DIGITAL EMC CO., LTD.

683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080
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CERTIFICATIO OF COMPLIANCE

SEOWON INTECH CO., LTD.
689-47, Kumjung-Dong, Kunpo-City, Kyunggi-Do,
435-862, Korea

Dates of Tests: December 9 ~ 16, 2009
Test Report S/N: DR50110912J
Test Site : DIGITAL EMC CO., LTD.

FCC ID. **V7MSWC-5100W**

APPLICANT **SEOWON INTECH CO., LTD.**

Classification	:	**Licensed Non-Broadcast Station Transmitter(TNB)**
FCC Rule Part(s)	:	**§27(M), §2**
EUT Type	:	**WIMAX CPE With 802.11b/g WLAN**
Model name	:	**SWC-5100W**
Serial number	:	**Identical prototype**
TX Frequency Range	:	**2498.5 ~ 2687.5MHz (5MHz OBW)**
		2501.0 ~ 2685.0MHz (10MHz OBW)
RX Frequency Range	:	**2498.5 ~ 2687.5MHz (5MHz OBW)**
		2501.0 ~ 2685.0MHz (10MHz OBW)
Max. RF Output Power	:	**OBW: 5MHz – 0.443W Conducted (26.46dBm)**
		OBW: 10MHz – 0.474W Conducted(26.76dBm)
Emission Designators:	:	**4M71G7D(QPSK)**
		4M70W7D(16QAM)
		9M36G7D(QPSK)
		9M38W7D(16QAM)
Date of Issue	:	**December 17, 2009**

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◈ MEASUREMENT REPORT

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MEASUREMENT REPORT

1.1 Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

§2.1033 General Information

Applicant: **SEOWON INTECH CO., LTD.**
Address: 689-47, Kumjung-Dong, Kunpo-City, Kyunggi-Do, 435-862, Korea
Attention: CHOUN-SUP, KIM

- FCC ID: V7MSWC-5100W
- Quantity: Quantity production is planned
- Emission Designators: 4M71G7D(QPSK), 4M70W7D(16QAM)
  9M36G7D(QPSK), 9M38W7D(16QAM)
- Tx Freq. Range: 2498.5 ~2687.5 MHz (5MHz OBW)
  2501.0 ~2685.0 MHz (10MHz OBW)
- Rx Freq. Range: 2498.5 ~2687.5 MHz (5MHz OBW)
  2501.0 ~2685.0 MHz (10MHz OBW)
- Max. Power Rating: OBW: 5MHz – 0.443W Conducted (26.46dBm)
  OBW: 10MHz – 0.474W Conducted(26.76dBm)
- FCC Classification(s): Licensed Non-Broadcast Station Transmitter(TNB)
- Equipment (EUT) Type: WIMAX CPE With 802.11b/g WLAN
- Modulation(s): QPSK, 16QAM
- Data rates: QPSK1/2, QPSK3/4, 16QAM1/2, 16QAM3/4
- Antenna Type Dipole Antenna
- FCC Rule Part(s): §27(M), §2
- Dates of Tests: December 9 ~ 16, 2009
- Place of Tests: DIGITAL EMC
- Test Report S/N: DR50110912J

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2.1. GENERAL INFORMATION

This report contains the result of tests performed by:

DIGITAL EMC CO., LTD.
Address: 683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080
http://www.digitalemc.com E-mail : harveysung@digitalemc.com
Tel: +82-31-321-2664 Fax: +82-31-321-1664

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competent of calibration and testing laboratory".

Tested by: Engineer

December 17, 2009	Won-Jung LEE	
Data	Name	Signature

Reviewed by: Technical Director

December 17, 2009	Harvey Sung	
Data	Name	Signature

Ordering party:

Company name	:	SEOWON INTECH CO., LTD.
Address	:	689-47, Kumjung-Dong
Zipcode	:	435-862
City/town	:	Kunpo-City, Kyunggi-Do
Country	:	Korea
Date of order	:	November 30, 2009

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3.1 DESCRIPTION OF TESTS

3.1.1 Occupied Bandwidth Emission Limits

- Part §2.1049, §27.53.(m)(2)(V), (6)

(a) For fixed and temporary fixed digital stations, the attenuation shall be not less than 43 + 10 log (P) dB, unless a documented interference complaint is received from an adjacent channel licensee.

(b) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

3.1.2 Spurious and Harmonic Emissions at Antenna Terminal

- Part§2.1051, §27.53.(m)(2)(V), (6)

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

3.1.3 Radiation Spurious and Harmonic Emissions

- Part §2.1053, §27.53.(m)(2)(V), (6)

Spurious and harmonic emissions between the lowest frequency generated in this device and up to 10^{th} harmonic of the highest generated in this device are measured at 3-meter OATS. The equipment under test is placed on a wooden turntable located at 3-meters from the receive antenna. The receive antenna height and turntable rotations are adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole is substituted in place of the EUT. This dipole antenna is driven by a vector signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1GHz, the above procedure is repeated using the horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

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3.1 DESCRIPTION OF TESTS (Continued…)

3.1.4 Frequency Stability/Temperature Variation.

- Part §2.1055, §27.54

The frequency stability of the transmitter is measured by:

a) **Temperature** : The temperature is varied from -30°C to + 50°C using an environmental chamber with 10°C increments.
b) **Primary Supply Voltage** : The primary supply voltage is varied from 85% to 115% of the nominal voltage at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification – The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature. (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

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3.2 SUMMARY OF TESTS

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
I. Transmitter Test Items				
2.1049 27.53(m)(6)	Occupied Bandwidth	N/A	Conducted	C note 2
2.1051 27.53(m)(2)(V),(6)	Band Edge	< 43+ $10\log_{10}(P)$		C note 2
2.1051 27.53(m)(2)(V),(6)	Conducted Spurious Emissions	< 43+ $10\log_{10}(P)$		C note 2
2.1046 27.50(h)(2)	Transmitter Output Power	< 2 Watts max.		C
2.1055 27.54	Frequency Stability	Fundamental emissions must stay within the authorized bands of operation.		C note 2
2.1051 27.53(m)(2)(V),(6)	Radiated Spurious Emissions	< 43+ $10\log_{10}(P)$ for all out-of-band emissions	Radiated	C note 2
II. Additional Test Results for JBP portion				
15.107	AC Conducted Emissions	< FCC 15.107 limits	Radiated	C note 3
15.109	General Field Strength Limits	< FCC 15.109 limits	Line Conducted	C note 3

Note 1: C=Comply NC=Not Comply NT=Not Tested NA=Not Applicable
Note 2: According to the transmitter output power measurement data, basically these test were performed with the AMC zone format and QPSK 1/2, 16QAM 1/2.
Note 3: The JBP (Computing device peripheral) portion of this device was tested and approved by FCC DOC Procedure.

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4.1 TEST DATA

4.1.1 Transmitter Output Power

A vector signal generator was used to supply the WiMAX signal sources to a EUT and an external trigger source to a spectrum analyzer. The trigger was set in such a way that the analyzer recorded power measurements only during the times in which the EUT was transmitting. The WiMAX conducted powers are reported below as well as a test setup diagram.

A PC(or Notebook) controlled EUT to transmit rated output power under appropriate transmission mode and specific frequency.

- Measurement data

Bandwidth	Zone Format	Frequency (MHz)	QPSK 1/2 (dBm)	QPSK 3/4 (dBm)	16QAM 1/2 (dBm)	16QAM 3/4 (dBm)
5MHz	PUSC	2498.5	25.13	24.98	24.92	24.85
		2593.0	25.62	25.55	25.60	25.58
		2687.5	25.83	25.81	25.82	25.76
	AMC	2498.5	**25.64**	25.58	**25.55**	25.33
		2593.0	**26.39**	26.23	**26.35**	26.28
		2687.5	***26.46***	26.43	**26.42**	26.33
10MHz	PUSC	2501.0	25.47	25.37	25.55	25.38
		2593.0	25.79	25.73	25.81	25.71
		2685.0	26.03	26.01	26.08	25.95
	AMC	2501.0	**25.93**	25.82	**25.92**	25.85
		2593.0	**26.23**	26.20	**26.42**	26.17
		2685.0	**26.60**	26.58	***26.76***	26.60

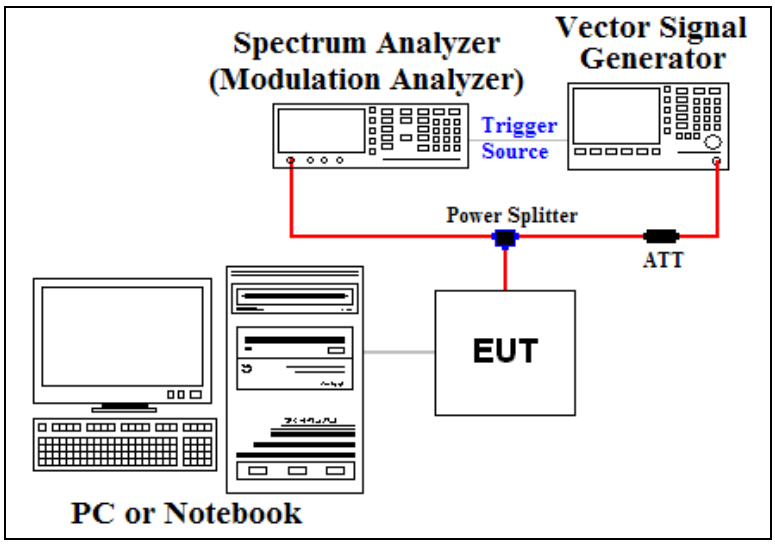

Figure1. Test Setup Diagram of WiMAX Coducted Power

4.1 TEST DATA (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	QPSK 1/2	
BANDWIDTH	:	5	MHz
OPERATING FREQUENCY	:	2498.5	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
4997.0	V	-31.22	10.92	-20.30	7.30
7495.5	V	-29.60	11.50	-18.10	5.10
9994.0	V	-40.95	11.86	-29.09	16.09
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	16QAM 1/2	
BANDWIDTH	:	5	MHz
OPERATING FREQUENCY	:	2498.5	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
4997.0	V	-30.78	10.92	-19.86	6.86
7495.5	V	-29.03	11.50	-17.53	4.53
9994.0	V	-40.67	11.86	-28.81	15.81
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	QPSK 1/2	
BANDWIDTH	:	5	MHz
OPERATING FREQUENCY	:	2593.0	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5186.0	V	-31.61	10.99	-20.62	7.62
7779.0	V	-30.60	11.36	-19.24	6.24
10372.0	V	-32.06	12.09	-19.97	6.97
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	16QAM 1/2	
BANDWIDTH	:	5	MHz
OPERATING FREQUENCY	:	2593.0	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5186.0	V	-31.05	10.99	-20.06	7.06
7779.0	V	-29.91	11.36	-18.55	5.55
10372.0	V	-31.59	12.09	-19.50	6.50
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	QPSK 1/2	
BANDWIDTH	:	5	MHz
OPERATING FREQUENCY	:	2687.5	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5375.0	V	-26.98	11.06	-15.92	2.92
8062.5	V	-26.39	11.27	-15.12	2.12
10750.0	V	-33.00	12.33	-20.67	7.67
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	16QAM 1/2	
BANDWIDTH	:	5	MHz
OPERATING FREQUENCY	:	2687.5	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5375.0	V	-26.37	11.06	-15.31	2.31
8062.5	V	-26.14	11.27	-14.87	1.87
10750.0	V	-33.11	12.33	-20.78	7.78
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	QPSK 1/2	
BANDWIDTH	:	10	MHz
OPERATING FREQUENCY	:	2501	MHz
DISTANCE	:	3	m
LIMIT	:	$43 + 10 \log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5002.0	V	-34.99	10.92	-24.07	11.07
7503.0	V	-34.86	11.49	-23.37	10.37
10004.0	V	-48.94	11.86	-37.08	24.08
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	16QAM 1/2	
BANDWIDTH	:	10	MHz
OPERATING FREQUENCY	:	2501	MHz
DISTANCE	:	3	m
LIMIT	:	$43 + 10 \log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5002.0	V	-34.52	10.92	-23.60	10.60
7503.0	V	-34.58	11.50	-23.08	10.08
10004.0	V	-48.54	11.86	-36.68	23.68
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	QPSK 1/2	
BANDWIDTH	:	10	MHz
OPERATING FREQUENCY	:	2593	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W) =	-13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5186.0	V	-32.53	10.99	-21.54	8.54
7779.0	V	-34.64	11.36	-23.28	10.28
10372.0	V	-38.93	12.09	-26.84	13.84
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	16QAM 1/2	
BANDWIDTH	:	10	MHz
OPERATING FREQUENCY	:	2593	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5186.0	V	-32.16	10.99	-21.17	8.17
7779.0	V	-34.00	11.36	-22.64	9.64
10372.0	V	-37.53	12.09	-25.44	12.44
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	QPSK 1/2	
BANDWIDTH	:	10	MHz
OPERATING FREQUENCY	:	2685	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5370.0	V	-29.25	11.05	-18.20	5.20
8055.0	V	-29.31	11.26	-18.05	5.05
10740.0	V	-37.36	12.33	-25.03	12.03
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.2 Radiated Spurious Emissions (Continued…)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX	
ZONE MODE	:	AMC	
MODULATION TYPE	:	16QAM 1/2	
BANDWIDTH	:	10	MHz
OPERATING FREQUENCY	:	2685	MHz
DISTANCE	:	3	m
LIMIT	:	43 + 10 $\log_{10}$ (W)	= -13dBm

Freq. (MHz)	**POL** (H/V)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**RESULT LEVEL** (dBm)	**Margin** (dBc)
5370.0	V	-29.16	11.05	-18.11	5.11
8055.0	V	-28.51	11.26	-17.25	4.25
10740.0	V	-36.86	12.33	-24.53	11.53
-	-	-	-	-	-

- RESULT LEVEL(dBm) = LEVEL@ ANTENNA TERMINALS(dBm) +SUBSTITUTE ANTENNA GAIN(dBi)

- MARGIN(dB) = -13dBm – RESULT LEVEL(dBm)

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden table located at 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the spectrum analyzer. A antenna was substituted in place of the EUT. This antenna was driven by a vector signal generator for spurious emissions. The level of the signal generator was adjusted to obtain the same spectrum analyzer's reading level when EUT existed. After that conducted power at the input terminal of the transmit antenna was measured and this conducted power was corrected with antenna gain in dBi.
This spurious level was recorded.

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4.1 TEST DATA (Continued…)

4.1.3 Frequency Stability

BANDWIDTH	:	5	MHZ
ZONE MODE	:	AMC	
MODULATION TYPE	:	QPSK 1/2	
OPERATING FREQUENCY	:	2,592,999,965	Hz
REFERENCE VOLTAGE	:	120	V_{AC}

VOLTAGE (%)	POWER (VAC)	TEMP (℃)	FREQ (Hz)	Deviation (ppm)
100%	120	+20(Ref)	2,592,999,965	0.000
		-30	2,592,999,970	0.002
		-20	2,592,999,967	0.001
		-10	2,592,999,982	0.007
		0	2,592,999,976	0.004
		+10	2,592,999,975	0.004
		+20	2,592,999,978	0.005
		+30	2,592,999,980	0.006
		+40	2,592,999,965	0.000
		+50	2,592,999,972	0.003
85%	102	+20	2,592,999,965	0.000
115%	138	+20	2,592,999,968	0.001
BATT.ENDPOINT	-	-	-	-

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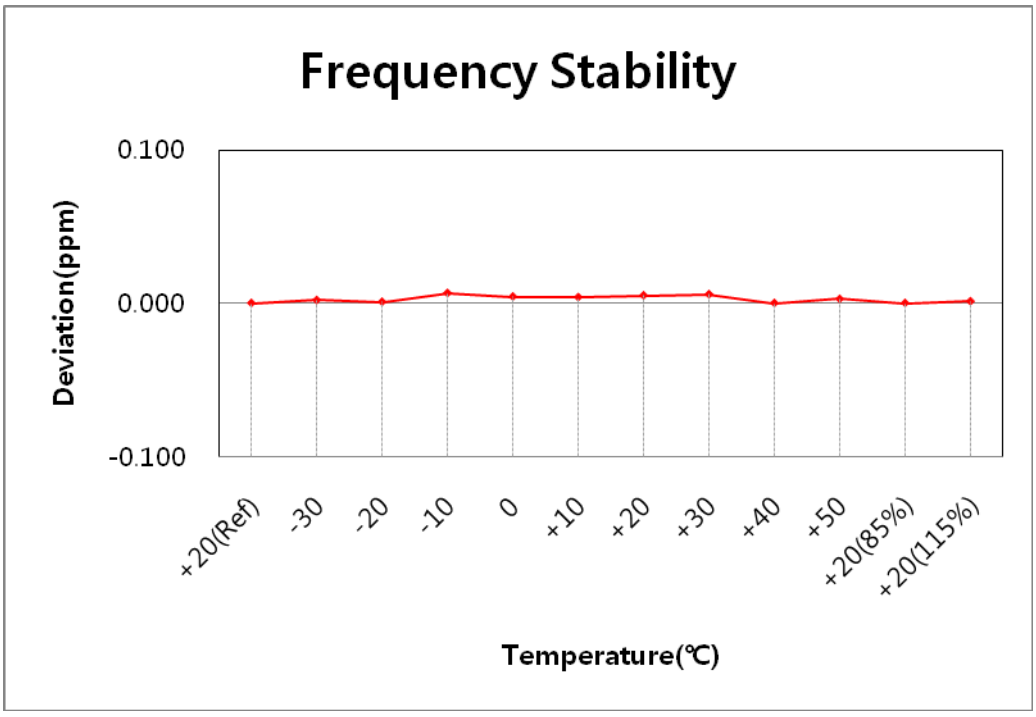
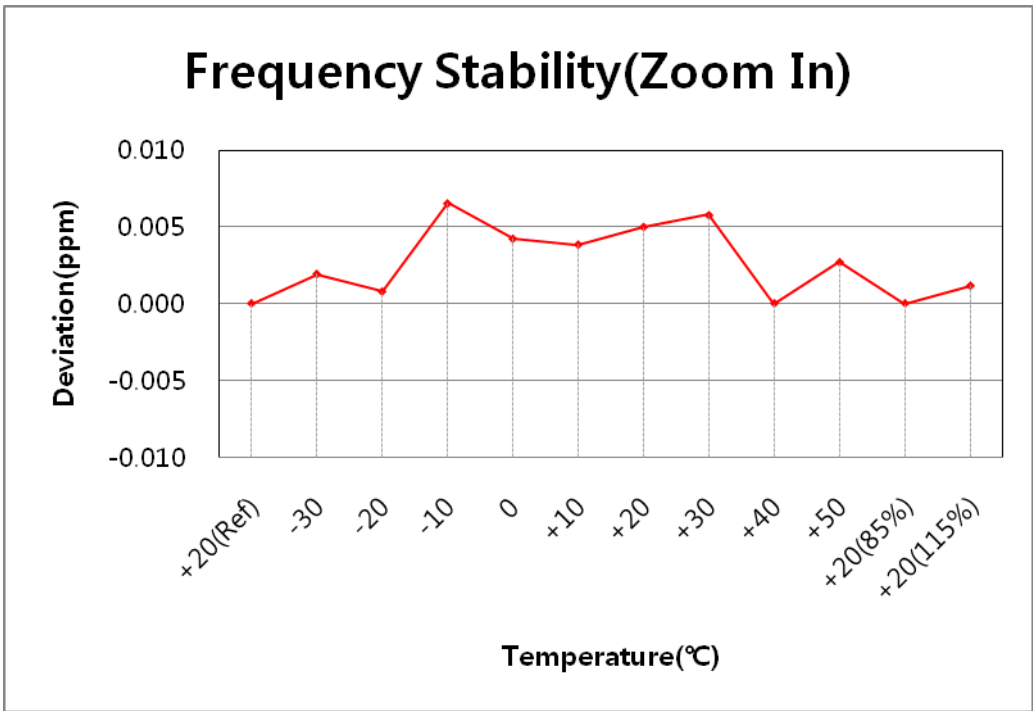
4.1 TEST DATA (Continued…)

4.1.3 Frequency Stability (Continued…)





4.1 TEST DATA (Continued…)

4.1.3 Frequency Stability (Continued…)

BANDWIDTH	:	5	MHZ
ZONE MODE	:	AMC	
MODULATION TYPE	:	16QAM 1/2	
OPERATING FREQUENCY	:	2,592,999,961	Hz
REFERENCE VOLTAGE	:	120	V_{AC}

VOLTAGE (%)	POWER (VAC)	TEMP (℃)	FREQ (Hz)	Deviation (ppm)
100%	120	+20(Ref)	2,592,999,961	0.000
100%		-30	2,592,999,959	-0.001
100%		-20	2,592,999,956	-0.002
100%		-10	2,592,999,971	0.004
100%		0	2,592,999,968	0.003
100%		+10	2,592,999,960	0.000
100%		+20	2,592,999,967	0.002
100%		+30	2,592,999,969	0.003
100%		+40	2,592,999,954	-0.003
100%		+50	2,592,999,961	0.000
85%	102	+20	2,592,999,954	-0.003
115%	138	+20	2,592,999,960	0.000
BATT.ENDPOINT	-	-	-	-

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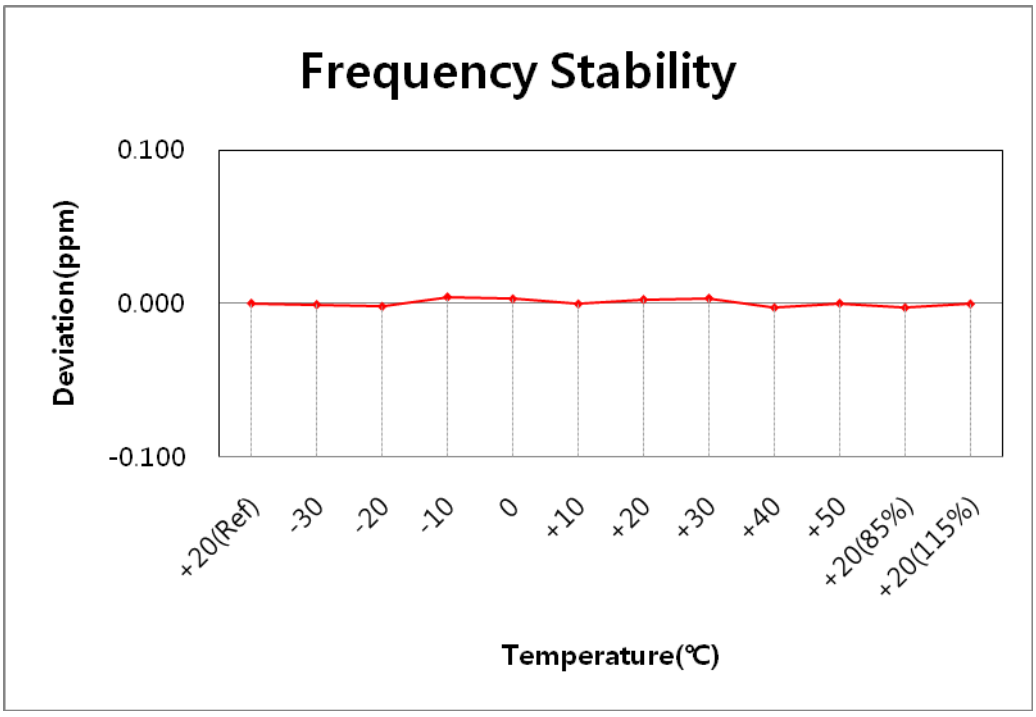
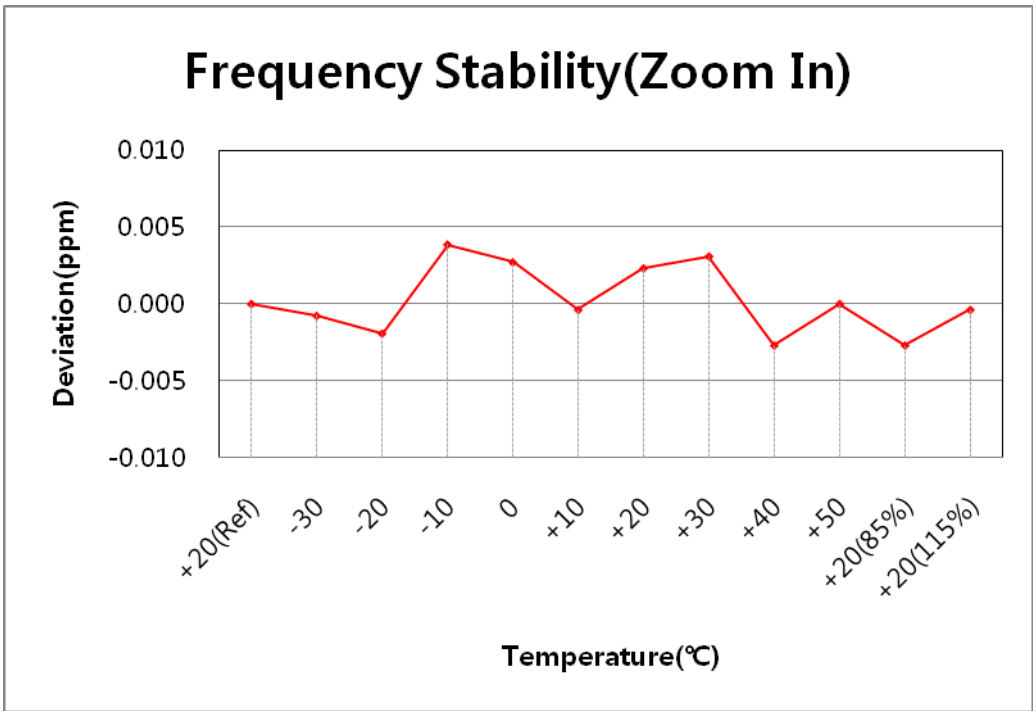
4.1 TEST DATA (Continued…)

4.1.3 Frequency Stability (Continued…)





4.1 TEST DATA (Continued…)

4.1.3 Frequency Stability (Continued…)

BANDWIDTH	:	10	MHZ
ZONE MODE	:	AMC	
MODULATION TYPE	:	QPSK 1/2	
OPERATING FREQUENCY	:	2,592,999,973	Hz
REFERENCE VOLTAGE	:	120	V_{AC}

VOLTAGE (%)	POWER (VAC)	TEMP (℃)	FREQ (Hz)	Deviation (ppm)
100%	120	+20(Ref)	2,592,999,973	0.000
100%		-30	2,592,999,975	0.001
100%		-20	2,592,999,972	0.000
100%		-10	2,592,999,987	0.005
100%		0	2,592,999,981	0.003
100%		+10	2,592,999,980	0.003
100%		+20	2,592,999,983	0.004
100%		+30	2,592,999,985	0.005
100%		+40	2,592,999,970	-0.001
100%		+50	2,592,999,977	0.002
85%	102	+20	2,592,999,970	-0.001
115%	138	+20	2,592,999,976	0.001
BATT.ENDPOINT	-	-	-	-

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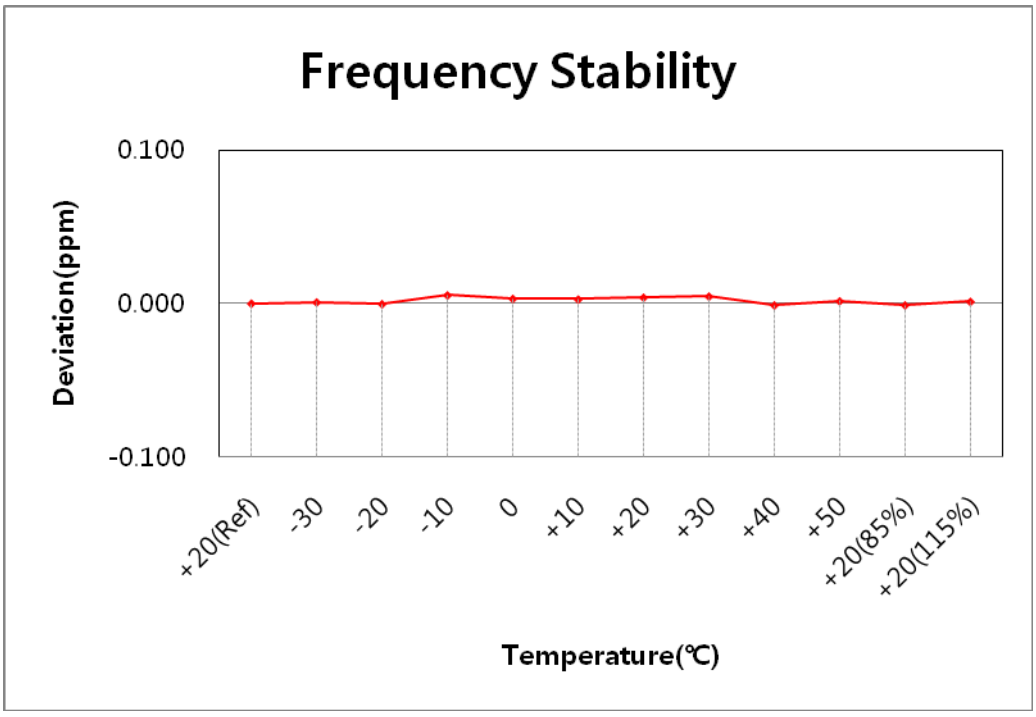
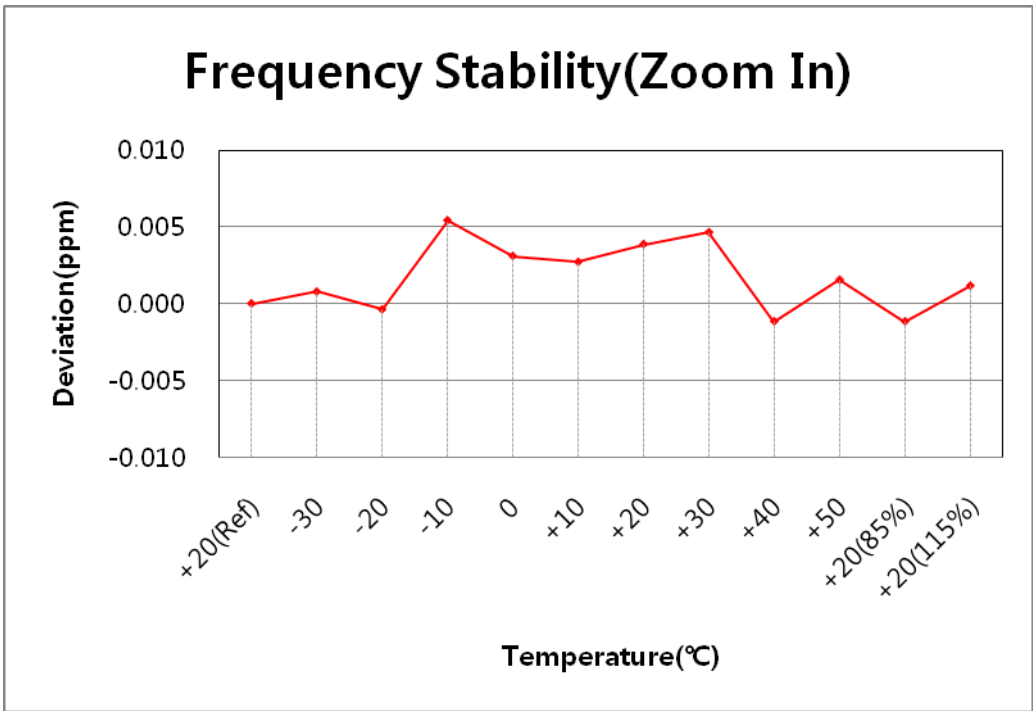
4.1 TEST DATA (Continued…)

4.1.3 Frequency Stability (Continued…)





4.1 TEST DATA (Continued…)

4.1.3 Frequency Stability (Continued…)

BANDWIDTH	:	10	MHZ
ZONE MODE	:	AMC	
MODULATION TYPE	:	16QAM 1/2	
OPERATING FREQUENCY	:	2,592,999,974	Hz
REFERENCE VOLTAGE	:	120	V_{AC}

VOLTAGE (%)	POWER (VAC)	TEMP (℃)	FREQ (Hz)	Deviation (ppm)
100%	120	+20(Ref)	2,592,999,974	0.000
100%		-30	2,592,999,981	0.003
100%		-20	2,592,999,976	0.001
100%		-10	2,592,999,988	0.005
100%		0	2,592,999,985	0.004
100%		+10	2,592,999,986	0.005
100%		+20	2,592,999,987	0.005
100%		+30	2,592,999,989	0.006
100%		+40	2,592,999,968	-0.002
100%		+50	2,592,999,981	0.003
85%	102	+20	2,592,999,974	0.000
115%	138	+20	2,592,999,980	0.002
BATT.ENDPOINT	-	-	-	-

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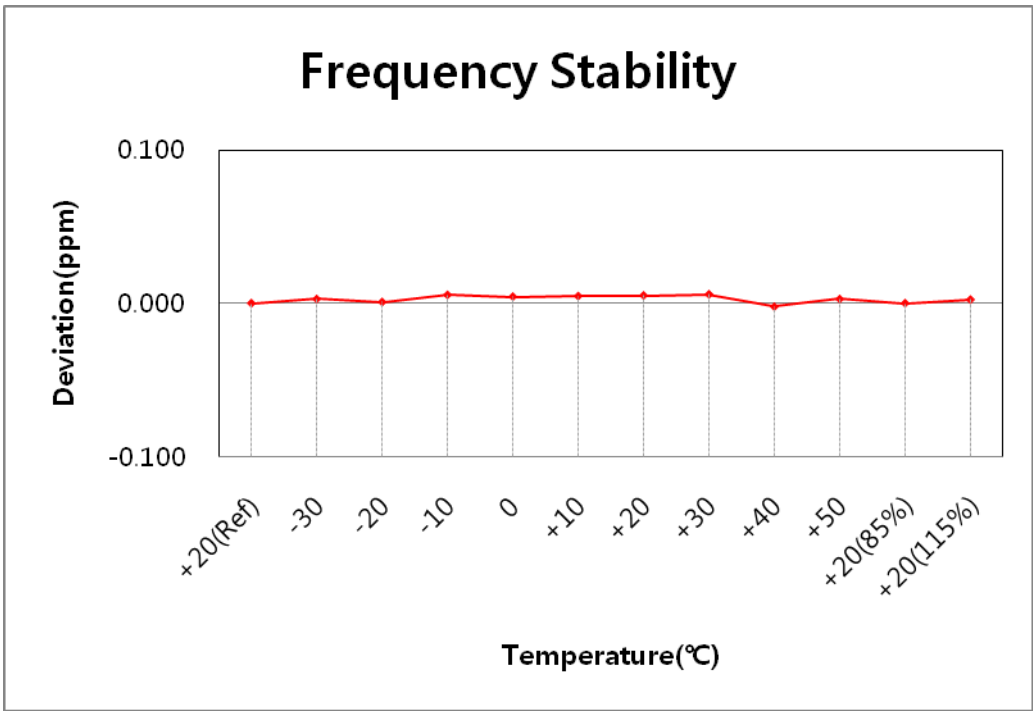
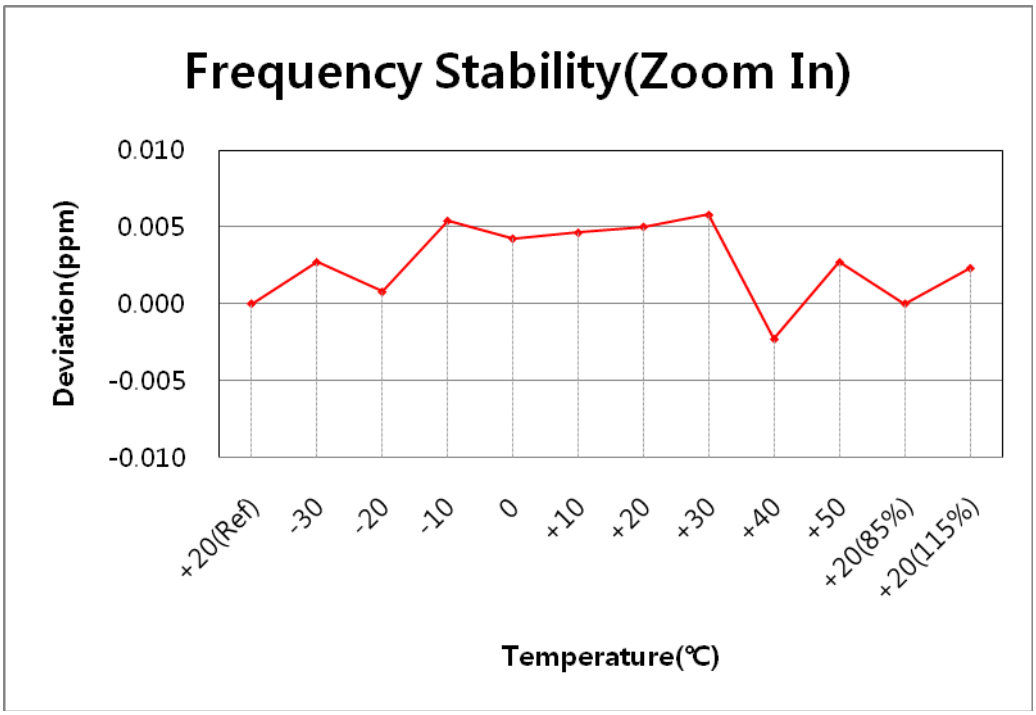
4.1 TEST DATA (Continued…)

