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# FCC TEST REPORT (CO-LOCATED)

**REPORT NO.:** RF131024C22-3  
**MODEL NO.:** PA-MR03LN  
**FCC ID:** 2AA5WPAMR03LN  
**RECEIVED:** Oct. 24, 2013  
**TESTED:** Dec. 29, 2013  
**ISSUED:** Jan. 13, 2014

**APPLICANT:** NEC Access Technica, Ltd.

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436-8501, Japan

**ISSUED BY:** Bureau Veritas Consumer Products Services  
(H.K.) Ltd., Taoyuan Branch

**LAB ADDRESS:** No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,  
New Taipei City, Taiwan, R.O.C.

**TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei  
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF131024C22-3	Original release	Jan. 13, 2014



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## 1. CERTIFICATION

**PRODUCT:** PA MR03LN  
**MODEL NO.:** PA-MR03LN  
**BRAND:** NEC  
**APPLICANT:** NEC Access Technica, Ltd.  
**TESTED:** Dec. 29, 2013  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**STANDARDS:** **FCC Part 15, Subpart C (Section 15.247)**  
**FCC Part 22, Subpart H**  
**FCC Part 24, Subpart E**  
**ANSI C63.10-2009**

The above equipment (model: PA-MR03LN) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY** :  , **DATE** : Jan. 13, 2014  
Pettie Chen / Senior Specialist

**APPROVED BY** :  , **DATE** : Jan. 13, 2014  
Anderson Chiu / Senior Engineer



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## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247) FCC Part 22, Subpart H FCC Part 24, Subpart E			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -12.21dB at 1.47266MHz.
15.247(d) 2.1053 22.917 24.238	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -6.52dB at 1909.80MHz.

### 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.19 dB
	200MHz ~ 1000MHz	3.21 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	PA MR03LN	
<b>MODEL NO.</b>	PA-MR03LN	
<b>POWER SUPPLY</b>	3.8Vdc (Battery) 5Vdc (adapter)	
<b>MODULATION TYPE</b>	<b>WLAN</b>	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
	<b>GPRS</b>	GMSK
	<b>WCDMA, HSDPA, HSUPA</b>	BPSK
<b>TRANSFER RATE</b>	<b>WLAN</b>	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps
<b>OPERATING FREQUENCY</b>	<b>WLAN</b>	2412 ~ 2462MHz
	<b>GPRS</b>	824.2MHz ~ 848.8MHz 1850.2MHz ~ 1909.8MHz
	<b>WCDMA, HSDPA, HSUPA</b>	826.4MHz ~ 846.6MHz
<b>OUTPUT POWER</b>	<b>WLAN</b>	300.617mW
<b>MAX. ERP POWER</b>	<b>GPRS</b>	0.716Watts (28.55dBm)
	<b>WCDMA</b>	0.106Watts (20.27dBm)
<b>MAX. EIRP POWER</b>	<b>GPRS</b>	0.701Watts (28.46dBm)
<b>ANTENNA TYPE</b>	<b>WLAN:</b> Antenna 3: Omni-Directional antenna with -6.32dBi gain Antenna 4: Omni-Directional antenna with -5.82dBi gain <b>GPRS 800, WCDMA Band V:</b> PCB antenna with -1.18dBi gain <b>GPRS 1900:</b> PCB antenna with -1.9dBi gain	
<b>DATA CABLE</b>	NA	
<b>I/O PORTS</b>	Refer to user's manual	
<b>ACCESSORY DEVICES</b>	Refer to Note as below	



**NOTE:**

1. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	2TX
802.11g	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

2. The EUT consumes power from the following battery and adapter.

ITEM	BRAND	MODEL	SPECIFICATION
Adapter (Support unit)	NEC	AL1-004001-001	I/P: 100-240Vac~50/60Hz 140mA O/P: 5Vdc, 1.0A
Li-ion Battery (Accessory)	SANYO	AL1-003388-001	Rating: 3.8Vdc, 2300mAh

3. The following support units provided by client.

ITEM	BRAND	MODEL	SPECIFICATION
Ethernet Cable	NA	AL1-001423-001	2.0m non-shielded cable without core
USB Cable	NA	AL1-003329-005	1.0m non-shielded cable without core
PA-MR03L-EX3C	NEC	EX3C cradle	NA

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

### 3.2 DESCRIPTION OF TEST MODES

#### FOR 2.4GHz

11 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		



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### 850 Band:

#### GPRS:

	CHANNEL	FREQUENCY (MHz)
LOW	128	824.2
MIDDLE	189	836.4
HIGH	251	848.8

### WCDMA, HSDPA, HSUPA:

	CHANNEL	FREQUENCY (MHz)
LOW	4132	826.4
MIDDLE	4182	836.4
HIGH	4233	846.6

### 1900 Band:

#### GPRS:

	CHANNEL	FREQUENCY (MHz)
LOW	512	1850.2
MIDDLE	661	1880.0
HIGH	810	1909.8





### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION
	RE≥1G	RE<1G	PLC	
-	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz  
**PLC**: Power Line Conducted Emission

**NOTE:**

The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned as below.

