Test Report of FCC CFR 47 Part 15 Subpart C

On Behalf of

i-Mobile Technology Corporation

FCC ID:	**XZOIO-10C**
Product Description:	**Tablet PC**
Model No.:	**IO-10C**
Supplementary Model:	**IC-10**
Brand Name:	**@MOBILE**
Prepared for:	**i-Mobile Technology Corporation** 3F #8 Alley 15 Lane 120 Sec.1 Neihu Road Neihu District, Taipei City 114, Taiwan
Prepared by:	**Bontek Compliance Testing Laboratory Co., Ltd** 1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China Tel: 86-755-86337020 Fax: 86-755-86337028
Report No.:	BCT13FR189E-2
Issue Date:	April 5, 2014
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Tested by: Lion Cai

Reviewed by: Oweh Yang

Approved by: Kendy Wang

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	**i-Mobile Technology Corporation**
Address of Applicant:	3F #8 Alley 15 Lane 120 Sec.1 Neihu Road Neihu District, Taipei City 114, Taiwan
Manufacturer:	**i-Mobile Technology Corporation**
Address of Manufacturer:	3F #8 Alley 15 Lane 120 Sec.1 Neihu Road Neihu District, Taipei City 114, Taiwan

General Description of E.U.T

Items	Description
EUT Description:	Tablet PC
Model No.:	IO-10C
Supplementary Model:	IC-10
Trade Name:	@MOBILE
Frequency Band:	2402 MHz ~ 2480 MHz
Channel Spacing:	1 MHz
Number of Channels:	79
Modulation Technique:	FHSS
Type of Modulation:	GFSK
Antenna Type:	Built-in Antenna
Antenna Gain:	-5 dBi
Rated Voltage:	Input: 16VDC 4.0A from AC/DC adapter
Adapter description:	Model:STD-16040 Input: AC 100-240V 47-63Hz 1.4A MAX Output: 16VDC 4.0A

*NOTE: * The test data gathered are from the production sample provided by the manufacturer.*
** Supplementary models have the same circuit, but with different appearance*

1.2 Test Standards

The tests were performed based on the Electromagnetic Interference (EMI) tests performed on the EUT. Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 - 2003 Radiated testing was performed at an antenna to EUT distance 3 meters.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.207, 15.209 and 15.247 rules. Test was carried out according to the above mentioned FCC rules and the FCC publication notice DA 00-705: Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems

1.3 Test Facility

All measurement required was performed at laboratory of Shenzhen CTL Testing Technology Co., Ltd. at Floor 1-A,Baisha Technology Park,No.3011,Shahexi Road, Nanshan District, Shenzhen, China 518055.

The test facility is recognized, certified, or accredited by the following organizations:

FCC – Registration No.: 970318

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 970318, December, 2013.

2. SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 Support Equipment

The calibrated antennas used to sample the radiated field strength are mounted on a non-conductive, motorized antenna mast 3 or 10 meters from the leading edge of the turntable.

Support equipments or special accessories in test configuration：

AUX Description:	Manufacturer	Model No.	Certificate	CABLE
Load impedance	SAA	78MD82X	CE, FCC	N/A
Keyboard	Dell	L100	CE, FCC	1.8m shielded data Cable with core
Mouse	Dell	OCJ339	CE, FCC	1.8m shielded data Cable with core
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2.3 General Test Procedures

Conducted Emissions:The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 7.1 of ANSI C63.4-2003 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak detector mode.

Radiated Emissions: The EUT is a placed on as turntable, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4-2009.

2.4 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Power Line Conducted Emission	+/- 2.3 dB
Radiated Emission	+/- 3.4 dB

Uncertainty figures are valid to a confidence level of 95%.

2.5 List of Measuring Equipments Used

Test equipments list of Shenzhen CTL Testing Technology Co., Ltd

No.	Instrument no.	Equipment	Manufacturer	Model No.	S/N	Last Calculator	Due Calculator
1	BCT-EMC001	EMI Test Receiver	R&S	ESCI	100687	2013-4-25	2014-4-24
2	BCT-EMC002	EMI Test Receiver	R&S	ESPI	100097	2013-11-1	2014-10-31
3	BCT-EMC003	Amplifier	HP	8447D	1937A02492	2013-4-25	2014-4-24
4	BCT-EMC018	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2013-4-25	2014-4-24
5	BCT-EMC021	Triple-Loop Antenna	EVERFINE	LLA-2	711002	2013-11-1	2014-10-31
6	BCT-EMC026	RF POWER AMPLIFIER	FRANKONIA	FLL-75	1020A1109	2013-4-25	2014-4-24
7	BCT-EMC029	6DB Attenuator	FRANKONIA	N/A	1001698	2013-4-25	2014-4-24
8	BCT-EMC032	10dB attenuator	ELECTRO-METRICS	EM-7600	836	2013-4-25	2014-4-24
9	BCT-EMC036	Spectrum Analyzer	R&S	FSP	100397	2013-11-1	2014-10-31
10	BCT-EMC037	Broadband preamplifier	SCH WARZBECK	BBV9718	9718-182	2013-4-25	2014-4-24
11	BCT-EMC039	Horn Antenna	SCHWARZBECK	BBHA 9120D	0437	2013-4-25	2014-4-24
12	BCT-EMC038	Horn Antenna	SCHWARZBECK	BBHA9170	0483	2013-4-5	2014-4-4

3. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.207	AC Power Line Conducted Emission	Pass
FCC §15.247(a)(1)	Hopping Channel Bandwidth	Pass
FCC §15.247(a)(1)	Hopping Channel Separation	Pass
FCC §15.247(a)(1)	Number of Hopping Frequency Used	Pass
FCC §15.247(a)(1)(iii)	Dwell Time of Each Frequency	Pass
FCC §15.247(b)(1)	Maximum Peak Output Power	Pass
FCC §15.247(d)	Band Edges Emission	Pass
FCC §15.247(d)	Spurious Radiated Emission	Pass
FCC §15.203/15.247(b)/(c)	Antenna Requirement	Pass

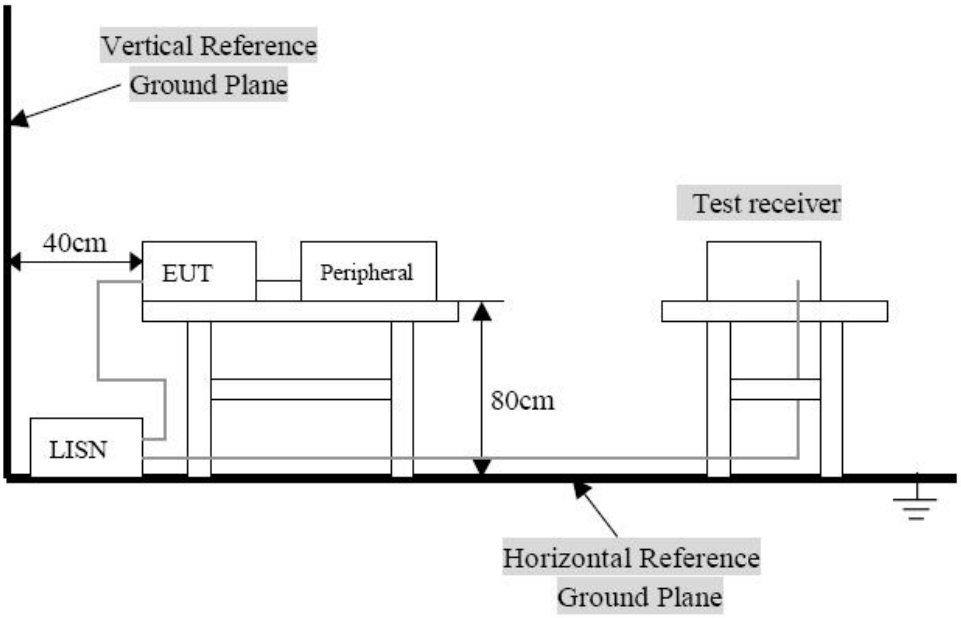
4. TEST OF AC POWER LINE CONDUCTED EMISSION

4.1 Applicable Standard

Refer to FCC §15.207.
For a Low-power Radio-frequency Device is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150～0.500	66～56	56～46
0.500～5.000	56	46
5.000～30.00	60	50

4.2 Test Setup Diagram



Remark: The EUT was connected to a 120 VAC/ 60Hz power source.

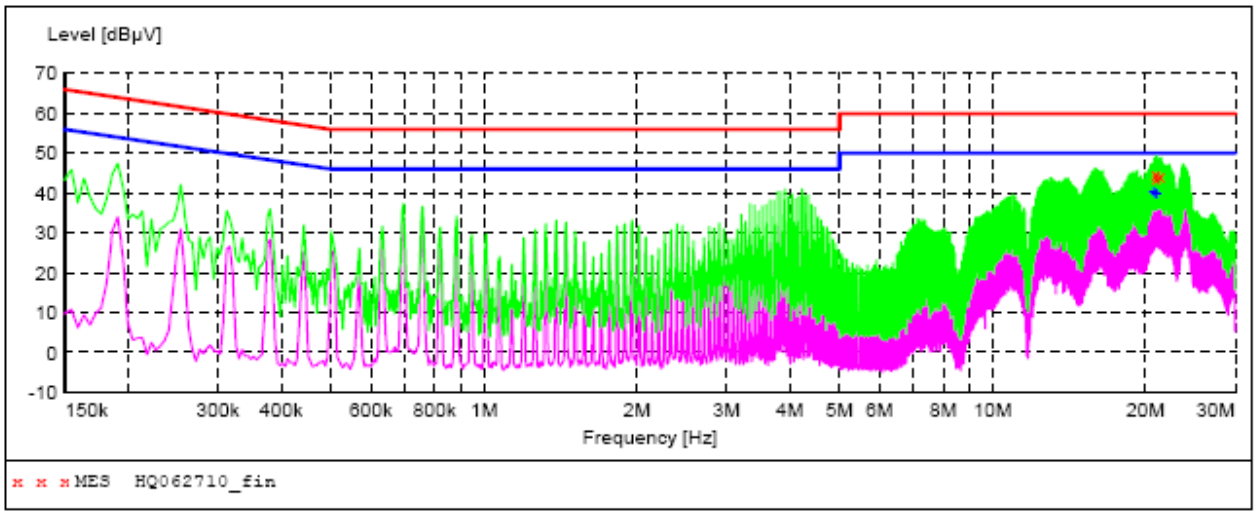
4.3 Test Result

Temperature (℃) : 23~25	EUT: Tablet PC
Humidity (%RH): 45~58	M/N: IO-10C
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode

Conducted Emission:

EUT: Tablet PC
Operating Condition: Tx Mode
Test Site: Shielded Room
Operator: Andy
Test Specification: AC 120V/60Hz for adapter
Comment: Live Line

SCAN TABLE: "Voltage(150K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HQ062710_fin"

6/27/2013 15:03

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
20.908500	45.10	10.7	60	14.9	QP	L1	GND
20.976000	43.70	10.7	60	16.3	QP	L1	GND
21.412500	44.40	10.7	60	15.6	QP	L1	GND

