

# TEST REPORT

**REPORT NUMBER: I12GWD248-3G**

**ON**

**Type of Equipment: GSM QUAD BAND AND UMTS 850/1900**

**Model of Equipment: A3560**

**Marketing Name: A3560, HSD787, HSD787PE, HSD787AL, HSD787CL, HSD787EC, HSD787MV, HSD787OM, HSD787MX, HSD787CR, PCD787PE, PCD787AL, PCD787CL, PCD787EC, PCD787MV, PCD787OM, PCD787MX, PCD787CR, TE787PE, AL787AL, CL787CL, CL787EC, MV787MV, TE787MX, CL787CR**

**Applicant: Cellon Communications Technology(ShenZhen)Co., Ltd.**

**China Telecommunication Technology Labs**

*Month date, year*

*May 2<sup>nd</sup>, 2012*

*Signature*



*Ma Xin*

*Vice Director*

**FCC ID:** T38PCD3560

**Report Date:** 2012-04-25

**Test Firm Name:** China Telecommunication Technology Labs

**Registration Number:** 840587

#### Statement

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 2, 22, and 24. The sample tested was found to comply with the requirements defined in the applied rules.

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## 1 General Information

### 1.1 Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 2 (2010), 22 (2010) and 24 (2010).

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviation from, additions to, or exclusions from the test specifications have been made. See Annex C.

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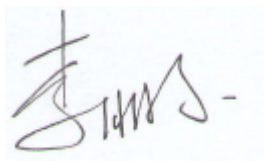
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## 1.2 Testers

Name: Li Peng

Position: Engineer

Signature:



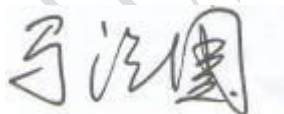
Technical responsibility for area of testing:

Name: Ma Zhiguo

Position: Manager

Date: 2012-05-02

Signature:



### 1.3 Testing Laboratory information

#### 1.3.1 Location

Name: China Telecommunication Technology Labs.

Address: No. 11, Yue Tan Nan Jie, Xi Cheng District

BEIJING

P. R. CHINA, 100083

Tel: +86 10 68094053

Fax: +86 10 68011404

Email: [emc@chinattl.com](mailto:emc@chinattl.com)

#### 1.3.2 Details of accreditation status

Accredited by: China National Accreditation Service for Conformity  
Assessment (CNAS)

Registration number: CNAS Registration No. CNAS L0570

Standard: ISO/IEC 17025

#### 1.3.3 Test location, where different from section 1.3.1

Name: -----

Street: -----

City: -----

Country: -----

Telephone: -----

Fax: -----

Postcode: -----

## 1.4 Details of applicant or manufacturer

### 1.4.1 Applicant

Name: Cellon Communications Technology(ShenZhen)Co.,  
Ltd.  
Address: 13/F, Skyworth Building C Gaoxin S. Ave. 1st,  
High-Tech industrial Park NanShan, ShenZhen  
Country: China  
Telephone: +86-755-86365704  
Fax: +86-755-86365686  
Contact: Maggie Xu  
Email: maggie.xu@cellon.com

### 1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name: --  
Address: --

### 1.4.3 Manufactory (if different from applicant in section 1.4.1)

Name: --  
Address: --

## 2 Test Item

### 2.1 General Information

Manufacturer: Cellon Communications Technology(ShenZhen)Co., Ltd.

Name: GSM QUAD BAND AND UMTS 850/1900

Model Number: A3560

Serial Number: --

Production Status: Product

Receipt date of test item: 2012-04-16

Transmitter Frequency range: WCDMA Band II: 1852.4-1907.6MHz,  
WCDMA Band V: 826.4-846.6MHz

Receiver Frequency Range: WCDMA Band II: 1932.4-1987.6MHz,  
WCDMA Band V: 871.4-891.6MHz

Bluetooth Frequency Range: 2400MHz~2480MHz

High Voltage Level: 4.2 V

Nominal Voltage Level: 3.8 V

Low Voltage Level: 3.4 V

### 2.2 Outline of EUT

E.U.T. is a GSM QUAD BAND AND UMTS 850/1900.

### 2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

### 2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	handset	Cellon Communications Technology(ShenZhen) Co., Ltd.	A3560	--	None
B	adapter	Aquilstar	CNR1218	--	None
C	battery	BAK	BTR380	--	None

## 2.5 Other Information

### (a) Version of hardware and software

HW Version: A3560\_MB\_P1B

SW Version: A3560\_1.0\_Lab\_Test\_Only

### (b) Battery information:

Nominal Voltage: 3.7 V

Capacity: 720 mAh

CTL Test Report

### 3 Summary of Test Results

A brief summary of the tests carried out is shown as following.

<b>WCDMA Band V mode:</b>		
<b>FCC Specification Clause</b>	<b>Name of Test</b>	<b>Result</b>
2.1051, 24.238, 22.917	Radiated Spurious Emission	Pass
22.913, 24.232	Output Power	Pass
15.107, 15.207	Conducted Emission	Pass
2.1049,22.917(b), 24.238(b)	Occupied Bandwidth	Pass
22.917(b), 24.238(b)	Emission Bandwidth	Pass
2.1055,22.355, 24.235	Frequency Stability	Pass
2.1057,22.917, 24.238	Conducted spurious emissions	Pass
22.917(b), 24.238(b)	Band Edge Compliance	Pass

<b>WCDMA Band II mode:</b>		
<b>FCC Specification Clause</b>	<b>Name of Test</b>	<b>Result</b>
2.1051, 24.238, 22.917	Radiated Spurious Emission	Pass
22.913, 24.232	Output Power	Pass
15.107, 15.207	Conducted Emission	Pass
2.1049,22.917(b), 24.238(b)	Occupied Bandwidth	Pass
22.917(b), 24.238(b)	Emission Bandwidth	Pass
2.1055,22.355, 24.235	Frequency Stability	Pass
2.1057,22.917, 24.238	Conducted spurious emissions	Pass
22.917(b), 24.238(b)	Band Edge Compliance	Pass

<b>FCC Specification Clause</b>	<b>Name of Test</b>	<b>Result</b>
2.1047	Modulation characteristics	Pass

## 4 Test Results of mode

### 4.1 Radiated Spurious Emission

<b>Specifications:</b>	2.1051, 24.238, 22.917
<b>Test conditions:</b>	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Operation Mode</b>	TX on, channel 4183 and 9400
<b>Test Results:</b>	Pass

**Limit Level Construction:**

According to Part 24.238 (a), i.e., Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB, so the limit level is:  
 $P(\text{dBm}) - (43 + 10 \log(P)) \text{ dB} = -13\text{dBm}$

<b>Limits for Radiated spurious emissions(UE)</b>	
<b>Frequency range</b>	<b>Limit Level /Resolution Bandwidth</b>
30 MHz to 20000 MHz	-13dBm/1MHz

**Test Setup:**

The EUT was placed in an anechoic chamber, see figure SP. The Wireless Communications Test Set was used to set the TX channel and power level and modulate the TX signal with different bit patterns. The test was done using an automated test system, where all test equipments were controlled by a computer.

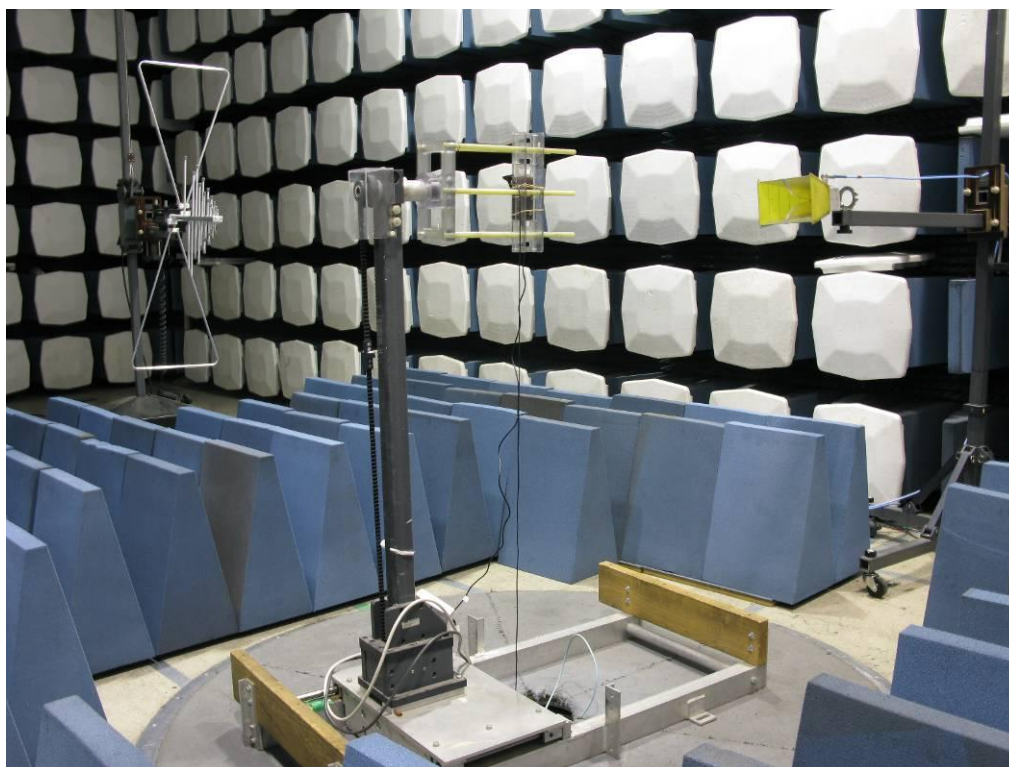


Figure SP

**Test Method:**

The measurement was performed accordance with section 2.2.12 of TIA-603-C-2004: *Land Mobile FM or PM Communications Equipment Measurement and Performance Standards*.

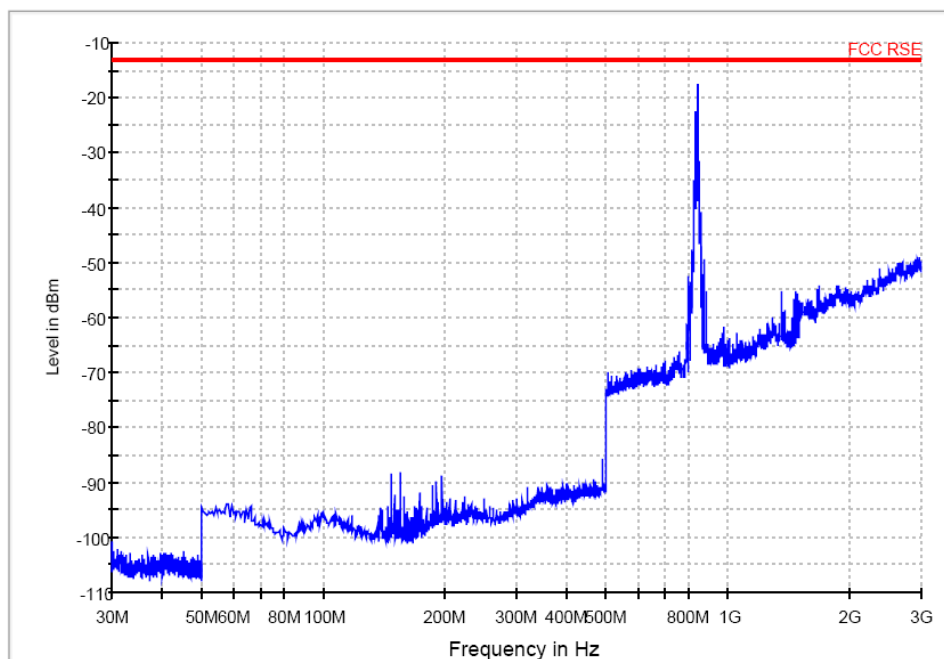
- 1 The maximum spurious emissions were searched by turning the azimuth of the turntable, shifting the polarization of the measuring antenna and changing the pose of the EUT.
- 2 Levels of EUT's transmitter harmonics and suspicious signals were recorded.
- 3 The recorded levels were corrected in the automated test system with the correction factors given by a substitution calibration made before the measurement.
- 4 The corrected values of radiated spurious emissions indicated as EIRP are reported.

**Note:**

- 1 The investigated ARFCNs are 4183 (836.6 MHz) and 9400 (1880.0 MHz).
- 2 The investigated frequency range is 30 MHz to the 10<sup>th</sup> harmonic of the highest Frequency generated within the equipment.

