 dB	.02 dB
= 4.0:1	-2.00 dBm	.59 dB	.02 dB
= 4.0:1	-1.00 dBm	.59 dB	.02 dB
= 4.0:1	0.00 dBm	.59 dB	.01 dB
= 4.0:1	1.00 dBm	.59 dB	.01 dB
= 4.0:1	2.00 dBm	.59 dB	.01 dB
= 4.0:1	3.00 dBm	.59 dB	.01 dB
= 4.0:1	4.00 dBm	.59 dB	.01 dB
= 4.0:1	5.00 dBm	.59 dB	.01 dB
= 4.0:1	6.00 dBm	.59 dB	.01 dB
= 4.0:1	7.00 dBm	.59 dB	.02 dB
= 4.0:1	8.00 dBm	.59 dB	.02 dB
= 4.0:1	9.00 dBm	.59 dB	.03 dB
= 4.0:1	10.00 dBm	.59 dB	.04 dB

PWR ACCURACY 6 GHz

PASS

TAR	SET POWER	(+/-) SPEC	dB ERROR
4.4:1	-13.00 dBm	.70 dB	.09 dB
4.4:1	-12.00 dBm	.70 dB	.09 dB
4.4:1	-11.00 dBm	.70 dB	.08 dB
4.4:1	-10.00 dBm	.70 dB	.08 dB
4.4:1	-9.00 dBm	.70 dB	.08 dB
4.4:1	-8.00 dBm	.70 dB	.09 dB
4.4:1	-7.00 dBm	.70 dB	.08 dB
4.4:1	-6.00 dBm	.70 dB	.09 dB
4.4:1	-5.00 dBm	.70 dB	.09 dB
4.4:1	-4.00 dBm	.70 dB	.09 dB
4.4:1	-3.00 dBm	.70 dB	.09 dB
4.4:1	-2.00 dBm	.70 dB	.09 dB
4.4:1	-1.00 dBm	.70 dB	.09 dB
4.4:1	0.00 dBm	.70 dB	.09 dB
4.4:1	1.00 dBm	.70 dB	.09 dB
4.4:1	2.00 dBm	.70 dB	.09 dB
4.4:1	3.00 dBm	.70 dB	.09 dB
4.4:1	4.00 dBm	.70 dB	.09 dB
4.4:1	5.00 dBm	.70 dB	.09 dB
4.4:1	6.00 dBm	.70 dB	.10 dB
4.4:1	7.00 dBm	.70 dB	.10 dB
4.4:1	8.00 dBm	.70 dB	.10 dB
4.4:1	9.00 dBm	.70 dB	.11 dB
4.4:1	10.00 dBm	.70 dB	.11 dB



Manufacturer: AGILENT/HP

Model # 83650B

ID # 183

PWR ACCURACY 10 GHz

PASS

Cal Date: 6/4/2020

Certificate # TSV-0-238520

Procedure: CP9983(A)

TAR	SET POWER	(+/-)	SPEC	dB ERROR
4.4:1	-13.00 dBm	.70	dB	.11 dB
4.4:1	-12.00 dBm	.70	dB	.10 dB
4.4:1	-11.00 dBm	.70	dB	.09 dB
4.4:1	-10.00 dBm	.70	dB	.09 dB
4.4:1	-9.00 dBm	.70	dB	.08 dB
4.4:1	-8.00 dBm	.70	dB	.09 dB
4.4:1	-7.00 dBm	.70	dB	.09 dB
4.4:1	-6.00 dBm	.70	dB	.09 dB
4.4:1	-5.00 dBm	.70	dB	.09 dB
4.4:1	-4.00 dBm	.70	dB	.10 dB
4.4:1	-3.00 dBm	.70	dB	.10 dB
4.4:1	-2.00 dBm	.70	dB	.10 dB
4.4:1	-1.00 dBm	.70	dB	.10 dB
4.4:1	0.00 dBm	.70	dB	.10 dB
4.4:1	1.00 dBm	.70	dB	.10 dB
4.4:1	2.00 dBm	.70	dB	.10 dB
4.4:1	3.00 dBm	.70	dB	.10 dB
4.4:1	4.00 dBm	.70	dB	.10 dB
4.4:1	5.00 dBm	.70	dB	.10 dB
4.4:1	6.00 dBm	.70	dB	.11 dB
4.4:1	7.00 dBm	.70	dB	.11 dB
4.4:1	8.00 dBm	.70	dB	.11 dB
4.4:1	9.00 dBm	.70	dB	.12 dB
4.4:1	10.00 dBm	.70	dB	.12 dB

