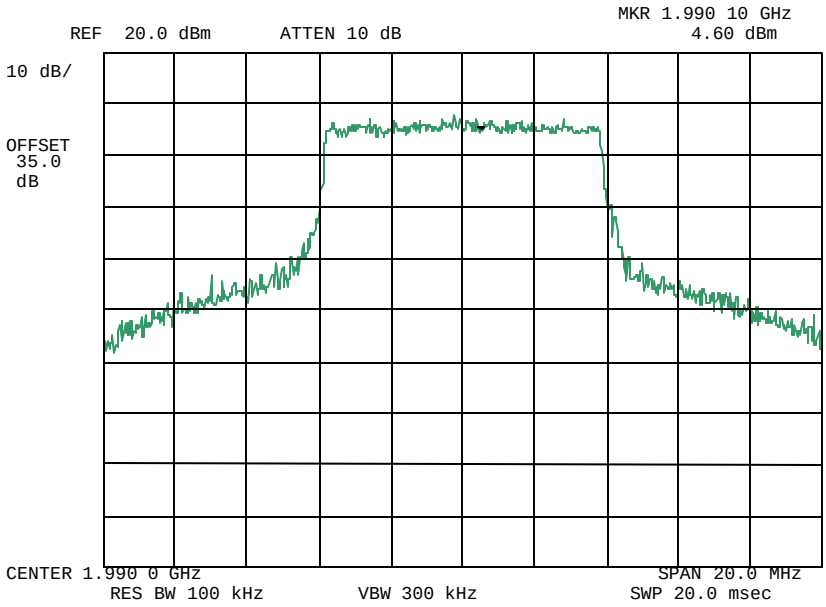
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610028: 2006-Jan-26 Thu 14:08:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 64QAM
LOW CHANNEL

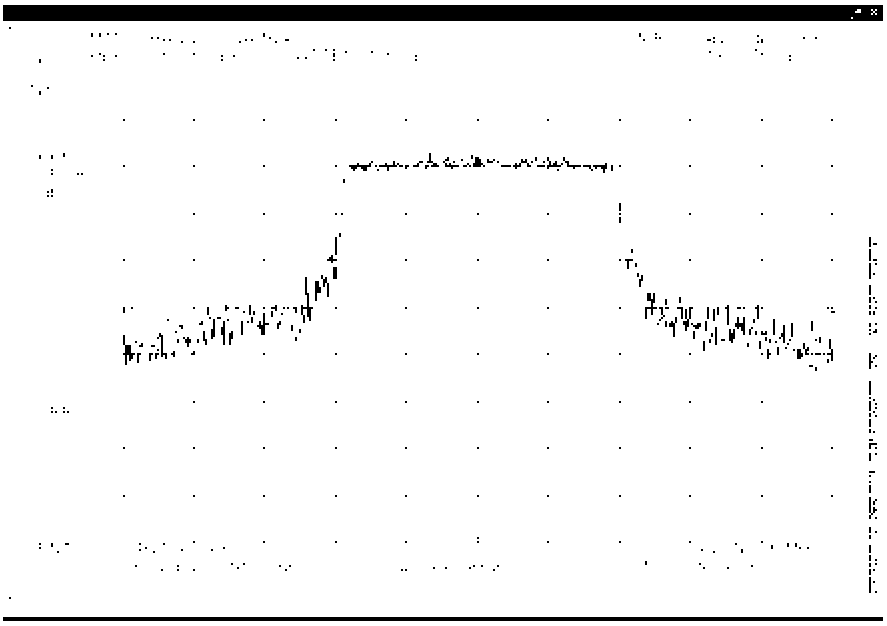
Performed by: Fred Chastain, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610030: 2006-Jan-26 Thu 14:11:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 64QAM
MID CHANNEL

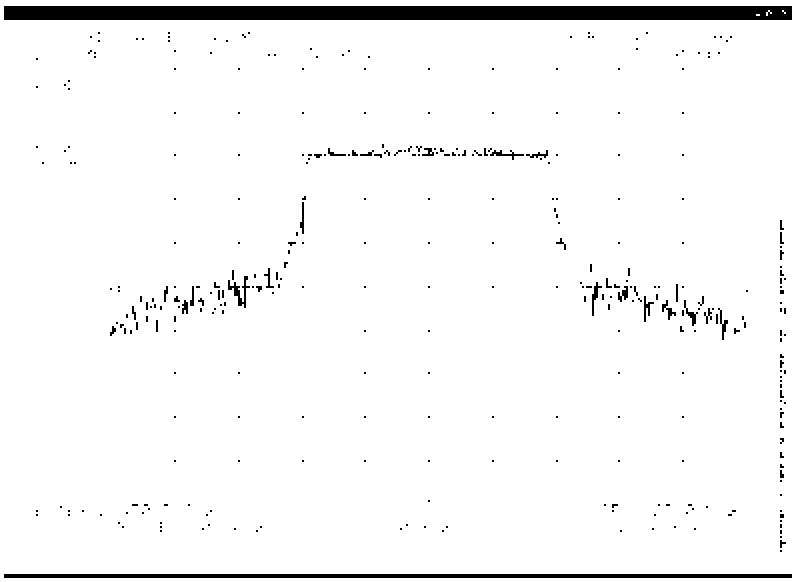
Performed by: Michael Wyman, Test Engineer

