



TEST REPORT

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Report Number: 2604P16309E-RF-00B
FCC ID: 2BMPT-N18

Test Standard (s)

FCC PART 15.407

Sample Description

Product Name: Wi-Fi Halow Video Recorder
Model No.: N1, GLH-1908AY, H3
Trade Mark: N/A
Date Received: 2026-01-26
Report Date: 2026-03-20

Test Result:	The EUT complied with the standards above.
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Prepared and Checked By:

Jason Fan

Jason Fan
EMC Engineer

Approved By:

Bob. Liao

Bob. Liao
EMC Engineer

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
Rev.00	2604P16309E-RF-00B	Original Report	2026-03-20

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product Name	Wi-Fi Halow Video Recorder
Tested Model	N1
Multiple Model	GLH-1908AY, H3
Model Difference [#]	Only the model names are different. Please refer to DOS letter for details. The applicant provided model "N1" for testing.
Voltage Range [#]	DC 12V from power port

Frequency Range	5G Wi-Fi: 5150-5250MHz; 5250-5350MHz 5470-5725MHz; 5725-5850MHz
Mode	802.11 a/n20/n40/ac20/ac40/ax20/ax40
Maximum Conducted Average Output Power (actual test result)	5150-5250MHz: 15.05dBm
	5250-5350MHz: 13.94dBm
	5470-5725MHz: 10.89dBm
	5725-5850MHz: 14.09dBm
Modulation Technique	OFDM, OFDMA
Antenna Specification [#]	Internal Antenna (It is provided by the applicant.)
	5150-5250MHz: 4.9dBi
	5250-5350MHz: 4.9dBi
	5470-5725MHz: 4.9dBi
Sample Serial Number	For CE&RE Test: 3GNR-2
	For RF Conducted Test: 3GNR-2 (Assigned by ATC, Shenzhen)
Sample/EUT Status	Good condition
Note: The device is belong a client device.	

Objective

This type approval report is in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB789033D02 General U-NII Test Procedures New Rules v02r01.

Unless otherwise stated there are no any additions to, deviations, or exclusions from the method.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China.

Accredited by American Association for Laboratory Accreditation (A2LA).The Certificate Number is 4297.01.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5 %
RF Frequency		0.064×10^{-7}
RF output power, conducted		0.3 dB
Unwanted Emission, conducted		1.2 dB
AC Power Lines Conducted Emissions		2.7 dB
Emissions, Radiated	9kHz - 30MHz	2.1 dB
	30MHz - 1GHz	4.3 dB
	1GHz - 18GHz	4.9 dB
	18GHz - 26.5GHz	5.2 dB
	26.5GHz - 40GHz	4.6 dB
Temperature		1 °C
Humidity		7 %
Supply voltages		0.4 %

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in engineering mode.

The device supports 802.11a/n20/n40/ac20/ac40/ax20/ax40 mode, the n20/n40 mode was reduced test as identical parameter with ac20/ac40 mode.

For 5150-5250MHz, 6 channels are provided to testing:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	46	5230
38	5190	44	5220	48	5240

For 802.11a/ac20/ax20, Channel 36, 40 and 48 were tested.

For 802.11ac40/ax40, Channel 38, 46 were tested.

For 5250-5350MHz, 6 channels are provided to testing:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
52	5260	56	5280	62	5310
54	5270	60	5300	64	5320

For 802.11a/ac20/ax20, Channel 52, 60 and 64 were tested.

For 802.11ac40/ax40, Channel 54, 62 were tested.

For 5470-5725MHz, 18 channels are provided to testing:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
100	5500	112	5560	126	5630	140	5700
102	5510	116	5580	128	5640	142	5710
104	5520	118	5590	132	5660	144	5720
108	5540	120	5600	134	5670	/	/
110	5550	124	5620	136	5680	/	/

For 802.11a/ac20/ax20, Channel 100, 116, 140 and 144 were tested.

For 802.11ac40/ax40, Channel 102, 110, 134 and 142 were tested.

The Cross Frequency: 5710MHz, 5720MHz

For 5725-5850MHz, 7 channels are provided to testing:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
149	5745	153	5765	159	5795	165	5825
151	5755	157	5785	161	5805	/	/

For 802.11a/ac20/ax20, Channel 149, 157 and 165 were tested.

For 802.11ac40/ax40, Channel 151 and 159 were tested.

