FCC C2PC Test Report

FCC ID	:	**ZQ6-AP6234A**
Equipment	:	**Wifi Dual Band + BT combo module**
Model No.	:	**AP6234A, AP6234AL**
Brand Name	:	**Ampak**
Applicant	:	**Ampak Technology Inc**
Address	:	**No.1 Jen Al Road, Hsinchu Industrial Park, Hukou, Hsinchu, Taiwan, 30352**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**Jul. 03, 2014**
Tested Date	:	**Jul. 03 ~ Jul. 10, 2014**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:

Gary Chang / Manager

Testing Laboratory
2732

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Release Record

Report No.	Version	Description	Issued Date
FR440102-11AE	Rev. 01	Initial issue	Sep. 18, 2014

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emissions	[dBuV]: 0.155MHz 44.40 (Margin -11.34dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 1534.00MHz 49.23 (Margin -4.77dB) - AV	Pass

1 General Description

1.1 Information

This report is prepared for FCC class II change.

This report is issued as a supplementary report to original ICC report no. FR440102-07AE. The modification is adding 2nd antenna(PIFA antenna), therefore, radiated emission and conducted emission has been re-tested after re-evaluation, and only its data was recorded in the following sections.

Brand Name	Model Name	Product Name	Description
Ampak	AP6234A	Wifi Dual Band + BT combo module	Without 2.4G SAW filter
	AP6234AL		With 2.4G SAW filter

1.1.1 Specification of the Equipment under Test (EUT)

RF General Information				
Frequency Range (MHz)	**Bluetooth Mode**	**Ch. Freq. (MHz)**	**Channel Number**	**Data Rate**
2400-2483.5	BT LE	2402-2480	0-39 [40]	1 Mbps
Note 1: Bluetooth BR uses a GFSK (1Mbps).				

1.1.2 Antenna Details

Ant. No.	Type	Gain (dBi)	Connector	Remark
1	Dipole(Original)	2	UFL	---
2	PIFA(New)	3.53	UFL	---

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	3.3Vdc from host.

1.1.4 Accessories

N/A

1.1.5 Channel List

Frequency band (MHz)				2400~2483.5			
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
37	2402	9	2422	18	2442	28	2462
0	2404	10	2424	19	2444	29	2464
1	2406	38	2426	20	2446	30	2466
2	2408	11	2428	21	2448	31	2468
3	2410	12	2430	22	2450	32	2470
4	2412	13	2432	23	2452	33	2472
5	2414	14	2434	24	2454	34	2474
6	2416	15	2436	25	2456	35	2476
7	2418	16	2438	26	2458	36	2478
8	2420	17	2440	27	2460	39	2480

1.1.6 Test Tool and Duty Cycle

Model	AP6234A
Test tool	Brocom Blue Tool, V.1.7.3.3
Duty cycle of test signal (%)	66.66%
Duty Factor (dB)	1.76

Model	AP6234AL
Test tool	Brocom Blue Tool, V.1.7.3.3
Duty cycle of test signal (%)	67.76%
Duty Factor (dB)	1.69

1.1.7 Power Setting

For AP6234A / AP6234AL

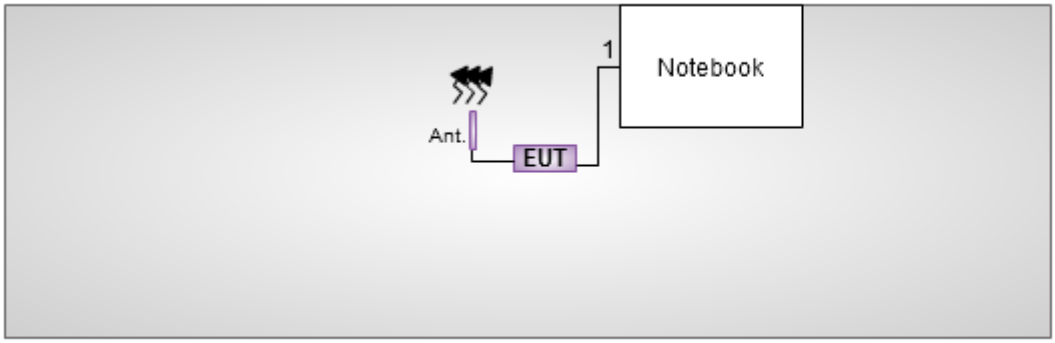
Modulation Mode	Test Frequency (MHz)		
	2402	2440	2480
GFSK/1Mbps	Default	Default	Default

1.2 Local Support Equipment List

Support Equipment List						
No.	**Equipment**	**Brand**	**Model**	**S/N**	**FCC ID**	**Signal cable / Length (m)**
1	Notebook	DELL	E6430	---	DoC	USB 1.0m shielded cable w/o core.

1.3 Test Setup Chart

Test Setup Diagram



1. USB, 1.0m shielded w/o core

1.4 Test Equipment List and Calibration Data

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
EMC Receiver	R&S	ESCS 30	100169	Oct. 15, 2013	Oct. 14, 2014
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 23, 2013	Nov. 22, 2014
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127-666	Dec. 04, 2013	Dec. 03, 2014
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Apr. 23, 2014	Apr. 22, 2015
50 ohm terminal (Support Unit)	NA	50	04	Apr. 18, 2014	Apr. 17, 2015
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 2 / (03CH02-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101499	Feb. 08, 2014	Feb. 07, 2015
Receiver	R&S	ESR3	101657	Jan. 18, 2014	Jan. 17, 2015
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-524	Jan. 08, 2014	Jan. 07, 2015
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Jan. 07, 2014	Jan. 06, 2015
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Dec. 27, 2013	Dec. 26, 2014
Preamplifier	Burgeon	BPA-530	100218	Dec. 09, 2013	Dec. 08, 2014
Preamplifier	Agilent	83017A	MY39501309	Dec. 09, 2013	Dec. 08, 2014
Preamplifier	WM	TF-130N-R1	923365	Oct. 23, 2013	Oct. 22, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 17, 2013	Dec. 16, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 17, 2013	Dec. 16, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 17, 2013	Dec. 16, 2014
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	Dec. 17, 2013	Dec. 16, 2014
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-004	Dec. 17, 2013	Dec. 16, 2014
Note: Calibration Interval of instruments listed above is one year.					

Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014
Note: Calibration Interval of instruments listed above is two year.					

1.5 Test Standards

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.247
ANSI C63.10-2009
FCC KDB 558074 D01 DTS Meas Guidance v03r02

Note: The EUT has been tested and complied with FCC part 15B requirement. FCC Part 15B test results are issued to another report.

