

TEST REPORT

FCC BT LE Test for SM-A376U
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2512-FC033

DATE OF ISSUE
December 16, 2025

Tested by
Jeong Ho Kim



Technical Manager
Jong Seok Lee



HCT CO., LTD.
BongJai Huh
BongJai Huh / CEO



HCT CO.,LTD.

2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea
Tel. +82 31 645 6300 Fax. +82 31 645 6401

TEST REPORT

REPORT NO.

HCT-RF-2512-FC033

DATE OF ISSUE

December 16, 2025

Additional Model

SM-A376U1, SM-S376V

Applicant

SAMSUNG Electronics Co., Ltd.
129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Product Name

Mobile Phone

Model Name

SM-A376U

FCC ID

A3LSMA376U

Date of Test

November 04, 2025 ~ December 16, 2025

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	December 16, 2025	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).

CONTENTS

1. EUT DESCRIPTION	5
ANTENNA CONFIGURATIONS	6
2. TEST METHODOLOGY	7
EUT CONFIGURATION	7
EUT EXERCISE	7
GENERAL TEST PROCEDURES	7
DESCRIPTION OF TEST MODES	8
3. INSTRUMENT CALIBRATION	8
4. FACILITIES AND ACCREDITATIONS	8
FACILITIES	8
EQUIPMENT	8
5. ANTENNA REQUIREMENTS	9
6. MEASUREMENT UNCERTAINTY	9
7. DESCRIPTION OF TESTS	10
8. SUMMARY TEST OF RESULTS	27
9. TEST RESULT	28
9.1 DUTY CYCLE	28
9.2 6 dB BANDWIDTH	31
9.3 OUTPUT POWER	33
9.4 POWER SPECTRAL DENSITY	35
9.5 BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS	37
9.6 RADIATED SPURIOUS EMISSIONS	39
9.7 RADIATED RESTRICTED BAND EDGES	46
9.8 POWERLINE CONDUCTED EMISSIONS	48
10. LIST OF TEST EQUIPMENT	49
11. ANNEX A_ TEST SETUP PHOTO	51

1. EUT DESCRIPTION

Model	SM-A376U		
Additional Model	SM-A376U1, SM-S376V		
EUT Type	Mobile Phone		
Power Supply	DC 3.90 V		
Frequency Range	125k, 500k, 1M Bit/s : 2402 - 2480 MHz 2M Bit/s : 2404 - 2478 MHz (Except for 2426 MHz)		
Number of Channels	125k, 500k, 1M Bit/s : 40 Channels 2M Bit/s : 37 Channels		
Max. RF Output Power (Normal)	Peak	1 M Bit/s: 2 M Bit/s: 125 k Bit/s: 500 k Bit/s:	14.199 dBm (26.30 mW) 14.226 dBm (26.46 mW) 12.477 dBm (17.69 mW) 12.565 dBm (18.05 mW)
	Average	1 M Bit/s: 2 M Bit/s: 125 k Bit/s: 500 k Bit/s:	13.792 dBm (23.94 mW) 13.953 dBm (24.85 mW) 12.251 dBm (16.79 mW) 12.392 dBm (17.34 mW)
Modulation Type	GFSK		
Bluetooth Version	5.3		
Antenna Information	Please refer to the Antenna Specification document.		
Serial number	Conducted : R3CY90Z7ZCZ Radiated : R3CY90Z80FT		

Grant Notes :

1. Output Power listed is conducted(Average)

ANTENNA CONFIGURATIONS

1. Below Tables are the possible configurations.

Configurations	SISO		Dual BT
	Ant1(Core-0)	Ant2(Core-1)	Ant1 & Ant2
Bluetooth Low Energy	O	X	X

Note:

- 1) O = Support, X = Not Support
- 2) SISO = Single Input Single Output

2. This device supports simultaneous transmission operation, which allows for two channels to operate independent of one another in the 2.4 GHz and 5 GHz Bands simultaneously on each antenna.

Simultaneous transmission Scenario	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	BT Ant.1	BT Ant.2	Test Case
BT ANT.1 + 5 GHz WiFi MIMO	on	on	on	-	Scenario 1
BT ANT.1 + 5 GHz WiFi ANT.1	on	-	on	-	Scenario 2

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

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. The site is constructed in conformance with the requirements of ANSI C63.4-2014 and CISPR Publication 22.

Detailed description of test facility was submitted to the Commission and accepted dated March 11, 2024 (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.”

- (1) The antennas of this E.U.T are permanently attached.
- (2) The E.U.T Complies with the requirement of § 15.203

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 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

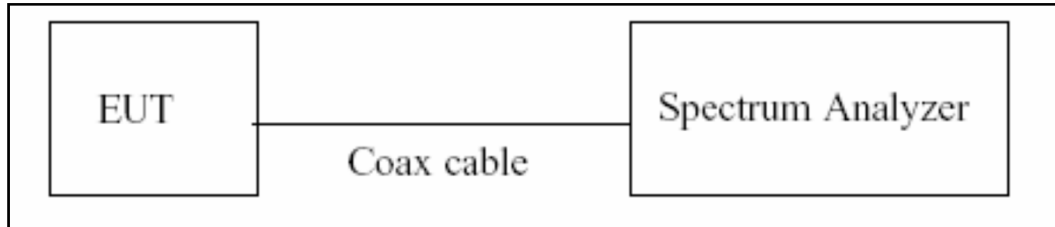
Parameter	Expanded Uncertainty ($\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.54 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Power Meter)	0.54 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Signal Analyzer)	0.68 (Confidence level about 95 %, $k=2$)
Power Spectral Density	1.03 (Confidence level about 95 %, $k=2$)
Band Edge (Out of Band Emissions)	0.70 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.68 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.75 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.82 (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

The transmitter output is connected to the Spectrum Analyzer.

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 Spectrum Analyzer is set to

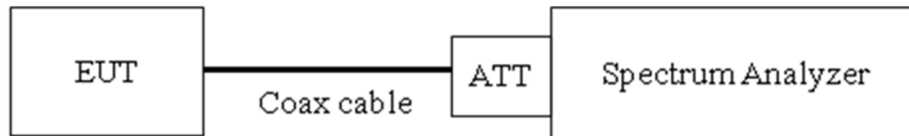
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz ($\geq$ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = $T_{\text{on}} / T_{\text{total}}$ and Duty Cycle Factor = $10\log(1/\text{Duty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

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.

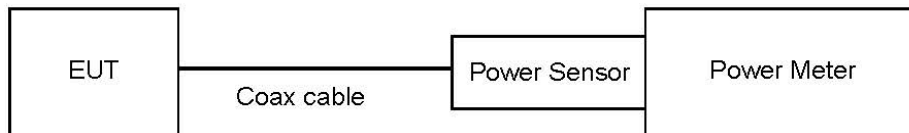
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

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

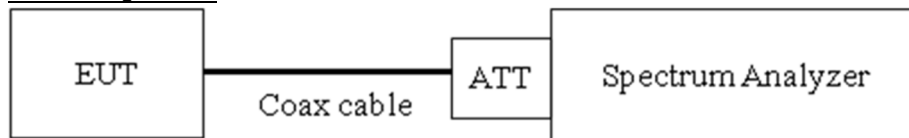
- Conducted Output Power(Peak) = Measured Value + ATT loss + Cable loss
- Conducted Output Power(Average) = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

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 OBW.
 - 3) $RBW = 3 \text{ kHz} \leq RBW \leq 100 \text{ kHz}$.
 - 4) $VBW \geq 3 \times RBW$.
 - 5) Sweep = auto couple
 - 6) Detector = power averaging (rms) or sample detector (when rms not available).
 - 7) Ensure that the number of measurement points in the sweep $\geq [2 \times \text{span} / RBW]$.
 - 8) Employ trace averaging (rms) mode over a minimum of 100 traces
 - 9) Use the peak marker function to determine the maximum amplitude level.
 - 10) Use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11) if then duty factor shall be added to adjust the result if the duty cycle is less than 98 %

Sample Calculation

- Power Spectral Density = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

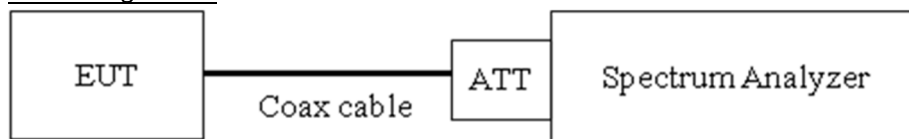
7.5. Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions

Limit

The maximum conducted (average) 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 30 dB relative to the maximum in-band peak PSD level in 100 kHz.

[Conducted > 30 dBc]

Test Configuration



Test Procedure

The transmitter output is connected to the spectrum analyzer.

