# TEST REPORT

Report No. .....: CHTEW21060230 Report Verification:

Project No...... SHT2105069803EW

FCC ID.....: 2AMRODCCRIO120

Applicant's name.....: iOttie, Inc

States

Test item description .....: Aivo View

Trade Mark .....iOttie

Listed Model(s) ..... -

Standard .....: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of receipt of test sample........... May 31, 2021

Date of testing...... May 31, 2021- Jun.28, 2021

Date of issue...... Jun.29, 2021

Result...... PASS

Compiled by

( Position+Printed name+Signature): File administrator Echo Wei

Supervised by

(Position+Printed name+Signature): Project Engineer Kiki Kong

Approved by

(Position+Printed name+Signature): RF Manager Hans Hu

Testing Laboratory Name .....: Shenzhen Huatongwei International Inspection Co., Ltd.

Tianliao, Gongming, Shenzhen, China

Shenzhen Huatongwei International Inspection Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Huatongwei International Inspection Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Huatongwei International Inspection Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

The test report merely correspond to the test sample.

Report No.: CHTEW21060230 Page: 2 of 42 Issued: 2021-06-29

## **Contents**

<u>1.</u>	TEST STANDARDS AND REPORT VERSION	3
1.1.	Test Standards	3
1.2.	Report version	3
	·	
<u>2.</u>	TEST DESCRIPTION	4
<u>3.</u>	SUMMARY	5
0.4		_
3.1.	Client Information	5
3.2.	Product Description	5
3.3.	Radio Specification Description	5 6
3.4.	Testing Laboratory Information	0
<u>4.</u>	TEST CONFIGURATION	7
		-
4.1.	Test frequency list	7
4.2.	Descriptions of Test mode	7
4.3.	Test mode	7
4.4.	Support unit used in test configuration and system	8
4.5.	Testing environmental condition	8
4.6.	Measurement uncertainty	8
4.7.	Equipment Used during the Test	9
<u>5.</u>	TEST CONDITIONS AND RESULTS	11
5.1.	Antenna Requirement	11
5.2.	AC Conducted Emission	12
5.3.	Peak Output Power	15
5.4.	Power Spectral Density	16
5.5.	6dB bandwidth	17
5.6.	99% Occupied Bandwidth	18
5.7.	Duty Cycle	19
5.8.	Conducted Band edge and Spurious Emission	20
5.9.	Radiated Band edge Emission	22
5.10.	Radiated Spurious Emission	26
6	TEST SETUP PHOTOS	33
<u>6.</u>	ILST SETUF FINE 103	
<u>7.</u>	EXTERANAL AND INTERNAL PHOTOS	35
8.	APPENDIX REPORT	42

Report No.: CHTEW21060230 Page: 3 of 42 Issued: 2021-06-29

## 1. TEST STANDARDS AND REPORT VERSION

### 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 C63.10:2013: American National Standard for Testing Unlicensed Wireless Devices
- KDB 558074 D01 15.247 Meas Guidance v05r02: Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating under Section 15.247 of The FCC Rules

### 1.2. Report version

Revision No.	Date of issue	Description
N/A	2021-06-29	Original

Report No.: CHTEW21060230 Page: 4 of 42 Issued: 2021-06-29

## 2. TEST DESCRIPTION

Report clause	Test Items	Standard Requirement	Result
5.1	Antenna Requirement	15.203/15.247(c)	PASS
5.2	AC Conducted Emission	15.207	PASS
5.3	Peak Output Power	15.247(b)(3)	PASS
5.4	Power Spectral Density	15.247(e)	PASS
5.5	6dB Bandwidth	15.247(a)(2)	PASS
5.6 99% Occupied Bandwidth		-	PASS <sup>*1</sup>
5.7	Duty cycle	-	PASS <sup>*1</sup>
5.8	Conducted Band Edge and Spurious Emission	15.247(d)/15.205	PASS
5.9	Radiated Band Edge Emission	15.205/15.209	PASS
5.10	Radiated Spurious Emission	15.247(d)/15.205/15.209	PASS

#### Note:

The measurement uncertainty is not included in the test result.

 <sup>\*1:</sup> No requirement on standard, only report these test data.

Report No.: CHTEW21060230 Page: 5 of 42 Issued: 2021-06-29

## 3. **SUMMARY**

### 3.1. Client Information

Applicant:	iOttie, Inc
Address:	20 West 37th Street 6th FL New York, New York 10018, United States
Manufacturer:	iOttie, Inc
Address:	20 West 37th Street 6th FL New York, New York 10018, United States
Factory:	SHENZHEN AONI ELECTRONIC CO., LTD
Address:	No.5,Bldg.,Honghui Industrial Park,2nd Liuxian Road, Baoan District,Shenzhen,China 518101

## 3.2. Product Description

Name of EUT:	Aivo View
Trade Mark:	iOttie
Model No.:	DCCRIO120
Listed Model(s):	-
Power supply:	DC 12V
Charger Information:	Model: G515 Input: 12VDC-24VDC Output: 5Va.c.,1.5A
Hardware version:	90100D0250001
Software version:	SSQ31-11.108.0.44.999

## 3.3. Radio Specification Description

Support type*2:	802.11b, 802.11g, 802.11n(HT20)
Modulation:	DSSS for 802.11b  OFDM for 802.11g/802.11n(HT20)
Operation frequency:	2412MHz~2462MHz
Channel number:	11
Channel separation:	5MHz
Antenna type:	FPC
Antenna gain:	1.5dBi

Note:

<sup>\*2:</sup> only show the RF function associated with this report.

Report No.: CHTEW21060230 Page: 6 of 42 Issued: 2021-06-29

# 3.4. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.		
Laboratory Location	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China		
Connect information:	Phone: 86-755-26715499 E-mail: cs@szhtw.com.cn http://www.szhtw.com.cn		
Qualifications	Туре	Accreditation Number	
Qualifications	FCC	762235	

Report No.: CHTEW21060230 Page: 7 of 42 Issued: 2021-06-29

## 4. TEST CONFIGURATION

### 4.1. Test frequency list

According to section 15.31(m), regards to the operating frequency range over 10 MHz, must select three channels which were tested. The Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the below blue front.

Channel	Frequency (MHz)
01	2412
02	2417
· :	· :
06	2437
· :	· :
10	2457
11	2462

### 4.2. Descriptions of Test mode

Preliminary tests were performed in different data rates, final test modes are considering the modulation and worse data rates as below table.

Modulation	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	MCS0

#### 4.3. Test mode

For RF test items

The engineering test program was provided and enabled to make EUT continuous transmit.

For AC power line conducted emissions:

The EUT was set to connect with the WLAN AP under large package sizes transmission.

For Radiated spurious emissions test item:

The engineering test program was provided and enabled to make EUT continuous transmit.

The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data Recorded in the report.

Report No.: CHTEW21060230 Page: 8 of 42 Issued: 2021-06-29

### 4.4. Support unit used in test configuration and system

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The following peripheral devices and interface cables were connected during the measurement:

Wheth	Whether support unit is used?				
✓	✓ No				
Item	Equipement	Trade Name	Model No.	FCC ID	Power cord
1					
2					

### 4.5. Testing environmental condition

Туре	Requirement	Actual
Temperature:	15~35°C	25°C
Relative Humidity:	25~75%	50%
Air Pressure:	860~1060mbar	1000mbar

### 4.6. Measurement uncertainty

Test Item	Measurement Uncertainty
AC Conducted Emission (150kHz~30MHz)	3.02 dB
Radiated Emission (30MHz~1000MHz	4.90 dB
Radiated Emissions (1GHz~25GHz)	4.96 dB
Peak Output Power	0.51 dB
Power Spectral Density	0.51 dB
Conducted Spurious Emission	0.51 dB
6dB Bandwidth	70 Hz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

Report No.: CHTEW21060230 Page: 9 of 42 Issued: 2021-06-29

## 4.7. Equipment Used during the Test

•	Conducted E	mission					
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
•	Shielded Room	Albatross projects	HTWE0114	N/A	N/A	2018/09/28	2023/09/27
•	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2020/10/19	2021/10/18
•	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2020/10/15	2021/10/14
•	Pulse Limiter	R&S	HTWE0033	ESH3-Z2	100499	2020/10/15	2021/10/14
•	RF Connection Cable	HUBER+SUHNER	HTWE0113-02	ENVIROFLE X_142	EF-NM- BNCM-2M	2020/10/15	2021/10/14
•	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

•	Radiated emi	ssion-6th test sit	te				
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
•	Semi-Anechoic Chamber	Albatross projects	HTWE0127	SAC-3m-02	C11121	2018/09/30	2021/09/29
•	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2020/10/19	2021/10/18
•	Loop Antenna	R&S	HTWE0170	HFH2-Z2	100020	2021/04/06	2022/04/05
•	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0123	VULB9163	538	2021/04/06	2022/04/05
•	Pre-Amplifer	SCHWARZBECK	HTWE0295	BBV 9742	N/A	2020/11/13	2021/11/12
•	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2021/02/26	2022/02/25
•	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX104	501184/4	2021/02/26	2022/02/25
•	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

