

TEST REPORT

FCC DTS Test for SPW-B43143U
Certification

APPLICANT

HP Inc.

REPORT NO.

HCT-RF-2608-FC002

DATE OF ISSUE

September 04, 2026

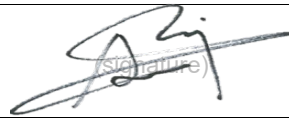
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Applicant	HP Inc. 11311 CHINDEN BOULEVARD, BOISE, ID 83714, USA
Product Name	WLAN Module
Model Name	SPW-B43143U
FCC ID	B94SPWB43143U26
Date of Test	July 13, 2026 ~September 4, 2026
FCC Classification	Digital Transmission System(DTS)
Test Standard Used	FCC Rule Part(s): Part 15.247
Test Results	PASS
Location of Test	☒ Permanent Testing Lab ☐ On Site Testing Lab (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	September 04, 2026	Initial Release

Notice

Content
Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance. The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated. The test results have only been applied with the test methods required by the standard(s). The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***. When confirmation of authenticity of this test report is required, please contact www.hct.co.kr The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

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1. EUT DESCRIPTION

Model	SPW-B43143U	
EUT Type	WLAN Module	
Power Supply	DC 3.3 V	
Frequency Range	2 412 MHz ~ 2 462 MHz	
Max. RF Output Power	<u>Average Power</u>	14.48 dBm
	<u>Peak Power</u>	21.13 dBm
Modulation Type	DSSS/CCK : 802.11b OFDM : 802.11g, 802.11n(HT20, 40)	
Number of Channels	11 Channels (20M : ch.1~11) 7 Channels (40M ch.3~9)	
Antenna Information	Please refer to the Antenna Specification document.	
Serial number	Conducted : WCMDM3002 Radiated : WCMDM3002	

Grant Notes :

1. Output Power listed is conducted(Peak)

2. TEST METHODOLOGY

Unlicensed wireless device were tested using the following measurement procedure.

[1] KDB 558074 D01 15.247 Meas Guidance v05r02

[2] ANSI C63.10-2020 + Cor. 1-2023

Note : Here in after, ANSI C63.10-2020 + Cor. 1-2023 will be referred to as ANSI C63.10-2020

EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10-2020. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

According to the requirements in Section 6.3 ~ Section 6.6 of ANSI C63.10-2020.

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1 GHz. Above 1 GHz with 1.5 m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes.

DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

3. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment's, which is traceable to recognized national standards.

Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

4. FACILITIES AND ACCREDITATIONS

FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea.

This test facility has completed the evaluation in compliance with the standards and evaluation period required for chamber validity verification. ANSI C63.4-2014 + C63.4a-2017 and ANSI C63.25.1-2018 Detailed description of test facility was submitted to the Commission and accepted dated February 26,2026 (Registration Number: KR0032).

EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to ANSI/USEMCSC C63.2-2023, "American National Standard for Specifications of Electromagnetic Interference and Field Strength Measuring Instrumentation in the Frequency Range 9 kHz to 40 GHz".

5. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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.”

6. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2020.

All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence.

The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty ($\pm$ kHz)
X dB, 99% Bandwidth	95 (Confidence level about 95 %, $k=2$)

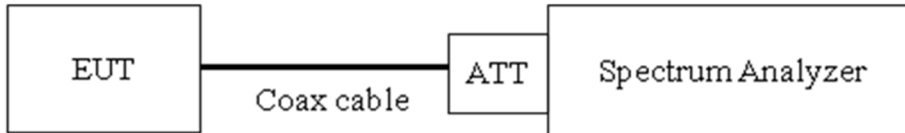
Parameter	Expanded Uncertainty ($\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.96 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Power Meter)	0.54 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Signal Analyzer)	0.73 (Confidence level about 95 %, $k=2$)
Power Spectral Density	0.98 (Confidence level about 95 %, $k=2$)
Band Edge (Out of Band Emissions)	1.11 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.54 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.80 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.86 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.44 (Confidence level about 95 %, $k=2$)

7. DESCRIPTION OF TESTS

Test Item	Test Procedure
Duty Cycle	- ANSI C63.10-2020 – Section 11.6
6 dB Bandwidth	- ANSI C63.10-2020 – Section 11.8
Output Power	- ANSI C63.10-2020 – Section 11.9.1.2(Peak) & 11.9.2.3(Avg)
Power Spectral Density	- ANSI C63.10-2020 – Section 11.10
Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions	- ANSI C63.10-2020– Section 11.11
Radiated Test	- ANSI C63.10-2020 – Section 6.4 (Below 30 MHz) - ANSI C63.10-2020 – Section 6.5 (30 MHz to 1000 MHz) - ANSI C63.10-2020 – Section 6.6 (1 GHz to 40 GHz) - ANSI C63.10-2020 – Section 6.10 & 11.12 (Restricted frequency bands)
AC Power line Conducted Emissions	- ANSI C63.10-2020– Section 6.2

7.1. Duty Cycle

Test Configuration



Test Procedure

We tested according to the zero-span measurement method.

The largest available value of RBW is 8 MHz and VBW is 50 MHz.

The zero-span method of measuring duty cycle shall not be used if $T \leq 6.25$ microseconds. ($50/6.25 = 8$)

The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are $> 50/T$.

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to :

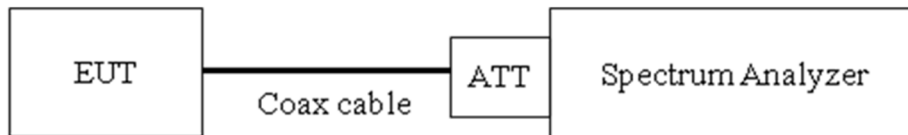
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz or 50 MHz ($\geq$ RBW)
3. SPAN = 0 Hz
4. Detector = Average
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = $T_{\text{on}} / T_{\text{total}}$ and Duty Cycle Factor = $10\log(1/\text{Duty Cycle})$

7.2. 6 dB Bandwidth

Limit

The minimum permissible 6 dB bandwidth is 500 kHz.

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to :

- 1) RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- 2) VBW $\geq 3 \times$ RBW
- 3) Detector = Peak
- 4) Trace mode = max hold
- 5) Sweep = No faster than coupled (auto) time.
- 6) Allow the trace to stabilize
- 7) We tested 6 dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer. X dB is set 6 dB.

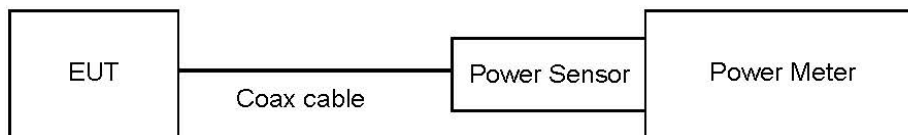
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

7.3. Output Power

Limit

The maximum permissible conducted output power is 1 Watt.

Test Configuration



Test Procedure

The transmitter output is connected to the Power Meter.

- Peak Power
 - : Measure the peak power of the transmitter.
- Average Power
 - 1) Measure the duty cycle.
 - 2) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
 - 3) Add $10 \log (1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Sample Calculation

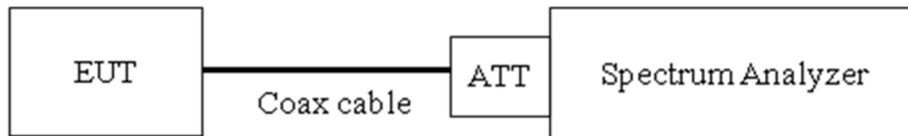
- Conducted Output Power(Peak) = Measured Value + ATT loss + Cable loss
- Conducted Output Power(Average) = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

7.4. Power Spectral Density

Limit

The transmitter power density average over 1-second interval shall not be greater than 8 dBm in any 3 kHz BW.

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to :

- 1) Set analyzer center frequency to DTS channel center frequency.
- 2) Set span to at least 1.5 times the DTS bandwidth.
- 3) $RBW = 3 \text{ kHz} \leq RBW \leq 100 \text{ kHz}$.
- 4) $VBW \geq 3 \times RBW$.
- 5) Sweep = No faster than coupled (auto) time.
- 6) Detector = Peak.
- 7) Trace mode = max hold.
- 8) Allow trace to fully stabilize.
- 9) Use the peak marker function to determine the maximum amplitude level within the RBW.
- 10) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

Sample Calculation

- Power Spectral Density = Measured Value + ATT loss + Cable loss

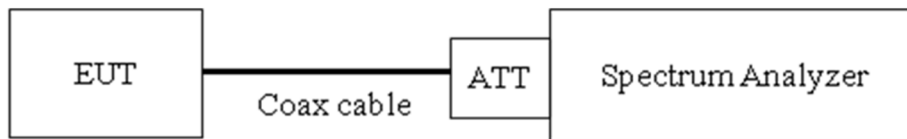
7.5. Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions

Limit

The maximum conducted (Peak) output power was used to demonstrate compliance, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz.