**RADIATED EMISSION TEST (ABOVE 1GHz):**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	EUT POSITION
-	GPRS 850 +802.11n(20MHz)	824.2~848.8	128 to 251	128 + 6	GMSK	Y
		2412~2462	1 to 11		OFDM	
-	WCDMA 850 +802.11n(20MHz)	826.4 ~ 846.6	4132 to 4233	4132 + 6	BPSK	X
		2412~2462	1 to 11		OFDM	
-	GPRS 1900 +802.11n(20MHz)	1850.2 ~ 1909.8	512 to 810	810 + 6	GMSK	X
		2412~2462	1 to 11		OFDM	

**RADIATED EMISSION TEST (BELOW 1GHz):**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	EUT POSITION
-	GPRS 850 +802.11n(20MHz)	824.2~848.8	128 to 251	128 + 6	GMSK	Y
		2412~2462	1 to 11		OFDM	
-	WCDMA 850 +802.11n(20MHz)	826.4 ~ 846.6	4132 to 4233	4132 + 6	BPSK	X
		2412~2462	1 to 11		OFDM	
-	GPRS 1900 +802.11n(20MHz)	1850.2 ~ 1909.8	512 to 810	810 + 6	GMSK	X
		2412~2462	1 to 11		OFDM	



**CONDUCTED EMISSION TEST:**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	EUT POSITION
-	GPRS 850 +802.11n(20MHz)	824.2~848.8	128 to 251	128 + 6	GMSK	Y
		2412~2462	1 to 11		OFDM	
-	WCDMA 850 +802.11n(20MHz)	826.4 ~ 846.6	4132 to 4233	4132 + 6	BPSK	X
		2412~2462	1 to 11		OFDM	
-	GPRS 1900 +802.11n(20MHz)	1850.2 ~ 1909.8	512 to 810	810 + 6	GMSK	X
		2412~2462	1 to 11		OFDM	

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 68%RH	120Vac, 60Hz	Jones Chang
RE<1G	25deg. C, 68%RH	120Vac, 60Hz	Jones Chang
PLC	22deg. C, 60%RH	120Vac, 60Hz	Jones Chang



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### 3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PA-MR03L-EX3C	NEC	EX3C cradle	NA	NA
2	Universal Radio Communication Tester	R&S	CMU200	104958	NA

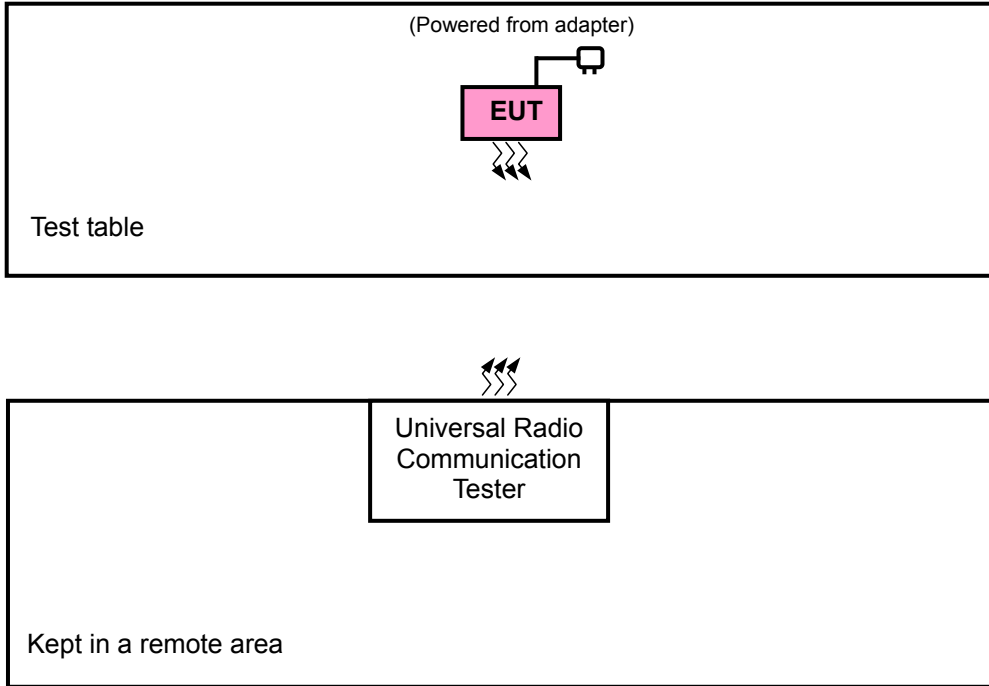
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.0m non-shielded USB cable without core
2	NA

