



*Full*

# TEST REPORT

**No. I16D00249-RFA**

*For*

**Client : Hisense International Co., Ltd.**

**Production : Smartphone**

**Model Name : Hisense F102**

**FCC ID: 2ADOBF102**

**Hardware Version: V1.00**

**Software Version: L1307.6.01.05.MX06**

**Issued date: 2017-01-05**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of ECIT Shanghai.

**Test Laboratory:**

ECIT Shanghai, East China Institute of Telecommunications

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**Revision Version**

Report Number	Revision	Date	Memo
I16D00249-RFA	00	2017-01-05	Initial creation of test report

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## 1. Test Laboratory

### 1.1. Testing Location

Company Name:	ECIT Shanghai, East China Institute of Telecommunications
Address:	7-8F, G Area, No. 668, Beijing East Road, Huangpu District, Shanghai, P. R. China
Postal Code:	200001
Telephone:	(+86)-021-63843300
Fax:	(+86)-021-63843301
FCC Registration NO.:	489729

### 1.2. Testing Environment

Normal Temperature:	15-35°C
Extreme Temperature:	-10/+55°C
Relative Humidity:	25-75%

### 1.3. Project data

Project Leader:	Yu Anlu
Testing Start Date:	2016-12-10
Testing End Date:	2017-01-05

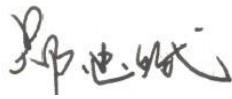
### 1.4. Signature



Zhang Shiyu  
(Prepared this test report)



Ding Li  
(Reviewed this test report)



Zheng Zhongbin  
Director of the laboratory  
(Approved this test report)

## 2. Client Information

### 2.1. Applicant Information

Company Name: Hisense International Co., Ltd.  
Address: Floor 22, Hisense Tower, 17 Donghai Xi Road, Qingdao, 266071, China  
Email: zhangkelin@hisense.com  
Postcode: 266010

### 2.2. Manufacturer Information

Company Name: Hisense Communications Co., Ltd.  
Address: 218 Qianwangang Road, Economic & Technological Development Zone, Qingdao, Shandong Province, P.R. China  
Email: Xuxin2@hisense.com  
Postcode: 266510

### 3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

#### 3.1. About EUT

EUT Description	Smartphone
Model name	Hisense F102
FCC ID	2AD0BF102
Frequency	GSM850/900/1800/1900; WCDMA BandII/IV/V LTE FDD2/4/5/7
Extreme Temperature	-10/+55°C
Nominal Voltage	3.8V
Extreme High Voltage	4.35V
Extreme Low Voltage	3.5V

Note: Photographs of EUT are shown in ANNEX A of this test report.

#### 3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N09	861864030000217	V1.00	L1307.6.01.05.MX06	2016-12-15

\*EUT ID: is used to identify the test sample in the lab internally.

#### 3.3. Internal Identification of AE used during the test

AE ID*	Description	SN
AE1	RF cable	---
AE2	Dummy Battery	---

\*AE ID: is used to identify the test sample in the lab internally.

#### 3.4. Statements

The product name Hisense F102, supporting  
GSM/GPRS/EDGE/WCDMA/HSDPA/HSUPA/HSPA+/LTE/WLAN/BT/BLE, manufactured by  
Hisense Communications Co., Ltd. is a new product for testing.

ECIT has verified that the compliance of the tested device specified in section 5 of this test report  
is successfully evaluated according to the procedure and test methods as defined in type  
certification requirement listed in section 5 of this test report.

## 4. Reference Documents

### 4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	2014
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	2014
FCC Part 22	PUBLIC MOBILE SERVICES	2014
ANSI-TIA-603-D	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2010
ANSI C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2009

## 5. SUMMARY OF TEST RESULTS

Item	Test items	FCC rules	result
1	Output Power	2.1046/22.913(a)/24.232(c)/27.50(d)(4)	Pass
2	Peak-to-Average Ratio	24.232(d)/27.50(a)	Pass
3	99%Occupied Bandwidth	2.1049(h)(i)/22.917(b)/2.1049(h)(i)	Pass
4	-26dB Emission Bandwidth	22.917(b)/§24.238(b)/27.53(h)	Pass
5	Band Edge at antenna terminals	22.917(a)/24.238(a)/27.53(h)	Pass
6	Frequency stability	2.1055/24.235/27.54/2.1005	Pass
7	Conducted Spurious mission	2.1053/22.917(a)/24.238(a)/27.53(h)/2.1057	Pass
8	Emission Limit	2.1051/22.917/24.238/22.913/24.232	Pass

## 6. Test Equipments Utilized

### Climate chamber

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Climate chamber	SH-641	92012011	ESPEC	2017-01-07

### Radiated emission test system

The test equipments and ancillaries used are as follows.

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Universal Radio Communication Tester	CMU200	123101	R&S	2017-05-11
3	Test Receiver	ESU40	100307	R&S	2017-05-11
4	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2017-11-04
5	Double Ridged Guide Antenna	ETS-3117	135885	ETS	2017-05-05
8	2-Line V-Network	ENV216	101380	R&S	2017-05-11

## Conducted test system

No.	Name	Type	SN	Manufacture	Cal. Due Date
1	Spectrum Analyzer	FSQ26	101096	R&S	2017-05-11
2	Universal Radio Communication Tester	CMU200	123102	R&S	2017-05-11
3	DC Power Supply	ZUP60-14	LOC-220Z006 -0007	TDL-Lambda	2017-05-11
4	Weinschel power spliter	1870A	10264	Weinschel	2017-05-11

## 7. Test Environment

**Shielding Room1** (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 25%, Max. = 75 %
Shielding effectiveness	> 110 dB
Ground system resistance	< 0.5 Ω

**Control room** did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 25 %, Max. = 75 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

**Fully-anechoic chamber1** (6.9 meters×10.9 meters×5.4 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 25 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
VSWR	Between 0 and 6 dB, from 1GHz to 18GHz
Site Attenuation Deviation	Between -4 and 4 dB, 30MHz to 1GHz
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

## ANNEX A. MEASUREMENT RESULTS

### ANNEX A.1. OUTPUT POWER

#### A.1.1. Summary

During the process of testing, the EUT was controlled Rhode & Schwarz Digital Radio. Communication tester (CMU-200) to ensure max power transmission and proper modulation. This result contains peak output power and EIRP measurements for the EUT. In all cases, output power is within the specified limits.

#### A.1.2. Conducted

##### A.1.2.1. Method of Measurements

Method of measurements please refer to KDB971168 D01 v02r02 clause 5.

The EUT was set up for the max output power with pseudo random data modulation.

The power was measured with Rhode & Schwarz Spectrum Analyzer FSQ(peak).

These measurements were done at 3 frequencies, 1850.2 MHz, 1880.0MHz and 1909.8MHz for PCS1900 band; 824.2MHz, 836.6MHz and 848.8MHz for GSM850 band. (bottom, middle and top of operational frequency range).

These measurements were done at 3 frequencies, 1852.4 MHz, 1880.0MHz and 1907.6MHz for WCDMA Band II; 826.4MHz, 836.6MHz and 846.6MHz for WCDMA Band V. (bottom, middle and top of operational frequency range).

##### A.1.2.2 Test procedures:

1. The transmitter output port was connected to base station.
2. Set the EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

##### A.1.2.3 GSM Limit:

GSM850	Power control level	Nominal Peak output power (dBm)
GSM	5	33
GPRS	3	33
EDGE	6	27

GSM1900	Power control level	Nominal Peak output power (dBm)

GSM	0	30
GPRS	3	30
EDGE	5	26

**A.1.2.4 WCDMA Limit:**

22.913(a) Mobile stations are limited to 7watts.

24.232(c) Mobile and portable stations are limited to 2 watts.

**A.1.2.5 Test Procedure:**

The transmitter output power was connected to calibrated attenuator, the other end of which was connected to signal analyzer. Transmitter output power was read off the power in dBm. The power outputs at the transmitter antenna port was determined by adding the value of attenuator to the signal analyzer reading.

**A.1.2.6 GSM Test Condition:**

RBW	VBW	Sweep time	Span
1MHz	1MHz	300ms	10MHz

**A.1.2.7 WCDMA Test Condition:**

RBW	VBW	Sweep time	Span
10MHz	10MHz	800ms	50MHz

**A.1.2.8 Measurement results:**

GSM 850 (GMSK)	
Channel/fc(MHz)	Peak power (dBm)
Mid 189/836.4	29.675
Low 128/824.2	30.024
High 251/848.8	29.937
GPRS 850 (GMSK 1 Slot)	
Channel/fc(MHz)	Peak power (dBm)
Mid 189/836.4	29.771
Low 128/824.2	30.168
High 251/848.8	30.073

EDGE 850 (8PSK 1 Slot)	
Channel/fc(MHz)	Peak power (dBm)
Mid 189/836.4	25.657
Low 128/824.2	26.138
High 251/848.8	26.04

GSM 1900(GMSK)	
Channel/fc(MHz)	Peak power (dBm)
Mid 661/1880	29.513
Low 512/1850.2	29.689
High 810/1909.8	29.181
GPRS 1900 (GMSK 1 Slot)	
Channel/fc(MHz)	Peak power (dBm)
Mid 661/1880	29.541
Low 512/1850.2	29.699
High 810/1909.8	29.193
EDGE 1900 (8PSK 1 Slot)	
Channel/fc(MHz)	Peak power (dBm)
Mid 661/1880	25.38
Low 512/1850.2	25.524
High 810/1909.8	25.226

WCDMA II	
Channel/fc(MHz)	Peak power (dBm)
Mid 9400 /1880	23.51
Low 9262/1852.4	23.27
High 9538/1907.6	23.23

WCDMA IV	
Channel/fc(MHz)	Peak power (dBm)
Mid 1413 /1732.6	23.56
Low 1312/1712.4	23.51
High 1513/1752.6	23.35

WCDMA BAND V	
Channel/fc(MHz)	Peak power (dBm)
Mid 4183/836.6	25.21
Low 4132/826.4	24.63
High 4233/846.6	25.00

**Conclusion: PASS**

## ANNEX A.2. Peak-to-Average Power Ratio

Method of test measurements please refer to KDB971168 D01 v02r02 clause 5.7.

### A.2.1 PAPR Limit

The peak-to-average power ratio (PAPR) of the transmission may not exceed 13dB

### A.2.2 Test procedures

1. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
2. For GSM1900/WCDMA Band II:
  - 1) Select the spectrum analyzer CCDF function.
  - 2) Set RBW  $\geq$  signal's occupied bandwidth.
  - 3) Set the number of counts to a value that stabilizes the measured CCDF curve;
  - 4) Sweep time  $\geq$  1s.
3. Record the maximum PAPR level associated with a probability of 0.1%.

### A.2.3 Test results:

GSM850			
Modes	GSM850		
Channel	512	661	810
Frequency (MHz)	824.2	836.4	848.8

PAPR(dB)	9.13	8.49	10.71
<b>GPRS850</b>			
Modes	GPRS850		
Channel	512	661	810
Frequency (MHz)	824.2	836.4	848.8
PAPR(dB)	10.71	10.67	10.71
<b>EDGE850</b>			
Modes	EDGE850		
Channel	512	661	810
Frequency (MHz)	824.2	836.4	848.8
PAPR(dB)	10.71	10.71	10.71

<b>GSM1900</b>			
Modes	GSM1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PAPR(dB)	10.71	7.69	10.71
<b>GPRS1900</b>			
Modes	GPRS1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PAPR(dB)	7.69	10.71	10.71
<b>EDGE1900</b>			
Modes	EDGE1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8

PAPR(dB)	8.30	7.72	10.4
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WCDMA Band II			
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880	1907.6
PAPR(dB)	2.53	2.50	2.56

WCDMA Band IV			
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
PAPR(dB)	2.47	2.40	2.50

WCDMA Band V			
Channel	4132	4183	4233
Frequency (MHz)	826.4	836.4	846.6
PAPR(dB)	2.63	3.04	2.95

**Conclusion: PASS****ANNEX A.3. Occupied Bandwidth**

Method of test please refer to KDB971168 D01 v02r02 clause 4.0.

**A.3.1. Occupied Bandwidth**

Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of GSM850, PCS1900, WCDMA BANDII and WCDMA BANDV.

**A.3.2 Test Procedure:**

1. The EUT output RF connector was connected with a short cable to the signal analyzer.
2. RBW was set to about 1% of emission BW, VBW >= 3 times RBW.,
3. 99% bandwidth were measured, the occupied bandwidth is delta frequency between the two points where the display line intersects the signal trace.