- 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) Allow trace to fully stabilize.
- 8) 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	10.10
100	10.11
200	10.15
300	10.18
400	10.19
500	10.26
600	10.25
700	10.28
800	10.29
900	10.30
1000	10.30
2000	10.52
2400	10.60
2500	10.60
3000	10.62
4000	10.67
5000	10.80
6000	10.90
7000	10.90
8000	10.94
9000	11.04
10000	11.14
11000	11.18
12000	11.22
13000	11.28
14000	11.35
15000	11.44
16000	11.49
17000	11.53
18000	11.57
19000	11.63
20000	11.68
21000	11.71
22000	11.80
23000	11.82
24000	11.93
25000	11.95

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

2. Factor = Attenuator loss + Cable loss

3. EUT cable loss = 0.20 dB

4. Total Port offset = 10.80 dB

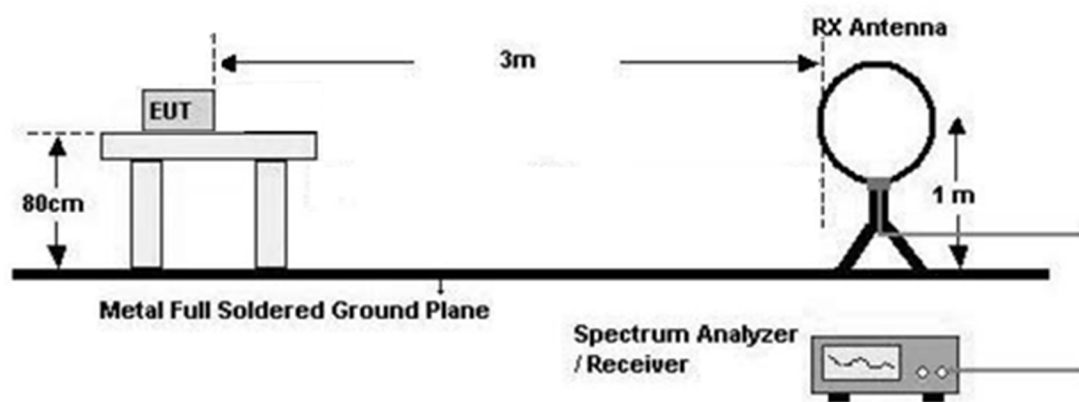
7.6. Radiated Test

Limit

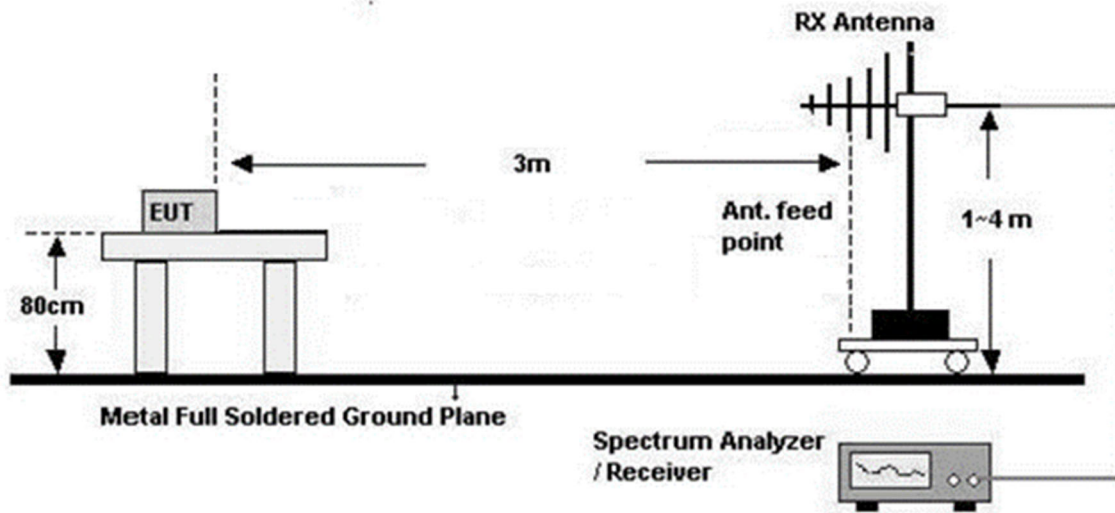
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

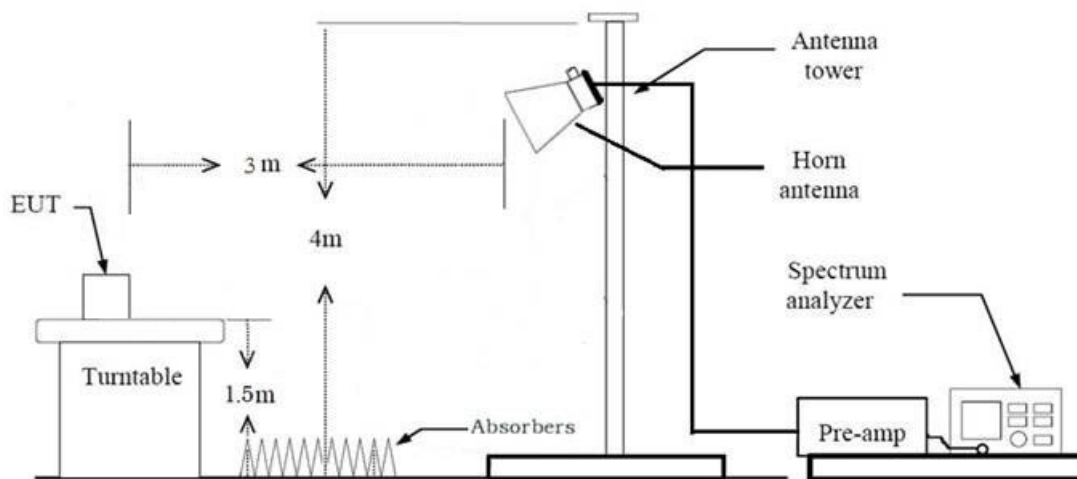
Below 30 MHz



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
 - 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 1m 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 = Max hold
 - RBW = 1 MHz
 - VBW $\geq 3 \times$ RBW
 - (2) 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 percent duty cycle.
 - Duty Cycle Factor (dB) : Please refer to the please refer to section 9.1
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 + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G)
 - + Distance Factor(D.F)Total (Measurement Type : Average)
 - = Average Measured Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G)

+ Distance Factor(D.F)

#Note : Used Average measurement method according to KDB 558074 Section11 Q3

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 = Max hold
 - RBW = 1 MHz
 - VBW $\geq 3 \times$ RBW
 - (2) 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 percent duty cycle.
 - Duty Cycle Factor (dB) : Please refer to the please refer to section 9.1.
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
 - (1)Measurement(Peak)
 - = Peak Measured Value

(2) Measurement(Avg)

= Average Measured Value

- 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) – Amp. Gain(A.G)
+ Attenuator (ATT)

#Note : Used Average measurement method according to KDB 558074 Section11 Q3

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

7.9. Worst case configuration and mode

Radiated Test

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : Stand alone, Stand alone + External accessories(Earphone etc)
 - Worstcase : Stand alone
2. EUT Axis
 - Radiated Spurious Emissions : Y
 - Radiated Restricted Band Edge : X
3. All packet length of operation were investigated and the test results are worst case in lowest packet length.
(Worst case :1M Bit/s 37 Byte)
(125k, 500k, 1M Bit/s all have the same 1 MHz Bandwidth and only Worst result is attached.)
4. All datarate of operation were investigated and the worst case configuration results are reported.
 - Worst case : 1M, 2M
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. SM-A376U, Additional Models were tested and the worst case results are reported.
(Worst case: SM-A376U)

Conducted test

1. The EUT was configured with packet length of highest power.
 - ALL supported mode tested.
 - Worst Results refer to Notes for each test item
2. SM-A376U, Additional Models were tested and the worst case results are reported.
(Worst case: SM-A376U)

AC Power line Conducted Emissions

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : Stand alone+ External accessories(Earphone, etc)+Travel Adapter
Stand alone + Travel Adapter
 - Worstcase : Stand alone + Travel Adapter
2. SM-A376U, Additional Models were tested and the worst case results are reported.
(Worst case: SM-A376U)

Radiated test(Simultaneous transmission Scenario)

1. All modes of operation were investigated and the worst case configuration results are reported.

- Mode : Stand alone, Stand alone + External accessories
- Worstcase : Stand alone

2. EUT Axis

- Radiated Spurious Emissions : Y

3. All of Simultaneous transmission Scenario were investigated and the worst case configuration results are reported. (Bluetooth Worst case : BTLE)

Simultaneous transmission Scenario	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	BT Ant.1	BT Ant.2	Test Case
BT ANT.1 + 5 GHz WiFi MIMO	on	on	on	-	Scenario 1
BT ANT.1 + 5 GHz WiFi ANT.1	on	-	on	-	Scenario 2

4. The Simultaneous transmission Scenario mode test investigated both intermodulation and radiated spurious emissions.

- Worst result : Radiated spurious emissions
- Intermodulation : No signals are generated.
- Radiated spurious emissions : cf. Section 9.6

5. The following tables show the worst cases configurations determined during testing.

(Worst case : The lowest margin condition the channels and modes were selected for test.)

