TEST REPORT

No. I14Z47255-EMC01

for

Sony Mobile Communications Inc.

GSM/WCDMA/LTE Mobile Phone

FCC ID: PY7PM-0808

with

Hardware Version: A

Software Version: 23.0.F.0.56

Issued Date: Aug. 07th, 2014

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 TMC Beijing.

Test Laboratory:

DAkks accreditation (DIN EN ISO/IEC 17025): No. D-PL-12123-01-01

FCC 2.948 Listed: No.733176

IC O.A.T.S listed: No.6629A-1

TMC Beijing, Telecommunication Metrology Center of Ministry of Industry and Information Technology

No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China 100191.

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CONTENTS

1. Test Laboratory

1.1. Testing Location

Location A

Company Name:	TMC Beijing, Telecommunication Metrology Center of MIIT
Address:	No 52, Huayuan Bei Road, Haidian District, Beijing, P.R. China
Postal Code:	100191

Location B

Company Name:	TMC Beijing, Telecommunication Metrology Center of MIIT
Address:	Building Shouxiang, No.51, Xueyuan Road, Haidian District, Beijing, China
Postal Code:	100191

1.2. Testing Environment

Normal Temperature:	15-35℃
Relative Humidity:	20-75%
Air pressure	980 - 1040 hPa

The climatic requirements above are general exclude the special requirements for dedicated test environments listed in section 5 and some specific test cases in other parts of this report.

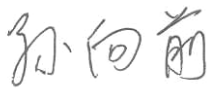
1.3. Project data

Receipt of Sample	Jul. 08th, 2014
Testing Start Date:	Jul. 16th, 2014
Testing End Date:	Jul. 26th, 2014

1.4. Signature

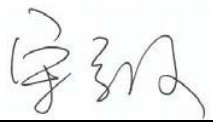
Qu Pengfei

(Prepared this test report)



Sun Xiangqian

(Reviewed this test report)



Song Chongwen

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Sony Mobile Communications (China) Co. Ltd
Address /Post:	Sony Mobile R&D Center, No. 16, Guangshun South Street, Chaoyang District
City:	Beijing
Postal Code:	100102
Country:	China
Contact Person:	Ma, Gang
Telephone:	+86-10-58656312
Fax:	+86-10-58659049

2.2. Manufacturer Information

Company Name:	Sony Mobile Communications Inc.
Address /Post:	1-8-15 Konan, Minato-ku, Tokyo, 108-0075, Japan
City:	Tokyo
Postal Code:	108-0075
Country:	Japan

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

3.1. About EUT

Description	GSM/WCDMA/LTE mobile phone
FCC ID	PY7PM-0808
Antenna	Internal
Power supply	Battery (charged by travel adapter or vehicle charger)
Extreme vol. Limits	3.6VDC to 4.2VDC (nominal: 3.8VDC)
Extreme temp. Tolerance	-10°C to +55°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MIIT of People's Republic of China.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN	IMEI	HW Version	SW Version
EUT7	CB5A1ZTFL3	004402452521127	A	23.0.F.0.56
EUT13	CB5A1ZTFJ7	004402452421556	A	23.0.F.0.56
EUT11	CB5A1ZTFRY	004402452521432	A	23.0.F.0.56
#25139	CB5A1ZTFL3	004402452521127	A	23.0.F.0.56

*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	Revision
AE1	Travel Charger	/	/
AE3	USB Cable	134912A21208328	AP1.0
#23086	Travel Charger	8512W32101941	RTL
#24925	USB Cable	134912AC120616	RTL

AE1, #23086

Commercial name	EP880
Type	AC-0400-EU
Manufacturer	SALCOMP
Length of cable	100 cm (length of USB cable)

AE3, #24925

Commercial name	EC803
Type	AI-0404
Manufacturer	Sony Mobile
Length of cable	100 cm

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

3.4. General Description

The Equipment Under Test (EUT) is a model supporting GSM/UMTS/LTE with 2.4G/5G technologies.
It consists of normal options: USB cable and travel charger.
Manual and specifications of the EUT were provided to fulfil the test.
Samples undergoing test were selected by the client.

3.5. EUT set-ups

EUT Set-up No.	Combination of EUT and AE	Remarks
Set.8	EUT7 + AE1 + AE3	1900MHz, Tests with travel charger
Set.9	EUT7	1900MHz, ERP/EIRP/RSE tests
Set.10	EUT13	1900MHz, Conducted RF tests
Set.11	#25139+#23086+#24925	850MHz, Tests with travel charger
Set.12	#25139	850MHz, ERP/EIRP/RSE tests
Set.13	AE11	850MHz, Conducted RF tests

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 15	Radio frequency devices	10-1-13 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-13 Edition
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-13 Edition
ANSI/TIA-603-C	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2004
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. LABORATORY ENVIRONMENT

Semi-anechoic chamber SAC-1 (23 meters×17meters×10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ˚C, Max. = 35 ˚C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3m/10m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

Fully-anechoic chamber FAC-3 (9 meters×6.5 meters×4 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ˚C, Max. = 35 ˚C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 4000 MHz

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

Temperature	Min. = 15 ˚C, Max. = 35 ˚C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω

6. SUMMARY OF TEST RESULTS

6.1. Summary of test results

Abbreviations used in this clause:		
Verdict Column	P	Pass
	F	Fail
	NA	Not applicable
	NM	Not measured
Location Column	A/B/C/D	The test is performed in test location A, B, C or D which are described in section 1.1 of this report

GSM 850

Items	Test Name	Clause in FCC rules	Section in this report	Verdict	Test Location
1	Output Power	22.913(a)	A.1	P	B
2	Emission Limit	22.917, 2.1051	A.2	P	B
3	Conducted Emission	15.107/207	A.3	P	A
4	Frequency Stability	22.355, 2.1055	A.4	P	B
5	Occupied Bandwidth	2.1049(h)(i)	A.5	P	B
6	Emission Bandwidth	22.917(b)	A.6	P	B
7	Band Edge Compliance	22.917(b)	A.7	P	B
8	Conducted Spurious Emission	22.917, 2.1057	A.8	P	B

PCS 1900

Items	Test Name	Clause in FCC rules	Section in this report	Verdict	Test Location
1	Output Power	24.232(c)	A.1	P	B
2	Emission Limit	24.238, 2.1051	A.2	P	B
3	Conducted Emission	15.107/207	A.3	P	A
4	Frequency Stability	24.235, 2.1055	A.4	P	B
5	Occupied Bandwidth	2.1049(h)(i)	A.5	P	B
6	Emission Bandwidth	24.238(b)	A.6	P	B
7	Band Edge Compliance	24.238(b)	A.7	P	B
8	Conducted Spurious Emission	24.238, 2.1057	A.8	P	B

6.2. Statements

The test cases listed in section 6.1 of this report for the EUT specified in section 3 were performed by TMC according to the standards or reference documents in section 4.1.

The EUT met all applicable requirements of the standards or reference documents in section 4.1.

This report only deals with the GSM/GPRS/EGPRS functions among the features described in section 3.

7. Test Equipments Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
1.	EMI Antenna	VULB 9163	9163-235	Schwarzbeck	2014-09-28	3 Years
2.	Test Receiver	ESCI	100344	R&S	2015-03-03	1 Year
3.	EMI Antenna	3117	00119024	ETS-Lindgren	2016-01-20	3 Years
4.	EMI Antenna	9117	167	Schwarzbeck	2015-07-06	
5.	EMI Antenna	3117	00058889	ETS-Lindgren	2014-12-20	3 Years
6.	Signal Generator	N5183A	MY49060052	Agilent	2015-03-02	1 Year
7.	Power Amplifier	5S1G4	0341863	AR	/	1 Year
8.	Universal Radio Communication Tester	CMW500	143008	R&S	2014-12-09	1 Year
9.	Universal Radio Communication Tester	CMW500	116588	R&S	2014-10-27	1 Year
10.	Universal Radio Communication Tester	E5515C	MY48363198	Agilent	2015-07-06	1 Year
11.	Spectrum Analyzer	E4440A	MY48250642	Agilent	2015-02-27	1 Year
12.	LISN	ESH2-Z5	829991/012	R&S	2015-04-14	1 Year
13.	Climatic chamber	SH-641	92014694	ESPEC	2015-11-27	1 Year

ANNEX A: MEASUREMENT RESULTS

A.1 OUTPUT POWER

Reference

FCC: CFR Part 22.913(a), 24.232(c).

A.1.1 Summary

During the process of testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication tester (CMU200) to ensure max power transmission and proper modulation.
This result contains peak output power and ERP/EIRP measurements for the EUT.
In all cases, output power is within the specified limits.

A.1.2 Conducted Power

A.1.2.1 Method of Measurements

The EUT was set up for the max output power with pseudo random data modulation.
The power was measured with spectrum analyzer's peak detector.
These measurements were done at 3 frequencies (bottom, middle and top of operational frequency range) for each band: 1850.2 MHz, 1880.0MHz and 1909.8MHz for PCS1900 band; 824.2MHz, 836.6MHz and 848.8MHz for GSM850 band.

.

GSM850

Limit

	Power step	Nominal Peak output power (dBm)	Tolerance (dB)	Target (dBm)
GSM	5	33dBm(2W)	± 2	33±1
GPRS	3	33dBm(2W)	± 2	33±1
EGPRS	6	33dBm(2W)	± 2	33±1

Measurement result

GSM (GMSK)

Frequency(MHz)	Power Step	Peak output power(dBm)
824.2	5	**32.70**
836.6	5	32.56
848.8	5	32.42

GPRS (GMSK, Time Slot 1)

Frequency(MHz)	Power Step	Peak output power(dBm)
824.2	3	**32.80**
836.6	3	32.60
848.8	3	32.50

EGPRS (8PSK, Time Slot 1)

Frequency(MHz)	Power Step	Peak output power(dBm)
824.2	6	**27.28**
836.6	6	26.84
848.8	6	26.91

Note: Expanded measurement uncertainty for GSM850 is *U* = 0.52 dB, *k* = 2.

PCS1900

Limit

	Power step	Nominal Peak output power (dBm)	Tolerance (dB)	Target (dBm)
GSM	0	30dBm(1W)	± 2	30±1
GPRS	3	30dBm(1W)	± 2	30±1
EGPRS	5	30dBm(1W)	± 2	30±1

Measurement result

GSM (GMSK)

Frequency(MHz)	Power Step	Peak output power(dBm)
1850.2	0	30.57
1880.0	0	30.54
1909.8	0	**30.64**

GPRS (GMSK, Time Slot 1)

Frequency(MHz)	Power Step	Peak output power(dBm)
1850.2	3	30.59
1880.0	3	30.55
1909.8	3	**30.66**

EGPRS (8PSK, Time Slot 1)

Frequency(MHz)	Power Step	Peak output power(dBm)
1850.2	5	**26.81**
1880.0	5	26.76
1909.8	5	26.77

Note: Expanded measurement uncertainty for PCS1900 is *U* =0.83 dB, *k* = 2.

A.1.3 Radiated Power

A.1.3.1 Description

This is the test for the maximum radiated power from the EUT.

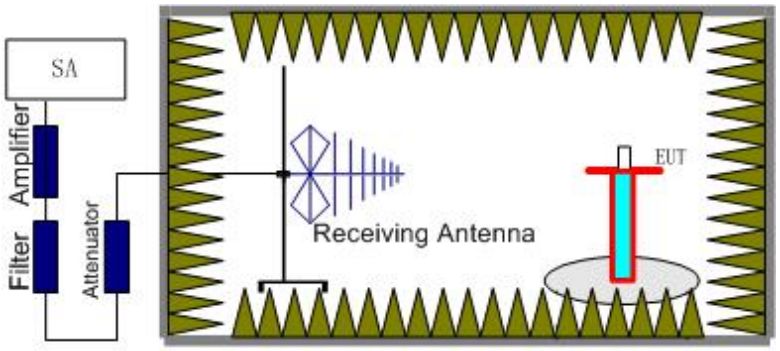
Rule Part 24.232(c) specifies "Mobile and portable stations are limited to 2 watts EIRP" and 24.232(e) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

Rule Part 22.913(a) specifies "Maximum ERP. The effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts."

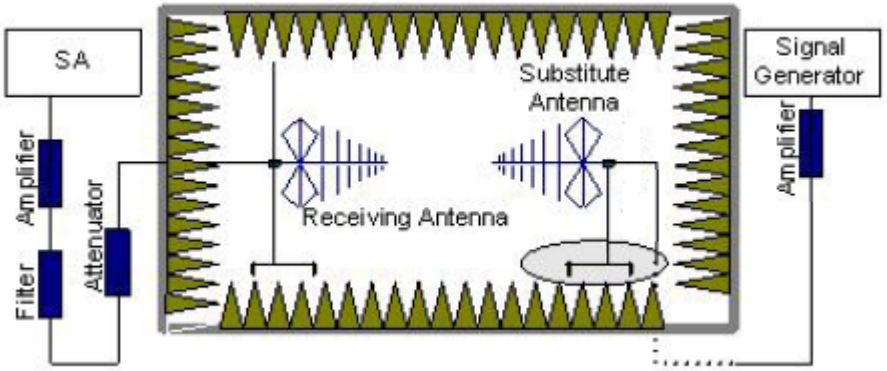
A.1.3.2 Method of Measurement

The measurements procedures in TIA-603C-2004 are used.

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. An amplifier should be connected to the Signal Source output port. And the cable should be connected between the amplifier and the substitution antenna.
   The cable loss (P_{cl}), the substitution antenna Gain (G_a) and the amplifier Gain (P_{Ag}) should be recorded after test.
   The measurement results are obtained as described below:
   Power (EIRP) = P_{Mea} - P_{Ag} - P_{cl} - G_a
5. This value is EIRP since the measurement is calibrated using an antenna of known gain (Unit: dBi) and known input power.
6. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15.

For test layout photo, please refer to Pic.1 in Annex B.

GSM 850- ERP 22.913(a)

Limits

	Power Step	Burst Peak ERP (dBm)
GSM	5	≤38.45dBm (7W)
GPRS	3	≤38.45dBm (7W)
EGPRS	6	≤38.45dBm (7W)

Measurement result

GSM (GMSK)

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	Peak ERP(dBm)	Polarization
824.20	-18.47	2.07	-53.00	0.84	2.15	29.47	Horizontal
836.60	-17.76	2.08	-53.00	0.90	2.15	**30.11**	Horizontal
848.80	-17.89	2.09	-53.00	0.95	2.15	29.92	Horizontal

GPRS (GMSK)

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	Peak ERP(dBm)	Polarization
824.20	-18.51	2.07	-53.00	0.84	2.15	29.43	Horizontal
836.60	-18.00	2.08	-53.00	0.90	2.15	29.87	Horizontal
848.80	-18.16	2.09	-53.00	0.95	2.15	29.65	Horizontal

EGPRS (8PSK)

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	Peak ERP(dBm)	Polarization
824.20	-23.45	2.07	-53.00	0.84	2.15	24.49	Horizontal
836.60	-22.64	2.08	-53.00	0.90	2.15	25.23	Horizontal
848.80	-21.97	2.09	-53.00	0.95	2.15	25.84	Horizontal

Sample calculation: GSM, 836.60MHz

Peak ERP(dBm) = P_{Mea}(-17.76dBm) - G_a (0.90dBi) - P_{Ag} (-53.00 dB) - P_{cl} (2.08 dB) -2.15 dB
= 30.11 dBm

ANALYZER SETTINGS: RBW = VBW = 3MHz

Note: Expanded measurement uncertainty for GSM850 is *U* = 0.96dB, *k* = 2.

PCS1900- EIRP 24.232(c)

Limits

	Power Step	Burst Peak EIRP (dBm)
GSM	0	≤33dBm (2W)
GPRS	3	≤33dBm (2W)
EGPRS	5	≤33dBm (2W)

Measurement result

GSM (GMSK)

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Peak EIRP(dBm)	Polarization
1850.20	-22.03	3.19	-50.00	-4.56	29.34	Horizontal
1880.00	-21.11	3.11	-50.00	-4.43	30.21	Horizontal
1909.80	-20.81	3.18	-50.00	-4.30	**30.31**	Horizontal

GPRS (GMSK)

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Peak EIRP(dBm)	Polarization
1850.20	-21.98	3.19	-50.00	-4.56	29.39	Horizontal
1880.00	-21.09	3.11	-50.00	-4.43	30.23	Horizontal
1909.80	-21.84	3.18	-50.00	-4.30	29.28	Horizontal

EGPRS (8PSK)

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Peak EIRP(dBm)	Polarization
1850.20	-24.67	3.19	-50.00	-4.56	26.70	Horizontal
1880.00	-23.64	3.11	-50.00	-4.43	27.68	Horizontal
1909.80	-23.53	3.18	-50.00	-4.30	27.59	Horizontal

Sample calculation: GSM, 1909.80MHz

Peak EIRP(dBm) = P_{Mea}(-20.81dBm) - G_a (-4.30 dBi) - P_{Ag} (-50.00 dB) - P_{cl} (3.18 dB) = 30.31 dBm

ANALYZER SETTINGS: RBW = VBW = 3MHz

Note: Expanded measurement uncertainty for PCS1900 is *U* = 1.07 dB, *k* = 2.

A.2 EMISSION LIMT

Reference

FCC: CFR 2.1051, Part 22.917(a), 24.238(a).

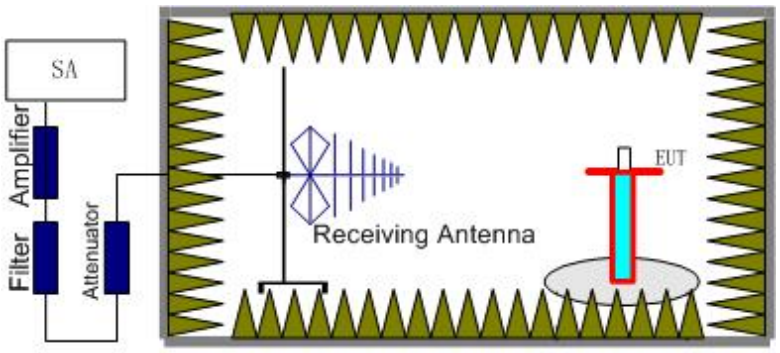
A.2.1 Measurement Method

The measurements procedures in TIA-603C-2004 are used. This measurement is carried out in fully-anechoic chamber FAC-3.

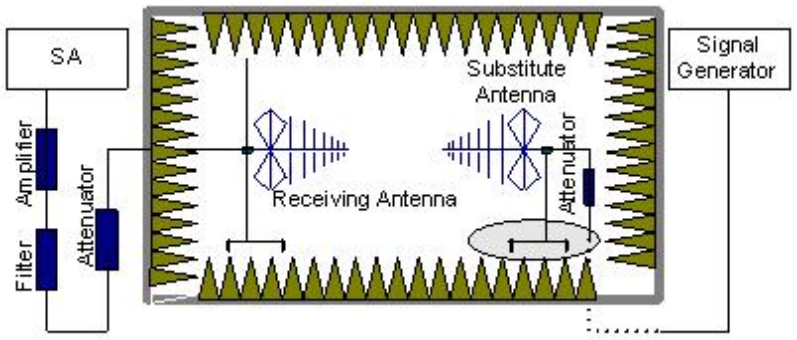
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier that can be as high as 1910 MHz. The resolution bandwidth is set 1MHz as outlined in Part 24.238. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of the PCS1900 band, GSM850 band.

The procedure of radiated spurious emissions is as follows:

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. The Path loss (P_{pl}) between the Signal Source with the Substitution Antenna and the Substitution Antenna Gain (G_a) should be recorded after test.
   An amplifier should be connected in for the test.
   The Path loss (P_{pl}) is the summation of the cable loss and the gain of the amplifier.
   The measurement results are obtained as described below:
   Power (EIRP)=P_{Mea}+ P_{pl} + G_a
5. This value is EIRP since the measurement is calibrated using an antenna of known gain (unit: dBi) and known input power.
6. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dB.

A.2.2 Measurement Limit

Part 24.238 specifies that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the PCS band (1850.2 MHz, 1880 MHz and 1909.8 MHz), GSM850 band (824.2MHz, 836.6MHz and 848.8MHz). It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the GSM850 or PCS1900 into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this.

GSM Mode Channel 128/824.2MHz

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP(dBm)	Limit （dBm）	Polarization
1648.50	-45.16	2.91	-5.45	2.15	-44.77	-13.00	Horizontal
2472.50	-40.42	3.56	-5.32	2.15	-40.81	-13.00	Vertical
3294.87	-53.68	4.23	-7.41	2.15	-52.65	-13.00	Horizontal
4120.33	-52.59	4.68	-8.57	2.15	-50.85	-13.00	Horizontal
4946.42	-51.41	5.11	-9.60	2.15	-49.07	-13.00	Vertical
5768.19	-49.01	5.69	-10.11	2.15	-46.74	-13.00	Vertical

GSM Mode Channel 190/836.6MHz

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP(dBm)	Limit （dBm）	Polarization
1673.24	-46.97	2.97	-5.34	2.15	-46.75	-13.00	Horizontal
2509.71	-41.30	3.59	-5.43	2.15	-41.61	-13.00	Horizontal
3349.67	-54.12	4.24	-7.54	2.15	-52.97	-13.00	Horizontal
4184.91	-52.45	4.67	-8.61	2.15	-50.66	-13.00	Vertical
5016.26	-50.95	5.16	-9.71	2.15	-48.55	-13.00	Vertical
5860.50	-49.47	5.66	-10.14	2.15	-47.14	-13.00	Horizontal

GSM Mode Channel 251/848.8MHz

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP(dBm)	Limit （dBm）	Polarization
1697.51	-47.83	2.95	-5.23	2.15	-47.70	-13.00	Horizontal
2546.14	-43.54	3.63	-5.52	2.15	-43.80	-13.00	Horizontal
3400.07	-53.55	4.21	-7.66	2.15	-52.25	-13.00	Horizontal
4248.72	-51.71	4.79	-8.65	2.15	-50.00	-13.00	Vertical
5091.96	-51.63	5.20	-9.76	2.15	-49.22	-13.00	Horizontal
5938.08	-49.03	5.52	-10.18	2.15	-46.52	-13.00	Vertical

GSM Mode Channel 512/1850.2MHz

Frequency (MHz)	P_{Mea} (dBm)	P_{pl} (dB)	G_a (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarity
3700.34	-58.60	4.44	-8.14	-54.90	-13.00	Vertical
5550.90	-58.55	5.46	-10.02	-53.99	-13.00	Horizontal
7429.52	-60.63	6.38	-11.36	-55.65	-13.00	Vertical
9316.98	-60.03	7.73	-12.60	-55.16	-13.00	Horizontal
11183.42	-55.33	8.24	-12.40	-51.17	-13.00	Vertical
13048.34	-56.84	9.14	-13.35	-52.63	-13.00	Vertical

GSM Mode Channel 661/1880.0MHz

Frequency (MHz)	P_{Mea} (dBm)	P_{pl} (dB)	G_a (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarity
3760.23	-57.51	4.52	-8.21	-53.82	-13.00	Vertical
5611.81	-61.83	5.46	-10.04	-57.25	-13.00	Horizontal
7539.73	-62.09	6.83	-11.44	-57.48	-13.00	Horizontal
9465.22	-57.96	7.41	-12.60	-52.77	-13.00	Vertical
11245.71	-57.09	8.41	-12.40	-53.10	-13.00	Vertical
13138.04	-53.89	9.22	-13.44	-49.67	-13.00	Vertical

GSM Mode Channel 810/1909.8MHz

Frequency (MHz)	P_{Mea} (dBm)	P_{pl} (dB)	G_a (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarity
3868.02	-61.62	4.53	-8.34	-57.81	-13.00	Vertical
5778.84	-61.77	5.67	-10.11	-57.33	-13.00	Vertical
7654.29	-59.19	6.55	-11.55	-54.19	-13.00	Vertical
9582.80	-59.08	7.90	-12.57	-54.41	-13.00	Vertical
11396.95	-56.43	8.67	-12.40	-52.70	-13.00	Horizontal
13214.77	-53.37	9.10	-13.51	-48.96	-13.00	Vertical

Note: Expanded measurement uncertainty for this test item is U = 4.2 dB, k = 2.

