



DIGITAL EMC CO., LTD.

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CERTIFICATION OF COMPLIANCE

Infomark Co., Ltd.

#801, KINS Tower, 25-1, Jeongja-Dong, Bundang-Gu,
Seongnam-Si, Gyonggi-Do, Korea

Dates of Tests: April 5 ~ 17, 2010

Test Report S/N: DRTFCC1004-0016

Test Site : DIGITAL EMC CO., LTD.

FCC ID.

YCO-IMW-C610W

APPLICANT

Infomark Co., Ltd.

Classification	:	Licensed Non-Broadcast Station Transmitter(TNB)
FCC Rule Part(s)	:	§27(M), §2
EUT Type	:	WiMAX & WiFi Dual CPE
Model Name	:	IMW-C610W
Serial number	:	Identical prototype
TX Frequency Range	:	2499.00 ~ 2686.75MHz (5MHz OBW) 2508.50 ~ 2683.50MHz (10MHz OBW)
RX Frequency Range	:	2499.00 ~ 2686.75MHz (5MHz OBW) 2508.50 ~ 2683.50MHz (10MHz OBW)
Max. RF Output Power	:	OBW: 5MHz – 0.254W Conducted (24.05 dBm) OBW: 10MHz – 0.263W Conducted(24.20 dBm)
Emission Designators:	:	4M71G7D(QPSK) 4M71W7D(16QAM) 9M41G7D(QPSK) 9M39W7D(16QAM)
Date of Issue	:	April 20, 2010

TABLE OF CONTENTS

◆ MEASUREMENT REPORT

1.1 SCOPE	3
2.1 GENERAL INFORMATION	4
3.1 DESCRIPTION OF TESTS	5
3.1.1 TEST SET-UP CONFIGURATION	5
3.1.2 OCCUPIED BANDWIDTH EMISSION LIMITS	5
3.1.3 SPURIOUS AND HARMONICS EMISSIONS AT ANTENNA TERMINAL	5
3.1.4 RADIATED SPURIOUS AND HARMONIC EMISSIONS	6
3.1.5 FREQUENCY STABILITY / TEMPERATURE CARIATION	6
3.1 SUMMARY OF TESTS	7
4.1 TEST DATA	8
4.1.1 TRANSMITTER OUTPUT POWER	8
4.1.2 OCCUPIED BANDWIDTH(99%)	8
4.1.3 RADIATED SPURIOUS EMISSIONS	9
4.1.4 FREQUENCY STABILITY	21
5.1 PLOTS OF EMISSIONS	29
5.1.1 TRANSMITTER OUTPUT POWER(BW: 5MHz)	29
5.1.2 TRANSMITTER OUTPUT POWER(BW: 10MHz)	41
5.1.3 OCCUPIED BANDWIDTH(BW: 5MHz)	53
5.1.4 OCCUPIED BANDWIDTH(BW: 10MHz)	65
5.1.5 BAND EDGE(BW: 5MHz)	77
5.1.6 BAND EDGE(BW: 10MHz)	101
5.1.7 CONDUCTED SPURIOUS EMISSIONS(BW: 5MHz)	125
5.1.8 CONDUCTED SPURIOUS EMISSIONS(BW: 10MHz)	137
6.1 LIST OF TEST EQUIPMENT	149
7.1 EMISSION DESIGNATOR	151
8.1 CONCLUSION	152

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: **Infomark Co., Ltd.**

Address: #801, KINS Tower, 25-1, Jeongja-Dong, Bundang-Gu, Seongnam-Si, Gyonggi-Do,
Korea

Attention: Heejun, Gu

- FCC ID: YCO-IMW-C610W
- FCC Classification(s): Licensed Non-Broadcast Station Transmitter(TNB)
- Equipment (EUT) Type: WiMAX & WiFi Dual CPE
- Quantity: Quantity production is planned
- Associated Channel BW: 5MHz, 10MHz
- Tx Freq. Range: 2499.00 ~2686.75 MHz (5MHz OBW)
2508.50 ~2683.50 MHz (10MHz OBW)
- Rx Freq. Range: 2499.00 ~2686.75 MHz (5MHz OBW)
2508.50 ~2683.50 MHz (10MHz OBW)
- Zone Format: PUSC, AMC Zone
- DL : UL Symbol Ratio: 29 : 18
- Modulation(s): QPSK, 16QAM
- Code rates: QPSK1/2, QPSK3/4, 16QAM1/2, 16QAM3/4
- Antenna Type: Pattern Antenna
- FCC Rule Part(s): §27(M), §2
- Dates of Tests: April 5 ~ 17, 2010
- Place of Tests: DIGITAL EMC
- Test Report S/N: DRTFCC1004-0016

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.digitalemcc.com> E-mail : harveysung@digitalemcc.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

April 20, 2010

Won-Jung LEE

Data

Name

Signature

Reviewed by: Technical Director

April 20, 2010

Harvey Sung

Data

Name

Signature

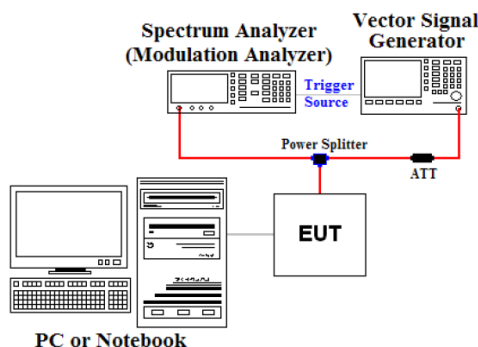
Ordering party:

Company name : Infomark Co., Ltd.
 Address : #801, KINS Tower, 25-1, Jeongja-Dong, Bundang-Gu
 City/town : Seongnam-Si, Gyonggi-Do
 Country : Korea
 Date of order : February 22, 2010

3.1 DESCRIPTION OF TESTS

3.1.1 Test set-up configuration

The test set-up for RF testing is shown in the below picture. This device is connected to USB port of the notebook computer.



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

The telnet program is used for verifying a connection status between notebook computer and EUT and to control maximum transmitting power, channel selection, BW(5MHz & 10MHz) and TX/RX status of the DUT.

A vector signal generator(VSG) is used to supply the WiMAX signal sources to a EUT and an external trigger source to a spectrum analyzer. The trigger is set in such a way that the analyzer records power measurements only during the times in which the EUT is transmitting.

The WiMAX signal sources are provided by R&S as below,

OBW	File name	
	PUSC Zone	AMC Zone
5MHz	5MHz_7204_UL_QPSK_12.wv	UI_AMC_QPSK_12_5MHz.wv
	5MHz_7204_UL_QPSK_34.wv	UI_AMC_QPSK_34_5MHz.wv
	5MHz_7204_UL_16QAM_12.wv	UI_AMC_16QAM_12_5MHz.wv
	5MHz_7204_UL_16QAM_34.wv	UI_AMC_16QAM_34_5MHz.wv
10MHz	10MHz_7204_UL_QPSK_12.wv	UI_AMC_QPSK_12_10MHz.wv
	10MHz_7204_UL_QPSK_34.wv	UI_AMC_QPSK_34_10MHz.wv
	10MHz_7204_UL_16QAM_12.wv	UI_AMC_16QAM_12_10MHz.wv
	10MHz_7204_UL_16QAM_34.wv	UI_AMC_16QAM_34_10MHz.wv

The WiMAX signal sources have 29:18 symbol ratio(Downlink : Uplink). This device will transmit control signaling at the first 3 uplink symbols and then use the rest of the uplink symbols for data traffic bursts in the uplink sub-frame. Measurements were taken in the 29:18 ratio, but since there was no energy in the control symbols, the effective power is only across 15 data symbols.

3.1 DESCRIPTION OF TESTS

(Continued...)

3.1.2 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.

3.1.3 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.

3.1.4 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 10th 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.

This test is based on the use of spectrum analyzer employing a RBW/VBW = 5MHz(OBW: 5MHz) and 10MHz(OBW: 10MHz) and peak detector mode.

The receive antenna height and turntable rotations are adjusted for the highest reading on the receive spectrum analyzer. A antenna is substituted in place of the EUT. This antenna is driven by a vector signal generator for spurious emissions. The level of the signal generator is 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 is measured and this conducted power is corrected with antenna gain in dBi. This spurious level was recorded.

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

3.1 DESCRIPTION OF TESTS

(Continued...)

3.1.5 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.

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
2.1051 27.53(m)(2)(V),(6)	Band Edge	$< 43 + 10\log_{10}(P)$		C
2.1051 27.53(m)(2)(V),(6)	Conducted Spurious Emissions	$< 43 + 10\log_{10}(P)$		C
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
2.1051 27.53(m)(2)(V),(6)	Radiated Spurious Emissions	$< 43 + 10\log_{10}(P)$ for all out-of-band emissions	Radiated	C
II. Additional Test Results for JBP portion				
15.107	AC Conducted Emissions	$< \text{FCC 15.107 limits}$	Radiated	C ^{note 2}
15.109	General Field Strength Limits	$< \text{FCC 15.109 limits}$	Line Conducted	C ^{note 2}
<p>Note 1: C=Comply NC=Not Comply NT=Not Tested NA=Not Applicable</p> <p>Note 2: The JBP (Computing device peripheral) portion of this device was tested and approved by FCC DOC Procedure.</p>				

4.1 TEST DATA

4.1.1 Transmitter Output Power

- 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	2499.00	23.35	23.44	23.37	23.10
		2600.00	23.13	23.11	23.02	23.06
		2686.75	22.95	23.06	22.93	22.92
	AMC	2499.00	23.90	23.89	24.05	23.73
		2600.00	23.80	23.67	23.90	23.70
		2686.75	23.88	23.80	23.73	23.65
10MHz	PUSC	2508.50	23.70	23.67	23.72	23.54
		2600.00	23.36	23.28	23.31	23.11
		2683.50	23.24	23.20	23.28	23.12
	AMC	2508.50	24.20	24.16	24.13	24.00
		2600.00	23.86	23.73	23.69	23.56
		2683.50	23.82	23.67	23.66	23.62

4.1.2 Occupied Bandwidth(99%)

- Measurement data

Bandwidth	Zone Format	Frequency (MHz)	QPSK 1/2 (MHz)	QPSK 3/4 (MHz)	16QAM 1/2 (MHz)	16QAM 3/4 (MHz)
5MHz	PUSC	2499.00	4.440	4.440	4.440	4.445
		2600.00	4.445	4.440	4.440	4.450
		2686.75	4.440	4.445	4.445	4.435
	AMC	2499.00	4.710	4.710	4.700	4.705
		2600.00	4.710	4.705	4.710	4.705
		2686.75	4.700	4.705	4.700	4.710
10MHz	PUSC	2508.50	9.105	9.075	9.105	9.120
		2600.00	9.120	9.135	9.120	9.150
		2683.50	9.135	9.135	9.120	9.135
	AMC	2508.50	9.390	9.360	9.345	9.345
		2600.00	9.405	9.375	9.390	9.375
		2683.50	9.390	9.390	9.375	9.375

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	PUSC
BANDWIDTH	:	5 MHz
OPERATING FREQUENCY	:	2499.00 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W) = -13\text{dBm}$

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
4998.00	QPSK 1/2	H	-46.79	10.92	-35.87	22.87
4998.00	QPSK 3/4	H	-47.19	10.92	-36.27	23.27
4998.00	16QAM 1/2	H	-47.03	10.92	-36.11	23.11
4998.00	16QAM 3/4	H	-46.84	10.92	-35.92	22.92
4998.00	QPSK 1/2	V	-41.81	10.92	-30.89	17.89
4998.00	QPSK 3/4	V	-42.05	10.92	-31.13	18.13
4998.00	16QAM 1/2	V	-41.85	10.92	-30.93	17.93
4998.00	16QAM 3/4	V	-42.06	10.92	-31.14	18.14
7497.00	QPSK 1/2	H	-39.08	11.50	-27.58	14.58
7497.00	QPSK 3/4	H	-40.05	11.50	-28.55	15.55
7497.00	16QAM 1/2	H	-39.85	11.50	-28.35	15.35
7497.00	16QAM 3/4	H	-40.50	11.50	-29.00	16.00
7497.00	QPSK 1/2	V	-37.04	11.50	-25.54	12.54
7497.00	QPSK 3/4	V	-38.46	11.50	-26.96	13.96
7497.00	16QAM 1/2	V	-38.34	11.50	-26.84	13.84
7497.00	16QAM 3/4	V	-39.06	11.50	-27.56	14.56
9996.00	QPSK 1/2	H	-43.01	12.20	-30.81	17.81
9996.00	QPSK 3/4	H	-43.73	12.20	-31.53	18.53
9996.00	16QAM 1/2	H	-43.97	12.20	-31.77	18.77
9996.00	16QAM 3/4	H	-44.05	12.20	-31.85	18.85
9996.00	QPSK 1/2	V	-38.28	12.20	-26.08	13.08
9996.00	QPSK 3/4	V	-39.14	12.20	-26.94	13.94
9996.00	16QAM 1/2	V	-39.55	12.20	-27.35	14.35
9996.00	16QAM 3/4	V	-39.79	12.20	-27.59	14.59
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	AMC
BANDWIDTH	:	5 MHz
OPERATING FREQUENCY	:	2499.00 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W)$ = -13dBm

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
4998.00	QPSK 1/2	H	-47.08	10.92	-36.16	23.16
4998.00	QPSK 3/4	H	-47.07	10.92	-36.15	23.15
4998.00	16QAM 1/2	H	-47.42	10.92	-36.50	23.50
4998.00	16QAM 3/4	H	-46.95	10.92	-36.03	23.03
4998.00	QPSK 1/2	V	-41.91	10.92	-30.99	17.99
4998.00	QPSK 3/4	V	-41.80	10.92	-30.88	17.88
4998.00	16QAM 1/2	V	-41.92	10.92	-31.00	18.00
4998.00	16QAM 3/4	V	-41.98	10.92	-31.06	18.06
7497.00	QPSK 1/2	H	-39.24	11.50	-27.74	14.74
7497.00	QPSK 3/4	H	-38.97	11.50	-27.47	14.47
7497.00	16QAM 1/2	H	-38.76	11.50	-27.26	14.26
7497.00	16QAM 3/4	H	-39.44	11.50	-27.94	14.94
7497.00	QPSK 1/2	V	-37.58	11.50	-26.08	13.08
7497.00	QPSK 3/4	V	-37.18	11.50	-25.68	12.68
7497.00	16QAM 1/2	V	-36.79	11.50	-25.29	12.29
7497.00	16QAM 3/4	V	-37.75	11.50	-26.25	13.25
9996.00	QPSK 1/2	H	-43.57	12.20	-31.37	18.37
9996.00	QPSK 3/4	H	-42.49	12.20	-30.29	17.29
9996.00	16QAM 1/2	H	-42.92	12.20	-30.72	17.72
9996.00	16QAM 3/4	H	-42.80	12.20	-30.60	17.60
9996.00	QPSK 1/2	V	-38.01	12.20	-25.81	12.81
9996.00	QPSK 3/4	V	-37.40	12.20	-25.20	12.20
9996.00	16QAM 1/2	V	-37.45	12.20	-25.25	12.25
9996.00	16QAM 3/4	V	-38.18	12.20	-25.98	12.98
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	PUSC
BANDWIDTH	:	5 MHz
OPERATING FREQUENCY	:	2600.00 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W) = -13\text{dBm}$

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5200.00	QPSK 1/2	H	-43.76	10.99	-32.77	19.77
5200.00	QPSK 3/4	H	-44.01	10.99	-33.02	20.02
5200.00	16QAM 1/2	H	-43.63	10.99	-32.64	19.64
5200.00	16QAM 3/4	H	-44.27	10.99	-33.28	20.28
5200.00	QPSK 1/2	V	-43.80	10.99	-32.81	19.81
5200.00	QPSK 3/4	V	-43.98	10.99	-32.99	19.99
5200.00	16QAM 1/2	V	-43.66	10.99	-32.67	19.67
5200.00	16QAM 3/4	V	-44.07	10.99	-33.08	20.08
7800.00	QPSK 1/2	H	-34.75	11.38	-23.37	10.37
7800.00	QPSK 3/4	H	-35.25	11.38	-23.87	10.87
7800.00	16QAM 1/2	H	-35.18	11.38	-23.80	10.80
7800.00	16QAM 3/4	H	-35.43	11.38	-24.05	11.05
7800.00	QPSK 1/2	V	-36.99	11.38	-25.61	12.61
7800.00	QPSK 3/4	V	-37.35	11.38	-25.97	12.97
7800.00	16QAM 1/2	V	-37.52	11.38	-26.14	13.14
7800.00	16QAM 3/4	V	-37.99	11.38	-26.61	13.61
10400.00	QPSK 1/2	H	-38.90	12.36	-26.54	13.54
10400.00	QPSK 3/4	H	-39.95	12.36	-27.59	14.59
10400.00	16QAM 1/2	H	-40.15	12.36	-27.79	14.79
10400.00	16QAM 3/4	H	-40.51	12.36	-28.15	15.15
10400.00	QPSK 1/2	V	-40.15	12.36	-27.79	14.79
10400.00	QPSK 3/4	V	-40.56	12.36	-28.20	15.20
10400.00	16QAM 1/2	V	-40.36	12.36	-28.00	15.00
10400.00	16QAM 3/4	V	-40.58	12.36	-28.22	15.22
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	AMC
BANDWIDTH	:	5 MHz
OPERATING FREQUENCY	:	2600.00 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W) = -13\text{dBm}$

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5200.00	QPSK 1/2	H	-43.77	10.99	-32.78	19.78
5200.00	QPSK 3/4	H	-44.17	10.99	-33.18	20.18
5200.00	16QAM 1/2	H	-43.94	10.99	-32.95	19.95
5200.00	16QAM 3/4	H	-43.83	10.99	-32.84	19.84
5200.00	QPSK 1/2	V	-43.80	10.99	-32.81	19.81
5200.00	QPSK 3/4	V	-43.77	10.99	-32.78	19.78
5200.00	16QAM 1/2	V	-44.10	10.99	-33.11	20.11
5200.00	16QAM 3/4	V	-43.81	10.99	-32.82	19.82
7800.00	QPSK 1/2	H	-35.11	11.38	-23.73	10.73
7800.00	QPSK 3/4	H	-34.36	11.38	-22.98	9.98
7800.00	16QAM 1/2	H	-34.42	11.38	-23.04	10.04
7800.00	16QAM 3/4	H	-35.20	11.38	-23.82	10.82
7800.00	QPSK 1/2	V	-37.03	11.38	-25.65	12.65
7800.00	QPSK 3/4	V	-36.66	11.38	-25.28	12.28
7800.00	16QAM 1/2	V	-36.64	11.38	-25.26	12.26
7800.00	16QAM 3/4	V	-37.38	11.38	-26.00	13.00
10400.00	QPSK 1/2	H	-38.95	12.36	-26.59	13.59
10400.00	QPSK 3/4	H	-39.01	12.36	-26.65	13.65
10400.00	16QAM 1/2	H	-38.56	12.36	-26.20	13.20
10400.00	16QAM 3/4	H	-39.08	12.36	-26.72	13.72
10400.00	QPSK 1/2	V	-39.62	12.36	-27.26	14.26
10400.00	QPSK 3/4	V	-38.89	12.36	-26.53	13.53
10400.00	16QAM 1/2	V	-38.82	12.36	-26.46	13.46
10400.00	16QAM 3/4	V	-39.65	12.36	-27.29	14.29
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	PUSC
BANDWIDTH	:	5 MHz
OPERATING FREQUENCY	:	2686.75 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W)$ = -13dBm

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5373.50	QPSK 1/2	H	-42.77	11.05	-31.72	18.72
5373.50	QPSK 3/4	H	-43.08	11.05	-32.03	19.03
5373.50	16QAM 1/2	H	-42.82	11.05	-31.77	18.77
5373.50	16QAM 3/4	H	-42.85	11.05	-31.80	18.80
5373.50	QPSK 1/2	V	-40.69	11.05	-29.64	16.64
5373.50	QPSK 3/4	V	-41.03	11.05	-29.98	16.98
5373.50	16QAM 1/2	V	-40.63	11.05	-29.58	16.58
5373.50	16QAM 3/4	V	-40.45	11.05	-29.40	16.40
8060.25	QPSK 1/2	H	-32.59	11.30	-21.29	8.29
8060.25	QPSK 3/4	H	-32.44	11.30	-21.14	8.14
8060.25	16QAM 1/2	H	-32.51	11.30	-21.21	8.21
8060.25	16QAM 3/4	H	-32.77	11.30	-21.47	8.47
8060.25	QPSK 1/2	V	-34.75	11.30	-23.45	10.45
8060.25	QPSK 3/4	V	-34.58	11.30	-23.28	10.28
8060.25	16QAM 1/2	V	-34.90	11.30	-23.60	10.60
8060.25	16QAM 3/4	V	-34.69	11.30	-23.39	10.39
10747.00	QPSK 1/2	H	-36.58	12.49	-24.09	11.09
10747.00	QPSK 3/4	H	-36.66	12.49	-24.17	11.17
10747.00	16QAM 1/2	H	-37.48	12.49	-24.99	11.99
10747.00	16QAM 3/4	H	-37.80	12.49	-25.31	12.31
10747.00	QPSK 1/2	V	-36.17	12.49	-23.68	10.68
10747.00	QPSK 3/4	V	-36.93	12.49	-24.44	11.44
10747.00	16QAM 1/2	V	-36.68	12.49	-24.19	11.19
10747.00	16QAM 3/4	V	-37.26	12.49	-24.77	11.77
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	AMC
BANDWIDTH	:	5 MHz
OPERATING FREQUENCY	:	2686.75 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W) = -13\text{dBm}$

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5373.50	QPSK 1/2	H	-43.58	11.05	-32.53	19.53
5373.50	QPSK 3/4	H	-43.32	11.05	-32.27	19.27
5373.50	16QAM 1/2	H	-43.20	11.05	-32.15	19.15
5373.50	16QAM 3/4	H	-43.22	11.05	-32.17	19.17
5373.50	QPSK 1/2	V	-40.97	11.05	-29.92	16.92
5373.50	QPSK 3/4	V	-40.86	11.05	-29.81	16.81
5373.50	16QAM 1/2	V	-40.38	11.05	-29.33	16.33
5373.50	16QAM 3/4	V	-40.81	11.05	-29.76	16.76
8060.25	QPSK 1/2	H	-33.24	11.30	-21.94	8.94
8060.25	QPSK 3/4	H	-32.71	11.30	-21.41	8.41
8060.25	16QAM 1/2	H	-32.94	11.30	-21.64	8.64
8060.25	16QAM 3/4	H	-33.32	11.30	-22.02	9.02
8060.25	QPSK 1/2	V	-34.87	11.30	-23.57	10.57
8060.25	QPSK 3/4	V	-34.60	11.30	-23.30	10.30
8060.25	16QAM 1/2	V	-34.46	11.30	-23.16	10.16
8060.25	16QAM 3/4	V	-34.68	11.30	-23.38	10.38
10747.00	QPSK 1/2	H	-36.66	12.49	-24.17	11.17
10747.00	QPSK 3/4	H	-36.33	12.49	-23.84	10.84
10747.00	16QAM 1/2	H	-36.53	12.49	-24.04	11.04
10747.00	16QAM 3/4	H	-37.00	12.49	-24.51	11.51
10747.00	QPSK 1/2	V	-35.77	12.49	-23.28	10.28
10747.00	QPSK 3/4	V	-36.16	12.49	-23.67	10.67
10747.00	16QAM 1/2	V	-36.23	12.49	-23.74	10.74
10747.00	16QAM 3/4	V	-36.33	12.49	-23.84	10.84
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	PUSC
BANDWIDTH	:	10 MHz
OPERATING FREQUENCY	:	2508.50 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W) = -13\text{dBm}$

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5017.00	QPSK 1/2	H	-47.66	10.93	-36.73	23.73
5017.00	QPSK 3/4	H	-47.98	10.93	-37.05	24.05
5017.00	16QAM 1/2	H	-47.46	10.93	-36.53	23.53
5017.00	16QAM 3/4	H	-48.14	10.93	-37.21	24.21
5017.00	QPSK 1/2	V	-45.68	10.93	-34.75	21.75
5017.00	QPSK 3/4	V	-45.92	10.93	-34.99	21.99
5017.00	16QAM 1/2	V	-45.49	10.93	-34.56	21.56
5017.00	16QAM 3/4	V	-45.63	10.93	-34.70	21.70
7525.50	QPSK 1/2	H	-44.33	11.49	-32.84	19.84
7525.50	QPSK 3/4	H	-44.70	11.49	-33.21	20.21
7525.50	16QAM 1/2	H	-44.61	11.49	-33.12	20.12
7525.50	16QAM 3/4	H	-45.81	11.49	-34.32	21.32
7525.50	QPSK 1/2	V	-39.66	11.49	-28.17	15.17
7525.50	QPSK 3/4	V	-40.11	11.49	-28.62	15.62
7525.50	16QAM 1/2	V	-39.79	11.49	-28.30	15.30
7525.50	16QAM 3/4	V	-41.42	11.49	-29.93	16.93
10034.00	QPSK 1/2	H	-47.14	12.21	-34.93	21.93
10034.00	QPSK 3/4	H	-47.84	12.21	-35.63	22.63
10034.00	16QAM 1/2	H	-47.59	12.21	-35.38	22.38
10034.00	16QAM 3/4	H	-48.44	12.21	-36.23	23.23
10034.00	QPSK 1/2	V	-41.01	12.21	-28.80	15.80
10034.00	QPSK 3/4	V	-41.95	12.21	-29.74	16.74
10034.00	16QAM 1/2	V	-41.39	12.21	-29.18	16.18
10034.00	16QAM 3/4	V	-42.63	12.21	-30.42	17.42
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	AMC
BANDWIDTH	:	10 MHz
OPERATING FREQUENCY	:	2508.50 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W) = -13\text{dBm}$

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5017.00	QPSK 1/2	H	-47.18	10.93	-36.25	23.25
5017.00	QPSK 3/4	H	-47.80	10.93	-36.87	23.87
5017.00	16QAM 1/2	H	-47.69	10.93	-36.76	23.76
5017.00	16QAM 3/4	H	-47.82	10.93	-36.89	23.89
5017.00	QPSK 1/2	V	-45.93	10.93	-35.00	22.00
5017.00	QPSK 3/4	V	-45.89	10.93	-34.96	21.96
5017.00	16QAM 1/2	V	-46.43	10.93	-35.50	22.50
5017.00	16QAM 3/4	V	-46.82	10.93	-35.89	22.89
7525.50	QPSK 1/2	H	-44.22	11.49	-32.73	19.73
7525.50	QPSK 3/4	H	-44.41	11.49	-32.92	19.92
7525.50	16QAM 1/2	H	-43.47	11.49	-31.98	18.98
7525.50	16QAM 3/4	H	-44.62	11.49	-33.13	20.13
7525.50	QPSK 1/2	V	-39.47	11.49	-27.98	14.98
7525.50	QPSK 3/4	V	-39.49	11.49	-28.00	15.00
7525.50	16QAM 1/2	V	-38.74	11.49	-27.25	14.25
7525.50	16QAM 3/4	V	-39.69	11.49	-28.20	15.20
10034.00	QPSK 1/2	H	-47.00	12.21	-34.79	21.79
10034.00	QPSK 3/4	H	-47.63	12.21	-35.42	22.42
10034.00	16QAM 1/2	H	-45.85	12.21	-33.64	20.64
10034.00	16QAM 3/4	H	-46.65	12.21	-34.44	21.44
10034.00	QPSK 1/2	V	-41.37	12.21	-29.16	16.16
10034.00	QPSK 3/4	V	-40.82	12.21	-28.61	15.61
10034.00	16QAM 1/2	V	-39.83	12.21	-27.62	14.62
10034.00	16QAM 3/4	V	-41.08	12.21	-28.87	15.87
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	PUSC
BANDWIDTH	:	10 MHz
OPERATING FREQUENCY	:	2600.00 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W)$ = -13dBm

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5200.00	QPSK 1/2	H	-44.80	10.99	-33.81	20.81
5200.00	QPSK 3/4	H	-44.63	10.99	-33.64	20.64
5200.00	16QAM 1/2	H	-44.64	10.99	-33.65	20.65
5200.00	16QAM 3/4	H	-44.87	10.99	-33.88	20.88
5200.00	QPSK 1/2	V	-43.78	10.99	-32.79	19.79
5200.00	QPSK 3/4	V	-44.02	10.99	-33.03	20.03
5200.00	16QAM 1/2	V	-44.25	10.99	-33.26	20.26
5200.00	16QAM 3/4	V	-44.03	10.99	-33.04	20.04
7800.00	QPSK 1/2	H	-34.81	11.38	-23.43	10.43
7800.00	QPSK 3/4	H	-35.20	11.38	-23.82	10.82
7800.00	16QAM 1/2	H	-34.75	11.38	-23.37	10.37
7800.00	16QAM 3/4	H	-36.91	11.38	-25.53	12.53
7800.00	QPSK 1/2	V	-36.06	11.38	-24.68	11.68
7800.00	QPSK 3/4	V	-37.02	11.38	-25.64	12.64
7800.00	16QAM 1/2	V	-36.07	11.38	-24.69	11.69
7800.00	16QAM 3/4	V	-38.21	11.38	-26.83	13.83
10400.00	QPSK 1/2	H	-40.04	12.36	-27.68	14.68
10400.00	QPSK 3/4	H	-41.00	12.36	-28.64	15.64
10400.00	16QAM 1/2	H	-40.07	12.36	-27.71	14.71
10400.00	16QAM 3/4	H	-41.67	12.36	-29.31	16.31
10400.00	QPSK 1/2	V	-37.87	12.36	-25.51	12.51
10400.00	QPSK 3/4	V	-38.50	12.36	-26.14	13.14
10400.00	16QAM 1/2	V	-37.67	12.36	-25.31	12.31
10400.00	16QAM 3/4	V	-38.19	12.36	-25.83	12.83
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	AMC
BANDWIDTH	:	10 MHz
OPERATING FREQUENCY	:	2600.00 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W) = -13\text{dBm}$

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5200.00	QPSK 1/2	H	-44.58	10.99	-33.59	20.59
5200.00	QPSK 3/4	H	-44.52	10.99	-33.53	20.53
5200.00	16QAM 1/2	H	-44.29	10.99	-33.30	20.30
5200.00	16QAM 3/4	H	-44.64	10.99	-33.65	20.65
5200.00	QPSK 1/2	V	-44.20	10.99	-33.21	20.21
5200.00	QPSK 3/4	V	-43.73	10.99	-32.74	19.74
5200.00	16QAM 1/2	V	-44.02	10.99	-33.03	20.03
5200.00	16QAM 3/4	V	-43.99	10.99	-33.00	20.00
7800.00	QPSK 1/2	H	-34.25	11.38	-22.87	9.87
7800.00	QPSK 3/4	H	-35.00	11.38	-23.62	10.62
7800.00	16QAM 1/2	H	-33.78	11.38	-22.40	9.40
7800.00	16QAM 3/4	H	-34.58	11.38	-23.20	10.20
7800.00	QPSK 1/2	V	-36.12	11.38	-24.74	11.74
7800.00	QPSK 3/4	V	-36.55	11.38	-25.17	12.17
7800.00	16QAM 1/2	V	-35.15	11.38	-23.77	10.77
7800.00	16QAM 3/4	V	-36.27	11.38	-24.89	11.89
10400.00	QPSK 1/2	H	-40.07	12.36	-27.71	14.71
10400.00	QPSK 3/4	H	-40.56	12.36	-28.20	15.20
10400.00	16QAM 1/2	H	-40.87	12.36	-28.51	15.51
10400.00	16QAM 3/4	H	-40.66	12.36	-28.30	15.30
10400.00	QPSK 1/2	V	-38.13	12.36	-25.77	12.77
10400.00	QPSK 3/4	V	-37.62	12.36	-25.26	12.26
10400.00	16QAM 1/2	V	-36.24	12.36	-23.88	10.88
10400.00	16QAM 3/4	V	-37.78	12.36	-25.42	12.42
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	PUSC
BANDWIDTH	:	10 MHz
OPERATING FREQUENCY	:	2683.50 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W)$ = -13dBm

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5367.00	QPSK 1/2	H	-40.74	11.05	-29.69	16.69
5367.00	QPSK 3/4	H	-40.68	11.05	-29.63	16.63
5367.00	16QAM 1/2	H	-40.76	11.05	-29.71	16.71
5367.00	16QAM 3/4	H	-40.88	11.05	-29.83	16.83
5367.00	QPSK 1/2	V	-40.19	11.05	-29.14	16.14
5367.00	QPSK 3/4	V	-40.36	11.05	-29.31	16.31
5367.00	16QAM 1/2	V	-40.16	11.05	-29.11	16.11
5367.00	16QAM 3/4	V	-40.22	11.05	-29.17	16.17
8050.50	QPSK 1/2	H	-33.47	11.30	-22.17	9.17
8050.50	QPSK 3/4	H	-34.55	11.30	-23.25	10.25
8050.50	16QAM 1/2	H	-33.35	11.30	-22.05	9.05
8050.50	16QAM 3/4	H	-34.65	11.30	-23.35	10.35
8050.50	QPSK 1/2	V	-34.48	11.30	-23.18	10.18
8050.50	QPSK 3/4	V	-34.51	11.30	-23.21	10.21
8050.50	16QAM 1/2	V	-34.61	11.30	-23.31	10.31
8050.50	16QAM 3/4	V	-36.47	11.30	-25.17	12.17
10734.00	QPSK 1/2	H	-40.92	12.49	-28.43	15.43
10734.00	QPSK 3/4	H	-41.74	12.49	-29.25	16.25
10734.00	16QAM 1/2	H	-40.90	12.49	-28.41	15.41
10734.00	16QAM 3/4	H	-43.13	12.49	-30.64	17.64
10734.00	QPSK 1/2	V	-33.08	12.49	-20.59	7.59
10734.00	QPSK 3/4	V	-33.29	12.49	-20.80	7.80
10734.00	16QAM 1/2	V	-33.04	12.49	-20.55	7.55
10734.00	16QAM 3/4	V	-33.49	12.49	-21.00	8.00
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.3 Radiated Spurious Emissions

(Continued...)

