

# FCC PART 15C TEST REPORT No. I19N00514-BLE

For

**RUGGEAR LIMITED** 

LTE SMARTPHONE

Model Name: RG655

With

**Hardware Version: V1.0** 

Software Version: RG655\_US\_1.0.0.0.0\_5\_20190415

FCC ID: 2ASCH-RG655

Issued Date: 2019-04-26

**Designation Number: CN1210** 

#### 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 SAICT.

#### **Test Laboratory:**

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# **REPORT HISTORY**

Report Number	Revision	Description	Issue Date	
I19N00514-BLE	Rev.0	1st edition	2019-04-26	



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# 1. Test Laboratory

# 1.1. Testing Location

Location: Shenzhen Academy of Information and Communications Technology
Address: Building G, Shenzhen International Innovation Center, No.1006

Shennan Road, Futian District, Shenzhen, Guangdong Province, China

Postal Code: 518026

Telephone: +86(0)755-33322000 Fax: +86(0)755-33322001

# 1.2. Testing Environment

Normal Temperature:  $15-30^{\circ}$ C Relative Humidity:  $35-60^{\circ}$ 

1.3. Project data

Testing Start Date: 2019-03-14
Testing End Date: 2019-04-19

1.4. Signature

Lin Kanfeng

(Prepared this test report)

**Tang Weisheng** 

(Reviewed this test report)

**Zhang Bojun** 

(Approved this test report)



# 2. Client Information

# 2.1. Applicant Information

Company Name: RUGGEAR LIMITED

Address /Post: RM1301,13/F WING TUCK COMM CTR 177-183 WING LOK ST

SHEUNG WAN HONG KONG

City: HONG KONG

Postal Code: /

Country: China

Telephone: 0755-86220211

# 2.2. Manufacturer Information

Company Name: RUGGEAR LIMITED

Address /Post: RM1301,13/F WING TUCK COMM CTR 177-183 WING LOK ST

SHEUNG WAN HONG KONG

City: HONG KONG

Postal Code: /

Country: China

Telephone: 0755-86220211



# 3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

# 3.1. About EUT

Description LTE SMARTPHONE

Model Name RG655 Market Name RG655

Frequency Range 2400MHz~2483.5MHz

Type of Modulation GFSK Number of Channels 40

Antenna Type Integrated
Antenna Gain 0.7dBi

Power Supply 3.8V DC by Battery FCC ID 2ASCH-RG655

Condition of EUT as received No abnormality in appearance

Note: Components list, please refer to documents of the manufacturer.

# 3.2. Internal Identification of EUT

EUT ID*	IMEI	<b>HW Version</b>	SW Version	Receive Date
EUT1	1	V1.0	RG655_US_1.0.0.0.0_5_20190415	2019-03-14

<sup>\*</sup>EUT ID: is used to identify the test sample in the lab internally.

### 3.3. Internal Identification of AE

AE ID*	Description	Mode	Manufacturer
AE1	Battery	Li-Polymer Battery	SHENZHEN YJC TECHNOLOGY CO. LTD.
AE2	Charger	HKC0055010-3D	SHENZHEN HUNTKEY ELECTRIC CO., LTD.

<sup>\*</sup>AE ID: is used to identify the test sample in the lab internally.

### 3.4. General Description

The Equipment under Test (EUT) is a model of LTE SMARTPHONE with integrated antenna and battery.

It consists of normal options: travel charger, USB cable and Phone.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.



# 4. Reference Documents

# 4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant 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.

Title	Version
FCC CFR 47, Part 15, Subpart C:	2017
15.205 Restricted bands of operation;	
15.209 Radiated emission limits, general requirements;	
15.247 Operation within the bands 902-928MHz,	
2400-2483.5 MHz, and 5725-5850 MHz	
American National Standard of Procedures for Compliance	2013
Testing of Unlicensed Wireless Devices	
	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, 2400–2483.5 MHz, and 5725–5850 MHz American National Standard of Procedures for Compliance



# 5. Test Results

# 5.1. Summary of Test Results

No	Test cases	Sub-clause of Part 15C	Verdict
0	Antenna Requirement	15.203	Р
1	Maximum Peak Output Power	15.247 (b)	Р
2	Peak Power Spectral Density	15.247 (e)	Р
3	Occupied 6dB Bandwidth	15.247 (a)	Р
4	Band Edges Compliance	15.247 (d)	Р
5	Transmitter Spurious Emission - Conducted	15.247 (d)	Р
6	Transmitter Spurious Emission - Radiated	15.247, 15.205, 15.209	Р
7	AC Power line Conducted Emission	15.107, 15.207	Р

See ANNEX A for details.

# 5.2. Statements

SAICT has evaluated the test cases requested by the applicant/manufacturer as listed in section 5.1 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2.

# 5.3. Terms used in the result table

Terms used in Verdict column

Р	Pass
NA	Not Available
F	Fail

### Abbreviations

AC	Alternating Current
AFH	Adaptive Frequency Hopping
BW	Band Width
E.I.R.P.	equivalent isotropic radiated power
ISM	Industrial, Scientific and Medical
R&TTE	Radio and Telecommunications Terminal Equipment
RF	Radio Frequency
Tx	Transmitter



# 5.4. <u>Laboratory Environment</u>

# Semi-anechoic chamber

Temperature	Min. = 15 °C, Max. = 30 °C		
Relative humidity	Min. = 35 %, Max. = 60 %		
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB		
Electrical insulation	> 2MΩ		
Ground system resistance	< 4 Ω		
Normalised site attenuation (NSA)	< ±4 dB, 3 m distance, from 30 to 1000 MHz		

