

Test Report

Report No.: MTi230926006-06E2

Date of issue: 2023-11-13

Applicant: ZhiHaiHe Marketing (ShenZhen) Co.,Ltd

Product: VTP68 Ariel/Lilac/Monet/Sakura Themed Keyboard

Model(s): VTP68

FCC ID: 2BDPP-VTP68

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

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Test Result Certification	
Applicant:	ZhiHaiHe Marketing (ShenZhen) Co.,Ltd
Address:	Rm202, 2nd Floor, Block 3, 10th Industrial Zone, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China
Manufacturer:	SHENZHEN ARBITER TECHNOLOGY CO.,LTD
Address:	Floor 2, 3 and 4, Bldg. A, Meisheng Industrial Park, Chongqing Rd., Fuhai St., Baoan Dist.,Shenzhen, Guangdong
Product description	
Product name:	VTP68 Ariel/Lilac/Monet/Sakura Themed Keyboard
Trademark:	Varmilo
Model name:	VTP68
Series Model:	N/A
Standards:	47 CFR Part 15.249
Test Method:	ANSI C63.10-2013
Date of Test	
Date of test:	2023-10-30 to 2023-11-09
Test result:	Pass

Test Engineer	:	<i>Yanice Xie</i>
		(Yanice.Xie)
Reviewed By	:	<i>Leon Chen</i>
		(Leon Chen)
Approved By	:	<i>Tom Xue</i>
		(Tom Xue)

1 General Description

1.1 Description of the EUT

Product name:	VTP68 Ariel/Lilac/Monet/Sakura Themed Keyboard
Model name:	VTP68
Series Model:	N/A
Model difference:	N/A
Electrical rating:	Input:DC 5V/ 300mA Battey:3.7V 4000mAh
Accessories:	1. Cable:USB-A to Type-C cable (2.0m) 2. Dongle*1
Hardware version:	V1.0
Software version:	V1.0
Test sample(s) number:	MTi230926006-06S1001
RF specification	
Operating frequency range:	2405-2475 MHz
Channel number:	16
Modulation type:	GFSK
Antenna(s) type:	FPC Antenna
Antenna(s) gain:	0 dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	TX-GFSK

1.2.1 Operation channel list

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2405	5	2408	9	2412	13	2419
2	2463	6	2466	10	2471	14	2475
3	2441	7	2445	11	2459	15	2453
4	2426	8	2422	12	2436	16	2439

Note: The test software provided by manufacturer is used to control EUT for working in engineering mode, that enables selectable channel, and capable of continuous transmitting mode.

Test Software: key

For power setting, refer to below table.

Bandwidth (MHz)	Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
/	2405	2441	2475

Mode	2405MHz	2441MHz	2475MHz
GFSK	3	3	3

1.3 Environmental Conditions

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

Temperature:	15°C ~ 35°C
Humidity:	20% RH ~ 75% RH
Atmospheric pressure:	98 kPa ~ 101 kPa

1.4 Description of support units

Support equipment list			
Description	Model	Serial No.	Manufacturer
/	/	/	/
Support cable list			
Description	Length (m)	From	To
/	/	/	/

1.5 Measurement uncertainty

Measurement	Uncertainty
Occupied channel bandwidth	±3 %
Radiated spurious emissions (above 1GHz)	±5.3dB
Radiated spurious emissions (9kHz~30MHz)	±4.3dB
Radiated spurious emissions (30MHz~1GHz)	±4.7dB
Temperature	±1 °C
Humidity	± 5 %

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

2 Summary of Test Result

No.	Item	Standard	Requirement	Result
1	Antenna requirement	47 CFR Part 15C	47 CFR Part 15.203	Pass
2	Occupied Bandwidth	47 CFR Part 15C	47 CFR 15.215(c)	Pass
3	Band edge emissions (Radiated)	47 CFR Part 15C	47 CFR 15.249(d)	Pass
4	Emissions in frequency bands (below 1GHz)	47 CFR Part 15C	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)	Pass
5	Emissions in frequency bands (above 1GHz)	47 CFR Part 15C	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)	Pass

