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FCC RF TEST REPORT

47 CFR FCC PART 22&24

Report Reference No.....: TRE13010112 R/C:52567

FCC ID.....: QISEM770W

Compiled by

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Wenliang Li

Date of issue.....: Feb 20, 2013

Testing Laboratory Name: Shenzhen Huatongwei International Inspection Co., Ltd

Address: Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

Applicant's name: Kaba GmbH

Address: Albertstr. 3 Villingen-Schwenningen 78056 Germany

Test specification:

Standard: 47 CFR FCC Part 22 subpart H

47 CFR FCC Part 24 subpart E

47 CFR FCC Part 2:2010

Test method.....: TIA/EIA 603-C-2004

ANSI C63.4-2009

FCC KDB 971168 D01 Power Meas License Digital Systems v01

FCC KDB 662911 D01 Multiple Transmitter Output v01

TRF Originator.....: Shenzhen Huatongwei International Inspection CO., Ltd

Master TRF.....: Dated 2006-06

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Test item description: RFID Time Attendance/ Access Control/ Data Collection Terminal

Trade Mark: /

Model/Type reference.....: B-web 9600

Listed Models: /

Result.....: Positive

TEST REPORT

Test Report No. : TRE13010112	Feb 20, 2013
	Date of issue

Equipment under Test : RFID Time Attendance/ Access Control/ Data Collection Terminal

Model /Type : B-web 9600

Listed Models : /

Applicant : **Kaba GmbH**

Address : Albertstr. 3 Villingen-Schwenningen 78056 Germany

Manufacturer **DongGuan ZKSoftware Electronic Technology Co.,Ltd**

Address No.26,Pingshan 188 Industry zone,Tangxia
Town,Dongguan City,Guangdong Province,China 523728

Test Result according to the standards on page 4:	Positive
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. TEST STANDARDS

The tests were performed according to following standards:

[FCC Part 22:2011 Subpart H](#) - Public Mobile Services

[FCC Part 24:2010 Subpart E](#) - Personal Communication Services

[ANSI C63.4-2009](#): -American National Standard for Methods of Measurement of Radio-Noise Emissions From Low Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz.

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Feb 01, 2013
Testing commenced on	:	Feb 01, 2013
Testing concluded on	:	Feb 20, 2013

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage	:	☒ 120V / 60 Hz	☐ 115V / 60Hz
		☐ 12 V DC	☐ 24 V DC
		☐ Other (specified in blank below)	

Adapter information:

Model: KSAFH1200300T1M3
 Input: 100-240V ~ 50/60Hz 1.2A
 Output: +12V DC 3.0A
 Power Cable: 180cm
☐ Shielded ☒ Unshielded

2.3. Short description of the Equipment under Test (EUT)

The **Kaba GmbH**.'s Model: B-web 9600 or the "EUT" as referred to in this report; more general information as follows, for more details, Please refer to the user's manual of the EUT.

Name of EUT	RFID Time Attendance/ Access Control/ Data Collection Terminal
Model Number	B-web 9600
Work Mode	The EUT have EDGE/GPRS/WCDMA function
Operation Frequency Band	GSM850/PCS1900/WCDMA BAND V / WCDMA BAND II
Modulation Type	GSM/GPRS, GMSK modulation
	EDGE, 8PSK modulation
	WCDMA, QPSK modulation
	HSDPA, QPSK modulation
	HSUPA, QPSK modulation
Antenna Type	Internal

2.4. Test Conditions

The EUT will be connected to test system (Base Station Simulator) in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment).

2.5. Test Connections

Traffic Mode:

The EUT is required to be in the traffic mode, a call is set up according to the generic call set up procedure and enter the EUT into loop back test mode.(WCDMA see 3GPP TS 34.121, GSM see ETSI TS 151.010).

For WCDMA, the following conditions shall also be met:

Logical Test Interface for details regarding generic call set-up procedure and BER, BLER test loop scenarios:

set and send continuously up power control commands to the UE;

The DTX shall be disabled;

Inner Loop Power Control shall be enabled;

transmitting and/or receiving (UL/DL) bit rate for reference test channel shall be 12.2 kbit / s.

The EUT shall be commanded to operate at maximum transmit power;

For GSM850 and PCS1900, the following conditions shall also be met:

The EUT shall be commanded to operate at maximum transmit power;

The downlink RXQUAL shall be monitored.

Assign channel frequency to an appropriate channel number. Here, set the ARFCN channel number to 661 for PCS1900, 190 to GSM850, 4132 to WCDMA 850, 9400 to WCDMA 1900.

Idle Mode:

The EUT will be connected to test system (Base Station Simulator) in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment).

The EUT is required to be in the idle mode.

For WCDMA, the following conditions shall be met:

UE shall be camped on a cell;

UE shall perform Location Registration (LR) before the test, but not during the test;

UE's neighbour cell list shall be empty;

Paging repetition period and DRX cycle shall be set to minimum (shortest possible time interval).

For GSM850 and PCS1900, the following conditions shall be met::

When the EUT is required to be in the idle mode, the test system shall simulate a Base Station (BS) with Broadcast Control Channel/Common Control Channel (BCCH/CCCH) on one carrier. The EUT shall be synchronized to the BCCH, listening to the CCCH and able to respond to paging messages. Periodic Location Updating shall be disabled.

2.6. Configuration of Tested System

Mode		Work Frequency	
		Transmitter frequency(MHz)	Receive frequency(MHz)
WCDMA	BAND V	826.4-846.6	871.4-891.6
	BAND II	1852.4-1907.6	1932.4-1987.6
GSM	GSM850	824.2-848.8	869.2-893.8
	PCS1900	1850.2-1909.8	1930.2-1989.8

There were 20 test Modes. TM1 to TM20 were shown below:

TM1: operate in traffic GPRS 1900;

TM2: operate in traffic mode EGPRS 1900;

TM3: operate in traffic mode GPRS 850;

TM4: operate in traffic mode EGPRS 850;

TM5: operate in traffic mode WCDMA BANDII;

TM6: operate in traffic mode HSDPA BANDII;

TM7: operate in traffic mode HSUPA BANDII;

TM8: operate in traffic mode WCDMA BAND V;

TM9: operate in traffic mode HSDPA BAND V;

TM10: operate in traffic mode HSUPA BAND V;

TM11: operate in idle mode GPRS 1900;

TM12: operate in idle mode EGPRS 1900;

TM13: operate in idle mode GPRS 850;

TM14: operate in idle mode EGPRS 850;

TM15: operate in idle mode WCDMA BANDII;
TM16: operate in idle mode HSDPA BANDII;
TM17: operate in idle mode HSUPA BANDII;
TM18: operate in idle mode WCDMA BAND V;
TM19: operate in idle mode HSDPA BAND V;
TM20: operate in idle mode HSUPA BAND V;

2.7. EUT operation mode

Fig. 2-1 Configuration of Tested System

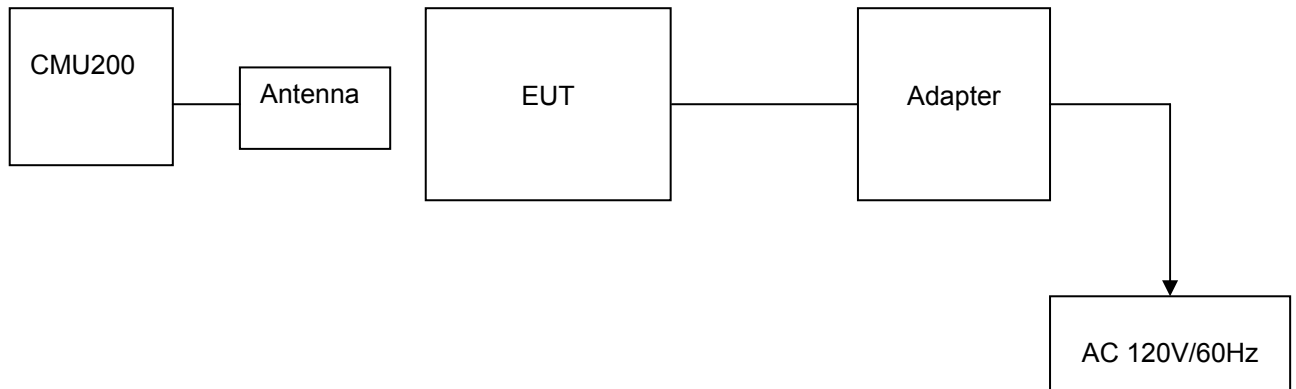


Table 2-1 Equipment Used in Tested System

2.8. Related Submittal(s) / Grant (s)

This submittal(s) (test report) of **FCC ID: QISEM770W** filing to comply with the FCC Part 22&24 Rules.

2.9. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: Mar. 30, 2009. Valid time is until Feb 28, 2015.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sept. 30, 2013.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date Jun. 01, 2012, valid time is until Jun. 01, 2015.

IC-Registration No.: 5377A

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Jan. 25, 2011, valid time is until Jan. 24, 2014.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

NEMKO-Aut. No.: ELA125

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10, the authorization is valid through July 07, 2013

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-292. Date of Registration: Dec. 24, 2010. Valid time is until Dec. 23, 2013.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 19, 2015.

Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-1837. Date of Registration: May 07, 2010. Valid time is until May 06, 2013.

DNV

Shenzhen Huatongwei International Inspection Co., Ltd. has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2013.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

3.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24 dB	(1)
Radiated Emission	1~18GHz	5.16 dB	(1)
Conducted Disturbance	0.15~30MHz	3.39 dB	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.5. Equipments Used during the Test

Transmitter Output Power / Occupied Bandwidth / Spurious Emission at Antenna Terminal					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI TEST RECEIVER	Rohde&Schwarz	ESI 26	100009	2012/10/27
2	Power Meter	Anritsu	ML2487A	6K00001568	2012/10/27
3	Power Meter Sensor	Anritsu	ML2491A	0630989	2012/10/27
4	Spectrum Analyzer	Rohde&Schwarz	FSP	1164.4391.40	2012/10/27
5	Universal Radio Communication Tester	Rohde&Schwarz	CMU200	112012	2012/10/27

Radiated Disturbance / Radiated Spurious Emissions/ Receiver Spurious Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultrar-Broadband Antenna	Rohde&Schwarz	HL562	100015	2012/10/27
2	EMI Test Receiver	Rohde&Schwarz	ESI 26	100009	2012/10/27
3	RF Test Panel	Rohde&Schwarz	TS / RSP	335015/ 0017	2012/10/27
4	Turetable	ETS	2088	2149	2012/10/27
5	Antenna Mast	ETS	2075	2346	2012/10/27
6	EMI Test Software	Rohde&Schwarz	ESK1	N/A	2012/10/27
7	Horn Antenna	Rohde&Schwarz	HF906	100039	2012/10/27
8	Tunable Dipole	Schwarzbeck	D69250- UHAP/D6925 0-VHAP	919/1009	2012/10/27
9	Universal Radio Communication Tester	Rohde&Schwarz	CMU200	112012	2012/10/27
10	Horn Antenna	SCHWARZBECK	BBHA9170	25841	2012/10/27
11	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	2012/10/27
12	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	539	2012/10/27
13	HORN ANTENNA	ShwarzBeck	9120D	1011	2012/10/27
14	TURNTABLE	MATURO	TT2.0	----	2012/10/27
15	ANTENNA MAST	MATURO	TAM-4.0-P	----	2012/10/27

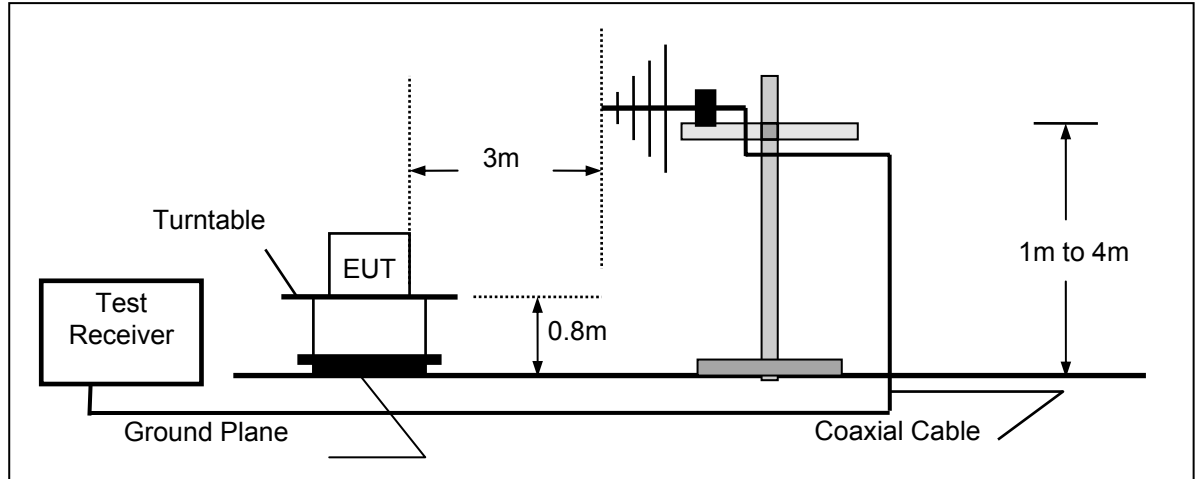
The Calibration Interval was one year.

4. TEST CONDITIONS AND RESULTS

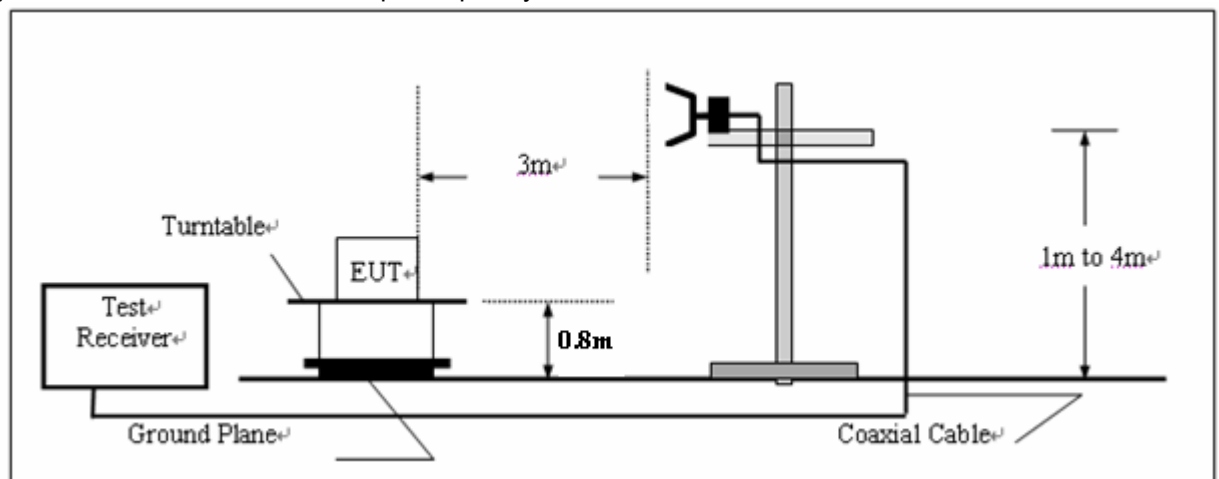
4.1. Radiated Disturbance

TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency below 1000MHz



(B) Radiated Emission Test Set-Up, Frequency above 1000MHz



Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
3. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
4. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

5. Repeat above procedures until the measurements for all frequencies are complete.
6. A preliminary scan and a final scan of the emissions were made from 30 MHz to 18GHz by using test script of software; the emissions were measured using a Quasi-Peak Detector. The maximal emission value was acquired by adjusting the antenna height, polarisation and turntable azimuth in accordance with the software setup. Normally, the height range of antenna was 1m to 4m, the azimuth range of turntable was 0° to 360°, The receive antenna has two polarizations V and H.
8. The EUT was communicated with the BTS simulator through Air interface. The Mobile Station operated on the typical channel and the Mobile Station worked in idle mode, transmitter was not work in this test.
9. EUT was configured in idle mode and the test performed at worst emission state.

RADIATION LIMIT

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/m)
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

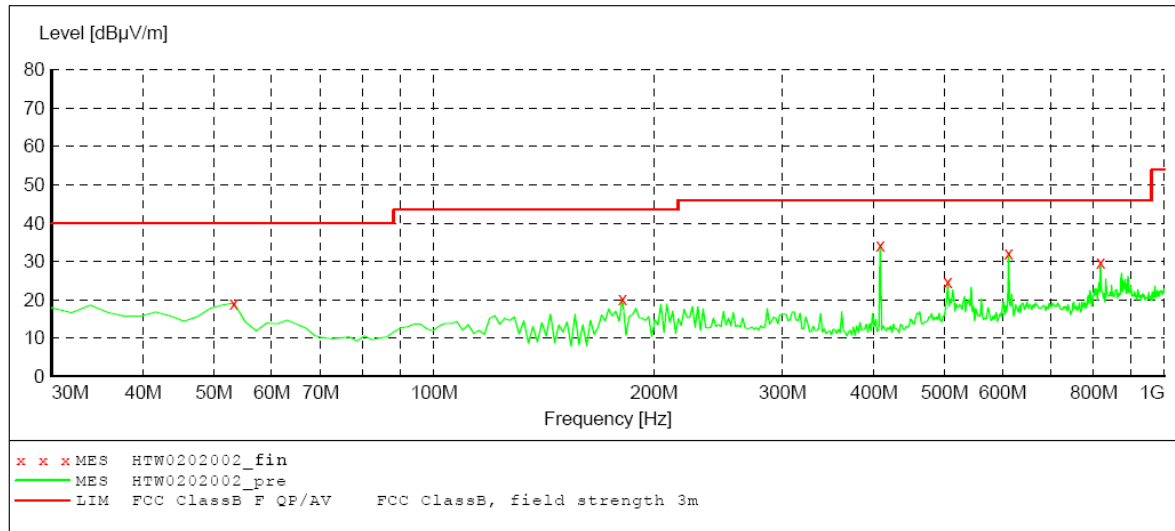
TEST RESULTS

This test was carried out in all the test modes, but only the worst test result was shown. The EUT has met the requirements for Radiated Emission of enclosure port.

30MHz-1GHz

SWEEP TABLE: "test (30M-1G)"

Short Description:		Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562

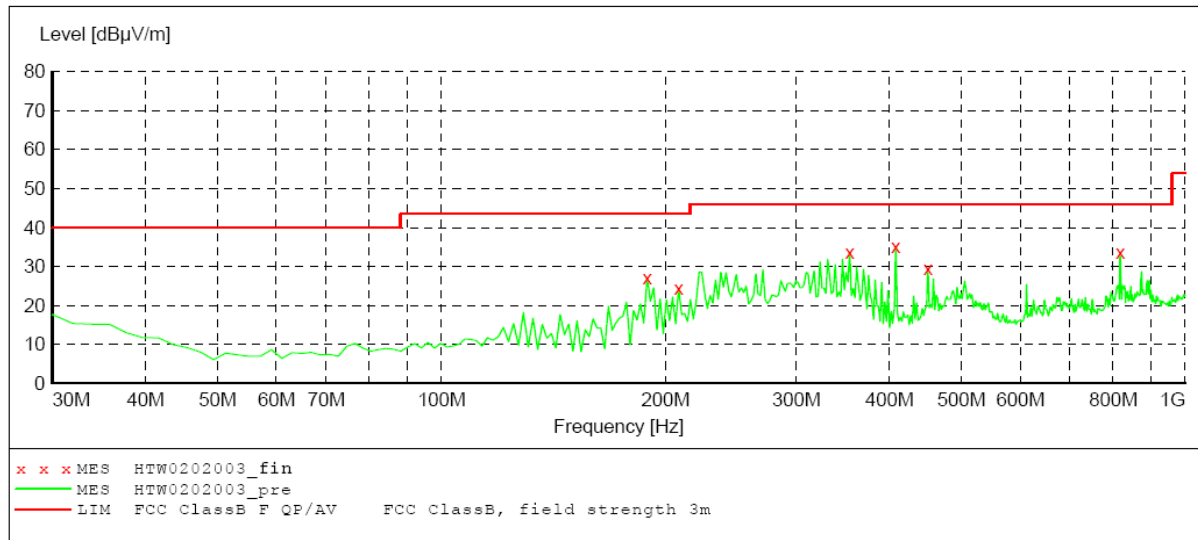
***MEASUREMENT RESULT: "HTW0202002_fin"***

2/2/2013 8:02PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
53.280000	19.20	-23.2	40.0	20.8	QP	100.0	101.00	VERTICAL
181.320000	20.40	-22.2	43.5	23.1	QP	100.0	196.00	VERTICAL
408.300000	34.20	-15.3	46.0	11.8	QP	100.0	169.00	VERTICAL
505.300000	24.70	-13.3	46.0	21.3	QP	100.0	206.00	VERTICAL
612.000000	32.30	-12.2	46.0	13.7	QP	100.0	271.00	VERTICAL
817.640000	29.70	-7.8	46.0	16.3	QP	100.0	359.00	VERTICAL

SWEEP TABLE: "test (30M-1G) "

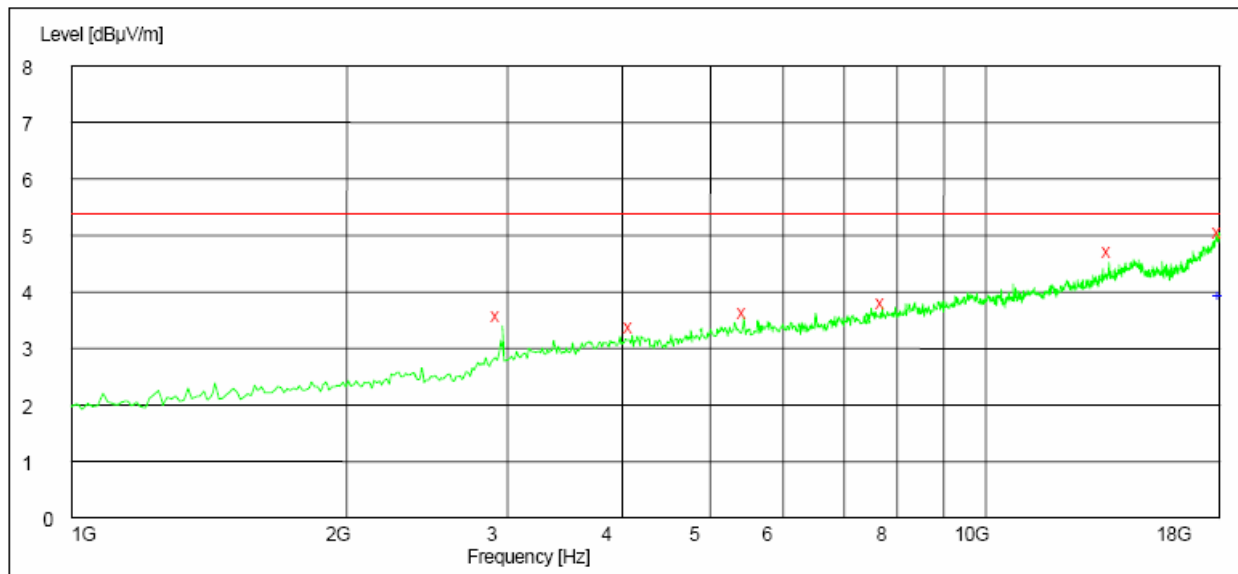
Short Description:		Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562

***MEASUREMENT RESULT: "HTW0202003_fin"***

2/2/2013 8:04PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
189.080000	27.20	-22.5	43.5	16.3	QP	300.0	103.00	HORIZONTAL
208.480000	24.50	-21.1	43.5	19.0	QP	100.0	101.00	HORIZONTAL
353.980000	33.70	-17.0	46.0	12.3	QP	100.0	70.00	HORIZONTAL
408.300000	35.20	-15.3	46.0	10.8	QP	100.0	321.00	HORIZONTAL
450.980000	29.40	-14.7	46.0	16.6	QP	100.0	108.00	HORIZONTAL
817.640000	33.60	-7.8	46.0	12.4	QP	100.0	142.00	HORIZONTAL

1GHz-18GHz



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
3372.000000	36.00	-7.8	53.9	17.9	100.0	322.00	HORIZONTAL
4883.500000	46.50	-3.9	53.9	7.4	100.0	198.00	VERTICAL
5439.000000	40.10	-2.4	53.9	13.8	100.0	359.00	VERTICAL
7325.500000	47.20	0.7	53.9	6.7	100.0	51.00	HORIZONTAL
13629.50000	47.40	10.2	53.9	6.5	100.0	330.00	HORIZONTAL
17994.00000	52.50	17.3	53.9	1.4	100.0	341.00	HORIZONTAL

4.2. Transmitter Output Power

Test condition

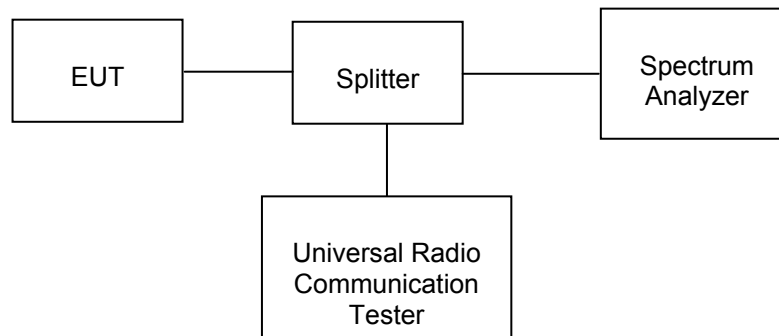
According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), in no case may the peak output power of a base station transmitter exceed 2 watt EIRP.

