





TEST REPORT

REPORT NUMBER: 123W00020-BLE RF

ON

Type of Equipment: 4G Smart Phone

Type of Designation: MobiWire H6322, Altice S35

Brand Name: MobiWire, Altice

Manufacturer: MobiWire SAS

FCC ID: QPN-H6322

ACCORDING TO

FCC Part15

Chongqing Academy of Information and Communications Technology

Month date, year Jun 16, 2023

Signature

每罗夏

Xiang Luoyong

Director

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communications Technology.





Revision Version

Report Number	Revision	Date	Memo
123W00020-BLE RF	00	2023-06-16	Initial creation of test report





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1. Test Laboratory

1.1. Testing Location

Name:	Chongqing Academy of Information and Communications Technology	
FCC/IC Registration Number:	CN1239	
Address:	Building C, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China	
Postal Code:	401336	
Telephone:	0086-23-88069965	
Fax:	0086-23-88608777	

1.2. Testing Environment

Normal Temperature:	15-35°C
Relative Humidity:	25-75%

1.3. Project data

Testing Start Date:	2023-05-23
Testing End Date:	2023-05-26

1.4. Signature

董俊蠡	2023-06-16	
Dong Junxin (Prepared this test report)	Date	
To Make	2023-06-16	
Li Xu (Reviewed this test report)	Date	
多罗第	2023-06-16	
Xiang Luoyong Director of the laboratory (Approved this test report)	Date	





2. Client Information

2.1. Applicant Information

Company Name:	MobiWire SAS	
Address /Post:	107 Boulevard de la Mission Marchand 92400 Courbevoie,France	
City:	Courbevoie	
Country:	France	
Telephone:	+33625028368	
Fax:	N/A	
Email:	olivier.tiennault@mobiwire.com	
Contact Person:	Olivier Tiennault	

2.2. Manufacturer Information

Company Name:	MobiWire SAS	
Address /Post:	107 Boulevard de la Mission Marchand 92400 Courbevoie,France	
City:	Courbevoie	
Country:	France	
Telephone:	+33625028368	
Fax:	N/A	
Email:	olivier.tiennault@mobiwire.com	
Contact Person:	Olivier Tiennault	





3. Equipment under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

EUT Description	4G Smart Phone
Model name	MobiWire H6322, Altice S35
Brand name	MobiWire, Altice
GSM Frequency Band	GSM:850/ 900/ 1800/1900
WCDMA Frequency Band	WCDMA:B1/B2/B5/B8
LTE Frequency Band	LTE: B1/2/3/4/5/7/8/20/28/38/41
BLUETOOTH Frequency Band	2402MHz-2480MHz
WLAN Frequency Band	Wi-Fi 2.4G:802.11b/g/n, Wi-Fi 5G U-NII-1/ U-NII-2a/U-NII-2c/U-NII-3:802.11a/n/ac
Type of BLE modulation	GFSK
Extreme Temperature	-10-55°C
Nominal Voltage	3.85V
Extreme High Voltage	4.4V
Extreme Low Voltage	3.6V

Note: Photographs of EUT are shown in ANNEX A of this test report.

Note: High and low voltage values in extreme condition test are given by manufacturer.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
S4	354365420003740	V01	Mobiwire H6322 V01	2023-05-23
34	354365420003757	VUI	WIOOIWIIE_HO322_VOI	2023-03-23
S8	354365420006222	V01	Mobiwire H6322 V01	2023-05-23
36	354365420006230	VUI	WIOOIWITE_F10322_VUI	2023-03-23
S9	354365420009044	V01	Mobiwire H6322 V01	2023-05-23
39	354365420009051	V 01	WIOOIWIIE_FI0322_VUI	2023-03-23

*EUT ID: is used to identify the test sample in the lab internally.

Technology	Band	UL Freq.(MHz)	DL Freq.(MHz)	Note
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Chongqing Academy of Information and Communication Technology





BLE	СН0-39	2402-2480	
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3.3. Outline of Equipment under Test

3.4. Internal Identification of AE used during the test

AE ID*	Description	dB*
AE1	RF cable	1dB

^{*}AE ID: is used to identify the test sample in the lab internally.

dB*: is provided customer.

3.5. EUT Test RF Confagle Configuration

EUT uses MTK working control emission measurement, Change power level, channel, rate and HT.







4. Reference Documents

4.1. Documents supplied by applicant

PICS/PIXIT, referring to Annex B for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz	
KDB 558074	Guidance for Performing Compliance Measurements on Frequency Hopping Spread Spectrum systems (DSS) Operating Under §15.247	2019





5. Test Equipments Utilized

5.1. RF Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	Spectrum analyzer	FSQ 26	201137/02			R&S	2023-06-29
2	Spectrum analyzer	FSW26	104280			R&S	2023-06-29
3	DC Power Supply	3303D	801128			Topward	2023-06-29

5.2. RSE and CE Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	EMI Test Receiver	ESU40	100307			R&S	2023-06-29
2	TRILOG Broadband Antenna	VULB9163	9163-586	1		Schwarzbeck	2024-10-28
3	Horn antenna	9120D	1083			Schwarzbeck	2024-12-14
4	Horn antenna	DATE 1152	LM7127			ETS	2024-09-06
5	Horn antenna	DATE 1012	LM5945			ETS	2024-09-06
6	Amplifier1	SCU-08F1	8320027			R&S	2023-06-29
7	Amplifier2	SCU-18F	180093			R&S	2023-06-29
8	2-Line V-Network	ENV216	102368			R&S	2024-05-27
9	Test Receiver	ESR 3	101382	03	3.48 SP2	R&S	2024-01-28
10	Test Receiver	ESW 26	101382	00	1.50 SP1	R&S	2023-06-29





5.3. Climate Chamber

No.	Name	Type	SN	Manufacture	Cal.Due Date

5.4. Anechoic chamber Vibration table

No.	Name	Type	SN	Manufacture	Cal.Due Date
1	Fully-Anechoic Chamber	FAC 5		TDK	2024-09-22
2	Anechoic Chamber	SAC 10		TDK	2026-08-26

5.5. Test software

No.	Name	version	SN	Manufacture
1	EMC32 (Transmitter Spurious Emission-Radiated Above 1GHz)	V 10.20.01		R&S
2	EMC32 (Transmitter Spurious Emission-Radiated Below 1GHz)	V9.26.01		R&S
3	EMC32 (AC Powerline Conducted Emission)	V 10.40.10		R&S





6. Test Results

6.1. Summary of Test Results

FCC Rules	Name of Test	Result
15.247(b)	Maximum Peak Output Power	Pass
15.247(e)	Peak Power Spectral Density	Pass
15.247(a)	6dB Occupied Bandwidth	Pass
15.247(a)	99% Occupied Bandwidth	Pass
15.247(d)	Band Edges Compliance	Pass
15.247(d)	Transmitter Spurious Emission-Conducted	Pass
15.247/15.205/15.209	Transmitter Spurious Emission-Radiated	Pass
15.207	AC Powerline Conducted Emission	Pass

NOTE:

The MobiWire H6322, Altice 535, manufactured by MobiWire SAS is a new product for testing. The following configurations were tested for radiation spurious emission:





6.2. Peak Output Power-Conducted

Specifications:	FCC 47 Part 15.247(b)			
DUT Serial Number:	S4			
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa			
Test Results:	Pass			

Limit Level Construction:

Standard	Limit
FCC 47 Part 15.247,15.205,15.209	<30

Measurement Uncertainty:

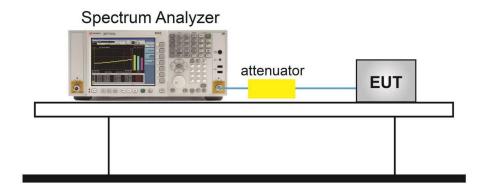
Test Procedure

The measurement is according to ANSI C63.10 clause 11.9.1

- 1. Set the RBW \geq DTS bandwidth.
- 2. Set $VBW \ge [3 \times RBW]$.
- 3. Set span \geq [3 × RBW].
- 4. Sweep time = auto couple.
- 5. Detector = peak.
- 6. Trace mode = max hold.
- 7. Allow trace to fully stabilize.
- 8. Use peak marker function to determine the peak amplitude level.