[Conducted > 20 dBc]

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to :

- 1) RBW = 100 kHz
- 2) VBW $\geq 3 \times$ RBW
- 3) Set span to encompass the spectrum to be examined
- 4) Detector = Peak
- 5) Trace Mode = max hold
- 6) Sweep time = No faster than coupled (auto) time.
- 7) Ensure that the number of measurement points $\geq 2 \times$ Span/RBW
- 8) Allow trace to fully stabilize.
- 9) Use peak marker function to determine the maximum amplitude level.

Measurements are made over the 30 MHz to 25 GHz range with the transmitter set to the lowest, middle, and highest channels.

Factors for frequency

Freq(MHz)	Factor(dB)
30	10.07
100	10.14
200	10.17
300	10.15
400	10.16
500	10.24
600	10.27
700	10.29
800	10.30
900	10.44
1000	10.45
2000	10.51
2400	10.58
2500	10.58
3000	11.01
4000	11.14
5000	11.45
6000	11.77
7000	11.94
8000	11.93
9000	11.97
10000	12.04
11000	12.03
12000	12.06
13000	12.08
14000	12.11
15000	12.06
16000	12.12
17000	12.16
18000	12.60
19000	12.66
20000	12.70
21000	12.72
22000	12.76
23000	12.93
24000	13.03
25000	13.07
26000	13.08

Note : 1. 2400 ~ 2500 MHz is fundamental frequency range.

2. Factor = Attenuator loss + Cable loss

3. EUT cable loss = 0.37 dB

4. Total Port offset = 10.95 dB

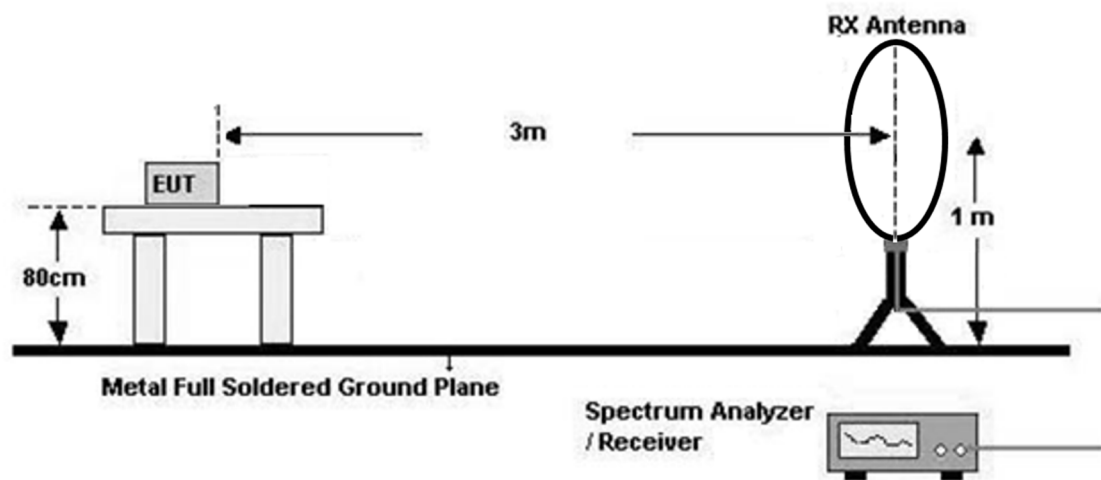
7.6. Radiated Test

Limit

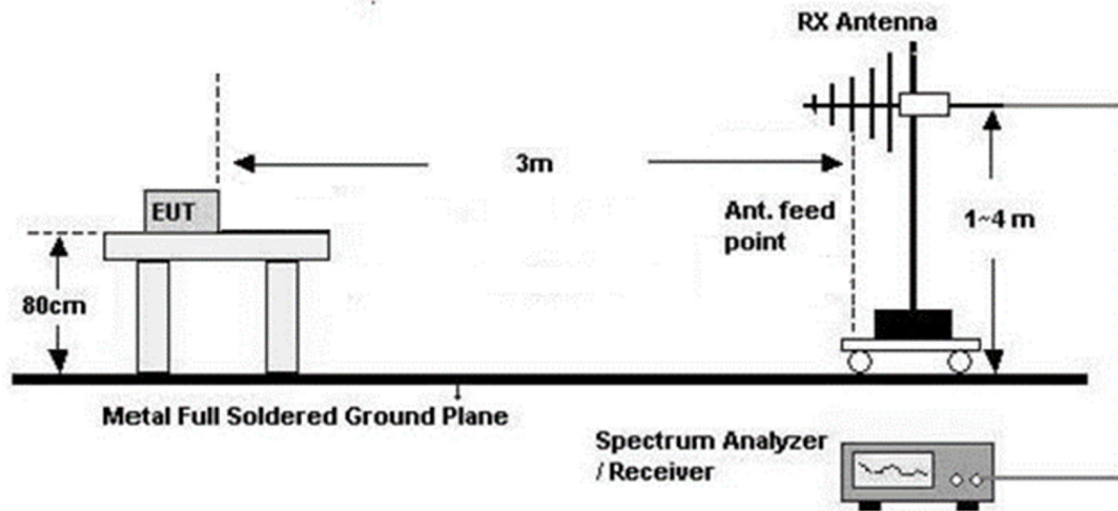
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

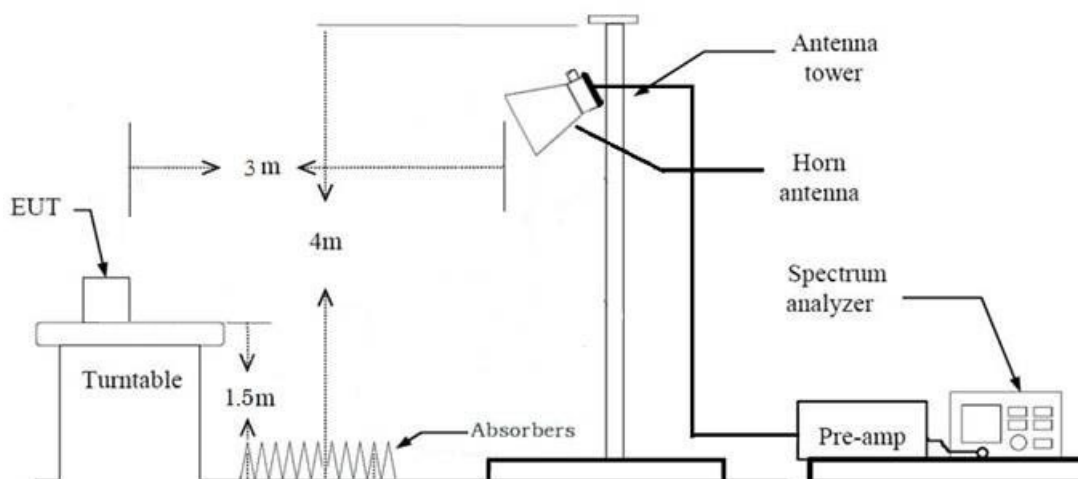
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



Test Procedure of Radiated spurious emissions (Below 30 MHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The loop antenna was placed at a location 3 m from the EUT
3. The EUT is placed on a turntable, which is 0.8 m above ground plane.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization and Parallel to the ground plane in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Distance Correction Factor(0.009 MHz – 0.490 MHz) = $40\log(3 \text{ m}/300 \text{ m}) = - 80 \text{ dB}$
Measurement Distance : 3 m
7. Distance Correction Factor(0.490 MHz – 30 MHz) = $40\log(3 \text{ m}/30 \text{ m}) = - 40 \text{ dB}$
Measurement Distance : 3 m
8. Spectrum Analyzer Setting
Measurement Type(Peak):
 - Frequency Range = 9 kHz ~ 30 MHz
 - Detector = Peak
 - Trace = Max hold
 - RBW = 9 kHz
 - VBW $\geq 3 \times$ RBW
9. Total = Measured value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
10. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

KDB 414788 OFS and Chamber Correlation Justification

Base on FCC 15.31 (f) (2): 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.

OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Test Procedure of Radiated spurious emissions (Below 1 GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8 m above ground plane.
3. The Hybrid antenna was placed at a location 3 m from the EUT, which is varied from 1 m to 4 m to find out the highest emissions.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Spectrum Analyzer Setting

(1) Measurement Type(Peak):

- Measured Frequency Range : 30 MHz – 1 GHz
- Detector = Peak
- Trace = Max hold
- RBW = 100 kHz
- VBW $\geq 3 \times$ RBW

(2) Measurement Type(Quasi-peak):

- Measured Frequency Range : 30 MHz – 1 GHz
- Detector = Quasi-Peak
- RBW = 120 kHz

In general, (1) is used mainly

7. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L)
8. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

Test Procedure of Radiated spurious emissions (Above 1 GHz)

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. Spectrum Analyzer Setting

(1) Measurement Type(Peak):

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = Peak
- Trace = Maxhold
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW

(2) Measurement Type(Average): Duty cycle ≥ 98 %

- Measured Frequency Range : 1 GHz – 25 GHz

- Detector = RMS
- Averaging type = power (i.e., RMS)
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).