## Graphical test Results:

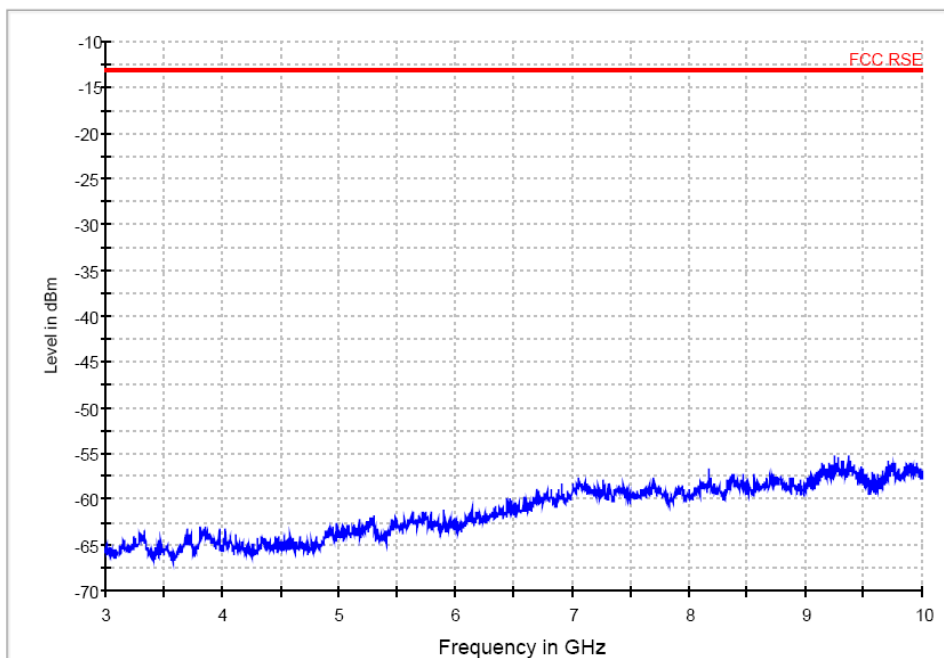
GSM850 Tx 30-3GHz-FCC Test



— FCC RSE Limit Line — Preview Result 1

### Channel 4183 for 850MHz – 30MHz to 3GHz

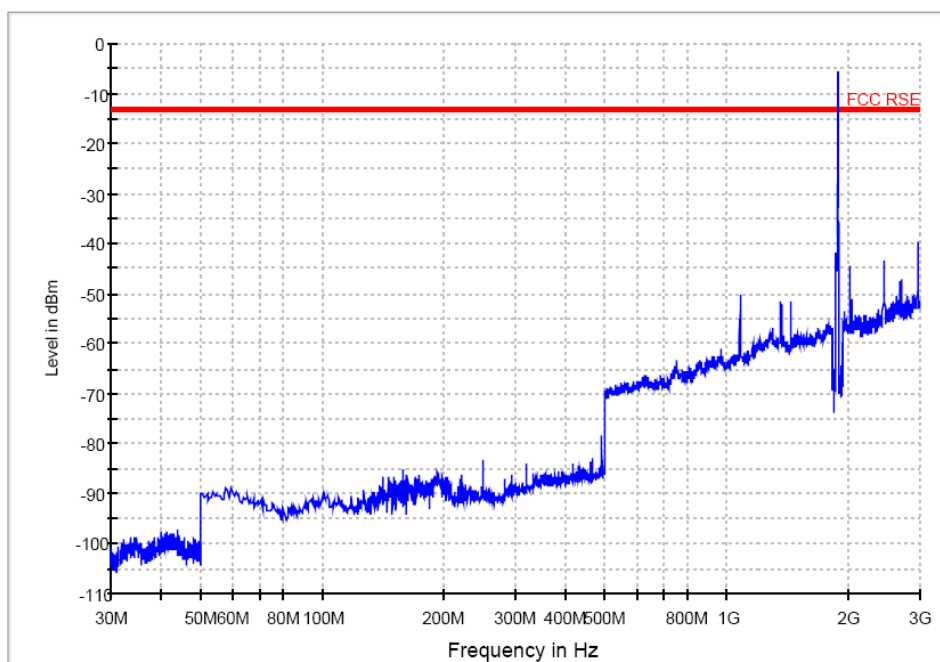
GSM850 Tx 3-12.75GHz-FCC Test



— FCC RSE Limit Line — Preview Result 1

### Channel 4183 for 850MHz – 3GHz to 10GHz

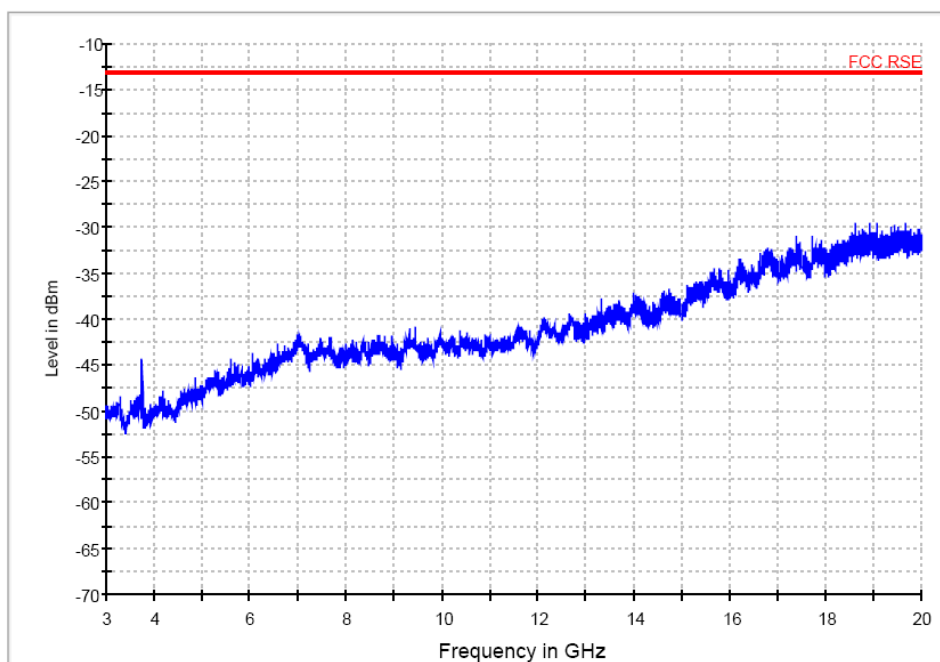
GSM1900 Tx 30-3GHz-FCC Test



— FCC RSE Limit Line — Preview Result 1

### Channel 9400 for 1900MHz– 30MHz to 3GHz

GSM1900 Tx 3-20GHz-FCC Test



— FCC RSE Limit Line — Preview Result 1

### Channel 9400 for 1900MHz– 3GHz to 20GHz

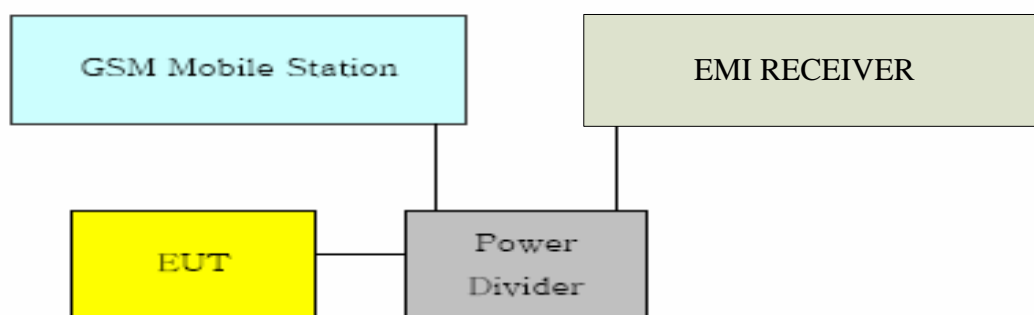
## 4.2 Output Power

### 4.2.1. Conducted Output Power

<b>Specifications:</b>	22.913, 24.232
<b>Test conditions:</b>	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Operation Mode</b>	TX on, channel 9262, 9400, 9538, 4132, 4183 and 4233
<b>Test Results:</b>	Pass

#### Test Setup:

During the process of testing, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by Rhode & Schwarz EMI test receiver (ESI26).



#### Test Method

- 1) The EUT was coupled to the EMI test receiver analyzer mode and the base station simulator through a power divider. The radio frequency load attached to the EUT antenna terminal was 50 Ohm. The loss of the cables the test system is calibrated to correct the readings.
- 2) The spectrum analyzer was set to Max-peak Detector function and Maximum hold mode.
- 3) The resolution bandwidth of the spectrum analyzer was comparable to the emission bandwidth.

**Note: --**

**Test Result:****WCDMA Band II**

ARFCN	Output Power [dBm]
9262	22.96
9400	22.95
9538	22.63

**WCDMA Band V**

ARFCN	Output Power [dBm]
4132	22.94
4183	22.70
4233	22.87

#### 4.2.2. Radiated Output Power

##### Test Setup:

The EUT was set in an anechoic chamber, which is connected to the Wireless Communications Test Set located outside the chamber over the air. The test was done using an automated test system, where all test equipments were controlled by a computer.

##### Test Method

The measurement was performed accordance with section 2.2.17 of ANSI/TIA-603-B-2002: *Land Mobile FM or PM Communications Equipment Measurement and Performance Standards*.

1 The maximum power was searched by turning the azimuth of the turntable, shifting the polarization of the measuring antenna and changing the pose of the EUT.

2 The measured levels are EIRP values corrected in the automated test system with the correction factors given by a substitution calibration made before the measurement. The calibration is made separately for vertical and horizontal polarization and the system uses different correction factors depending on the measuring antenna polarization.

3 The corrected maximum levels were reported for EIRP values, and ERP values can be calculated from EIRP values.

##### Note:

$ERP\text{ dBm} = EIRP\text{ dBm} - 2.15\text{dB}$ .

**EIRP Value for WCDMA Band V:****Limits**

	Burst Peak ERP (dBm)
WCDMA Band V	$\leq 38.45$ (7W)

ARFCN	Frequency [MHz]	ERP [dBm]
4132	826.40	20.90
4183	836.60	20.07
4233	846.60	21.34

**EIRP Value for WCDMA Band II:****Limits**

	Burst Peak EIRP (dBm)
WCDMA Band II	$\leq 33$ (2W)

ARFCN	Frequency [MHz]	EIRP [dBm]
9262	1852.40	23.53
9400	1880.00	23.11
9538	1907.60	22.59

### 4.3 Conducted Emission

<b>Specifications:</b>	15.107, 15.207
<b>Test conditions:</b>	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Operation Mode</b>	TX on, channel 4183 and 9400
<b>Test Results:</b>	Pass

#### Test Method

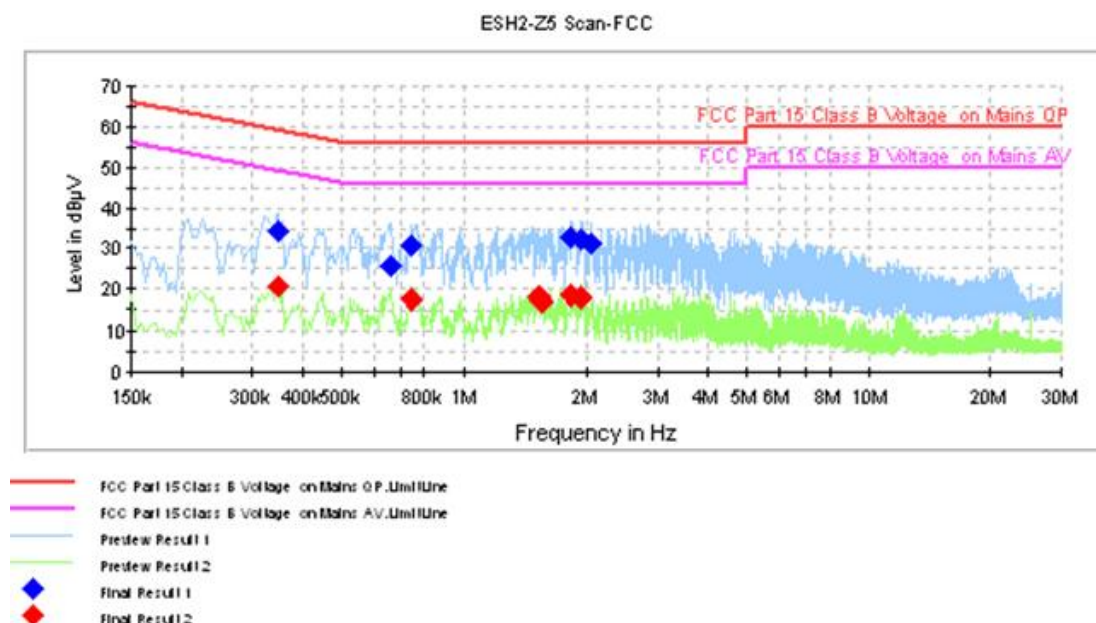
The Measure procedure is ANSI C63.4-1003 is used. Conducted Emission is measured with travel charger.

