

FCC CERTIFICATION TEST REPORT

FOR

Applicant	:	SHENZHEN ECARE ELECTRONICS CO., LTD.
Address	:	5-6/F., Block B, Huali Industrial Building, District 28, Bao An, Shenzhen, Guang Dong, China.
Equipment under Test	:	Temperature Monitor
Model No.	:	TP28B
Trade Mark	:	/
FCC ID	:	2AATP-TP28B
Manufacturer	:	SHENZHEN ECARE ELECTRONICS CO., LTD.
Address	:	5-6/F., Block B, Huali Industrial Building, District 28, Bao An, Shenzhen, Guang Dong, China.

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

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Dongguan City, Guangdong Province, China, 523808

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REPORT

Table of Contents

	Test report declares.....	4
1.	Summary of Test Results.....	5
2.	General Test Information	6
2.1.	Description of EUT	6
2.2.	Accessories of EUT.....	6
2.3.	Assistant equipment used for test.....	6
2.4.	Block diagram of EUT configuration for test.....	6
2.5.	Test environment conditions	6
2.6.	Deviations of test standard.....	6
2.7.	Test laboratory	7
2.8.	Measurement uncertainty.....	7
3.	Equipment Used During Test.....	8
4.	20 dB Bandwidth	10
4.1.	Block diagram of test setup.....	10
4.2.	Limits	10
4.3.	Test procedure	10
4.4.	Test result.....	10
4.5.	Original test data	11
5.	Radiated Emission	12
5.1.	Block diagram of test setup.....	12
5.2.	Limit.....	13
5.3.	Test procedure	14
5.4.	Test result.....	15
6.	Band Edge Compliance	20
6.1.	Block diagram of test setup.....	20
6.2.	Limit.....	20
6.3.	Test procedure	20
6.4.	Test result.....	20
7.	Power Line Conducted Emission	23
7.1.	Block diagram of test setup.....	23
7.2.	Power line conducted emission limits	23
7.3.	Test procedure	23
7.4.	Test result.....	24
8.	Antenna Requirements	25
8.1.	Limit.....	25
8.2.	Result	25

Test Report Declare

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Manufacturer	:	SHENZHEN ECARE ELECTRONICS CO., LTD.
Address	:	5-6/F., Block B, Huali Industrial Building, District 28, Bao An, Shenzhen, Guang Dong, China.

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C.

Test procedure used:

ANSI C63.10:2013.

We Declare:

The equipment described above is tested by Dongguan Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Dongguan Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

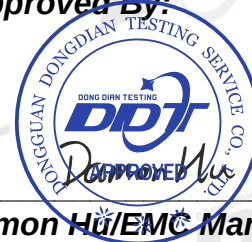
Report No:	DDT-R20042704-1E3		
Date of Receipt:	May 06, 2020	Date of Test:	May 06, 2020 ~ Jul. 22, 2020

Prepared By:

Sam Li

Sam Li/Engineer

Approved By:



Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jul. 22, 2020	

1. Summary of Test Results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	Standard	Results
20 dB Bandwidth	FCC Part 15: 15.215 ANSI C63.10:2013	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.249 ANSI C63.10:2013	PASS
Band Edge Compliance	FCC Part 15: 15.205 FCC Part 15: 15.249 ANSI C63.10:2013	PASS
Power Line Conducted Emission	FCC Part 15: 15.207 ANSI C63.10:2013	N/A
Antenna requirement	FCC Part 15: 15.203	PASS
Note: N/A represents not applicable		

2. General Test Information

2.1. Description of EUT

EUT* Name	: Temperature Monitor
Model Number	: TP28B
EUT function description	: Please reference user manual of this device
Power supply	: DC 3V (2*1.5 “AAA” batteries)
Operation frequency	: 915 MHz
Modulation	: FSK
Antenna Type	: Integral Antenna, maximum PK gain: 0 dBi
Sample Type	: Series production

Note: EUT is the ab. of equipment under test.

2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Serial No.	Other
N/A	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Serial No.	Other
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test

Tx Mode:

EUT

2.5. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25 °C
Humidity range:	40-75%
Pressure range:	86-106 kPa

2.6. Deviations of test standard

No Deviation.

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com

CNAS Accreditation No. L6451; A2LA Accreditation No. 3870.01

FCC Designation Number: CN1182; FCC Test Firm Registration Number: 540522

Industry Canada site registration number: 10288A-1

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum Analyzer)	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Frequencies Stability	6.7×10^{-8} (Antenna couple method) 5.5×10^{-8} (Conducted method)
Conducted Spurious Emissions	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.40 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$) 1.66 dB ($8 \text{ GHz} \leq f < 22 \text{ GHz}$)
Uncertainty for Radio Frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 °C
Humidity	2%
Uncertainty for Radiation Emission Test (30 MHz -1 GHz)	4.70 dB (Antenna Polarize: V) 4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission Test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz) 4.40 dB (6 GHz - 18 GHz) 3.54 dB (18 GHz - 26 GHz) 4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power Line Conduction Emission Test	3.32 dB (150 kHz - 30 MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

