FCC TEST REPORT(Tablet PC)

for

SISCOSUN GROUP, LLC

Tablet PC

Model Number: PT-701A, PT-701B, PT-701C, PT-701D, PT-701F, PT-701G, Q7 3G

FCC ID: 2AC7LPT-701A

Prepared for	:	SISCOSUN GROUP, LLC
Address	:	315 FIFTH AVENUE, SUITE 1005 NEW YORK, NY 10016, UNITED STATES OF AMERICA
Prepared by	:	Keyway Testing Technology Co., Ltd.
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Report No.	:	14KWE09187503F
Date of Test	:	Sep. 4~9, 2014
Date of Report	:	Sep. 10, 2014

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Keyway Testing Technology Co., Ltd.

Applicant: **Address:**	SISCOSUN GROUP, LLC 315 FIFTH AVENUE, SUITE 1005 NEW YORK, NY 10016, UNITED STATES OF AMERICA		
Manufacturer: **Address:**	Potato Technology International Co.,Ltd 3F/Block A1,JuYin industry Zone, ShangLiLang GanLI Road, BuJi street, LongGang District, Shenzhen, China		
E.U.T:	Tablet PC		
Model Number:	PT-701A, PT-701B, PT-701C, PT-701D, PT-701F, PT-701G, Q7 3G		
Trade Name:	------	**Serial No.:**	------
Date of Receipt:	Sep. 4, 2014	**Date of Test:**	Sep. 4~9, 2014
Test Specification:	FCC CFR Title 47 Part 2: 2013 FCC CFR Title 47 Part22 Subpart H: 2013 FCC CFR Title 47 Part24 Subpart E: 2013		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied. **Issue Date: Sep. 10, 2014**		

Tested by:	Reviewed by:	Approved by:
Jack Bu / Engineer	Andy Gao / Supervisor	Jade Yang/ Supervisor

Other Aspects:

None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

1.TEST SUMMARY

Test Items	Test Requirement	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093	Passed* (Please refer to SAR Report)
Conducted RF Output Power	2.1046	PASS
Peak to Average Radio	2.1055,22.355 24.235,27.54	PASS
99% & -26 dB Occupied Bandwidth	2.1049, 22.917 24.238,	PASS
Frequency Stability	2.1055, 22.355 24.235,	PASS
Conducted Out of Band Emissions	2.1051,2.1057 22.917, 24.238	PASS
Band Edge	2.1051,2.1057 22.917, 24.238	PASS
Transmitter Radiated Power (EIPR/ERP)	22.913, 24.232	PASS
Radiated Out of Band Emissions	2.1053,2.1057 22.917, 24.238	PASS

2.GENERAL PRODUCT INFORMATION

2.1. Product Function

Refer to Technical Construction Form and User Manual.

2.2. Description of Device (EUT)

Product Name:	Tablet PC
Model No.:	PT-701A, PT-701B, PT-701C, PT-701D, PT-701F, PT-701G, Q7 3G
Operation Frequency:	Bluetooth:2402~2480MHz WIFI:2412MHz~2462MHz (802.11b/802.11g/802.11n(H20)) 2422MHz~2452MHz (802.11n(H40)) GSM 850MHz: Tx: 824.20 - 848.80MHz (at intervals of 200kHz); Rx: 869.20 - 893.80MHz (at intervals of 200kHz) GSM 1900MHz: Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz); Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz) WCDMA Band II: TX: 1852.4MHz - 1907.6MHz, (at intervals of 200kHz); RX: 1932.4MHz - 1987.6MHz(at intervals of 200kHz); WCDMA Band V: Tx: 826.40 - 846.60MHz (at intervals of 200kHz); Rx: 871.40 – 891.60MHz (at intervals of 200kHz)
Channel numbers:	Bluetooth:79 Channels WIFI:11 Channel for 802.11b/g/n(HT20), 7 Channel for 802.11n(HT40)
Channel separation:	Bluetooth:1M WIFI:5M
Modulation technology:	Bluetooth: GFSK,Pi/4DQPSK,8-DQPSK WIFI:DBPSK/ DQPSK/CCK/BPSK/ QPSK/ 16QAM/ 64QAM GSM/GPRS Mode with GMSK, 8PSK Modulation WCDMA Mode with QPSK Modulation HSDPA Mode with QPSK, 16QAM Modulation HSUPA Mode with QPSK, 16QAM Modulation
Antenna Type:	Integral Antenna
Antenna gain:	3.0dBi (BT &WIFI), 1.1dBi（GSM&WCDMA）,
Power supply:	DC 5V from adapter Rechargeable lithium-ion battery 3.7V
GPRS Class:	12
EGPRS Class:	12
Adapter	Manufacturer: Potato Technology International Co., Ltd. M/N:RCL050200 I/P:AC 100~240V 50/60Hz O/P:DC 5V 2A

2.3. Difference between Model Numbers

The product are different for model, outlook color and size.

2.4. Test Supporting System

None.

2.5. Independent Operation Modes

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Test modes		
Band	Radiated	Conducted
GSM 850	■ GSM link ■ EGPRS 8 link	■ GSM link ■ EGPRS 8 link
PCS 1900	■ GSM link ■ EGPRS 8 link	■ GSM link ■ EGPRS 8 link
WCDMA Band II.	■ RMC 12.2Kbps link	■ RMC 12.2Kbps link
WCDMA Band V.	■ RMC 12.2Kbps link	■ RMC 12.2Kbps link

Note: The maximum power levels are GSM mode for GMSK link, RMC12.2Kbps mode for WCDMA band V, RMC12.2Kbps mode for WCDMA band II and V.

The conducted average power tables are as follows:

Conducted Average Power (dBm)						
Band	GSM850			PCS1900		
Channel	128	190	251	512	661	810
Frequency	824.20	836.60	848.80	1850.20	1880.00	1909.80
GSM (SIM1)	31.27	31.35	31.70	30.33	30.69	30.64
GSM (SIM2)	31.02	31.06	31.07	30.11	30.18	30.21

Note: The worst mode was in SIM1, all test data in SIM1 mode in this report..

3. TEST SITES

3.1. Test Facilities

Lab Qualifications : 944 Shielded Room built by ETS-Lindgren, USA
Date of completion: March 28, 2011

966 Chamber built by ETS-Lindgren, USA
Date of completion: March 28, 2011

Certificated by TUV Rheinland, Germany.
Registration No.: UA 50207153
Date of registration: July 13, 2011

Certificated by UL, USA
Registration No.: 100567-237
Date of registration: September 1, 2011

Certificated by Intertek
Registration No.: 2011-RTL-L1-31
Date of registration: October 11, 2011

Certificated by Industry Canada
Registration No.: 9868A
Date of registration: December 8, 2011

Certificated by FCC, USA
Registration No.: 370994
Date of registration: February 21, 2012

Certificated by CNAS China
Registration No.: CNAS L5783
Date of registration: August 8, 2012

Name of Firm : Keyway Testing Technology Co., Ltd.

Site Location : Baishun Industrial Zone, Zhangmutou Town,
Dongguan, Guangdong, China

3.2. List of Test and Measurement Instruments

3.2.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 27,14	Apr. 27,15
Artificial Mains Network	Rohde&Schwarz	ENV216	101315	Apr. 27,14	Apr. 27,15
Artificial Mains Network (AUX)	Rohde&Schwarz	ENV216	101314	Apr. 27,14	Apr. 27,15
RF Cable	FUJIKURA	3D-2W	944 Cable	Apr. 27,14	Apr. 27,15

3.2.2. For radiated emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 27,14	Apr. 27,15
System Simulator	Agilent	E5515C	GB43130245	Apr. 30,14	Apr. 30,15
Power Splitter	Weinschel	1506A	NW425	Apr. 30,14	Apr. 30,15
Bilog Antenna	ETS-LINDGREEN	3142D	135452	Apr. 27,14	Apr. 27,15
Loop antenna	teseq	HLA6120	22032	Apr. 30,14	Apr. 30,15
Spectrum Analyzer	Agilent	E4411B	MY4511304	Apr. 27,14	Apr. 27,15
3m Semi-anechoic Chamber	ETS-LINDGREEN	966	KW01	Apr. 27,14	Apr. 27,15
Signal Amplifier	SONOMA	310	187016	Apr. 27,14	Apr. 27,15
Signal Amplifier	Agilent	8449B	3008A00251	Apr. 27,14	Apr. 27,15
RF Cable	IMRO	IMRO-400	966 Cable 1#	N/A	N/A
MULTI-DEVICE Controller	ETS-LINDGREEN	2090	126913	N/A	N/A
Horn Antenna	DAZE	ZN30701	11003	Apr. 27,14	Apr. 27,15
Horn Antenna	SCHWARZBECK	BBHA9170	9170-068	Apr. 27,14	Apr. 27,15
Spectrum Analyzer	Agilent	8593E	3911A04271	Apr. 27,14	Apr. 27,15
Spectrum Analyzer	Agilent	E4408B	MY44211125	Apr. 30,14	Apr. 30,15
Signal Amplifier	DAZE	ZN3380C	11001	Apr. 27,14	Apr. 27,15
High Pass filter	Micro	HPM50111	324216	Apr. 30,14	Apr. 30,15
Filter	COM-MW	ZBSF-C836.5-25-X	KW032	Apr. 30,14	Apr. 30,15
Filter	COM-MW	ZBSF-C1747.5-75-X2	KW035	Apr. 30,14	Apr. 30,15
Filter	COM-MW	ZBSF-C1880-60-X2	KW037	Apr. 30,14	Apr. 30,15
DC Power Supply	LongWei	PS-305D	010964729	Apr. 27,14	Apr. 27,15
Constant temperature and humidity box	GF	GTH-800-40-1P	MAA9906-005	Apr. 27,14	Apr. 27,15
Universal radio communication tester	Rohde&Schwarz	CMU200	3215420	Apr. 27,14	Apr. 27,15
Splitter	Agilent	11636B	0025164	Apr. 27,14	Apr. 27,15

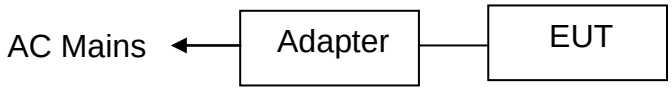
4. TEST SET-UP AND OPERATION MODES

4.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

4.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



(EUT: Tablet PC)

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4.3. Test Operation Mode and Test Software

None.

4.4. Special Accessories and Auxiliary Equipment

None.

4.5. Countermeasures to Achieve EMC Compliance

None.

4.6. Test Environment:

Ambient conditions in the test laboratory:

Items	Actual
Temperature (℃)	21~23
Humidity (%RH)	50~65

5. EMISSION TEST RESULTS

5.1. Conducted RF Output Power

5.1.1. Limit

According to FCC section 2.1046(a) , FCC part22.913(a) and FCC part24.232(b) ,for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

5.1.2. Test Setup

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

5.1.3. Test Result

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT.

Measurement data

The conducted power tables are as follows:

Average Conducted Power (dBm)						
Band	GSM850			PCS1900		
Frequency	824.20	836.60	848.80	1850.20	1880.00	1909.80
GSM (GMSK, 1 TX slot)	31.27	31.35	31.70	30.33	30.69	30.64
GPRS (GMSK, 1 TX slot)	31.11	31.31	31.67	30.15	30.55	30.58
GPRS (GMSK, 2 TX slot)	30.32	30.57	30.88	28.99	29.47	29.34
GPRS (GMSK, 3 TX slot)	28.34	28.60	28.44	26.97	27.41	27.38
GPRS (GMSK, 4 TX slot)	27.34	27.45	27.76	24.90	25.37	25.33
EGPRS(GMSK, 1 TX slot)	31.07	31.27	31.63	29.09	29.49	29.51
EGPRS(GMSK, 2 TX slot)	30.30	30.55	30.86	28.38	28.36	28.23
EGPRS(GMSK, 3 TX slot)	28.29	28.55	28.59	25.93	26.36	26.25
EGPRS(GMSK, 4 TX slot)	26.51	26.56	26.68	25.23	24.71	24.67
EGPRS (8PSK, 1 TX slot)	25.73	25.71	25.65	25.18	25.46	25.55
EGPRS (8PSK, 2 TX slot)	24.66	24.92	24.76	23.89	24.35	23.37
EGPRS (8PSK, 3 TX slot)	22.78	23.07	23.26	22.39	22.73	22.51
EGPRS (8PSK, 4 TX slot)	21.82	21.90	22.10	21.30	21.49	21.76

Average Conducted Power						
Band	WCDMA Band II.			WCDMA Band V.		
Frequency	1852.4	1880.0	1907.6	826.4	836.6	846.6
RMC 12.2Kbps	22.69	22.56	22.58	20.79	20.68	20.66
RMC 64kbps	22.62	22.45	22.50	20.73	20.56	20.58
RMC 144kbps	22.55	22.46	22.50	20.67	20.45	20.50
RMC 384kbps	22.48	22.46	22.50	20.61	20.34	20.41
HSDPA Subtest-1	22.28	22.23	22.31	20.42	20.34	20.39
HSDPA Subtest-2	22.29	22.22	22.31	20.36	20.33	20.39
HSDPA Subtest-3	22.24	22.18	22.23	20.31	20.29	20.31
HSDPA Subtest-4	22.21	22.09	22.25	20.28	20.20	20.33
HSUPA Subtest-1	22.19	22.18	22.19	20.26	20.29	20.27
HSUPA Subtest-2	22.16	22.07	22.21	20.23	20.18	20.29
HSUPA Subtest-3	22.29	22.17	22.25	20.36	20.28	20.33
HSUPA Subtest-4	22.11	22.10	22.21	20.18	20.21	20.29
HSUPA Subtest-5	22.14	22.09	22.13	20.21	20.20	20.21
ARM	22.22	22.06	22.17	20.30	20.22	20.31

Note: Measurement Uncertainty: ±2.6 dB.

5.2. Peak to Average Radio

5.2.1. Limit

According to FCC section 27.50(d)(5) , the peak to average ratio(PAR) of the transmission may not exceed 13dB.

5.2.2. Test Setup

See section 5.1.2 of this report.

5.2.3. Test Result

Measurement data as follows:

Band	GSM850		
	Low	Middle	High
Frequency	824.20	836.60	848.80
Peak-to average ratio(dB)/GSM	0.63	0.57	0.59
Peak-to average ratio(dB)/EDGE	0.38	0.39	0.41

Band	PCS1900		
	Low	Middle	High
Frequency	1850.20	1880.00	1909.8
Peak-to average ratio(dB)/GSM	0.64	0.65	0.65
Peak-to average ratio(dB)/EDGE	0.37	0.36	0.32

Band	WCDMA Band II.		
	Low	Middle	High
Frequency	1852.40	1880.00	1907.6
Peak-to average ratio(dB)	0.52	0.49	0.51

Band	WCDMA Band V.		
	Low	Middle	High
Frequency	1850.20	1880.00	1909.8
Peak-to average ratio(dB)/GSM	0.52	0.54	0.51

Note: Measurement Uncertainty: ±0.2 dB.

5.3. 99% Occupied Bandwidth

5.3.1. Limit

According to FCC section 2.1049 and FCC part22.913(a) and FCC part24.232(b), the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth,

5.3.2. Test Setup

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

5.3.3. Test Result

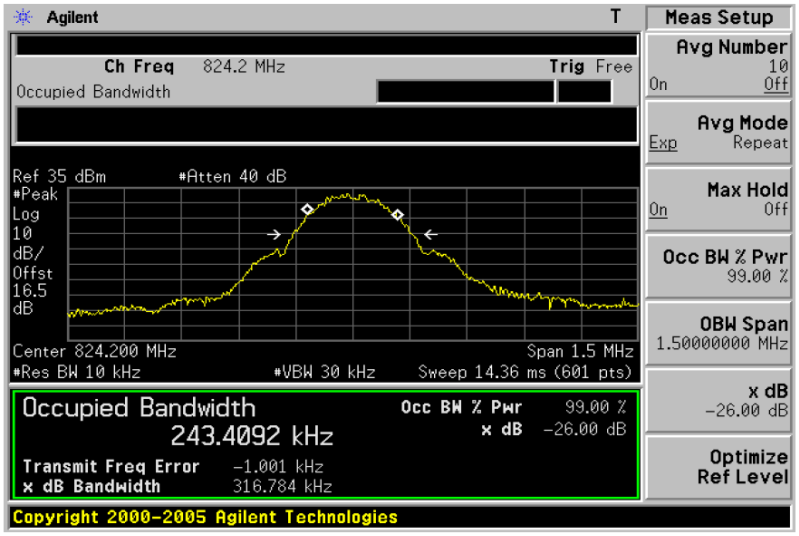
Measurement Data

EUT Mode	Frequency (MHz)	99% Occupy bandwidth (kHz)
GSM 850 (GSM link)	824.20	243.4
	836.60	244.5
	848.80	242.7
GSM 850 (EGPRS 8 link)	824.20	250.0
	836.60	248.8
	848.80	249.8
PCS 1900 (GSM link)	1850.20	240.4
	1880.00	243.3
	1909.80	241.3
PCS 1900 (EGPRS 8 link)	1850.20	247.1
	1880.00	247.8
	1909.80	248.8
WCDMA Band II (RMC 12.2Kbps link)	1852.4	4062.5
	1880.0	4042.6
	1907.6	4035.2
WCDMA Band V (RMC 12.2Kbps link)	826.4	4051.8
	836.0	4039.6
	846.6	4049.2

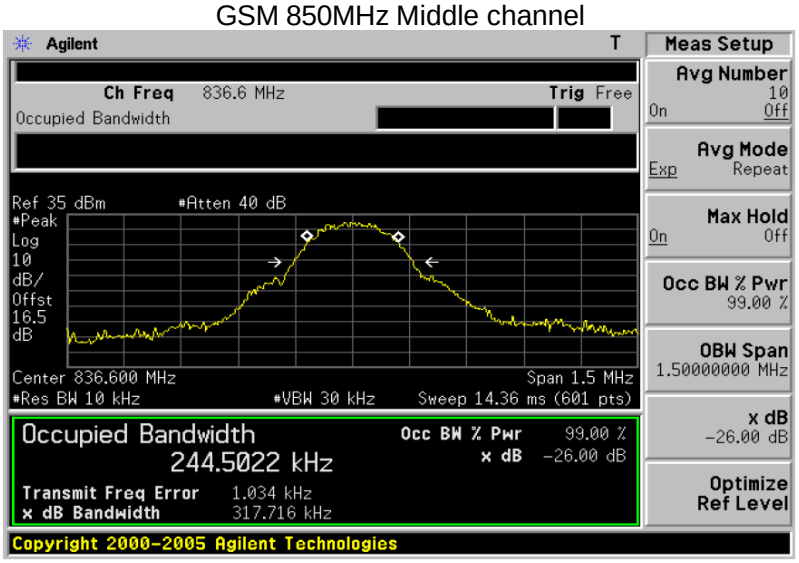
Note: Measurement Uncertainty: ±20Hz.