#### Limit

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50
Note: * Decreases with logarithm of the frequency		

# Test Result

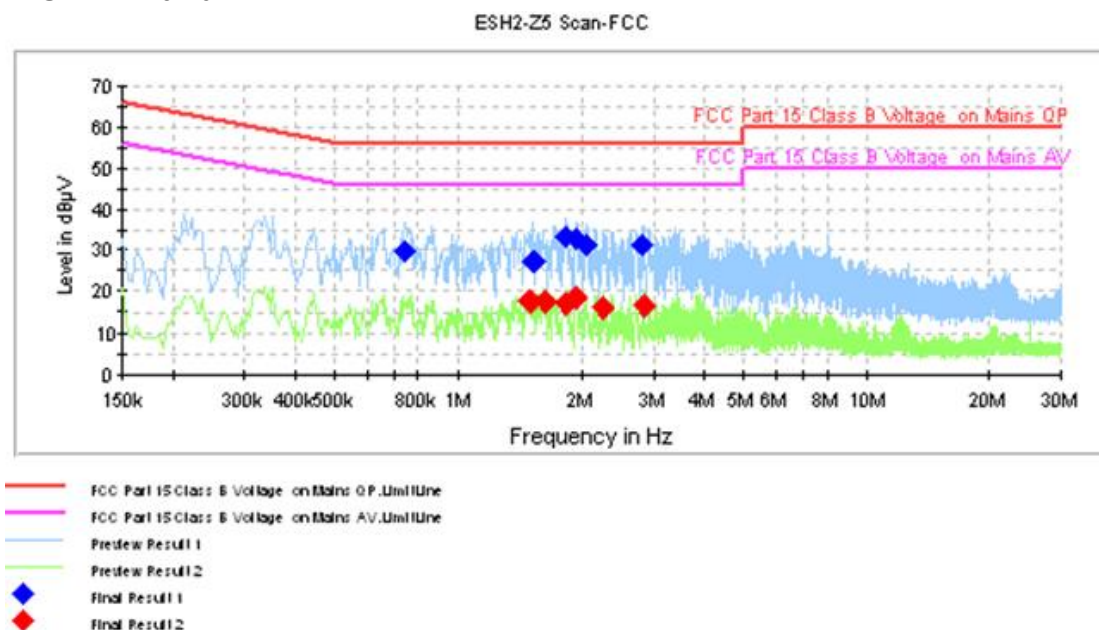
## WCDMA Band V:



Frequency (MHz)	QuasiPeak (dB μV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)
0.348000	34.0	FLO	L1	10.0	25.0	59.0
0.663000	25.8	FLO	N	10.0	30.2	56.0
0.739500	30.6	FLO	L1	10.0	25.4	56.0
1.833000	32.7	FLO	L1	10.1	23.3	56.0
1.941000	32.4	FLO	L1	10.1	23.6	56.0
2.053500	31.0	FLO	L1	10.1	25.0	56.0

Frequency (MHz)	CAverage (dB μV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)
0.348000	20.5	FLO	L1	10.0	28.5	49.0
0.739500	17.4	FLO	L1	10.0	28.6	46.0
1.536000	18.3	FLO	L1	10.1	27.7	46.0
1.545000	17.3	FLO	L1	10.1	28.7	46.0
1.833000	18.7	FLO	L1	10.1	27.3	46.0
1.941000	18.0	FLO	L1	10.1	28.0	46.0

**WCDMA Band II:**



Frequency (MHz)	QuasiPeak (dB $\mu$ V)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.744000	29.7	FLO	L1	10.0	26.3	56.0
1.531500	27.3	FLO	L1	10.1	28.7	56.0
1.828500	33.1	FLO	L1	10.1	22.9	56.0
1.936500	32.7	FLO	L1	10.1	23.3	56.0
2.040000	31.3	FLO	L1	10.1	24.7	56.0
2.814000	31.5	FLO	L1	10.1	24.5	56.0

Frequency (MHz)	CAverage (dB $\mu$ V)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
1.500000	17.8	FLO	L1	10.1	28.2	46.0
1.617000	17.8	FLO	L1	10.1	28.2	46.0
1.815000	17.1	FLO	L1	10.1	28.9	46.0
1.936500	18.9	FLO	L1	10.1	27.1	46.0
2.260500	16.1	FLO	L1	10.1	29.9	46.0
2.827500	16.9	FLO	L1	10.1	29.1	46.0

#### 4.4 Occupied bandwidth

<b>Specifications:</b>	2.1049,22.917(b),24.238(b)
<b>Operation Mode</b>	TX on, channel 9262, 9400, 9538, 4132, 4183 and 4233
<b>Test Results:</b>	Pass

##### Test Setup

The situation under which maximum EIRP values were found in the measurement of the radiated RF power output was used to determine the 99% occupied bandwidth. The Wireless Communications Test Set was used to set the TX channel, power level and modulation.

##### Test Method

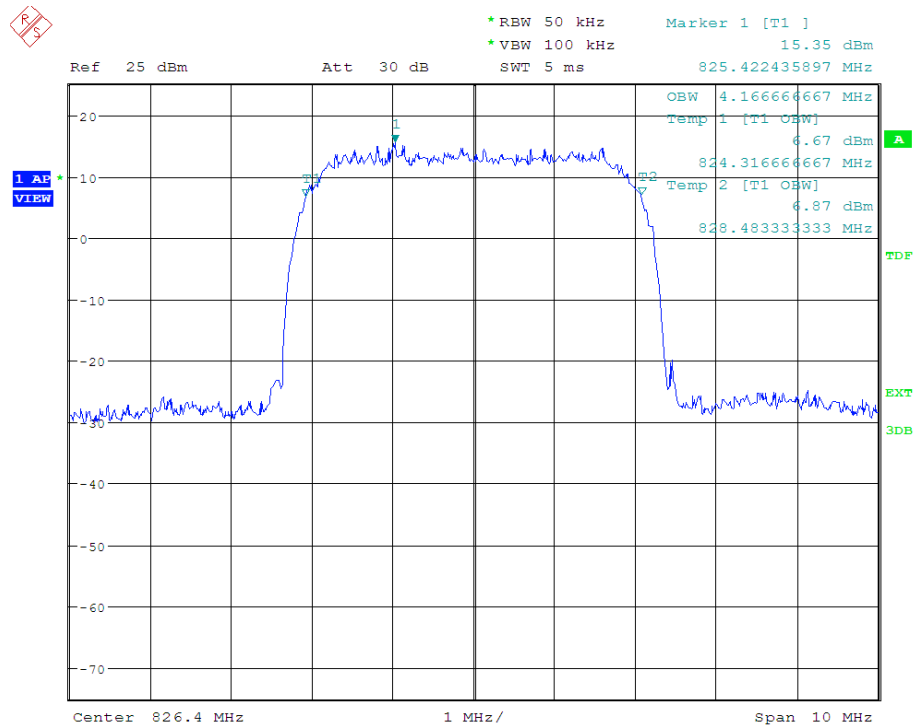
The 99% occupied bandwidth was calculated from the spectrum analyzer. Markers in the spectrum analyzer were then placed between the calculated frequencies to show the calculated 99% power band.

**Note: --**

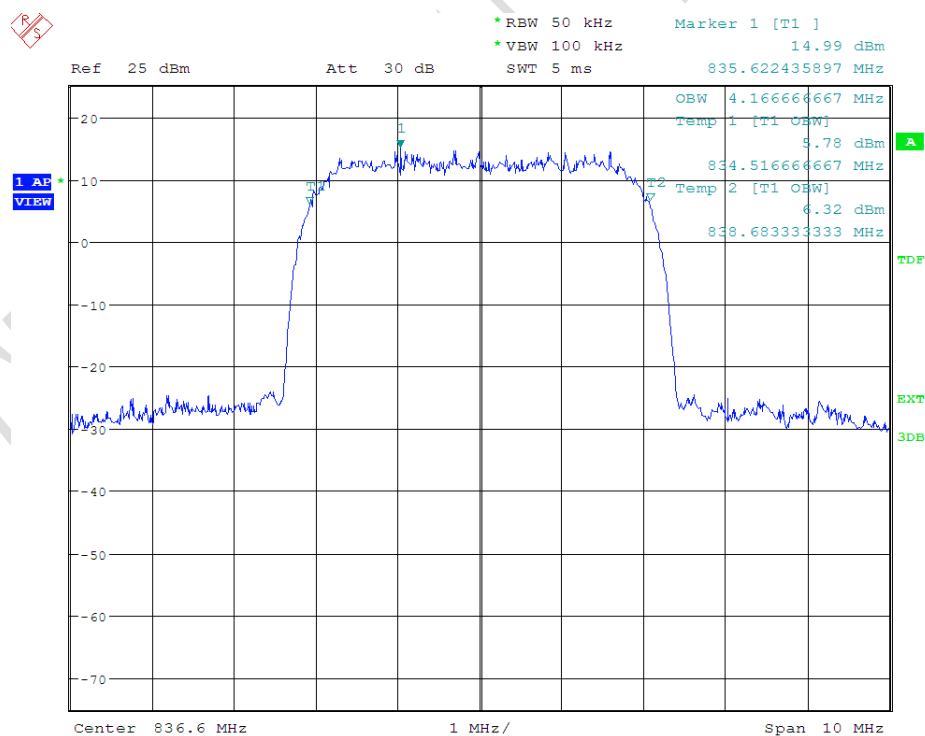
##### Results data:

EUT channel	99% occupied bandwidth [MHz]
4132	4.17
4183	4.17
4233	4.18
9262	4.18
9400	4.17
9538	4.18