A.3 CONDUCTED EMISSION

Reference

FCC: CFR Part 15.107/207.

The measurement procedure in ANSI C63.4-2009 is used. Conducted Emission is measured with travel charger. The EUT is working under GSM 850/1900MHz traffic mode which is the worst case of conducted emission measurement.

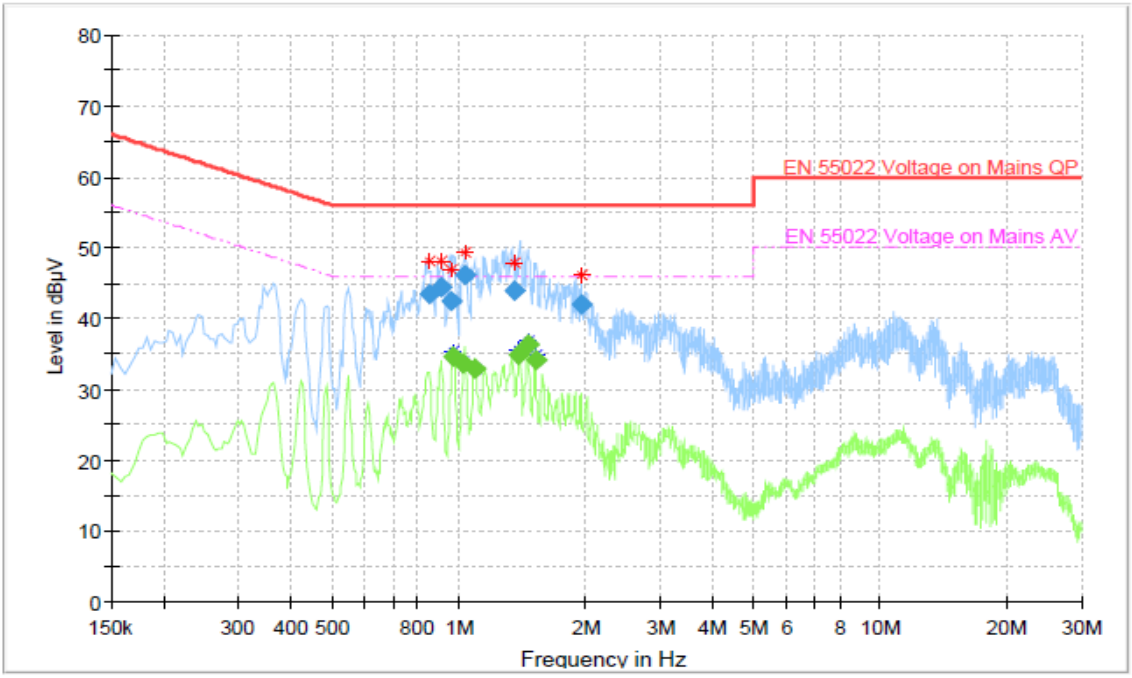
For test layout photo, please refer to Pic.2 in Annex B.

A.3.1 Limit

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi -Peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50
* Decreases with logarithm of the frequency		

A.3.2 Measurement result

GSM 850MHz



IF bandwidth 9 kHz

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

=PK value in pre-measurement

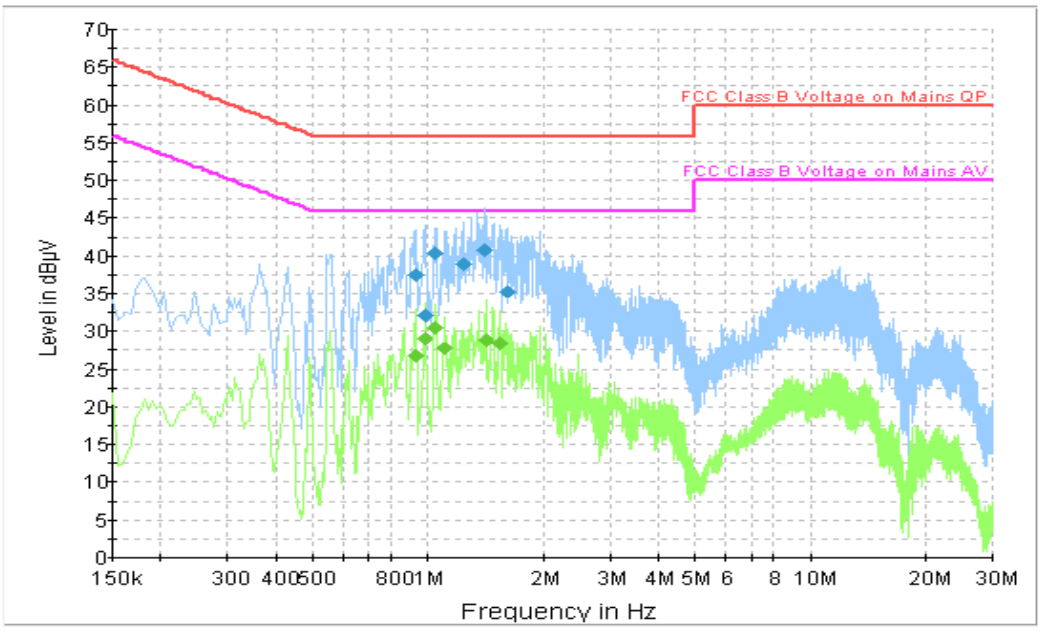
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.853433	43.6	GND	L1	10.1	12.4	56.0
0.908519	44.4	GND	L1	10.1	11.6	56.0
0.962942	42.4	GND	L1	10.1	13.6	56.0
1.034394	46.2	GND	L1	10.1	9.8	56.0
1.349000	44.0	GND	L1	10.1	12.0	56.0
1.947837	41.9	GND	L1	10.1	14.1	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.967260	34.6	GND	L1	10.1	11.4	46.0
1.026538	33.7	GND	L1	10.1	12.3	46.0
1.087365	33.0	GND	L1	10.1	13.0	46.0
1.392413	35.0	GND	L1	10.1	11.0	46.0
1.458577	36.2	GND	L1	10.1	9.8	46.0
1.520740	34.2	GND	L1	10.1	11.8	46.0

PCS 1900MHz



IF bandwidth 9 kHz

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.924000	37.5	GND	L1	9.7	18.5	56.0
0.991500	32.3	GND	L1	9.7	23.7	56.0
1.041000	40.4	GND	L1	9.7	15.6	56.0
1.239000	38.9	GND	L1	9.7	17.1	56.0
1.405500	40.7	GND	L1	9.7	15.3	56.0
1.612500	35.3	GND	L1	9.7	20.7	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.924000	26.7	GND	L1	9.7	19.3	46.0
0.982500	29.0	GND	L1	9.7	17.0	46.0
1.041000	30.5	GND	L1	9.7	15.5	46.0
1.108500	27.7	GND	L1	9.7	18.3	46.0
1.414500	28.8	GND	L1	9.7	17.2	46.0
1.536000	28.4	GND	L1	9.7	17.6	46.0

Note: The maximum value of expanded measurement uncertainty for this test item is U = 2.9 dB, k=2.

A.4 FREQUENCY STABILITY

Reference

FCC: CFR Part 2.1055, 22.355, 24.235.

A.4.1 Method of Measurement

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of R&S CMU200 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30℃.
3. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on channel 661 for PCS 1900, channel 190 for GSM850 measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10℃ increments from -30℃ to +50℃. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50℃.
7. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 ℃ increments from +50℃ to -30℃. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

A.4.2 Measurement Limit

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d) (2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.6VDC and 4.2VDC, with a nominal voltage of 4.2VDC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance from -5.4% to 10.8%. For the purposes of measuring frequency stability these voltage limits are to be used.

A.4.3 Measurement results

GSM 850

Room Temperature: 24 ℃

Frequency Error vs Voltage

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
4.2	10	0.012
3.8	11	0.013
3.6	8	0.010

Frequency Error vs Temperature

Temperature(℃)	Frequency error(Hz)	Frequency error(ppm)
50°	10	0.012
40°	7	0.008
30°	8	0.010
20°	11	0.013
10°	9	0.011
0°	14	0.017
- 10°	12	0.014
- 20°	7	0.008
- 30°	10	0.012

Expanded measurement uncertainty for this test item is 10 Hz, *k*=2

PCS 1900

Room Temperature: 24℃

Frequency Error vs Voltage

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.8	95	0.051
4.2	55	0.029
3.6	60	0.032

Frequency Error vs Temperature

Temperature(℃)	Frequency error(Hz)	Frequency error(ppm)
50°	55	0.029
40°	149	0.079
30°	122	0.065
20°	60	0.032
10°	57	0.030
0°	62	0.033
- 10°	61	0.033
- 20°	55	0.029
- 30°	59	0.031

Expanded measurement uncertainty for this test item is 10 Hz, k = 2.

A.5 OCCUPIED BANDWIDTH

Reference

FCC: CFR Part 2.1049(h)(i).

A.5.1 Occupied Bandwidth Results

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 the US Cellular/PCS frequency bands. The table below lists the measured 99% BW. Spectrum analyzer plots are included on the following pages.

Measurement Parameters:

RBW = 5 kHz, VBW = 20 kHz

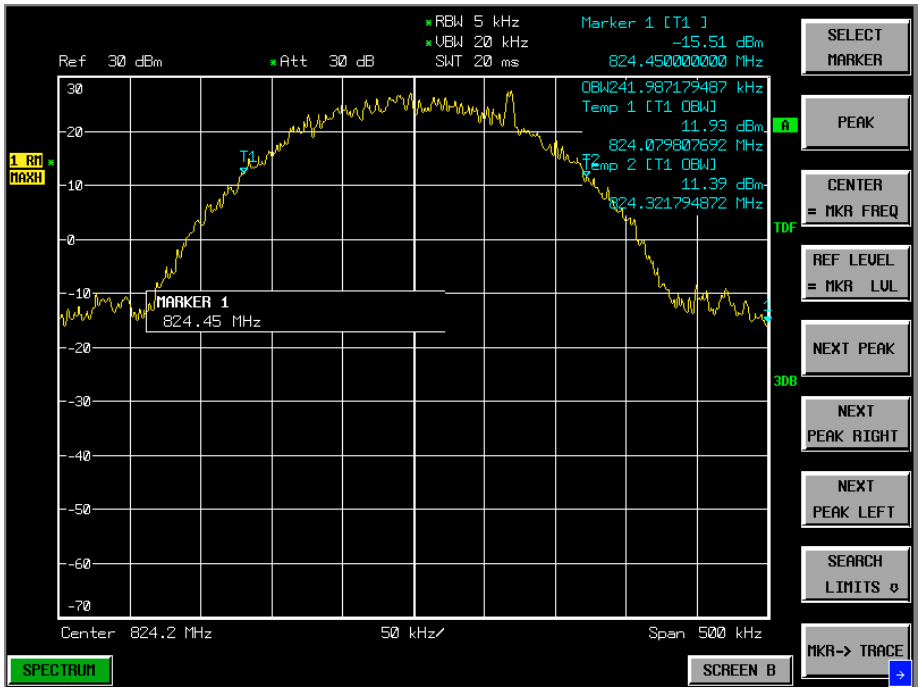
GSM 850(99% BW) per FCC rules

Frequency(MHz)	Occupied Bandwidth (99% BW)(kHz)
824.2	241.987
836.6	246.794
848.8	242.788

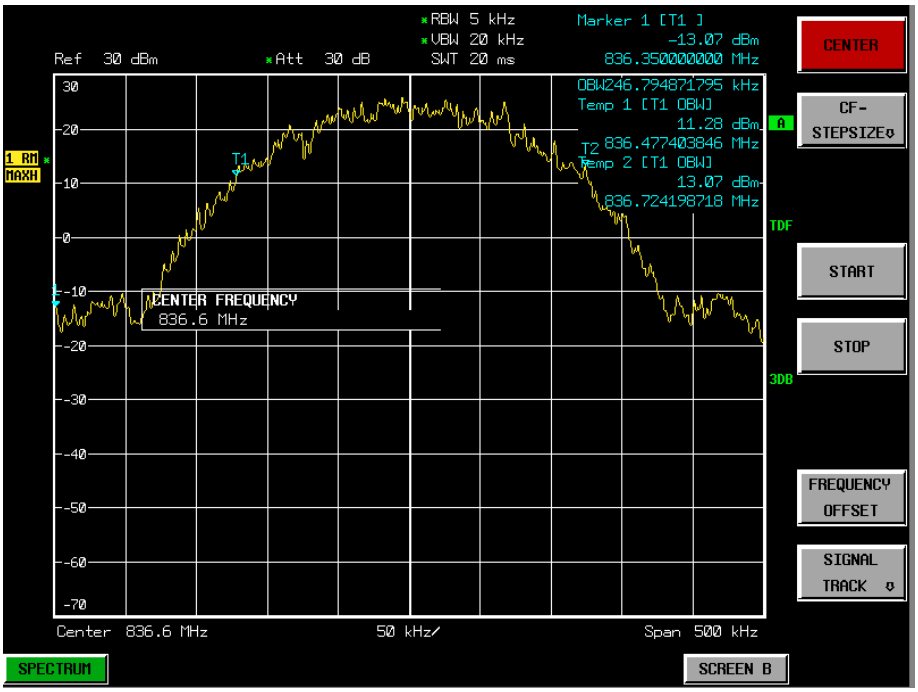
Expanded measurement uncertainty for this test item is 1.1 kHz, *k*=2.

GSM 850

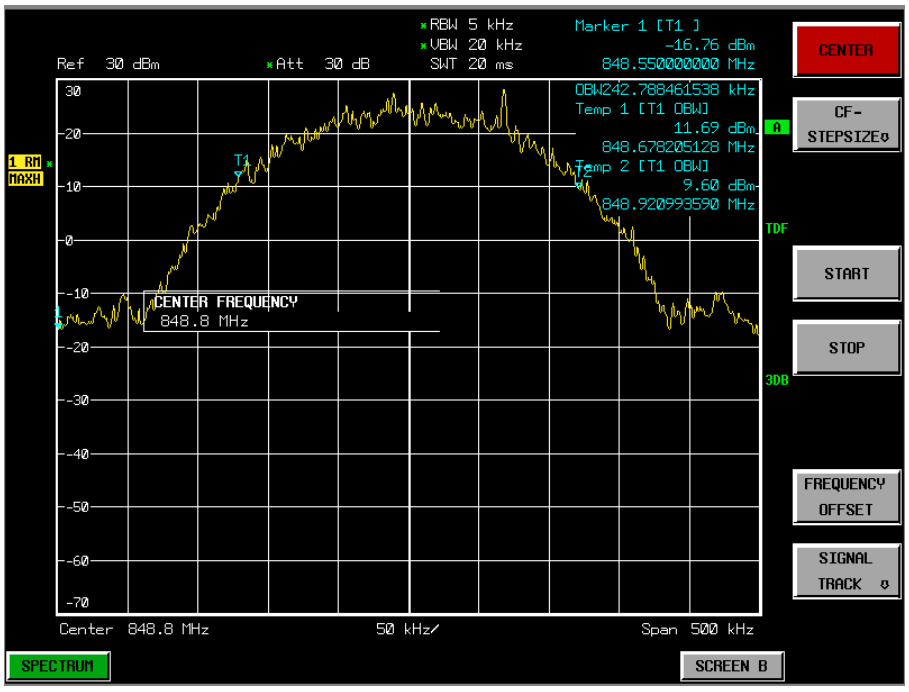
Channel 128-Occupied Bandwidth (99% BW)



Channel 190-Occupied Bandwidth (99% BW)



Channel 251-Occupied Bandwidth (99% BW)



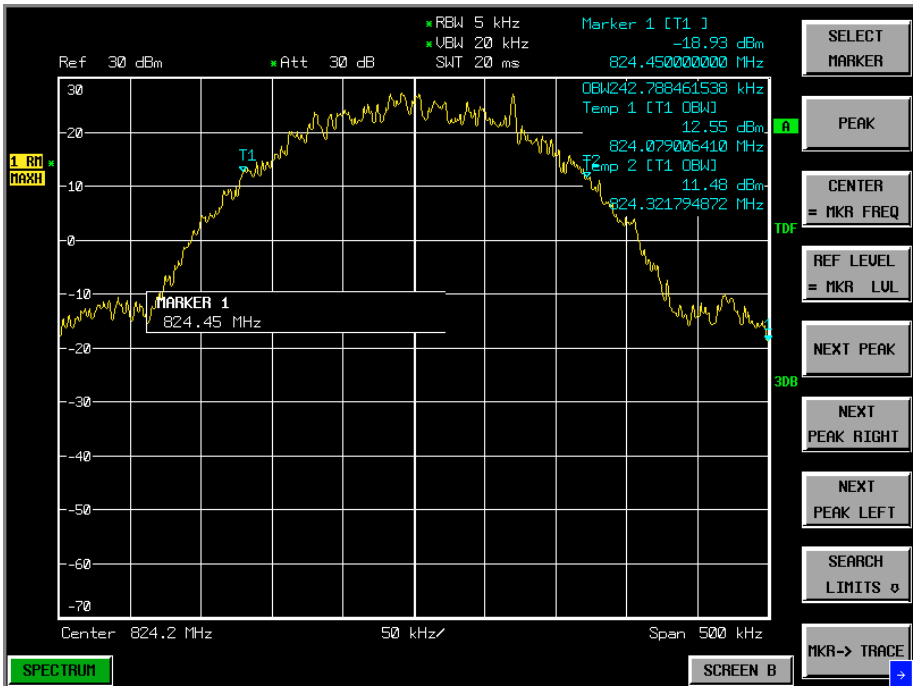
GPRS 850(99% BW) per FCC rules

Frequency(MHz)	Occupied Bandwidth (99% BW)(kHz)
824.2	242.788
836.6	241.185
848.8	245.192

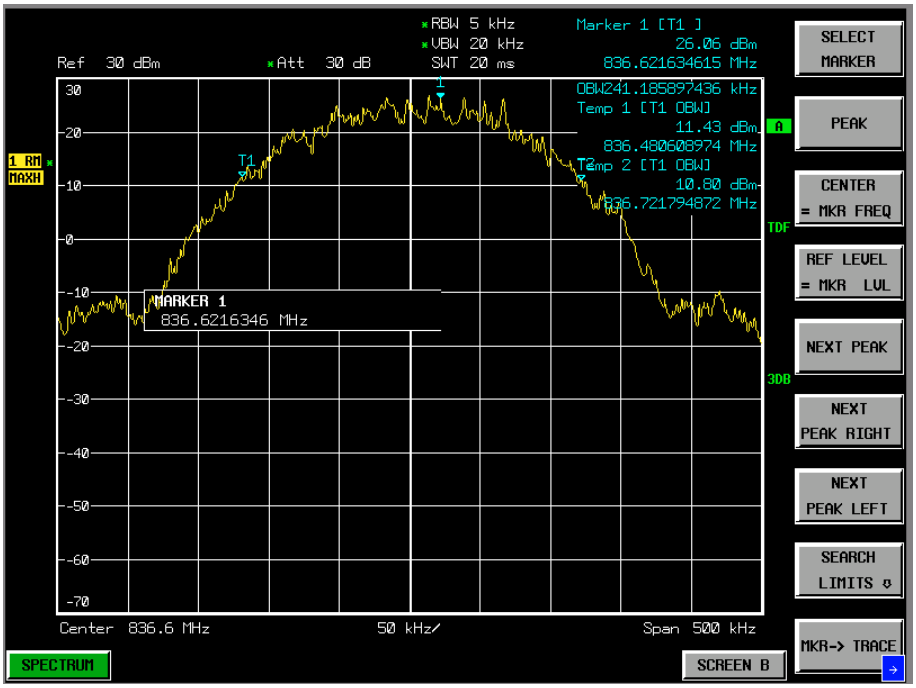
Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

GPRS 850

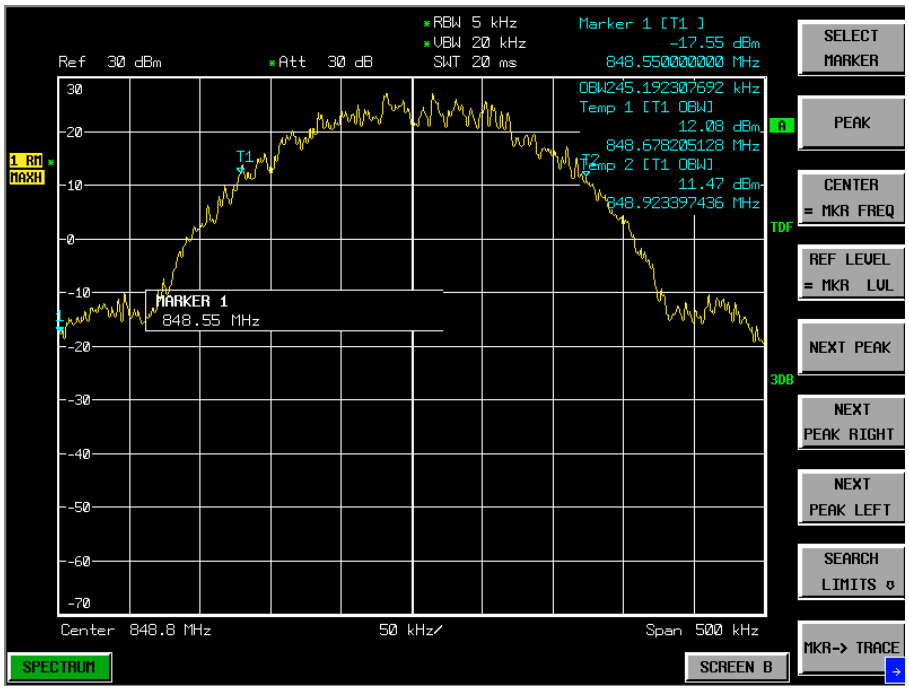
Channel 128-Occupied Bandwidth (99% BW)



Channel 190-Occupied Bandwidth (99% BW)



Channel 251-Occupied Bandwidth (99% BW)



