

# **TEST REPORT**

Product Name	:	4K AndroidTV Set Top Box
Brand Mark	:	Claro
Model No.	:	DV8935
FCC ID	:	2AW68-C8935
Report Number	:	BLA-EMC-202209-A5503
Date of Sample Receipt	:	2022/9/23
Date of Test	:	2022/10/16 to 2022/11/14
Date of Issue	:	2022/11/30
Test Standard	:	47 CFR Part 15, Subpart C 15.247 ANSI C63.10-2013
Test Result	:	Pass

Prepared for:

Shenzhen SDMC Technology Co.,Ltd.

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Prepared by:

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#### **REPORT REVISE RECORD**

Version No.	Date	Description
00	2022/11/30	Original



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# 1 TEST summary

Test item	Test Requirement	Test Method	Class/Severity	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2013 Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2013 Section 7.8.8 & Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2013 Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2013 Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2013 Section 7.8.6 & Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2013 Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2013 Section 7.8.5	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2013 Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass



# 2 General information

Applicant	Shenzhen SDMC Technology Co.,Ltd.	
Address	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen,	
Manufacturer	Shenzhen SDMC Technology Co.,Ltd.	
	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen,	
Product Name	4K AndroidTV Set Top Box	
Test Model No.	DV8935	

# **3** General description of E.U.T.

Hardware Version	V1		
Software Version	Android 10		
Operation Frequency:	2402MHz-2480MHz		
Modulation Type:	GFSK		
Data Rata	1Mbps; 2Mbps		
Channel Spacing:	2MHz		
Number of Channels:	40		
Antenna Type:	PCB Antenna		
Antenna Gain:	1.7dBi (Provided by antenna specification)		
	High speed HDMI cable with Ethernet		
EUT accessories: Wireless remote		WH191209B/ROH	
	AC adapter 1# Model: DCT12W120100US-A0 Input: 100-240V~50/60Hz 0.3A,Output: 12V=1A		
	AC adapter 2# Model: TPQ-368D120100UW01 Input: 100-240V~50/60Hz 0.4A,Output: 12V=1A		



# 4 Test environment

Environment	Temperature	Voltage	
Normal	25°C	DC 12V	

# 5 Test mode

TEST MODE	TEST MODE DESCRIPTION			
ТХ	Keep the EUT in transmitting mode			
Remark: only th	Remark: only the data of the worst mode would be recorded in this report. For Radiated emission, 1Mbps			
and 2Mbps mode all have been tested, only worse case 1Mbps mode is reported.				

# **6 MEASUREMENT UNCERTAINTY**

Parameter	Expanded Uncertainty (Confidence of 95%)	
Radiated Emission(9kHz-30MHz)	±4.34dB	
Radiated Emission(30Mz-1000MHz)	±4.24dB	
Radiated Emission(1GHz-18GHz)	±4.68dB	
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB	



# 7 DEscription of SUPPORT unit

Device Type	Manufacturer	Model Name	Serial No.	Remark
PC	HASEE	K610D	N/A	N/A
U Disk	laboratory	N/A	N/A	N/A
Fiber optic cable	laboratory	N/A	N/A	N/A
TF Card	laboratory	N/A	N/A	N/A
Loudspeaker	laboratory	N/A	N/A	N/A

# 8 Laboratory Location

All tests were performed at: BlueAsia Technical Services(Shenzhen) Co., Ltd. No.41, South of Beihuan Road, Shangwu Community, Shiyan Subdistrict, Bao'an District, Shenzhen,Guangdong ,China Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673 No tests were sub-contracted.



# 9 Test instruments list

Test Equipment Of Radiated Spurious Emissions					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Chamber 1	SKET	966	N/A	2020/11/10	2023/11/9
Chamber 2	SKET	966	N/A	2021/07/20	2024/07/19
Spectrum	R&S	FSP40	100817	2022/09/15	2023/09/14
Receiver	R&S	ESR7	101199	2022/09/15	2023/09/14
Receiver	R&S	ESPI7	101477	2022/07/16	2023/07/15
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2022/09/15	2023/09/14
Horn Antenna	Schwarzbeck	BBHA9120D	01892 P:00331	2022/09/13	2025/09/12
Amplifier	SKET	LNPA_30M01G-30	SK2021060801	2022/07/16	2023/07/15
Amplifier	SKET	PA-000318G-45	N/A	2022/09/13	2023/09/12
Amplifier	SKET	LNPA_18G40G-50	SK2022071301	2022/07/14	2023/07/13
Filter group	SKET	2.4G/5G Filter group r	N/A	2022/07/16	2023/07/15
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2022/9/14	2025/9/13
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A



Test Equipment O	Test Equipment Of Conducted Emissions at AC Power Line (150kHz-30MHz)							
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due			
Shield room	SKET	833	N/A	2020/11/25	2023/11/24			
Receiver	R&S	ESPI3	101082	2022/09/14	2023/09/13			
LISN	R&S	ENV216	3560.6550.15	2022/09/14	2023/09/13			
LISN	AT	AT166-2	AKK1806000003	2022/09/14	2023/09/13			
ISN	TESEQ	ISNT8-cat6	53580	2022/09/14	2023/09/13			
Single-channel vehicle artificial power network	Schwarzbeck	NNBM 8124	01045	2022/08/17	2023/08/16			
Single-channel vehicle artificial power network	Schwarzbeck	NNBM 8124	01075	2022/08/17	2023/08/16			
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A			

Test Equipment	Of RF Conducte	ed Test			
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2022/09/15	2023/09/14
Spectrum	Agilent	N9020A	MY49100060	2022/09/07	2023/09/06
Spectrum	KEYSIGHT	N9030A	MY52350152	2022/07/01	2023/06/30
Spectrum	KEYSIGHT	N9010A	MY54330814	2022/07/01	2023/06/30
Signal Generator	Agilent	N5182A	MY47420955	2022/09/07	2023/09/06
Signal Generator	Agilent	E8257D	MY44320250	2022/07/01	2023/06/30
Signal Generator	Agilent	N5181A	MY46240904	2022/08/02	2023/08/01
Signal Generator	R&S	CMW500	132429	2022/09/07	2023/09/06
BluetoothTester	Anritsu	MT8852B	06262047872	2022/09/07	2023/09/06
Power probe	DARE	RPR3006W	14100889SN042	2022/09/07	2023/09/06
DCPowersupply	zhaoxin	KXN-305D	20K305D1221363	2022/09/14	2023/09/13
DCPowersupply	zhaoxin	RXN-1505D	19R1505D050168	2022/09/14	2023/09/13
2.4GHz/5GHz RF Test software	MTS	MTS 8310	Version 2.0.0.0	N/A	N/A



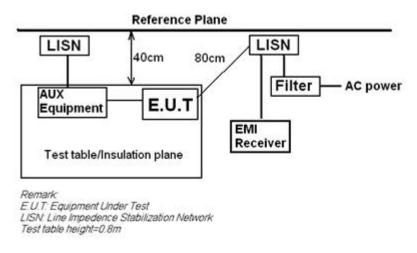
# 10 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10-2013 Section 6.2
Test Mode (Pre-Scan)	ТХ
Test Mode (Final Test)	ТХ
Tester	Charlie
Temperature	25°C
Humidity	60%

### 10.1 LIMITS

Frequency of	Conducted limit(dBµV)				
emission(MHz)	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 logarith	m of the frequency.				

