



*Full*

# TEST REPORT

**No. I17D00184-SRD05**

*For*

**Client : Gemalto M2M GmbH**

**Production : LTE Data-Only SMT World-Module**

**Model Name : PLS62-W**

**FCC ID: QIPPLS62-W**

**IC ID 7830A-PLS62W**

**Hardware Version: B2.1**

**Software Version: 01.000**

**Issued date: 2017-07-09**

**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**

<b>Report Number</b>	<b>Revision</b>	<b>Date</b>	<b>Memo</b>
I17D00184-SRD05	00	2017-07-09	Initial creation of test report
I17D00184-SRD05	01	2017-07-09	Second 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:	20-75%

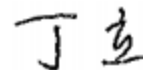
### 1.3. Project data

Project Leader:	Yu Anlu
Testing Start Date:	2017-06-26
Testing End Date:	2017-07-05

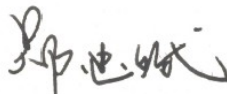
### 1.4. Signature



\_\_\_\_\_  
**Yang Dejun**  
 (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: Gemalto M2M GmbH  
Address: Gemalto M2M GmbH, Siemensdamm 50, 13629 Berlin, Germany  
Telephone: +861059378342  
Postcode: 13629

### 2.2. Manufacturer Information

Company Name: Gemalto M2M GmbH  
Address: Gemalto M2M GmbH, Siemensdamm 50, 13629 Berlin, Germany  
Telephone: +861059378342  
Postcode: 13629

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

#### 3.1. About EUT

EUT Description	LTE Data-Only SMT World-Module
Model name	PLS62-W
FCC ID	QIPPLS62-W
IC ID	7830A-PLS62W
Frequency	GSM850/900/1800/1900; WCDMA Band II/IV/V
Extreme Temperature	-10/+55 °C
Nominal Voltage	3.8V
Extreme High Voltage	4.5V
Extreme Low Voltage	3.0V

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
N05	N/A	B2.1	01.000	2017-06-22

Antenna model	Antenna manufacturer	Frequency band	Antenna gain(dBi)
taoglas	Dipole Swivel Terminal Antenna	LTE band2	2.15
taoglas	Dipole Swivel Terminal Antenna	LTE band4	2.15
taoglas	Dipole Swivel Terminal Antenna	LTE band5	5.15
taoglas	Dipole Swivel Terminal Antenna	LTE band7	4.2
taoglas	Dipole Swivel Terminal Antenna	LTE band12	2
taoglas	Dipole Swivel Terminal Antenna	LTE band18	5.15
taoglas	Dipole Swivel Terminal Antenna	LTE band19	5.15
MiniMag	Smarteq Wireless AB	GSM850	5.15
MiniMag	Smarteq Wireless AB	GSM1900	2.15
MiniMag	Smarteq Wireless AB	UMTS band2	2.15
MiniMag	Smarteq Wireless AB	UMTS band4	2.15
MiniMag	Smarteq Wireless AB	UMTS band5	5.15

\*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	---

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

### 3.4. Statements

The product name PLS62-W, supporting GPRS/EDGE/WCDMA/HSDPA/HSUPA/HSPA+/LTE, manufactured by Gemalto M2M GmbH, 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 24	PERSONAL COMMUNICATIONS SERVICES	2014
FCC Part 22	PUBLIC MOBILE SERVICES	2014
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	2014
ANSI-TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
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	2014
RSS-132	Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz	Issue 3
RSS-133	2 GHz Personal Communications Services	Issue 6
RSS-139	Advanced Wireless Services Equipment Operating in the Bands 1710-1755 MHz and 2110-2155 MHz	Issue 3

## 5. SUMMARY OF TEST RESULTS

Item	Test items	FCC rules	IC rules	result
1	Output Power	2.1046/22.913(a)/ 24.232(c)/ 27.50(d)	RSS-132 5.4/ RSS-133 6.4/ RSS-139 6.5	Pass
2	Peak-to-Average Ratio	24.232(d)/ 27.50(a)	RSS-132 5.4/ RSS-133 6.4/ RSS-139 6.5	Pass
3	99%Occupied Bandwidth	2.1049(h)(i)/ 22.917(b)	RSS-Gen 6.6	Pass
4	-26dB Emission Bandwidth	22.917(b)/ §24.238(b)/ 27.53(h)	RSS-Gen 6.6	Pass
5	Band Edge at antenna terminals	22.917(a)/ 24.238(a)/ 27.53(h)	RSS-132 5.5/ RSS-133 6.5/ RSS-139 6.6	Pass
6	Frequency stability	2.1055/  24.235/27.54	RSS-132 5.3/ RSS-133 6.3/ RSS-139 6.4	Pass
7	Conducted Spurious mission	2.1053/22.917(a)/ 24.238(a)/ 27.53(h)	RSS-132 5.5/ RSS-133 6.5/ RSS-139 6.6	Pass
8	Emission Limit	2.1051/22.917/27.53(h)  24.238/22.913/24.232	RSS-132 5.5/ RSS-133 6.5/ RSS-139 6.6	Pass

## 6. Test Equipment Utilized

### Climate chamber

No.	Equipment	Model	Serial Number	Manufacturer	Calibration date	Cal.interval
1	Climate chamber	SH-641	92012011	ESPEC	2016-01-06	2 Year

### Radiated emission test system

The test equipment and ancillaries used are as follows.

No.	Equipment	Model	Serial Number	Manufacturer	Calibration date	Cal.interval
1	Universal Radio Communication Tester	CMU200	123123	R&S	2017-05-11	1 Year
2	EMI Test Receiver	ESU40	100307	R&S	2017-05-11	1 Year
3	TRILOG Broadband Antenna	VULB9163	VULB9163-515	Schwarzbeck	2017-02-25	3 Year
4	Double-ridged Waveguide Antenna	ETS-3117	00135890	ETS	2017-01-11	3 Year
5	2-Line V-Network	ENV216	101380	R&S	2017-05-11	1 Year
6	Substitution Antenna	ETS-3117	00135890	ETS	2017-01-11	3 Year
7	RF Signal Generator	SMF100A	102314	R&S	2017-05-11	1 Year
8	Substitution Antenna	VUBA9117	9117-266	Schwarzbeck	2014-08-19	3 Year
9	Amplifier	SCU03	10009	R&S	2017-01-05	1 Year

10	Amplifier	NTWPA -008610 F	12023024	Rflight	2017-01-05	1 Year
11	Attenuators	BW-N3 W5+	/	MCL	2017-01-05	1 Year

**Conducted test system**

No.	Name	Type	SN	Manufacture	Calibration date	Cal.interval
1	Spectrum Analyzer	FSQ26	101096	R&S	2017-05-11	1 Year
2	Universal Radio Communicat	CMU200	123102	R&S	2017-05-11	1 Year
3	DC Power Supply	ZUP60-1 4	LOC-220Z006 -0007	TDL-Lambda	2017-05-11	1 Year

## 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. = 20 %, Max. = 75 %
Shielding effectiveness	> 100 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	> 100 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; 1732.6 MHz, 1712.4MHz and 1752.6MHz for WCDMA Band IV; 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 Limit:**

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

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

##### **A.1.2.4 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.1.2.5 GSM Test Condition:**

RBW	VBW	Sweep time	Span
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1MHz	1MHz	300ms	10MHz
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### A.1.2.6 WCDMA Test Condition:

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

### A.1.2.7 Measurement results:

GPRS 850 (GMSK 1 Slot)		
Channel/fc(MHz)	Average power (dBm)	Peak power (dBm)
Mid 189/836.4	33.41	33.79
Low 128/824.2	33.62	34
High 251/848.8	33.71	34.06
EDGE 850 (8PSK 1 Slot)		
Channel/fc(MHz)	Average power (dBm)	Peak power (dBm)
Mid 189/836.4	26.92	30.07
Low 128/824.2	26.98	30.11
High 251/848.8	26.96	30.19

GPRS 1900 (GMSK 1 Slot)		
Channel/fc(MHz)	Average power (dBm)	Peak power (dBm)
Mid 661/1880	29.86	30.11
Low 512/1850.2	30.15	30.38
High 810/1909.8	29.79	30.06
EDGE 1900 (8PSK 1 Slot)		
Channel/fc(MHz)	Average power (dBm)	Peak power (dBm)
Mid 661/1880	25.15	28.10
Low 512/1850.2	25.47	28.47
High 810/1909.8	25.06	28.01

WCDMA BAND II		
Channel/fc(MHz)	Average power (dBm)	Peak power (dBm)
Mid 9400/1880	22.29	25.48
Low 9262/1852.4	22.30	25.46
High 9538/1907.6	22.22	25.18
WCDMA IV		
Channel/fc(MHz)	Average power (dBm)	Peak power (dBm)
Mid 1413 /1732.6	22.46	25.52
Low 1312/1712.4	22.32	25.78
High 1513/1752.6	22.57	26.05
WCDMA BAND V		
Channel/fc(MHz)	Average power (dBm)	Peak power (dBm)
Mid 4183/836.6	22.25	25.42
Low 4132/826.4	22.17	25.58
High 4233/846.6	22.29	25.39

**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.
  - 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:



<b>GPRS850</b>			
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
PAPR(dB)	8.13	7.59	7.67
<b>EDGE850</b>			
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
PAPR(dB)	10.24	10.91	10.35

<b>GPRS1900</b>			
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PAPR(dB)	7.16	7.26	9.67
<b>EDGE1900</b>			
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PAPR(dB)	8.83	9.67	9.34

<b>WCDMA Band II</b>			
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880	1907.6
PAPR(dB)	8.59	8.59	8.59
<b>WCDMA Band IV</b>			
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
PAPR(dB)	4.71	4.71	5.1

WCDMA Band V			
Channel	4132	4183	4233
Frequency (MHz)	826.4	836.4	846.6
PAPR(dB)	8.43	8.43	8.43

**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 WCDMA BAND IV and WCDMA BANDV.

#### A.3.2 Test Procedure:

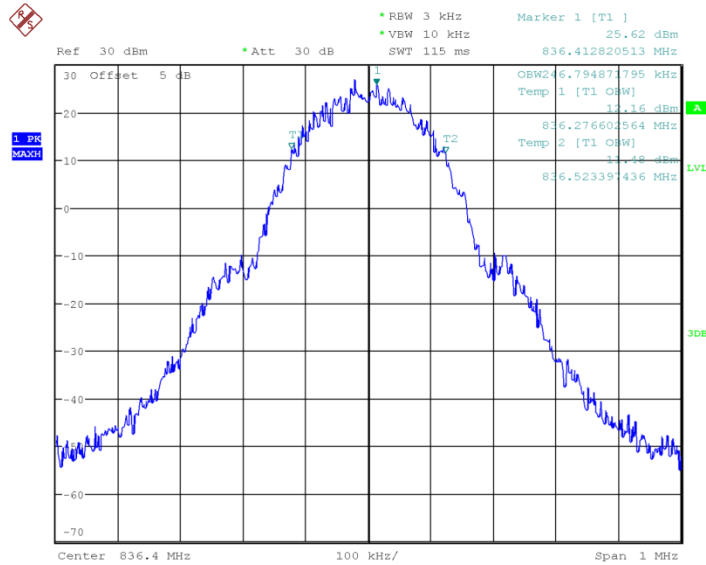
1. The EUT output RF connector was connected with a short cable to the signal analyzer.
2. RBW was set to about 1% of emission BW, VBW  $\geq$  3 times RBW,.
3. 99% bandwidth were measured, the occupied bandwidth is delta frequency between the two points where the display line intersects the signal trace.

