

TEST REPORT

FCC BT LE Test for SM-F761U
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2504-FC052

DATE OF ISSUE
April 29, 2025

Tested by
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TEST REPORT

REPORT NO.

HCT-RF-2504-FC052

DATE OF ISSUE

April 29, 2025

Additional Model

SM-F761U1

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-F761U

FCC ID

A3LSMF761U

Date of Test

February 27, 2025 ~ April 29, 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	April 29, 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).

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1. EUT DESCRIPTION

Model	SM-F761U			
Additional Model	SM-F761U1			
EUT Type	Mobile Phone			
Power Supply	DC 3.88 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)	Ant.1	Peak (For information only)	1 M Bit/s: 2 M Bit/s: 125 k Bit/s : 500 k Bit/s :	17.707 dBm (58.98 mW) 17.944 dBm (62.29 mW) 10.317 dBm (10.76 mW) 10.416 dBm (11.01 mW)
		Average	1 M Bit/s: 2 M Bit/s: 125 k Bit/s : 500 k Bit/s :	17.40 dBm (54.89 mW) 17.28 dBm (53.44 mW) 10.31 dBm (10.74 mW) 10.38 dBm (10.90 mW)
	Ant.2	Peak (For information only)	1 M Bit/s: 2 M Bit/s: 125 k Bit/s : 500 k Bit/s :	16.674 dBm (46.49 mW) 17.160 dBm (52.00 mW) 9.755 dBm (9.45 mW) 9.782 dBm (9.51 mW)
		Average	1 M Bit/s: 2 M Bit/s: 125 k Bit/s : 500 k Bit/s :	16.81 dBm (47.94 mW) 16.77 dBm (47.53 mW) 9.67 dBm (9.27 mW) 9.65 dBm (9.23 mW)
	Dual Ant.1 + Ant.2	Peak (For information only)	1 M Bit/s: 2 M Bit/s:	16.629 dBm (46.02 mW) 16.700 dBm (46.78 mW)
		Average	1 M Bit/s: 2 M Bit/s:	16.49 dBm (44.53 mW) 16.50 dBm (44.71 mW)
Modulation Type	GFSK			
Bluetooth Version	5.4			
Antenna Specification	Type: Metal ANT.1 Peak Gain: -5.31 dBi, ANT.2 Peak Gain: -7.22 dBi			
Serial number	Conducted : R3CY20BS17M Radiated : R3CY20BS07H			

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	O	O

Note:

- 1) O = Support, X = Not Support
- 2) SISO = Single Input Single Output
- 3) BLE 1M/2Mbps Mode support Dual BT, But 125k/500kbps Mode do not support Dual BT.

2. TEST METHODOLOGY

FCC KDB 558074 D01 15.247 Meas Guidance v05r02 dated April 02, 2019 entitled “guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices and the measurement procedure described in ANSI C63.10 (Version : 2013) ‘the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices’.

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. (Version :2013) 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

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 according to the requirements in Section 6.6.5 of ANSI C63.10. (Version: 2013)

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 C63.5 (Version : 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, 17383, Rep. of KOREA. The site is constructed in conformance with the requirements of ANSI C63.4.

(Version :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 CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

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 C63.10-2013.

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.

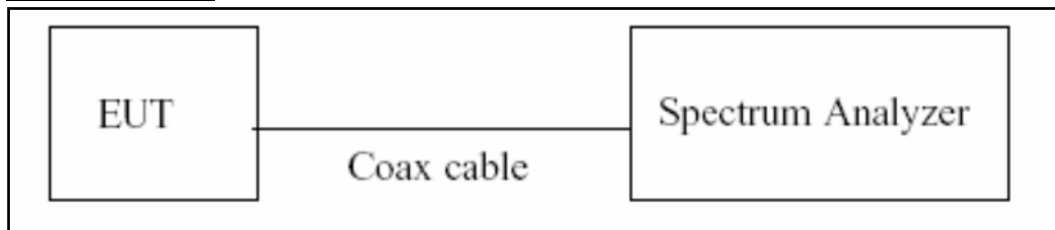
Parameter	Expanded Uncertainty ($\pm$ kHz)
X dB, 99% Bandwidth	95 (Confidence level about 95 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

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

7.1. Duty Cycle

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

We tested according to the zero-span measurement method, 6.0)b) in KDB 558074 v05r02.

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 $> 50/T$.

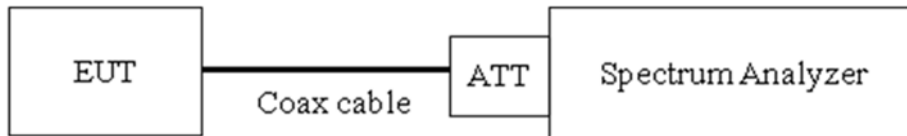
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz ($\geq$ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on}/T_{total} and Duty Cycle Factor = $10\log(1/\text{Duty Cycle})$

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

(Procedure 8.2 in KDB 558074 v05r02, Procedure 11.8.1 in ANSI 63.10-2013)

- 1) RBW = 100 kHz
- 2) VBW $\geq 3 \times$ RBW
- 3) Detector = Peak
- 4) Trace mode = max hold
- 5) Sweep = auto couple
- 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.

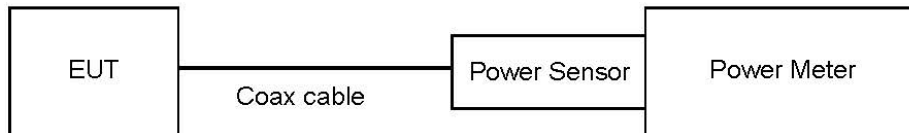
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

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 (Procedure 11.9.1.3 in ANSI 63.10-2013)
: Measure the peak power of the transmitter.

- Average Power (Procedure 8.3.2.3 in KDB 558074 v05r02, Procedure 11.9.2.3 in ANSI 63.10-2013)
 - 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

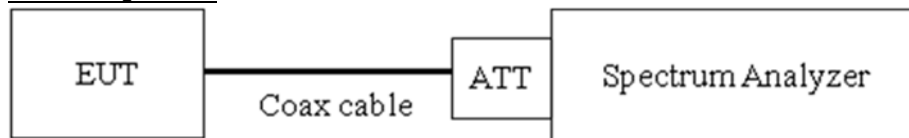
- Conducted Output Power(Peak) = Measured Value + ATT loss + Cable loss
- Conducted Output Power(Average) = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

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.

We tested according to Procedure 8.4 in KDB 558074 v05r02, Procedure 11.10 in ANSI 63.10-2013.

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

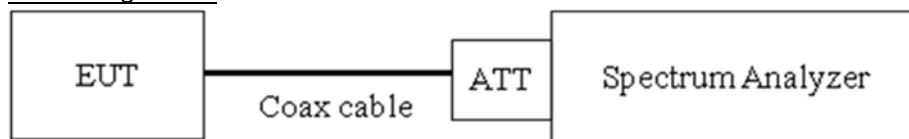
7.5. Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions

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.

(Procedure 8.5 in KDB 558074 v05r02, Procedure 11.11 in ANSI 63.10-2013)

- 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 = auto couple
- 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(ANT1) = 0.38 dB

4. Total ANT1 Port offset = 10.98 dB

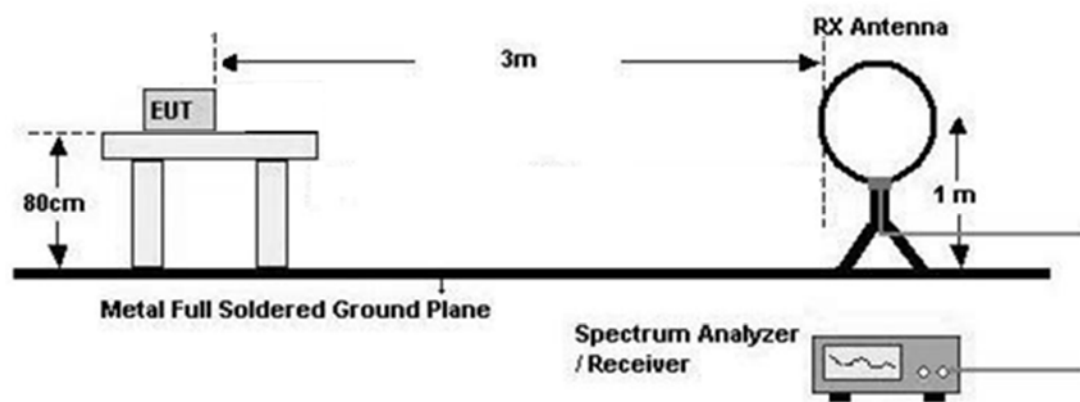
7.6. Radiated Test

Limit

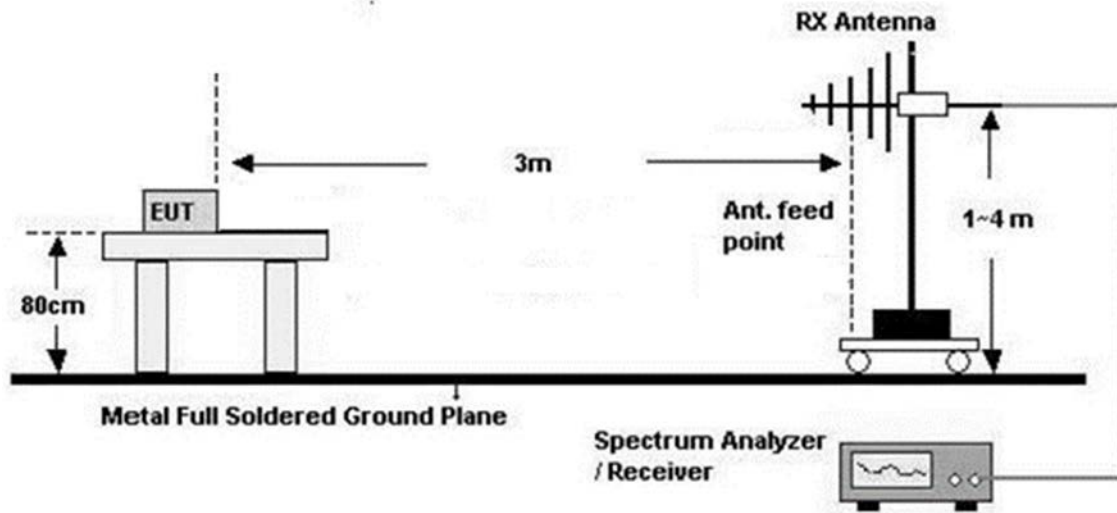
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

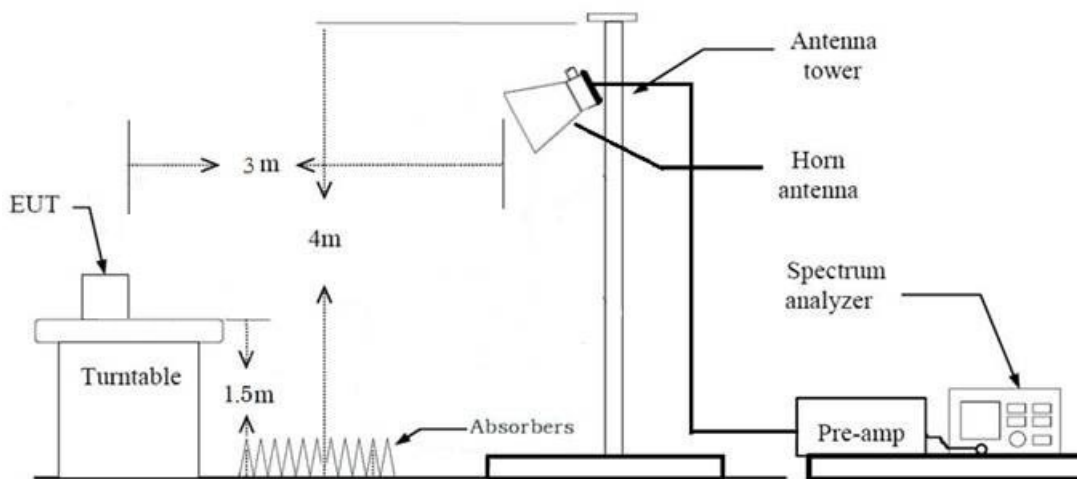
Below 30 MHz



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 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 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. The unit was tested with its standard battery.
8. Spectrum Setting (Method 8.6 in KDB 558074 v05r02, Procedure 11.12 in ANSI 63.10-2013)

(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
9. 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.
10. Distance extrapolation factor = $20 \log (\text{test distance} / \text{specific distance})$ (dB)
11. 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. The unit was tested with its standard battery.
8. Spectrum 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.
9. 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.
10. Distance extrapolation factor = $20\log(\text{test distance} / \text{specific distance})$ (dB)
- 11.Total

(1) Measurement(Peak)

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

(2) Measurement(Avg)

= 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

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

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

(1) Ant.1

- Radiated Spurious Emissions : Z
- Radiated Restricted Band Edge : X

(2) Ant.2

- Radiated Spurious Emissions : X
- Radiated Restricted Band Edge : X

(3) Dual Ant.1+ Ant.2

- 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 Band width and only Worst result is attached.)