1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty	
Parameters	**Uncertainty**
AC conducted emission	±2.92 dB
Radiated emission < 1GHz	±3.26 dB
Radiated emission > 1GHz	±4.94 dB

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	21°C / 55%	Skys Huang
Radiated Emissions	03CH02-WS	20-21°C / 64-68%	Anderson Hung

- FCC site registration No.: 657002
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

Test item	Mode	Test Frequency (MHz)	Data Rate (Mbps)	Test Configuration
AC Power Line Conducted Emissions	BT LE	2440	1Mbps	1, 2
Radiated Emissions ≤ 1GHz	BT LE	2440	1Mbps	1, 2
Radiated Emissions > 1GHz	BT LE	2402, 2440, 2480	1Mbps	1, 2

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Z-plane** results were found as the worst case and were shown in this report.
2. Two samples had been tested on the following test configurations.
   1) Configuration 1 : AP6234A
   2) Configuration 2 : AP6234AL

3 Transmitter Test Results

3.1 AC Power Line Conducted Emissions

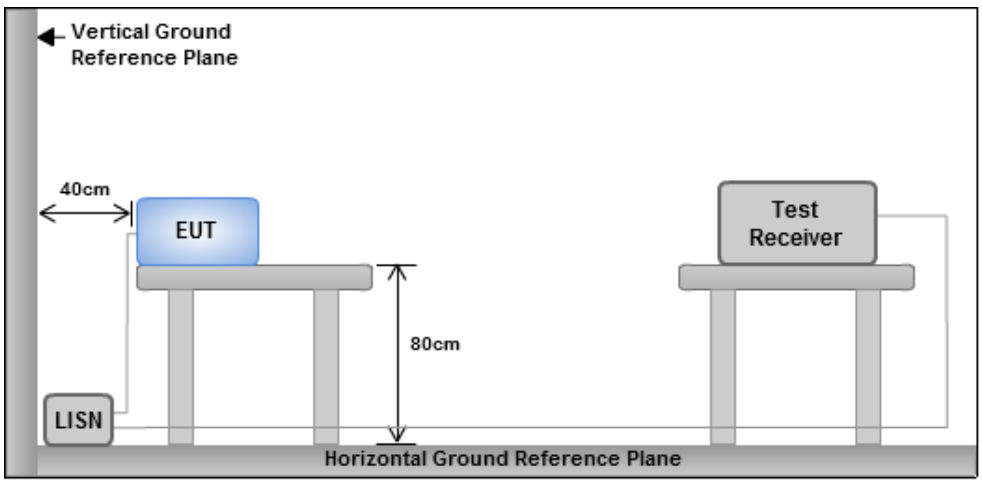
3.1.1 Limit of AC Power Line Conducted Emissions

Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Test Procedures

1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V/60Hz

3.1.3 Test Setup

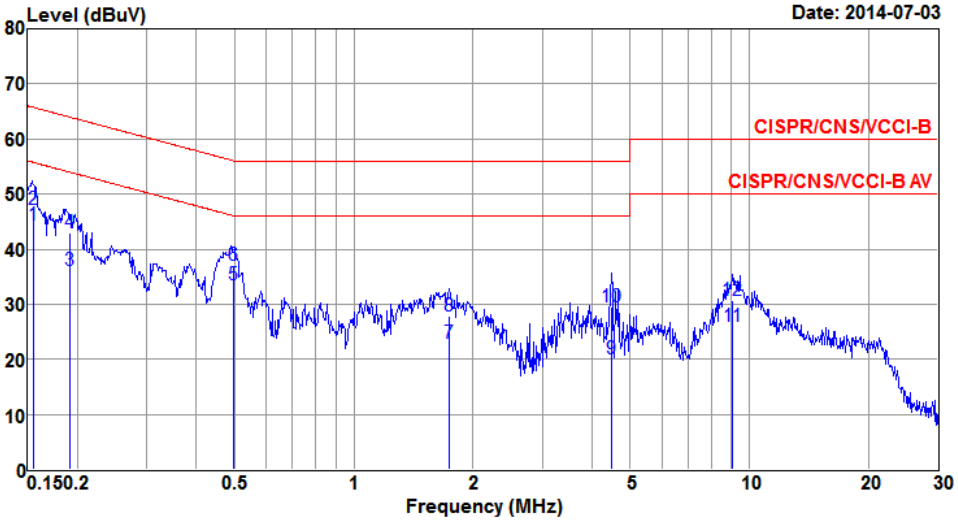


Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

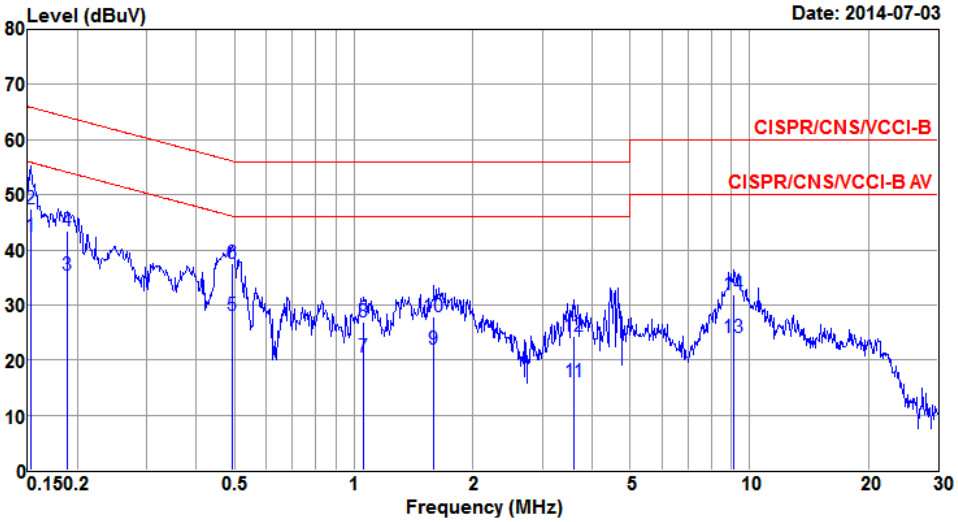
Modulation	GFSK	Test Freq. (MHz)	2440
Power Phase	Line	Test Configuration	1



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1*	0.155	44.40	55.74	-11.34	43.98	0.40	0.02	Average
2	0.155	47.32	65.74	-18.42	46.90	0.40	0.02	QP
3	0.192	36.19	53.96	-17.77	35.79	0.39	0.01	Average
4	0.192	43.05	63.96	-20.91	42.65	0.39	0.01	QP
5	0.495	33.49	46.08	-12.59	33.04	0.39	0.06	Average
6	0.495	37.17	56.08	-18.91	36.72	0.39	0.06	QP
7	1.744	22.91	46.00	-23.09	22.42	0.43	0.06	Average
8	1.744	27.97	56.00	-28.03	27.48	0.43	0.06	QP
9	4.478	20.15	46.00	-25.85	19.52	0.47	0.16	Average
10	4.478	29.55	56.00	-26.45	28.92	0.47	0.16	QP
11	9.059	26.08	50.00	-23.92	25.31	0.53	0.24	Average
12	9.059	30.80	60.00	-29.20	30.03	0.53	0.24	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

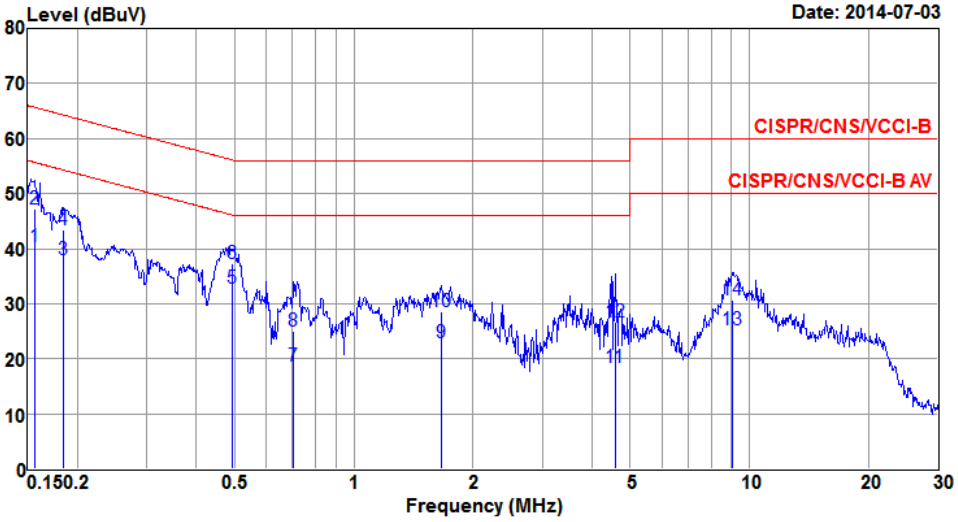
Modulation	GFSK	**Test Freq. (MHz)**	2440
Power Phase	Neutral	**Test Configuration**	1