# **10.2 BLOCK DIAGRAM OF TEST SETUP**



### **10.3 PROCEDURE**

1) The mains terminal disturbance voltage test was conducted in a shielded room.

2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50H + 5ohm linear impedance. The power cables of all other units of the EUT



were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

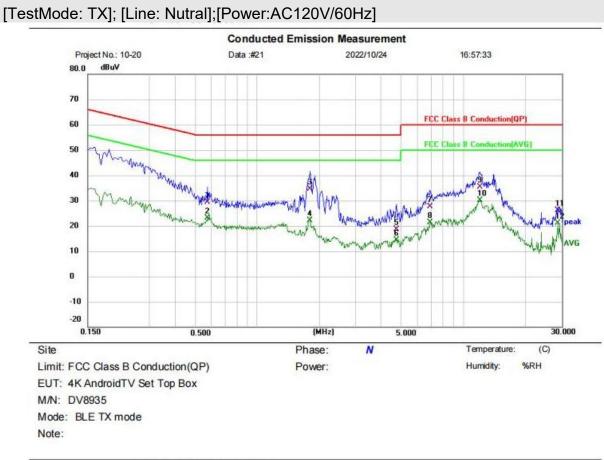
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: LISN=Read Level+ Cable Loss+ LISN Factor



# 10.4 TEST Data

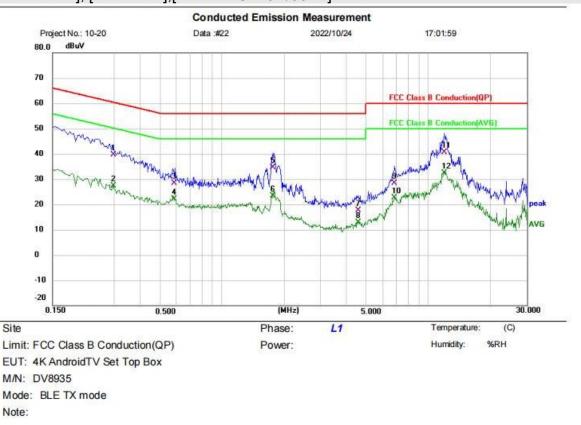


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5740	19.25	10.04	29.29	56.00	-26.71	QP	
2		0.5740	13.02	10.04	23.06	46.00	-22.94	AVG	
3		1.8020	24.62	10.09	34.71	56.00	-21.29	QP	
4		1.8020	12.06	10.09	22.15	46.00	-23.85	AVG	
5		4.7460	8.73	9.84	18.57	56.00	-37.43	QP	
6		4.7460	4.43	9.84	14.27	46.00	-31.73	AVG	
7		6.8860	17.65	9.87	27.52	60.00	-32.48	QP	
8		6.8860	11.42	9.87	21.29	50.00	-28.71	AVG	
9		12.0060	25.29	10.00	35.29	60.00	-24.71	QP	
10	*	12.0060	20.13	10.00	30.13	50.00	-19.87	AVG	
11		28.6860	16.10	9.96	26.06	60.00	-33.94	QP	
12	2	28.6860	11.07	9.96	21.03	50.00	-28.97	AVG	

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

(Reference Only



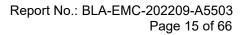


TactModa	· TY1· [l ino·	Line];[Power:AC120V/60Hz]	1
TESUNDUE.			

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.2940	29.52	10.07	39.59	60.41	-20.82	QP	
2	0.2940	17.37	10.07	27.44	50.41	-22.97	AVG	
3	0.5899	18.42	10.08	28.50	56.00	-27.50	QP	
4	0.5899	12.15	10.08	22.23	46.00	-23.77	AVG	
5	1.7580	24.48	10.26	34.74	56.00	-21.26	QP	
6	1.7580	13.04	10.26	23.30	46.00	-22.70	AVG	
7	4.5540	7.50	10.05	17.55	56.00	-38.45	QP	
8	4.5540	2.83	10.05	12.88	46.00	-33.12	AVG	
9	6.8620	18.37	10.07	28.44	60.00	-31.56	QP	
10	6.8620	12.55	10.07	22.62	50.00	-27.38	AVG	
11	11.9700	30.65	10.08	40.73	60.00	-19.27	QP	
12 *	11.9700	22.39	10.08	32.47	50.00	-17.53	AVG	

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

(Reference Only





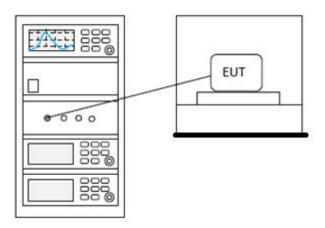
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10-2013 Section 7.8.8 & Section 11.13.3.2
Test Mode (Pre-Scan)	ТХ
Test Mode (Final Test)	ТХ
Tester	Charlie
Temperature	<b>25</b> ℃
Humidity	60%

# **11 Conducted Band Edges Measurement**

### 11.1 LIMITS

Limit:	In any 100 kHz 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided 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 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.209(a) (see §15.205(c)).
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### **11.2 BLOCK DIAGRAM OF TEST SETUP**





# 11.3 TEST Data

Pass: Please Refer To Appendix: Appendix 1 For Details



# **12 Radiated Spurious Emissions**

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10-2013 Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	ТХ
Test Mode (Final Test)	ТХ
Tester	Charlie
Temperature	<b>25</b> ℃
Humidity	60%

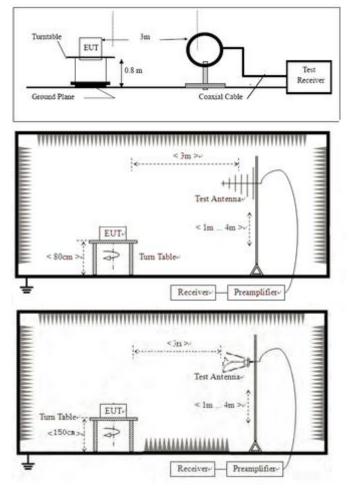
### 12.1 LIMITS

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.



### **12.2 BLOCK DIAGRAM OF TEST SETUP**



### 12.3 PROCEDURE

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. 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.

e. 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.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. 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.



h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

#### Remark:

1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

3) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. Fundamental frequency is blocked by filter, and only spurious emission is shown.