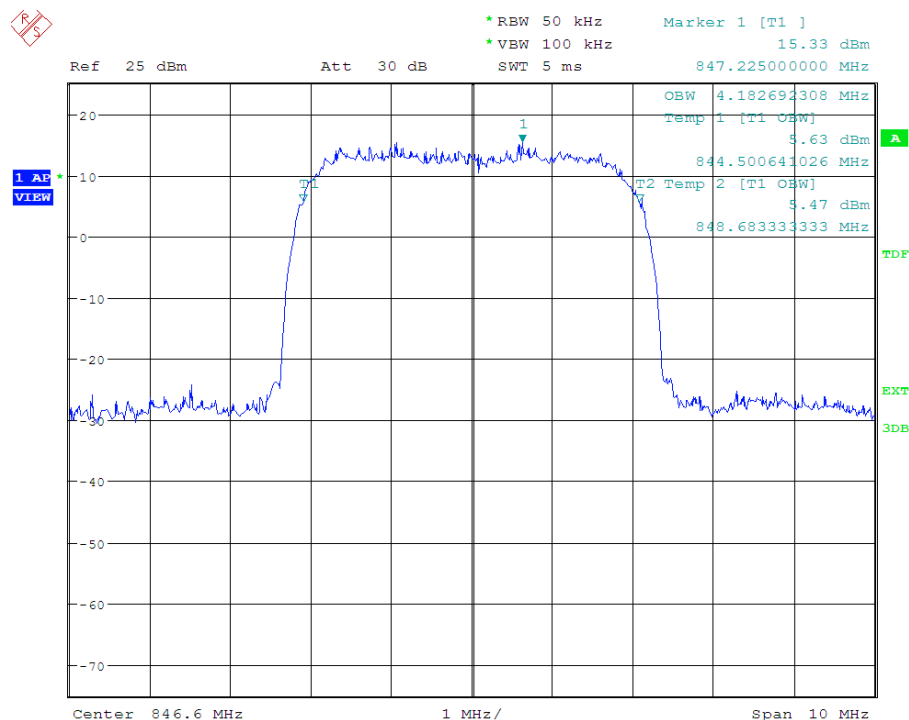
**Graphical results:**



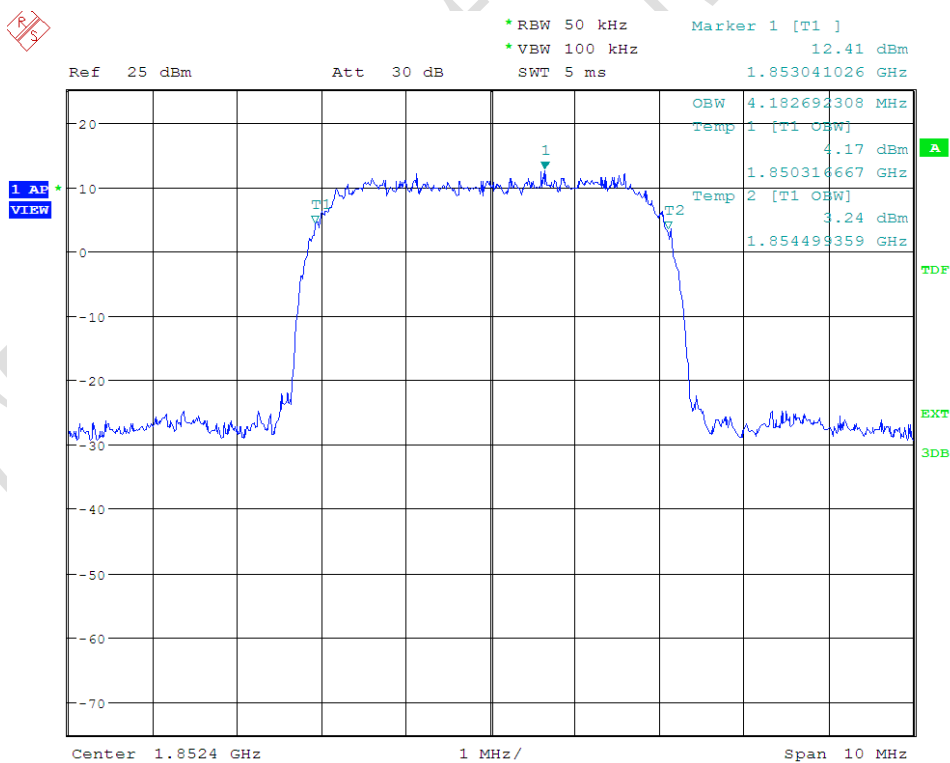
**Channel 4132**



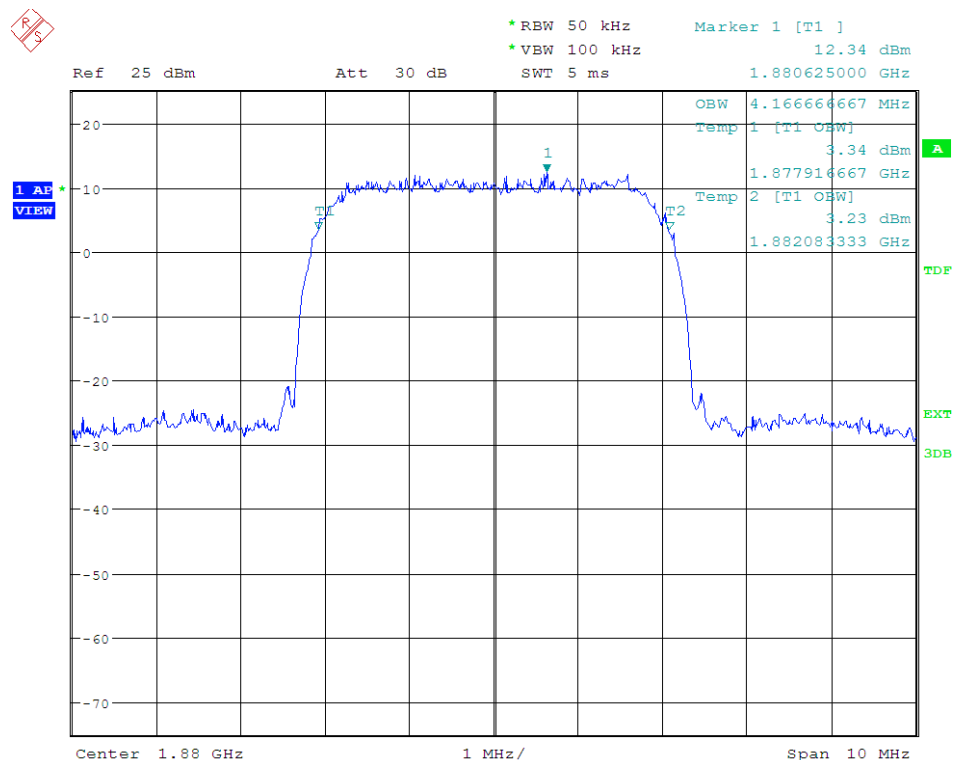
**Channel 4183**



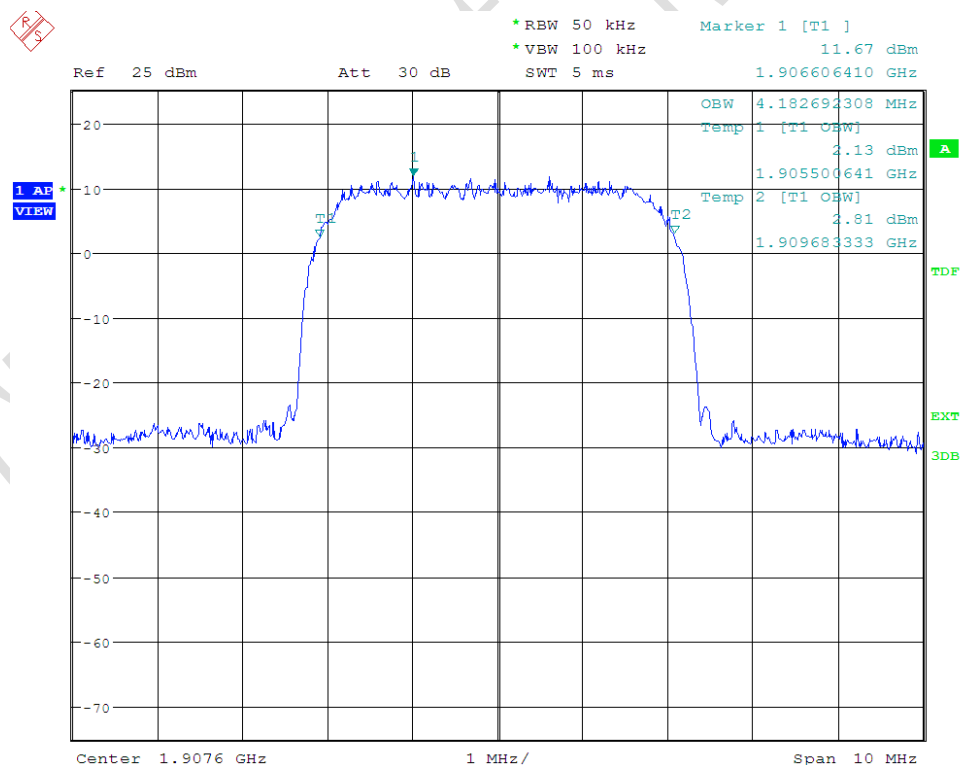
### Channel 4233



### Channel 9262



**Channel 9400**



**Channel 9538**

#### 4.5 Emission bandwidth

<b>Specifications:</b>	22.917(b), 24.238(b)
<b>Operation Mode</b>	TX on, channel 9262, 9400, 9538, 4132, 4183 and 4233
<b>Test Results:</b>	Pass

#### Test Setup

The setup of emission bandwidth is similar to conducted emissions.

#### Test Method

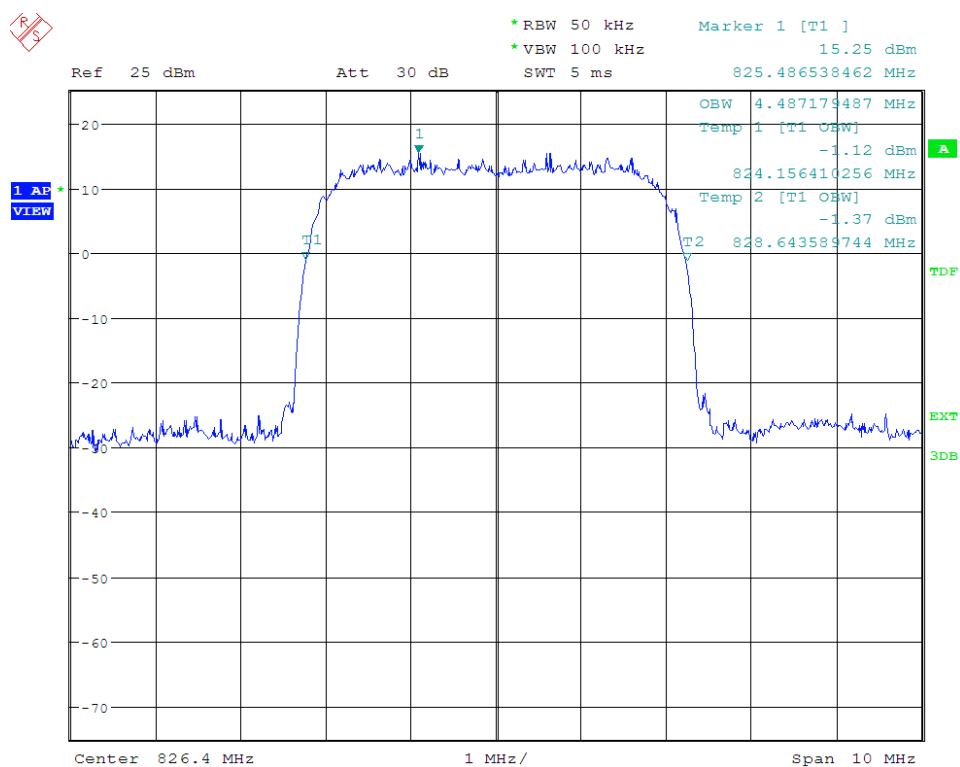
The emission bandwidth measures -26dBc Spectrum analyzer plots from frequencies of WCDMA Band II and WCDMA Band V.

**Note: --**

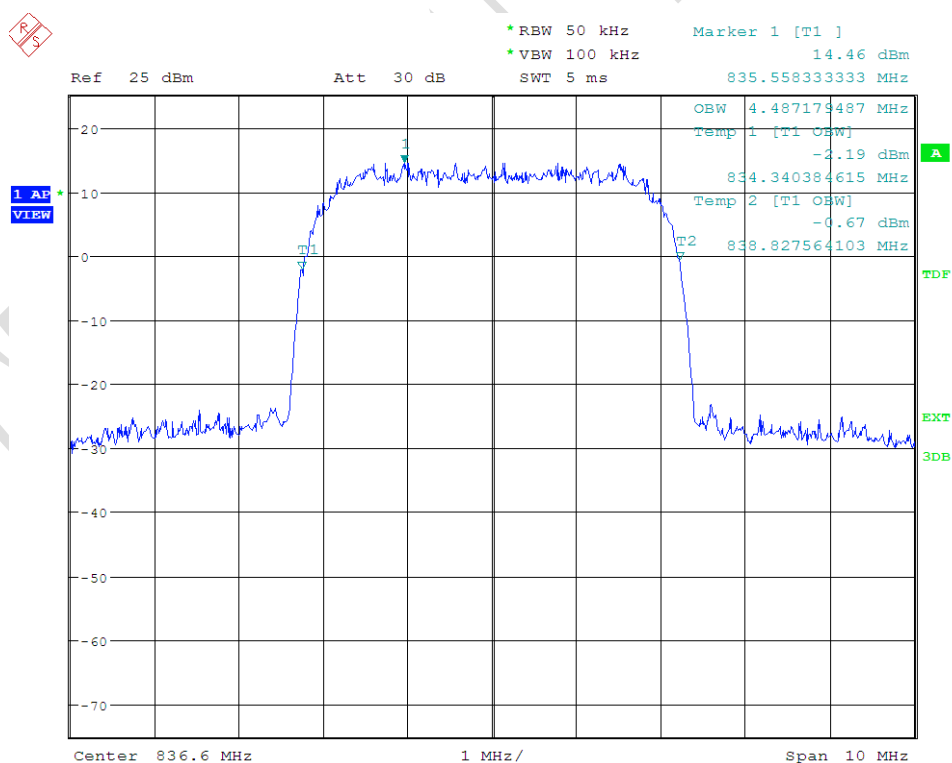
#### Results data:

EUT channel	-26dBc Emission bandwidth [MHz]
4132	4.49
4183	4.49
4233	4.47
9262	4.49
9400	4.49
9538	4.49

