

TEST REPORT

Report No.: BCTC2204846310E

Applicant: DP AUDIO VIDEO LLC

Product Name: Wireless Speaker

Model/Type reference: PKBT300

Tested Date: 2022-03-10 to 2022-03-15

Issued Date: 2022-03-15



Shenzhen **BCTC** Testing Co., Ltd.



FCC ID:2AVRVPKBT300

Product Name: Wireless Speaker

Trademark: Packed Party, Heyday, ONN
PKBT300

Model/Type Reference: PKBT300BW, PKBT300RB, PKBT300FL, PKBT300PD, PKBT300BS,
PKBT300WV, BTCR300BW, BTCR300RB, BTCR300FL, BTCR300PD,
BTCR300BS, BTCR300WV, PKBT324LP, PKBT324PD, PKBT324DM,
PKBT324ST, 100081903, AASPRK100081903, AAWAVE100081903,
AABRSH100081903, AADIAL100081903, AAPWAV100081903,
AAPNSP100081903, AANVLN100081903, AAORWV100081903

Prepared For: DP AUDIO VIDEO LLC

Address: 920 Malcolm Ave Los Angeles, California, USA 90024

Manufacturer: GANZHOU CITY MOSWS ELECTRONICS LTD

Address: SOUTH OF JINLINGXI ROAD, EAST OF QIFENGSAN ROAD, GANZHOU
DEVELOPMENT AREA GANZHOU CITY, JIANGXI PROVINCE, CHINA

Prepared By: Shenzhen BCTC Testing Co., Ltd.

Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei,
Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Sample Received Date: 2022-03-10

Sample tested Date: 2022-03-10 to 2022-03-15

Issue Date: 2022-03-15

Report No.: BCTC2204846310E

Test Standards: FCC Part15.247
ANSI C63.10-2013

Test Results: PASS

Remark: This is Bluetooth Classic radio test report.

Tested by:



Jeff Fu/ Project Handler

Approved by:



Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

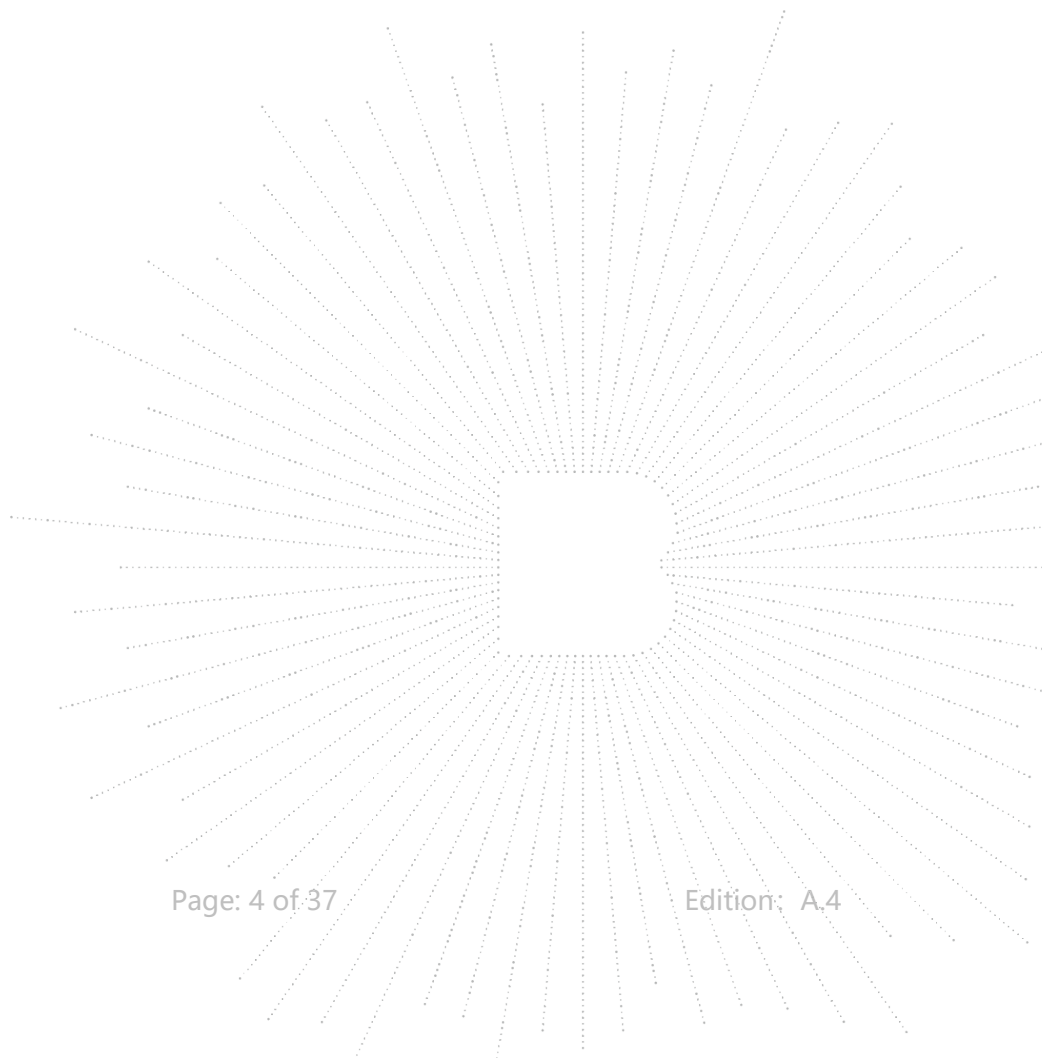
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(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2204846310E	2022-03-15	Original	Valid



2. Test Summary

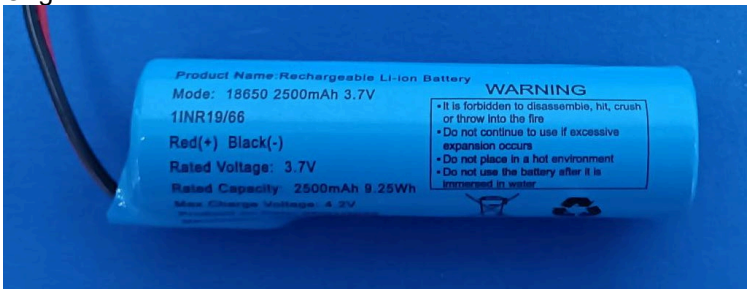
The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No	Results
1	Conducted emissions	15.207	PASS
2	Radiated Emissions	15.209	PASS

Remark: Based on the following changes in the product, the RF chip remains unchanged. So the report is only updated Conducted emissions and Radiated Emissions for the original report: BCTC2201454022E. The original ID of the reference:2AVRVPKBT300.

Changes : 1. The new product has Changed the internal battery.

Original:

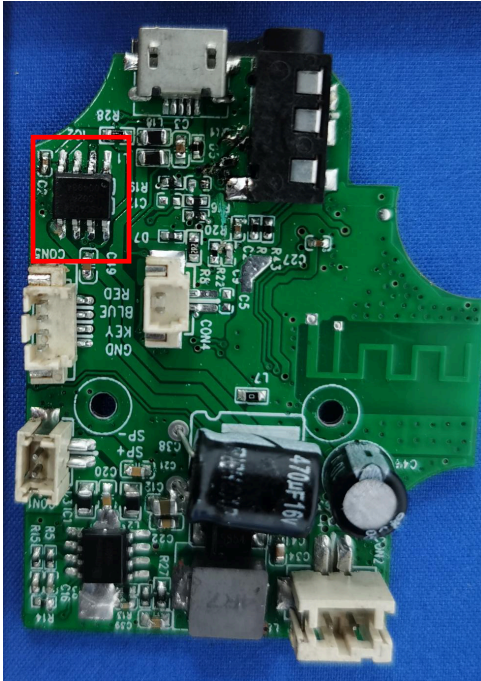


New

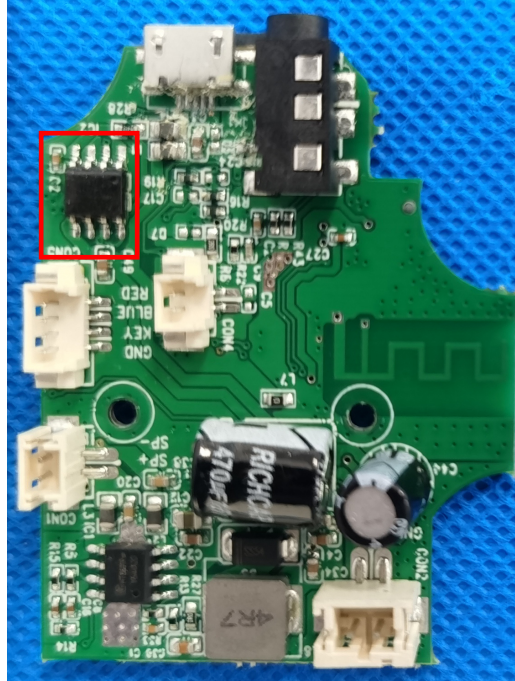


Changes : 2. The new product has changed charging IC.

Original:



New:



Based on two the changes in the product, Three test scenarios are generated:

scenario	Collocation method
1	Original IC+New Battery
2	New IC+ Original Battery
3	New IC+ New Battery

3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

No.	Item	Uncertainty
1	humidity uncertainty	U=5.3%
2	Temperature uncertainty	U=0.59°C
3	Conducted Emission (150kHz-30MHz)	U=3.2dB
4	Radiated disturbance(30MHz-1000MHz)	U=4.8dB
5	Radiated disturbance(1GHz-6GHz)	U=4.9dB
6	Radiated disturbance(1GHz-18GHz)	U=5.0dB

4. Product Information And Test Setup

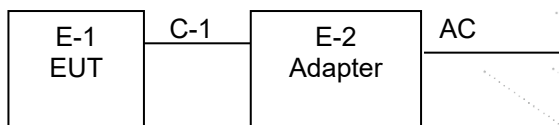
4.1 Product Information

Model/Type Reference:	PKBT300 PKBT300BW, PKBT300RB, PKBT300FL, PKBT300PD, PKBT300BS, PKBT300WV, BTCR300BW, BTCR300RB, BTCR300FL, BTCR300PD, BTCR300BS, BTCR300WV, PKBT324LP, PKBT324PD, PKBT324DM, PKBT324ST, 100081903, AASPRK100081903, AAWAVE100081903, AABRSH100081903, AADIAL100081903, AAPWAV100081903, AAPNSP100081903, AANVLN100081903, AAORWV100081903
Model differences:	All the model are the same circuit and RF module, except model names and appearance color
Operation Frequency:	Bluetooth: 2402-2480MHz
Type of Modulation:	Bluetooth: GFSK, $\pi/4$ DQPSK, 8DPSK
Number Of Channel	79CH
Antenna installation:	PCB antenna
Antenna Gain:	-0.68dBi
Ratings:	USB:DC 5V Battery:DC 3.7V