TEST PROCEDURE

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

Test Set-up figure:



TEST RESULTS

The EUT has met the requirements for Transmitted Output Power.

Conducted Power

		RF Output Power (Conducted)					
TEST CONDITIONS		Channel 128(L)		Channel 192(M)		Channel 251(H)	
		824.2MHz		837.0MHz		848.8MHz	
		dBm		dBm		dBm	
T _{nom} / V _{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM3		32.55	38.5	32.65	38.5	32.53	38.5
TM4		26.93	38.5	27.05	38.5	27.15	38.5
TEST CONDITIONS		Channel 4132(L)		Channel 4182(M)		Channel 4233(H)	
		826.4MHz		836.4MHz		846.6MHz	
		dBm		dBm		dBm	
T _{nom} / V _{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM8		23.71	38.5	23.61	38.5	23.67	38.5
TM9	Case1	23.13	38.5	23.09	38.5	23.13	38.5
	Case2	23.13	38.5	23.09	38.5	23.13	38.5
	Case3	22.66	38.5	22.69	38.5	22.64	38.5
	Case4	22.15	38.5	22.18	38.5	22.07	38.5
TM10	Case1	22.63	38.5	21.97	38.5	22.08	38.5
	Case2	20.49	38.5	21.05	38.5	21.09	38.5
	Case3	21.15	38.5	20.88	38.5	21.02	38.5
	Case4	20.99	38.5	20.95	38.5	21.07	38.5
	Case5	22.69	38.5	22.01	38.5	21.99	38.5

		RF Output Power (Conducted)					
TEST CONDITIONS		Channel1 512(L)		Channel 661(M)		Channel 810(H)	
		1850.2MHz		1880.0MHz		1909.8MHz	
		dBm		dBm		dBm	
T _{nom} / V _{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM1		30.47	33	30.59	33	30.63	33
TM2		26.23	33	26.12	33	26.83	33
TEST CONDITIONS		Channel 9262(L)		Channel 9400(M)		Channel 9538(H)	
		1852.4MHz		1880.0MHz		1907.6MHz	
		dBm		dBm		dBm	
T _{nom} / V _{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM5		22.54	33	22.86	33	22.67	33
TM6	Case1	22.67	33	22.59	33	22.53	33
	Case2	22.53	33	22.39	33	22.63	33
	Case3	22.66	33	22.64	33	22.64	33
	Case4	22.15	33	22.28	33	22.07	33
TM7	Case1	22.63	33	21.87	33	21.91	33
	Case2	21.58	33	21.65	33	21.48	33
	Case3	21.55	33	21.28	33	21.62	33
	Case4	21.69	33	21.49	33	21.47	33
	Case5	21.79	33	21.11	33	21.39	33

ERP

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBi]	Cable Loss [dB]	Substitution Level (ERP)	FCC limit [dBm]	Result
							[dBm]		
TM3	824.2	31.40	Dipole Ant.	34.55	-2.75	0.6	31.20	38.5	Pass
TM3	837.0	31.50	Dipole Ant.	34.77	-2.87	0.6	31.30	38.5	Pass
TM3	848.8	31.38	Dipole Ant.	34.63	-2.85	0.6	31.18	38.5	Pass
TM4	824.2	25.78	Dipole Ant.	28.93	-2.75	0.6	25.58	38.5	Pass
TM4	837.0	25.90	Dipole Ant.	29.17	-2.87	0.6	25.70	38.5	Pass
TM4	848.8	26.00	Dipole Ant.	29.25	-2.85	0.6	25.80	38.5	Pass
TM8	826.4	21.56	Dipole Ant.	24.71	-2.75	0.6	21.36	38.5	Pass
TM8	836.4	21.46	Dipole Ant.	24.73	-2.87	0.6	21.26	38.5	Pass
TM8	846.6	21.52	Dipole Ant.	24.77	-2.85	0.6	21.32	38.5	Pass

Note: a, For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{ERP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP=Signal Generator Level

EIRP

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBi]	Cable Loss [dB]	Substitution Level (ERP)	FCC limit [dBm]	Result
							[dBm]		
TM1	1850.2	29.56	Horn Ant.	26.15	4.5	1	29.65	33	Pass
TM1	1880.0	29.49	Horn Ant.	26.07	4.5	1	29.57	33	Pass
TM1	1909.8	29.39	Horn Ant.	25.68	4.8	1	29.48	33	Pass
TM2	1850.2	25.27	Horn Ant.	21.75	4.5	1	25.25	33	Pass
TM2	1880.0	25.19	Horn Ant.	21.66	4.5	1	25.16	33	Pass
TM2	1909.8	25.11	Horn Ant.	21.39	4.8	1	25.19	33	Pass
TM3	1852.4	22.89	Horn Ant.	19.23	4.5	1	22.73	33	Pass
TM3	1880.0	22.42	Horn Ant.	19.02	4.5	1	22.52	33	Pass
TM3	1907.6	22.35	Horn Ant.	18.68	4.8	1	22.48	33	Pass

Note: a, For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP=Signal Generator Level

4.3. OCCUPIED BANDWIDTH

Test condition

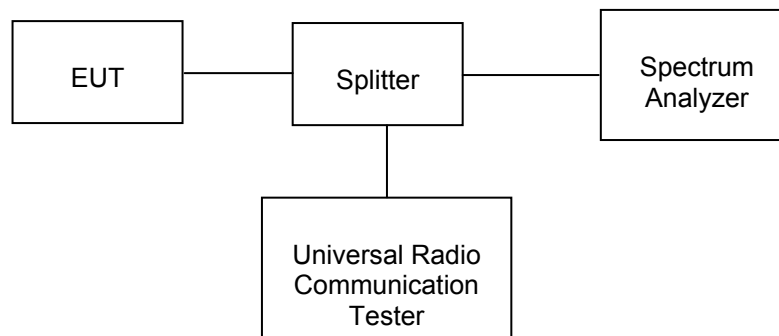
CFR 47 §2.1049, §22.917, §22.905 and §24.238.

TEST PROCEDURE

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 3 kHz (Cellular /PCS) and the 99% bandwidth was recorded.

Test Set-up figure:

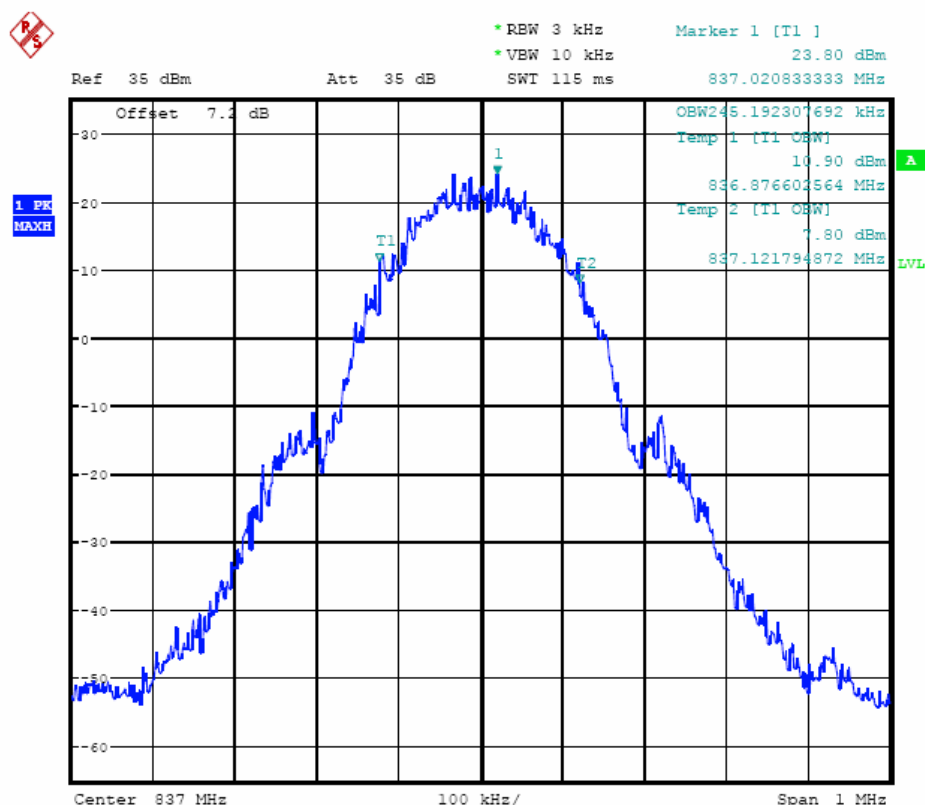


TEST RESULTS

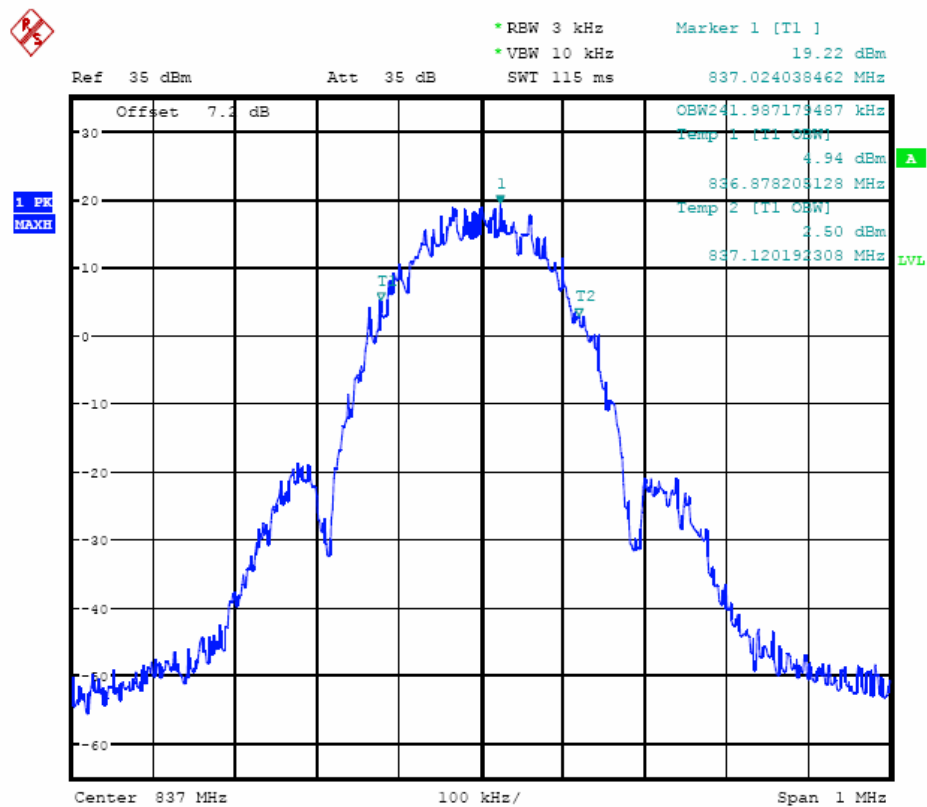
The EUT has met the requirements for Spurious Emission at Antenna Terminal.

Please refer to the following plots:

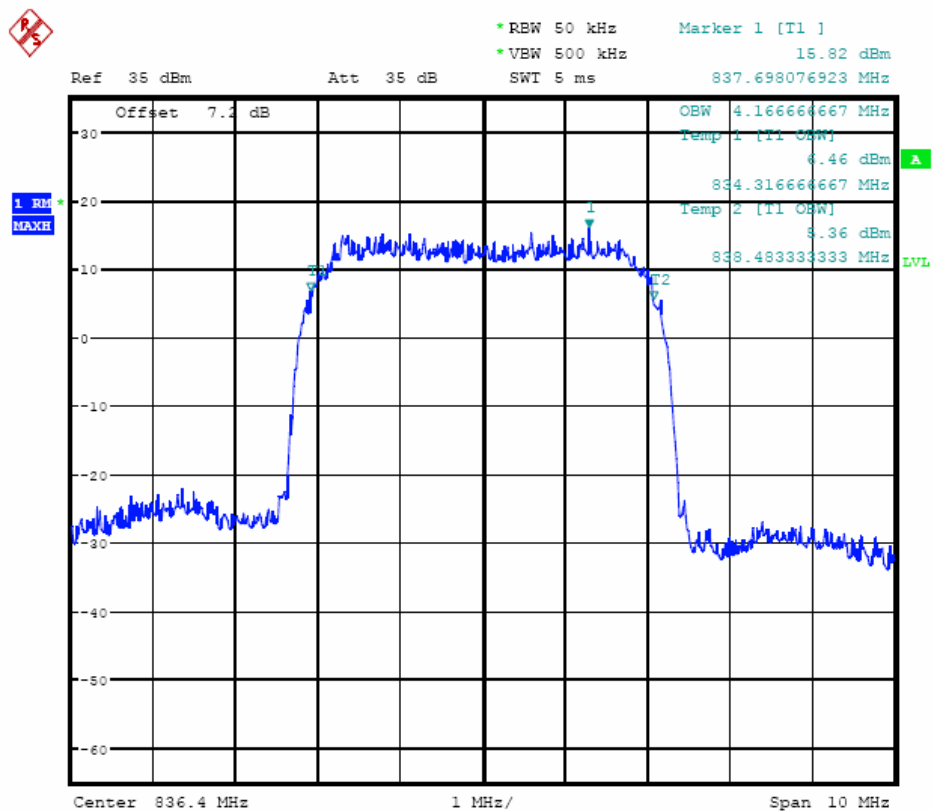
For GSM850:GPRS(Channel 192)



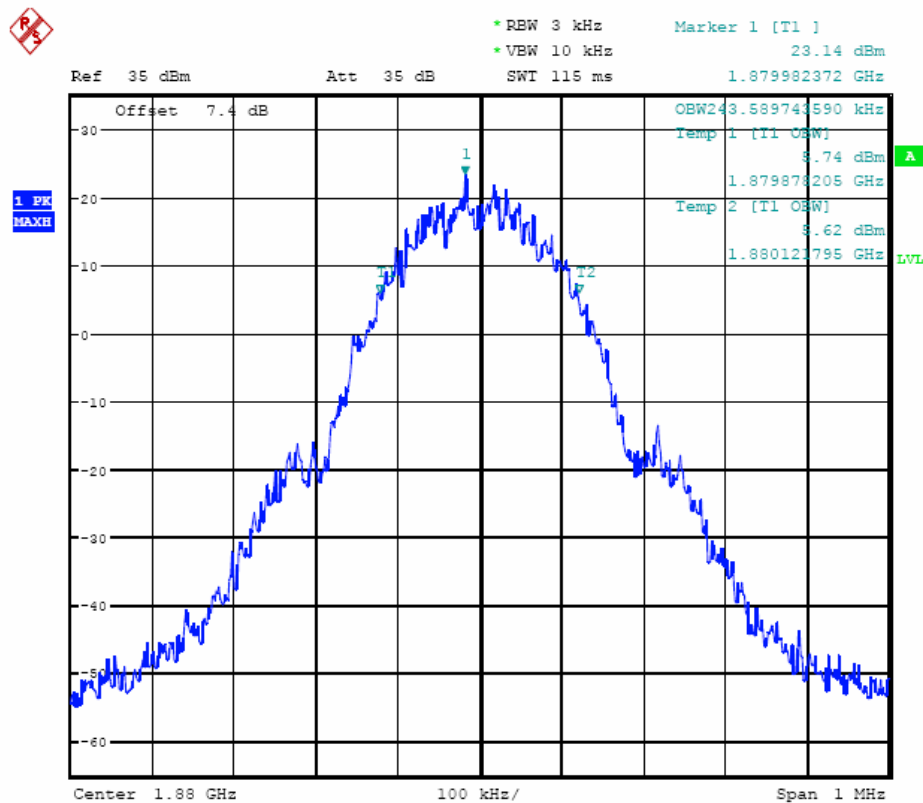
For GSM850:EGPRS(Channel 192)



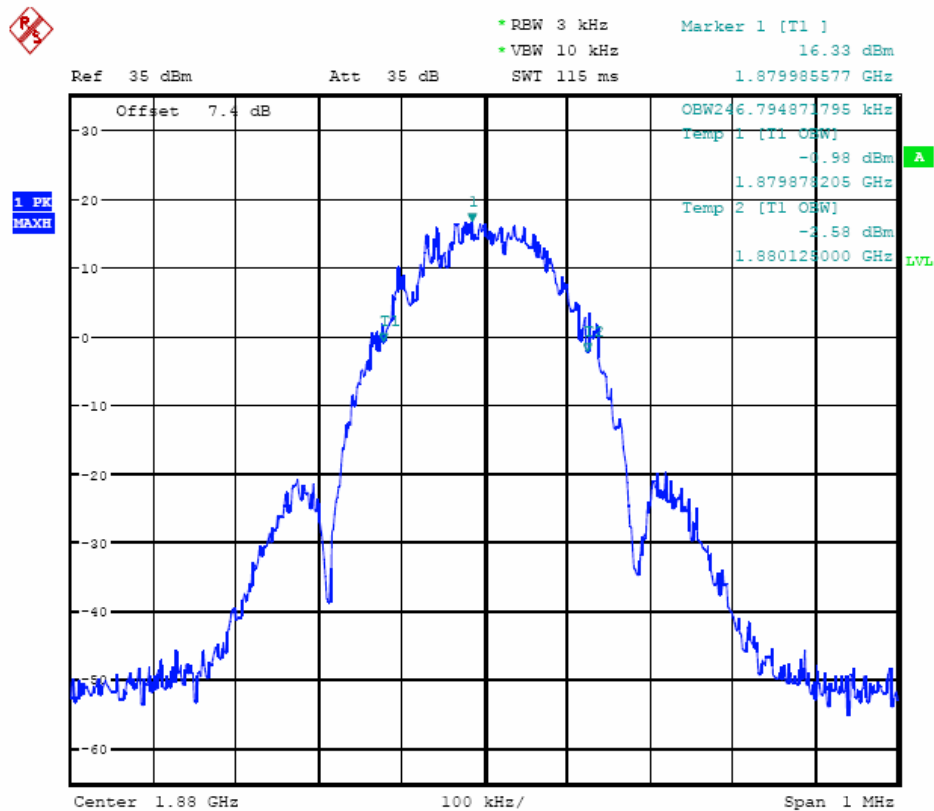
For WCDMA band V:Channel 4182



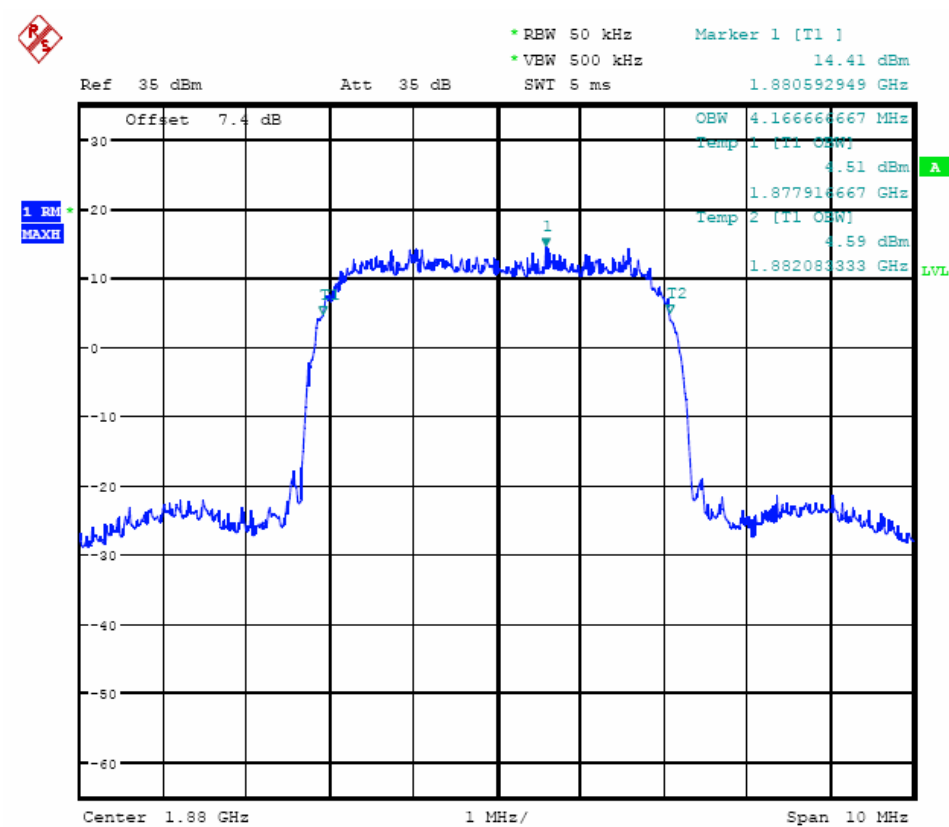
For PCS1900:GPRS(Channel 661)



For PCS1900:EGPRS(Channel 661)