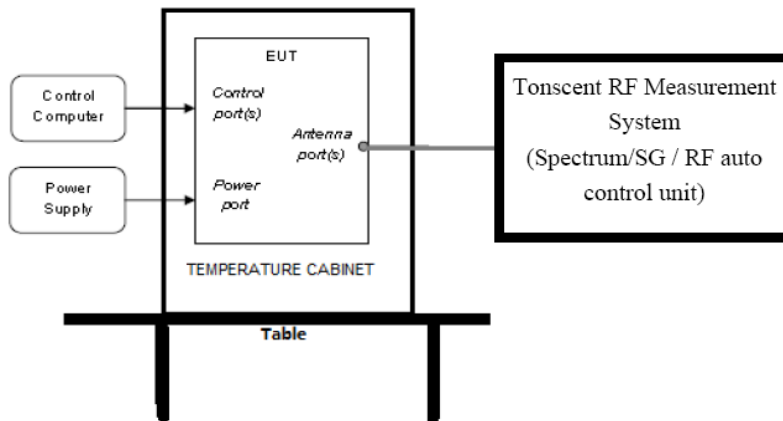
3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
RF Connected Test (Tonscend RF Measurement System)					
Spectrum analyzer	R&S	FSU26	200071	Sep. 29, 2019	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Sep. 29, 2019	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180737	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150010	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150011	Jul. 01, 2020	1 Year
DC Power Source	MATRIS	MPS-3005L-3	D813058W	Jul. 01, 2020	1 Year
RF Cable	Micable	C10-01-01-1	100309	Sep. 29, 2019	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	Oct. 21, 2019	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.7	N/A	N/A
Radiation 1#chamber					
EMI Test Receiver	R&S	ESU8	100316	Sep. 29, 2019	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	Nov. 15, 2019	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 29, 2019	1 Year
Double Ridged Horn Antenna	R&S	HF907	100276	Nov. 15, 2019	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	Sep. 29, 2019	1 Year
Pre-amplifier	A.H.	PAM-0118	360	Sep. 29, 2019	1 Year
Pre-amplifier	TERA-MW	TRLA-0040 G35	101303	Sep. 29, 2019	1 Year
RF Cable	HUBSER	CP-X2+ CP-X1	W11.03+ W12.02	Sep. 29, 2019	1 Year
RF Cable	N/A	5m+6m+1m	06270619	Sep. 29, 2019	1 Year
MI Cable	HUBSER	C10-01-01-1 M	1091629	Sep. 29, 2019	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
Radiation 2#chamber					
EMI Test Receiver	R&S	ESCI	101364	Sep. 29, 2019	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	9163-994	Nov. 15, 2019	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 29, 2019	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120	02108	Jul. 11, 2020	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	Sep. 29, 2019	1 Year

Pre-amplifier	TERA-MW	TRLA-0040 G35	101303	Sep. 29, 2019	1 Year
RF Cable	N/A	14+1.5m	06270619	Sep. 29, 2019	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A

4. 20 dB Bandwidth

4.1. Block diagram of test setup



4.2. Limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

4.3. Test procedure

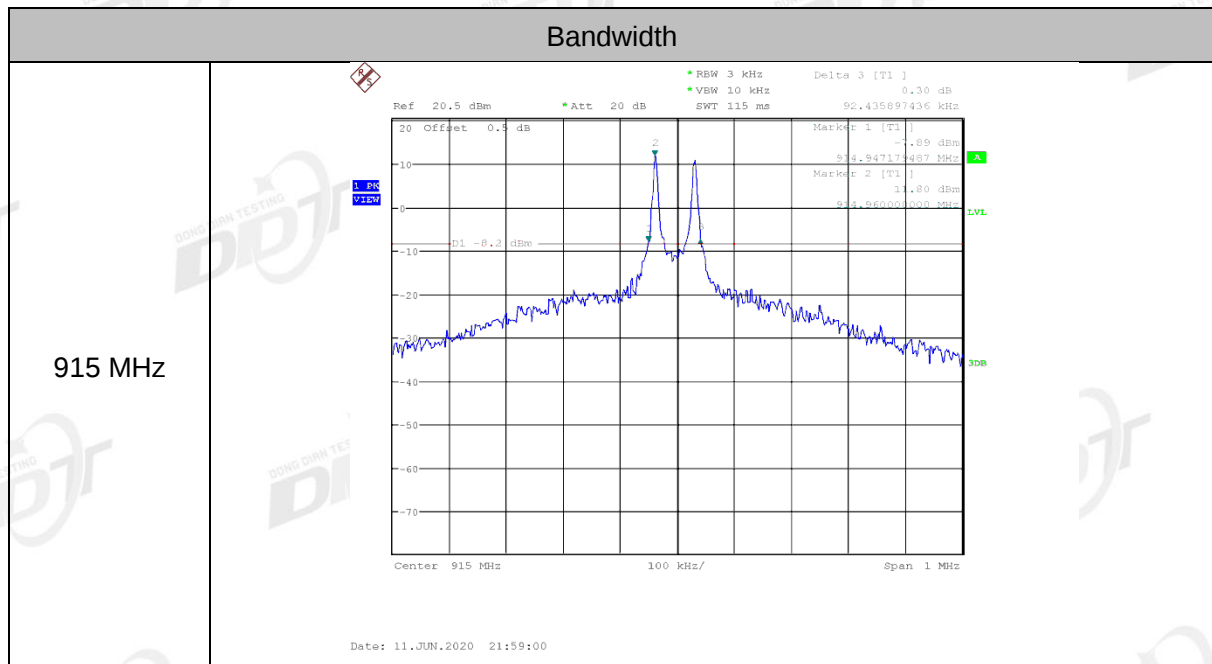
- (1) Connect EUT's antenna output to spectrum analyzer by RF cable.
- (2) Set the spectrum analyzer as follows:

RBW:	3 kHz
VBW:	10 kHz
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold
- (3) Allow the trace to stabilize, measure the 20dB bandwidth of signal.

