MEASUREMENT REPORT
of
GSM emergency phone

Applicant	**:**	ON GUARD, INC
EUT	**:**	GSM emergency phone
Model No.	**:**	OG-GSM
FCC ID	**:**	YLEOG-GSM

Tested by :

Training Research Co., Ltd.

TEL : 886-2-26935155 FAX : 886-2-26934440

No. 255, Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C.

CERTIFICATION

We here by verify that:

The test data, data evaluation, test procedures and equipment configurations shown in this report were made mainly in accordance with the procedures given in ANSI C63.4 (2003) as a reference. All test were conducted by ***Training Research Co., Ltd.***, 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Also, we attest to the accuracy of each.

We further submit that the energy emitted by the sample EUT tested as described in the report is **in compliance with** the technical requirements set forth in the FCC Rules Part 2, Part 22 Subpart H and Part 24 Subpart E.

Applicant	**:**	ON GUARD, INC
Applicant Address	**:**	6846 Theall Road # 100, Houston, TEXAS, USA 77066
FCC ID	**:**	YLEOG-GSM
Model	**:**	OG-GSM
Report No.	**:**	O1522100131
Test Date	**:**	July 01, 2010

Prepared by: Jack Tsai *Jack Tsai* **Approved by:** Frank Tsai *Frank Tsai*

Conditions of issue :

(1) ***This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.***

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Ⅰ. GENERAL

1.1 Introduction

The following measurement report is submitted on behalf of applicant in support that the certification in accordance with Part 2 Subpart J ,Part 15 Subpart B ,Part 22 Subpart H and Part 24 Subpart E of the Commission's Rules and Regulations.

1.2 Description of EUT

FCC ID	**:**	YLEOG-GSM
Product Name	**:**	GSM emergency phone
Model Name	**:**	OG-GSM
Frequency Range	**:**	GSM850 MHz Band - 824.2MHz to 848.8MHz
		PCS 1900 MHz Band - 1850.2MHz to 1909.8MHz
Channel Spacing	**:**	GSM850 MHz Band – 200 kHz
		PCS 1900 MHz Band – 200 kHz
Support Channel	**:**	GSM850 MHz Band - 124 channels
		PCS 1900 MHz Band - 299 channels
Modulation Skill	**:**	GSM
Power Type	**:**	Battery/Solar/Power adaptor
Data Cable	**:**	Solar Plate – Non shielded, 288cm long, without ferrite core

1.3 Test method

1.3.1 The DC-In socket connected to AC mains supply by switching adapter.

1.3.2 The Solar-in socket connected to solar plate.

1.3.3 The DC battery-in socket connected to DC battery

1.3.4 According to its class of bands, the EUT was set up for the maximum output power by linking the radio communication analyzer in a simulated call on desired channel.

1.3.5 Set different channels (CH128/CH190/CH251) of GSM 850 MHz band

and (CH512/CH661/CH810) of PCS 1900MHz band

being test and repeat the procedures above.

(a) Conducted test and Radiated:

making EUT to the mode of continuous transmission

1.4 Description of Support Equipment

In order to construct the minimum testing, following equipment were used as the support units.

Power Adaptor (Optional):Logitec

Model No.	:	LA-12W12S
Power type	:	I/P:AC100-120V, 50/60Hz, 0.3A
		O/P:12Vdc, 1A
Power cable	:	Non shielded, 174cm long, without ferrite core

Radio Communication Analyzer : ANRITSU

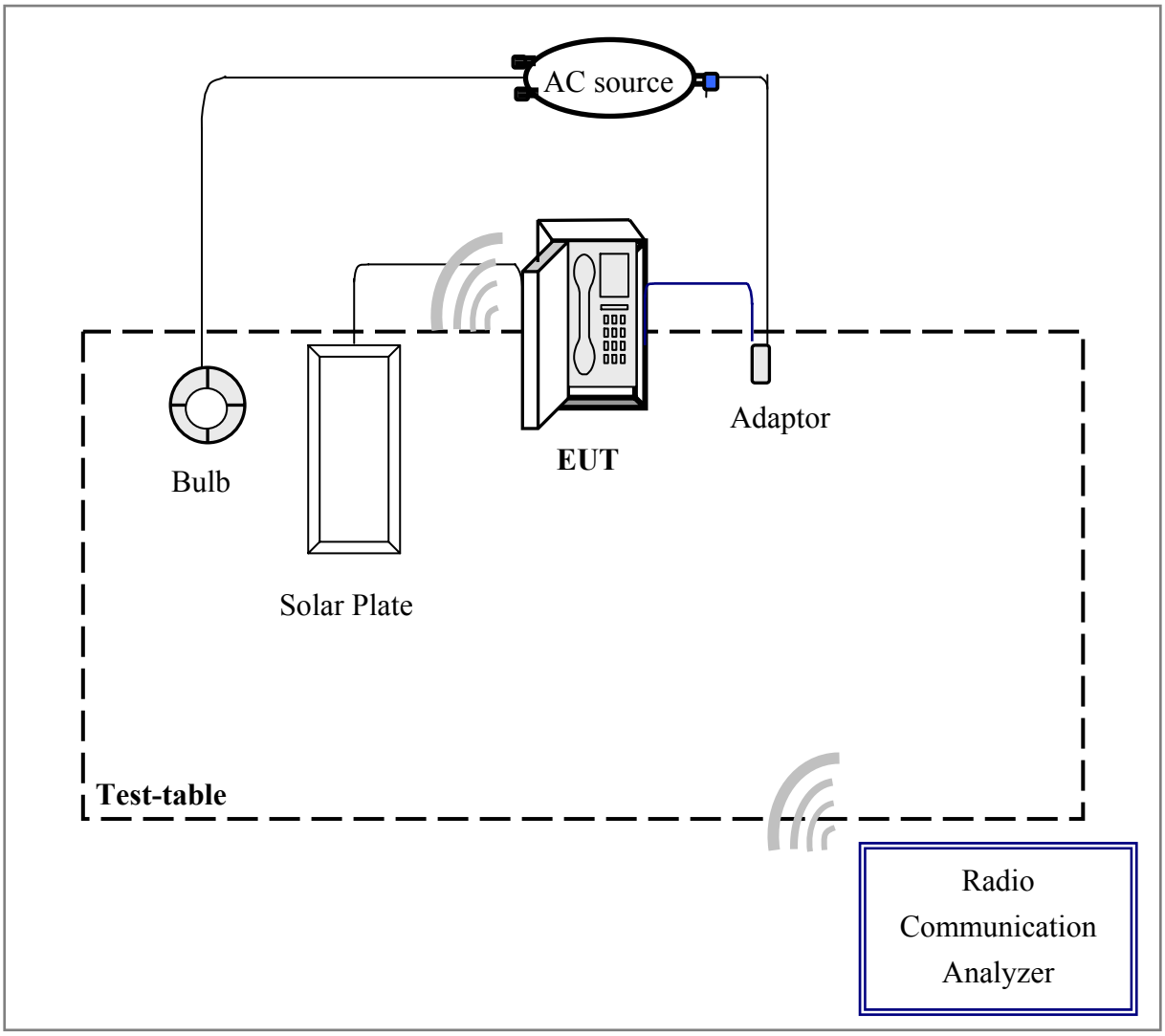
Model No.	:	MT8820A
Serial No.	:	6200300452
Power type	:	120Vac, 60Hz
Power cable	:	Non shielded, 2.10m long, without ferrite core

Bulb: Taiwan Light

Model No.	:	200W
Power type	:	120Vac, 60Hz
Power cable	:	Non shielded, 213cm long, without ferrite core

1.5 Configuration of System Under Test

1.5.1 Conducted and Radiated for Unintentional



The tests below are carried with the EUT transmitter set at high power. The EUT is forced to select of output power level and channel number by Radio Communication Analyzer

The setting up procedure was recorded in 1.3 test method.

1.6 Verify the Frequency and Channel

For GSM 850 MHz Band, all frequencies are operated in 824 MHz to 849 MHz.
For PCS 1900 MHz Band, all frequencies are operated in 1850 MHz to 1910 MHz

Channel spacing is 200 kHz.
So there are 124 total channels of GSM 850 MHz Band and there are 299 total channels for PCS 1900 MHz Band.

Section 15.31(m): Measurements on intentional radiators or receivers shall be performed at three frequencies for operating frequency range over 10 MHz
(The locations of these frequencies one near the top, one near the middle and one near the bottom.)
All the items as followed in testing report are need to test these three frequencies:
For GSM 850 MHz Band
Top: Channel – 128; Middle: Channel – 190; Bottom: Channel – 251.

For PCS 1900 MHz Band
Top: Channel – 512; Middle: Channel – 661; Bottom: Channel – 810.

1.7 Test Procedure

All measurements contained in this report were performed mainly according to the techniques described in ANSI C63.4 (2003) and the pre-setup was written on 1.3 test method, the detail setup was written on each test item.

1.8 Location of the Test Site

The radiated emissions measurements required by the rules were performed on the **three-meter**, **semi-anechoic Chamber (FCC Registration Number: 93906)** maintained by *Training Research Co., Ltd.* 1F, No. 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Complete description and measurement data have been placed on file with the commission. The conducted power line emissions tests and other test items were performed in a semi-anechoic chamber also located at Training Research Co., Ltd.

No. 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. *Training Research Co., Ltd.* is listed by the FCC as a facility available to do measurement work for others on a contract basis.

1.9 General Test Condition

The conditions under which the EUT operates were varied to determine their effect on the equipment's emission characteristics. The final configuration of the test system and the mode of operation used during these tests were chosen as that which produced the highest emission levels. However, only those conditions, which the EUT was considered likely to encounter in normal use were investigated.

In test, they were set in high power and continuously transmitting mode that controlled by computer. The lowest channels, the middle channels and the highest channels of EUT were all tested. The setting up procedure is recorded on 1.3 test method.

II. Section 15.203: Antenna requirement

The EUT can be equipped with detachable antenna. The external antenna is affixed to the EUT using a unique connector, which allows for replacement of a broken antenna, but does not use a standard antenna jack or electrical connector. The antenna requirement stated in Section15.203 is inapplicable to this EUT.

The custom antenna specification of list as below:

Manufacturer	:	SHENZHENSHI HUASHIJIE COMMUNICATION DEVICE.CO.LTD
Part No	:	TTM85901819-47A
Connector	:	SMA
Antenna Gain	:	3.02 dBi

III. Section 15.207: Power Line Conducted Emissions for AC Powered Units

3.1 Test Condition & Setup

The power line conducted emission measurements were performed in an semi-anechoic chamber. The EUT was assembled on a wooden table, which is 80 centimeters high, was placed 40 centimeters from the backwall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and Line Impedance Stabilization Networks (LISNs). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer (or EMI receiver) was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak and average detection mode. The analyzer's 6 dB bandwidth was set to 9KHz. No post-detector video filter was used.

The spectrum was scanned from 150KHz to 30MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 4.3.

There is a test condition apply in this test item, the test procedure description as <1.3>. Three channels were tested, one in the lowest, one in the middle (CH06) and the other in highest).

3.2 List of Test Instruments

Calibration Date

Instrument Name	Model	Brand	Serial No.	Next time
EMI Receiver	8546A	HP	3520A00242	03/12/11
RF Filter Section	85460A	HP	3448A00217	03/12/11
LISN (EUT)	3816/2	EMCO	00042976	01/26/11
LISN (Support E.)	3816/2	EMCO	00042989	01/15/11
Pre-amplifier	15542 ZFL-500	Mini – Circuits	0 0117	10/10/10
6dB Attenuator	MCL BW-S6W2	Mini – Circuits	9915 – Conducted	10/10/10
10dB Attenuator	A5542 VAT010	Mini – Circuits	0215 – Conducted	10/10/10
Coaxial Cable (2.0 meter)	A30A30-0058-50FS-2M	Jyebao	SMA-08	10/10/10
Coaxial Cable (1.1 meter)	A30A30-0058-50FS-1M	Jyebao	SMA-09	10/10/10
Coaxial Cable (20 meter)	RG-214/U	Jyebao	NP-01	10/10/10
Coaxial Cable (20 meter)	RG-214/U	Jyebao	NP-02	10/10/10
Auto Switch Box (< 30MHz)	ASB-01	TRC	9904-01	10/10/10

3.3 Test Result of Power Line Conducted Emissions

The following table shows a summary of the highest emissions of power line conducted emissions on the LIVE and NETURAL conductors of the EUT power cord. Show as follows.

Test Conditions: Temperature : 25 °C Humidity : 73 % RH

Test mode: 824.2Mhz

Power Connected Emissions					***Class B***		
Conductor	***Frequency (KHz)***	***Peak (dBμV)***	***QP (dBμV)***	***Average (dBμV)***	***QP-limit (dBμV)***	***AVG-limit (dBμV)***	***Margin (dB)***
Line 1	308.000	43.72	---	---	61.49	51.49	-7.77
	434.000	40.76	---	---	57.89	47.89	-7.13
	499.000	39.38	---	---	56.03	46.03	-6.65
	745.000	38.17	---	---	56.00	46.00	-7.83
	817.000	37.82	---	---	56.00	46.00	-8.18
	19620.000	43.23	---	---	60.00	50.00	-6.77
Line 2	305.000	43.80	---	---	61.57	51.57	-7.77
	430.000	40.24	---	---	58.00	48.00	-7.76
	499.000	38.07	---	---	56.03	46.03	-7.96
	681.000	39.40	---	---	56.00	46.00	-6.60
	745.000	37.80	---	---	56.00	46.00	-8.20
	23350.000	42.02	---	---	60.00	50.00	-7.98

NOTE:

(1)Margin = Peak Amplitude – Limit, *The reading amplitudes are all under limit.*

(2)A "+" sign in the margin column means the emission is OVER the Class B Limit, and "–" sign of means UNDER the Class B limit

Test mode: 836.6MHz

Power Connected Emissions					*Class B*		
Conductor	***Frequency (KHz)***	***Peak (dBμV)***	***QP (dBμV)***	***Average (dBμV)***	***QP-limit (dBμV)***	***AVG-limit (dBμV)***	***Margin (dB)***
Line 1	430.000	41.96	---	---	58.00	48.00	-6.04
	674.000	39.83	---	---	56.00	46.00	-6.17
	738.000	36.73	---	---	56.00	46.00	-9.27
	795.000	40.15	---	---	56.00	46.00	-5.85
	19620.000	43.14	---	---	60.00	50.00	-6.86
	20770.000	41.71	---	---	60.00	50.00	-8.29
Line 2	311.000	43.84	---	---	61.40	51.40	-7.56
	430.000	41.56	---	---	58.00	48.00	-6.44
	738.000	37.35	---	---	56.00	46.00	-8.65
	802.000	37.39	---	---	56.00	46.00	-8.61
	20770.000	41.75	---	---	60.00	50.00	-8.25
	23350.000	41.30	---	---	60.00	50.00	-8.70