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610030: 2006-Jan-26 Thu 14:11:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 64QAM
HI CHANNEL

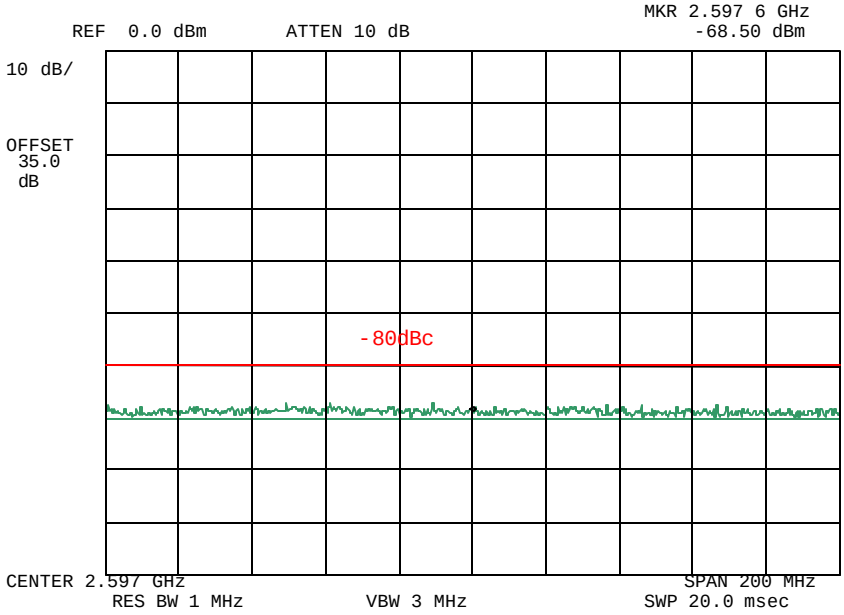
Performed by: Michael Wyman, Test Engineer

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610031: 2006-Jan-26 Thu 14:12:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 64QAM
UPPER BAND EDGE

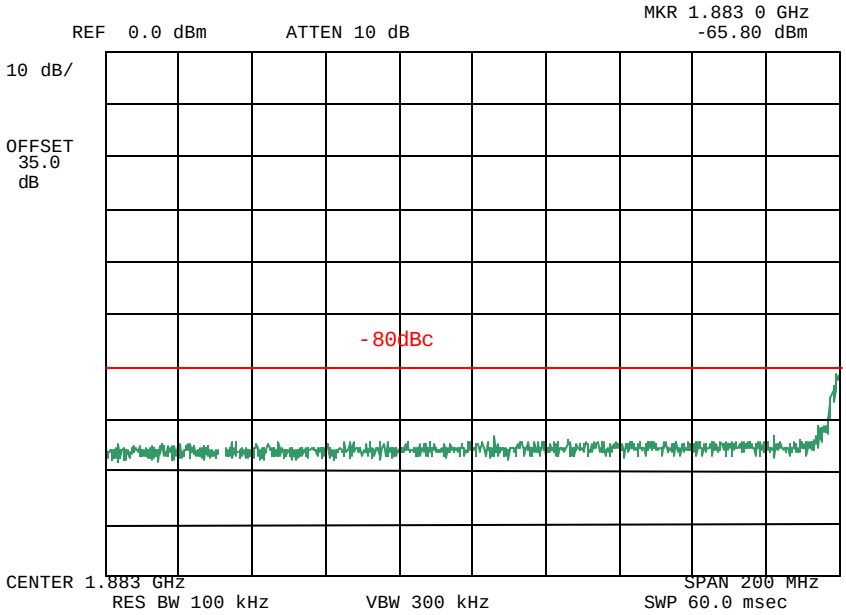
Performed by: Fred Chastain, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610032: 2006-Jan-26 Thu 14:13:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 64QAM
LOWER BAND EDGE