Field Strength of SPURIOUS Radiation

MODULATION SIGNAL	:	WIMAX
ZONE FORMAT	:	AMC
BANDWIDTH	:	10 MHz
OPERATING FREQUENCY	:	2683.50 MHz
DISTANCE	:	3 m
LIMIT	:	$43 + 10 \log_{10}(W)$ = -13dBm

Freq. (MHz)	MODULATION TYPE	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	RESULT LEVEL (dBm)	Margin (dB)
5367.00	QPSK 1/2	H	-41.03	11.05	-29.98	16.98
5367.00	QPSK 3/4	H	-41.00	11.05	-29.95	16.95
5367.00	16QAM 1/2	H	-40.91	11.05	-29.86	16.86
5367.00	16QAM 3/4	H	-40.94	11.05	-29.89	16.89
5367.00	QPSK 1/2	V	-40.33	11.05	-29.28	16.28
5367.00	QPSK 3/4	V	-39.93	11.05	-28.88	15.88
5367.00	16QAM 1/2	V	-40.17	11.05	-29.12	16.12
5367.00	16QAM 3/4	V	-40.29	11.05	-29.24	16.24
8050.50	QPSK 1/2	H	-33.76	11.30	-22.46	9.46
8050.50	QPSK 3/4	H	-33.32	11.30	-22.02	9.02
8050.50	16QAM 1/2	H	-33.04	11.30	-21.74	8.74
8050.50	16QAM 3/4	H	-33.35	11.30	-22.05	9.05
8050.50	QPSK 1/2	V	-34.72	11.30	-23.42	10.42
8050.50	QPSK 3/4	V	-34.58	11.30	-23.28	10.28
8050.50	16QAM 1/2	V	-34.35	11.30	-23.05	10.05
8050.50	16QAM 3/4	V	-34.17	11.30	-22.87	9.87
10734.00	QPSK 1/2	H	-42.07	12.49	-29.58	16.58
10734.00	QPSK 3/4	H	-42.20	12.49	-29.71	16.71
10734.00	16QAM 1/2	H	-41.80	12.49	-29.31	16.31
10734.00	16QAM 3/4	H	-41.25	12.49	-28.76	15.76
10734.00	QPSK 1/2	V	-33.33	12.49	-20.84	7.84
10734.00	QPSK 3/4	V	-32.87	12.49	-20.38	7.38
10734.00	16QAM 1/2	V	-32.63	12.49	-20.14	7.14
10734.00	16QAM 3/4	V	-33.15	12.49	-20.66	7.66
-	-	-	-	-	-	-

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

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

4.1 TEST DATA

(Continued...)

4.1.4 Frequency Stability

BANDWIDTH :	5	MHZ
ZONE MODE :	AMC	
MODULATION TYPE :	QPSK 1/2	
OPERATING FREQUENCY :	2,600,000,086	Hz
REFERENCE VOLTAGE :	3.7	V _{DC}

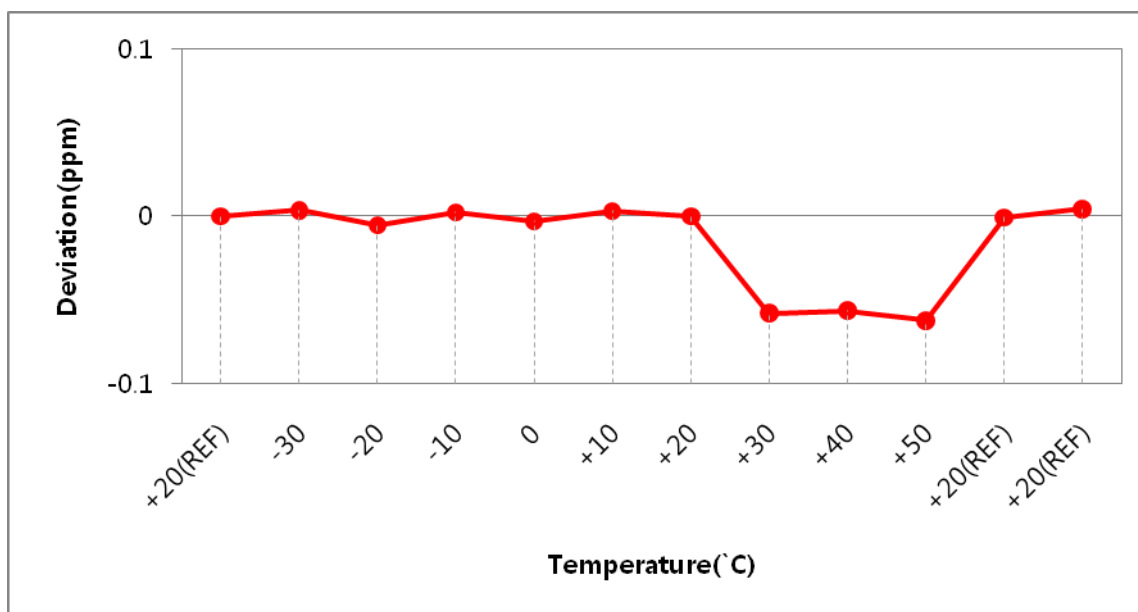
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQ (Hz)	Deviation (ppm)
100%	3.7	+20(Ref)	2,600,000,086	0.000
100%		-30	2,600,000,095	0.003
100%		-20	2,600,000,072	-0.005
100%		-10	2,600,000,092	0.002
100%		0	2,600,000,078	-0.003
100%		+10	2,600,000,094	0.003
100%		+20	2,600,000,086	0.000
100%		+30	2,599,999,935	-0.058
100%		+40	2,599,999,939	-0.057
100%		+50	2,599,999,924	-0.062
85%	3.145	+20	-	-
115%	4.255	+20	2,600,000,084	-0.001
BATT.ENDPOINT	3.350	+20	2,600,000,097	0.004

4.1 TEST DATA

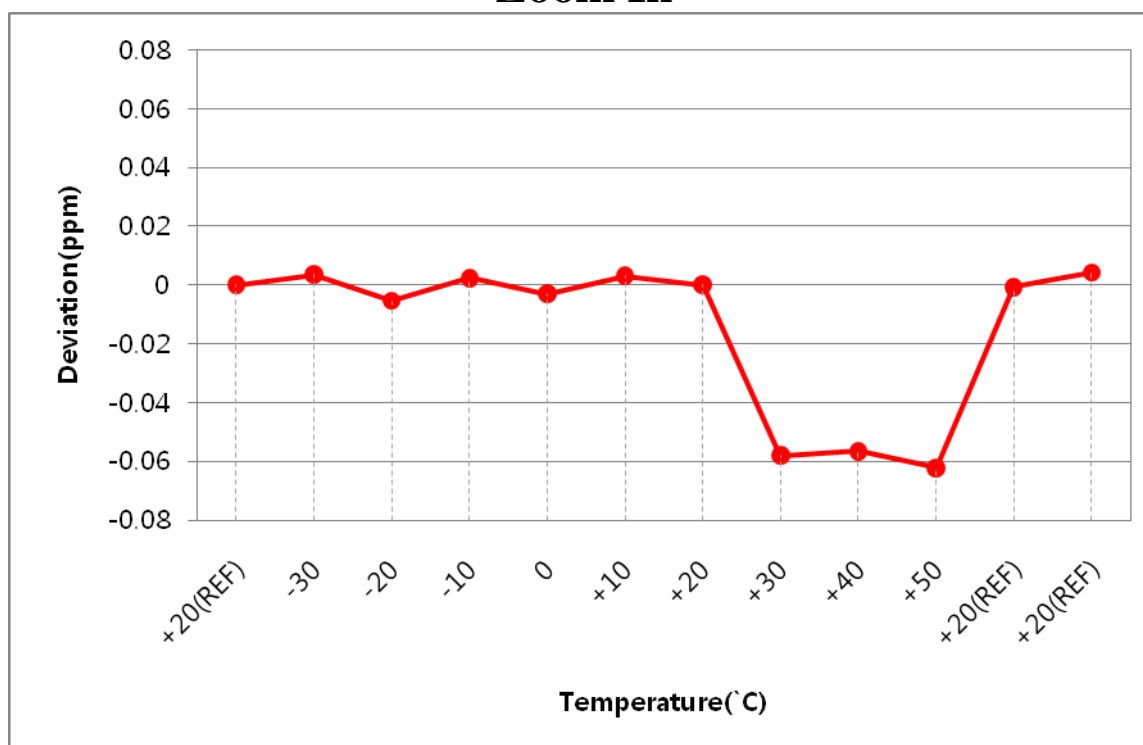
(Continued...)

4.1.4 Frequency Stability

(Continued...)



Zoom In



4.1 TEST DATA**(Continued...)****4.1.4 Frequency Stability****(Continued...)**

BANDWIDTH :	5	MHZ
ZONE MODE :	AMC	
MODULATION TYPE :	16QAM 1/2	
OPERATING FREQUENCY :	2,600,000,096	Hz
REFERENCE VOLTAGE :	3.7	V _{DC}

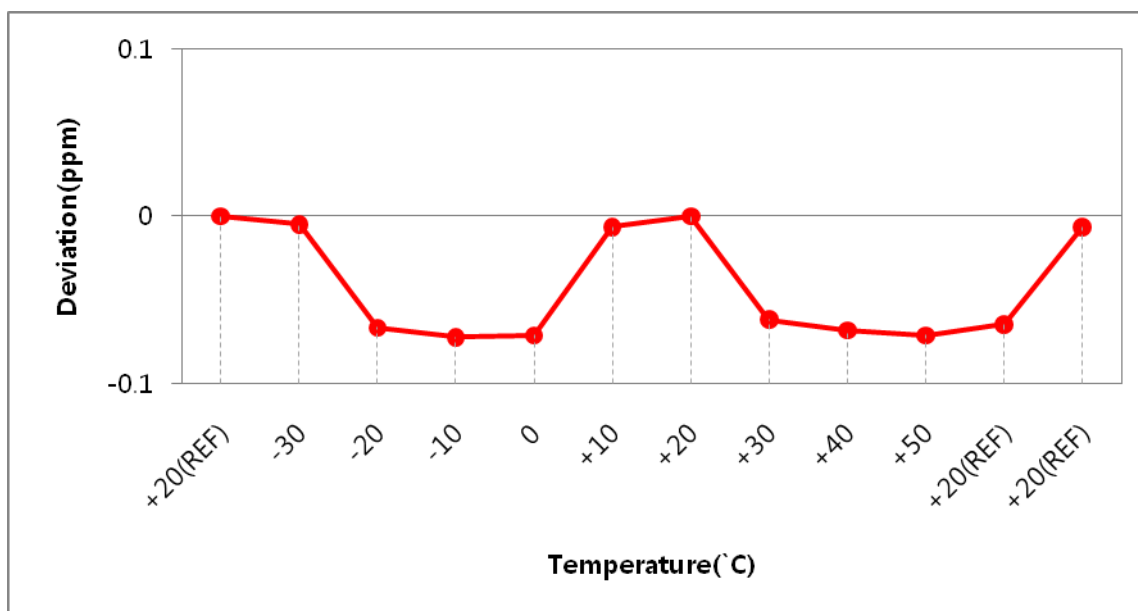
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQ (Hz)	Deviation (ppm)
100%	3.7	+20(Ref)	2,600,000,096	0.000
100%		-30	2,600,000,083	-0.005
100%		-20	2,599,999,923	-0.067
100%		-10	2,599,999,908	-0.072
100%		0	2,599,999,911	-0.071
100%		+10	2,600,000,079	-0.007
100%		+20	2,600,000,096	0.000
100%		+30	2,599,999,935	-0.062
100%		+40	2,599,999,919	-0.068
100%		+50	2,599,999,911	-0.071
85%	3.145	+20	-	-
115%	4.255	+20	2,599,999,928	-0.065
BATT.ENDPOINT	3.350	+20	2,600,000,079	-0.007

4.1 TEST DATA

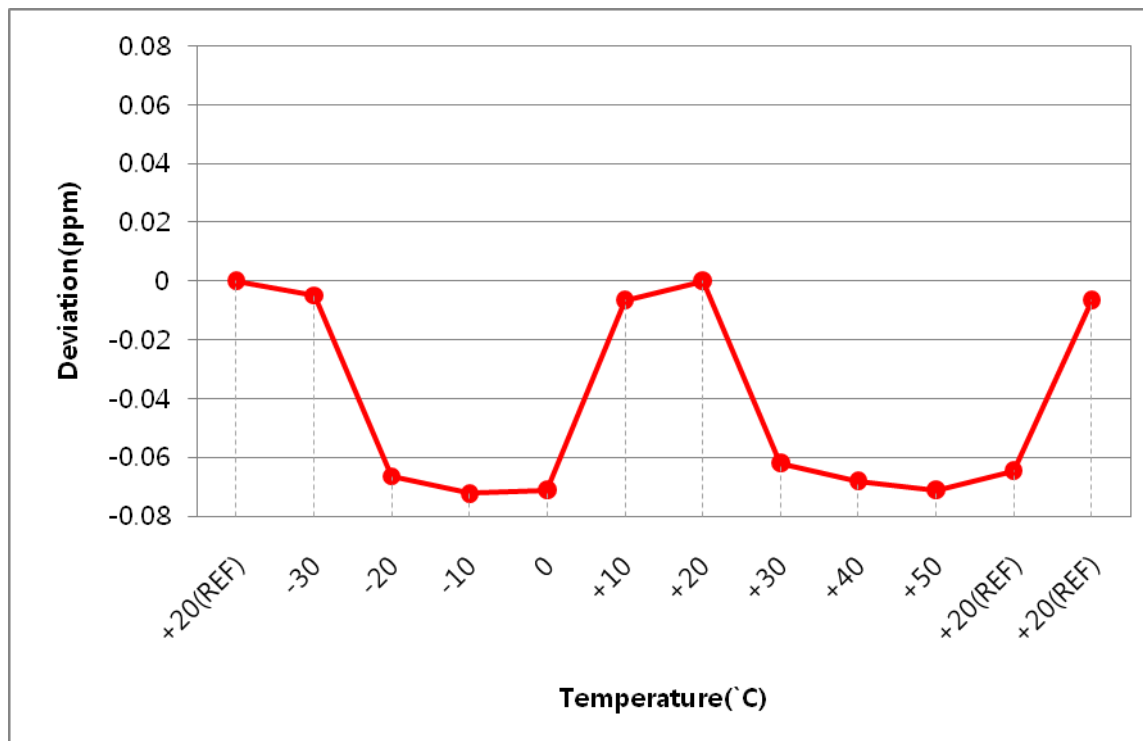
(Continued...)

4.1.4 Frequency Stability

(Continued...)



Zoom In



4.1 TEST DATA**(Continued...)****4.1.4 Frequency Stability****(Continued...)**

BANDWIDTH :	10	MHZ
ZONE MODE :	AMC	
MODULATION TYPE :	QPSK 1/2	
OPERATING FREQUENCY :	2,599,999,935	Hz
REFERENCE VOLTAGE :	3.7	V _{DC}

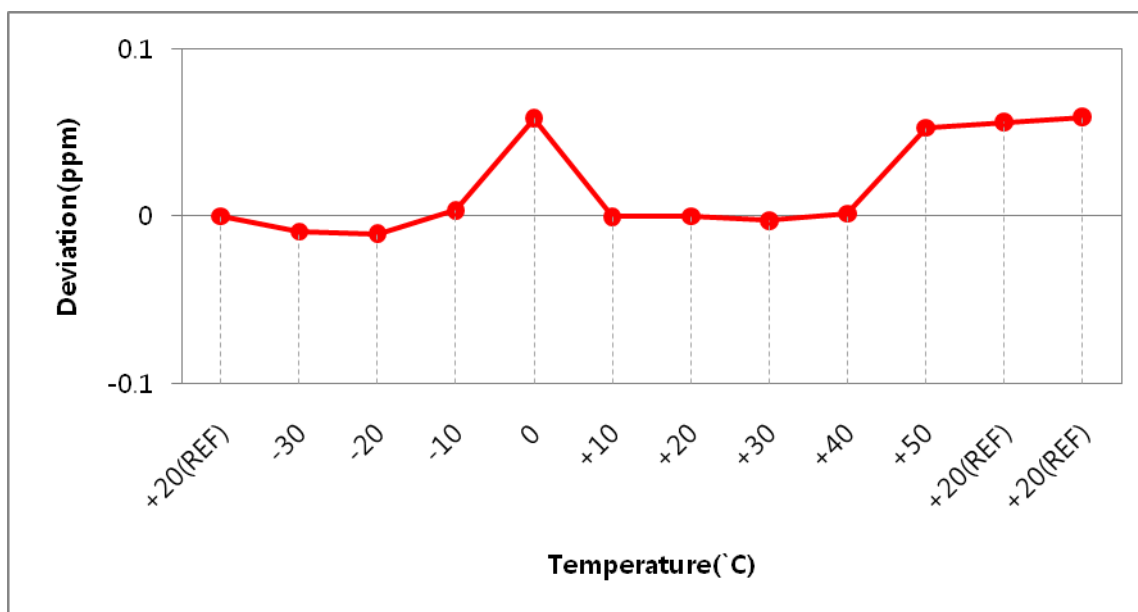
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQ (Hz)	Deviation (ppm)
100%	3.7	+20(Ref)	2,599,999,935	0.000
100%		-30	2,599,999,911	-0.009
100%		-20	2,599,999,908	-0.010
100%		-10	2,599,999,944	0.003
100%		0	2,600,000,087	0.058
100%		+10	2,599,999,934	0.000
100%		+20	2,599,999,935	0.000
100%		+30	2,599,999,928	-0.003
100%		+40	2,599,999,939	0.002
100%		+50	2,600,000,072	0.053
85%	3.145	+20	-	-
115%	4.255	+20	2,600,000,081	0.056
BATT.ENDPOINT	3.350	+20	2,600,000,089	0.059

4.1 TEST DATA

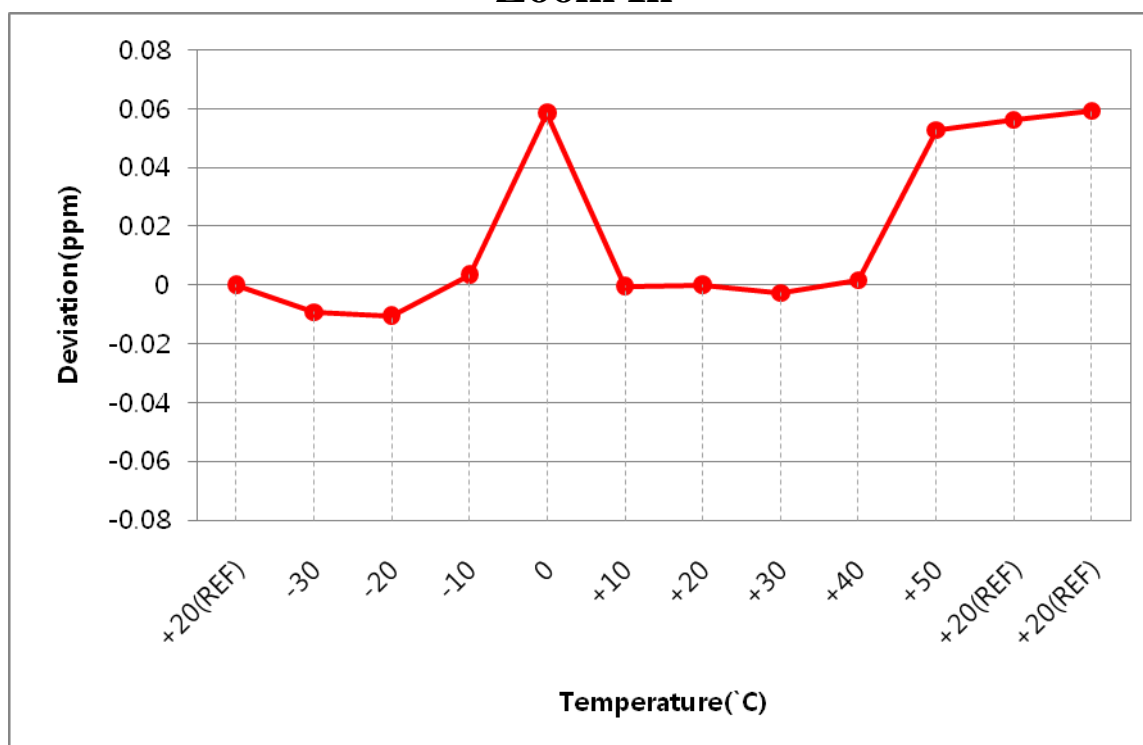
(Continued...)

4.1.4 Frequency Stability

(Continued...)



Zoom In



4.1 TEST DATA**(Continued...)****4.1.4 Frequency Stability****(Continued...)**

BANDWIDTH :	10	MHZ
ZONE MODE :	AMC	
MODULATION TYPE :	16QAM 1/2	
OPERATING FREQUENCY :	2,599,999,939	Hz
REFERENCE VOLTAGE :	3.7	V _{DC}

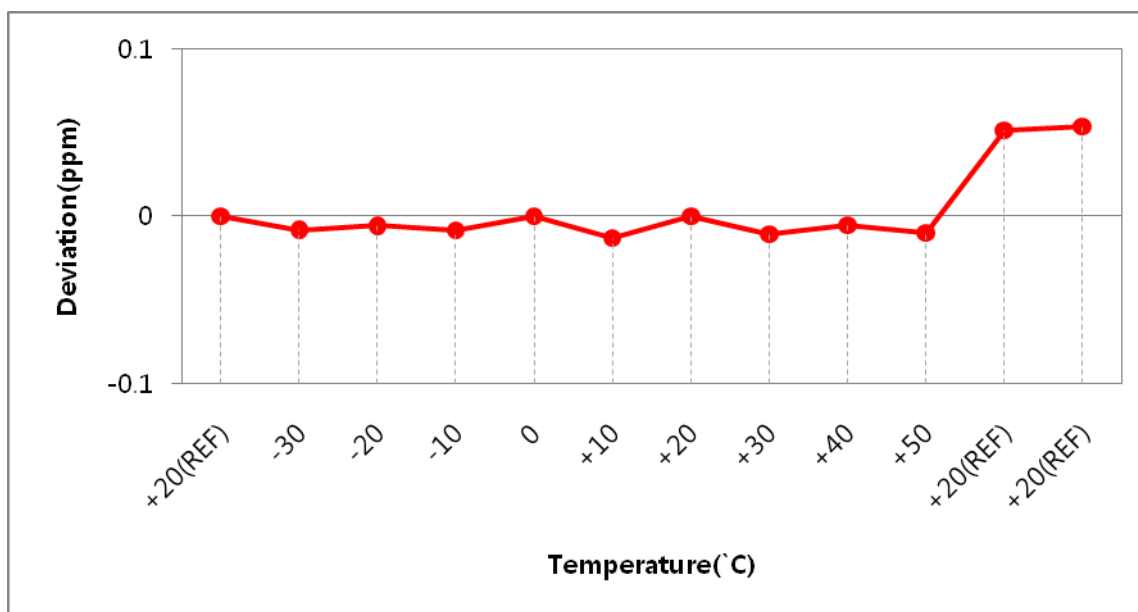
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQ (Hz)	Deviation (ppm)
100%	3.7	+20(Ref)	2,599,999,939	0.000
100%		-30	2,599,999,918	-0.008
100%		-20	2,599,999,924	-0.006
100%		-10	2,599,999,917	-0.008
100%		0	2,599,999,939	0.000
100%		+10	2,599,999,905	-0.013
100%		+20	2,599,999,939	0.000
100%		+30	2,599,999,911	-0.011
100%		+40	2,599,999,925	-0.005
100%		+50	2,599,999,913	-0.010
85%	3.145	+20	-	-
115%	4.255	+20	2,600,000,072	0.051
BATT.ENDPOINT	3.350	+20	2,600,000,078	0.053

4.1 TEST DATA

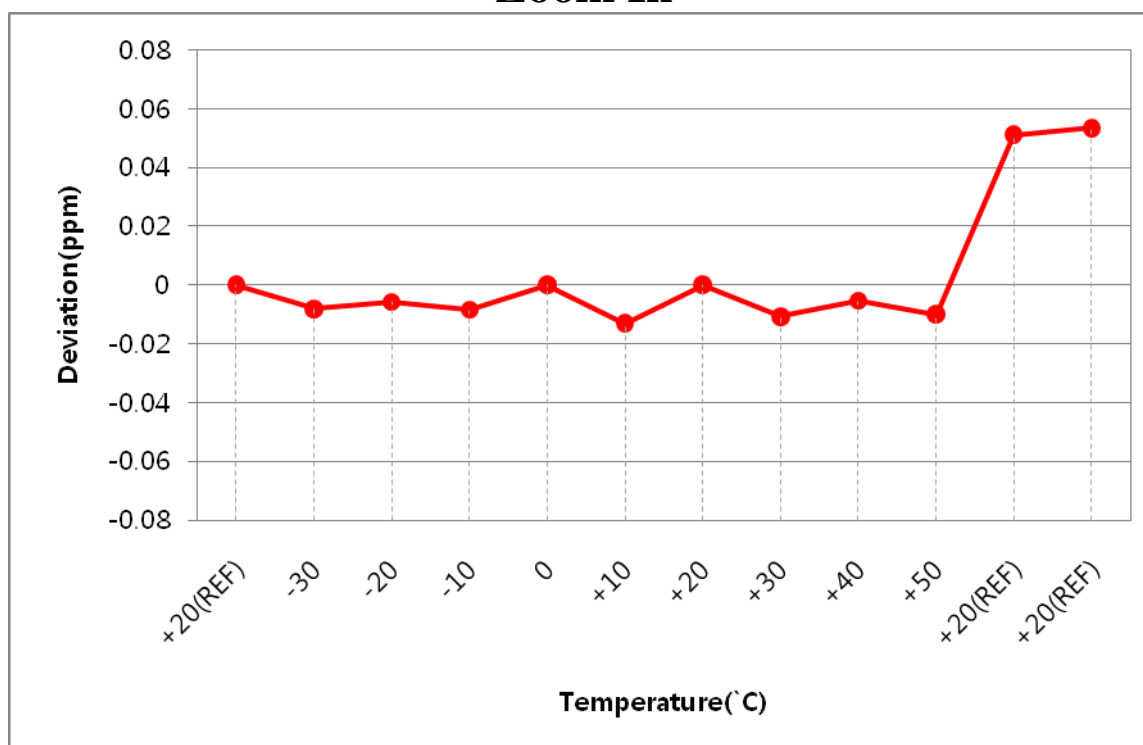
(Continued...)

4.1.4 Frequency Stability

(Continued...)



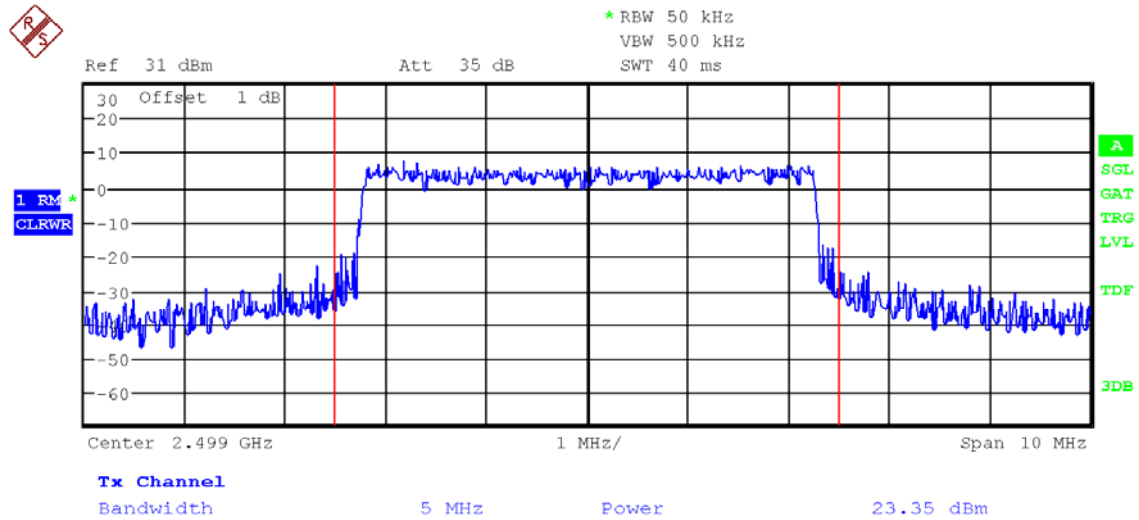
Zoom In



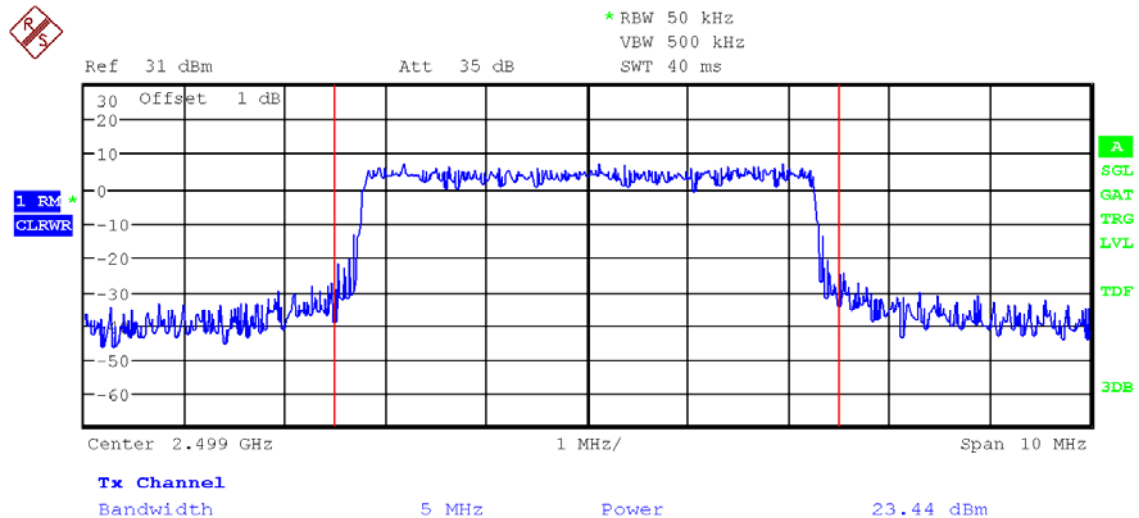
5.1 PLOTS OF EMISSIONS

5.1.1 Transmitter Output Power(BW: 5MHz)

- Lowest Channel(2499.00MHz) & PUSC Mode & QPSK 1/2



- Lowest Channel(2499.00MHz) & PUSC Mode & QPSK 3/4



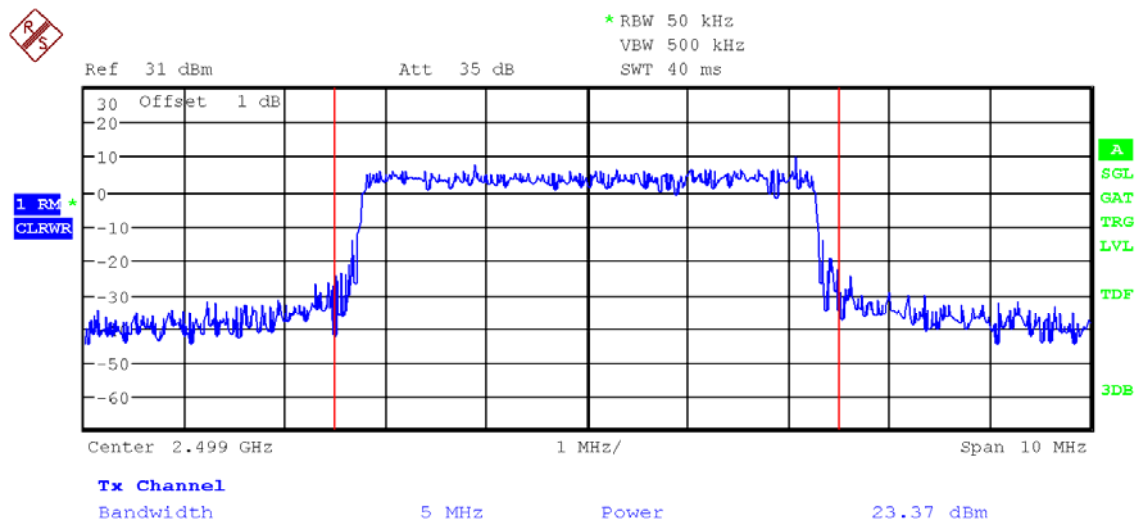
5.1 PLOTS OF EMISSIONS

(Continued...)

