Full

TEST REPORT

No. I18D00205-SRD04

For

Client : Mobiwire SAS

Production : 4G Smart Feature Phone

Model Name : MobiWire Oneida

FCC ID : QPN-ONEIDA

Hardware Version: V04

Software Version: VDF_ONEIDA_SS_O_L_C_V01.0_20181025_MP_FCC

Issued date: 2018-11-20

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
I18D00205-SRD04	00	2018-11-20	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	958356

1.2. Testing Environment

Normal Temperature:	15-35℃
Extreme Temperature:	-20/+60℃
Relative Humidity:	20-75%

1.3. Project data

Project Leader:	Yu Anlu
Testing Start Date:	2018-10-18
Testing End Date:	2018-11-01

1.4. Signature

Yang Dejun
(Prepared this test report)

Shi Hongqi
(Reviewed this test report)

Zheng Zhongbin
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Mobiwire SAS
Address:	79 avenue Francois Arago, 92000 NANTERRE France
Telephone:	0574 59555707
Postcode:	/

2.2. Manufacturer Information

Company Name:	Mobiwire SAS
Address:	79 avenue Francois Arago, 92000 NANTERRE France
Telephone:	0574 59555707
Postcode:	/

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

3.1. About EUT

EUT Description	4G Smart Feature Phone
Model name	MobiWire Oneida
FCC ID	QPN-ONEIDA
GSM Frequency Band	GSM850/GSM900/GSM1800/GSM1900
UMTS Frequency Band	Band 1/2/5/8
CDMA Frequency Band	NA
LTE Frequency Band	Band 1/3/7/20
Additional Communication Function	BT/BLE/2.4G WLAN 802.11 b/g/n20/n40
Extreme Temperature	-20/+60℃
Nominal Voltage	3.7V
Extreme High Voltage	4.2V
Extreme Low Voltage	3.6V

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*	Model Name	SN or IMEI	HW Version	SW Version	Date of receipt
N02	MobiWire Oneida	352548100000589/352548100000597	V04	VDF_ONEIDA_SS_O_L_C_V01.0_20181025_MP_FCC	2018-10-15
N05	MobiWire Oneida	352548100000563/352548100000571	V04	VDF_ONEIDA_SS_O_L_C_V01.0_20181025_MP_FCC	2018-10-15
N08(Single SIM)	MobiWire Oneida	352548100003310	V04	VDF_ONEIDA_SS_O_L_C_V01.0_20181025_MP_FCC	2018-10-31
N10(Without Camera)	MobiWire Oneida	352548100004086	V04	VDF_ONEIDA_SS_O_L_C_V01.0_20181025_MP_FCC	2018-10-31

*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	---	---

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

3.4. Statements

The MobiWire Oneida, supporting GSM/GPRS/EDGE/WCDMA/LTE/BT/BLE/WLAN, manufactured by Mobiwire SAS, which is a new product for testing.

Note: This project has three sets of radiated configuration samples, N05, N08(single SIM) and N10(without Camera), Among them, N05 main test, N08 and N10 samples test the worst mode of N05.

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	2017/10/1
FCC Part 22	PUBLIC MOBILE SERVICES	2017/10/1
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

5. SUMMARY OF TEST RESULTS

Item	Test items	FCC rules	IC rules	result
1	Output Power	2.1046/22.913(a)/24.23	/	Pass
2	Peak-to-Average	24.232(d)	/	Pass
3	99%Occupied	2.1049(h)(i)/ 22.917(b)	/	Pass
4	-26dB Emission	22.917(b)/§24.238(b)	/	Pass
5	Band Edge at antenna terminals	22.917(a)/24.238(a)	/	Pass
6	Frequency stability	2.1055/24.235	/	Pass
7	Conducted Spurious mission	2.1053/22.917(a)/24.23	/	Pass
8	Emission Limit	2.1051/22.917/24.238/	/	Pass

6. Test Equipment Utilized

Climate chamber

No.	Equipment	Model	Serial Number	Manufacturer	Calibration date	Cal.interval
1	Climate chamber	SH-641	92012011	ESPEC	2017-12-25	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	2018-05-11	1 Year
2	EMI Test Receiver	ESU40	100307	R&S	2018-05-11	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	2018-05-11	1 Year
6	Substitution Antenna	ETS-3117	00135890	ETS	2017-01-11	3 Year
7	RF Signal Generator	SMF100A	102314	R&S	2018-05-11	1 Year
8	Substitution Antenna	VUBA9117	9117-266	Schwarzbeck	2017-11-18	3 Year
9	Amplifier	SCU08	10146	R&S	2018-05-11	1 Year

Conducted test system

No.	Name	Type	SN	Manufacture	Calibration date	Cal.interval
1	Spectrum Analyzer	FSQ26	101096	R&S	2018-05-11	1 Year
2	Universal Radio Communicat	CMU200	123124	R&S	2018-05-11	1 Year
3	DC Power Supply	ZUP60-14	LOC-220Z006-0007	TDL-Lambda	2018-05-11	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 ℃, Max. = 35 ℃
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Ground system resistance	< 0.5

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

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. =25 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 k
Ground system resistance	< 0.5

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

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. = 25 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 k
Ground system resistance	< 0.5
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 v03 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 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

10MHz	30MHz	Auto	10MHz

A.1.2.6 WCDMA Test Condition:

RBW	VBW	Sweep time	Span
10MHz	30MHz	Auto	50MHz

A.1.2.7 Measurement results:

GSM 850 (GMSK)		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 189/836.4	32.9	32.44
Low 128/824.2	32.64	32.43
High 251/848.8	32.67	32.43
GPRS 850 (GMSK 1 Slot)		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 189/836.4	32.93	32.47
Low 128/824.2	32.74	32.45
High 251/848.8	32.72	32.45
EDGE 850 (8PSK 1 Slot)		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 189/836.4	30.14	27.26
Low 128/824.2	29.95	27.05
High 251/848.8	30.25	27.37

GSM 1900(GMSK)		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 661/1880	32.56	32.40
Low 512/1850.2	31.72	30.18
High 810/1909.8	32.94	32.77

GPRS 1900 (GMSK 1 Slot)		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 661/1880	30.65	29.98
Low 512/1850.2	31.04	30.2
High 810/1909.8	30.26	29.69
EDGE 1900 (8PSK 1 Slot)		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 661/1880	29.32	26.41
Low 512/1850.2	29.05	26.28
High 810/1909.8	29.21	26.31

WCDMA II		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 9400 /1880	26.37	22.64
Low 9262/1852.4	26.55	22.73
High 9538/1907.6	26.51	22.72
WCDMA BAND V		
Channel/fc(MHz)	Peak power (dBm)	AV power (dBm)
Mid 4183/836.6	26.20	22.45
Low 4132/826.4	26.23	22.46
High 4233/846.6	26.11	22.35

Conclusion: PASS

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

Method of test measurements please refer to KDB971168 D01 v03 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≥signal's occupied bandwidth.
   3) Set the number of counts to a value that stabilizes the measured CCDF cure;
   4) Sweep time ≥ 1s.
3. Record the maximum PAPR level associated with a probability of 0.1%.

A.2.3 Test results:

GSM850			
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
PAPR(dB)	7.66	8.04	10.71
GPRS850			
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
PAPR(dB)	7.78	8.25	10.69
EDGE850			
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
PAPR(dB)	7.78	8.14	10.68

GSM1900			
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PAPR(dB)	10.67	7.69	10.06
GPRS1900			
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PAPR(dB)	10.58	7.7	10.11

EDGE1900			
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PAPR(dB)	10.58	7.69	10.05

WCDMA Band II			
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880	1907.6
PAPR(dB)	5.45	5.1	5.03
WCDMA Band V			
Channel	4132	4183	4233
Frequency (MHz)	826.4	836.4	846.6
PAPR(dB)	8.43	4.1	4.29

Conclusion: PASS

ANNEX A.3. Occupied Bandwidth

Method of test please refer to KDB971168 D01 v03 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	245.192
High 251	848.8	248.397
GPRS850		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 189	836.4	243.59
Low 128	824.2	248.397
High 251	848.8	245.192
EDGE850		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 189	836.4	246.795
Low 128	824.2	250
High 251	848.8	246.795