4.4. Test result

Mode	Freq (MHz)	20 dB bandwidth Result (kHz)	Limit (kHz)	Conclusion
FSK	915	92.436	/	PASS

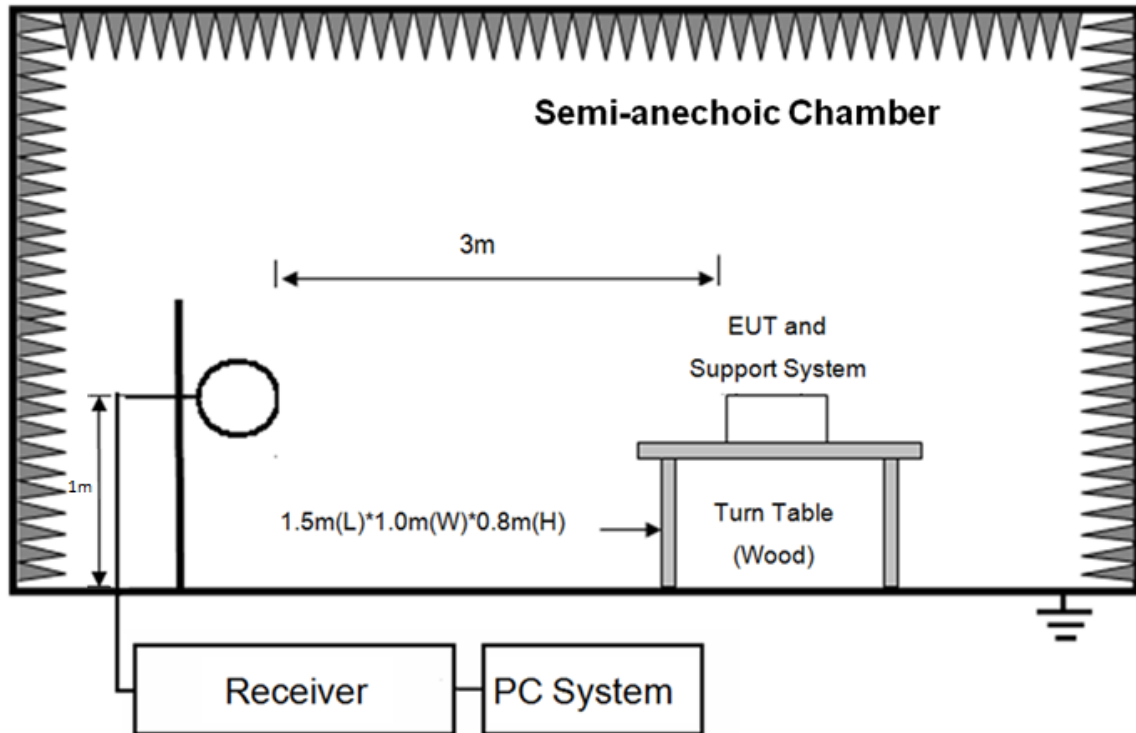
4.5. Original test data



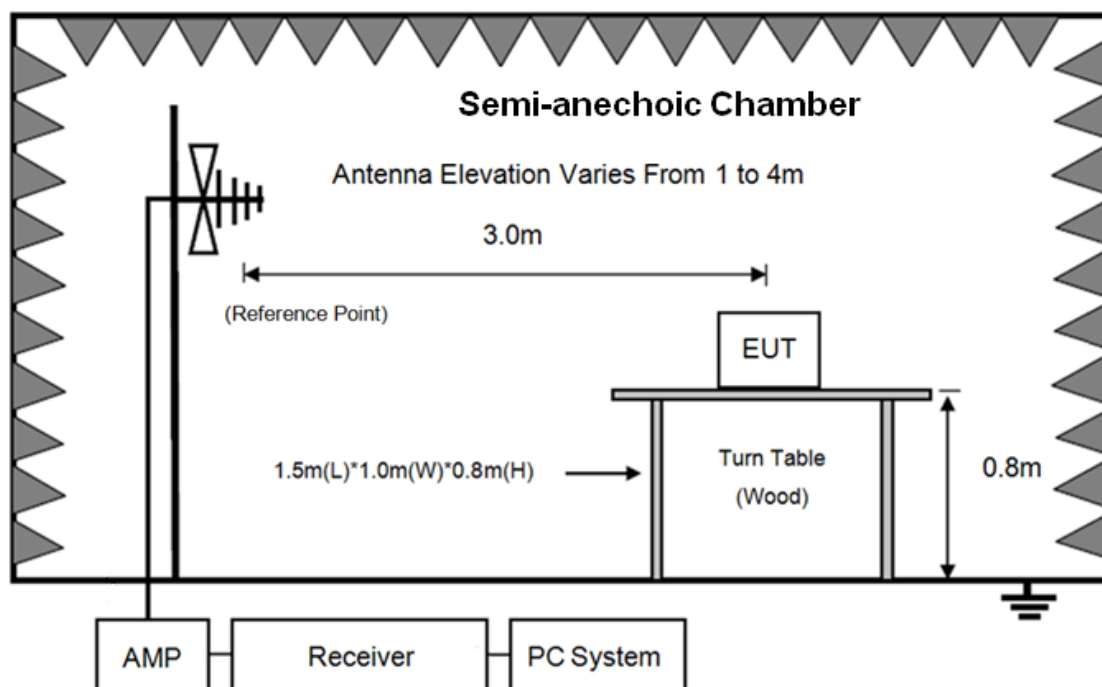
5. Radiated Emission

5.1. Block diagram of test setup

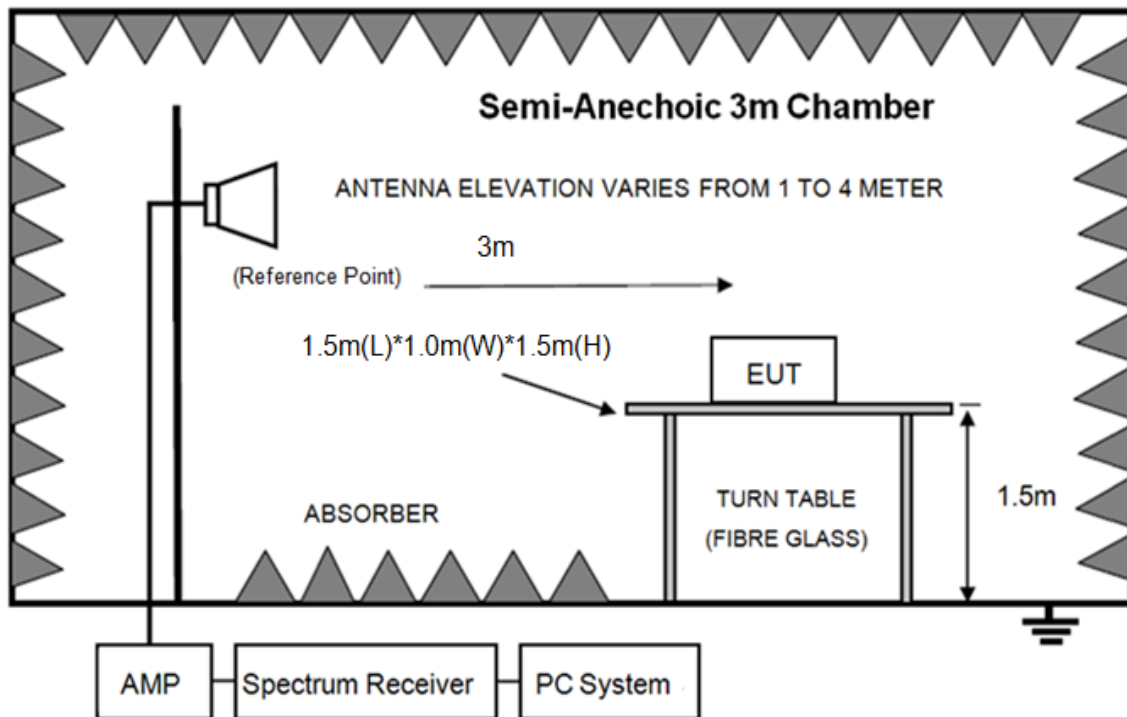
In 3 m Anechoic Chamber Test Setup Diagram for 9 kHz - 30 MHz



In 3 m Anechoic Chamber Test Setup Diagram for 30 MHz - 1 GHz



In 3 m Anechoic Chamber Test Setup Diagram for frequency above 1 GHz



Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

5.2. Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000 MHz	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	
Field Strength of Fundamental emission for 902 MHz - 928 MHz	3	94.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average) 114.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak)	
Field Strength of Harmonics	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

Remark:

- (1) Emission level $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V}/\text{m}$
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.
- (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz and above 1000 MHz, radiated emission limits in these three bands are based on measurements employing an average detector.

5.3. Test procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.
- (2) Setup EUT and assistant system according clause 2.4
- (3) Test antenna was located 3 m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.
 - (a) Change work frequency or channel of device if practicable.
 - (b) Change modulation type of device if practicable.
 - (c) Change power supply range from 85% to 115% of the rated supply voltage
 - (d) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
- (4) Spectrum frequency from 9 kHz to 10 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9 kHz to 30 MHz, so below final test was performed with frequency range from 30 MHz to 10 GHz.
- (5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to ANSI C63.10:2013 on Radiated Emission test.
- (6) For emissions from 30 MHz to 1 GHz, Quasi-Peak values were measured with EMI Receiver and the bandwidth of Receiver is 120 kHz.
- (7) For emissions above 1 GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1 MHz, VBW is set at 3 MHz for Peak measure; according ANSI C63.10:2013 clause 4.1.4.2 procedure for average measure.
- (8) For fundamental frequency test, set spectrum analyzer's RBW = 100 kHz, VBW = 300 kHz. Peak detector for pre-test, then read the QP Level in spectrum analyzer and record.
- (9) X axis, Y axis, Z axis are tested, and worse setup X axis is reported.

5.4. Test result

PASS. (See below detailed test result)

All the emissions except fundamental emission from 9 kHz to 10 GHz were comply with 15.209 limit.

Note1: According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz, so the final test was performed with frequency range from 30 MHz to 10 GHz and recorded in below.

Note2: For emissions above 1 GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

Field Strength of the Fundamental Signal

Freq. (MHz)	Read level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Result Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
915	61.90	22.21	7.97	92.08	94.00	1.92	QP	HORIZONTAL
915	50.10	22.21	7.97	80.28	94.00	13.72	QP	VERTICAL
Result: Pass								

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss

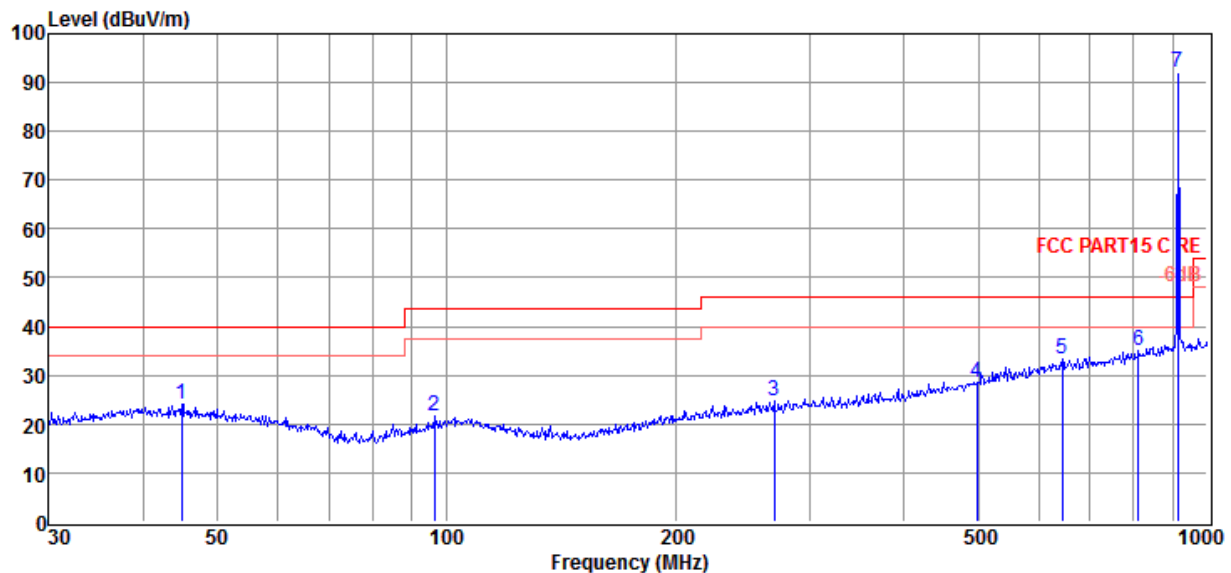
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

Radiated Emission test (below 1 GHz)

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2# **E:\2020 RE2# Report Data\Q20042704-1E TP28B\0722 RE.EM6**
Test Date : 2020-07-22 **Tested By** : Jacky
EUT : Temperature Monitor **Model Number** : TP28B
Power Supply : Battery **Test Mode** : Tx mode
Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2019 VULB 9163 2#/3m/HORIZONTAL
Memo :

Data: 5



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	44.90	6.38	13.88	3.74	24.00	40.00	-16.00	Peak	HORIZONTAL
2	96.44	6.20	11.15	4.17	21.52	43.50	-21.98	Peak	HORIZONTAL
3	269.43	6.34	13.31	5.23	24.88	46.00	-21.12	Peak	HORIZONTAL
4	497.68	4.76	17.65	6.26	28.67	46.00	-17.33	Peak	HORIZONTAL
5	645.12	6.77	19.58	6.96	33.31	46.00	-12.69	Peak	HORIZONTAL
6	813.11	6.01	21.32	7.59	34.92	46.00	-11.08	Peak	HORIZONTAL
7	915.00	61.90	22.21	7.97	92.08	/	/	QP	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

