CALIFORNIA AMPLIFIER TEST REPORT

FOR THE

MMDS WIRELESS MODEM, 530009

FCC PART 21

COMPLIANCE

DATE OF ISSUE: MARCH 3, 2003

PREPARED FOR:

California Amplifier
460 Calle San Pablo
Camarillo, CA 93012

P.O. No.: 28079
W.O. No.: 80082

PREPARED BY:

Mary Ellen Clayton
CKC Laboratories, Inc.
5473A Clouds Rest
Mariposa, CA 95338

Date of test: February 27-28, 2003

Report No.: FC03-011

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

DATE OF TEST:	February 27-28, 2003
DATE OF RECEIPT:	February 27, 2003
PURPOSE OF TEST:	To demonstrate the compliance of the MMDS Wireless Modem, 530009 with the requirements for FCC Part 21 devices.
TEST METHOD:	FCC Part 21
FREQUENCY RANGE TESTED:	9 kHz – 27 GHz
MANUFACTURER:	California Amplifier 460 Calle San Pablo Camarillo, CA 93012
REPRESENTATIVE:	Nader Barakat
TEST LOCATION:	CKC Laboratories, Inc. 5473A Clouds Rest Mariposa, CA 95338

SUMMARY OF RESULTS

As received, the California Amplifier MMDS Wireless Modem, 530009 was found to be fully compliant with the following standards and specifications:

United States

- FCC Part 21

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

QUALITY ASSURANCE:

Steve Behm, Director of Engineering Services and Quality Assurance

Joyce Walker, Quality Assurance Administrative Manager

Mike Wilkinson, Lab Manager

TEST PERSONNEL:

Monika Brandle, EMC Test Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The MMDS Wireless Modem, 530009 tested by CKC Laboratories was a production unit.

EQUIPMENT UNDER TEST

MMDS Wireless Modem
Manuf: California Amplifier
Model: 530009
Serial: 022703-001
FCC ID: J26-530009 (pending)

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Fan
Manuf: Panaflo
Model: FBK-08A12H
Serial: 5A10TL1A
FCC ID: DoC

Power Supply
Manuf: HP
Model: 6205C
Serial: 2228A-01775
FCC ID: NA

Monitor
Manuf: IBM
Model: P50
Serial: 08-69550
FCC ID: DoC

Mouse
Manuf: Compaq
Model: Intellimouse 1.2A PS/2 Compatible
Serial: 63618-OEM-0918021-54599
FCC ID: DoC

Keyboard
Manuf: Compaq
Model: SK-2850
Serial: B23240ACP1862K
FCC ID: DoC

Computer
Manuf: Compaq
Model: Prosignia Desktop
Serial: 6008DJ3PA155
FCC ID: DoC

MEASUREMENT UNCERTAINTY

TEST	HIGHEST UNCERTAINTY
Radiated Emissions	+/- 2.94 dB

Note: Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Statements of compliance are based on the nominal values only.

TEMPERATURE AND HUMIDITY DURING TESTING
The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

2.1033(c)(3) USER'S MANUAL
The necessary information is contained in a separate document.

2.1033 (c)(4) TYPE OF EMISSIONS
F9W

2.1033(c)(5) FREQUENCY RANGE
2596-2686 MHz. Note: The grant should cover this operational band even though the testing was conducted over the 2603 to 2683 MHz band. The reason for this was simply a limitation on the test software used to generate the proprietary CDMA waveform and control the Modem during testing. The Modem circuitry and filtering is fully capable of covering the specified bandwidth of 2596-2686 MHz.

2.1033(c)(6) OPERATING POWER
The maximum conducted rated channel power (rms) at the antenna port is:

a. 25 dBm (316.2 mW) at any channel frequency centered within ±1.5 MHz from any MMDS channel center frequency with in the specified frequency bandwidth in section 2.1033(c)(5).
b. 28 dBm (631 mW) at any channel frequency centered within ±0.5 MHz from any MMDS channel center frequency with in the specified frequency bandwidth in section 2.1033(c)(5).

2.1033(c)(7) MAXIMUM POWER RATING
2 Watts

2.1033(c)(8) DC VOLTAGES
Power Supply Requirements: The CPE runs off an AC to DC power supply of 120 VAC input and 6 VDC output. The total peak transmit mode current consumption is about 2A. The receive mode current consumption is about 0.8A. The CPE incorporates several internal voltage regulations. There are 5, 3.3, and 1.8 volts. The digital modem section runs off the 1.8 and 3.3 VDC regulators, while the RF/Analog sections run off the 3.3 and 5 V supplies. The transmit RF section (driver and PA) runs off the 6-volt supply directly from the AC-to-DC power supply. The DC current breakdown is as follows:
Digital/Modem Section: 450 mA
RF Receive section: 350 mA
RF Transmit section: 1.5A

2.1033(c)(9) TUNE-UP PROCEDURE

The CPE does not require any tuning or adjustment by the user. The CPE is tuned and set at the factory. Both power and channel frequency are set by the wireless operator Base Station. No user interface is required except for power up or down and connecting the CPE to a computer via the USB or Ethernet port.

2.1033(c)(10) SCHEMATICS AND CIRCUITRY DESCRIPTION

Emission Suppression:

In order to comply with Part 21 of the FCC Certification Rules, The Modem incorporates two main filtering schemes optimally placed to achieve their desired goal. The first filter is at the IF frequency of 350 MHz using a surface mount SAW filter technology, that has very high selectivity. The filter Band Width (BW) is 2 MHz, which matches that of the channel BW. The second filtering scheme is in the RF section of the Modem. an RF ceramic BPF along with a Low Pass Filter (LPF) are used to achieve the maxim out-of-band spurious emission rejection as required by Part 21.

The Modem digital circuitry generates the CDMA digital waveform which in turn gets unconverted to the desired transmitted channel. In addition the Modem commands the CPE to the desired minimum Tx power based on data received from the Base Station during the receive time frame. The Modem software caps the Transmit power to the maximum allowable rated power as outlined in this application.

2.1033(c)(11) LABEL AND PLACEMENT

The necessary information is contained in a separate document.

2.1033(c)(12) SUBMITTAL PHOTOS

The necessary information is contained in a separate document.

2.1033(c)(13) MODULATION INFORMATION

The Modulation Technique used in this Modem is a propriety CDMA waveform utilizing Spread Spectrum Coding Techniques. The Transmit and Receive channel is comprised of four contiguous sub-carries at 500 kHz each. Further, each carrier can have up to 32 spreading codes. Depending on received signal quality, each sub-carrier can be modulated with QPSK or up to 16 QAM for optimum data rate.

2.1033(c)(14)/2.1046/21.904(d) - RF POWER OUTPUT

Test Conditions: EUT is powered by 6VDC and is continuously sending a signal. Operating frequency range is 2596-2686 MHz. Output Power Measurements – taken with a power meter. Cable correction factor is 9.2 dB. Customer is declaring the output power to be 25 and 28 dBm. Took measurements at each power rating at low, middle and high channels.

Low Channel = 2603 MHz
Middle Channel = 2640 MHz
High Channel = 2683 MHz

25dBm
2603 – 15.94dBm + 9.2dBm = 25.14dBm
2640 – 15.94dBm + 9.2dBm = 25.14dBm
2683 – 15.96dBm + 9.2dBm = 25.16dBm

28dBm
2603-19.03+ 9.2dBm = 28.23dBm
2640-19.11+ 9.2dBm = 28.31dBm
2683-19.14+ 9.2dBm = 28.34dBm

PHOTOGRAPH SHOWING RF POWER

Test Equipment

Description	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
Power Meter	HP	435B	2342A08531	00174	5/29/02	5/29/03

2.1033(c)(14)/2.1047(a) - MODULATION CHARACTERISTICS - AUDIO FREQUENCY RESPONSE

Not applicable to this unit.