•	Radiated em	ission-7th test s	ite				
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
•	Semi-Anechoic Chamber	Albatross projects	HTWE0122	SAC-3m-01	N/A	2018/09/27	2021/09/26
•	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2020/10/20	2021/10/19
•	Horn Antenna	SCHWARZBECK	HTWE0126	9120D	1011	2020/04/01	2023/03/31
•	Broadband Horn Antenna	SCHWARZBECK	HTWE0103	BBHA9170	BBHA9170472	2018/10/11	2021/10/11
•	Pre-amplifier	CD	HTWE0071	PAP-0102	12004	2020/11/13	2021/11/12
•	Broadband Pre- amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2021/03/05	2022/03/04
•	RF Connection Cable	HUBER+SUHNER	HTWE0120-01	6m 18GHz S Serisa	N/A	2021/02/26	2022/02/25
•	RF Connection Cable	HUBER+SUHNER	HTWE0120-02	6m 3GHz RG Serisa	N/A	2021/02/26	2022/02/25
•	RF Connection Cable	HUBER+SUHNER	HTWE0119-05	6m 3GHz RG Serisa	N/A	2021/02/26	2022/02/25
•	RF Connection Cable	HUBER+SUHNER	HTWE0120-04	6m 3GHz RG Serisa	N/A	2021/02/26	2022/02/25
•	RF Connection Cable	HUBER+SUHNER	HTWE0121-01	6m 18GHz S Serisa	N/A	2021/02/26	2022/02/25
•	Test Software	Audix	N/A	E3	N/A	N/A	N/A

Report No.: CHTEW21060230 Page: 10 of 42 Issued: 2021-06-29

•	RF Conducted Method					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
•	Signal and spectrum Analyzer	R&S	FSV40	100048	2020/10/19	2021/10/18
•	Spectrum Analyzer	Agilent	N9020A	MY50510187	2020/10/19	2021/10/18
•	Power Meter	Anritsu	ML249A	N/A	2020/10/19	2021/10/18
0	Radio communication tester	R&S	CMW500	137688-Lv	2020/10/19	2021/10/18

Report No.: CHTEW21060230 Page: 11 of 42 Issued: 2021-06-29

### 5. TEST CONDITIONS AND RESULTS

### 5.1. Antenna Requirement

### Requirement

### FCC CFR Title 47 Part 15 Subpart C Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responseble 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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

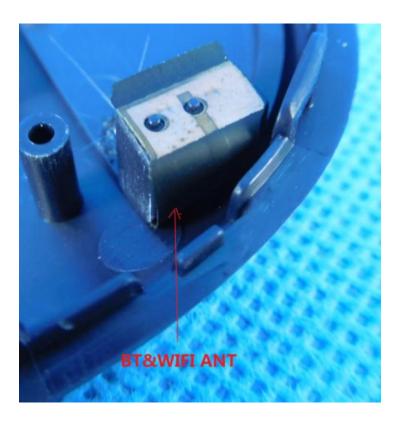
#### FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

### **TEST RESULT**

$oxed{oxed}$ Passed	☐ Not Applicable
---------------------	------------------

The antenna type is a FPC antenna, the directional gain of the antenna less than 6 dBi, please refer to the below antenna photo.



Report No.: CHTEW21060230 Page: 12 of 42 Issued: 2021-06-29

#### 5.2. AC Conducted Emission

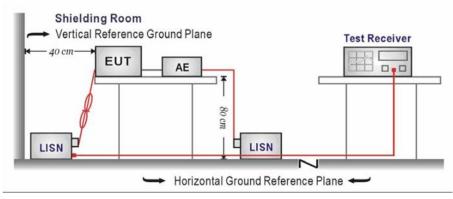
#### LIMIT

### FCC CFR Title 47 Part 15 Subpart C Section 15.207

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

<sup>\*</sup> Decreases with the logarithm of the frequency.

#### **TEST CONFIGURATION**



#### **TEST PROCEDURE**

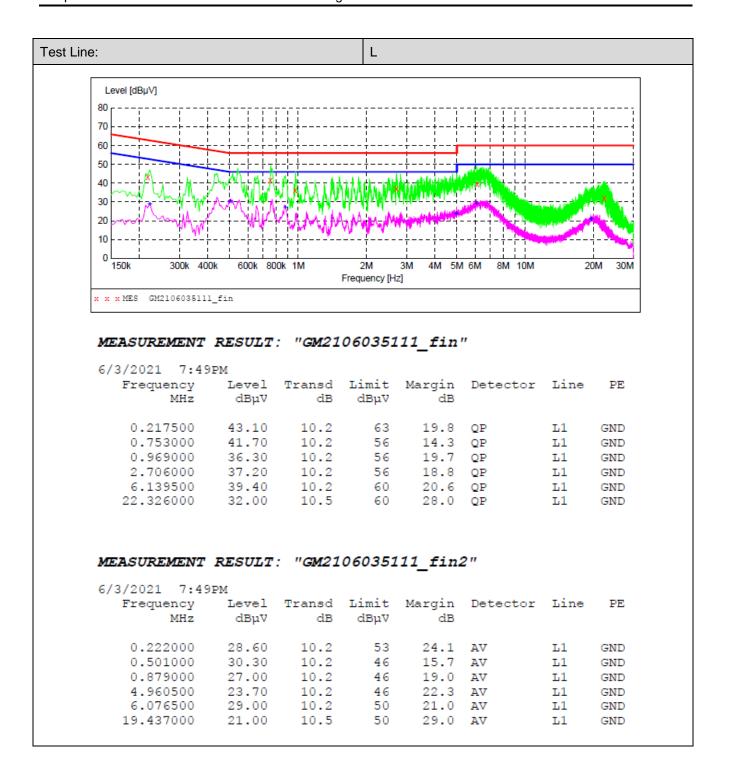
- 1. The EUT was setup according to ANSI C63.10 requirements.
- The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
- The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.
- 4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
- 5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
- 6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
- 7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
- 8. During the above scans, the emissions were maximized by cable manipulation.

### TEST MODE:

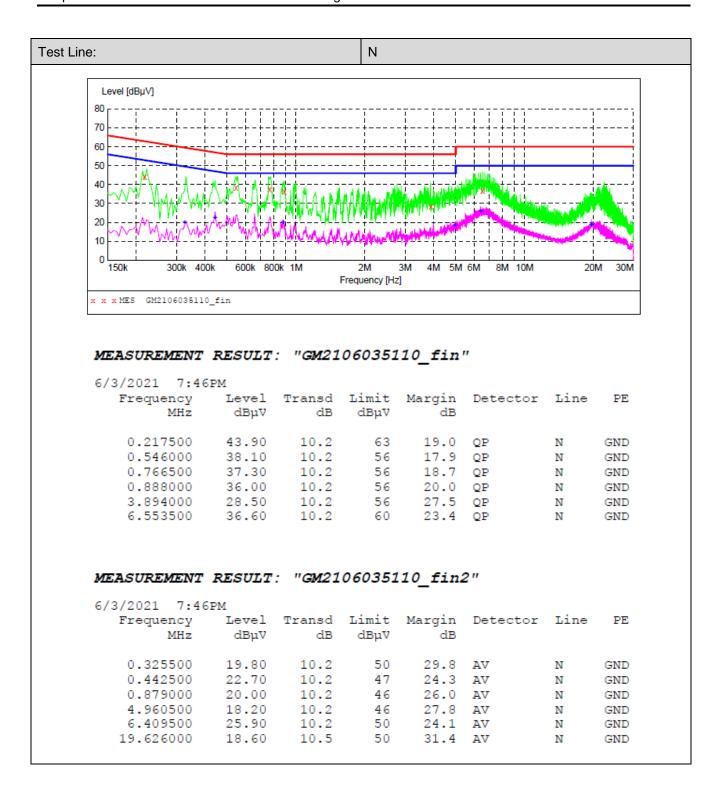
Please refer to the clause 4.2

#### **TEST RESULT**

 Report No.: CHTEW21060230 Page: 13 of 42 Issued: 2021-06-29



Report No.: CHTEW21060230 Page: 14 of 42 Issued: 2021-06-29



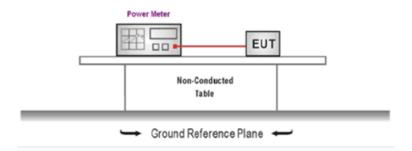
Report No.: CHTEW21060230 Page: 15 of 42 Issued: 2021-06-29

### 5.3. Peak Output Power

#### LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3): 30dBm

### **TEST CONFIGURATION**



### **TEST PROCEDURE**

- 1. The EUT was tested according to ANSI C63.10 and KDB 558074 D01 requirements.
- 2. The maximum peak conducted output power may be measured using a broadband peak RF power meter.
- 3. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.
- 4. Record the measurement data.

#### **TEST MODE:**

Please refer to the clause 4.2

### **TEST RESULT**

### **TEST Data**

Please refer to appendix A on the appendix report

Report No.: CHTEW21060230 Page: 16 of 42 Issued: 2021-06-29

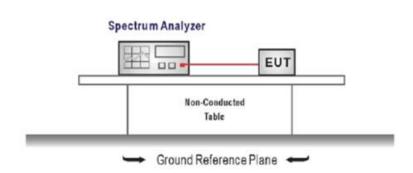
### 5.4. Power Spectral Density

#### LIMIT

### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e):

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

#### **TEST CONFIGURATION**



#### **TEST PROCEDURE**

- 1. Connect the antenna port(s) to the spectrum analyzer input,
- Configure the spectrum analyzer as shown below:

Center frequency=DTS channel center frequency

Span =1.5 times the DTS bandwidth

RBW = 3 kHz ≤ RBW ≤ 100 kHz, VBW ≥ 3 × RBW

Sweep time = auto couple

Detector = peak

Trace mode = max hold

- 3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.
- 4. Use the peak marker function to determine the maximum amplitude level within the RBW.
- 5. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

#### TEST MODE:

Please refer to the clause 4.2

### **TEST RESULT**

#### **TEST Data**

Please refer to appendix B on the appendix report

Report No.: CHTEW21060230 Page: 17 of 42 Issued: 2021-06-29

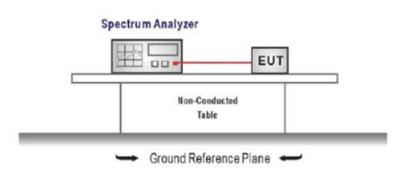
#### 5.5. 6dB bandwidth

#### LIMIT

### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2):

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

#### **TEST CONFIGURATION**



#### **TEST PROCEDURE**

- 1. Connect the antenna port(s) to the spectrum analyzer input.
- Configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).

