

Test Report

Verified code: 310200

Report No.: E202112276794-2

Customer: NunoErin, LLC

Address: 533 Commerce Street, Jackson MS 39201 USA

Sample Name: Table top touch screen

Sample Model: UCTTA-42

Receive Sample Date: Dec.29,2021

Test Date: Dec.31,2021 ~ Apr.21,2022

Reference Document: CFR 47, FCC Part 15 Subpart C
RADIO FREQUENCY DEVICES:Subpart C—Intentional Radiators

Test Result: Pass

Prepared by: *Wen Wen*

Reviewed by:

Jiang Tao

Approved by:

Xiao Liang

GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2022-06-01

GUANGZHOU GRG METROLOGY & TEST CO., LTD.

Address: No.163, Pingyun Road, West of Huangpu Avenue, Guangzhou, Guangdong, China
Tel: (+86) 400-602-0999 FAX: (+86) 020-38698685 Web: <http://www.grgtest.com>



Statement

1. The report is invalid without "special seal for inspection and testing"; some copies are invalid; The report is invalid if it is altered or missing; The report is invalid without the signature of the person who prepared, reviewed and approved it.
2. The sample information is provided by the client and responsible for its authenticity; The content of the report is only valid for the samples sent this time.
3. When there are reports in both Chinese and English, the Chinese version will prevail when the language problems are inconsistent.
4. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.
5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

----- The following blanks -----

Table of Contents

1.	TEST RESULT SUMMARY	6
2.	GENERAL DESCRIPTION OF EUT.....	7
2.1	APPLICANT	7
2.2	MANUFACTURER	7
2.3	FACTORY	7
2.4	BASIC DESCRIPTION OF EQUIPMENT UNDER TEST	7
2.5	CHANNELLIST	8
2.6	TEST OPERATION MODE	8
2.7	LOCAL SUPPORTIVE	8
2.8	CONFIGURATION OF SYSTEM UNDER TEST	8
2.9	DUTY CYCLE.....	9
3.	LABORATORY AND ACCREDITATIONS	11
3.1	LABORATORY	11
3.2	ACCREDITATIONS	11
3.3	MEASUREMENT UNCERTAINTY	12
4.	LIST OF USED TEST EQUIPMENT AT GRGT	13
5.	RADIATED SPURIOUS EMISSIONS	14
5.1	LIMITS.....	14
5.2	TEST PROCEDURES	14
5.3	TEST SETUP	17
5.4	DATA SAMPLE	18
5.5	TEST RESULTS	19
6.	CONDUCTED EMISSION MEASUREMENT	27
6.1	LIMITS.....	27
6.2	TEST PROCEDURES	27
6.3	TEST SETUP	28
6.4	DATA SAMPLE	28
6.5	TEST RESULTS	29
7.	6dB BANDWIDTH.....	31
7.1	LIMITS.....	31
7.2	TEST PROCEDURES	31
7.3	TEST SETUP	31
7.4	TEST RESULTS	31
8.	MAXIMUM PEAK OUTPUT POWER	36
8.1	LIMITS.....	36
8.2	TEST PROCEDURES	36
8.3	TEST SETUP	36
8.4	TEST RESULTS	36
9.	POWER SPECTRAL DENSITY	37
9.1	LIMITS.....	37
9.2	TEST PROCEDURES	37

9.3	TEST SETUP	37
9.4	TEST RESULTS	37
10.	CONDUCTED BAND EDGES AND SPURIOUS EMISSIONS	42
10.1	LIMITS.....	42
10.2	TEST PROCEDURES	42
10.3	TEST SETUP	42
10.4	TEST RESULTS	43
11.	RESTRICTED BANDS OF OPERATION.....	55
11.1	LIMITS.....	55
11.2	TEST PROCEDURES	56
11.3	TEST SETUP	56
11.4	TEST RESULTS	57
APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM		65
APPENDIX B. PHOTOGRAPH OF THE EUT		65

----- The following blanks -----

REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202112276794-2	Original Issue	2022-04-27

----- The following blanks -----

1. TEST RESULT SUMMARY

Technical Requirements		
FCC 47 CFR Part 15 Subpart C 15.247 ANSI C63.10-2013 KDB 558074 D01 15.247 measurement guidance v05r02		
Limit / Severity	Item	Result
Section 15.203	Antenna Requirement	Pass
Section 15.207(a)	Conducted Emission	Pass
Section 15.247(d) & 15.209 & 15.205	Radiated Spurious Emission	Pass
Section 15.247(b)(3)	Maximum Peak Output Power	Pass
Section 15.247(e)	Power Spectral Density	Pass
Section 15.247(a)(2)	6dB bandwidth	Pass
Section 15.247(d)	Conducted band edges and Spurious Emission	Pass
Section 15.247 (d)&15.205 & 15.209	Restricted bands of operation	Pass

The EUT has one antenna. The antenna is Internal antenna. The max gain of antenna is 3dBi, which accordance 15.203, is considered sufficient to comply with the provisions of this section.

----- The following blanks -----

2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: NunoErin, LLC
Address: 533 Commerce Street, Jackson MS 39201 USA

2.2 MANUFACTURER

Name: Chengdu Vantron Technology Co., Ltd.
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045

2.3 FACTORY

Name: Chengdu Vantron Technology Co., Ltd.
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment: Table top touch screen
Model No.: UCTTA-42
Adding Model: /
Trade Name: NunoErin
FCC ID: 2A5VA-UCTTA42
Rating: Input: 100-240V~ 50/60Hz 2A
Frequency Band: 2402 ~ 2480MHz
Transmit Power: GFSK 1M: 3.28dBm, GFSK 2M: 3.19dBm
Modulation type: GFSK
Channel space: 2MHz
Antenna Specification: Internal antenna with 3dBi gain (Max.)
Temperature Range: 0°C ~ 50°C
Hardware Version: V 2.0
Software Version: Android 10
Sample No: E202112276794-0003

2.5 CHANNELIST

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

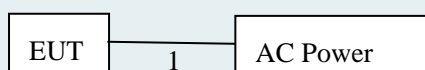
2.6 TEST OPERATION MODE

Mode No.	Description of the modes
1	Bluetooth BLE fixed frequency transmitting

2.7 LOCAL SUPPORTIVE

Name of Equipment	Manufacturer	Model	Serial Number	Note
/	/	/	/	/
Cable				
AC cable(No.1)	/	/	/	Unshield 1.2m

2.8 CONFIGURATION OF SYSTEM UNDER TEST



Test software:

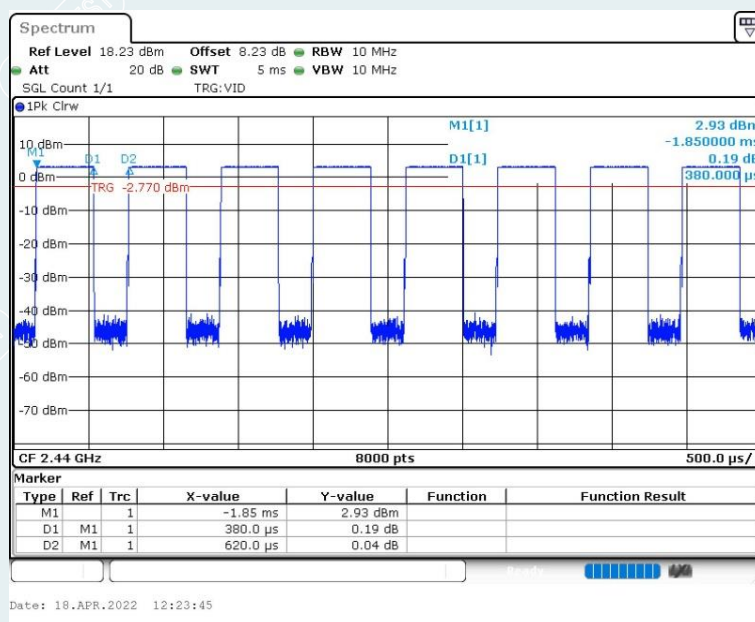
Software version	Test level
Ampak RF testTool	Default

Environment: 22.6°C/48%RH
Tested By: Deng Weihao

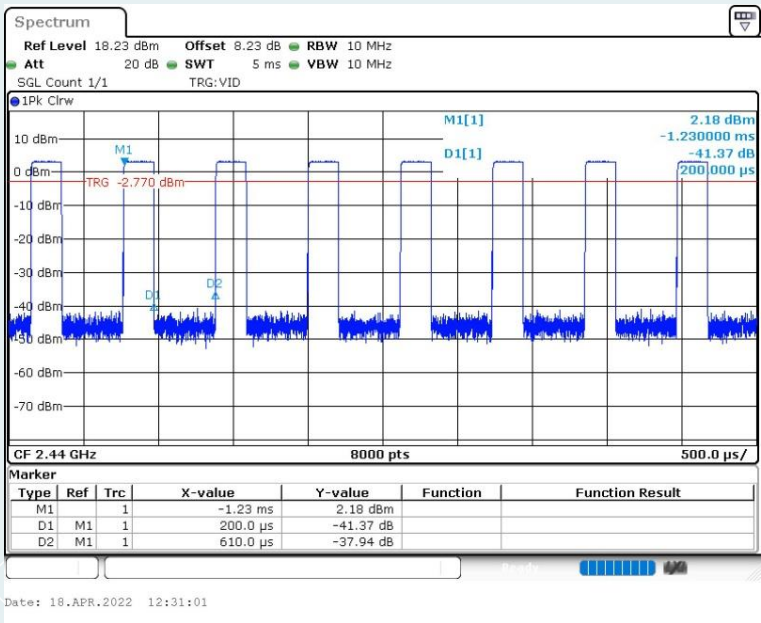
Voltage: AC 120V/60Hz
Date: 2022-04-18

Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	DC [%]	T [s]
BLE_1M	Ant1	2440	0.38	0.62	61.29	0.00038
BLE_2M	Ant1	2440	0.20	0.61	32.79	0.00020

BLE_1M_2440 MHz



BLE_2M_2440 MHz



----- The following blanks -----

3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add : No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District
Shenzhen, 518110, People's Republic of China

P.C. : 518110

Tel : 0755-61180008

Fax : 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA A2LA(Certificate #2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada ISED (Company Number: 24897, CAB identifier:CN0069)

USA FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,
<http://www.grgtest.com>

----- The following blanks -----

3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	9kHz~30MHz	4.46dB
		30MHz~1000MHz	4.30dB
		1GHz~18GHz	5.60dB
		18GHz~26.5GHz	3.65dB
	Vertical	9kHz~30MHz	4.46dB
		30MHz~1000MHz	4.30dB
		1GHz~18GHz	5.60dB
		18GHz~26.5GHz	3.65dB
Conduction Emission		9 kHz~150kHz	2.80dB
		150kHz~10MHz	2.80dB
		10MHz~30MHz	2.20dB

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.78 dB
Occupied channel bandwidth	0.4 dB
Unwanted emission, conducted	0.68 dB
Humidity	6 %
Temperature	2 °C

This uncertainty represents an expanded uncertainty factor of $k=2$.

----- The following blanks -----

4. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Conducted Emissions				
EZ-EMC	EZ	CCS-3A1-CE	/	/
EMI Receiver	R&S	ESCI	100783	2022-09-13
LISN(EUT)	R&S	ENV216	101543	2022-09-14
Radiated Spurious Emission&Restricted bands of operation				
Test S/W	EZ	CCS-03A1		
Loop Antenna	TESEQ	HLA6121	52599	2023-04-02
Test Receiver	R&S	ESR7	102444	2022-09-21
Preamplifier	EMEC	EM330	I00426	2023-03-05
Bi-log Antenna	Schwarzbeck	VULB9160	VULB9160-3401	2022-10-27
Spectrum Analyzer	Agilent	N9020B	MY57120179	2022-08-08
Horn Antenna	Schwarzbeck	BBHA9120D(1201)	02143	2022-10-22
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	2022-10-16
Amplifier	Tonscend	TAP01018048	AP20E8060075	2022-05-09
Amplifier	Tonscend	TAP184050	AP20E806071	2022-05-17
Test S/W	Tonscend	JS32-RE/2.5.1.5		
6 dB Bandwidth				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Output Power				
Pulse power sensor	Anristu	MA2411B	1126150	2023-03-01
Power meter	Anristu	ML2495A	1204003	2023-02-28
Conducted band edges and Spurious Emission				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Power Spectral Density				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10

Note: The calibration interval of the above test instruments is 12 months.

5. RADIATED SPURIOUS EMISSIONS

5.1 LIMITS

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required.

Frequency (MHz)	Quasi-peak(μ V/m)	Measurement distance(m)	Quasi-peak(dB μ V/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

NOTE:

- (1) The emission limits for the ranges 9-90kHz and 110-490kHz are based on measurements employing a linear average detector.
- (2) The lower limit shall apply at the transition frequencies.
- (3) Above 18GHz test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dB μ V/m).
The Avg Limit=54+20*log(3/1)=63.54 (dB μ V/m).

5.2 TEST PROCEDURES

1) Sequence of testing 9kHz to 30MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 ° to 360 °.
- The antenna height is 1.0 meter.
- The antenna is polarized X,Y and Z.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

- Identified emissions during the pre measurement the software maximizes by rotating the turntable

position (0 ° to 360 °) and by rotating the elevation axes (0 ° to 360 °).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30MHz to 1GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0 ° to 360 °.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 4 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of pre measurement the software maximize the peaks by changing turntable rotates from 0 ° to 360 ° and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1GHz to 18GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 ° to 360 °.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 4 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of pre measurement the software maximize the peaks by changing turntable rotates from 0 ° to 360 ° and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18GHz**Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 1 meter.
- The EUT was set into operation.

Pre measurement:

- The antenna is moved spherical over the EUT in different polarisations of the antenna.

Final measurement:

- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the pre measurements with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

NOTE:

- (a). The frequency from 9kHz to 150kHz, Set RBW=300Hz (for Peak & AVG), VBW=300Hz (for Peak & AVG). The frequency from 150kHz to 30MHz, Set RBW=9kHz, VBW=9kHz, (for QP Detector).
- (b). The frequency from 30MHz to 1GHz, Set RBW=120kHz, VBW=300kHz, (for QP Detector).
- (c). The frequency above 1GHz, for Peak detector: Set RBW=1MHz, VBW=3MHz.
- (d). The frequency above 1GHz, for Avg detector: Set RBW=1MHz, if the EUT is configured to transmit with duty cycle $\geq 98\%$, set $VBW \leq RBW/100$ (i.e., 10kHz) but not less than 10Hz. Where duty cycle is defined in section 2.9. If the EUT duty cycle is $< 98\%$, set $VBW \geq 1/T$, Where T is defined in section 2.9.

5.3 TEST SETUP

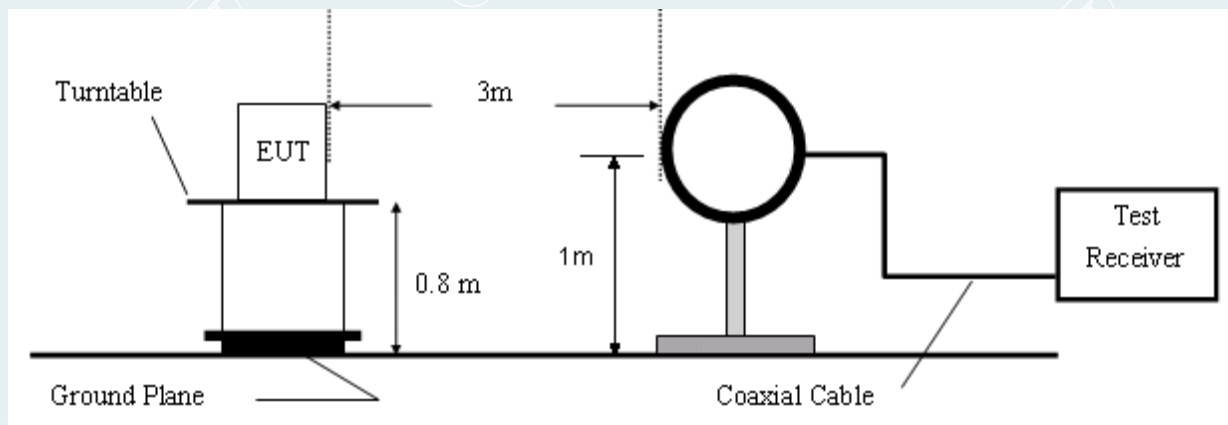


Figure 1. 9kHz to 30MHz radiated emissions test configuration

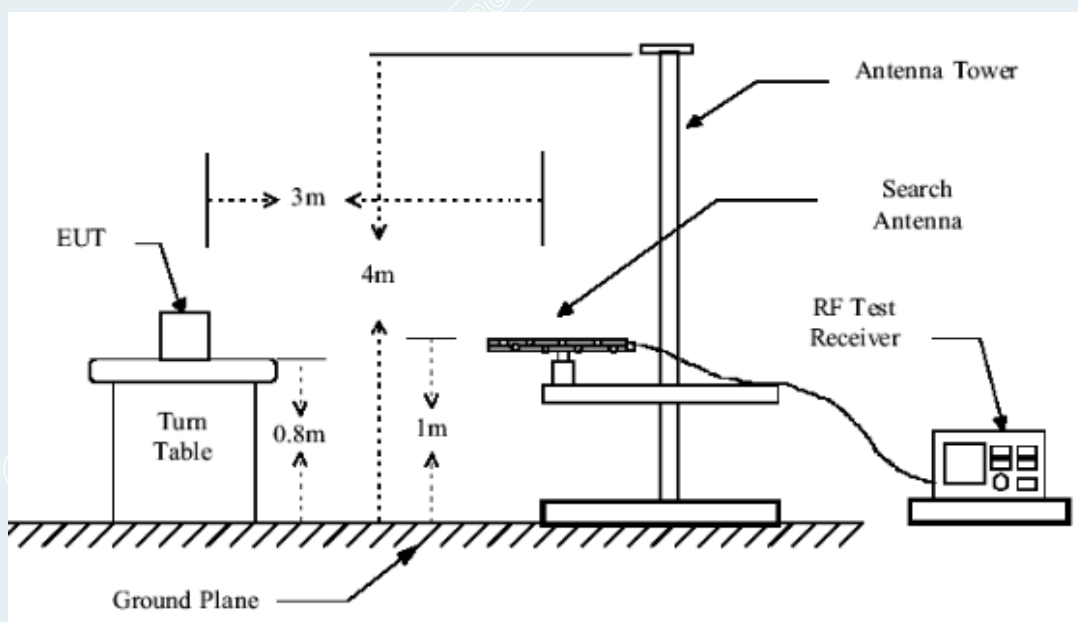


Figure 2. 30MHz to 1GHz radiated emissions test configuration

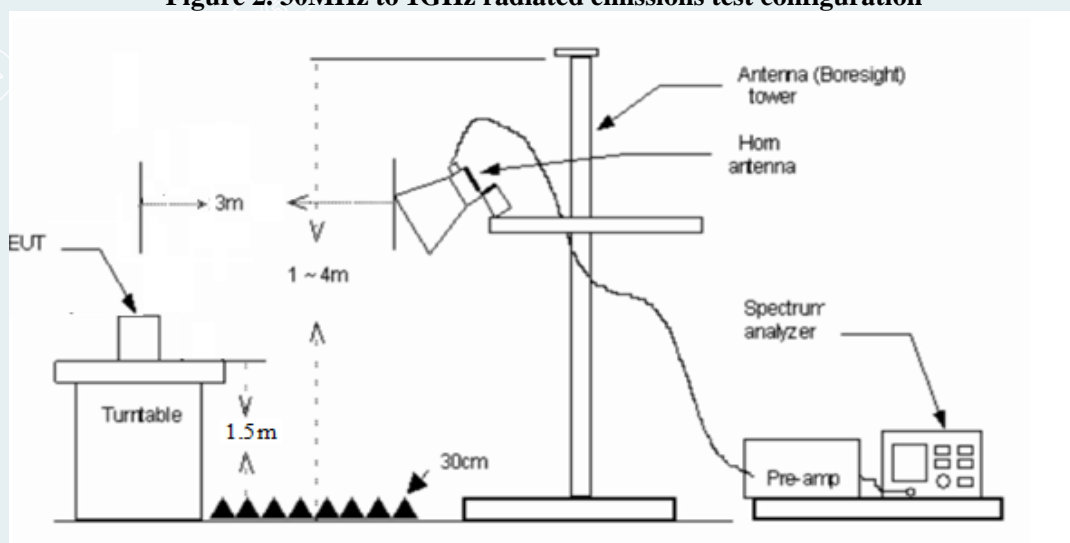


Figure 3. 1GHz to 18GHz radiated emissions test configuration

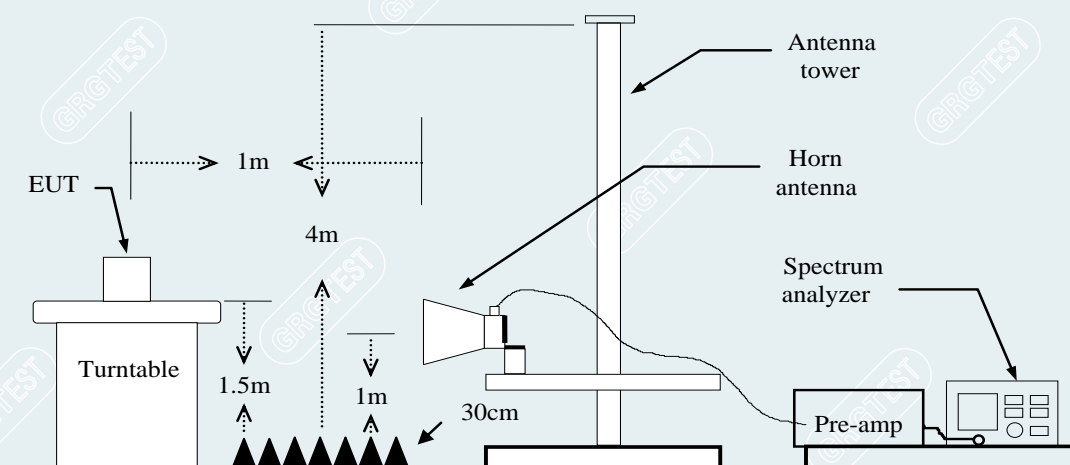


Figure 4. 18GHz to 26.5GHz radiated emissions test configuration

5.4 DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	37.06	-15.48	21.58	40.00	-18.42	QP	Vertical

1GHz to 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	65.45	-11.12	54.33	74.00	-19.67	Peak	Vertical
xxx	xxx	63.00	-11.12	51.88	54.00	-2.12	AVG	Vertical

Above 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	68.86	57.66	-11.20	83.54	25.88	peak	Vertical
xxx	xxx	68.89	-11.20	57.69	63.54	5.85	AVG	Vertical

Frequency (MHz) = Emission frequency in MHz

Ant.Pol. (H/V) = Antenna polarization

Reading (dBuV) = Uncorrected Analyzer / Receiver reading

Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain

Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Remark Result (dBuV/m) – Limit (dBuV/m)

Peak = Peak Reading

QP = Quasi-peak Reading

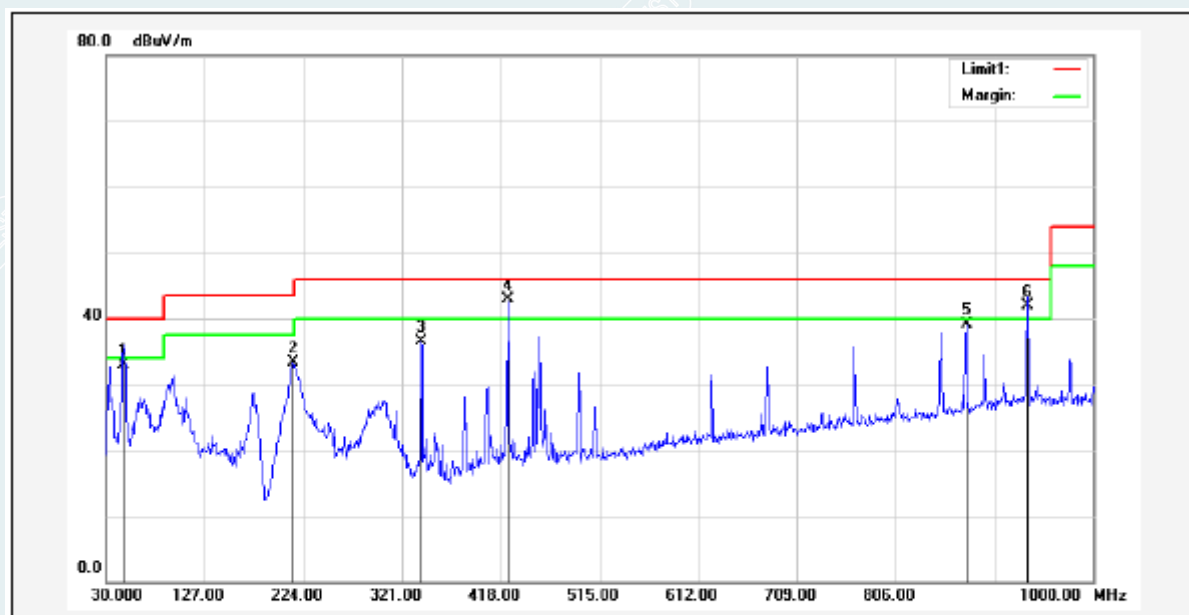
AVG = Average Reading

5.5 TEST RESULTS

Below 1GHz

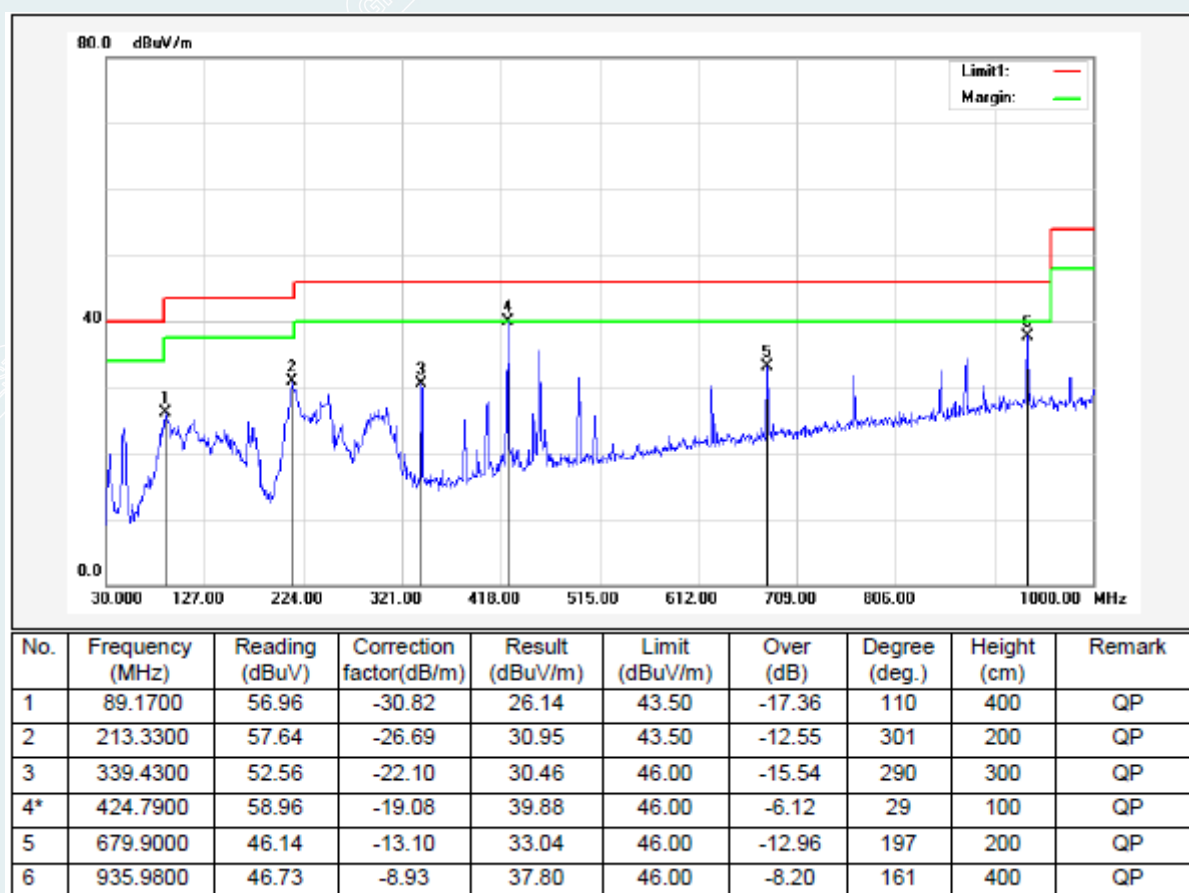
Recorded the worst case BLE/1M 2402MHz test results in the report.

EUT Name	Table top touch screen	Model	UCTTA-42
Environmental Conditions	24.1℃ / 47%RH	Test Voltage	AC 120V/60Hz
Test Mode	TX/BLE 1M (2402MHz)	Polarity	Vertical
Tested By	Tang Shenghui	Tested Date	2022-01-15



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	47.4600	59.49	-26.59	32.90	40.00	-7.10	164	100	QP
2	214.3000	59.90	-26.65	33.25	43.50	-10.25	358	100	QP
3	339.4300	58.54	-22.10	36.44	46.00	-9.56	179	100	QP
4*	424.7900	62.08	-19.08	43.00	46.00	-3.00	39	100	QP
5	875.8400	48.97	-9.86	39.11	46.00	-6.89	265	100	QP
6!	935.9800	50.93	-8.93	42.00	46.00	-4.00	221	200	QP

EUT Name	Table top touch screen	Model	UCTTA-42
Environmental Conditions	24.1 °C / 47%RH	Test Voltage	AC 120V/60Hz
Test Mode	TX/BLE 1M (2402MHz)	Polarity	Horizontal
Tested By	Tang Shenghui	Tested Date	2022-01-15

**Remark:**

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Measuring frequencies from 9kHz to the 1GHz.
- 3 Radiated emissions measured in frequency range from 30MHz to 1GHz were made with an instrument using Peak/Quasi-peak detector mode.
- 4 Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5 The IF bandwidth of SPA between 30MHz to 1GHz was 120kHz.

Above 1GHz:

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Mode: TX/ BLE 1M

Lowest Frequency (2402MHz)

Environment: 25°C/60%RH

Tested By: Chen Xiacong

Date: 2022-01-12

Voltage: AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1367.8000	63.16	39.51	-23.65	74.00	34.49	200	257	Horizontal
2	1870.2000	56.43	34.56	-21.87	74.00	39.44	100	196	Horizontal
3	3768.0000	53.26	38.79	-14.47	74.00	35.21	100	103	Horizontal
4	4662.0000	50.77	40.61	-10.16	74.00	33.39	100	307	Horizontal
5	5697.0000	50.67	42.60	-8.07	74.00	31.40	200	124	Horizontal
6	7213.5000	49.92	46.65	-3.27	74.00	27.35	100	96	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.8000	69.03	45.38	-23.65	74.00	28.62	200	0	Vertical
2	1615.2000	63.17	40.37	-22.80	74.00	33.63	200	134	Vertical
3	2281.2000	60.40	40.16	-20.24	74.00	33.84	200	359	Vertical
4	3229.5000	56.11	39.81	-16.30	74.00	34.19	200	296	Vertical
5	4647.0000	51.92	41.55	-10.37	74.00	32.45	100	267	Vertical
6	6828.0000	50.07	45.49	-4.58	74.00	28.51	200	144	Vertical

----- The following blanks -----

Mode: TX/ BLE 1M
Middle Frequency (2440MHz)
Environment: 25°C/60%RH
Tested By: Chen Xiacong

Date: 2022-01-12
Voltage: AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.4000	62.95	39.30	-23.65	74.00	34.70	200	216	Horizontal
2	1615.6000	58.96	36.16	-22.80	74.00	37.84	200	80	Horizontal
3	1760.8000	62.86	40.50	-22.36	74.00	33.50	200	264	Horizontal
4	3193.5000	53.89	37.92	-15.97	74.00	36.08	100	200	Horizontal
5	4627.5000	52.22	41.59	-10.63	74.00	32.41	100	166	Horizontal
6	5824.5000	51.43	43.40	-8.03	74.00	30.60	100	355	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.6000	71.33	47.68	-23.65	74.00	26.32	200	356	Vertical
2	1615.6000	63.20	40.40	-22.80	74.00	33.60	200	12	Vertical
3	2040.2000	62.84	41.35	-21.49	74.00	32.65	200	74	Vertical
4	2635.4000	58.71	39.95	-18.76	74.00	34.05	200	272	Vertical
5	3231.0000	56.85	40.53	-16.32	74.00	33.47	200	308	Vertical
6	5343.0000	51.39	41.82	-9.57	74.00	32.18	200	247	Vertical

----- The following blanks -----

Mode: TX/ BLE 1M
Highest Frequency (2480MHz)
Environment: 25°C/60%RH
Tested By: Chen Xiacong

Date: 2022-01-12
Voltage: AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.2000	63.41	39.76	-23.65	74.00	34.24	200	223	Horizontal
2	1763.4000	57.55	35.21	-22.34	74.00	38.79	100	52	Horizontal
3	3475.5000	54.16	38.71	-15.45	74.00	35.29	200	206	Horizontal
4	4203.0000	52.97	39.86	-13.11	74.00	34.14	100	315	Horizontal
5	6048.0000	50.49	43.26	-7.23	74.00	30.74	200	55	Horizontal
6	7231.5000	49.62	46.14	-3.48	74.00	27.86	200	145	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1020.2000	63.61	38.49	-25.12	74.00	35.51	200	45	Vertical
2	1367.8000	69.79	46.14	-23.65	74.00	27.86	200	257	Vertical
3	1615.4000	63.20	40.40	-22.80	74.00	33.60	200	161	Vertical
4	1749.8000	67.76	45.32	-22.44	74.00	28.68	100	1	Vertical
5	3231.0000	57.40	41.08	-16.32	74.00	32.92	200	301	Vertical
6	7615.5000	48.60	46.25	-2.35	74.00	27.75	200	130	Vertical

----- The following blanks -----

Mode: TX/ BLE 2M
Lowest Frequency (2402MHz)
Environment: 25°C/60%RH
Tested By: Chen Xiacong

Date: 2022-01-12
Voltage: AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.4000	65.34	41.69	-23.65	74.00	32.31	200	216	Horizontal
2	1754.2000	61.66	39.25	-22.41	74.00	34.75	200	271	Horizontal
3	3292.5000	53.86	37.92	-15.94	74.00	36.08	100	185	Horizontal
4	4203.0000	53.33	40.22	-13.11	74.00	33.78	200	248	Horizontal
5	5704.5000	50.90	42.82	-8.08	74.00	31.18	200	360	Horizontal
6	7141.5000	49.44	45.95	-3.49	74.00	28.05	100	137	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1367.0000	68.68	45.02	-23.66	74.00	28.98	200	0	Vertical
2	1761.6000	64.45	42.10	-22.35	74.00	31.90	100	251	Vertical
3	2635.6000	60.04	41.28	-18.76	74.00	32.72	200	271	Vertical
4	3231.0000	56.75	40.43	-16.32	74.00	33.57	200	294	Vertical
5	4662.0000	50.96	40.80	-10.16	74.00	33.20	200	68	Vertical
6	6844.5000	49.72	44.90	-4.82	74.00	29.10	100	117	Vertical

----- The following blanks -----

Mode: TX/ BLE 2M
Middle Frequency (2440MHz)
Environment: 25°C/60%RH
Tested By: Chen Xiaocong

Date: 2022-01-12
Voltage: AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.2000	68.52	44.87	-23.65	74.00	29.13	200	243	Horizontal
2	1747.4000	57.05	34.61	-22.44	74.00	39.39	100	332	Horizontal
3	3675.0000	53.27	38.49	-14.78	74.00	35.51	200	316	Horizontal
4	4515.0000	51.87	40.14	-11.73	74.00	33.86	200	358	Horizontal
5	6292.5000	50.84	44.22	-6.62	74.00	29.78	100	1	Horizontal
6	7630.5000	48.94	46.46	-2.48	74.00	27.54	100	48	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.2000	69.65	46.00	-23.65	74.00	28.00	200	359	Vertical
2	1615.8000	63.33	40.53	-22.80	74.00	33.47	200	155	Vertical
3	2284.8000	60.25	40.04	-20.21	74.00	33.96	200	155	Vertical
4	2635.8000	59.64	40.88	-18.76	74.00	33.12	200	271	Vertical
5	3231.0000	57.54	41.22	-16.32	74.00	32.78	200	302	Vertical
6	7221.0000	49.85	46.49	-3.36	74.00	27.51	100	323	Vertical

----- The following blanks -----

Mode: TX/ BLE 2M
 Highest Frequency (2480MHz)
 Environment: 25°C/60%RH
 Tested By: Chen Xiacong

Date: 2022-01-12
 Voltage: AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.2000	62.84	39.19	-23.65	74.00	34.81	200	122	Horizontal
2	2280.4000	58.68	38.44	-20.24	74.00	35.56	200	204	Horizontal
3	3475.5000	53.65	38.20	-15.45	74.00	35.80	200	131	Horizontal
4	5137.5000	50.80	40.72	-10.08	74.00	33.28	100	240	Horizontal
5	6786.0000	48.93	44.38	-4.55	74.00	29.62	200	255	Horizontal
6	8487.0000	47.89	46.25	-1.64	74.00	27.75	200	124	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1369.6000	71.55	47.91	-23.64	74.00	26.09	200	0	Vertical
2	1615.6000	63.74	40.94	-22.80	74.00	33.06	200	11	Vertical
3	2040.6000	61.76	40.27	-21.49	74.00	33.73	200	284	Vertical
4	2276.2000	60.47	40.19	-20.28	74.00	33.81	200	182	Vertical
5	4647.0000	51.92	41.55	-10.37	74.00	32.45	100	212	Vertical
6	7393.5000	50.13	46.66	-3.47	74.00	27.34	100	226	Vertical

Remark:

- 1 Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2 The amplitude of 18GHz to 26.5GHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 4 Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 5 Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

6. CONDUCTED EMISSION MEASUREMENT

6.1 LIMITS

Frequency range	Limits (dB μ V)	
	Quasi-peak	Average
150kHz~0.5MHz	66~56	56~46
0.5MHz~5MHz	56	46
5MHz~30MHz	60	50

6.2 TEST PROCEDURES

Procedure of Preliminary Test

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

- Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:

- 1) Place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or

- 2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;

- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;

- The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;

- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.

- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

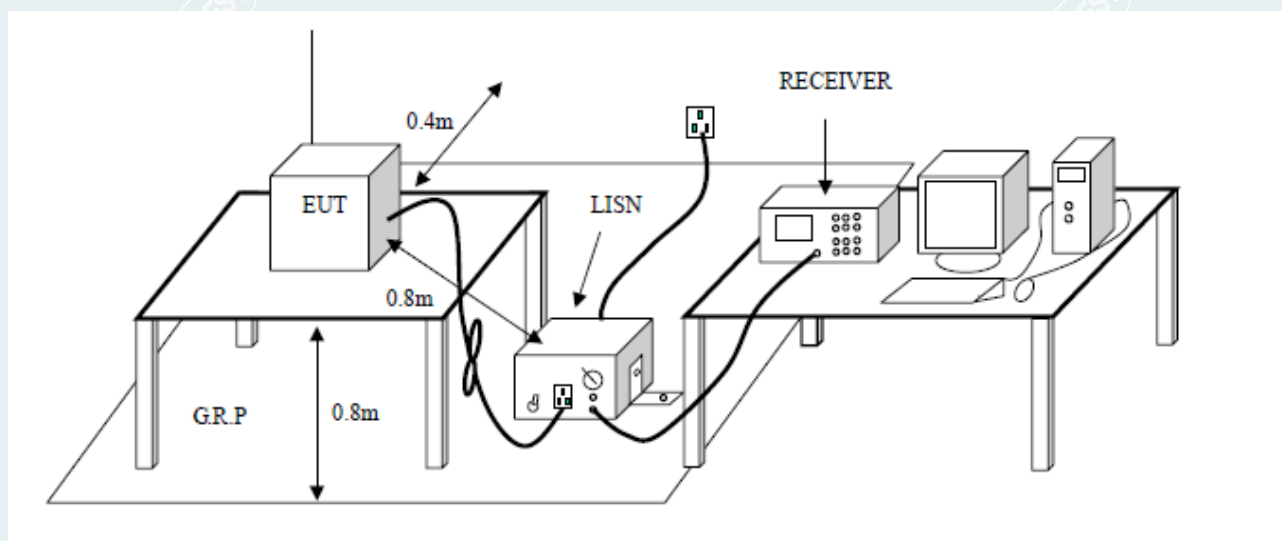
The test mode(s) described in Item 2.6 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.6 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of 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, 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.

6.3 TEST SETUP



6.4 DATA SAMPLE

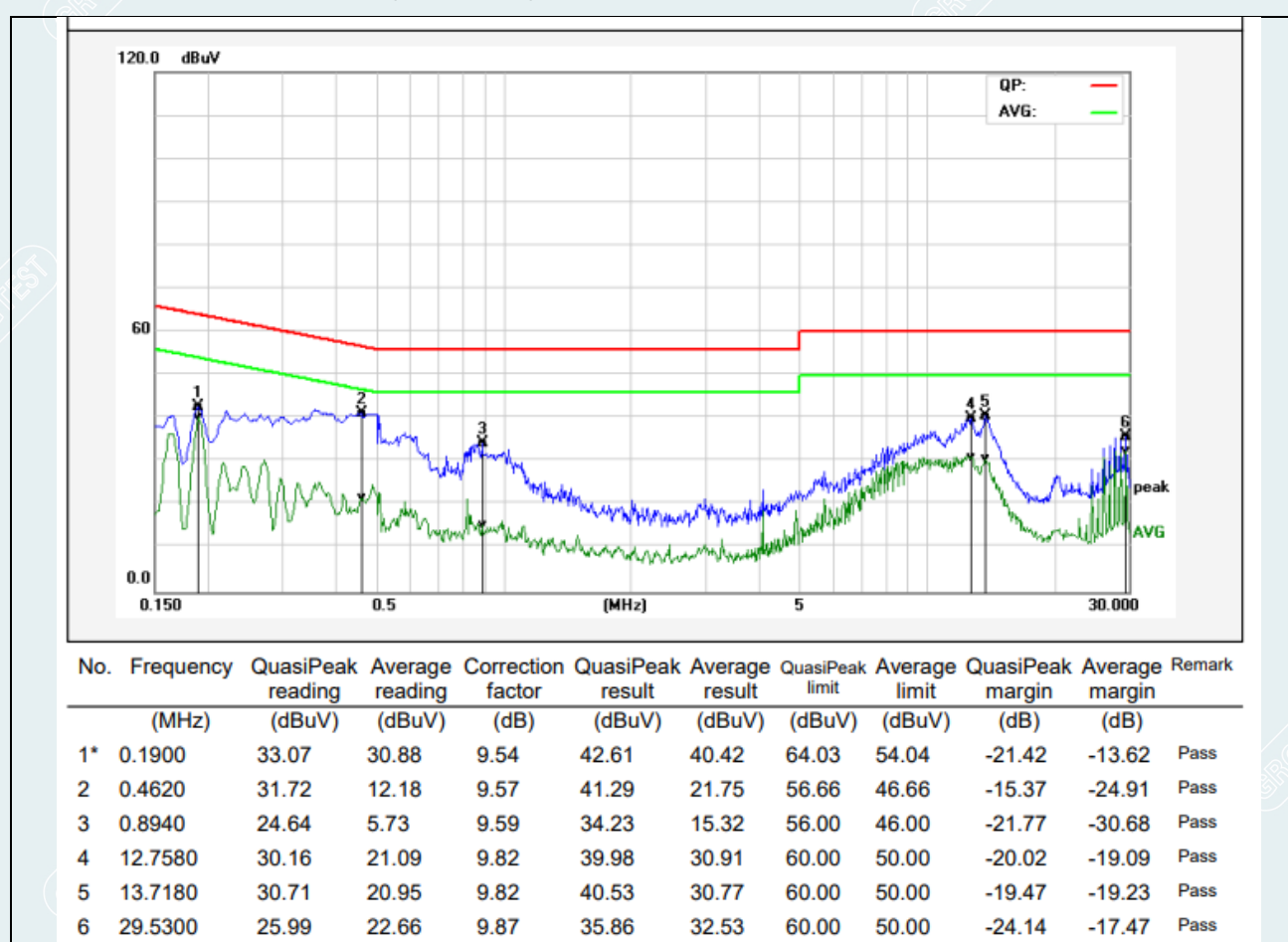
Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
 Result = Quasi-peak Reading/ Average Reading + Factor
 Limit = Limit stated in standard
 Margin = Result (dBuV) – Limit (dBuV)

6.5 TEST RESULTS

EUT Name	Table top touch screen	Model	UCTTA-42
Environmental Conditions	22.5°C/45%RH	Test Mode	BLE/1M 2402MHz
Tested By	Zeng Xianglong	Line	L
Tested Date	2022-02-15	Test Voltage	AC120V/60Hz

(The chart below shows the highest readings taken from the final data.)

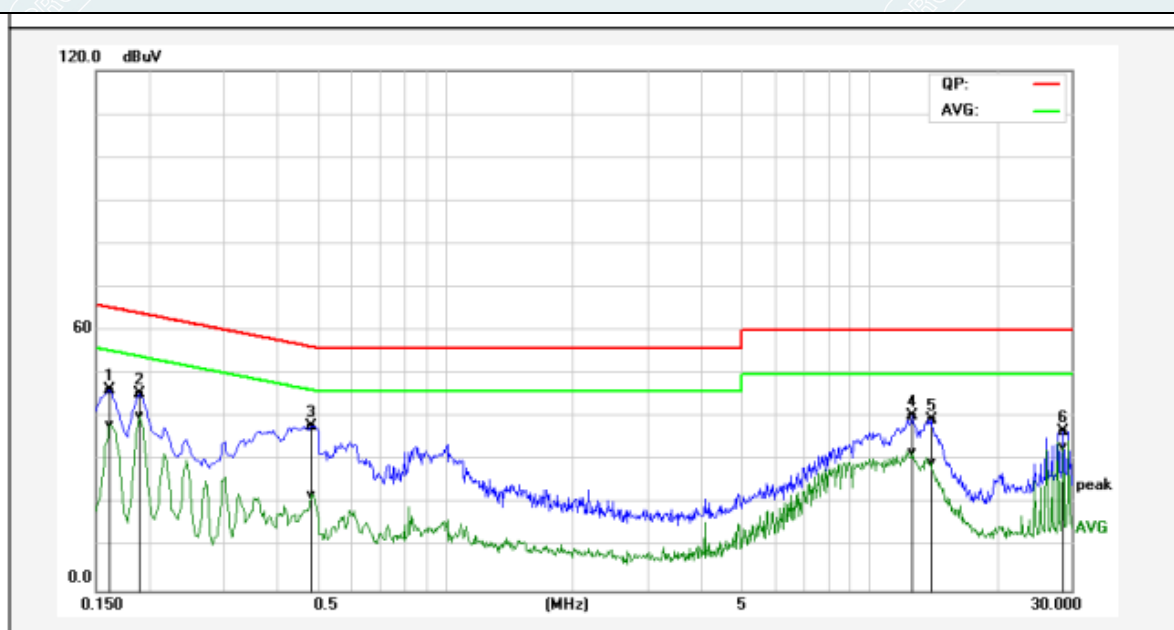


REMARKS: L = Live Line

Pre-scan all mode and recorded the worst case results in this report (TX-Low Channel 1Mbps)

EUT Name	Table top touch screen	Model	UCTTA-42
Environmental Conditions	22.5°C/45%RH	Test Mode	BLE/1M 2402MHz
Tested By	Zeng Xianglong	Line	N
Tested Date	2022-02-15	Test Voltage	AC120V/60Hz

(The chart below shows the highest readings taken from the final data.)



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1620	36.96	28.78	9.52	46.48	38.30	65.36	55.36	-18.88	-17.06	Pass
2*	0.1900	35.90	30.68	9.56	45.46	40.24	64.03	54.04	-18.57	-13.80	Pass
3	0.4860	28.33	12.29	9.69	38.02	21.98	56.24	46.24	-18.22	-24.26	Pass
4	12.6980	30.64	22.15	9.85	40.49	32.00	60.00	50.00	-19.51	-18.00	Pass
5	14.0140	29.67	19.63	9.88	39.55	29.51	60.00	50.00	-20.45	-20.49	Pass
6	28.7140	26.75	23.03	10.03	36.78	33.06	60.00	50.00	-23.22	-16.94	Pass

REMARKS: N = Neutral Line.

Pre-scan all mode and recorded the worst case results in this report (TX-Low Channel 1Mbps)