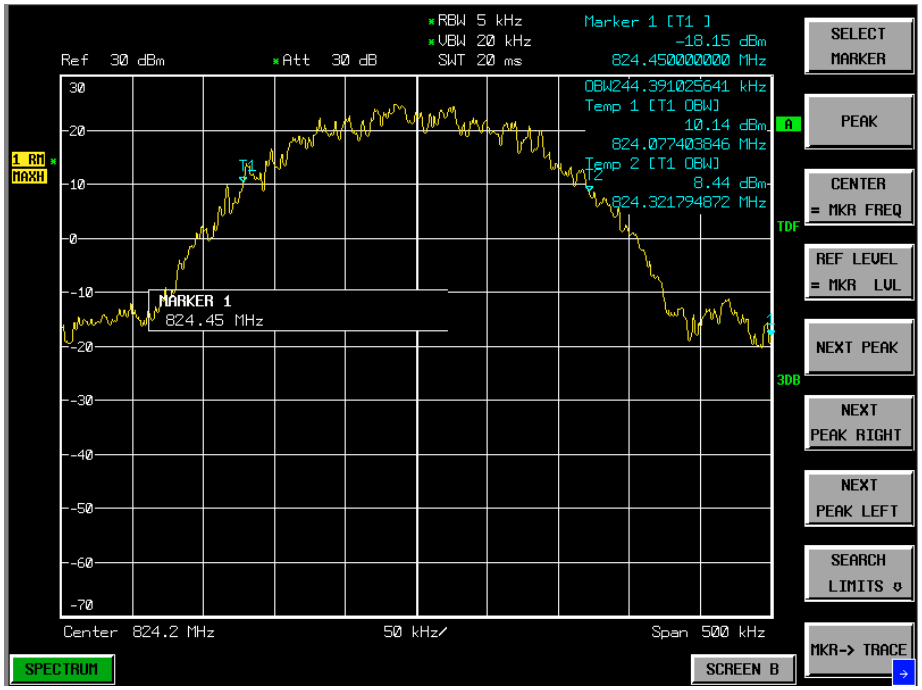
EGPRS 850(99% BW) per FCC rules

Frequency(MHz)	Occupied Bandwidth (99% BW)(kHz)
824.2	244.391
836.6	243.589
848.8	245.192

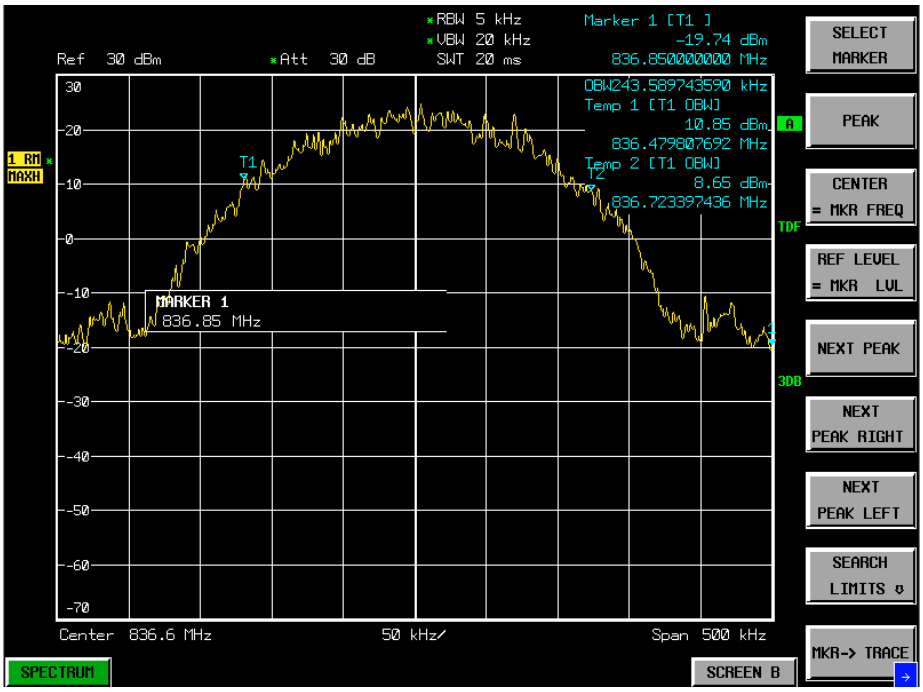
Expanded measurement uncertainty for this test item is 1.1 kHz, *k*=2

EGPRS 850

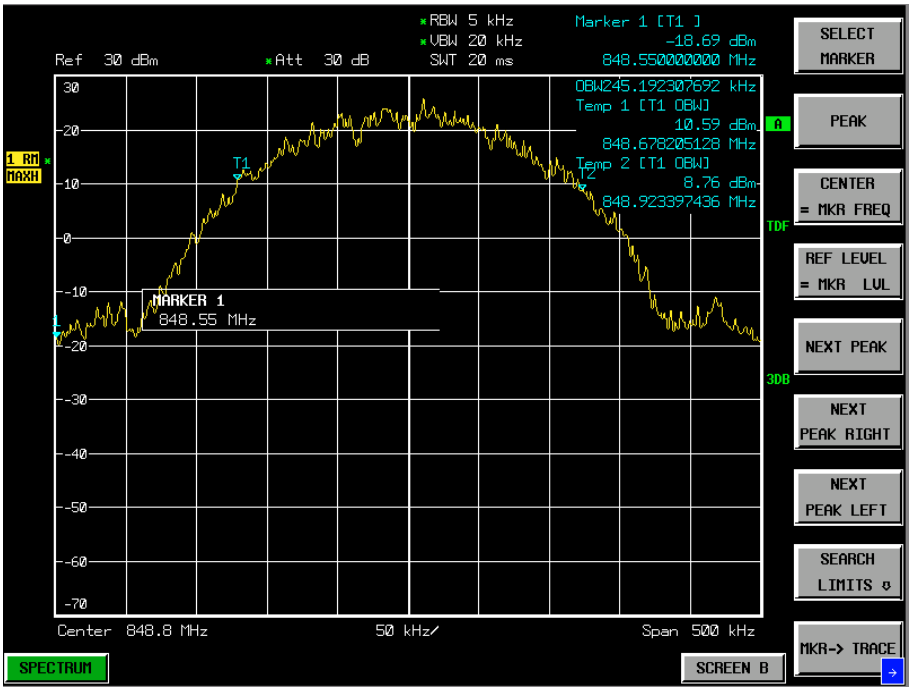
Channel 128-Occupied Bandwidth (99% BW)



Channel 190-Occupied Bandwidth (99% BW)



Channel 251-Occupied Bandwidth (99% BW)



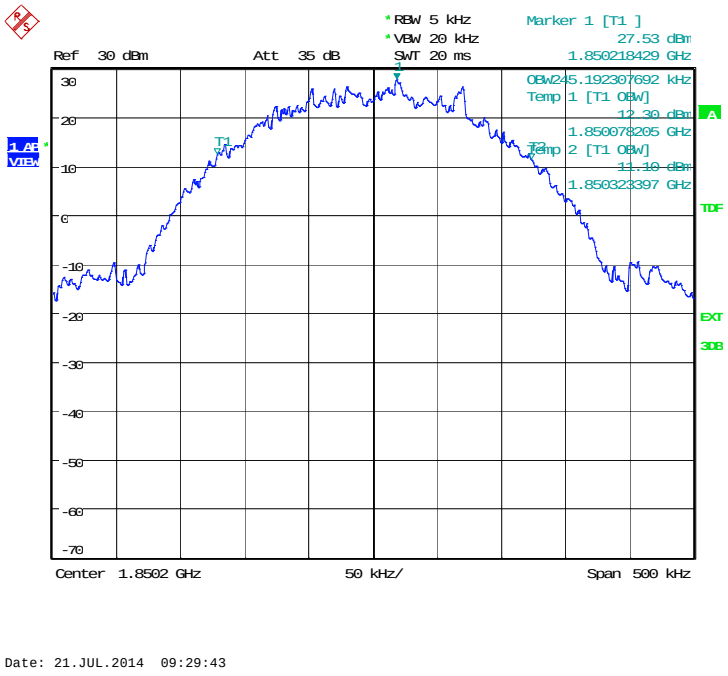
PCS 1900(99% BW) per FCC rules

Frequency(MHz)	Occupied Bandwidth (99% BW)(kHz)
1850.2	245.192
1880.0	244.391
1909.8	245.994

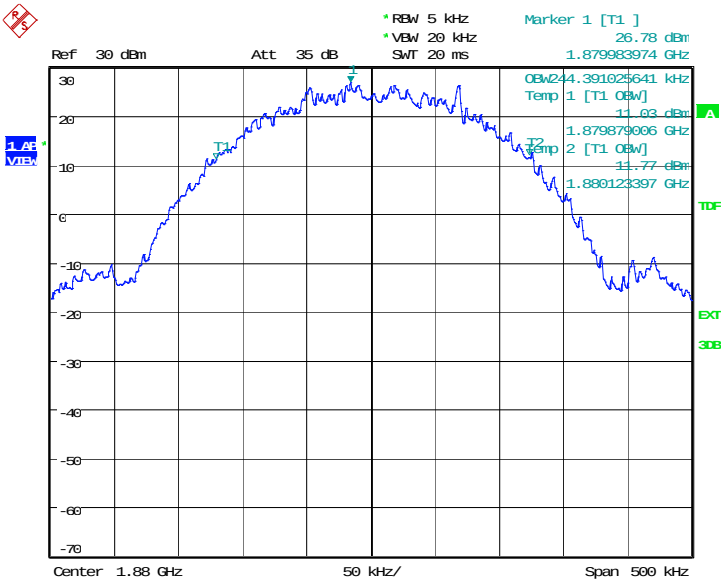
Expanded measurement uncertainty for this test item is 1.1 kHz, *k*=2

PCS 1900

Channel 512-Occupied Bandwidth (99% BW)

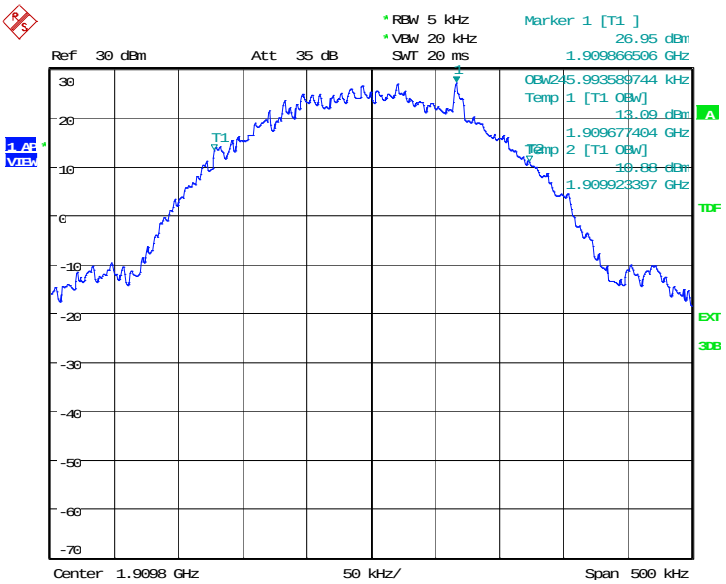


Channel 661-Occupied Bandwidth (99% BW)



Date: 21.JUL.2014 09:30:15

Channel 810-Occupied Bandwidth (99% BW)



Date: 21.JUL.2014 09:30:47

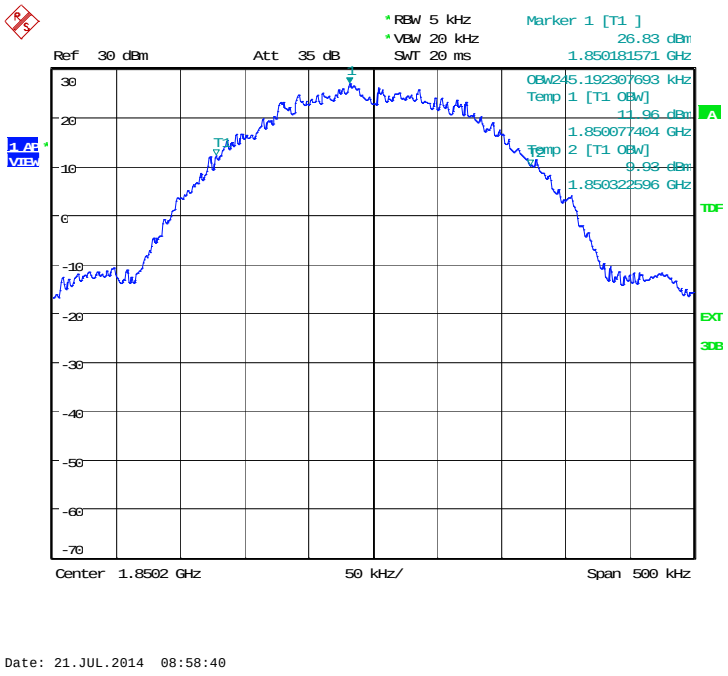
GPRS 1900(99% BW) per FCC rules

Frequency(MHz)	Occupied Bandwidth (99% BW)(kHz)
1850.2	245.192
1880.0	241.987
1909.8	241.987

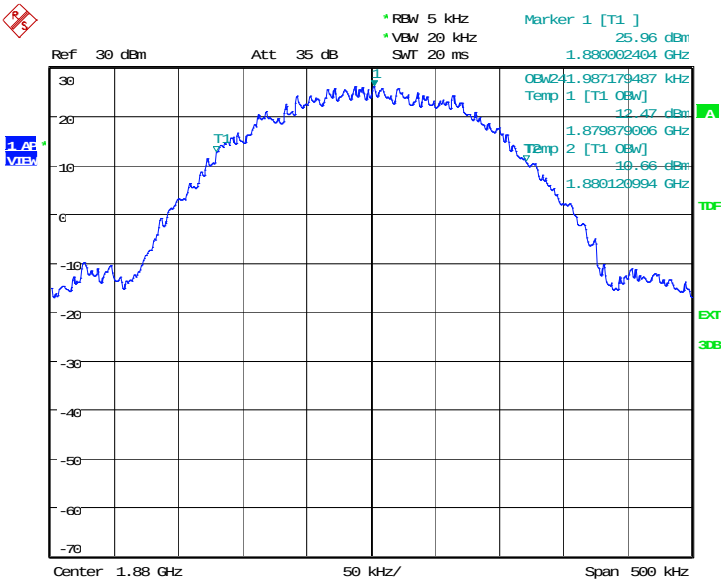
Expanded measurement uncertainty for this test item is 1.1 kHz, *k*=2

GPRS 1900

Channel 512-Occupied Bandwidth 99% BW)

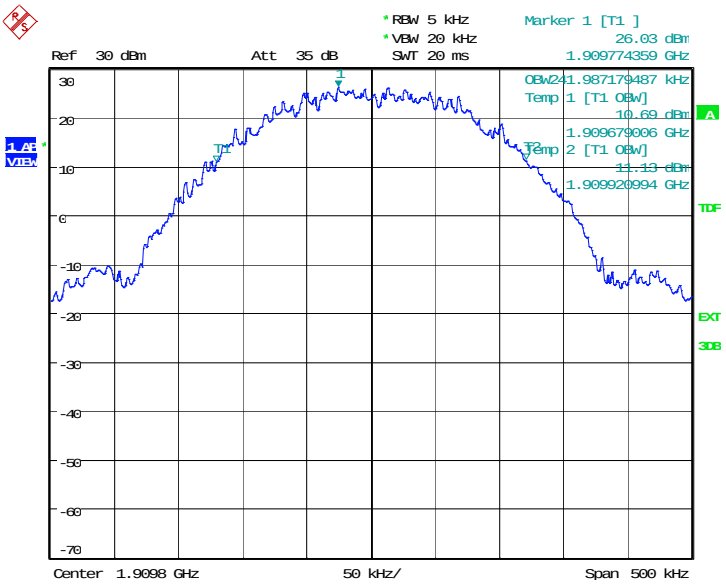


Channel 661-Occupied Bandwidth (99% BW)



Date: 21.JUL.2014 08:59:12

Channel 810-Occupied Bandwidth (99% BW)



Date: 21.JUL.2014 08:59:45

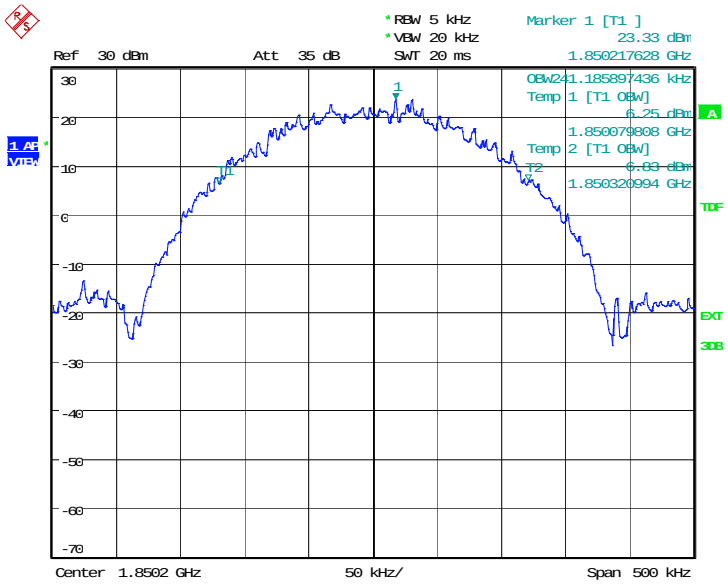
EGPRS 1900(99% BW) per FCC rules

Frequency(MHz)	Occupied Bandwidth (99% BW)(kHz)
1850.2	241.186
1880.0	242.788
1909.8	245.994

Expanded measurement uncertainty for this test item is 1.1 kHz, *k*=2

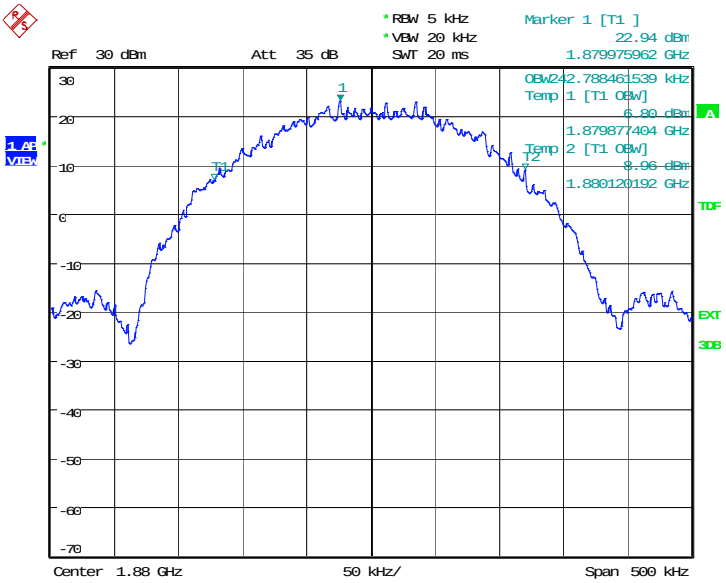
EGPRS 1900

Channel 512-Occupied Bandwidth (99% BW)



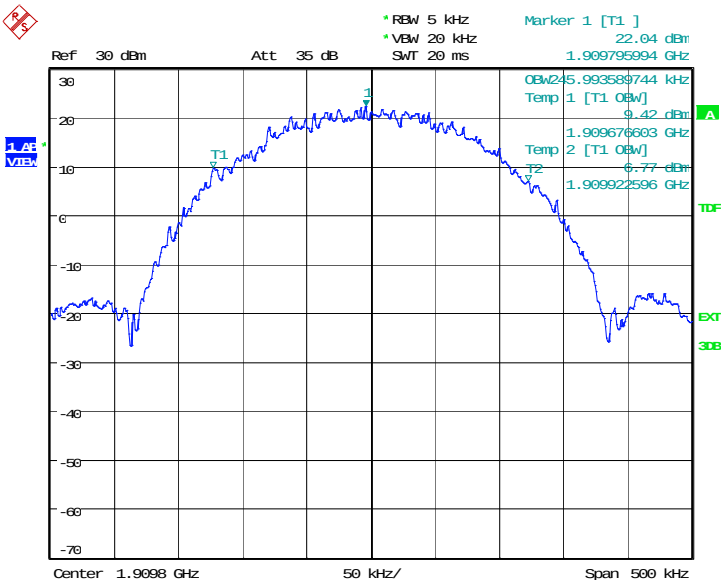
Date: 21.JUL.2014 09:17:38

Channel 661-Occupied Bandwidth (99% BW)



Date: 21.JUL.2014 09:18:10

Channel 810-Occupied Bandwidth (99% BW)



Date: 21.JUL.2014 09:18:42

A.6 EMISSION BANDWIDTH

Reference

FCC: CFR Part 22.917(b), 24.238(b).

A.6.1Emission Bandwidth Results

Emission 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 the PCS1900 band and GSM850 band. Table below lists the measured 100% BW. Spectrum analyzer plots are included on the following pages.