**A.3.3 Test result:**

GSM850		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 189	836.4	246.795
Low 128	824.2	250.000
High 251	848.8	248.397

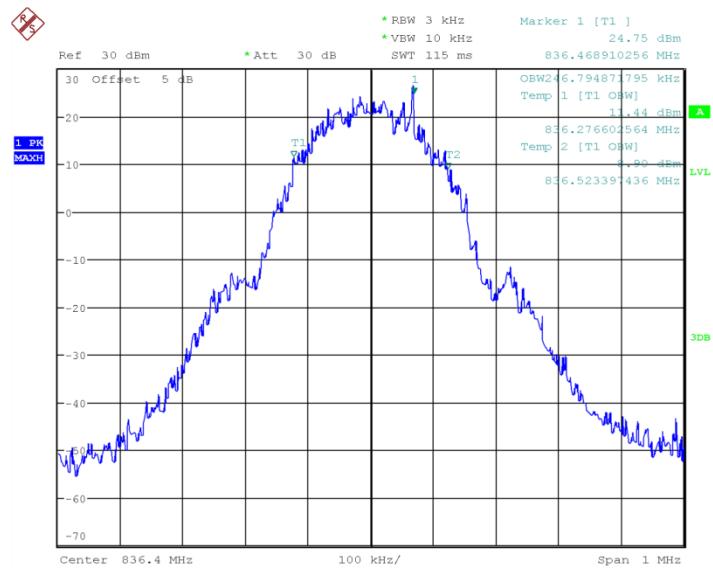
  

GPRS850		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 189	836.4	241.987
Low 128	824.2	243.590
High 251	848.8	245.192

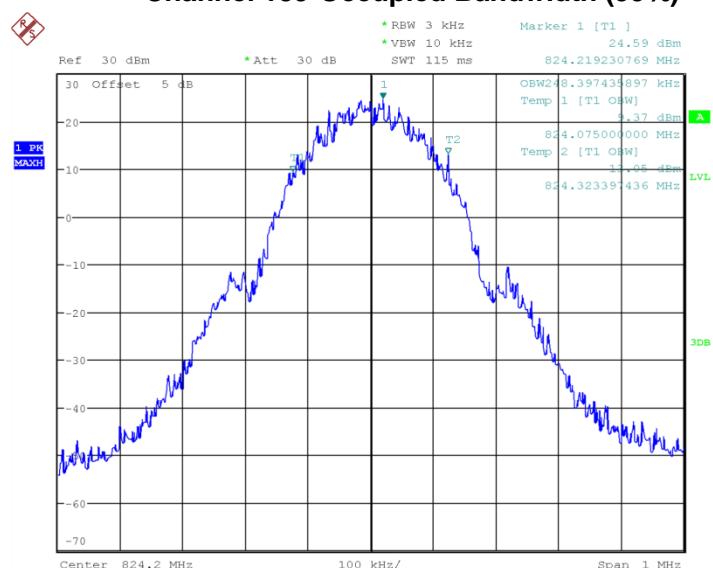
EDGE850		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 189	836.4	241.987
Low 128	824.2	245.192
High 251	848.8	245.192

**Conclusion: PASS****GSM 850**



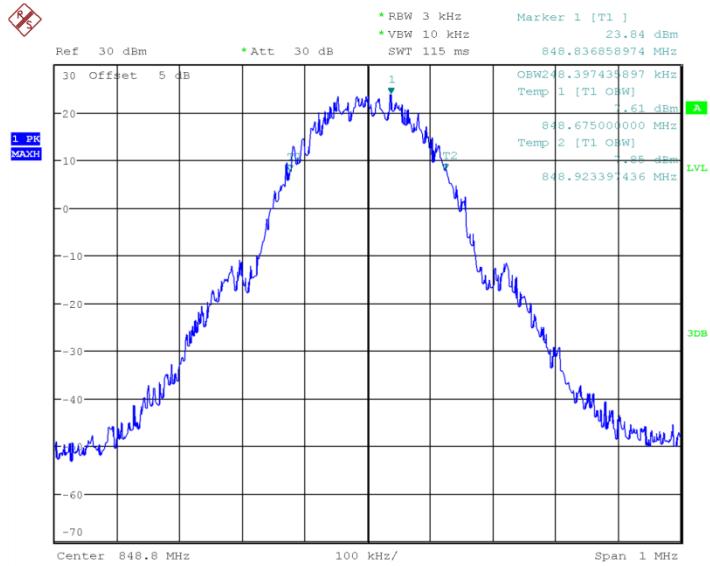
Date: 10.DEC.2016 10:37:54

### Channel 189-Occupied Bandwidth (99%)



Date: 10.DEC.2016 10:38:32

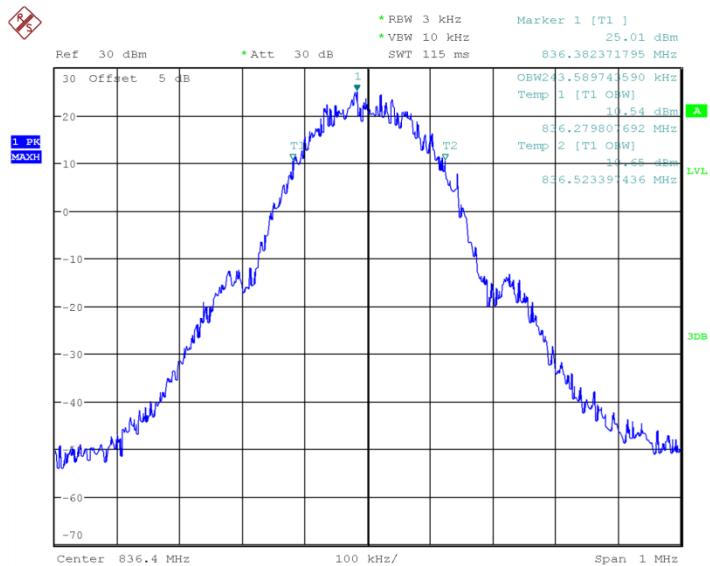
### Channel 128-Occupied Bandwidth (99%)



Date: 10.DEC.2016 10:39:09

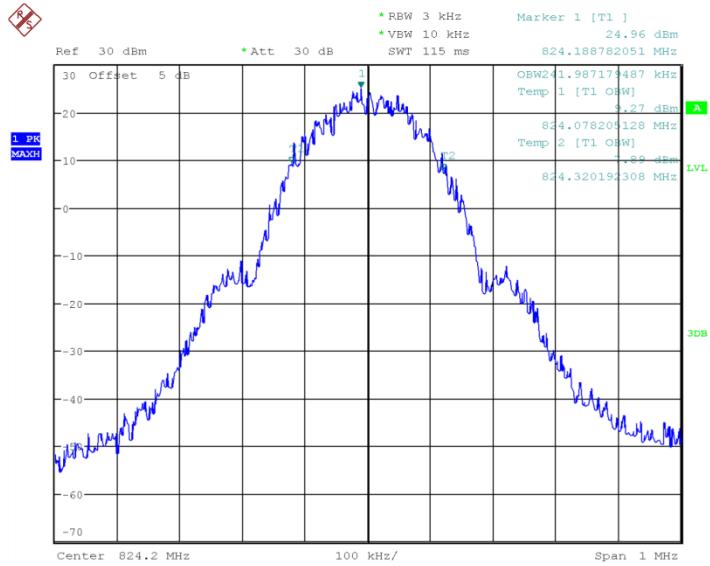
### Channel 251-Occupied Bandwidth (99%)