#### A.3.3 Test result:

GPRS850		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 189	836.4	246.795
Low 128	824.2	246.795
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	246.795
High 251	848.8	250

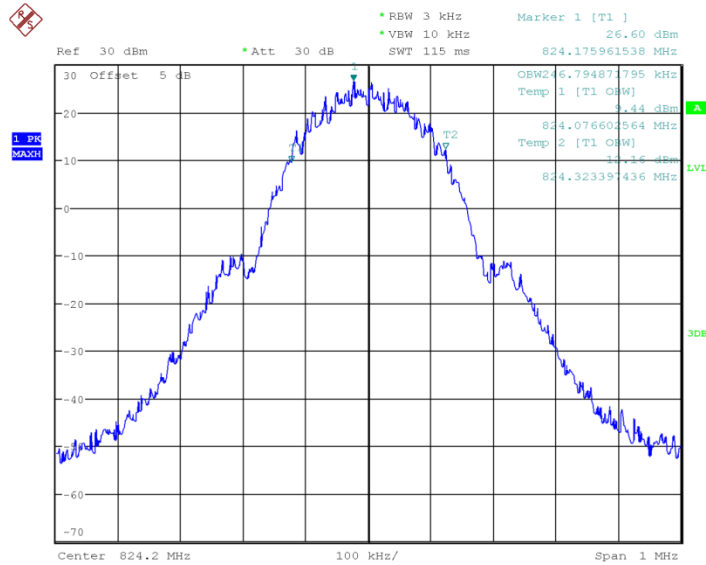
**Conclusion: PASS**

## GPRS 850



Date: 27.JUL.2017 07:53:59

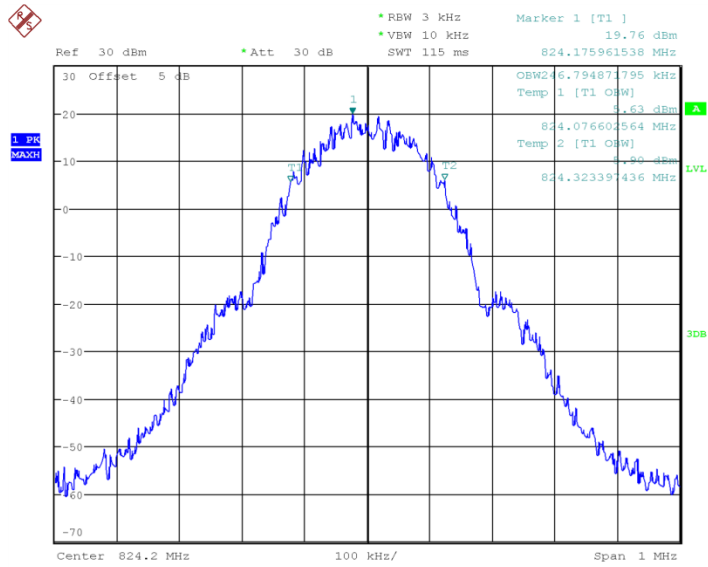
### Channel 189-Occupied Bandwidth (99%)



Date: 27.JUL.2017 07:54:37

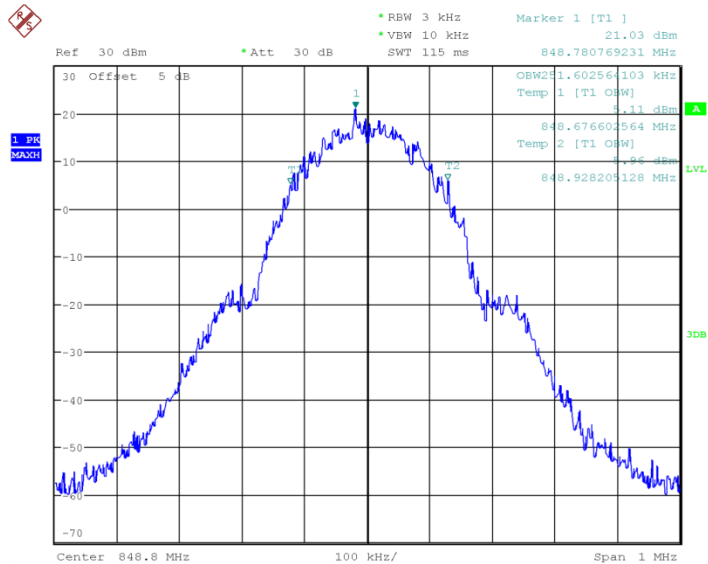
### Channel 128-Occupied Bandwidth (99%)





Date: 27.JUL.2017 08:00:20

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

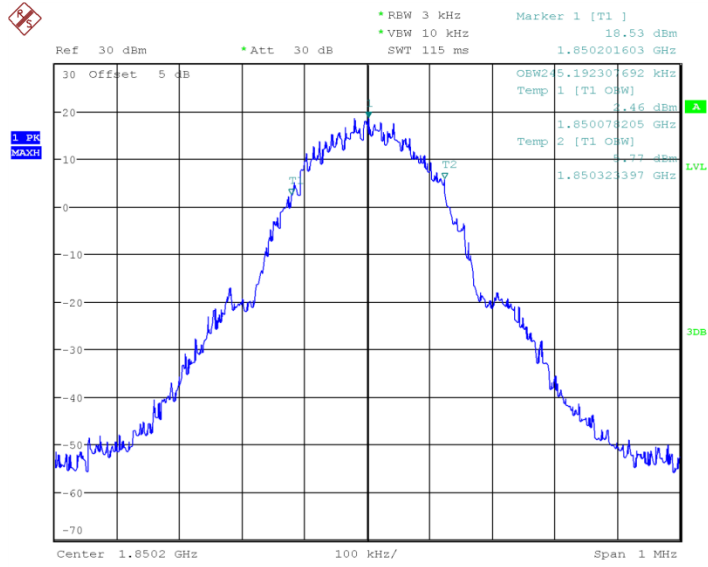


Date: 27.JUL.2017 08:00:58

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

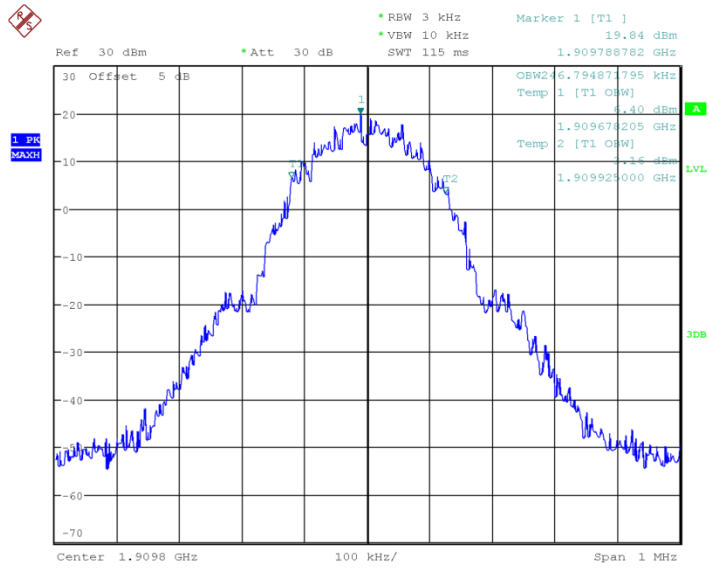
GPRS1900		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 661	1880	240.385
Low 512	1850.2	245.192
High 810	1909.8	248.397





