



# Radio Test Report

## FCC ID: 2A233-AYANEO2

### Change II

**Report No.** : TBR-C-202302-0179-121  
**Applicant** : Shenzhen Konkr Technology Co., Ltd  
**Equipment Under Test (EUT)**  
**EUT Name** : tablet computer  
**Model No.** : AYANEO 2  
**Series Model No.** : AYANEO GEEK  
**Brand Name** : AYANEO  
**Sample ID** : RW-C-202302-0179-8-1#&RW-C-202302-0179-8-2#  
**Receipt Date** : 2023-03-01  
**Test Date** : 2023-03-01 to 2023-04-13  
**Issue Date** : 2023-04-13  
**Standards** : FCC Part 15 Subpart C 15.247  
**Test Method** : ANSI C63.10: 2013  
KDB 558074 D01 15.247 Meas Guidance v05r02  
**Conclusions** : **PASS**

In the configuration tested, the EUT complied with the standards specified above.

**Witness Engineer** :

**Engineer Supervisor** :

**Engineer Manager** :

Wade Lv

Ivan Su

Ray Lai



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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## Revision History

Report No.	Version	Description	Issued Date
TBR-C-202302-0179-121	Rev.01	Initial issue of report	2023-04-13



# 1. General Information about EUT

## 1.1 Client Information

<b>Applicant</b>	:	Shenzhen Konkrr Technology Co., Ltd
<b>Address</b>	:	Room 215, Building 22, Maker Town, No. 4109, Liuxian Avenue, Pingshan Community, Taoyuan Street, Nanshan District, Shenzhen, China
<b>Manufacturer</b>	:	Shenzhen Konkrr Technology Co., Ltd
<b>Address</b>	:	Room 215, Building 22, Maker Town, No. 4109, Liuxian Avenue, Pingshan Community, Taoyuan Street, Nanshan District, Shenzhen, China

## 1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	tablet computer	
Models No.	:	AYANEO 2, AYANEO GEEK	
Model Different	:	All PCB boards and circuit diagrams are the same, the only difference is that appearance names and color.	
Product Description	:	Operation Frequency:	Bluetooth 5.2(BLE): 2402MHz~2480MHz
		Number of Channel:	Bluetooth 5.2(BLE): 40 channels
		Antenna Gain:	2.15dBi FPC Antenna
		Modulation Type:	GFSK
		Bit Rate of Transmitter:	1Mbps&2Mbps
Power Rating	:	Adapter(DCTPD65WUS-B1) Input: 100-240V~50/60Hz 1.6A max. Output: DC 20V 3.25A DC 11.55V by 4200mAh 48.51Wh Rechargeable Li-ion battery	
Software Version	:	----	
Hardware Version	:	AB03_P01	
Remark:			
(1)The antenna gain and adapter provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.			
(2)For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.			
(3)Antenna information provided by the applicant.			



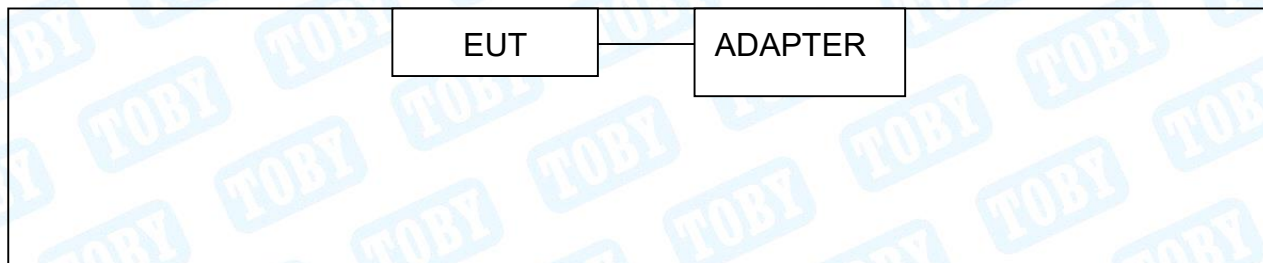
(4)Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	14	2430	28	2458
01	2404	15	2432	29	2460
02	2406	16	2434	30	2462
03	2408	17	2436	31	2464
04	2410	18	2438	32	2466
05	2412	19	2440	33	2468
06	2414	20	2442	34	2470
07	2416	21	2444	35	2472
08	2418	22	2446	36	2474
09	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454		
13	2428	27	2456		