3 Test Facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573
IC Registration No.:	21760
CABID:	CN0093

4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
Occupied Bandwidth						
1	Wideband Radio Communication Tester	Rohde&schwarz	CMW500	149155	2023-04-26	2024-04-25
2	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2023-04-25	2024-04-24
3	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2023-04-25	2024-04-24
4	Synthesized Sweeper	Agilent	83752A	3610A01957	2023-04-25	2024-04-24
5	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2023-04-26	2024-04-25
6	RF Control Unit	Tonscend	JS0806-1	19D8060152	2023-04-26	2024-04-25
7	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2023-05-05	2024-05-04
8	ESG Vector Signal Generator	Agilent	N5182A	MY50143762	2023-04-25	2024-04-24
9	DC Power Supply	Agilent	E3632A	MY40027695	2023-05-05	2024-05-04
Band edge emissions (Radiated) Emissions in frequency bands (above 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2023-04-26	2024-04-25
2	Double Ridged Broadband Horn Antenna	schwarabeck	BBHA 9120 D	2278	2023-05-26	2024-05-25
3	Amplifier	Agilent	8449B	3008A01120	2023-06-26	2024-06-25
4	Multi-device Controller	TuoPu	TPMDC	/	2023-05-04	2024-05-03
5	MXA signal analyzer	Agilent	N9020A	MY54440859	2023-05-05	2024-05-04
Emissions in frequency bands (below 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2023-04-26	2024-04-25
2	TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-1338	2023-06-11	2025-06-10
3	Amplifier	Hewlett-Packard	8447F	3113A06184	2023-06-26	2024-06-25
4	Multi-device Controller	TuoPu	TPMDC	/	2023-05-04	2024-05-03
5	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00066	2021/05/30	2024/05/29

5 Evaluation Results (Evaluation)

5.1 Antenna requirement

Test Requirement:	Refer to 47 CFR Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.
Description of the antenna of EUT:	The antenna of the EUT is permanently attached.
Conclusion:	The EUT complies with the requirement of FCC PART 15.203.

6 Radio Spectrum Matter Test Results (RF)

6.1 Occupied Bandwidth

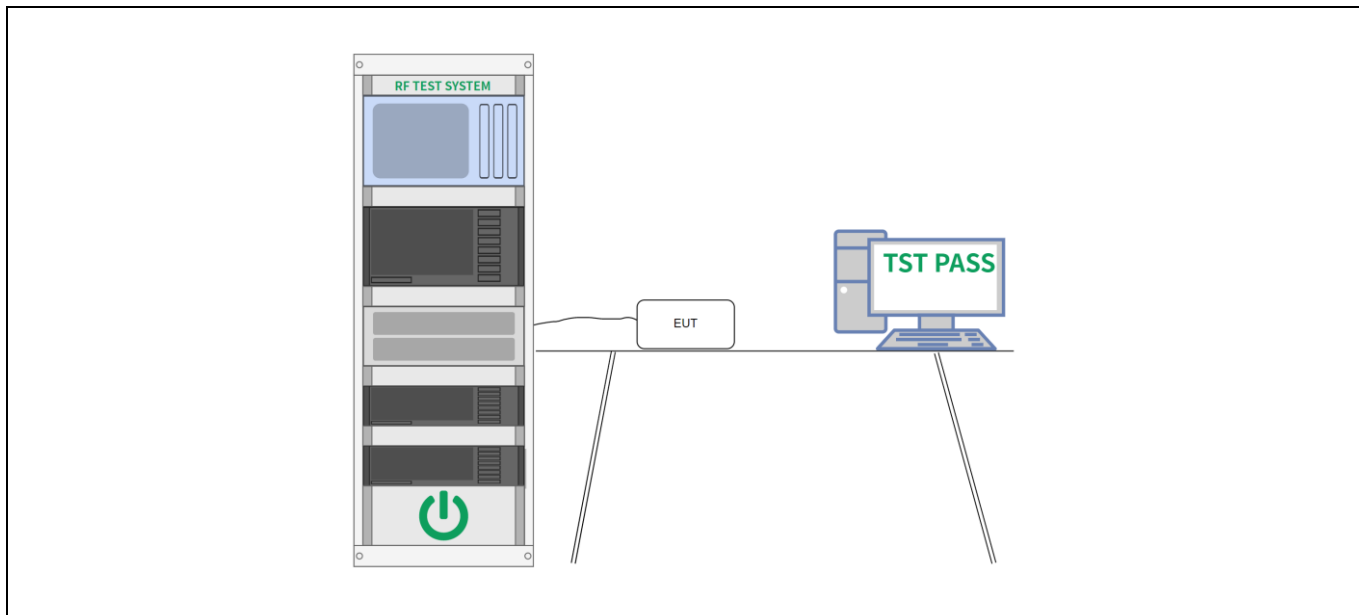
Test Requirement:	47 CFR 15.215(c)
Test Limit:	Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
Test Method:	ANSI C63.10-2013, section 6.9.2
Procedure:	a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2. d) Steps a) through c) might require iteration to adjust within the specified tolerances. e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value. f) Set detection mode to peak and trace mode to max hold. g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value). h) Determine the “-xx dB down amplitude” using $[(\text{reference value}) - xx]$. Alternatively, this calculation may be made by using the marker-delta function of the instrument. i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j). j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-xx dB down amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth. k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the