Scenario 1	Description	BT Emission	5 GHz Emission
BT ANT.1 + 5 GHz WiFi MIMO	Antenna	ANT 1	ANT ALL
	Channel	37	165
	Data Rate	1 Mbps	MCS 0
	Mode	BTLE 1M 37 Bytes	802.11ax(HE 20)
	Tone/RU	-	242/61

Note : UNII ax Simultaneous transmission Data refer to [UNII ax] Test Report

Scenario 2	Description	BT Emission	5 GHz Emission
BT ANT.1 + 5 GHz WiFi ANT. 1	Antenna	ANT 1	ANT 1
	Channel	37	165
	Data Rate	1 Mbps	MCS 0
	Mode	BTLE 1M 37 Bytes	802.11ax(HE 20)
	Tone/RU	-	242/61

Note : UNII ax Simultaneous transmission Data refer to [UNII ax] Test Report

6. SM-A376U, Additional Models were tested and the worst case results are reported.

(Worst case: SM-A376U)

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 Band		PASS
Band Edge (Out of Band Emissions)	§ 15.247(d)	Conducted > 30 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'

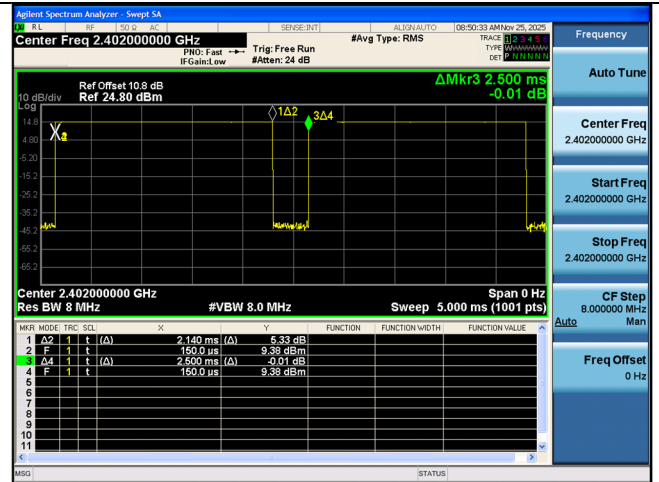
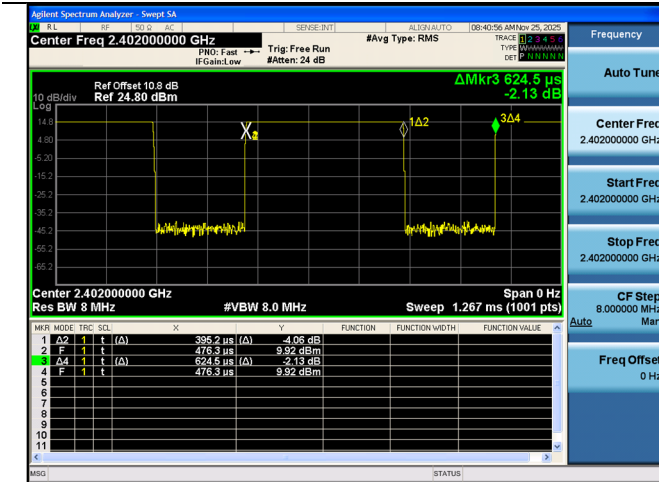
9. TEST RESULT

9.1 DUTY CYCLE

Data rate (Bit/s)	Packet length (Byte)	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
1M	37	0.395	0.624	0.633	1.987
	255	2.140	2.500	0.856	0.675
2M	37	0.209	0.624	0.335	4.754
	255	1.082	1.874	0.577	2.386
125k	37	3.100	3.750	0.827	0.827
	255	17.07	17.50	0.975	0.109
500k	37	1.074	1.877	0.572	2.424
	255	4.560	5.000	0.912	0.400

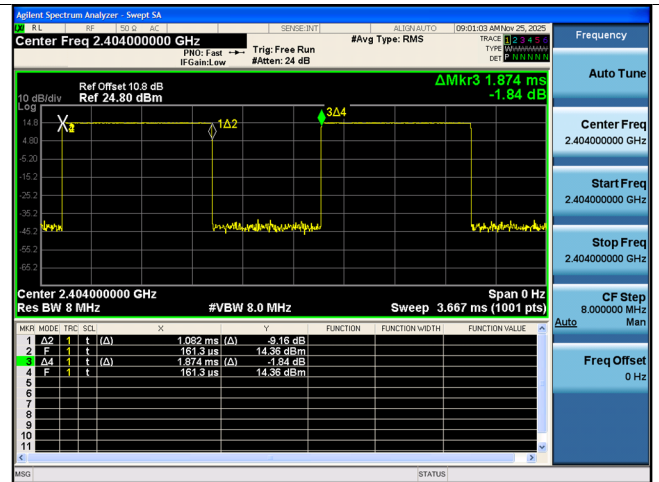
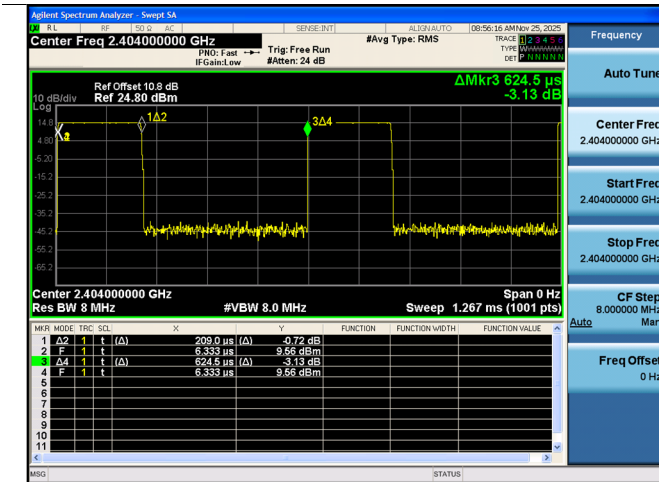
1 M Bit/s (37 Byte)

1 M Bit/s (255 Byte)



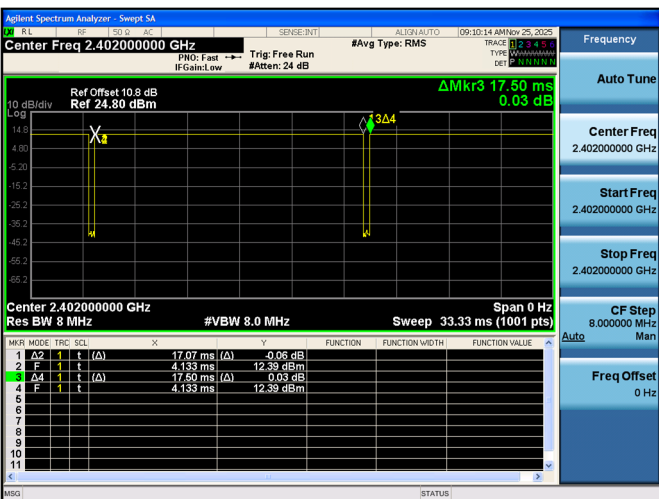
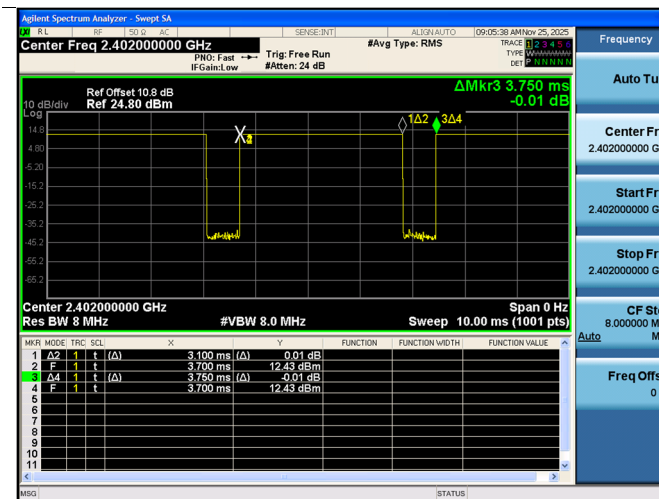
2 M Bit/s (37 Byte)