(3) Measurement Type(Average): Duty cycle < 98 %, duty cycle variations are less than ± 2 %

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (i.e., RMS)
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- Correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 % duty cycle.
- Duty Cycle Factor (dB) : Please refer to Duty cycle test result.

8. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

9. Distance extrapolation factor = $20\log(\text{test distance} / \text{specific distance})$ (dB)

10. Total(Measurement Type : Peak)

= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Distance Factor(D.F)

Total(Measurement Type : Average, Duty cycle ≥ 98 %)

= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Distance Factor(D.F)

Total(Measurement Type : Average, Duty cycle < 98 %)

= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Distance Factor(D.F)
+ Duty Cycle Factor

Test Procedure of Radiated Restricted Band Edge

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

7. Spectrum Analyzer Setting

(1) Measurement Type(Peak):

- Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
- Detector = Peak
- Trace = Maxhold
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW

(2) Measurement Type(Average): Duty cycle ≥ 98 %,

- Measured Frequency Range : 2310 MHz ~ 2390 MHz / 2483.5 MHz ~ 2500 MHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).

(3) Measurement Type(Average): Duty cycle < 98 %, duty cycle variations are less than ± 2 %

- Measured Frequency Range : 2310 MHz ~ 2390 MHz / 2483.5 MHz ~ 2500 MHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- Correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 % duty cycle.
- Duty Cycle Factor (dB) : Please refer to Duty cycle test result.

(4) Measurement Type(Average , Integration Method) : Duty cycle ≥ 98 %

- Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 100 kHz
- VBW $\geq 3 \times$ RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- Compute the power by integrating the spectrum over 1 MHz using the analyzer's band-power measurement function with band limits set equal to the emission frequency ($f_{\text{emission}} \pm 0.5$ MHz). If the instrument does not have a band-power function, then sum the amplitude levels (in power units) at 100 kHz intervals extending across the 1 MHz spectrum defined by $f_{\text{emission}} \pm 0.5$ MHz

(5) Measurement Type(Average , Integration Method) : Duty cycle < 98 %, duty cycle variations are less than ± 2 %

- Measured Frequency Range : 1 GHz – 25 GHz
 - Detector = RMS
 - Averaging type = power (*i.e.*, RMS)
 - RBW = 100 kHz
 - VBW $\geq 3 \times$ RBW
 - Sweep time = auto.
 - Trace mode = average (at least 100 traces).
 - Compute the power by integrating the spectrum over 1 MHz using the analyzer's band-power measurement function with band limits set equal to the emission frequency ($f_{\text{emission}} \pm 0.5$ MHz). If the instrument does not have a band-power function, then sum the amplitude levels (in power units) at 100 kHz intervals extending across the 1 MHz spectrum defined by $f_{\text{emission}} \pm 0.5$ MHz.
 - Correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 % duty cycle.
 - Duty Cycle Factor (dB) : Please refer to Duty cycle test result.
8. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
9. Distance extrapolation factor = $20\log(\text{test distance} / \text{specific distance})$ (dB)
10. Total (Measurement Type : Peak)
= Peak Measured Value
- Total(Measurement Type : Average, Duty cycle ≥ 98 %)
= Average Measured Value
- Total(Measurement Type : Average, Duty cycle < 98 %)
= Average Measured Value + Duty Cycle Factor
 - We apply to the offset in the range 1 GHz - 18 GHz.
 - The offset = Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)

7.7. AC Power line Conducted Emissions

Limit

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56 ^(a)	56 to 46 ^(a)
0.50 to 5	56	46
5 to 30	60	50

^(a)Decreases with the logarithm of the frequency.

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Annex A for the actual connections between EUT and support equipment.

Test Procedure

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors : Quasi Peak and Average Detector.

Sample Calculation

Quasi-peak(Final Result) = Measured Value + Correction Factor

7.8. Worst case configuration and mode

Conducted test

1. The EUT was configured with data rate of highest power.
2. All measurements were performed with the EUT transmitting continuously.(Duty cycle $\geq 98\%$).

Radiated test

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : Stand alone
- 2 EUT Axis
 - Radiated Spurious Emissions : Y
 - Radiated Restricted Band Edge : Z
3. All measurements were performed with the EUT transmitting continuously.(Duty cycle $\geq 98\%$).
- 4 All data rate of operation were investigated and the test results are worst case in lowest Data Rate of each mode.
 - 802.11b : 1 Mbps
 - 802.11g : 6 Mbps
 - 802.11n(HT20): MCS0
 - 802.11n(HT40): MCS0
- 5 All position of loop antenna were investigated and the test result is a no critical peak found at all positions.
 - Position : Horizontal, Vertical, Parallel to the ground plane
- 6 Radiated Spurious Emissions
 - All modes of operation were investigated and the worst case results are reported.
 - Mode: 802.11b, 802.11g, 802.11n(HT20,40)
 - Worst case: 802.11b

AC Power line Conducted Emissions

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : Stand alone + Notebook Computer

8. SUMMARY TEST OF RESULTS

Test Item	FCC Part Section(s)	Test Limit	Test Condition	Test Result
6 dB Bandwidth	§15.247(a)(2)	> 500 kHz	Conducted	PASS
Conducted Maximum Output Power	§15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	§15.247(e)	< 8 dBm / 3 kHz		PASS
Band Edge (Out of Band Emissions)	§15.247(d)	Conducted > 20 dBc		PASS
AC Power line Conducted Emissions	§15.207	cf. Section 7.7		PASS
Radiated Spurious Emissions	§15.247(d), 15.205, 15.209	cf. Section 7.6	Radiated	PASS
Radiated Restricted Band Edge	§15.247(d), 15.205, 15.209	cf. Section 7.6		PASS

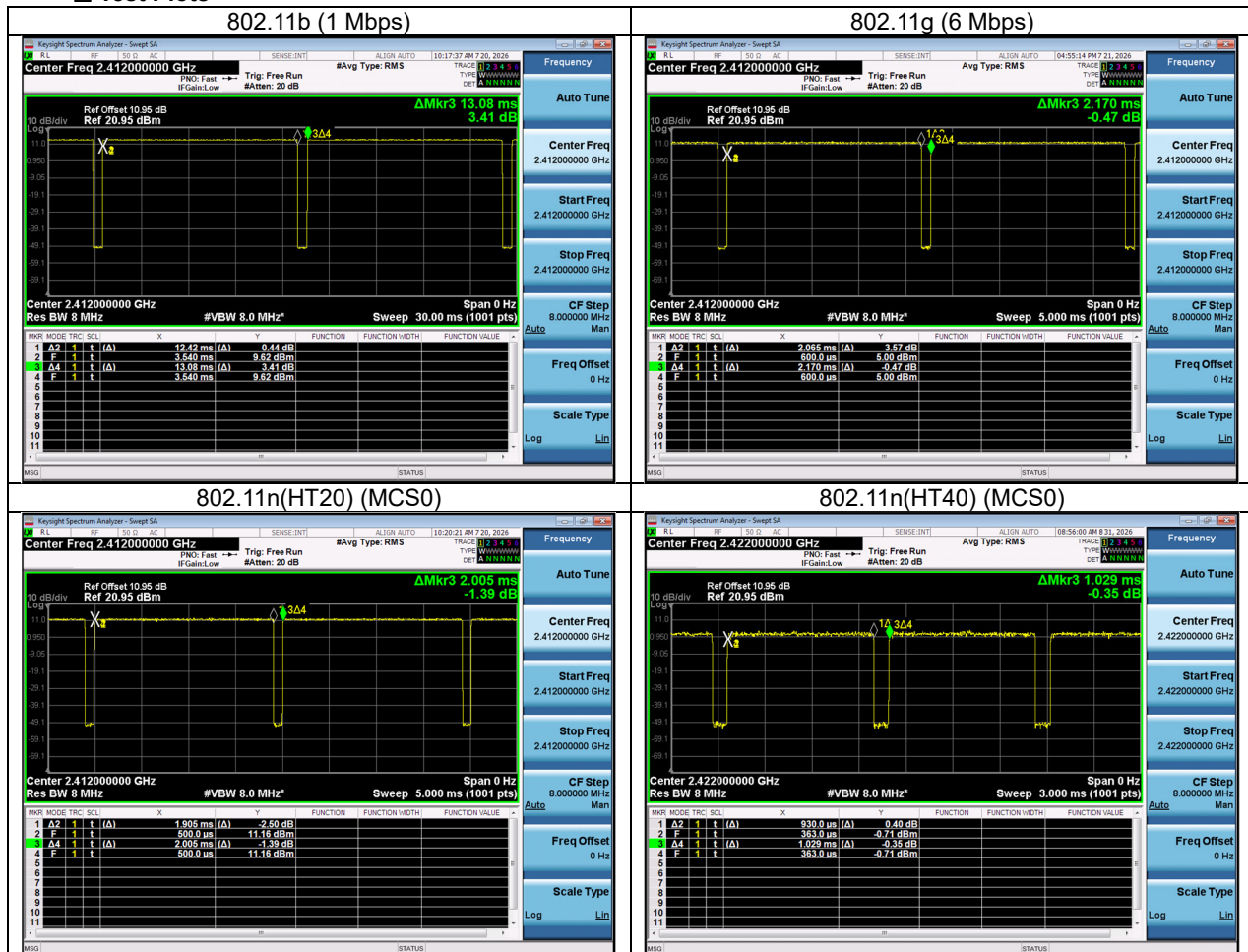
Note. The decision rule applies 'simple acceptance'