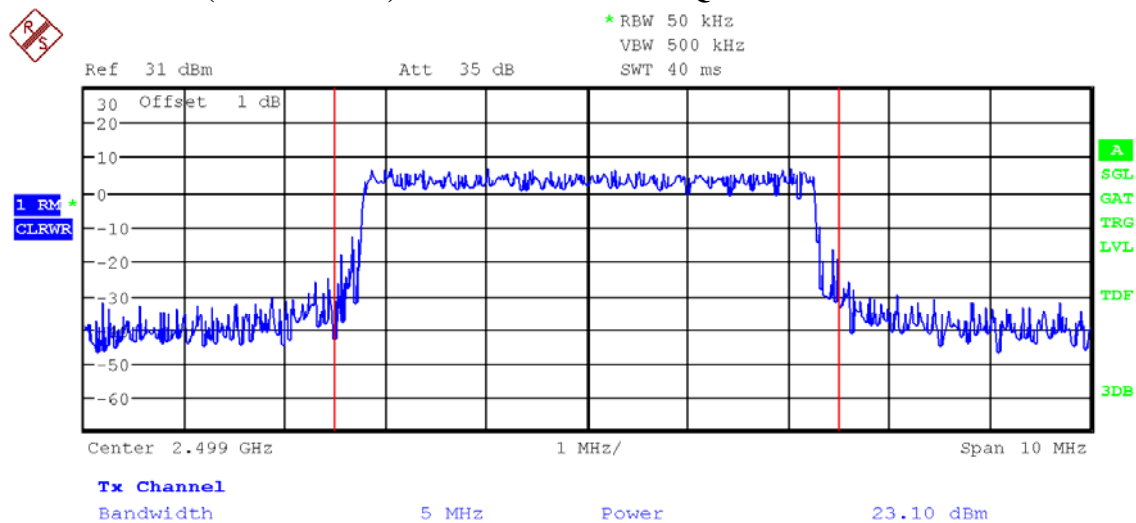
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Lowest Channel(2499.00MHz) & PUSC Mode & 16QAM 1/2



- Lowest Channel(2499.00MHz) & PUSC Mode & 16QAM 3/4



(Continued...)

(Continued...)

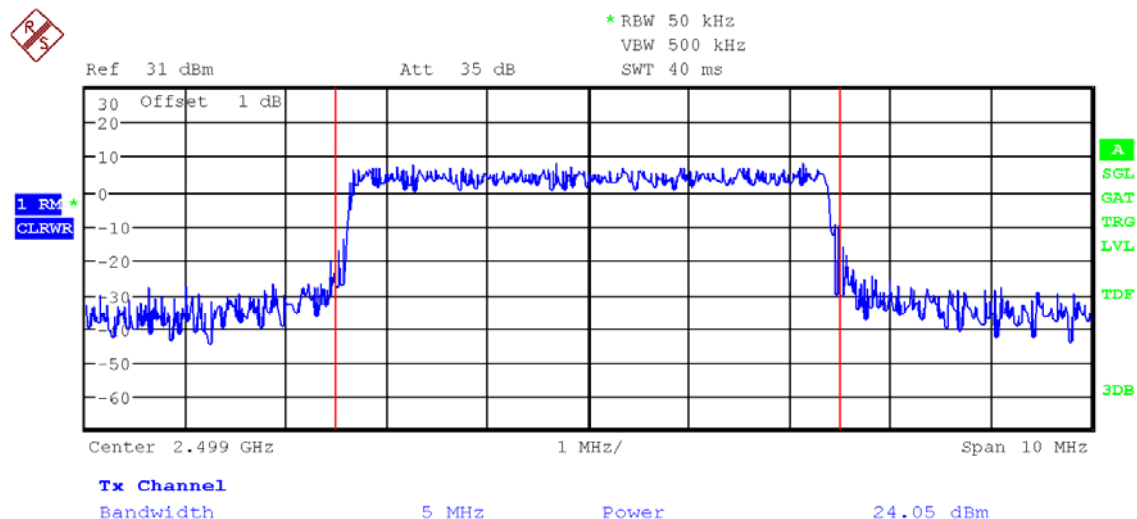
5.1 PLOTS OF EMISSIONS

(Continued...)

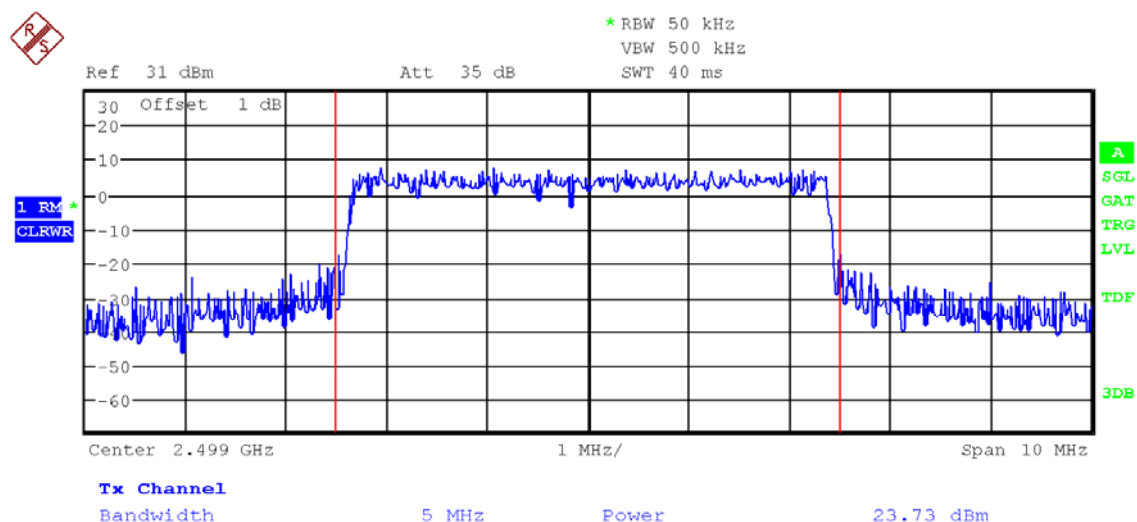
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Lowest Channel(2499.00MHz) & AMC Mode & 16QAM 1/2



- Lowest Channel(2499.00MHz) & AMC Mode & 16QAM 3/4



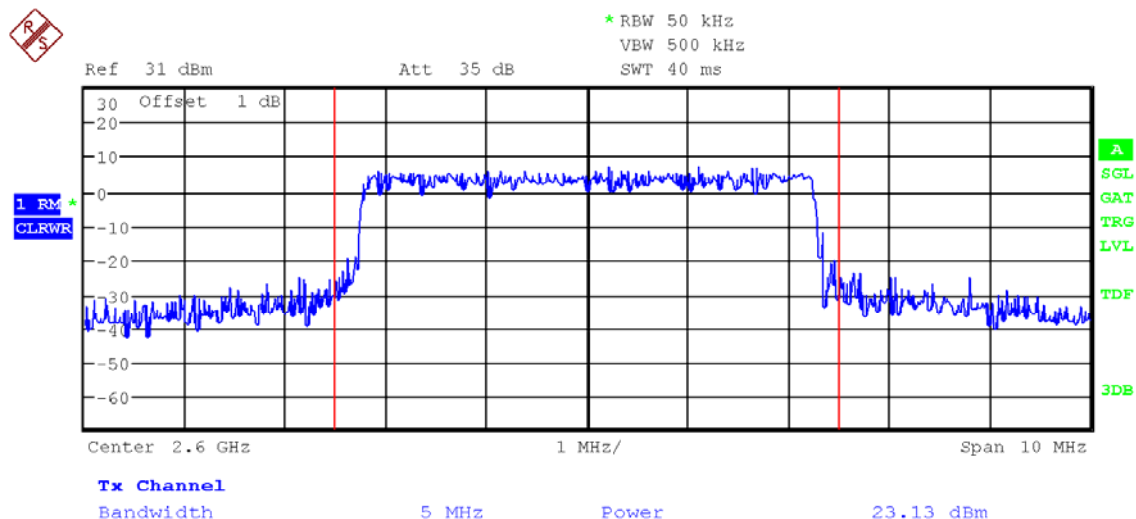
5.1 PLOTS OF EMISSIONS

(Continued...)

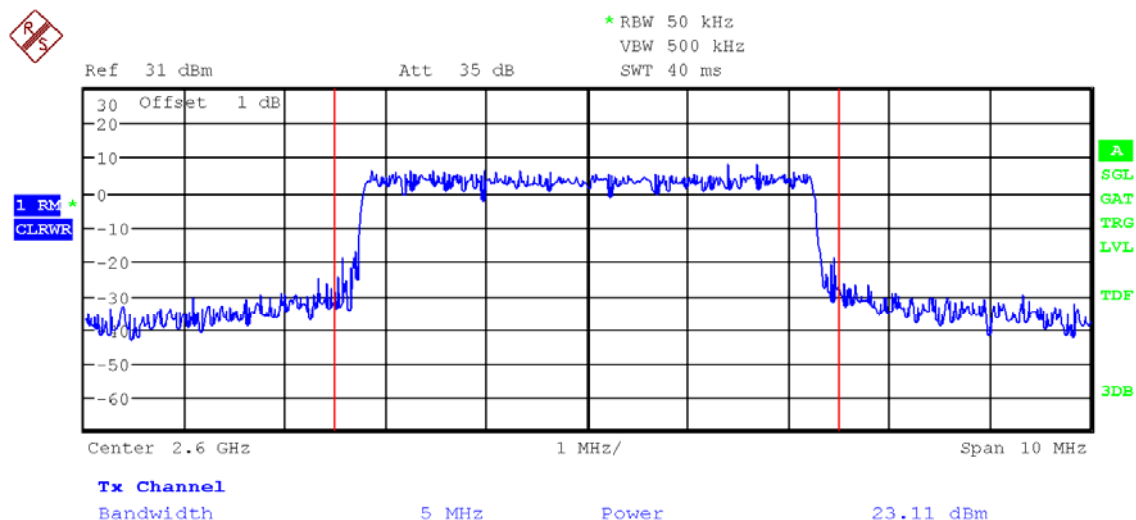
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Middle Channel(2600.00MHz) & PUSC Mode & QPSK 1/2



- Middle Channel(2600.00MHz) & PUSC Mode & QPSK 3/4



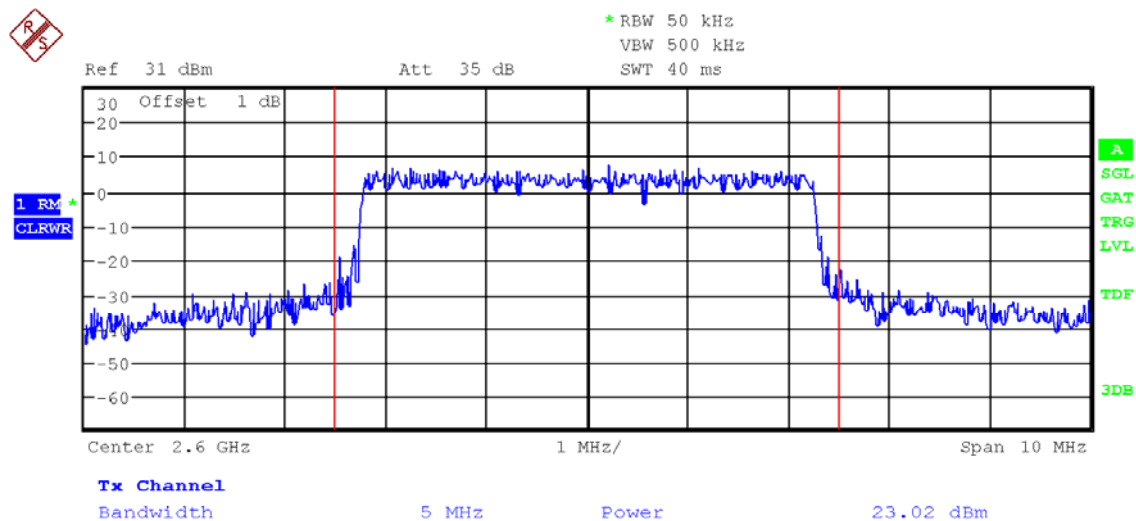
5.1 PLOTS OF EMISSIONS

(Continued...)

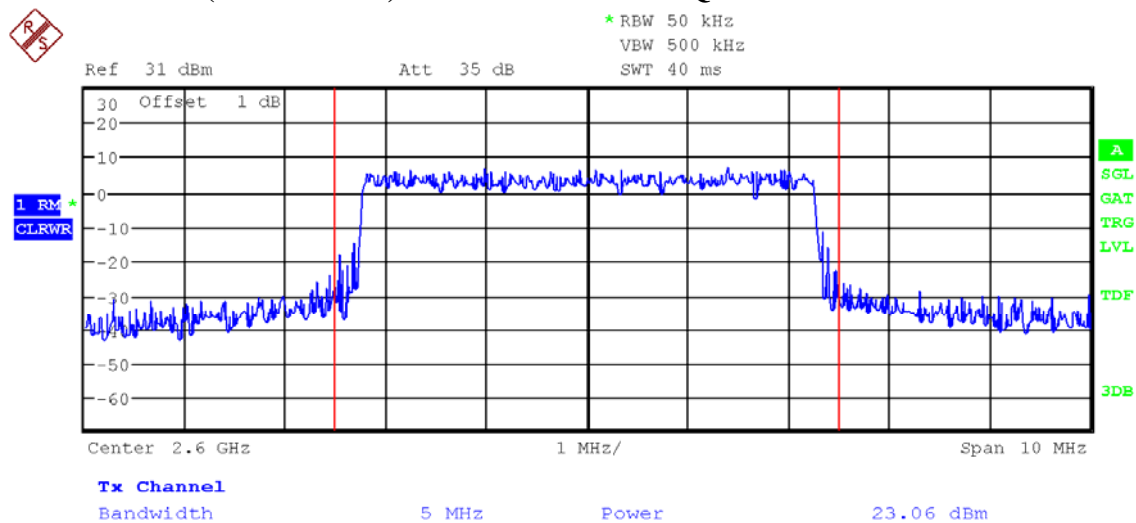
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Middle Channel(2600.00MHz) & PUSC Mode & 16QAM 1/2



- Middle Channel(2600.00MHz) & PUSC Mode & 16QAM 3/4



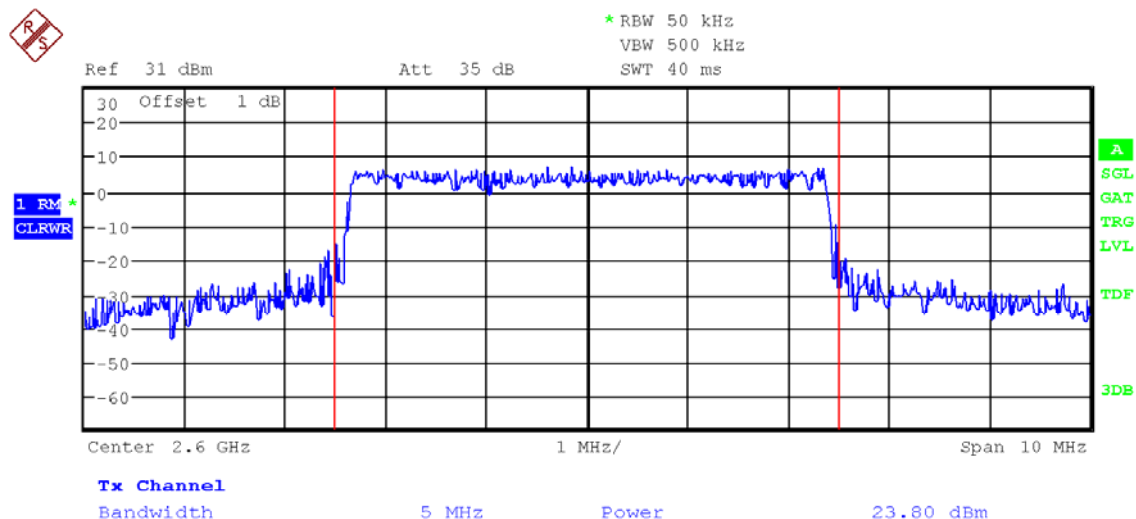
5.1 PLOTS OF EMISSIONS

(Continued...)

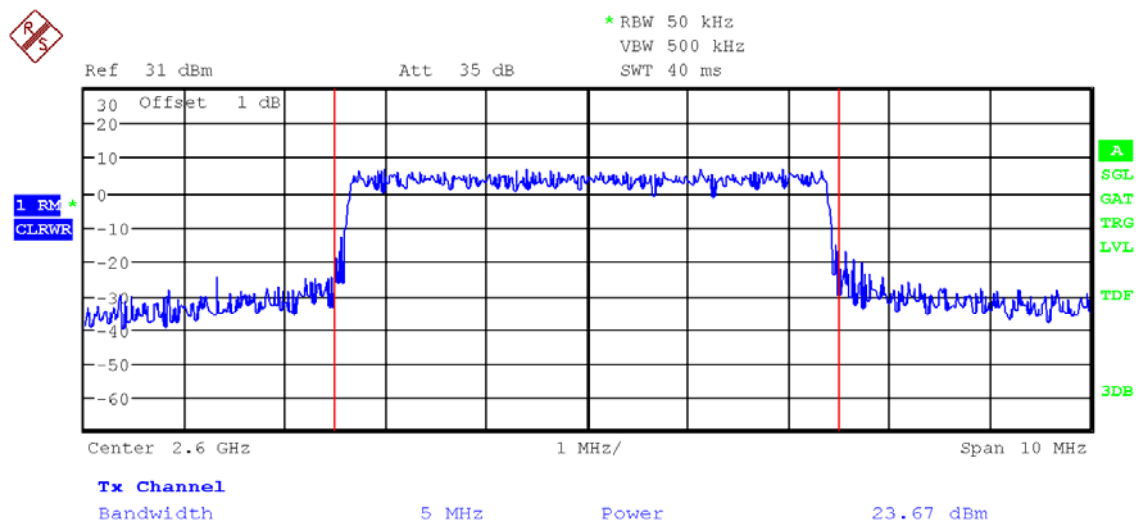
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Middle Channel(2600.00MHz) & AMC Mode & QPSK 1/2



- Middle Channel(2600.00MHz) & AMC Mode & QPSK 3/4



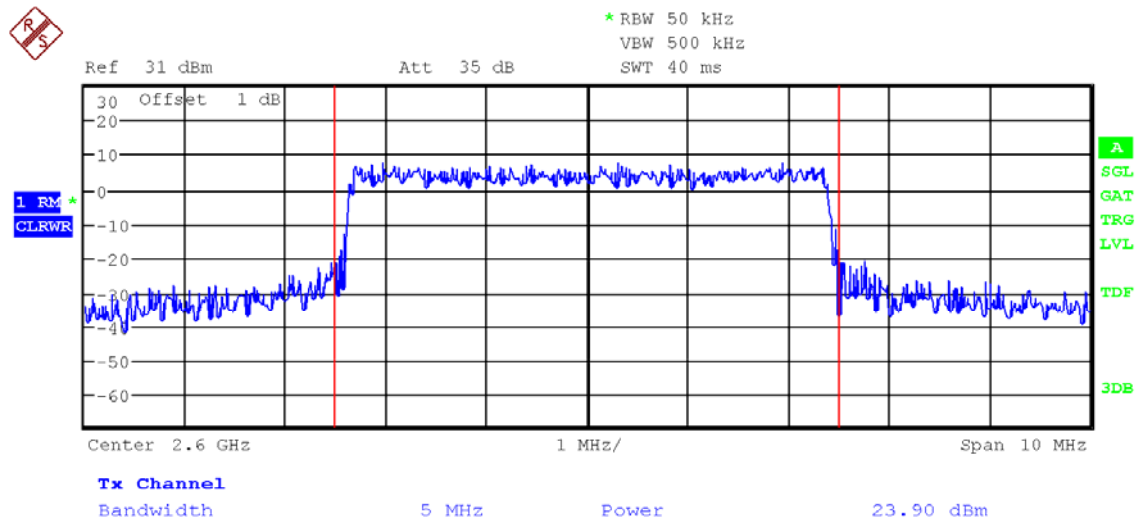
5.1 PLOTS OF EMISSIONS

(Continued...)

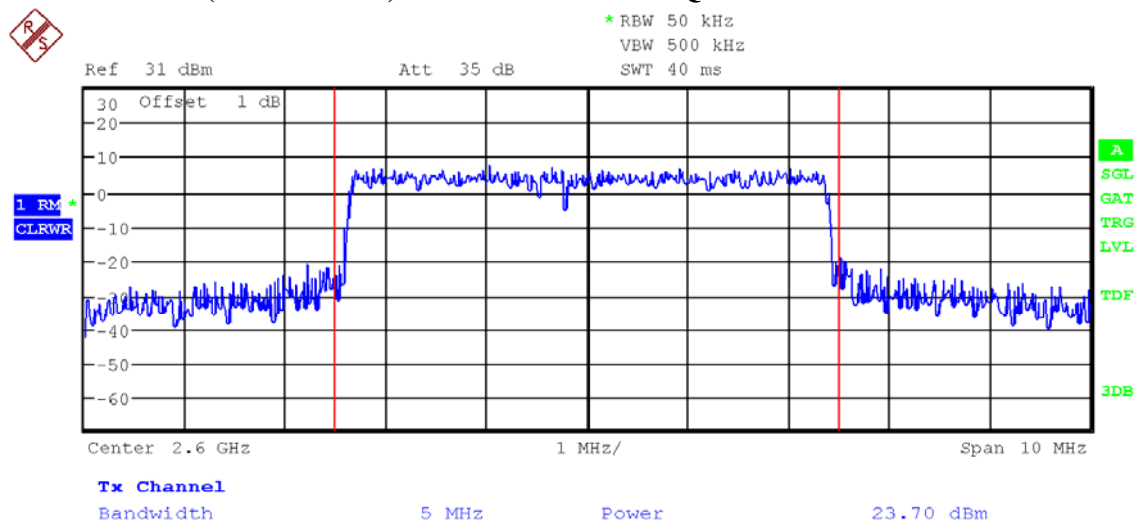
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Middle Channel(2600.00MHz) & AMC Mode & 16QAM 1/2



- Middle Channel(2600.00MHz) & AMC Mode & 16QAM 3/4



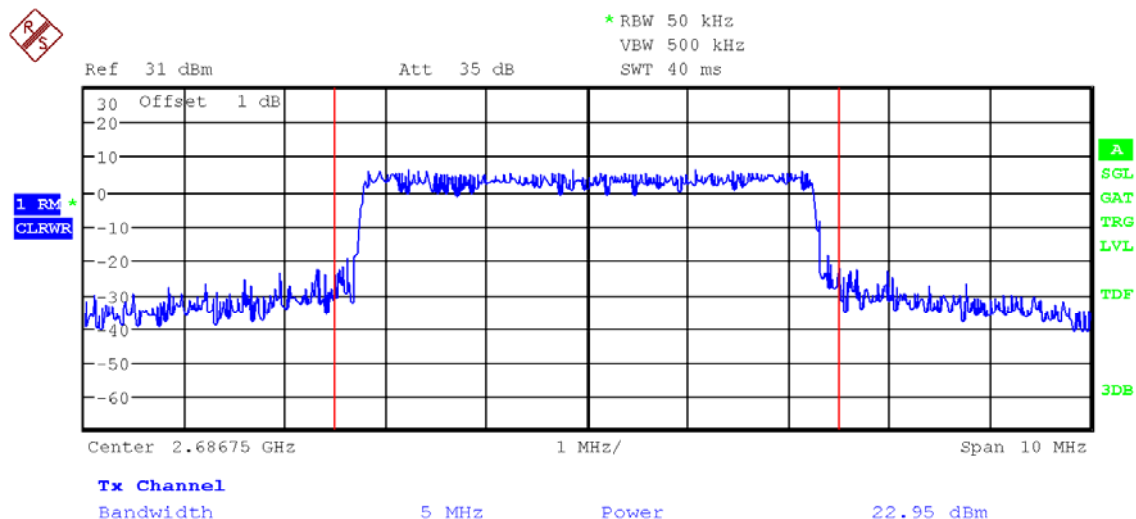
5.1 PLOTS OF EMISSIONS

(Continued...)

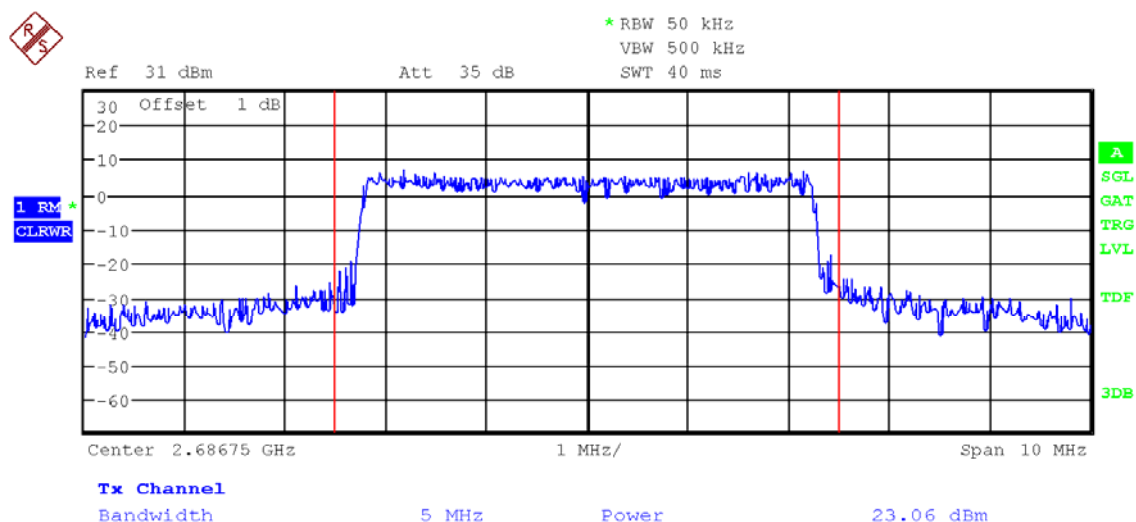
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Highest Channel(2686.75MHz) & PUSC Mode & QPSK 1/2



- Highest Channel(2686.75MHz) & PUSC Mode & QPSK 3/4



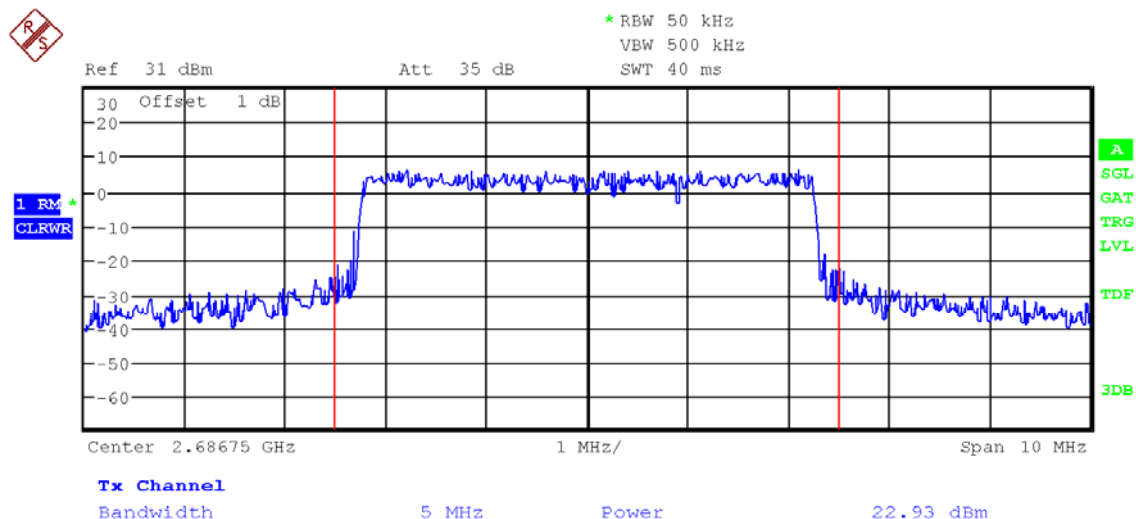
5.1 PLOTS OF EMISSIONS

(Continued...)

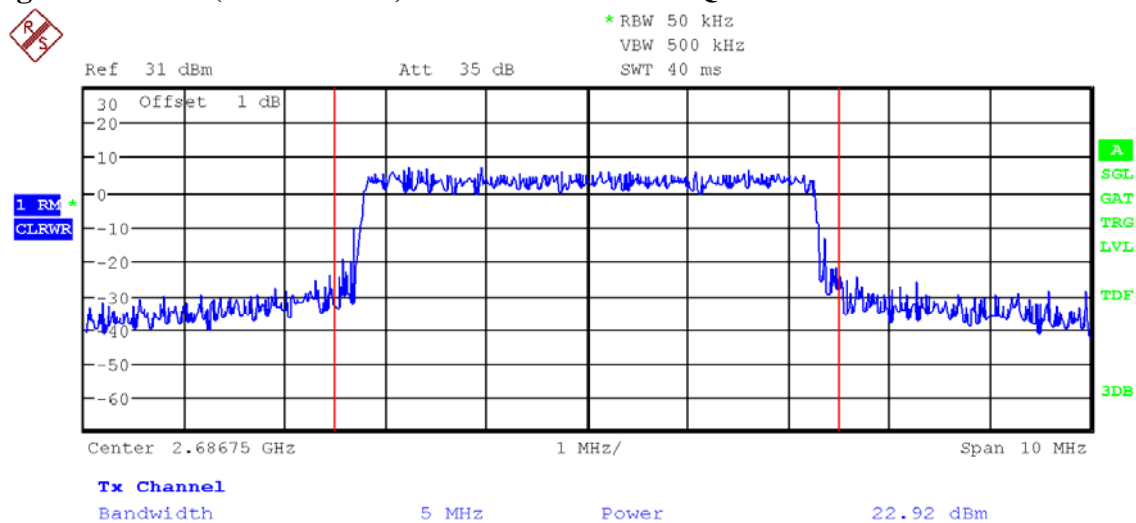
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Highest Channel(2686.75MHz) & PUSC Mode & 16QAM 1/2



- Highest Channel(2686.75MHz) & PUSC Mode & 16QAM 3/4



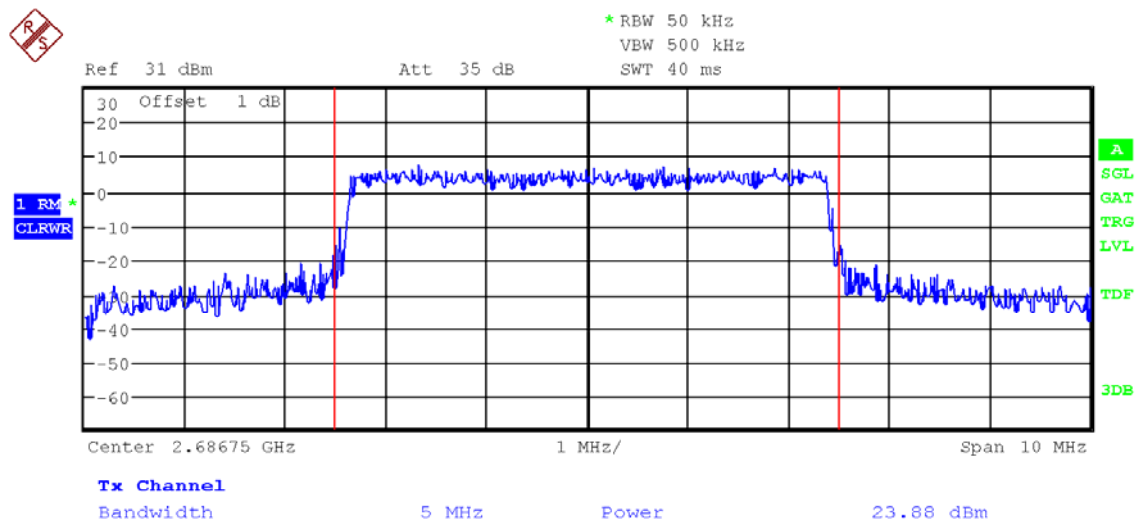
5.1 PLOTS OF EMISSIONS

(Continued...)

