for

47 CFR Part 15 Subpart C

- Equipment : W11 GPRS with WLAN PCMCIA Card
- Model No. : 56W11
- FCC ID : JAP56W11
- Filing Type : Certification
- Applicant : **BENQ Corporation.** No. 157, Shan-Ying Road, Gueishan Taoyuan 333, Taiwan, R.O.C.
- The test result refers exclusively to the test presented test model / sample.
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- Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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History of this test report

Original Report Issue Date: Mar. 15, 2004

No additional attachment.

Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

Certificate No. : F422302-01

CERTIFICATE OF COMPLIANCE

for

47 CFR Part 15 Subpart C

Equipment	: W11 GPRS with WLAN PCMCIA Card
Model No.	: 56W11
FCC ID	: JVP56W11
Filing Type	: Certification
Applicant	 BENQ Corporation. No. 157, Shan-Ying Road, Gueishan Taoyuan 333, Taiwan, R.O.C.

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 2001** and the equipment under test was *passed* all test items required in FCC Part 15 subpart C, relative to the equipment under test. Testing was carried out on Feb. 24, 2004 at **SPORTON International Inc.** LAB.

aniel La 4/1/2004

Daniel Lee Manager

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

SPORTON International Inc.
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 FCC ID
 : JAP56W11

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 : Mar. 15, 2004

1. General Description of Equipment under Test

1.1. Applicant

BENQ Corporation No. 157, Shan-Ying Road, Gueishan Taoyuan 333, Taiwan, R.O.C.

1.2 Manufacturer

Same as 1.1

1.3 Basic Description of Equipment under Test

Equipment	: W11 GPRS with WLAN PC Card
Trade Name	: BenQ
Model No.	: 56W11
Power Supply Type	: From system
AC Power Cord	: AC 100~240V, Non-shielded, Wall-Mount
DC Power Cable	: DC 12V, Non-shielded, 1.8 meter, 3 pin

	Product Feature & Specification					
1.	Host/Radio Interface	PCMCIA Card Type II				
2.	Type of Modulation	DBPSK/DQPSK/CCK				
2	Number of Channels	USA/Canada: 11	V	European: 13	V	
3.	Number of Channels	Japan: 13,14.	Х	Other:		
4.	Frequency Band	2.412GHz ~ 2.4720	GHz			
5.	Carrier Frequency of each channel	2412MHz+(n-1)*5MHz, n=1~13				
6.	Bandwidth of each channel	5MHz				
7.	Maximum Output Power to Antenna	18.3dBm				
8.	IF & L.O. frequency	Zero IF Architecture				
9.	Antenna Type / Gain	PCB Antenna / 0dBi				
10.	Function Type	Transmitter		Transceiver	V	
11.	Power Rating (DC/AC , Voltage)	DC 5V±0.5V				
12.	Basic function of product	Wireless data communication				
13.	Temperature Range (Operating)	0°C ~ 55°C				
14.	Humidity	15% ~ 85%RH				

1.4 Feature of Equipment under Test

2 Test Configuration of Equipment under Test

2.1 Test Manner

- a. The EUT has been associated with peripherals pursuant to ANSI C63.4-2001 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- b. The complete test system included LOGITECH USB Mouse, EPSON Printer, ACEEX Modem, DELL Notebook, Gateway USB Keyboard and EUT as local workstations for EMI test.
- c. For WLAN emission The EUT can operate on eleven channels from 2412.0MHz to 2462.0MHz. (as listed in section <u>1.4</u>).
- d. The following test modes were pretested for conduction and conducted test:
 - Mode 1: Tx CH01 (2412MHz)
 - Mode 2: Tx CH06 (2437MHz)
 - Mode 3: Tx CH11 (2462MHz)
- e. The following test modes were pretested for radiation test:
 - Mode 1: GSM 850 CH189 Link / WLAN CH01 Tx
 - Mode 2: GSM 1900 CH661Link / WLAN CH01 Tx
 - Mode 3: GSM 850 CH189 Link / WLAN CH06 Tx
 - Mode 4: GSM 1900 CH661Link / WLAN CH06 Tx
 - Mode 5: GSM 850 CH189 Link / WLAN CH11 Tx
 - Mode 6: GSM 1900 CH661Link / WLAN CH11Tx
- f. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 25000 MHz.

2.2 Description of Test System

Support Unit 1. – Notebook (DE	L)-local workstation and remote workstation
--------------------------------	---

FCC ID	: E2K24CLNS
Model No.	: PP05L
Power Supply Type	: From system
Power Cord	: Shielded, 0.9m
Serial No.	: SP0037
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

Support Unit 2. –(USB) Mouse (LOGITECH) –local workstation
FCC ID	: N/A
Model No.	: M-BE58
Serial No.	: SP0052
Data Cable	: Shielded, 1.7m
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.
Support Unit 3. – Printer (EPSO	N) –local workstation
FCC ID	: N/A
Model No.	: STYLUS COLOR 680
Serial No.	: SP0041
Power Cord	: Non-Shielded
Data Cable	: Shielded, 1.35m
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.
Support Unit 4. – Modem (ACEE	EX) –local workstation
FCC ID	: IFAXDM141
Model No.	: DM141
Power Supply Type	: Linear
Power Cord	: Shielded, 1.15m
Serial No.	: SP0048
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.
Support Unit 5. – USB keyboard	(Gateway) –local workstation
ECC ID	· N/A

FCC ID	: N/A
Model No.	: SK-9900V
Serial No.	: SP0049
Data Cable	: Shielded, 1.7m
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.



2.3 Connection Diagram of Test System

- 1. The I/O cable is connected from Notebook to the support unit 2
- 2. The I/O cable is connected from Notebook to the support unit 3
- 3. The I/O cable is connected from Notebook to the support unit 4
- 4. The I/O cable is connected from Notebook to the support unit 5

3 Operation of Equipment under Test

An executive program, EMCTEST.EXE on WIN2000 continuously generating a complete line of "H" pattern, was used as the test software.

The program was executed as follows:

- a. Turn on the power of all equipment.
- b. The PC reads the test program from the hard disk drive and runs it.
- c. The PC sends "H" messages to the monitor, and the monitor displays "H" patterns on the screen.
- d. The PC sends "H" messages to the printer, then the printer prints them on the paper.
- e. The PC sends "H" messages to the internal hard disk , and the hard disk reads and writes the message.
- f. Repeat the steps from c to e.

At the same time, the following program was executed:

"RF Hard ware Test" sends continuous Tx.

4 General Information of Test

Test Site Location	:	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
		Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
		TEL : 886-3-327-3456
		FAX : 886-3-318-0055
Test Site No	:	CO01-HY, 03CH03-HY

4.1 Test Voltage

110V/ 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2001

4.3 Test in Compliance with

47 CFR Part 15 Subpart C

4.4 Frequency Range Investigated

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation: from 30 MHz to 25000 MHz

4.5 Test Distance

The test distance of radiated emission from antenna to EUT is 3 m.

5 Report of Measurements and Examinations

5.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.207	Conducted Emission	Pass
15.247(a)(2)	6dB Bandwidth	Pass
15.247(b)	Maximum Peak Output Power	Pass
15.209(a)	Radiated Emission	Pass
15.247 (c)	100kHz Bandwidth of Frequency Band Edges	Pass
15.247(d)	Power Spectral Density	Pass
15.203	Antenna Requirement	Pass
15.247(b)(4), 1.1307	RF Exposure	Pass

5.2 6dB Bandwidth

5.2.1 Measuring Instruments :

As described in chapter 7 of this test report.

5.2.2 Test Procedure :

- 1. The transmitter output was connected to the spectrum analyzer through an attenuator.
- 2. Set RBW of spectrum analyzer to 100kHz and VBW to 100kHz.
- 3. The 6 dB bandwidth is defined as the frequency range where the power is higher than the peak power minus 6dB.

5.2.3 Test Setup Layout :



5.2.4 Test Result :

- Mode 1~3 : WLAN Tx mode
- Temperature : 23 °C
- Relative Humidity : 51%
- Antenna Gain: 0 dBi

Channel	Frequency	6dB Emission bandwidth	Limits	Plot
	(MHz)	(MHz)	(MHz)	Ref. No.
01	2412	8.5	0.5	B1
06	2437	8.5	0.5	B2
11	2462	8.5	0.5	B3

5.3 Power Spectral Density

5.3.1 Measuring Instruments :

As described in chapter 7 of this test report.

5.3.2 Test Procedure :

- 1. The transmitter output was connected to spectrum analyzer through an attenuator.
- 2. The spectrum analyzer's resolution bandwidth was set at 3kHz RBW and 30kHz VBW as that of the fundamental frequency. Set the sweep time=span/3kHz.
- 3. The power spectral density was measured and recorded.
- 4. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

5.3.3 Test Setup Layout :



5.3.4 Test Result :

- Mode 1~3 : WLAN Tx mode
- Temperature : 23 °C
- Relative Humidity : 51%
- Antenna Gain: 0 dBi

Channel	Frequency	Power Spectral Density	Limits	Plot
	(MHz)	(dBm)	(dBm)	Ref. No.
01	2412	-13.53	8	B4
06	2437	-13.61	8	B5
11	2462	-13.52	8	B6

5.4 Band Edges Measurement

5.4.1 Measuring Instruments :

As described in chapter 7 of this test report.

5.4.2 Test Procedure :

- 1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
- Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100 kHz bandwidth from band edge.
- 3. The band edges was measured and recorded.

5.4.3 Test Result :

- Mode 1 ~ 3 : WLAN 802.11b
- Temperature : 23 °C
- Relative Humidity : 51 %
- Antenna Gain: 0 dBi
- Test Result in lower band (Channel 1)
 PASS
- Test Result in higher band (Channel 11) : PASS

5.4.4 Note on Band Edge Emission

The band edge emission plot on appendix B page B7 shows 53.29 dB delta between carrier maximum power and local maximum emission in the restricted band (2.390GHz).

The band edge emission plot on appendix B page B8 shows 54.26 dB delta between carrier maximum power and local maximum emission in the restricted band (2.4835GHz).

Test Mode: GSM 850

Channel	Polarity	The emission of band edge power strength	The maximum field strength in restrict Limit band		Margin	Remark	Result
		(dB μ V/m)	(dB μ V/m)	(dB μ V/m)	(dB)		
	V	103.59	50.3	74	-23.7	Peak	Pass
01	V	96.75	43.46	54	-10.54	Average	Pass
UT	Н	101.94	48.65	74	-25.35	Peak	Pass
	Н	94.15	40.86	54	-13.14	Average	Pass
	V	105.62	51.36	74	-22.64	Peak	Pass
11	V	97.78	43.52	54	-10.48	Average	Pass
	Н	104.81	50.55	74	-23.45	Peak	Pass
	Н	99.39	45.13	54	-8.87	Average	Pass

Test Mode: GSM 1900

Channel	Polarity	The emission of band edge power strength	The maximum field strength in restrict band	Limit	Margin	Remark	Result
		(dB μ V/m)	(dB μ V/m)	(dB μ V/m)	(dB)		
	V	104.11	50.82	74	-23.18	Peak	Pass
01	V	93.41	40.12	54	-13.88	Average	Pass
01	Н	104.56	51.27	74	-22.73	Peak	Pass
	Н	92.08	38.79	54	-15.21	Average	Pass
	V	104.20	49.94	74	-24.06	Peak	Pass
11	V	95.40	41.14	54	-12.86	Average	Pass
	Н	99.08	44.82	74	-29.18	Peak	Pass
	Н	89.85	35.59	54	-18.41	Average	Pass

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5.5 Peak Output Power

5.5.1 Measuring Instruments :

As described in chapter 7 of this test report.