#### GPRS 850



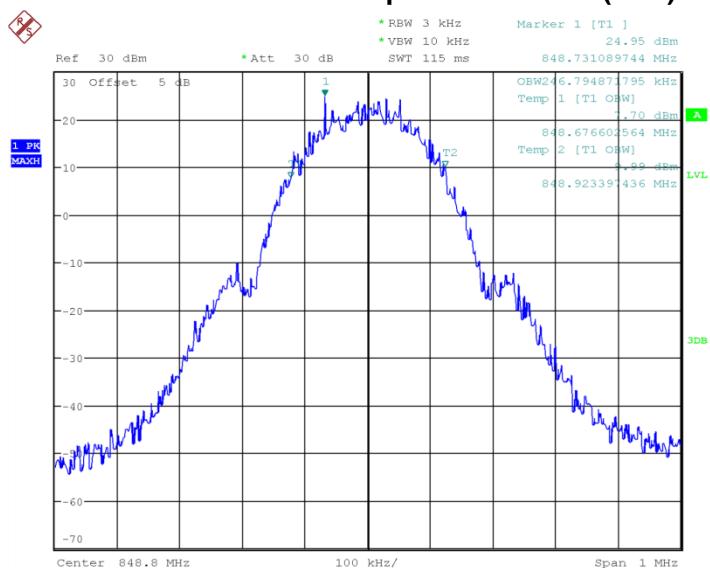
Date: 10.DEC.2016 10:41:17

### Channel 189-Occupied Bandwidth (99%)



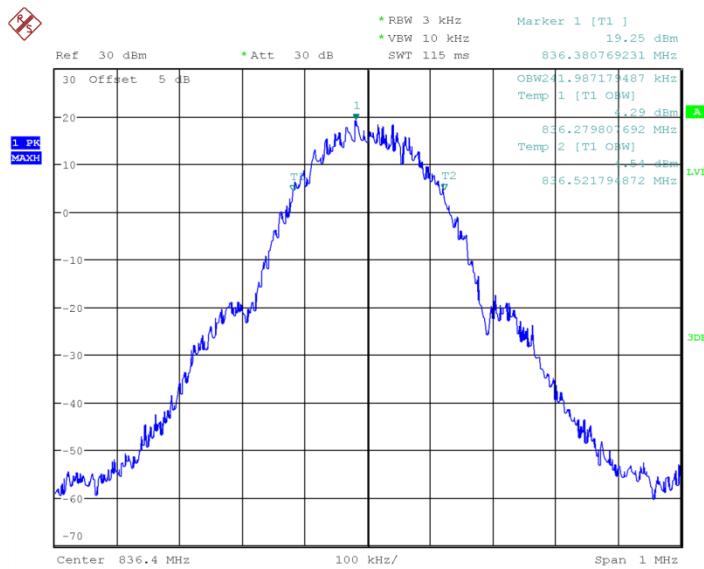
Date: 10.DEC.2016 10:41:53

### Channel 128-Occupied Bandwidth (99%)

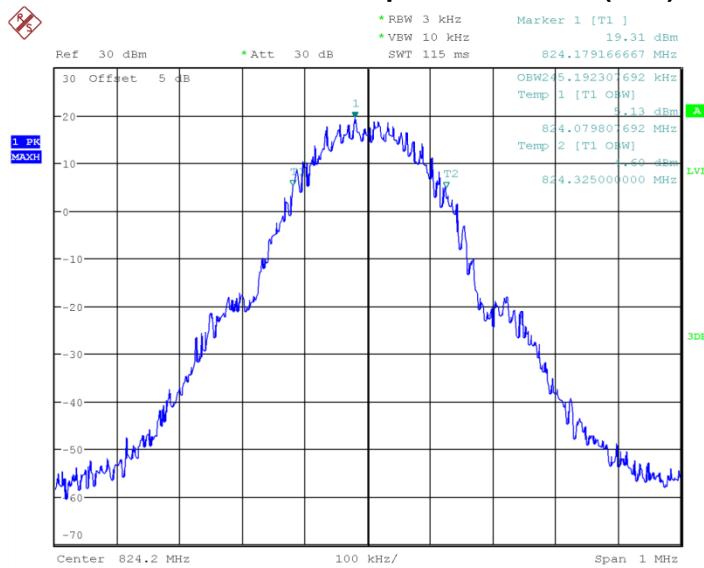


Date: 10.DEC.2016 10:42:28

### Channel 251-Occupied Bandwidth (99%)

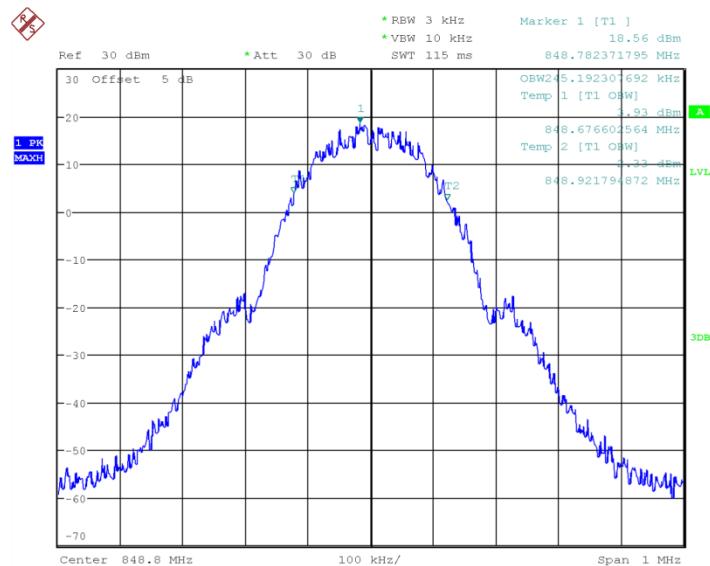
**EDGE 850**


Date: 10.DEC.2016 10:44:32

**Channel 189-Occupied Bandwidth (99%)**


Date: 10.DEC.2016 10:45:08

**Channel 128-Occupied Bandwidth (99%)**



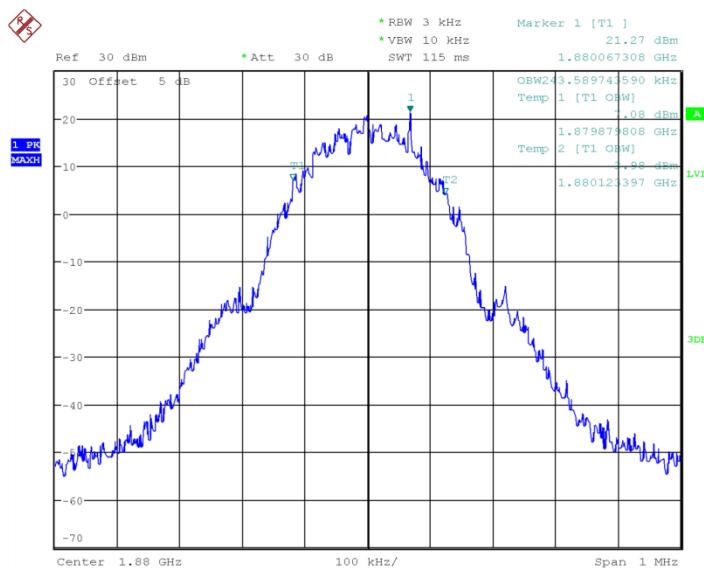
Date: 10.DEC.2016 10:45:43

**Channel 251-Occupied Bandwidth (99%)**

GSM 1900		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 661	1880	243.590
Low 512	1850.2	250.000
High 810	1909.8	250.000
GPRS1900		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 661	1880	240.385
Low 512	1850.2	243.59
High 810	1909.8	246.795
EDGE1900		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 661	1880	219.551
Low 512	1850.2	246.795
High 810	1909.8	221.154

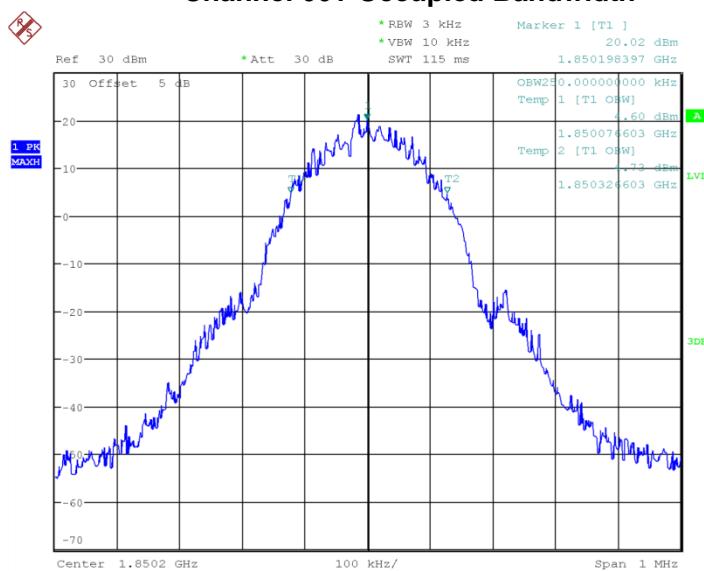
**Conclusion: PASS**

## GSM 1900



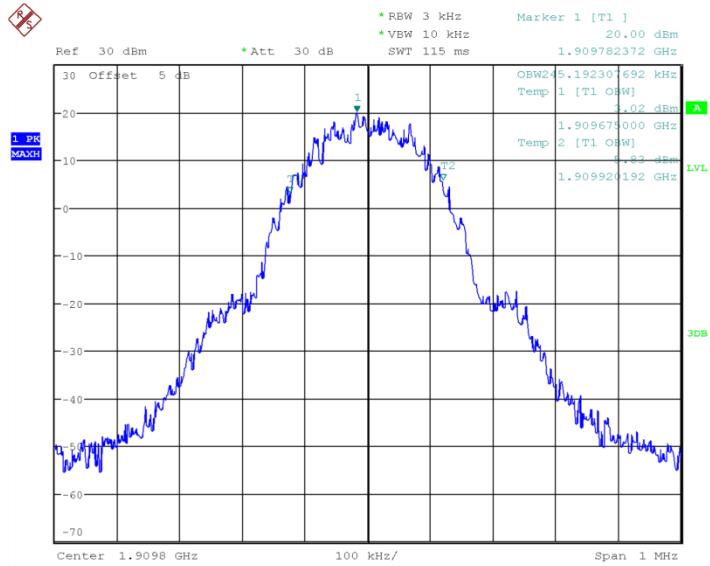
Date: 10.DEC.2016 10:48:13

## Channel 661-Occupied Bandwidth



Date: 10.DEC.2016 10:48:51

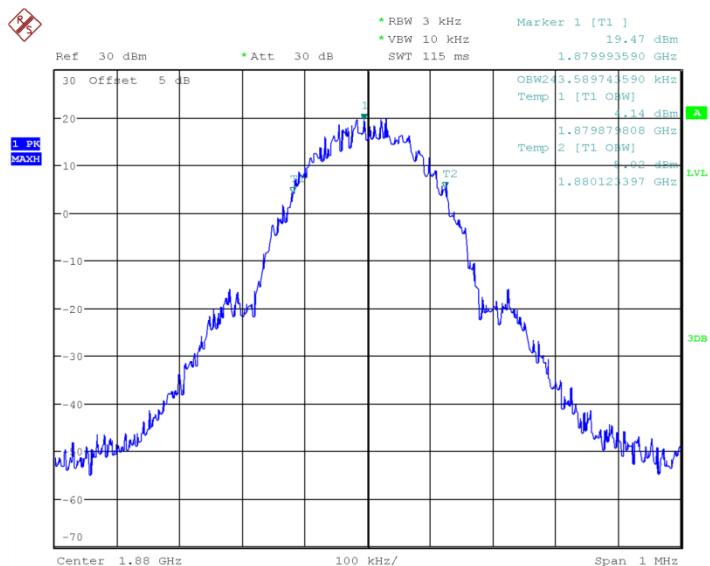
## Channel512-Occupied Bandwidth



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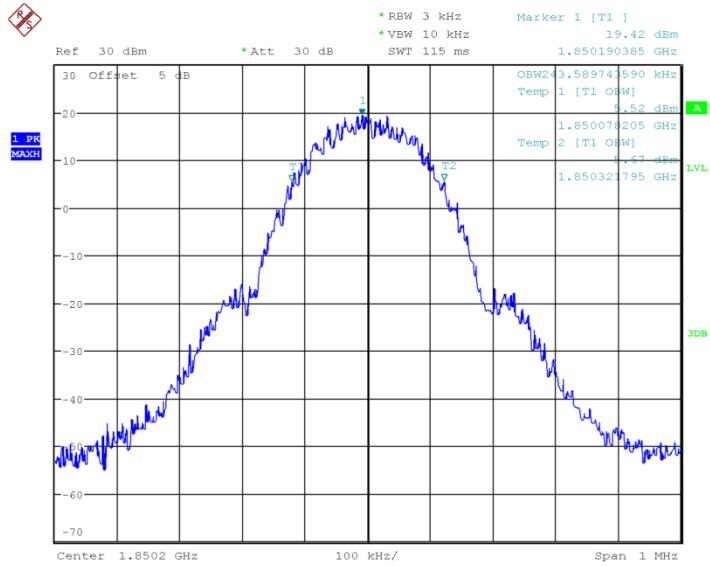
### Channel 810-Occupied Bandwidth

#### GPRS 1900



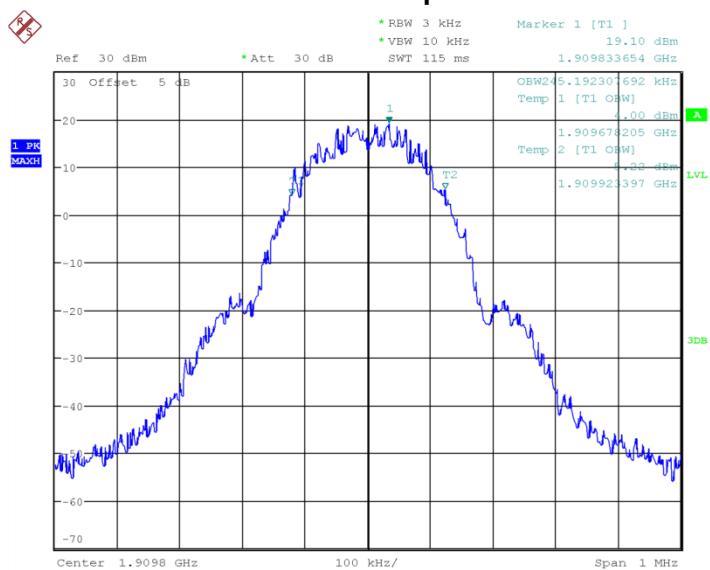
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### Channel 661-Occupied Bandwidth



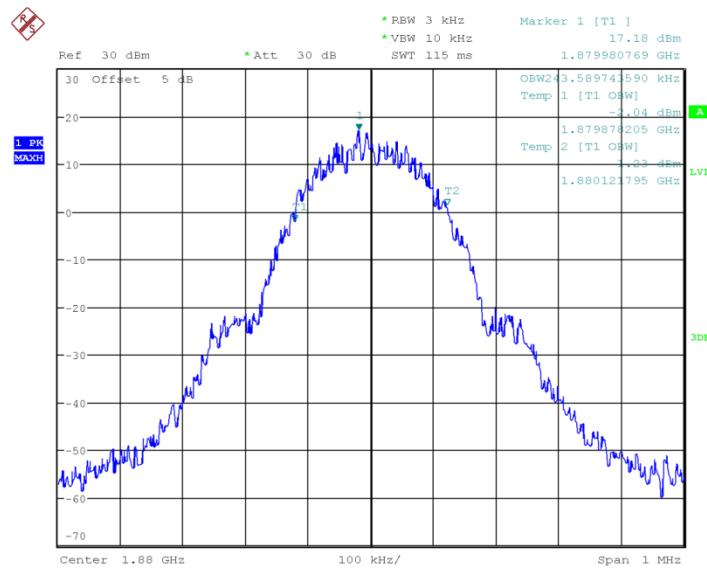
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### Channel 512-Occupied Bandwidth