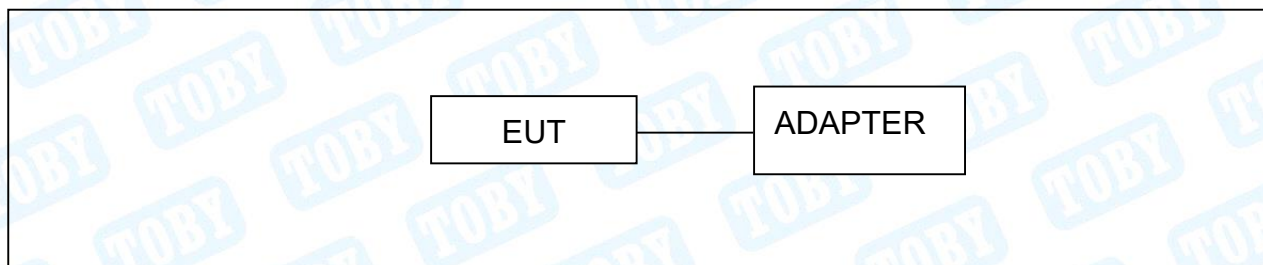


### 1.3 Block Diagram Showing the Configuration of System Tested

#### Conducted Test



#### Radiated Test



## 1.4 Description of Support Units

Equipment Information				
Name	Model	FCC ID/SDOC	Manufacturer	Used “√”
Adapter	DCTPD65WUS-B1	----	Dachuan	√
Cable Information				
Number	Shielded Type	Ferrite Core	Length	Note
Cable 1	Yes	NO	1.0M	Accessory
Note: The cables and adapter provided by the Applicant.				

## 1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For Conducted Test	
Final Test Mode	Description
Mode 1	TX Mode
For Radiated Test	
Final Test Mode	Description
Mode 2	TX 1Mbps Mode (Channel 00/19/39)
Mode 3	TX 2Mbps Mode (Channel 00/19/39)

### Note:

- (1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

BLE Mode: GFSK Modulation Transmitting mode.

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a portable unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.



## 1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of RF setting.

Test Software Version	DRTU		
Frequency	2402 MHz	2440MHz	2480 MHz
BLE 1M	7	7	7
BLE 2M	7	7	7

## 1.7 Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty ( $U_{Lab}$ )
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	$\pm 3.50$ dB $\pm 3.10$ dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	$\pm 4.60$ dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	$\pm 4.50$ dB
Radiated Emission	Level Accuracy: Above 1000MHz	$\pm 4.20$ dB



## 1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F., Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

### **CNAS (L5813)**

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

### **A2LA Certificate No.: 4750.01**

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

### **IC Registration No.: (11950A)**

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.



## 2. Test Summary

Standard Section	Test Item	Test Sample(s)	Judgment	Remark
FCC				
FCC 15.207(a)	Conducted Emission	RW-C-202302-0179-8-1#	PASS	N/A
FCC 15.209 & 15.247(d)	Radiated Unwanted Emissions	RW-C-202302-0179-8-1#	PASS	N/A
FCC 15.203	Antenna Requirement	/	PASS	N/A
FCC 15.247(a)(2)	6dB Bandwidth	/	PASS	N/A
/	99% Occupied bandwidth	/	PASS	N/A
FCC 15.247(b)(3)	Peak Output Power and E.I.R.P	/	PASS	N/A
FCC 15.247(e)	Power Spectral Density	/	PASS	N/A
FCC 15.247(d)	Band Edge Measurements	/	PASS	N/A
FCC 15.207	Conducted Unwanted Emissions	/	PASS	N/A
FCC 15.247(d)	Emissions in Restricted Bands	/	PASS	N/A
/	On Time and Duty Cycle	/	/	N/A

**Note:**

(1) N/A is an abbreviation for Not Applicable.

(2) This report is Class II change report for the original equipment have changed, the transmitter module itself has not changed. More information about the test data please refer to the original test report.

(3) As there is change regard RF transmitter portion and Antenna assembly, the change will have effect on Radiated emission above 1GHz by judging for experience, therefore radiation spurious data above 1GHz are tested.

## 3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE
Radiation Emission	EZ-EMC	EZ	FA-03A2RE+
RF Conducted Measurement	MTS-8310	MWRFTtest	V2.0.0.0
RF Test System	JS1120	Tonscend	V3.2.22



## 4. Test Equipment

Conducted Emission Test					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jun. 23, 2022	Jun. 22, 2023
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jun. 23, 2022	Jun. 22, 2023
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jun. 22, 2022	Jun. 21, 2023
LISN	Rohde & Schwarz	ENV216	101131	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	NTFM 8131	8131-193	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	CAT3 8158	cat3 5158-0094	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	NTFM5158	NTFM5158 0145	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	CAT 8158	cat5 8158-179	Jun. 22, 2022	Jun. 21, 2023
Radiation Emission Test (A Site)					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 2023
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jun. 23, 2022	Jun. 22, 2023
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Feb. 27, 2022	Feb.26, 2024
Horn Antenna	ETS-LINDGREN	3117	00143207	Feb. 26, 2022	Feb.25, 2024
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Feb. 26, 2022	Feb.25, 2024
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Feb. 26, 2022	Feb.25, 2024
Pre-amplifier	SONOMA	310N	185903	Feb. 23, 2023	Feb.22, 2024
Pre-amplifier	HP	8449B	3008A00849	Feb. 23, 2023	Feb.22, 2024
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Sep.01.2022	Aug. 31, 2023
Radiation Emission Test (B Site)					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep.01.2022	Aug. 31, 2023
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 2023
EMI Test Receiver	Rohde & Schwarz	ESU-8	100472/008	Feb. 23, 2023	Feb.22, 2024
Bilog Antenna	SCHWARZBECK	VULB 9168	1225	Dec. 05, 2021	Dec. 04, 2023
Horn Antenna	SCHWARZBECK	BBHA 9120 D	2463	Feb. 26, 2022	Feb.25, 2024
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Jun. 26, 2022	Jun.25, 2024
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jun. 26, 2022	Jun.25, 2024
HF Amplifier	Tonscend	TAP9E6343	AP21C806117	Sep.01.2022	Aug. 31, 2023
HF Amplifier	Tonscend	TAP051845	AP21C806141	Sep.01.2022	Aug. 31, 2023
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Sep.01.2022	Aug. 31, 2023