Test setup





Antenna gain of EUT

No.	Item(s)	Data
1	Antenna gain of EUT	1.15 dBi

Note: The data is provided by the customer may affect the validity of the test results in this report, and the impact and consequences of this shall be undertaken by the customer.

Test Result Peak

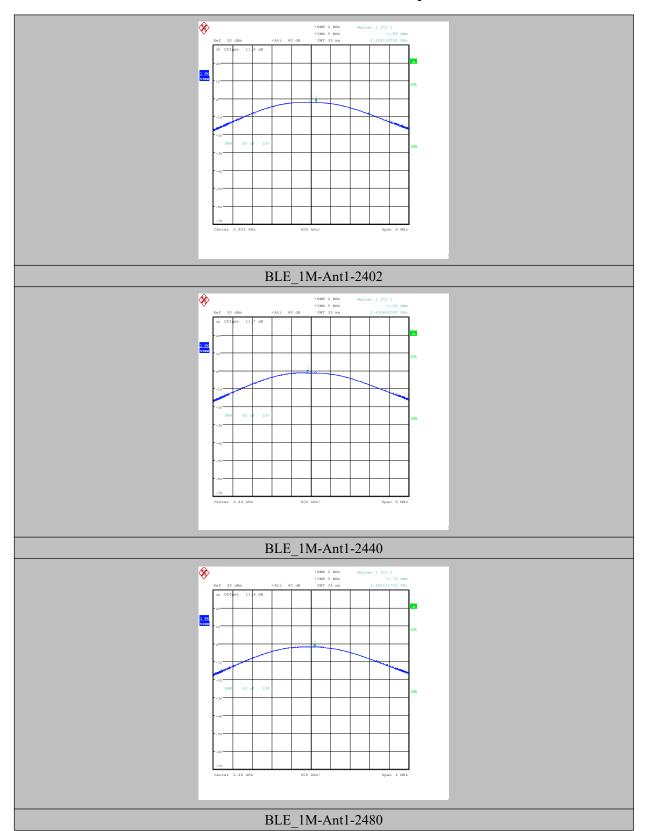
TestMode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-1.89	≤30	-0.69	≤36	PASS
BLE_1M	Ant1	2440	-1.02	≤30	0.18	≤36	PASS
BLE_1M	Ant1	2480	-1.74	≤30	-0.54	≤36	PASS
BLE_2M	Ant1	2402	-1.77	≤30	-0.57	≤36	PASS
BLE_2M	Ant1	2440	-0.88	≤30	0.32	≤36	PASS
BLE_2M	Ant1	2480	-1.74	≤30	-0.54	≤36	PASS

Test graphs as below

BLE_125K-Ant1-2402

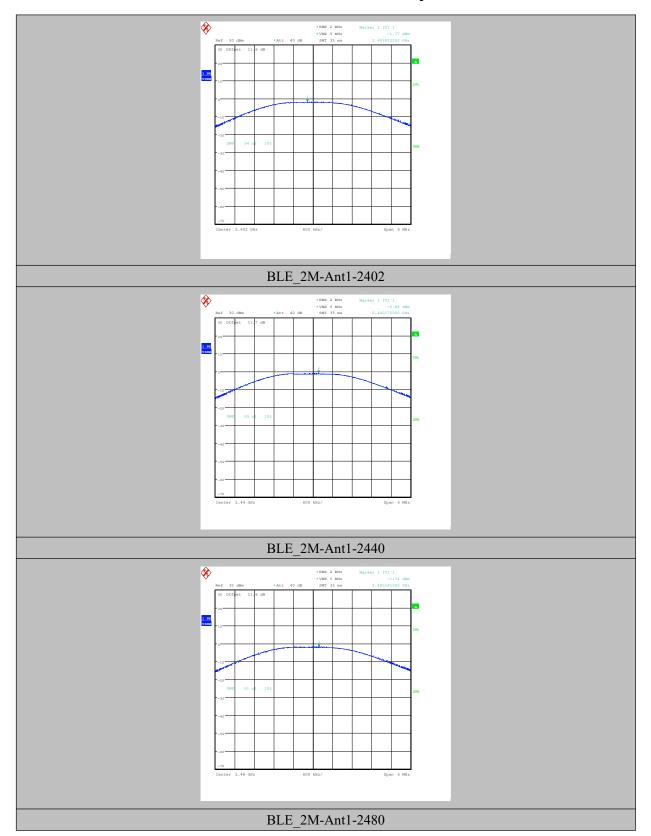
















6.3. Peak Power Spectral Density

Specifications:	FCC 47 Part 15.247(e)
DUT Serial Number:	S4
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

Standard	Limit		
FCC 47 Part 15.247(e)	≤ 8dBm/3 kHz		

Measurement Uncertainty:

Measurement Uncertainty	±0.56dB
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Test procedures

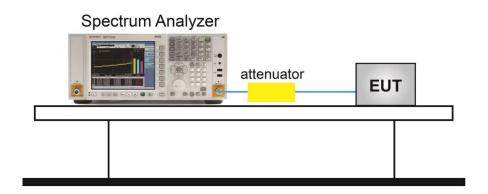
The measurement is according to ANSI C63.10 clause 11.10.

- 1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
- 2. Enable EUT transmitter maximum power continuously.
- 3. Set analyzer center frequency to DTS channel center frequency.
- 4. Set the span to 1.5 times the DTS bandwidth.
- 5. Set the RBW to $3 \text{ kHz} \le \text{RBW} \le 100 \text{ kHz}$.
- 6. Set the VBW \geq [3 × RBW].
- 7. Detector = peak.
- 8. Sweep time = auto couple.
- 9. Trace mode = max hold.
- 10. Allow trace to fully stabilize.
- 11. Use the peak marker function to determine the maximum amplitude level within the RBW.
- 12. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.