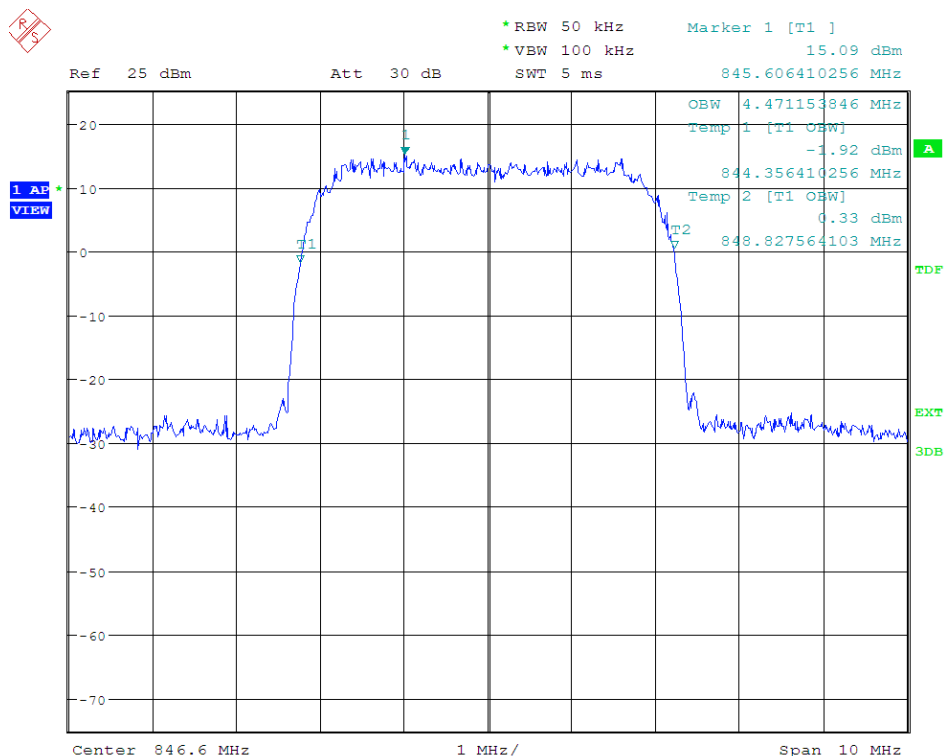
**Graphical results:**



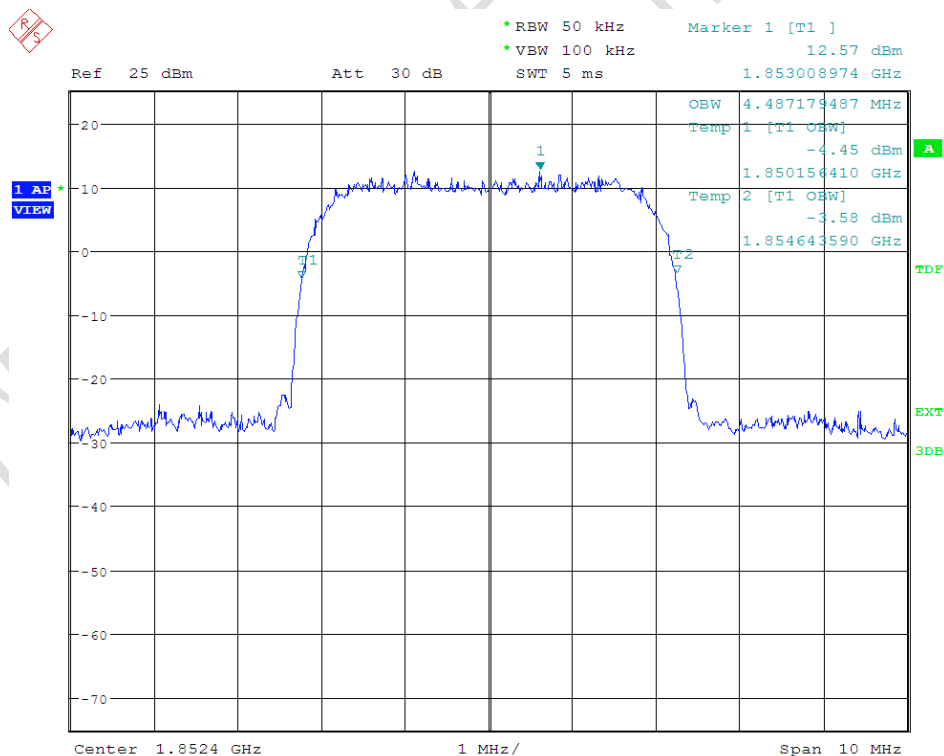
**Channel 4132**



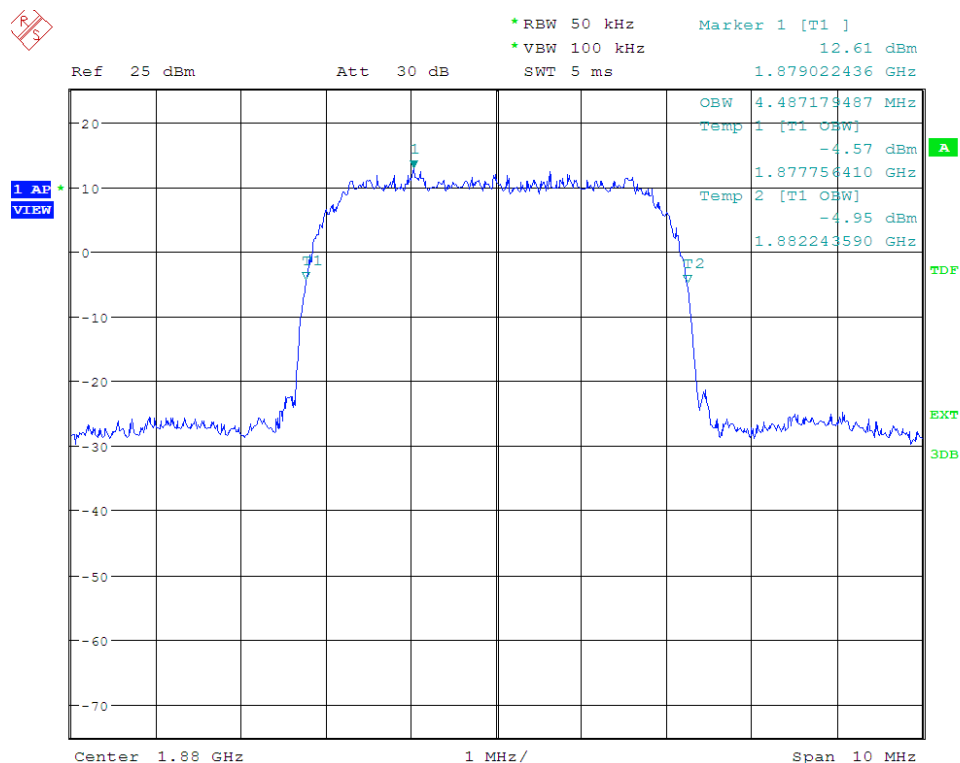
**Channel 4183**



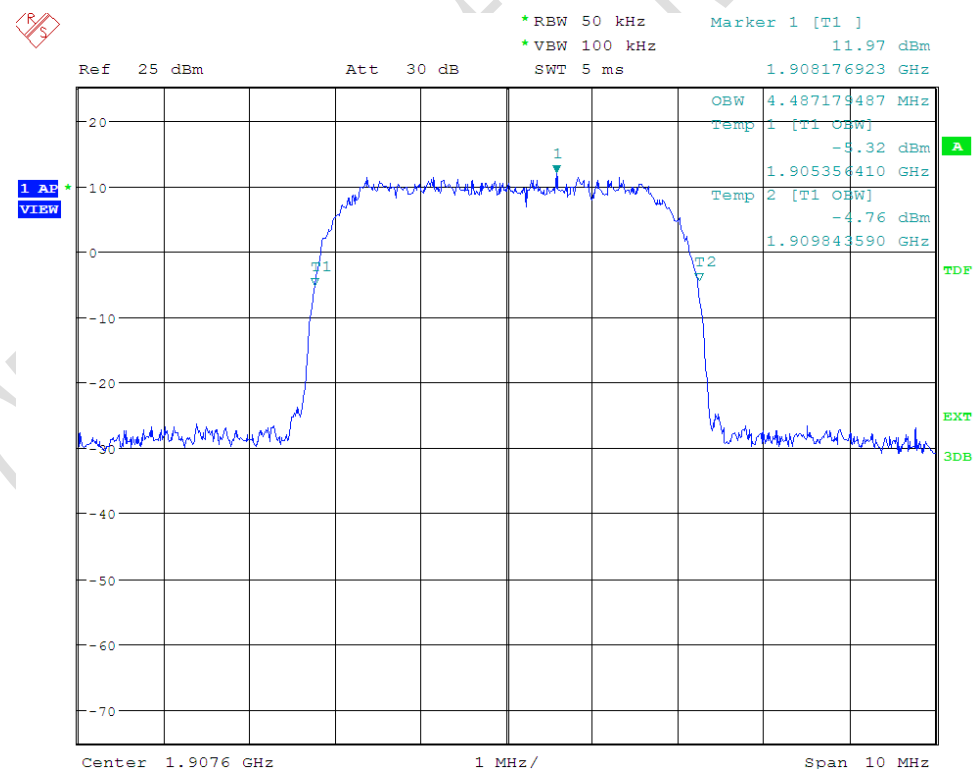
### Channel 4233



### Channel 9262



**Channel 9400**



**Channel 9538**

## 4.6 Frequency Stability

<b>Specifications:</b>	2.1055,22.355, 24.235
<b>Test conditions:</b>	Ambient Temperature:-30℃-50℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Operation Mode</b>	TX on, channel 4183 and 9400
<b>Test Results:</b>	Pass
<b>Limit</b>	
Frequency deviation [ppm]	±2.5

### 4.6.1 Frequency stability over temperature variation

#### Test Setup

The EUT was placed in a temperature chamber, demonstrated as figure T. The wireless communications test set (test simulator) was used to set the TX channel and power levels, modulate the TX signal with different bit patterns and measure the frequency of TX.

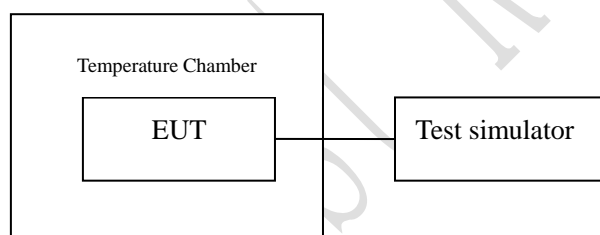


Figure T: setup for measurement of frequency stability over temperature variation

#### Test Method

1. The EUT was turned off and placed in the temperature chamber.
2. The temperature of the chamber was set to -30℃ and allowed to stabilize.
3. The EUT temperature was allowed to stabilize for 45 minutes.
4. The EUT was turned on and set to transmit with CMU200.
5. The maximum transmit frequency deviation during one minute period was measured by Wireless Communications Test Set.
6. The steps 3-5 were repeated for -20℃, -10℃, 0℃, 10℃, 20℃, 30℃, 40℃ and 50℃.

**Test results data:**

Channel 4183:

Temperature[℃]	Deviation[Hz]	Remarks
-30	-1	Pass
-20	1	Pass
-10	0	Pass
0	1	Pass
10	-1	Pass
20	2	Pass
30	0	Pass
40	1	Pass
50	2	Pass

Channel 9400:

Temperature[℃]	Deviation[Hz]	Remarks
-30	-1	Pass
-20	-1	Pass
-10	-2	Pass
0	2	Pass
10	0	Pass
20	0	Pass
30	-1	Pass
40	-2	Pass
50	1	Pass

## 4.6.2 Frequency Stability over Voltage Variation

<b>Specifications:</b>	2.1055,22.355,24.235
<b>Test conditions:</b>	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Operation Mode</b>	TX on, channel 4183 and 9400
<b>Test Results:</b>	Pass
<b>Limit</b>	
Frequency deviation [ppm]	±2.5

### Test Setup

The EUT was placed in a shielding chamber and powered by the dummy battery which is connected to a DC power source, demonstrated as figure V. The wireless communications test set was used to set the TX channel and power level, modulate the TX signal with different bit patterns and measure the frequency of TX.

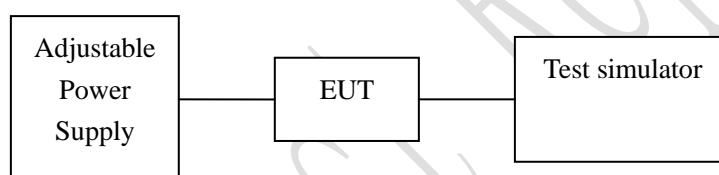


Figure V: test setup for measurement of frequency stability over voltage variation

### Test Results data:

Channel 4183:

Level	Voltage[V]	Deviation[Hz]	Remarks
Maximum	4.2	2	Pass
Nominal	3.7	1	Pass
Minimum	3.6	1	Pass

Channel 9400:

Level	Voltage[V]	Deviation[Hz]	Remarks
Maximum	4.2	-1	Pass
Nominal	3.7	0	Pass
Minimum	3.6	2	Pass

#### 4.7 Conducted Spurious Emission

<b>Specifications:</b>	2.1051,22.917,24.238
<b>Test conditions:</b>	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Operation Mode</b>	TX on, channel 4183 and 9400
<b>Test Results:</b>	Pass

##### Limit Level Construction:

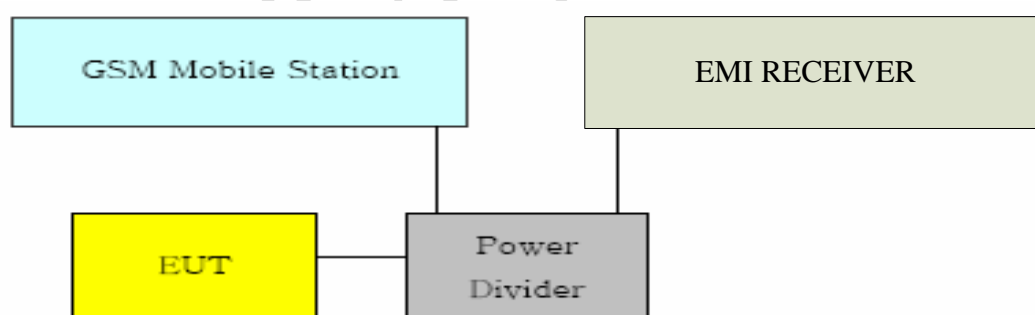
According to Part 24.238 (a), i.e., Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB, so the limit level is:  
 $P(\text{dBm}) - (43 + 10 \log(P)) \text{ dB} = -13\text{dBm}$

##### Limits for Radiated spurious emissions(UE)

Frequency range	Limit Level /Resolution Bandwidth
30 MHz to 20000 MHz	-13dBm/1MHz

##### Test Setup:

During the process of testing, the EUT was controlled via Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by Rhode & Schwarz EMI test receiver (ESI26)



##### Test Method

The measurement was performed accordance with section 2.2.13 of ANSI/TIA-603-B-2002: *Land Mobile FM or PM Communications Equipment Measurement and Performance Standards*.

The following steps outline the procedure used to measure the conducted emissions from the EUT.