EUT Exercise Software and Power Level #

Exercise Software:		SSCOM			
For 5150-5250MHz:					
Mode	Data Rate	Power Level			
		Lowest Channel	Middle Channel	Highest Channel	
802.11 a	6Mbps	16	16	16	
802.11 ac20	MCS0	17	17	17	
802.11 ac40	MCS0	16	/	16	
802.11 ax20	MCS0	17	17	17	
802.11 ax40	MCS0	14	/	14	
For 5250-5350MHz:					
Mode	Data Rate	Power Level			
		Lowest Channel	Middle Channel	Highest Channel	
802.11 a	6Mbps	16	16	16	
802.11 ac20	MCS0	16	16	16	
802.11 ac40	MCS0	14	/	14	
802.11 ax20	MCS0	15	15	15	
802.11 ax40	MCS0	13	/	13	
For 5470-5725MHz:					
Mode	Data Rate	Power Level			
		Lowest Channel	Middle Channel	Highest Channel	Cross Band
802.11 a	6Mbps	13	13	13	13
802.11 ac20	MCS0	12	12	12	12
802.11 ac40	MCS0	13	13	13	13
802.11 ax20	MCS0	12	12	12	12
802.11 ax40	MCS0	12	12	12	12
For 5725-5850MHz:					
Mode	Data Rate	Power Level			
		Lowest Channel	Middle Channel	Highest Channel	
802.11 a	6Mbps	16	16	16	
802.11 ac20	MCS0	16	16	16	
802.11 ac40	MCS0	16	/	16	
802.11 ax20	MCS0	17	17	17	
802.11 ax40	MCS0	14	/	14	

Note 1: The information in the above table is provided by the applicant.

Note 2: The worse-case data rates are determined to be as above for each mode based upon investigations by measuring the output power and PSD across all data rates, bandwidths and modulations.

Note 3: For 802.11ax mode, the device not support partial RU mode.

Special Accessories and Equipment Modifications

No special accessories or modifications were used on the device under test (EUT) during the test.

Support Equipment List and Details

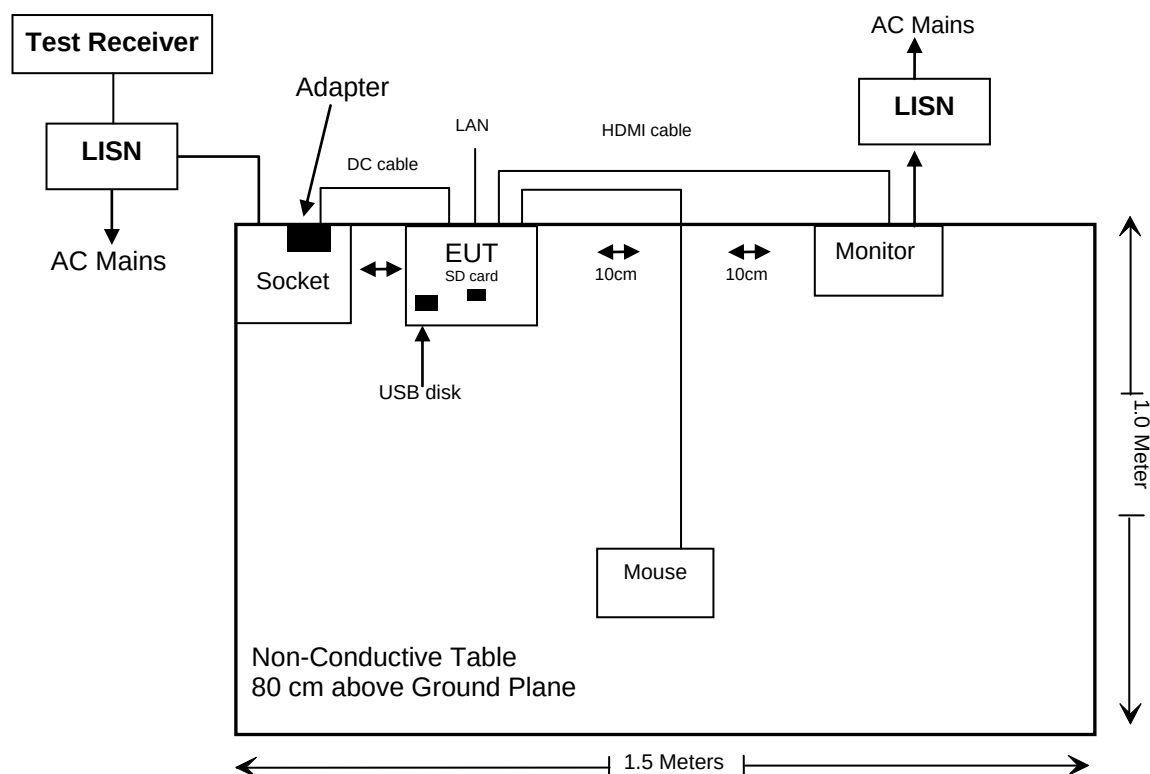
Manufacturer	Description	Model	Serial Number
DELL	Monitor	ST2310f	Unknown
Lenovo	Mouse	Unknown	Unknown
Lexar	SD card	64GB	Unknown
Kingston	USB disk	DTSE9H	Unknown
C.SA	Adapter [#] Input: 100-240V~ 50/60Hz 1.5A Output: 12V ---2A	CS-1202000	Unknown