9. TEST RESULT

9.1 DUTY CYCLE

Mode	Data Rate	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11b	1 Mbps	12.420	13.080	0.950	0.22
802.11g	6 Mbps	2.065	2.170	0.952	0.22
802.11n HT20	MCS0	1.905	2.005	0.950	0.22
802.11n HT40	MCS0	0.930	1.029	0.904	0.44

Test Plots



9.2 6 dB BANDWIDTH

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11b	2412	1	7.940	> 0.50
	2437	6	7.868	
	2462	11	7.906	
802.11g	2412	1	16.02	
	2437	6	16.03	
	2462	11	16.07	
802.11n HT20	2412	1	17.31	
	2437	6	17.35	
	2462	11	17.39	
802.11n HT40	2422	3	36.01	
	2437	6	35.99	
	2452	9	35.95	

Test Plots

Note: In order to simplify the report, attached plots were only the narrowest 6 dB BW channel



9.3 OUTPUT POWER

Peak Power

Mode	Frequency [MHz]	Channel No.	Data Rate	Conducted Peak Power [dBm]	Limit [dBm]
802.11b	2412	1	11M	20.63	30
	2437	6	11M	20.81	
	2462	11	11M	21.13	
802.11g	2412	1	6M	9.63	
	2437	6	6M	20.47	
	2462	11	6M	13.96	
802.11n HT20	2412	1	MCS0	11.78	
	2437	6	MCS0	20.32	
	2462	11	MCS0	13.85	
802.11n HT40	2422	3	MCS0	15.65	
	2437	6	MCS0	19.02	
	2452	9	MCS0	18.17	

Average Power

Mode	Frequency [MHz]	Channel No.	Data Rate	Total Average Power [dBm]			Limit [dBm]
				Measured Value	D.C.F	Summed	
802.11b	2412	1	1M	13.82	0.22	14.04	30
	2437	6	1M	14.05	0.22	14.27	
	2462	11	1M	14.26	0.22	14.48	
802.11g	2412	1	6M	1.47	0.22	1.69	
	2437	6	6M	12.11	0.22	12.33	
	2462	11	6M	5.52	0.22	5.74	
802.11n HT20	2412	1	MCS0	3.41	0.22	3.63	
	2437	6	MCS0	11.93	0.22	12.15	
	2462	11	MCS0	5.47	0.22	5.69	
802.11n HT40	2422	3	MCS0	7.13	0.44	7.57	
	2437	6	MCS0	10.27	0.44	10.71	
	2452	9	MCS0	9.48	0.44	9.92	

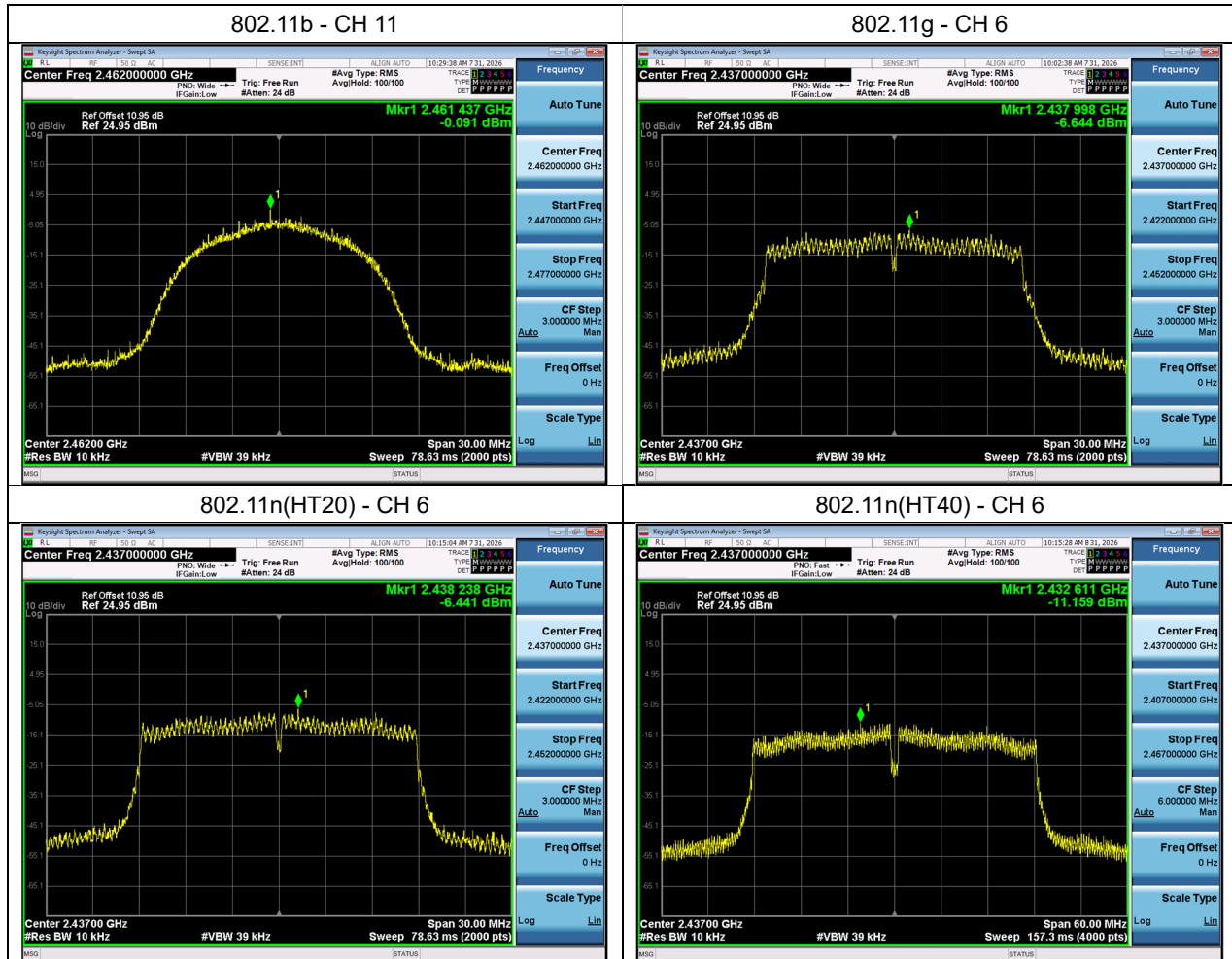
9.4 POWER SPECTRAL DENSITY

BW	Frequency [MHz]	Channel No.	Data Rate	Power Spectral Density [dBm/3kHz]	Limit
802.11b	2412	1	11M	-0.776	8 dBm / 3 kHz
	2437	6	11M	-0.761	
	2462	11	11M	-0.091	
802.11g	2412	1	6M	-18.237	
	2437	6	6M	-6.644	
	2462	11	6M	-13.542	
802.11n HT20	2412	1	MCS0	-14.462	
	2437	6	MCS0	-6.441	
	2462	11	MCS0	-12.674	
802.11n HT40	2422	3	MCS0	-13.375	
	2437	6	MCS0	-11.159	
	2452	9	MCS0	-11.822	

Test Plots

Note :

In order to simplify the report, attached plots were only the worst case PSD channel.



9.5 BAND EDGE / CONDUCTED SPURIOUS EMISSIONS

Band Edge

Limit : 20 dBc

Mode	Freq. [MHz]	CH.	Worst Data Rate	Measured Position	Band edge[dB]
802.11b	2 412	1	11M	Lowest Bandedge	45.953
	2 462	11	11M	Highest Bandedge	57.619
802.11g	2 412	1	6M	Lowest Bandedge	41.077
	2 462	11	6M	Highest Bandedge	45.959
802.11n HT20	2 412	1	MCS0	Lowest Bandedge	39.748
	2 462	11	MCS0	Highest Bandedge	45.383
802.11n HT40	2422	3	MCS0	Lowest Bandedge	34.142
	2452	9	MCS0	Highest Bandedge	36.757