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1*	0.152	42.52	55.87	-13.35	42.02	0.48	0.02	Average
2	0.152	47.56	65.87	-18.31	47.06	0.48	0.02	QP
3	0.188	35.44	54.11	-18.67	34.95	0.48	0.01	Average
4	0.188	43.47	64.11	-20.64	42.98	0.48	0.01	QP
5	0.494	28.13	46.10	-17.97	27.60	0.47	0.06	Average
6	0.494	37.42	56.10	-18.68	36.89	0.47	0.06	QP
7	1.060	20.44	46.00	-25.56	19.77	0.48	0.19	Average
8	1.060	26.86	56.00	-29.14	26.19	0.48	0.19	QP
9	1.593	21.98	46.00	-24.02	21.41	0.49	0.08	Average
10	1.593	27.83	56.00	-28.17	27.26	0.49	0.08	QP
11	3.603	15.99	46.00	-30.01	15.34	0.52	0.13	Average
12	3.603	24.37	56.00	-31.63	23.72	0.52	0.13	QP
13	9.156	24.11	50.00	-25.89	23.31	0.56	0.24	Average
14	9.156	31.95	60.00	-28.05	31.15	0.56	0.24	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

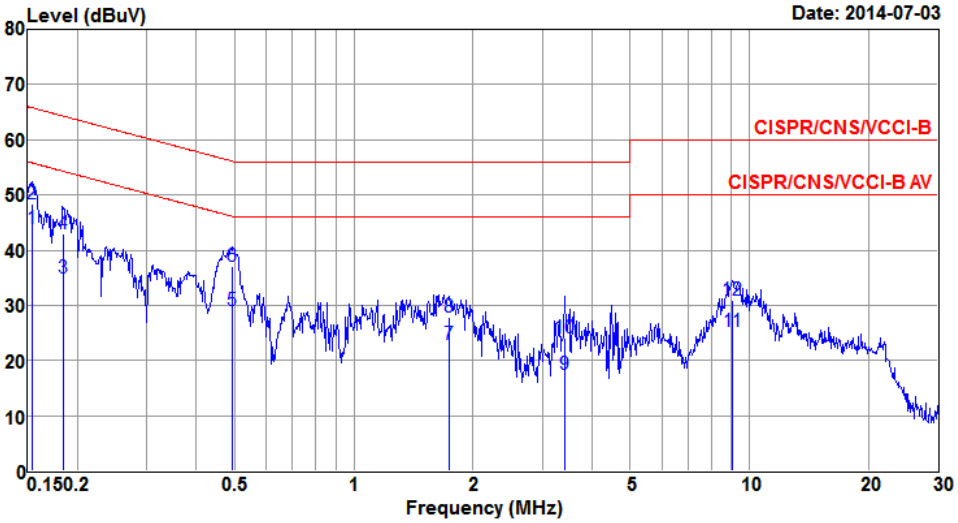
Modulation	GFSK	Test Freq. (MHz)	2440
Power Phase	Line	Test Configuration	2



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.156	40.33	55.69	-15.36	39.91	0.40	0.02	Average
2	0.156	47.14	65.69	-18.55	46.72	0.40	0.02	QP
3	0.184	37.98	54.28	-16.30	37.58	0.39	0.01	Average
4	0.184	43.36	64.28	-20.92	42.96	0.39	0.01	QP
5*	0.491	32.91	46.14	-13.23	32.46	0.39	0.06	Average
6	0.491	37.39	56.14	-18.75	36.94	0.39	0.06	QP
7	0.705	18.72	46.00	-27.28	18.19	0.40	0.13	Average
8	0.705	24.98	56.00	-31.02	24.45	0.40	0.13	QP
9	1.662	22.91	46.00	-23.09	22.42	0.42	0.07	Average
10	1.662	28.47	56.00	-27.53	27.98	0.42	0.07	QP
11	4.574	18.34	46.00	-27.66	17.71	0.47	0.16	Average
12	4.574	26.66	56.00	-29.34	26.03	0.47	0.16	QP
13	9.059	25.35	50.00	-24.65	24.58	0.53	0.24	Average
14	9.059	30.76	60.00	-29.24	29.99	0.53	0.24	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

Modulation	GFSK	Test Freq. (MHz)	2440
Power Phase	Neutral	Test Configuration	2



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1*	0.154	44.02	55.78	-11.76	43.52	0.48	0.02	Average
2	0.154	48.37	65.78	-17.41	47.87	0.48	0.02	QP
3	0.184	34.85	54.28	-19.43	34.36	0.48	0.01	Average
4	0.184	42.84	64.28	-21.44	42.35	0.48	0.01	QP
5	0.494	29.09	46.10	-17.01	28.56	0.47	0.06	Average
6	0.494	37.14	56.10	-18.96	36.61	0.47	0.06	QP
7	1.744	22.96	46.00	-23.04	22.40	0.50	0.06	Average
8	1.744	27.88	56.00	-28.12	27.32	0.50	0.06	QP
9	3.417	17.38	46.00	-28.62	16.74	0.52	0.12	Average
10	3.417	24.15	56.00	-31.85	23.51	0.52	0.12	QP
11	9.059	25.20	50.00	-24.80	24.40	0.56	0.24	Average
12	9.059	30.82	60.00	-29.18	30.02	0.56	0.24	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

3.2 Emissions in Restricted Frequency Bands

3.2.1 Limit of Emissions in Restricted Frequency Bands

Restricted Band Emissions Limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1:
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit
Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

3.2.2 Test Procedures

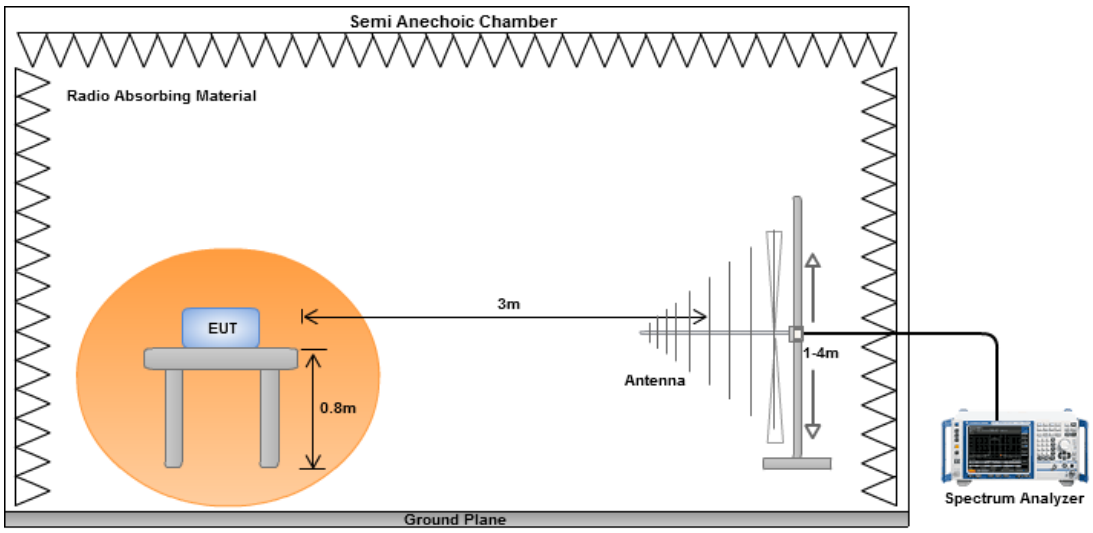
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at a height of 0.8 m test table above the ground plane.
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

