REPORT ON

FCC CRF 47 Part 2: 2007 & Part 15: 2008 & Part 27: 2007 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

COMMERCIAL-IN-CONFIDENCE

FCC ID: WIN-CPE722

Doc Number 57008049 Report 01 Issue 1 **August 2008**

Product Service

Product Service

Competence. Certainty. Quality.

TUV Product Service Ltd, Beijing Branch,
Unit 918, Landmark Tower 2, No.8 North Dongsanhuan Road, Beijing 100004, P.R. China

REPORT ON FCC CRF 47 Part 2: 2007 & Part 15:2008 & Part 27:2007 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

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PREPARED FOR Beijing Xinwei Telecom Technology Inc.,
Xinwei Building, No.7 Zhongguancun Software Park,
No.8 Dongbeiwang West Road, Haidian District, Beijing China

PREPARED BY

Li Qun
Project Engineer

APPROVED BY

Zhang Xiaoying
Authorised Signatory

DATED 2008-08-06

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CRF 47 Part 2: 2007 & Part 15:2008 & Part 27:2007. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineers;

Li Qun

Product Service

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Product Service

SECTION 1

REPORT SUMMARY

FCC CRF 47 Part 2: 2007 & Part 15: 2008 & Part 27: 2007 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

Product Service

1.1 STATUS

Equipment Under Test	Broadband Wireless desktop terminal McWiLL CPE722
Objective	To undertake measurements to determine the Equipment Under Test's (EUT's) compliance with the specification.
Name and Address of Client	Beijing Xinwei Telecom Technology Inc. Xinwei Building, No.7 Zhongguancun Software Park, No.8 Dongbeiwang West Road, Haidian District, Beijing China
Type	CPE722
Serial Number(s)	C5C0810011360A
Declared Variants	None
FCC ID Number	WIN-CPE722
Test Specification/Issue/Date	FCC CFR 47 Part 2: 2007 FCC CFR 47 Part15: 2008 FCC CFR 47 Part 27: 2007
Number of Items Tested	One
Start of Test **Finish of Test**	23 July 2008 28 July 2008
Related Documents	- ANSI C63.4: 2003 - EIA/TIA-603-C: 2004 - ITU-R Recommendation SM.329-10 (2003)

1.2 INTRODUCTION

The information contained within this report is intended to show limited verification of compliance of the Beijing Xinwei Telecom Technology Inc. Broadband Wireless desktop terminal McWiLL CPE722 to the requirements of FCC Specification Part 2: 2007 & Part 15: 2008 & Part 27: 2007.

1.2.1 Declaration of Build Status

MAIN EUT	
MANUFACTURING DESCRIPTION	Broadband Wireless desktop terminal McWiLL CPE722 operating with full power output on the frequencies of Bottom (699MHz), Middle (721MHz) and Top (745MHz)
MANUFACTURER	Beijing Xinwei Telecom Technology Inc.
TYPE	CPE722
PART NUMBER	N/A
SERIAL NUMBER	C5C0810011360A
HARDWARE VERSION	CPE_M.PCB 72.20.00.00
SOFTWARE VERSION	CPE.om.1.4.5.9
Operating Frequency Range	698MHz – 746MHz
Duplex Mode	Time Division Duplex (TDD)
Access Method	CS-OFDMA
Modulation and Coding Scheme	QPSK, 8PSK QAM16, QAM64
Channel Bandwidth	1MHz
OUTPUT POWER (mW or dBm)	21.71dBm(ERP)
ANTENNA GAIN	2.5dBi
COUNTRY OF ORIGIN	China
INTERMEDIATE FREQUENCIES	None
FCC ID	WIN-CPE722
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	The Equipment Under Test (EUT) was a Broadband Wireless desktop terminal which provides broadband connections to Internet access service and voice service network.
POWER SUPPLY	
MANUFACTURING DESCRIPTION	The Broadband Wireless desktop terminal CPE722 were powered by a power supply: Model Type: UE15W1-050200SPAU; I/P: 100 ~ 240Va.c, 50/60Hz, 0.5A; O/P: 5.0Vd.c, 2.0A

TUV Product Service Ltd Beijing Branch formally certifies that the manufacturer's declaration as reproduced in this report is a true and accurate record of the original received from the applicant.

1.3 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out is shown below:

Test	FCC Specification	Test Description	Result
2.1	Part 2.1046 Part 27.50 (c)(9)	RF Power Output	Pass
2.2	Part 2.1049 Part 27.53(f)	Occupied Bandwidth	Pass
2.3	Part 2.1051 Part 27.53 (f)	Conducted Spurious Emissions	Pass
2.4	Part 2.1051 Part 27.53 (f)	Band Edge Compliance	Pass
2.5	Part 2.1053 Part 27.53 (f)	Radiated Spurious Emissions	Pass
2.6	Part 2.1055 Part 27.54	Frequency Stability	Pass
2.7	Part 15.107	Power Line Conducted Emissions	Pass
2.8	Part 15.109	Enclosure Radiated Emissions	Pass

1.4 GENERAL INFORMATION

1.4.1 Information about the Testing Laboratory

Company Name:	TUV Product service Ltd Beijing Branch
Address:	Unit 918, Landmark Tower 2, No.8 North Dongsanhuan Road, Beijing 100004, P.R. China
Contact:	Zhang Xiaoying
Telephone No.:	86 10 - 65906186
Fax No.:	86 10 - 65906182
Email:	xiaoying.zhang@tuv-sud.cn

1.4.2 Applicant Details

Company Name:	Beijing Xinwei Telecom Technology Inc.
Address:	Xinwei Building, No.7 Zhongguancun Software Park, No.8 Dongbeiwang West Road, Haidian District, Beijing China

1.4.3 Manufacturer Details

Company Name:	Beijing Xinwei Telecom Technology Inc.
Address:	Xinwei Building, No.7 Zhongguancun Software Park, No.8 Dongbeiwang West Road, Haidian District, Beijing China

Product Service

1.4 GENERAL INFORMATION—continued

1.4.4 Technical Description

The Equipment Under Test (EUT) was Broadband Wireless desktop terminal working in the 698MHz – 746MHz band which provides broadband connections to Internet access service and voice service networkl. It supports QPSK, 8PSK, QAM16, QAM64 modulation over a bandwidth of 1MHz.

1.4.5 Reference Specification

The EUT is a Broadband Wireless desktop terminal working in the 698MHz – 746MHz band which provides broadband connections to Internet access service and voice service network. it should comply with the requirement of following standards:

FCC CFR 47 Part 2: 2007
FCC CFR 47 Part15: 2008
FCC CFR 47 Part 27: 2007

All tests have been performed and recorded as per the above standard.

1.4.6 Test Configuration

The Broadband Wireless desktop terminal was powered by 5Vdc, 2.0A power supply and made in continuous transmitting mode under full power output on the frequencies of bottom channel (699MHz), middle channel(721MHz) and top channel(745MHz) by a console computer during the testing.

1.4.7 EUT Details

EUT	Serial Number	Hardware Version	Software Version
	C5C0810011360A	CPE_M.PCB 72.20.00.00	CPE.om.1.4.5.9

1.4.8 Description of Support Device

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support devices were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.
1	Laptop	DELL	PP17L	3915740949
2	BTS	Xinwei	XW5000-07	C510407110222
3	TTA	Xinwei	TTA5000-07	C251808040062
4	BTS Power Supply	Shi Jiazhuang Guoyao Electronic	GYZ720-220S24C2	GY200612T010007006
5	BTS Battery Units	--	INT 6FM100-B 12V100Ah	INT0404151 INT0070125
6	Power Attenuator	Shanghai Huaxiang	SHX_BK5_8_90_2-5	05120602

Product Service

1.4 GENERAL INFORMATION—continued

1.4.9 Test Environment

Environment	Temperature (°C)	Humidity (%)	Atmospheric Pressure (mbar)
Ambient	24	32.1	1006
Minimum Extreme	0		
Maximum Extreme	50		

Normal Supply Voltage (Vdc)	5
Minimum Extreme Voltage (Vdc)	4.25
Maximum Extreme Voltage (Vdc)	5.75

1.4.10 Description of Test Modes

For spurious emissions test, the device under QPSK modulation type and receiver antenna at vertical polarization was found as the worst case, so chosen for final test and record the result.
The test results presented in following section are tested from below modes:

Test mode	Modulation Type	Channel	Transmitter status
A	QPSK	B, M, T	TX
	8PSK	B, M, T	TX
	QAM16	B, M, T	TX
	QAM64	B, M, T	TX
B	QPSK	B, M, T	TX
C	Automatic	Automatic	Idle
D	--	B, M, T	CW
E	QPSK	Automatic	TX

Where B: Bottom channel; M: Middle channel; T: Top channel;
TX: Continuous transmitting; CW: Carrier signal

1.5 TEST CONDITIONS

The EUT was set-up simulating a typical user installation at the Test Laboratory, as listed in Section 1.2.1and tested in accordance with the applicable specification.

For all tests, the wireless Broadband Wireless desktop terminal was powered by 5Vdc, 2.0A power supply.

1.6 DEVIATIONS FROM THE STANDARD

Not Applicable

1.7 MODIFICATION RECORD

Not Applicable

1.8 ALTERNATIVE TEST SITE

Testing has been performed under the following site accreditations:

FCC Registration No.612767

The State Radio Spectrum Monitoring and Testing Center

No.80 Beilishi Road Xicheng District Beijing, China

SECTION 2

TEST RESULTS

FCC CRF 47 Part 2: 2007 & Part 15: 2008 & Part 27: 2007 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

2.1 RF Power Output

2.1.1 Specification Reference

FCC 47 CFR Part 2, Section 2.1046
FCC 47 CFR Part 27, Section 27.50 (c)(9)

Per 27.50 (c) (9), Control and mobile stations are limited to 30 watts ERP.

2.1.2 Equipment Under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode A described in section 1.4.10.

2.1.3 Date of Test

23 Jul. 2008

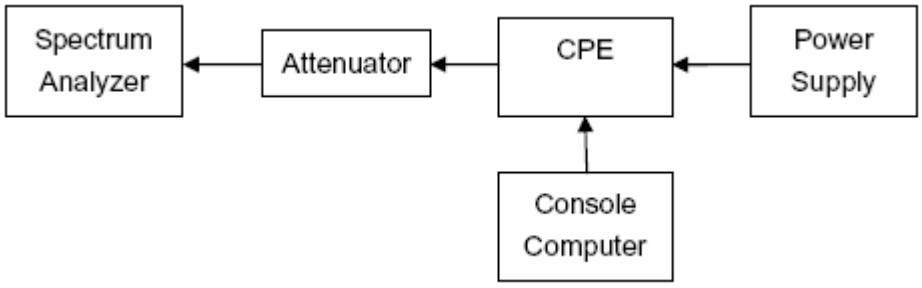
2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

Product Service

2.1.5 Test Procedure

The EUT was connected to a Spectrum Analyzer via the main RF connector, and through an appropriate Attenuator. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the maximum channel power of the EUT by the Spectrum Analyzer.



2.1.6 Test Results

All test modes were considered for this test. All typical frequency points were considered for this test.

Test Mode	Transmitter Output Power Level(ERP) (dBm)		
	CH Bottom (699MHz)	CH Middle (721MHz)	CH Top (745MHz)
QPSK	18.91	20.53	21.38
8PSK	20.08	19.76	21.54
QAM16	18.26	21.07	21.71
QAM64	8.42	13.47	8.32
Limit	30W(44.8dBm)(ERP)		
Conclusion	Complies		
Measurement Uncertainty	±0.7dB		

Note: P(ERP)=P(Channel)+Antenna Gain(dBi) —2.15

Product Service

2.2 Occupied Bandwidth

2.2.1 Specification Reference

FCC 47 CFR Part 2, Section 2.1049
FCC 47 CFR Part 27, Section 27.53 (f)

Per 2.1049, The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Per 27.53 (f), for operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

2.2.2 Equipment under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode A described in section 1.4.10.

2.2.3 Date of Test

23 Jul. 2008

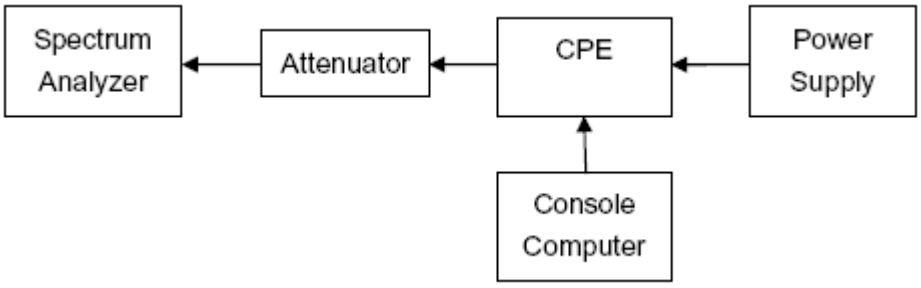
2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.5 Test Procedure

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the occupied bandwidth of the EUT by the Signal Analyzer.

The main settings of the Signal Analyzer were as below:
- Measurement bandwidth (RBW): 30 kHz



2.2.6 Test Results

All test modes were considered for this test. All typical frequency points were considered for this test.

Test Mode	Occupied Bandwidth (99% Power bandwidth) (kHz)		
	CH Bottom (699MHz)	CH Middle (721MHz)	CH Top (745MHz)
QPSK	976.01	974.41	977.23
8PSK	978.01	980.24	978.88
QAM16	974.12	984.74	980.64
QAM64	980.61	970.55	972.23
Limit	1MHz (Supplier's declaration)		
Conclusion	Complies		
Measurement Uncertainty	--		

The test plot for Occupied Bandwidth please refer to section 4.1 in this report.

2.3 Conducted Spurious Emissions

2.3.1 Specification Reference

FCC 47 CFR Part 2, Section 2.1051
FCC 47 CFR Part 27.53 (f)

According to 47 CFR Part 2 section 2.1051 and Part 27 section 27.53(f), the power of any emissions outside the licensee's frequency bands of operation must be attenuated below the transmitter power (P in watts) by at least 43 +10 lg (P) dB. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100kHz or greater.

The limit is calculated to be P (W) - {43 dB + 10 lg [P (W)]} = 10 lg [1000 P (W)] (dBm) - 43 dB - 10 lg [P (W)) = 30 dBm - 43 dB = -13 dBm.

2.3.2 Equipment under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode A described in section 1.4.10.

2.3.3 Date of Test

23 Jul. 2008

2.3.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

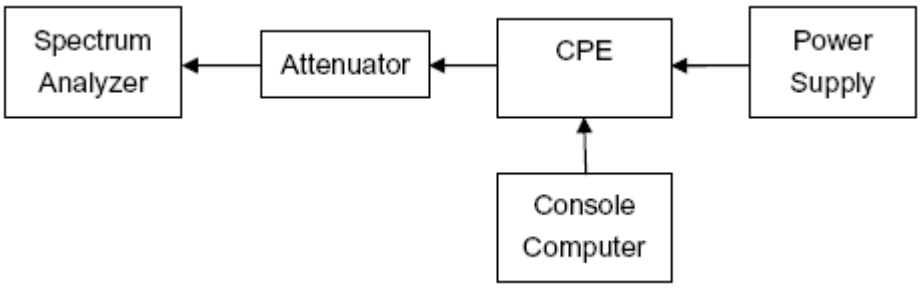
Product Service

2.3.5 Test Procedure

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the maximum unwanted emissions of the EUT by the Signal Analyzer.

According to 47CFR part 27.53(f), the main settings of the Signal Analyzer were as below:
- Measurement bandwidth (RBW): 1 MHz
- Sweep width (Span): 9 kHz to 10th harmonic included

Alternatively, according to ITU SM.329-10,
- Measurement bandwidth (RBW) for 30 MHz up to 1 GHz: 100 kHz
- Measurement bandwidth (RBW) for 1 GHz up to 10th harmonic included: 1 MHz



2.3.6 Test Results

All test modes were considered for this test. All typical frequency points were considered for this test.

Test Mode	Frequency by plot range	Spurious emissions		
		CH Bottom (699MHz)	CH Middle (721MHz)	CH Top (745MHz)
QPSK	30MHz ~ 1GHz	Plot13	Plot16	Plot19
	1GHz ~ 5GHz	Plot14	Plot17	Plot20
	5GHz ~8GHz	Plot15	Plot18	Plot21
8PSK	30MHz ~ 1GHz	Plot22	Plot25	Plot28
	1GHz ~ 5GHz	Plot23	Plot26	Plot29
	5GHz ~ 8GHz	Plot24	Plot27	Plot30
QAM16	30MHz ~ 1GHz	Plot31	Plot34	Plot37
	1GHz ~ 5GHz	Plot32	Plot35	Plot38
	5GHz ~ 8GHz	Plot33	Plot36	Plot39
QAM64	30MHz ~ 1GHz	Plot40	Plot43	Plot46
	1GHz ~ 5GHz	Plot41	Plot44	Plot47
	5GHz ~ 8GHz	Plot42	Plot45	Plot48
Limit		-13dBm		
Conclusion		Complies		
Measurement uncertainty		±0.7dB		

The test plot for Conducted Spurious Emissions please refer to section 4.2 in this report.

Product Service

2.4 Band Edge Compliance

2.4.1 Specification Reference

FCC 47 CFR Part 2, Section 2.1051
FCC 47 CFR Part 27.53 (f)

According to 47 CFR Part 2 section 2.1051 and Part 27 section 27.53(f), the power of any emissions outside the licensee's frequency bands of operation must be attenuated below the transmitter power (P in watts) by at least 43 +10 lg (P) dB. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100kHz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

The limit is calculated to be P (W) - {43 dB + 10 lg [P (W)]} = 10 lg [1000 P (W)] (dBm) - 43 dB - 10 lg [P (W)) = 30 dBm - 43 dB = -13 dBm.

2.4.2 Equipment under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode A described in section 1.4.10.

2.4.3 Date of Test

23 Jul. 2008

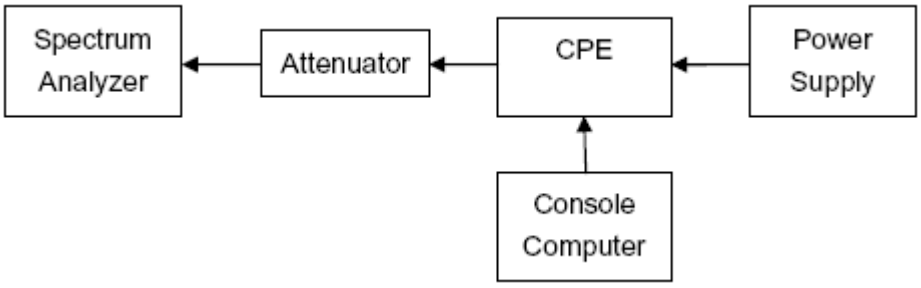
2.4.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.4.5 Test Procedure

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the maximum band edge emissions of the EUT by the Signal Analyzer.

The main settings of the Signal Analyzer were as below:
- Measurement bandwidth (RBW): 30 kHz
- Center frequency (CF): frequency point of the licensee's band block
- Sweep width (Span): at least 2 MHz



2.4.6 Test Results

All test modes were considered for this test. Only channel bottom, channel middle and channel top operating frequency points were performed for this test.

Test Mode	Band Edge Power – P(W) (dBm)					
	CH Bottom (699MHz)		CH Middle (721MHz)		CH Top (745MHz)	
	Lower	Upper	Lower	Upper	Lower	Upper
QPSK	-35.60	-35.44	-28.37	-30.29	-29.27	-29.53
8PSK	-35.52	-33.65	-30.97	-29.85	-30.80	-29.11
QAM16	-39.21	-37.80	-35.96	-33.46	-26.69	-29.04
QAM64	-51.38	-52.63	-50.07	-45.65	-60.74	-60.06
Limit	-13dBm					
Conclusion	Complies					
Measurement uncertainty	±0.7dB					

The test plot for band edge compliance please refer to section 4.3 in this report.

2.5 Radiated Spurious Emissions

2.5.1 Specification Reference

FCC 47 CFR Part 2, Section 2.1053
FCC 47 CFR Part 27.53 (f)

According to 47 CFR Part 2 section 2.1053 and Part 27 section 27.53(f), the power of any emissions outside the licensee's frequency bands of operation must be attenuated below the transmitter power (P in watts) by at least 43 +10 lg (P) dB. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100kHz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

The limit is calculated to be P (W) - {43 dB + 10 lg [P (W)]} = 10 lg [1000 P (W)] (dBm) - 43 dB - 10 lg [P (W)) = 30 dBm - 43 dB = -13 dBm.

2.5.2 Equipment under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode B described in section 1.4.10.

2.5.3 Date of Test

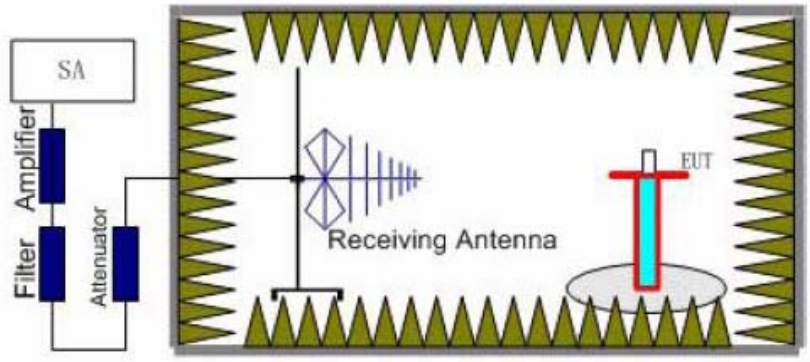
28 Jul. 2008

2.5.4 Test Equipment Used

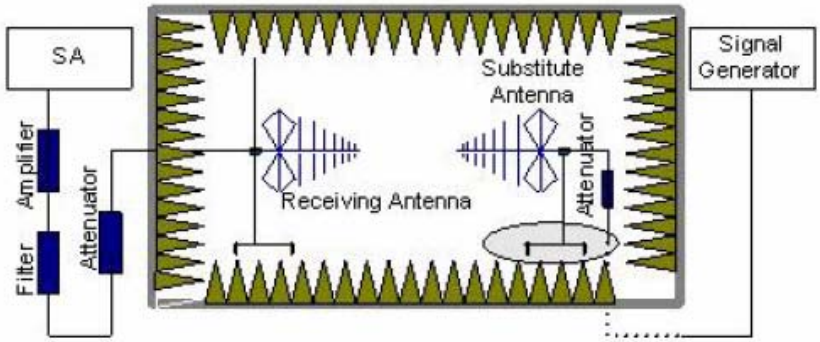
The major items of test equipment used for the above tests are identified in Section 3.1.

Product Service

2.5.5 Test Procedure



Step 1



Step 2

Step1:
The measurement is carried out in the fully anechoic chamber. EUT was placed on a 2.4 meter high non-conductive table at a 3 meter test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. The height of receiving antenna is 2.4m and varies in certain range to find the maximum power value. The EUT shall be set to continuous transmitting mode under maximum output power. The measurement is carried out using a spectrum analyzer or receiver. The spectrum analyzer scans from 30MHz to 8GHz (higher than the 10th harmonic of the carrier). The peak detector is used and RBW is set to 1MHz on spectrum analyzer. Then the antenna height and turn table rotation is adjusted till the maximum power value is founded on spectrum analyzer or receiver. A notch filter is necessary in the band near to the carrier frequency. A high pass filter is needed to avoid the distortion of the testing equipment in the band above the carrier frequency.

Step 2:
A log-periodic antenna or double-ridged wave guide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

Product Service

2.5.5 Test Procedure--continued

Calculation procedure:
The data of cable loss, antenna gain and air loss has been calibrated in full testing frequency range before the testing.
The power of the Radiated Spurious Emissions is calculated by adding the cable loss, antenna gain and air loss. The basic equation with a sample calculation is as followed:
$P=P_R+L_C+L_A-G$
Where P: Power of the Radiated Spurious Emissions (dBm)
P_R: reading of the receiver (dBm)
L_C: Cable Lose (dB)
L_A: Air loss (dB)
G: Antenna Gain (dBi)
Assumed the reading of the receiver is -60dBm. A cable lose of 10dB, an air lose of 30dB and an antenna gain of 11dBi are added.
$P=P_R+L_C+L_A-G=-60+10+30-11=-31dBm$

2.5.6 Test Results

Only worst case was considered for this test. All typical frequency points were considered for this test.

Test Mode	Frequency by plot range	Spurious emissions		
		CH Bottom (699MHz)	CH Middle (721MHz)	CH Top (745MHz)
QPSK	30MHz ~ 3GHz	Plot61	Plot63	Plot65
	3GHz ~ 8GHz	Plot62	Plot64	Plot66
Limit		-13dBm		
Conclusion		Complies		
Measurement uncertainty		30MHz～100MHz 3.96dB 100MHz～1000MHz 3.90dB 1000MHz～18000MHz 3.64dB		

The test plot for Band Edge Compliance please refer to section 4.4 in this report.

2.6 Frequency Stability

2.6.1 Specification Reference

FCC 47 CFR Part 2, Section 2.1055
FCC 47 CRF Part 27, Section 27.54

According to 47 CFR Part 2 section 2.1055 and Part 27 section 27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

2.6.2 Equipment under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode D described in section 1.4.10.

2.6.3 Date of Test

23 Jul. 2008

2.6.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

Product Service

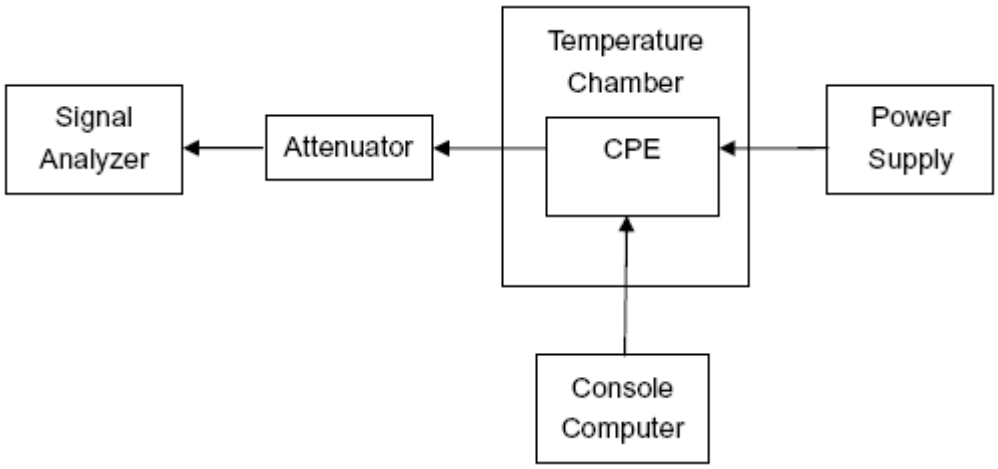
2.6.5 Test Procedure

The frequency stability shall be measured with variation of ambient temperature from -30°C to +50°C.

Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10 ° C through the range. A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level shall be allowed prior to frequency measurement.

The frequency stability shall be measured with variation of primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the frequency error of the EUT by the Signal Analyzer.



2.6.6 Test Results

All test modes were considered for this test. All typical frequency points were considered for this test.

Test conditions		Frequency error (Hz / ppm)		
Temp(°C)	**Voltage(V)**	**CH Bottom (699MHz)**	**CH Middle (721MHz)**	**CH Top (745MHz)**
100% Rated (5Vdc)	**0**	-152 / -0.22	-207 / -0.29	-108 / -0.14
	10	35 / 0.05	-55 /- 0.08	45 / 0.06
	20	50 / 0.07	71 / 0.10	112 / 0.15
	30	-45 / -0.06	-50 / -0.07	-70 / -0.09
	40	-20 /- 0.03	-40 / -0.06	60 / 0.08
	50	28 / 0.04	86 / 0.12	73 / 0.10
85% Rated (4.25Vdc)	**20**	50 / 0.07	-65 / -0.09	-50 / -0.07
115% Rated (5.75Vdc)	**20**	-50 /- 0.07	-30 / -0.04	-35 / -0.05
Conclusion		Complies		
Measurement uncertainty		--		

Note: the EUT can't operate normally below 0 °C

2.7 Power Line Conducted Emissions

2.7.1 Specification Reference

FCC 47 CFR Part 15 Subpart B, Section 15.107

2.7.2 Equipment under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode E described in section 1.4.10.

2.7.3 Date of Test

28 Jul. 2008

2.7.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.7.5 Test Procedure

The test was applied in accordance with the test method requirements of ANSI C63.4-2003.

The EUT was placed 0.4 meters from the conducting wall of the shield room with EUT being connected to the power mains through an artificial mains network (AMN). The distance between the EUT and AMN is 80cm. Other support units were connected to the power mains through another AMN. The two AMNs provide 50 Ohm/ 50Uh of coupling impedance for the measuring instrument.

Both lines of the power mains connected to the EUT were checked for maximum conducted interface.

Measurements were made over the frequency range 0.15MHz to 30MHz.

The test was carried out with the EUT powered by AC/DC Power Supply.

2.7.6 Test Results

The EUT satisfied the Class B requirements of FCC 47 CFR Part 15 subpart B for Conducted Emissions on the AC Power Ports.

Test results are shown in the following tables.

Live Line Test Results

Frequency MHz	Quasi-Peak Level dBµV	Quasi-Peak Limit dBµV	Margin dB	Average Level dBµV	Average Limit dBµV	Margin dB
4.015500	38.44	56.00	-17.56	37.80	46.00	-8.2

Neutral Line Test Results

Frequency MHz	Quasi-Peak Level dBµV	Quasi-Peak Limit dBµV	Margin dB	Average Level dBµV	Average Limit dBµV	Margin dB
4.015500	38.30	56.00	-17.7	38.30	46.00	-7.7

The margin between the specification requirements and all other emissions was 15dB or more below the specified Quasi-Peak and 20dB or more below the specified Average limit

The test plot for Power Line Conducted Emissions please refer to section 4.5 in this report.

2.7.7 Conducted Limits

Limit for conducted emissions

Frequency range	Limit (quasi-peak)	Limit (average)
0.15MHz to 0.5MHz	66dBµV to 56dBµV	56dBµV to 46dBµV
0.5MHz to 5MHz	56dBµV	46dBµV
5MHz to 30MHz	60dBµV	50dBµV

2.8 Enclosure Radiated Emissions

2.8.1 Specification Reference

FCC 47 CFR Part 15 Subpart B, Section 15.109

2.8.2 Equipment under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode C described in section 1.4.10.

2.8.3 Date of Test

26 Jul. 2008

2.8.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.8.5 Test Procedure

The test set-up was made in accordance to the general provisions of ANSI C63.4-2003.

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.

The radiated emissions measurements were made in a typical installation configuration.

Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz or above, using receive log period antenna HL562 or Ridge horn antenna HF906.

Frequency Range	RBW	VBW
30 – 1000MHz	120kHz	300kHz
1G – 8GHz	1MHz	3MHz

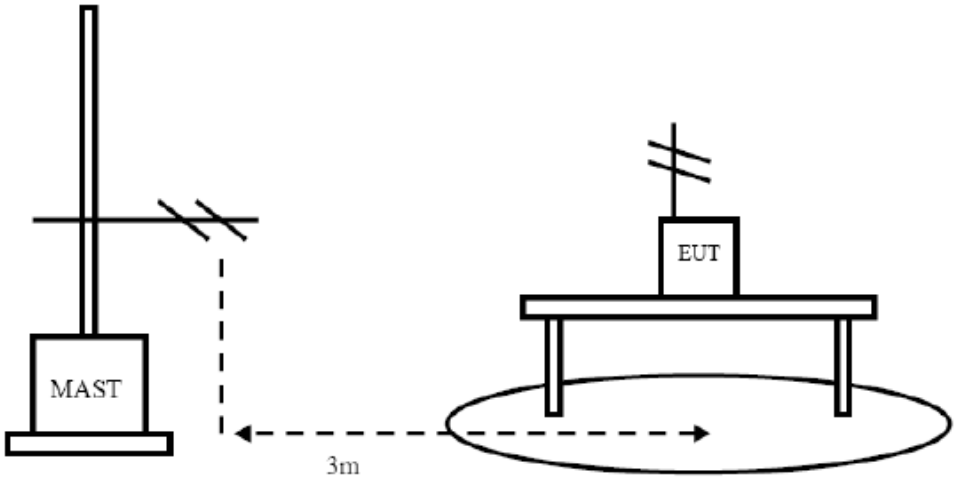
Product Service

2.8.5 Test Procedure-continued

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level.

The measurements shall be repeated with orthogonal polarization of the test antenna.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.



2.8.6 Test Results

The equipment complies with the radiated spurious limits of 15.109(a) for all frequencies in the range 30 MHz- 8000MHz on enclosure.

Radiated emissions at fundamental frequency and harmonics.

Frequency (MHz)	Average Field Strength			Height cm	Azimuth Deg.	Polarization	Verdict
	Level dBµV/m	Limit dBµV/m	Margin dB				
41.362725	16.08	40.0	-23.92	300.0	270.00	H	Pass
73.206413	18.60	40.0	-21.4	300.00	0.00	V	Pass
168.136273	11.90	43.5	-31.6	100.00	270.00	V	Pass
184.168337	8.10	43.5	-35.4	400.00	90.00	V	Pass
516.032064	11.90	46.0	-34.1	400.00	0.00	H	Pass
936.873747	24.3	46.0	-21.7	100.00	0.00	V	Pass

Note: 1) Negative sign (-) in Margin column signify levels below the limits.
2) All other emission not reported are below the equipment noise floor which is at least 6dB below the limit.
3) The Measurement uncertainty is 4.47dB

The test plot for Enclosure Radiated Emissions please refer to section 4.6 in this report.

2.8.7 Radiated emission limits

Limits for radiated emission for except of class A digital devices at a measuring distance of 3m

Frequency range(MHz)	Quasi-peak limits(dBµV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54

SECTION 3

TEST EQUIPMENT

FCC CRF 47 Part 2: 2007 & Part 15: 2008 & Part 27: 2007 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

3.1 Test Equipment

List of absolute measuring and other principal items of test equipment.

Item	Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
1	Spectrum Analyzer	Agilent	E4440A	MY46186900	2008-05-23
2	Power Probe	Agilent	8485A	MY41091233	2007-08-20
3	30dB Attenuator	Weinschel	2	BL9589	TU
4	Power Supply	CALTEK	CA1713A	041N1898	O/P MON
5	Digital Multimeter	FLUKE	179	91820401	2008-01-04
6	Thermo-Hygrometer	AZ Instruments	8705	9151655	2007-12-10
7	Temperature Chamber	Wuxi Jinhua	GDW-225	00595	O/P MON
8	Test Receiver	Rohde & Schwarz	ESI 40	100015	2007-08-20
9	Ultra log test antenna	R&S	HL562	100016	2007-09-20
10	Double-Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF 906	100029	2007-09-20
11	Antenna master	FRANKONIA	MA 260	--	TU
12	Relay Switch Unit	R&S	331.1601.31	338965002	TU
13	Signal generator	R&S	SMR 20	836074/025	2007-08-20
14	Full- Anechoic Chamber	FRANKONIA	12.65mx8.03m x7.50m	--	2007-09-24
15	Turn Table	FRANKONIA	PS2000	--	2007-08-20
16	Controller	HD	HD100	100/746	TU
17	EMI test software	Rohde & Schwarz	ES-K1	--	TU
18	Semi-Anechoic Chamber	FRANKONIA	23.18m×16.88 m×9.60m	--	2007-09-24
19	EMI Test Receiver	Rohde & Schwarz	ESCS	100029	2007-08-20
20	LISN	Rohde & Schwarz	ESH3-Z5	100020	2007-08-20

TU Traceability Unscheduled
O/P MON Output Monitored

Product Service

SECTION 4

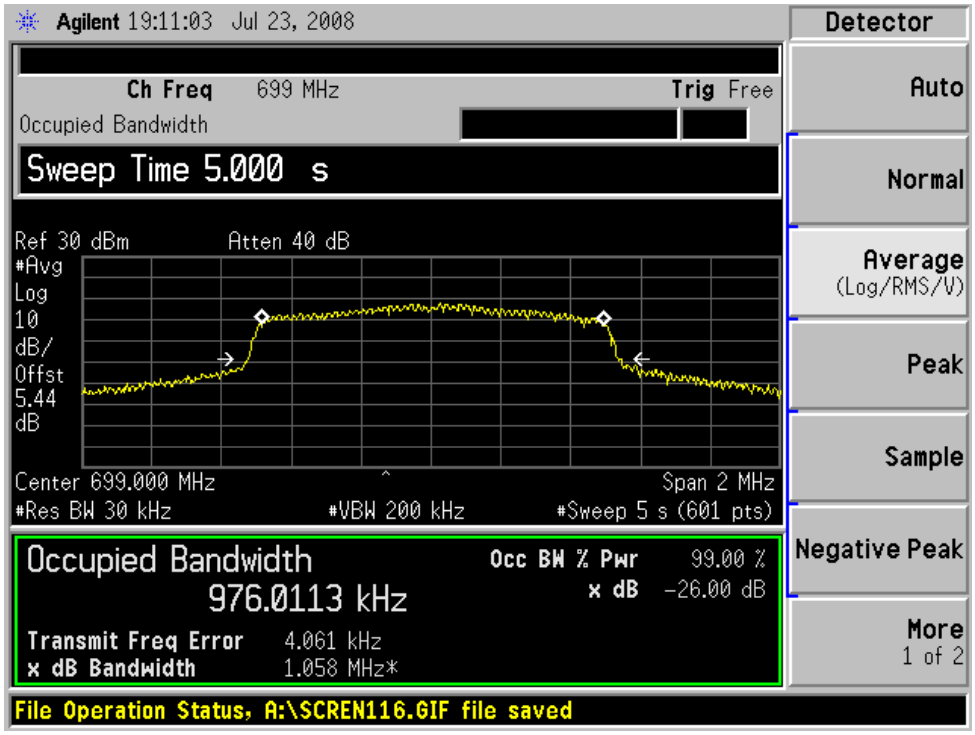
TEST RESULTS REPRESENTED BY PLOTS

FCC CRF 47 Part 2: 2007 & Part 15: 2008 & Part 27: 2007 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