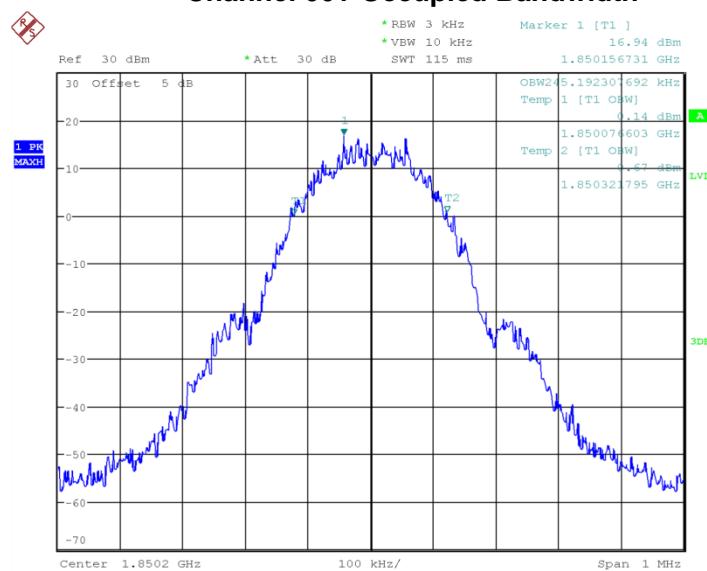


Date: 10.DEC.2016 10:52:59

### Channel 810-Occupied Bandwidth

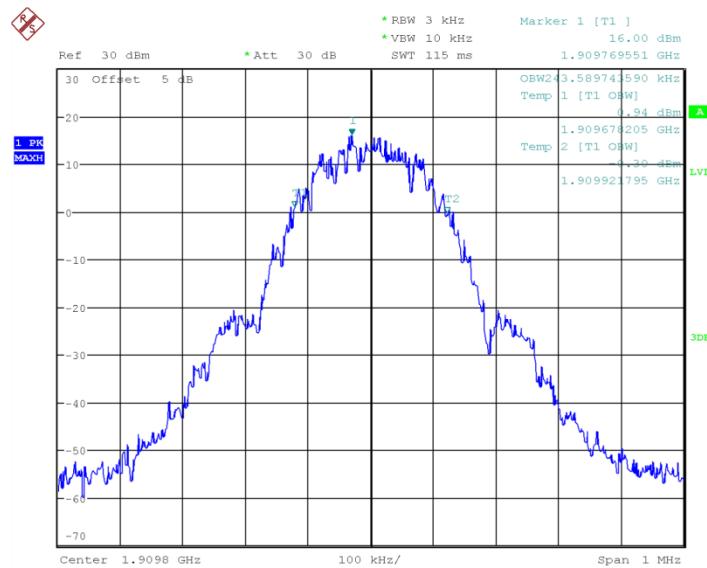
**EDGE 1900**


Date: 10.DEC.2016 10:55:11

**Channel 661-Occupied Bandwidth**


Date: 10.DEC.2016 10:55:47

**Channel512-Occupied Bandwidth**



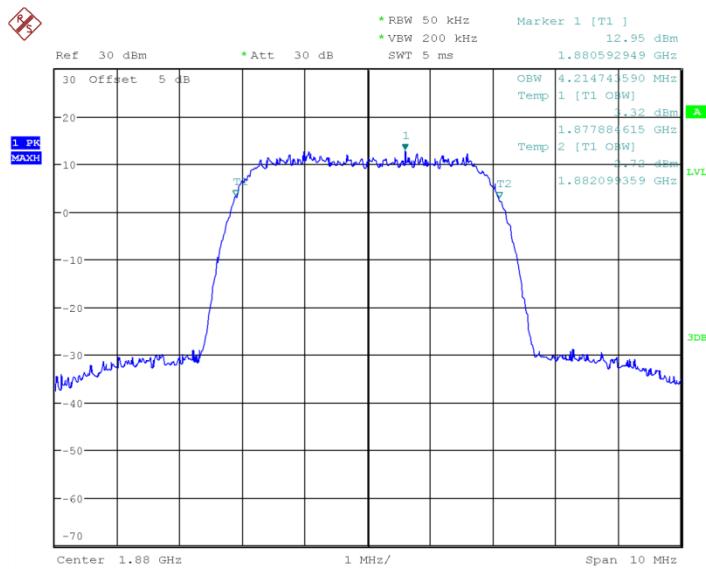
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### Channel 810-Occupied Bandwidth

WCDMA BAND II		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 9400	1880	4.21
Low 9262	1852.4	4.23
High 9538	1907.6	4.21
WCDMA BAND IV		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 1413	1732.6	4.25
Low 1312	1712.4	4.25
High 1513	1752.6	4.21
WCDMA BAND V		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 4183	836.6	4.21
Low 4132	826.4	4.21
High 4233	846.6	4.21