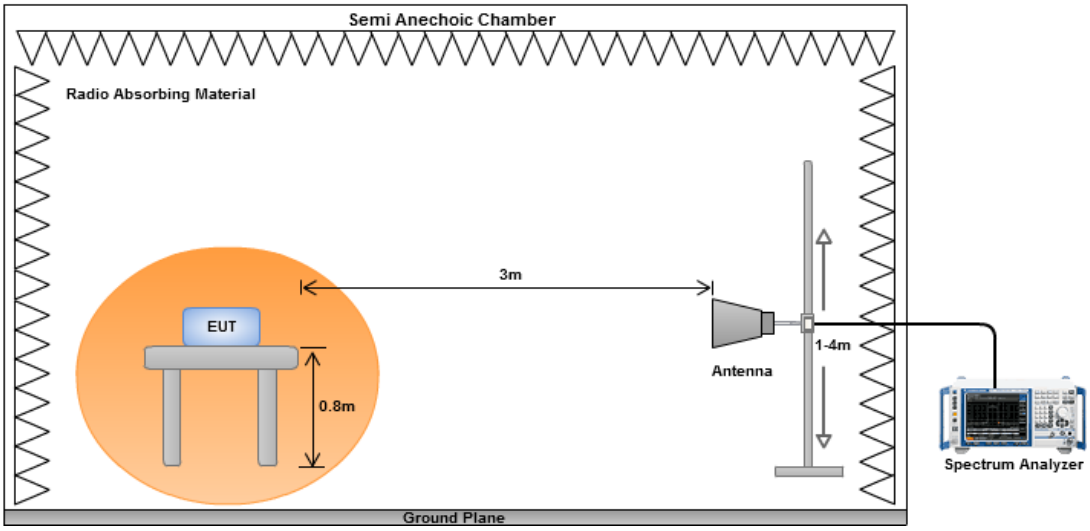
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

3.2.3 Test Setup

Radiated Emissions below 1 GHz

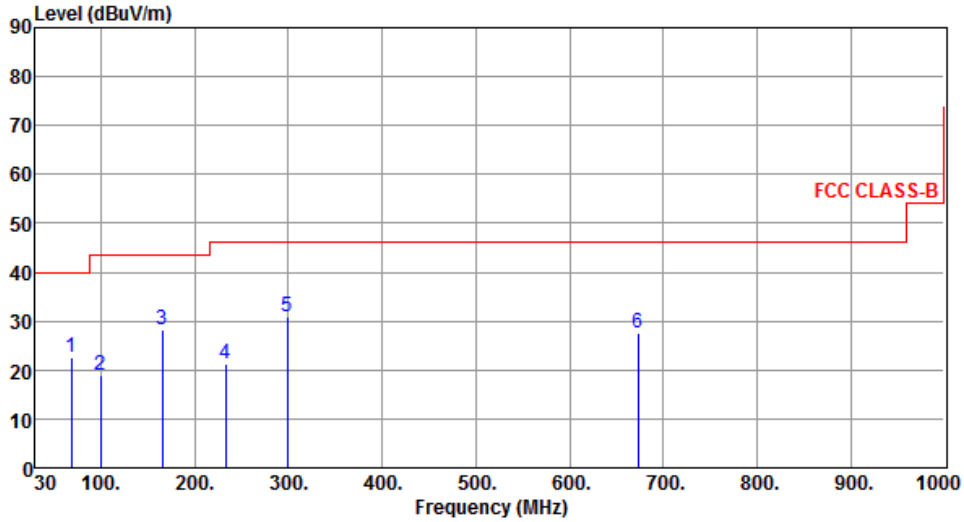


Radiated Emissions above 1 GHz



3.2.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

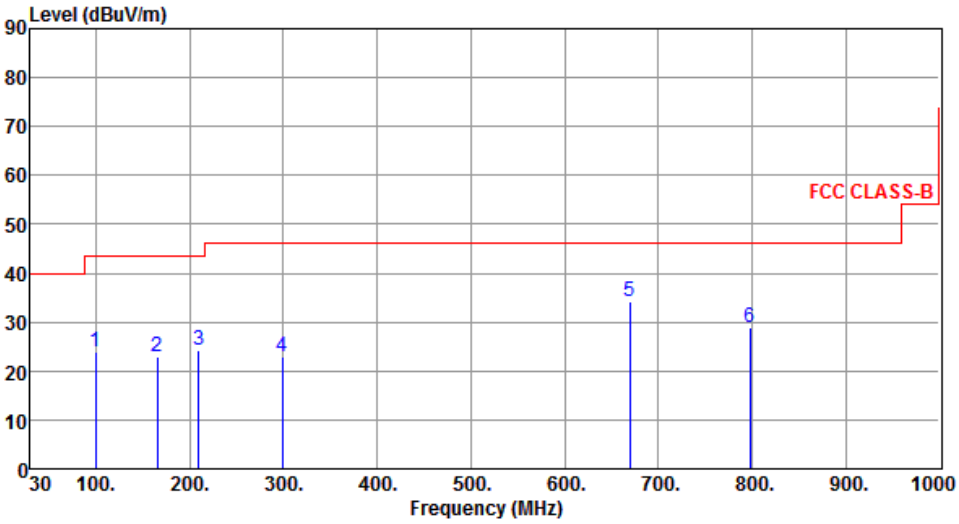
Modulation	GFSK	Test Freq. (MHz)	2440
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	68.80	22.72	40.00	-17.28	41.55	-18.83	Peak	---	---
2	99.84	19.05	43.50	-24.45	40.71	-21.66	Peak	---	---
3	165.80	28.09	43.50	-15.41	45.25	-17.16	Peak	---	---
4	232.73	21.20	46.00	-24.80	39.79	-18.59	Peak	---	---
5	298.69	30.84	46.00	-15.16	47.09	-16.25	Peak	---	---
6	673.11	27.61	46.00	-18.39	36.32	-8.71	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

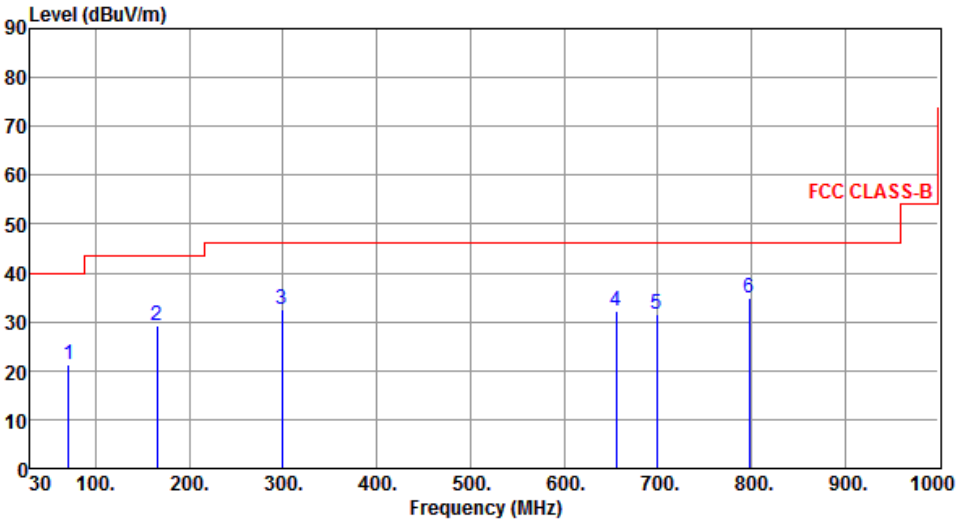
Modulation	GFSK	Test Freq. (MHz)	2440
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	99.84	23.96	43.50	-19.54	45.62	-21.66	Peak	---	---
2	165.80	23.05	43.50	-20.45	40.21	-17.16	Peak	---	---
3	209.45	24.24	43.50	-19.26	43.71	-19.47	Peak	---	---
4	298.69	22.86	46.00	-23.14	39.11	-16.25	Peak	---	---
5	669.23	34.08	46.00	-11.92	42.84	-8.76	Peak	---	---
6	798.24	28.75	46.00	-17.25	35.45	-6.70	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