5.5.2 Test Procedure :

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. The power is equal to the reading level on power meter plus cable loss at the EUT antenna terminal.

5.5.3 Test Setup Layout :



5.5.4 Test Result :

- Mode 1~3 : WLAN 802.11b
- Temperature : 23 °C
- Relative Humidity : 51%
- Antenna Gain: 0 dBi

Channel	Frequency	Measured Output Power	Limits	
	(MHz)	(dBm)	(Watt/dBm)	
01	2412	18.30	1W/30 dBm	
06	2437	17.80	1W/30 dBm	
11	2462	17.62	1W/30 dBm	

6. Test of Conducted Emission

Conducted emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in ANSI C63.4-2001 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

6.1. Major Measuring Instruments :

•	Test Receiver	(R&S ESCS 30)
	Attenuation	10 dB
	Start Frequency	0.15 MHz
	Stop Frequency	30 MHz
	IF Bandwidth	9 kHz

6.2. Test Procedures :

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power port of the line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

6.3. Test Result of Conducted Emission :

6.3.1 Frequency Range of Test : 150kHz to 30 MHz

- Test Mode : Mode 1
- Temperature : 22.5°C
- Relative Humidity : 50 %

The test that passed at minimum margin was marked by the frame in the following table.



Site Condition EUT Power Model Memo	: CO01-HY : CNS/VC : Tri Band : AC 110V : 56W11 : 802 11b	Y CI/CISPR GSM/WL 7/60Hz Tx CH01	-B 2003 20 AN (802-11 2412MHz	01/008 LI IB) PCMC	NE IA Card			
1900/201	1993/1993	0201000000	Over	Limit	Read	Probe	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
<u>12</u>	MHz	dBuV	dB	dBuV	dBuV	dB	dB	5 <u></u>
1	0.162	45.24	-20.14	65.38	45.02	0.10	0.12	QP
2	0.162	32.11	-23.27	55.38	31.89	0.10	0.12	Average
3	0.164	44.95	-20.32	65.27	44.73	0.10	0.12	QP
4	0.164	30.88	-24.39	55.27	30.66	0.10	0.12	Average
5	0.213	26.96	-26.13	53.09	26.73	0.10	0.13	Average
6	0.213	40.75	-22.34	63.09	40.52	0.10	0.13	QP
7	0.282	33.13	-27.63	60.76	32.94	0.10	0.09	QP
8	0.282	18.76	-32.00	50.76	18.57	0.10	0.09	Average
9	0.334	23.27	-36.09	59.36	23.10	0.10	0.07	QP
10	0.334	9.82	-39.54	49.36	9.65	0.10	0.07	Average
11	8.906	34.52	-25.48	60.00	34.20	0.19	0.13	QP
12	8.906	28.52	-21.48	50.00	28.20	0.19	0.13	Average

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Site Condition EUT Power Model Memo	: CO01-H' : CNS/VO : Tri Band : AC 110V : 56W11 : 802.11b	: COUI-HY : CNS/VCCI/CISPR-B 2003 2001/008 NEUTRAL : Tri Band GSM/WLAN(802-11B) PCMCIA Card : AC 110V/60Hz : 56 W11 : 802.11b Tx CH01 2412MHz									
			Over	Limit	Read	Probe	Cable				
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark			
<u></u>	WU			- ap., u	- ap.,y			<u>.</u>			

	MHZ	шbuv	œ	шuv	шuv	œ	œ	
1	0.150	51.32	-14.68	66.00	51.11	0.10	0.11	OP
2	0.150	35.12	-20.88	56.00	34.91	0.10	0.11	Average
3	0.159	33.58	-21.94	55.52	33.36	0.10	0.12	Average
4	0.159	49.96	-15.56	65.52	49.74	0.10	0.12	QP
5	0.187	41.75	-22.42	64.17	41.52	0.10	0.13	QP
6	0.187	25.12	-29.05	54.17	24.89	0.10	0.13	Average
7	0.223	41.03	-21.67	62.70	40.81	0.10	0.12	QP
8	0.223	27.94	-24.76	52.70	27.72	0.10	0.12	Average
9	0.270	13.86	-37.26	51.12	13.66	0.10	0.10	Average
10	0.270	29.42	-31.70	61.12	29.22	0.10	0.10	QP
11	8.581	28.64	-21.36	50.00	28.31	0.20	0.13	Average
12	8.581	34.75	-25.25	60.00	34.42	0.20	0.13	QP

Test Engineer : Jay

6.3.2 Frequency Range of Test : 150kHz to 30 MHz

- Test Mode : Mode 2
- Temperature : 22.5°C
- Relative Humidity : 50 %
- The test that passed at minimum margin was marked by the frame in the following table.



Site Condition EUT Power Model Memo	: CO01-HY : CNS/VCCI/CISPR-B 2003 2001/008 LINE : Tri Band GSM/WLAN(802-11B) PCMCIA Card : AC 110V/60Hz : 56W11 : 56W11 : 802 11b Tx CH06 2437MHz										
			Over	Limit	Read	Probe	Cable				
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark			
<u>12</u>	MHz	dBuV	dB	dBuV	dBuV	dB	dB	5			
1	0.152	48.25	-17.64	65.89	48.04	0.10	0.11	QP			
2	0.152	32.71	-23.18	55.89	32.50	0.10	0.11	Average			
3	0.202	40.52	-23.01	63.53	40.28	0.10	0.14	QP			
4	0.202	25.48	-28.05	53.53	25.24	0.10	0.14	Average			
5	0.227	42.41	-20.15	62.56	42.19	0.10	0.12	QP			
6	0.227	30.88	-21.68	52.56	30.66	0.10	0.12	Average			
7	0.289	31.99	-28.56	60.55	31.80	0.10	0.09	QP			
8	0.289	20.52	-30.03	50.55	20.33	0.10	0.09	Average			
9	0.367	32.24	-26.33	58.57	32.09	0.10	0.05	QP			
10	0.367	26.35	-22.22	48.57	26.20	0.10	0.05	Average			
11	8.640	33.85	-26.15	60.00	33.54	0.18	0.13	QP			
12	8.640	28.42	-21.58	50.00	28.11	0.18	0.13	Average			



Site Condition EUT Power Model Memo	: CO01-H : CNS/VC : Tri Band : AC 110V : 56W11 : 802.11b	: COUL-HY : CNS/VCCI/CISPR-B 2003 2001/008 NEUTRAL : Tri Band GSM/WLAN (802-11B) PCMCIA Card : AC 110V/60Hz : 56W11 : 802.11b Tx CH06 2437MHz										
			Over	Limit	Read	Probe	Cable					
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark				
<u>-</u> 2	MHz	dBuV	dB	dBuV	dBu∛	dB	dB	5				
1	0.151	50.23	-15.71	65.94	50.02	0.10	0.11	QP				
2	0.151	29.13	-26.81	55.94	28.92	0.10	0.11	Average				
3	0.151	44.97	-20.97	65.94	44.76	0.10	0.11	QP				
4	0.151	30.12	-25.82	55.94	29.91	0.10	0.11	Average				
5	0.172	42.31	-22.55	64.86	42.08	0.10	0.13	QP				
6	0.172	27.30	-27.56	54.86	27.07	0.10	0.13	Average				
7	0.200	41.85	-21.76	63.61	41.61	0.10	0.14	QP				

8	0.200	24.50 -29.11	53.61	24.26	0.10	0.14 Average
9	0.264	24.15 -37.15	61.30	23.95	0.10	0.10 QP
10	0.264	13.75 -37.55	51.30	13.55	0.10	0.10 Average
11	0.370	33.87 -24.64	58.51	33.72	0.10	0.05 QP
12	0.370	28.26 -20.25	48.51	28.11	0.10	0.05 Average

Test Engineer : Jay

6.3.3 Frequency Range of Test : 150kHz to 30 MHz

- Test Mode : Mode 3
- Temperature : 22.5°C
- Relative Humidity : 50 %





Site Condition EUT Power Model Memo	: CO01-H : CNS/VC : Tri Band : AC 110V : 56W11 : 802.11b	Y CI/CISPR GSM/WI 7/60Hz Tx CH11	-B 2003 20 AN (802-1) 2462MHz	01/008 LI IB) PCMC	NE IA Card			
			Over	Limit	Read	Probe	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
1 <u>21</u>	MHz	dBuV	dB	dBuV	dBuV	dB	dB	5
1	0.159	46.86	-18.66	65.52	46.64	0.10	0.12	QP
2	0.159	35.04	-20.48	55.52	34.82	0.10	0.12	Average
3	0.169	43.05	-21.96	65.01	42.83	0.10	0.12	QP
4	0.169	28.26	-26.75	55.01	28.04	0.10	0.12	Average
5	0.194	42.78	-21.08	63.86	42.54	0.10	0.14	QP
6	0.194	25.42	-28.44	53.86	25.18	0.10	0.14	Average
7	0.209	41.47	-21.77	63.24	41.24	0.10	0.13	QP
8	0.209	28.25	-24.99	53.24	28.02	0.10	0.13	Average
9	0.232	42.05	-20.33	62.38	41.83	0.10	0.12	QP
10	0.232	30.20	-22.18	52.38	29.98	0.10	0.12	Average
11	0.292	32.03	-28.44	60.47	31.84	0.10	0.09	QP
12	0.292	23.53	-26.94	50.47	23.34	0.10	0.09	Average



Site Condition EUT Power Model Memo	: CO01-HY : CNS/VC0 : Tri Band : AC 110V : 56W11 : 802.11b	Y CI/CISPR- GSM/WL '/60Hz Tx CH11 :	B 2003 20 AN (802-1) 2462MHz	01/008 NH IB) PCMC	EUTRAL IA Card			
			Over	Limit	Read	Probe	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark

	MHZ	dBuV	dВ	dBuv	dBuV	dВ	dB	
1	0.150	49.19	-16.81	66.00	48.98	0.10	0.11	QP
2	0.150	32.71	-23.29	56.00	32.50	0.10	0.11	Average
3	0.180	42.26	-22.23	64.49	42.03	0.10	0.13	QP
4	0.180	25.92	-28.57	54.49	25.69	0.10	0.13	Average
5	0.197	41.30	-22.44	63.74	41.06	0.10	0.14	QP
6	0.197	25.61	-28.13	53.74	25.37	0.10	0.14	Average
7	0.223	42.39	-20.32	62.71	42.17	0.10	0.12	QP
8	0.223	31.01	-21.70	52.71	30.79	0.10	0.12	Average
9	0.252	28.72	-32.97	61.69	28.51	0.10	0.11	QP
10	0.252	17.36	-34.33	51.69	17.15	0.10	0.11	Average
11	0.369	33.85	-24.67	58.52	33.70	0.10	0.05	QP
12	0.369	28.22	-20.30	48.52	28.07	0.10	0.05	Average



Jay

6.4. Photographs of Conducted Emission Test Configuration

• The photographs show the configuration that generates the maximum emission.