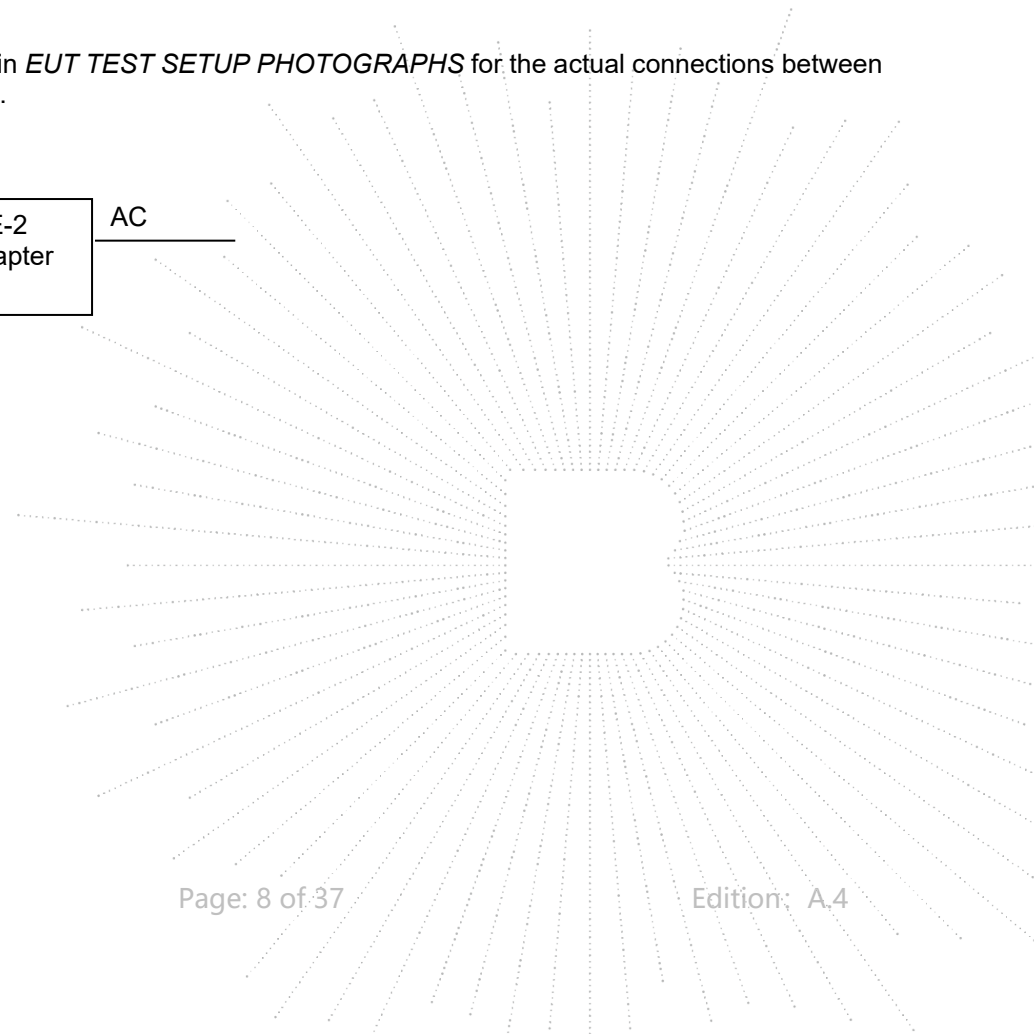
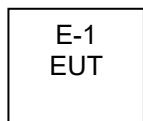
4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Conducted Emission:



Radiated Emissions



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Wireless Speaker	Packed Party, Heyday	PKBT300	Ref. the Section 4.1	EUT
E-2	Adapter	UGREEN	CD122	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	0.3M	DC cable unshielded

Notes:

- All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
0	2402	1	2403	2	2404	3	2405
4	2406	5	2407	6	2408	7	2409
8	2410	9	2411	10	2412	11	2413
12	2414	13	2415	14	2416	15	2417
16	2418	17	2419	18	2420	19	2421
20	2422	21	2423	22	2424	23	2425
24	2426	25	2427	26	2428	27	2429
28	2430	29	2431	30	2432	31	2433
32	2434	33	2435	34	2436	35	2437
36	2438	37	2439	38	2440	39	2441
40	2442	41	2443	42	2444	43	2445
44	2446	45	2447	46	2448	47	2449
48	2450	49	2451	50	2452	51	2453
52	2454	53	2455	54	2456	55	2457
56	2458	57	2459	58	2460	59	2461
60	2462	61	2463	62	2464	63	2465
64	2466	65	2467	66	2468	67	2469
68	2470	69	2471	70	2472	71	2473
72	2474	73	2475	74	2476	75	2477
76	2478	77	2479	78	2480	79	/

4.5 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 above was evaluated respectively.

Test Mode	Test mode
1	Original IC+New Battery (Conducted emission)
2	New IC+ Original Battery (Conducted emission)
3	New IC+ New Battery(Conducted emission)
4	Original IC+New Battery (Radiated emission)
5	New IC+ Original Battery (Radiated emission)
6	New IC+ New Battery(Radiated emission)

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

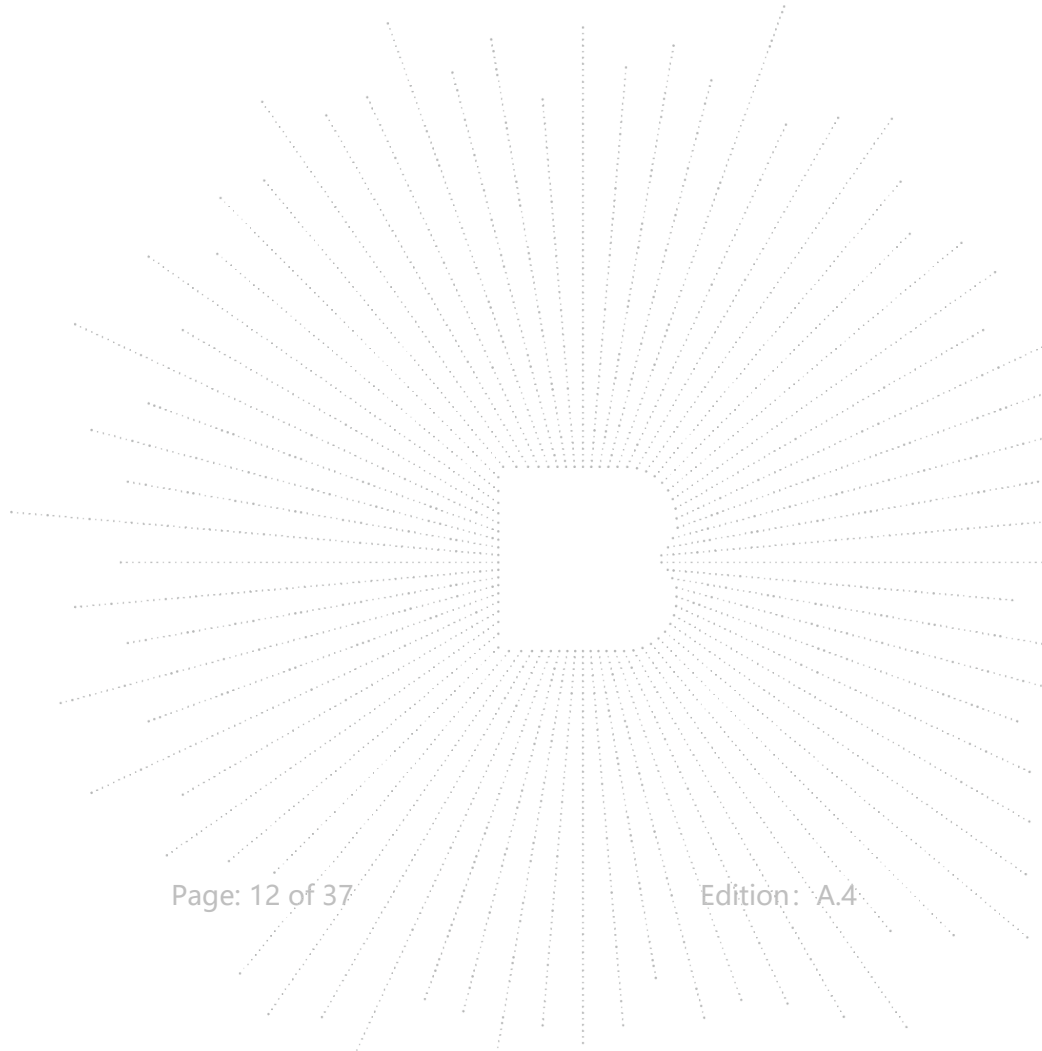
IC Registered No.: 23583

5.2 Test Instrument Used

Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
LISN	R&S	ENV216	101375	May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB DC-6GHz	1650	May 28, 2021	May 27, 2022

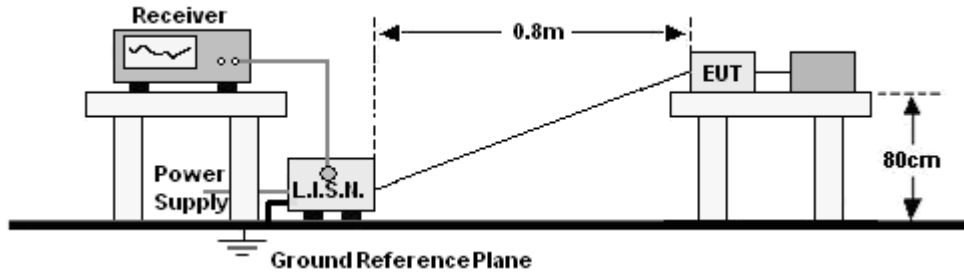
Radiated Emissions Test (966 Chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Jun. 06. 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
Receiver	R&S	ESRP	101154	May 28, 2021	May 27, 2022
Amplifier	SKET	LAPA_01G18 G-45dB	\	May 28, 2021	May 27, 2022
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 28, 2021	May 27, 2022
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	Jun. 01, 2021	May 31, 2022
Horn Antenna	Schwarzbeck	BBHA9120D	1541	Jun. 02, 2021	Jun. 01, 2022
Horn Antenn (18GHz-40GH z)	Schwarzbeck	BBHA9170	00822	Jun. 15, 2021	Jun. 14, 2022
Amplifier (18GHz-40GH z)	MITEQ	TTA1840-35- HG	2034381	May 28, 2021	May 27, 2022
Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Jun. 02, 2021	Jun. 01, 2022