For WCDMA band II:Channel 9400



4.4. Spurious Emission at Antenna Terminal

Test condition

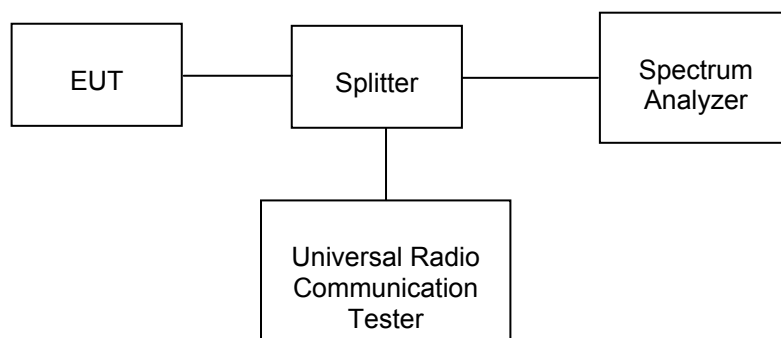
CFR 47 §2.1051, §22.917(a) and §24.238(a).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

TEST PROCEDURE

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

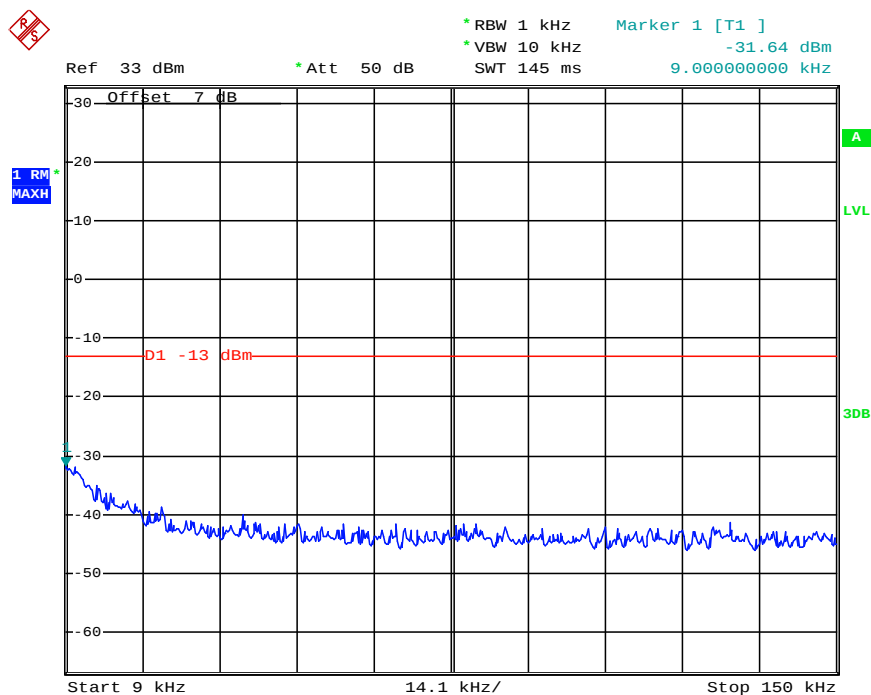
Test Set-up figure:

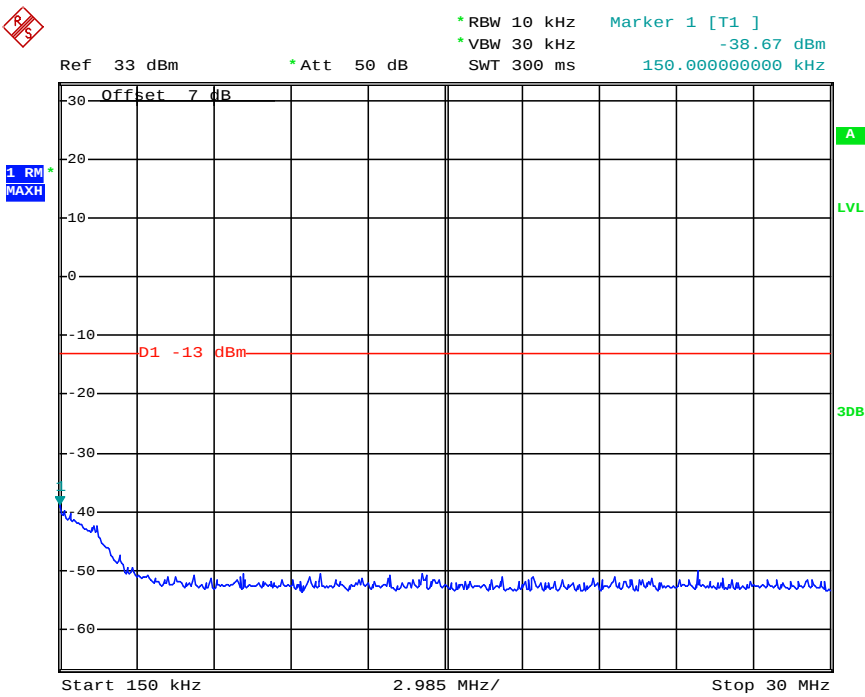


TEST RESULTS

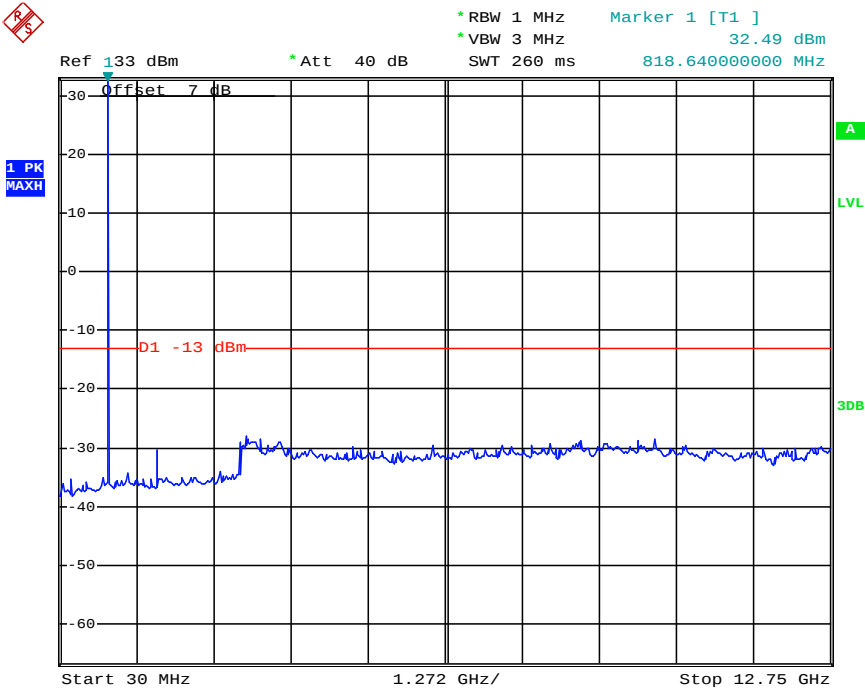
The EUT has met the requirements for Spurious Emission at Antenna Terminal.
Please refer to the following plots:

For GSM850:GPRS(Channel 128)



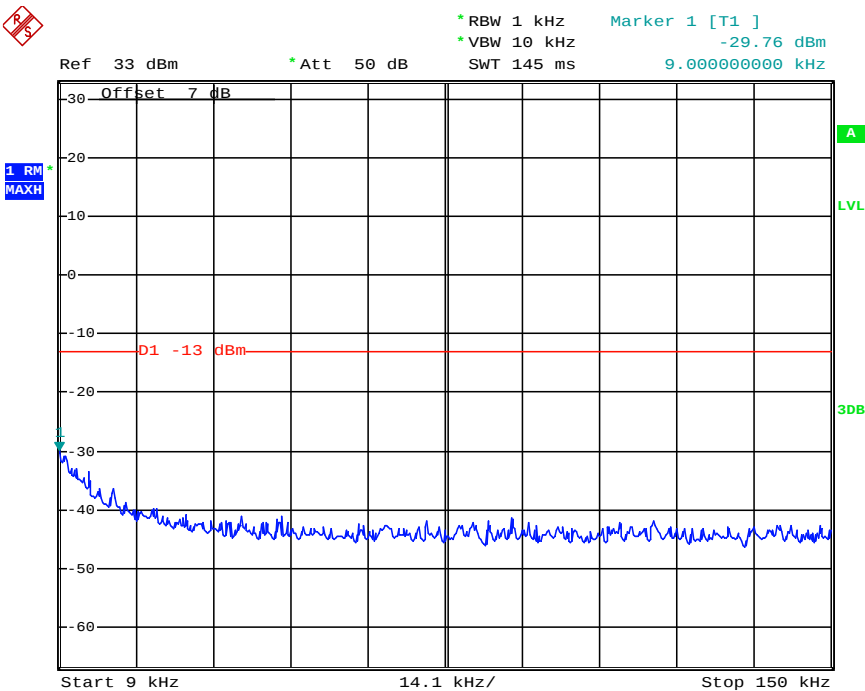


Date: 2.FEB.2013 17:34:50

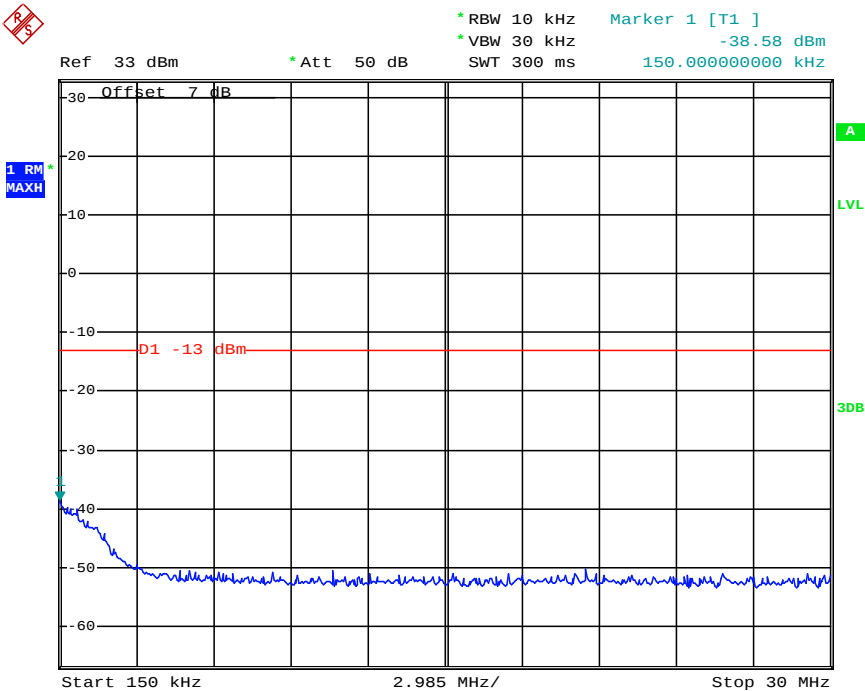


Date: 2.FEB.2013 19:16:39

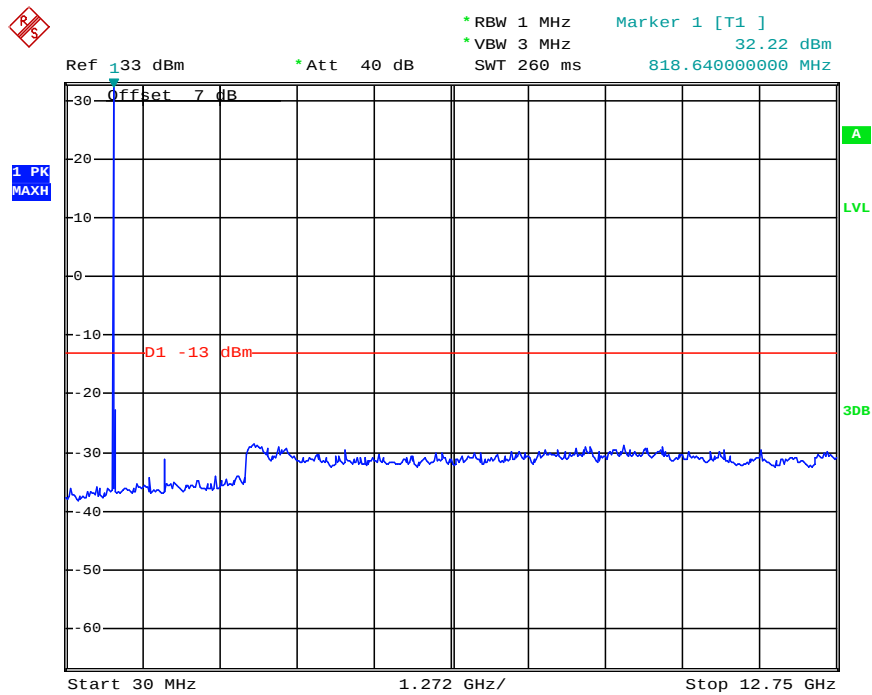
For GSM850:GPRS(Channel 192)



Date: 2.FEB.2013 17:28:49

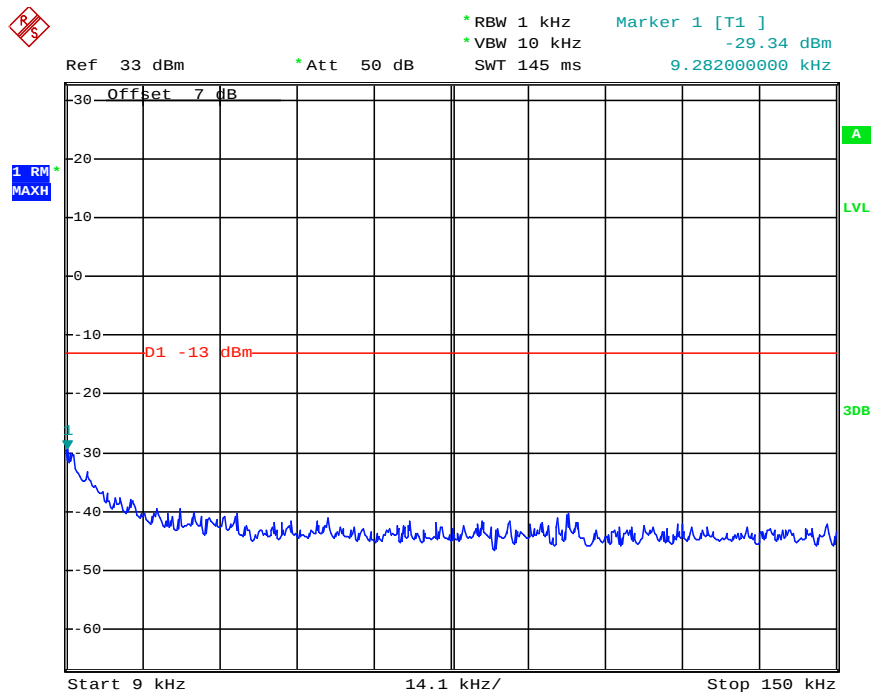


Date: 2.FEB.2013 17:35:27

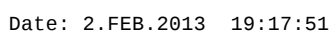
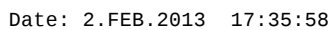


Date: 2.FEB.2013 19:17:28

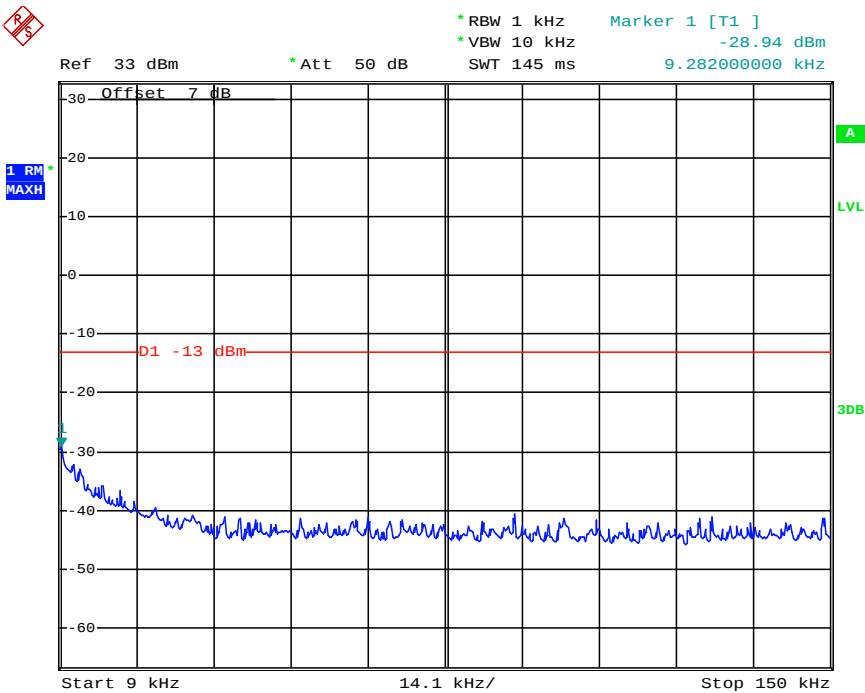
For GSM850:GPRS(Channel 251)



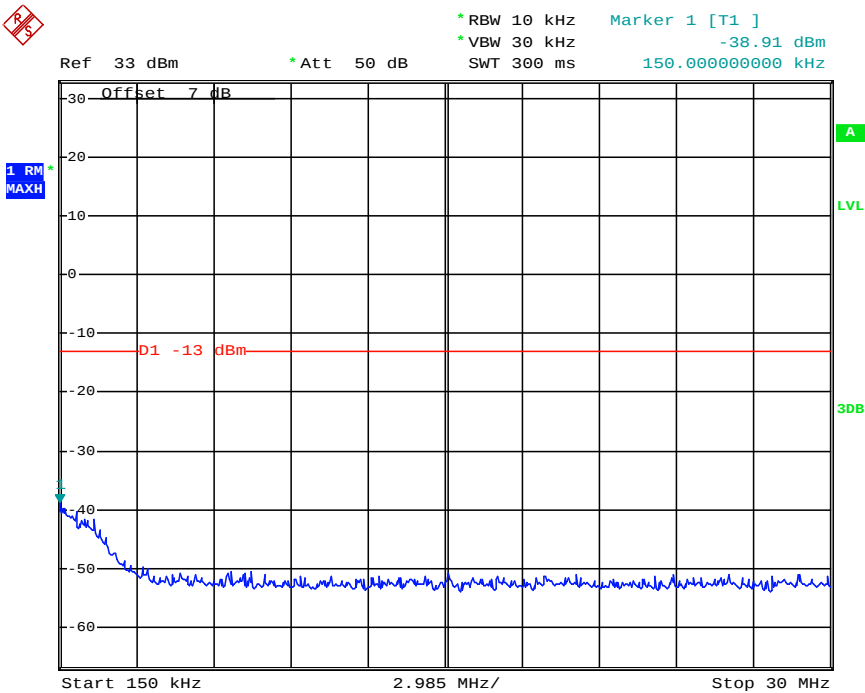
Date: 2.FEB.2013 17:29:25



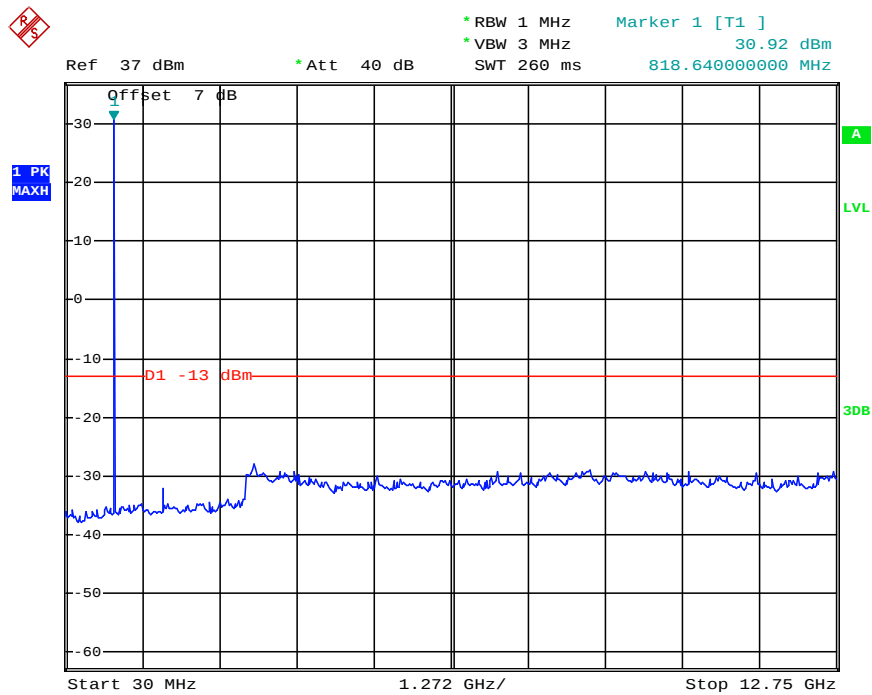
For GSM850:EGPRS(Channel 128)



Date: 2.FEB.2013 17:29:58

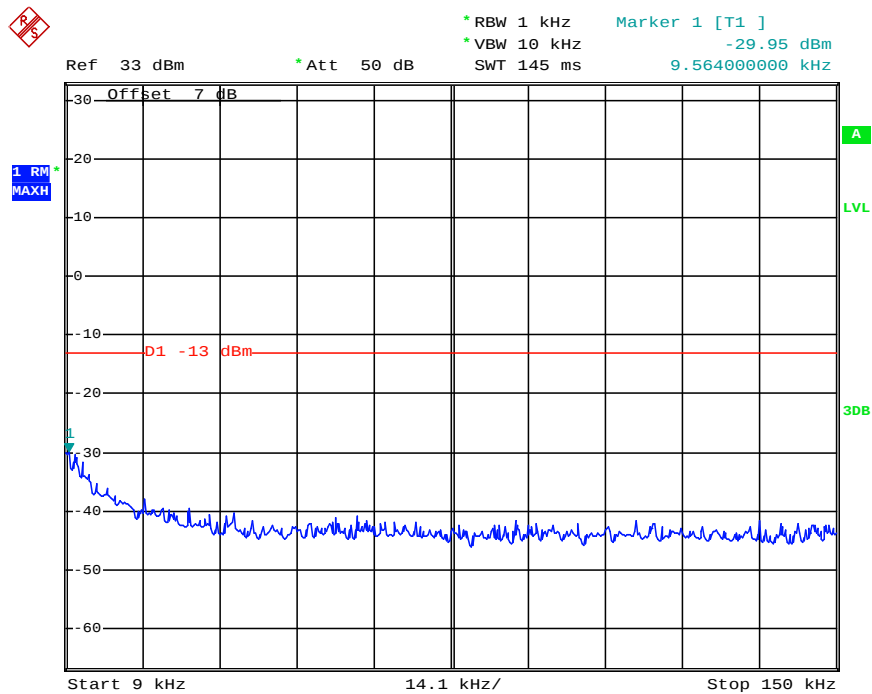


Date: 2.FEB.2013 17:36:41

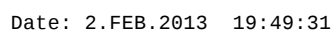
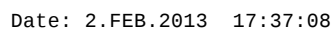


