FCC CFR47 CERTIFICATION

PART 24E

TEST REPORT

FOR

KYOCERA CORPORATION

MODEL: UTD1900D-US-A

FCC ID: JOYIUD19AA

REPORT NUMBER: 04I2701-2

ISSUE DATE: JUNE 10, 2004

Prepared for

KYOCERA CORPORATION
2-1-1 KAGAHARA TSUZUKI-KU
YOKOHAMA-SHI,
JAPAN

Prepared by

COMPLIANCE CERTIFICATION SERVICES
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TABLE OF CONTENT

1. TEST RESULT CERTIFICATION

COMPANY NAME: KYOCERA CORPORATION
2-1-1 KAGAHARA TSUZUKI-KU YOKOHAMA-SHI
KANAGAWA 224-8502, JAPAN

EUT DESCRIPTION: USER TERMINAL (DESKTOP TYPE) OF WIRELESS BROADBAND INTERNET SYSTEM

MODEL NUMBER: UTD1900D-US-A

DATE TESTED: JUNE 01 TO JUNE 6, 2004

TYPE OF EQUIPMENT	INTENTIONAL RADIATOR, LICENSED TX MODULE IN MOBILE APPLICATION
MEASUREMENT PROCEDURE	ANSI C63.4 / 2001, TIA/EIA 603
PROCEDURE	CERTIFICATION
FCC RULE	CFR 47 PART 24 Subpart E

Compliance Certification Services, Inc. tested the above equipment for compliance with the requirement set forth in CFR 47, PART 24 Subpart E-Broadband PCS. The equipment in the configuration described in this report, shows the measured emission levels emanating from the equipment do not exceed the specified limit.

Note: This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document.

Tested By:

VIEN TRAN
EMC TECHNICIAN
COMPLIANCE CERTIFICATION SERVICES

Released For CCS By:

THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

2. EUT DESCRIPTION

The EUT is a 1900MHz User Terminal (Desktop Type) of Wireless Broadband Internet System, which has an output power of 31.7dBm / 1.479W (EIRP Peak Output Power), which is designed for the bands transmitting of frequency range 1900MHz to 1910MHz.

3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures documented on chapter 13 of ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

4. TEST FACILITY

The open area test sites and conducted measurement facilities used to collect the radiated data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

5. ACCREDITATION AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code: 200065-0 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government. In addition, the test facilities are listed with Federal Communications Commission (reference no: 31040/SIT (1300B3) and 31040/SIT (1300F2))

6. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

7. TEST SETUP, PROCEDURE AND RESULT

7.1. SECTION 2.1046: RF POWER OUTPUT

INSTRUMENTS LIST

TEST EQUIPMENT LIST				
Name of Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Due Date**
Spectrum Analyzer	**HP**	**E4446A**	**US42510266**	**7/23/2004**
Spectrum Analyzer, 26.5 GHz	**HP**	**8593EM**	**3710A00205**	**10/1/2004**
Power Meter	**HP**	**436A**	**2709A29209**	**7/15/2004**
Power Sensor, 100 kHz ~ 4.2 GHz	**HP**	**8482A**	**2349A08568**	**7/15/2004**
Antenna, Horn 1 ~ 18 GHz	**EMCO**	**3115**	**6717**	**2/4/2005**
Antenna, Horn 1 ~ 18 GHz	**EMCO**	**3115**	**2238**	**2/4/2005**
10dB Attenuator	**Weinschel**	**56-10**	**M2348**	**CNR**
Signal Generator	**R & S**	**SMP04**	**DE34210**	**5/25/2005**

MEASUREMENT PROCEDURE

1). On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.

2). The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the frequency of the transmitter.

3). The output of the test antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.

4). The transmitter shall be placed 0.80 meter above the ground plane, the X, Y, and Z positions shall be tested and the worst case reported if necessary. The transmitter shall be switched on with typical modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.

5). The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.

6). The transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

7). The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.

8). The maximum signal level detected by the measuring receiver shall be noted.

9). The transmitter shall be replaced by a tuned dipole (substitution antenna).

10). The substitution antenna shall be oriented for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.

11). The substitution antenna shall be connected to a calibrated signal generator.

12). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

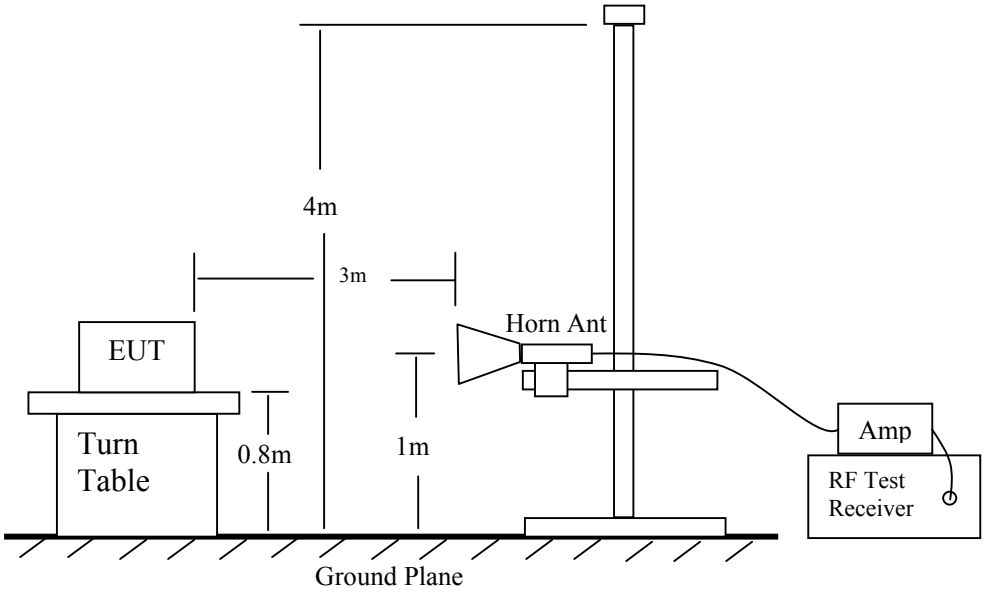
13). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.

14). The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.

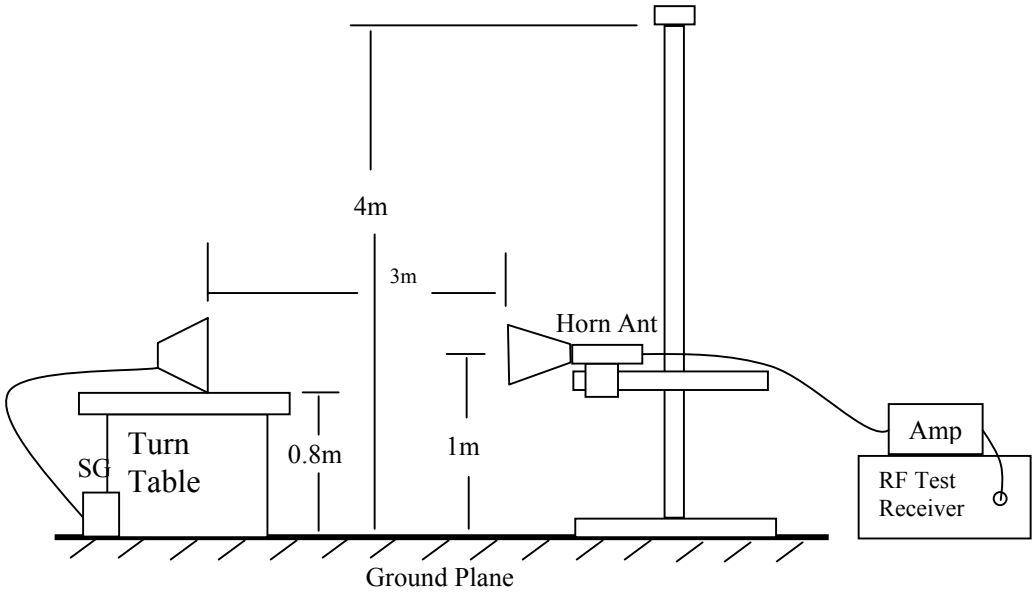
15). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

16). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

17). The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for the gain of the substitution antenna if necessary.

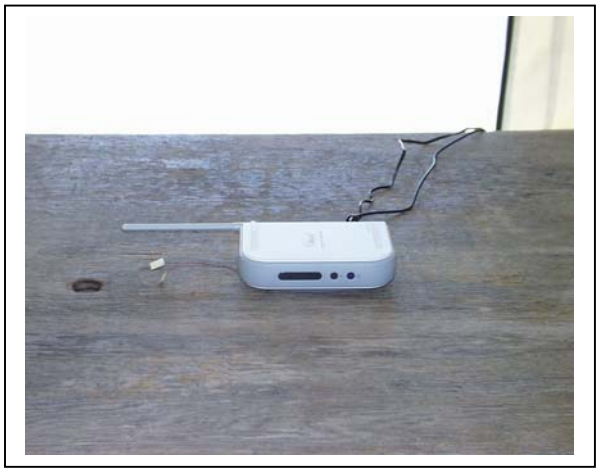


Radiated Emission Above 1000 MHz



Radiated Emission – Substitution Method Set-up

X position:



Y position:

Z position:

Test result:

Output Power:

BPSK

	Ch.#	Freq. (MHz)	EIRP Peak Power (dBm)	Conducted Average Power (dBm)
Low Ch.	0	1900.3125	29.30	22.20
Mid Ch.	7	1904.6875	30.50	22.27
High Ch.	15	1909.6875	30.50	22.38

QPSK

	Ch.#	Freq. (MHz)	EIRP Peak Power (dBm)	Conducted Average Power (dBm)
Low Ch.	0	1900.3125	30.40	21.37
Mid Ch.	7	1904.6875	31.10	21.28
High Ch.	15	1909.6875	31.60	21.20

8PSK

	Ch.#	Freq. (MHz)	EIRP Peak Power (dBm)	Conducted Average Power (dBm)
Low Ch.	0	1900.3125	31.70	21.30
Mid Ch.	7	1904.6875	30.20	21.2
High Ch.	15	1909.6875	30.40	21.38

12QAM

	Ch.#	Freq. (MHz)	EIRP Peak Power (dBm)	Conducted Average Power (dBm)
Low Ch.	0	1900.3125	30.40	19.91
Mid Ch.	7	1904.6875	31.20	20.22
High Ch.	15	1909.6875	31.20	19.94

16QAM

	Ch.#	Freq. (MHz)	EIRP Peak Power (dBm)	Conducted Average Power (dBm)
Low Ch.	0	1900.3125	31.00	20.06
Mid Ch.	7	1904.6875	31.30	19.98
High Ch.	15	1909.6875	31.00	20.04

Output Power (EIRP):

f GHz	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
BPSK									
Y_Low ch									
1.900	94.2	23.4	1.4	7.2	5.1	29.3	33.0	-3.7	Peak, Vertical @ worst polarization
1.900	83.0	14.1	1.4	7.2	5.1	20.0	33.0	-13.0	Peak, Horizontal @ worst polarization
Y_ mid Ch									
1.904	95.5	24.6	1.4	7.2	5.1	30.5	33.0	-2.5	Peak, Vertical @ worst polarization
1.904	84.0	14.7	1.4	7.2	5.1	20.6	33.0	-12.4	Peak, Horizontal @ worst polarization
Y _high ch									
1.910	95.4	24.6	1.4	7.2	5.1	30.5	33.0	-2.5	Peak, Vertical @ worst polarization
1.91000	84.5	14.8	1.4	7.2	5.1	20.7	33.0	-12.3	Peak, Horizontal @ worst polarization
QPSK									
Y pos, low ch									
1.900	95.3	24.5	1.4	7.2	5.1	30.4	33.0	-2.6	Peak, Vertical @ worst polarization
1.900	84.3	14.6	1.4	7.2	5.1	20.5	33.0	-12.5	Peak, Horizontal @ worst polarization
Y pos, mid ch									
1.904	97.0	25.2	1.4	7.2	5.1	31.1	33.0	-1.9	Peak, Vertical @ worst polarization
1.904	86.0	15.5	1.4	7.2	5.1	21.4	33.0	-11.6	Peak, Horizontal @ worst polarization
Y pos, high ch									
1.910	96.5	25.7	1.4	7.2	5.1	31.6	33.0	-1.4	Peak, Vertical @ worst polarization
1.91000	84.0	14.4	1.4	7.2	5.1	20.3	33.0	-12.7	Peak, Horizontal @ worst polarization
8PSK									
Y pos, low ch									
1.900	96.8	25.8	1.4	7.2	5.1	31.7	33.0	-1.3	Peak, Vertical @ worst polarization
1.900	85.6	15.3	1.4	7.2	5.1	21.2	33.0	-11.8	Peak, Horizontal @ worst polarization
Y pos, mid ch									
1.904	95.3	24.3	1.4	7.2	5.1	30.2	33.0	-2.8	Peak, Vertical @ worst polarization
1.904	86.0	15.5	1.4	7.2	5.1	21.4	33.0	-11.6	Peak, Horizontal @ worst polarization
Y pos, high ch									
1.910	95.2	24.5	1.4	7.2	5.1	30.4	33.0	-2.6	Peak, Vertical @ worst polarization
1.910	85.2	15.1	1.4	7.2	5.1	21.0	33.0	-12.0	Peak, Horizontal @ worst polarization
12QAM									
Y pos, low ch									
1.900	95.3	24.5	1.4	7.2	5.1	30.4	33.0	-2.6	Peak, Vertical @ worst polarization
1.900	85.5	15.3	1.4	7.2	5.1	21.2	33.0	-11.8	Peak, Horizontal @ worst polarization
Y pos, mid ch									
1.904	96.2	25.3	1.4	7.2	5.1	31.2	33.0	-1.8	Peak, Vertical @ worst polarization
1.90400	85.3	15.1	1.4	7.2	5.1	21.0	33.0	-12.0	Peak, Horizontal @ worst polarization
Y pos, high ch									
1.91000	96.3	25.3	1.4	7.2	5.1	31.2	33.0	-1.8	Peak, Vertical @ worst polarization
1.91000	85.0	15.0	1.4	7.2	5.1	20.9	33.0	-12.1	Peak, Horizontal @ worst polarization
16QAM									
Y pos, low ch									
1.90000	96.0	25.1	1.4	7.2	5.1	31.0	33.0	-4.4	Peak, Vertical @ worst polarization
1.90000	85.4	15.2	1.4	7.2	5.1	21.1	33.0	-14.3	Peak, Horizontal @ worst polarization
Y pos, mid ch									
1.90400	96.3	25.4	1.4	7.2	5.1	31.3	33.0	-3.1	Peak, Vertical @ worst polarization
1.90400	85.0	15.0	1.4	7.2	5.1	20.9	33.0	-14.5	Peak, Horizontal @ worst polarization
Y pos, high ch									
1.91000	96.0	25.1	1.4	7.2	5.1	31.0	33.0	-4.5	Peak, Vertical @ worst polarization
1.91000	84.9	15.0	1.4	7.2	5.1	20.9	33.0	-14.6	Peak, Horizontal @ worst polarization

The peak reading is included the duty cycle factor of 10*log (0.33) = -4.8

7.2. SECTION 2.1047: MODULATION CHARACTERISTICS

Not applicable.

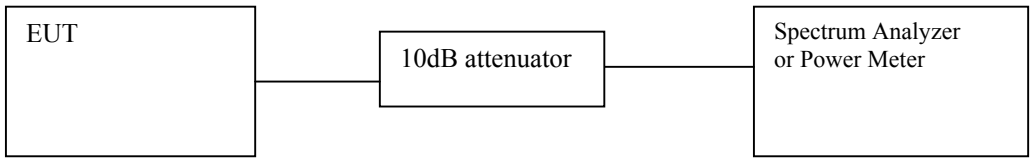
7.3. SECTION 2.1049: OCCUPIED BANDWIDTH

OCCUPIED BANDWIDTH:

INSTRUMENTS LIST

TEST EQUIPMENT LIST				
Name of Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Due Date**
Spectrum Analyzer	**HP**	**E4446A**	**US42510266**	**7/23/2004**
Power Meter	**HP**	**436A**	**2709A29209**	**7/15/2004**
Power Sensor, 100 kHz ~ 4.2 GHz	**HP**	**8482A**	**2349A08568**	**7/15/2004**
10dB Attenuator	**Weinschel**	**56-10**	**M2348**	**CNR**

TEST SETUP



TEST PROCEDURE

The EUT's output RF connector (made solely for the purpose of the test) was connected with a short cable to the spectrum analyzer, RES BW was set to about 1% of emission BW , -26 dBc display line was placed on the screen (or 99% bandwidth), the occupied BW is the delta frequency between the two points where the display line intersects the signal trace.

RESULT

No non-compliance noted, reference only.

BPSK

	Ch.#	Freq. (MHz)	99% BW (KHz)	26dBc BW (KHz)
Low Ch.	0	1900.3125	520.578	605.143
Mid Ch.	7	1904.6875	526.285	606.385
High Ch.	15	1909.6875	526.829	606.755

QPSK

	Ch.#	Freq. (MHz)	99% BW (KHz)	26dBc BW (KHz)
Low Ch.	0	1900.3125	519.722	616.882
Mid Ch.	7	1904.6875	523.086	607.098
High Ch.	15	1909.6875	521.723	606.886

8PSK

	Ch.#	Freq. (MHz)	99% BW (KHz)	26dBc BW (KHz)
Low Ch.	0	1900.3125	520.784	611.061
Mid Ch.	7	1904.6875	516.139	607.837
High Ch.	15	1909.6875	522.454	611.297

12QAM

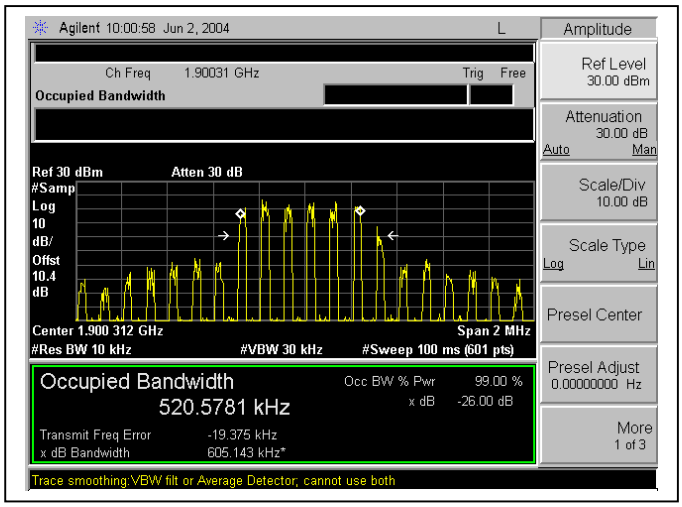
	Ch.#	Freq. (MHz)	99% BW (KHz)	26dBc BW (KHz)
Low Ch.	0	1900.3125	511.063	605.578
Mid Ch.	7	1904.6875	524.439	608.462
High Ch.	15	1909.6875	523.922	606.070

16QAM

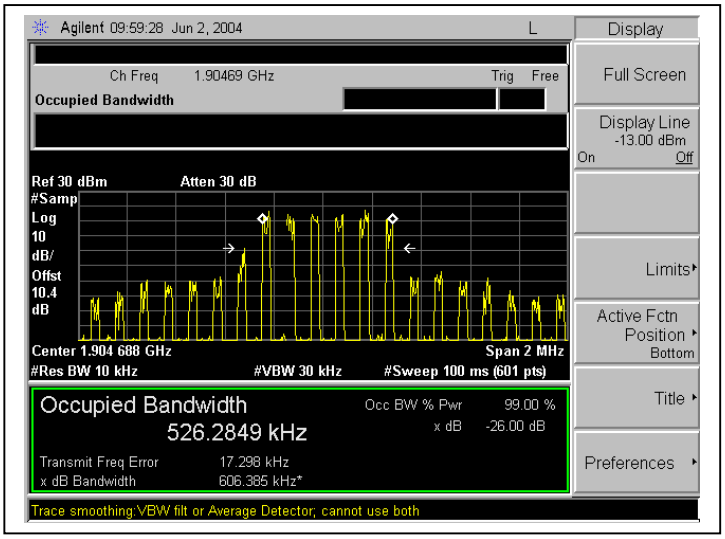
	Ch.#	Freq. (MHz)	99% BW (KHz)	26dBc BW (KHz)
Low Ch.	0	1900.3125	527.018	608.121
Mid Ch.	7	1904.6875	524.742	607.064
High Ch.	15	1909.6875	523.769	613.482

BPSK Modulation:

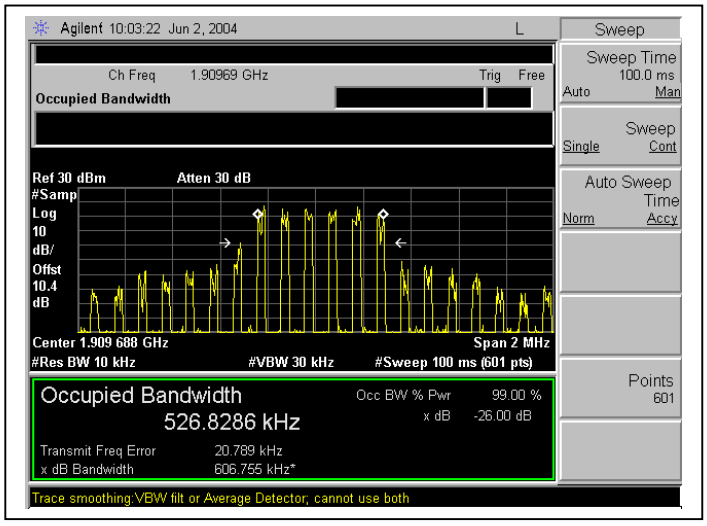
Low Channel



Mid Channel:

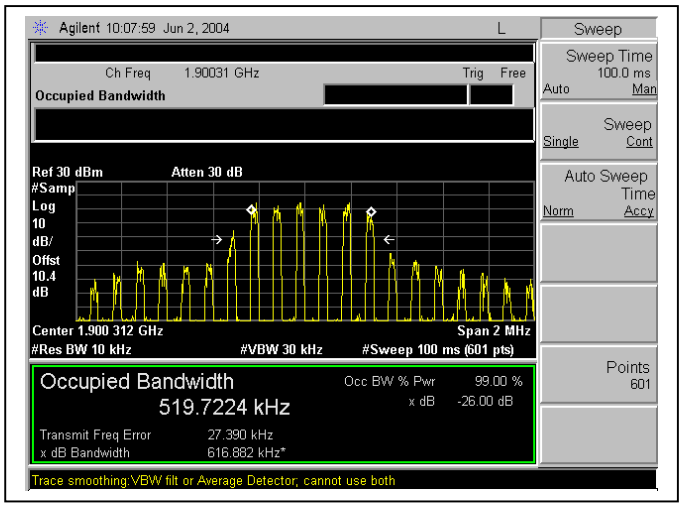


High Channel:



QPSK Modulation:

Low Channel



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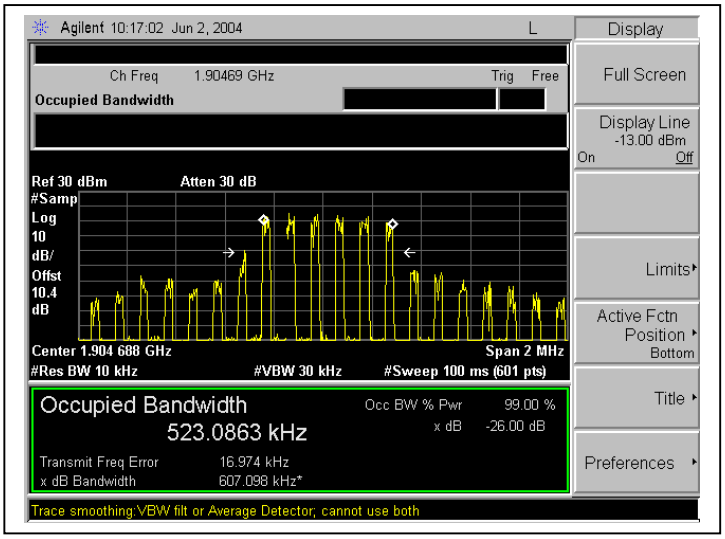

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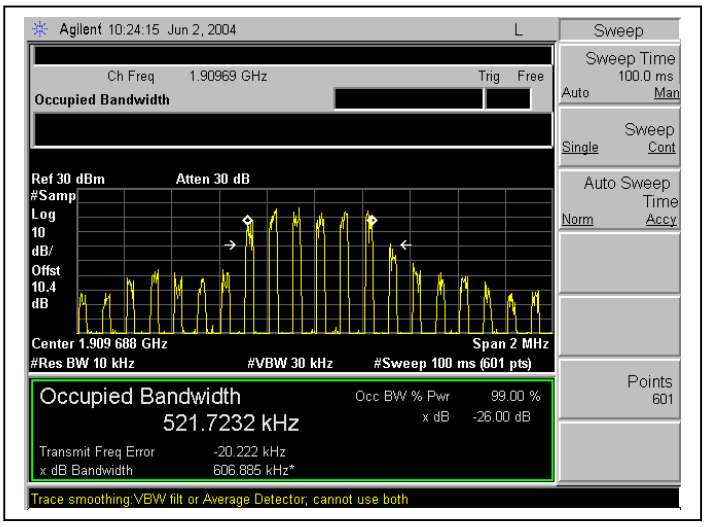
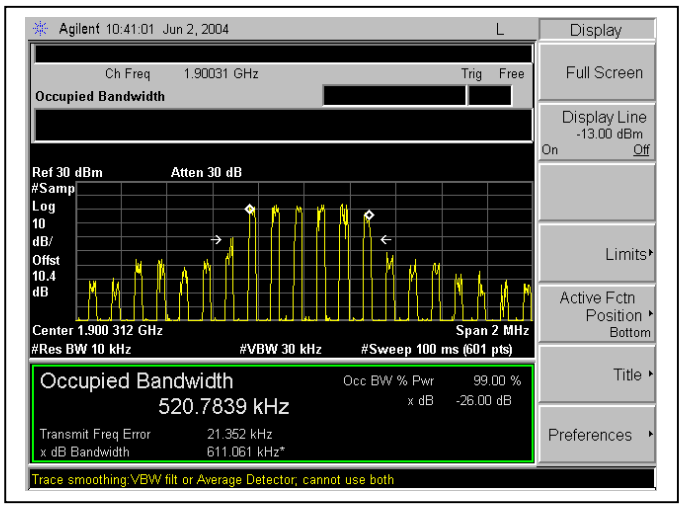
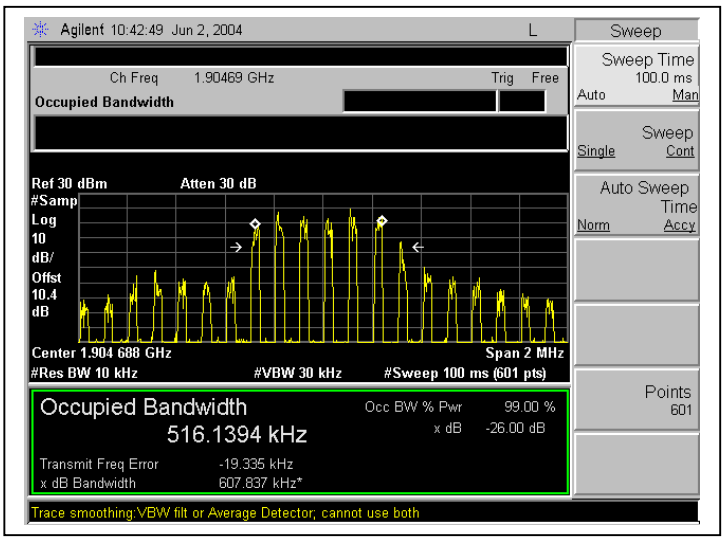


8PSK Modulation:

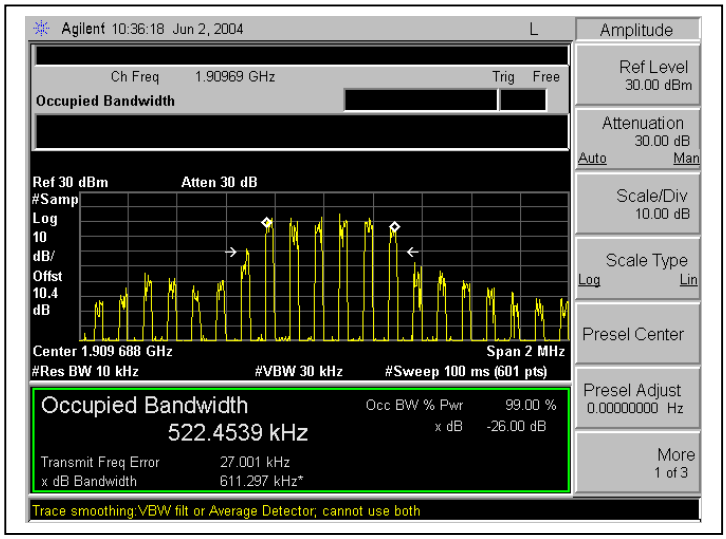
Low Channel



Mid Channel:

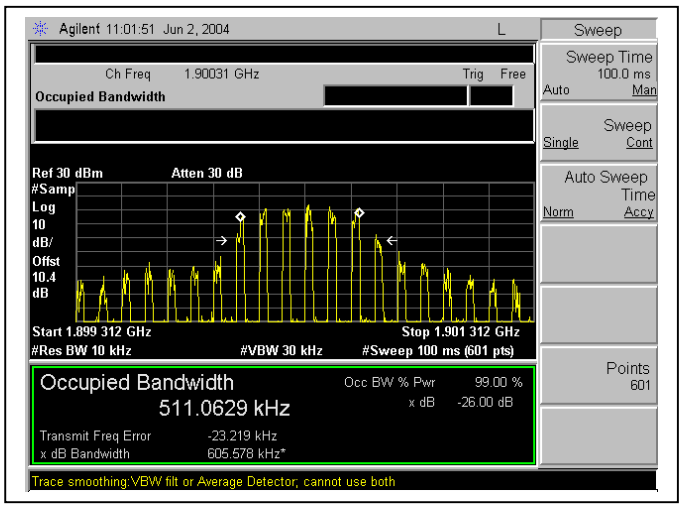


High Channel:

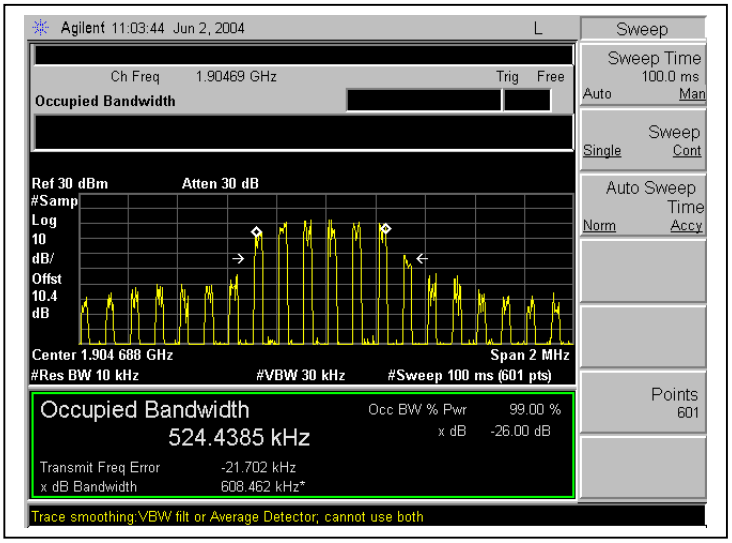


12QAM Modulation:

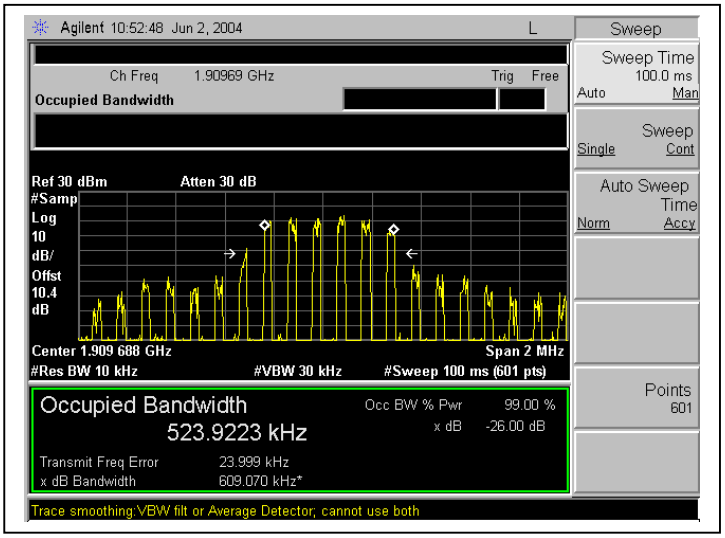
Low Channel



Mid Channel:

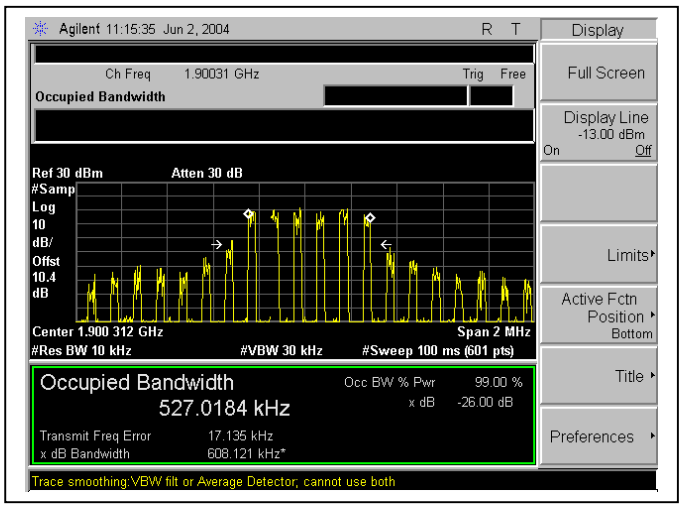


High Channel:

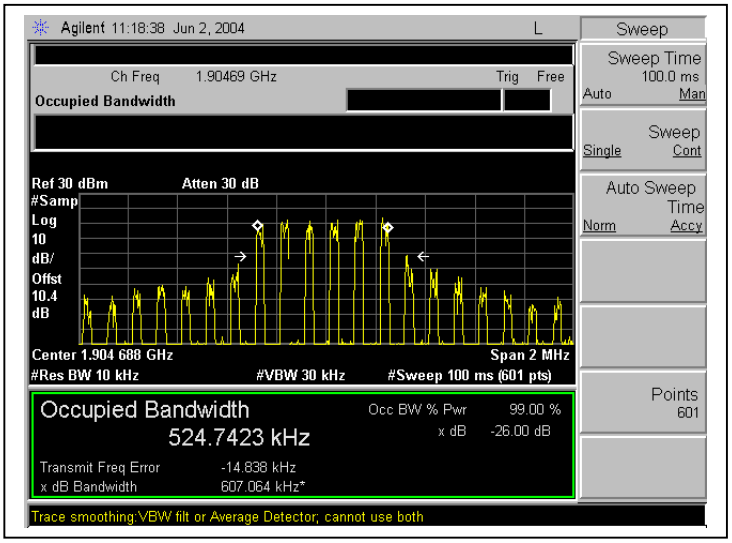


16QAM Modulation:

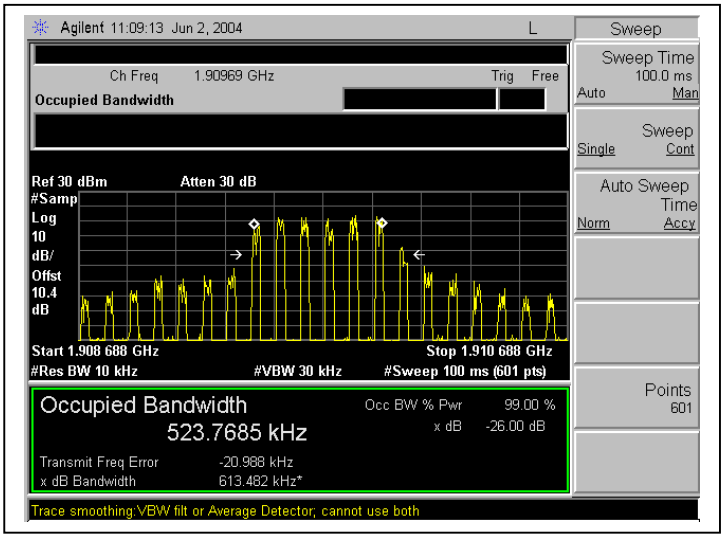
Low Channel



Mid Channel:



High Channel:

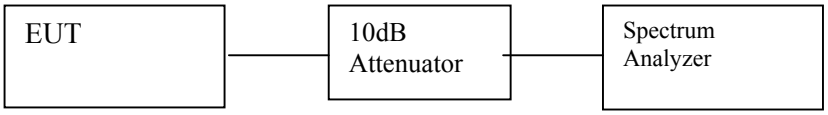


7.4. SECTION 2.1051: SPURIOUS EMISSION AT ANTENNA TERMINAL

INSTRUMENTS LIST

TEST EQUIPMENT LIST				
Name of Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Due Date**
Spectrum Analyzer	**HP**	**E4446A**	**US42510266**	**7/23/2004**
Power Meter	**HP**	**436A**	**2709A29209**	**7/15/2004**
Power Sensor, 100 kHz ~ 4.2 GHz	**HP**	**8482A**	**2349A08568**	**7/15/2004**
10dB Attenuator	**Weinschel**	**56-10**	**M2348**	**CNR**

TEST SETUP



TEST PROCEDURE

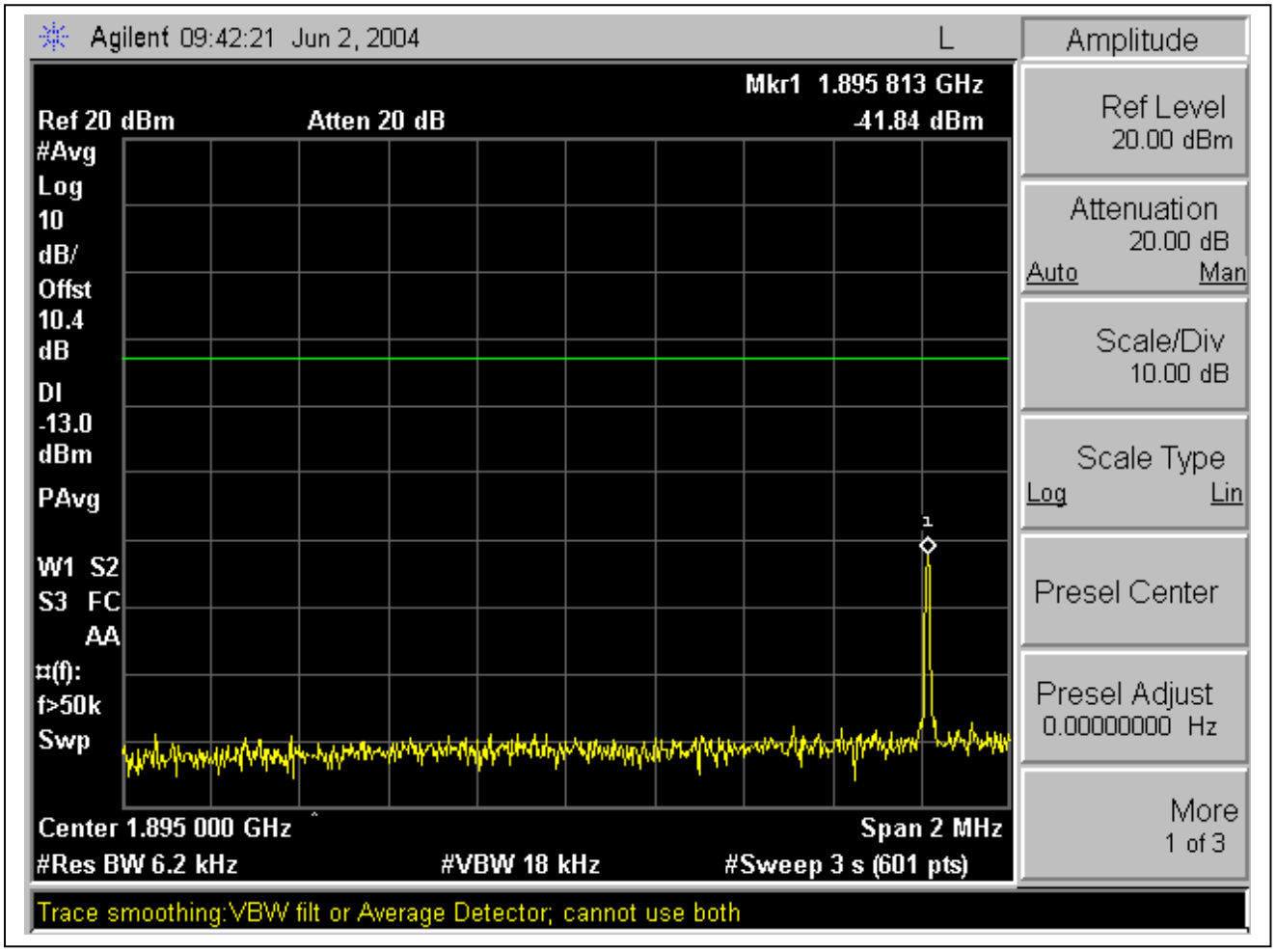
1) RF signal or three balanced signals (intermodulation measurement) were applied to the RF input. One set as close as possible to the bottom of the block edge and one set as close as possible to the top of the block edge. Set the RES BW to 1% of the emission bandwidth to show compliance with the –13dBm limit, in the 1 MHz bands immediately outside and adjacent to the top and bottom edges of the frequency block.

2) For the Out-of-Band measurements a 1 MHz RES BW was used to scan from 15 MHz to 10xfo of the fundamental carrier for all frequency block. A display line was placed at –13dBm to show compliance for spurious, harmonics, and intermodulation emissions.