MEASUREMENT RESULT: "HQ062710_fin2"

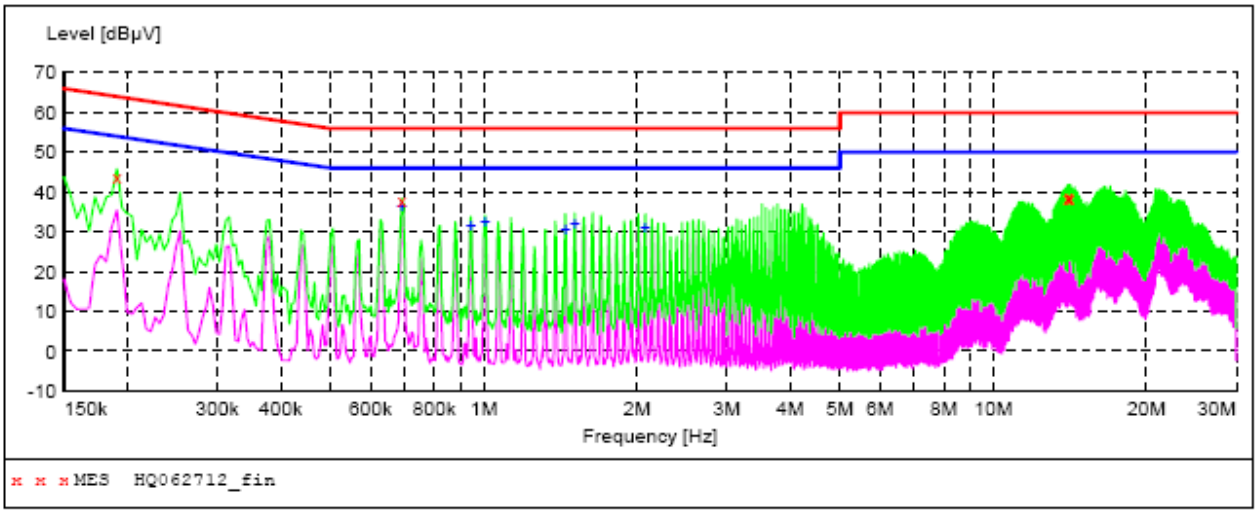
6/27/2013 15:03

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
20.719500	40.40	10.7	50	9.6	AV	L1	GND
20.908500	40.00	10.7	50	10.0	AV	L1	GND
21.034500	40.00	10.7	50	10.0	AV	L1	GND

Conducted Emission:

EUT: Tablet PC
Operating Condition: Tx Mode
Test Site: Shielded Room
Operator: Andy
Test Specification: AC 120V/60Hz for adapter
Comment: Neutral Line

SCAN TABLE: "Voltage(150K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HQ062712_fin"

6/27/2013 15:18

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.190500	44.00	11.7	64	20.0	QP	N	GND
0.690000	37.90	10.4	56	18.1	QP	N	GND
14.014500	38.30	10.7	60	21.7	QP	N	GND
14.077500	38.80	10.7	60	21.2	QP	N	GND
14.140500	38.40	10.8	60	21.6	QP	N	GND

MEASUREMENT RESULT: "HQ062712_fin2"

6/27/2013 15:18

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.690000	36.60	10.4	46	9.4	AV	N	GND
0.942000	31.80	10.4	46	14.2	AV	N	GND
1.005000	32.50	10.5	46	13.5	AV	N	GND
1.446000	30.60	10.4	46	15.4	AV	N	GND
1.509000	32.20	10.4	46	13.8	AV	N	GND
2.071500	31.20	10.4	46	14.8	AV	N	GND

5. Test of Hopping Channel Bandwidth

5.1 Applicable Standard

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

5.2 EUT Setup

Spectrum Analyzer

5.3 Test Equipment List and Details

See section 2.5.

5.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.

2. Use the following spectrum analyzer settings:
   Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel
   RBW ⩾ 1% of the 20 dB bandwidth, VBW ⩾ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold

3. The spectrum width with level higher than 20dB below the peak level.

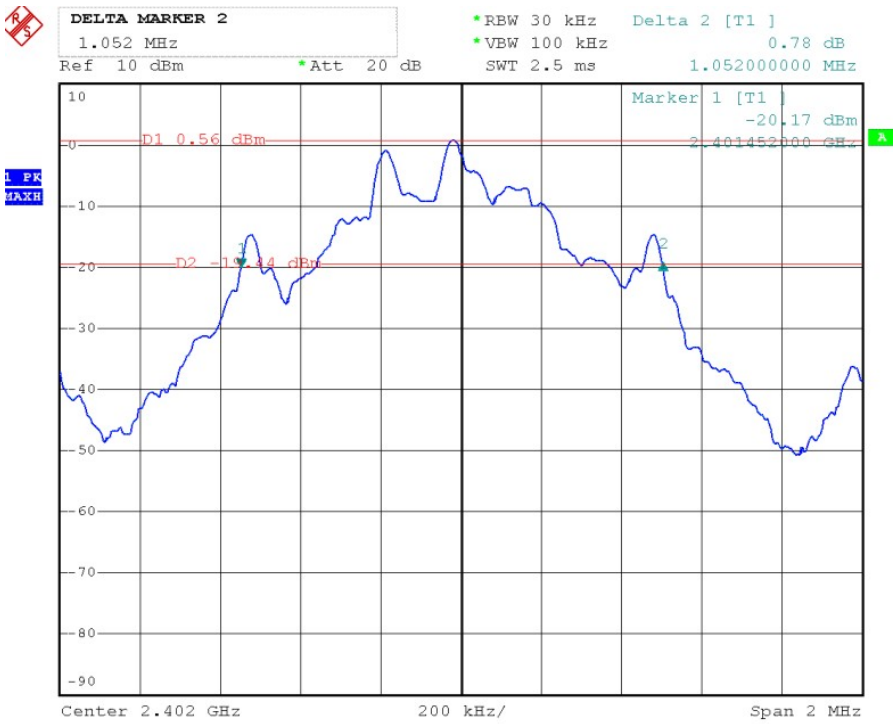
4. Repeat above 1~3 points for the middle and highest channel of the EUT.

5.5 Test Result

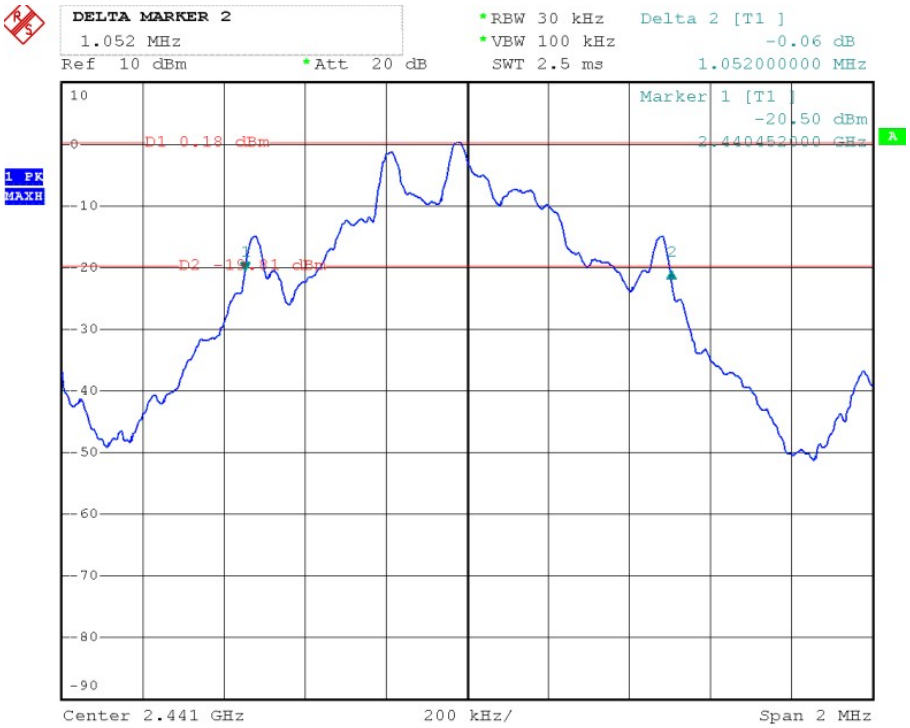
Temperature (℃) : 22~23	EUT: Tablet PC
Humidity (%RH): 50~54	M/N: IO-10C
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode

Modulation Type	Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	Min. Limit (kHz)
GFSK	Low	2402.00	1052	>25
GFSK	Middle	2441.00	1052	>25
GFSK	High	2480.00	1056	>25

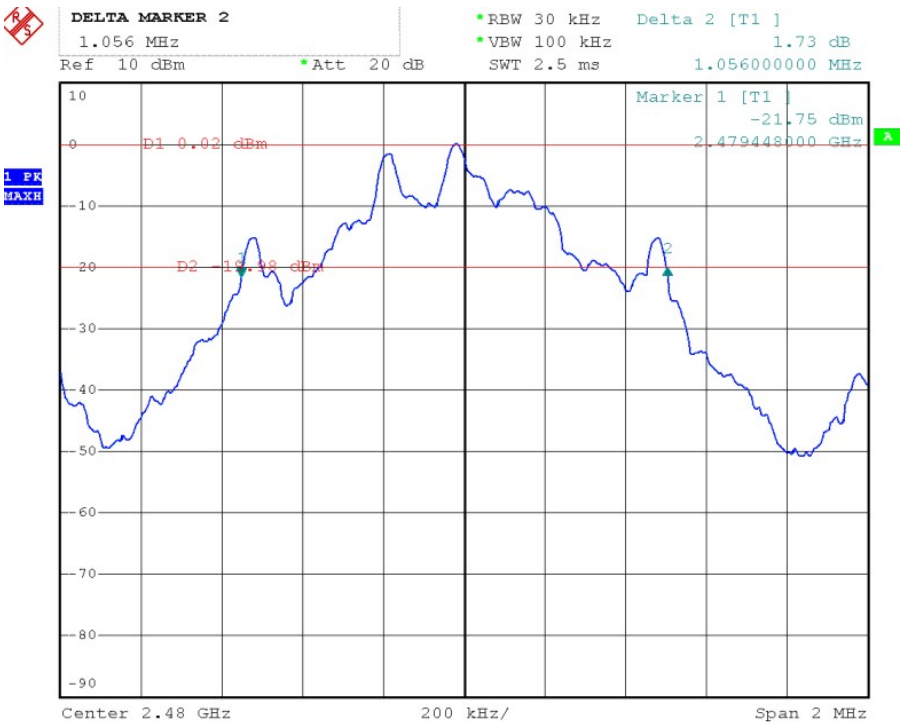
Channel Low



Channel Middle



Channel High



6. Test of Hopping Channel Separation

6.1 Applicable Standard

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

6.2 EUT Setup

Spectrum Analyzer

6.3 Test Equipment List and Details

See **section 2.5**.

6.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.

2. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peaks of two adjacent channels
   RBW ≥ 1% of the span, VBW ≥ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold

3. The Hopping Channel Separation is defined as the separation between 2 neighboring hopping frequencies.

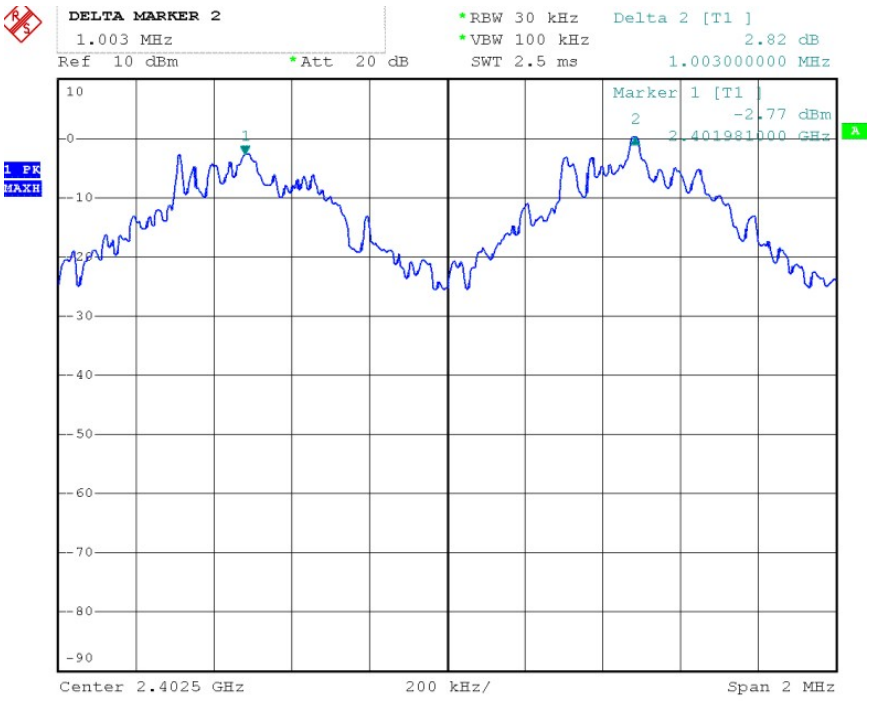
4. Repeat above 1~3 points for the middle and highest channel of the EUT.

6.5 Test Result

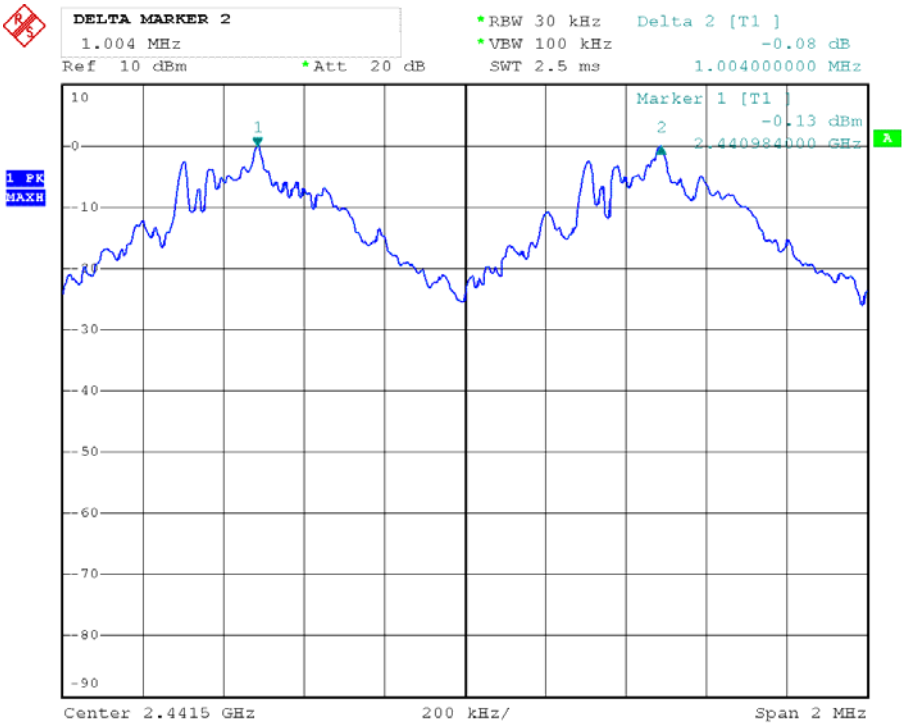
Temperature (℃) : 22~23	EUT: Tablet PC
Humidity (%RH): 50~54	M/N: IO-10C
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode

Modulation Type	Frequency (MHz)	Channel Separation (MHz)	Min. Limit (kHz)
GFSK	2402~2403	1.003	>25
GFSK	2441~2442	1.004	>25
GFSK	2479~2480	1.004	>25

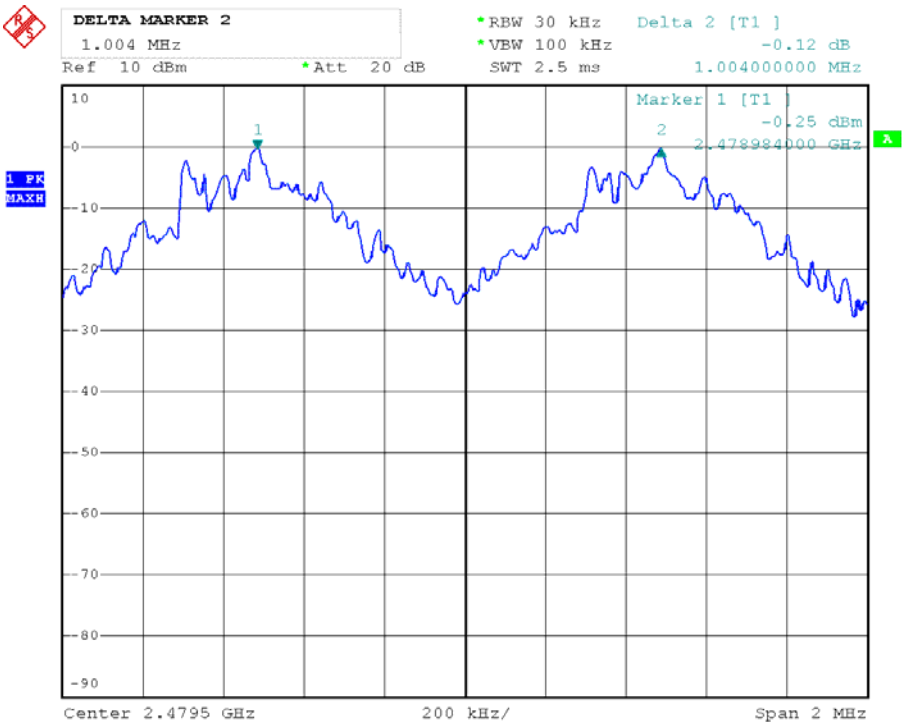
Channel Low



Channel Middle



Channel High

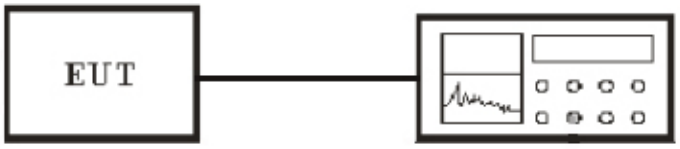


7. Test of Number of Hopping Frequency

7.1 Applicable Standard

Section 15.247(a)(1)(iii): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 15 non-overlapping hopping channels. Frequency hopping system which use fewer than 75 hopping frequencies may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping system may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels are used.

7.2 EUT Setup



Spectrum Analyzer

7.3 Test Equipment List and Details

See **section 2.5**.

7.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.

2. Use the following spectrum analyzer settings:
   Span = the frequency band of operation
   RBW ⩾ 1% of the span, VBW ⩾ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold

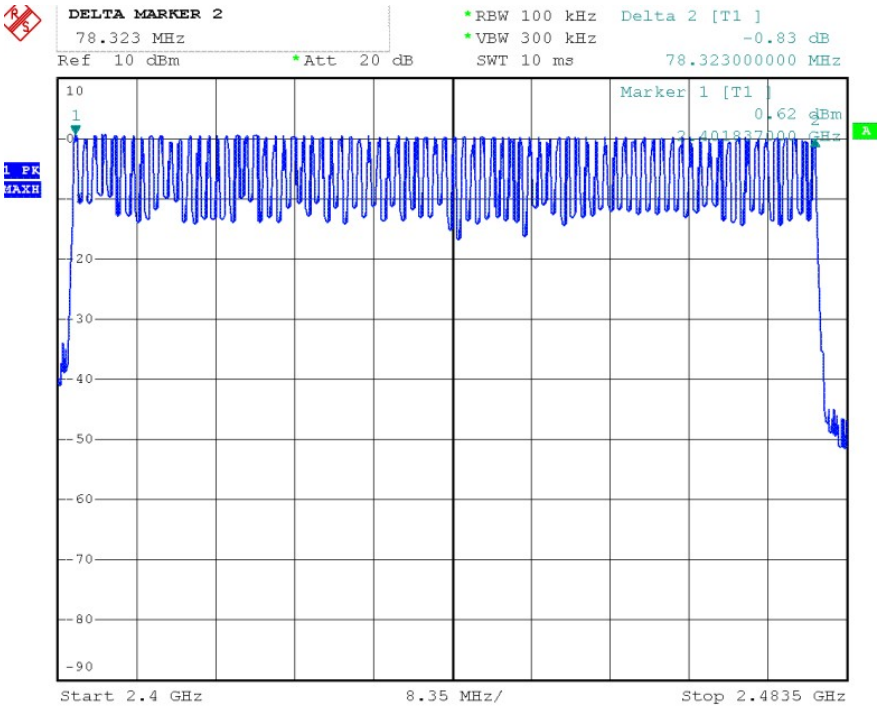
3. Observe frequency hopping in 2400MHz~2483.5MHz, there are at least 32 non-overlapping channels.

4. Repeat above 1~3 points for the middle and highest channel of the EUT.

7.5 Test Result

Temperature (℃) : 22~23	EUT: Tablet PC
Humidity (%RH): 50~54	M/N: IO-10C
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode

Modulation Type	Frequency (MHz)	Number of Hopping Channels	Min. Limit
GFSK	2402.0~2480.0	79	>15


DELTA MARKER 2
78.323 MHz
*RBW 100 kHz
*VBW 300 kHz
SWT 10 ms
Delta 2 [T1]
-0.83 dB
78.323000000 MHz
Ref 10 dBm
*Att 20 dB
Marker 1 [T1]
0.62 dBm
1 PK
MAXH
Start 2.4 GHz
8.35 MHz/
Stop 2.4835 GHz

8. Test of Dwell Time of Each Frequency

8.1 Applicable Standard

Section 15.247(a)(1)(iii): For frequency hopping systems operating in the 2400-2483.5 MHz band The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4seconds multiplied by the number of hopping channels employed.

8.2 EUT Setup

Spectrum Analyzer

8.3 Test Equipment List and Details

See **section 2.5**.

8.4 Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator.