External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded Detachable DC Cable	1.2	Adapter	EUT
Unshielded Detachable Network Cable	3.0	EUT	LAN
Unshielded Detachable Mouse Cable	1.2	EUT	Mouse
Unshielded Detachable HDMI Cable	1.0	EUT	Monitor

Block Diagram of Test Setup

For Conducted Emission:



The diagram illustrates the experimental setup for the EUT (Equipment Under Test). The setup is placed on a Non-Conductive Table, 80 cm above the Ground Plane. The table dimensions are 1.5 Meters in width and 1.0 Meter in height. The EUT is connected to AC Mains via a Socket and an Adapter. A DC cable connects the Adapter to the EUT. A LAN cable connects the EUT to the AC Mains. An HDMI cable connects the EUT to a Monitor. A USB disk is connected to the EUT. A Mouse is connected to the EUT. The distance between the Socket and the EUT is 10cm. The distance between the EUT and the Monitor is 10cm. The distance between the EUT and the Mouse is 10cm.

The diagram illustrates the test setup. A large rectangle represents the test area. At the top left, a box labeled 'Socket' is connected to 'AC Mains' (indicated by an upward arrow). An 'Adapter' (a small black square) is placed on a 'Non-Conductive Table' (150 cm above Ground Plane) and is connected to the 'Socket'. The 'EUT' (Equipment Under Test) is placed on another 'Non-Conductive Table' (80 cm above Ground Plane). The distance between the two tables is 1.0 Meter. The total width of the setup is 1.5 Meters.

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.407(b)(9) & §15.207(a)	AC Conducted Emissions	Compliance
§15.205 & §15.209 & §15.407(b)	Undesirable Emission & Restricted Bands	Compliance
§15.407(a), (e)	Emission Bandwidth	Compliance
§15.407(a)	Conducted Transmitter Output Power	Compliance
§15.407(a)	Power Spectral Density	Compliance
§15.407(h)(1)	Transmit Power Control (TPC)	Not Applicable
§15.407(h)(2)	Dynamic Frequency Selection (DFS)	Compliance*

Not Applicable: The device does not support this function.

Compliance*: Please refer to the DFS report: 2604P16309E-RF-00C.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	100784	2025/09/17	2026/09/16
Rohde & Schwarz	L.I.S.N.	ENV216	101314	2025/09/17	2026/09/16
Rohde & Schwarz	L.I.S.N.	ESH3-Z5	100305	2025/09/18	2026/09/17
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2025/09/18	2026/09/17
Rohde & Schwarz	Pulse Limiter	ESH3-Z2	100312	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.17	N0350	2025/05/30	2026/05/29
Test Software: e3 191218 (V9)					
Radiated Spurious Emission Test(Below 1GHz)					
Rohde & Schwarz	Test Receiver	ESR	102725	2025/09/18	2026/09/17
SONOMA INSTRUMENT	Amplifier	310N	186131	2025/03/26	2026/03/25
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2024/08/08	2027/08/07
Unknown	RF Coaxial Cable	No.12	N040	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.13	N300	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.14	N800	2025/05/30	2026/05/29
BACL	LOOP ANTENNA	1313-1A	3110711	2024/01/16	2027/01/15
Test Software: e3 191218 (V9)					
Radiated Spurious Emission Test(Above 1GHz)					
Rohde & Schwarz	Spectrum Analyzer	FSV40	101949	2025/09/17	2026/09/16
Decentest	Filter Switch Unit	DT7220FSU	DQ77927	2025/09/18	2026/09/17
Decentest	Multiplex Switch Test Control Set	DT7220CSU	DQ77924	2025/09/18	2026/09/17
A.H. Systems, inc.	Preamplifier	PAM-0118	226	2025/03/20	2026/03/19
Schwarzbeck	Horn Antenna	BBHA9120D	837	2023/02/22	2026/02/21
Unknown	RF Coaxial Cable	No.10	N050	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.11	N1000	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.19	N500	2025/05/30	2026/05/29
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2023/12/12	2026/12/11
BACL	Amplifier	BACL-1313-A1840	4012521	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.15	N600	2025/05/30	2026/05/29
Unknown	RF Coaxial Cable	No.16	N650	2025/05/30	2026/05/29
Test Software: e3 191218 (V9)					