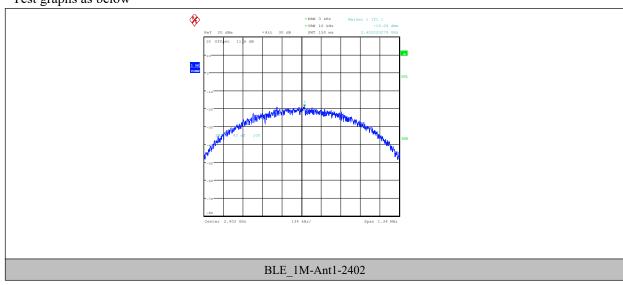
Test Setup



Measurement Results

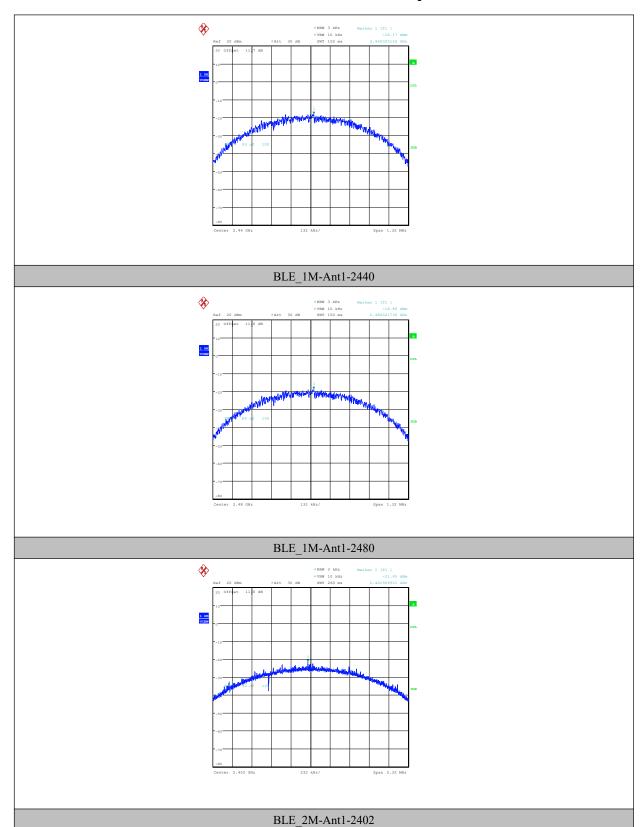
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-19.09	≤8.00	PASS
BLE_1M	Ant1	2440	-18.17	≤8.00	PASS
BLE_1M	Ant1	2480	-18.86	≤8.00	PASS
BLE_2M	Ant1	2402	-21.45	≤8.00	PASS
BLE_2M	Ant1	2440	-20.56	≤8.00	PASS
BLE_2M	Ant1	2480	-21.37	≤8.00	PASS

Test graphs as below



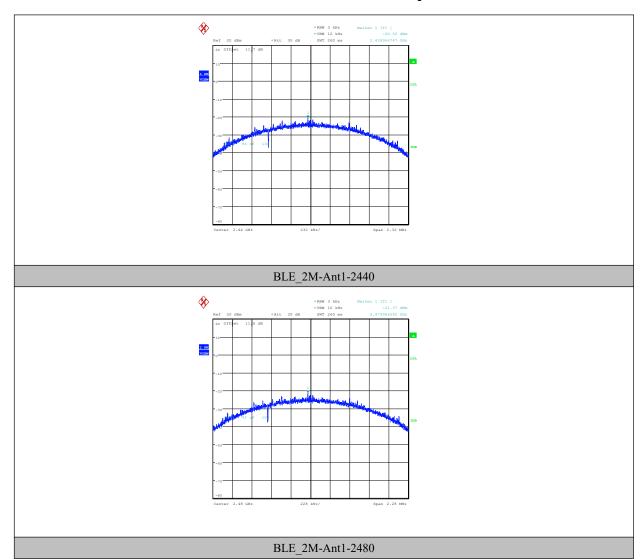
















6.4. 6dB Bandwidth

Specifications:	FCC 47 Part 15.247 (a) (2)
DUT Serial Number:	S4
Test conditions: Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa	
Test Results:	Pass

Limit Level Construction:

Standard	Limit	
FCC 47 Part 15.247 (a) (2)	≥500kHz	

Measurement Uncertainty:

Measurement Uncertainty	±0.72KHz
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Test procedures

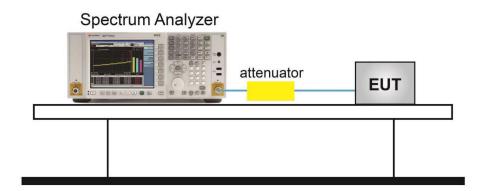
The measurement is according to ANSI C63.10 clause 11.8.

- 1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
- 2. Enable EUT transmitter maximum power continuously.
- 3. Set RBW = 100 kHz.
- 4. Set the VBW \geq [3 × RBW].
- 5. Detector = peak.
- 6. Trace mode = \max hold.
- 7. Sweep = auto couple.
- 8. Allow the trace to stabilize.
- 9. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.





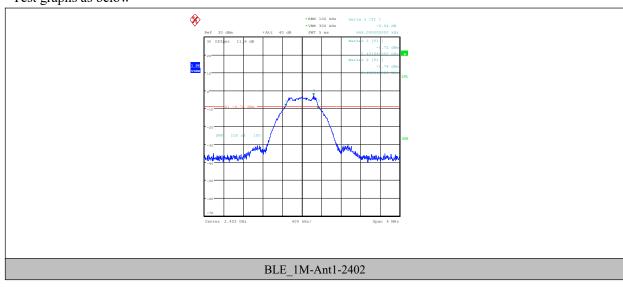
Test Setup



Measurement Result

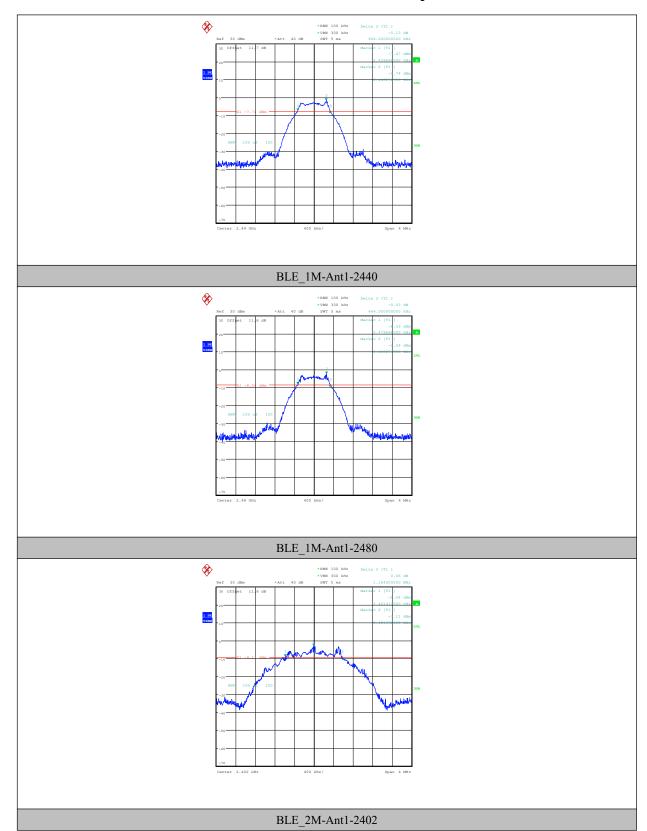
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.67	2401.66	2402.33	0.5	PASS
BLE_1M	Ant1	2440	0.66	2439.67	2440.33	0.5	PASS
BLE_1M	Ant1	2480	0.66	2479.67	2480.33	0.5	PASS
BLE_2M	Ant1	2402	1.16	2401.41	2402.58	0.5	PASS
BLE_2M	Ant1	2440	1.16	2439.42	2440.58	0.5	PASS
BLE_2M	Ant1	2480	1.14	2479.44	2480.58	0.5	PASS

Test graphs as below



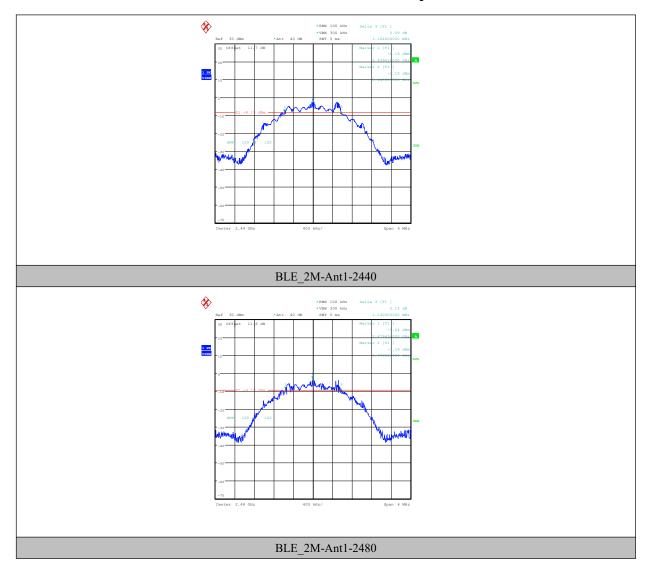
















6.5. 99% Occupied Bandwidth

Specifications:	15.247(a)
DUT Serial Number:	S4
	Ambient Temperature:15°C-35°C
Test conditions:	Relative Humidity:30%-60%
	Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

Standard	Limit
15.247(a)	N/A

Measurement Uncertainty:

Measurement Uncertainty	±0.72KHz

Test procedures

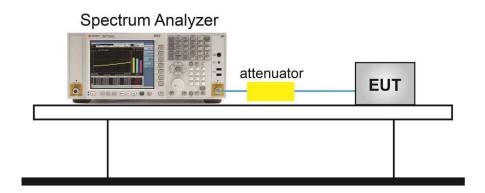
The measurement is according to ANSI C63.10 clause 6.9.3.