Test mode: 848.8MHz

Power Connected Emissions					*Class B*		
Conductor	***Frequency (KHz)***	***Peak (dBμV)***	***QP (dBμV)***	***Average (dBμV)***	***QP-limit (dBμV)***	***AVG-limit (dBμV)***	***Margin (dB)***
Line 1	430.000	41.96	---	---	58.00	48.00	-6.04
	494.000	40.27	---	---	56.17	46.17	-5.90
	681.000	39.09	---	---	56.00	46.00	-6.91
	802.000	39.40	---	---	56.00	46.00	-6.60
	1889.000	40.24	---	---	56.00	46.00	-5.76
	19620.000	43.23	---	---	60.00	50.00	-6.77
Line 2	308.000	43.82	---	---	61.49	51.49	-7.67
	430.000	41.14	---	---	58.00	48.00	-6.86
	494.000	39.84	---	---	56.17	46.17	-6.33
	681.000	39.06	---	---	56.00	46.00	-6.94
	795.000	39.93	---	---	56.00	46.00	-6.07
	876.000	39.96	---	---	56.00	46.00	-6.04

Test mode: 1850.2MHz

Power Connected Emissions					*Class B*		
Conductor	***Frequency (KHz)***	***Peak (dBμV)***	***QP (dBμV)***	***Average (dBμV)***	***QP-limit (dBμV)***	***AVG-limit (dBμV)***	***Margin (dB)***
Line 1	314.000	44.04	---	---	61.31	51.31	-7.27
	475.000	38.42	---	---	56.71	46.71	-8.29
	523.000	39.01	---	---	56.00	46.00	-6.99
	19620.000	41.87	---	---	60.00	50.00	-8.13
	20770.000	41.15	---	---	60.00	50.00	-8.85
	23350.000	41.54	---	---	60.00	50.00	-8.46
Line 2	314.000	43.55	---	---	61.31	51.31	-7.76
	475.000	37.72	---	---	56.71	46.71	-8.99
	528.000	39.51	---	---	56.00	46.00	-6.49
	893.000	37.26	---	---	56.00	46.00	-8.74
	20770.000	39.95	---	---	60.00	50.00	-10.05
	23350.000	41.81	---	---	60.00	50.00	-8.19

Test mode: 1880.0MHz

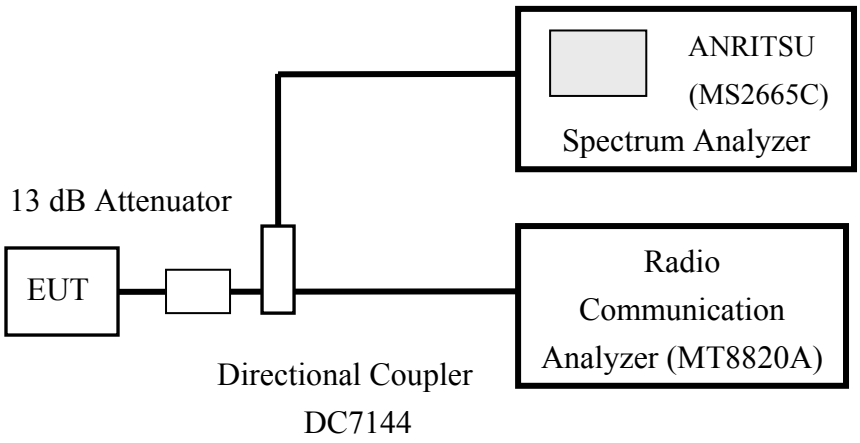
Power Connected Emissions					*Class B*		
Conductor	***Frequency (KHz)***	***Peak (dBμV)***	***QP (dBμV)***	***Average (dBμV)***	***QP-limit (dBμV)***	***AVG-limit (dBμV)***	***Margin (dB)***
Line 1	320.000	43.23	---	---	61.14	51.14	-7.91
	475.000	38.14	---	---	56.71	46.71	-8.57
	528.000	38.90	---	---	56.00	46.00	-7.10
	841.000	36.33	---	---	56.00	46.00	-9.67
	20770.000	41.71	---	---	60.00	50.00	-8.29
	23350.000	41.70	---	---	60.00	50.00	-8.30
Line 2	317.000	44.15	---	---	61.23	51.23	-7.08
	513.000	40.51	---	---	56.00	46.00	-5.49
	688.000	37.33	---	---	56.00	46.00	-8.67
	893.000	37.12	---	---	56.00	46.00	-8.88
	20770.000	41.79	---	---	60.00	50.00	-8.21
	23350.000	42.18	---	---	60.00	50.00	-7.82

Test mode: 1909.8MHz

Power Connected Emissions					*FCC Class B*		
Conductor	***Frequency (KHz)***	***Peak (dBμV)***	***QP (dBμV)***	***Average (dBμV)***	***QP-limit (dBμV)***	***AVG-limit (dBμV)***	***Margin (dB)***
Line 1	320.000	43.36	---	---	61.14	51.14	-7.78
	475.000	39.22	---	---	56.71	46.71	-7.49
	528.000	39.77	---	---	56.00	46.00	-6.23
	695.000	37.16	---	---	56.00	46.00	-8.84
	19620.000	43.61	---	---	60.00	50.00	-6.39
	23350.000	41.61	---	---	60.00	50.00	-8.39
Line 2	314.000	44.39	---	---	61.31	51.31	-6.92
	475.000	39.12	---	---	56.71	46.71	-7.59
	841.000	36.52	---	---	56.00	46.00	-9.48
	902.000	36.63	---	---	56.00	46.00	-9.37
	20770.000	41.72	---	---	60.00	50.00	-8.28
	23350.000	42.13	---	---	60.00	50.00	-7.87

IV. Section 22.917(b)/24.238(b): Emission Bandwidth

4.1 Test Condition & Setup



The emission bandwidth is defined as the width of the signal between two points, located at the two sides of the carrier frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

The transmitter bandwidth measurements were performed by the contact manner. The EUT was set to transmit continuously, also various channels were investigated to find the maximum occupied bandwidth. The output of the EUT was connected to the spectrum analyzer. The bandwidth of the fundamental frequency is observed by the spectrum analyzer with 3 kHz RBW and 10 kHz VBW.

The EUT was coupled to the Radio Simulator through the directional coupler and outputs to spectrum Analyzer. The loss of the cables is calibrated to correct the reading The Spectrum analyzer was set to Max-peak Detector function and Maximum Hold mode. The EUT operated at the maximum output power: Power Control level 5 for GSM 850 MHz; Power Control level 0 for PCS 1900.

The 26 dB bandwidths of the low, middle and high channels for being the highest RF powers were measured.

4.2 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.
Spectrum Analyzer	MS2665C	ANRITSU	6200175476
Radio Communication Analyzer	MT8820A	ANRITSU	6200300452
Directional Coupler	DC7144	Amplifier Research	305930

4.2 Test Results of Emission Bandwidth

GSM 850 MHz Band

Channel	Occupied Bandwidth (-26 dBc Bandwidth)kHz
128	324
190	316
251	320

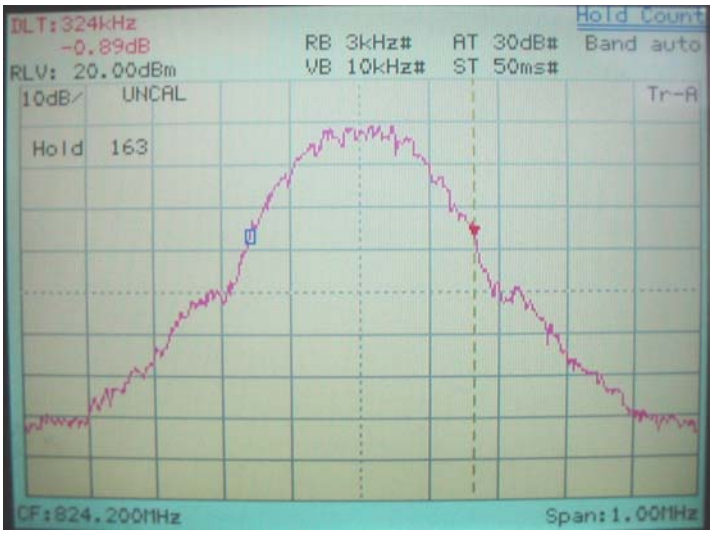
Note: 1. The data in the above table are summarizing the following attachment spectrum analyzer hard copy. We'd made the measurement with the spectrum analyzer's resolution bandwidth *(RBW)3kHz* and set the *span>>RBW*.2. The attachments show these on the following pages.

PCS 1900 MHz Band

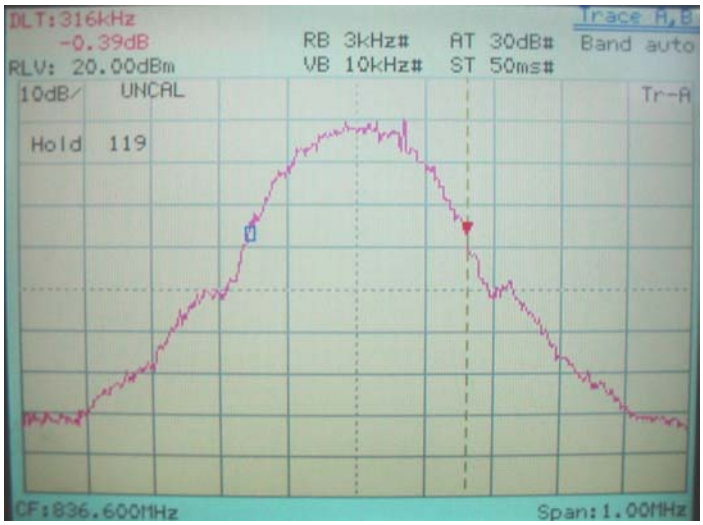
Channel	Occupied Bandwidth (-26 dBc Bandwidth)kHz
512	312
661	318
810	316

(a) GSM850 MHz Band

26dB Bandwidth of Channel 128



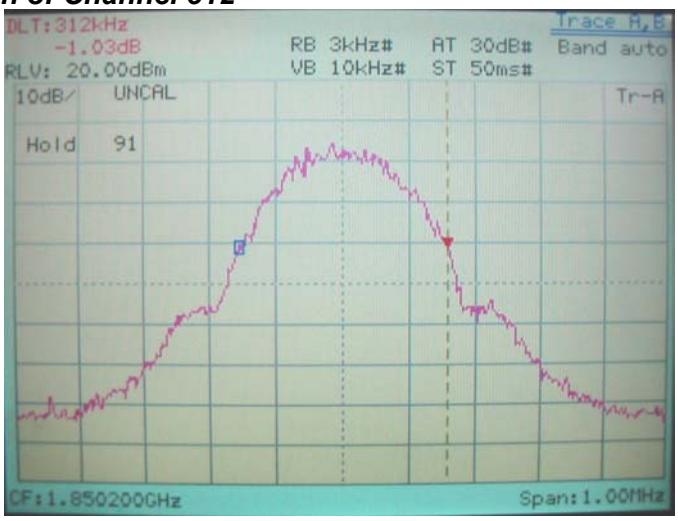
26dB Bandwidth of Channel 190



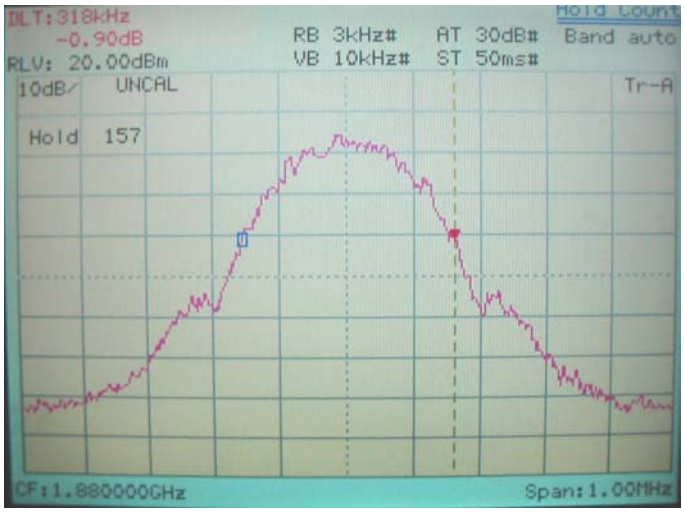
26dB Bandwidth of Channel 251

(b) PCS 1700 MHz Band

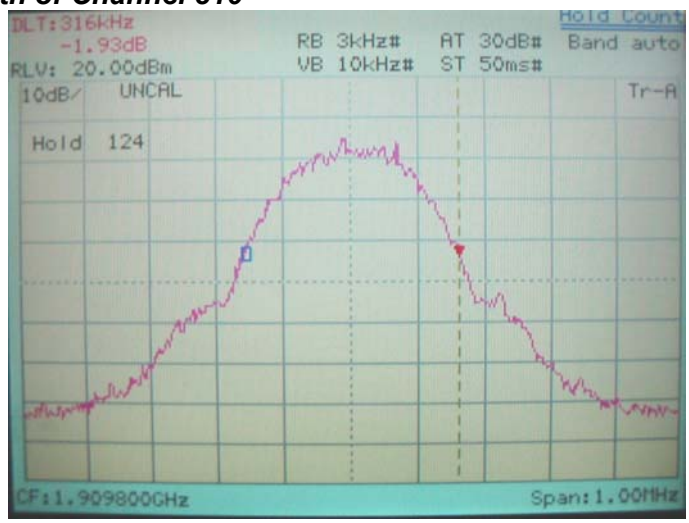
26dB Bandwidth of Channel 512



26dB Bandwidth of Channel 661



26dB Bandwidth of Channel 810

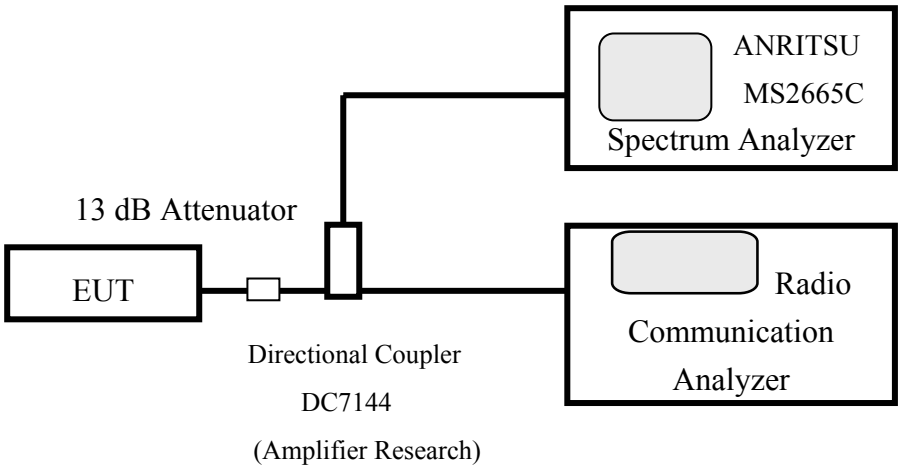


V. Section 2.1049: Occupied Bandwidth

5.1 .Test Condition & Setup

The occupied bandwidth, that 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, or 20 dB bandwidth (10log1%=20 dB) taking the total RF output power as reference.