**NOTE:**

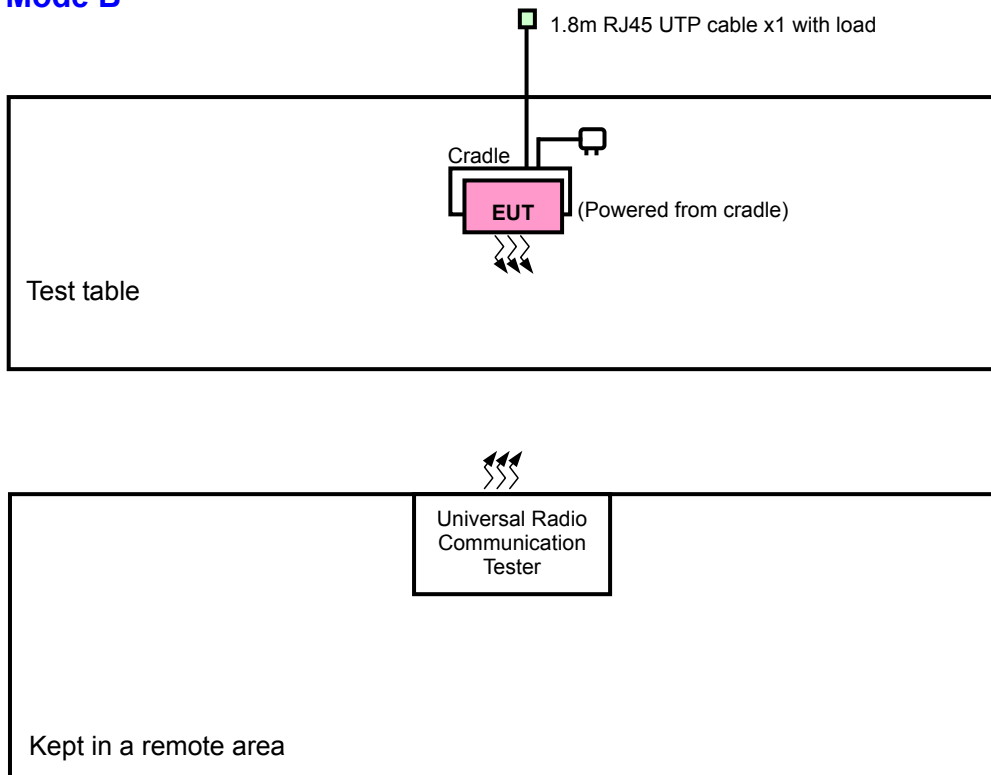
1. All power cords of the above support units are non-shielded (1.8m).
2. Item 1 was provided by client.
3. Item 2 act as a communication partner to transfer data.

### 3.3.1 CONFIGURATION OF SYSTEM UNDER TEST

#### Test Mode A



#### Test Mode B





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### **3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart C (Section 15.247)**

**FCC Part 22, Subpart H**

**FCC Part 24, Subpart E**

**ANSI C63.10-2009**

All test items have been performed and recorded as per the above standards.



## 4. TEST TYPES AND RESULTS

### 4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

#### 4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

#### 4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
√	FIELD STRENGTH AT 3m (dBμV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
	PK	PK
	-27	68.3

**NOTE:** The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$



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### 4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 29, 2013	Nov. 28, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 28, 2013	Jan. 27, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Mar. 22, 2013	Mar. 21, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Sep. 12, 2013	Sep. 11, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8449B	3008A01911	Aug. 22, 2013	Aug. 21, 2014
Preamplifier Agilent	8447D	2944A10638	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	248780/4 309222/4 274092/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable Worken	5D-FB	Cable-HYCH9-01	Aug. 11, 2013	Aug. 10, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 215374.
5. The IC Site Registration No. is IC 7450F-9.



#### 4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**NOTE:**

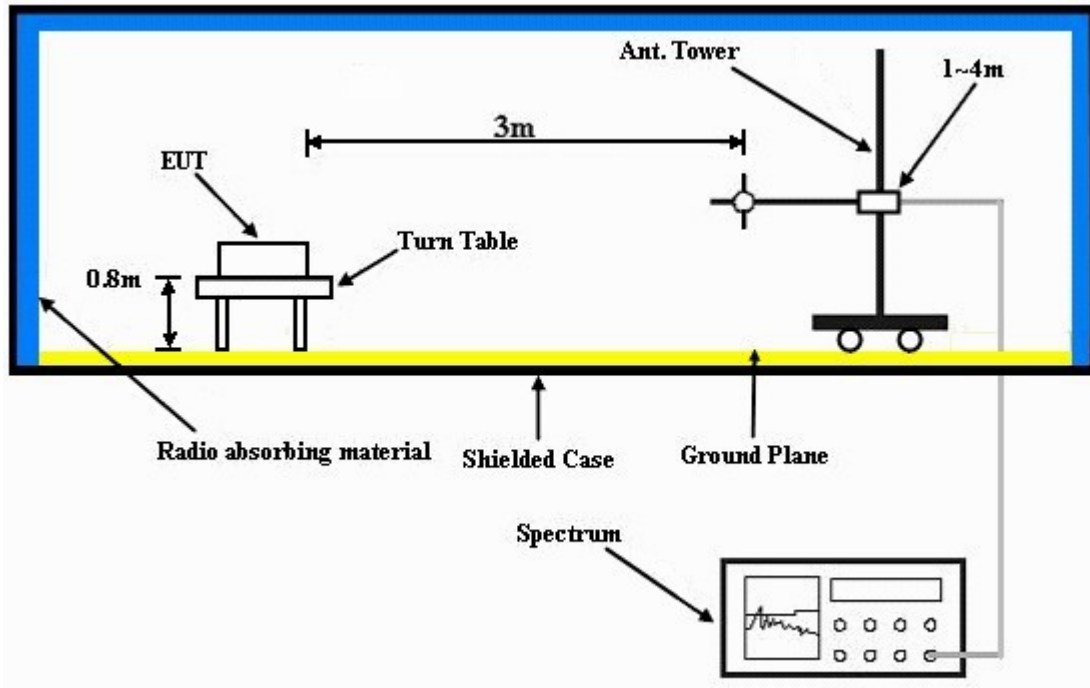
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.5 DEVIATION FROM TEST STANDARD

No deviation.