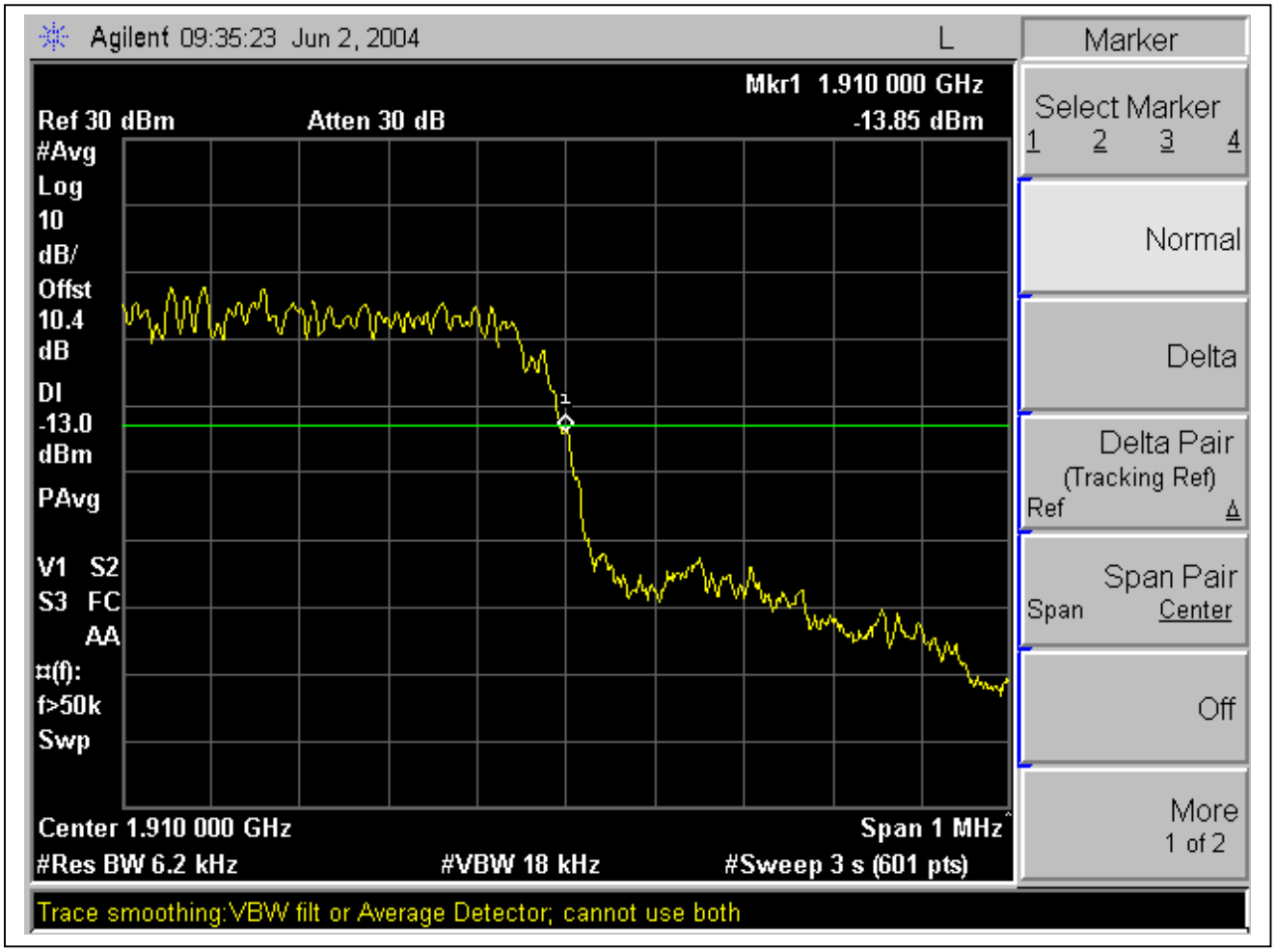
RESULT:

BPSK Modulation: Band Edges, Out-Of-Band Emissions

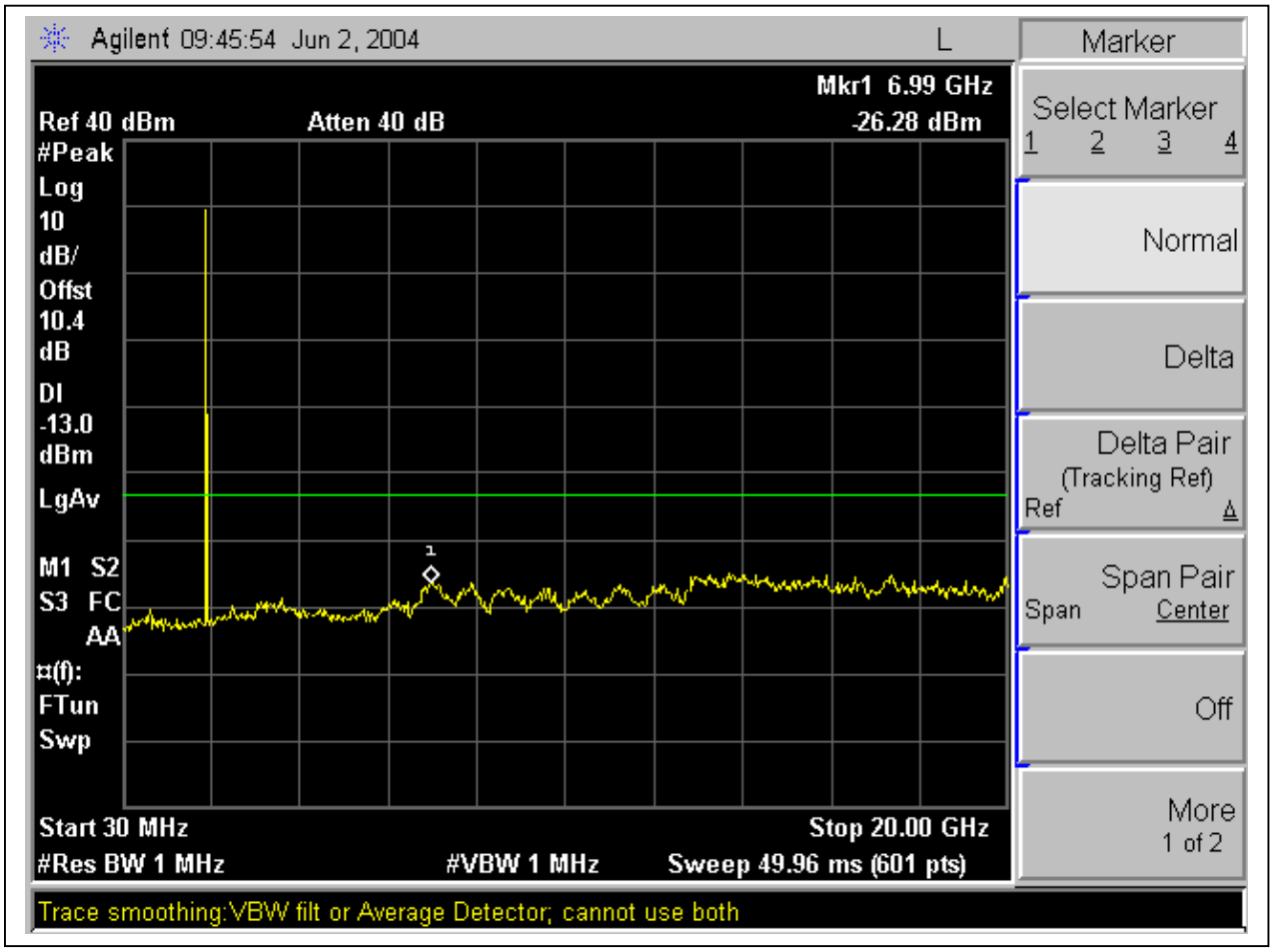
Low Channel Band Edge



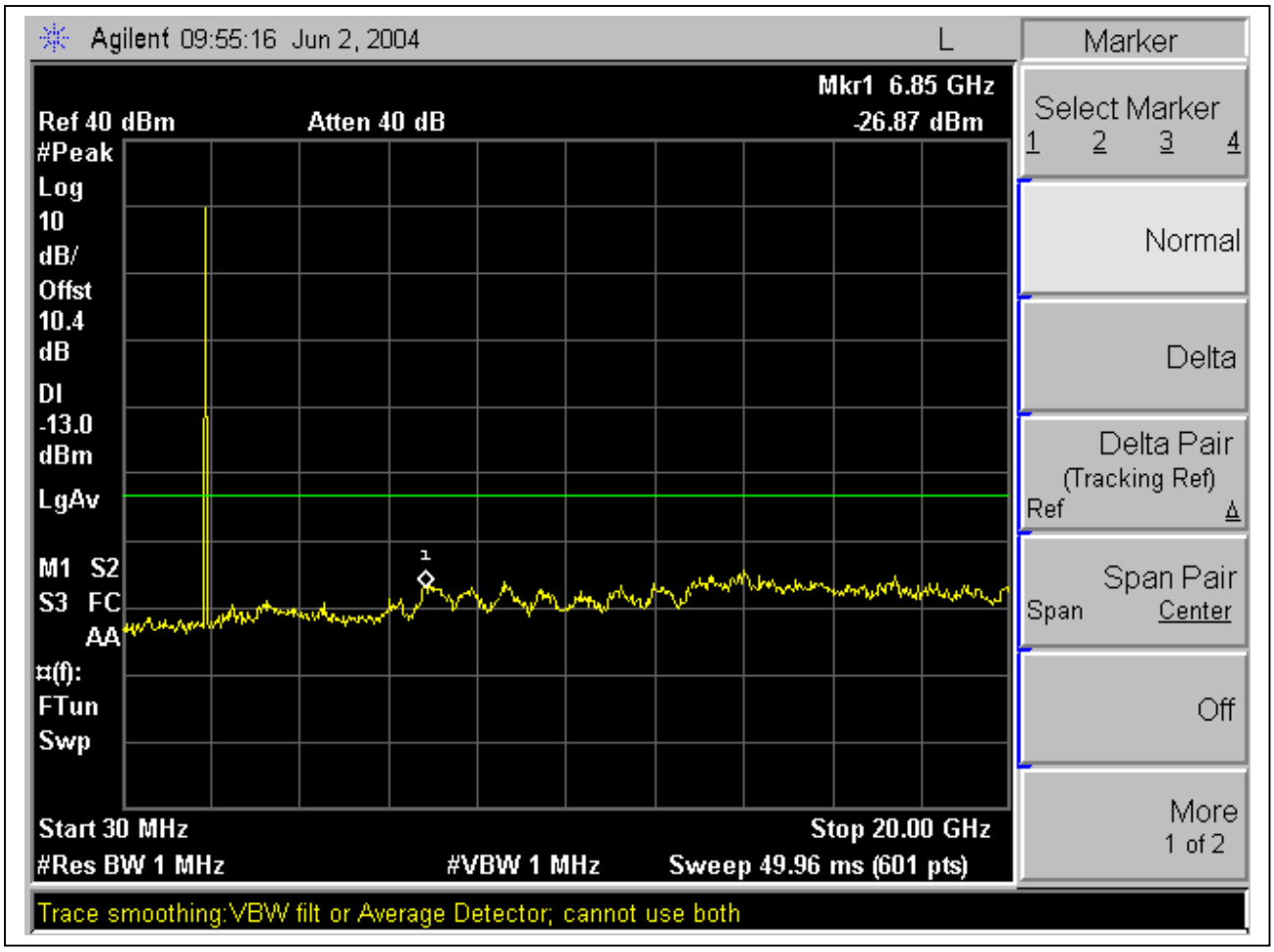
High Channel Band Edge



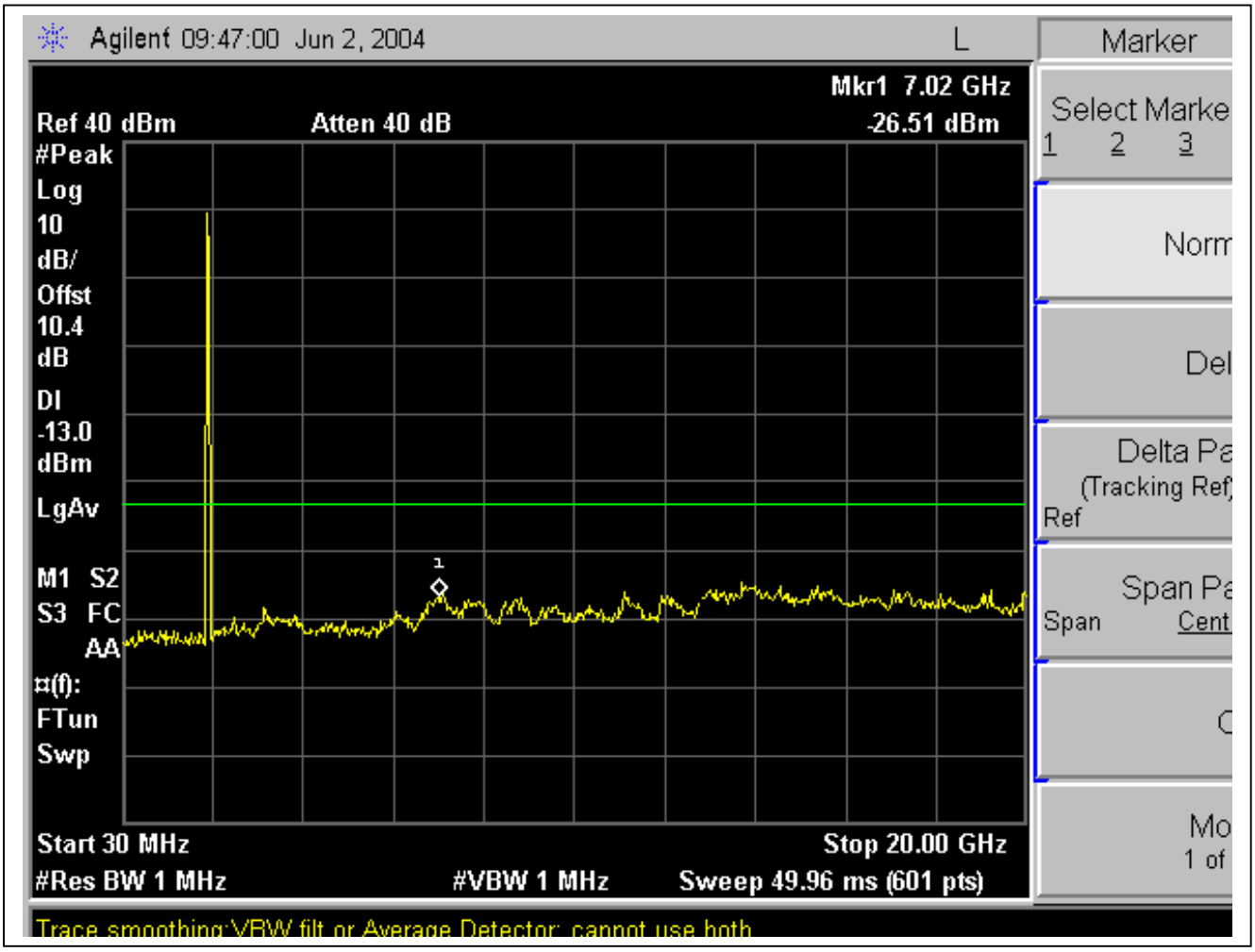
Low Channel, Out-Of-Band Emissions



Mid Channel, Out-Of-Band Emissions

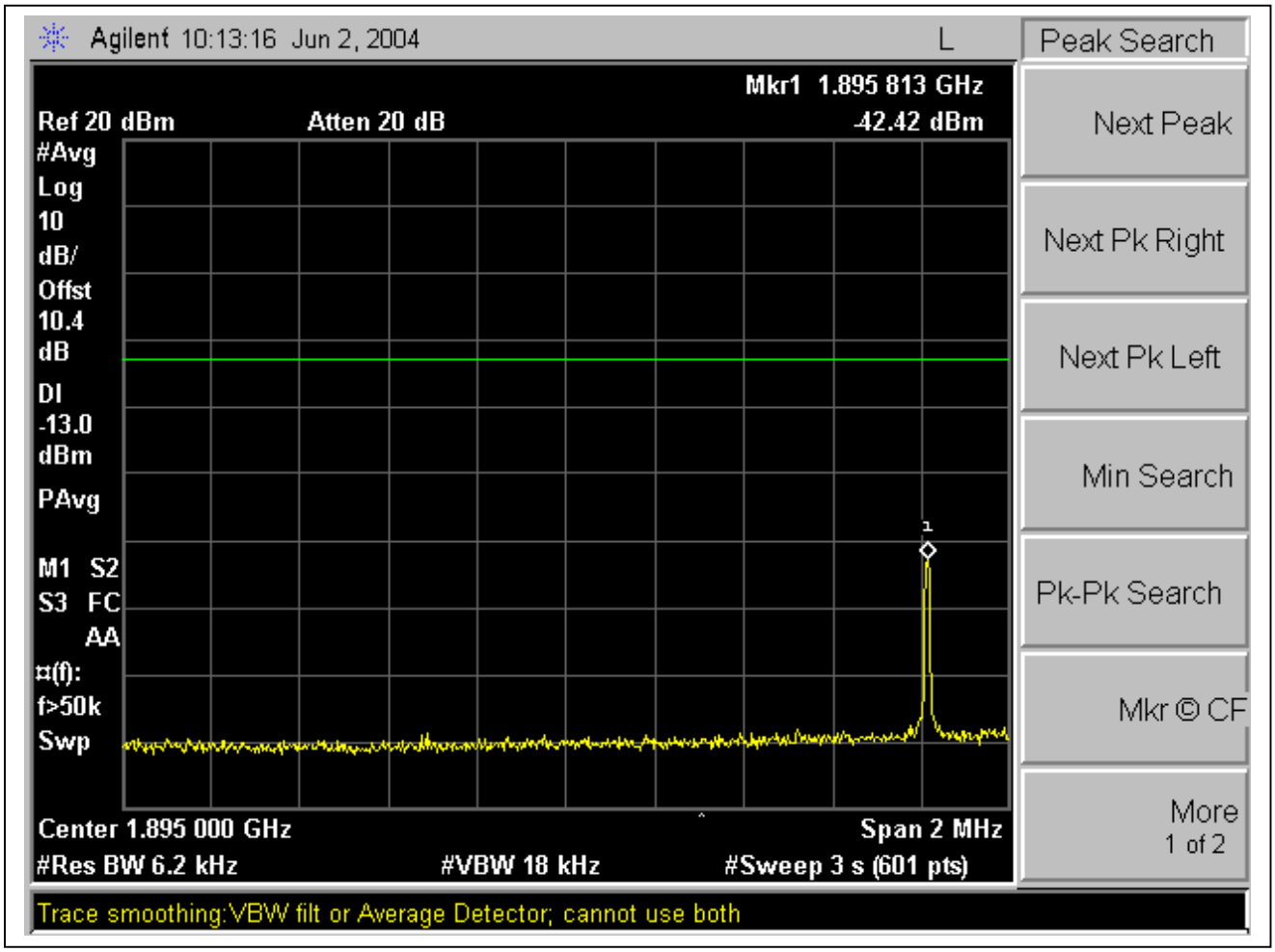


High Channel, Out-Of-Band Emissions



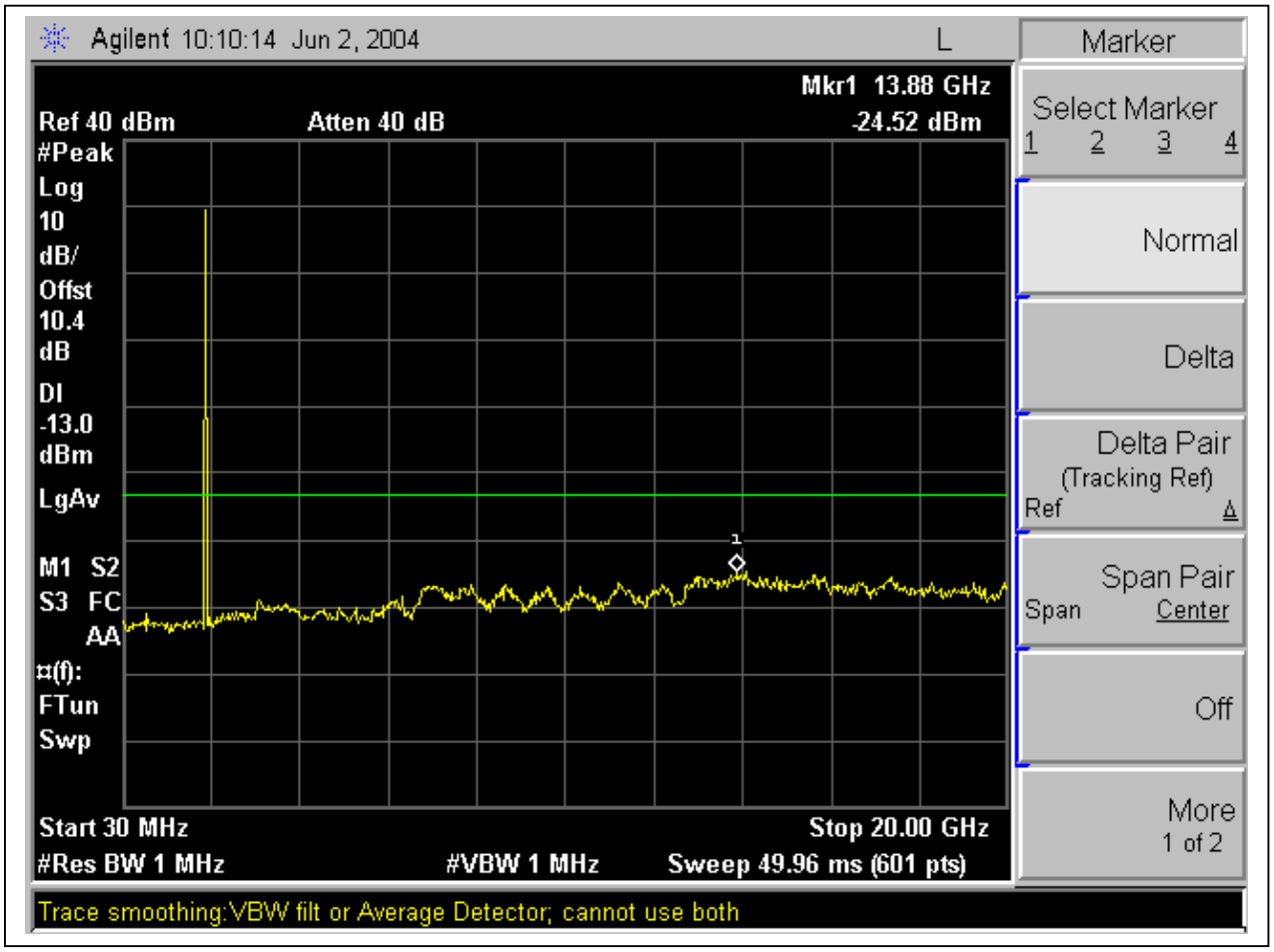
QPSK Modulation: Band Edges, Out-Of-Band Emissions