2.1033(c)(14)/2.1047(b) MODULATION CHARACTERISTICS – Modulation Limiting Response

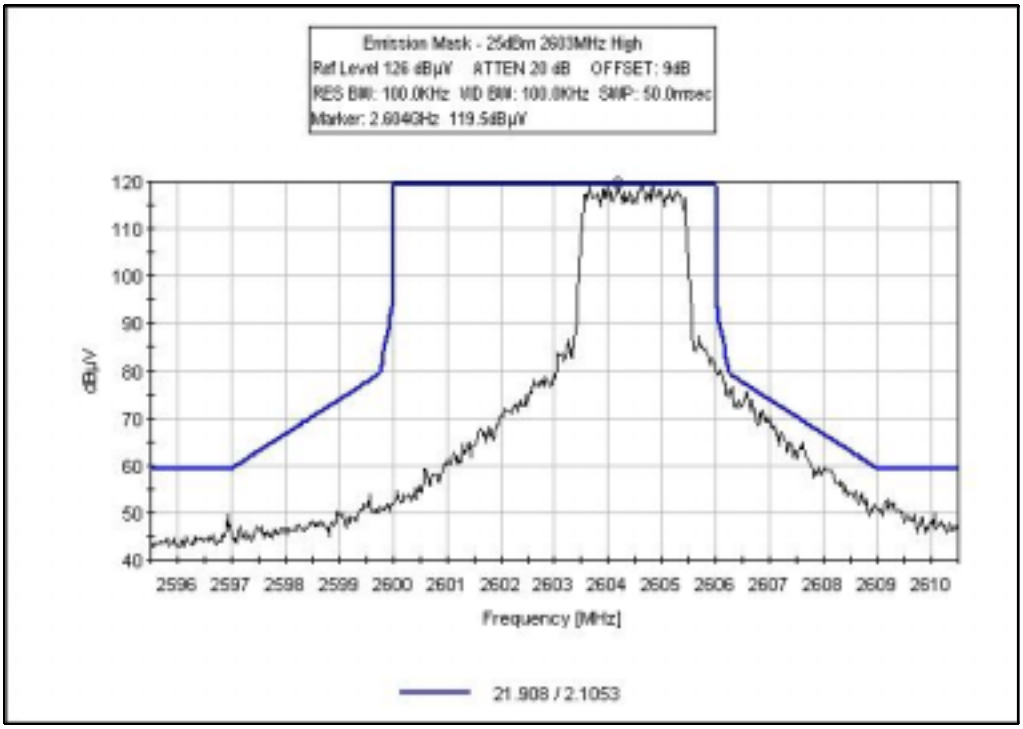
Not applicable to this unit.

2.1033(c)(14)/2.1049(i)/21.908(d)- OCCUPIED BANDWIDTH

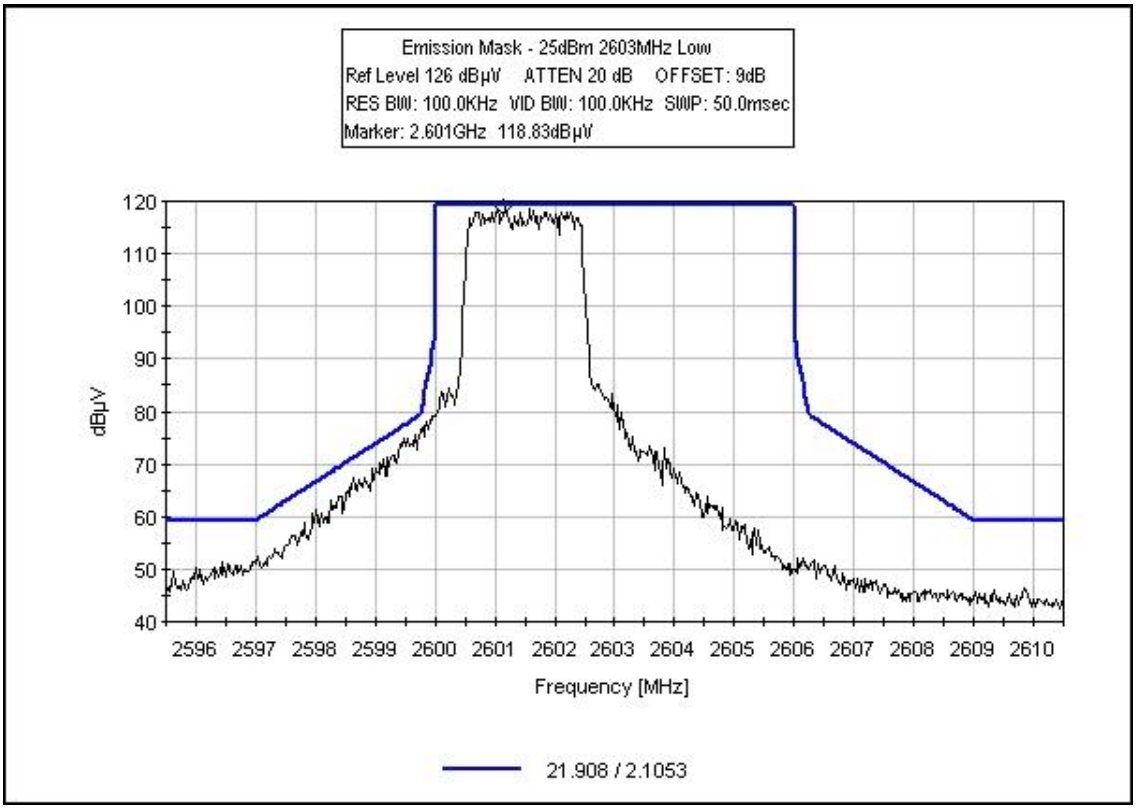
Not applicable to this unit.

Test Condition: Plots taken at both power levels (25 and 28dBm). The low and high edges of each channel were recorded. EUT is powered by 6VDC and is continuously sending a signal. Operating frequency range is 2596-2686 MHz.