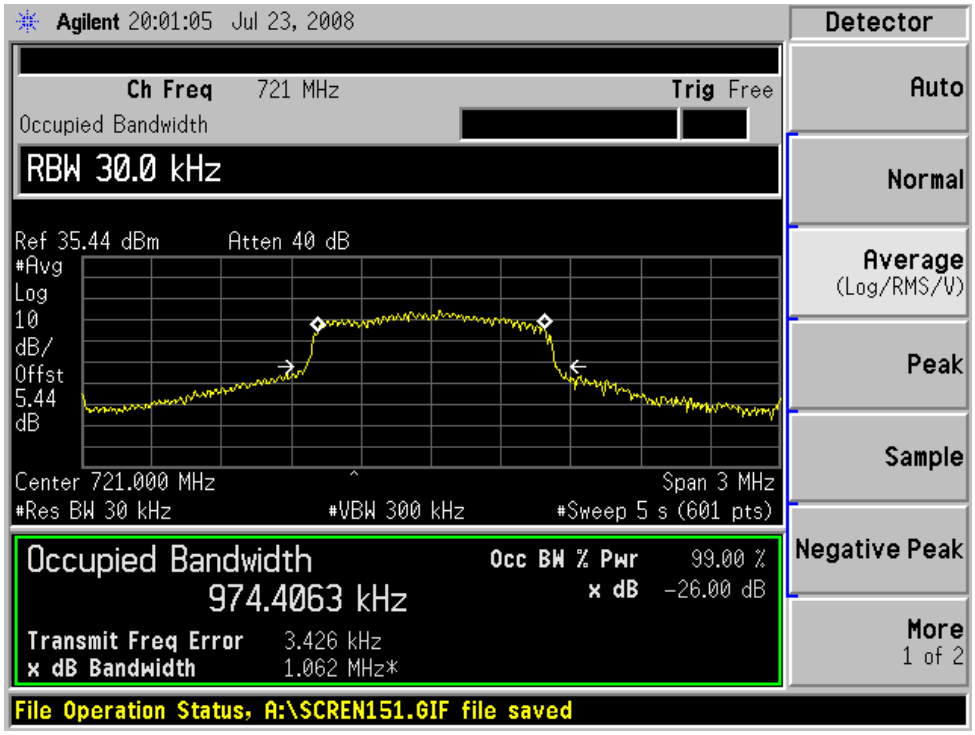
Product Service

4.1 Occupied Bandwidth

Modulation Mode: QPSK
Channel Bandwidth: 1MHz



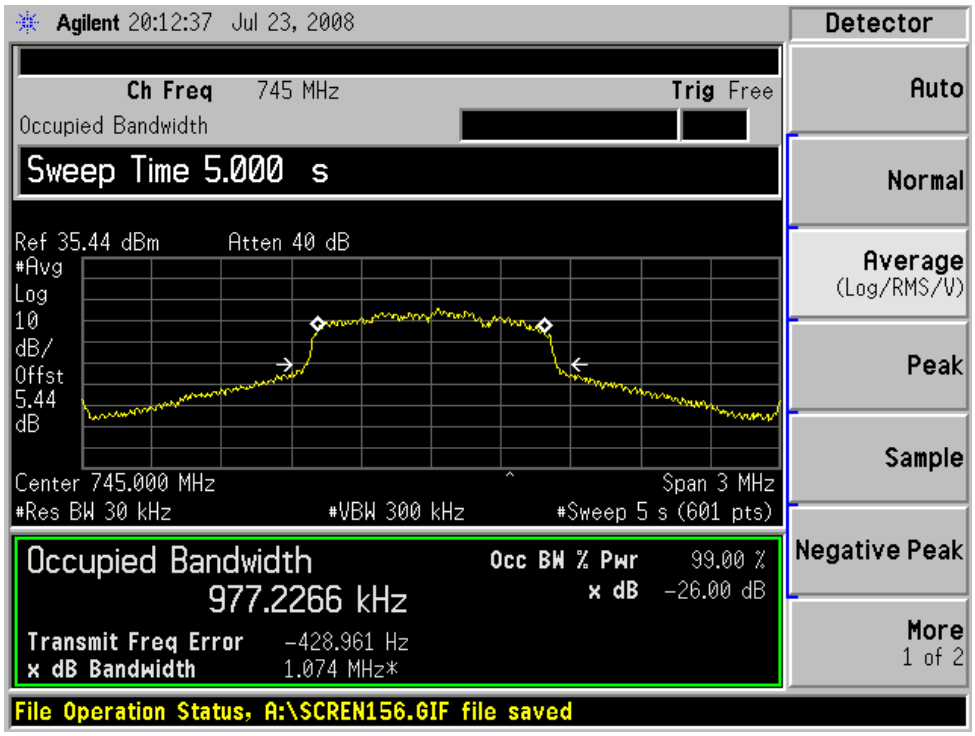
Plot 1 Occupied Bandwidth on CH Bottom



Plot 2 Occupied Bandwidth on CH Middle

4.1 Occupied Bandwidth-continued

Modulation Mode: QPSK
Channel Bandwidth: 1MHz

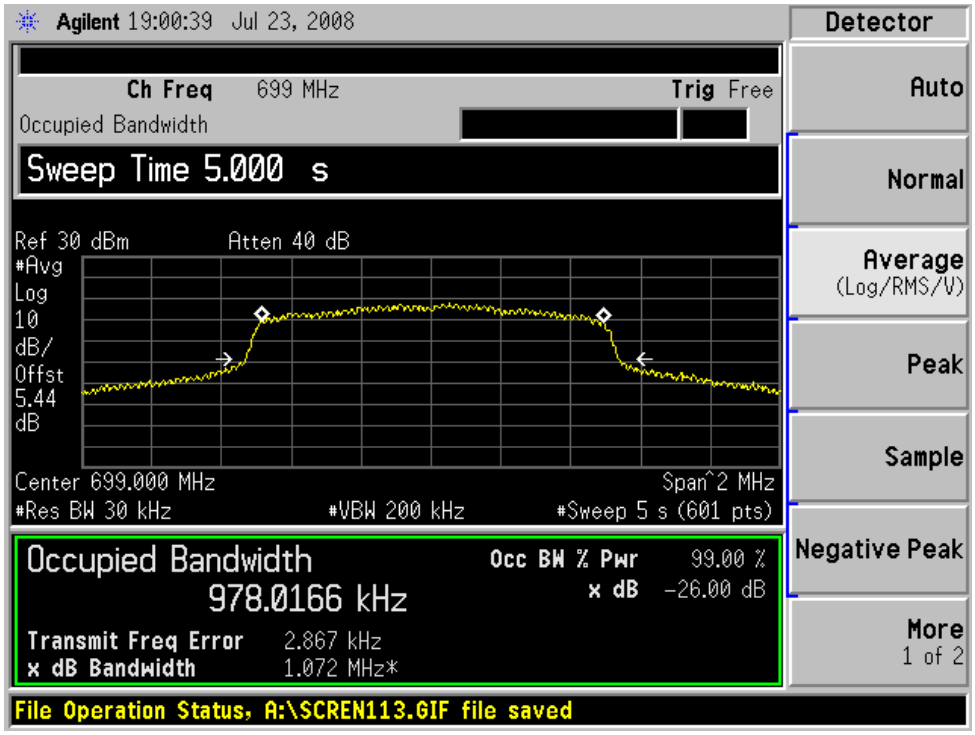


Plot 3 Occupied Bandwidth on CH Bottom

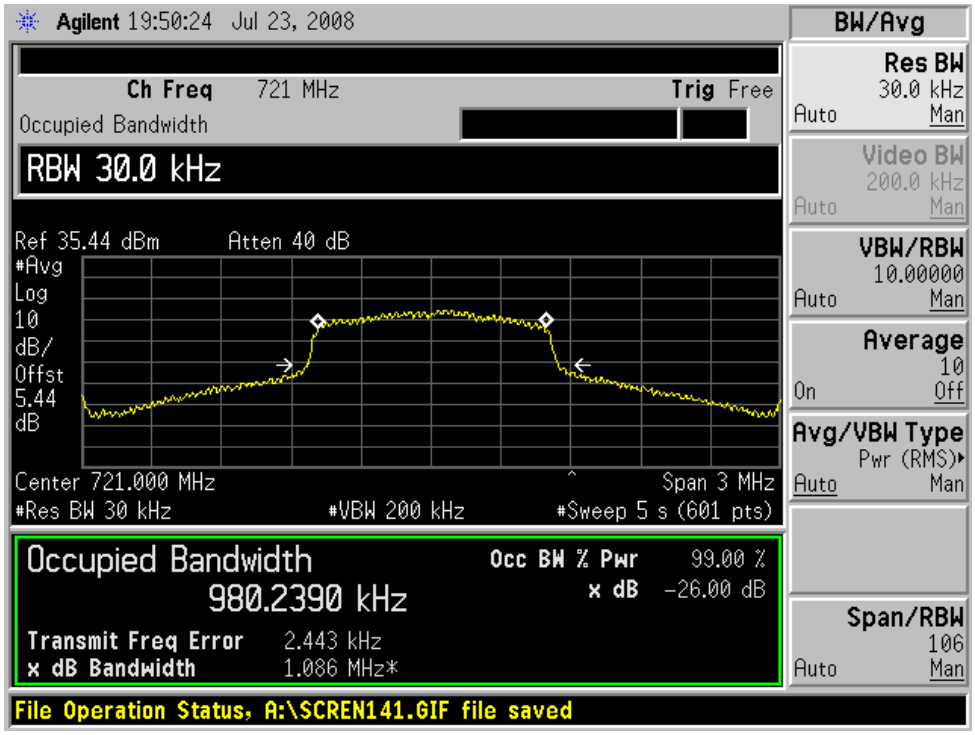
Product Service

4.1 Occupied Bandwidth-continued

Modulation Mode: 8PSK
Channel Bandwidth: 1MHz



Plot 4 Occupied Bandwidth on CH Bottom

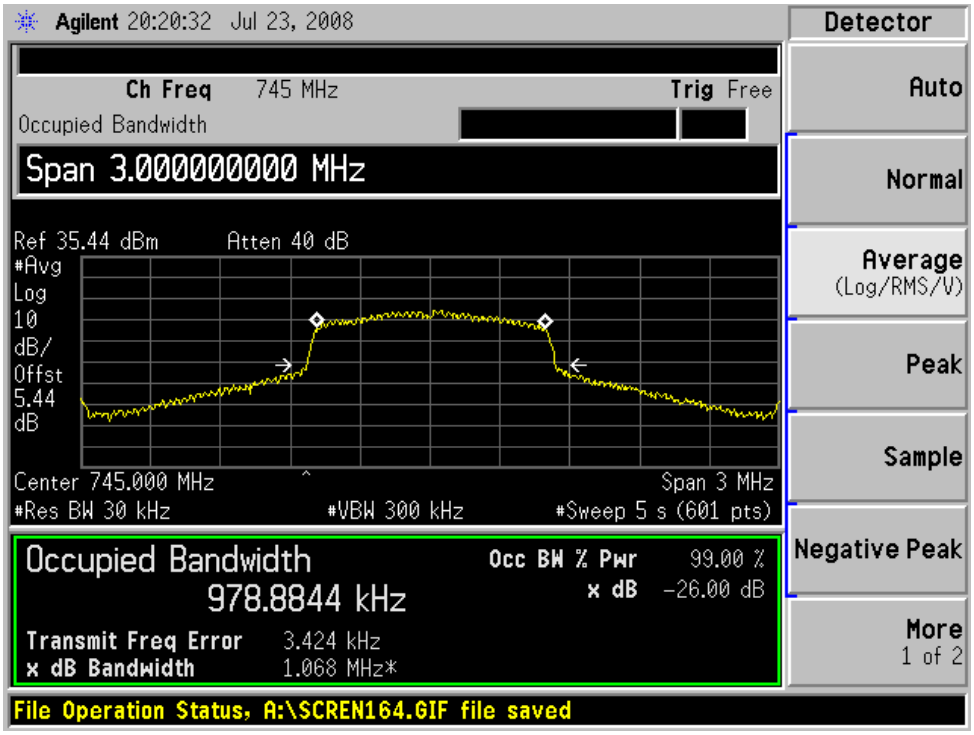


Plot 5 Occupied Bandwidth on CH Middle

Product Service

4.1 Occupied Bandwidth-continued

Modulation Mode: 8PSK
Channel Bandwidth: 1MHz

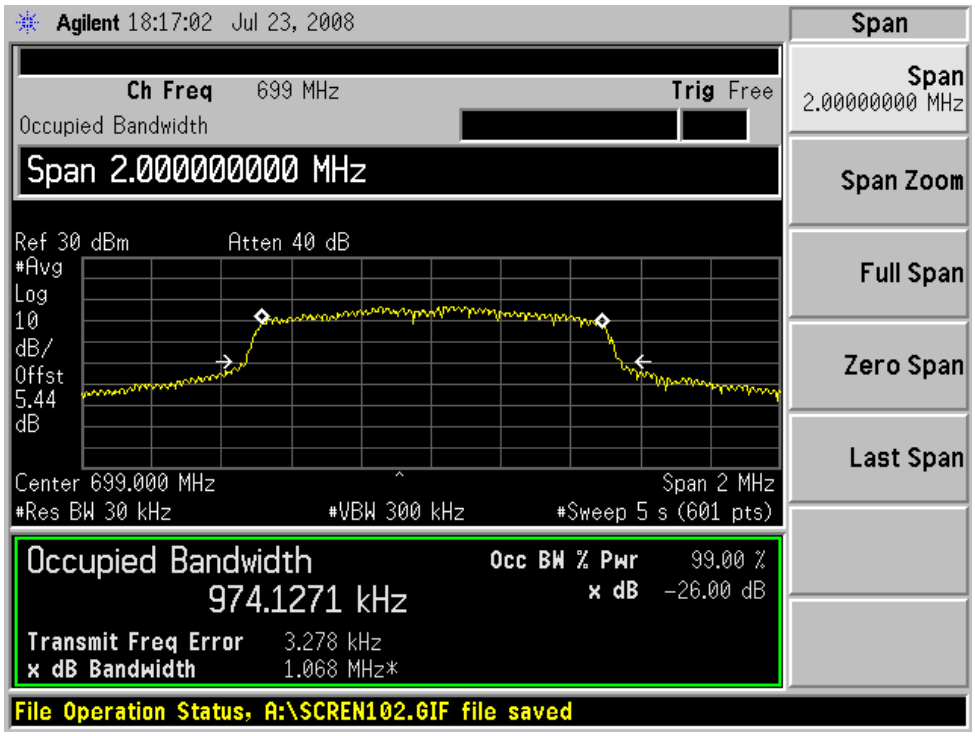


Plot 6 Occupied Bandwidth on CH Bottom

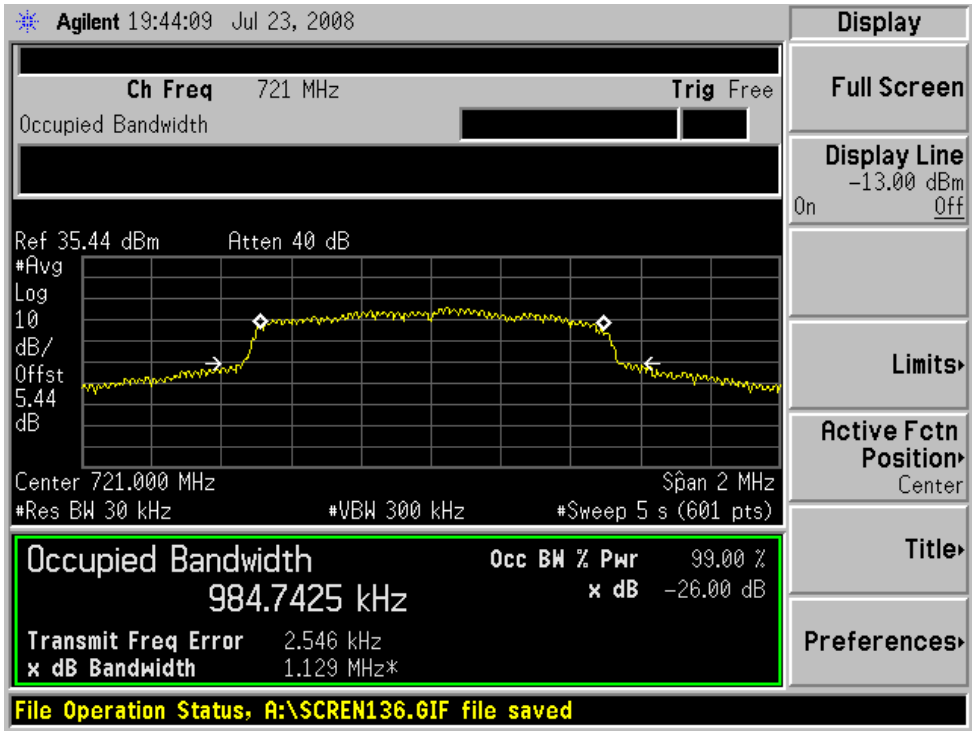
Product Service

4.1 Occupied Bandwidth-continued

Modulation Mode: QAM16
Channel Bandwidth: 1MHz



Plot 7 Occupied Bandwidth on CH Bottom

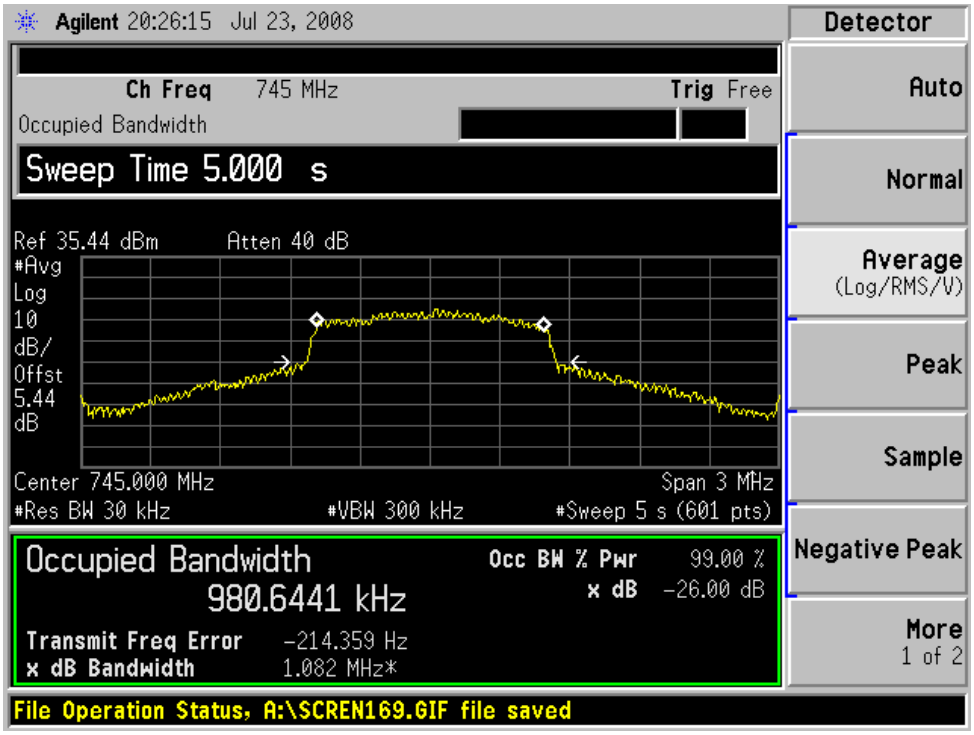


Plot 8 Occupied Bandwidth on CH Middle

Product Service

4.1 Occupied Bandwidth-continued

Modulation Mode: QAM16
Channel Bandwidth: 1MHz

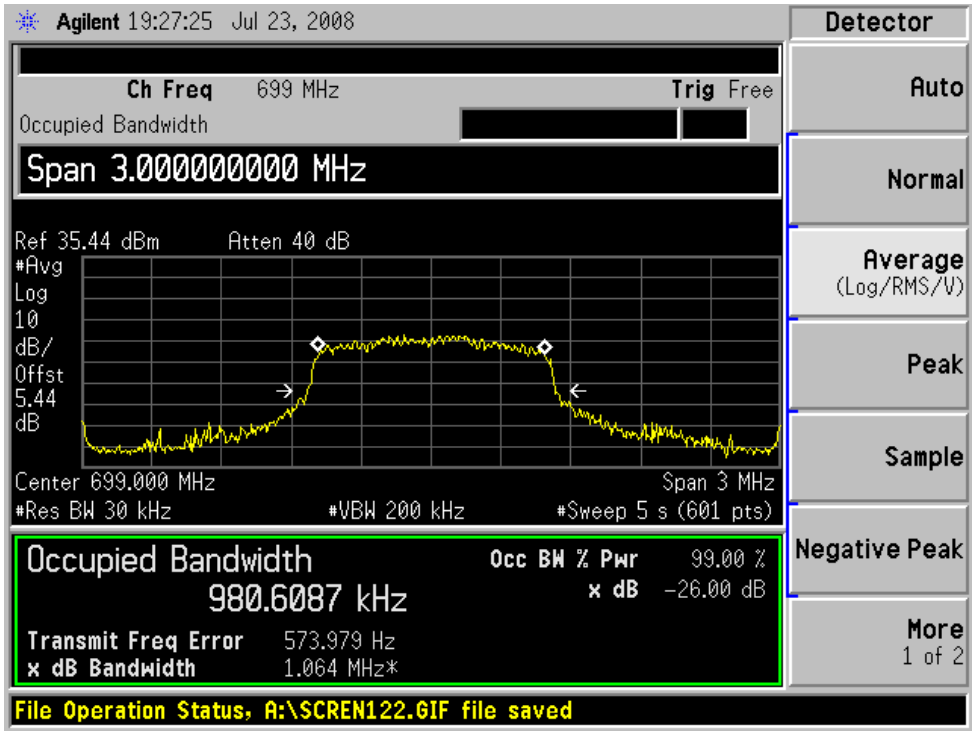


Plot 9 Occupied Bandwidth on CH Bottom

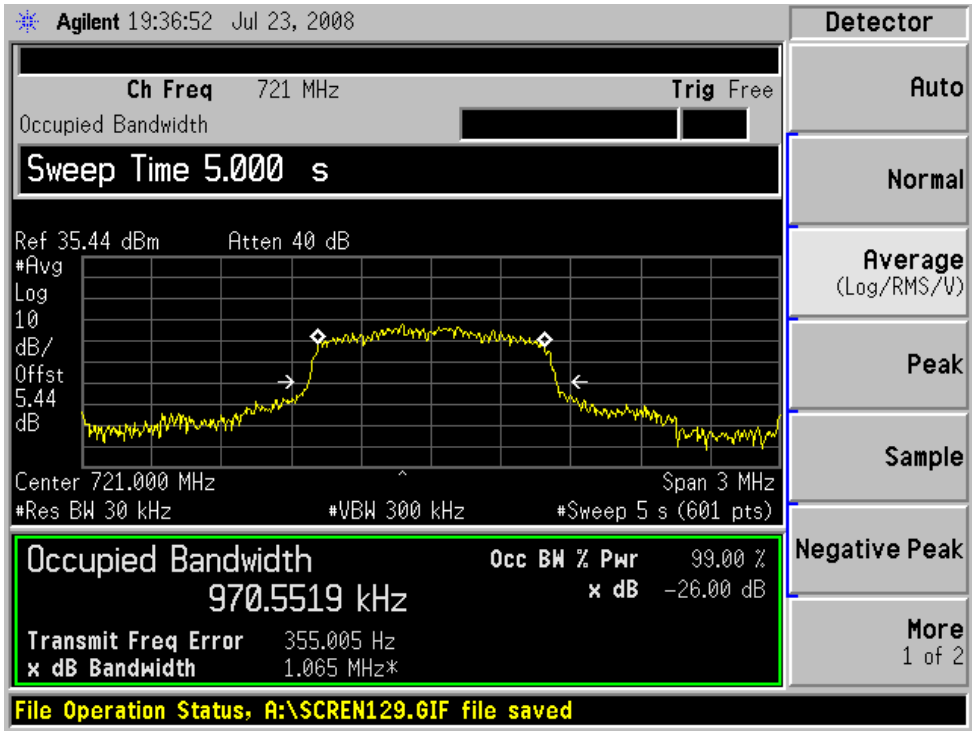
Product Service

4.1 Occupied Bandwidth-continued

Modulation Mode: QAM64
Channel Bandwidth: 1MHz



Plot 10 Occupied Bandwidth on CH Bottom

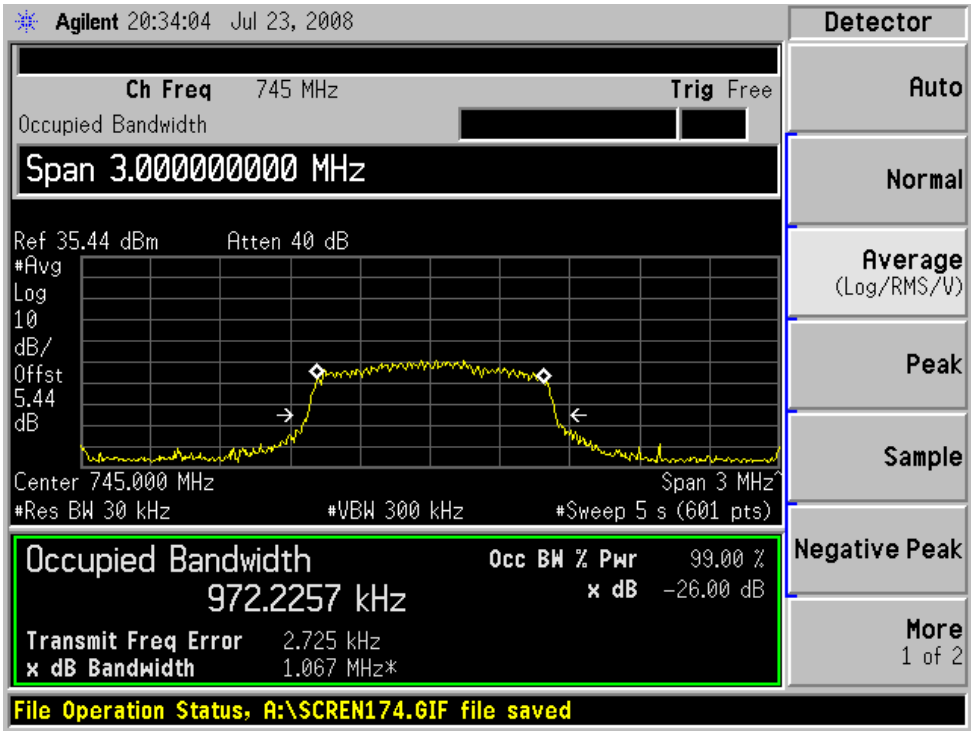


Plot 11 Occupied Bandwidth on CH Middle

Product Service

4.1 Occupied Bandwidth-continued

Modulation Mode: QAM64
Channel Bandwidth: 1MHz

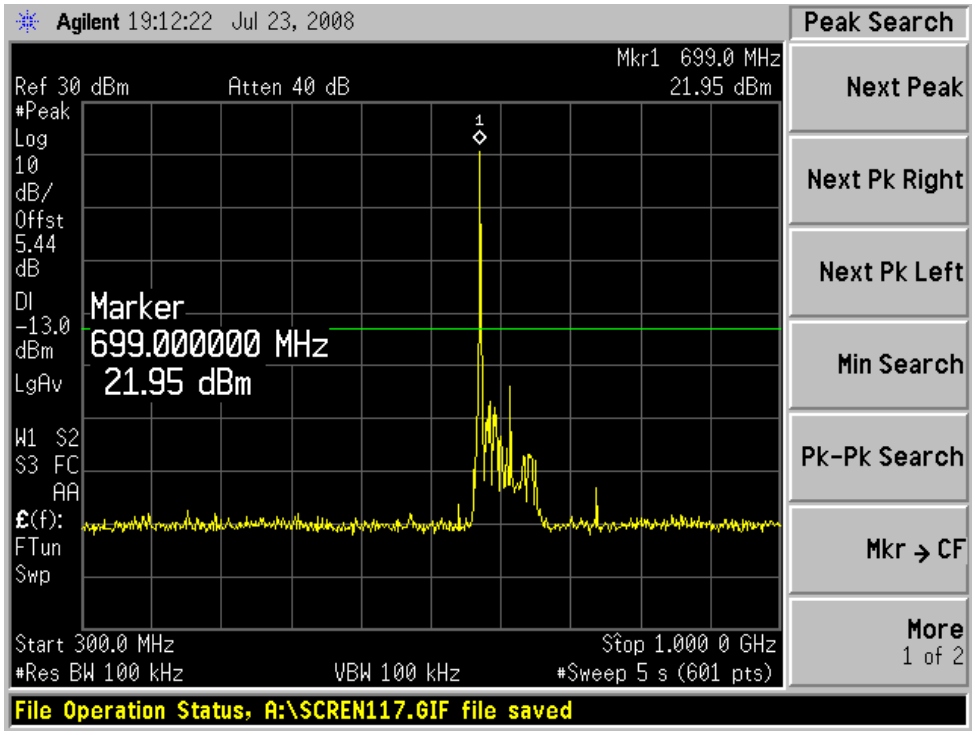


Plot 12 Occupied Bandwidth on CH Bottom

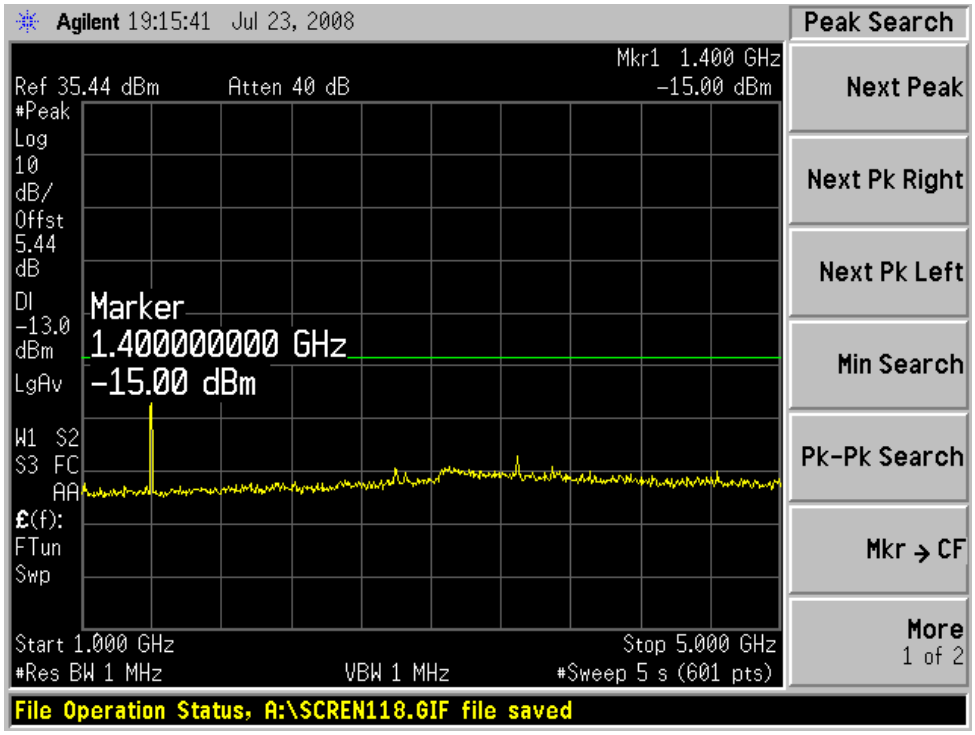
Product Service

4.2 Conducted Spurious Emissions

Modulation Mode: QPSK
Channel Bandwidth: 1MHz



Plot 13 30MHz ~ 1GHz spurious emissions on CH Bottom
Note: The emission beyond the limit is that on operating frequency.

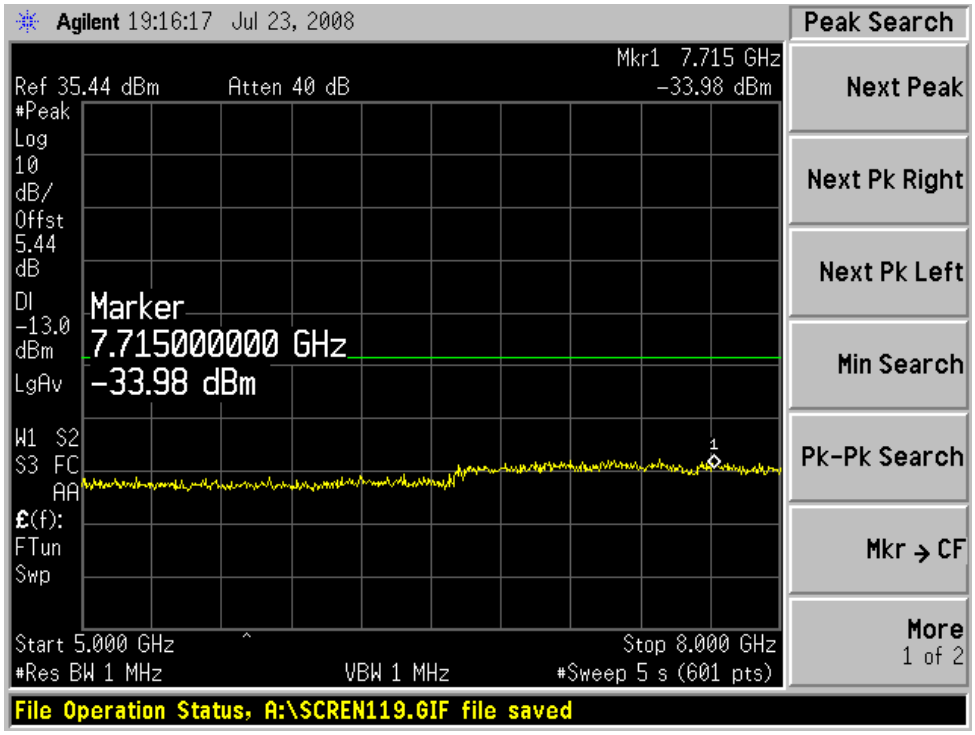


Plot 14 1GHz ~ 5GHz spurious emissions on CH Bottom

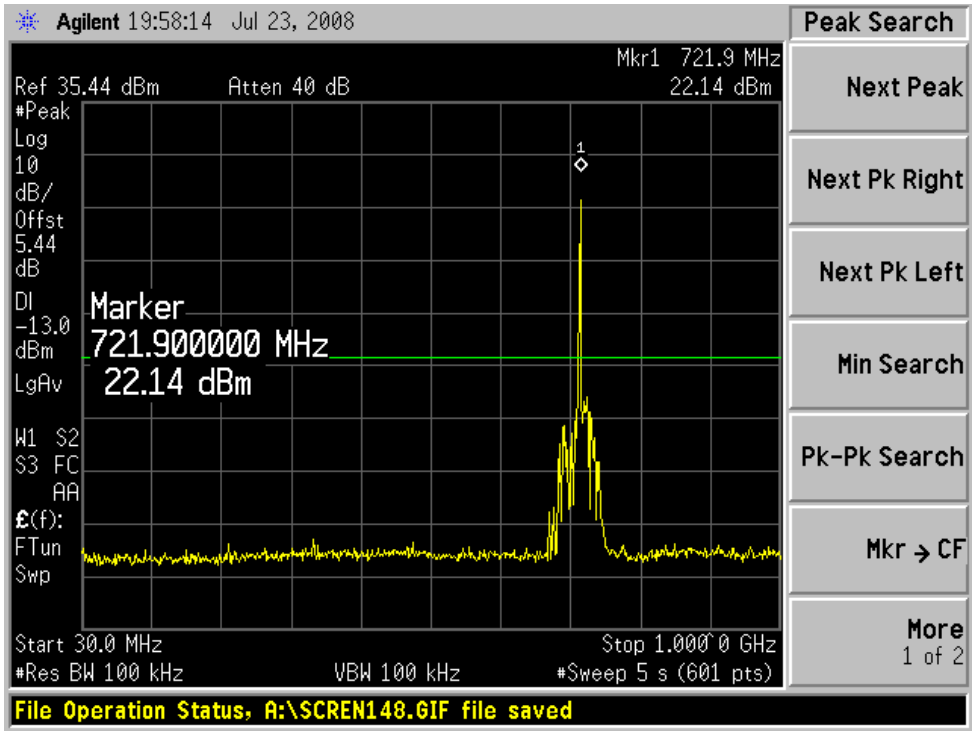
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QPSK
Channel Bandwidth: 1MHz



Plot 15 5GHz ~ 8GHz spurious emissions on CH Bottom

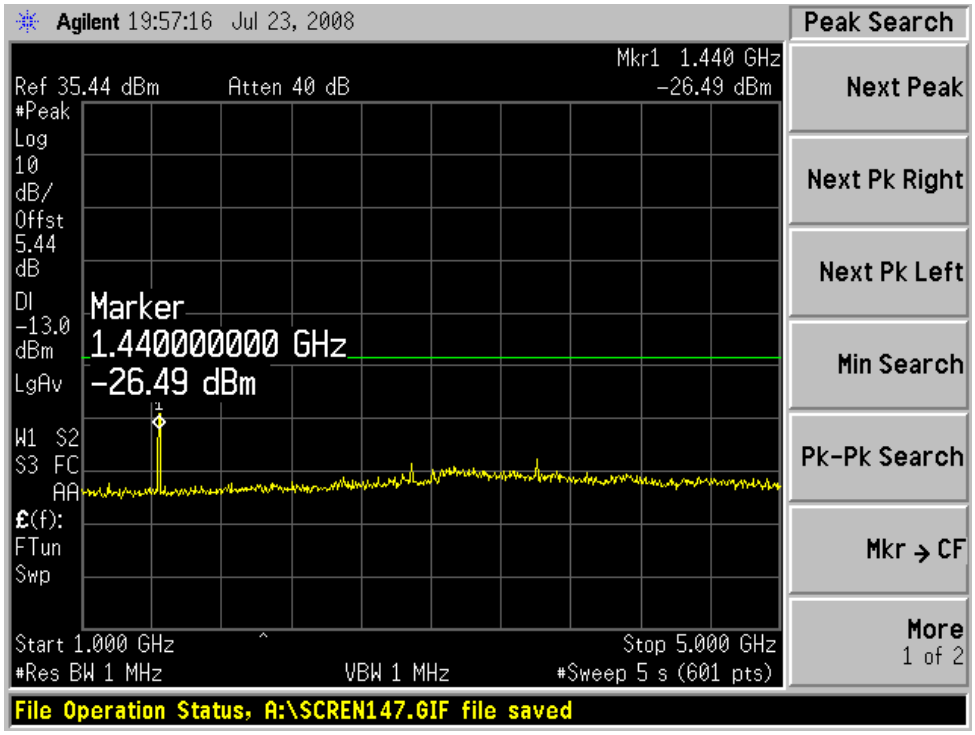


Plot 16 30MHz ~ 1GHz spurious emissions on CH Middle
Note: The emission beyond the limit is that on operating frequency.