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101590	2025/09/17	2026/09/16
Anritsu	Microwave Peak Power Sensor	MA24418A	12619	2025/03/26	2026/03/25
WEINSCHEL	10dB Attenuator	5324	AU 3842	2025/03/26	2026/03/25
Test Software: JDAutoTestSystem V1.0.0					

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.
- c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.407 (a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has one antenna arrangement for 5G Wi-Fi, which were permanently attached to the EUT, fulfill the requirement of this section. Please refer to the EUT photos.

Frequency Range	Antenna gain
5150-5250MHz	4.9 dBi
5250-5350MHz	4.9 dBi
5470-5725MHz	4.9 dBi
5725-5850MHz	4.9 dBi

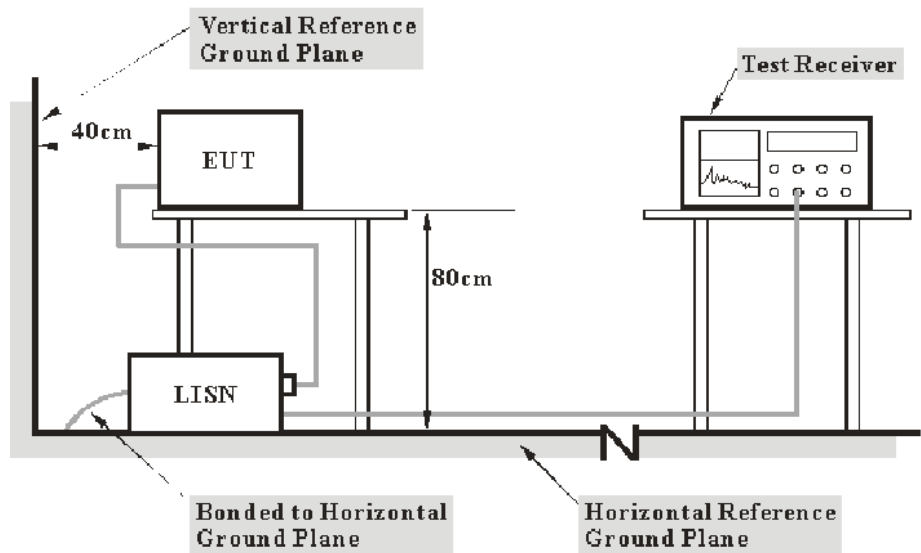
Result: Compliance.

AC CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (9)

EUT Setup



- Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2020 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.
During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.
Maximizing procedure was performed on the six (6) highest emissions of the EUT.
All data was recorded in the Quasi-peak and average detection mode.

Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

$$\text{Factor} = \text{LISN VDF} + \text{Cable Loss} + 10\text{dB Attenuation(Limiter)}$$

The “**Over limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over limit of -7 dB means the emission is 7 dB below the limit. The equation for calculation is as follows:

$$\text{Over Limit} = \text{Level} - \text{Limit}$$

$$\text{Level} = \text{Read Level} + \text{Factor}$$

Test Data

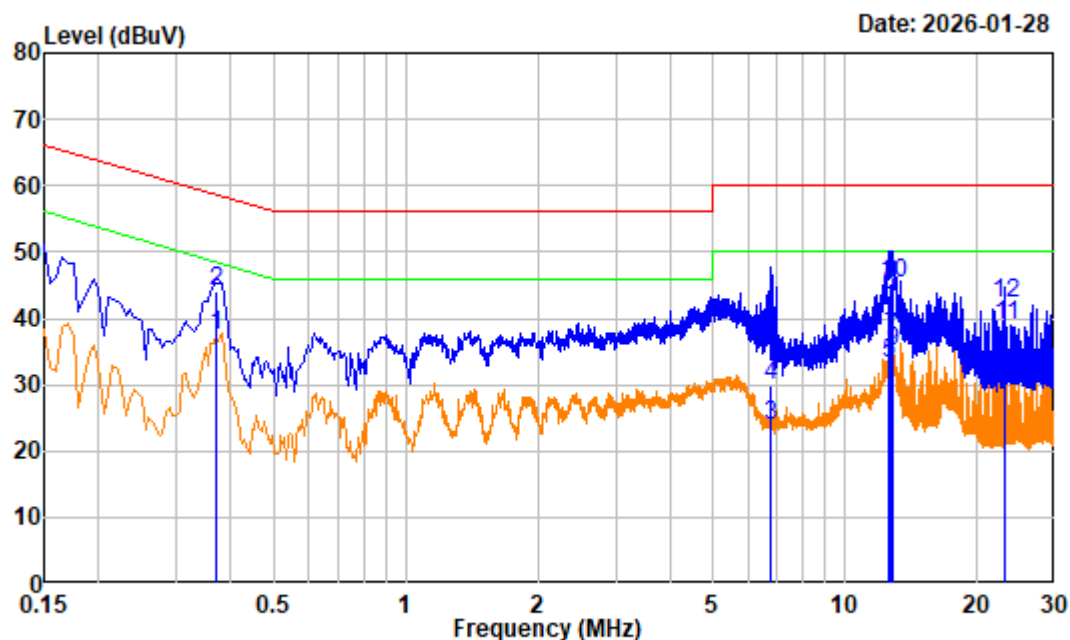
Environmental Conditions

Temperature:	21.5℃
Relative Humidity:	37 %
ATM Pressure:	101.8 kPa
Test Engineer:	Serein Wen
Test Date:	2026-01-28
EUT Operation Mode:	5G WIFI Transmitting

Test Result: Compliance, please refer to the below data.

Note: The pre-scan maximum output power mode and channel: 5G WiFi 802.11ac20 High Channel 5240MHz was tested.

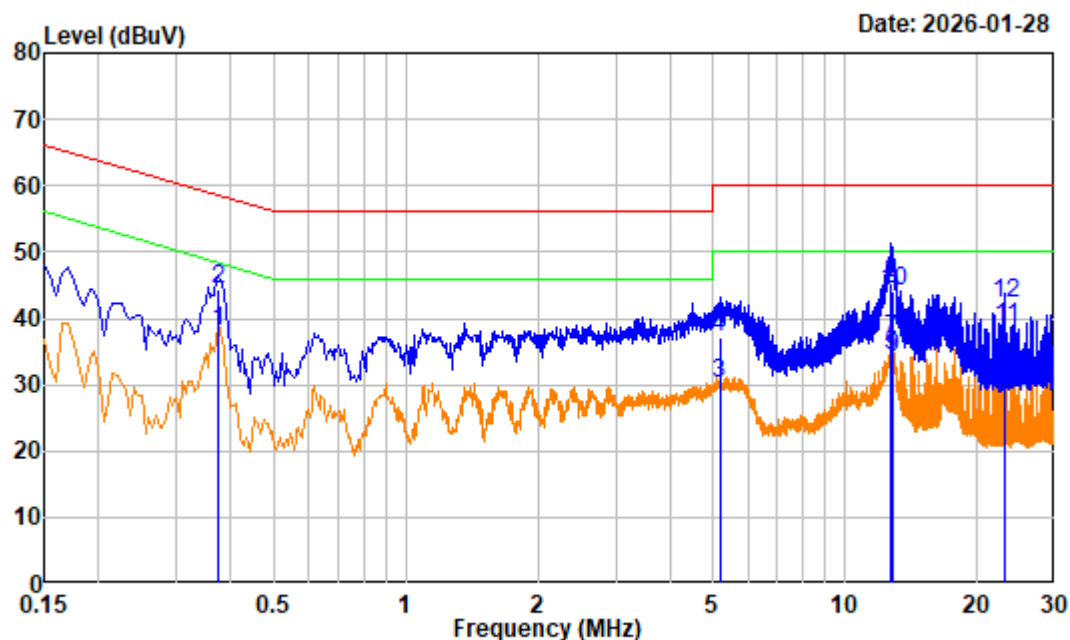
AC 120V/60Hz, Line:



Site : Shielding Room
 Condition : Line
 Job No. : 2604P16309E-RF
 Test Mode : 5G WIFI Transmitting
 Tester : Serein Wen
 Receiver Setting: IF B/W 9kHz PK/AV

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.370	20.04	17.49	37.53	48.50	-10.97	Average
2	0.370	20.04	24.15	44.19	58.50	-14.31	QP
3	6.750	22.00	1.82	23.82	50.00	-26.18	Average
4	6.750	22.00	7.80	29.80	60.00	-30.20	QP
5	12.540	23.17	10.11	33.28	50.00	-16.72	Average
6	12.540	23.17	20.28	43.45	60.00	-16.55	QP
7	12.745	23.20	13.86	37.06	50.00	-12.94	Average
8	12.745	23.20	22.06	45.26	60.00	-14.74	QP
9	12.795	23.20	11.75	34.95	50.00	-15.05	Average
10	12.795	23.20	22.12	45.32	60.00	-14.68	QP
11	23.130	24.29	14.52	38.81	50.00	-11.19	Average
12	23.130	24.29	18.06	42.35	60.00	-17.65	QP

AC 120V/60Hz, Neutral:



Site : Shielding Room
 Condition : neutral
 Job No. : 2604P16309E-RF
 Test Mode : 5G WIFI Transmitting
 Tester : Serein Wen
 Receiver Setting: IF B/W 9kHz PK/AV

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.375	19.94	18.25	38.19	48.39	-10.20	Average
2	0.375	19.94	24.41	44.35	58.39	-14.04	QP
3	5.175	21.75	8.43	30.18	50.00	-19.82	Average
4	5.175	21.75	15.31	37.06	60.00	-22.94	QP
5	12.725	23.30	11.04	34.34	50.00	-15.66	Average
6	12.725	23.30	21.01	44.31	60.00	-15.69	QP
7	12.750	23.30	13.46	36.76	50.00	-13.24	Average
8	12.750	23.30	21.92	45.22	60.00	-14.78	QP
9	12.890	23.32	10.80	34.12	50.00	-15.88	Average
10	12.890	23.32	20.64	43.96	60.00	-16.04	QP
11	23.130	24.37	14.28	38.65	50.00	-11.35	Average
12	23.130	24.37	17.92	42.29	60.00	-17.71	QP

UNDESIRABLE EMISSION&RESTRICTED BANDS

Applicable Standard

FCC §15.407 (b); §15.209; §15.205;

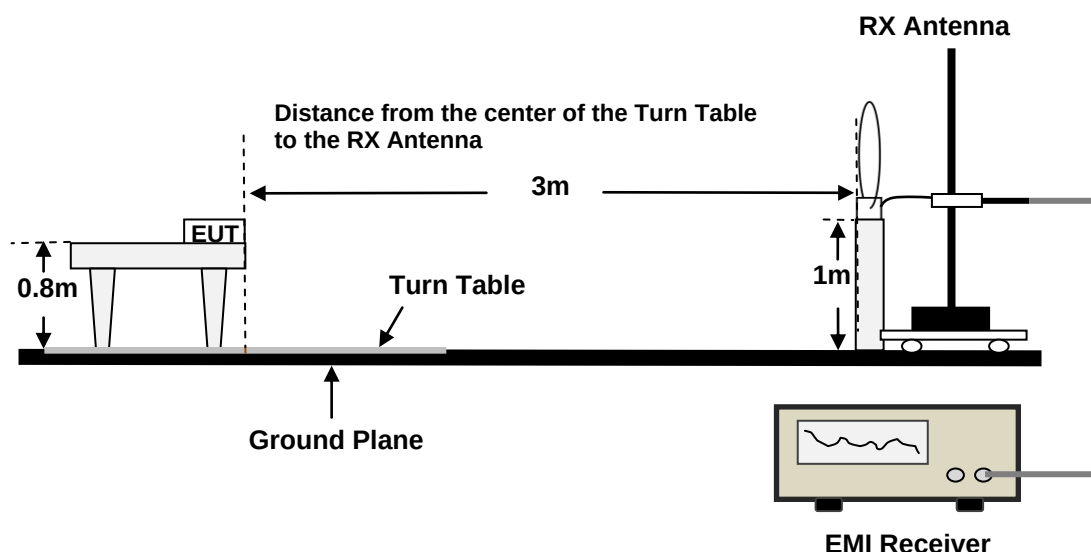
(b) Undesirable emission limits. Except as shown in paragraph (b) (7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