RF cables1 (9kHz-30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-000 8	May 28, 2021	May 27, 2022
RF cables2 (30MHz-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	May 28, 2021	May 27, 2022
RF cables3 (1GHz-40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	May 28, 2021	May 27, 2022
Power Metter	Keysight	E4419	\	May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9300A	\	May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5G Hz	Keysight	N9020A	MY49100060	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40GHz	R&S	FSP 40	\	May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	FA-03A2 RE	\	\



6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

Frequency (MHz)	Limit (dBuV)	
	Quas-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Notes:
 1. *Decreasing linearly with logarithm of frequency.
 2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

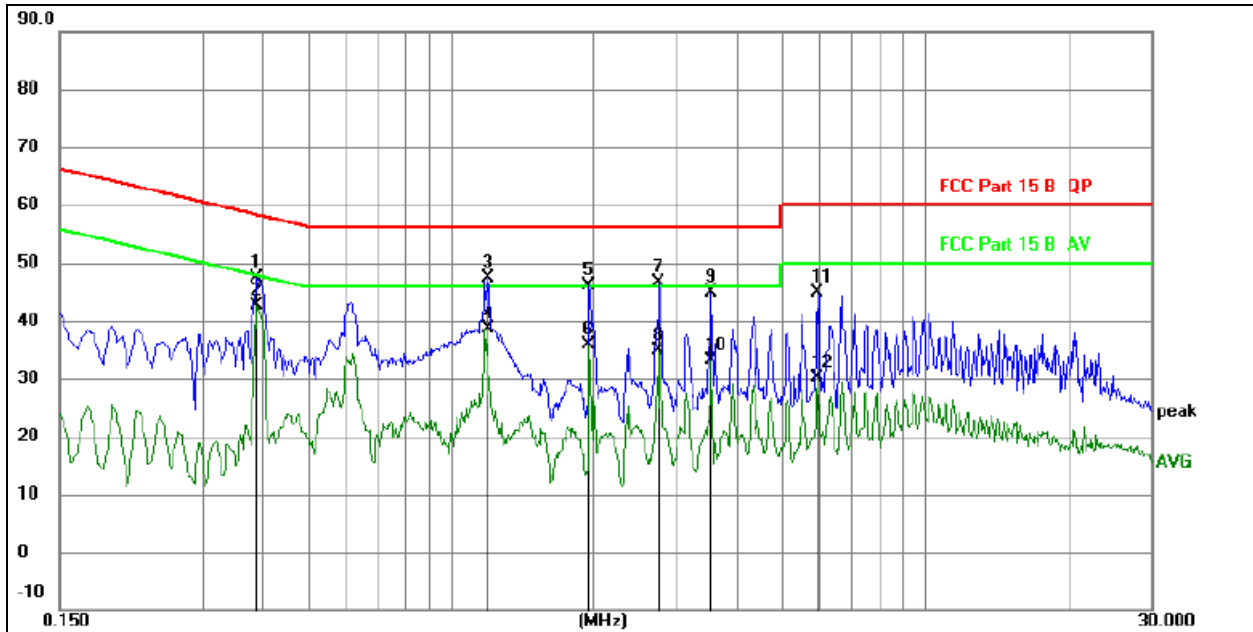
6.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

6.5 Test Result

Original IC+New Battery

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	L
Test Mode:	Mode 1	Test Voltage :	AC 120V/60Hz

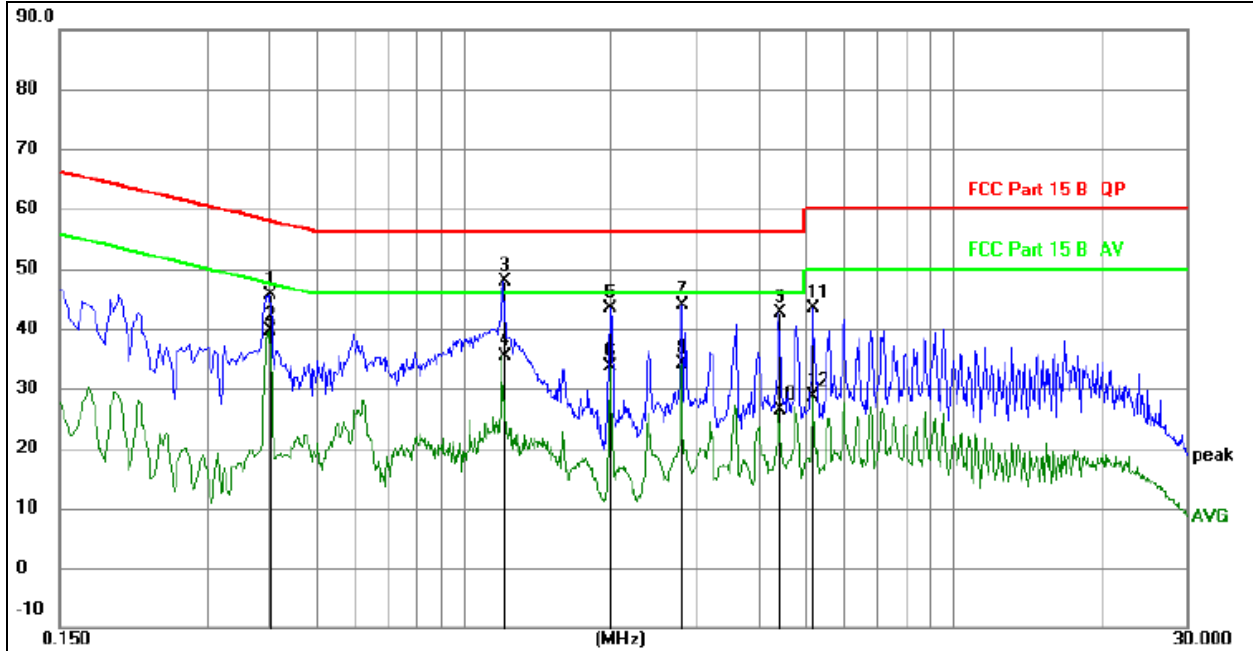


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.3913	27.79	19.61	47.40	58.04	-10.64	QP
2	*	0.3913	22.97	19.61	42.58	48.04	-5.46	AVG
3		1.1970	27.78	19.62	47.40	56.00	-8.60	QP
4		1.1970	19.07	19.62	38.69	46.00	-7.31	AVG
5		1.9592	26.39	19.62	46.01	56.00	-9.99	QP
6		1.9592	16.31	19.62	35.93	46.00	-10.07	AVG
7		2.7501	27.02	19.64	46.66	56.00	-9.34	QP
8		2.7501	15.35	19.64	34.99	46.00	-11.01	AVG
9		3.5465	25.10	19.66	44.76	56.00	-11.24	QP
10		3.5465	13.59	19.66	33.25	46.00	-12.75	AVG
11		5.9293	25.27	19.71	44.98	60.00	-15.02	QP
12		5.9293	10.34	19.71	30.05	50.00	-19.95	AVG

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	N
Test Mode:	Mode 1	Test Voltage :	AC 120V/60Hz

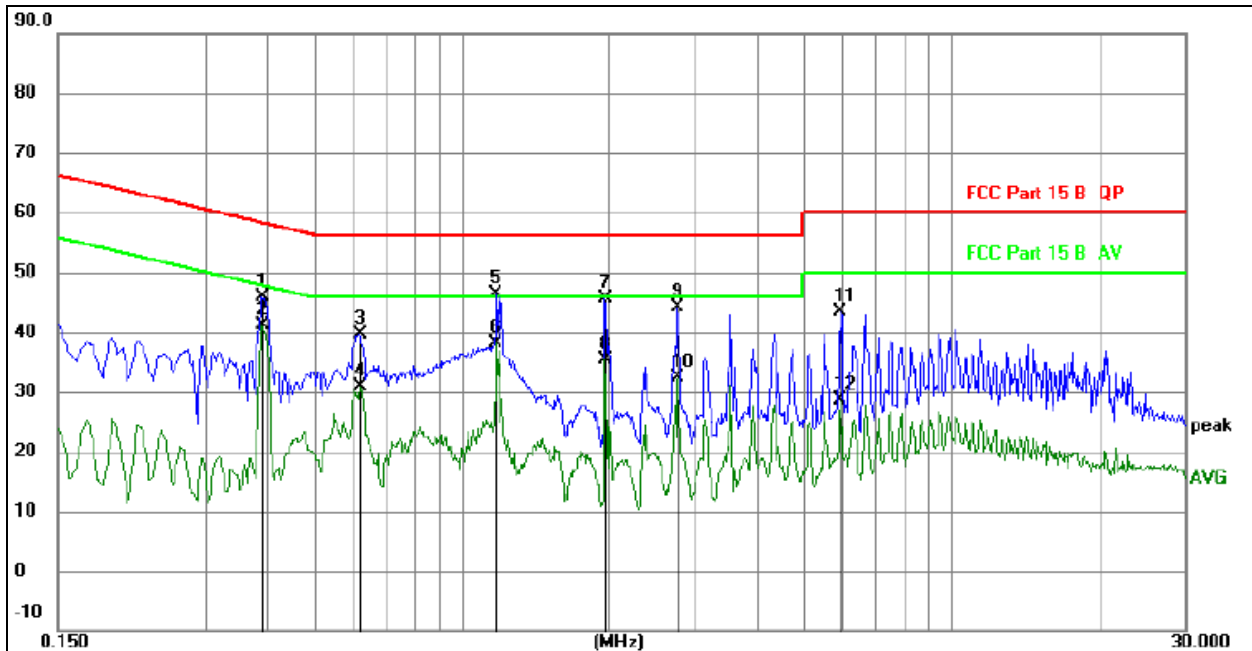

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.4020	25.93	19.61	45.54	57.81	-12.27	QP
2		0.4020	20.08	19.61	39.69	47.81	-8.12	AVG
3	*	1.2119	28.31	19.62	47.93	56.00	-8.07	QP
4		1.2119	15.86	19.62	35.48	46.00	-10.52	AVG
5		1.9994	23.82	19.62	43.44	56.00	-12.56	QP
6		1.9994	14.04	19.62	33.66	46.00	-12.34	AVG
7		2.7960	24.12	19.64	43.76	56.00	-12.24	QP
8		2.7960	14.54	19.64	34.18	46.00	-11.82	AVG
9		4.4160	22.88	19.68	42.56	56.00	-13.44	QP
10		4.4160	6.75	19.68	26.43	46.00	-19.57	AVG
11		5.1900	23.72	19.70	43.42	60.00	-16.58	QP
12		5.1900	9.00	19.70	28.70	50.00	-21.30	AVG