Antenna Conducted Emission					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jun. 23, 2022	Jun. 22, 2023
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 2023
MXA Signal Analyzer	KEYSIGT	N9020B	MY60110172	Sep. 01, 2022	Aug. 31, 2023
MXA Signal Analyzer	Agilent	N9020A	MY47380425	Sep. 01, 2022	Aug. 31, 2023
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep. 01, 2022	Aug. 31, 2023
Analog Signal Generator	Agilent	N5181A	MY48180463	Sep. 01, 2022	Aug. 31, 2023
Vector Signal Generator	KEYSIGT	N5182B	MY59101429	Sep. 01, 2022	Aug. 31, 2023
Analog Signal Generator	KEYSIGHT	N5173B	MY61252685	Dec. 15, 2022	Dec. 14, 2023
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Sep. 01, 2022	Aug. 31, 2023
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Sep. 01, 2022	Aug. 31, 2023
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Sep. 01, 2022	Aug. 31, 2023
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Sep. 01, 2022	Aug. 31, 2023
RF Control Unit	Tonsced	JS0806-1	21C8060380	N/A	N/A
RF Control Unit	Tonsced	JS0806-2	21F8060439	Sep. 01, 2022	Aug. 31, 2023
Band Reject Filter Group	Tonsced	JS0806-F	21D8060414	Jun. 23, 2022	Jun. 22, 2023
Power Control Box	Tonsced	JS0806-4ADC	21C8060387	N/A	N/A
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	144382	Sep. 01, 2022	Aug. 31, 2023
Universal Radio Communication Tester	Rohde&Schwarz	CMW500	168796	Jun. 23, 2022	Jun. 22, 2023
Temperature and Humidity Chamber	ZhengHang	ZH-QTH-1500	ZH2107264	Jun. 22, 2022	Jun. 21, 2023



## 5. Conducted Emission

### 5.1 Test Standard and Limit

#### 5.1.1 Test Standard

#### FCC Part 15.207

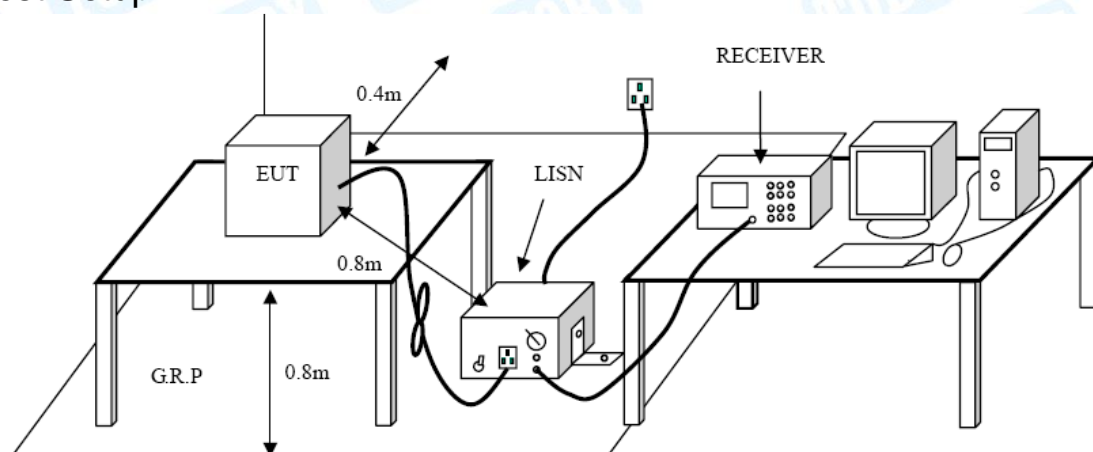
#### 5.1.2 Test Limit

Frequency	Maximum RF Line Voltage (dB $\mu$ V)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

#### Notes:

- (1) \*Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 5.2 Test Setup



### 5.3 Test Procedure

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.



- The bandwidth of EMI test receiver is set at 9 kHz, and the test frequency band is from 0.15MHz to 30MHz.

#### 5.4 Deviation From Test Standard

No deviation

#### 5.5 EUT Operating Mode

Please refer to the description of test mode.

#### 5.6 Test Data

Please refer to the Attachment A inside test report.