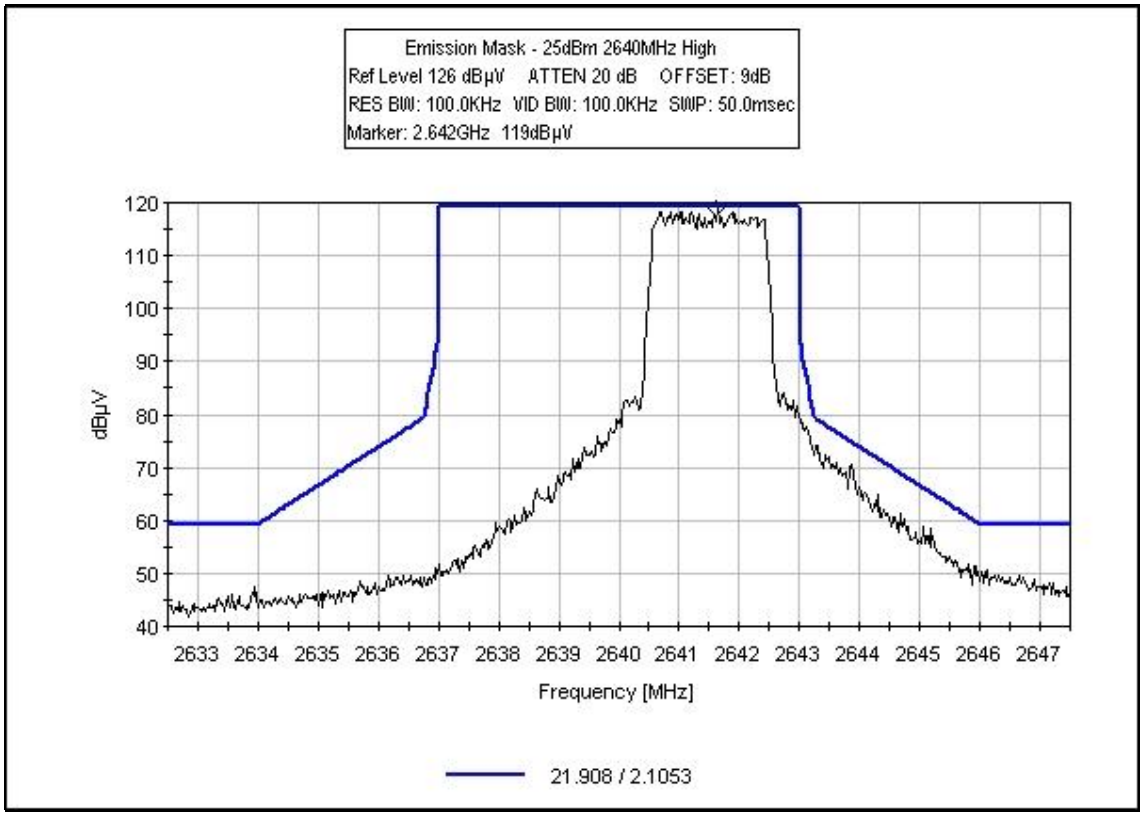
EMISSIONS MASK - 25 dBm 2603 MHz High



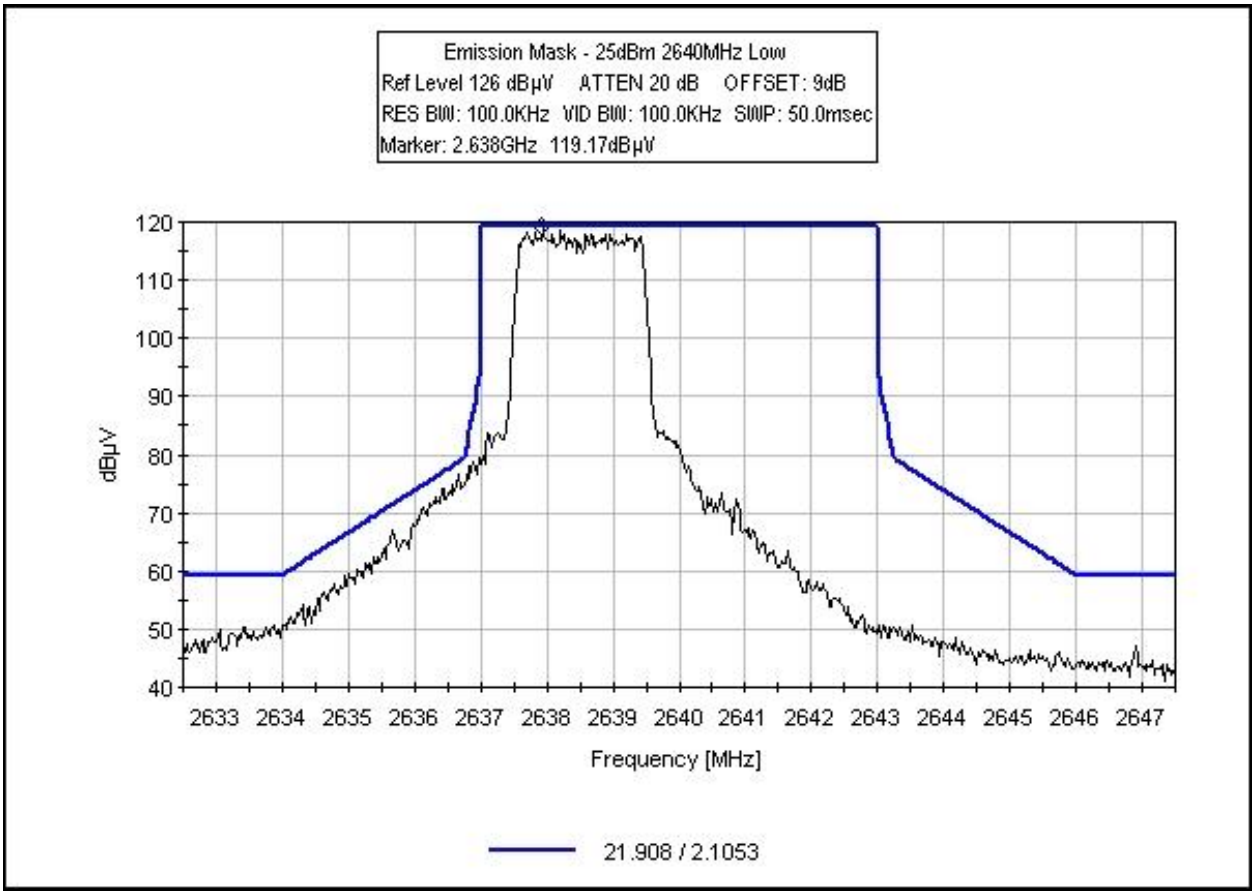
EMISSIONS MASK - 25 dBm 2603 MHz Low



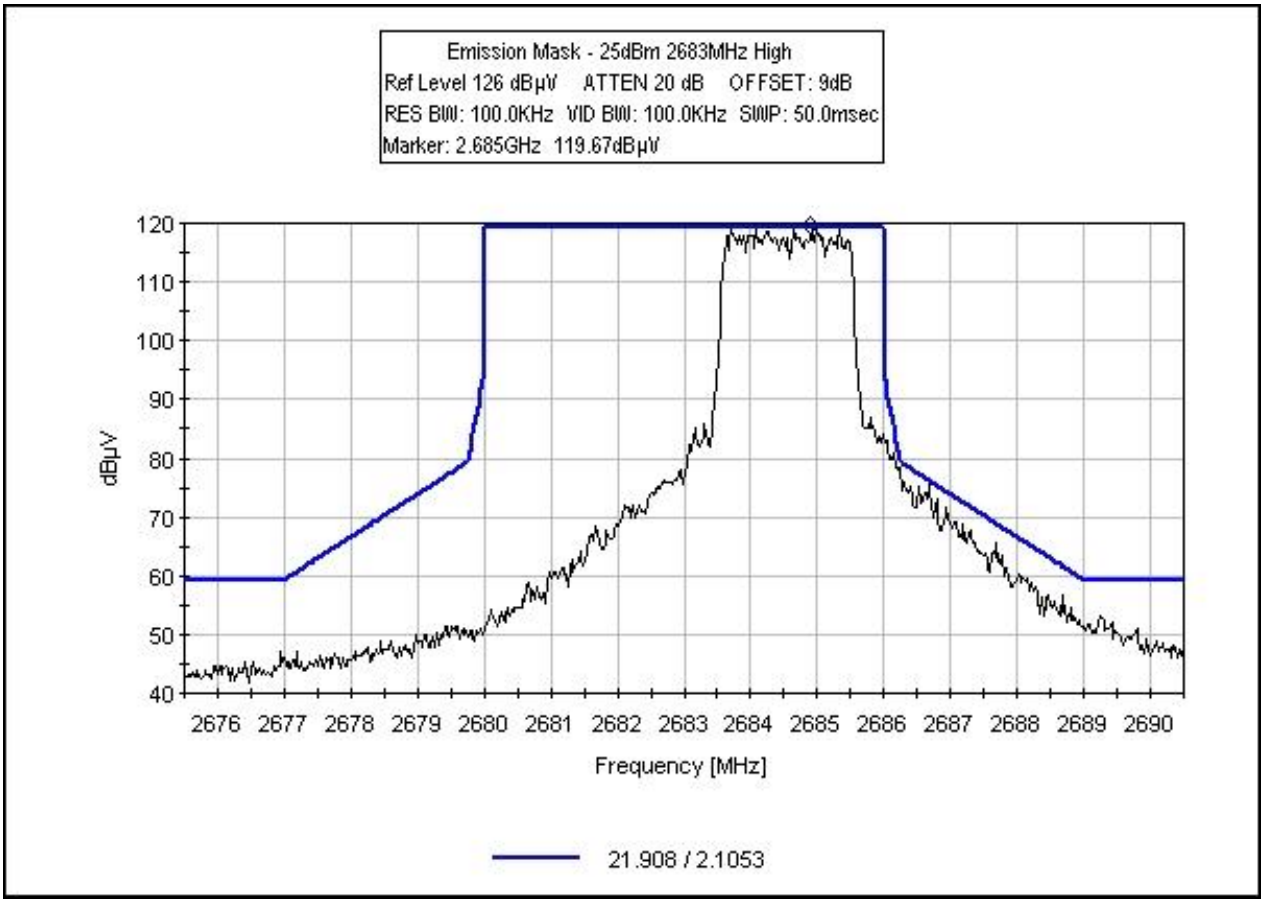
EMISSIONS MASK - 25 dBm 2640 MHz High



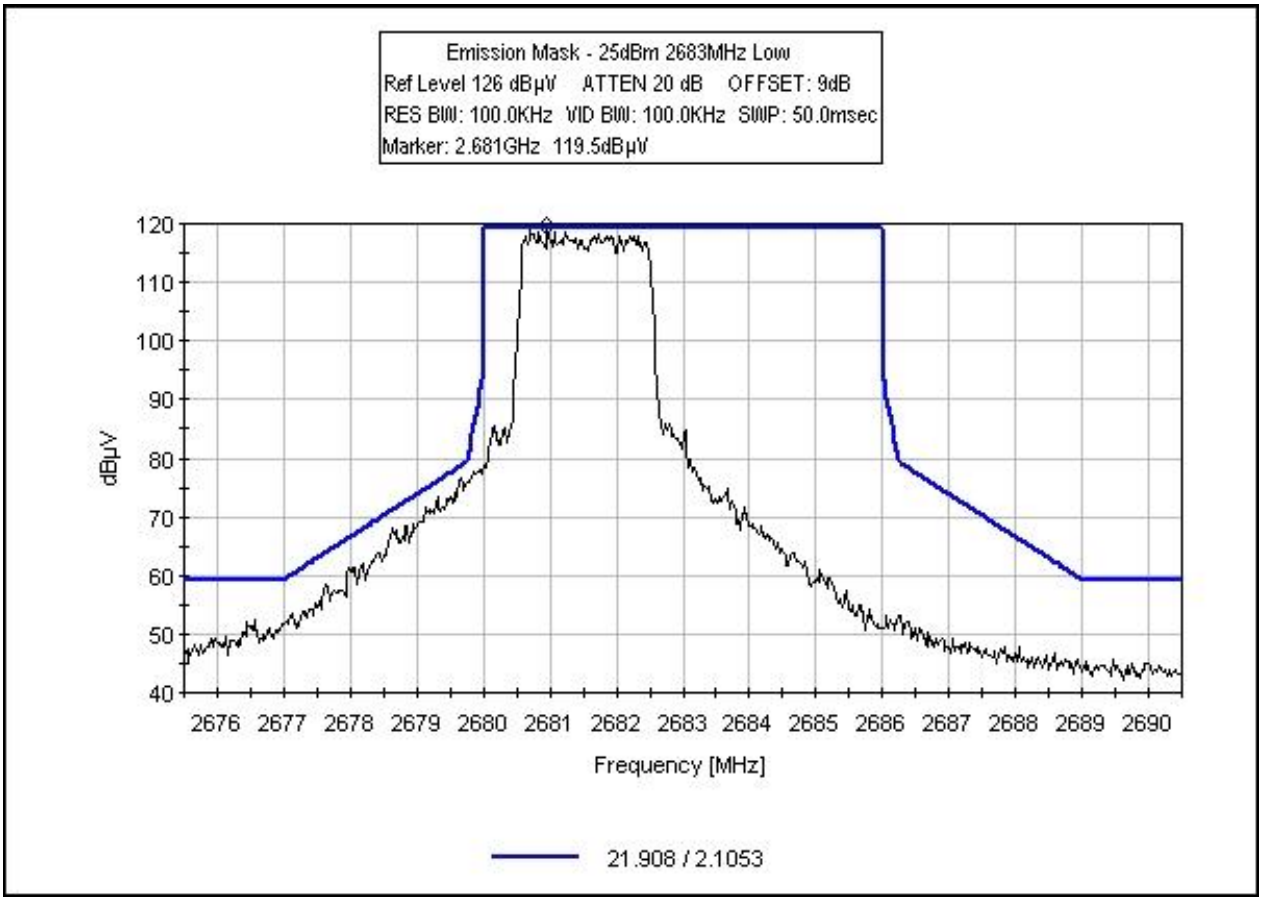
EMISSIONS MASK - 25 dBm 2640 MHz Low