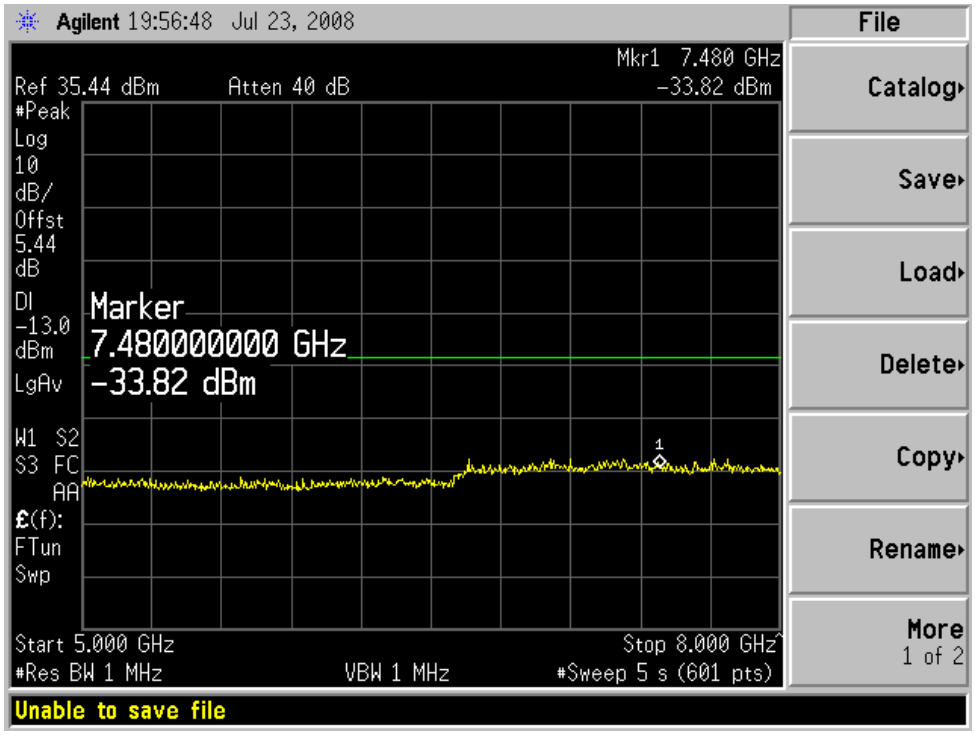
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QPSK
Channel Bandwidth: 1MHz



Plot 17 1GHz ~ 5GHz spurious emissions on CH Middle

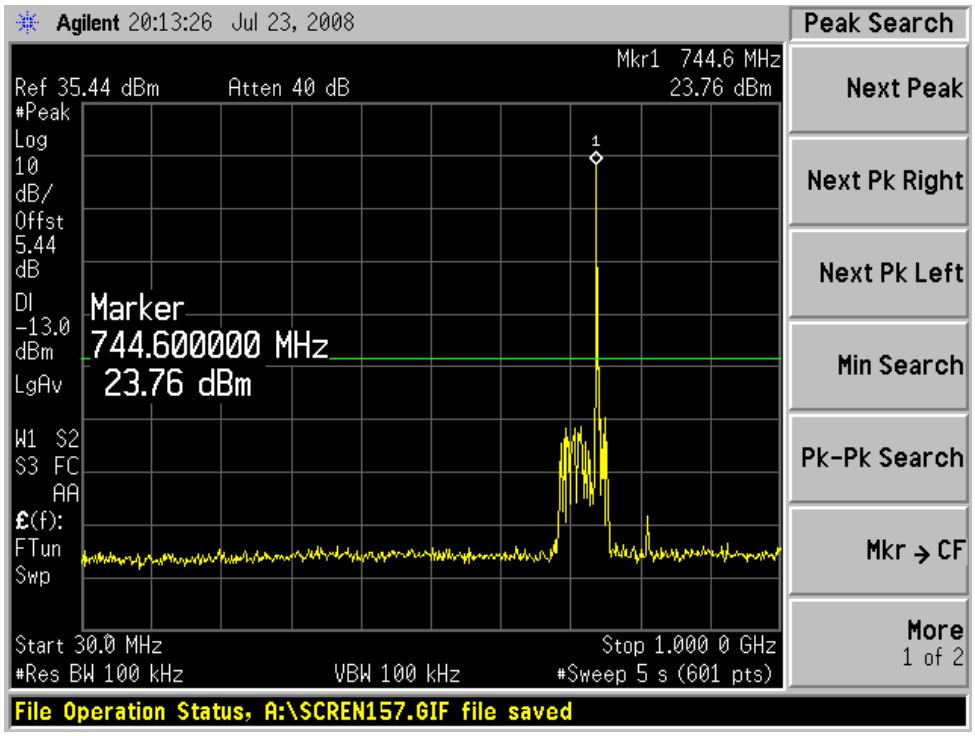


Plot 18 5GHz ~ 8GHz spurious emissions on CH Middle

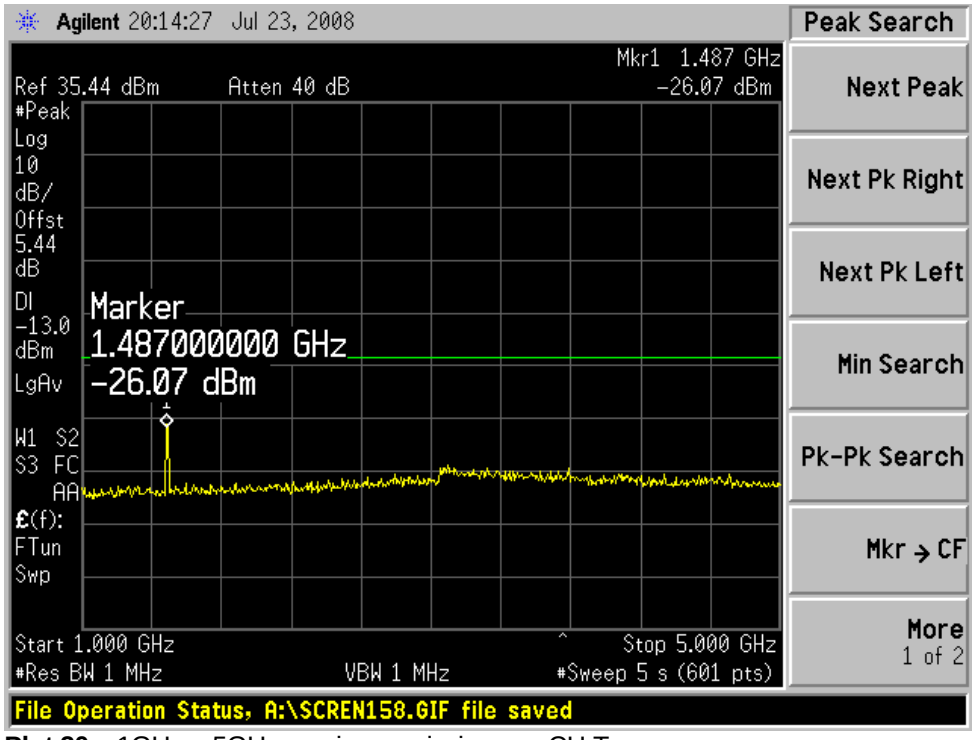
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QPSK
Channel Bandwidth: 1MHz



Plot 19 30MHz ~ 1GHz spurious emissions on CH Top
Note: The emission beyond the limit is that on operating frequency.

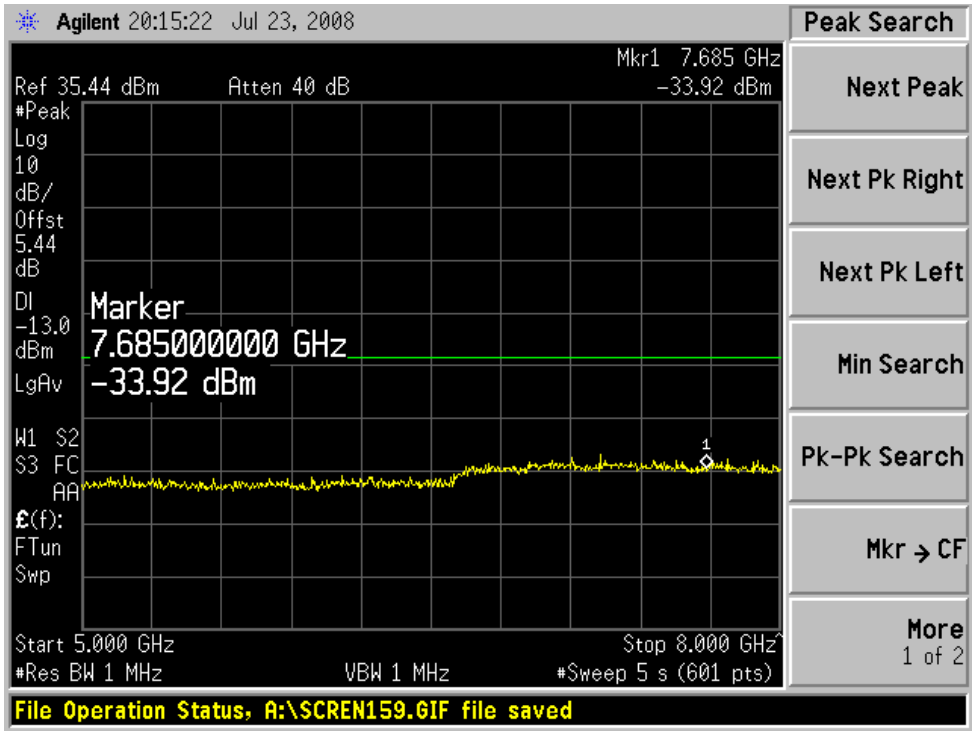


Plot 20 1GHz ~ 5GHz spurious emissions on CH Top

Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QPSK
Channel Bandwidth: 1MHz

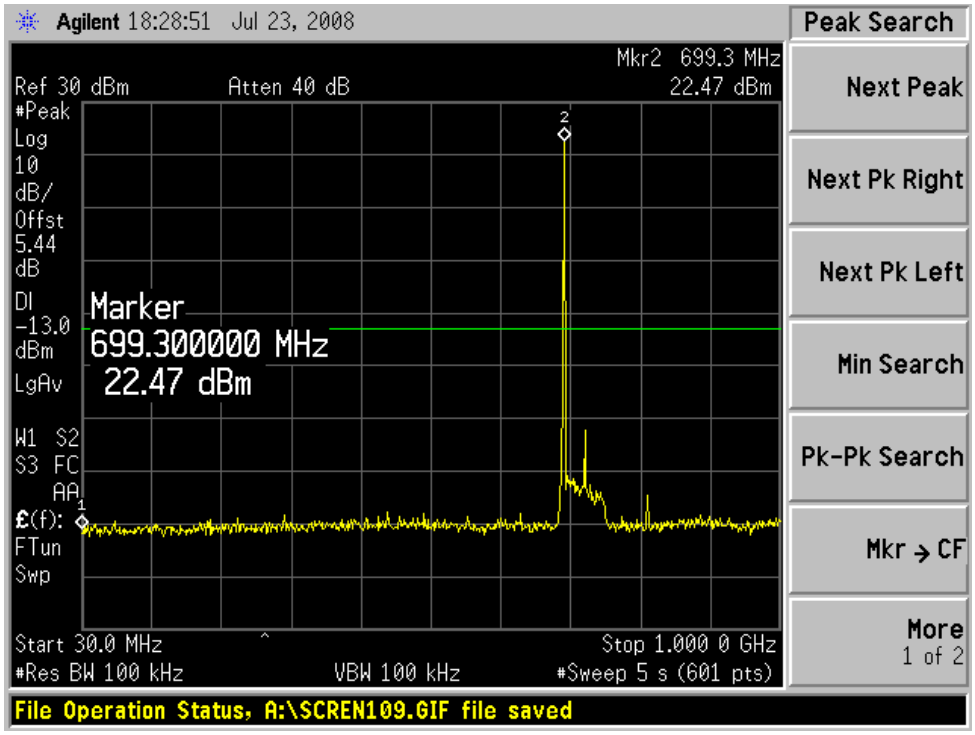


Plot 21 5GHz ~ 8GHz spurious emissions on CH Top

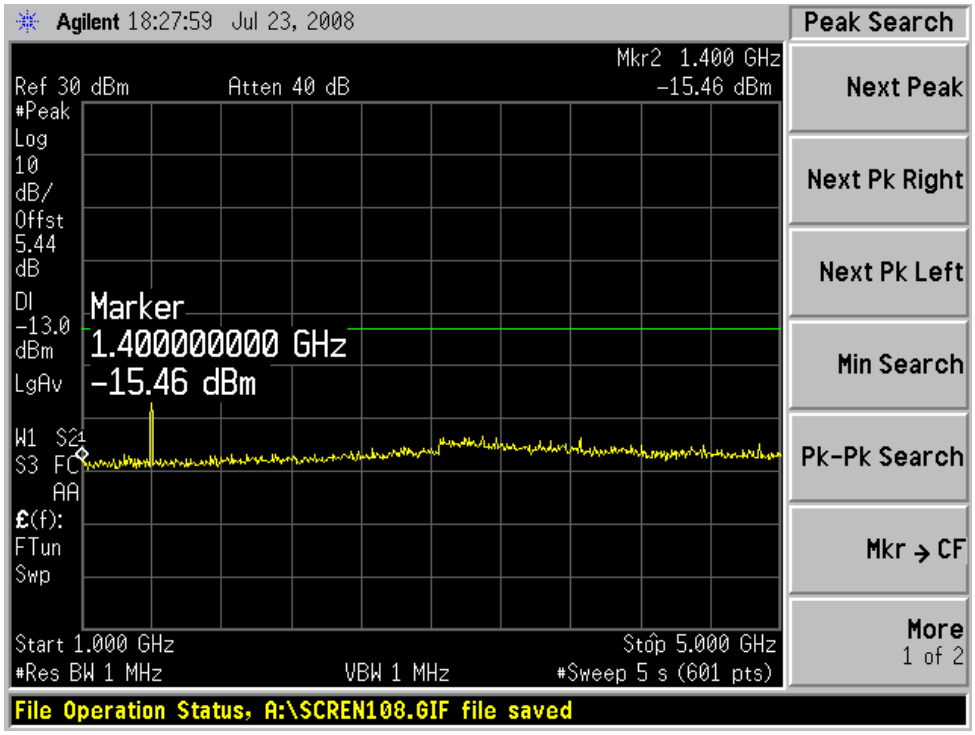
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: 8PSK
Channel Bandwidth: 1MHz



Plot 22 30MHz ~ 1GHz spurious emissions on CH Bottom
Note: The emission beyond the limit is that on operating frequency.

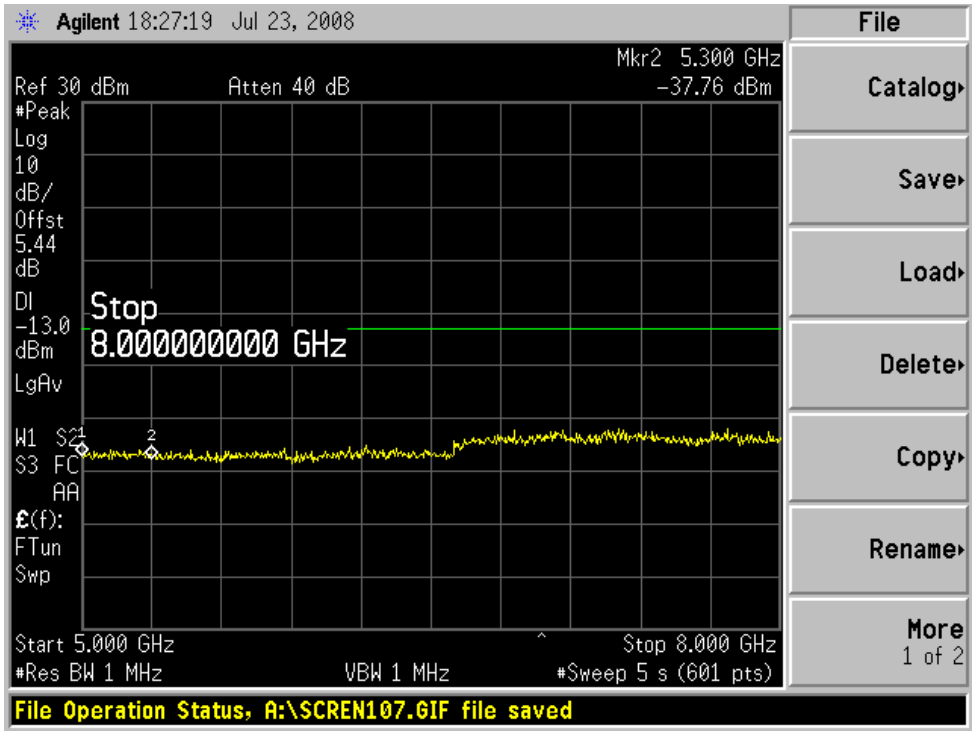


Plot 23 1GHz ~ 5GHz spurious emissions on CH Bottom

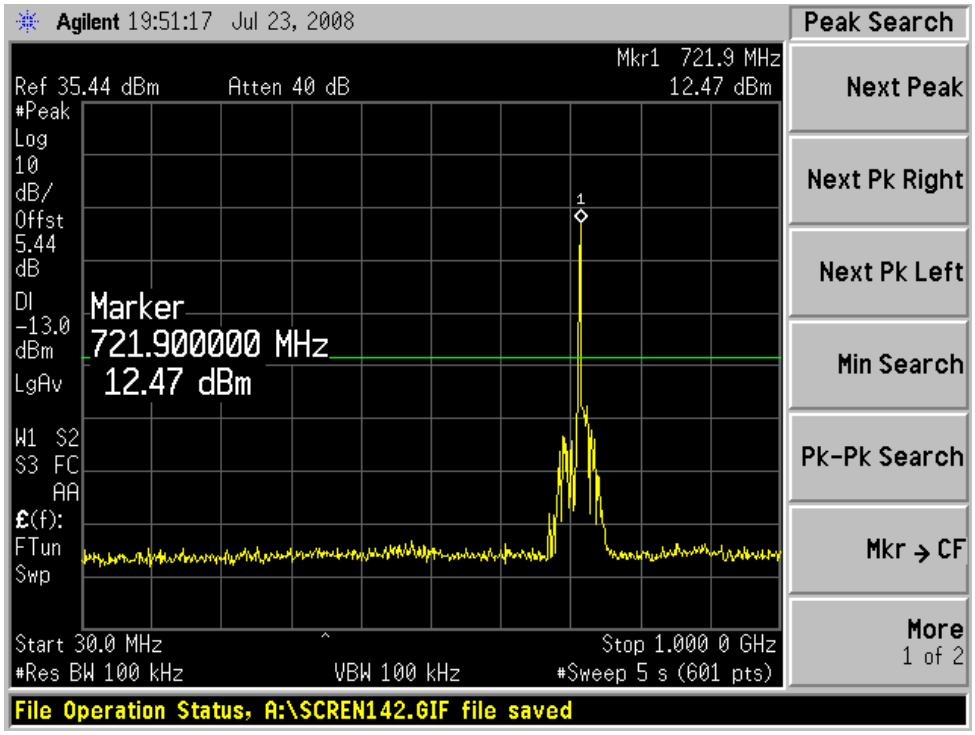
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: 8PSK
Channel Bandwidth: 1MHz



Plot 24 5GHz ~ 8GHz spurious emissions on CH Bottom

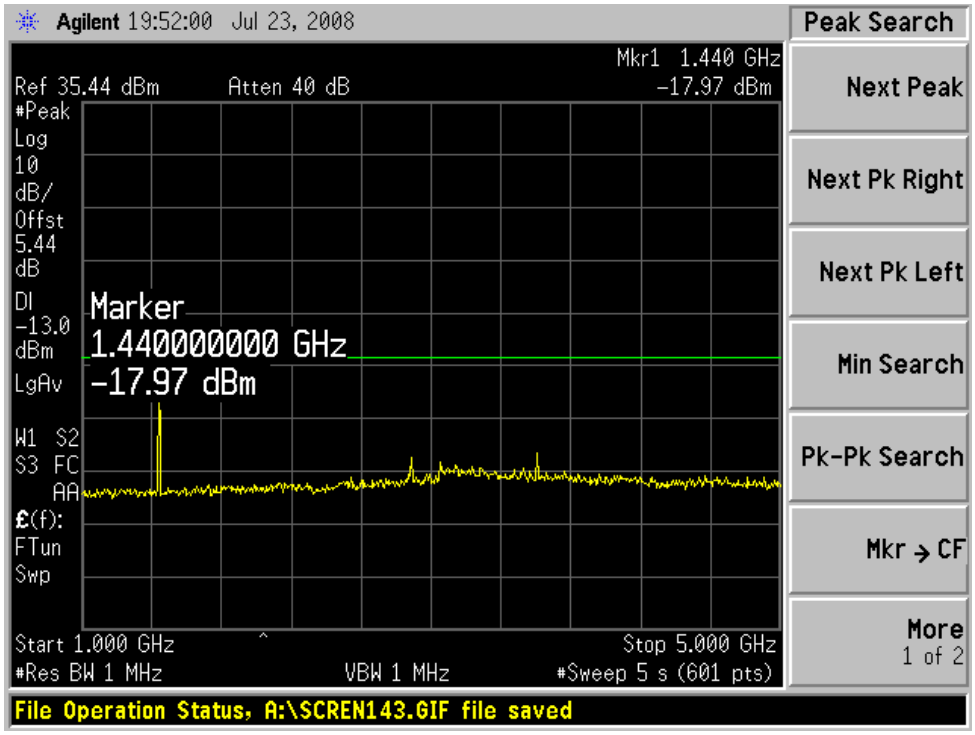


Plot 25 30MHz ~ 1GHz spurious emissions on CH Middle
Note: The emission beyond the limit is that on operating frequency.

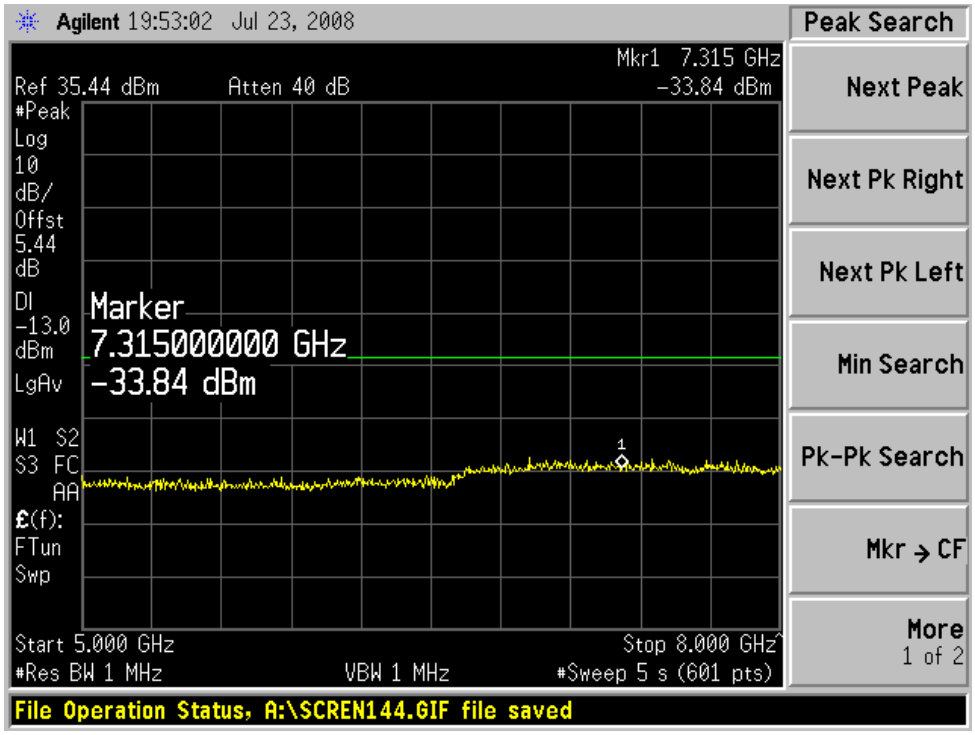
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: 8PSK
Channel Bandwidth: 1MHz



Plot 26 1GHz ~ 5GHz spurious emissions on CH Middle

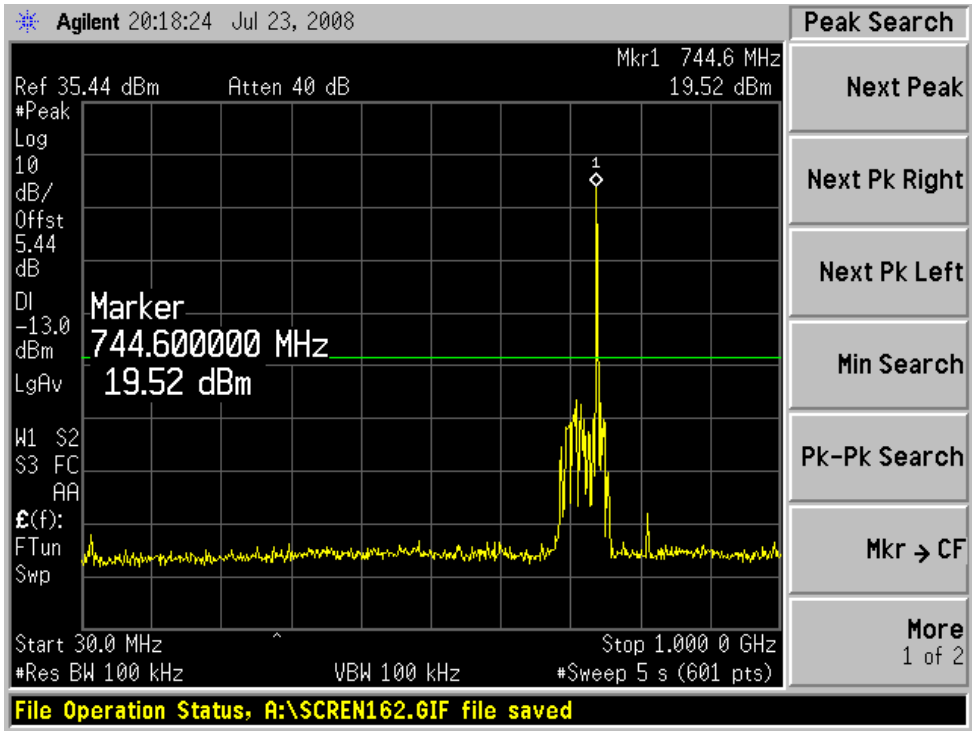


Plot 27 5GHz ~ 8GHz spurious emissions on CH Middle

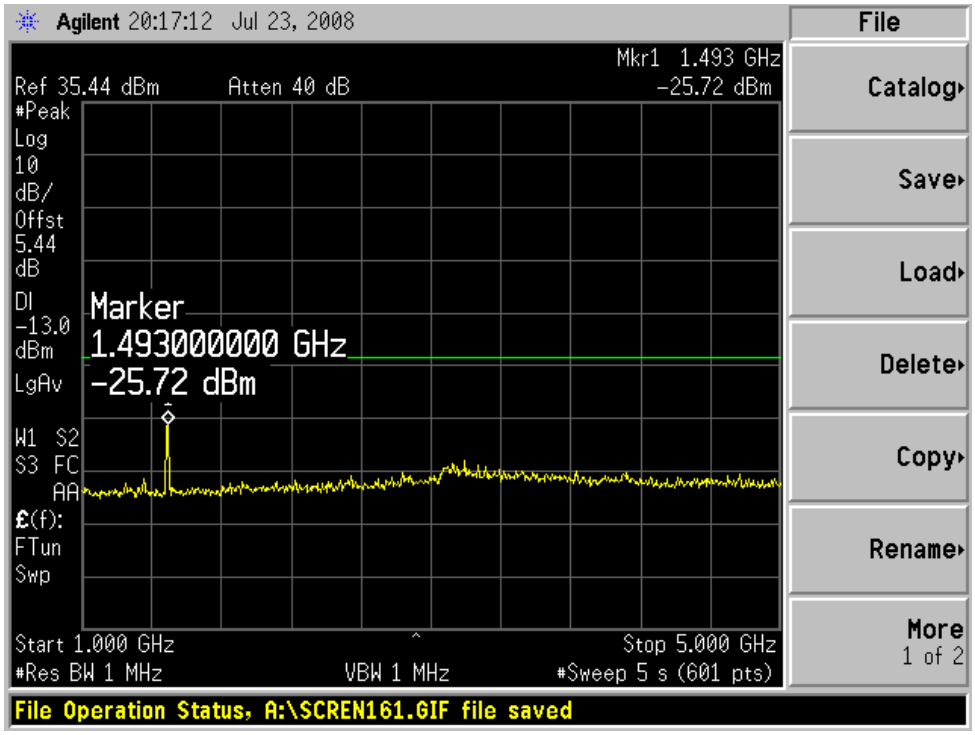
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: 8PSK
Channel Bandwidth: 1MHz



Plot 28 30MHz ~ 1GHz spurious emissions on CH Top
Note: The emission beyond the limit is that on operating frequency.