	plot(s).
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6.1.1 E.U.T. Operation:

Operating Environment:					
Temperature:	25.1 °C	Humidity:	56.3 %	Atmospheric Pressure:	100 kPa
Test mode:	Mode1				

6.1.2 Test Setup Diagram:



6.1.3 Test Data:

Please Refer to Appendix for Details.

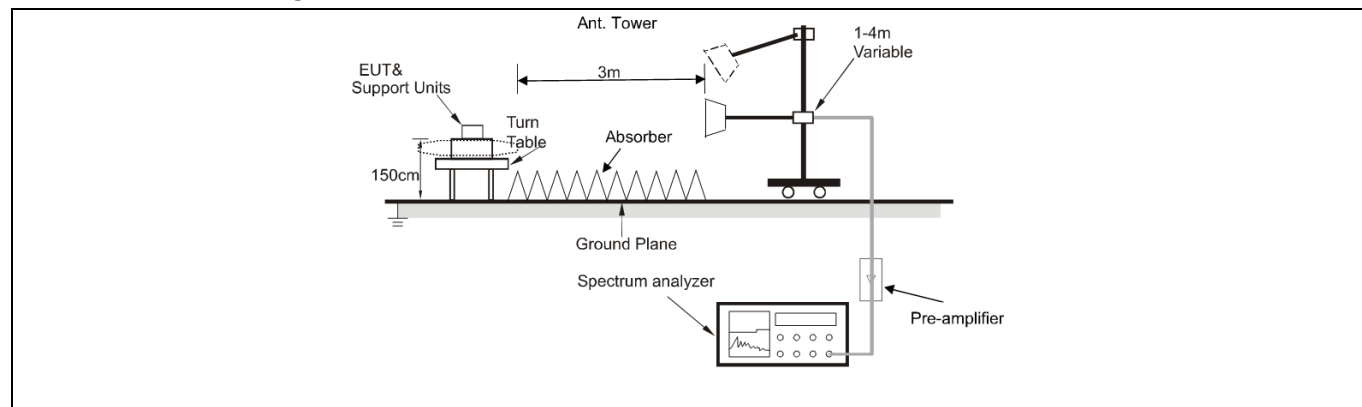
6.2 Band edge emissions (Radiated)

Test Requirement:	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.																										
Test Limit:	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation. <table><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr><tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr><tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr><tr><td>1.705-30.0</td><td>30</td><td>30</td></tr><tr><td>30-88</td><td>100 **</td><td>3</td></tr><tr><td>88-216</td><td>150 **</td><td>3</td></tr><tr><td>216-960</td><td>200 **</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.			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
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																									
Test Method:	ANSI C63.10-2013 section 6.6.4																										
Procedure:	ANSI C63.10-2013 section 6.6.4																										

6.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24.6 °C	Humidity:	58.3 %	Atmospheric Pressure:	99 kPa
Test mode:		Mode1			
Note: The amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported					