Date: 27.JUL.2017 08:07:58

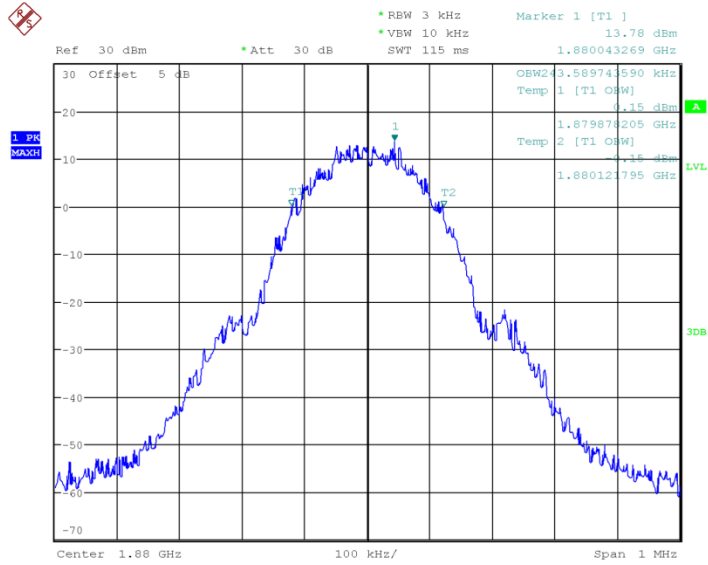
## Channel512-Occupied Bandwidth



Date: 27.JUL.2017 08:08:36

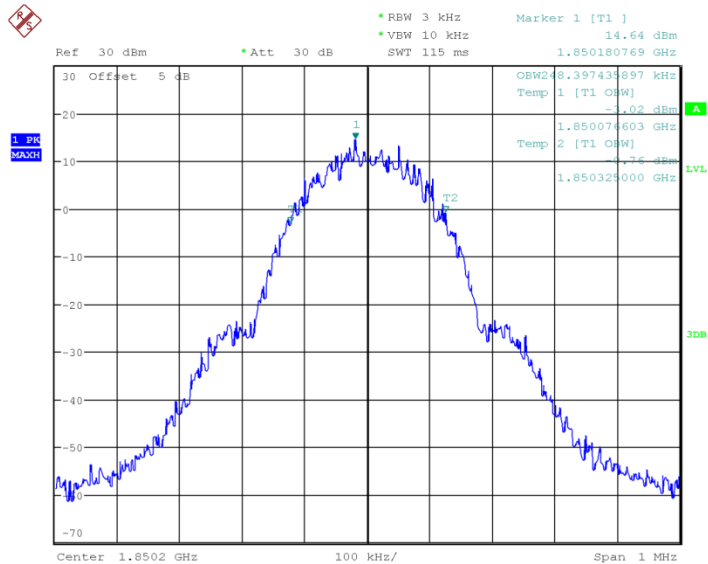
## Channel 810-Occupied Bandwidth

**EDGE 1900**



Date: 27.JUL.2017 08:11:42

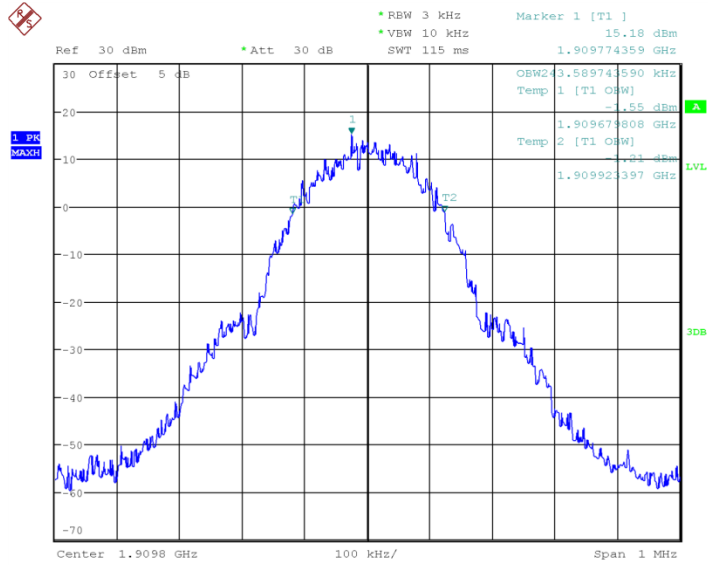
## Channel 661-Occupied Bandwidth



Date: 27.JUL.2017 08:12:20

## Channel 512-Occupied Bandwidth



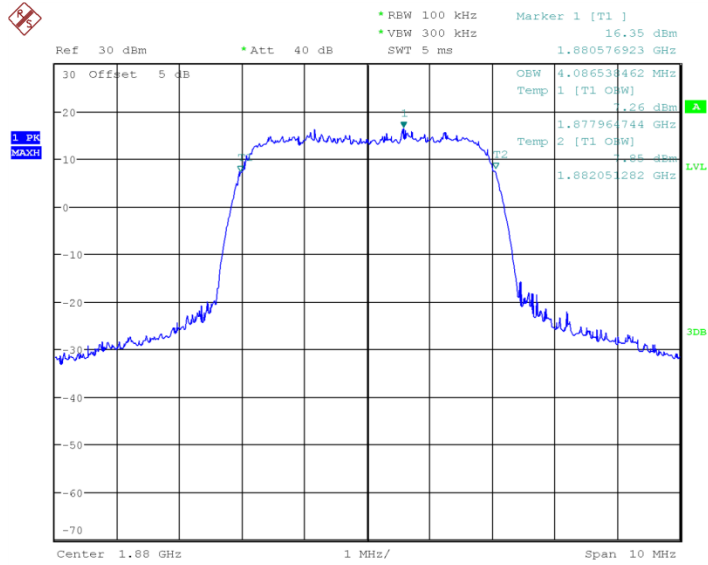


Date: 27.JUL.2017 08:12:57

### Channel 810-Occupied Bandwidth

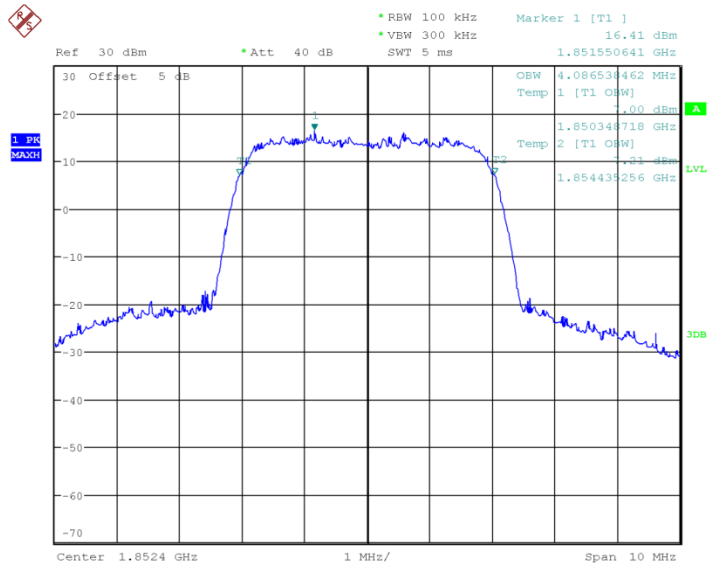
WCDMA BAND II		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 9400	1880	4.09
Low 9262	1852.4	4.09
High 9538	1907.6	4.09

**Conclusion: PASS**  
**WCDMA BAND II**



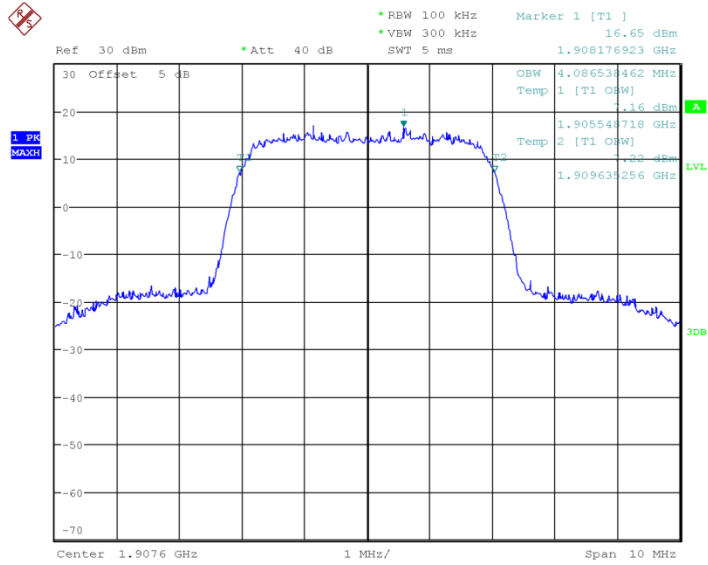
Date: 23.AUG.2017 13:45:36

## Channel 9400-Occupied Bandwidth



Date: 23.AUG.2017 13:46:38

## Channel 9262-Occupied Bandwidth

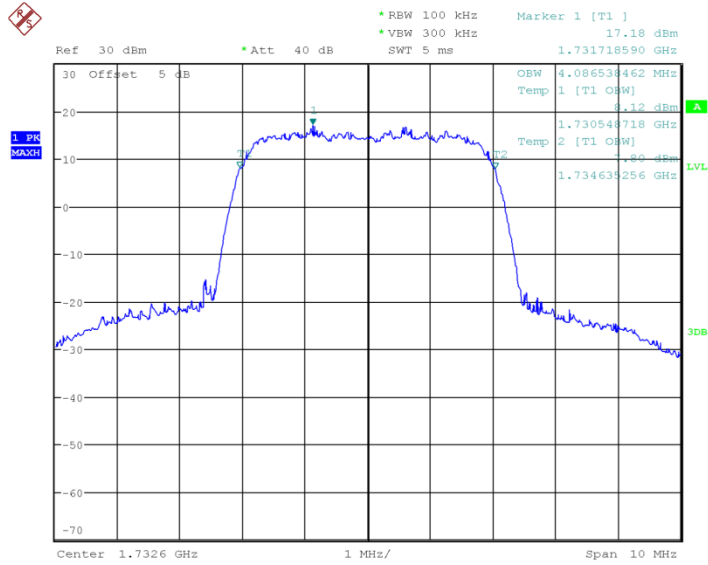


Date: 23.AUG.2017 13:47:40

### Channel 9538-Occupied Bandwidth

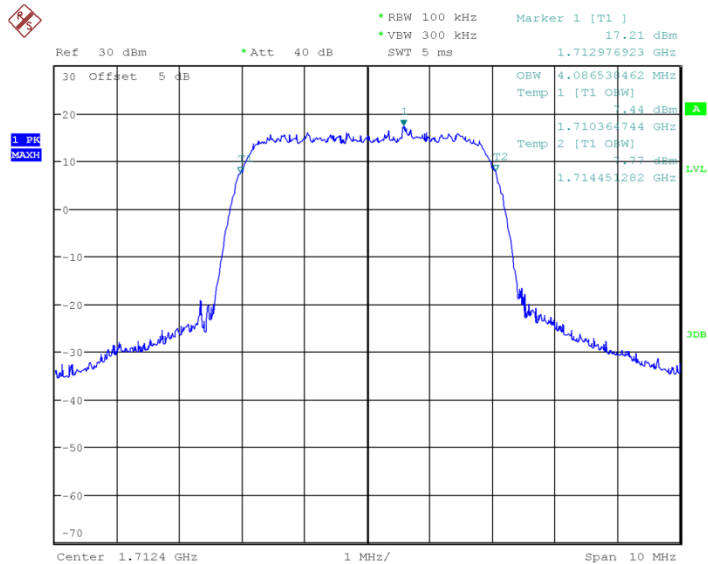
WCDMA BAND IV		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 1413	1732.6	4.09
Low 1312	1712.4	4.09
High 1513	1752.6	4.07