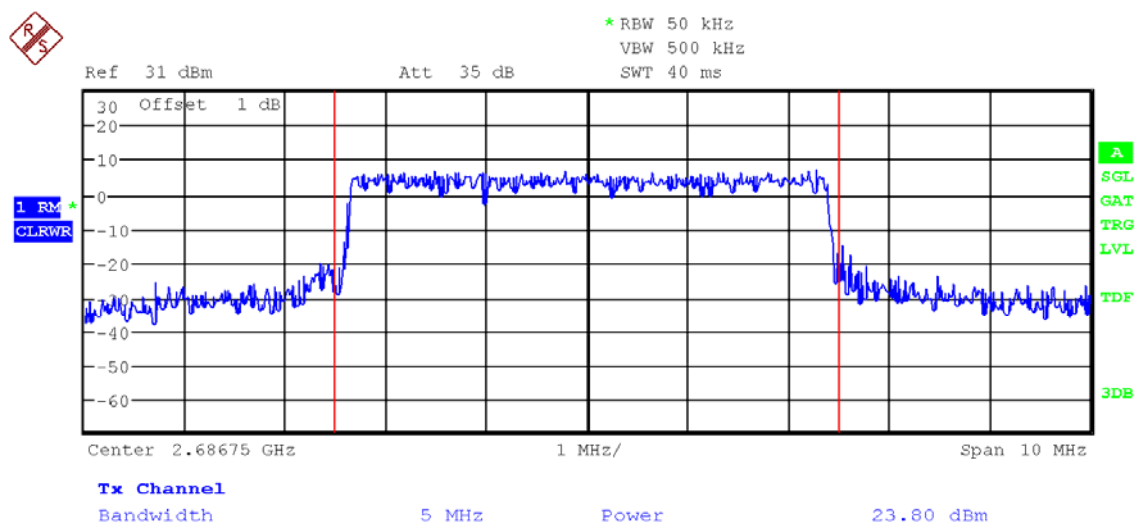
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Highest Channel(2686.75MHz) & AMC Mode & QPSK 1/2



- Highest Channel(2686.75MHz) & AMC Mode & QPSK 3/4



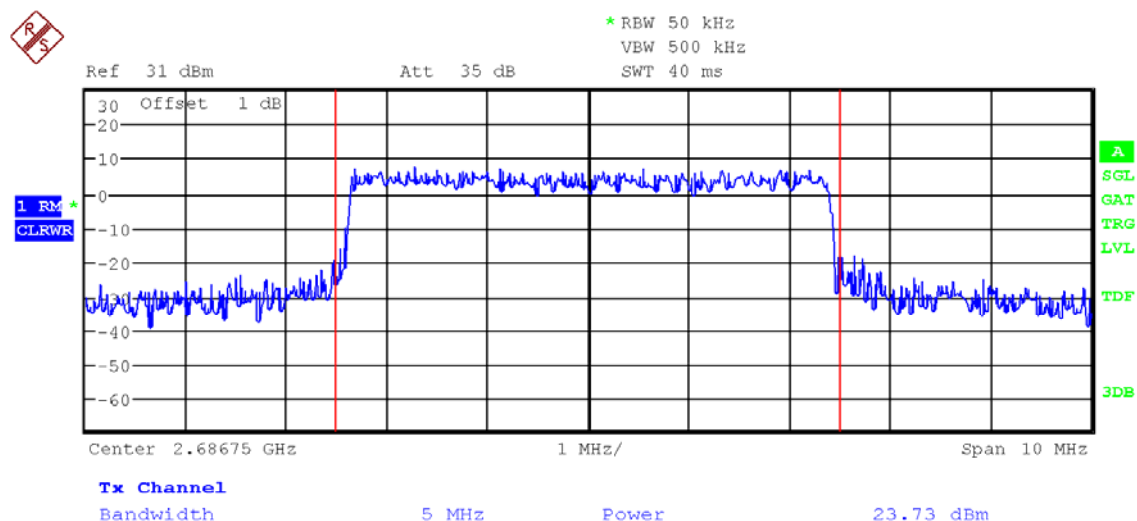
5.1 PLOTS OF EMISSIONS

(Continued...)

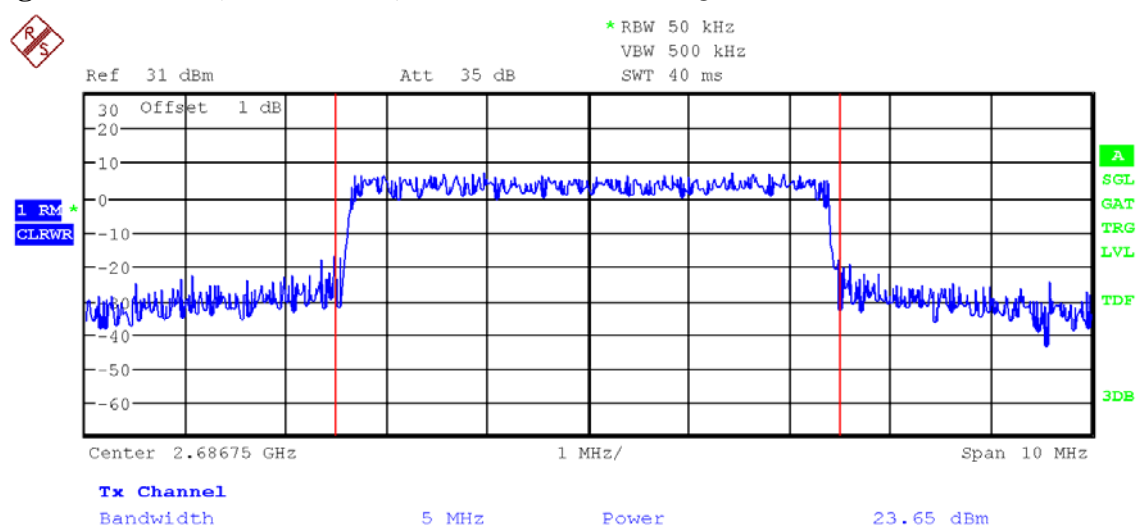
5.1.1 Transmitter Output Power(BW: 5MHz)

(Continued...)

- Highest Channel(2686.75MHz) & AMC Mode & 16QAM 1/2



- Highest Channel(2686.75MHz) & AMC Mode & 16QAM 3/4

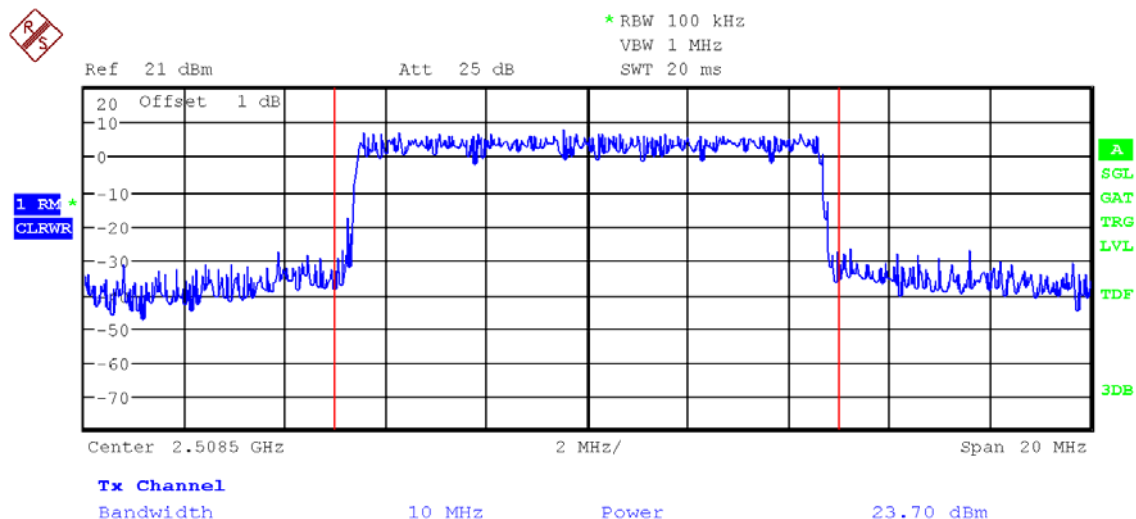


5.1 PLOTS OF EMISSIONS

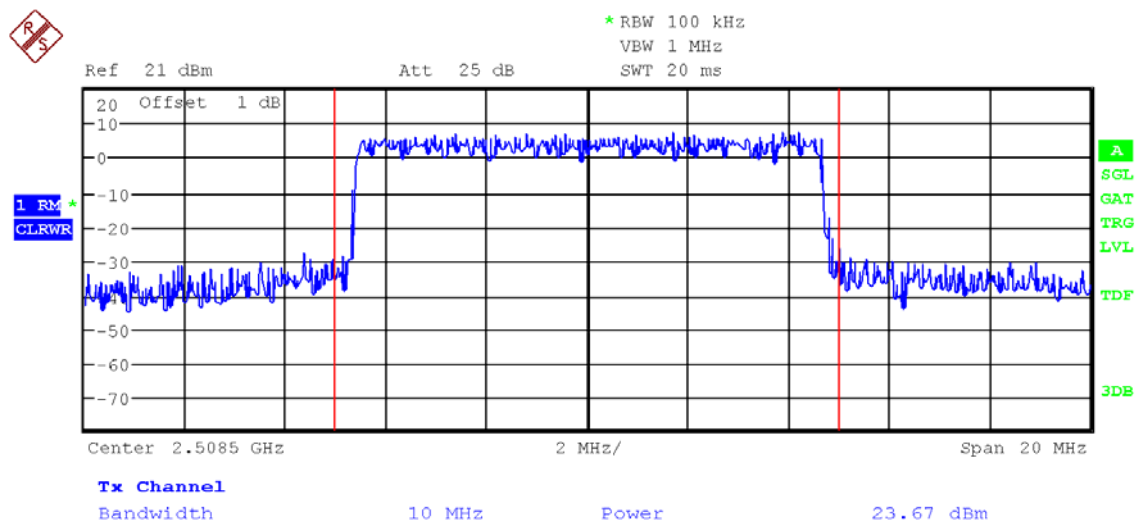
(Continued...)

5.1.2 Transmitter Output Power(BW: 10MHz)

- Lowest Channel(2508.50MHz) & PUSC Mode & QPSK 1/2



- Lowest Channel(2508.50MHz) & PUSC Mode & QPSK 3/4



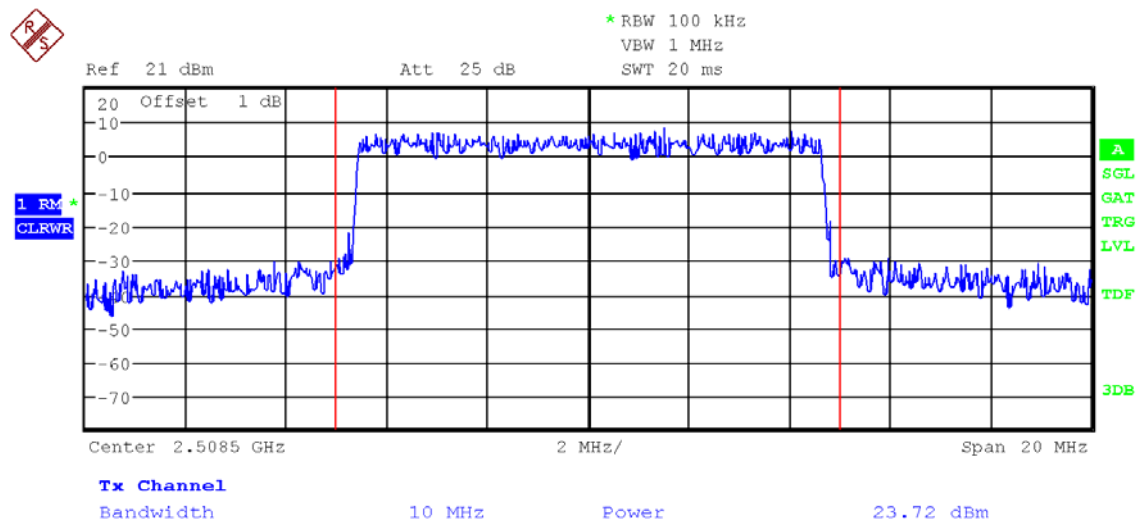
5.1 PLOTS OF EMISSIONS

(Continued...)

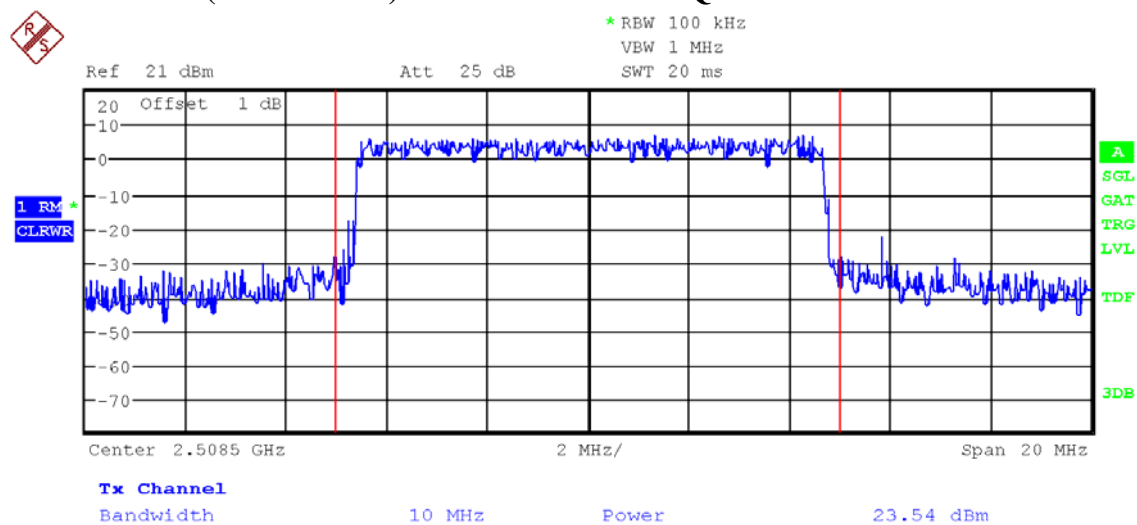
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Lowest Channel(2508.50MHz) & PUSC Mode & 16QAM 1/2



- Lowest Channel(2508.50MHz) & PUSC Mode & 16QAM 3/4



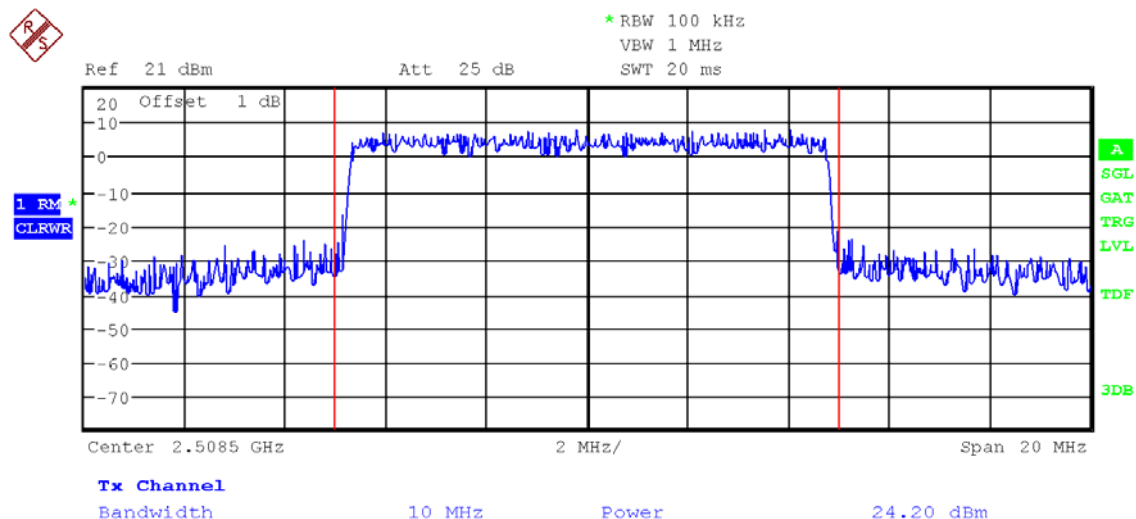
5.1 PLOTS OF EMISSIONS

(Continued...)

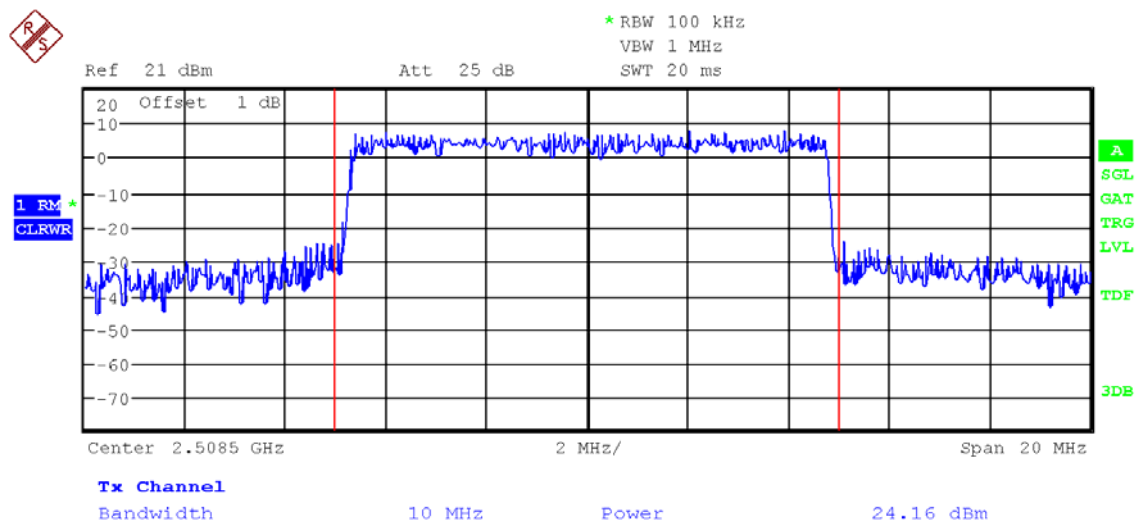
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Lowest Channel(2508.50MHz) & AMC Mode & QPSK 1/2



- Lowest Channel(2508.50MHz) & AMC Mode & QPSK 3/4



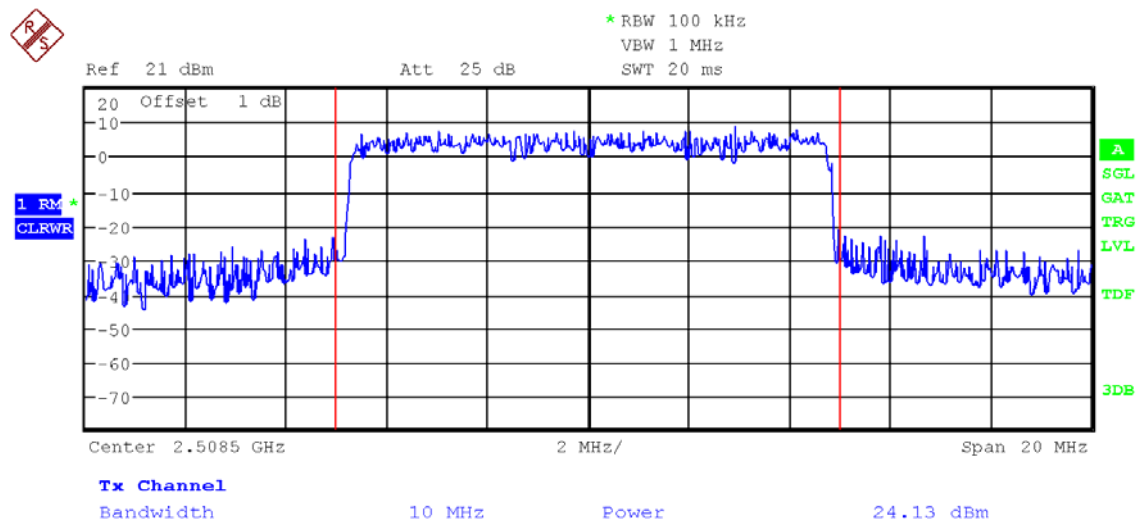
5.1 PLOTS OF EMISSIONS

(Continued...)

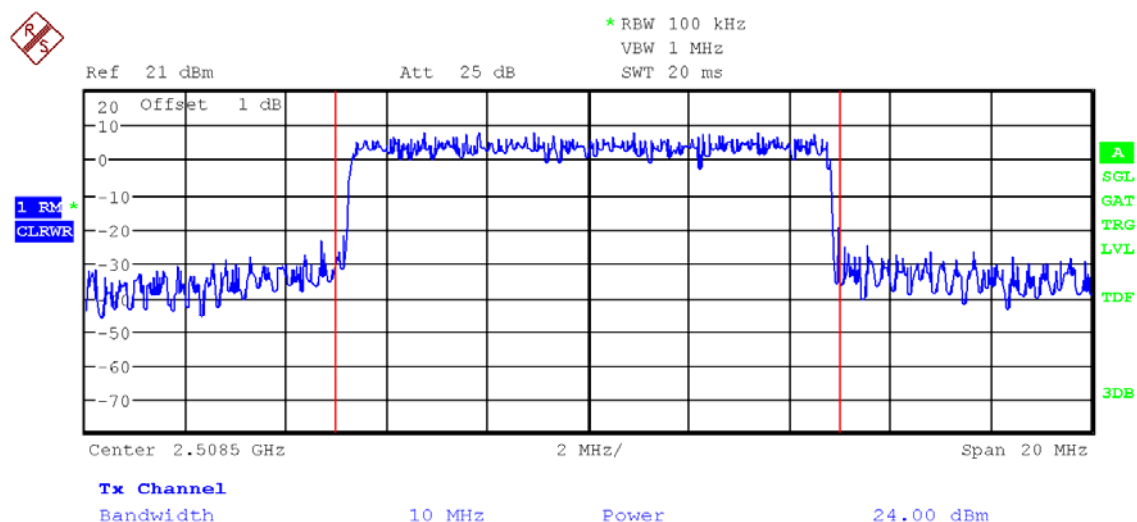
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Lowest Channel(2508.50MHz) & AMC Mode & 16QAM 1/2



- Lowest Channel(2508.50MHz) & AMC Mode & 16QAM 3/4



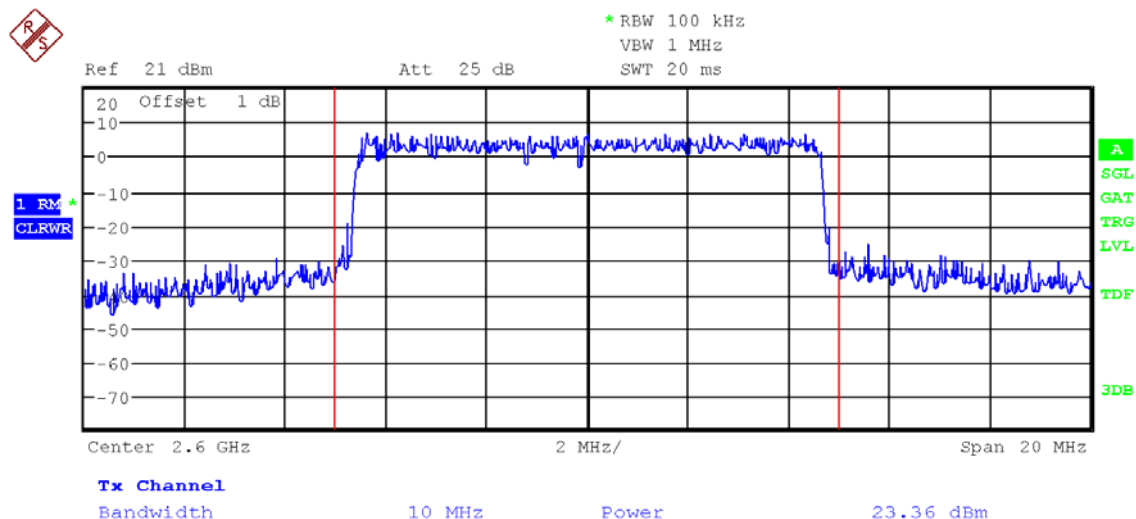
5.1 PLOTS OF EMISSIONS

(Continued...)

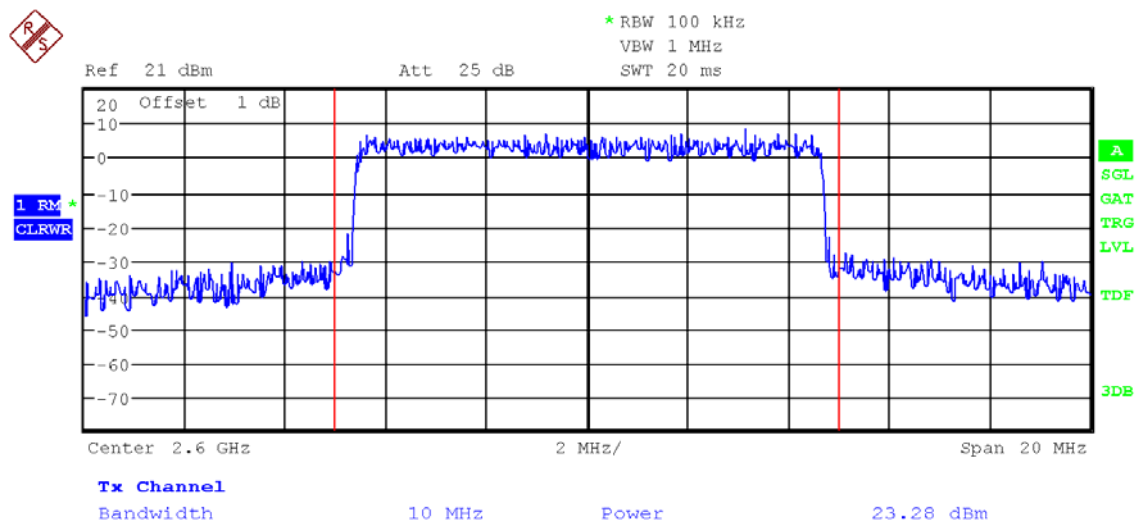
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Middle Channel(2600.00MHz) & PUSC Mode & QPSK 1/2



- Middle Channel(2600.00MHz) & PUSC Mode & QPSK 3/4



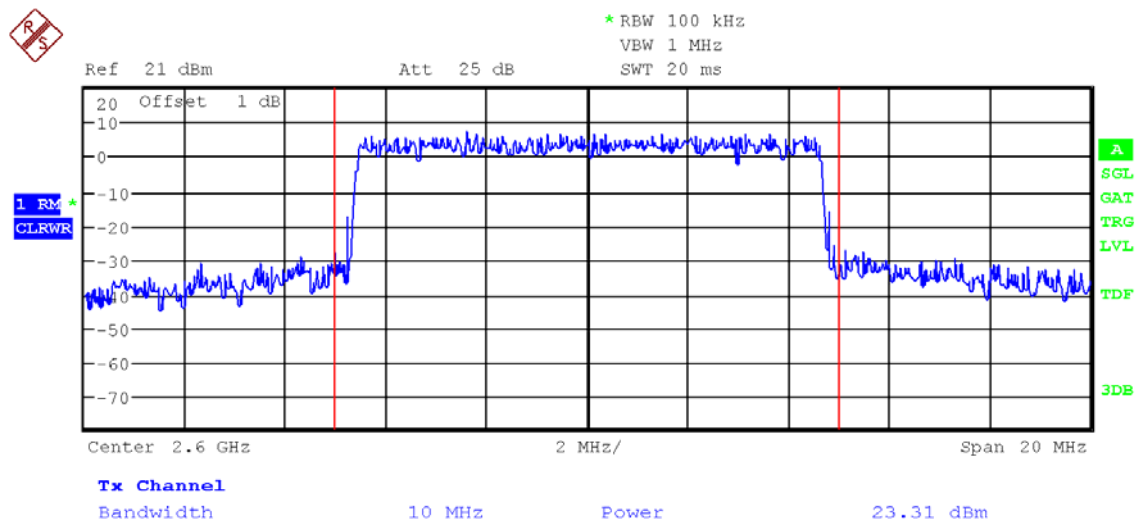
5.1 PLOTS OF EMISSIONS

(Continued...)

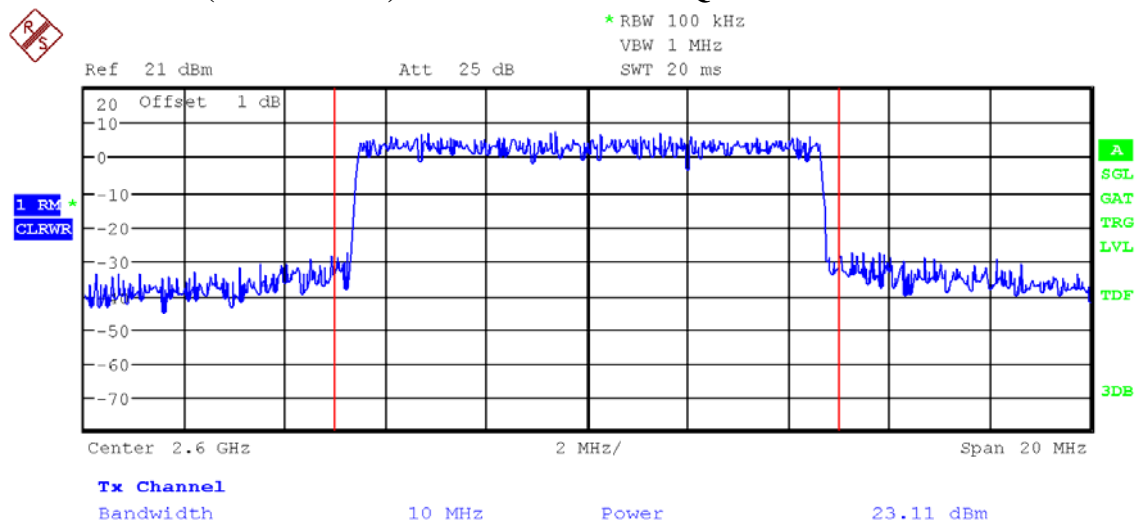
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Middle Channel(2600.00MHz) & PUSC Mode & 16QAM 1/2



- Middle Channel(2600.00MHz) & PUSC Mode & 16QAM 3/4



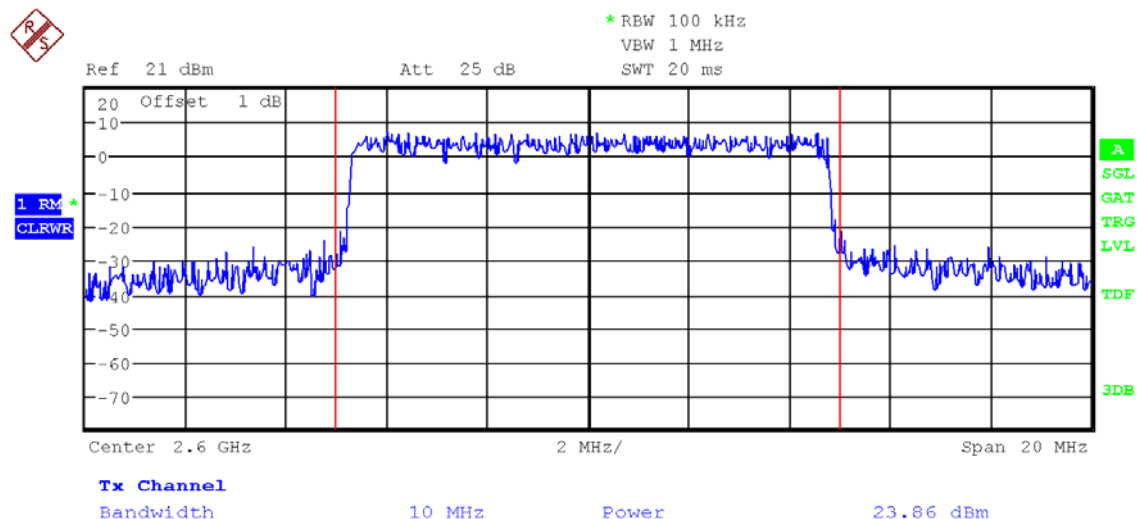
5.1 PLOTS OF EMISSIONS

(Continued...)