Conclusion: PASS

GSM 850

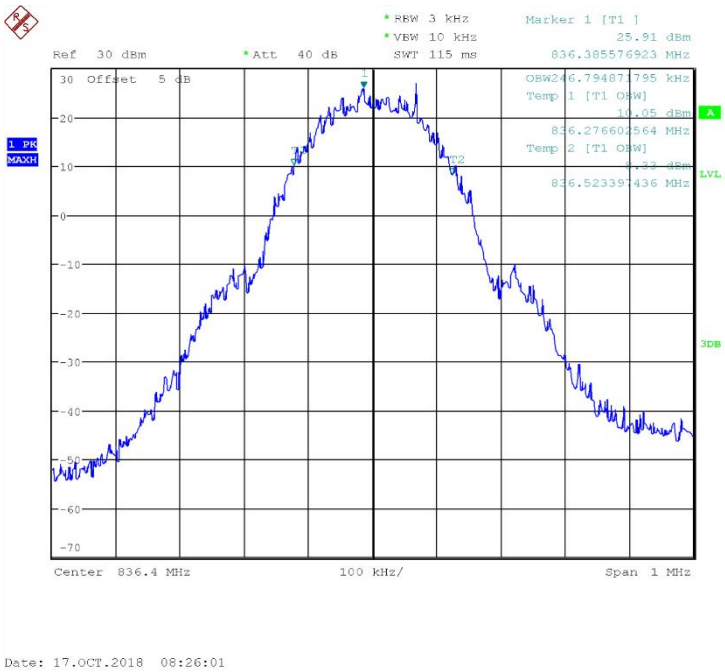


Fig.1 **Channel 189-Occupied Bandwidth (99%)**

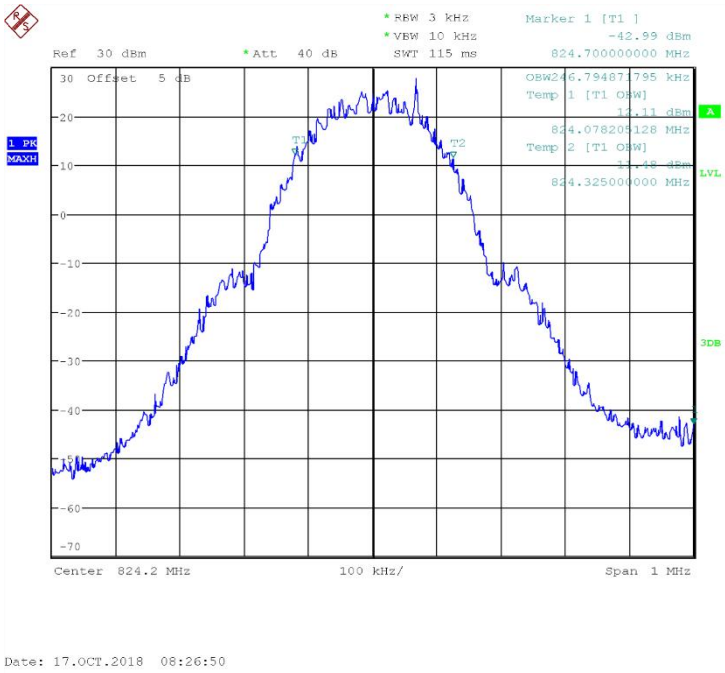


Fig.2 **Channel 128-Occupied Bandwidth (99%)**

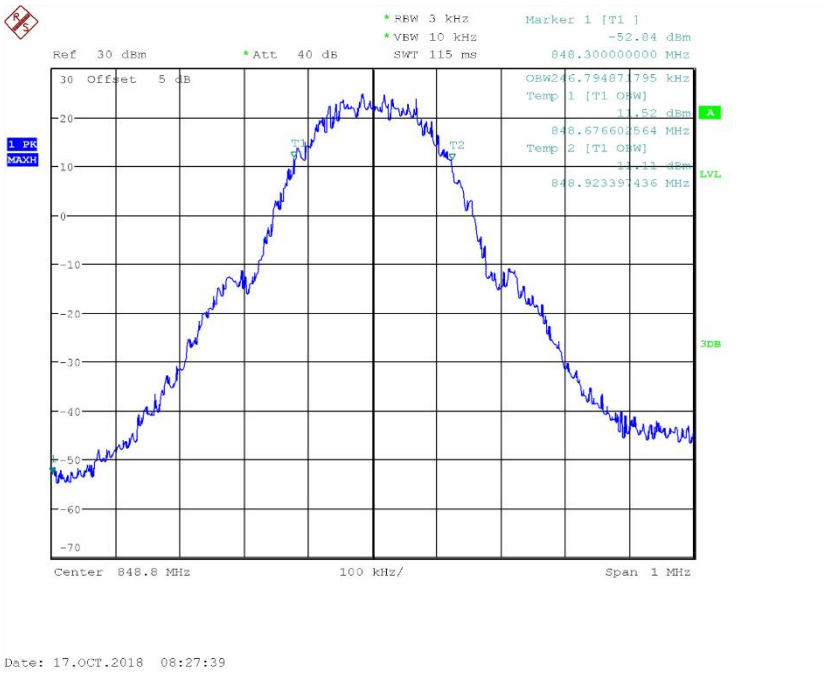


Fig.3 **Channel 251-Occupied Bandwidth (99%)**

GPRS 850

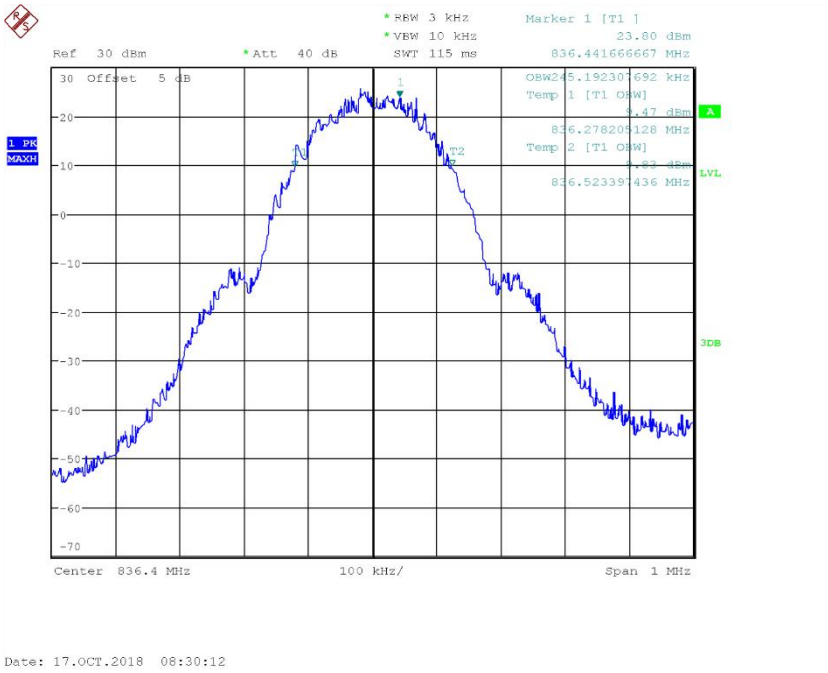


Fig.4 **Channel 189-Occupied Bandwidth (99%)**

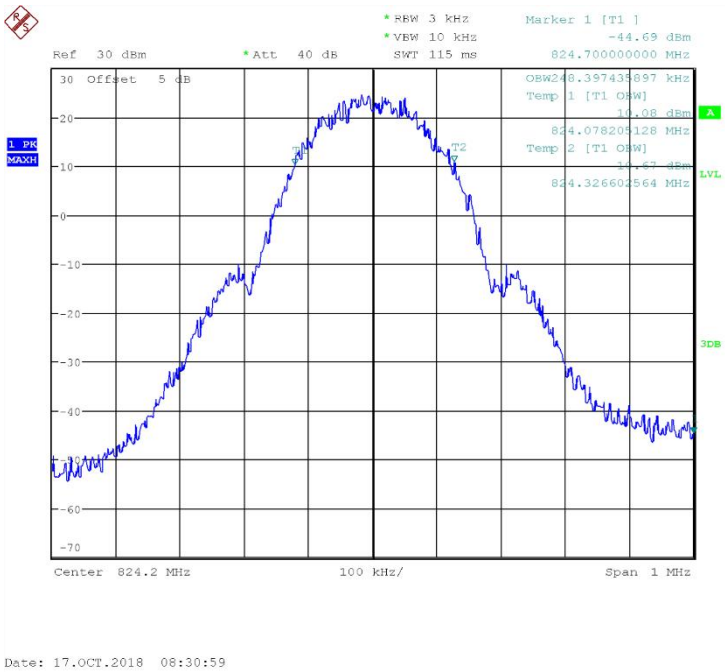


Fig.5 **Channel 128-Occupied Bandwidth (99%)**

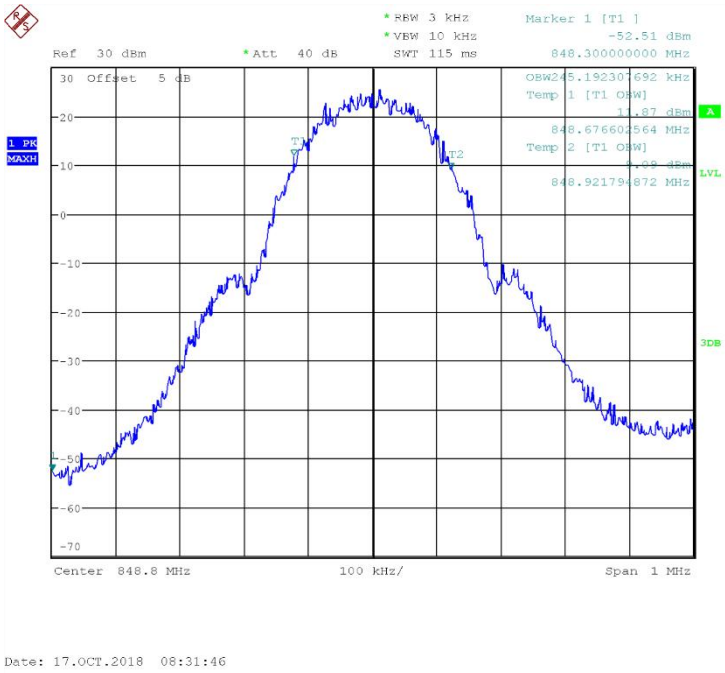


Fig.6 **Channel 251-Occupied Bandwidth (99%)**

EDGE 850

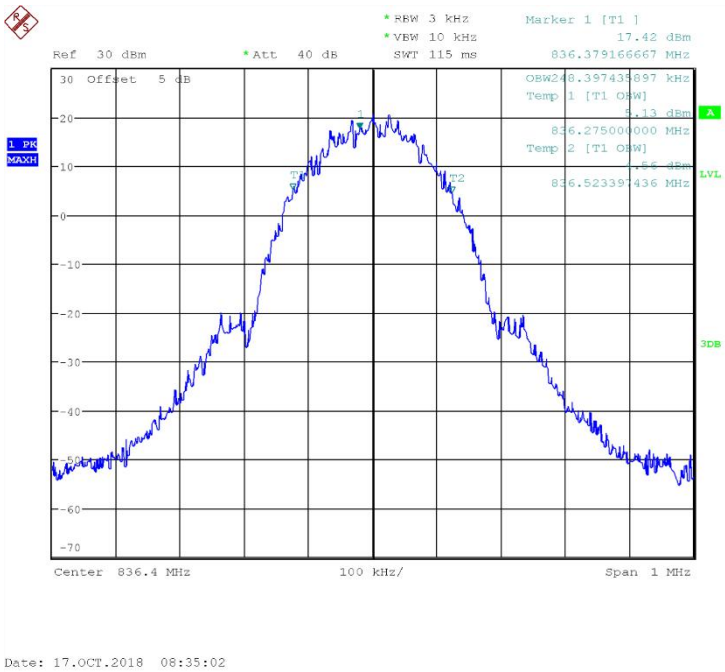


Fig.7 **Channel 189-Occupied Bandwidth (99%)**

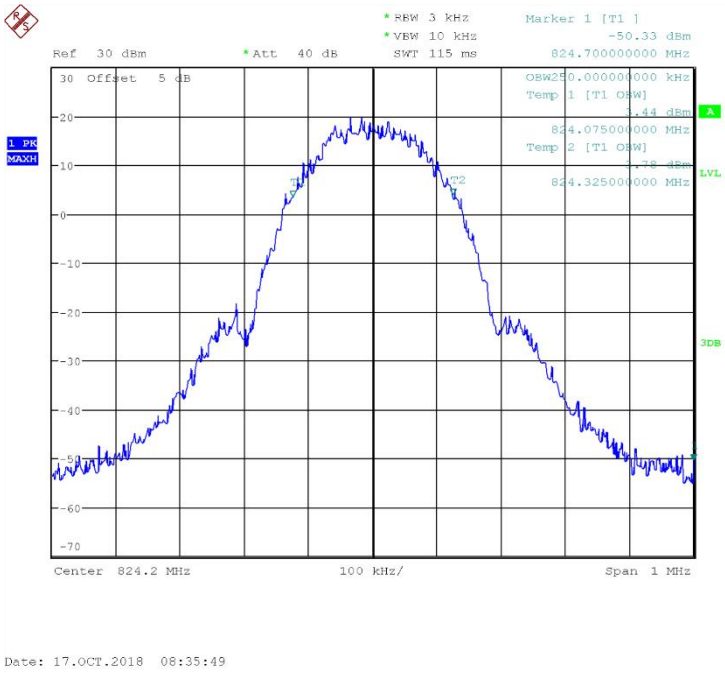


Fig.8 **Channel 128-Occupied Bandwidth (99%)**

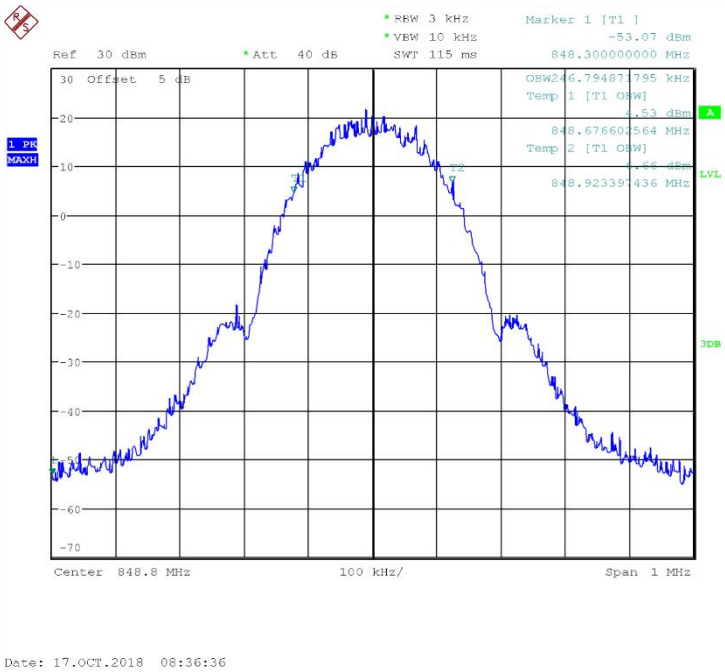


Fig.9 **Channel 251-Occupied Bandwidth (99%)**

GSM1900		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 661	1880	243.589
Low 512	1850.2	246.795
High 810	1909.8	246.795
GPRS1900		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 661	1880	246.795
Low 512	1850.2	246.795
High 810	1909.8	243.589
EDGE1900		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(KHz)
Mid 661	1880	256.410
Low 512	1850.2	253.205
High 810	1909.8	253.205