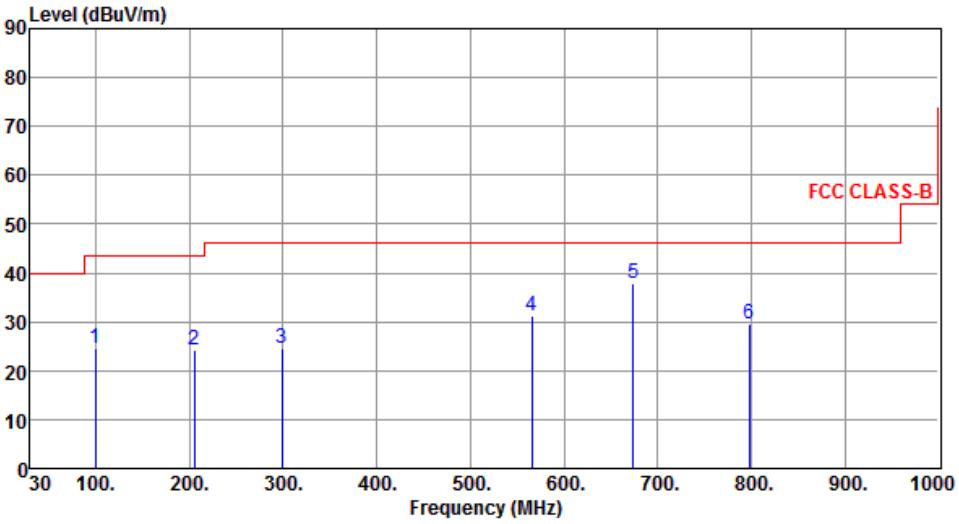
Modulation	GFSK	**Test Freq. (MHz)**	2440
Polarization	Horizontal	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	70.74	21.11	40.00	-18.89	40.32	-19.21	Peak	---	---
2	165.80	29.09	43.50	-14.41	46.25	-17.16	Peak	---	---
3	298.69	32.71	46.00	-13.29	48.96	-16.25	Peak	---	---
4	655.65	32.22	46.00	-13.78	41.18	-8.96	Peak	---	---
5	699.30	31.70	46.00	-14.30	40.03	-8.33	Peak	---	---
6	798.24	34.86	46.00	-11.14	41.56	-6.70	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	GFSK	Test Freq. (MHz)	2440
Polarization	Vertical	Test Configuration	2

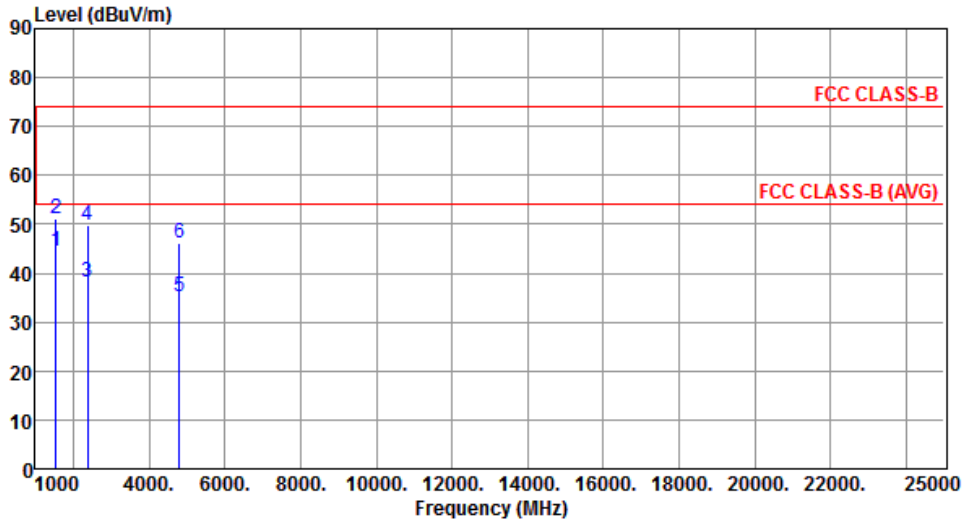


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	99.84	24.45	43.50	-19.05	46.11	-21.66	Peak	---	---
2	205.57	24.28	43.50	-19.22	43.92	-19.64	Peak	---	---
3	298.69	24.56	46.00	-21.44	40.81	-16.25	Peak	---	---
4	565.44	31.36	46.00	-14.64	41.65	-10.29	Peak	---	---
5	674.08	37.90	46.00	-8.10	46.59	-8.69	Peak	---	---
6	798.24	29.65	46.00	-16.35	36.35	-6.70	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.2.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for GFSK

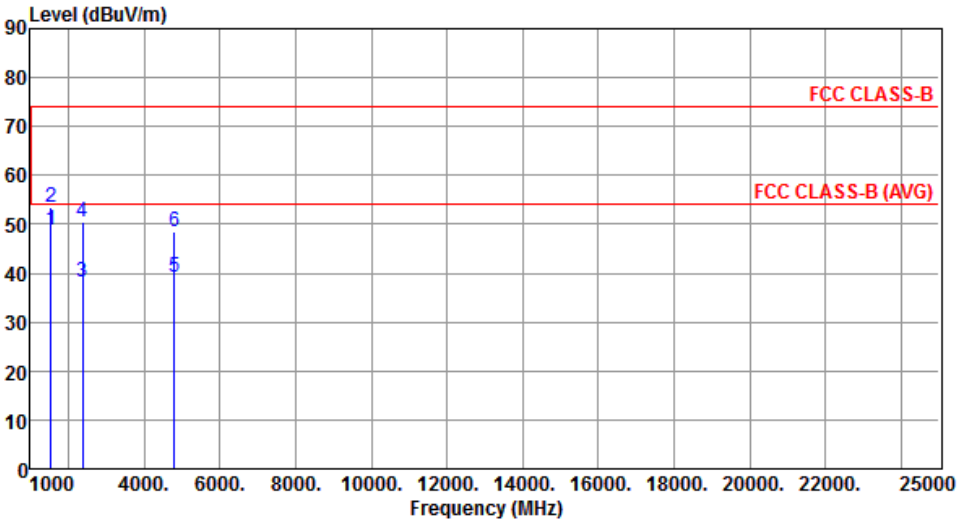
Modulation	GFSK	Test Freq. (MHz)	2402
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1535.00	44.62	54.00	-9.38	50.95	-6.33	Average	---	---
2	1535.00	51.08	74.00	-22.92	57.41	-6.33	Peak	---	---
3	2390.00	38.04	54.00	-15.96	40.86	-2.82	Average	---	---
4	2390.00	49.72	74.00	-24.28	52.54	-2.82	Peak	---	---
5	4804.00	35.32	54.00	-18.68	30.27	5.05	Average	---	---
6	4804.00	46.11	74.00	-27.89	41.06	5.05	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