FRONT VIEW

REAR VIEW

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SIDE VIEW

7. Test of Radiated Emission

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defined in ANSI C63.4-2001. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions

7.1. Major Measuring Instruments

Amplifier	(MITEQ AFS44)
RF Gain	40 dB
Signal Input	100 MHz to 26.5 GHz
Amplifier	(HP8447D)
RF Gain	30 dB
Signal Input	100 MHz to 1.3 GHz
 Spectrum analyzer 	(R&S FSP40)
Attenuation	10 dB
Start Frequency	1 GHz
Stop Frequency	25 GHz
Resolution Bandwidth	1 MHz
Video Bandwidth	1 MHz
Signal Input	9 kHz to 40 GHz
 Spectrum analyzer 	(R&S FSP40)
Attenuation	10 dB
Start Frequency	30MHz
Stop Frequency	1 GHz
Resolution Bandwidth	120 KHz
Video Bandwidth	300KHz
Signal Input	9 kHz to 40 GHz

7.2. Test Procedures

- 1. The EUT was placed on a rotatable table top 0.8 meter above ground.
- 2. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest radiation.
- 4. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- 5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- 6. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- 7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.
- 8. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

7.3. Typical Test Setup Layout of Radiated Emission



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7.4. Test Result of Radiated Emission

7.4.1 Test Mode: Mode 1

- Test Distance : 3 m
- Temperature : 23°C
- Relative Humidity :51 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- · Corrected Reading : Probe Factor + Cable Loss + Read Level Preamp Factor = Level

The test that passed at minimum margin was marked by the frame in the following table.

Site :03CH03-HY Condition : FCC CLASS-B 3m HORN-ANT-6741 VERTICAL EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card Power : AC 110V / 60Hz Model : 56W11 Memo : GSM850 CH189; TX CH01 2412MHz Over Limit Read Probe Cable Preamp Limit Line Level Factor Loss Factor Remark Ant Table Freq Level Limit Pos Pos dB dB MHz dBuV/m dB dBuV/m dBuV dB CIL deg 1 1674.000 57.25 -16.75 74.00 56.68 26.08 1.55 27.06 Peak 100 176 2 1674.000 45.19 -8.81 54.00 44.62 26.08 1.55 27.06 Average 100 176

Site	: 03CH	103-HY									
Conditi	on : FCC	CLASS	-B 3m H	ORN-A	NT-674	1 VERTI	CAL				
EUT	: Tri B	and GSI	M/WLAI	N (802.1	1b) PCN	ICIA Ca	ırd				
Power	: AC 1	10V / 60	DHz								
Model	: 56W	11									
Memo	: GSM	850 CH	189 ; TX	CH01 2	2412MH	z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
37	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	2390.000	38.88	-15.12	54.00	36.12	28.20	1.72	27.16	Average	101	351
2	2390.000	48.55	-25.45	74.00	45.79	28.20	1.72	27.16	Peak	101	351
зх	2411.000	96.75	42.75	54.00	93.93	28.24	1.74	27.16	Average	105	337
4 X	2411.000	103.59	29.59	74.00	100.77	28.24	1.74	27.16	Peak	105	337
5	2483.500	38.53	-15.47	54.00	35.49	28.39	1.82	27.17	Average	103	348
6	2483.500	47.83	-26.17	74.00	44.79	28.39	1.82	27.17	Peak	103	348
7	2510.000	43.11	-10.89	54.00	39.96	28.47	1.86	27.18	Average	100	341
8	2510.000	52.23	-21.77	74.00	49.08	28.47	1.86	27.18	Peak	100	341

Site	:03CH	103-HY										
Conditio	n :FCC	CLASS	-B 3m H	IORN-A	NT-674	1 HORIZ	ZONTA	L				
EUT	: Tri B	and GSN	M/WLA!	N (802.1)	1b) PCN	ACIA Ca	ird					
Power	: AC 1	10V / 60	JHz	189.903-0166-00								
Model	: 56W	11										
Memo	: GSM	850 CH	189 ; TX	CH01 2	412MH:	z						
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table	
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos	
-	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	21	cm	deg	
1 1	.674.000	54.79	-19.21	74.00	54.22	26.08	1.55	27.06	Peak	100	175	
2 1	674.000	45.25	-8.75	54.00	44.68	26.08	1.55	27.06	Average	100	175	

Site	: 03CH	103-HY									
Condit	ion : FCC	CLASS	-B 3m H	IORN-A	NT-674	1 HORIZ	CONTA	L			
EUT	: Tri B	and GSI	M/WLA	N (802.1)	b) PCN	ICIA Ca	rd				
Power	: AC 1	10V / 6	OHz	199 2 - 1997 - 1							
Model	: 56W	11									
Memo	: GSM	1850 CH	189 ; TX	CH01 2	412MH:	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
87	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	2390.000	47.91	-26.09	74.00	45.15	28.20	1.72	27.16	Peak	101	343
2	2390.000	38.62	-15.38	54.00	35.86	28.20	1.72	27.16	Average	101	343
зх	2411.000	101.94	27.94	74.00	99.12	28.24	1.74	27.16	Peak	106	326
4 X	2411.000	94.15	40.15	54.00	91.33	28.24	1.74	27.16	Average	106	326
5	2483.500	48.18	-25.82	74.00	45.14	28.39	1.82	27.17	Peak	103	337
6	2483.500	39.49	-14.51	54.00	36.45	28.39	1.82	27.17	Average	103	337
7	2510.000	41.33	-12.67	54.00	38.18	28.47	1.86	27.18	Average	100	355
8	2510.000	51.38	-22.62	74.00	48.23	28.47	1.86	27.18	Peak	100	355
8	2510.000	51.38	-22.62	74.00	48.23	28.47	1.86	27.18	Peak	100	

For 2.510GHz ~ 25GHz

Frequency from 2510MHz to 25000MHz, the emission emitted by the EUT is too low to be measured

Frequency		Antenna	Cable	Reading	Limits	Emission	Margin	Detect
	Polarity	Factor	Loss					
(MHz)		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	Mode
2411.000	V	27.16	1.74	74.69	-	103.59	-	Peak
2411.000	V	27.16	1.74	67.85	-	96.75	-	AV
2411.000	Н	28.24	1.74	71.96	-	101.94	-	Peak
2411.000	Н	28.24	1.74	64.17	-	94.15	-	AV
4822.000	V/H	-	-	-	-	-	-	AV/Peak
7236.000	V/H	-	-	-	-	-	-	AV/Peak
9648.000	V/H	-	-	-	-	-	-	AV/Peak
12060.000	V/H	-	-	-	-	-	-	AV/Peak
14472.000	V/H	-	-	-	-	-	-	AV/Peak
16884.000	V/H	-	-	-	-	-	-	AV/Peak
19296.000	V/H	-	-	-	-	-	-	AV/Peak
21708.000	V/H	-	-	-	-	-	-	AV/Peak
24120.000	V/H	-	-	-	-	-	-	AV/Peak

■ Field strength of fundamental and harmonics

Remark:

- 1. The emission emitted by the EUT is too low to be measured except the emission listed above,
- 2. Reading = Reading on SA-Preamp Factor

Jag Test Engineer :

Jay

7.4.2 Test Mode: Mode 2

- Test Distance : 3 m
- Temperature : 23°C
- Relative Humidity :51 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- · Corrected Reading : Probe Factor + Cable Loss + Read Level Preamp Factor = Level

The test that passed at minimum margin was marked by the frame in the following table.

Site : site Condition : FCC CLASS-B 3m HORN-ANT-6741 VERTICAL : Tri Band GSM/WLAN (802.11b) PCMCIA Card EUT : AC 110V / 60Hz Power :56W11 Model Memo : GSM1900 CH661 ;TX CH01 2412MHz Over Limit Read Probe Cable Preamp Ant Table Freq Level Limit Line Level Factor Loss Factor Remark Pos Pos MHz dBuV/m dB dBuV/m dBuV dB dB dB Cm dea 1 2390.000 58.10 -15.90 74.00 69.32 28.20 1.72 41.14 Peak 100 234 2 2390.000 44.59 -9.41 54.00 55.81 28.20 3 X 2412.000 93.41 39.41 54.00 104.58 28.24 1.72 41.14 Average 100 234 1.74 41.15 Average 107 307 4 X 2412.000 104.11 30.11 74.00 115.28 28.24 1.74 41.15 Peak 107 307 2483.500 58.54 -15.46 74.00 69.53 28.39 1.82 41.20 Peak 2483.500 44.84 -9.16 54.00 55.83 28.39 1.82 41.20 Average 5 100 204 100 204 6

Site	: site										
Conditio	n : FCC	CLASS	-B 3m H	(ORN-A)	NT-674	1 VERTI	CAL				
EUT	: Tri B	and GSI	M/WLAI	N (802.1)	1b) PCN	ICIA Ca	ırd				
Power	: AC 1	10V/6	DHz								
Model	: 56W	11									
Memo	: GSM	1900 CH	1661 ;TΣ	CH01 2	412MH	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
53	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 :	3758.000	41.04	-12.96	54.00	48.67	31.96	1.82	41.41	Average	100	338
2 ;	3758.000	47.73	-26.27	74.00	55.36	31.96	1.82	41.41	Peak	100	338
з.	\$828.000	37.75	-16.25	54.00	44.56	33.08	2.49	42.38	Average	100	256
4 4	4828.000	46.54	-27.46	74.00	53.35	33.08	2.49	42.38	Peak	100	256