Measurement Parameters:

RBW = 5 kHz, VBW = 20 kHz

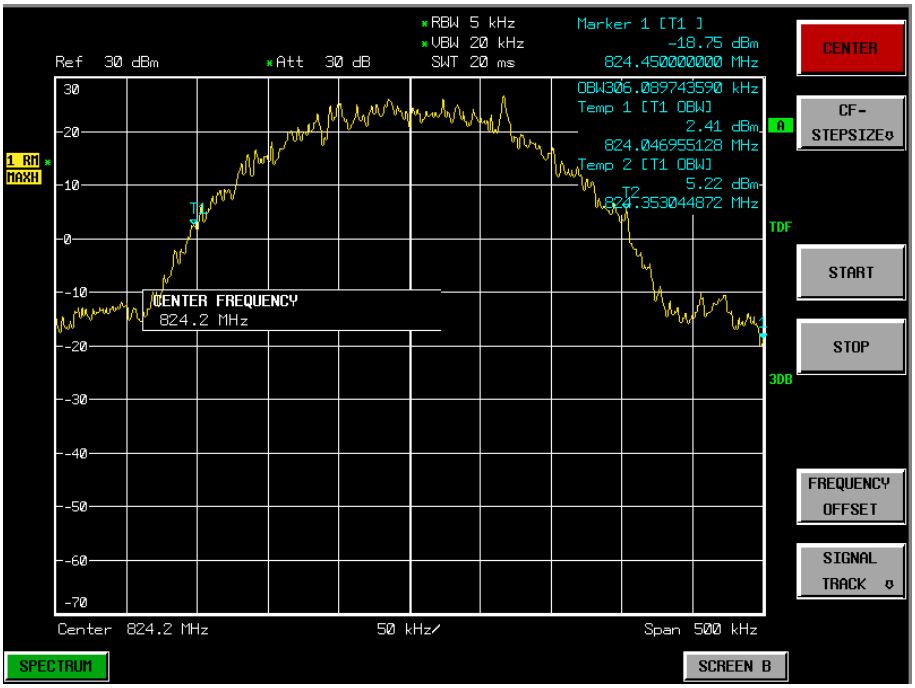
GSM 850(100% BW)

Frequency(MHz)	Occupied Bandwidth (100% BW)(kHz)
824.2	306.089
836.6	306.891
848.8	306.089

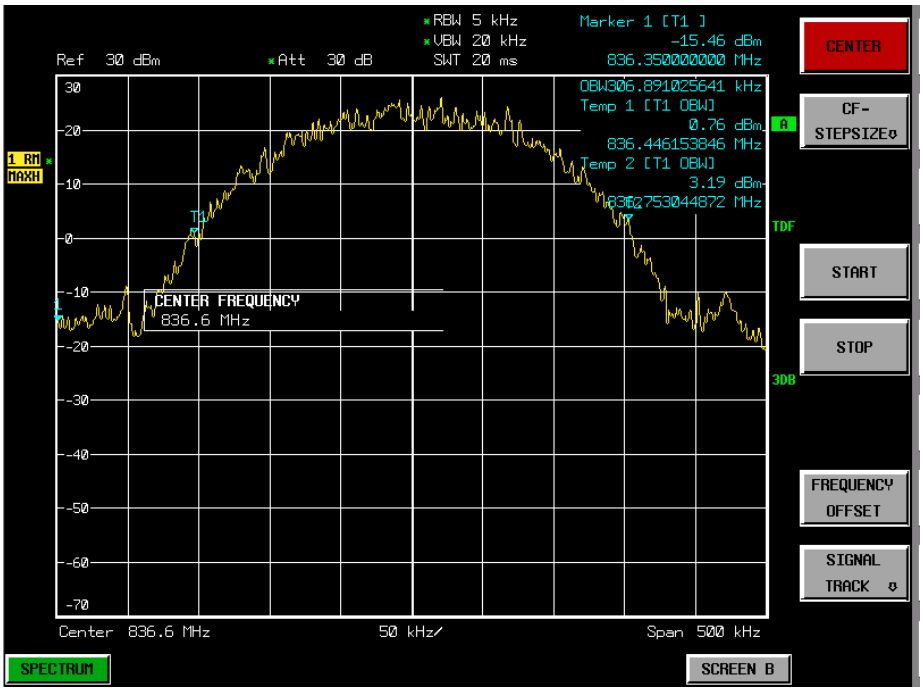
Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

GSM 850

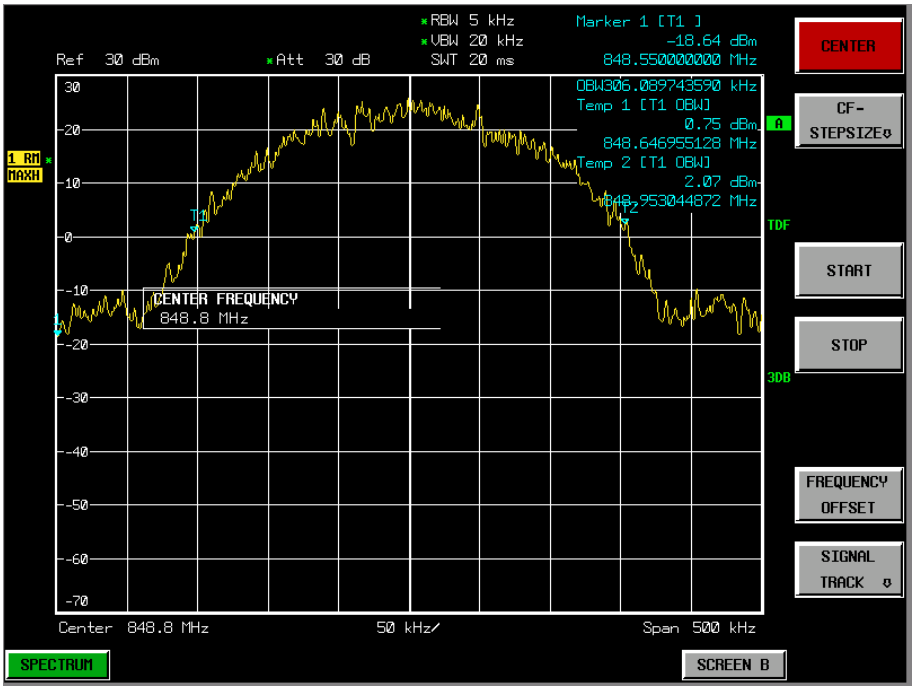
Channel 128-Occupied Bandwidth (100% BW)



Channel 190-Occupied Bandwidth (100% BW)



Channel 251-Occupied Bandwidth (100% BW)



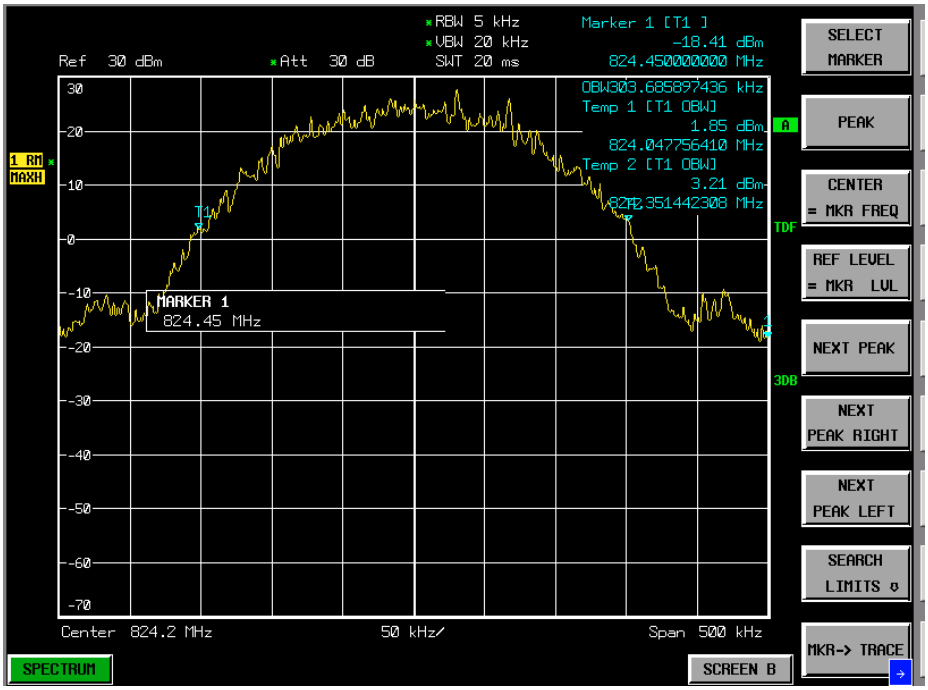
GPRS 850(100% BW)

Frequency(MHz)	Occupied Bandwidth (100% BW)(kHz)
824.2	303.685
836.6	306.089
848.8	305.288

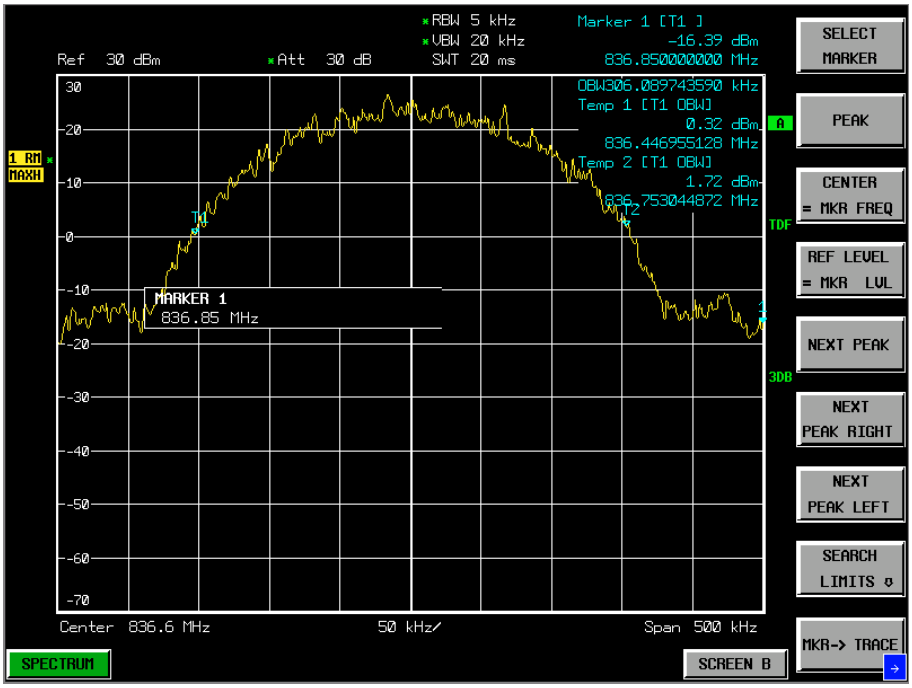
Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

GPRS 850

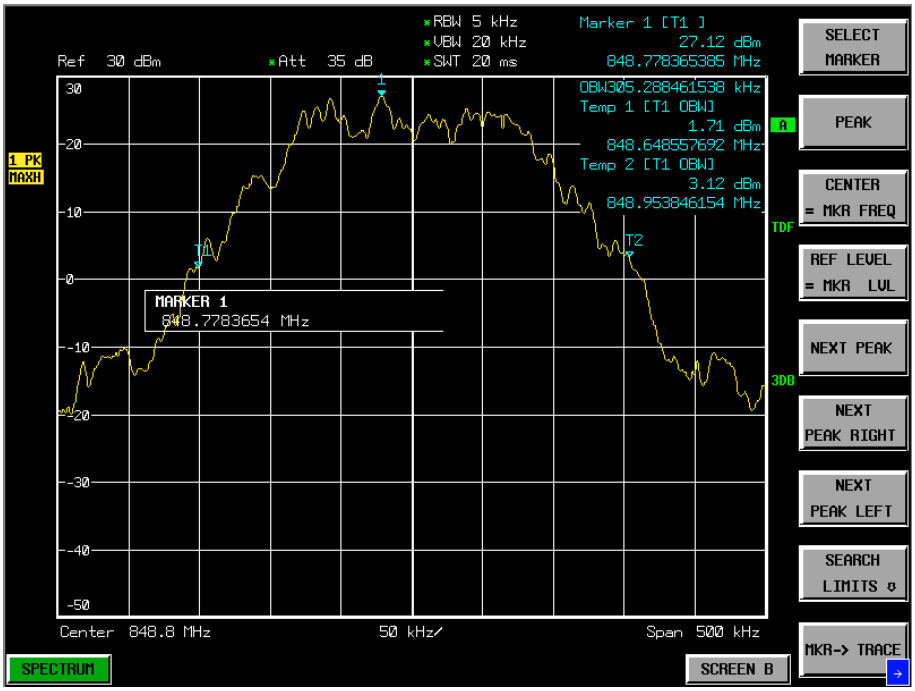
Channel 128-Occupied Bandwidth (100% BW)



Channel 190-Occupied Bandwidth (100% BW)



Channel 251-Occupied Bandwidth (100% BW)



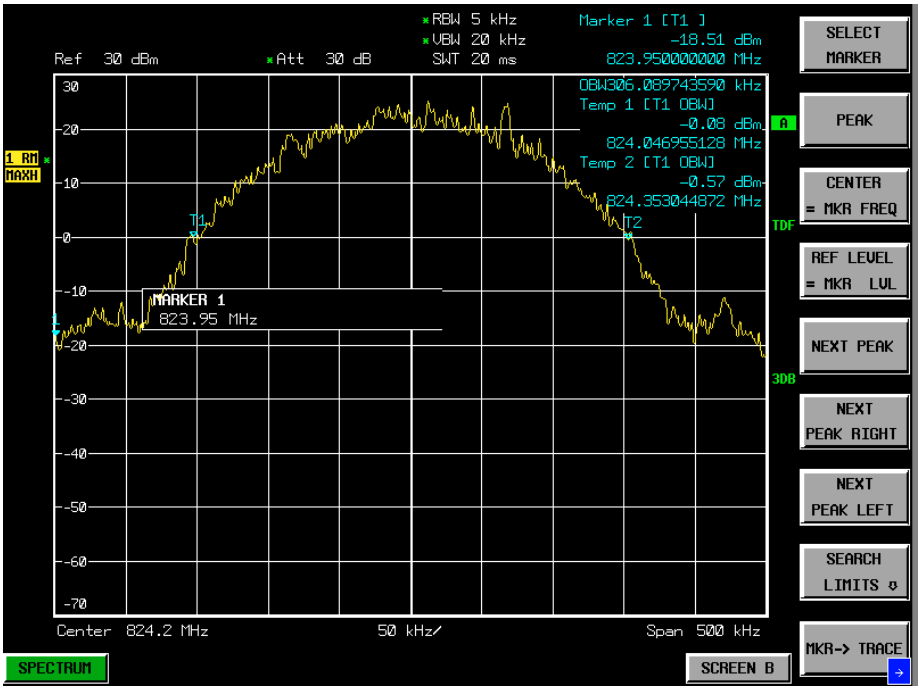
EGPRS 850(100%)

Frequency(MHz)	Occupied Bandwidth (100% BW)(kHz)
824.2	306.089
836.6	304.487
848.8	306.089

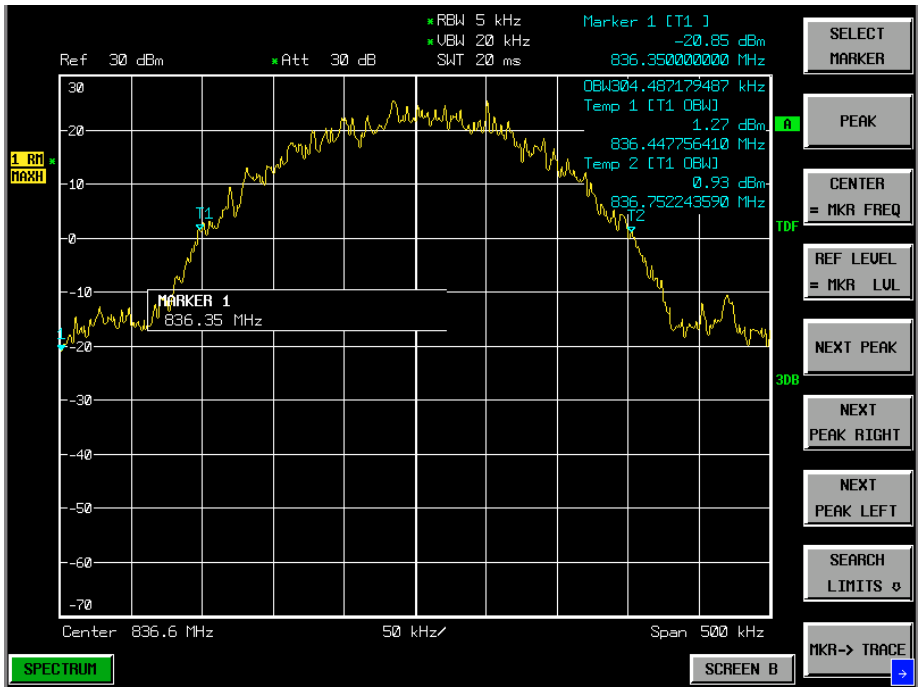
Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

EGPRS 850

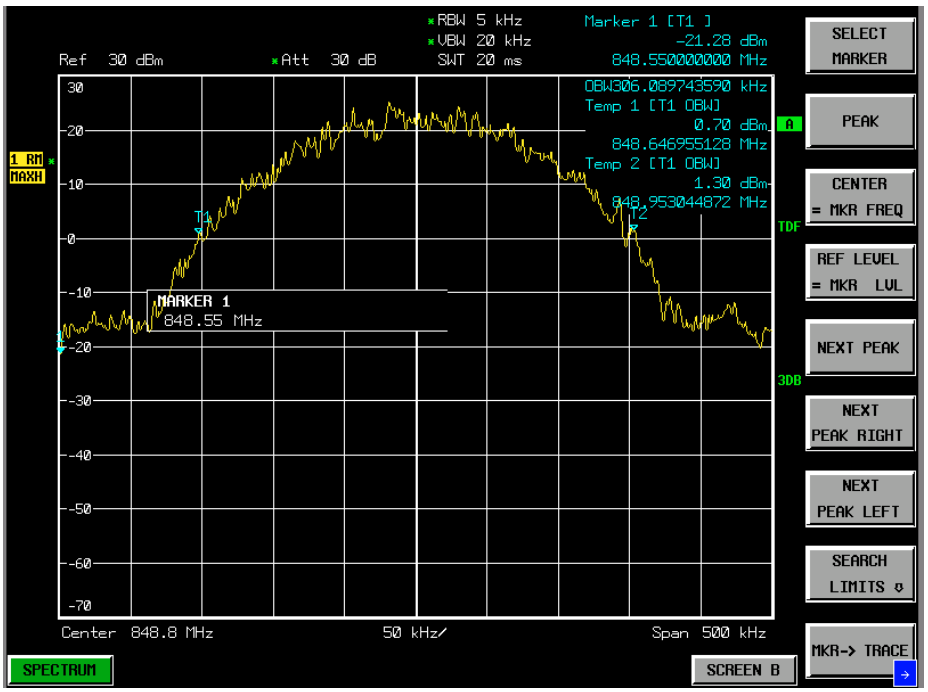
Channel 128-Occupied Bandwidth (100% BW)



Channel 190-Occupied Bandwidth (100% BW)



Channel 251-Occupied Bandwidth (100% BW)



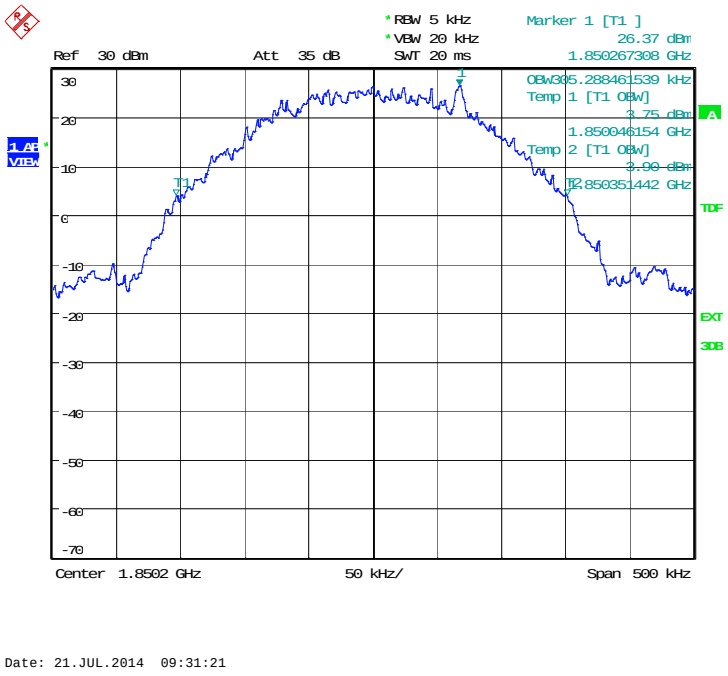
PCS 1900(100% BW)

Frequency(MHz)	Occupied Bandwidth (100% BW)(kHz)
1850.2	305.288
1880.0	306.090
1909.8	306.090

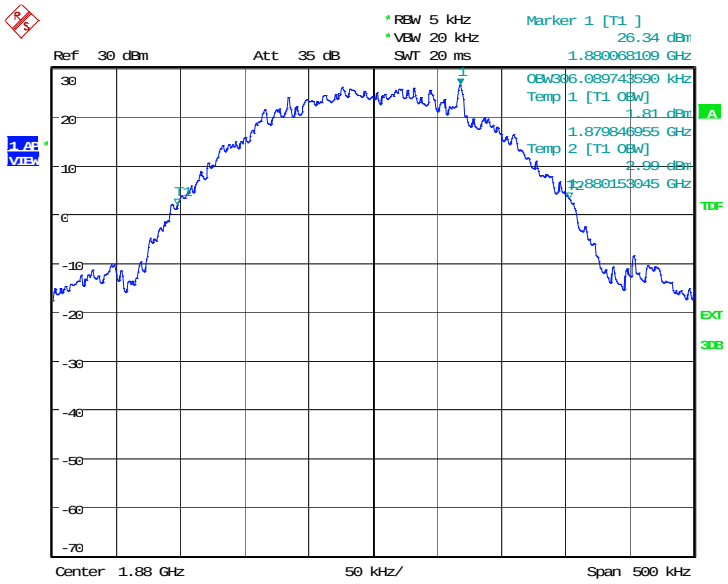
Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

PCS 1900

Channel 512-Occupied Bandwidth (100% BW)

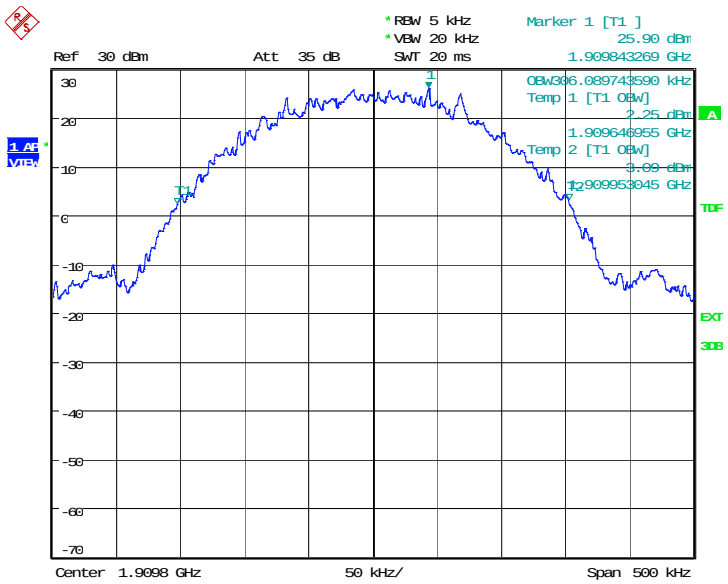


Channel 661-Occupied Bandwidth (100% BW)



Date: 21.JUL.2014 09:31:53

Channel 810-Occupied Bandwidth (100% BW)



Date: 21.JUL.2014 09:32:25

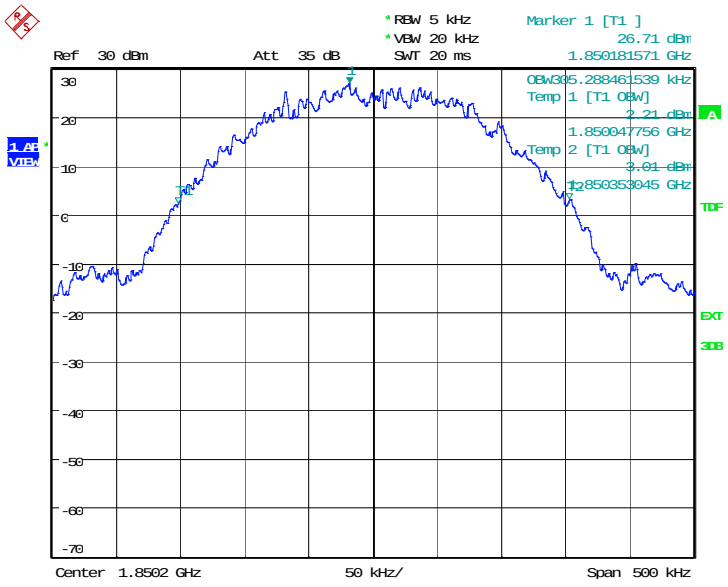
GPRS 1900(100%)