Test plot as follows:

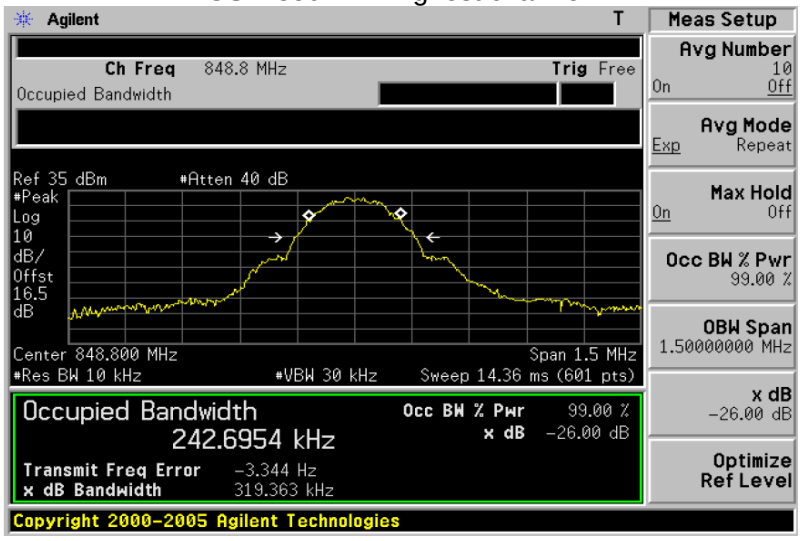
GSM 850MHz Lowest channel



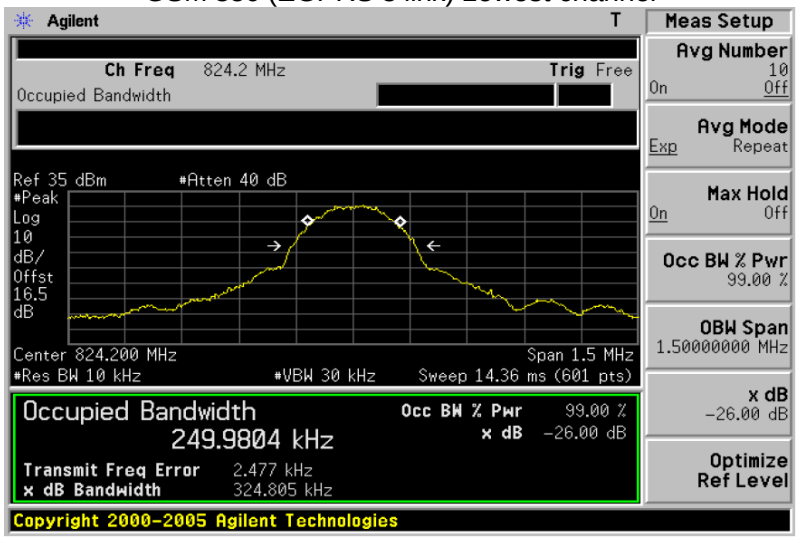
GSM 850MHz Middle channel



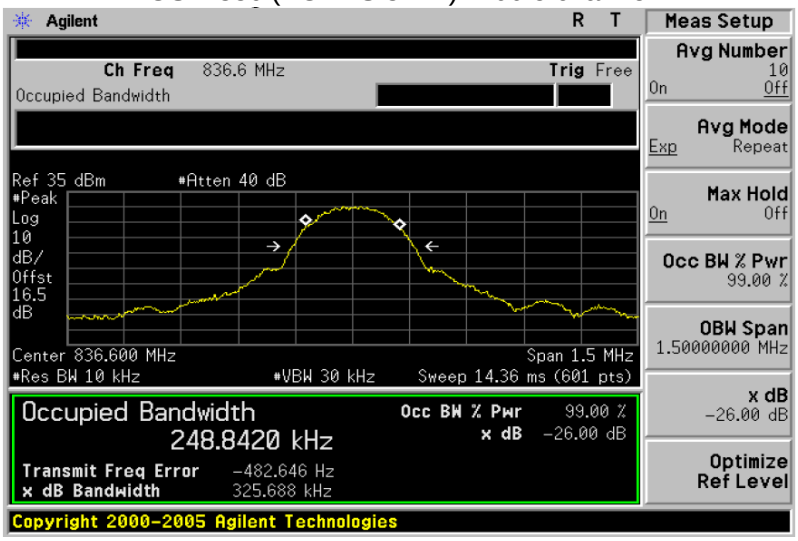
GSM 850MHz Highest channel:



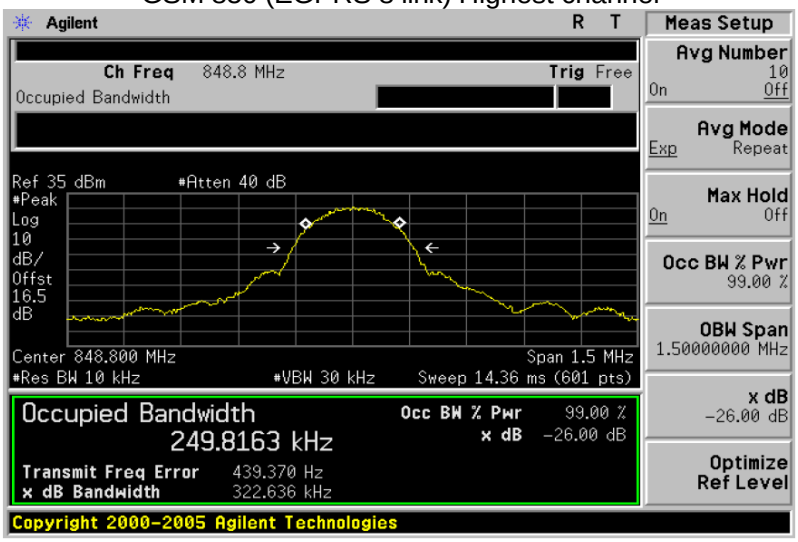
GSM 850 (EGPRS 8 link) Lowest channel



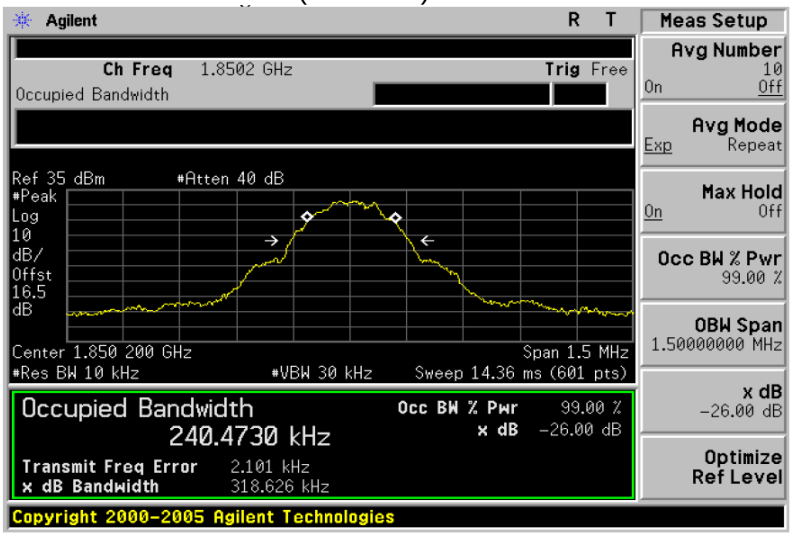
GSM 850 (EGPRS 8 link) Middle channel



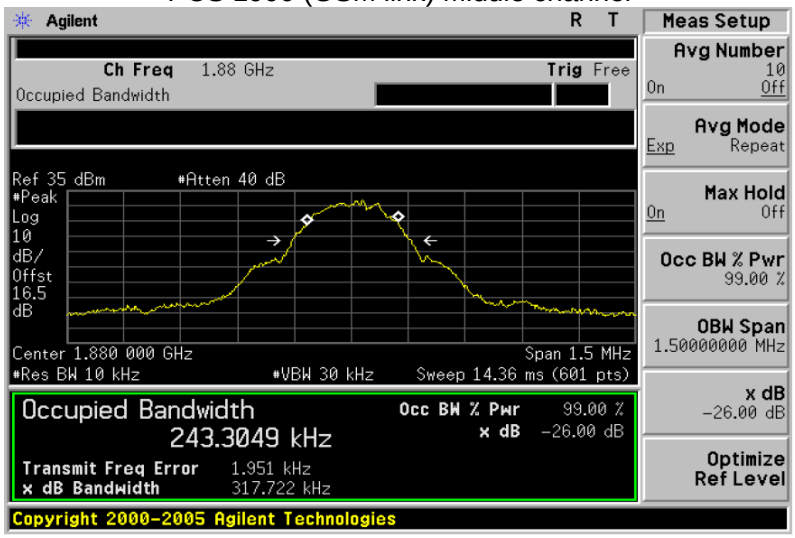
GSM 850 (EGPRS 8 link) Highest channel



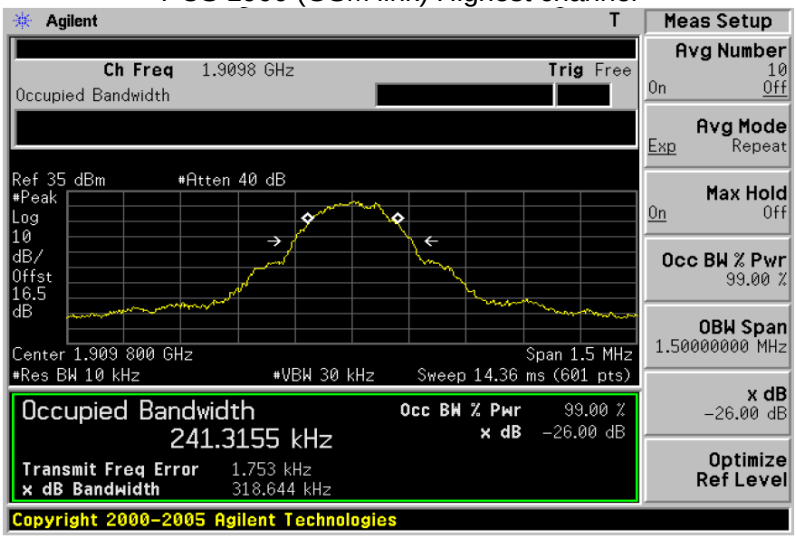
PCS 1900 (GSM link) Lowest channel



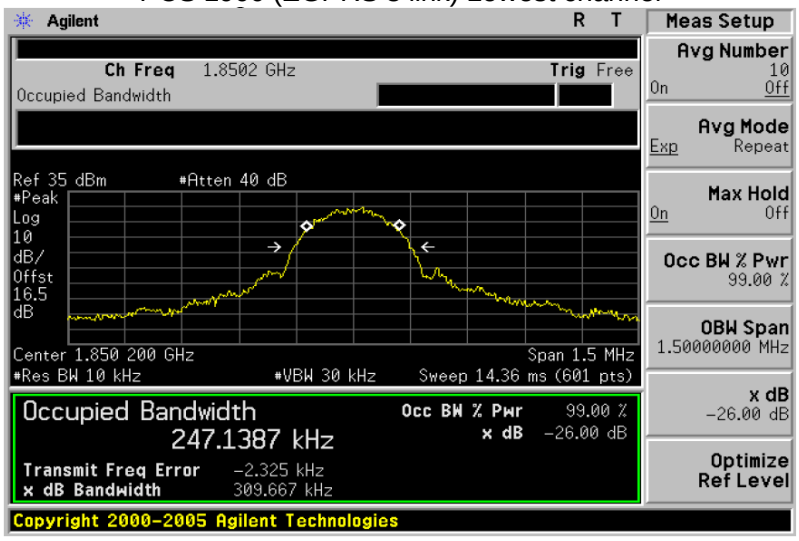
PCS 1900 (GSM link) Middle channel



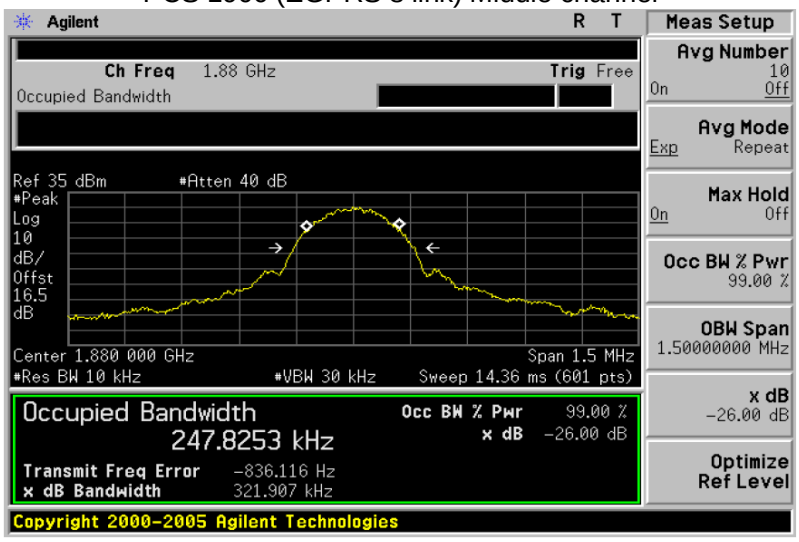
PCS 1900 (GSM link) Highest channel



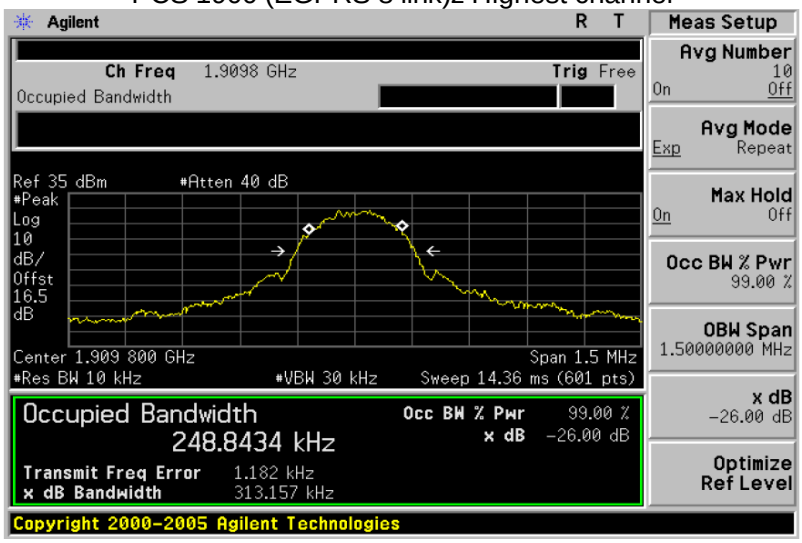
PCS 1900 (EGPRS 8 link) Lowest channel



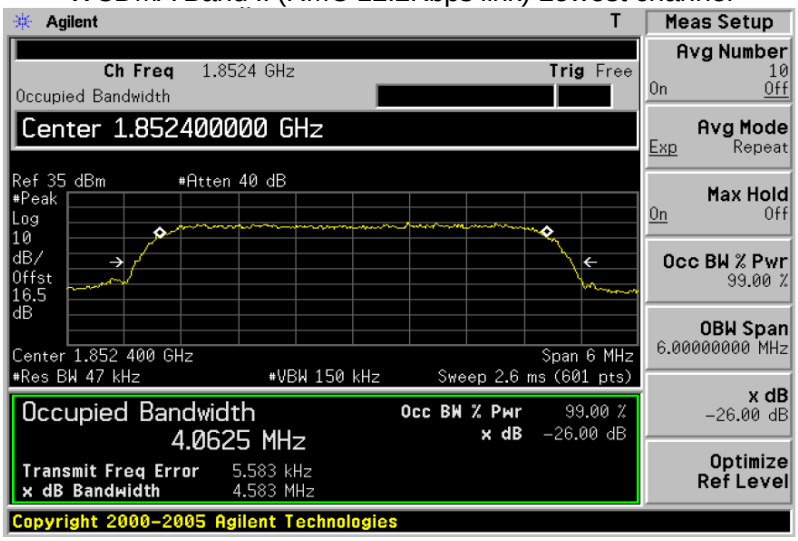
PCS 1900 (EGPRS 8 link) Middle channel



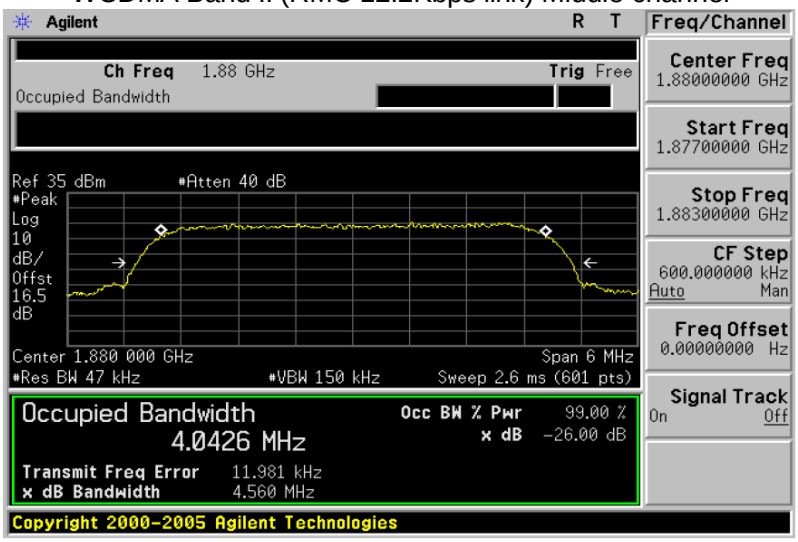
PCS 1900 (EGPRS 8 link)z Highest channel