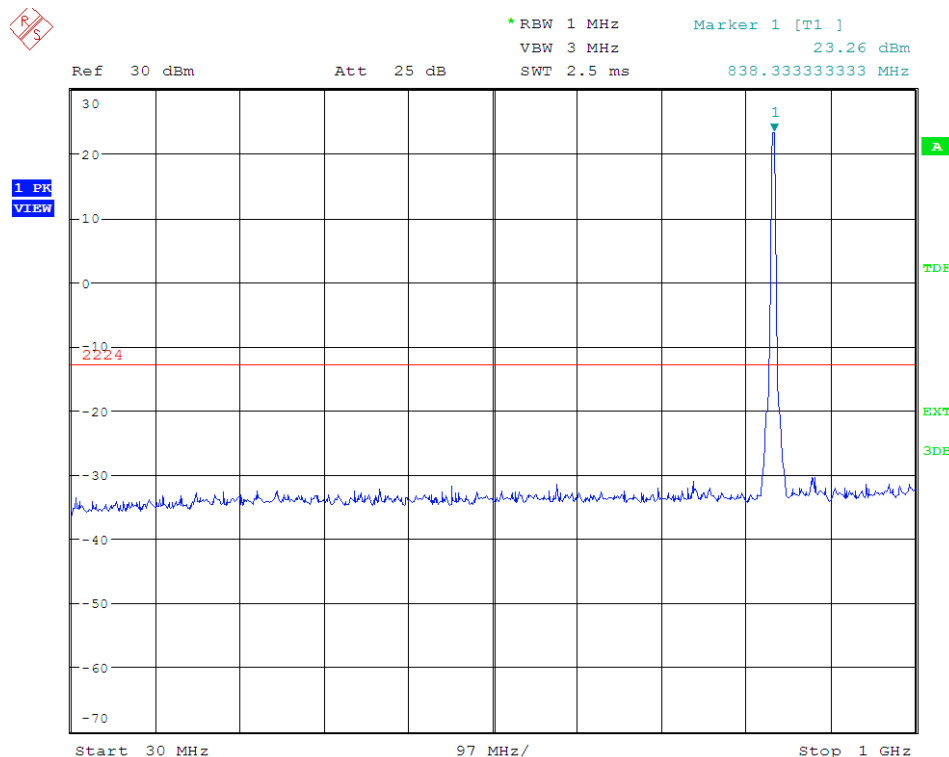
1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment under test, this equates to a frequency range of 30 MHz to 19.1 GHz,

data taken from 30 MHz to 20 GHz.

2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.

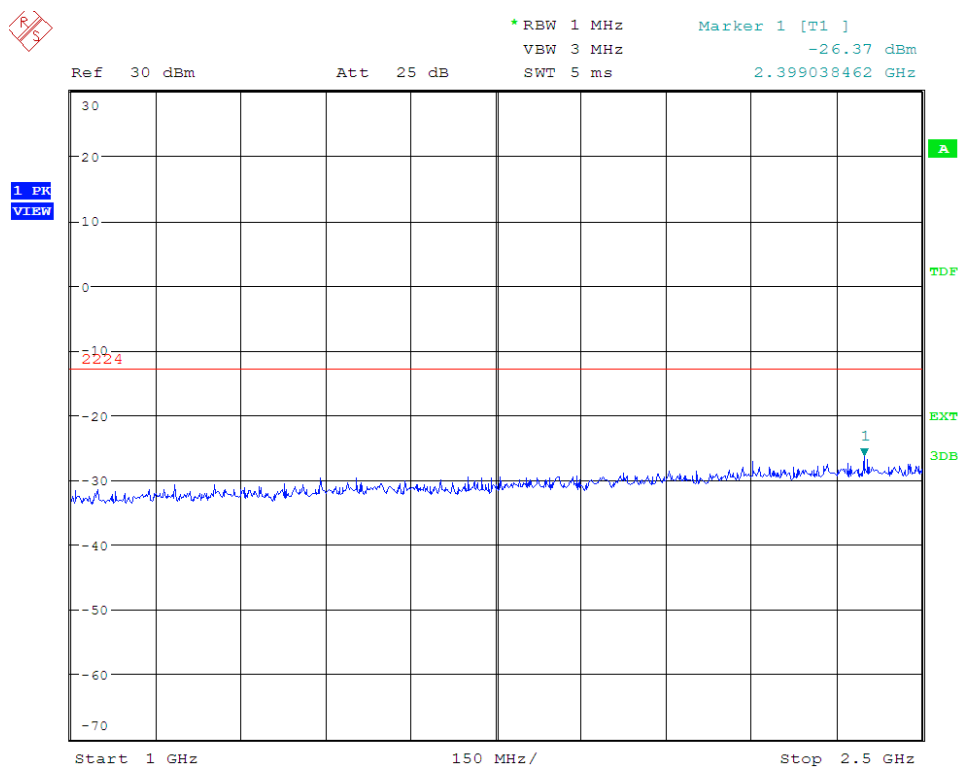
**Note: --**

### Graphical results:

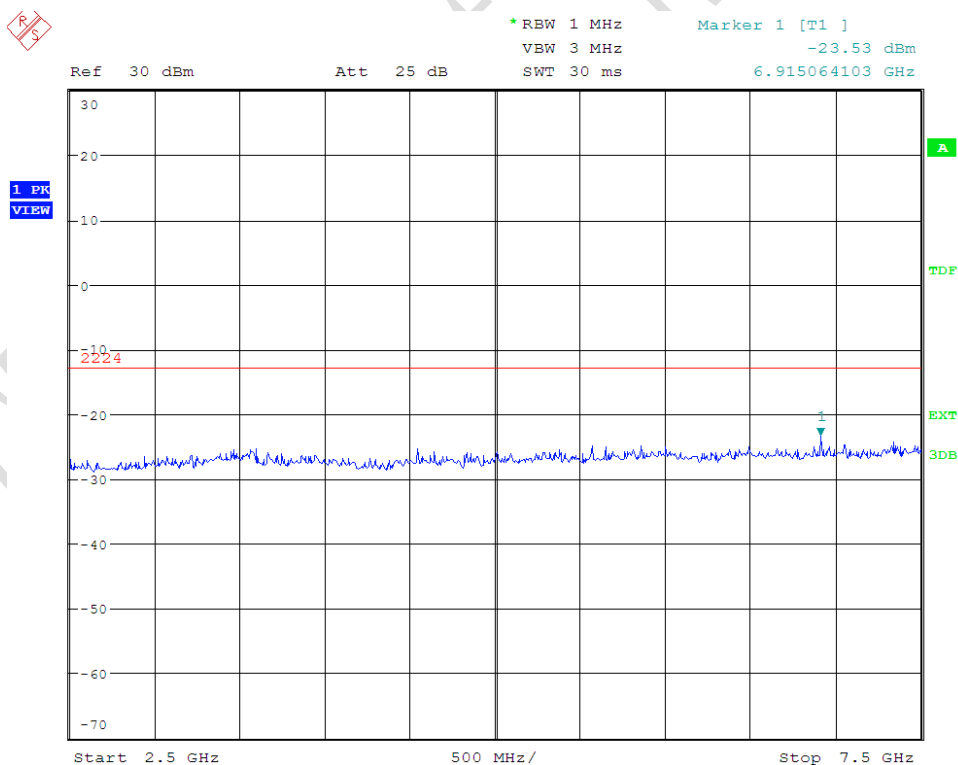


**Channel 4183 for 850MHz – 30MHz to 1GHz**

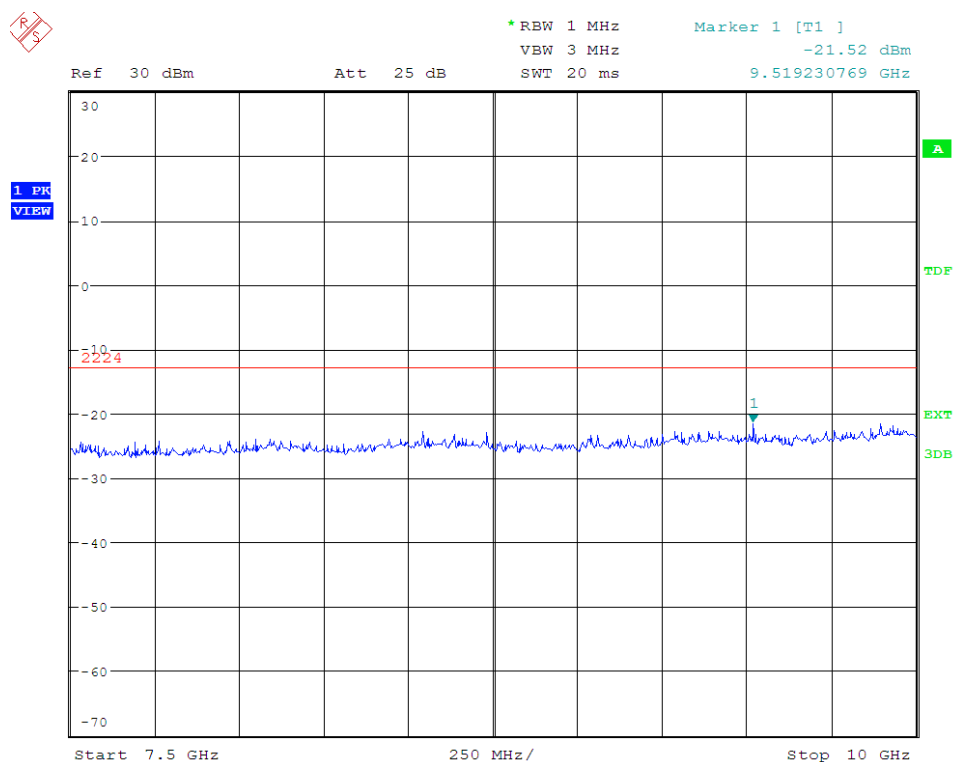
**No. I12GWD248-3G**



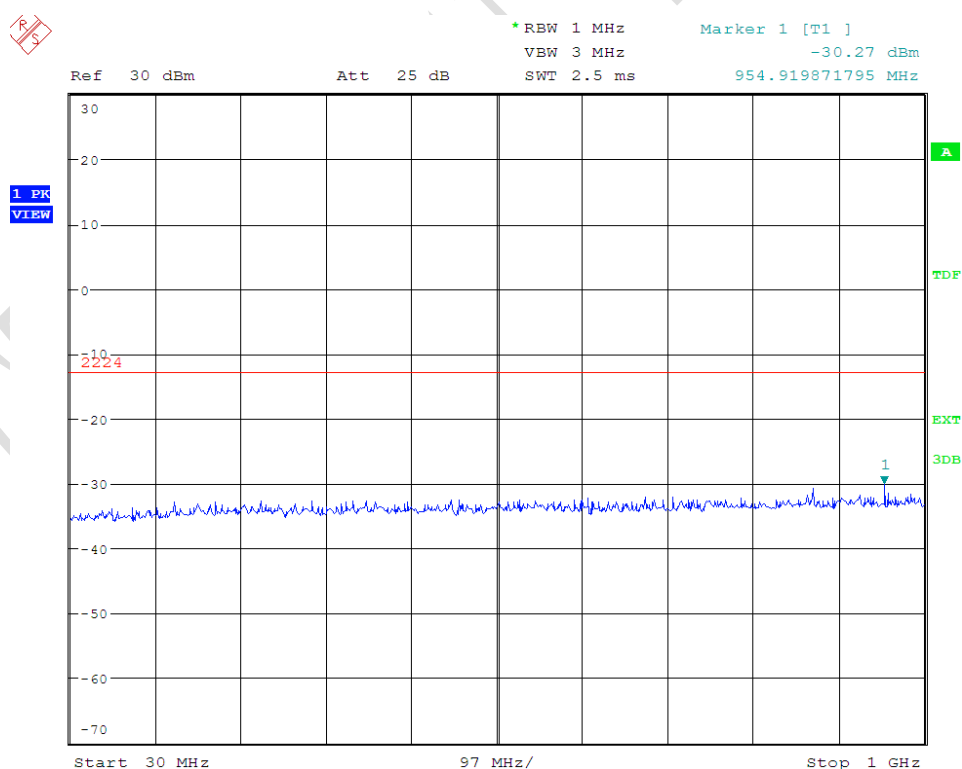
**Channel 4183 for 850MHz – 1GHz to 2.5GHz**