6.2.2 Test Setup Diagram:



6.2.3 Test Data:

Mode1 / Polarization: Horizontal / Band: 2.4G/ CH: L

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	2310.000	47.97	-2.66	45.31	74.00	-28.69	peak
2	2310.000	37.51	-2.66	34.85	54.00	-19.15	AVG
3	2390.000	48.91	-2.03	46.88	74.00	-27.12	peak
4	2390.000	38.03	-2.03	36.00	54.00	-18.00	AVG
5	2400.000	47.80	-1.95	45.85	74.00	-28.15	peak
6 *	2400.000	38.25	-1.95	36.30	54.00	-17.70	AVG

Mode1 / Polarization: Vertical / Band: 2.4G / CH: L

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	2310.000	47.50	-2.66	44.84	74.00	-29.16	peak
2	2310.000	37.48	-2.66	34.82	54.00	-19.18	AVG
3	2390.000	47.71	-2.03	45.68	74.00	-28.32	peak
4 *	2390.000	38.10	-2.03	36.07	54.00	-17.93	AVG
5	2400.000	48.54	-1.95	46.59	74.00	-27.41	peak
6	2400.000	37.97	-1.95	36.02	54.00	-17.98	AVG

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	47.78	-1.91	45.87	74.00	-28.13	peak
2		2483.500	37.76	-1.91	35.85	54.00	-18.15	AVG
3		2500.000	47.79	-1.80	45.99	74.00	-28.01	peak
4	*	2500.000	37.80	-1.80	36.00	54.00	-18.00	AVG

Mode1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	47.33	-1.91	45.42	74.00	-28.58	peak
2		2483.500	37.80	-1.91	35.89	54.00	-18.11	AVG
3		2500.000	47.64	-1.80	45.84	74.00	-28.16	peak
4	*	2500.000	38.00	-1.80	36.20	54.00	-17.80	AVG

6.2.4 Field strength of fundamental

Frequency	Ant. Polarization	Emission level	Limits	Detector	Result
(MHz)	H / V	dB μ V/m	dB μ V/m		
2405	H	81.23	114	PK	PASS
2405	H	78.11	94	AV	PASS
2405	V	85.68	114	PK	PASS
2405	V	82.97	94	AV	PASS

Frequency	Ant. Polarization	Emission level	Limits	Detector	Result
(MHz)	H / V	dB μ V/m	dB μ V/m		
2441	H	80.43	114	PK	PASS
2441	H	78.62	94	AV	PASS
2441	V	84.71	114	PK	PASS
2441	V	81.23	94	AV	PASS

Frequency	Ant. Polarization	Emission level	Limits	Detector	Result
(MHz)	H / V	dB μ V/m	dB μ V/m		
2475	H	82.40	114	PK	PASS
2475	H	80.05	94	AV	PASS
2475	V	86.01	114	PK	PASS
2475	V	83.18	94	AV	PASS

6.3 Emissions in frequency bands (below 1GHz)

Test Requirement:	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)																																								
Test Limit:	Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following: <table border="1"> <thead> <tr> <th>Fundamental frequency</th><th>Field strength of fundamental (millivolts/meter)</th><th>Field strength of harmonics (microvolts/meter)</th></tr> </thead> <tbody> <tr> <td>902-928 MHz</td><td>50</td><td>500</td></tr> <tr> <td>2400-2483.5 MHz</td><td>50</td><td>500</td></tr> <tr> <td>5725-5875 MHz</td><td>50</td><td>500</td></tr> <tr> <td>24.0-24.25 GHz</td><td>250</td><td>2500</td></tr> </tbody> </table> Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation. <table border="1"> <thead> <tr> <th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr> </thead> <tbody> <tr> <td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr> <tr> <td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr> <tr> <td>1.705-30.0</td><td>30</td><td>30</td></tr> <tr> <td>30-88</td><td>100 **</td><td>3</td></tr> <tr> <td>88-216</td><td>150 **</td><td>3</td></tr> <tr> <td>216-960</td><td>200 **</td><td>3</td></tr> <tr> <td>Above 960</td><td>500</td><td>3</td></tr> </tbody> </table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section 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 point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.		Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)	902-928 MHz	50	500	2400-2483.5 MHz	50	500	5725-5875 MHz	50	500	24.0-24.25 GHz	250	2500	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
Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)																																							
902-928 MHz	50	500																																							
2400-2483.5 MHz	50	500																																							
5725-5875 MHz	50	500																																							
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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																																							
Test Method:	ANSI C63.10-2013 section 6.5																																								
Procedure:	ANSI C63.10-2013 section 6.5																																								