E:\2020 RE2# Report Data\Q20042704-1E TP28B\0722 RE.EM6

Test Date : 2020-07-22

Tested By : Jacky

EUT : Temperature Monitor

Model Number : TP28B

Power Supply : Battery

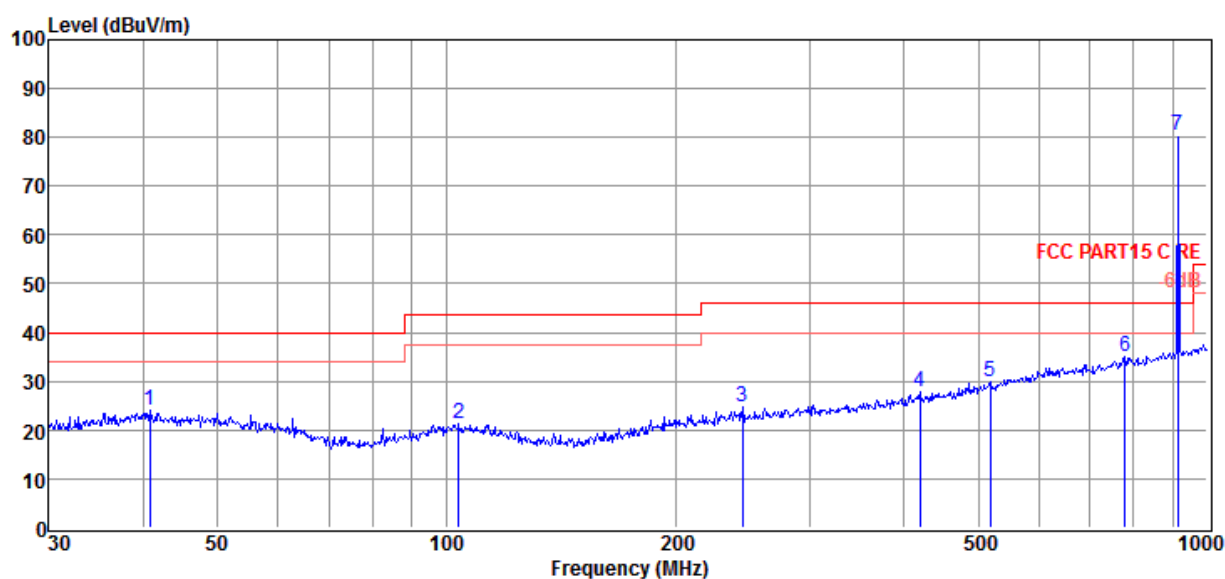
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 VULB 9163 2#/3m/VERTICAL

Memo :

Data: 6



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBUV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	40.70	6.10	14.41	3.71	24.22	40.00	-15.78	Peak	VERTICAL
2	103.81	5.35	11.66	4.23	21.24	43.50	-22.26	Peak	VERTICAL
3	245.09	7.10	12.70	5.10	24.90	46.00	-21.10	Peak	VERTICAL
4	419.11	5.88	15.96	5.92	27.76	46.00	-18.24	Peak	VERTICAL
5	519.07	5.66	18.03	6.37	30.06	46.00	-15.94	Peak	VERTICAL
6	779.61	6.53	20.95	7.47	34.95	46.00	-11.05	Peak	VERTICAL
7	915.00	50.10	22.21	7.97	80.28	/	/	QP	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

Radiated Emission test (above 1 GHz)

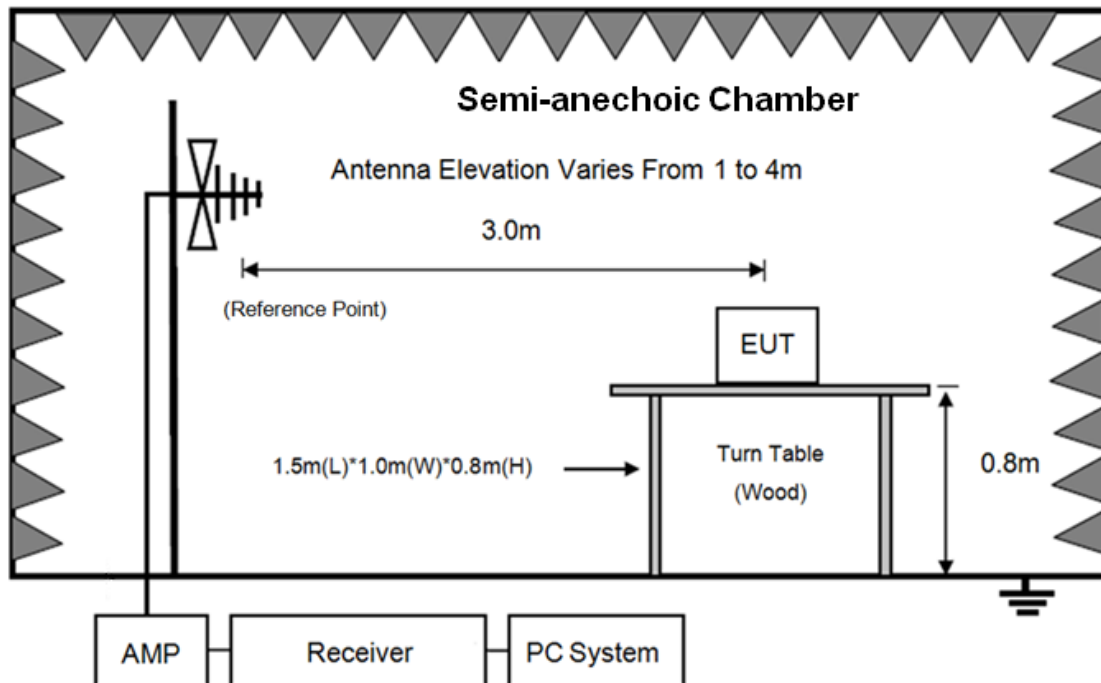
Freq. (MHz)	Read level (dBμV)	Antenn a Factor (dB/m)	PRM Facto r(dB)	Cable Loss (dB)	ResultL evel(dB μV/m)	Limit (dBμV/ m)	Margin (dB)	Detector type	Polarization
Tx mode: 915 MHz									
2745.00	54.75	28.39	43.37	4.38	44.15	74.00	-29.85	Peak	HORIZONTAL
4573.00	45.03	31.90	43.57	6.02	39.38	74.00	-34.62	Peak	HORIZONTAL
6517.00	44.80	35.36	43.01	7.28	44.43	74.00	-29.57	Peak	HORIZONTAL
7480.00	44.38	37.29	42.87	8.10	46.90	74.00	-27.10	Peak	HORIZONTAL
8038.00	43.71	37.98	42.79	8.69	47.59	74.00	-26.41	Peak	HORIZONTAL
9685.00	44.75	39.25	42.46	9.13	50.67	74.00	-23.33	Peak	HORIZONTAL
2737.00	48.51	28.36	43.36	4.37	37.88	74.00	-36.12	Peak	VERTICAL
4573.00	47.55	31.90	43.57	6.02	41.90	74.00	-32.10	Peak	VERTICAL
6643.00	45.07	35.79	42.99	7.35	45.22	74.00	-28.78	Peak	VERTICAL
7822.00	43.65	37.75	42.82	8.49	47.07	74.00	-26.93	Peak	VERTICAL
9145.00	42.55	38.82	42.56	8.71	47.52	74.00	-26.48	Peak	VERTICAL
9730.00	43.19	39.28	42.45	9.17	49.19	74.00	-24.81	Peak	VERTICAL
Result: Pass									