- 1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
- 2. Enable EUT transmitter maximum power continuously.
- 3. Set RBW shall be in the range of 1% to 5% of the OBW.
- 4. Set the VBW \geq [3 × RBW].
- 5. Detector = peak.
- 6. Trace mode = max hold.
- 7. Sweep = auto couple.
- 8. Allow the trace to stabilize.
- 9. The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.





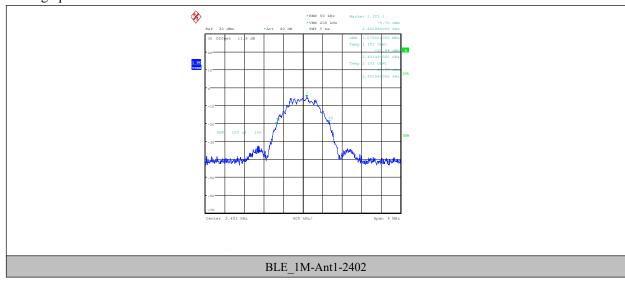
Test setup



Measurement Result

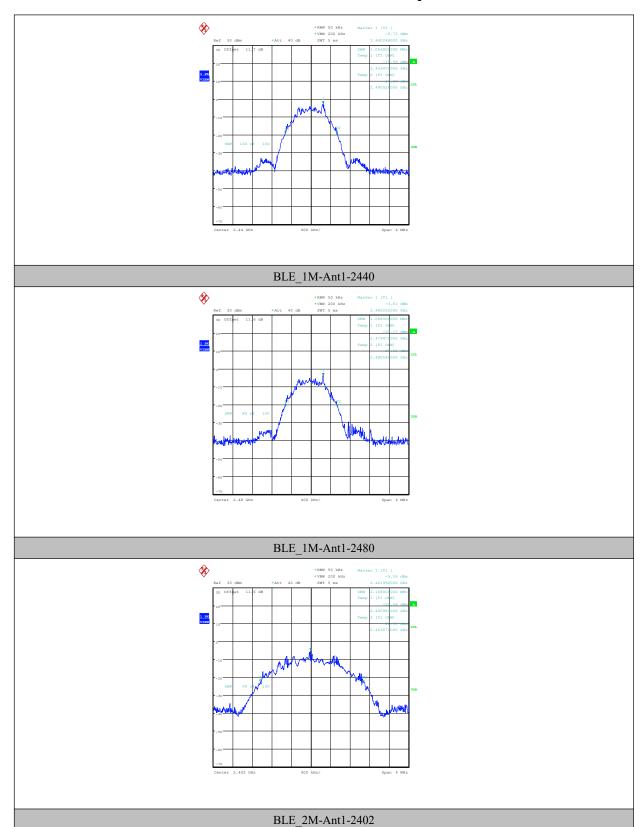
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.076	2401.4640	2402.5400		
BLE_1M	Ant1	2440	1.056	2439.4720	2440.5280		
BLE_1M	Ant1	2480	1.068	2479.4720	2480.5400		
BLE_2M	Ant1	2402	2.108	2400.9640	2403.0720		
BLE_2M	Ant1	2440	2.112	2438.9560	2441.0680		
BLE_2M	Ant1	2480	2.108	2478.9560	2481.0640		

Test graphs as below



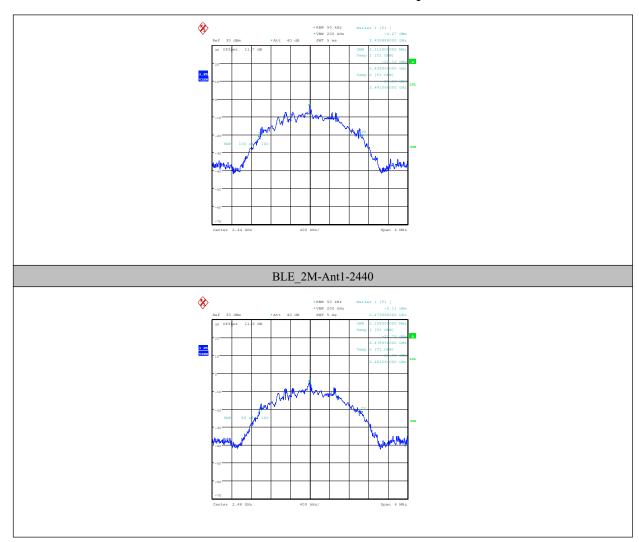
















6.6. Frequency Band Edges-Conducted

Specifications:	FCC 47 Part 15.247(d)
DUT Serial Number:	S4,S8,S9
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

Standard	Limit
FCC 47 Part 15.247(d)	>20

Measurement Uncertainty:

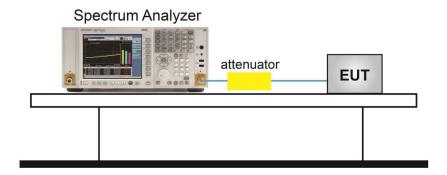
Measurement Uncertainty ±1.02dBm/KHz

Test procedures

The measurement is according to ANSI C63.10 clause 11.13.2

- 1. Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.
- 2. Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
- 3. Attenuation: Auto (at least 10 dB preferred).
- 4. Sweep time: Coupled.
- 5. Resolution bandwidth: 100 kHz.6) Video bandwidth: 300 kHz.7) Detector: Peak.8) Trace: Max hold.

Test Setup



Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336 Tel: 0086-23-88069965 FAX:0086-23-88608777

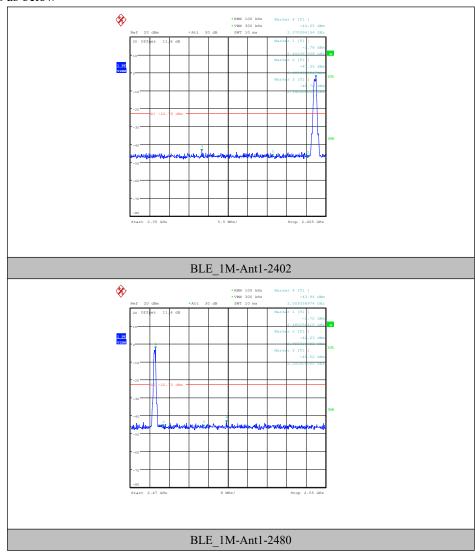




Measurement Result

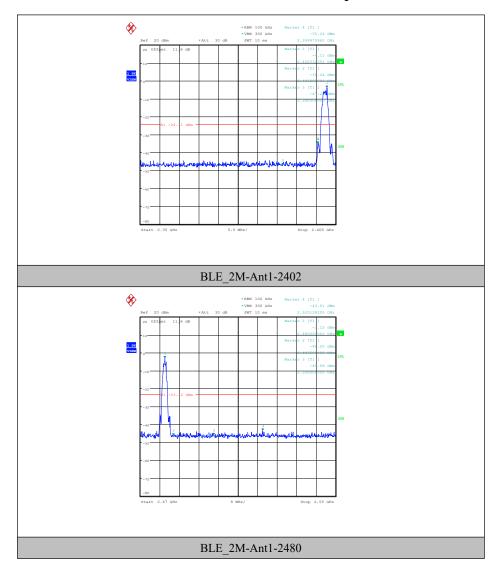
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-2.78	-44.05	≤-22.78	PASS
BLE_1M	Ant1	High	2480	-2.72	-43.96	≤-22.72	PASS
BLE_2M	Ant1	Low	2402	-4.11	-35.24	≤-24.11	PASS
BLE_2M	Ant1	High	2480	-3.12	-43.51	≤-23.12	PASS