PWR ACCURACY 18 GHz

PASS

TAR	SET POWER	(+/-)	SPEC	dB ERROR
4.4:1	-13.00 dBm	.70	dB	.12 dB
4.4:1	-12.00 dBm	.70	dB	.11 dB
4.4:1	-11.00 dBm	.70	dB	.11 dB
4.4:1	-10.00 dBm	.70	dB	.11 dB
4.4:1	-9.00 dBm	.70	dB	.11 dB
4.4:1	-8.00 dBm	.70	dB	.11 dB
4.4:1	-7.00 dBm	.70	dB	.11 dB
4.4:1	-6.00 dBm	.70	dB	.11 dB
4.4:1	-5.00 dBm	.70	dB	.11 dB
4.4:1	-4.00 dBm	.70	dB	.11 dB
4.4:1	-3.00 dBm	.70	dB	.11 dB
4.4:1	-2.00 dBm	.70	dB	.11 dB
4.4:1	-1.00 dBm	.70	dB	.11 dB
4.4:1	0.00 dBm	.70	dB	.11 dB
4.4:1	1.00 dBm	.70	dB	.11 dB
4.4:1	2.00 dBm	.70	dB	.11 dB
4.4:1	3.00 dBm	.70	dB	.11 dB
4.4:1	4.00 dBm	.70	dB	.11 dB
4.4:1	5.00 dBm	.70	dB	.11 dB
4.4:1	6.00 dBm	.70	dB	.12 dB
4.4:1	7.00 dBm	.70	dB	.12 dB
4.4:1	8.00 dBm	.70	dB	.12 dB
4.4:1	9.00 dBm	.70	dB	.13 dB
4.4:1	10.00 dBm	.70	dB	.13 dB



Manufacturer: AGILENT/HP

Model # 83650B

ID # 183

PWR ACCURACY 30 GHz

PASS

Cal Date: 6/4/2020

Certificate # TSV-0-238520

Procedure: CP9983(A)

TAR	SET POWER	(+/-) SPEC	dB ERROR
5.3:1	-13.00 dBm	.90 dB	.20 dB
5.3:1	-12.00 dBm	.90 dB	.21 dB
5.3:1	-11.00 dBm	.90 dB	.22 dB
5.3:1	-10.00 dBm	.90 dB	.22 dB
5.3:1	-9.00 dBm	.90 dB	.22 dB
5.3:1	-8.00 dBm	.90 dB	.22 dB
5.3:1	-7.00 dBm	.90 dB	.22 dB
5.3:1	-6.00 dBm	.90 dB	.22 dB
5.3:1	-5.00 dBm	.90 dB	.22 dB
5.3:1	-4.00 dBm	.90 dB	.22 dB
5.3:1	-3.00 dBm	.90 dB	.21 dB
5.3:1	-2.00 dBm	.90 dB	.22 dB
5.3:1	-1.00 dBm	.90 dB	.22 dB
5.3:1	0.00 dBm	.90 dB	.21 dB
5.3:1	1.00 dBm	.90 dB	.21 dB
5.3:1	2.00 dBm	.90 dB	.21 dB
5.3:1	3.00 dBm	.90 dB	.21 dB
5.3:1	4.00 dBm	.90 dB	.21 dB
5.3:1	5.00 dBm	.90 dB	.21 dB

