

HCT CO., LTD.

CERTIFICATE OF COMPLIANCE FCC Certification

Applicant Name:
Kyocera Corporation

Date of Issue:

July 16, 2013

Test Site/Location:

Address:
1-34, Sanyo-cho, Daito-Shi, Osaka, 574-8501, JAPAN

HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, Korea

Report No.: HCTR1307FR21

HCT FRN: 0005866421

FCC ID: V65C6522

APPLICANT: Kyocera Corporation

FCC Model(s): C6522N

EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN

FCC Classification: Licensed Portable Transmitter Held to Ear (PCE)

FCC Rule Part(s): §2, §27

Tx Frequency: 706.5 MHz – 713.5 MHz (LTE – Band 17),
1710.7 MHz – 1754.3 MHz (LTE – Band 4)

Max. Conducted Power:

Band 17 (5 MHz) : 0.234 W (QPSK) (23.69 dBm)
0.254 W (16-QAM) (24.05 dBm)
Band 17 (10 MHz) : 0.254 W (QPSK) (24.04 dBm)
0.292 W (16-QAM) (24.65 dBm)

Band 4 (1.4 MHz): 0.834 W (QPSK) (29.21 dBm)
0.931 W (16-QAM) (29.69 dBm)
Band 4 (3 MHz): 0.832 W (QPSK) (29.20 dBm)
0.935 W (16-QAM) (29.71 dBm)
Band 4 (5 MHz): 0.836 W (QPSK) (29.22 dBm)
0.859 W (16-QAM) (29.34 dBm)
Band 4 (10 MHz): 0.731 W (QPSK) (28.64 dBm)
0.778 W (16-QAM) (28.91 dBm)
Band 4 (15 MHz): 0.774 W (QPSK) (28.89 dBm)
0.895 W (16-QAM) (29.52 dBm)
Band 4 (20 MHz): 0.796 W (QPSK) (29.01 dBm)
0.869 W (16-QAM) (29.39 dBm)

Emission Designator(s):

Band 17 (5 MHz) : 4M49G7D (QPSK) / 4M49W7D (16-QAM)
Band 17 (10 MHz) : 8M97G7D (QPSK) / 8M94W7D (16-QAM)
Band 4 (1.3 MHz) : 1M09G7D (QPSK) / 1M08W7D (16-QAM)
Band 4 (4 MHz) : 2M72G7D (QPSK) / 2M72W7D (16-QAM)
Band 4 (5 MHz) : 4M49G7D (QPSK) / 4M49W7D (16-QAM)
Band 4 (10 MHz) : 8M94G7D (QPSK) / 8M94W7D (16-QAM)
Band 4 (15 MHz) : 13M43G7D (QPSK) / 13M40W7D (16-QAM)
Band 4 (20 MHz) : 17M95G7D (QPSK) / 17M95W7D (16-QAM)

The measurements shown in this report were made in accordance with the procedures specified in §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S.C. 853(a)



Report prepared by
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Test engineer of RF Team



Approved by
: Chang Seok Choi
Manager of RF Team

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FCC CERTIFICATION REPORT			www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1307FR21	July 16, 2013	First Approval Report

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MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name: Kyocera Corporation

Address: 1-34, Sanyo-cho, Daito-Shi, Osaka, 574-8501, JAPAN

FCC ID: V65C6522

Application Type: Certification

FCC Classification: Licensed Portable Transmitter Held to Ear (PCE)

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Band 4 (15 MHz) :	13M43G7D (QPSK) / 13M40W7D (16-QAM)
Band 4 (20 MHz) :	17M95G7D (QPSK) / 17M95W7D (16-QAM)

Date(s) of Tests: June 24, 2013 ~ July 11, 2013

Antenna Specification

Manufacturer: DONGNAM

Antenna type: Built in Antenna

Peak Gain: Band 4: 1.1 dBi
Band 17: -1.8 dBi

2. INTRODUCTION

2.1. EUT DESCRIPTION

The Kyocera Corporation C6522N GSM/WCDMA/LTE Phone with Bluetooth/WLAN consists of LTE 4 and 17.

2.2. MEASURING INSTRUMENT CALIBRATION

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

2.3. TEST FACILITY

The Fully-anechoic and conducted measurement facility used to collect the radiated data are located at the 105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, Korea. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated March 02, 2011 (Registration Number: 90661)

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3. DESCRIPTION OF TESTS

3.1 ERP/EIRP RADIATED POWER AND RADIATED SPURIOUS EMISSIONS

Note: ERP(Effective Radiated Power), EIRP(Effective Isotropic Radiated Power)

Test Procedure

Radiated emission measurements are performed in the Fully-anechoic chamber. The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna in accordance with ANSI/TIA-603-C-2004 Clause 2.2.17. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission. The level and position of the maximized emission is recorded with the spectrum analyzer using a positive peak detector.

A half wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

The power is calculated by the following formula;

$$P_{d(dBm)} = P_{g(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

Where: P_d is the dipole equivalent power and P_g is the generator output power into the substitution antenna.

The maximum EIRP is calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration

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3.2 BLOCK A FREQUENCY RANGE (704 – 710 and 734 – 740 MHz,)

§27.5(c)

698-746 MHz Band. The following frequencies are available for licensing pursuant to this part in the 698–746 MHz band: (1) Three paired channel blocks of 12 MHz each are available for assignment as follows :

Block A : 698 – 704 MHz and 728 – 734 MHz ;

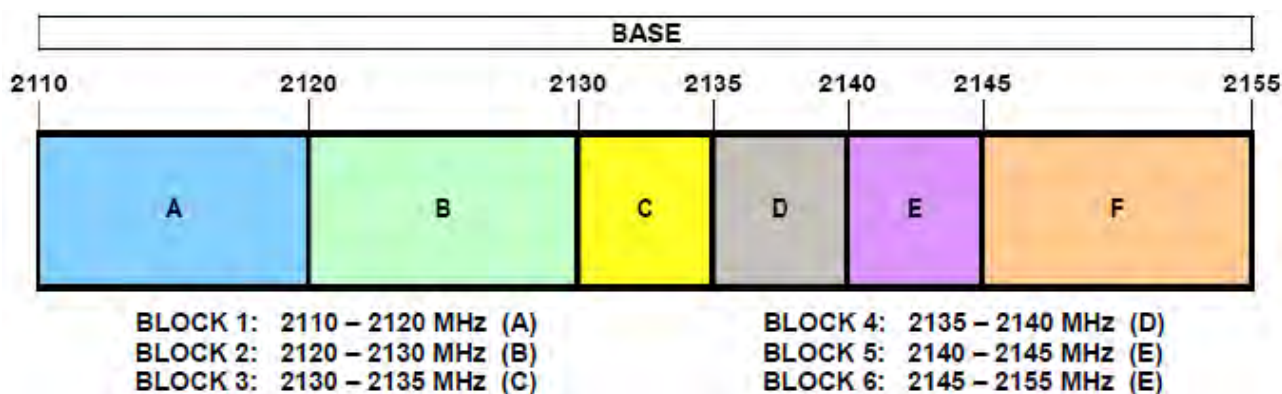
Block B : 704 – 710 MHz and 734 – 740 MHz ; and

Block C : 710 – 716 MHz and 740 – 746 MHz.

The EUT is only being authorized for operation in Blocks B and C.

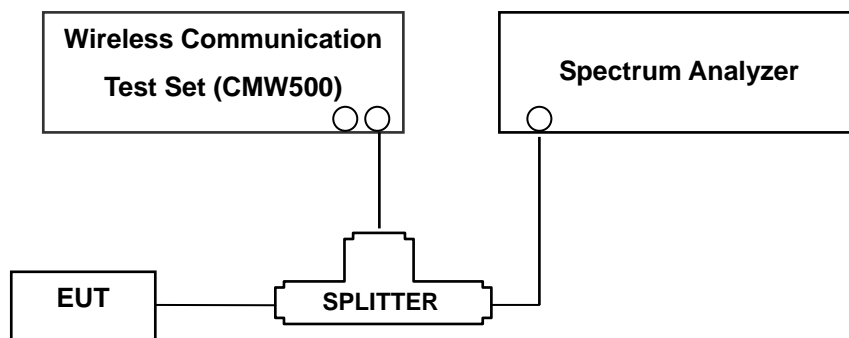
3.3 AWS – BASE FREQUENCY BLOCKS

§27.5(h)



3.2 OCCUPIED BANDWIDTH.

Test set-up



(Configuration of conducted Emission measurement)

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

Test Procedure

The EUT makes a call to the communication simulator. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels(low, middle and high operational range.)

The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

3.5 PEAK-AVERAGE RATIO.

Test Procedure

Peak to Average Power Ratio is tested in accordance with KDB971168 D01 Power Meas License Digital Systems v02r01, June 7, 2013, Section 5.7.

- Section 5.7.1 CCDF Procedure

- a) Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
- b) Set the number of counts to a value that stabilizes the measured CCDF curve;
- c) Set the measurement interval as follows:
 - 1) for continuous transmissions, set to 1 ms,
 - 2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
- d) Record the maximum PAPR level associated with a probability of 0.1%.

- Section 5.7.2 Alternate Procedure

Use one of the procedures presented in 5.1 to measure the total peak power and record as P_{Pk} . Use one of the applicable procedures presented 5.2 to measure the total average power and record as P_{Avg} . Determine the P.A.R. from: $P.A.R_{(dB)} = P_{Pk (dBm)} - P_{Avg (dBm)}$ (P_{Avg} = Average Power + Duty cycle Factor)

5.1.1 Peak power measurements with a spectrum/signal analyzer or EMI receiver

The following procedure can be used to determine the total peak output power.

- a) Set the RBW \geq OBW.
- b) Set VBW $\geq 3 \times$ RBW.
- c) Set span $\geq 2 \times$ RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Ensure that the number of measurement points \geq span/RBW.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the peak amplitude level.

5.2.2 Procedures for use with a spectrum/signal analyzer when EUT cannot be configured to transmit continuously and sweep triggering/signal gating cannot be properly implemented

If the EUT cannot be configured to transmit continuously (burst duty cycle < 98%), then one of the following procedures can be used. The selection of the applicable procedure will depend on the characteristics of the measured burst duty cycle.

Measure the burst duty cycle with a spectrum/signal analyzer or EMC receiver can be used in zero-span mode if the response time and spacing between bins on the sweep are sufficient to permit accurate measurement of the burst on/off time of the transmitted signal.

5.2.2.2 Constant burst duty cycle

If the measured burst duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent), then:

- a) Set span to at least 1.5 times the OBW.
- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
- c) Set VBW $\geq 3 \times$ RBW.
- d) Number of points in sweep $\geq 2 \times$ span / RBW. (This gives bin-to-bin spacing \leq RBW/2, so that narrowband signals are not lost between frequency bins.)
- e) Sweep time = auto.
- f) Detector = RMS (power averaging).
- g) Set sweep trigger to "free run".
- h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
- j) Add $10 \log (1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).

For example, add $10 \log (1/0.25) = 6$ dB if the duty cycle is a constant 25%.

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL.

Test Procedure

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer.

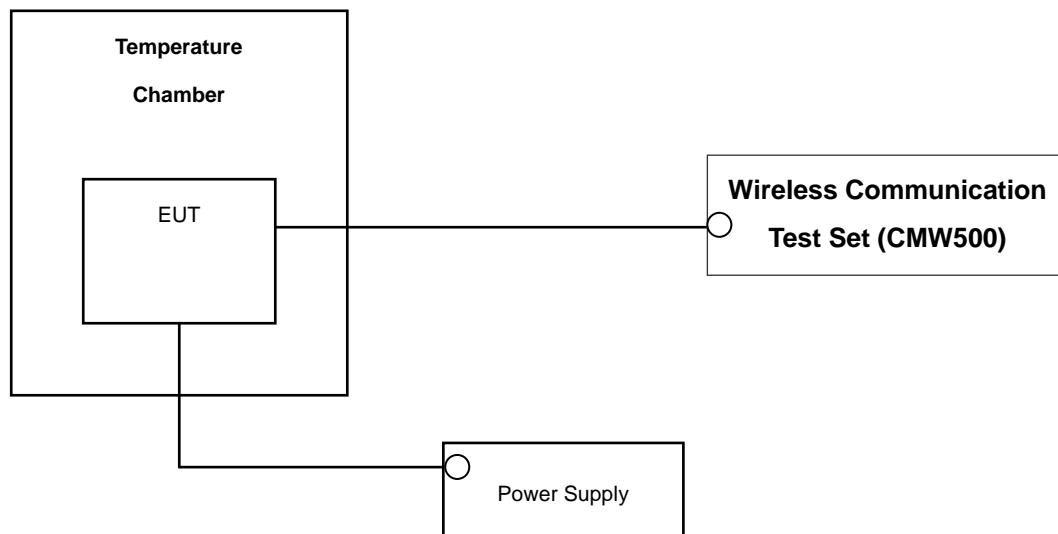
The EUT was setup to maximum output power at its lowest channel. The Resolution BW of the analyzer is set to 1 % of the emission bandwidth to show compliance with the – 13 dBm limit, in the 1 MHz bands immediately outside and adjacent to the edge of the frequency block. The 1 MHz RBW was used to scan from 30 MHz to 26.5 GHz. A display line was placed at – 13 dBm to show compliance. The high, lowest and a middle channel were tested for out of band measurements.

- Band Edge Requirement : In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

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3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

Test Set-up



* Nominal Operating Voltage

Test Procedure

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.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from battery end point to 115 % of the voltage normally 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 emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.000\ 25\ \%$ ($\pm 2.5\ \text{ppm}$) of the center frequency.

Time Period and Procedure:

The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).

1. 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.

2. 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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4. LIST OF TEST EQUIPMENT

Manufacture	Model/ Equipment	Serial Number	Calibration Interval	Calibration Due
Agilent	E9327A/ Power Sensor	MY4442009	Annual	04/16/2014
MITEQ	AMF-6D-001180-35-20P/AMP	1081666	Annual	09/11/2013
Wainwright	WHK1.2/15G-10EF/H.P.F	2	Annual	04/25/2014
Wainwright	WHK3.3/18G-10EF/H.P.F	1	Annual	04/25/2014
Hewlett Packard	11667B / Power Splitter	10126	Annual	11/07/2013
Digital	EP-3010/ Power Supply	3110117	Annual	11/07/2013
Schwarzbeck	UHAP/ Dipole Antenna	557	Biennial	03/05/2015
Schwarzbeck	UHAP/ Dipole Antenna	558	Biennial	05/03/2015
Korea Engineering	KR-1005L / Chamber	KRAB05063-3CH	Annual	11/07/2013
Schwarzbeck	BBHA 9120D/ Horn Antenna	147	Biennial	05/15/2014
Schwarzbeck	BBHA 9120D/ Horn Antenna	937	Biennial	10/17/2013
Agilent	E4440A/Spectrum Analyzer	US45303008	Annual	04/25/2014
WEINSCHL	ATTENUATOR	BR0592	Annual	11/07/2013
REOHDE&SCHWARZ	FSV40/Spectrum Analyzer	1307.9002K40-100931-NK	Annual	06/10/2014
Agilent	8960 (E5515C)/ Base Station	GB44400269	Annual	02/14/2014

5. SUMMARY OF TEST RESULTS

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result
2.1049, 27.53(h)(1)	Occupied Bandwidth	N/A	CONDUCTED	PASS
2.1051, 27.53(h)	Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	$< 43 + 10 \log_{10} (P[\text{Watts}])$ at Band Edge and for all-of-band emissions		PASS
27.50(d)(5)	Peak-Average Ratio	$< 13 \text{ dB}$		PASS
2.1046	Conducted Output Power	N/A		PASS
2.1055, 27.54	Frequency stability / variation of ambient temperature	$< 2.5 \text{ ppm}$		PASS
27.50(c)(10)	Effective Radiated Power (Band 17)	$< 3 \text{ Watts max. ERP}$	RADIATED	PASS
27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	$< 1 \text{ Watts max. EIRP}$		PASS
				PASS
2.1053, 27.53(h), 27.53(g)	Undesirable Out-of-Band Emissions	$< 43 + 10 \log_{10} (P[\text{Watts}])$ for all out-of-band emissions		PASS

6. SAMPLE CALCULATION

A. ERP Sample Calculation

Mode	Ch./ Freq.		Measured Level(dBm)	Substitute LEVEL(dBm)	Ant. Gain (dBd)	C.L	Pol.	ERP	
	channel	Freq.(MHz)						W	dBm
LTE	23755	706.5	-15.12	34.27	-10.11	0.79	H	0.217	23.37

$$\text{ERP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 1) The EUT mounted on a wooden tripod is 0.8 meter above test site ground level.
- 2) During the test , the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of effective radiated power (ERP).

B. Emission Designator

QPSK Modulation

Emission Designator = 8M95G7D

LTE BW = 8.95 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Amplitude/Angle Modulated

16QAM Modulation

Emission Designator = 8M94W7D

LTE BW = 8.94 MHz

D = Amplitude/Angle Modulated

7 = Quantized/Digital Info

W = Combination (Audio/Data)

7. TEST DATA

7.2 PEAK-TO-AVERAGE RATIO

Band	Band Width (MHz)	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Band 4	1.4	1732.5	QPSK	6	0	6.72
			16-QAM	6	0	7.70
	3	1732.5	QPSK	15	0	6.39
			16-QAM	15	0	7.65
	5	1732.5	QPSK	25	0	6.60
			16-QAM	25	0	7.27
	10	1732.5	QPSK	50	0	6.39
			16-QAM	50	0	7.39
	15	1732.5	QPSK	75	0	6.60
			16-QAM	75	0	7.53
	20	1732.5	QPSK	100	0	6.35
			16-QAM	100	0	7.68

- Plots of the EUT's Peak- to- Average Ratio are shown Page 48 ~ 53

7.3 OCCUPIED BANDWIDTH

Band	Band Width (MHz)	Frequency (Mhz)	Modulation	Resource Block Size	Resource Block Offset	Data (RB 1 : KHz / RB 25,50 : MHz)
Band 4	1.4	1732.5	QPSK	6	0	1.085383502
			16-QAM	6	0	1.082489146
	3	1732.5	QPSK	15	0	2.720694645
			16-QAM	15	0	2.720694645
	5	1732.5	QPSK	25	0	4.486251809
			16-QAM	25	0	4.486251809
	10	1732.5	QPSK	50	0	8.943560058
			16-QAM	50	0	8.943560058
	15	1732.5	QPSK	75	0	13.429811867
			16-QAM	75	0	13.400868307
	20	1732.5	QPSK	100	0	17.945007236
			16-QAM	100	0	17.945007236

Band	Band Width (MHz)	Frequency (Mhz)	Modulation	Resource Block Size	Resource Block Offset	Data (RB 1 : KHz / RB 25,50 : MHz)
Band 17	5	710.0	QPSK	25	0	4.486251809
			16-QAM	25	0	4.486251809
	10	710.0	QPSK	50	0	8.965267728
			16-QAM	50	0	8.943560058

- Plots of the EUT's Occupied Bandwidth are shown Page 40 ~ 47

7.4 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (Mhz)	Modulation	Resource Block Size	Resource Block Offset	Frequency of Maximum Harmonic (GHz)	Maximum Data [dBm]
Band 4	1.4	1710.7	QPSK	1	0	19.623270	-25.24
		1732.5		1	0	19.562270	-24.35
		1754.3		1	0	19.591770	-24.21
	3	1711.5		1	0	19.582270	-24.79
		1732.5		1	0	19.596770	-24.73
		1753.5		1	0	19.613270	-25.14
	5	1712.5		1	0	19.566770	-23.89
		1732.5		1	0	19.585770	-24.83
		1752.5		1	0	19.617770	-24.59
	10	1715.0		1	0	19.563770	-25.15
		1732.5		1	0	19.533270	-24.82
		1750.0		1	0	19.580270	-25.25
	15	1717.5		1	0	19.621770	-24.38
		1732.5		1	0	19.576270	-24.53
		1747.5		1	0	19.564770	-25.19
	20	1720.0		1	0	19.616770	-23.99
		1732.5		1	0	19.560270	-24.62
		1745.0		1	0	19.594770	-24.47

Band	Band Width (MHz)	Frequency (Mhz)	Modulation	Resource Block Size	Resource Block Offset	Frequency of Maximum Harmonic (GHz)	Maximum Data [dBm]
Band 17	5	706.5	QPSK	1	0	6.560400	-28.50
		710.0		1	0	6.978370	-27.75
		713.5		1	0	6.829710	-28.04
	10	709.0		1	0	6.961700	-27.56
		710.0		1	0	6.984700	-27.59
		711.0		1	0	6.559060	-27.35

- Plots of the EUT's Conducted Spurious Emissions are shown Page 70 ~ 93

7.4.1 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 54 ~ 69

7.5 EFFECTIVE RADIATED POWER OUTPUT

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	ERP	
								W	dBm
706.5	5 MHz	QPSK	-17.52	32.76	-10.09	0.79	H	0.154	21.88
		16-QAM	-17.24	33.04	-10.09	0.79	H	0.164	22.16
710.0		QPSK	-15.99	33.48	-10.12	0.81	H	0.180	22.55
		16-QAM	-15.96	33.51	-10.12	0.81	H	0.181	22.58
713.5		QPSK	-15.62	34.81	-10.14	0.98	H	0.234	23.69
		16-QAM	-15.26	35.17	-10.14	0.98	H	0.254	24.05

Effective Radiated Power Data (Band 17 – 5 MHz)

Note: Worst case is 1 resource block.

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	ERP	
								W	dBm
709.0	10 MHz	QPSK	-15.12	34.27	-10.11	0.79	H	0.217	23.37
		16-QAM	-15.19	34.20	-10.11	0.79	H	0.214	23.30
710.0		QPSK	-16.54	32.93	-10.12	0.81	H	0.158	22.00
		16-QAM	-16.21	33.26	-10.12	0.81	H	0.171	22.33
711.0		QPSK	-14.73	35.17	-10.13	1.00	H	0.254	24.04
		16-QAM	-14.12	35.78	-10.13	1.00	H	0.292	24.65

Effective Radiated Power Data (Band 17 – 10 MHz)

Note: Worst case is 1 resource block.

NOTES:

Effective Radiated Power Output Measurements by Substitution Method

according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a non-conductive styrofoam resin table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For 1 MHz BW signals, a peak detector is used, with RBW = VBW = 1 MHz. For 10 MHz BW signals, a peak detector is used, with RBW = VBW = 10 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

Also, we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna. The worst case of the EUT is x plane in LTE mode. Also worst case of detecting Antenna is horizontal polarization in LTE mode.

FCC CERTIFICATION REPORT				www.hct.co.kr
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7.6 EQUIVALENT ISOTROPIC RADIATED POWER OUTPUT

Freq (MHz)	Bandwidth (MHz)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	EIRP	
								W	dBm
1710.7	1.4	QPSK	-10.89	20.76	9.54	1.36	V	0.783	28.94
		16-QAM	-10.55	21.10	9.54	1.36	V	0.847	29.28
1732.5		QPSK	-11.11	20.76	9.65	1.34	V	0.807	29.07
		16-QAM	-10.61	21.26	9.65	1.34	V	0.906	29.57
1754.3		QPSK	-11.14	20.81	9.76	1.36	V	0.834	29.21
		16-QAM	-10.66	21.29	9.76	1.36	V	0.931	29.69

Effective Radiated Power Data (Band 4 – 1.4 MHz)

Note: Worst case is 1 resource block.

Freq (MHz)	Bandwidth (MHz)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	EIRP	
								W	dBm
1711.5	3	QPSK	-11.11	20.64	9.55	1.35	V	0.766	28.84
		16-QAM	-10.47	-10.47	9.55	1.35	V	0.887	29.48
1732.5		QPSK	-10.99	20.88	9.65	1.34	H	0.830	29.19
		16-QAM	-10.71	-10.71	9.65	1.34	H	0.885	29.47
1753.5		QPSK	-11.06	20.81	9.75	1.36	V	0.832	29.20
		16-QAM	-10.55	-10.55	9.75	1.36	V	0.935	29.71

Effective Radiated Power Data (Band 4 – 3 MHz)

Note: Worst case is 1 resource block.

Freq (MHz)	Bandwidth (MHz)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	EIRP	
								W	dBm
1712.5	5	QPSK	-11.03	20.82	9.56	1.36	V	0.797	29.02
		16-QAM	-10.93	20.92	9.56	1.36	H	0.816	29.12
1732.5		QPSK	-10.96	20.91	9.65	1.34	V	0.836	29.22
		16-QAM	-10.84	21.03	9.65	1.34	V	0.859	29.34
1752.5		QPSK	-10.89	20.85	9.75	1.40	V	0.832	29.20
		16-QAM	-10.89	20.85	9.75	1.40	V	0.832	29.20

Effective Radiated Power Data (Band 4 – 5 MHz)

Note: Worst case is 1 resource block.

FCC CERTIFICATION REPORT				www.hct.co.kr
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Freq (MHz)	Bandwidth (MHz)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	EIRP	
								W	dBm
1715.0	10	QPSK	-11.63	20.39	9.57	1.32	V	0.731	28.64
		16-QAM	-11.36	20.66	9.57	1.32	H	0.778	28.91
1732.5		QPSK	-11.82	20.05	9.65	1.34	H	0.685	28.36
		16-QAM	-11.45	20.42	9.65	1.34	H	0.746	28.73
1750.0		QPSK	-11.52	20.01	9.74	1.40	V	0.684	28.35
		16-QAM	-11.13	20.40	9.74	1.40	V	0.748	28.74

Effective Radiated Power Data (Band 4 – 10 MHz)

Note: Worst case is 1 resource block.

Freq (MHz)	Bandwidth (MHz)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	EIRP	
								W	dBm
1717.5	15	QPSK	-11.37	20.60	9.58	1.29	H	0.774	28.89
		16-QAM	-10.74	21.23	9.58	1.29	H	0.895	29.52
QPSK		-11.30	20.57	9.65	1.34	V	0.773	28.88	
16-QAM		-10.79	21.08	9.65	1.34	V	0.869	29.39	
QPSK		-11.67	20.04	9.73	1.35	V	0.695	28.42	
16-QAM		-11.05	20.66	9.73	1.35	V	0.802	29.04	

Effective Radiated Power Data (Band 4 – 15 MHz)

Note: Worst case is 1 resource block.

Freq (MHz)	Bandwidth (MHz)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	EIRP	
								W	dBm
1720.0	20	QPSK	-11.12	20.64	9.59	1.33	V	0.776	28.90
		16-QAM	-11.16	20.60	9.59	1.33	H	0.769	28.86
1732.5		QPSK	-11.31	20.56	9.65	1.34	H	0.771	28.87
		16-QAM	-10.89	20.98	9.65	1.34	H	0.849	29.29
1745.0		QPSK	-11.26	20.61	9.72	1.32	H	0.796	29.01
		16-QAM	-10.88	20.99	9.72	1.32	V	0.869	29.39

Effective Radiated Power Data (Band 4 – 20 MHz)

Note: Worst case is 1 resource block.

FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

NOTES:

Effective Radiated Power Output Measurements by Substitution Method

according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a non-conductive styrofoam resin table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For 1 MHz BW signals, a peak detector is used, with RBW = VBW = 1 MHz. For 10 MHz BW signals, a peak detector is used, with RBW = VBW = 10 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

Also, we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

- Worst case

Freq (MHz)	Band width (MHz)	EUT Plane (x, y, z)	Ant Pol (H, V)
1710.7	1.4	y	V
1732.5		y	V
1754.3		y	V
1711.5	3	y	V
1732.5		x	H
1753.5		y	V
1712.5	5	y, x(16QAM)	V, H(16QAM)
1732.5		y	V
1752.5		y	V
1715.0	10	y, x(16QAM)	V, H(16QAM)
1732.5		x	H
1750.0		y	V
1717.5	15	x	H
1732.5		y	V
1747.5		y	V
1720.0	20	y, x(16QAM)	V, H(16QAM)
1732.5		x	H
1745.0		x, y(16QAM)	H, V(16QAM)

7.7 RADIATED SPURIOUS EMISSIONS

7.7.1 RADIATED SPURIOUS EMISSIONS (Band 4)

- OPERATING FREQUENCY : 1732.50 MHz
- MEASURED OUTPUT POWER: 29.69 dBm = 0.931W
- MODULATION SIGNAL: 1.4 MHz 16-QAM
- DISTANCE: 3 meters
- LIMIT: - (43 + 10 log₁₀ (W)) = 42.69 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
19957 (1710.7)	3421.4	-49.79	12.38	-56.29	2.04	V	-45.95	75.64
	5132.1	-47.29	12.86	-46.96	2.71	H	-36.81	66.50
	6842.8	-	-	-	-	-	-	-
20175 (1732.5)	3465.0	-52.54	12.38	-58.75	1.97	H	-48.34	78.03
	5197.5	-48.50	12.97	-48.28	2.70	H	-38.01	67.70
	6930.0	-	-	-	-	-	-	-
20393 (1754.3)	3508.6	-49.98	12.32	-55.68	2.11	H	-45.47	75.16
	5262.9	-49.01	13.15	-49.21	2.79	H	-38.85	68.54
	7017.2	-	-	-	-	-	-	-

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:
 2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5th Harmonic for all channel.
 3. we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. Worst case is 1 resource block.

■ OPERATING FREQUENCY : 1732.50 MHz
 ■ MEASURED OUTPUT POWER: 29.71 dBm = 0.935W
 ■ MODULATION SIGNAL: 3 MHz 16-QAM
 ■ DISTANCE: 3 meters
 ■ LIMIT: - (43 + 10 log₁₀ (W)) = 42.71 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
19965 (1711.5)	3423.0	-50.02	12.38	-56.52	2.04	V	-46.18	75.89
	5134.5	-49.74	12.86	-49.41	2.71	H	-39.26	68.97
	6846.0	-	-	-	-	-	-	-
20175 (1732.5)	3465.0	-51.44	12.38	-57.65	1.97	H	-47.24	76.95
	5197.5	-47.83	12.97	-47.61	2.70	H	-37.34	67.05
	6930.0	-	-	-	-	-	-	-
20385 (1753.5)	3507.0	-50.83	12.32	-56.53	2.11	H	-46.32	76.03
	5260.5	-51.39	13.11	-51.82	2.80	H	-41.51	71.22
	7014.0	-	-	-	-	-	-	-

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:
 2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5th Harmonic for all channel.
 3. we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. Worst case is 1 resource block.

- OPERATING FREQUENCY : 1732.50 MHz
- MEASURED OUTPUT POWER: 29.34 dBm = 0.859W
- MODULATION SIGNAL: 5 MHz 16-QAM
- DISTANCE: 3 meters
- LIMIT: - (43 + 10 log₁₀ (W)) = 42.34 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
19975 (1712.5)	3425.0	-48.61	12.38	-55.11	2.04	V	-44.77	74.11
	5137.5	-50.48	12.86	-50.15	2.71	H	-40.00	69.34
	6850.0	-	-	-	-	-	-	-
20175 (1732.5)	3465.0	-53.31	12.38	-59.52	1.97	H	-49.11	78.45
	5197.5	-48.65	12.97	-48.43	2.70	H	-38.16	67.50
	6930.0	-	-	-	-	-	-	-
20375 (1752.5)	3505.0	-53.56	12.32	-59.26	2.11	H	-49.05	78.39
	5257.5	-50.99	13.11	-51.37	2.80	H	-41.06	70.40
	7010.0	-	-	-	-	-	-	-

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:
 2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5th Harmonic for all channel.
 3. we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. Worst case is 1 resource block.

■ OPERATING FREQUENCY : 1732.50 MHz
 ■ MEASURED OUTPUT POWER: 28.91 dBm = 0.778W
 ■ MODULATION SIGNAL: 10 MHz 16-QAM
 ■ DISTANCE: 3 meters
 ■ LIMIT: - (43 + 10 log₁₀ (W)) = 41.91 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
20000 (1715.0)	3430.0	-54.10	12.38	-60.60	2.04	H	-50.26	79.17
	5145.0	-46.38	12.87	-45.94	2.71	H	-35.78	64.69
	6860.0	-	-	-	-	-	-	-
20175 (1732.5)	3465.0	-54.26	12.38	-60.47	1.97	H	-50.06	78.97
	5197.5	-46.39	12.97	-46.17	2.70	H	-35.90	64.81
	6930.0	-	-	-	-	-	-	-
20350 (1750.0)	3500.0	-56.42	12.32	-62.17	2.11	H	-51.96	80.87
	5250.0	-45.95	13.08	-46.28	2.82	H	-36.02	64.93
	7000.0	-	-	-	-	-	-	-

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:
 2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5th Harmonic for all channel.
 3. we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. Worst case is 1 resource block.

- ☐ OPERATING FREQUENCY : 1732.50 MHz
☐ MEASURED OUTPUT POWER: 29.52 dBm = 0.895W
☐ MODULATION SIGNAL: 15 MHz 16-QAM
☐ DISTANCE: 3 meters
☐ LIMIT: - (43 + 10 log₁₀ (W)) = 42.52 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
20025 (1717.5)	3435.0	-48.66	12.39	-55.17	2.04	H	-44.82	74.34
	5152.5	-48.56	12.89	-48.16	2.69	V	-37.96	67.48
	6870.0	-	-	-	-	-	-	-
20175 (1732.5)	3465.0	-54.42	12.38	-60.63	1.97	H	-50.22	79.74
	5197.5	-48.88	12.97	-48.66	2.70	V	-38.39	67.91
	6930.0	-	-	-	-	-	-	-
20325 (1747.5)	3495.0	-48.79	12.33	-54.52	2.04	H	-44.23	73.75
	5242.5	-49.78	13.08	-49.91	2.80	H	-39.63	69.15
	6990.0	-	-	-	-	-	-	-

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:
 2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5th Harmonic for all channel.
 3. we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. Worst case is 1 resource block.