2. Use the following spectrum analyzer settings:
   Span = zero span, centered on a hopping channel
   RBW = 1 MHz, VBW ≥ RBW
   Sweep = as necessary to capture the entire dwell time per hopping channel
   Detector function = peak
   Trace = max hold

3. Set the center frequency on any frequency would be measure and set the frequency span to zero span.

4. Measure the maximum time duration of one single pulse.

8.5 Test Result

Temperature (℃) : 22~23	EUT: Tablet PC
Humidity (%RH): 50~54	M/N: IO-10C
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode

DH1

Dwell time= t*(1.6/2/79)*31.6

DH3

Dwell time= t*(1.6/4/79)*31.6

DH5

Dwell time= t*(1.6/6/79)*31.6

Low Channel

Modulation Type		Reading （ms）	Dwell Time (ms)	Limit (ms)
GFSK	DH1	0.400	128	400
GFSK	DH3	1.655	264.8	400
GFSK	DH5	2.919	311.36	400

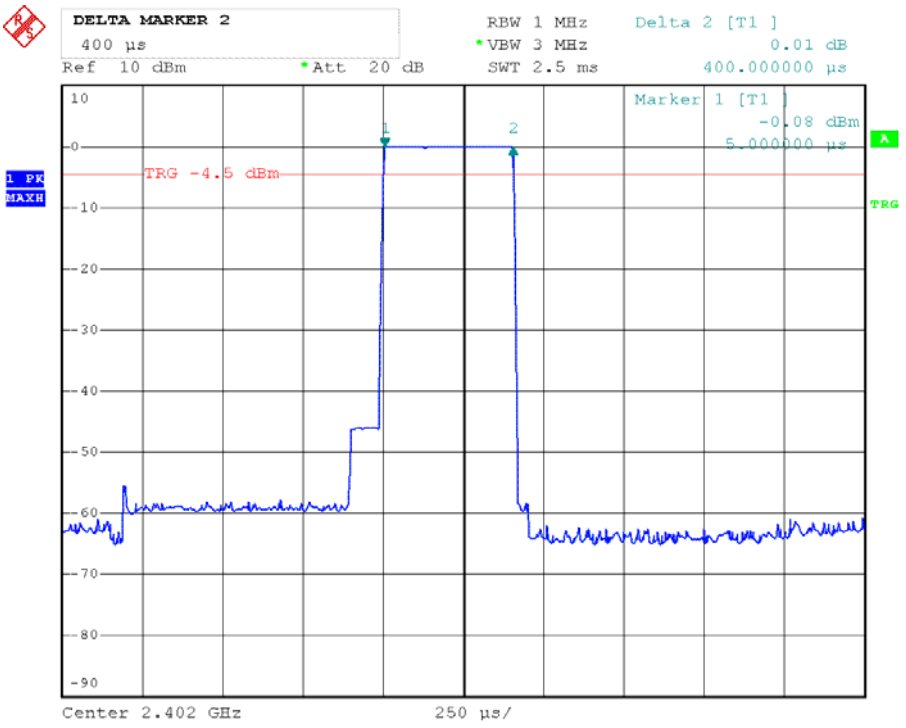
Middle Channel

Modulation Type		Reading （ms）	Dwell Time (ms)	Limit (ms)
GFSK	DH1	0.400	128	400
GFSK	DH3	1.655	264.8	400
GFSK	DH5	2.919	311.36	400

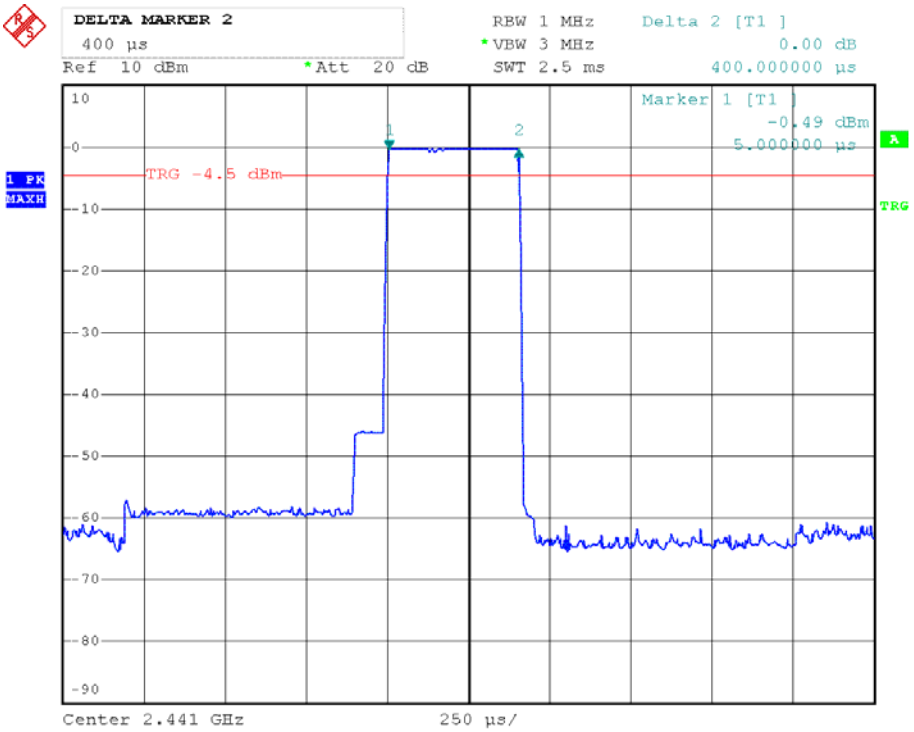
High Channel

Modulation Type		Reading （ms）	Dwell Time (ms)	Limit (ms)
GFSK	DH1	0.400	128	400
GFSK	DH3	1.655	264.8	400
GFSK	DH5	2.919	311.36	400