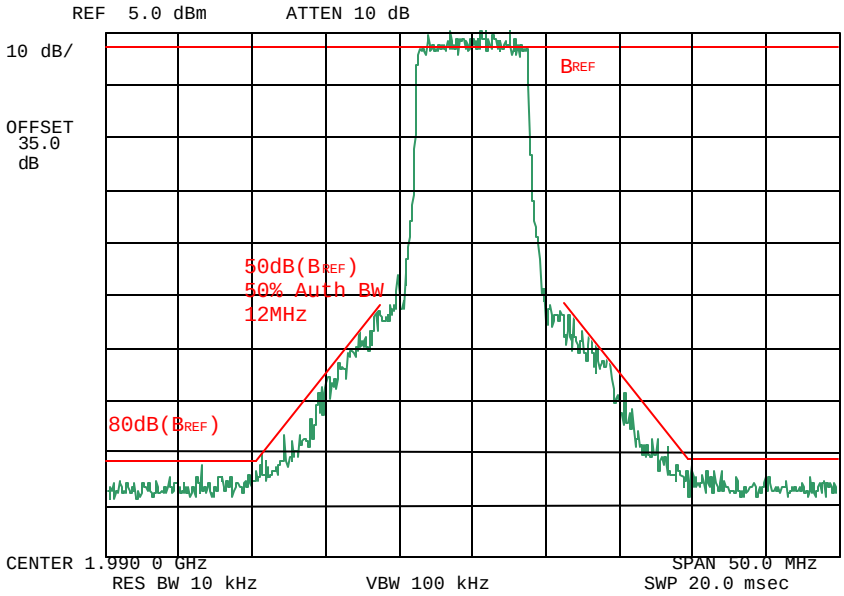
Performed by: Fred Chastain, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610033: 2006-Jan-26 Thu 14:14:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 16QAM
LOW CHANNEL
MASK 74.637(a)(2)(i)

Performed by: Fred Chastain, Test Technician

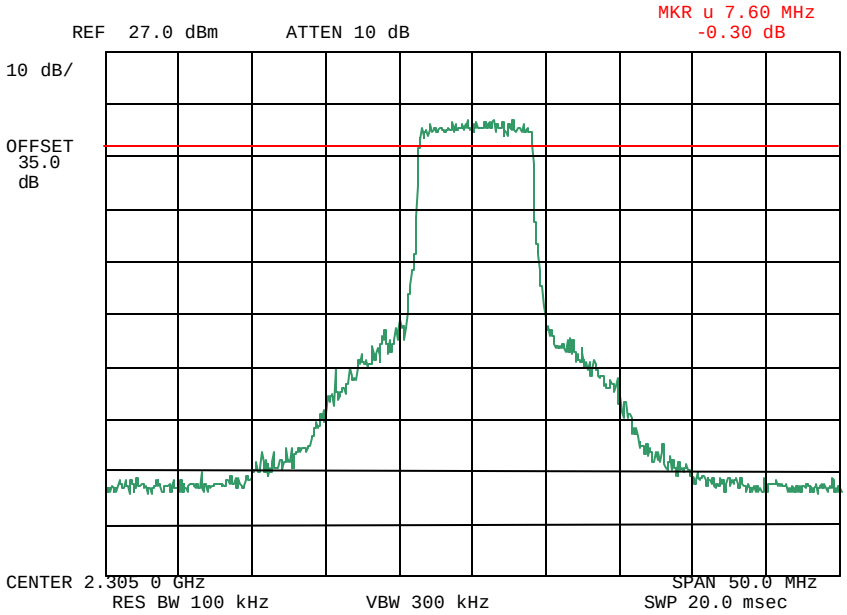
Name of Test: Emission Masks (Occupied Bandwidth)

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610034: 2006-Jan-26 Thu 14:15:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 16QAM
MID CHANNEL
(OCC BW @ 6dB = 7.60MHz)

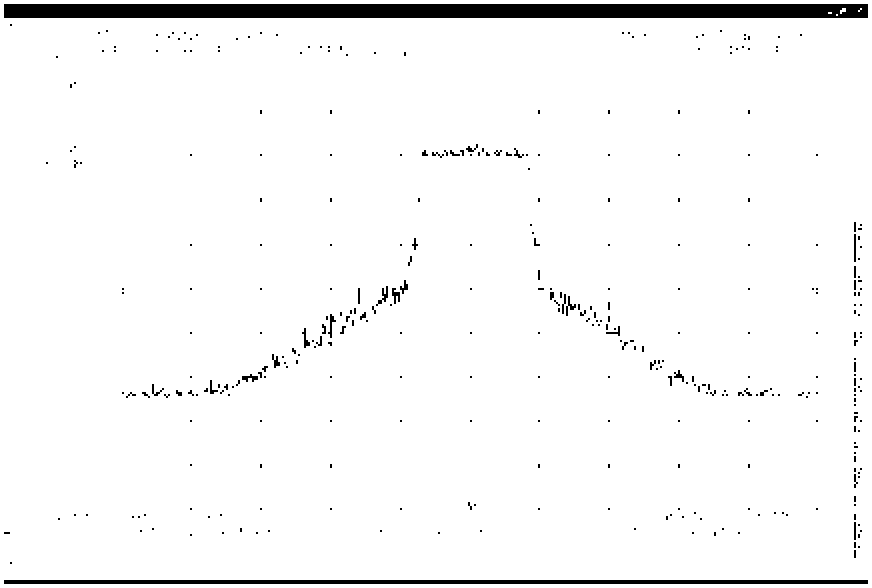
Performed by: Fred Chastain, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610035: 2006-Jan-26 Thu 14:15:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