■ OPERATING FREQUENCY : 1732.50 MHz
 ■ MEASURED OUTPUT POWER: 29.39 dBm = 0.869 W
 ■ MODULATION SIGNAL: 20 MHz 16-QAM
 ■ DISTANCE: 3 meters
 ■ LIMIT: - (43 + 10 log₁₀ (W)) = 42.39 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
20050 (1720.0)	3440.0	-50.27	12.39	-56.80	2.04	V	-46.45	75.84
	5160.0	-50.69	12.89	-50.39	2.69	H	-40.19	69.58
	6880.0	-	-	-	-	-	-	-
20175 (1732.5)	3465.0	-51.80	12.38	-58.01	1.97	H	-47.60	76.99
	5197.5	-47.73	12.97	-47.51	2.70	H	-37.24	66.63
	6930.0	-	-	-	-	-	-	-
20300 (1745.0)	3490.0	-51.38	12.33	-57.11	2.04	H	-46.82	76.21
	5235.0	-49.84	12.06	-48.94	2.79	H	-39.67	69.06
	6980.0	-	-	-	-	-	-	-

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:
 2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5th Harmonic for all channel.
 3. we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. Worst case is 1 resource block.

7.7.2 RADIATED SPURIOUS EMISSIONS (Band 17)

- ☐ OPERATING FREQUENCY : 706.50 MHz
☐ MEASURED OUTPUT POWER: 24.05 dBm = 0.254W
☐ MODULATION SIGNAL: 5 MHz 16-QAM
☐ DISTANCE: 3 meters
☐ LIMIT: - (43 + 10 log₁₀ (W)) = 37.05 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBd)	Substitute Level (dBm)	C.L	Pol	ERP (dBm)	dBc
23755 (706.50)	1413.00	-55.39	5.25	-59.38	1.08	V	-55.21	79.26
	2119.50	-	-	-	-	-	-	-
	2826.00	-	-	-	-	-	-	-
23790 (710.00)	1420.00	-56.26	5.25	-61.51	0.50	V	-56.76	80.81
	2130.00	-	-	-	-	-	-	-
	2840.00	-	-	-	-	-	-	-
23825 (713.50)	1427.00	-56.11	5.33	-60.83	1.09	V	-56.59	80.64
	2140.50	-	-	-	-	-	-	-
	2854.00	-	-	-	-	-	-	-

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:
 2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5th Harmonic for all channel.
 3. we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. Worst case is 1 resource block.

- OPERATING FREQUENCY : 710.00 MHz
- MEASURED OUTPUT POWER: 24.65 dBm = 0.292W
- MODULATION SIGNAL: 10 MHz 16-QAM
- DISTANCE: 3 meters
- LIMIT: - (43 + 10 log₁₀ (W)) = 37.65 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBd)	Substitute Level (dBm)	C.L	Pol	ERP (dBm)	dBc
23780 (709.00)	1418.00	-56.18	5.25	-60.17	1.08	V	-56.00	80.65
	2127.00	-	-	-	-	-	-	-
	2836.00	-	-	-	-	-	-	-
23790 (710.00)	1420.00	-55.81	5.25	-61.06	0.50	H	-56.31	80.96
	2130.00	-	-	-	-	-	-	-
	2840.00	-	-	-	-	-	-	-
23800 (711.00)	1422.00	-56.24	5.33	-60.96	1.09	V	-56.72	81.37
	2133.00	-	-	-	-	-	-	-
	2844.00	-	-	-	-	-	-	-

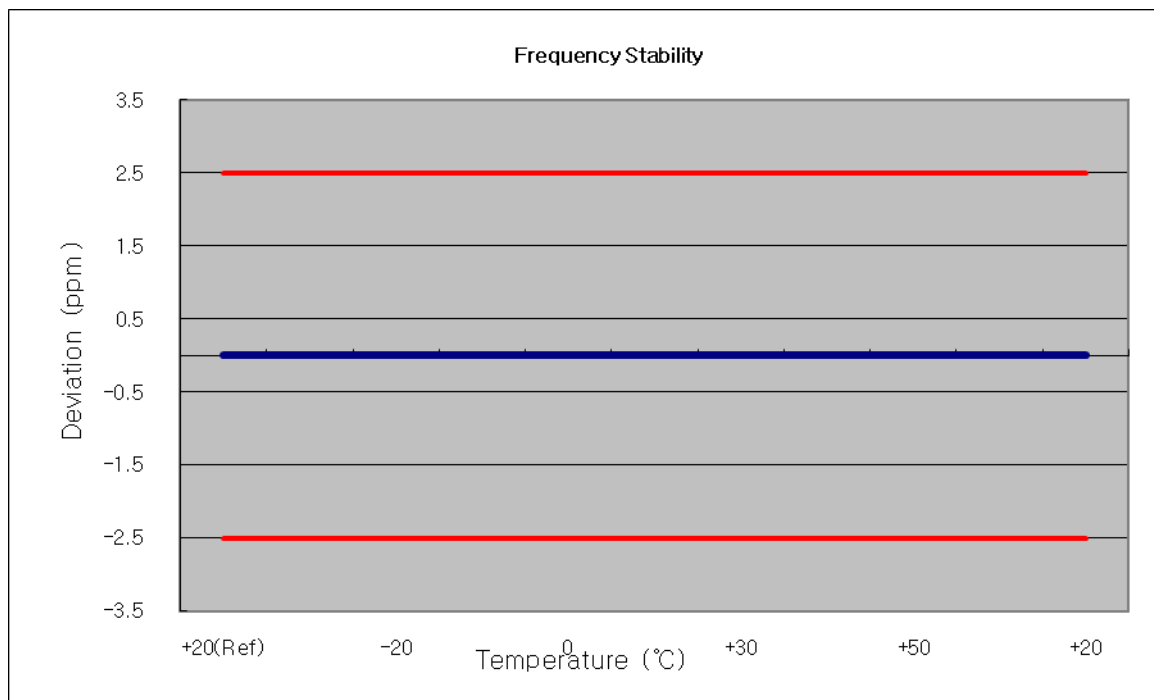
- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:
 2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5th Harmonic for all channel.
 3. we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. Worst case is 1 resource block.

7.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

7.8.1 FREQUENCY STABILITY (LTE Band 4)

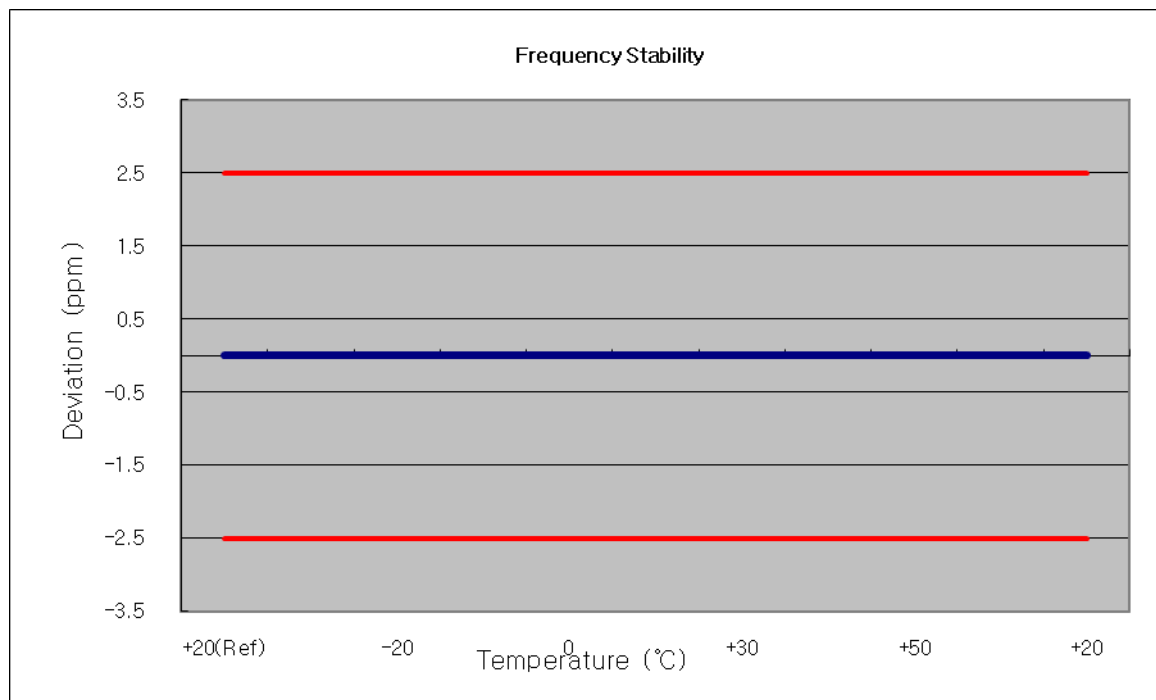
- OPERATING FREQUENCY: 1732,500,000 Hz
- CHANNEL: 20175 (1.4 MHz)
- REFERENCE VOLTAGE: 3.8 VDC
- DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.800	+20(Ref)	1732 499 992	0	0.000 000	0.000
100%		-30	1732 500 003	10.40	0.000 001	0.006
100%		-20	1732 499 998	5.30	0.000 000	0.003
100%		-10	1732 499 996	3.90	0.000 000	0.002
100%		0	1732 499 999	7.20	0.000 000	0.004
100%		+10	1732 500 001	8.80	0.000 001	0.005
100%		+30	1732 499 990	-2.20	0.000 000	-0.001
100%		+40	1732 499 994	2.10	0.000 000	0.001
100%		+50	1732 500 002	10.10	0.000 001	0.006
115%	4.370	+20	1732 500 002	10.20	0.000 001	0.006
85%	3.500	+20	1732 499 998	5.70	0.000 000	0.003



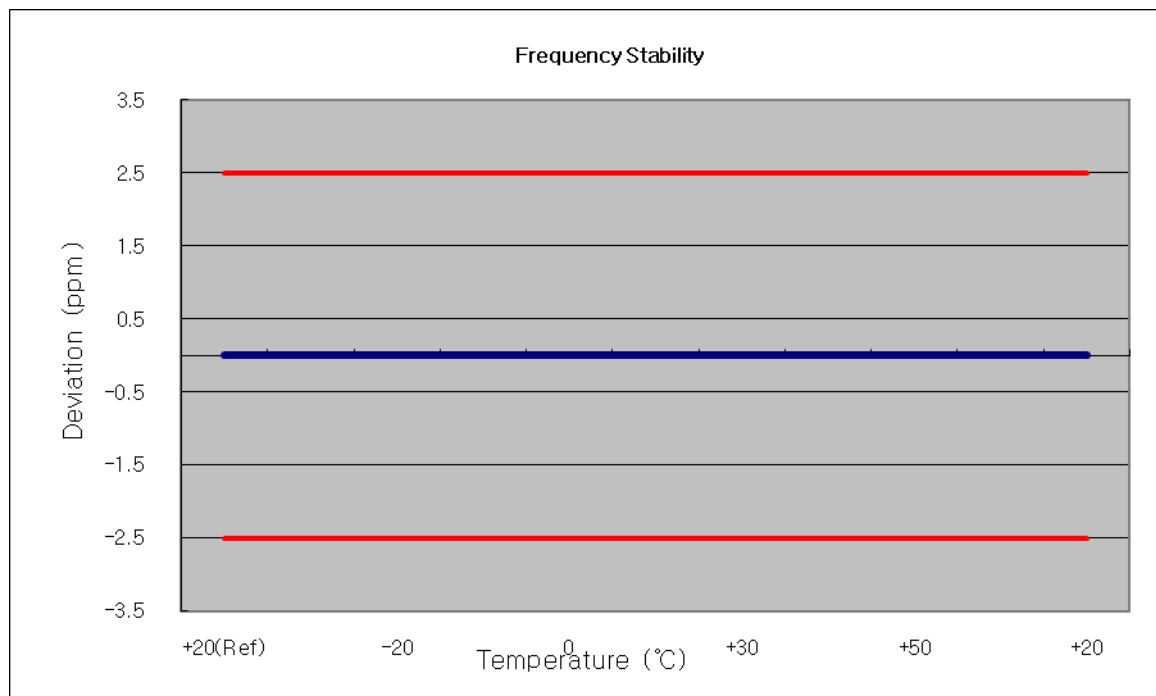
- ☐ OPERATING FREQUENCY: 1732,500,000 Hz
☐ CHANNEL: 20175 (3 MHz)
☐ REFERENCE VOLTAGE: 3.8 VDC
☐ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.800	+20(Ref)	1732 500 001	0	0.000 000	0.000
100%		-30	1732 500 006	5.10	0.000 000	0.003
100%		-20	1732 500 000	-1.40	0.000 000	-0.001
100%		-10	1732 500 008	7.20	0.000 000	0.004
100%		0	1732 500 012	10.80	0.000 001	0.006
100%		+10	1732 500 011	9.70	0.000 001	0.006
100%		+30	1732 499 998	-3.10	0.000 000	-0.002
100%		+40	1732 500 005	4.20	0.000 000	0.002
100%		+50	1732 499 997	-4.00	0.000 000	-0.002
115%	4.370	+20	1732 500 004	2.90	0.000 000	0.002
85%	3.500	+20	1732 500 008	6.70	0.000 000	0.004



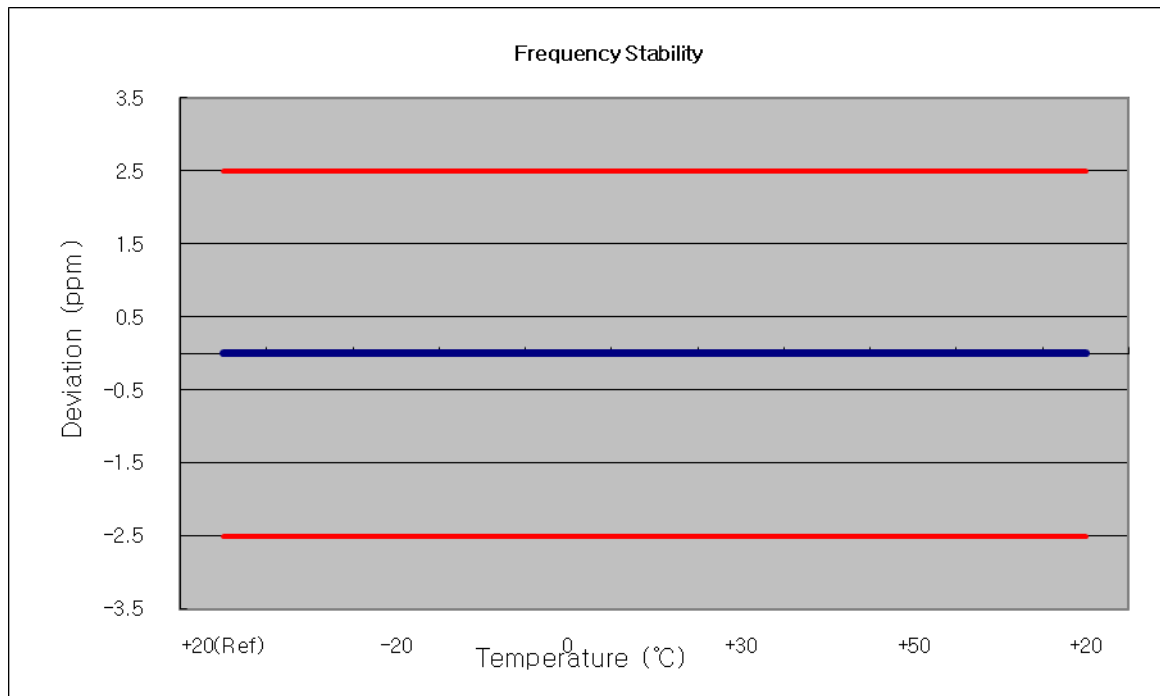
- OPERATING FREQUENCY: 1732,500,000 Hz
- CHANNEL: 20175 (5 MHz)
- REFERENCE VOLTAGE: 3.8 VDC
- DEVIATION LIM IT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.800	+20(Ref)	1732 499 998	0	0.000 000	0.000
100%		-30	1732 500 003	5.70	0.000 000	0.003
100%		-20	1732 500 001	3.60	0.000 000	0.002
100%		-10	1732 499 999	1.30	0.000 000	0.001
100%		0	1732 500 001	3.10	0.000 000	0.002
100%		+10	1732 500 000	2.30	0.000 000	0.001
100%		+30	1732 499 999	1.90	0.000 000	0.001
100%		+40	1732 500 003	5.10	0.000 000	0.003
100%		+50	1732 499 997	-1.00	0.000 000	-0.001
115%	4.370	+20	1732 500 004	6.50	0.000 000	0.004
85%	3.500	+20	1732 499 999	1.60	0.000 000	0.001



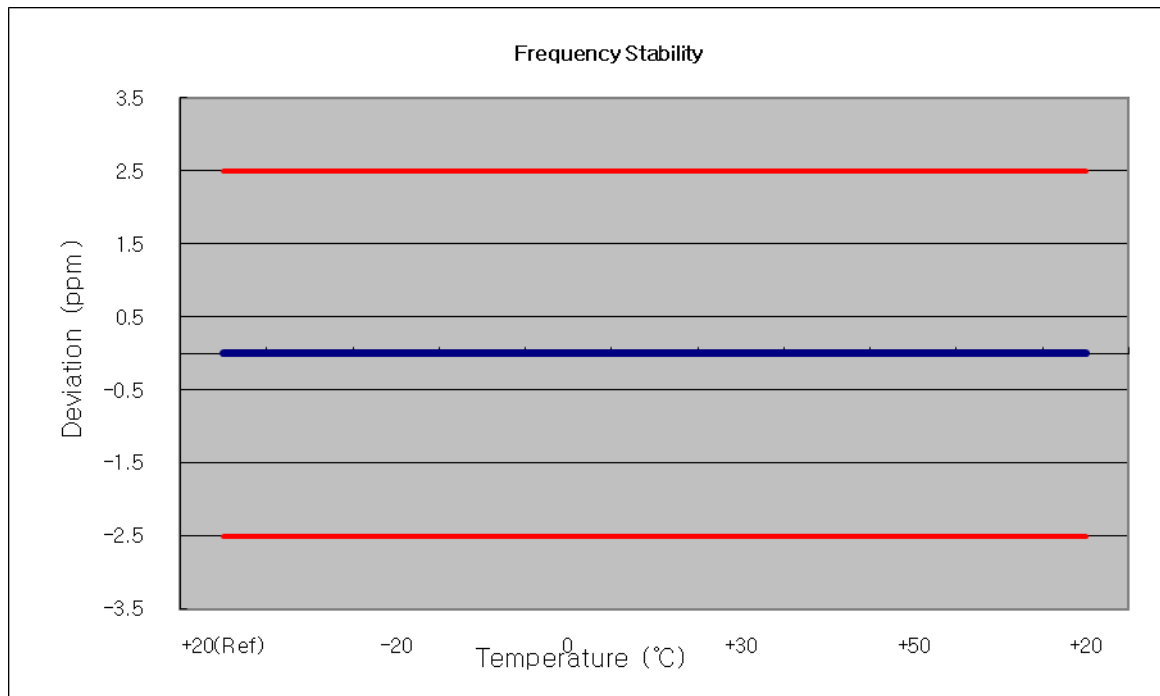
- OPERATING FREQUENCY: 1732,500,000 Hz
- CHANNEL: 20175 (10 MHz)
- REFERENCE VOLTAGE: 3.8 VDC
- DEVIATION LIM IT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.800	+20(Ref)	1732 499 989	0	0.000 000	0.000
100%		-30	1732 499 981	-8.60	0.000 000	-0.005
100%		-20	1732 499 987	-1.70	0.000 000	-0.001
100%		-10	1732 499 990	1.10	0.000 000	0.001
100%		0	1732 499 986	-3.00	0.000 000	-0.002
100%		+10	1732 499 991	2.10	0.000 000	0.001
100%		+30	1732 499 991	1.90	0.000 000	0.001
100%		+40	1732 499 998	8.60	0.000 000	0.005
100%		+50	1732 499 994	5.00	0.000 000	0.003
115%	4.370	+20	1732 499 991	2.00	0.000 000	0.001
85%	3.500	+20	1732 499 990	1.20	0.000 000	0.001



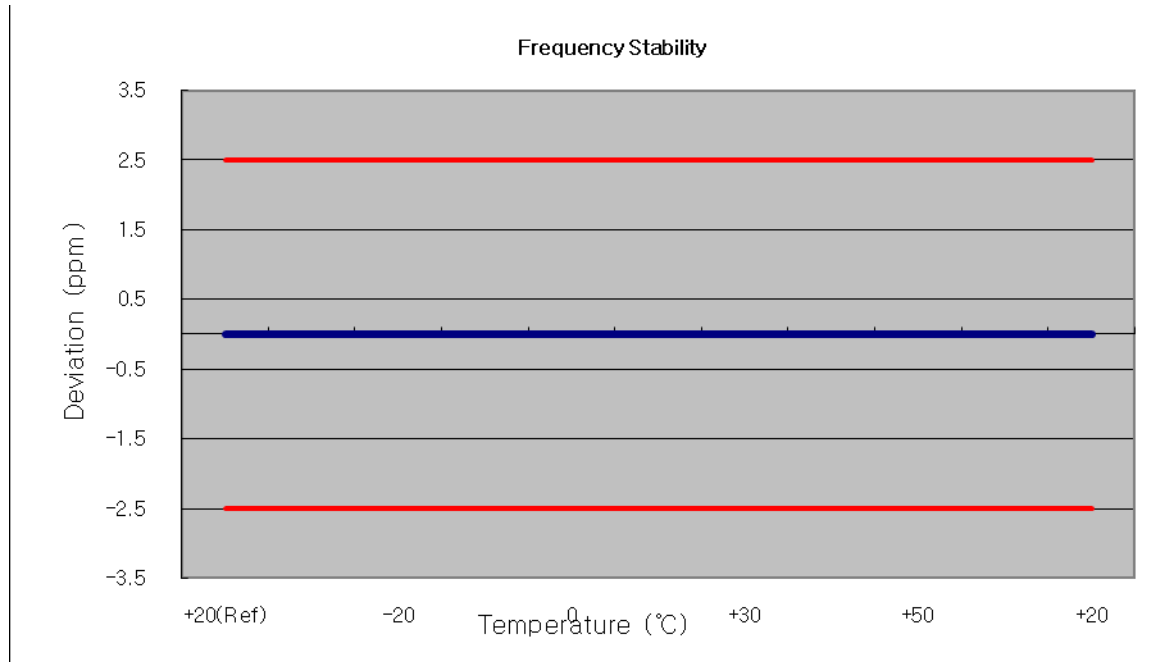
- OPERATING FREQUENCY: 1732,500,000 Hz
- CHANNEL: 20175 (15 MHz)
- REFERENCE VOLTAGE: 3.8 VDC
- DEVIATION LIM IT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.800	+20(Ref)	1732 500 004	0	0.000 000	0.000
100%		-30	1732 500 000	-4.30	0.000 000	-0.002
100%		-20	1732 500 002	-2.00	0.000 000	-0.001
100%		-10	1732 500 009	5.20	0.000 000	0.003
100%		0	1732 500 010	5.70	0.000 000	0.003
100%		+10	1732 500 002	-2.30	0.000 000	-0.001
100%		+30	1732 500 007	2.60	0.000 000	0.002
100%		+40	1732 500 009	4.60	0.000 000	0.003
100%		+50	1732 500 008	3.60	0.000 000	0.002
115%	4.370	+20	1732 500 002	-2.40	0.000 000	-0.001
85%	3.500	+20	1732 500 010	5.50	0.000 000	0.003



- ☐ OPERATING FREQUENCY: 1732,500,000 Hz
☐ CHANNEL: 20175 (20 MHz)
☐ REFERENCE VOLTAGE: 3.8 VDC
☐ DEVIATION LIM IT: ± 0.000 25 % or 2.5 ppm

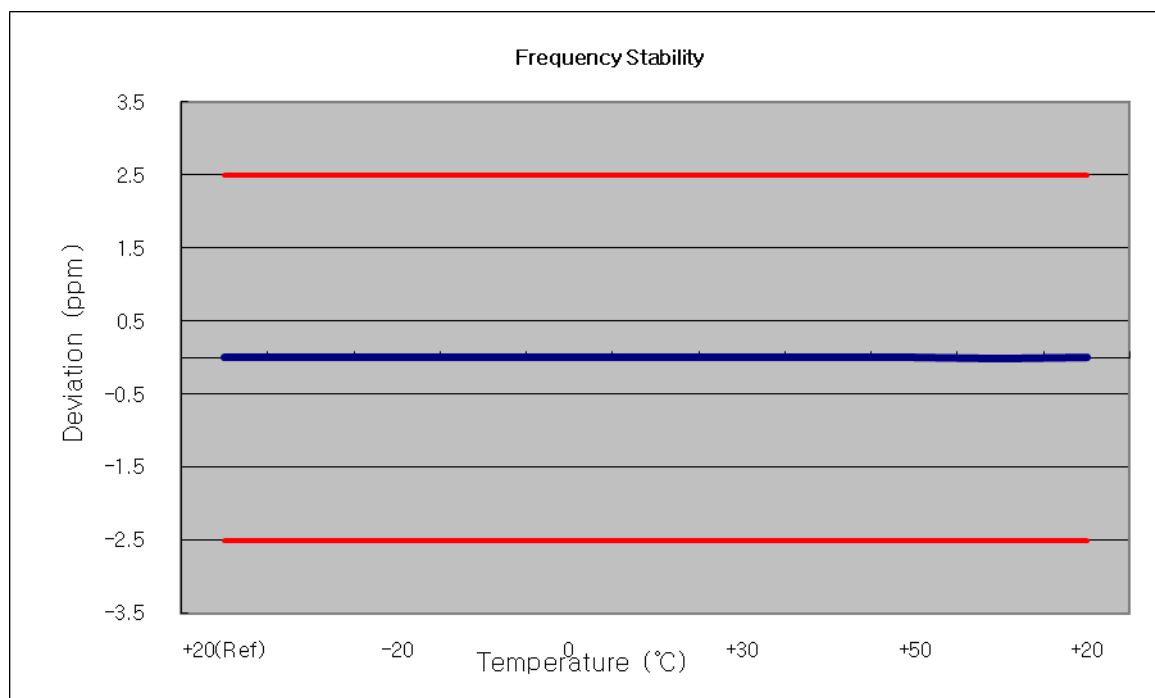
Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.800	+20(Ref)	1732 500 001	0	0.000 000	0.000
100%		-30	1732 499 997	-4.40	0.000 000	-0.003
100%		-20	1732 500 002	0.30	0.000 000	0.000
100%		-10	1732 500 003	1.60	0.000 000	0.001
100%		0	1732 500 004	2.60	0.000 000	0.002
100%		+10	1732 500 005	3.40	0.000 000	0.002
100%		+30	1732 499 993	-8.60	0.000 000	-0.005
100%		+40	1732 499 998	-3.20	0.000 000	-0.002
100%		+50	1732 500 002	0.50	0.000 000	0.000
115%	4.370	+20	1732 500 002	0.60	0.000 000	0.000
85%	3.500	+20	1732 500 006	4.80	0.000 000	0.003



7.8.2 FREQUENCY STABILITY (LTE Band 17)

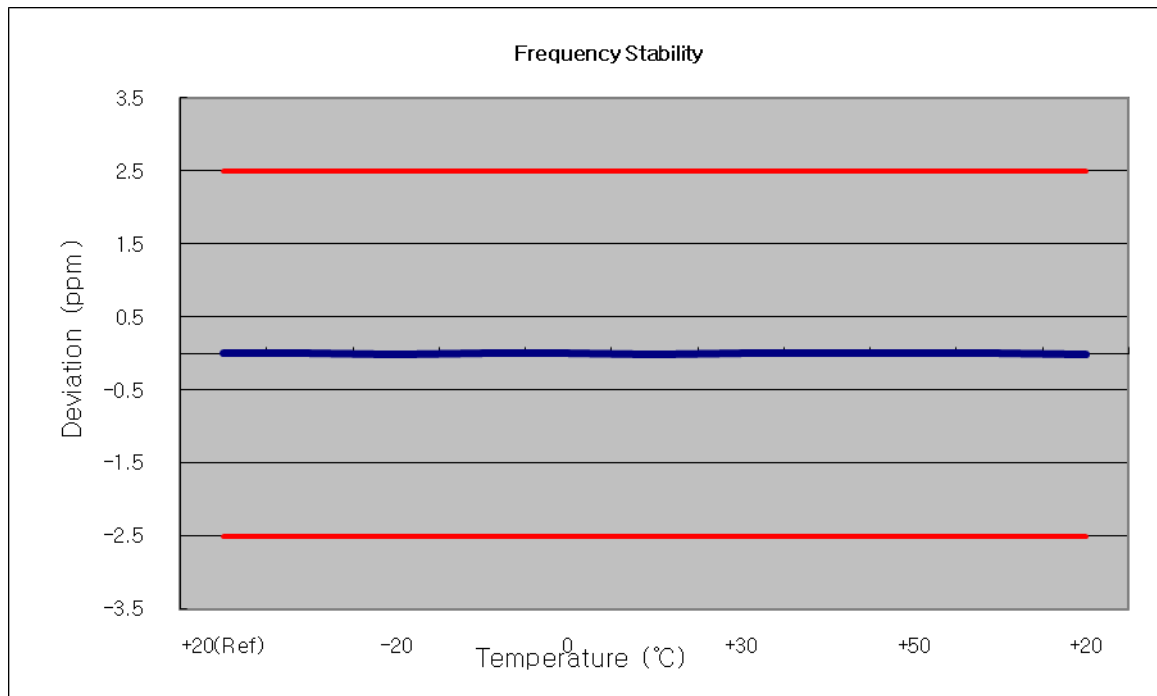
- ☒ OPERATING FREQUENCY: 710,000,000 Hz
☒ CHANNEL: 23790 (5 MHz)
☒ REFERENCE VOLTAGE: 3.8 VDC
☒ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.800	+20(Ref)	710 000 001	0	0.000 000	0.000
100%		-30	710 000 002	0.90	0.000 000	0.001
100%		-20	709 999 999	-1.90	0.000 000	-0.003
100%		-10	710 000 001	0.40	0.000 000	0.001
100%		0	710 000 002	1.40	0.000 000	0.002
100%		+10	709 999 998	-2.50	0.000 000	-0.004
100%		+30	710 000 002	0.90	0.000 000	0.001
100%		+40	710 000 000	-0.40	0.000 000	-0.001
100%		+50	710 000 002	1.50	0.000 000	0.002
115%	4.370	+20	709 999 995	-5.80	-0.000 001	-0.008
85%	3.500	+20	710 000 000	-0.70	0.000 000	-0.001



- OPERATING FREQUENCY: 710,000,000 Hz
- CHANNEL: 23790 (10 MHz)
- REFERENCE VOLTAGE: 3.8 VDC
- DEVIATION LIM IT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.800	+20(Ref)	710 000 003	0	0.000 000	0.000
100%		-30	710 000 000	-2.20	0.000 000	-0.003
100%		-20	709 999 998	-4.50	-0.000 001	-0.006
100%		-10	710 000 007	4.80	0.000 001	0.007
100%		0	710 000 003	0.20	0.000 000	0.000
100%		+10	709 999 998	-4.10	-0.000 001	-0.006
100%		+30	709 999 999	-3.10	0.000 000	-0.004
100%		+40	710 000 000	-2.50	0.000 000	-0.004
100%		+50	710 000 003	0.80	0.000 000	0.001
115%	4.370	+20	710 000 003	0.40	0.000 000	0.001
85%	3.500	+20	709 999 998	-4.80	-0.000 001	-0.007



8. TEST PLOTS

FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Band 4: Occupied Bandwidth Plot (1.4MHz QPSK - RB Size 6)



Date: 11.JUL.2013 02:37:47

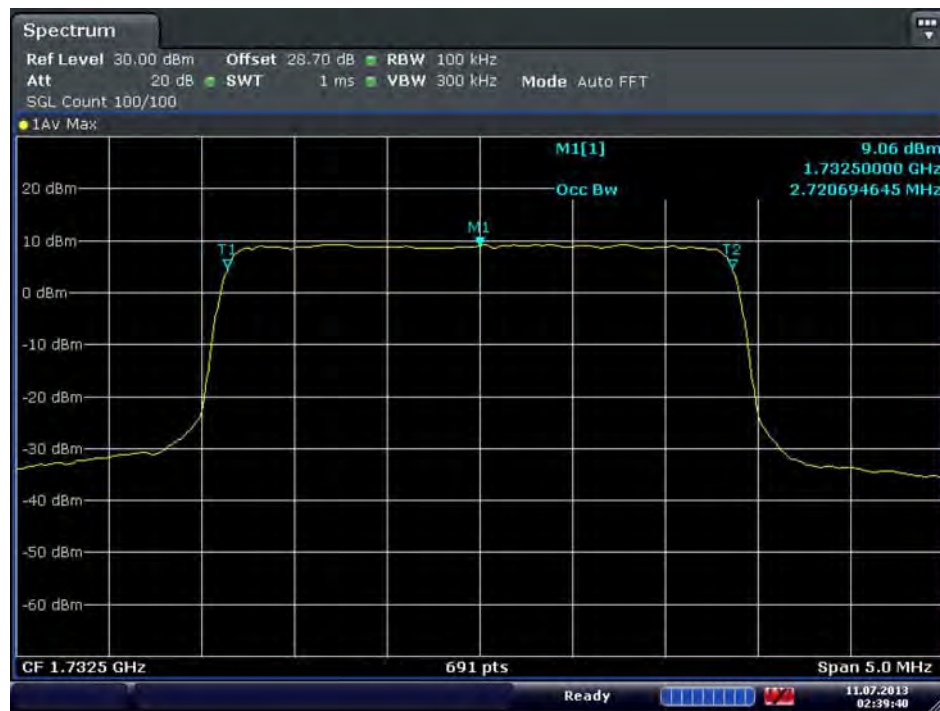
Band 4: Occupied Bandwidth Plot (1.4MHz 16-QAM - RB Size 6)