New IC+ Original Battery

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	L
Test Mode:	Mode 2	Test Voltage :	AC 120V/60Hz

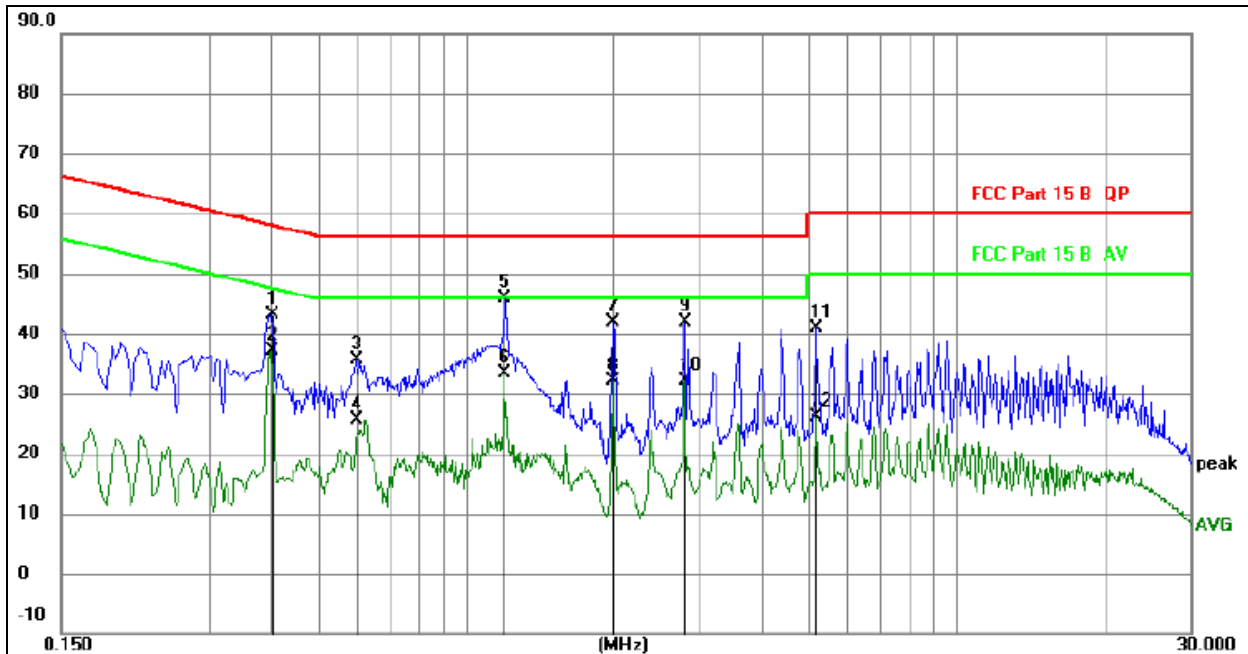


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.3914	26.29	19.61	45.90	58.03	-12.13	QP
2	*	0.3914	21.47	19.61	41.08	48.03	-6.95	AVG
3		0.6173	19.91	19.61	39.52	56.00	-16.48	QP
4		0.6173	11.26	19.61	30.87	46.00	-15.13	AVG
5		1.1781	26.70	19.62	46.32	56.00	-9.68	QP
6		1.1781	18.57	19.62	38.19	46.00	-7.81	AVG
7		1.9593	25.89	19.62	45.51	56.00	-10.49	QP
8		1.9593	15.81	19.62	35.43	46.00	-10.57	AVG
9		2.7502	24.52	19.64	44.16	56.00	-11.84	QP
10		2.7502	12.85	19.64	32.49	46.00	-13.51	AVG
11		5.9293	23.77	19.71	43.48	60.00	-16.52	QP
12		5.9293	8.84	19.71	28.55	50.00	-21.45	AVG

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	N
Test Mode:	Mode 2	Test Voltage :	AC 120V/60Hz

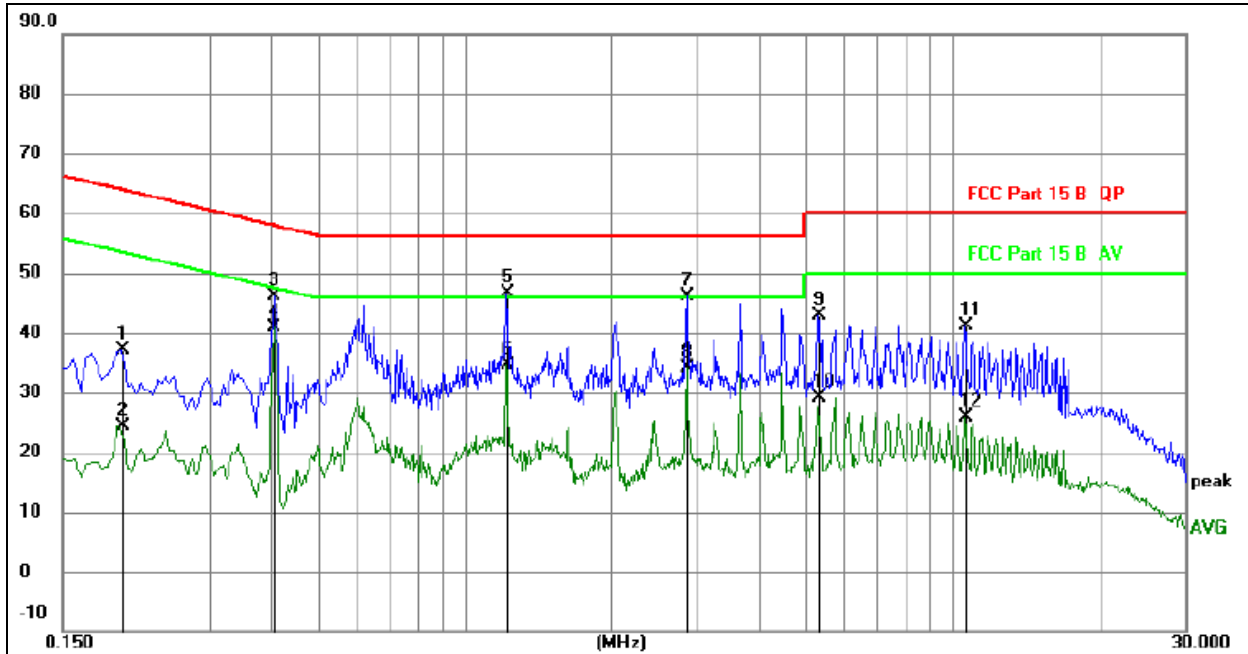

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz		dB	dBuV	dBuV	dB	
1		0.4020	23.43	19.61	43.04	57.81	-14.77	QP
2		0.4020	17.58	19.61	37.19	47.81	-10.62	AVG
3		0.6000	15.92	19.61	35.53	56.00	-20.47	QP
4		0.6000	5.99	19.61	25.60	46.00	-20.40	AVG
5	*	1.1985	26.31	19.62	45.93	56.00	-10.07	QP
6		1.1985	13.86	19.62	33.48	46.00	-12.52	AVG
7		1.9995	22.32	19.62	41.94	56.00	-14.06	QP
8		1.9995	12.54	19.62	32.16	46.00	-13.84	AVG
9		2.7960	22.12	19.64	41.76	56.00	-14.24	QP
10		2.7960	12.54	19.64	32.18	46.00	-13.82	AVG
11		5.1900	21.22	19.70	40.92	60.00	-19.08	QP
12		5.1900	6.50	19.70	26.20	50.00	-23.80	AVG

New IC+ New Battery

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	L
Test Mode:	Mode 3	Test Voltage :	AC 120V/60Hz

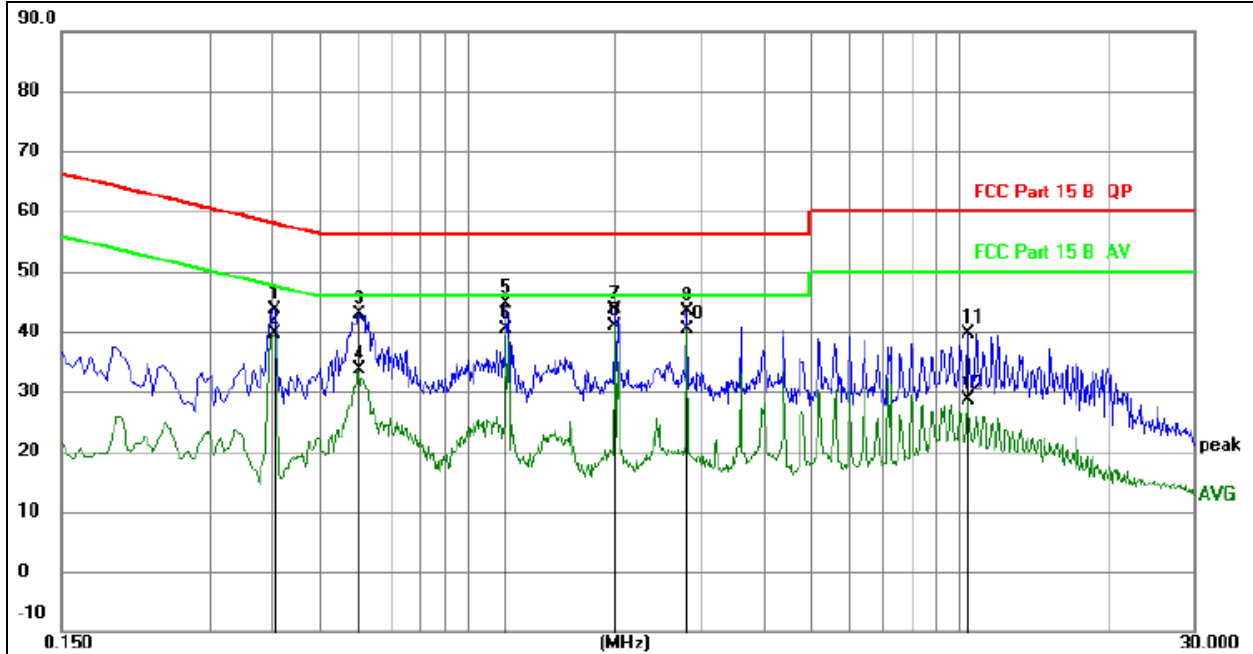


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1995	17.51	19.60	37.11	63.63	-26.52	QP
2		0.1995	4.87	19.60	24.47	53.63	-29.16	AVG
3		0.4065	26.51	19.61	46.12	57.72	-11.60	QP
4	*	0.4065	21.37	19.61	40.98	47.72	-6.74	AVG
5		1.2210	27.10	19.62	46.72	56.00	-9.28	QP
6		1.2210	15.07	19.62	34.69	46.00	-11.31	AVG
7		2.8590	26.38	19.64	46.02	56.00	-9.98	QP
8		2.8590	14.49	19.64	34.13	46.00	-11.87	AVG
9		5.3115	23.20	19.70	42.90	60.00	-17.10	QP
10		5.3115	9.40	19.70	29.10	50.00	-20.90	AVG
11		10.5900	21.30	19.79	41.09	60.00	-18.91	QP
12		10.5900	6.05	19.79	25.84	50.00	-24.16	AVG