4.1.3 Frequency Stability (Continued…)

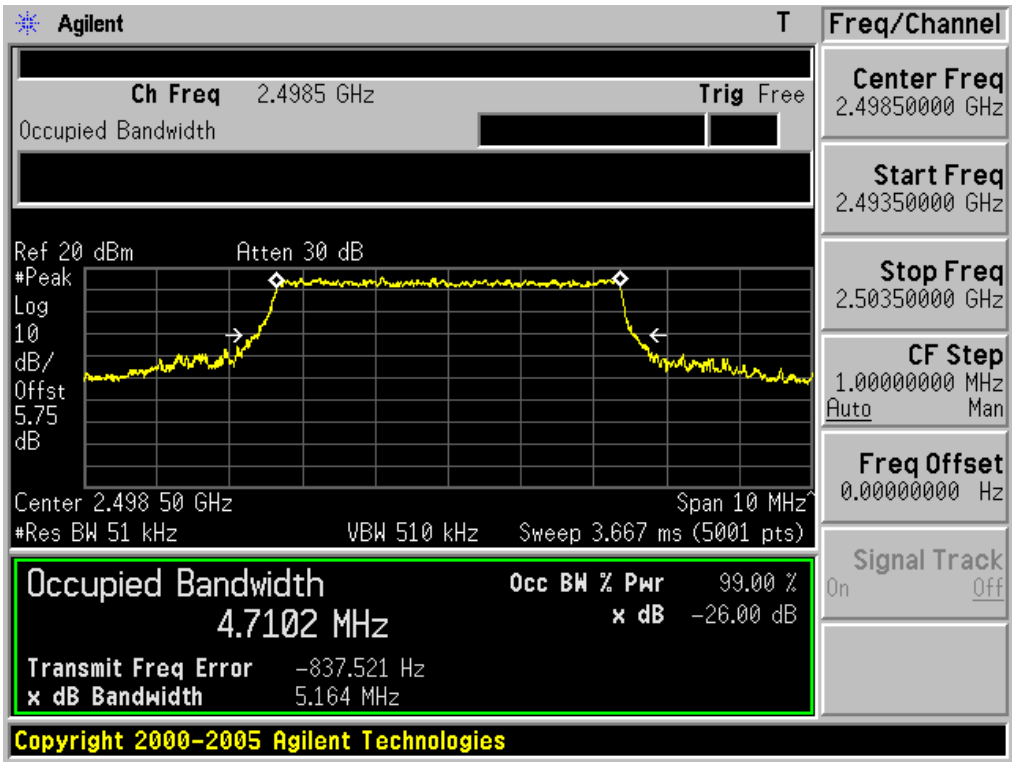




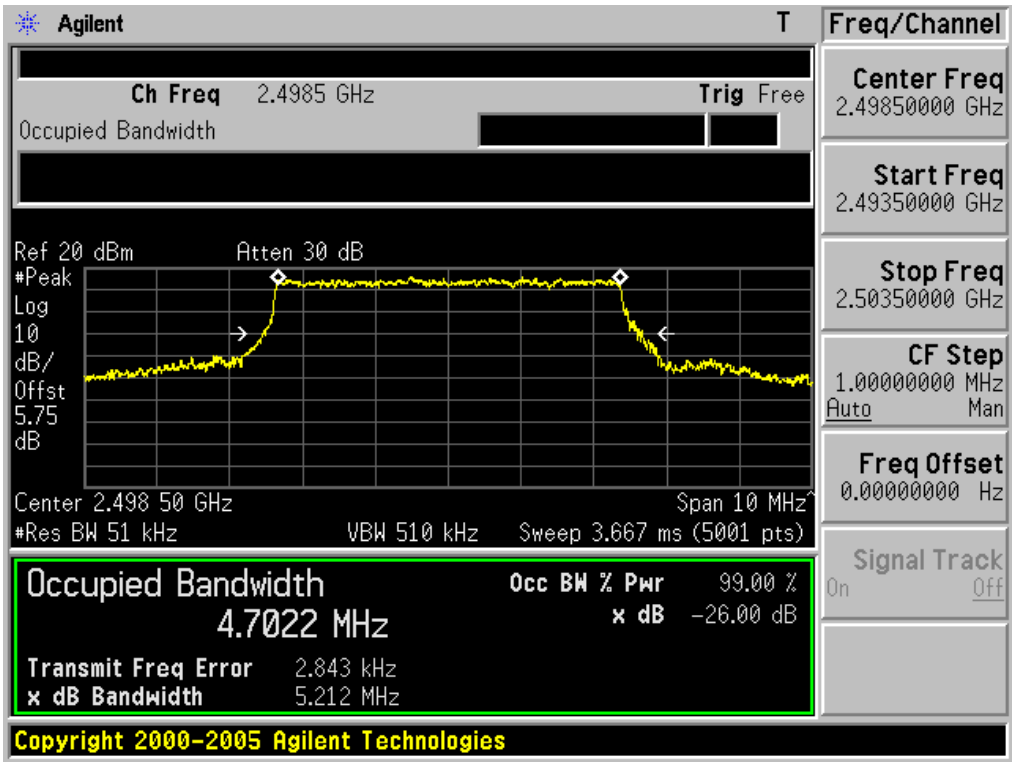
5.1 PLOTS OF EMISSIONS

5.1.1 Occupied Bandwidth(BW: 5MHz)

- Lowest Channel(2498.5MHz) & AMC Mode & QPSK 1/2



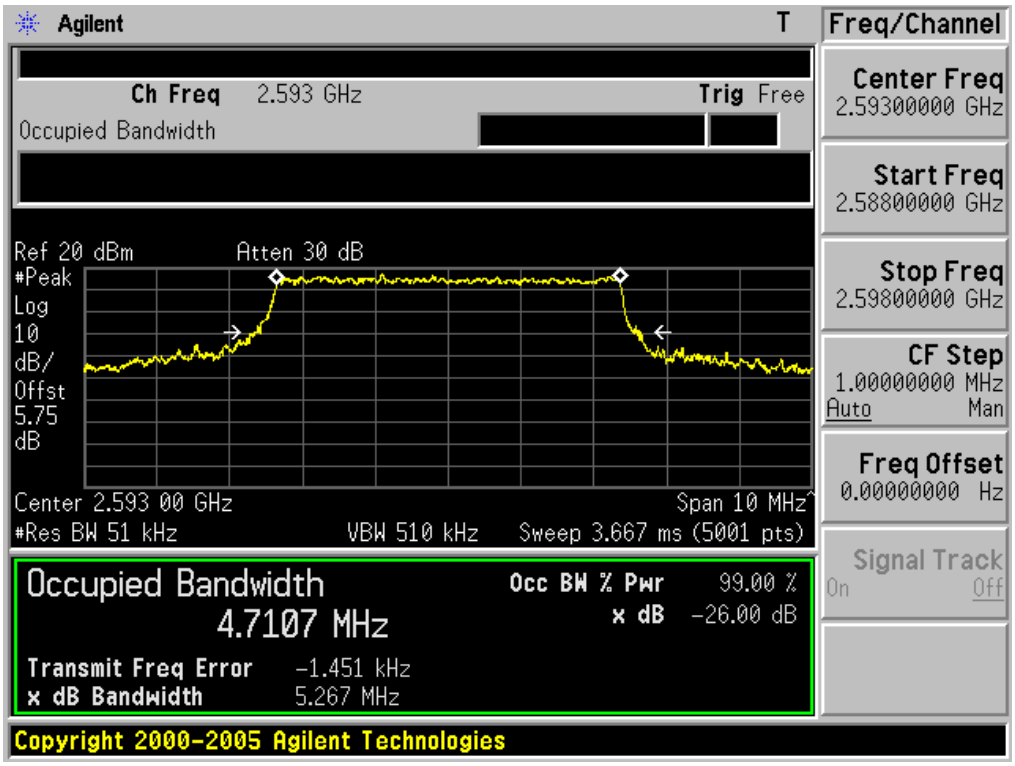
- Lowest Channel(2498.5MHz) & AMC Mode & 16QAM 1/2



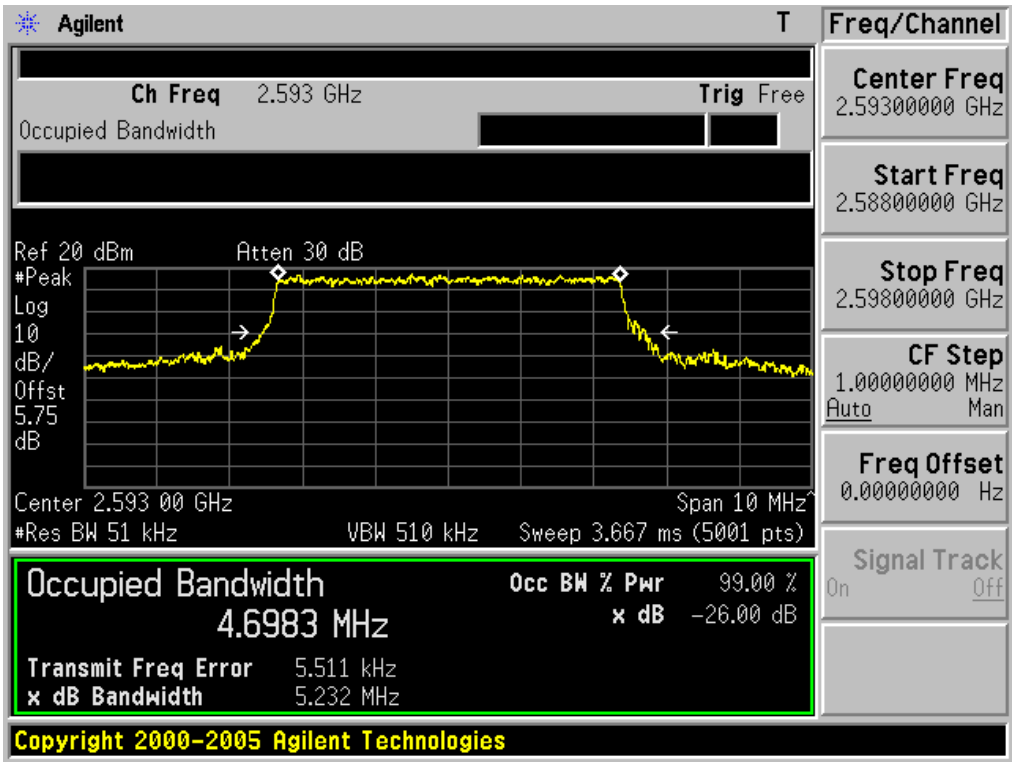
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.1 Occupied Bandwidth(BW: 5MHz) (Continued…)

- Middle Channel(2593.0MHz) & AMC Mode & QPSK 1/2



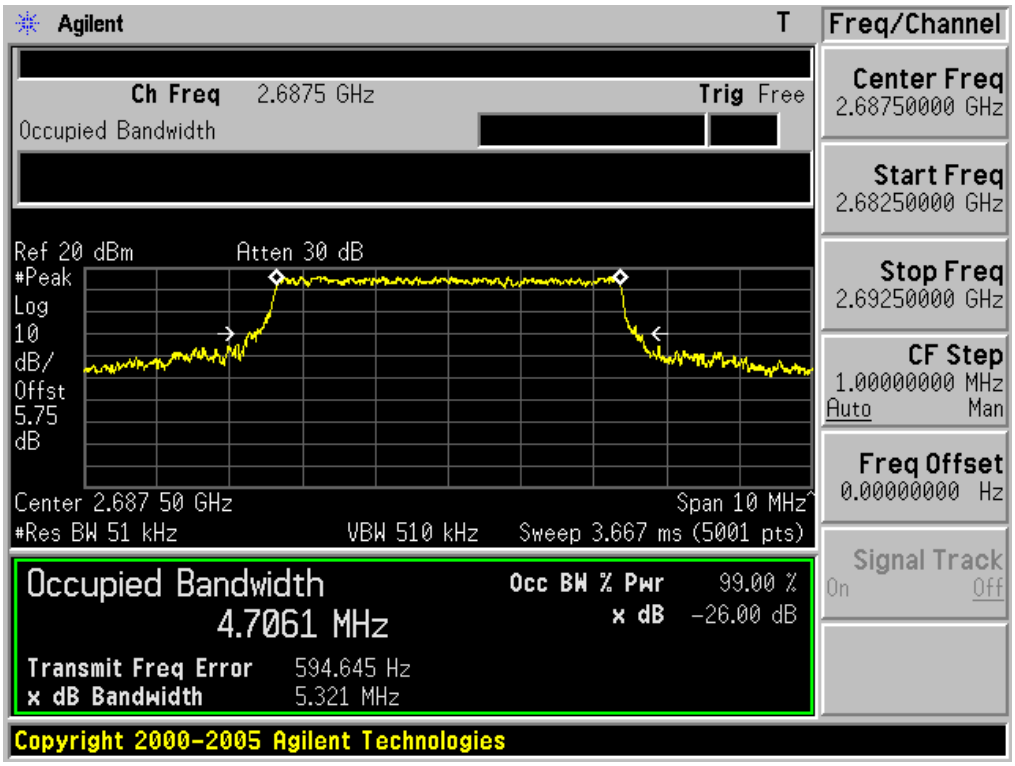
- Middle Channel(2593.0MHz) & AMC Mode & 16QAM 1/2



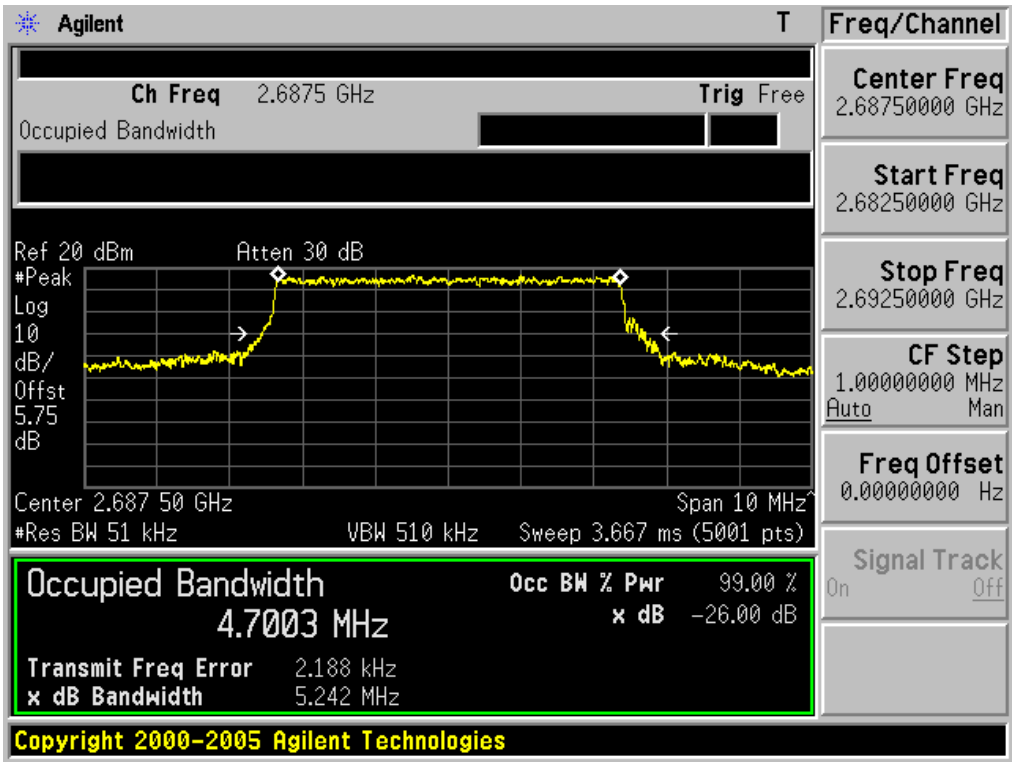
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.1 Occupied Bandwidth(BW: 5MHz) (Continued…)

- Highest Channel(2687.5MHz) & AMC Mode & QPSK 1/2



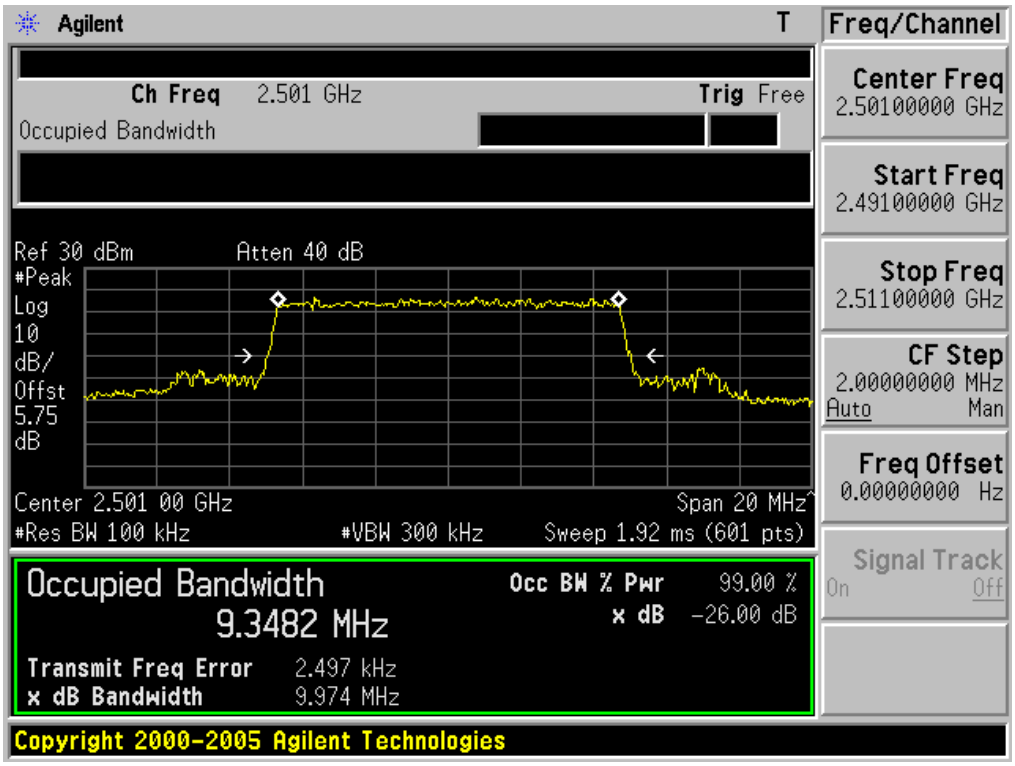
- Highest Channel(2687.5MHz) & AMC Mode & 16QAM 1/2



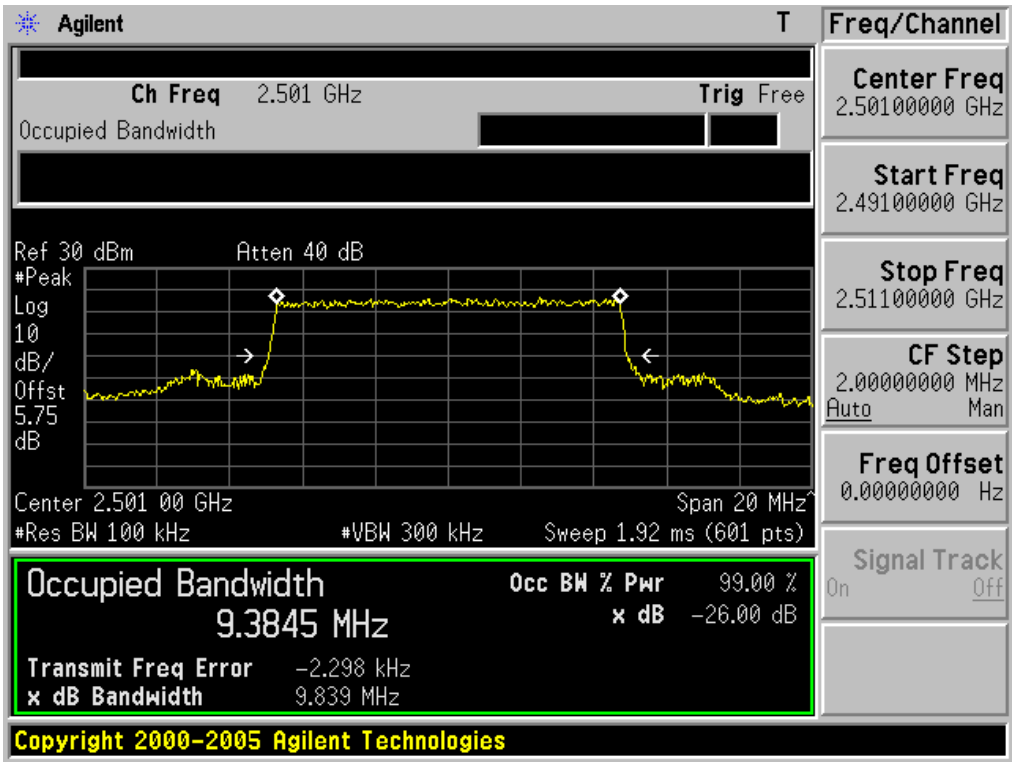
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.1 Occupied Bandwidth(BW: 10MHz) (Continued…)

- Lowest Channel(2501MHz) & AMC Mode & QPSK 1/2



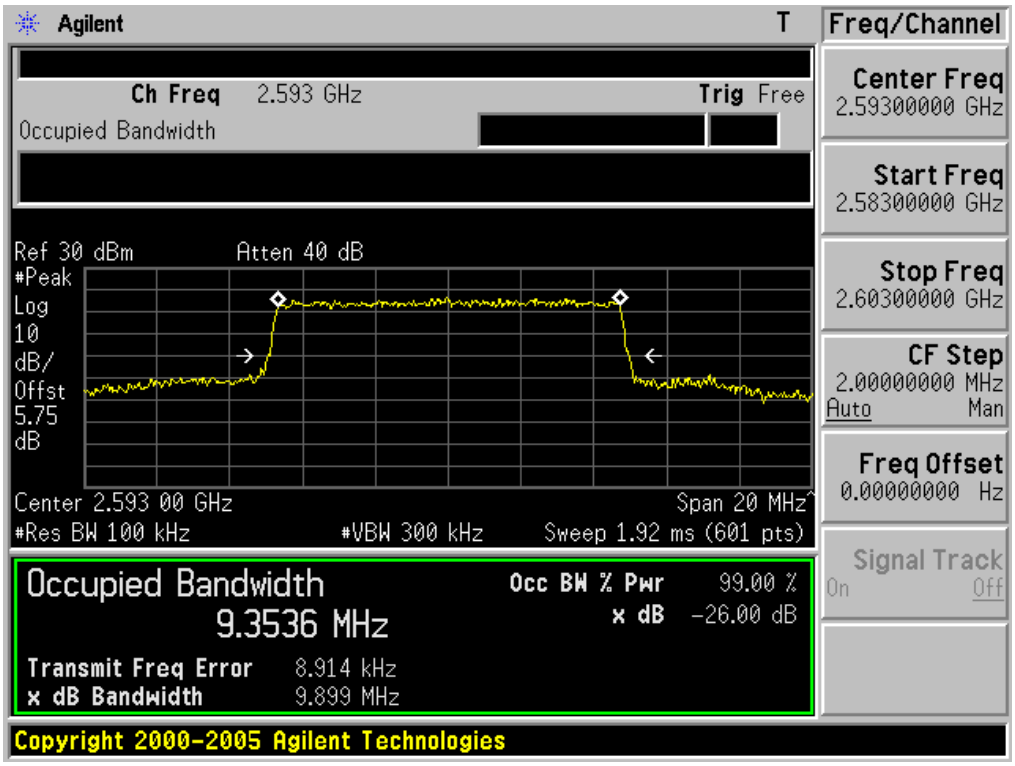
- Lowest Channel(2501MHz) & AMC Mode & 16QAM 1/2



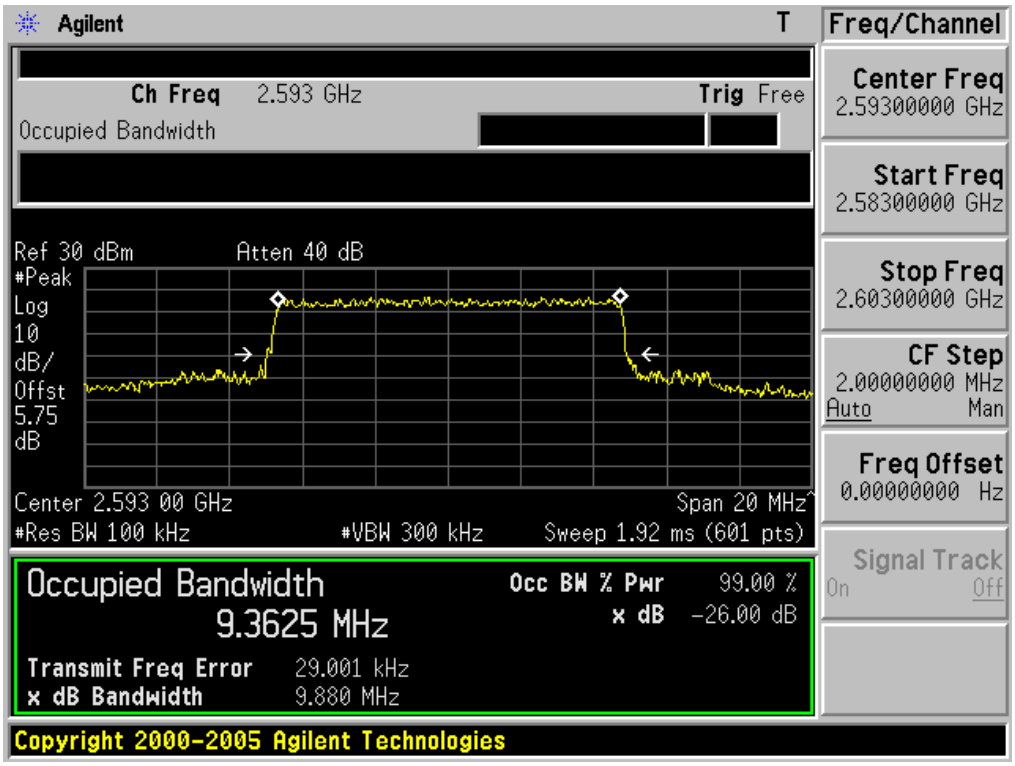
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.1 Occupied Bandwidth(BW: 10MHz) (Continued…)

- Middle Channel(2593MHz) & AMC Mode & QPSK 1/2



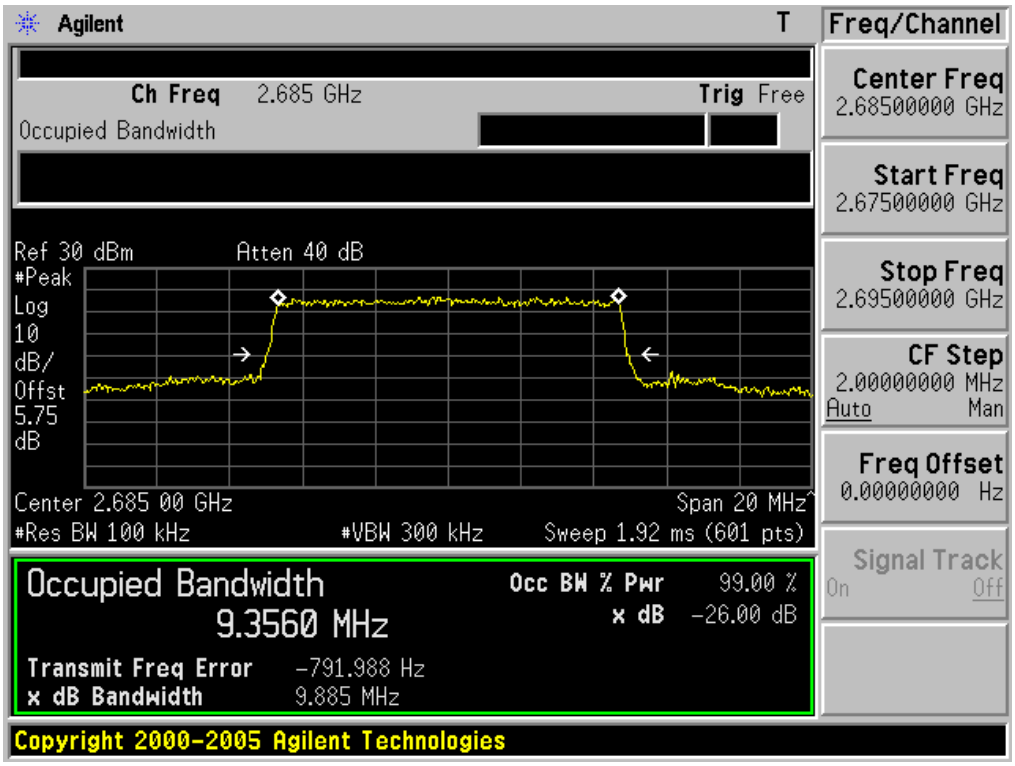
- Middle Channel(2593MHz) & AMC Mode & 16QAM 1/2



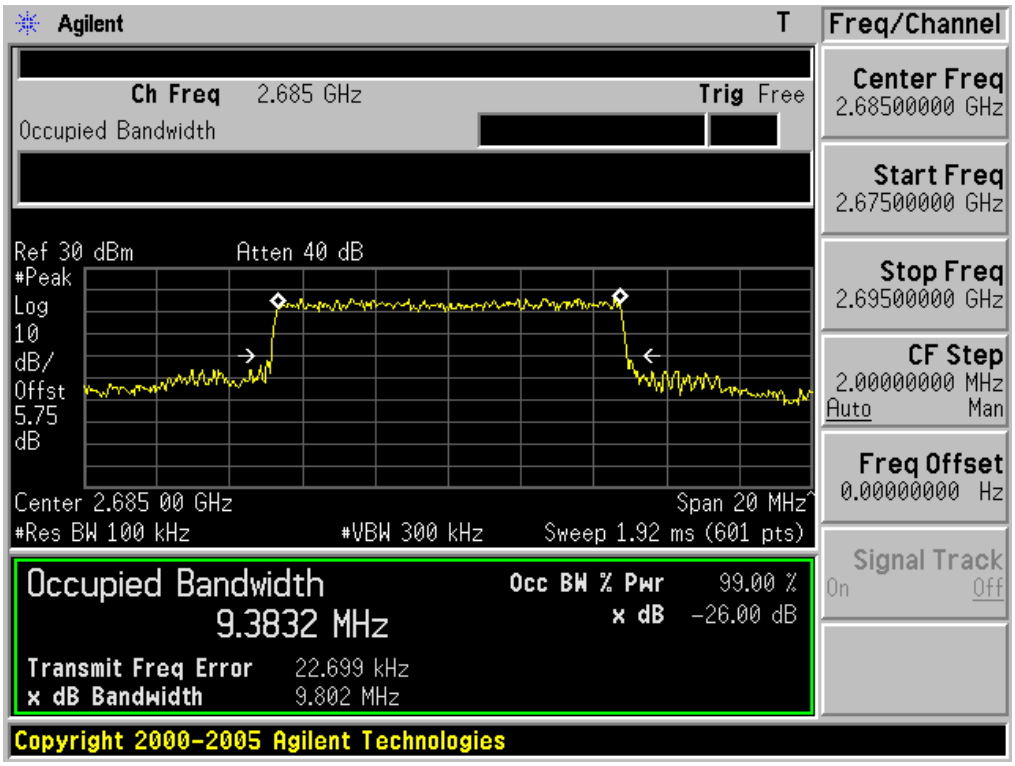
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.1 Occupied Bandwidth(BW: 10MHz) (Continued…)

- Highest Channel(2685MHz) & AMC Mode & QPSK 1/2



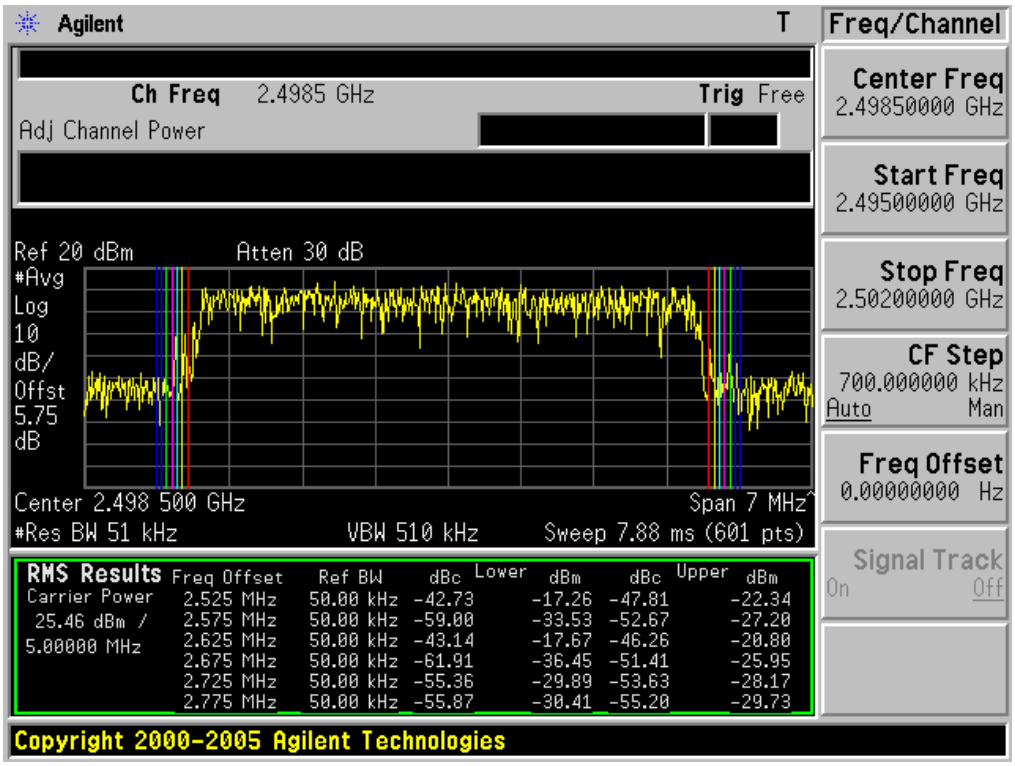
- Highest Channel(2685MHz)& AMC Mode & 16QAM 1/2

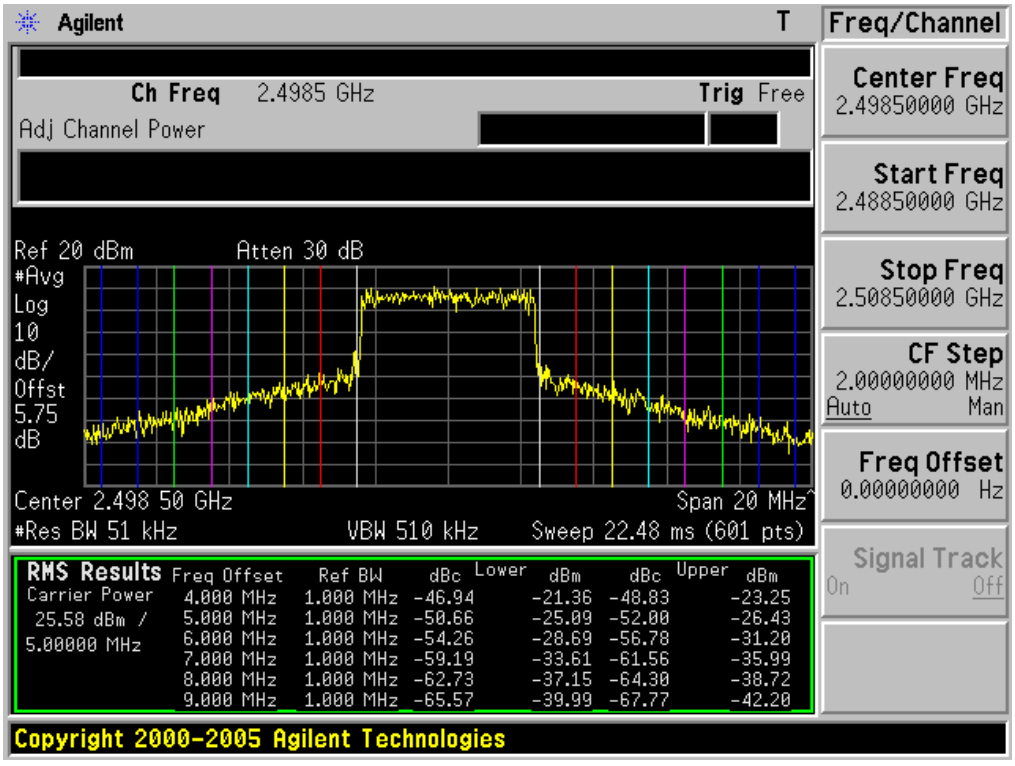


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 5MHz)

- Low Channel(2498.5MHz) & AMC Mode & QPSK 1/2

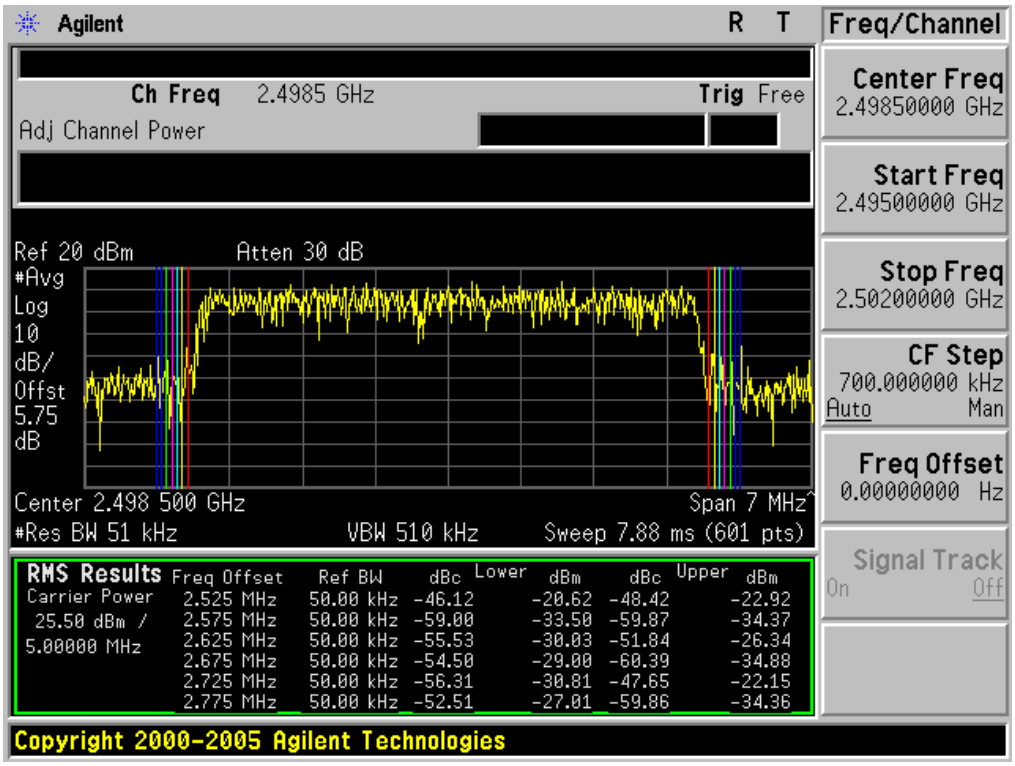


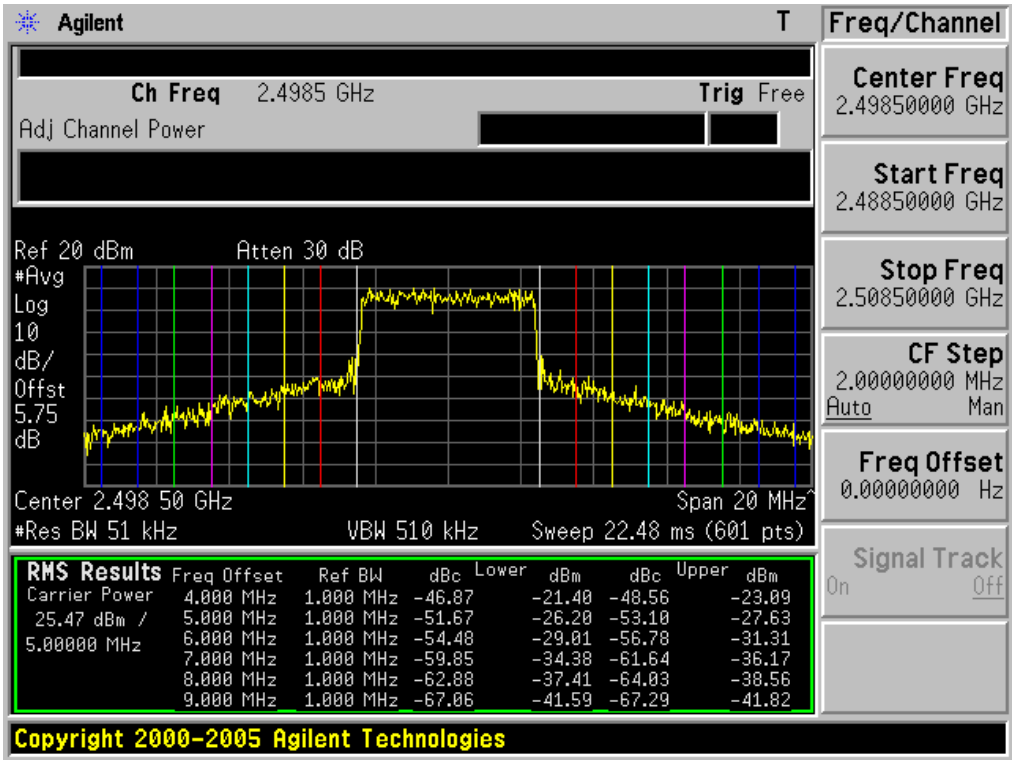


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 5MHz) (Continued…)