## 6. Radiated and Conducted Unwanted Emissions

### 6.1 Test Standard and Limit

#### 6.1.1 Test Standard

**FCC Part 15.209 & FCC Part 15.247(d)**

#### 6.1.2 Test Limit

General field strength limits at frequencies Below 30MHz		
Frequency (MHz)	Field Strength (microvolt/meter)**	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30

**Note:** 1, The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

General field strength limits at frequencies above 30 MHz		
Frequency (MHz)	Field strength (μV/m at 3 m)	Measurement Distance (meters)
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

General field strength limits at frequencies Above 1000MHz		
Frequency (MHz)	Distance of 3m (dBuV/m)	
	Peak	Average
Above 1000	74	54

**Note:**

(1) The tighter limit applies at the band edges.

(2) Emission Level(dBuV/m)=20log Emission Level(μV/m)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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, provided that the transmitter demonstrates compliance with the peak conducted power

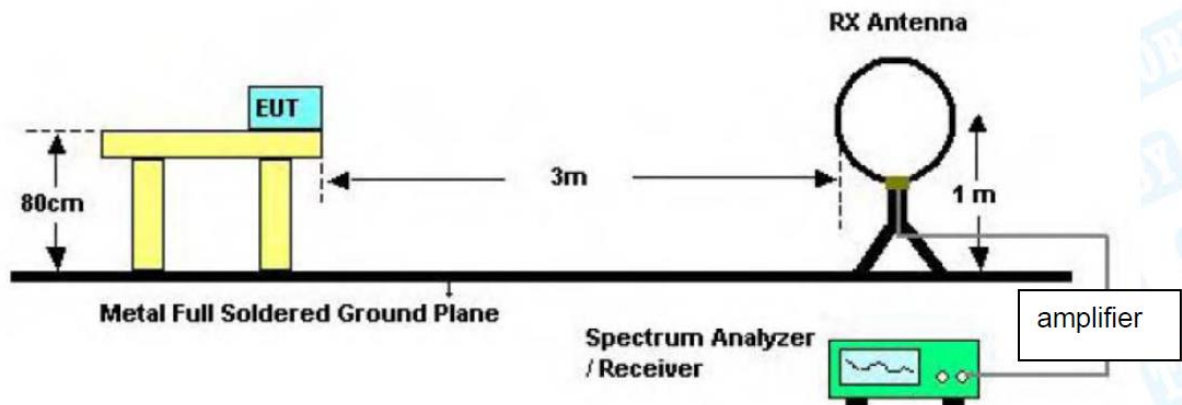


limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

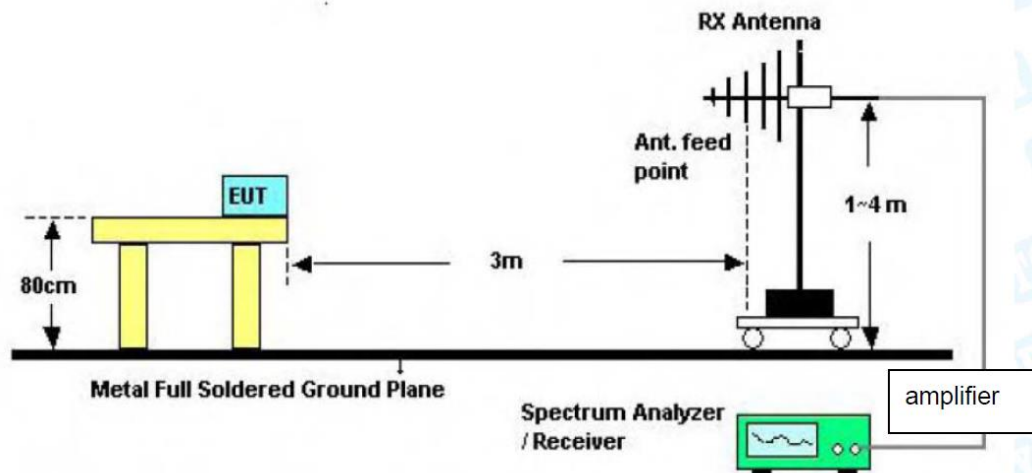


## 6.2 Test Setup

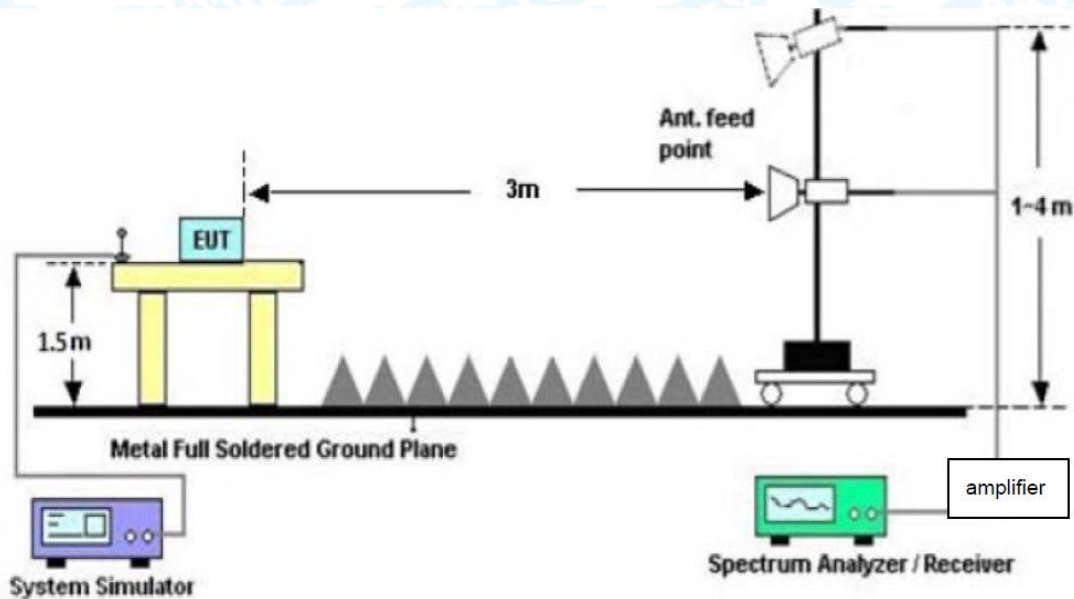
### Radiated measurement



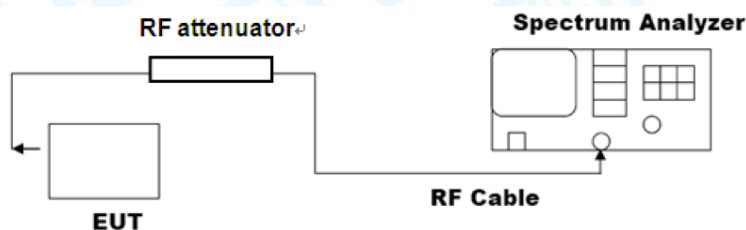