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	N
Test Mode:	Mode 3	Test Voltage :	AC 120V/60Hz


Remark:

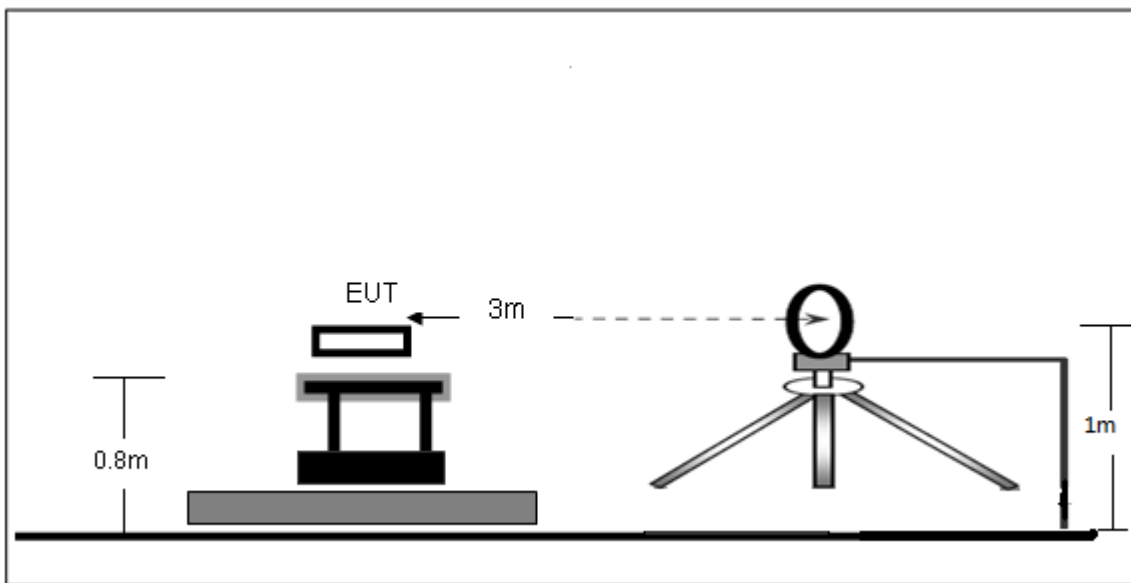
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.4061	24.10	19.61	43.71	57.73	-14.02	QP
2		0.4061	20.08	19.61	39.69	47.73	-8.04	AVG
3		0.6043	23.38	19.61	42.99	56.00	-13.01	QP
4		0.6043	14.02	19.61	33.63	46.00	-12.37	AVG
5		1.1970	24.90	19.62	44.52	56.00	-11.48	QP
6		1.1970	20.72	19.62	40.34	46.00	-5.66	AVG
7		2.0011	24.00	19.62	43.62	56.00	-12.38	QP
8	*	2.0011	21.24	19.62	40.86	46.00	-5.14	AVG
9		2.7942	23.62	19.64	43.26	56.00	-12.74	QP
10		2.7942	20.68	19.64	40.32	46.00	-5.68	AVG
11		10.3972	19.74	19.79	39.53	60.00	-20.47	QP
12		10.3972	8.88	19.79	28.67	50.00	-21.33	AVG

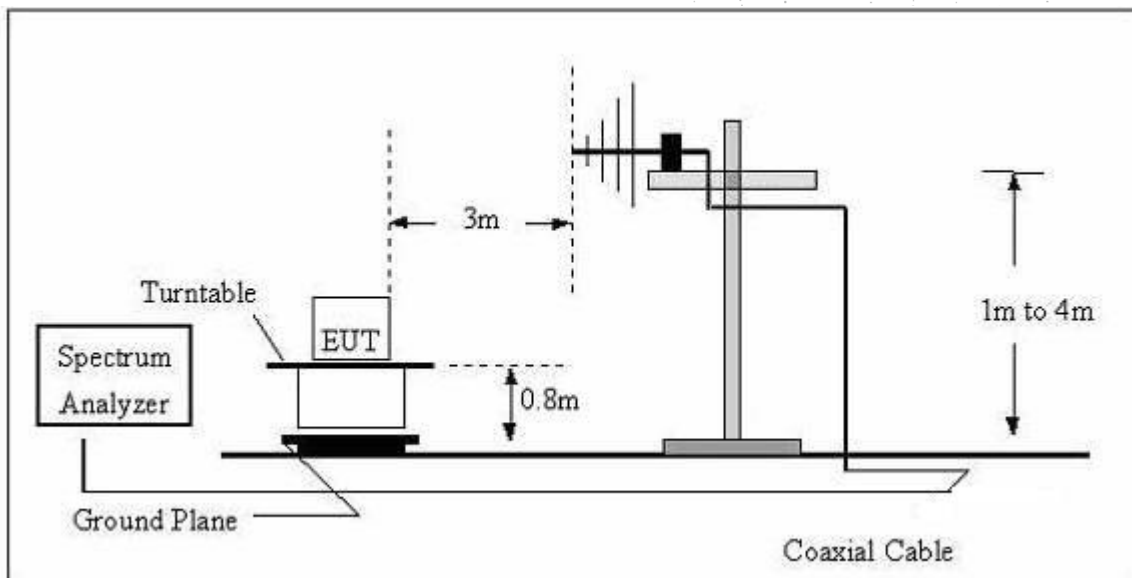
7. Radiated emissions

7.1 Block Diagram Of Test Setup

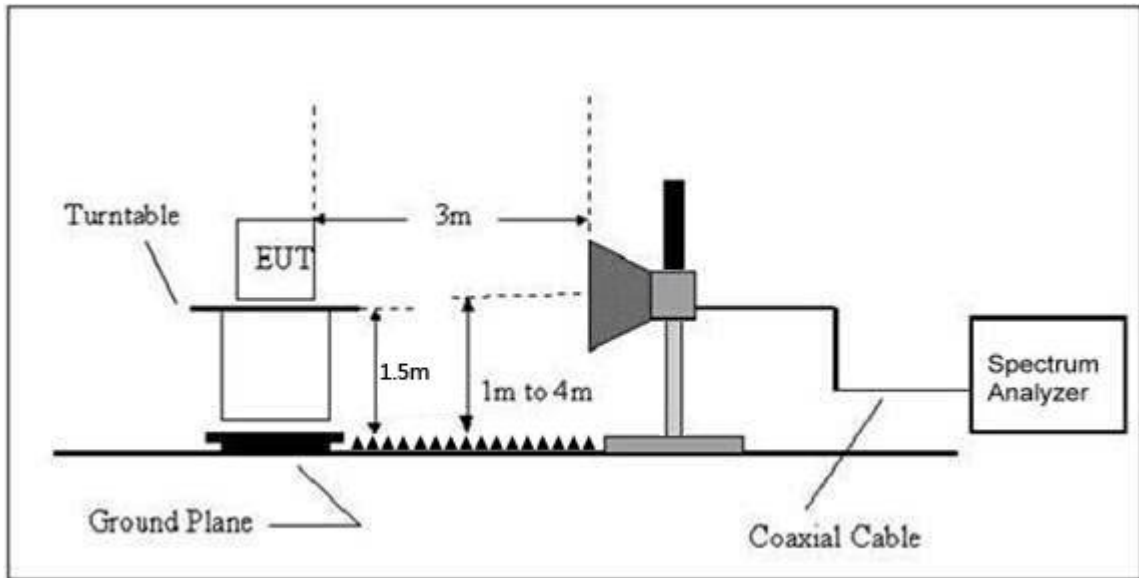
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



7.2 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency (MHz)	Field Strength uV/m	Distance (m)	Field Strength Limit at 3m Distance	
			uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

Limits Of Radiated Emission Measurement (Above 1000MHz)

Frequency (MHz)	Limit (dBuV/m) (at 3M)	
	Peak	Average
Above 1000	74	54

Notes:

- (1)The limit for radiated test was performed according to FCC PART 15C.
- (2)The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Frequency Range Of Radiated Measurement

(a) For an intentional radiator the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in this paragraph:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(4) If the intentional radiator operates at or above 95 GHz: To the third harmonic of the highest fundamental frequency or to 750 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(5) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a) (1)through (4) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this section, whichever is the higher frequency range of investigation.

7.3 Test procedure

Receiver Parameter	Setting
Attenuation	Auto
9kHz~150kHz	RBW 200Hz for QP
150kHz~30MHz	RBW 9kHz for QP
30MHz~1000MHz	RBW 120kHz for QP

Spectrum Parameter	Setting
1-25GHz	RBW 1 MHz /VBW 1 MHz for Peak, RBW 1 MHz / VBW 10Hz for Average

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

- a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middlest channel, the Highest channel.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