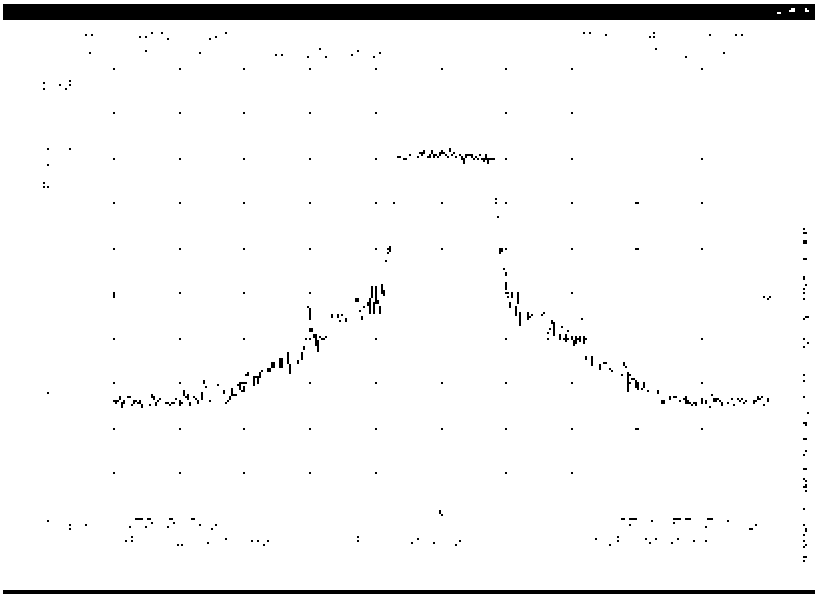
Power: HIGH
Modulation: 16QAM
MID CHANNEL

Performed by: Michael Wyman, Test Engineer

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610035: 2006-Jan-26 Thu 14:15:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



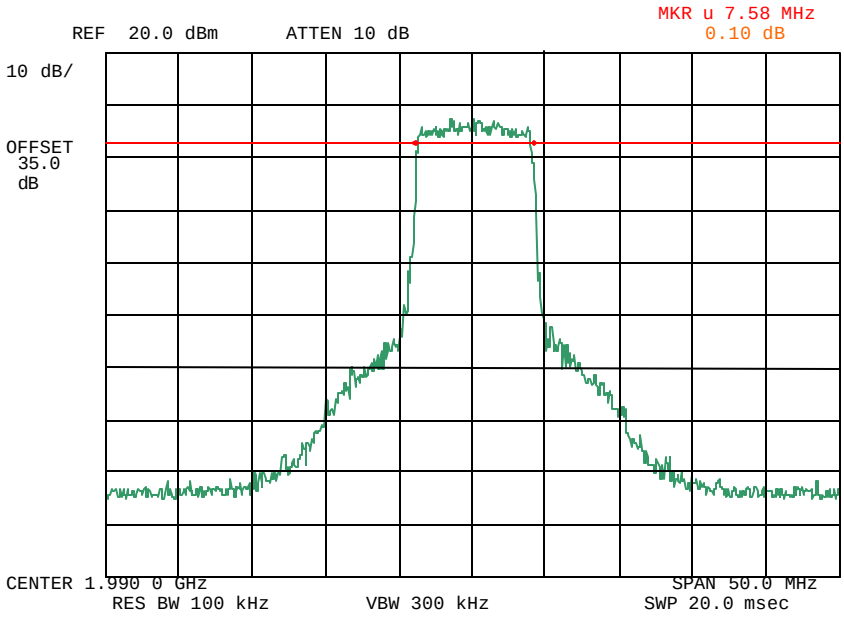
Power: HIGH
Modulation: 16QAM
HIGH CHANNEL

Performed by: Michael Wyman, Test Engineer

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610246: 2006-Jan-27 Fri 10:18:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: QPSK
LOW CHANNEL
(OCC BW @ 6dB = 7.58MHz)