Frequency(MHz)	Occupied Bandwidth (100% BW)(kHz)
1850.2	305.288
1880.0	305.288
1909.8	305.288

Expanded measurement uncertainty for this test item is 1.1 kHz, *k*=2

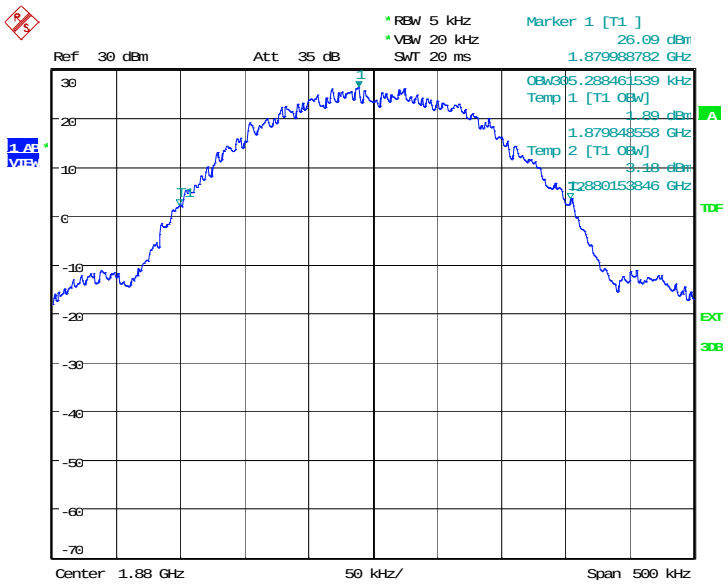
GPRS 1900

Channel 512-Occupied Bandwidth (100% BW)



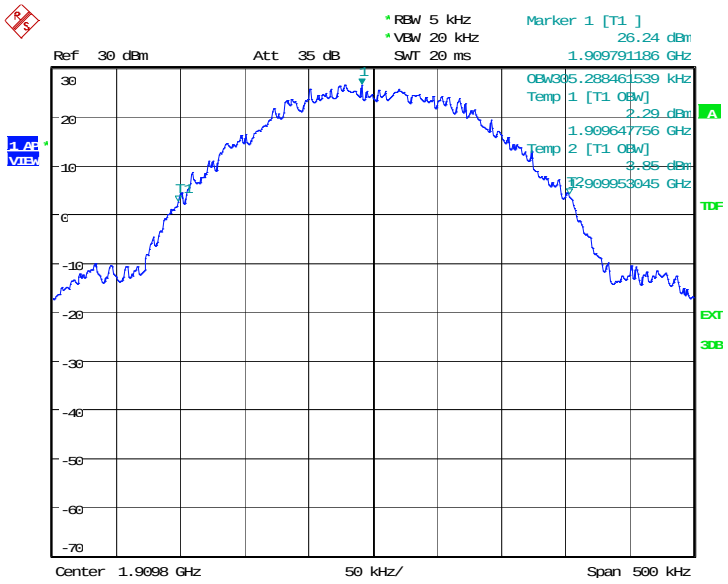
Date: 21.JUL.2014 09:00:18

Channel 661-Occupied Bandwidth (100% BW)



Date: 21.JUL.2014 09:00:50

Channel 810-Occupied Bandwidth (100% BW)



Date: 21.JUL.2014 09:01:22

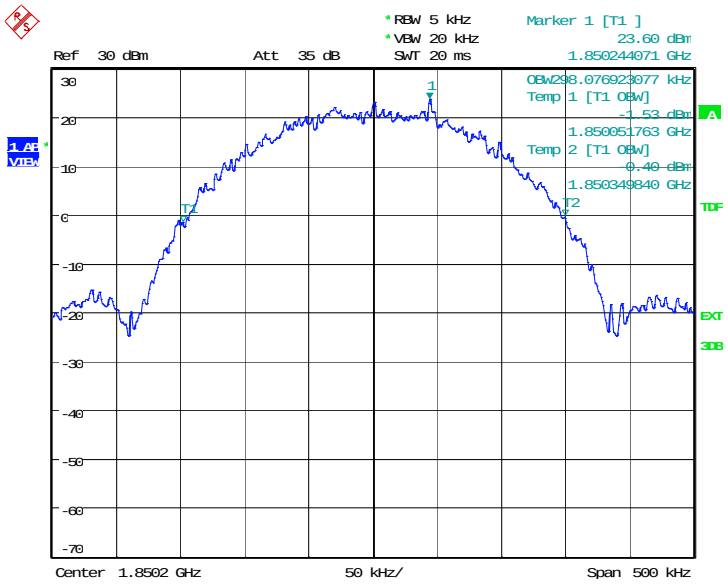
EGPRS 1900(100% BW)

Frequency(MHz)	Occupied Bandwidth (100% BW)(kHz)
1850.2	298.077
1880.0	299.679
1909.8	299.679

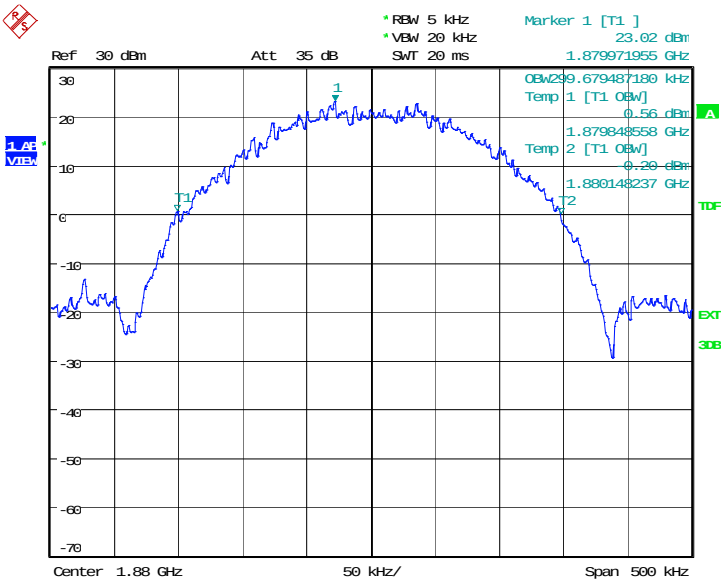
Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

EGPRS 1900

Channel 512-Occupied Bandwidth (100% BW)

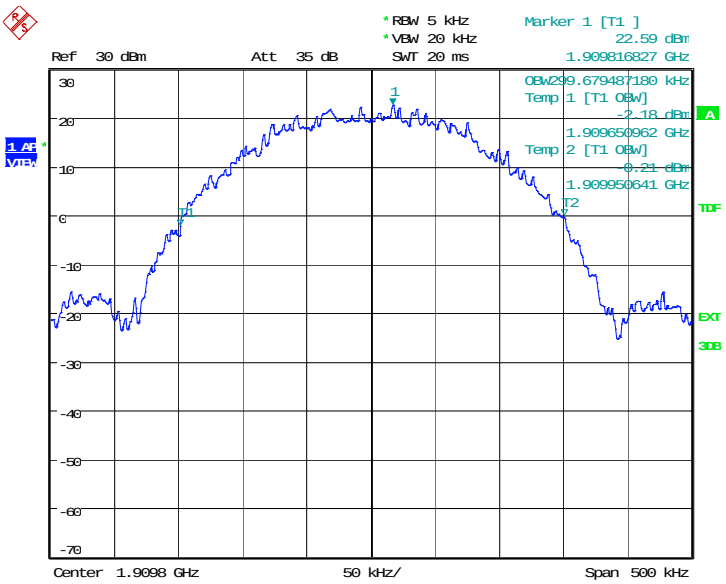


Channel 661-Occupied Bandwidth (100% BW)



Date: 21.JUL.2014 09:19:48

Channel 810-Occupied Bandwidth (100% BW)



Date: 21.JUL.2014 09:20:20

A.7 BAND EDGE COMPLIANCE

Reference

FCC: CFR Part 22.917(b), 24.238(b).

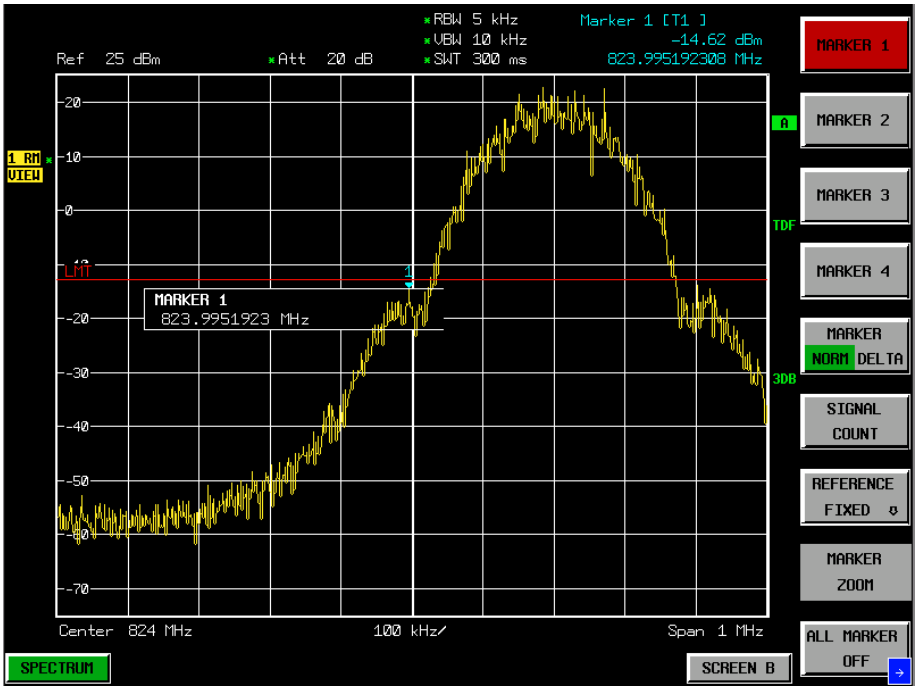
A.7.1 Measurement limit

On any frequency outside frequency band of the US Cellular/PCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log (P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

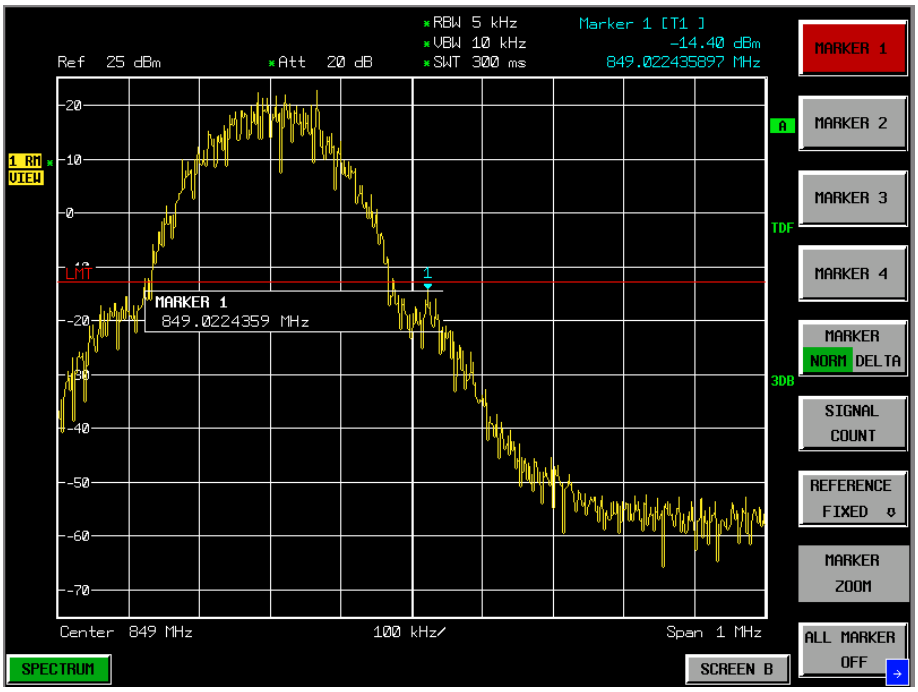
A.7.2 Measurement result

GSM 850

LOW BAND EDGE BLOCK-A (GSM850)-Channel 128

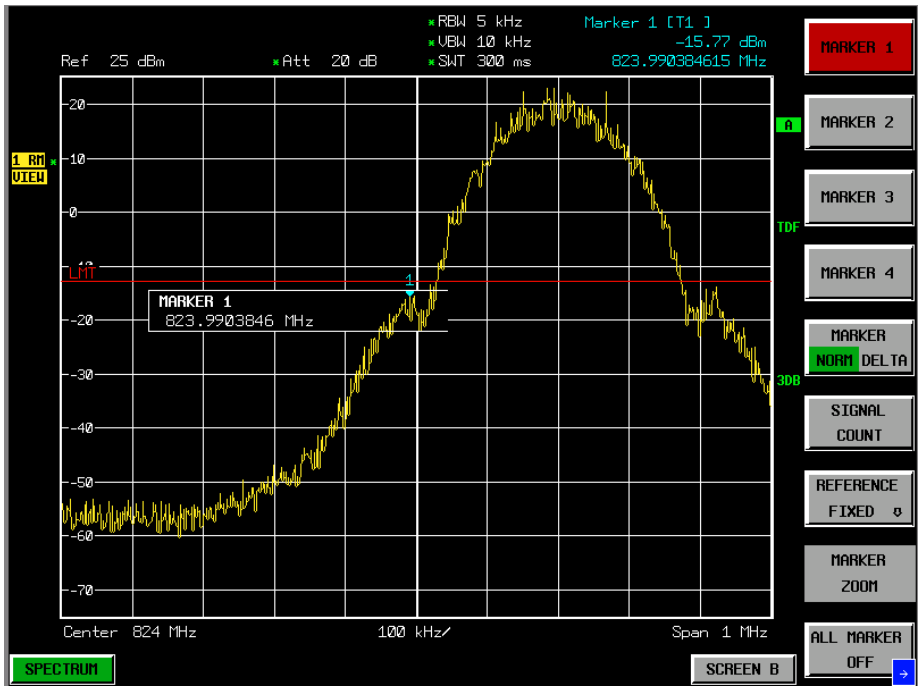


HIGH BAND EDGE BLOCK-C (GSM850) –Channel 251

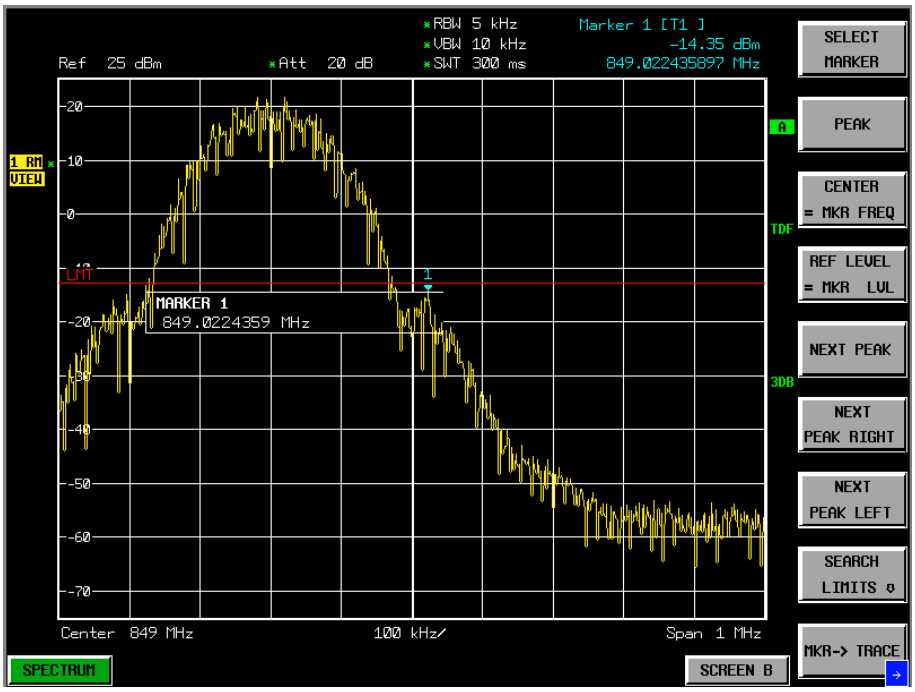


GPRS 850

LOW BAND EDGE BLOCK-A (GSM850)-Channel 128

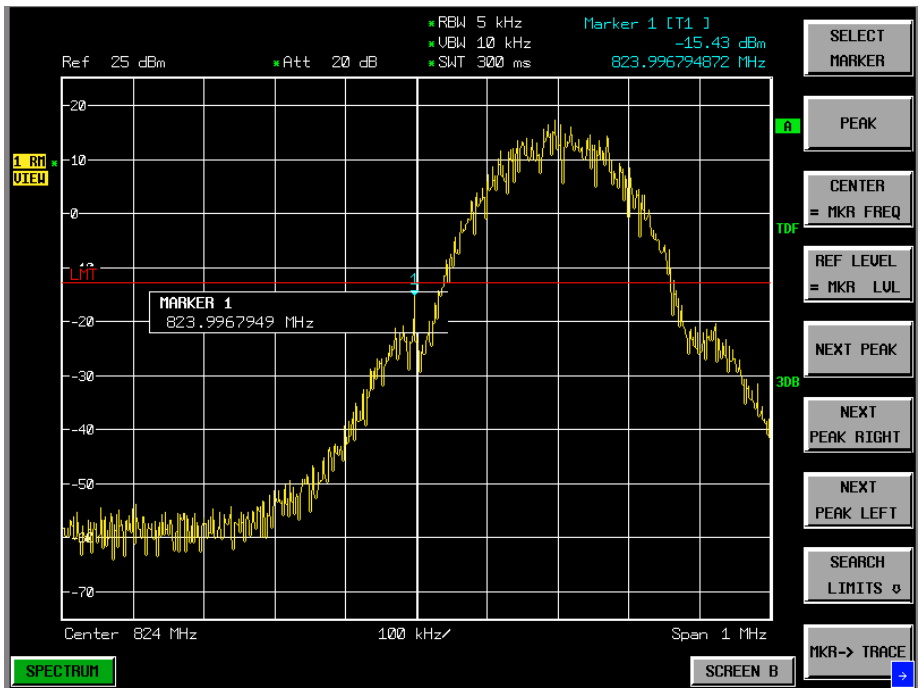


HIGH BAND EDGE BLOCK-C (GSM850) –Channel 251

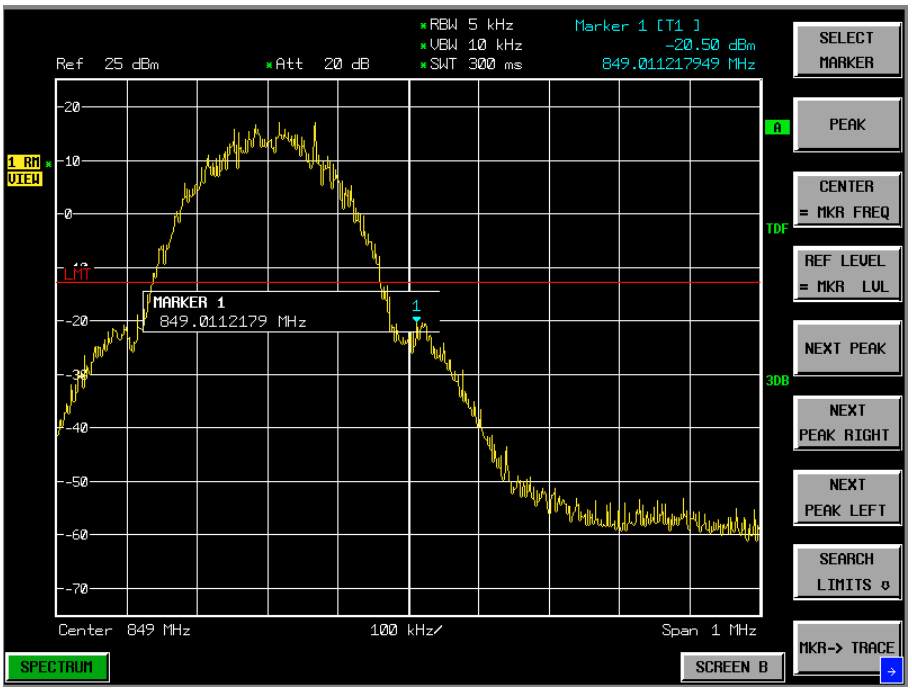


EGPRS 850-8PSK

LOW BAND EDGE BLOCK-A (GSM850)-Channel 128

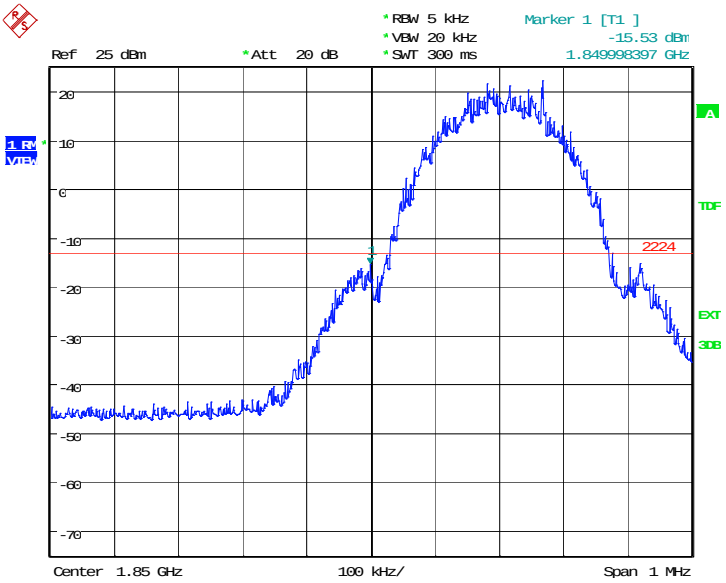


HIGH BAND EDGE BLOCK-C (GSM850) –Channel 251



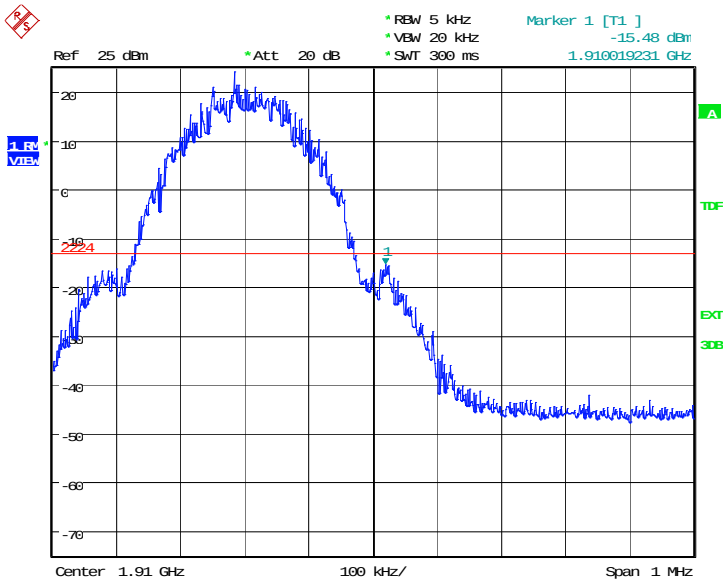
PCS 1900

LOW BAND EDGE BLOCK-A (PCS-1900)-Channel 512



Date: 21.JUL.2014 09:32:39

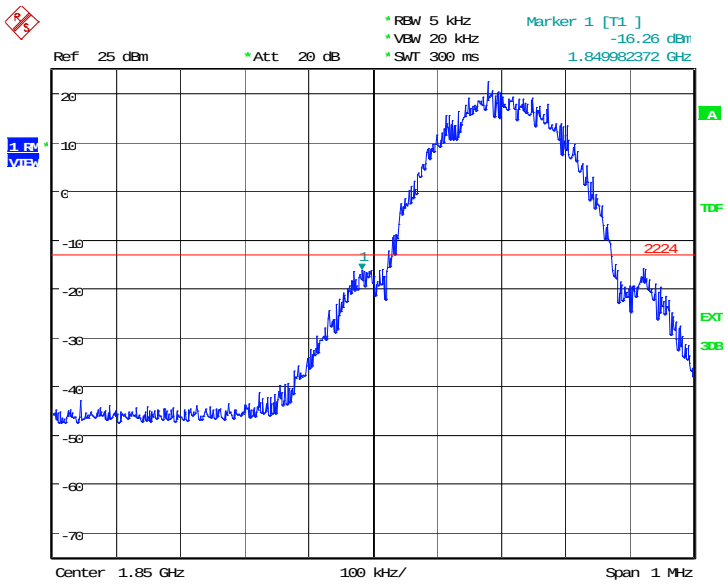
HIGH BAND EDGE BLOCK-C (PCS-1900) –Channel 810