#### 4.1.6 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.1.7 EUT OPERATING CONDITIONS

- a. Plugged the EUT in cradle and placed them on the testing table.
- b. Set the EUT under transmission condition continuously at specific channel frequency.



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#### 4.1.8 TEST RESULTS

##### Above 1GHz data

##### GPRS 850+802.11n(20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 128 + CH 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Jones Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.1 PK			1.08 H	190	64.10	32.00
2	*2437.00	85.6 AV			1.00 H	198	53.60	32.00
3	4874.00	48.7 PK	74.0	-25.3	1.00 H	277	43.70	5.00
4	4874.00	37.7 AV	54.0	-16.3	1.00 H	277	32.70	5.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	86.0 PK			1.00 V	333	54.00	32.00
2	*2437.00	79.1 AV			1.00 V	333	47.10	32.00
3	4874.00	46.9 PK	74.0	-27.1	1.00 V	12	41.90	5.00
4	4874.00	35.0 AV	54.0	-19.0	1.00 V	12	30.00	5.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 128 + CH 6	FREQUENCY RANGE	1 ~ 18GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH
TESTED BY	Jones Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	2472.60	-50.80	-50.26	6.43	-43.83	-13.00	-30.83

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	2472.60	-46.04	-45.11	6.43	-38.68	-13.00	-25.68

**REMARKS:**

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 128 + CH 6	INPUT POWER (SYSTEM)	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Jones Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	824.20	-1.91	28.49	0.01	28.50	38.45	-9.95

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	824.20	-7.14	21.88	0.01	21.89	38.45	-16.56

**REMARKS:**

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



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WCDMA 850+802.11n(20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 4132 + CH 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Jones Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.2 PK			1.01 H	194	64.20	32.00
2	*2437.00	85.9 AV			1.01 H	194	53.90	32.00
3	4874.00	49.2 PK	74.0	-24.8	1.00 H	229	44.20	5.00
4	4874.00	37.8 AV	54.0	-16.2	1.00 H	229	32.80	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	86.2 PK			1.00 V	304	54.20	32.00
2	*2437.00	78.9 AV			1.00 V	304	46.90	32.00
3	4874.00	46.9 PK	74.0	-27.1	1.00 V	29	41.90	5.00
4	4874.00	35.8 AV	54.0	-18.2	1.00 V	29	30.80	5.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 4132 + CH 6	FREQUENCY RANGE	1 ~ 18GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH
TESTED BY	Jones Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1652.80	-58.35	-59.33	5.49	-53.84	-13.00	-40.84

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1652.80	-59.01	-63.13	5.49	-57.64	-13.00	-44.64

**REMARKS:**

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 4132 + CH 6	INPUT POWER (SYSTEM)	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Jones Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-9.78	20.42	0.06	20.48	38.45	-17.97

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.40	-16.39	12.71	0.06	12.77	38.45	-25.68

**REMARKS:**

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



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**GPRS 1900+802.11n(20MHz)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 810 + CH 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Jones Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.5 PK			1.05 H	199	64.50	32.00
2	*2437.00	85.8 AV			1.05 H	199	53.80	32.00
3	4874.00	49.3 PK	74.0	-24.7	1.00 H	259	44.30	5.00
4	4874.00	38.0 AV	54.0	-16.0	1.00 H	259	33.00	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	86.1 PK			1.02 V	289	54.10	32.00
2	*2437.00	79.0 AV			1.02 V	298	47.00	32.00
3	4874.00	46.7 PK	74.0	-27.3	1.00 V	69	41.70	5.00
4	4874.00	35.5 AV	54.0	-18.5	1.00 V	69	30.50	5.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.





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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 810 + CH 6	FREQUENCY RANGE	1 ~ 18GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH
TESTED BY	Jones Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3819.60	-49.01	-42.82	7.05	-35.77	-13.00	-22.77

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3819.60	-50.70	-44.69	7.05	-37.64	-13.00	-24.64

**REMARKS:**

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 810 + CH 6	INPUT POWER (SYSTEM)	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Jones Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1909.80	-13.74	25.37	1.11	26.48	33.00	-6.52

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1909.80	-18.88	17.01	1.11	18.12	33.00	-14.88

**REMARKS:**

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



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Below 1GHz data

GPRS 850+802.11n(20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 128 + CH 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH
TESTED BY	Jones Chang		