Site Con FUT	idition	: site : FCC : Tri F	CLAS:	S-B3mB	HORN-A	.NT-674	1 HORI	ZONTA	AL.			
Pov	ver	AC	110V / 6	50Hz	.14 (002.1	10) FCI	VICIA C	, ar u				
Mo	del	: 56W	11									
Met	mo	GSN	11900 C	H661 :T.	X CH01	2412MF	Iz					
0.000	0.0457	10020020	57.155.55.035	Over	Limit	Read	Probe	Cable	Pream	5	Ant	Table
		Freq	Level	L Limit	Line	Level	Factor	Loss	Facto	r Remark	Pos	: Pos
	5	MHz	dBuV/1	a dE	dBuV/m	dBuV	dE	dE	े वा		CB	deg
			F0 9/			60.00				4 10 20 10	100	
1	235		58.70	-15.30	74.00	69.92	28.20	1.72	41.1	4 Peak 4 January	100	96
2	233	0.000	44.90	-9.04 9.04	54.00	36.18	28.20	1.72	41.1	4 Average	100	. 96
3	X 241	2.000	104.50	> 30.56	74.00	115.73	28.24	1.79	41.1.	5 Peak 5 Jeeewaara	135	. 96
4	A 241	2.000	92.00	5 38.08 5 .0 00	54.00	103.25	28.29	1.74 1.02	41.1	5 Average	136) 96) 96
5	248	3.500 0. 500	45.00	-9.00	54.00	55.99	28.33	1.82	41.2	D Average	100	96
Site		eite										
				D 2 110	DNL AN	T 6741	UODIZ	ONTAL				
onai	uon :	FUUU	LASS-	B 3m HC	JRN-AN	1-0/41	HURIZ	UNIAL				
EUT		Tn Ba	nd GSM	/WLAN	(802.11) PCM(CIA Cat	rd.				
Powe	r:	AC 11	OV / 60.	Hz								
Mode	1 ::	56W11										
Memo))	GSM1	900 CH	661 ;TX	CH01 24	12MHz						
				Over	Limit	Read	Probe	Cable 1	Preamp		Ant	Table
		Freq	Level	Limit	Line	Level F	actor	Loss 1	Factor	Remark	Pos	Pos
		MHz d	BuV/m	dB o	BuV/m	dBuV	dB	dB	dB	e.	cm	deg
1	3758.	. 000	38.04	-15.96	54.00	45.67	31.96	1.82	41.41	Average	100	265
1 2	3758. 3758.	.000	38.04 47.73	-15.96 -26.27	54.00 74.00	45.67 55.36	31.96 31.96	1.82 1.82	41.41 41.41	Average Peak	100 100	265 265
1 2 3	3758 3758 4828	. 000 . 000 . 000	38.04 47.73 46.54	-15.96 -26.27 -27.46	54.00 74.00 74.00	45.67 55.36 53.35	31.96 31.96 33.08	1.82 1.82 2.49	41.41 41.41 42.38	Average Peak Peak	100 100 100	265 265 236

For 4.828GHz ~ 25GHz

Frequency from 4828MHz to 25000MHz, the emission emitted by the EUT is too low to be measured

Frequency		Antenna	Cable	Reading	Limits	Emission	Margin	Detect
	Polarity	Factor	Loss					
(MHz)		(dB/m)	(dB)	(dBuV)	(dBuV/m)(dBuV/m)	(dB)	Mode
2412.000	V	28.24	1.74	74.13	-	104.11	-	Peak
2412.000	V	28.24	1.74	63.43	-	93.41	-	AV
2412.000	Н	28.24	1.74	74.58	-	104.56	-	Peak
2412.000	Н	28.24	1.74	62.10	-	92.08	-	AV
3758.000	V	31.96	1.82	13.95	74.00	47.73	-26.27	Peak
3758.000	V	31.96	1.82	7.26	54.00	41.04	-12.96	AV
4828.000	V	33.08	2.49	10.97	74.00	46.54	-27.46	Peak
4828.000	V	33.08	2.49	2.18	54.00	37.75	-16.25	AV
3758.000	Н	31.96	41.41	-25.64	74.00	47.73	-26.27	Peak
3758.000	Н	31.96	41.41	-35.33	54.00	38.04	-15.96	AV
4828.000	Н	33.08	42.38	-28.92	74.00	46.54	-27.46	Peak
4828.000	Н	33.08	42.38	-37.79	54.00	37.67	-16.33	AV
7236.000	V/H	-	-	-	-	-	-	AV/Peak
9648.000	V/H	-	-	-	-	-	-	AV/Peak
12060.000	V/H	-	-	-	-	-	-	AV/Peak
14472.000	V/H	-	-	-	-	-	-	AV/Peak
16884.000	V/H	-	-	-	-	-	-	AV/Peak
19296.000	V/H	-	-	-	-	-	-	AV/Peak
21708.000	V/H	-	-	-	-	-	-	AV/Peak
24120.000	V/H	-	-	-	-	-	-	AV/Peak

■ Field strength of fundamental and harmonics

Remark:

1. The emission emitted by the EUT is too low to be measured except the emission listed above,

2. Reading = Reading on SA-Preamp Factor

Test Engineer :

Jay

7.4.3 Test Mode: Mode 3

- Test Distance : 3 m
- Temperature : 23°C
- Relative Humidity :51 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Probe Factor + Cable Loss + Read Level Preamp Factor = Level

The test that passed at minimum margin was marked by the frame in the following table.

Site	: 03CH	103-HY									
Conditio	on : FCC	CLASS	-B 3m H	IORN-A	NT-674	I VERTI	CAL				
EUT	: Tri B	and GSI	M/WLA	N (802.1)	lb) PCN	ACIA Ca	rd				
Power	: AC 1	10V / 6	OHz								
Model	: 56W	11									
Memo	: GSM	850 CH	189 ; TX	CH06 2	437MH.	z					
			0ver	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
55-	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	8	cm	deg
1	1674.000	57.45	-16.55	74.00	56.88	26.08	1.55	27.06	Peak	100	170
2 .	1674.000	47.12	-6.88	54.00	46.55	26.08	1.55	27.06	Average	100	170

Site	: 03CH	103-HY									
Conditi	on : FCC	CLASS	-B 3m H	IORN-A	NT-674	I VERTI	CAL				
EUT	: Tri B	and GSI	M/WLAI	N (802.1	1b) PCN	ICIA Ca	rd				
Power	AC 1	10V / 6	DHz		3 P.(. 1.) 199 P.(.						
Model	: 56W	11									
Memo	GSM	850 CH	189 ; TX	CH06 2	2437MH:	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
57	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	9	cm	deg
1	2390.000	48.31	-25.69	74.00	45.55	28.20	1.72	27.16	Peak	106	319
2	2390.000	38.61	-15.39	54.00	35.85	28.20	1.72	27.16	Average	106	319
зх	2436.000	104.52	30.52	74.00	101.64	28.29	1.76	27.17	Peak	102	332
4 X	2436.000	96.41	42.41	54.00	93.53	28.29	1.76	27.17	Average	102	332
5	2483.500	47.73	-26.27	74.00	44.69	28.39	1.82	27.17	Peak	101	342
6	2483.500	38.50	-15.50	54.00	35.46	28.39	1.82	27.17	Average	101	342
7	2510.000	53.64	-20.36	74.00	50.49	28.47	1.86	27.18	Peak	103	348
8	2510.000	43.19	-10.81	54.00	40.04	28.47	1.86	27.18	Average	103	348

Site Conditio EUT	: 03CH n : FCC : Tri B	H03-HY CLASS and GSI	-B 3m H M/WLAI	IORN-A. N (802.1	NT-674 1b) PCN	1 HORIZ ACIA Ca	CONTA 1rd	L			
Power	: AC 1	10V / 6	OHz	199 8 - 1997 - 2							
Model	: 56W	11									
Memo	: GSM	850 CH	189 ; TX	CH06 2	437MH.	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
50	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	·	cm	deg
1 1	.674.000	44.32	-9.68	54.00	43.75	26.08	1.55	27.06	Average	102	177
2 1	.674.000	53.57	-20.43	74.00	53.00	26.08	1.55	27.06	Peak	102	177

Site	: 03CH	403-HY									
Condit	ion : FCC	CLASS	-B 3m H	IORN-A	NT-674	1 HORIZ	CONTA	L			
EUT	: Tri B	and GSI	M/WLAI	N (802.1	1b) PCN	ICIA Ca	rd				
Power	: AC 1	10V / 6	OHz								
Model	: 56W	11									
Memo	: GSM	850 CH	189 ; TX	CH06 2	2437MH	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
37	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	2	cm	deg
1	2390.000	48.46	-25.54	74.00	45.70	28.20	1.72	27.16	Peak	106	323
2	2390.000	36.91	-17.09	54.00	34.15	28.20	1.72	27.16	Average	106	323
зх	2438.000	98.72	44.72	54.00	95.83	28.30	1.76	27.17	Average	102	330
4 X	2438.000	105.53	31.53	74.00	102.64	28.30	1.76	27.17	Peak	102	330
5	2483.500	48.69	-25.31	74.00	45.65	28.39	1.82	27.17	Peak	100	315
6	2483.500	38.14	-15.86	54.00	35.10	28.39	1.82	27.17	Average	100	315
7	2510.000	51.55	-22.45	74.00	48.40	28.47	1.86	27.18	Peak	102	324
8	2510.000	41.52	-12.48	54.00	38.37	28.47	1.86	27.18	Average	102	324

For 2.510GHz ~ 25GHz

Frequency from 2510MHz to 25000MHz, the emission emitted by the EUT is too low to be measured

Frequency		Antenna	Cable	Reading	Limits	Emission	Margin	Detect
	Polarity	Factor	Loss					
(MHz)		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	Mode
2436.000	V	28.29	1.76	74.47	-	104.52	-	Peak
2436.000	V	28.29	1.76	66.36	-	96.41	-	AV
2438.000	н	28.30	1.76	75.47	-	105.53	-	Peak
2438.000	Н	28.30	1.76	68.66	-	98.72	-	AV
4822.000	V/H	-	-	-	-	-	-	AV/Peak
7236.000	V/H	-	-	-	-	-	-	AV/Peak
9648.000	V/H	-	-	-	-	-	-	AV/Peak
12060.000	V/H	-	-	-	-	-	-	AV/Peak
14472.000	V/H	-	-	-	-	-	-	AV/Peak
16884.000	V/H	-	-	-	-	-	-	AV/Peak
19296.000	V/H	-	-	-	-	-	-	AV/Peak
21708.000	V/H	-	-	-	-	-	-	AV/Peak
24120.000	V/H	-	-	-	-	-	-	AV/Peak

■ Field strength of fundamental and harmonics

Remark:

- 1. The emission emitted by the EUT is too low to be measured except the emission listed above,
- 2. Reading = Reading on SA-Preamp Factor

Jay Test Engineer : ____

Jay

7.4.4 Test Mode: Mode 4

- Test Distance : 3 m
- Temperature : 23°C
- Relative Humidity :51 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Probe Factor + Cable Loss + Read Level Preamp Factor = Level

The test that passed at minimum margin was marked by the frame in the following table.