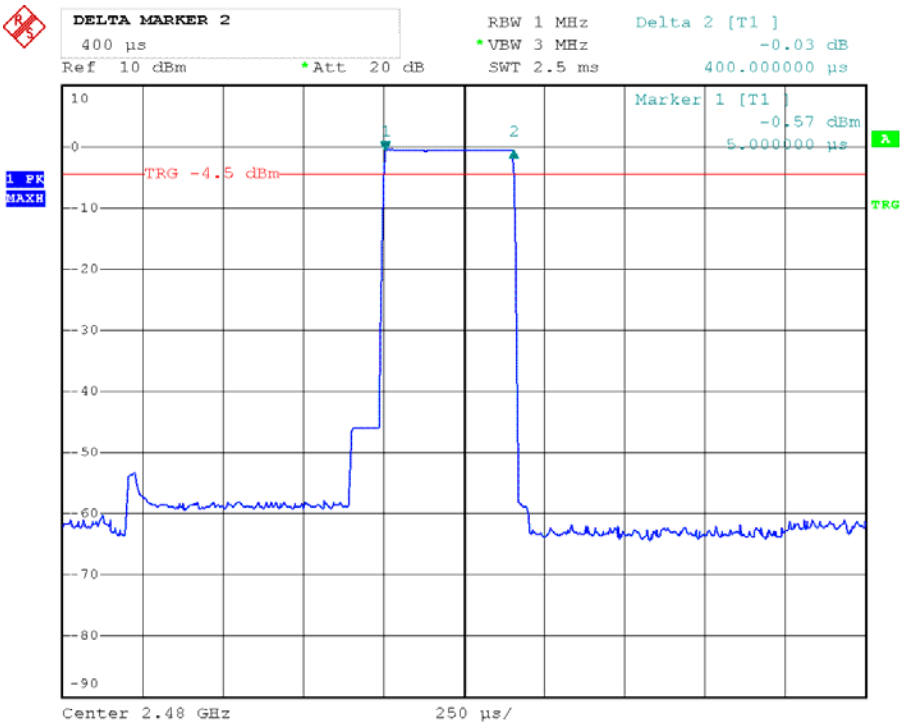
DH1
Channel Low



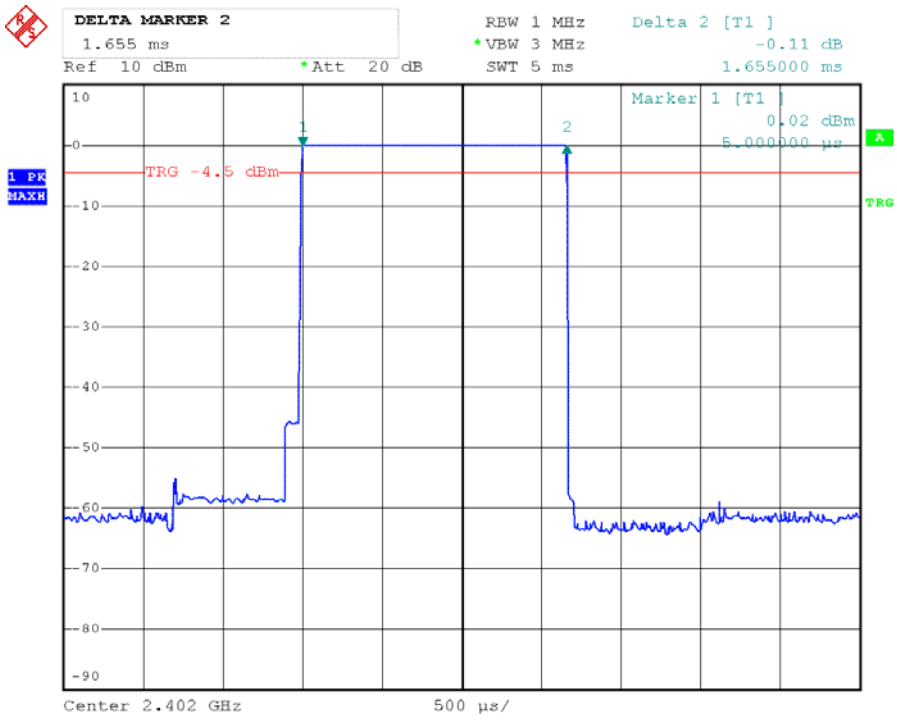
Channel Middle



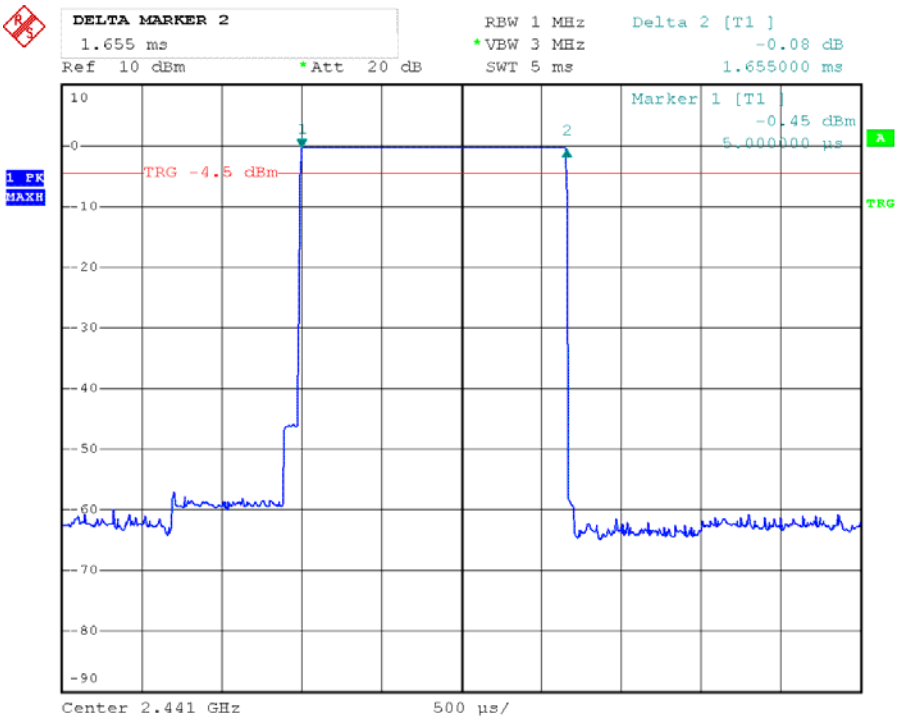
Channel High



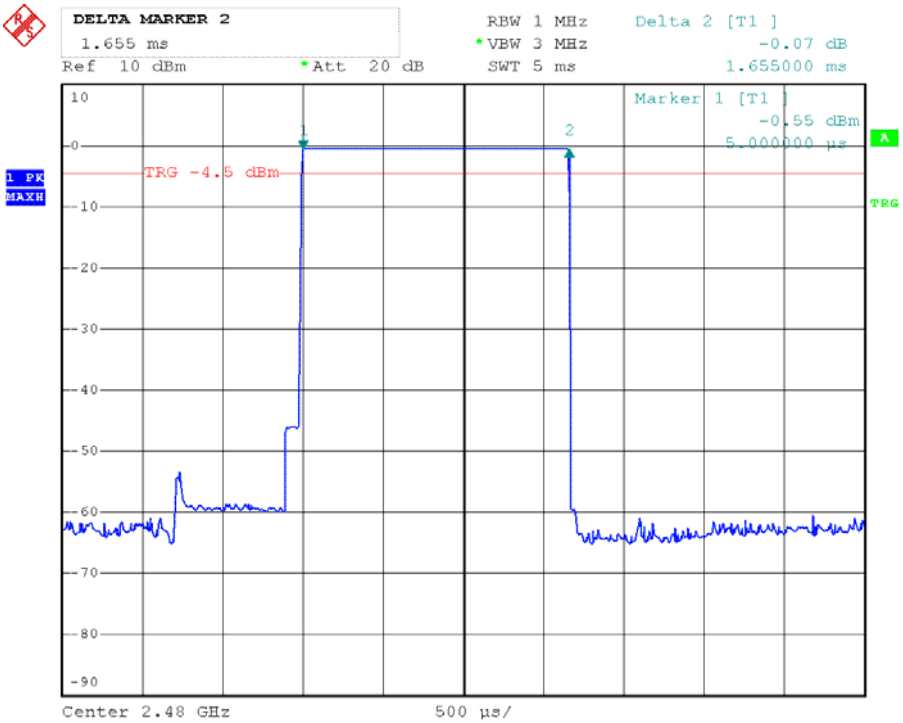
DH3
Channel Low



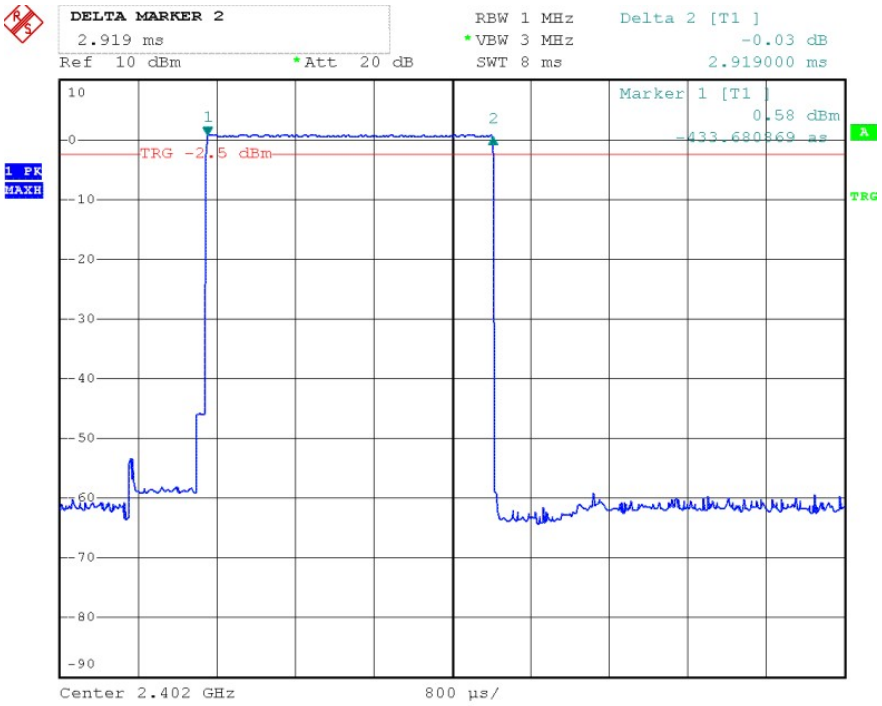
Channel Middle



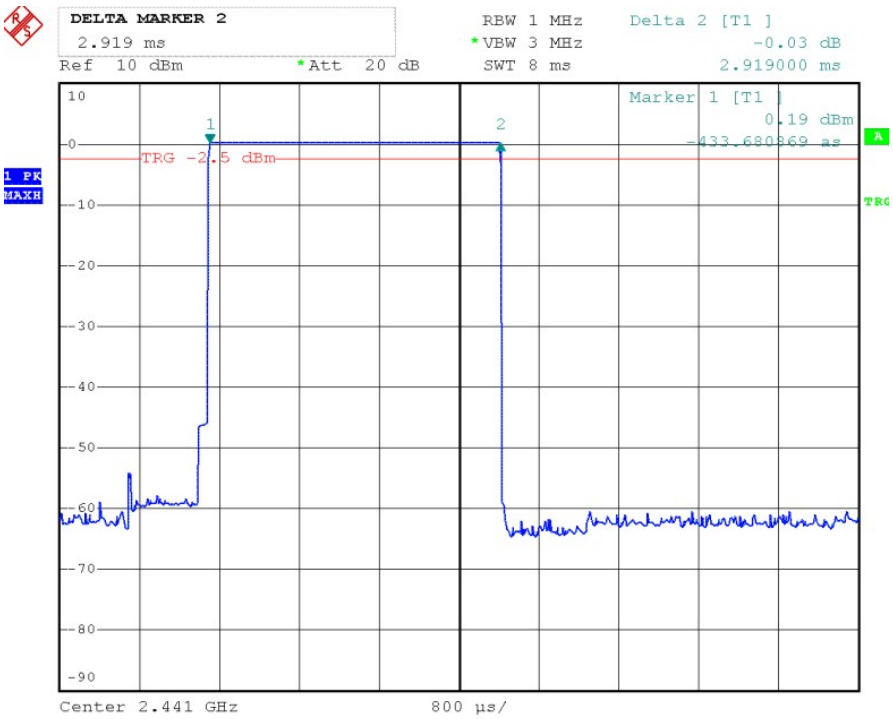
Channel High



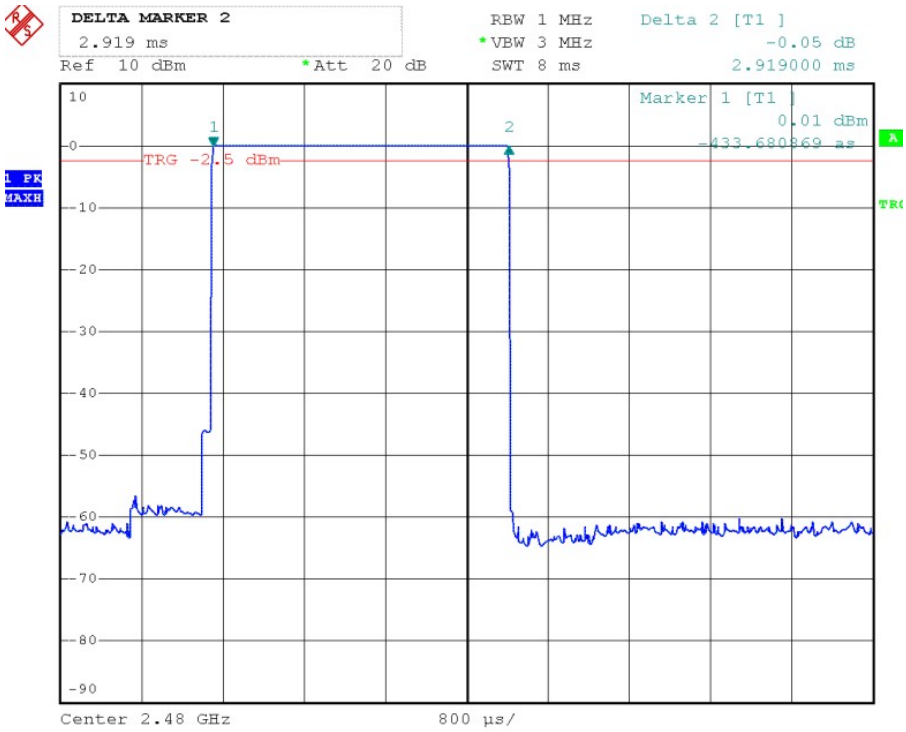
DH5
Channel Low



Channel Middle



Channel High



9. Test of Maximum Peak Output Power

9.1 Applicable Standard

Section 15.247(b)(1): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels and The maximum peak output power shall not exceed 1 watt. For all other frequency hopping systems in this frequency band, The maximum peak output power shall not exceed 0.125 watt.

9.2 EUT Setup

Spectrum Analyzer

9.3 Test Equipment List and Details

See **section 2.5**.

9.4 Test Procedure

1. The transmitter output was connected to the peak power meter and recorded the peak value.

2. Peak power meter parameter set to auto attenuator and filter is the same as.

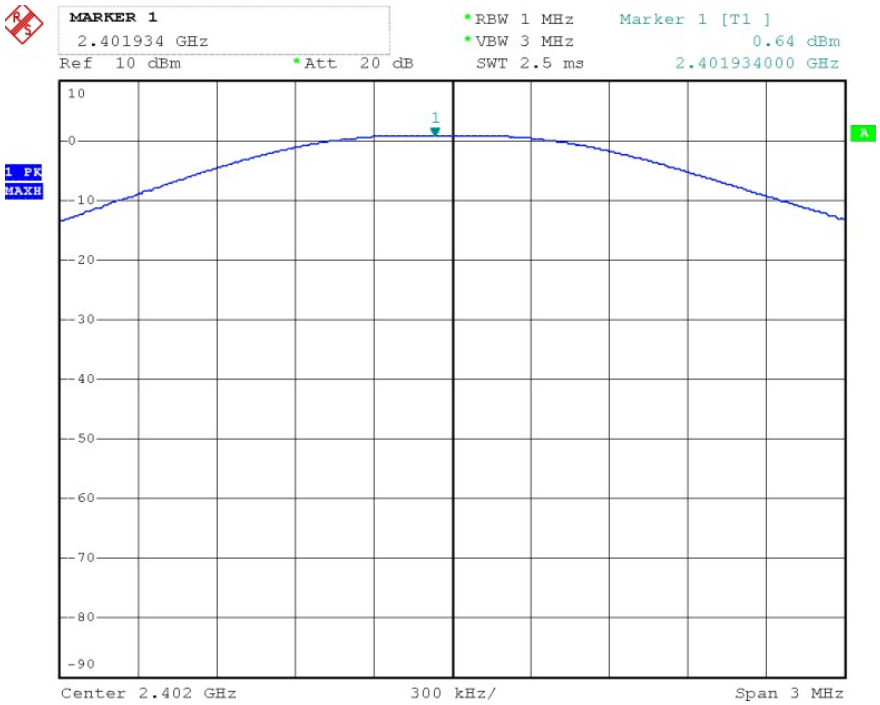
3. Repeated the 1 for the middle and highest channel of the EUT.