Date: 11.JUL.2013 07:11:01

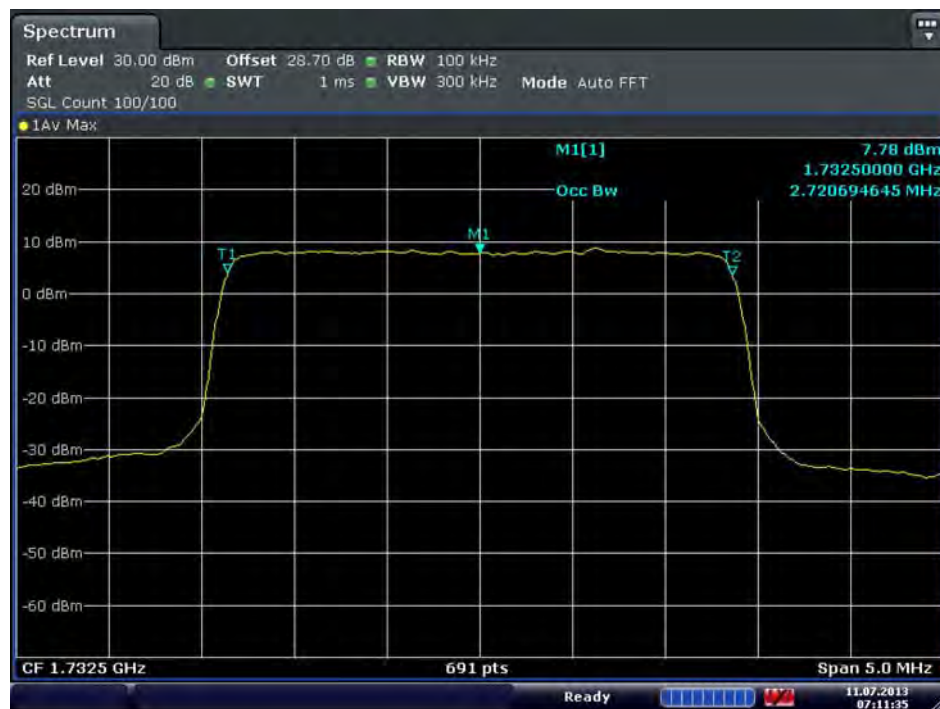
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Band 4: Occupied Bandwidth Plot (3MHz QPSK - RB Size 15)



Date: 11.JUL.2013 02:39:40

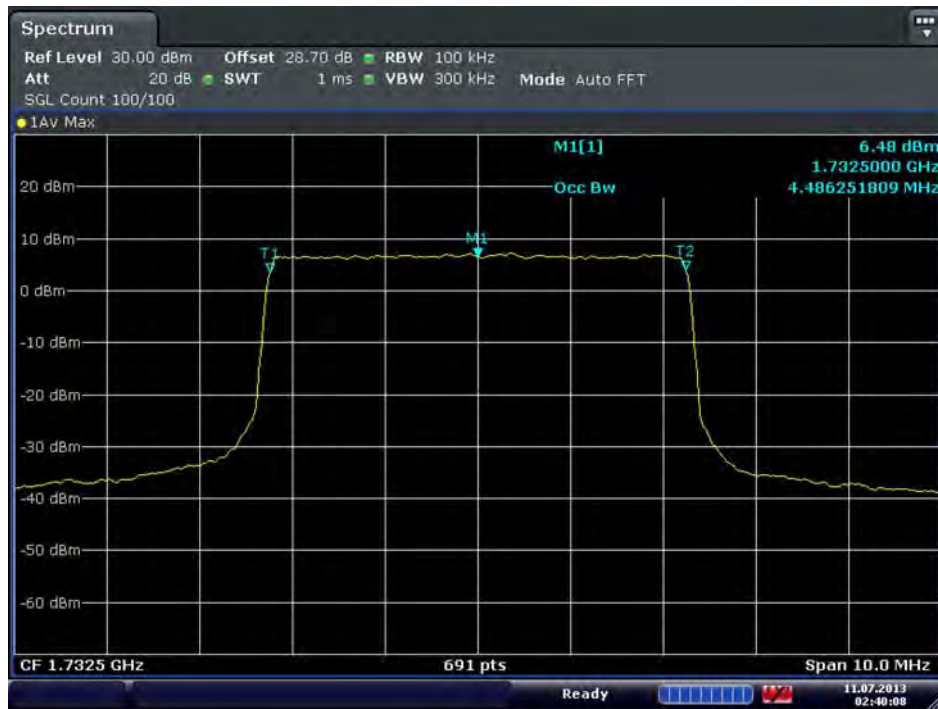
Band 4: Occupied Bandwidth Plot (3MHz 16-QAM - RB Size 15)



Date: 11.JUL.2013 07:11:35

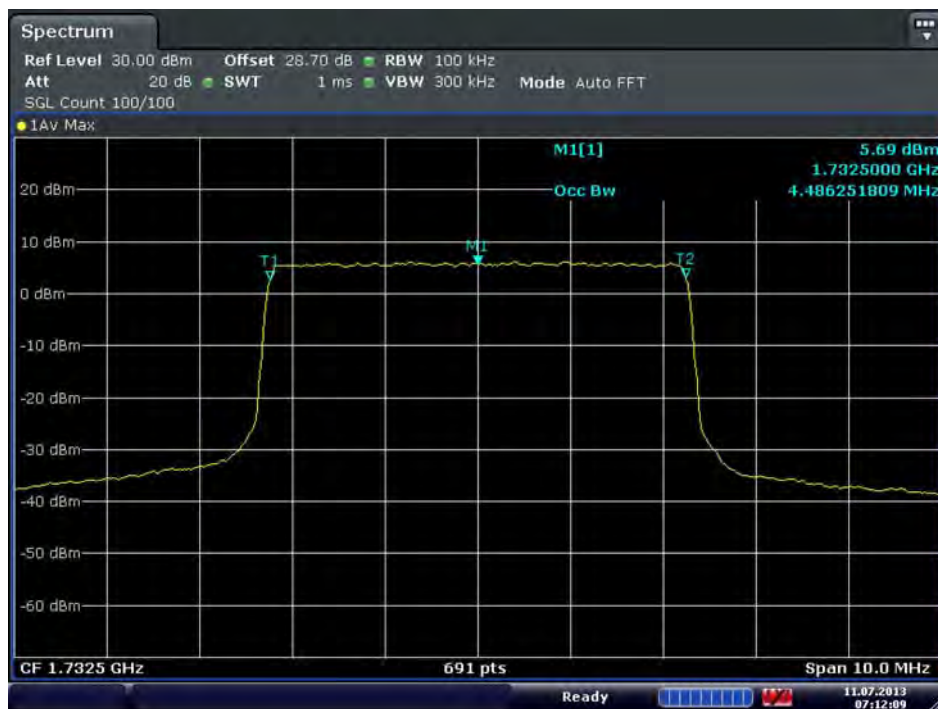
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Band 4: Occupied Bandwidth Plot (5MHz QPSK - RB Size 25)



Date: 11.JUL.2013 02:40:08

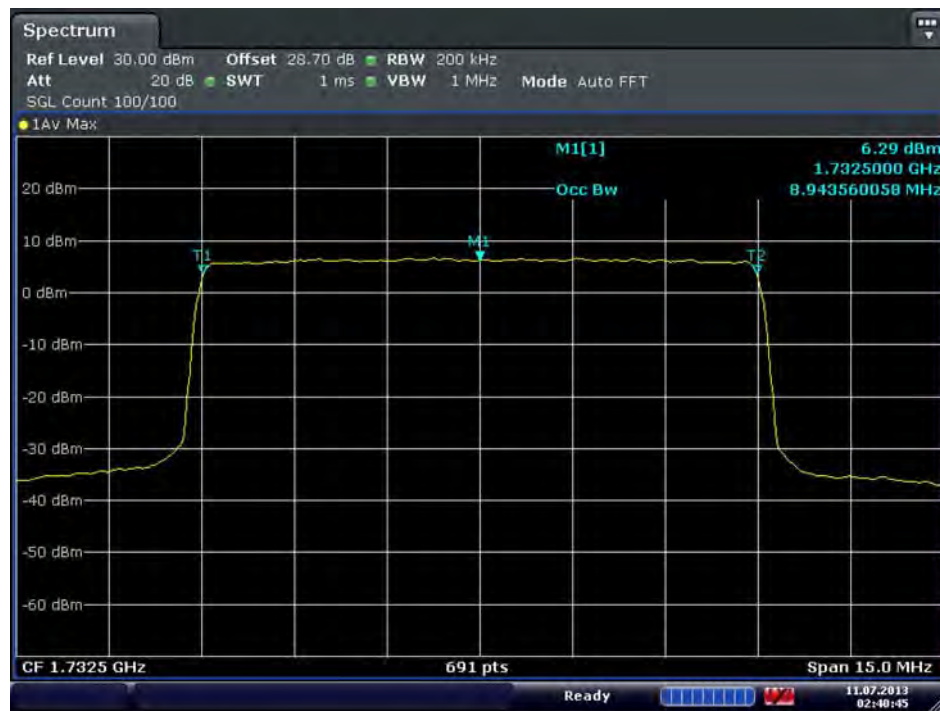
Band 4: Occupied Bandwidth Plot (5MHz 16-QAM - RB Size 25)



Date: 11.JUL.2013 07:12:09

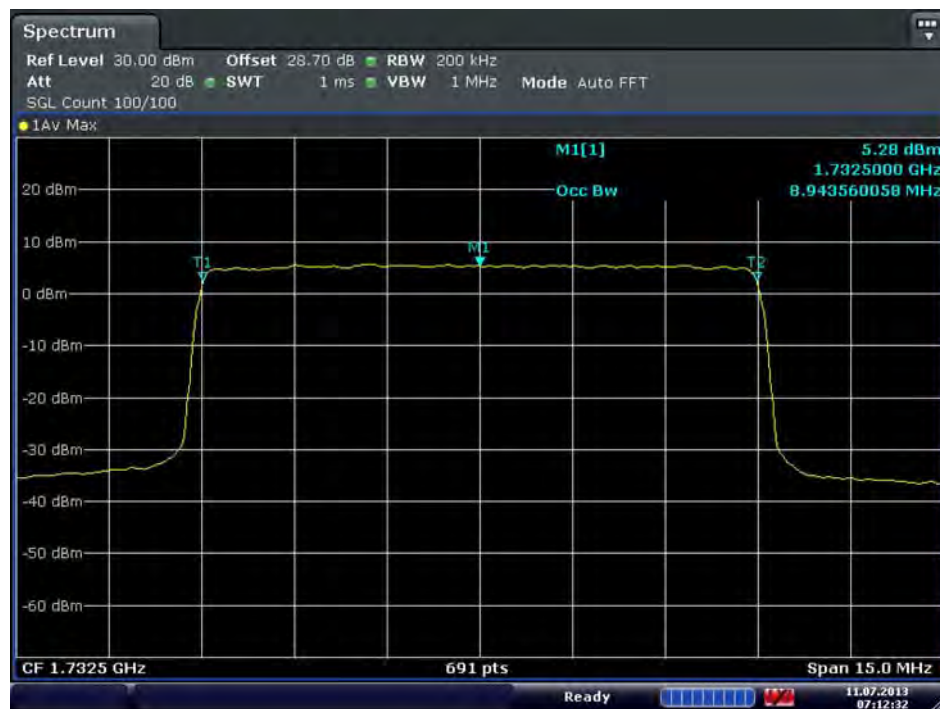
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Band 4: Occupied Bandwidth Plot (10MHz QPSK - RB Size 50)



Date: 11.JUL.2013 02:40:45

Band 4: Occupied Bandwidth Plot (10MHz 16-QAM - RB Size 50)



Date: 11.JUL.2013 07:12:32

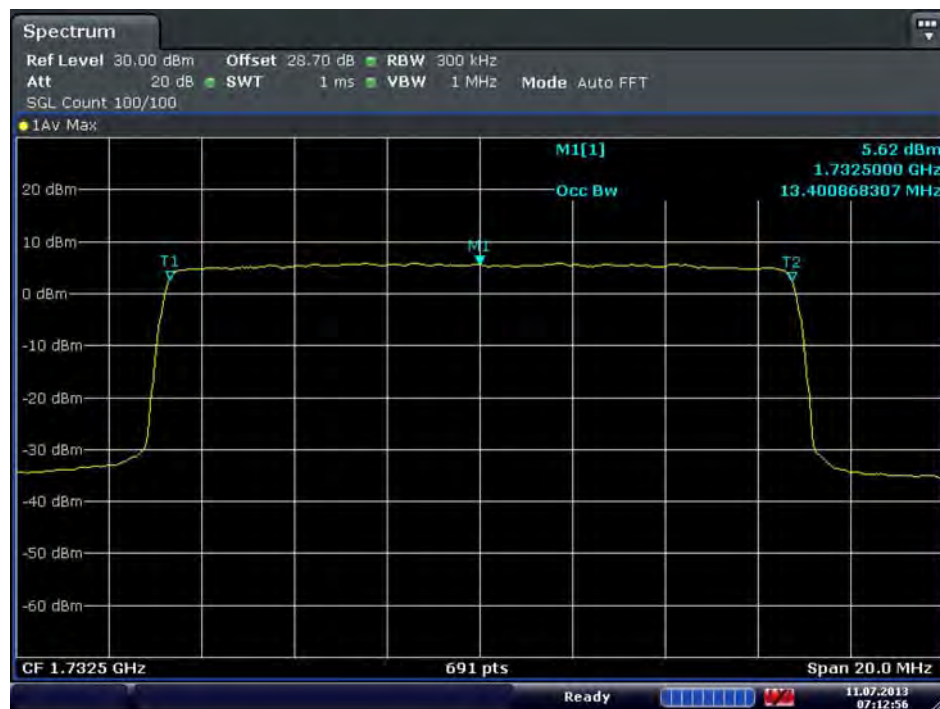
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Band 4: Occupied Bandwidth Plot (15MHz QPSK - RB Size 75)



Date: 11.JUL.2013 02:42:35

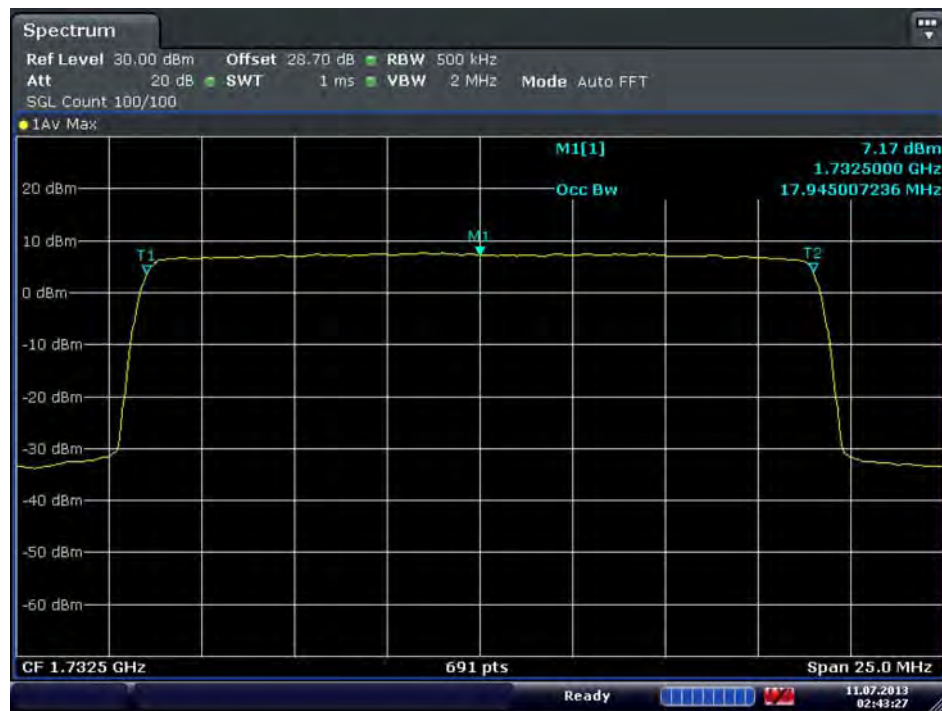
Band 4: Occupied Bandwidth Plot (15MHz 16-QAM - RB Size 75)



Date: 11.JUL.2013 07:12:56

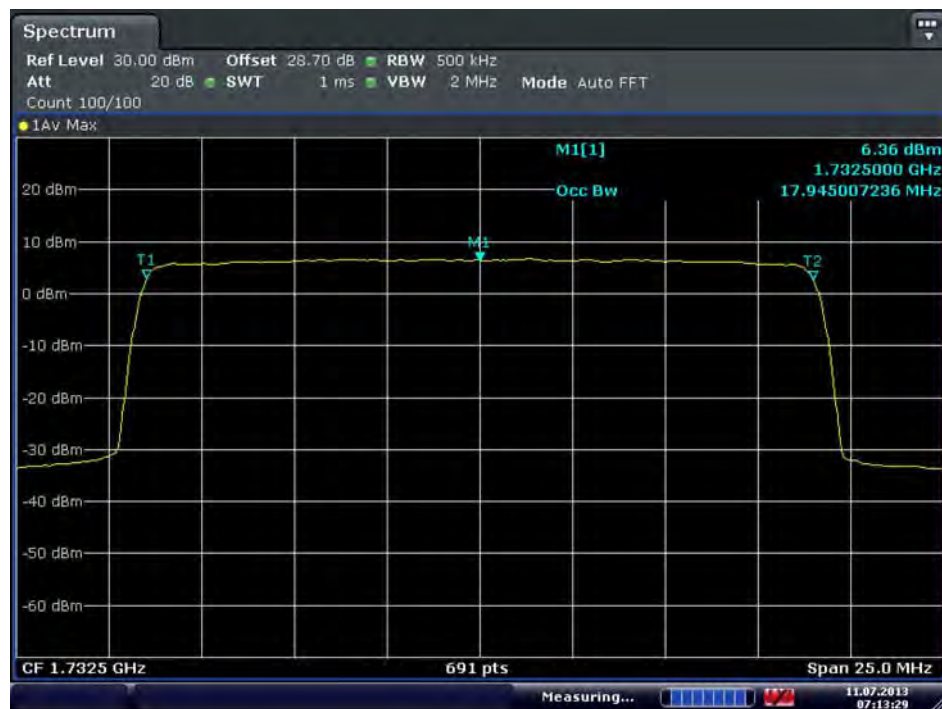
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Band 4: Occupied Bandwidth Plot (20MHz QPSK - RB Size 100)



Date: 11.JUL.2013 02:43:27

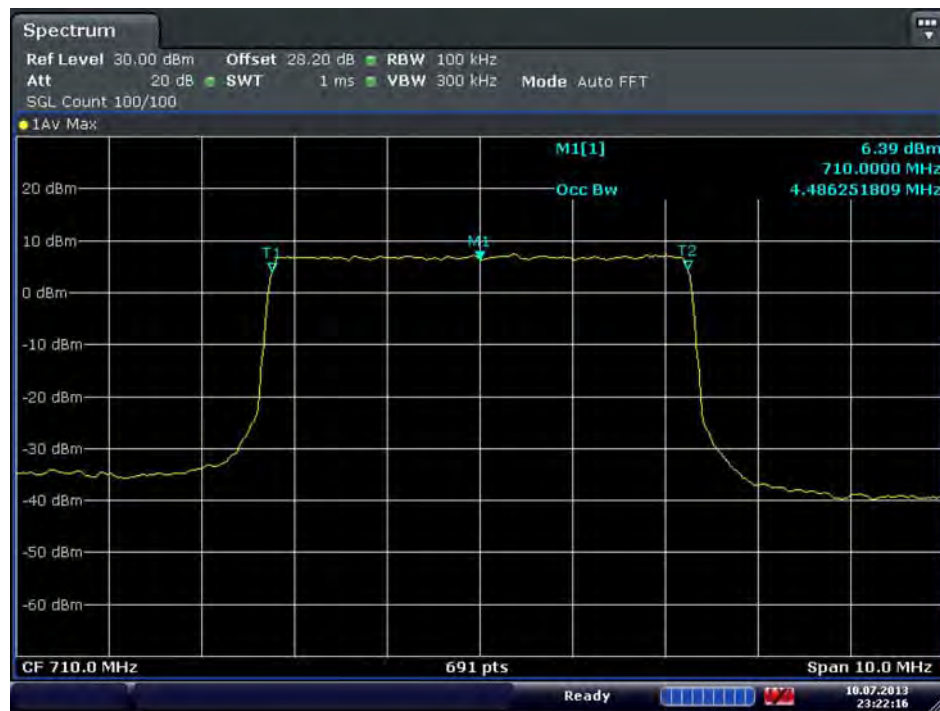
Band 4: Occupied Bandwidth Plot (20MHz 16-QAM - RB Size 100)



Date: 11.JUL.2013 07:13:30

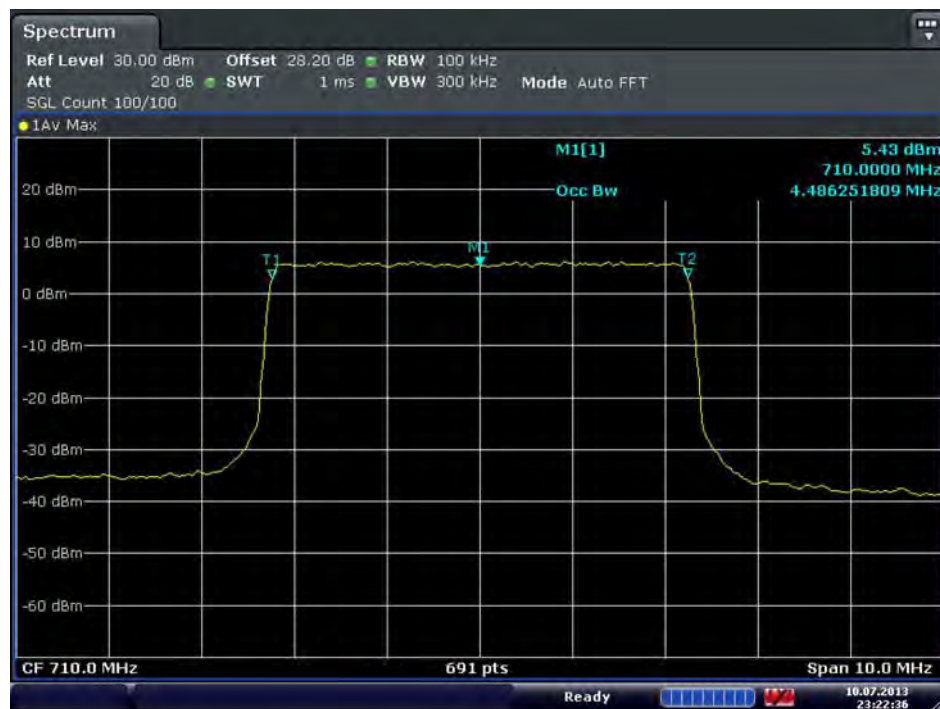
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Band 17: Occupied Bandwidth Plot (5MHz QPSK - RB Size 25)



Date: 10.JUL.2013 23:22:16

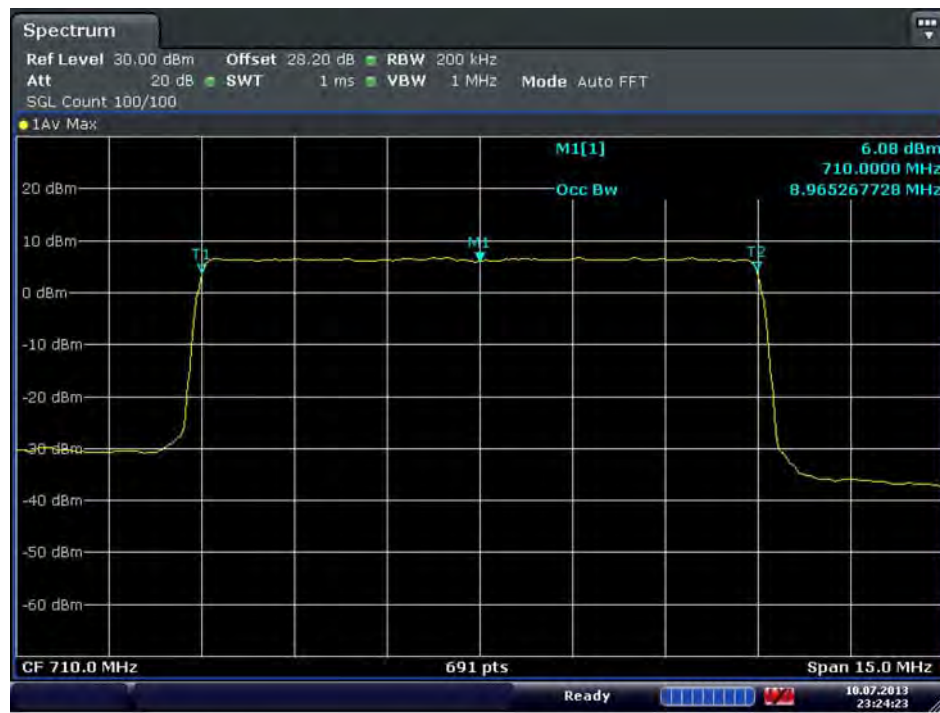
Band 17: Occupied Bandwidth Plot (5MHz 16-QAM - RB Size 25)



Date: 10.JUL.2013 23:22:36

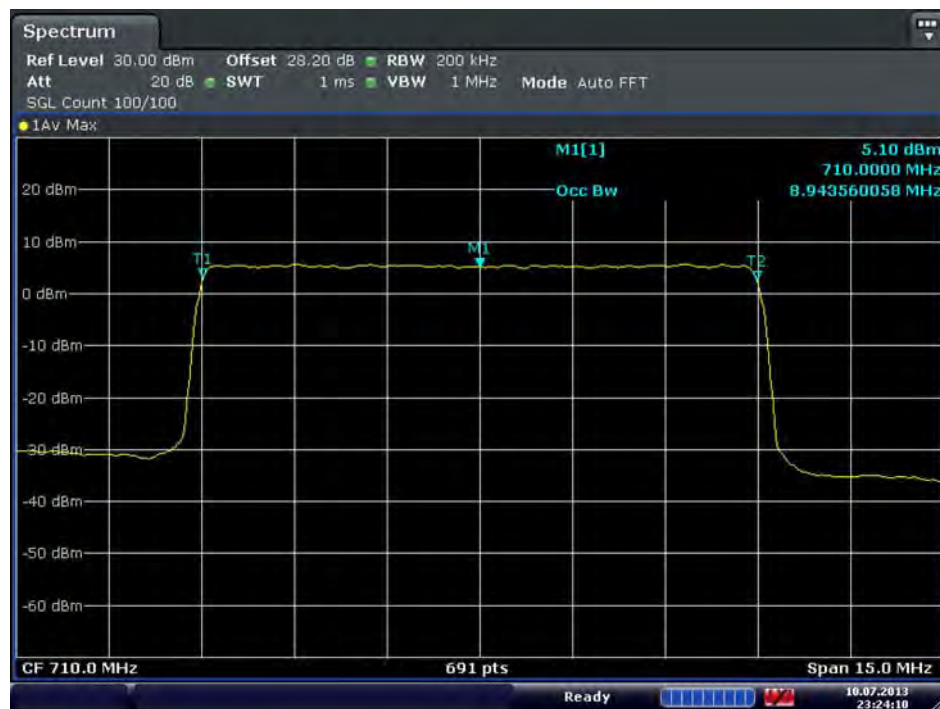
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

Band 17: Occupied Bandwidth Plot (10MHz QPSK - RB Size 50)



Date: 10.JUL.2013 23:24:23

Band 17: Occupied Bandwidth Plot (10MHz 16-QAM - RB Size 50)



Date: 10.JUL.2013 23:24:10

FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

PAR Band 4: Plot (1.4MHz QBand 4: PSK - RB Size 6)



Date: 11.JUL.2013 02:10:27

PAR Band 4: Plot (1.4MHz 16-QAM - RB Size 6)



Date: 11.JUL.2013 07:10:03

PAR Band 4: Plot (3MHz QBand 4: PSK - RB Size 15)



Date: 11.JUL.2013 02:11:04

PAR Band 4: Plot (3MHz 16-QAM - RB Size 15)



Date: 11.JUL.2013 07:17:32

PAR Band 4: Plot (5MHz QBand 4: PSK - RB Size 25)



Date: 11.JUL.2013 02:12:05

PAR Band 4: Plot (5MHz 16-QAM - RB Size 25)



Date: 11.JUL.2013 07:17:06

PAR Band 4: Plot (10MHz QBand 4: PSK - RB Size 50)



Date: 11.JUL.2013 02:12:41

PAR Band 4: Plot (10MHz 16-QAM - RB Size 50)



Date: 11.JUL.2013 07:16:37

PAR Band 4: Plot (15MHz QBand 4: PSK - RB Size 75)



Date: 11.JUL.2013 02:13:01

PAR Band 4: Plot (15MHz 16-QAM - RB Size 75)



Date: 11.JUL.2013 07:16:13

PAR Band 4: Plot (20MHz QBand 4: PSK - RB Size 100)



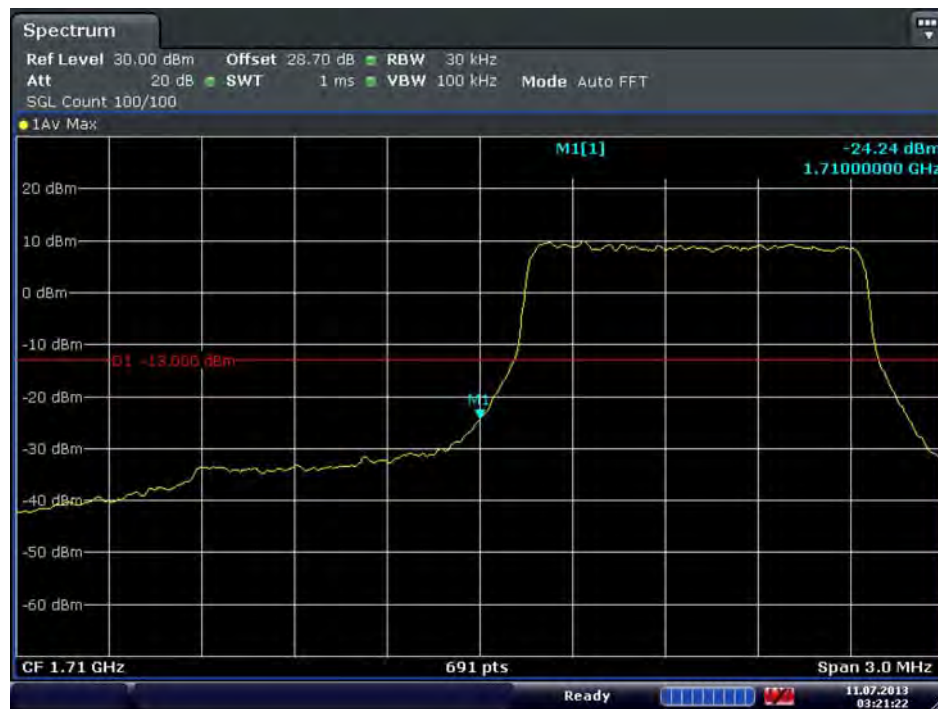
Date: 11.JUL.2013 02:13:21

PAR Band 4: Plot (20MHz 16-QAM - RB Size 100)



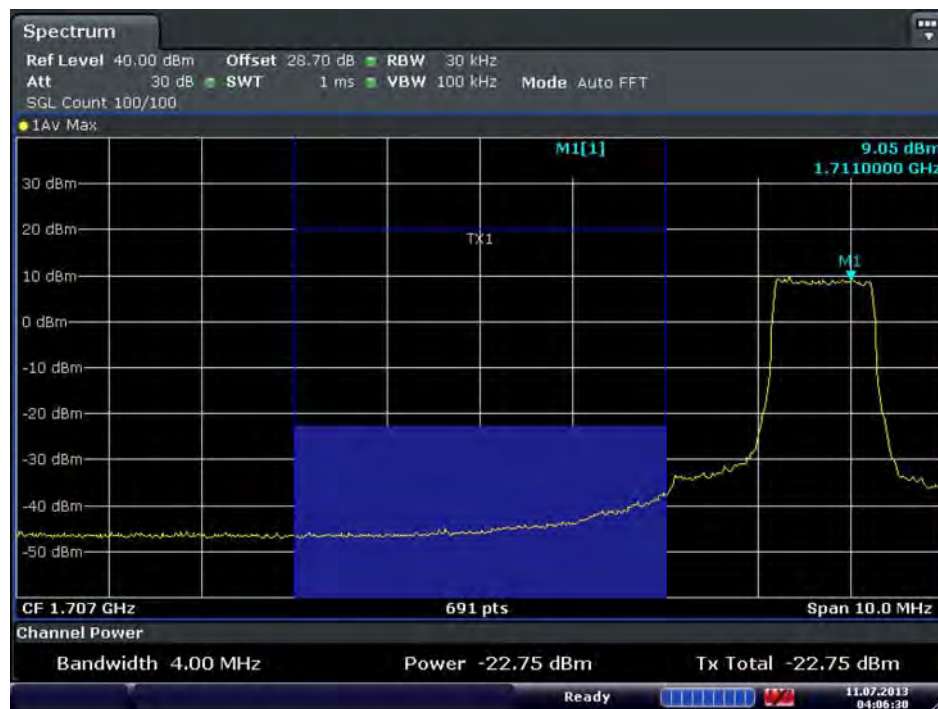
Date: 11.JUL.2013 07:14:49

Band 4: Lower Band Edge Plot (1.4 MHz QPSK - RB Size 6)



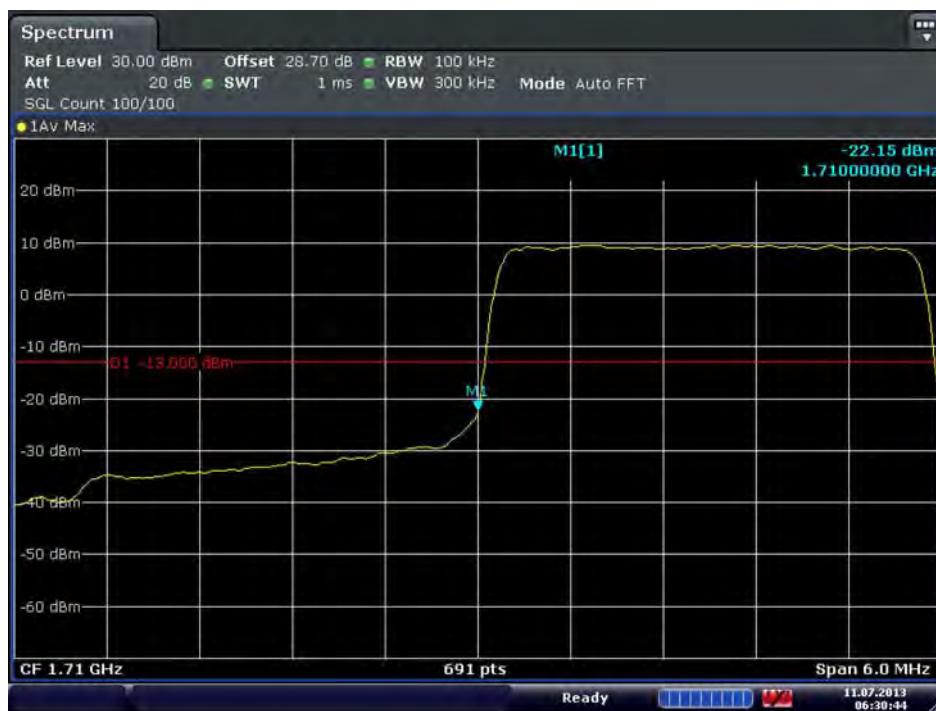
Date: 11.JUL.2013 03:21:22

Band 4: Lower Extended Band Edge Plot (1.4 MHz QPSK - RB Size 6)