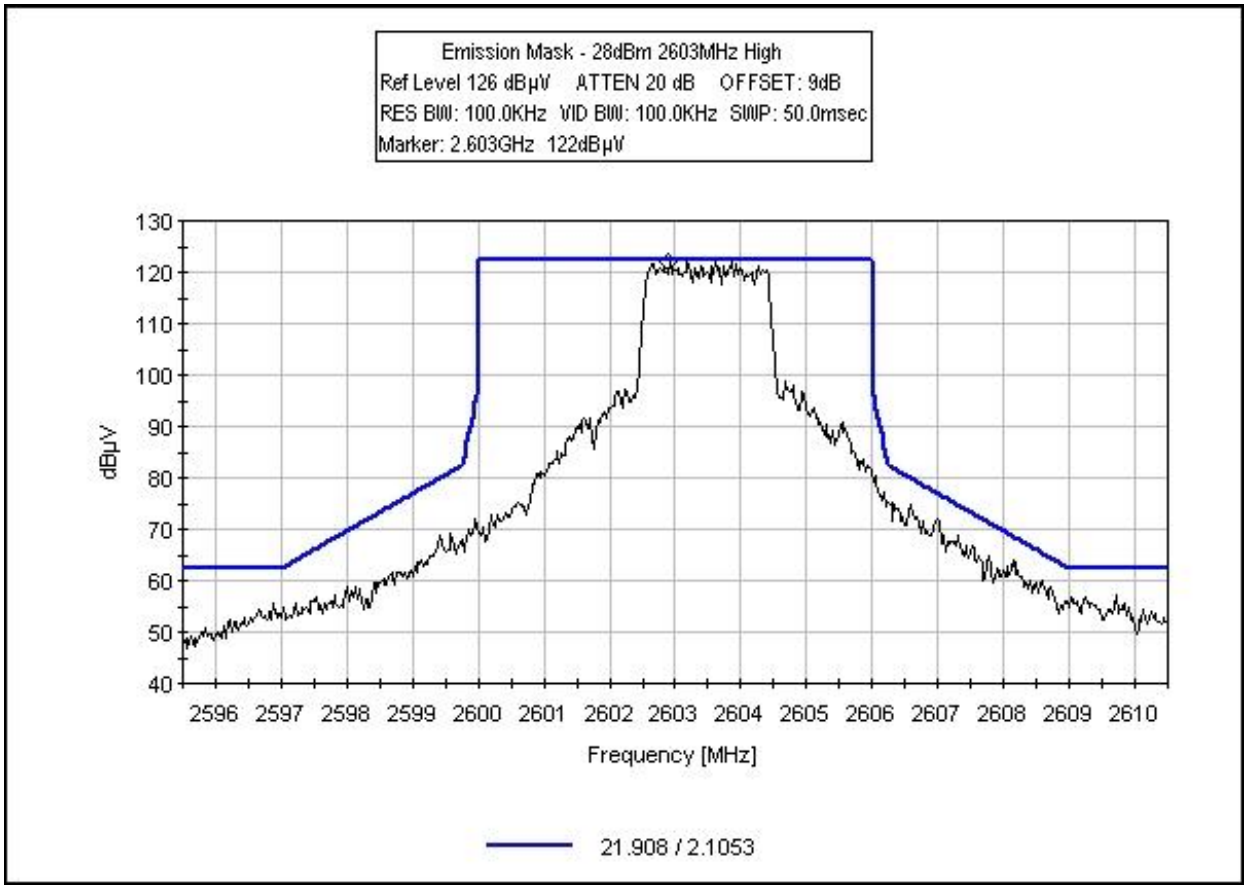
EMISSIONS MASK - 25 dBm 2683 MHz High



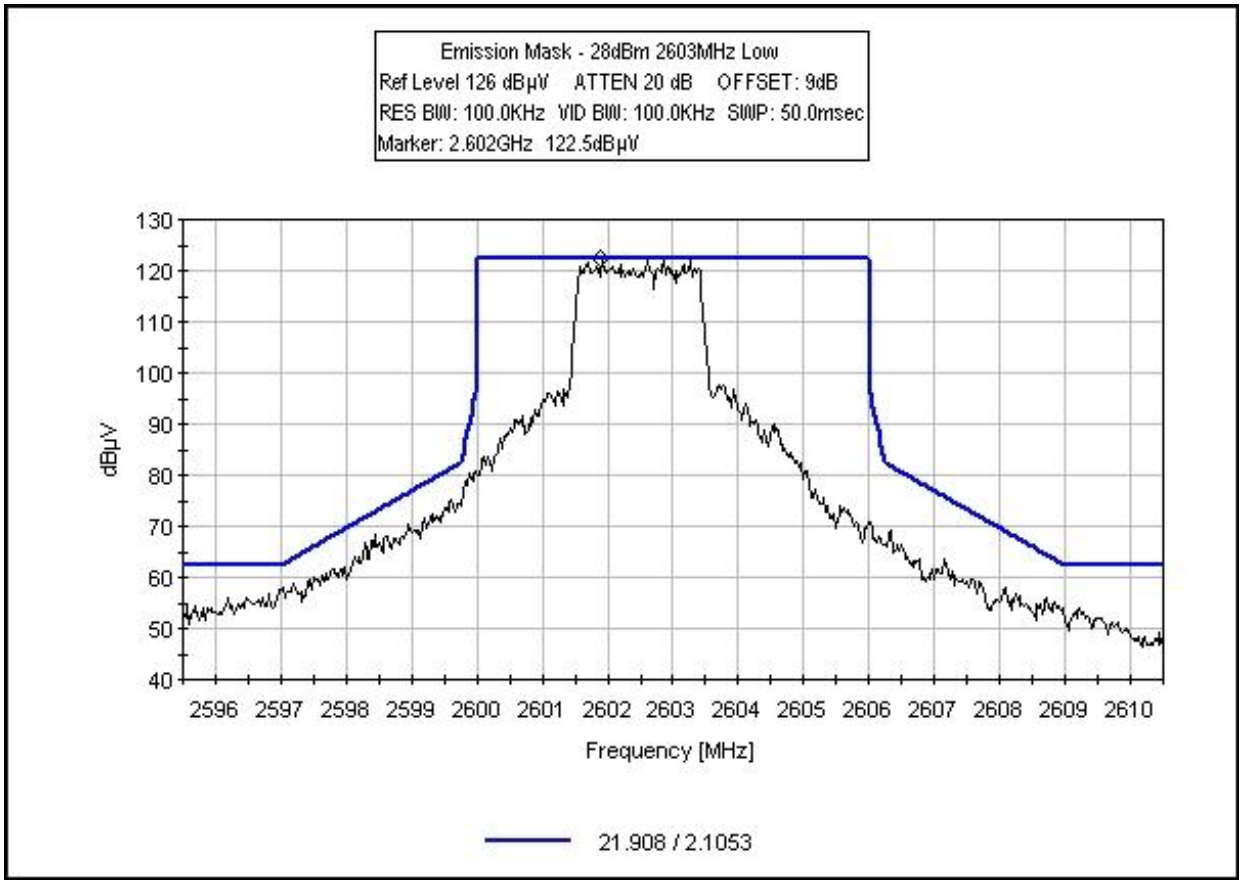
EMISSIONS MASK - 25 dBm 2683 MHz Low



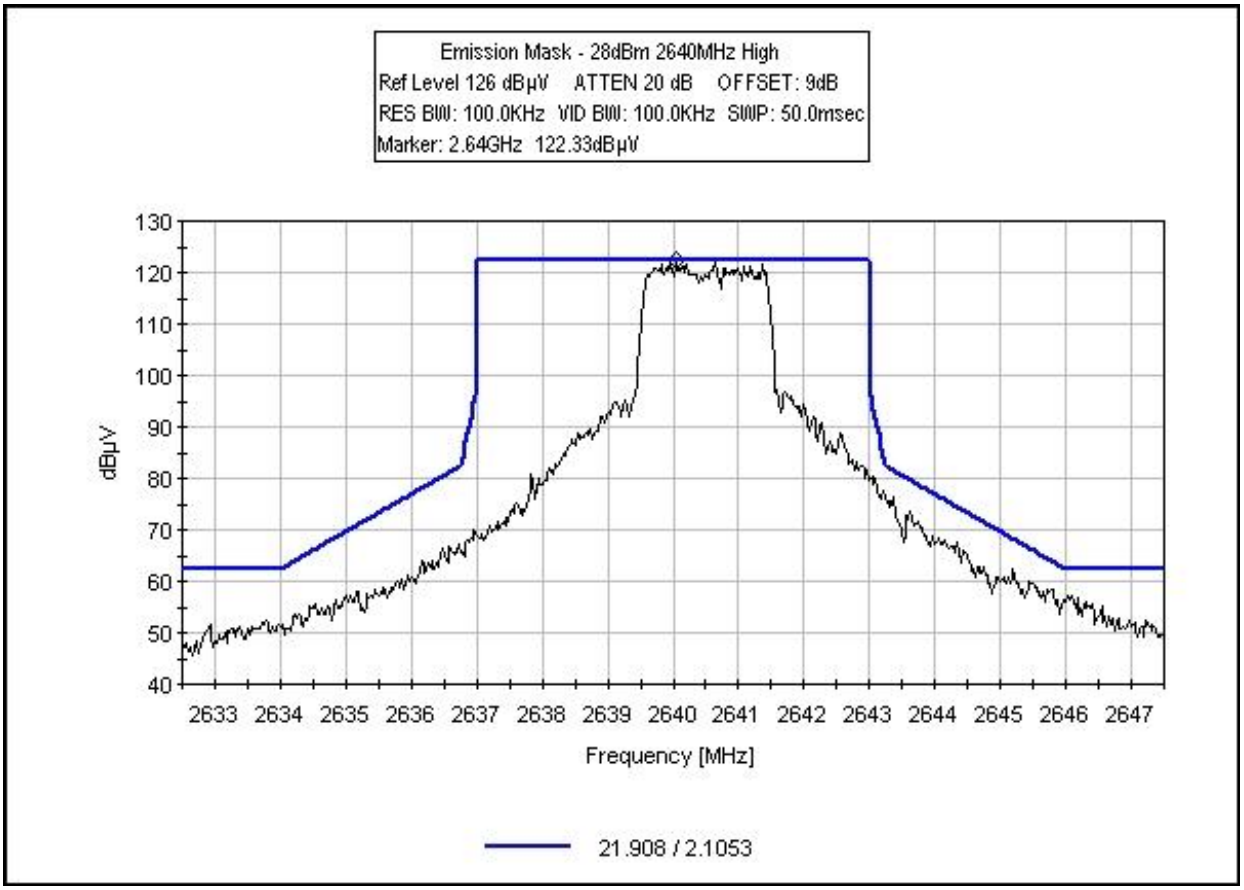
EMISSIONS MASK - 28 dBm 2603 MHz High



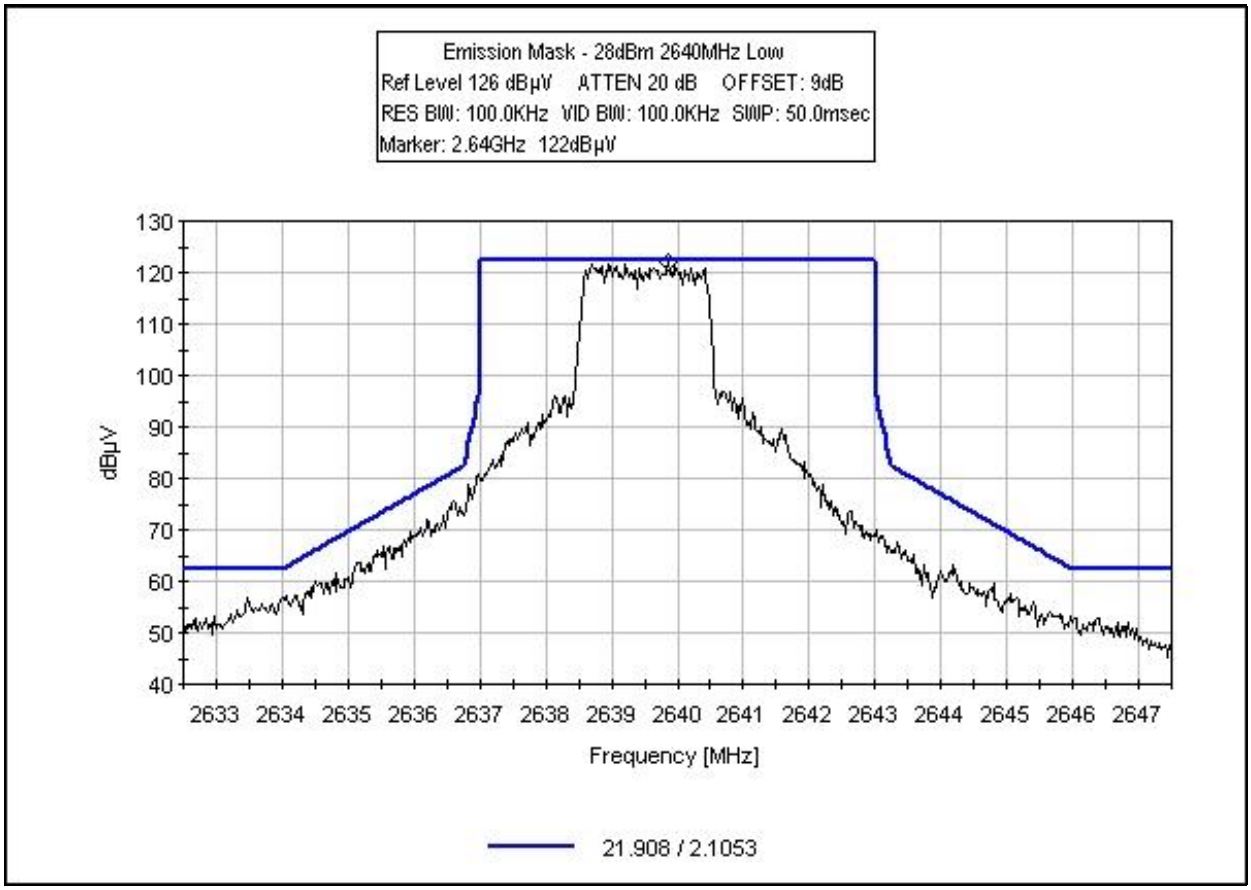
EMISSIONS MASK - 28 dBm 2603 MHz Low