PWR ACCURACY 45 GHz

PASS

TAR	SET POWER	(+/-) SPEC	dB ERROR
8.5:1	-13.00 dBm	1.70 dB	.89 dB
8.5:1	-12.00 dBm	1.70 dB	.89 dB
8.5:1	-11.00 dBm	1.70 dB	.90 dB
8.5:1	-10.00 dBm	1.70 dB	.90 dB
8.5:1	-9.00 dBm	1.70 dB	.90 dB
8.5:1	-8.00 dBm	1.70 dB	.90 dB
8.5:1	-7.00 dBm	1.70 dB	.90 dB
8.5:1	-6.00 dBm	1.70 dB	.89 dB
8.5:1	-5.00 dBm	1.70 dB	.90 dB
8.5:1	-4.00 dBm	1.70 dB	.89 dB
8.5:1	-3.00 dBm	1.70 dB	.89 dB
8.5:1	-2.00 dBm	1.70 dB	.90 dB
8.5:1	-1.00 dBm	1.70 dB	.90 dB
8.5:1	0.00 dBm	1.70 dB	.90 dB
8.5:1	1.00 dBm	1.70 dB	.90 dB
8.5:1	2.00 dBm	1.70 dB	.91 dB
8.5:1	3.00 dBm	1.70 dB	.91 dB
8.5:1	4.00 dBm	1.70 dB	.92 dB
8.5:1	5.00 dBm	1.70 dB	.92 dB

FLATNESS <2 GHz

PASS

UUT FLATNESS FROM .050 GHz TO 1.995 GHz

SPEC: < 1.00 dB MEASURED: .26 dB

MIN POWER MEASURED: -.158 dBm AT .330 GHz

MAX POWER MEASURED: .104 dBm AT 1.870 GHz



Manufacturer: AGILENT/HP
Model # 83650B
ID # 183

Cal Date: 6/4/2020
Certificate # TSV-0-238520
Procedure: CP9983(A)

FLATNESS 2-20 GHz PASS

UUT FLATNESS FROM 2.000 GHz TO 20.000 GHz

=====

SPEC: < 1.20 dB	MEASURED: .28 dB
MIN POWER MEASURED: .049 dBm AT 18.200 GHz	
MAX POWER MEASURED: .329 dBm AT 19.800 GHz	

FLATNESS 20-40 GHz PASS

UUT FLATNESS FROM 20.005 GHz TO 40.000 GHz

=====

SPEC: < 1.60 dB	MEASURED: 1.34 dB
MIN POWER MEASURED: -1.010 dBm AT 37.205 GHz	
MAX POWER MEASURED: .327 dBm AT 20.805 GHz	

FLATNESS 40-50 GHz PASS

UUT FLATNESS FROM 40.005 GHz TO 50.000 GHz

=====

SPEC: < 3.00 dB	MEASURED: 1.05 dB
MIN POWER MEASURED: -1.544 dBm AT 48.805 GHz	
MAX POWER MEASURED: -.497 dBm AT 43.205 GHz	

EXTERNAL LEVELING PASS

UUT OUTPUT	U/M	MINIMUM	MAXIMUM	MEASURED
-36 dBm	mVDC	-0.2000	+0.0000	-0.2000
9 dBm	VDC	-1.0000	-0.5000	-0.5416

CW OUT BAND SWITCH PASS

SERNO=3614, SPEC = 50 mSEC MAX

	FROM FREQ (MHz)	TO FREQ (MHz)	SPEC (mSEC)	MEASURED (mSEC)
CW STEP ACROSS BAND 0 TO 5	10.000	50000.000	<= 50.0	35.40
CW STEP ACROSS BAND 1 TO 5	2000.000	50000.000	<= 50.0	35.40
CW STEP ACROSS BAND 2 TO 5	13500.000	50000.000	<= 50.0	35.40