- Lowest Channel(2498.5MHz) & AMC Mode & 16QAM 1/2

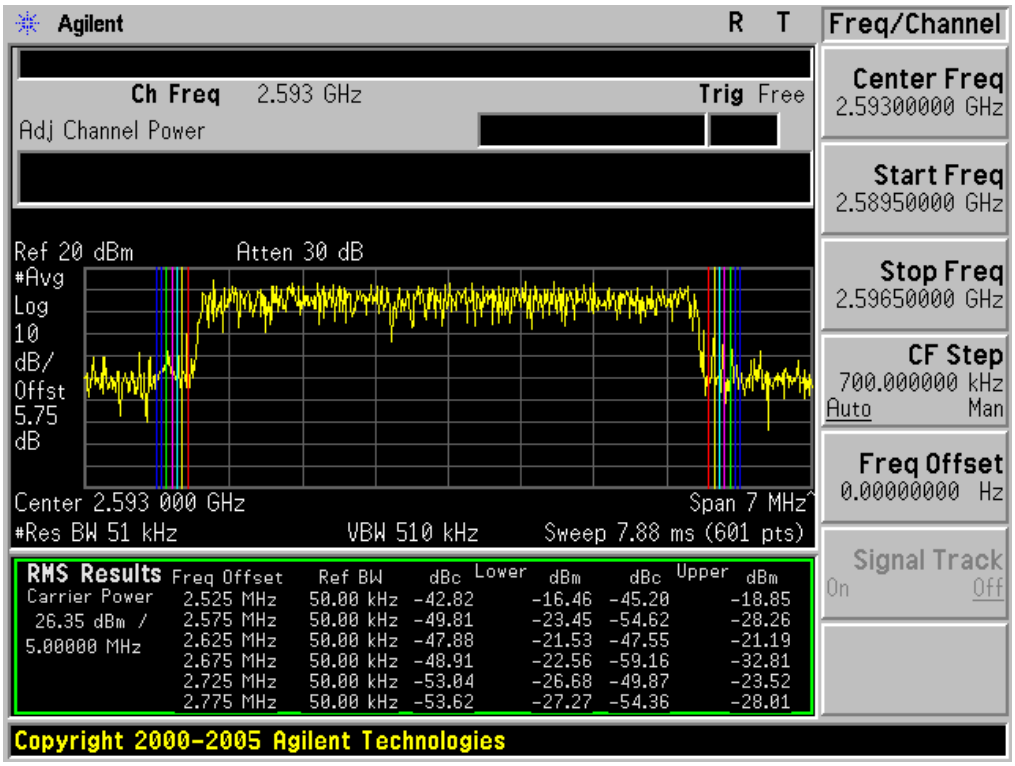


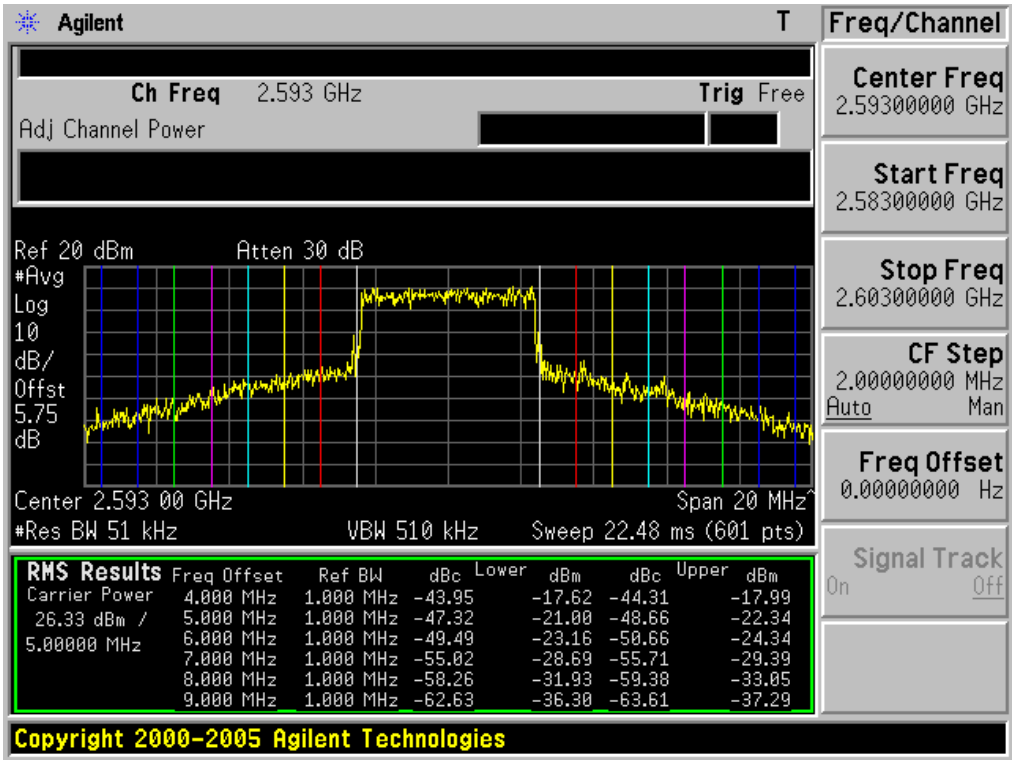


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 5MHz) (Continued…)

- Middle Channel(2593.0MHz) & AMC Mode & QPSK 1/2

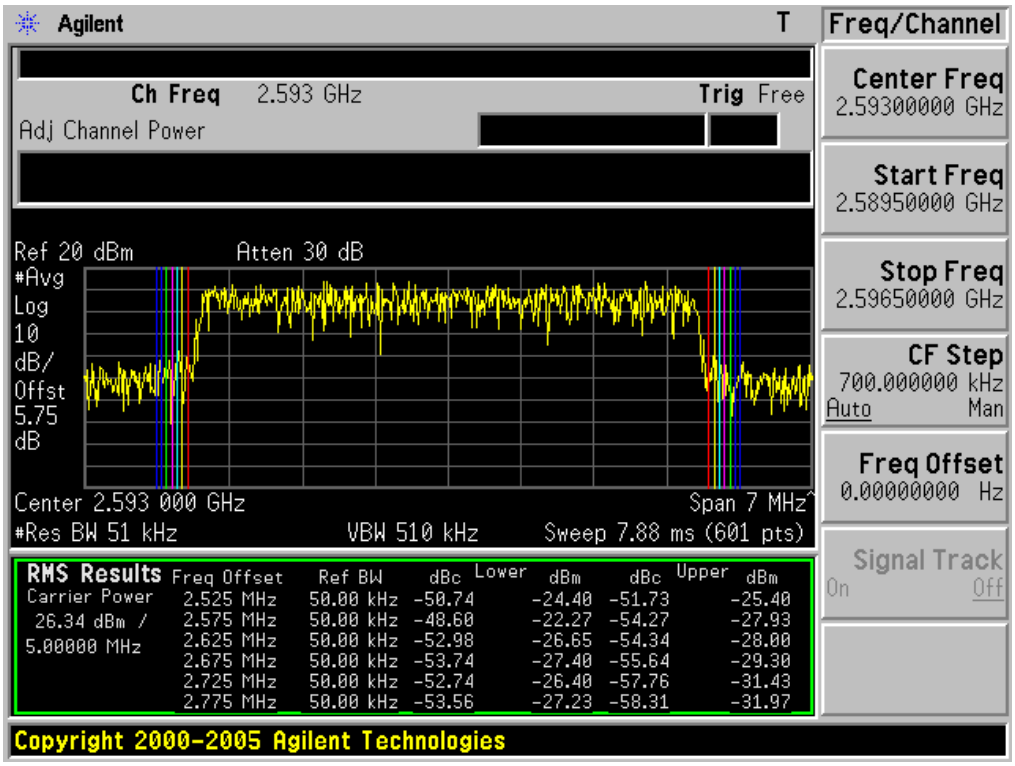


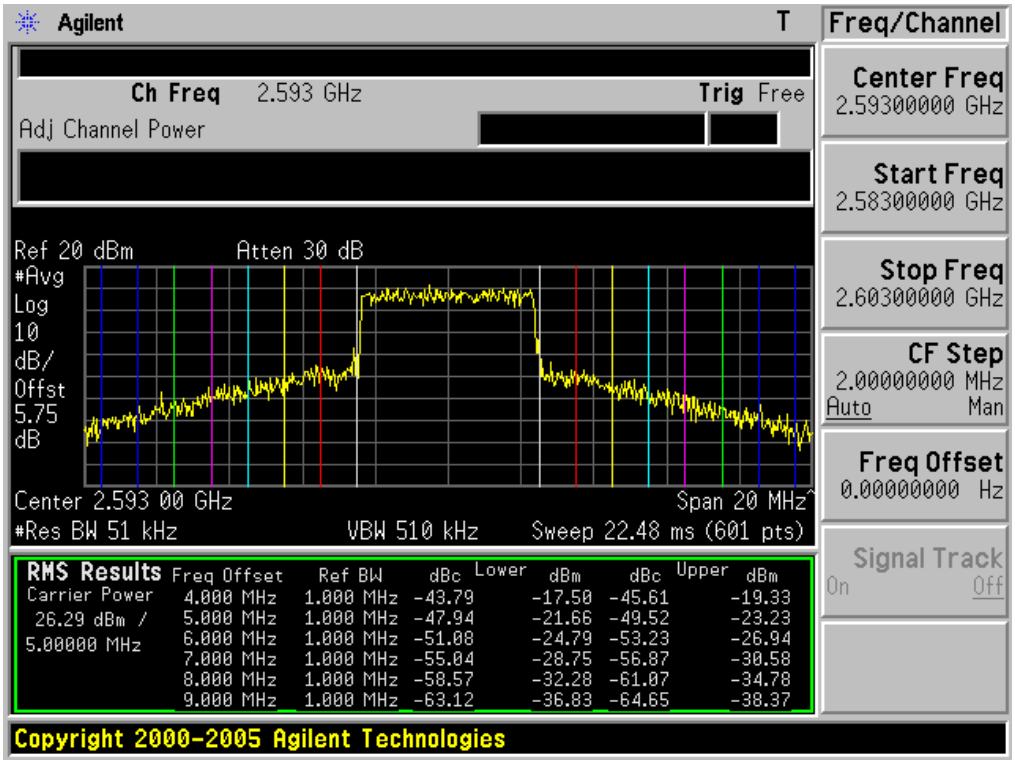


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 5MHz) (Continued…)

- Middle Channel(2593.0MHz) & AMC Mode & 16QAM 1/2

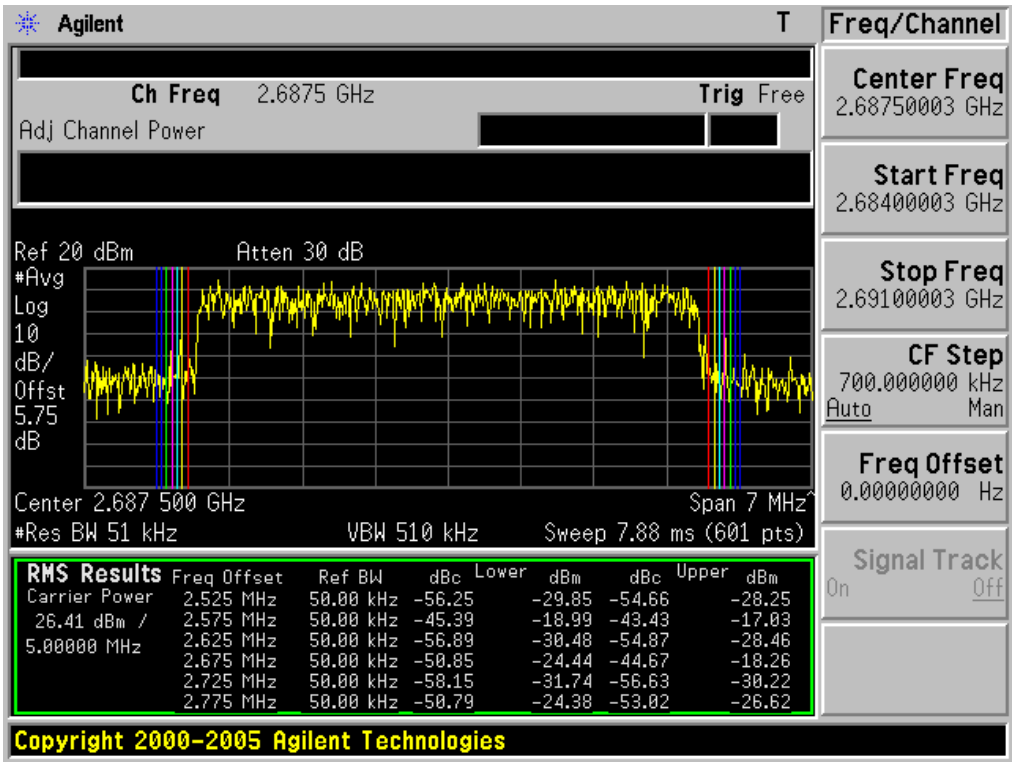


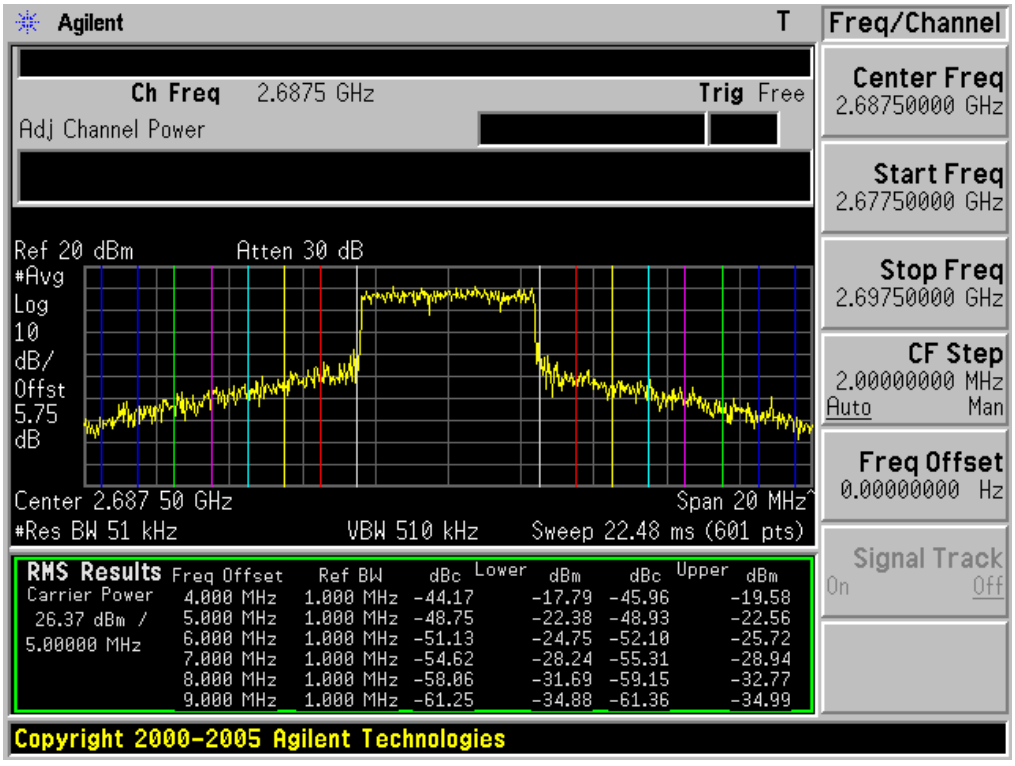


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 5MHz) (Continued…)

- Highest Channel(2687.5MHz) & AMC Mode & QPSK 1/2

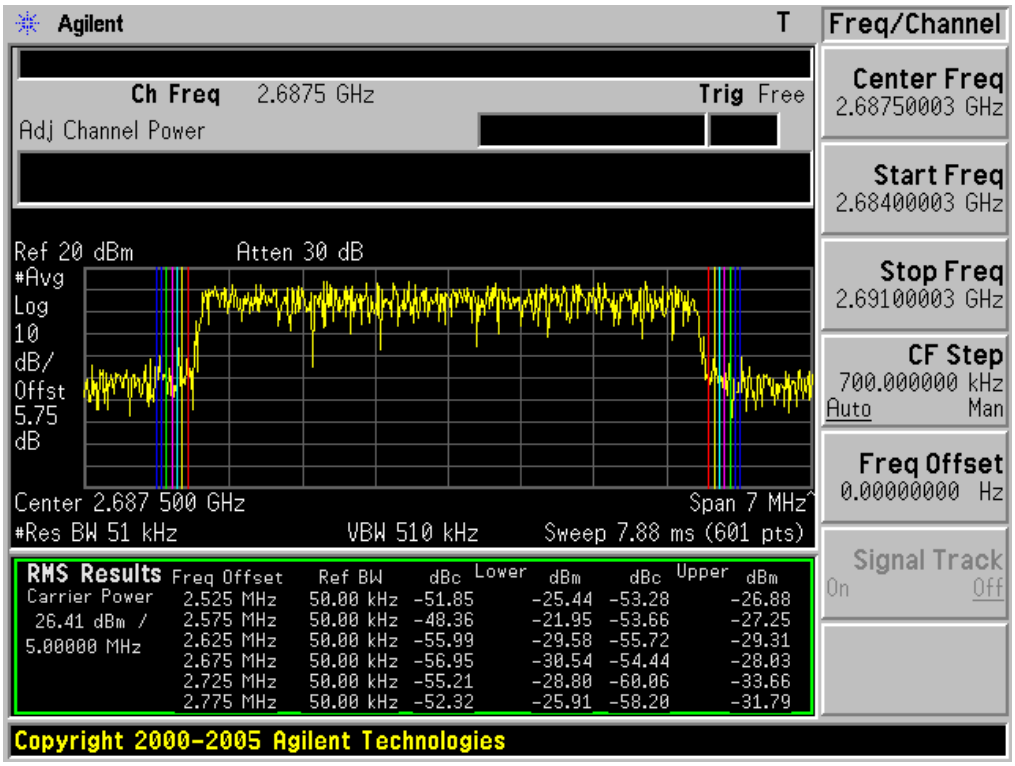


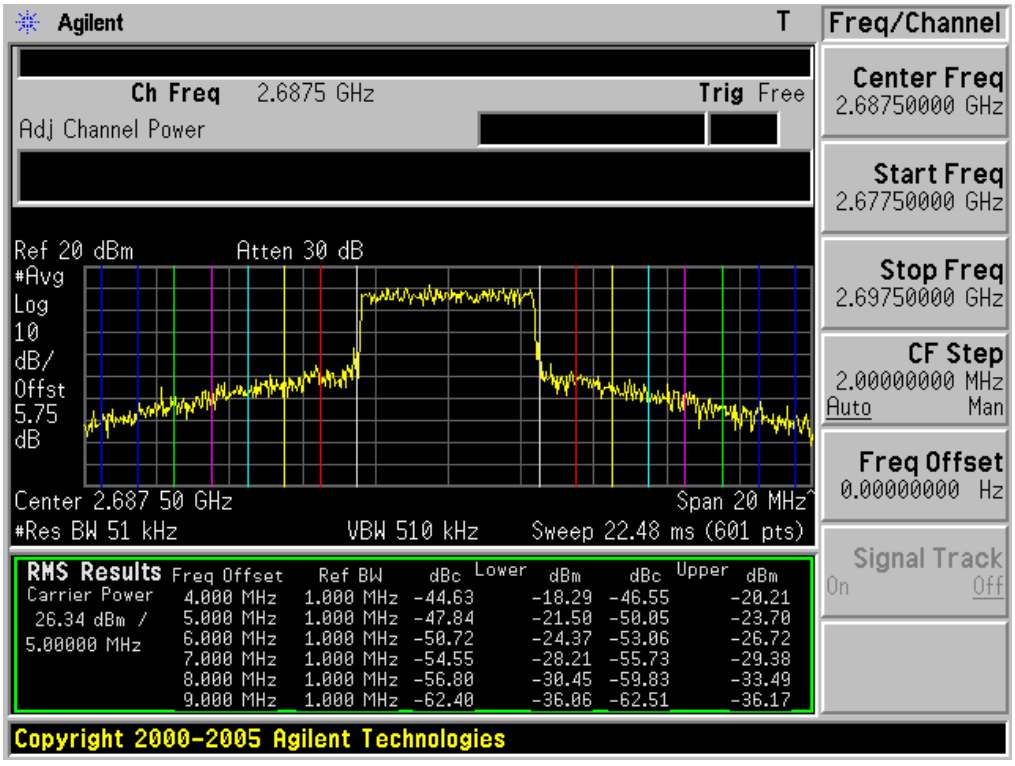


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 5MHz) (Continued…)

- Highest Channel(2687.5MHz) & AMC Mode & 16QAM 1/2

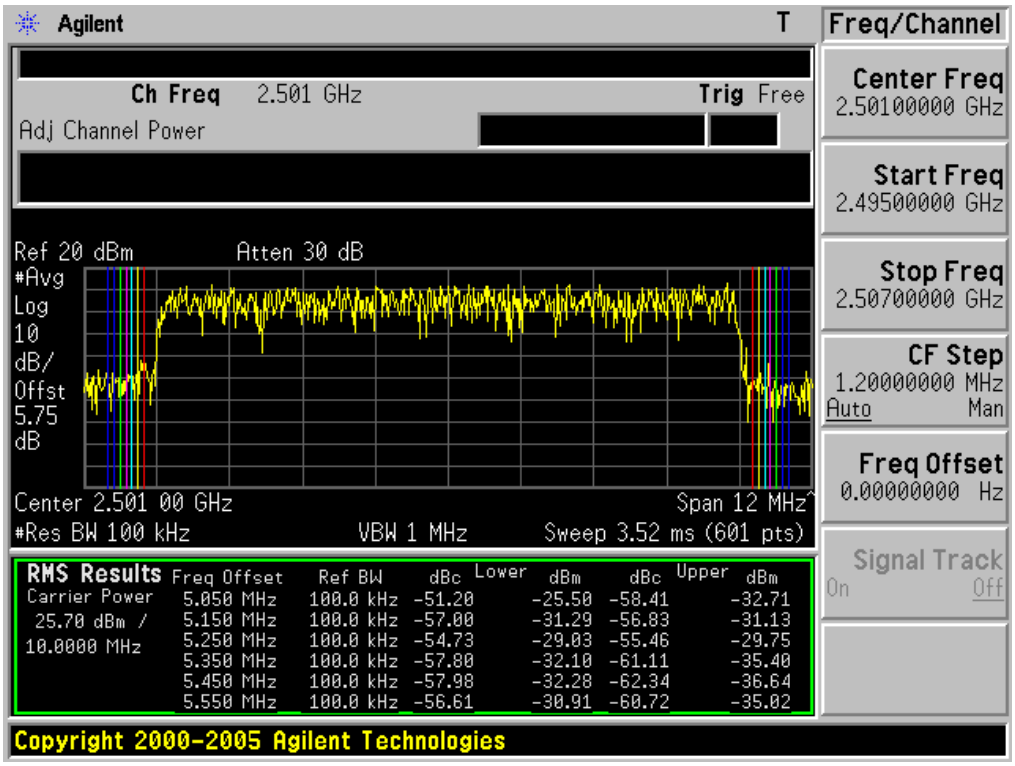


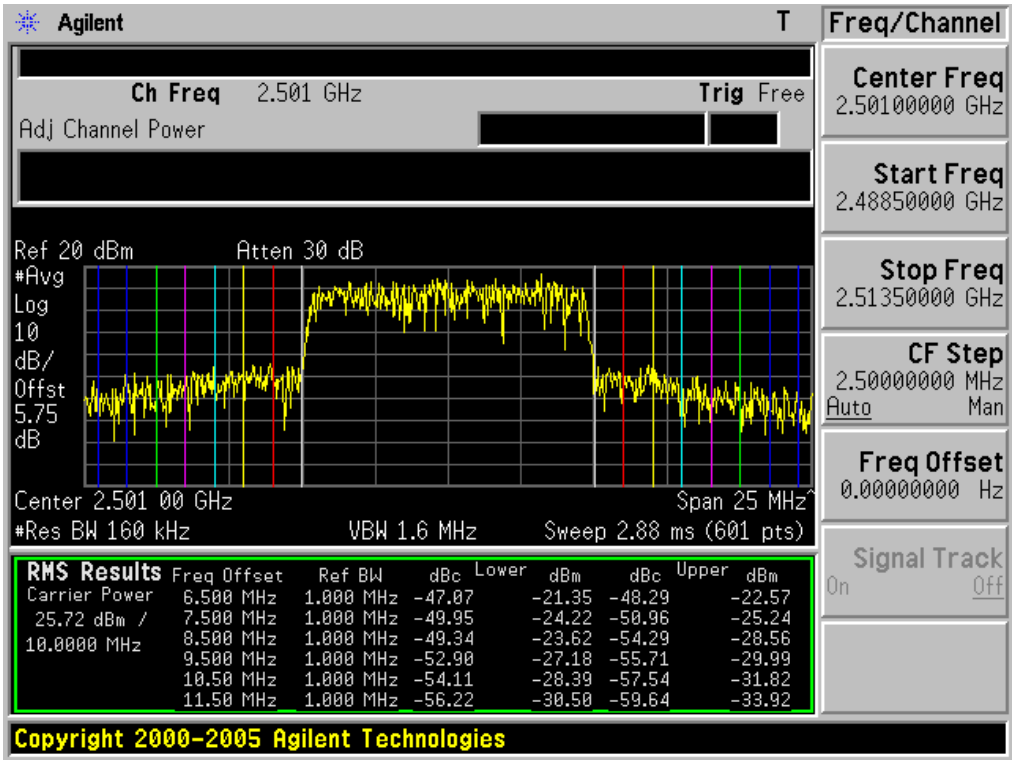


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 10MHz) (Continued…)

- Low Channel(2501MHz) & AMC Mode & QPSK 1/2

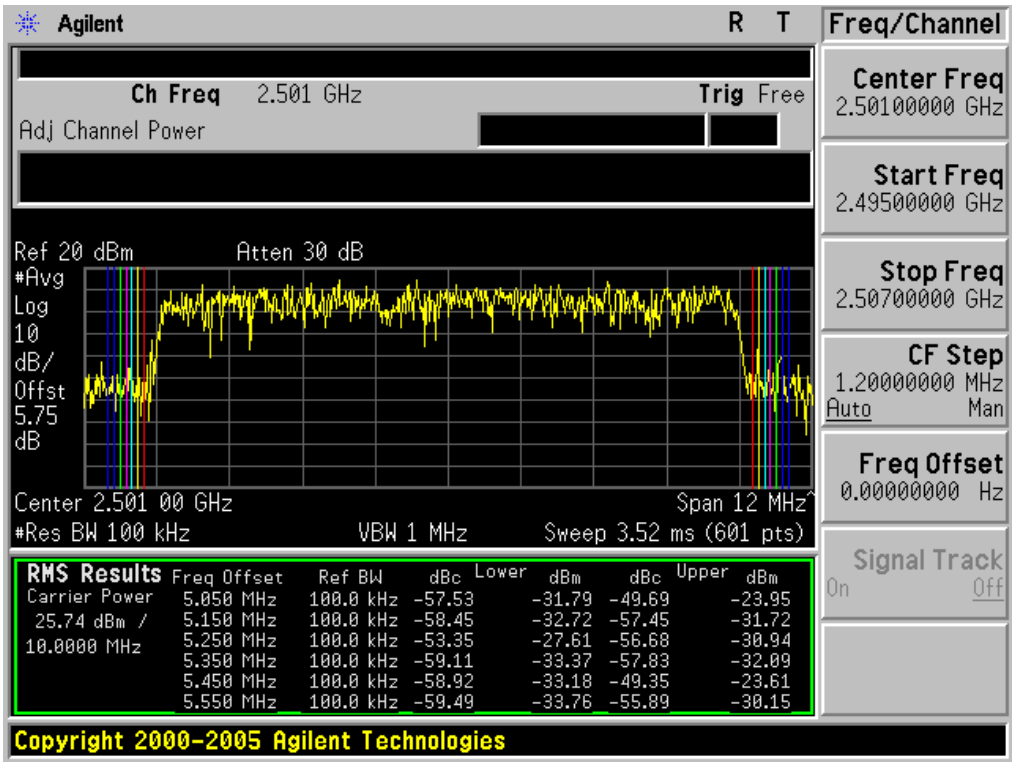


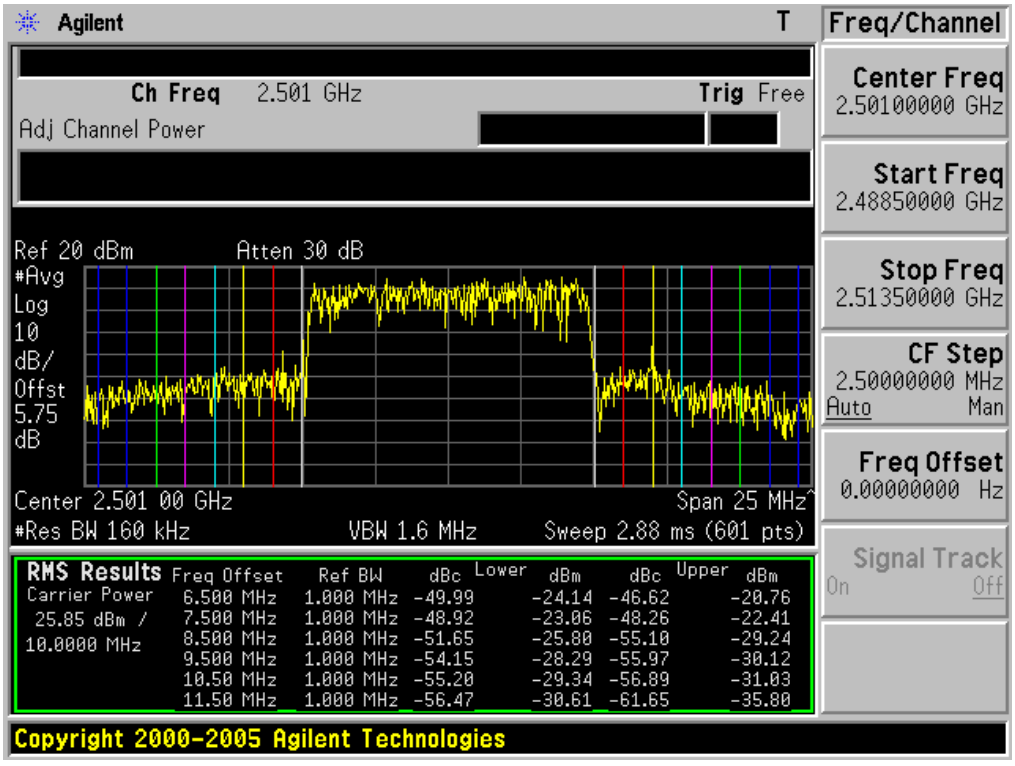


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 10MHz) (Continued…)

- Lowest Channel(2501MHz) & AMC Mode & 16QAM 1/2

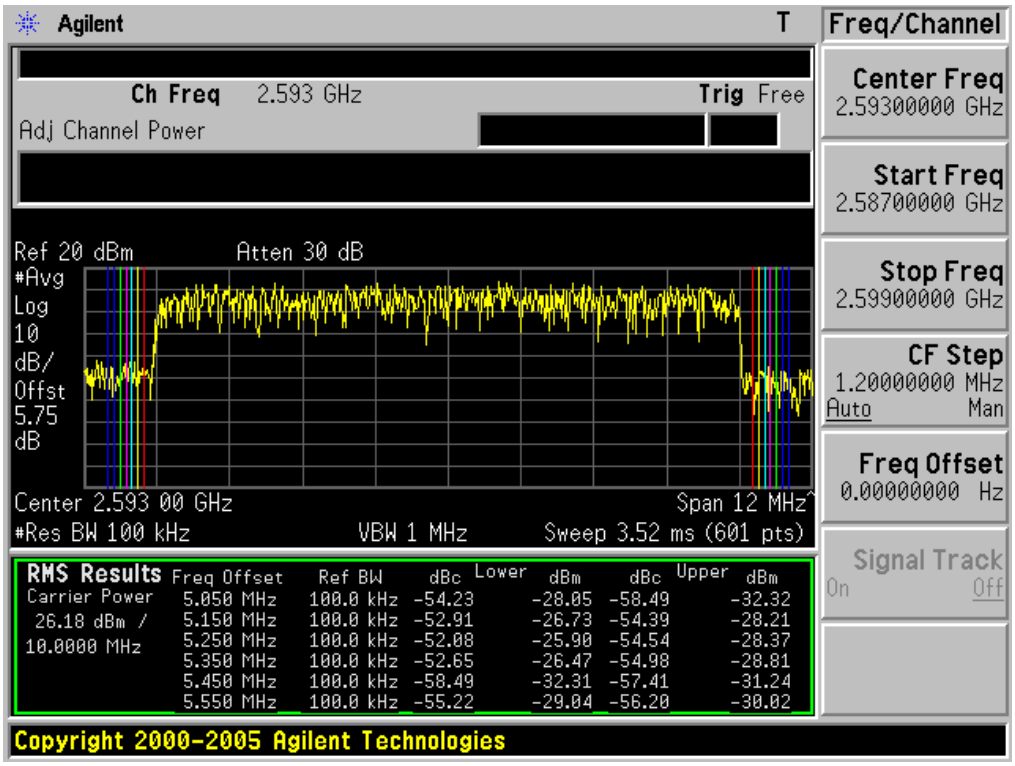


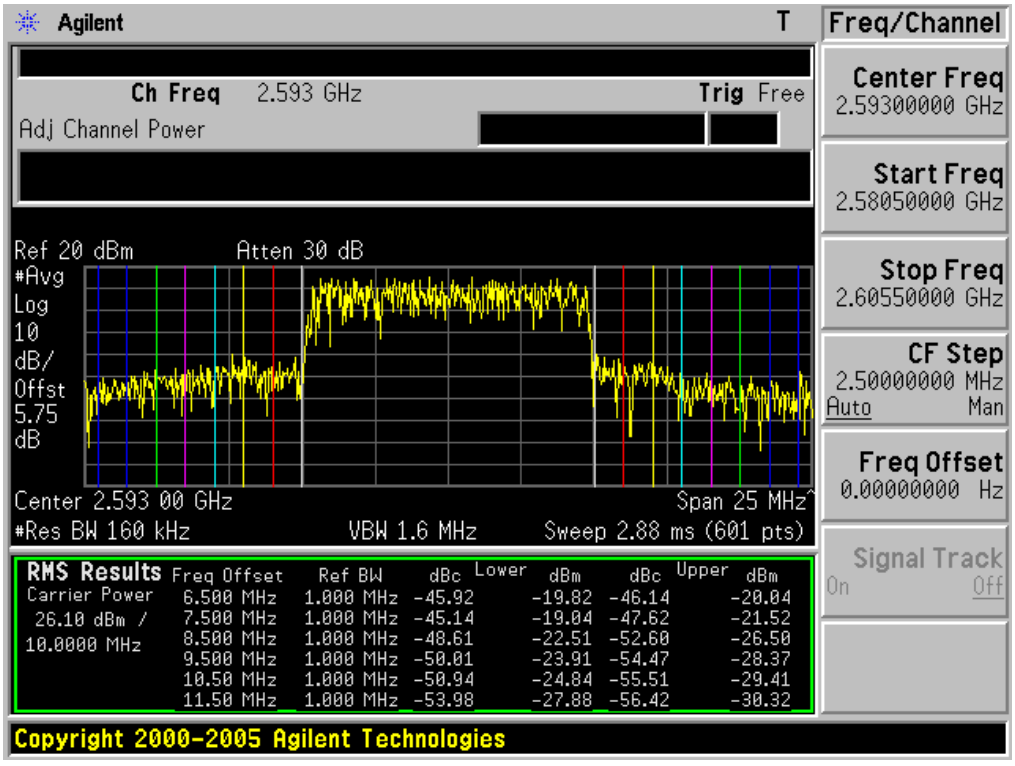


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 10MHz) (Continued…)

- Middle Channel(2593MHz) & AMC Mode & QPSK 1/2

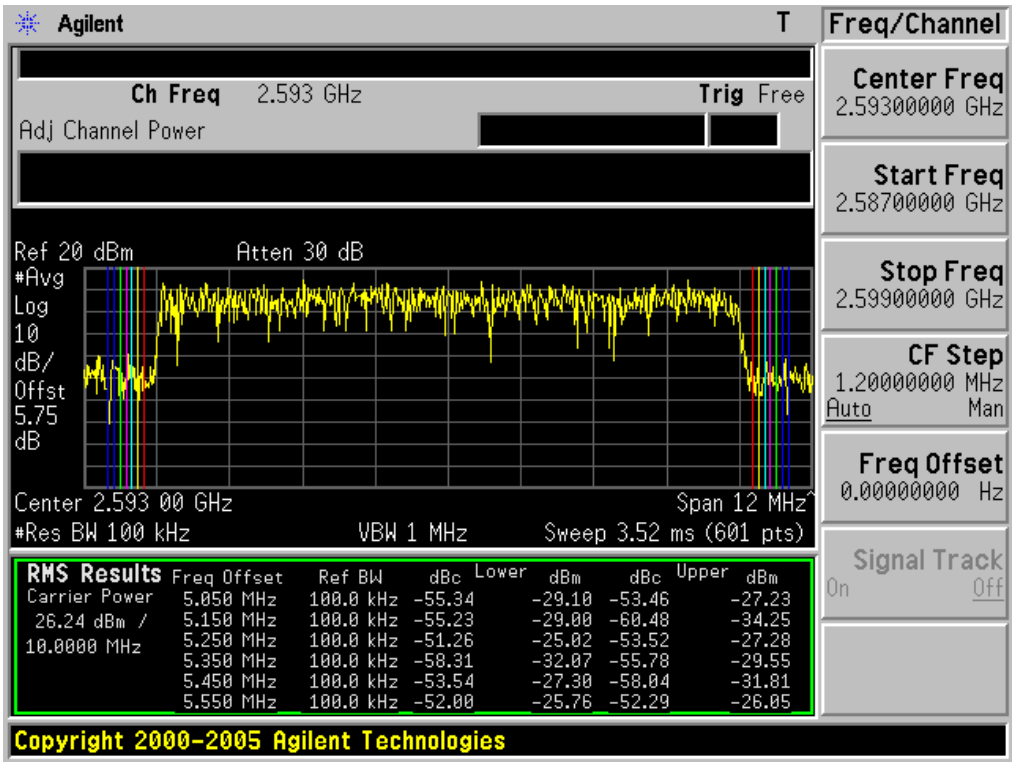


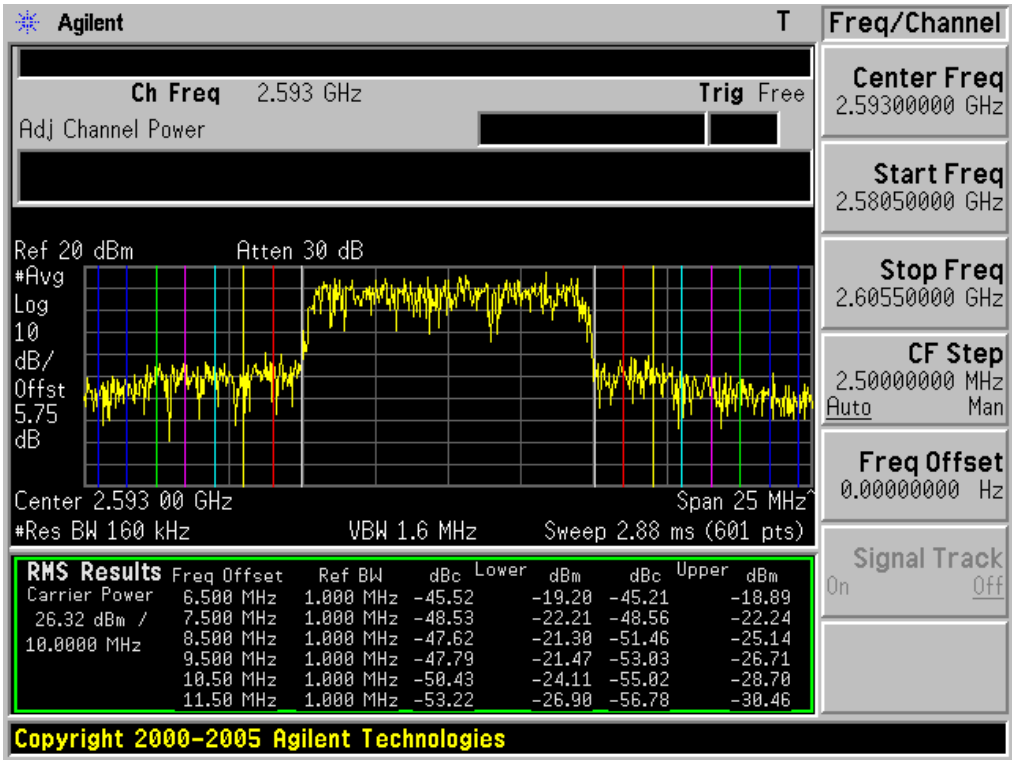


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 10MHz) (Continued…)