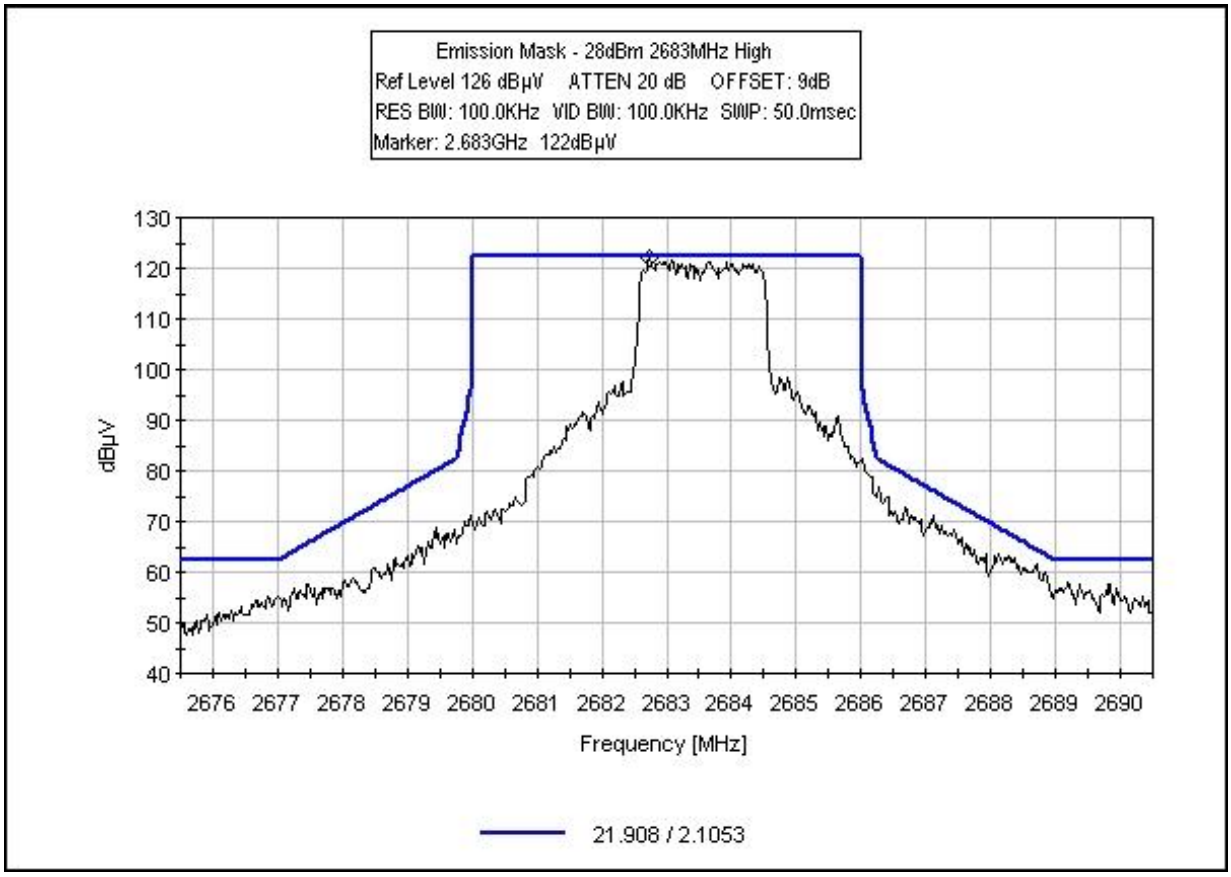
EMISSIONS MASK - 28 dBm 2640 MHz High



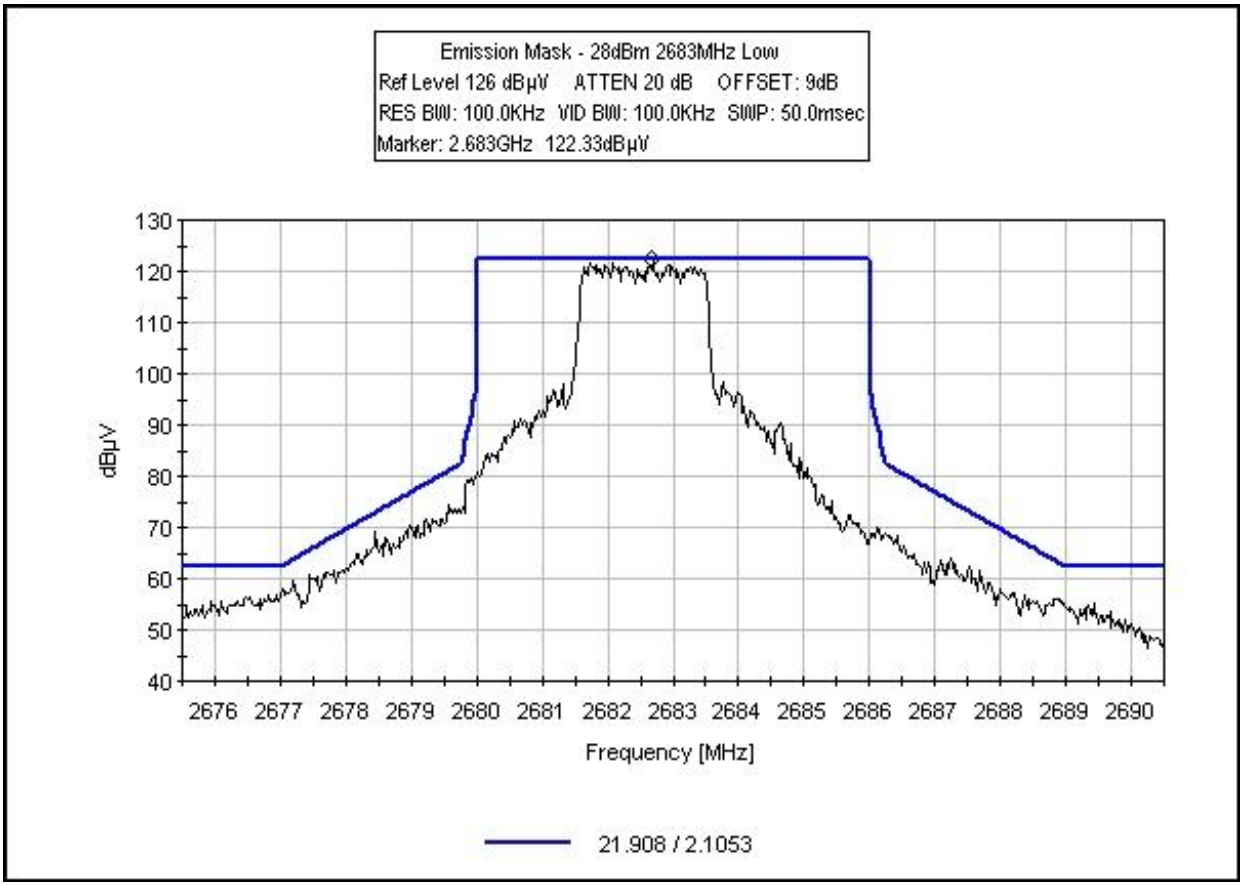
EMISSIONS MASK - 28 dBm 2640 MHz Low



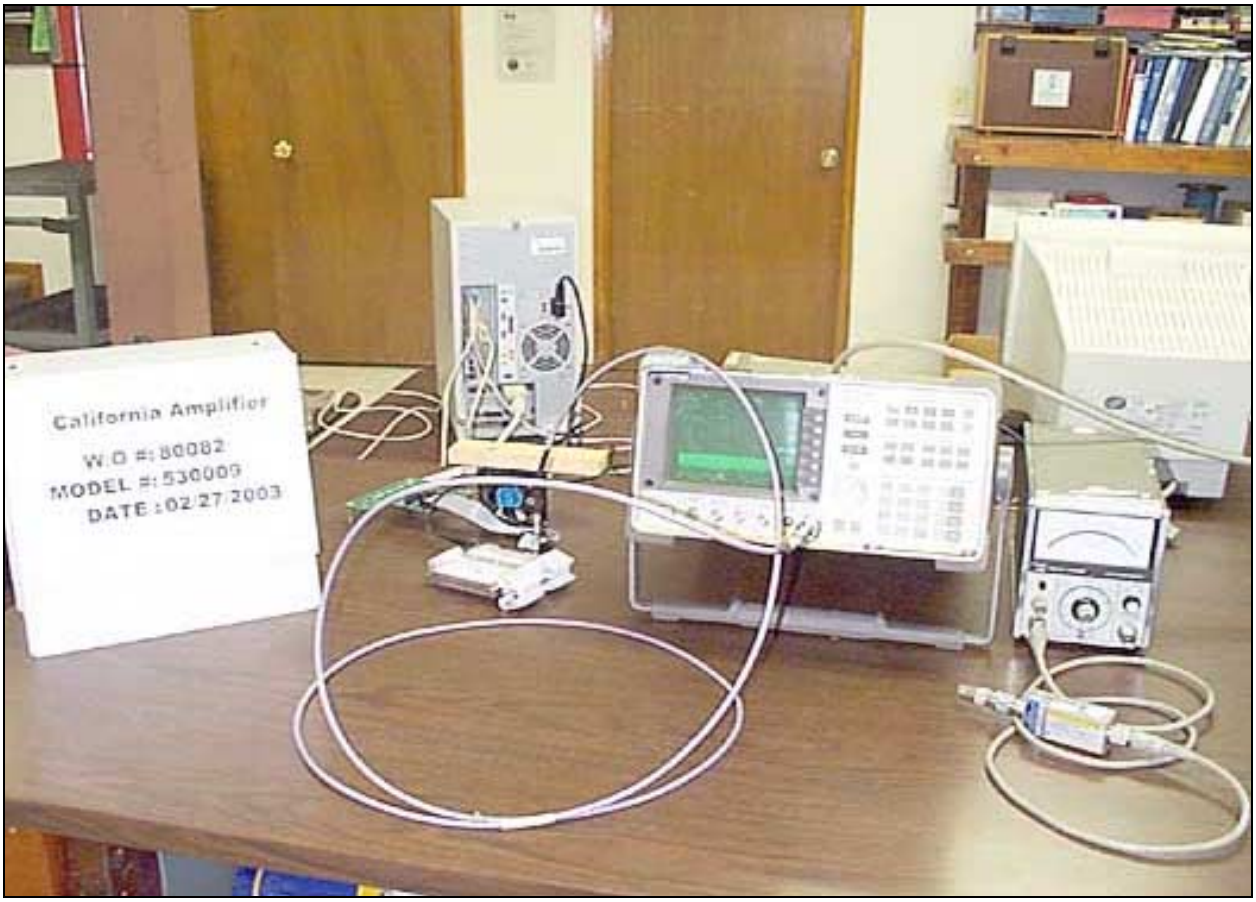
EMISSIONS MASK - 28 dBm 2683 MHz High



EMISSIONS MASK - 28 dBm 2683 MHz Low



PHOTOGRAPH SHOWING DIRECT CONNECT EMISSIONS



Test Equipment

Description	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
Spectrum Analyzer RF Section	HP	8567A	2727A00473	P00709	2/20/03	2/20/04
Spectrum Analyzer Display	HP	8567A	2816A15964	00708	2/20/03	2/20/04
Spectrum Analyzer QP Adapter	HP	85650A	2521A00904	02495	3/4/02	3/4/03
Spectrum Analyzer	HP	8564E	3623A00539	01406	6/27/02	6/27/03