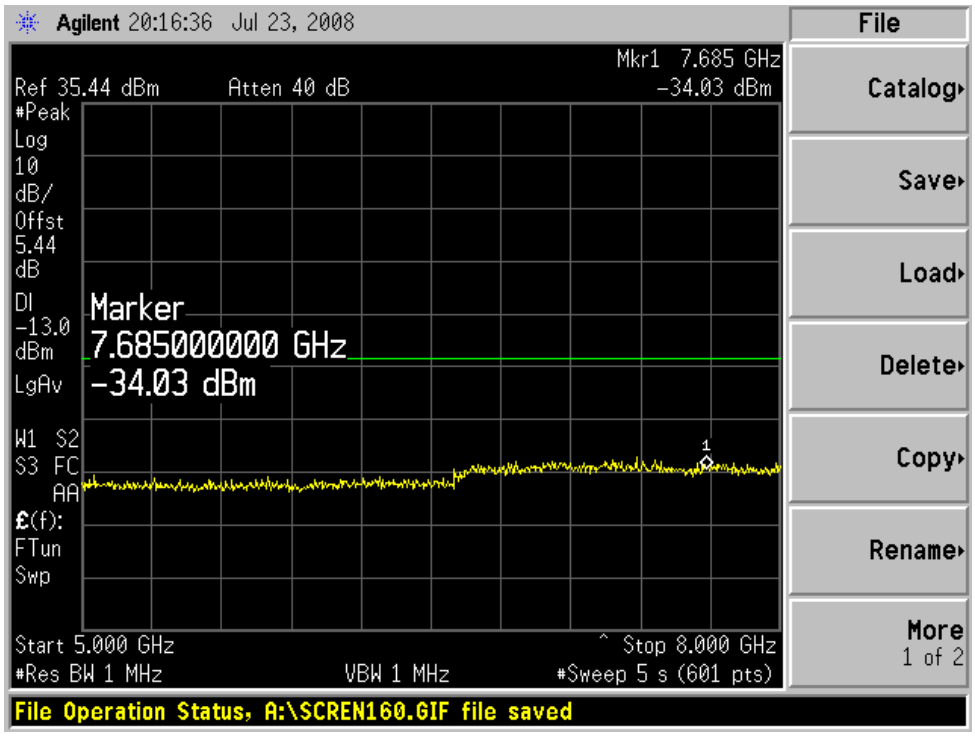


Plot 29 1GHz ~ 5GHz spurious emissions on CH Top

Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: 8PSK
Channel Bandwidth: 1MHz

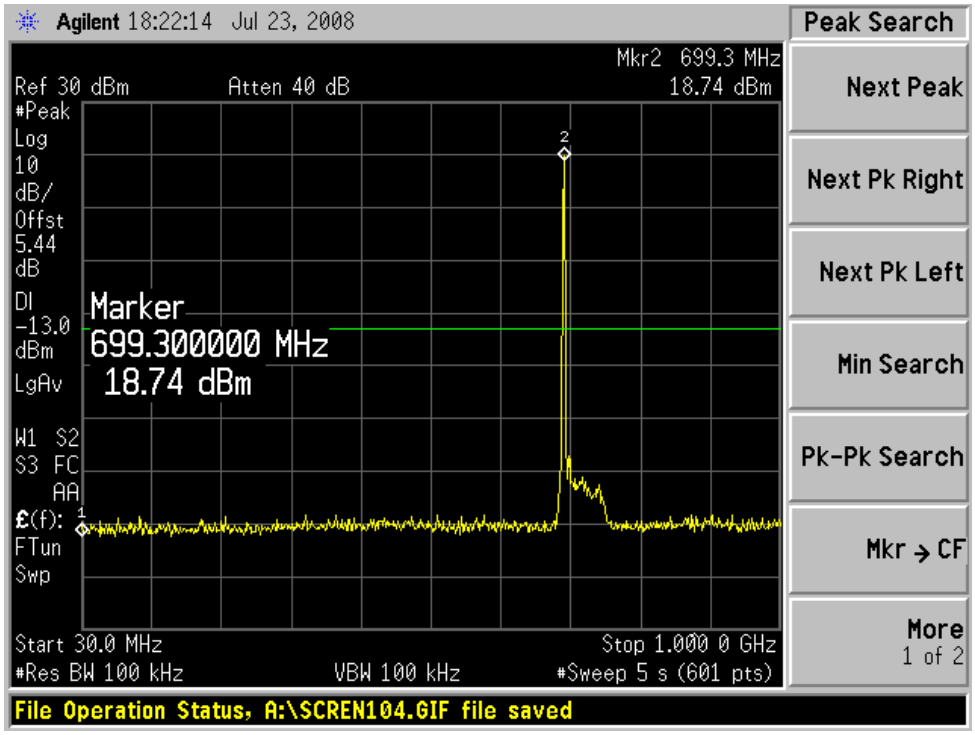


Plot 30 5GHz ~ 8GHz spurious emissions on CH Top

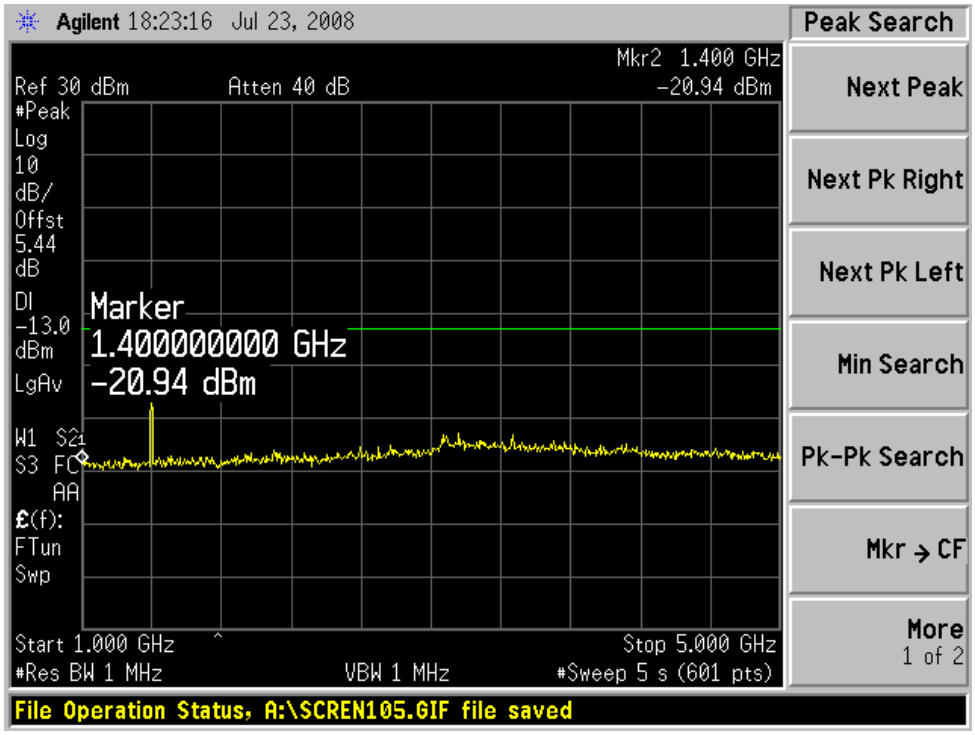
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM16
Channel Bandwidth: 1MHz



Plot 31 30MHz ~ 1GHz spurious emissions on CH Bottom
Note: The emission beyond the limit is that on operating frequency.

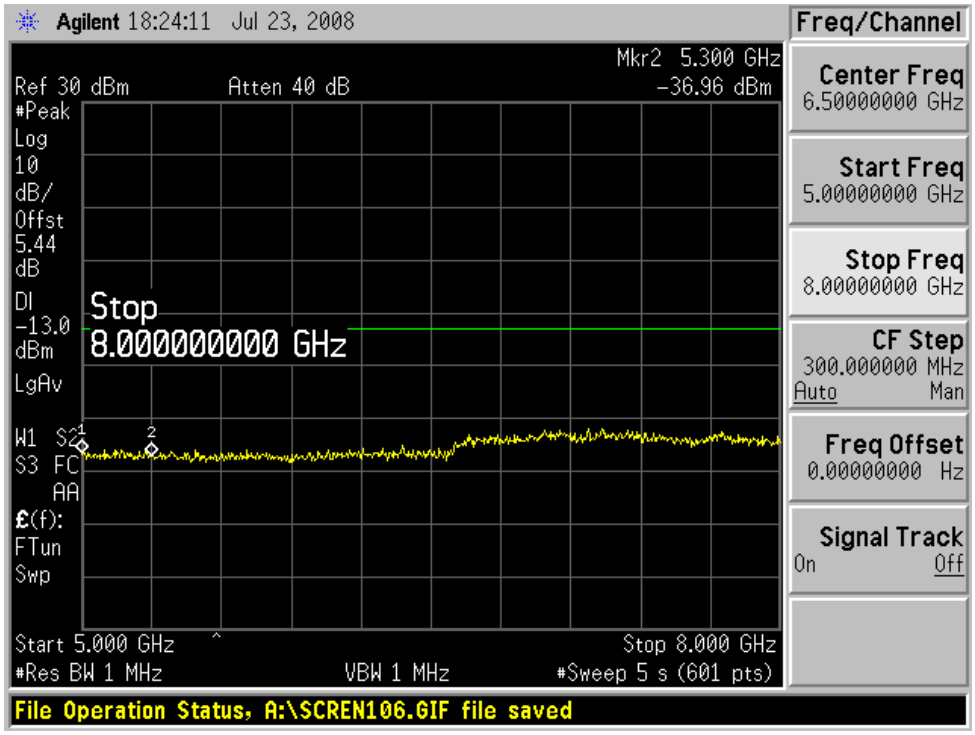


Plot 32 1GHz ~ 5GHz spurious emissions on CH Bottom

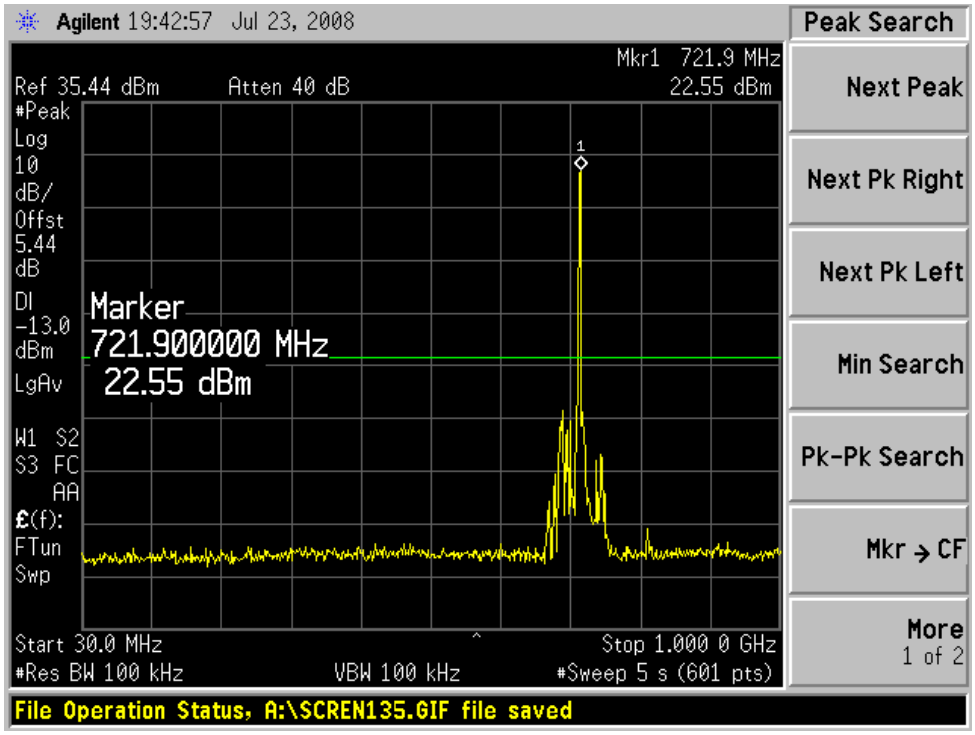
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM16
Channel Bandwidth: 1MHz



Plot 33 5GHz ~ 8GHz spurious emissions on CH Bottom

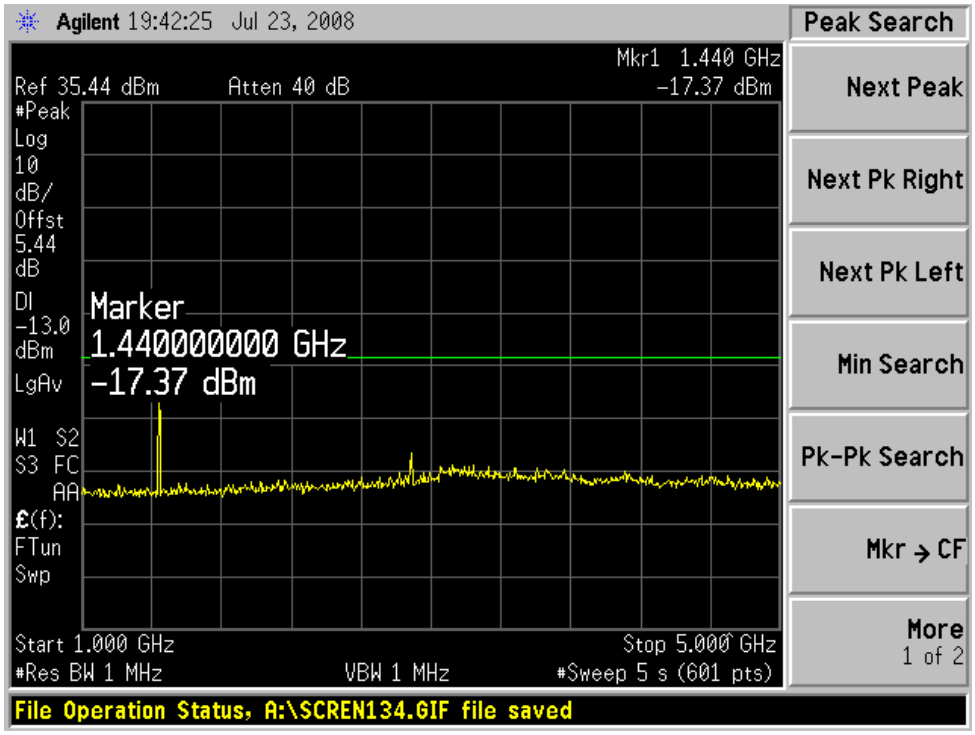


Plot 34 30MHz ~ 1GHz spurious emissions on CH Middle
Note: The emission beyond the limit is that on operating frequency.

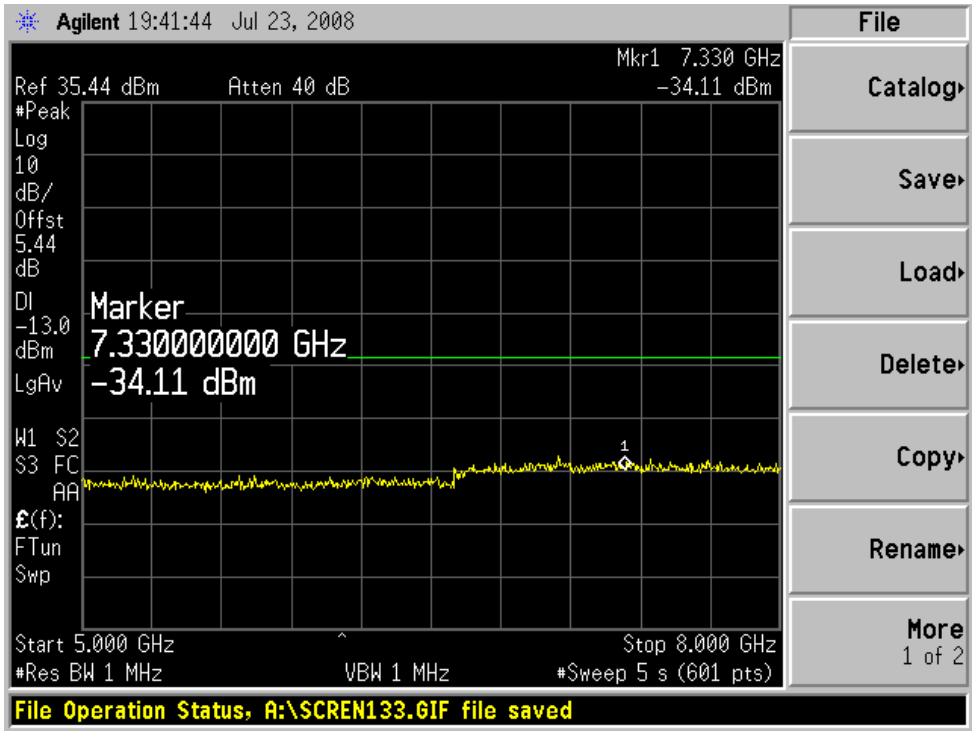
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM16
Channel Bandwidth: 1MHz



Plot 35 1GHz ~ 5GHz spurious emissions on CH Middle

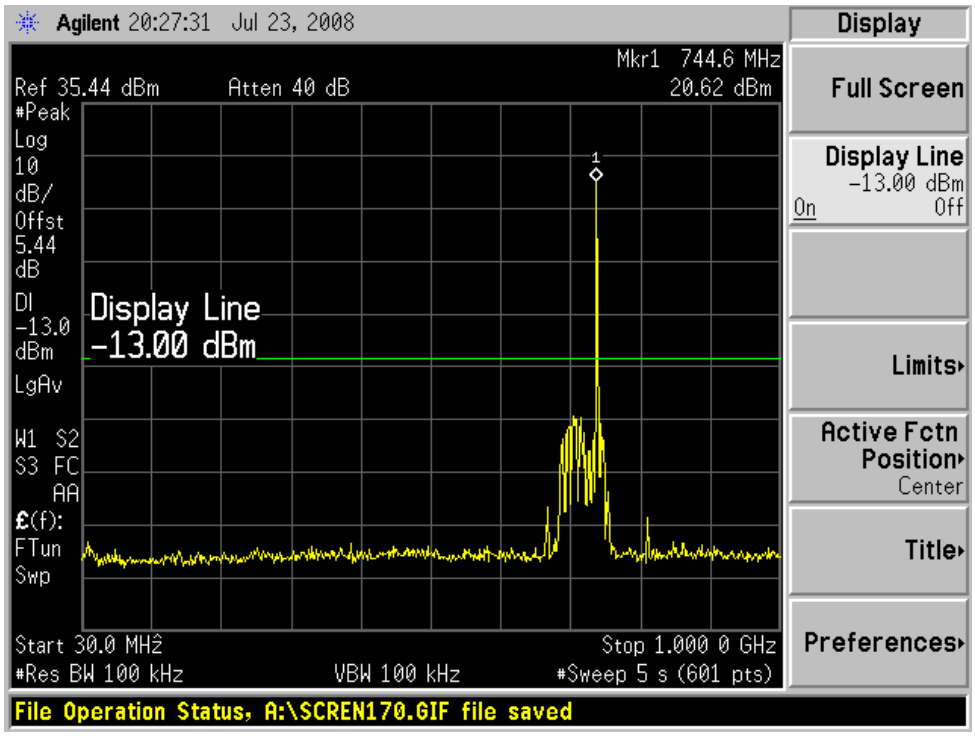


Plot 36 5GHz ~ 8GHz spurious emissions on CH Middle

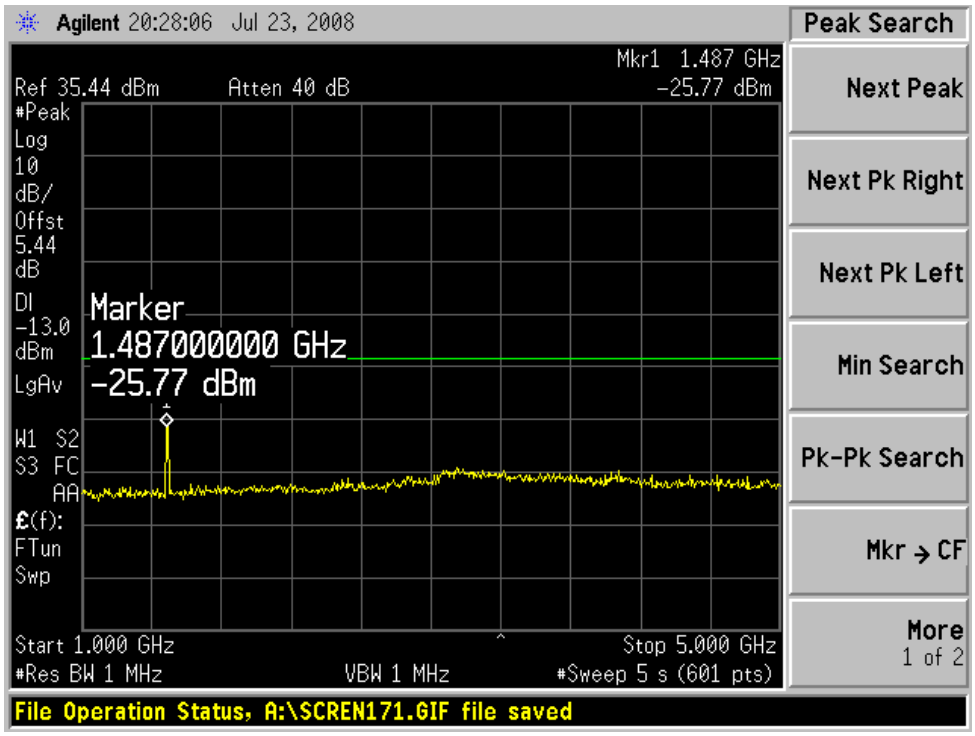
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM16
Channel Bandwidth: 1MHz



Plot 37 30MHz ~ 1GHz spurious emissions on CH Top
Note: The emission beyond the limit is that on operating frequency.