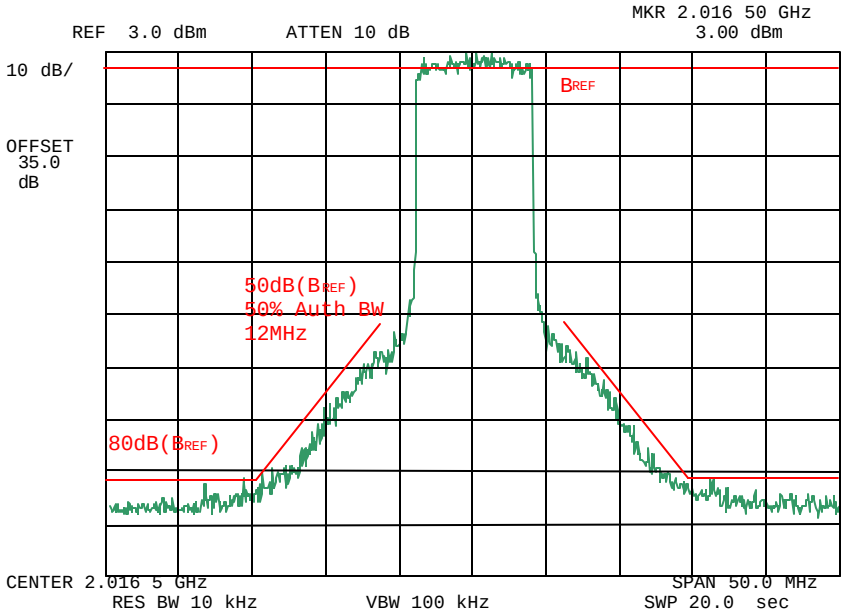
Performed by: Fred Chastain, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610213: 2006-Jan-27 Fri 09:07:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: QPSK
MID CHANNEL
MASK 74.637(a)(2)(i)

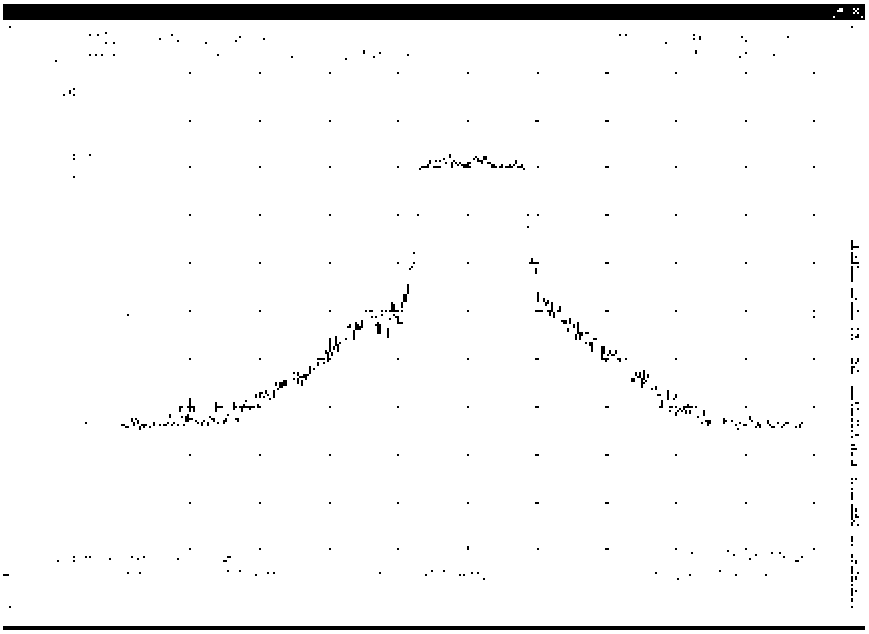
Performed by: Fred Chastain, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610249: 2006-Jan-27 Fri 10:07:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: QPSK
MID CHANNEL

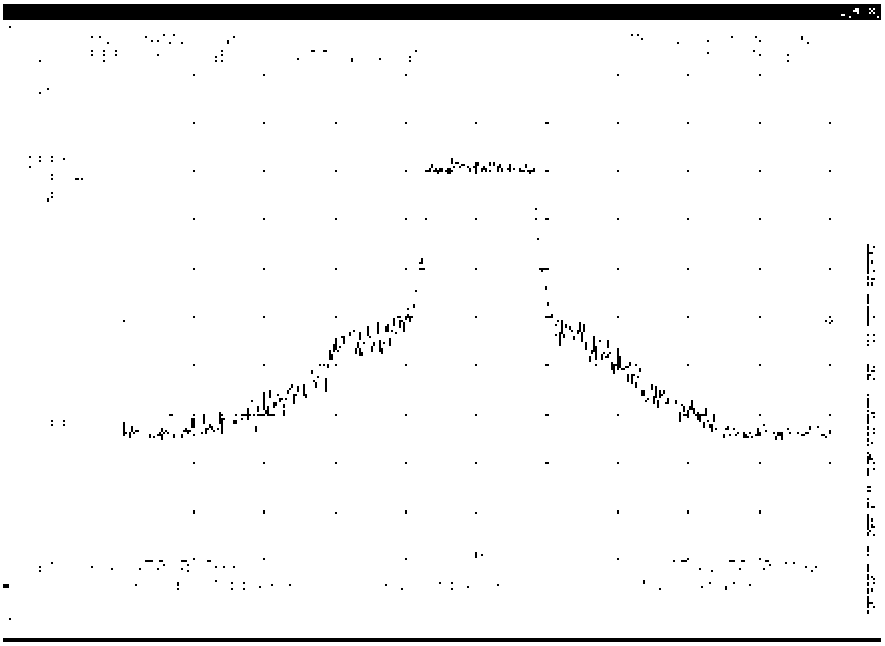
Performed by: Michael Wyman, Test Engineer