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Procedure: CP9983(A)

CW IN BAND SWITCH

PASS

SERNO=3614, SPEC = 15 mSEC + 5 mSEC/GHZ MAX

	FROM FREQ (MHz)	TO FREQ (MHz)	SPEC (mSEC)	MEASURED (mSEC)
CW STEP WITHIN BAND 0	10.000	1910.000	<= 24.5	9.03
CW STEP WITHIN BAND 1	2000.000	6500.000	<= 37.5	21.23
CW STEP WITHIN BAND 2	7000.000	13000.000	<= 45.0	27.55
CW STEP WITHIN BAND 3	13500.000	19500.000	<= 45.0	27.30
CW STEP WITHIN BAND 4	21500.000	25500.000	<= 35.0	19.22
CW STEP WITHIN BAND 5	27500.000	39500.000	<= 45.0	35.15

SWEEP STEP SWITCH

PASS

SERNO=3614, SPEC = 5 mSEC + 5 mSEC/GHZ MAX

	FROM FREQ (MHz)	TO FREQ (MHz)	SPEC (mSEC)	MEASURED (mSEC)
SWEEP STEP MODE <= 100 MHZ	100.000	200.000	<= 5.0	3.70
SWEEP STEP MODE <= 100 MHZ	2500.000	2600.000	<= 5.0	3.50
SWEEP STEP MODE <= 100 MHZ	7700.000	7800.000	<= 5.0	3.30
SWEEP STEP MODE <= 100 MHZ	14100.000	14200.000	<= 5.0	3.60
SWEEP STEP MODE <= 100 MHZ	24100.000	24200.000	<= 5.0	4.10
SWEEP STEP MODE <= 100 MHZ	39100.000	39200.000	<= 5.0	2.40

SSB PHASE NOISE

PASS

FUNDAMENTAL FREQ (MHz)	OFFSET (Hz)	SPEC (dBc/Hz)	MEASURED (dBc/Hz)
1969.999999	+100	< -70.0	-92.6
1969.999999	-100	< -70.0	-94.5
1969.999999	+1000	< -78.0	-97.2
1969.999999	-1000	< -78.0	-100.8
1969.999999	+10000	< -86.0	-93.6
1969.999999	-10000	< -86.0	-96.8
1969.999999	+100000	< -107.0	-111.8
1969.999999	-100000	< -107.0	-115.3
8989.999999	+100	< -64.0	-78.9
8989.999999	-100	< -64.0	-73.7
8989.999999	+1000	< -72.0	-90.0
8989.999999	-1000	< -72.0	-95.6
8989.999999	+10000	< -80.0	-91.5
8989.999999	-10000	< -80.0	-93.0
8989.999999	+100000	< -101.0	-111.0
8989.999999	-100000	< -101.0	-113.8
17999.999998	+100	< -60.0	-74.4
17999.999998	-100	< -60.0	-77.5
17999.999998	+1000	< -68.0	-85.7
17999.999998	-1000	< -68.0	-83.0
17999.999998	+10000	< -76.0	-84.2
17999.999998	-10000	< -76.0	-87.4
17999.999998	+100000	< -97.0	-105.8
17999.999998	-100000	< -97.0	-104.3
22990.000000	+100	< -58.0	-72.1
22990.000000	-100	< -58.0	-74.8
22990.000000	+1000	< -66.0	-85.3
22990.000000	-1000	< -66.0	-82.7
22990.000000	+10000	< -74.0	-84.9
22990.000000	-10000	< -74.0	-85.1
22990.000000	+100000	< -95.0	-103.8
22990.000000	-100000	< -95.0	-101.4

HARMONIC SPURS

PASS

FUNDAMENTAL	HARMONIC	SPEC	MEASURED
Techmaster San Diego 2453 Cades Way Ste. C Vista, CA 92081 (760) 536-0227	Techmaster Orlando 6925 Lake Ellenor Dr. Suite 134 Orlando, FL 32809 (407) 985-5104		