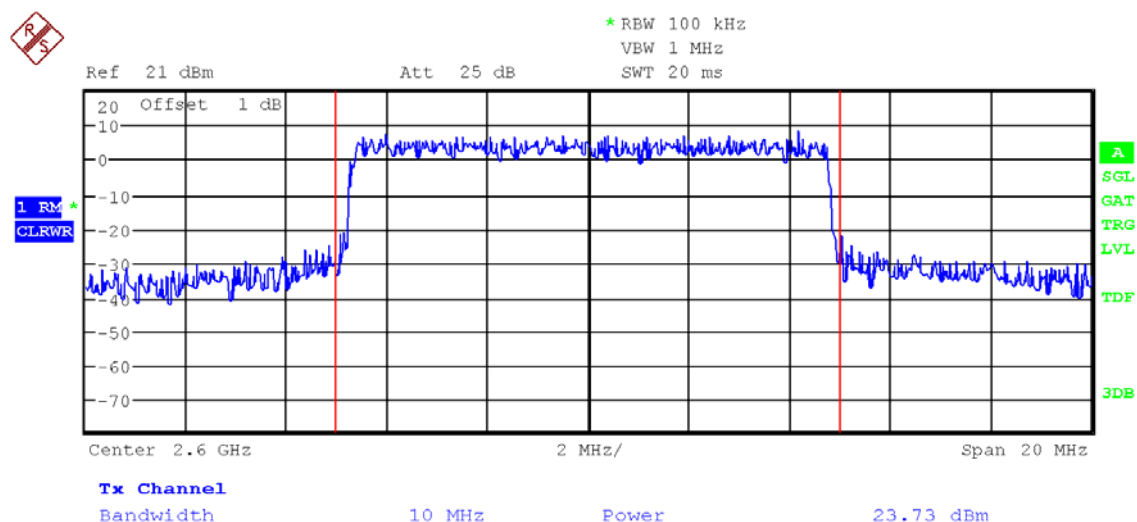
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Middle Channel(2600.00MHz) & AMC Mode & QPSK 1/2



- Middle Channel(2600.00MHz) & AMC Mode & QPSK 3/4



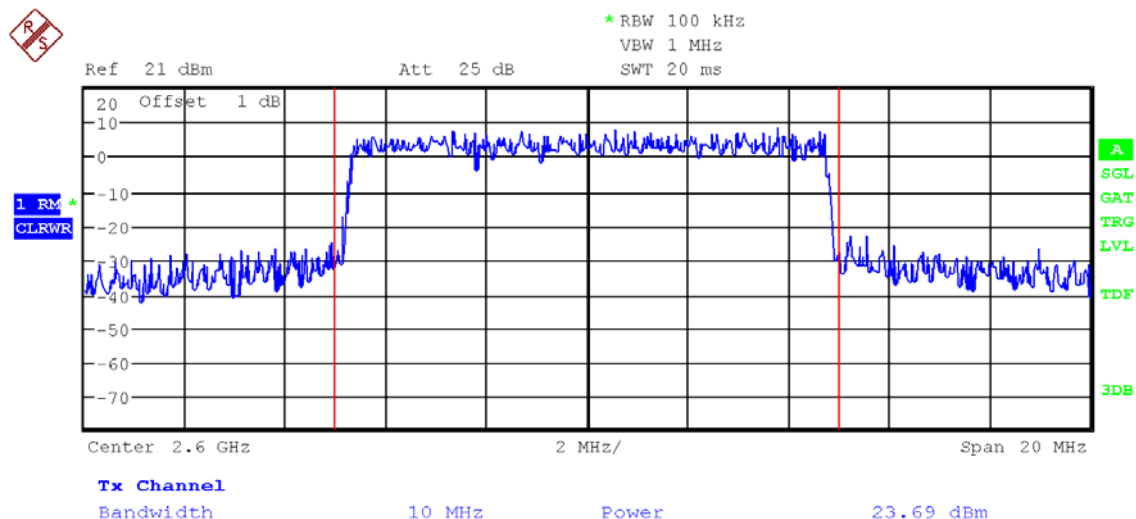
5.1 PLOTS OF EMISSIONS

(Continued...)

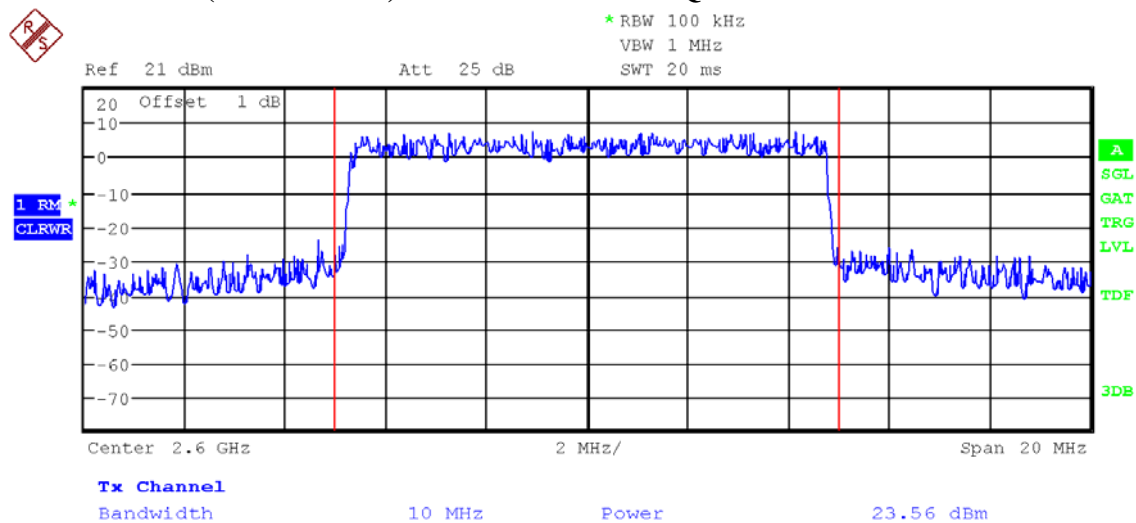
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Middle Channel(2600.00MHz) & AMC Mode & 16QAM 1/2



- Middle Channel(2600.00MHz) & AMC Mode & 16QAM 3/4



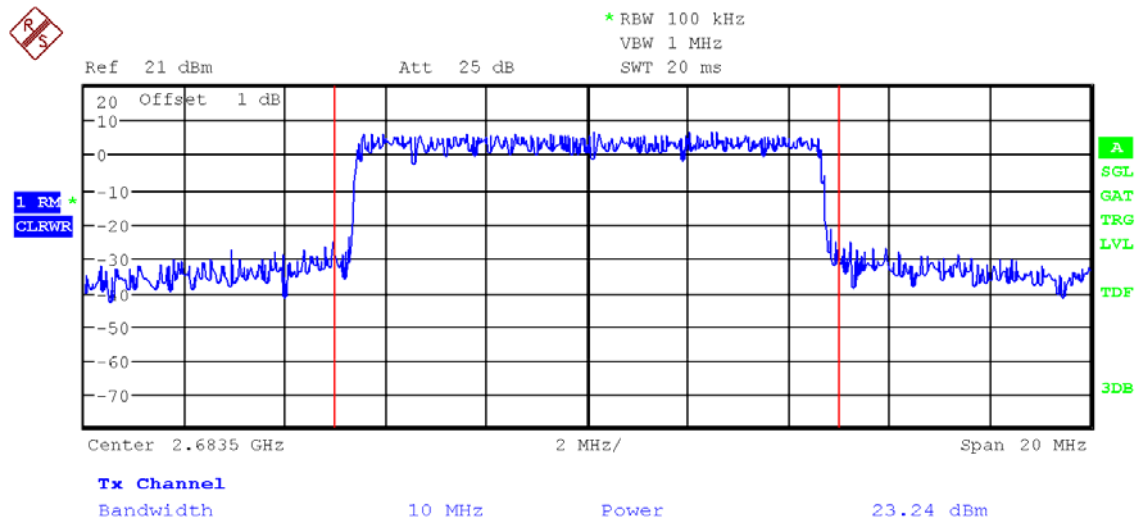
5.1 PLOTS OF EMISSIONS

(Continued...)

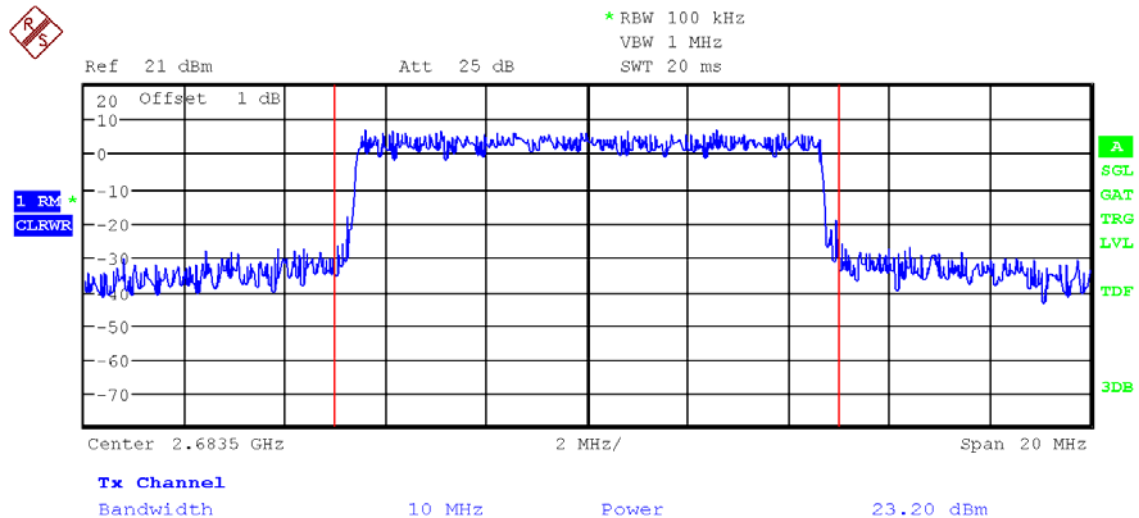
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Highest Channel(2683.50MHz) & PUSC Mode & QPSK 1/2



- Highest Channel(2683.50MHz) & PUSC Mode & QPSK 3/4



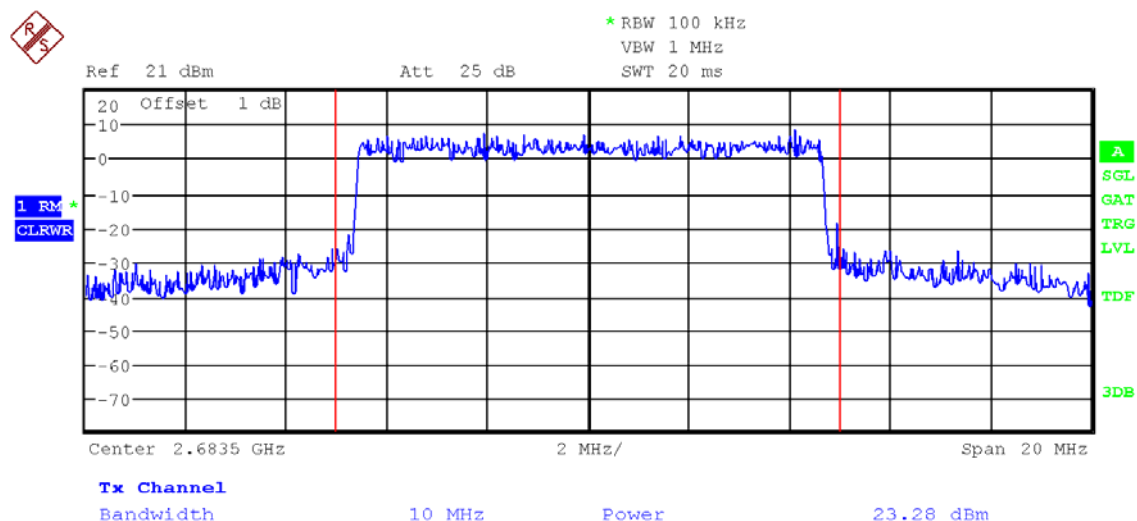
5.1 PLOTS OF EMISSIONS

(Continued...)

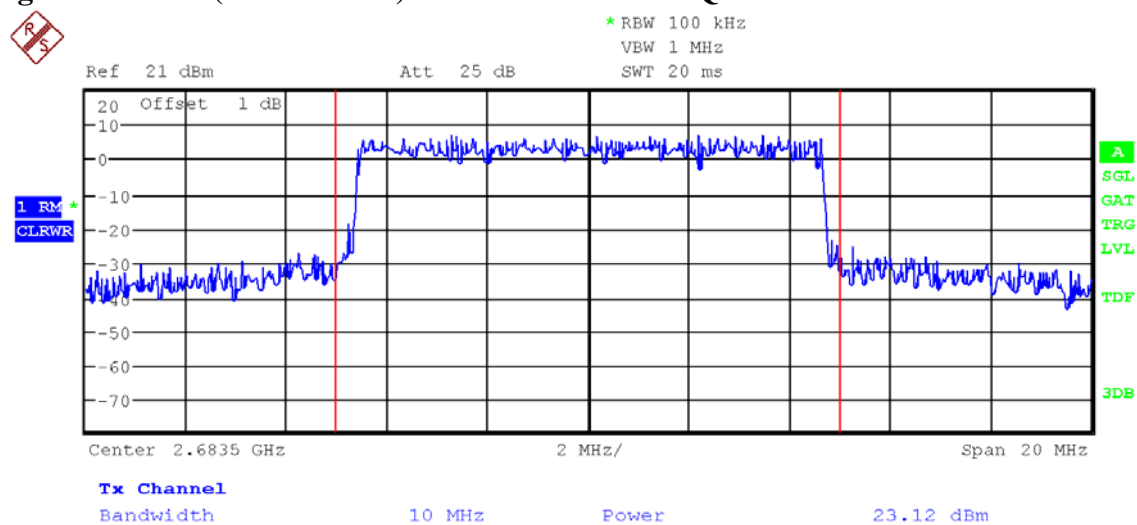
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Highest Channel(2683.50MHz) & PUSC Mode & 16QAM 1/2



- Highest Channel(2683.50MHz) & PUSC Mode & 16QAM 3/4



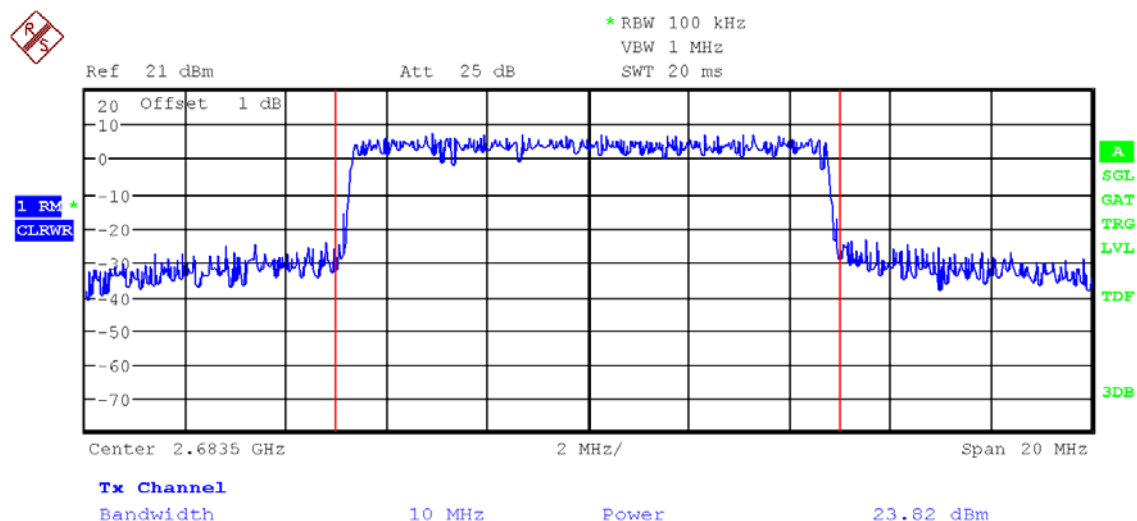
5.1 PLOTS OF EMISSIONS

(Continued...)

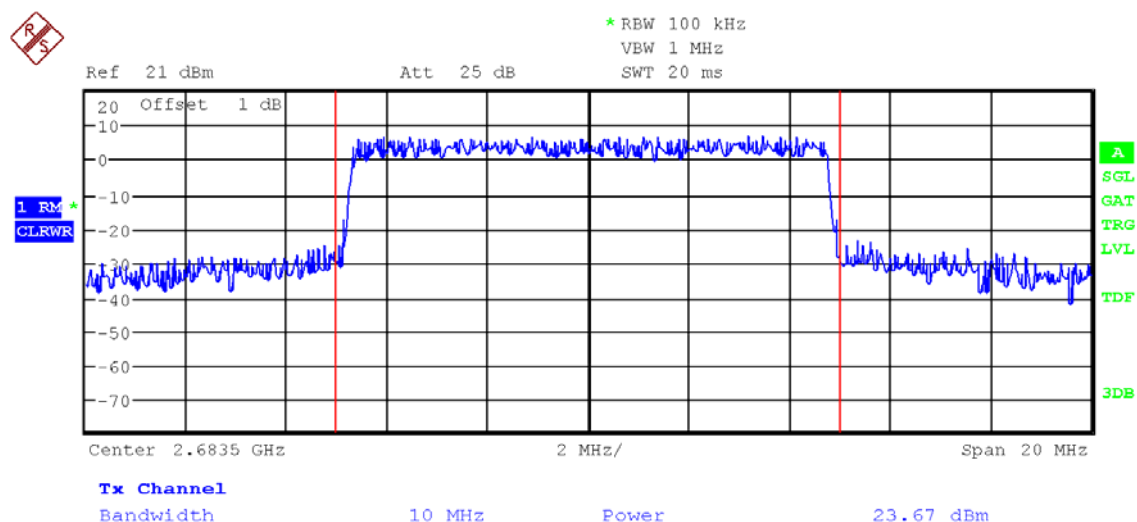
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Highest Channel(2683.50MHz) & AMC Mode & QPSK 1/2



- Highest Channel(2683.50MHz) & AMC Mode & QPSK 3/4



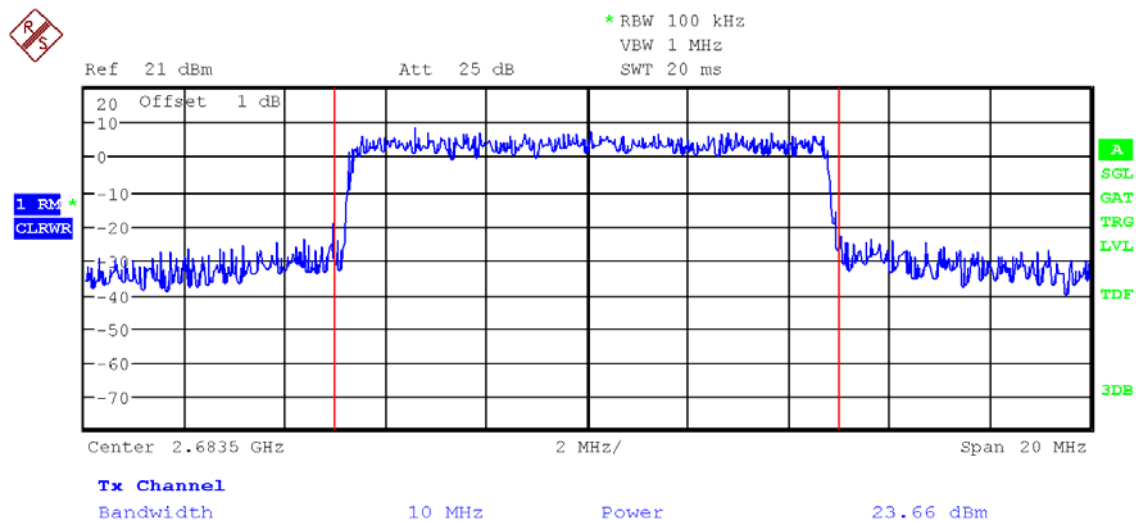
5.1 PLOTS OF EMISSIONS

(Continued...)

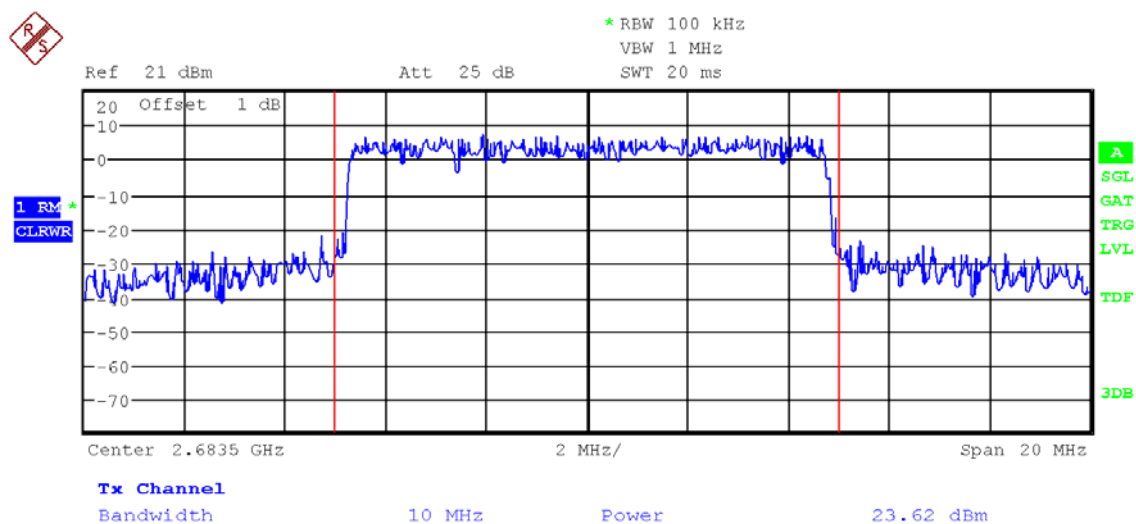
5.1.2 Transmitter Output Power(BW: 10MHz)

(Continued...)

- Highest Channel(2683.50MHz) & AMC Mode & 16QAM 1/2



- Highest Channel(2683.50MHz) & AMC Mode & 16QAM 3/4

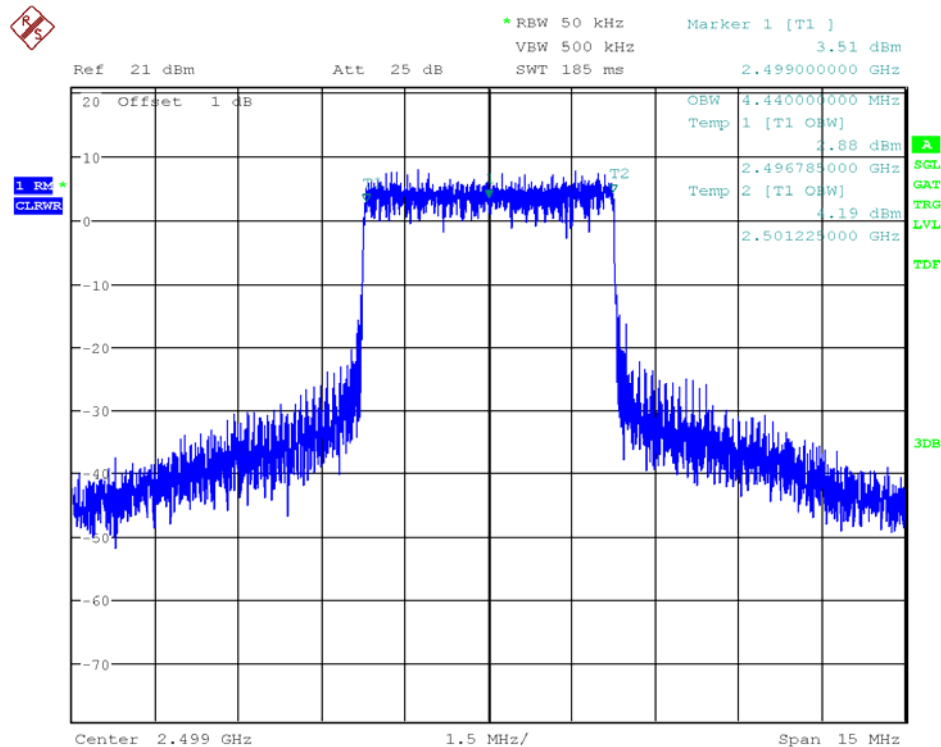


5.1 PLOTS OF EMISSIONS

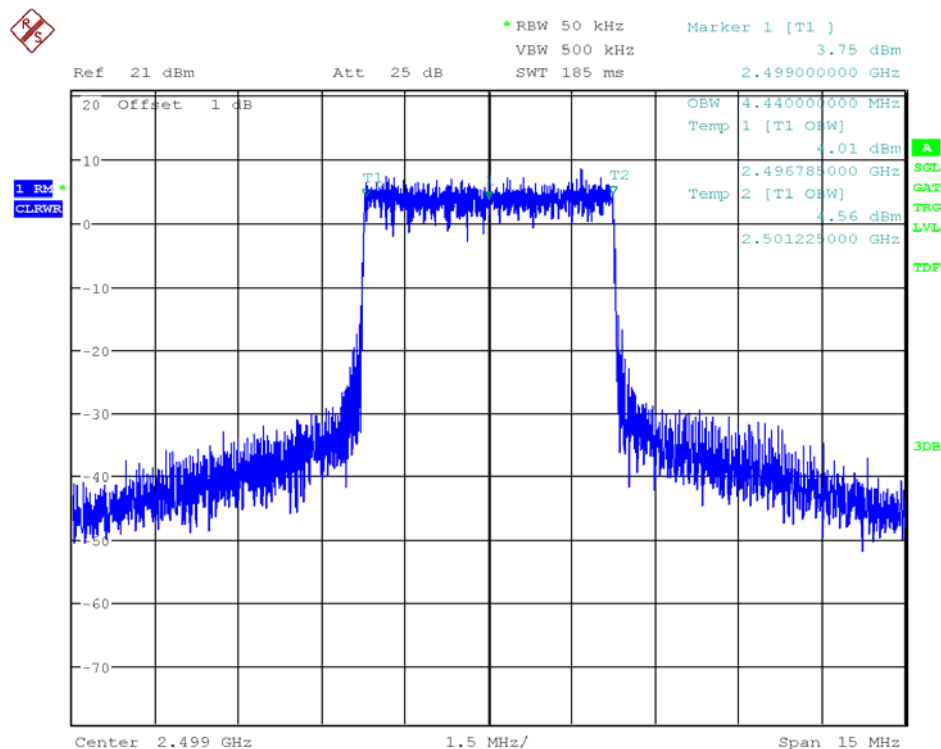
(Continued...)

5.1.3 Occupied Bandwidth(BW: 5MHz)

- Lowest Channel(2499.00MHz) & PUSC Mode & QPSK 1/2



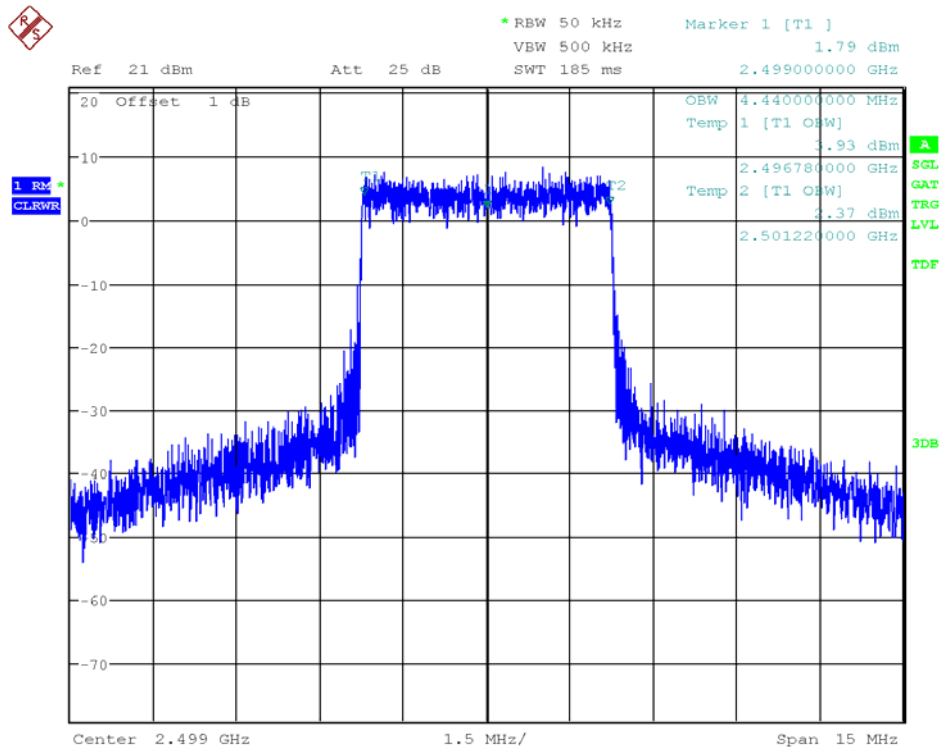
- Lowest Channel(2499.00MHz) & PUSC Mode & QPSK 3/4



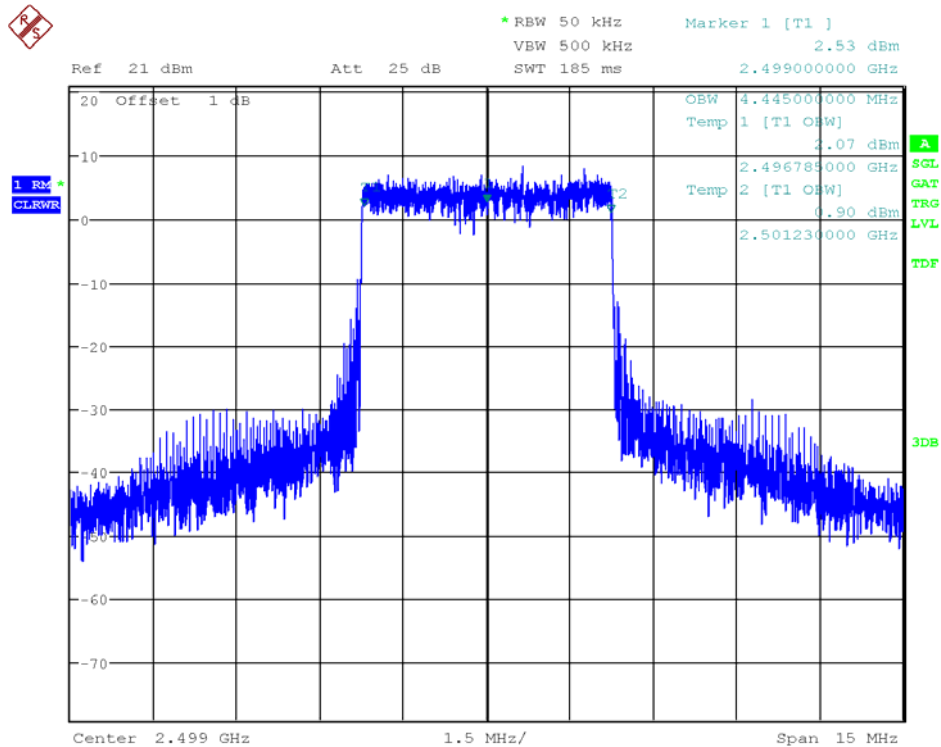
(Continued...)