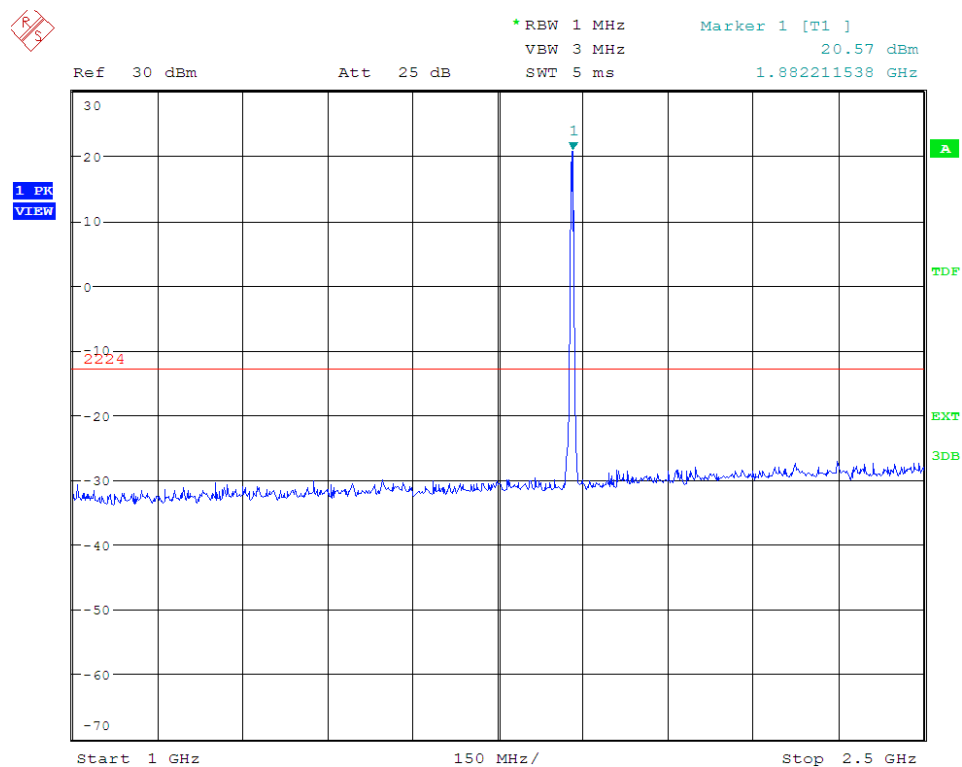
**Channel 4183 for 850MHz – 2.5GHz to 7.5GHz**



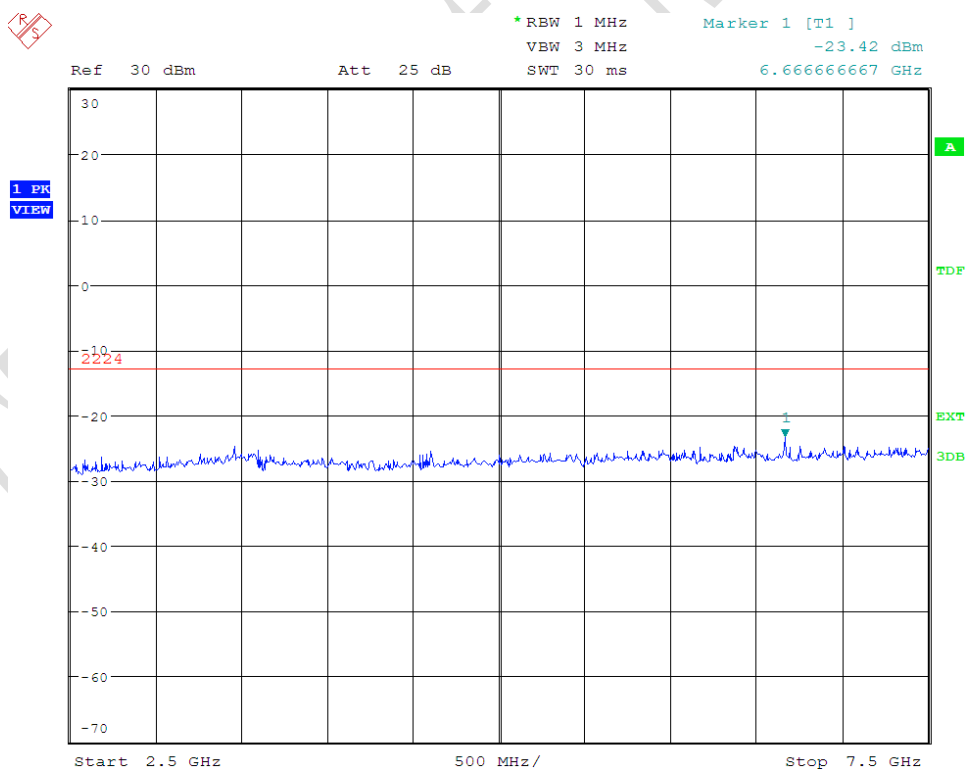
**Channel 4183 for 850MHz – 7.5GHz to10GHz**



**Channel 9400 for 1900MHz – 30MHz to 1GHz**

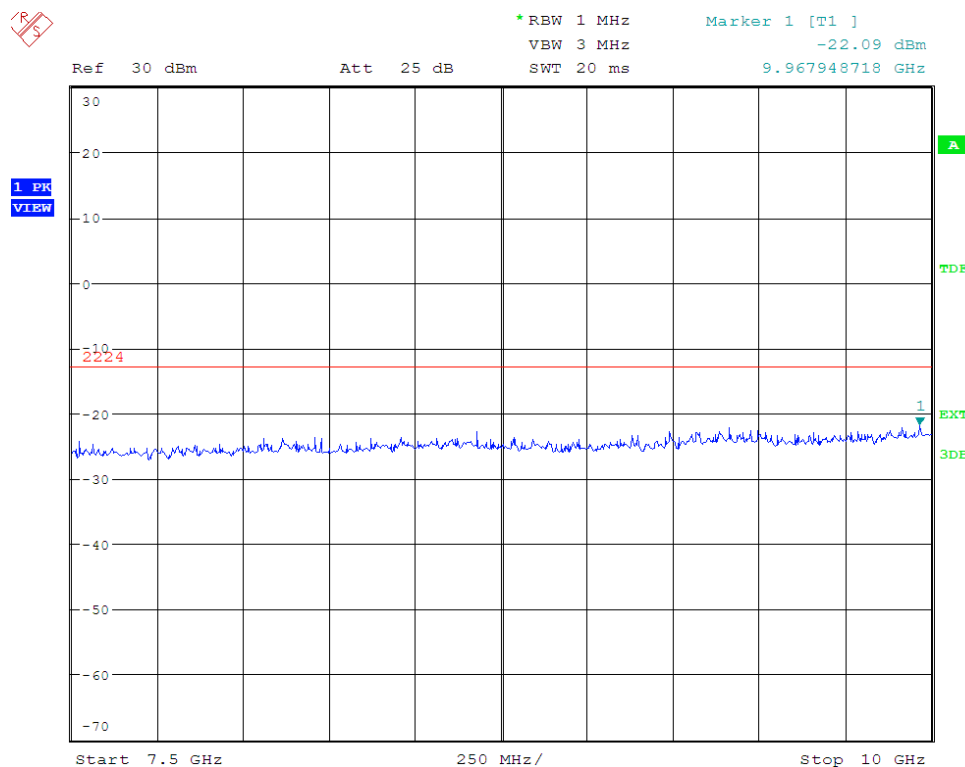


**Channel 9400 for 1900MHz – 1GHz to 2.5GHz**

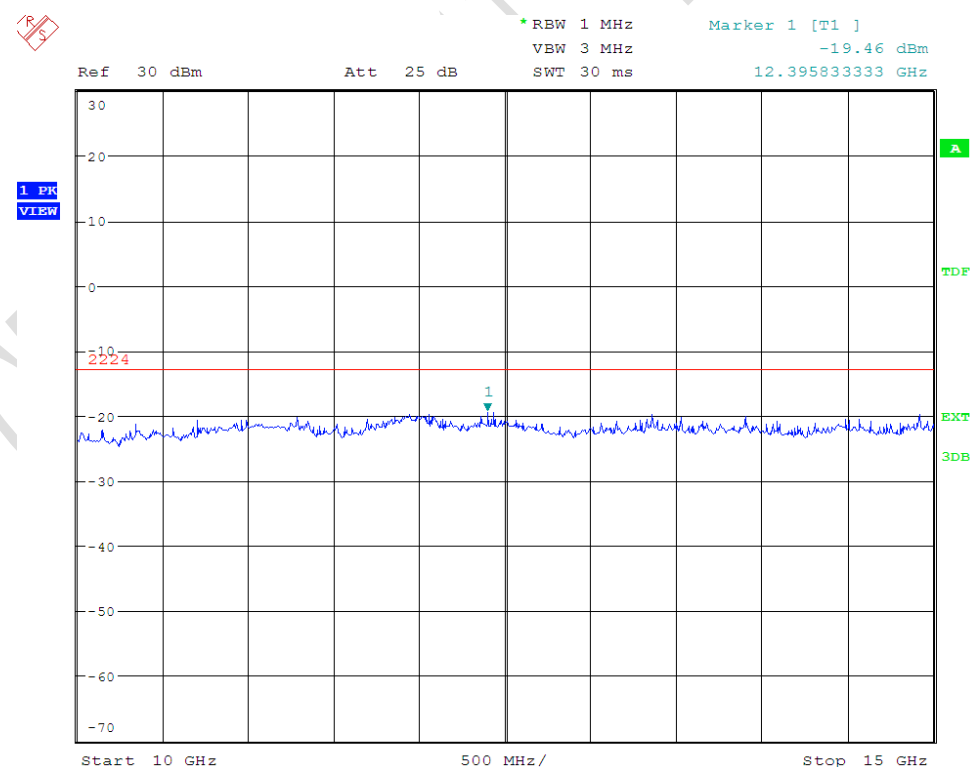


**Channel 9400 for 1900MHz – 2.5GHz to 7.5GHz**

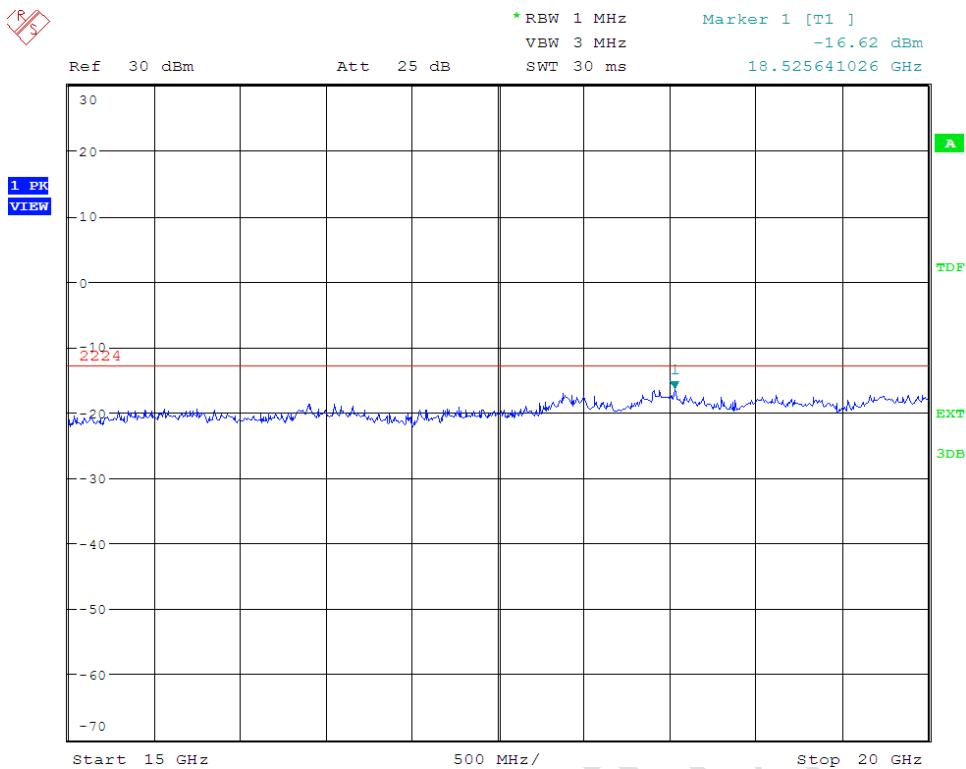
**No. I12GWD248-3G**



**Channel 9400 for 1900MHz – 7.5GHz to 10GHz**



**Channel 9400 for 1900MHz – 10GHz to 15GHz**



Channel 9400 for 1900MHz – 15GHz to 20GHz

#### 4.8 Band Edge Compliance

<b>Specifications:</b>	22.917(b), 24.238(b)
<b>Test conditions:</b>	Ambient Temperature: 15°C-35°C Relative Humidity: 30%-60% Air pressure: 86-106kPa
<b>Operation Mode</b>	TX on, channel 4132, 4233, 9262 and 9538
<b>Test Results:</b>	Pass

##### Limit Level Construction:

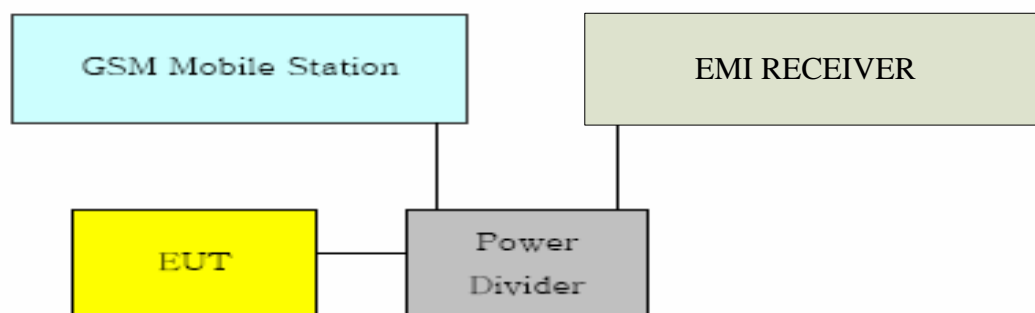
According to Part 24.238 (a), i.e., Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB, so the limit level is:  
 $P(\text{dBm}) - (43 + 10 \log(P)) \text{ dB} = -13\text{dBm}$

##### Limits for Radiated spurious emissions(UE)

Frequency range	Limit Level /Resolution Bandwidth
30 MHz to 20000 MHz	-13dBm/1MHz

##### Test Setup:

During the process of testing, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by Rhode & Schwarz EMI test receiver (ESI26).