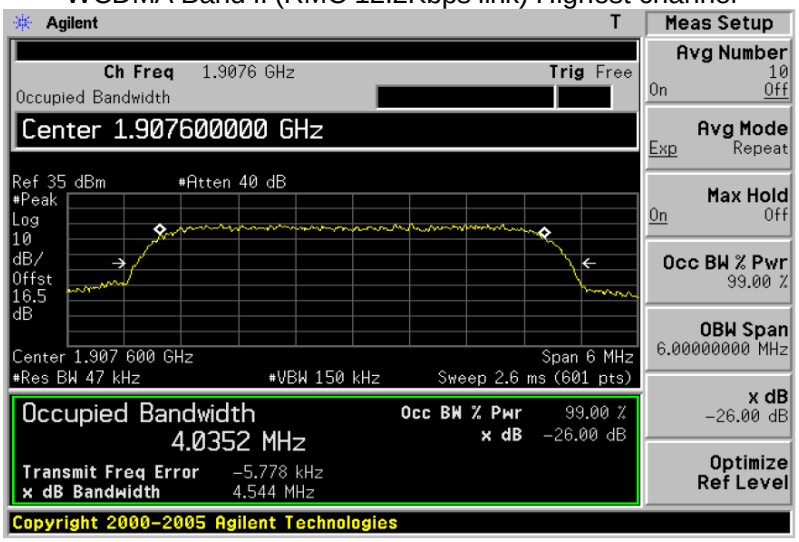
WCDMA Band II (RMC 12.2Kbps link) Lowest channel



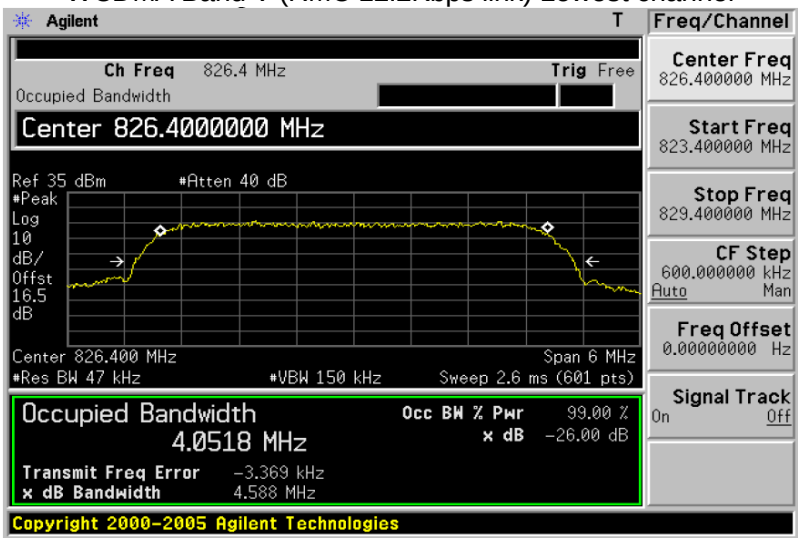
WCDMA Band II (RMC 12.2Kbps link) Middle channel



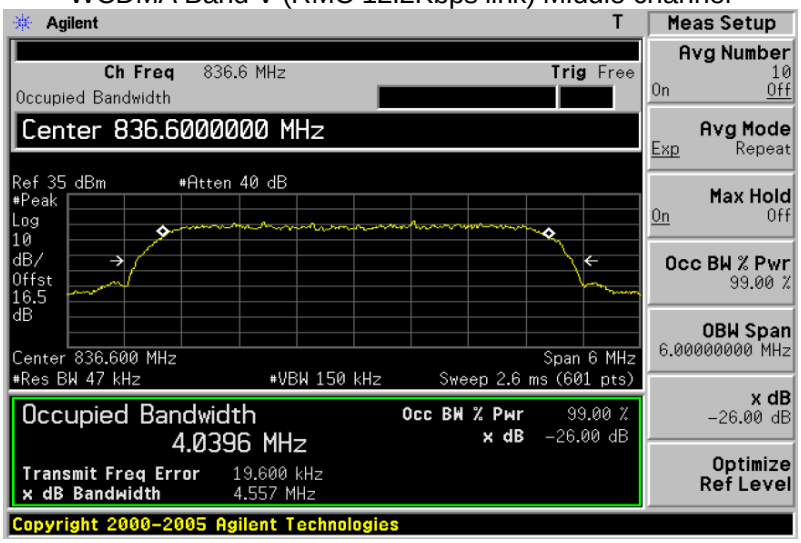
WCDMA Band II (RMC 12.2Kbps link) Highest channel



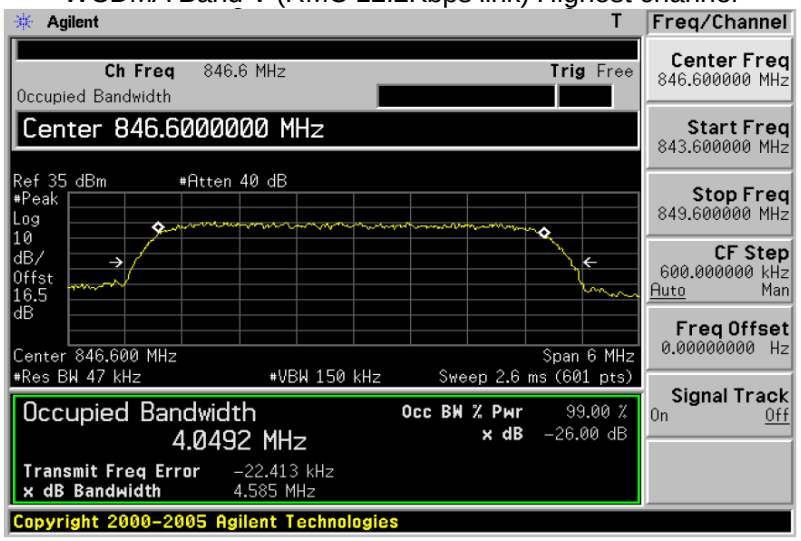
WCDMA Band V (RMC 12.2Kbps link) Lowest channel



WCDMA Band V (RMC 12.2Kbps link) Middle channel



WCDMA Band V (RMC 12.2Kbps link) Highest channel



5.4. Frequency Stability

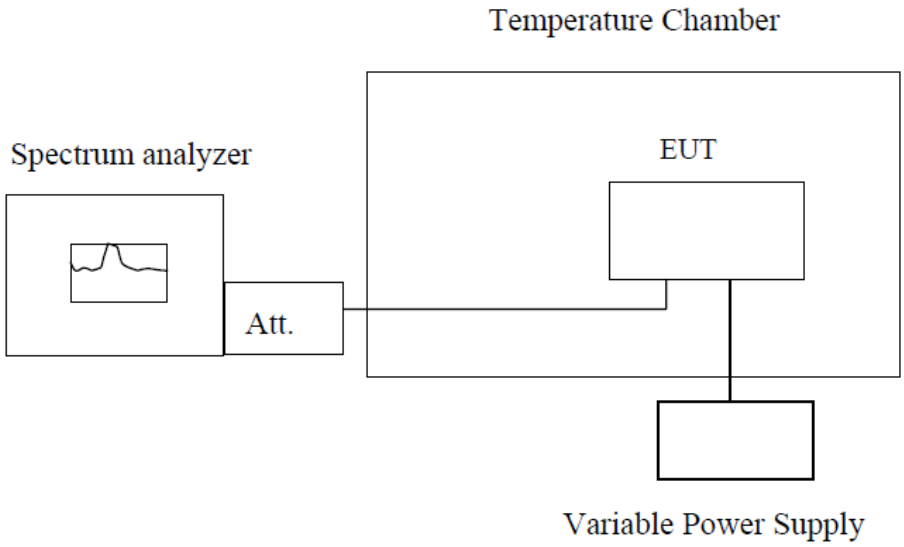
5.4.1. Limit

According to FCC section 22.355 and FCC section 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from -30℃ to +50℃ at intervals of not more than 10℃.

(b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

5.4.2. Test Setup



Note : Measurement setup for testing on Antenna connector

The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber.

The EUT is commanded by the System Simulator (SS) to operate at the maximum output power

5.4.3. Test Result

The nominal, highest and lowest extreme voltages are separately 3.7VDC, 4.2VDC and 3.6VDC which are specified by the applicant; the normal temperature here used is 25℃. The frequency deviation limit of 850MHz band is ±2.5ppm, and 1900MHz is ±1ppm

Normal

Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(℃)	Frequency Error(Hz)	ppm	Limit	
GSM850 (GSM link) Middle channel=190 channel=836.6MHz	3.7	-30	44	0.0526	±2.5	PASS
	3.7	-20	40	0.0478		
	3.7	-10	35	0.0418		
	3.7	0	33	0.0394		
	3.7	10	31	0.0371		
	3.7	20	27	0.0323		
	3.7	30	33	0.0394		
	3.7	40	37	0.0442		
	3.7	50	35	0.0418		
	4.25	25	29	0.0347		
	3.70	25	27	0.0323		
	3.40	25	31	0.0371		
GSM850 (EGPRS 8 link) Middle channel=190 channel=836.6MHz	3.7	-30	39	0.0466	±2.5	PASS
	3.7	-20	36	0.0430		
	3.7	-10	31	0.0371		
	3.7	0	30	0.0359		
	3.7	10	28	0.0335		
	3.7	20	25	0.0299		
	3.7	30	30	0.0359		
	3.7	40	33	0.0394		
	3.7	50	31	0.0371		
	4.25	25	27	0.0323		
	3.70	25	25	0.0299		
	3.40	25	28	0.0335		
PCS1900 (GSM link) Middle channel=661 channel=1880MHz	3.7	-30	72	0.0383	±1	PASS
	3.7	-20	67	0.0356		
	3.7	-10	59	0.0314		
	3.7	0	57	0.0303		
	3.7	10	54	0.0287		
	3.7	20	49	0.0261		
	3.7	30	57	0.0303		
	3.7	40	62	0.0330		
	3.7	50	59	0.0314		
	4.25	25	52	0.0277		
	3.70	25	49	0.0261		
	3.40	25	51	0.0271		

Note: Measurement Uncertainty: ±20Hz.

PCS1900 (EGPRS 8 link) Middle channel=661 channel=1880MHz	3.7	-30	57	0.0303	±1	PASS
	3.7	-20	64	0.0340		
	3.7	-10	75	0.0399		
	3.7	0	64	0.0340		
	3.7	10	36	0.0191		
	3.7	20	55	0.0293		
	3.7	30	48	0.0255		
	3.7	40	43	0.0229		
	3.7	50	63	0.0335		
	4.25	25	57	0.0303		
	3.70	25	45	0.0239		
	3.40	25	27	0.0144		
WCDMA Band II Middle channel=9400 channel=1880.0MHz	3.7	-30	46	0.0245	±1	PASS
	3.7	-20	65	0.0346		
	3.7	-10	57	0.0303		
	3.7	0	44	0.0234		
	3.7	10	43	0.0229		
	3.7	20	38	0.0202		
	3.7	30	26	0.0138		
	3.7	40	45	0.0239		
	3.7	50	54	0.0287		
	4.25	25	36	0.0191		
	3.70	25	48	0.0255		
	3.40	25	42	0.0223		
WCDMA Band V Middle channel=4180 channel=836.6MHz	3.7	-30	57	0.0303	±1	PASS
	3.7	-20	45	0.0239		
	3.7	-10	56	0.0298		
	3.7	0	64	0.0340		
	3.7	10	34	0.0181		
	3.7	20	36	0.0191		
	3.7	30	38	0.0202		
	3.7	40	27	0.0144		
	3.7	50	66	0.0351		
	4.25	25	36	0.0191		
	3.70	25	29	0.0154		
	3.40	25	43	0.0229		

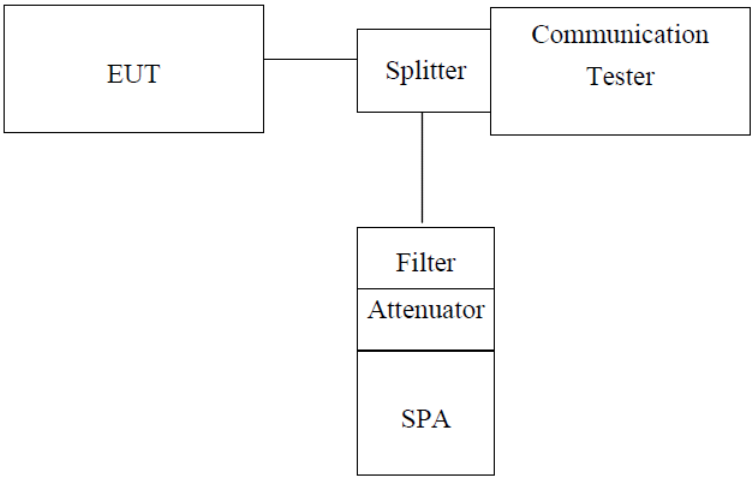
Note: Measurement Uncertainty: ±20Hz.

5.5. Conducted Out of Band Emissions

5.5.1. Limit

According to FCC section 22.917(a) and FCC section 24.238(a), 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. This calculated to be -13dBm.

5.5.2. Test Setup



Note: *Measurement setup for testing on Antenna connector*

5.5.3. Measurement Procedure

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 100KHz, Start=30MHz, Stop= 10th harmonic.

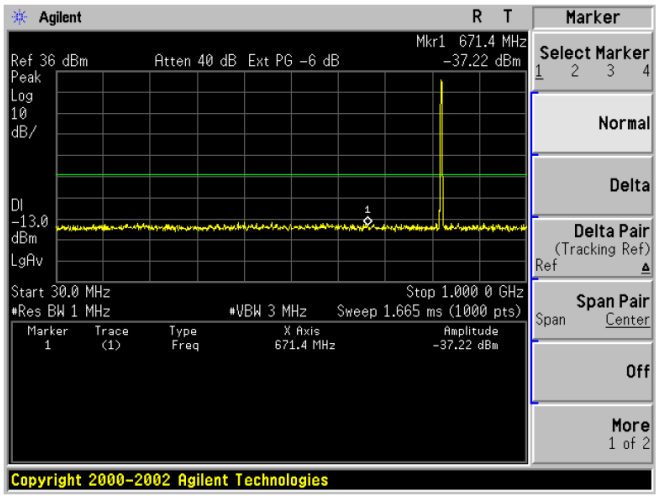
Limit = -13dBm

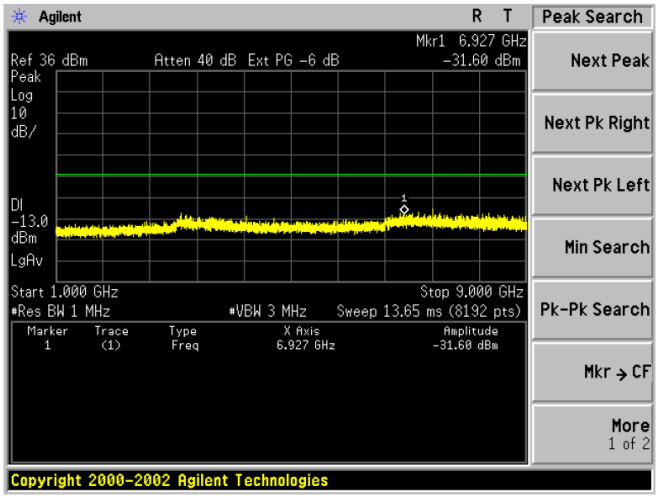
5.5.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

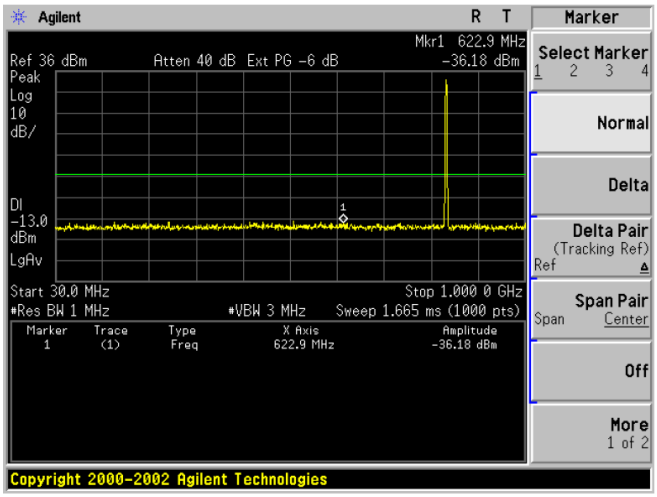
Test plot as follows:

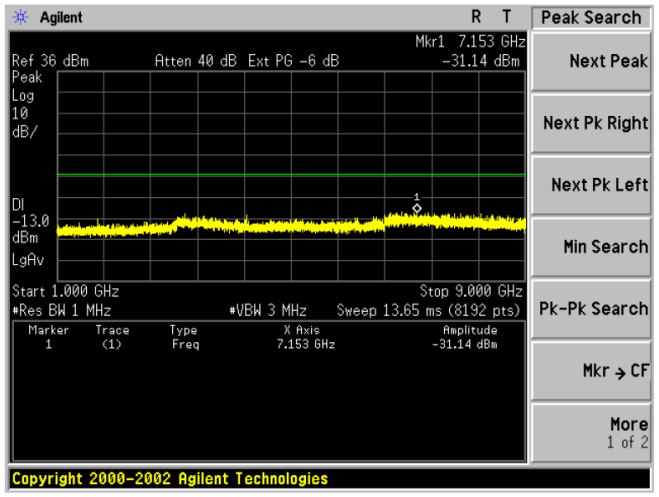
GSM 850MHz Lowest channel



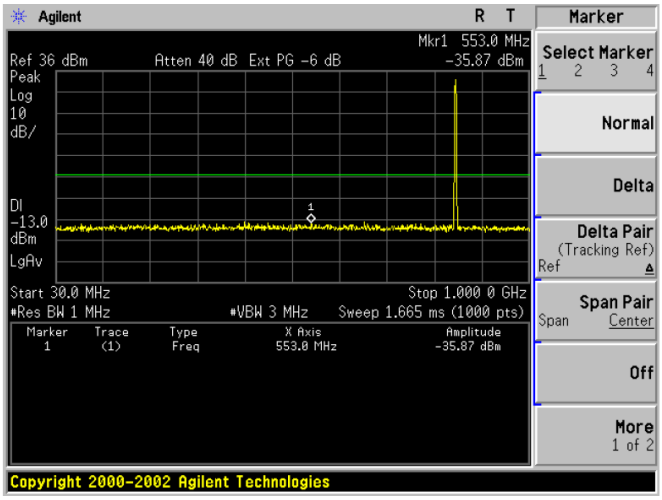


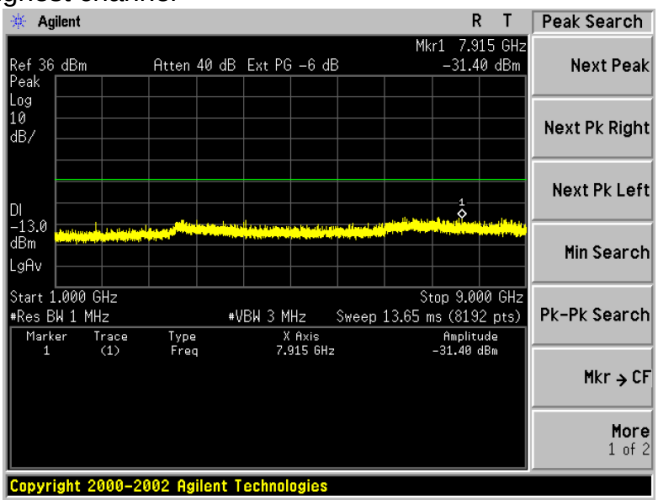
GSM 850MHz Middle channel



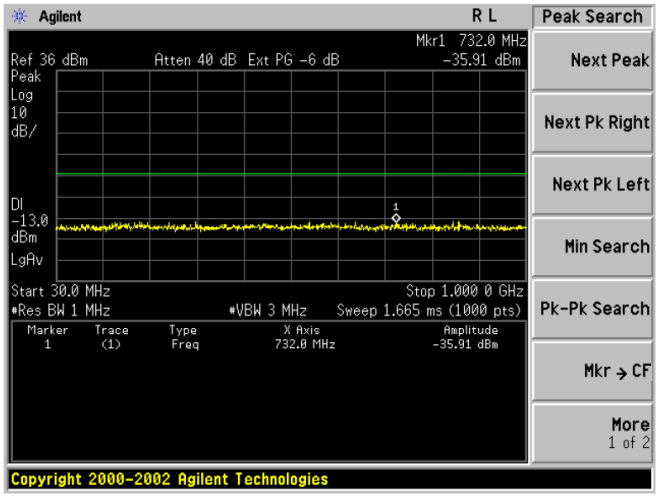


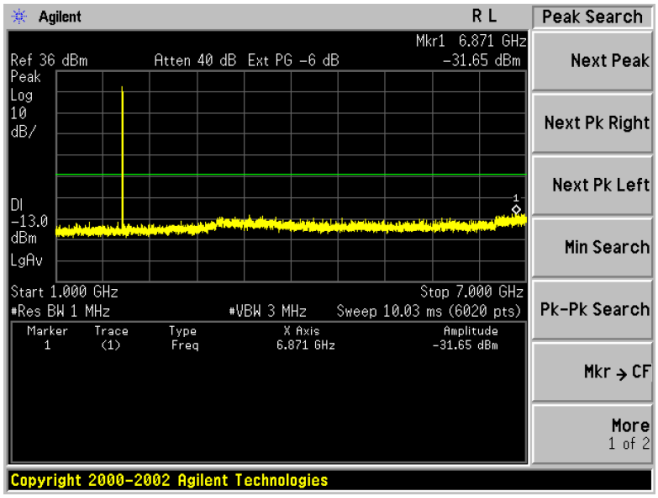
GSM 850MHz Highest channel

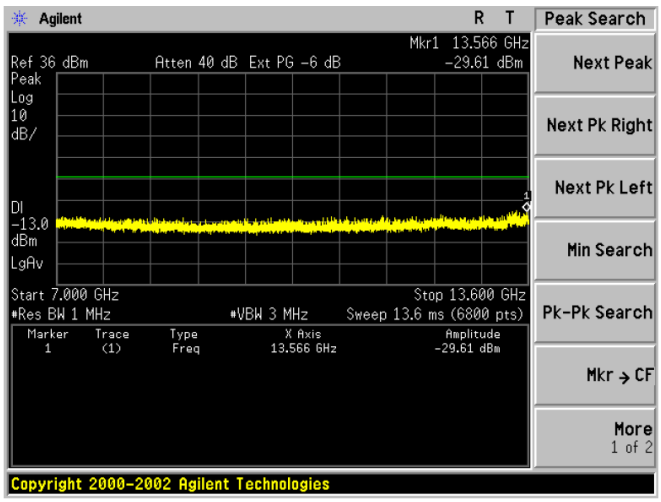


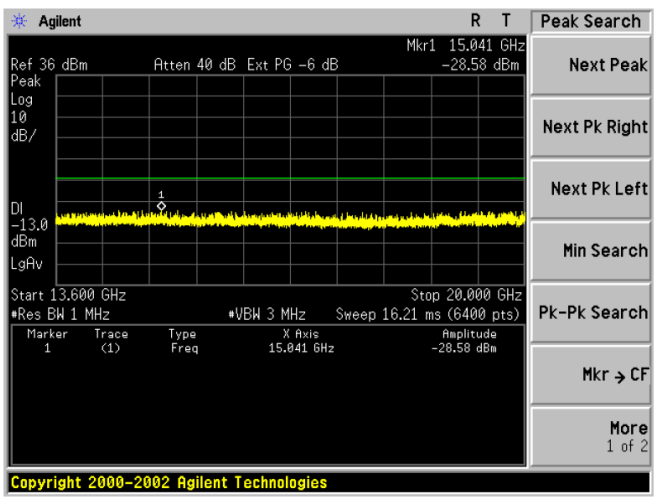


GSM 1900MHz Lowest channel

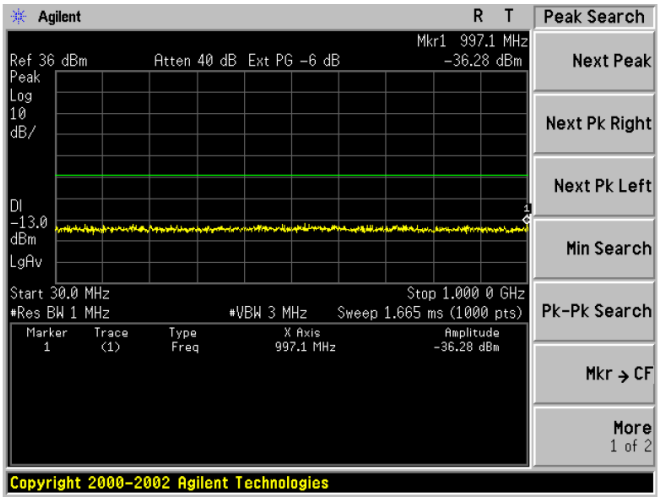


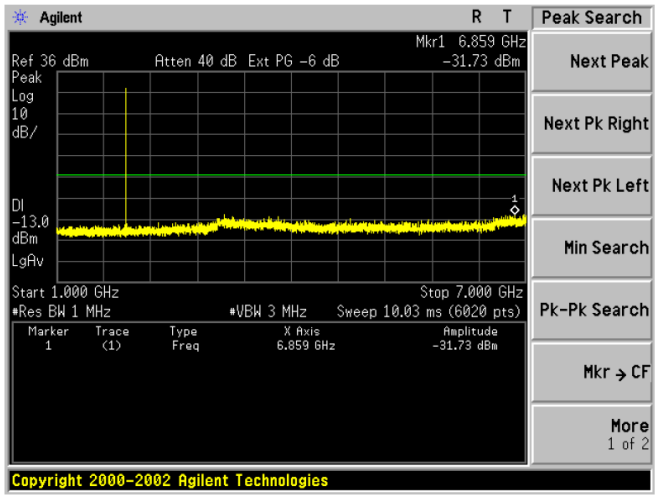


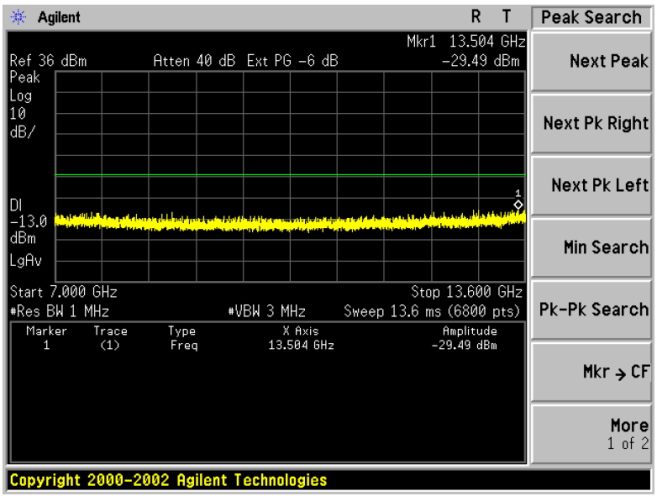


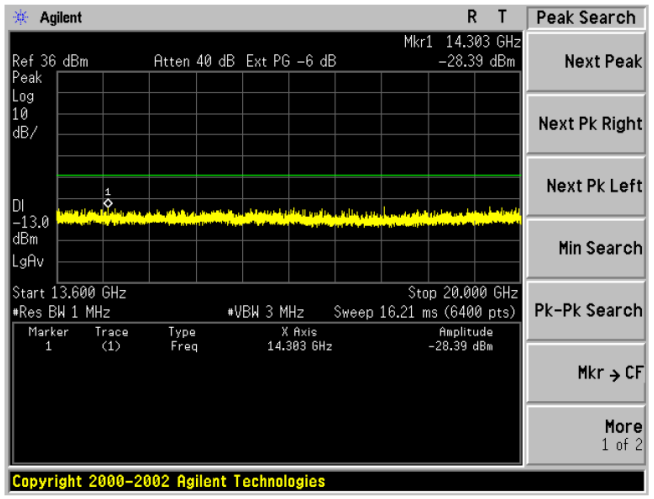


GSM 1900MHz Middle channel

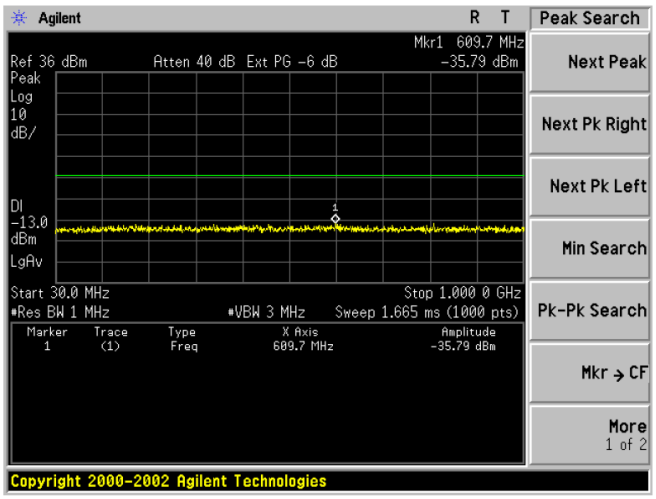


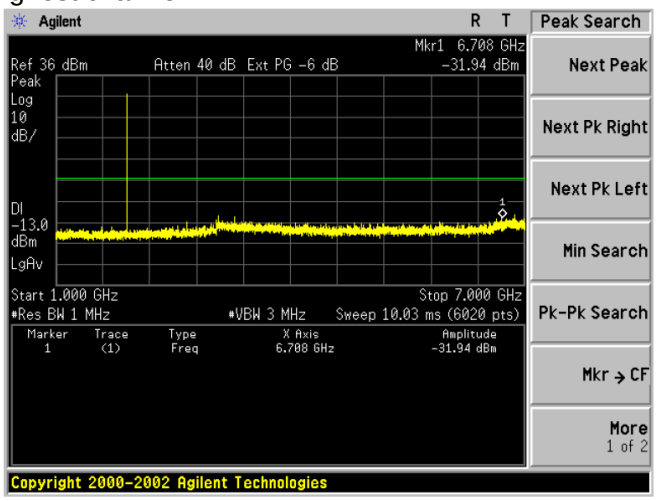


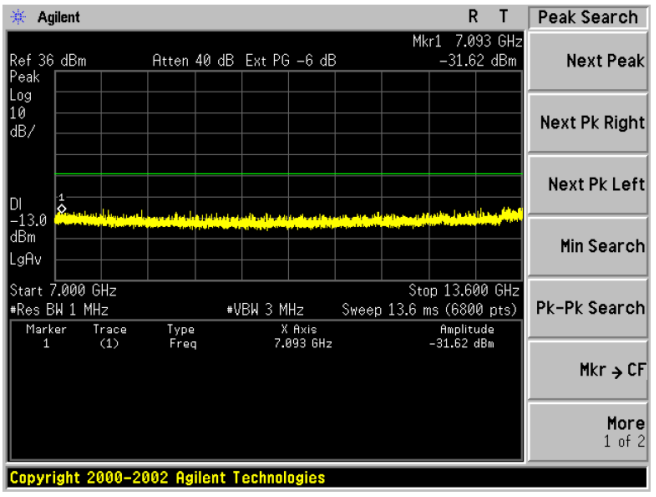


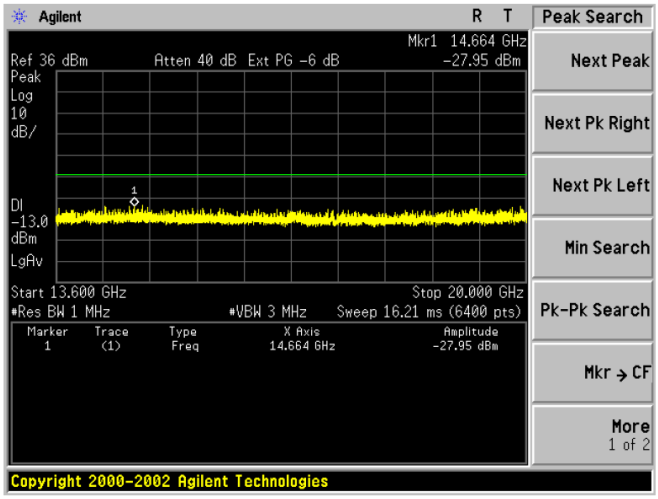


GSM 1900MHz Highest channel

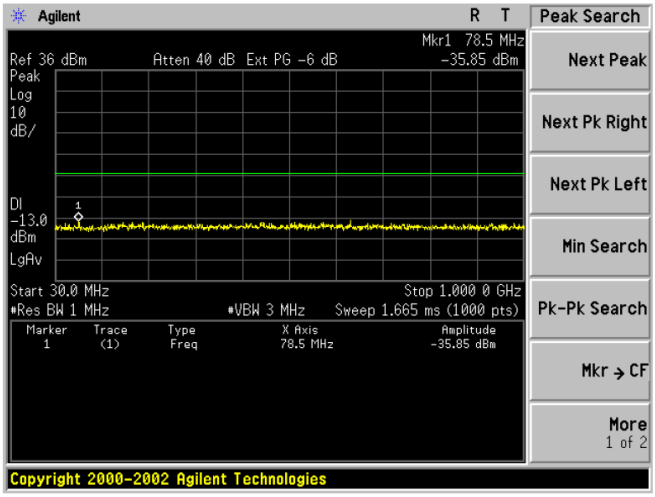


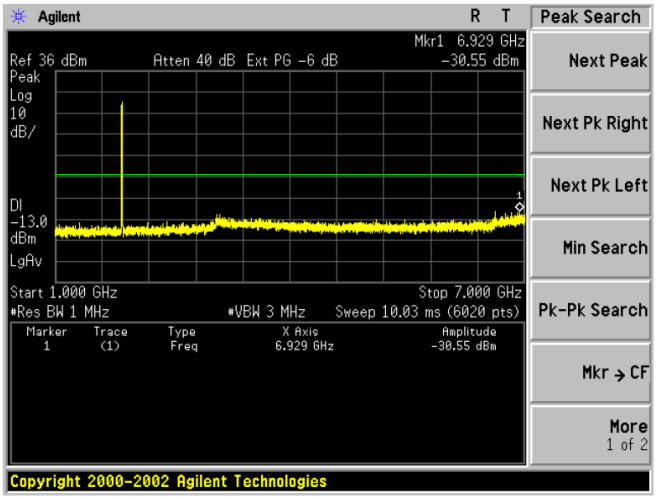


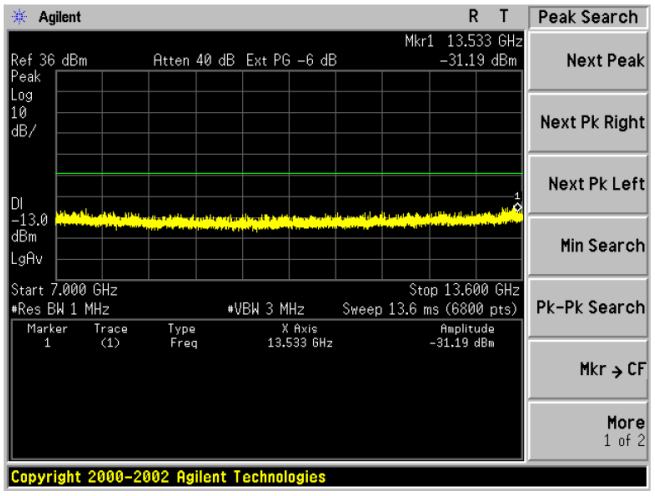


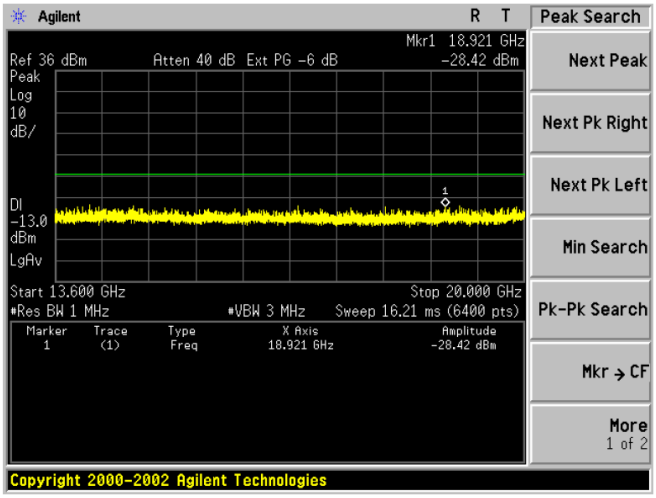


WCDMA Band II (RMC 12.2Kbps link)
Lowest channel

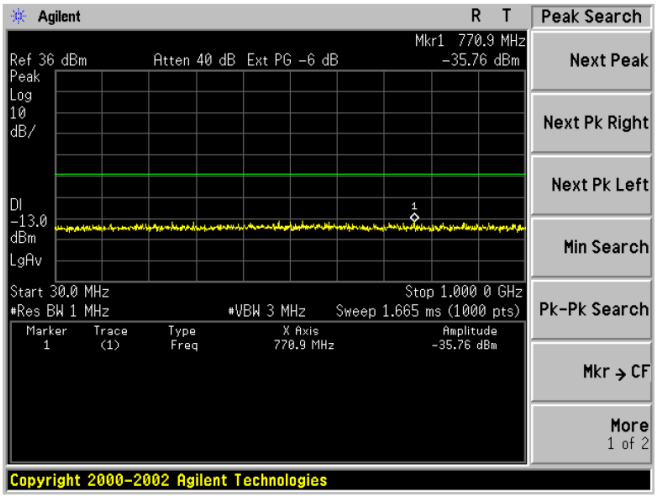


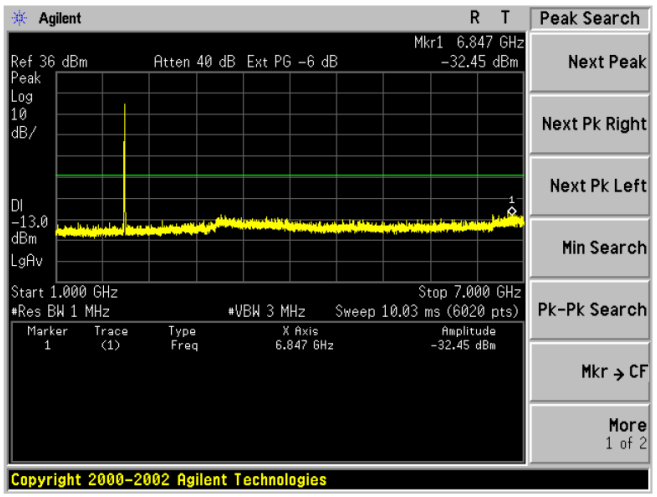


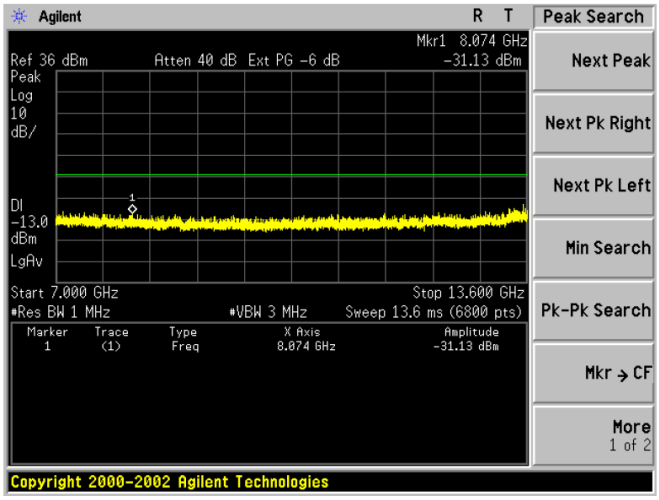


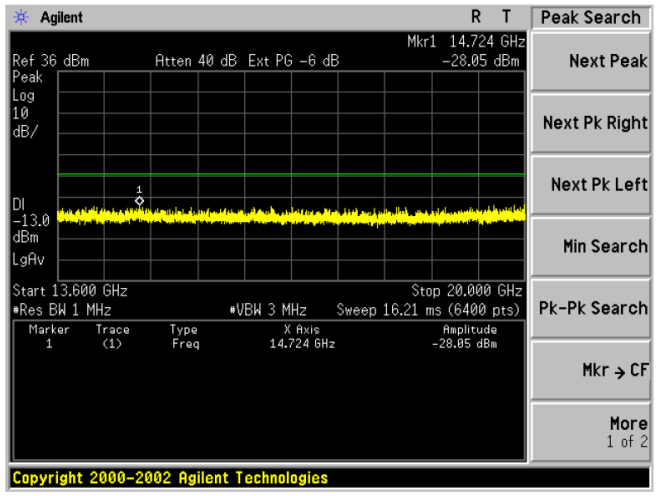


WCDMA Band II (RMC 12.2Kbps link)