2 M Bit/s (255 Byte)



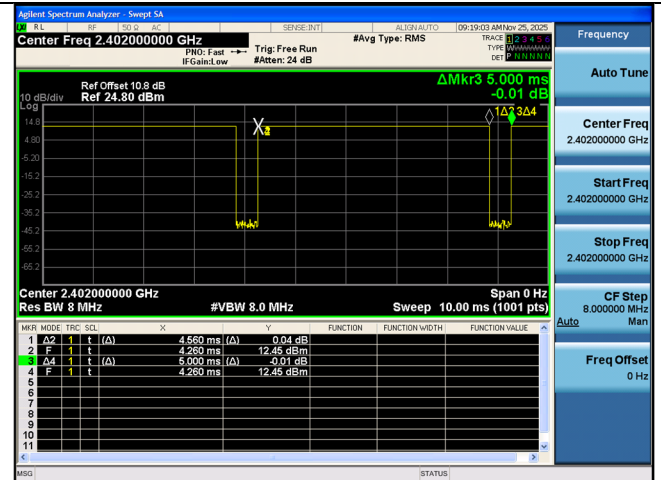
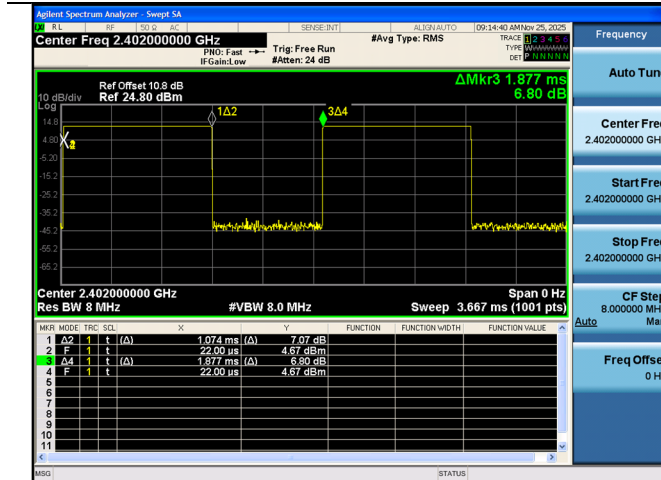
125 k Bit/s(37 Byte)

125 k Bit/s(255 Byte)



500 k Bit/s(37 Byte)

500 k Bit/s(255 Byte)



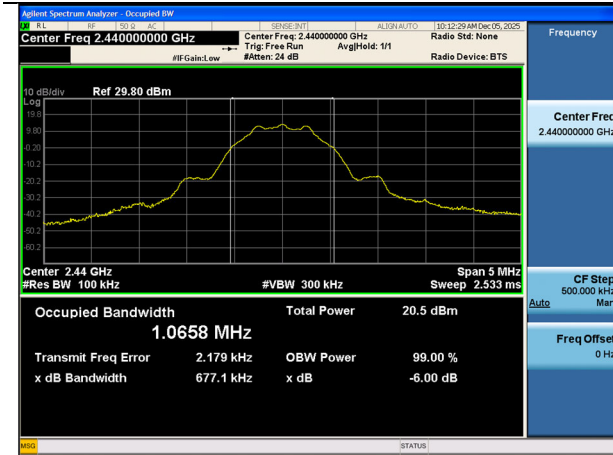
9.2 6 dB BANDWIDTH

Mode	Channel	Frequency [MHz]	6dB BW [kHz]	Limit [kHz]
1M 37Byte	37	2402	680.9	> 500
	17	2440	677.1	
	39	2480	680.9	
1M 255Byte	37	2402	679.2	
	17	2440	682.2	
	39	2480	680.0	
2M 37Byte	0	2404	1121	
	17	2440	1117	
	36	2478	1117	
2M 255Byte	0	2404	1124	
	17	2440	1122	
	36	2478	1120	
125k 37Byte	37	2402	627.9	
	17	2440	621.5	
	39	2480	630.7	
125k 255Byte	37	2402	632.4	
	17	2440	630.0	
	39	2480	622.8	
500k 37Byte	37	2402	680.8	
	17	2440	675.4	
	39	2480	677.2	
500k 255Byte	37	2402	680.4	
	17	2440	686.9	
	39	2480	675.3	

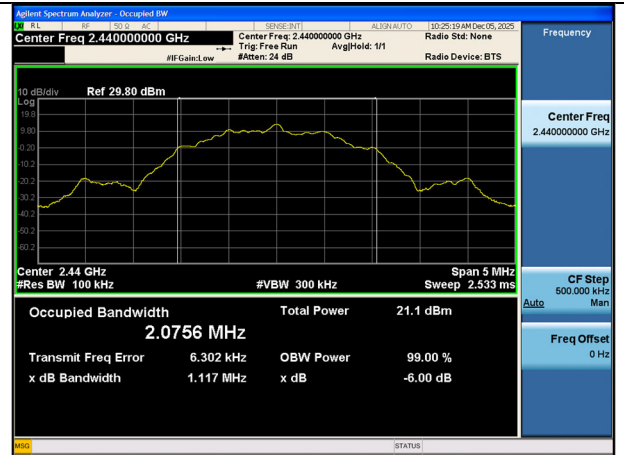
Test Plots

Note: In order to simplify the report, attached plots were only the narrowest 6 dB BW channel (125k, 500k, 1M Bit/s all have the same 1 MHz Band width and only Worst result is attached.)

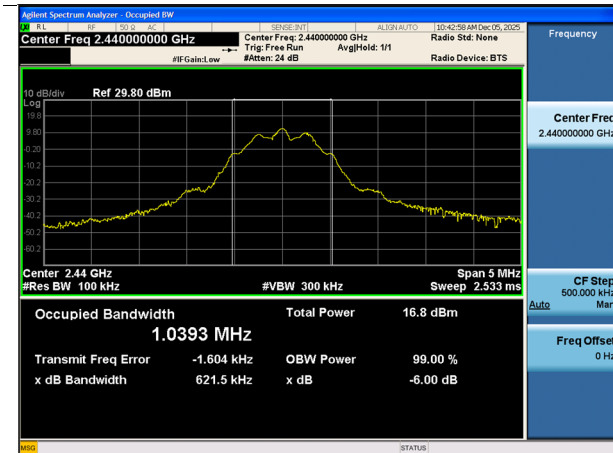
1 MBit/s 37 Byte (CH 17)



2 MBit/s 37 Byte (CH 17)



125k Bit/s 37 Byte (CH 17)



500k Bit/s 255 Byte (CH 39)



9.3 OUTPUT POWER

Peak Power

Mode	Channel	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	14.20	30
	17	2440	13.98	
	39	2480	14.11	
1M 255Byte	37	2402	14.09	
	17	2440	13.87	
	39	2480	14.03	
2M 37Byte	0	2404	14.23	
	17	2440	14.22	
	36	2478	14.11	
2M 255Byte	0	2404	14.11	
	17	2440	14.06	
	36	2478	13.89	
125k 37Byte	37	2402	12.46	
	17	2440	12.39	
	39	2480	12.38	
125k 255Byte	37	2402	12.48	
	17	2440	12.35	
	39	2480	12.40	
500k 37Byte	37	2402	12.57	
	17	2440	12.45	
	39	2480	12.47	
500k 255Byte	37	2402	12.48	
	17	2440	12.35	
	39	2480	12.37	

Average Power

Note :

Total Power [dBm] = Measured Power [dBm] + Duty Cycle Factor [dB]

Mode	Channel	Frequency [MHz]	Measured Power [dBm]	D.C.F [dB]	Total Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	11.79	1.99	13.78	30
	17	2440	11.64	1.99	13.63	
	39	2480	11.77	1.99	13.76	
1M 255Byte	37	2402	13.11	0.68	13.79	
	17	2440	12.93	0.68	13.60	
	39	2480	13.12	0.68	13.79	
2M 37Byte	0	2404	9.20	4.75	13.95	
	17	2440	9.12	4.75	13.88	
	36	2478	8.87	4.75	13.63	
2M 255Byte	0	2404	11.38	2.39	13.77	
	17	2440	11.55	2.39	13.94	
	36	2478	11.16	2.39	13.55	
125k 37Byte	37	2402	11.42	0.83	12.25	
	17	2440	11.33	0.83	12.15	
	39	2480	11.25	0.83	12.08	
125k 255Byte	37	2402	12.05	0.11	12.16	
	17	2440	11.95	0.11	12.06	
	39	2480	12.05	0.11	12.15	
500k 37Byte	37	2402	9.85	2.42	12.27	
	17	2440	9.76	2.42	12.18	
	39	2480	9.97	2.42	12.39	
500k 255Byte	37	2402	11.83	0.40	12.23	
	17	2440	11.68	0.40	12.08	
	39	2480	11.76	0.40	12.16	

9.4 POWER SPECTRAL DENSITY

Note :

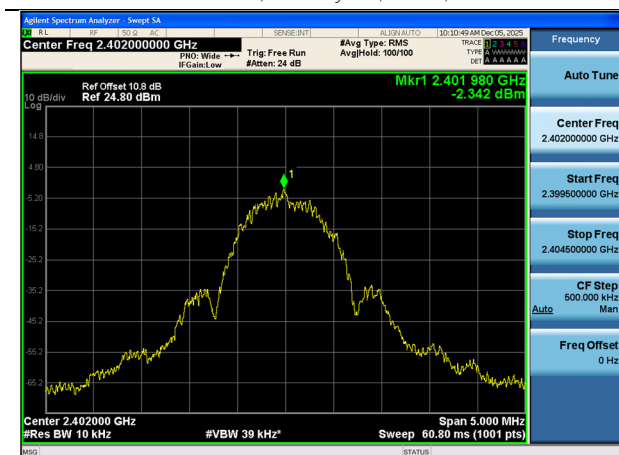
Total PSD [dBm] = Measured PSD [dBm] + Duty Cycle Factor [dB]