9kHz - 30MHz:



The diagram illustrates the experimental setup for EMI measurement. A Ground Plane is shown at the bottom. A Turn Table is positioned on the Ground Plane. A EUT (Equipment Under Test) is placed on the Turn Table, at a height of 0.8m. The RX Antenna is positioned at a distance of 3m from the center of the Turn Table, at a height of 1-4m. An EMI Receiver is connected to the RX Antenna.

The diagram illustrates a measurement setup for EMI testing using a turn table. A **Ground Plane** is shown at the base. On the left, a **EUT** (Equipment Under Test) is mounted on a stand, with a height of **1.5m** from the ground plane. A **Turn Table** is positioned between the EUT and the RX Antenna. The **Distance from the center of the Turn Table to the RX Antenna** is **3m**. The **RX Antenna** is mounted on a stand, with a height of **4m** from the ground plane. The antenna is connected to a **Spectrum Analyzer**, which is shown with a display screen and two input ports. The distance from the center of the turn table to the antenna is **3m**, and the height of the antenna is **4m**. The distance from the ground plane to the EUT is **1.5m**.

TR-4-E-R027

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9kHz to 40GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

9kHz - 1000MHz:

Frequency Range	Measurement	RBW	Video B/W	IF B/W	Detector
9kHz - 150kHz	PK	0.3kHz	1kHz	/	PK
	QP/AV	/	/	200Hz	QP/AV
150kHz - 30MHz	PK	10kHz	30kHz	/	PK
	QP/AV	/	/	9kHz	QP/AV
30MHz - 1000MHz	PK	100kHz	300kHz	/	PK
	QP	/	/	120kHz	QP

1GHz -40GHz:

Pre-scan:

Measurement	Detector	Duty cycle	RBW	Video B/W
PK	Peak	Any	1MHz	3MHz
Ave.	Peak	>98%	1MHz	3kHz / 5kHz
		<98%	1MHz	≥1/T, no less than 3kHz

Final measurement for emission identified during the pre-scan:

Measurement	Detector	Duty cycle	RBW	Video B/W
PK	Peak	Any	1MHz	3MHz
Ave.	Peak	>98%	1MHz	10Hz
		<98%	1MHz	≥1/T

Note 1: T is minimum transmission duration

Note 2: The 1GHz-18GHz testing use the notch filter.

Note 3: The band edge testing use 10dB attenuator.

Note 4: The filters and attenuators are all integrated within the filter switch unit.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

According to FCC §15.209(e), the provisions in §15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

According to FCC§15.31 measurement standard (f)(2), at frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

For 9kHz-30MHz, test distance is 3m, extrapolation limit shall be calculated using Equation:

$$E_{\text{limit-measure}} = E_{\text{limit-Standard}} + 40 \times \log_{10}\left(\frac{d_{\text{Standard}}}{d_{\text{measure}}}\right)$$

Note 1: If the maximized peak measured value is under the QP/Average limit by more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Note 2: For above 1GHz, the test result of peak was 20dB below to the limit of peak, which can be compliant to the average limit, so just peak value was recorded.

Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Over Limit/Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

$$\begin{aligned}\text{Over Limit/Margin} &= \text{Level / Corrected Amplitude} - \text{Limit} \\ \text{Level / Corrected Amplitude} &= \text{Read Level} + \text{Factor}\end{aligned}$$

Test Data

Please refer to the AppendixA(5G WIFI-Undesirable Emission & Restricted Bands).

EMISSION BANDWIDTH

Applicable Standard

According to FCC §15.407(a),

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

According to FCC §15.407(e),

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

According to KDB789033 D02 section II.C. and section II.D.

1. Emission Bandwidth (EBW)

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- Set RBW = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.
- 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.

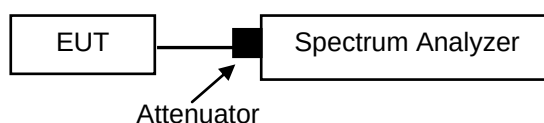
3. 99% Occupied Bandwidth

The 99% occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. Measurement of the 99% occupied bandwidth is *required* only as a condition for using the optional bandedge measurement techniques described in II.G.3.d). Measurements of 99% occupied bandwidth may also optionally be used in lieu of the EBW to define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with Section 15.407(a).