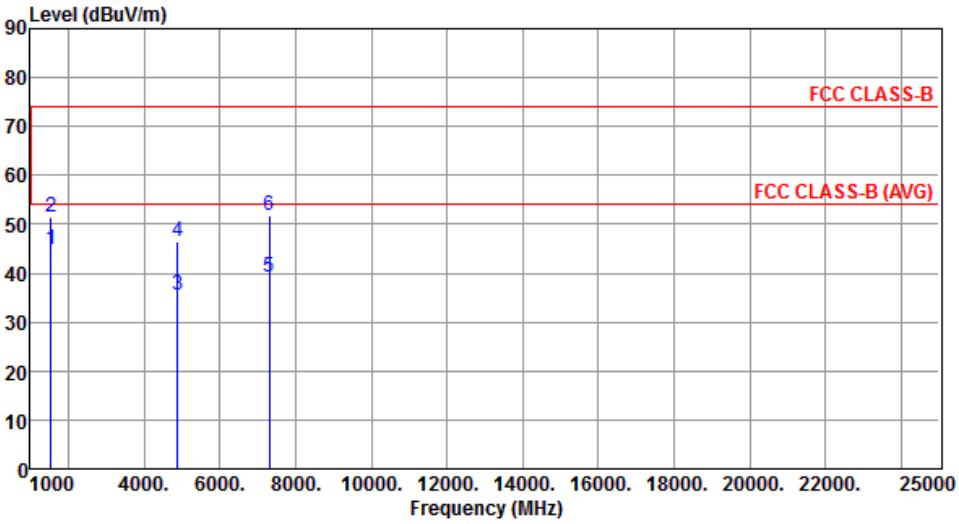
Modulation	GFSK	**Test Freq. (MHz)**	2402
Polarization	Vertical	**Test Configuration**	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1535.00	48.73	54.00	-5.27	55.06	-6.33	Average	---	---
2	1535.00	53.46	74.00	-20.54	59.79	-6.33	Peak	---	---
3	2390.00	38.16	54.00	-15.84	40.98	-2.82	Average	---	---
4	2390.00	50.34	74.00	-23.66	53.16	-2.82	Peak	---	---
5	4804.00	39.27	54.00	-14.73	34.22	5.05	Average	---	---
6	4804.00	48.62	74.00	-25.38	43.57	5.05	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

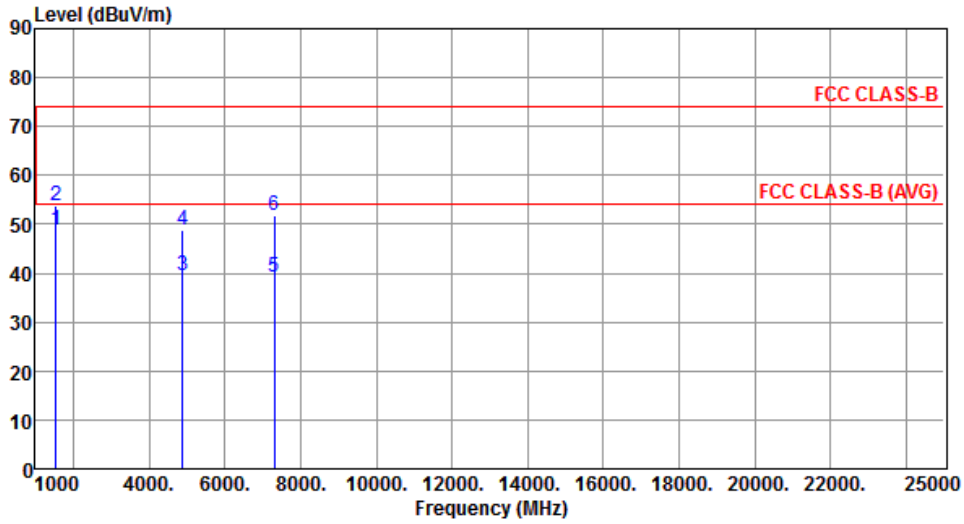
Modulation	GFSK	**Test Freq. (MHz)**	2440
Polarization	Horizontal	**Test Configuration**	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1535.00	44.83	54.00	-9.17	51.16	-6.33	Average	---	---
2	1535.00	51.42	74.00	-22.58	57.75	-6.33	Peak	---	---
3	4880.00	35.64	54.00	-18.36	30.45	5.19	Average	---	---
4	4880.00	46.50	74.00	-27.50	41.31	5.19	Peak	---	---
5	7320.00	39.22	54.00	-14.78	28.48	10.74	Average	---	---
6	7320.00	51.67	74.00	-22.33	40.93	10.74	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

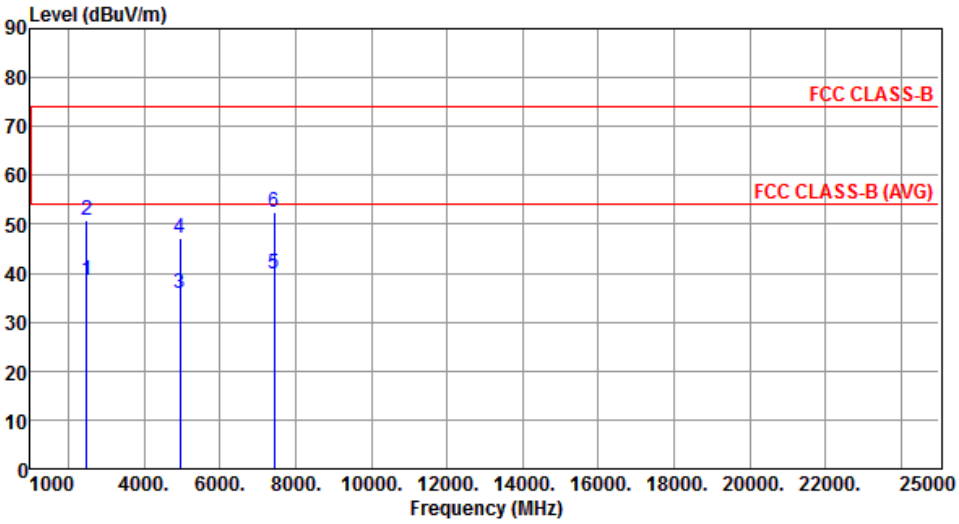
Modulation	GFSK	**Test Freq. (MHz)**	2440
Polarization	Vertical	**Test Configuration**	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1535.00	48.94	54.00	-5.06	55.27	-6.33	Average	---	---
2	1535.00	53.84	74.00	-20.16	60.17	-6.33	Peak	---	---
3	4880.00	39.63	54.00	-14.37	34.44	5.19	Average	---	---
4	4880.00	48.81	74.00	-25.19	43.62	5.19	Peak	---	---
5	7320.00	39.19	54.00	-14.81	28.45	10.74	Average	---	---
6	7320.00	51.97	74.00	-22.03	41.23	10.74	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

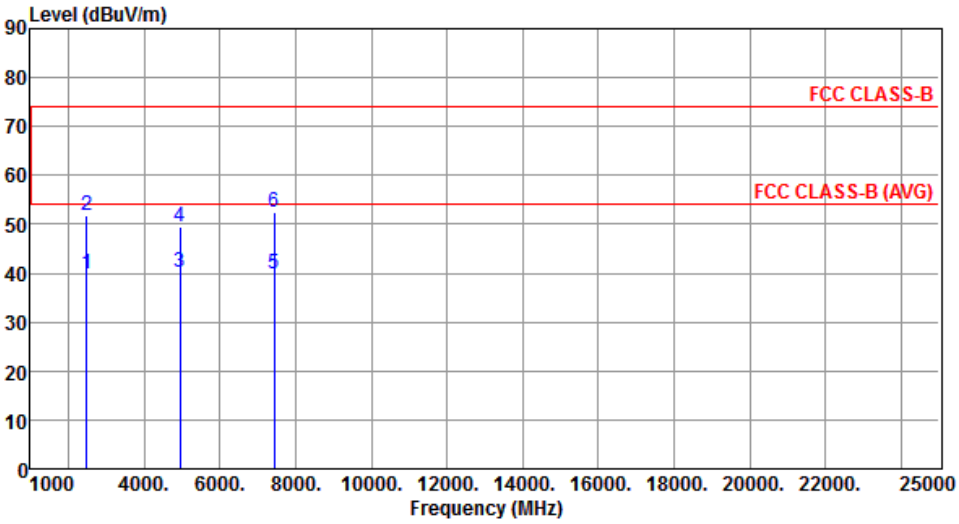
Modulation	GFSK	**Test Freq. (MHz)**	2480
Polarization	Horizontal	**Test Configuration**	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	38.45	54.00	-15.55	40.84	-2.39	Average	---	---
2	2483.50	50.78	74.00	-23.22	53.17	-2.39	Peak	---	---
3	4960.00	35.97	54.00	-18.03	30.63	5.34	Average	---	---
4	4960.00	47.03	74.00	-26.97	41.69	5.34	Peak	---	---
5	7440.00	39.95	54.00	-14.05	29.02	10.93	Average	---	---
6	7440.00	52.33	74.00	-21.67	41.40	10.93	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