(Continued...)

- Lowest Channel(2499.00MHz) & PUSC Mode & 16QAM 1/2



- Lowest Channel(2499.00MHz) & PUSC Mode & 16QAM 3/4



(Continued...)

(Continued...)

* RBW 50 kHz Marker 1 [T1]
 VBW 500 kHz 3.61 dBm
 Ref 21 dBm Att 25 dB SWT 185 ms 2.499000000 GHz

20 Offset 1 dB
 10
 0
 -10
 -20
 -30
 -40
 -50
 -60
 -70

OBW 4.710000000 MHz
 Temp 1 [T1 OBW] 3.63 dBm
 2.496650000 GHz
 Temp 2 [T1 OBW] 5.54 dBm
 2.501360000 GHz

1 RBW
 CLRWR

A
 SGL
 GAT
 TRG
 LVL
 TDF

3DB

Center 2.499 GHz 1.5 MHz/ Span 15 MHz

Ref 21 dBm Att 25 dB SWT 185 ms 2.499000000 GHz

20 Offset 1 dB

10

0

-10

-20

-30

-40

-50

-60

-70

OBW 4.710000000 MHz

Temp 1 [T1 OBW] 5.55 dBm

2.496650000 GHz

Temp 2 [T1 OBW] 4.80 dBm

2.501360000 GHz

Center 2.499 GHz 1.5 MHz/ Span 15 MHz

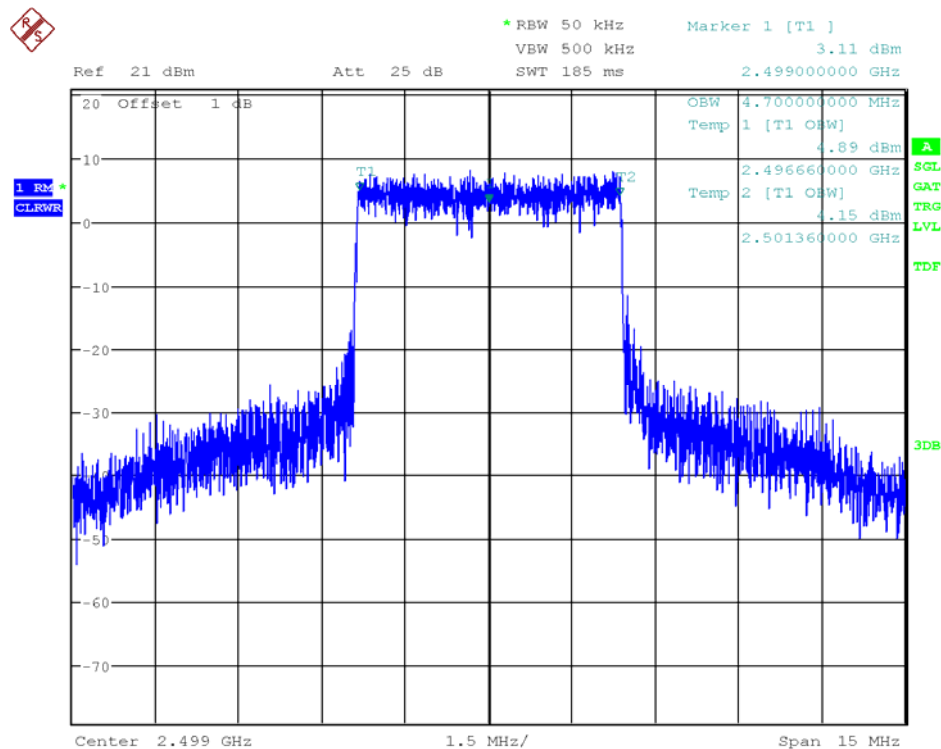
5.1 PLOTS OF EMISSIONS

(Continued...)

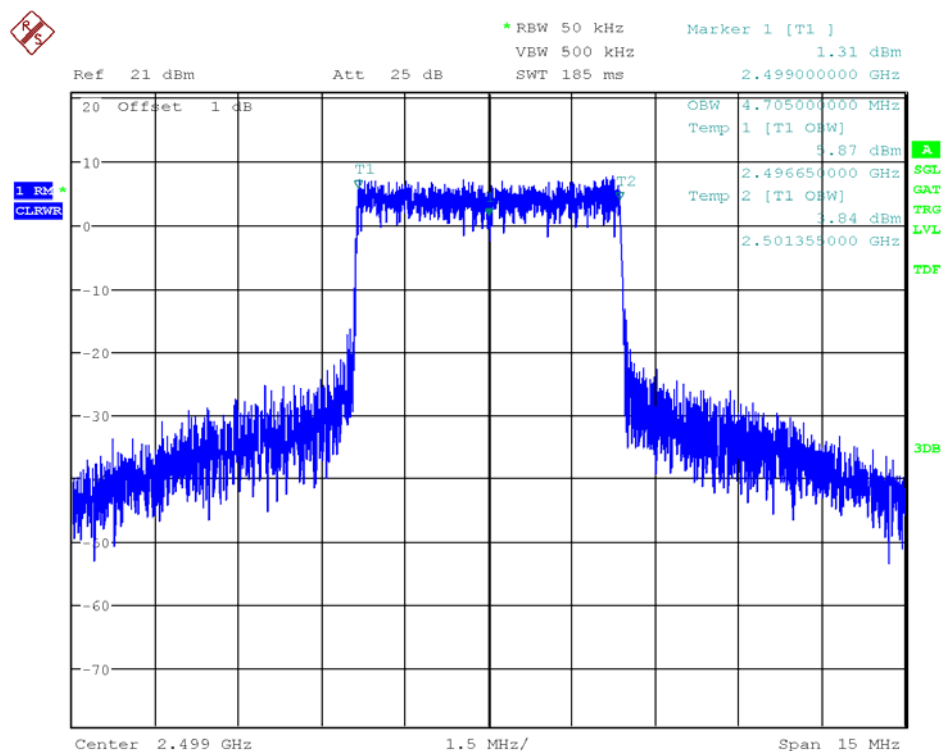
5.1.3 Occupied Bandwidth(BW: 5MHz)

(Continued...)

- Lowest Channel(2499.00MHz) & AMC Mode & 16QAM 1/2



- Lowest Channel(2499.00MHz) & AMC Mode & 16QAM 3/4



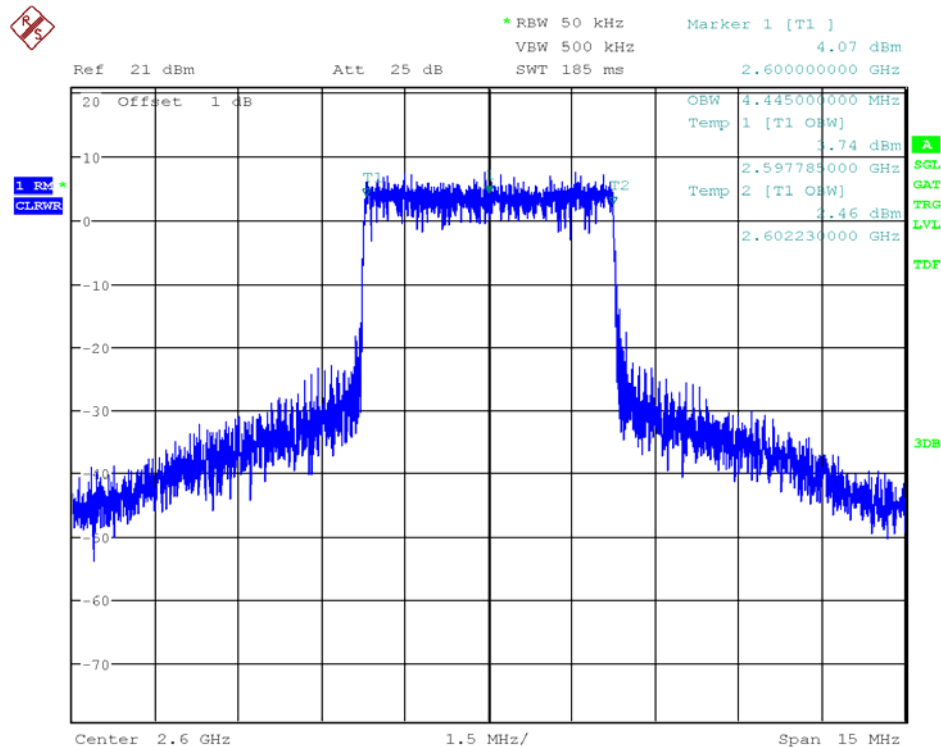
5.1 PLOTS OF EMISSIONS

(Continued...)

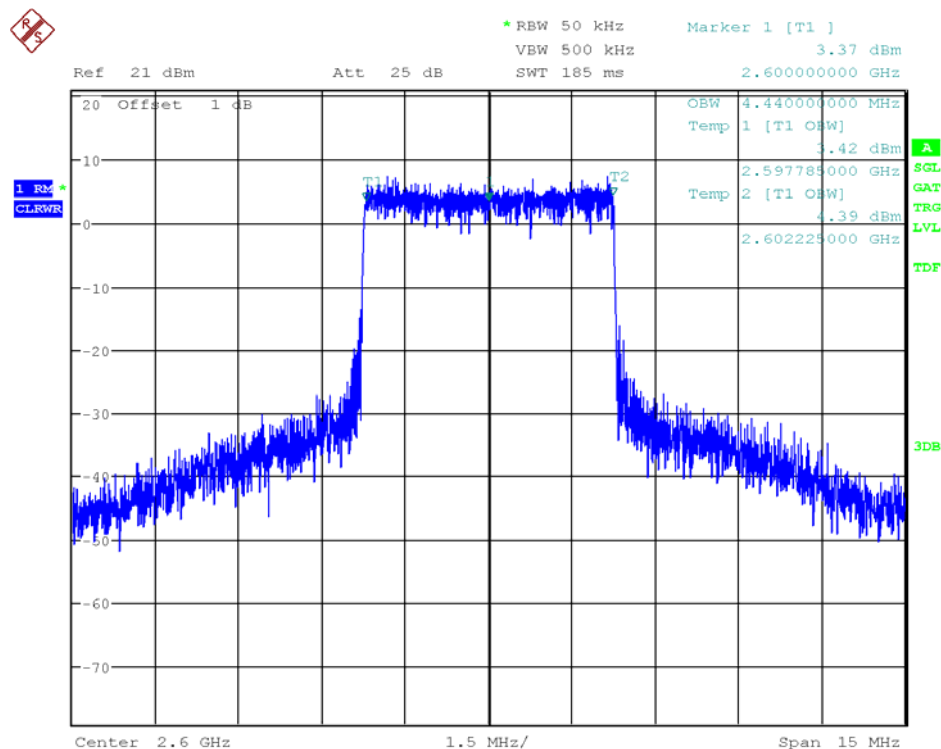
5.1.3 Occupied Bandwidth(BW: 5MHz)

(Continued...)

- Middle Channel(2600.00MHz) & PUSC Mode & QPSK 1/2



- Middle Channel(2600.00MHz) & PUSC Mode & QPSK 3/4



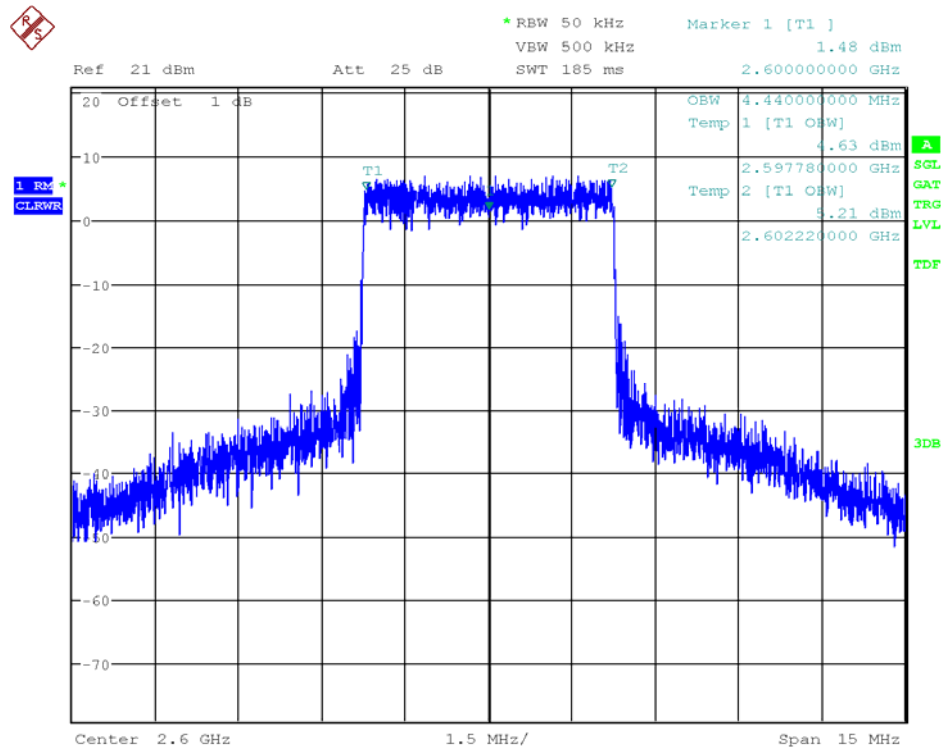
5.1 PLOTS OF EMISSIONS

(Continued...)

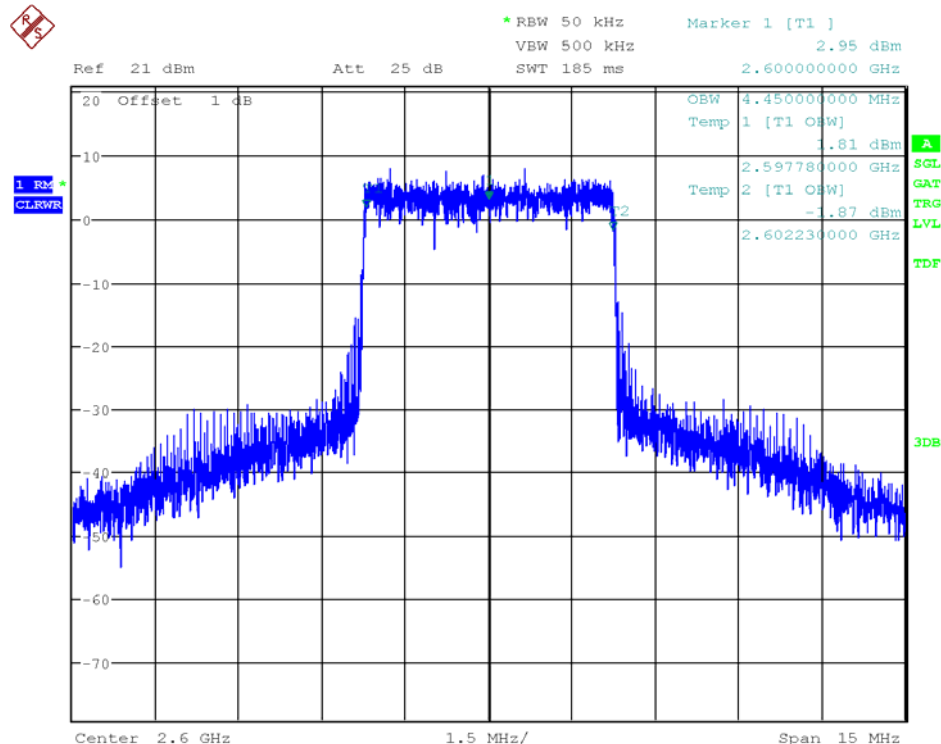
5.1.3 Occupied Bandwidth(BW: 5MHz)

(Continued...)

- Middle Channel(2600.00MHz) & PUSC Mode & 16QAM 1/2



- Middle Channel(2600.00MHz) & PUSC Mode & 16QAM 3/4



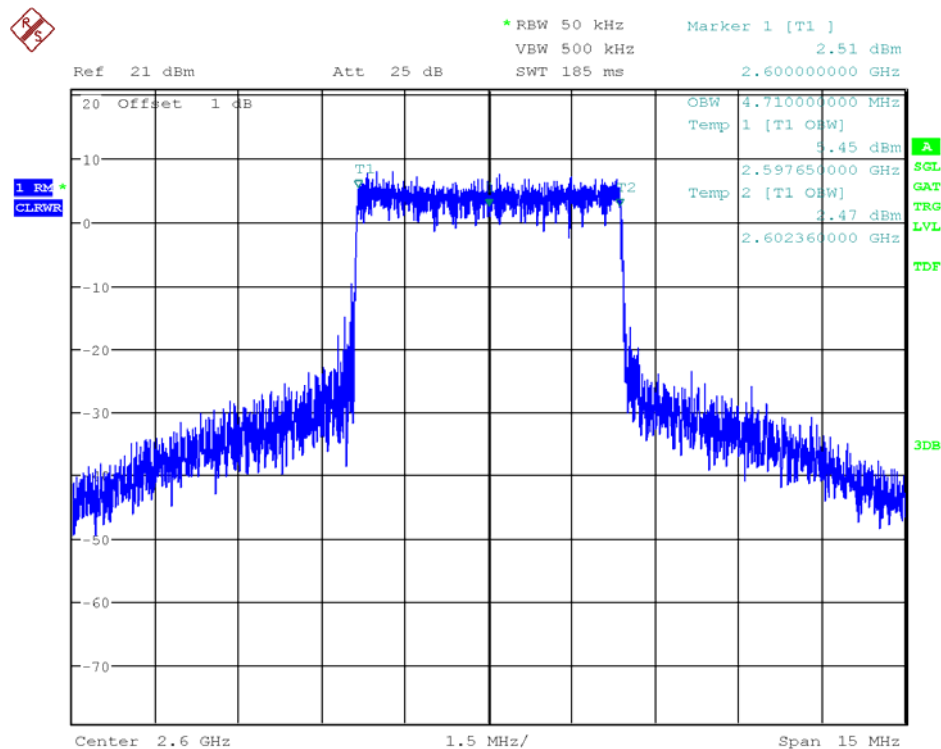
5.1 PLOTS OF EMISSIONS

(Continued...)

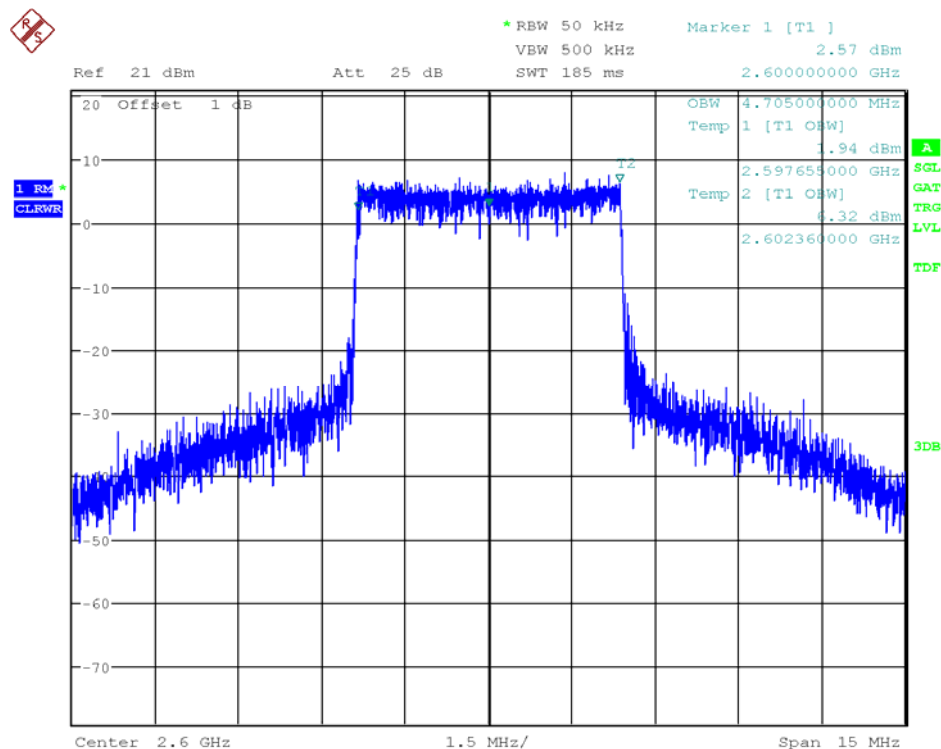
5.1.3 Occupied Bandwidth(BW: 5MHz)

(Continued...)

- Middle Channel(2600.00MHz) & AMC Mode & QPSK 1/2



- Middle Channel(2600.00MHz) & AMC Mode & QPSK 3/4



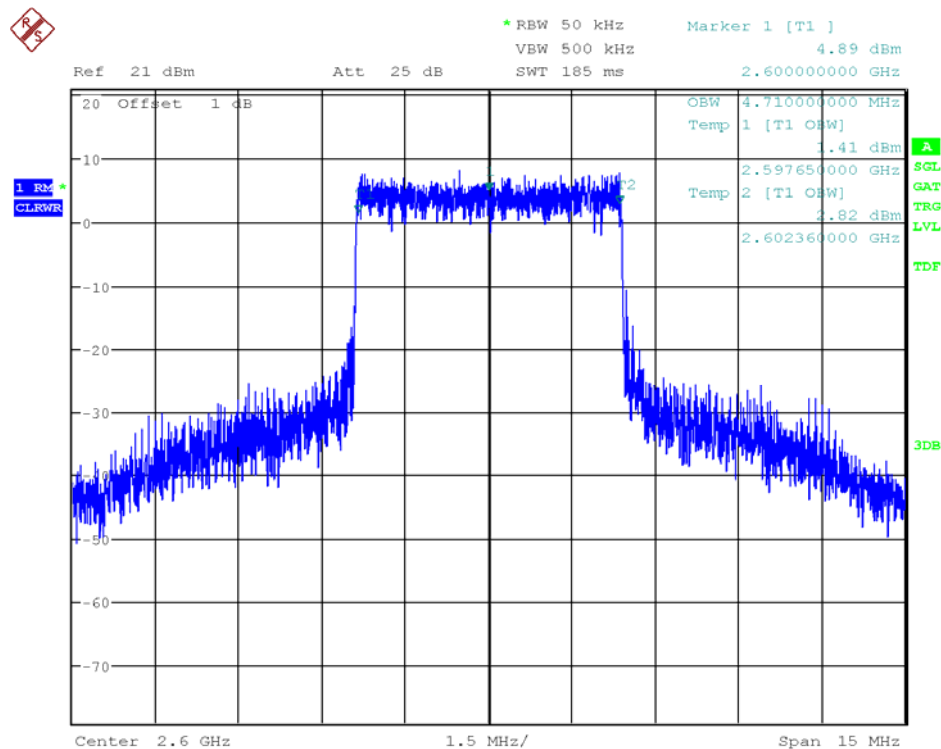
5.1 PLOTS OF EMISSIONS

(Continued...)

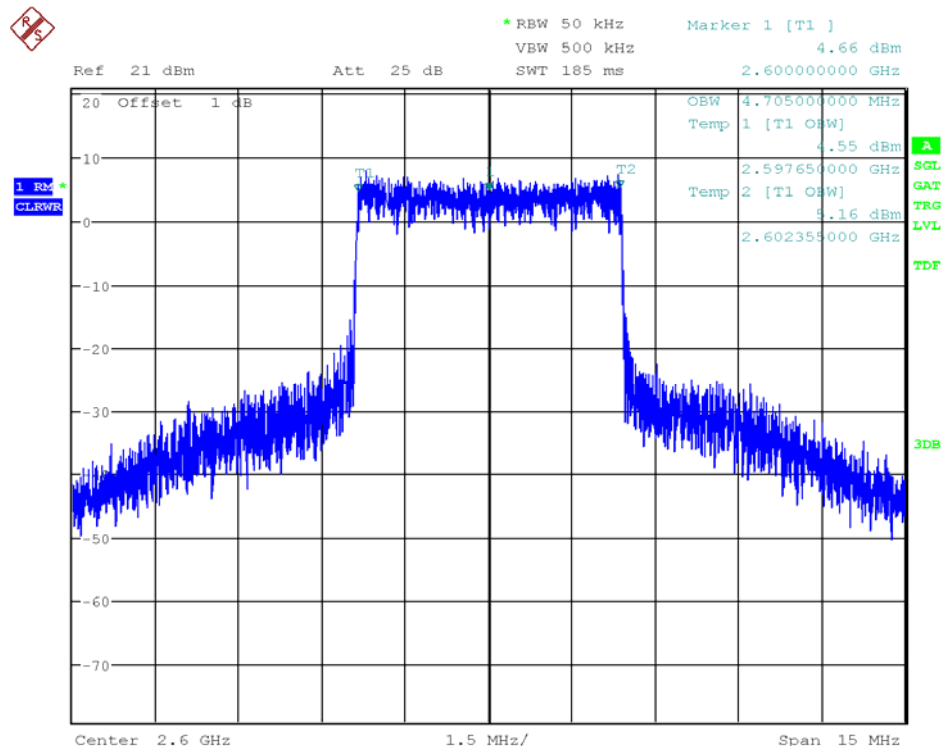
5.1.3 Occupied Bandwidth(BW: 5MHz)

(Continued...)

- Middle Channel(2600.00MHz) & AMC Mode & 16QAM 1/2



- Middle Channel(2600.00MHz) & AMC Mode & 16QAM 3/4



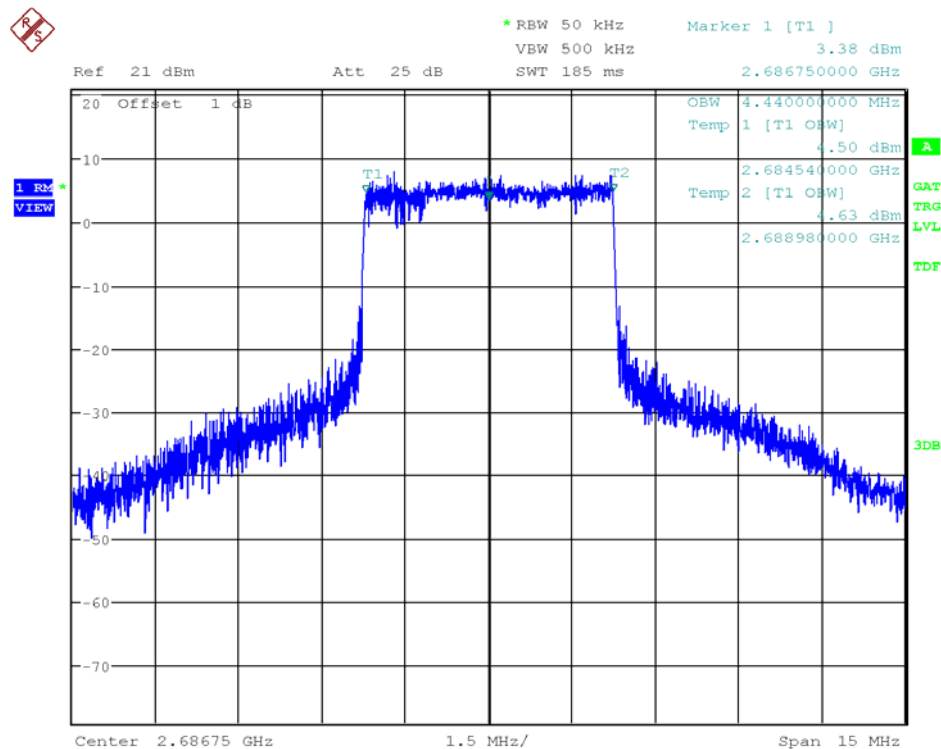
5.1 PLOTS OF EMISSIONS

(Continued...)

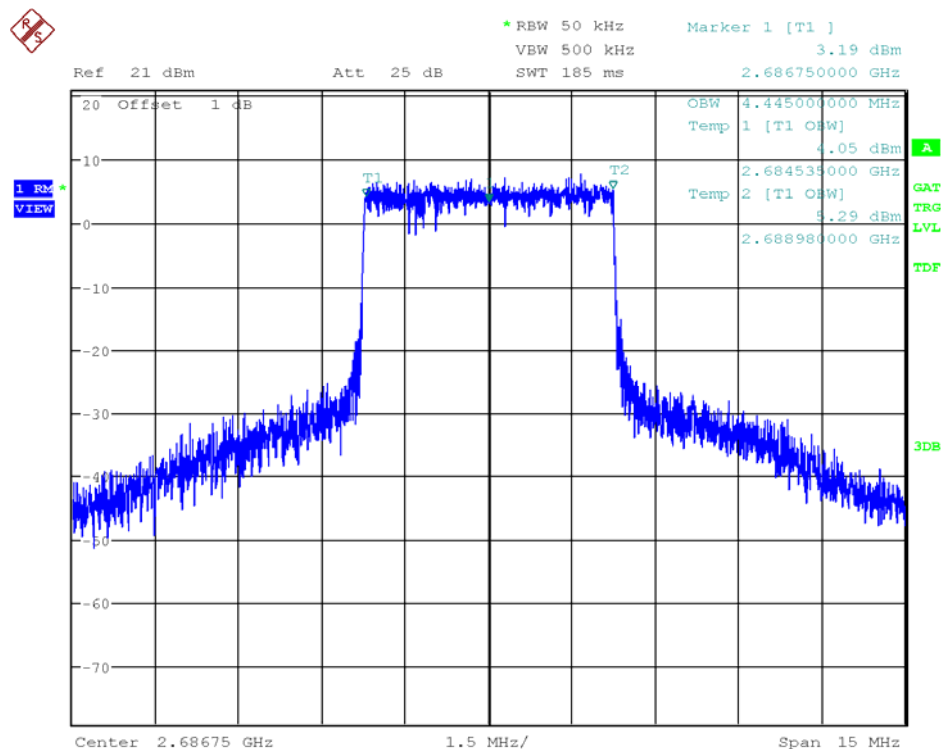
5.1.3 Occupied Bandwidth(BW: 5MHz)

(Continued...)

- Highest Channel(2686.75MHz) & PUSC Mode & QPSK 1/2



- Highest Channel(2686.75MHz) & PUSC Mode & QPSK 3/4



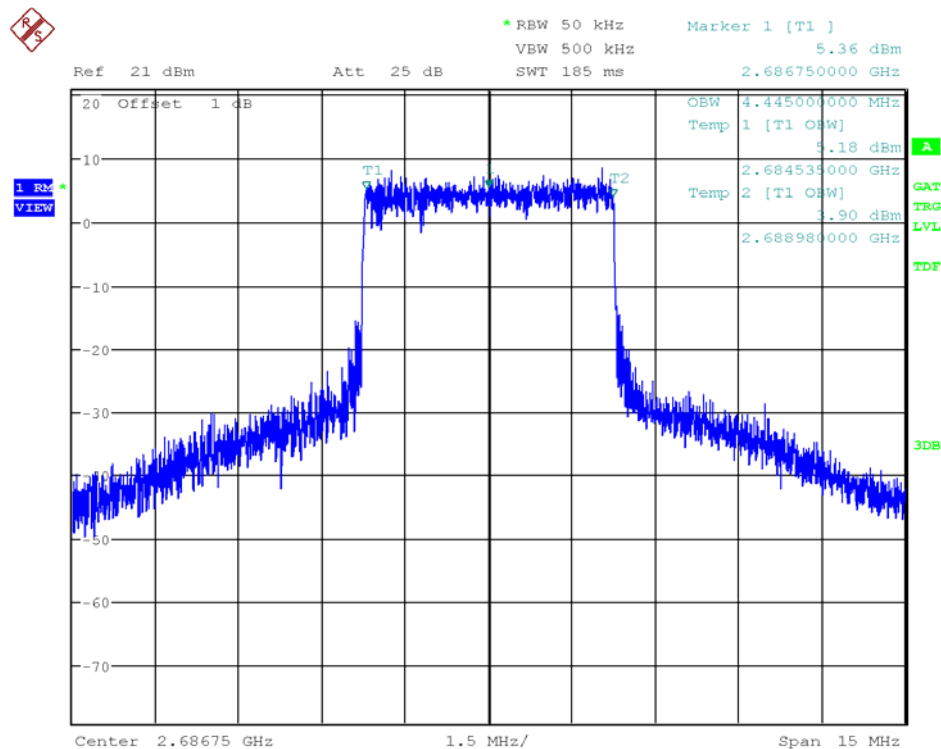
5.1 PLOTS OF EMISSIONS

(Continued...)