Techmaster Silicon Valley
46782 Lakeview Blvd
Fremont, CA 94538
510.252.9001



Manufacturer: AGILENT/HP

Model # 83650B

ID # 183

Cal Date: 6/4/2020

Certificate # TSV-0-238520

Procedure: CP9983(A)

FREQ (MHz)	(MHz)	(dBc)	(dBc)
10	20	< -20.0	-48.5
10	30	< -20.0	-62.7
10	40	< -20.0	-78.0
100	200	< -30.0	-47.3
100	300	< -30.0	-57.7
100	400	< -30.0	-75.3
1000	2000	< -30.0	-48.8
1000	3000	< -30.0	-66.7
1000	4000	< -30.0	-76.5
2000	4000	< -50.0	-58.8
2000	6000	< -50.0	-75.3
2000	8000	< -50.0	-73.3
4000	8000	< -50.0	-68.7
4000	12000	< -50.0	-72.7
4000	16000	< -50.0	-72.2
6000	12000	< -50.0	-71.3
6000	18000	< -50.0	-73.0
6000	24000	< -50.0	-65.7
8000	16000	< -50.0	-70.2
8000	24000	< -50.0	-65.7
10000	20000	< -50.0	-71.2
12000	24000	< -50.0	-65.3
12000	6000	< -50.0	-74.0
12000	18000	< -50.0	-71.8
14000	7000	< -50.0	-72.3
14000	21000	< -50.0	-70.3
16000	8000	< -50.0	-71.7
16000	24000	< -50.0	-64.7
18000	9000	< -50.0	-72.5
20000	10000	< -40.0	-71.8
22000	11000	< -40.0	-70.0
24000	12000	< -40.0	-70.2
26500	13250	< -40.0	-57.3
33000	16500	< -40.0	-53.2
38000	19000	< -40.0	-53.3
45000	22500	< -35.0	-49.3
50000	25000	< -35.0	-50.7

NON-HARMONIC SPURS

PASS

FUNDAMENTAL FREQ (MHz)	SPUR (MHz)	SPEC (dBc)	MEASURED (dBc)
19765.000000	19765.018563	< -60.0	-71.2
19765.000000	19765.037126	< -60.0	-72.0
19765.000000	19765.062381	< -60.0	-83.0
19765.000000	19765.124762	< -60.0	-89.6
19765.000000	19765.125000	< -60.0	-80.1
19765.000000	19765.500000	< -60.0	-78.3
19765.000000	100.000000	< -60.0	-100.7
19765.000000	900.000000	< -60.0	-81.7
19765.000000	6400.000000	< -60.0	-119.3



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LINE-RELATED SPURS

PASS

Cal Date: 6/4/2020

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FUNDAMENTAL FREQ (MHz)	LINE SPUR (MHz)	SPEC (dBc)	MEASURED (dBc)
6990.000000	6990.000120	< -55.0	-64.5
6990.000000	6990.000180	< -55.0	-67.0
6990.000000	6990.000240	< -55.0	-68.0
1900.000000	1900.000120	< -55.0	-71.5
1900.000000	1900.000180	< -55.0	-74.1
1900.000000	1900.000240	< -55.0	-74.3

PULSE MOD ON/OFF

PASS

FREQ (MHz)	SPEC (dBc)	MEASURED (dBc)
1000.000001	< -80.0	-112.2
6000.000001	< -80.0	-111.8
9000.000000	< -80.0	-110.0
20000.000002	< -80.0	-89.5
22000.000000	< -80.0	-93.8