Note 1: Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

2: For emissions above 1 GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

6. Band Edge Compliance

6.1. Block diagram of test setup



6.2. Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

6.3. Test procedure

Same with clause 5.3 except change investigated frequency range from 890 MHz to 930 MHz.

Remark: All restriction bands have been tested, and only the worst case is shown in report.

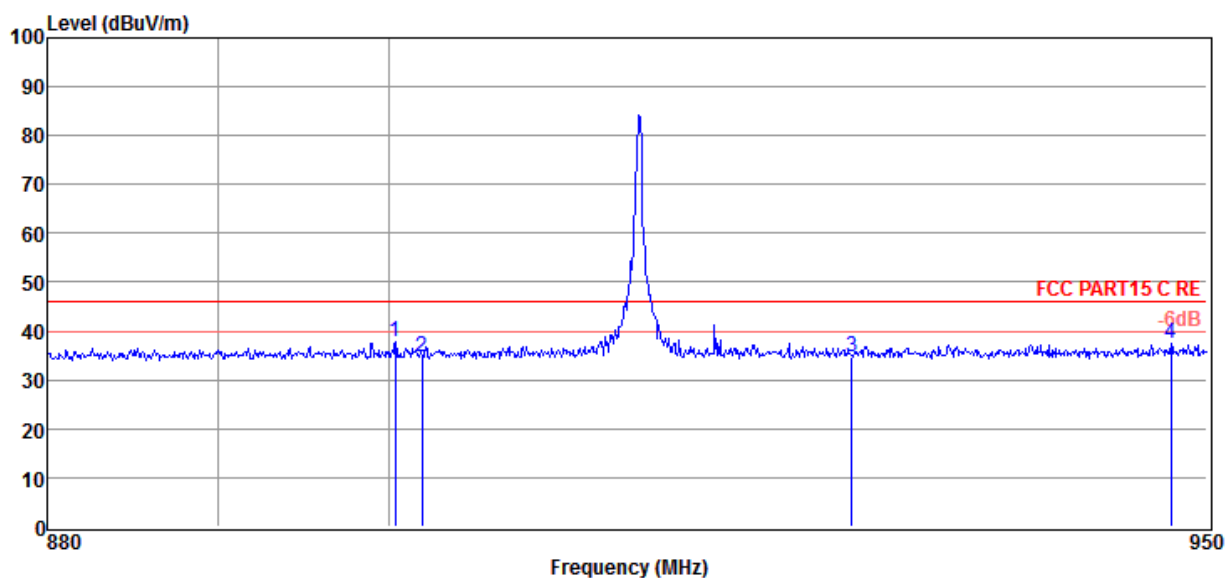
6.4. Test result

PASS. (See below detailed test result)

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2# **E:\2020 RE2# Report Data\Q20042704-1E TP28B\0722 RE.EM6**
Test Date : 2020-07-22 **Tested By** : Jacky
EUT : Temperature Monitor **Model Number** : TP28B
Power Supply : Battery **Test Mode** : Tx mode
Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2019 VULB 9163 2#/3m/VERTICAL
Memo :

Data: 7



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	900.44	7.72	22.10	7.92	37.74	46.00	-8.26	Peak	VERTICAL
2	902.00	4.74	22.11	7.93	34.78	46.00	-11.22	Peak	VERTICAL
3	928.00	4.45	22.30	8.02	34.77	46.00	-11.23	Peak	VERTICAL
4	947.75	6.78	22.44	8.09	37.31	46.00	-8.69	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