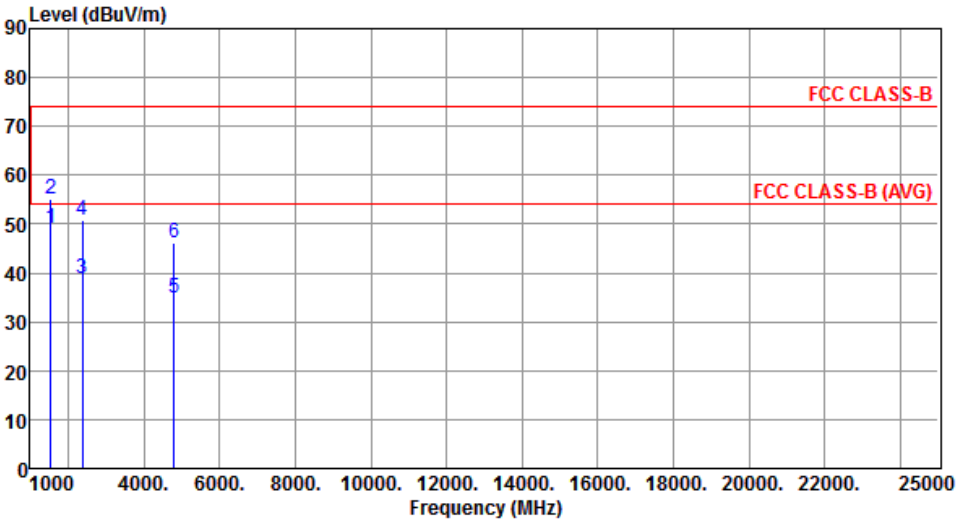
Modulation	GFSK	**Test Freq. (MHz)**	2480
Polarization	Vertical	**Test Configuration**	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	39.79	54.00	-14.21	42.18	-2.39	Average	---	---
2	2483.50	51.83	74.00	-22.17	54.22	-2.39	Peak	---	---
3	4960.00	40.26	54.00	-13.74	34.92	5.34	Average	---	---
4	4960.00	49.51	74.00	-24.49	44.17	5.34	Peak	---	---
5	7440.00	39.87	54.00	-14.13	28.94	10.93	Average	---	---
6	7440.00	52.36	74.00	-21.64	41.43	10.93	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

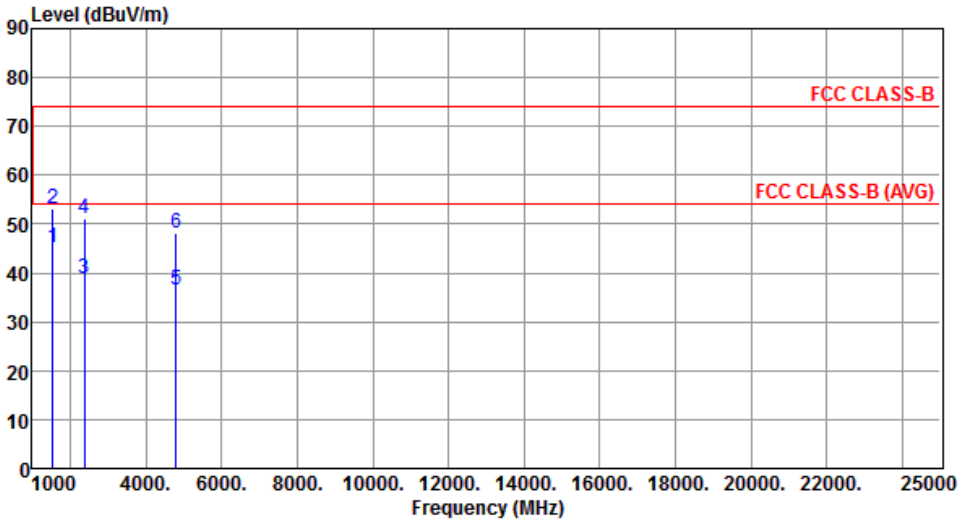
Modulation	GFSK	**Test Freq. (MHz)**	2402
Polarization	Horizontal	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1534.00	49.12	54.00	-4.88	55.45	-6.33	Average	---	---
2	1534.00	55.27	74.00	-18.73	61.60	-6.33	Peak	---	---
3	2390.00	38.72	54.00	-15.28	41.54	-2.82	Average	---	---
4	2390.00	50.97	74.00	-23.03	53.79	-2.82	Peak	---	---
5	4804.00	34.88	54.00	-19.12	29.83	5.05	Average	---	---
6	4804.00	46.27	74.00	-27.73	41.22	5.05	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

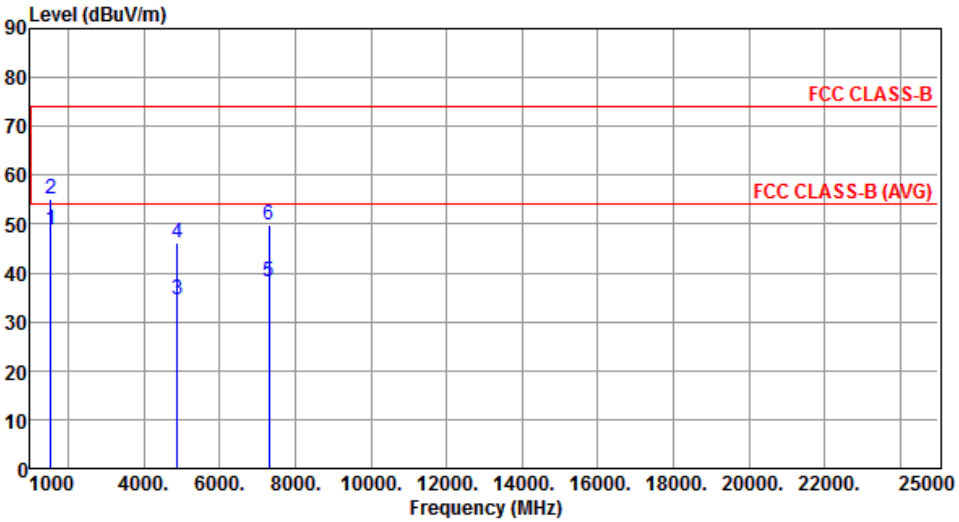
Modulation	GFSK	**Test Freq. (MHz)**	2402
Polarization	Vertical	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1534.00	45.26	54.00	-8.74	51.59	-6.33	Average	---	---
2	1534.00	53.17	74.00	-20.83	59.50	-6.33	Peak	---	---
3	2390.00	38.87	54.00	-15.13	41.69	-2.82	Average	---	---
4	2390.00	51.12	74.00	-22.88	53.94	-2.82	Peak	---	---
5	4804.00	36.49	54.00	-17.51	31.44	5.05	Average	---	---
6	4804.00	48.00	74.00	-26.00	42.95	5.05	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