- Middle Channel(2593MHz) & AMC Mode & 16QAM 1/2

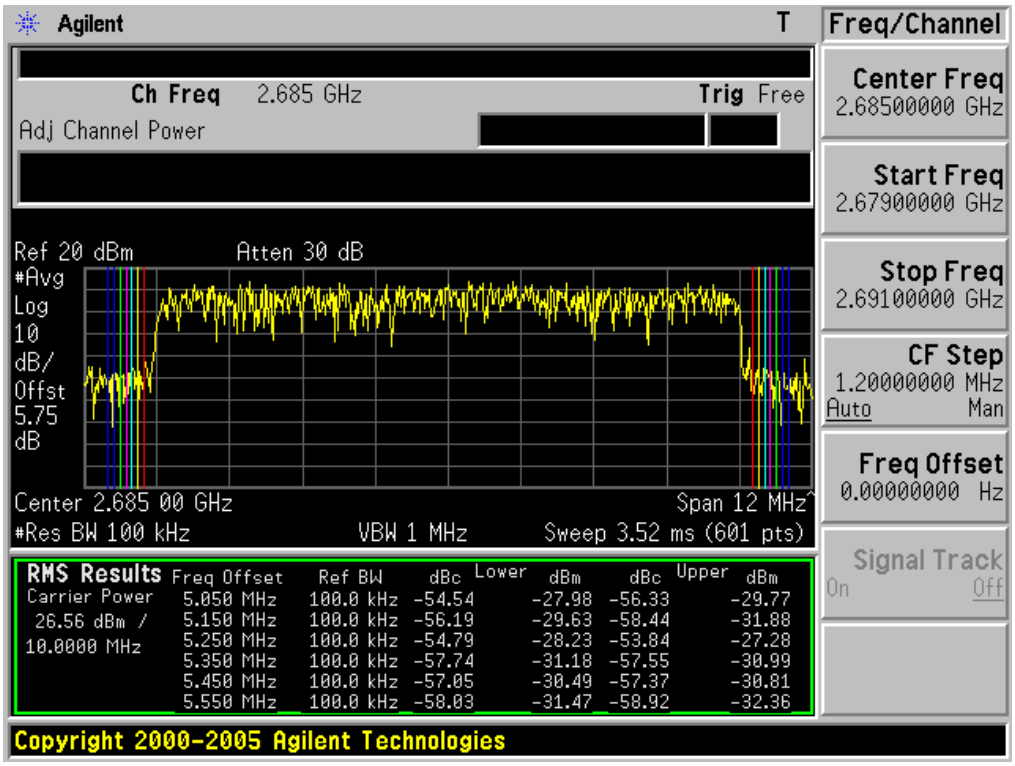


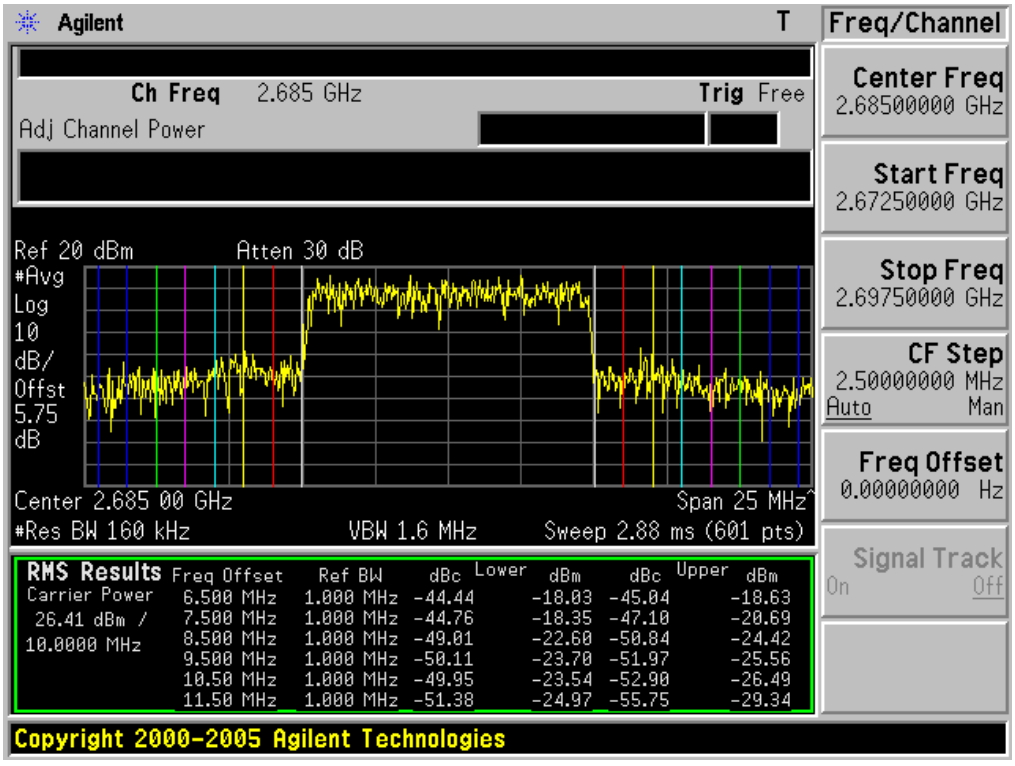


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 10MHz) (Continued…)

- Highest Channel(2685MHz) & AMC Mode & QPSK 1/2

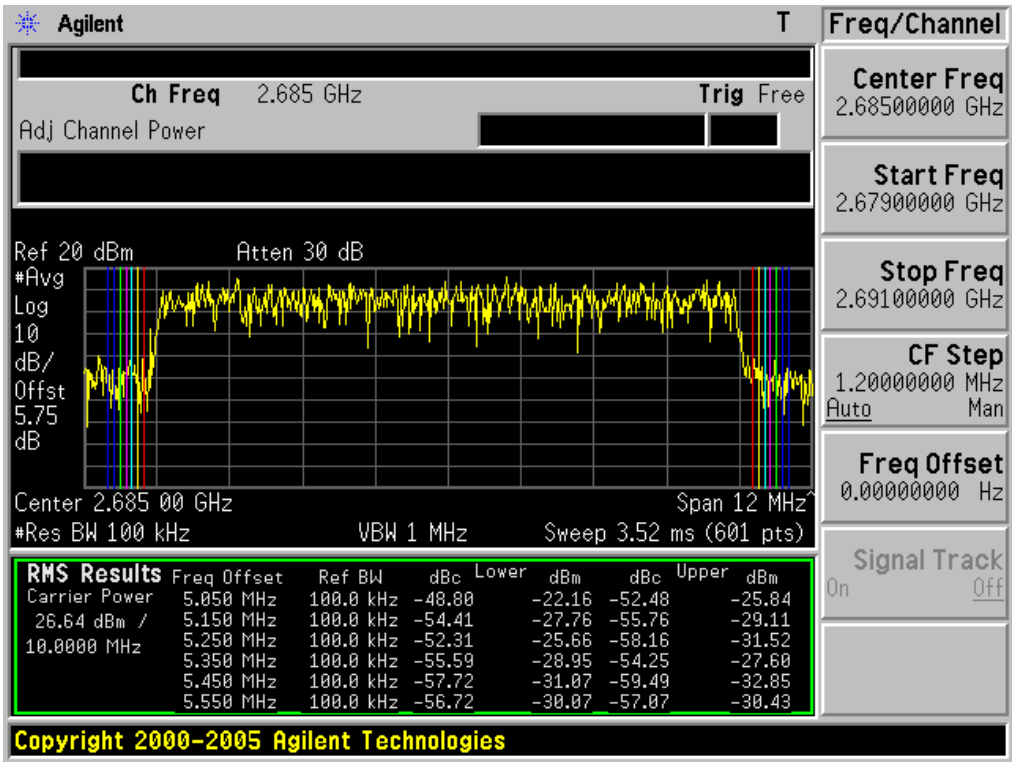


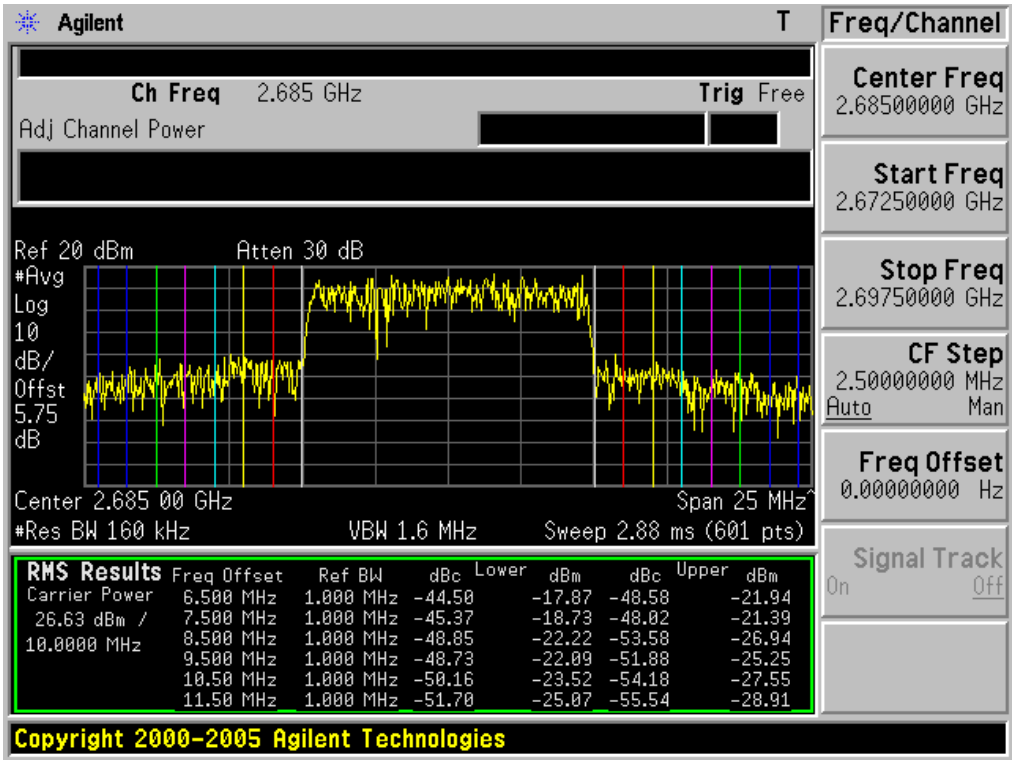


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.2 Band Edge(BW: 10MHz) (Continued…)

- Highest Channel(2685MHz) & AMC Mode & 16QAM 1/2

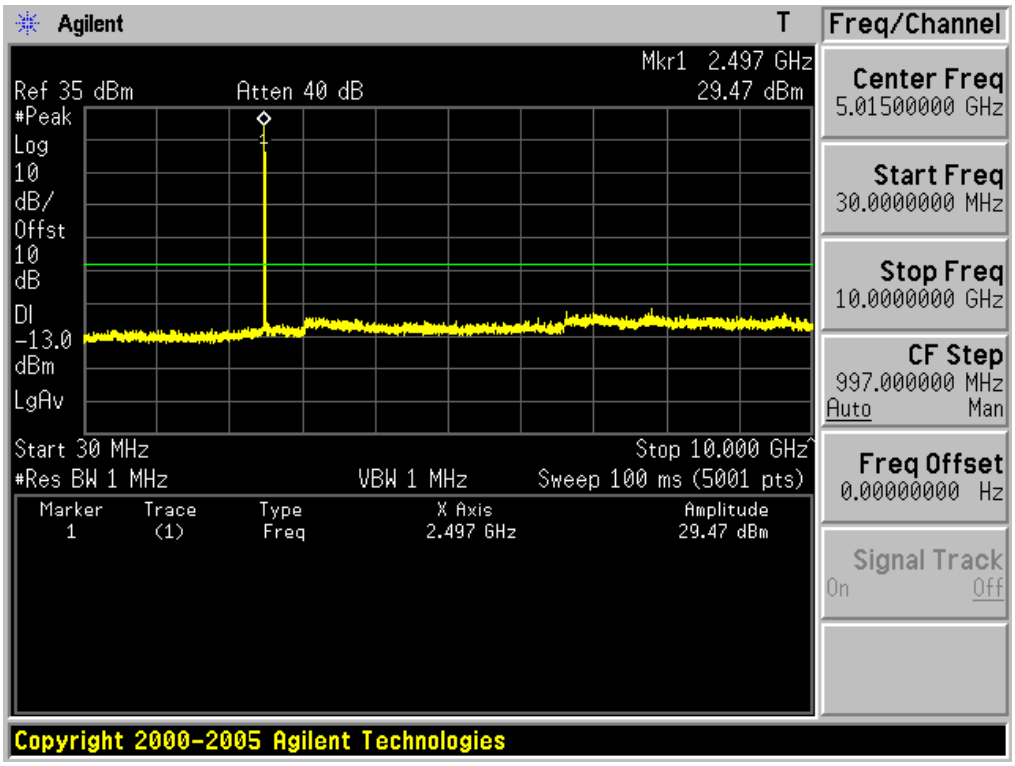


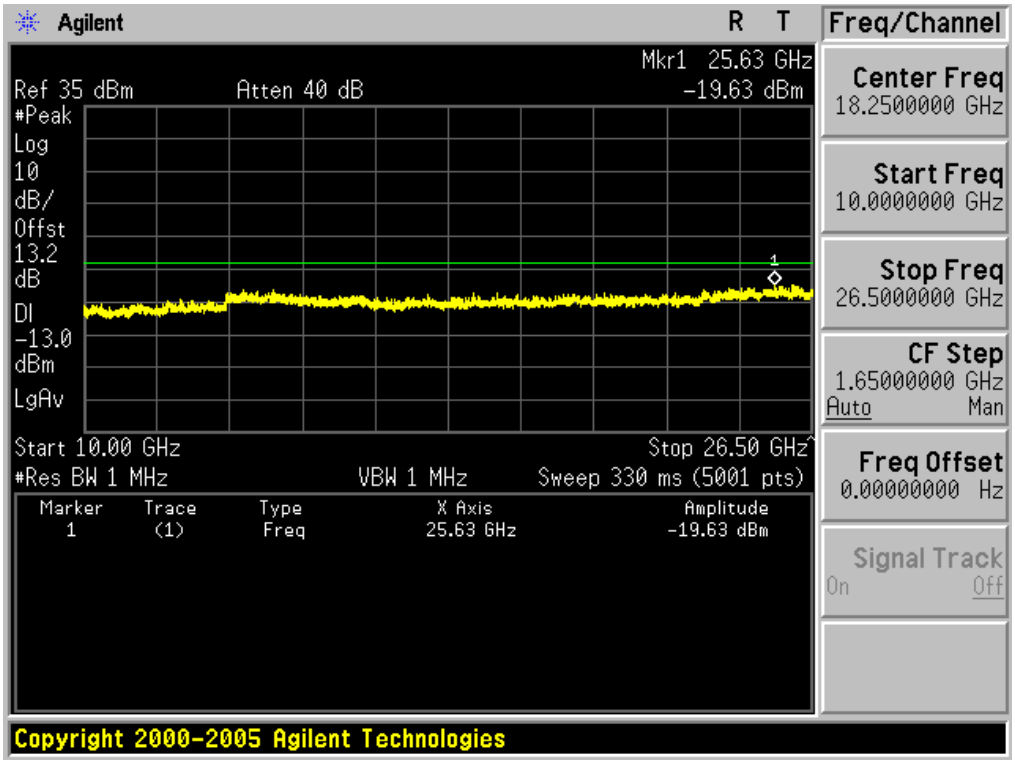


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 5MHz)

- Low Channel(2498.5MHz) & AMC Mode & QPSK 1/2

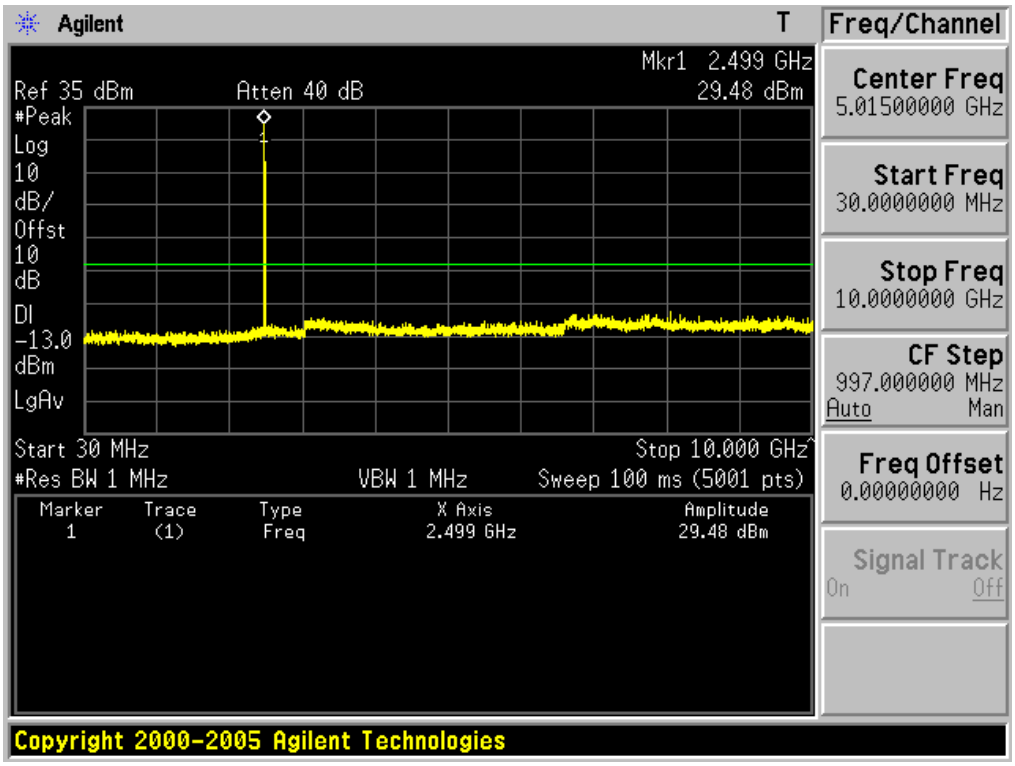


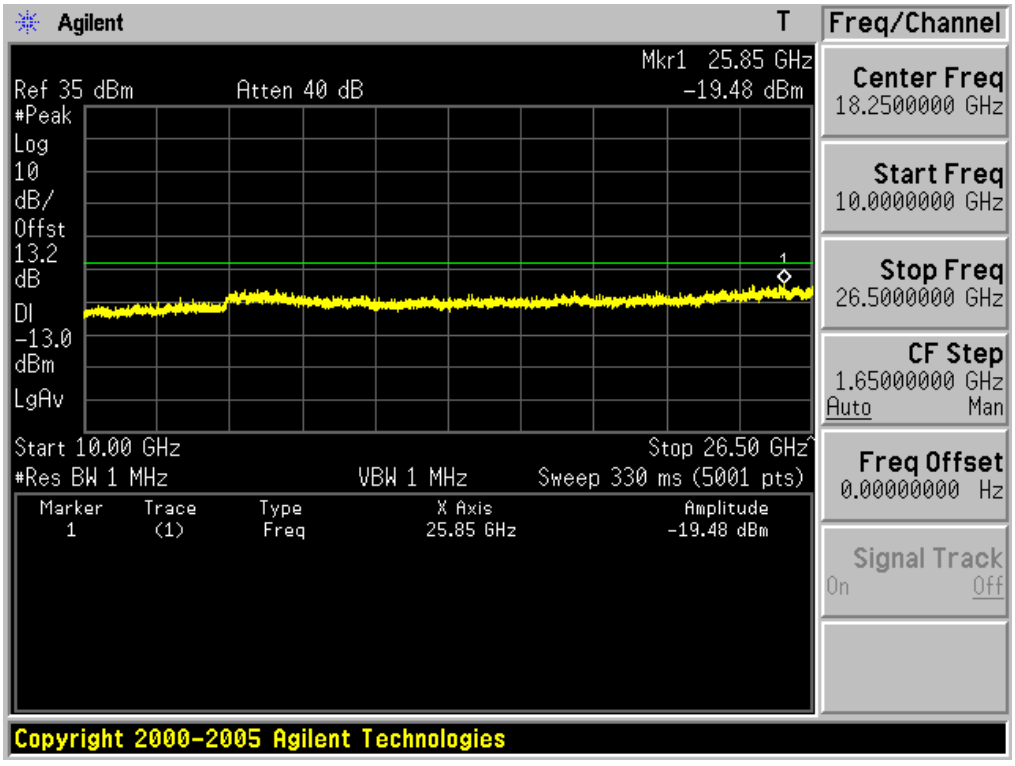


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 5MHz) (Continued…)

- Low Channel(2498.5MHz) & AMC Mode & 16QAM 1/2

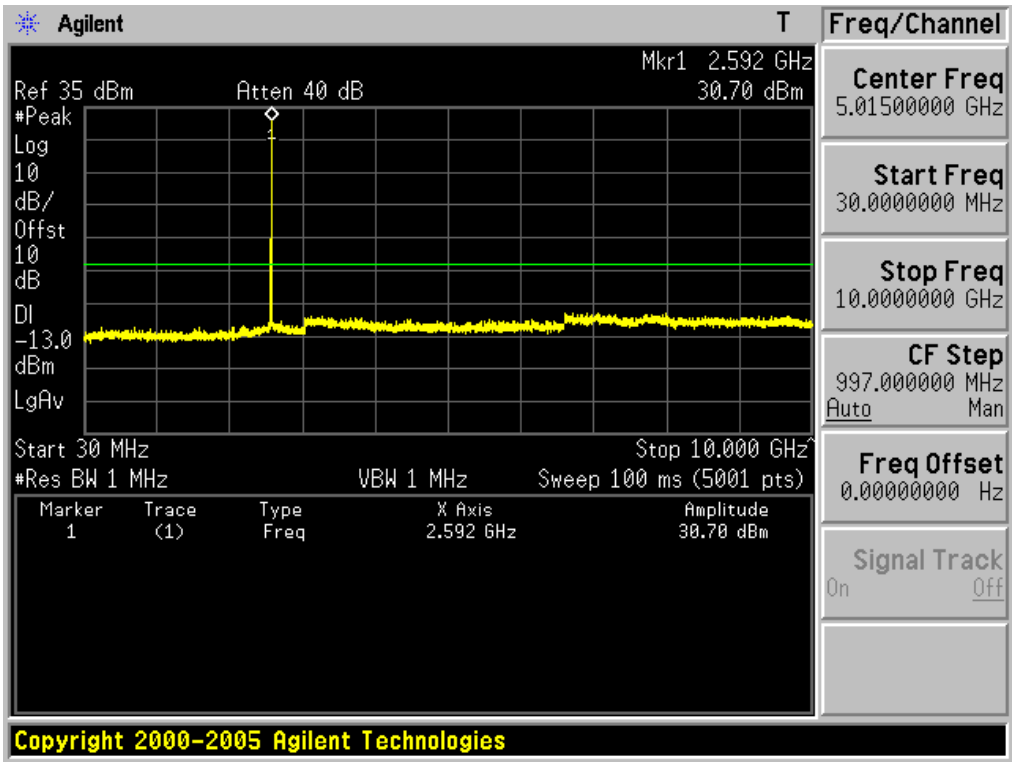


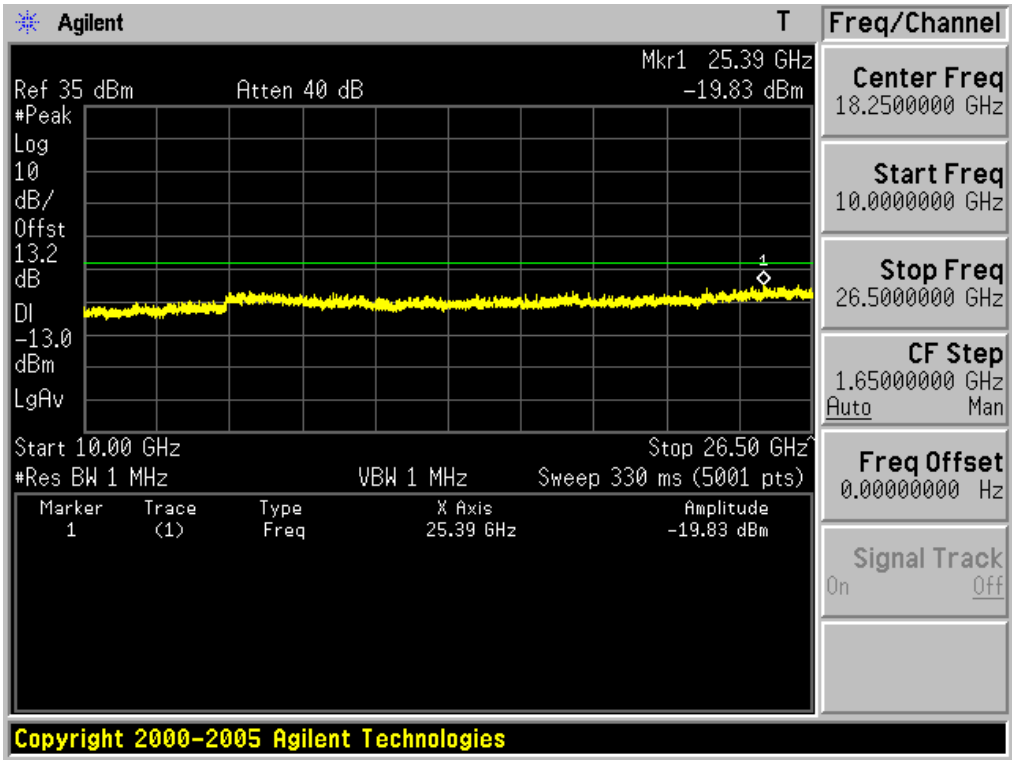


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 5MHz) (Continued…)

- Middle Channel(2593.0MHz) & AMC Mode & QPSK 1/2

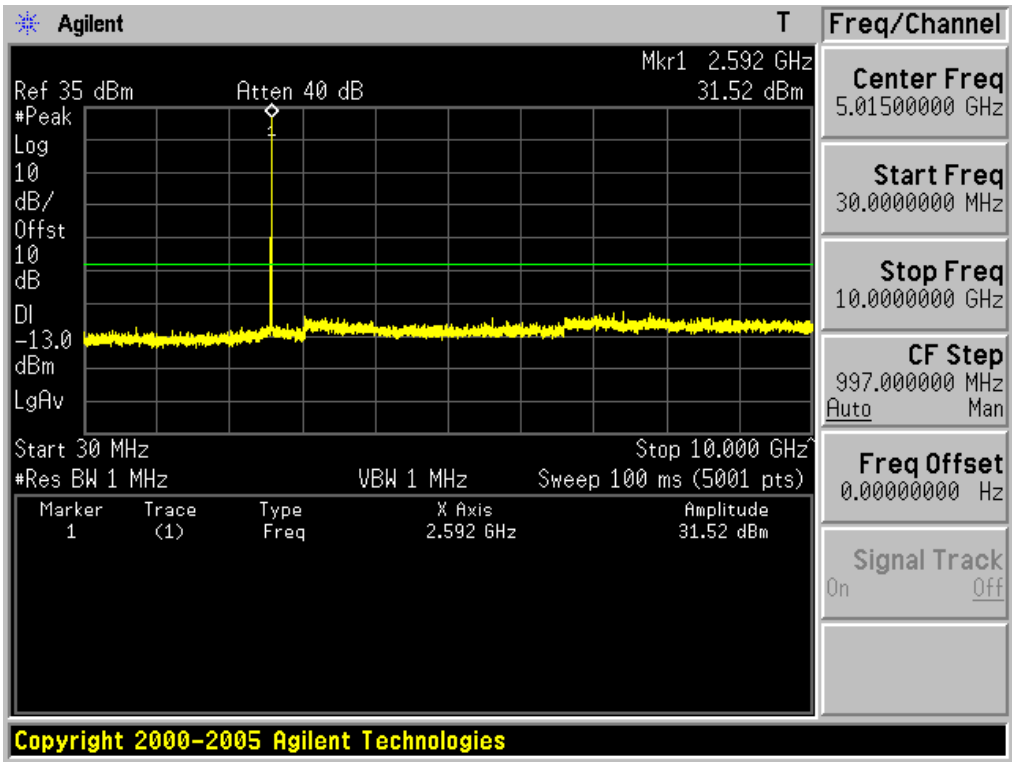


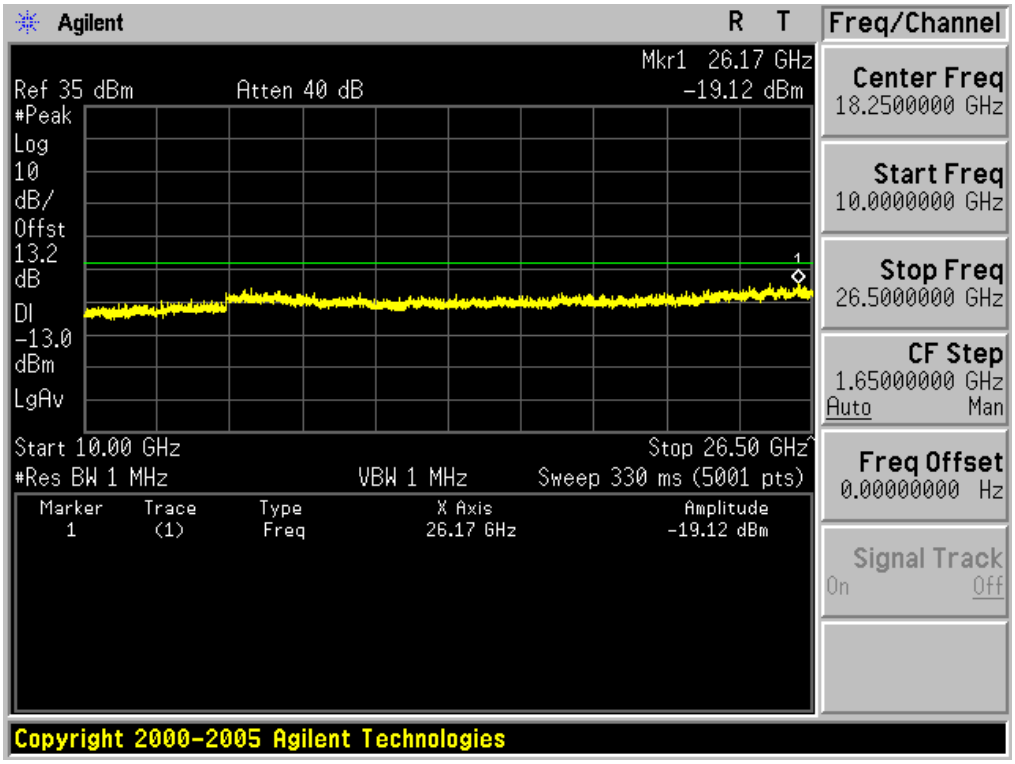


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 5MHz)

- Middle Channel(2593.0MHz) & AMC Mode & 16QAM 1/2

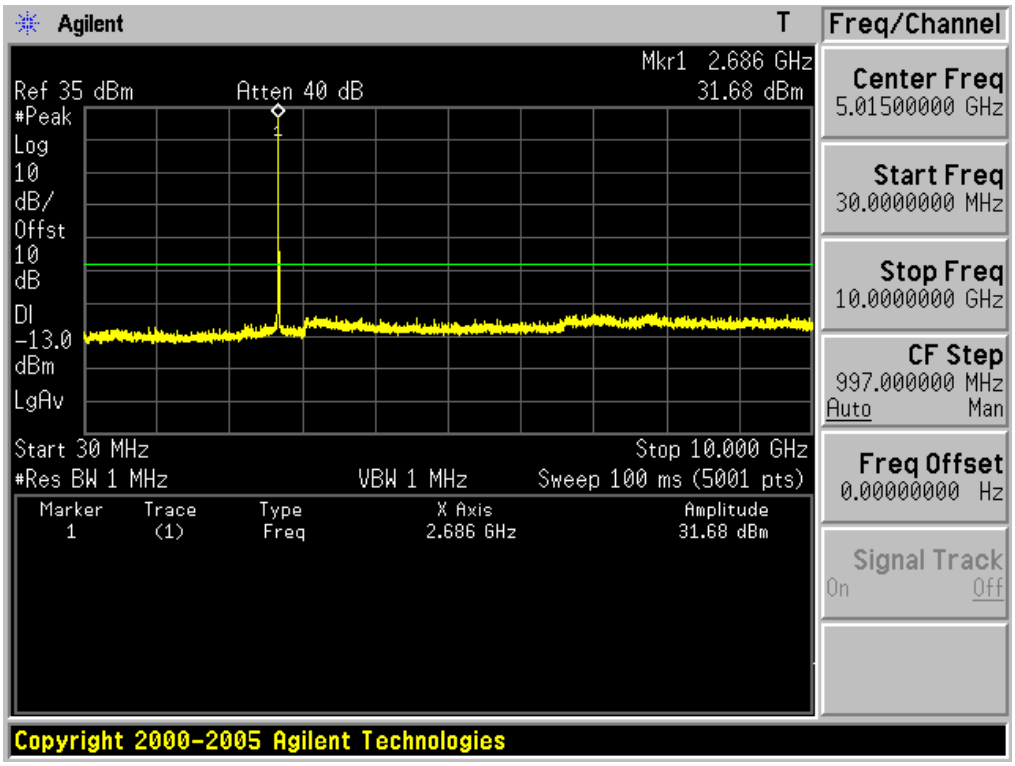


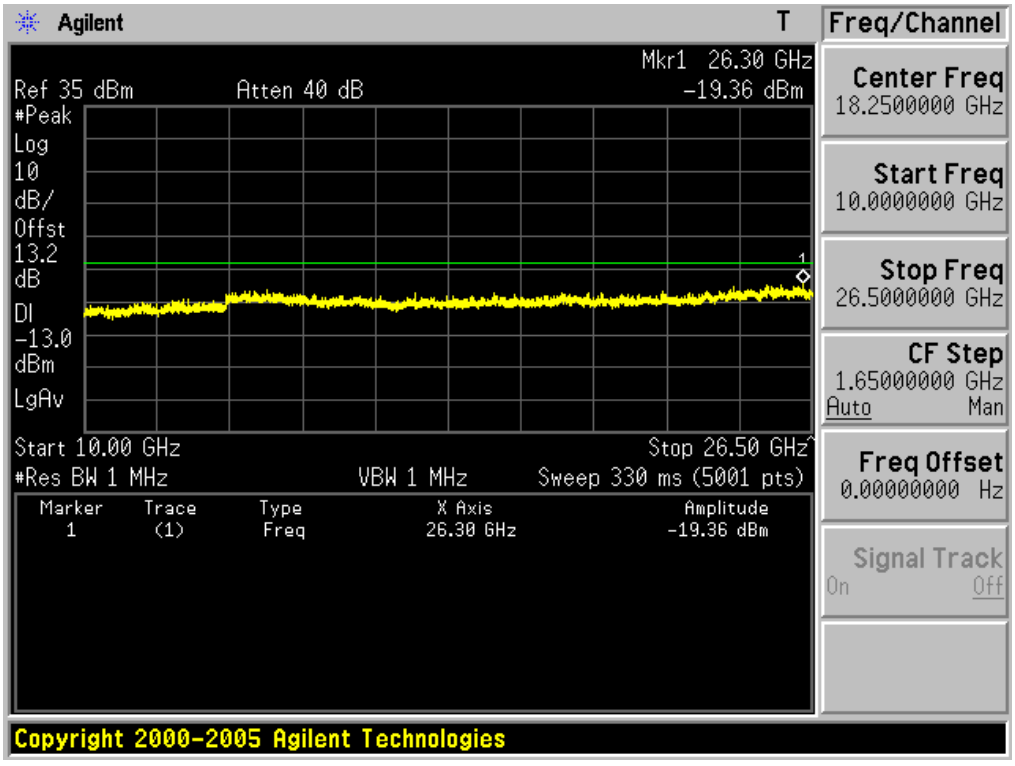


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 5MHz) (Continued…)

- High Channel(2687.5MHz) & AMC Mode & QPSK 1/2

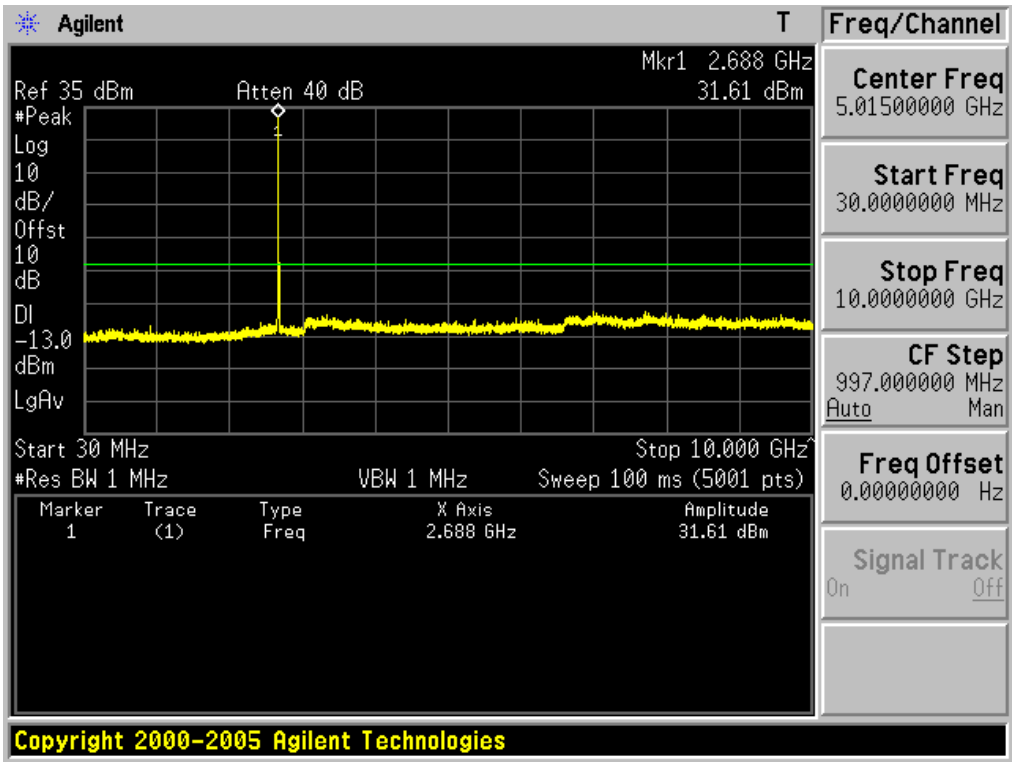


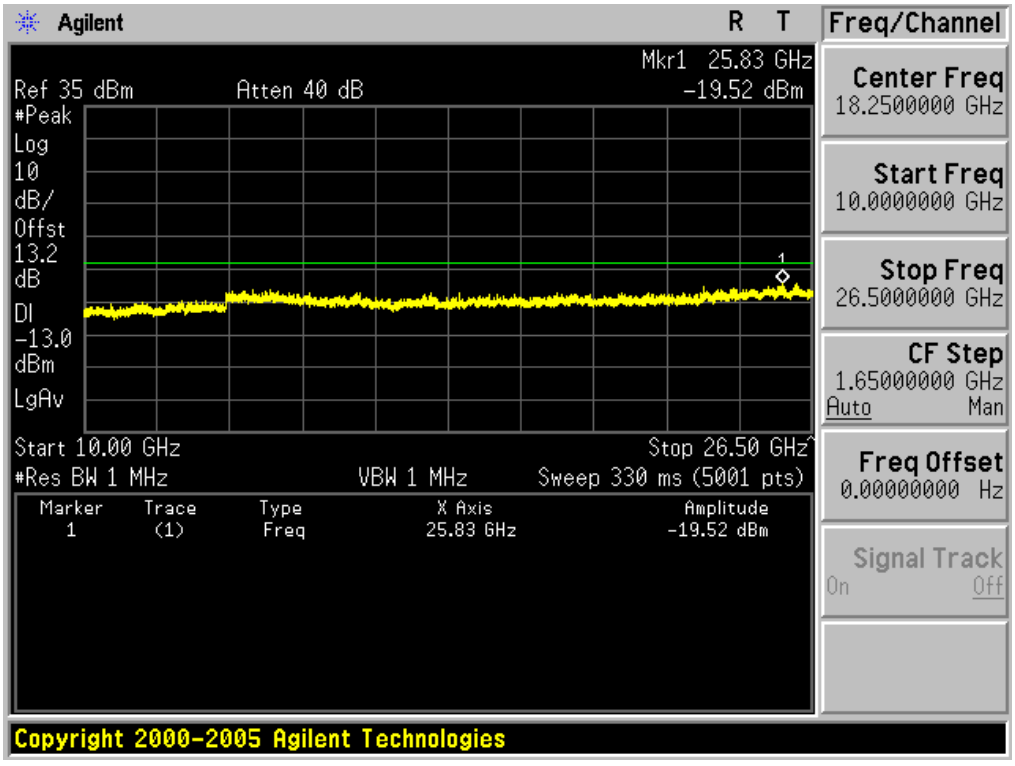


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 5MHz) (Continued…)