Low Channel Band Edge

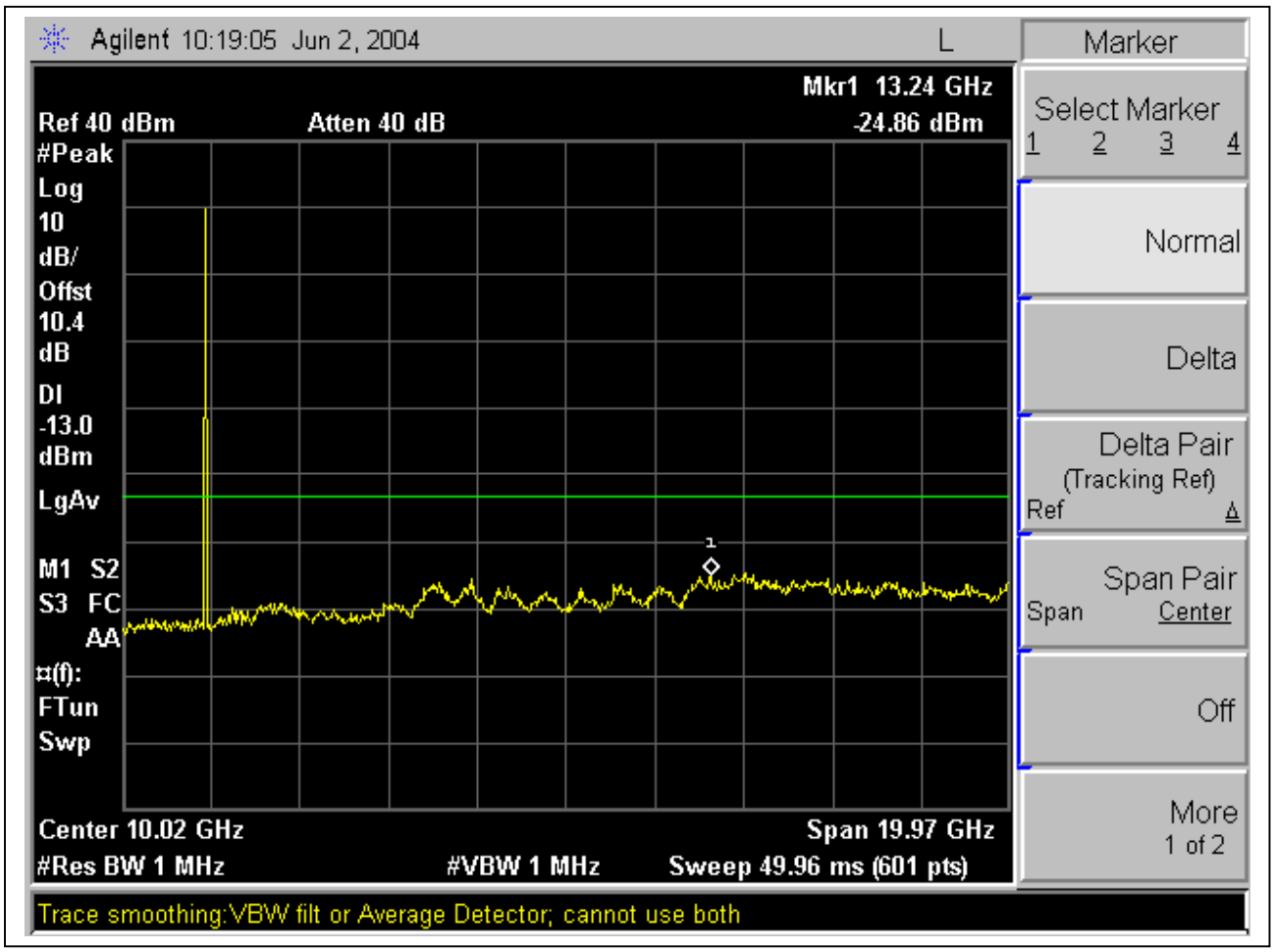


High Channel Band Edge

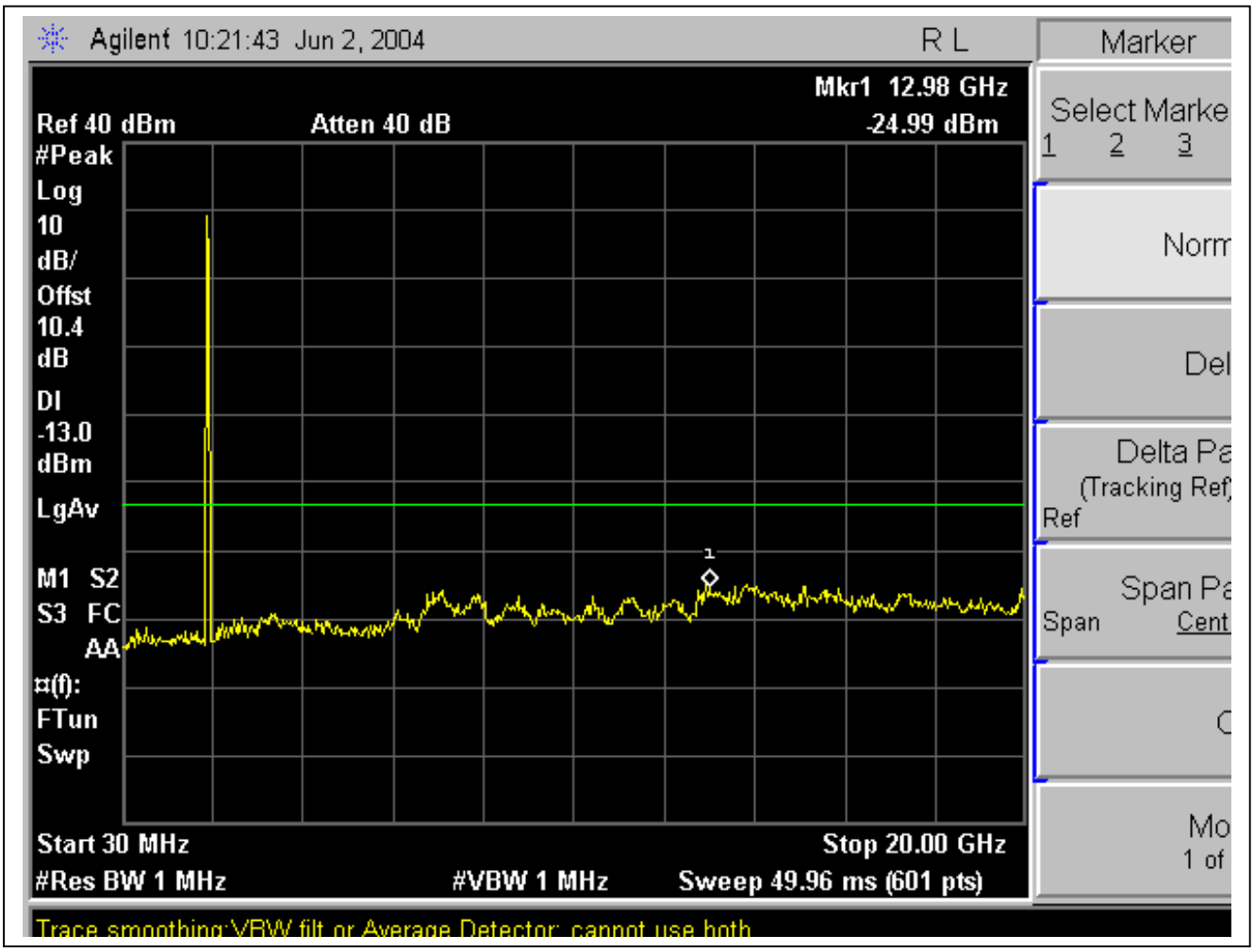
Low Channel, Out-Of-Band Emissions



Mid Channel, Out-Of-Band Emissions

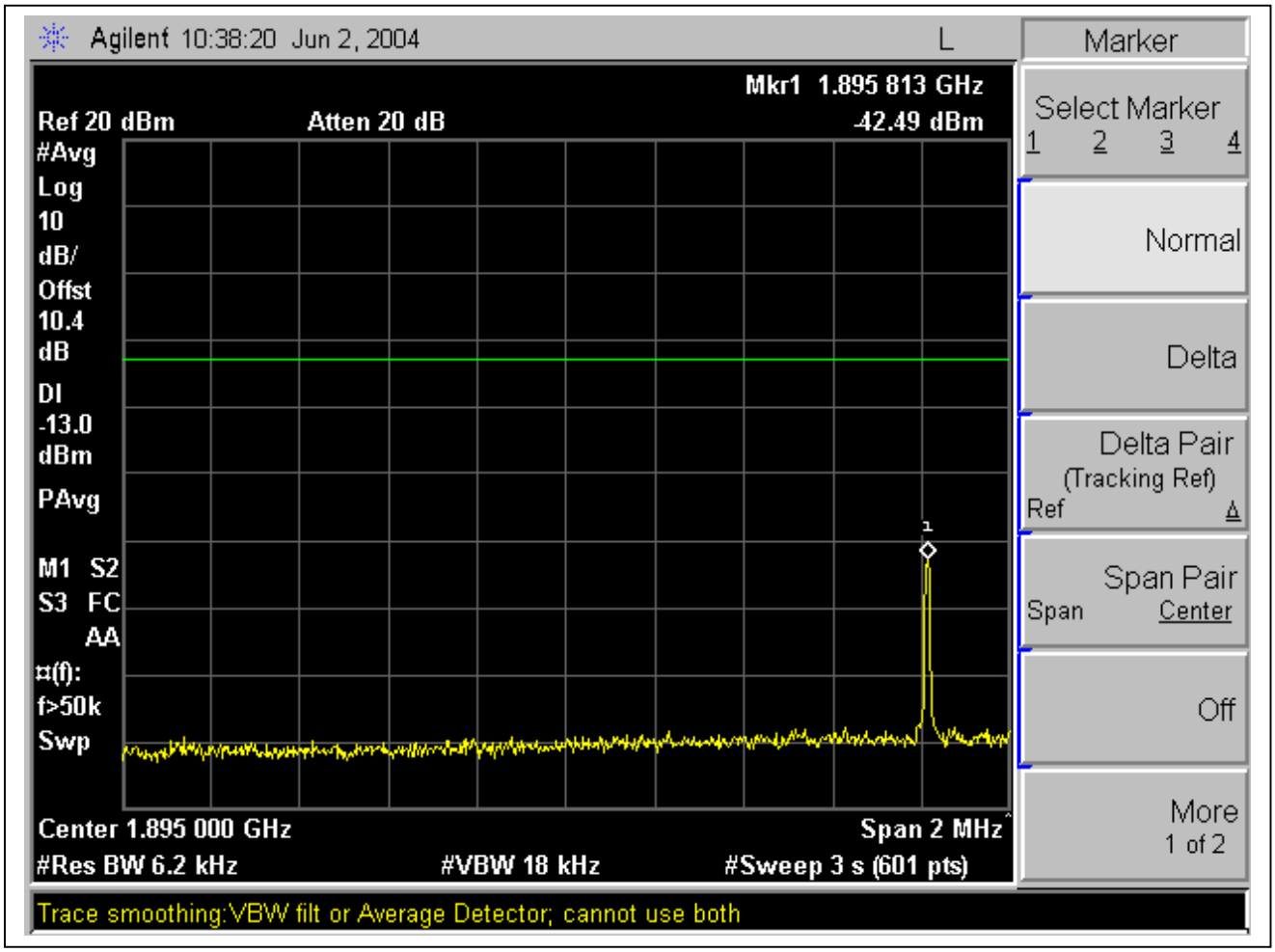


High Channel, Out-Of-Band Emissions

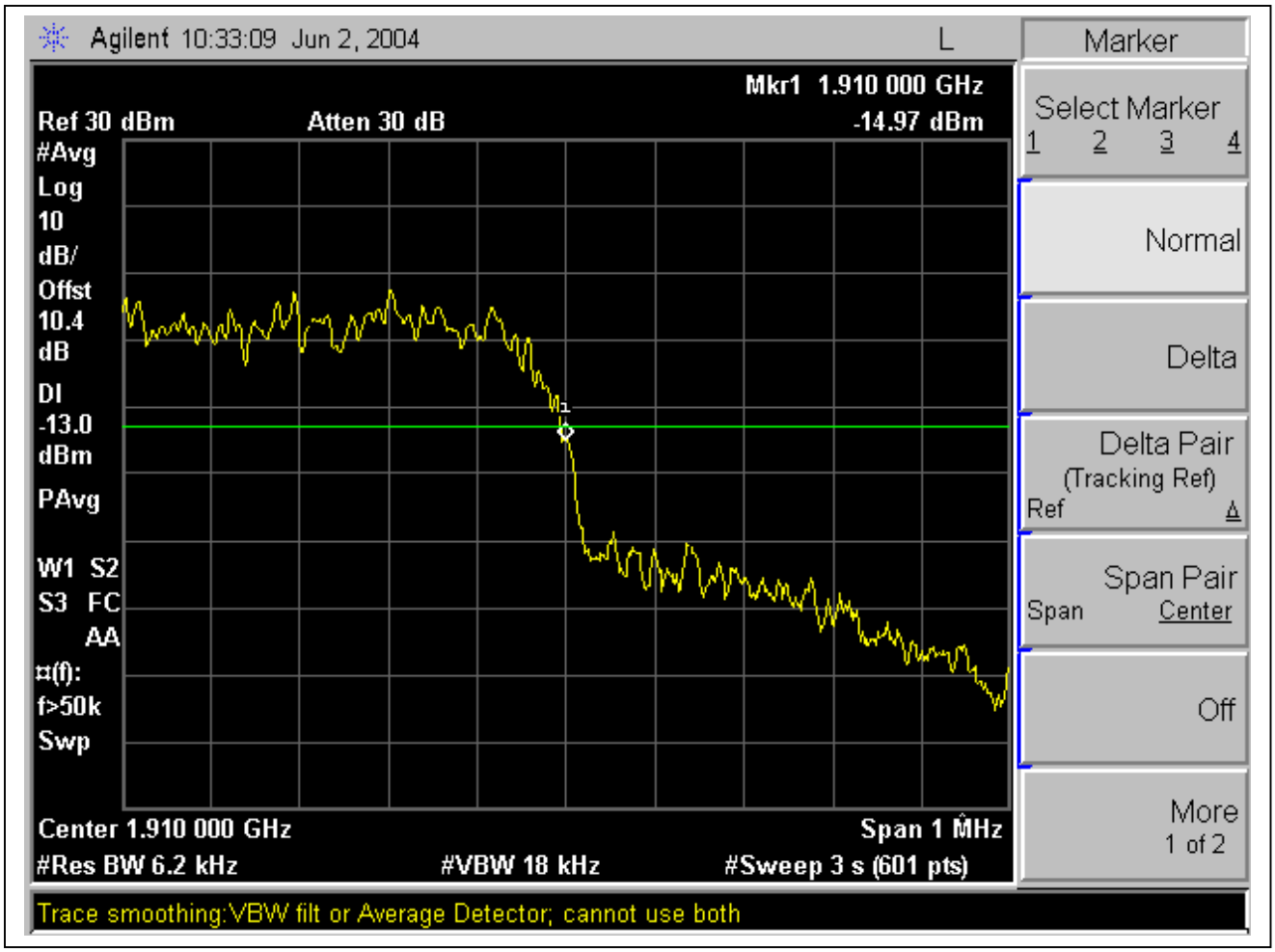


8PSK Modulation: Band Edges, Out-Of-Band Emissions

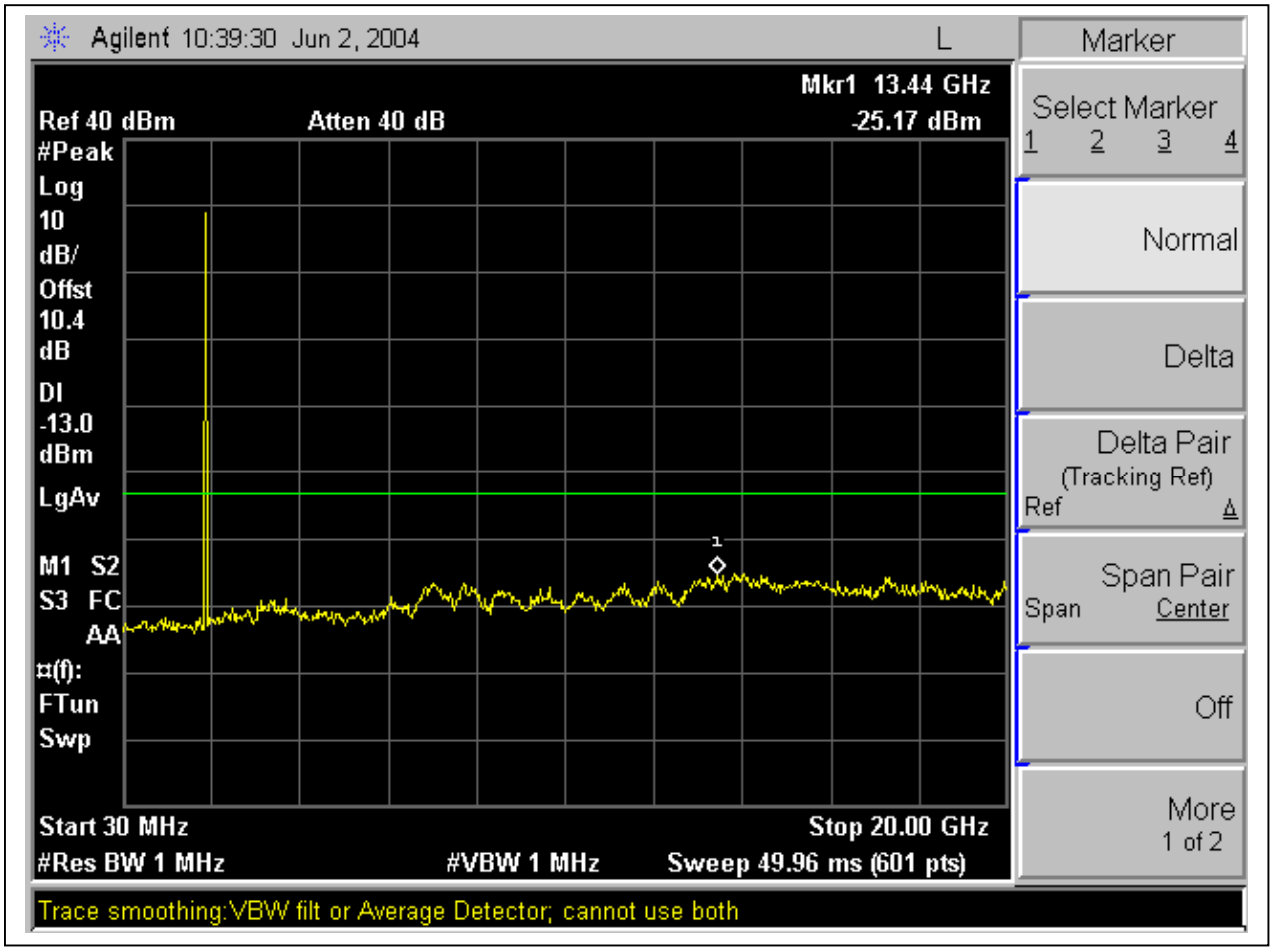