Middle channel

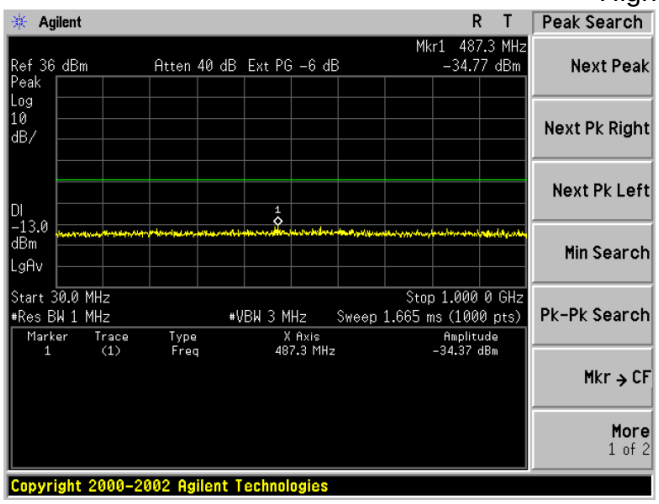


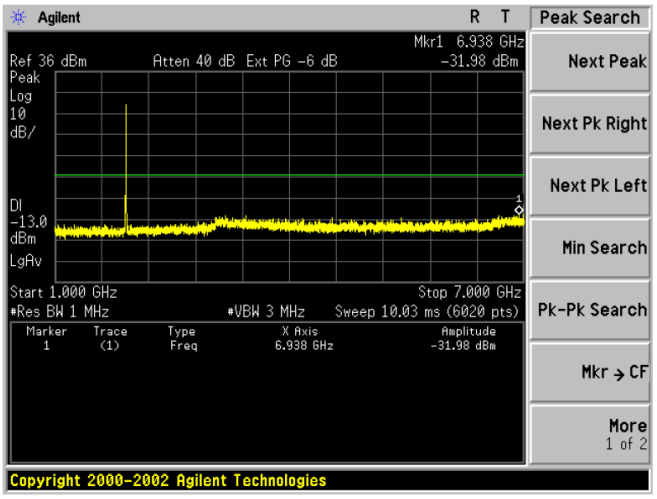


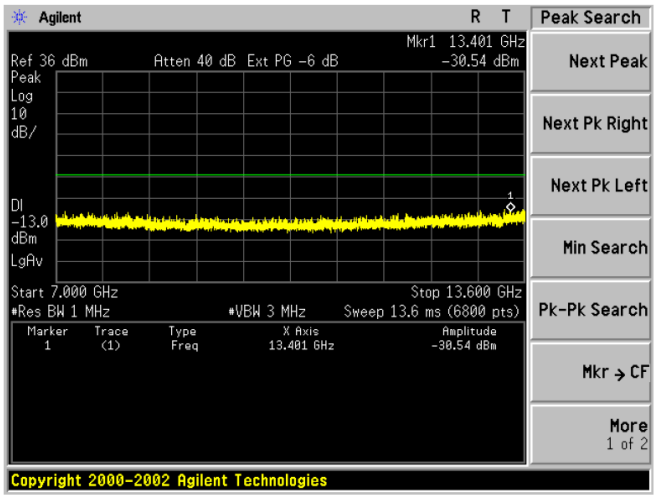


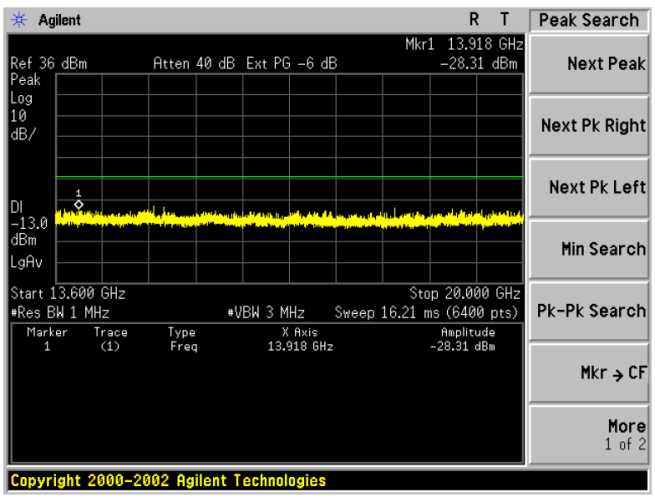


WCDMA Band II (RMC 12.2Kbps link)
Highest channel

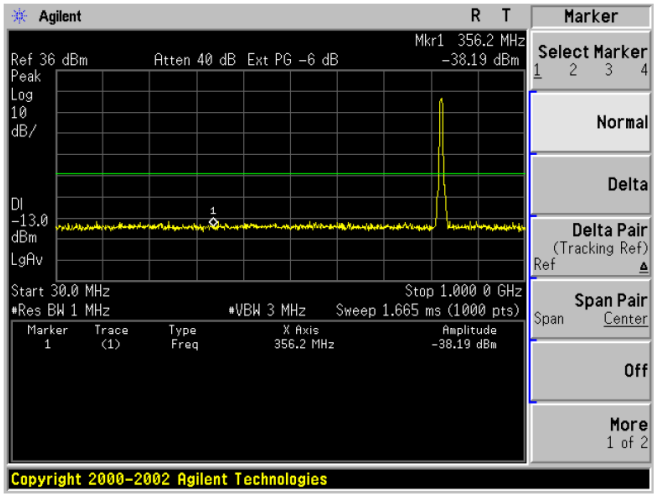


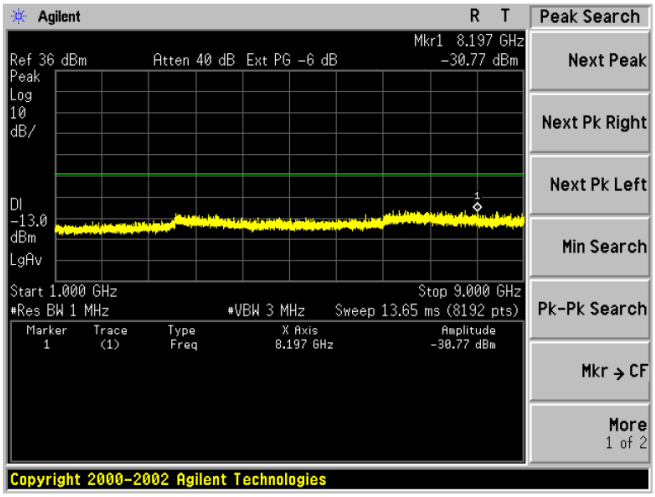




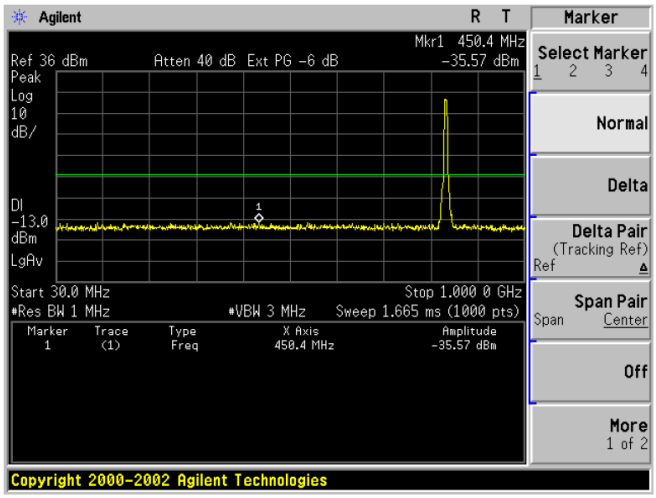


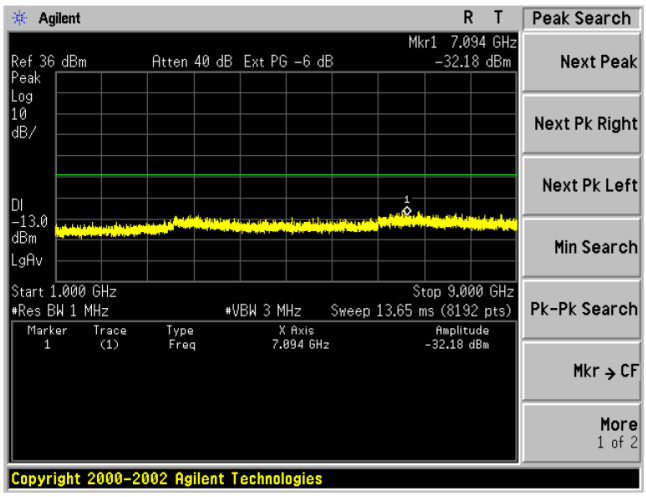
WCDMA Band V (RMC 12.2Kbps link)
Lowest channel



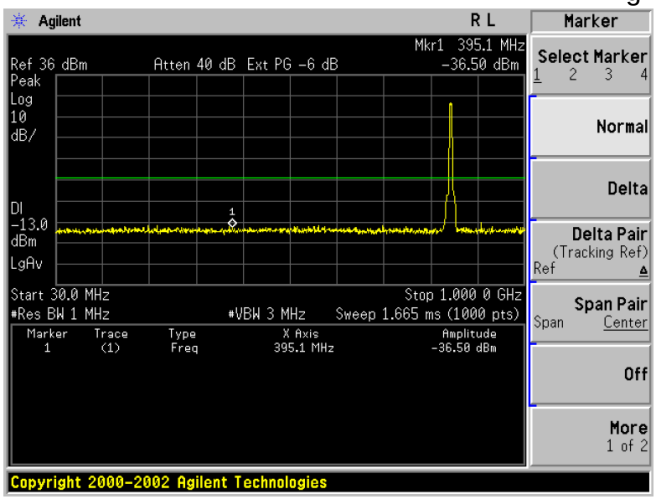


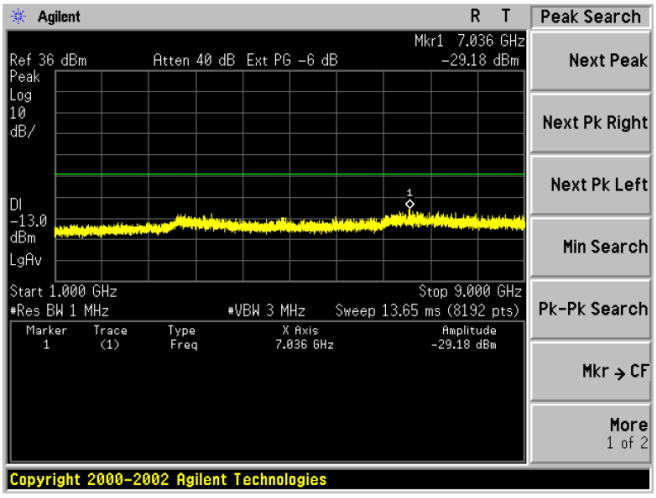
WCDMA Band V (RMC 12.2Kbps link)
Middle channel





WCDMA Band V (RMC 12.2Kbps link)
Highest channel



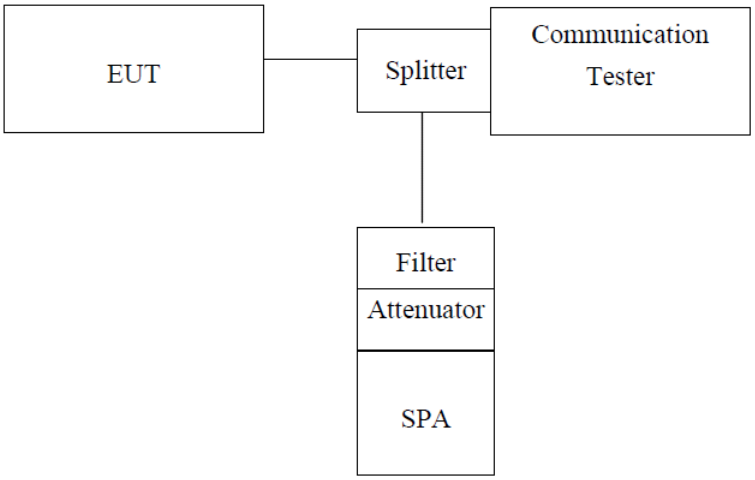


5.6. Conducted Bandedge Emissions

5.6.1. Limit

According to FCC section 22.917(b) and FCC section 24.238(b), 27.53(g)(h) in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

5.6.2. Test Setup



Note: *Measurement setup for testing on Antenna connector*

5.6.3. Measurement Procedure

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer and the System Simulator with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the System Simulator to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the System Simulator.