- High Channel(2687.5MHz) & AMC Mode & 16QAM 1/2

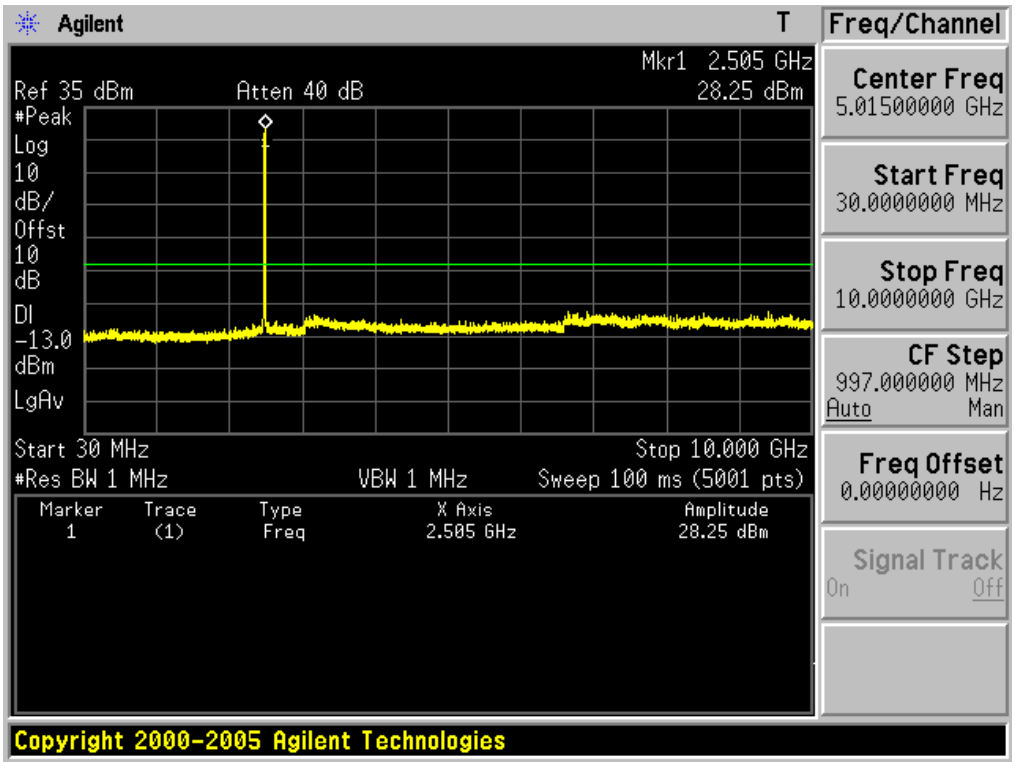


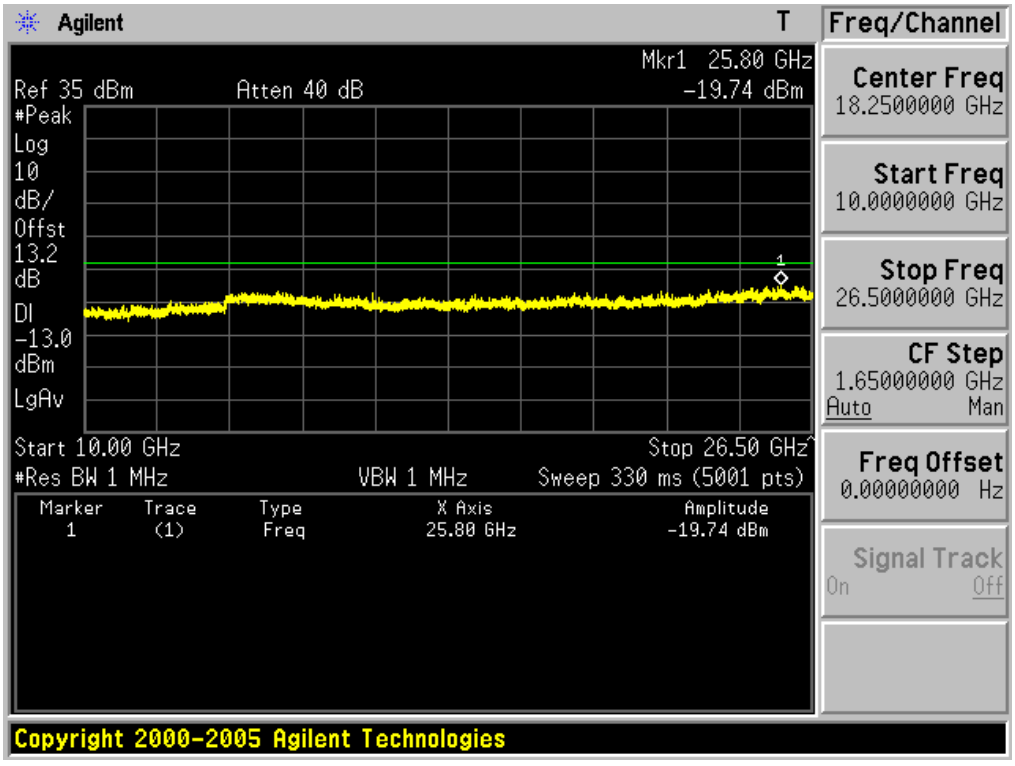


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 10MHz) (Continued…)

- Low Channel(2501MHz) & AMC Mode & QPSK 1/2

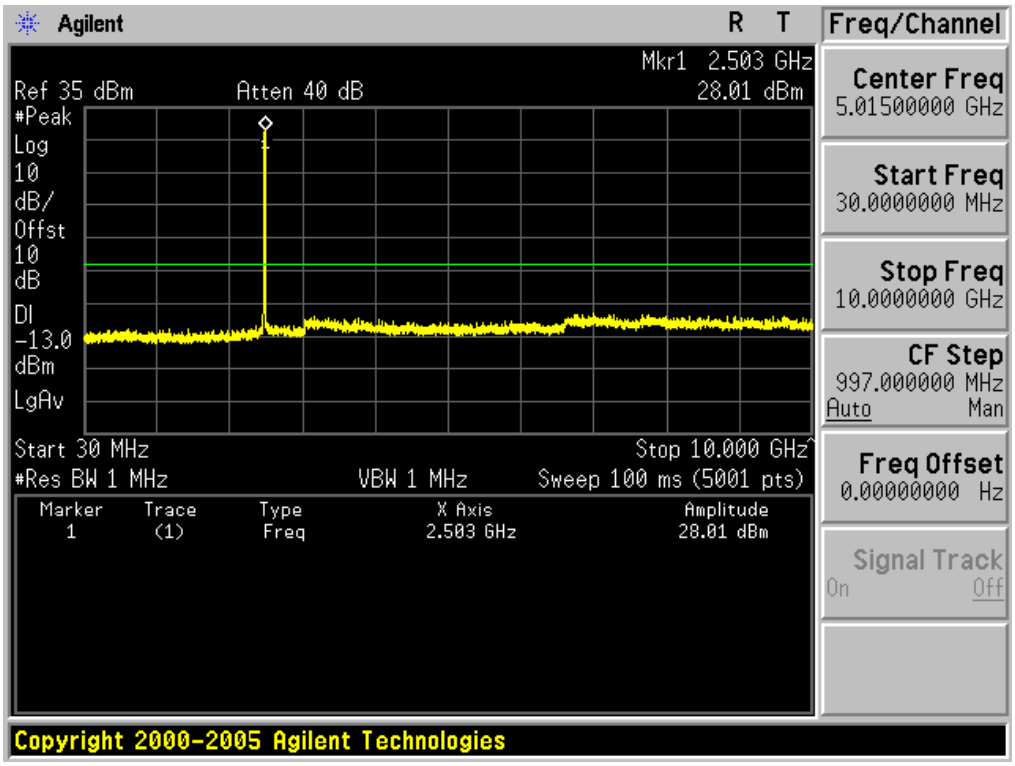


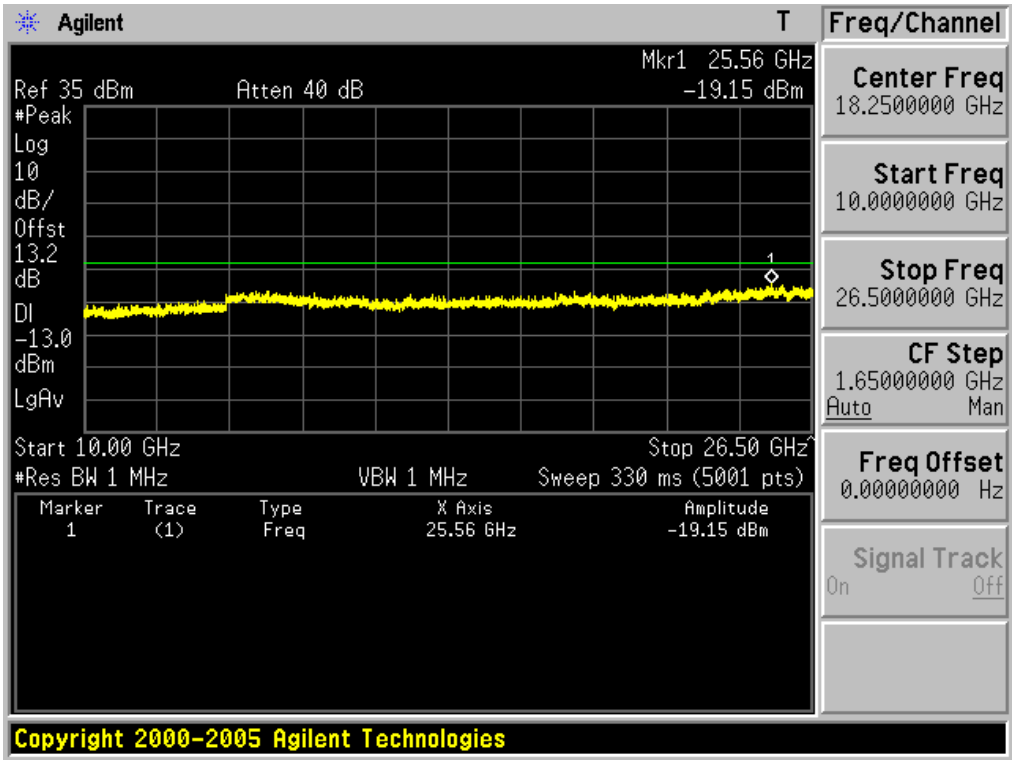


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 10MHz) (Continued…)

- Low Channel(2501MHz) & AMC Mode & 16QAM 1/2

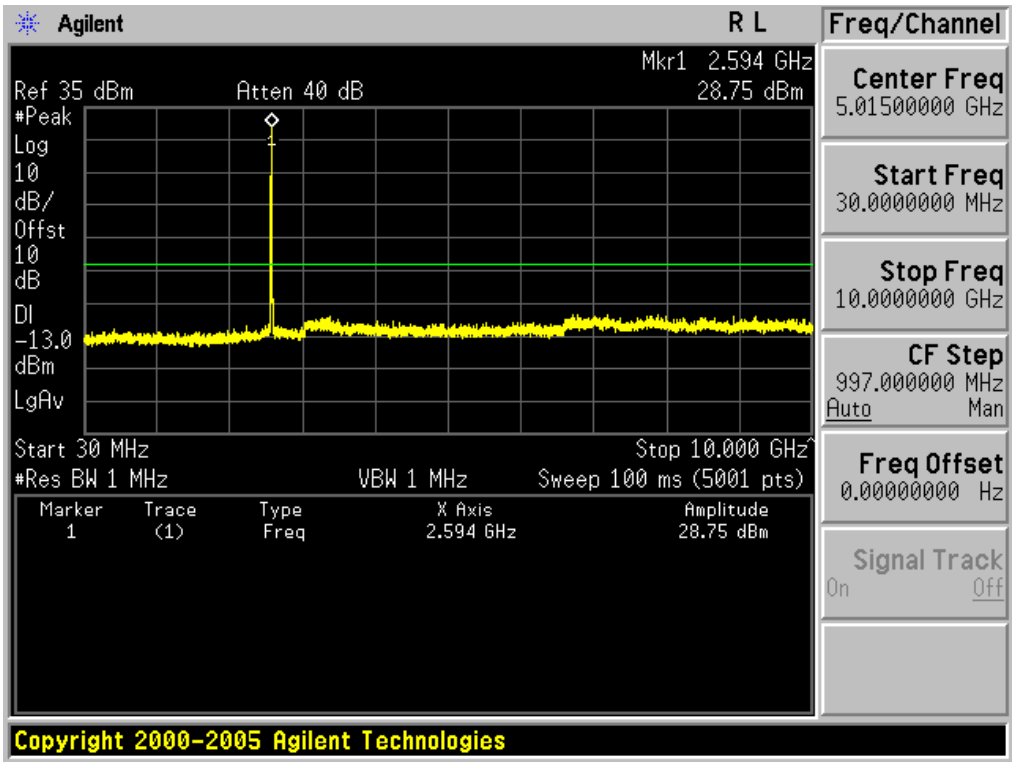


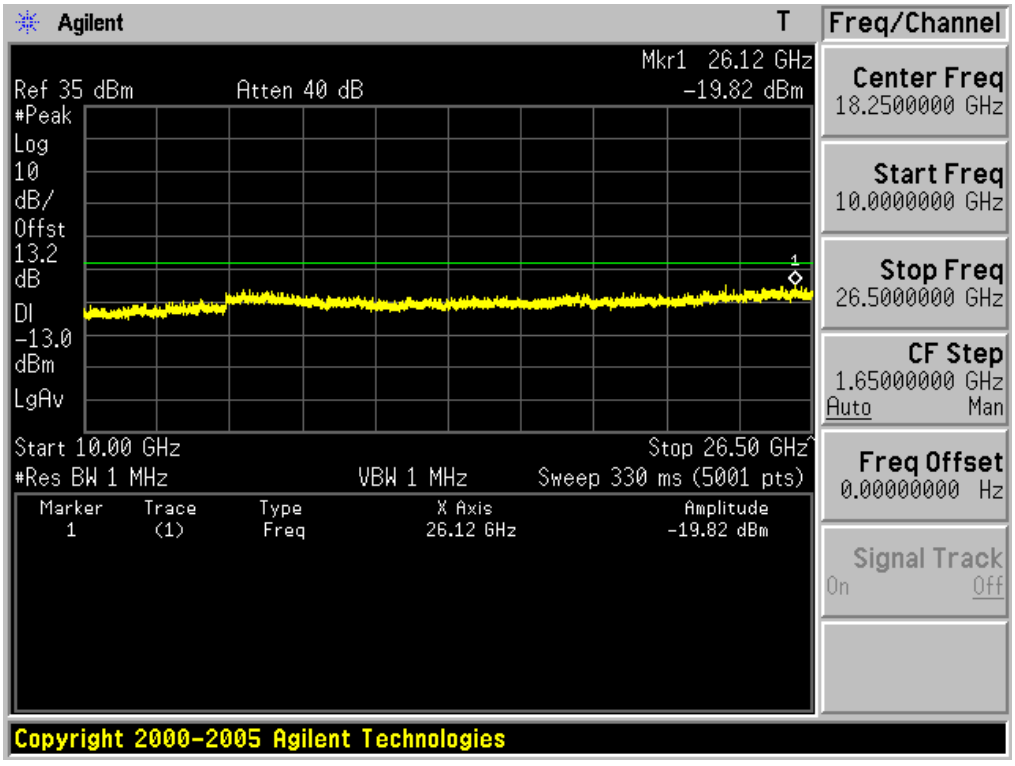


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 10MHz) (Continued…)

- Middle Channel(2593MHz) & AMC Mode & QPSK 1/2

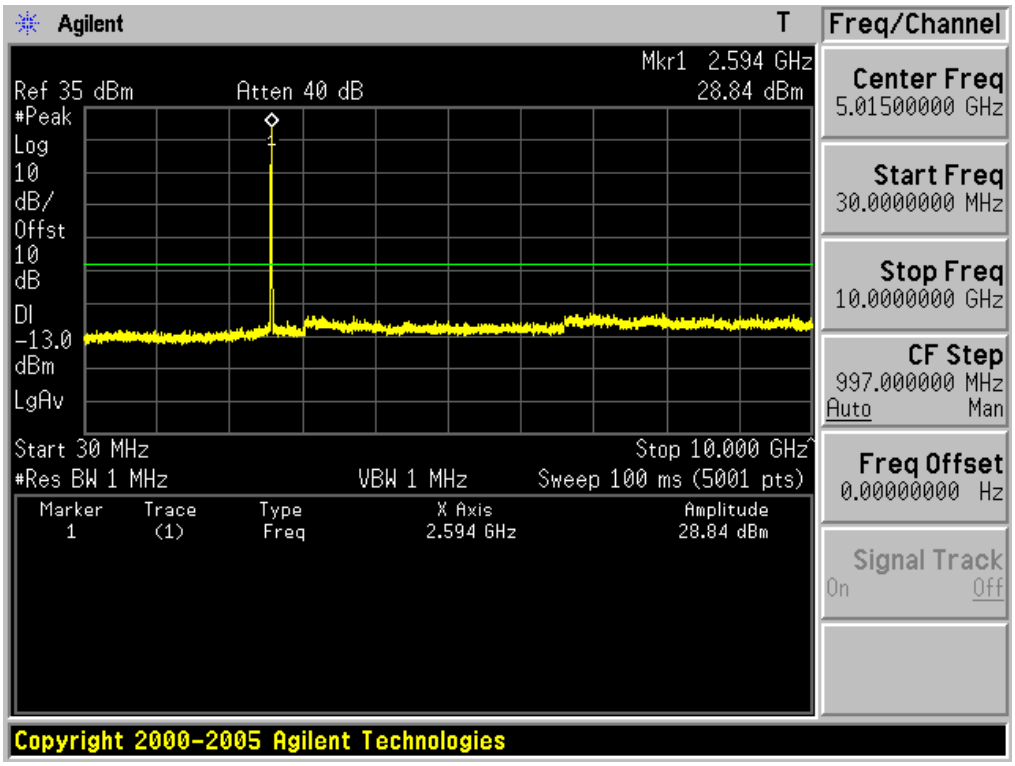


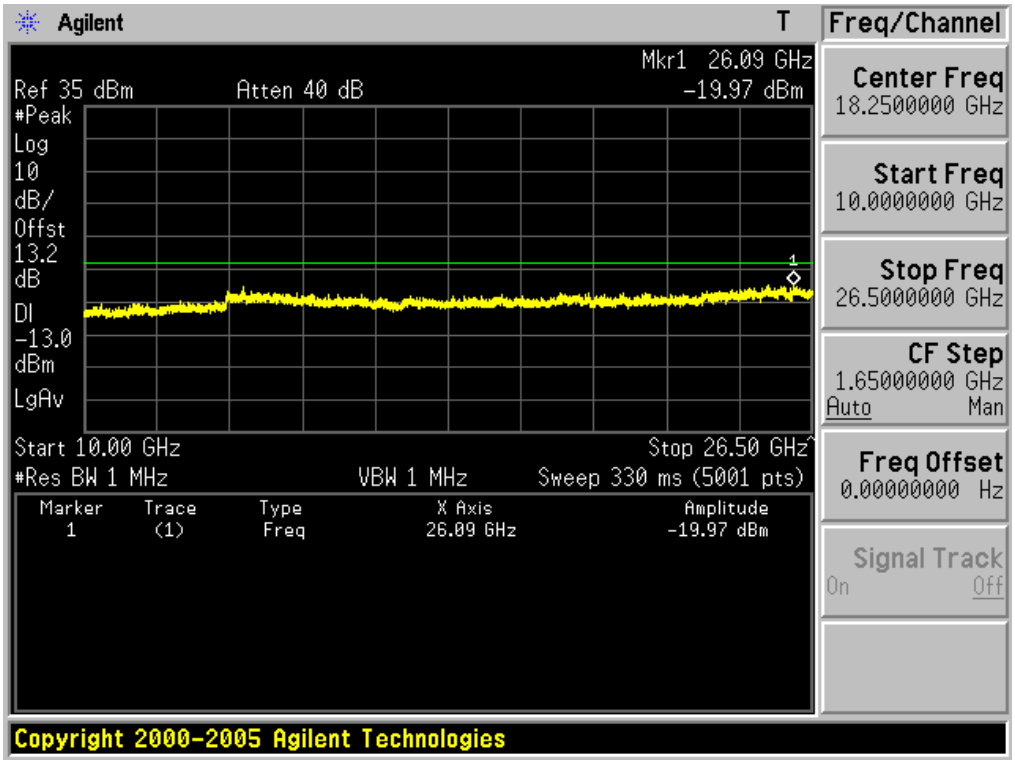


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 10MHz) (Continued…)

- Middle Channel(2593MHz) & AMC Mode & 16QAM 1/2

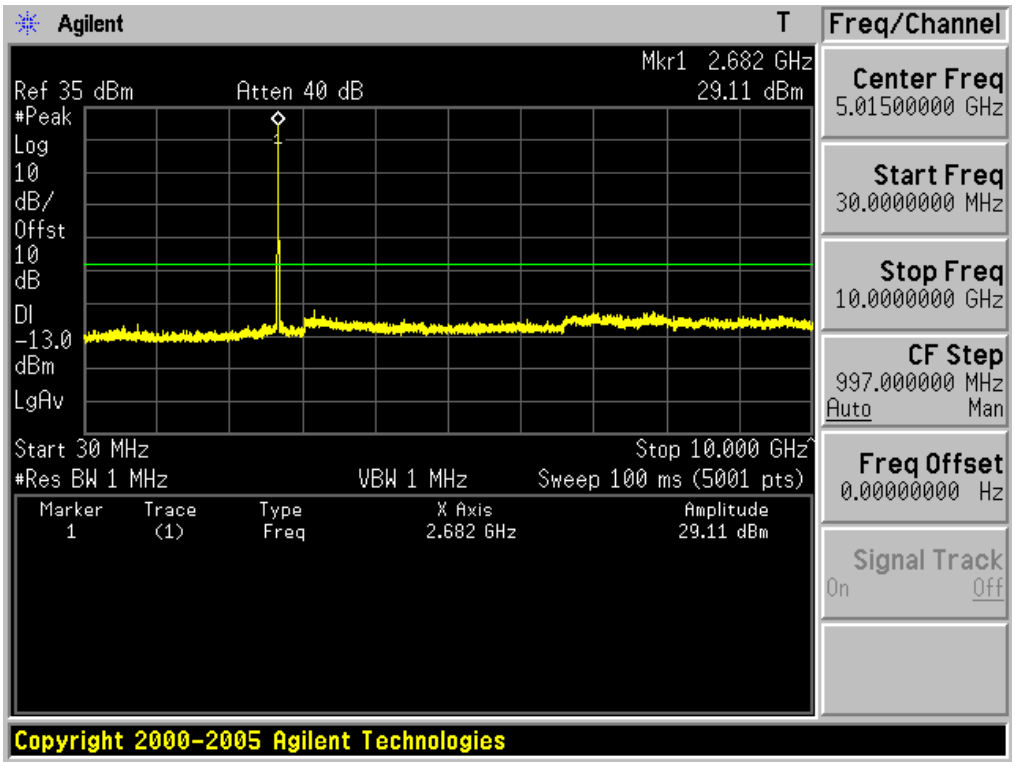


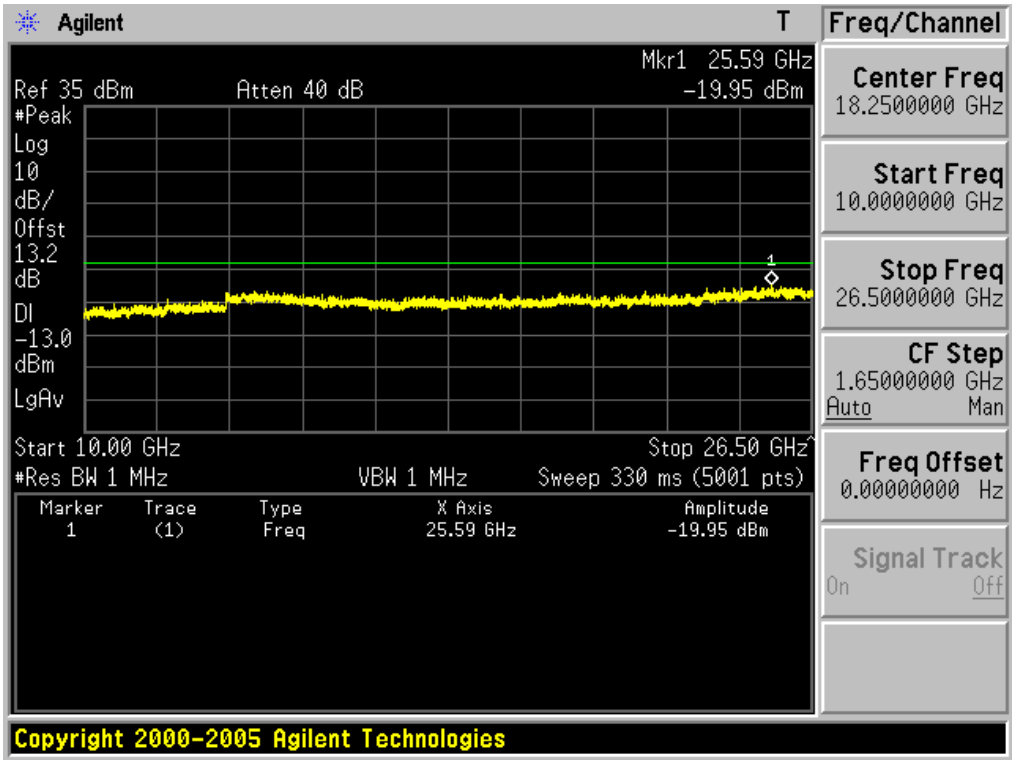


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 10MHz) (Continued…)

- High Channel(2685MHz) & AMC Mode & QPSK 1/2

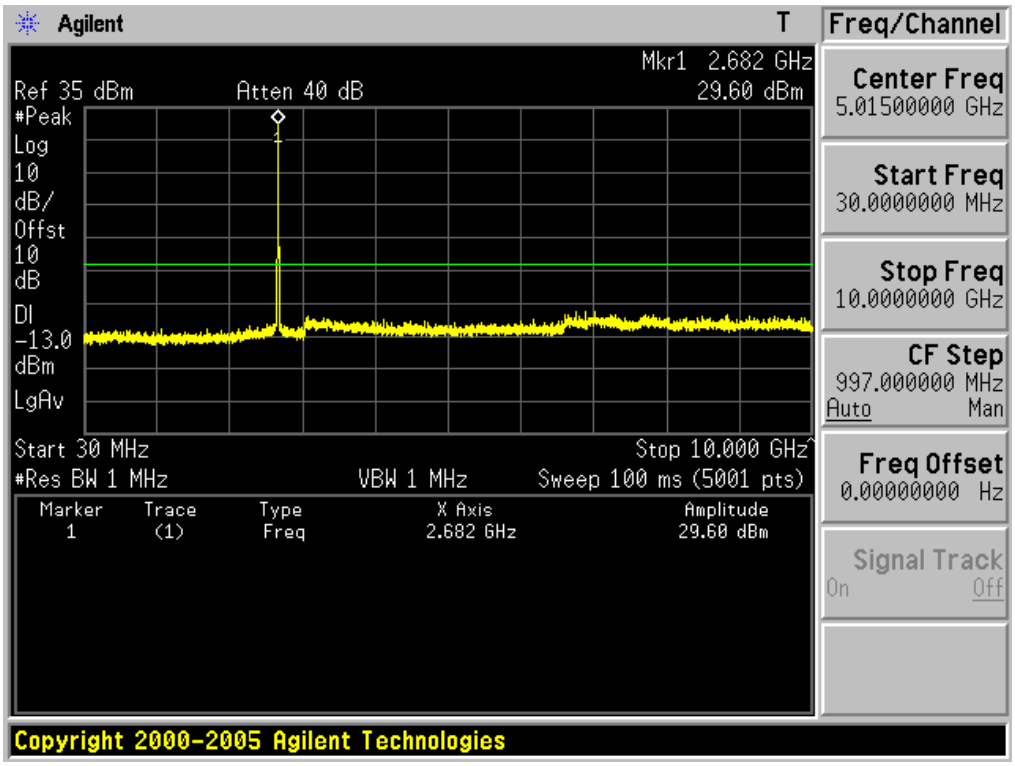


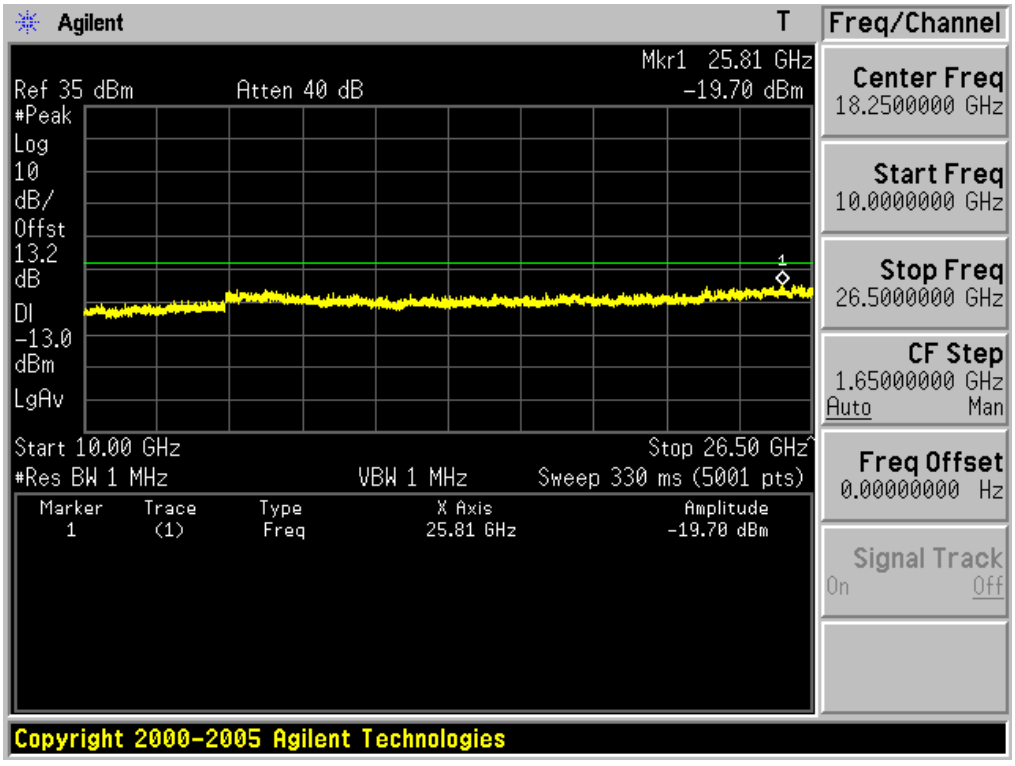


5.1 PLOTS OF EMISSIONS (Continued…)

5.1.3 Conducted Spurious Emissions(BW: 10MHz) (Continued…)

- High Channel(2685MHz) & AMC Mode & 16QAM 1/2

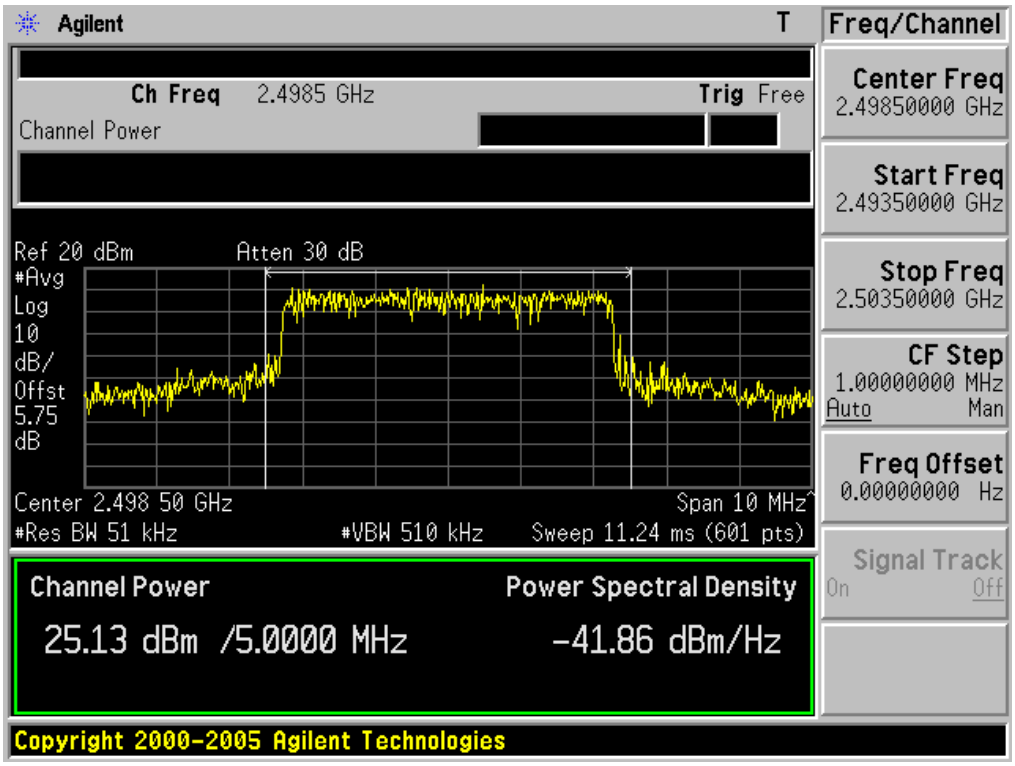




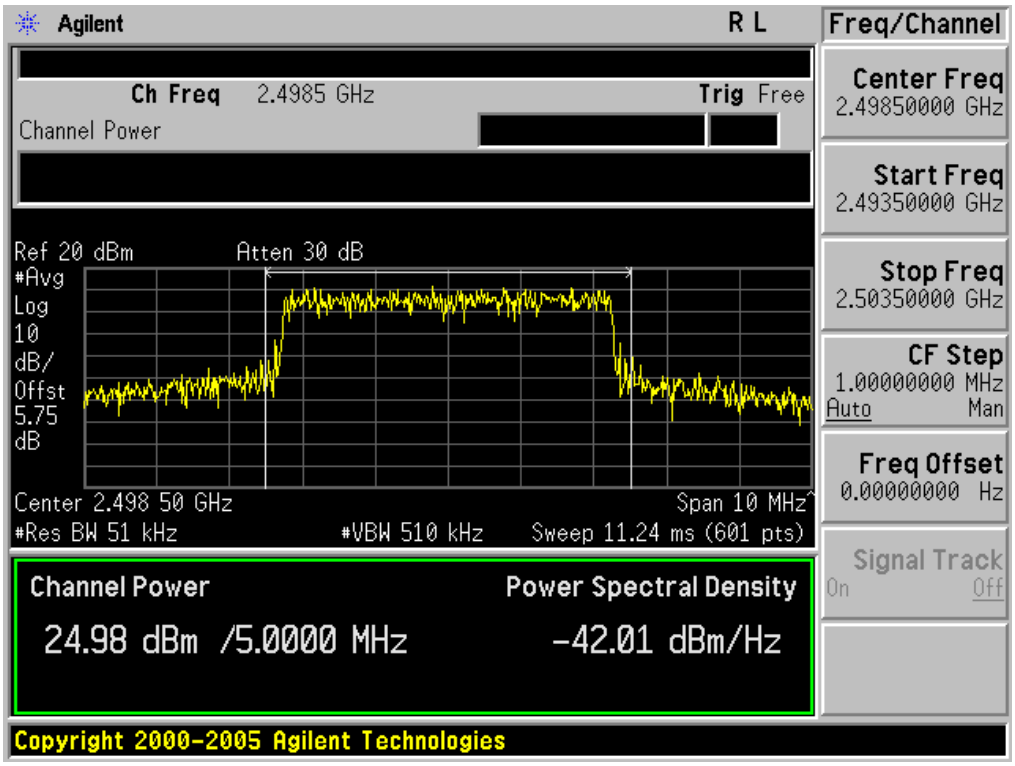
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz)

- Low Channel(2498.5MHz) & PUSC Mode & QPSK 1/2



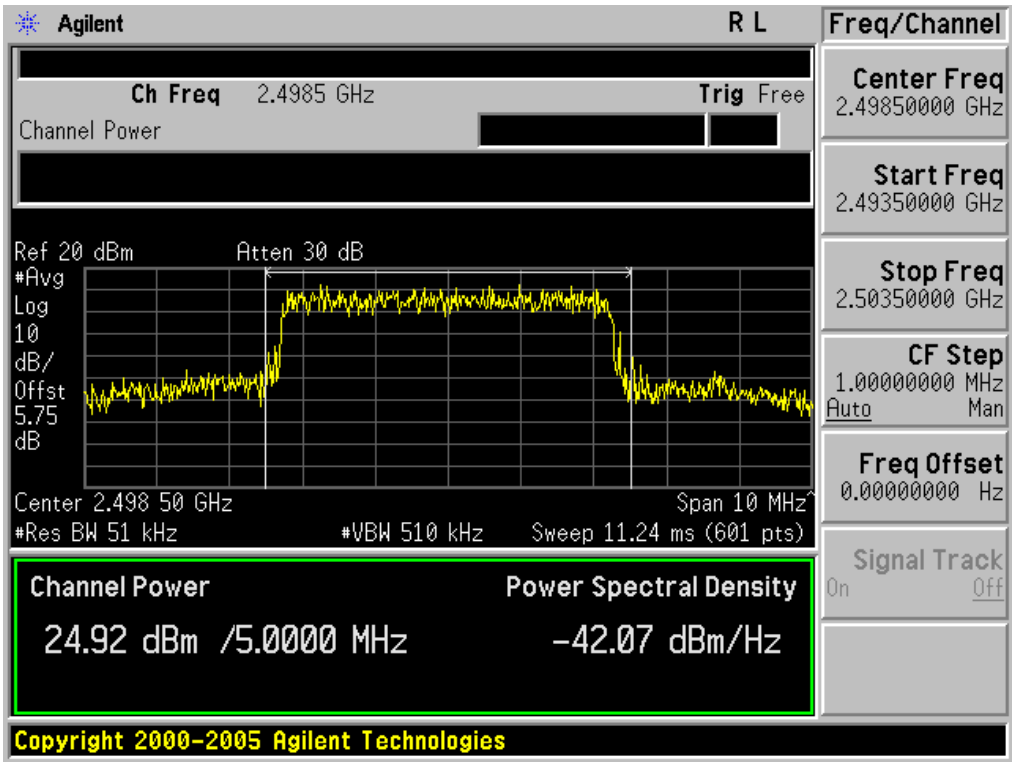
- Low Channel(2498.5MHz) & PUSC Mode & QPSK 3/4



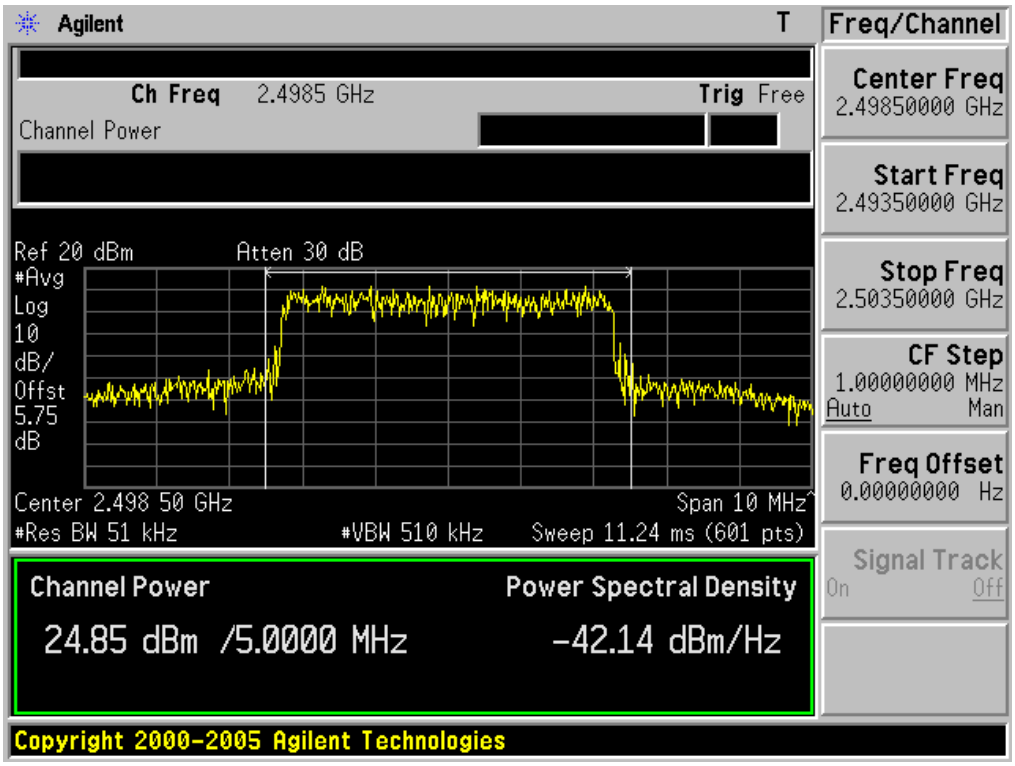
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- Low Channel(2498.5MHz) & PUSC Mode & 16QAM 1/2