4. All datarate of operation were investigated and the worst case configuration results are reported.

- Worst case : 1 M, 2 M

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. The EUT was tested in three modes(Open, Half-open, Closed), the worst case configuration results are reported.

(1) Ant.1

- Radiated Spurious Emissions : Open Mode
- Radiated Restricted Band Edge : Open Mode

(2) Ant.2

- Radiated Spurious Emissions : Open Mode
- Radiated Restricted Band Edge : Open Mode

(3) Dual Ant.1+ Ant.2

- Radiated Spurious Emissions : Open Mode
- Radiated Restricted Band Edge : Open Mode

7. SM-F761U, SM-F761U1 were tested and the worst case results are reported.

(Worst case: SM-F761U)

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-F761U, SM-F761U1 were tested and the worst case results are reported.

(Worst case: SM-F761U)

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-F761U, SM-F761U1 were tested and the worst case results are reported.

(Worst case: SM-F761U)

8. SUMMARY TEST OF RESULTS

Test Description	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'

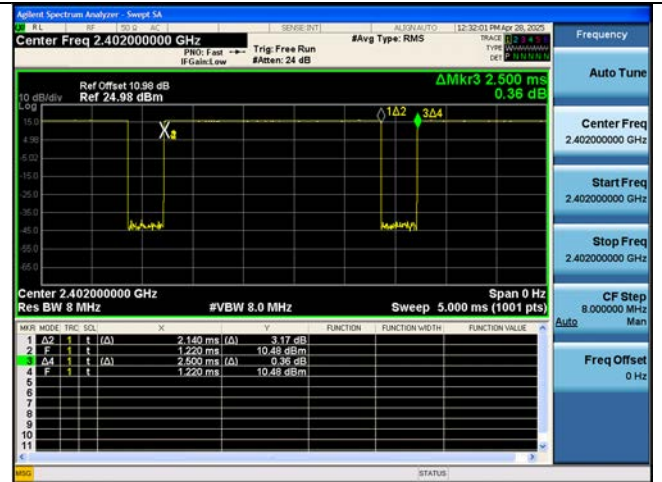
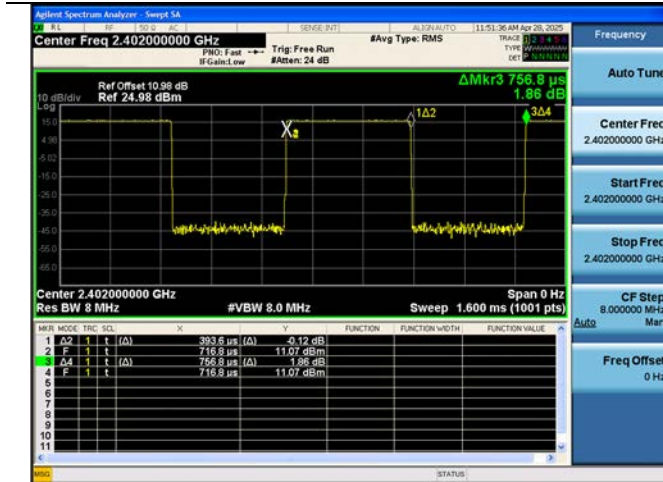
9. TEST RESULT

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	0.394	0.757	0.520	2.839
	255	2.140	2.500	0.856	0.675
2M	37	0.209	0.536	0.389	4.100
	255	1.083	1.408	0.769	1.141
125k	37	3.110	4.110	0.757	1.211
	255	17.03	18.03	0.945	0.248
500k	37	1.074	1.819	0.591	2.286
	255	4.560	5.300	0.860	0.653

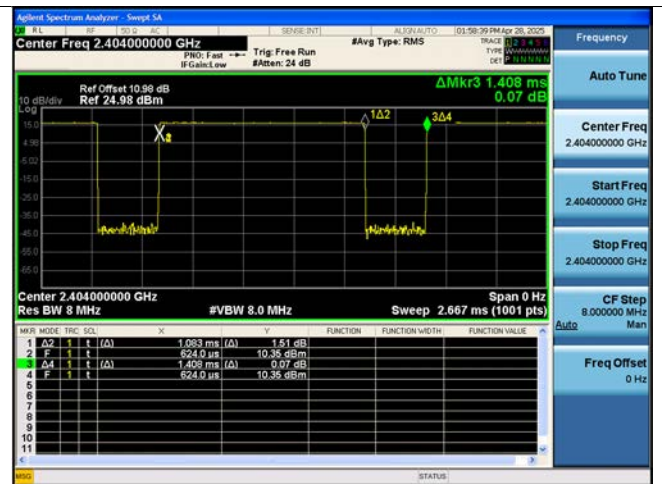
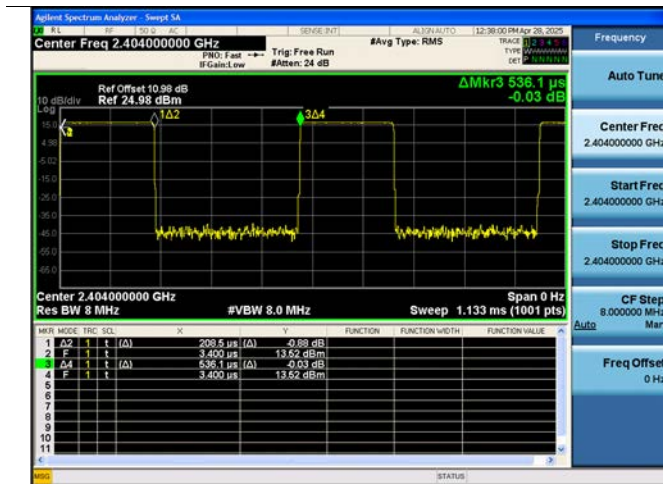
1 M Bit/s (37 Byte)

1 M Bit/s (255 Byte)



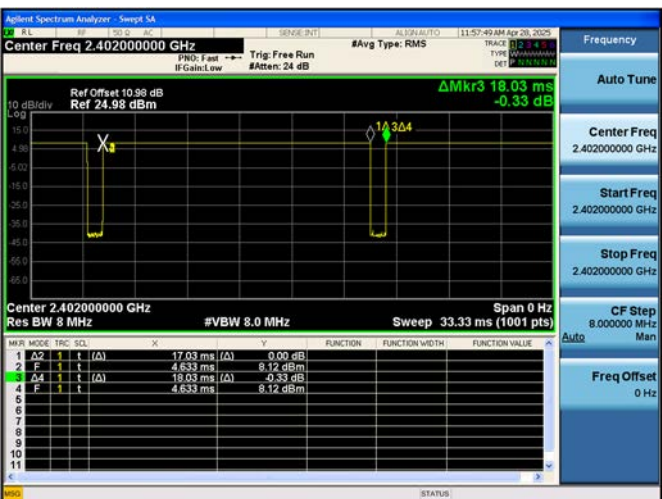
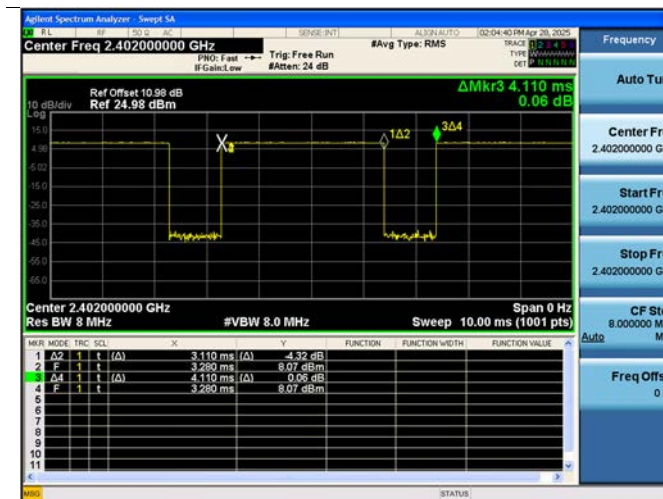
2 M Bit/s (37 Byte)

2 M Bit/s (255 Byte)



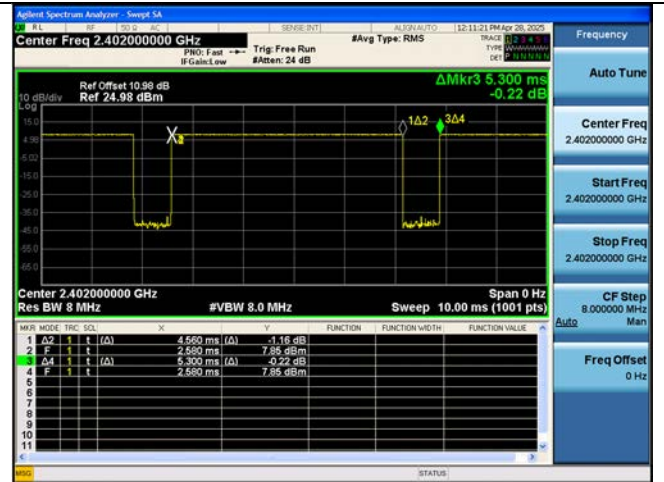
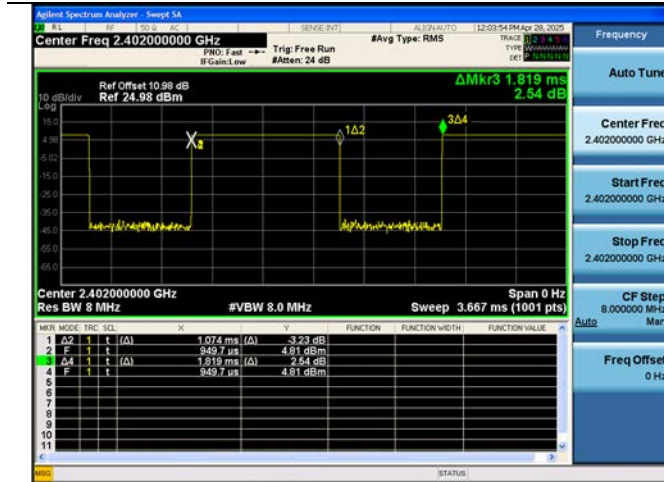
125 k Bit/s(37 Byte)

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]	Ant.1 6dB BW [kHz]	Ant.2 6dB BW [kHz]	Limit [kHz]
1M 37Byte	37	2402	687.8	684.1	> 500
	17	2440	690.7	682.6	
	39	2480	687.4	683.7	
1M 255Byte	37	2402	663.7	667.6	
	17	2440	665.7	669.2	
	39	2480	663.9	672.1	
2M 37Byte	0	2404	1155	1153	
	17	2440	1155	1153	
	36	2478	1157	1156	
2M 255Byte	0	2404	1157	1149	
	17	2440	1158	1150	
	36	2478	1164	1157	
125k 37Byte	37	2402	609.1	609.9	
	17	2440	611.5	614.8	
	39	2480	611.3	610.4	
125k 255Byte	37	2402	610.1	616.0	
	17	2440	617.7	608.1	
	39	2480	615.9	608.5	
500k 37Byte	37	2402	671.6	664.4	
	17	2440	664.0	665.9	
	39	2480	663.9	664.0	
500k 255Byte	37	2402	671.1	664.0	
	17	2440	667.4	664.4	
	39	2480	662.6	665.0	

[Dual BT]

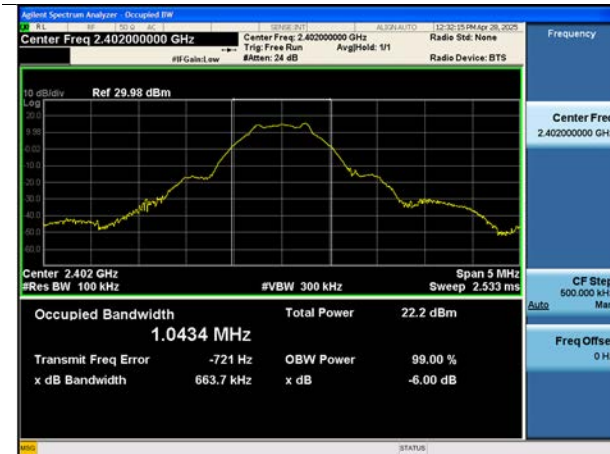
Mode	Channel	Frequency [MHz]	Ant.1 6dB BW [kHz]	Ant.2 6dB BW [kHz]	Limit [kHz]
1M 37Byte	37	2402	678.0	672.9	> 500
	17	2440	673.5	671.4	
	39	2480	681.5	676.1	
1M 255Byte	37	2402	662.0	664.7	
	17	2440	665.1	663.5	
	39	2480	671.0	669.6	
2M 37Byte	0	2404	1144	1147	
	17	2440	1147	1143	
	36	2478	1145	1145	
2M 255Byte	0	2404	1144	1151	
	17	2440	1152	1153	
	36	2478	1156	1154	

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.)