Conclusion: PASS

GSM 1900

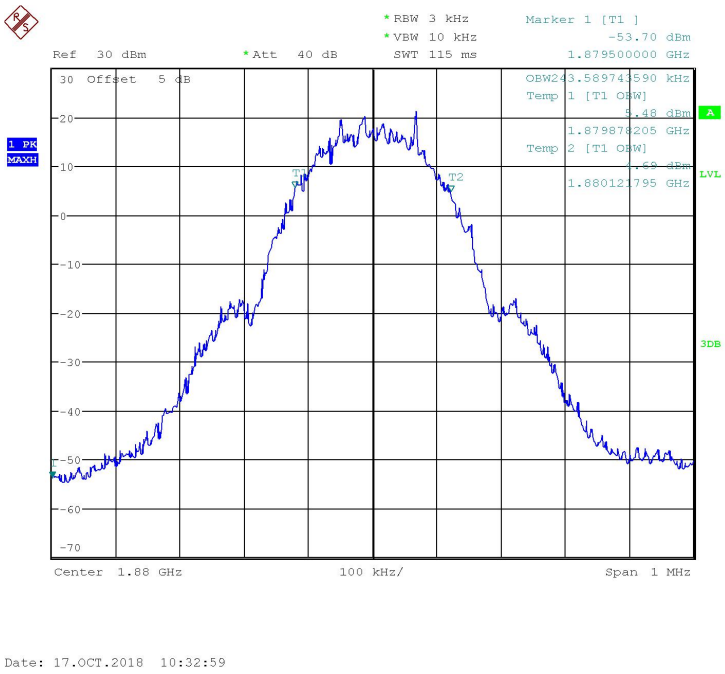


Fig.10 **Channel 661-Occupied Bandwidth (99%)**

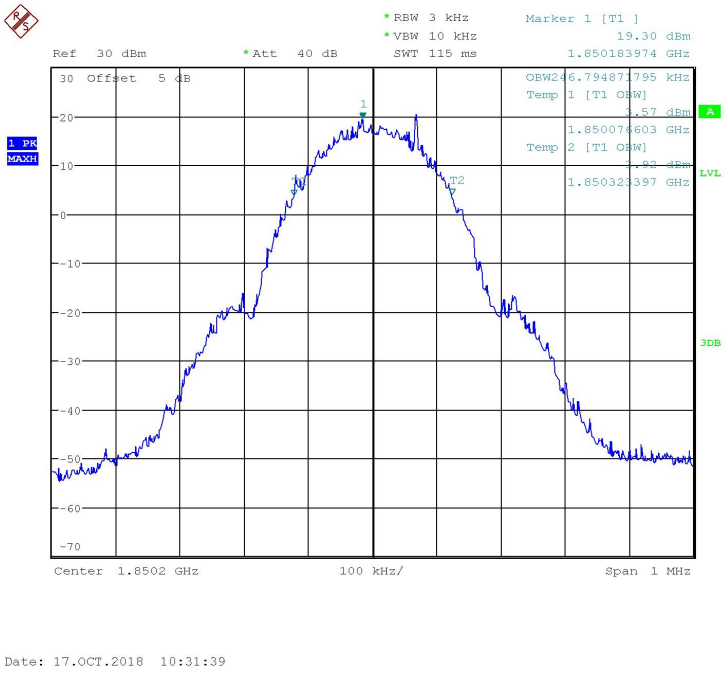


Fig.11 **Channel 512-Occupied Bandwidth (99%)**

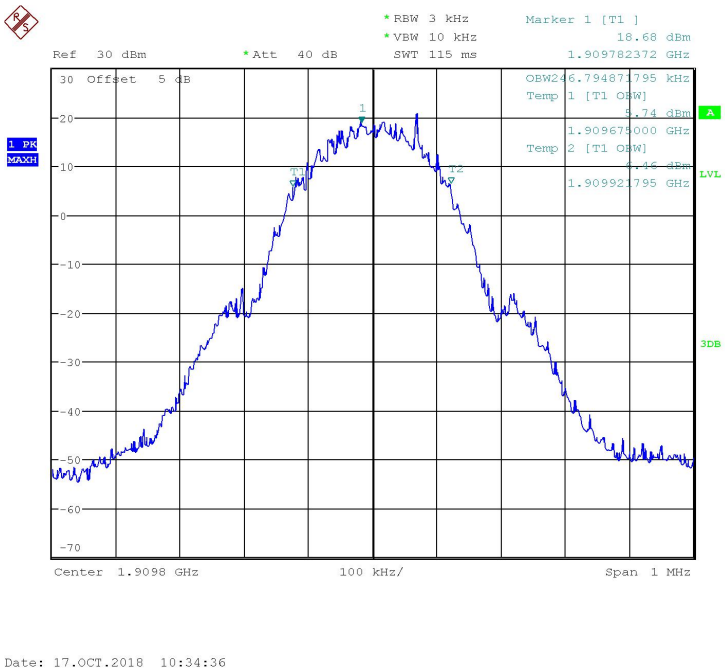


Fig.12 **Channel 810-Occupied Bandwidth (99%)**

GPRS 1900

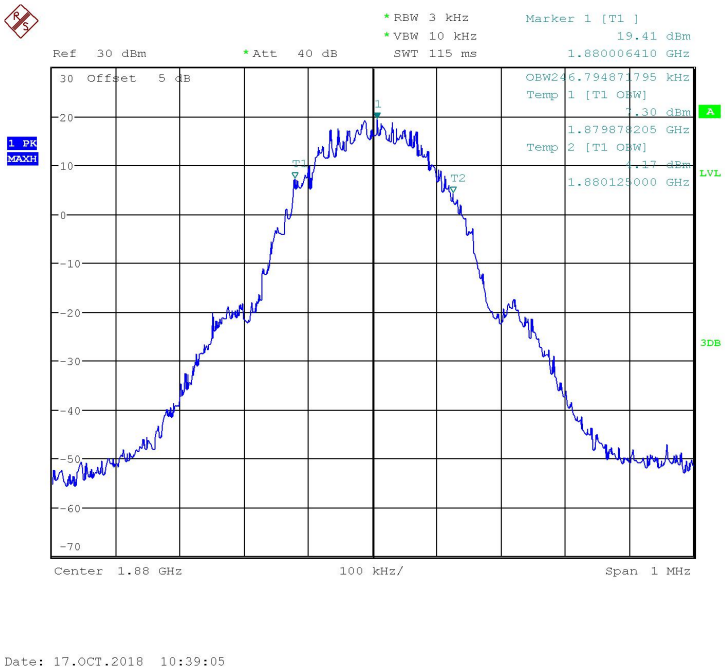


Fig.13 **Channel 661-Occupied Bandwidth (99%)**

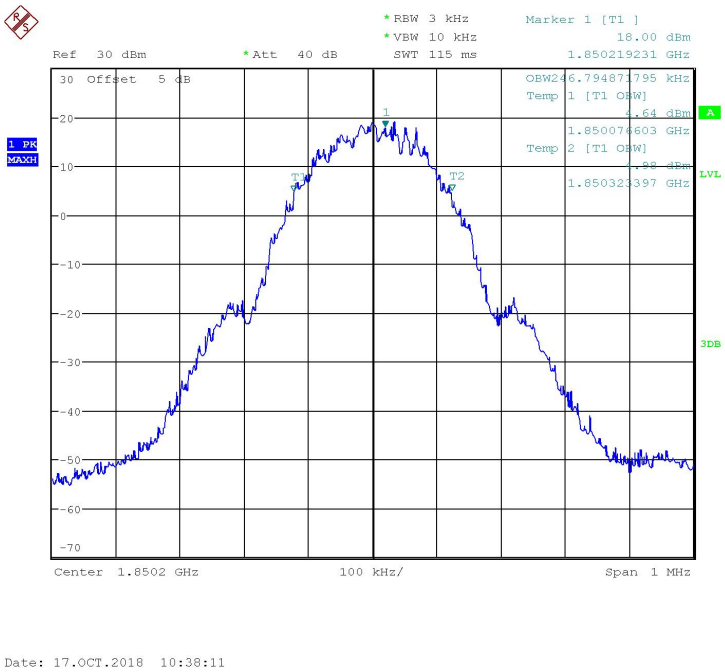


Fig.14 **Channel 512-Occupied Bandwidth (99%)**

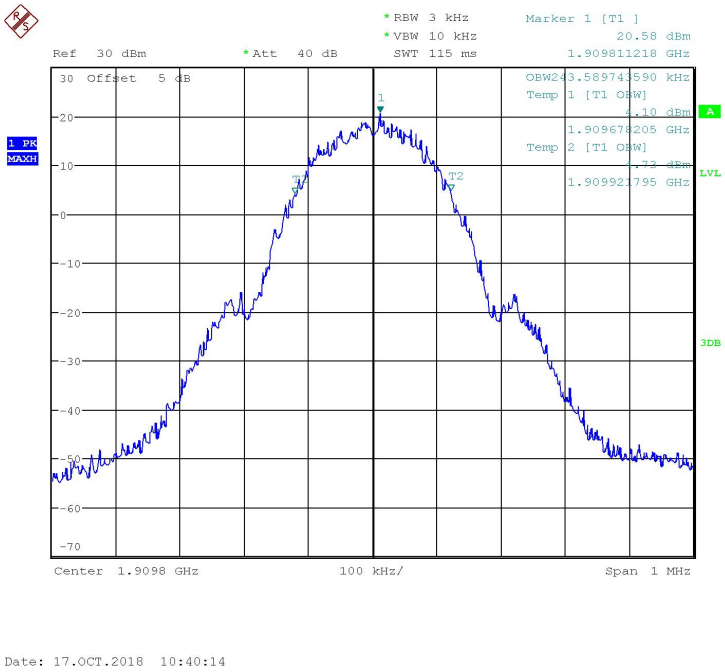


Fig.15 **Channel 810-Occupied Bandwidth (99%)**

EDGE 1900

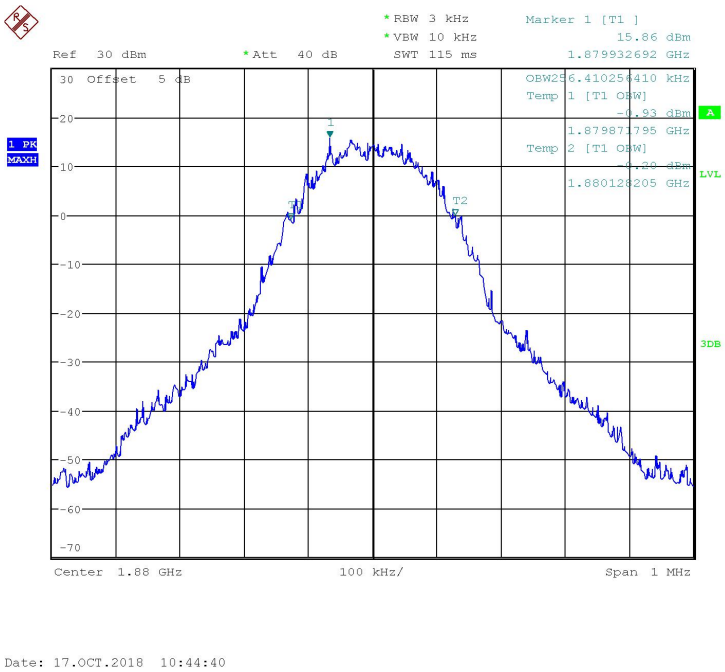


Fig.16 **Channel 661-Occupied Bandwidth (99%)**

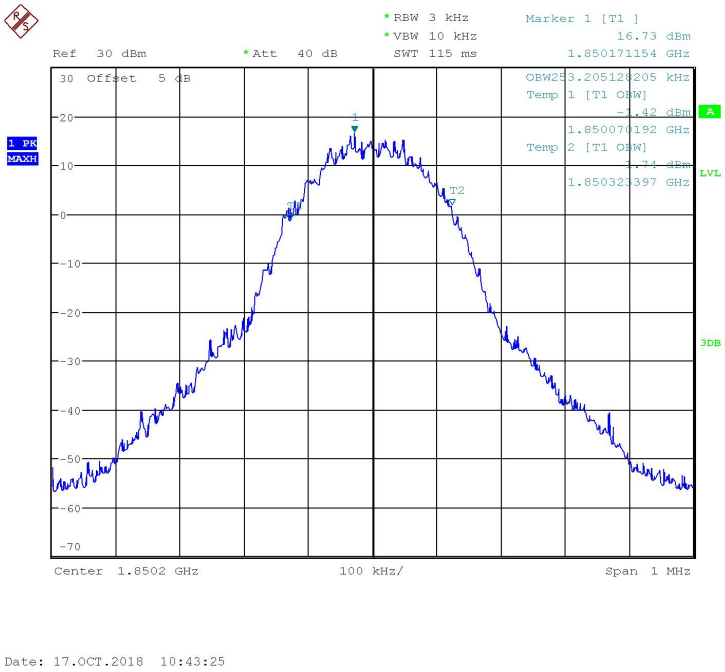


Fig.17 **Channel 512-Occupied Bandwidth (99%)**

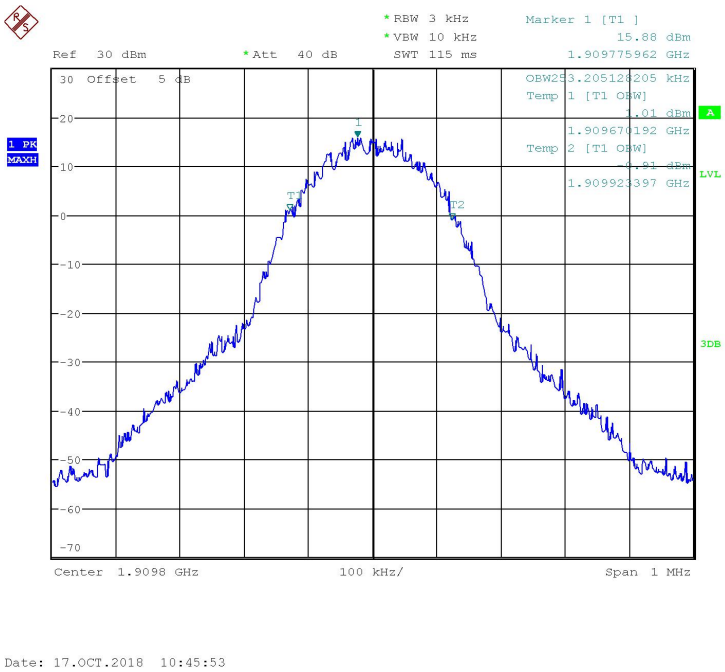


Fig.18 **Channel 810-Occupied Bandwidth (99%)**

WCDMA BAND II		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 9400	1880	4.167
Low 9262	1852.4	4.183
High 9538	1907.6	4.167