7.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

7.5 Test Result

Below 30MHz

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 3.7V
Test Mode:	Mode 6		

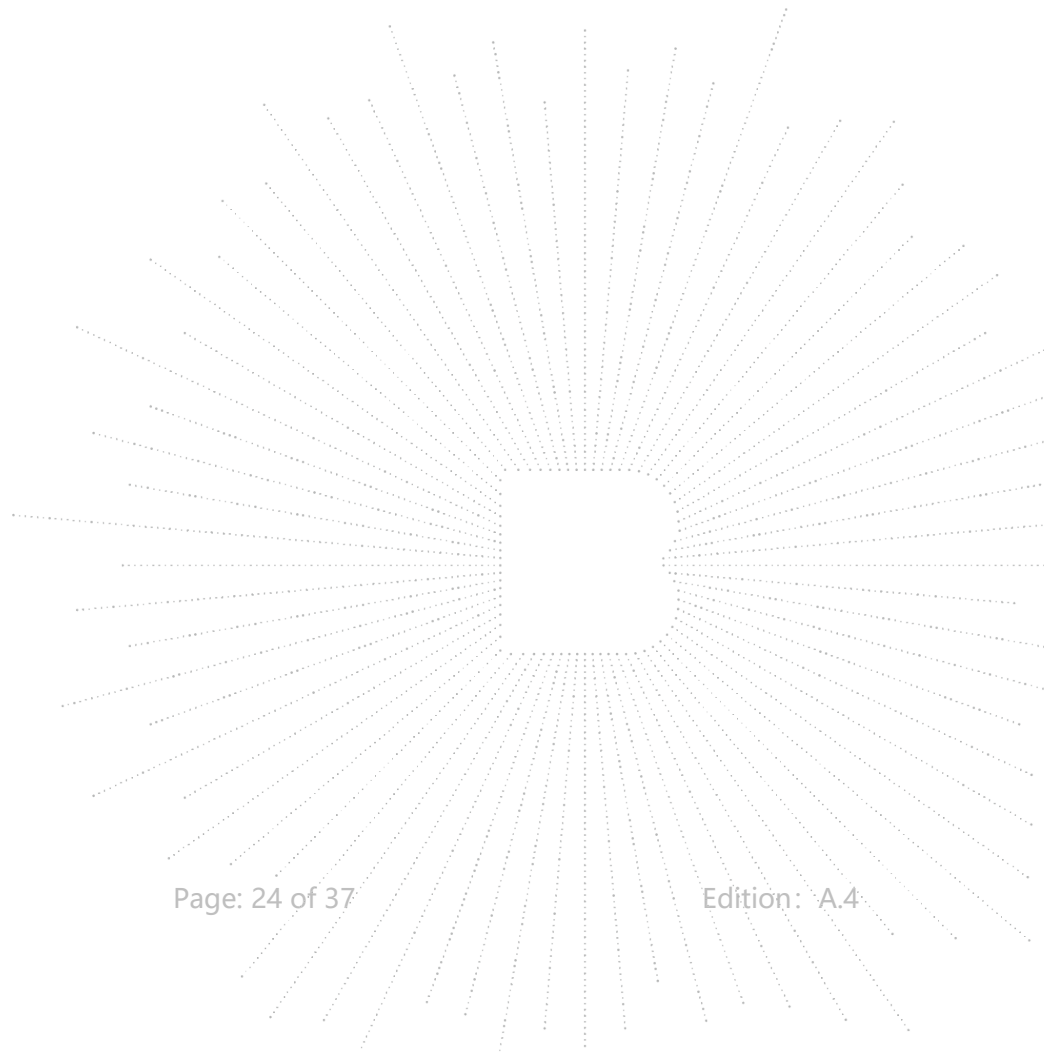
Freq. (MHz)	Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	State P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

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

Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})(\text{dB})$;

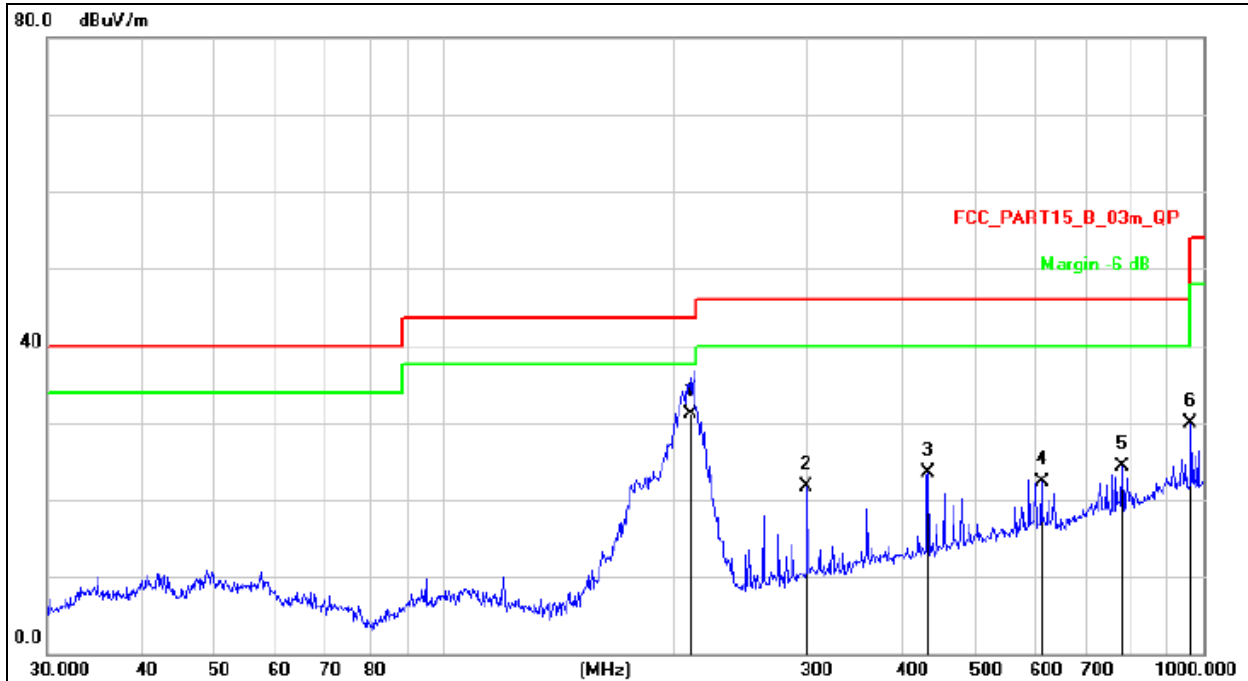
Limit line = specific limits(dBuv) + distance extrapolation factor.



Between 30MHz – 1GHz

Original IC+New Battery

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	Mode 4	Test Voltage :	DC 3.7V

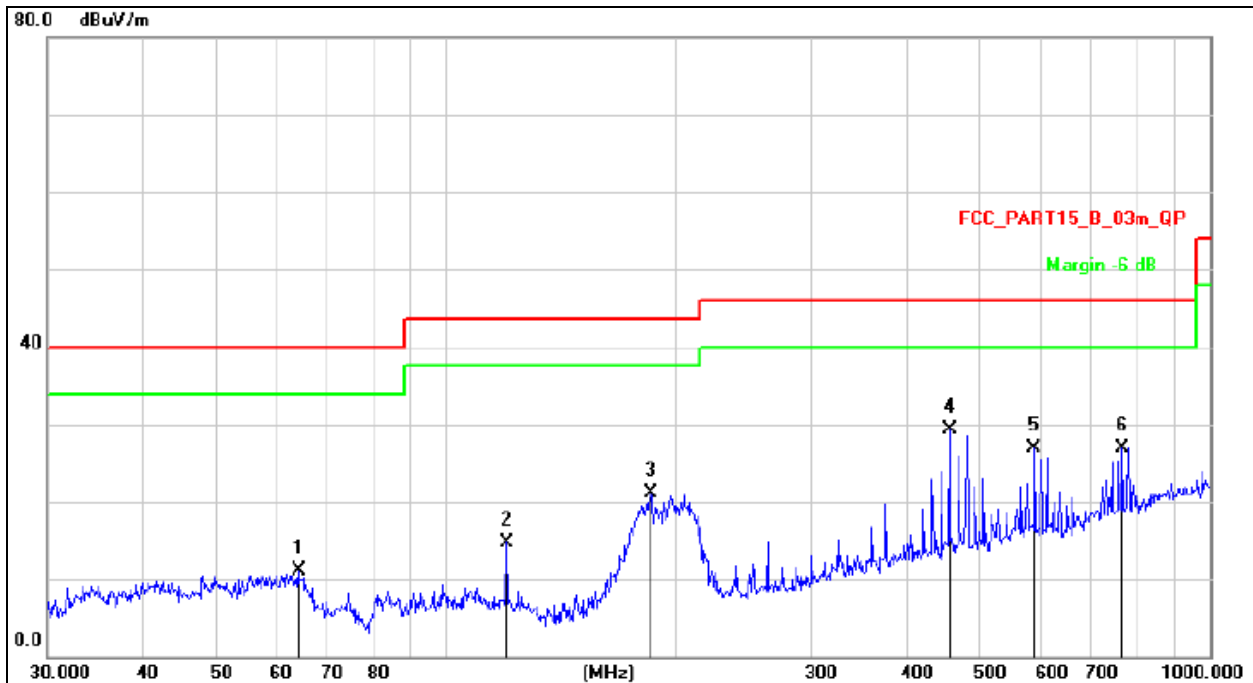


Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Measurement = Reading Level + Correct Factor
- Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1	*	211.6561	47.23	-16.03	31.20	43.50	-12.30	QP
2		300.3672	35.23	-13.59	21.64	46.00	-24.36	QP
3		434.0651	33.92	-10.33	23.59	46.00	-22.41	QP
4		612.0642	28.97	-6.59	22.38	46.00	-23.62	QP
5		782.3453	28.12	-3.89	24.23	46.00	-21.77	QP
6		962.1623	30.87	-1.04	29.83	54.00	-24.17	QP

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 4	Test Voltage :	DC 3.7V

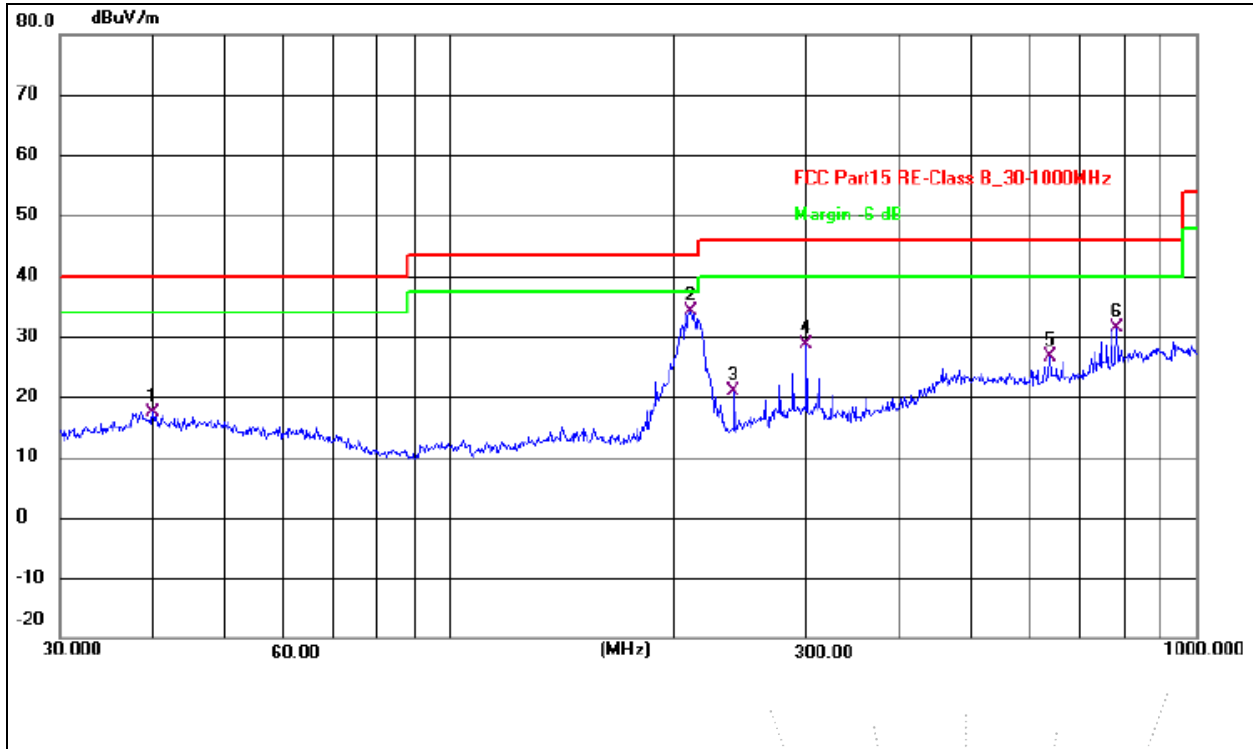

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dB/m	dB	
1		63.9828	27.95	-16.82	11.13	40.00	-28.87	QP
2		119.8556	32.36	-17.56	14.80	43.50	-28.70	QP
3		185.1379	38.36	-17.25	21.11	43.50	-22.39	QP
4	*	455.9058	39.14	-9.85	29.29	46.00	-16.71	QP
5		588.9051	33.62	-6.78	26.84	46.00	-19.16	QP
6		768.7481	30.96	-4.08	26.88	46.00	-19.12	QP

