EMC
TEST REPORT

Report No. : **EME-010047**
Model No. : **9011**
Issued Date : **Mar. 15, 2001**

Applicant : **CIDMATE International Technology Inc.**
5F-1, No. 168, Lian-Cheng Rd., Chung-Ho City,
Taipei Hsien, Taiwan, R.O.C.

Test By : **Intertek Testing Services Taiwan Ltd.**
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Test Engineer

Elton Chen

Approved By

J. T. CHEN
MANAGER (EMC LABORATORY)
ETL SEMKO DIVISION

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1 Summary of Tests

Basic 900MHz Cordless Phone-Model: 9011
FCC ID: PIZMH9011

Test	Reference	Results
Emission within operated Band	15.249(a) (b)	Complies
Conducted Emission of AC Power	15.207	Complies
Radiated Emission	15.249(c), 15.209	Complies
Emission above 1GHz	15.249(d)	Complies

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MANAGER (EMC LABORATORY)
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1.1 General Information

1.2 Identification of the EUT

Manufacturer	: CIDMATE International Technology Inc.
Product	: Basic 900MHz Cordless Phone
Model No.	: 9011
FCC ID.	: PIZMH9011
Frequency Range	: 902MHz to 928MHz
Channel Number	: 40 channels
Type of Modulation	: FM
Power Supply	: 120Vac, 60Hz to 9Vdc adapter
Data Cable	: Cable length 10m with RJ-11 connector ×1
Sample Received	: Jan. 17, 2001
Test Date(s)	: Jan. 29, 2001 to Feb. 27, 2001

1.3 Test Assignment to the EUT

The EUT is a Basic 900MHz Cordless Phone, and is defined as Unlicensed Intentional Radiated equipment, should be conducted the tests to represent the conformity of FCC Part 15 Subpart C Paragraph 15.249 for non-spread spectrum devices.

For more detail features, please refer to user's Manual.

1.4 Peripherals equipment

1. Exchange Board

Product No.	: 250-00193-07
Serial No.	: 94948
Manufacturer	: Teltone

2. Telephone

Product No.	: ATC-814
Serial No.	: 9904000066
Manufacturer	: Tozai

3. Headphone

Product No.	: EMS-101
Serial No.	: N/A
Manufacturer	: STAND WIN Co., Ltd.

2. Test Condition

2.1 Test Standard

The EUT was performed according to the procedures in FCC Part 15 Subpart C Paragraph 15.249 for non-spread spectrum devices.

The AC power conducted emissions was invested over the frequency range from 0.45MHz to 30MHz using a receiver bandwidth of 9kHz. (15.207 paragraph)

Radiated emissions were invested over the frequency range from 30MHz to 1000MHz using a receiver bandwidth of 120kHz and the frequency over 1GHz using a receiver bandwidth of 1MHz. (15.209 paragraph)

Radiated testing was performed at an antenna to EUT distance of 3 meters.

The EUT setup configurations please refer to the photo of test configuration in item.

2.2 EMI Reduction Solution During Compliance Testing

No modification was made during testing.

2.3 Test Equipment

Conducted Emission

Equipment	Brand	Model No.	ITS ID No.
EMI Receiver	Rohde & Schwarz	ESCS 30	EC318
EMI Receiver	Rohde & Schwarz	ESMI	EC317
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	EC318
Shield Room	N/A	N/A	N/A

Note:
1. The calibration interval of the above instruments is 12 months.

Radiated Emission

Equipment	Brand	Model No.	ITS ID No.
EMI Receiver	Rohde & Schwarz	ESCS 30	EC318
EMI Spectrum	Rohde & Schwarz	ESMI	EC317
Pre-Amplifier	Advantest	BB525C	83120047
Horn Antenna	EMCO	3115	EC332
Turn Table	Electro-Metrics	EM4710	EP306
Bilog Antenna	Electro-Metrics	EM-6917-1	EC325
Antenna Tower	Electro-Metrics	EM-4720	EP307