Center Frequency =DTS channel center frequency

Span=2 x DTS bandwidth

RBW = 100 kHz, VBW ≥ 3 × RBW

Sweep time= auto couple

Detector = Peak

Trace mode = max hold

- 3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
- 4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission, and record the pertinent measurements.

### TEST MODE:

Please refer to the clause 4.2

### TEST RESULT

#### **TEST Data**

Please refer to appendix C on the appendix report

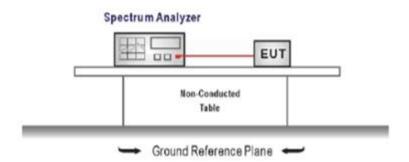
Report No.: CHTEW21060230 Page: 18 of 42 Issued: 2021-06-29

### 5.6. 99% Occupied Bandwidth

#### **LIMIT**

N/A

#### **TEST CONFIGURATION**



### **TEST PROCEDURE**

- 1. Connect the antenna port(s) to the spectrum analyzer input.
- Configure the spectrum analyzer as shown below (enter all losses between the transmitter output andthe spectrum analyzer).

Center Frequency =channel center frequency

Span≥1.5 x OBW

RBW = 1%~5%OBW

VBW ≥ 3 × RBW

Sweep time= auto couple

Detector = Peak

Trace mode = max hold

Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.

### **TEST MODE:**

Please refer to the clause 4.2

### **TEST RESULT**

#### **TEST Data**

Please refer to appendix D on the appendix report

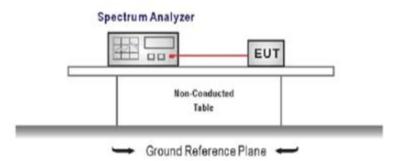
Report No.: CHTEW21060230 Page: 19 of 42 Issued: 2021-06-29

### 5.7. Duty Cycle

### **LIMIT**

N/A

### **TEST CONFIGURATION**



#### **TEST PROCEDURE**

- The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting and enable the EUT transmit continuously
- 3. Use the following spectrum analyzer settings:
  - Span=zero span, Frequency=centered channel, RBW= 1 MHz, VBW  $\geq$  RBW
  - Sweep=as necessary to capture the entire dwell time,
  - Detector function = peak, Trigger mode
- 4. Measure and record the duty cycle data

#### **TEST MODE:**

Please refer to the clause 4.2

#### **TEST Data**

Please refer to appendix E on the appendix report

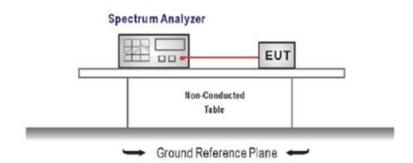
Report No.: CHTEW21060230 Page: 20 of 42 Issued: 2021-06-29

## 5.8. Conducted Band edge and Spurious Emission

#### **LIMIT**

**FCC CFR Title 47 Part 15 Subpart C Section15.247 (d):**In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

#### **TEST CONFIGURATION**



#### **TEST PROCEDURE**

- 1. Connect the antenna port(s) to the spectrum analyzer input.
- 2. Establish a reference level by using the following procedure

Center frequency=DTS channel center frequency

The span = 1.5 times the DTS bandwidth.

RBW = 100 kHz, VBW  $\geq$  3 x RBW

Detector = peak, Sweep time = auto couple, Trace mode = max hold

Allow trace to fully stabilize

Use the peak marker function to determine the maximum PSD level

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

3. Emission level measurement

Set the center frequency and span to encompass frequency range to be measured

RBW = 100 kHz, VBW ≥ 3 x RBW

Detector = peak, Sweep time = auto couple, Trace mode = max hold

Allow trace to fully stabilize

Use the peak marker function to determine the maximum amplitude level.

- 4. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
- 5. Ensure that the amplitude of all unwanted emission outside of the authorized frequency band excluding restricted frequency bands) are attenuated by at least the minimum requirements specified (at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz). Report the three highest emission relative to the limit.

#### **TEST MODE:**

Please refer to the clause 4.2

Report No.: CHTEW21060230 Page: 21 of 42 Issued: 2021-06-29

 $oxed{oxed}$  Passed  $oxed{oxed}$  Not Applicable

## TEST Data

Please refer to appendix F on the appendix report

Report No.: CHTEW21060230 Page: 22 of 42 Issued: 2021-06-29

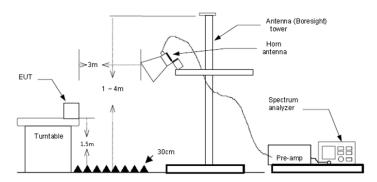
### 5.9. Radiated Band edge Emission

#### LIMIT

### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d):

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, Radiated Emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the Radiated Emissions limits specified in §15.209(a) (see §15.205(c)).

#### **TEST CONFIGURATION**



#### **TEST PROCEDURE**

- 1. The EUT was setup and tested according to ANSI C63.10.
- 2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
- 4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna. In order to find themaximum emission, all of the interface cables were manipulated according to ANSI C63.10 on radiated measurement.
- Use the following spectrum analyzer settings:
  - a) Span shall wide enough to fully capture the emission being measured
  - b) Set RBW=100kHz for <1GHz, VBW=3\*RBW, Sweep time=auto, Detector=peak, Trace=max hold
  - c) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement

For average measurement:

- VBW=10Hz, When duty cycle is no less than 98 percent
- VBW≥1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation, so refer to this clasue 5.6 duty cycle.

### **TEST MODE:**

Please refer to the clause 4.2

### **TEST RESULT**

□ Passed □ Not Applicable

#### Note:

- Level= Reading + Factor; Factor = Antenna Factor + Cable Loss- Preamp Factor
- 2) Over Limit = Level- Limit
- Average measurement was not performed if peak level is lower than average limit(54 dBuV/m).

Report No.: CHTEW21060230 Page: 23 of 42 Issued: 2021-06-29

Туре		802.11	b	Test ch	nannel	CH	l01	P	olarity	Horizontal
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Pream	p Aux dB	Level dBuV/m	Limit Ove	
	1	2310.00	31.33	27.96	7.30	37.56	20.00	49.03	74.00 -24.9	7 Peak
	2	2390.01	30.60	27.72	7.72	37.45	20.00	48.59	74.00 -25.4	1 Peak
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m	Limit Over dBuV/m limit	Remark
	1	2310.00	25.68	27.96	7.30	37.56	20.00	43.38	54.00 -10.62	Average
	2	2390.01	24.46	27.72	7.72	37.45	20.00	42.45	54.00 -11.55	Average
Туре		802.11	b	Test ch	nannel	CH	101	Р	olarity	Vertical
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m	Limit Over	
	1	2310.00	32.41	27.96	7.30	37.56	20.00	50.11	74.00 -23.89	Peak
	2	2390.01	31.16	27.72	7.72	37.45	20.00	49.15	74.00 -24.85	Peak
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m	Limit Over dBuV/m limit	Remark
	1	2310.00	25.41	27.96		37.56	20.00		54.00 -10.89	Average
		2390.01	25.14	27.72		37.45	20.00		54.00 -10.87	Average

Туре		802.1	1b	Test c	hannel	CH	111	P	olarity	Horizontal
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Pream dB	p Aux dB	Level dBuV/m	Limit Ove dBuV/m lim	
	1	2483.49	32.70	27.43	7.80	37.26	20.00	50.67	74.00 -23.3	3 Peak
	2	2500.00	31.90	27.40	7.81	37.26	20.00	49.85	74.00 -24.1	5 Peak
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m	Limit Over dBuV/m limit	Remark
	1	2483.49	24.93	27.43	7.80	37.26	20.00	42.90	54.00 -11.10	Average
	2	2500.00	23.84	27.40	7.81	37.26	20.00	41.79	54.00 -12.21	Average
Туре		802.1	1b	Test c	hannel	CH	111	Р	olarity	Vertical
	Mark	Frequency	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m	Limit Ove	
	1	2483.49	32.53	27.43	7.80	37.26	20.00	50.50	74.00 -23.5	7. The second se
	2	2500.00	33.82	27.40	7.81	37.26	20.00	51.77	74.00 -22.2	
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m	Limit Over dBuV/m limit	Remark
	1	2483.49	25.71	27.43		37.26	20.00		54.00 -10.32	Average
	_	2500.00	24.66	27.40		37.26	20.00		54.00 -11.39	Average