The EUT was coupled to the Radio Simulator through the directional coupler and outputs. The loss of the cables is calibrated to correct the reading
The Spectrum analyzer was set to Max-peak Detector function and Maximum Hold mode to read RF output Power.
The EUT operated at the maximum output power: Power Control level 5 for GSM 850 MHz; Power Control level 0 for PCS 1900.
The 99% occupied bandwidths of the low, middle and high channels for the highest RF powers were measured.



5.2 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.
Spectrum Analyzer	MS2665C	ANRITSU	6200175476
Radio Communication Analyzer	MT8820A	ANRITSU	6200300452
Directional Coupler	DC7144	Amplifier Research	305930

5.3 Test Result of Bandwidth

GSM 850 MHz Band

Channel	99% Bandwidth
128	246 kHz
190	240 kHz
251	242 kHz

PCS 1900 MHz Band

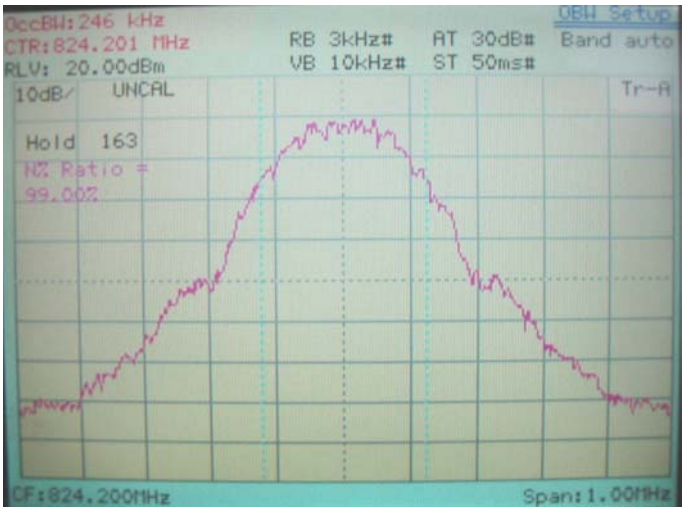
Channel	99% Bandwidth
512	242 kHz
661	246 kHz
810	242 kHz

Note: 1. The data in the above table are summarizing the following attachment spectrum analyzer hard copy. According to the guidance, we'd made the measurement with the spectrum analyzer's resolution bandwidth *(RBW)=3kHz,video* bandwidth *(VBW)=10kHz* and set the *span>>RBW*. The results show the measured 99% bandwidth.

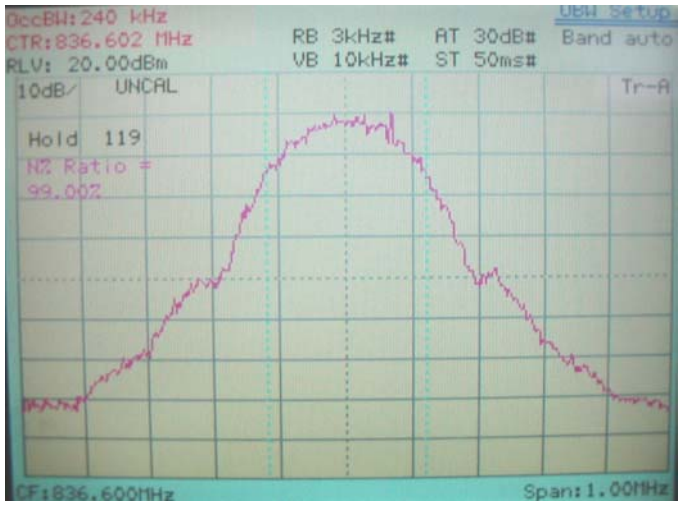
2. The attachments show these on the following pages.

(a) GSM850 MHz Band

99% Bandwidth of Channel 128



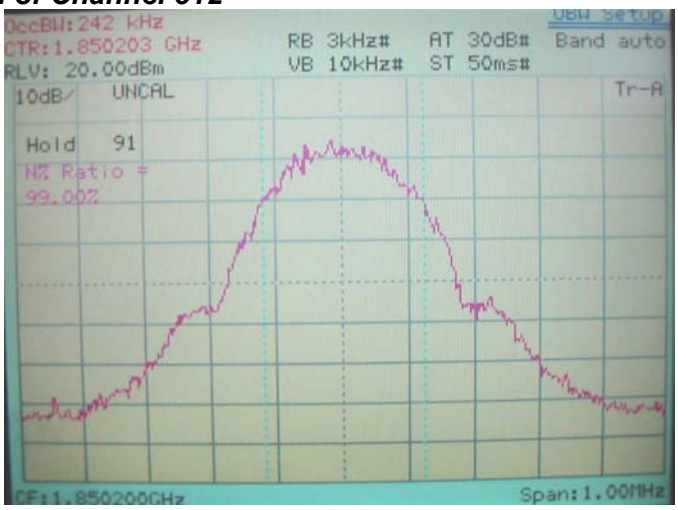
99% Bandwidth of Channel 190



99% Bandwidth of Channel 251

(b) PCS 1700 MHz Band

99% Bandwidth of Channel 512



99% Bandwidth of Channel 661

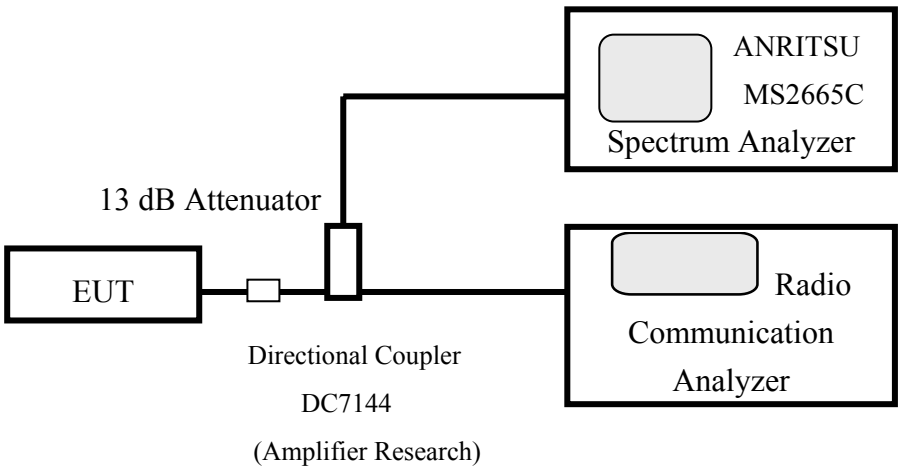
99% Bandwidth of Channel 810

VI. Section 22.917/24.238: Band Edge Compliance

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.

6.1 .Test Condition & Setup

The EUT was coupled to the Radio Simulator through the directional coupler and outputs to spectrum Analyzer. The loss of the cables is calibrated to correct the reading
The Spectrum analyzer was set to Max-peak Detector function and Maximum Hold mode. The EUT operated at the maximum output power: Power Control level 5 for GSM 850 MHz; Power Control level 0 for PCS 1900.
The band edges of low and high channels for the highest RF power were measured. Set RBW as roughly BW/100.



6.2 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.
Spectrum Analyzer	MS2665C	ANRITSU	6200175476
Radio Communication Analyzer	MT8820A	ANRITSU	6200300452
Directional Coupler	DC7144	Amplifier Research	305930

6.3 Test Result of Band Edge

GSM 850 MHz Band

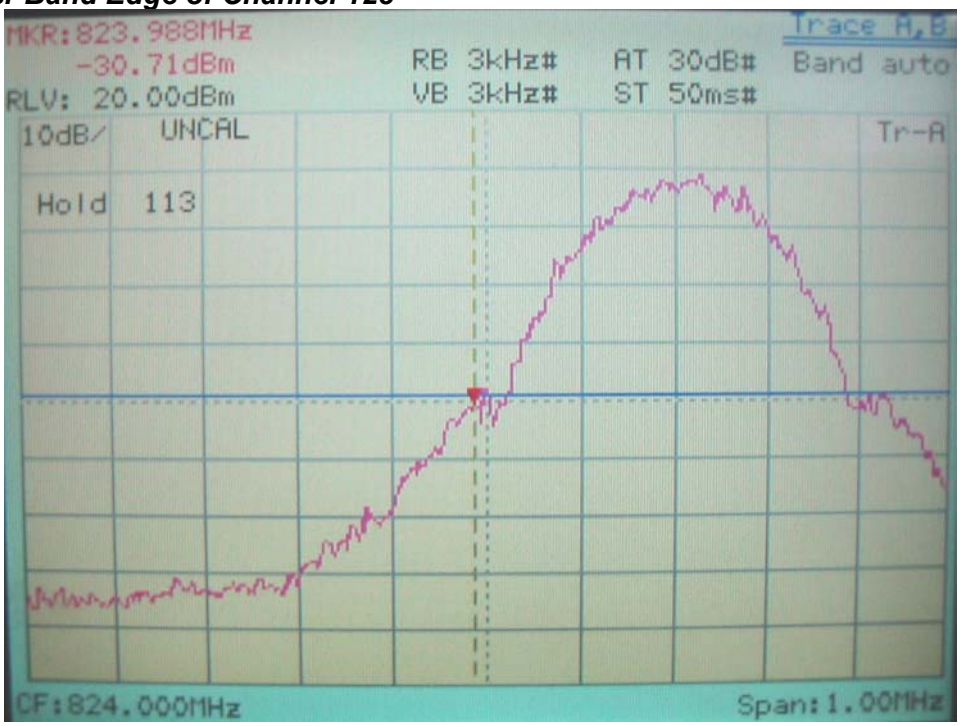
Channel	Reading (dBm)	Total Loss	Final Power	Limited (dBm)
128	-30.71	15.70	-15.01	-12.99
251	-29.89	15.85	-14.04	-12.79

PCS 1900 MHz Band

Channel	Reading (dBm)	Total Loss	Final Power	Limited (dBm)
512	-34.81	17.50	-17.31	-12.99
810	-32.80	17.40	-15.40	-12.99

(a) GSM 810 MHz Band

Lower Band Edge of Channel 128

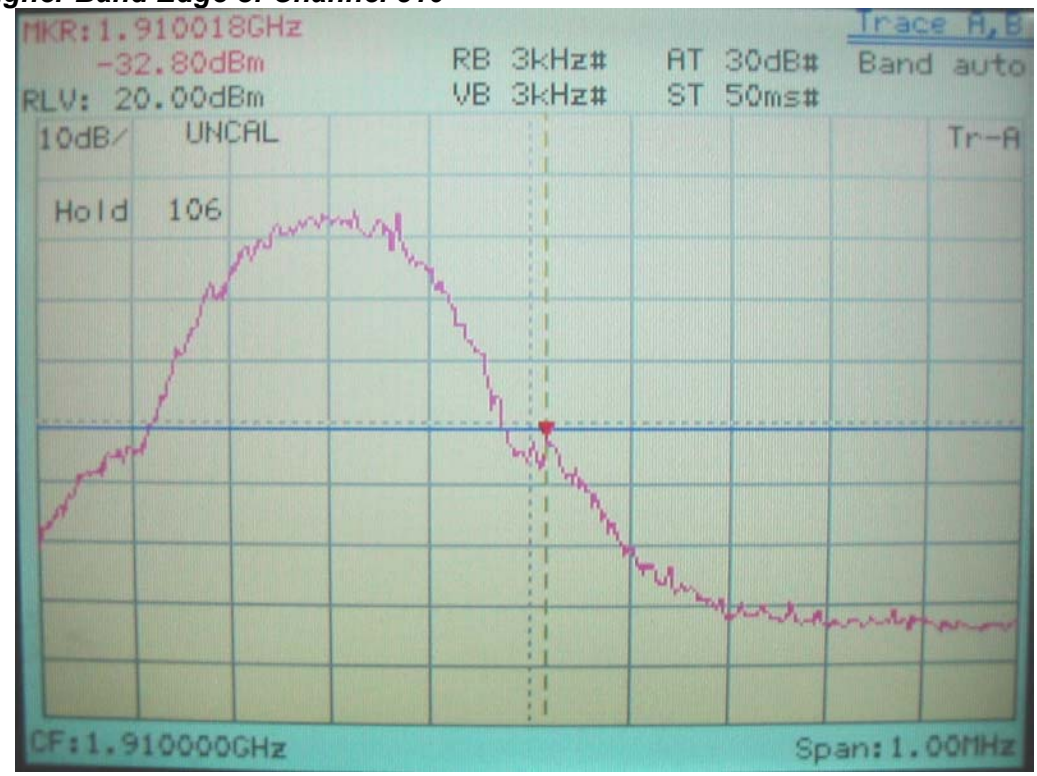


Highest Band Edge of Channel 251

(b) PCS 1900 MHz Band

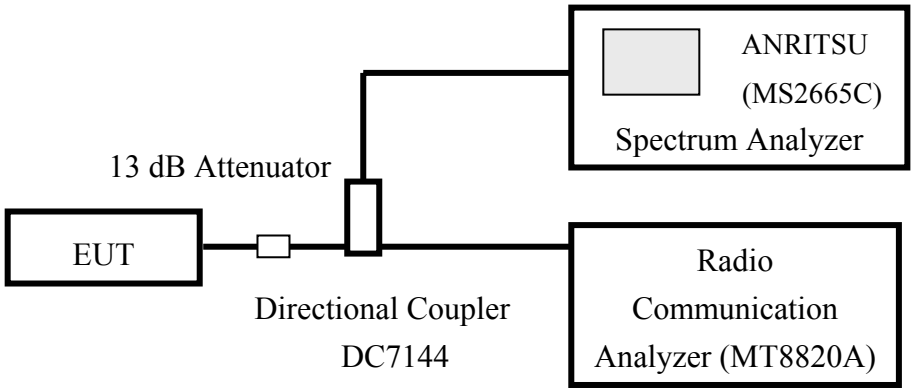
Lower Band Edge of Channel 512

Higher Band Edge of Channel 810



VII. Section 2.1046(a): Conducted RF Output Power

7.1 Test Condition & Setup



-According to FCC 2.1046 (a), 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 §2.1033(c)(8).
-The EUT was coupled to the Radio Simulator through the directional coupler and outputs to spectrum Analyzer.
-The Spectrum analyzer was set to Max-peak Detector function and Maximum Hold mode to read RF output Power. Peak point (in dBm) of frequency is its conducted RF output power.
-The EUT operated at the maximum output power: Power Control level 5 for GSM 850 MHz; Power Control level 0 for PCS 1900.
For GSM signal, VBW=RBW=1 MHz, CDMA signal, VBW=RBW=1 MHz

Formula:
RF Output of EUT + |Total Loss| = Output Peak Power
Total Loss: It is including attenuator, cable and directional coupler.