Ant.1

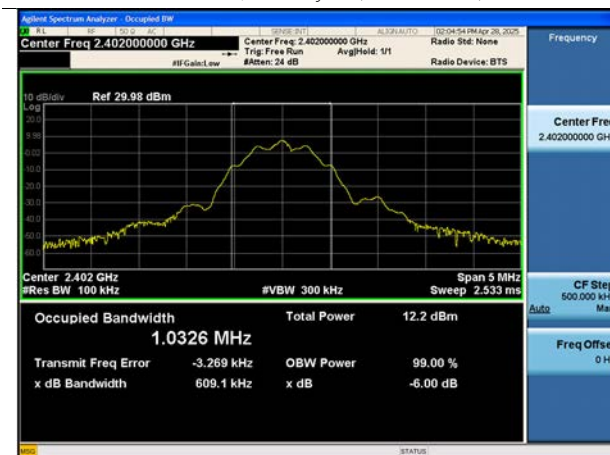
1 MBit/s 255 Byte (Low-CH 37)



2 MBit/s 37 Byte (Low-CH 0)



125k Bit/s 37 Byte (Low-CH 37)



500k Bit/s 255 Byte (High-CH 39)



Ant.2

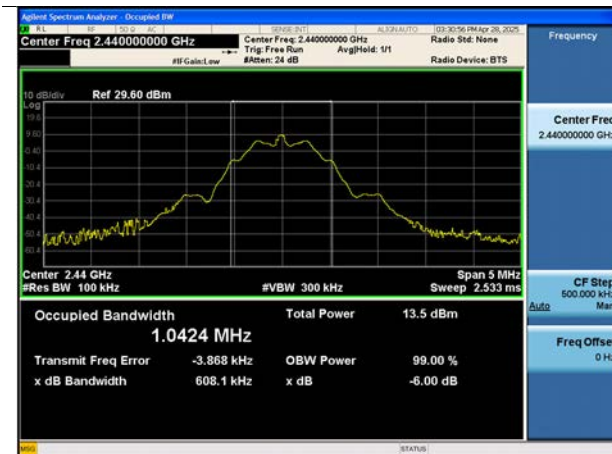
1 MBit/s 255 Byte (Low-CH 37)



2 MBit/s 255 Byte (Low-CH 0)



125k Bit/s 255 Byte (Mid-CH 17)

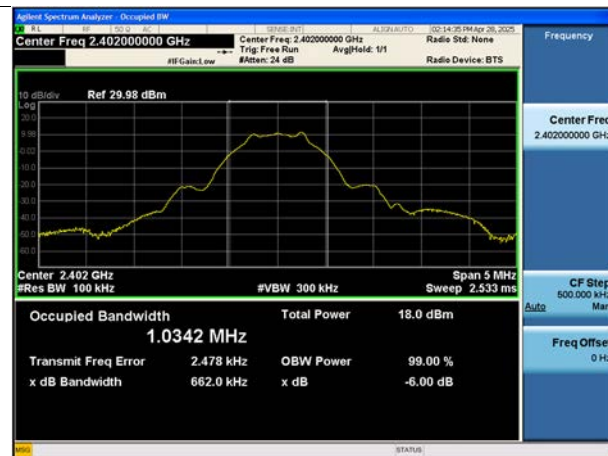


500k Bit/s 255 Byte (Low-CH 37)



Dual Ant.1

1 MBit/s 255 Byte (Low-CH 37)



2 MBit/s 37 Byte (Low-CH 0)



Dual Ant.2

1 MBit/s 255 Byte (Mid-CH 17)



2 MBit/s 37 Byte (Mid-CH 17)



9.3 OUTPUT POWER

Peak Power

Note :

Dual Peak Power [dBm] = $10 \cdot \log((10^{(\text{Dual Ant.1 Peak Power} / 10)}) + (10^{(\text{Dual Ant.2 Peak Power} / 10)}))$

Mode	Channel	Frequency [MHz]	Ant.1 Peak Power [dBm]	Ant.2 Peak Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	15.94	14.73	30
	17	2440	17.60	16.67	
	39	2480	16.00	14.45	
1M 255Byte	37	2402	15.93	14.82	
	17	2440	17.71	16.23	
	39	2480	15.56	13.73	
2M 37Byte	0	2404	16.74	15.61	
	17	2440	17.94	17.16	
	36	2478	16.66	15.20	
2M 255Byte	0	2404	16.56	15.44	
	17	2440	17.79	16.60	
	36	2478	16.51	14.41	
125k 37Byte	37	2402	8.12	8.96	
	17	2440	10.32	9.71	
	39	2480	8.77	9.47	
125k 255Byte	37	2402	8.03	8.97	
	17	2440	10.32	9.76	
	39	2480	8.80	9.51	
500k 37Byte	37	2402	7.98	9.03	
	17	2440	10.42	9.78	
	39	2480	8.76	9.55	
500k 255Byte	37	2402	8.09	9.03	
	17	2440	10.36	9.75	
	39	2480	8.84	9.52	

[Dual (Ant. 1 + Ant.2)]

Mode	Channel	Frequency [MHz]	Dual Ant.1 Peak Power [dBm]	Dual Ant.1 Peak Power [dBm]	Dual Peak Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	11.35	11.96	14.67	30
	17	2440	14.24	12.87	16.62	
	39	2480	11.77	12.69	15.26	
1M 255Byte	37	2402	11.41	11.87	14.66	
	17	2440	14.32	12.78	16.63	
	39	2480	11.58	12.58	15.12	
2M 37Byte	0	2404	12.57	11.97	15.29	
	17	2440	14.32	12.95	16.70	
	36	2478	12.41	12.86	15.65	
2M 255Byte	0	2404	12.54	11.95	15.27	
	17	2440	14.29	12.89	16.66	
	36	2478	12.22	12.80	15.53	

Average Power

Note :

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

Dual Total Power [dBm] = $10 \cdot \log((10^{(\text{Dual Ant.1 Power} / 10)}) + (10^{(\text{Dual Ant.2 Power} / 10)}))$

[Ant.1]

Mode	Channel	Frequency [MHz]	Measured Power [dBm]	D.C.F [dB]	Total Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	12.40	2.84	15.24	30
	17	2440	14.49	2.84	17.33	
	39	2480	12.95	2.84	15.79	
1M 255Byte	37	2402	14.76	0.68	15.43	
	17	2440	16.72	0.68	17.40	
	39	2480	14.69	0.68	15.36	
2M 37Byte	0	2404	12.02	4.10	16.12	
	17	2440	13.18	4.10	17.28	
	36	2478	12.05	4.10	16.15	
2M 255Byte	0	2404	14.82	1.14	15.96	
	17	2440	16.06	1.14	17.20	
	36	2478	14.81	1.14	15.95	
125k 37Byte	37	2402	6.50	1.21	7.71	
	17	2440	9.08	1.21	10.29	
	39	2480	7.36	1.21	8.57	
125k 255Byte	37	2402	7.53	0.25	7.78	
	17	2440	10.06	0.25	10.31	
	39	2480	8.42	0.25	8.67	
500k 37Byte	37	2402	5.35	2.29	7.64	
	17	2440	7.95	2.29	10.24	
	39	2480	6.50	2.29	8.79	
500k 255Byte	37	2402	7.13	0.65	7.79	
	17	2440	9.72	0.65	10.38	
	39	2480	8.04	0.65	8.69	

[Ant.2]

Mode	Channel	Frequency [MHz]	Measured Power [dBm]	D.C.F [dB]	Total Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	12.25	2.84	15.09	30
	17	2440	13.97	2.84	16.81	
	39	2480	11.68	2.84	14.52	
1M 255Byte	37	2402	14.12	0.68	14.80	
	17	2440	15.54	0.68	16.22	
	39	2480	13.11	0.68	13.79	
2M 37Byte	0	2404	11.11	4.10	15.22	
	17	2440	12.67	4.10	16.77	
	36	2478	10.74	4.10	14.84	
2M 255Byte	0	2404	13.80	1.14	14.94	
	17	2440	15.17	1.14	16.31	
	36	2478	12.87	1.14	14.01	
125k 37Byte	37	2402	7.63	1.21	8.85	
	17	2440	8.46	1.21	9.67	
	39	2480	8.18	1.21	9.39	
125k 255Byte	37	2402	8.68	0.25	8.93	
	17	2440	9.41	0.25	9.66	
	39	2480	9.19	0.25	9.44	
500k 37Byte	37	2402	6.50	2.29	8.78	
	17	2440	7.30	2.29	9.58	
	39	2480	7.03	2.29	9.32	
500k 255Byte	37	2402	8.32	0.65	8.98	
	17	2440	9.00	0.65	9.65	
	39	2480	8.78	0.65	9.44	

[Dual Ant.1]

Mode	Channel	Frequency [MHz]	Measured Power [dBm]	D.C.F [dB]	Total Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	8.12	2.84	10.96	30
	17	2440	11.27	2.84	14.11	
	39	2480	8.87	2.84	11.71	
1M 255Byte	37	2402	10.20	0.68	10.88	
	17	2440	13.46	0.68	14.13	
	39	2480	10.83	0.68	11.51	
2M 37Byte	0	2404	8.05	4.10	12.15	
	17	2440	10.03	4.10	14.13	
	36	2478	8.10	4.10	12.20	
2M 255Byte	0	2404	11.00	1.14	12.15	
	17	2440	12.88	1.14	14.02	
	36	2478	10.78	1.14	11.92	

[Dual Ant.2]

Mode	Channel	Frequency [MHz]	Measured Power [dBm]	D.C.F [dB]	Total Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	8.96	2.84	11.80	30
	17	2440	9.90	2.84	12.74	
	39	2480	9.79	2.84	12.63	
1M 255Byte	37	2402	11.03	0.68	11.71	
	17	2440	11.98	0.68	12.66	
	39	2480	11.81	0.68	12.49	
2M 37Byte	0	2404	7.64	4.10	11.74	
	17	2440	8.65	4.10	12.75	
	36	2478	8.47	4.10	12.57	
2M 255Byte	0	2404	10.65	1.14	11.79	
	17	2440	11.46	1.14	12.61	
	36	2478	11.34	1.14	12.48	

[Dual (Ant. 1 + Ant .2)]