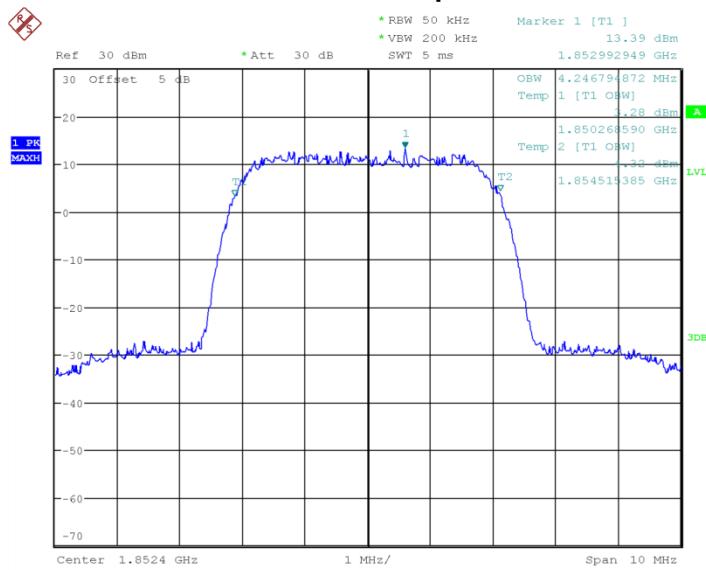
**Conclusion: PASS**

### WCDMA BAND II



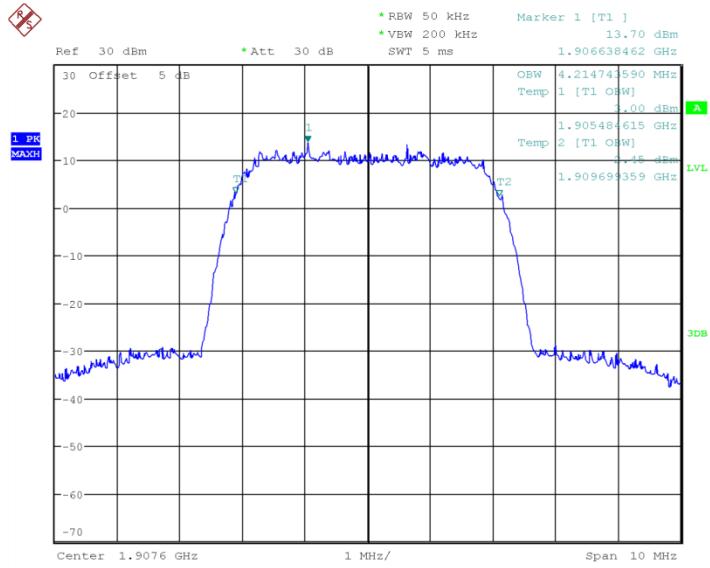
Date: 10.DEC.2016 11:00:26

### Channel 9400-OccUPIed Bandwidth



Date: 10.DEC.2016 11:01:04

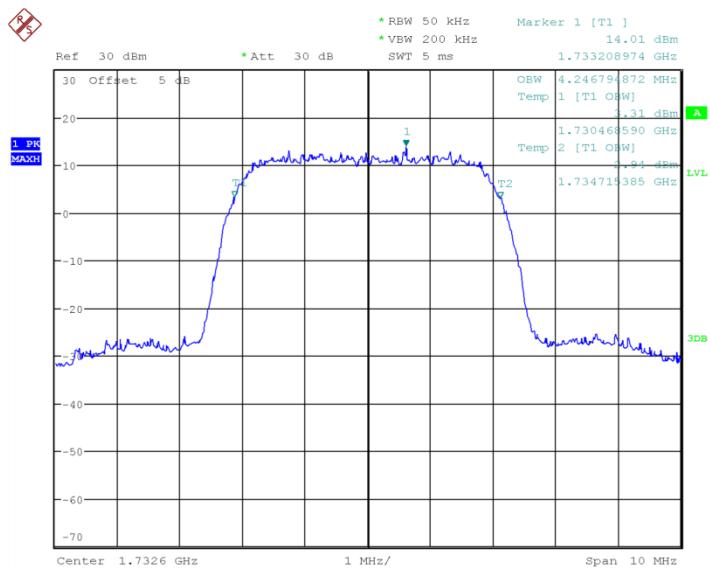
### Channel 9262-OCCUPIED Bandwidth



Date: 10.DEC.2016 11:01:41

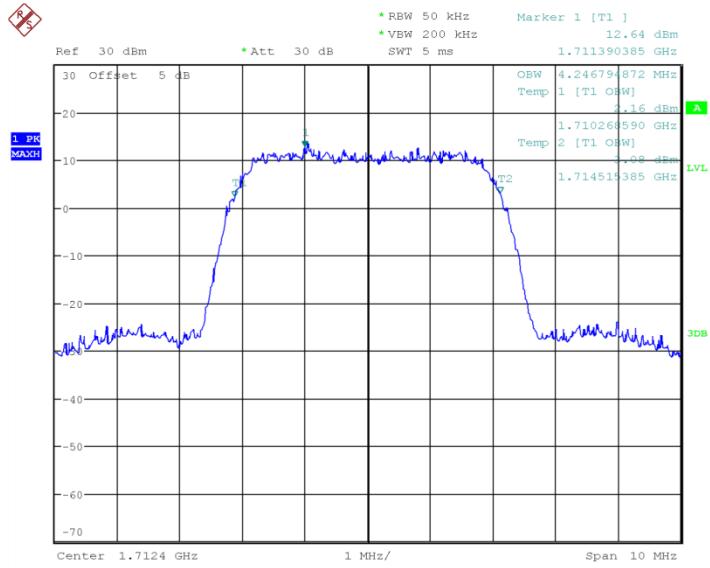
### Channel 9538-Occupied Bandwidth

#### WCDMA BAND IV



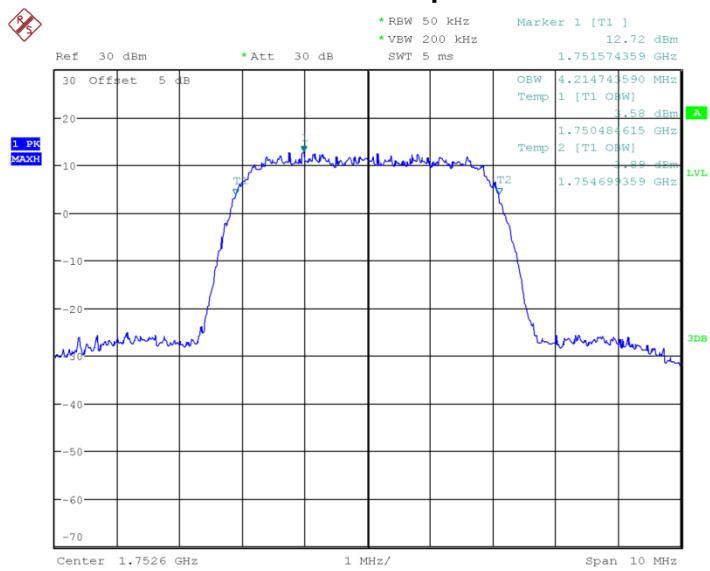
Date: 4.JAN.2017 16:27:21

### Channel 1413-Occupied Bandwidth



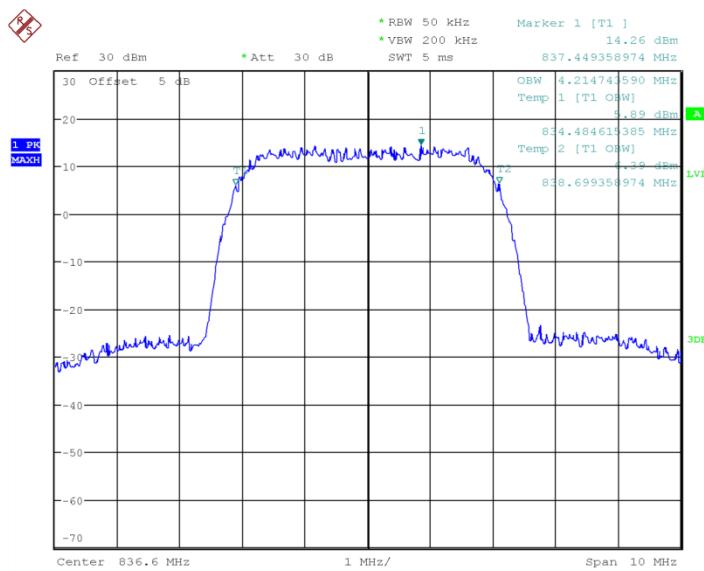
Date: 4.JAN.2017 16:27:59

### Channel1312-Occupied Bandwidth

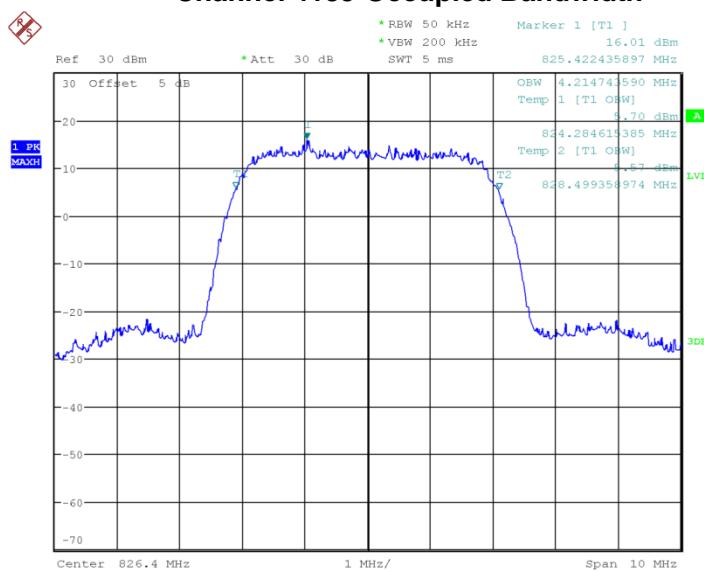


Date: 4.JAN.2017 16:28:36

### Channel 1513-Occupied Bandwidth

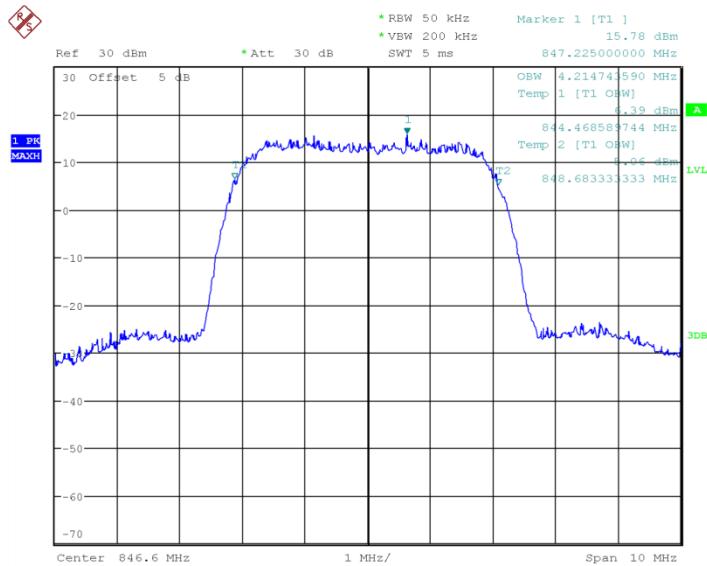
**WCDMA BAND V**


Date: 10.DEC.2016 11:02:41

**Channel 4183-OccUPIed Bandwidth**


Date: 10.DEC.2016 11:03:19

**Channel4132-OCCUPIED Bandwidth**



Date: 10.DEC.2016 11:03:57

### Channel 4233-Occupied Bandwidth

## ANNEX A.4. -26dB Emission Bandwidth

Method of test please refer to KDB971168 D01 v02r02 clause 4.0.

### A.4.1. -26dB Emission Bandwidth

Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of GSM850, PCS1900, WCDMA BANDII and WCDMA BANDV.

### A.4.2 Test Procedure:

1. The EUT output RF connector was connected with a short cable to the signal analyzer.
2. RBW was set to about 1% of emission BW, VBW  $\geq$  3 times RBW.,
3. 26dB bandwidth were measured, the occupied bandwidth is delta frequency between the two points where the display line intersects the signal trace.

### A.4.3 Measurement methods:

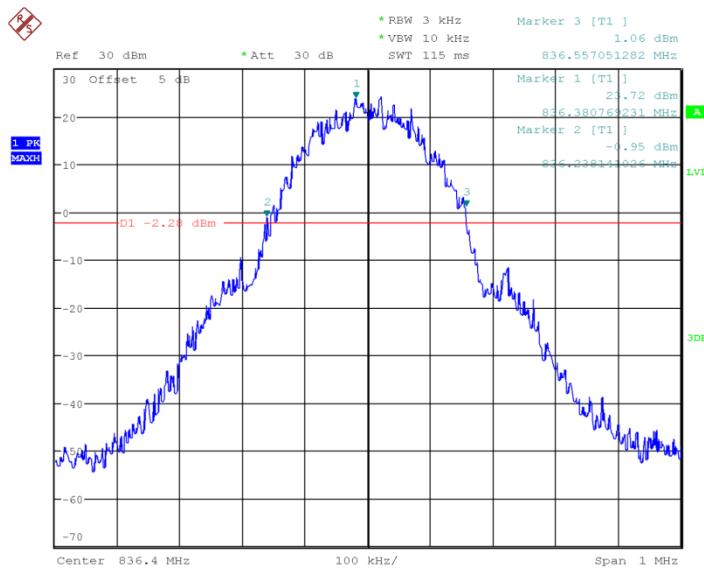
For GSM: signal analyzer setting as: RBW=3KHz;VBW=10KHz;Span=1MHz.

For WCDMA: signal analyzer setting as: RBW=50KHZ;VBW=20KHZ;Span=10MHz.

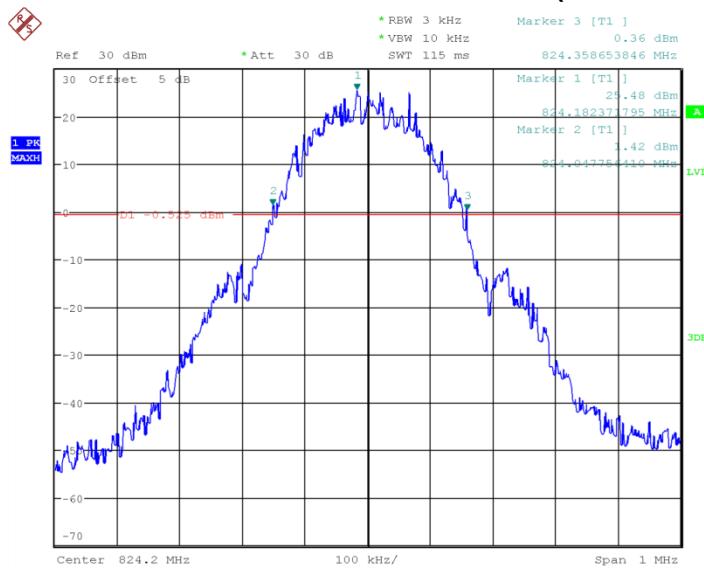
### A.4.4 Test results:

GSM850		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 189	836.4	318.910
Low 128	824.2	310.897
High 251	848.8	312.500
GPRS850		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 189	836.4	310.897
Low 128	824.2	309.295
High 251	848.8	310.897
EDGE850		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 189	836.4	306.090

Low 128	824.2	314.103
High 251	848.8	310.897

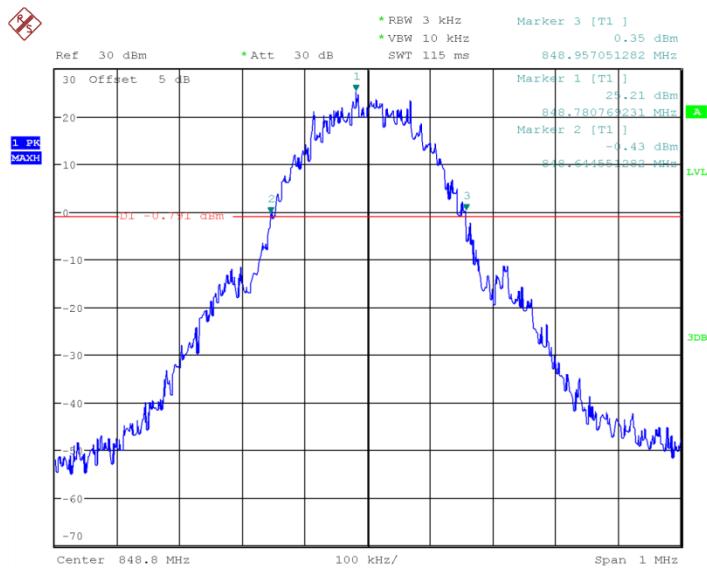
**Conclusion: PASS**
**GSM 850**


Date: 10.DEC.2016 11:07:21

**Channel 189-Emission Bandwidth (-26dBc BW)**


Date: 10.DEC.2016 11:07:49

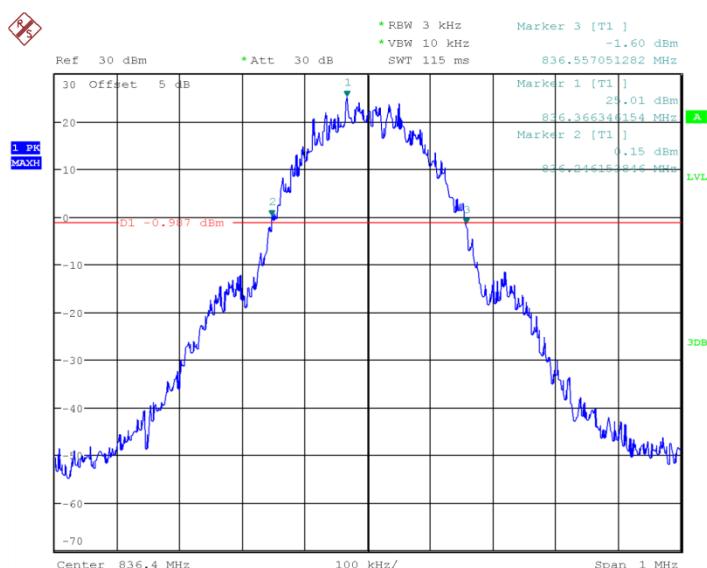
**Channel 128- Emission Bandwidth (-26dBc BW)**



Date: 10.DEC.2016 11:08:18

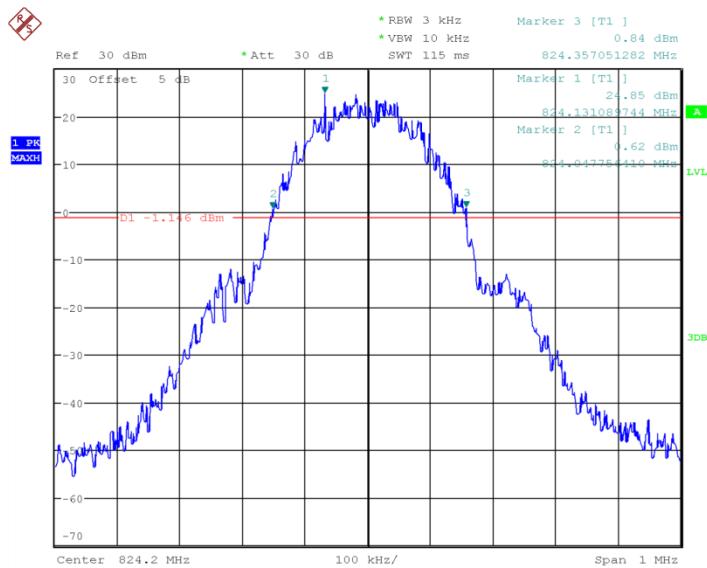
### Channel 251- Emission Bandwidth (-26dBc BW)