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610249: 2006-Jan-27 Fri 10:07:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: QPSK
HIGH CHANNEL

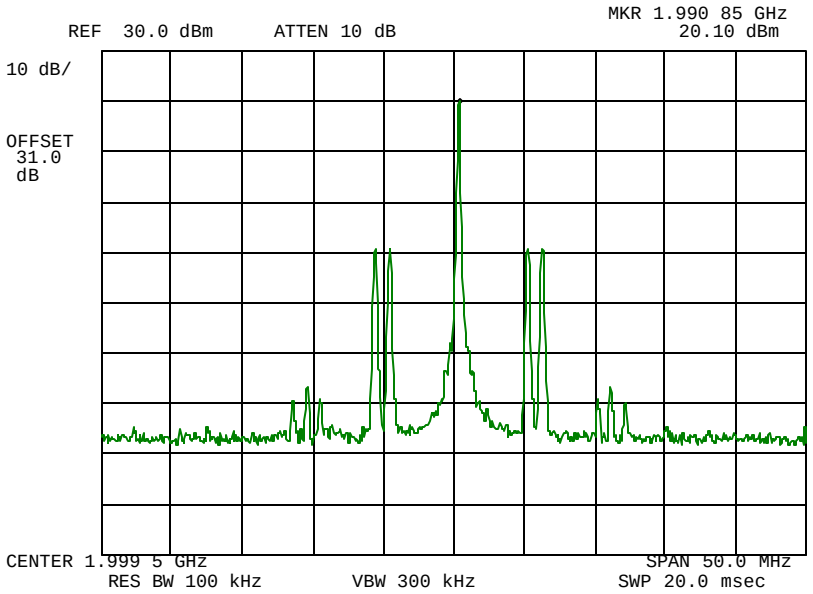
Performed by: Michael Wyman, Test Engineer

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610037: 2006-Jan-26 Thu 14:16:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: ANALOG
LOW CHANNEL

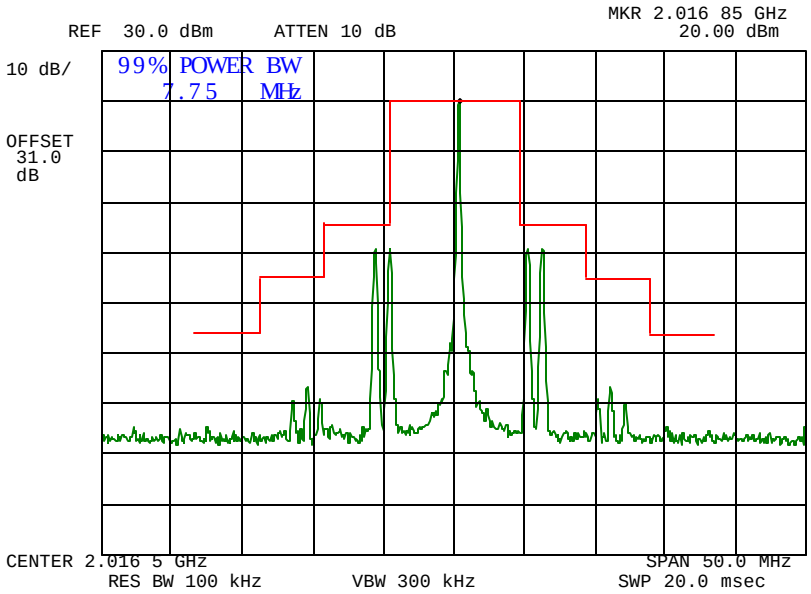
Performed by: Fred Chastain, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610038: 2006-Jan-26 Thu 14:16:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: ANALOG
MID CHANNEL
MASK 74.637(a)