### Below 30MHz Test Setup



### Below 1000MHz Test Setup



### Above 1GHz Test Setup Conducted measurement



## 6.3 Test Procedure

### ---Radiated measurement

- The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Below 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- Testing frequency range 30MHz-1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection. Testing frequency range 9KHz-150Hz the measuring instrument use VBW=200Hz with Quasi-peak detection. Testing frequency range 9KHz-30MHz the measuring instrument use VBW=9kHz with Quasi-peak detection.
- Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- For the actual test configuration, please see the test setup photo.



**--- Conducted measurement****● Reference level measurement**

Establish a reference level by using the following procedure:

- a) Set instrument center frequency to DTS channel center frequency.
- b) Set the span to  $\geq 1.5$  times the DTS bandwidth.
- c) Set the RBW = 100 kHz.
- d) Set the VBW  $\geq [3 \times \text{RBW}]$ .
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

**● Emission level measurement**

Establish an emission level by using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured.
- b) Set the RBW = 100 kHz.
- c) Set the VBW  $\geq [3 \times \text{RBW}]$ .
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

**6.4 Deviation From Test Standard**

No deviation

**6.5 EUT Operating Mode**

Please refer to the description of test mode.

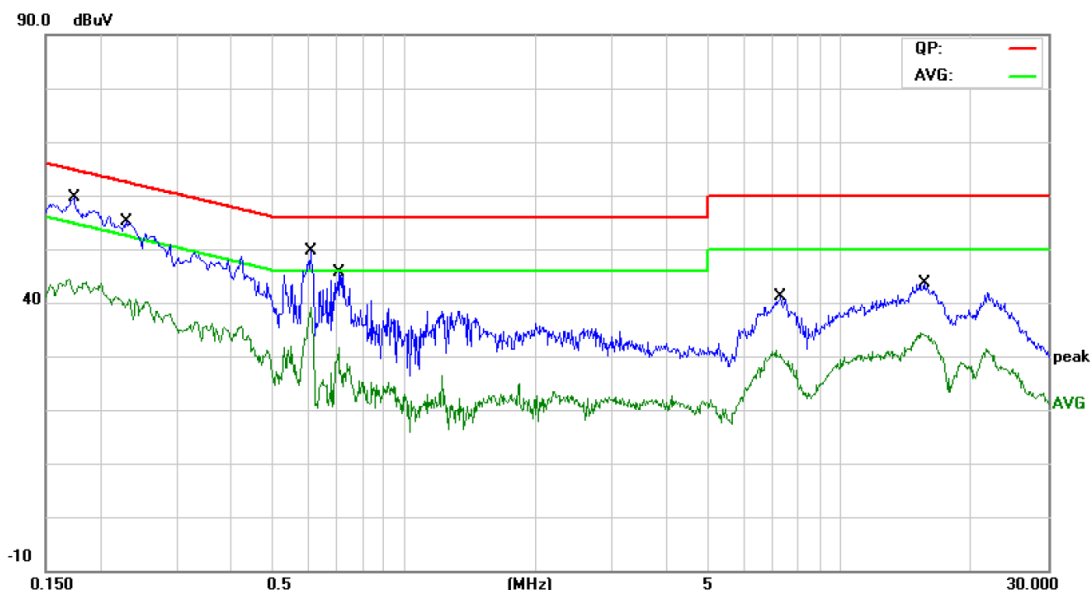
**6.6 Test Data**

Radiated measurement please refer to the Attachment B inside test report.