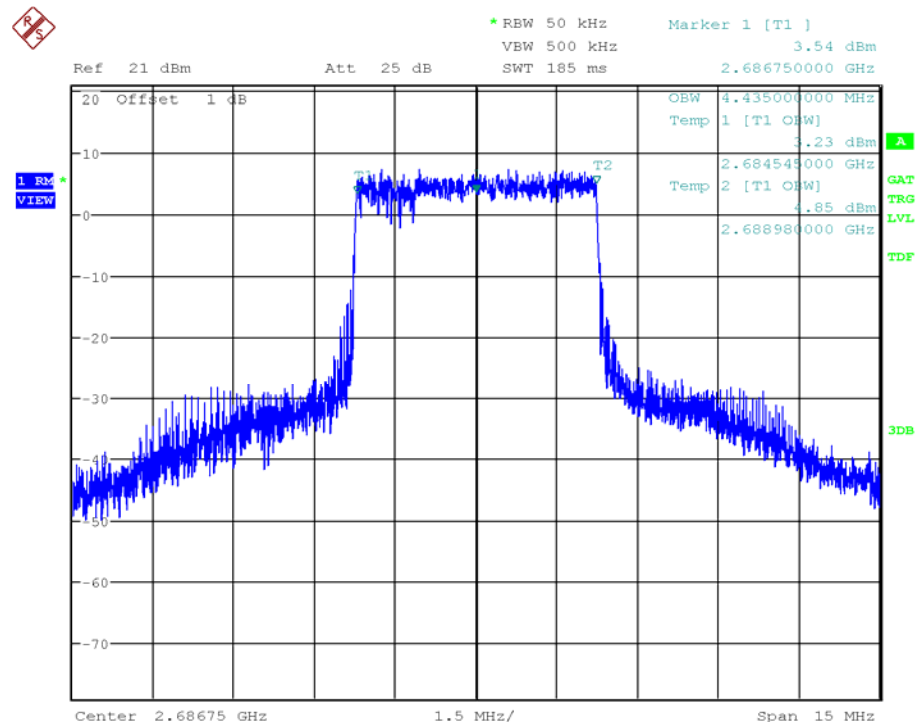
5.1.3 Occupied Bandwidth(BW: 5MHz)

(Continued...)

- Highest Channel(2686.75MHz) & PUSC Mode & 16QAM 1/2



- Highest Channel(2686.75MHz) & PUSC Mode & 16QAM 3/4



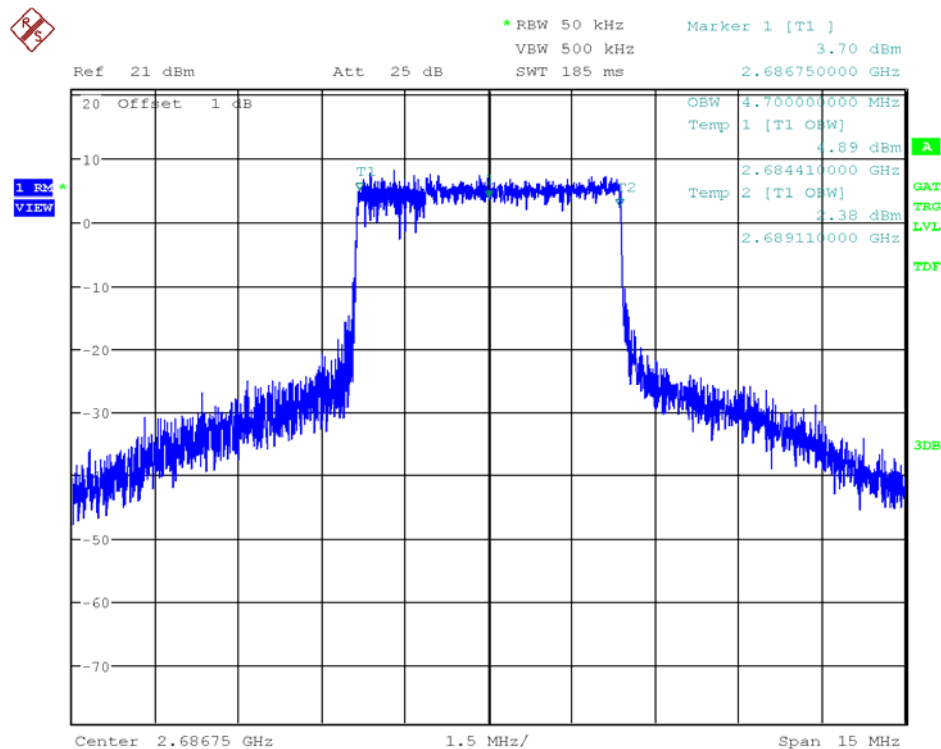
5.1 PLOTS OF EMISSIONS

(Continued...)

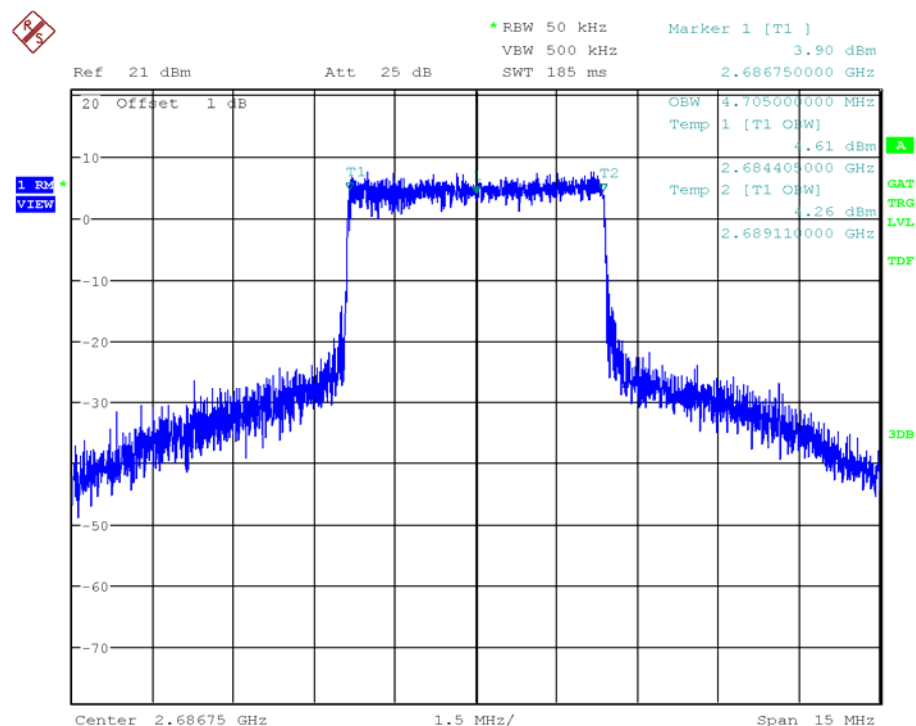
5.1.3 Occupied Bandwidth(BW: 5MHz)

(Continued...)

- Highest Channel(2686.75MHz) & AMC Mode & QPSK 1/2



- Highest Channel(2686.75MHz) & AMC Mode & QPSK 3/4



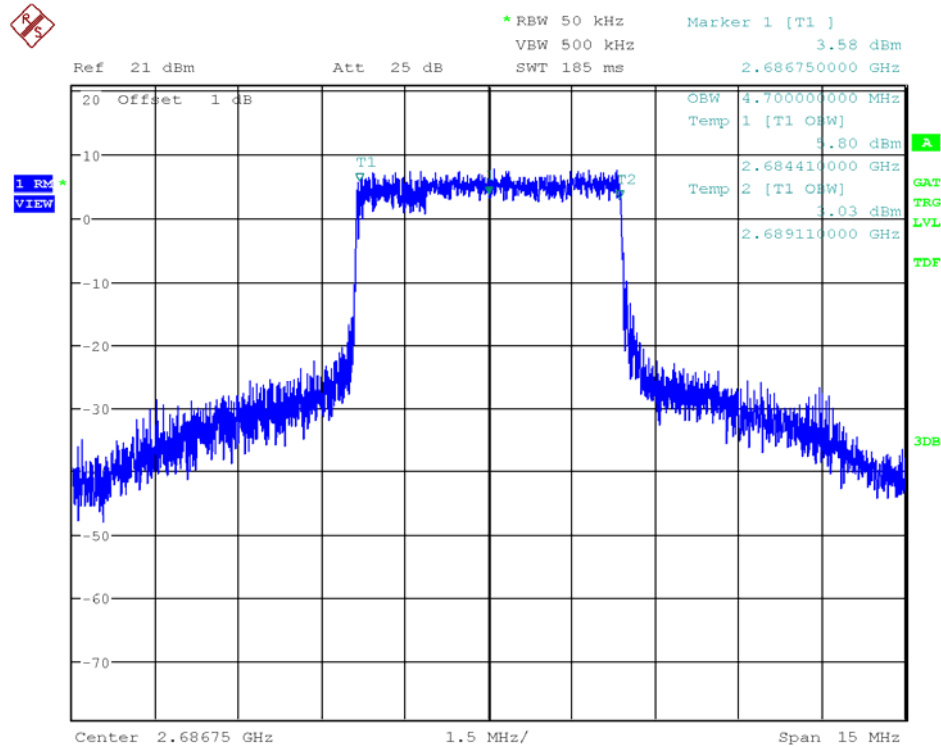
5.1 PLOTS OF EMISSIONS

(Continued...)

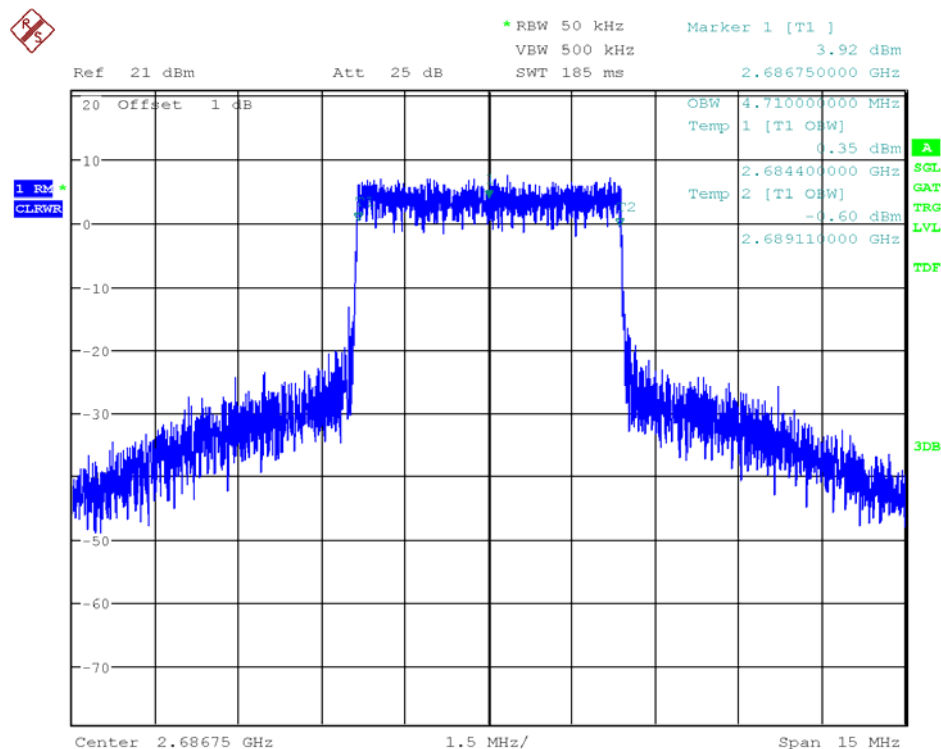
5.1.3 Occupied Bandwidth(BW: 5MHz)

(Continued...)

- Highest Channel(2686.75MHz) & AMC Mode & 16QAM 1/2



- Highest Channel(2686.75MHz) & AMC Mode & 16QAM 3/4

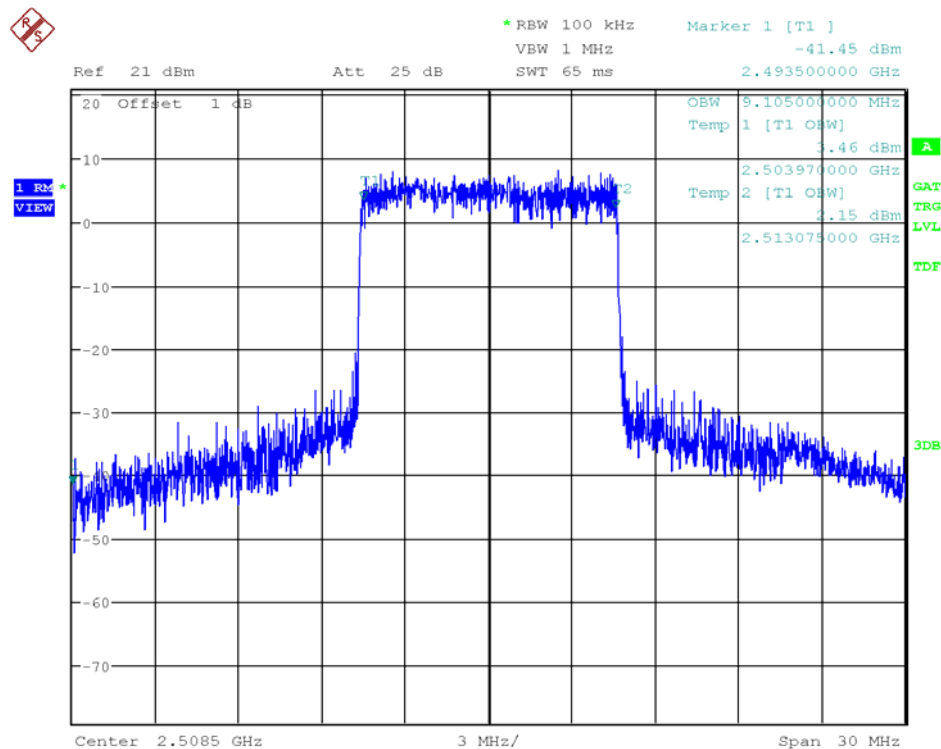


5.1 PLOTS OF EMISSIONS

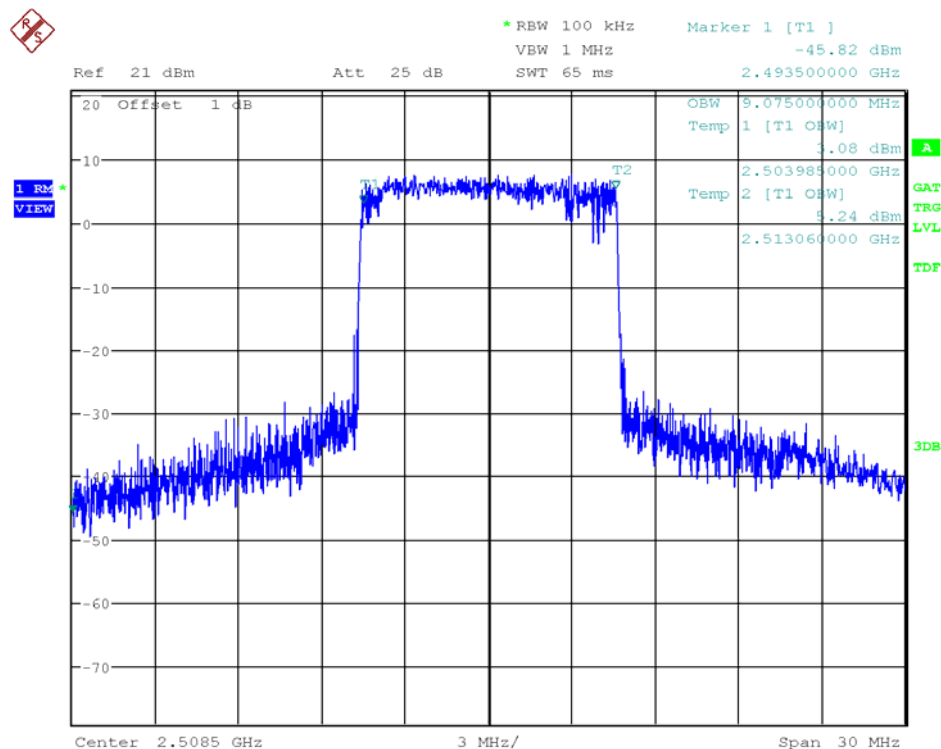
(Continued...)

5.1.4 Occupied Bandwidth(BW: 10MHz)

- Lowest Channel(2508.50MHz) & PUSC Mode & QPSK 1/2



- Lowest Channel(2508.50MHz) & PUSC Mode & QPSK 3/4



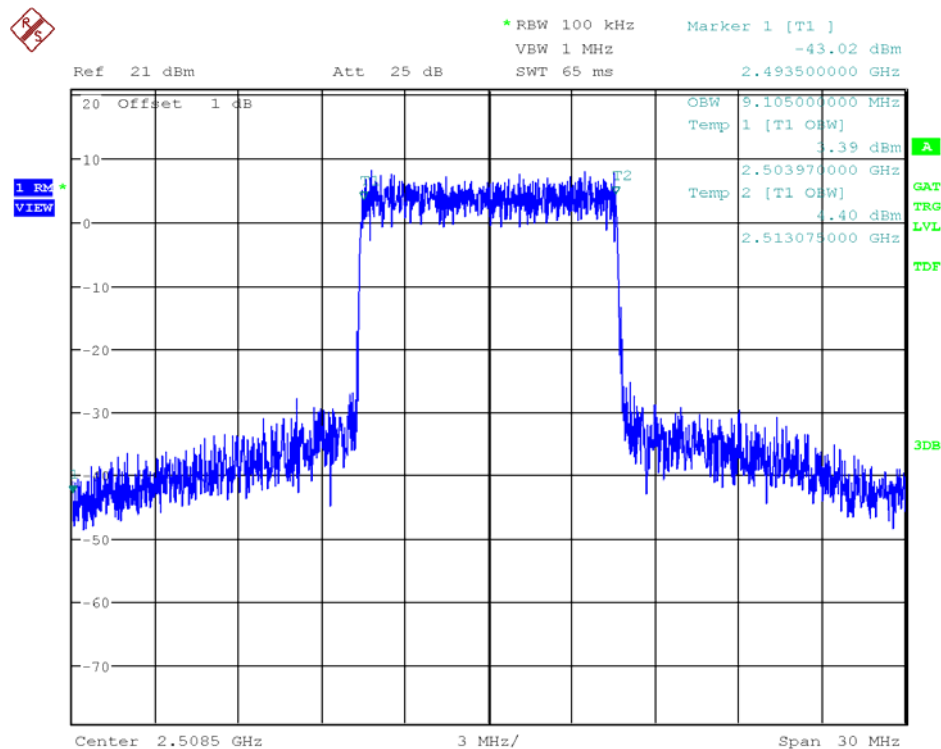
5.1 PLOTS OF EMISSIONS

(Continued...)

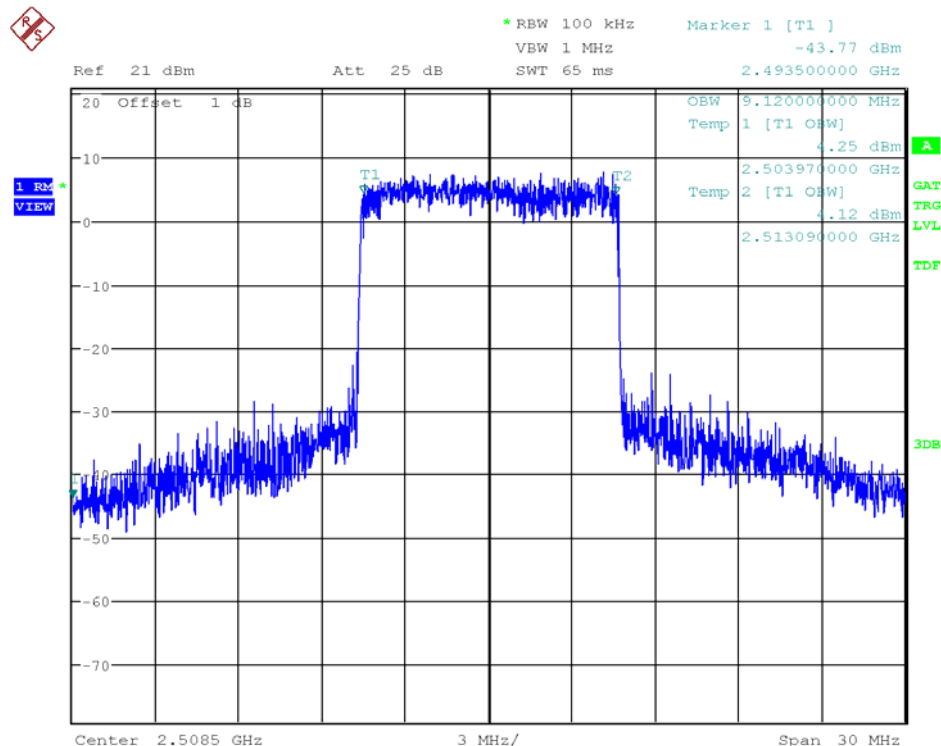
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Lowest Channel(2508.50MHz) & PUSC Mode & 16QAM 1/2



- Lowest Channel(2508.50MHz) & PUSC Mode & 16QAM 3/4



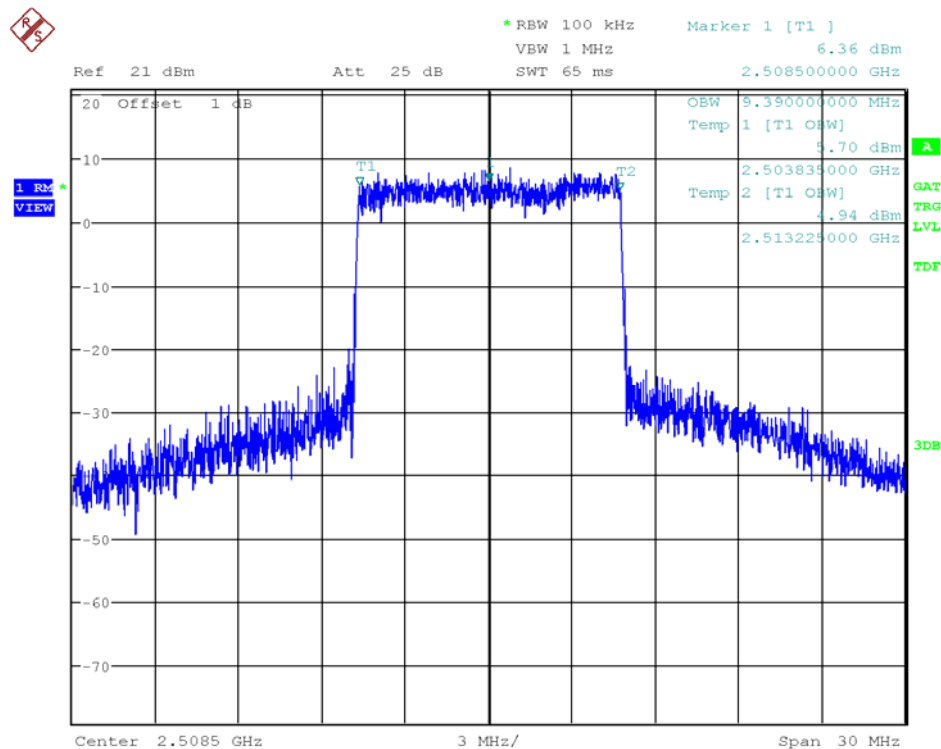
5.1 PLOTS OF EMISSIONS

(Continued...)

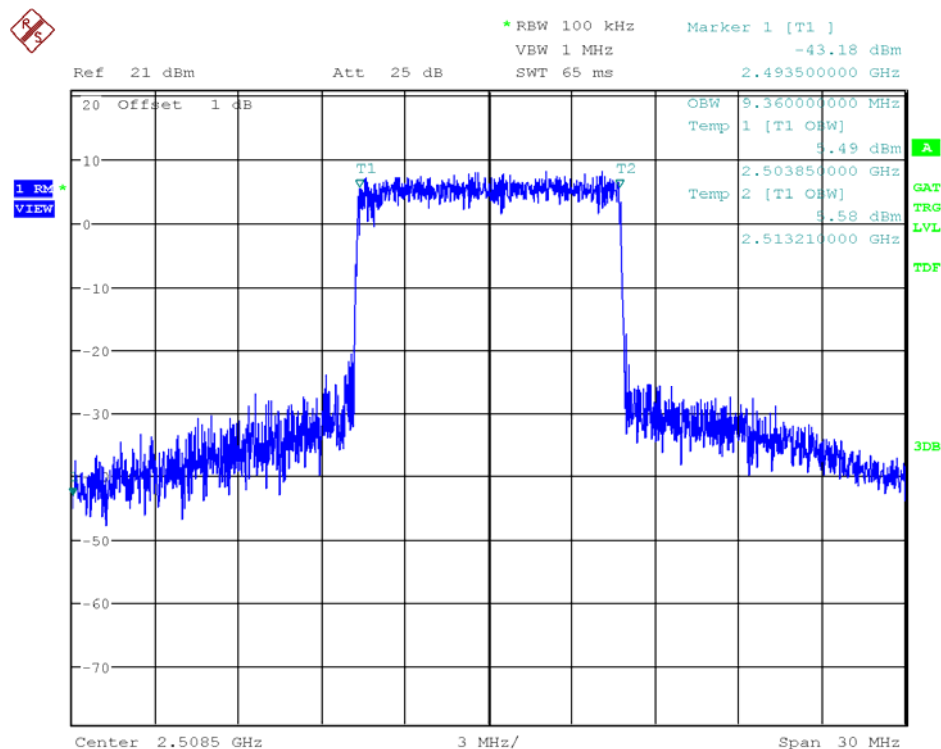
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Lowest Channel(2508.50MHz) & AMC Mode & QPSK 1/2



- Lowest Channel(2508.50MHz) & AMC Mode & QPSK 3/4



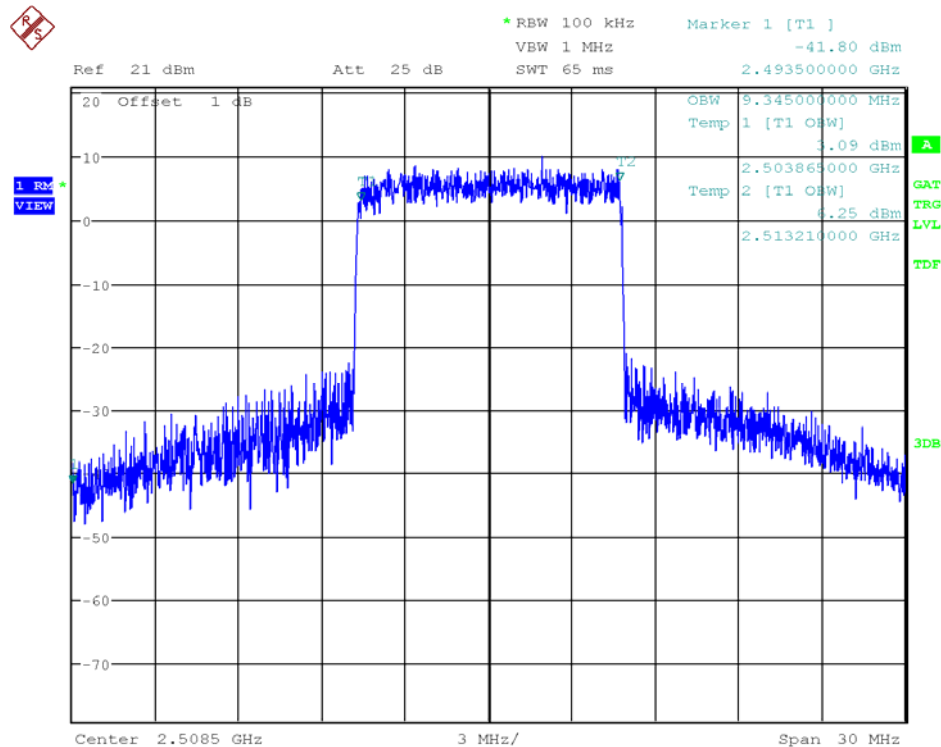
5.1 PLOTS OF EMISSIONS

(Continued...)

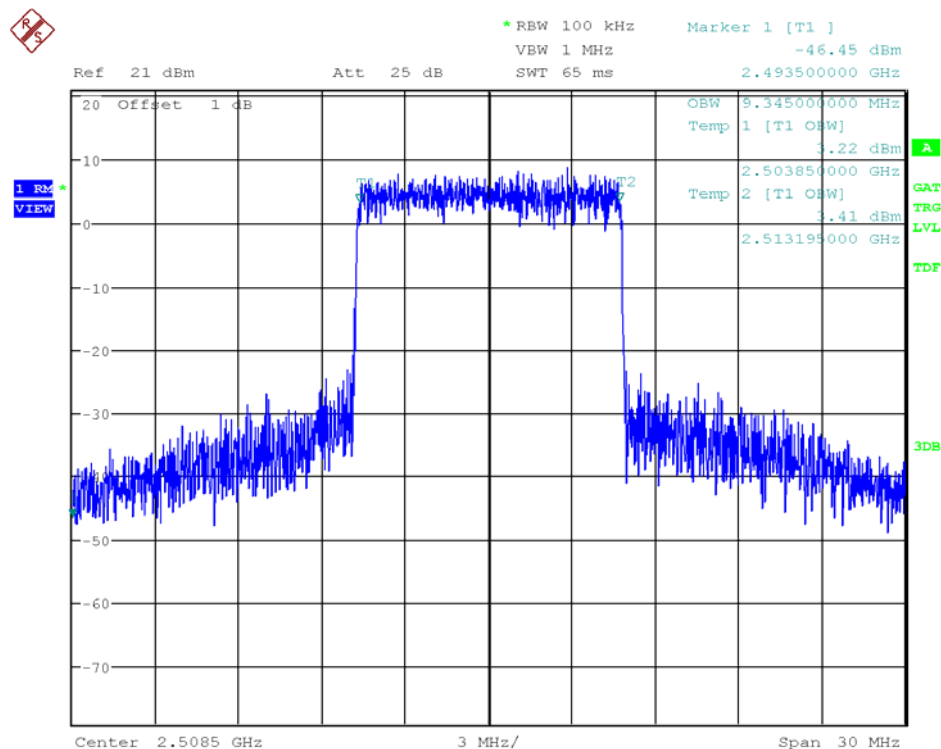
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Lowest Channel(2508.50MHz) & AMC Mode & 16QAM 1/2



- Lowest Channel(2508.50MHz) & AMC Mode & 16QAM 3/4



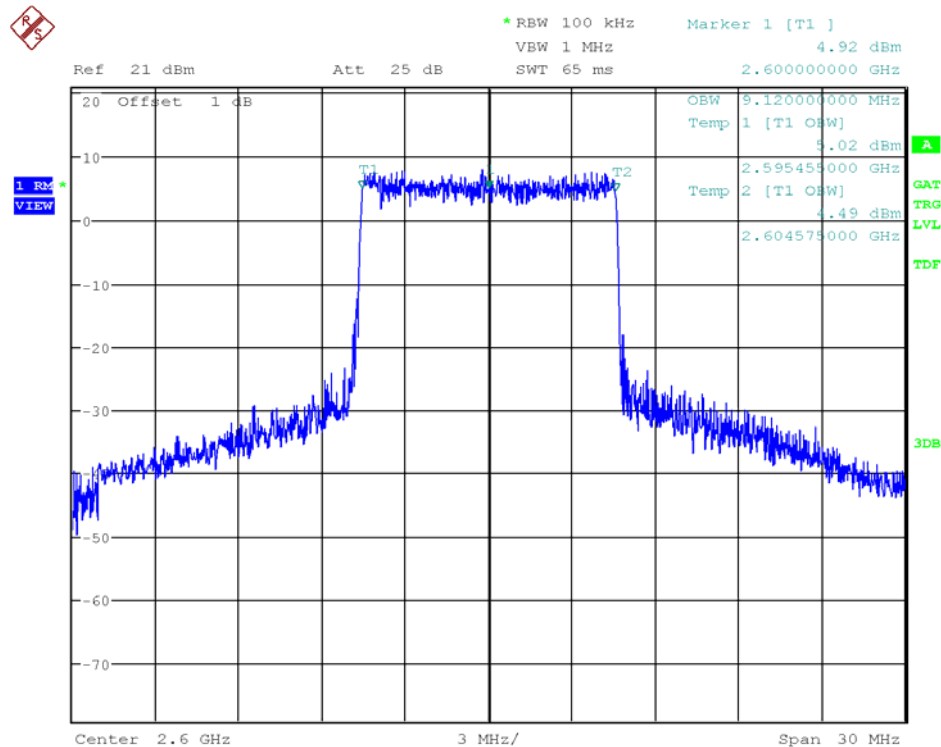
5.1 PLOTS OF EMISSIONS

(Continued...)