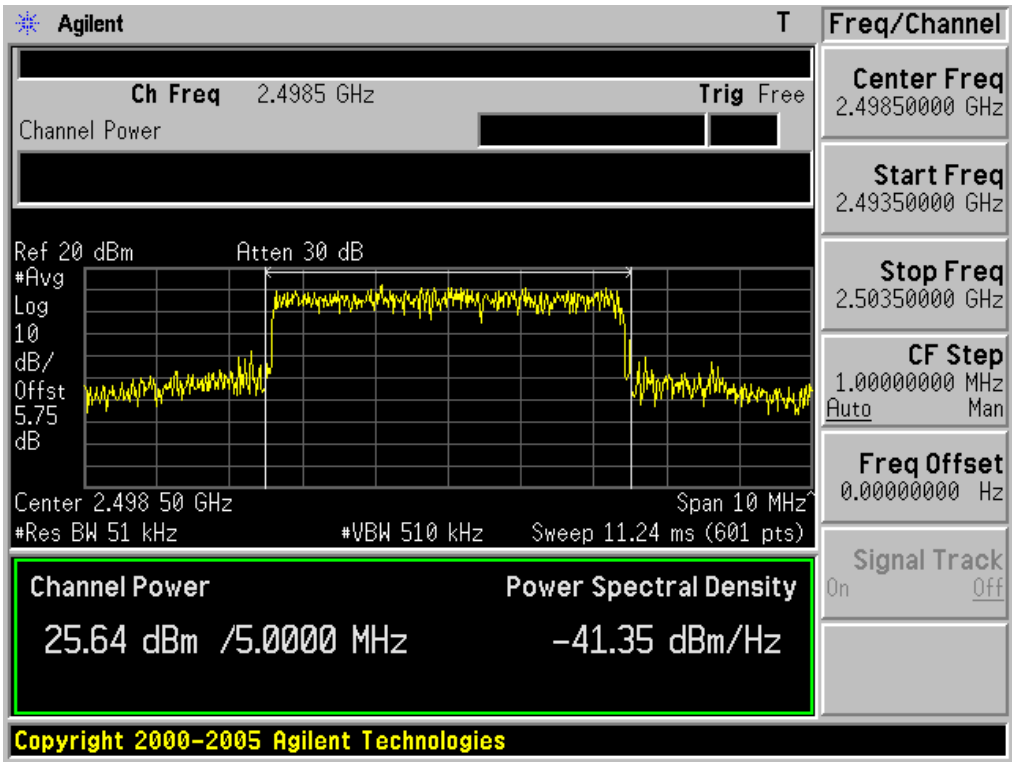
- Low Channel(2498.5MHz) & PUSC Mode & 16QAM 3/4



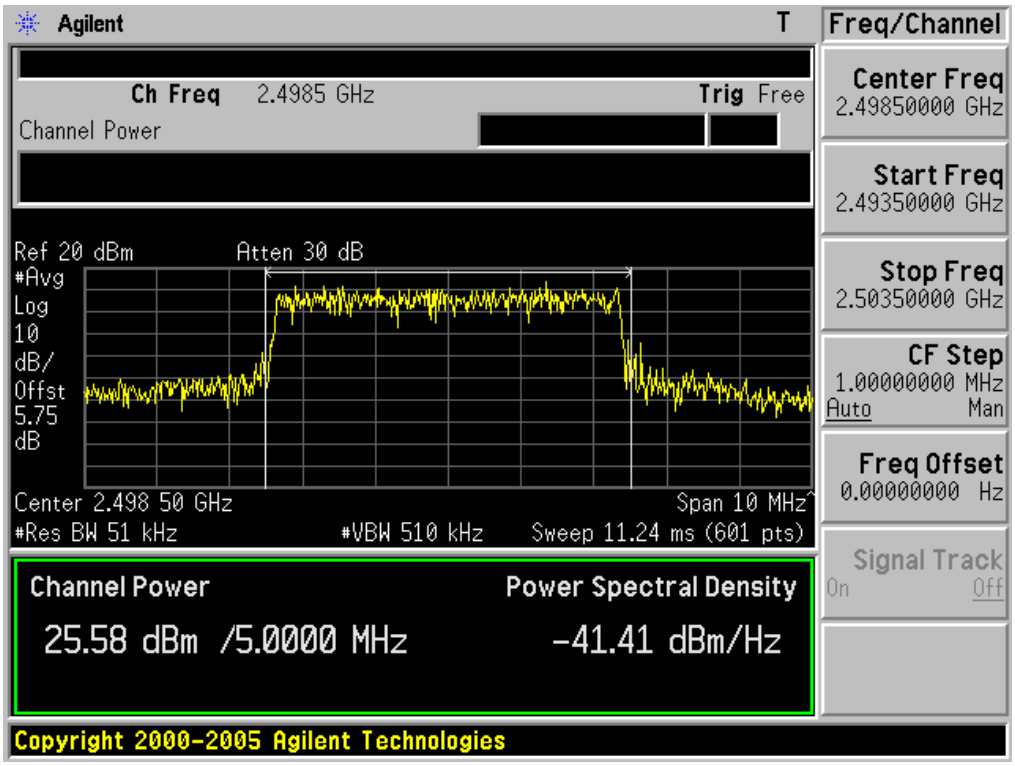
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- Low Channel(2498.5MHz) & AMC Mode & QPSK 1/2



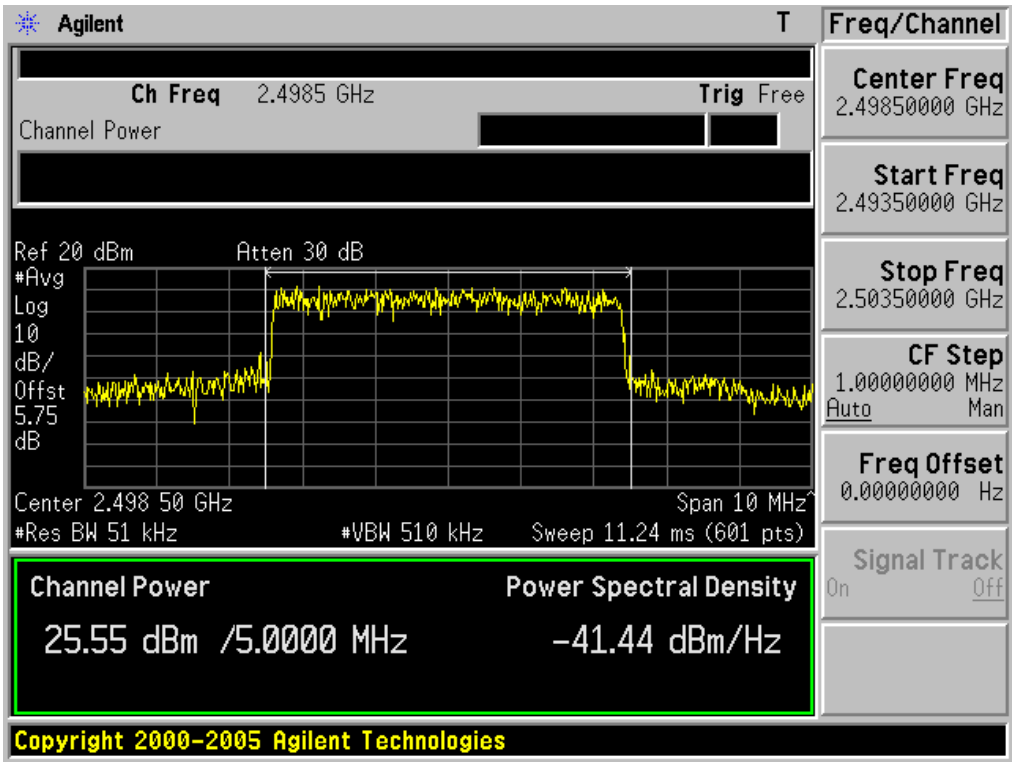
- Low Channel(2498.5MHz) & AMC Mode & QPSK 3/4



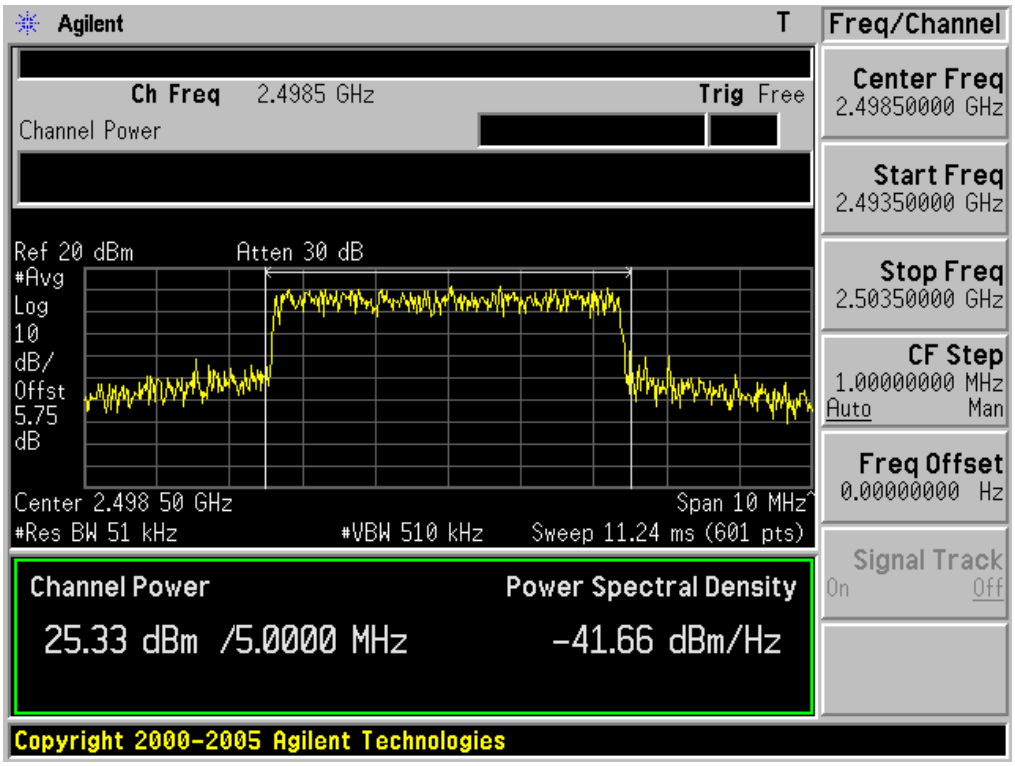
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- Low Channel(2498.5MHz) & AMC Mode & 16QAM 1/2



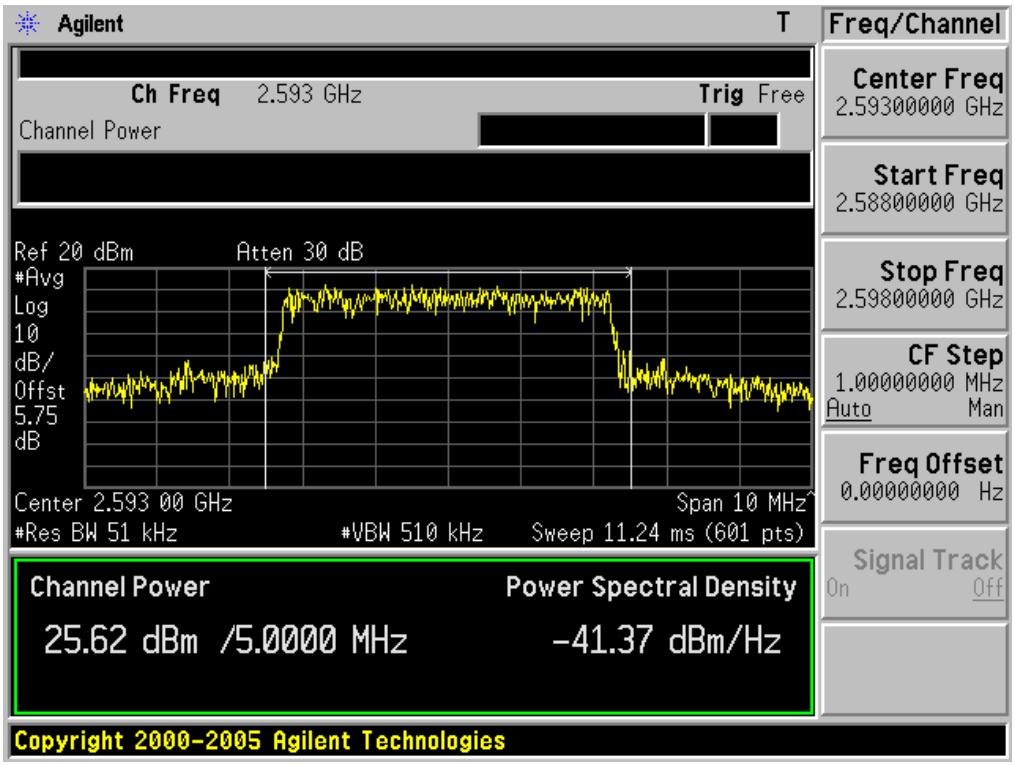
- Low Channel(2498.5MHz) & AMC Mode & 16QAM 3/4



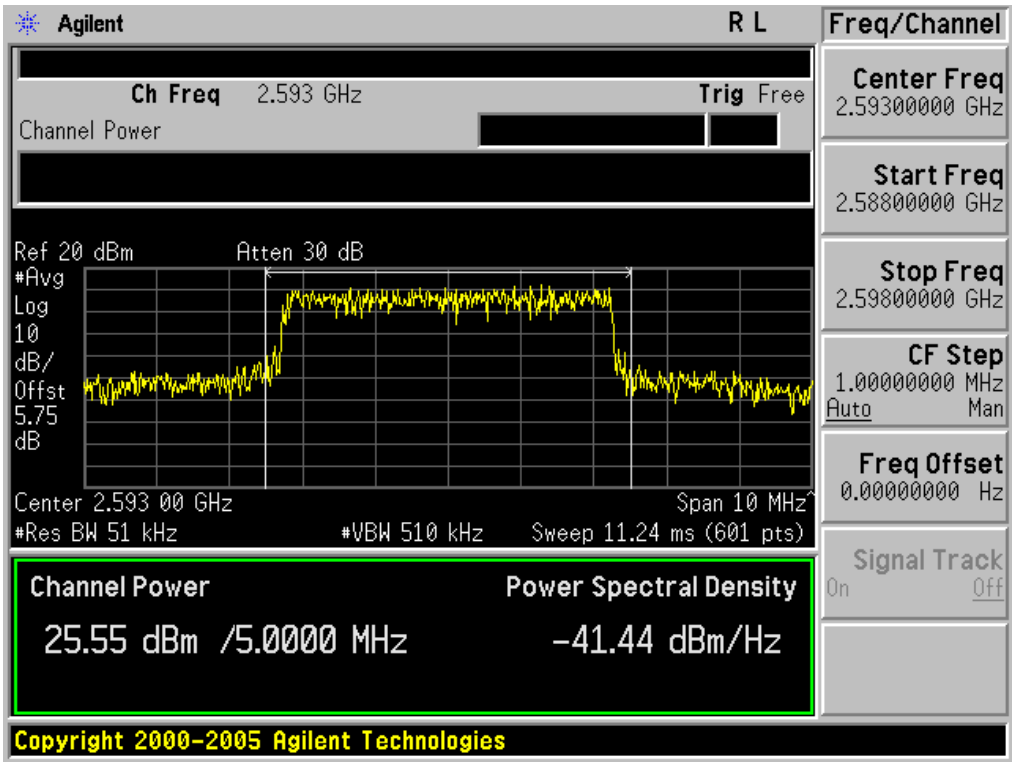
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- Middle Channel(2593.0MHz) & PUSC Mode & QPSK 1/2



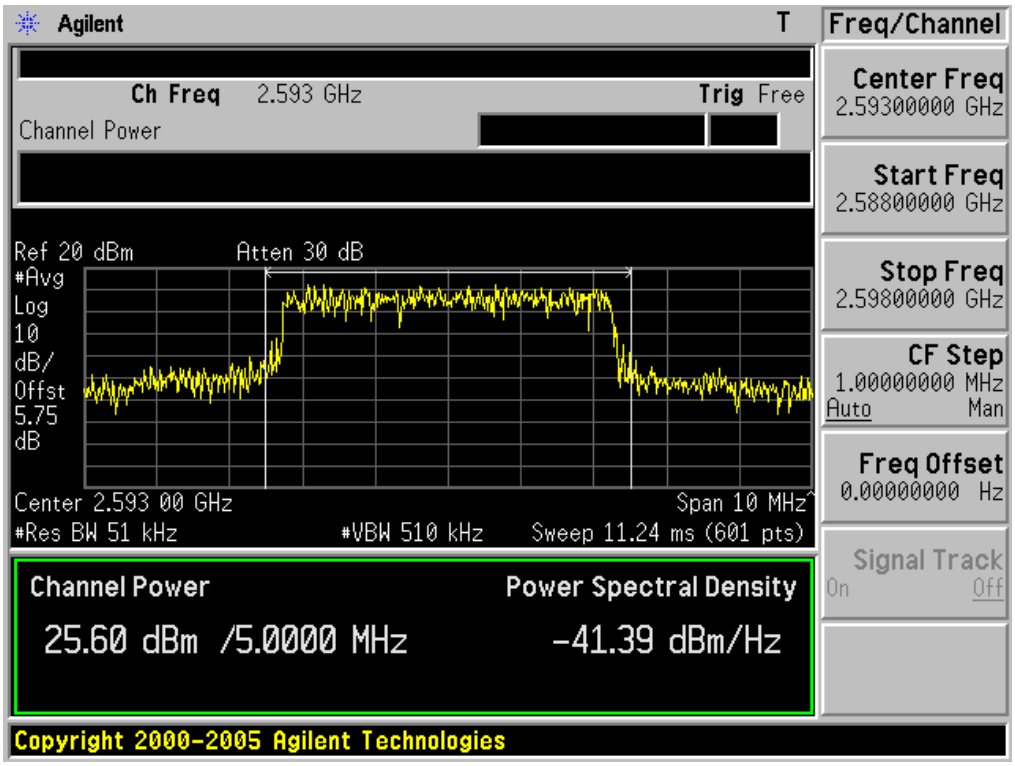
- Middle Channel(2593.0MHz) & PUSC Mode & QPSK 3/4



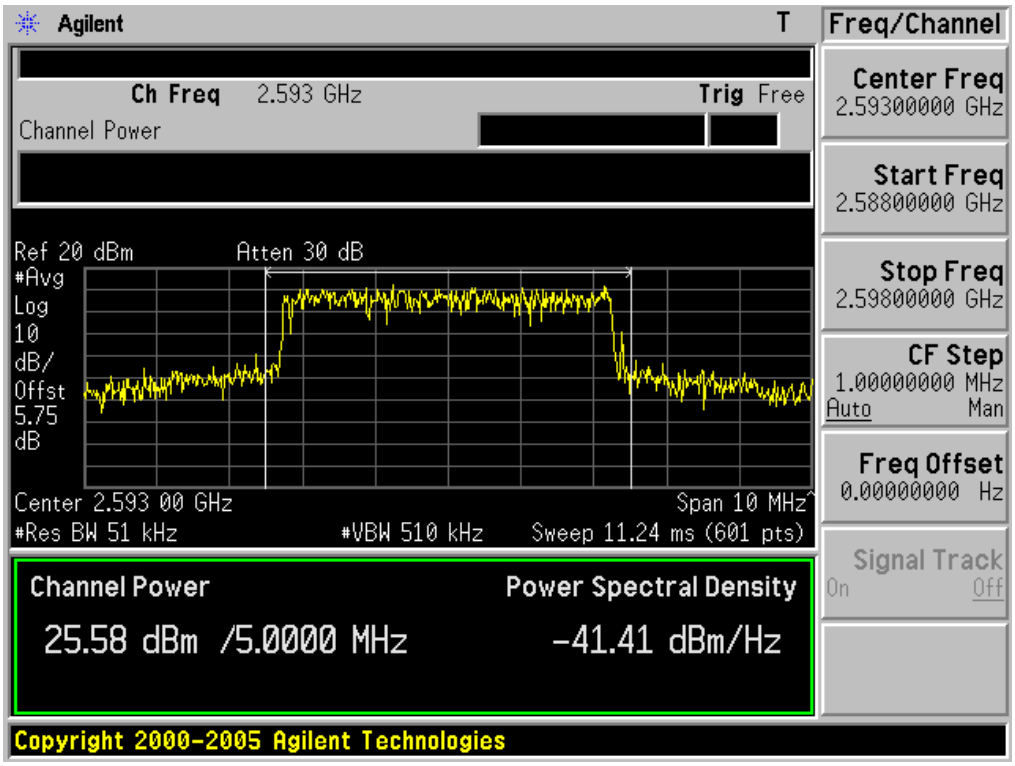
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- Middle Channel(2593.0MHz) & PUSC Mode & 16QAM 1/2



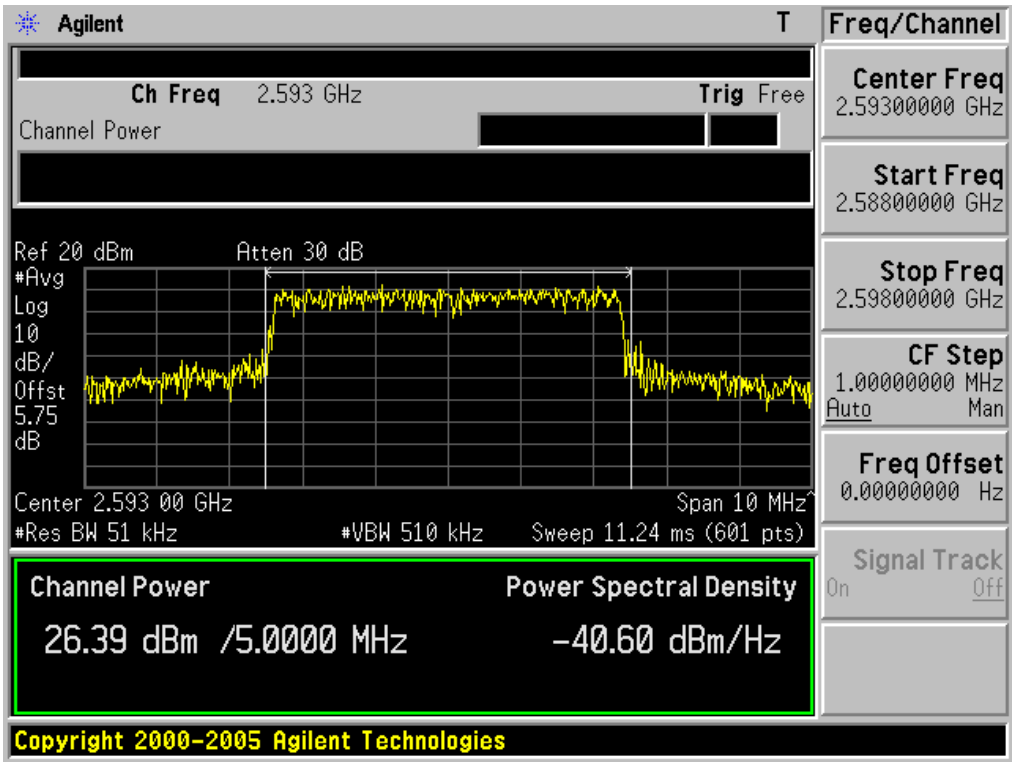
- Middle Channel(2593.0MHz) & PUSC Mode & 16QAM 3/4



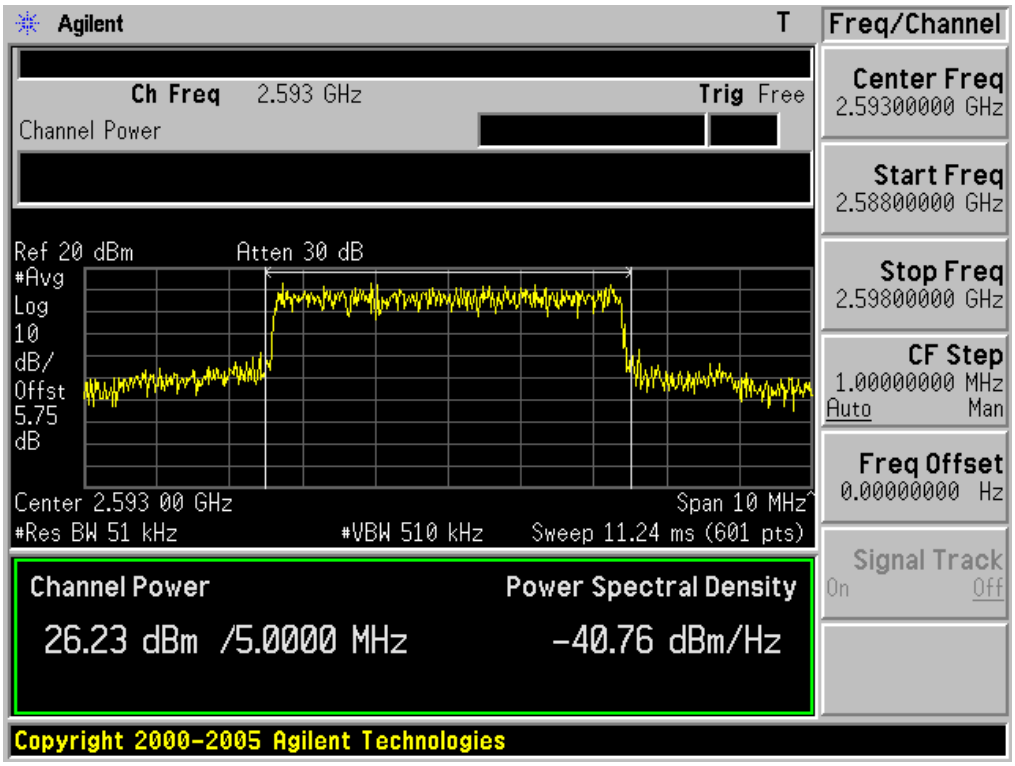
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- Middle Channel(2593.0MHz) & AMC Mode & QPSK 1/2



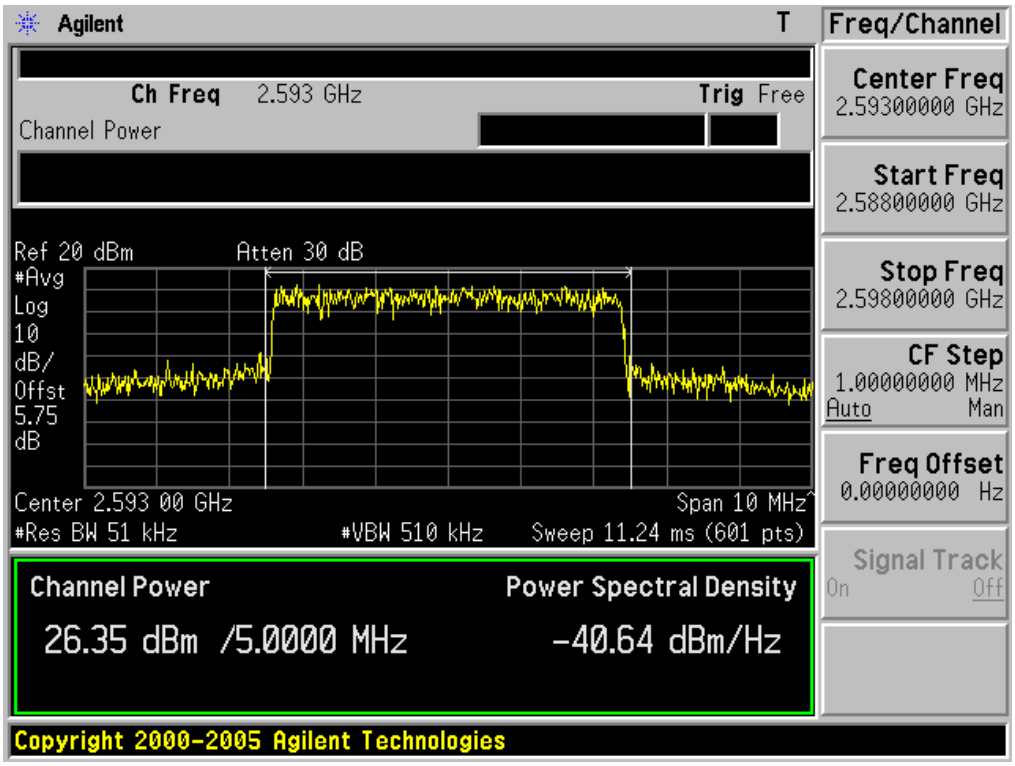
- Middle Channel(2593.0MHz) & AMC Mode & QPSK 3/4



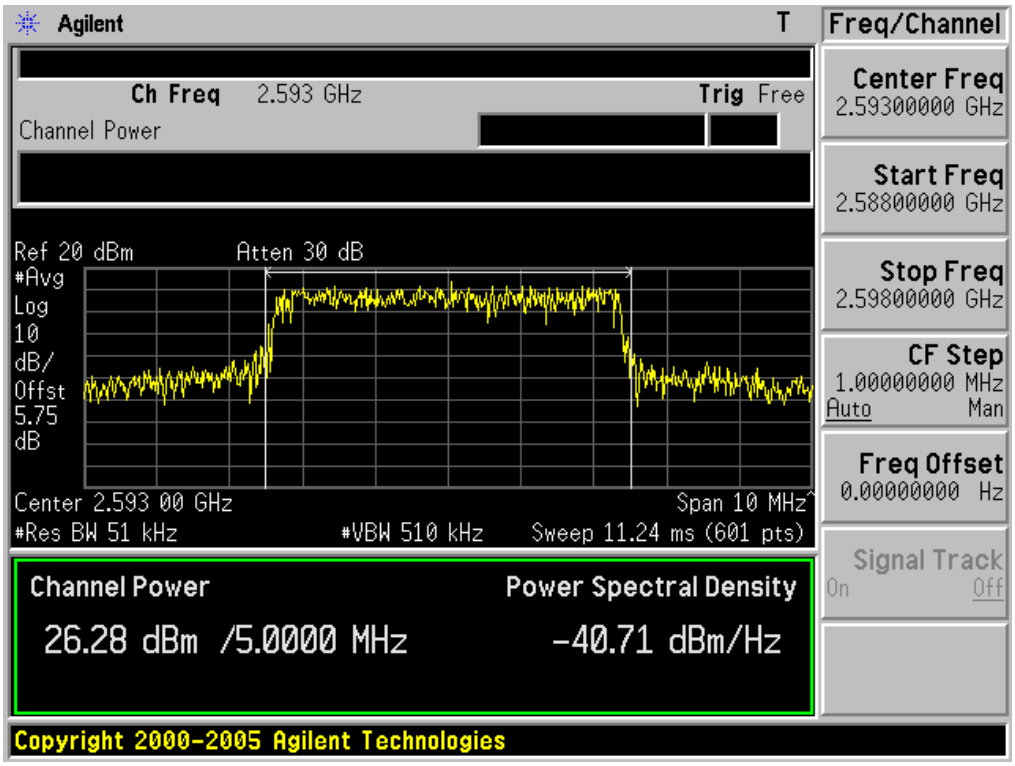
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- Middle Channel(2593.0MHz) & AMC Mode & 16QAM 1/2



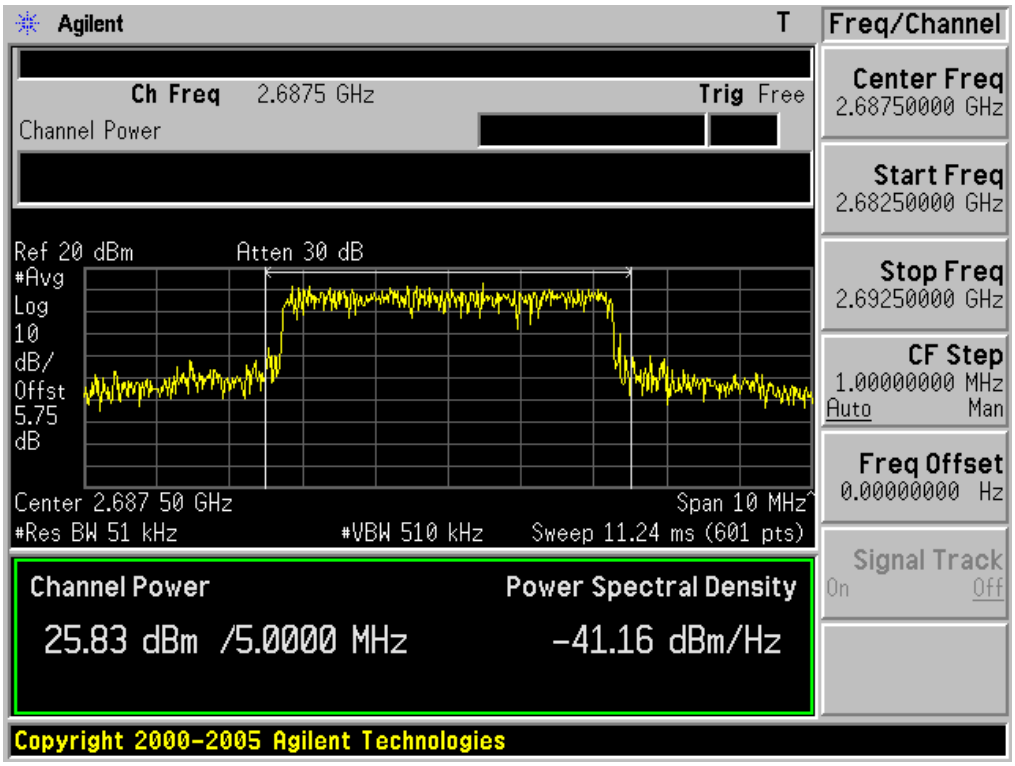
- Middle Channel(2593.0MHz) & AMC Mode & 16QAM 3/4



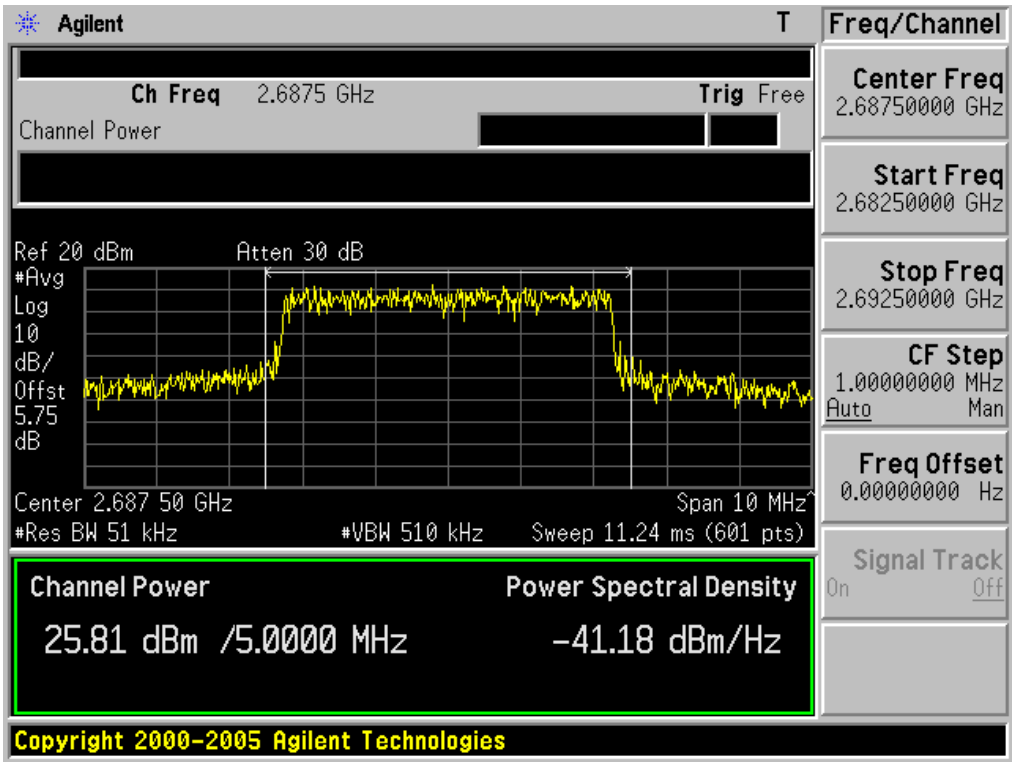
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- High Channel(2687.5MHz) & PUSC Mode & QPSK 1/2



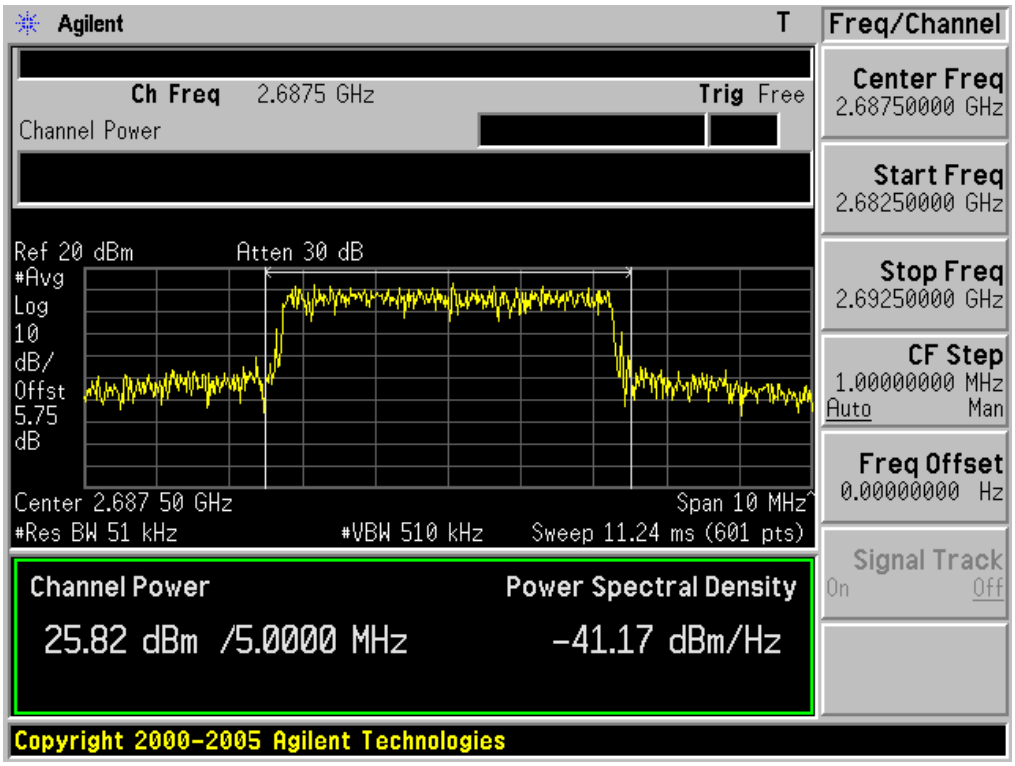
- High Channel(2687.5MHz) & PUSC Mode & QPSK 3/4



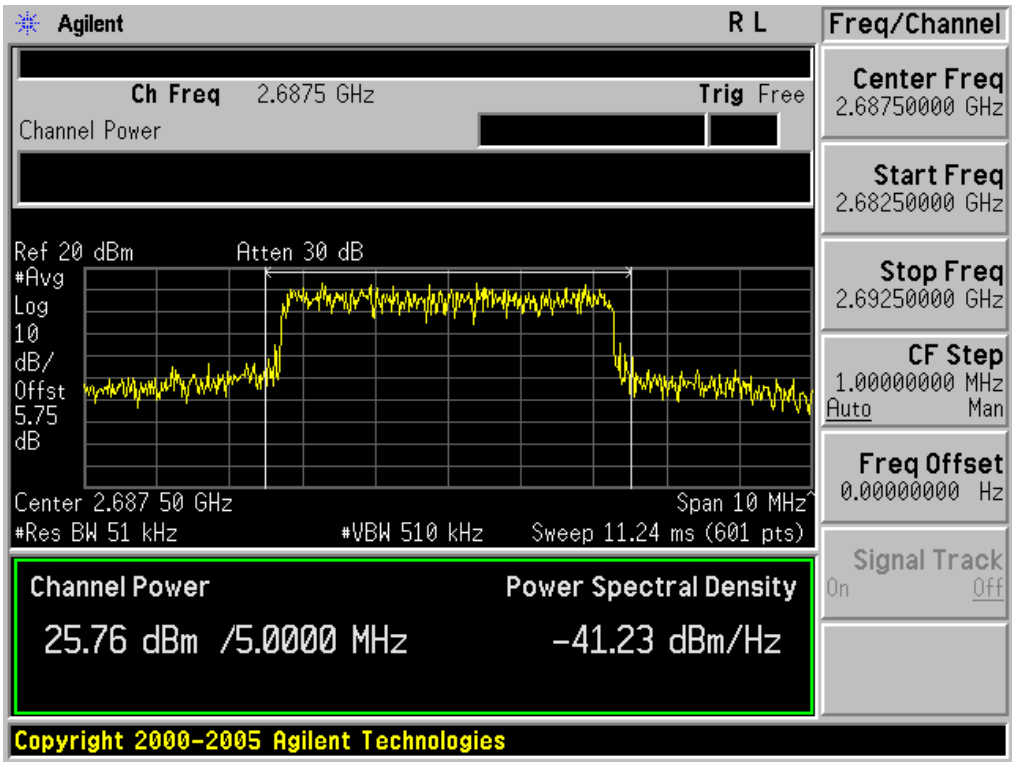
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- High Channel(2687.5MHz) & PUSC Mode & 16QAM 1/2