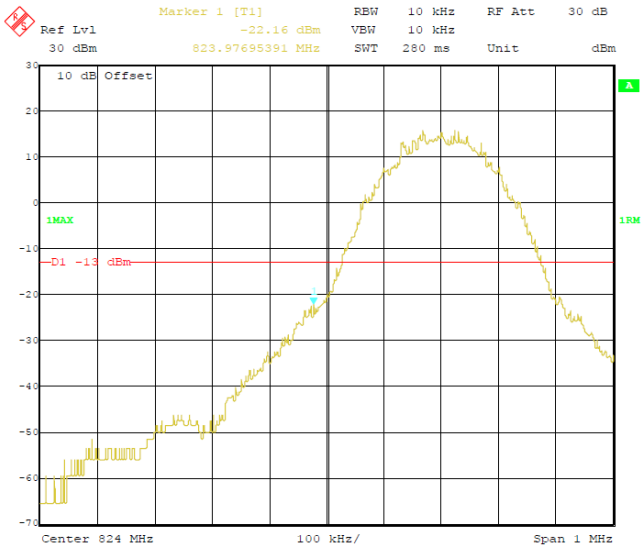
5.6.4. Test Result

According to FCC Part 22.917(a), the power of any emissions 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.

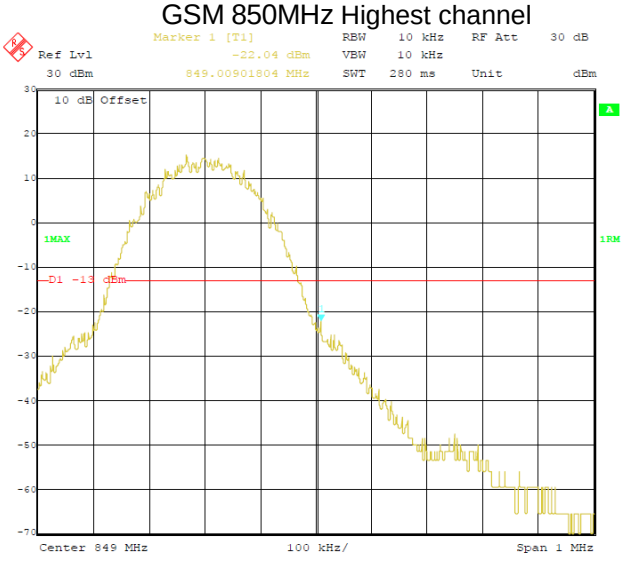
According to FCC Part 24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

Test plot as follows:

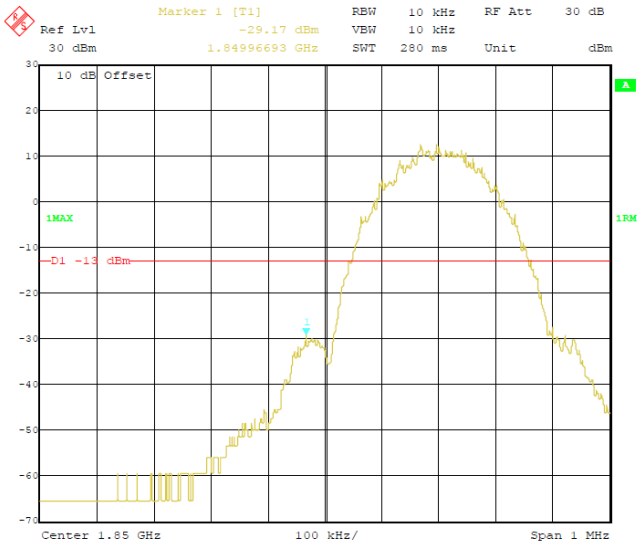
GSM 850MHz Lowest channel



GSM 850MHz Highest channel

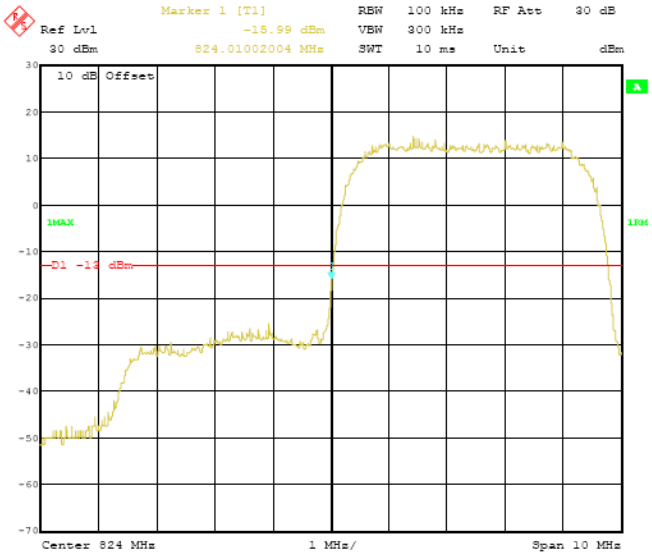


GSM 1900MHz Lowest channel

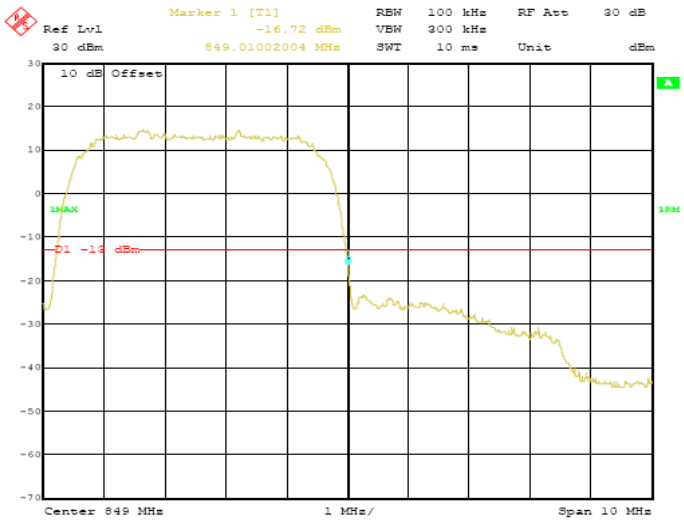


GSM 1900MHz Highest channel

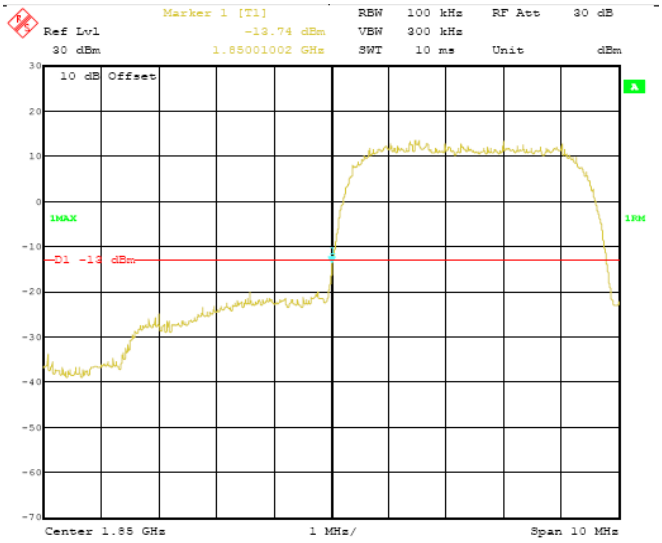
WCDMA Band V (RMC 12.2Kbps link)
Lowest channel



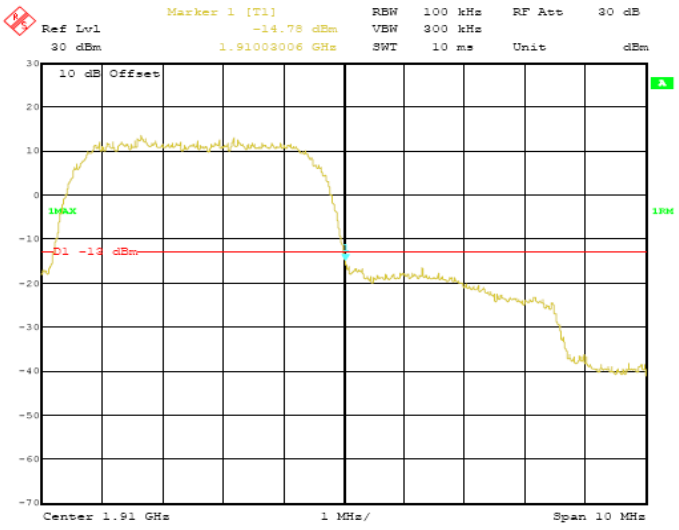
WCDMA Band V (RMC 12.2Kbps link)
Highest channel



WCDMA Band II (RMC 12.2Kbps link)
Lowest channel



WCDMA Band II (RMC 12.2Kbps link)
Highest channel



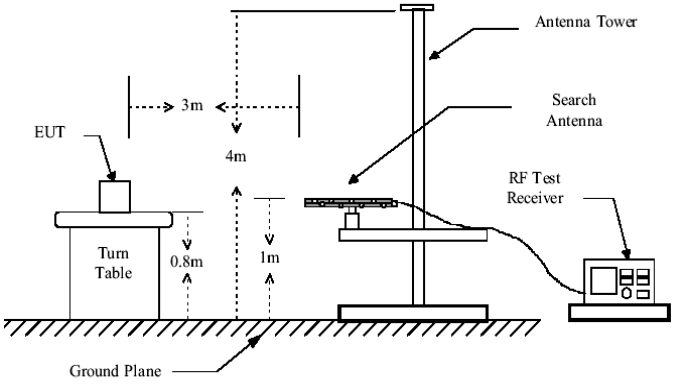
5.7. Transmitter Radiated Power (EIRP/ERP)

5.7.1. Limit

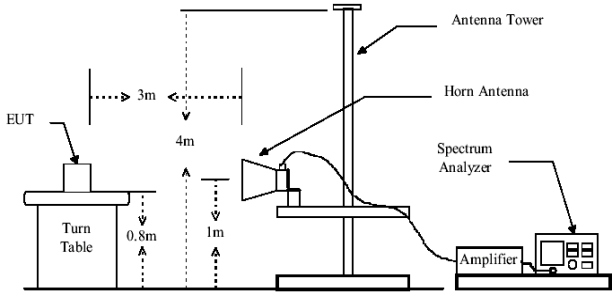
According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts, and FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.

5.7.2. Test Setup

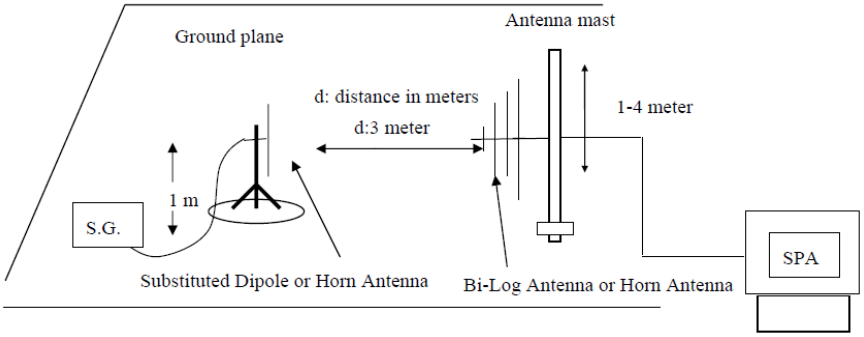
Below 1GHz



Above 1GHz



Substituted method:



5.7.3. Measurement Procedure

The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. all test in Full-Anechoic Chamber.

During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)

EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)

5.7.4. Test Result

EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
GSM850 (GSM link)	Lowest	H	V	31.84	38.45	Pass
			H	29.08		
		E1	V	25.09		
			H	29.41		
		E2	V	24.57		
			H	27.79		
	Middle	H	V	31.73	38.45	Pass
			H	29.32		
		E1	V	25.42		
			H	29.77		
		E2	V	25.85		
			H	28.24		
	Highest	H	V	**32.28**	38.45	Pass
			H	29.04		
		E1	V	25.28		
			H	28.83		
		E2	V	24.17		
			H	28.38		

EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
GSM850 (EGPRS 8 link)	Lowest	H	V	30.84	38.45	Pass
			H	28.97		
		E1	V	22.94		
			H	25.38		
		E2	V	24.29		
			H	23.34		
	Middle	H	V	27.93	38.45	Pass
			H	25.18		
		E1	V	26.26		
			H	25.74		
		E2	V	20.80		
			H	23.82		
	Highest	H	V	32.12	38.45	Pass
			H	24.63		
		E1	V	27.89		
			H	24.36		
		E2	V	27.50		
			H	23.80		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP (dBm)	Limit (dBm)	Result
PCS1900 (GSM link)	Lowest	H	V	29.73	33.01	Pass
			H	27.08		
		E1	V	22.99		
			H	27.42		
		E2	V	22.46		
			H	25.76		
	Middle	H	V	**30.24**	33.01	Pass
			H	28.60		
		E1	V	24.60		
			H	29.06		
		E2	V	25.03		
			H	27.49		
	Highest	H	V	30.05	33.01	Pass
			H	27.91		
		E1	V	24.05		
			H	27.69		
		E2	V	22.92		
			H	27.23		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP (dBm)	Limit (dBm)	Result
PCS1900 (EGPRS 8 link)	Lowest	H	V	28.72	33.01	Pass
			H	24.09		
		E1	V	19.48		
			H	24.47		
		E2	V	18.89		
			H	22.60		
	Middle	H	V	29.89	33.01	Pass
			H	24.37		
		E1	V	19.87		
			H	24.88		
		E2	V	20.36		
			H	23.12		
	Highest	H	V	29.92	33.01	Pass
			H	23.72		
		E1	V	19.39		
			H	23.48		
		E2	V	18.11		
			H	22.96		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
WCDMA Band II	Lowest	H	V	**22.89**	33.01	Pass
			H	17.97		
		E1	V	15.85		
			H	16.39		
		E2	V	15.19		
			H	19.31		
	Middle	H	V	22.63	33.01	Pass
			H	17.83		
		E1	V	16.83		
			H	18.40		
		E2	V	17.38		
			H	20.45		
	Highest	H	V	22.83	33.01	Pass
			H	21.28		
		E1	V	15.46		
			H	20.01		
		E2	V	14.05		
			H	17.44		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
WCDMA Band V	Lowest	H	V	20.73	33.01	Pass
			H	16.92		
		E1	V	15.80		
			H	14.35		
		E2	V	15.14		
			H	19.25		
	Middle	H	V	**20.78**	33.01	Pass
			H	18.77		
		E1	V	16.78		
			H	15.35		
		E2	V	17.33		
			H	20.39		
	Highest	H	V	20.39	33.01	Pass
			H	17.23		
		E1	V	15.41		
			H	15.96		
		E2	V	14.01		
			H	17.39		

5.8. Radiated Out of Band Emissions

5.8.1. Limit

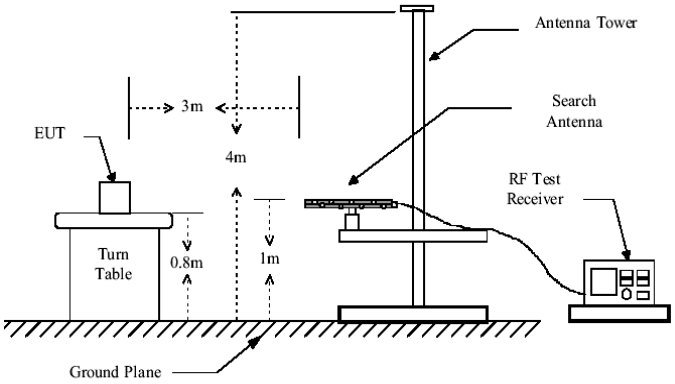
According to FCC section 22.917(a) and section 24.238(a), 27.53(g) the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power

(P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

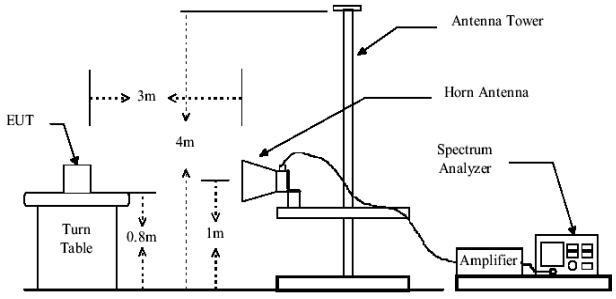
The spurious emission with frequency band 1900 according to FCC section 2.1057.