**Conclusion: PASS**  
**WCDMA BAND IV**



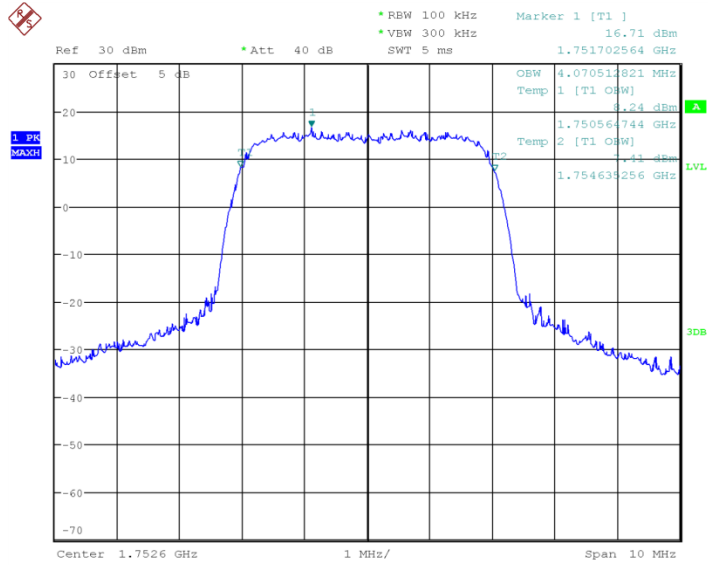
Date: 16.AUG.2017 07:58:58

## Channel 1413-Occupied Bandwidth



Date: 16.AUG.2017 08:00:03

## Channel 1312-Occupied Bandwidth



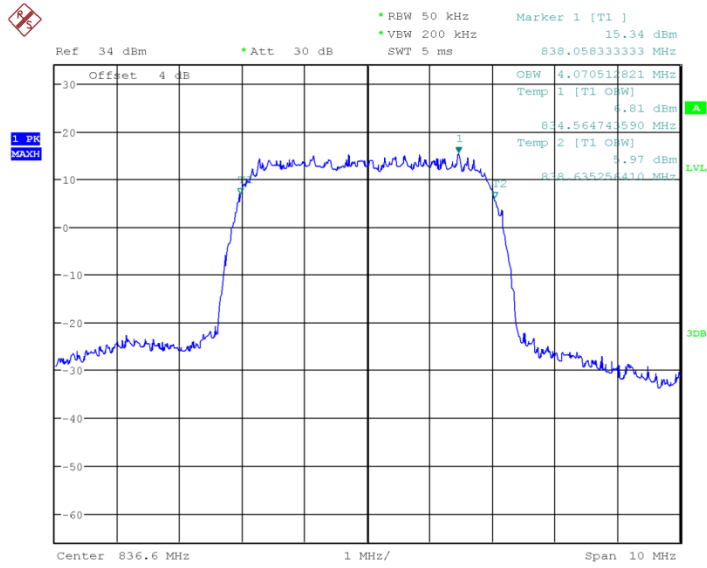
Date: 16.AUG.2017 08:01:07

### Channel 1513-Occupied Bandwidth

WCDMA BAND V		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 4183	836.6	4.07
Low 4132	826.4	4.07
High 4233	846.6	4.09

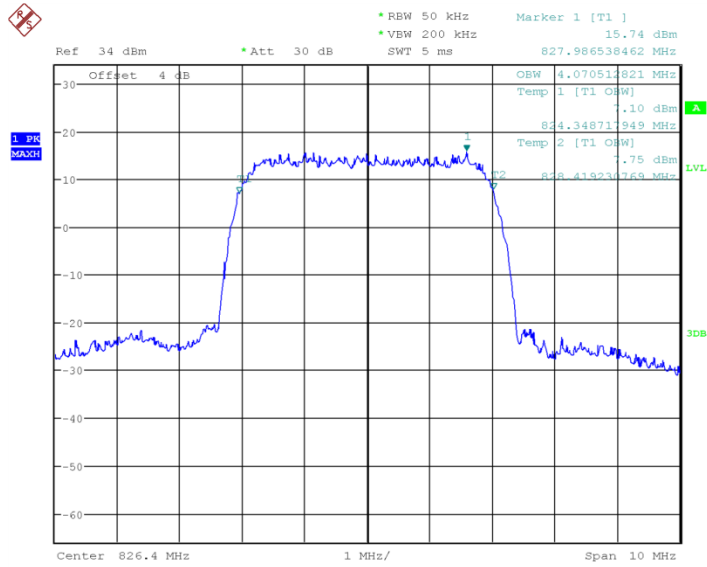
**Conclusion: PASS**

## WCDMA BAND V



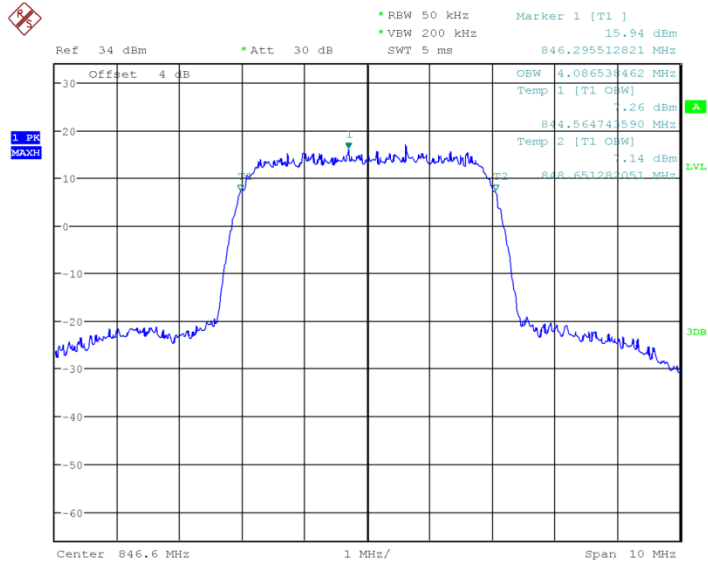
Date: 25.JUL.2017 13:19:44

### Channel 4183-Occupied Bandwidth



Date: 25.JUL.2017 13:20:25

### Channel4132-Occupied Bandwidth



Date: 25.JUL.2017 13:21:05

## 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 WCDMA BAND IV 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 >= 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.

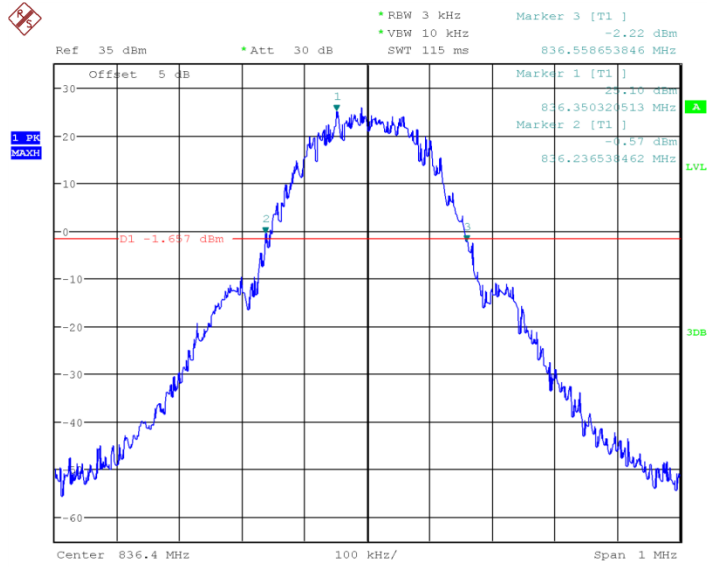
**A.4.4 Test results:**

GPRS 850		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 189	836.4	322.115
Low 128	824.2	317.308
High 251	848.8	315.705
EDGE 850		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 189	836.4	315.705
Low 128	824.2	312.5
High 251	848.8	312.5