Mode	Channel	Frequency [MHz]	Measured PSD [dBm/3kHz]	D.C.F [dB]	Total PSD [dBm/3kHz]	Limit [dBm/3kHz]
1M 37Byte	37	2402	-2.342	1.99	-0.355	8
	17	2440	-2.733	1.99	-0.746	
	39	2480	-2.587	1.99	-0.600	
1M 255Byte	37	2402	-2.750	0.68	-2.075	
	17	2440	-2.946	0.68	-2.271	
	39	2480	-2.865	0.68	-2.190	
2M 37Byte	0	2404	-3.393	4.75	1.361	
	17	2440	-4.175	4.75	0.579	
	36	2478	-4.490	4.75	0.264	
2M 255Byte	0	2404	-5.560	2.39	-3.174	
	17	2440	-6.146	2.39	-3.760	
	36	2478	-4.882	2.39	-2.496	
125k 37Byte	37	2402	4.599	0.83	5.426	
	17	2440	4.486	0.83	5.313	
	39	2480	3.896	0.83	4.723	
125k 255Byte	37	2402	5.196	0.11	5.305	
	17	2440	4.885	0.11	4.994	
	39	2480	4.849	0.11	4.958	
500k 37Byte	37	2402	-2.330	2.42	0.094	
	17	2440	-0.903	2.42	1.521	
	39	2480	-0.943	2.42	1.481	
500k 255Byte	37	2402	-3.064	0.40	-2.664	
	17	2440	-2.600	0.40	-2.200	
	39	2480	-3.966	0.40	-3.566	

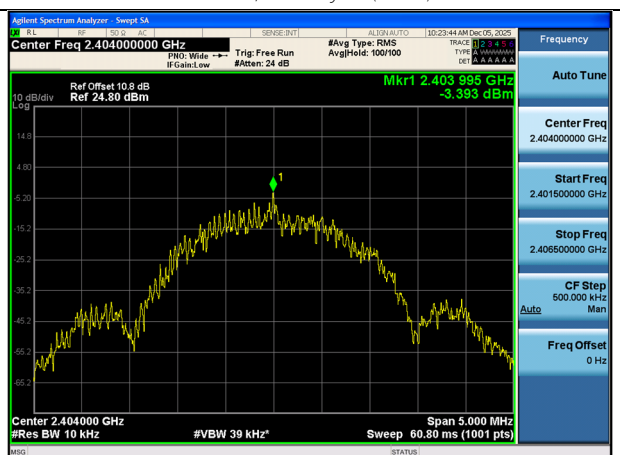
Test Plots

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

1 MBit/s 37 Byte (CH 37)



2 MBit/s 37 Byte (CH 0)



125k Bit/s 37 Byte (CH 37)



500k Bit/s 37 Byte (CH 17)



9.5 BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS

[BAND EDGE]

Mode	Channel	Frequency [MHz]	Position	Band Edge [dB]	Limit [dBc]
1M 37Byte	37	2402	Lower	57.249	30
	39	2480	Upper	63.841	
1M 255Byte	37	2402	Lower	56.671	
	39	2480	Upper	64.315	
2M 37Byte	0	2404	Lower	61.420	
	36	2478	Upper	65.040	
2M 255Byte	0	2404	Lower	61.030	
	36	2478	Upper	67.792	
125k 37Byte	37	2402	Lower	55.256	
	39	2480	Upper	62.263	
125k 255Byte	37	2402	Lower	52.854	
	39	2480	Upper	63.414	
500k 37Byte	37	2402	Lower	56.996	
	39	2480	Upper	63.696	
500k 255Byte	37	2402	Lower	56.123	
	39	2480	Upper	62.197	

■ Test Plot(Band Edge)

125k Bit/s 255 Byte (CH 37)



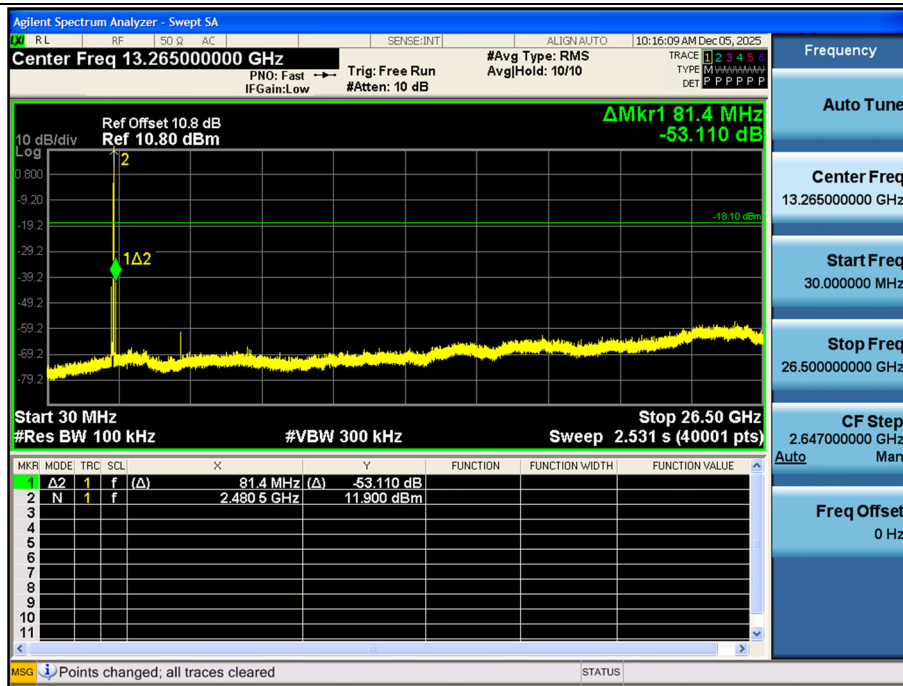
[CONDUCTED SPURIOUS EMISSIONS]

In order to simplify the report, attached plots were only the worst case channel and data rate.

- Worst case : 1M Bit/s 37 Byte Ch. 39(2 480 MHz)

▣ Test Plots(Conducted Spurious Emission (30 MHz – 26.5 GHz))

Conducted Spurious Emission



Note

Limit (dBm): -18.100

9.6 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

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

Note:

1. The Measured 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 = 40log (specific distance / test distance) (dB)
3. Limit line = specific Limits (dB μ V) + Distance extrapolation factor

Frequency Range : Below 1 GHz

Frequency	Measured Value	A.F+C.L	POL	Total	Limit	Margin
[MHz]	[dB μ V]	[dB/m]	[H/V]	[dB μ V/m]	[dB μ V/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

CH 37	2402	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4804	45.59	2.26	V	47.85	73.98	26.13	PK
4804	34.45	2.26	V	36.71	53.98	17.27	AV
7206	43.62	10.85	V	54.47	73.98	19.51	PK
7206	34.55	10.85	V	45.40	53.98	8.58	AV
4804	46.01	2.26	H	48.27	73.98	25.71	PK
4804	35.08	2.26	H	37.34	53.98	16.64	AV
7206	44.72	10.85	H	55.57	73.98	18.41	PK
7206	35.32	10.85	H	46.17	53.98	7.81	AV

CH 17	2440	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4880	47.55	2.35	V	49.90	73.98	24.08	PK
4880	38.21	2.35	V	40.56	53.98	13.42	AV
7320	42.99	9.96	V	52.95	73.98	21.03	PK
7320	32.92	9.96	V	42.88	53.98	11.10	AV
4880	48.64	2.35	H	50.99	73.98	22.99	PK
4880	38.87	2.35	H	41.22	53.98	12.76	AV
7320	43.67	9.96	H	53.63	73.98	20.35	PK
7320	33.25	9.96	H	43.21	53.98	10.77	AV

CH 39	2480	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4960	45.44	3.48	V	48.92	73.98	25.06	PK
4960	35.84	3.48	V	39.32	53.98	14.66	AV
7440	47.22	10.16	V	57.38	73.98	16.60	PK
7440	33.59	10.16	V	43.75	53.98	10.23	AV
4960	46.46	3.48	H	49.94	73.98	24.04	PK
4960	36.19	3.48	H	39.67	53.98	14.31	AV
7440	48.48	10.16	H	58.64	73.98	15.34	PK
7440	34.55	10.16	H	44.71	53.98	9.27	AV

CH 0	2404	MHz	Mode :		2 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4808	44.98	2.23	V	47.21	73.98	26.77	PK
4808	32.92	2.23	V	35.15	53.98	18.83	AV
7212	42.66	10.81	V	53.47	73.98	20.51	PK
7212	30.91	10.81	V	41.72	53.98	12.26	AV
4808	45.88	2.23	H	48.11	73.98	25.87	PK
4808	33.76	2.23	H	35.99	53.98	17.99	AV
7212	43.38	10.81	H	54.19	73.98	19.79	PK
7212	31.17	10.81	H	41.98	53.98	12.00	AV