Test graphs as below













6.7. Conducted Emission

Specifications:	FCC 47 Part 15.247(d)
DUT Serial Number:	S4
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

Standard	Limit		
FCC 47 Part 15.247(d)	20dB below peak output power in 100KHz bandwidth		

Measurement Uncertainty:

Measurement Uncertainty	±1.02dBm/KHz
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Test procedures

This measurement is according to ANSI C63.10 clause 11.11.

- 1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
- 2. Enable EUT transmitter maximum power continuously.

Reference level measurement

- 3. Set instrument center frequency to DTS channel center frequency.
- 4. Set the span to ≥ 1.5 times the DTS bandwidth.
- 5. Set the RBW = 100 kHz.
- 6. Set the VBW $\geq [3 \times RBW]$.
- 7. Detector = peak.
- 8. Sweep time = auto couple.
- 9. Trace mode = max hold.
- 10. Allow trace to fully stabilize.
- 11. Use the peak marker function to determine the maximum PSD level.

Emission level measurement

- 1. Set the center frequency and span to encompass frequency range to be measured.
- 2. Set the RBW = 100 kHz.
- 3. Set the VBW \geq [3 × RBW].
- 4. Detector = peak.
- 5. Sweep time = auto couple.

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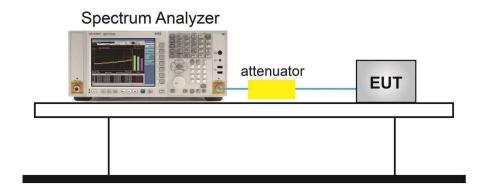
Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336 Tel: 0086-23-88069965 FAX:0086-23-88608777





- Trace mode = max hold.
- 7. Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

Test Setup



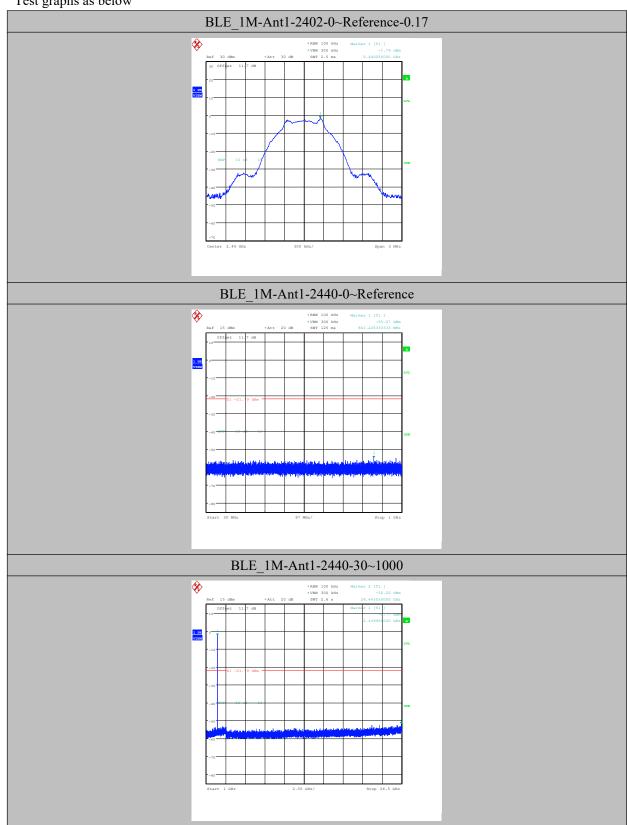
Measurement Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2440	0~Reference	-1.79	-1.79		PASS
BLE_1M	Ant1	2440	30~1000	-1.79	-55.07	≤-21.79	PASS
BLE_1M	Ant1	2440	1000~26500	-1.79	-52.22	≤-21.79	PASS
BLE_1M	Ant1	2402	0~Reference	-2.72	-2.72		PASS
BLE_1M	Ant1	2402	30~1000	-2.72	-54.81	≤-22.72	PASS
BLE_1M	Ant1	2402	1000~26500	-2.72	-52.5	≤-22.72	PASS
BLE_1M	Ant1	2480	0~Reference	-2.66	-2.66		PASS
BLE_1M	Ant1	2480	30~1000	-2.66	-55.68	≤-22.66	PASS
BLE_1M	Ant1	2480	1000~26500	-2.66	-52.65	≤-22.66	PASS
BLE_2M	Ant1	2402	0~Reference	-3.14	-3.14		PASS
BLE_2M	Ant1	2402	30~1000	-3.14	-55.4	≤-23.14	PASS
BLE_2M	Ant1	2402	1000~26500	-3.14	-52.49	≤-23.14	PASS
BLE_2M	Ant1	2440	0~Reference	-2.30	-2.30		PASS
BLE_2M	Ant1	2440	30~1000	-2.30	-55.16	≤-22.3	PASS
BLE_2M	Ant1	2440	1000~26500	-2.30	-51.72	≤-22.3	PASS
BLE_2M	Ant1	2480	0~Reference	-3.16	-3.16		PASS
BLE_2M	Ant1	2480	30~1000	-3.16	-55.64	≤-23.16	PASS
BLE_2M	Ant1	2480	1000~26500	-3.16	-52.8	≤-23.16	PASS