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	45.52	-58.84	-48.40	-9.97	-58.37	-13.00	-45.37
2	57.33	-54.69	-49.92	-8.17	-58.09	-13.00	-45.09
3	101.78	-58.92	-67.48	0.80	-66.68	-13.00	-53.68
4	204.60	-59.92	-73.56	5.46	-68.10	-13.00	-55.10
5	321.00	-58.20	-68.73	5.15	-63.58	-13.00	-50.58
6	400.54	-60.77	-67.54	5.28	-62.26	-13.00	-49.26

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	57.21	-41.00	-40.66	-8.20	-48.86	-13.00	-35.86
2	101.78	-58.73	-65.62	0.80	-64.82	-13.00	-51.82
3	171.62	-67.85	-70.29	1.86	-68.43	-13.00	-55.43
4	321.00	-63.80	-70.98	5.15	-65.83	-13.00	-52.83
5	513.06	-57.05	-61.06	4.83	-56.23	-13.00	-43.23
6	555.74	-58.26	-61.23	4.62	-56.61	-13.00	-43.61

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss



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**WCDMA 850+802.11n(20MHz)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 4132 + CH 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH
TESTED BY	Jones Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	62.98	-46.79	-45.34	-6.83	-52.17	-13.00	-39.17
2	90.14	-33.09	-42.86	1.13	-41.73	-13.00	-28.73
3	105.66	-38.02	-46.47	0.65	-45.82	-13.00	-32.82
4	140.58	-44.24	-50.73	-0.31	-51.04	-13.00	-38.04
5	342.34	-54.13	-63.83	5.20	-58.63	-13.00	-45.63
6	491.72	-58.42	-65.01	4.92	-60.09	-13.00	-47.09

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	53.31	-33.00	-31.48	-9.04	-40.52	-13.00	-27.52
2	82.41	-32.80	-38.43	-0.97	-39.40	-13.00	-26.40
3	272.50	-49.25	-58.12	5.28	-52.84	-13.00	-39.84
4	319.06	-47.22	-54.44	5.15	-49.29	-13.00	-36.29
5	763.30	-57.11	-54.65	4.48	-50.17	-13.00	-37.17
6	871.99	-55.61	-51.11	3.94	-47.17	-13.00	-34.17

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss



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**GPRS 1900+802.11n(20MHz)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 810 + CH 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH
TESTED BY	Jones Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	47.46	-58.59	-46.29	-10.16	-56.45	-13.00	-43.45
2	105.66	-59.58	-65.88	0.65	-65.23	-13.00	-52.23
3	196.84	-62.15	-73.14	5.07	-68.07	-13.00	-55.07
4	332.64	-57.29	-65.21	5.18	-60.03	-13.00	-47.03
5	394.72	-60.35	-65.07	5.26	-59.81	-13.00	-46.81
6	454.86	-62.38	-66.81	5.06	-61.75	-13.00	-48.75

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	57.16	-41.64	-39.13	-8.21	-47.34	-13.00	-34.34
2	90.14	-55.26	-60.87	1.13	-59.74	-13.00	-46.74
3	101.78	-59.28	-64.02	0.80	-63.22	-13.00	-50.22
4	299.66	-61.70	-67.67	5.13	-62.54	-13.00	-49.54
5	534.40	-57.81	-59.19	4.73	-54.46	-13.00	-41.46
6	561.56	-58.59	-59.22	4.61	-54.61	-13.00	-41.61

**REMARKS:**

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss



## 4.2 CONDUCTED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
  2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
  3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 17, 2013	Nov. 16, 2014
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 23, 2013	Dec. 22, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 08, 2013	Jul. 07, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  2. The test was performed in HwaYa Shielded Room 2.
  3. The VCCI Site Registration No. is C-2047.



#### 4.2.3 TEST PROCEDURES

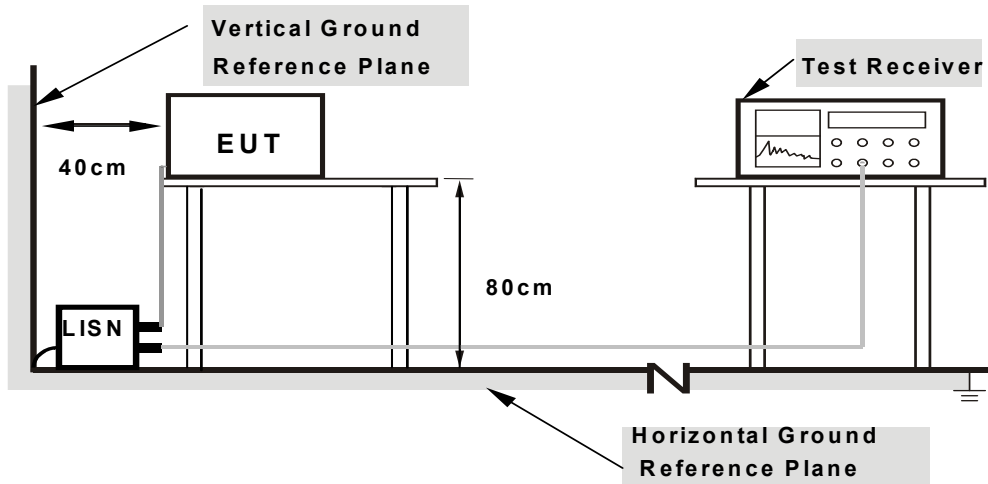
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

**NOTE:** All modes of operation were investigated and the worst-case emissions are reported.

#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.2.5 TEST SETUP



- Note:**
1. Support units were connected to second LISN.
  2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.