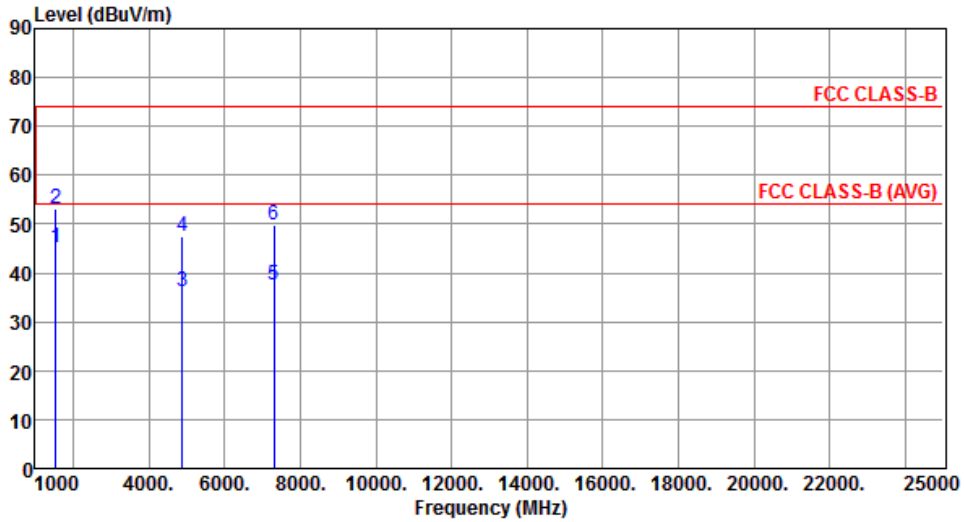
Modulation	GFSK	**Test Freq. (MHz)**	2440
Polarization	Horizontal	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1534.00	48.94	54.00	-5.06	55.27	-6.33	Average	---	---
2	1534.00	55.13	74.00	-18.87	61.46	-6.33	Peak	---	---
3	4880.00	34.52	54.00	-19.48	29.33	5.19	Average	---	---
4	4880.00	46.12	74.00	-27.88	40.93	5.19	Peak	---	---
5	7320.00	38.15	54.00	-15.85	27.41	10.74	Average	---	---
6	7320.00	49.92	74.00	-24.08	39.18	10.74	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

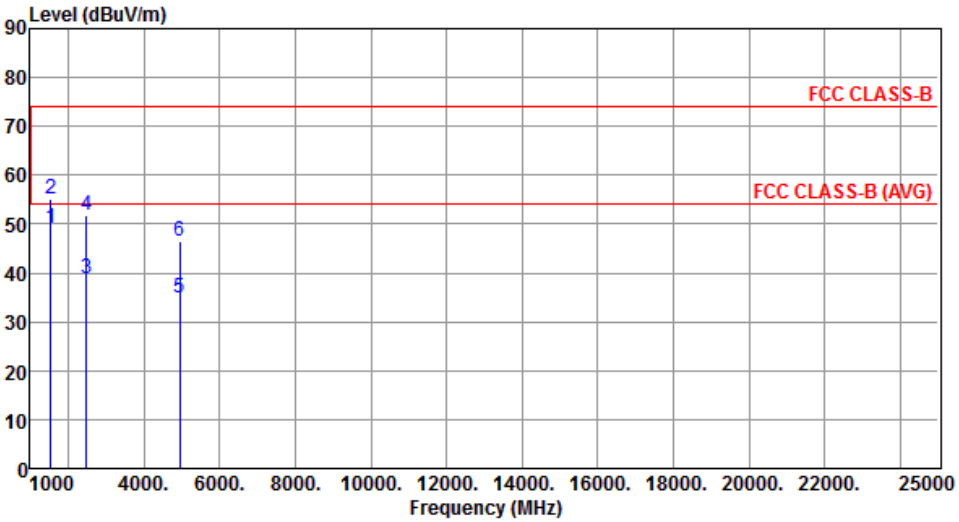
Modulation	GFSK	**Test Freq. (MHz)**	2440
Polarization	Vertical	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1534.00	45.27	54.00	-8.73	51.60	-6.33	Average	---	---
2	1534.00	53.11	74.00	-20.89	59.44	-6.33	Peak	---	---
3	4880.00	36.23	54.00	-17.77	31.04	5.19	Average	---	---
4	4880.00	47.38	74.00	-26.62	42.19	5.19	Peak	---	---
5	7320.00	37.56	54.00	-16.44	26.82	10.74	Average	---	---
6	7320.00	49.98	74.00	-24.02	39.24	10.74	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

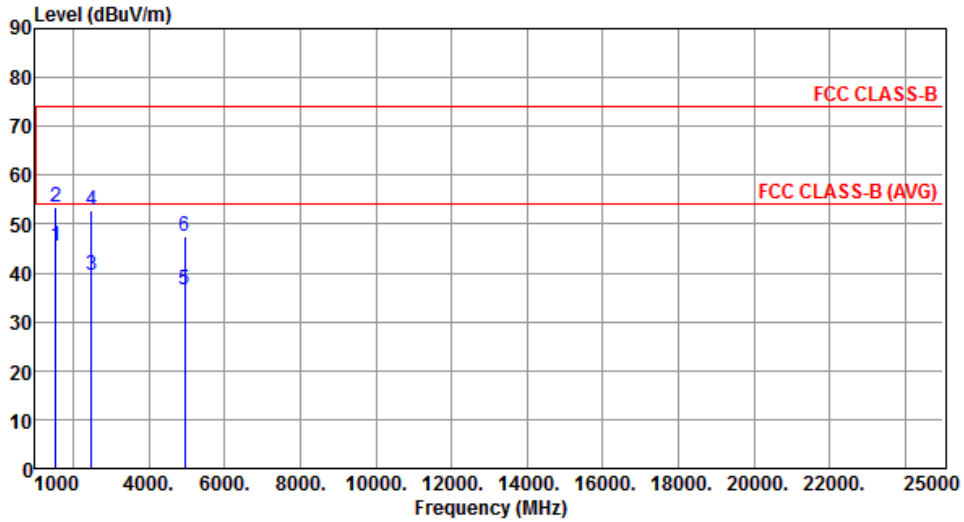
Modulation	GFSK	**Test Freq. (MHz)**	2480
Polarization	Horizontal	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1534.00	49.23	54.00	-4.77	55.56	-6.33	Average	---	---
2	1534.00	55.27	74.00	-18.73	61.60	-6.33	Peak	---	---
3	2483.50	38.94	54.00	-15.06	41.33	-2.39	Average	---	---
4	2483.50	51.73	74.00	-22.27	54.12	-2.39	Peak	---	---
5	4960.00	34.93	54.00	-19.07	29.59	5.34	Average	---	---
6	4960.00	46.55	74.00	-27.45	41.21	5.34	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	GFSK	**Test Freq. (MHz)**	2480
Polarization	Vertical	**Test Configuration**	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1534.00	45.52	54.00	-8.48	51.85	-6.33	Average	---	---
2	1534.00	53.36	74.00	-20.64	59.69	-6.33	Peak	---	---
3	2483.50	39.37	54.00	-14.63	41.76	-2.39	Average	---	---
4	2483.50	52.66	74.00	-21.34	55.05	-2.39	Peak	---	---
5	4960.00	36.39	54.00	-17.61	31.05	5.34	Average	---	---
6	4960.00	47.50	74.00	-26.50	42.16	5.34	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp, it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan Hsiang. Location map can be found on our website http://www.icertifi.com.tw.

Linkou

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If you have any suggestion, please feel free to contact us as below information

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==END==