Report No.: CHTEW21060230 Page: 24 of 42 Issued: 2021-06-29

Туре		802.1	1g	Test c	hannel	CH	101	F	olarity		Horizontal
	Mark		Reading	Antenna	Cable			Level	Limit		Remark
		MHz	dBuV/m	dB	dB	dB	dB	dBuV/m	dBuV/r		
	1	2310.00	31.77	27.96	7.30	37.56	20.00	49.47	74.00	-24.53	Peak
	2	2385.90	41.78	27.73	7.70	37.46	20.00	59.75	74.00	-14.25	Peak
	3	2390.01	32.45	27.72	7.72	37.45	20.00	50.44	74.00	-23.56	Peak
	Mark		Reading	Antenna	Cable	Preamp	Aux	Level	Limit	Over	Remark
		MHz	dBuV/m	dB	dB	dB	dB	dBuV/m	dBuV/m	limit	
	1	2310.00	25.81	27.96	7.30	37.56	20.00	43.51	54.00	-10.49	Average
	2	2390.01	24.54	27.72	7.72	37.45	20.00	42.53	54.00	-11.47	Average
Туре		802.1	1g	Test c	hannel	CH	101	F	Polarity		Vertical
	Mark	The second secon	Reading	Antenna	Cable	and the same of th		Level	Limit		Remark
		MHz	dBuV/m	dB	dB	dB	dB	dBuV/m	dBuV/r	n limit	
	1	2310.00	32.20	27.96	7.30	37.56	20.00	49.90	74.00	-24.10	Peak
	2	2388.28	38.40	27.72	7.71	37.45	20.00	56.38	74.00	-17.62	Peak
	3	2390.01	32.60	27.72	7.72	37.45	20.00	50.59	74.00	-23.41	Peak
	Mark	Frequency	Reading	Antenna	Cable	Preamp	Aux	Level	Limit	Over	Remark
		MHz	dBuV/m	dB	dB	dB	dB	dBuV/m	dBuV/m	limit	
	1	2310.00	25.16	27.96	7.30	37.56	20.00	42.86	54.00	-11.14	Average
	2	2390.01	24.41	27.72	7.72	37.45	20.00	42.40	54.00	-11.60	Average

Туре		802.11	Ig	Test cl	nannel	CH	111	Р	olarity		Horizontal
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux	Level dBuV/m	Limit dBuV/m	Over limit	Remark
	1	2483.49	36.98	27.43	7.80	37.26	20.00	54.95	74.00	-19.05	Peak
	2	2491.25	40.33	27.42	7.81	37.26	20.00	58.30	74.00	-15.70	Peak
	3	2500.00	31.42	27.40	7.81	37.26	20.00	49.37	74.00	-24.63	Peak
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
	1	2483.49	25.14	27.43	7.80	37.26	20.00	43.11	54.00	-10.89	Average
	2	2500.00	23.80	27.40	7.81	37.26	20.00	41.75	54.00	-12.25	Average
Туре		802.11	Ig	Test cl	nannel	CH	111	Р	olarity		Vertical
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Pream;	Aux dB	Level dBuV/m	Limit dBuV/		
	1	2483.49	32.82	27.43	7.80	37.26	20.00	50.79	74.00	-23.21	Peak
	2	2488.23	36.80	27.42	7.81	37.26	20.00	54.77	74.00	-19.23	Peak
	3	2500.00	31.35	27.40	7.81	37.26	20.00	49.30	74.00	-24.70	Peak
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux	Level dBuV/m	Limit dBuV/m	Over limit	Remark
	1	2483.49	26.40	27.43	7.80	37.26	20.00	44.37	54.00	-9.63	Average
	2	2500.00	24.96	27.40	7.81	37.26	20.00	42 91	54.00	-11.09	Average

Report No.: CHTEW21060230 Page: 25 of 42 Issued: 2021-06-29

Туре		802.1	1n(HT20)	Test c	hannel	CH	101	P	olarity		Horizontal
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m		Over limit	Remark
	1	2310.00	30.85	27.96	7.30	37.56	20.00	48.55	74.00 -2	5.45	Peak
	2	2390.01	37.66	27.72	7.72	37.45	20.00	55.65	74.00 -1	8.35	Peak
	Mark	Frequency	Reading	Antenna	Cable	Preamp	Aux	Level	Limit O	ver	Remark
		MHz	dBuV/m	dB	dB	dB	dB	dBuV/m	dBuV/m li	imit	
	1	2310.00	24.36	27.96	7.30	37.56	20.00	42.06	54.00 -11.	.94	Average
	2	2390.01	24.27	27.72	7.72	37.45	20.00	42.26	54.00 -11.	.74	Average
Гуре		802.1	1n(HT20)	Test c	hannel	CH	101	P	olarity		Vertical
	Mark	Frequency	Reading	Antenna	Cable	Pream	p Aux	Level	Limit	0ver	Remark
		MHz	dBuV/m	dB	dB	dB	dB	dBuV/m	dBuV/m	limi	t
	1	2310.00	30.86	27.96	7.30	37.56	20.00	48.56	74.00 -	25.44	Peak
	2	2389.90	39.47	27.72	7.72	37.45	20.00	57.46	74.00 -	16.54	Peak
	3	2390.01	32.47	27.72	7.72	37.45	20.00	50.46	74.00 -	23.54	Peak
	Mark	,	_	Antenna	Cable	Preamp	Aux	Level		/er	Remark
		MHz	dBuV/m	dB	dB	dB	dB	dBuV/m		imit	
	1	2310.00		27.96			20.00		54.00 -11.		Average
	2	2390.01	24.72	27.72	7.72	37.45	20.00	42.71	54.00 -11.	. 29	Average

Туре		802.1	1n(HT20)	Test cl	hannel	CH	111	P	olarity	Horizontal
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Pream dB	p Aux dB	Level dBuV/m	Limit Over	ZREWING SAN
	1	2483.49	35.52	27.43	7.80	37.26	20.00	53.49	74.00 -20.5	1 Peak
	2	2487.07	37.45	27.43	7.80	37.26	20.00	55.42	74.00 -18.58	8 Peak
	3	2500.00	33.74	27.40	7.81	37.26	20.00	51.69	74.00 -22.3	1 Peak
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m	Limit Over	Remark
	1	2483.49					20.00	43.63		Average
		2500.00					20.00	42.00		Average
Туре		000.4	1 ~ /LITOO\	Toot of	hannel	CF	111	Ь	olarity	Vertical
Type		802.1	1n(HT20)	Test C	name	Ci	111		Olarity	Vertical
I ype	Mark	1127	Reading dBuV/m	Antenna dB	300 March 201	0.770   1.1	57.1	Level dBuV/m	Limit Over	Remark
Type	Mark 1	Frequency	Reading	Antenna	Cable	Pream	p Aux	Level	Limit Over	Remark it
Type		Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Pream dB	p Aux dB	Level dBuV/m	Limit Over dBuV/m limi	Remark it B Peak
Type	1	Frequency MHz 2483.49	Reading dBuV/m 32.55	Antenna dB 27.43	Cable dB 7.80	Pream dB 37.26	p Aux dB 20.00	Level dBuV/m 50.52	Limit Over dBuV/m limi 74.00 -23.48	Remark it Peak
Type	1 2	Frequency MHz 2483.49 2485.08	Reading dBuV/m 32.55 37.73	Antenna dB 27.43 27.43	Cable dB 7.80 7.80	Pream dB 37.26 37.26	p Aux dB 20.00 20.00 20.00	Level dBuV/m 50.52 55.70	Limit Over dBuV/m limi 74.00 -23.48 74.00 -18.30	Remark it Peak Peak
Туре	1 2 3	Frequency MHz 2483.49 2485.08 2500.00 Frequency	Reading dBuV/m 32.55 37.73 31.82 Reading	Antenna dB 27.43 27.43 27.40 Antenna	Cable dB 7.80 7.80 7.81 Cable dB	Pream dB 37.26 37.26 37.26	p Aux dB 20.00 20.00 20.00	Level dBuV/m 50.52 55.70 49.77 Level dBuV/m	Limit Over dBuV/m limi 74.00 -23.48 74.00 -18.30 74.00 -24.23 Limit Over	Remark it 3 Peak 9 Peak 9 Peak

Report No.: CHTEW21060230 Page: 26 of 42 Issued: 2021-06-29

## 5.10. Radiated Spurious Emission

#### LIMIT

### FCC CFR Title 47 Part 15 Subpart C Section 15.209

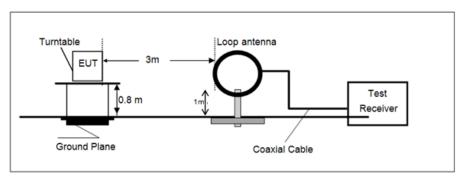
Frequency	Limit (dBuV/m)	Value
0.009 MHz ~0.49 MHz	2400/F(kHz) @300m	Quasi-peak
0.49 MHz ~ 1.705 MHz	24000/F(kHz) @30m	Quasi-peak
1.705 MHz ~30 MHz	30 @30m	Quasi-peak

Note: Limit dBuV/m @3m = Limit dBuV/m @300m + 40\*log(300/3) = Limit dBuV/m @300m +80, Limit dBuV/m @3m = Limit dBuV/m @30m +40\*log(30/3) = Limit dBuV/m @30m + 40.