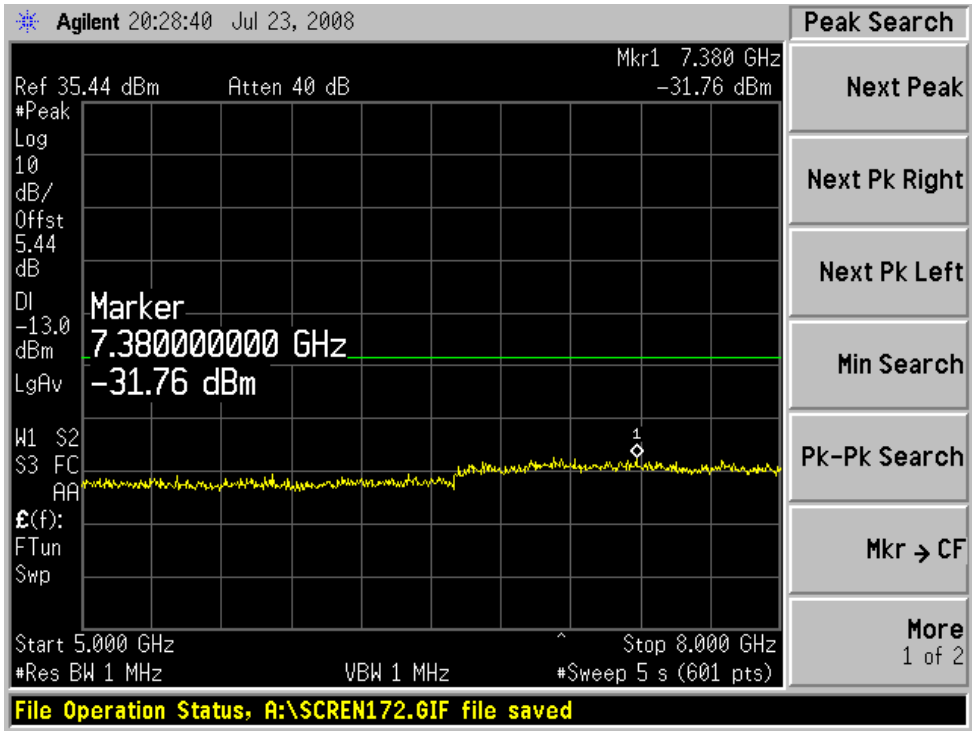


Plot 38 1GHz ~ 5GHz spurious emissions on CH Top

Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM16
Channel Bandwidth: 1MHz

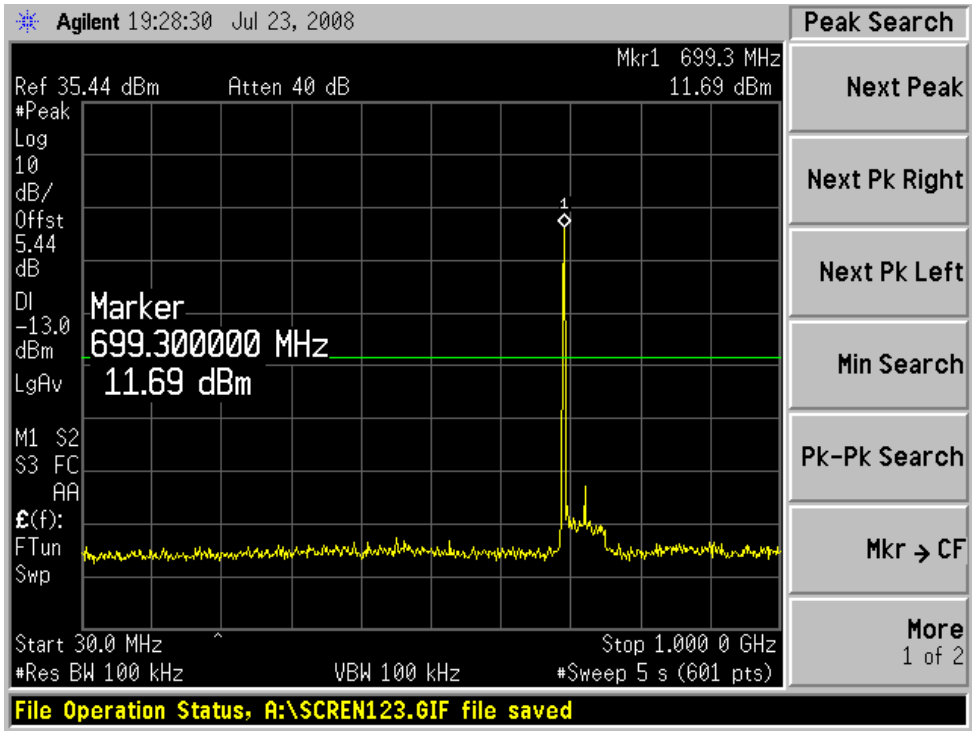


Plot 39 5GHz ~ 8GHz spurious emissions on CH Top

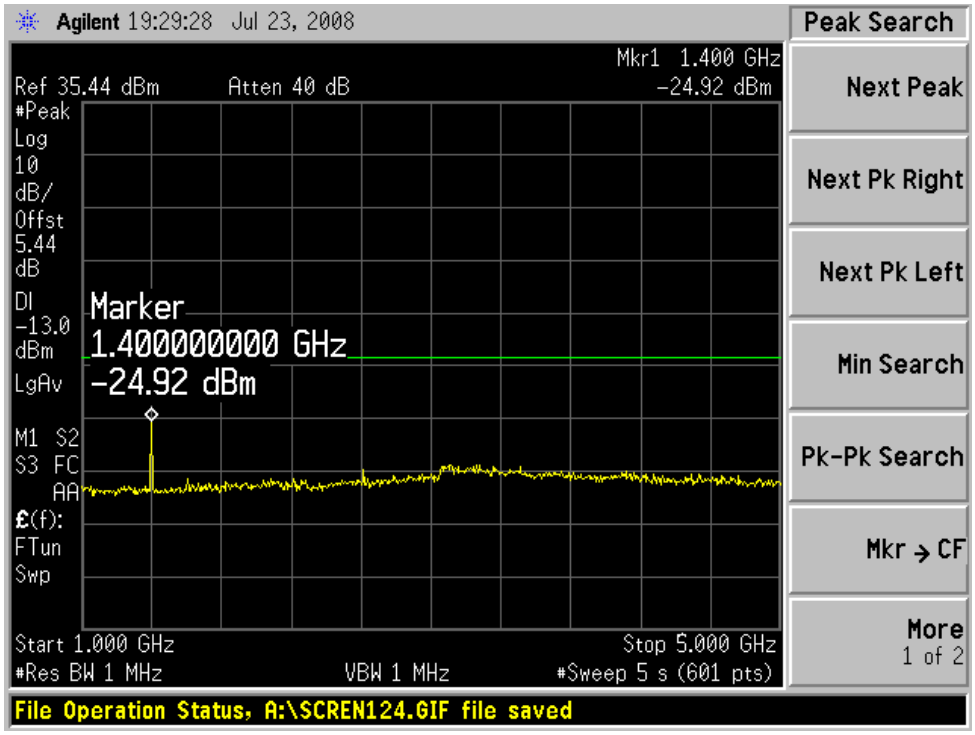
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM64
Channel Bandwidth: 1MHz



Plot 40 30MHz ~ 1GHz spurious emissions on CH Bottom
Note: The emission beyond the limit is that on operating frequency.

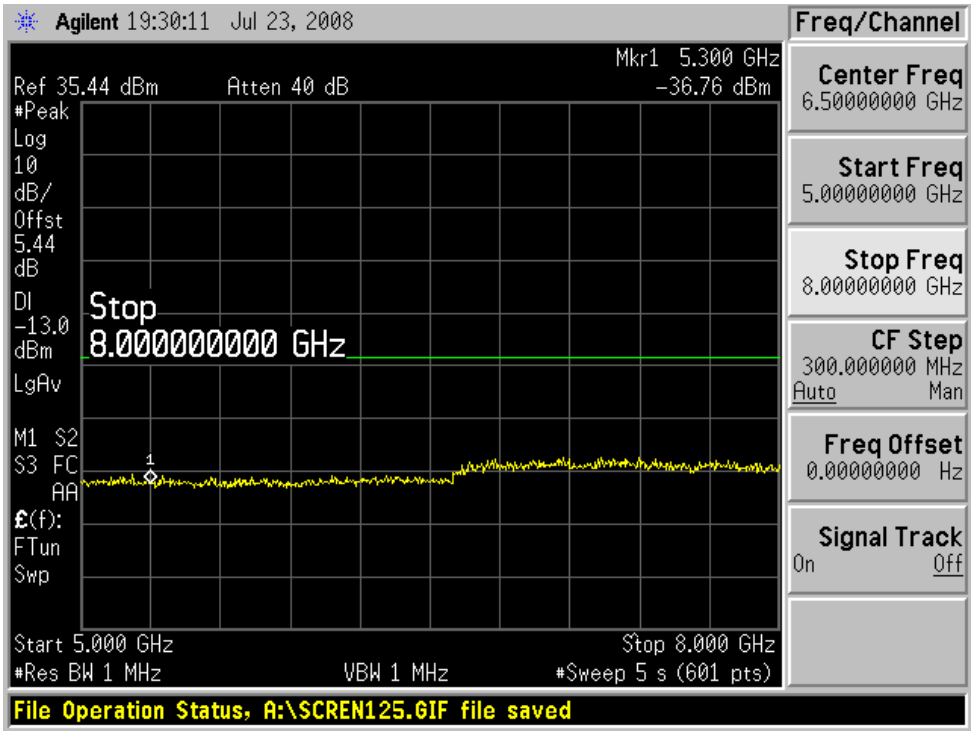


Plot 41 1GHz ~ 5GHz spurious emissions on CH Bottom

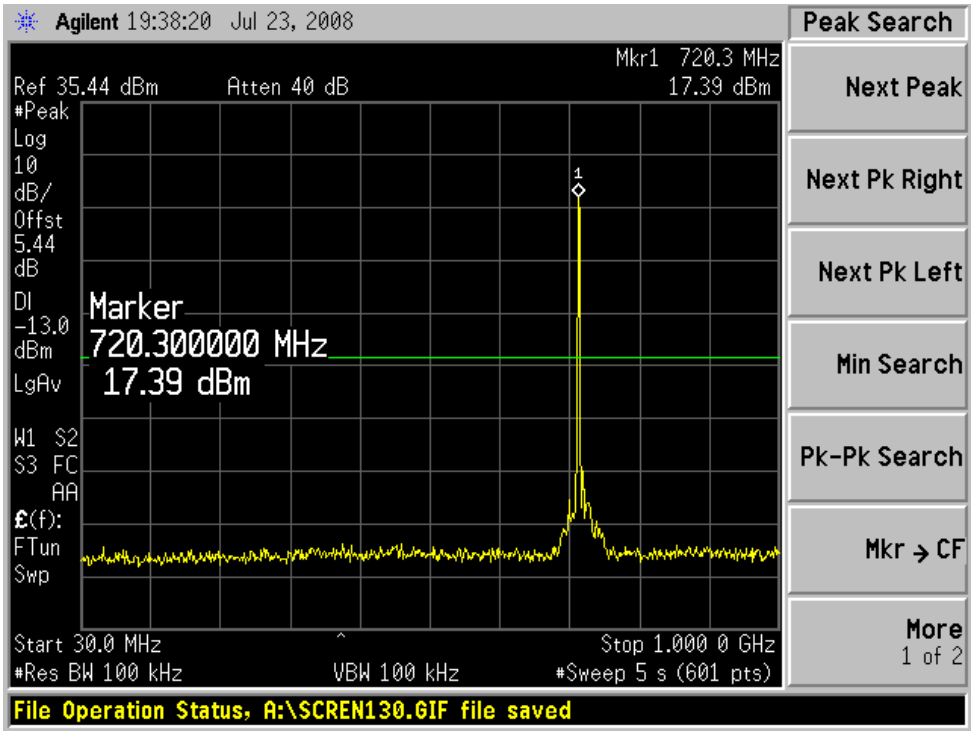
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM64
Channel Bandwidth: 1MHz



Plot 42 5GHz ~ 8GHz spurious emissions on CH Bottom

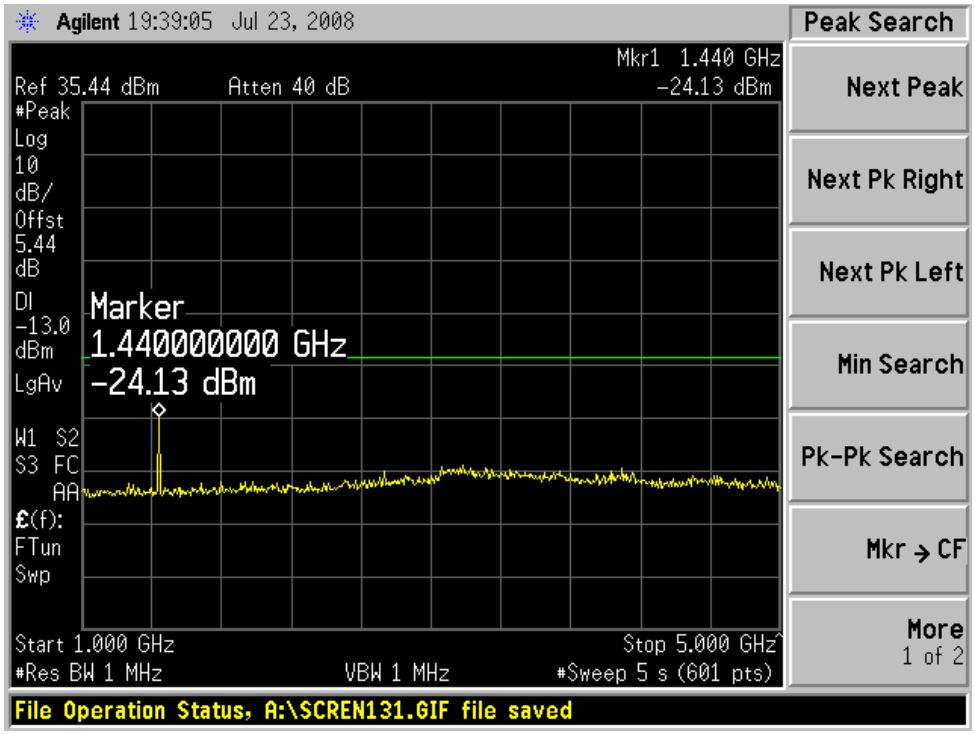


Plot 43 30MHz ~ 1GHz spurious emissions on CH Middle
Note: The emission beyond the limit is that on operating frequency.

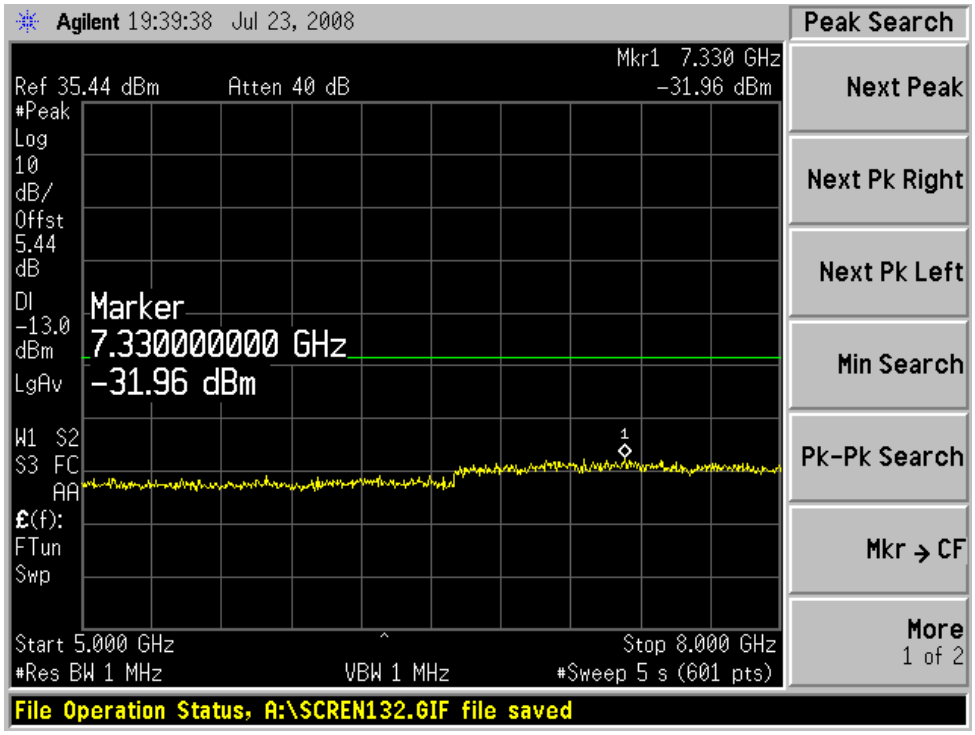
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM64
Channel Bandwidth: 1MHz



Plot 44 1GHz ~ 5GHz spurious emissions on CH Middle

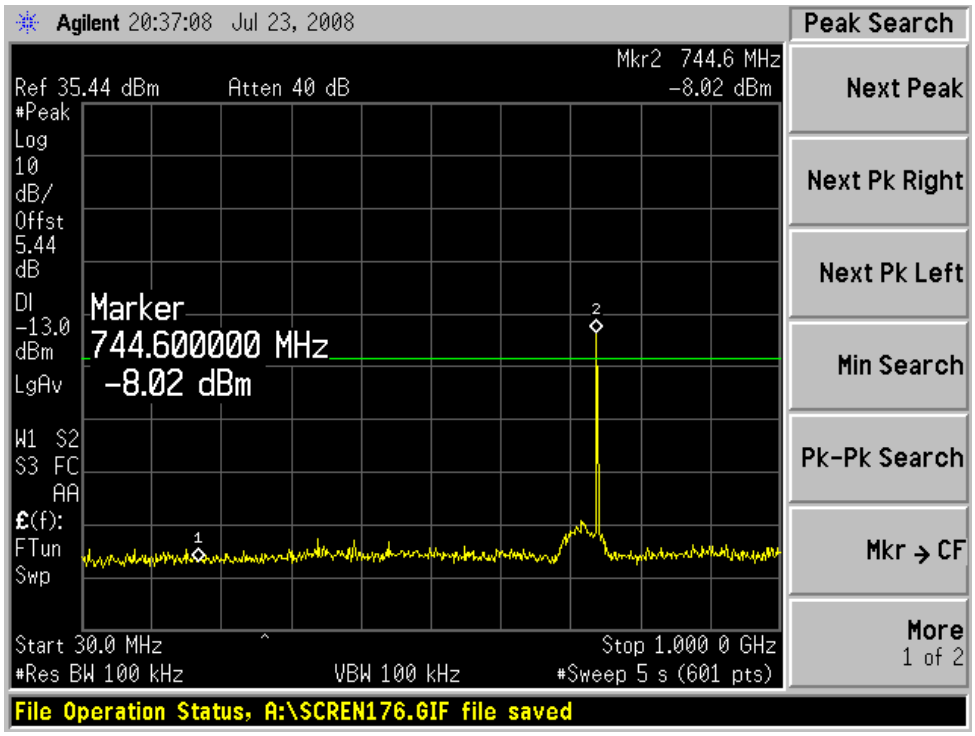


Plot 45 5GHz ~ 8GHz spurious emissions on CH Middle

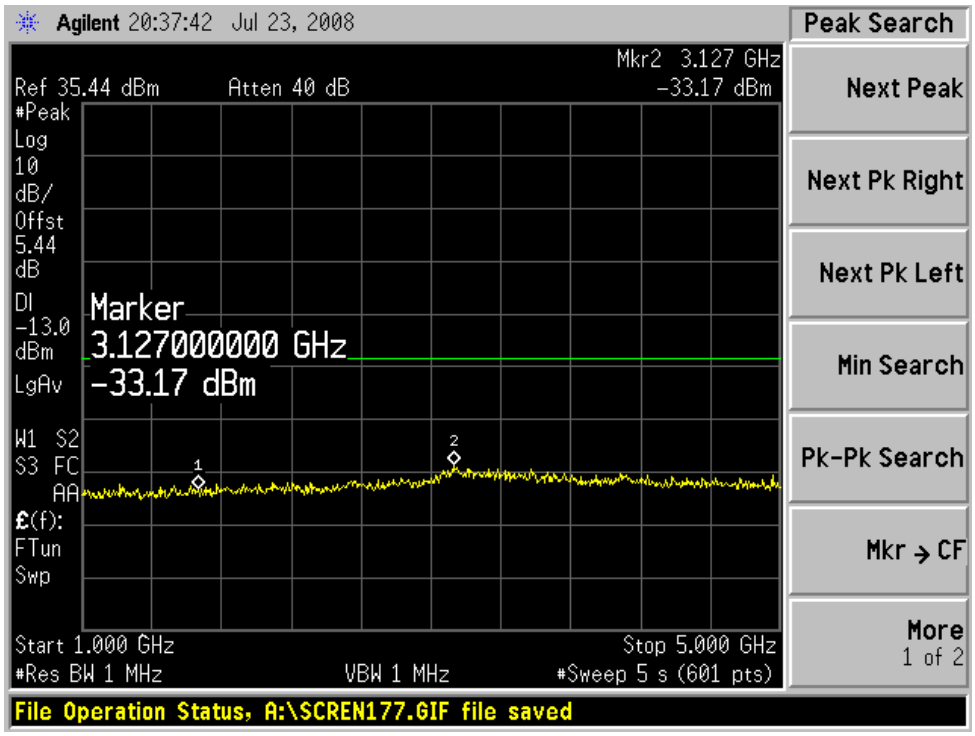
Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM64
Channel Bandwidth: 1MHz



Plot 46 30MHz ~ 1GHz spurious emissions on CH Top
Note: The emission beyond the limit is that on operating frequency.