Site	: site										
Conditi	on : FCC	CLASS	-B 3m H	IORN-A	NT-674	1 VERTI	CAL				
EUT	: Tri B	and GSI	M/WLA	N (802.1	1b) PCN	ACIA Ca	rd				
Power	: AC 1	10V / 6	0Hz								
Model	: 56W	11									
Memo	: GSM	1900 CH	H661 ;T2	CH06	2437MH	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	2	Cm	deg
1	2390.000	57.75	-16.25	74.00	68.97	28.20	1.72	41.14	Peak	100	154
2	2390.000	44.81	-9.19	54.00	56.03	28.20	1.72	41.14	Average	100	154
зх	2432.000	96.48	42.48	54.00	107.60	28.29	1.76	41.17	Average	100	186
4 X	2438.000	105.52	31.52	74.00	116.63	28.30	1.76	41.17	Peak	100	186
5	2483.500	58.41	-15.59	74.00	69.40	28.39	1.82	41.20	Peak	100	56
6	2483.500	44.91	-9 09	54.00	55 90	28 39	1 82	41.20	Average	100	56

Site	: site										
Conditio	on : FCC	CLASS	-B 3m H	ORN-A	NT-674	1 VERTI	ICAL				
EUT	: Tri B	and GSI	M/WLAI	N (802.1)	lb) PCN	ACIA Ca	ard				
Power	: AC 1	10V/6	OHz								
Model	: 56W	11									
Memo	: GSM	1900 CH	H661 ;TΣ	CH06 2	432MH	z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
87	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	3758.000	48.12	-25.88	74.00	55.75	31.96	1.82	41.41	Peak	100	47
2	3758.000	45.92	-8.08	54.00	53.55	31.96	1.82	41.41	Average	100	47
з	4876.000	44.57	-9.43	54.00	51.32	33.17	2.52	42.44	Average	142	126
4	4876.000	48.73	-25.27	74.00	55.48	33.17	2.52	42.44	Peak	142	126

Site Condit EUT Power Model	: site ion : FCC : Tri E : AC : 56W	CLASS 3and GS 110V / 6 11	-B 3m F M/WLA 0Hz	IORN-A N (802.1	.NT-674 1b) PCI	1 HORIZ MCIA Ca	ZONTA ærd	L			
Iviemo	: 621	11900 CI	H001;12	C CHUD	2437IVIE	1Z	102/02/02/02	2002.03473		572575	2012/12/2012
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
ŝ	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	2	CI	deg
10	2200 000	50 00	_15 02	24 00	60.20	20 20	1 72	41 14	Deels	100	- 1
2	2390.000	44 60	-13.92	F4.00	69.30 EE 02	20.20	1.72	41.14	Averege	100	71
2 V	2436 000	104 57	20 57	74 00	115 69	20.20	1.76	41 17	Dook	100	71
4 X	2436 000	99 95	45 95	54 00	111 07	28 29	1.76	41 17	iverene	100	71
5	2483 500	58 39	-15 61	74 00	69 38	28 39	1 82	41 20	Peak	100	71
6	2483.500	44.94	-9.06	54.00	55.93	28,39	1.82	41.20	Average	100	71
Site Conditi EUT Power Model Memo	: site on : FCC : Tri B : AC 1 : 56WJ : GSM Freq	CLASS and GSM 10V / 60 1 1900 CH Level	B 3m H M/WLAN DHz H661 ;TX Over Limit	ORN-A N (802.1) CH06 2 Limit Line	NT-6741 lb) PCW 432MH Read Level	l HORIZ ICIA Ca Z Probe Factor	CONTA) rd Cable Loss	L Preamp Factor	Remark	Ant Pos	Table Pos
50	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		Cm	deg
1	3758.000	48.61	-25.39	74.00	56.24	31.96	1.82	41.41	Peak	100	238
2	3758.000	40.50	-13.50	54.00	48.13	31.96	1.82	41.41	Average	100	238
з	4870.000	43.35	-10.65	54.00	50.10	33.16	2.52	42.43	Average	106	92
4	4870.000	47.28	-26.72	74.00	54.03	33.16	2.52	42.43	Peak	106	92

For 4.876GHz ~ 25GHz

Frequency from 4876MHz to 25000MHz, the emission emitted by the EUT is too low to be measured

Frequency		Antenna	Cable	Reading	Limits	Emission	Margin	Detect
	Polarity	Factor	Loss					
(MHz)		(dB/m)	(dB)	(dBuV)	(dBuV/m)(dBuV/m)	(dB)	Mode
2438.000	V	28.30	1.76	75.19	-	105.25	-	Peak
2432.000	V	28.29	1.76	66.43	-	96.48	-	AV
2436.000	н	28.29	1.76	74.52	-	104.57	-	Peak
2436.000	Н	28.29	1.76	69.90	-	99.95	-	AV
3758.000	V	31.96	1.82	14.34	74.00	48.12	-25.88	Peak
3758.000	V	31.96	1.82	12.14	54.00	45.92	-8.08	AV
4876.000	V	33.17	2.52	13.04	74.00	48.73	-25.27	Peak
4876.000	V	33.17	2.52	8.88	54.00	44.57	-9.43	AV
3758.000	Н	31.96	41.41	-24.76	74.00	48.61	-25.39	Peak
3758.000	Н	31.96	41.41	-32.87	54.00	40.50	-13.50	AV
4870.000	Н	33.16	42.43	-28.31	74.00	47.28	-26.72	Peak
4870.000	Н	33.16	42.43	-32.24	54.00	43.35	-10.65	AV
7236.000	V/H	-	-	-	-	-	-	AV/Peak
9648.000	V/H	-	-	-	-	-	-	AV/Peak
12060.000	V/H	-	-	-	-	-	-	AV/Peak
14472.000	V/H	-	-	-	-	-	-	AV/Peak
16884.000	V/H	-	-	-	-	-	-	AV/Peak
19296.000	V/H	-	-	-	-	-	-	AV/Peak
21708.000	V/H	-	-	-	-	-	-	AV/Peak
24120.000	V/H	-	-	-	-	-	-	AV/Peak

■ Field strength of fundamental and harmonics

Remark:

1. The emission emitted by the EUT is too low to be measured except the emission listed above,

2. Reading = Reading on SA-Preamp Factor

Test Engineer : ____

Jay

7.4.5 Test Mode: Mode 5

- Test Distance : 3 m
- Temperature : 23°C
- Relative Humidity :51 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Probe Factor + Cable Loss + Read Level Preamp Factor = Level

The test that passed at minimum margin was marked by the frame in the following table.

Site	: 03CH	103-HY									
Condition	: FCC	CLASS-	B 3m B	IC-9124-	301 VI	ERTICA	L				
EUT	: Tri B	and GSN	/WLAI	N (802.1	1b) PCN	ACIA Ca	rd				
Power	: AC 1	10V/60	Hz								
Model	: 56W	11									
Memo	: GSM	850 CH1	89 ; TX	CH11 2	462MH	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
57	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	66.380	33.18	-6.82	40.00	50.42	9.17	1.56	27.97	Peak		
2 !]	32.510	37.75	-5.75	43.50	51.90	11.46	2.22	27.83	Peak	102	342
3 !]	.66.340	37.71	-5.79	43.50	50.00	13.05	2.43	27.77	Peak	10000	127020713

Site Conditior	: 03CH 1 : FCC	103-HY CLASS	-B 3m L	OG-9111	-221 V	ERTICA	L				
EUT	: Tri B	and GSI	M/WLAI	N (802.1)	1b) PCN	ACIA Ca	ird				
Power	: AC 1	10V / 60	OHz								
Model	: 56W	11									
Memo	: GSM	850 CH	189 ; TX	CH11 2	462MH.	z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
-	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	·	cm	deg
1 3	363.200	32.59	-13.41	46.00	40.86	15.26	4.08	27.61	Peak		
2 6	565.600	35.28	-10.72	46.00	39.59	19.10	5.32	28.73	Peak	102	342
3 9	957.600	37.43	-8.57	46.00	37.15	21.90	6.62	28.24	Peak	1000	10000

Site	:03CH	103-HY									
Condition	: FCC	CLASS-	B 3m B	IC-9124-	-301 H	ORIZON	ITAL				
EUT	: Tri B	and GSN	I/WLAI	N (802.1)	lb) PCN	ICIA Ca	ard				
Power	: AC 1	10V/60	Hz	0.0000000000000000000000000000000000000							
Model	: 56W	11									
Memo	: GSM	850 CH1	89 ; TX	CH11 2	462MH	z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
-	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	2	cm	deg
1!	65.870	37.07	-2.93	40.00	54.26	9.22	1.56	27.97	Peak		
2 ! 1	33.190	41.11	-2.39	43.50	55.20	11.49	2.25	27.83	Peak		
3 ! 1	66.490	41.28	-2.22	43.50	53.56	13.06	2.43	27.77	QP	100	270

Site	:03CH	103-HY									
Condition	: FCC	CLASS-	B 3m L	OG-9111	-221 H	ORIZON	ITAL				
EUT	: Tri B	and GSN	/WLA	N (802.1)	1b) PCN	ICIA Ca	ırd				
Power	: AC 1	10V/60	Hz								
Model	: 56W	11									
Memo	: GSM	850 CH1	89 ; TX	CH11 2	462MH	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 ! 20	55.600	40.24	-5.76	46.00	51.85	12.50	3.33	27.44	Peak		
2 36	53.990	38.87	-7.13	46.00	47.23	15.26	4.00	27.62	QP	100	350
3 43	32.000	39.47	-6.53	46.00	47.16	16.24	4.16	28.09	Peak	1000	

Site	: 03CH	403-HY									
Conditi	on : FCC	CLASS	-B 3m H	IORN-A	NT-674	1 VERTI	CAL				
EUT	: Tri B	and GSI	M/WLA	N (802.1	1b) PCN	ACIA Ca	rd				
Power	: AC 1	10V / 6	OHz								
Model	: 56W	11									
Memo	: GSM	1850 CH	189 ; TX	CH11 2	462MH.	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
57	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		CM	deg
1	1194.000	49.78	-24.22	74.00	50.96	24.59	1.22	26.99	Peak		
2	1594.000	48.87	-25.13	74.00	48.66	25.75	1.51	27.05	Peak		
з	1672.660	47.77	-6.23	54.00	47.21	26.07	1.55	27.06	Average	100	171
4	1672.660	57.88	-16.12	74.00	57.32	26.07	1.55	27.06	Peak	100	171