#### GPRS 850



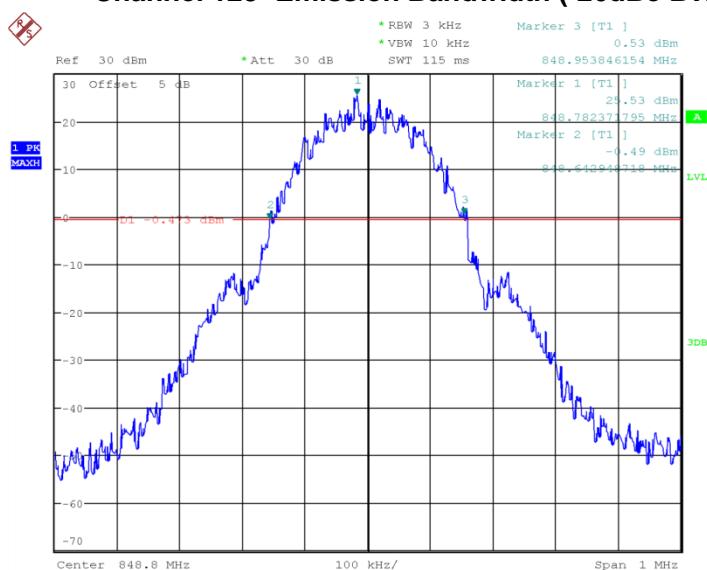
Date: 10.DEC.2016 11:17:01

### Channel 189- Emission Bandwidth (-26dBc BW)



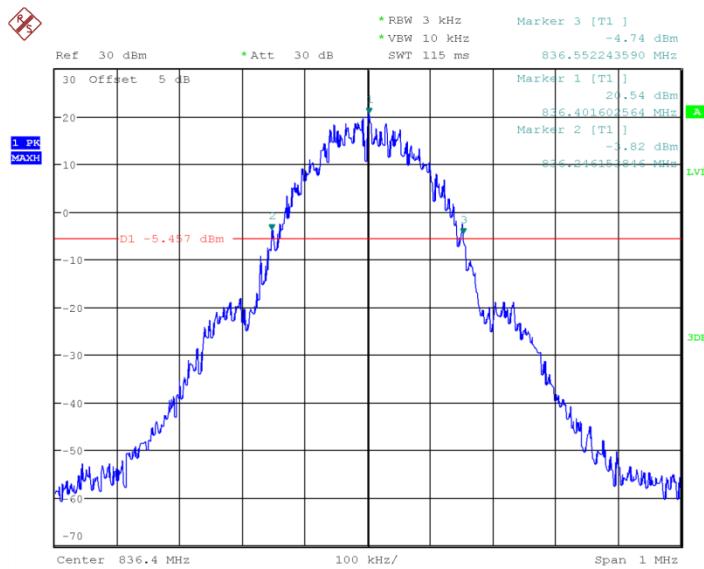
Date: 10.DEC.2016 11:17:28

### Channel 128- Emission Bandwidth (-26dBc BW)

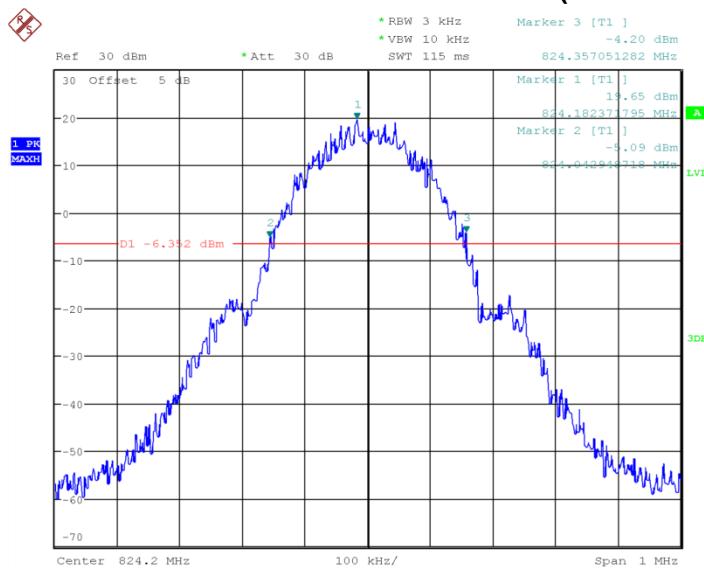


Date: 10.DEC.2016 11:17:55

### Channel 251- Emission Bandwidth (-26dBc BW)

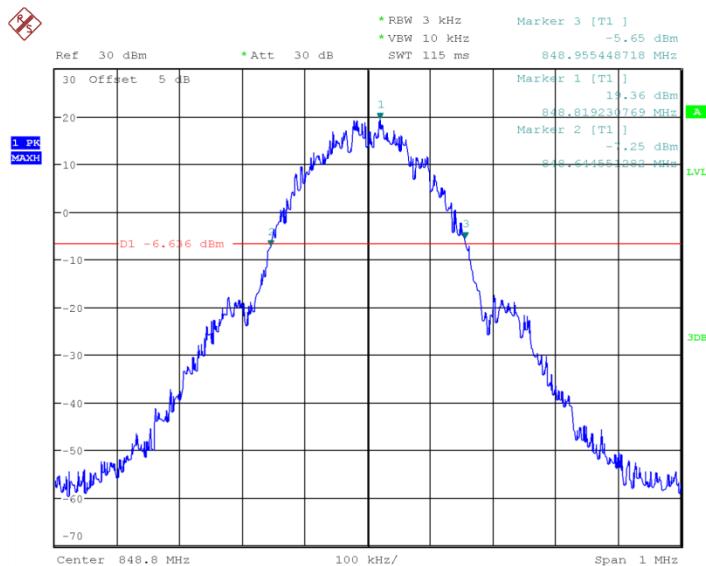
**EDGE 850**


Date: 10.DEC.2016 11:21:26

**Channel 189- Emission Bandwidth (-26dBc BW)**


Date: 10.DEC.2016 11:21:52

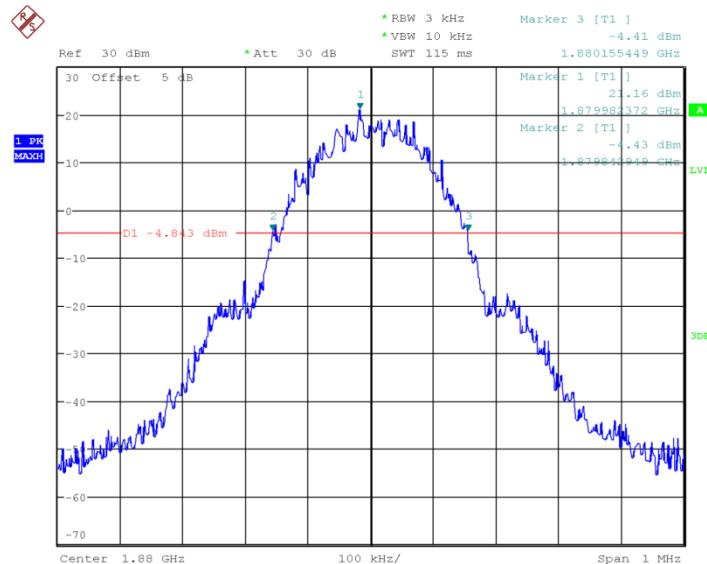
**Channel 128- Emission Bandwidth (-26dBc BW)**



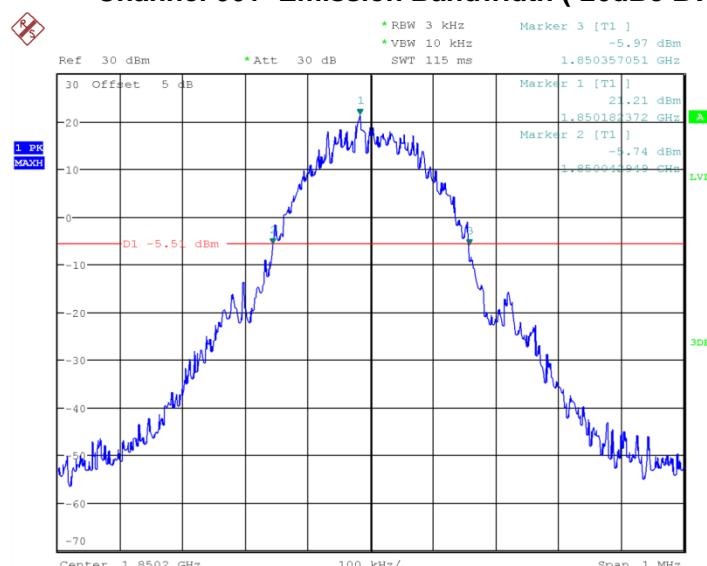
Date: 10.DEC.2016 11:22:19

### Channel 251- Emission Bandwidth (-26dBc BW)

GSM 1900		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 661	1880	312.500
Low 512	1850.2	314.103
High 810	1909.8	317.308
GPRS1900		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 661	1880	312.500
Low 512	1850.2	312.500
High 810	1909.8	312.500
EDGE1900		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 661	1880	315.705
Low 512	1850.2	312.500
High 810	1909.8	302.885

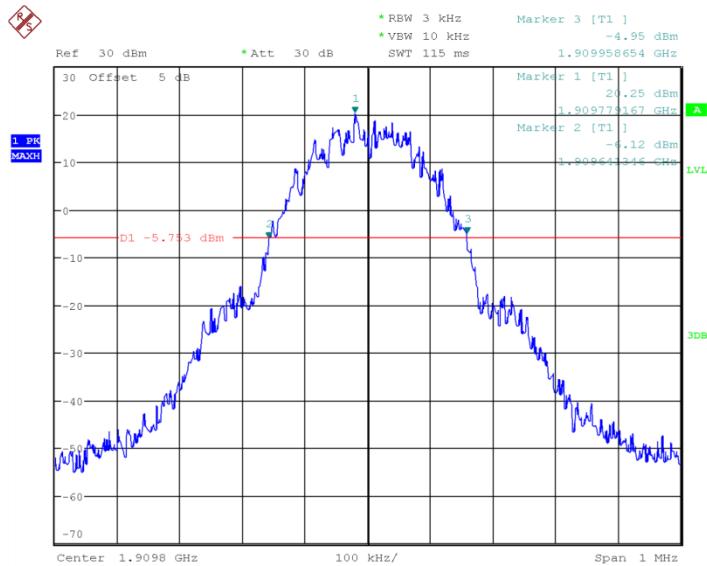
**Conclusion: PASS**
**GSM 1900**


Date: 10.DEC.2016 11:26:01

**Channel 661- Emission Bandwidth (-26dBc BW)**


Date: 10.DEC.2016 11:26:30

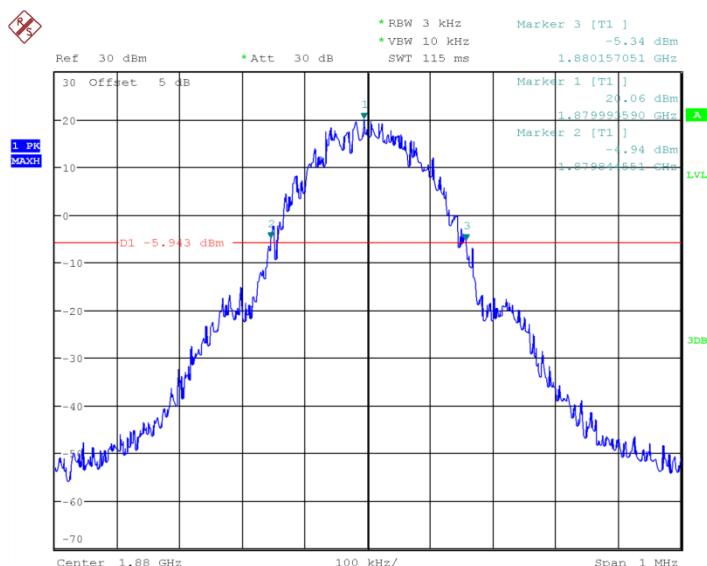
**Channel512- Emission Bandwidth (-26dBc BW)**



Date: 10.DEC.2016 11:26:58

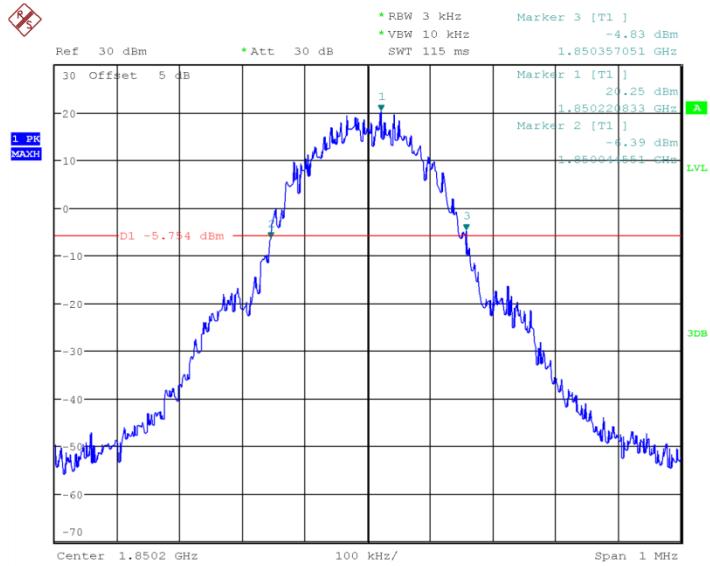
### Channel 810- Emission Bandwidth (-26dBc BW)