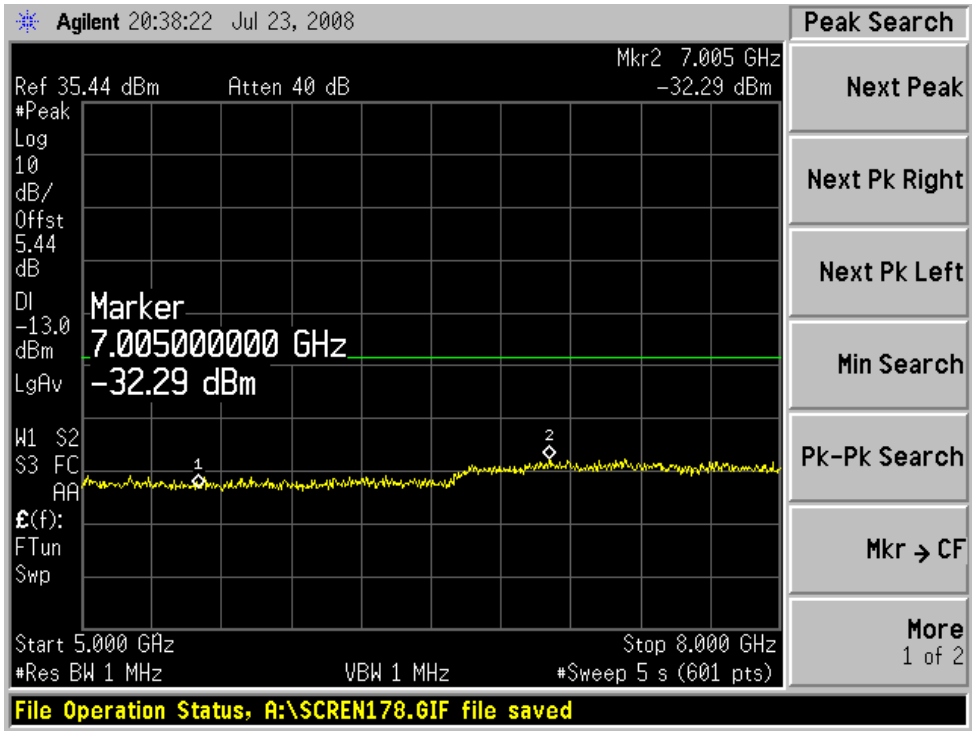


Plot 47 1GHz ~ 5GHz spurious emissions on CH Top

Product Service

4.2 Conducted Spurious Emissions-continued

Modulation Mode: QAM64
Channel Bandwidth: 1MHz

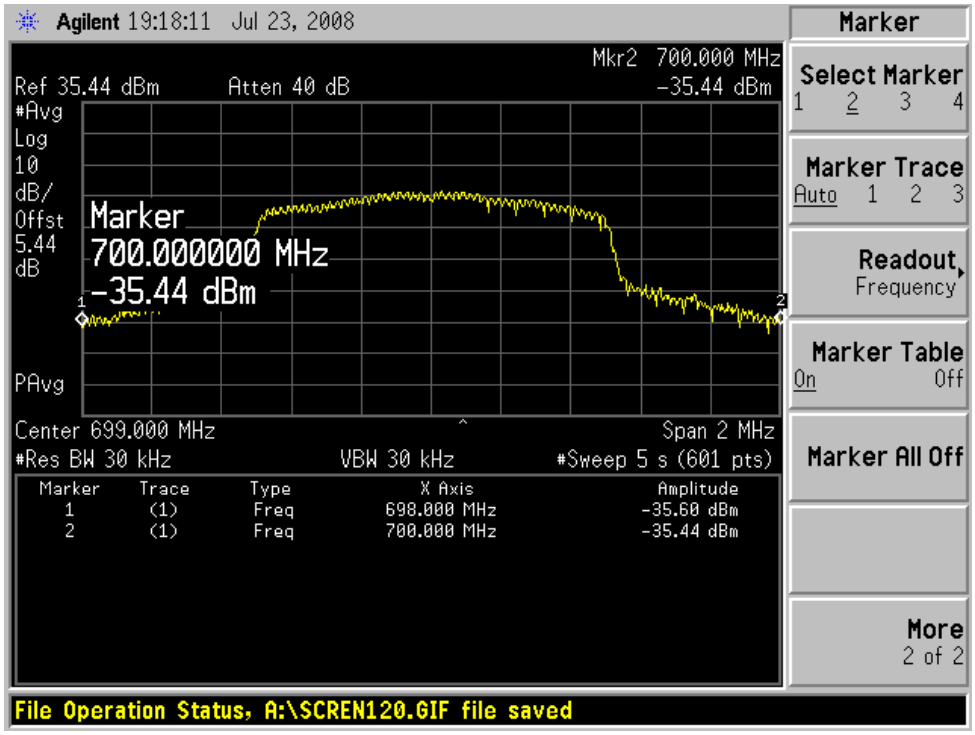


Plot 48 5GHz ~ 8GHz spurious emissions on CH Top

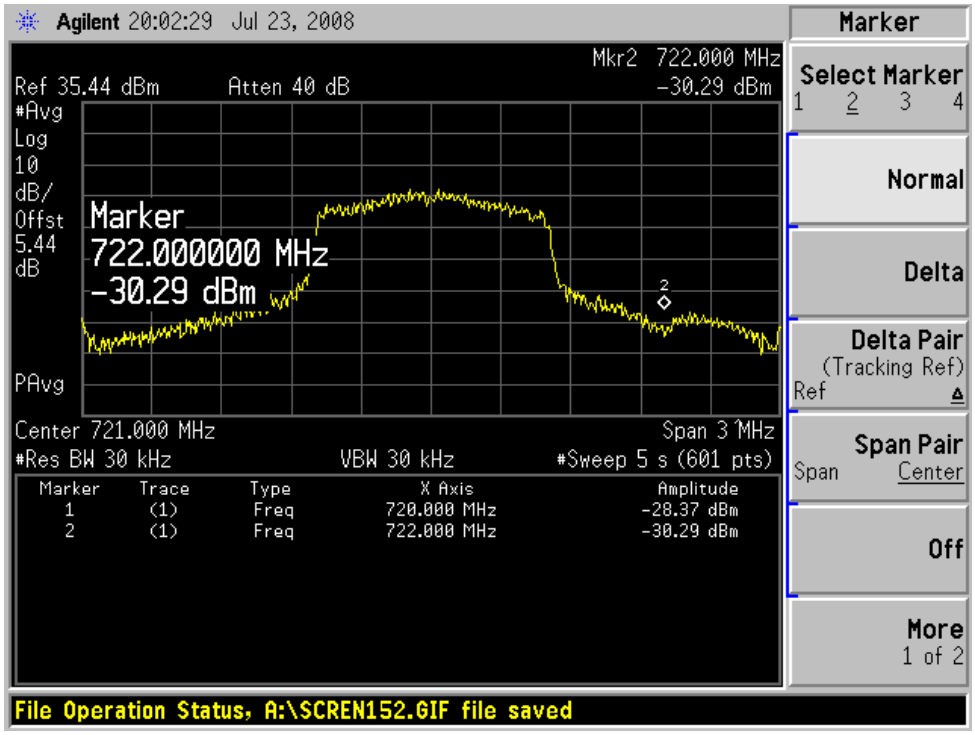
Product Service

4.3 Band Edge Compliance

Modulation Mode: QPSK
Channel Bandwidth: 1MHz



Plot 49 Occupied Bandwidth on CH Bottom

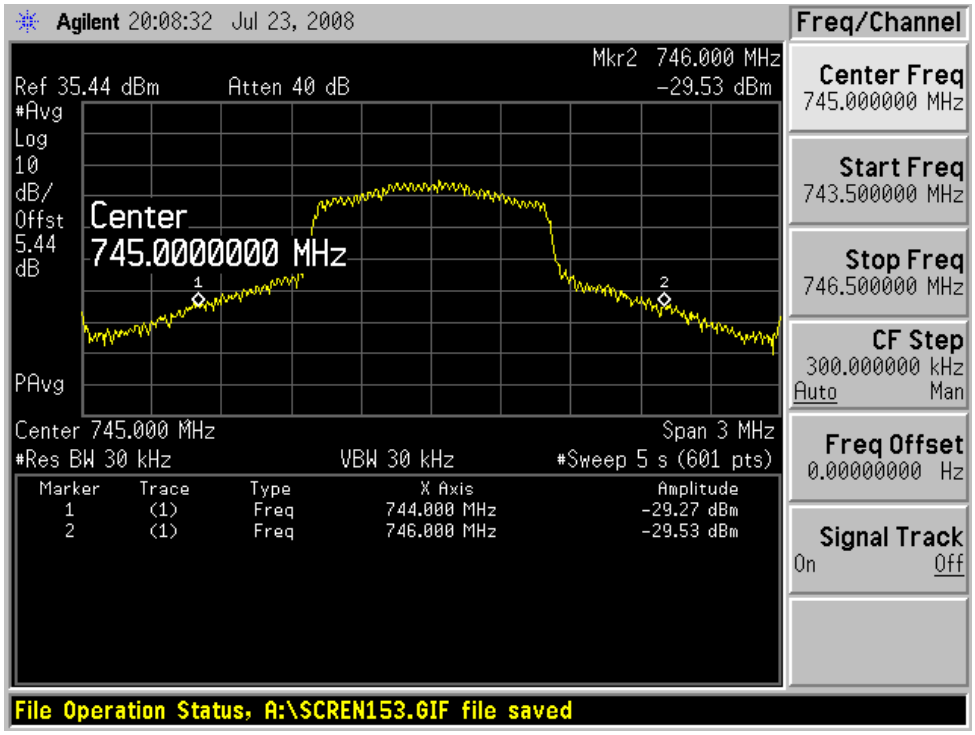


Plot 50 Occupied Bandwidth on CH Middle

Product Service

4.3 Band Edge Compliance-continued

Modulation Mode: QPSK
Channel Bandwidth: 1MHz

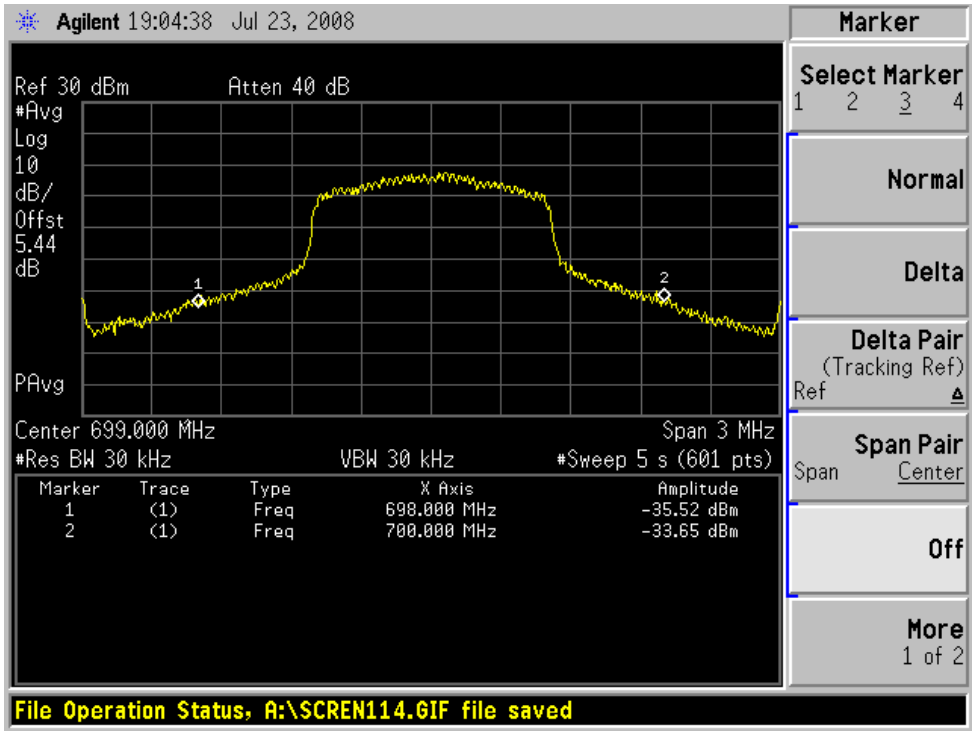


Plot 51 Occupied Bandwidth on CH Top

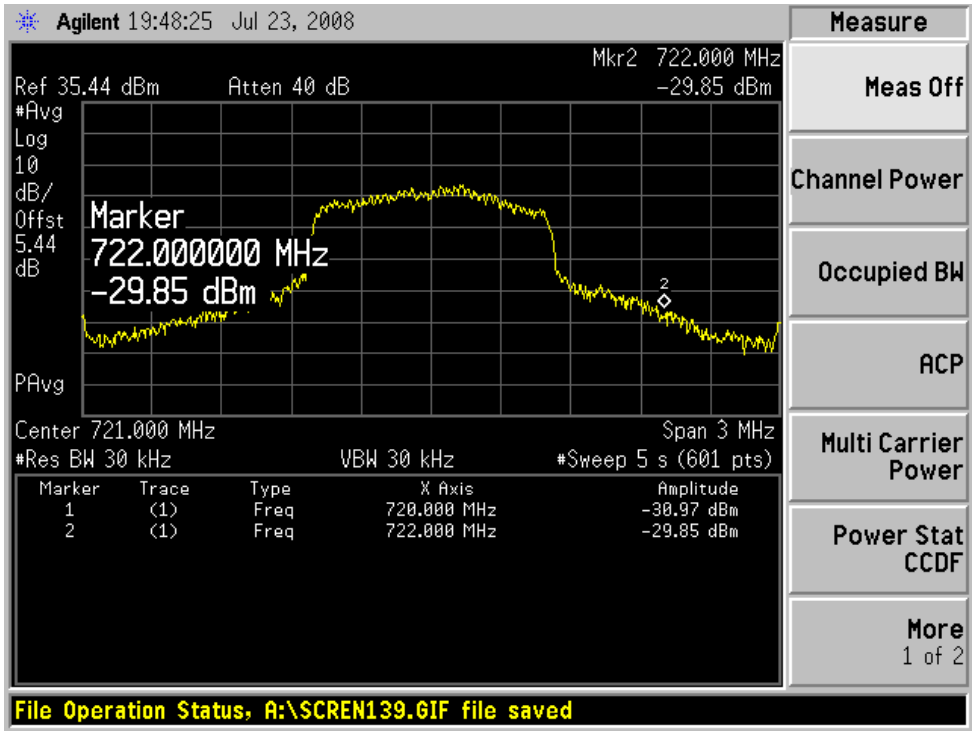
Product Service

4.3 Band Edge Compliance-continued

Modulation Mode: 8PSK
Channel Bandwidth: 1MHz



Plot 52 Occupied Bandwidth on CH Bottom

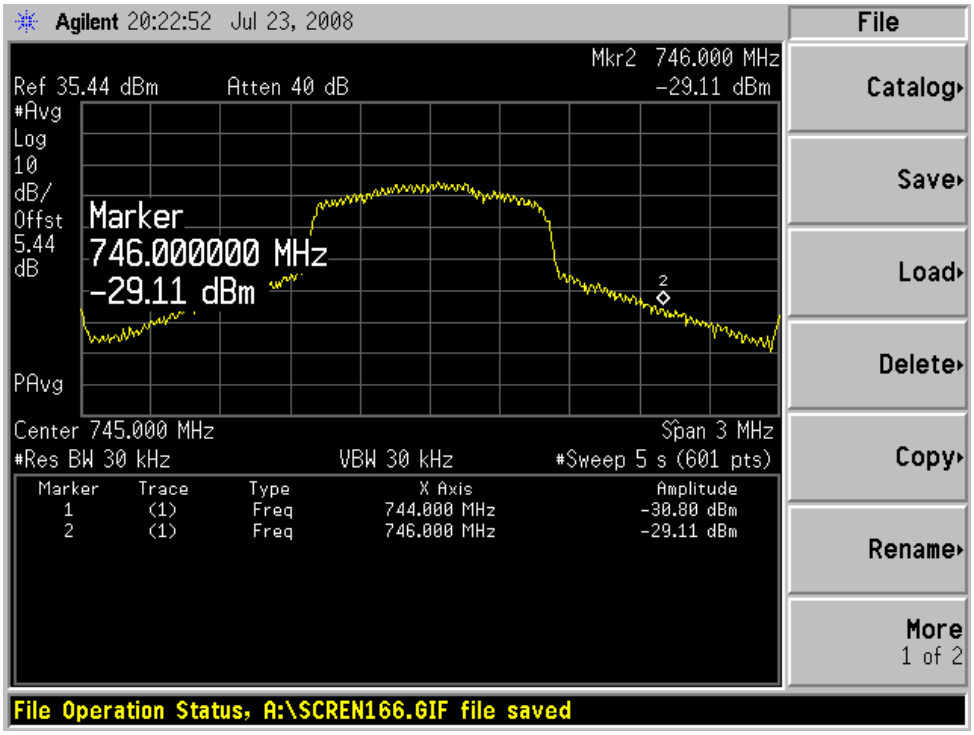


Plot 53 Occupied Bandwidth on CH Middle

Product Service

4.3 Band Edge Compliance-continued

Modulation Mode: 8PSK
Channel Bandwidth: 1MHz

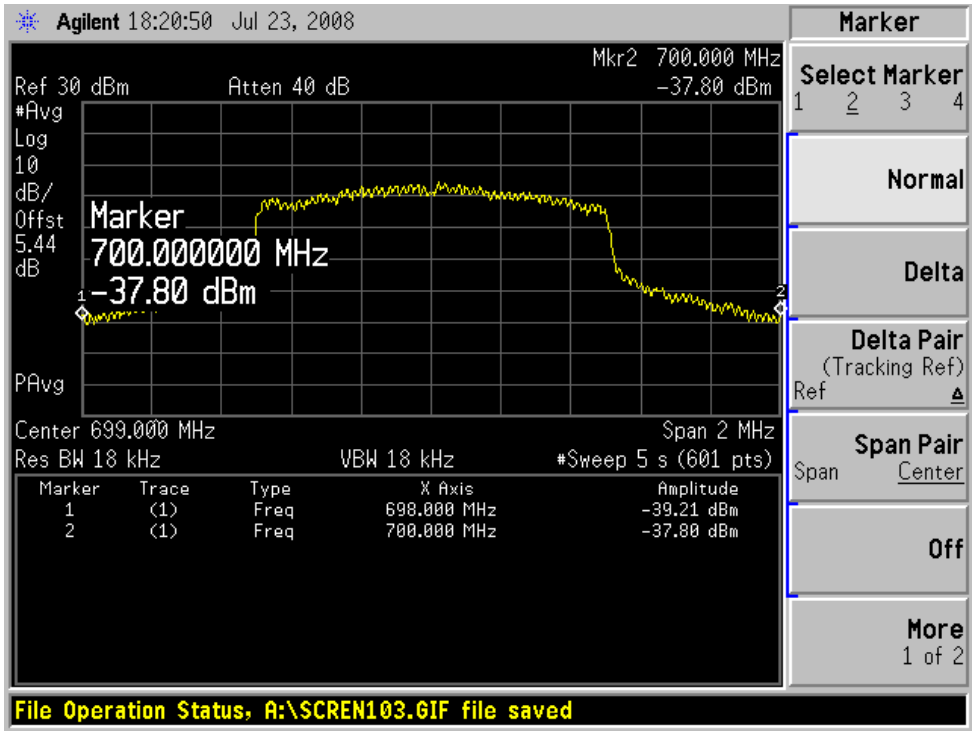


Plot 54 Occupied Bandwidth on CH Top

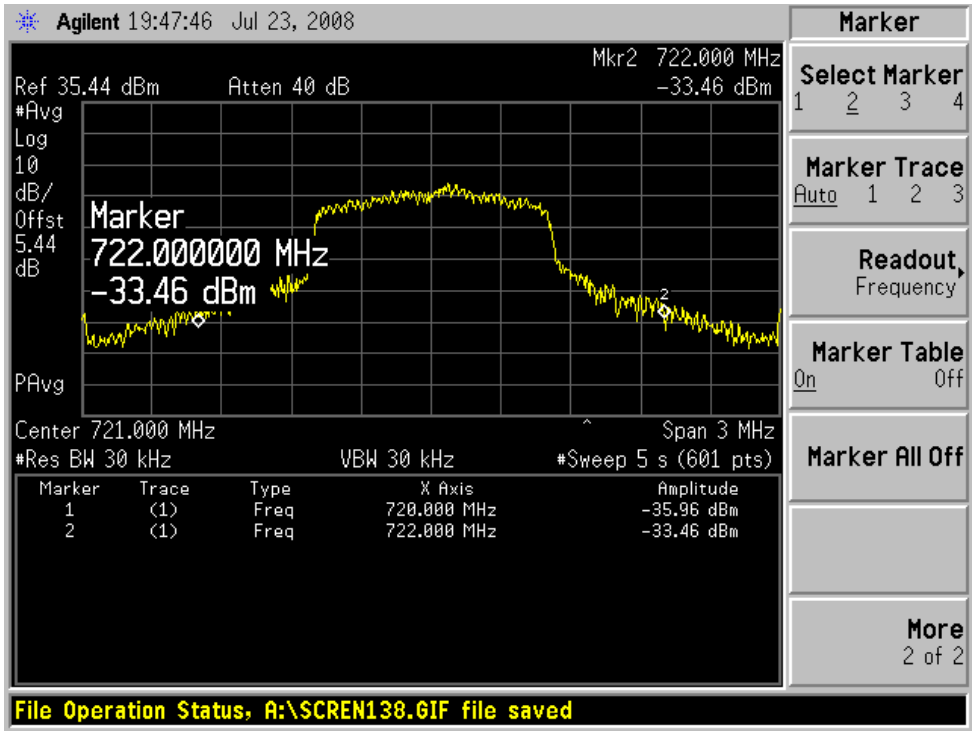
Product Service

4.3 Band Edge Compliance-continued

Modulation Mode: QAM16
Channel Bandwidth: 1MHz



Plot 55 Occupied Bandwidth on CH Bottom

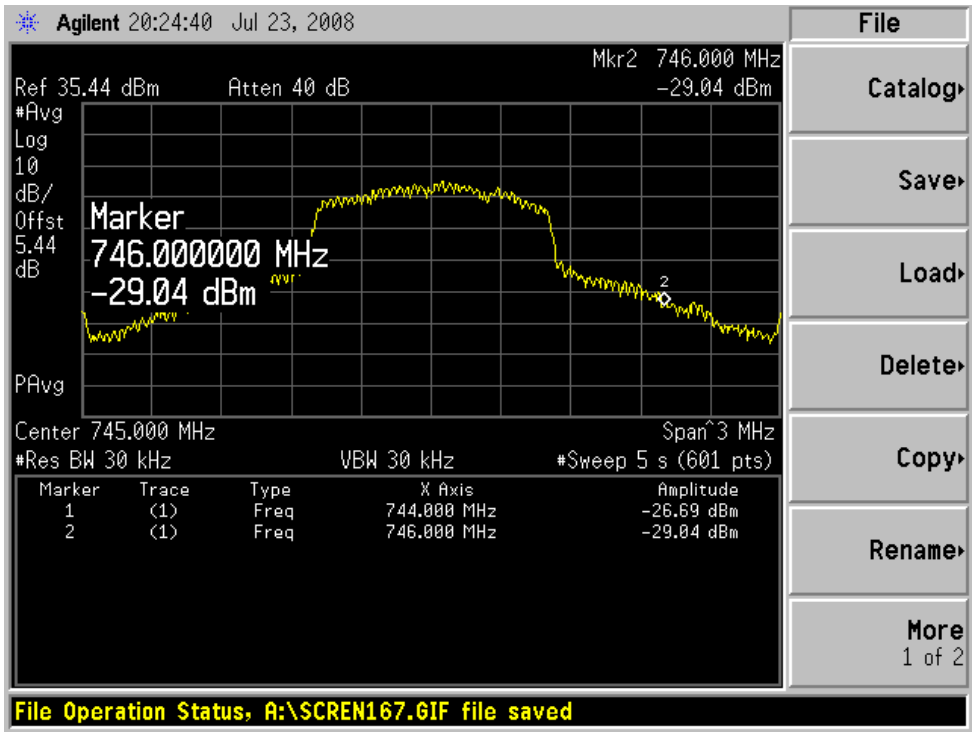


Plot 56 Occupied Bandwidth on CH Middle

Product Service

4.3 Band Edge Compliance-continued

Modulation Mode: QAM16
Channel Bandwidth: 1MHz

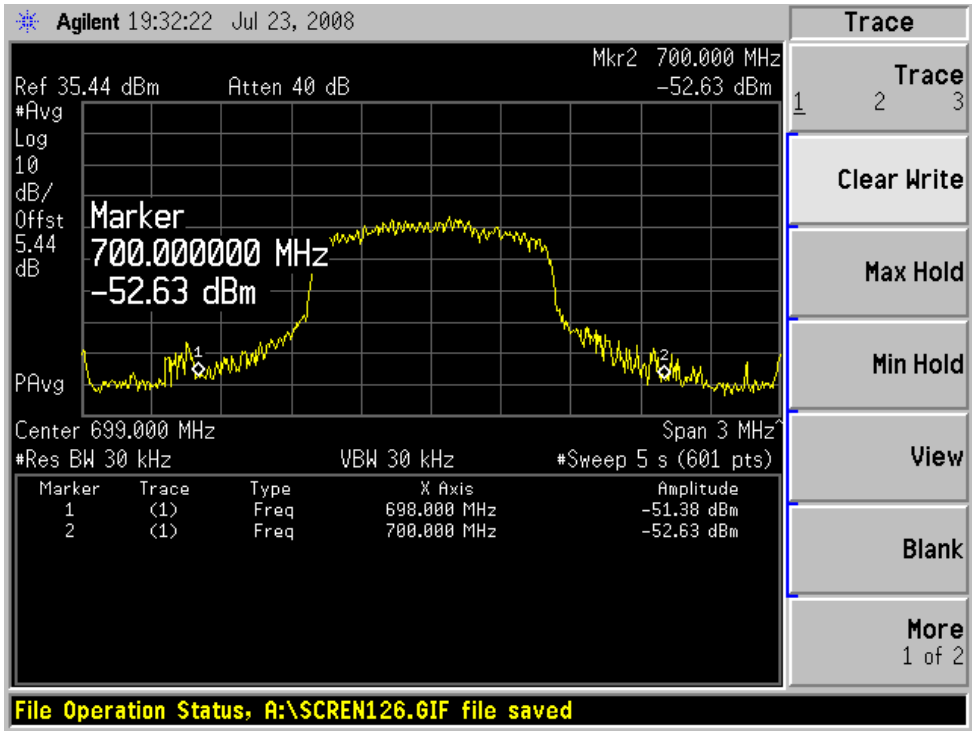


Plot 57 Occupied Bandwidth on CH Top

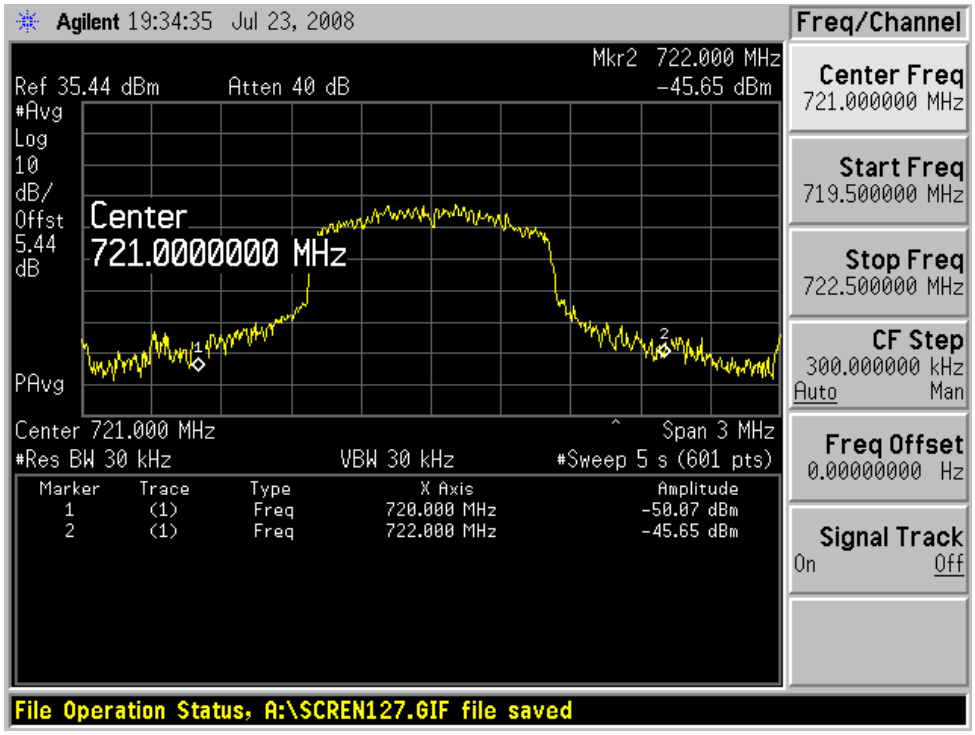
Product Service

4.3 Band Edge Compliance-continued

Modulation Mode: QAM64
Channel Bandwidth: 1MHz



Plot 58 Occupied Bandwidth on CH Bottom

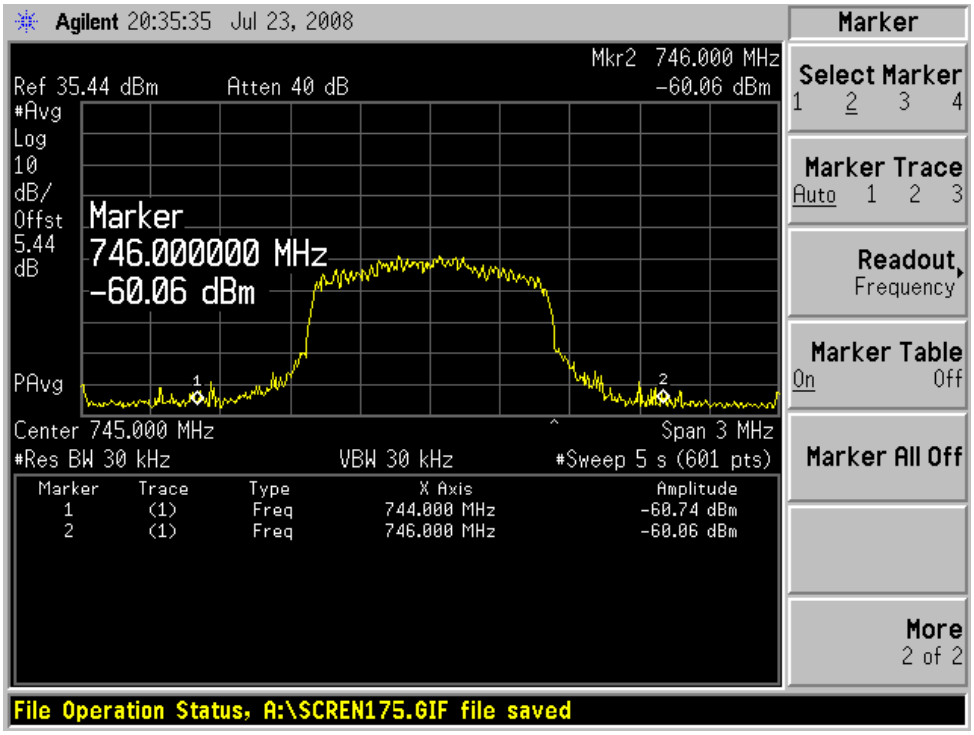


Plot 59 Occupied Bandwidth on CH Middle

Product Service

4.3 Band Edge Compliance-continued

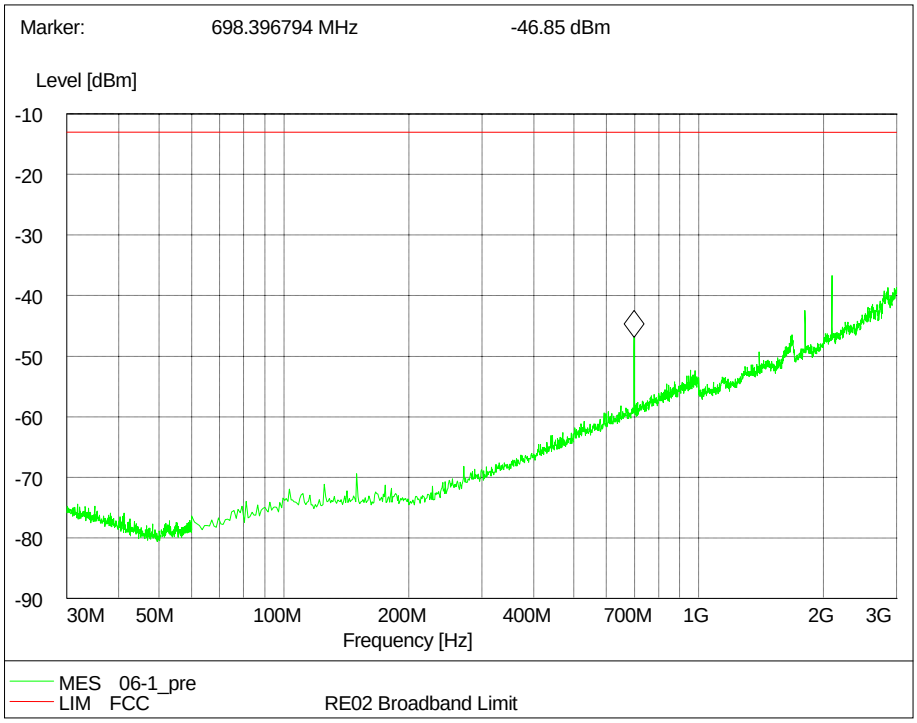
Modulation Mode: QAM64
Channel Bandwidth: 1MHz