Conclusion: PASS

WCDMA BAND II

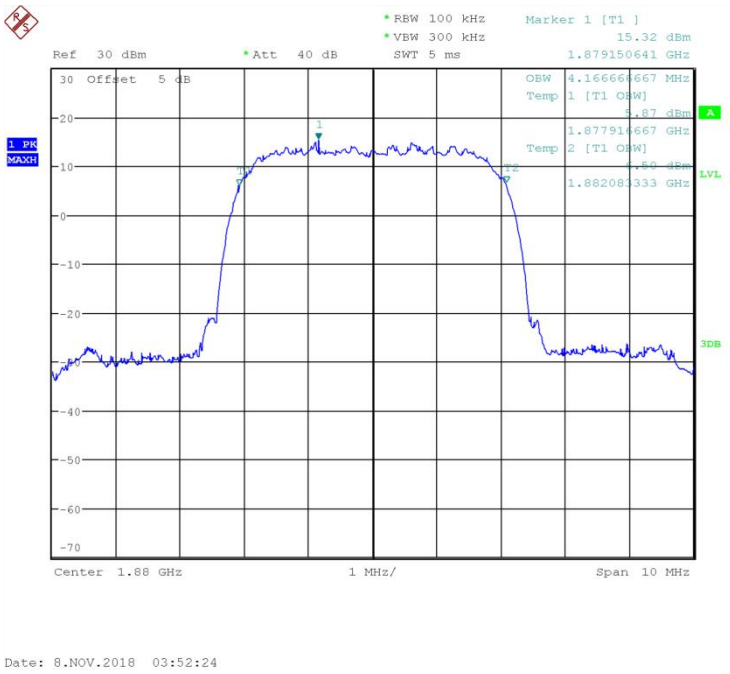


Fig.19 **Channel 9400-Occupied Bandwidth (99%)**

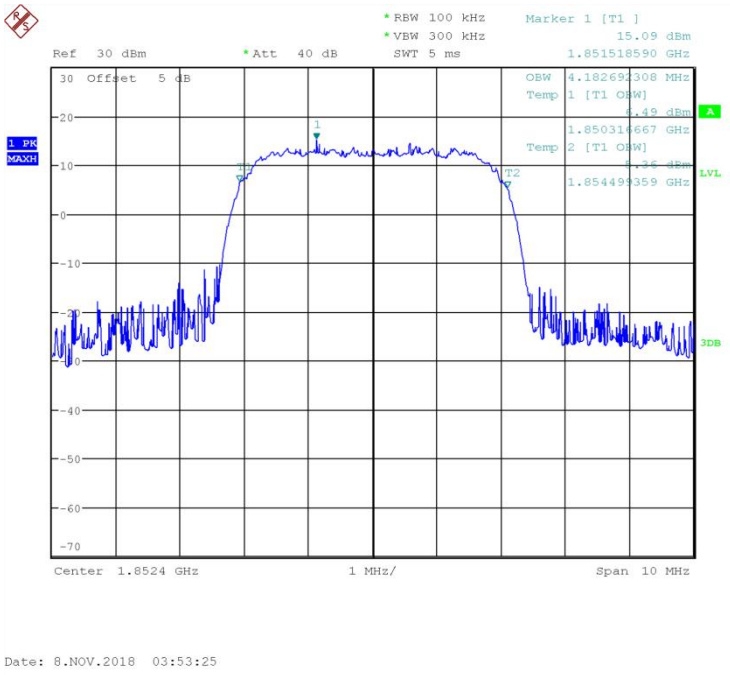


Fig.20 **Channel 9262-Occupied Bandwidth (99%)**

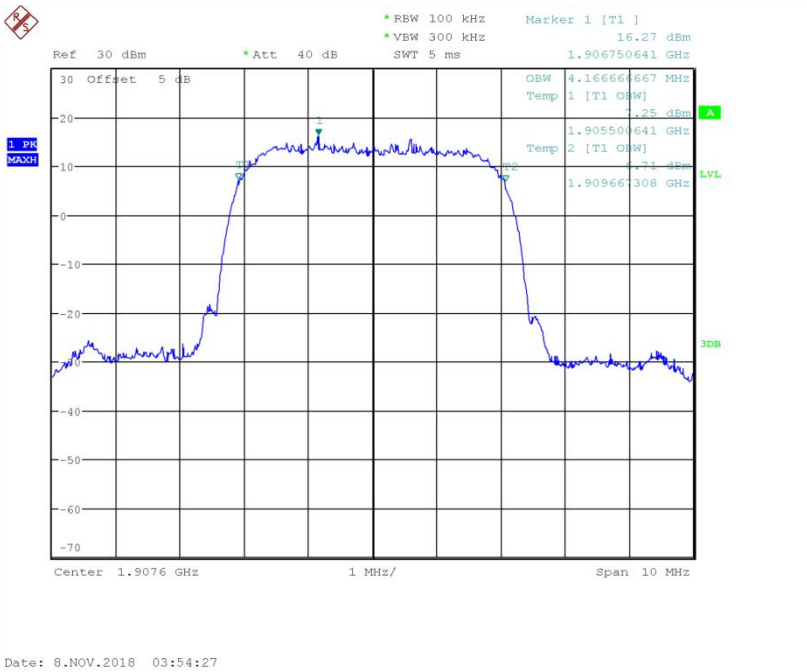


Fig.21 **Channel 9538-Occupied Bandwidth (99%)**

WCDMA BAND V		
Test channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)
Mid 4183	836.6	4.183
Low 4132	826.4	4.183
High 4233	846.6	4.183

Conclusion: PASS

WCDMA BAND V

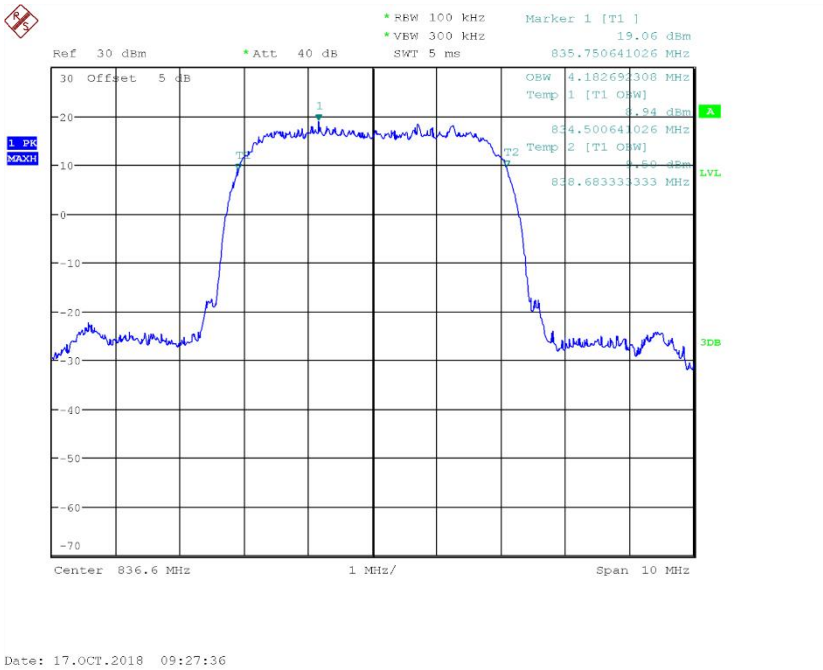


Fig.22 **Channel 4183-Occupied Bandwidth (99%)**

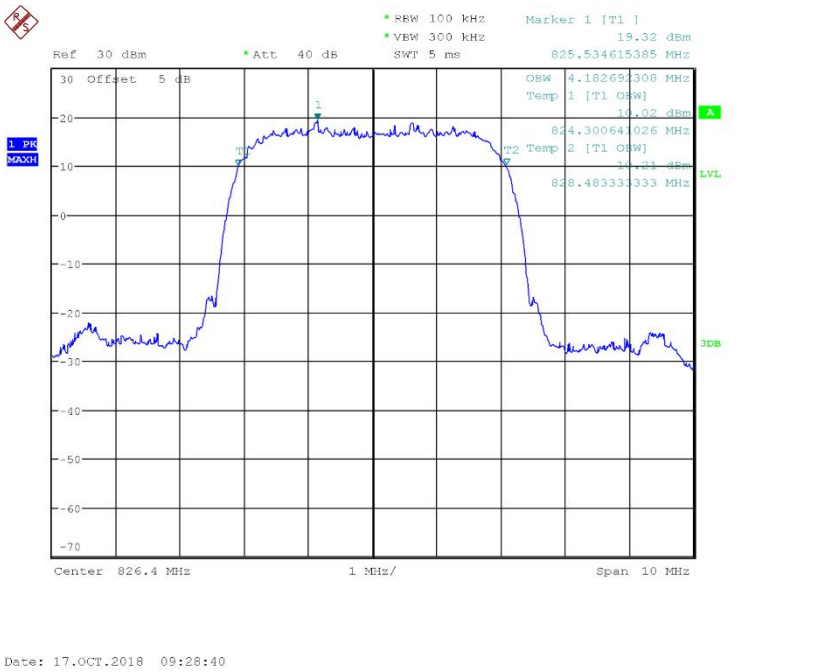


Fig.23 **Channel 4132-Occupied Bandwidth (99%)**

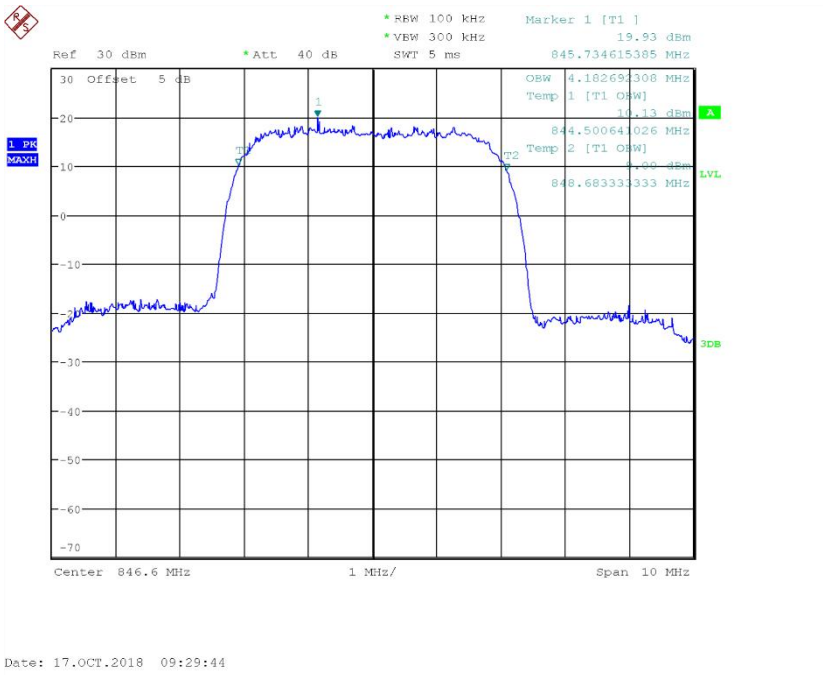


Fig.24 **Channel 4233-Occupied Bandwidth (99%)**

ANNEX A.4. -26dB Emission Bandwidth

Method of test please refer to KDB971168 D01 v03 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 >= 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=200KHz;Span=10MHz.

A.4.4 Test results:

GSM 850		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(KHz)
Mid 189	836.4	314.103
Low 128	824.2	310.897
High 251	848.8	317.308
GPRS 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
EDGE 850		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(KHz)
Mid 189	836.4	310.897