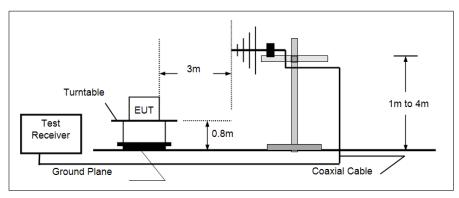
Frequency	Limit (dBuV/m @3m)	Value
30MHz~88MHz	40.00	Quasi-peak
88MHz~216MHz	43.50	Quasi-peak
216MHz~960MHz	46.00	Quasi-peak
960MHz~1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
Above TGHZ	74.00	Peak

### **TEST CONFIGURATION**

#### → 9 kHz ~ 30 MHz

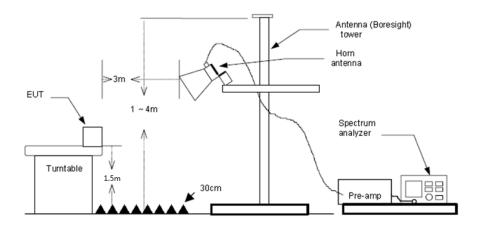


### > 30 MHz ~ 1 GHz



Above 1 GHz

Report No.: CHTEW21060230 Page: 27 of 42 Issued: 2021-06-29



#### **TEST PROCEDURE**

- The EUT was setup and tested according to ANSI C63.10.
- 2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
- 4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
- 5. Set to the maximum power setting and enable the EUT transmit continuously.
- Use the following spectrum analyzer settings
  - a) Span shall wide enough to fully capture the emission being measured;
  - b) Below 1 GHz:

RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;

If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

c) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement

For average measurement:

- VBW=10Hz, When duty cycle is no less than 98 percent
- VBW≥1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation, so refer to this clasue 5.6 duty cycle.

#### TEST MODE:

Please refer to the clause 4.2

#### **TEST RESULT**

#### Note:

- 1) Level= Reading + Factor/Transd; Factor/Transd = Antenna Factor+ Cable Loss- Preamp Factor
- 2) Over Limit = Level- Limit
- 3) Average measurement was not performed if peak level is lower than average limit(54 dBuV/m) for above 1GHz.

Report No.: CHTEW21060230 Page: 28 of 42 Issued: 2021-06-29

### TEST DATA FOR 9 kHz ~ 30 MHz

The EUT was pre-scanned this frequency band, found the radiated level 20dB lower than the limit, so don't show data on this report.

### TEST DATA FOR 30 MHz ~ 1000 MHz

Have pre-scan all test channel, found CH06 of 802.11B which it was worst case, so only show the worst case's data on this report.

Report No.: CHTEW21060230 Page: 29 of 42 Issued: 2021-06-29

#### Polarization: Horizontal Level [dBµV/m] 80 70 60 50 40 30 20 10 30M 40M 50M 60M 70M 100M 200M 300M 400M 500M 600M 800M Frequency [Hz] x x x MES GM2106046042 red MEASUREMENT RESULT: "GM2106046042 red" 6/4/2021 2:10PM Level Transd Limit Margin Det. Height Azimuth Polarization Frequency dB MHz dBµV/m dB dBµV/m deg 45.520000 19.30 -8.9 20.7 QP 300.0 40.0 18.00 HORIZONTAL 16.7 QP 21.4 QP 23.30 -14.0 22.10 -13.8 72.680000 300.0 355.00 HORIZONTAL -14.040.0 174.00 HORIZONTAL 154.160000 43.5 100.0 191.020000 23.40 -10.9 43.5 20.1 QP 300.0 332.00 HORIZONTAL 18.8 QP 10.1 QP 544.100000 27.20 -0.8 46.0 100.0 114.00 HORIZONTAL 930.160000 35.90 7.5 46.0 300.0 272.00 HORIZONTAL Vertical Polarization: Level [dBµV/m] 70 60 50 40 30 20 10 30M 40M 50M 60M 70M 100M 200M 300M 400M 500M 600M 800M 1G Frequency [Hz] x x x MES GM2106046043\_red MEASUREMENT RESULT: "GM2106046043 red"

Level Transd Limit Margin Det. Height Azimuth Polarization

cm

100.0

100.0

100.0

100.0

100.0

deg

100.0 186.00 VERTICAL

52.00

237.00

15.00

77.00

67.00 VERTICAL

dB

4.4 QP

8.8 QP 3.8 QP

21.6 QP 19.2 QP

10.9 QP

dBµV/m

31.20

36.20

21.90

26.80

35.10

35.60 -12.4

-8.9

-14.0

-11.4

-0.3

6.6

dB dBµV/m

40.0

40.0

40.0

43.5

46.0

46.0

6/4/2021 2:12PM

MHz

Frequency

30.000000

45.520000

72.680000

187.140000

555.740000

871.960000

VERTICAL

VERTICAL

VERTICAL

VERTICAL

Report No.: CHTEW21060230 Page: 30 of 42 Issued: 2021-06-29

## TEST DATA FOR 1 GHz ~ 25 GHz

Mark   Frequency   Reading   Antenna   Cable   Preamp   Aux   Level   Limit   Over   Remark   Hard   GBuV/m   dB   dB   dB   dB   dB   dB   GB   GB
1 1773.13
2 3176.16
3
Type
Type
Mark   Frequency   Reading   Antenna   Cable   Preamp   Aux   Level   Limit   Over   Remark   dB   dB   dB   dB   dB   dB   dB   d
Minimax
1   1219.64   35.32   25.72   5.16   36.62   0.00   29.58   74.00   -44.42   Peak   2   3672.11   33.19   29.40   9.88   37.03   0.00   35.44   74.00   -38.56   Peak   35718.40   30.98   31.90   12.44   34.88   0.00   40.44   74.00   -33.56   Peak   4   8615.13   31.27   37.43   14.95   35.28   0.00   48.37   74.00   -25.63   Peak   74.00   -25.76   Peak   74.00   -26.55   Peak   74.00   Peak   Pe
2   3672.11   33.19   29.40   9.88   37.03   0.00   35.44   74.00   -38.56   Peak   35718.40   30.98   31.90   12.44   34.88   0.00   40.44   74.00   -33.56   Peak   4   8615.13   31.27   37.43   14.95   35.28   0.00   48.37   74.00   -25.63   Peak   Type
3   5718.40   30.98   31.90   12.44   34.88   0.00   40.44   74.00   -33.56   Peak   74.00   -25.63   Peak
Type 802.11b Test channel CH06 Polarity Horizontal    Mark   Frequency   Reading   Antenna   Cable   Preamp   Aux   Boundary   Antenna   Cable   Preamp   Aux   Choo   Antenna   Cable   Preamp   Aux   Choo   Antenna   Cable   Preamp   Aux   Cable   Preamp   Pr
Type 802.11b Test channel CH06 Polarity Horizontal    Mark   Frequency   Reading   Antenna   Cable   Preamp   Aux   Level   Limit   Over   Remark
Mark   Frequency   Reading   Antenna   Cable   Preamp   Aux   Level   Limit   Over   Remark
MHz
MHz
1 1232.12 34.37 25.79 5.20 36.57 0.00 28.79 74.00 -45.21 Peak 2 3516.59 31.74 29.17 9.60 36.68 0.00 33.83 74.00 -40.17 Peak 3 5151.68 30.18 31.99 11.47 35.44 0.00 38.20 74.00 -35.80 Peak 4 8042.90 30.08 37.19 14.28 33.31 0.00 48.24 74.00 -25.76 Peak  Type 802.11b Test channel CH06 Polarity Vertical  Mark Frequency Reading Antenna Cable Preamp Aux Level Limit Over Remark 1 1313.08 33.38 26.08 5.44 36.33 0.00 28.57 74.00 -45.43 Peak 2 3607.26 31.67 29.40 10.08 36.96 0.00 34.19 74.00 -39.81 Peak 3 5338.58 30.66 31.48 12.05 35.41 0.00 38.78 74.00 -35.22 Peak 4 8022.46 29.33 37.14 14.29 33.31 0.00 47.45 74.00 -26.55 Peak  Type 802.11b Test channel CH11 Polarity Horizontal  Mark Frequency Reading Antenna Cable Preamp Aux Level Limit Over Remark GBUV/m GB
2 3516.59 31.74 29.17 9.60 36.68 0.00 33.83 74.00 -40.17 Peak 3 5151.68 30.18 31.99 11.47 35.44 0.00 38.20 74.00 -35.80 Peak 4 8042.90 30.08 37.19 14.28 33.31 0.00 48.24 74.00 -25.76 Peak  Type 802.11b Test channel CH06 Polarity Vertical  Mark Frequency Reading Antenna Cable Preamp Aux Level Limit Over Remark MHz dBuV/m dB dB dB dB dB dBuV/m dBuV/m limit 1 1313.08 33.38 26.08 5.44 36.33 0.00 28.57 74.00 -45.43 Peak 2 3607.26 31.67 29.40 10.08 36.96 0.00 34.19 74.00 -39.81 Peak 3 5338.58 30.66 31.48 12.05 35.41 0.00 38.78 74.00 -35.22 Peak 4 8022.46 29.33 37.14 14.29 33.31 0.00 47.45 74.00 -26.55 Peak  Type 802.11b Test channel CH11 Polarity Horizontal  Mark Frequency Reading Antenna Cable Preamp Aux Level Limit Over Remark dB
3   5151.68   30.18   31.99   11.47   35.44   0.00   38.20   74.00   -35.80   Peak   4   8042.90   30.08   37.19   14.28   33.31   0.00   48.24   74.00   -25.76   Peak
Type 802.11b Test channel CH06 Polarity Vertical    Mark Frequency MHz dBuV/m dB
Mark Frequency   Reading   Antenna   Cable   Preamp   Aux   Level   Limit   Over   Remark
MHz
MHz
1 1313.08 33.38 26.08 5.44 36.33 0.00 28.57 74.00 -45.43 Peak 2 3607.26 31.67 29.40 10.08 36.96 0.00 34.19 74.00 -39.81 Peak 3 5338.58 30.66 31.48 12.05 35.41 0.00 38.78 74.00 -35.22 Peak 4 8022.46 29.33 37.14 14.29 33.31 0.00 47.45 74.00 -26.55 Peak  Type 802.11b Test channel CH11 Polarity Horizontal  Mark Frequency Reading Antenna Cable Preamp Aux dB
2 3607.26 31.67 29.40 10.08 36.96 0.00 34.19 74.00 -39.81 Peak 3 5338.58 30.66 31.48 12.05 35.41 0.00 38.78 74.00 -35.22 Peak 4 8022.46 29.33 37.14 14.29 33.31 0.00 47.45 74.00 -26.55 Peak  Type 802.11b Test channel CH11 Polarity Horizontal  Mark Frequency Reading Antenna Cable Preamp Aux dB
3 5338.58 30.66 31.48 12.05 35.41 0.00 38.78 74.00 -35.22 Peak 4 8022.46 29.33 37.14 14.29 33.31 0.00 47.45 74.00 -26.55 Peak  Type 802.11b Test channel CH11 Polarity Horizontal  Mark Frequency Reading Antenna Cable Preamp Aux dB
4         8022.46         29.33         37.14         14.29         33.31         0.00         47.45         74.00         -26.55         Peak           Type         802.11b         Test channel         CH11         Polarity         Horizontal           Mark         Frequency MHz         Reading Antenna GB B B B B B B B B B B B B B B B B B B
Mark Frequency Reading Antenna Cable Preamp Aux Level Limit Over Remark MHz dBuV/m dB dB dB dB dBuV/m dBuV/m limit
MHz dBuV/m dB dB dB dBuV/m dBuV/m limit
MHz dBuV/m dB dB dB dBuV/m dBuV/m limit
1 1343.51 33.71 26.26 5.47 36.41 0.00 29.03 74.00 -44.97 Peak
2 3728.63 32.19 29.46 9.80 37.12 0.00 34.33 74.00 -39.67 Peak
3 5244.30 31.20 31.43 11.73 35.34 0.00 39.02 74.00 -34.98 Peak
4 7900.86 30.09 36.80 14.60 33.33 0.00 48.16 74.00 -25.84 Peak
4 /300.00 30.03 30.00 14.00 33.33 0.00 40.10 /4.00 123.04 Feak
Type 802.11b Test channel CH11 Polarity Vertical
Mark Frequency Reading Antenna Cable Preamp Aux Level Limit Over Remark
MHz dBuV/m dB dB dB dBuV/m dBuV/m limit
MHz dBuV/m dB dB dB dB dBuV/m dBuV/m limit 1 1280.07 33.94 25.96 5.36 36.37 0.00 28.89 74.00 -45.11 Peak
1 1280.07 33.94 25.96 5.36 36.37 0.00 28.89 74.00 -45.11 Peak