6.3.1 E.U.T. Operation:

Operating Environment:			
Temperature:	25.6 °C	Humidity:	58.3 %
		Atmospheric Pressure:	99 kPa
Test mode:	Mode1		

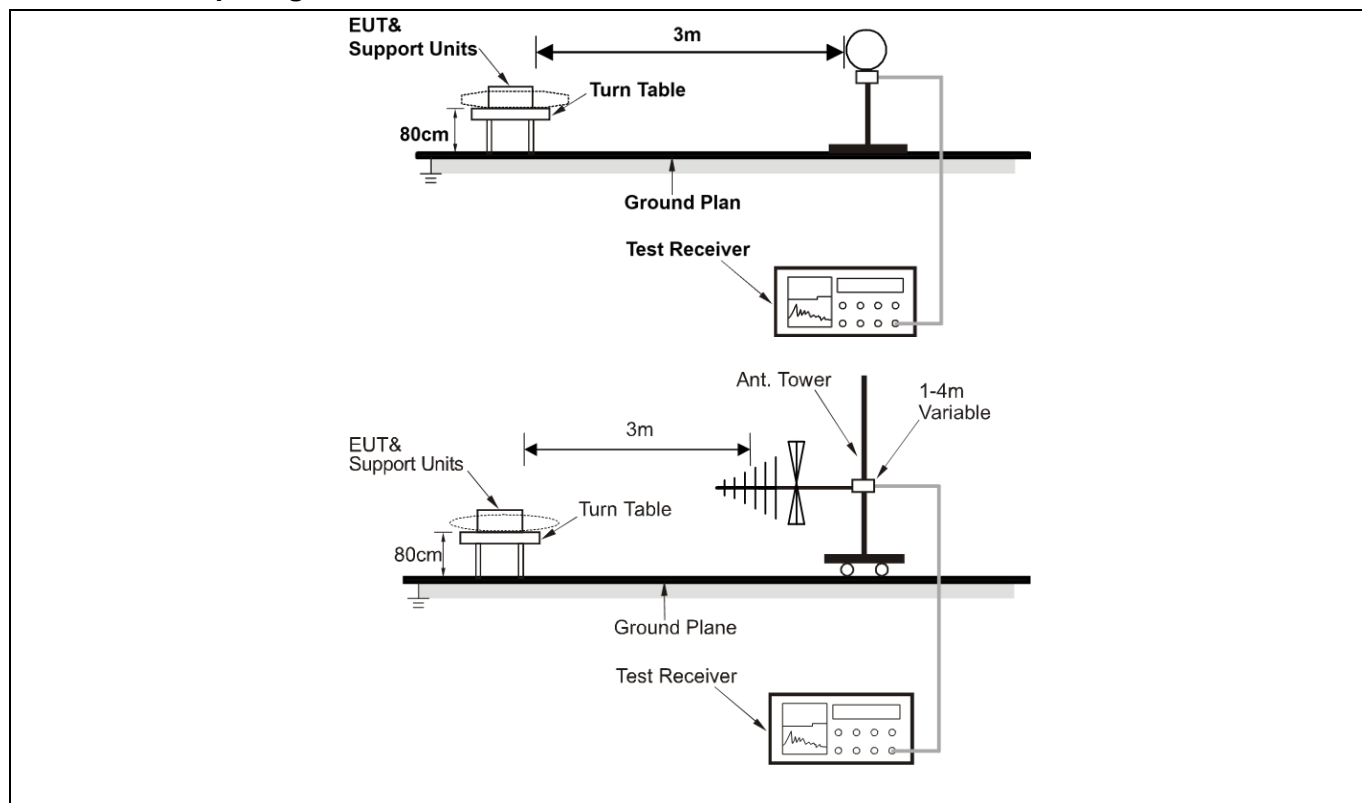
Note:

The amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported.