CH 17	2440	MHz	Mode :		2 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4880	47.66	2.35	V	50.01	73.98	23.97	PK
4880	35.58	2.35	V	37.93	53.98	16.05	AV
7320	42.65	9.96	V	52.61	73.98	21.37	PK
7320	30.94	9.96	V	40.90	53.98	13.08	AV
4880	48.41	2.35	H	50.76	73.98	23.22	PK
4880	36.08	2.35	H	38.43	53.98	15.55	AV
7320	43.82	9.96	H	53.78	73.98	20.20	PK
7320	31.15	9.96	H	41.11	53.98	12.87	AV

CH 36	2478	MHz	Mode :		2 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4956	45.07	3.42	V	48.49	73.98	25.49	PK
4956	33.19	3.42	V	36.61	53.98	17.37	AV
7434	42.56	10.24	V	52.80	73.98	21.18	PK
7434	31.23	10.24	V	41.47	53.98	12.51	AV
4956	45.77	3.42	H	49.19	73.98	24.79	PK
4956	33.58	3.42	H	37.00	53.98	16.98	AV
7440	43.67	10.24	H	53.91	73.98	20.07	PK
7440	32.05	10.24	H	42.29	53.98	11.69	AV

[Simultaneous transmission Scenario]

Scenario1

ANT.1(SISO) BTLE 1M 37 Bytes Ch. 37 + ANT ALL(MIMO) 5 GHz 802.11ax(HE 20) 242 Tone RU 61, Ch. 165, MCS 0

Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4804	46.92	2.26	V	49.18	73.98	24.80	PK
4804	37.45	2.26	V	39.71	53.98	14.27	AV
7206	40.98	10.85	V	51.83	73.98	22.15	PK
7206	28.26	10.85	V	39.11	53.98	14.87	AV
4804	47.97	2.26	H	50.23	73.98	23.75	PK
4804	38.59	2.26	H	40.85	53.98	13.13	AV
7206	41.29	10.85	H	52.14	73.98	21.84	PK
7206	28.89	10.85	H	39.74	53.98	14.24	AV

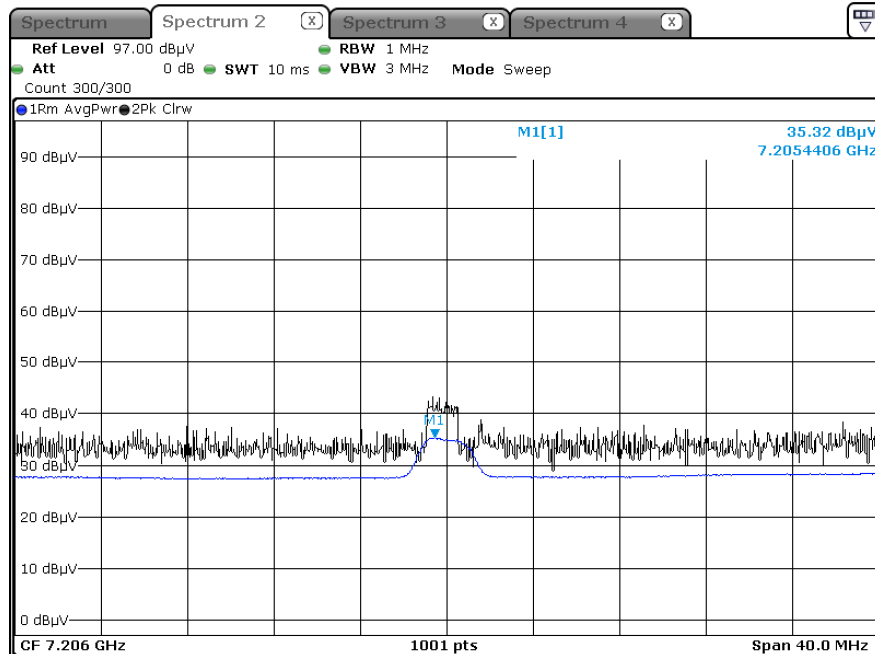
Scenario 2

ANT.1(SISO) BTLE 1M 37 Bytes Ch. 37 + ANT.1(SISO) 5 GHz 802.11ax(HE 20) 242 Tone RU 61, Ch. 165, MCS 0

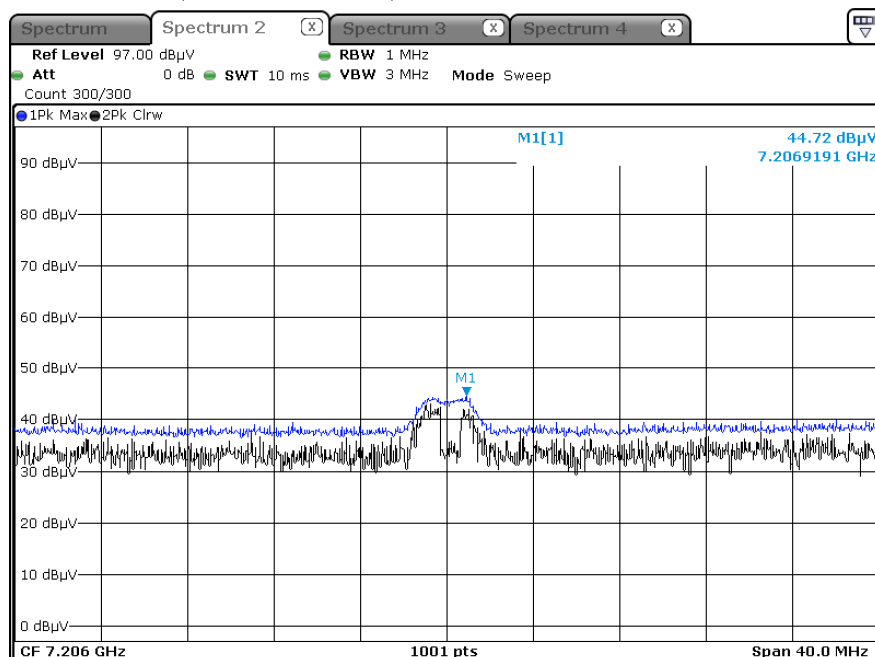
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4804	45.80	2.26	V	48.06	73.98	25.92	PK
4804	35.18	2.26	V	37.44	53.98	16.54	AV
7206	40.99	10.85	V	51.84	73.98	22.14	PK
7206	30.08	10.85	V	40.93	53.98	13.05	AV
4804	46.52	2.26	H	48.78	73.98	25.20	PK
4804	35.76	2.26	H	38.02	53.98	15.96	AV
7206	41.37	10.85	H	52.22	73.98	21.76	PK
7206	30.67	10.85	H	41.52	53.98	12.46	AV

1 M Bit/s 37 Bytes Test Plots (Worst case : Y-H)

Radiated Spurious Emissions plot – Average Result (Ch.37 3rd Harmonic)



Radiated Spurious Emissions plot – Peak Result (Ch.37 3rd Harmonic)



Note:

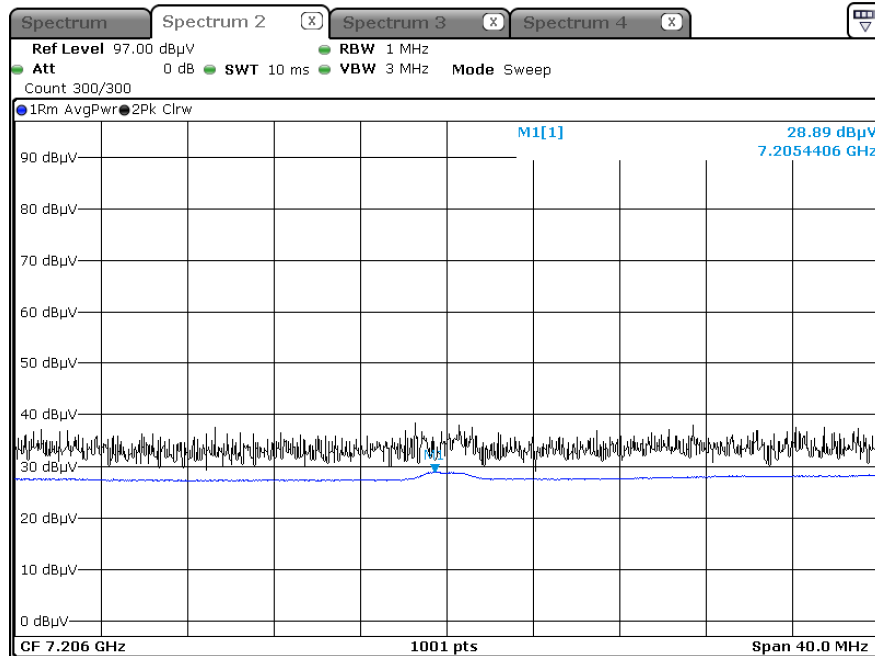
Plots of worst case are only reported.