Report No.: CHTEW21060230 Page: 31 of 42 Issued: 2021-06-29

Type		802.11	Ig	Test c	hannel	CHO	)1		Polarity		Horizontal
	Mark F	Frequency	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux	Level		Over limi	
	1 12	283.34	34.62	25.97	5.37	36.36	0.00	29.60	74.00	-44.40	
		112.72	42.47	27.65	7.78	37.37	0.00	40.53	74.00	-33.47	
		517.41	31.06	31.90	12.46	35.04	0.00	40.38	74.00	-33.62	
		125.22	30.61	37.10	14.36	33.36	0.00	48.71	74.00	-25.29	
	- 0.	25.22	30.01	37.10	14.50	33.30	0.00	40.71	74.00	-23.29	reak
Туре		802.11	Ig	Test c	hannel	CHO	)1		Polarity		Vertical
	Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux	Level dBuV/r	Limit n dBuV/m	Over limit	Remark
	1 4	004.08	34.86	29.91	10.18	36.34	0.00	38.61		-35.39	Peak
		996.69	36.66	31.87	11.57	35.24	0.00	44.86		-29.14	Peak
		702.28	31.14	36.40	14.72	33.15	0.00	49.11		-24.89	Peak
	3 6	762.20	31.14	30.40	14.72	22.42	0.00	49.11	74.00	-24.09	reak
Туре		802.11	Ig	Test c	hannel	CHO	)6		Polarity		Horizontal
	Mark H	Frequency	Reading	Antenna	Cable	Preamp	Aux	Level	Limit	Over	Remark
		MHz	dBuV/m	dB	dB	dB	dB	dBuV/m	dBuV/m	limit	
	1 1	235.26	36.49	25.81	5.21	36.56	0.00	30.95	74.00	-43.05	Peak
	2 4	724.56	30.45	31.40	11.22	35.63	0.00	37.44	74.00	-36.56	Peak
	3 59	910.80	29.92	32.32	12.61	35.05	0.00	39.80	74.00	-34.20	Peak
	4 98	884.60	31.43	39.50	15.38	36.87	0.00	49.44	74.00	-24.56	Peak
Туре		802.11	lg	Test c	hannel	CHO	)6		Polarity		Vertical
	Mark	Frequency	Reading	Antenna	Cable	Preamp	Aux	Level	Limit	Over	Remark
	14/12/04/05		dBuV/m	dB	dB	dB	dB	dBuV/			
		PIT Z	abuv/m						m upuv/m	1 1 1 1 1 1 1	T
	1 1	MHz 289.89						1000			
		289.89	35.06	25.98	5.39	36.33	0.00	30.10	74.00	-43.90	Peak
	2 3	289.89 607.26	35.06 33.49	25.98 29.40	5.39 10.08	36.33 36.96	0.00	30.10 36.01	74.00 74.00	-43.90 -37.99	Peak Peak
	2 3 3 4	289.89	35.06	25.98	5.39	36.33	0.00	30.10	74.00	-43.90	Peak Peak Peak
Type	2 3 3 4	289.89 607.26 908.44 042.90	35.06 33.49 32.29 30.86	25.98 29.40 31.42 37.19	5.39 10.08 11.51 14.28	36.33 36.96 35.22 33.31	0.00 0.00 0.00 0.00	30.10 36.01 40.00	74.00 74.00 74.00 74.00	-43.90 -37.99 -34.00	Peak Peak Peak Peak
Туре	2 3 3 4	289.89 607.26 908.44	35.06 33.49 32.29 30.86	25.98 29.40 31.42 37.19	5.39 10.08 11.51	36.33 36.96 35.22 33.31 CH1	0.00 0.00 0.00 0.00	30.10 36.01 40.00	74.00 74.00 74.00	-43.90 -37.99 -34.00	Peak Peak Peak
Гуре	2 3 3 4 4 8	289.89 607.26 908.44 042.90	35.06 33.49 32.29 30.86	25.98 29.40 31.42 37.19 Test c	5.39 10.08 11.51 14.28 hannel	36.33 36.96 35.22 33.31 CH1	0.00 0.00 0.00 0.00	30.10 36.01 40.00 49.02	74.00 74.00 74.00 74.00 74.00 Polarity	-43.90 -37.99 -34.00 -24.98	Peak Peak Peak Peak Peak  Horizontal
Гуре	2 3 3 4 4 8	289.89 607.26 908.44 042.90	35.06 33.49 32.29 30.86	25.98 29.40 31.42 37.19	5.39 10.08 11.51 14.28 hannel	36.33 36.96 35.22 33.31 CH1 Preamp	0.00 0.00 0.00 0.00	30.10 36.01 40.00 49.02	74.00 74.00 74.00 74.00 74.00 Polarity	-43.90 -37.99 -34.00 -24.98	Peak Peak Peak Peak Peak  Horizontal
Гуре	2 3 4 4 8 Mark	289.89 607.26 908.44 042.90 802.11	35.06 33.49 32.29 30.86	25.98 29.40 31.42 37.19 Test c	5.39 10.08 11.51 14.28 hannel	36.33 36.96 35.22 33.31 CH1	0.00 0.00 0.00 0.00	30.10 36.01 40.00 49.02	74.00 74.00 74.00 74.00 74.00 Polarity	-43.90 -37.99 -34.00 -24.98	Peak Peak Peak Peak Peak  Horizontal
Гуре	2 3 4 4 8 Mark 1 1:	289.89 607.26 908.44 042.90 802.11 Frequency	35.06 33.49 32.29 30.86	25.98 29.40 31.42 37.19 Test C	5.39 10.08 11.51 14.28 hannel	36.33 36.96 35.22 33.31 CH1 Preamp	0.00 0.00 0.00 0.00	30.10 36.01 40.00 49.02 Level	74.00 74.00 74.00 74.00 Polarity Limit n dBuV/m	-43.90 -37.99 -34.00 -24.98 Over limit	Peak Peak Peak Peak Peak Remark
Гуре	2 3 4 4 8 Mark 1 1 1 2 3 3 1	289.89 607.26 908.44 042.90 802.11 Frequency MHz 289.89	35.06 33.49 32.29 30.86 Ig Reading dBuV/m 34.66	25.98 29.40 31.42 37.19 Test C	5.39 10.08 11.51 14.28 hannel Cable dB 5.39	36.33 36.96 35.22 33.31 CH1 Preamp dB 36.33	0.00 0.00 0.00 0.00	30.10 36.01 40.00 49.02 Level dBuV/r 29.70	74.00 74.00 74.00 74.00 Polarity Limit n dBuV/m 74.00	-43.90 -37.99 -34.00 -24.98 Over limit -44.30	Peak Peak Peak Peak  Horizontal  Remark Peak
Туре	2 3 4 4 8 Mark 1 1 1 2 3 3 5 5 5	289.89 607.26 908.44 042.90 802.11 Frequency MHz 289.89 507.65	35.06 33.49 32.29 30.86 Ig Reading dBuV/m 34.66 32.93	25.98 29.40 31.42 37.19 Test C	5.39 10.08 11.51 14.28 hannel Cable dB 5.39 9.55	36.33 36.96 35.22 33.31 CH1 Preamp dB 36.33 36.64	0.00 0.00 0.00 0.00 1 Aux dB 0.00 0.00	30.10 36.01 40.00 49.02 Level dBuV/r 29.70 34.97	74.00 74.00 74.00 74.00 Polarity Limit n dBuV/m 74.00 74.00 74.00	-43.90 -37.99 -34.00 -24.98 Over limit -44.30 -39.03	Peak Peak Peak Peak  Horizontal  Remark Peak Peak Peak