Low Channel Band Edge



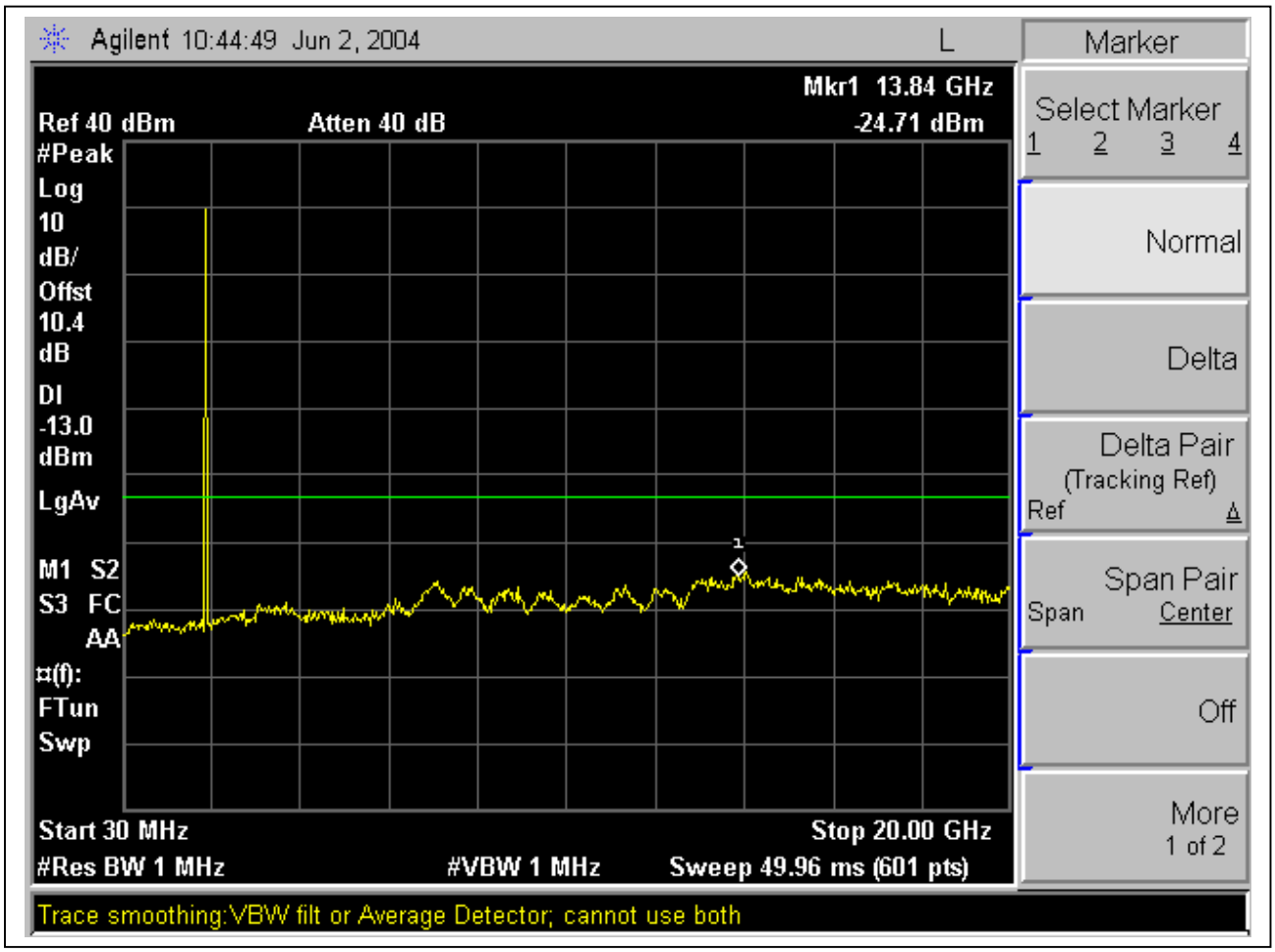
High Channel Band Edge



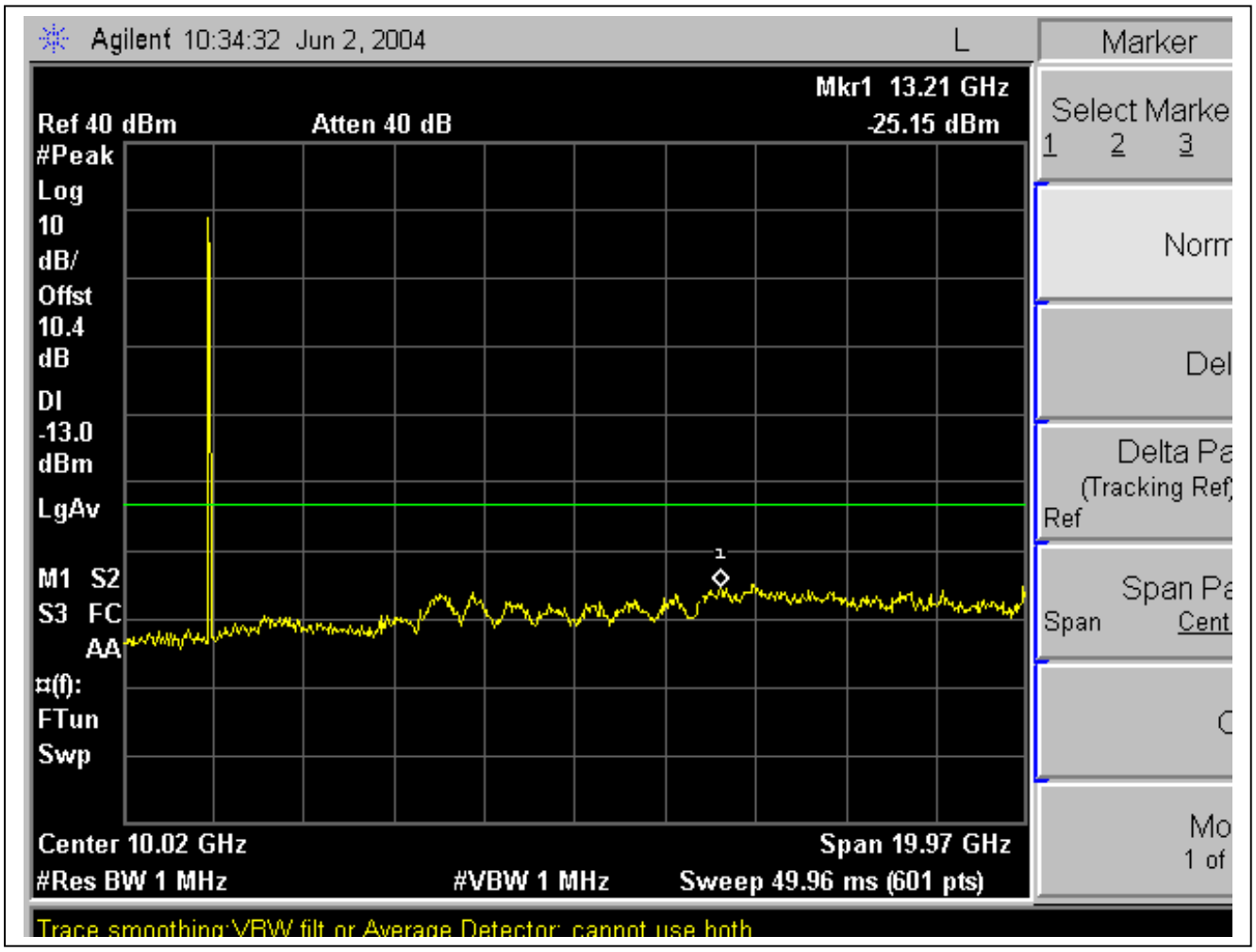
Low Channel, Out-Of-Band Emissions



Mid Channel, Out-Of-Band Emissions

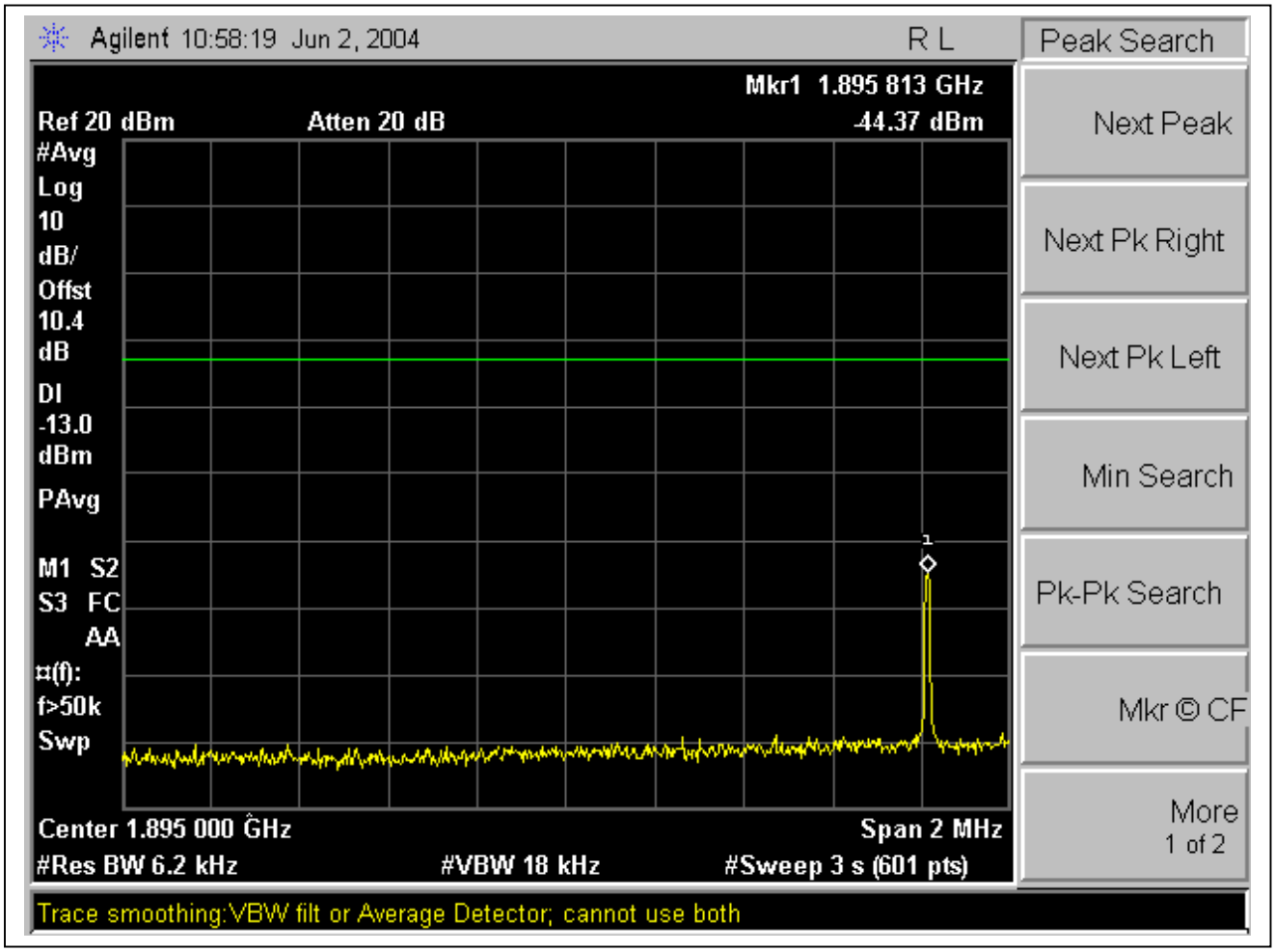


High Channel, Out-Of-Band Emissions



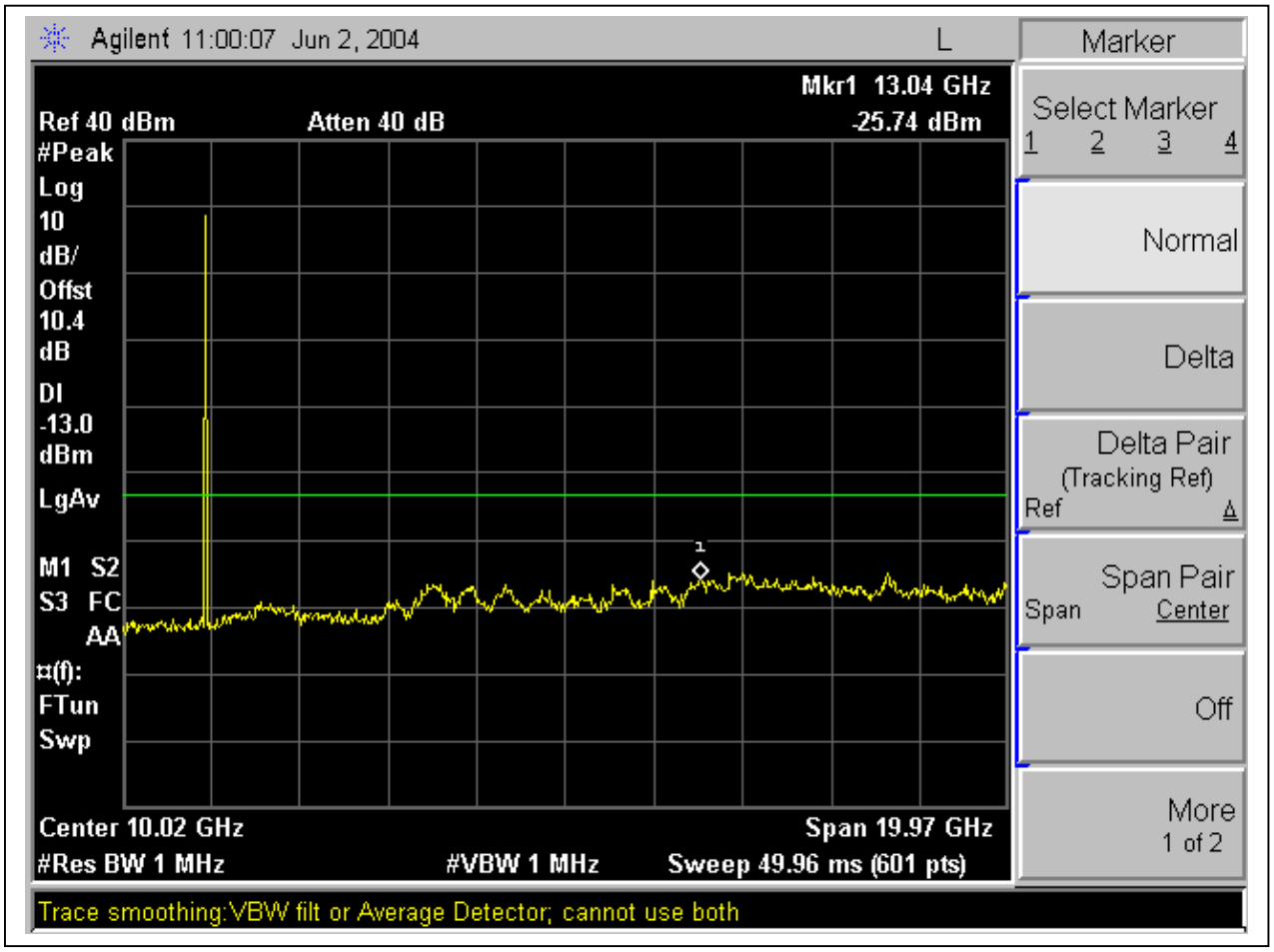
12QAM Modulation: Band Edges, Out-Of-Band Emissions