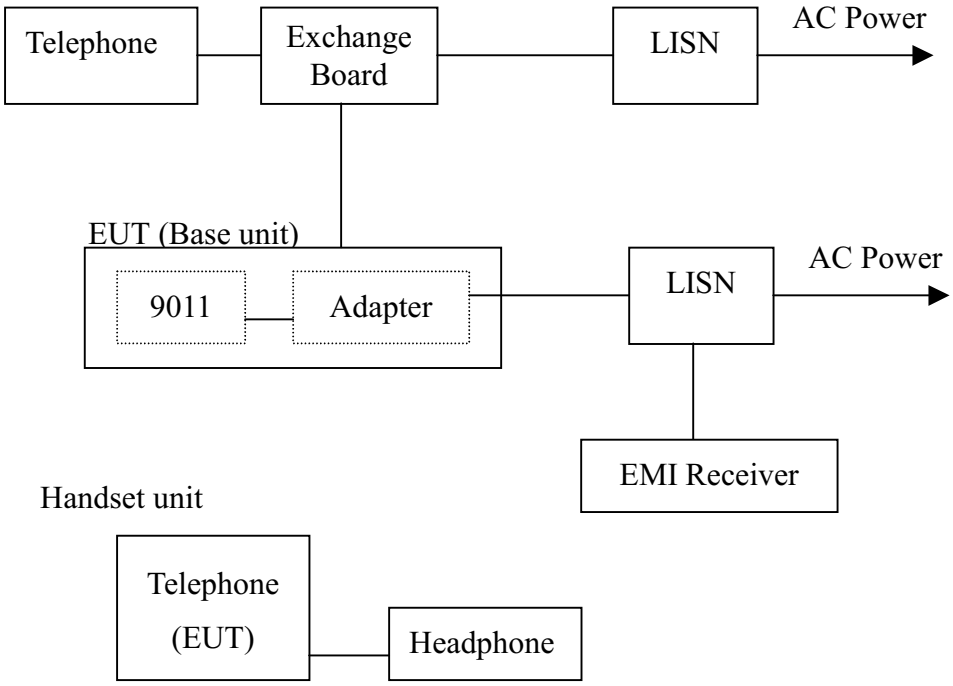
Note:
1. The calibration interval of the above instruments is 12 months.

3. Conducted emission test FCC 15.207

3.1 Operating Environment

Temperature: 18 ℃
Relative Humidity: 66 %

3.2 System Test Configuration



The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). This provides a 50 ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)
Both sides of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4/1992 on conducted measurement.
The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9kHz.

3.3 Conducted Emission Data (Base unit) FCC 15.207

Worst Case Conducted Emission
at Middle Channel, Line 13.65MHz ,margin:-19.6 dB

(1) Line
EUT : 9011 (Base unit)
Test Mode : Low Channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Margin (dB) QP
0.482	25.1	48	-22.90
0.978	12.1	48	-35.90
13.65	22.8	48	-25.20
15.146	21.1	48	-26.90

(2) Neutral
EUT : 9011 (Base unit)
Test Mode : Low Channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Margin (dB) QP
0.466	23.1	48	-24.90
0.766	13.3	48	-34.70
13.616	15.1	48	-32.90
15.882	26.9	48	-21.10
19.178	11.1	48	-36.90
21.658	20.5	48	-27.50

Remark:
1. The reading value including cable loss and LISN factor.
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the Conducted Emission Test, the uncertainty is within ±2dB
3. The average measurement was not performed when the peak measured data under the limit of average detection.

(3) Line

EUT : 9011 (Base unit)

Test Mode : Middle Channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Margin (dB) QP
0.482	25.2	48	-22.80
0.706	18.6	48	-29.40
1.058	12	48	-36.00
13.65	28.4	48	-19.60

(4) Neutral

EUT : 9011 (Base unit)

Test Mode : Middle Channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Margin (dB) QP
0.458	23	48	-25.00
9.842	20.5	48	-27.50
11.002	20.5	48	-27.50
13.65	20.5	48	-27.50
15.882	25.5	48	-22.50

Remark:

1. The reading value including cable loss and LISN factor.
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the Conducted Emission Test, the uncertainty is within ±2dB
3. The average measurement was not performed when the peak measured data under the limit of average detection.