##### Test Method

- 1) The EUT was coupled to the EMI test receiver analyzer mode and the base station simulator through a power divider. The radio frequency load attached to the EUT antenna terminal was 50 Ohm. The attenuation of every cables of the test system is being taken into account by calibration to ensure measurement accuracy
- 2) The spectrum analyzer was set to Maxpeak Detector function and Maximum hold mode.
- 3) The resolution bandwidth of the spectrum analyzer was comparable to the

### Test Results:

Band-edge emission		
EUT Channel	Frequency [MHz]	Level [dBm]
4132 Left band edge	824.000	-22.40
4233 Right band edge	849.000	-23.21
9262 Left band edge	1850.000	-21.61
9538 Right band edge	1910.000	-21.51

Ref 24.8 dBm \*Att 25 dB

\*RBW 50 kHz Marker 1 [T1]  
 \*VBW 10 MHz -22.40 dBm  
 SWT 2.5 ms 823.980769231 MHz

Offset 8 dB

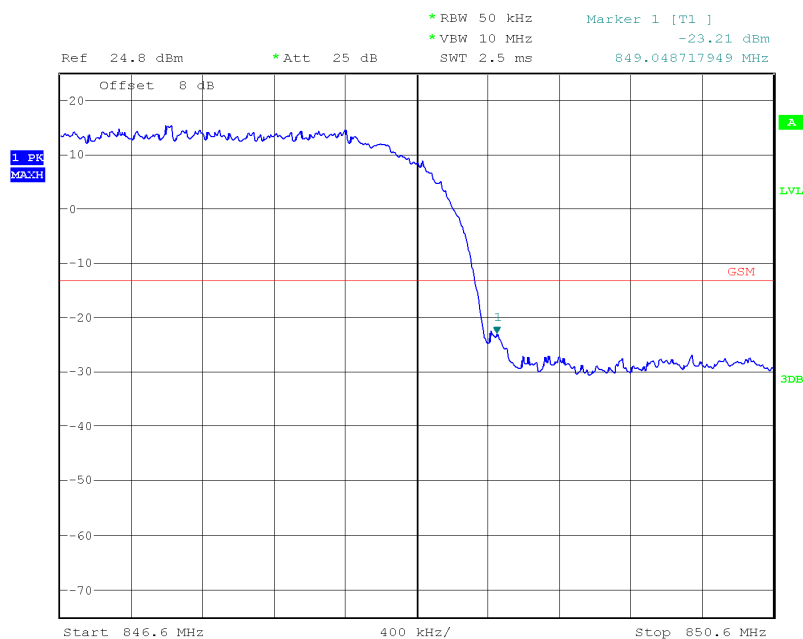
1 PK  
MAGN

GSM

Center 824.4 MHz 400 kHz/ Span 4 MHz

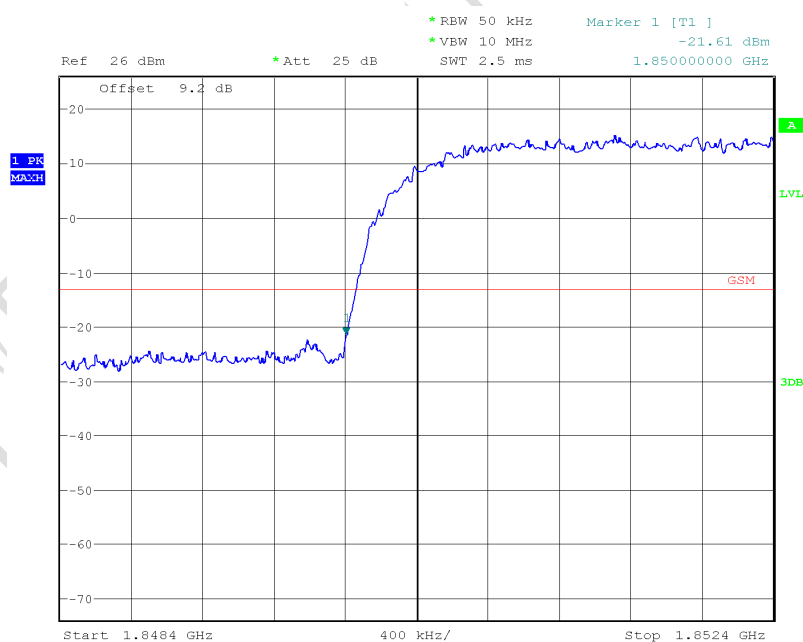
Date: 16.MAY.2012 19:52:47

### Channel 4132 Left band edge



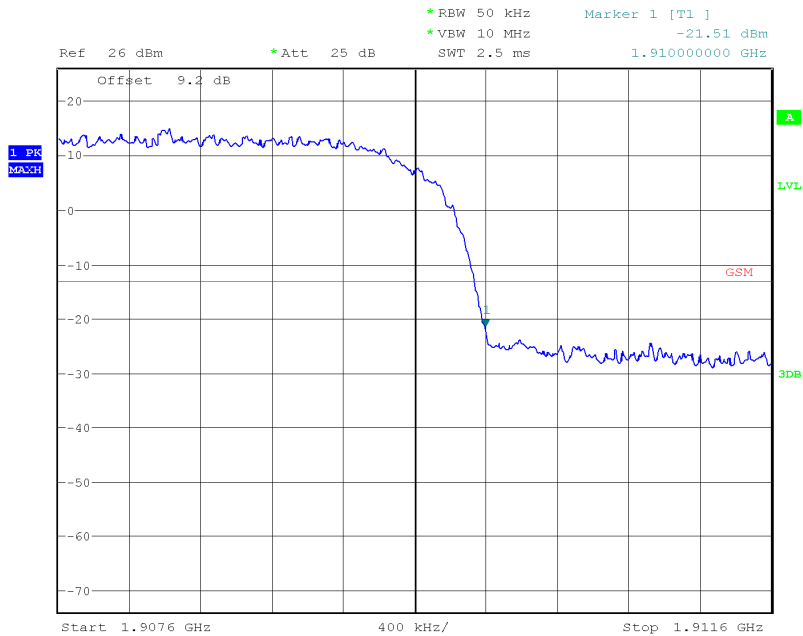
Date: 16.MAY.2012 19:54:38

### Channel 4233 Right band edge



Date: 16.MAY.2012 19:46:47

### Channel 9262 Left band edge



Date: 16.MAY.2012 19:44:50

Channel 9538 Right band edge

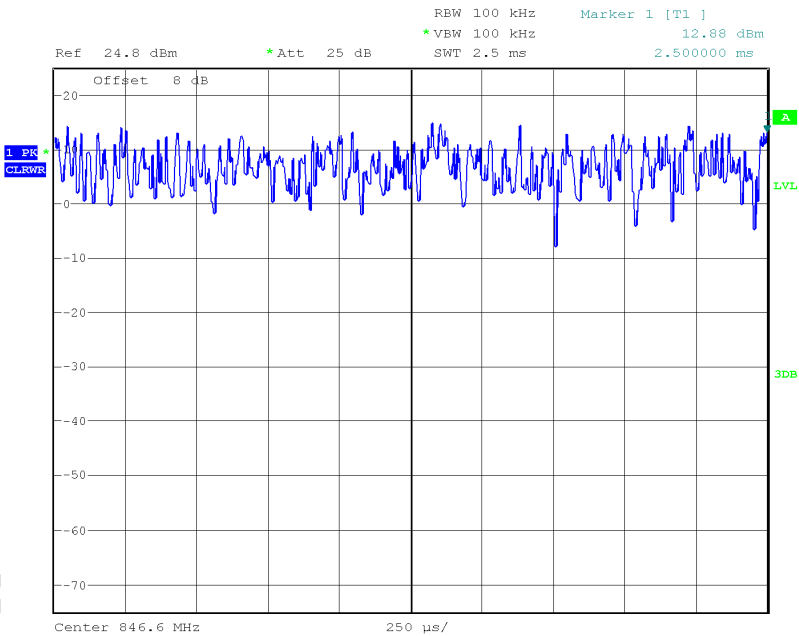
4.9 Modulation characteristics

Specifications:	2.1047
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Operation Mode	--
Test Results:	Pass

Test Method

The EUT operates with WCDMA (QPSK) mode, in which the information is digitized and coded into a bit stream.

Test Results for WCDMA



Date: 16.MAY.2012 20:07:54

## 5 Test Equipments and Ancillaries Used For Tests

The test equipments and ancillaries used are as follows.

### 5.1 Test Equipments for RF Test

Ref No.	Instrument/ Ancillary	Type	Manufacturer	Serial No.	Cal Due Date
1	Universal Radio Communication Tester	CMU200	Rohde&Schwarz	114828	2013.01.19
2	Spectrum Analyzer	FSU	Rohde&Schwarz	200679	2013.01.18
3	Temperature Chamber	SH-241	ESPEC	92007516	2013.02.24
4	DC Power Supply	U3606A	Agilent Technologies	MY50450012	2013.11.15
5	RF Switch Matrix	OSP130	Rohde&Schwarz	100086	2013.03.28
6	Vector Signal Generator	SMU200A	Rohde&Schwarz	104072	2013.03.28
7	MXG Analog Signal Generator	N5183A	Agilent Technologies	MY50140012	2013.11.15

## 5.2 Test Equipments for RSE Test

Ref No.	Instrument/ Ancillary	Type	Manufacturer	Serial No.	Cal Due Date
1	Universal Radio Communication	CMU200	Rohde&Schwarz	114545	2013.03.23
2	Test Receiver	ESCI	Rohde&Schwarz	100701	2013.12.30
3	BiLog Antenna	9163	Schwarzbeck	9163-330	2014.03.02
4	Double-Ridged Waveguide Horn Antenna	3164-05	ETS-Lindgren	00085724	2014.02.18
5	Spectrum Analyzer	FSP40	Rohde&Schwarz	100378	2013.12.23
6	Fully Anechoic Chamber	n/a	ETS-Lindgren	n/a	2013.04.17

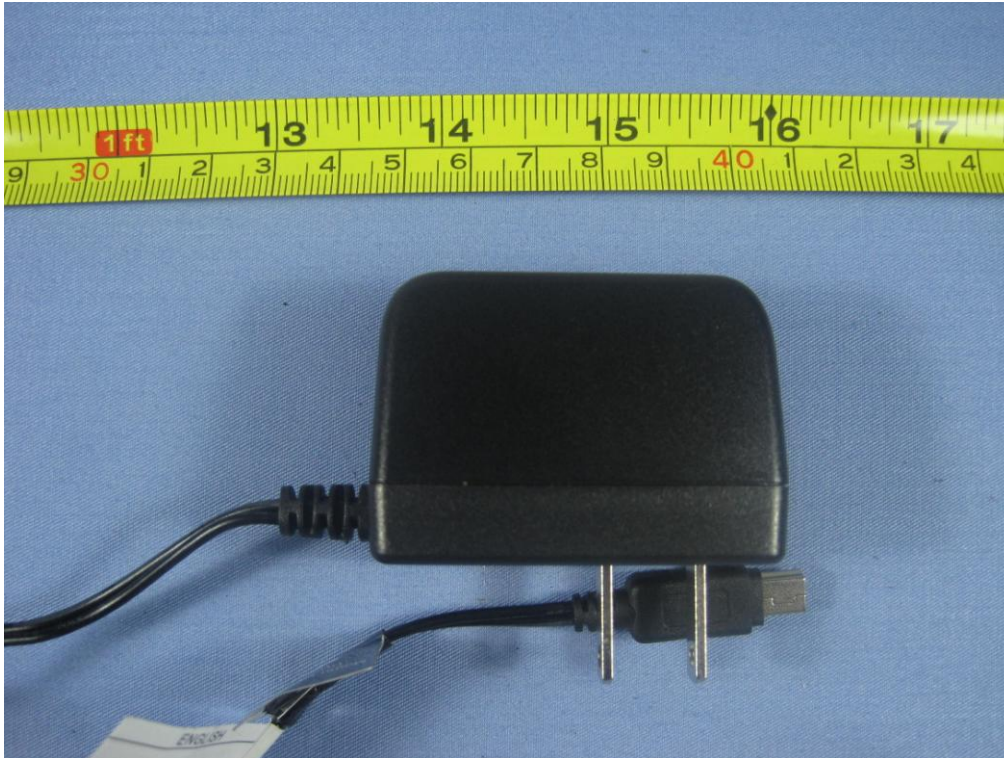
## Annex A External Photos



Front view



Back view



Adaptor and cable



battery

## ANNEX B Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

———— The End of this Report ————

CTL Test Report