7.2 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.
Spectrum Analyzer	MS2665C	ANRITSU	6200175476
Radio Communication Analyzer	MT8820A	ANRITSU	6200300452
Directional Coupler	DC7144	Amplifier Research	305930

7.3 Test Result of conducted RF output power

GSM 850 MHz Band

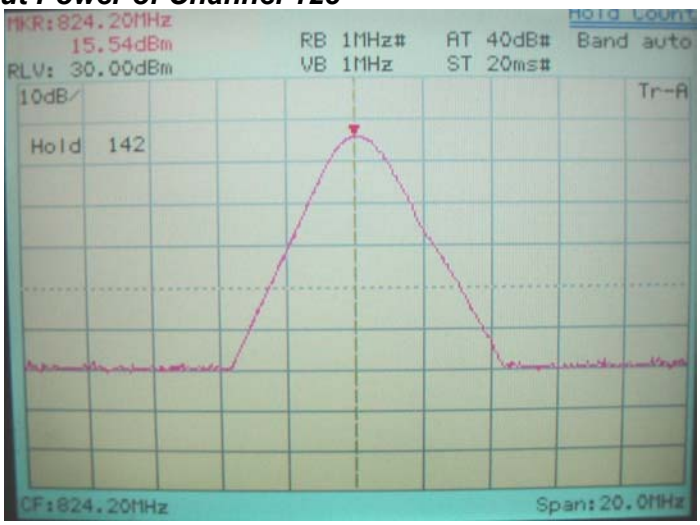
Channel	Frequency (MHz)	Reading (dBm)	Total Loss (dB)	Final Power (dBm)	Final Power (mW)	Rated Power (dBm)
128	824.20	15.54	15.70	31.24	1.330	33 (Level 5)
190	836.60	15.83	15.80	31.63	1.455	33 (Level 5)
251	848.80	15.98	15.85	31.83	1.524	33 (Level 5)

PCS 1900 MHz Band

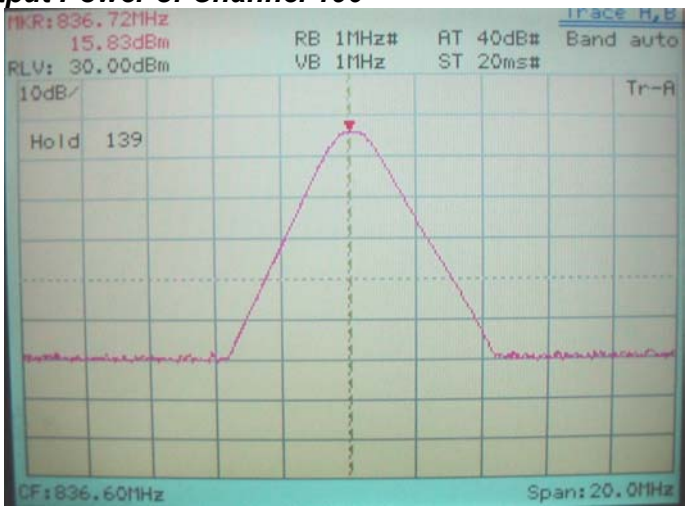
Channel	Frequency (MHz)	Reading (dBm)	Total Loss (dB)	Final Power (dBm)	Final Power (mW)	Rated Power (dBm)
512	1850.20	11.14	17.50	28.64	0.731	30 (Level 0)
661	1880.00	11.21	17.50	28.71	0.742	30 (Level 0)
810	1909.80	11.49	17.40	28.89	0.774	30 (Level 0)

(a) GSM 850 MHz Band

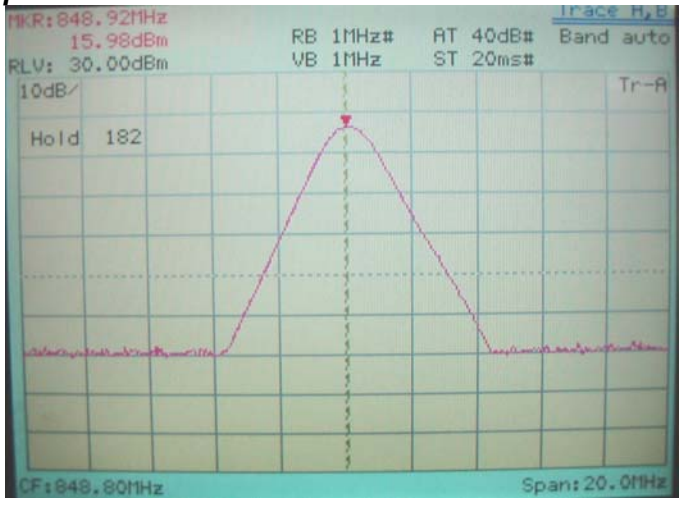
Conducted Output Power of Channel 128



Conducted Output Power of Channel 190

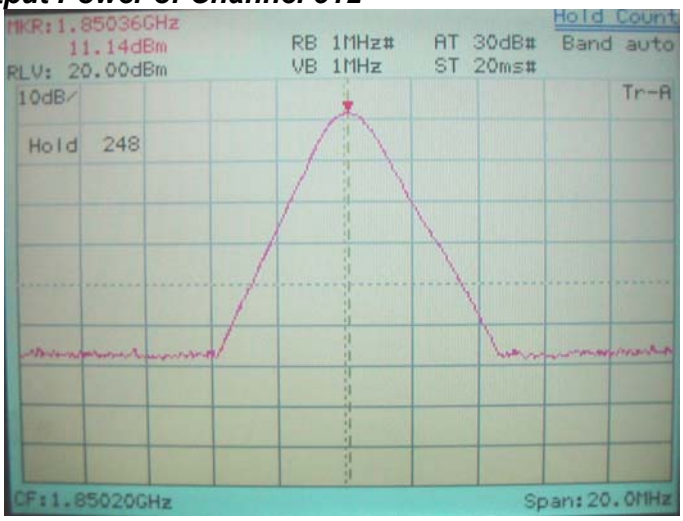


Conducted Output Power of Channel 251

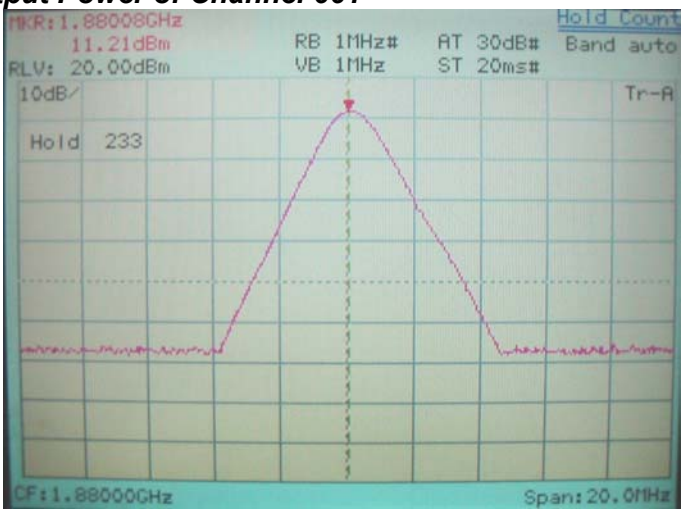


(b) PCS 1900 MHz Band

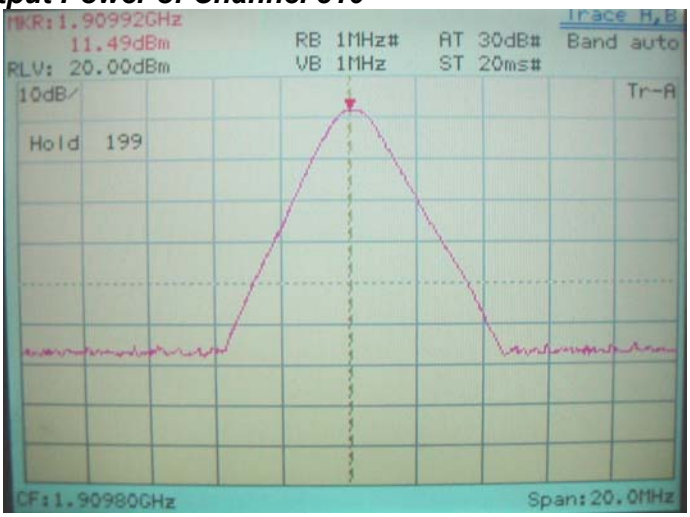
Conducted Output Power of Channel 512



Conducted Output Power of Channel 661



Conducted Output Power of Channel 810

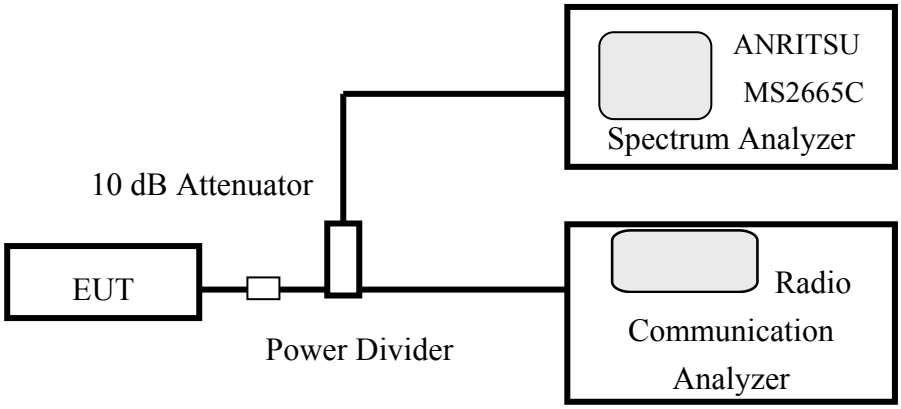


VIII. Section 22.917(a)/24.238(a): Spurious Emissions (Conducted)

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 is calculated as -13 dBm.
It is measured by means of a calibrated spectrum analyzer and scanned from 30 Mhz to a frequency including its 10^{th} harmonic

8.1 .Test Condition & Setup

The EUT was coupled to the Radio Simulator through the directional coupler and outputs to spectrum Analyzer. The loss of the cables is calibrated to correct the reading
The Spectrum analyzer was set to Max-peak Detector function and Maximum Hold mode .The resolution bandwidth was set to 1 MHz and video bandwidth as 3 MHz.The EUT operated at the maximum output power: Power Control level 5 for GSM 850 MHz; Power Control level 0 for PCS 1900.



8.2 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.
Spectrum Analyzer	8564E	HP	3720A00840
Radio Communication Analyzer	MT8820A	ANRITSU	6200300452

8.3 Test result

GSM 850 MHz Band: Channel 128(824.20 MHz)

Harmonics of frequency(MHz)	Level(dBm)	Limit(dBm)
1648.40	n.f	-13
2472.60	n.f	-13
3296.80	n.f	-13
4121.00	n.f	-13
4945.20	n.f	-13
5769.40	n.f	-13
6593.60	n.f	-13
7417.80	n.f	-13
8242.00	n.f	-13
n.f: Noise floor		

GSM 850 MHz Band: Channel 190(836.60 MHz)

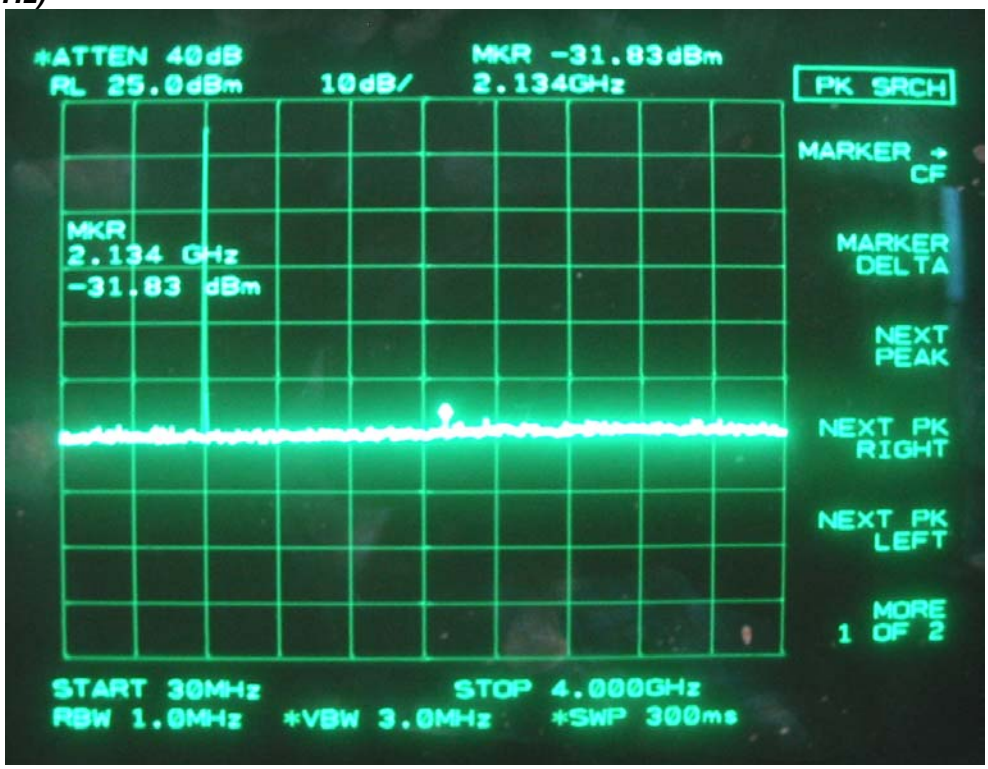
Harmonics of frequency(MHz)	Level (dBm)	Limit (dBm)
1673.20	n.f	-13
2509.80	n.f	-13
3346.40	n.f	-13
4183.00	n.f	-13
5019.60	n.f	-13
5856.20	n.f	-13
6692.80	n.f	-13
7529.40	n.f	-13
8366.00	n.f	-13
n.f: Noise floor		

GSM 850 MHz Band: Channel 251(848.80 MHz)