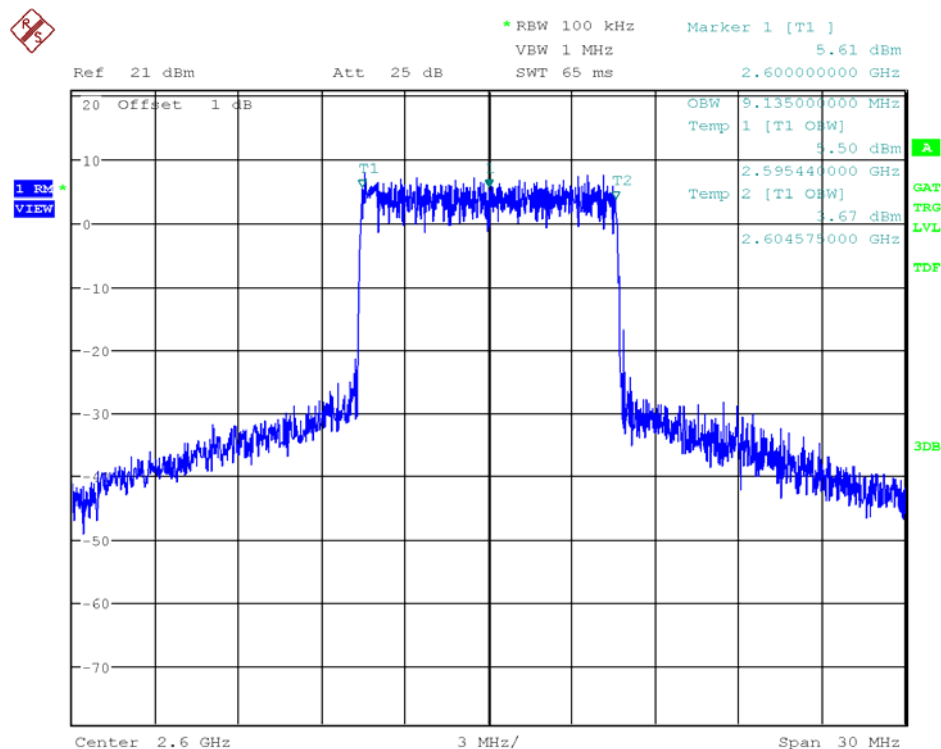
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Middle Channel(2600.00MHz) & PUSC Mode & QPSK 1/2



- Middle Channel(2600.00MHz) & PUSC Mode & QPSK 3/4



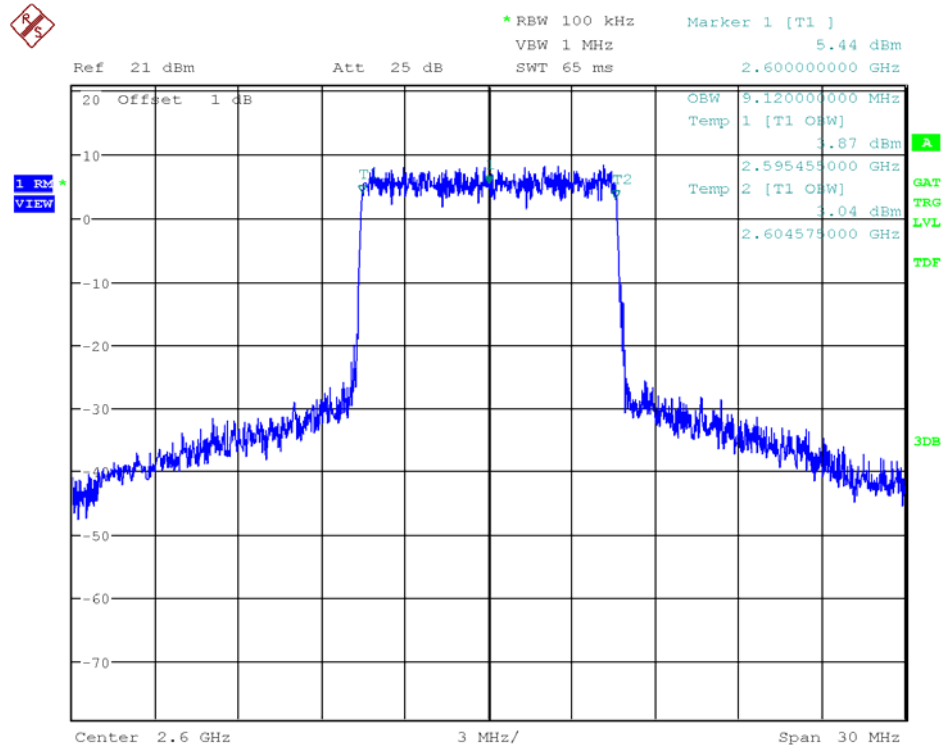
5.1 PLOTS OF EMISSIONS

(Continued...)

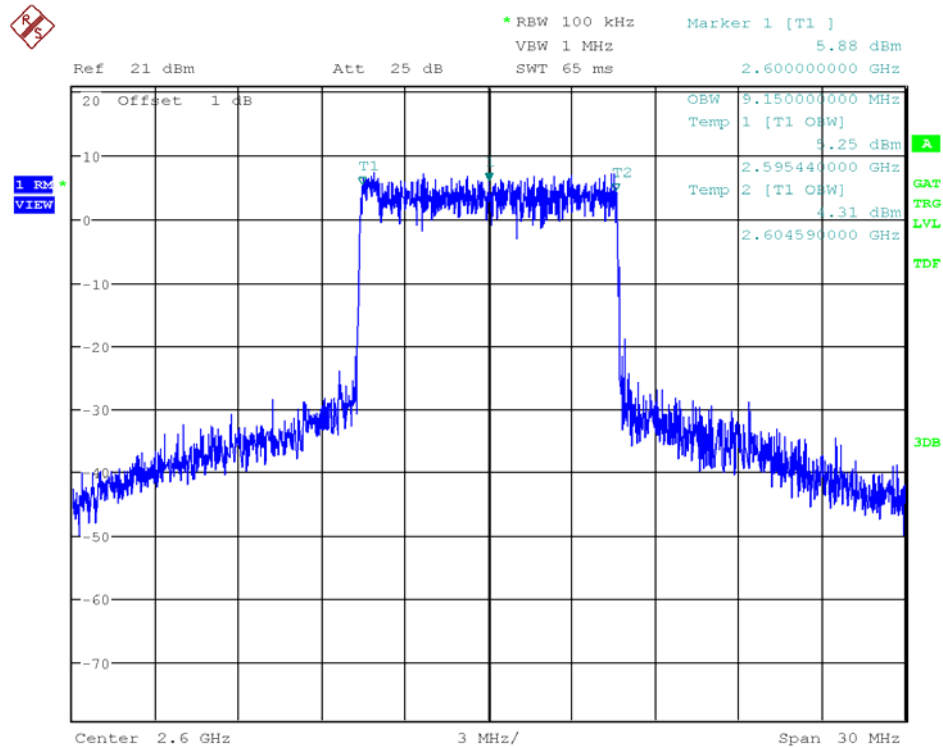
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Middle Channel(2600.00MHz) & PUSC Mode & 16QAM 1/2



- Middle Channel(2600.00MHz) & PUSC Mode & 16QAM 3/4



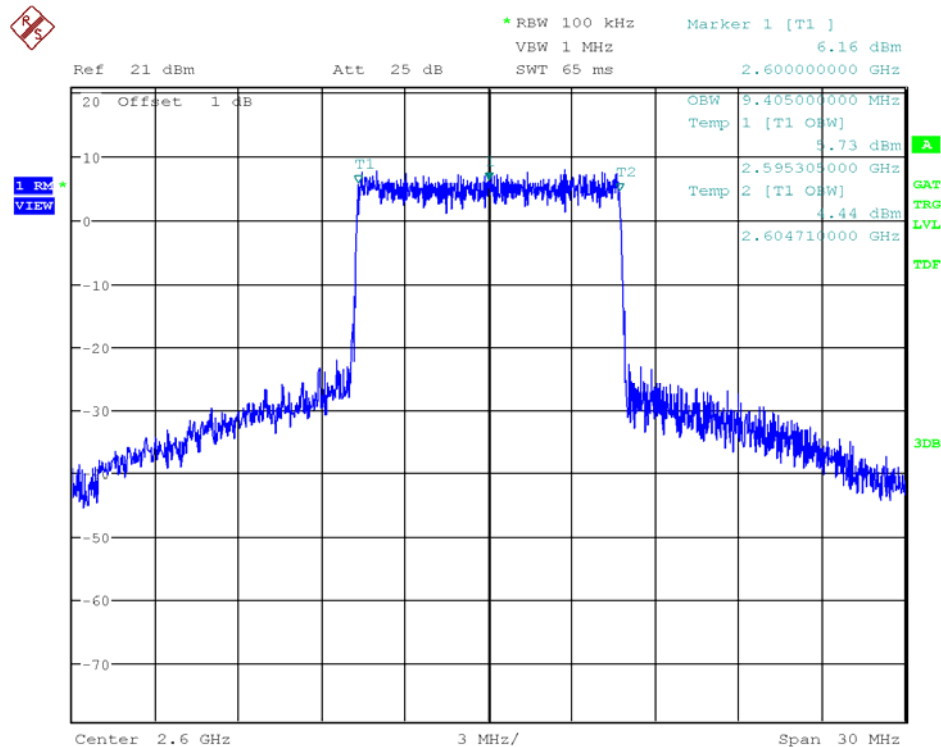
5.1 PLOTS OF EMISSIONS

(Continued...)

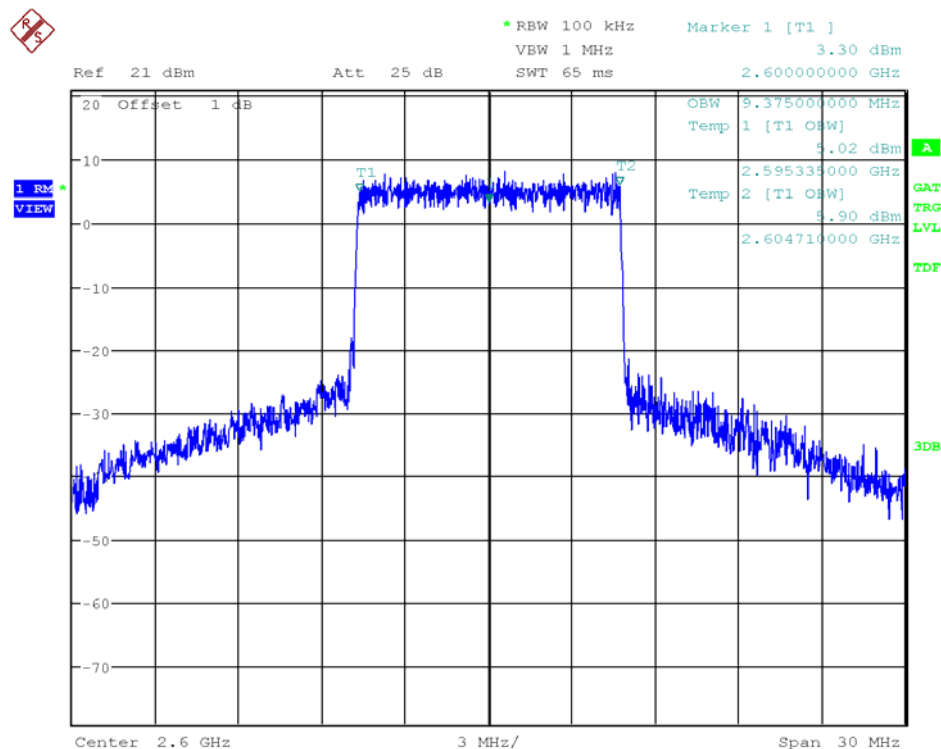
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Middle Channel(2600.00MHz) & AMC Mode & QPSK 1/2



- Middle Channel(2600.00MHz) & AMC Mode & QPSK 3/4



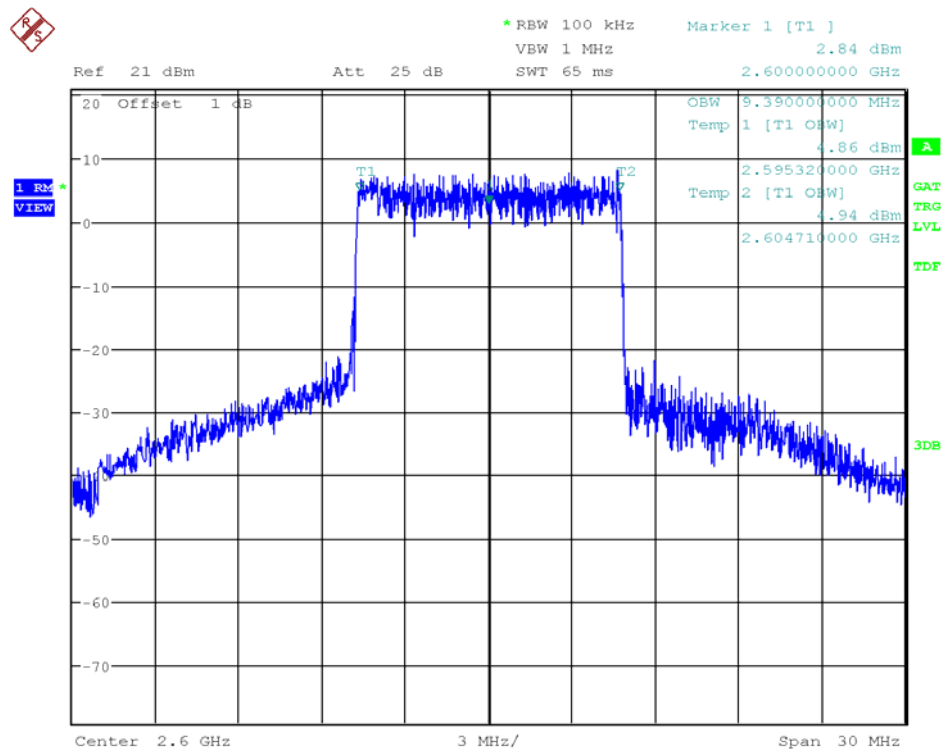
5.1 PLOTS OF EMISSIONS

(Continued...)

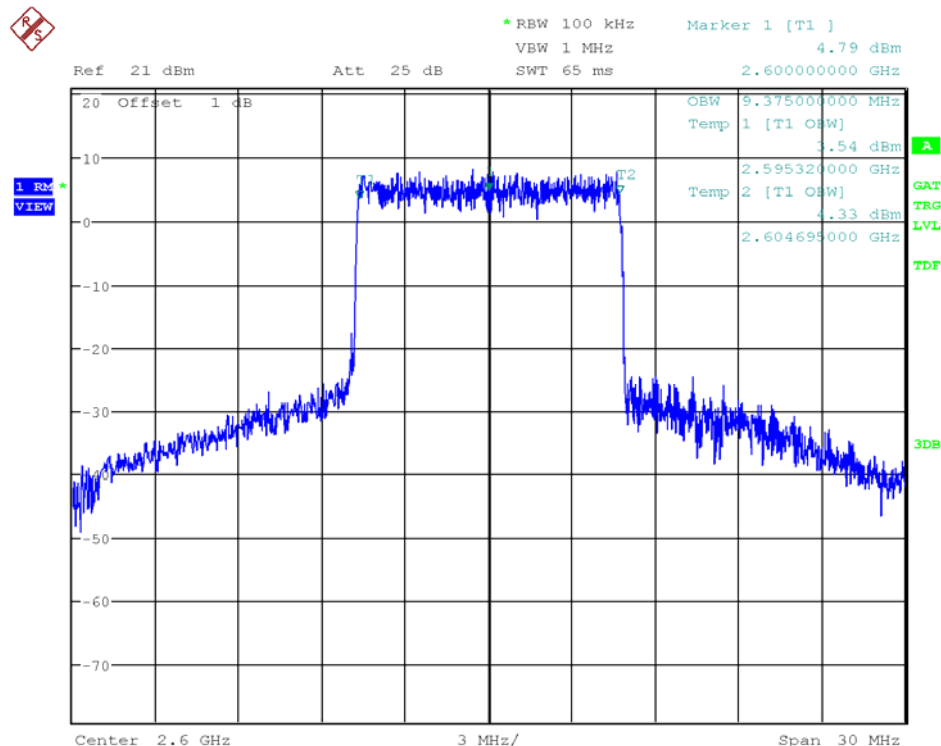
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Middle Channel(2600.00MHz) & AMC Mode & 16QAM 1/2



- Middle Channel(2600.00MHz) & AMC Mode & 16QAM 3/4



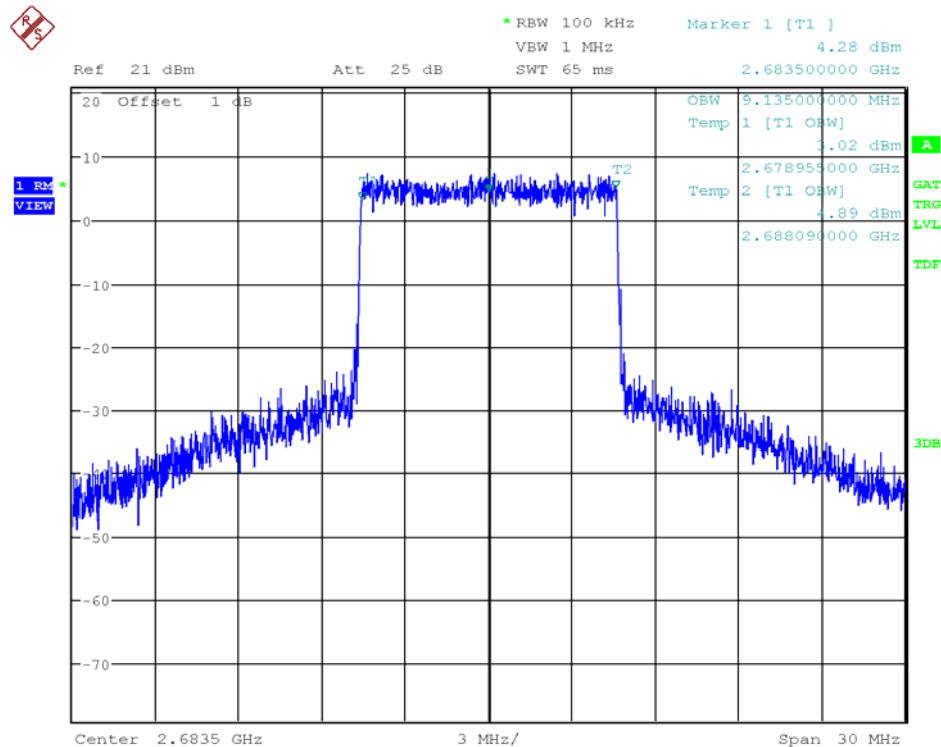
5.1 PLOTS OF EMISSIONS

(Continued...)

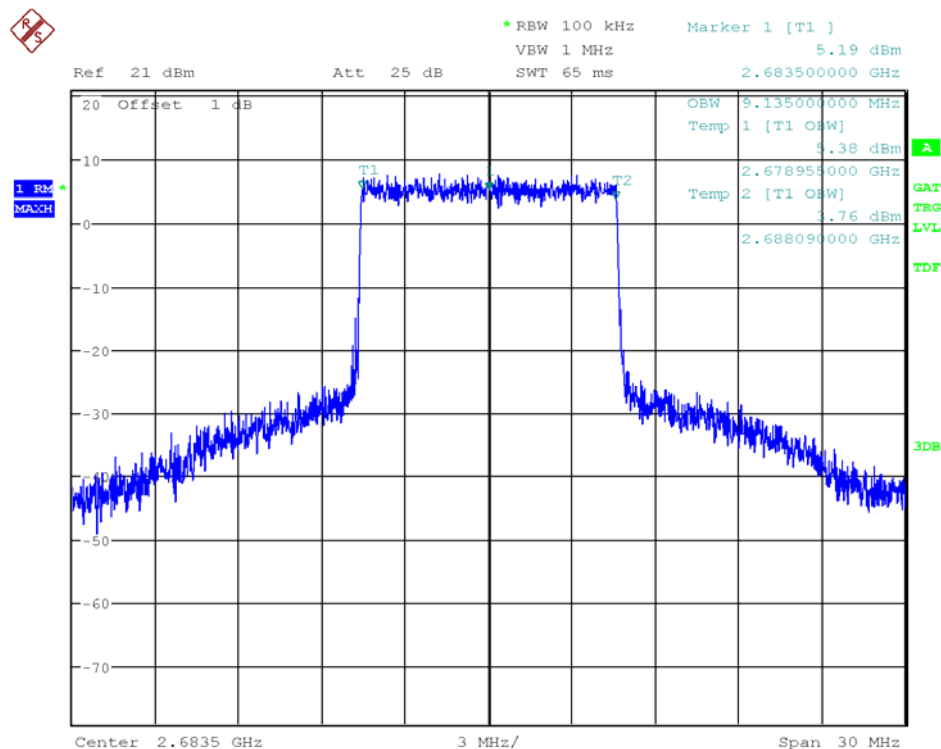
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Highest Channel(2683.50MHz) & PUSC Mode & QPSK 1/2



- Highest Channel(2683.50MHz) & PUSC Mode & QPSK 3/4



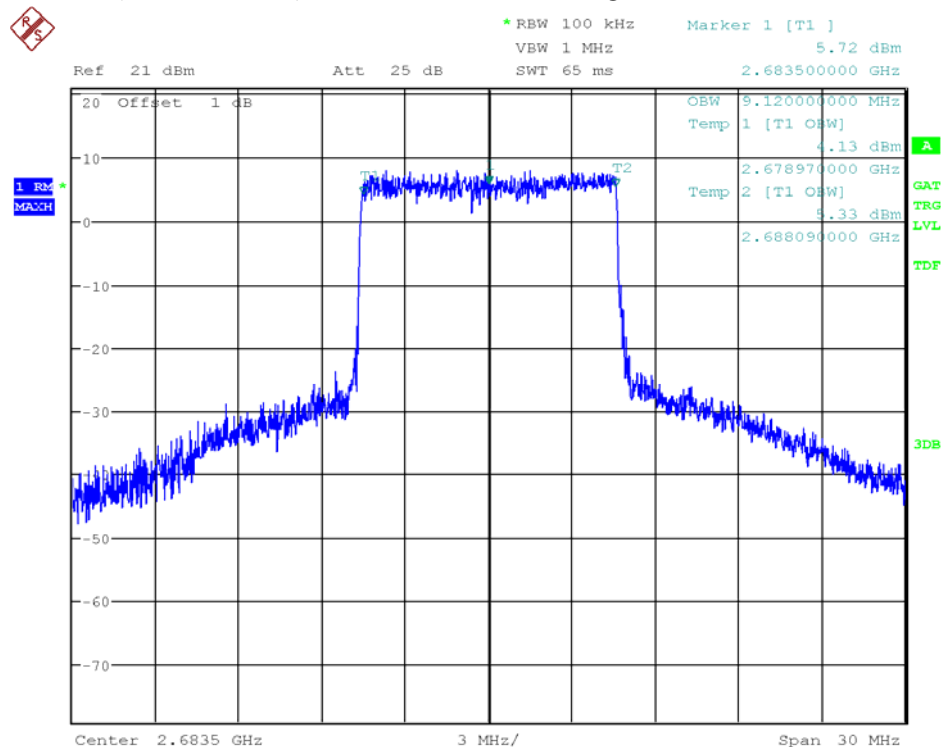
5.1 PLOTS OF EMISSIONS

(Continued...)

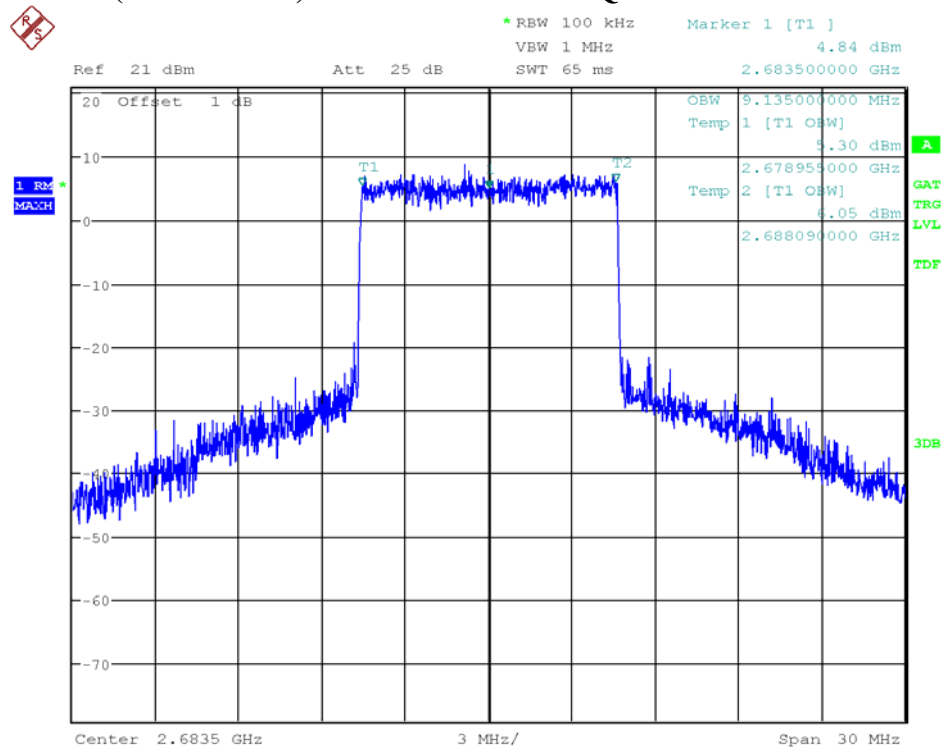
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Highest Channel(2683.50MHz) & PUSC Mode & 16QAM 1/2



- Highest Channel(2683.50MHz) & PUSC Mode & 16QAM 3/4



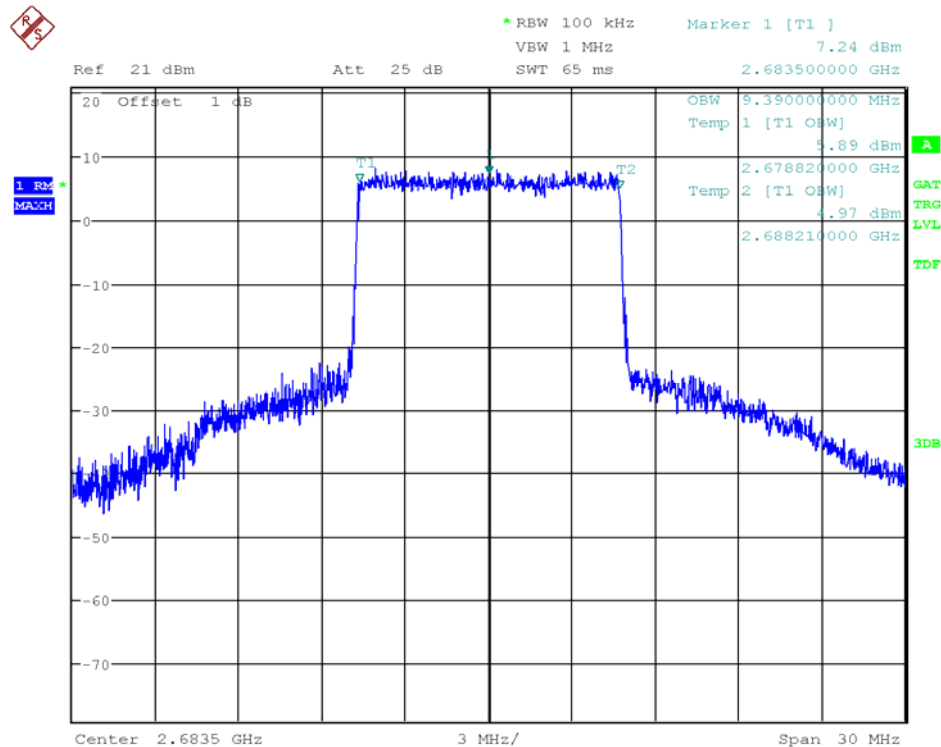
5.1 PLOTS OF EMISSIONS

(Continued...)

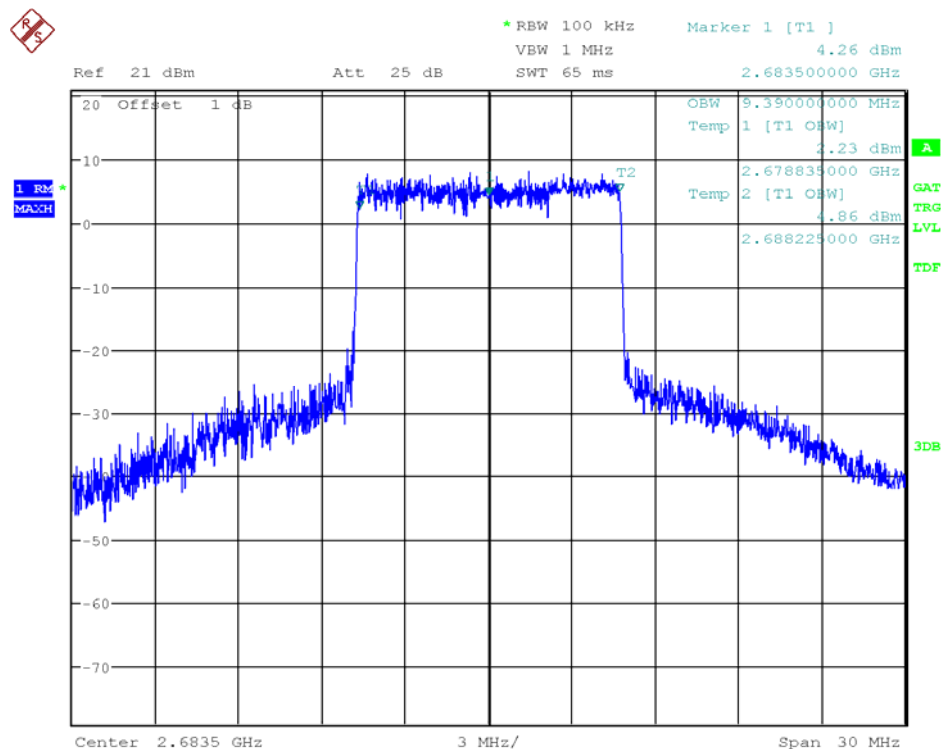
5.1.4 Occupied Bandwidth(BW: 10MHz)

(Continued...)

- Highest Channel(2683.50MHz) & AMC Mode & QPSK 1/2



- Highest Channel(2683.50MHz) & AMC Mode & QPSK 3/4



(Continued...)

(Continued...)

The screenshot displays a spectrum analyzer interface. At the top, a red diamond logo with 'R' and 'S' is visible. The main display area shows a blue signal trace on a grid. The signal is centered at 2.6835 GHz with a span of 30 MHz. The frequency axis ranges from -70 to 20 MHz. The signal level is approximately 4.64 dBm. Two markers, T1 and T2, are placed on the signal trace. The right side of the screen shows various measurement parameters and settings.

Parameter	Value
Ref	21 dBm
Att	25 dB
SWT	65 ms
Marker 1 [T1]	2.683500000 GHz
OBW	9.375000000 MHz
Temp 1 [T1 OBW]	4.64 dBm
Temp 2 [T1 OBW]	2.678820000 GHz
Temp 2 [T1 OBW]	4.56 dBm
Temp 2 [T1 OBW]	2.688195000 GHz

Center 2.6835 GHz 3 MHz/ Span 30 MHz