AM DYNAMIC RANGE

PASS

CARRIER FREQ (MHz)	NORMAL AM SPEC (dBm)	MEASURED (dB)
1000.000000	< -20.00	-41.83
2000.000000	< -20.00	-42.83
3000.000000	< -20.00	-38.83
4000.000000	< -20.00	-42.00
5000.000000	< -20.00	-38.50
6000.000000	< -20.00	-41.83
7000.000000	< -20.00	-42.17
8000.000000	< -20.00	-40.33
9000.000000	< -20.00	-41.50
10000.000000	< -20.00	-41.83
11000.000000	< -20.00	-40.50
12000.000000	< -20.00	-39.33
13000.000000	< -20.00	-40.83
14000.000000	< -20.00	-39.50
15000.000000	< -20.00	-40.67
16000.000000	< -20.00	-38.83
17000.000000	< -20.00	-41.00
18000.000000	< -20.00	-40.17
19000.000000	< -20.00	-44.17
20000.000000	< -20.00	-44.00
21000.000000	< -20.00	-40.67
22000.000000	< -20.00	-44.17

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CARRIER FREQ (MHz)	DEEP AM SPEC (dBm)	MEASURED (dB)
1000.000000	< -37.00	-70.00
2000.000000	< -37.00	-67.00
3000.000000	< -37.00	-65.50
4000.000000	< -37.00	-66.50
5000.000000	< -37.00	-62.17
6000.000000	< -37.00	-62.33
7000.000000	< -37.00	-68.67
8000.000000	< -37.00	-69.50
9000.000000	< -37.00	-64.17
10000.000000	< -37.00	-61.17
11000.000000	< -37.00	-62.33
12000.000000	< -37.00	-63.83
13000.000000	< -37.00	-64.67
14000.000000	< -37.00	-63.67
15000.000000	< -37.00	-64.17
16000.000000	< -37.00	-62.50
17000.000000	< -37.00	-67.33
18000.000000	< -37.00	-68.50
19000.000000	< -37.00	-67.00
20000.000000	< -40.00	-66.33
21000.000000	< -40.00	-46.83
22000.000000	< -40.00	-52.83

FM ACCURACY

PASS

CARRIER FREQ (MHz)	FM ACCURACY SPEC (%)	MEASURED (%)
1000.000000	+/- 10.0	-.42
5000.000000	+/- 10.0	+.21
10000.000000	+/- 10.0	+1.66
16000.000000	+/- 10.0	+1.25
22000.000000	+/- 10.0	+1.66

MAX ACFM DEVIATION

PASS

CARRIER FREQ (MHz)	FM RATE (MHz)	MINIMUM FM DEV. (MHz)	MEASURED (MHz)
1000.000000	.100	.500	.609
5000.000000	.100	.500	.619
9000.000000	.100	1.000	1.223
17000.000000	.100	1.500	1.840
22000.000000	.100	2.000	2.455
1000.000000	1.000	5.000	6.066
5000.000000	1.000	5.000	6.400
1000.000000	3.000	8.000	10.817
5000.000000	3.000	8.000	9.793

MAX DCFM DEVIATION

PASS

CARRIER FREQ (MHz)	FM RATE	MINIMUM FM DEV. (MHz)	MEASURED (MHz)
1000.000000	DC	150.000	153.333
5000.000000	DC	150.000	154.000
9000.000000	DC	150.000	153.333
18000.000000	DC	150.000	153.333
22000.000000	DC	150.000	153.667

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FM BANDWIDTH

PASS

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CARRIER FREQ (MHz)	8 MHz BANDWIDTH SPEC (dB)	MEASURED (dB)
1500.000000	> -3.00	- .98
4863.000000	> -3.00	- .92
9000.000000	> -3.00	-1.58
18000.000000	> -3.00	-1.75
23000.000000	> -3.00	-1.58

PULSE RISE & FALL

PASS

FREQ (GHZ)	MAX SPEC	RISETIME	FALLTIME
1.9	25 nS	9.12 nS	11.64 nS
5.0	25 nS	12.77 nS	13.09 nS
9.0	25 nS	15.10 nS	14.56 nS
15.0	25 nS	17.80 nS	16.05 nS
23.0	25 nS	18.34 nS	17.96 nS
28.0	25 nS	17.15 nS	14.65 nS
35.0	25 nS	15.59 nS	16.23 nS
45.0	25 nS	16.54 nS	17.04 nS

PULSE LEVEL ACCUR.