### 4.2.7 TEST RESULTS

#### CONDUCTED WORST-CASE DATA:

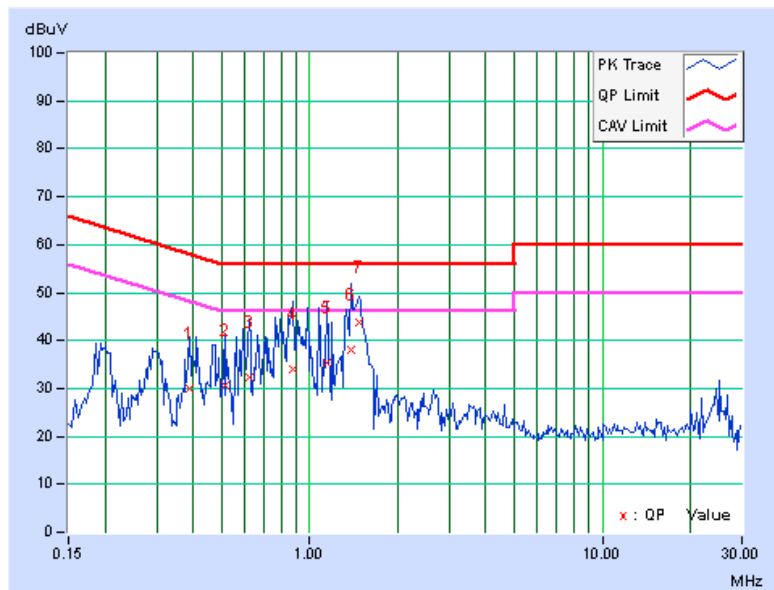
#### GPRS 850+802.11n(20MHz)

<b>CHANNEL</b>	CH 128 + CH 6	<b>6dB BANDWIDTH</b>	9kHz
<b>PHASE</b>	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.38828	0.15	29.73	15.75	29.88	15.90	58.10
2	0.51328	0.16	30.34	15.82	30.50	15.98	56.00	46.00	-25.50	-30.02
3	0.61875	0.16	32.11	17.69	32.27	17.85	56.00	46.00	-23.73	-28.15
4	0.87656	0.17	33.97	15.57	34.14	15.74	56.00	46.00	-21.86	-30.26
5	1.15234	0.18	35.23	15.68	35.41	15.86	56.00	46.00	-20.59	-30.14
6	1.38281	0.19	37.91	22.62	38.10	22.81	56.00	46.00	-17.90	-23.19
7	1.47266	0.19	43.60	27.58	43.79	27.77	56.00	46.00	-12.21	-18.23

#### REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

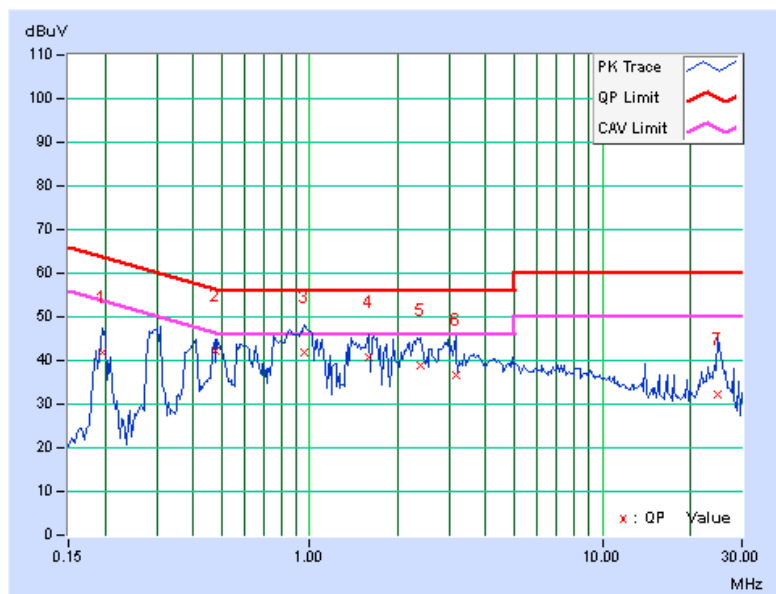


<b>CHANNEL</b>	CH 128 + CH 6	<b>6dB BANDWIDTH</b>	9kHz
<b>PHASE</b>	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19687	0.12	41.78	29.02	41.90	29.14	63.74	53.74	-21.84	-24.60
2	0.47422	0.14	42.22	25.85	42.36	25.99	56.44	46.44	-14.08	-20.45
3	0.95859	0.17	41.58	22.42	41.75	22.59	56.00	46.00	-14.25	-23.41
4	1.58984	0.19	40.72	25.54	40.91	25.73	56.00	46.00	-15.09	-20.27
5	2.40234	0.23	38.80	25.02	39.03	25.25	56.00	46.00	-16.97	-20.75
6	3.14844	0.27	36.27	24.37	36.54	24.64	56.00	46.00	-19.46	-21.36
7	24.64063	0.91	31.14	22.79	32.05	23.70	60.00	50.00	-27.95	-26.30