## Attachment A-- Conducted Emission Test Data

Temperature:	26°C	Relative Humidity:	54%
Test Voltage:	AC 120V/60Hz		
Terminal:	Line		
Test Mode:	Mode 1		
Remark:	Only worse case is reported.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1740	39.59	11.05	50.64	64.76	-14.12	QP
2		0.1740	26.77	11.05	37.82	54.76	-16.94	AVG
3		0.2300	32.43	11.08	43.51	62.45	-18.94	QP
4		0.2300	22.99	11.08	34.07	52.45	-18.38	AVG
5		0.6100	33.30	10.89	44.19	56.00	-11.81	QP
6	*	0.6100	26.49	10.89	37.38	46.00	-8.62	AVG
7		0.7060	29.92	10.87	40.79	56.00	-15.21	QP
8		0.7060	17.39	10.87	28.26	46.00	-17.74	AVG
9		7.3060	21.79	10.07	31.86	60.00	-28.14	QP
10		7.3060	15.02	10.07	25.09	50.00	-24.91	AVG
11		15.6180	26.91	10.39	37.30	60.00	-22.70	QP
12		15.6180	21.69	10.39	32.08	50.00	-17.92	AVG

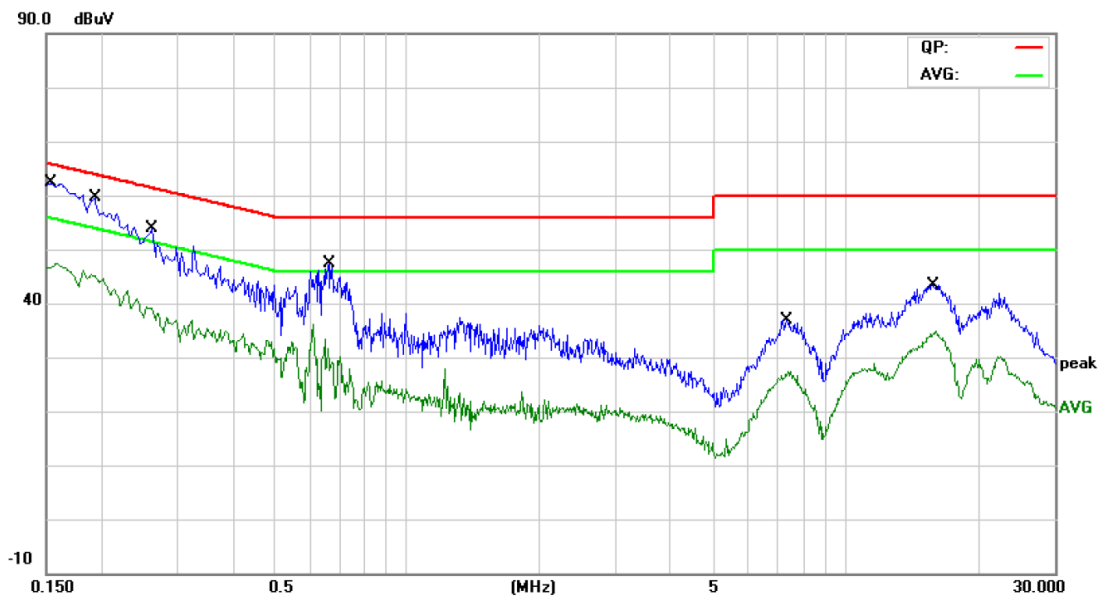
**Remark:**

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)

2. Margin (dB) = QuasiPeak/Average (dBuV) - Limit (dBuV)



Temperature:	26°C	Relative Humidity:	54%
Test Voltage:	AC 120V/60Hz		
Terminal:	Neutral		
Test Mode:	Mode 1		
Remark:	Only worse case is reported.		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1	*	0.1539	46.67	10.99	57.66	65.78	-8.12	QP
2		0.1539	34.49	10.99	45.48	55.78	-10.30	AVG
3		0.1945	43.80	11.10	54.90	63.84	-8.94	QP
4		0.1945	32.16	11.10	43.26	53.84	-10.58	AVG
5		0.2620	35.96	11.02	46.98	61.36	-14.38	QP
6		0.2620	26.31	11.02	37.33	51.36	-14.03	AVG
7		0.6620	31.47	10.88	42.35	56.00	-13.65	QP
8		0.6620	17.97	10.88	28.85	46.00	-17.15	AVG
9		7.3380	21.09	10.07	31.16	60.00	-28.84	QP
10		7.3380	15.45	10.07	25.52	50.00	-24.48	AVG
11		15.8740	28.69	10.40	39.09	60.00	-20.91	QP
12		15.8740	23.20	10.40	33.60	50.00	-16.40	AVG

**Remark:**

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)