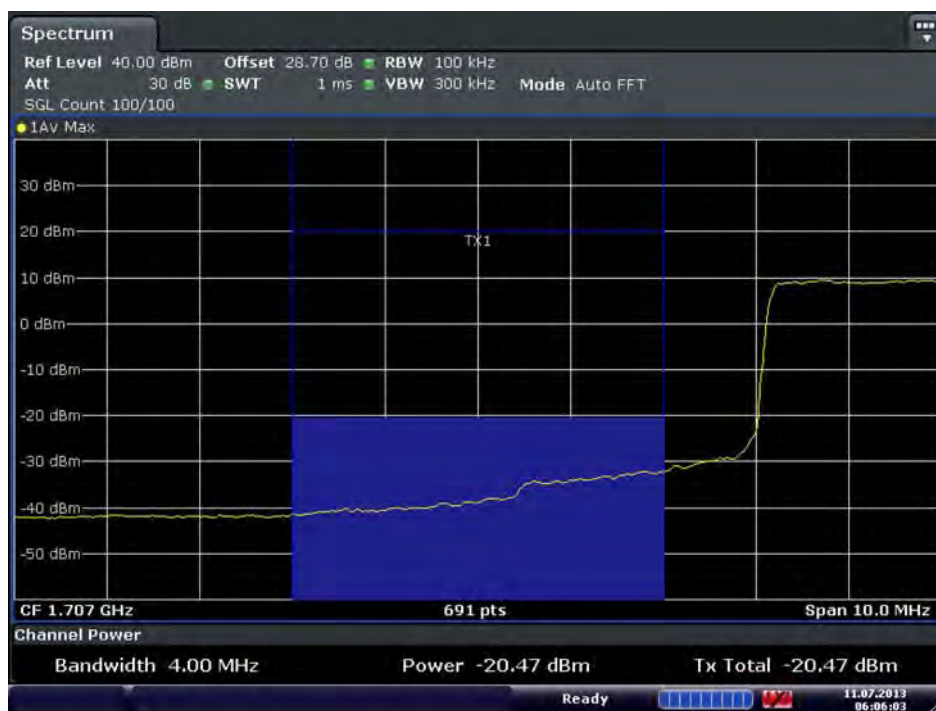
Date: 11.JUL.2013 04:06:30

Band 4: Lower Band Edge Plot (3 MHz QPSK - RB Size 15)



Date: 11.JUL.2013 06:30:44

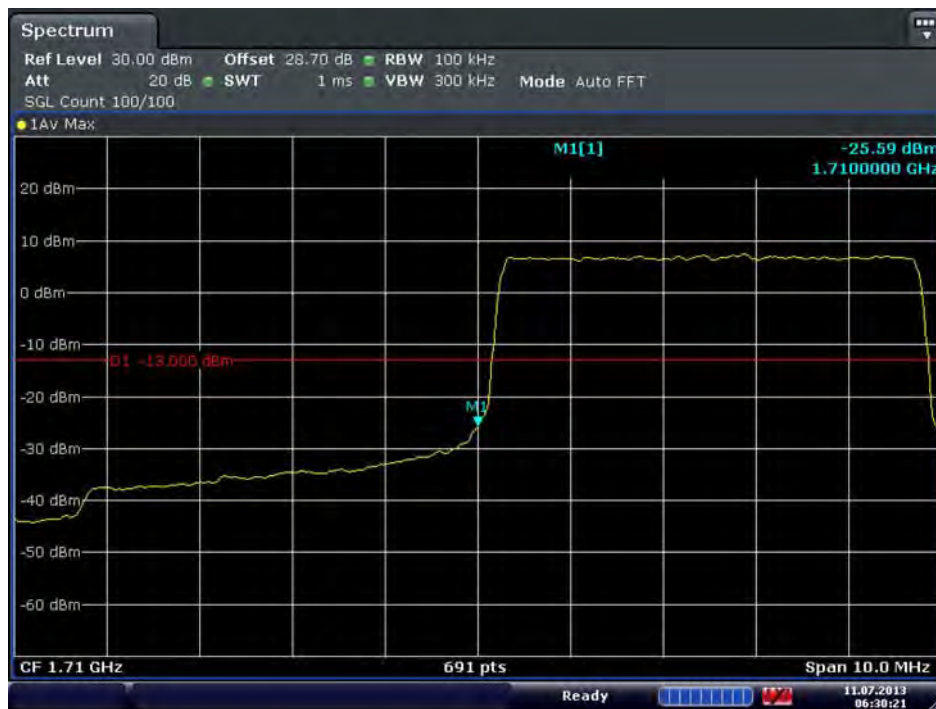
Band 4: Lower Extended Band Edge Plot (3 MHz QPSK - RB Size 15)



Date: 11.JUL.2013 06:06:03

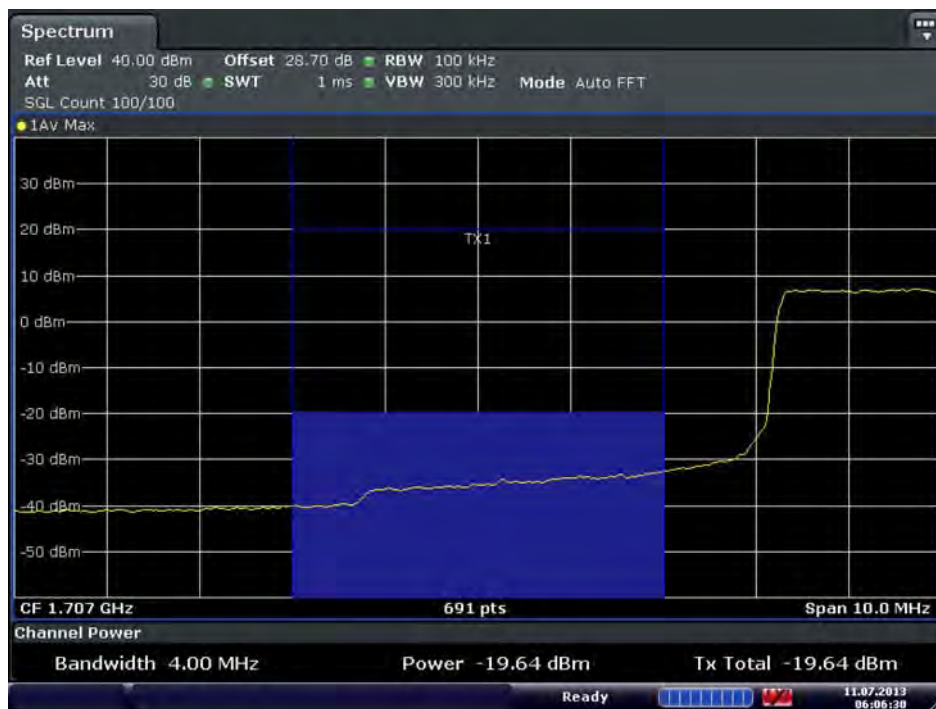
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Band 4: Lower Band Edge Plot (5 MHz QPSK - RB Size 25)



Date: 11.JUL.2013 06:30:22

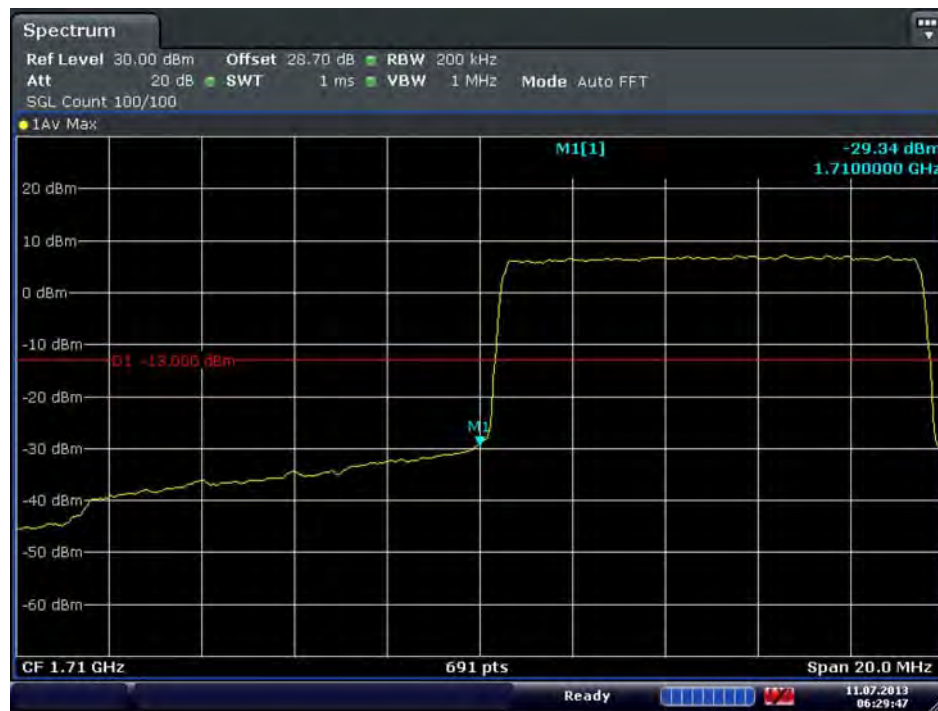
Band 4: Lower Extended Band Edge Plot (5 MHz QPSK - RB Size 25)



Date: 11.JUL.2013 06:06:30

FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

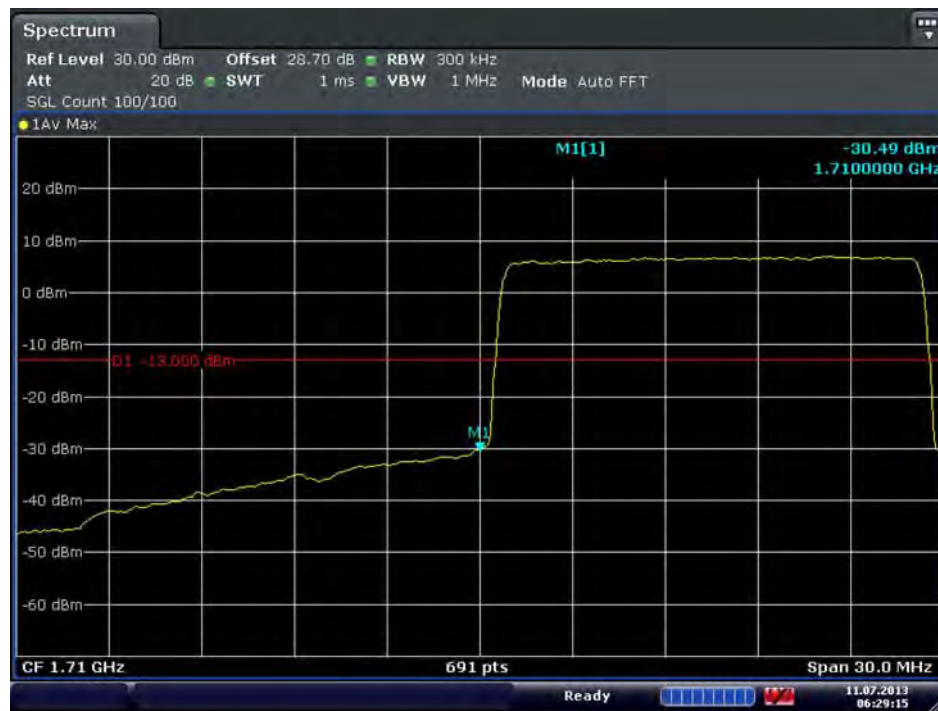
Band 4: Lower Band Edge Plot (10 MHz QPSK - RB Size 50)



Band 4: Lower Extended Band Edge Plot (10 MHz QPSK - RB Size 50)

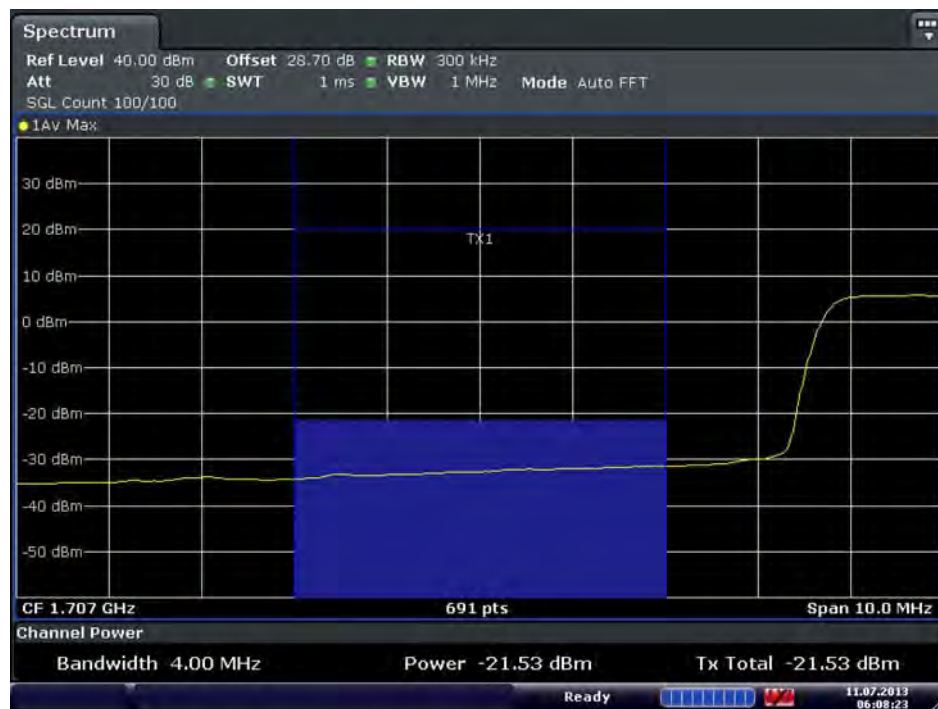


Band 4: Lower Band Edge Plot (15 MHz QPSK - RB Size 75)



Date: 11.JUL.2013 06:29:15

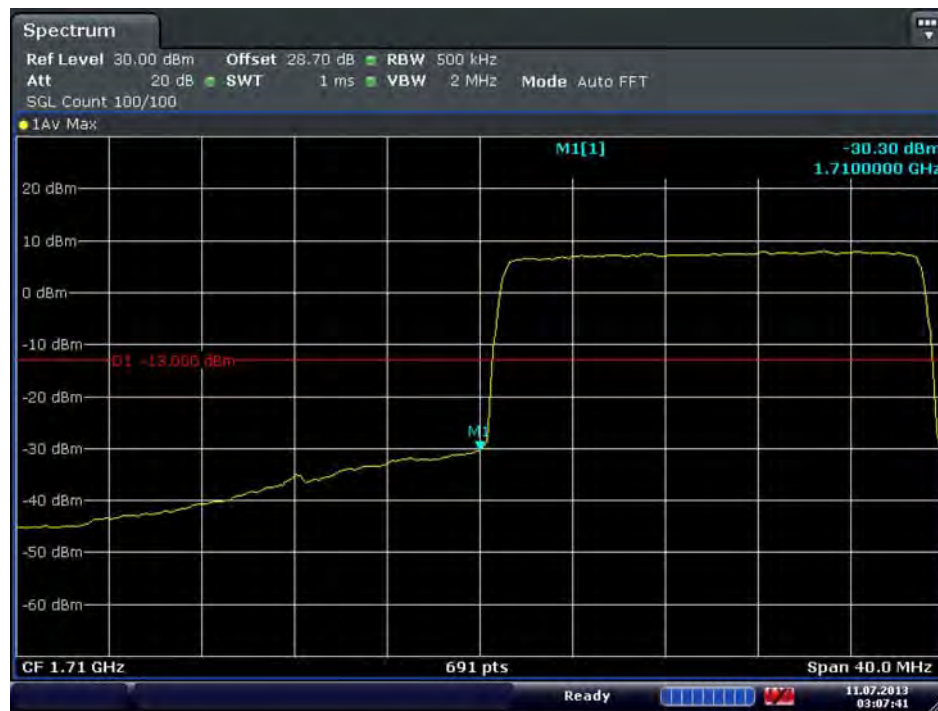
Band 4: Lower Extended Band Edge Plot (15 MHz QPSK - RB Size 75)



Date: 11.JUL.2013 06:08:23

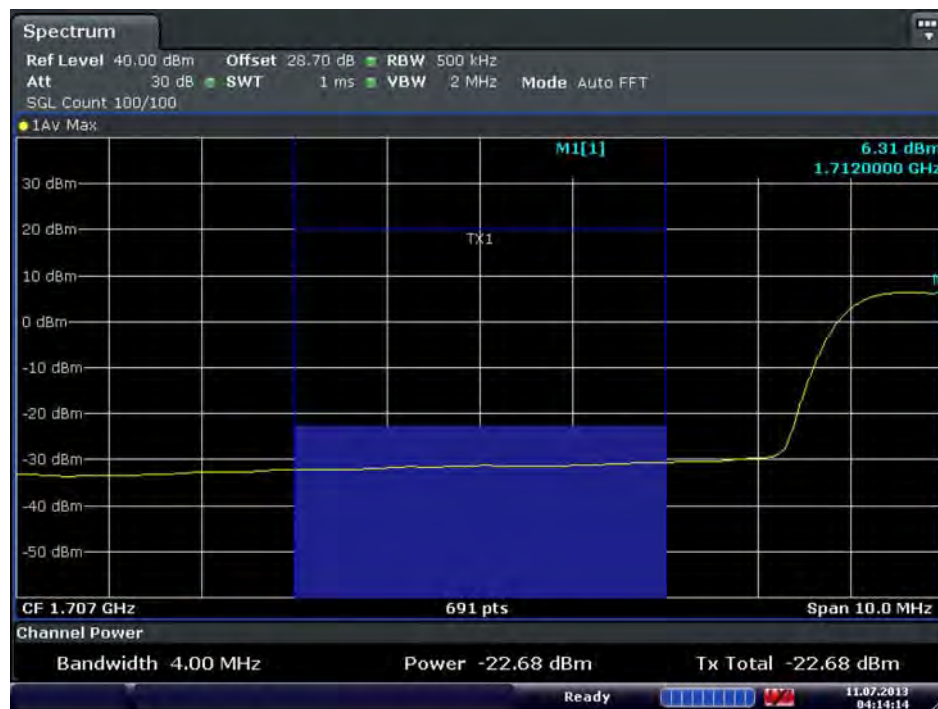
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

Band 4: Lower Band Edge Plot (20MHz QPSK - RB Size 100)



Date: 11.JUL.2013 03:07:41

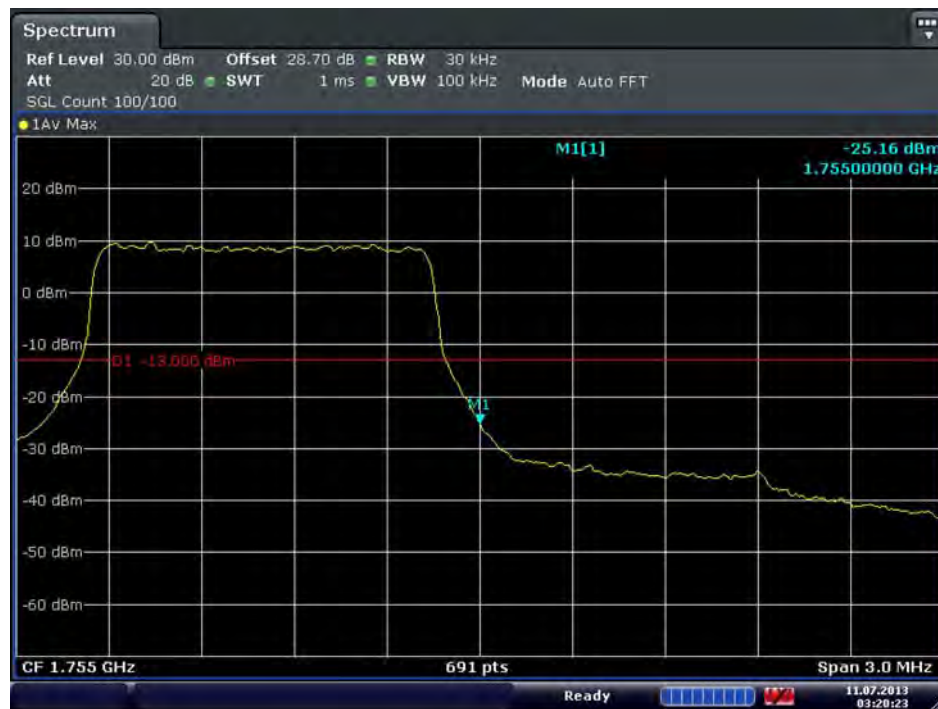
Band 4: Lower Extended Band Edge Plot (20MHz QPSK - RB Size 100)



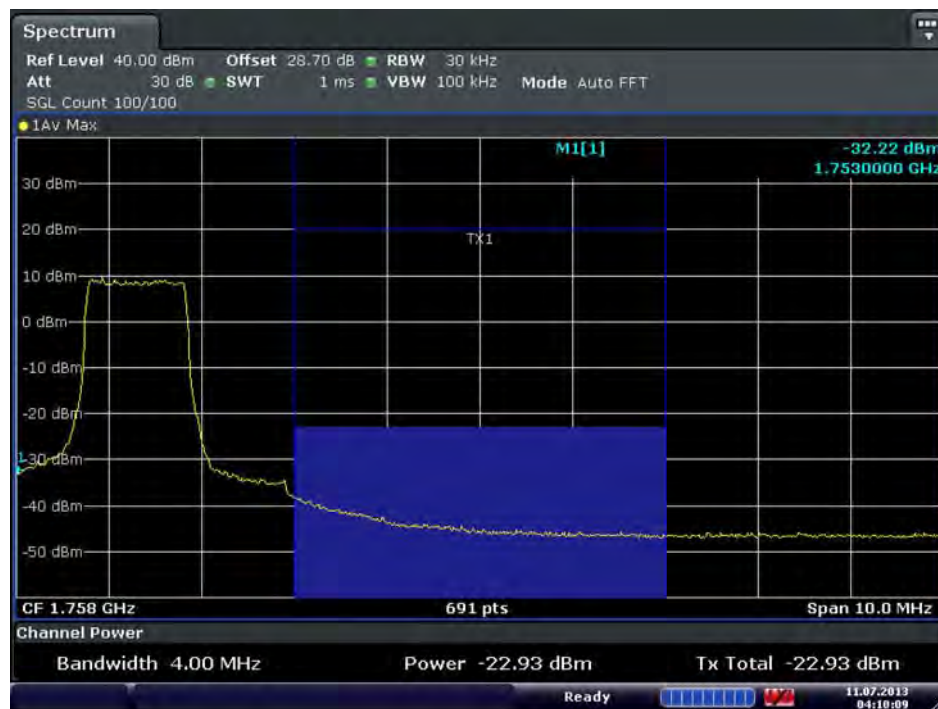
Date: 11.JUL.2013 04:14:14

FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN		FCC ID: V65C6522

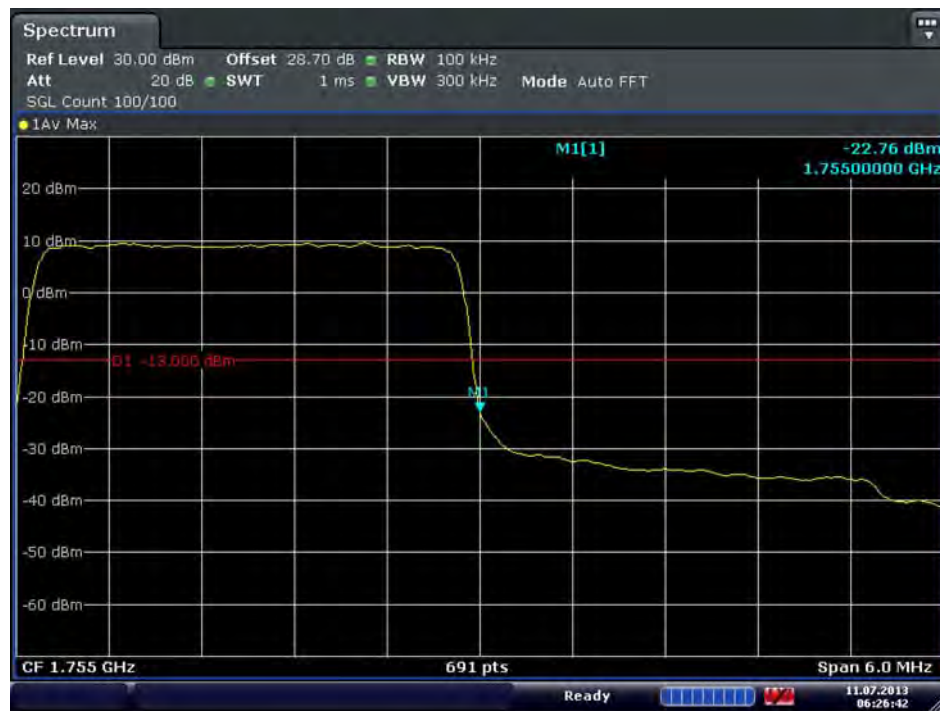
Band 4: Upper Band Edge Plot (1.4MHz QPSK - RB Size 6)



Band 4: Upper Extended Band Edge Plot (1.4MHz QPSK - RB Size 6)

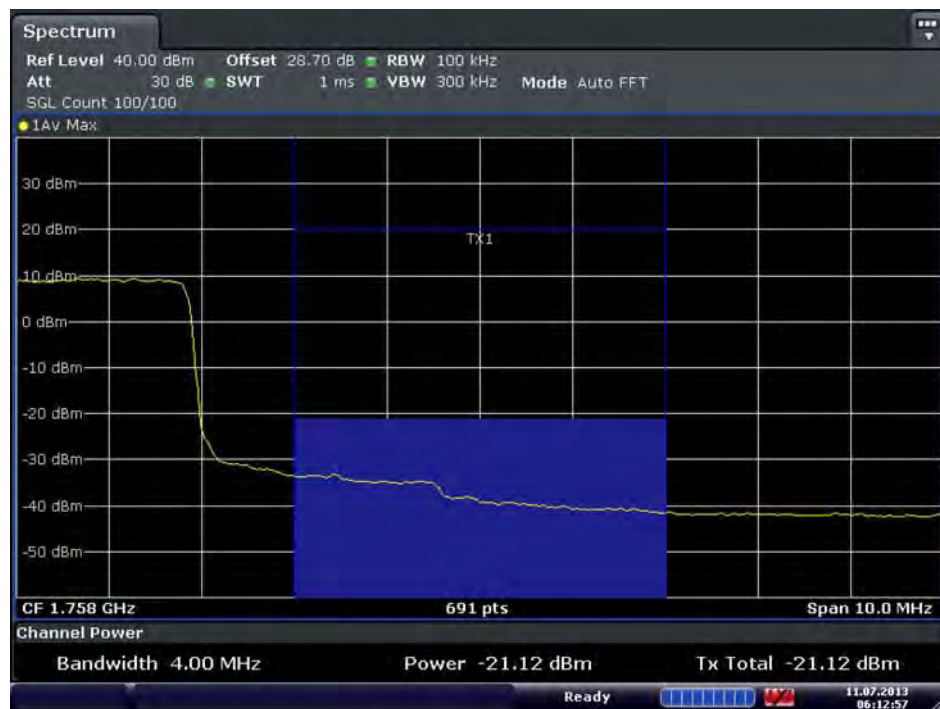


Band 4: Upper Band Edge Plot (3 MHz QPSK - RB Size 15)



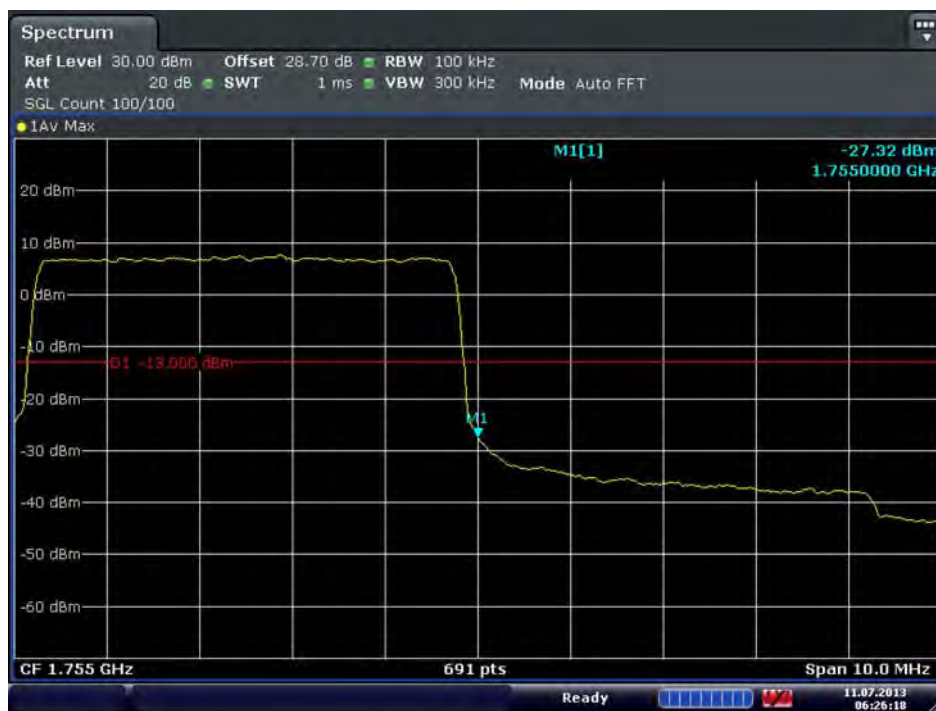
Date: 11.JUL.2013 06:26:43

Band 4: Upper Extended Band Edge Plot (3MHz QPSK - RB Size 15)



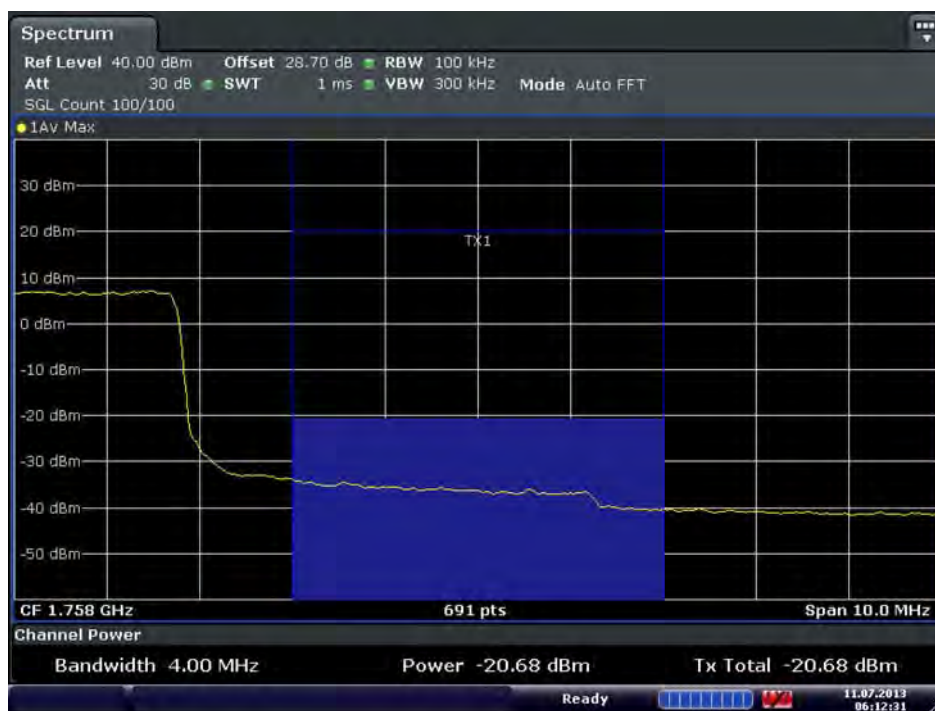
Date: 11.JUL.2013 06:12:57

Band 4: Upper Band Edge Plot (5 MHz QPSK - RB Size 25)