**Conclusion: PASS**

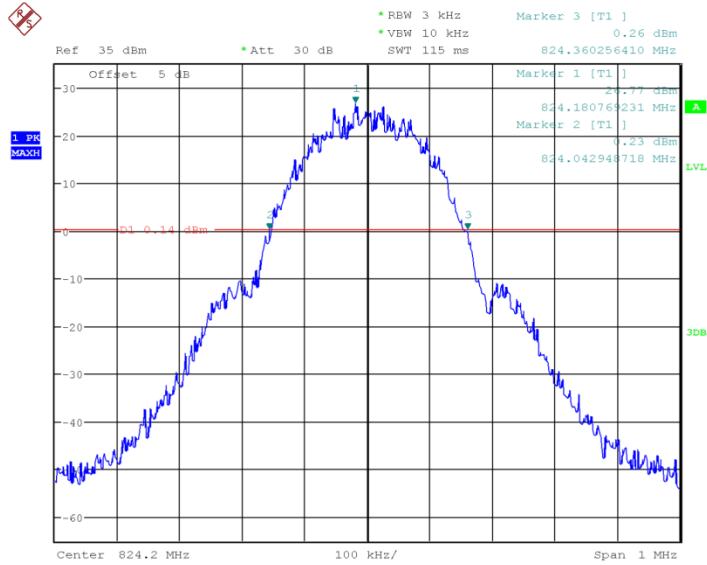


## GPRS 850



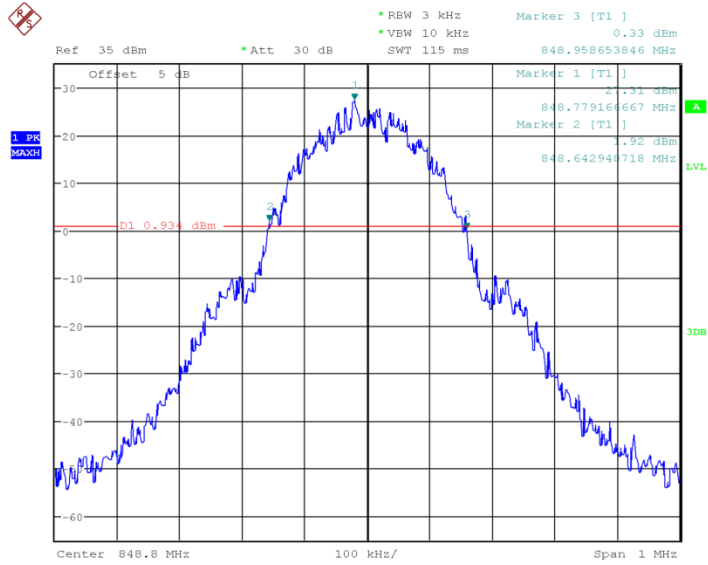
Date: 27.JUL.2017 11:23:50

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



Date: 27.JUL.2017 11:24:19

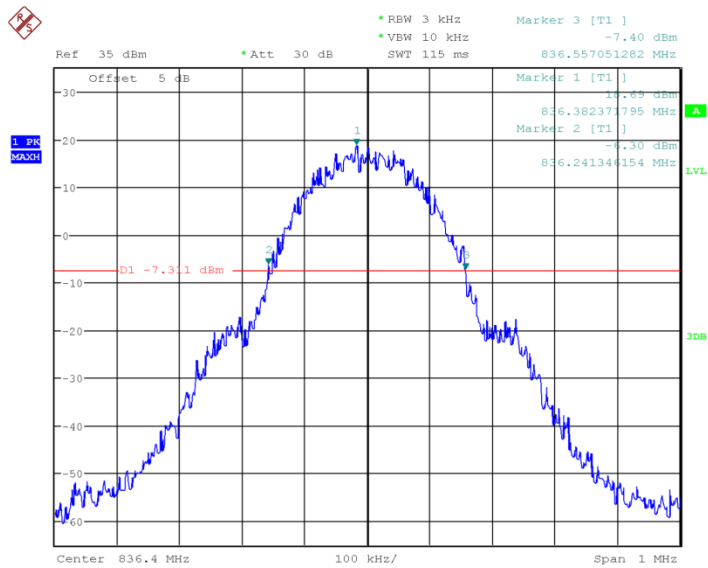
### Channel 128- Emission Bandwidth (-26dBc BW)



Date: 27.JUL.2017 11:24:48

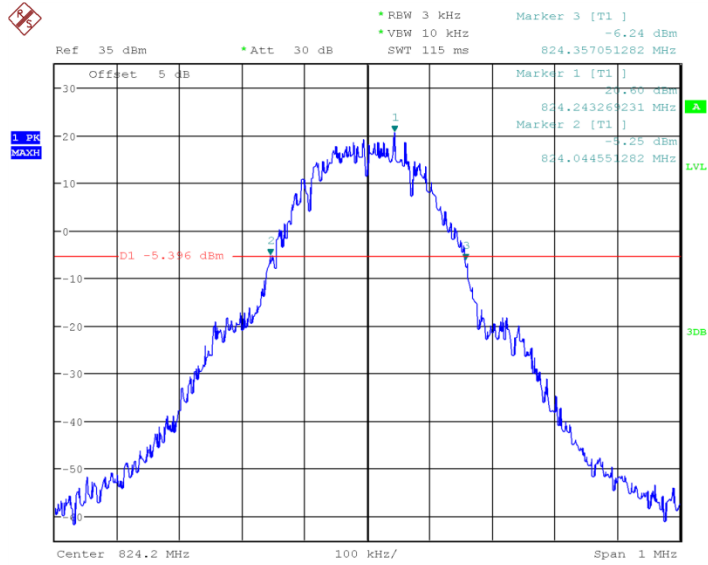
### Channel 251- Emission Bandwidth (-26dBc BW)

EDGE 850



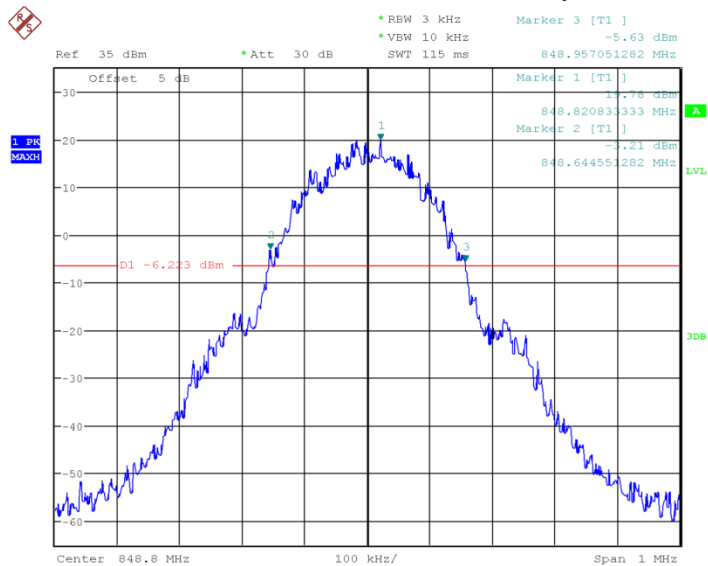
Date: 27.JUL.2017 11:28:08

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



Date: 27.JUL.2017 11:28:37

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



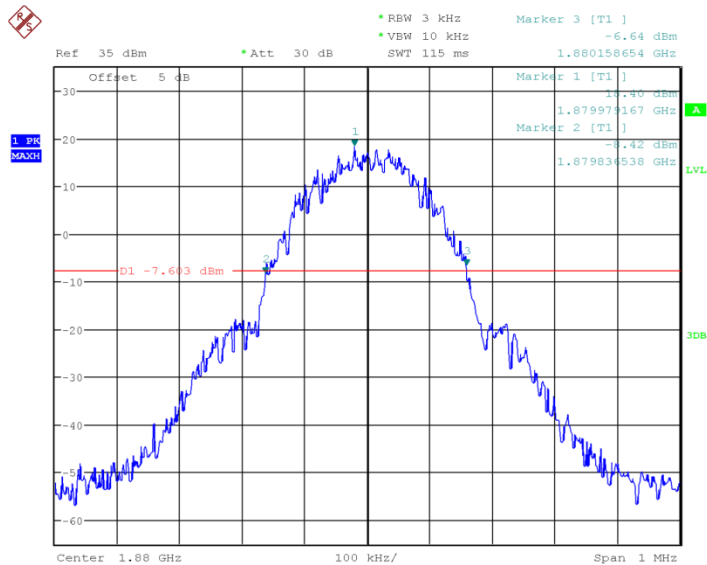
Date: 27.JUL.2017 11:29:06

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

GPRS1900		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 661	1880	322.115
Low 512	1850.2	315.705
High 810	1909.8	320.513
EDGE1900		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(KHz)
Mid 661	1880	310.897
Low 512	1850.2	312.5
High 810	1909.8	309.295

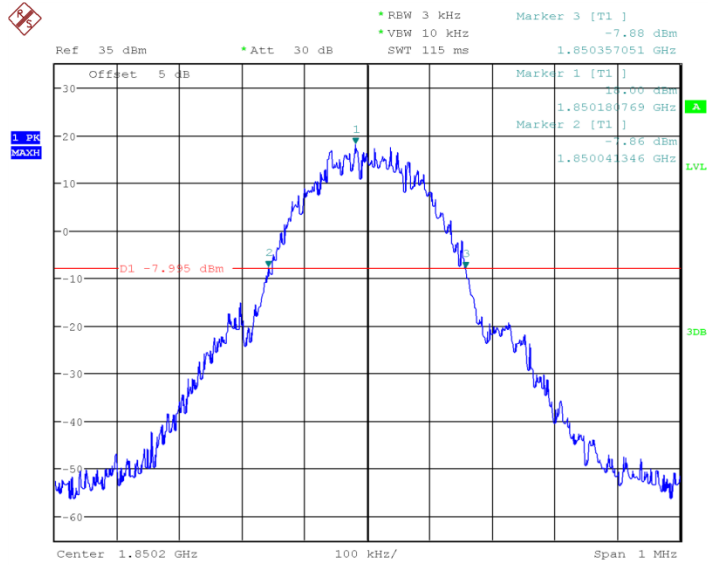
**Conclusion: PASS**

## GPRS 1900



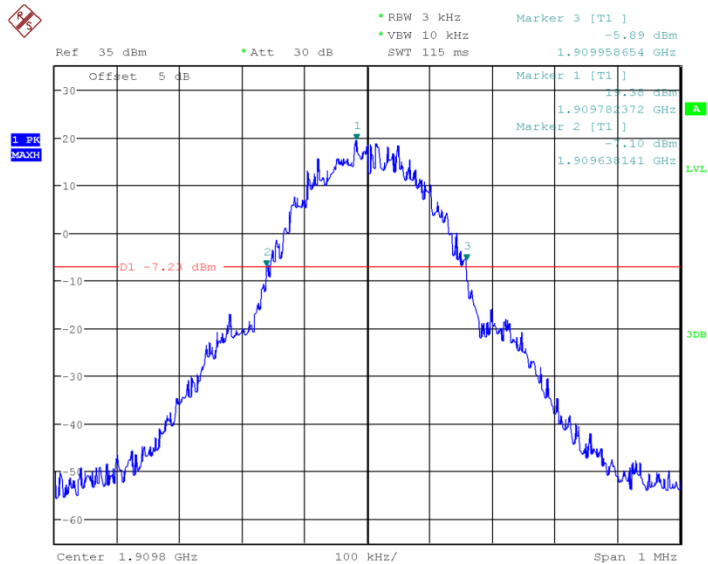
Date: 27.JUL.2017 11:33:23

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



Date: 27.JUL.2017 11:33:51

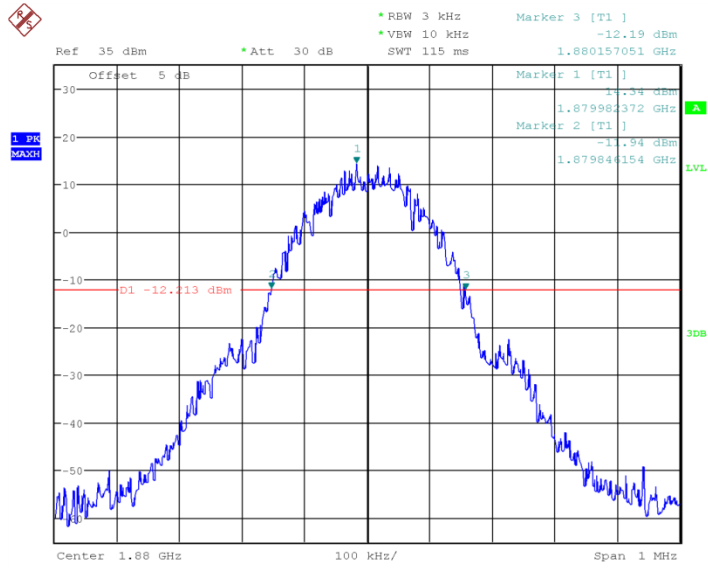
### Channel 512- Emission Bandwidth (-26dBc BW)