#### GPRS 1900



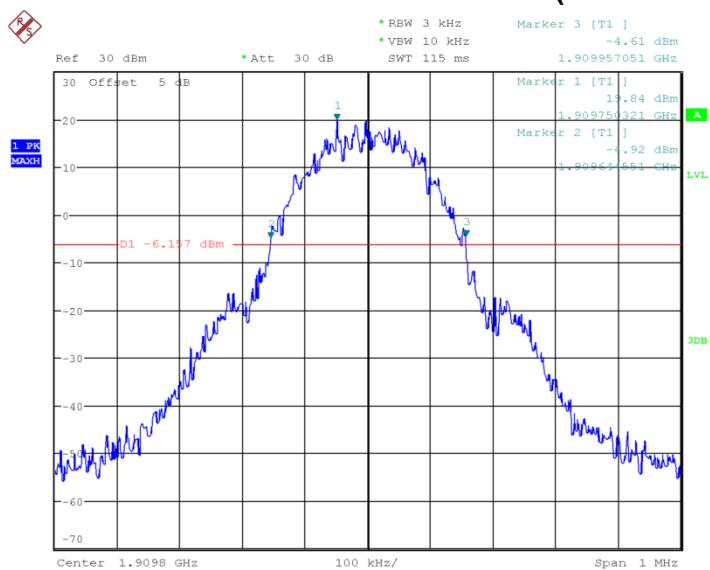
Date: 10.DEC.2016 11:30:38

### Channel 661- Emission Bandwidth (-26dBc BW)



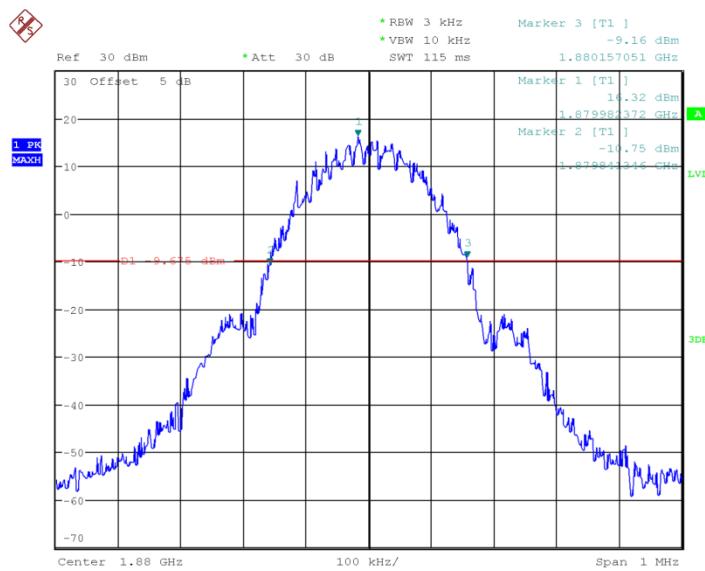
Date: 10.DEC.2016 11:31:04

### Channel512- Emission Bandwidth (-26dBc BW)

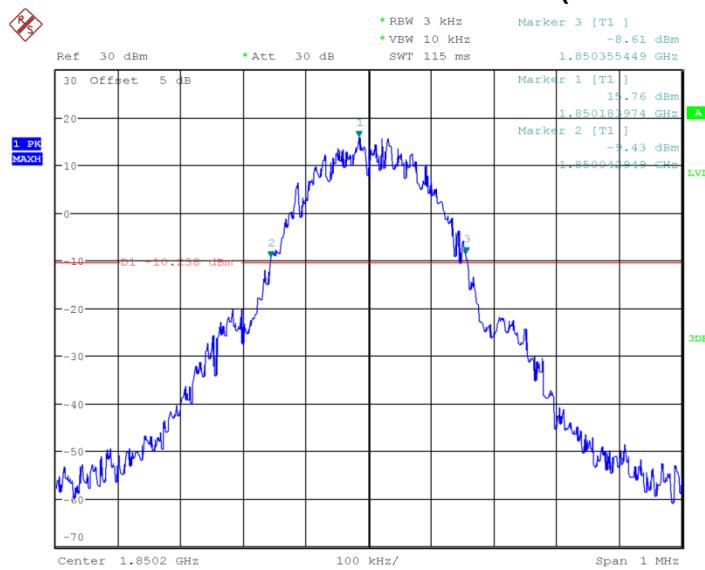


Date: 10.DEC.2016 11:31:30

### Channel 810- Emission Bandwidth (-26dBc BW)

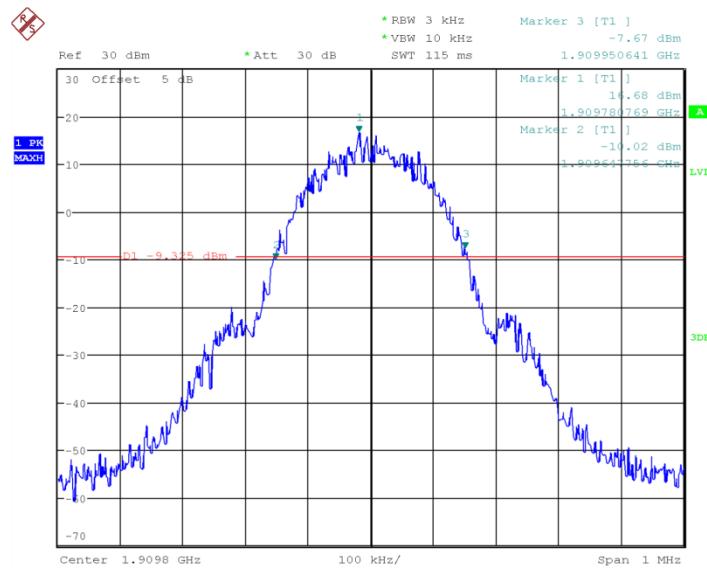
**EDGE 1900**


Date: 10.DEC.2016 11:56:03

**Channel 661- Emission Bandwidth (-26dBc BW)**


Date: 10.DEC.2016 11:56:29

**Channel512- Emission Bandwidth (-26dBc BW)**



Date: 10.DEC.2016 11:56:55

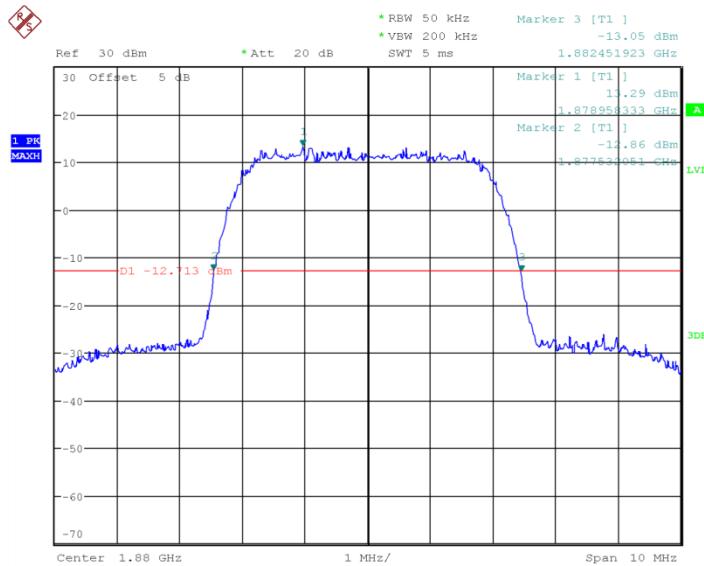
### Channel 810- Emission Bandwidth (-26dBc BW)

WCDMA BAND II		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(MHz)
Mid 9400	1880	4.9
Low 9262	1852.4	4.9
High 9538	1907.6	4.9
WCDMA BAND IV		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(MHz)
Mid 1413	1732.6	4.9
Low 1312	1712.4	4.9
High 1513	1752.6	4.9
WCDMA BAND V		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(MHz)
Mid 4183	836.6	4.9
Low 4132	826.4	4.9

High 4233	846.6	4.9
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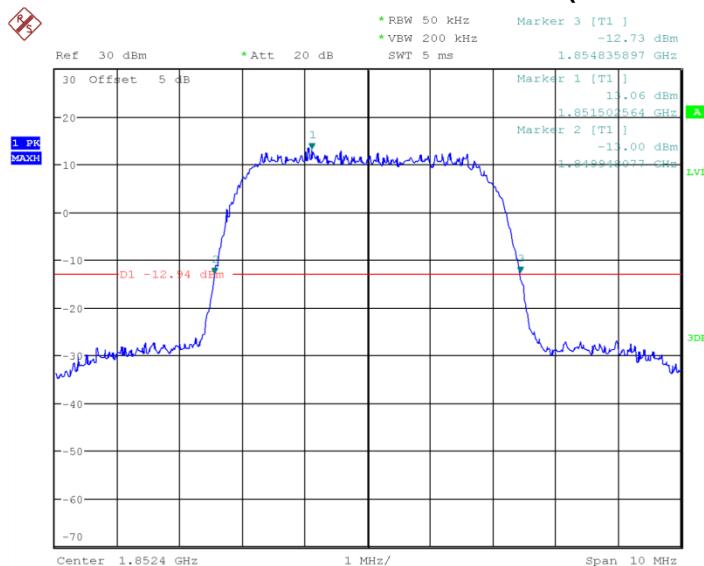
**Conclusion: PASS**

### WCDMA BAND II



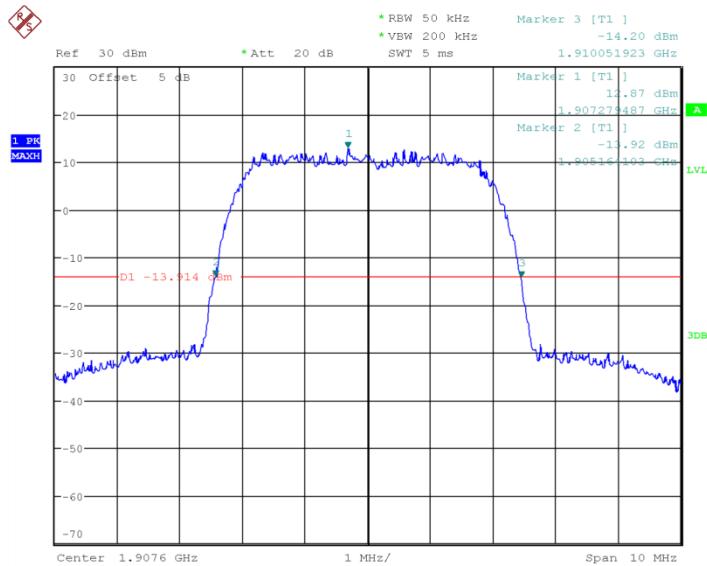
Date: 10.DEC.2016 12:25:50

### Channel 9400- Emission Bandwidth (-26dBc BW)



Date: 10.DEC.2016 12:26:18

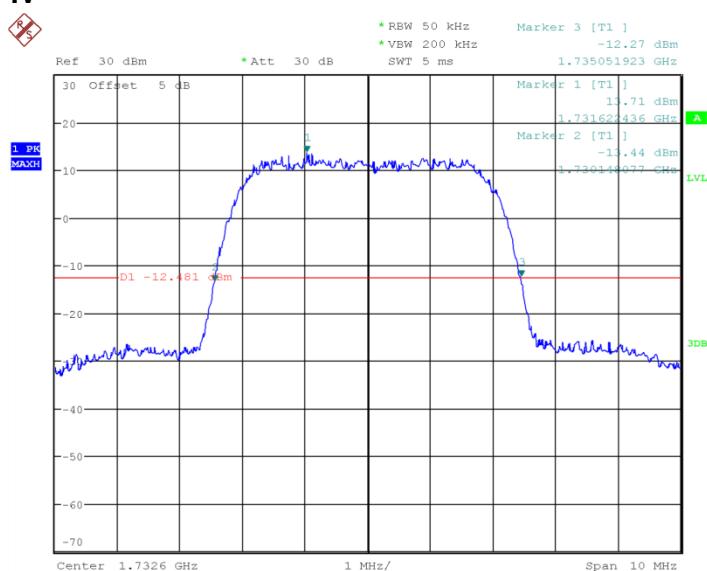
### Channel9262- Emission Bandwidth (-26dBc BW)



Date: 10.DEC.2016 12:26:46

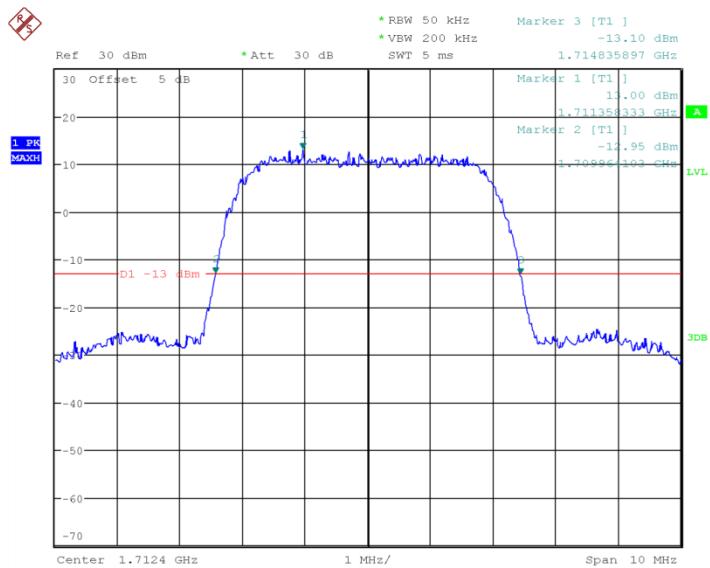
### Channel 9538- Emission Bandwidth (-26dBc BW)