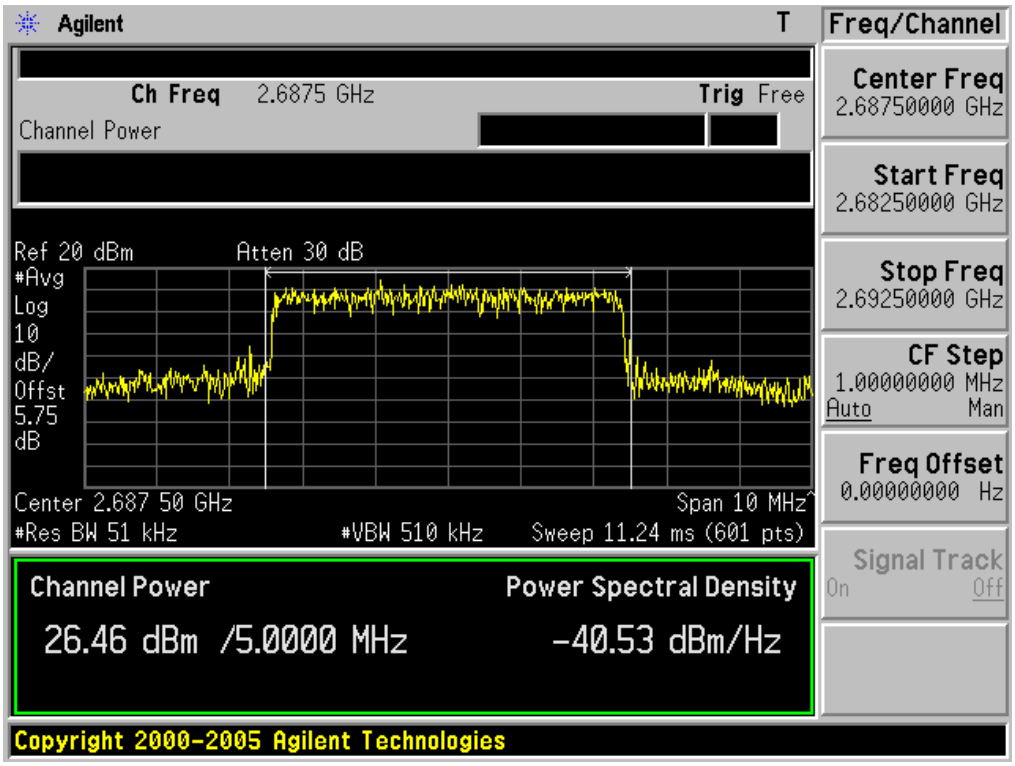
- High Channel(2687.5MHz) & PUSC Mode & 16QAM 3/4



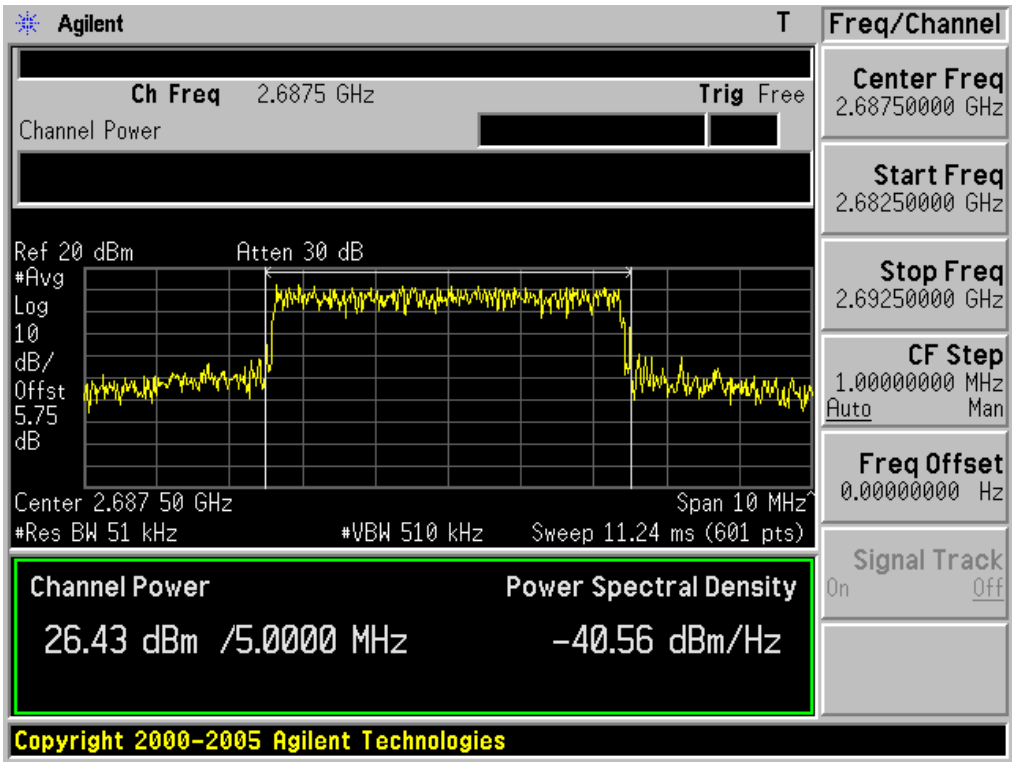
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- High Channel(2687.5MHz) & AMC Mode & QPSK 1/2



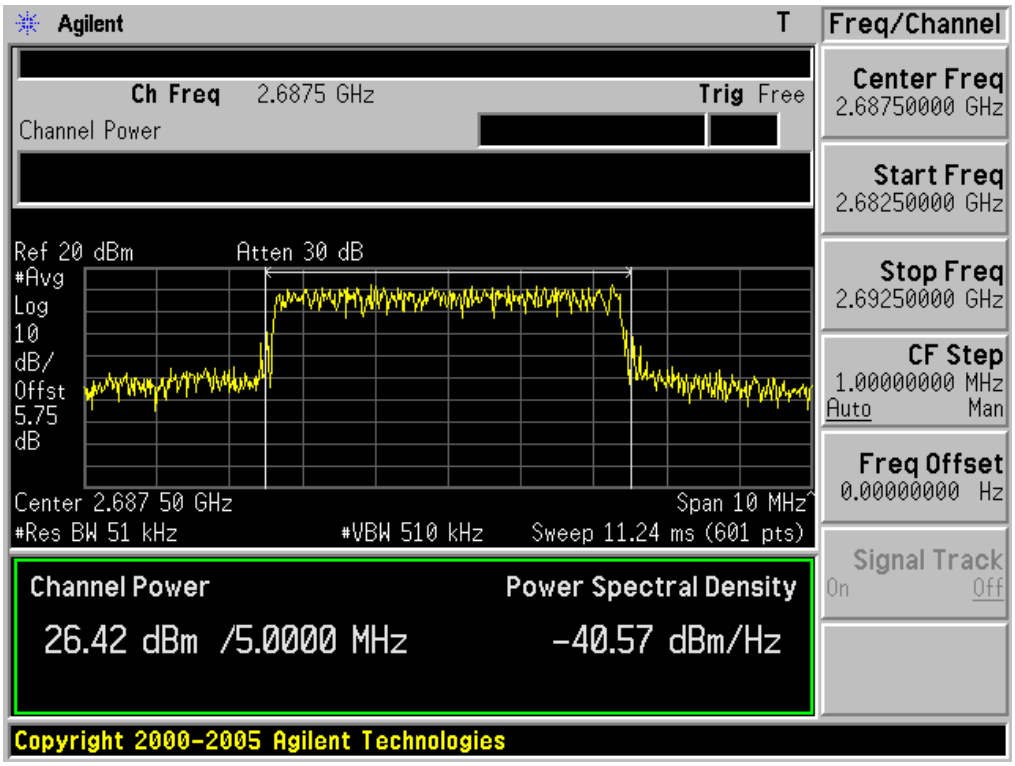
- High Channel(2687.5MHz) & AMC Mode & QPSK 3/4



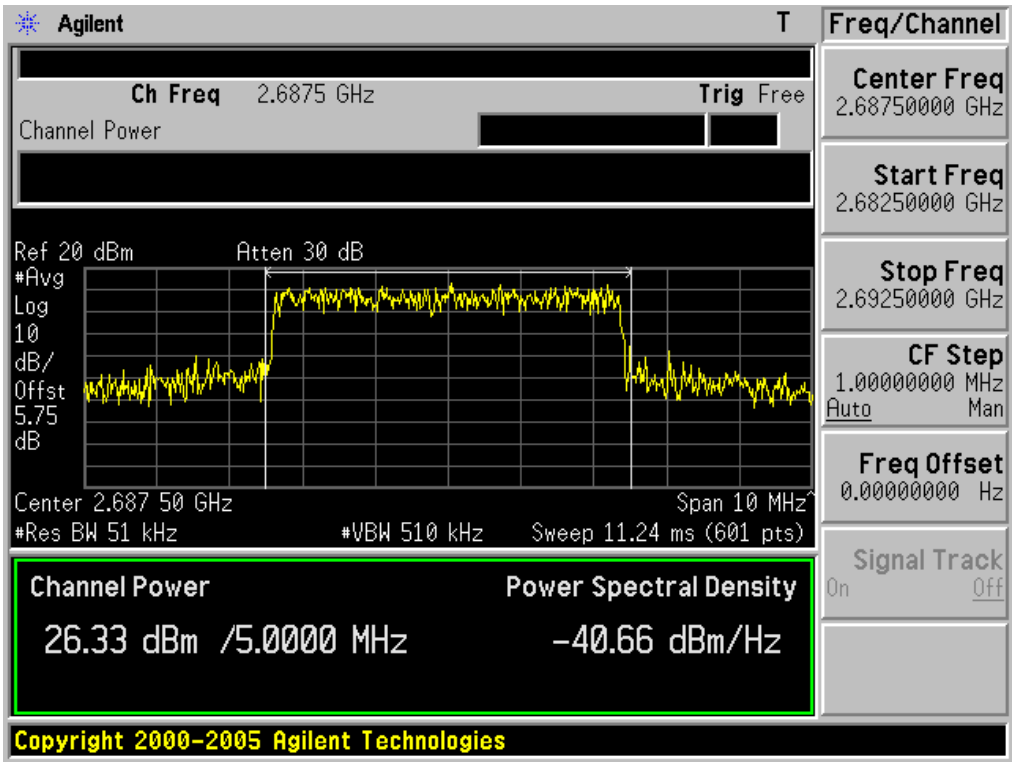
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 5MHz) (Continued…)

- High Channel(2687.5MHz) & AMC Mode & 16QAM 1/2



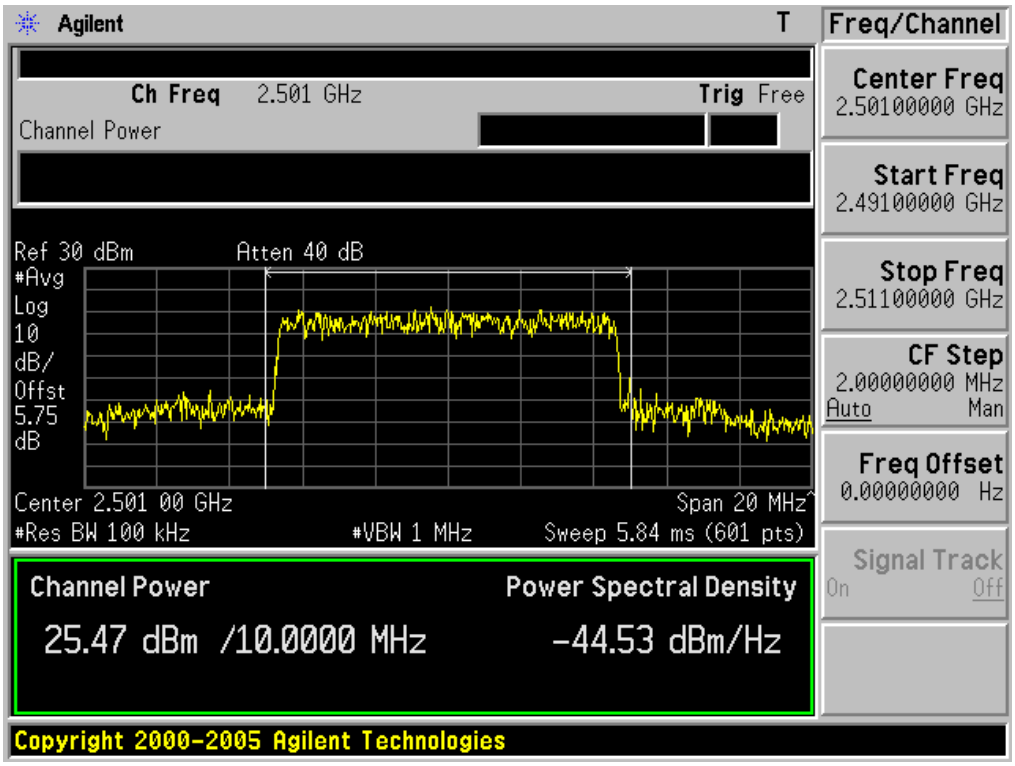
- High Channel(2687.5MHz) & AMC Mode & 16QAM 3/4



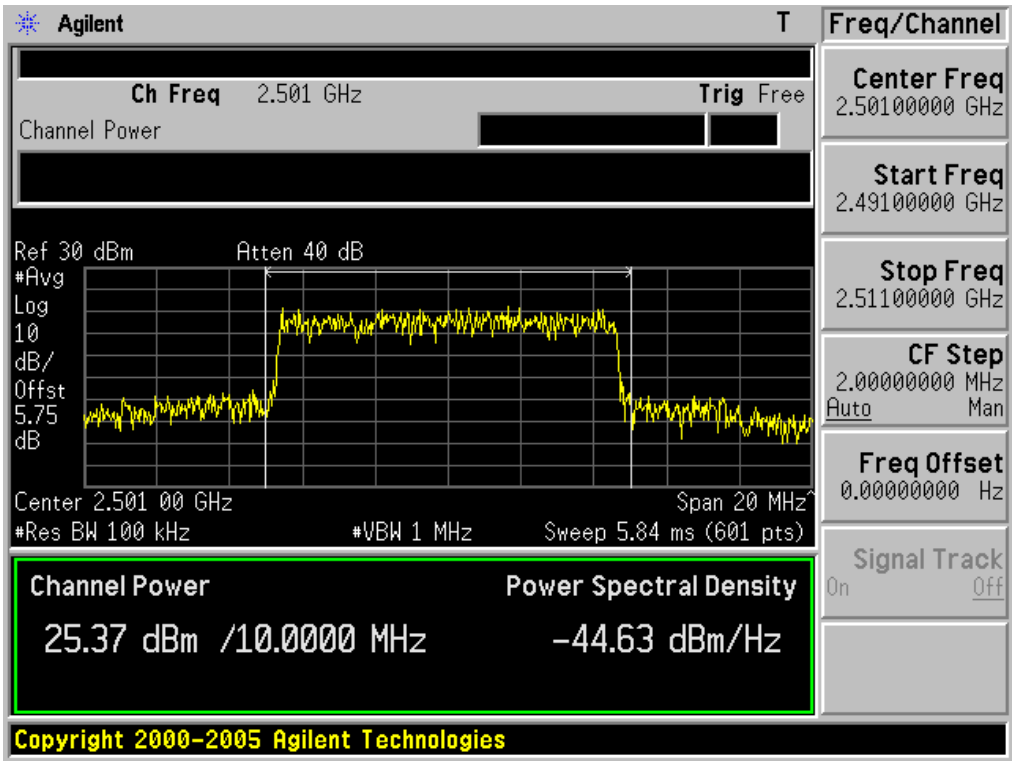
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- Low Channel(2501MHz) & PUSC Mode & QPSC 1/2



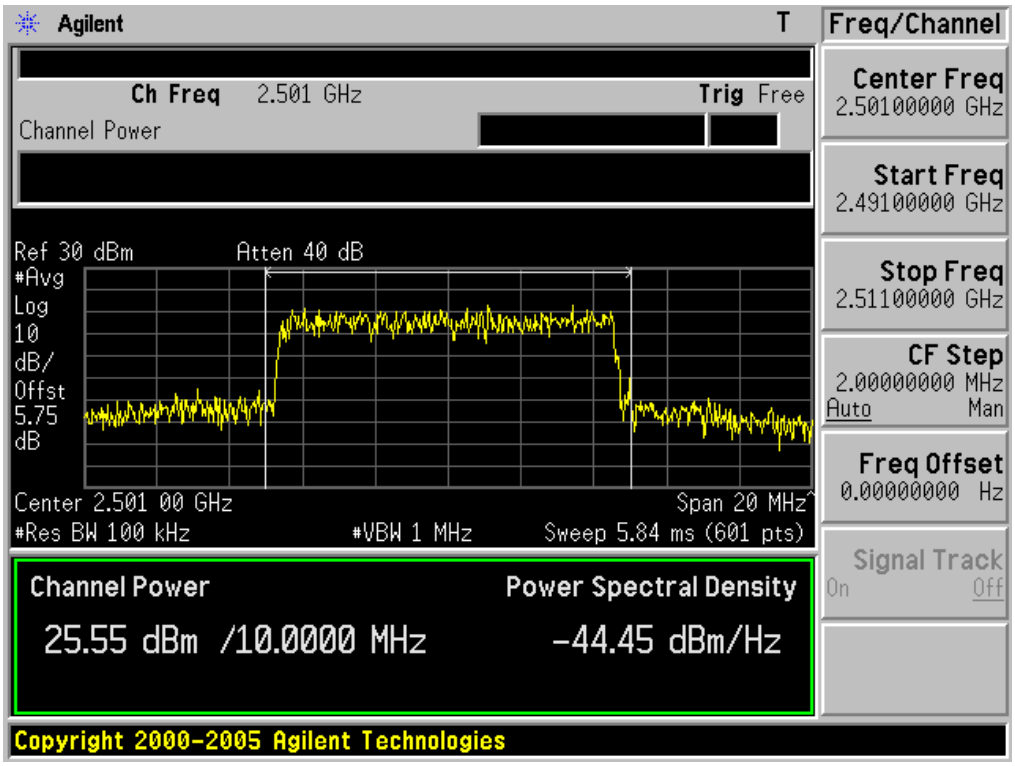
- Low Channel(2501MHz) & PUSC Mode & QPSK 3/4



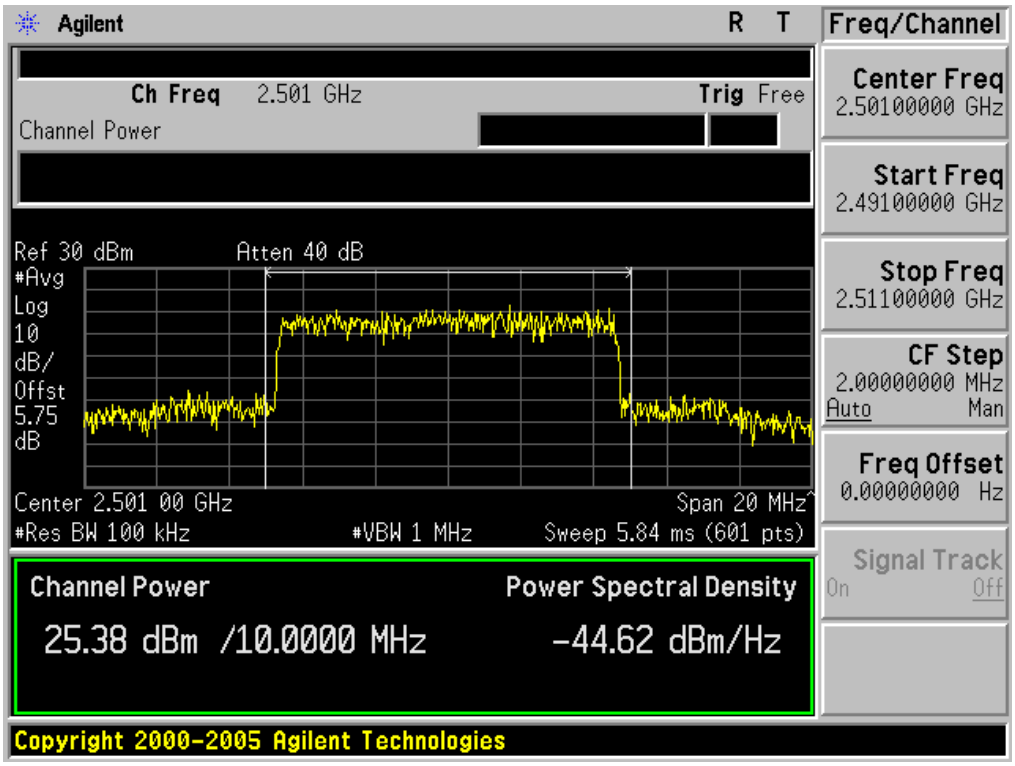
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- Low Channel(2501MHz) & PUSC Mode & 16QAM 1/2



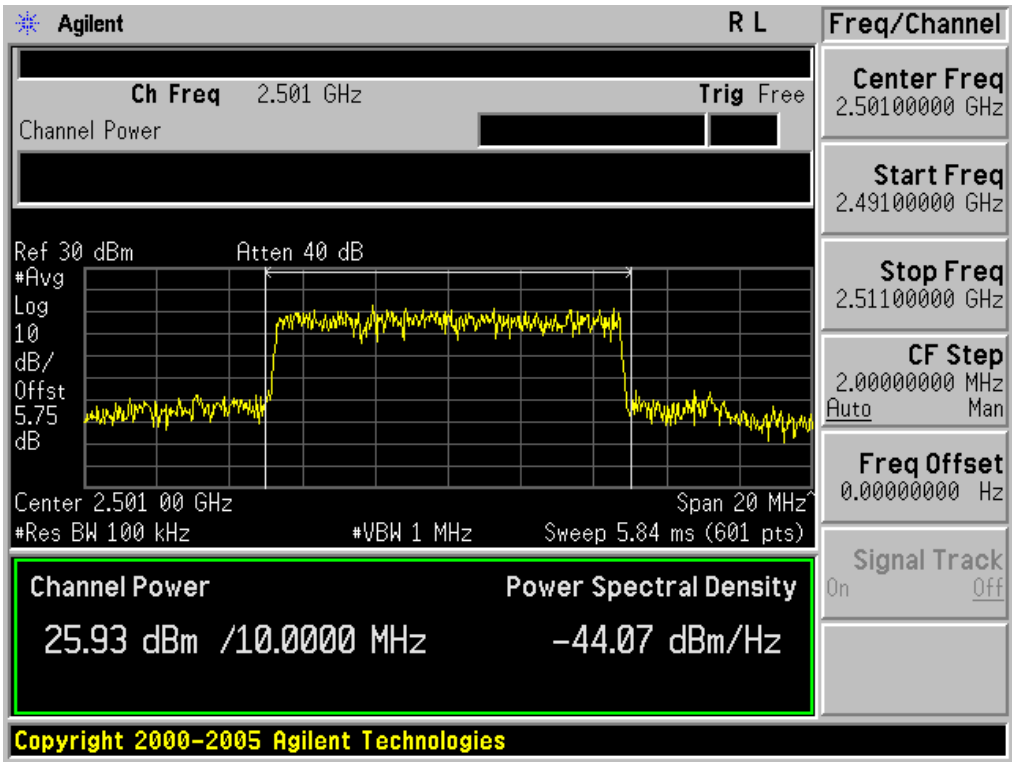
- Low Channel(2501MHz) & PUSC Mode & 16QAM 3/4



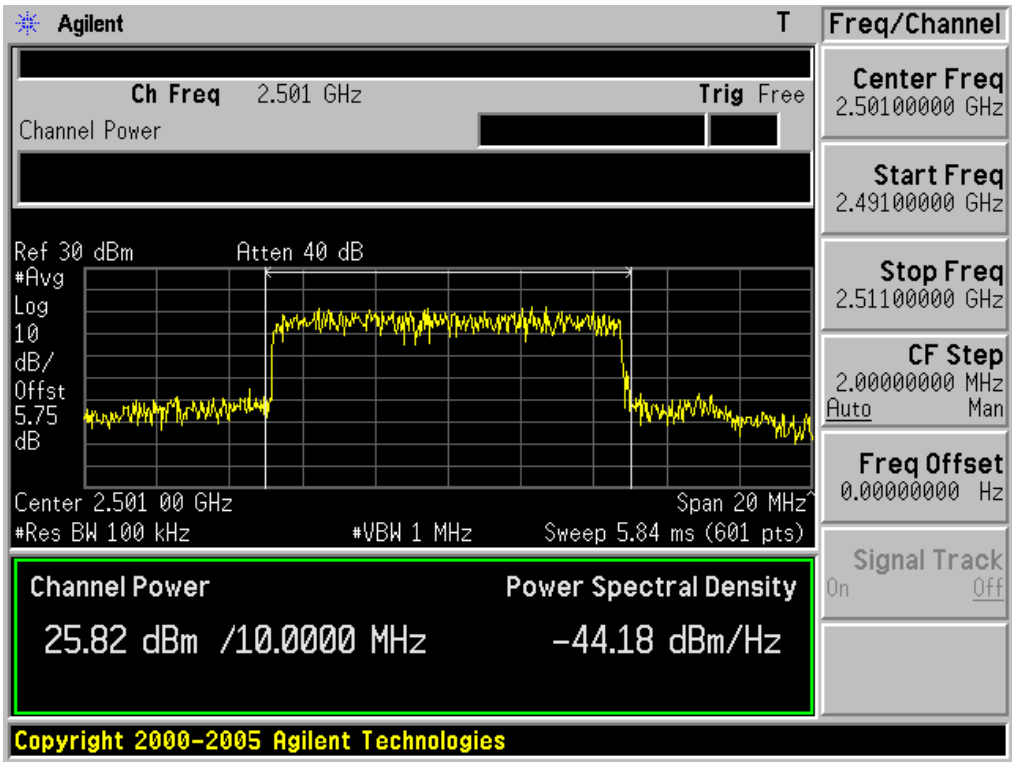
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- Low Channel(2501MHz) & AMC Mode & QPSK 1/2



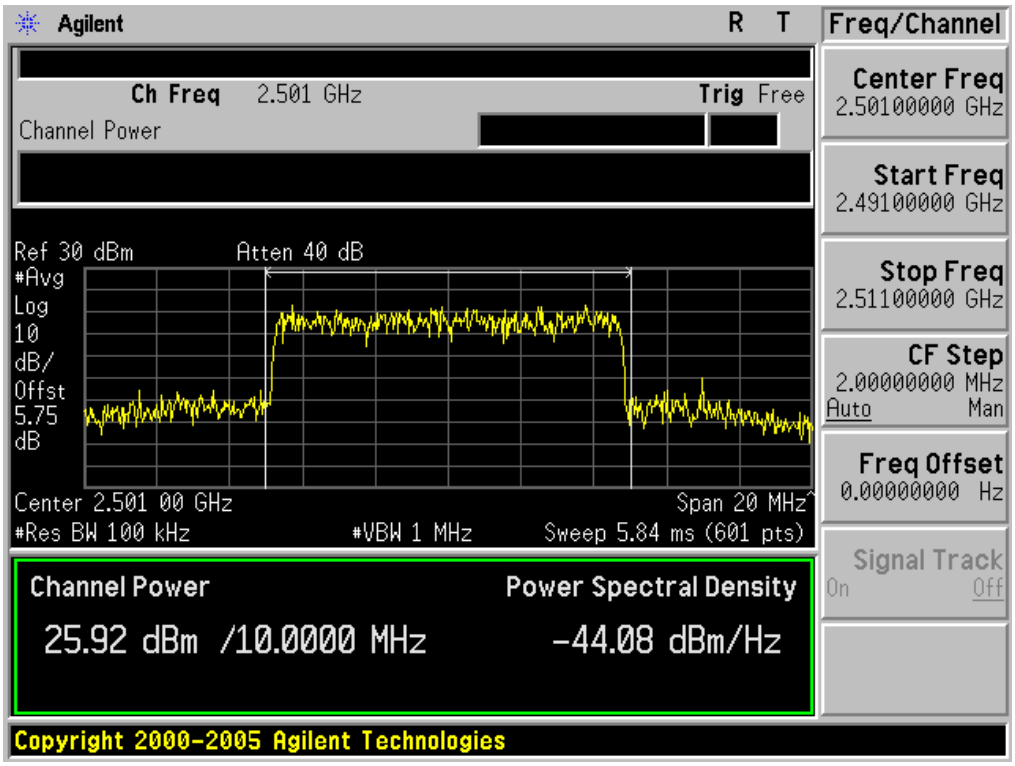
- Low Channel(2501MHz) & AMC Mode & QPSK 3/4



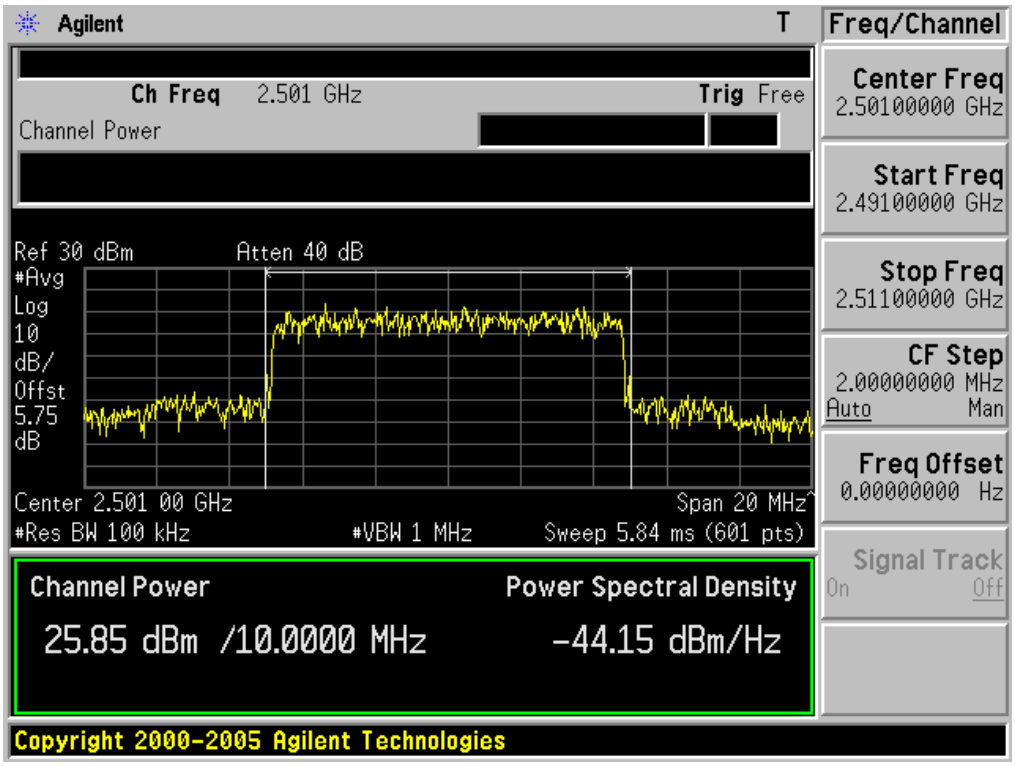
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- Low Channel(2501MHz) & AMC Mode & 16QAM 1/2



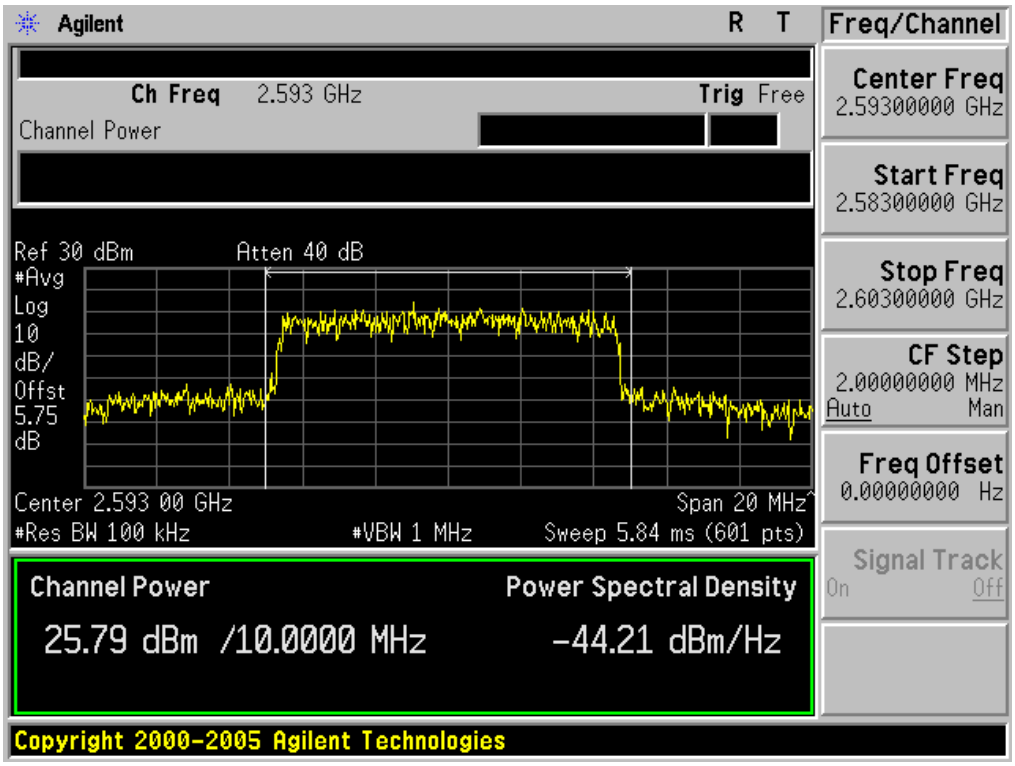
- Low Channel(2501MHz) & AMC Mode & 16QAM 3/4



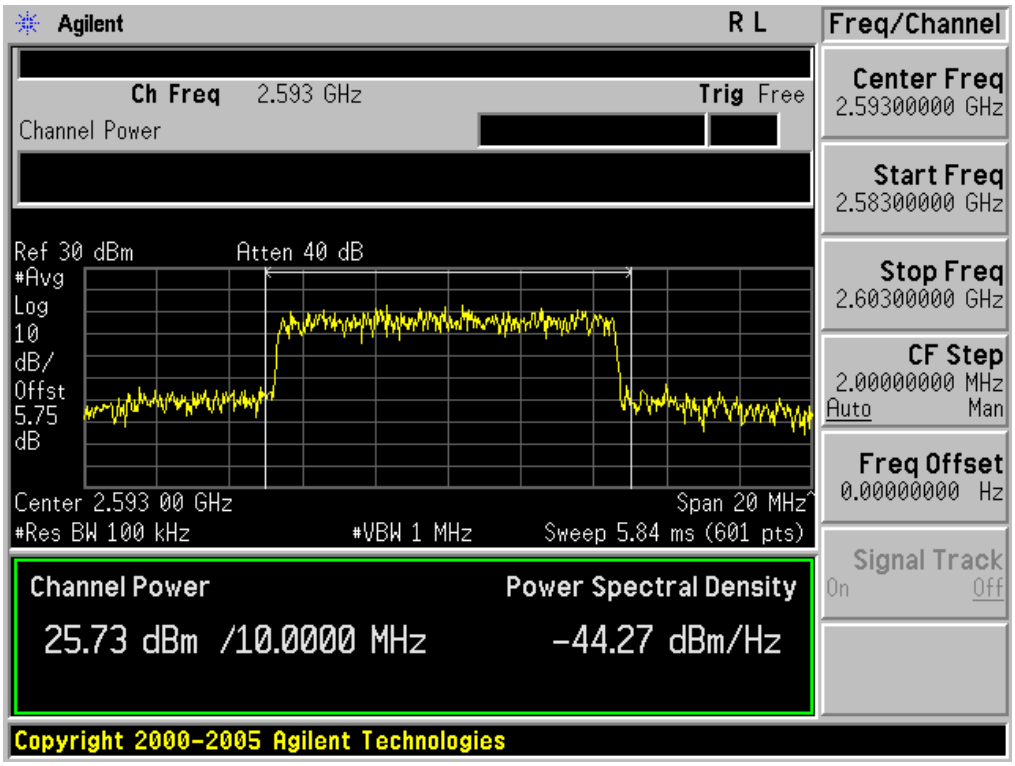
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- Middle Channel(2593MHz) & PUSC Mode & QPSK 1/2



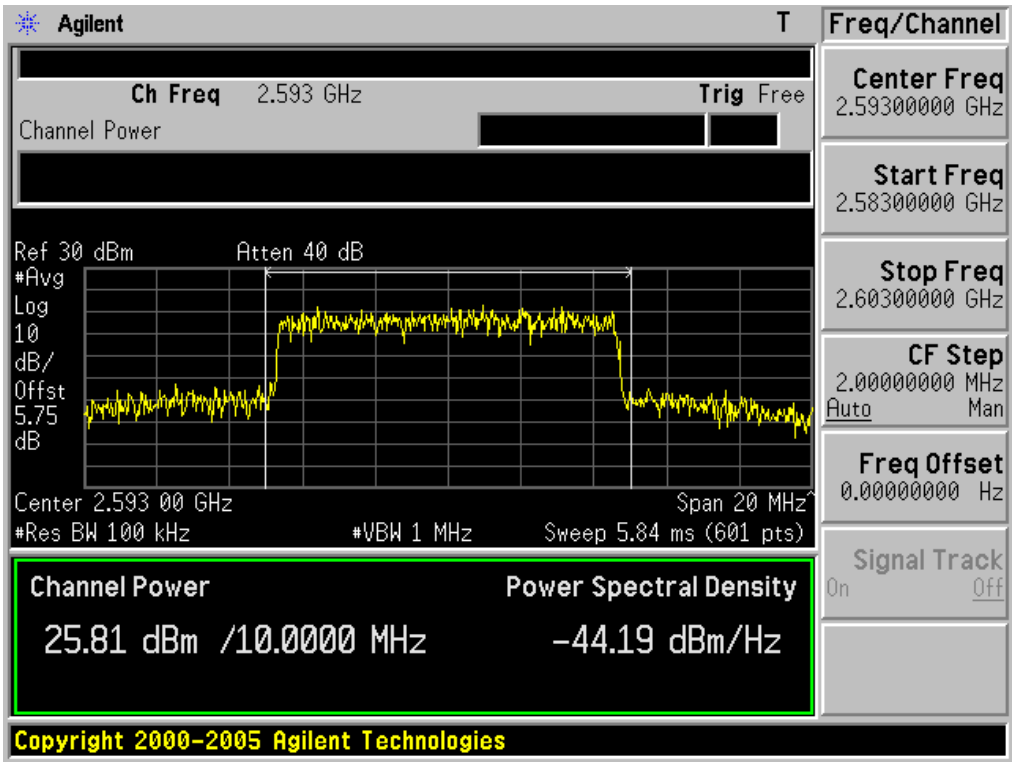
- Middle Channel(2593MHz) & PUSC Mode & QPSK 3/4



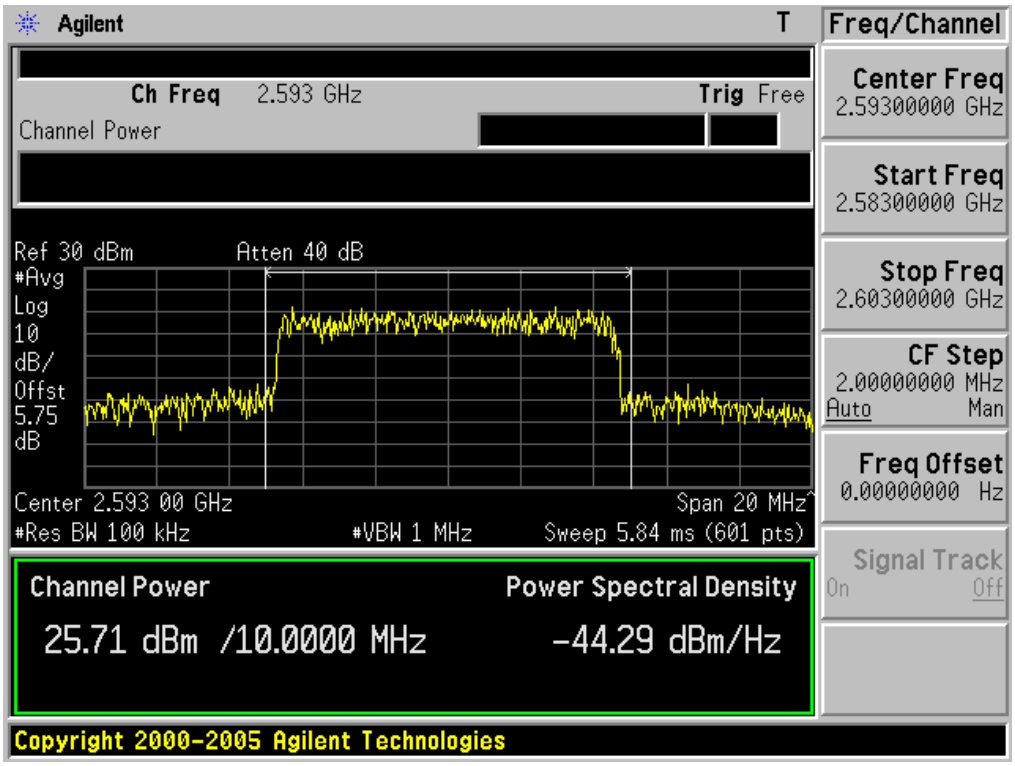
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- Middle Channel(2593MHz) & PUSC Mode & 16QAM 1/2