Date: 27.JUL.2017 11:34:19

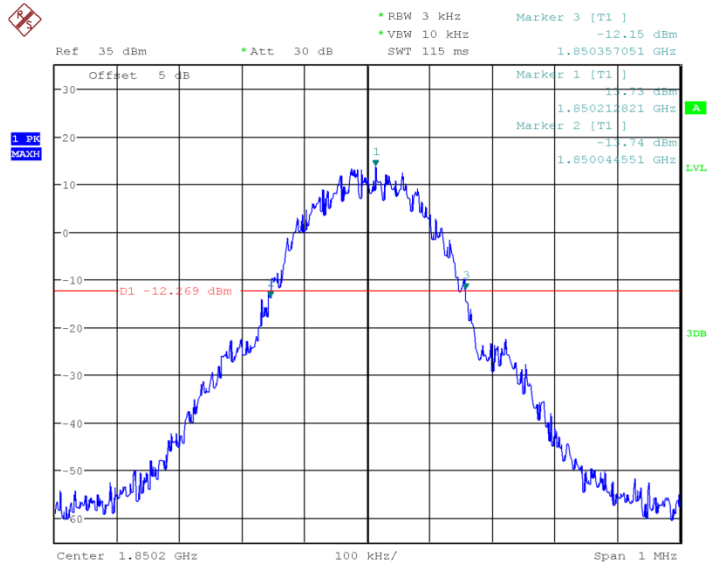
### Channel 810- Emission Bandwidth (-26dBc BW)

## EDGE 1900



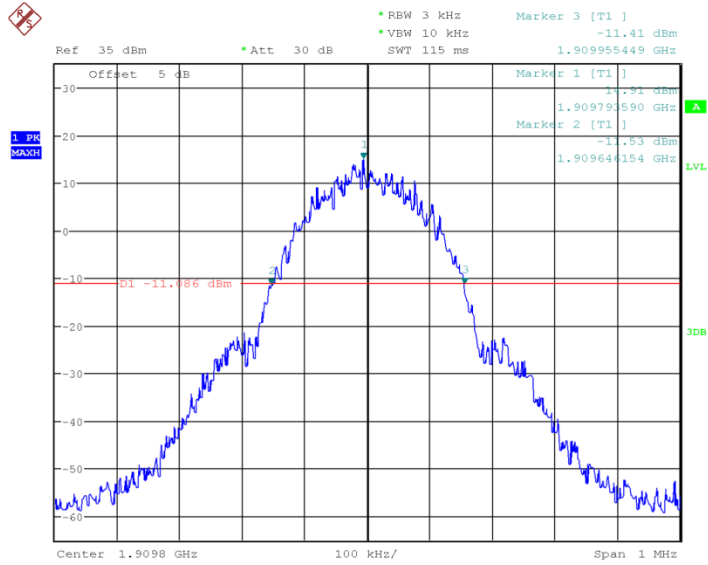
Date: 27.JUL.2017 11:40:55

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



Date: 27.JUL.2017 11:41:23

### Channel 512- Emission Bandwidth (-26dBc BW)



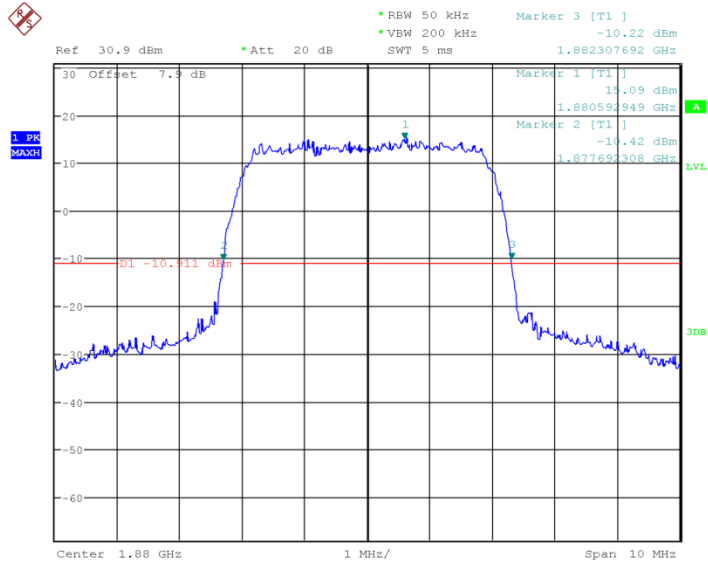
Date: 27.JUL.2017 11:41:51

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

WCDMA BAND II		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(MHz)
Mid 9400	1880	4.615
Low 9262	1852.4	4.647
High 9538	1907.6	4.711

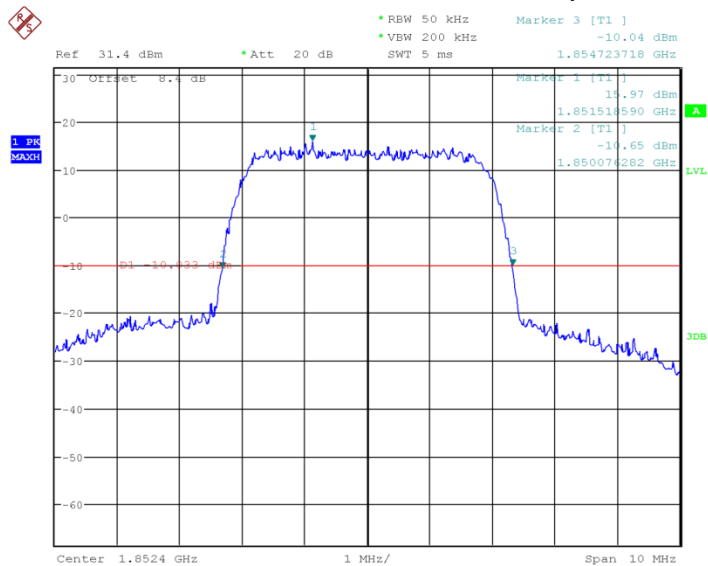
**Conclusion: PASS**

**WCDMA BAND II**



Date: 25.JUL.2017 13:25:53

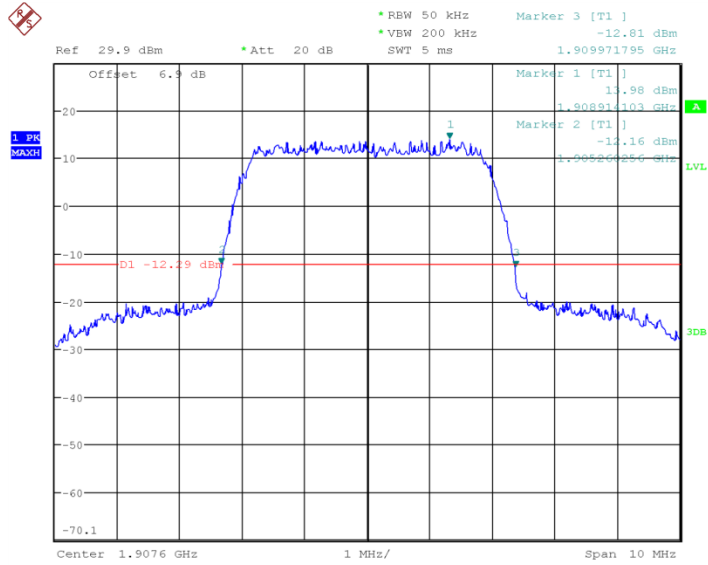
## Channel 9400- Emission Bandwidth (-26dBc BW)



Date: 25.JUL.2017 13:26:23

## Channel 9262- Emission Bandwidth (-26dBc BW)





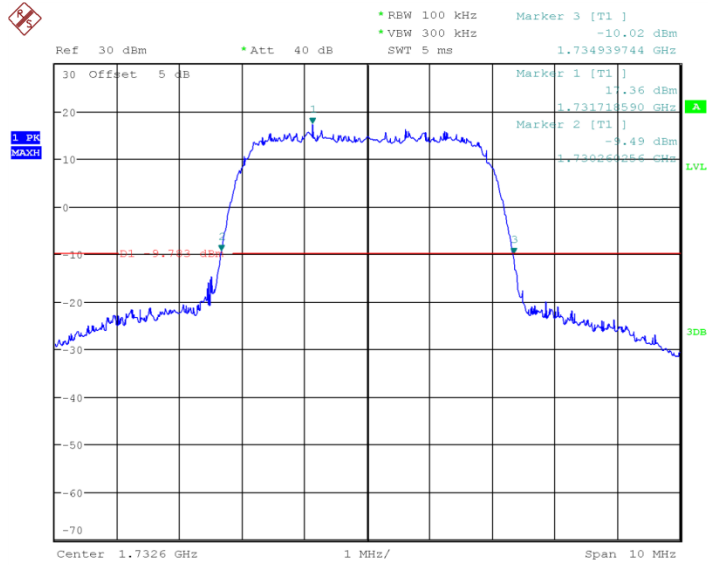
Date: 25.JUL.2017 13:26:53

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

WCDMA BAND IV		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(MHz)
Mid 1413	1732.6	4.679
Low 1312	1712.4	4.647
High 1513	1752.6	4.647