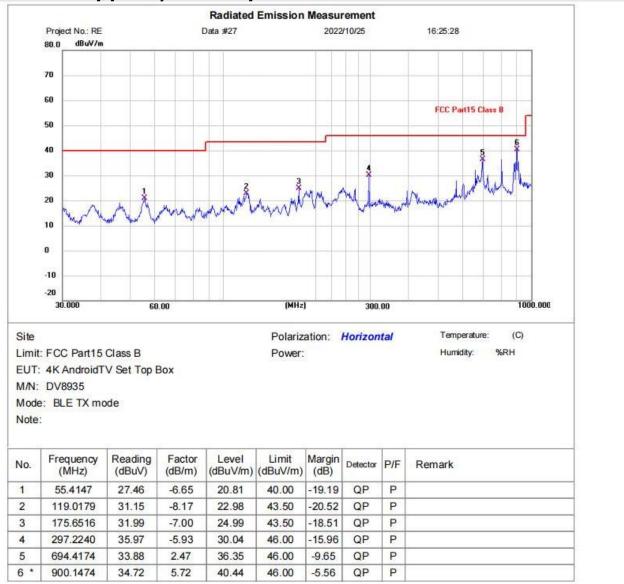
4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



# 12.4 TEST Data

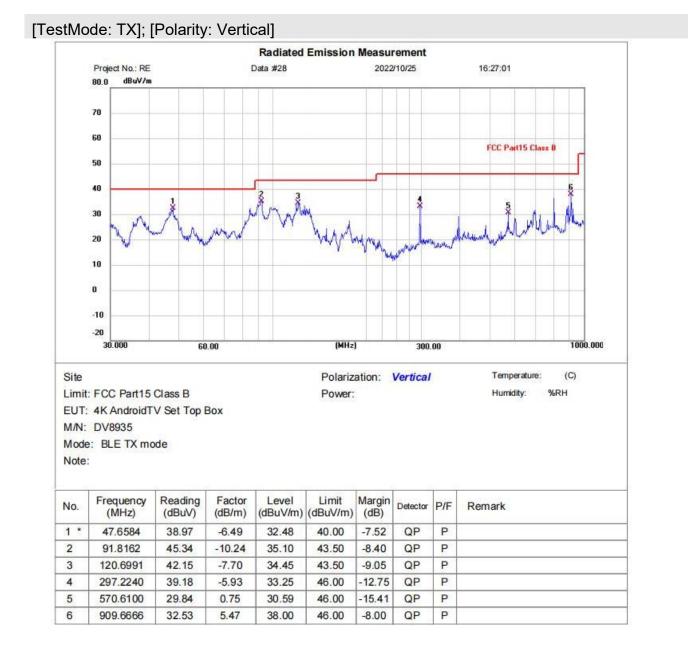
#### Below 1GHz

#### [TestMode: TX]; [Polarity: Horizontal]



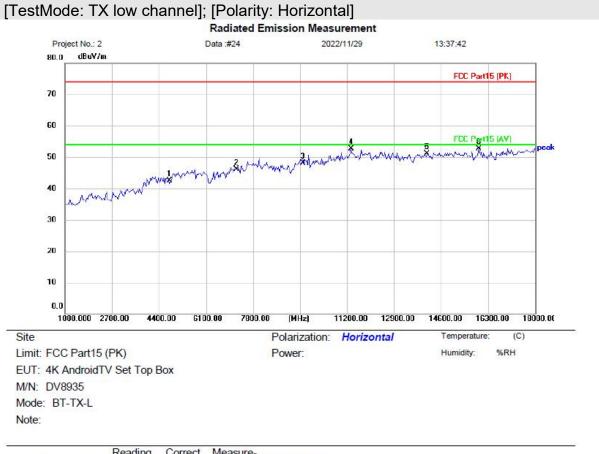
\*:Maximum data x:Over limit !:over margin





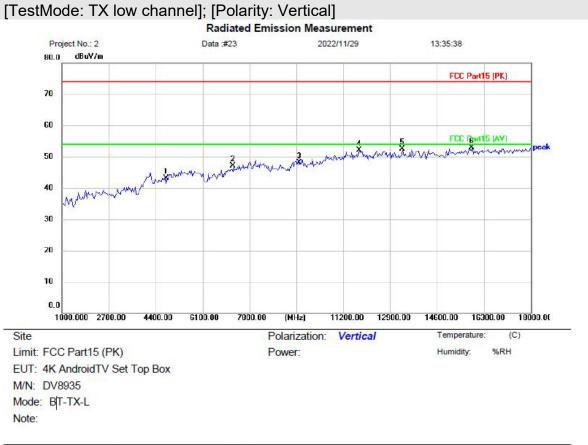
\*:Maximum data x:Over limit !:over margin





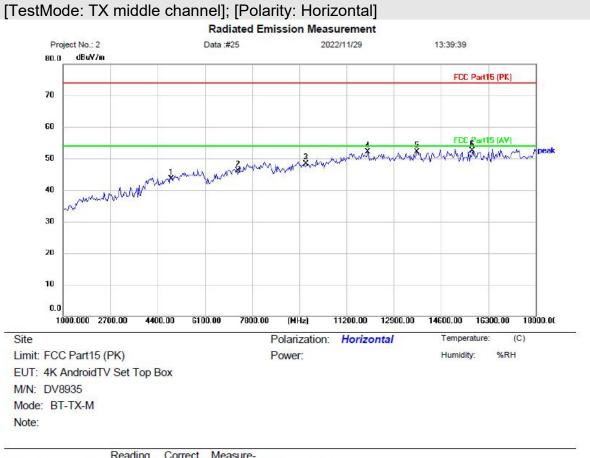
No.	Mk.	Freq.	Level	Factor	ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.000	38.55	4.05	42.60	74.00	-31.40	peak	
2		7206.000	38.15	7.93	46.08	74.00	-27.92	peak	
3		9608.000	37.29	10.90	48.19	74.00	-25.81	peak	
4	*	11336.000	39.03	13.60	52.63	74.00	-21.37	peak	
5	77	14090.000	35.68	15. <b>4</b> 5	51.13	74.00	-22.87	peak	
6	17	15960.000	37.20	15.43	52.63	74.00	-21.37	peak	