TTT TTT	n :FCC	CLASS	-B 3m H	HORN-A	ANT-674	1 VERT	ICAL				
EUT	: Tri I	Band GSI	M/WLA	N (802.)	11b) PCI	MCIA C:	ard				
Power	: AC	110V/6	0Hz	10.00	0.0000.0000						
Model	: 56W	711									
Memo	GSN	4850 CH	189 · TS	CHIL	2462MH	7					
IVICIIIO	. 001	1050 011	.107 , 12 Over	Limit	Deed	Drohe	Coble	Dreemn		ànt	Table
	Freq	[Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
32					. <u> </u>				21	10008	verver Verver
	MH2	: dBuV/m	dВ	dBuv/m	dBuv	dВ	dB	a ab		CH	deç
1 2	390.000	47.83	-26.17	74.00	45.07	28.20	1.72	27.16	Peak	100	323
22	390.000	32.14	-21.86	54.00	29.38	28.20	1.72	27.16	Average	100	32:
3 X 2	462.000	105.62	31.62	74.00	102.65	28.35	1.79	27.17	Peak	112	31
4 X 2	462.000	97.78	43.78	54.00	94.81	28.35	1.79	27.17	Average	112	31
5 2	483.500	38.47	-15.53	54.00	35.43	28.39	1.82	27.17	Average	102	31;
6 Z	483.500	48.63	-25.37	74.00	45.59	28.39	1.82	27.17	Peak	102	31:
7 Z	510.000	5Z.37	-21.63	74.00	49.22	28.47	1.86	27.18	Peak	100	35:
8 Z	510.000	42.65	-11.35	54.00	39.50	28.47	1.86	27.18	Average	100	35:
	01010101										
ite	: 03CH	103-HY	210 322	2222							
ondition	FCC	CLASS-	B 3m H	ORN-A	NT-6741	HORIZ	ONTAI				
UT	: Tri B	and GSN	1/WLAN	4 (802.1)	1b) PCN	ICIA Ca	rd				
ower	AC 1	10V/60	Hz	899 8 9 8 9 9 9 9							
Todal	56171	10, 100									
nouei *			00 111 7								
/lemo	GSM	850 CH1	89; IX	CHII 2	462MHz						
a cino											
iciii0			0ver	Limit	Read	Probe	Cable	Preamp		Ant	Table
101110	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	Freq MHz	Level dBuV/m	Over Limit dB	Limit Line dBuV/m	Read Level dBuV	Probe Factor dB	Cable Loss dB	Preamp Factor dB	Remark	Ant Pos 	Table Pos deg
 1 16	Freq MHz 74.000	Level dBuV/m 49.62	Over Limit dB -24.38	Limit Line dBuV/m 74.00	Read Level dBuV 49.05	Probe Factor dB 26.08	Cable Loss dB 1.55	Preamp Factor dB 27.06	Remark Peak	Ant Pos cm 103	Table Pos deg 346
1 16	Freq MHz 74.000	Level dBuV/m 49.62	Over Limit dB -24.38	Limit Line dBuV/m 74.00	Read Level dBuV 49.05	Probe Factor dB	Cable Loss dB 1.55	Preamp Factor dB 27.06	Remark Peak	Ant Pos cm 103	Table Pos deg 346
1 16	Freq MHz 74.000 : 03CH	Level dBuV/m 49.62 I03-HY	Over Limit dB -24.38	Limit Line dBuV/m 74.00	Read Level dBuV 49.05	Probe Factor dB 26.08	Cable Loss dB 1.55	Preamp Factor dB 27.06	Remark Peak	Ant Pos cm 103	Table Pos deg 346
1 16 ite	Freq MHz 74.000 : 03CH : FCC	Level dBuV/m 49.62 IO3-HY CLASS-	Over Limit dB -24.38 B 3m H	Limit Line dBuV/m 74.00	Read Level dBuV 49.05	Probe Factor dB 26.08	Cable Loss dB 1.55	Preamp Factor dB 27.06	Remark Peak	Ant Pos cm 103	Table Pos deg 346
1 16 ite Condition	Freq MHz 74.000 : 03CH : FCC : Tri B	Level dBuV/m 49.62 IO3-HY CLASS- and GSW	Over Limit dB -24.38 B 3m H I/WLAN	Limit Line dBuV/m 74.00 ORN-A V (802.1	Read Level dBuV 49.05 NT-6741 1b) PCW	Probe Factor dB 26.08 . HORIZ ICIA Ca	Cable Loss dB 1.55 ONTAI	Preamp Factor dB 27.06	Remark Peak	Ant Pos cm 103	Table Pos deg 346
1 16 ite condition CUT	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1	Level dBuV/m 49.62 IO3-HY CLASS- and GSIV 10V / 60	Over Limit dB -24.38 B 3m H I/WLAN Hz	Limit Line dBuV/m 74.00 ORN-A V (802.1)	Read Level dBuV 49.05 NT-6741 1b) PCIV	Probe Factor 26.08 26.08 26.08 26.08 26.08	Cable Loss dB 1.55 ONTAI rd	Preamp Factor dB 27.06	Remark Peak	Ant Pos 103	Table Pos deg 346
ite Condition CUT Yower Aodel	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W	Level dBuV/m 49.62 103-HY CLASS- and GSN 10V / 60	Over Limit dB -24.38 B 3m H I/WLAN Hz	Limit Line dBuV/m 74.00 ORN-A V (802.1)	Read Level dBuV 49.05 NT-6741 1b) PCW	Probe Factor 26.08 HORIZ ICIA Ca	Cable Loss dB 1.55 ONTA: rd	Preamp Factor dB 27.06	Remark 	Ant Pos cm 103	Table Pos deg 346
ite Condition UT Yower Aodel Aemo	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : GSM	Level dBuV/m 49.62 I03-HY CLASS- and GSIV 10V / 60 1 850 CH1	Over Limit dB -24.38 B 3m H I/WLAN Hz 89 : TX	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2	Read Level dBuV 49.05 NT-6741 1b) PCW	Probe Factor dB 26.08 HORIZ ICIA Ca	Cable Loss dB 1.55 ONTAJ rd	Preamp Factor dB 27.06	Remark ——— - Peak	Ant Pos cm · 103	Table Pos deg 346
ite Condition CUT Power Aodel Aemo	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : GSM	Level dBuV/m 49.62 103-HY CLASS- and GSN 10V / 60 11 850 CH1	Over Limit dB -24.38 B 3m H I/WLAN Hz 89; TX Over	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit	Read Level dBuV 49.05 NT-6741 1b) PCIV 462MHz Read	Probe Factor dB 26.08 HORIZ ICIA Ca	Cable Loss dB 1.55 ONTA rd	Preamp Factor dB 27.06	Remark 	Ant Pos cm 103 Ant	Table Pos deg 346
1 16 ite ondition UT ower Iodel Iemo	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : GSM Freq	Level dBuV/m 49.62 IO3-HY CLASS- and GSM 10V / 60 11 850 CH1 Level	Over Limit dB -24.38 B 3m H MWLAN Hz 89; TX Over Limit	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line	Read Level dBuV 49.05 NT-6741 1b) PCW 462MH2 Read Level	Probe Factor dB 26.08 HORIZ ICIA Ca ICIA Ca Probe Factor	Cable Loss dB 1.55 ONTA rd Cable Loss	Preamp Factor dB 27.06	Remark - Peak Remark	Ant Pos cm 103 Ant Pos	Table Pos 346 Table Pos
1 16 ite ondition UT ower Iodel Iemo	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : GSM Freq MHz	Level dBuV/m 49.62 103-HY CLASS- and GSN 10V / 60 11 850 CH1 Level dBuV/m	Over Limit dB -24.38 B 3m Hi I/WLAN Hz 89; TX Over Limit dB	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line dBuV/m	Read Level dBuV 49.05 NT-6741 1b) PCW 462MHz Read Level dBuV	Probe Factor dB 26.08 HORIZ ICIA Ca ICIA Ca Probe Factor dB	Cable Loss dB 1.55 ONTA rd Cable Loss dB	Preamp Factor dB 27.06 L Preamp Factor dB	Remark	Ant Pos cm 103 Ant Pos cm	Table Pos deg 346 Table Pos deg
1 16 ite condition UT fower fodel femo	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W : GSM Freq MHz	Level dBuV/m 49.62 103-HY CLASS- and GSIW 10V / 60 11 850 CH1 Level dBuV/m 46.20	Over Limit dB -24.38 B 3m H I/WLAN Hz 89; TX Over Limit dB -27.20	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line dBuV/m 74.00	Read Level dBuV 49.05 NT-6741 1b) PCW 462MHz Read Level dBuV	Probe Factor dB 26.08 HORIZ ICIA Ca ICIA Ca Probe Factor dB	Cable Loss dB 1.55 ONTAJ rd Cable Loss dB	Preamp Factor dB 27.06 L Preamp Factor dB 27.16	Remark Peak Remark	Ant Pos cm 103 Ant Pos cm	Table Pos 346 346 Pos deg
1 16 ite condition UT ower fodel femo	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : 56W1 : GSM Freq MHz : 90.000	Level dBuV/m 49.62 103-HY CLASS- and GSIM 10V / 60 11 850 CH1 Level dBuV/m 46.70 26.72	0ver Limit dB -24.38 B 3m H I/WLAN Hz 89; TX 0ver Limit dB -27.30	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line dBuV/m 74.00	Read Level dBuV 49.05 NT-6741 1b) PCIV 462MHz Read Level dBuV 43.94 24.02	Probe Factor dB 26.08 HORIZ ICIA Ca Probe Factor dB 28.20 28.20	Cable Loss dB 1.55 ONTA: rd Cable Loss dB 1.72	Preamp Factor dB 27.06 L Preamp Factor dB 27.16 27.16	Remark Peak Remark 	Ant Pos cm 103 Ant Pos cm 107	Table Pos deg 346 Table Pos deg 315
1 16 ite indition UT ower fodel femo	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : GSM Freq MHz :90.000 : 000	Level dBuV/m 49.62 103-HY CLASS- and GSN 10V / 60 11 850 CH1 Level dBuV/m 46.70 36.77	0ver Limit dB -24.38 B 3m Hi I/WLAN Hz 89; TX 0ver Limit dB -27.30 -17.23 20.01	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line dBuV/m 74.00 54.00	Read Level dBuV 49.05 NT-6741 1b) PCW 462MHz Read Level dBuV 43.94 34.01	Probe Factor dB 26.08 HORIZ ICIA Ca ICIA Ca Probe Factor dB 28.20 28.20	Cable Loss dB 1.55 ONTA rd Cable Loss dB 1.72 1.72	Preamp Factor dB 27.06 L Preamp Factor dB 27.16 27.16	Remark Peak Remark Peak Average	Ant Pos 103 Ant Pos cm 107 107	Table Pos deg 346 346 Pos deg 315 315
1 16 ite condition UT ower fodel femo	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : 56W1 : GSM Freq MHz :90.000 :90.000 :62.000	Level dBuV/m 49.62 103-HY CLASS- and GSIV 10V / 60 1 850 CH1 Level dBuV/m 46.70 36.77 104.81 000 00	0ver Limit dB -24.38 B 3m Hi I/WLAN Hz 89; TX 0ver Limit dB -27.30 -17.23 30.81	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line dBuV/m 74.00 54.00 74.00	Read Level dBuV 49.05 NT-6741 1b) PCW 462MHz Read Level dBuV 43.94 34.01	Probe Factor dB 26.08 HORIZ ICIA Ca ICIA Ca ICIA Ca S Probe Factor dB 28.20 28.20 28.35 20.07	Cable Loss dB 1.55 ONTA rd Cable Loss dB 1.72 1.72 1.79	Preamp Factor dB 27.06 L Preamp Factor dB 27.16 27.16 27.17	Remark Peak Peak Peak Average Peak	Ant Pos 103 Ant Pos cm 107 107	Table Pos deg 346 Pos deg 315 315 315 315
1 16 ite condition CUT fower fodel femo 1 23 2 23 3 2 24 4 2 24	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : 56W1 : 56W1 : 90.000 : 90.000 : 62.000 : 62.000	Level dBuV/m 49.62 103-HY CLASS- and GSIV 10V / 60 11 850 CH1 Level dBuV/m 46.70 36.77 104.81 99.39 26.92	0ver Limit dB -24.38 B 3m H [/WLA] Hz 89; TX 0ver Limit dB -27.30 -17.23 30.81 45.39	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line dBuV/m 74.00 54.00 74.00 54.00	Read Level dBuV 49.05 NT-6741 1b) PCW 462MHz Read Level dBuV 43.94 34.01 101.84 96.42	Probe Factor 26.08 HORIZ ICIA Car Probe Factor 28.20 28.20 28.35 28.35	Cable Loss dB 1.55 ONTA: rd Cable Loss dB 1.72 1.72 1.79 1.79	Preamp Factor dB 27.06 L Preamp Factor dB 27.16 27.16 27.17 27.17	Remark Peak Peak Peak Average Peak Average	Ant Pos 103 Ant Pos cm 107 107 107	Table Pos 346 346 Pos deg 315 315 342 342
1 16 ite condition CUT Yower Aodel Aemo 1 23 2 23 3 X 24 4 X 24 5 24	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : 56W1 : 56W1 : 90.000 : 0300 :	Level dBuV/m 49.62 103-HY CLASS- and GSIV 10V / 60 1 Level dBuV/m 46.70 36.77 104.81 99.39 36.83 104.81	0ver Limit dB -24.38 B 3m H [/WLA] Hz 89; TX 0ver Limit dB -27.30 -17.23 30.81 45.39 -17.17	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line dBuV/m 74.00 54.00 54.00 54.00	Read Level dBuV 49.05 NT-6741 lb) PCIV 462MHz Read Level dBuV 43.94 34.01 101.84 96.42 33.79	Probe Factor dB 26.08 HORIZ ICIA Ca ICIA Ca Probe Factor dB 28.20 28.20 28.35 28.35 28.35	Cable Loss dB 1.55 ONTA: rd Cable Loss dB 1.72 1.72 1.79 1.79 1.82	Preamp Factor dB 27.06 L Preamp Factor dB 27.16 27.16 27.17 27.17 27.17	Remark Peak Peak Peak Average	Ant Pos 103 Ant Pos cm 107 107 107 103 103 103	Table Pos 346 346 905 deg 315 315 342 342 325
1 16 Site Condition UT Yower Aodel Aemo 1 23 2 23 3 X 24 4 X 24 5 24 6 24	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W1 : GSM Freq MHz : 90.000 : 62.000 : 62.000 : 83.500 : 83.500	Level dBuV/m 49.62 H03-HY CLASS- and GSW 10V / 60 1 Level dBuV/m 46.70 36.77 104.81 99.39 36.83 47.78	Over Limit dB -24.38 B 3m H I/WLAN Hz 89; TX Over Limit dB -27.30 -17.23 30.81 45.39 -17.17 -26.22	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line dBuV/m 74.00 54.00 74.00 54.00 74.00	Read Level dBuV 49.05 NT-6741 1b) PCIV 462MHz Read Level dBuV 43.94 34.01 101.84 96.42 33.79 44.74	Probe Factor dB 26.08 HORIZ ICIA Ca ICIA Ca S Probe Factor dB 28.20 28.35 28.35 28.39 28.39	Cable Loss dB 1.55 ONTA: rd Cable Loss dB 1.72 1.72 1.72 1.79 1.82 1.82	Preamp Factor dB 27.06 27.06 L Preamp Factor dB 27.16 27.16 27.16 27.17 27.17 27.17	Remark Peak Peak Peak Peak Average Average	Ant Pos 103 Ant Pos cm 107 107 107 103 103 101 101	Table Pos 346 346 Pos deg 315 315 315 342 325 325
1 16 Site Condition UT Jower Aodel Aemo 1 23 2 23 3 X 24 4 X 24 5 24 6 24 7 25	Freq MHz 74.000 : 03CH : FCC : Tri B : AC 1 : 56W : GSM Freq MHz 90.000 : 000 :	Level dBuV/m 49.62 103-HY CLASS- and GSIV 10V / 60 1 850 CH1 Level dBuV/m 46.70 36.77 104.81 99.39 36.83 47.78 51.84 51.84	Over Limit dB -24.38 B 3m H (/WLA) Hz 89; TX Over Limit dB -27.30 -17.23 30.81 45.39 -17.17 -26.22 -22.16	Limit Line dBuV/m 74.00 ORN-A V (802.1) CH11 2 Limit Line dBuV/m 74.00 54.00 74.00 54.00 74.00 54.00	Read Level dBuV 49.05 NT-6741 1b) PCW 462MHz Read Level dBuV 43.94 34.01 101.84 96.42 33.79 44.74 48.69	Probe Factor dB 26.08 HORIZ ICIA Ca ICIA Ca Probe Factor dB 28.20 28.20 28.35 28.35 28.39 28.39 28.47	Cable Loss dB 1.55 ONTA rd Cable Loss dB 1.72 1.72 1.79 1.82 1.82 1.86	Preamp Factor dB 27.06 27.06 L Preamp Factor dB 27.16 27.16 27.16 27.17 27.17 27.17 27.17	Remark Peak Peak Peak Average Peak Average Peak Peak	Ant Pos 103 103 Ant Pos cm 107 107 103 103 101 101 105	Table Pos 346 346 90s deg 315 315 342 325 342 325 341