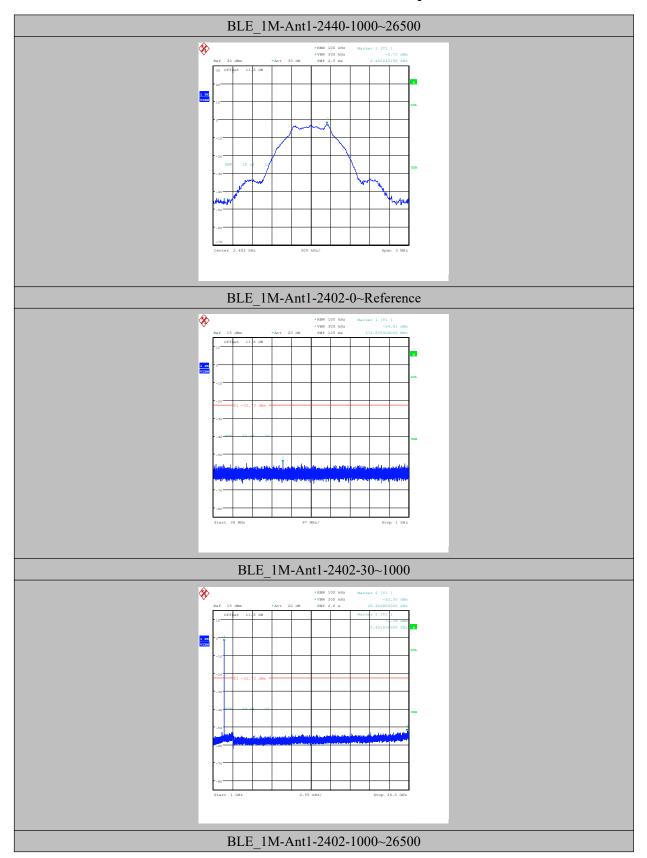


Test graphs as below







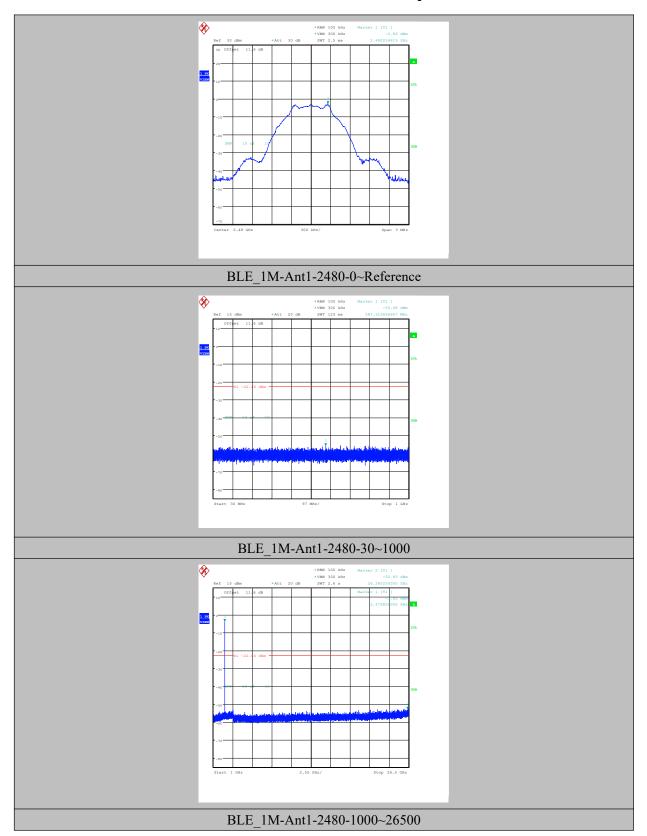


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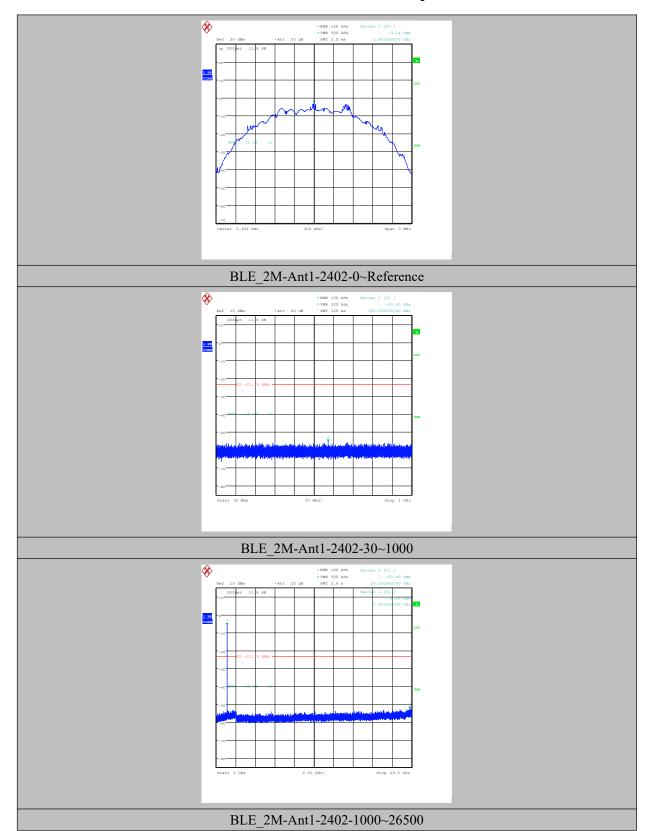






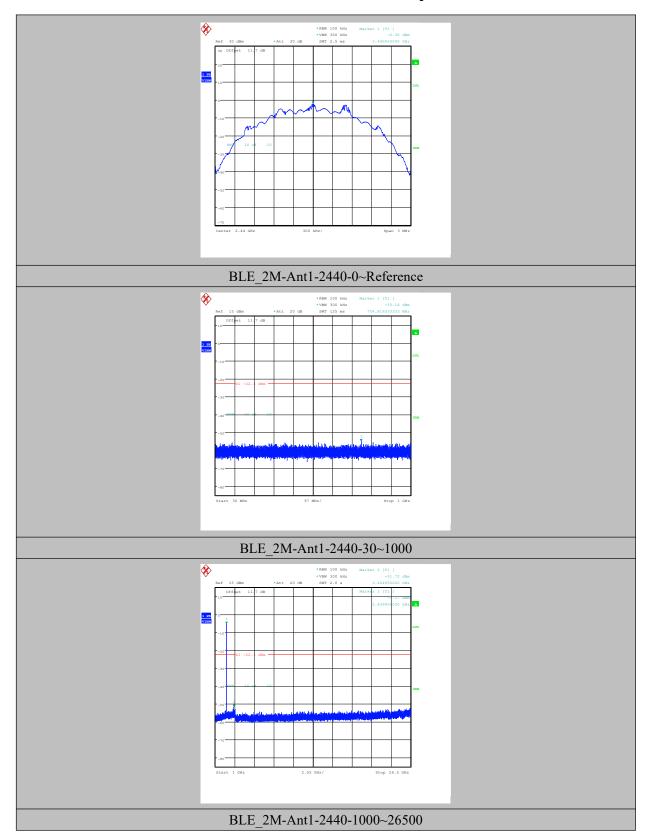






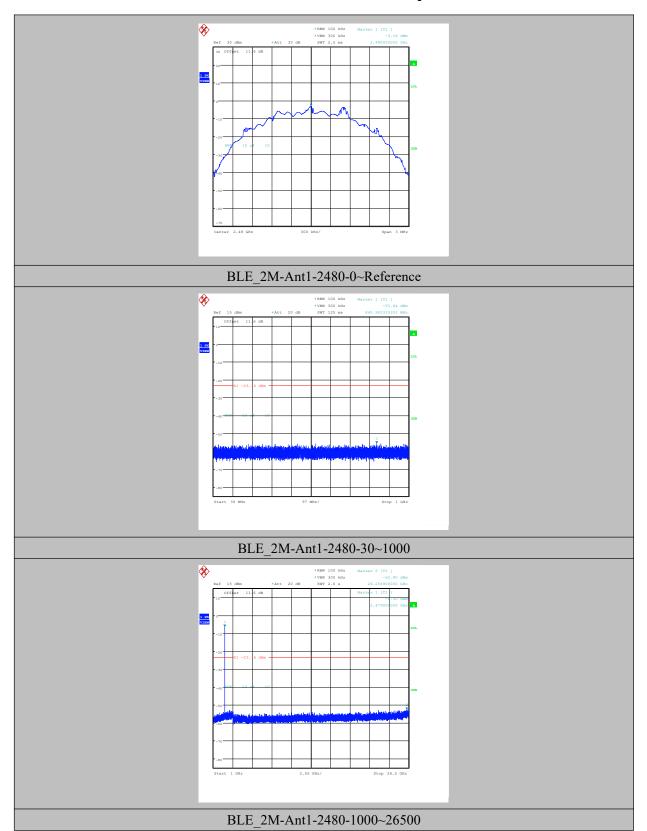
















6.8. Radiated Emission

Specifications:	FCC 47 Part 15.247(d),15.205(a),15.209(a)
DUT Serial Number:	S4,S8,S9
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

Standard	Limit	
FCC 47 Part 15.247(d),15.205(a),15.209(a)15.247(d),15.205(a),15.209(a)	20dB below peak output power in 100KHz bandwidth	

Measurement Uncertainty:

Measurement Uncertainty	30MHz-150MHz: 3.79 dB (k=2). 150MHz-1000MHz: 3.51dB (k=2). 1000MHz-6000MHz: 4.84 dB (k=2). 6000MHz-18000MHz: 4.52 dB (k=2).
-------------------------	--

In addition, radiated emissions which fall in the restricted bands, as defined in 15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see 15.205(c)).