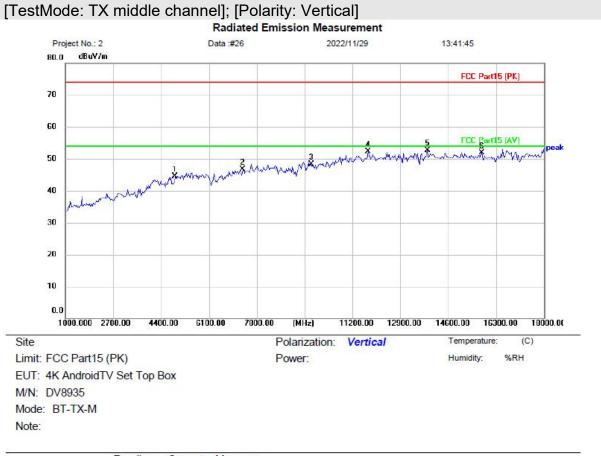
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4804.000	38.97	4.05	43.02	74.00	-30.98	peak		
2	7206.000	39.24	7.93	47.17	74.00	-26.83	peak		
3	9608.000	37.12	10.90	48.02	74.00	-25.98	peak		
4	11778.000	38.25	13.80	52.05	74.00	-21.95	peak		
5	13342.000	34.80	17.77	52.57	74.00	-21.43	peak		
6 *	15858.000	37.46	15.52	52.98	74.00	-21.02	peak		





Mk.	Freq.	Level	Factor	ment	Limit .	Over		
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
	4882.000	39.13	4.37	43.50	74.00	-30.50	peak	
	7323.000	37.88	8.21	46.09	74.00	-27.91	peak	
	9764.000	37.07	11.30	48.37	74.00	-25.63	peak	
8	11948.000	38.14	13.87	52.01	74.00	-21.99	peak	
	13716.000	36.13	15.97	52.10	74.00	-21.90	peak	
*	15722.000	36.81	15.64	52.45	74.00	-21.55	peak	
		MHz 4882.000 7323.000 9764.000 11948.000 13716.000	Mk.         Freq.         Level           MHz         dBuV           4882.000         39.13           7323.000         37.88           9764.000         37.07           11948.000         38.14           13716.000         36.13	Mk.         Freq.         Level         Factor           MHz         dBuV         dB/m           4882.000         39.13         4.37           7323.000         37.88         8.21           9764.000         37.07         11.30           11948.000         38.14         13.87           13716.000         36.13         15.97	Mk.         Freq.         Level         Factor         ment           MHz         dBuV         dB/m         dBuV/m           4882.000         39.13         4.37         43.50           7323.000         37.88         8.21         46.09           9764.000         37.07         11.30         48.37           11948.000         38.14         13.87         52.01           13716.000         36.13         15.97         52.10	Mk.         Freq.         Level         Factor         ment         Limit           MHz         dBuV         dB/m         dBuV/m         dBuV/m           4882.000         39.13         4.37         43.50         74.00           7323.000         37.88         8.21         46.09         74.00           9764.000         37.07         11.30         48.37         74.00           11948.000         38.14         13.87         52.01         74.00           13716.000         36.13         15.97         52.10         74.00	Mk.         Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV         dB/m         dBuV/m         dBuV/m         dB         dB           4882.000         39.13         4.37         43.50         74.00         -30.50           7323.000         37.88         8.21         46.09         74.00         -27.91           9764.000         37.07         11.30         48.37         74.00         -25.63           11948.000         38.14         13.87         52.01         74.00         -21.99           13716.000         36.13         15.97         52.10         74.00         -21.90	Mk.         Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV         dB/m         dBuV/m         dBuV/m         dB         Detector           4882.000         39.13         4.37         43.50         74.00         -30.50         peak           7323.000         37.88         8.21         46.09         74.00         -27.91         peak           9764.000         37.07         11.30         48.37         74.00         -25.63         peak           11948.000         38.14         13.87         52.01         74.00         -21.99         peak           13716.000         36.13         15.97         52.10         74.00         -21.90         peak





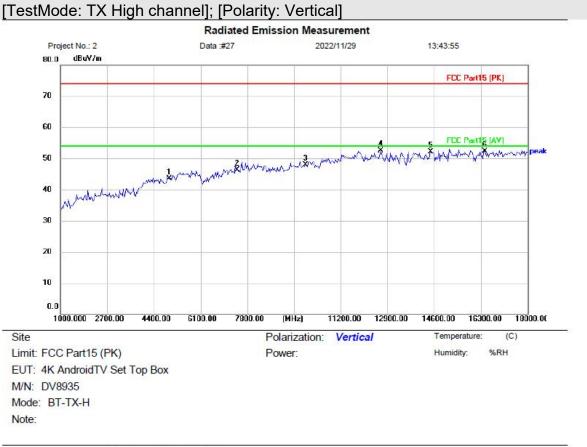
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4882.000	40.20	4.37	44.57	74.00	-29.43	peak	
2		7323.000	38.47	8.21	46.68	74.00	-27.32	peak	
3		9764.000	37.05	11.30	48.35	74.00	-25.65	peak	
4	1	11744.000	38.51	13.78	52.29	74.00	-21.71	peak	
5	*	13852.000	37.14	15.51	52.65	74.00	-21.35	peak	
6	2	15790.000	36.30	15.58	51.88	74.00	-22.12	peak	





No.	Mk.	Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4960.000	38.80	5.42	44.22	74.00	-29.78	peak		
2		7440.000	38.95	8.48	47.43	74.00	-26.57	peak		
3		9920.000	37.40	11.69	49.09	74.00	-24.91	peak		
4	1	11778.000	38.79	13.80	52.59	74.00	-21.41	peak		
5	*	14362.000	37.13	16.03	53.16	74.00	-20.84	peak		
6	- 1	16402.000	38.40	14.50	52.90	74.00	-21.10	peak		





No. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4960.000	38.06	5.42	43.48	74.00	-30.52	peak		
2	7440.000	37.78	8.48	46.26	74.00	-27.74	peak		
3	9920.000	36.17	11.69	47.86	74.00	-26.14	peak		
4 *	12662.000	38.56	13.87	<mark>52.4</mark> 3	74.00	-21.57	peak		
5	14464.000	36.03	16.06	52.09	74.00	-21.91	peak		
6	16436.000	37.71	14.62	52.33	74.00	-21.67	peak		



# **13 Antenna Requirement**

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	N/A

### 13.1 Conclusion

Standard Requirement:

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. The use of a antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1.7dBi.



# 14 Radiated Emissions which fall in the restricted bands

Test Standard	47 CFR Part 15, Subpart C 15.247 47 CFR Part 15, Subpart C 15.205 47 CFR Part 15, Subpart C 15.209
Test Method	ANSI C63.10-2013 Section 6.10.5
Test Mode (Pre-Scan)	ТХ
Test Mode (Final Test)	ТХ
Tester	Charlie
Temperature	25°C
Humidity	60%

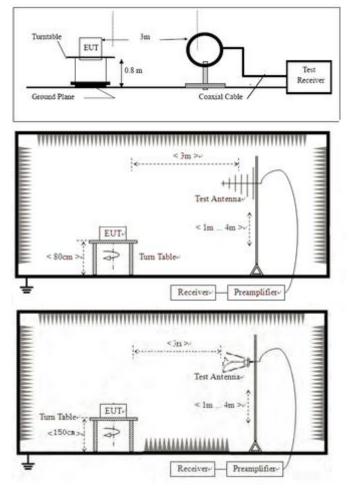
### 14.1 LIMITS

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.