PASS

FREQ (GHZ)	+ .3 dB		- .3 dB	
	MIN LEVEL	MAX LEVEL	MEASURED	
1.9	- .50	- .80	- .20	- .38
5.0	-1.83	-2.13	-1.53	-1.81
9.0	-2.08	-2.38	-1.78	-2.10
15.0	-2.20	-2.50	-1.90	-2.19
23.0	-2.88	-3.18	-2.59	-2.90
28.0	-3.87	-4.17	-3.57	-3.87
35.0	-4.36	-4.66	-4.06	-4.37
45.0	-7.22	-7.52	-6.92	-7.24



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SWEPT FREQ ACCURACY. PASS

UT SWEEP FREQ						
START	STOP (GHz)	NOMINAL U/M	MINIMUM	MAXIMUM	MEASURED	
.01	20	5.357325 GHz	5.337335	5.377315	5.367999	
.01	9.1	5.980994 GHz	5.971904	5.990084	5.986076	
2	7	2.1000000 GHz	2.0950000	2.1050000	2.1023089	
2	7	3.2062500 GHz	3.2012500	3.2112500	3.2069046	
2	7	3.2687500 GHz	3.2637500	3.2737500	3.2693847	
2	7	5.215625 GHz	5.210625	5.220625	5.218597	
2	7	5.653125 GHz	5.648125	5.658125	5.656230	
2	7	6.906250 GHz	6.901250	6.911250	6.909135	
7	13.5	7.199063 GHz	7.192563	7.205563	7.201913	
7	13.5	13.296875 GHz	13.290375	13.303375	13.300401	
15	20	15.200000 GHz	15.195000	15.205000	15.202371	
15	20	19.696875 GHz	19.691875	19.701875	19.700513	
2	13.5	2.1006250 GHz	2.0891250	2.1121250	2.1068875	
2	13.5	6.887500 GHz	6.876000	6.899000	6.882906	
2	13.5	7.203750 GHz	7.192250	7.215250	7.209594	
2	13.5	13.385000 GHz	13.373500	13.396500	13.391067	
7	20	7.195000 GHz	7.182000	7.208000	7.201906	
7	20	13.337500 GHz	13.324500	13.350500	13.344685	
7	20	13.760000 GHz	13.747000	13.773000	13.766688	
7	20	19.805000 GHz	19.792000	19.818000	19.812909	
.01	26.5	5.457006 GHz	5.430516	5.483496	5.471428	
2	50	2.1500000 GHz	2.1020000	2.1980000	2.1782752	
2	50	6.860000 GHz	6.812000	6.908000	6.892251	
2	50	7.100000 GHz	7.052000	7.148000	7.128918	
2	50	13.400000 GHz	13.352000	13.448000	13.427760	
2	50	13.610000 GHz	13.562000	13.658000	13.639216	
2	50	19.850000 GHz	19.802000	19.898000	19.854761	
2	50	20.120000 GHz	20.072000	20.168000	20.119786	
2	50	23.750000 GHz	23.702000	23.798000	23.777704	
2	50	26.600000 GHz	26.552000	26.648000	26.607892	
2	50	33.320000 GHz	33.272000	33.368000	33.328811	
2	50	33.500000 GHz	33.452000	33.548000	33.493756	
2	50	37.880000 GHz	37.832000	37.928000	37.894563	
2	50	38.120000 GHz	38.072000	38.168000	38.147741	
2	50	47.750000 GHz	47.702000	47.798000	47.467213	