Low Channel Band Edge

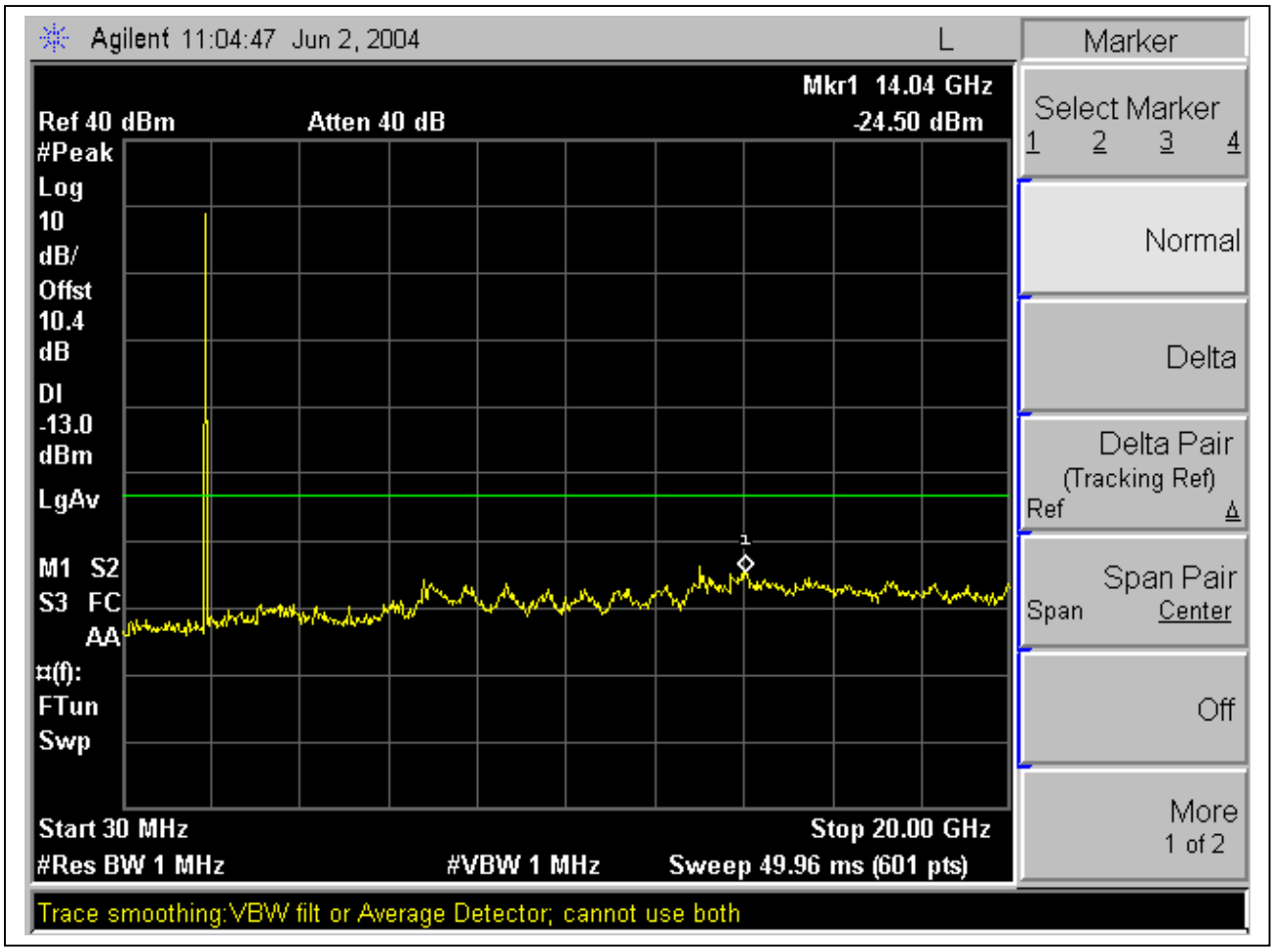


High Channel Band Edge

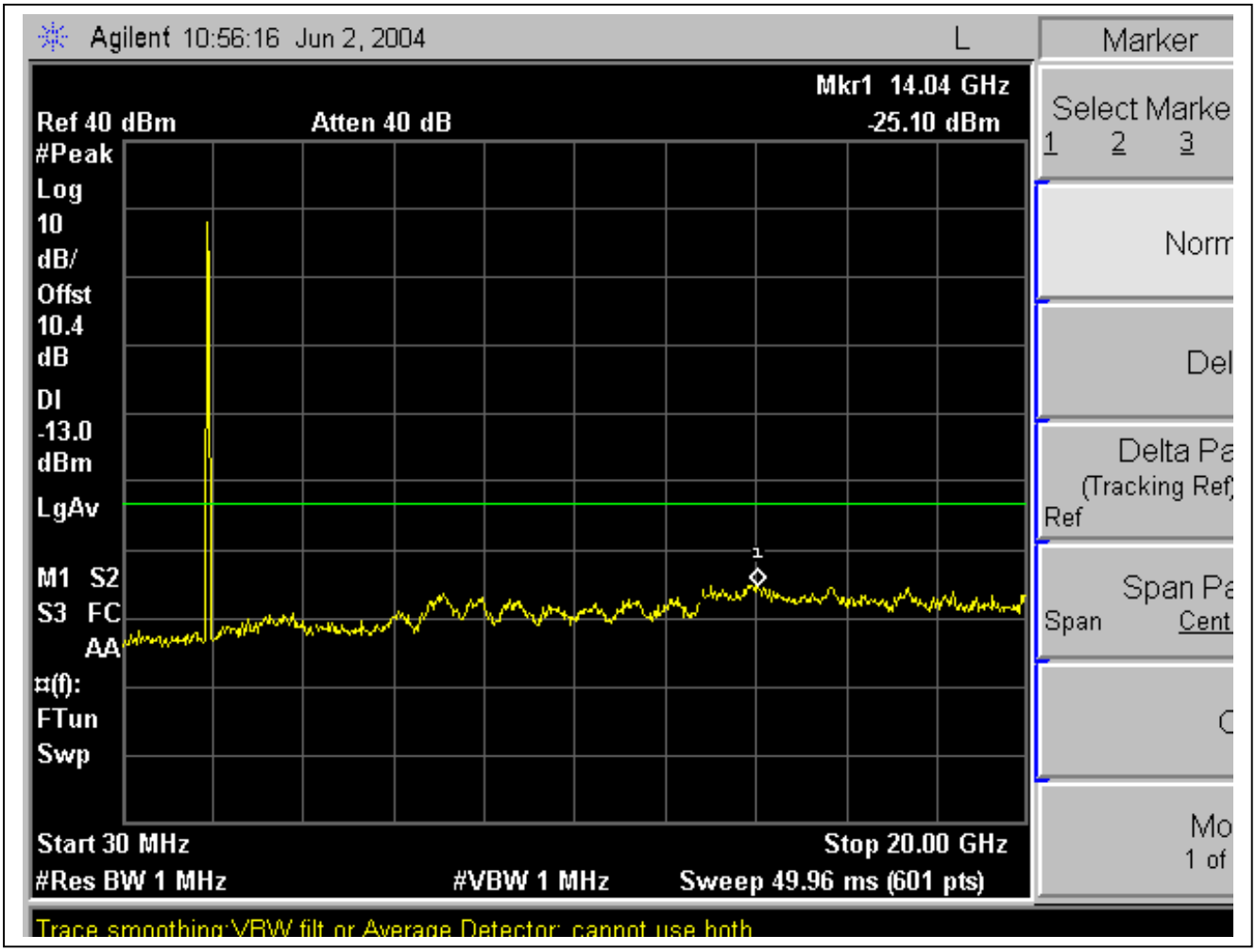
Low Channel, Out-Of-Band Emissions



Mid Channel, Out-Of-Band Emissions

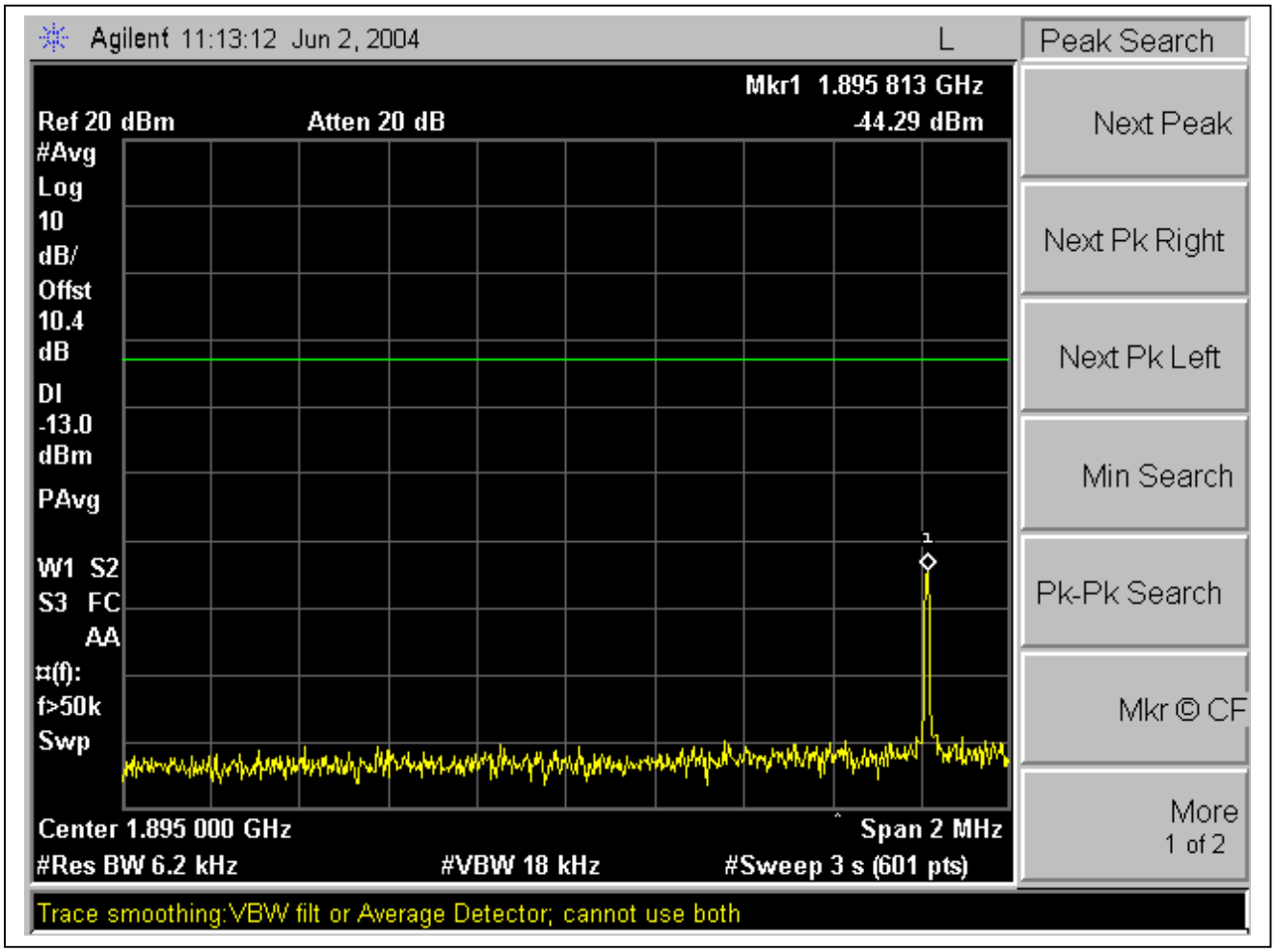


High Channel, Out-Of-Band Emissions



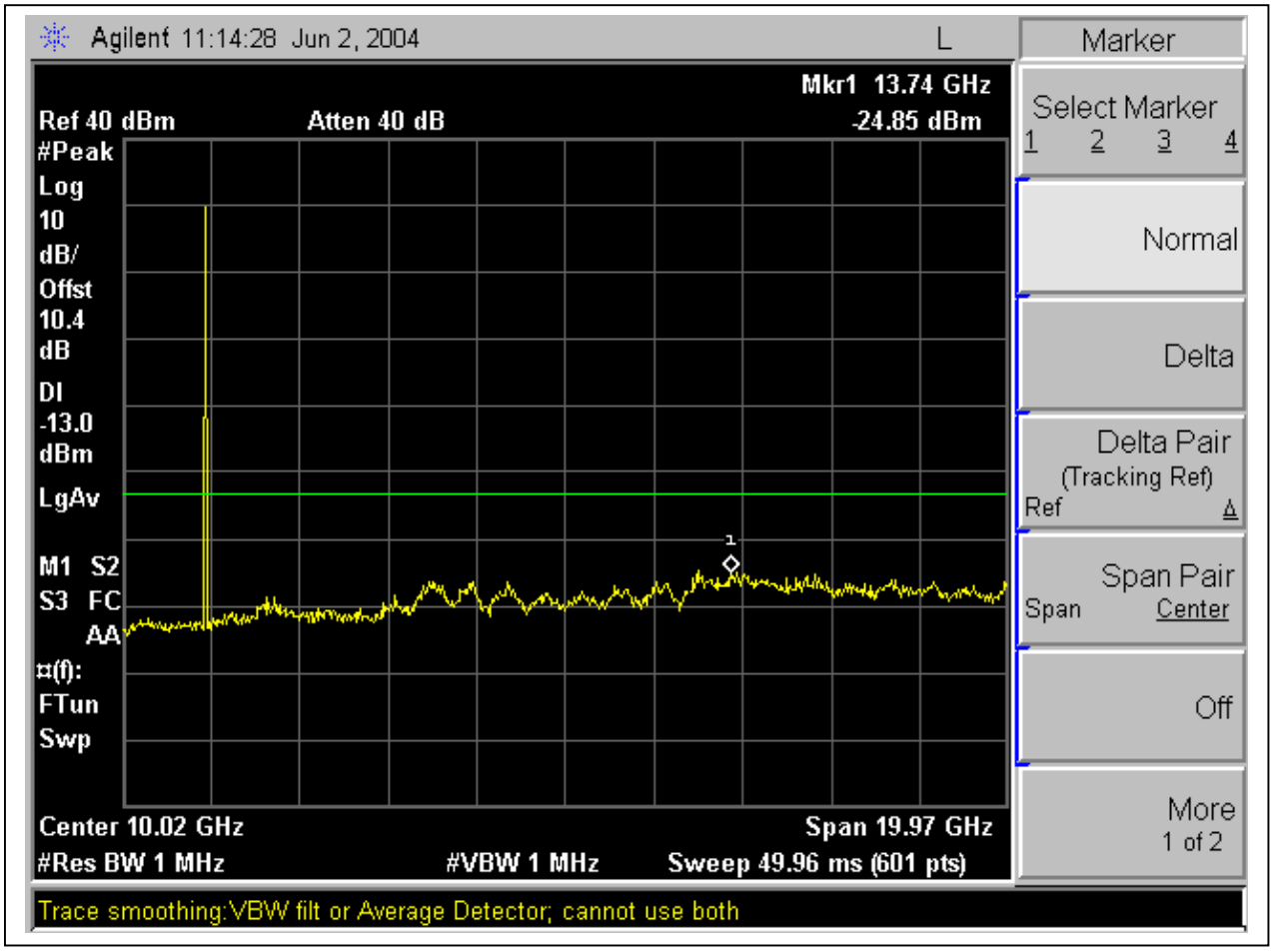
16QAM Modulation: Band Edges, Out-Of-Band Emissions

Low Channel Band Edge

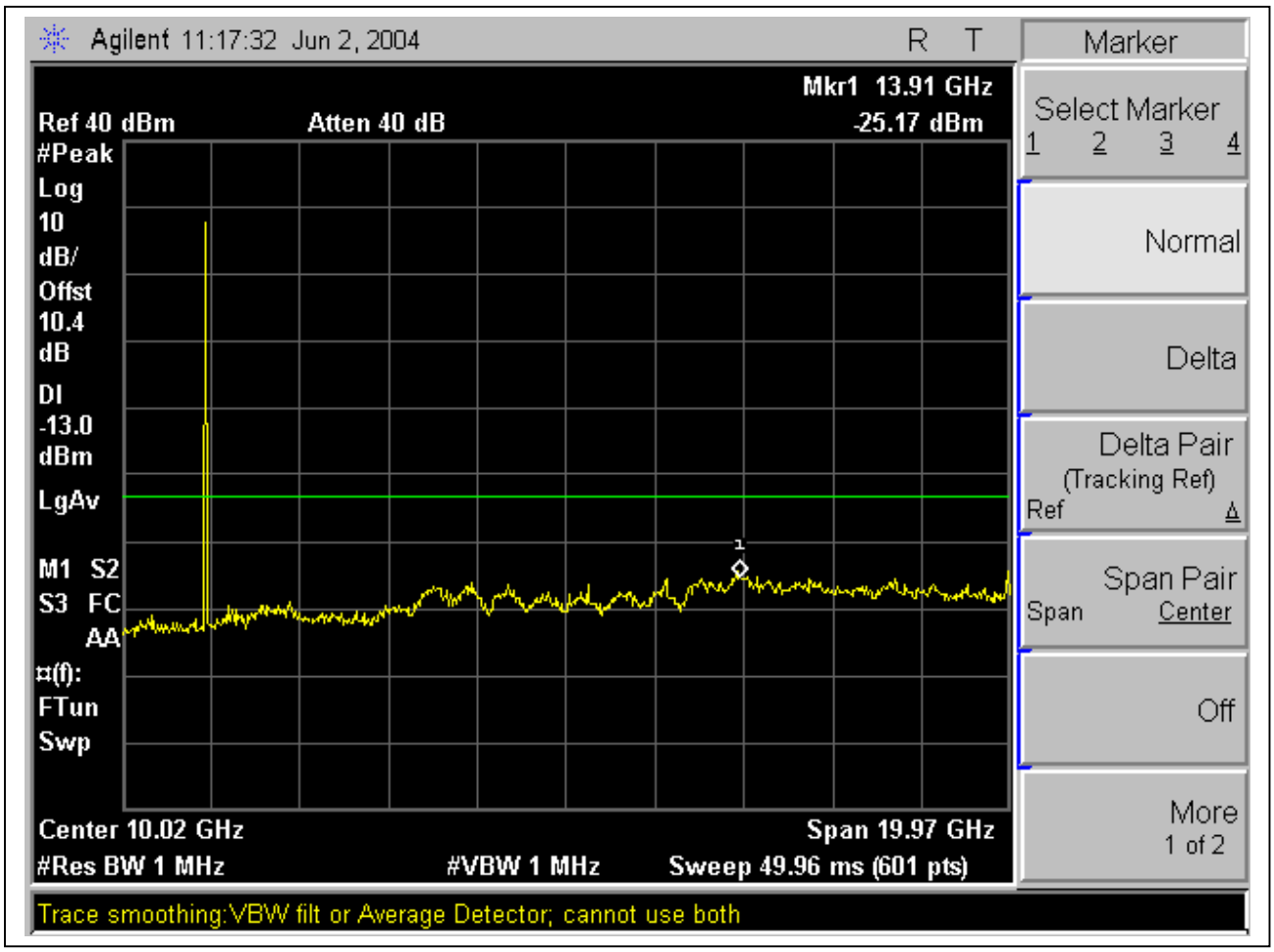


High Channel Band Edge

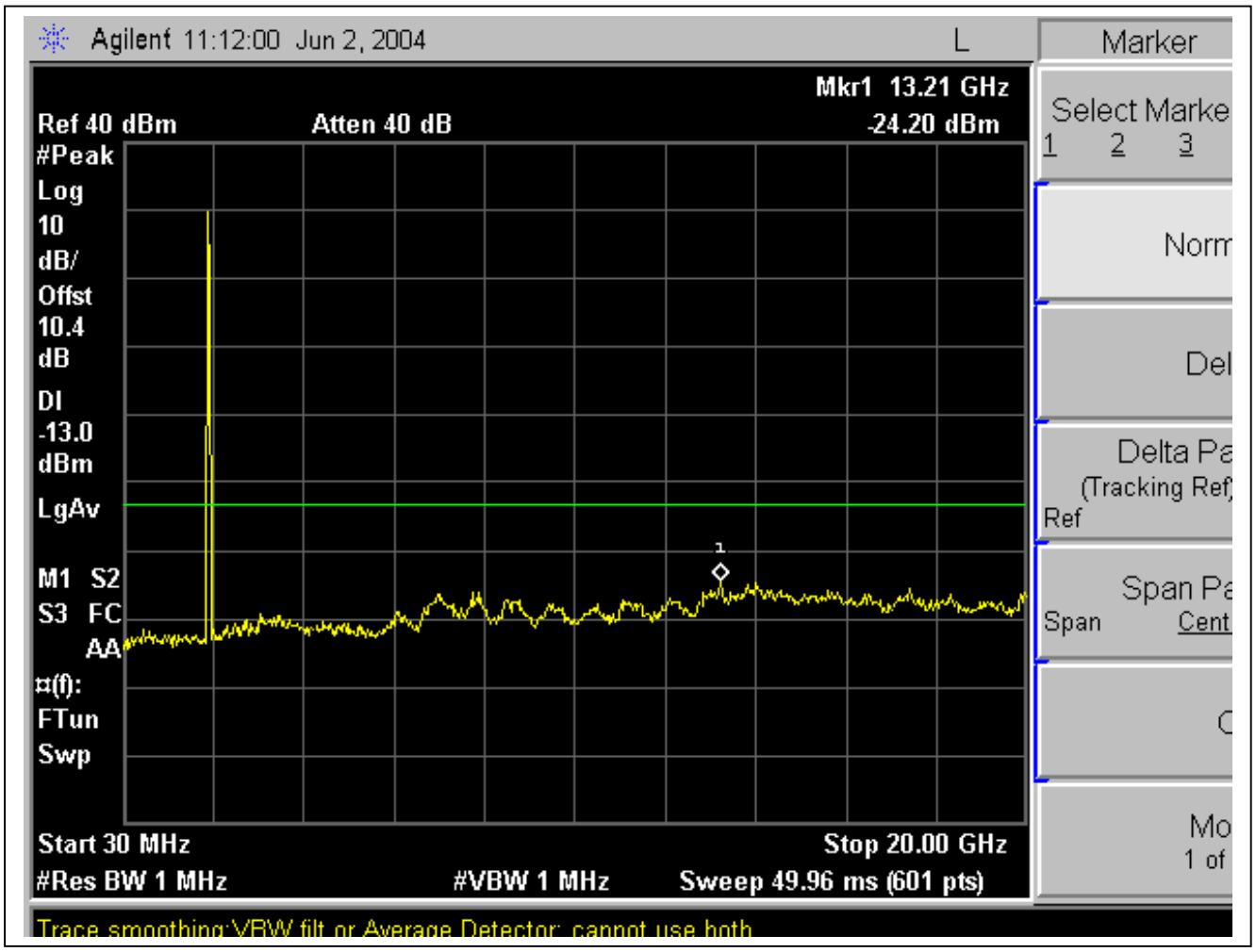
Low Channel, Out-Of-Band Emissions



Mid Channel, Out-Of-Band Emissions



High Channel, Out-Of-Band Emissions



7.5. SECTION 2.1053: FIELD STRENGTH OF SPURIOUS RADIATION

INSTRUMENTS LIST

TEST EQUIPMENT LIST				
Name of Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Due Date**
Spectrum Analyzer	**HP**	**E4446A**	**US42510266**	**7/23/2004**
2.7GHz HPF	**MicroTronic**	**HPM13193**	**1**	**CNR**
Antenna, Horn 1 ~ 18 GHz	**EMCO**	**3115**	**6717**	**2/4/2005**
Antenna, Horn 1 ~ 18 GHz	**EMCO**	**3115**	**2238**	**2/4/2005**
Amplifier 1-26GHz	**MITEQ**	**NSP2600-SP**	**924342**	**4/25/2005**
10dB Attenuator	**Weinschel**	**56-10**	**M2348**	**CNR**
Signal Generator	**R & S**	**SMP04**	**DE34210**	**5/25/2005**

Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	☒ Peak ☐ Average	☒ 1 MHz ☐ 1 MHz	☒ 1 MHz ☐ 10 Hz

TEST SETUP

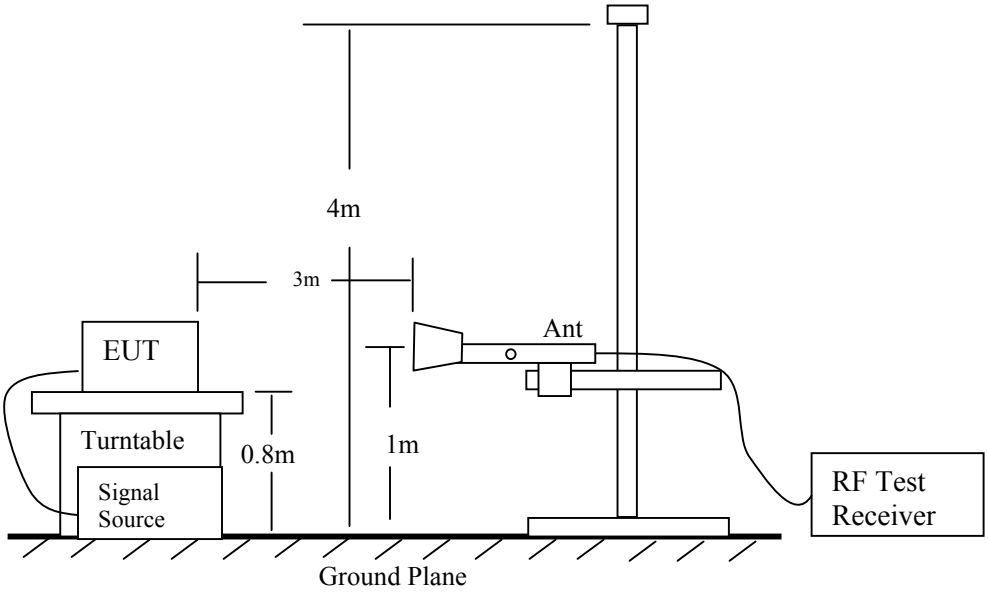


Fig 1: Radiated Emission Measurement

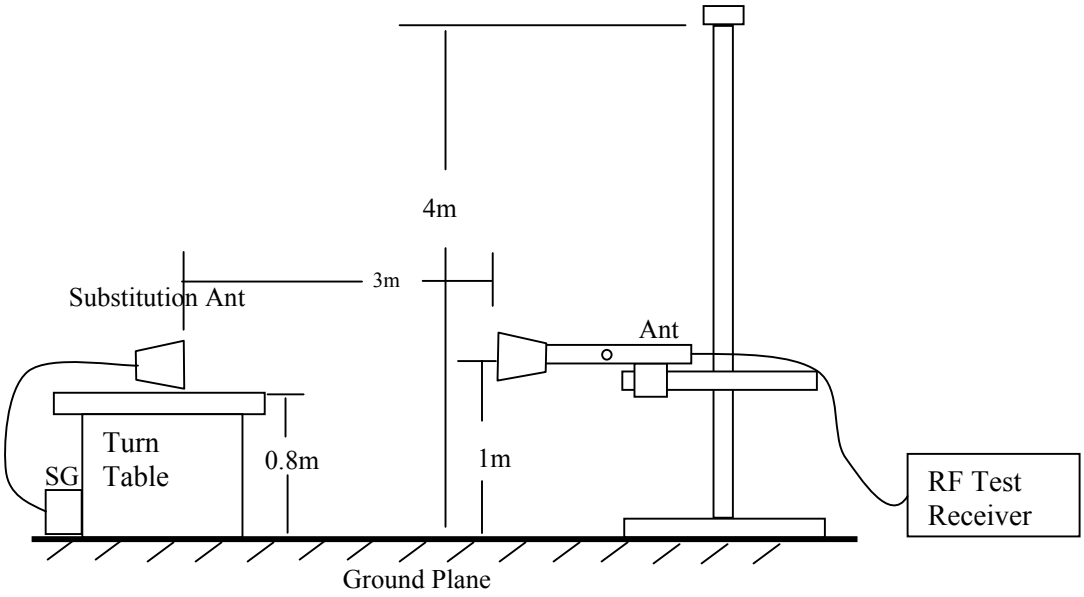


Fig 2: Radiated Emission – Substitution Method set-up

TEST PROCEDURE

1). On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
2). The test antenna shall be oriented initially for vertical polarization located 1m from the EUT to correspond to the frequency of the transmitter.
3). The output of the test antenna shall be connected to the measuring receiver and either a peak or average detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
4). The transmitter shall be switched on, if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
5). The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
6). The transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
7). The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
8). The maximum signal level detected by the measuring receiver shall be noted.
9). The transmitter shall be replaced by a substitution antenna.
10). The substitution antenna shall be oriented for vertical polarization.
11). The substitution antenna shall be connected to a calibrated signal generator.
12). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
13). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
14). The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
15). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
16). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.
17). The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for the gain of the substitution antenna if necessary.