Low 128	824.2	310.897
High 251	848.8	314.103

Conclusion: PASS

GSM 850

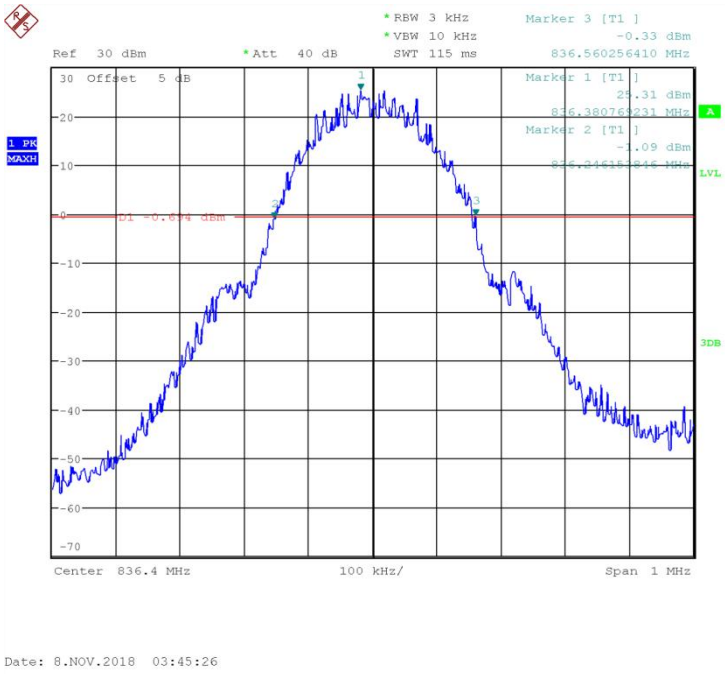


Fig.25 **Channel 189- Emission Bandwidth (-26dBc BW)**

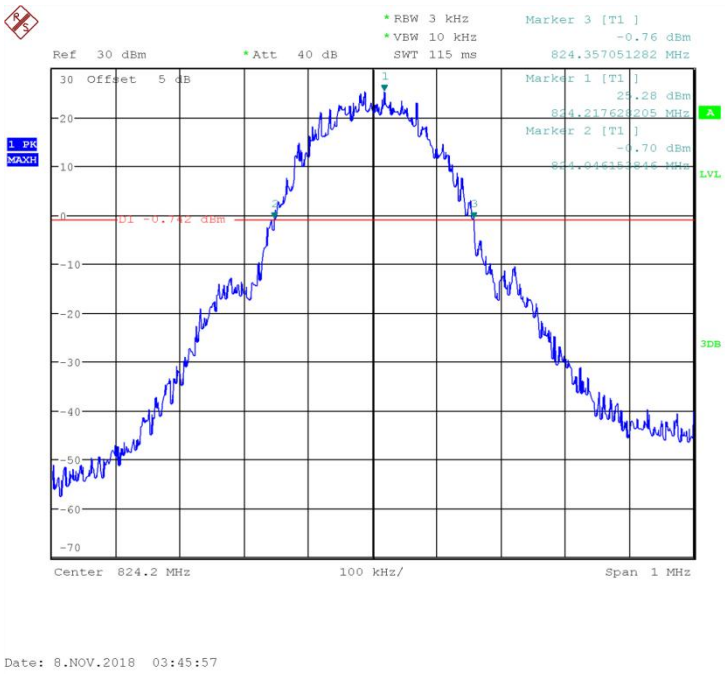


Fig.26 **Channel 128- Emission Bandwidth (-26dBc BW)**

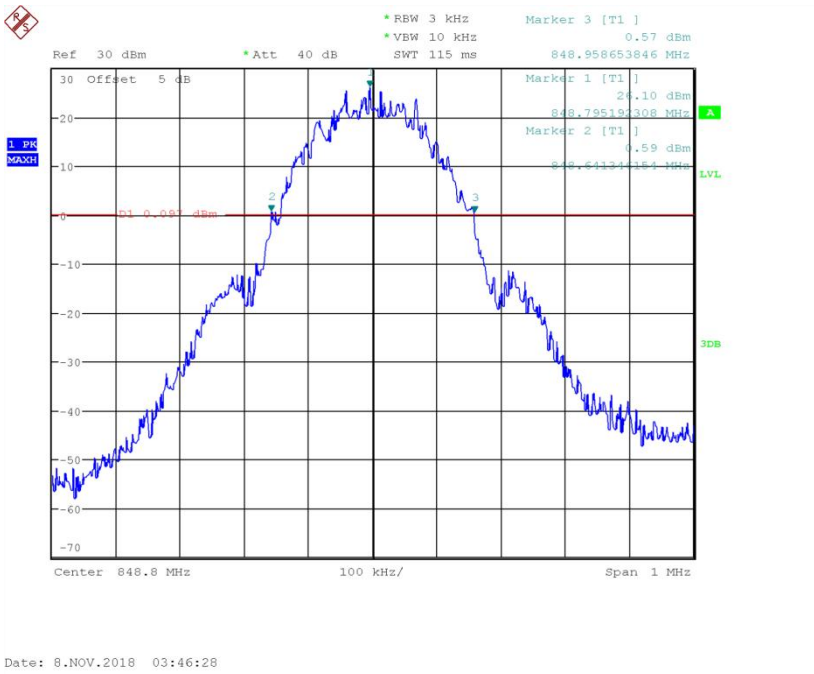


Fig.27 **Channel 251- Emission Bandwidth (-26dBc BW)**

GPRS 850

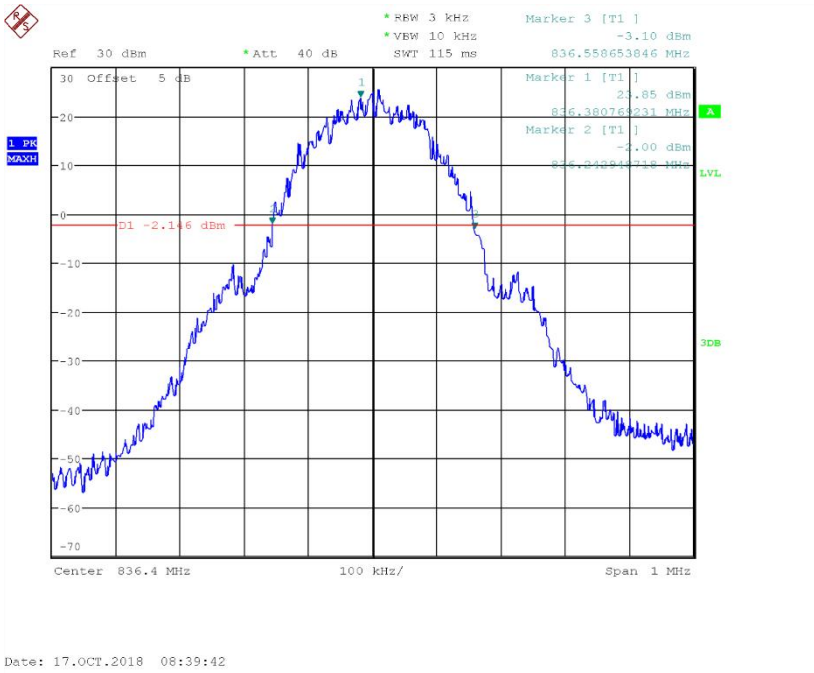


Fig.28 **Channel 189- Emission Bandwidth (-26dBc BW)**

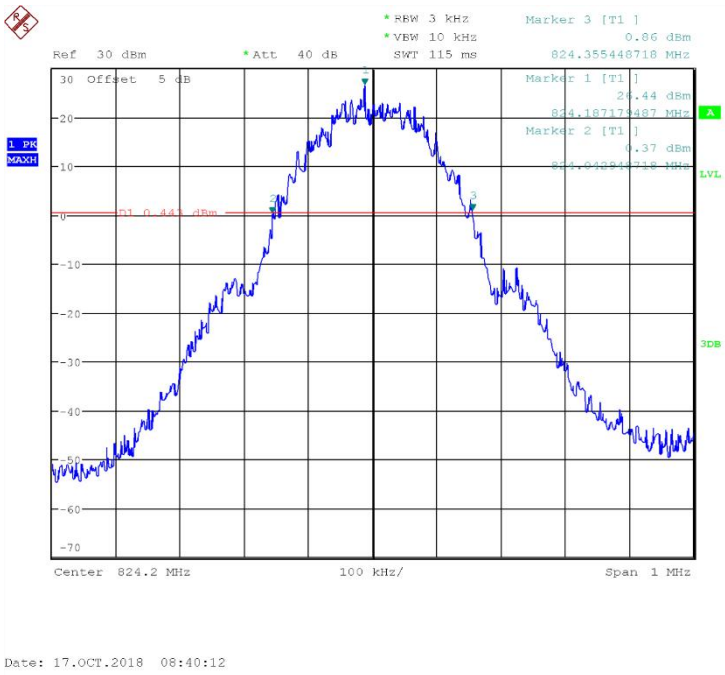


Fig.29 **Channel 128- Emission Bandwidth (-26dBc BW)**

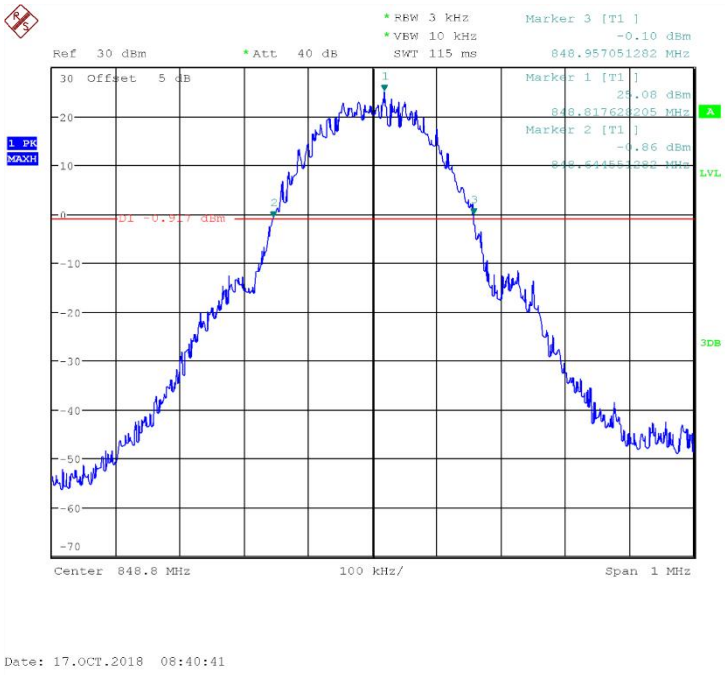


Fig.30 **Channel 251- Emission Bandwidth (-26dBc BW)**

EDGE 850

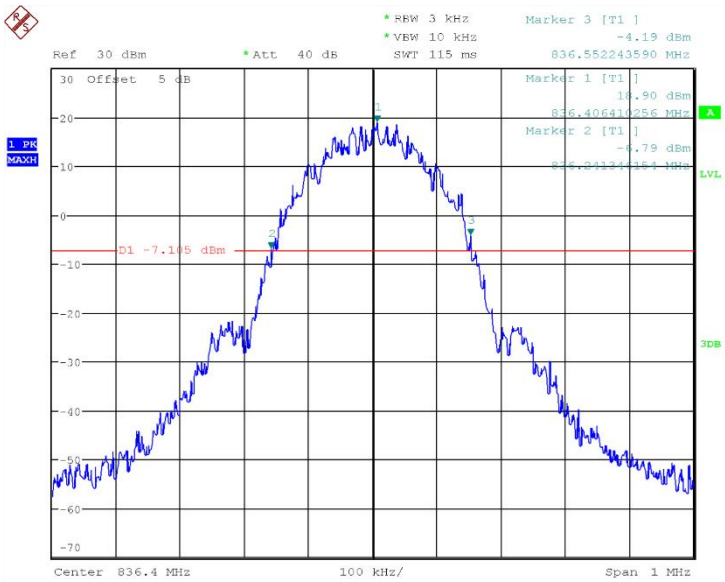


Fig.31 **Channel 189- Emission Bandwidth (-26dBc BW)**

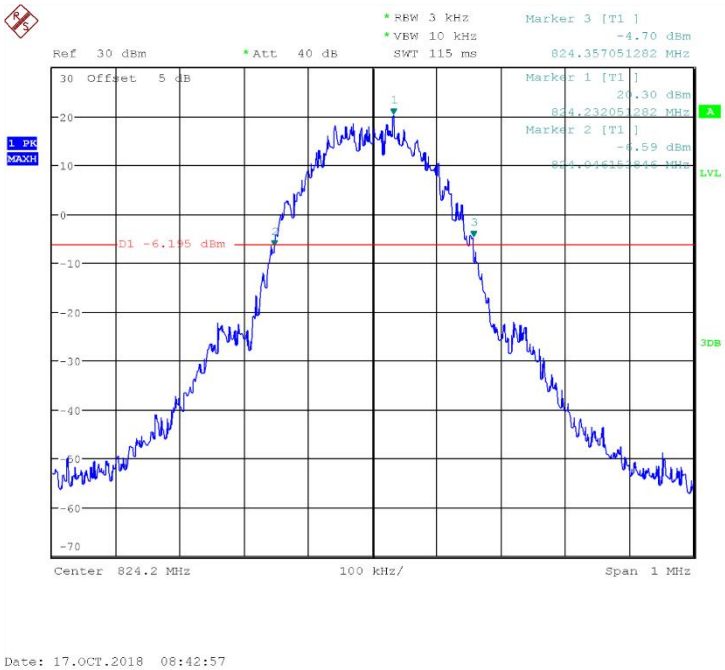


Fig.32 **Channel 128- Emission Bandwidth (-26dBc BW)**

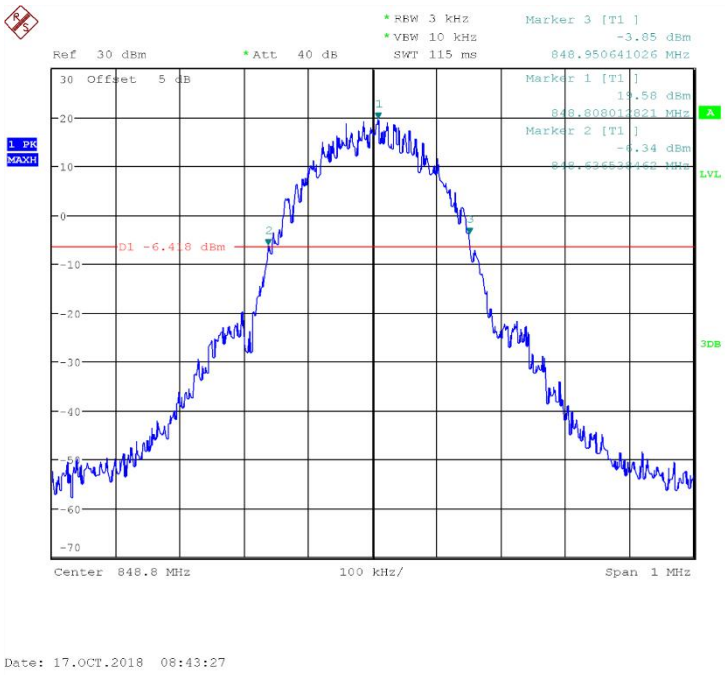


Fig.33 **Channel 251- Emission Bandwidth (-26dBc BW)**

GSM1900		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(KHz)
Mid 661	1880	312.5
Low 512	1850.2	310.897
High 810	1909.8	310.897
GPRS1900		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(KHz)
Mid 661	1880	320.513
Low 512	1850.2	317.308
High 810	1909.8	315.705
EDGE1900		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(KHz)
Mid 661	1880	323.718
Low 512	1850.2	323.718