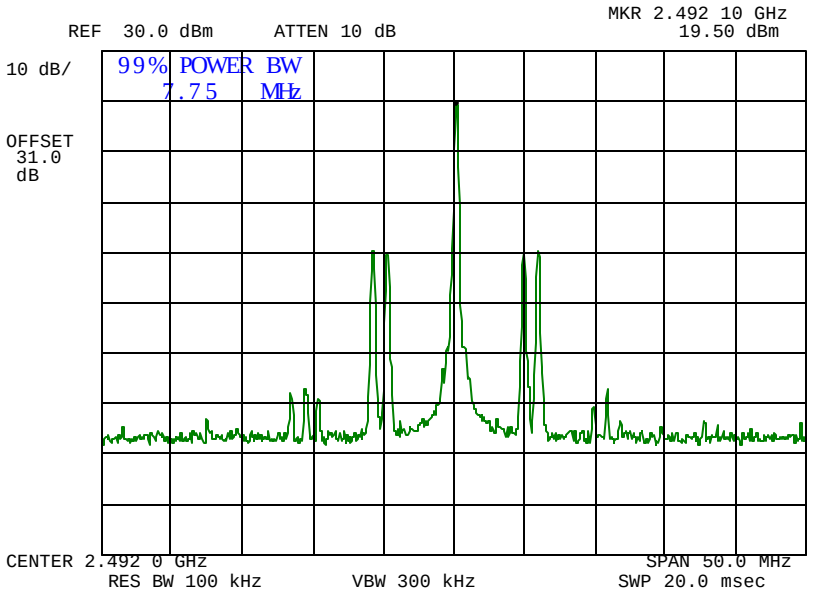
Performed by: Fred Chastain, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0610039: 2006-Jan-26 Thu 14:17:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: ANALOG
HIGH CHANNEL

Performed by: Fred Chastain, Test Technician

Name of Test: Frequency Stability (Temperature Variation)

Specification: 47 CFR 2.1055(a)(1)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.2

Measurement Procedure

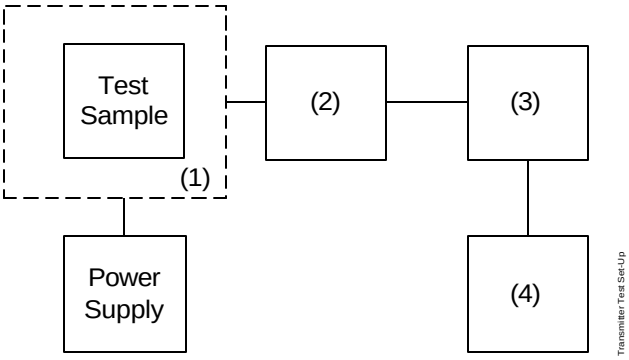
A) The EUT and test equipment were set up as shown on the following page.

B) With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was noted within one minute.

C) With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.

D) The temperature tests were performed for the worst case.

Transmitter Test Set-Up: Temperature Variation

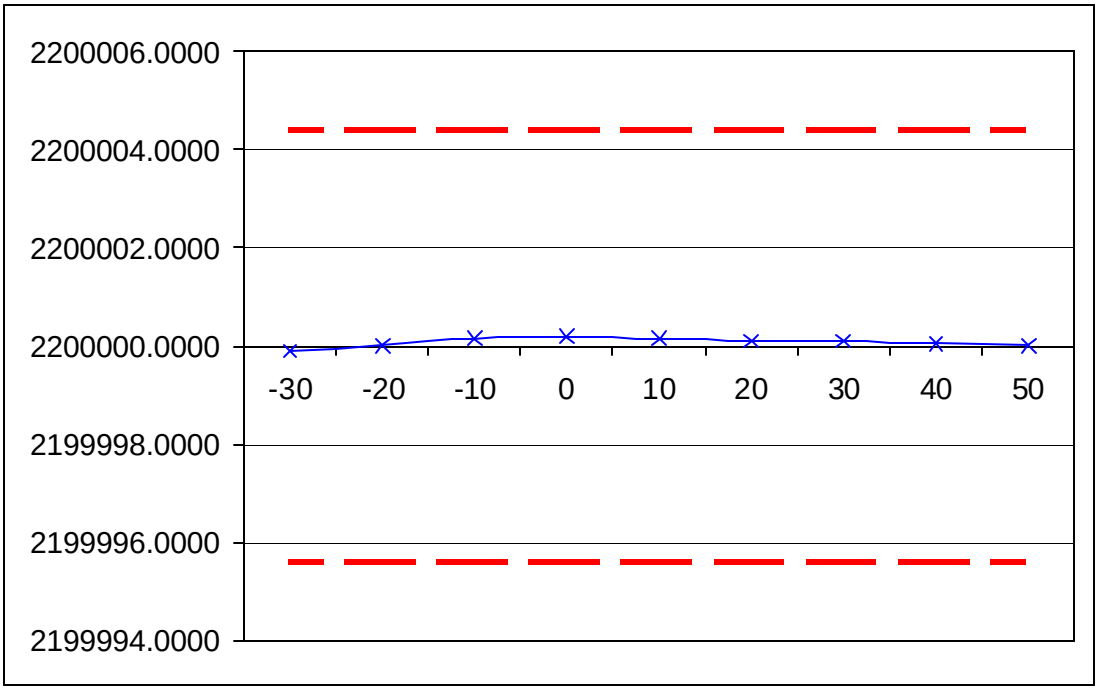


	Asset	Description	s/n	Cycle	Last Cal
(1) **Temperature, Humidity, Vibration**					
X	i00027	Tenney Temp. Chamber	9083-765-234	NCR	
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(3) **RF Power**					
X	i00067	HP 8920A Communications TS	3345U01242	12 mo.	Jun-05
(4) **Frequency Counter**					
X	i00067	HP 8920A Communications TS	3345U01242	12 mo.	Jun-05