Date: 21.JUL.2014 09:32:53

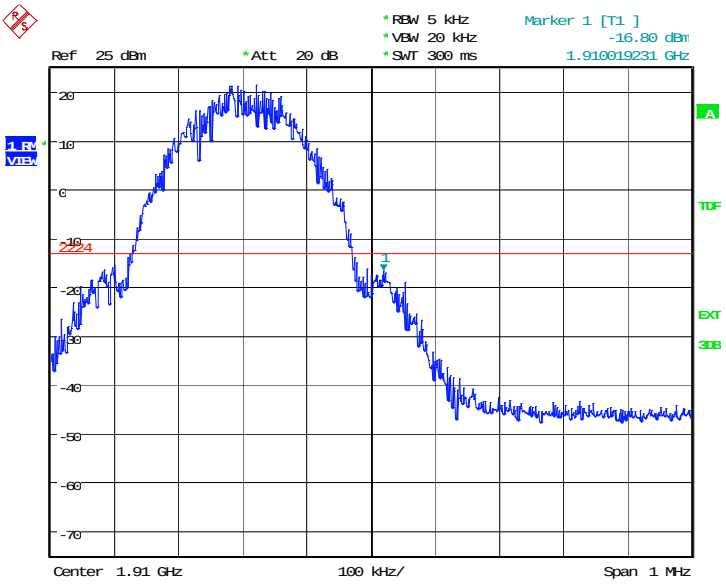
GPRS 1900

LOW BAND EDGE BLOCK-A (PCS-1900)-Channel 512



Date: 21.JUL.2014 09:01:36

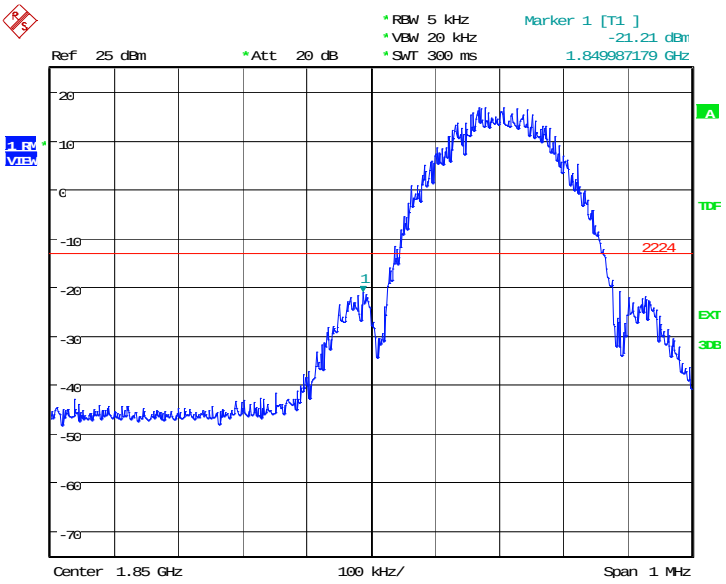
HIGH BAND EDGE BLOCK-C (PCS-1900) –Channel 810



Date: 21.JUL.2014 09:01:50

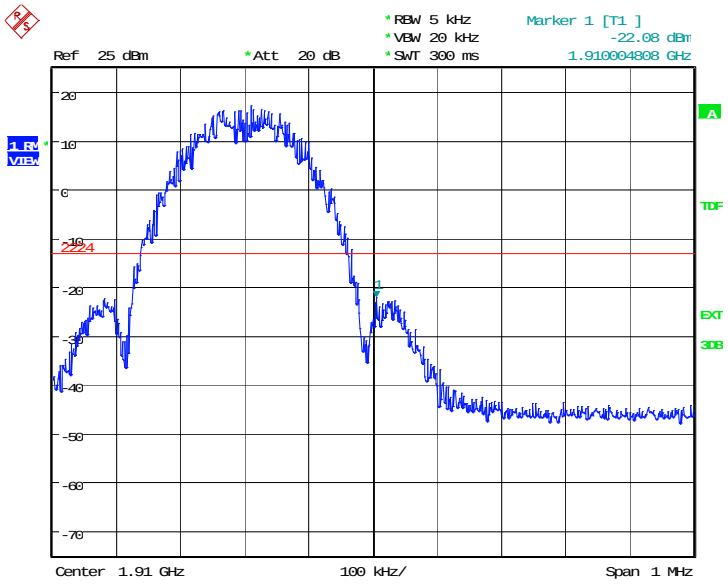
EGPRS 1900-8PSK

LOW BAND EDGE BLOCK-A (PCS-1900)-Channel 512



Date: 21.JUL.2014 09:20:34

HIGH BAND EDGE BLOCK-C (PCS-1900) –Channel 810



Date: 21.JUL.2014 09:20:48

A.8 CONDUCTED SPURIOUS EMISSION

Reference

FCC: CFR Part 2.1057, 22.917, 24.238.

A.8.1 Measurement Method

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

1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of PCS1900 band, this equates to a frequency range of 30 MHz to 19.1 GHz, data are taken from 30 MHz to 20 GHz. For GSM850, data are taken from 30 MHz to 10 GHz.
2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.

GSM850 Transmitter

Channel	Frequency (MHz)
128	824.2
190	836.6
251	848.8

PCS1900 Transmitter

Channel	Frequency (MHz)
512	1850.2
661	1880.0
810	1909.8

A. 8.2 Measurement Limit

Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A. 8.3 Measurement result

Measurement Uncertainty: 0.3dB

GSM850

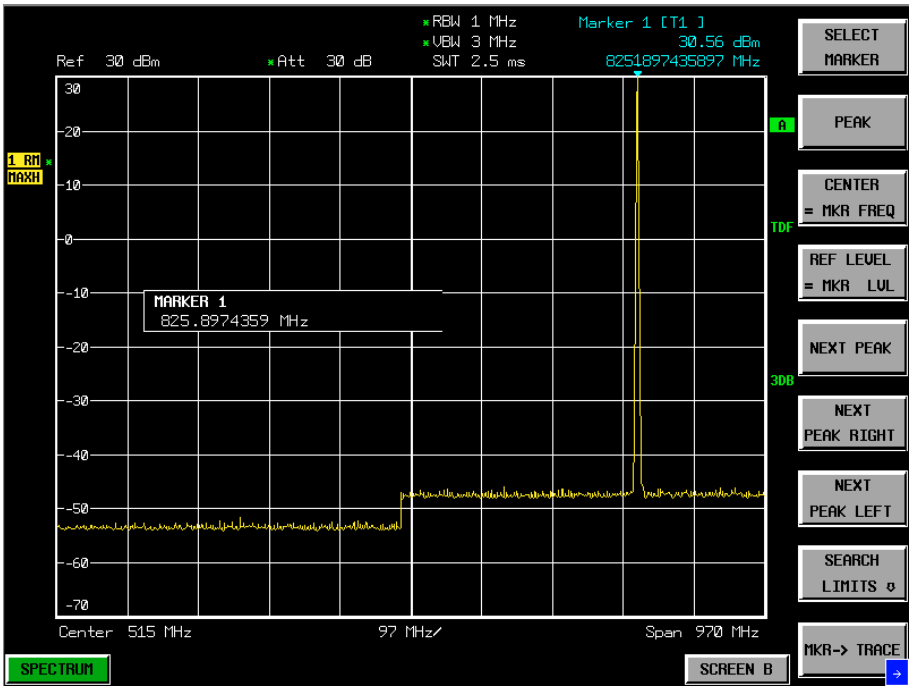
Harmonic	Tx ch. 128 Freq. (MHz)	Level (dBm)	Tx ch. 190 Freq. (MHz)	Level (dBm)	Tx ch. 251 Freq. (MHz)	Level (dBm)
2	1648.4	-32.87	1673.2	nf	1697.6	nf
3	2472.6	nf	2509.8	nf	2546.4	nf
4	3296.8	nf	3346.4	nf	3395.2	nf
5	4121	nf	4183	nf	4244	nf
6	4945.2	nf	5019.6	nf	5092.8	nf
7	5769.4	nf	5856.2	nf	5941.6	nf
8	6593.6	nf	6692.8	nf	6790.4	nf
9	7417.8	nf	7529.4	nf	7639.2	nf
10	8242	nf	8366	nf	8488	nf
nf: Noise floor						

GSM850

A.8.3.1 Channel 128: 30MHz – 1GHz

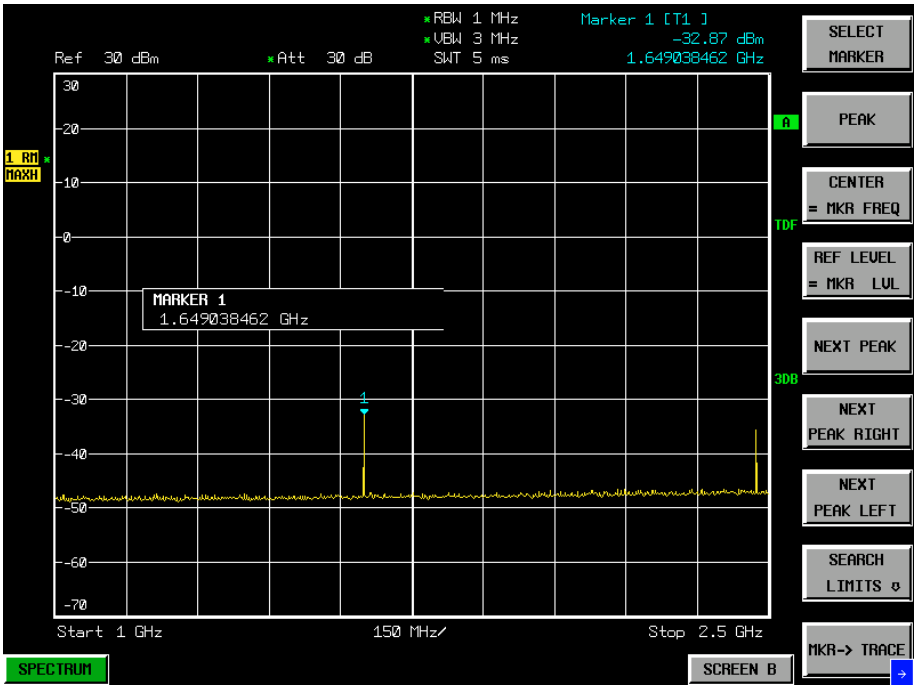
Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



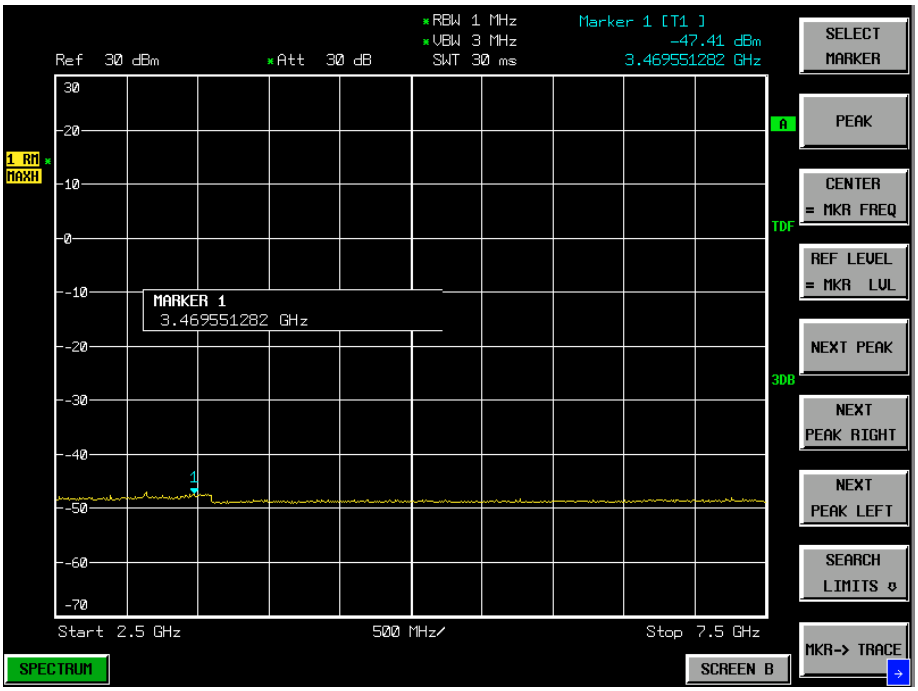
A.8.3.2 Channel 128: 1GHz – 2.5GHz

Spurious emission limit –13dBm.



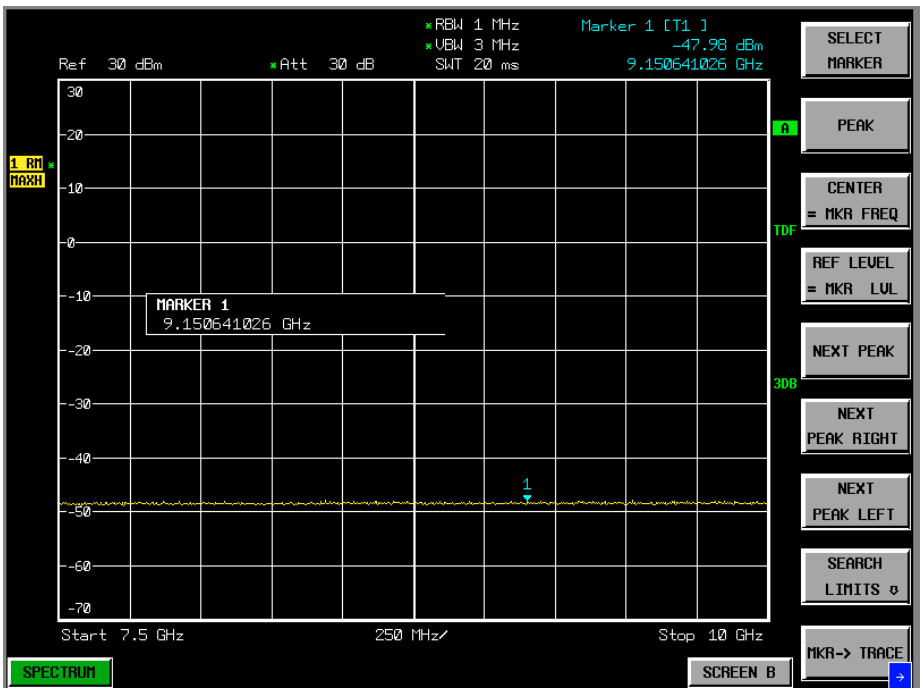
A.8.3.3 Channel 128: 2.5GHz – 7.5GHz

Spurious emission limit –13dBm.



A.8.3.4 Channel 128: 7.5GHz –10GHz

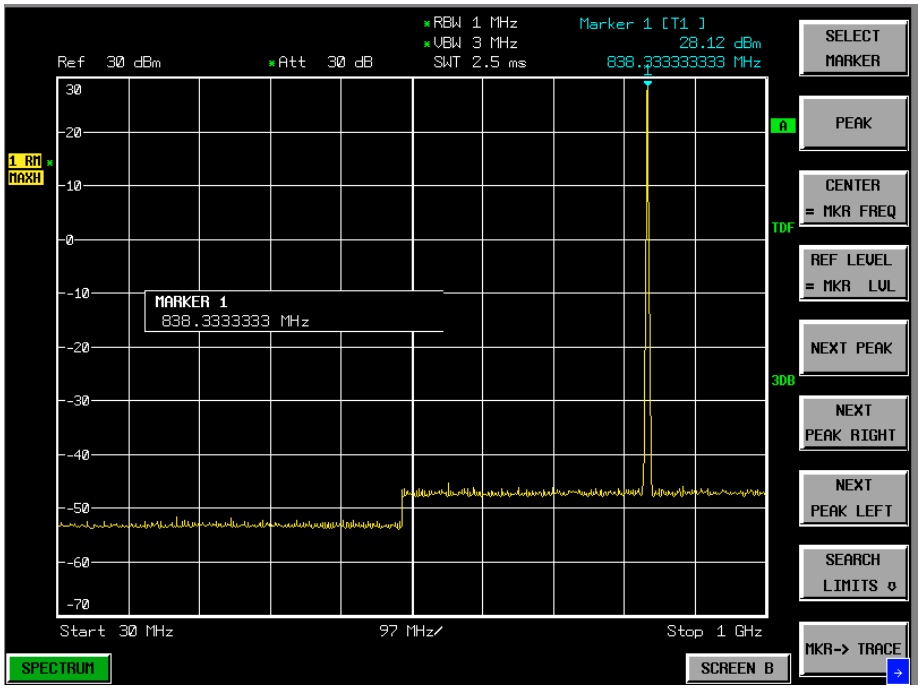
Spurious emission limit –13dBm.



A.8.3.5 Channel 190: 30MHz – 1GHz

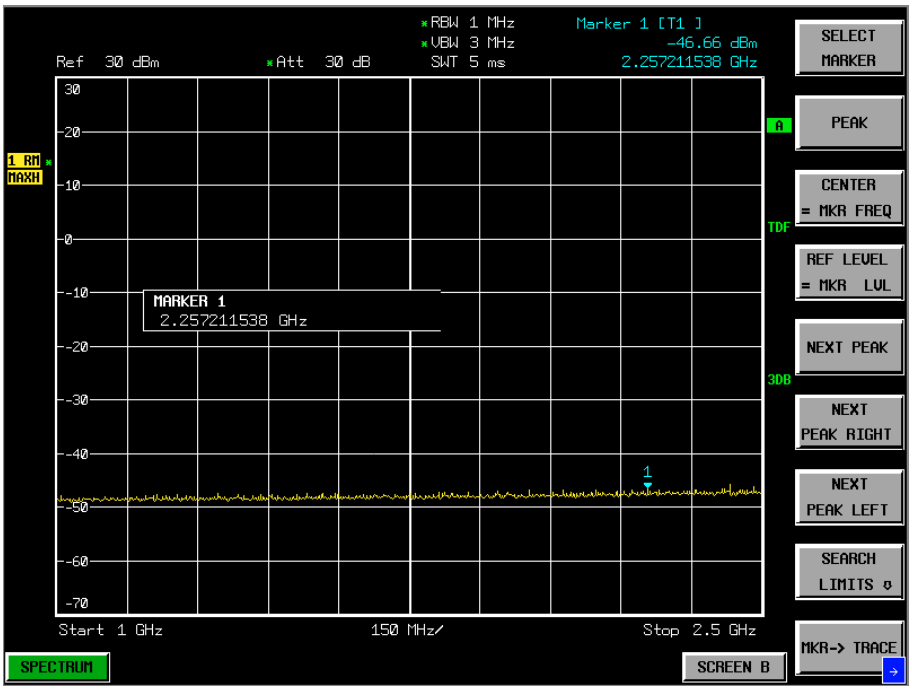
Spurious emission limit –13dBm

NOTE: peak above the limit line is the carrier frequency.