2.1033(c)(14)/2.1051/21.908(d)- SPURIOUS EMISSIONS AT ANTENNA TERMINAL

ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	27 GHz	1 MHz

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **California Amplifier**
Specification: **21.908 / 2.1051**
Work Order #: **80082** Date: 02/27/2003
Test Type: **2.1053** Time: 20:37:49
Equipment: **Modem** Sequence#: 2
Manufacturer: California Amplifier Tested By: Monika Brandle
Model: 530009
S/N: 022703-001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Modem*	California Amplifier	530009	022703-001

Support Devices:

Function	Manufacturer	Model #	S/N
Fan	Panaflo	FBK-08A12H	5A10TL1A
Power Supply	HP	6205C	2228A-01775
Monitor	IBM	P50	08-69550
Mouse	Compaq	Intellimouse 1.2A PS/2 Compatible	63618-OEM-0918021-54599
Keyboard	Compaq	SK-2850	B23240ACP1862K
Computer	Compaq	Prosignia Desktop	6008DJ3PA155

Test Conditions / Notes:

EUT is powered by 6VDC and is continuously sending a signal. Frequency range is 2596-2686 MHz. Low Channel = 2603 MHz, Middle Channel = 2640 MHz, High Channel = 2683 MHz. Output power range 25dBm. Frequency Range Scanned 9 kHz - 27 GHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2333.001M	60.8					+0.0	60.8	72.0	-11.2	None
2	2632.992M	60.2					+0.0	60.2	72.0	-11.8	None

3	2670.001M	60.0	+0.0	60.0	72.0	-12.0	None
4	2290.001M	59.5	+0.0	59.5	72.0	-12.5	None
5	2713.025M	58.5	+0.0	58.5	72.0	-13.5	None
6	5206.194M	58.2	+0.0	58.2	72.0	-13.8	None
7	2613.017M	58.0	+0.0	58.0	72.0	-14.0	None
8	2253.001M	57.8	+0.0	57.8	72.0	-14.2	None
9	2556.933M	57.5	+0.0	57.5	72.0	-14.5	None
10	2649.955M	57.3	+0.0	57.3	72.0	-14.7	None
11	2553.036M	57.2	+0.0	57.2	72.0	-14.8	None
12	2569.974M	56.7	+0.0	56.7	72.0	-15.3	None
13	2556.985M	56.5	+0.0	56.5	72.0	-15.5	None
14	2756.266M	56.3	+0.0	56.3	72.0	-15.7	None
15	2653.017M	56.2	+0.0	56.2	72.0	-15.8	None
16	5280.099M	56.2	+0.0	56.2	72.0	-15.8	None
17	2730.088M	55.8	+0.0	55.8	72.0	-16.2	None
18	2632.983M	55.7	+0.0	55.7	72.0	-16.3	None
19	2733.018M	55.7	+0.0	55.7	72.0	-16.3	None
20	2588.981M	55.7	+0.0	55.7	72.0	-16.3	None
21	2640.483M	54.5	+0.0	54.5	72.0	-17.5	None
22	2733.107M	54.5	+0.0	54.5	72.0	-17.5	None
23	2710.198M	54.3	+0.0	54.3	72.0	-17.7	None
24	2602.338M	54.2	+0.0	54.2	72.0	-17.8	None
25	2673.113M	53.7	+0.0	53.7	72.0	-18.3	None

26	13015.620M	53.0	+0.0	53.0	72.0	-19.0	None
27	5365.870M	51.2	+0.0	51.2	72.0	-20.8	None
28	10560.310M	50.8	+0.0	50.8	72.0	-21.2	None
29	13200.570M	45.5	+0.0	45.5	72.0	-26.5	None

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **California Amplifier**
Specification: **21.908 / 2.1051**
Work Order #: **80082** Date: 02/27/2003
Test Type: **2.1053** Time: 20:04:23
Equipment: **Modem** Sequence#: 1
Manufacturer: California Amplifier Tested By: Monika Brandle
Model: 530009
S/N: 022703-001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Modem*	California Amplifier	530009	022703-001

Support Devices:

Function	Manufacturer	Model #	S/N
Fan	Panaflo	FBK-08A12H	5A10TL1A
Power Supply	HP	6205C	2228A-01775
Monitor	IBM	P50	08-69550
Mouse	Compaq	Intellimouse 1.2A PS/2 Compatible	63618-OEM-0918021-54599
Keyboard	Compaq	SK-2850	B23240ACP1862K
Computer	Compaq	Prosignia Desktop	6008DJ3PA155

Test Conditions / Notes:

EUT is powered by 6VDC and is continuously sending a signal. Frequency range is 2596-2686 MHz. Low Channel = 2603 MHz, Middle Channel = 2640 MHz, High Channel = 2683 MHz. Output power range 28dBm. Frequency Range Scanned 9 kHz – 27 GHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2333.000M	61.3					+0.0	61.3	75.0	-13.7	None
2	2290.175M	60.5					+0.0	60.5	75.0	-14.5	None
3	2633.500M	59.5					+0.0	59.5	75.0	-15.5	None
4	2565.917M	59.3					+0.0	59.3	75.0	-15.7	None
5	2650.029M	58.3					+0.0	58.3	75.0	-16.7	None
6	2253.500M	58.3					+0.0	58.3	75.0	-16.7	None
7	2670.012M	58.0					+0.0	58.0	75.0	-17.0	None
8	5207.177M Ave	58.0					+0.0	58.0	75.0	-17.0	None

9	2713.083M	57.8	+0.0	57.8	75.0	-17.2	None
10	2553.000M	57.3	+0.0	57.3	75.0	-17.7	None
11	2556.917M	56.5	+0.0	56.5	75.0	-18.5	None
12	2612.833M	56.3	+0.0	56.3	75.0	-18.7	None
13	2612.583M	56.2	+0.0	56.2	75.0	-18.8	None
14	2710.169M	55.5	+0.0	55.5	75.0	-19.5	None
15	2690.202M	55.2	+0.0	55.2	75.0	-19.8	None
16	13018.170M	55.2	+0.0	55.2	75.0	-19.8	None
17	2627.860M	54.3	+0.0	54.3	75.0	-20.7	None
18	5366.452M	54.2	+0.0	54.2	75.0	-20.8	None
19	5279.883M	54.0	+0.0	54.0	75.0	-21.0	None
20	10731.140M	52.2	+0.0	52.2	75.0	-22.8	None
21	10559.570M	51.2	+0.0	51.2	75.0	-23.8	None
22	10412.840M	49.7	+0.0	49.7	75.0	-25.3	None

PHOTOGRAPH SHOWING DIRECT CONNECT EMISSIONS

Description	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
Spectrum Analyzer RF Section	HP	8567A	2727A00473	P00709	2/20/03	2/20/04
Spectrum Analyzer Display	HP	8567A	2816A15964	00708	2/20/03	2/20/04
Spectrum Analyzer QP Adapter	HP	85650A	2521A00904	02495	3/4/02	3/4/03
Spectrum Analyzer	HP	8564E	3623A00539	01406	6/27/02	6/27/03

2.1033(c)(14)/2.1053/21.908(d) - FIELD STRENGTH OF SPURIOUS RADIATION

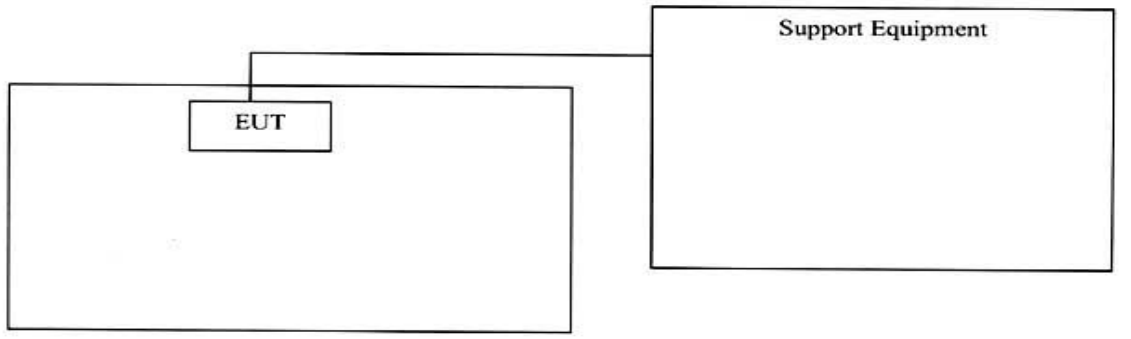
Test Conditions: EUT is powered by 6VDC and is continuously sending a signal. Frequency range is 2596-2686 MHz.
Channels Tested:
Low Channel = 2603 MHz
Middle Channel = 2640 MHz
High Channel = 2683 MHz
Output power range tested: 25 & 28dBm. Frequency Range Scanned 9 kHz – 27 GHz. All spurious emissions are 20dB below the spec limit.

ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	27 GHz	1 MHz

Operating Frequency: 2596-2686 MHz
Channels: Low, middle, high
Highest Measured Output Power: 33.98 EIRP(dBm)= 2.5 EIRP(Watts)
Distance: 3 meters
Limit: 43+10Log(P)= 46.98 dBc

Freq. (MHz)	Reference Level (dBm)	Antenna Polarity (H/V)	dBc
1,088.17	-30.6	Vert	64.58
47.96	-56.20	Vert	90.18
224.01	-57.70	Vert	91.68
159.97	-57.70	Vert	91.68

Test Setup Diagram



Test Equipment

Description	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
Spectrum Analyzer RF Section	HP	8567A	2727A00473	P00709	2/20/03	2/20/04
Spectrum Analyzer Display	HP	8567A	2816A15964	00708	2/20/03	2/20/04
Spectrum Analyzer QP Adapter	HP	85650A	2521A00904	02495	3/4/02	3/4/03
Antenna, Bicon	A&H	SAS-200/542	156	00225	12/2/02	12/2/03
Antenna, Log Periodic	A&H	SAS-200/510	154	01330	6/19/02	6/19/03
Preamp	HP	8447D	1937A02604	00099	3/21/02	3/21/03
Spectrum Analyzer	HP	8564E	3623A00539	01406	6/27/02	6/27/03
Horn (18-26.5GHz)	HP	84125-80008	942126-003	01413	7/11/02	7/11/03
Horn (1-18GHz)	HP	3115	4085	00656	3/19/02	3/19/03
Preamp	HP	83051A	3331A00238	00941A	3/5/02	3/5/03
Power Supply	HP	87421A	3116A00868	01408	3/5/02	3/5/03
Mag Loop	EMCO	6502	01074	00226	5/31/02	5/31/03

2.1033(c)(14)/2.1055/21.101 - FREQUENCY STABILITY

Test Conditions: EUT is powered by 6VDC and is continuously sending a signal. Operating frequency range is 2596-2686 MHz. Note: EUT was very stable.

Operating Voltage: 6 **VDC**
Frequency Limit: 0.001 **PPM/%**

Temperature Variations

Channel Frequency:		Channel 1 (MHz) **2253.00043**	Dev. (MHz)	Channel 2 (MHz) **2290.00045**	Dev. (MHz)
Temp (C)	Voltage				
-30	6	2253.00002	0.00041	2289.99999	0.00046
-20	6	2252.99990	0.00053	2289.99988	0.00057
-10	6	2252.99953	0.00090	2289.99950	0.00095
0	6	2252.99977	0.00066	2289.99997	0.00048
10	6	2253.00038	0.00005	2290.00035	0.00010
20	6	2253.00048	0.00005	2290.00048	0.00003
30	6	2253.00038	0.00005	2290.00038	0.00007
40	6	2253.00038	0.00005	2290.00035	0.00010
50	6	2253.00058	0.00015	2290.00060	0.00015

Voltage Variations (±15%)

20	102.0	**2253.00043**	0.00000	**2290.00045**	0.00000
20	120.0	**2253.00043**	0.00000	**2290.00045**	0.00000
20	138.0	**2253.00043**	0.00000	**2290.00045**	0.00000

Max Deviation (MHz)	**0.00090**		**0.00095**
Max Deviation (%)	**0.00004**		**0.00004**
	PASS		**PASS**

Temperature Variations

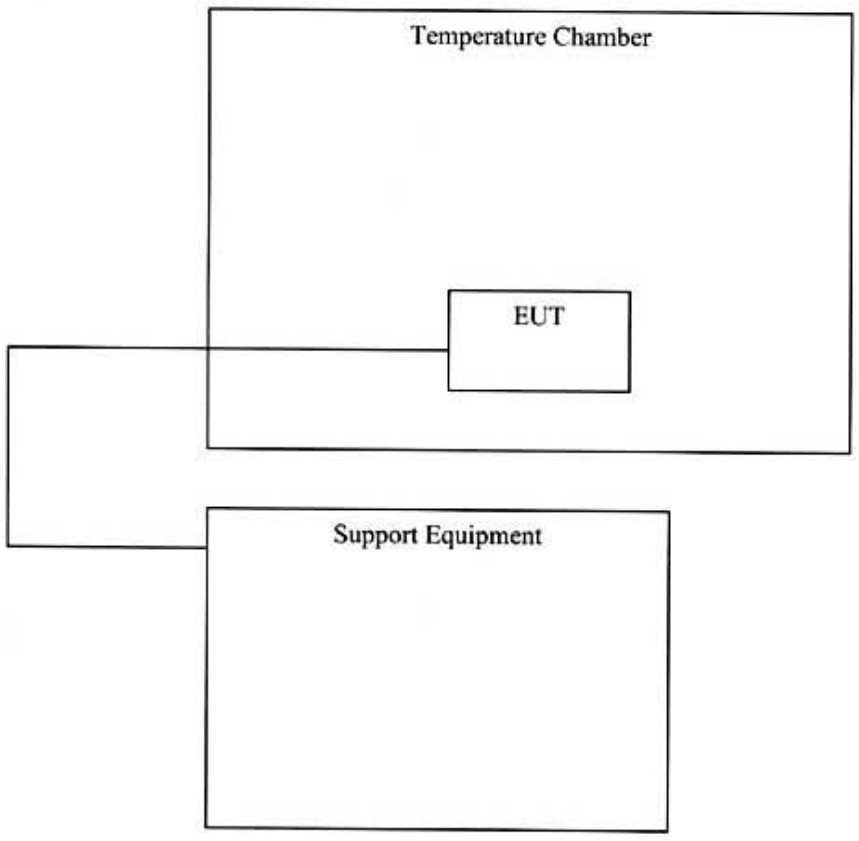
Channel 3 (MHz)	Dev. (MHz)
2333.00045	
2333.00023	0.00022
2332.99988	0.00057
2332.99952	0.00093
2332.99977	0.00068
2333.00035	0.00010
2333.00048	0.00003
2333.00040	0.00005
2333.00035	0.00010
2333.00060	0.00015

Voltage Variations (±15%)

2333.00045	0.00000
2333.00045	0.00000
2333.00045	0.00000

	0.00093
	0.00004
	PASS

Test Setup Diagram



Test Equipment

Description	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
Temp Chamber	Thermotron	S-1.2 MiniMax	11899	01879	1/31/03	1/31/04
Thermometer	Omega	HH-26K	T-202884	02242	8/30/02	8/30/03
Digital Multimeter	Radio Shack	22-183	NA	01241	9/3/02	9/3/03
Spectrum Analyzer	HP	8564E	3623A00539	01406	6/27/02	6/27/03
Power Supply	HP	6205C	2228A-017775	00762	6/5/02	6/5/03

1,1307 - MPE CALCULATIONS

Maximum Permissible Exposure Calculations

Calculations prepared for:

California Amplifier
460 Calle San Pablo
Camarillo, CA 93033

Calculations prepared by:

Monika Brandle
CKC Laboratories, Inc.
5473A Clouds Rest Road
Mariposa, CA 95338

Model Number: 530009
FCC Identification:

Fundamental Operating Frequency: 2596-2686MHz

Maximum Measured Antenna Conducted Output Power: 682.3 mWatts
Calculated EIRP: 3.162 Watts*
Maximum Rated EIRP Output Power: 665 Watts**

*Calculated EIRP =Antenna Conducted (dBm) + Cust ANT Gain (dBi)
EIRP = 28dBm +7dBi = 35dBm or 3.162Watts

**No response station shall operate with an EIRP in excess of that specified in the application for the response station hub for the particular regional class of characteristics with which the response station is associated, and such response station shall not operate with an EIRP in excess of 33 dBW + 10log(X/6) dBW, where X is the channel width in MHz.

Maximum EIRP = 33 dBW + 10log(X/6) dBW
EUT channel bandwidth is 2MHz
EIRP = 33 dBW + 10log(2/6) dBW = 665 Watts

Power Output and Operating Frequency Information used for these calculations were from:
CKC Laboratories, Test Report # FC03-011

MPE Limit in accordance with 1.1310(b): Limits for general population/uncontrolled exposure
MPE Limit = 665 Watts

EIRP (mW)	Distance (Centimeters)	Power Density (mW/cm^2)	Result
3162	15.87	1	Pass

$$PowerDensity(mW/cm^2) = \frac{EIRP}{4\pi d^2}$$ Given: EIRP in *mW* and d in *cm*

Under normal operating conditions, the antenna is designed to maintain a separation distance of greater than 20cm from all persons. As can be seen from the MPE results, this device passes the limits specified in 1.1310 at a distance of 15.87cm and at an output power of 3.162W.