Date: 11.JUL.2013 06:26:18

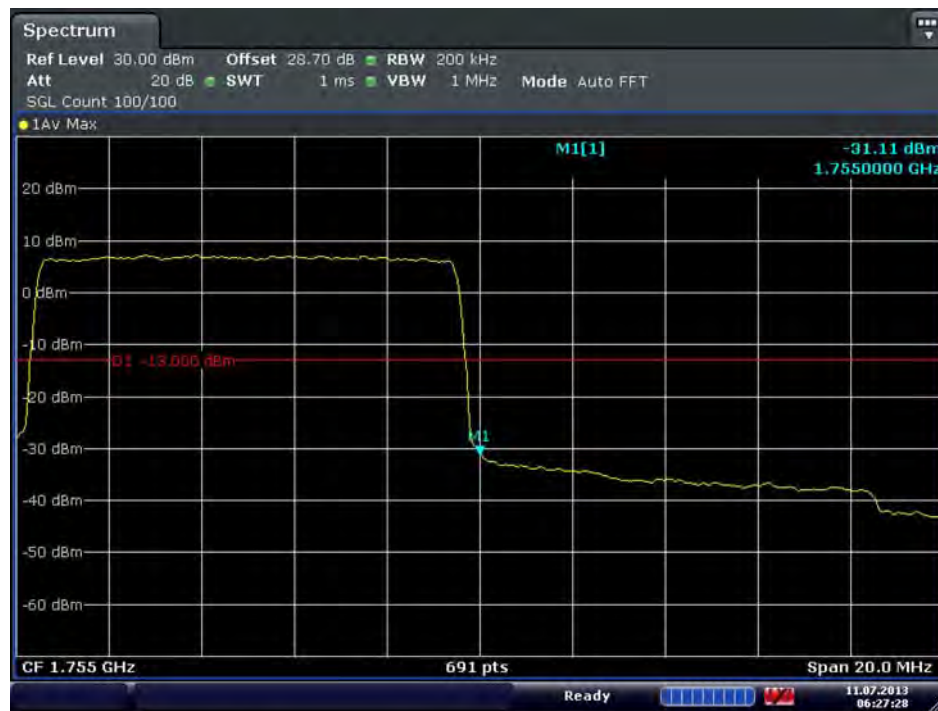
Band 4: Upper Extended Band Edge Plot (5MHz QPSK - RB Size 25)



Date: 11.JUL.2013 06:12:31

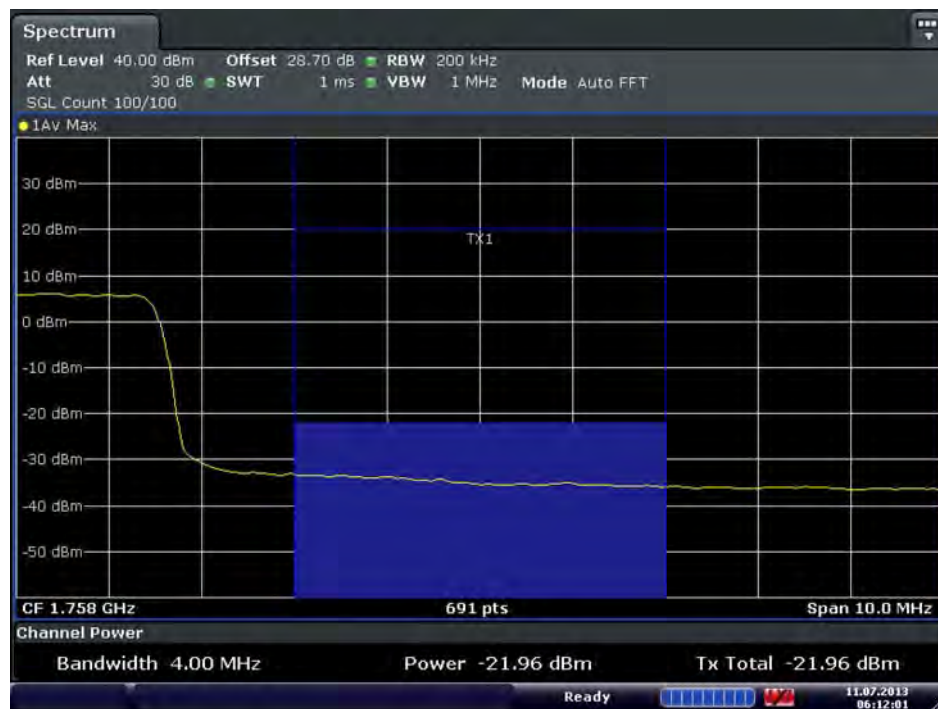
FCC CERTIFICATION REPORT			www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522

Band 4: Upper Band Edge Plot (10 MHz QPSK - RB Size 50)



Date: 11.JUL.2013 06:27:28

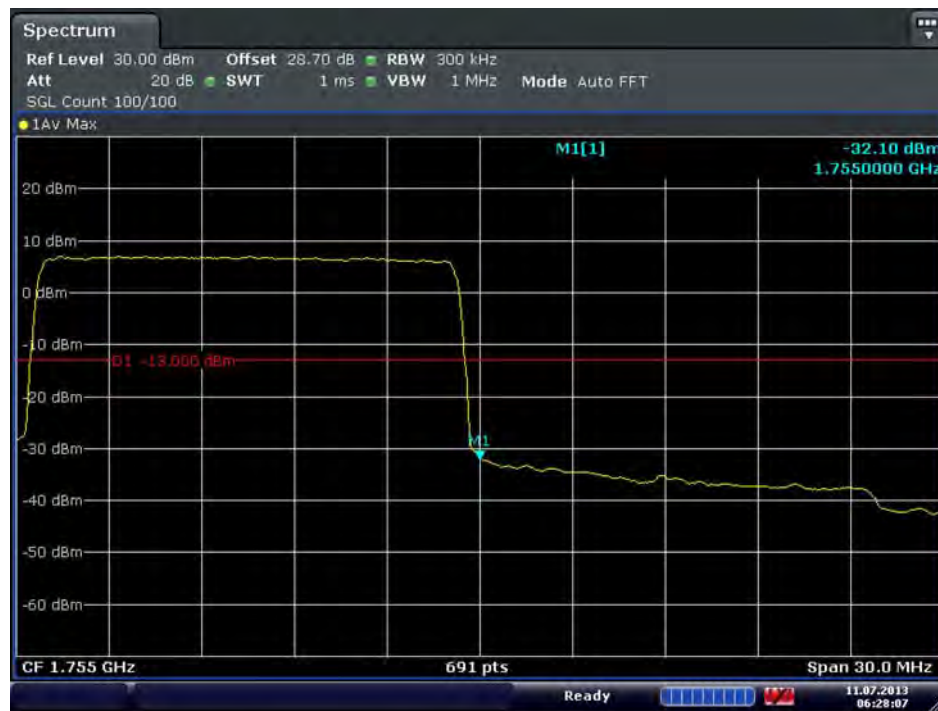
Band 4: Upper Extended Band Edge Plot (10MHz QPSK - RB Size 50)



Date: 11.JUL.2013 06:12:01

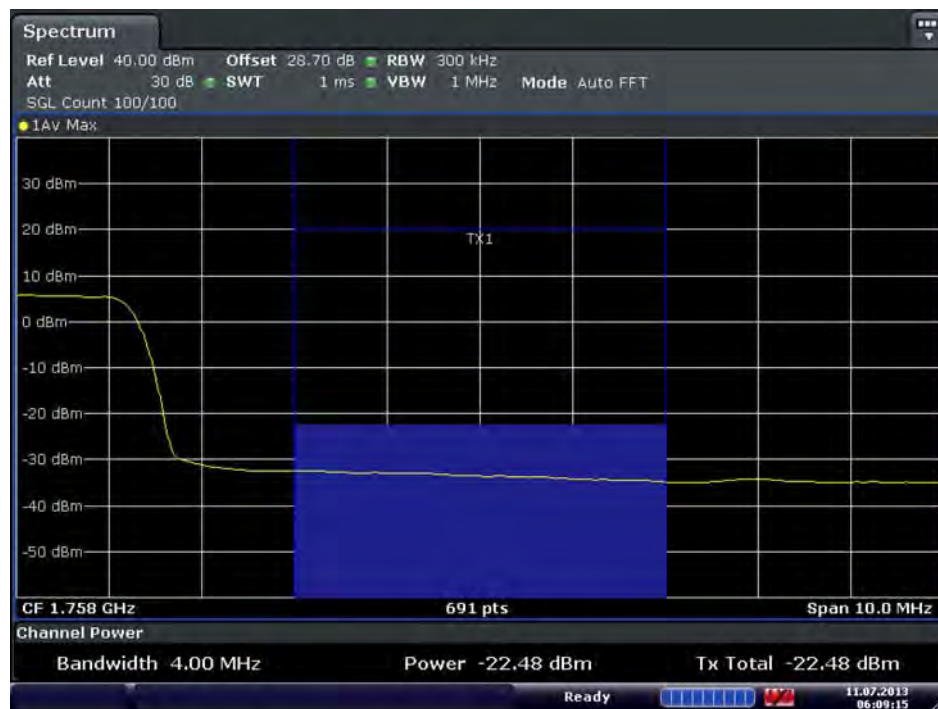
FCC CERTIFICATION REPORT			www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522

Band 4: Upper Band Edge Plot (15 MHz QPSK - RB Size 75)



Date: 11.JUL.2013 06:28:07

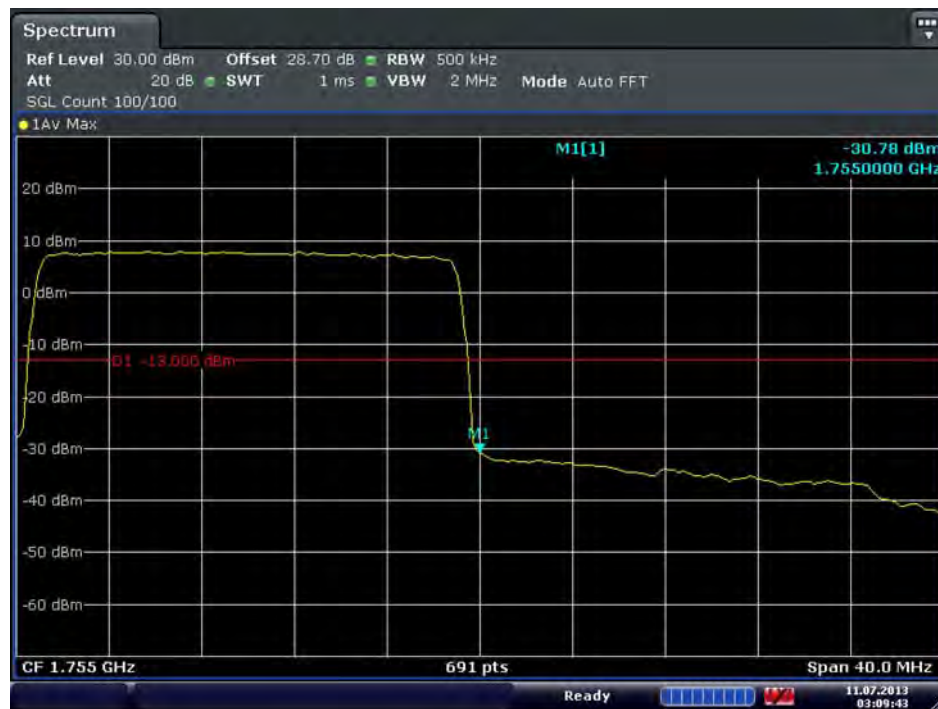
Band 4: Upper Extended Band Edge Plot (15MHz QPSK - RB Size 75)



Date: 11.JUL.2013 06:09:15

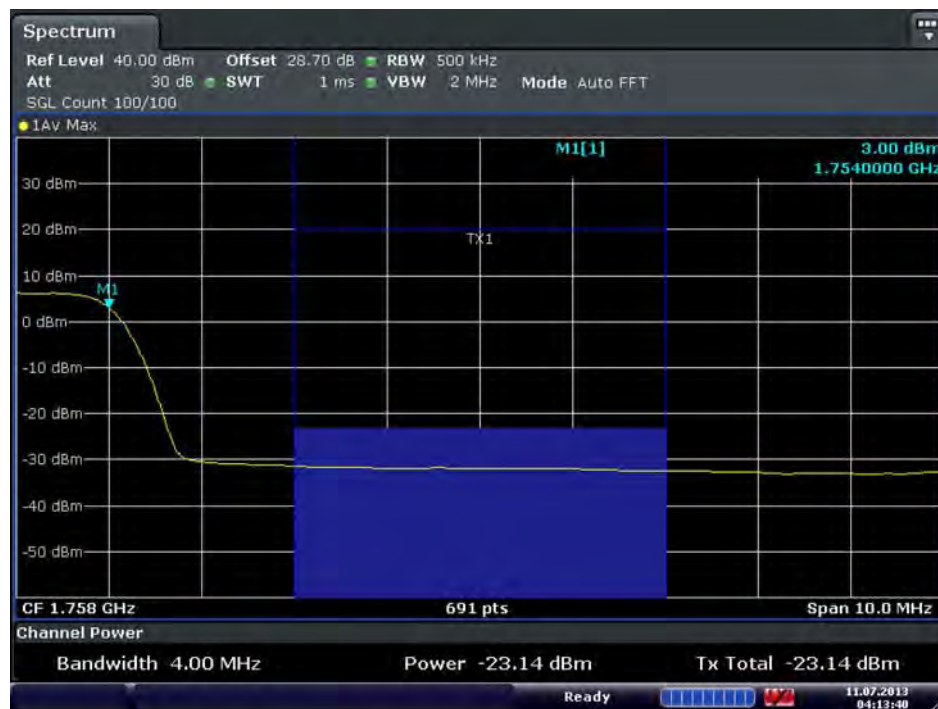
FCC CERTIFICATION REPORT			www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522

Band 4: Upper Band Edge Plot (20MHz QPSK - RB Size 100)



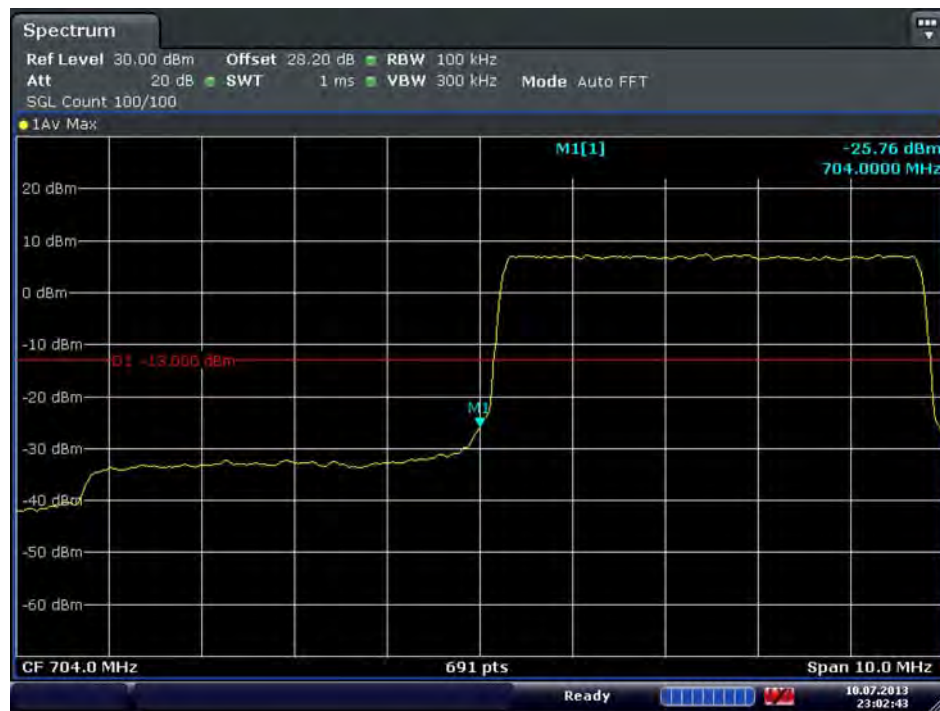
Date: 11.JUL.2013 03:09:43

Band 4: Upper Extended Band Edge Plot (20MHz QPSK - RB Size 100)



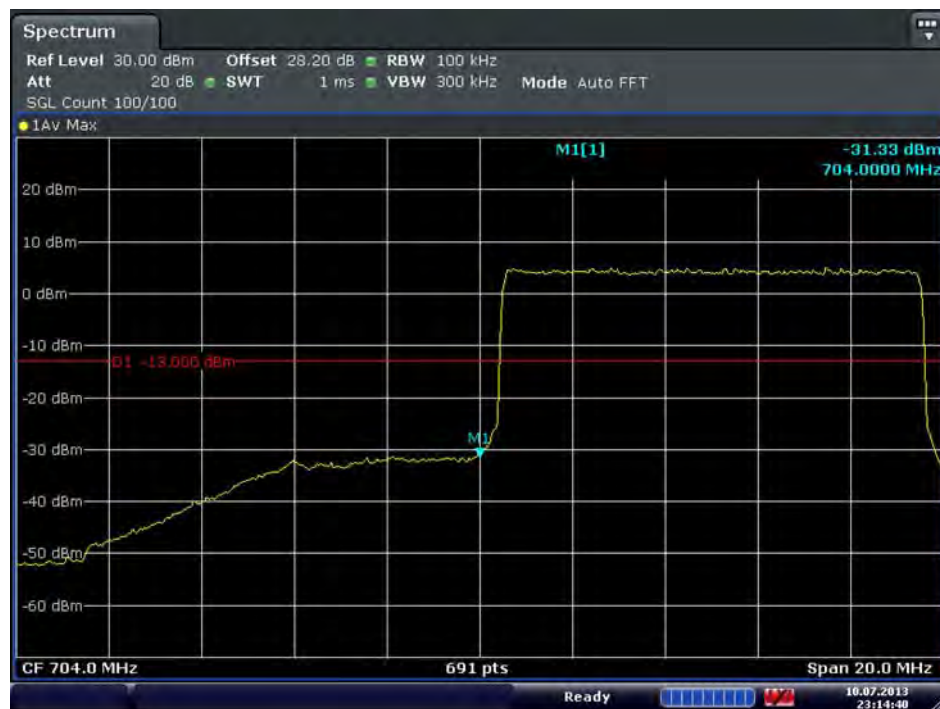
Date: 11.JUL.2013 04:13:40

Band 17: Lower Band Edge Plot (5MHz QPSK - RB Size 25)



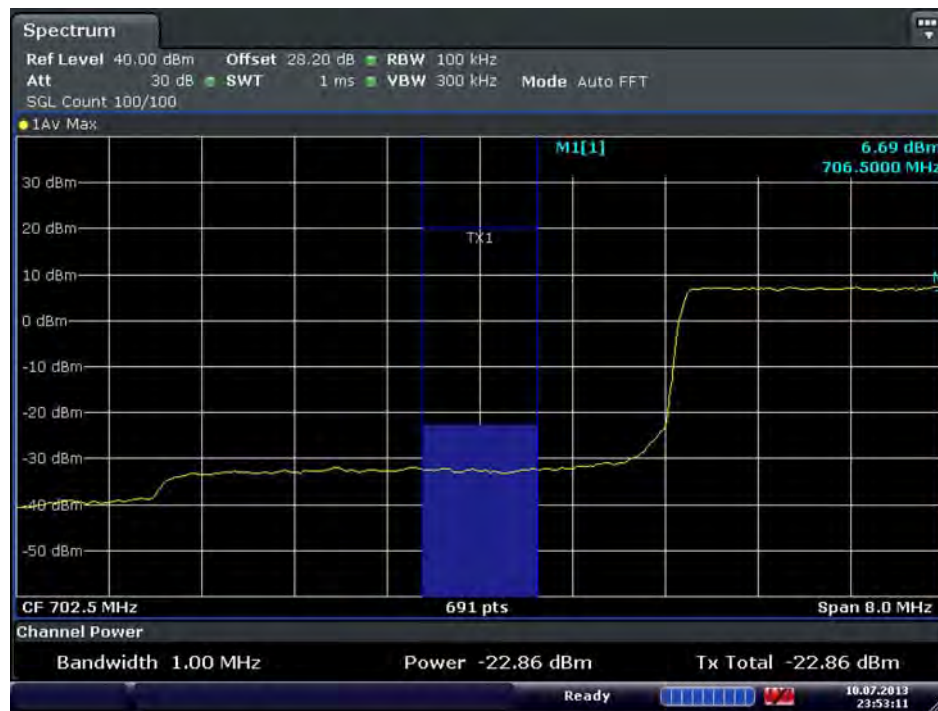
Date: 10.JUL.2013 23:02:43

Band 17: Lower Band Edge Plot (10MHz QPSK - RB Size 50)



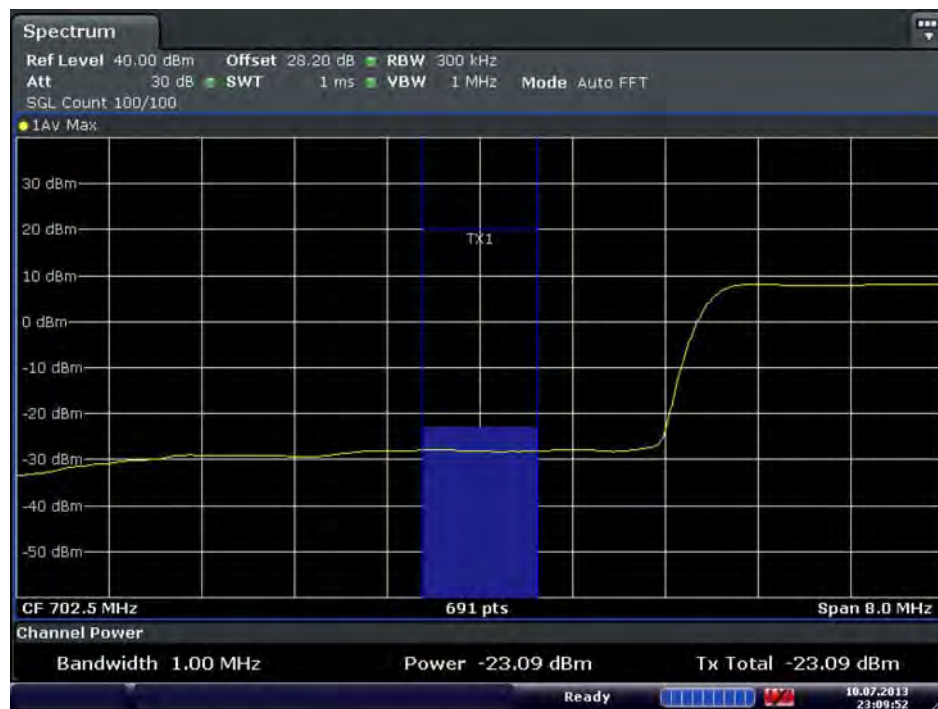
Date: 10.JUL.2013 23:14:40

Band 17: Lower Extended Band Edge Plot (5MHz QPSK - RB Size 25)



Date: 10.JUL.2013 23:53:11

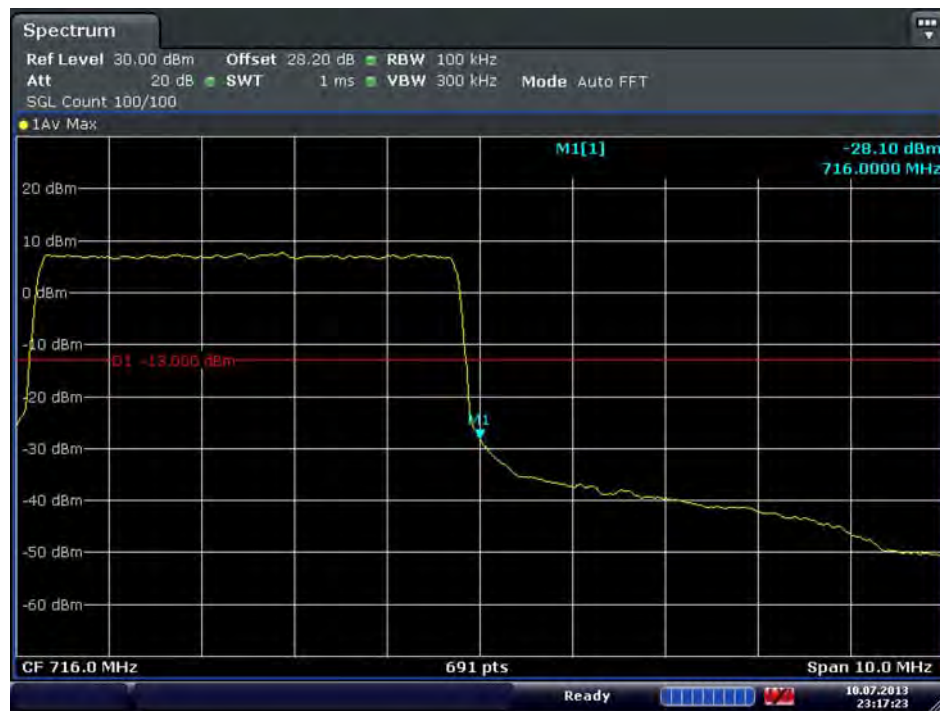
Band 17: Lower Extended Band Edge Plot (10MHz QPSK - RB Size 50)



Date: 10.JUL.2013 23:59:52

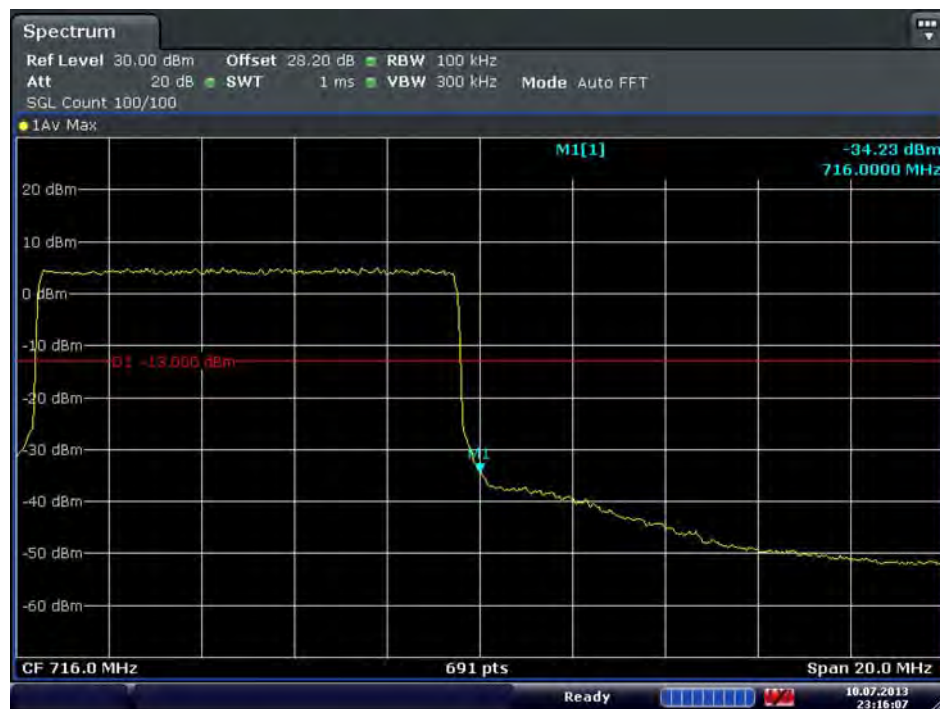
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Band 17: Upper Band Edge Plot (5MHz QPSK - RB Size 25)



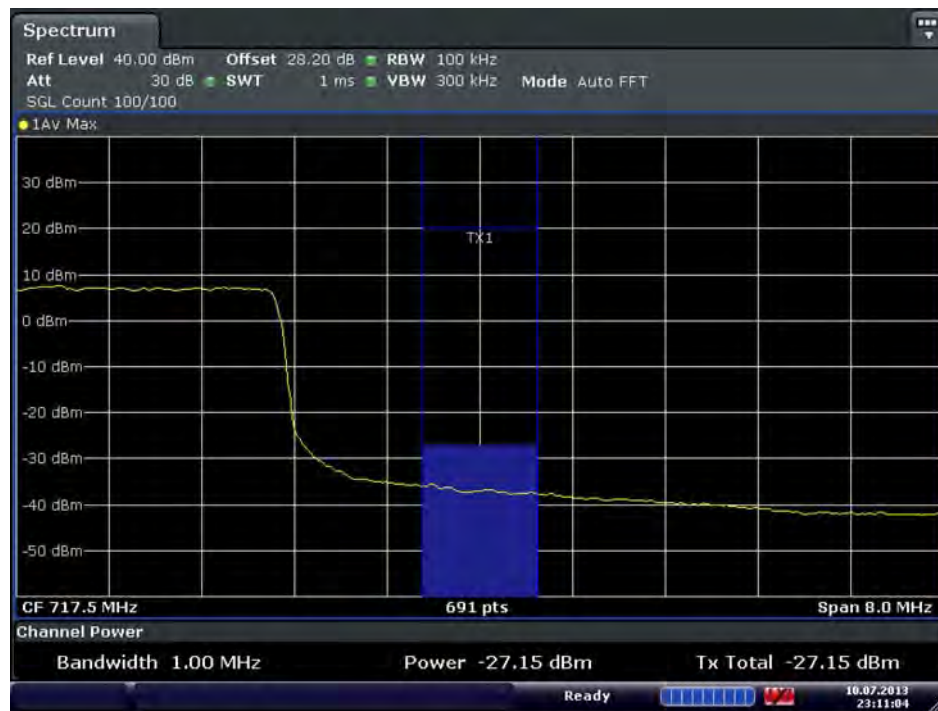
Date: 10.JUL.2013 23:17:23

Band 17: Upper Band Edge Plot (10MHz QPSK - RB Size 50)



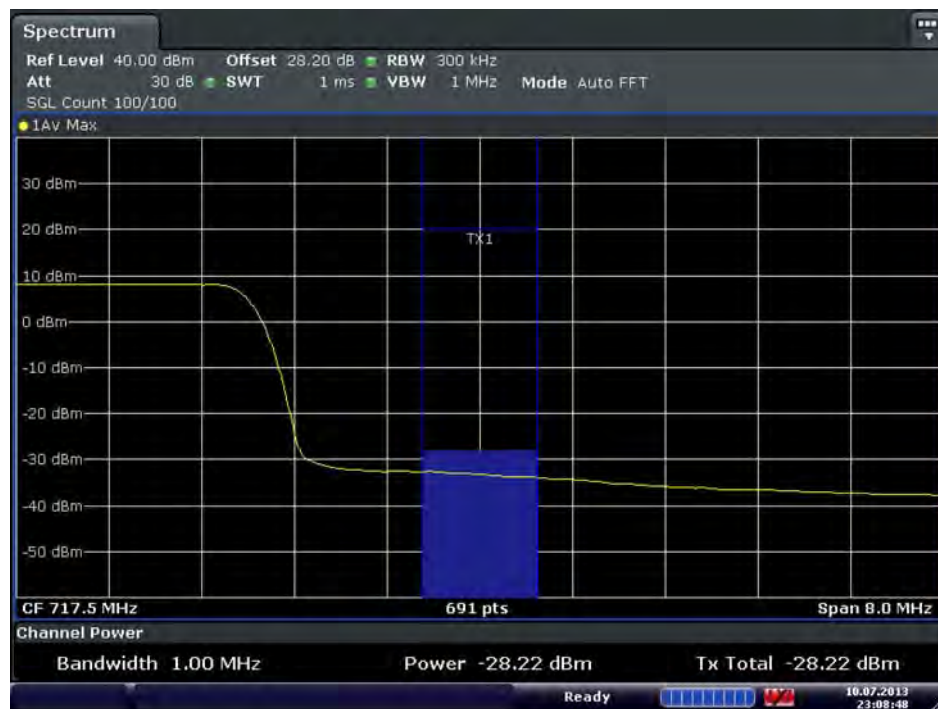
Date: 10.JUL.2013 23:16:07

Band 17: Upper Extended Band Edge Plot (5MHz QPSK - RB Size 25)



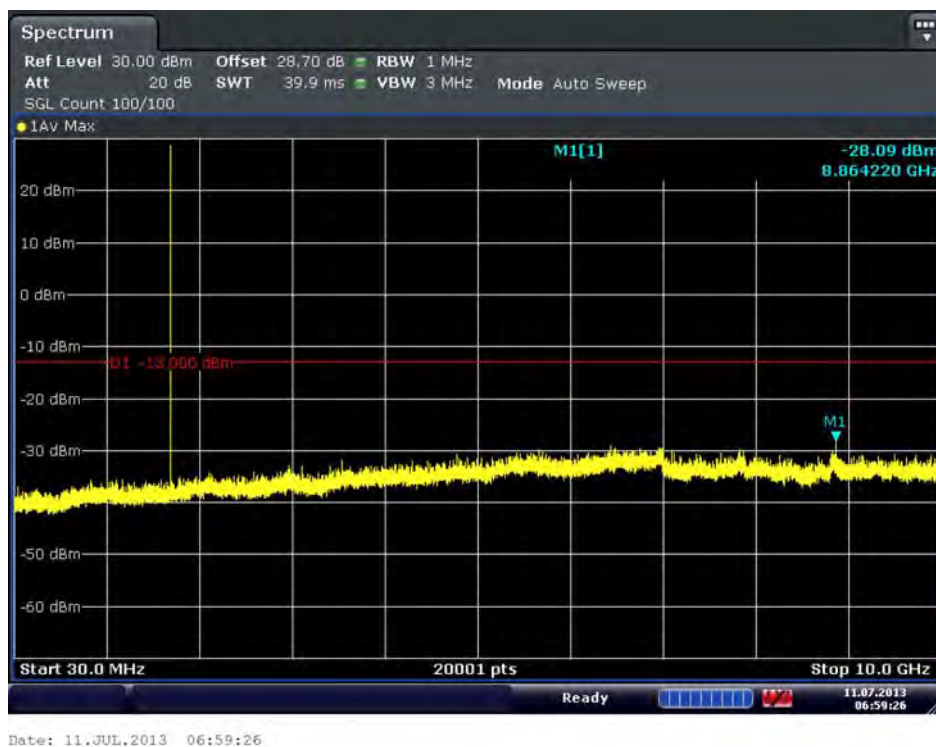
Date: 10.JUL.2013 23:11:04

Band 17: Upper Extended Band Edge Plot (10MHz QPSK - RB Size 50)