(5) Line

EUT : 9011 (Base unit)

Test Mode : High Channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Margin (dB) QP
0.474	25.3	48	-22.70
0.704	18.3	48	-29.70
1.004	12.4	48	-35.60
11.934	14.3	48	-33.70

(6) Neutral

EUT : 9011 (Base unit)

Test Mode : High Channel

Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Margin (dB) QP
0.45	22.5	48	-25.50
0.514	18.4	48	-29.60
0.684	14.6	48	-33.40
3.166	10.5	48	-37.50
23.754	18.6	48	-29.40

Remark:

1. The reading value including cable loss and LISN factor.
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the Conducted Emission Test, the uncertainty is within ±2dB
3. The average measurement was not performed when the peak measured data under the limit of average detection.

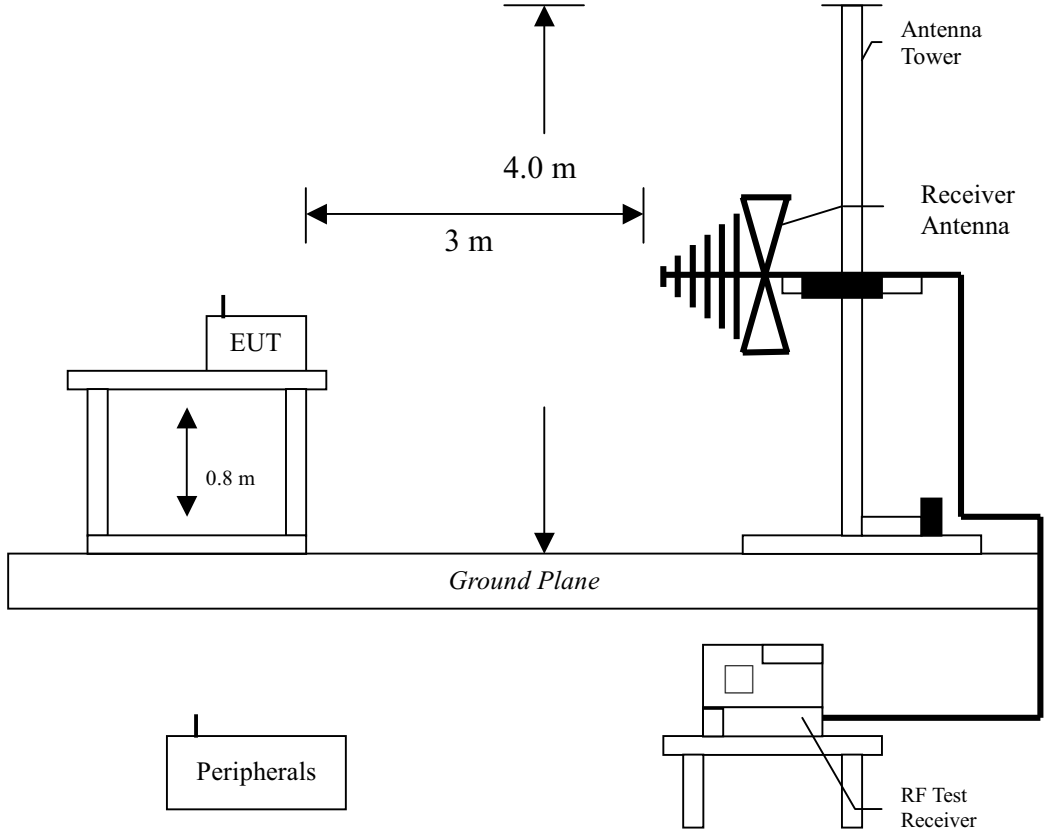
4. Radiated Emission Test FCC 15.249 (C)

4.1 Operating Environment

Temperature: 18 ℃
Relative Humidity: 70 %

4.2 Test Setup & procedure

The Diagram below shows the test setup, which is utilized to make these measurements.



The EUT are placed on a turntable, which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4/1992 on radiated measurement.
The bandwidth below 1GHz setting on the field strength meter (R&S Receiver ESMI) is 120kHz and above 1GHz is 1MHz.