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LF VIDEO FEEDTHRU PASS

	FREQ(MHZ)	+/- SPEC	MEASURED
Output = 10 dBm	400.000	5.0 %	0.00 %
	700.000	5.0 %	0.00 %
	1000.000	5.0 %	0.00 %
	1300.000	5.0 %	0.00 %
	1600.000	5.0 %	0.00 %
	1900.000	5.0 %	0.00 %
Output = 0 dBm	400.000	2.0 %	0.00 %
	700.000	2.0 %	0.00 %
	1000.000	2.0 %	0.00 %
	1300.000	5.0 %	.24 %
	1600.000	5.0 %	1.49 %
	1900.000	5.0 %	.76 %

HF VIDEO FEEDTHRU PASS

OUTPUT (dBm)	FREQ (MHZ)	+/- SPEC	MEASURED
10	5000.00	.2 %	.03 %
10	10000.00	.2 %	.02 %
10	15000.00	.2 %	.01 %
2.5	20000.00	.2 %	.05 %
2.5	23000.00	.2 %	.05 %

AM ACCURACY PASS

CARRIER FREQ (MHz)	MIN DEPTH (%)	MAX DEPTH (%)	MEASURED (%)
500.000000	28.51	31.51	30.50
5000.000000	28.51	31.51	30.15

AM BANDWIDTH PASS

CARRIER FREQ (MHz)	100 KHz BW SPEC (dB)	MEASURED (dB)
1500.000000	> -3.00	-.51
5000.000000	> -3.00	-.16
9000.000000	> -3.00	-.50
18000.000000	> -3.00	-.68
23000.000000	> -3.00	-.36

Report of Test Uncertainty and Notations/Exclusions

Agilent/HP 83650B Signal Generator

Work Order: TSV-0-238520
Customer: BAY AREA COMPLIANCE CORP.
Technician: S. PADILLA

Serial Number: 3614A000276
Asset Number: 183
Technical Manager: E. Solis

Date of Service: 4-Jun-20

Procedure Reference: SureCal CP1522 Rev. B

**This report is a supplementary statement of the estimated test uncertainties associated with the performance verification and data collected for the unit under test identified above. The expanded uncertainty presented in this report is consistent with the NIST Technical Note 1297/1994 ISO Guide to the Expression of Uncertainty in Measurement (GUM). Expanded uncertainty statements are the R.S.S. combination of both type A and type B uncertainty contributors and are representative of total system uncertainty during testing to include the unit under test. The distribution corresponds to a probability of approximately 95% (2 sigma). Data presented here is not to be confused with a tolerance limit for the user during application.*

Function Tested, Step Number	Value or Description	Estimated Uncertainty
10 MHz Timebase		5.6E-11 Hz
Power Accuracy	<2GHz	0.22 dB
	>/=2GHz, </=20GHz	0.35 dB
	>20GHz	0.38 dB
Power Flatness	<2GHz	0.15 dB
	>/=2GHz, </=20GHz	0.25 dB
	>20GHz	0.57 dB
Max. Leveled Power	0.01 to </=50GHz	2.30 dB
	0.01 to <50GHz	1.30 dB
	0.01 to <26.50GHz	1.70 dB
Frequency Switching Time	CW Out/In Switch	10.00 uV
	Sweep Stepped Switch	0.000001 s
SSB Phase Noise		2.00 dB
Spurious Signals: Harmonics, Subharmonics	<50MHz to </=23.5GHz	1.75 dB
	23.5GHz to 26.5GHz	2.22 dB
Spurious Signals: Non-Harmonics	all frequencies	1.00 dB
	low band mixer spur	1.85 dB
Spurious Signals: Line Related Attenuator		3.00 dB
	<= 2000MHz	
	0dBm to -10dBm	0.22 dB
	<-10dBm to -50dBm	0.23 dB
	<-50dBm to -70dBm	0.24 dB
	<-70dBm to -90dBm	0.25 dB
	> 2000 MHz	
	0dBm to -20dBm	0.32 dB
	<-20dBm	0.58 dB