9.5 Test Result

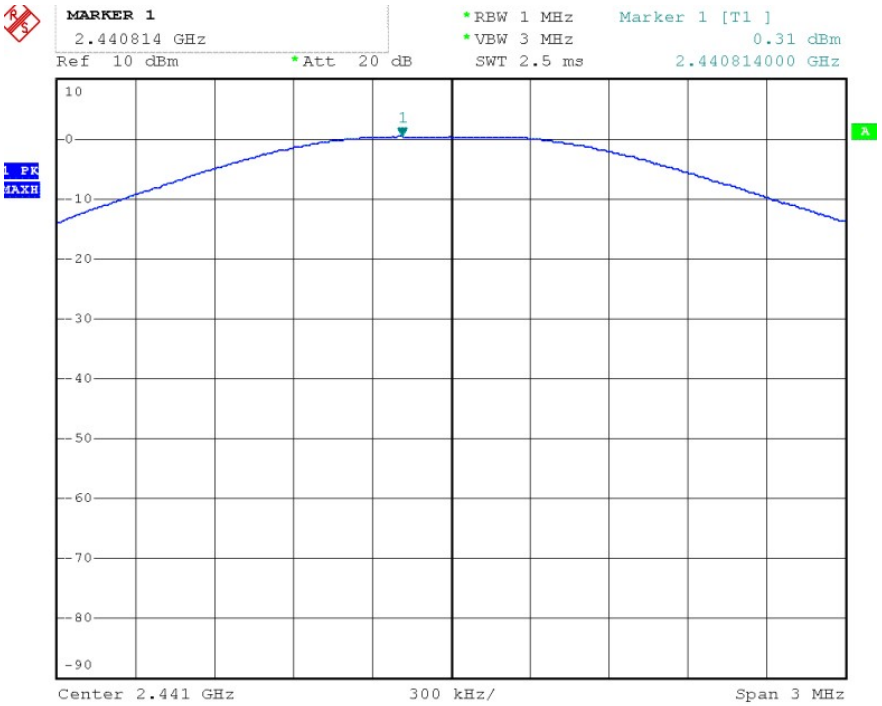
Temperature (℃) : 22~23	EUT: Tablet PC
Humidity (%RH): 50~54	M/N: IO-10C
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode

Modulation Type	Channel No.	Frequency (MHz)	Output Power (dBm)	Limits (dBm)	Margin (dB)
GFSK	Low	2402.00	0.64	21	20.43
GFSK	Middle	2441.00	0.31	21	20.83
GFSK	High	2480.00	-0-29	21	20.88

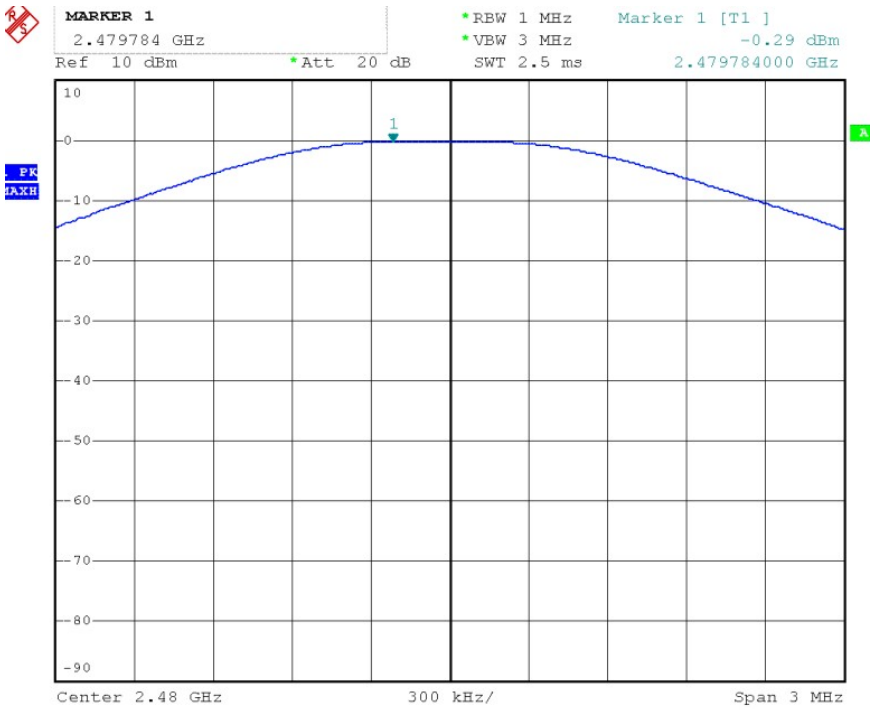
Channel Low



Channel Middle



Channel High



10. Test of Band Edges Emission

10.1 Applicable Standard

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. In addition, radiated emissions that fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209.

10.2 EUT Setup

Radiated Measurement Setup

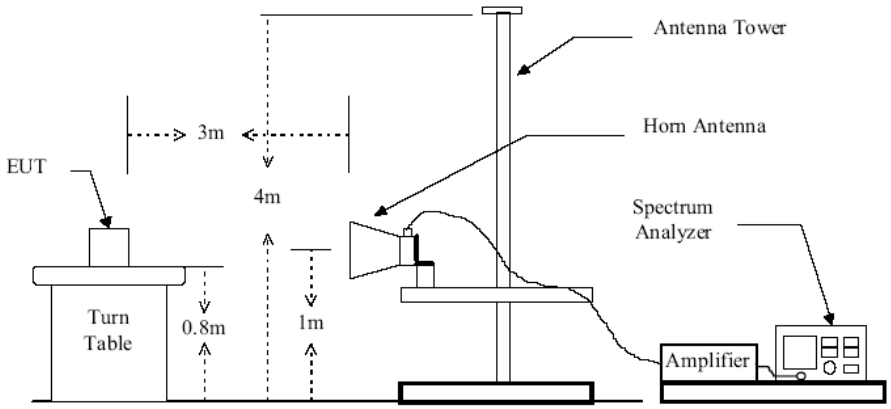


Figure 2 : Frequencies measured above 1 GHz configuration

Conducted Measurement Setup

Spectrum Analyzer

10.3 Test Equipment List and Details

See section 2.5.

10.4 Test Procedure

Conducted Measurement

1. The transmitter is set to the lowest channel.

2. The transmitter output was connected to the spectrum analyzer via a cable and cable loss is used as the offset of the spectrum analyzer.

3. Set both RBW and VBW of spectrum analyzer to 100KHz with convenient frequency span including 100MHz bandwidth from lower band edge. Then detector set to peak and max hold this trace.

4. The lowest band edges emission was measured and recorded.

5. The transmitter set to the highest channel and repeated 2~4.

Radiated Measurement

1. Configure the EUT according to ANSI C63.4-2003

2. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.

4. For band edge emission, the antenna tower was scan (from 1 M to 4 M) and then the turn table was rotated (from 0 degree to 360 degrees) to find the maximum reading.

5. For band edge emission, use 1MHz VBW and 1MHz RBW for reading under AV and use 1MHz VBW and 1MHz RBW for reading under PK.

10.5 Test Result

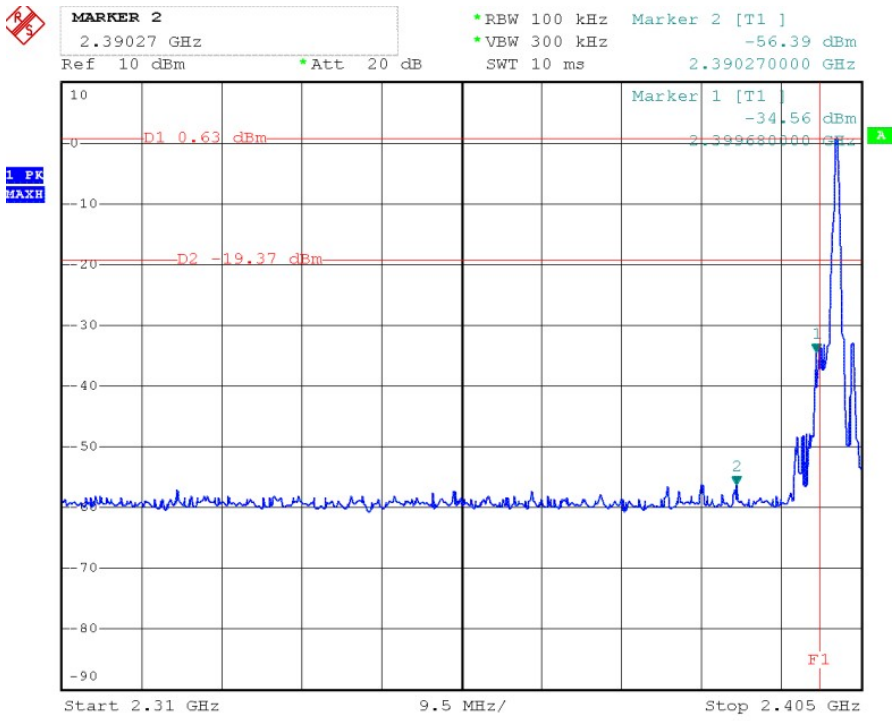
Temperature (℃) : 22~23	EUT: Tablet PC
Humidity (%RH): 50~54	M/N: IO-10C
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode

Radiated Test Result

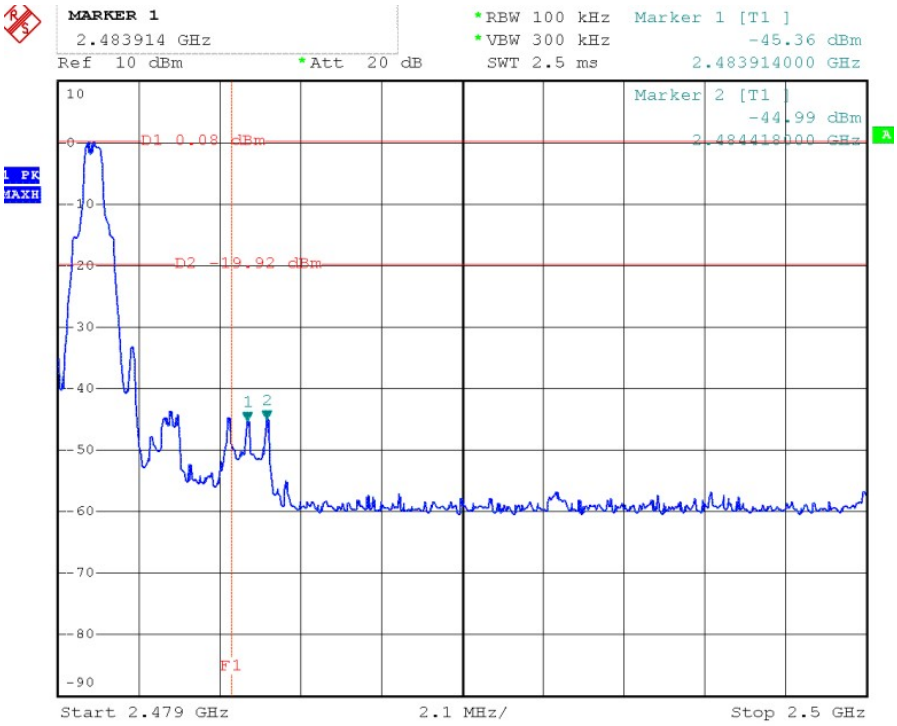
Worst Case

Frequency (MHz)	Antenna Polarization	Emission Read Value (dBμV/m)	Limits (dBμV/m)
2390	H	38.52	54
2483.6	H	37.54	54

Low Channel



High Channel



11. Test of Spurious Radiated Emission

11.1 Applicable Standard

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. In addition, radiated emissions that fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209.

11.2 EUT Setup

Radiated Measurement Setup

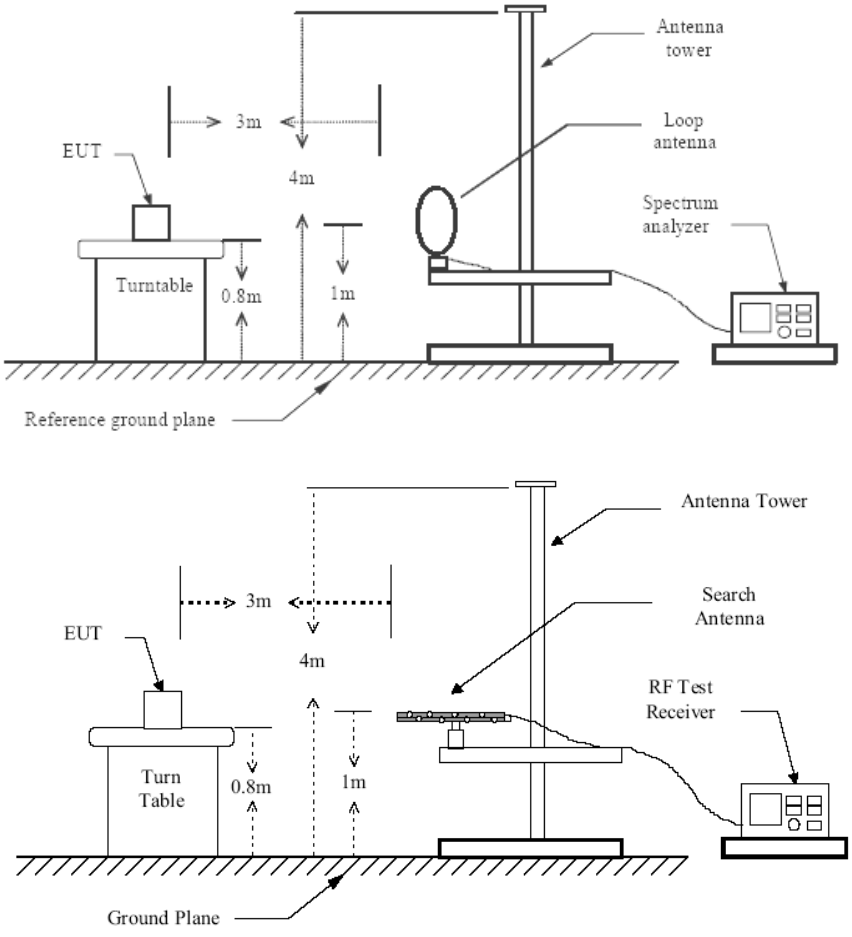


Figure 1 : Frequencies measured below 1 GHz configuration

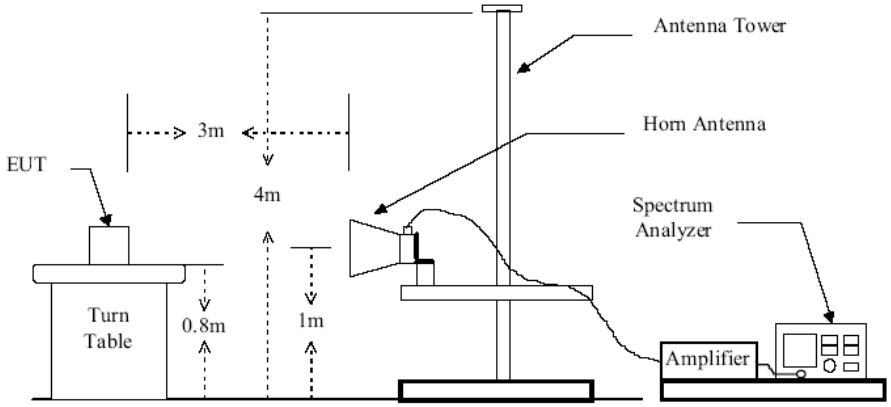


Figure 2 : Frequencies measured above 1 GHz configuration

Conducted Measurement Setup

Spectrum Analyzer

11.3 Test Equipment List and Details

See **section 2.5**.

11.4 Test Procedure

Radiated Measurement

1. Configure the EUT according to ANSI C63.4-2009

2. The EUT was placed on the top of the turntable 0.8 meter above ground.

3. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.

4. Power on the EUT and all the supporting units.

5. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

6. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.

7. For each suspected emission, the antenna tower was scanned (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.

8. According to the characteristic of the EUT crystals, the range of frequencies was investigated from 9KHz to 30MHz, 30MHz to 1GHz and 1GHz to 26GHz.

9. For emission below 1GHz, Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.

10. For emission above 1GHz, Set the RBW=1MHz,VBW=3MHz for Peak Detector while the RBW=1MHz, VBW=10Hz for Average Detector, Readings are both peak and average values.

11. The pre-test have done for the EUT in three axes and found the worst emission at position shown in test setup photos. The worst case data is recorded in the report. All emission not reported are much lower than the prescribed limits.

Conducted Measurement

1. For emission above 1GHz to 26G,conducted measurement method is used.

2. The transmitter is set to the lowest channel.

3. The transmitter output was connected to the spectrum analyzer via a cable and cable loss is used as the offset of the spectrum analyzer.

4. Set RBW to 1 MHz and VBW to 3 MHz, Then detector set to peak and max hold this trace.

5. The lowest band edges emission was measured and recorded.

6. The transmitter set to the highest channel and repeated 2~4.

11.5 Test Result

Temperature (℃) : 22~23	EUT: Tablet PC
Humidity (%RH): 50~54	M/N: IO-10C
Barometric Pressure (mbar): 950~1000	Operation Condition: Continue Tx

Note: In this testing, the EUT was respectively tested in three different orientations. That is:

1. EUT was lie vertically, and then its Antenna oriented upward
2. EUT was lie vertically, and then its Antenna oriented downward
3. EUT was lie flatwise, and then its Antenna oriented to the receiving antenna

The worst test data see following pages
When the EUT was lie flatwise, and its Antenna oriented to the receiving antenna, the worst test data was got as following table.

Worst case Spurious Emission (9k~30MHz)

Frequency	Meter Reading	Antenna Factor	Cable Loss	Emission Levels	Limits	Margin	Detector Mode
(MHz)	(dBμV)	(dB/M)	(dB)	(dBμV/M)	(dB μ V/M)	(dB)	PK/QP
5.56	22.66	8.15	1.03	31.84	67	-35.16	QP
14.21	19.82	9.04	1.19	30.05	49.5	-19.45	QP
19.05	20.33	9.13	1.08	30.54	49.5	-18.96	QP
24.22	19.68	8.22	1.66	29.56	49.5	-19.94	QP

Worst case BDR 1M
Spurious Emission (30~1000MHz)

Horizontal

Frequency	Meter Reading	Tansd	Limits	Margin	Detector Mode
(MHz)	(dBμV)	(dB)	(dB μ V/M)	(dB)	PK/QP
60.03	26.19	14.2	40	-13.81	QP
91.02	25.49	13.5	40	-14.51	QP
149.49	25.29	12.6	43.5	-18.21	QP
221.49	36.59	16.1	46	-9.41	QP
418.99	29.19	21.7	46	-16.81	QP
911.49	35.99	29.1	46	-10.01	QP
N/A	----	**----**	----	----	----

Vertical

Frequency	Meter Reading	Tansd	Limits	Margin	Detector Mode
(MHz)	(dBμV)	(dB)	(dB μ V/M)	(dB)	PK/QP
45.29	32.59	16.1	40	-7.41	QP
54.19	31.09	13.5	40	-8.91	QP
91.79	27.59	13.4	40	-12.41	QP
229.59	33.69	14.8	46	-12.31	QP
519.49	31.49	24.7	46	-14.51	QP
964.29	36.99	28.3	54	-17.01	QP
N/A	----	**----**	----	----	----

Worst case
Spurious Emission test data above 1G

Channel Low								
Maximum Frequency (MHz)	Polarity and Level					Limit (dBµV/m)	Margin (dBµV/m)	Mark (P/Q/A)
	Polarity	Height (m)	Reading dBµV	Transd	Result dBµV/m			
1793.33	H	1	47.2	-9.41	37.79	74	-36.21	P
			36.35	**-9.33**	27.02	54	-26.98	A
1878.33	V	1	49.25	-10.17	39.08	74	-34.92	P
			37.89	**-10.05**	27.84	54	-26.16	A
2402.01	H	1	70.31	-7.23	63.08	---	---	P
			68.61	-7.23	61.38	---	---	A
2402.01	V	1	70.71	-7.23	63.48	---	---	P
			67.81	-7.23	60.58	---	---	A
4804.03	H	1	45.34	2.14	47.48	74	-26.52	P
			38.33	2.14	40.47	54	-13.53	A
4804.03	V	1	46.45	2.14	48.59	74	-25.41	P
			39.4	2.14	41.54	54	-12.46	A
7206.05	H	1	48.3	6.58	54.88	74	-19.12	P
			39.63	6.58	46.21	54	-7.79	A
7206.05	V	1	47.74	6.58	54.32	74	-19.68	P
			38.39	6.58	44.97	54	-9.03	A
9625.14	H	1	48.76	8.25	57.01	74	-16.99	P
			39.84	8.13	47.97	54	-6.03	A
9617.06	V	1	48.37	8.07	56.44	74	-17.56	P
			39.29	8.22	47.51	54	-6.49	A
12011.27	---		---	---	---	---	---	
14415.12	---		---	---	---	---	---	
16824.09	---		---	---	---	---	---	
19226.15	---		---	---	---	---	---	
21628.22	---		---	---	---	---	---	
24030.17	---		---	---	---	---	---	