[Simultaneous transmission Scenario]

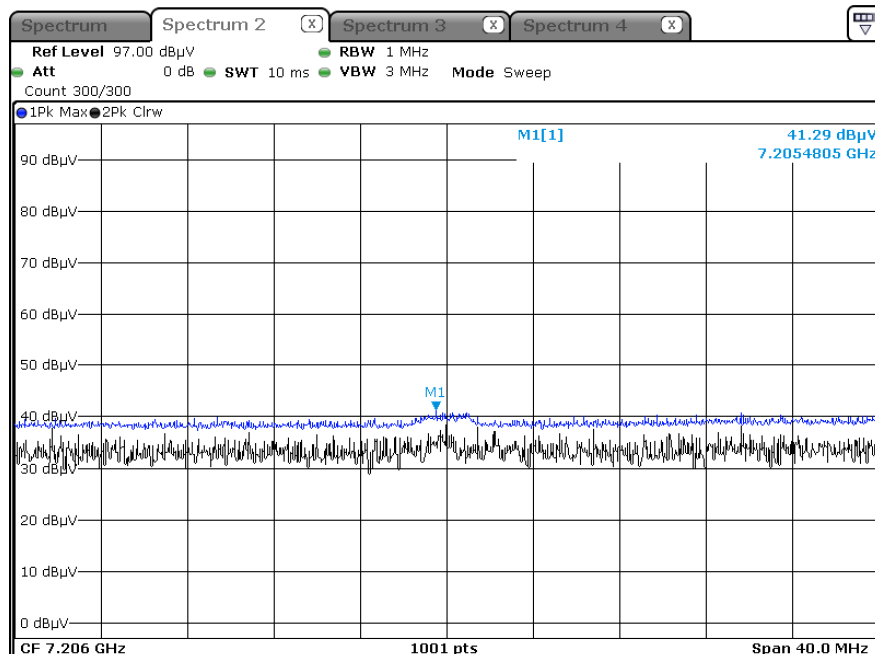
Scenario1

ANT.1(SISO) BTLE 1M 37 Bytes Ch. 37 + ANT ALL(MIMO) 5 GHz 802.11ax(HE 20) 242 Tone RU 61, Ch. 165, MCS 0

Radiated Spurious Emissions plot – Average Result (3rd Harmonic, Y-H)



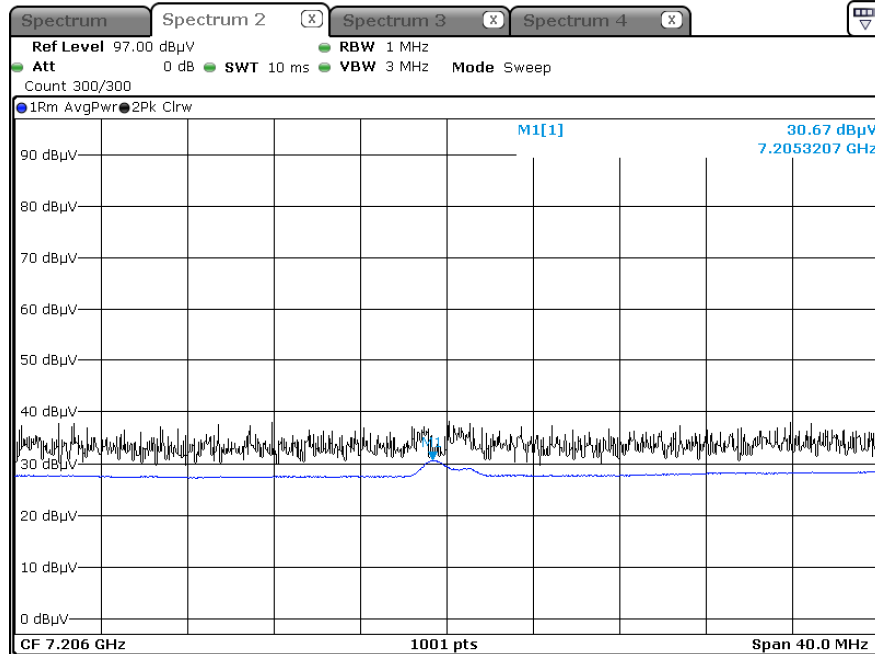
Radiated Spurious Emissions plot – Peak Result (3rd Harmonic, Y-H)



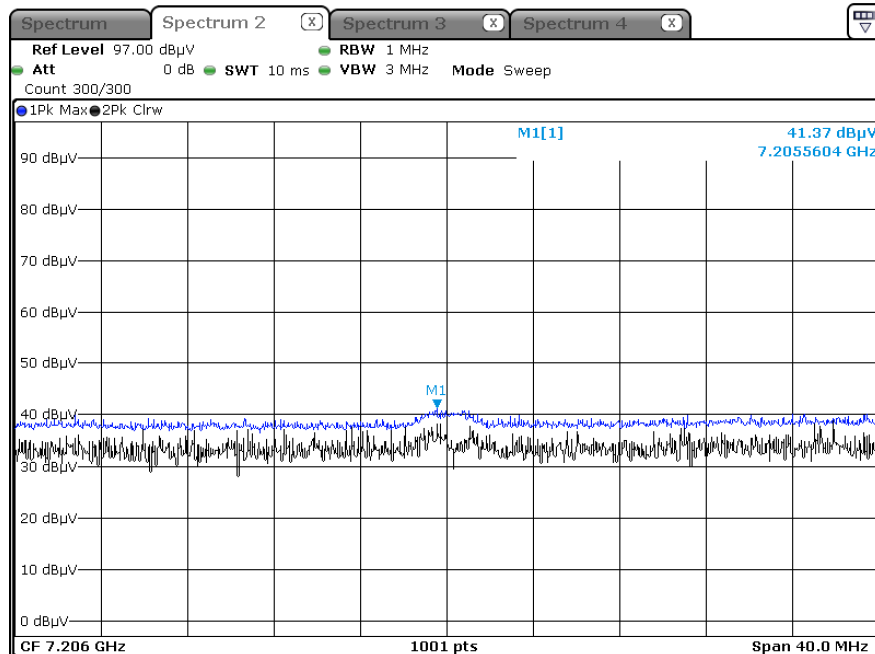
Scenario 2

ANT.1(SISO) BTLE 1M 37 Bytes Ch. 37 + ANT.1(SISO) 5 GHz 802.11ax(HE 20) 242 Tone RU 61, Ch. 165, MCS 0

Radiated Spurious Emissions plot – Average Result (3rd Harmonic, Y-H)



Radiated Spurious Emissions plot – Peak Result (3rd Harmonic, Y-H)



Note:

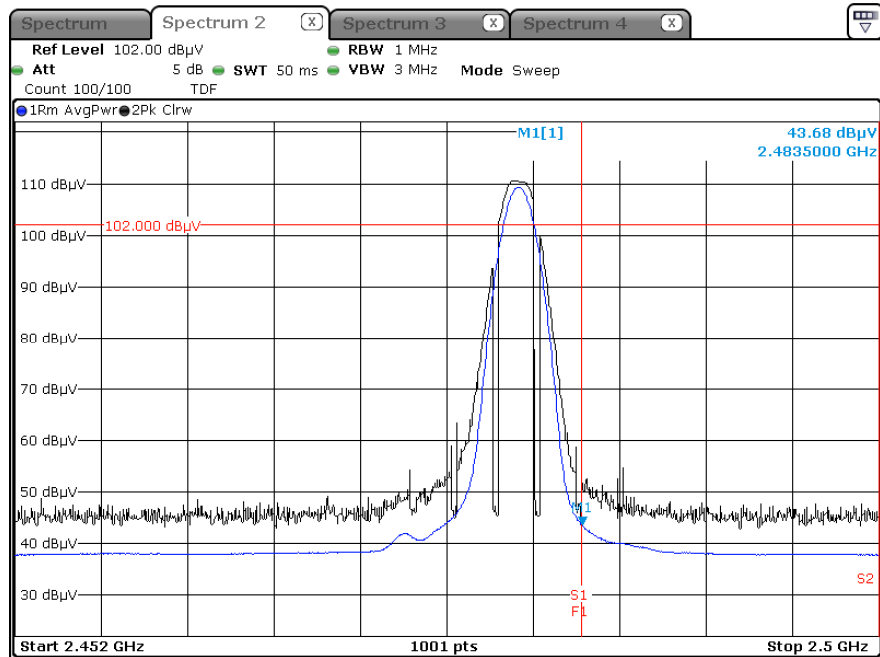
Plots of worst case are only reported.