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 FCC ID
 : JAP56W11

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 Issued Date
 : Mar. 15, 2004

For 2.510GHz ~ 25GHz

Frequency from 2510MHz to 25000MHz, the emission emitted by the EUT is too low to be measured

Field strength of fundamental and harmonics

Frequency		Antenna	Cable	Reading	LImits	Emission	Margin	Detect
	Polarity	Factor	Loss					
(MHz)		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	Mode
2462.000	V	28.35	1.79	75.48	-	105.62	-	Peak
2462.000	V	28.35	1.79	67.64	-	97.78	-	AV
2462.000	н	28.35	1.79	74.67	-	104.81	-	Peak
2462.000	н	28.35	1.79	69.25	-	99.39	-	AV
4822.000	V/H	-	-	-	-	-	-	AV/Peak
7236.000	V/H	-	-	-	-	-	-	AV/Peak
9648.000	V/H	-	-	-	-	-	-	AV/Peak
12060.000	V/H	-	-	-	-	-	-	AV/Peak
14472.000	V/H	-	-	-	-	-	-	AV/Peak
16884.000	V/H	-	-	-	-	-	-	AV/Peak
19296.000	V/H	-	-	-	-	-	-	AV/Peak
21708.000	V/H	-	-	-	-	-	-	AV/Peak
24120.000	V/H	-	-	-	-	-	-	AV/Peak

Remark:

- 1. The emission emitted by the EUT is too low to be measured except the emission listed above,
- 2. Reading = Reading on SA-Preamp Factor

Lang Test Engineer : _ Jay

7.4.6 Test Mode: Mode 6

- Test Distance : 3 m
- Temperature : 23°C
- Relative Humidity :51 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- · Corrected Reading : Probe Factor + Cable Loss + Read Level Preamp Factor = Level

The test that passed at minimum margin was marked by the frame in the following table.

Site	: site										
Condition	1 : FCC	CLASS	-B 3m B	IC-9124-	-301 V	ERTICA	L				
EUT	: Tri B	and GSI	M/WLAI	N (802.1	lb) PCN	ACIA Ca	rd				
Power	: AC 1	10V/60	OHz								
Model	: 56W	11									
Memo	: GSM	1900 CH	H661 ;TΣ	CH11 2	462MH	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
-	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	. <u> </u>	CIL	deg
1	34.420	31.76	-8.24	40.00	45.54	13.18	1.08	28.04	Peak		
2 3	132.340	29.62	-13.88	43.50	43.79	11.45	2.21	27.83	Peak		
3 ! .	198.470	37.90	-5.60	43.50	48.08	14.76	2.76	27.70	Peak	100	267

Site	: site										
Condition	1 : FCC	CLASS	-B 3m L	OG-9111	-221 VI	ERTICA	L				
EUT	: Tri B	and GSI	M/WLAI	N (802.1)	1b) PCN	ACIA Ca	ırd				
Power	: AC 1	10V / 6	DHz								
Model	: 56W	11									
Memo	: GSM	: GSM1900 CH661 ; TX CH11 2462MHz									
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
5	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	. <u> </u>	cm	deg
1	700.800	34.52	-11.48	46.00	38.06	19.80	5.36	28.70	Peak		

800.000 34.78 -11.22 46.00 37.26 20.38 5.94 28.80 Peak 905.600 36.22 -9.78 46.00 36.86 21.16 6.49 28.29 Peak

2

3

100

265

Site Condit EUT Power Model Memo	: site ion : FCC : Tri B : AC 1 : 56W : GSM	CLASS and GSI 10V / 6 11	-B 3m B M/WLA 0Hz 1661 :TX	N (802.1	301 H 1b) PCN 2462MH	ORIZON MCIA Ca	ITAL ard				
			Over	Limit	Read	Probe	Cable	Preamn		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
57	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
10	133 020	30 01	-13 49	43 50	44 11	11 48	2 25	27 83	Pesk		
2	165.660	36.92	-6.58	43.50	49.24	13.01	2.44	27.77	Peak		
3 !	198.470	40.43	-3.07	43.50	50.61	14.76	2.76	27.70	Peak	100	243
Site Condit EUT Power Model	: site ion : FCC : Tri B : AC 1 : S6W	CLASS and GSI 10V / 6(11	-B 3m L M/WLA))Hz	OG-911 N (802.1	1-221 H(1b) PCN	ORIZON ICIA Ca	ITAL rd				
Memo	GSM	1900 CF	4661 · T	X CH11	2462MF	47					
Ivicino	. 00141	1700 01	Over	Limit	Read	Prohe	Cable	Preamn		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
53	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	265.600	36.87	-9.13	46.00	48.48	12.50	3.33	27.44	Peak		
2	332.800	37.16	-8.84	46.00	46.09	14.97	3.56	27.46	Peak		
3	906.400	37.18	-8.82	46.00	37.88	21.18	6.41	28.29	Peak	100	272
Site Condit EUT Power Model	: site ion : FCC : Tri B : AC 1 : 56W	CLASS and GSI 10V / 60 11	-B 3m H M/WLA1)Hz	IORN-A N (802.1	NT-674 1b) PCN	1 VERTI ICIA Ca	ICAL ard				
Memo	: GSM	1900 CF	1661 ;TΣ	CH11	2462MH	Z					
	100.004.04		0ver	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
-	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	2	cm	deg
1	2390.000	58.25	-15.75	74.00	69.47	28.20	1.72	41.14	Peak	100	126
2	2390.000	44.74	-9.26	54.00	55.96	28.20	1.72	41.14	Average	100	126
зх	2462.000	95.40	41.40	54.00	106.44	28.35	1.79	41.18	Average	100	183
4 X	2462.000	104.20	-15 20	74.00	20 70	28.35	1.79	41.18	Peak	100	183
6	2483 500	44 92	-9 17	54 00	55 82	20.33	1.02	41 20	luerone	100	145
- O	2100.000	441.00	C	04.00	00002	20.05	1.02	41.20	inverage	100	140