Date: 2.FEB.2013 19:50:06

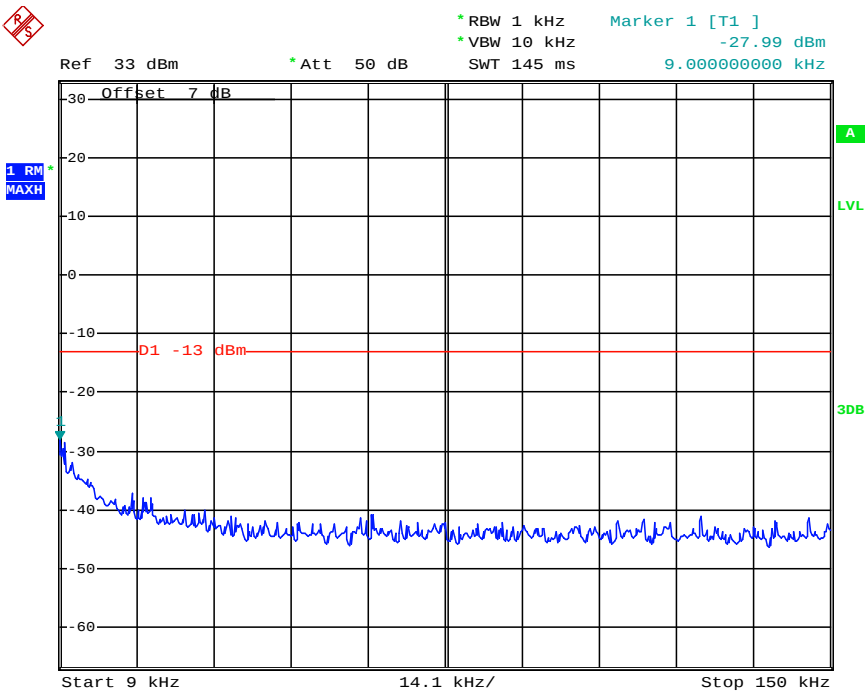
For GSM850:EGPRS(Channel 192)



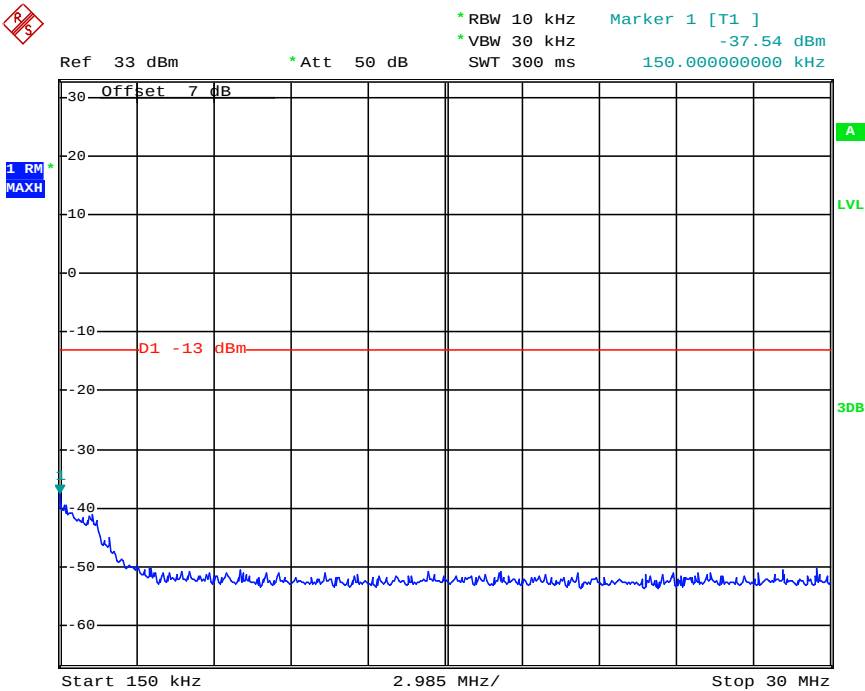
Date: 2.FEB.2013 17:31:11



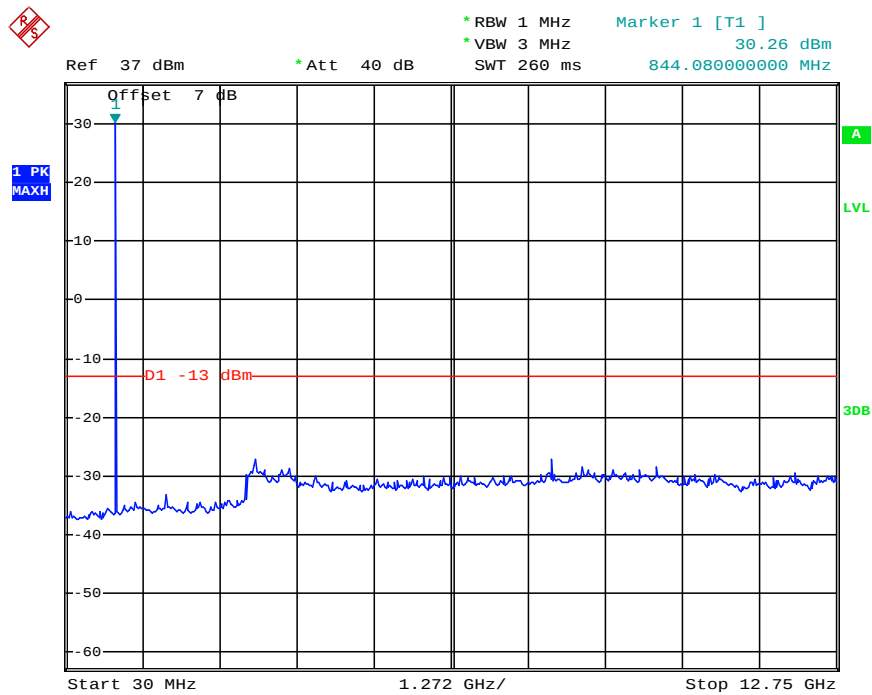
For GSM850:EGPRS(Channel 251)