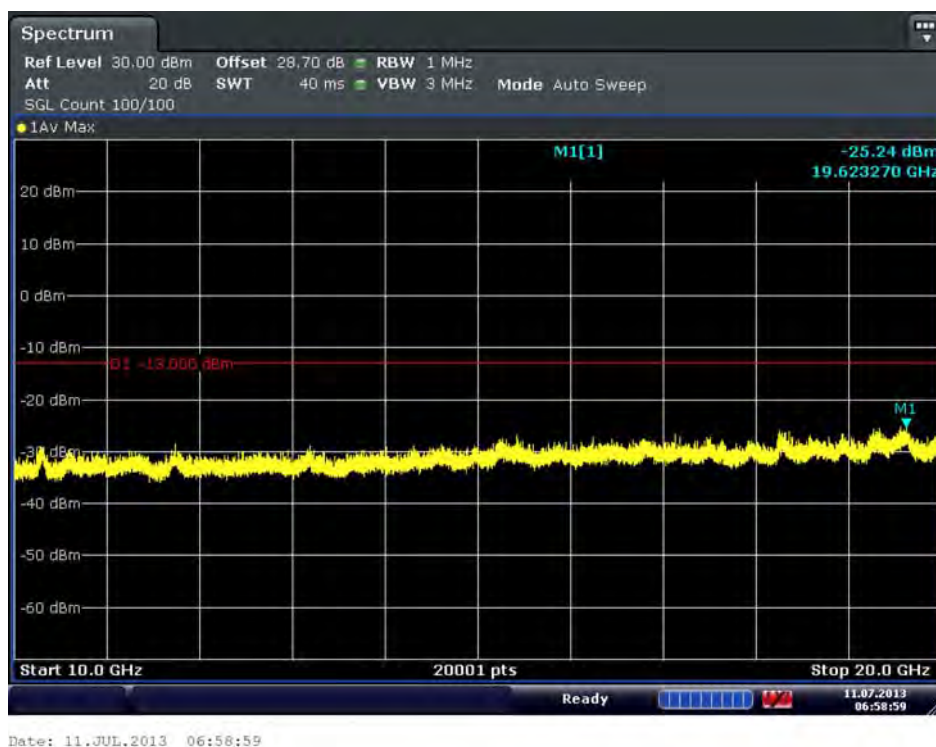


Date: 10.JUL.2013 23:08:49

Band 4: Conducted Spurious Plot 1 (1.4MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



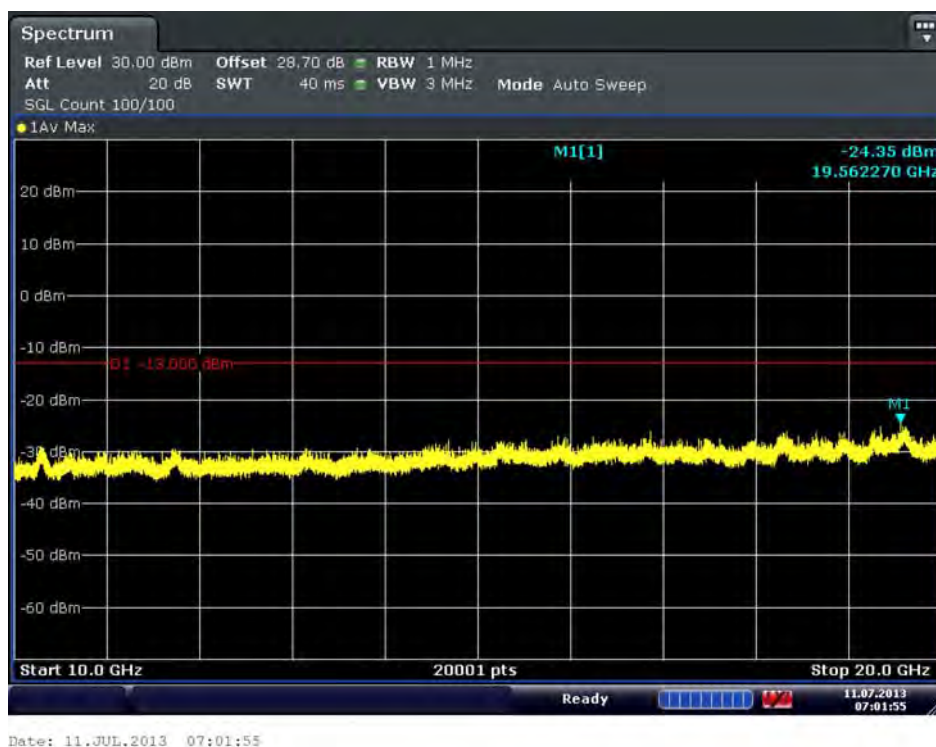
Band 4: Conducted Spurious Plot 2 (1.4MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



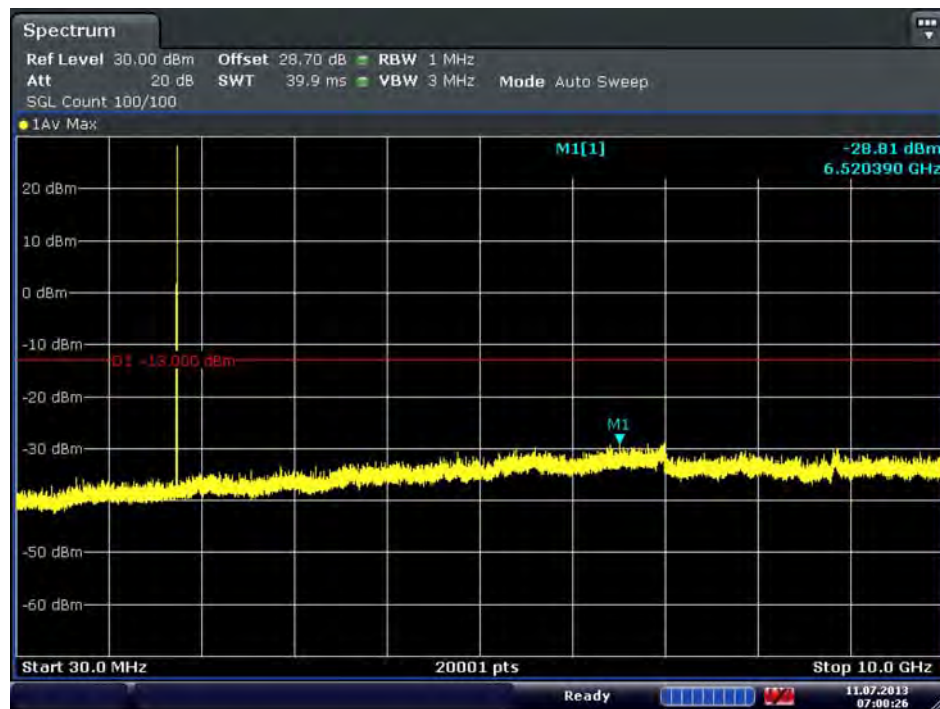
Band 4: Conducted Spurious Plot 1 (1.4MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)



Band 4: Conducted Spurious Plot 2 (1.4MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)

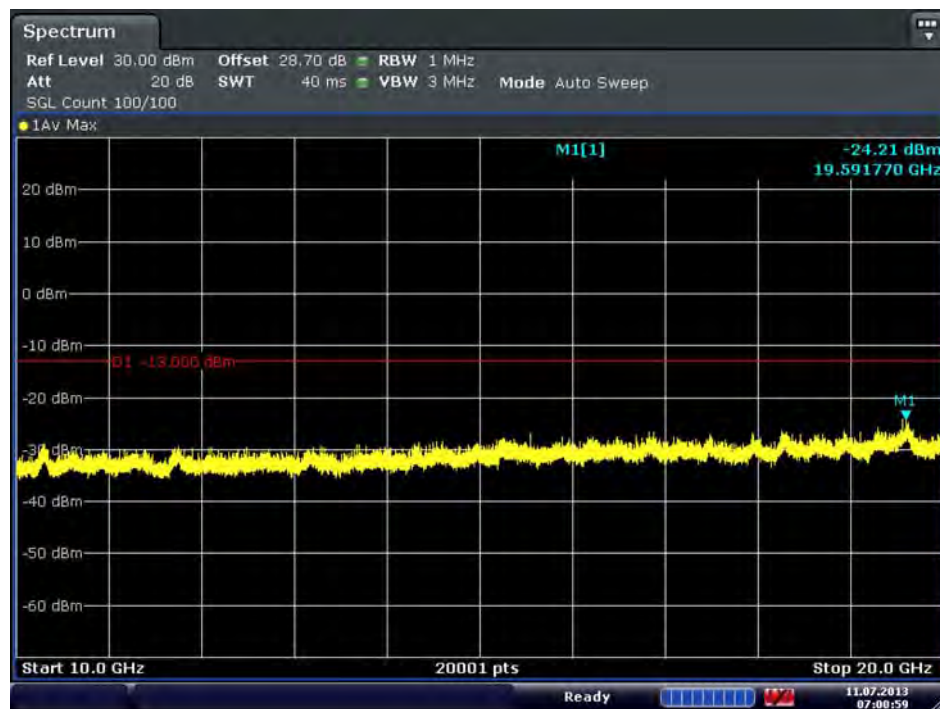


Band 4: Conducted Spurious Plot 1 (1.4MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)



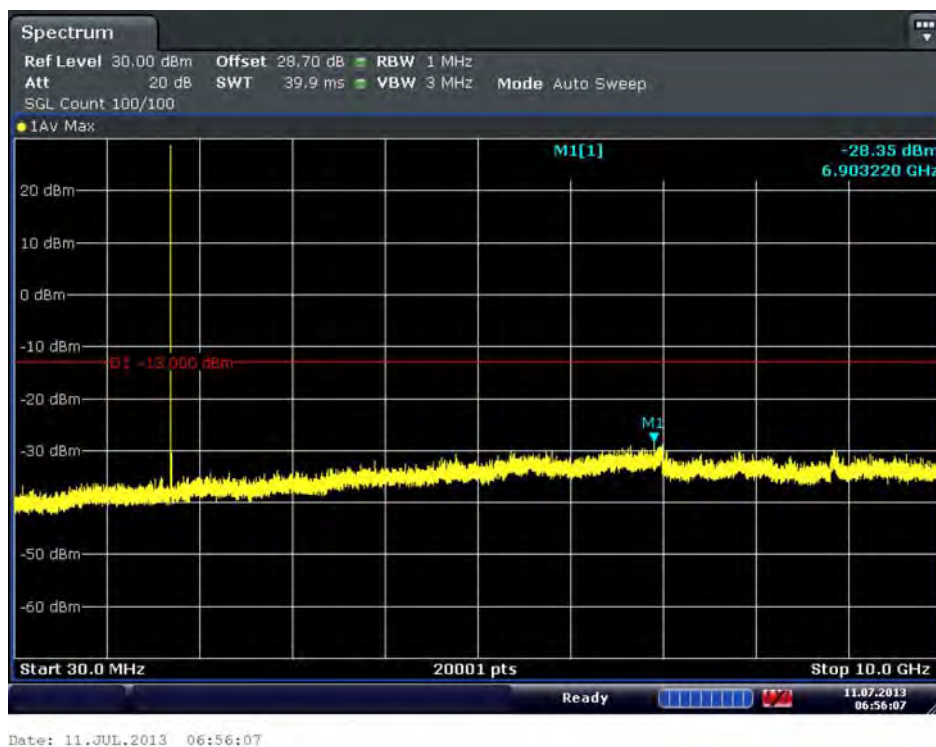
Date: 11.JUL.2013 07:00:26

Band 4: Conducted Spurious Plot 2 (1.4MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)

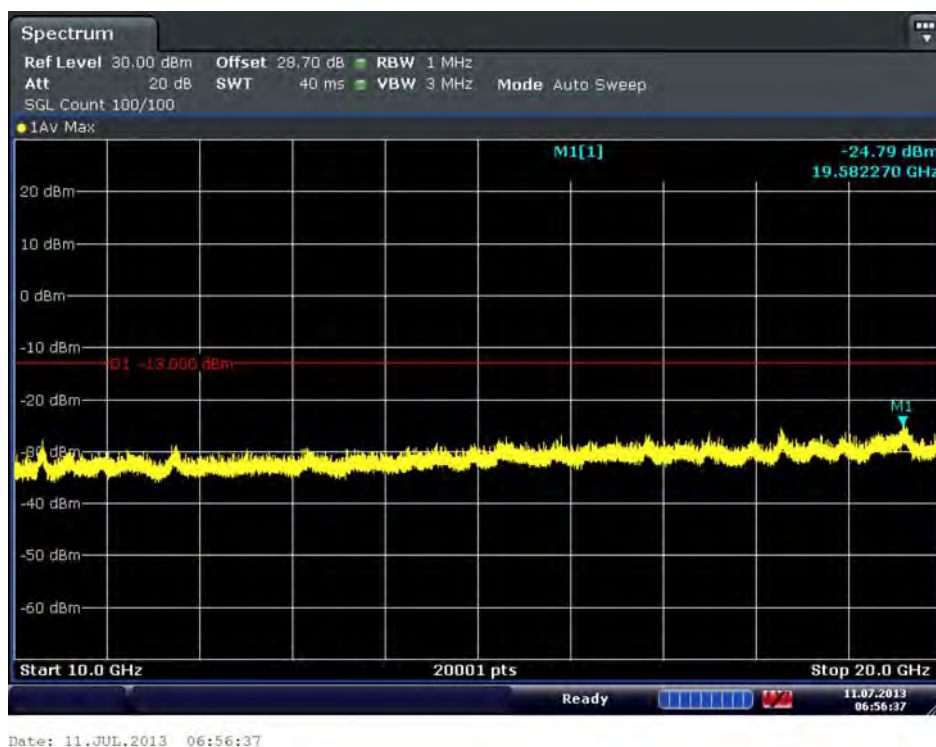


Date: 11.JUL.2013 07:00:59

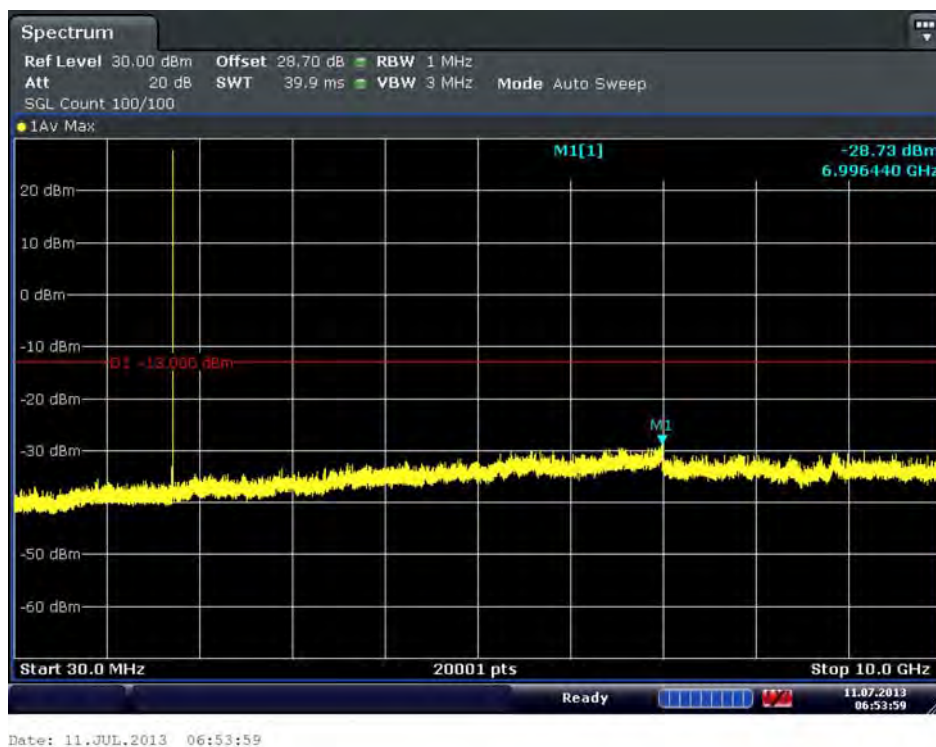
Band 4: Conducted Spurious Plot 1 (3MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



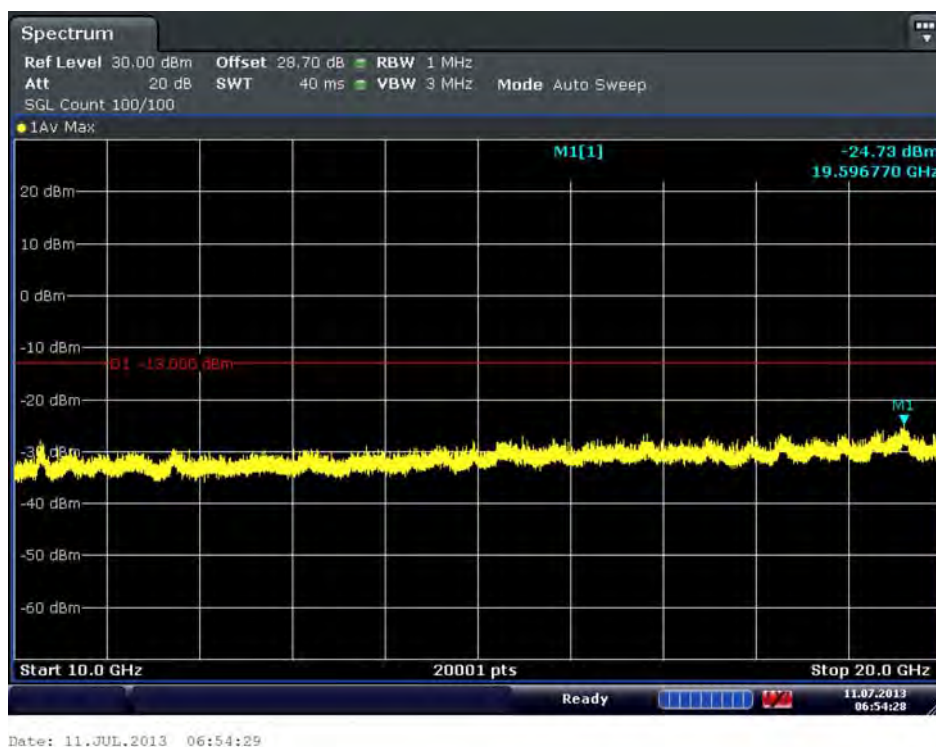
Band 4: Conducted Spurious Plot 2 (3MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



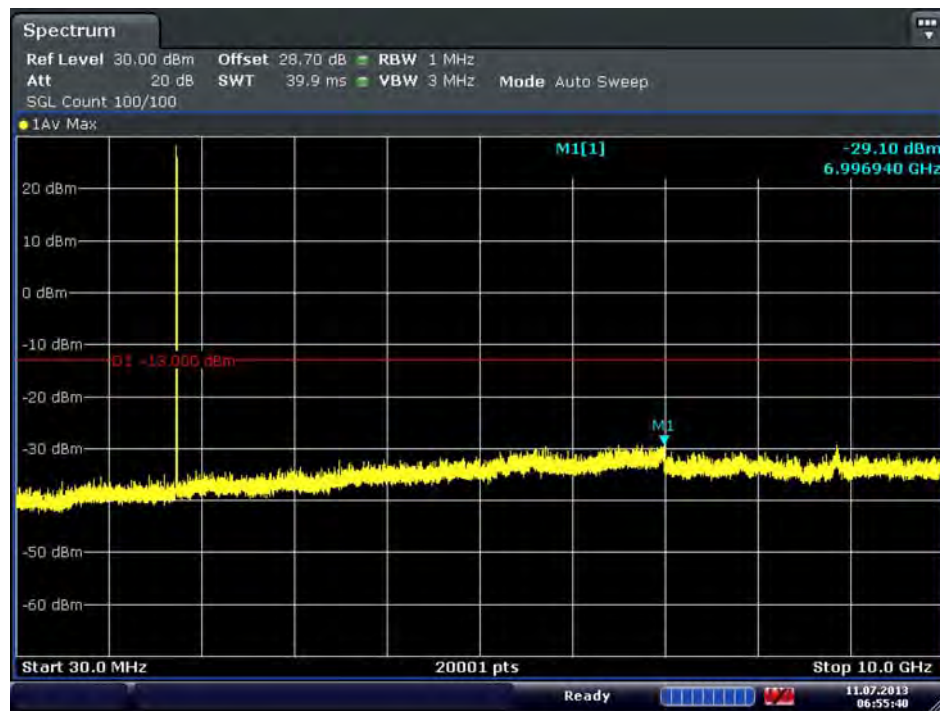
Band 4: Conducted Spurious Plot 1 (3MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)



Band 4: Conducted Spurious Plot 2 (3MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)

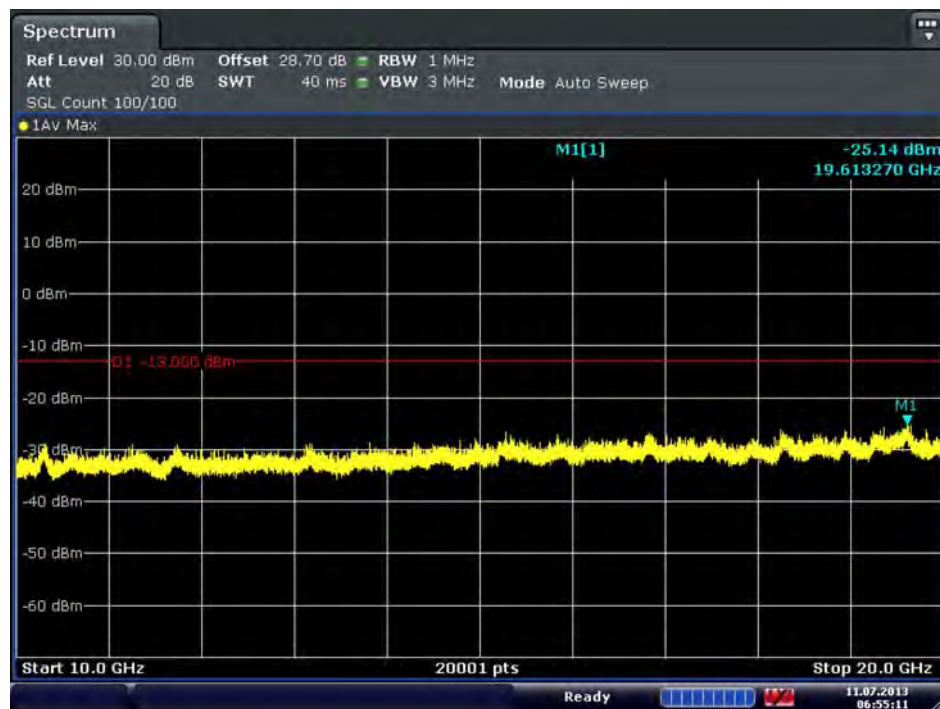


Band 4: Conducted Spurious Plot 1 (3MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)



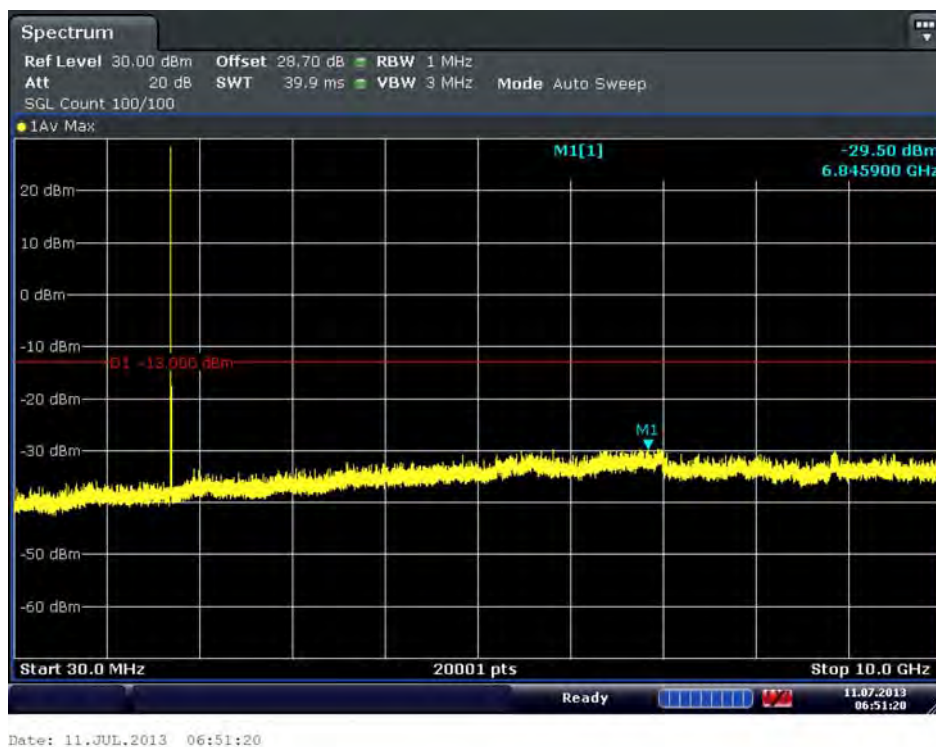
Date: 11.JUL.2013 06:55:40

Band 4: Conducted Spurious Plot 2 (3MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)

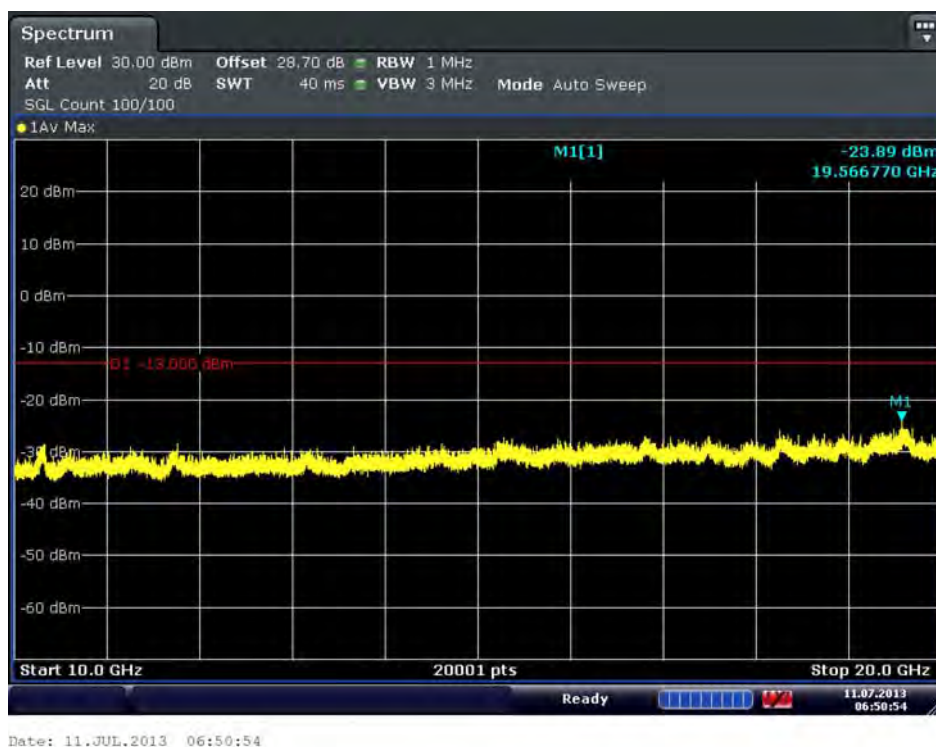


Date: 11.JUL.2013 06:55:11

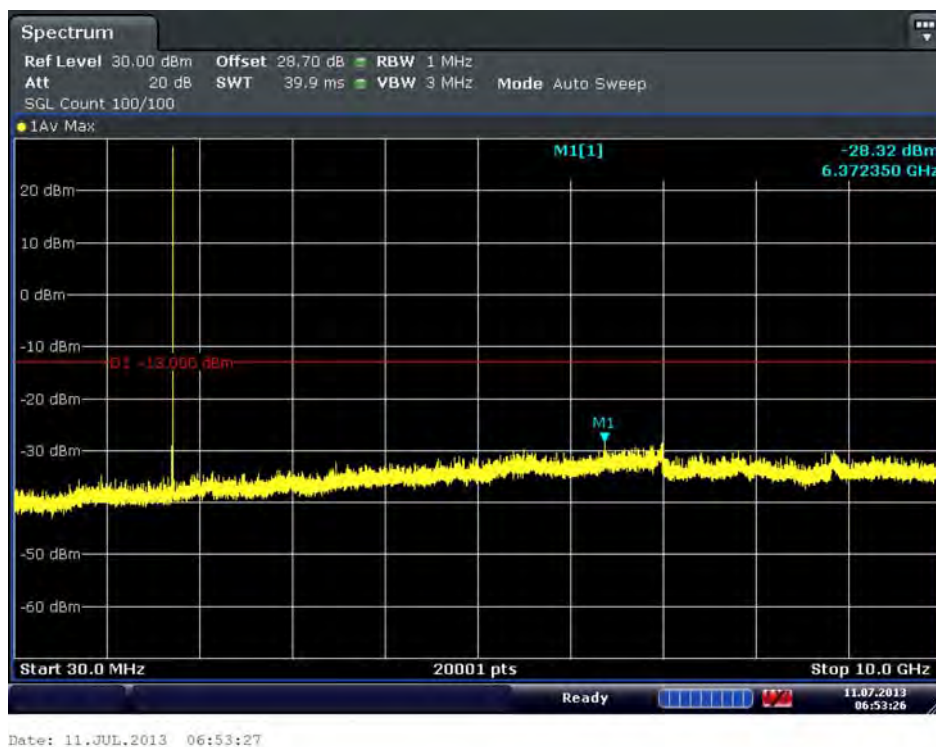
Band 4: Conducted Spurious Plot 1 (5MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



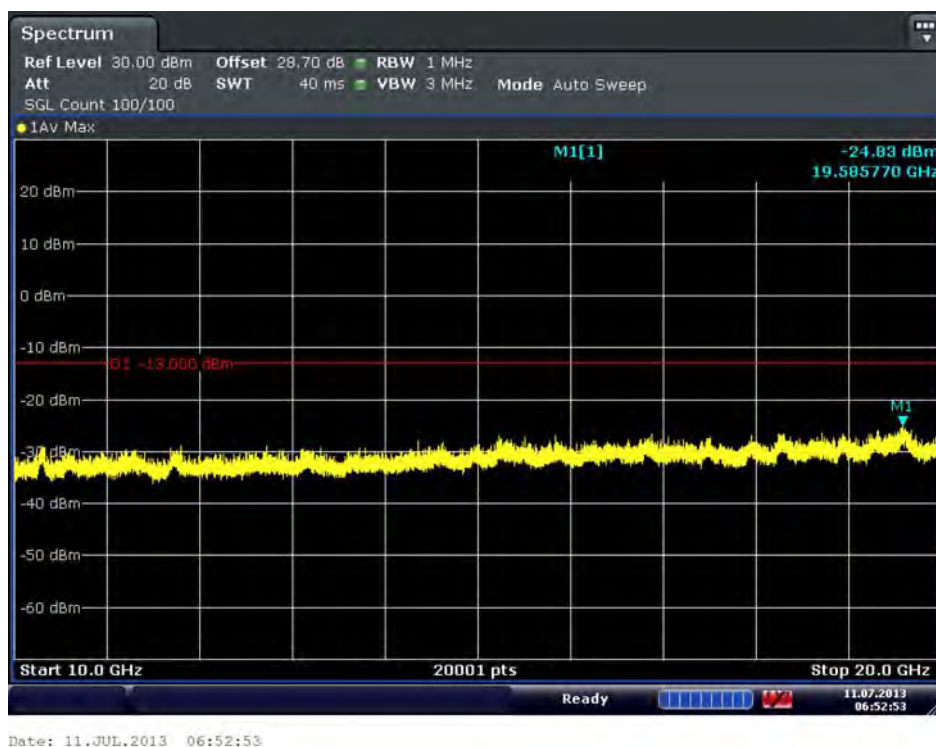
Band 4: Conducted Spurious Plot 2 (5MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



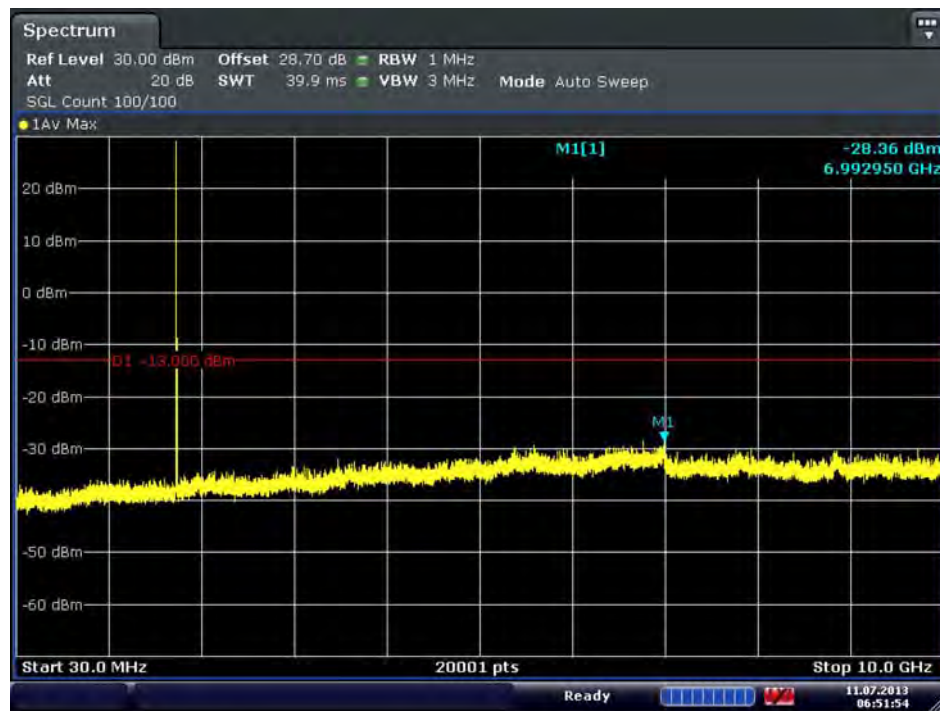
Band 4: Conducted Spurious Plot 1 (5MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)



Band 4: Conducted Spurious Plot 2 (5MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)