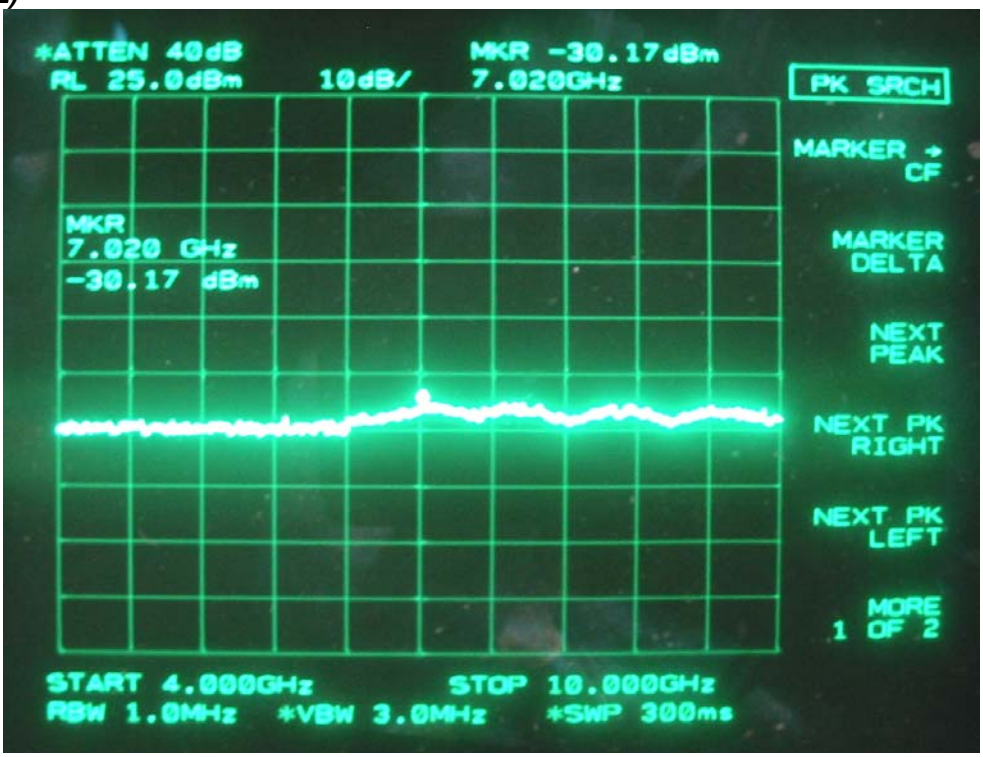
Harmonics of frequency(MHz)	Level (dBm)	Limit (dBm)
1697.60	n.f	-13
2546.40	n.f	-13
3395.20	n.f	-13
4244.00	n.f	-13
5092.80	n.f	-13
5941.60	n.f	-13
6790.40	n.f	-13
7639.40	n.f	-13
8488.00	n.f	-13
n.f: Noise floor		

Channel 128

(30M~4 GHz)

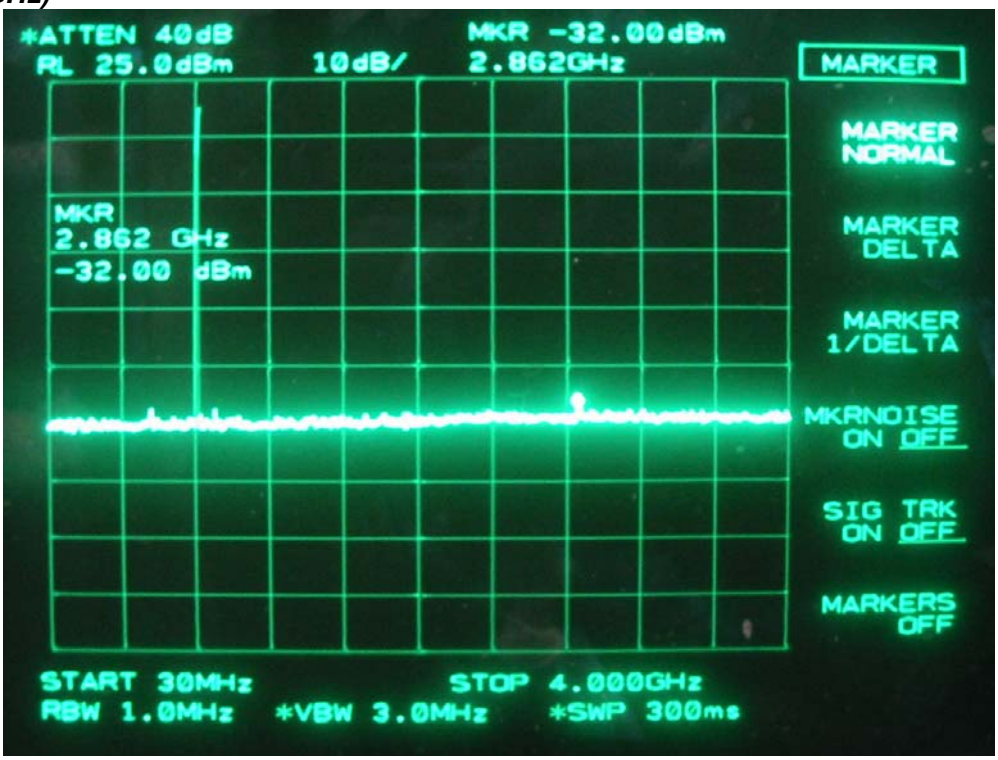


(4~10 GHz)

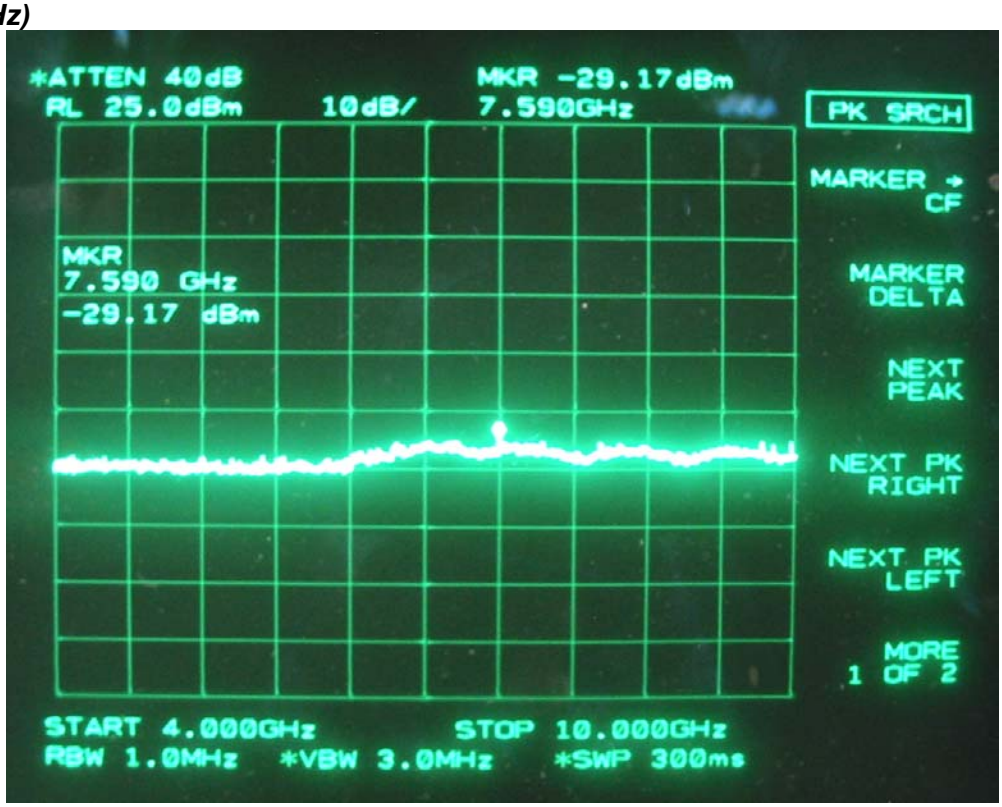


Channel 190

(30M~4 GHz)

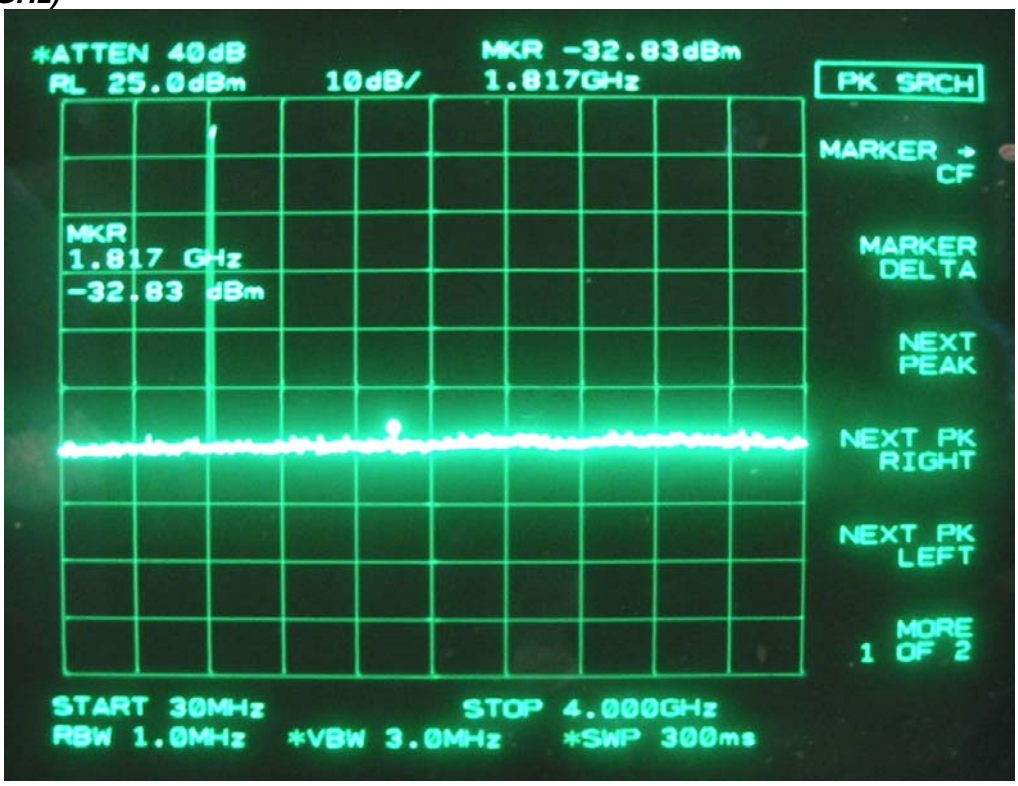


(4~10 GHz)

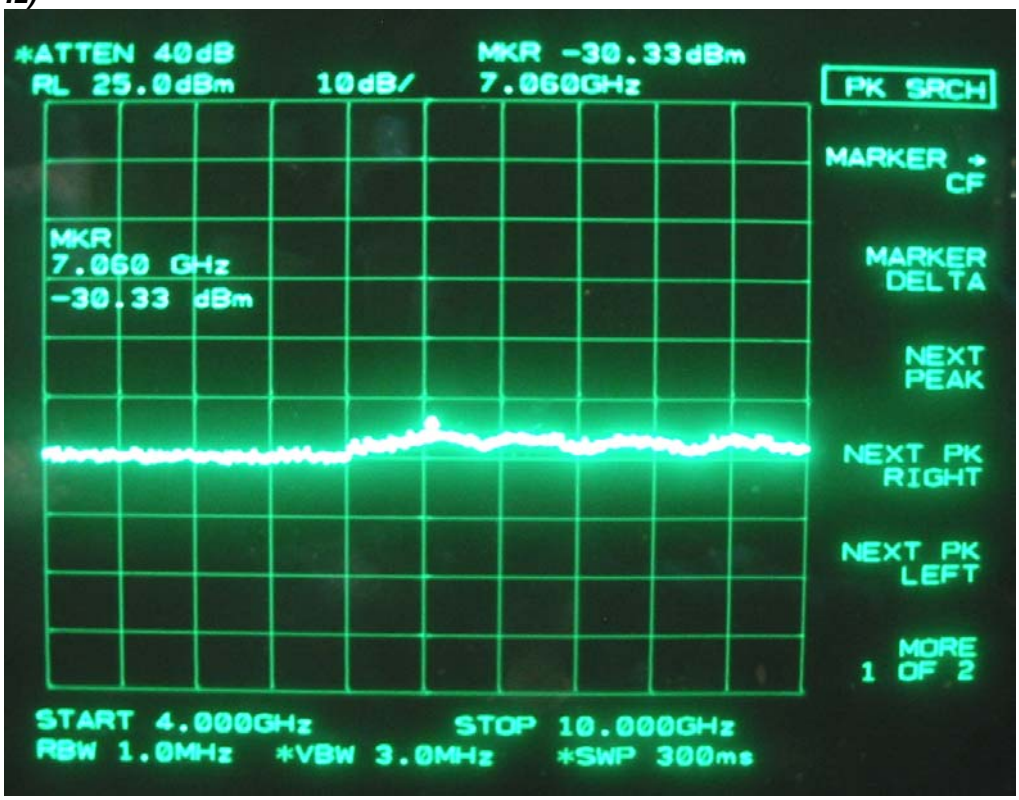


Channel 251

(30M~4 GHz)



(4~10 GHz)



PCS 1900 MHz Band: Channel 512(1850.20 MHz)

Harmonics of frequency(MHz)	Level(dBm)	Limit(dBm)
3700.40	n.f	-13
5550.60	n.f	-13
7400.80	n.f	-13
9251.00	n.f	-13
11101.20	n.f	-13
12951.40	n.f	-13
14801.60	n.f	-13
16651.80	n.f	-13
18502.00	n.f	-13
n.f: Noise floor		

PCS 1900 MHz Band: Channel 661(1880 MHz)

Harmonics of frequency(MHz)	Level(dBm)	Limit(dBm)
3760.00	n.f	-13
5640.00	n.f	-13
7520.00	n.f	-13
9400.00	n.f	-13
11280.00	n.f	-13
13160.00	n.f	-13
15040.00	n.f	-13
16920.00	n.f	-13
18800.00	n.f	-13
n.f: Noise floor		

PCS 1900 MHz Band: Channel 810(1909.80 MHz)

Harmonics of frequency(MHz)	Level(dBm)	Limit(dBm)
3819.60	n.f	-13
5729.40	n.f	-13
7439.20	n.f	-13
9549.00	n.f	-13
11458.80	n.f	-13
13368.60	n.f	-13
15278.40	n.f	-13
17188.20	n.f	-13
19098.00	n.f	-13
n.f: Noise floor		

Note:

(1). the spurious radiations from 30MHz to 10^{th} harmonic of the fundamental frequency are researched. Only the harmonics are recode in the tables.