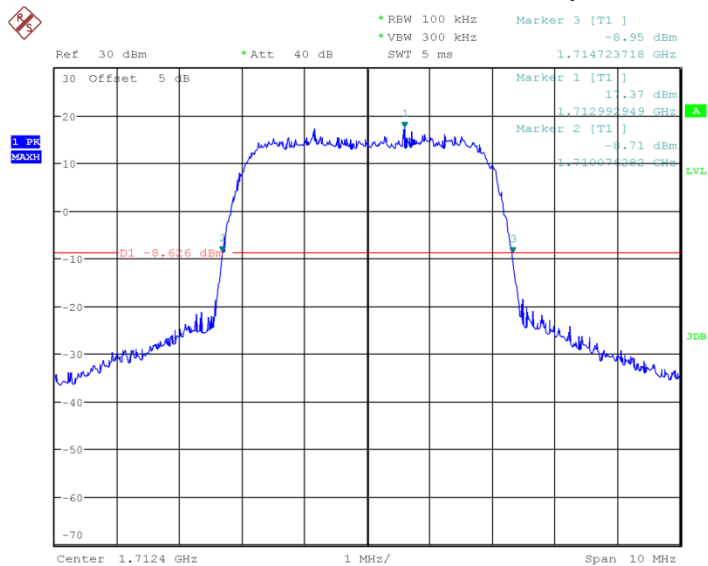
**Conclusion: PASS**

**WCDMA BAND IV**



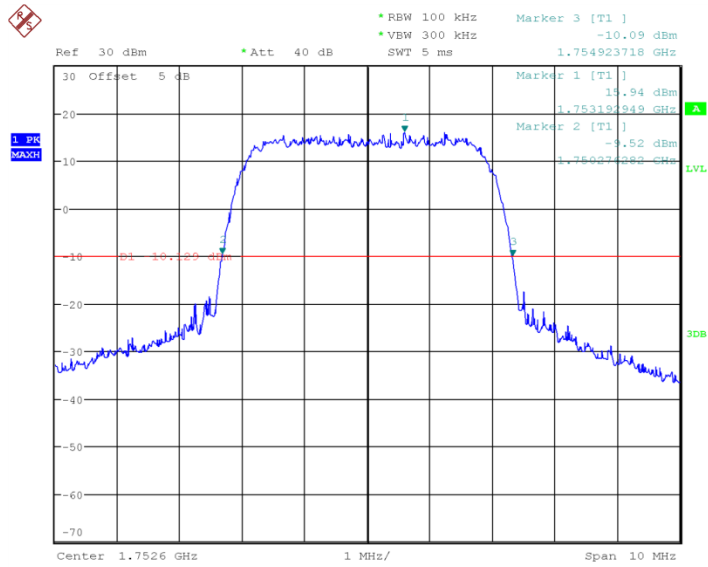
Date: 16.AUG.2017 08:05:02

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



Date: 16.AUG.2017 08:05:34

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



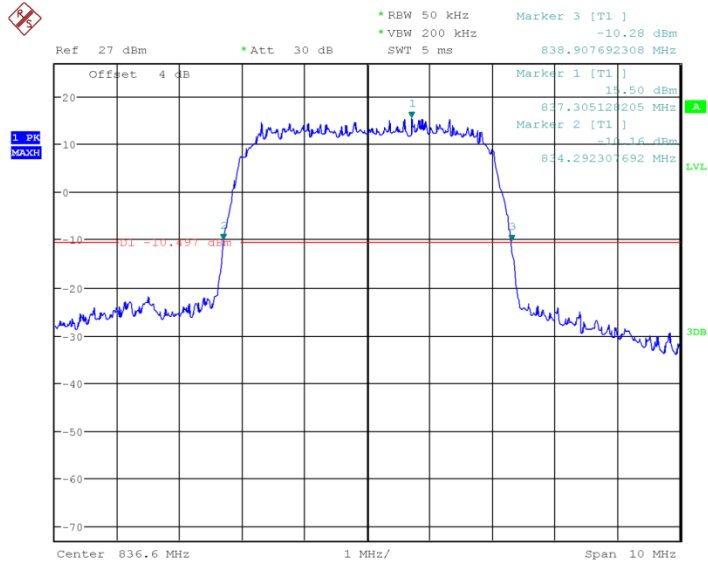
Date: 16.AUG.2017 08:06:06

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

WCDMA BAND V		
Test channel	Frequency (MHz)	-26dBc Emission Bandwidth(MHz)
Mid 4183	836.6	4.615
Low 4132	826.4	4.615
High 4233	846.6	4.631

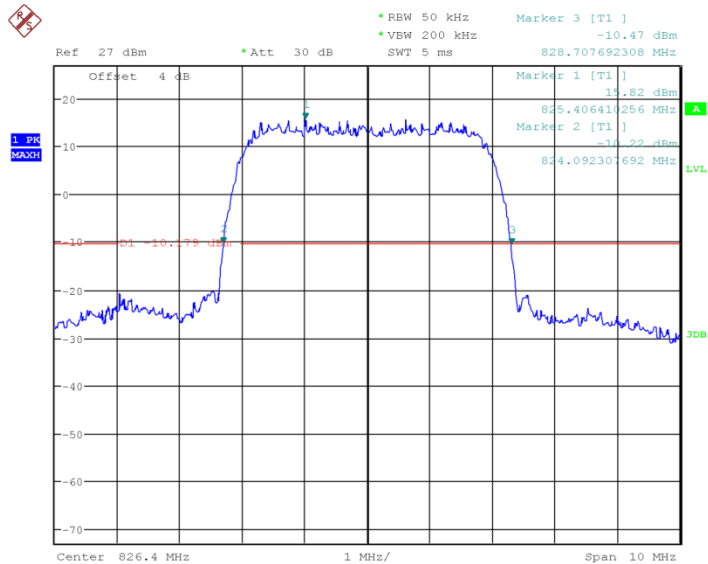
**Conclusion: PASS**

**WCDMA BAND V**



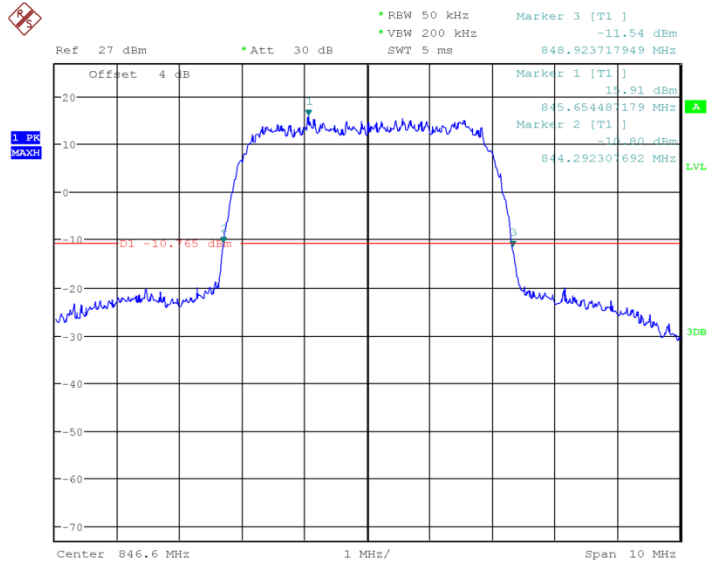
Date: 25.JUL.2017 13:27:45

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



Date: 25.JUL.2017 13:28:15

## Channel 4132- Emission Bandwidth (-26dBc BW)



Date: 25.JUL.2017 13:28:45

## 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

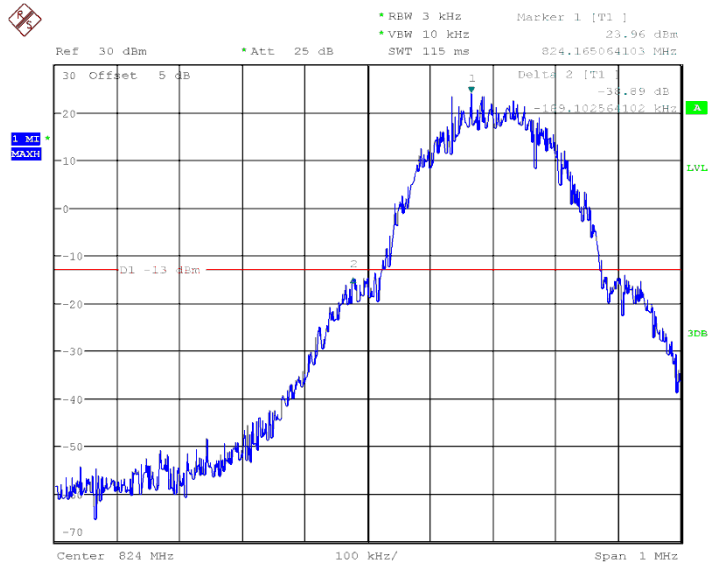
**A.5.1 Limit:**

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  $43+10\log$  (Mean power in watts) dBc below the mean power output outside a license's frequency block(-13dBm).