**REMARKS:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.





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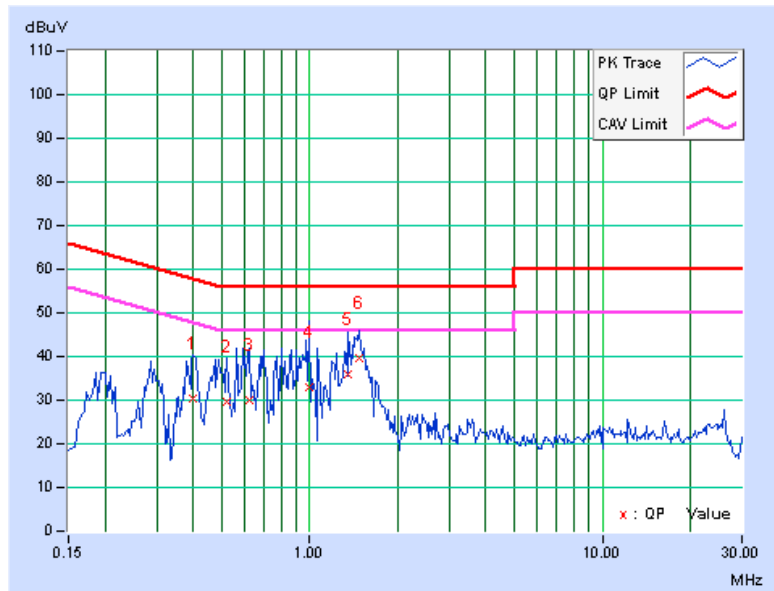
**WCDMA 850+802.11n(20MHz)**

<b>CHANNEL</b>	CH 4132 + CH 6	<b>6dB BANDWIDTH</b>	9kHz
<b>PHASE</b>	Line 1		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.40000	0.15	30.35	16.84	30.50	16.99	57.85	47.85	-27.35	-30.86
2	0.52109	0.16	29.52	14.88	29.68	15.04	56.00	46.00	-26.32	-30.96
3	0.62266	0.16	29.70	14.66	29.86	14.82	56.00	46.00	-26.14	-31.18
4	0.99766	0.18	32.86	13.78	33.04	13.96	56.00	46.00	-22.96	-32.04
5	1.35938	0.19	35.67	20.55	35.86	20.74	56.00	46.00	-20.14	-25.26
6	1.46875	0.19	39.43	24.84	39.62	25.03	56.00	46.00	-16.38	-20.97

**REMARKS:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

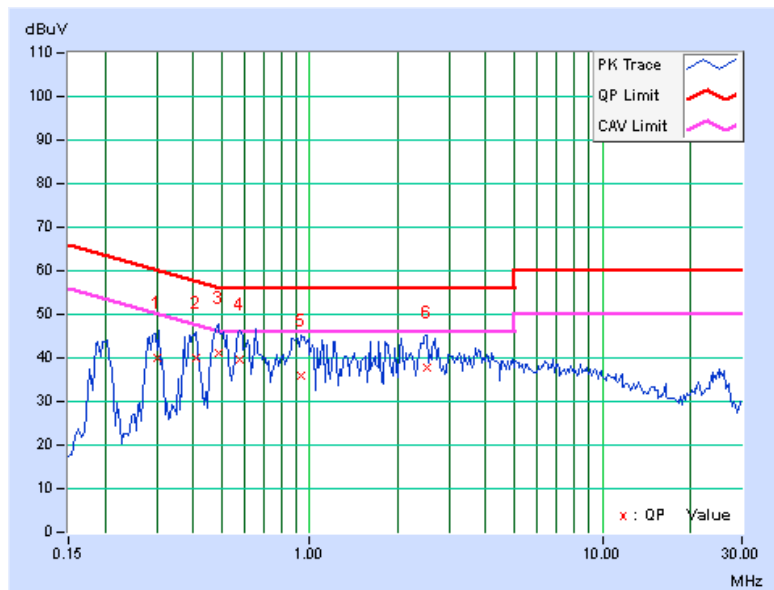


<b>CHANNEL</b>	CH 4132 + CH 6	<b>6dB BANDWIDTH</b>	9kHz
<b>PHASE</b>	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.30193	0.13	39.94	24.05	40.07	24.18	60.19	50.19	-20.12	-26.01
2	0.41172	0.14	39.90	22.24	40.04	22.38	57.61	47.61	-17.57	-25.23
3	0.48594	0.14	40.81	25.44	40.95	25.58	56.24	46.24	-15.28	-20.65
4	0.57969	0.15	39.42	24.67	39.57	24.82	56.00	46.00	-16.43	-21.18
5	0.93516	0.17	35.63	16.10	35.80	16.27	56.00	46.00	-20.20	-29.73
6	2.51172	0.24	37.68	23.26	37.92	23.50	56.00	46.00	-18.08	-22.50