Mode	Channel	Frequency [MHz]	Dual Ant.1 Total Power [dBm]	Dual Ant.2 Total Power [dBm]	Dual Total Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	10.96	11.80	14.41	30
	17	2440	14.11	12.74	16.49	
	39	2480	11.71	12.63	15.21	
1M 255Byte	37	2402	10.88	11.71	14.32	
	17	2440	14.13	12.66	16.47	
	39	2480	11.51	12.49	15.04	
2M 37Byte	0	2404	12.15	11.74	14.96	
	17	2440	14.13	12.75	16.50	
	36	2478	12.20	12.57	15.40	
2M 255Byte	0	2404	12.15	11.79	14.98	
	17	2440	14.02	12.61	16.38	
	36	2478	11.92	12.48	15.22	

9.4 POWER SPECTRAL DENSITY

Note :

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

Dual Total PSD [dBm] = $10 \cdot \log((10^{\text{Dual Ant.1 PSD / 10}}) + (10^{\text{Dual Ant.2 PSD / 10}}))$

[Ant.1]

Mode	Channel	Frequency [MHz]	Measured PSD [dBm]	D.C.F [dB]	Total PSD [dBm]	Limit [dBm/3kHz]
1M 37Byte	37	2402	2.251	2.84	5.090	8
	17	2440	4.013	2.84	6.852	
	39	2480	2.407	2.84	5.246	
1M 255Byte	37	2402	3.396	0.68	4.071	
	17	2440	5.662	0.68	6.337	
	39	2480	3.196	0.68	3.871	
2M 37Byte	0	2404	0.549	4.10	4.649	
	17	2440	1.594	4.10	5.694	
	36	2478	0.606	4.10	4.706	
2M 255Byte	0	2404	0.806	1.14	1.947	
	17	2440	2.664	1.14	3.805	
	36	2478	1.078	1.14	2.219	
125k 37Byte	37	2402	0.164	1.21	1.375	
	17	2440	2.432	1.21	3.643	
	39	2480	1.139	1.21	2.350	
125k 255Byte	37	2402	1.108	0.25	1.356	
	17	2440	3.462	0.25	3.710	
	39	2480	1.964	0.25	2.212	
500k 37Byte	37	2402	-4.916	2.29	-2.630	
	17	2440	-1.226	2.29	1.060	
	39	2480	-2.745	2.29	-0.459	
500k 255Byte	37	2402	-4.369	0.65	-3.716	
	17	2440	-2.394	0.65	-1.741	
	39	2480	-3.518	0.65	-2.865	

[Ant.2]

Mode	Channel	Frequency [MHz]	Measured PSD [dBm]	D.C.F [dB]	Total PSD [dBm]	Limit [dBm/3kHz]
1M 37Byte	37	2402	0.048	2.84	2.887	8
	17	2440	3.838	2.84	6.677	
	39	2480	0.831	2.84	3.670	
1M 255Byte	37	2402	2.737	0.68	3.412	
	17	2440	3.702	0.68	4.377	
	39	2480	1.808	0.68	2.483	
2M 37Byte	0	2404	-0.941	4.10	3.159	
	17	2440	0.701	4.10	4.801	
	36	2478	0.031	4.10	4.131	
2M 255Byte	0	2404	-0.071	1.14	1.070	
	17	2440	1.660	1.14	2.801	
	36	2478	-0.858	1.14	0.283	
125k 37Byte	37	2402	0.794	1.21	2.005	
	17	2440	1.800	1.21	3.011	
	39	2480	1.507	1.21	2.718	
125k 255Byte	37	2402	2.110	0.25	2.358	
	17	2440	2.665	0.25	2.913	
	39	2480	2.564	0.25	2.812	
500k 37Byte	37	2402	-4.225	2.29	-1.939	
	17	2440	-2.489	2.29	-0.203	
	39	2480	-2.673	2.29	-0.387	
500k 255Byte	37	2402	-3.706	0.65	-3.053	
	17	2440	-2.381	0.65	-1.728	
	39	2480	-2.629	0.65	-1.976	

[Dual Ant.1]

Mode	Channel	Frequency [MHz]	Measured PSD [dBm]	D.C.F [dB]	Total PSD [dBm]	Limit [dBm/3kHz]
1M 37Byte	37	2402	-1.664	2.84	1.175	8
	17	2440	1.600	2.84	4.439	
	39	2480	-1.535	2.84	1.304	
1M 255Byte	37	2402	-1.156	0.68	-0.481	
	17	2440	1.973	0.68	2.648	
	39	2480	-0.240	0.68	0.435	
2M 37Byte	0	2404	-2.880	4.10	1.220	
	17	2440	-0.934	4.10	3.166	
	36	2478	-3.340	4.10	0.760	
2M 255Byte	0	2404	-2.685	1.14	-1.544	
	17	2440	-1.164	1.14	-0.023	
	36	2478	-3.273	1.14	-2.132	

[Dual Ant.2]

Mode	Channel	Frequency [MHz]	Measured PSD [dBm]	D.C.F [dB]	Total PSD [dBm]	Limit [dBm/3kHz]
1M 37Byte	37	2402	-0.159	2.84	2.680	8
	17	2440	-0.778	2.84	2.061	
	39	2480	-1.039	2.84	1.800	
1M 255Byte	37	2402	-0.430	0.68	0.245	
	17	2440	0.332	0.68	1.007	
	39	2480	1.327	0.68	2.002	
2M 37Byte	0	2404	-4.370	4.10	-0.270	
	17	2440	-2.486	4.10	1.614	
	36	2478	-3.346	4.10	0.754	
2M 255Byte	0	2404	-2.839	1.14	-1.698	
	17	2440	-2.096	1.14	-0.955	
	36	2478	-1.898	1.14	-0.757	

[Dual (Ant.1+ Ant.2)]

Mode	Channel	Frequency [MHz]	Dual Ant.1 Total PSD [dBm]	Dual Ant.2 Total PSD [dBm]	Dual Total PSD [dBm]	Limit (dBm/3kHz)
1M 37Byte	37	2402	1.175	2.680	5.003	8
	17	2440	4.439	2.061	6.421	
	39	2480	1.304	1.800	4.570	
1M 255Byte	37	2402	-0.481	0.245	2.908	
	17	2440	2.648	1.007	4.915	
	39	2480	0.435	2.002	4.299	
2M 37Byte	0	2404	1.220	-0.270	3.549	
	17	2440	3.166	1.614	5.470	
	36	2478	0.760	0.754	3.768	
2M 255Byte	0	2404	-1.544	-1.698	1.390	
	17	2440	-0.023	-0.955	2.546	
	36	2478	-2.132	-0.757	1.620	

Test Plots

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

[Ant.1]

1 MBit/s 37 Byte (Mid-CH 17)



2 MBit/s 37 Byte (Mid-CH 17)



125k Bit/s 255 Byte (Mid-CH 17)



500k Bit/s 37 Byte (Mid-CH 17)



[Ant.2]

1 MBit/s 37 Byte (Mid-CH 17)



2 MBit/s 37 Byte (Mid-CH 17)



125k Bit/s 37 Byte (Mid-CH 17)



500k Bit/s 37 Byte (Mid-CH 17)



[Dual BT]

1 MBit/s 37 Byte (Mid-CH 17)

Dual Ant.1



Dual Ant.2



2 MBit/s 37 Byte (Low-CH 17)

Dual Ant.1



Dual Ant.2



9.5 BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS

[BAND EDGE]

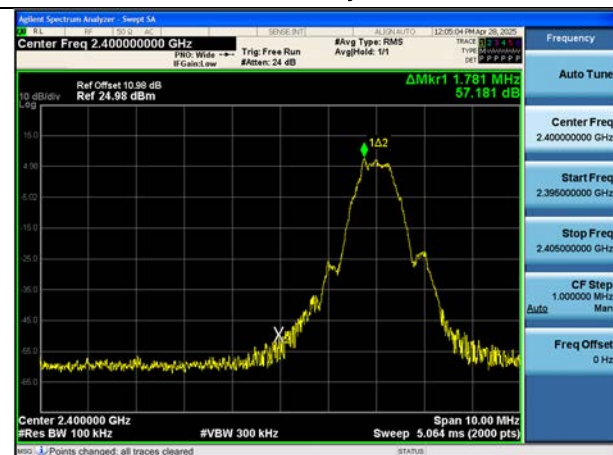
Mode	Channel	Frequency [MHz]	Position	Ant.1 Band Edge [dB]	Ant.2 Band Edge [dB]	Limit [dBc]
1M 37Byte	37	2402	Lower	57.631	56.518	30
	39	2480	Upper	68.251	61.946	
1M 255Byte	37	2402	Lower	58.993	54.496	
	39	2480	Upper	66.882	63.775	
2M 37Byte	0	2404	Lower	64.514	62.739	
	36	2478	Upper	69.300	68.259	
2M 255Byte	0	2404	Lower	65.027	63.423	
	36	2478	Upper	68.289	67.018	
125k 37Byte	37	2402	Lower	57.987	55.031	
	39	2480	Upper	61.837	65.333	
125k 255Byte	37	2402	Lower	58.033	55.348	
	39	2480	Upper	61.399	65.389	
500k 37Byte	37	2402	Lower	57.181	57.201	
	39	2480	Upper	65.816	66.543	
500k 255Byte	37	2402	Lower	58.812	59.337	
	39	2480	Upper	65.176	65.638	

[Dual BT]

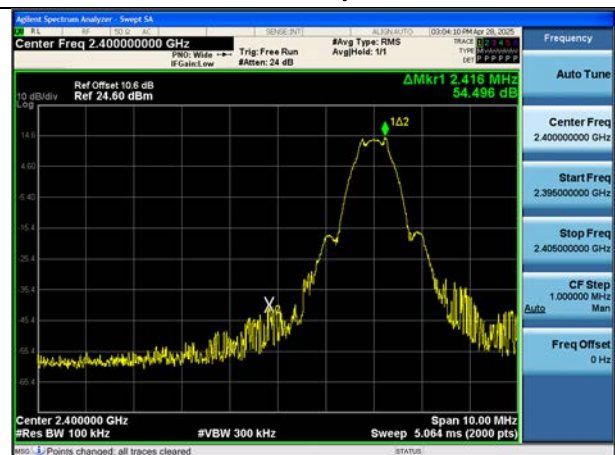
Mode	Channel	Frequency [MHz]	Position	Dual Ant.1 Band Edge [dB]	Dual Ant.2 Band Edge [dB]	Limit [dBc]
1M 37Byte	37	2402	Lower	56.989	56.537	30
	39	2480	Upper	66.836	67.138	
1M 255Byte	37	2402	Lower	58.295	56.867	
	39	2480	Upper	67.733	68.048	
2M 37Byte	0	2404	Lower	64.392	60.438	
	36	2478	Upper	68.481	66.165	
2M 255Byte	0	2404	Lower	65.168	62.158	
	36	2478	Upper	66.974	67.672	

▣ Test Plot(Band Edge)

Ant.1, 500k Bit/s 37 Byte (Low-CH 37)



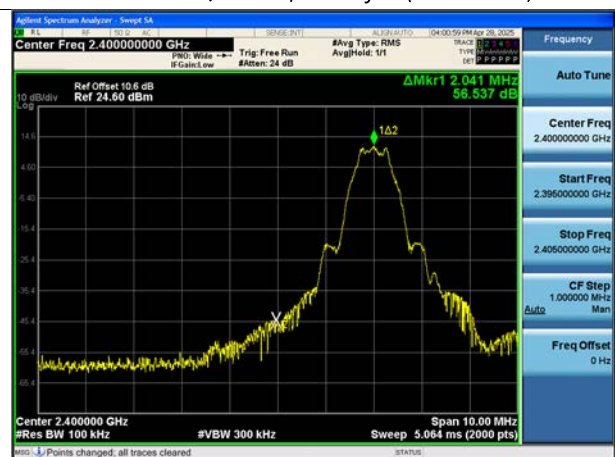
Ant.2, 1 MBit/s 255 Byte (Low-CH 37)



Dual Ant.1, 1 MBit/s 37 Byte (Low-CH 37)



Dual Ant.2, 1 MBit/s 37 Byte (Low-CH 37)



[CONDUCTED SPURIOUS EMISSIONS]