New IC+ Original Battery

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	Mode 5	Test Voltage :	DC 3.7V

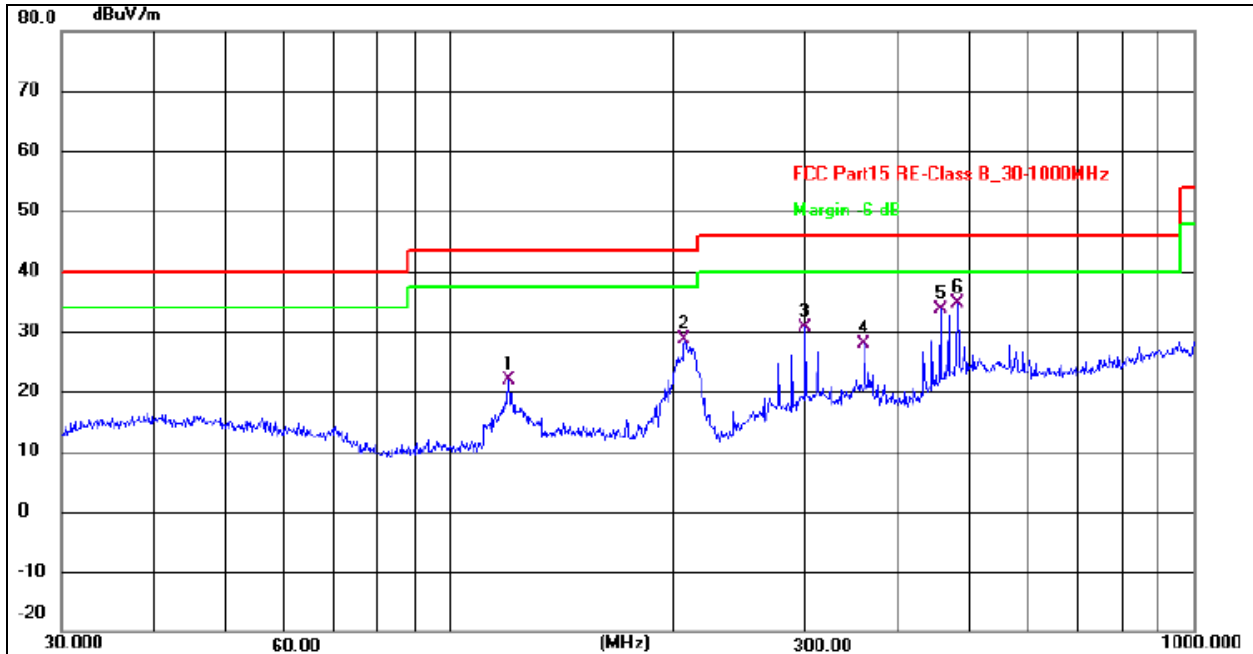


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	39.9941	28.28	-10.87	17.41	40.00	-22.59	QP
2 *	210.0481	47.83	-13.78	34.05	43.50	-9.45	QP
3	239.9873	33.44	-12.62	20.82	46.00	-25.18	QP
4	300.3672	38.73	-10.17	28.56	46.00	-17.44	QP
5	636.1340	29.11	-2.48	26.63	46.00	-19.37	QP
6	782.3452	31.76	-0.49	31.27	46.00	-14.73	QP

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 5	Test Voltage :	DC 3.7V

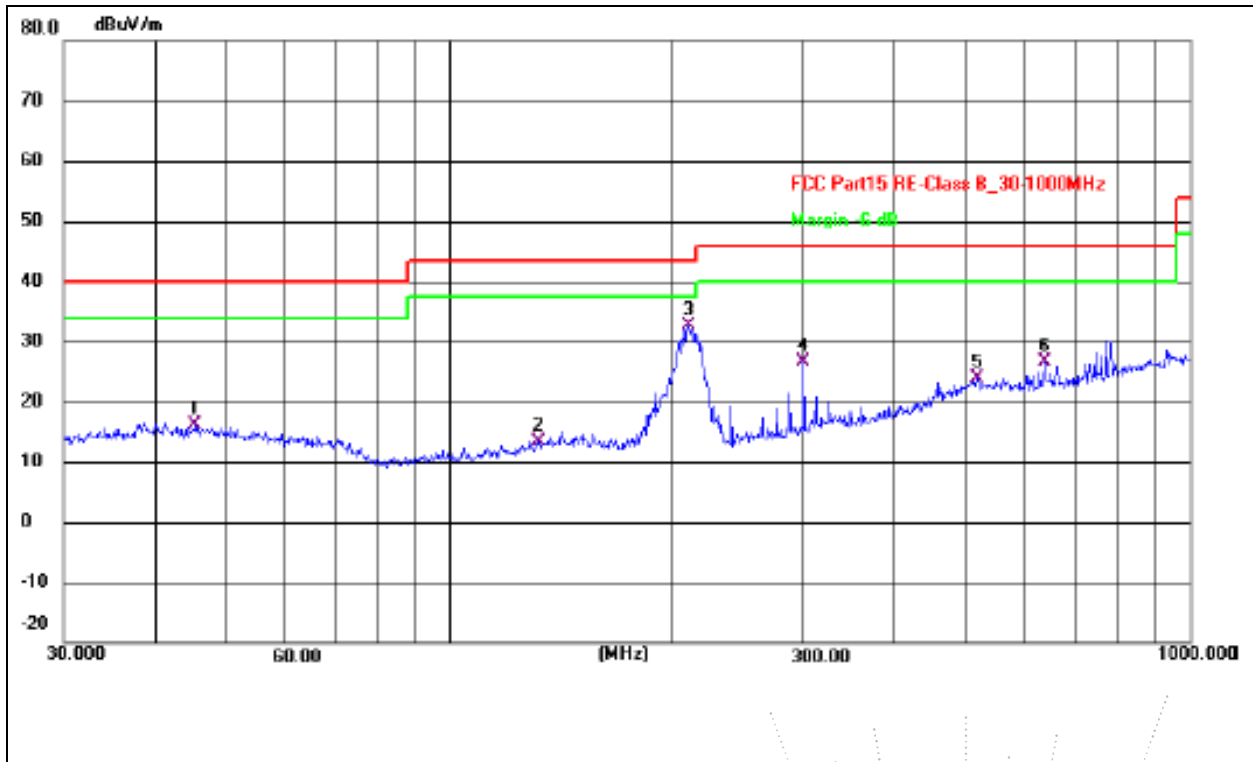


Remark:
 1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
 2. Measurement = Reading Level + Correct Factor
 3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)
1	119.8556	36.14	-14.28	21.86	43.50	-21.64	QP	
2	206.3975	42.55	-13.92	28.63	43.50	-14.87	QP	
3	300.3672	40.87	-10.17	30.70	46.00	-15.30	QP	
4	360.4476	36.67	-8.72	27.95	46.00	-18.05	QP	
5	455.9058	38.91	-5.18	33.73	46.00	-12.27	QP	
6 *	480.5276	38.72	-4.05	34.67	46.00	-11.33	QP	

New IC+ New Battery

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	Mode 6	Test Voltage :	DC 3.7V

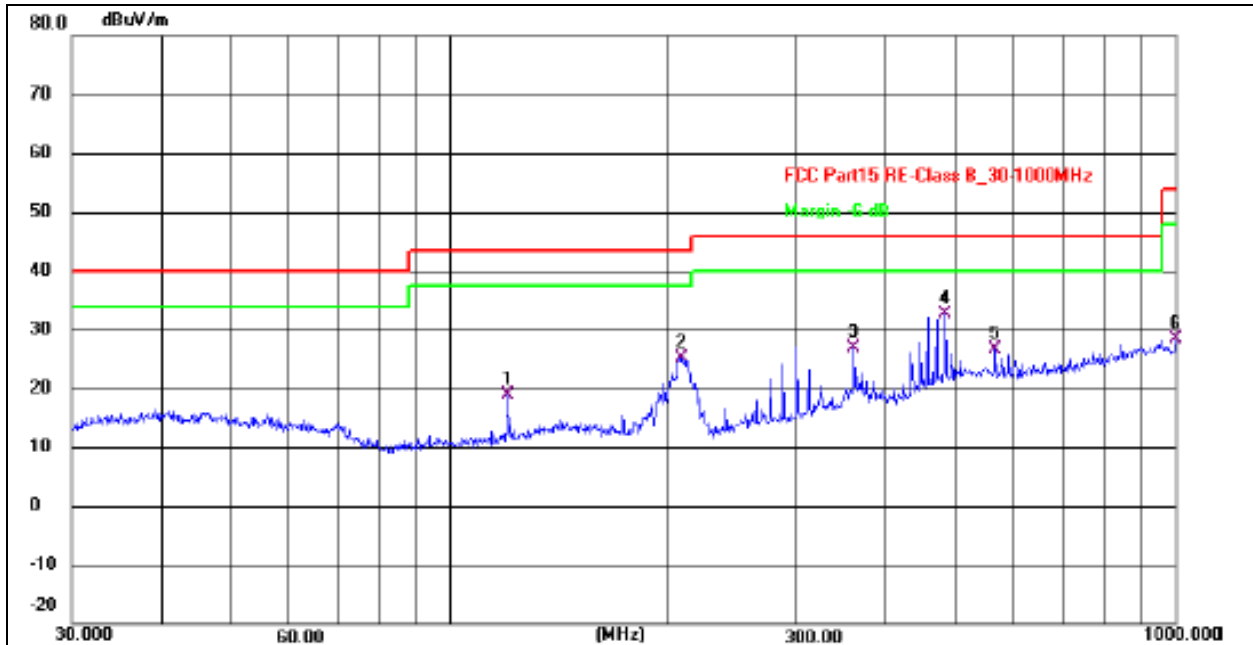


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	45.2166	27.23	-11.17	16.06	40.00	-23.94	QP
2	131.7577	27.12	-13.64	13.48	43.50	-30.02	QP
3 *	210.0482	46.33	-13.78	32.55	43.50	-10.95	QP
4	300.3672	36.73	-10.17	26.56	46.00	-19.44	QP
5	515.4374	26.91	-3.11	23.80	46.00	-22.20	QP
6	636.1340	29.11	-2.48	26.63	46.00	-19.37	QP