Date: 2.FEB.2013 17:31:40

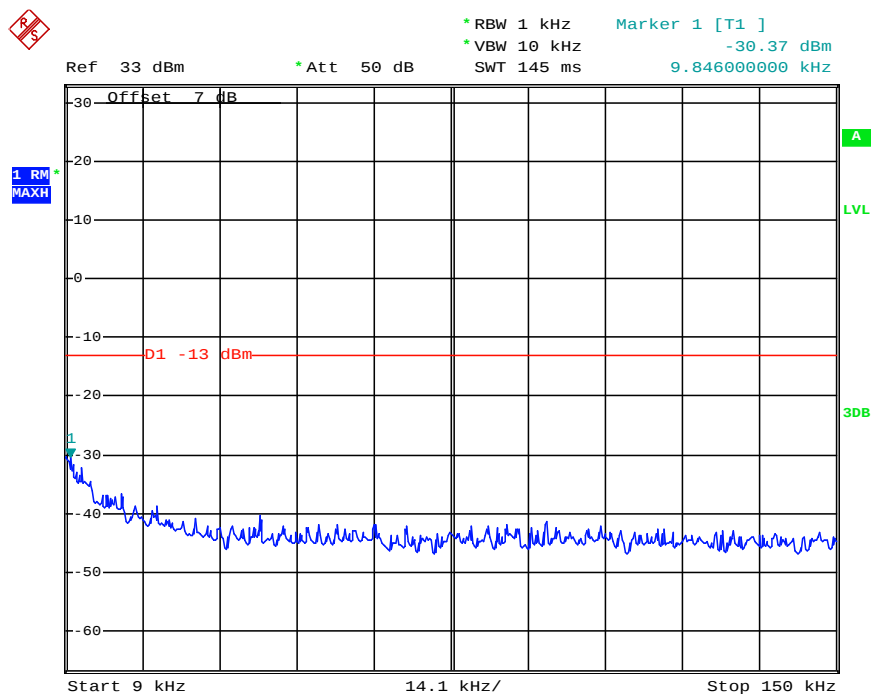


Date: 2.FEB.2013 17:37:34

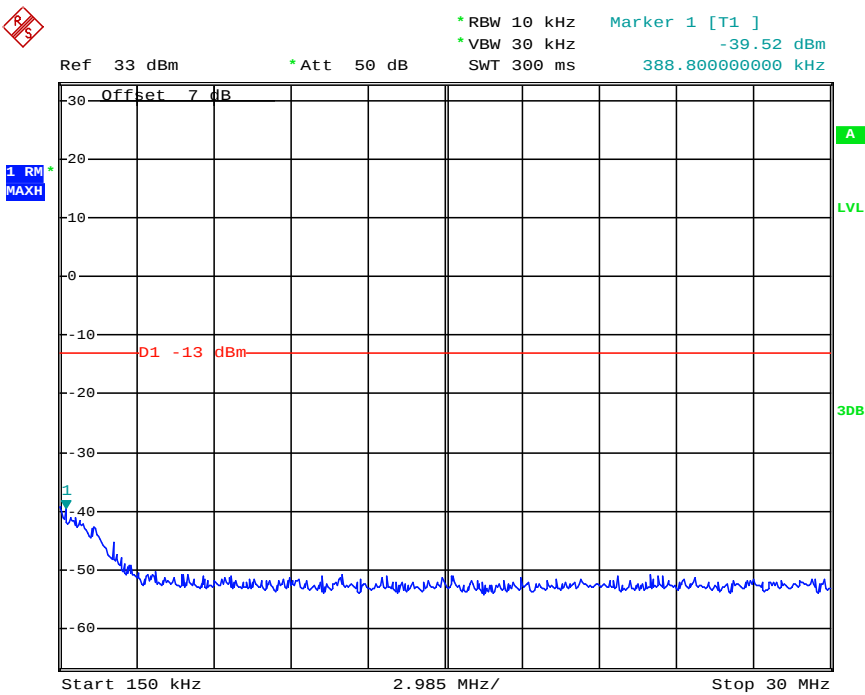


Date: 2.FEB.2013 19:50:39

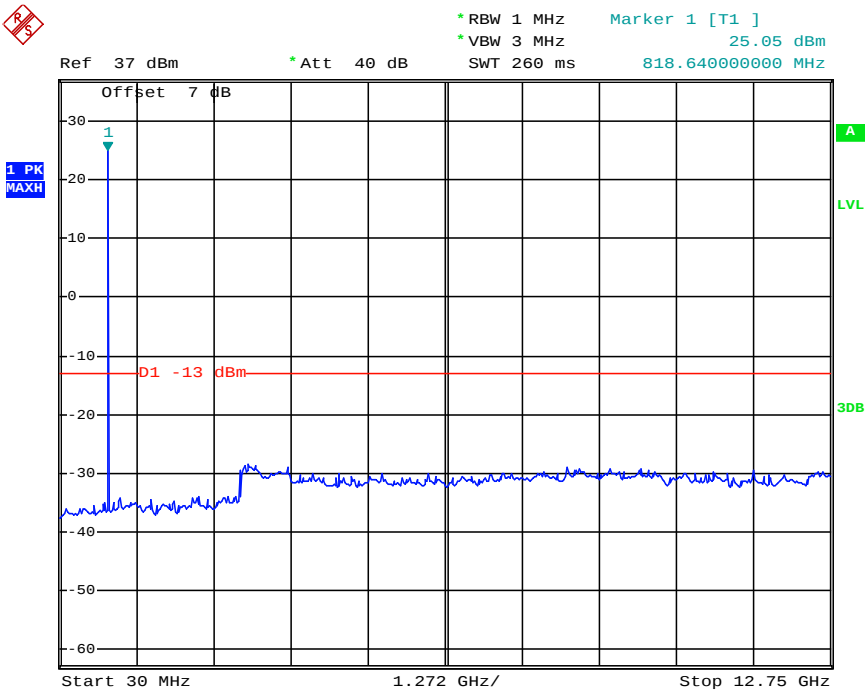
For WCDMA band V:Channel 4132



Date: 2.FEB.2013 17:31:57

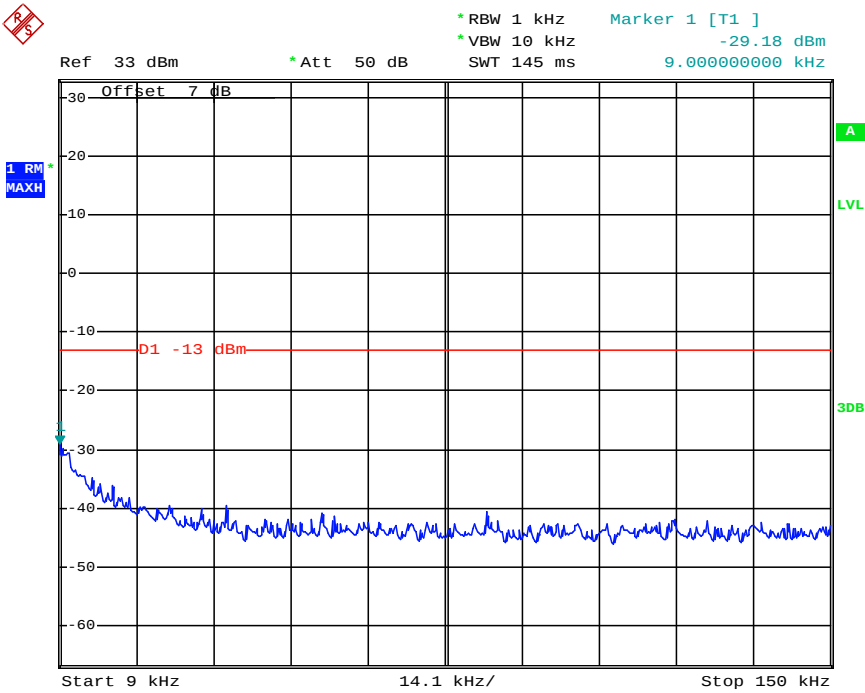


Date: 2.FEB.2013 17:37:52

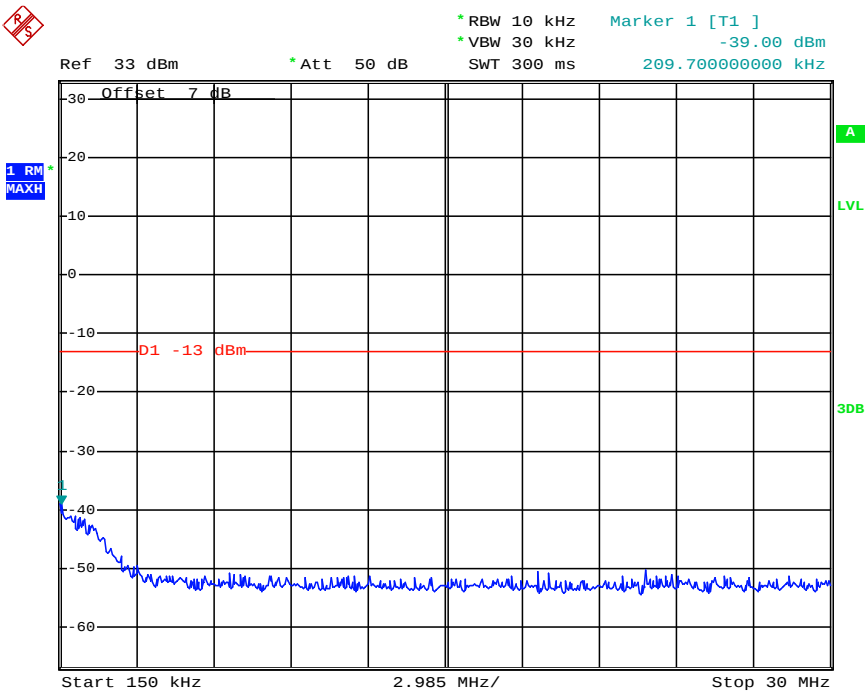


Date: 2.FEB.2013 19:52:56

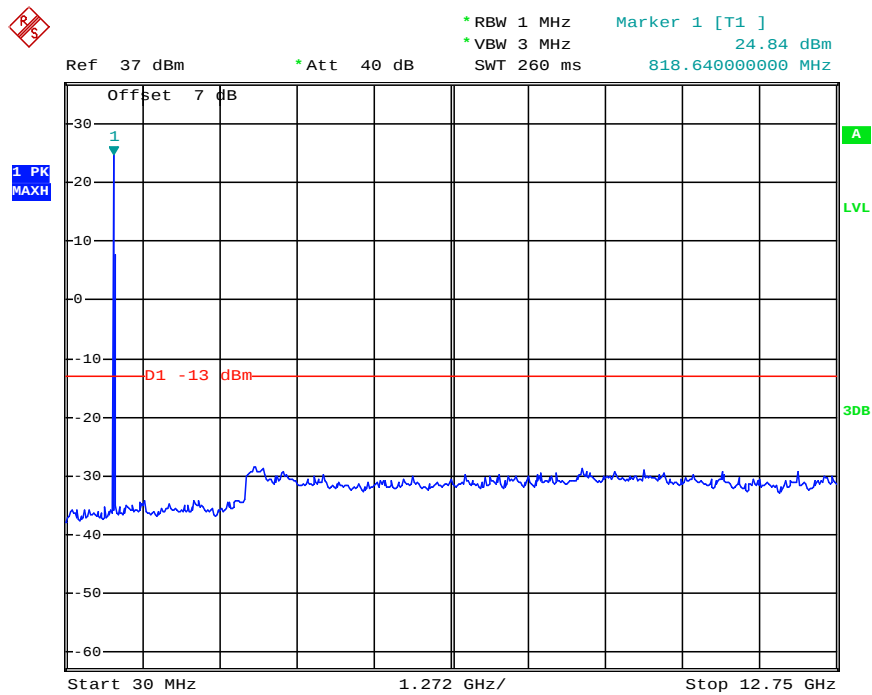
For WCDMA band V:Channel 4182



Date: 2.FEB.2013 17:32:33

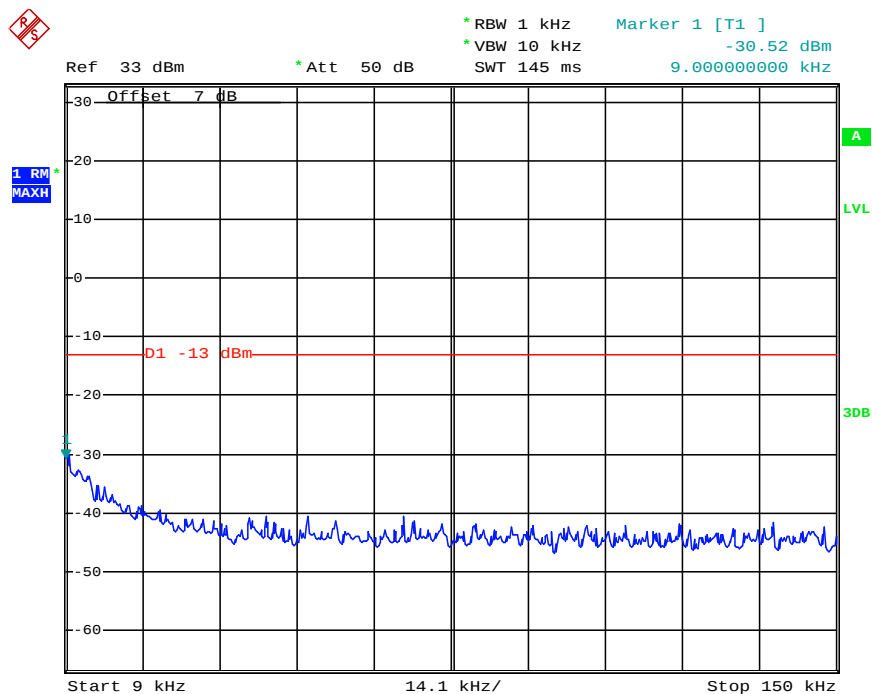


Date: 2.FEB.2013 17:38:06

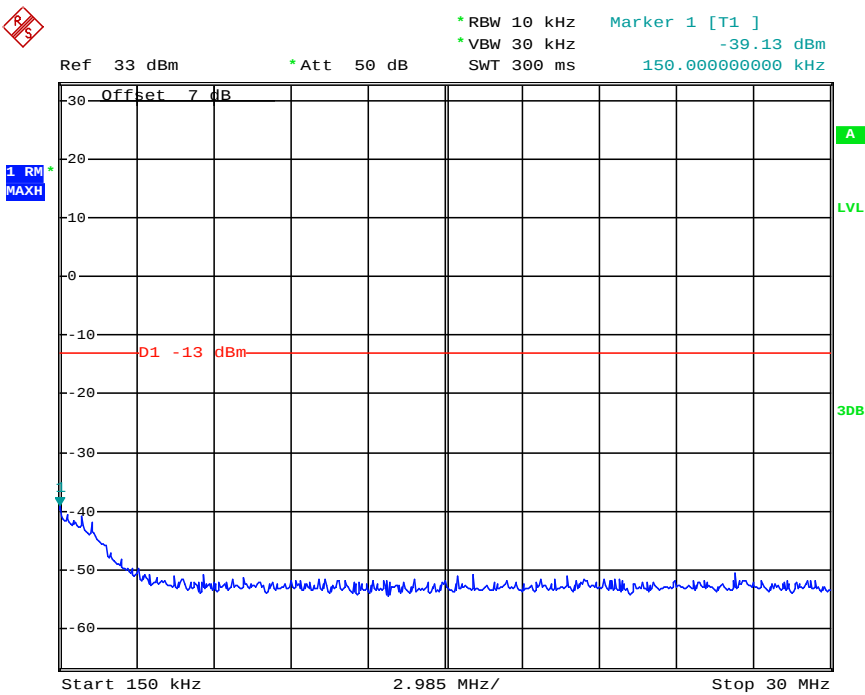


Date: 2.FEB.2013 19:53:27

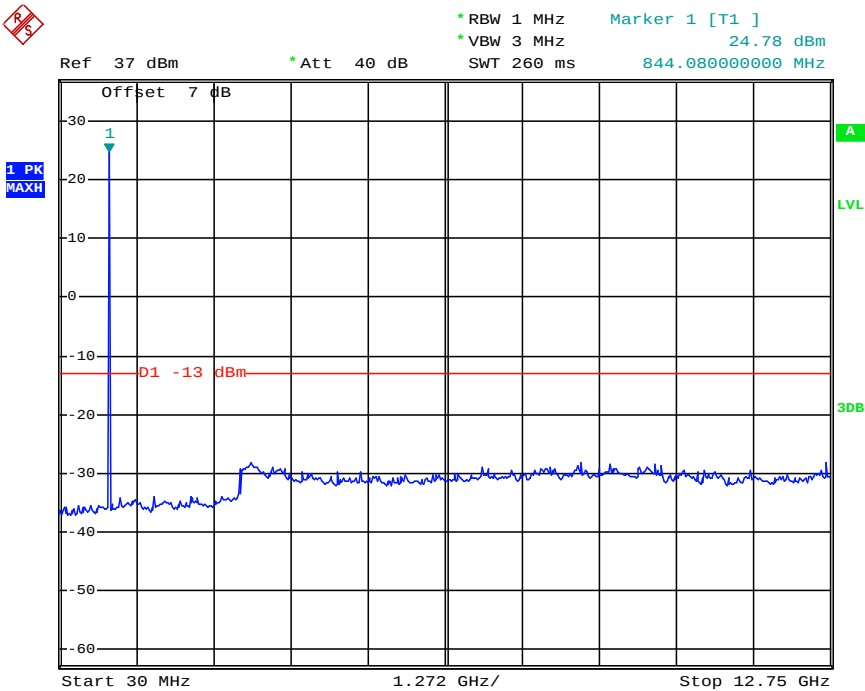
For WCDMA band V:Channel 4233



Date: 2.FEB.2013 17:32:57

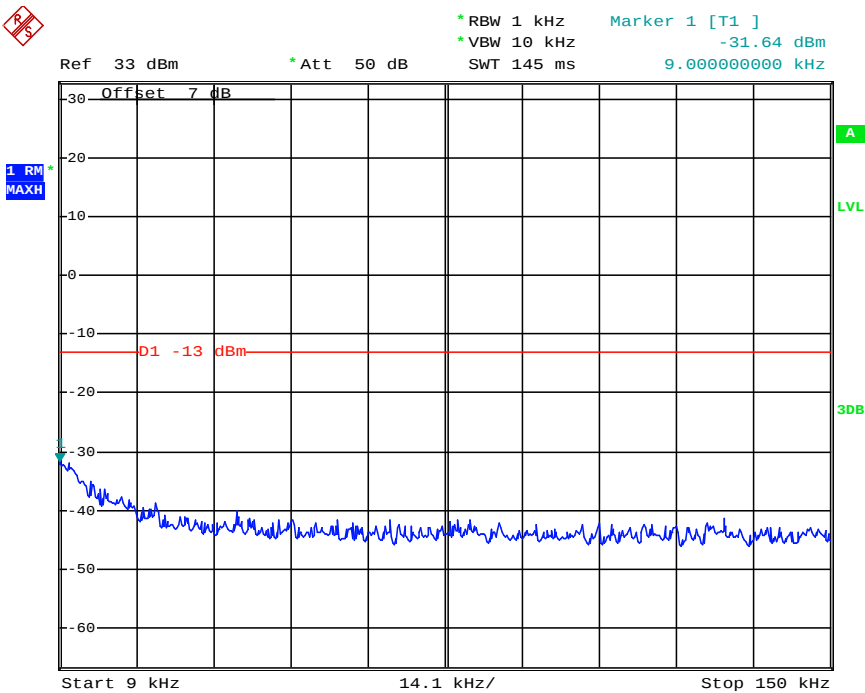


Date: 2.FEB.2013 17:38:19

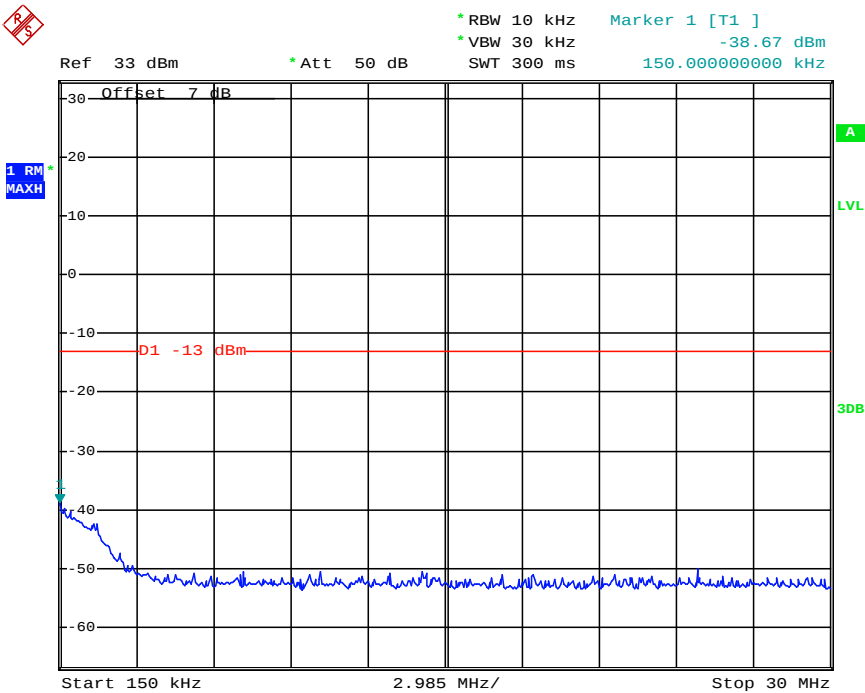


Date: 2.FEB.2013 19:54:19

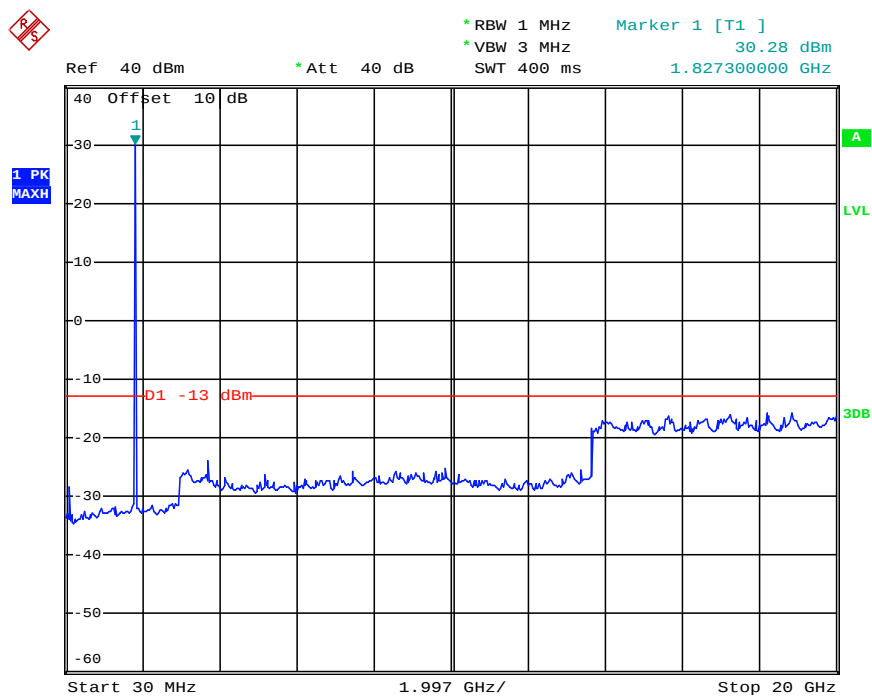
For PCS1900:GPRS(Channel 512)



Date: 2.FEB.2013 17:28:19

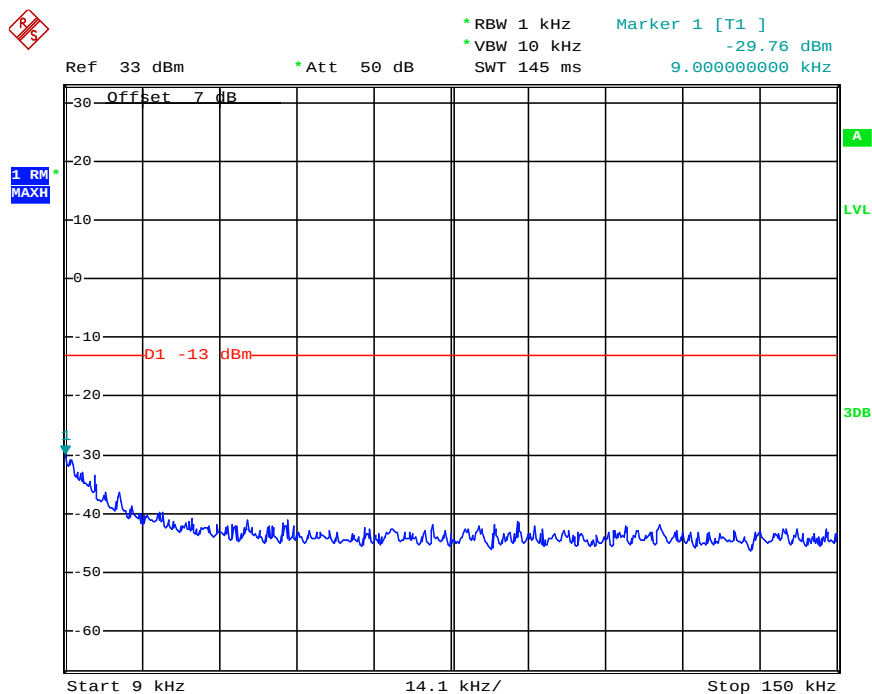


Date: 2.FEB.2013 17:34:50

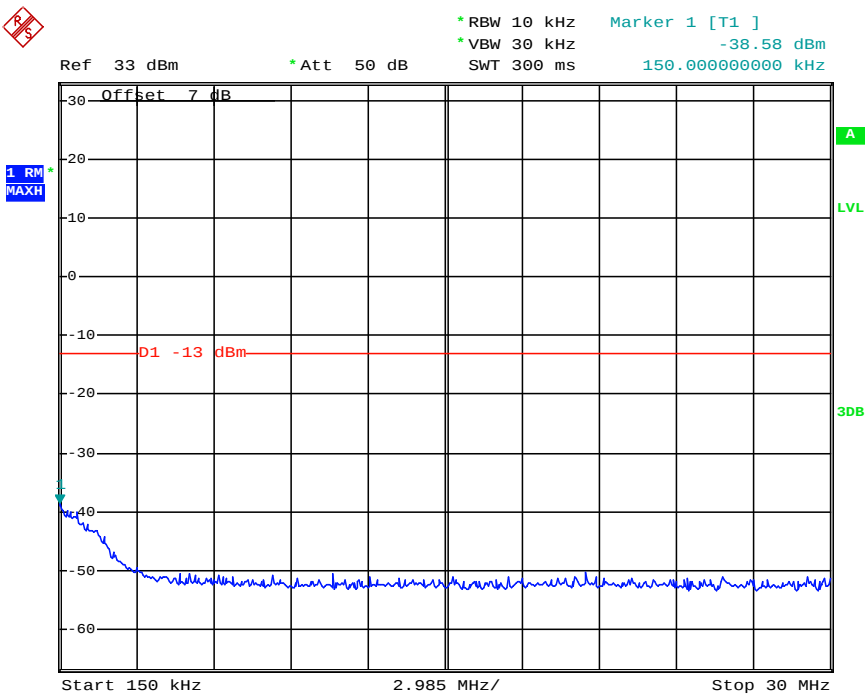


Date: 2.FEB.2013 19:27:50

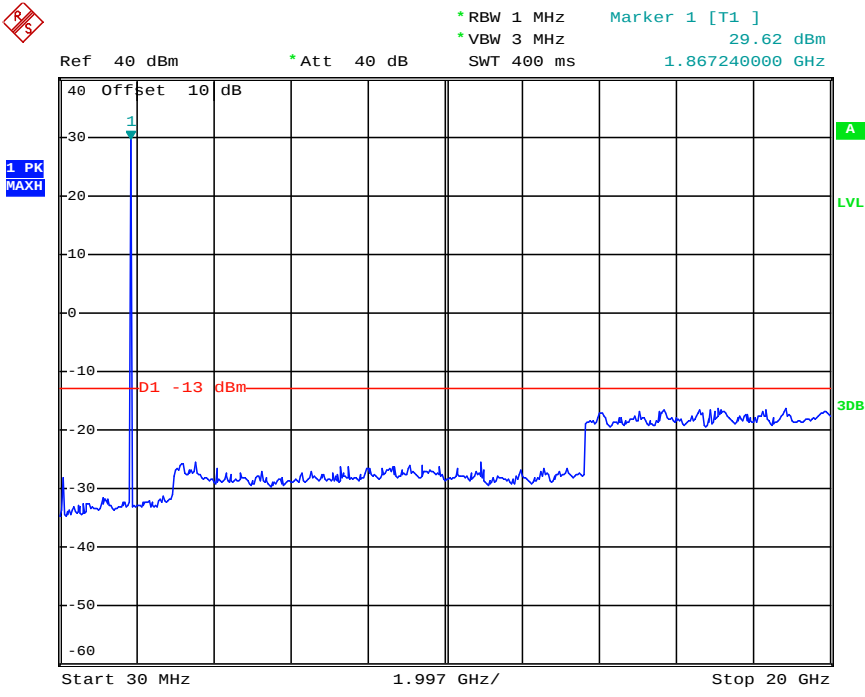
For PCS1900:GPRS(Channel 661)



Date: 2.FEB.2013 17:28:49

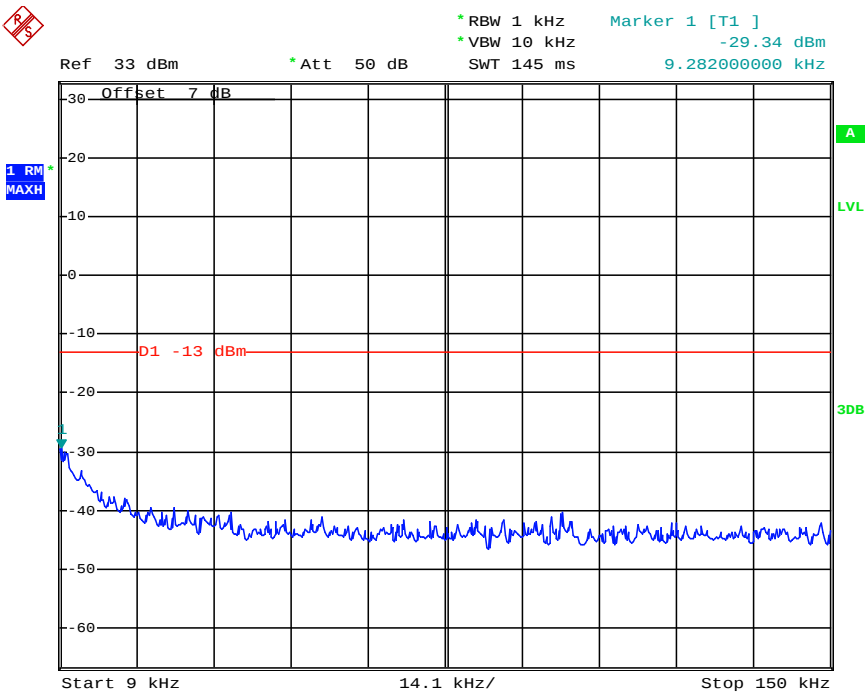


Date: 2.FEB.2013 17:35:27

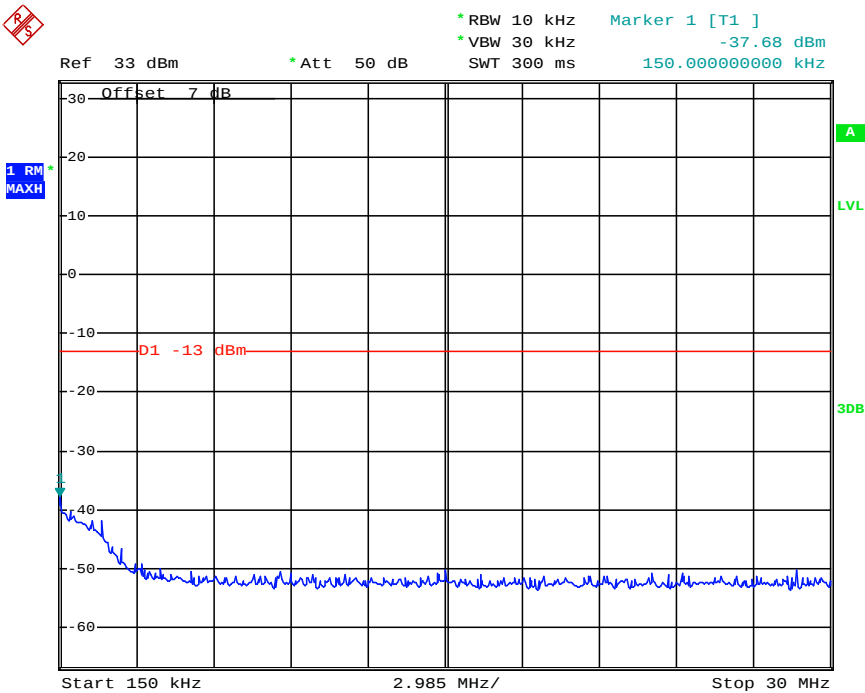


Date: 2.FEB.2013 19:29:51

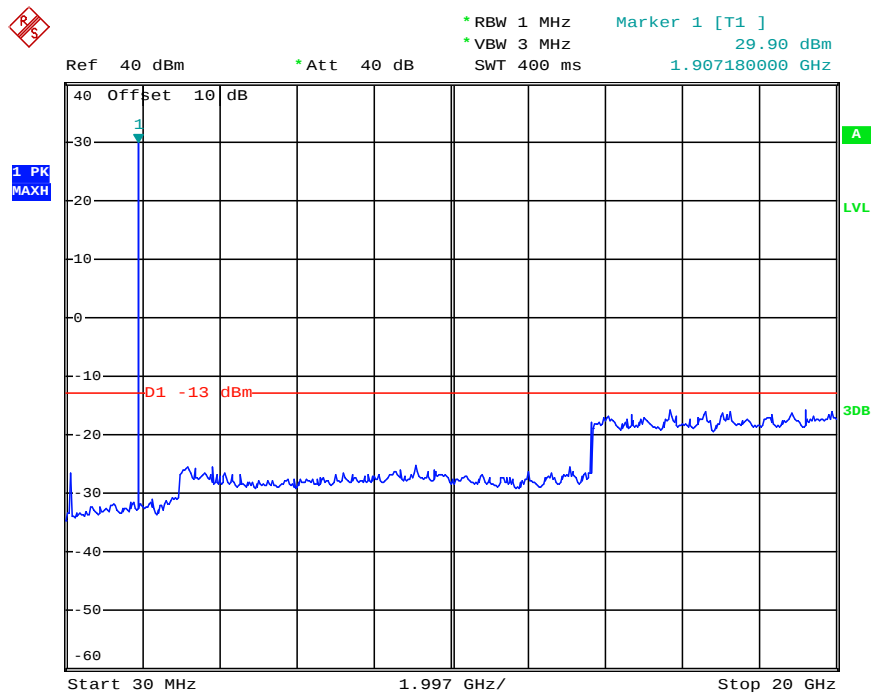
For PCS1900:GPRS(Channel 810)



Date: 2.FEB.2013 17:29:25

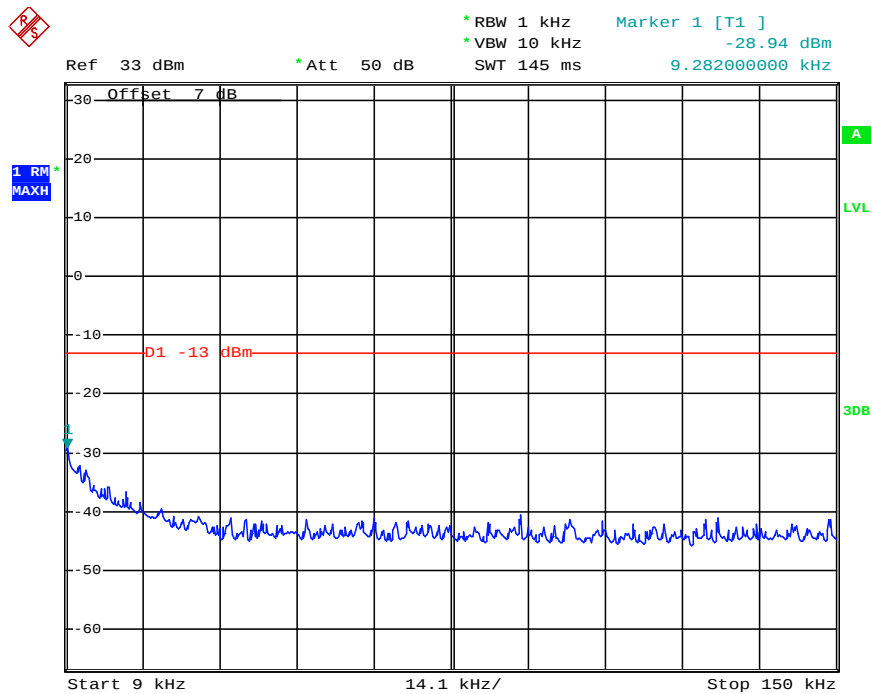


Date: 2.FEB.2013 17:35:58

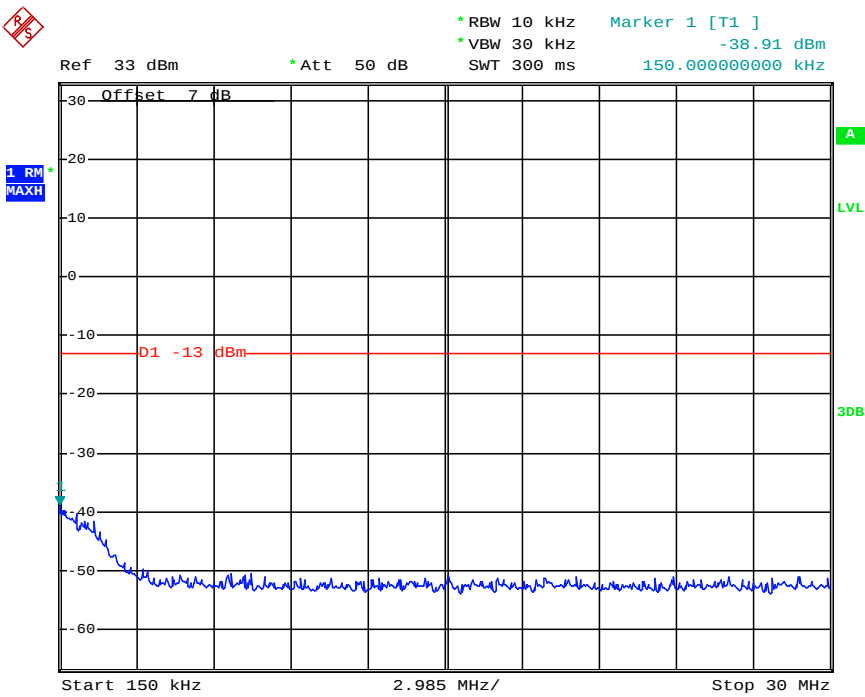


Date: 2.FEB.2013 19:29:03

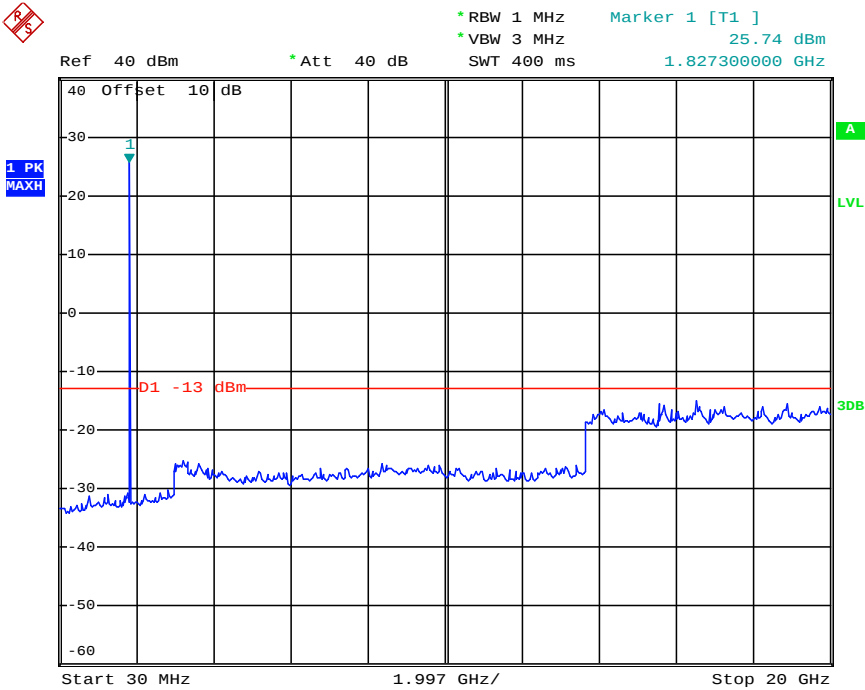
For PCS1900:EGPRS(Channel 512)