RESULT

No non-compliance noted, as shown below

BPSK: Low, Mid, & High Channels:

06/03/04 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr:Chin Pang
Project #:04i2701-2
Company:Kyocera
EUT Descrip.:1.9GHz iBurst & user terminal_D & User terminal_C
EUT M/N:UTD1900D-US-A
Test Target:FCC part24
Mode Oper:TX, BPSK

Test Equipment:

EMCO Horn 1-18GHz: T120; S/N: 29310 @3m
Horn > 18GHz:
Limit: FCC 24
☑ High Pass Filter

Hi Frequency Cables: ☐ (2 ft) ☑ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)

Pre-amplifer 1-26GHz: T63 Miteq 646456
Pre-amplifer 26-40GHz:

the peak reading is included duty cycle factor

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
low ch										
3.800	57.0	V	-38.6	2.5	8.1	5.9	-33.0	-13.0	-20.0	
5.701	61.2	V	-29.8	3.3	9.7	7.6	-23.4	-13.0	-10.4	
7.600	65.5	V	-23.2	3.8	11.3	9.1	-15.7	-13.0	-2.7	
9.500	54.8	V	-32.4	4.3	12.3	10.1	-24.4	-13.0	-11.4	
13.300	61.8	V	-24.1	5.2	13.1	10.9	-16.2	-13.0	-3.2	
3.800	57.0	H	-38.5	2.5	8.1	5.9	-32.9	-13.0	-19.9	
5.701	53.5	H	-36.5	3.3	9.7	7.6	-30.1	-13.0	-17.1	
7.600	64.0	H	-23.9	3.8	11.3	9.1	-16.4	-13.0	-3.4	
13.300	60.5	H	-24.6	5.2	13.1	10.9	-16.7	-13.0	-3.7	
mid ch										
3.809	56.0	V	-39.5	2.5	8.1	5.9	-33.9	-13.0	-20.9	
5.700	60.4	V	-30.6	3.3	9.7	7.6	-24.2	-13.0	-11.2	
7.620	65.0	V	-23.7	3.8	11.3	9.1	-16.1	-13.0	-3.1	
9.524	54.0	V	-33.2	4.3	12.2	10.1	-25.2	-13.0	-12.2	
13.330	62.1	V	-23.9	5.2	13.1	10.9	-16.0	-13.0	-3.0	
3.809	54.0	H	-41.4	2.5	8.1	5.9	-35.8	-13.0	-22.8	
5.715	57.2	H	-32.8	3.3	9.7	7.6	-26.4	-13.0	-13.4	
7.620	63.0	H	-24.9	3.8	11.3	9.1	-17.3	-13.0	-4.3	
9.524	50.4	H	-36.8	4.3	12.2	10.1	-28.8	-13.0	-15.8	
13.330	62.0	H	-23.2	5.2	13.1	10.9	-15.3	-13.0	-2.3	
high ch										
3.820	55.0	V	-40.5	2.5	8.1	6.0	-34.9	-13.0	-21.9	
5.730	58.4	V	-32.6	3.3	9.7	7.6	-26.2	-13.0	-13.2	
7.639	64.0	V	-24.6	3.8	11.3	9.2	-17.1	-13.0	-4.1	
9.549	53.0	V	-34.1	4.3	12.2	10.1	-26.2	-13.0	-13.2	
13.369	60.0	V	-26.0	5.2	13.1	11.0	-18.1	-13.0	-5.1	
3.820	51.0	H	-44.4	2.5	8.1	6.0	-38.8	-13.0	-25.8	
5.730	57.0	H	-33.0	3.3	9.7	7.6	-26.6	-13.0	-13.6	
7.639	62.0	H	-25.8	3.8	11.3	9.2	-18.3	-13.0	-5.3	
9.549	50.4	H	-36.7	4.3	12.2	10.1	-28.8	-13.0	-15.8	
13.369	59.0	H	-26.2	5.2	13.1	11.0	-18.3	-13.0	-5.3	
NO OTHER EMISSION WERE DETECTED AFTER 6TH HARMONIC										

QPSK: Low, Mid, & High Channels:

06/03/04 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr:Chin Pang
Project #:04i2701-2
Company:Kyocera
EUT Descrip.:1.9GHz iBurst & user terminal_D
EUT M/N:UTD1900D-US-A
Test Target:FCC Part24
Mode Oper:TX, QPSK

Test Equipment:

EMCO Horn 1-18GHz: T120; S/N: 29310 @3m
Horn > 18GHz:
Limit: FCC 24
☑ High Pass Filter
Hi Frequency Cables: ☐ (2 ft) ☑ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)
Pre-amplifer 1-26GHz: T63 Miteq 646456
Pre-amplifer 26-40GHz:

the peak reading is included duty cycle factor

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
low ch										
3.800	54.5	V	-41.1	2.5	8.1	5.9	-35.5	-13.0	-22.5	
5.701	60.0	V	-31.0	3.3	9.7	7.6	-24.6	-13.0	-11.6	
7.600	64.0	V	-24.7	3.8	11.3	9.1	-17.2	-13.0	-4.2	
9.500	50.0	V	-37.2	4.3	12.3	10.1	-29.2	-13.0	-16.2	
13.300	58.3	V	-27.6	5.2	13.1	10.9	-19.7	-13.0	-6.7	
3.800	53.0	H	-42.5	2.5	8.1	5.9	-36.9	-13.0	-23.9	
5.701	56.0	H	-34.0	3.3	9.7	7.6	-27.6	-13.0	-14.6	
7.600	60.0	H	-27.9	3.8	11.3	9.1	-20.4	-13.0	-7.4	
13.300	57.2	H	-27.9	5.2	13.1	10.9	-20.0	-13.0	-7.0	
mid ch										
3.809	54.0	V	-41.5	2.5	8.1	5.9	-35.9	-13.0	-22.9	
5.715	59.5	V	-31.5	3.3	9.7	7.6	-25.1	-13.0	-12.1	
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9.524	52.0	V	-35.2	4.3	12.2	10.1	-27.2	-13.0	-14.2	
13.330	60.4	V	-25.6	5.2	13.1	10.9	-17.7	-13.0	-4.7	
3.809	51.0	H	-44.4	2.5	8.1	5.9	-38.8	-13.0	-25.8	
5.715	56.2	H	-33.8	3.3	9.7	7.6	-27.4	-13.0	-14.4	
7.620	60.0	H	-27.9	3.8	11.3	9.1	-20.3	-13.0	-7.3	
9.524	49.4	H	-37.8	4.3	12.2	10.1	-29.8	-13.0	-16.8	
13.330	58.4	H	-26.8	5.2	13.1	10.9	-18.9	-13.0	-5.9	
high ch										
3.820	54.4	V	-41.1	2.5	8.1	6.0	-35.5	-13.0	-22.5	
5.730	56.5	V	-34.5	3.3	9.7	7.6	-28.1	-13.0	-15.1	
7.639	65.0	V	-23.6	3.8	11.3	9.2	-16.1	-13.0	-3.1	
9.549	50.6	V	-36.5	4.3	12.2	10.1	-28.6	-13.0	-15.6	
13.369	61.0	V	-25.0	5.2	13.1	11.0	-17.1	-13.0	-4.1	
3.820	51.1	H	-44.3	2.5	8.1	6.0	-38.7	-13.0	-25.7	
5.730	58.4	H	-31.6	3.3	9.7	7.6	-25.2	-13.0	-12.2	
7.639	62.3	H	-25.5	3.8	11.3	9.2	-18.0	-13.0	-5.0	
9.549	48.8	H	-38.3	4.3	12.2	10.1	-30.4	-13.0	-17.4	
13.369	58.4	H	-26.8	5.2	13.1	11.0	-18.9	-13.0	-5.9	
NO OTHER EMISSION WERE DETECTED AFTER 6TH HARMONIC										

8PSK: Low, Mid, & High Channels:

06/03/04 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr:Chin Pang
Project #:04i2701-2
Company:Kyocera
EUT Descrip.:1.9GHz iBurst & user terminal_D & User terminal_C
EUT M/N:
Test Target:FCC part24
Mode Oper:TX, 8PSK

Test Equipment:

EMCO Horn 1-18GHz: T120; S/N: 29310 @3m
Horn > 18GHz:
Limit: FCC 24
☑ High Pass Filter
Hi Frequency Cables: ☐ (2 ft) ☑ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)
Pre-amplifer 1-26GHz: T63 Miteq 646456
Pre-amplifer 26-40GHz:

the peak reading is included duty cycle factor

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
low ch										
3.800	52.0	V	-43.6	2.5	8.1	5.9	-38.0	-13.0	-25.0	
5.701	58.5	V	-32.6	3.3	9.7	7.6	-26.2	-13.0	-13.2	
7.600	64.2	V	-24.5	3.8	11.3	9.1	-17.0	-13.0	-4.0	
9.500	50.4	V	-36.8	4.3	12.3	10.1	-28.8	-13.0	-15.8	
13.300	58.2	V	-27.7	5.2	13.1	10.9	-19.8	-13.0	-6.8	
3.800	53.5	H	-42.0	2.5	8.1	5.9	-36.4	-13.0	-23.4	
5.701	57.2	H	-32.8	3.3	9.7	7.6	-26.4	-13.0	-13.4	
7.600	60.7	H	-27.2	3.8	11.3	9.1	-19.7	-13.0	-6.7	
13.300	57.0	H	-28.1	5.2	13.1	10.9	-20.2	-13.0	-7.2	
mid ch										
3.809	53.0	V	-42.5	2.5	8.1	5.9	-36.9	-13.0	-23.9	
5.715	57.3	V	-33.7	3.3	9.7	7.6	-27.3	-13.0	-14.3	
7.620	63.0	V	-25.7	3.8	11.3	9.1	-18.1	-13.0	-5.1	
9.524	49.5	V	-37.7	4.3	12.2	10.1	-29.7	-13.0	-16.7	
13.330	60.0	V	-26.0	5.2	13.1	10.9	-18.1	-13.0	-5.1	
3.809	50.2	H	-45.2	2.5	8.1	5.9	-39.6	-13.0	-26.6	
5.715	56.3	H	-33.7	3.3	9.7	7.6	-27.3	-13.0	-14.3	
7.620	61.5	H	-26.4	3.8	11.3	9.1	-18.8	-13.0	-5.8	
9.524	50.4	H	-36.8	4.3	12.2	10.1	-28.8	-13.0	-15.8	
13.330	59.2	H	-26.0	5.2	13.1	10.9	-18.1	-13.0	-5.1	
high ch										
3.820	53.6	V	-41.9	2.5	8.1	6.0	-36.3	-13.0	-23.3	
5.730	56.7	V	-34.3	3.3	9.7	7.6	-27.9	-13.0	-14.9	
7.639	65.7	V	-22.9	3.8	11.3	9.2	-15.4	-13.0	-2.4	
9.549	50.7	V	-36.4	4.3	12.2	10.1	-28.5	-13.0	-15.5	
13.369	59.3	V	-26.7	5.2	13.1	11.0	-18.8	-13.0	-5.8	
3.820	52.0	H	-43.4	2.5	8.1	6.0	-37.8	-13.0	-24.8	
5.730	58.0	H	-32.0	3.3	9.7	7.6	-25.6	-13.0	-12.6	
7.639	61.3	H	-26.5	3.8	11.3	9.2	-19.0	-13.0	-6.0	
9.549	49.4	H	-37.7	4.3	12.2	10.1	-29.8	-13.0	-16.8	
13.369	60.3	H	-24.9	5.2	13.1	11.0	-17.0	-13.0	-4.0	
NO OTHER EMISSION WERE DETECTED AFTER 6TH HARMONIC										

12QAM: Low, Mid, & High Channels:

06/03/04 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr:Chin Pang
Project #:04i2701-2
Company:Kyocera
EUT Descrip.:1.9GHz iBurst & user terminal_D & User terminal_C
EUT M/N:UTD1900D-US-A
Test Target:FCC Part24
Mode Oper:TX, 12QAM

Test Equipment:

EMCO Horn 1-18GHz: T120; S/N: 29310 @3m
Horn > 18GHz:
Limit: FCC 24
☑ High Pass Filter
Hi Frequency Cables: ☐ (2 ft) ☑ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)
Pre-amplifer 1-26GHz: T63 Miteq 646456
Pre-amplifer 26-40GHz:

the peak reading is included duty cycle factor

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
low ch										
3.800	52.0	V	-43.6	2.5	8.1	5.9	-38.0	-13.0	-25.0	
5.701	57.0	V	-34.0	3.3	9.7	7.6	-27.6	-13.0	-14.6	
7.600	64.0	V	-24.7	3.8	11.3	9.1	-17.2	-13.0	-4.2	
9.500	49.8	V	-37.4	4.3	12.3	10.1	-29.4	-13.0	-16.4	
13.300	60.0	V	-25.9	5.2	13.1	10.9	-18.0	-13.0	-5.0	
3.800	51.3	H	-44.2	2.5	8.1	5.9	-38.6	-13.0	-25.6	
5.701	55.4	H	-34.6	3.3	9.7	7.6	-28.2	-13.0	-15.2	
7.600	60.0	H	-27.9	3.8	11.3	9.1	-20.4	-13.0	-7.4	
13.300	58.5	H	-26.6	5.2	13.1	10.9	-18.7	-13.0	-5.7	
mid ch										
3.809	51.0	V	-44.5	2.5	8.1	5.9	-38.9	-13.0	-25.9	
5.715	57.4	V	-33.6	3.3	9.7	7.6	-27.2	-13.0	-14.2	
7.620	64.8	V	-23.9	3.8	11.3	9.1	-16.3	-13.0	-3.3	
9.524	50.6	V	-36.6	4.3	12.2	10.1	-28.6	-13.0	-15.6	
13.330	59.4	V	-26.6	5.2	13.1	10.9	-18.7	-13.0	-5.7	
3.809	51.0	H	-44.4	2.5	8.1	5.9	-38.8	-13.0	-25.8	
5.715	56.7	H	-33.3	3.3	9.7	7.6	-26.9	-13.0	-13.9	
7.620	61.3	H	-26.6	3.8	11.3	9.1	-19.0	-13.0	-6.0	
9.524	49.2	H	-38.0	4.3	12.2	10.1	-30.0	-13.0	-17.0	
13.330	59.2	H	-26.0	5.2	13.1	10.9	-18.1	-13.0	-5.1	
high ch										
3.820	53.0	V	-42.5	2.5	8.1	6.0	-36.9	-13.0	-23.9	
5.730	58.0	V	-33.0	3.3	9.7	7.6	-26.6	-13.0	-13.6	
7.639	63.5	V	-25.1	3.8	11.3	9.2	-17.6	-13.0	-4.6	
9.549	50.3	V	-36.8	4.3	12.2	10.1	-28.9	-13.0	-15.9	
13.369	61.2	V	-24.8	5.2	13.1	11.0	-16.9	-13.0	-3.9	
3.820	49.9	H	-45.6	2.5	8.1	6.0	-40.0	-13.0	-27.0	
5.730	57.8	H	-32.2	3.3	9.7	7.6	-25.8	-13.0	-12.8	
7.639	59.5	H	-28.3	3.8	11.3	9.2	-20.8	-13.0	-7.8	
9.549	49.6	H	-37.5	4.3	12.2	10.1	-29.6	-13.0	-16.6	
13.369	60.3	H	-24.9	5.2	13.1	11.0	-17.0	-13.0	-4.0	
NO OTHER EMISSION WERE DETECTED AFTER 6TH HARMONIC										

16QAM: Low, Mid, & High Channels:

06/03/04 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr:Chin Pang
Project #:04i2701-2
Company:Kyocera
EUT Descrip.:1.9GHz iBurst & user terminal_D & User terminal_C
EUT M/N:UTD1900D-US-A
Test Target:FCC Part24
Mode Oper:TX, 16QAM

Test Equipment:

EMCO Horn 1-18GHz: T120; S/N: 29310 @3m
Horn > 18GHz:
Limit: FCC 24
☑ High Pass Filter

Hi Frequency Cables: ☐ (2 ft) ☑ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)

Pre-amplifer 1-26GHz: T63 Miteq 646456
Pre-amplifer 26-40GHz:

the peak reading is included duty cycle factor

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
low ch										
3.800	53.2	V	-42.4	2.5	8.1	5.9	-36.8	-13.0	-23.8	
5.701	58.5	V	-32.5	3.3	9.7	7.6	-26.1	-13.0	-13.1	
7.600	64.5	V	-24.2	3.8	11.3	9.1	-16.7	-13.0	-3.7	
9.500	49.3	V	-37.9	4.3	12.3	10.1	-29.9	-13.0	-16.9	
13.300	61.0	V	-24.9	5.2	13.1	10.9	-17.0	-13.0	-4.0	
3.800	52.9	H	-42.6	2.5	8.1	5.9	-37.0	-13.0	-24.0	
5.701	56.8	H	-33.2	3.3	9.7	7.6	-26.8	-13.0	-13.8	
7.600	60.3	H	-27.6	3.8	11.3	9.1	-20.1	-13.0	-7.1	
13.300	59.0	H	-26.1	5.2	13.1	10.9	-18.2	-13.0	-5.2	
mid ch										
3.809	51.0	V	-44.5	2.5	8.1	5.9	-38.9	-13.0	-25.9	
5.715	57.4	V	-33.6	3.3	9.7	7.6	-27.2	-13.0	-14.2	
7.620	64.8	V	-23.9	3.8	11.3	9.1	-16.3	-13.0	-3.3	
9.524	49.4	V	-37.8	4.3	12.2	10.1	-29.8	-13.0	-16.8	
13.330	60.0	V	-26.0	5.2	13.1	10.9	-18.1	-13.0	-5.1	
3.809	49.5	H	-45.9	2.5	8.1	5.9	-40.3	-13.0	-27.3	
5.715	56.4	H	-33.6	3.3	9.7	7.6	-27.2	-13.0	-14.2	
7.620	61.5	H	-26.4	3.8	11.3	9.1	-18.8	-13.0	-5.8	
9.524	48.3	H	-38.9	4.3	12.2	10.1	-30.9	-13.0	-17.9	
13.330	60.7	H	-24.5	5.2	13.1	10.9	-16.6	-13.0	-3.6	
high ch										
3.820	52.3	V	-43.2	2.5	8.1	6.0	-37.6	-13.0	-24.6	
5.730	56.0	V	-35.0	3.3	9.7	7.6	-28.6	-13.0	-15.6	
7.639	64.0	V	-24.6	3.8	11.3	9.2	-17.1	-13.0	-4.1	
9.549	50.1	V	-37.0	4.3	12.2	10.1	-29.1	-13.0	-16.1	
13.369	59.8	V	-26.2	5.2	13.1	11.0	-18.3	-13.0	-5.3	
3.820	50.0	H	-45.4	2.5	8.1	6.0	-39.8	-13.0	-26.8	
5.730	59.6	H	-30.4	3.3	9.7	7.6	-24.0	-13.0	-11.0	
7.639	62.4	H	-25.4	3.8	11.3	9.2	-17.9	-13.0	-4.9	
9.549	49.0	H	-38.1	4.3	12.2	10.1	-30.2	-13.0	-17.2	
13.369	58.5	H	-26.7	5.2	13.1	11.0	-18.8	-13.0	-5.8	
NO OTHER EMISSION WERE DETECTED AFTER 6 TH ARMONIC										

7.6. SECTION 2.1055: FREQUENCY STABILITY

INSTRUMENTS LIST

TEST EQUIPMENT LIST				
Name of Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Due Date**
EMI Test Receiver	**R & S**	**ESIB40**	**100192**	**11/21/2004**
Temperature / Humidity Chamber	**Thermotron**	**SE 600-10-10**	**29800**	**5/30/2005**
Splitter	**Agilent**	**N/A**	**2339A06150**	**N/A**
10dB Pad	**Weinschel**	**56-10**	**M2348**	**N/A**
Signal Generator	**Agilent**	**E4432B**	**MY41000108**	**11/14/2005**

Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
800-1000	Peak	300 Hz	300 Hz

TEST SETUP

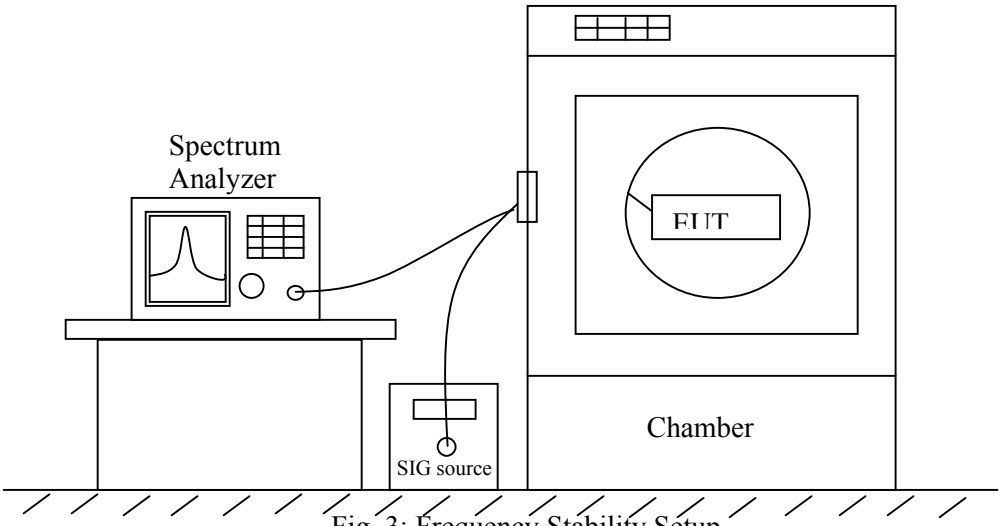


Fig. 3: Frequency Stability Setup

Test Setup Photos

TEST PROCEDURE

- **Frequency stability versus environmental temperature**

1). Setup the configuration per figure 6 for frequencies measurement inside the environmental chamber. Set the temperature of the chamber to 25°C. Set SA Resolution Bandwidth low enough to obtain the desired frequency resolution and measure the EUT 25°C operating frequency as reference frequency.
2). Turn EUT off and set Chamber temperature to -30°C.
3). Allow sufficient time (approximately 20 to 30 minus after chamber reach the assigned temperature) for EUT to stabilize. Turn on EUT and measure the EUT operating frequency. Turn off EUT after the measurement.
4). Repeat step 3 with a 10°C increased per stage until the highest temperature of +50°C reached, record all measured frequencies on each temperature step.

- **Frequency stability versus AC input voltage**

1). Setup the configuration per figure 6 and set chamber temperature to 25°C. Use a variable AC power supply to power the EUT and set AC output voltage to EUT nominal input AC voltage. Set SA Resolution Bandwidth low enough to obtain the desired frequency resolution and measure the EUT 25°C operating frequency as reference frequency.
2). Slowly reduce the EUT input voltage to specified extreme voltage variation (±15%) and record the maximum frequency change.

RESULT

No non-compliance noted, as shown below because the EUT uses the same OSC in both receiver and transmitter LO circuit. As a result, the frequency does not shift in Frequency Stability Test.