High 810	1909.8	314.103

Conclusion: PASS

GSM 1900

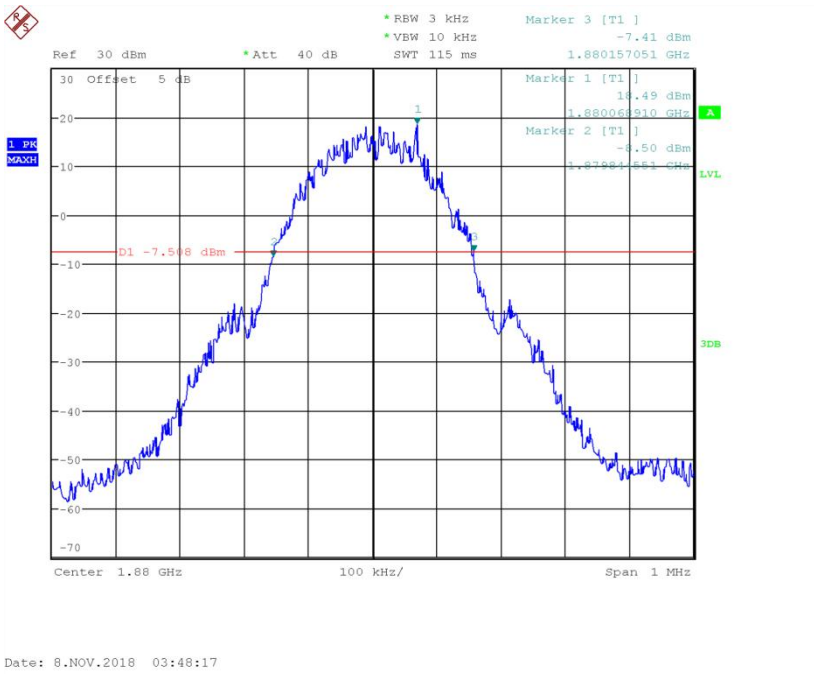


Fig.34 **Channel 661- Emission Bandwidth (-26dBc BW)**

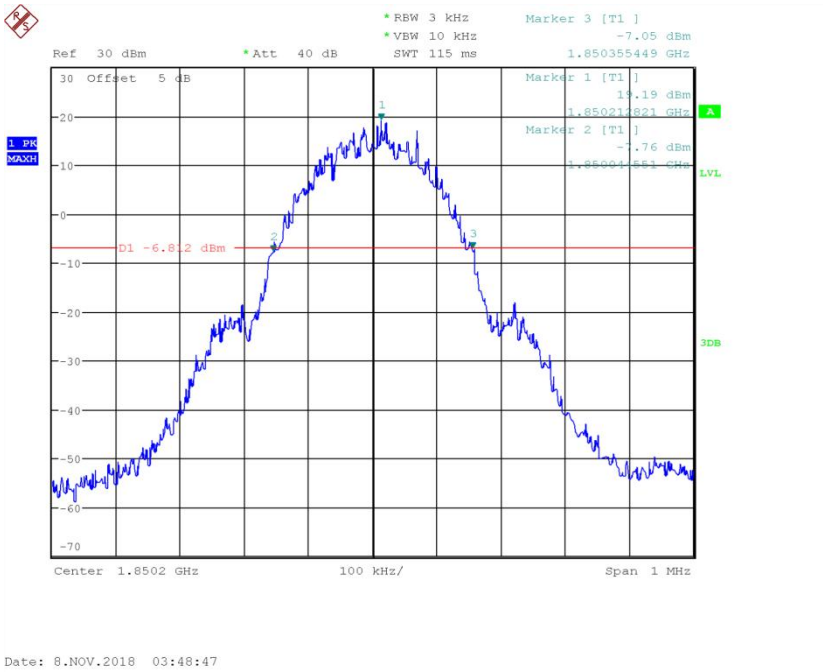


Fig.35 **Channel 512- Emission Bandwidth (-26dBc BW)**

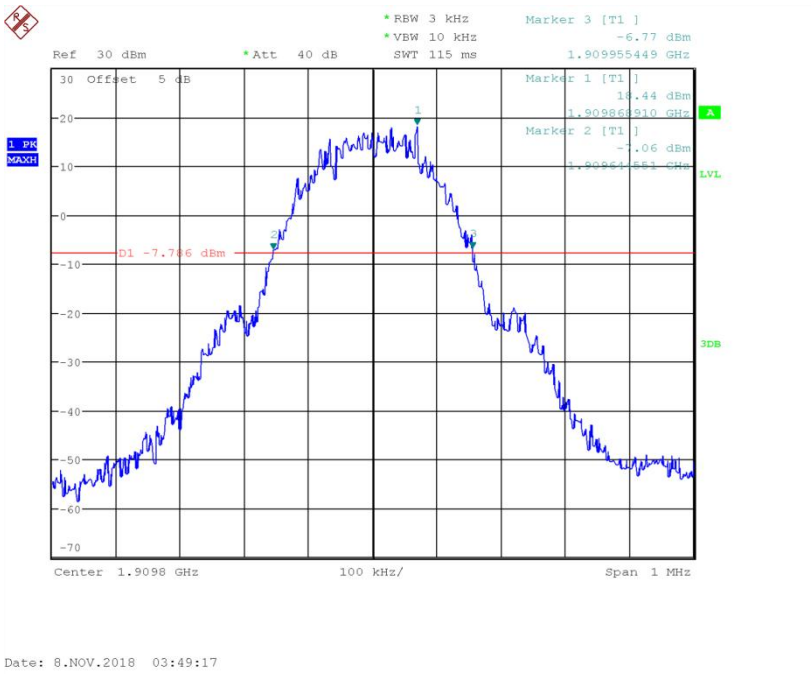


Fig.36 **Channel 810- Emission Bandwidth (-26dBc BW)**

GPRS 1900

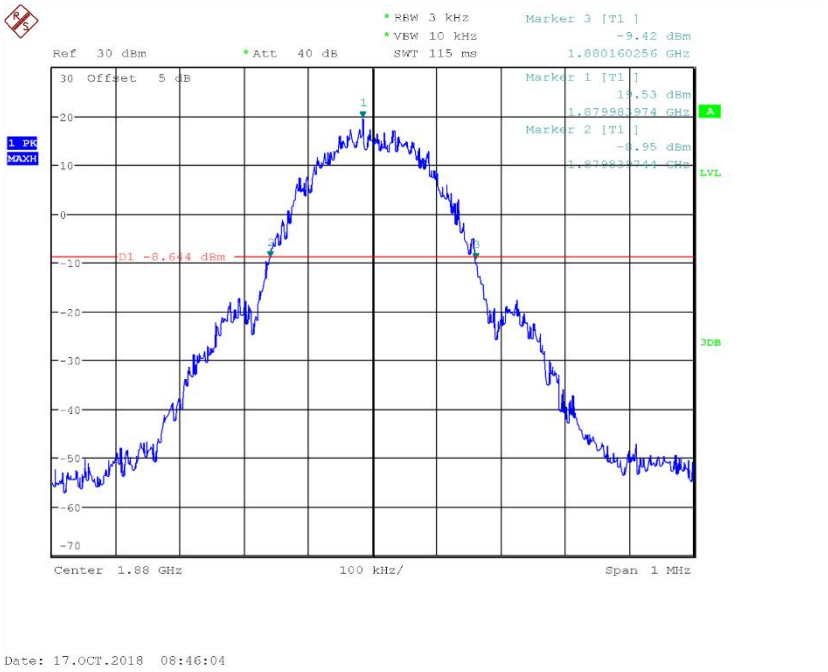


Fig.37 **Channel 661- Emission Bandwidth (-26dBc BW)**

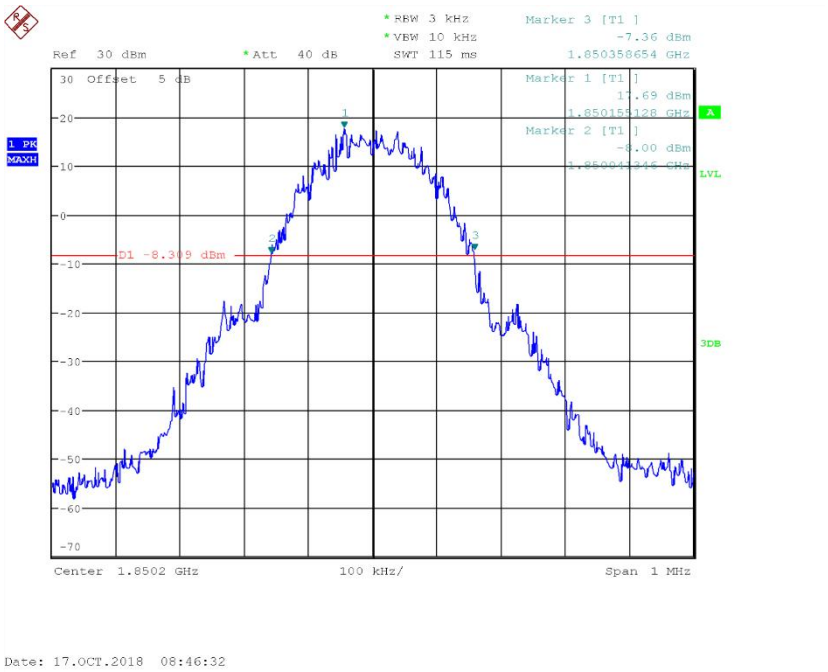


Fig.38 **Channel 512- Emission Bandwidth (-26dBc BW)**

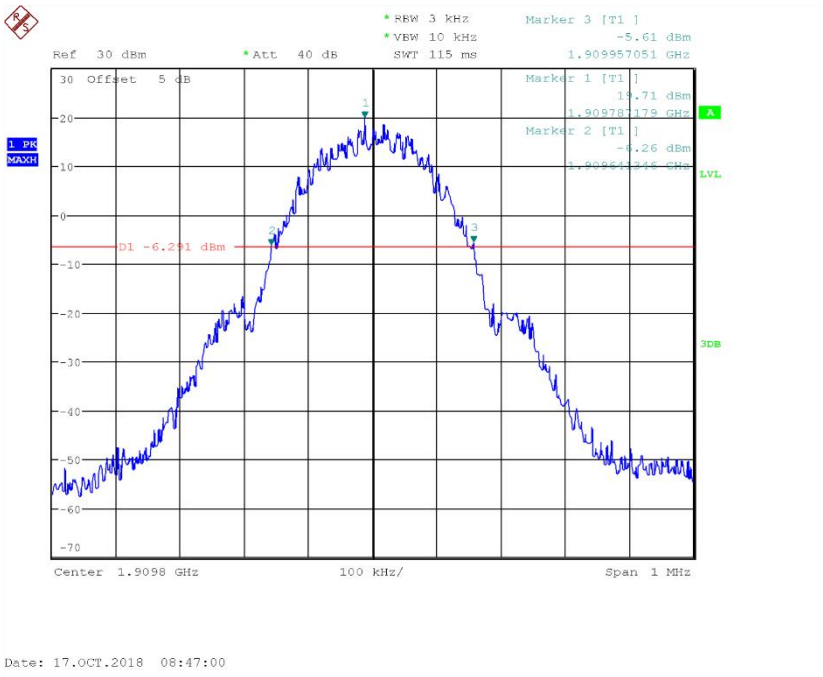


Fig.39 **Channel 810- Emission Bandwidth (-26dBc BW)**

EDGE 1900

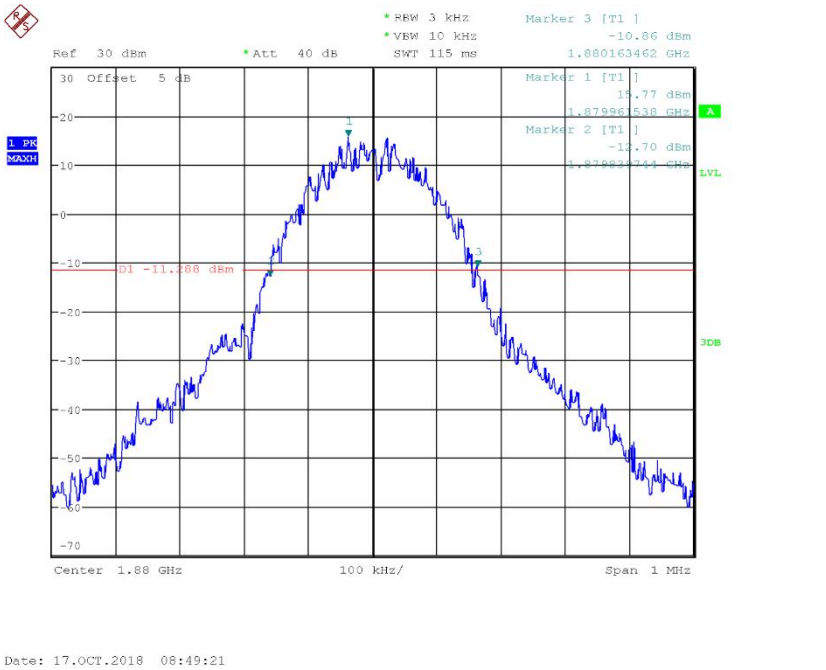


Fig.40 **Channel 661- Emission Bandwidth (-26dBc BW)**

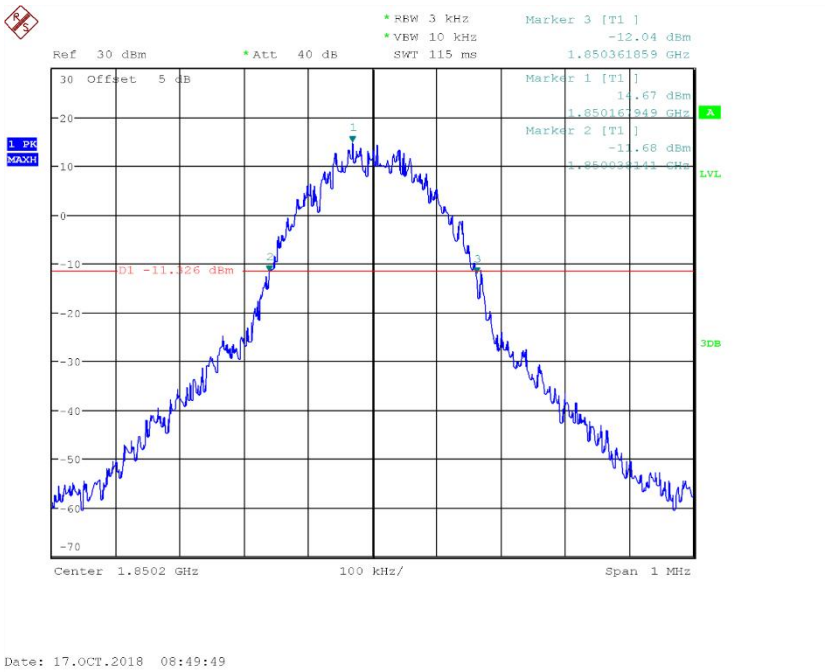


Fig.41 **Channel 512- Emission Bandwidth (-26dBc BW)**

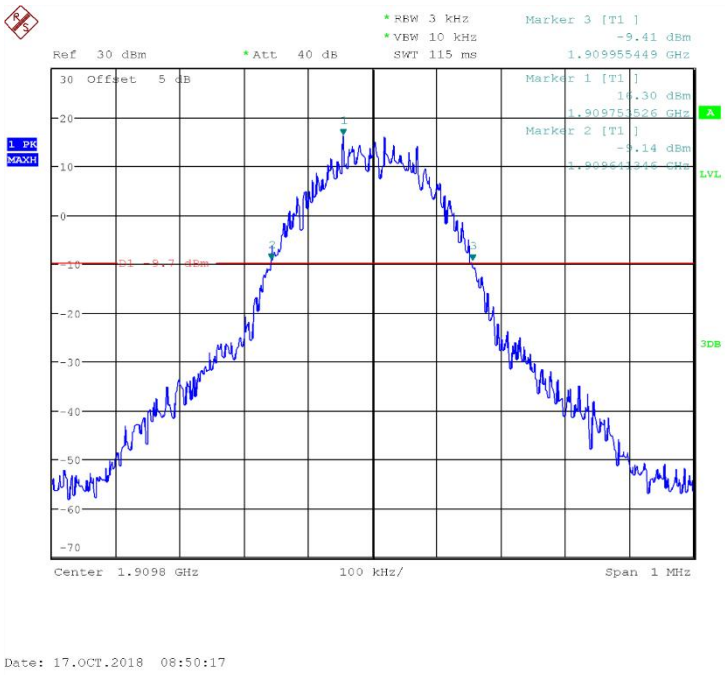


Fig.42 **Channel 810- Emission Bandwidth (-26dBc BW)**

WCDMA BAND II		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(MHz)
Mid 9400	1880	4.712
Low 9262	1852.4	4.696
High 9538	1907.6	4.728

Conclusion: PASS

WCDMA BAND II

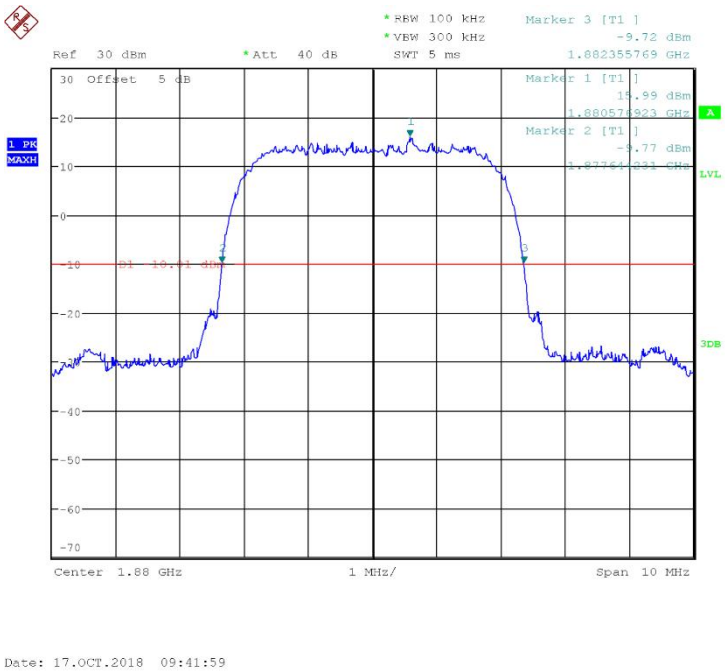