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 6	Test Voltage :	DC 3.7V


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	119.8556	33.14	-14.28	18.86	43.50	-24.64	QP
2	208.5803	39.01	-13.84	25.17	43.50	-18.33	QP
3	360.4476	35.67	-8.72	26.95	46.00	-19.05	QP
4 *	480.5276	36.72	-4.05	32.67	46.00	-13.33	QP
5	564.6389	29.66	-2.99	26.67	46.00	-19.33	QP
6	1000.0000	26.14	2.14	28.28	54.00	-25.72	QP

8. EUT Photographs

EUT Photo 1



EUT Photo 2



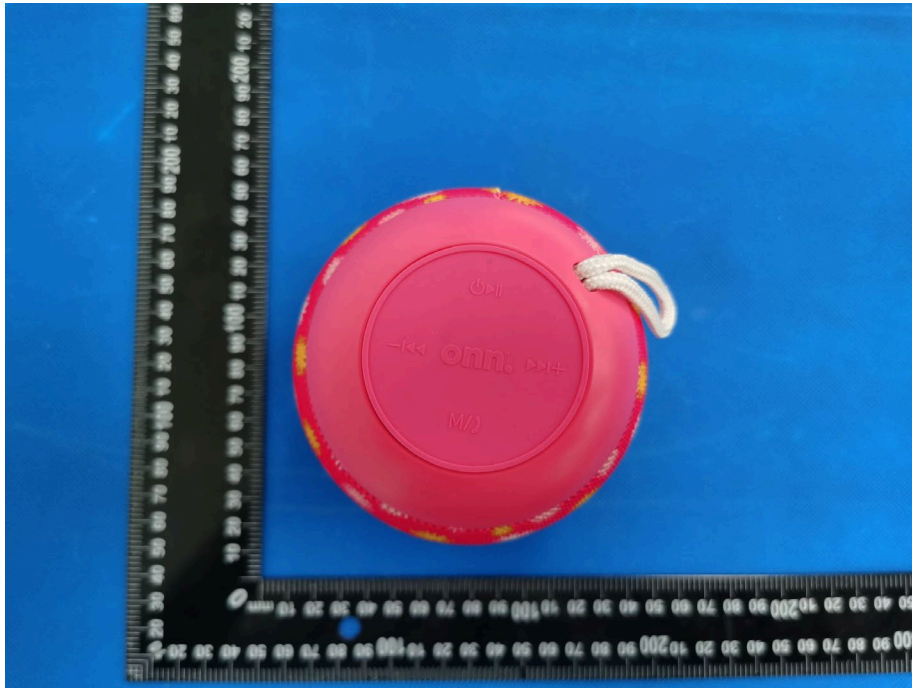
EUT Photo 3



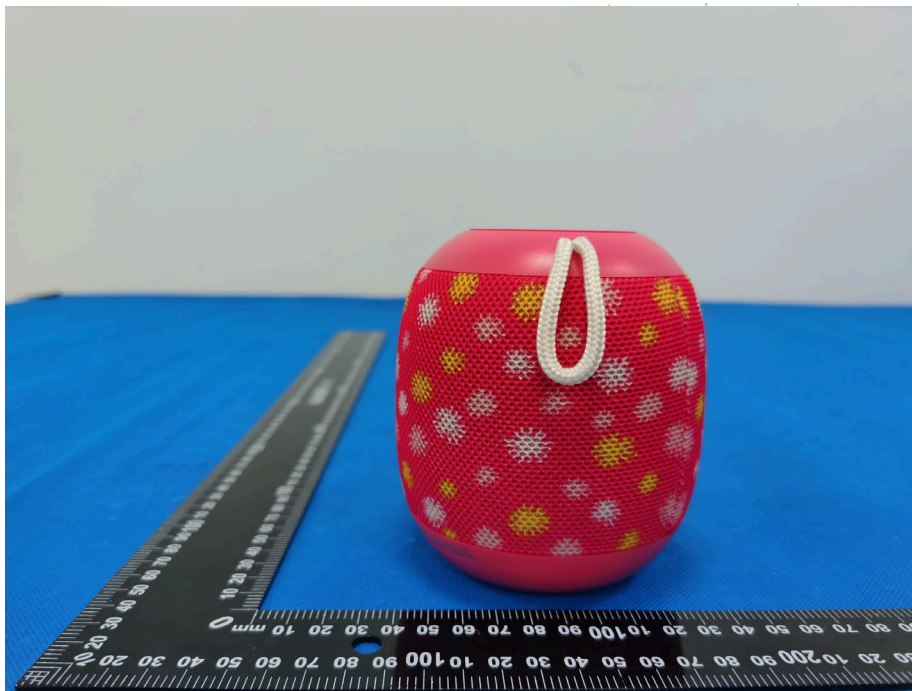
EUT Photo 4



EUT Photo 5



EUT Photo 6



9. EUT Test Setup Photographs

Conducted emissions (Original IC+New Battery)



Radiated Measurement Photo (Original IC+New Battery)



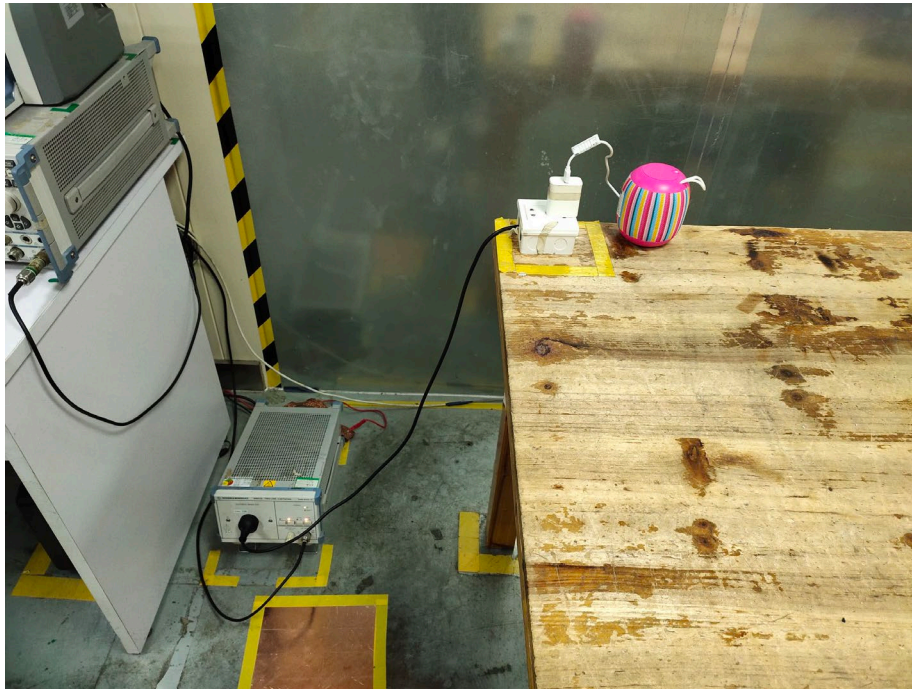
Conducted emissions (New IC+ Original Battery)



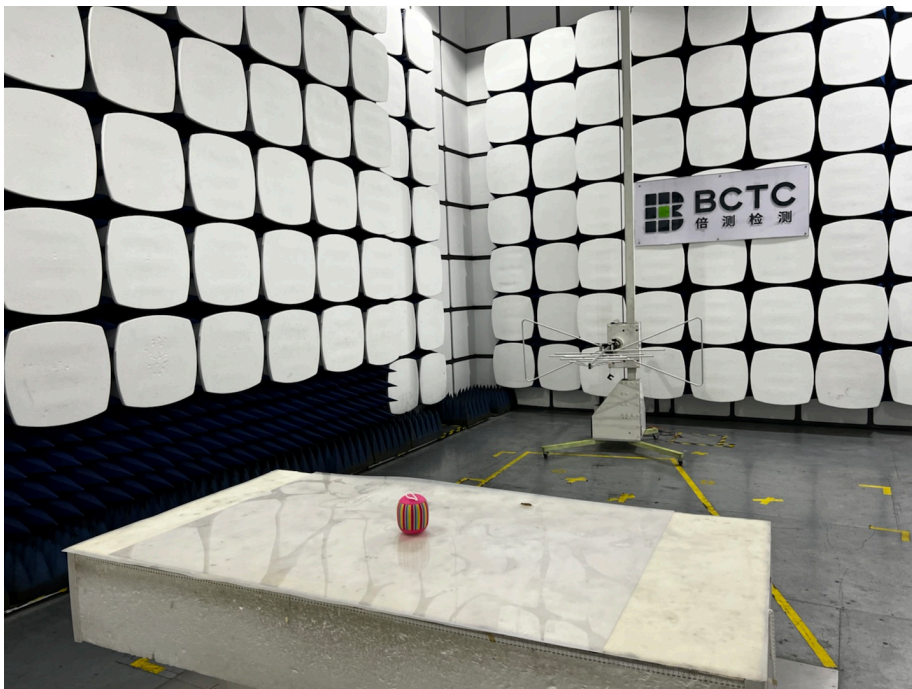
Radiated Measurement Photo (New IC+ Original Battery)



Conducted emissions (New IC+ New Battery)



Radiated Measurement Photo (New IC+ New Battery)



STATEMENT

- 1.The equipment lists are traceable to the national reference standards.
- 2.The test report can not be partially copied unless prior written approval is issued from our lab.
- 3.The test report is invalid without stamp of laboratory.
- 4.The test report is invalid without signature of person(s) testing and authorizing.
- 5.The test process and test result is only related to the Unit Under Test.
- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.
- 7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

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P.C.: 518103

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Website: <http://www.chnbctc.com>

E-Mail: bctc@bctc-lab.com.cn

***** END *****