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

- Worst case

Ant. 1 : 125k Bit/s 37 Byte Ch. 37(2 402 MHz)

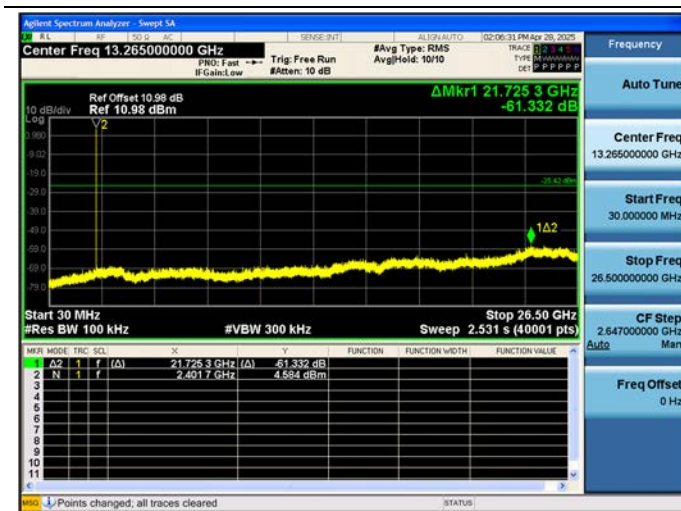
Ant. 2 : 125k Bit/s 255 Byte Ch. 37(2 402 MHz)

Dual Ant. 1 : 2M Bit/s 37 Byte Ch. 36(2 478 MHz)

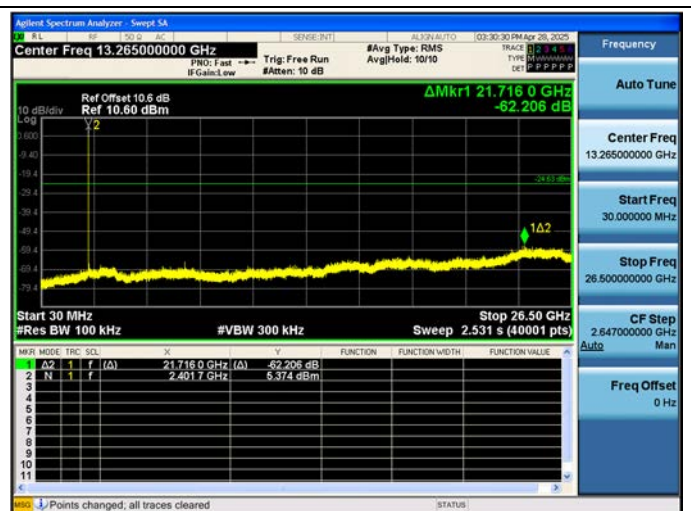
Dual Ant. 2 : 2M Bit/s 37 Byte Ch. 36(2 478 MHz)

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

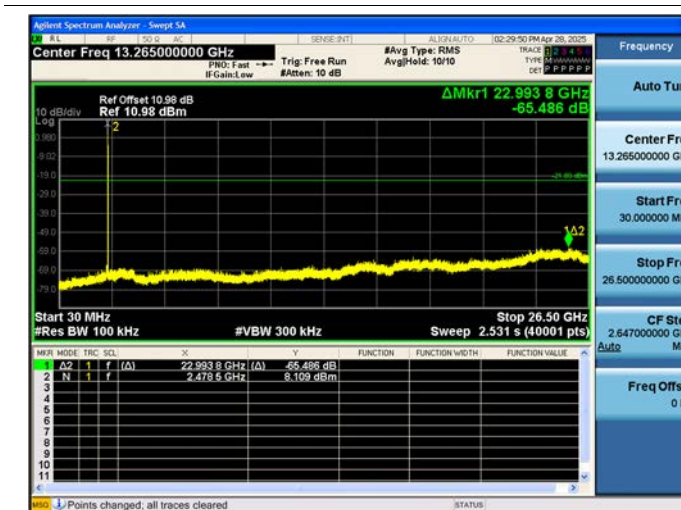
Ant. 1 Conducted Spurious Emission



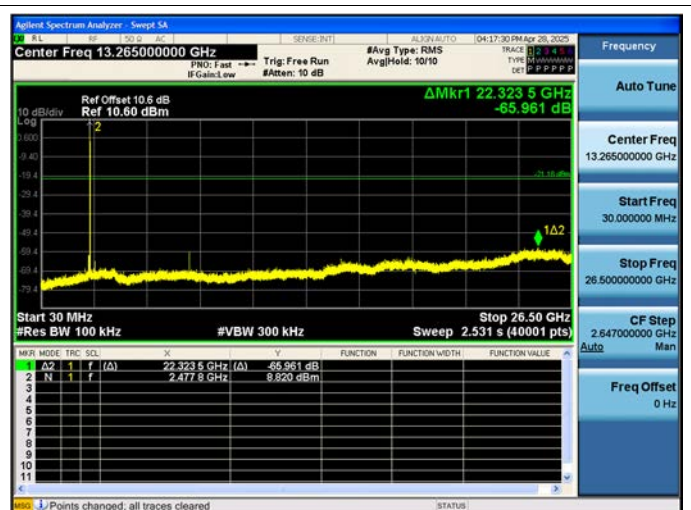
Ant. 2 Conducted Spurious Emission



Dual BT Ant. 1 Conducted Spurious Emission



Dual BT Ant. 2 Conducted Spurious Emission



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]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/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 = $40 \log(\text{specific distance} / \text{test distance})$ (dB)
3. Limit line = specific Limits (dBμV) + Distance extrapolation factor

Frequency Range : Below 1 GHz

Frequency	Measured Value	A.F+C.L	POL	Total	Limit	Margin
[MHz]	[dBμV]	[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

[Ant.1]

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	44.62	2.70	V	47.32	73.98	26.66	PK
4804	32.49	2.70	V	35.19	53.98	18.79	AV
7206	41.35	11.30	V	52.65	73.98	21.33	PK
7206	28.61	11.30	V	39.91	53.98	14.07	AV
4804	44.63	2.70	H	47.33	73.98	26.65	PK
4804	32.54	2.70	H	35.24	53.98	18.74	AV
7206	40.14	11.30	H	51.44	73.98	22.54	PK
7206	28.43	11.30	H	39.73	53.98	14.25	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	45.87	2.80	V	48.67	73.98	25.31	PK
4880	33.88	2.80	V	36.68	53.98	17.30	AV
7320	41.64	10.41	V	52.05	73.98	21.93	PK
7320	29.63	10.41	V	40.04	53.98	13.94	AV
4880	46.30	2.80	H	49.10	73.98	24.88	PK
4880	34.23	2.80	H	37.03	53.98	16.95	AV
7320	40.57	10.41	H	50.98	73.98	23.00	PK
7320	29.27	10.41	H	39.68	53.98	14.30	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	45.09	3.93	V	49.02	73.98	24.96	PK
4960	32.97	3.93	V	36.90	53.98	17.08	AV
7440	42.14	10.61	V	52.75	73.98	21.23	PK
7440	30.22	10.61	V	40.83	53.98	13.15	AV
4960	46.21	3.93	H	50.14	73.98	23.84	PK
4960	33.27	3.93	H	37.20	53.98	16.78	AV
7440	42.36	10.61	H	52.97	73.98	21.01	PK
7440	30.23	10.61	H	40.84	53.98	13.14	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	43.82	2.68	V	46.50	73.98	27.48	PK
4808	32.41	2.68	V	35.09	53.98	18.89	AV
7212	39.91	11.25	V	51.16	73.98	22.82	PK
7212	28.33	11.25	V	39.58	53.98	14.40	AV
4808	44.56	2.68	H	47.24	73.98	26.74	PK
4808	32.59	2.68	H	35.27	53.98	18.71	AV
7212	40.46	11.25	H	51.71	73.98	22.27	PK
7212	28.41	11.25	H	39.66	53.98	14.32	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	46.23	2.80	V	49.03	73.98	24.95	PK
4880	34.11	2.80	V	36.91	53.98	17.07	AV
7320	40.16	10.41	V	50.57	73.98	23.41	PK
7320	29.28	10.41	V	39.69	53.98	14.29	AV
4880	46.99	2.80	H	49.79	73.98	24.19	PK
4880	34.19	2.80	H	36.99	53.98	16.99	AV
7320	41.03	10.41	H	51.44	73.98	22.54	PK
7320	29.31	10.41	H	39.72	53.98	14.26	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	45.22	3.87	V	49.09	73.98	24.89	PK
4956	32.46	3.87	V	36.33	53.98	17.65	AV
7434	40.79	10.69	V	51.48	73.98	22.50	PK
7434	29.52	10.69	V	40.21	53.98	13.77	AV
4956	45.75	3.87	H	49.62	73.98	24.36	PK
4956	32.87	3.87	H	36.74	53.98	17.24	AV
7434	41.32	10.69	H	52.01	73.98	21.97	PK
7434	29.72	10.69	H	40.41	53.98	13.57	AV

[Ant.2]

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	44.95	2.70	V	47.65	73.98	26.33	PK
4804	32.05	2.70	V	34.75	53.98	19.23	AV
7206	39.55	11.30	V	50.85	73.98	23.13	PK
7206	28.04	11.30	V	39.34	53.98	14.64	AV
4804	45.07	2.70	H	47.77	73.98	26.21	PK
4804	32.43	2.70	H	35.13	53.98	18.85	AV
7206	39.78	11.30	H	51.08	73.98	22.90	PK
7206	28.14	11.30	H	39.44	53.98	14.54	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	45.98	2.80	V	48.78	73.98	25.20	PK
4880	33.99	2.80	V	36.79	53.98	17.19	AV
7320	40.81	10.41	V	51.22	73.98	22.76	PK
7320	29.01	10.41	V	39.42	53.98	14.56	AV
4880	46.25	2.80	H	49.05	73.98	24.93	PK
4880	34.05	2.80	H	36.85	53.98	17.13	AV
7320	41.80	10.41	H	52.21	73.98	21.77	PK
7320	29.09	10.41	H	39.50	53.98	14.48	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	45.62	3.93	V	49.55	73.98	24.43	PK
4960	33.98	3.93	V	37.91	53.98	16.07	AV
7440	41.21	10.61	V	51.82	73.98	22.16	PK
7440	29.14	10.61	V	39.75	53.98	14.23	AV
4960	46.27	3.93	H	50.20	73.98	23.78	PK
4960	34.16	3.93	H	38.09	53.98	15.89	AV
7440	42.05	10.61	H	52.66	73.98	21.32	PK
7440	29.65	10.61	H	40.26	53.98	13.72	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	43.97	2.68	V	46.65	73.98	27.33	PK
4808	32.42	2.68	V	35.10	53.98	18.88	AV
7212	39.62	11.25	V	50.87	73.98	23.11	PK
7212	28.21	11.25	V	39.46	53.98	14.52	AV
4808	44.67	2.68	H	47.35	73.98	26.63	PK
4808	32.56	2.68	H	35.24	53.98	18.74	AV
7212	39.74	11.25	H	50.99	73.98	22.99	PK
7212	28.33	11.25	H	39.58	53.98	14.40	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	45.91	2.80	V	48.71	73.98	25.27	PK
4880	34.05	2.80	V	36.85	53.98	17.13	AV
7320	41.04	10.41	V	51.45	73.98	22.53	PK
7320	29.01	10.41	V	39.42	53.98	14.56	AV
4880	46.04	2.80	H	48.84	73.98	25.14	PK
4880	34.14	2.80	H	36.94	53.98	17.04	AV
7320	41.58	10.41	H	51.99	73.98	21.99	PK
7320	29.12	10.41	H	39.53	53.98	14.45	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	44.63	3.87	V	48.50	73.98	25.48	PK
4956	32.54	3.87	V	36.41	53.98	17.57	AV
7434	41.22	10.69	V	51.91	73.98	22.07	PK
7434	29.65	10.69	V	40.34	53.98	13.64	AV
4956	45.67	3.87	H	49.54	73.98	24.44	PK
4956	32.87	3.87	H	36.74	53.98	17.24	AV
7434	41.51	10.69	H	52.20	73.98	21.78	PK
7434	29.72	10.69	H	40.41	53.98	13.57	AV