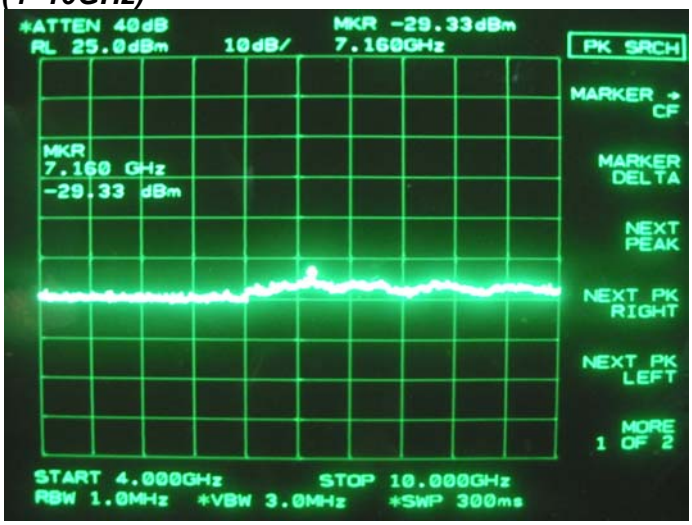
(2). “n.f“in the tables mean the emissions are just noise-floor that too small (low) to be measured

b) PCS 1700 MHz Band

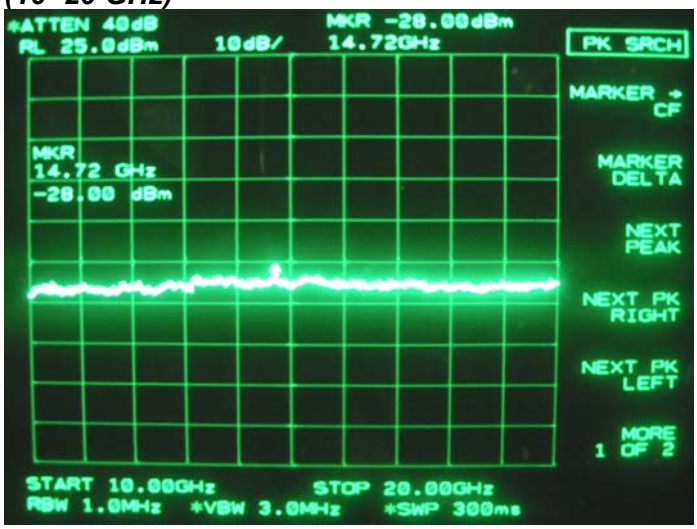
Channel 512

(30M~4 GHz)

(4~10GHz)

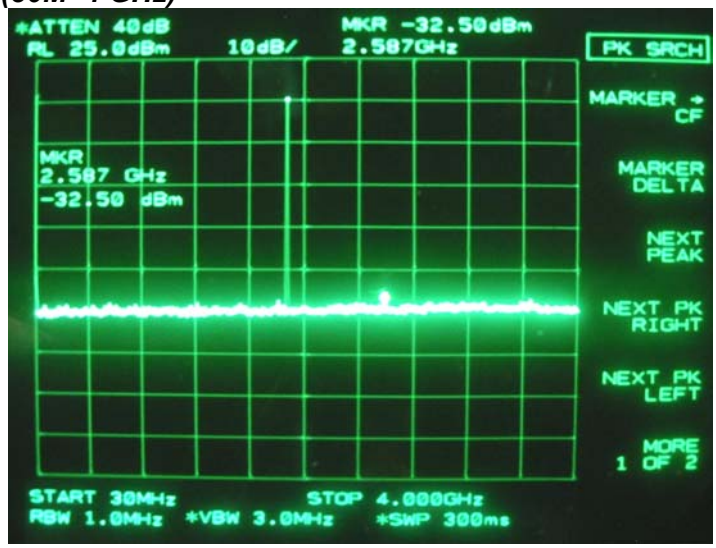


(10~20 GHz)

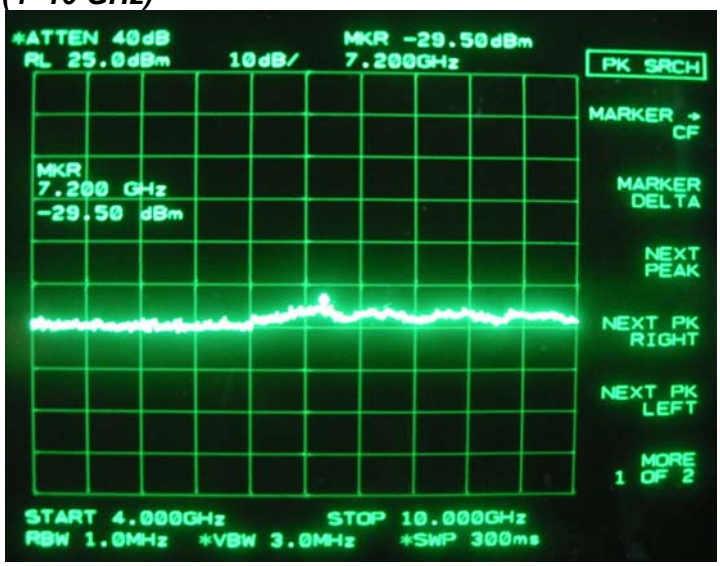


Channel 661

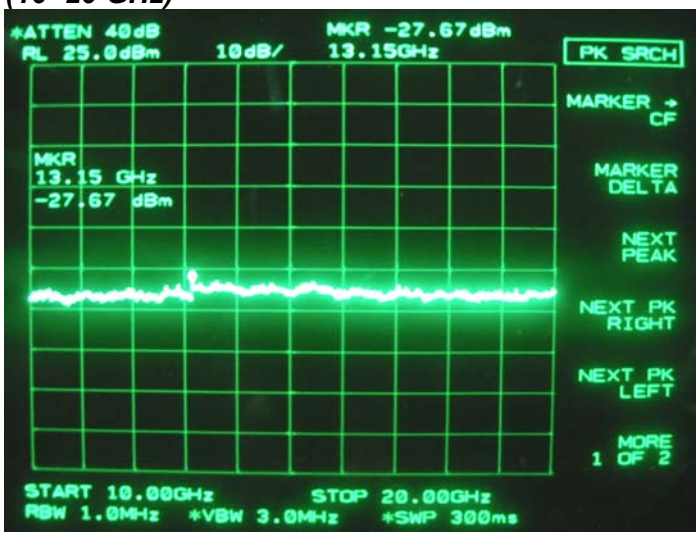
(30M~4 GHz)



(4~10 GHz)

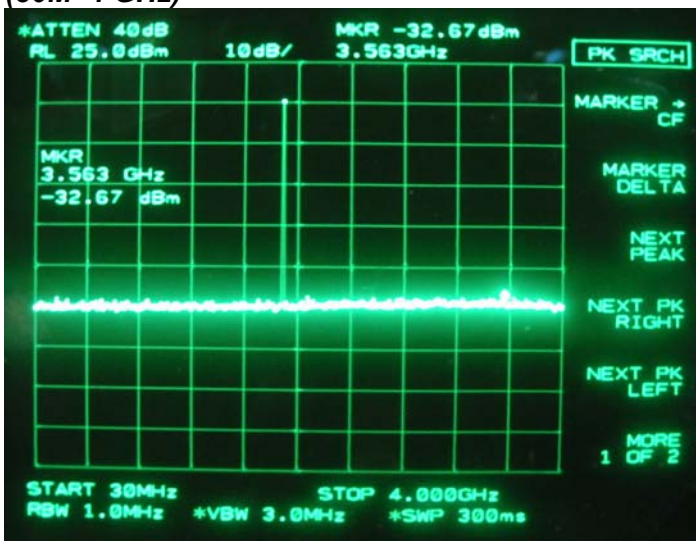


(10~20 GHz)

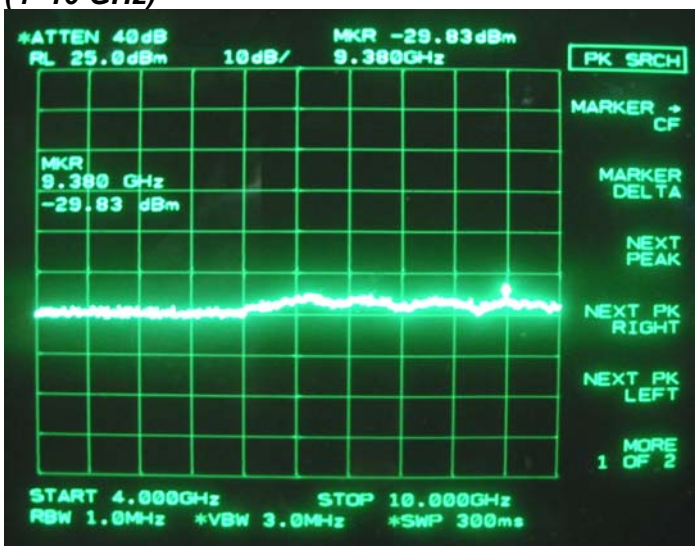


Channel 810

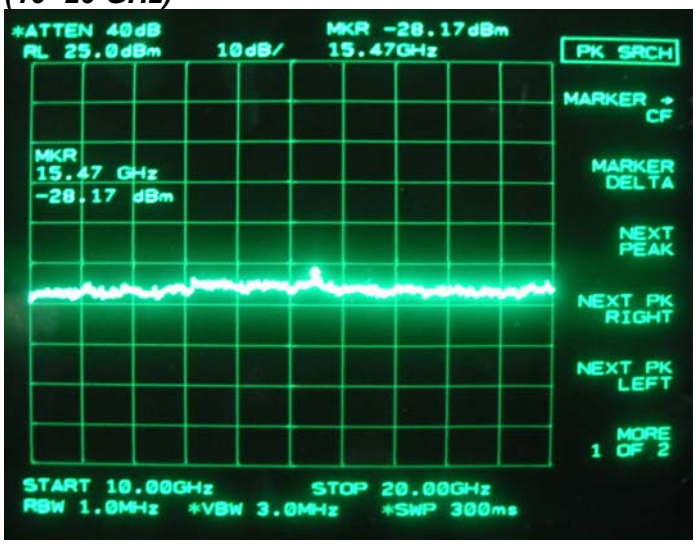
(30M~4 GHz)



(4~10 GHz)



(10~20 GHz)



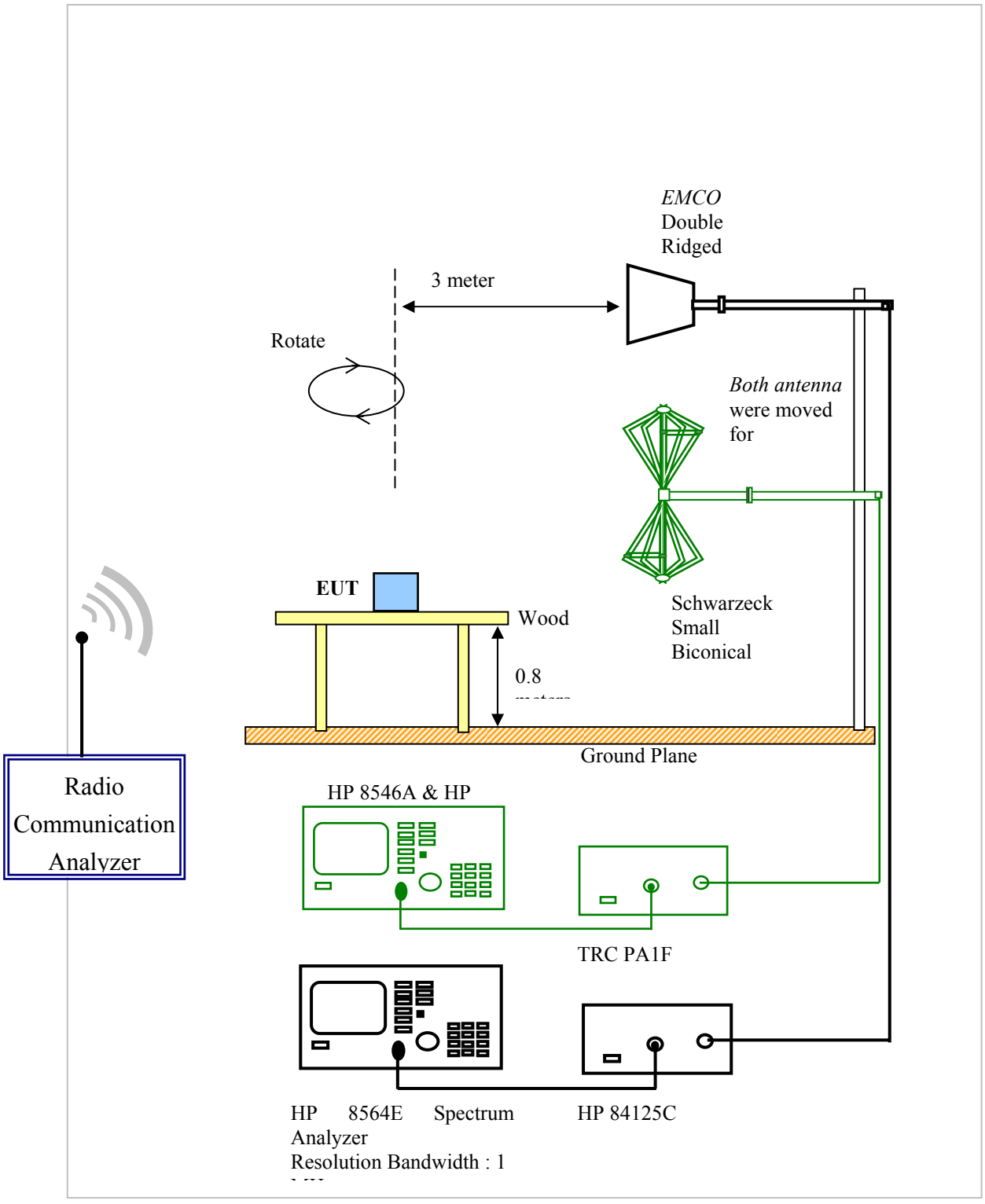
IX. Section 913(a)(2) & 24.232(c): Effective Radiated Power and Effective Isotropic Radiated Power Measurement

ERP/EIRP is measured by substitution method according to ANSI/TIA/EIA-603-C-2004.
The ERP of mobile transmitters must not exceed 3 Watts and the EIRP of mobile transmitters are limits to 1 Watts.

Test Procedures:

1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The Radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW = 1MHz, VBW = 3MHz, and peak detector setting.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest emission was recorded from analyzer power level from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna.