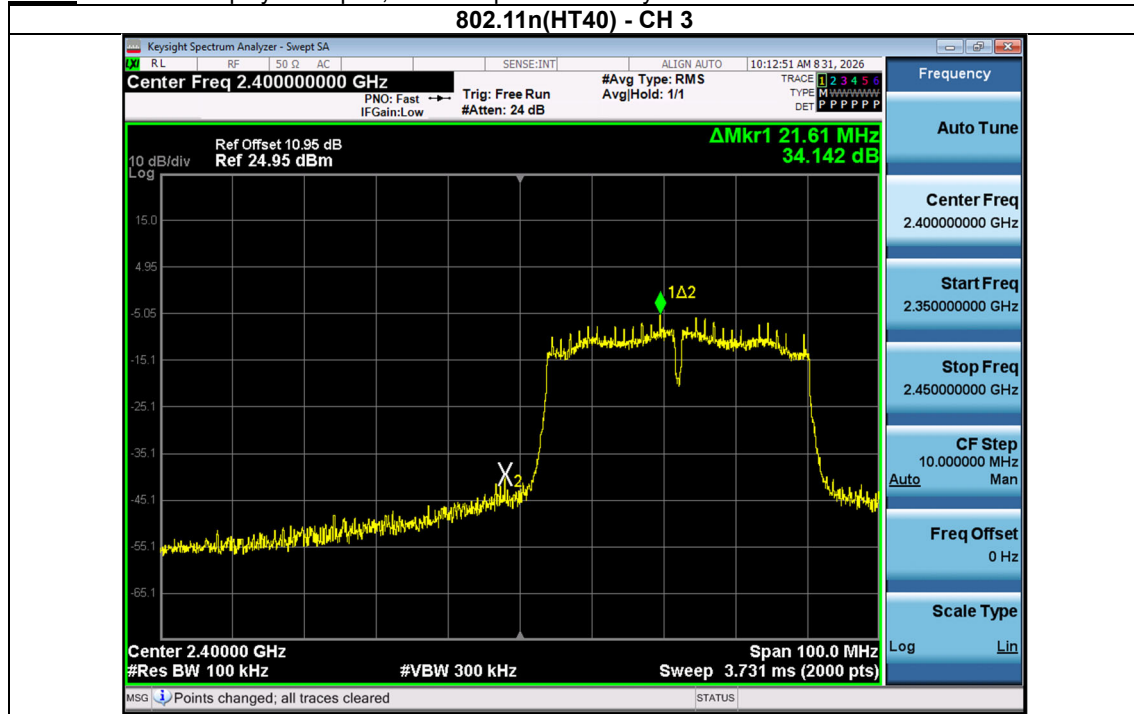
Conducted Spurious Emissions

Limit : 20 dBc

Mode	Frequency [MHz]	Channel No.	Worst Data Rate	Conducted Spurious Emissions [dBc]
802.11b	2412	1	11M	48.706
	2437	6	11M	48.660
	2462	11	11M	48.940
802.11g	2412	1	6M	31.862
	2437	6	6M	43.440
	2462	11	6M	39.222
802.11n HT20	2412	1	MCS0	35.041
	2437	6	MCS0	42.715
	2462	11	MCS0	37.760
802.11n HT40	2422	3	MCS0	34.873
	2437	6	MCS0	40.138
	2452	9	MCS0	37.583

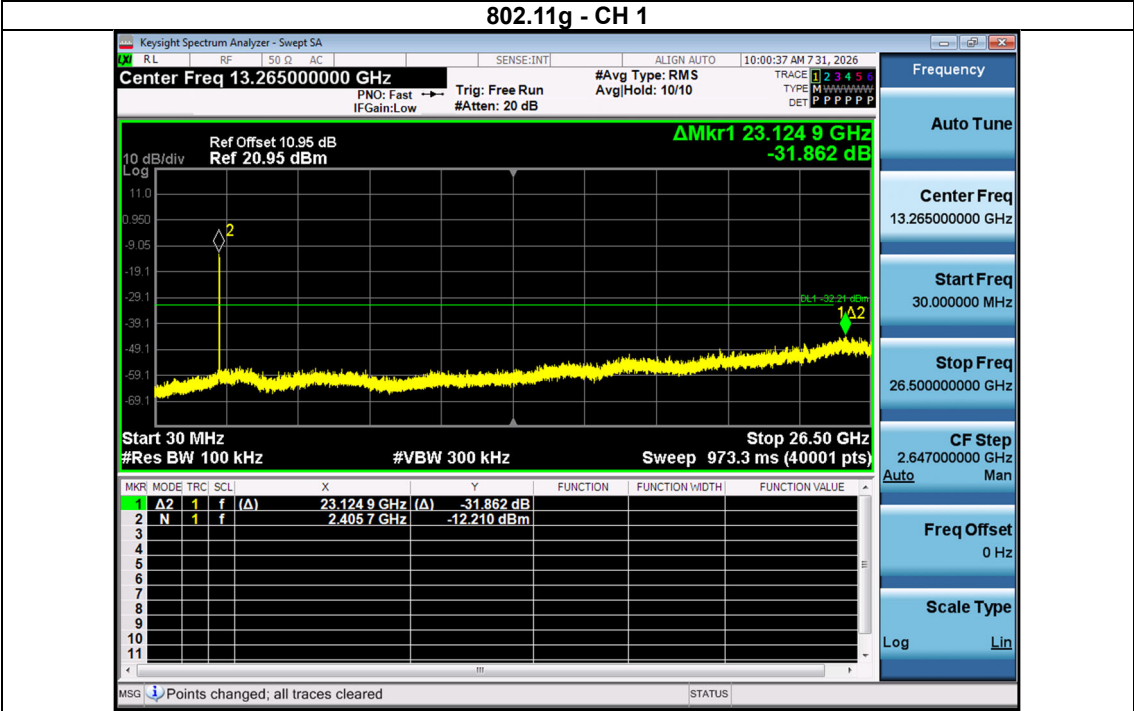
Test Plots(BAND EDGE)

Note: In order to simplify the report, attached plots were only the worst case.



■ Test Plots(Conducted Spurious Emission)

Note: In order to simplify the report, attached plots were only the worst case.



Limit

-32.210 dBm

9.6 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

Frequency	Measured Value	A.F+C.L+D.F	Ant. POL	Total	Limit	Margin
[MHz]	[dBμV/m]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]
No Critical peaks found						

Note:

1. The Measured value of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
2. Distance extrapolation factor = $40\log(\text{specific distance} / \text{test distance})$ (dB)
3. Limit line = specific Limits (dBμV) + Distance extrapolation factor

Frequency Range : Below 1 GHz

Frequency	Measured Value	A.F+C.L	Ant. POL	Total	Limit	Margin
[MHz]	[dBμV/m]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]
No Critical peaks found						

Note:

1. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.