4.3 Radiated Emission Test Data (Handset unit) FCC 15.249

Worst Case Radiated Emission
at Low Channel, 1849.74 MHz, margin: -5.03 dB

4.3.1 Fundamental & Harmonics Emission Data

EUT : 9011 (Handset unit)
Testing Mode : Transmitter (Low Channel)

Freq. (MHz)	Spec. Analyz Detector	Antenna Polariz. (H/V)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Corrected Reading (dBuV/m)	Limit At 3m (dBuV/m)	Margin (dB)
924.875	PK	V	56.31	22.35	5.08	83.74	94	-10.26
924.875	PK	H	57.94	22.35	5.08	85.37	94	-8.63
1849.74	AV	V	20.37	26.4	2.2	48.97	54	-5.03
1849.74	AV	H	19.24	26.4	2.2	47.84	54	-6.16
2774.58	AV	V	13.24	29.5	2.64	45.38	54	-8.62
2774.58	AV	H	12.82	29.5	2.64	44.96	54	-9.04

Remark:
1. Corrected Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

EUT : 9011 (Handset unit)
Testing Mode : Transmitter (Middle Channel)

Freq. (MHz)	Spec. Analyz Detector	Antenna Polariz. (H/V)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Corrected Reading (dBuV/m)	Limit At 3m (dBuV/m)	Margin (dB)
926.295	PK	H	58.36	22.35	5.08	85.79	94	-8.21
926.295	PK	V	52.47	22.35	5.08	79.9	94	-14.1
1852.55	AV	H	18.34	26.4	2.2	46.94	54	-7.06
1852.55	AV	V	17.33	26.4	2.2	45.93	54	-8.07
2778.87	AV	H	12.34	29.5	2.64	44.48	54	-9.52
2778.87	AV	V	11.45	29.5	2.64	43.59	54	-10.41

Remark:
1. Corrected Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

EUT : 9011 (Handset unit)
Testing Mode : Transmitter (High Channel)

Freq. (MHz)	Spec. Analyz Detector	Antenna Polariz. (H/V)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Corrected Reading (dBuV/m)	Limit At 3m (dBuV/m)	Margin (dB)
927.5	PK	V	53.91	22.35	5.08	81.34	94	-12.66
927.5	PK	H	57.96	22.35	5.08	85.39	94	-8.61
1855.11	AV	V	16.67	26.4	2.2	45.27	54	-8.73
1855.11	AV	H	17.34	26.4	2.2	45.94	54	-8.06
2782.638	AV	V	11.28	29.5	2.64	43.42	54	-10.58
2782.638	AV	H	12.34	29.5	2.64	44.48	54	-9.52

Remark:
1. Corrected Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

4.4 Radiated Emission Test Data (Base unit) FCC 15.249

Worst Case Radiated Emission
at High Channel, 1810.18 MHz, margin: -9.52 dB

4.4.1 Fundamental & Harmonics Emission Data

EUT : 9011 (Base unit)
Testing Mode : Transmitter (Low Channel)

Freq. (MHz)	Spec. Analyz Detector	Antenna Polariz. (H/V)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Corrected Reading (dBuV/m)	Limit At 3m (dBuV/m)	Margin (dB)
902.552	PK	H	50.28	22.43	5.08	77.79	94	-16.21
902.552	PK	V	49.19	22.43	5.08	76.7	94	-17.3
1805.104	AV	V	12.34	26.4	2.2	40.94	54	-13.06
1805.104	AV	H	13.21	26.4	2.2	41.81	54	-12.19
2707.656	AV	V	7.34	29.5	3.14	39.98	54	-14.02
2707.656	AV	H	8.21	29.5	3.14	40.85	54	-13.15

Remark:
1. Corrected Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

EUT : 9011 (Base unit)
Testing Mode : Transmitter (Middle Channel)

Freq. (MHz)	Spec. Analyz Detector	Antenna Polariz. (H/V)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Corrected Reading (dBuV/m)	Limit At 3m (dBuV/m)	Margin (dB)
903.75	PK	V	49.97	22.43	5.08	77.48	94	-16.52
903.75	PK	H	50.31	22.43	5.08	77.82	94	-16.18
1807.5	AV	H	13.46	26.4	2.2	42.06	54	-11.94
1807.5	AV	V	14.67	26.4	2.2	43.27	54	-10.73
2711.25	AV	H	8.24	29.5	3.14	40.88	54	-13.12
2711.25	AV	V	7.94	29.5	3.14	40.58	54	-13.42