### 14.2 BLOCK DIAGRAM OF TEST SETUP



### 14.3 PROCEDURE

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. 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.

e. 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.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. 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.



h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

#### §15.205 Restricted bands of operation.

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below.

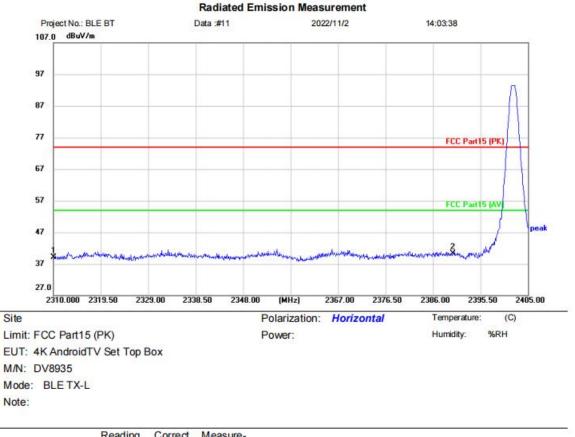
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.4 1425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	<sup>(2)</sup>
13.36-13.41			

(b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.



# 14.4 TEST Data

#### [TestMode: TX low channel]; [Polarity: Horizontal]



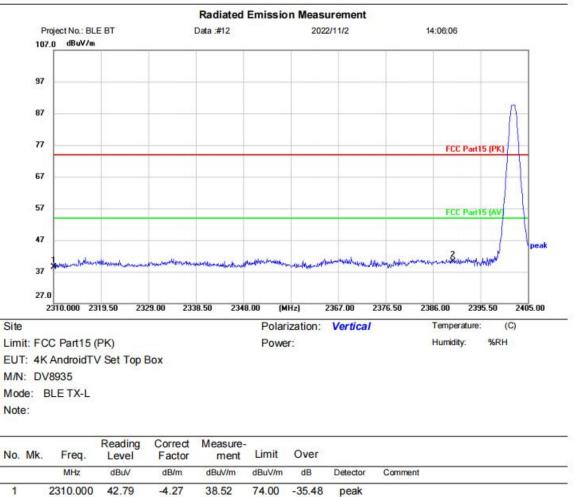
No.	Mk.	Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1		2310.000	43.35	-4.27	39.08	74.00	-34.92	peak		
2	*	2390.000	44.22	-3.82	40.40	74.00	-33.60	peak		

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

(Reference Only



#### [TestMode:TX low channel]; [Polarity: Vertical]



-33.71

peak

74.00

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

-3.82

40.29

(Reference Only

**Test Result: Pass** 

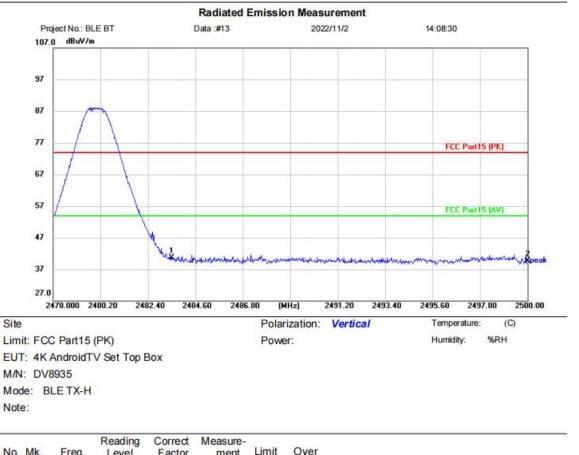
2

٠

2390.000

44.11





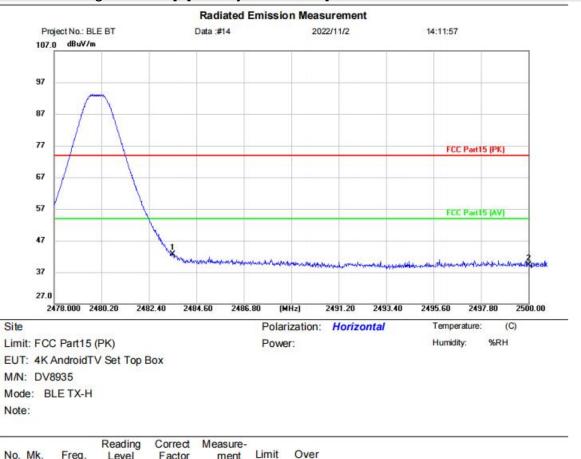
### [TestMode: TX High channel]; [Polarity: Vertical]

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	2483.500	44.65	-3.96	40.69	74.00	-33.31	peak		
2		2500.000	43.67	-4.00	39.67	74.00	-34.33	peak		

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

(Reference Only





#### [TestMode:TX High channel]; [Polarity: Horizontal]

Mk.	Freq.	Reading Level	Factor			Over			
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
*	2483.500	46.75	-3.96	42.79	74.00	-31.21	peak		
	2500.000	43.21	-4.00	39.21	74.00	-34.79	peak		
		MHz * 2483.500	Mk.         Freq.         Level           MHz         dBuV           *         2483.500         46.75	Mk.         Freq.         Level         Factor           MHz         dBuV         dB/m           *         2483.500         46.75         -3.96	Mk.         Freq.         Level         Factor         ment           MHz         dBuV         dB/m         dBuV/m           *         2483.500         46.75         -3.96         42.79	Mk.         Freq.         Level         Factor         ment         Limit           MHz         dBuV         dB/m         dBuV/m         dBuV/m         dBuV/m           *         2483.500         46.75         -3.96         42.79         74.00	Mk.         Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV         dB/m         dBuV/m         dBuV/m         dB           *         2483.500         46.75         -3.96         42.79         74.00         -31.21	Mk.         Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV         dB/m         dBuV/m         dBuV/m         dB         Detector           *         2483.500         46.75         -3.96         42.79         74.00         -31.21         peak	Mk.     Freq.     Level     Factor     ment     Limit     Over       MHz     dBuV     dB/m     dBuV/m     dBuV/m     dB     Detector     Comment       *     2483.500     46.75     -3.96     42.79     74.00     -31.21     peak

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

(Reference Only



# **15 Conducted Spurious Emissions**

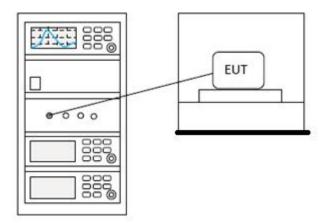
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10-2013 Section 7.8.6 & Section 11.11
Test Mode (Pre-Scan)	ТХ
Test Mode (Final Test)	ТХ
Tester	Charlie
Temperature	25°C
Humidity	60%