Fig.43 **Channel 9400- Emission Bandwidth (-26dBc BW)**

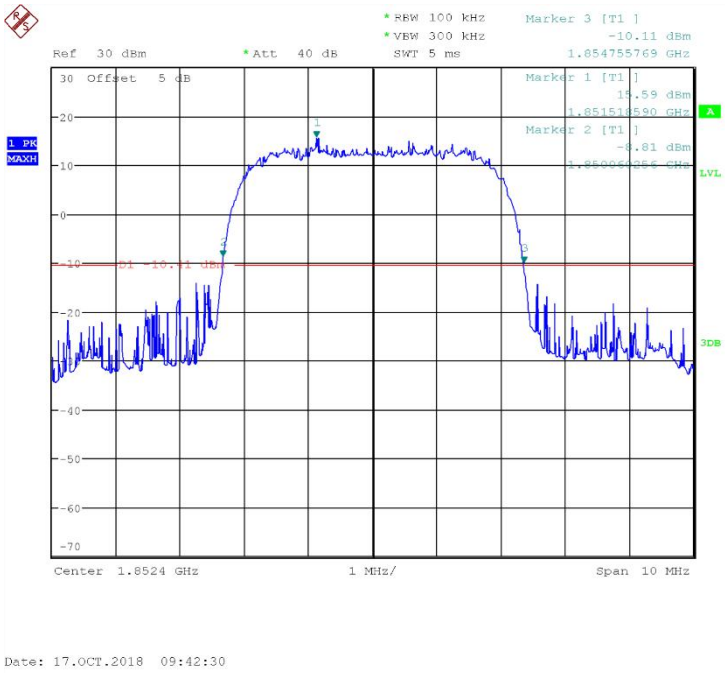


Fig.44 **Channel 9262- Emission Bandwidth (-26dBc BW)**

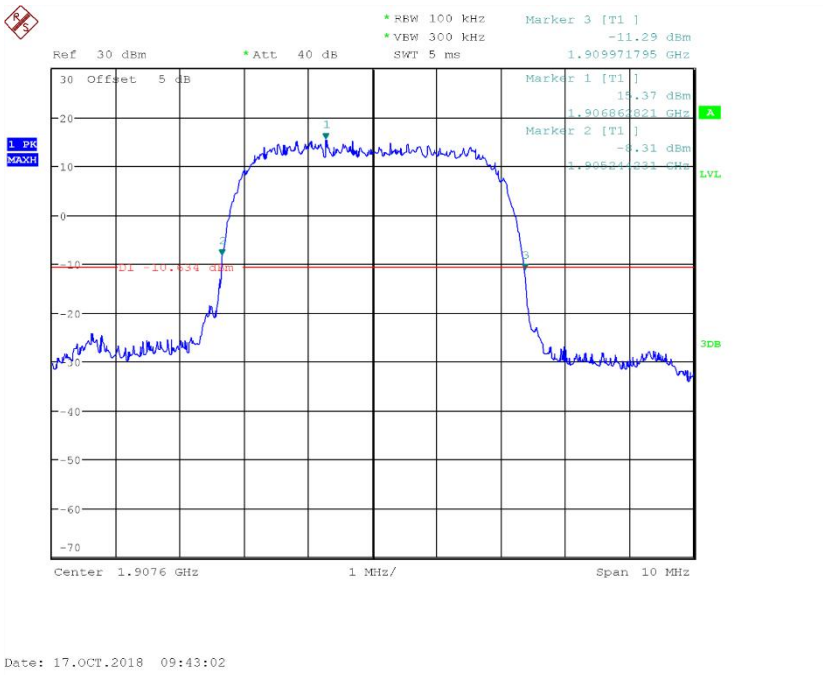
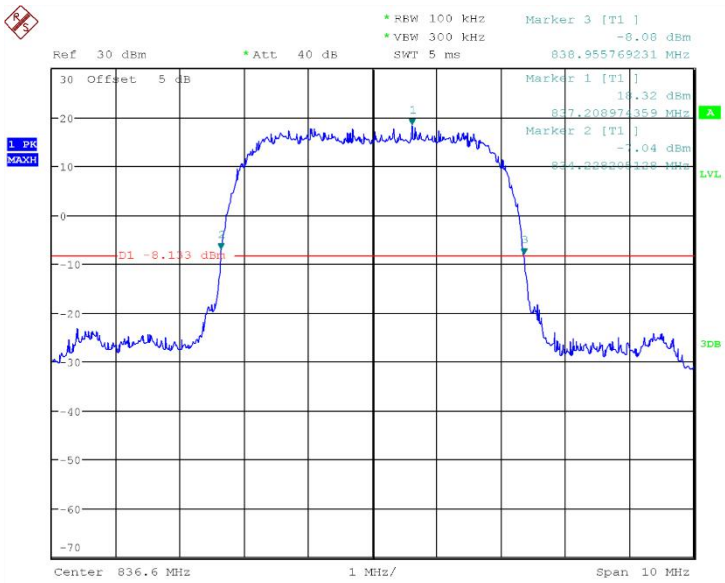


Fig.45 **Channel 9538- Emission Bandwidth (-26dBc BW)**

WCDMA BAND V		
Test channel	Frequency (MHz)	–26dBc Emission Bandwidth(MHz)
Mid 4183	836.6	4.728
Low 4132	826.4	4.744
High 4233	846.6	4.76

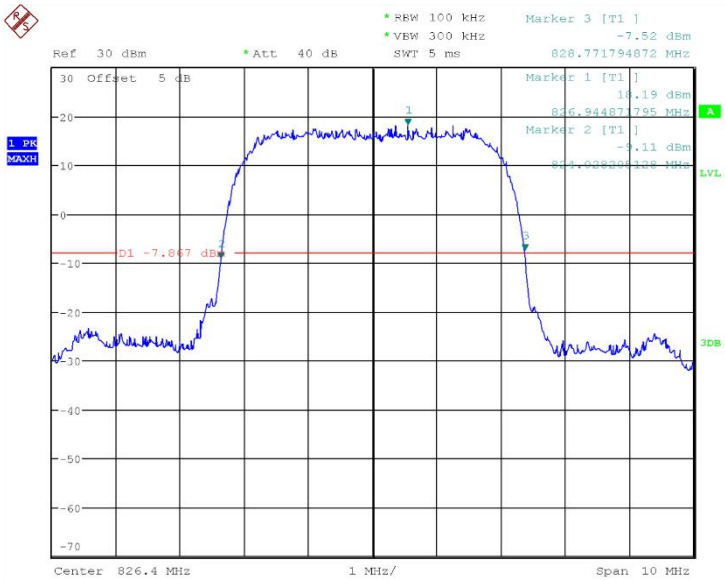
Conclusion: PASS

WCDMA BAND V



Date: 17.OCT.2018 09:43:43

Fig.46 **Channel 4183- Emission Bandwidth (-26dBc BW)**



Date: 17.OCT.2018 09:44:16

Fig.47 **Channel 4132- Emission Bandwidth (-26dBc BW)**

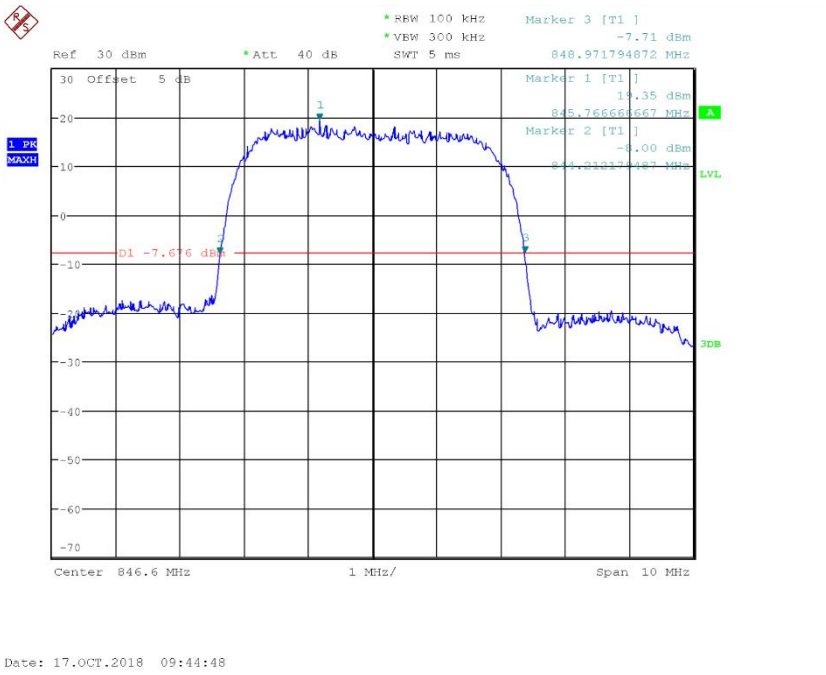


Fig.48 **Channel 4233- Emission Bandwidth (-26dBc BW)**

ANNEX A.5. Band Edge at antenna terminals

Method of test measurements please refer to KDB971168 D01 v03 clause 6

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+10log (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+10log(P) Db below the transmitter power P(Watts)
   =P(W)-[43+10log(P)](Db)
   =[30+10log(P)](dBm)-[43+10log(P)](Db)
   =-13dBm