Туре	2 3 4 4 8 Mark 1 1 1 2 3 3 5 5 5	289.89 607.26 908.44 042.90 802.11 Frequency MHz 289.89 507.65 703.86	35.06 33.49 32.29 30.86 Ig Reading dBuV/m 34.66 32.93 30.24 30.21	25.98 29.40 31.42 37.19 Test c Antenna dB 25.98 29.13 31.90 36.43	5.39 10.08 11.51 14.28 hannel Cable dB 5.39 9.55 12.47	36.33 36.96 35.22 33.31 CH1 Preamp dB 36.33 36.64 34.90	0.00 0.00 0.00 0.00 1 Aux dB 0.00 0.00 0.00	30.10 36.01 40.00 49.02 Level dBuV/r 29.70 34.97 39.71	74.00 74.00 74.00 74.00 Polarity Limit n dBuV/m 74.00 74.00 74.00	-43.90 -37.99 -34.00 -24.98 Over limit -44.30 -39.03 -34.29	Peak Peak Peak Peak  Horizontal  Remark Peak Peak Peak Peak
	2 3 4 4 8 Mark 1 1: 2 3: 3 5: 4 7:	289.89 607.26 908.44 042.90 802.11 Frequency MHz 289.89 507.65 703.86 585.53	35.06 33.49 32.29 30.86 Ig Reading dBuV/m 34.66 32.93 30.24 30.21	25.98 29.40 31.42 37.19 Test c Antenna dB 25.98 29.13 31.90 36.43	5.39 10.08 11.51 14.28 hannel Cable dB 5.39 9.55 12.47 14.59 hannel	36.33 36.96 35.22 33.31 CH1  Preamp dB 36.33 36.64 34.90 33.30  CH1  Preamp	0.00 0.00 0.00 0.00 1 Aux dB 0.00 0.00 0.00	30.10 36.01 40.00 49.02 Level dBuV/r 29.70 34.97 39.71 47.93	74.00 74.00 74.00 74.00 Polarity  Limit dBuV/m 74.00 74.00 74.00 74.00 Polarity Limit	-43.90 -37.99 -34.00 -24.98 Over limit -44.30 -39.03 -34.29 -26.07	Peak Peak Peak Peak Peak  Horizontal  Remark  Peak Peak Peak Peak Peak Peak Peak Pe
	2 3 4 4 8 Mark 1 1: 2 3: 3 5: 4 7:	289.89 607.26 908.44 042.90 802.11 Frequency MHz 289.89 507.65 703.86 585.53	35.06 33.49 32.29 30.86 Ig Reading dBuV/m 34.66 32.93 30.24 30.21	25.98 29.40 31.42 37.19 Test c Antenna dB 25.98 29.13 31.90 36.43 Test c	5.39 10.08 11.51 14.28 hannel Cable dB 5.39 9.55 12.47 14.59 hannel	36.33 36.96 35.22 33.31 CH1  Preamp dB 36.33 36.64 34.90 33.30  CH1	0.00 0.00 0.00 0.00 1 Aux dB 0.00 0.00 0.00	30.10 36.01 40.00 49.02 Level dBuV/r 29.70 34.97 39.71 47.93	74.00 74.00 74.00 74.00 Polarity  Limit dBuV/m 74.00 74.00 74.00 74.00 Polarity Limit	-43.90 -37.99 -34.00 -24.98 Over limit -44.30 -39.03 -34.29 -26.07	Peak Peak Peak Peak Peak  Horizontal  Remark  Peak Peak Peak Peak Peak Peak Peak Pe
	2 3 4 4 8 Mark 1 1: 2 3: 3 5: 4 7:	289.89 607.26 908.44 042.90 802.11 Frequency MHz 289.89 507.65 703.86 585.53 802.11	35.06 33.49 32.29 30.86 Ig Reading dBuV/m 34.66 32.93 30.24 30.21 Ig	25.98 29.40 31.42 37.19 Test c Antenna dB 25.98 29.13 31.90 36.43 Test c	5.39 10.08 11.51 14.28 hannel Cable dB 5.39 9.55 12.47 14.59 hannel	36.33 36.96 35.22 33.31 CH1  Preamp dB 36.33 36.64 34.90 33.30  CH1  Preamp	0.00 0.00 0.00 0.00 1 Aux dB 0.00 0.00 0.00	30.10 36.01 40.00 49.02 Level dBuV/r 29.70 34.97 39.71 47.93	74.00 74.00 74.00 74.00 Polarity  Limit dBuV/m 74.00 74.00 74.00 74.00 Polarity Limit	-43.90 -37.99 -34.00 -24.98 Over limit -44.30 -39.03 -34.29 -26.07	Peak Peak Peak Peak Peak  Horizontal  Remark  Peak Peak Peak Peak Peak Peak Peak Pe
	2 3 4 4 8 Mark 1 1: 2 3: 3 5: 4 7: Mark 1 1: 12	289.89 607.26 908.44 042.90 802.11 Frequency MHz 289.89 507.65 703.86 585.53 802.11	35.06 33.49 32.29 30.86 Ig Reading dBuV/m 34.66 32.93 30.24 30.21 Ig Reading dBuV/m	25.98 29.40 31.42 37.19 Test c Antenna dB 25.98 29.13 31.90 36.43 Test c	5.39 10.08 11.51 14.28 hannel Cable dB 5.39 9.55 12.47 14.59 hannel Cable dB 5.18	36.33 36.96 35.22 33.31 CH1  Preamp dB 36.33 36.64 34.90 33.30  CH1  Preamp dB	0.00 0.00 0.00 0.00 1 Aux dB 0.00 0.00 0.00	30.10 36.01 40.00 49.02 Level dBuV/r 29.70 34.97 39.71 47.93	74.00 74.00 74.00 74.00 Polarity  Limit dBuV/m 74.00 74.00 74.00 74.00 Polarity  Limit dBuV/m	-43.90 -37.99 -34.00 -24.98 Over limit -44.30 -39.03 -34.29 -26.07	Peak Peak Peak Peak Peak  Horizontal  Remark  Peak Peak Peak Peak Peak Peak Peak Pe
	2 3 4 4 8 Mark 1 1: 2 3: 3 5: 4 7: Mark 1 1: 2 3: 3 6: 4 7: 4 7: 4 7: 4 7: 4 7: 4 7: 4 7: 4	289.89 607.26 908.44 042.90 802.11 Frequency MHz 289.89 507.65 703.86 585.53 802.11	35.06 33.49 32.29 30.86 Ig Reading dBuV/m 34.66 32.93 30.24 30.21 Ig Reading dBuV/m 34.85	25.98 29.40 31.42 37.19 Test c Antenna dB 25.98 29.13 31.90 36.43 Test c Antenna dB 25.76	5.39 10.08 11.51 14.28 hannel Cable dB 5.39 9.55 12.47 14.59 hannel Cable dB 5.18	36.33 36.96 35.22 33.31 CH1  Preamp dB 36.33 36.64 34.90 33.30  CH1  Preamp dB 36.60 37.02	0.00 0.00 0.00 0.00 1 Aux dB 0.00 0.00 0.00	30.10 36.01 40.00 49.02 Level dBuV/r 29.70 34.97 39.71 47.93 Level dBuV/r 29.19	74.00 74.00 74.00 74.00 Polarity  Limit dBuV/m 74.00 74.00 74.00 74.00 Polarity  Limit dBuV/m 74.00	-43.90 -37.99 -34.00 -24.98 Over limit -44.30 -39.03 -34.29 -26.07 Over limit -44.81	Peak Peak Peak Peak Peak  Horizontal  Remark Peak Peak Peak Peak Peak Peak Peak Pea