Site Condi EUT Powe Mode	: site tion : FCC : Tri B r : AC 1 1 : 56W	CLASS and GSI 10V / 6(11	-B 3m H M/WLA1)Hz	IORN-# N (802.)	ANT-674 11b) PCI	1 VERT MCIA Ca	ICAL ard				
Memo	GSM : GSM	1900 CF	1661 :TX	CH11	2462MH	Iz					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	2	cm	deg
18	3758.000	48 11	-25.89	74.00	55.74	31.96	1.82	41 41	Peak		
2	3758 000	45.60	-8.40	54.00	53.23	31.96	1 82	41 41	Average	100	52
3	4926.000	49.96	-24.04	74.00	56.72	33.28	2.47	42.51	Peak		
4	4926.000	46.44	-7.56	54.00	53.20	33.28	2.47	42.51	Average	106	128
ite	site										
ondit	ion FCC	TLACC.	B 3m H	ORN-A	NT-6741	HORIZ	ONTAI	i New			
UTT		and CCM	L JIII III	U (202 1	16) DCM	ICIA C~	ed .				
01	. In Da	inu Gaiv.	D W LAN	1 (002.1	10) FCIV.	ICIA Ca	i u				
ower	AC I.		ΠZ								
lodel	: 00W1	1									
Iemo	: GSM1	.900 CH	661 ;TX	CH112	2462MH:	Z					
			Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
33	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	2	cm	deg
1	2390.000	44.53	-9.47	54.00	55.75	28.20	1.72	41.14	Average	123	52
2	2390.000	57.29	-16.71	74.00	68.51	28.20	1.72	41.14	Peak	123	52
зх	2462.000	89.85	35.85	54.00	100.89	28.35	1.79	41.18	Average	123	383
4 X	2462.000	99.08	25.08	74.00	110.12	28.35	1.79	41.18	Peak	123	383
5	2483.500	44.82	-9.18	54.00	55.81	28.39	1.82	41.20	Average	123	247
6	2483.500	58.42	-15.58	74.00	69.41	28.39	1.82	41.20	Peak	123	247
Site	: site										
Condi	tion : FCC	CLASS	-B 3m H	IORN-A	ANT-674	1 HORI	ZONTA	L			
EUT	: Tri B	and GSI	M/WLA	N (802.)	11b) PCI	MCIA Ca	ard				
Powe	r : AC 1	10V / 6	OHz	1999 200 200 200 200							
Mode	1 56377	11									
Mem	- CSM	 1900 ሮፑ	4661 ·TN	CH11	2462MF	17					
vicini		.1700 01	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Freq	Level	Limit	Line	e Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	2	cm	deg
1	3758.000	41.56	-12.44	54.00	49.19	31.96	1.82	41.41	. Average	100	267
	3758.000	49.04	-24.96	74.00	56.67	31.96	1.82	41.41	Peak	100	267
2										and the second sec	
2 3	4926.000	42.55	-11.45	54.00	49.31	33.28	2.47	42.51	. Average	118	72

For 4.926GHz ~ 25GHz

Frequency from 4926MHz to 25000MHz, the emission emitted by the EUT is too low to be measured

Frequency		Antenna	Cable	Reading	Limits	Emission	Margin	Detect
	Polarity	Factor	Loss					
(MHz)		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	Mode
2462.000	V	28.35	1.79	74.06	-	104.20	-	Peak
2462.000	V	28.35	1.79	65.26	-	95.40	-	AV
2462.000	Н	28.35	1.79	68.94	-	99.08	-	Peak
2462.000	Н	28.35	1.79	59.71	-	89.85	-	AV
3758.000	V	31.96	1.80	14.35	74.00	48.11	-25.89	Peak
3758.000	V	31.96	1.82	11.82	54.00	45.60	-8.40	AV
4926.000	V	33.28	2.47	14.21	74.00	49.96	-24.04	Peak
4926.000	V	33.28	2.47	10.69	54.00	46.44	-7.56	AV
3758.000	Н	31.96	1.82	15.26	74.00	49.04	-24.96	Peak
3758.000	Н	31.96	1.82	7.78	54.00	41.56	-12.44	AV
4926.000	Н	33.28	2.47	12.25	74.00	48.00	-26.00	Peak
4926.000	Н	33.28	2.47	6.80	54.00	42.55	-11.45	AV
7236.000	V/H	-	-	-	-	-	-	AV/Peak
9648.000	V/H	-	-	-	-	-	-	AV/Peak
12060.000	V/H	-	-	-	-	-	-	AV/Peak
14472.000	V/H	-	-	-	-	-	-	AV/Peak
16884.000	V/H	-	-	-	-	-	-	AV/Peak
19296.000	V/H	-	-	-	-	-	-	AV/Peak
21708.000	V/H	-	-	-	-	-	-	AV/Peak
24120.000	V/H	-	-	-	-	-	-	AV/Peak

Field strength of fundamental and harmonics

Remark:

- The emission emitted by the EUT is too low to be measured except the emission listed above, Reading = Reading on SA-Preamp Factor 1.
- 2.

Test Engineer : Jay

7.5. Photographs of Radiated Emission Test Configuration

• The photographs show the configuration that generates the maximum emission.



FRONT VIEW

REAR VIEW

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 FCC ID
 : JAP56W11

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 Issued Date
 : Mar. 15, 2004

8. Antenna Requirements

The EUT use an embedded PCB antenna without connector. It is considered to meet antenna requirement of FCC.

8.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no other antenna except assembled by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

8.2. Antenna Connected Construction

The antenna used in this product is embedded PCB antenna without connector.

*

Radiation

(03CH03-HY) Radiation

(03CH03-HY) Radiation

(03CH03-HY) Radiation

03CH03-HY) Radiation

(03CH03-HY) Radiation

(03CH03-HY) Radiation

(03CH03-HY) Radiation

(03CH03-HY) Radiation

(03CH03-HY) Radiation

(03CH03-HY)

Nov. 05, 2003

Jul. 24, 2003

Jul. 24, 2003

Dec. 03, 2003

Jul. 23, 2003

Apr. 08, 2003

N/A

N/A

Jun. 02, 2003

Dec. 05, 2003

9. List of Measuring Equipments

	-						
	Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
	EMC Receiver	R&S	ESCS 30	100132	9 KHz – 2.75 GHz	Jun. 12, 2003	Conduction (CO01-HY)
	LISN	MessTec	NNB-2/16Z	2001-008	9 KHz – 30 MHz	Apr. 30, 2003	Conduction (CO01-HY)
	LISN (Support Unit)	MessTec	NNB-2/16Z	2001-009	9 KHz – 30 MHz	Apr. 30, 2003	Conduction (CO01-HY)
	EMI Filter	LINDGREN	LRE-2060	1004	< 450 Hz	N/A	Conduction (CO01-HY)
	EMI Filter	LINDGREN	N6006	201052	0 ~ 60 Hz	N/A	Conduction (CO01-HY)
	RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9KHz~30MHz	Dec. 24, 2003	Conduction (CO01-HY)
	50 ohm BNC type Termina	I NOBLE	50ohm	TM013	50 ohm	Apr. 24, 2003	Conduction (CO01-HY)
	Calibration Interval of in	struments listed at	ove is one	year.			
	Instrument	Manufacturer	Model No.	Serial No	. Characteristic	s Calibration Da	ate Remark
m	n Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-H	IY 30MHz~1GH: 3m	z Jun. 21, 200	3 Radiation (03CH03-HY)
	Spectrum analyzer	R&S	FSP40	100004	9KHZ~40GH;	z Aug. 23, 200	3 Radiation (03CH03-HY)
-					1	1	

2944A09072 100KHz – 1.3GHz

30MHz - 200MHz

200MHz -1GHz

30MHz~1GHz

100MHz~26.5GHz

1GHz – 18GHz

 $0 \sim 360 \text{ degree}$

1 m - 4 m

15GHz~40GHz

1GHz~29.5GHz

301

221

CB021

879981

6741

420/650/00

240/560/00

154

CB030-HIGH

్	Calibration Interval of instruments listed above is one year, except for Horn Antenna,	BBHA9170.
*	Calibration Interval of Horn Antenna, BBHA9170, is three years.	

SPORTON International Inc.

Amplifier

Biconical Antenna

Log Antenna

RF Cable-R03m

Amplifier

Horn Antenna

Turn Table

Antenna Mast

Horn Antenna

RF Cable-HIGH

ΗP

SCHWARZBECK

SCHWARZBECK

Jye Bao

MITEQ

COM-POWER

HD

HD

Schwarzbeck

Jye Bao

8447D

VHBB 9124

VUSLP 9111

RG142

AFS44

3115

DS 420

MA 240

BBHA9170

RG142

TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
 FCC ID
 : JAP56W11

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 : Mar. 15, 2004

10. Uncertainty Measurement

Uncertainty of Conducted Emission Measurement

Contribution	Uncerta	ainty of x_i	$u(x_i)$		
	dB	Probability			
		Distribution			
Receiver reading	0.10	Normal(k=2)	0.05		
Cable loss	0.10	Normal(k=2)	0.05		
AMN insertion loss	2.50	Rectangular	0.63		
Receiver Spec	1.50	Rectangular	0.43		
Site imperfection	1.39	Rectangular	0.80		
Mismatch Receiver VSWR Γ1= LISN VSWR Γ2= Uncertainty=20log(1-Γ1*Γ2)	+0.34/-0.35	U-shape	0.24		
combined standard uncertainty Uc(y)	1.13				
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26				

$$\begin{split} U = & \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 0.5^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.2 & \text{for 10m test distance} \\ U = & \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 3^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.7 & \text{for 3m test distance} \end{split}$$

Contribution	Uncerta	ainty of x_i		
	٩D	Probability	$u(x_i)$	
	uв	Distribution		
Receiver reading	0.41	Normal(k=2)	0.21	
Antenna factor calibration	0.83	Normal(k=2)	0.42	
Cable loss calibration	0.25	Normal(k=2)	0.13	
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14	
RCV/SPA specification	2.50	Rectangular	0.72	
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29	
Site imperfection	1.43	Rectangular	0.83	
Mismatch				
Receiver VSWR Г1= 0.20	10 20/ 0 41	Laborad	0.29	
Antenna VSWR Г2= 0.23	+0.39/-0.41	0-shaped	0.20	
Uncertainty=20log(1-Г1*Г2)				
combined standard uncertainty Uc(y)		1.27		
Measuring uncertainty for a level of confidence of		2.54		
95% U=2Uc(y)	2.54			

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Uncertainty of Conducted Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of x_i				
	dB	Probability Distribution	$u(x_i)$	Ci	$Ci * u(x_i)$
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR Γ1= 0.197 Antenna VSWR Γ2= 0.194 Uncertainty=20log(1-Γ1*Γ2*Γ3)	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)	2.36				
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	4.72				

 $\mathsf{U} = \sqrt[]{(0.3/2)^2 + (2^2 + 1.5^2 + 0.2^2)/3 + (0.2)^2/2} = 1.66$