[Dual Ant.1+ Ant.2]

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	43.63	2.70	V	46.33	73.98	27.65	PK
4804	32.12	2.70	V	34.82	53.98	19.16	AV
7206	39.56	11.30	V	50.86	73.98	23.12	PK
7206	28.14	11.30	V	39.44	53.98	14.54	AV
4804	44.19	2.70	H	46.89	73.98	27.09	PK
4804	32.42	2.70	H	35.12	53.98	18.86	AV
7206	40.31	11.30	H	51.61	73.98	22.37	PK
7206	28.22	11.30	H	39.52	53.98	14.46	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	44.93	2.80	V	47.73	73.98	26.25	PK
4880	33.67	2.80	V	36.47	53.98	17.51	AV
7320	40.65	10.41	V	51.06	73.98	22.92	PK
7320	29.04	10.41	V	39.45	53.98	14.53	AV
4880	46.19	2.80	H	48.99	73.98	24.99	PK
4880	33.96	2.80	H	36.76	53.98	17.22	AV
7320	41.92	10.41	H	52.33	73.98	21.65	PK
7320	29.82	10.41	H	40.23	53.98	13.75	AV

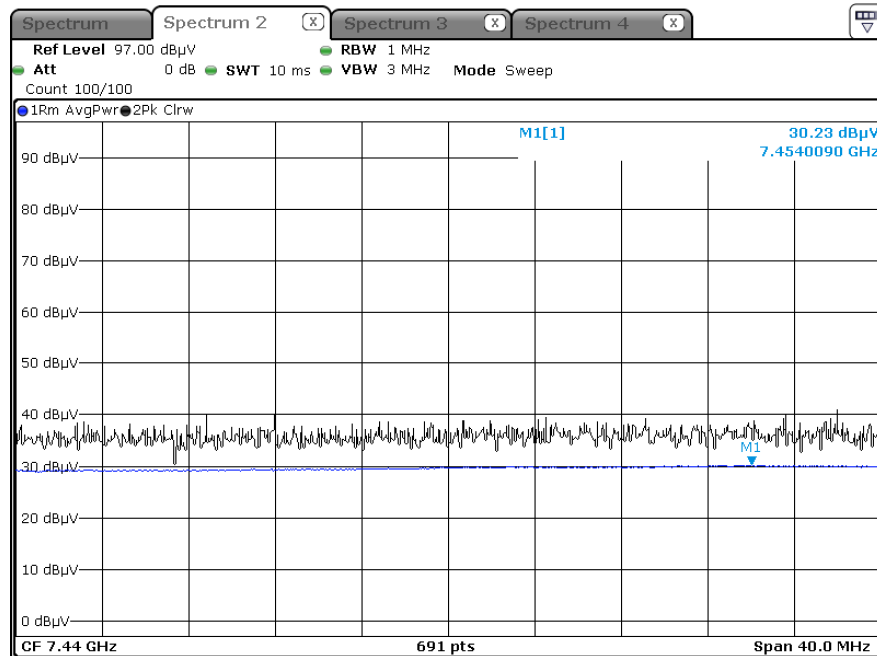
CH 39	2480	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4960	44.54	3.93	V	48.47	73.98	25.51	PK
4960	32.67	3.93	V	36.60	53.98	17.38	AV
7440	41.17	10.61	V	51.78	73.98	22.20	PK
7440	30.18	10.61	V	40.79	53.98	13.19	AV
4960	44.88	3.93	H	48.81	73.98	25.17	PK
4960	32.97	3.93	H	36.90	53.98	17.08	AV
7440	42.37	10.61	H	52.98	73.98	21.00	PK
7440	30.25	10.61	H	40.86	53.98	13.12	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	43.75	2.68	V	46.43	73.98	27.55	PK
4808	32.15	2.68	V	34.83	53.98	19.15	AV
7212	39.69	11.25	V	50.94	73.98	23.04	PK
7212	28.33	11.25	V	39.58	53.98	14.40	AV
4808	44.65	2.68	H	47.33	73.98	26.65	PK
4808	32.56	2.68	H	35.24	53.98	18.74	AV
7212	40.60	11.25	H	51.85	73.98	22.13	PK
7212	28.40	11.25	H	39.65	53.98	14.33	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	45.29	2.80	V	48.09	73.98	25.89	PK
4880	33.52	2.80	V	36.32	53.98	17.66	AV
7320	40.96	10.41	V	51.37	73.98	22.61	PK
7320	29.35	10.41	V	39.76	53.98	14.22	AV
4880	45.74	2.80	H	48.54	73.98	25.44	PK
4880	33.97	2.80	H	36.77	53.98	17.21	AV
7320	41.75	10.41	H	52.16	73.98	21.82	PK
7320	29.47	10.41	H	39.88	53.98	14.10	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	43.91	3.87	V	47.78	73.98	26.20	PK
4956	32.67	3.87	V	36.54	53.98	17.44	AV
7434	40.44	10.69	V	51.13	73.98	22.85	PK
7434	29.61	10.69	V	40.30	53.98	13.68	AV
4956	45.25	3.87	H	49.12	73.98	24.86	PK
4956	33.01	3.87	H	36.88	53.98	17.10	AV
7434	41.96	10.69	H	52.65	73.98	21.33	PK
7434	29.67	10.69	H	40.36	53.98	13.62	AV

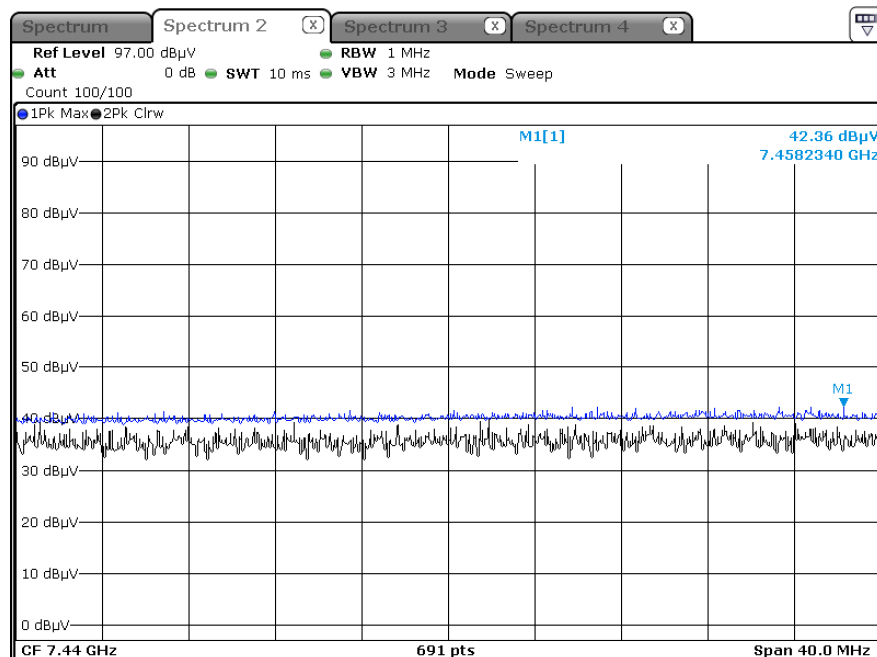
[Ant.1]

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

Radiated Spurious Emissions plot – Average Result (Ch.39 3rd Harmonic)



Radiated Spurious Emissions plot – Peak Result (Ch.39 3rd Harmonic)



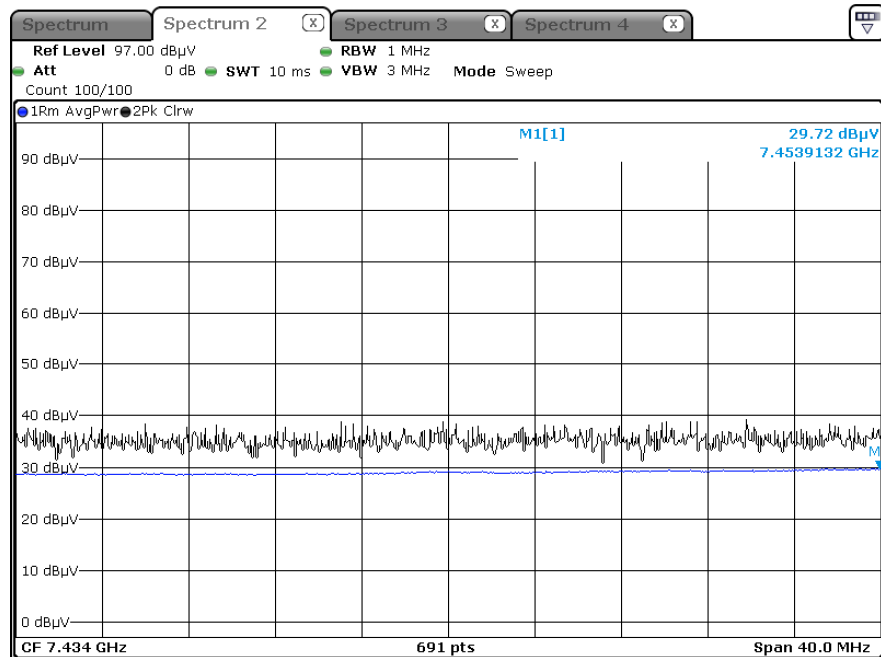
Note:

Plots of worst case are only reported.

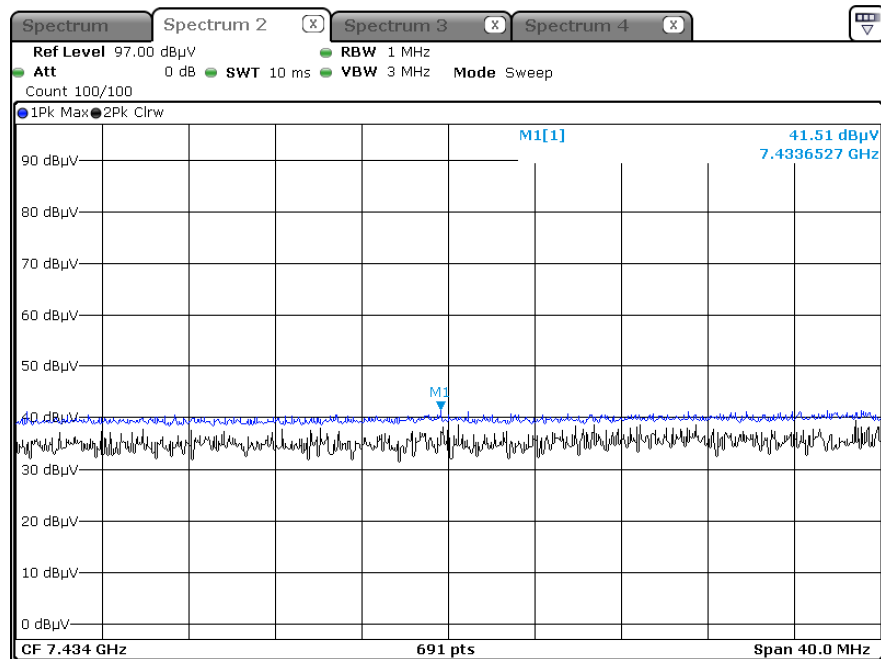
[Ant.2]

■ 2 M Bit/s 37 Bytes Test Plots (Worst case : X-H)

Radiated Spurious Emissions plot – Average Result (Ch.39 3rd Harmonic)



Radiated Spurious Emissions plot – Peak Result (Ch.39 3rd Harmonic)



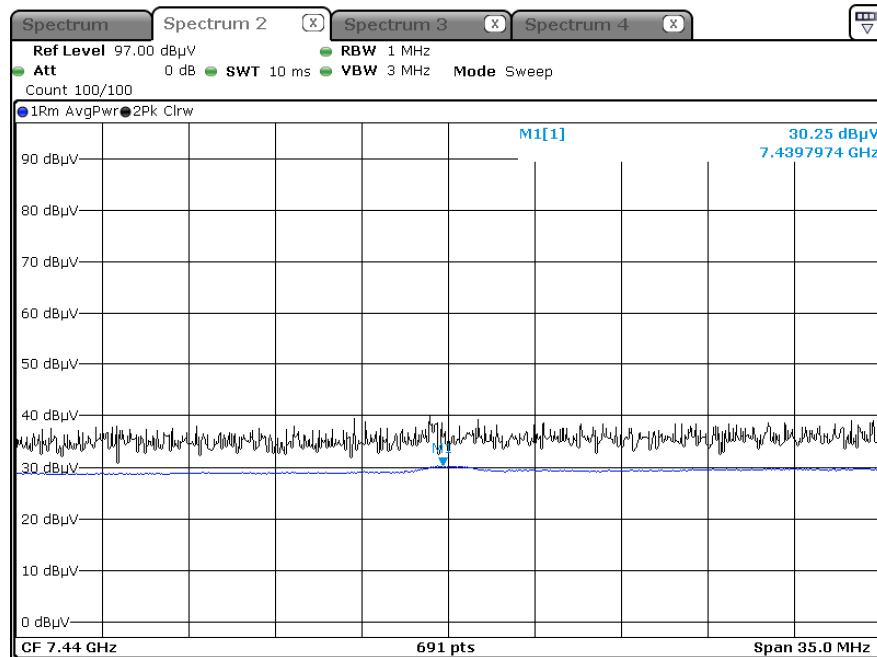
Note:

Plots of worst case are only reported.