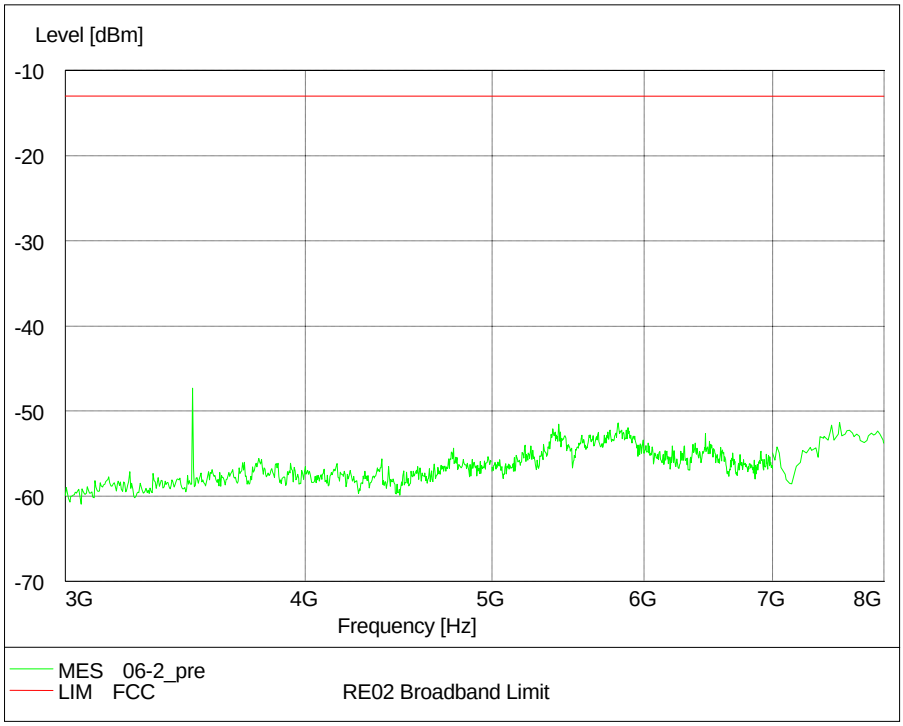
Plot 60 Occupied Bandwidth on CH Top

4.4 Radiated Spurious Emissions

Modulation Mode: QPSK
Channel Bandwidth: 1MHz



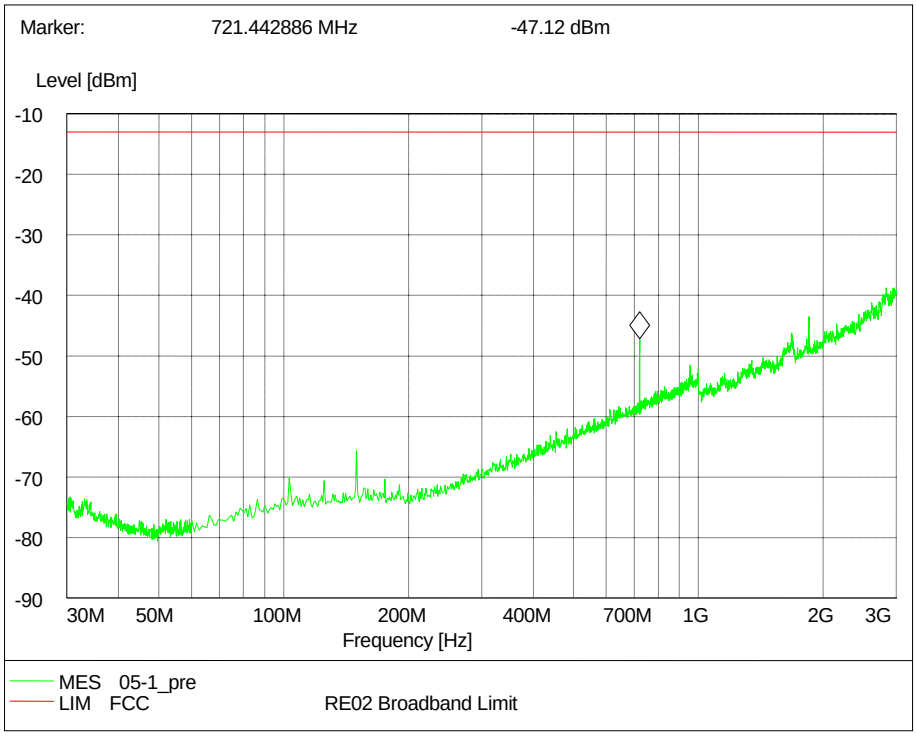
Plot 61 Radiated Spurious Emissions on CH Bottom 30MHz–3GHz



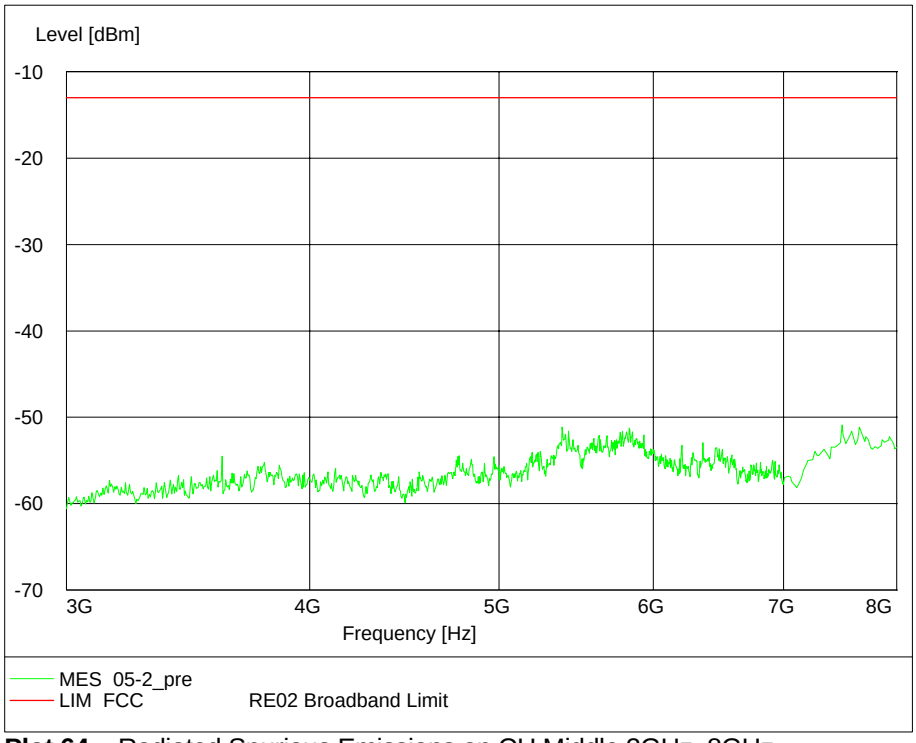
Plot 62 Radiated Spurious Emissions on CH Bottom 3GHz–8GHz

4.4 Radiated Spurious Emissions-continued

Modulation Mode: QPSK
Channel Bandwidth: 1MHz



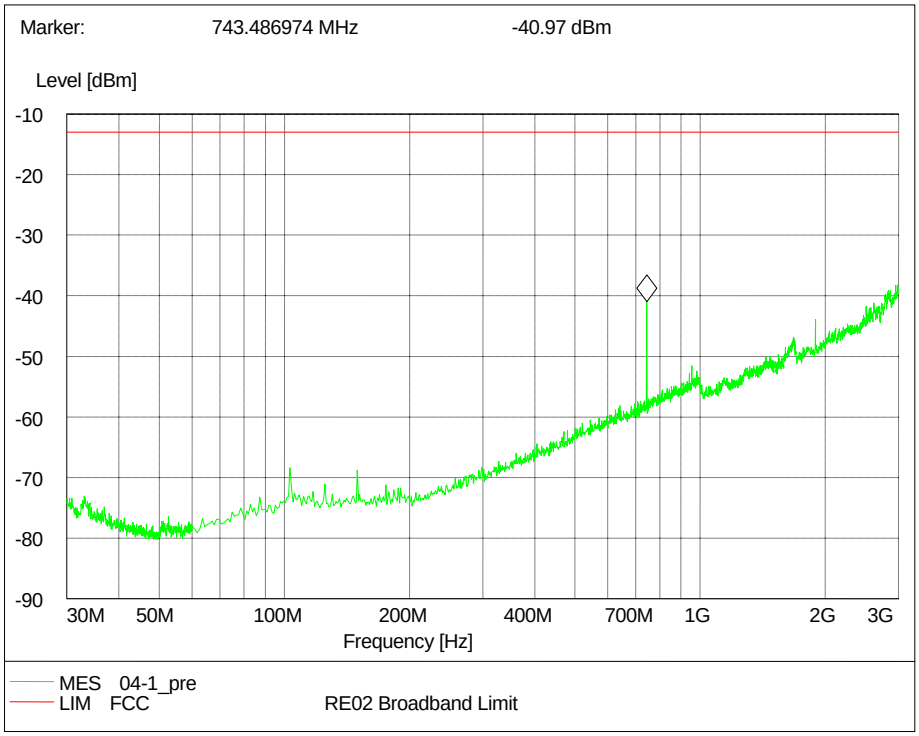
Plot 63 Radiated Spurious Emissions on CH Middle 30MHz–3GHz



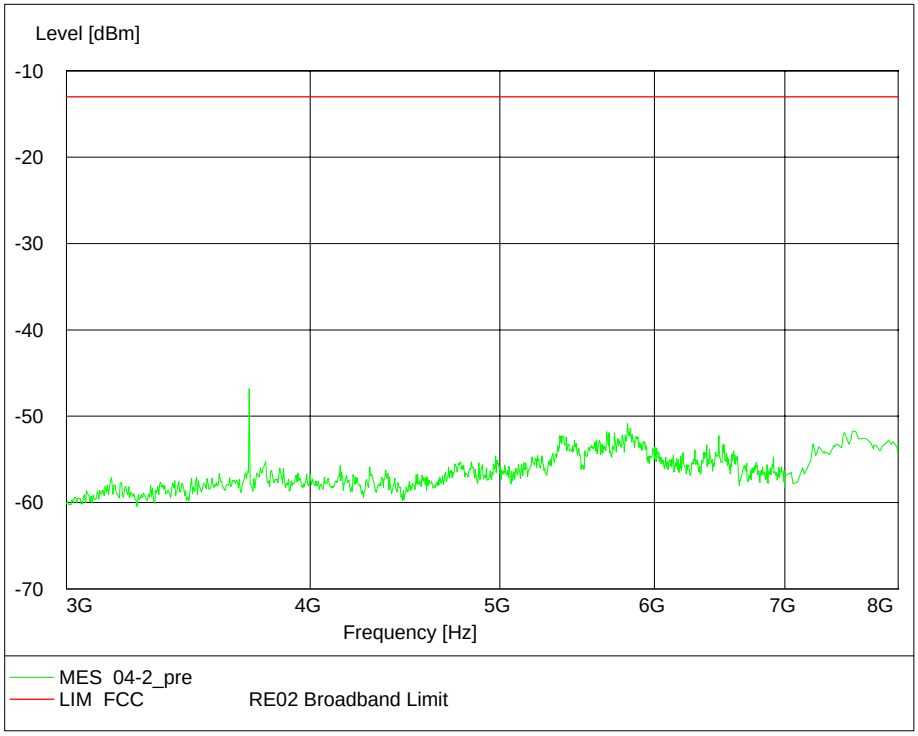
Plot 64 Radiated Spurious Emissions on CH Middle 3GHz–8GHz

4.4 Radiated Spurious Emissions-continued

Modulation Mode: QPSK
Channel Bandwidth: 1MHz

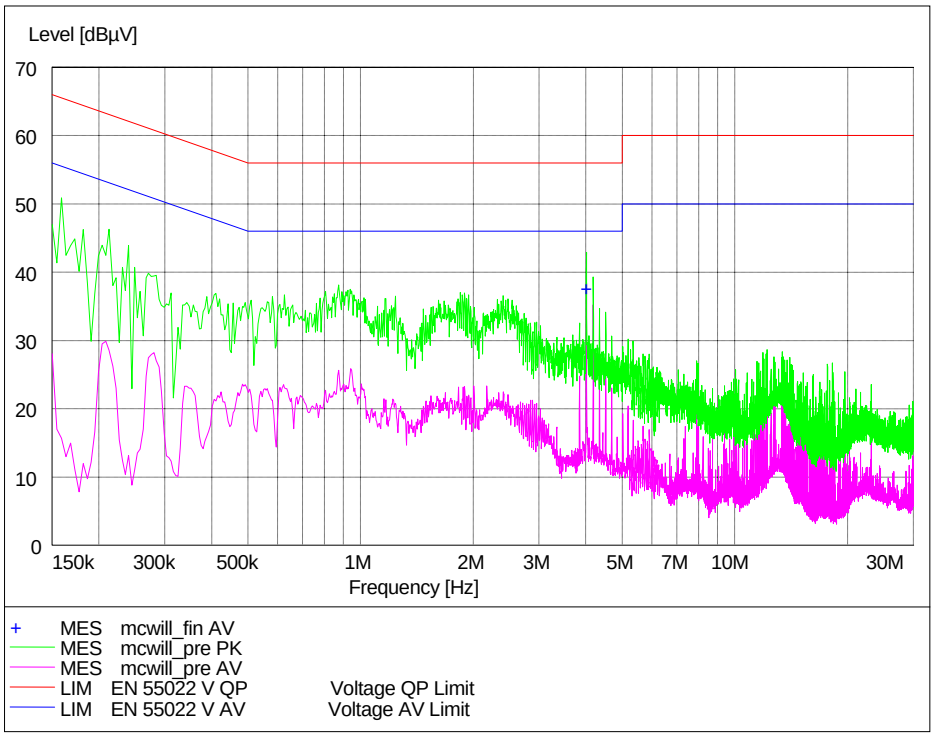


Plot 65 Radiated Spurious Emissions on CH Top 30MHz–3GHz

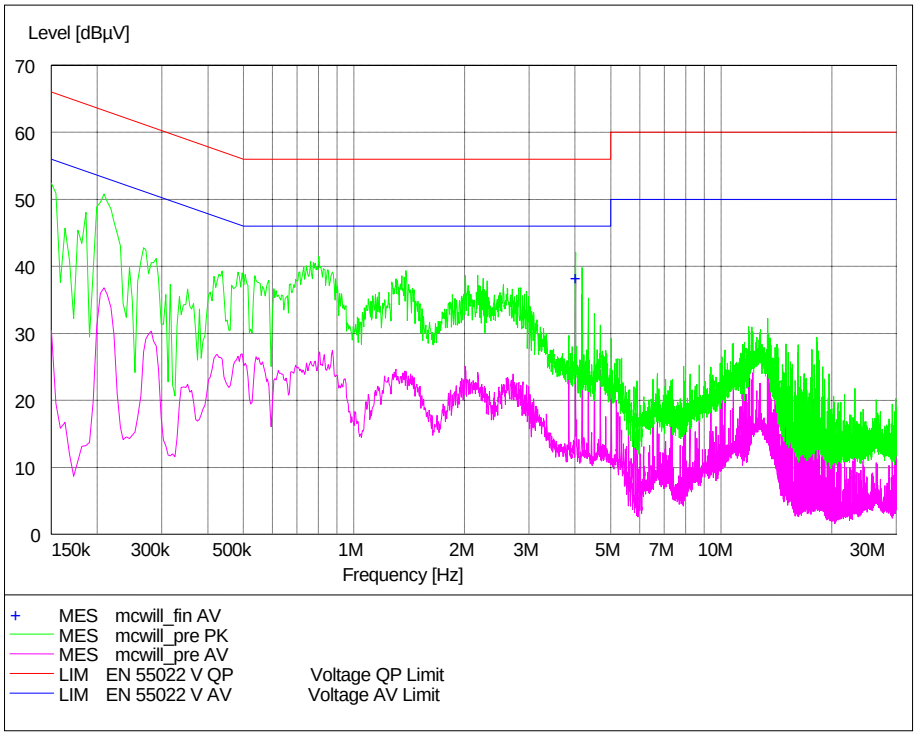


Plot 66 Radiated Spurious Emissions on CH Top 3GHz–8GHz

4.5 Power Line Conducted Emissions

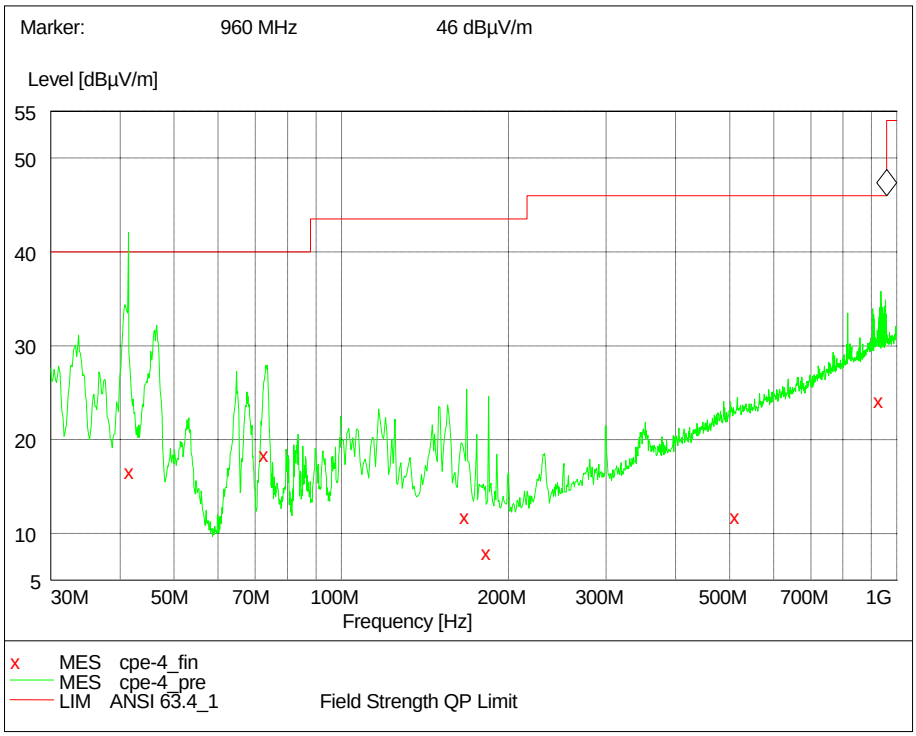


Plot 67 Power Line Conducted Emissions – L Line

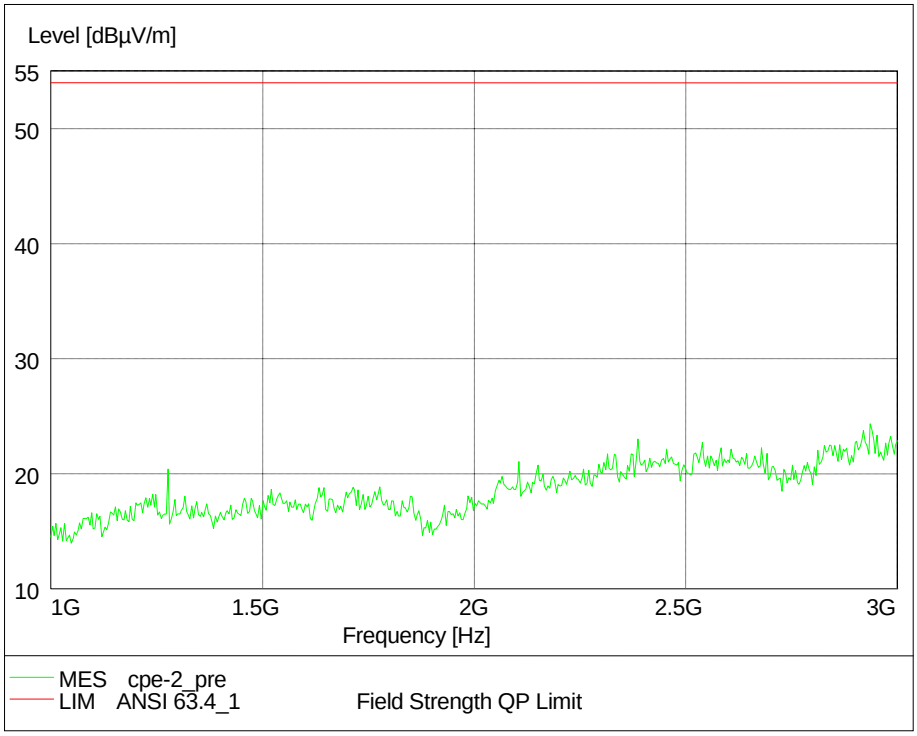


Plot 68 Power Line Conducted Emissions – N Line

4.6 Enclosure Radiated Emissions

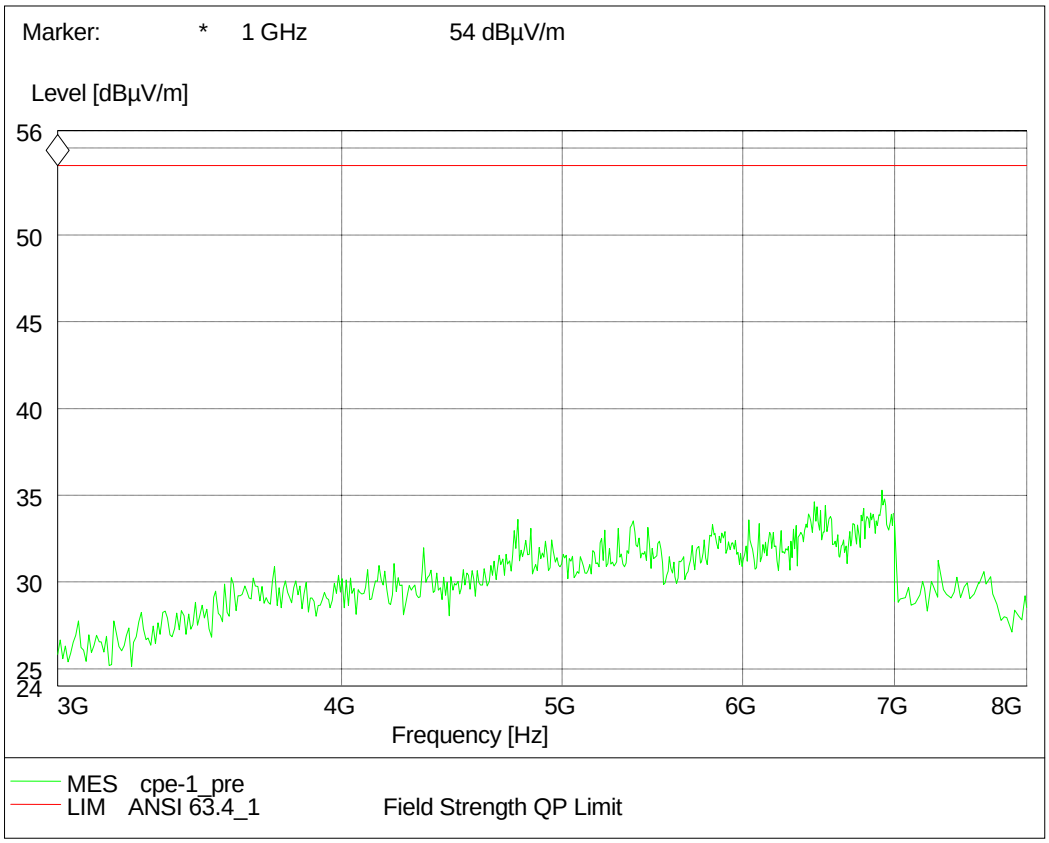


Plot 69 Radiated Emissions 30MHz–1GHz



Plot 70 Radiated Emissions 1GHz – 3GHz

4.6 Enclosure Radiated Emissions-continued



Plot 71 Radiated Emissions 3GHz – 8GHz

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SECTION 5

DISCLAIMERS AND COPYRIGHT

FCC CRF 47 Part 2: 2007 & Part 15: 2008 & Part 27: 2007 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

5.1 DISCLAIMER AND COPYRIGHT

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TUV Product Service Ltd Beijing Branch

APPENDIX

Appendix1 test setup