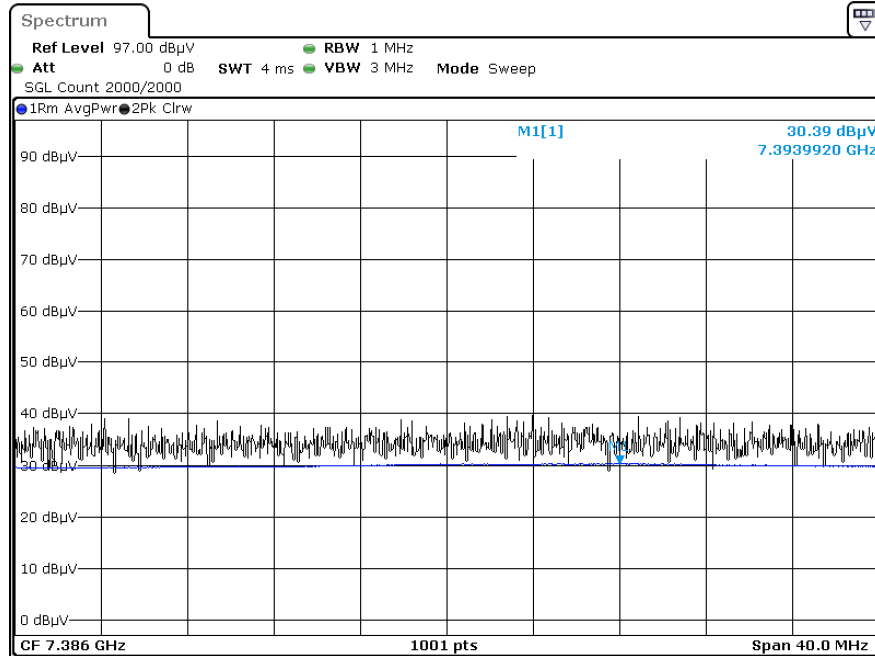
Frequency Range : Above 1 GHz

Band : DTS			Operation Mode :		802.11b			
CH.1 2412MHz			Transfer Rate :		1Mbps			
Frequency [MHz]	Measured value [dBμV]	D.C.F [dB]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	45.47	0.00	1.42	V	46.89	73.98	27.09	PK
4824	33.87	0.22	1.42	V	35.51	53.98	18.47	AV
7236	42.58	0.00	10.05	V	52.63	73.98	21.35	PK
7236	28.82	0.22	10.05	V	39.09	53.98	14.89	AV
4824	45.62	0.00	1.42	H	47.04	73.98	26.94	PK
4824	35.31	0.22	1.42	H	36.95	53.98	17.03	AV
7236	42.43	0.00	10.05	H	52.48	73.98	21.50	PK
7236	29.43	0.22	10.05	H	39.70	53.98	14.28	AV
Band : DTS			Operation Mode :		802.11b			
CH.6 2437MHz			Transfer Rate :		1Mbps			
Frequency [MHz]	Measured value [dBμV]	D.C.F [dB]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	46.23	0.00	1.47	V	47.70	73.98	26.28	PK
4874	34.45	0.22	1.47	V	36.14	53.98	17.84	AV
7311	41.93	0.00	9.39	V	51.32	73.98	22.66	PK
7311	29.48	0.22	9.39	V	39.09	53.98	14.89	AV
4874	46.67	0.00	1.47	H	48.14	73.98	25.84	PK
4874	35.14	0.22	1.47	H	36.83	53.98	17.15	AV
7311	42.24	0.00	9.39	H	51.63	73.98	22.35	PK
7311	30.00	0.22	9.39	H	39.61	53.98	14.37	AV
Band : DTS			Operation Mode :		802.11b			
CH.11 2462MHz			Transfer Rate :		1Mbps			
Frequency [MHz]	Measured value [dBμV]	D.C.F [dB]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4924	45.85	0.00	2.42	V	48.27	73.98	25.71	PK
4924	33.55	0.22	2.42	V	36.19	53.98	17.79	AV
7386	42.45	0.00	9.95	V	52.40	73.98	21.58	PK
7386	29.69	0.22	9.95	V	39.86	53.98	14.12	AV
4924	45.35	0.00	2.42	H	47.77	73.98	26.21	PK
4924	33.50	0.22	2.42	H	36.14	53.98	17.84	AV
7386	42.78	0.00	9.95	H	52.73	73.98	21.25	PK
7386	30.39	0.22	9.95	H	40.56	53.98	13.42	AV

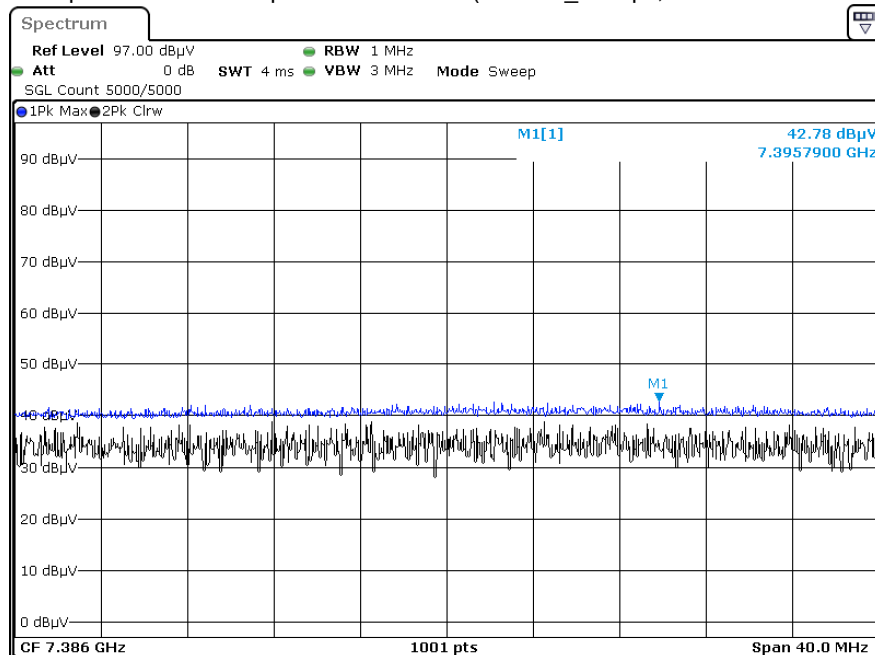
Test Plots

Note: In order to simplify the report, Plots of worst case are only reported.

Radiated Spurious Emissions plot – Average Result (802.11b_1 Mbps, Ch.11 3rd Harmonic, Y-H)



Radiated Spurious Emissions plot – Peak Result (802.11b_1 Mbps, Ch.11 3rd Harmonic, Y-H)



9.7 RADIATED RESTRICTED BAND EDGES

[DTS Lower Edge]

[802.11b]

Operation Mode :	802.11b_20	Tone & RU Index :	-		Transfer Rate :		1M
Channel No. :	1	Frequency :	2412 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	60.82	0.00	H	60.82	73.98	13.16	PK
2310 - 2390	48.38	0.22	H	48.60	53.98	5.38	AV

[802.11g]

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	1	Frequency :	2412 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	67.47	0.00	H	67.47	73.98	6.51	PK
2310 - 2390	44.70	0.22	H	44.92	53.98	9.06	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	2	Frequency :	2417 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	69.97	0.00	H	69.97	73.98	4.01	PK
2310 - 2390	47.85	0.22	H	48.07	53.98	5.91	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	3	Frequency :	2422 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	70.33	0.00	H	70.33	73.98	3.65	PK
2310 - 2390	49.93	0.22	H	50.15	53.98	3.83	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	4	Frequency :	2427 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	70.52	0.00	H	70.52	73.98	3.46	PK
2310 - 2390	50.58	0.22	H	50.80	53.98	3.18	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	5	Frequency :	2432 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	70.33	0.00	H	70.33	73.98	3.65	PK
2310 - 2390	50.18	0.22	H	50.40	53.98	3.58	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	6	Frequency :	2437 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	68.18	0.00	H	68.18	73.98	5.80	PK
2310 - 2390	49.40	0.22	H	49.62	53.98	4.36	AV

[802.11n(HT20)]

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	1	Frequency :	2412 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	65.73	0.00	H	65.73	73.98	8.25	PK
2310 - 2390	45.78	0.22	H	46.00	53.98	7.98	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	2	Frequency :	2417 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	70.10	0.00	H	70.10	73.98	3.88	PK
2310 - 2390	47.27	0.22	H	47.49	53.98	6.49	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	3	Frequency :	2422 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	70.63	0.00	H	70.63	73.98	3.35	PK
2310 - 2390	50.03	0.22	H	50.25	53.98	3.73	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	4	Frequency :	2427 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	70.40	0.00	H	70.40	73.98	3.58	PK
2310 - 2390	50.62	0.22	H	50.84	53.98	3.14	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	5	Frequency :	2432 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	69.57	0.00	H	69.57	73.98	4.41	PK
2310 - 2390	50.08	0.22	H	50.30	53.98	3.68	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	6	Frequency :	2437 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	69.53	0.00	H	69.53	73.98	4.45	PK
2310 - 2390	49.74	0.22	H	49.96	53.98	4.02	AV

[802.11n(HT40)]

Operation Mode :	802.11n_40	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	3	Frequency :	2422 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	70.98	0.00	H	70.98	73.98	3.00	PK
2310 - 2390	48.67	0.44	H	49.11	53.98	4.87	AV

Operation Mode :	802.11n_40	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	4	Frequency :	2427 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	69.59	0.00	H	69.59	73.98	4.39	PK
2310 - 2390	48.34	0.44	H	48.78	53.98	5.20	AV

Operation Mode :	802.11n_40	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	5	Frequency :	2432 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	70.45	0.00	H	70.45	73.98	3.53	PK
2310 - 2390	49.65	0.44	H	50.09	53.98	3.89	AV

Operation Mode :	802.11n_40	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	6	Frequency :	2437 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	68.16	0.00	H	68.16	73.98	5.82	PK
2310 - 2390	50.48	0.44	H	50.92	53.98	3.06	AV

Operation Mode :	802.11n_40	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	7	Frequency :	2442 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	69.28	0.00	H	69.28	73.98	4.70	PK
2310 - 2390	49.86	0.44	H	50.30	53.98	3.68	AV

[DTS Upper Edge]

[802.11b]

Operation Mode :	802.11b_20	Tone & RU Index :	-		Transfer Rate :		1M
Channel No. :	11	Frequency :	2462 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	57.63	0.00	H	57.63	73.98	16.35	PK
2483.5 - 2500	46.39	0.22	H	46.61	53.98	7.37	AV

[802.11g]

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	6	Frequency :	2437 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	69.18	0.00	H	69.18	73.98	4.80	PK
2483.5 - 2500	50.17	0.22	H	50.39	53.98	3.59	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	7	Frequency :	2442 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	70.75	0.00	H	70.75	73.98	3.23	PK
2483.5 - 2500	50.44	0.22	H	50.66	53.98	3.32	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	8	Frequency :	2447 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	70.66	0.00	H	70.66	73.98	3.32	PK
2483.5 - 2500	49.86	0.22	H	50.08	53.98	3.90	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	9	Frequency :	2452 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	70.93	0.00	H	70.93	73.98	3.05	PK
2483.5 - 2500	50.04	0.22	H	50.26	53.98	3.72	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	10	Frequency :	2457 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	67.82	0.00	H	67.82	73.98	6.16	PK
2483.5 - 2500	45.91	0.22	H	46.13	53.98	7.85	AV

Operation Mode :	802.11g_20	Tone & RU Index :	-		Transfer Rate :		6M
Channel No. :	11	Frequency :	2462 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	68.15	0.00	H	68.15	73.98	5.83	PK
2483.5 - 2500	45.38	0.22	H	45.60	53.98	8.38	AV

[802.11n(HT20)]