9.1 Test condition and setup



9.2 List of Test Instruments

Calibration Date

Instrument Name	Model	Brand	Serial No.	Next time
EMI Receiver	8546A	HP	3520A00242	03/12/11
RF Filter Section	85460A	HP	3448A00217	03/12/11
Small Biconical Antenna	UBAA9114 & BBVU9135	Schwarzeck	127	01/10/11
Pre-amplifier	PA1F	TRC	1FAC	10/10/10
Coaxial Cable (Double shielded, 15 meter)	A30A30-0058-50FS-15M	JYEBAO	SMA-01	10/10/10
Coaxial Cable (1.1 meter)	A30A30-0058-50FS-1M	JYEBAO	SMA-02	10/10/10
Spectrum Analyzer	8564E	HP	3720A00840	09/17/10
Microwave Preamplifier	84125C	HP	US36433002	11/05/10
Horn Antenna	3115	EMCO	9104-3668	08/06/10
Standard Guide Horn Antenna	84125-80008	HP	18-26.5GHz	09/14/10
Standard Guide Horn Antenna	84125-80001	HP	26.5-40GHz	08/12/10
Horn Antenna	1196E (3115)	HP (EMCO)	9704-5178	08/13/10
Pre-amplifier	PA2F	TRC	2F1GZ	10/10/10
Coaxial Cable (3 miter)	A30A30-0058-50FST118	JYEBAO	MSA-05	10/10/10
Coaxial Cable (1 meter)	A30A30-0058-50FST118	JYEBAO	MSA-04	10/10/10
Radio Communication Analyzer	MT8820A	ANRITSU	6200300452	10/01/11

9.3 Test Result

GSM 850 MHz Band

Channel	Frequency (MHz)	Polarization	RF Power (dBm) e.r,p	RF Power (Watt) e.r.p	Rated Power (dBm)
128	824.20	Horizontal	32.333	1.711	33 (Level 5)
190	836.60	Horizontal	32.553	1.800	33 (Level 5)
251	848.80	Horizontal	30.943	1.243	33 (Level 5)

Channel	Frequency (MHz)	Polarization	RF Power (dBm) e.r,p	RF Power (Watt) e.r.p	Rated Power (dBm)
128	824.20	Vertical	30.003	1.001	33 (Level 5)
190	836.60	Vertical	28.873	0.771	33 (Level 5)
251	848.80	Vertical	28.173	0.657	33 (Level 5)

PCS 1900 MHz Band

Channel	Frequency (MHz)	Polarization	RF Power (dBm) e.i.r,p	RF Power (Watt) e.i.r.p	Rated Power (dBm)
512	1850.20	Horizontal	26.030	0.401	30 (Level 0)
661	1880.00	Horizontal	25.910	0.390	30 (Level 0)
810	1909.80	Horizontal	24.760	0.299	30 (Level 0)

Channel	Frequency (MHz)	Polarization	RF Power (dBm) e.i.r,p	RF Power (Watt) e.i.r.p	Rated Power (dBm)
512	1850.20	Vertical	29.700	0.933	30 (Level 0)
661	1880.00	Vertical	28.080	0.643	30 (Level 0)
810	1909.80	Vertical	27.090	0.512	30 (Level 0)

X. Section 22.917(a)/24.238(a): Spurious Emissions (Radiated)

ERP/EIRP is measured by substitution method according to ANSI/TIA/EIA-603-C-2004.
The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limits to 2 Watts.

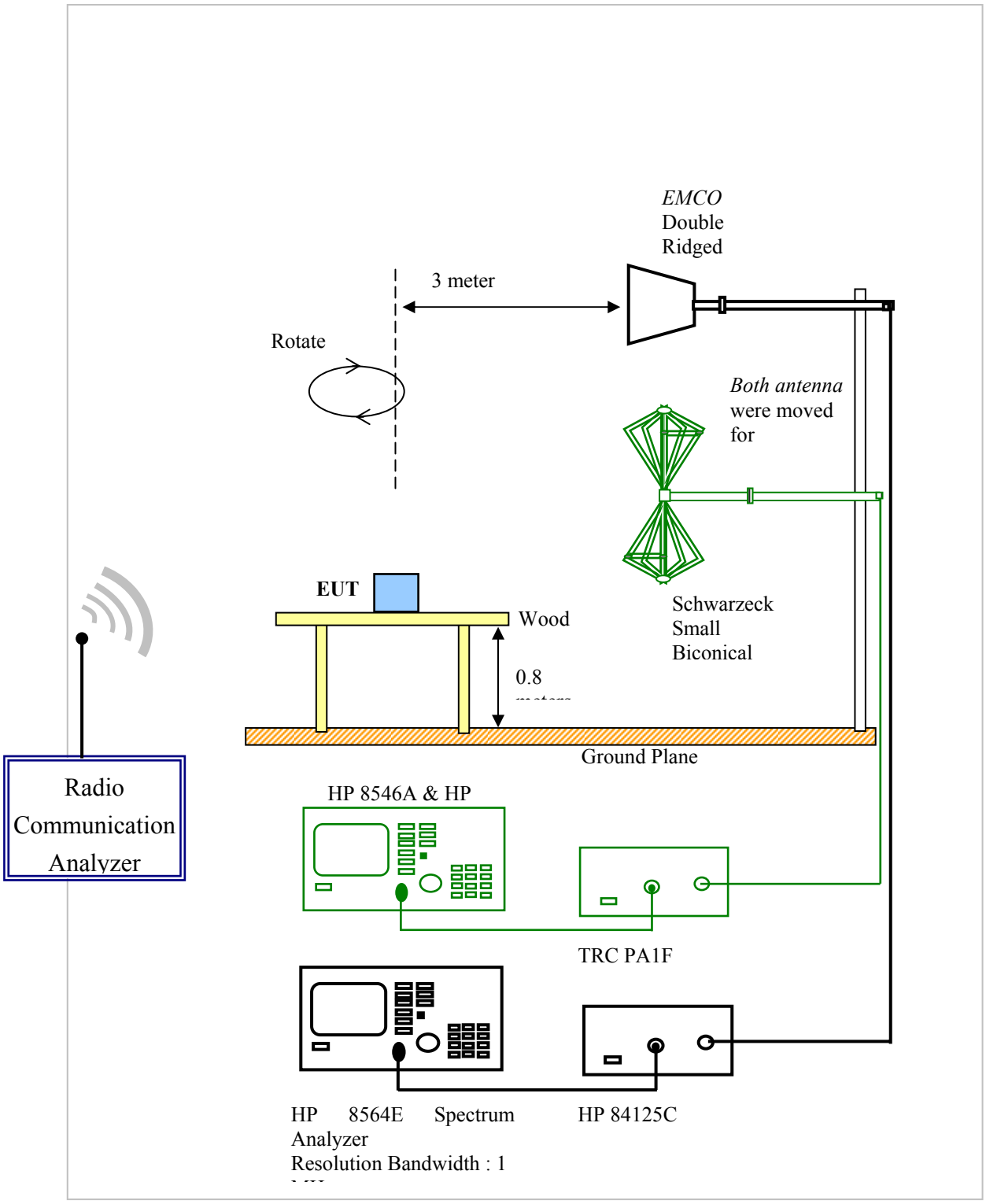
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz to a frequency including its 10^{th} harmonic

Test Procedures:

1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The Radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW = 1MHz, VBW = 3MHz, and peak detector setting.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest emission was recorded from analyzer power level from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna.

10.1 Test condition and setup



10.2 List of Test Instruments

Calibration Date

Instrument Name	Model	Brand	Serial No.	Next time
EMI Receiver	8546A	HP	3520A00242	03/12/11
RF Filter Section	85460A	HP	3448A00217	03/12/11
Small Biconical Antenna	UBAA9114 & BBVU9135	Schwarzeck	127	01/10/11
Pre-amplifier	PA1F	TRC	1FAC	10/10/10
Coaxial Cable (Double shielded, 15 meter)	A30A30-0058-50FS-15M	JYEBAO	SMA-01	10/10/10
Coaxial Cable (1.1 meter)	A30A30-0058-50FS-1M	JYEBAO	SMA-02	10/10/10
Spectrum Analyzer	8564E	HP	3720A00840	09/17/10
Microwave Preamplifier	84125C	HP	US36433002	11/05/10
Horn Antenna	3115	EMCO	9104-3668	08/06/10
Standard Guide Horn Antenna	84125-80008	HP	18-26.5GHz	09/14/10
Standard Guide Horn Antenna	84125-80001	HP	26.5-40GHz	08/12/10
Horn Antenna	1196E (3115)	HP (EMCO)	9704-5178	08/13/10
Pre-amplifier	PA2F	TRC	2F1GZ	10/10/10
Coaxial Cable (3 miter)	A30A30-0058-50FST118	JYEBAO	MSA-05	10/10/10
Coaxial Cable (1 meter)	A30A30-0058-50FST118	JYEBAO	MSA-04	10/10/10
Radio Communication Analyzer	MT8820A	ANRITSU	6200300452	10/01/11

10.3 Test Result

GSM 850 MHz Band: Channel 128(824.20 MHz)

Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc)	Limited (Minimum dBc)	Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc	Limited (Minimum dBc)
112.45	H	99.53		**57.89**	V	92.35	
1648.40	H	51.55		**1648.40**	V	58.89	
2472.60	H	66.39		**2472.60**	V	68.06	
3296.80	H	81.62		**3296.80**	V	80.45	
4121.00	H	84.65	45.33	**4121.00**	V	86.48	43.00
4945.20	H	84.84		**4945.20**	V	85.39	
5769.40	H	85.22		**5769.40**	V	83.56	
6593.60	H	82.70		**6593.60**	V	82.20	
7417.80	H	81.49		**7417.80**	V	81.82	
8242.00	H	80.49		**8242.00**	V	81.49	

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.

Calculated:

Horizontal: 43 + 10 log (P) dB= 43 + 10 log (1.711 Watt) dB=45.33 dB

Vertical: 43 + 10 log (P) dB= 43 + 10 log (1.001 Watt) dB=43.00 dB

GSM 850 MHz Band: Channel 190(836.60 MHz)

Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc)	Limited (Minimum dBc)	Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc	Limited (Minimum dBc)
113.66	H	101.14		**57.89**	V	93.05	
1673.20	H	58.33		**1673.20**	V	59.00	
2509.80	H	65.52		**2509.80**	V	69.02	
3346.40	H	82.43		**3346.40**	V	76.09	
4183.00	H	86.69	45.55	**4183.00**	V	86.02	41.87
5019.60	H	85.02		**5019.60**	V	84.52	
5856.20	H	84.61		**5856.20**	V	83.94	
6692.80	H	83.71		**6692.80**	V	84.55	
7529.40	H	82.82		**7529.40**	V	83.15	
8366.00	H	81.59		**8366.00**	V	81.92	

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.
Calculated:
Horizontal: 43 + 10 log (P) dB= 43 + 10 log (1.800 Watt) dB=45.55 dB
Vertical: 43 + 10 log (P) dB= 43 + 10 log (0.771 Watt) dB=41.87 dB

GSM 850 MHz Band: Channel 251(848.80 MHz)

Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc)	Limited (Minimum dBc)	Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc	Limited (Minimum dBc)
112.45	H	100.42		**56.67**	V	93.43	
1697.60	H	56.42		**1697.60**	V	60.92	
2546.40	H	62.65		**2546.40**	V	72.82	
3395.20	H	81.73		**3395.20**	V	77.56	
4244.00	H	85.36	43.94	**4244.00**	V	85.36	41.18
5092.80	H	85.44		**5092.80**	V	85.28	
5941.60	H	85.83		**5941.60**	V	85.00	
6790.40	H	83.75		**6790.40**	V	83.08	
7639.40	H	81.58		**7639.40**	V	81.74	
8488.00	H	82.73		**8488.00**	V	82.23	

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.
Calculated:
Horizontal: 43 + 10 log (P) dB= 43 + 10 log (1.243 Watt) dB=43.94 dB
Vertical: 43 + 10 log (P) dB= 43 + 10 log (0.657 Watt) dB=41.18 dB

PCS 1900 MHz Band: Channel 512(1850.20 MHz)

Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc)	Limited (Minimum dBc)	Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc	Limited (Minimum dBc)
113.66	H	101.38		**57.89**	V	92.68	
249.46	H	65.56		**244.61**	V	74.02	
1487.50	H	74.27		**1430.21**	V	68.24	
3700.40	H	75.87		**3700.40**	V	82.39	
5550.60	H	81.40		**5550.60**	V	81.07	
7400.80	H	79.20		**7400.80**	V	79.20	
9251.00	H	78.18	39.03	**9251.00**	V	78.85	42.70
11101.20	H	75.67		**11101.20**	V	77.01	
12951.40	H	76.26		**12951.40**	V	76.26	
14801.60	H	75.81		**14801.60**	V	75.15	
16651.80	H	76.29		**16651.80**	V	76.12	
18502.00	H	75.15		**18502.00**	V	74.81	

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.

Calculated:

Horizontal: 43 + 10 log (P) dB= 43 + 10 log (0.401 Watt) dB=39.03 dB

Vertical: 43 + 10 log (P) dB= 43 + 10 log (0.933 Watt) dB=42.70 dB

PCS 1900 MHz Band: Channel 661(1880.00 MHz)

Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc)	Limited (Minimum dBc)	Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc	Limited (Minimum dBc)
112.45	H	97.02		**57.89**	V	89.74	
268.86	H	74.63		**265.25**	V	75.58	
3760.00	H	80.95		**3760.00**	V	83.95	
5640.00	H	80.68		**5640.00**	V	81.85	
7520.00	H	79.10		**7520.00**	V	79.27	
9400.00	H	77.47	38.91	**9400.00**	V	77.80	41.08
11280.00	H	77.86		**11280.00**	V	78.02	
13160.00	H	76.24		**13160.00**	V	75.74	
15040.00	H	78.43		**15040.00**	V	76.76	
16920.00	H	74.15		**16920.00**	V	74.65	
18800.00	H	74.87		**18800.00**	V	75.03	

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.
Calculated:
Horizontal: 43 + 10 log (P) dB= 43 + 10 log (0.390 Watt) dB=38.91 dB
Vertical: 43 + 10 log (P) dB= 43 + 10 log (0.643 Watt) dB=41.08 dB

PCS 1900 MHz Band: Channel 810(1909.80 MHz)

Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc)	Limited (Minimum dBc)	Emission frequency MHz	Ant. Polarity	dB Below Carrier (dBc	Limited (Minimum dBc)
113.66	H	98.19		**57.89**	V	89.96	
340.40	H	80.26		**232.49**	V	80.25	
1479.17	H	74.79		**1479.17**	V	74.49	
3819.60	H	81.46		**3819.60**	V	82.62	
5729.40	H	81.80		**5729.40**	V	81.14	
7639.20	H	79.80		**7639.20**	V	79.47	
9549.00	H	77.32	37.76	**9549.00**	V	77.65	40.09
11458.80	H	77.26		**11458.80**	V	77.42	
13368.60	H	77.12		**13368.60**	V	76.62	
15278.40	H	76.45		**15278.40**	V	76.45	
17188.20	H	73.69		**17188.20**	V	73.69	
19098.00	H	76.08		**19098.00**	V	75.42	

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.