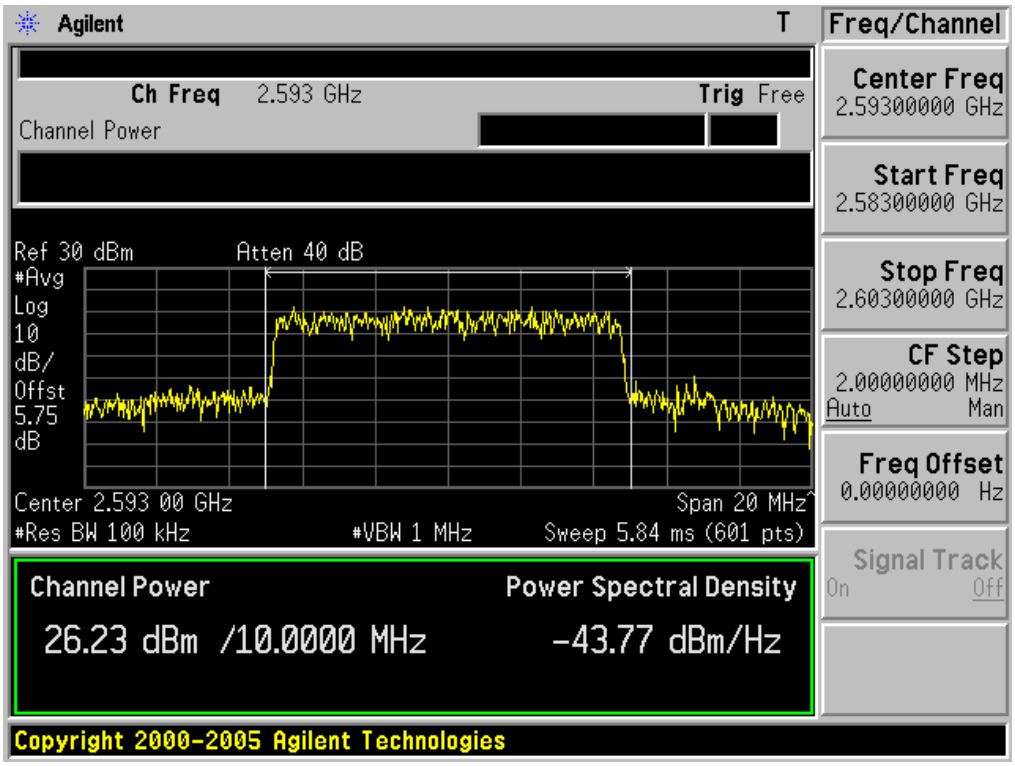
- Middle Channel(2593MHz) & PUSC Mode & 16QAM 3/4



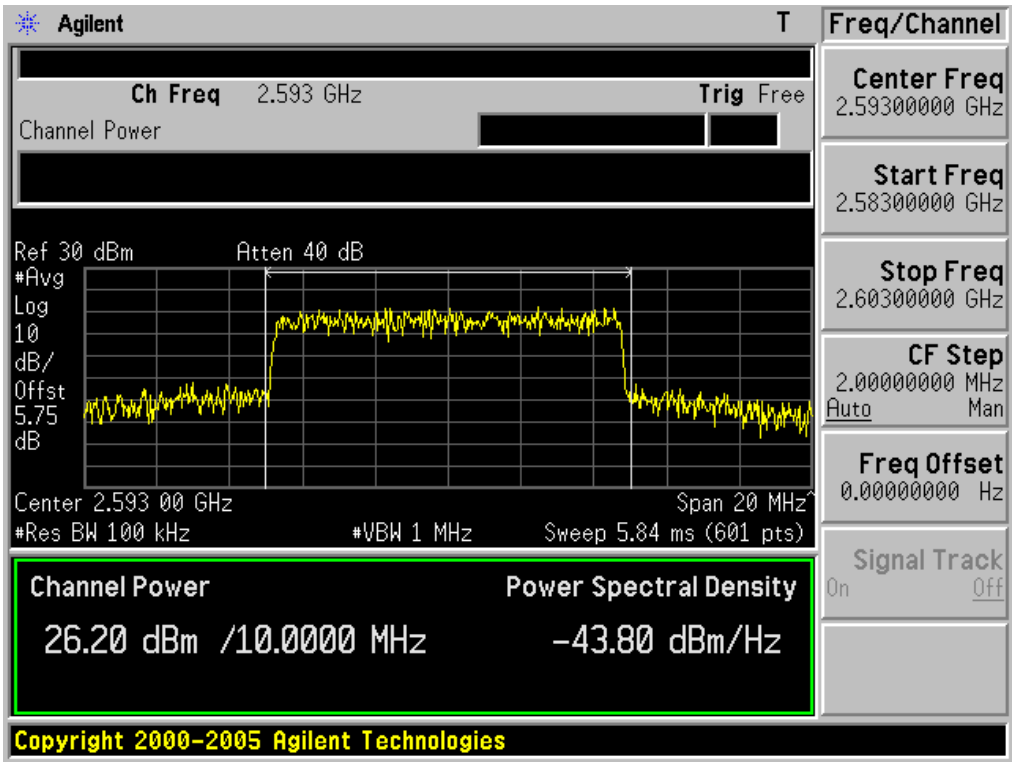
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- Middle Channel(2593MHz) & AMC Mode & QPSK 1/2



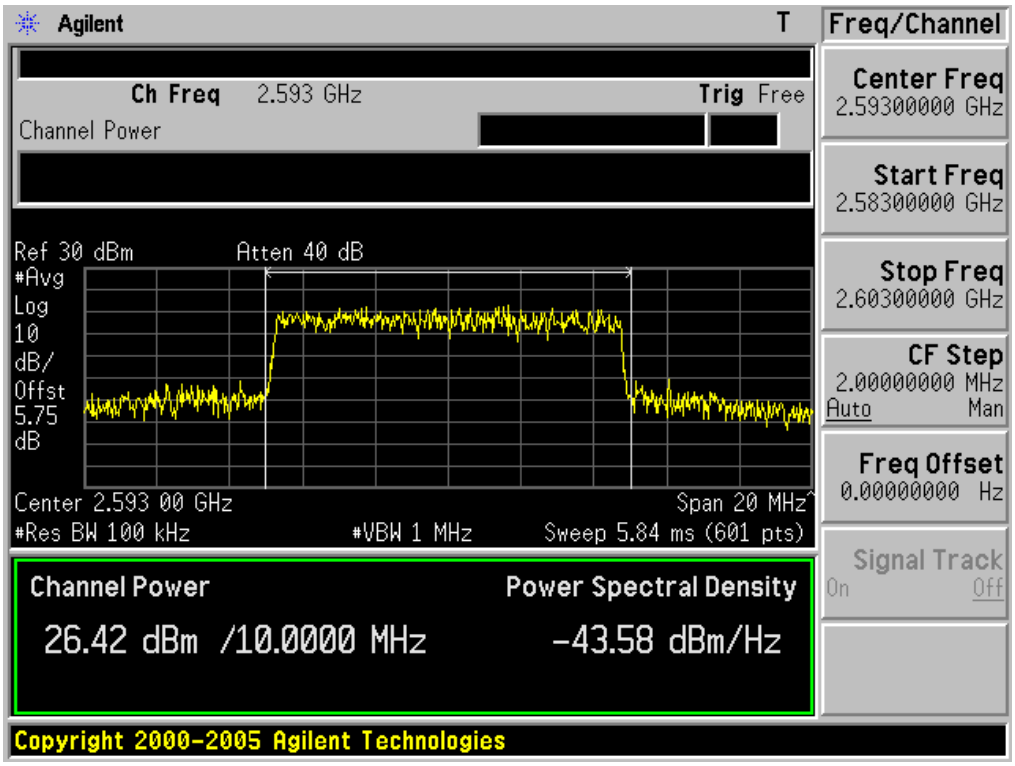
- Middle Channel(2593MHz) & AMC Mode & QPSK 3/4



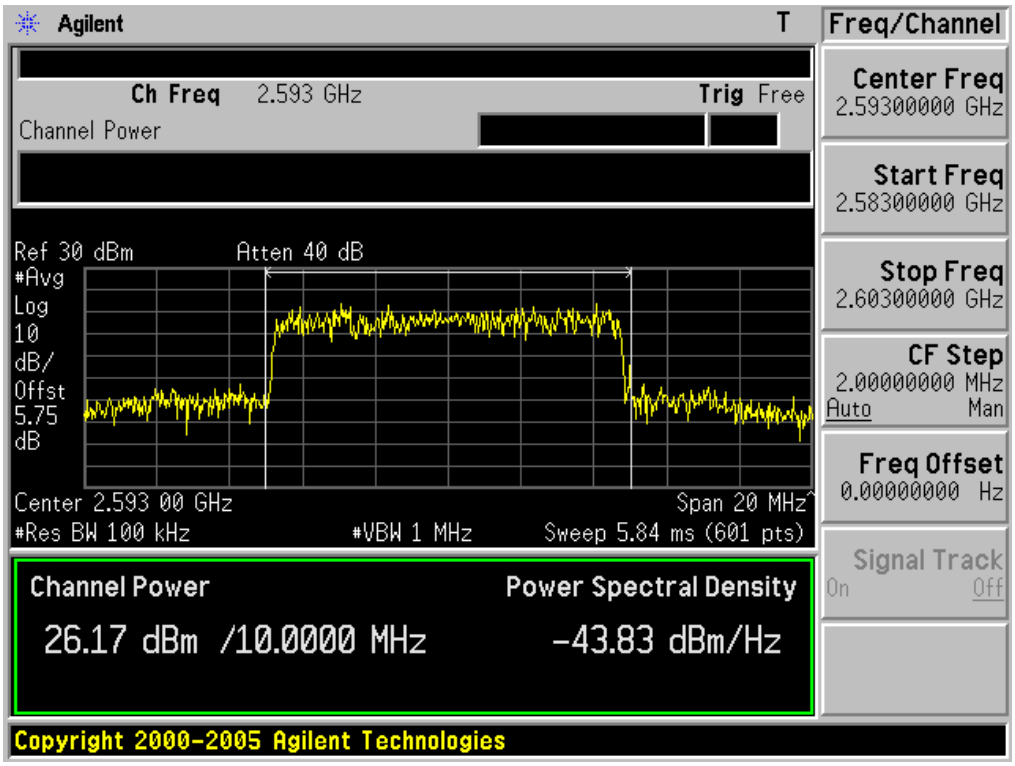
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- Middle Channel(2593MHz) & AMC Mode & 16QAM 1/2



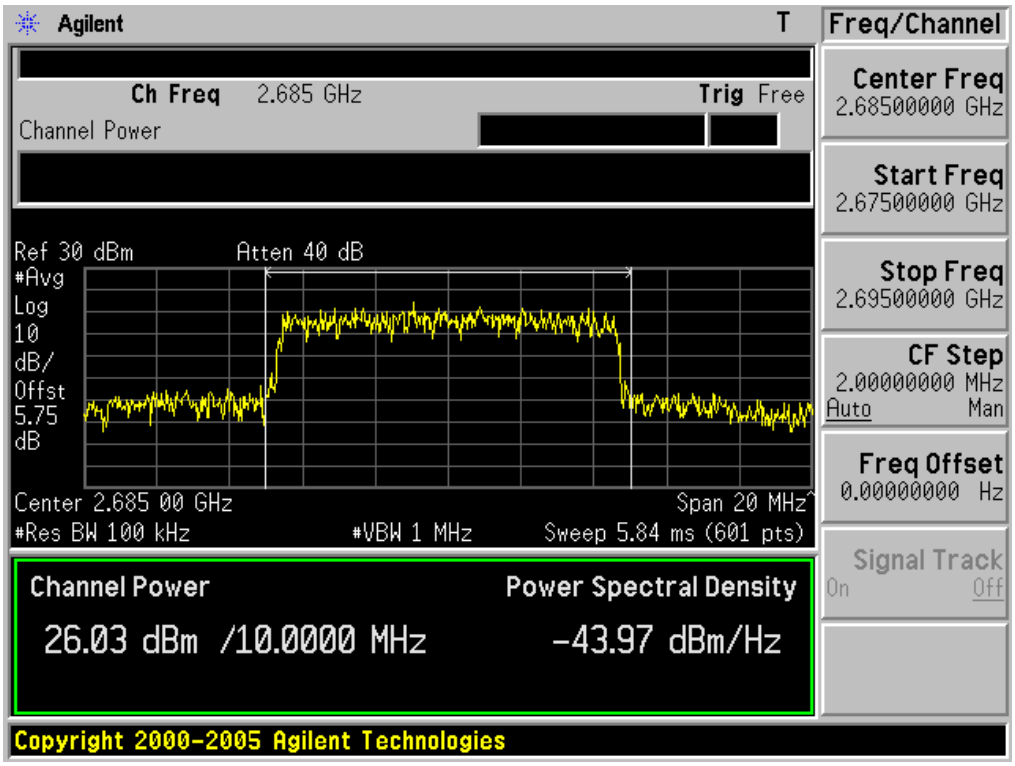
- Middle Channel(2593MHz) & AMC Mode & 16QAM 3/4



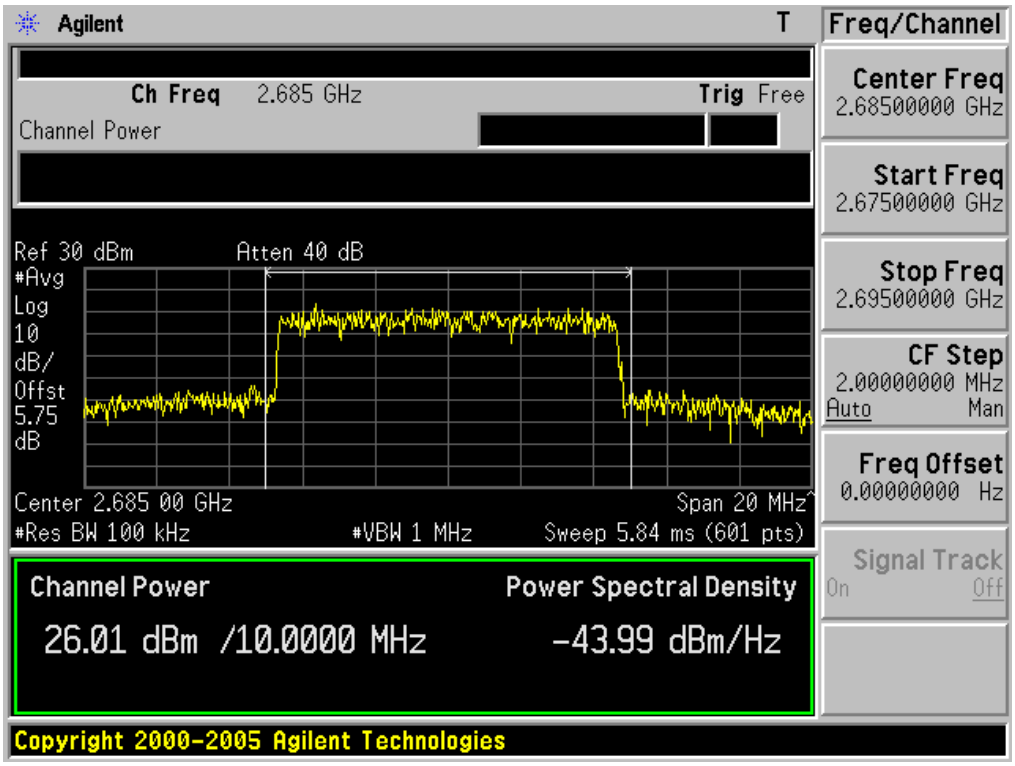
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- High Channel(2685MHz) & PUSC Mode & QPSK 1/2



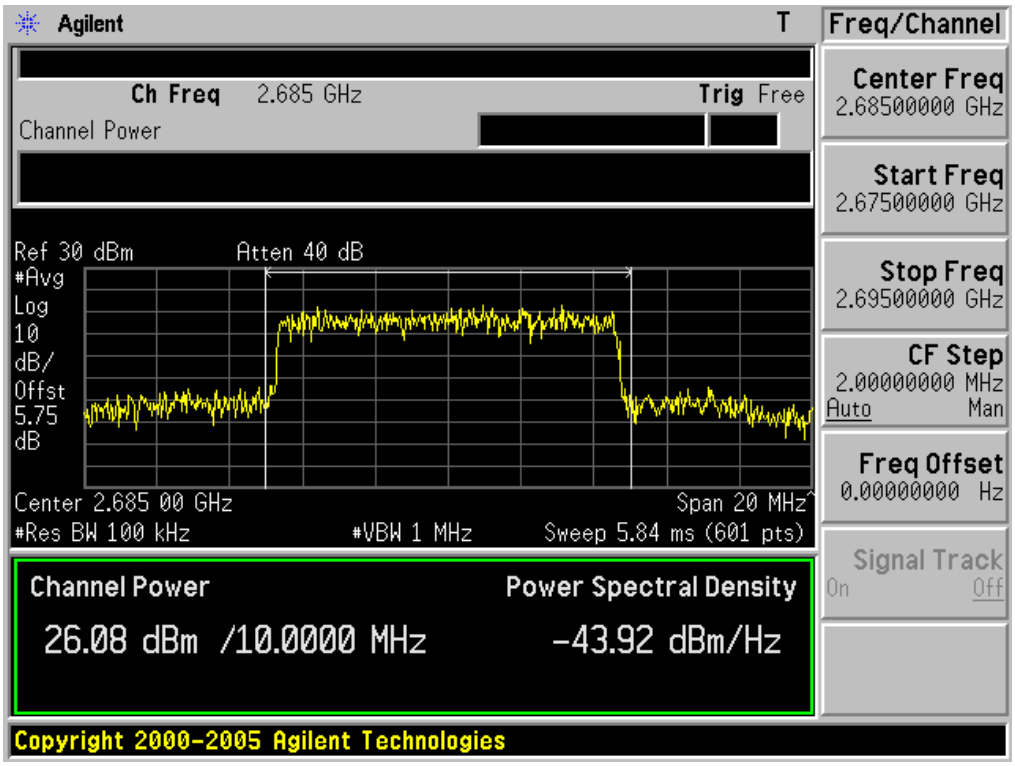
- High Channel(2685MHz) & PUSC Mode & QPSK 3/4



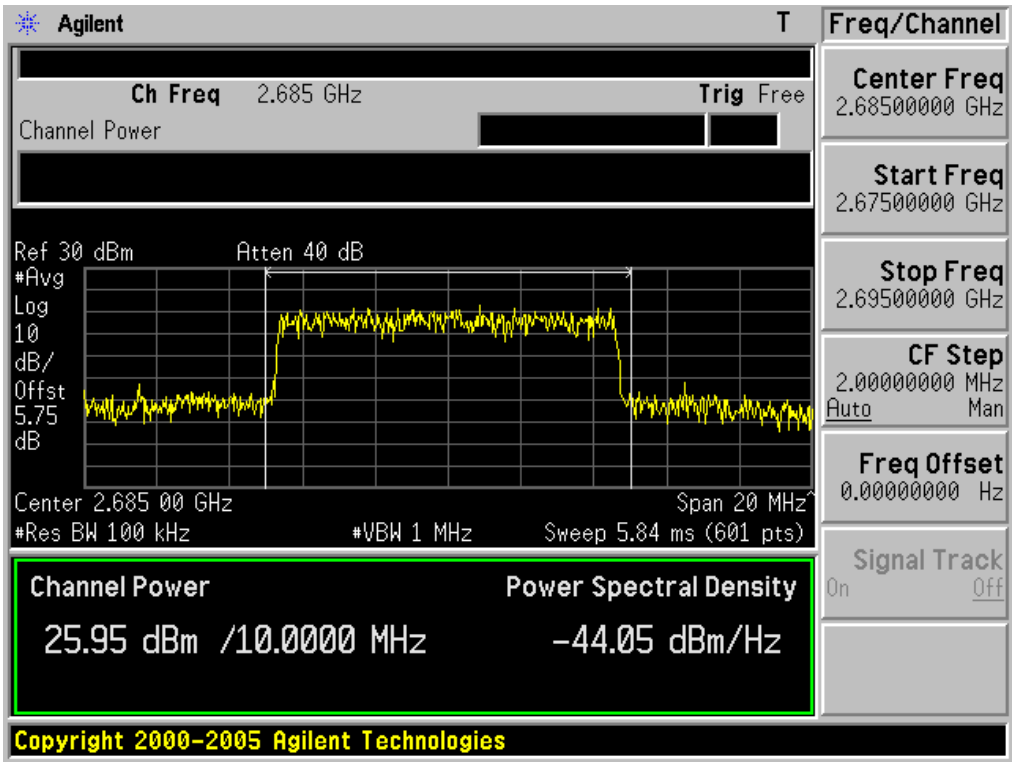
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- High Channel(2685MHz) & PUSC Mode & 16QAM 1/2



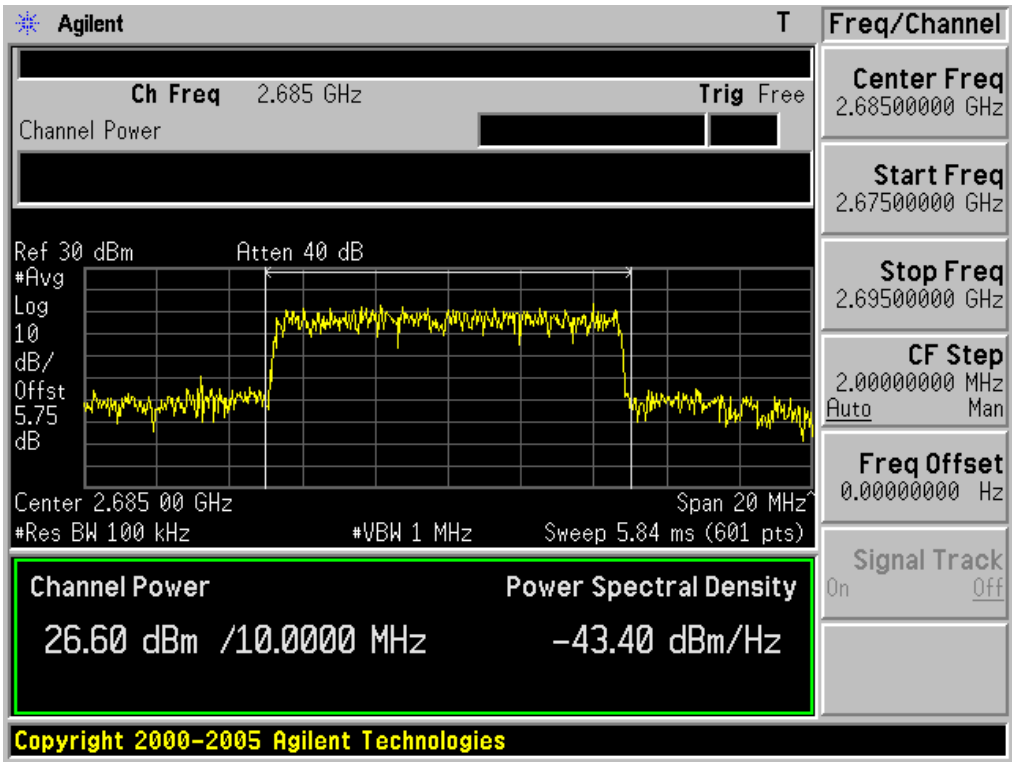
- High Channel(2685MHz) & PUSC Mode & 16QAM 3/4



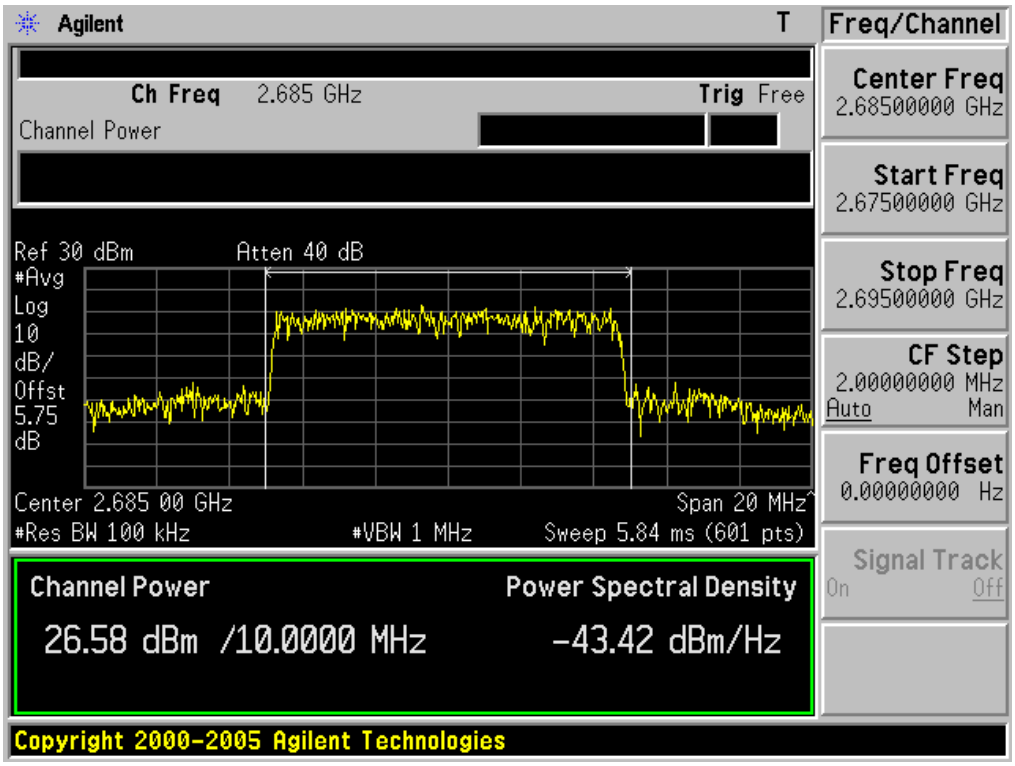
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- High Channel(2685MHz) & AMC Mode & QPSK 1/2



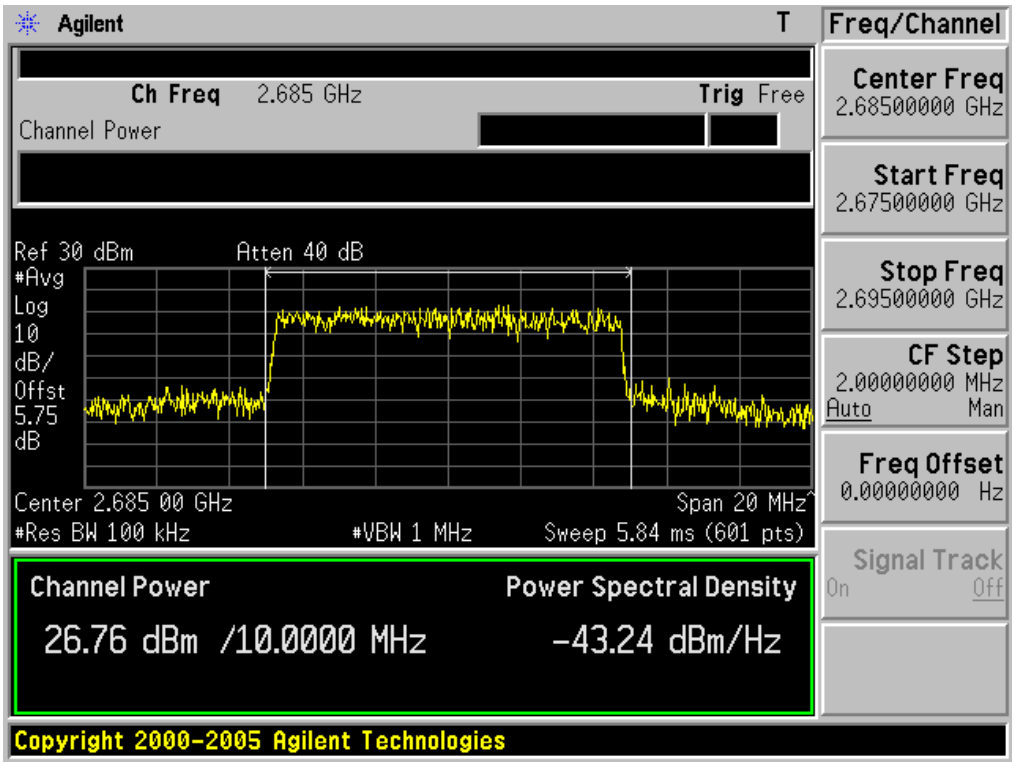
- High Channel(2685MHz) & AMC Mode & QPSK 3/4



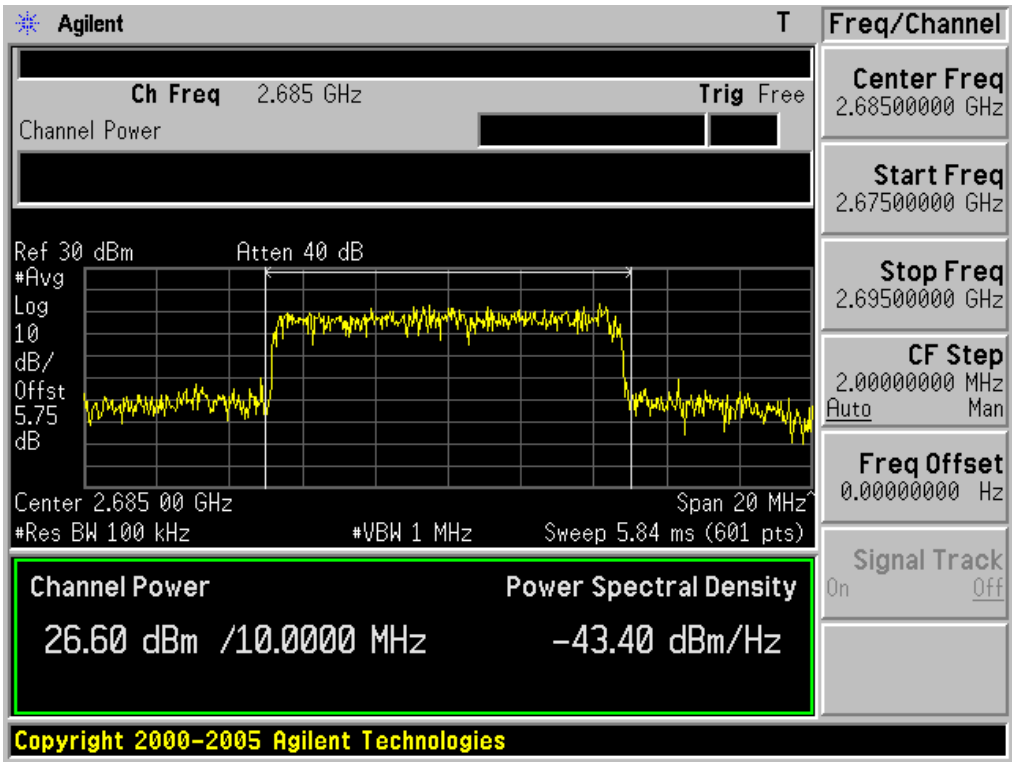
5.1 PLOTS OF EMISSIONS (Continued…)

5.1.4 Transmitter Output Power(BW: 10MHz) (Continued…)

- High Channel(2685MHz) & AMC Mode & 16QAM 1/2



- High Channel(2685MHz) & AMC Mode & 16QAM 3/4



6.1 LIST OF TEST EQUIPMENT

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
☒	Spectrum Analyzer	Agilent	E4440A	25/09/09	25/09/10	MY45304199
☒	Spectrum Analyzer	Rohde Schwarz	FSQ26	02/02/09	02/02/10	200347
☐	Power Meter	H.P	EMP-442A	02/07/09	02/07/10	GB37170413
☐	Power Sensor	H.P	8481A	02/07/09	02/07/10	3318A96332
☒	Power Divider	Agilent	11636B	13/10/09	13/10/10	56471
☐	Power Splitter	Anritsu	K241B	13/10/09	13/10/10	020611
☐	Frequency Counter	H.P	5342A	13/07/09	13/07/10	2119A04450
☒	TEMP & HUMIDITY Chamber	JISCO	KR-100/J-RHC2	10/10/09	10/10/10	30604493/021031
☒	Digital Multimeter	H.P	34401A	13/03/09	13/03/10	3146A13475
☐	Multifuction Synthesizer	HP	8904A	06/10/09	06/10/10	3633A08404
☒	Signal Generator	Rohde Schwarz	SMR20	13/03/09	13/03/10	101251
☐	Signal Generator	H.P	ESG-3000A	02/07/09	02/07/10	US37230529
☒	Vector Signal Generator	Rohde Schwarz	SMJ100A	02/02/09	02/02/10	100148
☐	Vector Signal Generator	Rohde Schwarz	SMJ100A	08/18/09	18/08/10	100698
☐	Audio Analyzer	H.P	8903B	02/07/09	02/07/10	3011A09448
☐	Modulation Analyzer	H.P	8901B	02/07/09	02/07/10	3028A03029
☐	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	02/07/09	02/07/10	GB43461134
☐	Universal Radio communication Tester	Rohde Schwarz	CMU 200	19/05/09	19/05/10	106760
☐	WIMAX Communication Tester	Rohde Schwarz	CMU270	15/06/09	15/06/10	100386
☐	Thermo hygrometer(SAR)	BODYCOM	BJ5478	06/02/09	06/02/10	090205-3
☒	Thermo hygrometer(RF)	BODYCOM	BJ5478	06/02/09	06/02/10	090205-2
☐	Thermo hygrometer(RSE)	BODYCOM	BJ5478	06/02/09	06/02/10	090205-4
☒	AC Power supply	DAEKWANG	5KVA	13/03/09	13/03/10	20060321-1
☐	DC Power Supply	HP	6622A	13/03/09	13/03/10	3448A03760
☐	DC Power Supply	HP	6633A	13/03/09	13/03/10	3524A06634
☐	BAND Reject Filter	Microwave Circuits	N0308372	06/10/09	06/10/10	3125-01DC0352
☐	BAND Reject Filter	Wainwright	WRCG1750	06/10/09	06/10/10	2
☐	High-pass filter	Wainwright	WHKX2.1	N/A	N/A	1
☒	High-Pass Filter	Wainwright	WHKX3.0	N/A	N/A	9
☐	Tunable Notch Filter	Wainwright	WRCT800.0 /960.0-0.2/40-8SSK	N/A	N/A	10
☐	Tunable Notch Filter	Wainwright	WRCD1700.0 /2000.0-0.2/40-10SSK	N/A	N/A	27
☐	Tunable Notch Filter	Wainwright	WRCT1900.0/ 2200.0-5/40-10SSK	N/A	N/A	7
☒	HORN ANT	ETS	3115	17/06/09	17/06/10	6419
☒	HORN ANT	ETS	3115	23/09/09	23/09/10	21097
☐	HORN ANT	A.H.Systems	SAS-574	10/06/09	10/06/10	154
☐	HORN ANT	A.H.Systems	SAS-574	10/06/09	10/06/10	155
☒	Dipole Antenna	Schwarzbeck	VHA9103	06/10/09	06/10/10	2116
☒	Dipole Antenna	Schwarzbeck	VHA9103	06/10/09	06/10/10	2117

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6.1 LIST OF TEST EQUIPMENT (Continued…)

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
☒	Dipole Antenna	Schwarzbeck	UHA9105	05/10/09	05/10/10	2261
☒	Dipole Antenna	Schwarzbeck	UHA9105	05/10/09	05/10/10	2262
☒	Coaxial Fixed Attenuators	Agilent	8491B	02/07/09	02/07/10	MY39260700
☐	Coaxial Fixed Attenuators	Agilent	8491B	02/07/09	02/07/10	MY39260699
☒	Attenuator (10dB)	WEINSCHEL	23-10-34	01/10/09	01/10/10	BP4386
☐	Attenuator (10dB)	WEINSCHEL	23-10-34	19/01/09	19/01/10	BP4387
☐	Attenuator (20dB)	WEINSCHEL	86-20-11	06/10/09	06/10/10	432
☐	Attenuator (10dB)	WEINSCHEL	86-10-11	06/10/09	06/10/10	446
☐	Attenuator (10dB)	WEINSCHEL	86-10-11	06/10/09	06/10/10	408
☐	Attenuator (40dB)	WEINSCHEL	57-40-33	01/10/09	01/10/10	NN837
☐	Attenuator (30dB)	JFW	50FH-030-300	13/03/09	13/03/10	060320-1
☐	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0088CAN	02/07/09	02/07/10	788
☐	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	02/07/09	02/07/10	790
☐	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0215CAN	02/07/09	02/07/10	112
☒	Amplifier (30dB)	Agilent	8449B	10/10/09	10/10/10	3008A01590
☐	Amplifier	EMPOWER	BBS3Q7ELU	02/02/09	02/02/10	1020
☐	RF Power Amplifier	OPHIRRF	5069F	02/07/09	02/07/10	1006
☐	EMI TEST RECEIVER	R&S	ESU	02/02/09	02/02/10	100014
☐	BILOG ANTENNA	SCHAFFNER	CBL6112B	02/06/09	02/06/10	2737
☐	Amplifier (22dB)	H.P	8447E	05/02/09	05/02/10	2945A02865
☐	EMI TEST RECEIVER	R&S	ESCI	12/05/09	12/05/10	100364
☐	LOG-PERIODIC ANT.	Schwarzbeck	UHALP9108A	30/05/09	30/05/10	590
☐	BICONICAL ANT.	Schwarzbeck	VHA 9103	02/06/09	02/06/10	2233
☐	LOG-PERIODIC ANT.	Schwarzbeck	UHALP 9108-A1	07/10/09	07/10/10	1098
☐	BICONICAL ANT.	Schwarzbeck	VHA 9103	06/10/09	06/10/10	91031946
☐	Low Noise Pre Amplifier	TSJ	MLA-100K01-B01-2	13/03/09	13/03/10	1252741
☒	Amplifier (25dB)	Agilent	8447D	12/05/09	12/05/10	2944A10144
☐	Amplifier (25dB)	Agilent	8447D	03/07/09	03/07/10	2648A04922
☐	Spectrum Analyzer(CE)	H.P	8591E	26/04/09	26/04/10	3649A05889
☐	LISN	Kyoritsu	KNW-407	03/07/09	03/07/10	8-317-8
☐	LISN	Kyoritsu	KNW-242	13/10/09	13/10/10	8-654-15
☐	CVCF	NF Electronic	4420	N/A	N/A	304935/337980
☐	DC BLOCK	Hyuplip	KEL-007	N/A	N/A	7-1581-5
☐	50 ohm Terminator	HME	CT-01	22/01/09	22/01/10	N/A
☐	RFI/FIELD Intensity Meter	Kyoritsu	KNM-2402	03/07/09	03/07/10	4N-170-3

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7.1 EMISSION DESIGNATOR

A. Emission Designator

- Bandwidth: 5MHz

QPSK Modulation

Emission Designator = 4M71G7D

WiMAX BW = 4.7107 MHz
G = Phase Modulation
7 = Quantized/Digital Information
D = Data Transmission

16QAM Modulation

Emission Designator = 4M70W7D

WiMAX BW = 4.7022 MHz
W = Composite – Quadrature Amplitude Modulation
7 = Quantized/Digital Information
D = Data Transmission

- Bandwidth: 10MHz

QPSK Modulation

Emission Designator = 9M36G7D

WiMAX BW = 9.3560 MHz
G = Phase Modulation
7 = Quantized/Digital Information
D = Data Transmission

16QAM Modulation

Emission Designator = 9M38W7D

WiMAX BW = 9.3845 MHz
W = Composite – Quadrature Amplitude Modulation
7 = Quantized/Digital Information
D = Data Transmission

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8.1 CONCLUSION

The data collected shows that the **SEOWONINTECH CO., LTD.** WIMAX CPE With 802.11b/g WLAN (**FCC ID: V7MSWC-5100W)** complies with all the requirements of Parts 2 and 27 of the FCC rules.

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