5.8.2. Test Setup

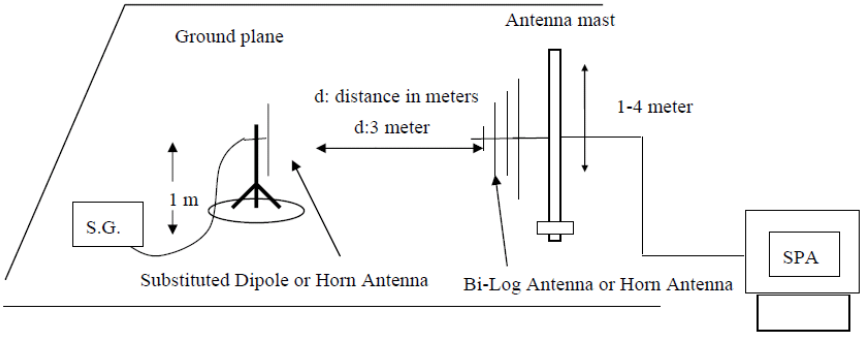
Below 1GHz



Above 1GHz



Substituted method:



5.8.3. Measurement Procedure

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. all test in Full-Anechoic Chamber.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency

(low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

EIRP = S.G. output (dBm) + Antenna Gain(dBi) – Cable Loss (dB)

Note: Measurement Uncertainty: ±3.6 dB.

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
GSM 850 Lowest	47.87	Vertical	-73.05	-13	PASS
	1648.40	Vertical	-24.27		
	2472.60	Vertical	-31.33		
	3296.80	Vertical	-33.58		
	4121.00	Vertical	-41.08		
	4945.20	Vertical	-35.23		
	127.58	Horizontal	-72.53		
	2472.60	Horizontal	-28.67		
	3296.80	Horizontal	-33.52		
	4121.00	Horizontal	-41.53		
	4945.20	Horizontal	-44.48		
	5769.40	Horizontal	-38.58		

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
GSM 850 Middle	45.58	Vertical	-71.15	-13	PASS
	1673.20	Vertical	-27.24		
	2509.80	Vertical	-28.59		
	3346.40	Vertical	-36.53		
	4183.00	Vertical	-43.46		
	5019.60	Vertical	-38.59		
	126.86	Horizontal	-72.43		
	1673.20	Horizontal	-24.18		
	2509.80	Horizontal	-28.44		
	3346.40	Horizontal	-44.15		
	4183.00	Horizontal	-45.21		
	5019.60	Horizontal	-35.06		

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
GSM 850 Highest	45.76	Vertical	-72.24	-13	PASS
	1697.60	Vertical	-26.13		
	2546.40	Vertical	-28.86		
	3395.20	Vertical	-32.43		
	4244.00	Vertical	-37.12		
	5092.80	Vertical	-42.21		
	121.65	Horizontal	-72.23		
	1697.60	Horizontal	-24.57		
	2546.40	Horizontal	-29.06		
	3395.20	Horizontal	-34.15		
	4244.00	Horizontal	-42.46		
	5092.80	Horizontal	-48.64		

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
PCS1900 Lowest	39.89	Vertical	-74.15	-13	PASS
	3700.40	Vertical	-42.53		
	5550.60	Vertical	-42.76		
	7400.80	Vertical	-35.16		
	9251.00	Vertical	-38.11		
	11101.20	Vertical	-37.16		
	188.67	Horizontal	-73.12		
	3700.40	Horizontal	-44.75		
	5550.60	Horizontal	-43.13		
	7400.80	Horizontal	-37.78		
	9251.00	Horizontal	-42.59		
	11101.20	Horizontal	-39.87		

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
PCS1900 Middle	39.47	Vertical	-71.76	-13	PASS
	3760.00	Vertical	-43.86		
	5640.00	Vertical	-42.58		
	7520.00	Vertical	-38.17		
	9400.00	Vertical	-37.11		
	11280.00	Vertical	-38.61		
	187.77	Horizontal	-73.62		
	3760.00	Horizontal	-42.28		
	5640.00	Horizontal	-42.13		
	7520.00	Horizontal	-34.75		
	9400.00	Horizontal	-38.21		
	11280.00	Horizontal	-37.61		

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
PCS1900 Highest	42.96	Vertical	-72.34	-13	PASS
	3819.60	Vertical	-43.23		
	5729.40	Vertical	-37.05		
	7639.20	Vertical	-33.36		
	9549.00	Vertical	-39.76		
	11458.80	Vertical	-39.61		
	185.89	Horizontal	-72.75		
	3819.60	Horizontal	-41.58		
	5729.40	Horizontal	-36.95		
	7639.20	Horizontal	-32.73		
	9549.00	Horizontal	-37.85		
	11458.80	Horizontal	-37.15		

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
WCDMA Band II Lowest	52.79	Vertical	-74.18	-13	PASS
	3704.80	Vertical	-24.57		
	5557.20	Vertical	-25.84		
	7409.60	Vertical	-32.54		
	9262.00	Vertical	-39.28		
	11114.40	Vertical	-44.61		
	152.32	Horizontal	-75.16		
	3704.80	Horizontal	-21.74		
	5557.20	Horizontal	-27.08		
	7409.60	Horizontal	-35.16		
	9262.00	Horizontal	-41.34		
	11114.40	Horizontal	-46.37		

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
WCDMA Band II Middle	51.12	Vertical	-74.15	-13	PASS
	3760.00	Vertical	-23.62		
	5640.00	Vertical	-25.86		
	7520.00	Vertical	-32.45		
	9400.00	Vertical	-39.75		
	11280.00	Vertical	-44.18		
	147.78	Horizontal	-75.12		
	3760.00	Horizontal	-22.37		
	5640.00	Horizontal	-27.18		
	7520.00	Horizontal	-35.12		
	9400.00	Horizontal	-41.42		
	11280.00	Horizontal	-46.07		

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
WCDMA Band II Highest	54.09	Vertical	-74.21	-13	PASS
	3815.20	Vertical	-22.73		
	5722.80	Vertical	-27.19		
	7630.40	Vertical	-32.06		
	9538.00	Vertical	-39.32		
	11445.60	Vertical	-44.51		
	151.76	Horizontal	-73.59		
	3815.20	Horizontal	-22.06		
	5722.80	Horizontal	-27.12		
	7630.40	Horizontal	-35.26		
	9538.00	Horizontal	-41.75		
	11445.60	Horizontal	-46.35		

Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
WCDMA Band V Lowest	52.87	Vertical	-73.96	-13	PASS
	1652.80	Vertical	-24.50		
	2479.20	Vertical	-25.76		
	3305.60	Vertical	-32.44		
	4132.00	Vertical	-39.16		
	4958.40	Vertical	-44.48		
	152.35	Horizontal	-74.93		
	1652.80	Horizontal	-21.67		
	2479.20	Horizontal	-27.00		
	3305.60	Horizontal	-35.05		
	4132.00	Horizontal	-41.22		
	4958.40	Horizontal	-46.23		

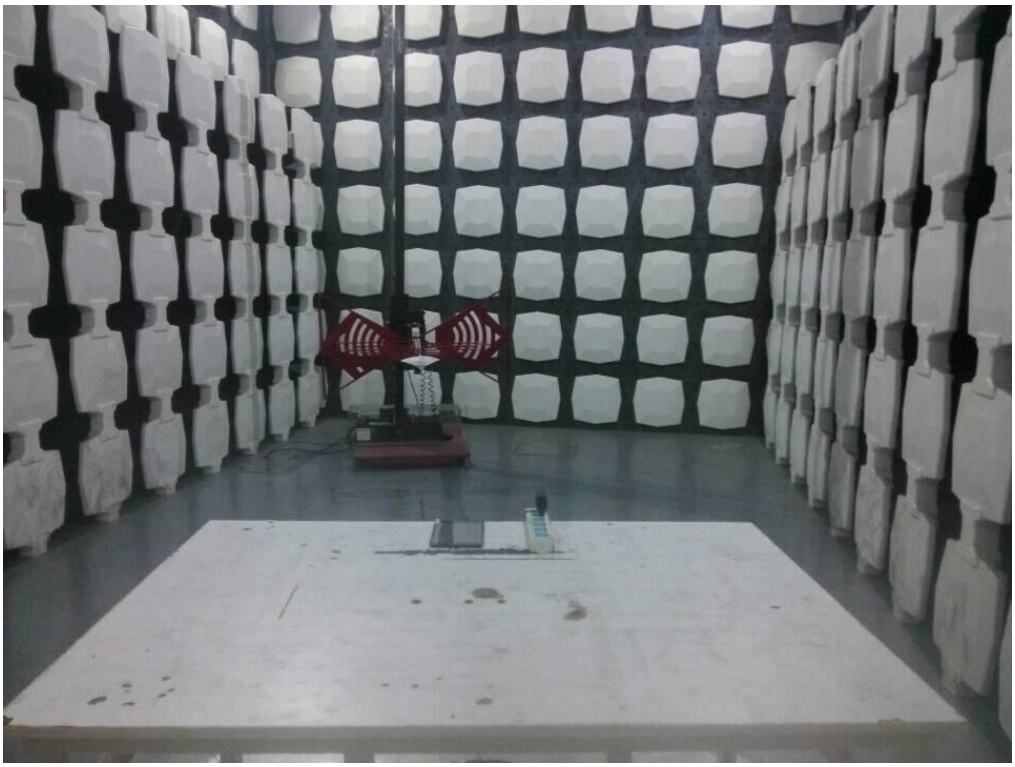
Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
WCDMA Band V Middle	50.67	Vertical	-73.93	-13	PASS
	1673.20	Vertical	-23.55		
	2509.80	Vertical	-25.78		
	3346.40	Vertical	-32.35		
	4183.00	Vertical	-39.63		
	5019.60	Vertical	-44.05		
	148.93	Horizontal	-74.89		
	1673.20	Horizontal	-22.30		
	2509.80	Horizontal	-27.10		
	3346.40	Horizontal	-35.01		
	4183.00	Horizontal	-41.30		
	5019.60	Horizontal	-45.93		

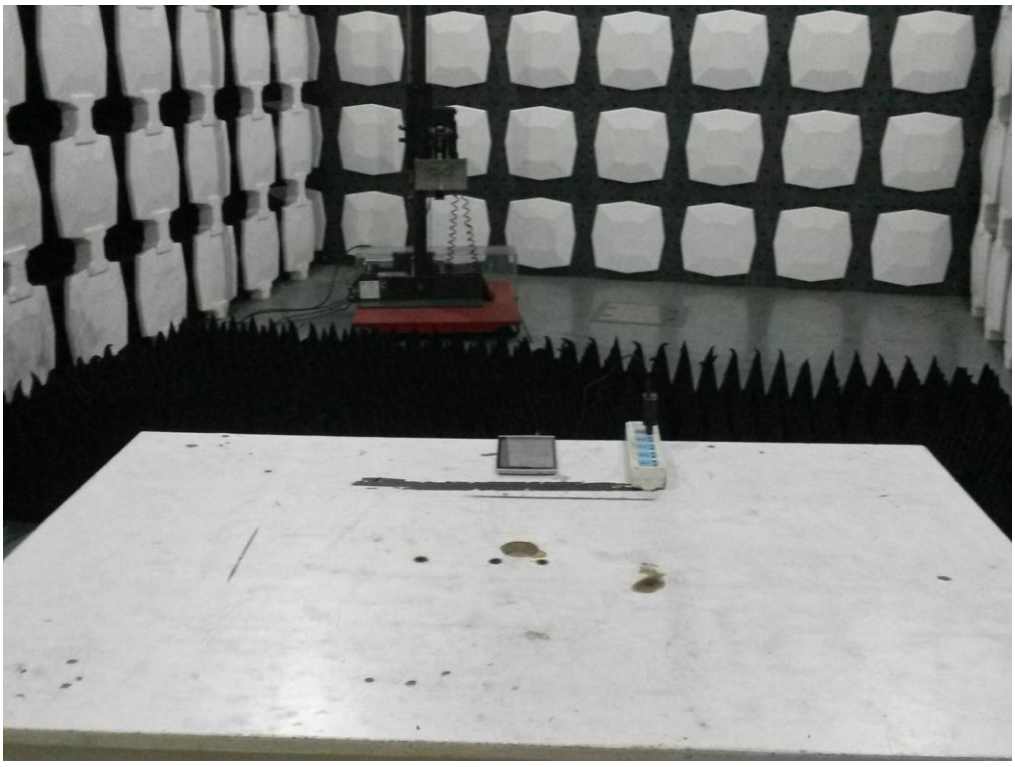
Band	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level(dBm)		
WCDMA Band V Highest	53.46	Vertical	-73.99	-13	PASS
	1693.20	Vertical	-22.66		
	2539.80	Vertical	-27.11		
	3386.40	Vertical	-31.96		
	4233.00	Vertical	-39.20		
	5079.60	Vertical	-44.38		
	151.32	Horizontal	-73.37		
	1693.20	Horizontal	-21.99		
	2539.80	Horizontal	-27.04		
	3386.40	Horizontal	-35.15		
	4233.00	Horizontal	-41.62		
	5079.60	Horizontal	-46.21		