Name of Test: Frequency Stability (Temperature Variation)

Measurement Results

State: Ambient Temperature: 23°C ± 3°C



Vertical Axis kHz / Horizontal Axis Degrees Centigrade

Performed by: Fred Chastain, Test Technician

Name of Test: Frequency Stability (Voltage Variation)

Specification: 47 CFR 2.1055(d)(1)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.2

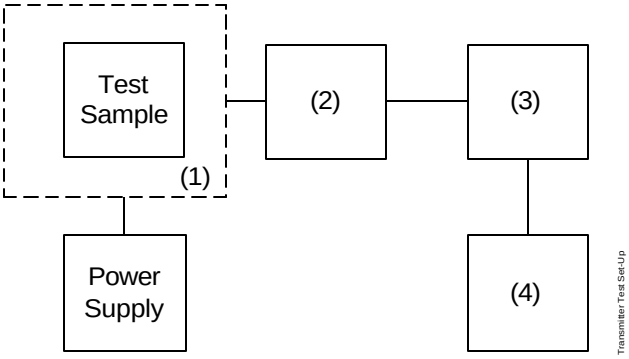
Measurement Procedure

A) The EUT was placed in a temperature chamber (if required) at 25±5°C and connected as shown below.

B) The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.

C) The variation in frequency was measured for the worst case.

Transmitter Test Set-Up: Voltage Variation



	Asset	Description	s/n	Cycle	Last Cal
(1) **Temperature, Humidity, Vibration**					
	i00027	Tenney Temp. Chamber	9083-765-234	NCR	
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(3) **RF Power**					
X	i00020	HP 8901A Power Mode	2105A01087	12 mo.	Apr-05
(4) **Frequency Counter**					
X	i00020	HP 8901A Frequency Mode	2105A01087	12 mo.	Apr-05

Results: Frequency Stability (Voltage Variation)

State: Ambient Temperature: 23°C ± 3°C

Limit, ppm	=	2.0
Limit, Hz	=	4400.0
Battery End Point (Voltage)	=	8.0

% of STV	Voltage	Frequency, MHz	Change, Hz	Change, ppm
115	13.8	2200.000200	200.0	+0.05
100	12.0	2200.000200	200.0	+0.05
85	10.2	2200.000200	200.0	+0.05
75	9.0	2200.000150	150.0	+0.03

Performed by: Fred Chastain, Test Technician

Name of Test: Necessary Bandwidth and Emission Bandwidth

Specification: 47 CFR 2.202(g)

Modulation = QAM, QPSK

Mem	Part Number	Rate (Mbit/s)	COFDM Mode	MPEG	Video Rate (Mbit/)	Video LPF	Low Delay Mode	Audio Rate (kbit/)
0	PBSW-TDVP - 0303-05-00	18.096257	64-QAM, 1/2, 1/32	422P@ML, GOP4	16.59	No	No	192
1	PBSW-TDVP - 0303-05-01	18.096257	64-QAM, 1/2, 1/32	SP@ML, infinite GOP,	11.81	No	Yes	192
2	PBSW-TDVP - 0303-05-02	12.06417	16-QAM, 1/2, 1/32	MP@ML, GOP4	10.00	Yes	No	192
3	PBSW-TDVP - 0303-05-03	12.06417	16-QAM, 1/2, 1/32	SP@ML, Infinite GOP, Intra-slice	8.00	Yes	Yes	160
4	PBSW-TDVP - 0303-05-04	9.048128	QPSK 3/4, 1/32	422P@ML, GOP4	7.79	Yes	No	192
5	PBSW-TDVP - 0303-05-05	9.048128	QPSK 3/4, 1/32	SP@ML, Infinite GOP, Intra-slice	6.00	Yes	Yes	192
6	PBSW-TDVP - 0303-05-06	6.032086	QPSK 1/2, 1/32	SP@ML, Infinite GOP	4.94	Yes	No	128
7	PBSW-TDVP - 0303-05-07	6.032086	QPSK 1/2, 1/32	MP@ML, GOP4	4.94	Yes	No	192

Measured as 7.8MHz Bandwidth worst case for all modes.
12M0 Emission Bandwidth used to comply with Mask 74.637(a)(2)(i)

Modulation = F3

Measured as 7.75MHz Bandwidth for all channel.
Complies with Mask 74.637(a)

Performed by: Hoosamuddin S. Bandukwala, Lab Director

END OF TEST REPORT

Testimonial
and
Statement of Certification

This is to Certify:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.

2. **That** the technical data supplied with the application was taken under my direction and supervision.

3. **That** the data was obtained on representative units, randomly selected.

4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

Certifying Engineer: Hoosamuddin S. Bandukwala, Lab Director

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Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax