Shenzhen CTL Testing Technology Co., Ltd.
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TEST REPORT

FCC PART 15.247

Report Reference No.: **CTL2112287021-WF01**

Compiled by: (position+printed name+signature)	Happy Guo (File administrators)
Tested by: (position+printed name+signature)	Gary Gao (Test Engineer)
Approved by: (position+printed name+signature)	Ivan Xie (Manager)

Product Name..... :	Laser Projector
Model/Type reference.....:	S420U-A
List Model(s).....:	F60-#K*A(“ # ”= 1-9, “*”= 0-9), H60-#K*A(“ # ”= 1-9, “*”= 0-9) S***U-A(“*”= 0-9), AL-DF****(*can be 0-9, B-Z, b-z or blank)
Trade Mark..... :	APPOTRONICS
FCC ID..... :	**2ALQL-S420U-A**
Applicant’s name..... :	**APPOTRONICS CO., LTD.**
Address of applicant.....:	20F to 22F, High-Tech Zone Union Tower, No.63 Xuefu Road, Nanshan District, Shenzhen, Guangdong, P. R. China.
Test Firm.....:	**Shenzhen CTL Testing Technology Co., Ltd.**
Address of Test Firm.....:	Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055
Test specification.....:	
Standard.....:	**FCC Part 15.247:** Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.
TRF Originator.....:	Shenzhen CTL Testing Technology Co., Ltd.
Master TRF.....:	Dated 2011-01
Date of receipt of test item.....:	Jan. 05, 2022
Date of Test Date.....:	Jan. 05, 2022-Jan. 25, 2022
Date of Issue.....:	Jan. 25, 2022
Result..... :	**Pass**

TEST REPORT

Test Report No. :	CTL2112287021-WF01	Jan. 25, 2022 Date of issue

Equipment under Test	:	Laser Projector
Sample No	:	CTL211228702-1-S001
Model /Type	:	S420U-A
Listed Models	:	F60-#K*A(“ # ”= 1-9, “*”= 0-9), H60-#K*A(“ # ”= 1-9, “*”= 0-9) S***U-A(“*”= 0-9), AL-DF****(*can be 0-9, B-Z, b-z or blank)
Applicant	:	**APPOTRONICS CO., LTD.**
Address	:	20F to 22F, High-Tech Zone Union Tower, No.63 Xuefu Road, Nanshan District, Shenzhen, Guangdong, P. R. China.
Manufacturer	:	**APPOTRONICS CO., LTD.**
Address	:	20F to 22F, High-Tech Zone Union Tower, No.63 Xuefu Road, Nanshan District, Shenzhen, Guangdong, P. R. China.

Test result	Pass *

*In the configuration tested, the EUT complied with the standards specified page 5.

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

** Modified History **

Revisions	Description	Issued Data	Report No.	Remark
Version 1.0	Initial Test Report Release	2022-01-25	CTL2112287021-WF01	Tracy Qi

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1. SUMMARY

1.1. TEST STANDARDS

The tests were performed according to following standards:
FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

ANSI C63.10: 2020: American National Standard for Testing Unlicensed Wireless Devices

1.2. Test Description

FCC PART 15.247		
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.247(a)(1)(i)	20dB Bandwidth	PASS
FCC Part 15.247(d)	Spurious RF Conducted Emission	PASS
FCC Part 15.247(b)	Maximum Peak Output Power	PASS
FCC Part 15.247(b)	Pseudorandom Frequency Hopping Sequence	PASS
FCC Part 15.247(a)(1)(iii)	Number of hopping frequency& Time of Occupancy	PASS
FCC Part 15.247(a)(1)	Frequency Separation	PASS
FCC Part 15.205/15.209	Radiated Emissions	PASS
FCC Part 15.247(d)	Band Edge Compliance of RF Emission	PASS
FCC Part 15.203/15.247 (b)	Antenna Requirement	PASS

1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.
Floor 1-A, Baisha Technology Park, No. 3011, Shahexi Road, Nanshan, Shenzhen 518055 China
There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.10 and CISPR 32/EN 55032 requirements.

1.3.2 Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L7497

Shenzhen CTL Testing Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No. 4343.01

Shenzhen CTL Testing Technology Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

IC Registration No.: 9618B

CAB identifier: CN0041

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with Registration No.: 9618B on Jan. 22, 2019.

FCC-Registration No.: 399832

Designation No.: CN1216

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 399832, December 08, 2017.

1.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.
Hereafter the best measurement capability for CTL laboratory is reported:

Test	Measurement Uncertainty	Notes
Transmitter power conducted	±0.57 dB	(1)
Transmitter power Radiated	±2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	±2.20 dB	(1)
Occupied Bandwidth	±0.01ppm	(1)
Radiated Emission 30~1000MHz	±4.10dB	(1)
Radiated Emission Above 1GHz	±4.32dB	(1)
Conducted Disturbance0.15~30MHz	±3.20dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2. GENERAL INFORMATION

2.1. Environmental conditions

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

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2. General Description of EUT

Product Name:	Laser Projector
Model/Type reference:	S420U-A
Power supply:	AC 120V 60Hz
Bluetooth:	
Version:	Supported BR/EDR
Modulation:	GFSK, π/4DQPSK, 8DPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79
Channel separation:	1MHz
Antenna type:	PCB Antenna
Antenna gain:	2.75 dBi
Bluetooth LE	
Supported type:	Bluetooth Low Energy
Modulation:	GFSK
Operation frequency:	2402MHz to 2480MHz
Channel number:	40
Channel separation:	2 MHz
Antenna type:	PCB Antenna
Antenna gain:	2.75 dBi
2.4G WIFI	
Supported type:	802.11b/802.11g/802.11n(H20)
Modulation:	802.11b: DSSS 802.11g/802.11n(H20): OFDM
Operation frequency:	802.11b/802.11g/802.11n(H20): 2412MHz~2462MHz
Channel number:	802.11b/802.11g/802.11n(H20): 11
Channel separation:	5MHz
MIMO:	Support
Antenna type:	PCB Antenna
Antenna gain:	Antenna 1：5.39 dBi, Antenna 2：2.90 dBi MIMO(Antenna 1+Antenna 2) Directional Gain (dBi): 7.24dBi
5G WIFI :	

Supported type:	20MHz system	40MHz system	80MHz system	160MHz system
	802.11a 802.11n 802.11ac	802.11n 802.11ac	802.11ac	N/A
Operation frequency:	5180MHz-5240MHz 5745MHz-5825MHz	5190MHz-5230MHz 5755MHz-5795MHz	5210MHz; 5775MHz	N/A
Modulation:	OFDM	OFDM	OFDM	N/A
Channel number:	9	4	2	N/A
Channel separation:	20MHz	40MHz	80MHz	N/A
DFS mode:	Nonsupport			
TPC:	Nonsupport			
MIMO:	Support			
Antenna type:	PCB Antenna			
Antenna gain:	Antenna 1：5.15 dBi, Antenna 2：3.89 dBi MIMO(Antenna 1+Antenna 2) Directional Gain (dBi): 7.55dBi			

Note1: For more details, please refer to the user's manual of the EUT.
Note2: Antenna gain provided by the applicant.
Note3: This report is for Bluetooth BR/EDR only.
Note4: Directional Gain (dBi)=10*LOG10(((POWER(10,Antenna 1/20)+POWER(10,Antenna 2/20))^2/2))

2.3. Description of Test Modes and Test Frequency

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting (Duty Cycle more than 98%) and receiving mode for testing .There are 79 channels provided to the EUT and Channel 00/39/78 were selected to test.

Operation Frequency：

Channel	Frequency (MHz)
00	**2402**
01	2403
⋮	⋮
38	2440
39	**2441**
40	2442
⋮	⋮
77	2479
78	**2480**

Preliminary tests were performed in each mode and packet length of BT, and found worst case as bellow, finally test were conducted at those mode and recorded in this report.

Test Items	Worst case
Conducted Emissions	DH5 Middle channel
Radiated Emissions and Band Edge	DH5
Maximum Conducted Output Power	DH5/2DH5/3DH5
20dB Bandwidth	DH5/2DH5/3DH5
Frequency Separation	DH5/2DH5/3DH5 Middle channel
Number of hopping frequency	DH5/2DH5/3DH5
Time of Occupancy (Dwell Time)	DH1/DH3/DH5 Middle channel 2DH1/2DH3/2DH5 Middle channel 3DH1/3DH3/3DH5 Middle channel
Out-of-band Emissions	DH5/2DH5/3DH5

2.4. Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
LISN	R&S	ESH2-Z5	860014/010	2021/05/10	2022/05/09
Double cone logarithmic antenna	Schwarzbeck	VULB 9168	824	2020/04/07	2023/04/06
Horn Antenna	Ocean Microwave	OBH100400	26999002	2019/11/28	2022/11/27
EMI Test Receiver	R&S	ESCI	1166.5950.03	2021/05/10	2022/05/09
Spectrum Analyzer	Agilent	E4407B	MY41440676	2021/05/14	2022/05/13
Spectrum Analyzer	Agilent	N9020A	US46220290	2021/05/14	2022/05/13
Spectrum Analyzer	Keysight	N9020A	MY53420874	2021/05/14	2022/05/13
Controller	EM Electronics	EM 1000	060859	2021/05/21	2022/05/20
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2020/09/22	2023/09/21
Active Loop Antenna	Da Ze	ZN30900A	/	2021/05/13	2024/05/12
Amplifier	Agilent	8449B	3008A02306	2021/05/10	2022/05/09
Amplifier	Agilent	8447D	2944A10176	2021/05/10	2022/05/09
Amplifier	Brief&Smart	LNA-4018	2104197	2021/05/10	2022/05/09
Temperature/Humidity Meter	Gangxing	CTH-608	02	2021/05/11	2022/05/10
Power Sensor	Agilent	U2021XA	MY55130004	2021/05/14	2022/05/13
Power Sensor	Agilent	U2021XA	MY55130006	2021/05/14	2022/05/13
Power Sensor	Agilent	U2021XA	MY54510008	2021/05/14	2022/05/13
Power Sensor	Agilent	U2021XA	MY55060003	2021/05/14	2022/05/13
Spectrum Analyzer	RS	FSP	1164.4391.38	2021/05/14	2022/05/13

Test Software	
Name of Software	Version
TST-PASS	1.1.0
EZ_EMC(Below 1GHz)	V1.1.4.2
EZ_EMC((Above 1GHz)	V1.1.4.2

The calibration interval was one year

2.5. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.6. Modifications

No modifications were implemented to meet testing criteria.

3. TEST CONDITIONS AND RESULTS

3.1. Conducted Emissions Test

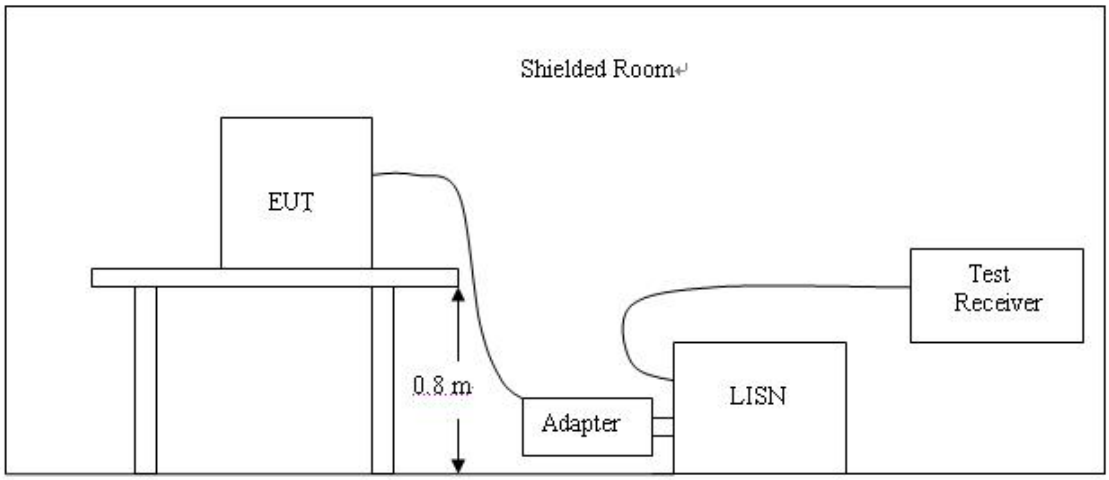
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

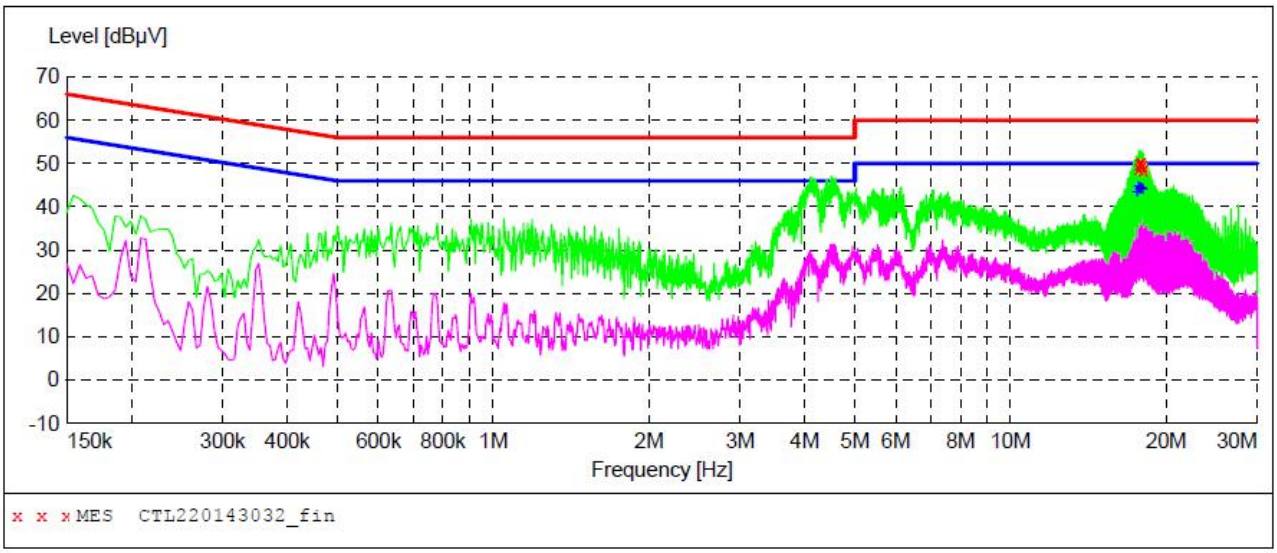
1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a Laser Projectorop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2020.
2. Support equipment, if needed, was placed as per ANSI C63.10:2020.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2020.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

Remark: All modes of GFSK, Pi/4 DQPSK, and 8DPSK were test at Low, Middle, and High channel; only the worst result of GFSK Middle Channel was reported as below:

SCAN TABLE: "Voltage (9K-30M) FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "CTL220143032_fin"

1/14/2022 9:04AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
17.686500	48.90	11.1	60	11.1	QP	L1	GND
17.749500	49.90	11.1	60	10.1	QP	L1	GND
17.812500	49.90	11.1	60	10.1	QP	L1	GND
17.875500	50.20	11.1	60	9.8	QP	L1	GND
18.006000	49.50	11.1	60	10.5	QP	L1	GND
18.073500	48.60	11.1	60	11.4	QP	L1	GND

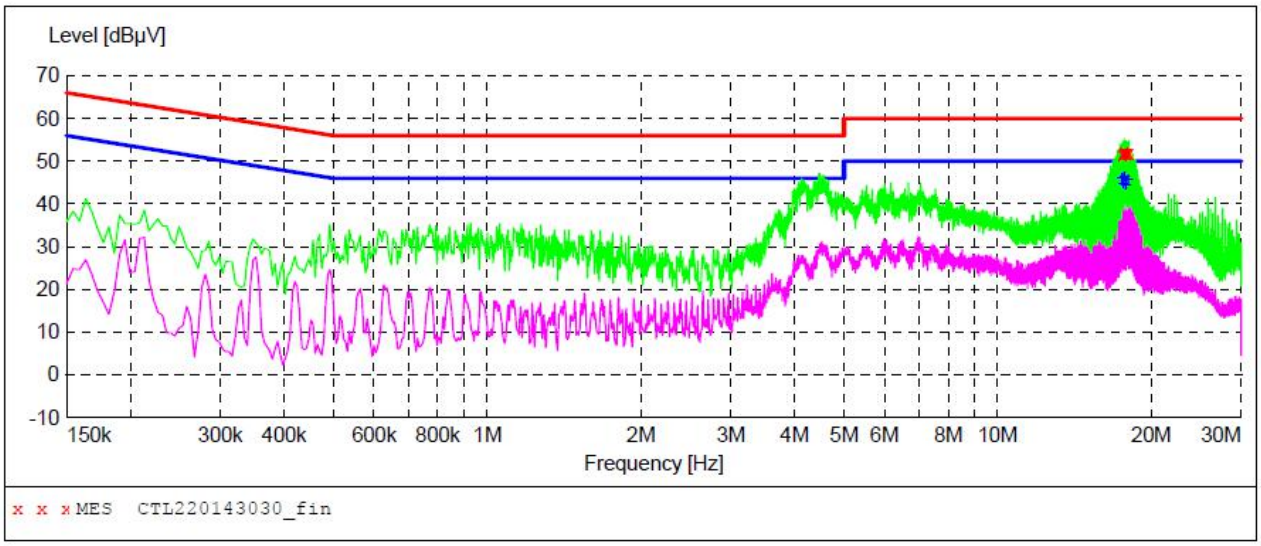
MEASUREMENT RESULT: "CTL220143032_fin2"

1/14/2022 9:04AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
17.560500	43.30	11.1	50	6.7	AV	L1	GND
17.686500	44.50	11.1	50	5.5	AV	L1	GND
17.754000	44.00	11.1	50	6.0	AV	L1	GND
17.817000	44.30	11.1	50	5.7	AV	L1	GND
17.880000	44.40	11.1	50	5.6	AV	L1	GND
18.010500	43.90	11.1	50	6.1	AV	L1	GND

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "CTL220143030_fin"

1/14/2022 8:56AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
17.560500	51.70	11.1	60	8.3	QP	N	GND
17.623500	51.80	11.1	60	8.2	QP	N	GND
17.686500	52.30	11.1	60	7.7	QP	N	GND
17.817000	51.80	11.1	60	8.2	QP	N	GND
17.947500	51.80	11.1	60	8.2	QP	N	GND
18.073500	52.00	11.1	60	8.0	QP	N	GND

MEASUREMENT RESULT: "CTL220143030_fin2"

1/14/2022 8:56AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
17.497500	46.00	11.1	50	4.0	AV	N	GND
17.560500	45.90	11.1	50	4.1	AV	N	GND
17.623500	44.70	11.1	50	5.3	AV	N	GND
17.691000	46.30	11.1	50	3.7	AV	N	GND
17.817000	44.30	11.1	50	5.7	AV	N	GND
18.015000	45.50	11.1	50	4.5	AV	N	GND

3.2. Radiated Emissions and Band Edge

Limit

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission out of authorized band shall not exceed the following table at a 3 meters measurement distance.

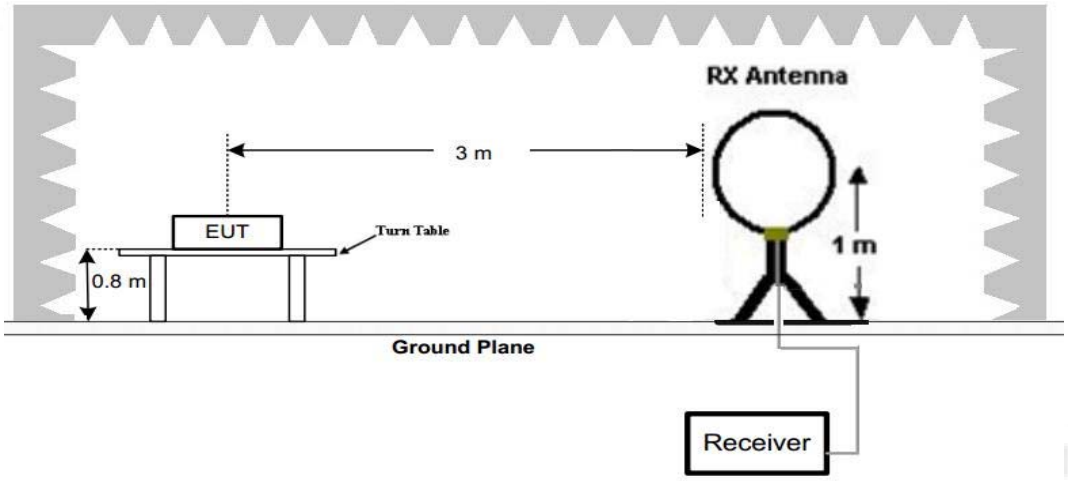
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

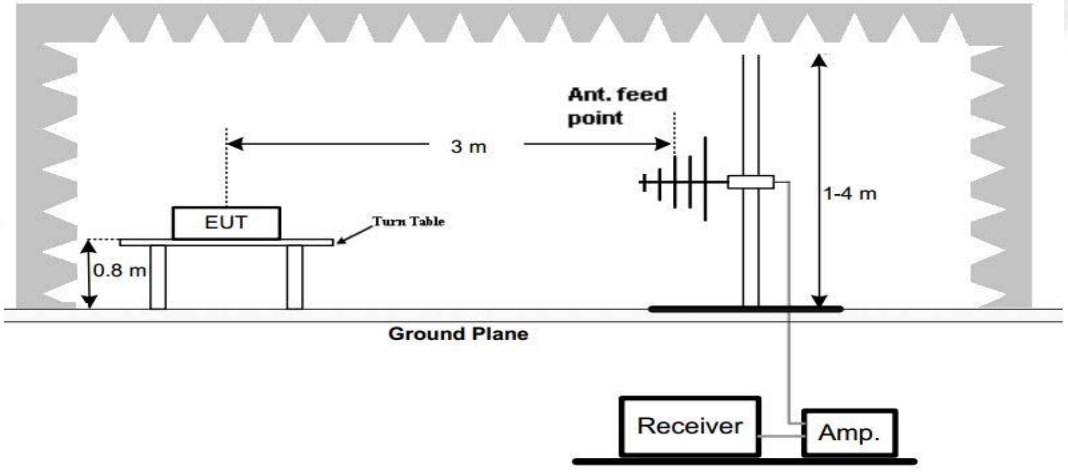
Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST CONFIGURATION

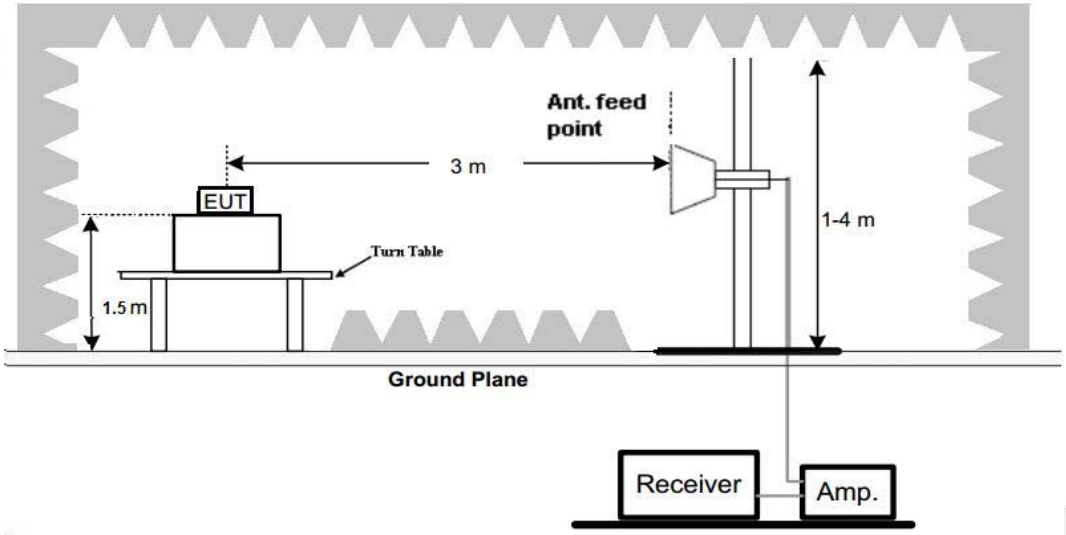
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



Test Procedure

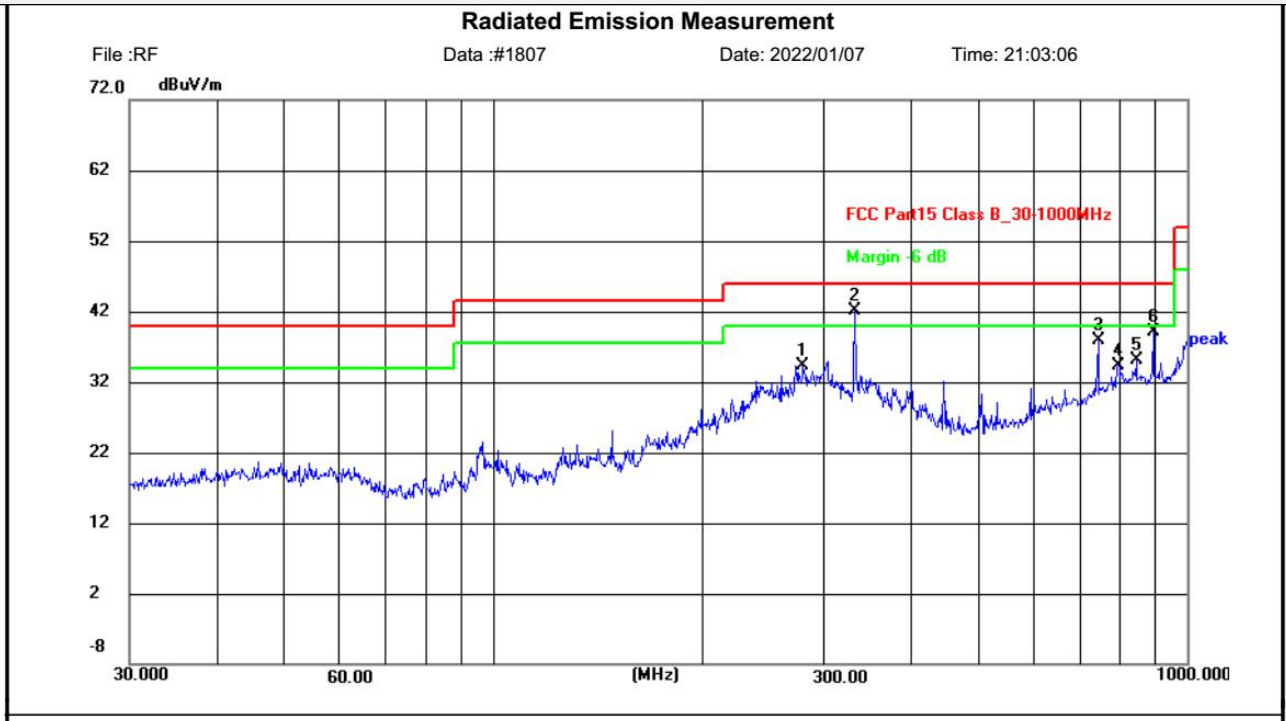
1. Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0℃ to 360℃ to acquire the highest emissions from EUT
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

TEST RESULTS

Remark:
1. We measured Radiated Emission at GFSK, π/4 DQPSK and 8DPSK mode from 9 KHz to 25GHz and recorded worst case at GFSK DH5 mode.
2. For below 1GHz testing recorded worst at GFSK DH5 low channel.
3. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, Found the emission level are attenuated 20dB below the limits from 9 kHz to 30MHz, so it does not recorded in report.

For 30MHz-1GHz

Horizontal



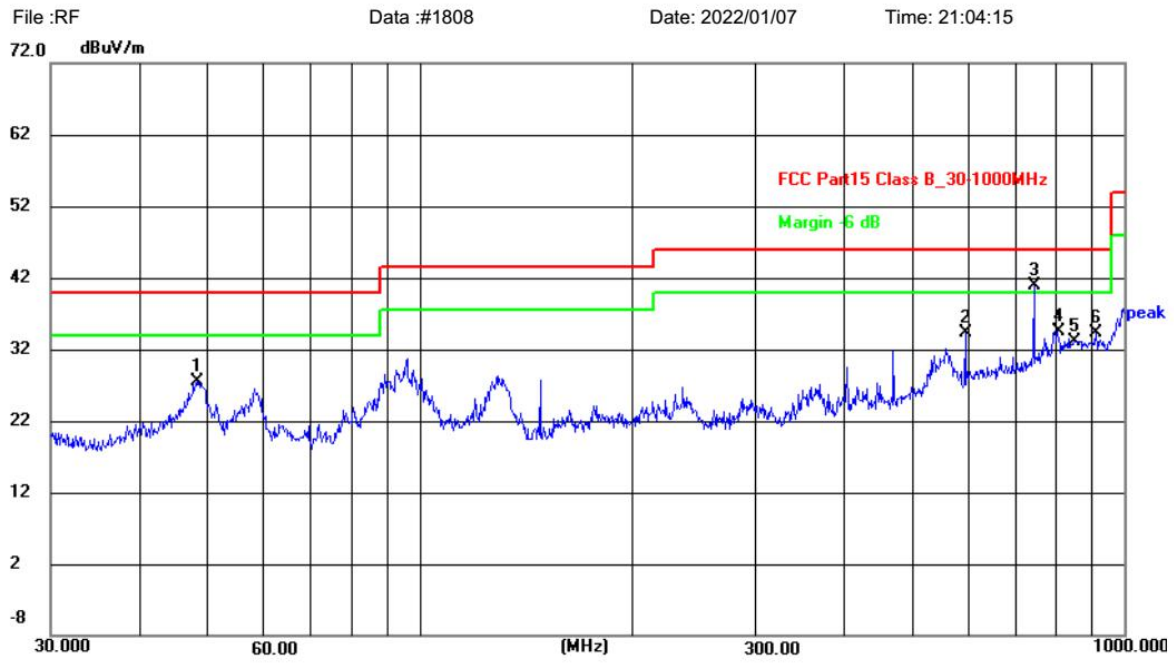
Site LAB Chamber 2
Limit: FCC Part15 Class B_30-1000MHz
EUT: /
M/N: S420U-A
Mode: WORKING
Note: GUANG FENG

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 25(C)
Humidity: 50 %

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	280.0237	20.38	13.95	34.33	46.00	11.67	peak	100	272	P	
2	332.5187	26.97	15.15	42.12	46.00	3.88	peak	100	159	P	
3	744.8660	14.19	23.78	37.97	46.00	8.03	peak	100	250	P	
4	796.1829	9.29	25.10	34.39	46.00	11.61	peak	100	250	P	
5	845.0877	9.31	25.80	35.11	46.00	10.89	peak	100	345	P	
6	893.8566	13.14	25.98	39.12	46.00	6.88	peak	100	294	P	