**REMARKS:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



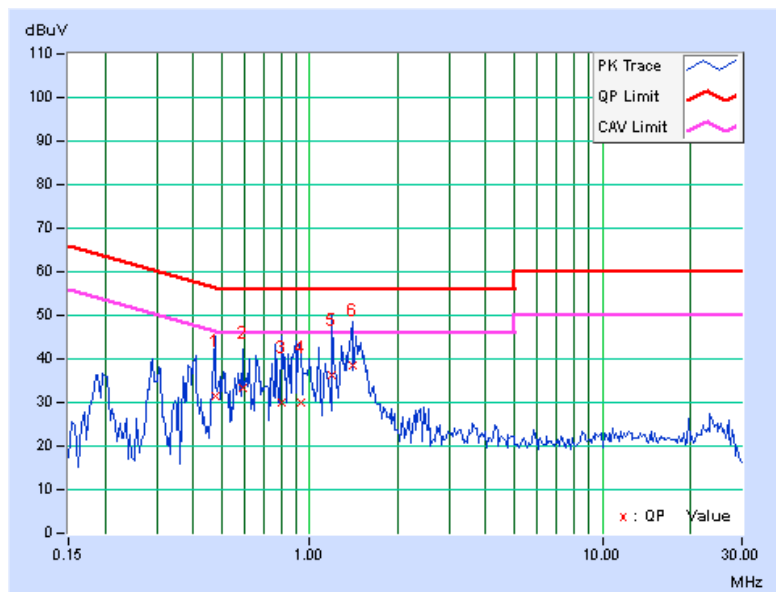
**GPRS 1900+802.11n(20MHz)**

<b>CHANNEL</b>	CH 810 + CH 6	<b>6dB BANDWIDTH</b>	9kHz
<b>PHASE</b>	Line 1		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.47422	0.15	31.40	17.66	31.55	17.81	56.44	46.44	-24.89	-28.63
2	0.59141	0.16	33.16	18.24	33.32	18.40	56.00	46.00	-22.68	-27.60
3	0.80234	0.17	29.95	11.23	30.12	11.40	56.00	46.00	-25.88	-34.60
4	0.93125	0.18	29.96	11.04	30.14	11.22	56.00	46.00	-25.86	-34.78
5	1.18750	0.18	36.23	15.92	36.41	16.10	56.00	46.00	-19.59	-29.90
6	1.39844	0.19	38.32	23.21	38.51	23.40	56.00	46.00	-17.49	-22.60

**REMARKS:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.





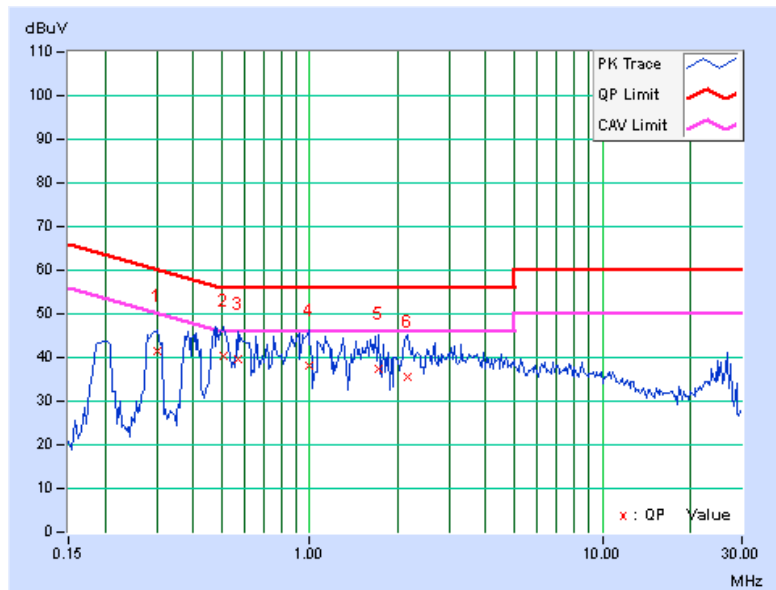
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<b>CHANNEL</b>	CH 810 + CH 6	<b>6dB BANDWIDTH</b>	9kHz
<b>PHASE</b>	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.30234	0.13	41.43	25.49	41.56	25.62	60.18
2	0.50938	0.15	40.14	24.96	40.29	25.11	56.00	46.00	-15.71	-20.89
3	0.56797	0.15	39.54	24.53	39.69	24.68	56.00	46.00	-16.31	-21.32
4	0.99375	0.17	37.96	19.11	38.13	19.28	56.00	46.00	-17.87	-26.72
5	1.72266	0.20	37.05	21.49	37.25	21.69	56.00	46.00	-18.75	-24.31
6	2.16016	0.22	35.43	21.06	35.65	21.28	56.00	46.00	-20.35	-24.72

**REMARKS:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.





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## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



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## 6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

The address and road map of all our labs can be found in our web site also.





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## **7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No modifications were made to the EUT by the lab during the test.

**---END---**