## 15.1 LIMITS

Limit:	In any 100 kHz 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided 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 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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) (see §15.205(c)).
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### **15.2 BLOCK DIAGRAM OF TEST SETUP**



### 15.3 TEST Data

Pass: Please Refer To Appendix: Appendix 1 For Details



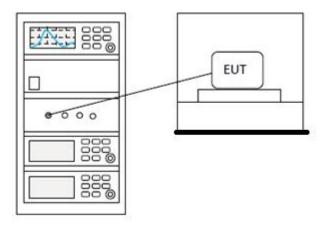
# **16 Power Spectrum Density**

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10-2013 Section 11.10.2
Test Mode (Pre-Scan)	ТХ
Test Mode (Final Test)	ТХ
Tester	Charlie
Temperature	25°C
Humidity	60%

### 16.1 LIMITS

	≤8dBm in any 3 kHz band during any time interval of continuous
Limit:	transmission

### **16.2 BLOCK DIAGRAM OF TEST SETUP**



### 16.3 TEST Data

Pass: Please Refer To Appendix: Appendix 1 For Details



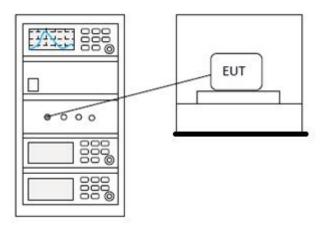
# **17 Conducted Peak Output Power**

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10-2013 Section 7.8.5
Test Mode (Pre-Scan)	ТХ
Test Mode (Final Test)	ТХ
Tester	Charlie
Temperature	25°C
Humidity	60%

### 17.1 LIMITS

Frequency range(MHz)	Output power of the intentional radiator(watt)
	1 for ≥50 hopping channels
902-928	0.25 for 25≤ hopping channels <50
	1 for digital modulation
	1 for ≥75 non-overlapping hopping channels
2400-2483.5	0.125 for all other frequency hopping systems
	1 for digital modulation
	1 for frequency hopping systems and digital
5725-5850	modulation

### 17.2 BLOCK DIAGRAM OF TEST SETUP





### 17.3 TEST Data

Pass: Please Refer To Appendix: Appendix 1 For Details



### 18 Minimum 6dB Bandwidth

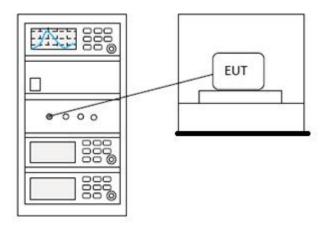
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10-2013 Section 11.8.1
Test Mode (Pre-Scan)	ТХ
Test Mode (Final Test)	ТХ
Tester	Charlie
Temperature	25°C
Humidity	60%

### 18.1 LIMITS

Limit:

≥500 kHz

### **18.2 BLOCK DIAGRAM OF TEST SETUP**



#### 18.3 TEST Data

Pass: Please Refer To Appendix: Appendix 1 For Details



# 19 Appendix 1

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	4.704	0	4.704	30	Pass
NVNT	BLE 1M	2442	Ant1	4.643	0	4.643	30	Pass
NVNT	BLE 1M	2480	Ant1	5.18	0	5.180	30	Pass
NVNT	BLE 2M	2402	Ant1	4.782	0	4.782	30	Pass
NVNT	BLE 2M	2442	Ant1	3.782	0	3.782	30	Pass
NVNT	BLE 2M	2480	Ant1	4.787	0	4.787	30	Pass

### **19.1 Maximum Conducted Output Power**

#### Power NVNT BLE 1M 2402MHz Ant1





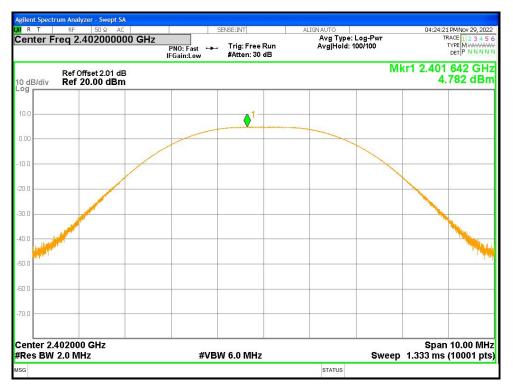


#### Power NVNT BLE 1M 2442MHz Ant1

#### Power NVNT BLE 1M 2480MHz Ant1







#### Power NVNT BLE 2M 2402MHz Ant1

#### Power NVNT BLE 2M 2442MHz Ant1







#### Power NVNT BLE 2M 2480MHz Ant1



Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.648	0.5	Pass
NVNT	BLE 1M	2442	Ant1	0.640	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.636	0.5	Pass
NVNT	BLE 2M	2402	Ant1	1.106	0.5	Pass
NVNT	BLE 2M	2442	Ant1	0.933	0.5	Pass
NVNT	BLE 2M	2480	Ant1	1.095	0.5	Pass

### **19.2 Minimum 6dB Bandwidth**

#### -6dB Bandwidth NVNT BLE 1M 2402MHz Ant1







#### -6dB Bandwidth NVNT BLE 1M 2442MHz Ant1

#### -6dB Bandwidth NVNT BLE 1M 2480MHz Ant1







#### -6dB Bandwidth NVNT BLE 2M 2402MHz Ant1

# -6dB Bandwidth NVNT BLE 2M 2442MHz Ant1







#### -6dB Bandwidth NVNT BLE 2M 2480MHz Ant1



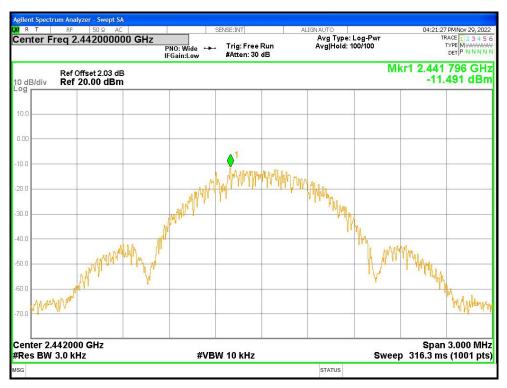
		-		-		
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-11.010	8	Pass
NVNT	BLE 1M	2442	Ant1	-11.491	8	Pass
NVNT	BLE 1M	2480	Ant1	-8.856	8	Pass
NVNT	BLE 2M	2402	Ant1	-13.590	8	Pass
NVNT	BLE 2M	2442	Ant1	-12.970	8	Pass
NVNT	BLE 2M	2480	Ant1	-12.466	8	Pass