Limit in restricted band

Frequency of emission (MHz)	Field strength (uV/m)	Field strength (dBuV/m)
0.009~0.49	2400/F (kHz)	129-94
0.49~1.705	24000/F (kHz)	74-63
1.705~30	30	70
30~88	100	40
88~216	150	43.5
216~960	200	46
Above 960	500	54

Test Method

Portable, small, lightweight, or modular devices that may be handheld, worn on the body, or placed on a

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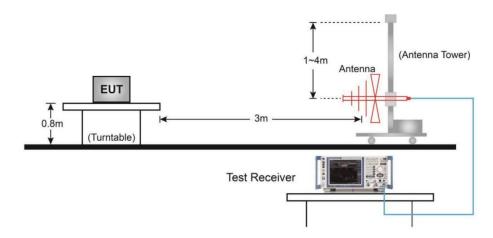


table during operation shall be positioned on a non-conducting platform, the top of which is 80 cm above the reference ground plane. The preferred area occupied by the EUT arrangement is 1 m by 1.5 m, but it may be larger or smaller to accommodate various sized EUTs. For testing purposes, ceiling- and wall-mounted devices also shall be positioned on a tabletop (see also ANSI C63.10-2013 section 6.3.4 and 6.3.5). In making any tests involving handheld, body-worn, or ceiling-mounted equipment, it is essential to recognize that the measured levels may be dependent on the orientation (attitude) of the three orthogonal axes of the EUT. Thus, exploratory tests as specified in 8.3.1 shall be carried out for various axes orientations to determine the attitude having maximum or near-maximum emission level.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time (s)
0.009~30	9KHz/30KHz	Auto
30~1000	100KHz/300KHz	5
1000~4000	1MHz/3MHz	15
4000~18000	1MHz/3MHz	40
18000~26500	1MHz/3MHz	20

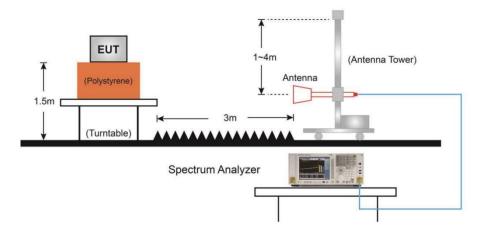
Test Setup Below 1GHz Test Setup







Above 1GHz Test Setup



Measurement Results:

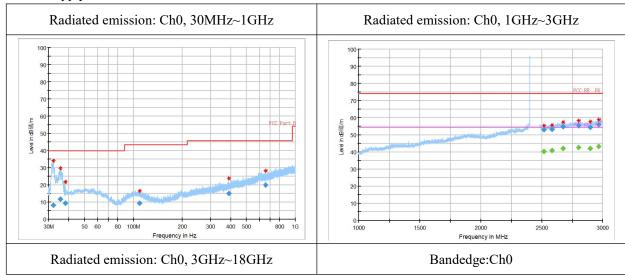
A "reference path loss" is established and ARpi is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

A_{Rpi} = Cable loss + Antenna Factor-Preamplifier gain

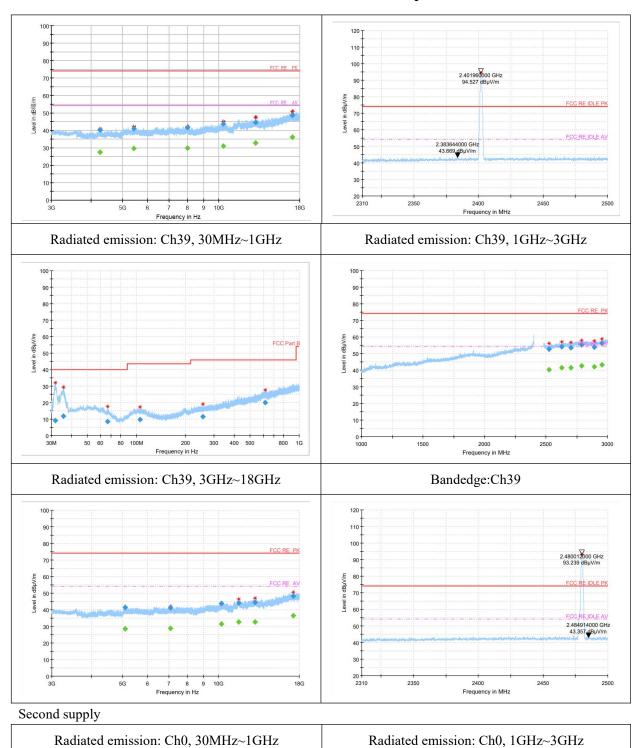
 $Result = P_{Mea} + A_{Rpi}$

The test data below 30MHz is more than 20dB lower than the limit value, so it is not provided in the report. Main Supply





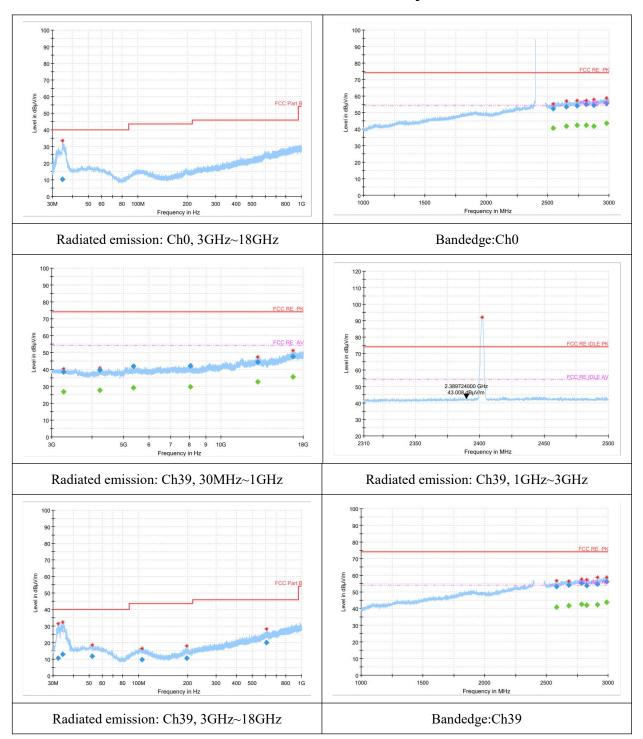




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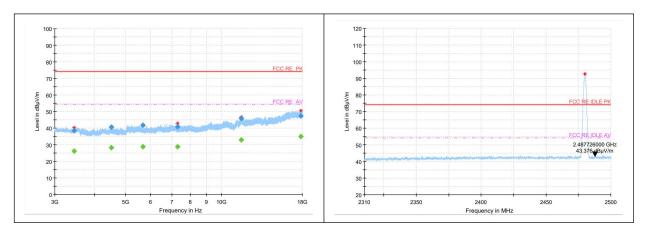












Note1: The out-of- limit signal in the picture is the main frequency signal.

Note2: Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier, the Emissions in the frequency band 18GHz-40GHz is more than 20dB below the limit are not report.