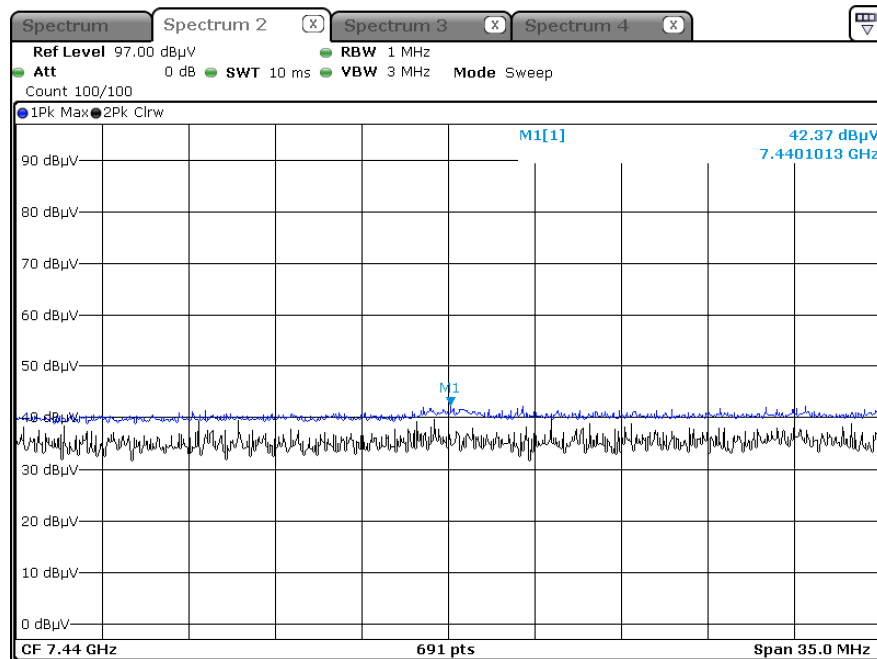
[Dual Ant.1+ Ant.2]

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

Radiated Spurious Emissions plot – Average Result (Ch.39 3rd Harmonic)



Radiated Spurious Emissions plot – Peak Result (Ch.39 3rd Harmonic)



Note:

Plots of worst case are only reported.

9.7 RADIATED RESTRICTED BAND EDGES

[Ant.1]

1 M Bit/s (37 Bytes)							
Channel	37 CH, 39 CH	Channel Frequency	2402 MHz, 2480 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	48.46	1.85	H	50.31	73.98	23.67	PK
2390.0	36.94	1.85	H	38.79	53.98	15.19	AV
2483.5	58.34	2.48	H	60.82	73.98	13.16	PK
2483.5	38.25	2.48	H	40.73	53.98	13.25	AV

1 M Bit/s (255 Bytes)							
Channel	37 CH, 39 CH	Channel Frequency	2402 MHz, 2480 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	49.26	1.85	H	51.11	73.98	22.87	PK
2390.0	36.89	1.85	H	38.74	53.98	15.24	AV
2483.5	57.78	2.48	H	60.26	73.98	13.72	PK
2483.5	38.36	2.48	H	40.84	53.98	13.14	AV

2 M Bit/s (37 Bytes)							
Channel	0 CH, 36 CH	Channel Frequency	2404 MHz, 2478 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	49.76	1.85	H	51.61	73.98	22.37	PK
2390.0	36.90	1.85	H	38.75	53.98	15.23	AV
2483.5	53.03	2.48	H	55.51	73.98	18.47	PK
2483.5	37.32	2.48	H	39.80	53.98	14.18	AV

2 M Bit/s (255 Bytes)							
Channel	0 CH, 36 CH	Channel Frequency	2404 MHz, 2478 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	49.09	1.85	H	50.94	73.98	23.04	PK
2390.0	36.78	1.85	H	38.63	53.98	15.35	AV
2483.5	54.29	2.48	H	56.77	73.98	17.21	PK
2483.5	37.52	2.48	H	40.00	53.98	13.98	AV

[Ant.2]

1 M Bit/s (37 Bytes)							
Channel	37 CH, 39 CH	Channel Frequency	2402 MHz, 2480 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	48.59	1.85	H	50.44	73.98	23.54	PK
2390.0	36.51	1.85	H	38.36	53.98	15.62	AV
2483.5	56.34	2.48	H	58.82	73.98	15.16	PK
2483.5	37.64	2.48	H	40.12	53.98	13.86	AV

1 M Bit/s (255 Bytes)							
Channel	37 CH, 39 CH	Channel Frequency	2402 MHz, 2480 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	48.76	1.85	H	50.61	73.98	23.37	PK
2390.0	36.57	1.85	H	38.42	53.98	15.56	AV
2483.5	57.33	2.48	H	59.81	73.98	14.17	PK
2483.5	37.53	2.48	H	40.01	53.98	13.97	AV

2 M Bit/s (37 Bytes)							
Channel	0 CH, 36 CH	Channel Frequency	2404 MHz, 2478 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	48.75	1.85	H	50.60	73.98	23.38	PK
2390.0	36.83	1.85	H	38.68	53.98	15.30	AV
2483.5	51.74	2.48	H	54.22	73.98	19.76	PK
2483.5	37.00	2.48	H	39.48	53.98	14.50	AV

2 M Bit/s (255 Bytes)							
Channel	0 CH, 36 CH	Channel Frequency	2404 MHz, 2478 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	48.20	1.85	H	50.05	73.98	23.93	PK
2390.0	37.22	1.85	H	39.07	53.98	14.91	AV
2483.5	53.15	2.48	H	55.63	73.98	18.35	PK
2483.5	37.12	2.48	H	39.60	53.98	14.38	AV

[Dual Ant.1+ Ant.2]

1 M Bit/s (37 Bytes)							
Channel	37 CH, 39 CH	Channel Frequency	2402 MHz, 2480 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	49.15	1.85	H	51.00	73.98	22.98	PK
2390.0	36.62	1.85	H	38.47	53.98	15.51	AV
2483.5	55.38	2.48	H	57.86	73.98	16.12	PK
2483.5	37.21	2.48	H	39.69	53.98	14.29	AV

1 M Bit/s (255 Bytes)							
Channel	37 CH, 39 CH	Channel Frequency	2402 MHz, 2480 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	48.45	1.85	H	50.30	73.98	23.68	PK
2390.0	36.57	1.85	H	38.42	53.98	15.56	AV
2483.5	55.34	2.48	H	57.82	73.98	16.16	PK
2483.5	37.32	2.48	H	39.80	53.98	14.18	AV

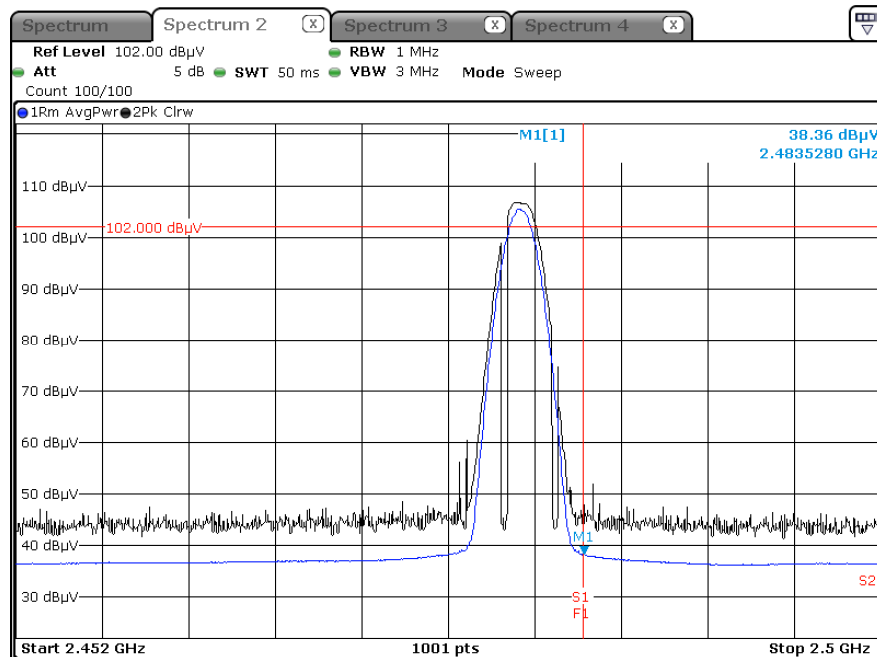
2 M Bit/s (37 Bytes)							
Channel	0 CH, 36 CH	Channel Frequency	2404 MHz, 2478 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	49.82	1.85	H	51.67	73.98	22.31	PK
2390.0	36.76	1.85	H	38.61	53.98	15.37	AV
2483.5	51.72	2.48	H	54.20	73.98	19.78	PK
2483.5	36.95	2.48	H	39.43	53.98	14.55	AV

2 M Bit/s (255 Bytes)							
Channel	0 CH, 36 CH	Channel Frequency	2404 MHz, 2478 MHz				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	48.72	1.85	H	50.57	73.98	23.41	PK
2390.0	36.80	1.85	H	38.65	53.98	15.33	AV
2483.5	52.41	2.48	H	54.89	73.98	19.09	PK
2483.5	36.89	2.48	H	39.37	53.98	14.61	AV

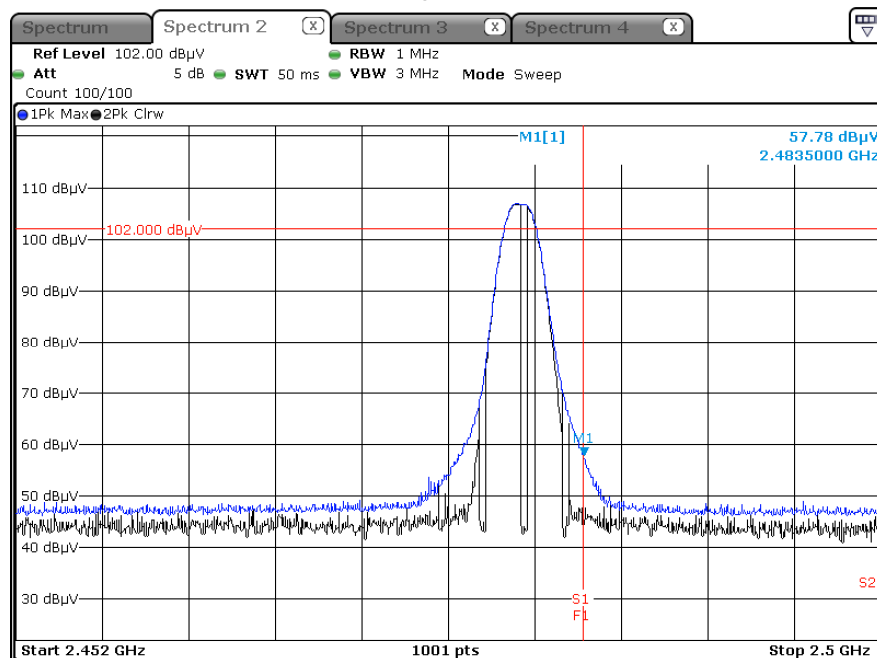
[Ant.1]