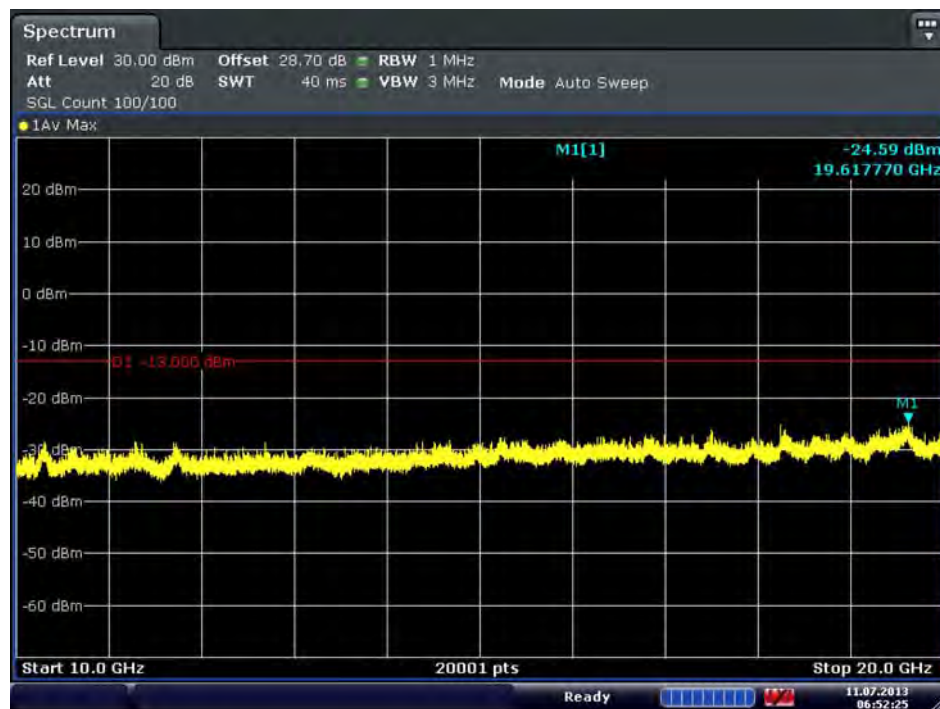


Band 4: Conducted Spurious Plot 1 (5MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)



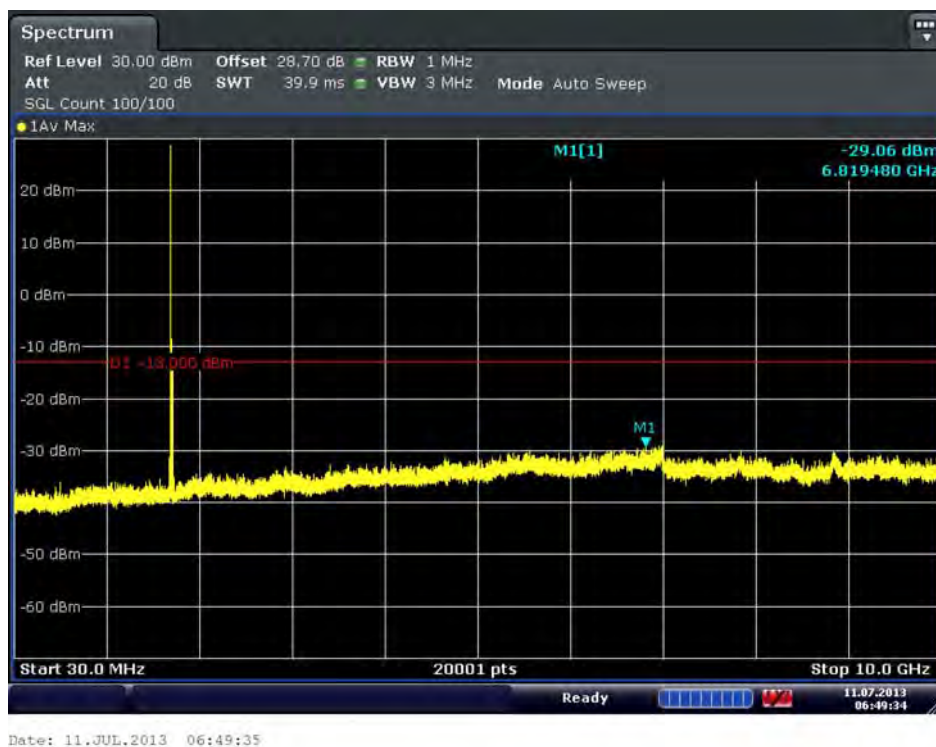
Date: 11.JUL.2013 06:51:54

Band 4: Conducted Spurious Plot 2 (5MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)

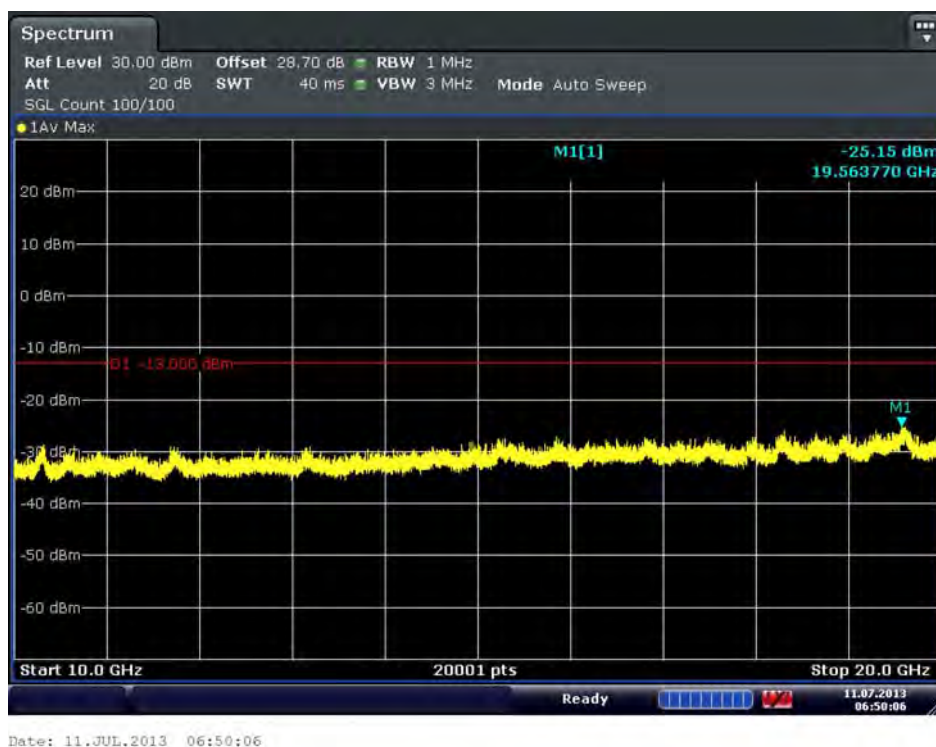


Date: 11.JUL.2013 06:52:25

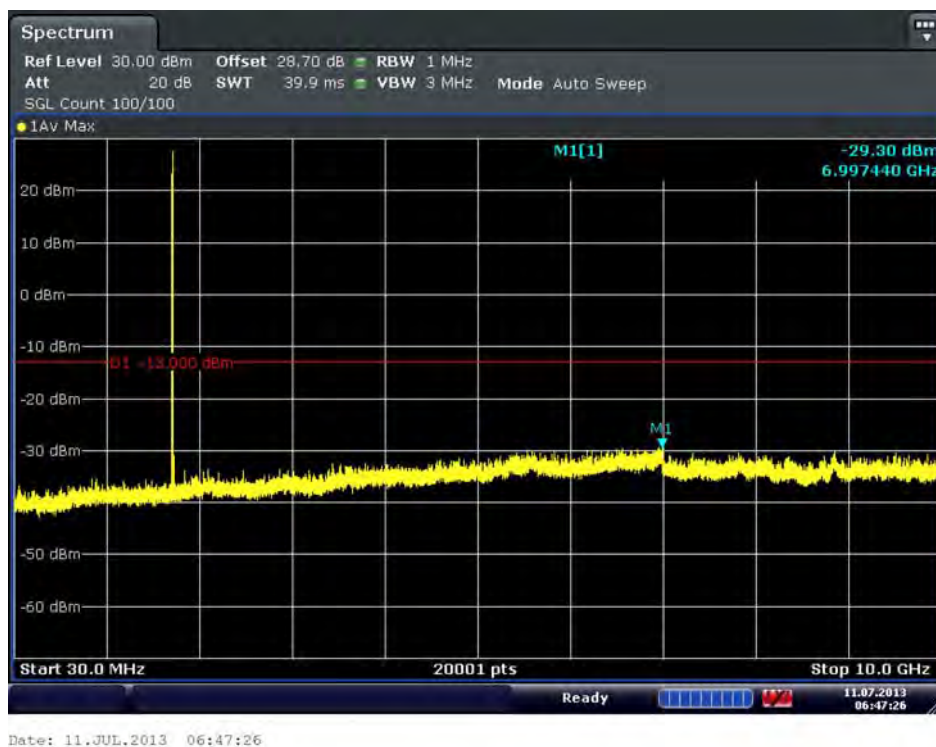
Band 4: Conducted Spurious Plot 1 (10MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



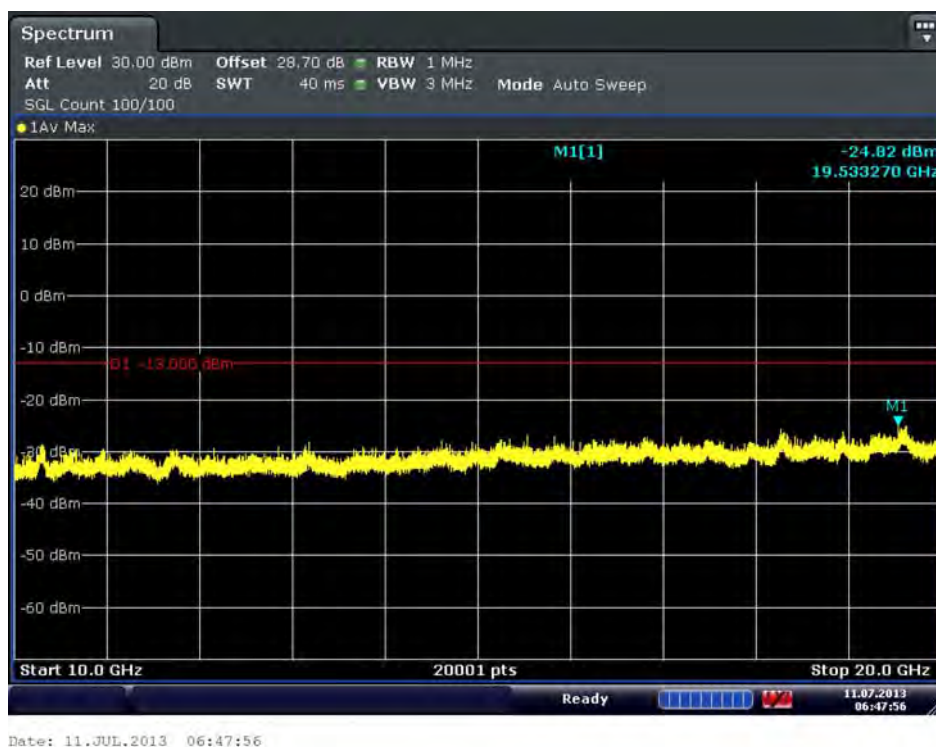
Band 4: Conducted Spurious Plot 2 (10MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



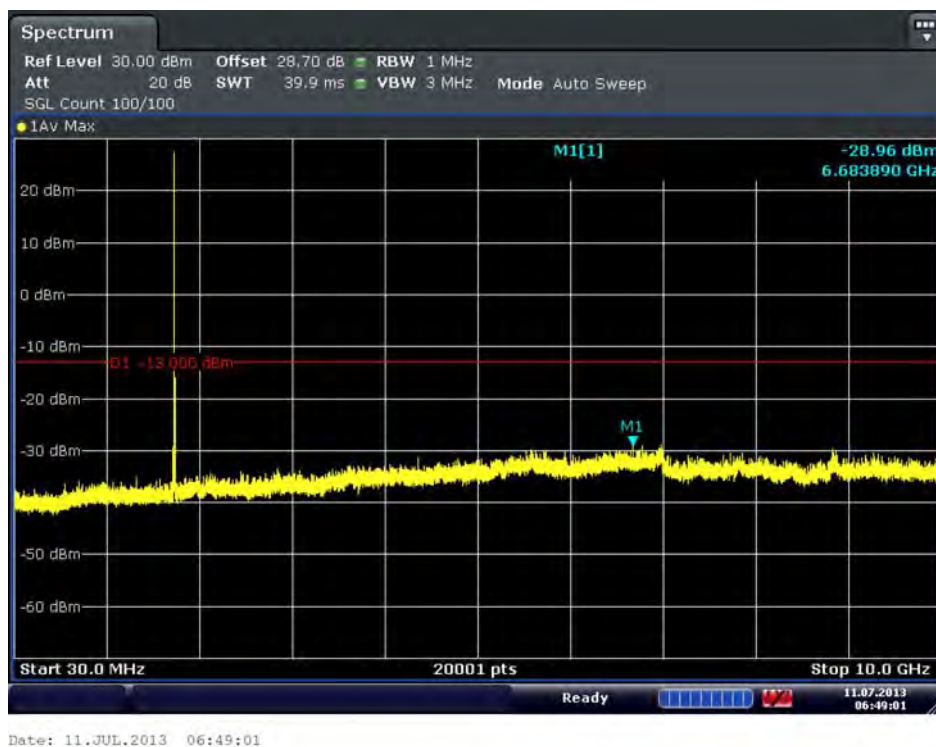
Band 4: Conducted Spurious Plot 1 (10MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)



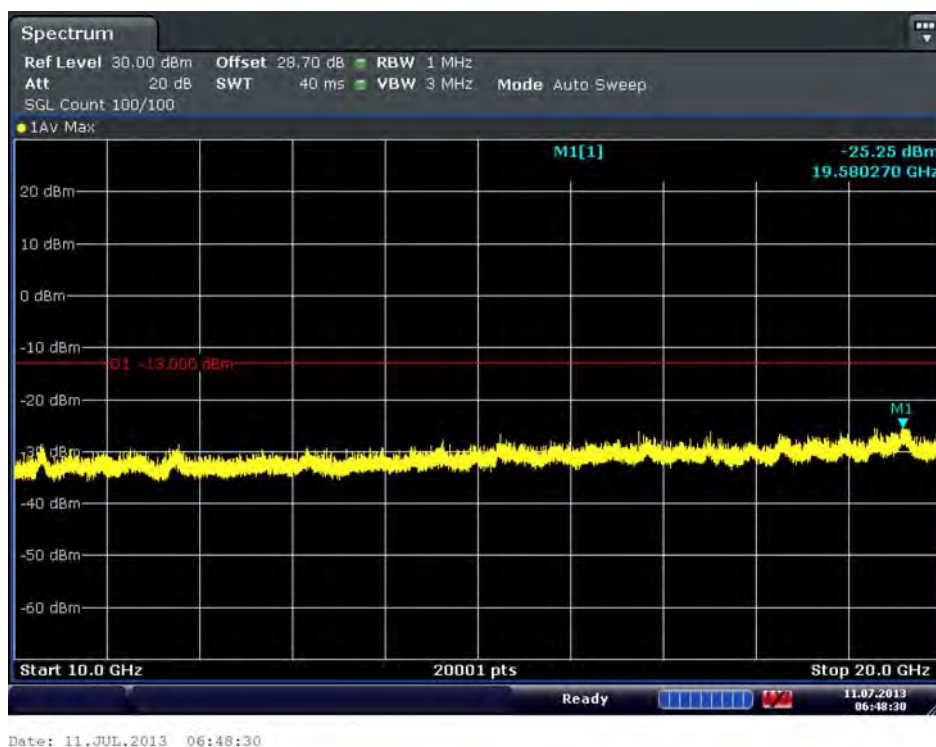
Band 4: Conducted Spurious Plot 2 (10MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)



Band 4: Conducted Spurious Plot 1 (10MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)



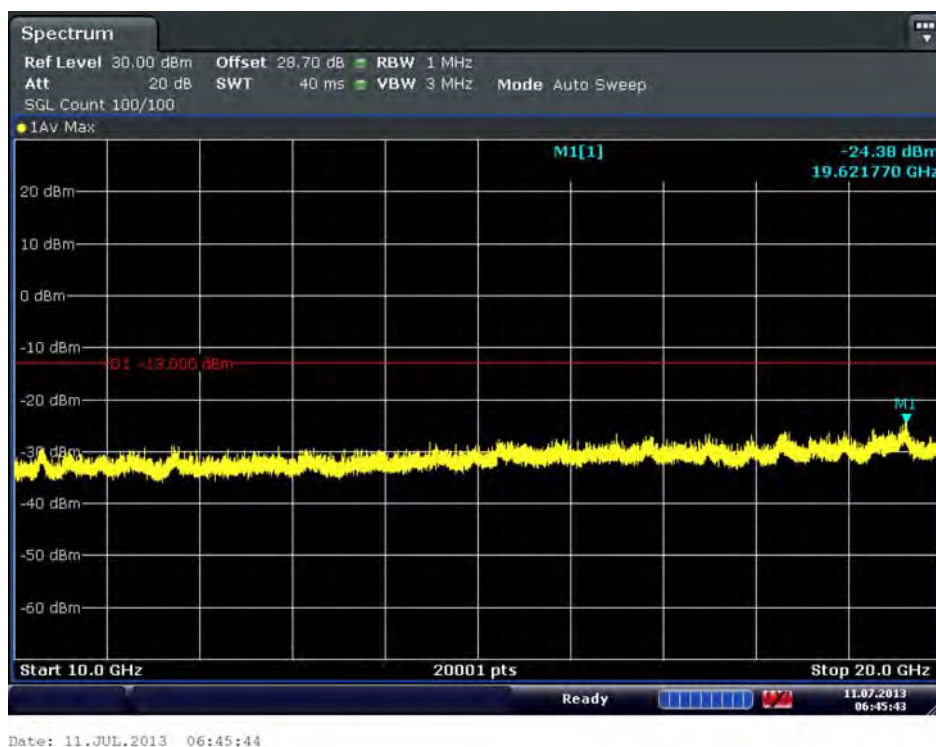
Band 4: Conducted Spurious Plot 2 (10MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)



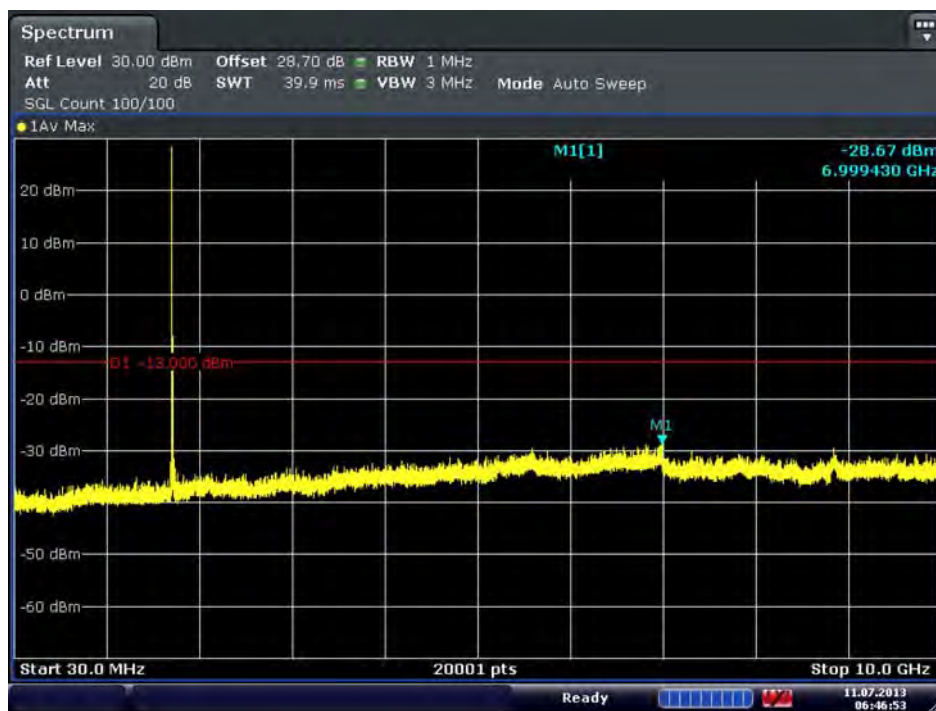
Band 4: Conducted Spurious Plot 1 (15MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



Band 4: Conducted Spurious Plot 2 (15MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)

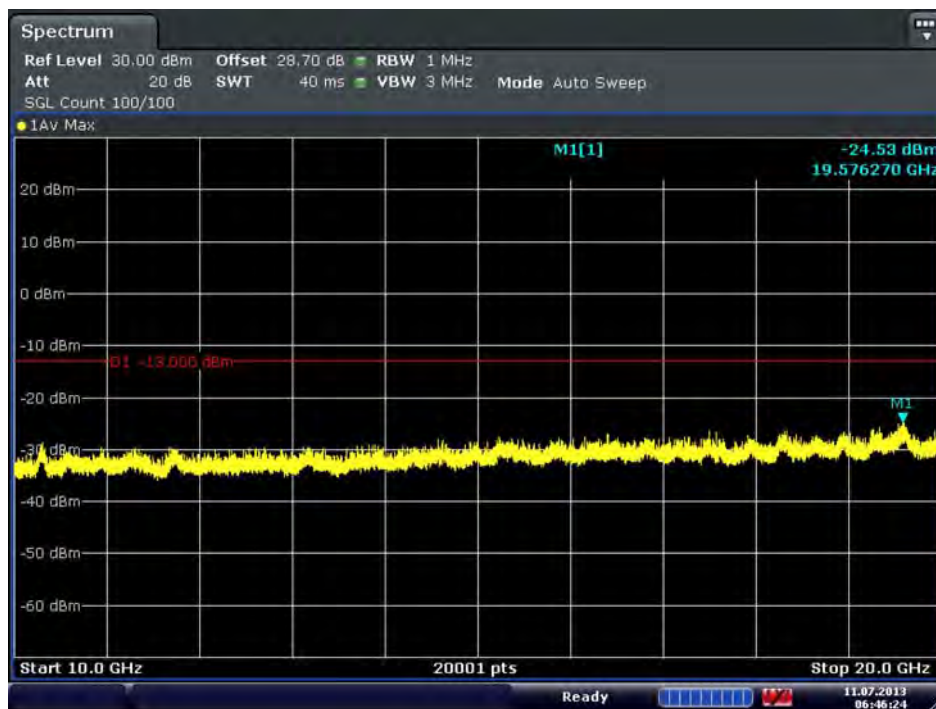


Band 4: Conducted Spurious Plot 1 (15MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)



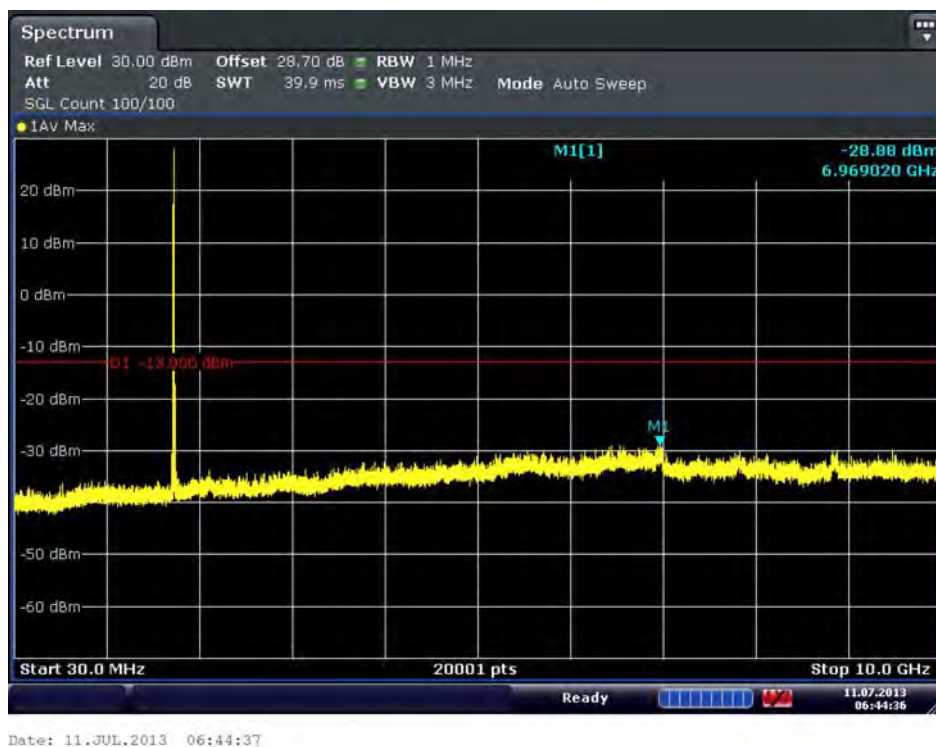
Date: 11.JUL.2013 06:46:53

Band 4: Conducted Spurious Plot 2 (15MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)

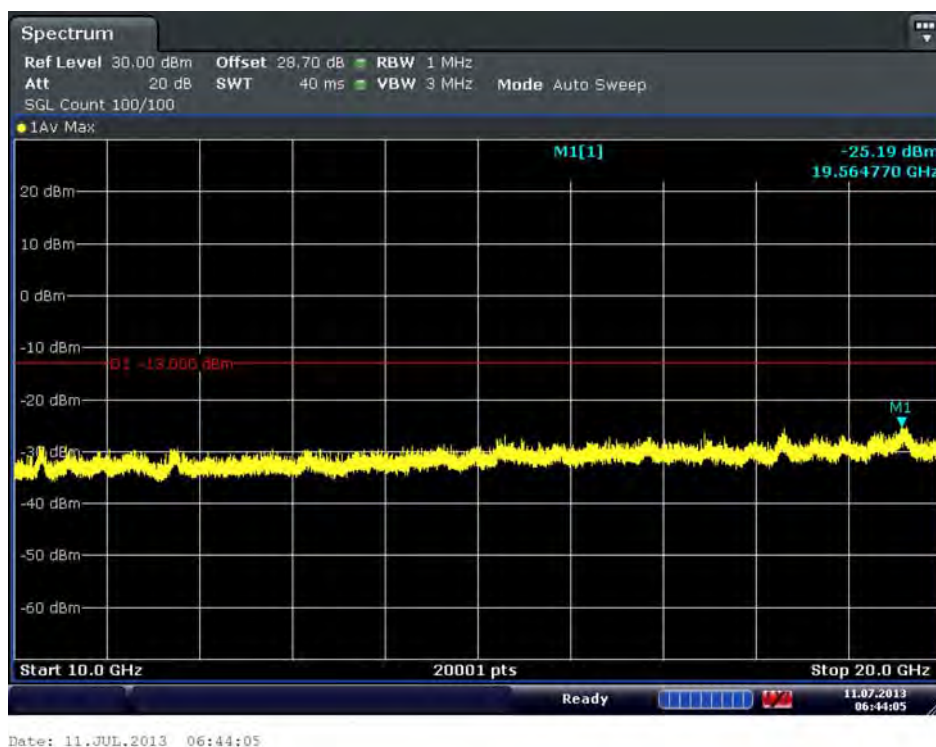


Date: 11.JUL.2013 06:46:25

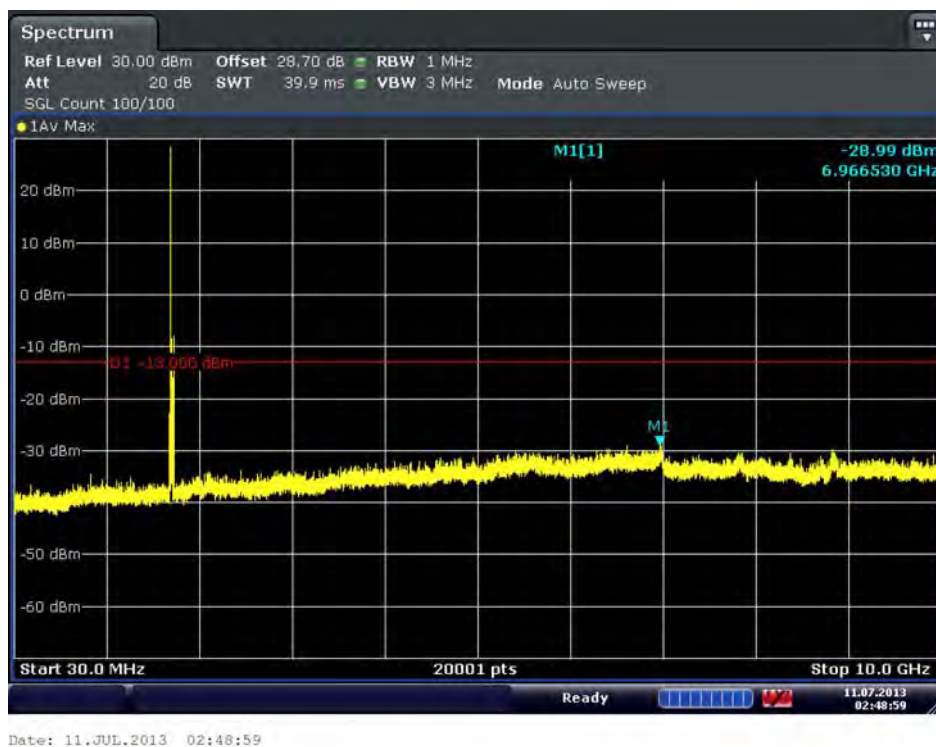
Band 4: Conducted Spurious Plot 1 (15MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)



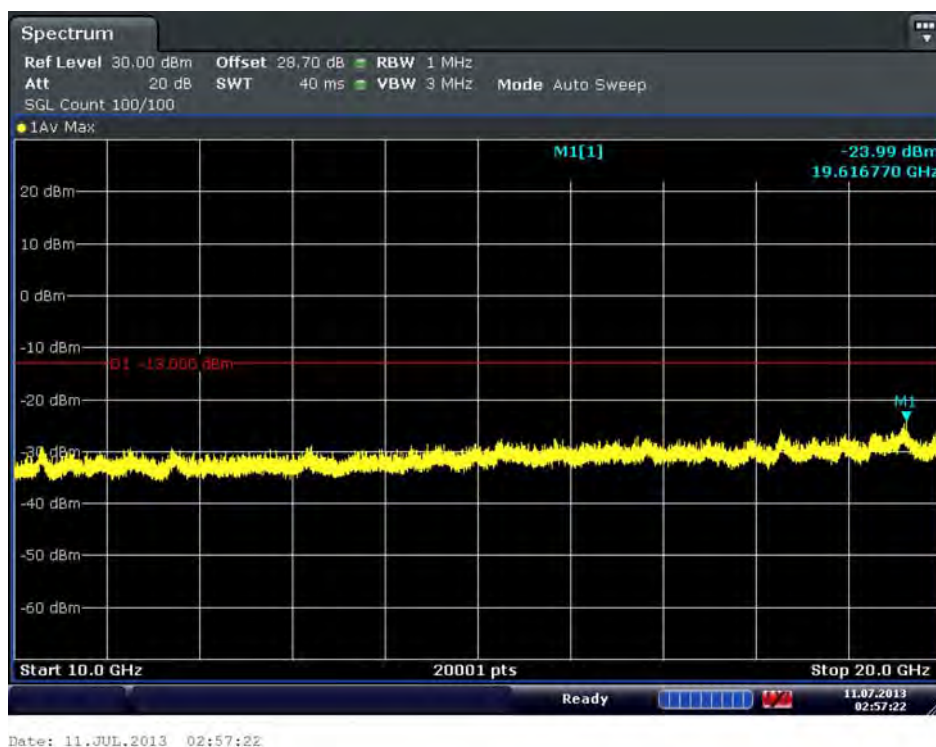
Band 4: Conducted Spurious Plot 2 (15MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)



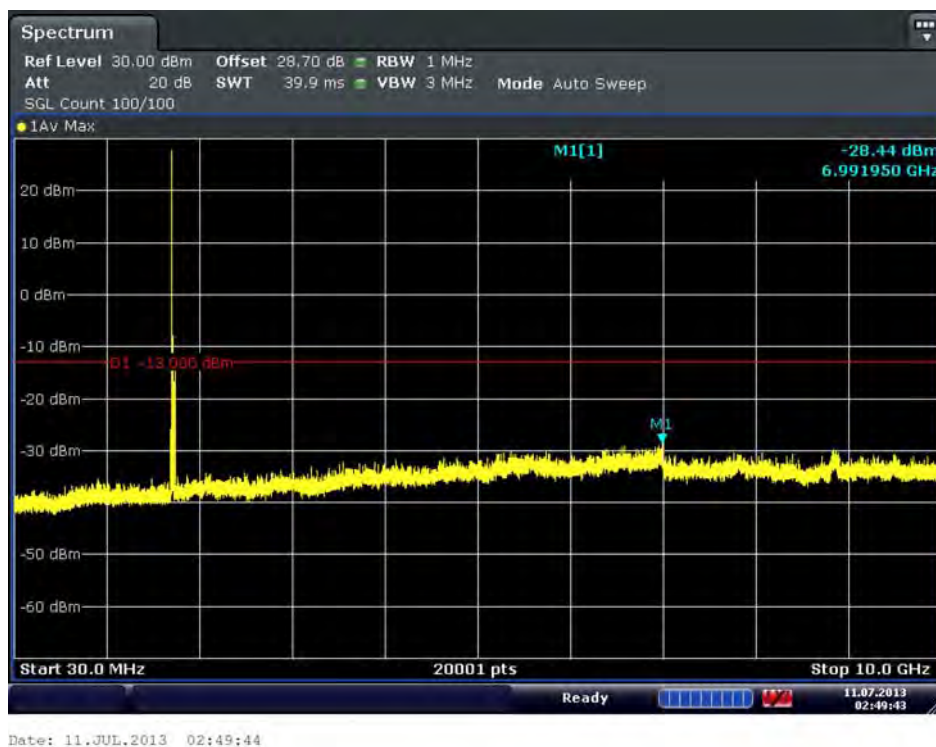
Band 4: Conducted Spurious Plot 1 (20MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