### **19.3 Maximum Power Spectral Density Level**

#### PSD NVNT BLE 1M 2402MHz Ant1

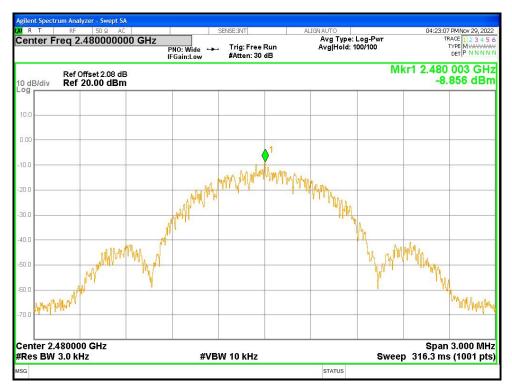






#### PSD NVNT BLE 1M 2442MHz Ant1

PSD NVNT BLE 1M 2480MHz Ant1







#### PSD NVNT BLE 2M 2402MHz Ant1

#### PSD NVNT BLE 2M 2442MHz Ant1







#### PSD NVNT BLE 2M 2480MHz Ant1



### 19.4 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-60.05	-20	Pass
NVNT	BLE 1M	2480	Ant1	-60.56	-20	Pass
NVNT	BLE 2M	2402	Ant1	-59.52	-20	Pass
NVNT	BLE 2M	2480	Ant1	-59.84	-20	Pass

### Band Edge NVNT BLE 1M 2402MHz Ant1 Ref

	rum Analyzer - Swept SA							
X/RT Center F	RF 50 Ω AC req 2.402000000		SENSE:INT	AL	IGN AUTO Avg Type: l	.og-Pwr		3 PM Nov 29, 2022 RACE 1 2 3 4 5 6
Contor 1	109 2.40200000	PNO: Wide +++ IFGain:Low	Trig: Free Rur #Atten: 30 dB	ı	Avg Hold: 10	00/100		
10 dB/div	Ref Offset 2.01 dB Ref 20.00 dBm					Mk	(r1 2.402 4.	016 GHz 572 dBm
10.0			1					
			and	0				
0.00				-m				
-10.0				1				
-20.0								
		~	1	1	~			
-30.0		1	<del>%</del>		1			
-40.0							v	-
					4			
-50.0		and and			my	NWN		
-60.0	man man	r hn			b		man	man m
-60.0								Mar 1
-70.0								
Center 2. #Res BW	402000 GHz 100 kHz	#VB	W 300 kHz			Sweep		8.000 MHz s (1001 pts)
NSG					STATUS	2011/11/14/2010/00/00/01		



RT	RF	50 Ω AC		9	ENSE:INT	ALIGN AUTO		04:18:5	1 PM Nov 29, 202
enter F	req 2.3	5600000	Ph	10: Fast ↔→ Gain:Low	Trig: Free Run #Atten: 30 dB		pe: Log-Pwr Id: 100/100		RACE 12345 TYPE MWWWWW DET PNNNN
) dB/div		fset 2.01 dB <b>0.00 dBm</b>						Mkr1 2.4 4.	02 0 GH 590 dBr
0.0									1
0.0									-15.43 d
0.0									
0.0								8	
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								2	10
art 2.3	0600 GH	łz						Stop 2	40600 GH
les BW	i 100 kH	Iz		#VB۱	N 300 kHz		Swee	ep 9.600 m	
R MODE 1		X		Y	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
N 2 N 3 N	1 f 1 f		2.402 0 GHz 2.400 0 GHz	4.590					
	1 f		2.390 0 GHz 2.376 0 GHz	-56.725					
			2.070000112	-00.400	abiii				
N									
									>

#### Band Edge NVNT BLE 1M 2402MHz Ant1 Emission

#### Band Edge NVNT BLE 1M 2480MHz Ant1 Ref





RT RF 50Ω A	IC	SENSE	EINT	ALIGN AUTO			4 PM Nov 29, 20
nter Freq 2.5260000	PNO		rig: Free Run Atten: 30 dB	Avg Type: Avg Hold:		т	RACE 1 2 3 4 TYPE MWWW DET P NNN
Ref Offset 2.08 d B/div Ref 20.00 dB						Mkr1 2.4 5.	80 0 GH 117 dB
		5					
							-14.94
							in the second
a 12 0 <sup>4</sup>	. 2						
1 mouthmann	manymenter	Langther and say high states	manumum	hermatherbarrenation	marchellingen	manufapprover	amenteday
					2	2	
rt 2.47600 GHz						Stop 2	.57600 G
s BW 100 kHz		#VBW 3	00 kHz		Swee	ep 9.600 m	s (1001 p
MODE TRC SCL	× 2.480 0 GHz	Y 5.117 dBr	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
N 1 f N 1 f	2.483 5 GHz 2.500 0 GHz	-57.642 dBn -58.907 dBn	n				
N 1 f	2.487 0 GHz	-55.506 dBn					

#### Band Edge NVNT BLE 1M 2480MHz Ant1 Emission

#### Band Edge NVNT BLE 2M 2402MHz Ant1 Ref







#### Band Edge NVNT BLE 2M 2402MHz Ant1 Emission

#### Band Edge NVNT BLE 2M 2480MHz Ant1 Ref





	RF 5	io Ω AC		SENSE: IN	IT	ALIGN AUTO			8 PM Nov 29
er F	req 2.526	5000000 GHz	PNO: Fast IFGain:Low		: Free Run en: 30 dB		e: Log-Pwr d: 100/100		TYPE MWW DET P N
/div	Ref Offse Ref 20.0							Mkr1 2.4 0	79 7 C 912 d
	1								
+									-15
N	N	-							
1	Vybranash	and Normaline	Househan	man	martuber	man han All han an a	ad more allowed	mallocartation	alonous
	7600 GHz 100 kHz		#	/BW 300	) kHz		Swee	Stop 2 ep 9.600 m	.57600 s (1001
ODE T N	RC SCL f	× 2.479 7 2.483 5		912 dBm 247 dBm	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
N N	f f	2.500 0 2.498 3	GHz -59.1	24 dBm I02 dBm					

### Band Edge NVNT BLE 2M 2480MHz Ant1 Emission



### **19.5 Conducted RF Spurious Emission**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-50.12	-20	Pass
NVNT	BLE 1M	2442	Ant1	-50.07	-20	Pass
NVNT	BLE 1M	2480	Ant1	-50.15	-20	Pass
NVNT	BLE 2M	2402	Ant1	-49.24	-20	Pass
NVNT	BLE 2M	2442	Ant1	-48.28	-20	Pass
NVNT	BLE 2M	2480	Ant1	-49.22	-20	Pass

#### Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref





<b>y</b>	ectrur		lyzer - Swept SA								
RT	-	RF	50 Ω AC			SENSE:INT	AL	IGNAUTO Avg Type:		04:19:2	25 PM Nov 29, 2022
enter	Fre	ed 1	3.2650000	PI	NO: Fast ↔↔ Gain:Low	Trig: Free R #Atten: 30 d		Avg Hold: 1			
0 dB/di			Offset 2.01 dE <b>20.00 dB</b> m								.412 GH .061 dBm
10.0		_	1								
5.00		<b></b>									
10.0											
0.0											-15.49 dB
0.0						-					
10.0				9							$\wedge^2$
50.0		_	0	34	5		m	monumen	- man - man	and	summer
50.0 <b></b>	And and	-Jacobard State	wenter an inte	adore of the set of the second	manhow	and an Astronoly and	a materia				
0.0		32		c		C				2	
tart 3 Res B			(Hz	1	#VB	W 300 kHz			Swe	Stop Stop 2.530	o 26.50 GH s (1001 pts
KR MODE	E TRC			×	Y	FUNC	TION FUNC	TION WIDTH	1	UNCTION VALUE	
1 N 2 N		f f		2.412 GHz 25.706 GHz	2.061 -45.614	dBm					
3 N 4 N		f f		4.953 GHz 7.362 GHz	-56.404 -55.531	dBm					
4 N 5 N 6 7 8 9	1	f		9.639 GHz	-56.533	dBm					
7											
9											
1											
											>
3								STATUS			

#### Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission

#### Tx. Spurious NVNT BLE 1M 2442MHz Ant1 Ref





R T		RF	lyzer - Swept SA 50 Ω AC			SENSE:INT	AL	IGN AUTO		04:22:0	D PM Nov 29, 20
ente	r Fre		3.2650000	000 GHz	0: Fast 🔸	Trig: Free R #Atten: 30 d	un	Avg Type: Avg Hold: 1		т	RACE 12345 TYPE MWWW DET PNNN
dB/d	liv		Offset 2.03 dE <b>20.00 dB</b> m								.439 GH 359 dBr
			1								
		- <b>Y</b>									
		-									-15.62 0
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			()3	A.4	5	k i i i i i i i i i i i i i i i i i i i			-010020-000	-	
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0	MORANA	dur	AND								
0		8		6				1		9	
	80 M BW 1	Hz 100 k	Hz	L	#VB	W 300 kHz			Swe	Stop ep 2.530 s	26.50 GI 5 (1001 pt
	DE TRO				Y	FUNCT	TON FUNC	TION WIDTH	F	UNCTION VALUE	
N N N		f f		2.439 GHz 25.362 GHz	4.359 -45.696	dBm					
N	1	f		4.768 GHz 7.415 GHz	-55.849 -55.690						
N		f		9.665 GHz	-55.877						
N											
											>
								STATUS			

#### Tx. Spurious NVNT BLE 1M 2442MHz Ant1 Emission

#### Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref





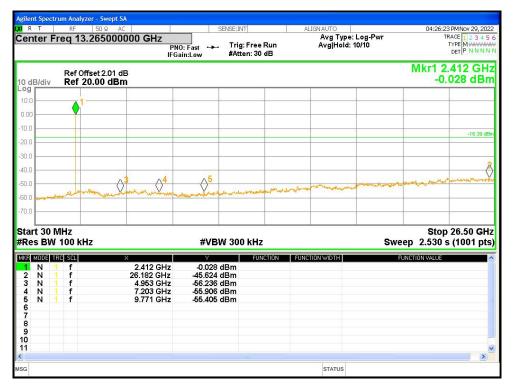
R T			RF	50 Ω	AC			9	SENSE:INT		AL	IGN AUTO			04:	23:48 PM	Nov 29, 20
ente	ər F	re		3.26500			PNO: Fast FGain:Lov		Trig: Fre #Atten: 3			Avg Tr	/pe: Log- old: 10/10			TRACI TYP	12345 MWWW TPNNN
dB/	div			Offset 2.08 20.00 dl											Mkr1		92 GH 18 dBr
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			- Y														
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			-		2				-						9		
	30 BW		lz 00 l	(Hz				#VB۱	N 300 kH	z				Swe	Si ep 2.53		6.50 GH 1001 pt
	DE	TRC			Х	0.400.011		Y		UNCTION	FUNCT	ION WIDTH		ſ	UNCTION VAL	.UE	
			f f		2	2.492 GHz 5.282 GHz	-4	3.788 5.300	dBm								
		1	f f			4.953 GHz 7.336 GHz		4.759									
Ņ			f		1	0.115 GHz		6.672									
N																	
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#### Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission

#### Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Ref







#### Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Emission

#### Tx. Spurious NVNT BLE 2M 2442MHz Ant1 Ref





RT	rum Analy RF	50 Ω AC			SENSE:INT	61	IGN AUTO		04-29-	41 PM Nov 29, 20
	1.0	3.2650000	000 GHz	IO: Fast 🔸	Trig: Free R #Atten: 30 d	un	Avg Type: Avg Hold: 1	Log-Pwr 0/10		TRACE 1 2 3 4 5 TYPE MWWW DET P N N N
dB/div		ffset 2.03 dE 20.00 dBm								2.439 GH ).510 dBi
	1	e.								
	()									
										-16.68 d
0										
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0	martine	marano	and white where the second	an ale and and the	www.and	Manageneral	at the second second			
0										
art 30 ľ es BW		Hz		#VB	W 300 kHz			Swe		p 26.50 GH s (1001 pt
N MODE T	RC SCL	>	2.439 GHz	Y 0.510	dBm	ION FUNC	TION WIDTH	F	UNCTION VALUE	
N	f		23.959 GHz	-44.965	dBm					
N	f f		4.768 GHz 7.389 GHz	-56.117 -55.079	dBm					
N	f		9.930 GHz	-56.238	dBm					
N										
										>

#### Tx. Spurious NVNT BLE 2M 2442MHz Ant1 Emission

#### Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Ref





RT	RF	50 Ω AC			SENSE:INT	AL	IGN AUTO		04:31:0	)2 PM Nov 29, 202
enter F	req 13.2	65000000	PNC	): Fast 🔸		lun IB	Avg Type:   Avg Hold: 1			TYPE MWWWW DET P NNNN
0 dB/div		et 2.08 dB 00 dBm								2.492 GH: .224 dBn
.og 10.0	1				8					
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0.0										-15.76 dB
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0.0	2	0			2 3				2	
tart 30 l Res BW	VIHz 100 kHz			#VB	W 300 kHz			Swe	Stop ep 2.530	o 26.50 GH s (1001 pts
Kr Mode T		×	492 GHz	Y 0.224	FUNC	TION FUNC	TION WIDTH	F	UNCTION VALUE	
2 N 3 N	f f	25.2	256 GHz 280 GHz	-44.987	dBm					
	f	7.3	336 GHz 356 GHz	-55.879 -56.499	dBm					
S IN		9.		-00.499	ubm					
4 N 5 N 6 7 8										
5 5 1										

### Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Emission



## **APPENDIX A: PHOTOGRAPHS OF TEST SETUP**

Reference to the test Attachment Test photos

# **APPENDIX B: PHOTOGRAPHS OF EUT**

Reference to the test report No. BLA-EMC-202209-A5501

### ----END OF REPORT-----

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