#### WCDMA BAND IV



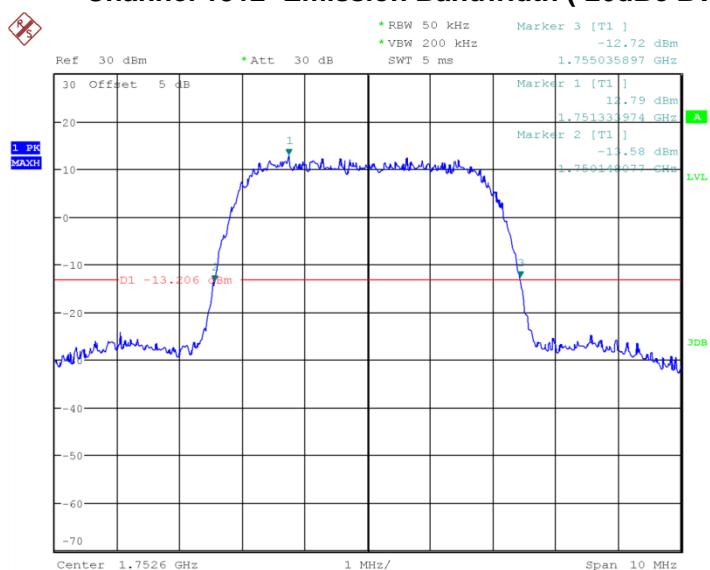
Date: 4.JAN.2017 16:31:28

### Channel 1413- Emission Bandwidth (-26dBc BW)



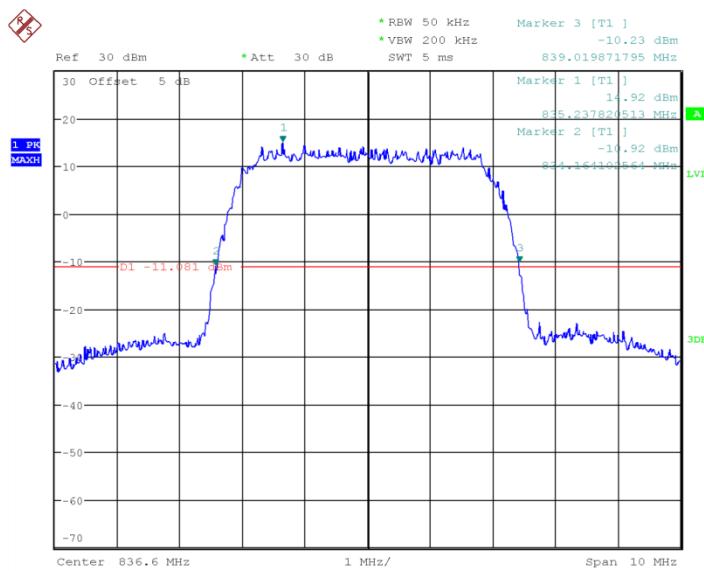
Date: 4.JAN.2017 16:31:56

### Channel 1312- Emission Bandwidth (-26dBc BW)

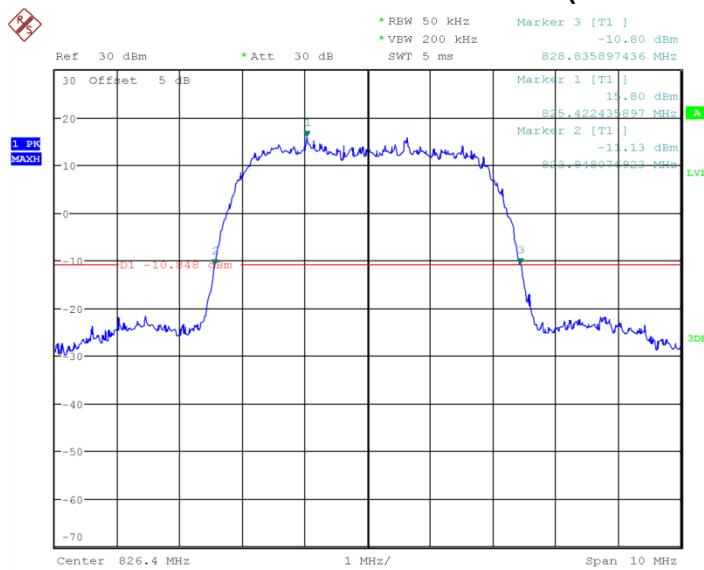


Date: 4.JAN.2017 16:32:24

### Channel 1513- Emission Bandwidth (-26dBc BW)

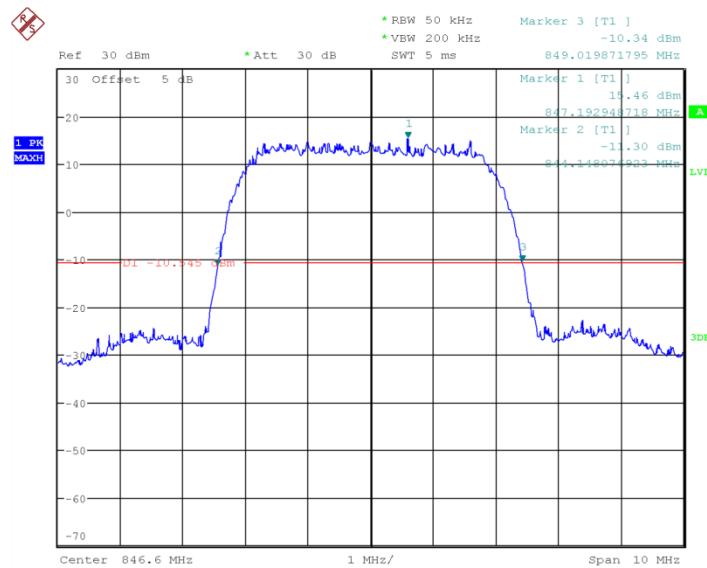
**WCDMA BAND V**


Date: 10.DEC.2016 12:27:36

**Channel 4183- Emission Bandwidth (-26dBc BW)**


Date: 10.DEC.2016 12:28:04

**Channel4132- Emission Bandwidth (-26dBc BW)**



Date: 10.DEC.2016 12:28:32

**Channel 4233- Emission Bandwidth (-26dBc BW)**

## ANNEX A.5. Band Edge at antenna terminals

Method of test measurements please refer to KDB971168 D01 v02r02 clause 3.5

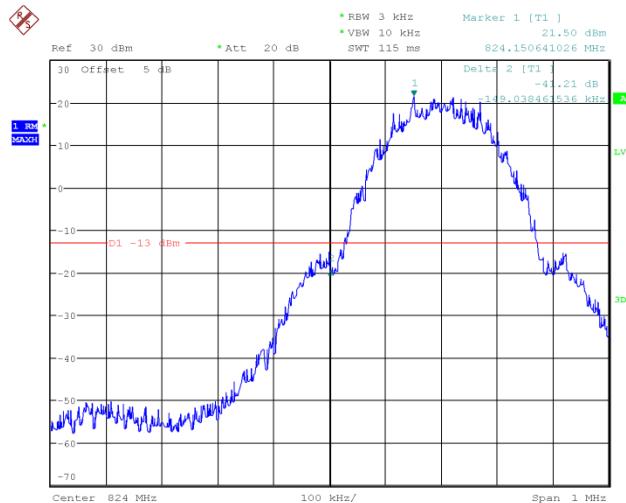
### A.5.1 Limit:

The magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specification in the instruction manual and/or alignment procedure, shall not be less than  $43+10\log(P)$  (Mean power in watts) dBc below the mean power output outside a license's frequency block(-13dBm).

### A.5.2 Test procedure:

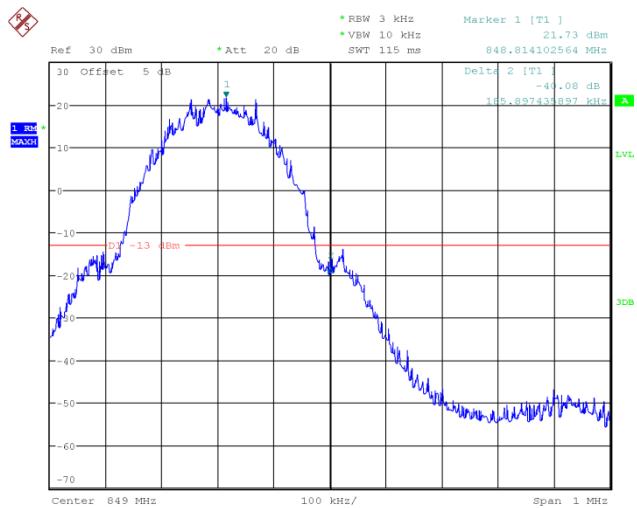
1. The RF output of the transceiver was connected to a signal analyzer through appropriate attenuation.
2. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.
3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band
4. The limit line is derived from  $43+10\log(P)$  Db below the transmitter power P(Watts)  
 $=P(W)-[43+10\log(P)](Db)$   
 $=[30+10\log(P)](dBm)-[43+10\log(P)](Db)$   
 $=-13dBm$

## GSM 850



Date: 30.DEC.2016 08:06:29

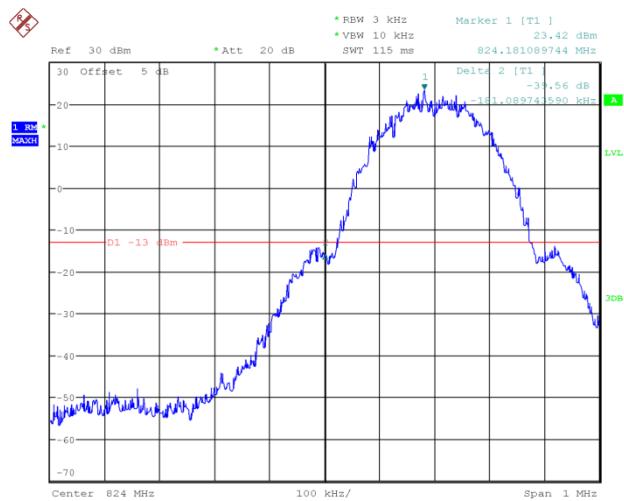
## Channel 128- LOW BAND EDGE BLOCK



Date: 30.DEC.2016 08:04:08

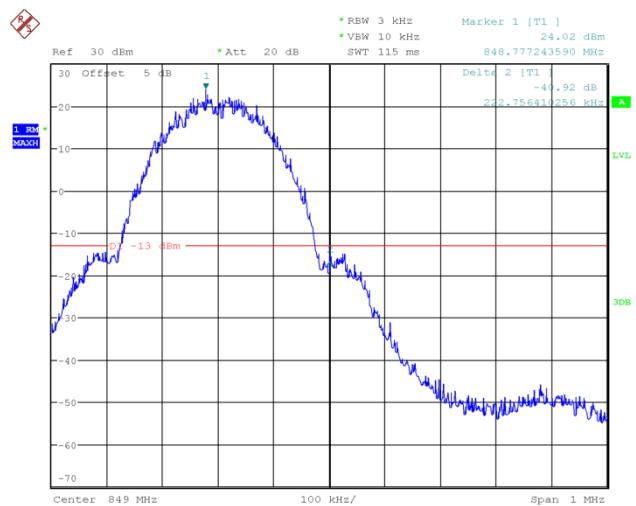
### Channel 251- HIGH BAND EDGE BLOCK

#### GPRS 850



Date: 23.DEC.2016 15:37:43

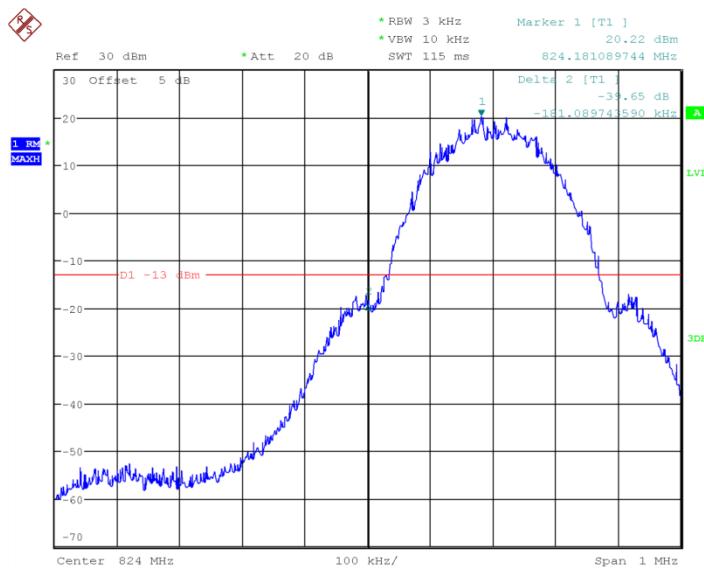
### Channel 128- LOW BAND EDGE BLOCK



Date: 23.DEC.2016 15:11:45

### Channel 251- HIGH BAND EDGE BLOCK

#### EDGE 850



Date: 10.DEC.2016 13:07:40

### Channel 128- LOW BAND EDGE BLOCK