Remark:
1. Corrected Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

EUT : 9011 (Base unit)
Testing Mode : Transmitter (High Channel)

Freq. (MHz)	Spec. Analyz Detector	Antenna Polariz. (H/V)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Corrected Reading (dBuV/m)	Limit At 3m (dBuV/m)	Margin (dB)
905.089	PK	H	49.84	22.43	5.08	77.35	94	-16.65
905.089	PK	V	50.34	22.43	5.08	77.85	94	-16.15
1810.178	AV	V	15.34	26.4	2.2	43.94	54	-10.06
1810.178	AV	H	15.88	26.4	2.2	44.48	54	-9.52
2715.267	AV	H	8.37	29.5	3.14	41.01	54	-12.99
2715.267	AV	V	9.51	29.5	3.14	42.15	54	-11.85

Remark:
1. Corrected Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

4.5 General Radiated Emission Data (Handset unit) FCC 15.209

Worst Case Radiated Emission
at Polarization Vertical, 30 MHz, margin: -19.84 dB

4.5.1 General Radiated Emission Data

(1) Polarity : Vertical
EUT : 9011 (Handset unit)
Testing Mode : Transmitter

Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dB μ V)	Calculated (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
30	13.61	1.6	2.17	17.38	40	-22.62
37.76	15.2	1.77	2.70	19.67	40	-20.33
80.44	6.47	2.18	1.69	10.34	40	-29.66
159.98	8.82	3.03	3.49	15.34	43.5	-28.16
220.12	10.59	3.5	1.11	15.20	46	-30.80
241.46	11.42	3.5	0.75	15.67	46	-30.33

Remark:
1. Calculated Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

(2) Polarity : Horizontal
EUT : 9011 (Handset unit)
Testing Mode : Transmitter

Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dB μ V)	Calculated (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
30	13.61	1.6	4.95	20.16	40	-19.84
31.94	14	1.64	1.89	17.53	40	-22.47
39.7	14.61	1.74	2.91	19.26	40	-20.74
64.92	8.84	1.93	1.54	12.31	40	-27.69
227.88	10.59	3.5	1.30	15.39	46	-30.61
236.61	11.42	3.5	1.32	16.24	46	-29.76

Remark:
1. Calculated Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

4.6 General Radiated Emission Data (Base unit) FCC 15.209

Worst Case Radiated Emission
at Polarization Horizontal, 37.76 MHz, margin: -14.33 dB

4.6.1 General Radiated Emission Data

(1) Polarity : Vertical
EUT : 9011 (Base unit)
Testing Mode : Transmitter

Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dB μ V)	Calculated (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
30	13.61	1.6	10.40	25.61	40	-14.39
46.49	13.68	1.75	2.91	18.34	40	-21.66
65.89	8.57	1.95	1.70	12.22	40	-27.78
81.41	6.47	2.18	5.00	13.65	43.5	-29.85
191.02	9.88	3.13	1.28	14.29	43.5	-29.21
306.45	12.46	3.85	0.91	17.22	46	-28.78

Remark:
1. Calculated Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

(2) Polarity : Horizontal
EUT : 9011 (Base unit)
Testing Mode : Transmitter

Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dB μ V)	Calculated (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
37.76	15.2	1.77	8.70	25.67	40	-14.33
44.55	14	1.75	2.59	18.34	40	-21.66
78.5	7.49	2.18	2.43	12.10	40	-27.90
209.45	10.59	3.1	1.43	15.12	43.5	-28.38
294.81	12.46	3.85	0.25	16.56	46	-29.44
346.22	14.48	4.33	1.62	20.43	46	-25.57

Remark:
1. Calculated Level = Reading Level + Antenna Factor + Cable Loss
2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within ±2.5dB
3. All Readings below 1GHz are Quasi-Peak, above are average value

4.7 Radiated Emission on the band edge FCC 15.249(C)

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental (902~928MHz). Please refer to the attachment plots.

Base
Band-edge channel 1: 9011BC1.pdf

Handset
Band-edge channel 40: 9011BC40.pdf