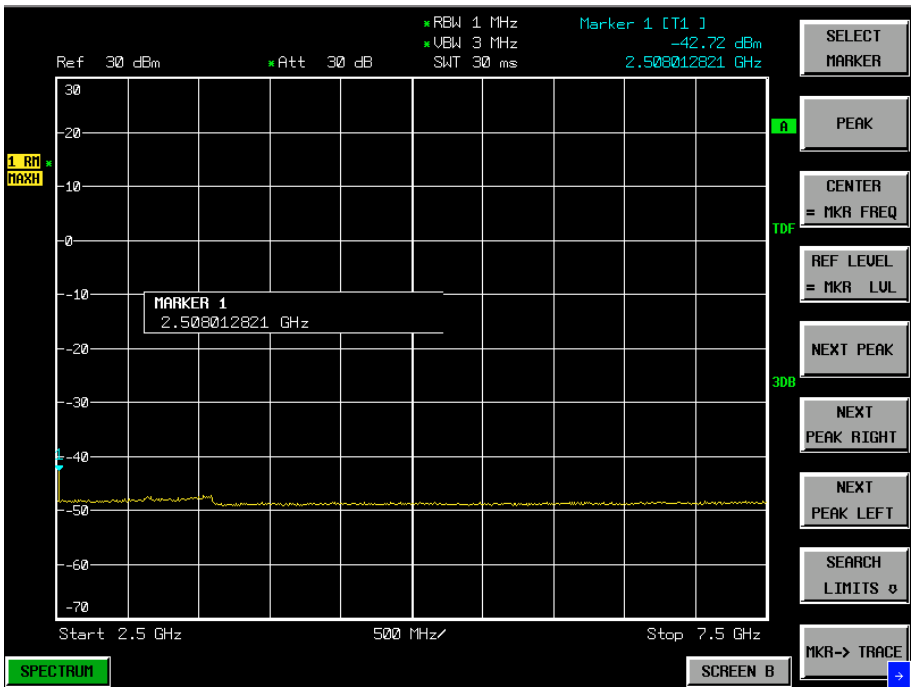
A.8.3.6 Channel 190: 1GHz –2.5GHz

Spurious emission limit –13dBm



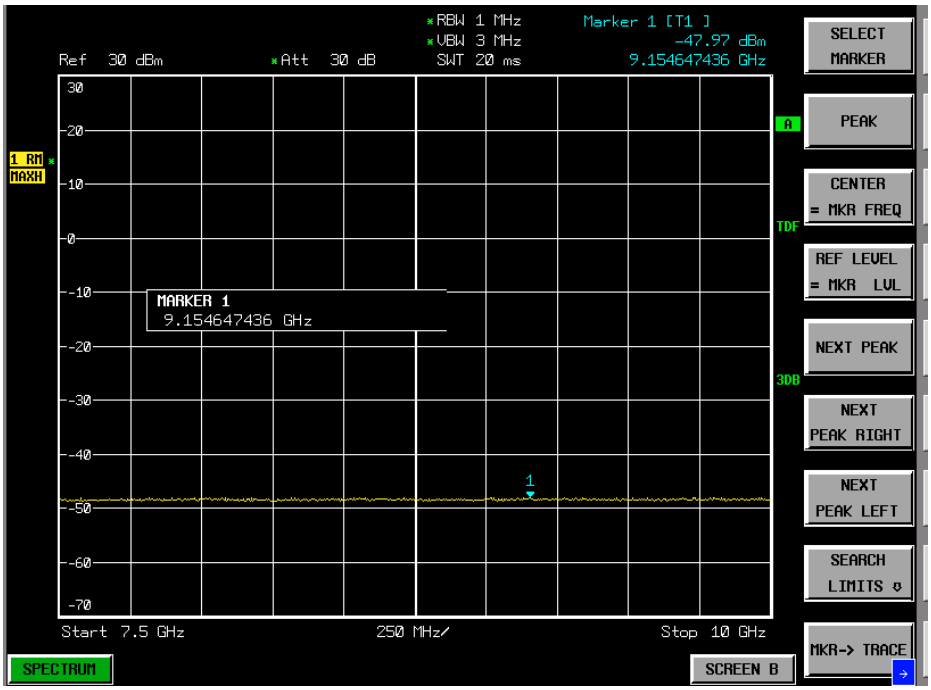
A.8.3.7 Channel 190: 2.5GHz –7.5GHz

Spurious emission limit –13dBm



A.8.3.8 Channel 190: 7.5GHz –10GHz

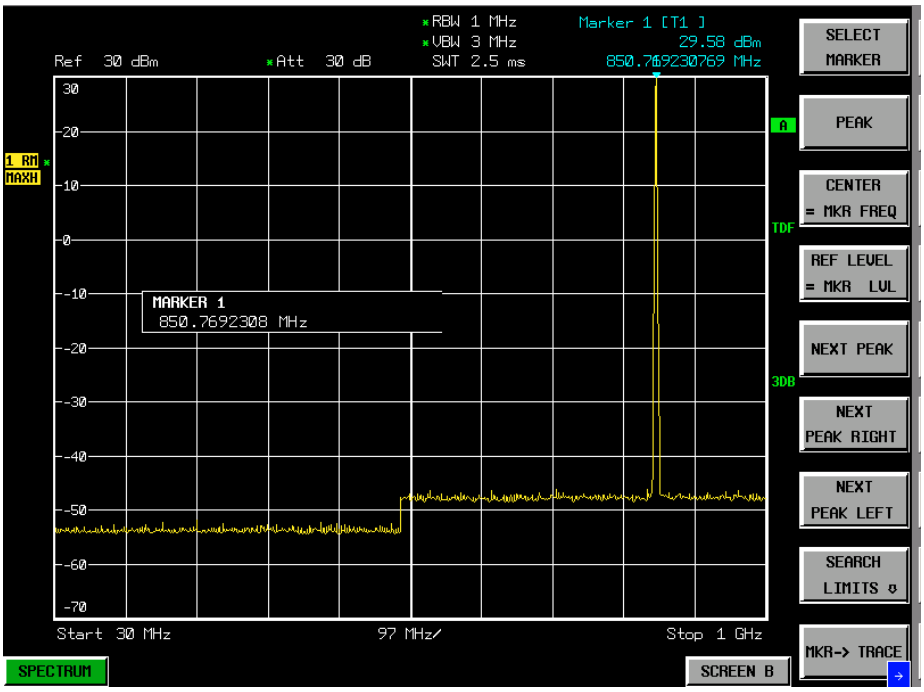
Spurious emission limit –13dBm



A.8.3.9 Channel 251: 30MHz – 1GHz

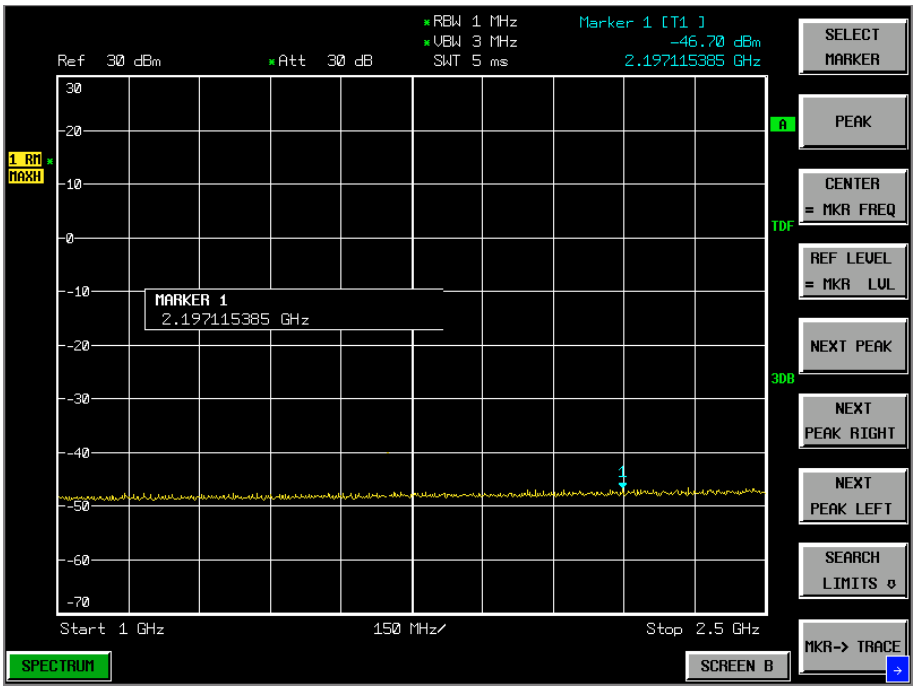
Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



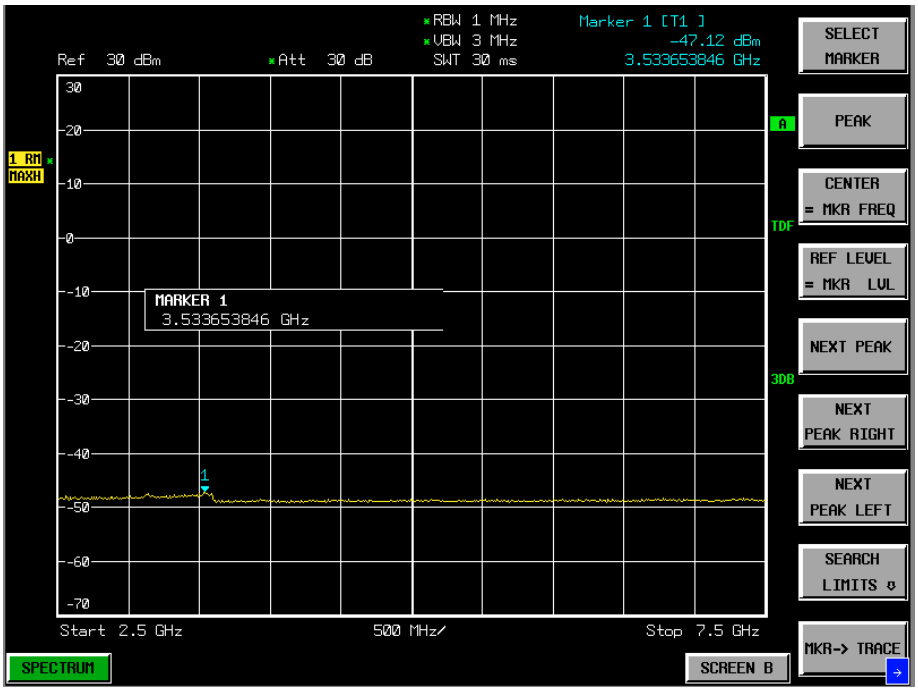
A.8.3.10 Channel 251: 1GHz – 2.5GHz

Spurious emission limit –13dBm.



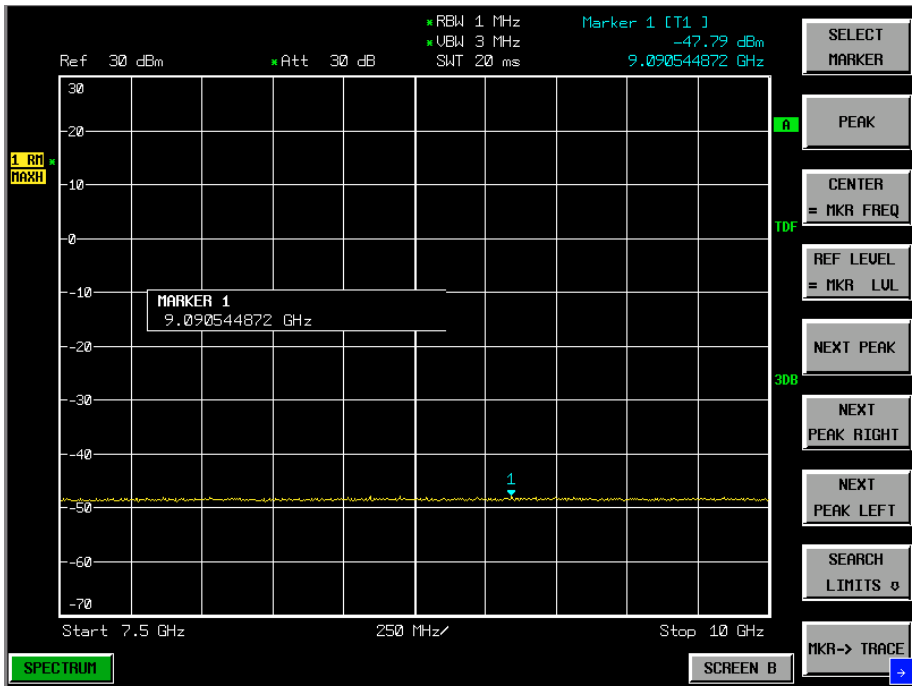
A.8.3.11 Channel 251:2.5GHz – 7.5GHz

Spurious emission limit –13dBm.



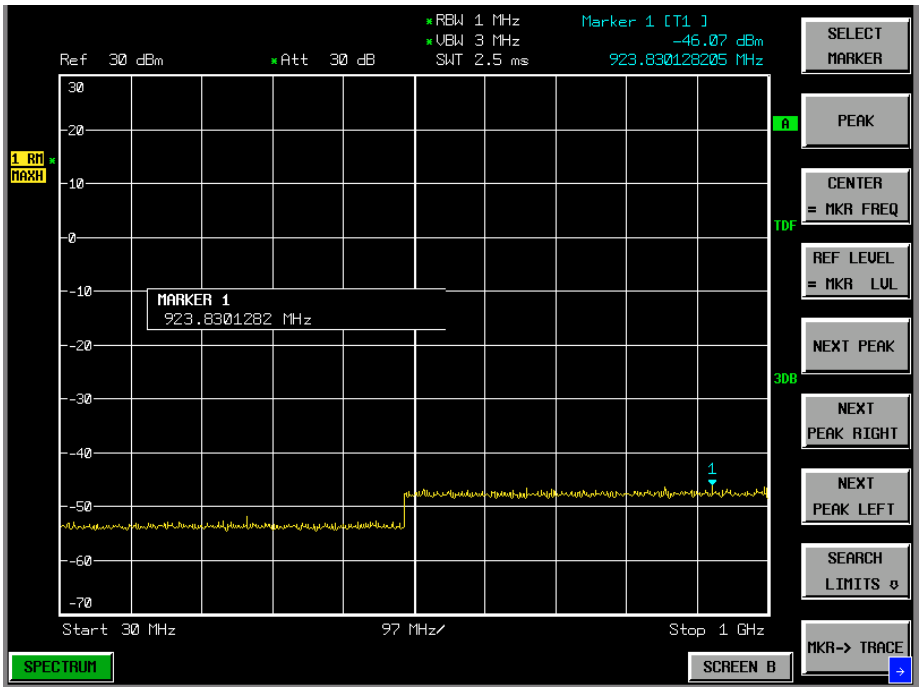
A.8.3.12 Channel 251: 7.5GHz – 10GHz

Spurious emission limit –13dBm.



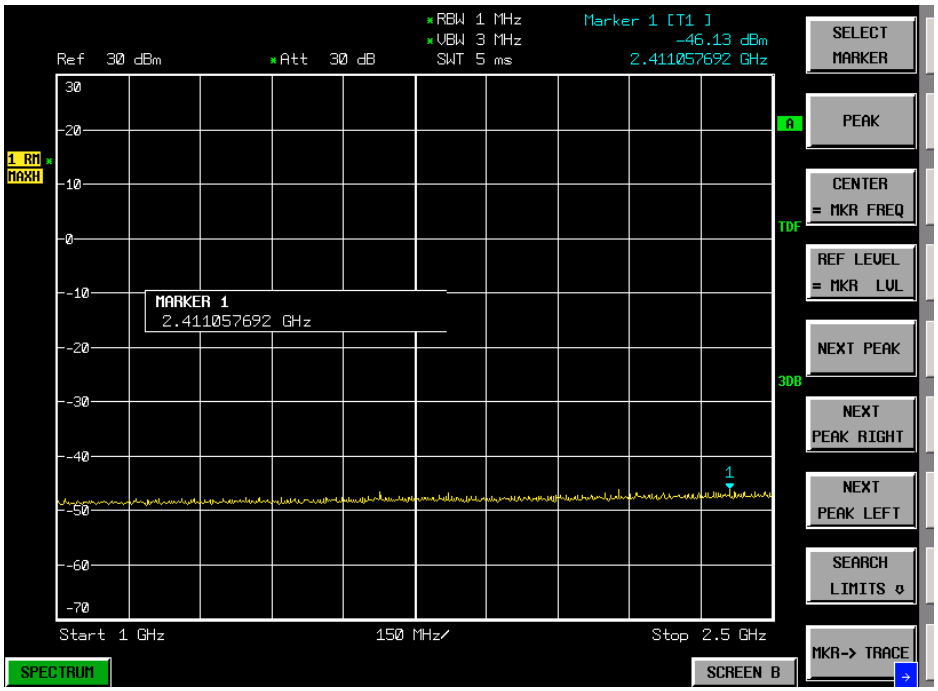
A.8.3.13 Idle mode: 30MHz – 1GHz

Spurious emission limit –13dBm.



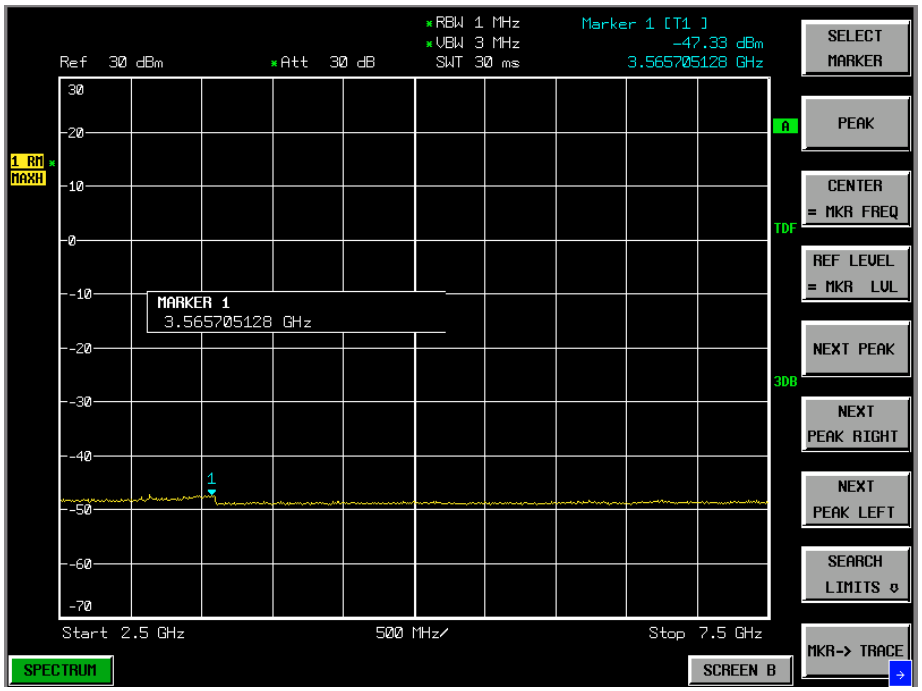
A.8.3.14 Idle mode: 1GHz – 2.5GHz

Spurious emission limit –13dBm.



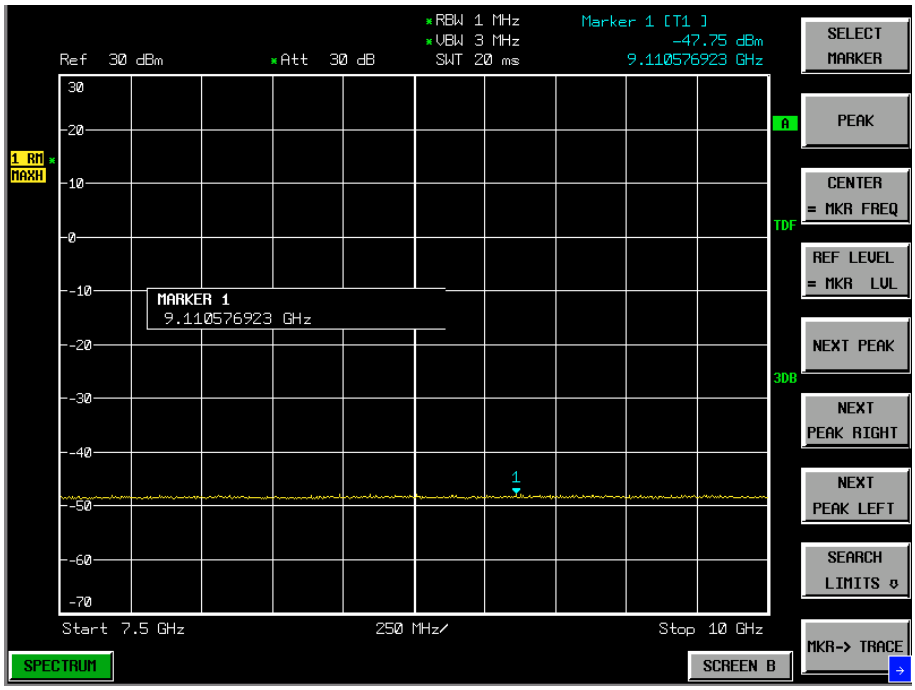
A.8.3.15 Idle mode: 2.5GHz – 7.5GHz

Spurious emission limit –13dBm.



A.8.3.16 Idle mode: 7.5GHz – 10GHz

Spurious emission limit –13dBm.



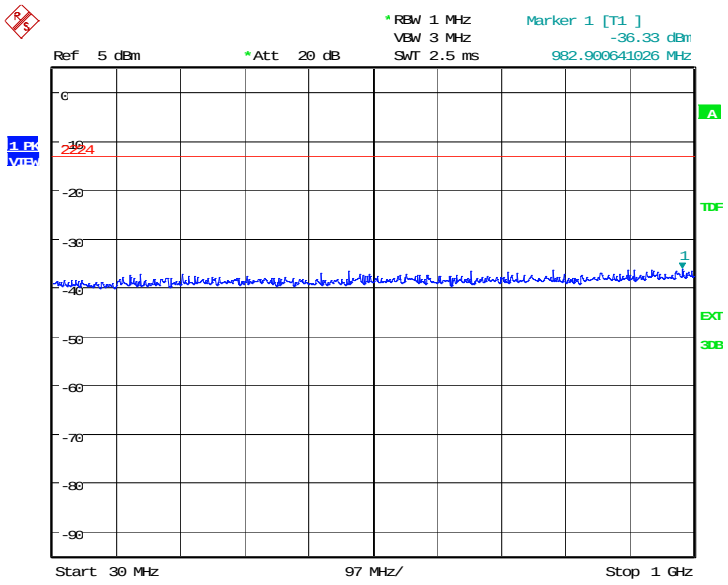
PCS1900

Harmonic	Tx ch. 512 Freq. (MHz)	Level (dBm)	Tx ch. 661 Freq. (MHz)	Level (dBm)	Tx ch. 810 Freq. (MHz)	Level (dBm)
2	3700.4	nf	3760	nf	3819.6	nf
3	5550.6	nf	5640	nf	5729.4	nf
4	7400.8	nf	7520	nf	7639.2	nf
5	9251.0	nf	9400	nf	9549.0	nf
6	11101.2	nf	11280	nf	11458.8	nf
7	12951.4	nf	13160	nf	13368.6	nf
8	14801.6	nf	15040	nf	15278.4	nf
9	16651.8	nf	16920	nf	17188.2	nf
10	18502.0	nf	18800	nf	19098.0	nf
nf: Noise floor						

PCS1900

A.8.3.17 Channel 512: 30MHz – 1GHz

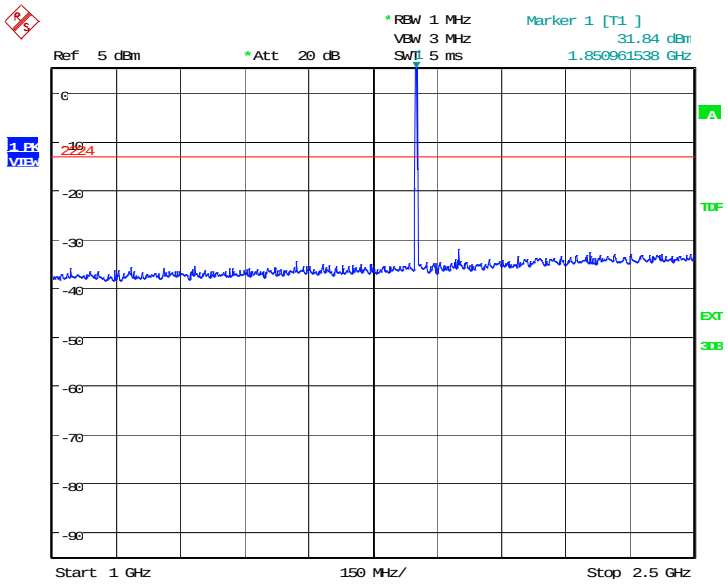
Spurious emission limit –13dBm.