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	6	Frequency :	2437 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	69.83	0.00	H	69.83	73.98	4.15	PK
2483.5 - 2500	49.85	0.22	H	50.07	53.98	3.91	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	7	Frequency :	2442 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	70.46	0.00	H	70.46	73.98	3.52	PK
2483.5 - 2500	49.54	0.22	H	49.76	53.98	4.22	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	8	Frequency :	2447 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	70.55	0.00	H	70.55	73.98	3.43	PK
2483.5 - 2500	48.84	0.22	H	49.06	53.98	4.92	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	9	Frequency :	2452 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	68.47	0.00	H	68.47	73.98	5.51	PK
2483.5 - 2500	47.73	0.22	H	47.95	53.98	6.03	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	10	Frequency :	2457 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	68.64	0.00	H	68.64	73.98	5.34	PK
2483.5 - 2500	46.11	0.22	H	46.33	53.98	7.65	AV

Operation Mode :	802.11n_20	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	11	Frequency :	2462 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	68.81	0.00	H	68.81	73.98	5.17	PK
2483.5 - 2500	45.83	0.22	H	46.05	53.98	7.93	AV

[802.11n(HT40)]

Operation Mode :	802.11n_40	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	9	Frequency :	2452 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	70.47	0.00	H	70.47	73.98	3.51	PK
2483.5 - 2500	50.96	0.44	H	51.40	53.98	2.58	AV

Operation Mode :	802.11n_40	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	8	Frequency :	2447 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	70.94	0.00	H	70.94	73.98	3.04	PK
2483.5 - 2500	50.59	0.44	H	51.03	53.98	2.95	AV

Operation Mode :	802.11n_40	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	7	Frequency :	2442 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	70.23	0.00	H	70.23	73.98	3.75	PK
2483.5 - 2500	50.85	0.44	H	51.29	53.98	2.69	AV

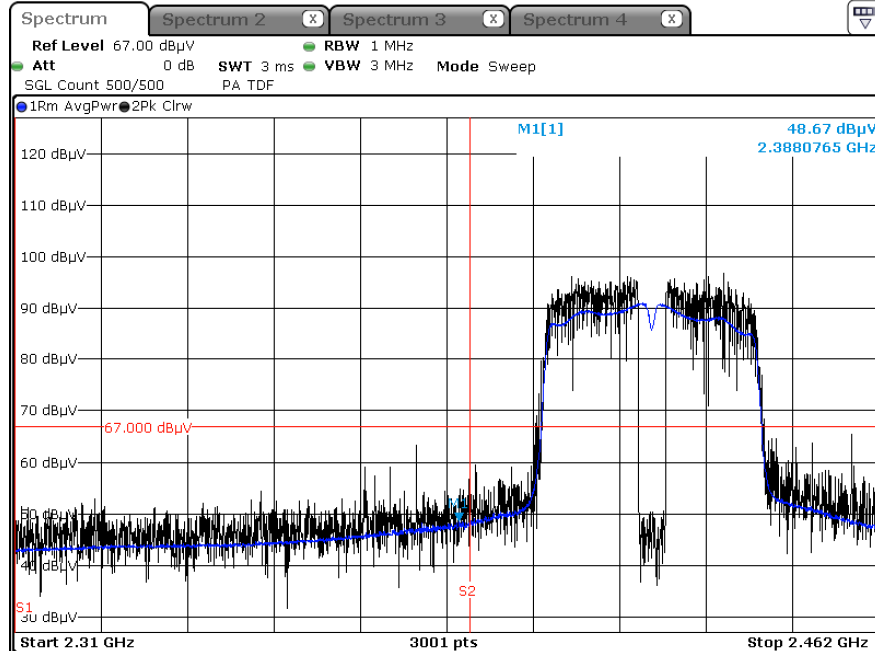
Operation Mode :	802.11n_40	Tone & RU Index :	-		MCS index :		MCS0
Channel No. :	6	Frequency :	2437 MHz		Band :		DTS
Frequency	Measured Value	Duty Cycle Factor	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2483.5 - 2500	65.00	0.00	H	65.00	73.98	8.98	PK
2483.5 - 2500	48.43	0.44	H	48.87	53.98	5.11	AV

Test Plots

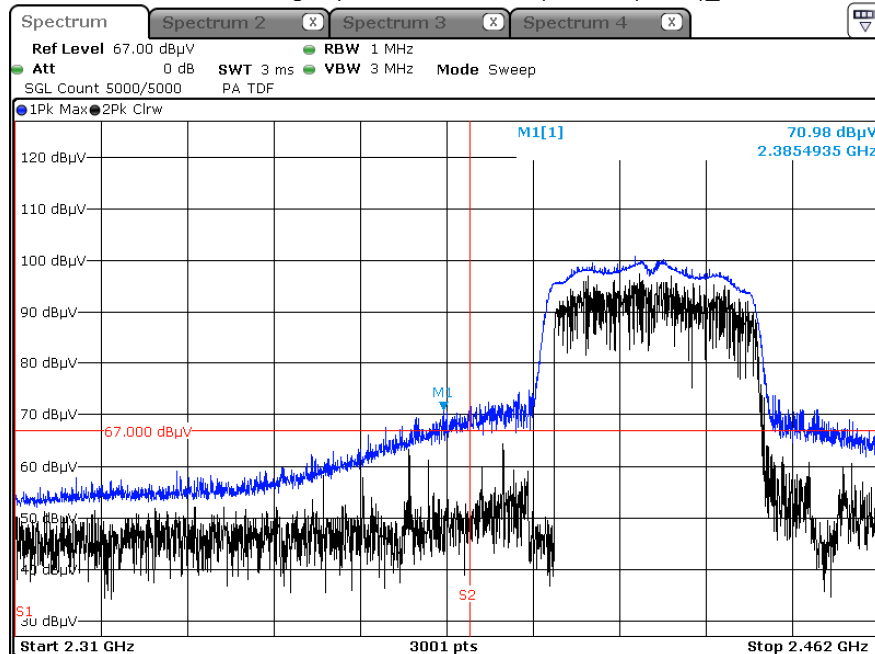
Note: In order to simplify the report, Plots of worst case are only reported.

[DTS Lower Edge]

Radiated Restricted Band Edges plot – Average Result (802.11n(HT40)_MCS0, Ch.3, Z-H)

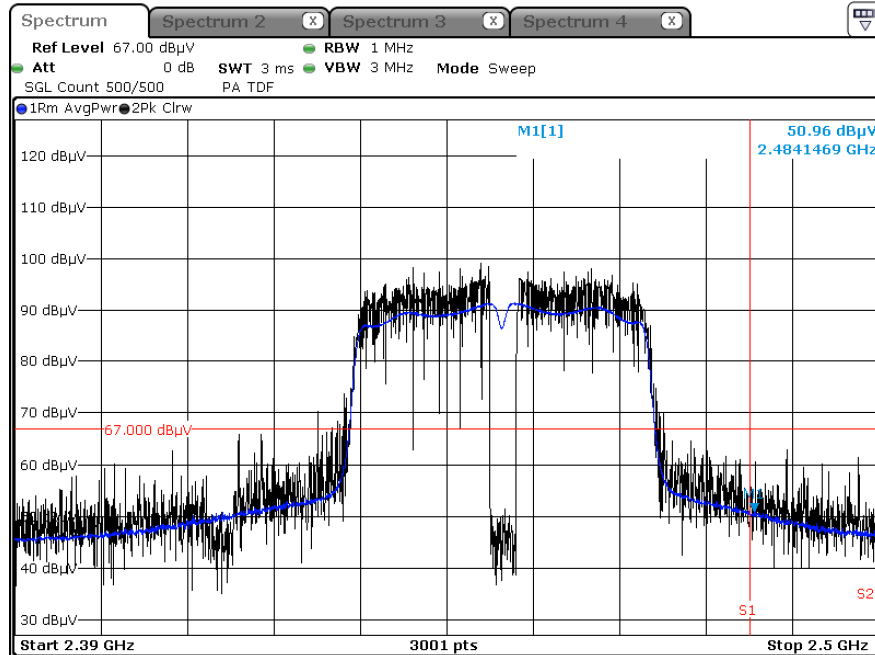


Radiated Restricted Band Edges plot – Peak Result (802.11n(HT40)_MCS0, Ch.3, Z-H)