Remark: 1. Transd.=Antenna Factor+Cable Loss-Pre-amplifier
Margin = Level-Limit
Mark: P means Peak Value, Q means Quasi Peak Value, A means Average Value
2. Data of measurement within this frequency range shown " -" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
3. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz.
4. The test limit distance is 3m limit

Channel Mid								
Maximum Frequency (MHz)	Polarity and Level					Limit (dBµV/m)	Margin (dBµV/m)	Mark (P/Q/A)
	Polarity	Height (m)	Reading dBµV	Transd	Result dBµV/m			
2441.02	H	1	70.91	-7.15	63.76	---	---	P
			68.66	-7.15	61.51	---	---	A
2441.02	V	1	69.35	-7.15	62.2	---	---	P
			68.42	-7.15	61.27	---	---	A
4882.05	H	1	46.34	2.52	48.86	74	-25.14	P
			37.52	2.52	40.04	54	-13.96	A
4882.05	V	1	47.63	2.52	50.15	74	-23.85	P
			38.6	2.52	41.12	54	-12.88	A
7323.07	H	1	48.39	6.71	55.1	74	-18.9	P
			40.33	6.71	47.04	54	-6.96	A
7323.07	V	1	48.46	6.71	55.17	74	-18.83	P
			40.86	6.71	47.57	54	-6.43	A
9753.12	H	1	46.3	8.31	54.61	74	-19.39	P
			37.39	8.22	45.61	54	-8.39	A
9745.21	V	1	47.34	8.26	55.6	74	-18.4	P
			37.68	8.17	45.85	54	-8.15	A
12213.11	---		---	---	---	---	---	
14656.13	---		---	---	---	---	---	
17067.14	---		---	---	---	---	---	
19538.36	---		---	---	---	---	---	
21959.12	---		---	---	---	---	---	
24420.21	---		---	---	---	---	---	

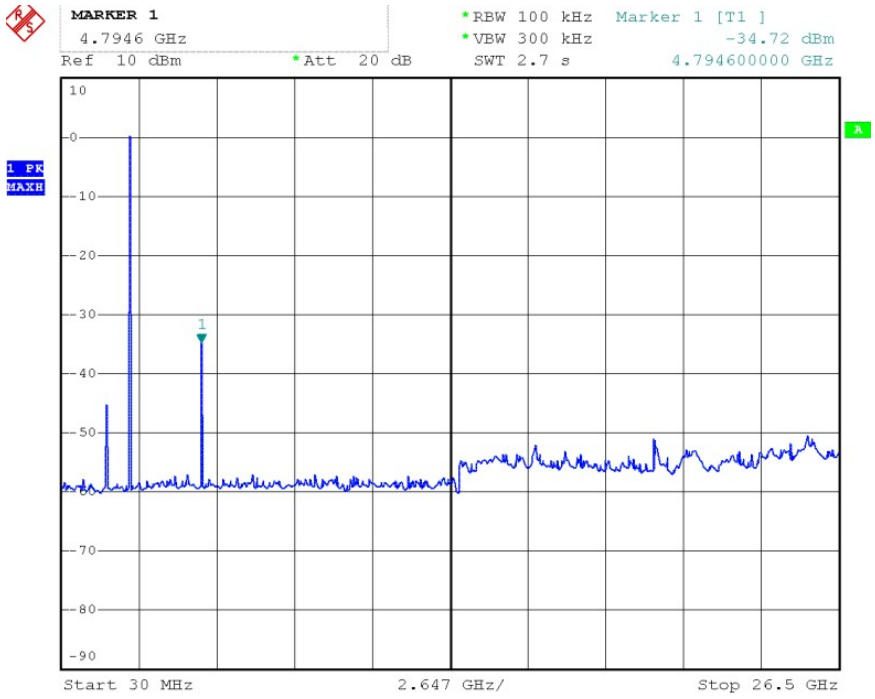
Remark: 1. Transd.=Antenna Factor+Cable Loss-Pre-amplifier
Margin = Level-Limit
Mark: P means Peak Value, Q means Quasi Peak Value, A means Average Value
2. Data of measurement within this frequency range shown " -" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
3. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz.
4. The test limit distance is 3m limit

Channel High								
Maximum Frequency (MHz)	Polarity and Level					Limit (dBµV/m)	Margin (dBµV/m)	Mark (P/Q/A)
	Polarity	Height (m)	Reading dBµV	Transd	Result dBµV/m			
2480.01	H	1	67.79	-7.03	60.76	---	---	P
			64.09	-7.03	57.06	---	---	A
2480.01	V	1	67.09	-7.03	60.06	---	---	P
			66.39	-7.03	59.36	---	---	A
2898.33	H	1	43.51	-4.65	38.86	74	-35.14	P
			35.94	-4.23	31.71	54	-22.29	A
2898.33	V	1	44.11	-4.65	39.46	74	-34.54	P
			36.42	-4.23	32.19	54	-21.81	A
4960.02	H	1	46.96	2.63	49.59	74	-24.41	P
			38.11	2.63	40.74	54	-13.26	A
4960.02	V	1	47.02	2.63	49.65	74	-24.35	P
			37.93	2.63	40.56	54	-13.44	A
7440.03	H	1	46.14	7.12	53.26	74	-20.74	P
			37.03	7.12	44.15	54	-9.85	A
7440.03	V	1	46.24	7.12	53.36	74	-20.64	P
			36.95	7.12	44.07	54	-9.93	A
9925.04	H	1	46.71	8.35	55.06	74	-18.94	P
			34.73	8.28	43.01	54	-10.99	A
9925.04	V	1	46.24	8.35	54.59	74	-19.41	P
			35.31	8.28	43.59	54	-10.41	A
12423.05	---		---	---	---	---	---	
14885.16	---		---	---	---	---	---	
17370.07	---		---	---	---	---	---	
19845.28	---		---	---	---	---	---	
22330.13	---		---	---	---	---	---	
24810.1	---		---	---	---	---	---	

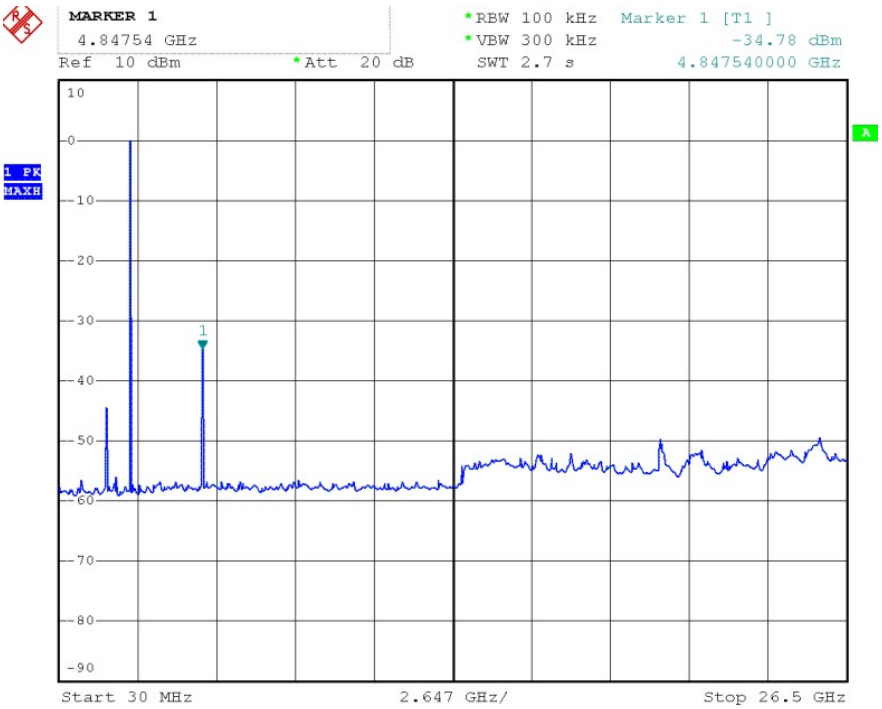
Remark: 1. Transd.=Antenna Factor+Cable Loss-Pre-amplifier
Margin = Level-Limit
Mark: P means Peak Value, Q means Quasi Peak Value, A means Average Value
2. Data of measurement within this frequency range shown " -" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
3. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz.
4. The test limit distance is 3m limit

Conducted Spurious Emission

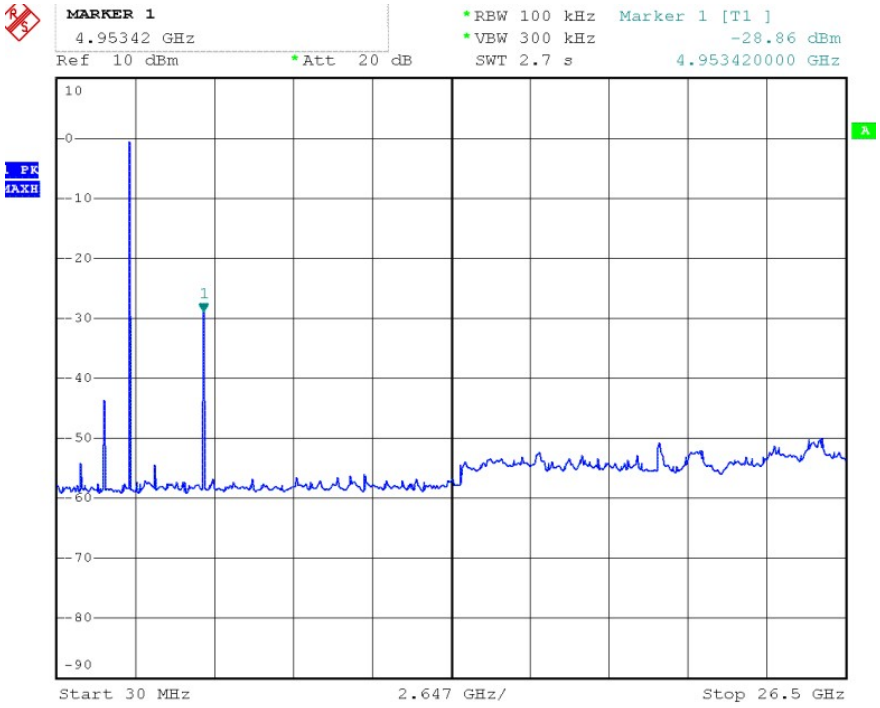
Channel Low



Channel Mid



Channel High



12. ANTENNA REQUIREMENT

12.1 Standard Applicable

Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Section 15.247(b)/(c):

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

If the intentional radiator is used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

12.2 Antenna Connected Construction

The antenna is designed with permanent attachment and no consideration of replacement. The antenna used in this product is complied with Standard. The maximum Gain of the antenna lower than 6.0dBi and have the definite antenna Specification