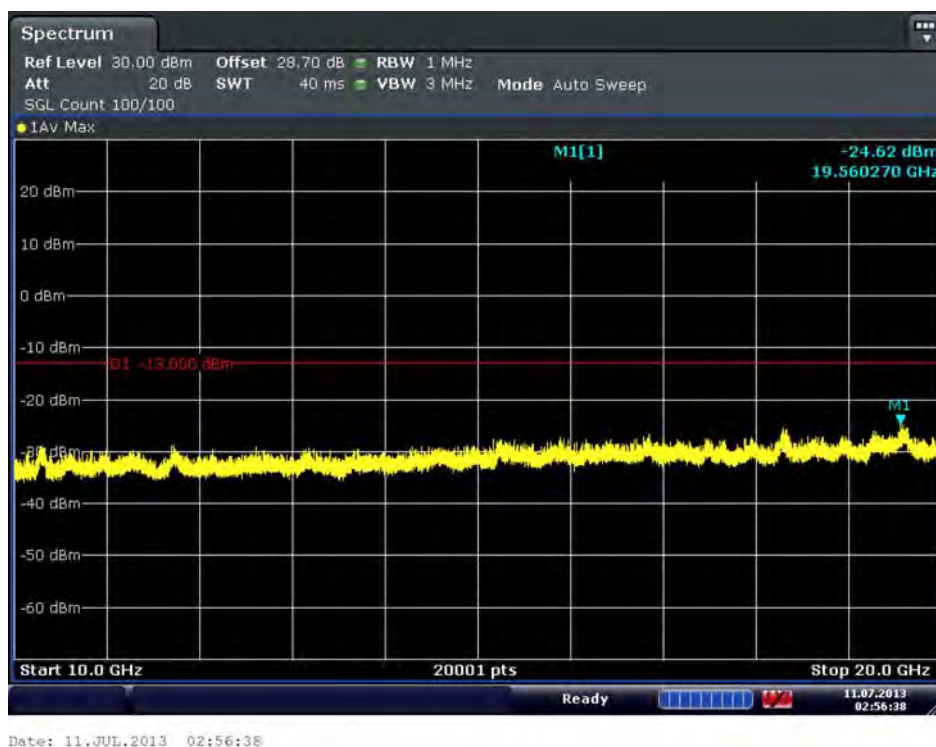
Band 4: Conducted Spurious Plot 2 (20MHz QPSK - RB Size 1, RB Offset 0 - Low Band 4: Channel)



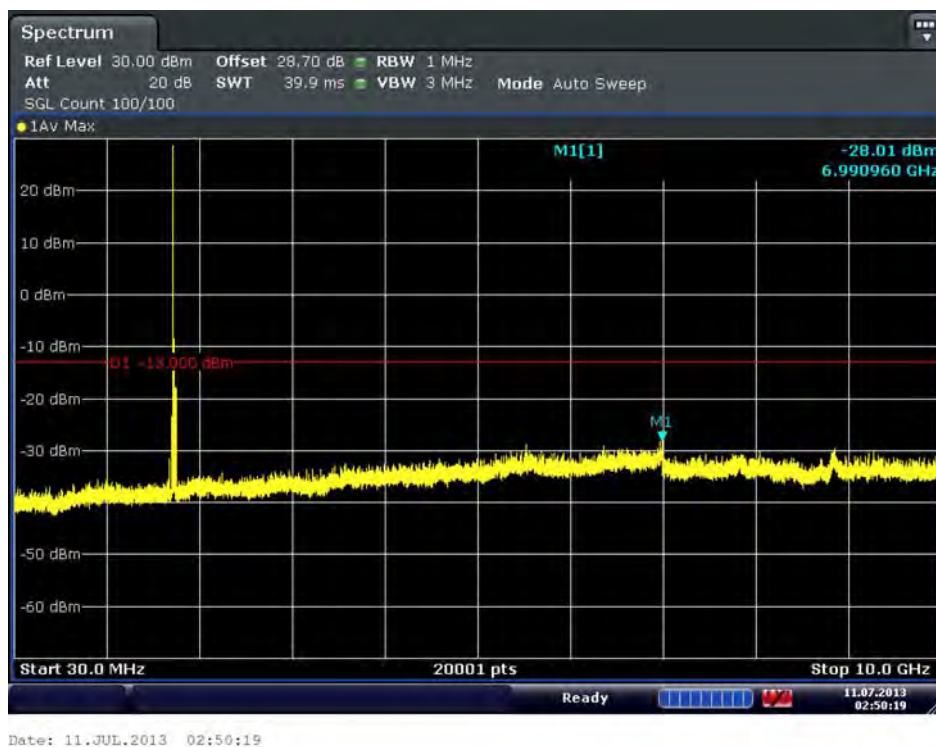
Band 4: Conducted Spurious Plot 1 (20MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)



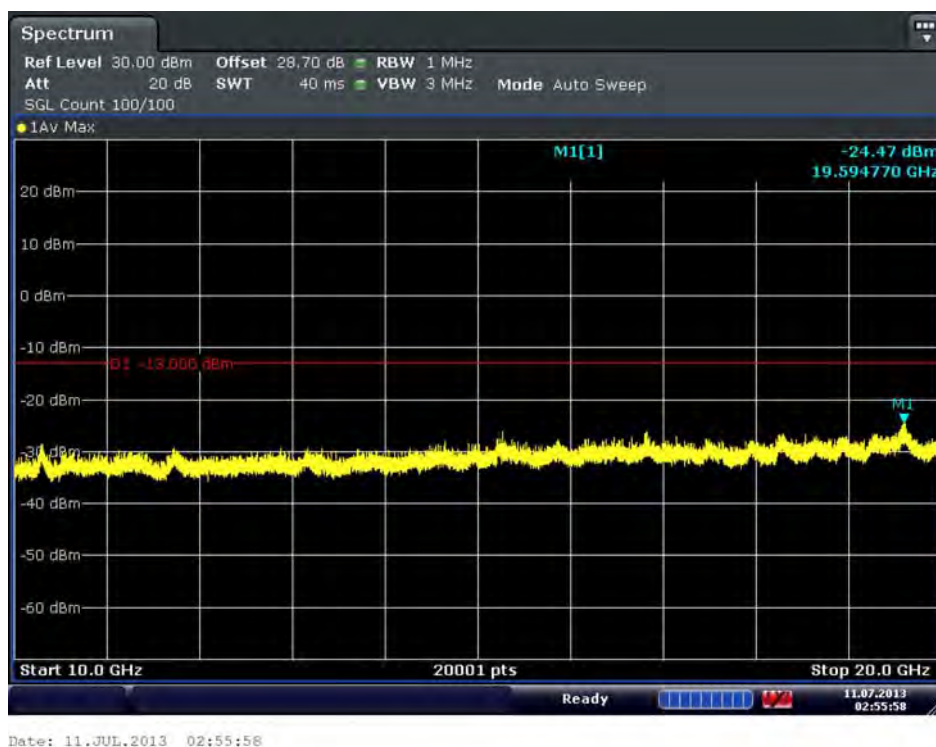
Band 4: Conducted Spurious Plot 2 (20MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 4: Channel)



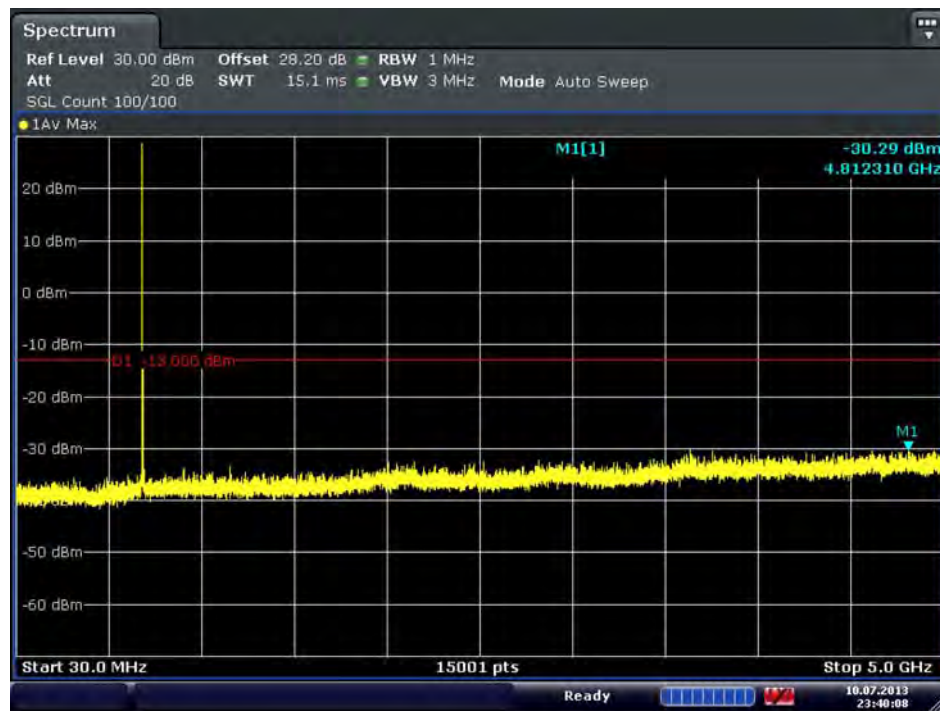
Band 4: Conducted Spurious Plot 1 (20MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)



Band 4: Conducted Spurious Plot 2 (20MHz QPSK - RB Size 1, RB Offset 0 - High Band 4: Channel)

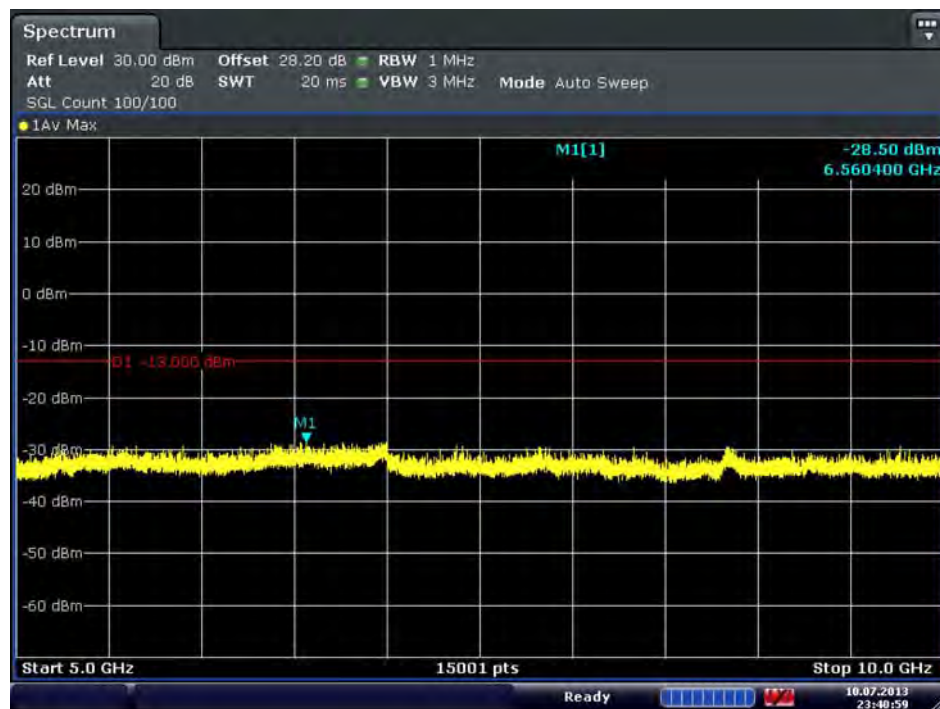


Band 17: Conducted Spurious Plot 1 (5MHz QPSK - RB Size 1, RB Offset 0 - Low Band 17: Channel)



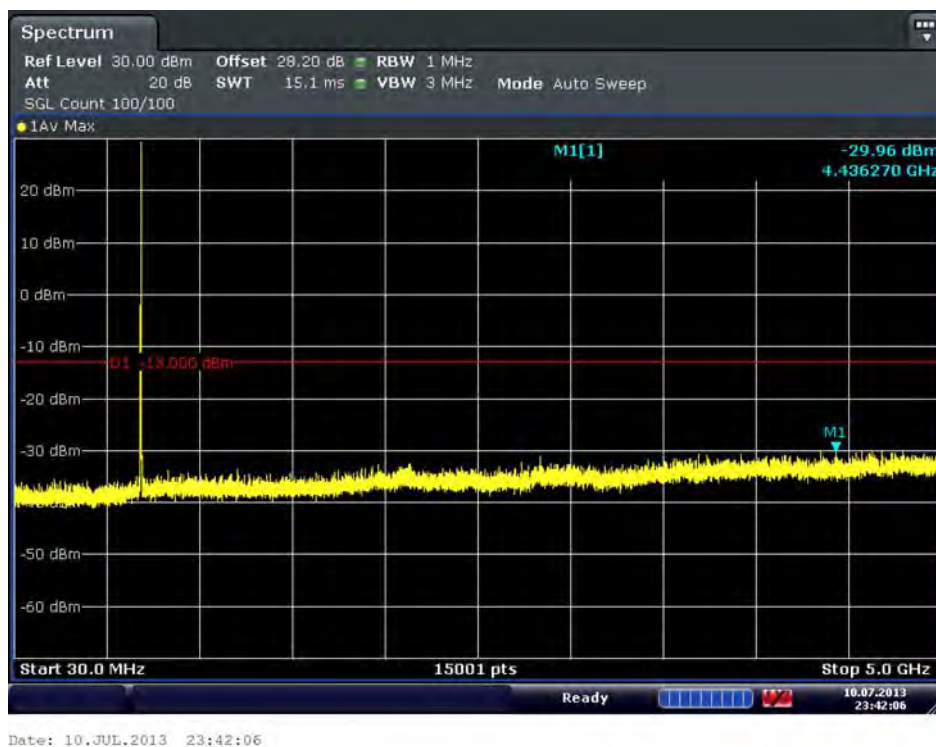
Date: 10.JUL.2013 23:40:08

Band 17: Conducted Spurious Plot 2 (5MHz QPSK - RB Size 1, RB Offset 0 - Low Band 17: Channel)

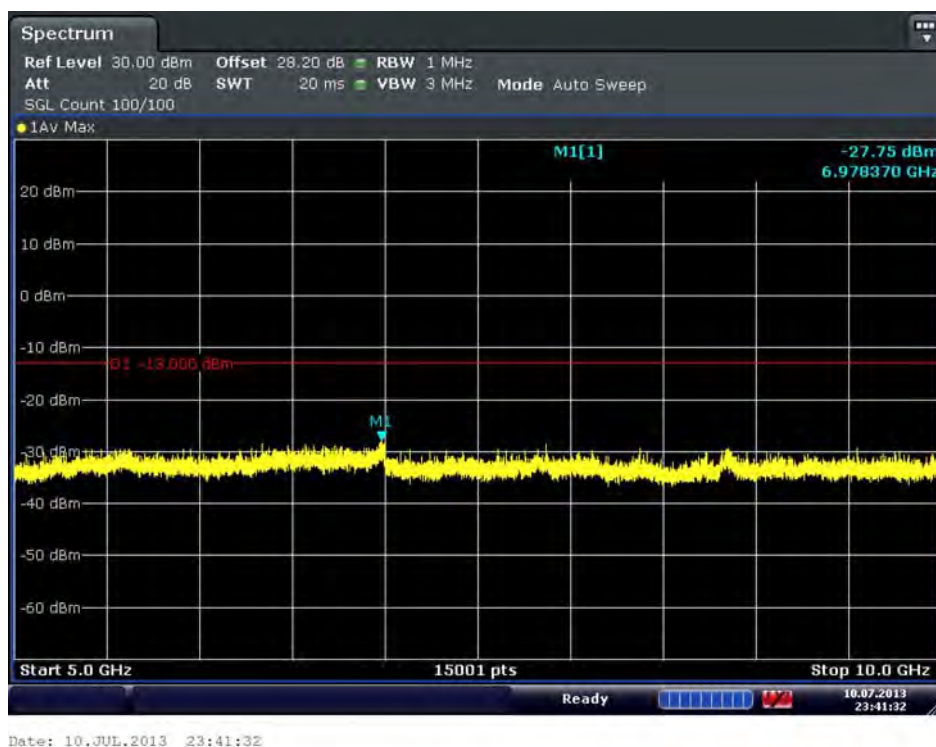


Date: 10.JUL.2013 23:40:59

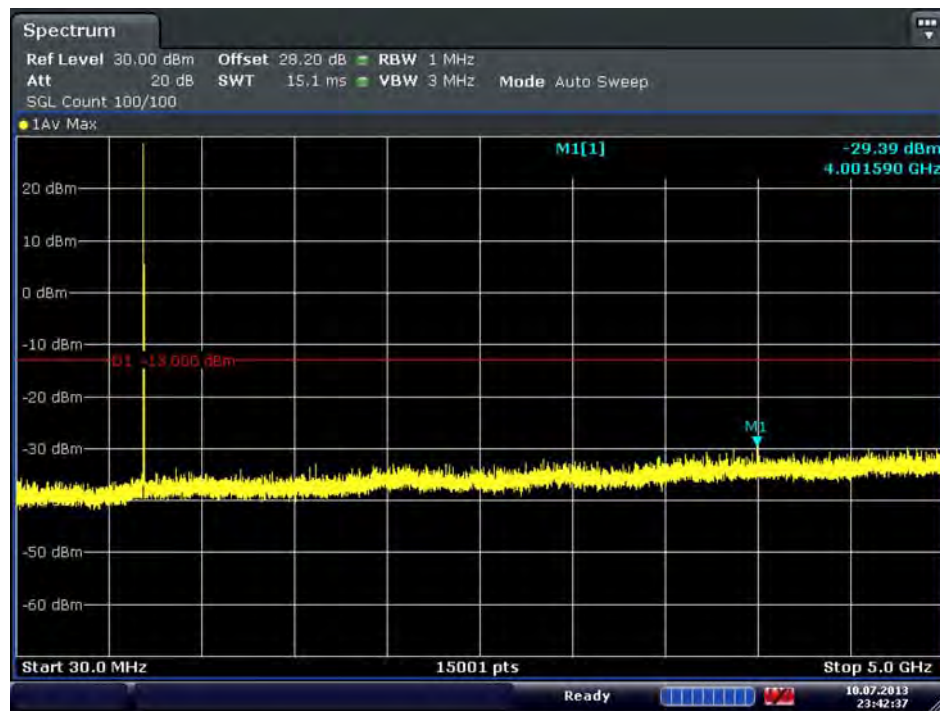
Band 17: Conducted Spurious Plot 1 (5MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 17: Channel)



Band 17: Conducted Spurious Plot 2 (5MHz QPSK - RB Size 1, RB Offset 0 - Mid Band 17: Channel)

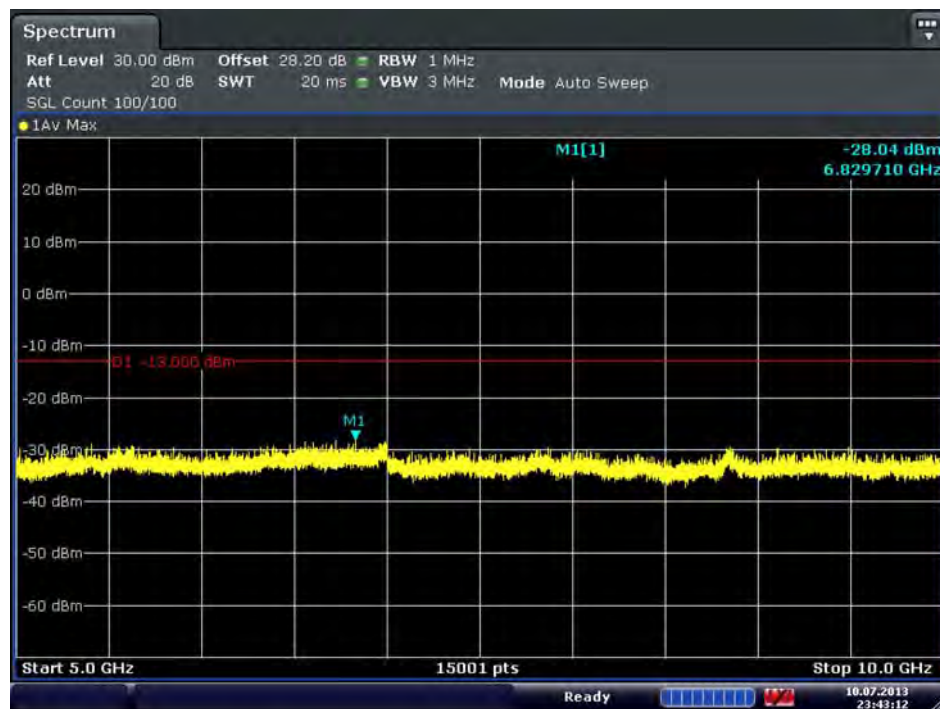


Band 17: Conducted Spurious Plot 1 (5MHz QPSK - RB Size 1, RB Offset 0 - High Band 17: Channel)



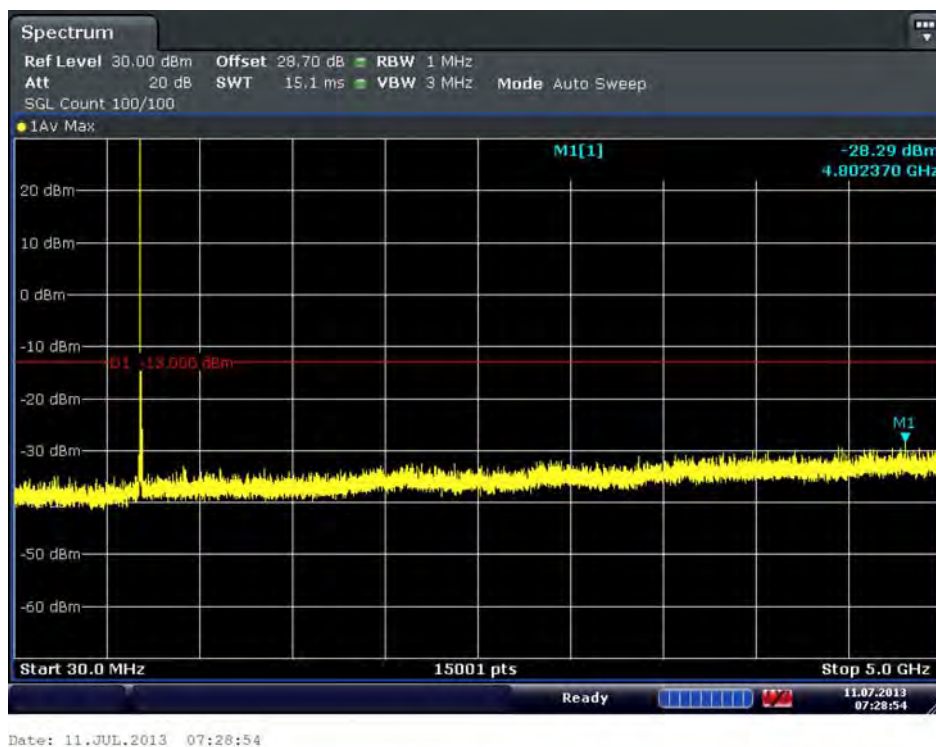
Date: 10.JUL.2013 23:42:37

Band 17: Conducted Spurious Plot 2 (5MHz QPSK - RB Size 1, RB Offset 0 - High Band 17: Channel)

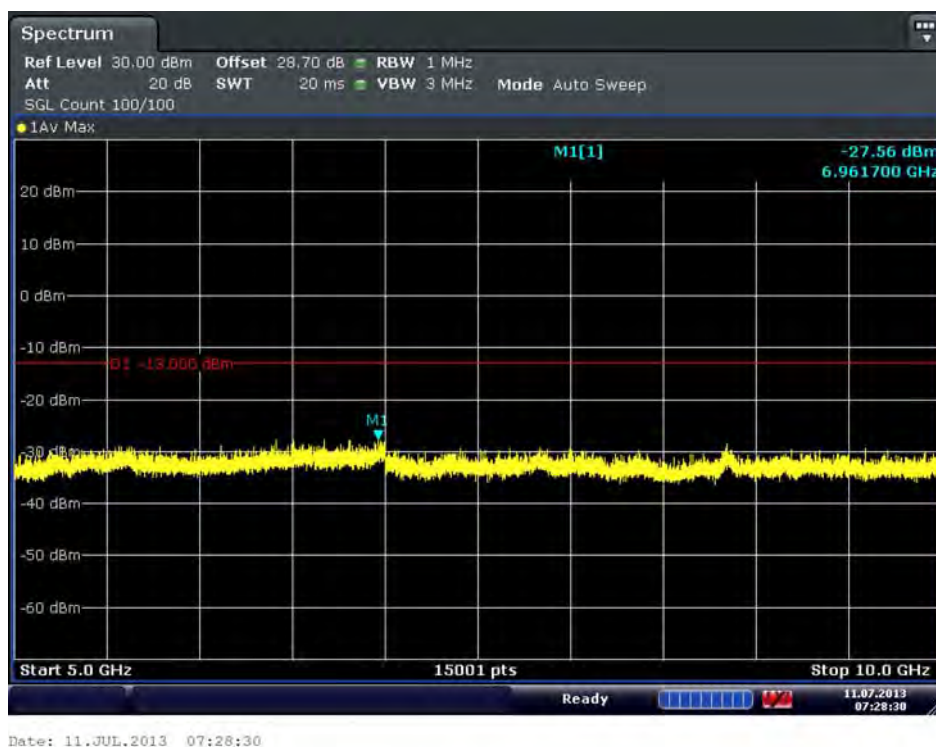


Date: 10.JUL.2013 23:43:12

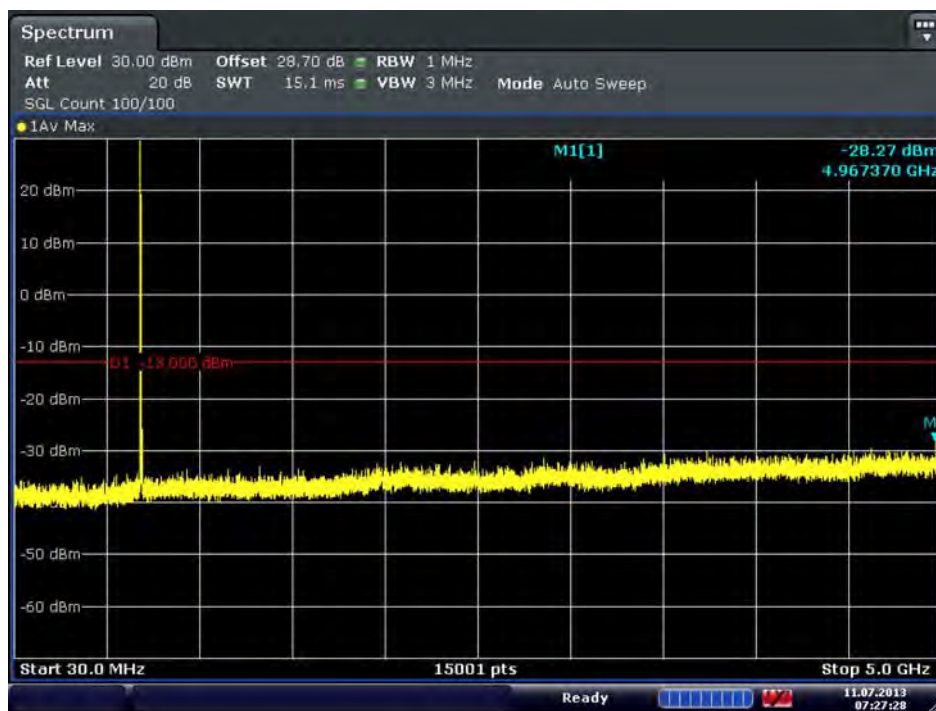
Conducted Spurious Plot 1 (10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



Conducted Spurious Plot 2 (10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

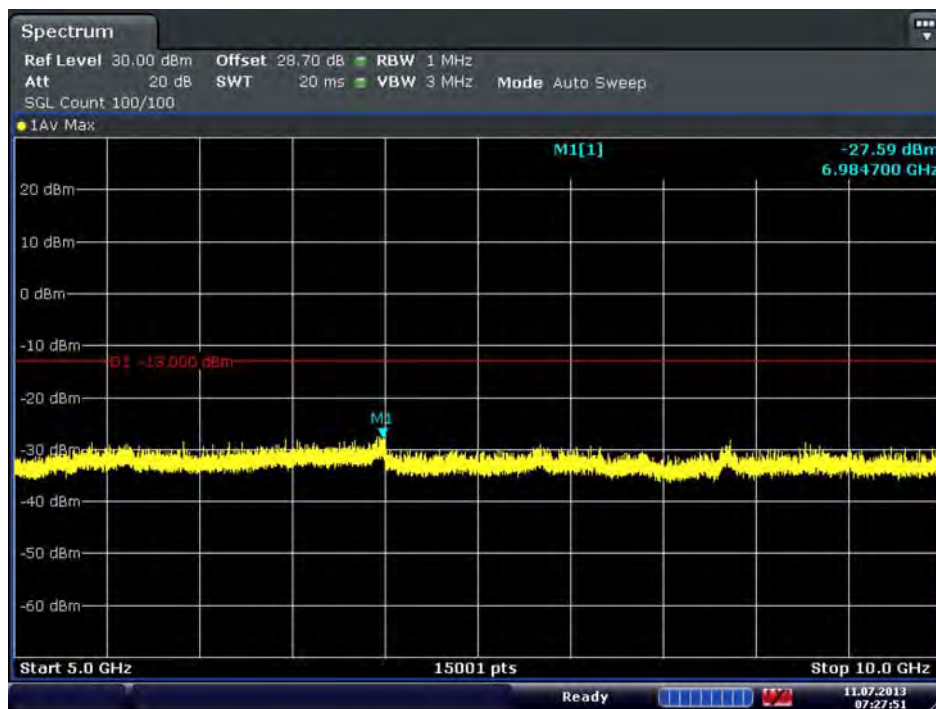


Conducted Spurious Plot 1 (10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Date: 11.JUL.2013 07:27:28

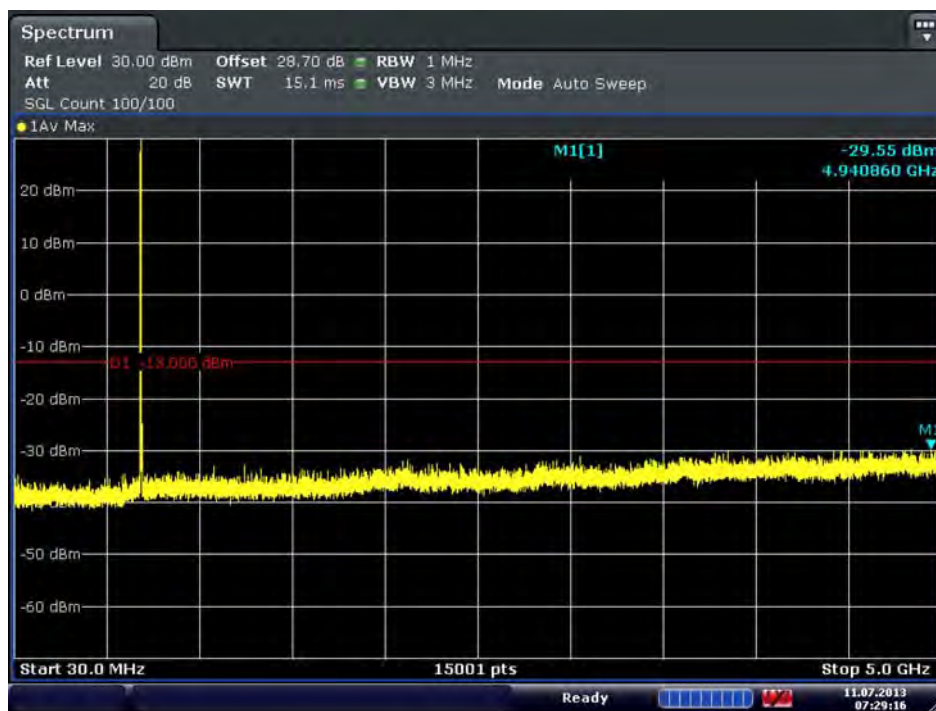
Conducted Spurious Plot 2 (10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Date: 11.JUL.2013 07:27:51

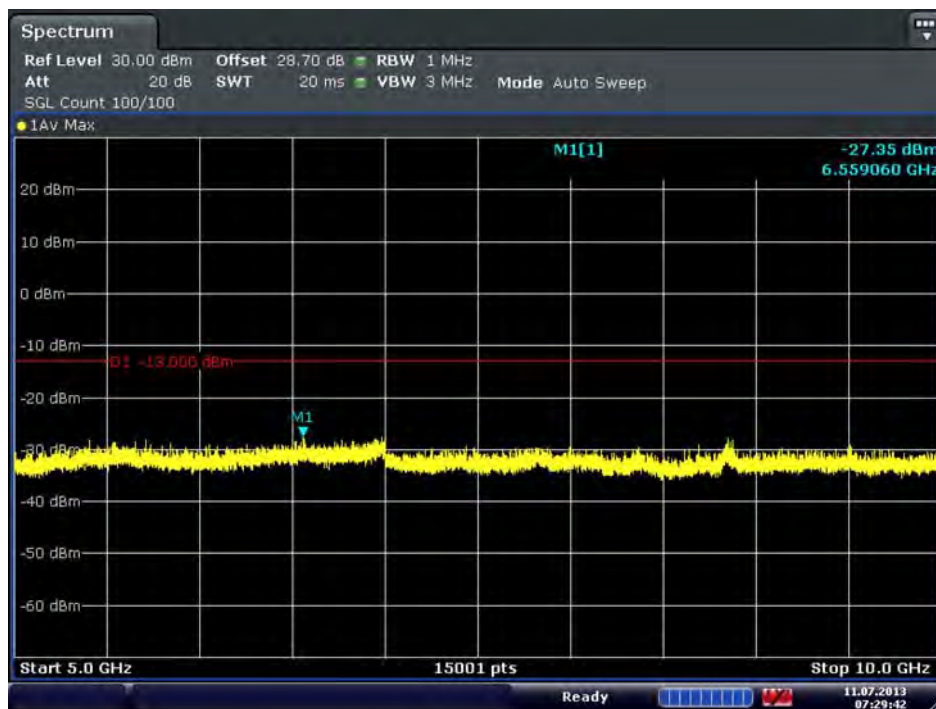
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No. HCTR1307FR21	Date of Issue: July 16, 2013	EUT Type: GSM/WCDMA/LTE Phone with Bluetooth/WLAN	FCC ID: V65C6522	

Conducted Spurious Plot 1 (10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Date: 11.JUL.2013 07:29:16

Conducted Spurious Plot 2 (10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Date: 11.JUL.2013 07:29:42