Main Supply

RSE-CH0-1G-3G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
2517.1	52.9	15.5	37.4	Н
2581.2	53.31	16.2	37.11	V
2674.2	54.82	17.2	37.62	Н
2802.3	55.23	18.1	37.13	V
2897.3	54.46	17.8	36.66	Н
2966.4	55.88	19.1	36.78	V

RSE-CH0-1G-3G (Average)

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
2674.2	41.96	17.2	24.76	Н
2802.3	42.68	18.1	24.58	V
2897.3	42.18	17.8	24.38	Н
2966.4	43.24	19.1	24.14	V





RSE-CH0-3G-18G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
4256.9	40.21	-5.1	45.31	V
5440.0	41.16	-3	44.16	Н
7994.6	41.82	-1.1	42.92	V
10351.5	43.73	1.1	42.63	Н
13039.5	44.81	4.4	40.41	Н
17017.1	48.87	10	38.87	V

RSE-CH0-30M-1G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
32.1	8.25	-15.7	23.95	V
35.5	11.64	-14.9	26.54	V
37.9	9.46	-13.9	23.36	V
109.3	9.53	-12.8	22.33	Н
386.8	15	-7.7	22.7	Н
657.1	19.98	-2.4	22.38	Н

RSE-CH39-1G-3G

Frequency (MHz)	Result (dBμV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
2526.8	52.61	15.5	37.11	Н
2626.5	54.12	16.9	37.22	V
2702.0	53.4	17.1	36.3	V
2787.2	55.22	18.1	37.12	Н
2893.9	53.89	17.8	36.09	Н
2953.1	56.19	18.9	37.29	Н

RSE-CH39-1G-3G (Average)





Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
2626.5	41.44	16.9	24.54	V
2787.2	42.71	18.1	24.61	Н
2953.1	43.28	18.9	24.38	Н

RSE-CH39-3G-18G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
5107.5	41.5	-0.7	42.2	V
7076.0	41.08	-2.2	43.28	Н
10243.0	43.87	0.7	43.17	Н
11621.4	44.16	3.3	40.86	V
13040.7	44.48	4.4	40.08	Н
17231.2	48.24	10.1	38.14	V

RSE-CH39-30M-1G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
31.7	9.11	-15.7	24.81	V
35.6	11.66	-14.8	26.46	V
66.6	8.6	-14.2	22.8	V
105.5	9.64	-12.7	22.34	V
256.4	11.51	-11	22.51	V
616.7	20.11	-1.9	22.01	V

Second supply

RSE-CH0-1G-3G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
2546.9	52.49	16	36.49	V
2651.8	53.46	17.3	36.16	Н





2740.0	54.17	17.7	36.47	V
2814.7	54.99	18	36.99	V
2874.8	54.51	17.8	36.71	V
2977.6	55.61	19.2	36.41	Н

RSE-CH0-1G-3G (Average)

Frequency	Result	A.D., 1 (4D)	DM (4D - W/)	D-1- ::
(MHz)	(dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
2740.0	42.35	17.7	24.65	V
2814.7	42.37	18	24.37	V
2874.8	41.81	17.8	24.01	V
2977.6	43.42	19.2	24.22	Н

RSE-CH0-3G-18G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
3263.1	38.41	-6.6	45.01	Н
4227.1	39.56	-5.3	44.86	V
5380.2	41.63	-3.2	44.83	V
8063.0	42.04	-1.3	43.34	Н
13024.8	44.53	4.4	40.13	Н
16720.3	47.53	10	37.53	Н

RSE-CH0-30M-1G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
34.6	10.2	-15.1	25.3	V

RSE-CH39-1G-3G

Frequency (MHz)	Result (dBμV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
2580.6	53.15	16.2	36.95	V





2681.4	54.11	17.2	36.91	Н
2785.1	55.29	18.1	37.19	V
2824.8	53.97	17.9	36.07	Н
2915.2	54.74	18.1	36.64	Н
2987.7	56.04	19.4	36.64	V

RSE-CH39-1G-3G (Average)

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
2681.4	41.8	17.2	24.6	Н
2785.1	42.68	18.1	24.58	V
2915.2	42.47	18.1	24.37	Н
2987.7	43.68	19.4	24.28	V

RSE-CH39-3G-18G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
3449.1	38.62	-6.7	45.32	V
4518.1	40.54	-4.2	44.74	Н
5676.1	41.76	-3.2	44.96	Н
7284.1	41.01	-2.2	43.21	V
11553.3	45.91	3.4	42.51	Н
17811.7	47.29	10.4	36.89	V

RSE-CH39-30M-1G

Frequency (MHz)	Result (dBµV/m)	ARpl (dB)	PMea (dBμV/m)	Polarity
32.3	10.61	-15.7	26.31	V
34.3	12.9	-15.2	28.1	V
52.1	11.67	-11.5	23.17	Н
105.0	9.68	-12.7	22.38	V





197.2	10.47	-12.5	22.97	V
608.2	20.02	-2.1	22.12	Н





6.9. AC Powerline Conducted Emission

Method of Measurement: ANSI C63.10-2013-clause 6.2

1. The one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.

2.f the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.

3. The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.

4.If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.

If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.36 Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

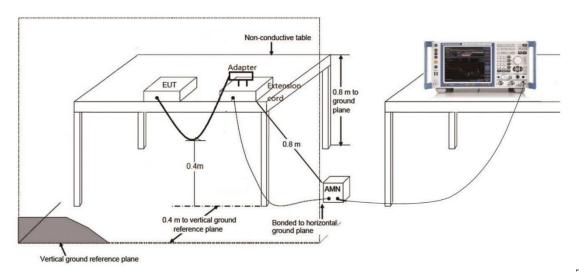
Measurement Uncertainty:

Measurement Uncertainty	1.97dB (k=2)
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Test Setup







Test

Condition

Voltage (V)	Frequency (Hz)		
120	60		

Measurement Result and limit:

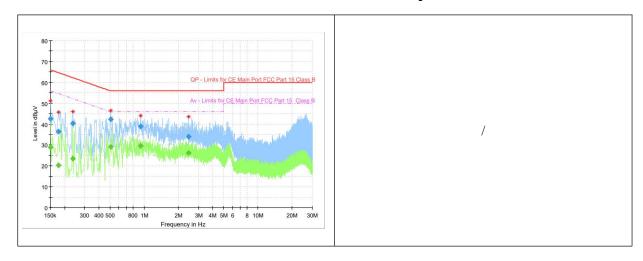
(Quasi-peak-average Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Average Limit (dBμV)	Conclusion	
0.15 to 0.5	66 to 56			
0.5 to 5	56	46	Р	
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

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Frequency (MHz)	QuasiPea k	Averag e	Limit (dBµ	Margi n	Meas. Time	Band width	Line	Filter	Corr .
	(dBµV)	(dµV)	V)	(dB)	(ms)	(kHz)			(dB)
0.150000	42.65		66.00	23.35	15000.0	9.000	N	ON	9.6
0.150000		28.97	56.00	27.03	15000.0	9.000	N	ON	9.6
0.176119		20.25	54.67	34.42	15000.0	9.000	L1	ON	9.6
0.176119	36.36		64.67	28.31	15000.0	9.000	L1	ON	9.6
0.235819	40.41		62.24	21.83	15000.0	9.000	L1	ON	9.6
0.235819		23.43	52.24	28.81	15000.0	9.000	L1	ON	9.6
0.508200		29.23	46.00	16.77	15000.0	9.000	N	ON	9.6
0.508200	42.30		56.00	13.70	15000.0	9.000	N	ON	9.6
0.929831		29.57	46.00	16.43	15000.0	9.000	N	ON	9.6
0.929831	38.80		56.00	17.21	15000.0	9.000	N	ON	9.6
2.452181		26.18	46.00	19.82	15000.0	9.000	N	ON	9.7
2.452181	34.09		56.00	21.91	15000.0	9.000	N	ON	9.7





Annex A EUT Photos

See the document"I23W00020-External Photos". See the document" I23W00020-Internal Photos".





ANNEX B Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

END OF REPORT