Report No.: CHTEW21060230 Page: 32 of 42 Issued: 2021-06-29

Туре			802.11	In(HT20)	Test c	hannel	CHO	)1		Polarity	Horizontal
	Mark		quency Hz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/m	Limit Ove	
	1	1182	.94	35.61	25.53	5.07	36.67	0.00	29.54	74.00 -44.4	46 Peak
	2	3993	.90	34.16	29.90	10.17	36.37	0.00	37.86	74.00 -36.1	14 Peak
	3	5631	.73	31.73	31.90	12.46	35.02	0.00	41.07	74.00 -32.9	
	4	7663	.17	30.98	36.33	14.71	33.16	0.00	48.86	74.00 -25.1	14 Peak
Туре			802.11	In(HT20)	Test c	hannel	CHO	)1		Polarity	Vertical
	Mark		quency Hz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Aux dB	Level dBuV/		ver Remark mit
	1	1216	.53	35.38	25.70	5.15	36.62	0.00	29.61	74.00 -44.	39 Peak
	2	4688	.62	31.21	31.35	11.09	35.81	0.00	37.84	74.00 -36.	16 Peak
	3	6078	.64	29.51	32.56	12.88	34.96	0.00	39.99	74.00 -34.	01 Peak
	4	7961	.43	30.09	36.95	14.41	33.32	0.00	48.13	74.00 -25.	87 Peak
Туре			802.11	In(HT20)	Test c	hannel	CHO	)6		Polarity	Horizontal
	Mark		quency	_	Antenna			Aux	Level	Limit Ove	
			Hz	dBuV/m	dB	dB	dB	dB	dBuV/n		
	1	1293		35.38	25.99		36.32	0.00	30.45	74.00 -43.5	
	2	3993		33.32	29.90		36.37	0.00	37.02	74.00 -36.9	
	3	5660		30.20	31.90	12.47	34.98	0.00	39.59	74.00 -34.4	
	4	7981	.72	30.14	37.03	14.35	33.31	0.00	48.21	74.00 -25.7	79 Peak
Туре			802.11	In(HT20)	Test c	hannel	CHO	)6		Polarity	Vertical
	Mark		quency		Antenna				Level		ver Remark
			Hz	dBuV/m	dB	dB	dB	dB	dBuV/		imit
	1	1316		34.38	26.10	5.44	36.34	0.00	29.58	74.00 -44	
	2	3815		32.52	29.66	9.86	37.00	0.00	35.04	74.00 -38	
	3	5325		32.92	31.45	12.03	35.41	0.00	40.99	74.00 -33	
	4	9710	.03	32.14	39.60	15.19	36.53	0.00	50.40	74.00 -23	.60 Peak
Туре			802.11	In(HT20)	Test c	hannel	CH1	11		Polarity	Horizontal
	Mark	Fre	quency	_	Antenna		Preamp	Aux	Level		ver Remark
			Hz	dBuV/m	dB	dΒ	dB	dB	dBuV/		imit
	1	1182		35.90	25.53	5.07	36.67	0.00	29.83	74.00 -44	
	2	4170	.53	31.49	30.04	10.22	36.25	0.00	35.50	74.00 -38	.50 Peak
	3	6267	.19	30.13	32.93	13.32	34.58	0.00	41.80	74.00 -32	
	4	9204	.60	30.97	38.82	15.11	35.95	0.00	48.95	74.00 -25	.05 Peak
					<b>—</b> .	hannel	CH1	11		Polarity	Vertical
Гуре			802.11	In(HT20)	l est c						
Гуре	Mark		quency	Reading	Antenna	Cable	Preamp		Level		er Remark
Гуре		M	quency Hz	Reading dBuV/m	Antenna dB	Cable dB	dB	dB	dBuV/r	n dBuV/m li	mit
Гуре	1	M 1156	quency Hz .15	Reading dBuV/m 35.41	Antenna dB 25.43	Cable dB 5.04	dB 36.75	dB 0.00	dBuV/r 29.13	n dBuV/m li 74.00 -44.	mit 87 Peak
Гуре	1 2	M 1156 3690	quency Hz .15 .85	Reading dBuV/m 35.41 34.61	Antenna dB 25.43 29.40	Cable dB 5.04 9.82	dB 36.75 37.04	dB 0.00 0.00	dBuV/r 29.13 36.79	n dBuV/m li 74.00 -44. 74.00 -37.	mit 87 Peak 21 Peak
Гуре	1	M 1156	quency Hz .15 .85	Reading dBuV/m 35.41	Antenna dB 25.43	Cable dB 5.04	dB 36.75 37.04 35.30	dB 0.00	dBuV/r 29.13 36.79 38.87	n dBuV/m li 74.00 -44.	mit 87 Peak 21 Peak 13 Peak

Report No.: CHTEW21060230 Page: 33 of 42 Issued: 2021-06-29

# 6. TEST SETUP PHOTOS

Radiated Emission







Report No.: CHTEW21060230 Page: 34 of 42 Issued: 2021-06-29



### AC Conducted Emission

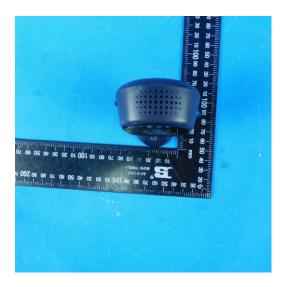


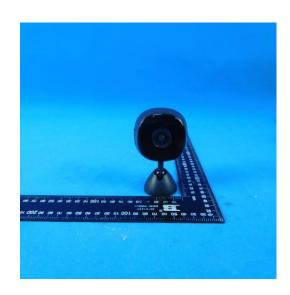
Report No.: CHTEW21060230 Page: 35 of 42 Issued: 2021-06-29

# 7. EXTERANAL AND INTERNAL PHOTOS

### **External Photos**



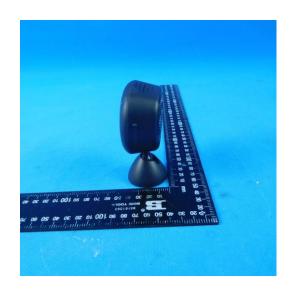




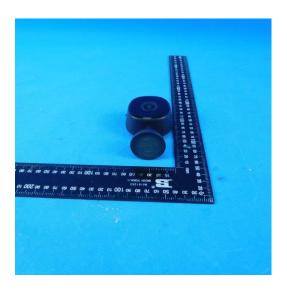
Report No.: CHTEW21060230 Page: 36 of 42 Issued: 2021-06-29

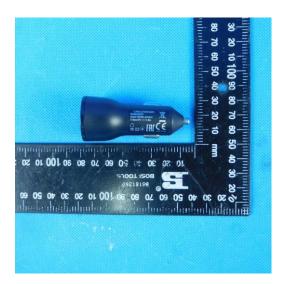


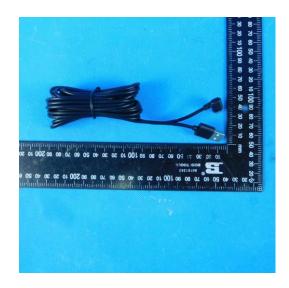




Report No.: CHTEW21060230 Page: 37 of 42 Issued: 2021-06-29





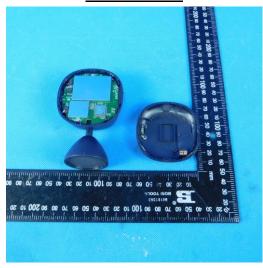


Report No.: CHTEW21060230 Page: 38 of 42 Issued: 2021-06-29

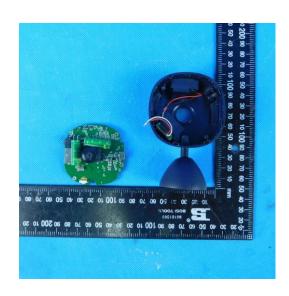


Report No.: CHTEW21060230 Page: 39 of 42 Issued: 2021-06-29

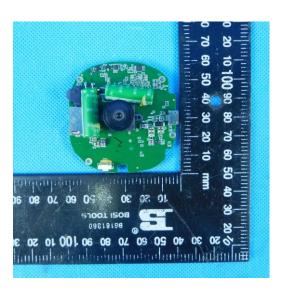
### **Internal Photos**

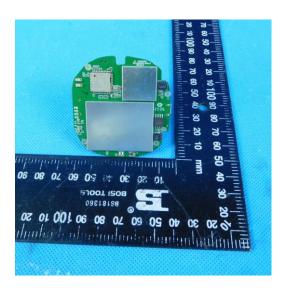


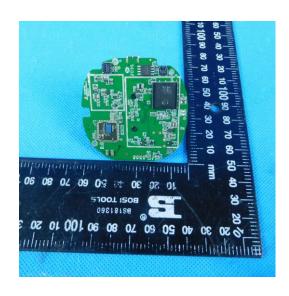




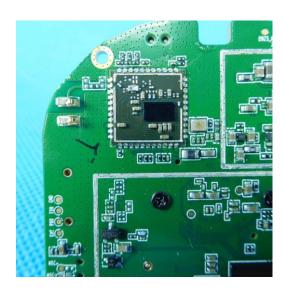
Report No.: CHTEW21060230 Page: 40 of 42 Issued: 2021-06-29



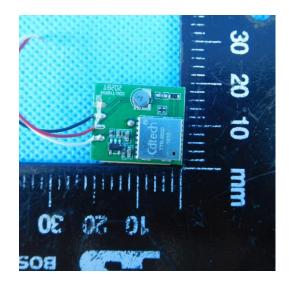




Report No.: CHTEW21060230 Page: 41 of 42 Issued: 2021-06-29



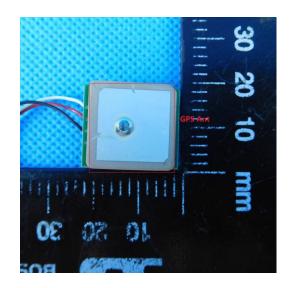




Report No.: CHTEW21060230 Page: 42 of 42 Issued: 2021-06-29







# 8. APPENDIX REPORT