A.8.3.18 Channel 512: 1GHz – 2.5GHz

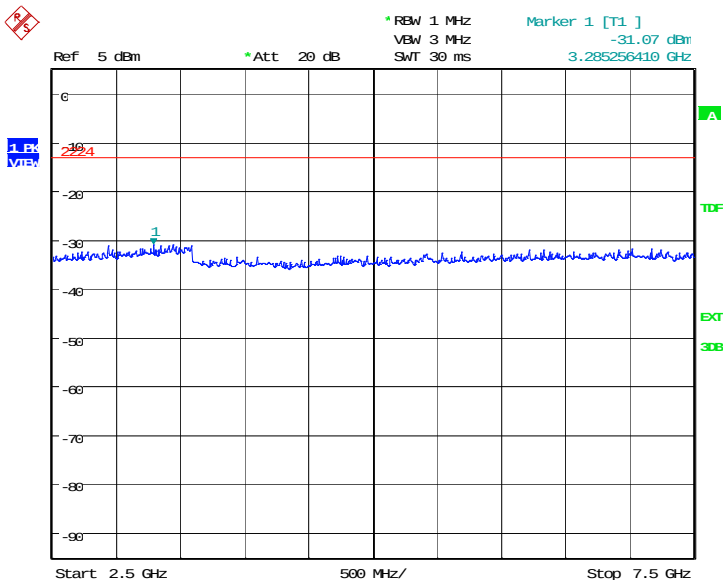
Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



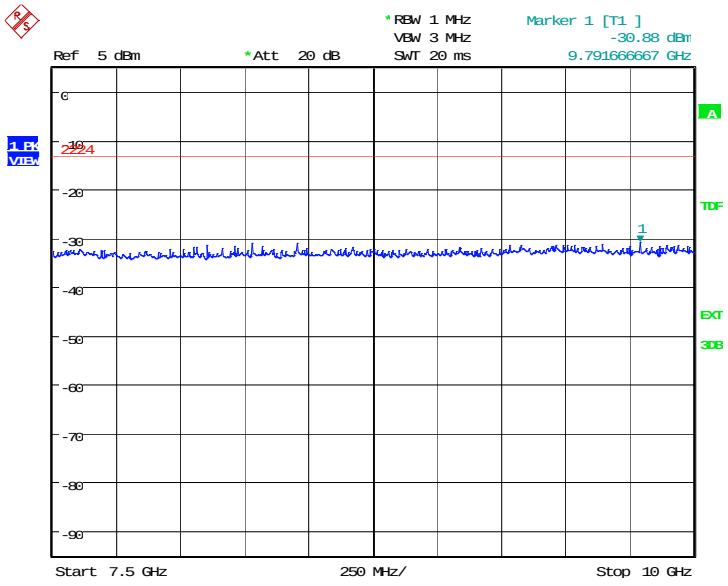
A.8.3.19 Channel 512: 2.5GHz – 7.5GHz

Spurious emission limit –13dBm.



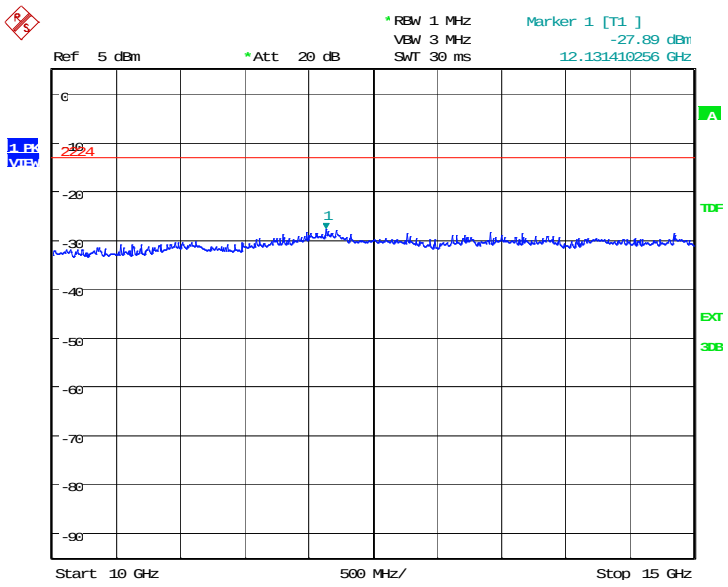
A.8.3.20 Channel 512: 7.5GHz –10GHz

Spurious emission limit –13dBm.



A.8.3.21 Channel 512: 10GHz –15GHz

Spurious emission limit –13dBm.



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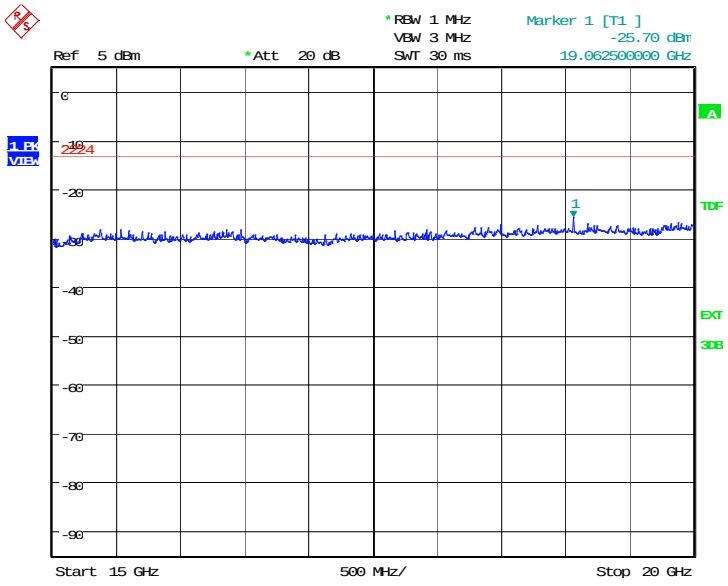
A.8.3.22 Channel 512: 15GHz –20GHz

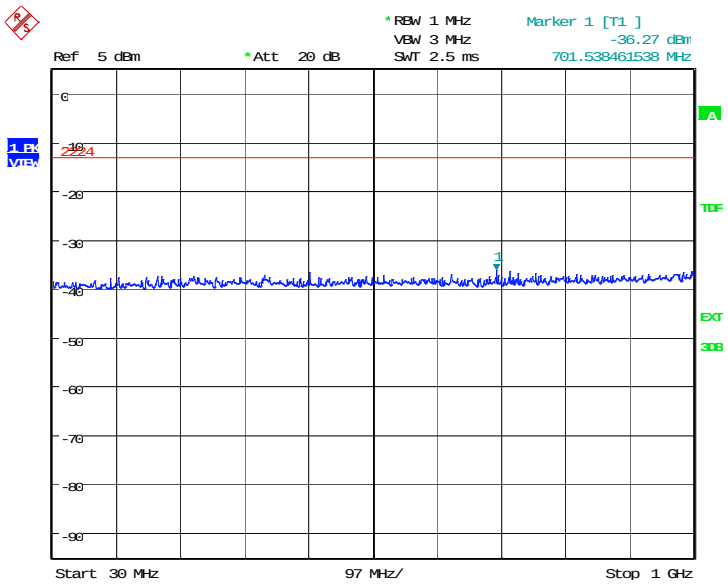
Spurious emission limit –13dBm.



Date: 21.JUL.2014 09:37:40

A.8.3.23 Channel 661: 30MHz – 1GHz

Spurious emission limit –13dBm

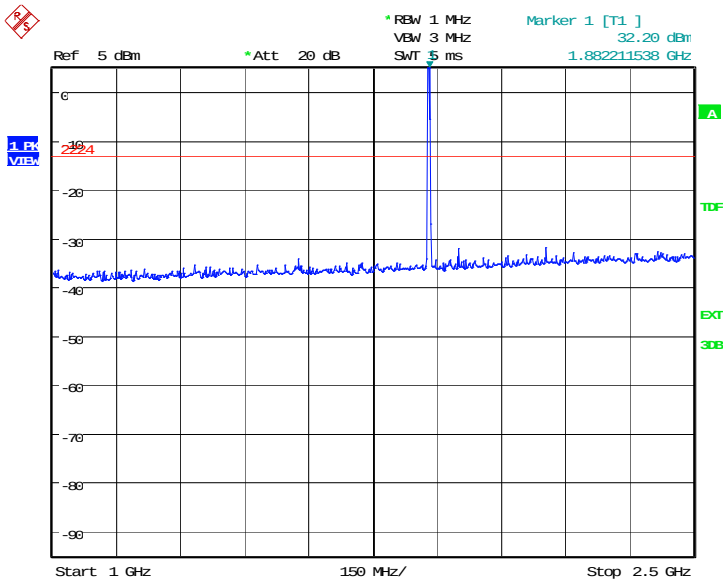


Date: 21.JUL.2014 09:38:08

A.8.3.24 Channel 661: 1GHz –2.5GHz

Spurious emission limit –13dBm

NOTE: peak above the limit line is the carrier frequency.



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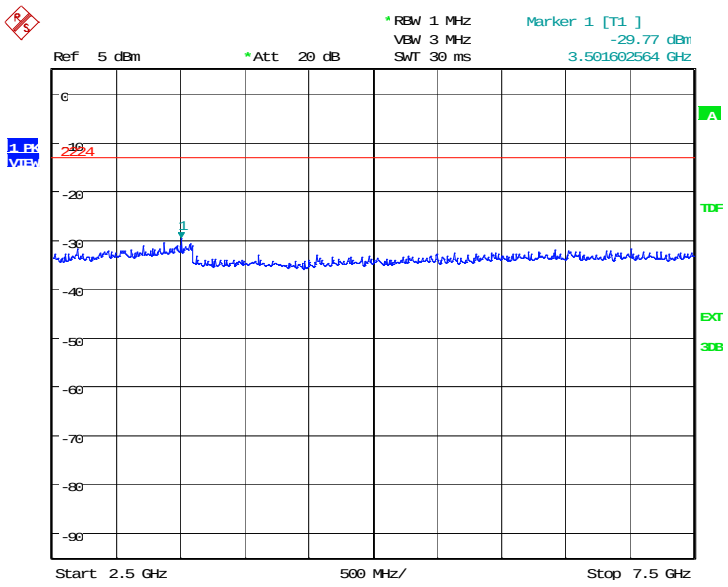
A.8.3.25 Channel 661: 2.5GHz –7.5GHz

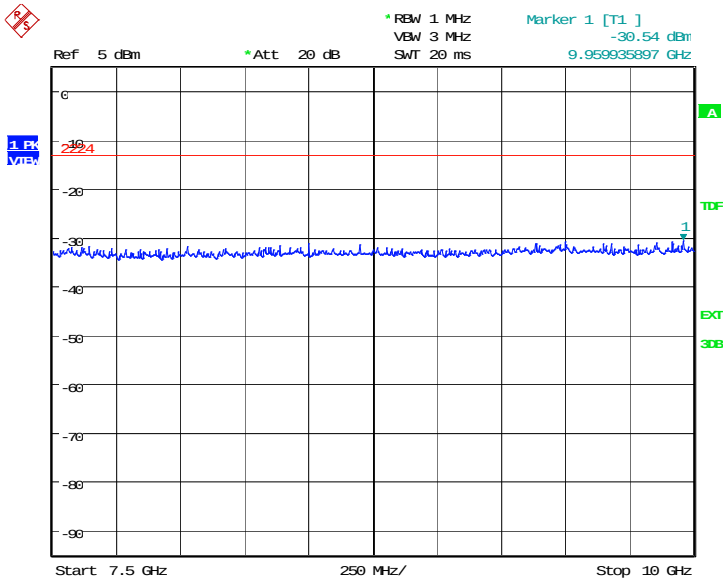
Spurious emission limit –13dBm



Date: 21.JUL.2014 09:39:04

A.8.3.26 Channel 661: 7.5GHz –10GHz

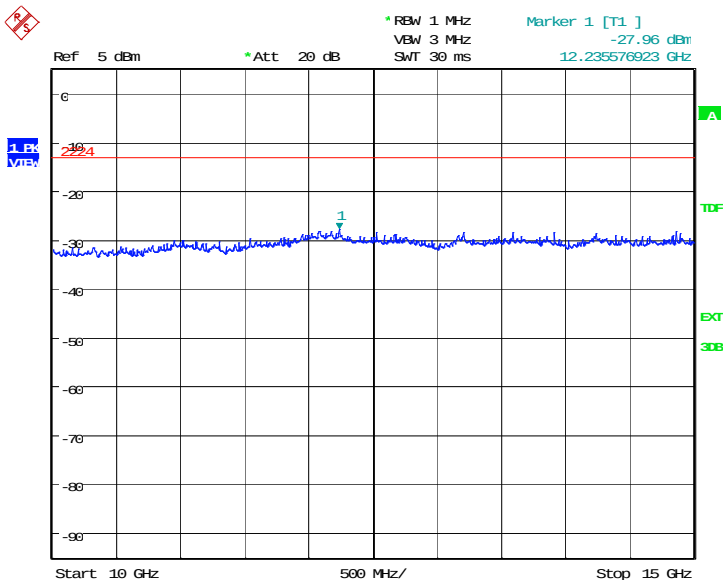
Spurious emission limit –13dBm



Date: 21.JUL.2014 09:39:33

A.8.3.27 Channel 661: 10GHz –15GHz

Spurious emission limit –13dBm.



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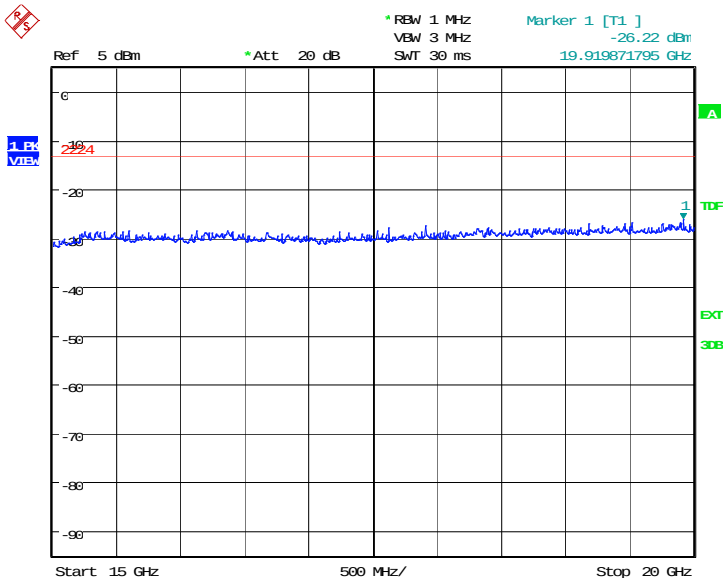
A.8.3.28 Channel 661: 15GHz –20GHz

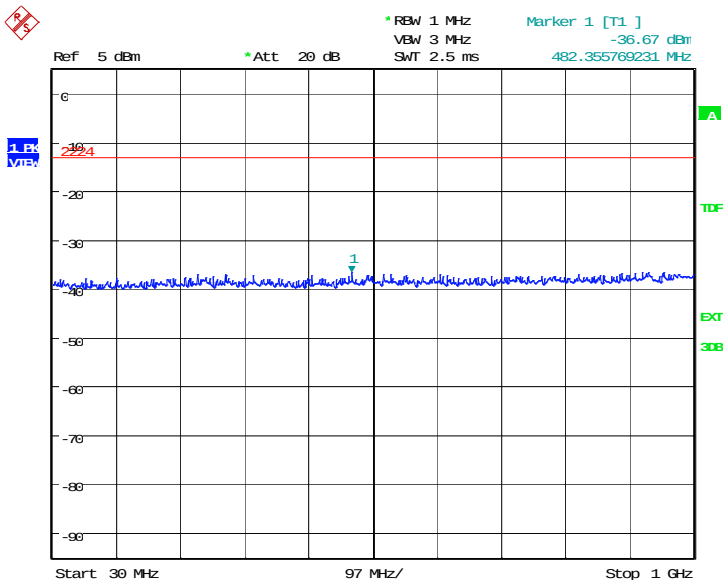
Spurious emission limit –13dBm.



Date: 21.JUL.2014 09:40:29

A.8.3.29 Channel 810: 30MHz – 1GHz

Spurious emission limit –13dBm.

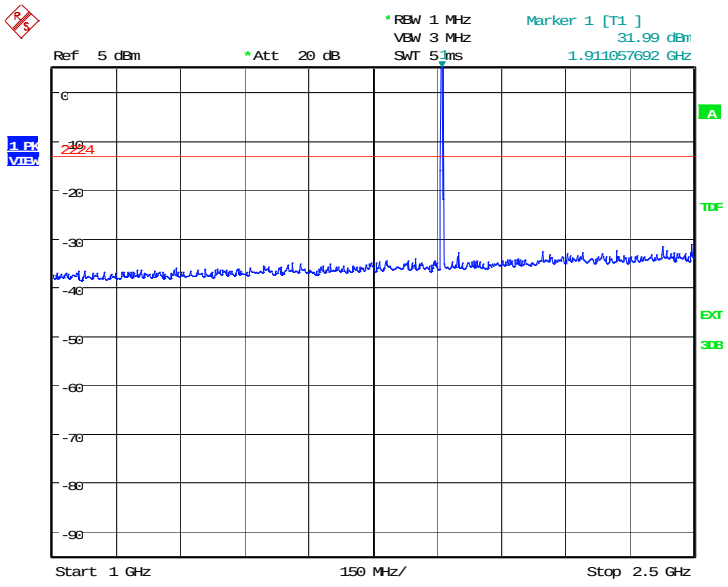


Date: 21.JUL.2014 09:40:58

A.8.3.30 Channel 810: 1GHz – 2.5GHz

Spurious emission limit –13dBm.

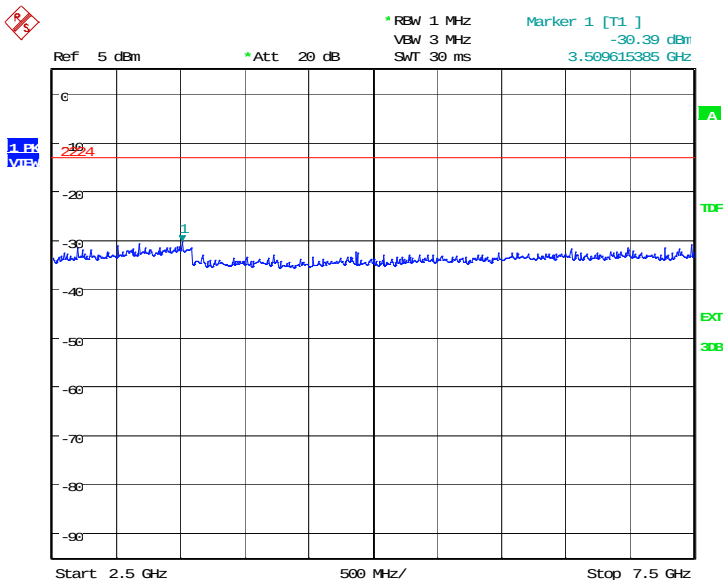
NOTE: peak above the limit line is the carrier frequency.



Date: 21.JUL.2014 09:41:26

A.8.3.31 Channel 810:2.5GHz – 7.5GHz

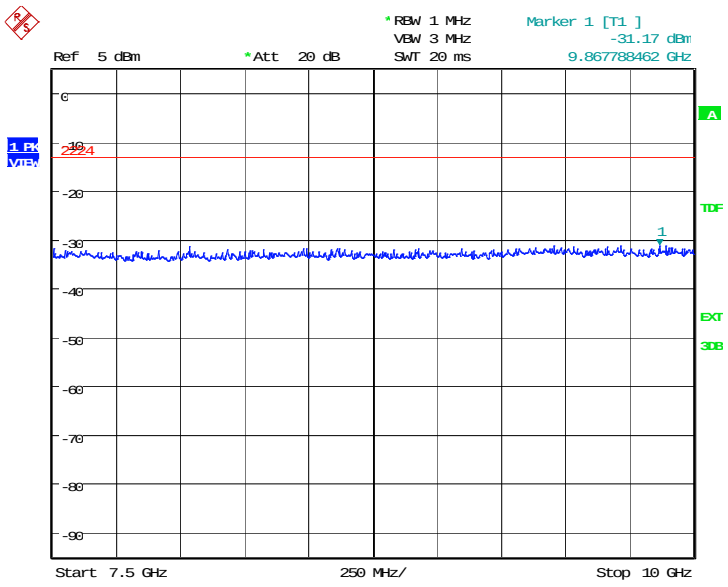
Spurious emission limit –13dBm.



Date: 21.JUL.2014 09:41:54

A.8.3.32 Channel 810: 7.5GHz – 10GHz

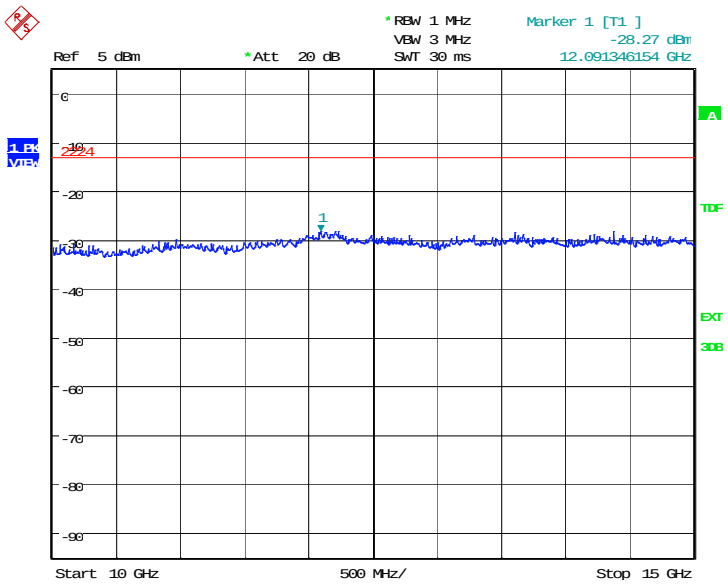
Spurious emission limit –13dBm.



Date: 21.JUL.2014 09:42:22

A.8.3.33 Channel 810: 10GHz –15GHz

Spurious emission limit –13dBm.



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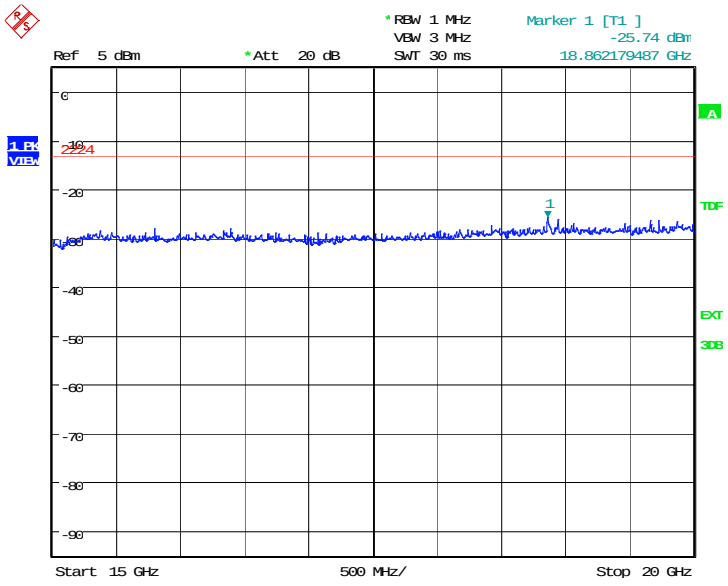
A.8.3.34 Channel 810: 15GHz –20GHz

Spurious emission limit –13dBm.



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*****END OF REPORT*****