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)



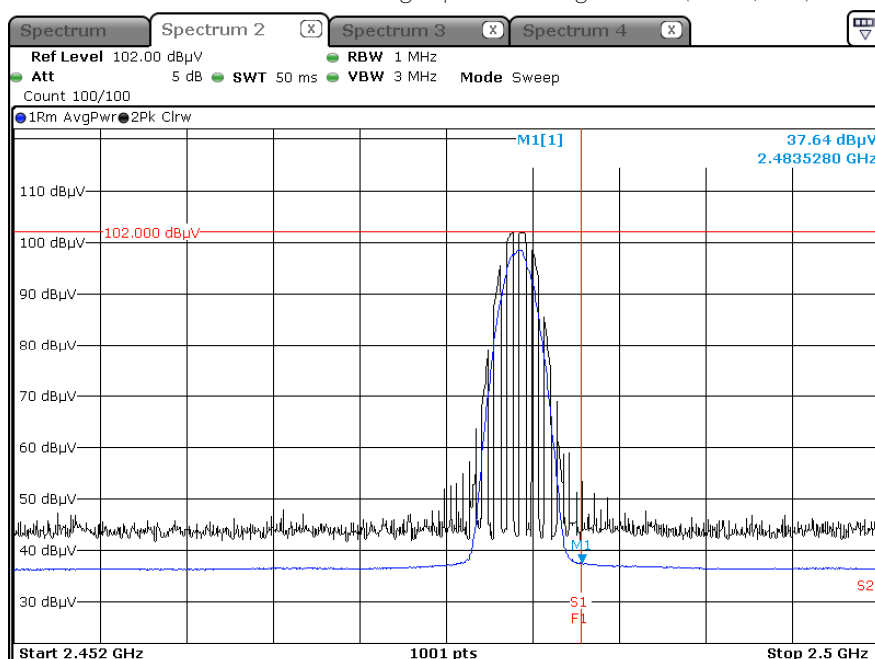
Note:

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

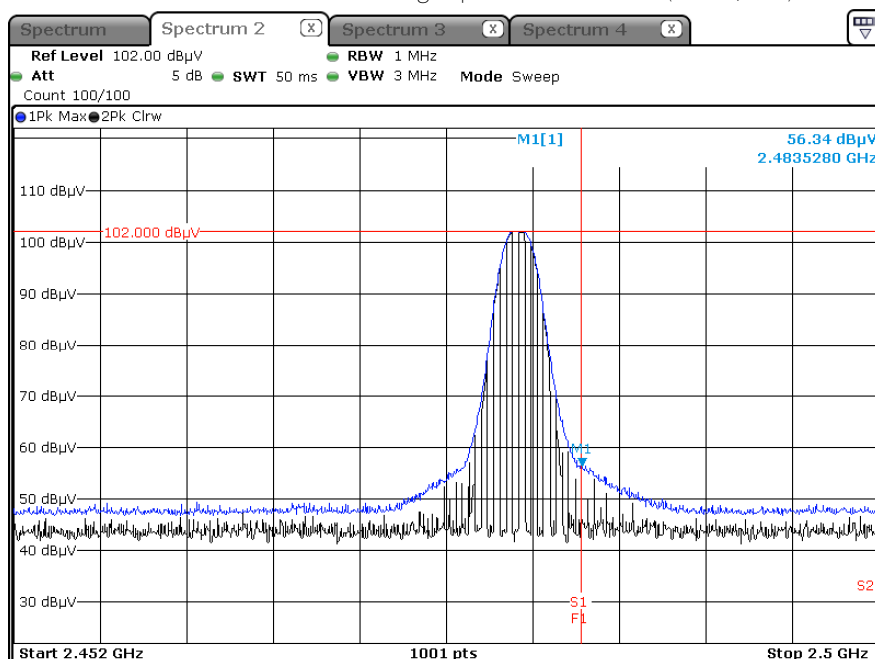
[Ant.2]

Mode : 1 M Bit/s (37 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)



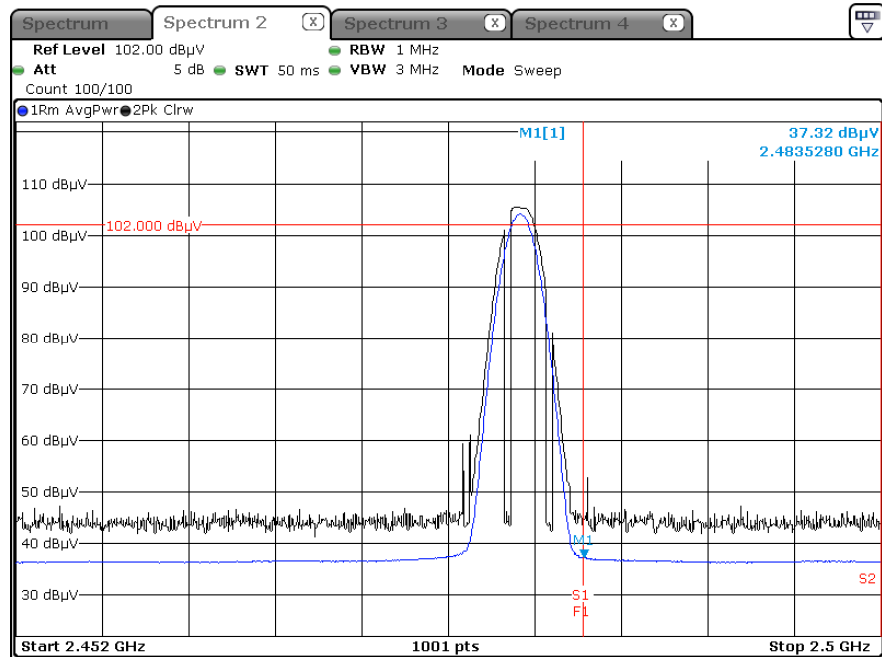
Note:

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

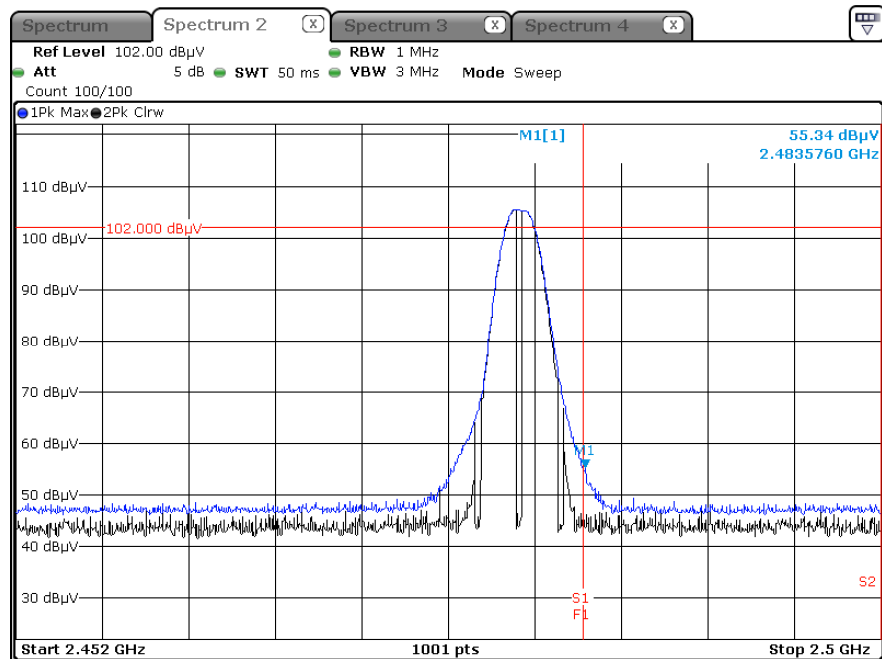
[Dual Ant.1+ Ant.2]

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

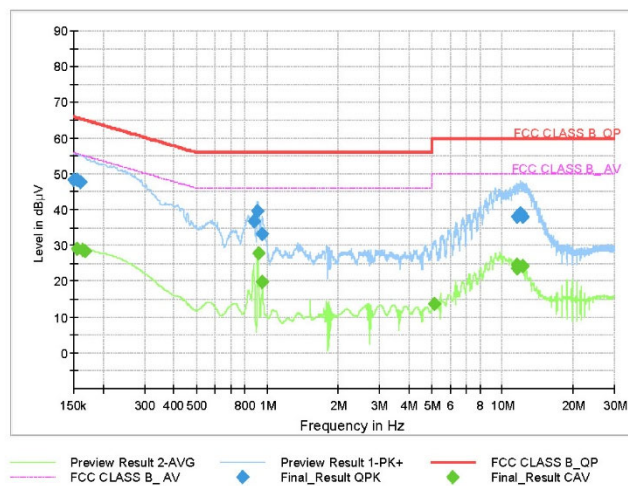
1 / 1

Test Report

Common Information

EUT : SM-F761U
Operating Conditions : BTLE Mode
Comment :

Full Spectrum



Final Result QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1500	48.45	66.00	17.55	9.000	N	9.6
0.1545	48.19	65.75	17.56	9.000	N	9.6
0.1613	47.66	65.40	17.74	9.000	N	9.6
0.8780	36.71	56.00	19.29	9.000	L1	9.7
0.9118	39.81	56.00	16.19	9.000	L1	9.7
0.9478	33.32	56.00	22.68	9.000	L1	9.7
11.5498	38.12	60.00	21.88	9.000	N	10.2
11.9615	39.13	60.00	20.87	9.000	N	10.2
12.2113	38.22	60.00	21.78	9.000	N	10.2

Final Result CAV

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1545	29.24	55.75	26.52	9.000	N	9.6
0.1635	28.73	55.28	26.55	9.000	N	9.6
0.1680	28.49	55.06	26.57	9.000	N	9.6
0.9140	27.96	46.00	18.04	9.000	N	9.7
0.9523	19.83	46.00	26.17	9.000	L1	9.7
5.1440	13.74	50.00	36.26	9.000	L1	9.9
11.5093	24.59	50.00	25.41	9.000	N	10.2
11.5475	23.67	50.00	26.33	9.000	N	10.2
12.1370	24.32	50.00	25.68	9.000	N	10.2

2025-04-07

오전 10:01:03

10. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	07/17/2025	Annual
EMI Test Receiver	ESR	Rohde & Schwarz	101910	07/02/2025	Annual
Temperature Chamber	SU-642	ESPEC	0093008124	02/11/2026	Annual
Signal Analyzer	N9030A	Agilent	MY52350879	03/25/2026	Annual
Power Measurement Set	OSP 120	Rohde & Schwarz	101231	10/17/2025	Annual
Power Meter	N1911A	Agilent	MY45100523	02/21/2026	Annual
Power Sensor	N1921A	Agilent	MY57820067	02/04/2026	Annual
Directional Coupler	87300B	Agilent	3116A03621	10/21/2025	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	06/05/2025	Annual
Software	EMC32	Rohde & Schwarz	N/A	N/A	N/A
FCC WLAN&BT&BLE Conducted Test Software v3.0	N/A	HCT CO., LTD.	N/A	N/A	N/A

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

Radiated Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Controller(Antenna mast)	CO3000	Innco system	CO3000-4p	N/A	N/A
Antenna Position Tower	MA4640/800-XP-EP	Innco system	N/A	N/A	N/A
Controller	EM1000	Audix	060520	N/A	N/A
Turn Table	N/A	Audix	N/A	N/A	N/A
Loop Antenna	FMZB 1513	Schwarzbeck	1513-175	01/06/2027	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	9168-1135	08/19/2026	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	MY49431210	12/12/2025	Annual
Attenuator(3 dB)	18B-03	Api tech.	1	05/02/2025	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	5	06/04/2025	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	6	06/04/2025	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	11/07/2025	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/19/2026	Annual

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
3. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5(Version : 2017).

11. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2504-FC052-P