All modes of operation of the EUT were investigated, and only the worst-case results are reported.

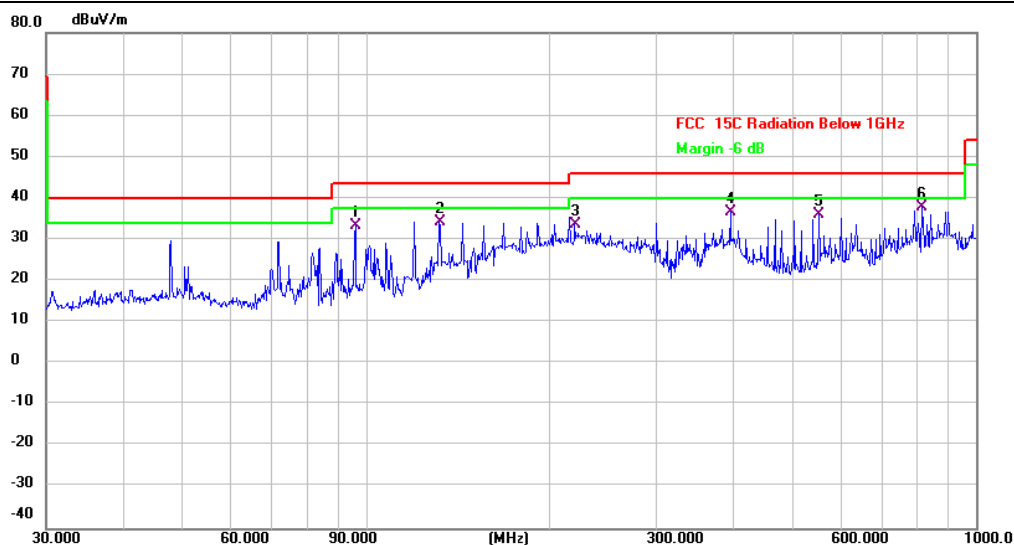
There were no emissions found below 30MHz within 20dB of the limit.

6.3.2 Test Setup Diagram:



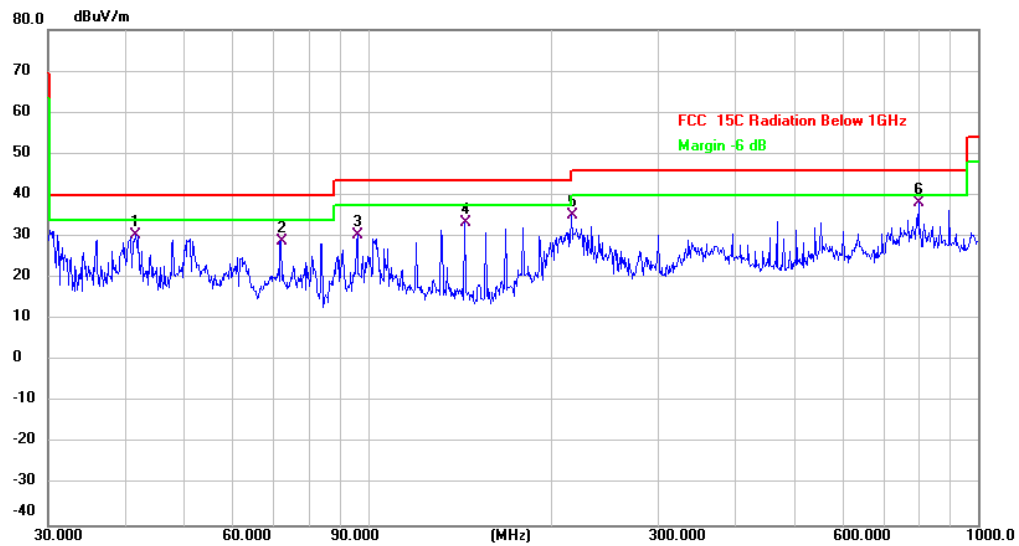
6.3.3 Test Data:

Mode1 / Polarization: Horizontal / Band: 2.4G / CH: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		96.0986	43.84	-10.55	33.29	43.50	-10.21	QP	
2		131.7577	45.97	-11.77	34.20	43.50	-9.30	QP	
3		220.6171	42.17	-8.48	33.69	46.00	-12.31	QP	
4		396.2415	41.71	-4.97	36.74	46.00	-9.26	QP	
5		552.8832	38.51	-2.49	36.02	46.00	-9.98	QP	
6	*	815.9678	37.38	0.34	37.72	46.00	-8.28	QP	

Mode1 / Polarization: Vertical / Band: 2.4G / CH: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		41.7129	38.31	-8.04	30.27	40.00	-9.73	QP	
2		72.0843	40.15	-11.27	28.88	40.00	-11.12	QP	
3		96.0986	40.80	-10.55	30.25	43.50	-13.25	QP	
4		143.8295	43.94	-10.56	33.38	43.50	-10.12	QP	
5		216.0240	44.21	-8.98	35.23	46.00	-10.77	QP	
6	*	798.9797	36.87	1.18	38.05	46.00	-7.95	QP	

6.4 Emissions in frequency bands (above 1GHz)

Test Requirement:	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)																																								
Test Limit:	Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following: <table border="1"> <thead> <tr> <th>Fundamental frequency</th><th>Field strength of fundamental (millivolts/meter)</th><th>Field strength of harmonics (microvolts/meter)</th></tr> </thead> <tbody> <tr> <td>902-928 MHz</td><td>50</td><td>500</td></tr> <tr> <td>2400-2483.5 MHz</td><td>50</td><td>500</td></tr> <tr> <td>5725-5875 MHz</td><td>50</td><td>500</td></tr> <tr> <td>24.0-24.25 GHz</td><td>250</td><td>2500</td></tr> </tbody> </table> Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation. <table border="1"> <thead> <tr> <th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr> </thead> <tbody> <tr> <td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr> <tr> <td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr> <tr> <td>1.705-30.0</td><td>30</td><td>30</td></tr> <tr> <td>30-88</td><td>100 **</td><td>3</td></tr> <tr> <td>88-216</td><td>150 **</td><td>3</td></tr> <tr> <td>216-960</td><td>200 **</td><td>3</td></tr> <tr> <td>Above 960</td><td>500</td><td>3</td></tr> </tbody> </table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section 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 point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.		Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)	902-928 MHz	50	500	2400-2483.5 MHz	50	500	5725-5875 MHz	50	500	24.0-24.25 GHz	250	2500	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
Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)																																							
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2400-2483.5 MHz	50	500																																							
5725-5875 MHz	50	500																																							
24.0-24.25 GHz	250	2500																																							
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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																																							
Test Method:	ANSI C63.10-2013 section 6.6																																								
Procedure:	ANSI C63.10-2013 section 6.6																																								

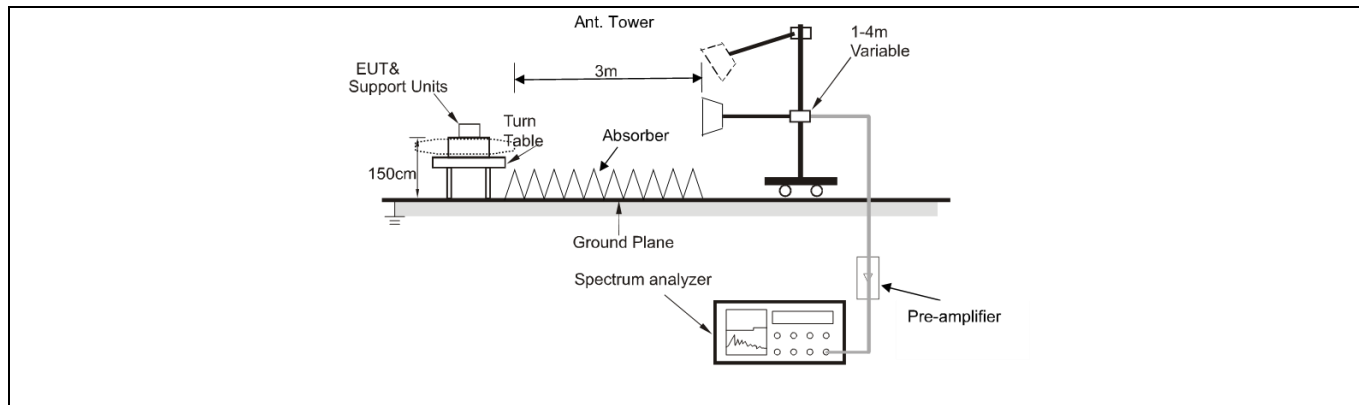
6.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.6 °C	Humidity:	58.3 %	Atmospheric Pressure:	99 kPa
Test mode:	Mode1				
Note: Test frequency are from 1GHz to 25GHz, the amplitude of spurious emissions which are					