Frequency stability versus environmental temperature

Reference Frequency: Low or High Channel @ 25?C Limit: to stay within the authorized block					
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**			
(Vac)	**Temperature (?C)**	**(MHz)**	**Delta (ppm)**	**Limit (ppm)**	**Delta (Hz)**
115.00	50	1910.01091	-0.488	± 2.5	933
115.00	40	1910.01080	-0.427	± 2.5	816
115.00	30	1910.01057	-0.306	± 2.5	585
115.00	***25***	***1910.00998***	***0***	***± 2.5***	***0***
115.00	20	1910.01083	-0.445	± 2.5	849.9999999
115.00	10	1910.01107	-0.572	± 2.5	1093
115.00	0	1910.01083	-0.446	± 2.5	851.9999999
115.00	-10	1910.01118	-0.626	± 2.5	1195
115.00	-20	1910.01135	-0.718	± 2.5	1371
115.00	-30	1910.01150	-0.793	± 2.5	1515
97.75	25	1910.01034	-0.188	± 2.5	360
132.25	25	1910.01086	-0.461	± 2.5	880.0000001

7.7. RADIATED EMISSION

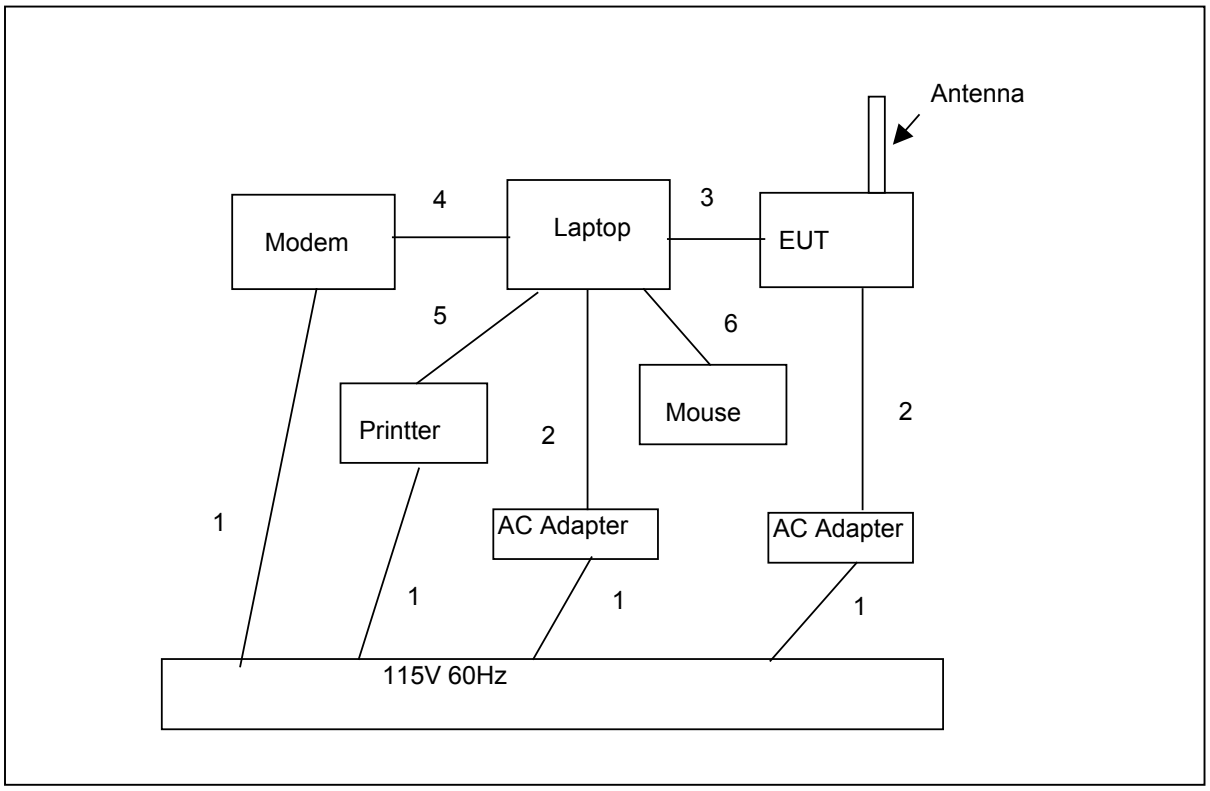
Detector Setting of Spectrum Analyzer

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
30 to 1000	☒ Peak ☒ Quasi Peak	☒ 100 KHz ☒ 1 MHz	☒ 100 KHz ☒ 1 MHz

INSTRUMENT LIST

TEST EQUIPMENT LIST				
Name of Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Due Date**
EMI Receiver, 9 kHz ~ 2.9 GHz	**HP**	**8542E**	**3942A00286**	**11/21/2004**
RF Filter Section	**HP**	**85420E**	**3705A00256**	**11/21/2004**
10dB Attenuator	**Weinschel**	**56-10**	**M2348**	**CNR**
2.7GHz HPF	**MicroTronic**	**HPM13194**	**1**	**CNR**
Antenna, Horn 1 ~ 18 GHz	**EMCO**	**3115**	**2238**	**2/4/2005**
30MHz---- 2Ghz	**Sunol Sciences**	**JB1 Antenna**	**A121003**	**12/22/2004**
Spectrum Analyzer	**HP**	**E4446A**	**US42510266**	**7/23/2004**

TEST SETUP



TEST PROCEDURE

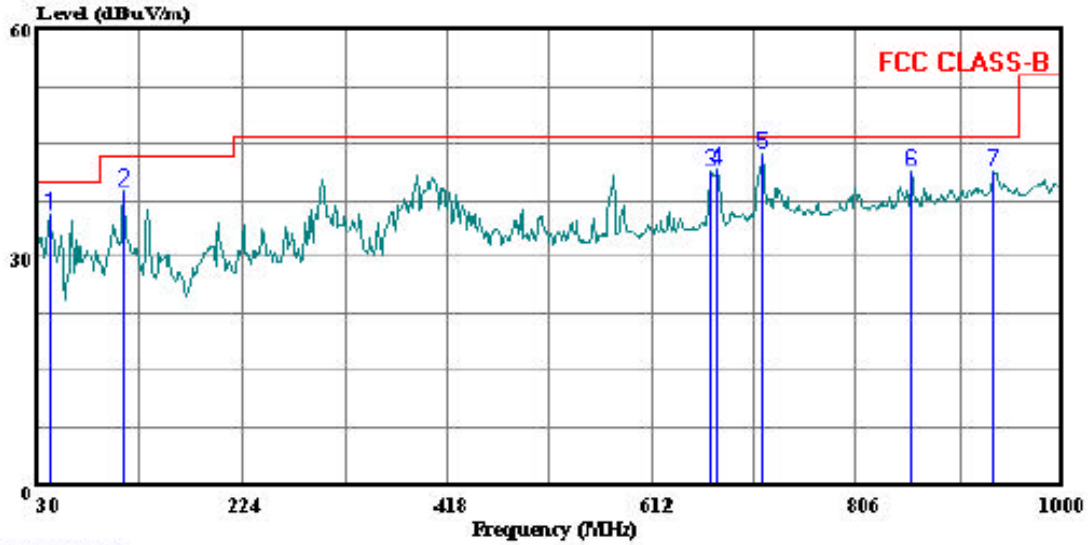
1. The EUT was placed on the turn table 0.8 meter above ground inside 3 meter Anechoic Chamber.
2. Set the resolution bandwidth to 120KHz in the test receiver and select Peak function to scan the frequency below 1 GHz.
3. Shift the interference-receiving antenna located in antenna tower upwards and downwards between 1 and 4 meters above ground and find out the local peak emission on frequency domain.
4. Locate the interference-receiving antenna at the position where the local peak reach the maximum emission.
5. Rotate the turn table and stop at the angle where the measurement device has maximum reading
6. Shift the interference-receiving antenna again to detect the maximum emission of the local peak
7. If the reading of the local peak under Peak function is lower than limit by 6dB, then Quasi Peak detection is not needed and this reading should be recorded. And if it is higher than Peak limit, then the test is fail. Others, switch the receiver to Quasi Peak function, set the resolution bandwidth to 100kHz and repeat the procedures (3)~(6). If the reading is lower than limit, this reading should be recorded, otherwise, the test is fail.

MEASUREMENT RESULT

No non-compliance noted, as shown below.

561F Monterey Road
San Jose, CA 95131
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 6 File#: 04I2701.EMI Date: 06-02-2004 Time: 21:56:29



(Audix ATC)

Trace: 5 Ref Trace:

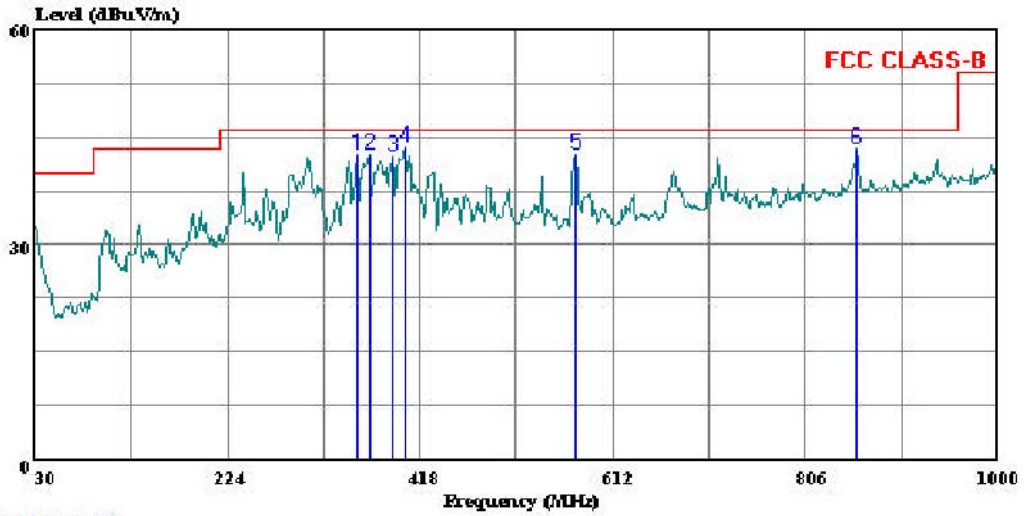
Condition: 3m VERTICAL
Test Operator: : Ben Du
Project #: : 04U2701-2
Company: : KYOCERA Corp.
EUT: : UDT
Model No: : UTD1900D-US-A
Configuration: : EUT w/ Laptop PC ,Printer, Modem, MS
Target of Test: : FCC B
Mode of Operation: Communiacting
: IBM Laptop PC

Page: 1

	Freq	Remark	Read Level	Factor	Level	Limit Line	Over Limit
	MHz		dBuV	dB	dBuV/m	dBuV/m	dB
1	41.640	Peak	19.73	15.74	35.47	40.00	-4.53
2	111.480	Peak	25.10	13.73	38.83	43.50	-4.67
3	667.290	Peak	18.21	23.21	41.42	46.00	-4.58
4	674.080	Peak	18.21	23.33	41.54	46.00	-4.46
5	717.730	Peak	19.59	24.05	43.64	46.00	-2.36
6	858.380	Peak	15.71	25.53	41.24	46.00	-4.76
7	935.980	Peak	14.38	26.83	41.21	46.00	-4.79

561F Monterey Road
San Jose, CA 95131
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 8 File#: 04I2701.EMI Date: 06-02-2004 Time: 22:04:55



(Audix ATC)

Trace: 7 Ref Trace:

Condition: 3m HORIZONTAL
Test Operator: : Ben Du
Project #: : 04U2701-2
Company: : KYOCERA Corp.
EUT: : UDT
Model No: : UTD1900D-US-A
Configuration: : EUT w/ Laptop PC ,Printer, Modem, MS
Target of Test: : FCC B
Mode of Operation: Communiacting
: IBM X24 Laptop PC

Page: 1

	Freq	Remark	Read Level	Factor	Level	Limit Line	Over Limit
	MHz		dBuV	dB	dBuV/m	dBuV/m	dB
1	353.980	Peak	25.64	16.98	42.62	46.00	-3.38
2	366.590	Peak	25.32	17.35	42.67	46.00	-3.33
3	390.840	Peak	24.36	18.00	42.36	46.00	-3.64
4	402.480	Peak	25.31	18.26	43.57	46.00	-2.43
5	575.140	Peak	20.86	21.84	42.70	46.00	-3.31
6	858.380	Peak	17.78	25.53	43.31	46.00	-2.69

Radiated Emission photos

7.8. POWERLINE CONDUCTED EMISSION

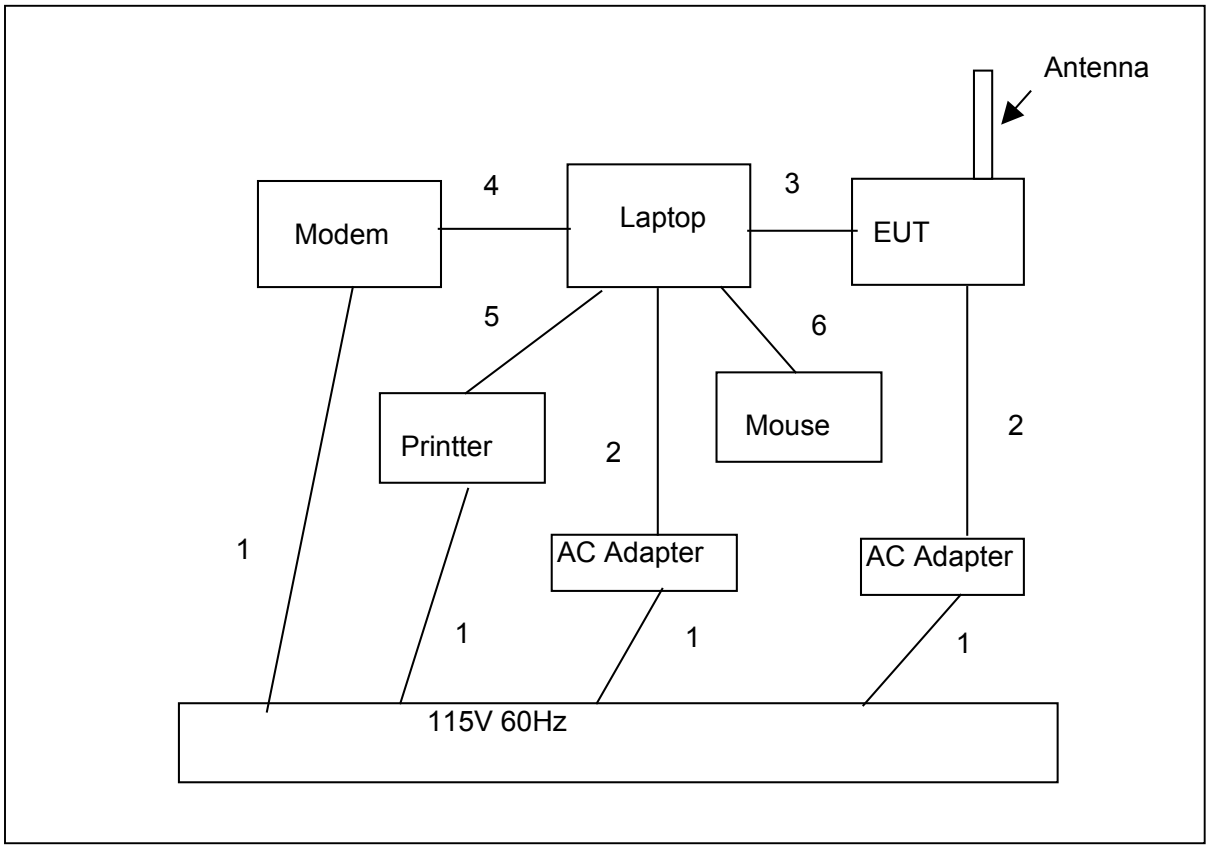
Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
150 KHz to 30 MHz	☒ Peak ☐ CISPR Quasi Peak	☒ 9 KHz	☒ 9 KHz

INSTRUMENT LIST

TEST EQUIPMENT LIST				
Name of Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Due Date**
EMI Test Receiver	**R & S**	**ESHS 20**	**827129/006**	**7/17/2004**
10dB Attenuator	**Weinschel**	**56-10**	**M2348**	**CNR**
LISN, 10 kHz ~ 30 MHz	**FCC**	**50/250-25-2**	**114**	**10/13/2004**
Line Filter	**Lindgren**	**LMF-3489**	**497**	**CNR**
LISN, 10 kHz ~ 30 MHz	**Solar**	**8012-50-R-24-BNC**	**837990**	**10/13/2004**
AC Power Source, 10KVA	**ACS**	**AFC-10K-AFC-2**	**J1568**	**CNR**

TEST SETUP



TEST PROCEDURE

1. The EUT was placed on a wooden table 40 cm from a vertical ground plane and approximately 80 cm above the horizontal ground plane on the floor. The EUT was set to transmit in a continuous mode.

2. Line conducted data was recorded for both NEUTRAL and HOT lines.

MEASUREMENT RESULT

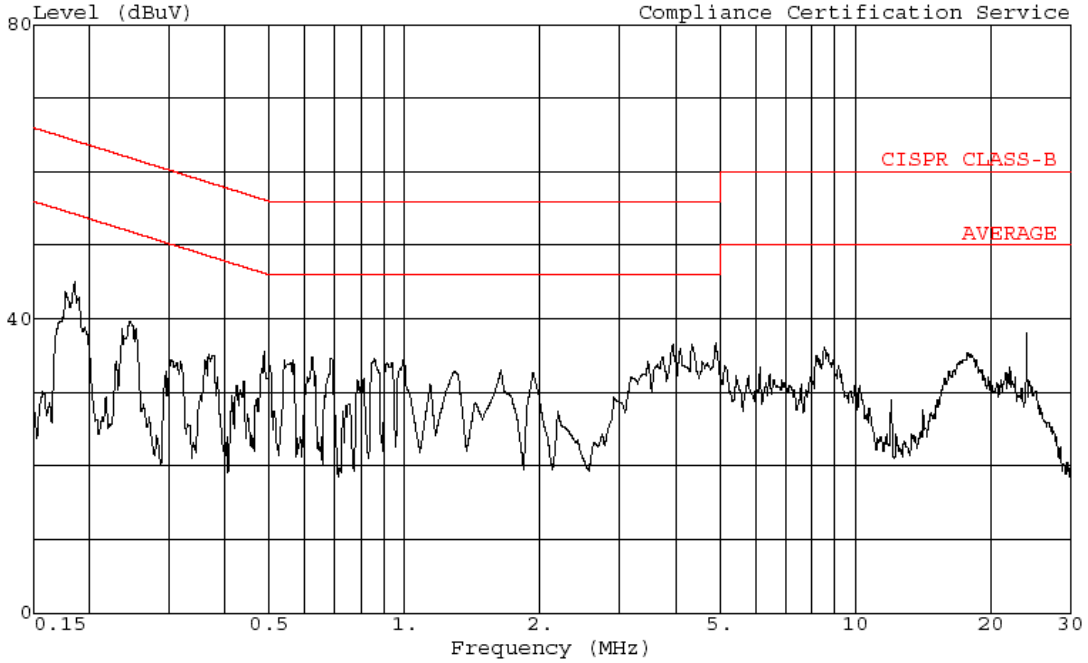
No non-compliance noted, as shown below.

CONDUCTED EMISSIONS DATA (115VAC 60Hz)

Freq.	Reading			Closs	Limit	EN_A	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.19	44.96	--	--	0.00	65.00	55.00	-20.04	-10.04	L1
0.25	40.64	--	--	0.00	63.26	53.26	-22.62	-12.62	L1
24.01	38.02	--	--	0.00	60.00	50.00	-21.98	-11.98	L1
0.18	44.12	--	--	0.00	65.23	55.23	-21.11	-11.11	L2
0.97	34.28	--	--	0.00	56.00	46.00	-21.72	-11.72	L2
8.87	35.76	--	--	0.00	60.00	50.00	-24.24	-14.24	L2
6 Worst Data									

COMPLIANCE Engineering Services, Inc.
561F Monterey Road,
Morgan Hill, CA 95037 US
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 7 File#: 2701LC2.EMI Date: 06-03-2004 Time: 16:26:54



Trace: Ref Trace:

Project # : 04I2701-2
Test Operator : Chin Pang
Company : KYOCERA
EUT : 1.9GHz iBurst User Terminal_D & User
: Terminal_C
Model : UTD 1900D-US-A
Configuration : EUT/Laptop/Printer/Modem/Mouse
Mode of Operation: Normal
Target of Test : FCC Class B
Voltage : 115VAC / 60 Hz
: L1: Peak(Black)

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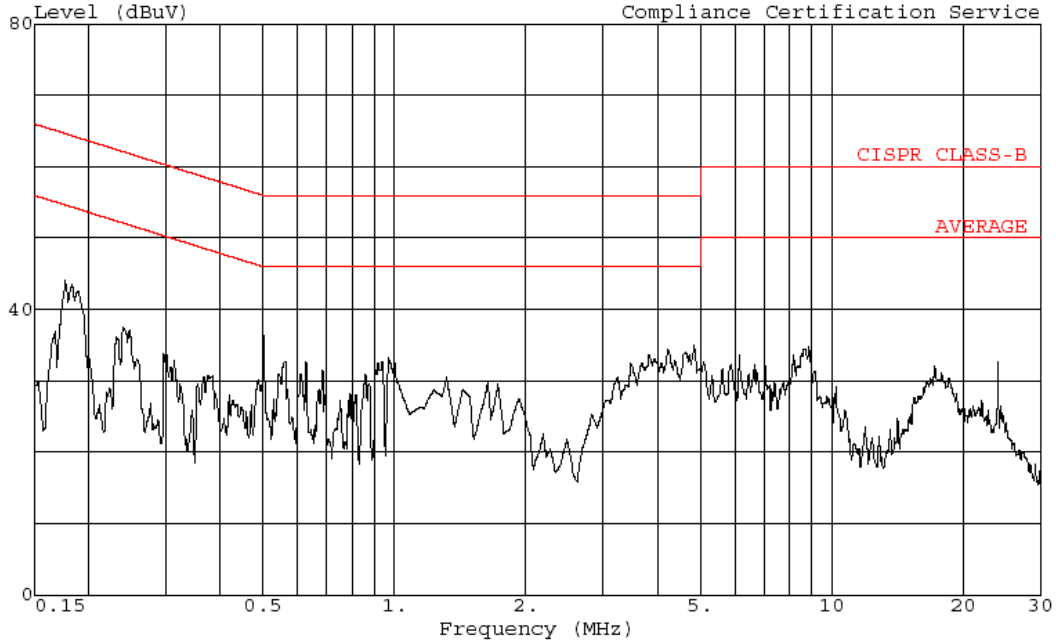
Data#: 14 File#: 2701LC2.EMI Date: 06-03-2004 Time: 16:35:48



Trace: Ref Trace:

Project #	: 04I2701-2
Test Operator	: Chin Pang
Company	: KYOCERA
EUT	: 1.9GHz iBurst User Terminal_D & User
	: Terminal_C
Model	: UTD 1900D-US-A
Configuration	: EUT/Laptop/Printer/Modem/Mouse
Mode of Operation	: Normal
Target of Test	: FCC Class B
Voltage	: 115VAC / 60 Hz
	: L2: Peak(Black)

AC Conducted Emission photos

8. APENDIX

8.1. EXTERNAL & INTERNAL PHOTOS

Please refer to attached sheets.

8.2. SCHEMATICS

Please refer to attached sheets.

8.3. BLOCK DIAGRAM

Please refer to attached sheets.

8.4. USER MANUAL

Please refer to attached sheets.

END OF REPORT