**A.5.2 Test procedure:**

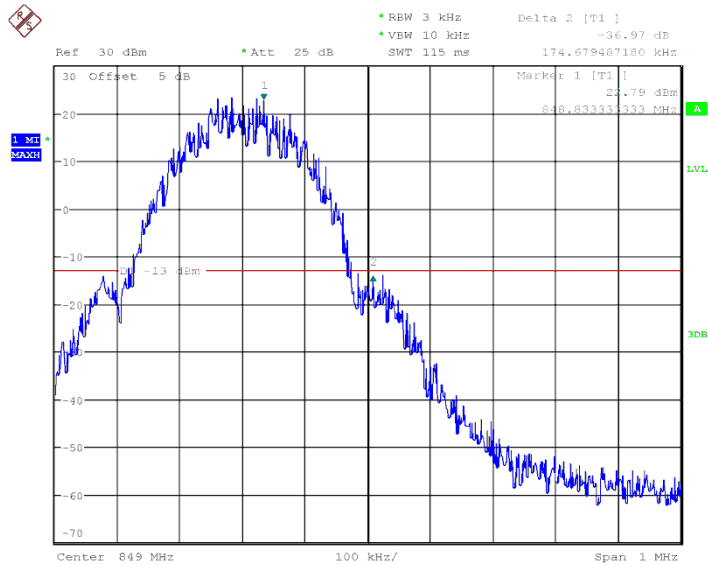
1. The RF output of the transceiver was connected to a signal analyzer through appropriate attenuation.
2. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter 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)  
 $=P(W)-[43+10\log(P)](Db)$   
 $=[30+10\log(P)](dBm)-[43+10\log(P)](Db)$   
 $=-13dBm$

## GPRS 850



Date: 16.AUG.2017 11:32:45

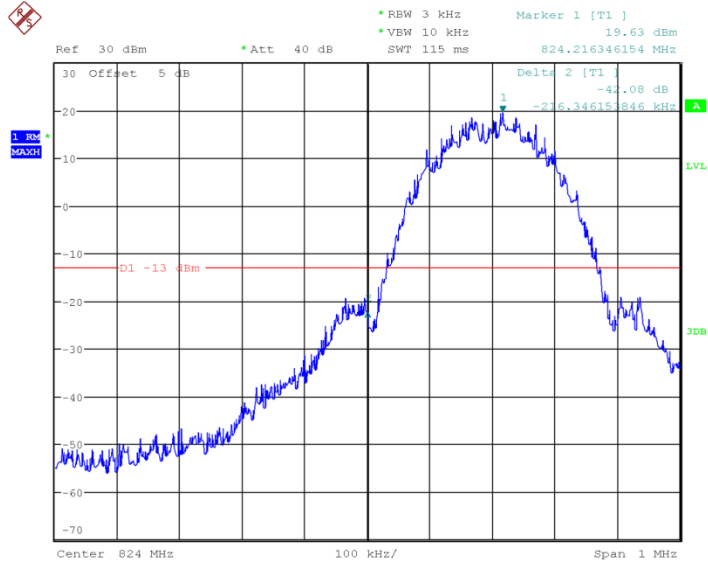
### Channel 128- LOW BAND EDGE BLOCK



Date: 16.AUG.2017 11:29:30

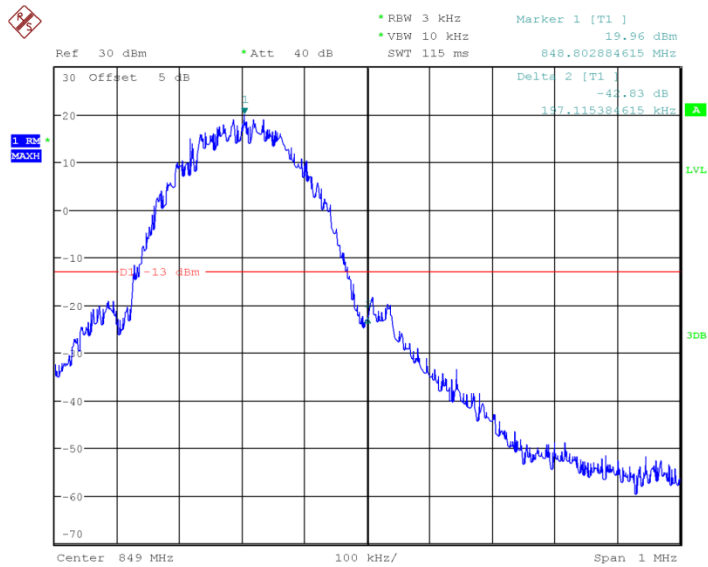
### Channel 251- HIGH BAND EDGE BLOCK

## EDGE 850



Date: 28.JUL.2017 07:46:35

### Channel 128- LOW BAND EDGE BLOCK

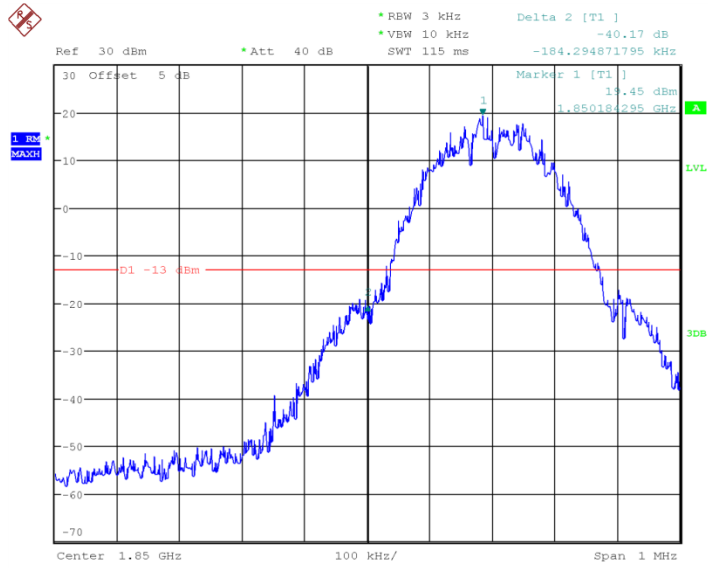


Date: 28.JUL.2017 07:47:25

### Channel 251- HIGH BAND EDGE BLOCK

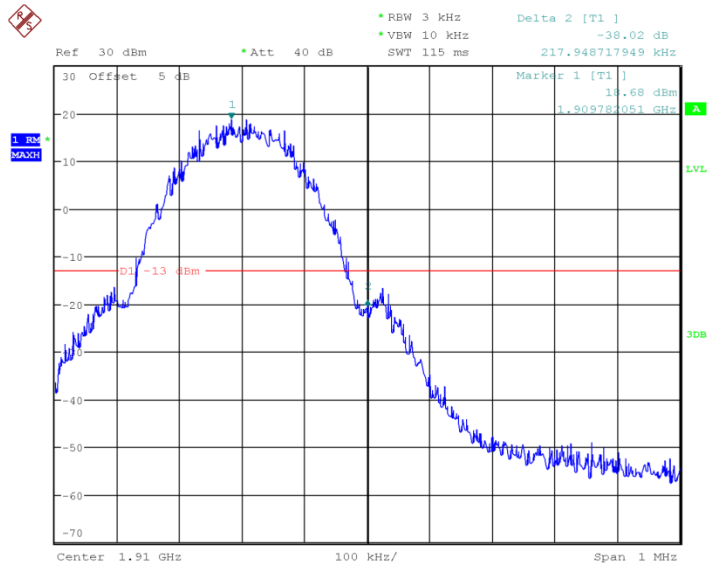


## GPRS 1900



Date: 28.JUL.2017 07:59:29

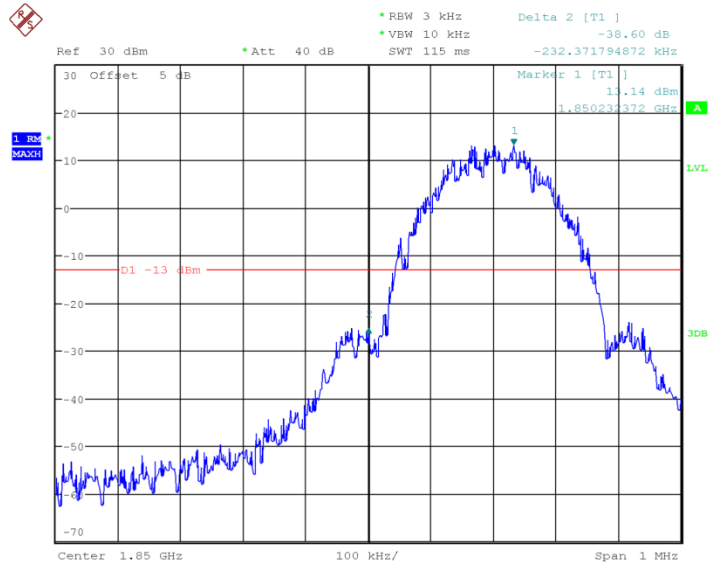
### Channel 512- LOW BAND EDGE BLOCK



Date: 28.JUL.2017 08:00:20

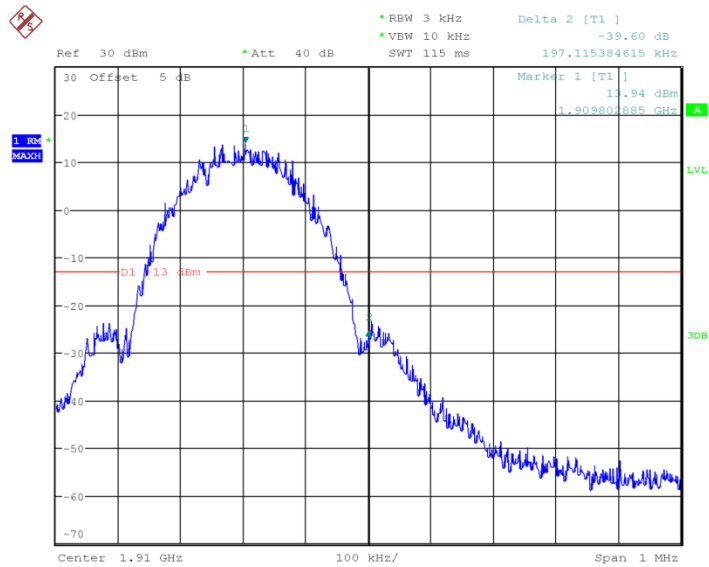
### Channel 810- HIGH BAND EDGE BLOCK

## EDGE 1900



Date: 28.JUL.2017 08:07:48

### Channel 512- LOW BAND EDGE BLOCK



Date: 28.JUL.2017 08:08:38

### Channel 810- HIGH BAND EDGE BLOCK