2. Margin (dB) = QuasiPeak/Average (dBuV) - Limit (dBuV)



## Attachment B--Unwanted Emissions Data

### ---Radiated Unwanted Emissions

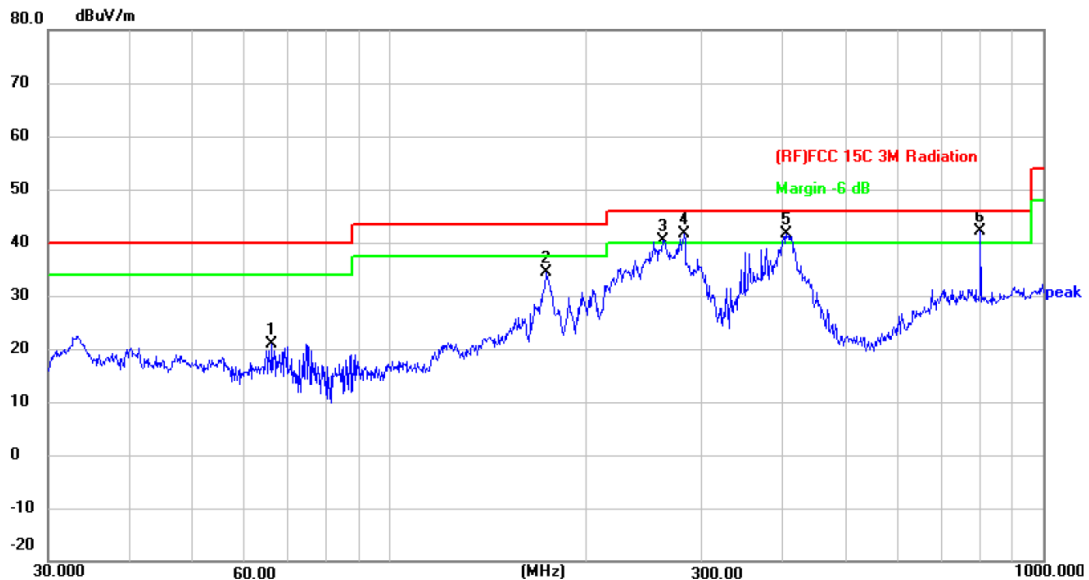
#### 9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB  
Below the permissible value has no need to be reported.

#### 30MHz~1GHz

Temperature:	24.3℃	Relative Humidity:	45%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Horizontal		
Test Mode:	Mode 2 TX 1Mbps Mode Channel 00		
Remark:	Only worse case is reported.		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	66.0340	45.04	-24.11	20.93	40.00	-19.07	peak	P
2	173.2050	57.63	-23.28	34.35	43.50	-9.15	peak	P
3 !	261.9750	62.70	-22.33	40.37	46.00	-5.63	peak	P
4 !	281.9945	62.92	-21.36	41.56	46.00	-4.44	peak	P
5 !	404.6664	59.28	-17.76	41.52	46.00	-4.48	peak	P
6 *	801.7862	51.22	-9.02	42.20	46.00	-3.80	peak	P

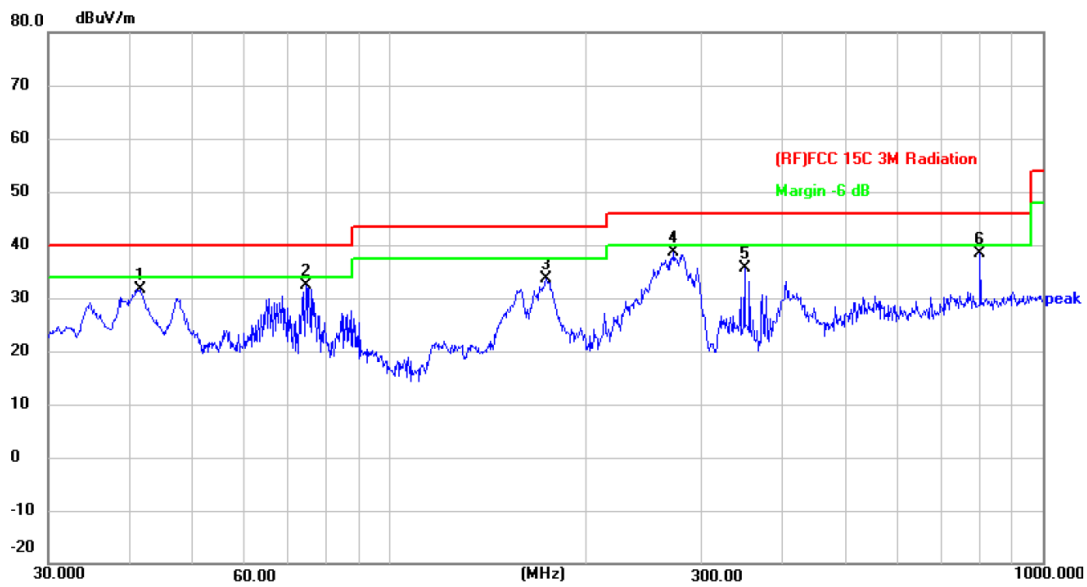
\*:Maximum data    x:Over limit    !:over margin

#### Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = QuasiPeak (dBuV/m)-Limit QPK(dBuV/m)



Temperature:	24.3°C	Relative Humidity:	45%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Vertical		
Test Mode:	Mode 2 TX 1Mbps Mode Channel 00		
Remark:	Only worse case is reported.		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	41.4215	54.56	-22.86	31.70	40.00	-8.30	peak	P
2	74.3953	58.00	-25.53	32.47	40.00	-7.53	peak	P
3	173.2050	56.98	-23.28	33.70	43.50	-9.80	peak	P
4 *	272.2776	60.31	-21.80	38.51	46.00	-7.49	peak	P
5	349.2500	54.97	-19.44	35.53	46.00	-10.47	peak	P
6	801.7862	47.38	-9.02	38.36	46.00	-7.64	peak	P

\*:Maximum data    x:Over limit    !:over margin

**Remark:**

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak (dBμV/m)-Limit QPK(dBμV/m)



## Above 1GHz

Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Horizontal		
Test Mode:	BLE(1Mbps) Mode TX 2402MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	10817.500	47.53	-2.17	45.36	74.00	-28.64	peak	P
2 *	13571.500	46.08	-0.02	46.06	74.00	-27.94	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit, So only show the peak value.

Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Vertical		
Test Mode:	BLE(1Mbps) Mode TX 2402MHz		

No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	P/F
1	10970.500	46.59	-1.82	44.77	74.00	-29.23	peak	P
2 *	13571.500	45.28	-0.02	45.26	74.00	-28.74	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBUV/m)= Corr. (dB/m)+ Read Level (dBUV)
3. Margin (dB) = Peak/AVG (dBUV/m)-Limit PK/AVG(dBUV/m)
4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
5. No report for the emission which more than 20dB below the prescribed limit.
6. The peak value<average limit, So only show the peak value.



Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Horizontal		
Test Mode:	BLE(1Mbps) Mode TX 2440MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	10843.000	46.96	-2.04	44.92	74.00	-29.08	peak	P
2	13240.000	44.86	-0.20	44.66	74.00	-29.34	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit, So only show the peak value.

Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Vertical		
Test Mode:	BLE(1Mbps) Mode TX 2440MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	10919.500	47.82	-1.79	46.03	74.00	-27.97	peak	P
2	13520.500	44.91	0.07	44.98	74.00	-29.02	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit, So only show the peak value.



Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Horizontal		
Test Mode:	BLE(1Mbps) Mode TX 2480MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	13214.500	45.02	-0.20	44.82	74.00	-29.18	peak	P
2 *	14974.000	43.98	1.37	45.35	74.00	-28.65	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)
4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
5. No report for the emission which more than 20dB below the prescribed limit.
6. The peak value<average limit, So only show the peak value.

Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Vertical		
Test Mode:	BLE(1Mbps) Mode TX 2480MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	10970.500	46.47	-1.82	44.65	74.00	-29.35	peak	P
2 *	13138.000	45.49	-0.17	45.32	74.00	-28.68	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit, So only show the peak value.



Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Horizontal		
Test Mode:	BLE(2Mbps) Mode TX 2402MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	11786.500	45.56	-0.96	44.60	74.00	-29.40	peak	P
2 *	13214.500	45.15	-0.20	44.95	74.00	-29.05	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit, So only show the peak value.

Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Vertical		
Test Mode:	BLE(2Mbps) Mode TX 2402MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	10919.500	47.05	-1.79	45.26	74.00	-28.74	peak	P
2	13699.000	44.83	0.30	45.13	74.00	-28.87	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit, So only show the peak value.



Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Horizontal		
Test Mode:	BLE(2Mbps) Mode TX 2440MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	10588.000	48.11	-3.57	44.54	74.00	-29.46	peak	P
2 *	13163.500	45.11	-0.19	44.92	74.00	-29.08	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit, So only show the peak value.

Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Vertical		
Test Mode:	BLE(2Mbps) Mode TX 2440MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	10511.500	47.87	-3.56	44.31	74.00	-29.69	peak	P
2 *	12118.000	45.62	-0.66	44.96	74.00	-29.04	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit, So only show the peak value.



Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Horizontal		
Test Mode:	BLE(2Mbps) Mode TX 2480MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	11735.500	46.04	-1.13	44.91	74.00	-29.09	peak	P
2 *	13444.000	45.42	0.15	45.57	74.00	-28.43	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit, So only show the peak value.

Temperature:	22.6℃	Relative Humidity:	56%
Test Voltage:	DC 11.55V		
Ant. Pol.	Vertical		
Test Mode:	BLE(2Mbps) Mode TX 2480MHz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	10945.000	47.70	-1.80	45.90	74.00	-28.10	peak	P
2	13954.000	44.25	0.70	44.95	74.00	-29.05	peak	P

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

5. No report for the emission which more than 20dB below the prescribed limit.

6. The peak value<average limit. So only show the peak value.

-----END OF THE REPORT-----