6. PHOTOGRAPHS OF TEST SET-UP

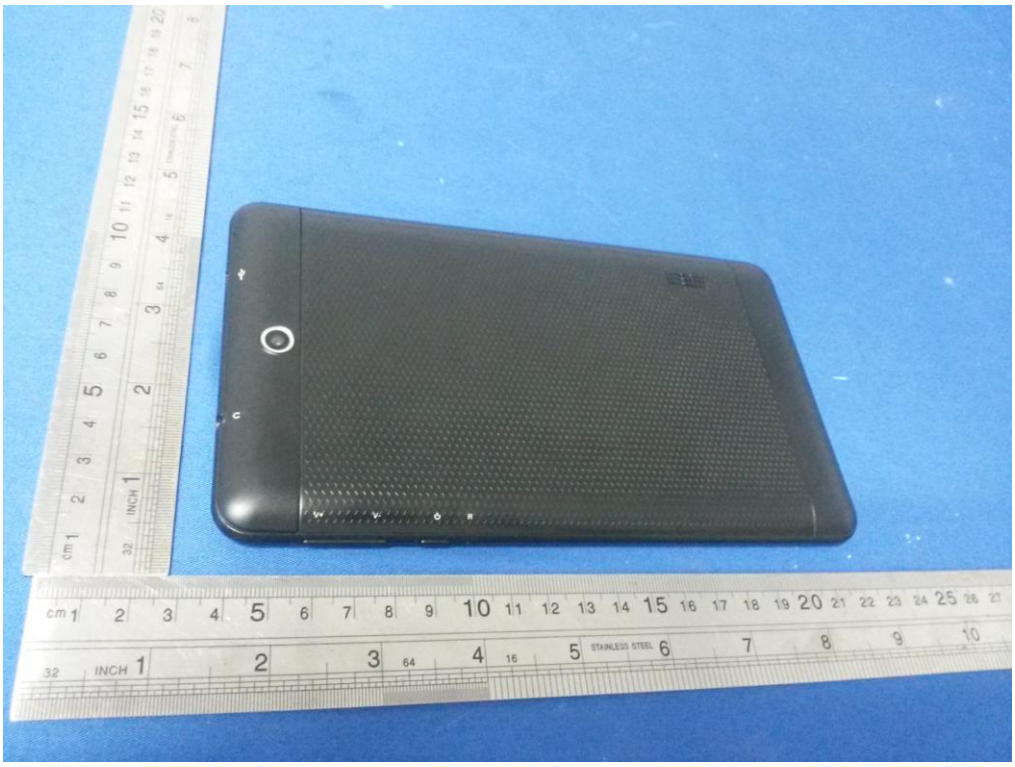
Conducted Emission

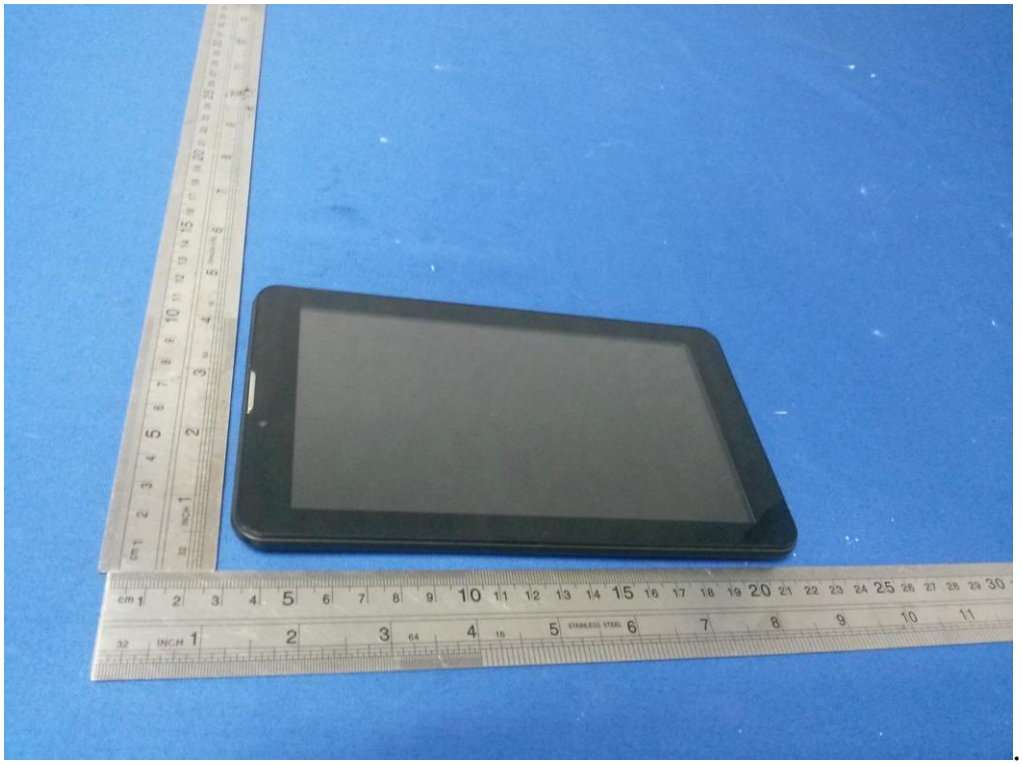
Radiated Emission

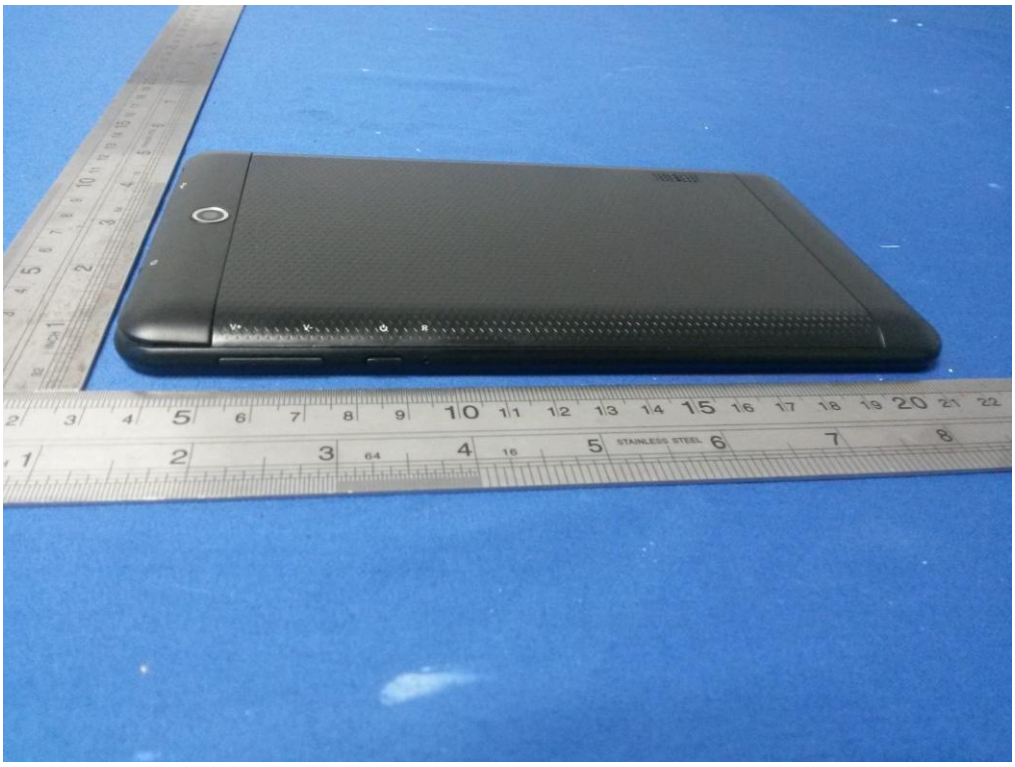


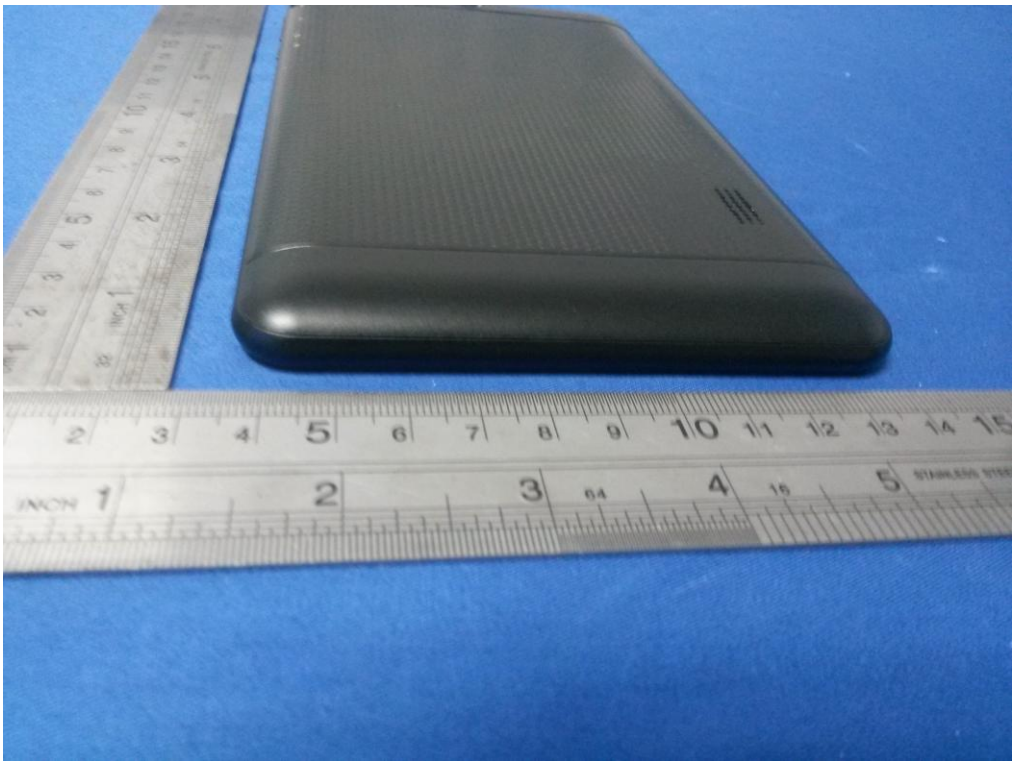


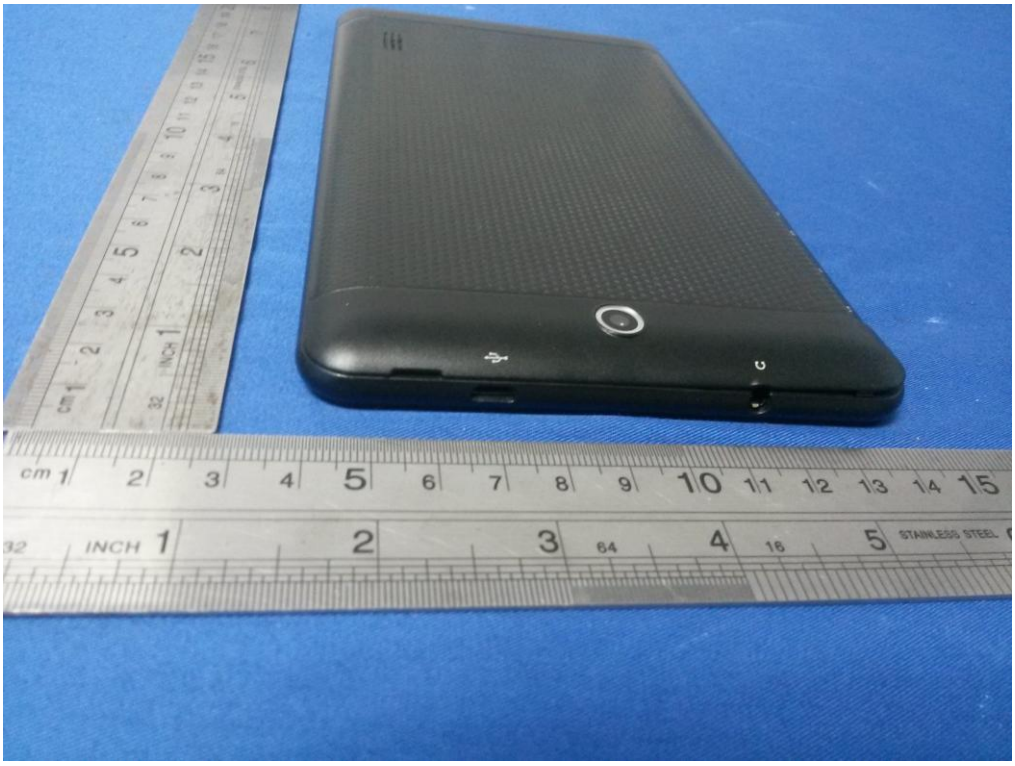
7. PHOTOGRAPHS OF THE EUT



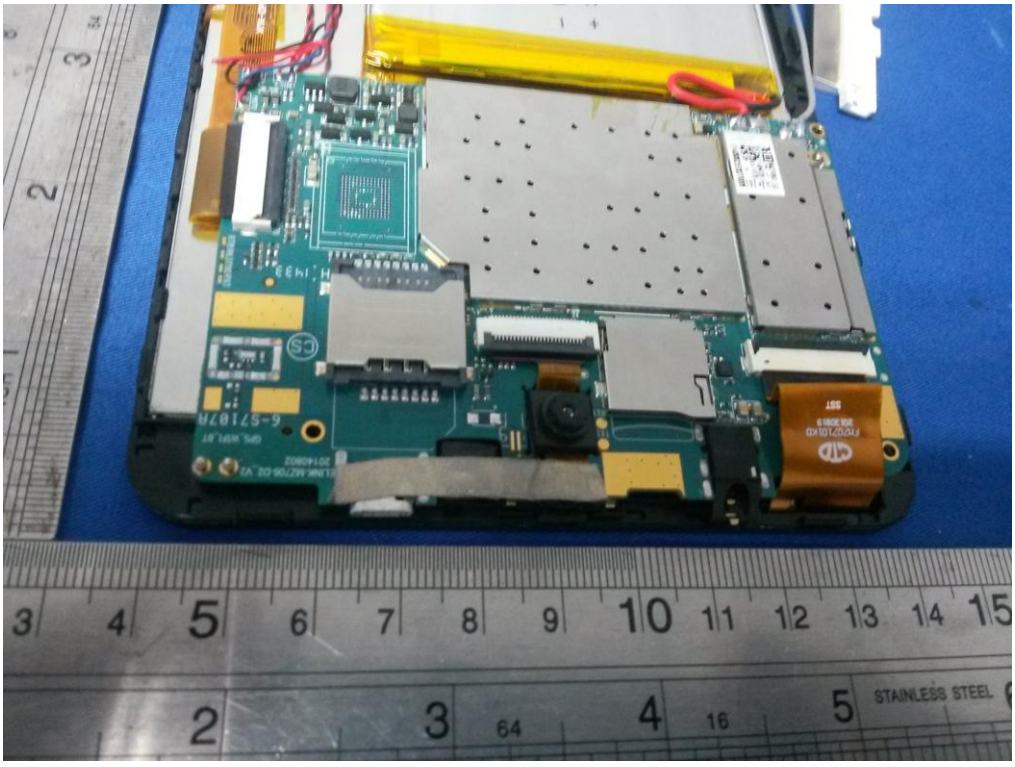


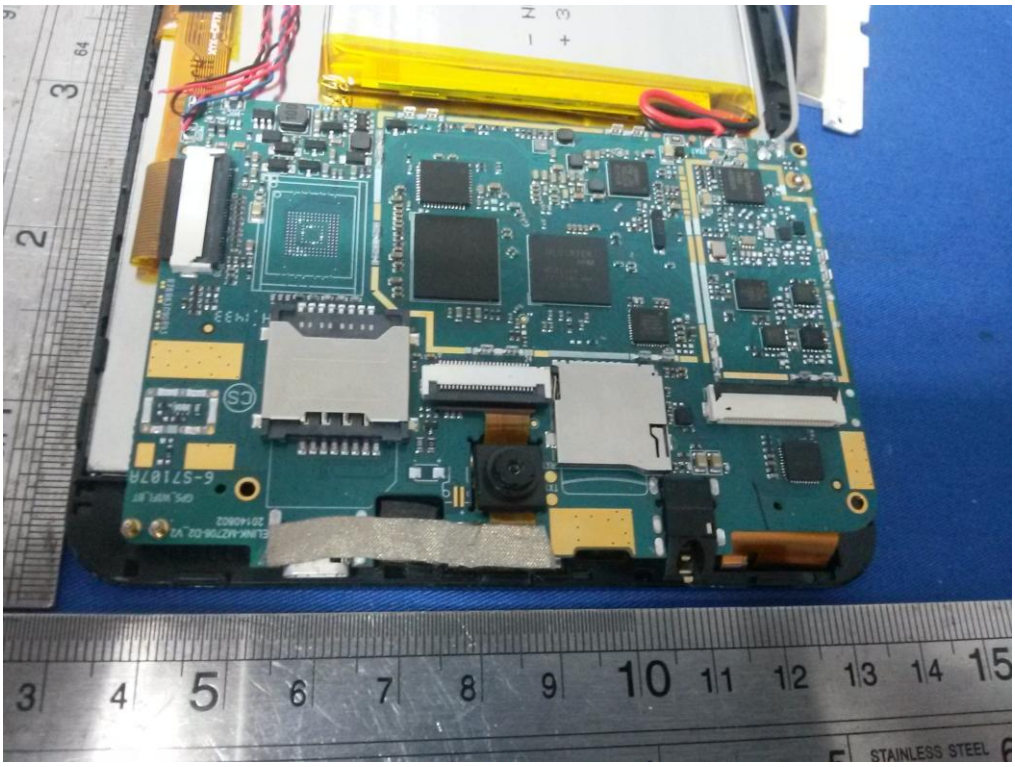


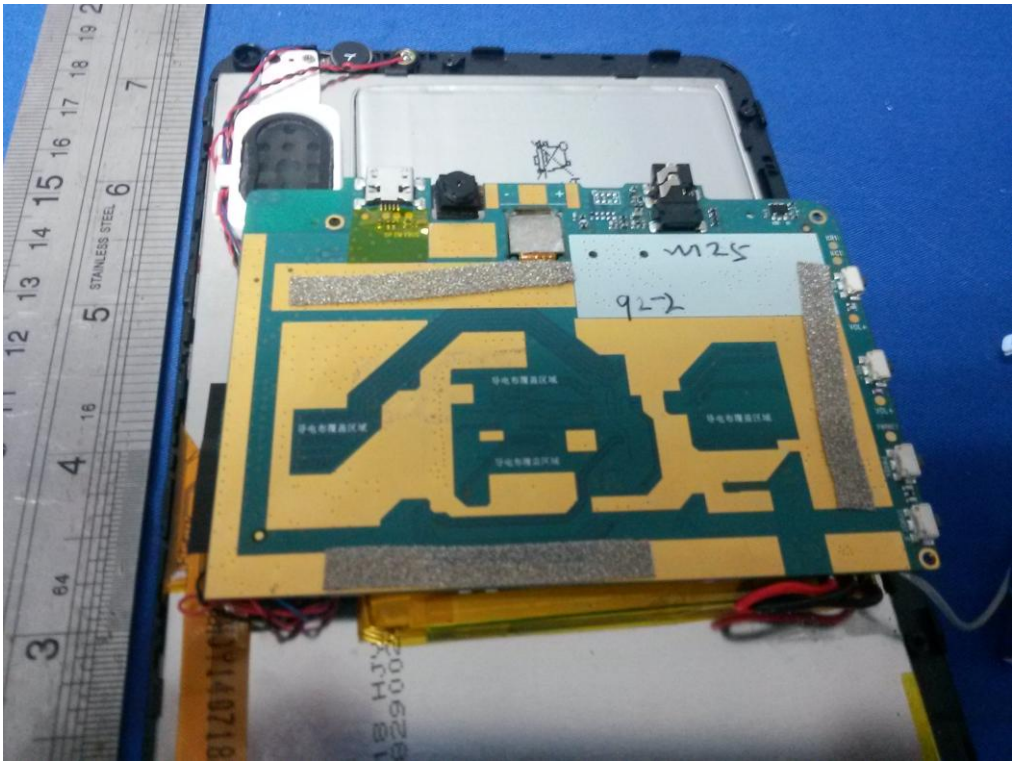





- NU 357096 2800mAh
+ 3.7U 10.36WH 20140HBA
STAINLESS STEEL


STAINLESS STEEL


STAINLESS STEEL


STAINLESS STEEL


- MU 357096 2800mAh
+ 3.7V 10.36WH 20140HBA


POWER SUPPLY
MADE IN CHINA

END.