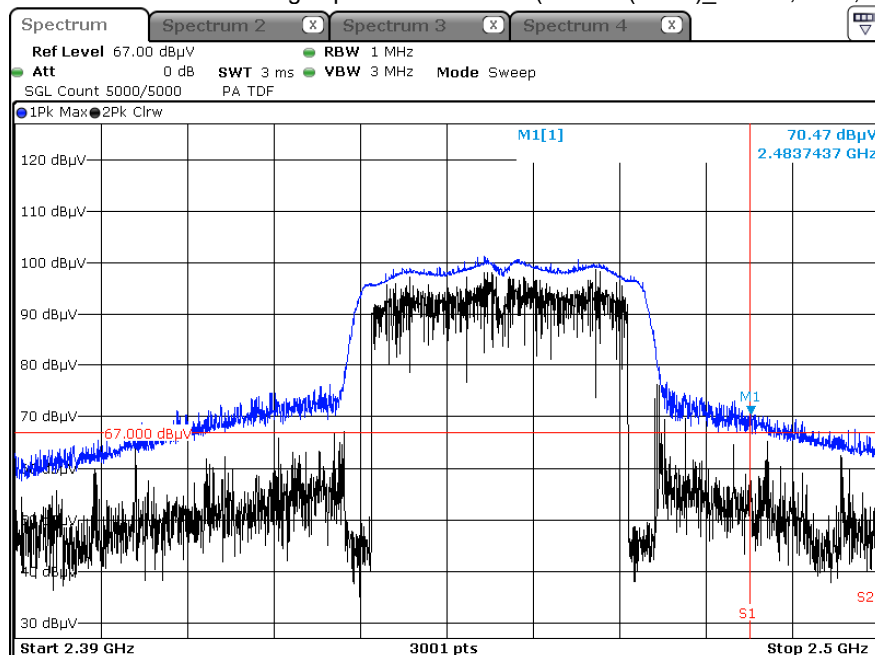


[DTS Upper Edge]

Radiated Restricted Band Edges plot – Average Result (802.11n(HT40)_ MCS0, Ch.9, Z-H)



Radiated Restricted Band Edges plot – Peak Result (802.11n(HT40)_ MCS0, Ch.9, Z-H)



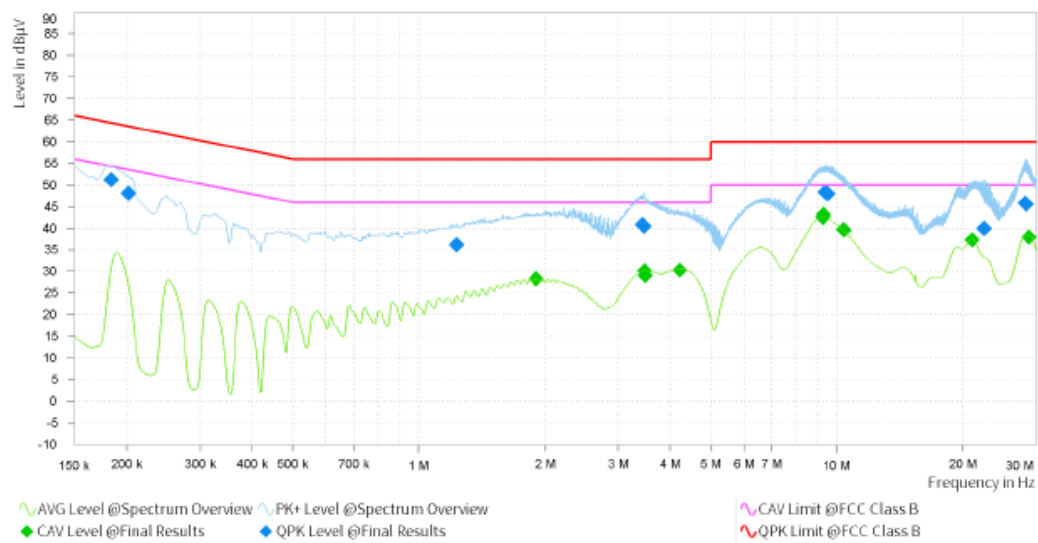
9.8 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions

Test Report

Test Information

EUT SPW-B43143U
Operating Condition 2.4G WLAN Mode
Comment



EMI Final Results

Frequency [MHz]	QPK Level [dBuV]	QPK Limit [dBuV]	QPK Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
0.184	51.23	64.31	13.09	9.56	L1	9.000
0.202	48.10	63.54	15.44	9.56	L1	9.000
1.232	36.14	56.00	19.86	9.60	L1	9.000
3.431	40.77	56.00	15.23	9.64	N	9.000
3.467	40.38	56.00	15.62	9.64	L1	9.000
9.380	48.35	60.00	11.65	9.75	L1	9.000
9.535	47.93	60.00	12.07	9.75	L1	9.000
22.529	39.92	60.00	20.08	9.86	L1	9.000
28.284	45.84	60.00	14.16	9.88	L1	9.000
28.475	45.61	60.00	14.39	9.88	L1	9.000

EMI Final Results

Frequency [MHz]	CAV Level [dBuV]	CAV Limit [dBuV]	CAV Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
1.907	28.28	46.00	17.72	9.62	L1	9.000
3.471	30.19	46.00	15.81	9.64	L1	9.000
3.485	29.08	46.00	16.92	9.64	N	9.000
4.218	30.28	46.00	15.72	9.65	L1	9.000
9.290	42.43	50.00	7.57	9.75	N	9.000
9.317	43.24	50.00	6.76	9.75	L1	9.000
10.399	39.63	50.00	10.37	9.77	L1	9.000
10.417	39.53	50.00	10.47	9.77	L1	9.000
21.107	37.37	50.00	12.63	9.85	L1	9.000
28.833	37.99	50.00	12.01	9.88	L1	9.000

10. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	07/10/2027	Annual
EMI Test Receiver	EPL1000	Rohde & Schwarz	101127	05/15/2027	Annual
Chamber	SU-642	ESPEC	93022487	06/17/2027	Annual
Signal Analyzer	N9030A	Keysight	MY55410508	07/14/2027	Annual
Open Switch and Control Platform	OSP 150	Rohde & Schwarz	100894	05/06/2027	Annual
Power Meter	N1911A	Agilent	MY45100523	02/13/2027	Annual
WIDEBAND Power Sensor	N1921A	Keysight	MY57820067	01/26/2027	Annual
Directional Coupler	87300B	Agilent	3116A03621	10/14/2026	Annual
Power Splitter	11667B	Hewlett Packard	10545	01/15/2027	Annual
DC Power Supply	E3632A	Agilent	MY40010147	07/15/2027	Annual
Attenuator	8493C-010	HP	08285	05/08/2027	Annual
Software	ELEKTRA	Rohde & Schwarz	N/A	N/A	N/A
Bluetooth Tester	CBT	Rohde & Schwarz	100752	12/22/2026	Annual
Automation Software	FCC WLAN Conducted	HCT CO., LTD.	-	-	-
Automation Software	FCC BT Conducted	HCT CO., LTD.	-	-	-

Note:

- Equipment whose calibration due date was updated during the test period was not used between the previous due date and the update.
All reported measurements were performed using equipment within valid calibration.
- Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

Radiated Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Antenna Mast Controller	CO3000	Innco systems GmbH	CO3000/1031/41190717/P	N/A	N/A
Antenna Mast	MA46040/800-XP-ET	Innco systems GmbH	S2AM	07/01/2027	Annual
Turn Table	DS2000-s	Innco systems GmbH	-	N/A	N/A
Loop Antenna	FMZB 1513	Schwarzbeck Mess-Elektronik OHG	1513-175	06/24/2027	Biennial
Trilog Broadband Antenna	VULB 9168	Schwarzbeck Mess-Elektronik OHG	9168-1135	08/12/2028	Biennial
Horn Antenna	BBHA 9120 D	Schwarzbeck Mess-Elektronik OHG	02299	01/08/2028	Biennial
Horn Antenna	BBHA 9170	Schwarzbeck Mess-Elektronik OHG	BBHA9170342	09/20/2026	Biennial
Signal Analyzer	FSV40	Rohde & Schwarz	100901	02/13/2027	Annual
Signal Analyzer	N9030A	Agilent	MY52350879	03/16/2027	Annual
Attenuator	18B-03	API Technologies	1	04/13/2027	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	5	03/19/2027	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	6	03/19/2027	Annual
Band Reject Filter	WRCJV2400/2483.5-2370/2520-60/12SS	Wainwright Instruments	2	12/11/2026	Annual
Band Reject Filter	WRCJV5100/5850-40/50-8EEK	Wainwright Instruments	1	01/07/2027	Annual
RF Switching System	FMSR-04B (3G HPF+LNA)	T&M SYSTEM	S2L1	12/18/2026	Annual
RF Switching System	FMSR-04B (10dB ATT+LNA)	T&M SYSTEM	S2L2	12/18/2026	Annual
RF Switching System	FMSR-04B (3dB ATT+LNA)	T&M SYSTEM	S2L3	12/18/2026	Annual
RF Switching System	FMSR-04B (LNA)	T&M SYSTEM	S2L4	12/18/2026	Annual
RF Switching System	FMSR-04B (7G HPF+LNA)	T&M SYSTEM	S2L5	12/18/2026	Annual
Broadband LNA	CBL18265035	CERNEX	22966	10/21/2026	Annual
Broadband LNA	CBL26405040	CERNEX	25956	02/09/2027	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/03/2027	Annual
Automation Software	FCC WLAN Radiated	HCT CO., LTD	-	-	-

Note:

- Equipment whose calibration due date was updated during the test period was not used between the previous due date and the update.
All reported measurements were performed using equipment within valid calibration.
- Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

11. ANNEX A_TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2608-FC002-P