Date: 2.FEB.2013 17:29:58

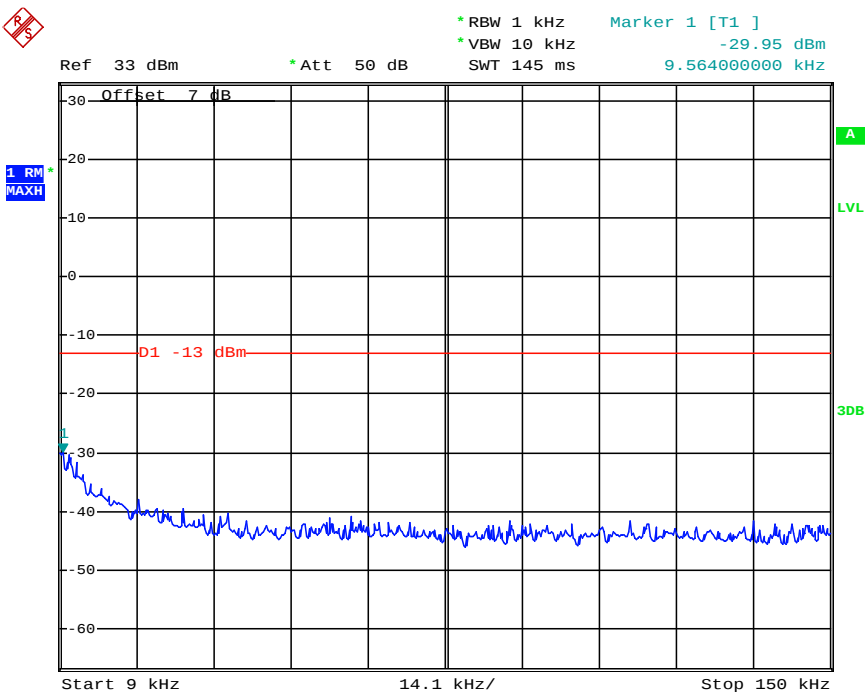


Date: 2.FEB.2013 17:36:41

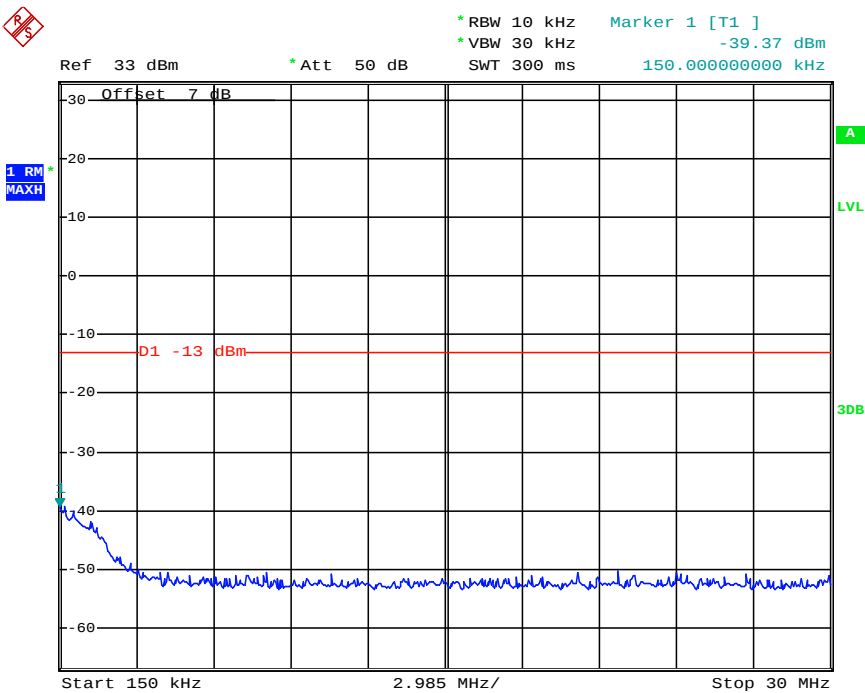


Date: 2.FEB.2013 19:47:11

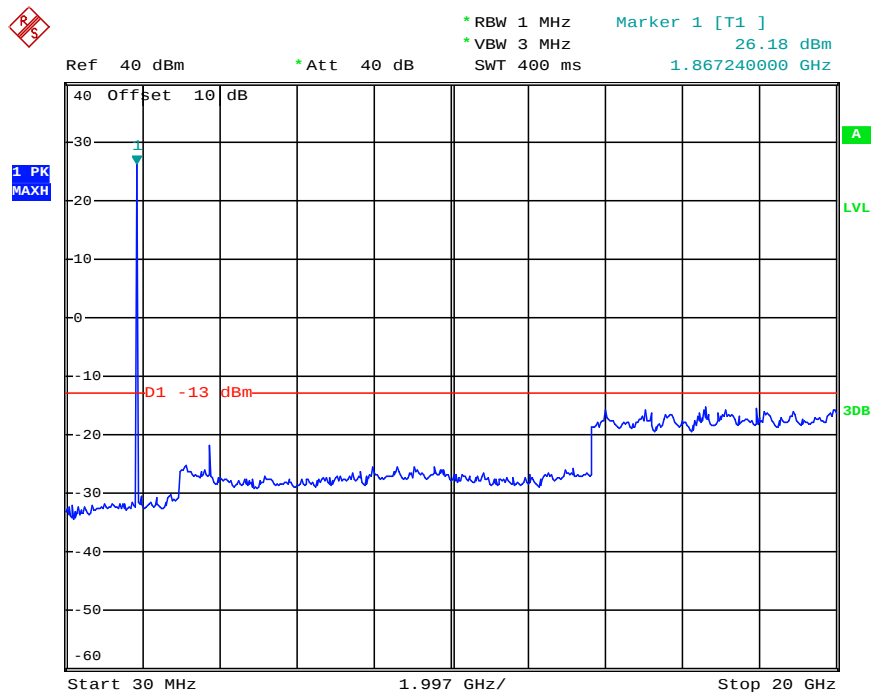
For PCS1900:EGPRS(Channel 661)



Date: 2.FEB.2013 17:31:11

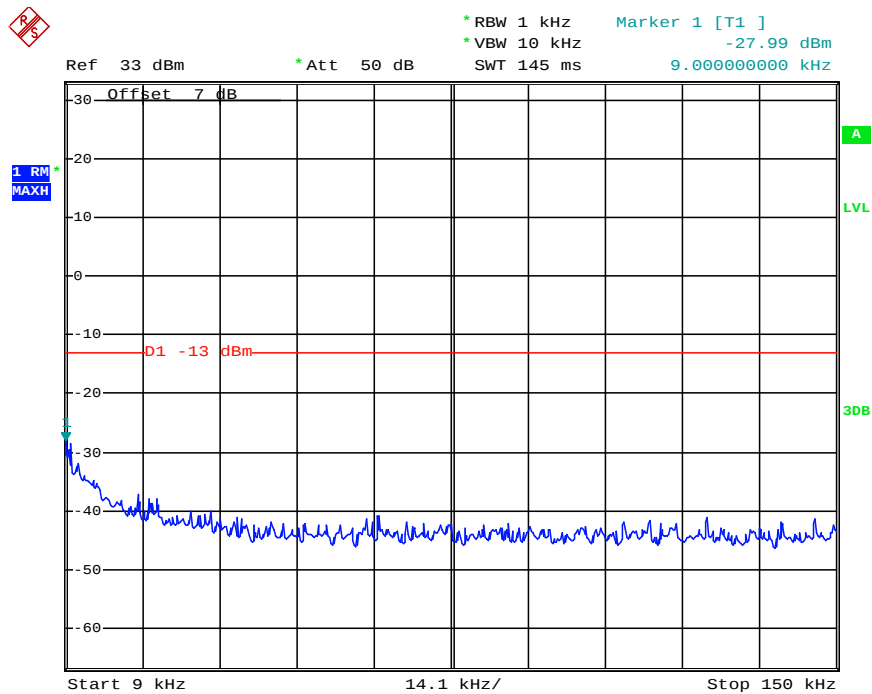


Date: 2.FEB.2013 17:37:08

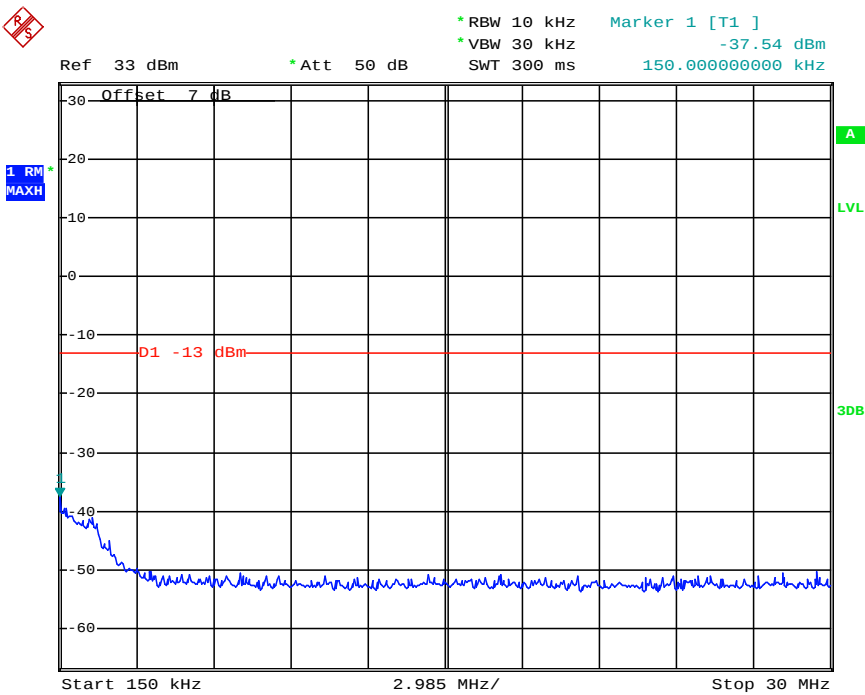


Date: 2.FEB.2013 19:46:21

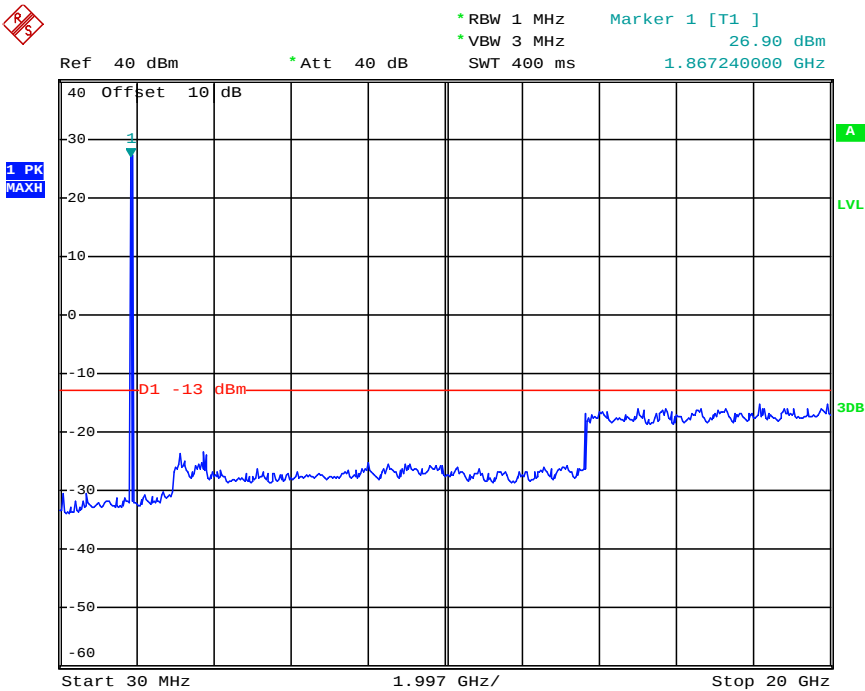
For PCS1900:EGPRS(Channel 810)