The following procedure shall be used for measuring (99%) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1% to 5% of the OBW
4. Set VBW $\geq 3 \times$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99% power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

Note: For devices that use channel aggregation refer to III.A and III.C for determining 99% bandwidth.



Note: Offset = RF cable loss(1.0dB[#]) + Attenuator(10dB)

Test Data

Test Result: Compliance. Please refer to the Appendix B(5G WIFI-RF Conducted Test Result) B.1.1 and B.1.2.

CONDUCTED TRANSMITTER OUTPUT POWER

Applicable Standard

According to FCC §15.407(a),

For an indoor access point operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For an outdoor access point operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

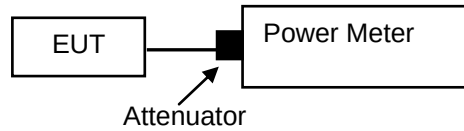
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB789033 D02 section II.E.3.a).

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



Note: Offset = RF cable loss(1.0dB[#]) + Attenuator(10dB)

Test Data

Test Result: Compliance. Please refer to the Appendix B(5G WIFI-RF Conducted Test Result) B.2.

POWER SPECTRAL DENSITY

Applicable Standard

According to FCC §15.407(a),

For an indoor access point operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For an outdoor access point operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

For client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Duty cycle $\geq 98\%$

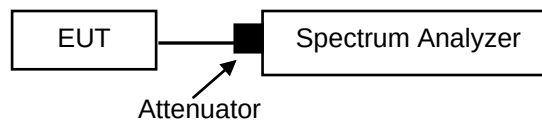
KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-1 should be applied.

Duty cycle $< 98\%$, duty cycle variations are less than $\pm 2\%$

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-2 should be applied.

Duty cycle $< 98\%$, duty cycle variations exceed $\pm 2\%$

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-3 should be applied.



Note: Offset = RF cable loss(1.0dB[#]) + Attenuator(10dB)

Test Data

Test Result: Compliance. Please refer to the Appendix B(5G WIFI-RF Conducted Test Result) B.3.

DUTY CYCLE

Test Procedure

According to ANSI C63.10-2020 Section 12.2,

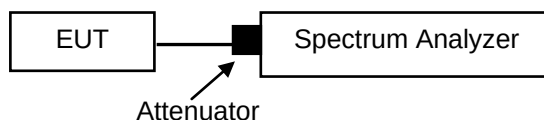
The following procedure shall be used for determining duty cycle, transmission duration, and maximum power control level for U-NII devices:

a) All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, D, and maximum-power transmission duration, T, are required for each tested mode of operation:

- 1) T refers to 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.
- 2) Duty cycle (D), as used in this clause, refers to the fraction of time over which the transmitter is ON and is transmitting at its maximum power control level.
- 3) The term "maximum power control level" is intended to distinguish between operating power levels of the EUT and differences in power levels of individual symbols that occur with some modulation types, such as quadrature amplitude modulation (QAM). During testing, the EUT is not required to transmit continuously with its highest possible symbol power level. Rather, it shall transmit all of the symbols, and shall do so at the highest power control level (i.e., highest operating power level) of the EUT.

b) Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

- 1) A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
- 2) The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:
 - i) Set the center frequency of the instrument to the center frequency of the transmission.
 - ii) Set RBW $\geq$ EBW if possible; otherwise, set RBW to the largest available value.
 - iii) Set VBW $\geq$ RBW.
 - iv) Set detector = peak.
 - v) The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$, where T is defined in item a1) of 12.2, and the number of sweep points across duration T exceeds 100.
For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if $T \leq 16.7 \mu\text{s}$.



Note: Offset = RF cable loss(1.0dB[#]) + Attenuator(10dB)

Test Data

Test Result: Compliance. Please refer to the Appendix B(5G WIFI-RF Conducted Test Result) B.4.

EXHIBIT A-EUT PHOTOGRAPHS

Please refer to the Attachment No.1 2604P16309E-RF EUT External Photos and Attachment No.2 2604P16309E-RF EUT Internal Photos.

EXHIBIT B-TEST SETUP PHOTOGRAPHS

Please refer to the Attachment No.3 2604P16309E-RF-00A Test Photos.

***** END OF REPORT *****