Calculated:

Horizontal: 43 + 10 log (P) dB= 43 + 10 log (0.299 Watt) dB=37.76 dB

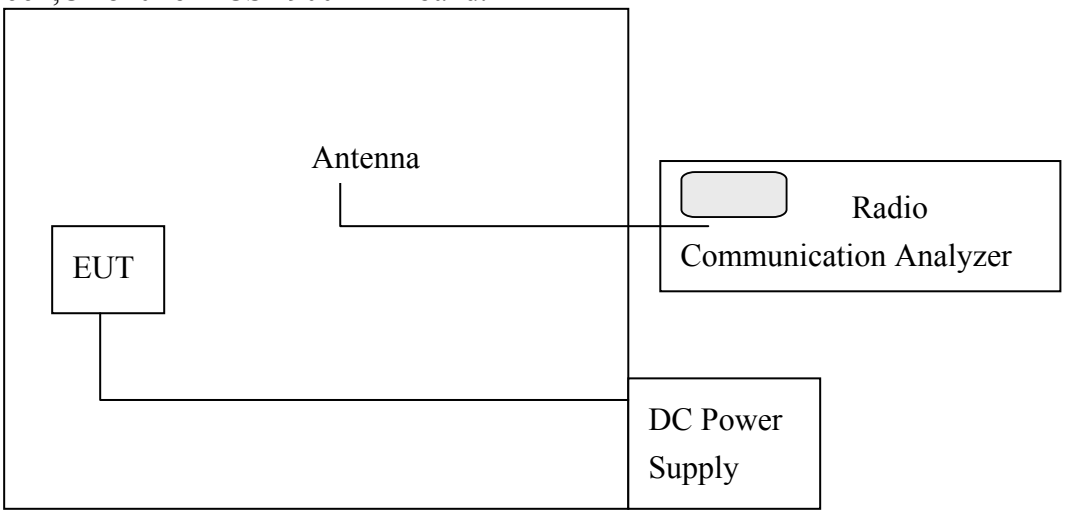
Vertical: 43 + 10 log (P) dB= 43 + 10 log (0.512 Watt) dB=40.09 dB

XI. Section 2.1055/ 22.355/ 24.235: Frequency Stability Test

11.1 Test Condition & Setup

According to FCC 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.
According to FCC 2.1055, the test conditions are:
-The temperature is varied from -30C to +50C at intervals of not more than 10C
-For hand carried battery power equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.
Section 2.1055(d) also mentions that 85% to 115% of normal voltage for other than hand carried battery equipments.

(1) The power of EUT was off and placed in the temperature chamber and set chamber's temperature to -30 C
(2) When temperature was reached to -30 C, the EUT was going to measure after this temperature stabilized.
(3) On the power now and simulated call on channel 128 using Radio Communication Analyzer.
(4) Maximum change in the frequency was recorded from Radio Communication Analyzer within one minute to prevent significant self-warming.
(5) After record, off the power and repeat the above measurements at every 10 C increments form -30 C to +50 C.
(6) Repeat the above step(1) to (5) for Ch 190, Ch 251 for GSM 850 MHz band and Ch 512, Ch 661,Ch 810 for PCS 1900 MHz band.



11.2 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.
Radio Communication Analyzer	MT8820A	ANRITSU	6200300452
Temperature & Humidity Chamber	THS-ML1	KING SON	240
DC Power Supply	GPC-3030DQ	GoodWill	A622054
AC Power Source	CF-3000E	IDRC	974302

11.3 Test Result

(a)DC Supply

GSM 850 MHz Band

Voltage (V)	Temperature (℃)	Frequency Deviation(Hz)		
		Ch 128	Ch 190	Ch 251
3.7V (V_{normal})	-30	-16.0	-14.6	-15.7
	-20	-15.6	-14.4	-15.4
	-10	-14.2	-12.5	-13.6
	0	-13.7	-15.0	-15.3
	10	-24.1	-17.7	-14.2
	20	-15.9	-12.4	-11.0
	30	-14.4	-17.2	-19.7
	40	-13.8	-16.5	-18.2
	50	-17.9	-15.5	-12.9
	60	-19.0	-17.8	-15.9
4.5V (V_{max})	Room Temperature	-12.7	-14.0	-15.5
3.4V (V_{min})	Room Temperature	-13.2	-14.9	-15.8
Limited 1.5ppm		±618.15Hz	±627.45Hz	±636.60Hz

PCS 1900 MHz Band

Voltage (V)	Temperature (℃)	Frequency Deviation(Hz)		
		Ch 512	Ch 661	Ch 810
3.7V (V_{normal})	-30	16.7	-25.6	-23.4
	-20	16.2	-25.0	-23.2
	-10	14.8	-23.5	-21.0
	0	-17.3	-16.9	-18.6
	10	-24.6	13.4	-21.8
	20	-22.6	-22.3	-27.8
	30	24.0	-21.1	-28.6
	40	-18.1	-19.9	-20.4
	50	-15.2	-24.0	-17.6
	60	-22.6	-20.3	-18.6
4.5V (V_{max})	Room Temperature	19.7	22.6	-20.7
3.4V (V_{min})	Room Temperature	20.1	22.9	-21.0
Limited 0.1ppm		±92.51Hz	±94.00Hz	±95.49Hz

(b)AC Supply

GSM 850 MHz Band

Voltage (V)	Temperature (℃)	Frequency Deviation(Hz)		
		Ch 128	Ch 190	Ch 251
120V (V_{normal})	-30	-15.8	-14.3	-15.4
	-20	-15.5	-14.2	-15.3
	-10	-14.0	-12.9	-13.9
	0	-13.9	-14.8	-15.1
	10	-23.7	-17.5	-14.6
	20	-15.6	-12.9	-11.3
	30	-14.7	-17.0	-19.4
	40	-14.1	-16.3	-18.0
	50	-17.2	-15.2	-13.3
	60	-18.7	17.4	-15.5
138V (V_{max})	Room Temperature	-13.1	-14.3	-15.3
102V (V_{min})	Room Temperature	-12.9	-14.5	-15.5
Limited 1.5ppm		±618.15Hz	±627.45Hz	±636.60Hz

PCS 1900 MHz Band

Voltage (V)	Temperature (℃)	Frequency Deviation(Hz)		
		Ch 512	Ch 661	Ch 810
120V (V_{normal})	-30	-16.5	-25.3	-23.3
	-20	16.0	-25.1	-23.5
	-10	14.5	-23.1	-21.3
	0	-17.0	-16.5	-18.9
	10	-24.2	13.8	-21.6
	20	-22.8	-22.1	-27.5
	30	23.6	-21.4	-28.4
	40	-17.7	-19.6	-20.7
	50	-15.5	-23.6	-17.8
	60	-22.3	-20.5	-18.2
138V (V_{max})	Room Temperature	19.8	22.7	-20.5
102V (V_{min})	Room Temperature	19.9	22.8	-20.8
Limited 0.1ppm		±92.51Hz	±94.00Hz	±95.49Hz

XII. Part 22.905/24.229:Frequency Blocks

12.1 Frequency Blocks Available for Cellular Service

According to FCC 22.905, the following frequency bands are allocated for assignment to service providers in the Cellular Radiotelephone Service:

Channel Block A: 869–880 MHz paired with 824–835 MHz, and
890–891.5 MHz paired with 845–846.5 MHz.

Channel Block B: 880–890 MHz paired with 835–845 MHz, and
891.5–894 MHz paired with 846.5–849 MHz.

12.2. Frequency Blocks Available for Broadband PCS

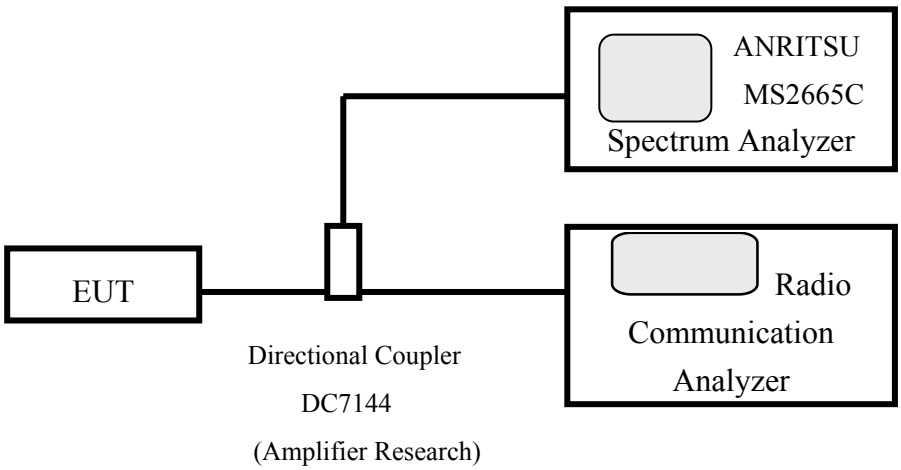
The frequencies available in the Broadband PCS service are listed in this section in accordance with the frequency allocations table of § 2.106 of this chapter.

(a) The following frequency blocks are available for assignment on an MTA basis:
Block A: 1850–1865 MHz paired with 1930–1945 MHz; and
Block B: 1870–1885 MHz paired with 1950–1965 MHz

(b) The following frequency blocks are available for assignment on an BTA basis:
Block C: 1895–1910 MHz paired with 1975–1990 MHz
Block D: 1865–1870 MHz paired with 1945–1950 MHz
Block E: 1885–1890 MHz paired with 1965–1970 MHz
Block F: 1890–1895 MHz paired with 1970–1975 MHz

12.3 .Test Condition & Setup

The EUT was coupled to the Radio Simulator through the directional coupler and outputs to spectrum Analyzer. The loss of the cables is calibrated to correct the reading
The Spectrum analyzer was set to Max-peak Detector function and Maximum Hold mode.
The resolution bandwidth was set to at least 1% of the emission bandwidth of the fundamental emission of the transmitter. VBW=RBW=3 kHz
Power Control level 5 for GSM 850 MHz; Power Control level 0 for PCS 1900.



The mobile transmitter frequency arrangement of the GSM 850 MHz band is
Fl(n)=824.2+0.2*(n-128) 128≦ n ≦251
The mobile transmitter frequency arrangement of the PCS1900 MHz band is
Fl(n)=1850.2+0.2*(n-512) 512≦ n ≦810

The lowest channel and the highest channel were measured respectively:
Channel 128(lowest) and 251(highest) for GSM 850 MHz;
Channel 512(lowest) and 810(highest) for PCS 1900 MHz

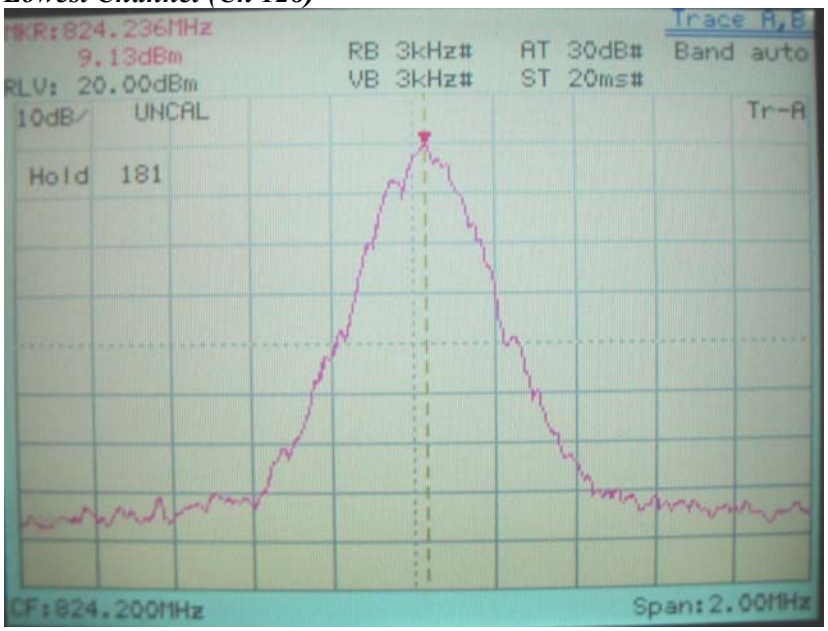
12.4 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.
Radio Communication Analyzer	MT8820A	ANRITSU	6200300452

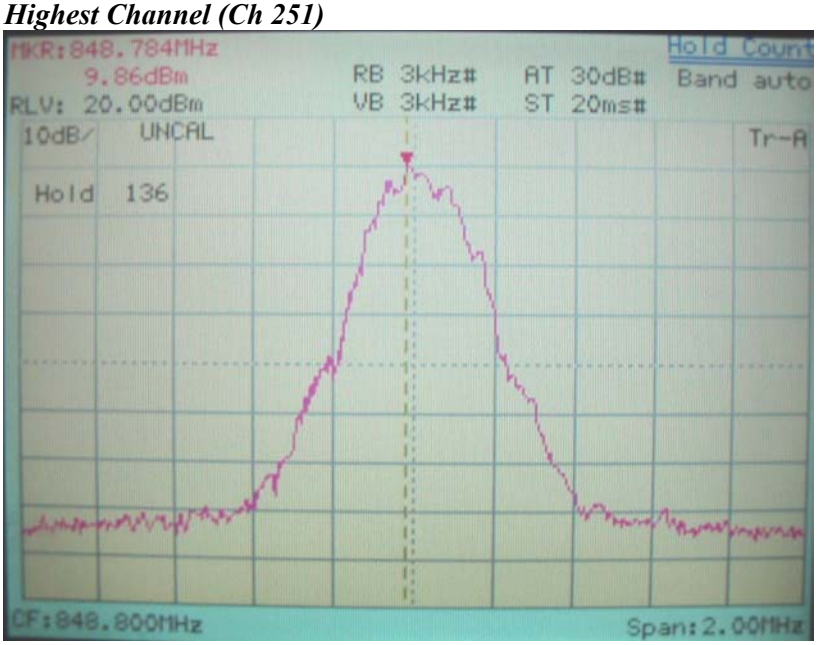
12.5 Test Result

(a)GSM 850 MHz Band

Lowest Channel (Ch 128)

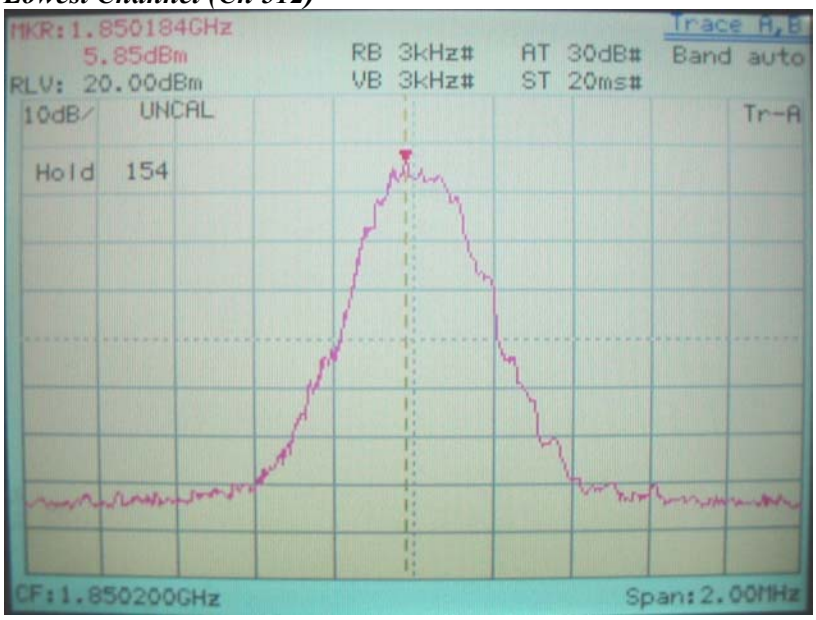


Highest Channel (Ch 251)



(b)PCS 1900 MHz Band

Lowest Channel (Ch 512)



Highest Channel (Ch 810)