Date: 2.FEB.2013 17:31:40

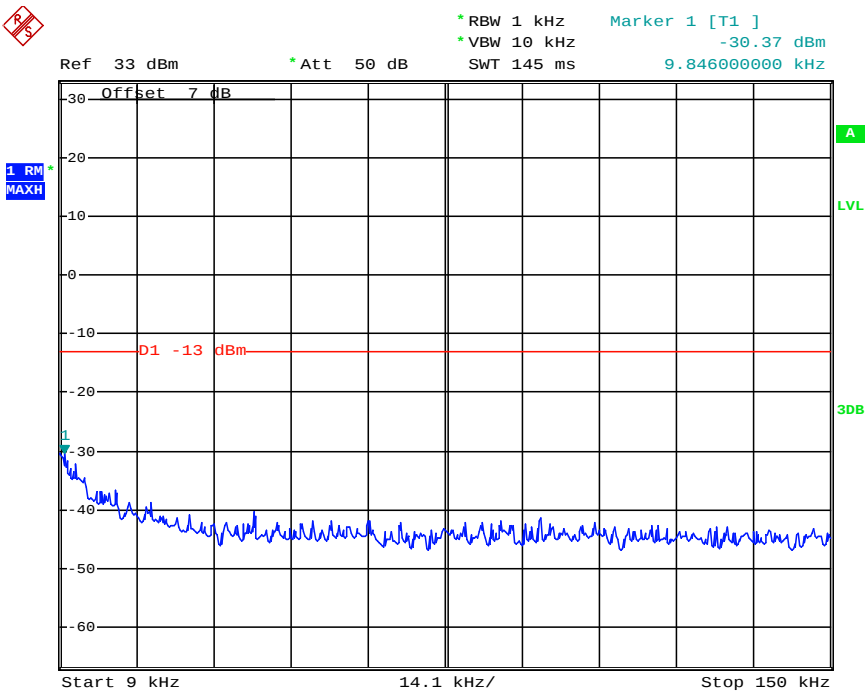


Date: 2.FEB.2013 17:37:34

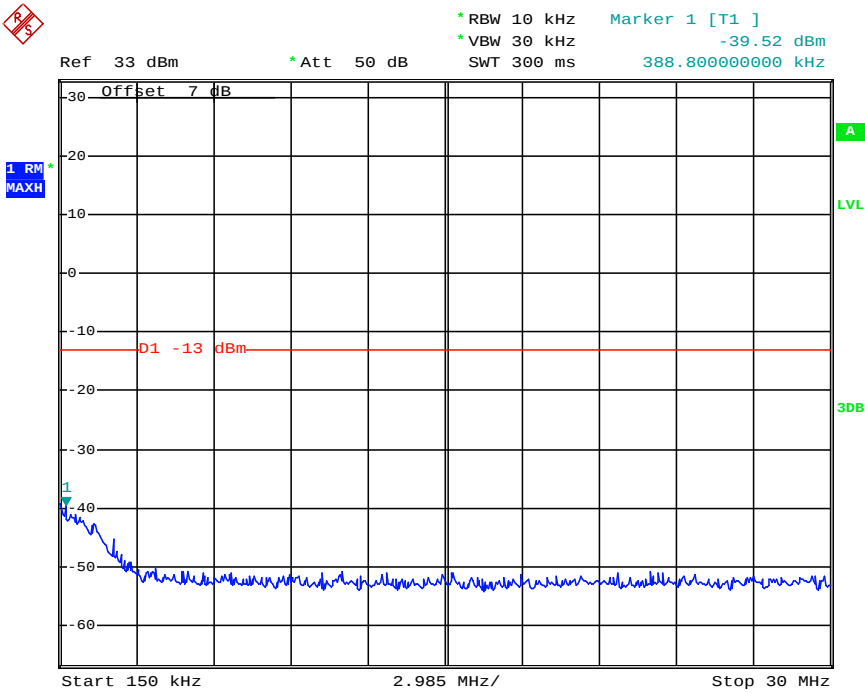


Date: 2.FEB.2013 19:45:15

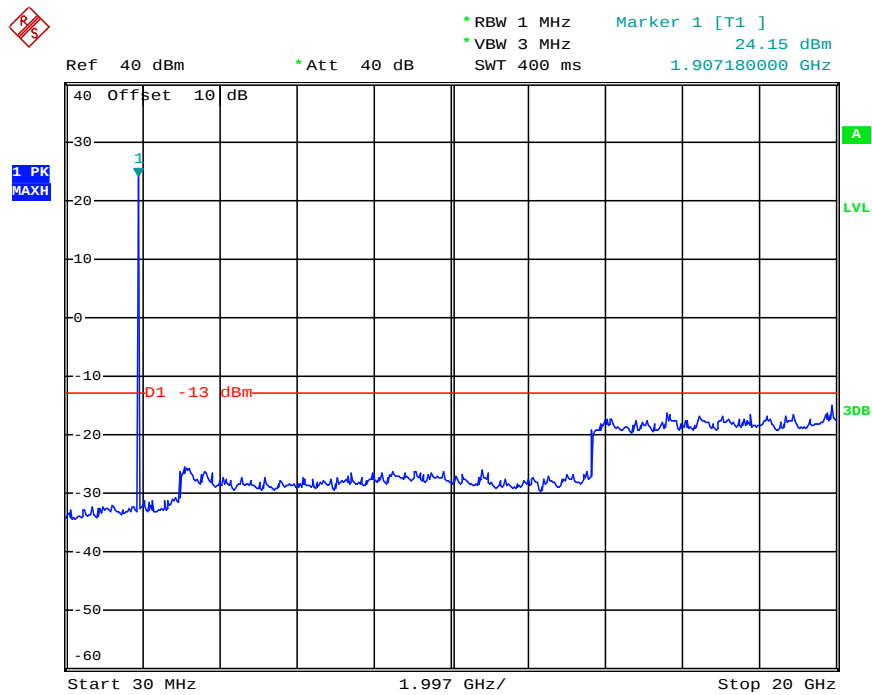
For WCDMA bandII:Channel 9262



Date: 2.FEB.2013 17:31:57

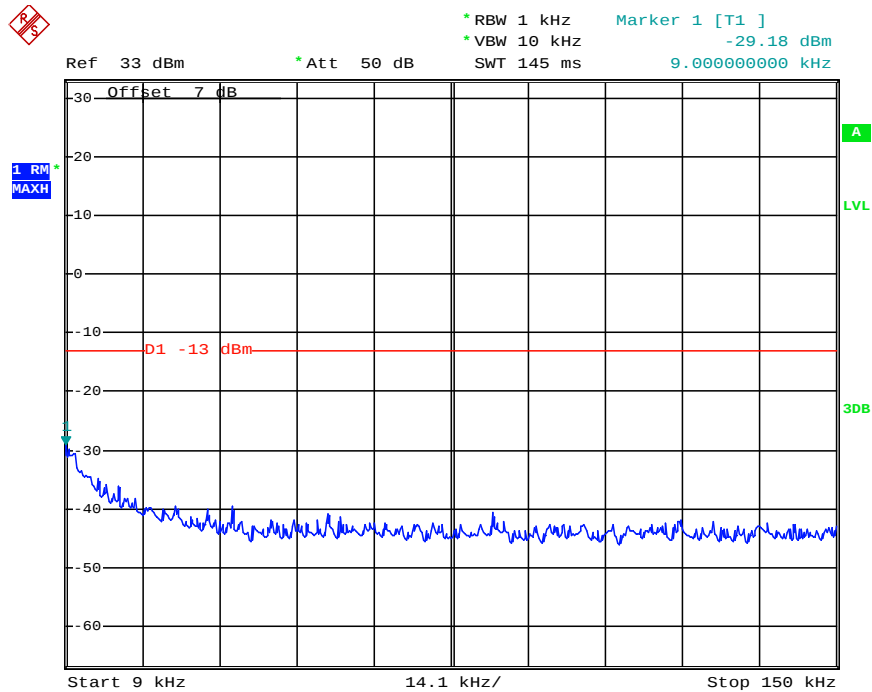


Date: 2.FEB.2013 17:37:52

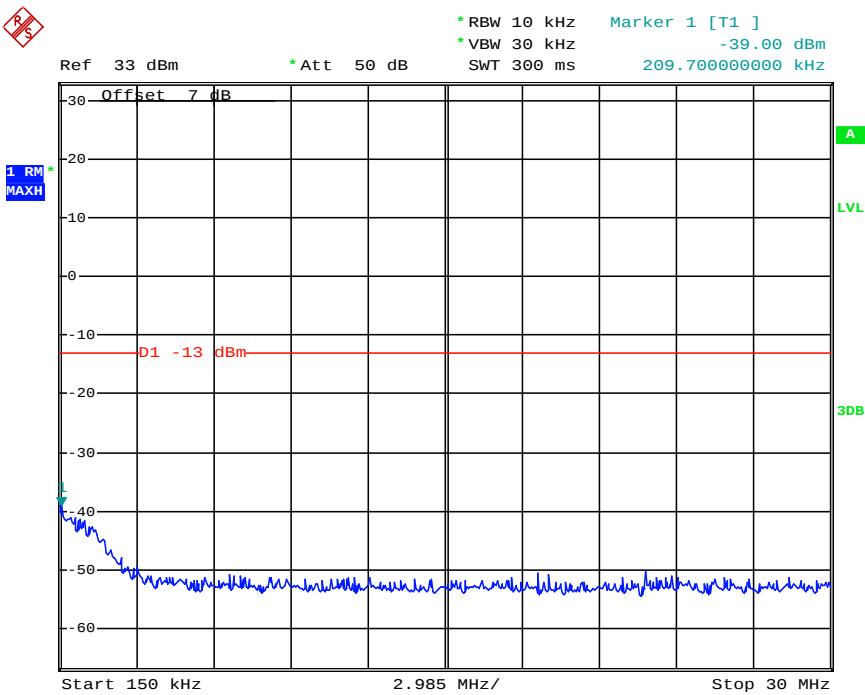


Date: 2.FEB.2013 19:59:04

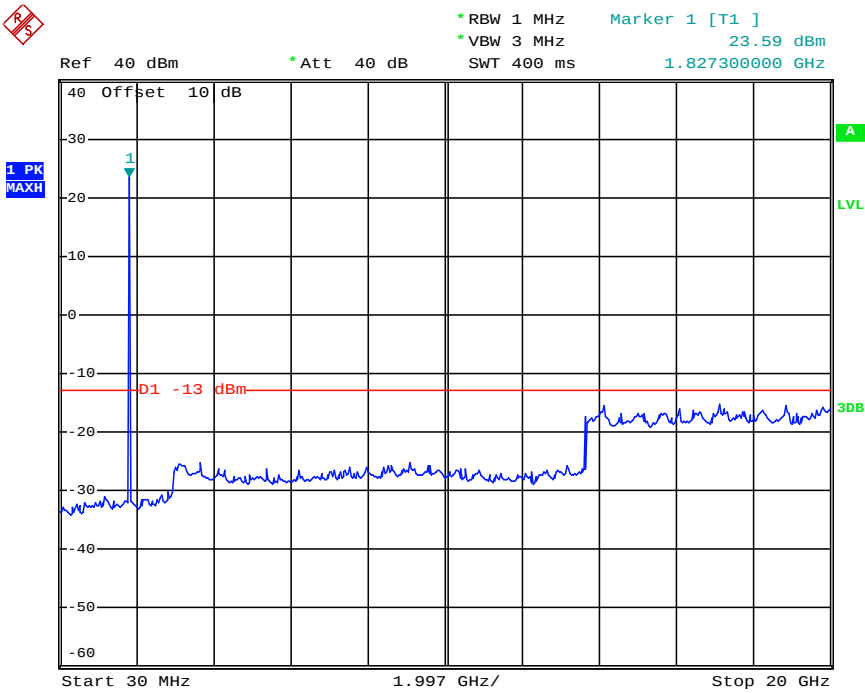
For WCDMA bandII:Channel 9400



Date: 2.FEB.2013 17:32:33

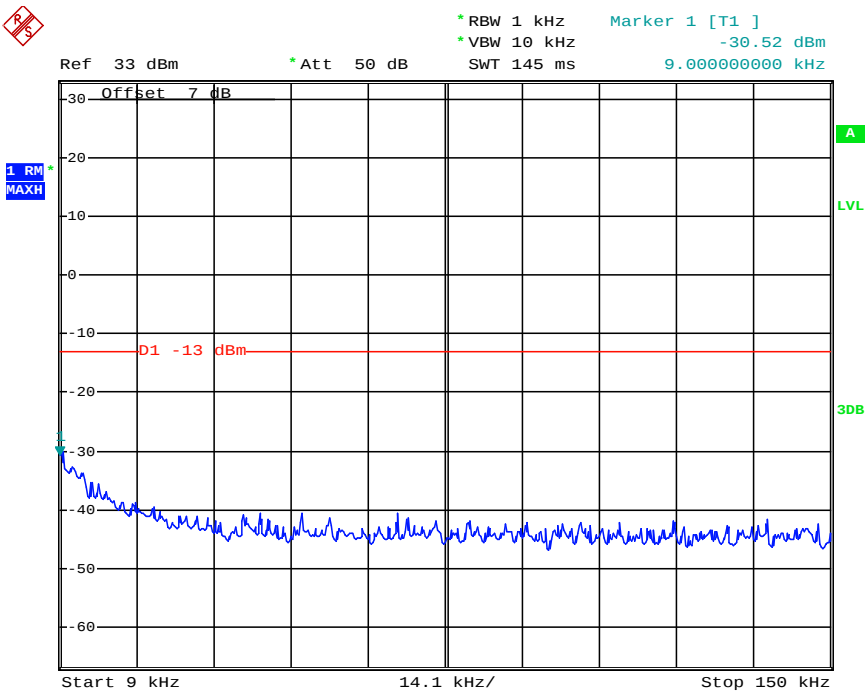


Date: 2.FEB.2013 17:38:06

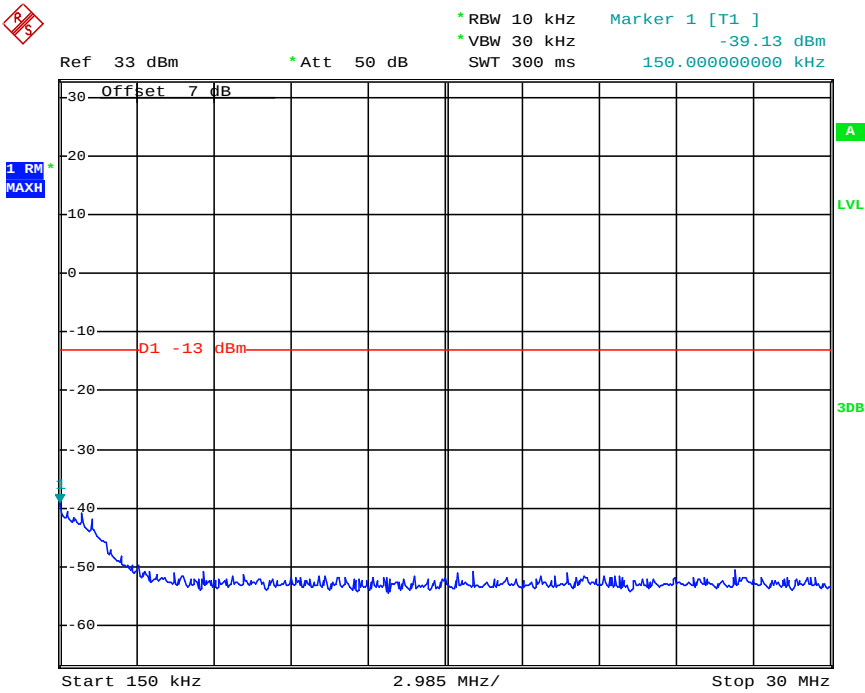


Date: 2.FEB.2013 20:00:26

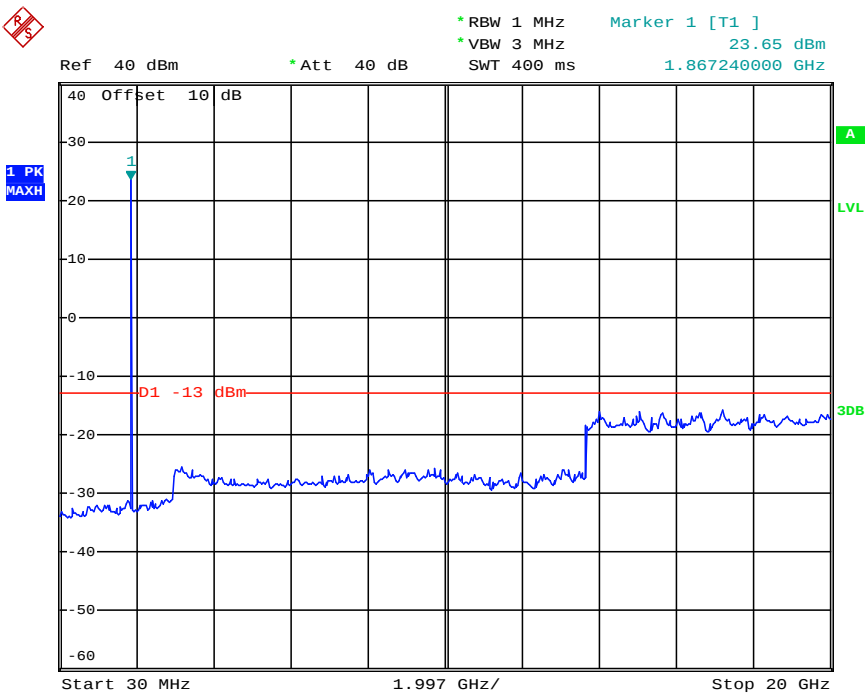
For WCDMA bandII:Channel 9538



Date: 2.FEB.2013 17:32:57



Date: 2.FEB.2013 17:38:19



Date: 2.FEB.2013 20:01:43

4.5. Radiated Spurious Emissions Test

Test Procedure

The EUT was placed on a non-conducting support in the anechoic chamber and was operated from a power source via an RF filter to avoid radiation from the power leads. Please refer to FCC part 22/24 test requirements.

LIMIT

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

According to part 22.917, the defined measurement bandwidth as following:

22.917(b) Measurement procedure: Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

Measurement bandwidth (RBW) for 9 kHz up to 150 kHz: 1 kHz;
 Measurement bandwidth (RBW) for 150 kHz up to 30 MHz: 10 kHz;
 Measurement bandwidth (RBW) for 30 MHz up to 1 GHz: 100 kHz;
 Measurement bandwidth (RBW) for 1GHz up to 18 GHz: 1MHz;

Radiated Spurious Emissions Limits

Frequency band	Minimum requirement (E.R.P) traffic mode
30MHz~18GHz	-13dBm

According to part 24.238, the defined measurement bandwidth as following:

24.238 (b) Measurement procedure: Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater.

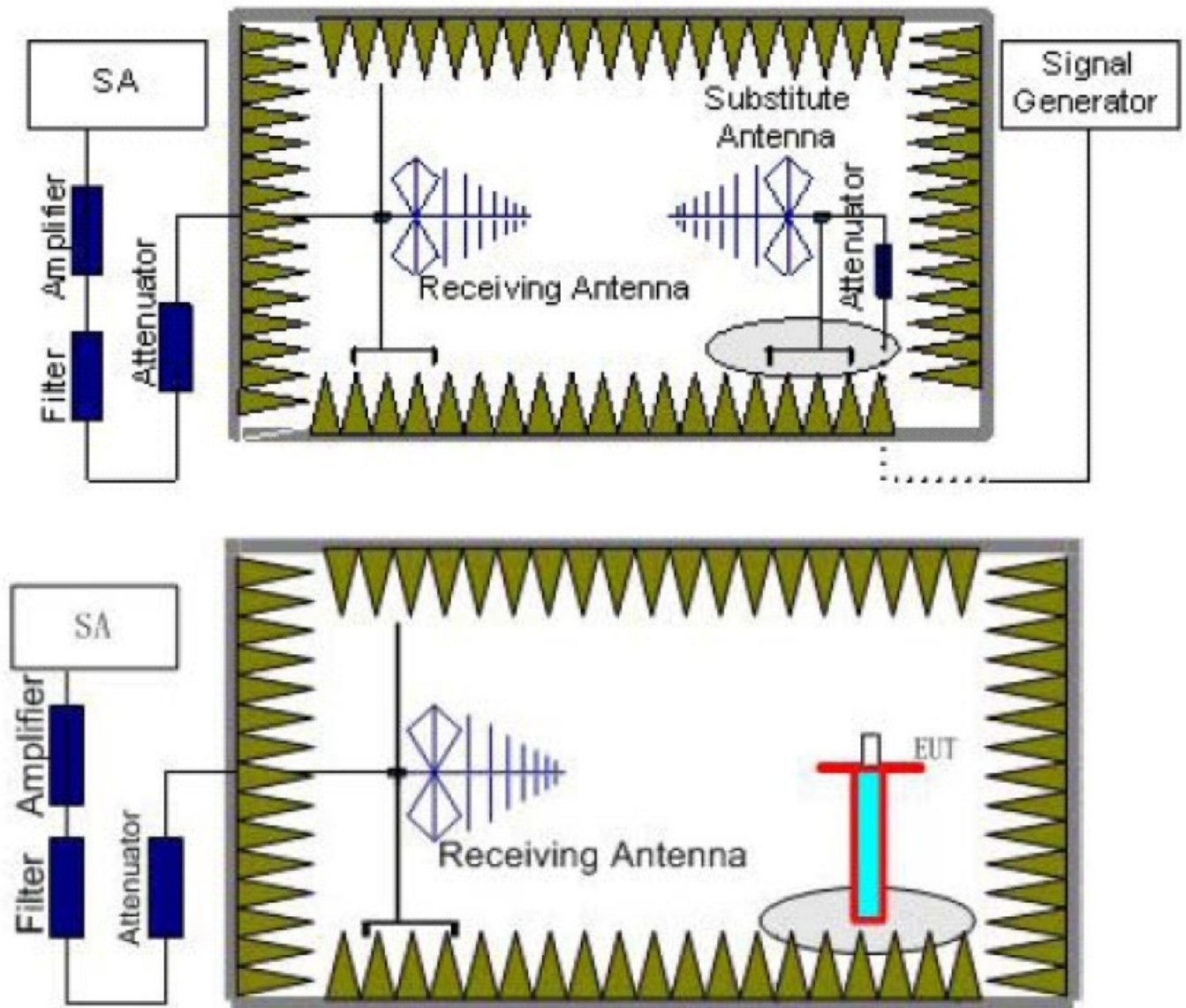
Measurement bandwidth (RBW) for 9 kHz up to 150 kHz: 1 kHz;
 Measurement bandwidth (RBW) for 150 kHz up to 30 MHz: 10 kHz;
 Measurement bandwidth (RBW) for 30 MHz up to 26.5 GHz: 1 MHz;

Radiated Spurious Emissions Limits

Frequency band	Minimum requirement (E.R.P) traffic mode
30MHz~26.5GHz	-13dBm

TEST CONFIGURATION

Effective Radiated Power measurement

**TEST RESULTS**

The EUT has met the requirements for Radiated Spurious Emissions.

GPRS 850 Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBµV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
771.81	48.66	183	1.0	V	771.81	-48.11	0	0.6	-48.71	-13	35.71
1673.2	47.30	121	1.2	V	1673.2	-53.32	6.2	0.8	-47.92	-13	34.92
2509.8	37.73	140	1.1	V	2509.8	-61.73	7.3	1.2	-55.63	-13	42.63
257.73	41.07	25	1.5	H	257.73	-53.24	0	0.4	-53.64	-13	40.64
1673.2	45.36	322	1.5	H	1673.2	-50.85	6.2	0.8	-45.45	-13	32.45
2509.8	39.05	226	1.2	H	2509.8	-58.86	7.3	1.2	-52.76	-13	39.76

EGPRS 850 Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
770.61	47.54	125	1.1	V	770.61	-49.22	0	0.6	-49.82	-13	36.82
1674.9	46.18	236	1.1	V	1674.9	-54.42	6.2	0.8	-49.02	-13	36.02
2508.2	36.61	120	1.0	V	2508.2	-62.82	7.3	1.2	-56.72	-13	43.72
258.45	39.95	325	1.2	H	258.45	-54.32	0	0.4	-54.72	-13	41.72
1676.5	44.24	22	1.3	H	1676.5	-51.92	6.2	0.8	-46.52	-13	33.52
2508.7	37.93	229	1.2	H	2508.7	-59.92	7.3	1.2	-53.82	-13	40.82

GPRS 1900 Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
718.70	42.08	258	1.1	V	718.70	-53.95	0	0.6	-54.55	-13	41.55
3760.1	51.17	110	2.0	V	3760.1	-42.55	6.9	1.5	-37.15	-13	24.15
5640.5	35.93	276	1.8	V	5640.5	-50.75	8.3	1.8	-44.25	-13	31.25
258.92	41.53	205	1.6	H	258.92	-52.45	0	0.4	-52.85	-13	39.85
5640.5	34.33	0	1.9	H	5640.5	-52.05	8.3	1.8	-45.55	-13	32.55
3760.1	49.28	10	1.9	H	3760.1	-42.95	6.9	1.5	-37.55	-13	24.55

EGPRS 1900 Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
719.20	42.15	166	1.1	V	719.20	-53.68	0	0.6	-54.28	-13	41.28
3761.2	52.16	192	2.0	V	3761.2	-41.59	6.9	1.5	-36.19	-13	23.19
5640.5	36.31	188	1.8	V	5640.5	-50.25	8.3	1.8	-43.75	-13	30.75
258.99	42.56	181	1.6	H	258.99	-51.86	0	0.4	-52.26	-13	39.26
5640.5	35.45	264	1.9	H	5640.5	-51.46	8.3	1.8	-44.96	-13	31.96
3761.2	50.01	203	1.9	H	3761.2	-42.37	6.9	1.5	-36.97	-13	23.97

WCDMA BANDV Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
770.98	46.66	183	1.0	V	770.98	-50.11	0	0.6	-50.71	-13	37.71
1675.6	45.30	121	1.2	V	1675.6	-55.32	6.2	0.8	-49.92	-13	36.92
2514.6	35.73	140	1.1	V	2514.6	-63.73	7.3	1.2	-57.63	-13	44.63
255.53	39.07	25	1.5	H	255.53	-51.24	0	0.4	-51.64	-13	38.64
1675.6	43.36	322	1.5	H	1675.6	-52.85	6.2	0.8	-47.45	-13	34.45
2514.6	37.05	226	1.2	H	2514.6	-60.86	7.3	1.2	-54.76	-13	41.76

WCDMA BANDII Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
718.70	42.64	305	1.1	V	718.70	-54.97	0	0.6	-55.57	-13	42.57
3760	51.57	159	2.0	V	3760	-43.47	6.9	1.5	-38.07	-13	25.07
5640	35.82	120	1.8	V	5640	-51.28	8.3	1.8	-44.78	-13	31.78
258.92	41.34	283	1.6	H	258.92	-52.36	0	0.4	-52.76	-13	39.76
5640	34.65	168	1.9	H	5640	-52.49	8.3	1.8	-45.99	-13	32.99
3760	49.71	203	1.9	H	3760	-43.61	6.9	1.5	-38.21	-13	25.21

HSDPA BANDV Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
771.81	49.16	313	1.0	V	771.81	-47.64	0	0.6	-48.24	-13	35.24
1673.2	48.51	125	1.2	V	1673.2	-52.39	6.2	0.8	-46.99	-13	33.99
2509.8	38.25	246	1.1	V	2509.8	-60.75	7.3	1.2	-54.65	-13	41.65
257.73	42.34	125	1.5	H	257.73	-52.26	0	0.4	-52.66	-13	39.66
1673.2	46.26	222	1.5	H	1673.2	-50.01	6.2	0.8	-44.61	-13	31.61
2509.8	40.26	129	1.2	H	2509.8	-57.18	7.3	1.2	-51.08	-13	38.08

HSUPA BANDV Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
771.81	48.66	285	1.0	V	771.81	-48.56	0	0.6	-49.16	-13	36.16
1673.2	47.30	129	1.2	V	1673.2	-53.38	6.2	0.8	-47.98	-13	34.98
2509.8	37.73	45	1.1	V	2509.8	-61.71	7.3	1.2	-55.61	-13	42.61
257.73	41.07	67	1.5	H	257.73	-53.62	0	0.4	-54.02	-13	41.02
1673.2	45.36	122	1.5	H	1673.2	-50.28	6.2	0.8	-44.88	-13	31.88
2509.8	39.05	326	1.2	H	2509.8	-58.02	7.3	1.2	-51.92	-13	38.92

HSDPA BANDII Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
718.70	41.58	305	1.0	V	718.70	-54.29	0	0.6	-54.89	-13	41.89
3760.5	52.57	180	1.0	V	3760.5	-42.74	6.9	1.5	-37.34	-13	24.34
5640.9	36.23	155	1.0	V	5640.9	-51.16	8.3	1.8	-44.66	-13	31.66
258.92	42.63	183	1.0	H	258.92	-52.57	0	0.4	-52.97	-13	39.97
5640.9	33.91	260	1.1	H	5640.9	-52.41	8.3	1.8	-45.91	-13	32.91
3760.5	48.58	139	1.1	H	3760.5	-43.38	6.9	1.5	-37.98	-13	24.98

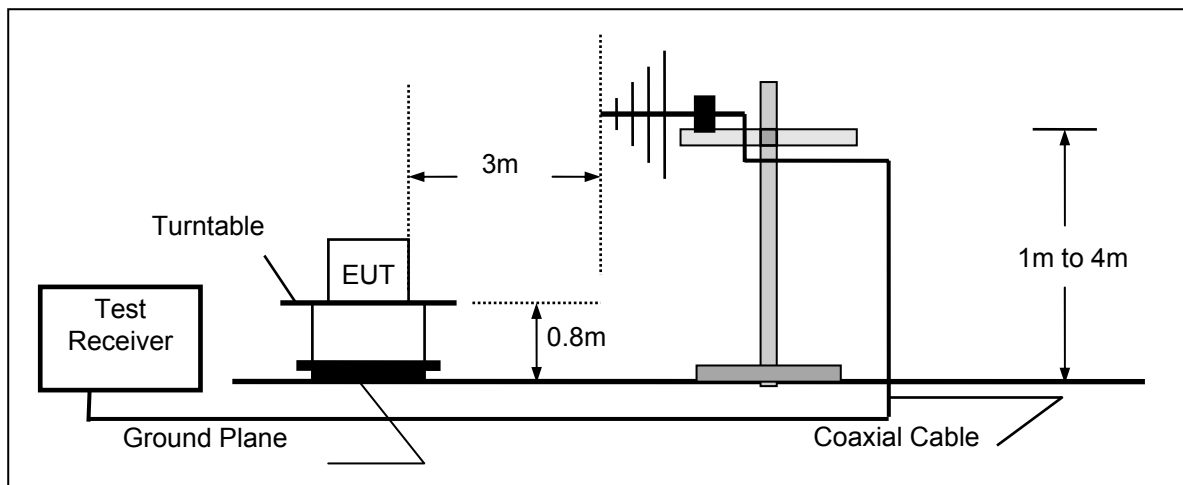
HSUPA BANDII Mode

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV/m)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Middle Channel											
718.70	40.64	356	1.2	V	718.70	-55.95	0	0.6	-56.55	-13	43.55
3760.5	49.29	115	1.5	V	3760.5	-44.24	6.9	1.5	-38.84	-13	25.84
5640.9	33.82	10	1.5	V	5640.9	-53.02	8.3	1.8	-46.52	-13	33.52
258.92	39.41	113	1.2	H	258.92	-54.56	0	0.4	-54.96	-13	41.96
5640.9	32.28	260	1.1	H	5640.9	-54.98	8.3	1.8	-48.48	-13	35.48
3760.5	47.97	134	1.6	H	3760.5	-45.26	6.9	1.5	-39.86	-13	26.86

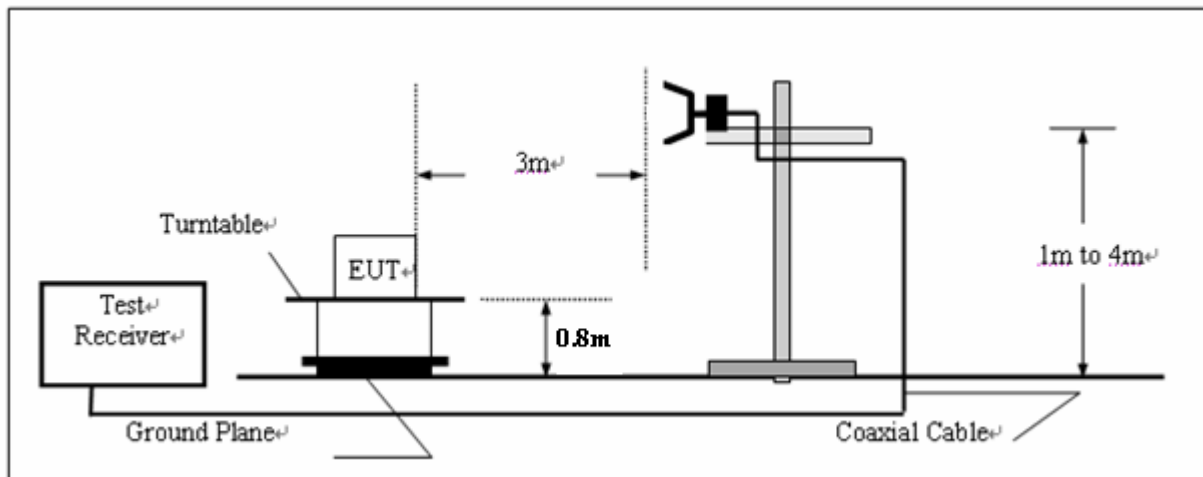
4.6. Receiver Spurious Emission

TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

TEST PROCEDURE

- The EUT is placed on a turntable, which is 0.8m above ground plane.
- EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- Repeat above procedures until the measurements for all frequencies are complete.
- A preliminary scan and a final scan of the emissions were made from 30 MHz to 18GHz by using test

16. script of software; the emissions were measured using a Quasi-Peak Detector. The maximal emission value was acquired by adjusting the antenna height, polarisation and turntable azimuth in accordance with the software setup. Normally, the height range of antenna was 1m to 4m, the azimuth range of turntable was 0° to 360°, The receive antenna has two polarizations V and H.
17. The EUT was communicated with the BTS simulator through Air interface. The Mobile Station operated on the typical channel and the Mobile Station worked in idle mode, transmitter was not work in this test.
18. EUT was configured in Receiver mode and the test performed at worst emission state.