A.5. Test Result:

GSM 850

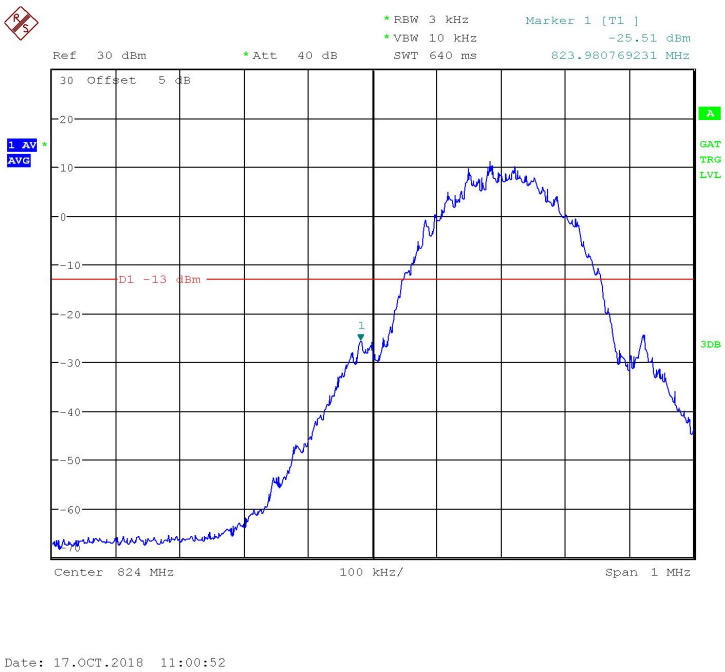


Fig.49 **Channel 128- LOW BAND EDGE BLOCK**

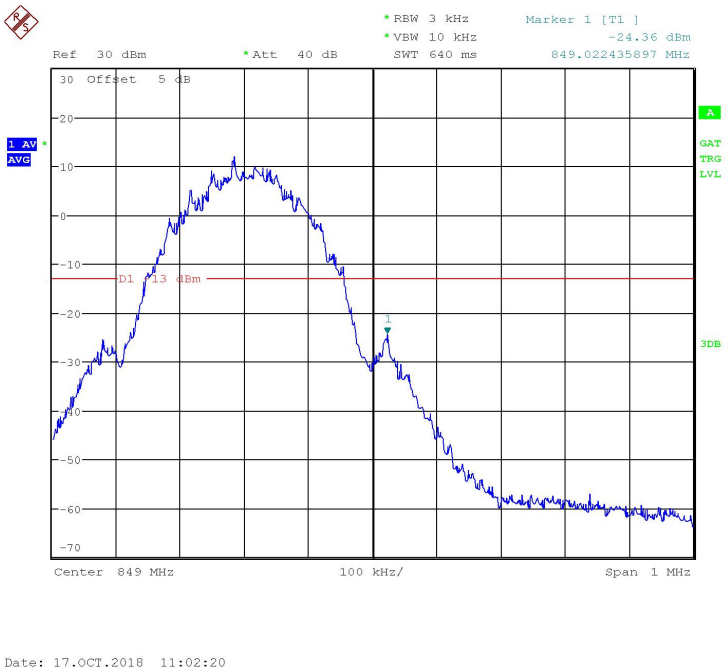


Fig.50 **Channel 251- LOW BAND EDGE BLOCK**

GPRS 850

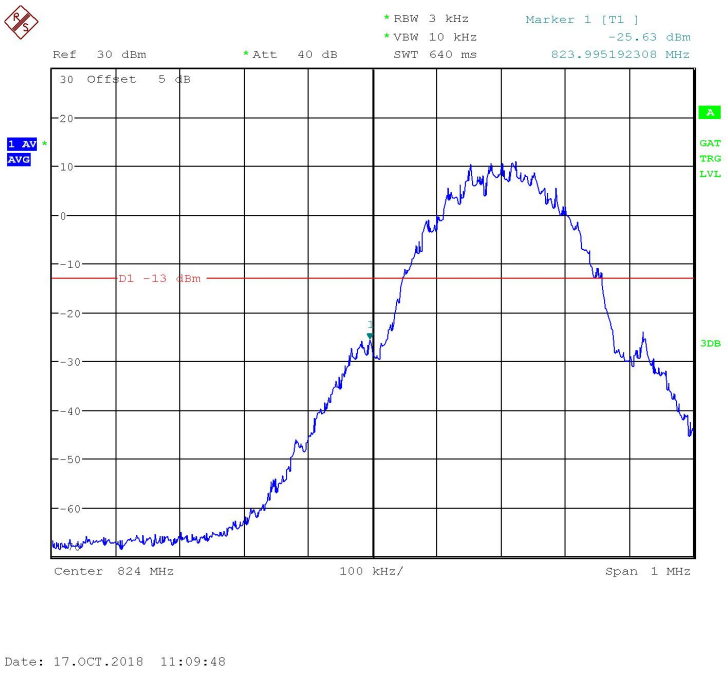


Fig.51 **Channel 128- LOW BAND EDGE BLOCK**

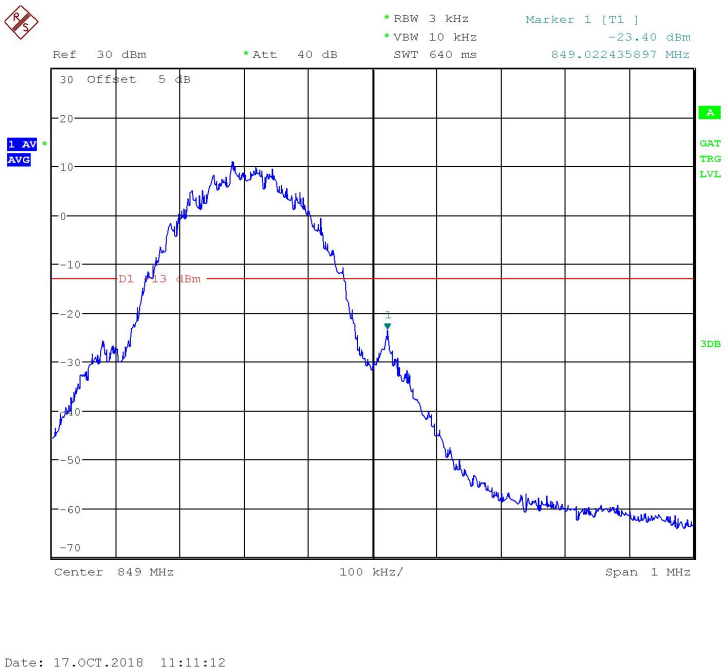


Fig.52 **Channel 251- LOW BAND EDGE BLOCK**

EDGE 850

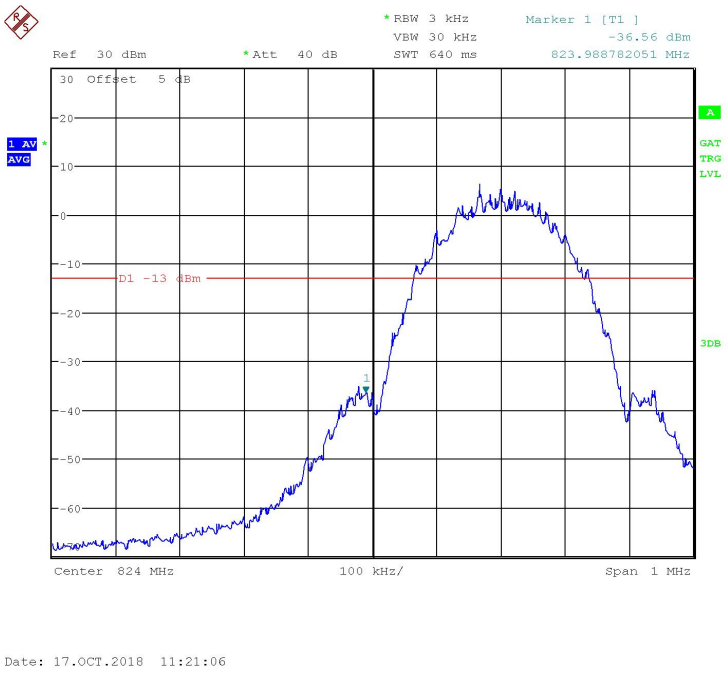


Fig.53 **Channel 128- LOW BAND EDGE BLOCK**

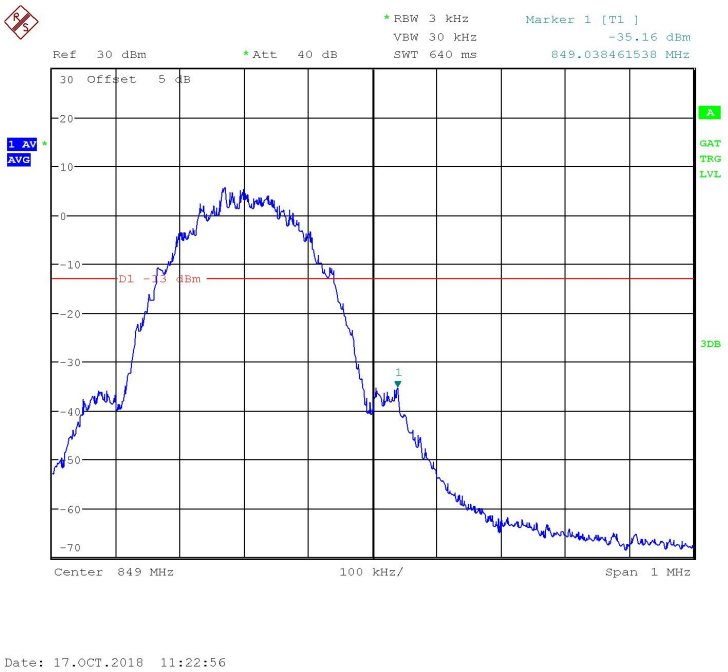


Fig.54 **Channel 251- LOW BAND EDGE BLOCK**

GSM 1900

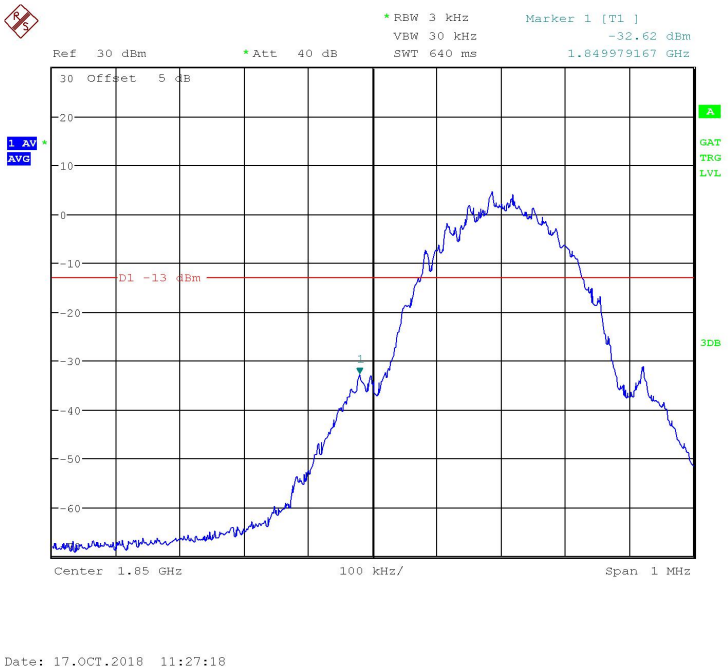


Fig.55 **Channel 512- LOW BAND EDGE BLOCK**