Vertical



Site LAB Chamber 2
Limit: FCC Part15 Class B_30-1000MHz
EUT: /
M/N: S420U-A
Mode: WORKING
Note: GUANG FENG

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 25(C)
Humidity: 50 %

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	48.3318	13.10	14.35	27.45	40.00	12.55	peak	100	79	P	
2	595.1329	13.20	21.06	34.26	46.00	11.74	peak	100	348	P	
3	744.8661	17.15	23.78	40.93	46.00	5.07	peak	100	117	P	
4	804.6028	9.40	25.19	34.59	46.00	11.41	peak	100	253	P	
5	851.0353	7.32	25.83	33.15	46.00	12.85	peak	100	34	P	
6	912.8620	8.07	26.27	34.34	46.00	11.66	peak	100	15	P	

For 1GHz to 25GHz

Note：GFSK, Pi/4 DQPSK and 8DPSK all have been tested, only worse case GFSK is reported.

GFSK (above 1GHz)

Frequency(MHz):			2402		Polarity:			HORIZONTAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4804.00	51.26	PK	74.00	22.74	46.75	33.49	6.91	35.89	4.51
4804.00	--	AV	54.00	--	--	--	--	--	--
5648.00	48.02	PK	74.00	25.98	41.16	34.06	7.04	34.24	6.86
5648.00	--	AV	54.00	--	--	--	--	--	--
7206.00	46.81	PK	74.00	27.19	35.71	36.95	9.18	35.03	11.10
7206.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2402		Polarity:			VERTICAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4804.00	52.48	PK	74.00	21.52	47.97	33.49	6.91	35.89	4.51
4804.00	--	AV	54.00	--	--	--	--	--	--
5947.00	47.26	PK	74.00	26.74	40.4	34.06	7.04	34.24	6.86
5947.00	--	AV	54.00	--	--	--	--	--	--
7206.00	46.02	PK	74.00	27.98	34.92	36.95	9.18	35.03	11.10
7206.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2441		Polarity:			HORIZONTAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4882.00	49.17	PK	74.00	24.83	42.81	33.60	6.95	34.19	6.36
4882.00	--	AV	54.00	--	--	--	--	--	--
5962.00	46.22	PK	74.00	27.78	38.62	34.56	7.15	34.11	7.60
5962.00	--	AV	54.00	--	--	--	--	--	--
7323.00	44.96	PK	74.00	29.04	33.26	37.46	9.23	35.00	11.70
7323.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2441		Polarity:			VERTICAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4882.00	50.16	PK	74.00	23.84	43.8	33.60	6.95	34.19	6.36
4882.00	--	AV	54.00	--	--	--	--	--	--
6481.00	47.35	PK	74.00	26.65	39.75	34.56	7.15	34.11	7.60
6481.00	--	AV	54.00	--	--	--	--	--	--
7323.00	45.98	PK	74.00	28.02	34.28	37.46	9.23	35.00	11.70
7323.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2480		Polarity:			HORIZONTAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4960.00	52.59	PK	74.00	21.41	47.67	33.84	7.00	35.92	4.92
4960.00	--	AV	54.00	--	--	--	--	--	--
5481.00	46.28	PK	74.00	27.72	39	34.45	7.12	34.29	7.28
5481.00	--	AV	54.00	--	--	--	--	--	--
7440.00	47.33	PK	74.00	26.67	35.38	37.64	9.28	34.97	11.95
7440.00	--	AV	54.00	--	--	--	--	--	--

Frequency(MHz):			2480		Polarity:			VERTICAL	
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
4960.00	50.69	PK	74.00	23.31	45.77	33.84	7.00	35.92	4.92
4960.00	--	AV	54.00	--	--	--	--	--	--
5921.00	48.11	PK	74.00	25.89	40.83	34.45	7.12	34.29	7.28
5921.00	--	AV	54.00	--	--	--	--	--	--
7440.00	46.37	PK	74.00	27.63	34.42	37.64	9.28	34.97	11.95
7440.00	--	AV	54.00	--	--	--	--	--	--

REMARKS:

1. Emission level (dBuV/m) =Raw Value (dBuV)+Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Limit value- Emission level.
4. -- Mean the PK detector measured value is below average limit.
5. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.
6. Other emissions are attenuated 20dB below the limits from 9kHz to 30MHz, so it does not recorded in report.