RADIATION LIMIT

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

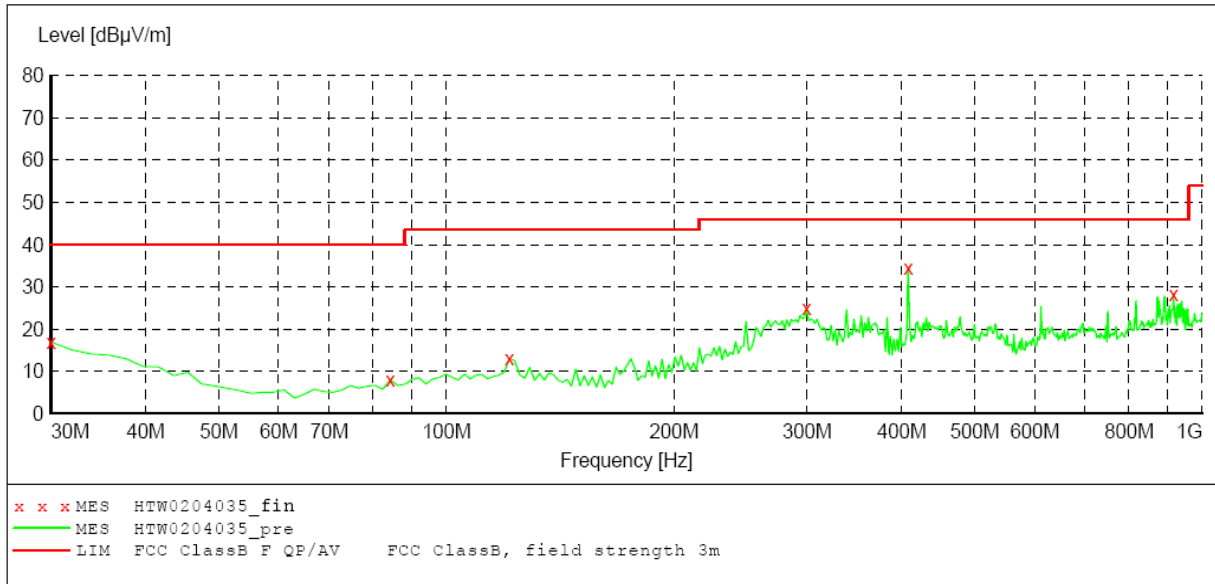
TEST RESULTS

This test was carried out in all the test modes, but only the worst test result was shown. The EUT has met the requirements for Receiver Spurious Emission.

30MHz-1GHz

SWEEP TABLE: "test (30M-1G)"

Short Description:		Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562

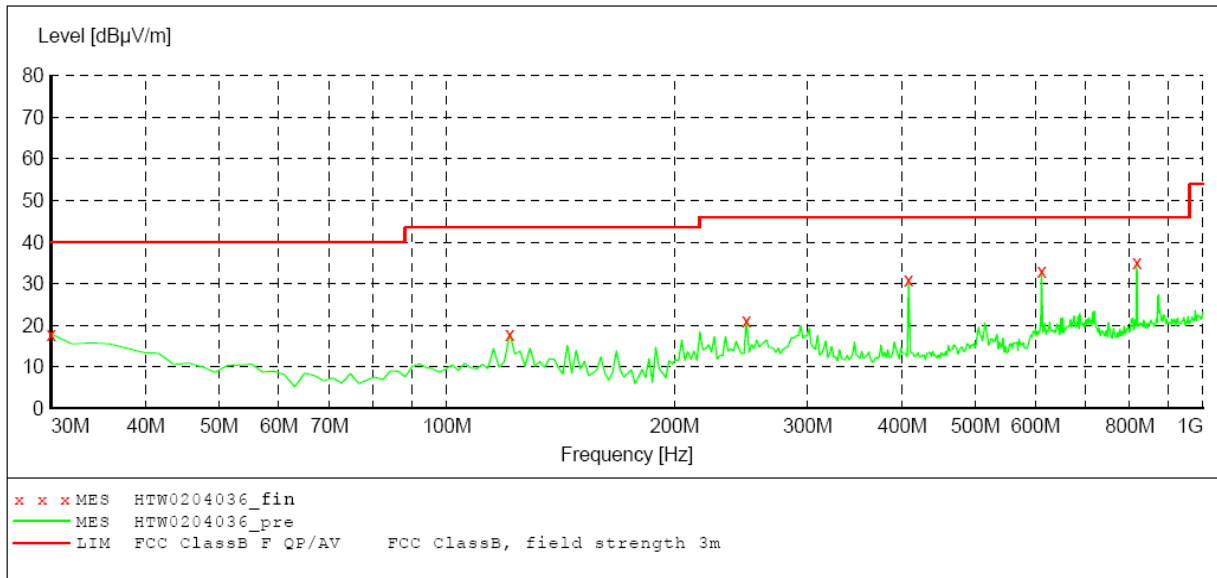
***MEASUREMENT RESULT: "HTW0204035_fin"***

2/4/2013 12:57PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	16.90	-11.1	40.0	23.1	QP	100.0	160.00	HORIZONTAL
84.320000	8.00	-21.3	40.0	32.0	QP	300.0	231.00	HORIZONTAL
121.180000	13.00	-19.3	43.5	30.5	QP	300.0	3.00	HORIZONTAL
299.660000	24.90	-17.1	46.0	21.1	QP	100.0	190.00	HORIZONTAL
408.300000	34.40	-15.3	46.0	11.6	QP	100.0	87.00	HORIZONTAL
916.580000	28.30	-7.3	46.0	17.7	QP	100.0	197.00	HORIZONTAL

SWEEP TABLE: "test (30M-1G)"

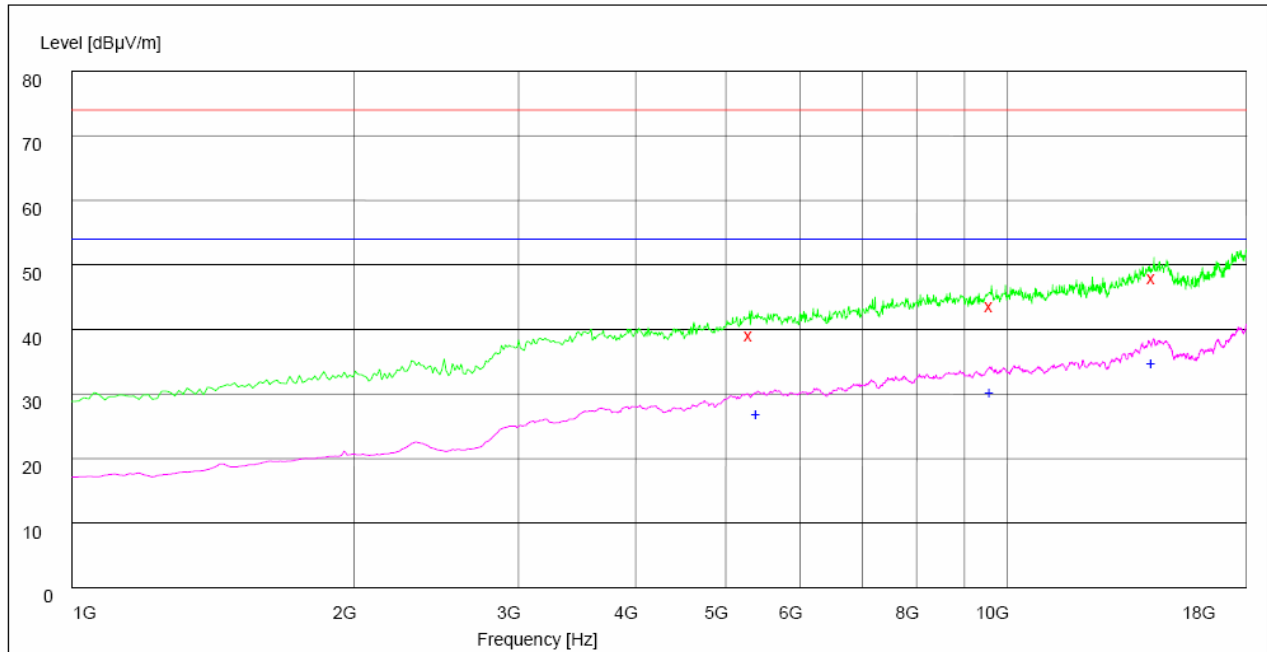
Short Description:		Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562

***MEASUREMENT RESULT: "HTW0204036_fin"***

2/4/2013 12:59PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	17.90	-11.1	40.0	22.1	QP	100.0	91.00	VERTICAL
121.180000	18.00	-19.3	43.5	25.5	QP	100.0	255.00	VERTICAL
249.220000	21.30	-18.6	46.0	24.7	QP	100.0	319.00	VERTICAL
408.300000	31.10	-15.3	46.0	14.9	QP	100.0	210.00	VERTICAL
612.000000	33.00	-12.2	46.0	13.0	QP	100.0	337.00	VERTICAL
817.640000	35.10	-7.8	46.0	10.9	QP	100.0	357.00	VERTICAL

1GHz-18GHz



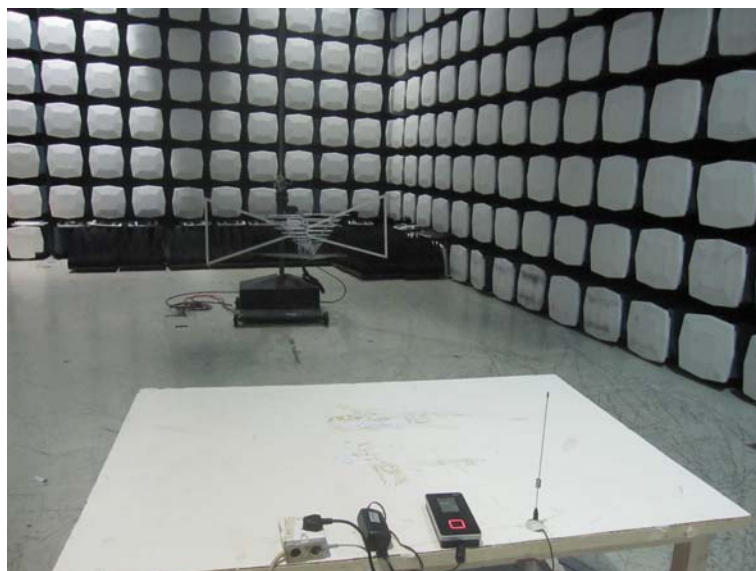
MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
5321.800000	40.60	-1.1	74.0	33.4	100.0	26.00	HORIZONTAL
9615.400000	44.90	6.0	74.0	29.1	100.0	108.00	VERTICAL
14349.00000	49.40	16.6	74.0	24.6	100.0	359.00	VERTICAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
5413.400000	28.20	-0.8	54.0	25.8	135.0	136.00	HORIZONTAL
9614.900000	31.60	6.0	54.0	22.4	100.0	99.00	VERTICAL
14323.50000	36.10	16.5	44.0	17.9	148.0	176.00	VERTICAL

5. Test Setup Photos of the EUT





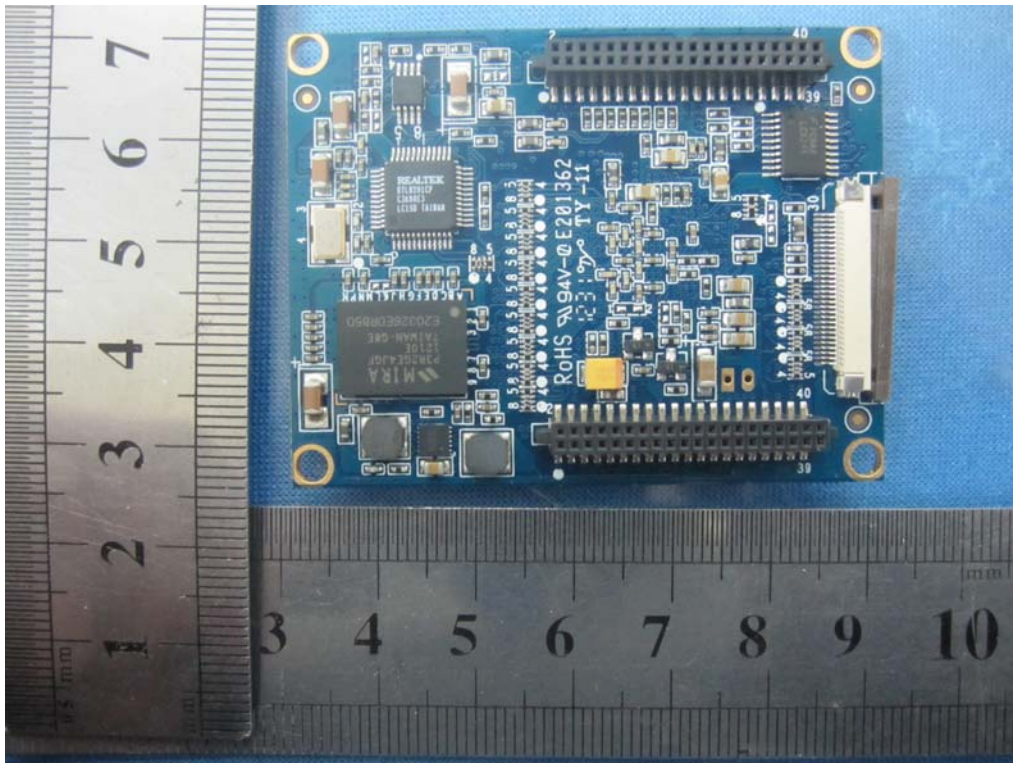
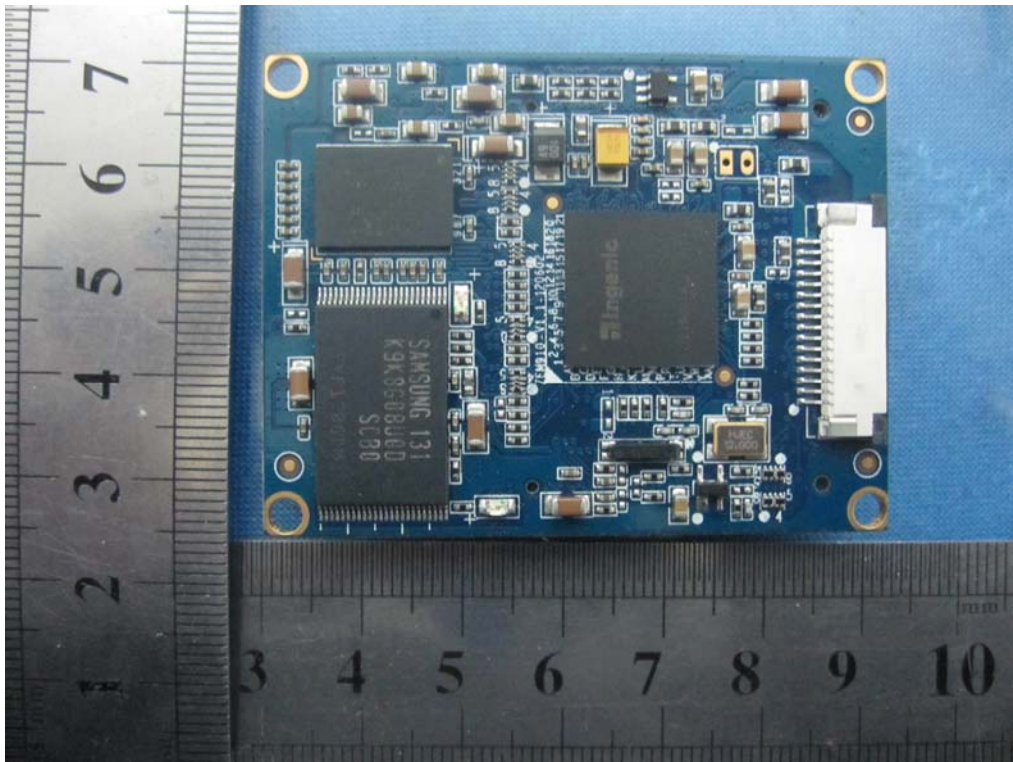
6. External and Internal Photos of the EUT

External photos of the EUT

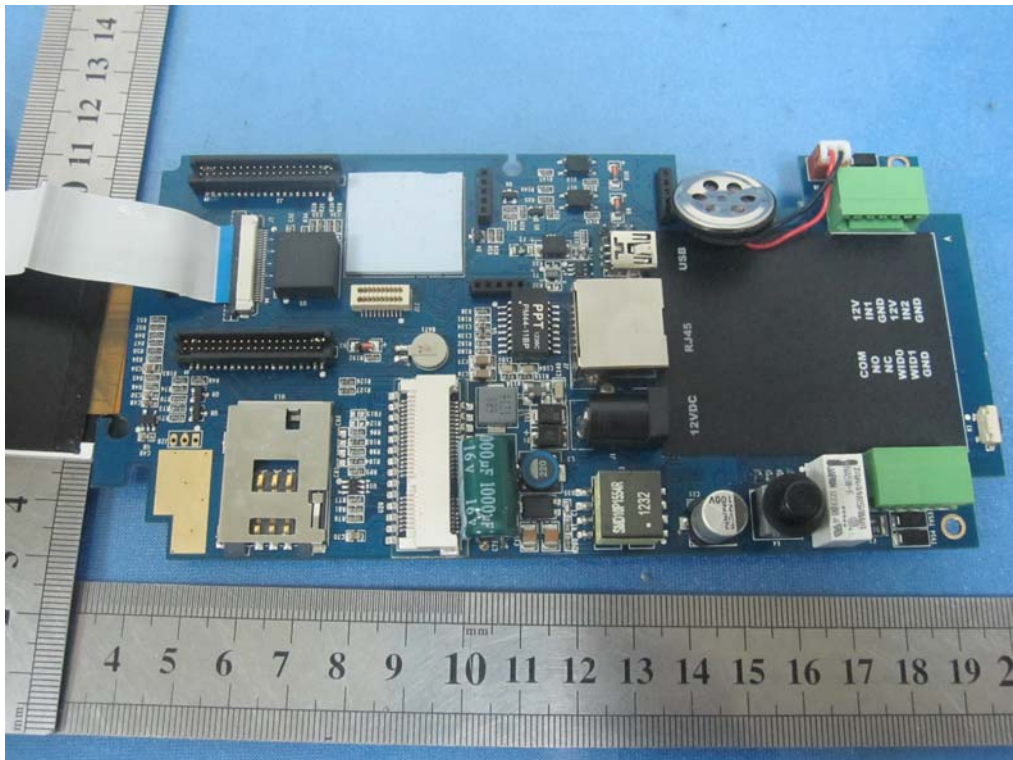
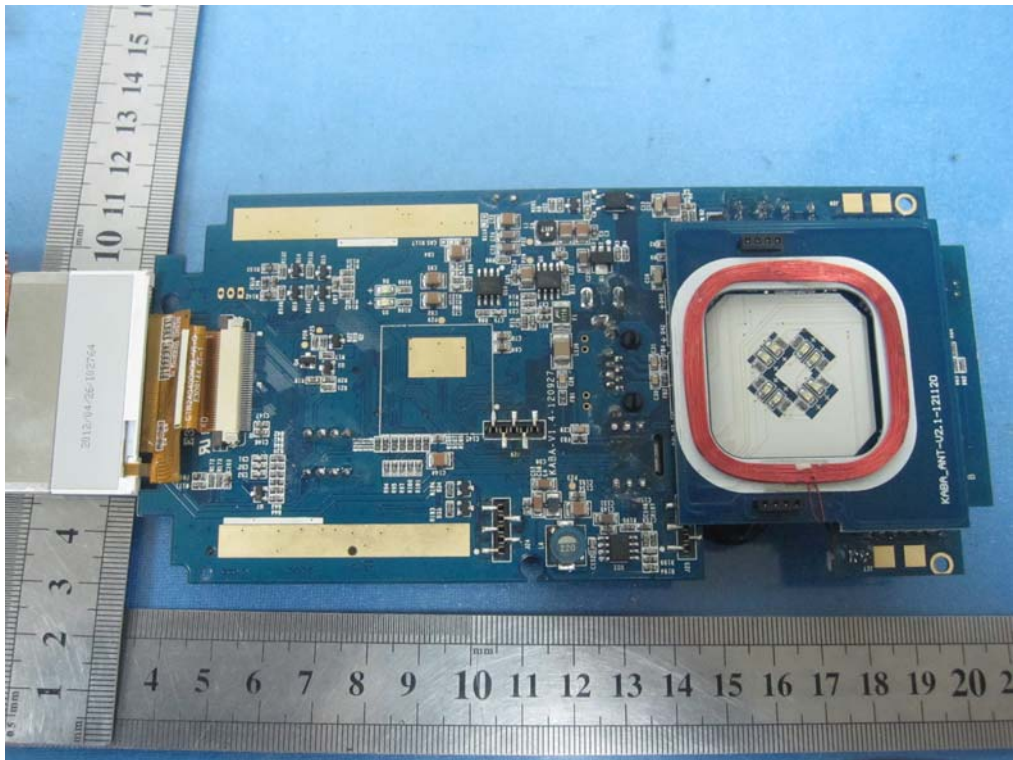


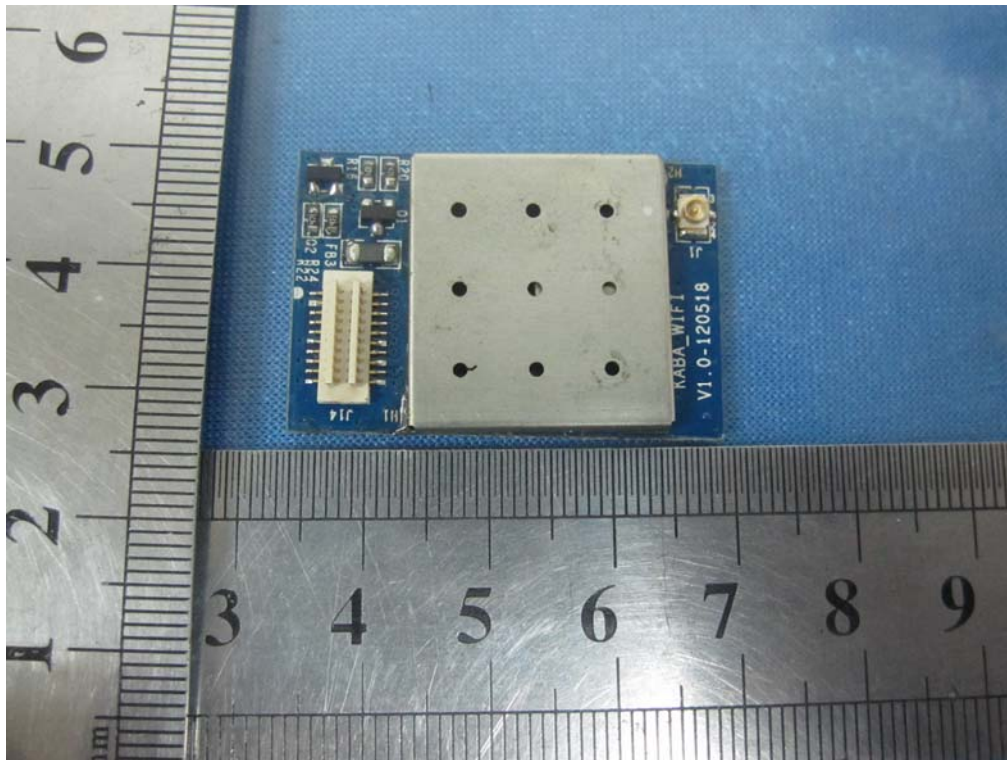


Internal photos of the EUT









.....End of Report.....