9.7 RADIATED RESTRICTED BAND EDGES

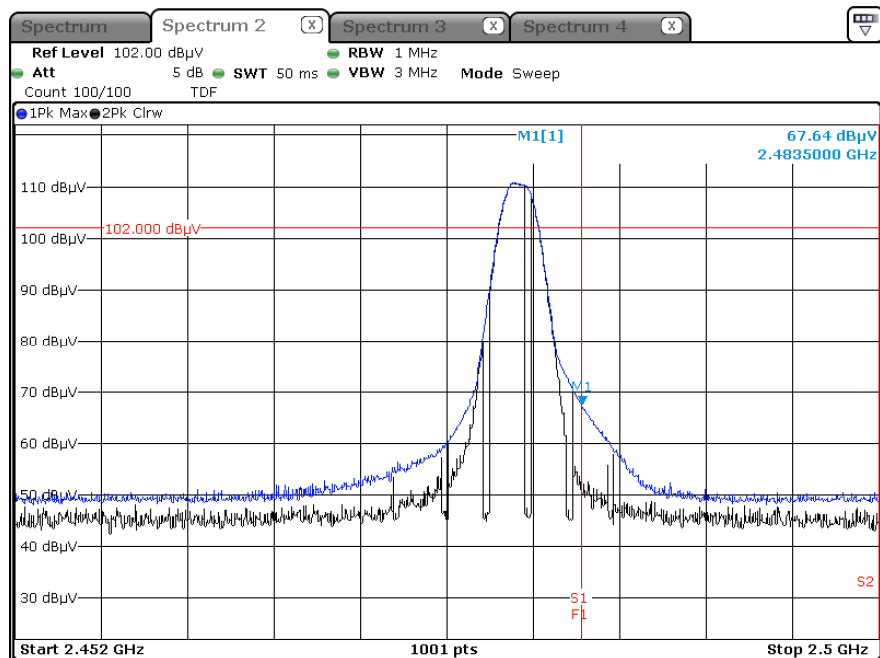
1 M Bit/s (37 Bytes)						
Channel	37 CH, 39 CH	Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	50.09	H	50.09	73.98	23.89	PK
2390.0	37.59	H	37.59	53.98	16.39	AV
2483.5	67.56	H	67.56	73.98	6.42	PK
2483.5	43.39	H	43.39	53.98	10.59	AV
1 M Bit/s (255 Bytes)						
Channel	37 CH, 39 CH	Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	50.07	H	50.07	73.98	23.91	PK
2390.0	37.45	H	37.45	53.98	16.53	AV
2483.5	67.64	H	67.64	73.98	6.34	PK
2483.5	43.68	H	43.68	53.98	10.30	AV
2 M Bit/s (37 Bytes)						
Channel	0 CH, 36 CH	Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	50.10	H	50.10	73.98	23.88	PK
2390.0	37.93	H	37.93	53.98	16.05	AV
2483.5	64.42	H	64.42	73.98	9.56	PK
2483.5	41.32	H	41.32	53.98	12.66	AV
2 M Bit/s (255 Bytes)						
Channel	0 CH, 36 CH	Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	50.04	H	50.04	73.98	23.94	PK
2390.0	37.79	H	37.79	53.98	16.19	AV
2483.5	64.13	H	64.13	73.98	9.85	PK
2483.5	41.39	H	41.39	53.98	12.59	AV

Mode : 1 M Bit/s (255 Bytes) Test Plots

Radiated Restricted Band Edges plot – Average Result (Ch.39, X-H)



Radiated Restricted Band Edges plot – Peak Result (Ch.39, X-H)



Note:

In order to simplify the report, Plot of worst case are only reported.

9.8 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions

Test

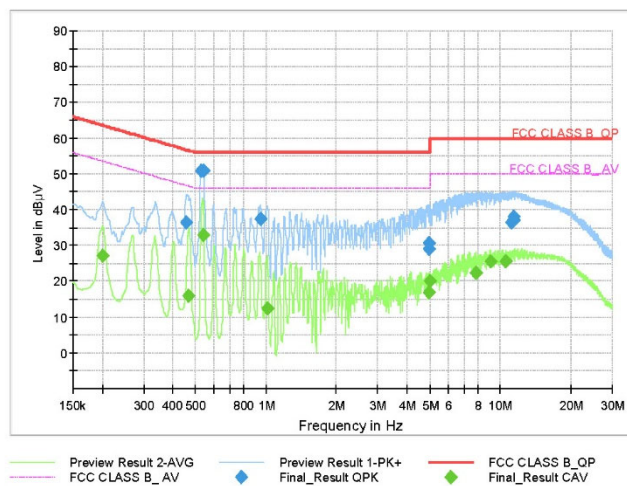
1 / 1

Test Report

Common Information

EUT : SM-A376U
Operating Conditions : BTLE Mode
Comment :

Full Spectrum



Final Result QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.4583	36.53	56.72	20.19	9.000	L1	9.8
0.5315	50.81	56.00	5.19	9.000	L1	9.8
0.5428	50.85	56.00	5.15	9.000	L1	9.8
0.9455	37.28	56.00	18.72	9.000	L1	9.8
4.9348	29.10	56.00	26.90	9.000	L1	10.0
4.9393	30.67	56.00	25.33	9.000	L1	10.0
11.2078	36.48	60.00	23.52	9.000	L1	10.2
11.4260	37.02	60.00	22.98	9.000	N	10.2
11.4485	38.13	60.00	21.87	9.000	L1	10.2

Final Result CAV

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.2018	27.06	53.54	26.48	9.000	L1	9.8
0.4695	15.89	46.52	30.63	9.000	L1	9.8
0.5383	32.97	46.00	13.03	9.000	L1	9.8
1.0153	12.42	46.00	33.58	9.000	L1	9.8
4.9393	17.01	46.00	28.99	9.000	L1	10.0
5.0180	20.05	50.00	29.95	9.000	L1	10.0
7.8710	22.44	50.00	27.56	9.000	L1	10.1
9.0928	25.55	50.00	24.45	9.000	L1	10.2
10.5733	25.61	50.00	24.39	9.000	L1	10.2

2025-11-16

오전 9:33:18

10. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	07/15/2026	Annual
EMI Test Receiver	ESR	Rohde & Schwarz	101910	08/20/2026	Annual
Temperature Chamber	SU-642	ESPEC	0093008124	02/11/2026	Annual
Signal Analyzer	N9030A	Agilent	MY49431210	11/28/2026	Annual
Power Meter	N1911A	Agilent	MY45100523	02/21/2026	Annual
Power Sensor	N1921A	Agilent	MY57820067	02/04/2026	Annual
Directional Coupler	87300B	Agilent	3116A03621	10/14/2026	Annual
Power Splitter	11667B	Hewlett Packard	05001	04/10/2026	Annual
DC Power Supply	E3632A	H.P	KR75303243	04/16/2026	Annual
Attenuator(10 dB)	8493C	Hewlett Packard	07560	05/27/2026	Annual
Bluetooth Tester	CBT	Rohde & Schwarz	100752	12/27/2025	Annual
Software	EMC32	Rohde & Schwarz	N/A	N/A	N/A
Automation Software	FCC WLAN Conducted	HCT CO., LTD	-	-	-
Automation Software	FCC Bluetooth Conducted	HCT CO., LTD	-	-	-

Note:

1. 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.

2. 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
Controller (Antenna mast & Turn Table)	CO3000	Innco system	CO3000/1031/ 41190717/P	N/A	N/A
Antenna Mast	MA4640	Innco system	S2AM	07/25/2026	Annual
Turn Table	DS2000-S	Innco system	N/A	N/A	N/A
Loop Antenna	FMZB 1513	Rohde & Schwarz	1513-333	03/07/2026	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	760	02/17/2027	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	02299	01/29/2026	Biennial
Horn Antenna (15GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Spectrum Analyzer	FSV40	Rohde & Schwarz	100901	02/21/2026	Annual
Signal Analyzer	N9030A	Agilent	MY52350879	03/25/2026	Annual
Attenuator(3 dB)	18B-03	Api tech.	1	04/21/2026	Annual
Band Reject Filter	WRCJV12-4900-5100-5900- 6100-50SS	Wainwright Instruments	5	05/27/2026	Annual
Band Reject Filter	WRCJV12-4900-5100-5900- 6100-50SS	Wainwright Instruments	6	05/27/2026	Annual
Band Reject Filter	WRCJV2400/2483.5- 2370/2520-60/12SS	Wainwright Instruments	2	12/26/2025	Annual
Band Reject Filter	WRCJV5100/5850-40/50- 8EEK	Wainwright Instruments	1	01/09/2026	Annual
RF Switching System	FMSR-04B (3G HPF+LNA)	T&M SYSTEM	S2L1	12/23/2025	Annual
RF Switching System	FMSR-04B (10dB ATT+LNA)	T&M SYSTEM	S2L2	12/23/2025	Annual
RF Switching System	FMSR-04B (3dB ATT+LNA)	T&M SYSTEM	S2L3	12/23/2025	Annual
RF Switching System	FMSR-04B (LNA)	T&M SYSTEM	S2L4	12/23/2025	Annual
RF Switching System	FMSR-04B (7G HPF+LNA)	T&M SYSTEM	S2L5	12/23/2025	Annual
Power Amplifier	CBL18265035	CERNEX	22966	10/21/2026	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/19/2026	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/12/2026	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-2512-FC033-P