attenuated more than 20 dB below the limits are not reported.

All modes of operation of the EUT were investigated, and only the worst-case results are reported.

6.4.2 Test Setup Diagram:



6.4.3 Test Data:

Mode1 / Polarization: Horizontal / Band: 2.4G / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4810.000	41.06	2.77	43.83	74.00	-30.17	peak
2		4810.000	34.77	2.77	37.54	54.00	-16.46	AVG
3		7215.000	41.53	9.26	50.79	74.00	-23.21	peak
4		7215.000	36.28	9.26	45.54	54.00	-8.46	AVG
5		9620.000	41.11	10.64	51.75	74.00	-22.25	peak
6	*	9620.000	35.87	10.64	46.51	54.00	-7.49	AVG

Mode1 / Polarization: Vertical / Band: 2.4G / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4810.000	42.04	2.77	44.81	74.00	-29.19	peak
2		4810.000	36.74	2.77	39.51	54.00	-14.49	AVG
3		7215.000	41.92	9.26	51.18	74.00	-22.82	peak
4	*	7215.000	37.31	9.26	46.57	54.00	-7.43	AVG
5		9620.000	41.19	10.64	51.83	74.00	-22.17	peak
6		9620.000	35.90	10.64	46.54	54.00	-7.46	AVG

Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / CH: M

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4882.000	40.71	3.07	43.78	74.00	-30.22	peak
2		4882.000	35.47	3.07	38.54	54.00	-15.46	AVG
3		7323.000	40.75	9.03	49.78	74.00	-24.22	peak
4		7323.000	36.51	9.03	45.54	54.00	-8.46	AVG
5		9764.000	40.44	12.03	52.47	74.00	-21.53	peak
6	*	9764.000	34.51	12.03	46.54	54.00	-7.46	AVG

Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / CH: M

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4882.000	40.67	3.07	43.74	74.00	-30.26	peak
2		4882.000	35.47	3.07	38.54	54.00	-15.46	AVG
3		7323.000	41.14	9.03	50.17	74.00	-23.83	peak
4	*	7323.000	37.51	9.03	46.54	54.00	-7.46	AVG
5		9764.000	39.90	12.03	51.93	74.00	-22.07	peak
6		9764.000	33.81	12.03	45.84	54.00	-8.16	AVG

Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz/ CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4950.000	40.41	3.38	43.79	74.00	-30.21	peak
2		4950.000	34.16	3.38	37.54	54.00	-16.46	AVG
3		7425.000	41.24	9.16	50.40	74.00	-23.60	peak
4		7425.000	37.38	9.16	46.54	54.00	-7.46	AVG
5		9900.000	40.37	11.80	52.17	74.00	-21.83	peak
6	*	9900.000	35.65	11.80	47.45	54.00	-6.55	AVG

Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4950.000	40.60	3.38	43.98	74.00	-30.02	peak
2		4950.000	34.16	3.38	37.54	54.00	-16.46	AVG
3		7425.000	41.11	9.16	50.27	74.00	-23.73	peak
4		7425.000	36.38	9.16	45.54	54.00	-8.46	AVG
5		9900.000	40.21	11.80	52.01	74.00	-21.99	peak
6	*	9900.000	34.77	11.80	46.57	54.00	-7.43	AVG

Photographs of the test setup

Refer to Appendix - Test Setup Photos

Photographs of the EUT

Refer to Appendix - EUT Photos

Appendix A: 20dB Emission Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	20db EBW [MHz]
SRD 2.4G	Ant1	2405	1.975
		2441	1.945
		2475	1.940

Test Graphs



----End of Report----