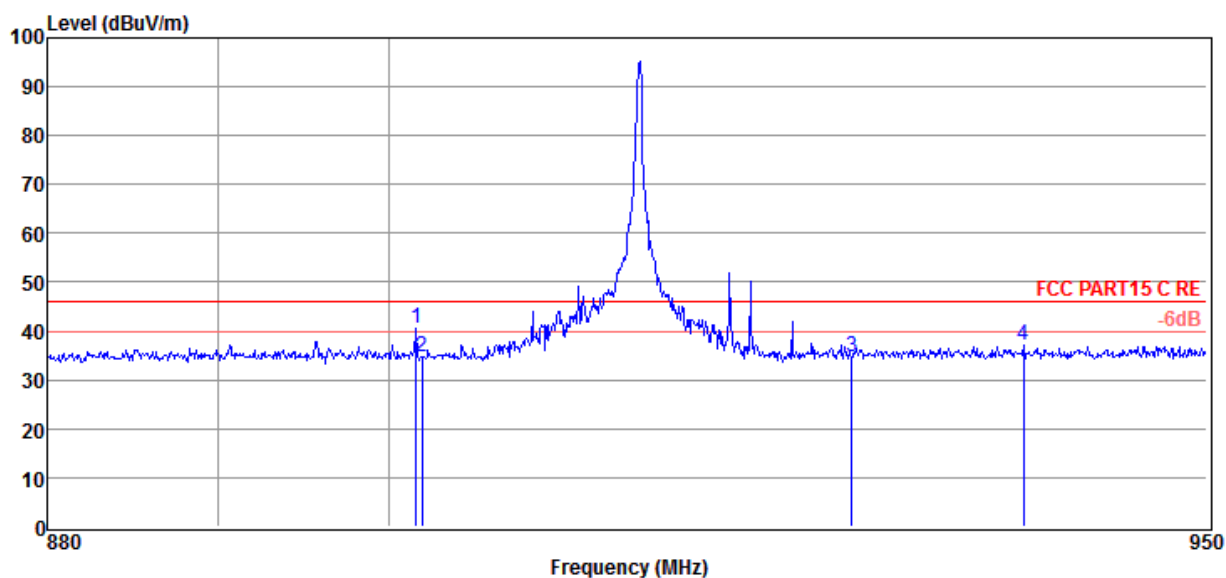
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2# **E:\2020 RE2# Report Data\Q20042704-1E TP28B\0722 RE.EM6**
Test Date : 2020-07-22 **Tested By** : Jacky
EUT : Temperature Monitor **Model Number** : TP28B
Power Supply : Battery **Test Mode** : Tx mode
Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2019 VULB 9163 2#/3m/HORIZONTAL
Memo :

Data: 8



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	901.68	10.34	22.11	7.93	40.38	46.00	-5.62	Peak	HORIZONTAL
2	902.00	4.61	22.11	7.93	34.65	46.00	-11.35	Peak	HORIZONTAL
3	928.00	4.39	22.30	8.02	34.71	46.00	-11.29	Peak	HORIZONTAL
4	938.58	6.65	22.38	8.06	37.09	46.00	-8.91	Peak	HORIZONTAL

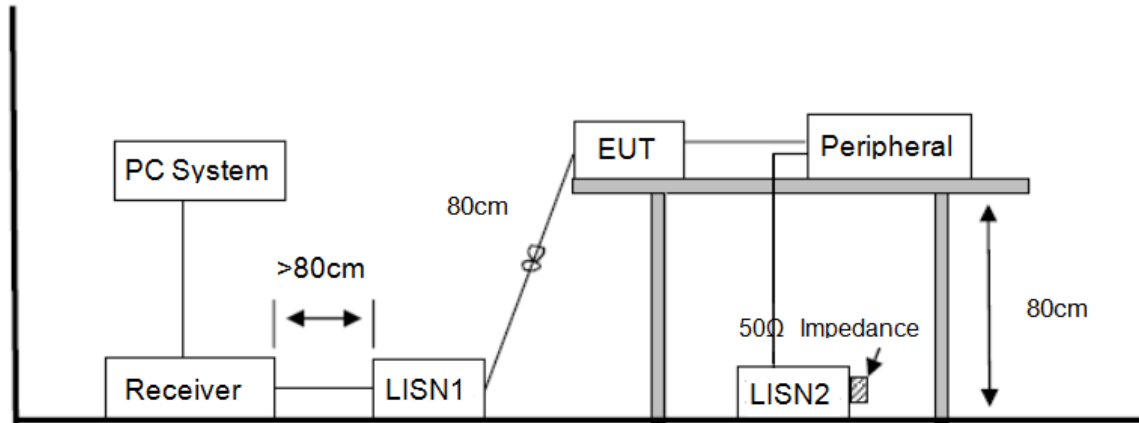
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

7. Power Line Conducted Emission

7.1. Block diagram of test setup



7.2. Power line conducted emission limits

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150 kHz ~ 500 kHz	66 ~ 56*	56 ~ 46*
500 kHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

7.3. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 10.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level. The EUT configuration and worse cable configuration of the above highest emission levels were

recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

7.4. Test result

PASS. (See below detailed test result)

Not applicable, since EUT is battery-powered.

8. Antenna Requirements

8.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

8.2. Result

The antenna used for this product is Integral Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 0 dBi.

END OF REPORT