### Shielded room

Temperature	Min. = 15 °C, Max. = 30 °C	
Relative humidity	Min. = 35 %, Max. = 60 %	
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-10000MHz>90 dB	
Electrical insulation	> 2MΩ	
Ground system resistance	< 4 Ω	

# Fully-anechoic chamber

Temperature	Min. = 15 °C, Max. = 30 °C	
Relative humidity	Min. = 35 %, Max. = 60 %	
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB	
Electrical insulation	> 2MΩ	
Ground system resistance	< 4 Ω	
Voltage Standing Wave Ratio (VSWR)	≤ 6 dB, from 1 to 18 GHz, 3 m distance	
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz	



# 6. Test Facilities Utilized

# **Conducted test system**

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Cycle	Calibration Due date
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2019-01-17	2020-01-16
2	Power Sensor	U2021XA	MY554300 13	Agilent	2019-01-17	2020-01-16
3	Data Acquisiton	U2531A	TW554435 07	Agilent	/	/

# Radiated emission test system

Itadii	Natiated emission test system						
NO.	Equipment	Model	Serial	Manufacturer	Calibration	Calibration	
	Equipment	Model	Number	Manaraotarer	Due date	Period	
1	LISN	ESH2-Z5	100196	R&S	2019-01-04	2020-01-03	
2	Test Receiver	ESCI	100701	R&S	2018-08-08	2019-08-07	
3	Loop Antenna	HLA6120	35779	TESEQ	2016-05-03	2019-05-02	
4	BiLog Antenna	VULB9163	9163 329	Schwarzbeck	2017-02-18	2020-02-17	
5	Horn Antenna	3117	00066585	ETS-Lindgren	2019-03-05	2022-03-04	
6	Test Receiver	ESR7	101675	R&S	2018-07-20	2019-07-19	
7	Spectrum	FSP 40	100378	R&S	2018-12-14	2019-12-13	
/	Analyzer	F3F 40	100376	Καο	2010-12-14	2019-12-13	
8	Chamber	FACT5-2.0	4166	ETS-Lindgren	2018-05-13	2021-05-12	
9	Antenna	QSH-SL-1	17013	Q-par	2017-01-16	2020-01-15	
9	Antenna	8-26-S-20	17013	Q-pai	2017-01-10	2020-01-15	
10	Antenna	QSH-SL-2	17014	Oner	2017-01-12	2020-01-11	
10	Antenna	6-40-K-20	17014	Q-par	2017-01-12	2020-01-11	

# **Test software**

No.	Equipment	Manufacturer	Version
1	TechMgr Software	CAICT	2.1.1
2	EMC32	Rohde & Schwarz	8.53.0
3	EMC32	Rohde & Schwarz	10.01.00

EUT is engineering software provided by the customer to control the transmitting signal.

The EUT was programmed to be in continuously transmitting mode.

# **Anechoic chamber**

Fully anechoic chamber by ETS-Lindgren



# 7. Measurement Uncertainty

Test Name	Uncertainty		
RF Output Power - Conducted	±1.32dB		
2.Power Spectral Density - Conducted	±2.32	2dB	
3.Occupied channel bandwidth - Conducted	±66l	-lz	
	30MHz≶f≶1GHz	±1.41dB	
4 Transmitter Spurious Emission Conducted	1GHz≶f≶7GHz	±1.92dB	
4 Transmitter Spurious Emission - Conducted	7GHz≤f≤13GHz	±2.31dB	
	13GHz≤f≤26GHz	±2.61dB	
	9kHz≤f≤30MHz	±1.84dB	
5 Transmitter Sourious Emission Redicted	30MHz≤f≤1GHz	±4.90dB	
5. Transmitter Spurious Emission - Radiated	1GHz≤f≤18GHz	±5.12dB	
	18GHz≤f≤40GHz	±4.66dB	
6. AC Power line Conducted Emission	150kHz≤f≤30MHz	±3.10dB	



# **ANNEX A: Detailed Test Results**

# A.0 Antenna requirement

### **Measurement Limit:**

Standard	Requirement		
FCC CRF Part 15.203	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.		

Conclusion: The Directional gains of antenna used for transmitting is 0.7dBi.

The RF transmitter uses an integrate antenna without connector.



# **A.1 Test Configuration**

#### **A.1.1 Conducted Measurements**

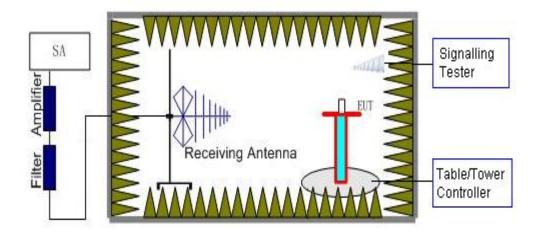
The measurement is made according to ANSI C63.10.

- 1). Connect the EUT to the test system correctly.
- 2). Set the EUT to the required work mode.
- 3). Set the EUT to the required channel.
- 4). Set the spectrum analyzer to start measurement.
- 5). Record the values.



#### A.1.2 Radiated Measurements

**Test setup:** EUT was placed on a 1.5 meter high non-conductive table at a 3 meter test distance from the receive antenna. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiving antenna polarization.





# **A.2 Maximum Peak Output Power**

# Method of Measurement: See ANSI C63.10-clause 11.9.1.3

The maximum peak conducted output power may be measured using a broadband peak RF power meter.

### **Measurement Limit:**

Standard	Limit (dBm)	
FCC 47 CRF Part 15.247(b)	< 30	

### **Measurement Results:**

Mode	Frequency (MHz)	Peak Conducted Output Power(dBm)	Conclusion
	2402(CH0)	-2.75	Р
GFSK	2440(CH19)	-2.72	Р
	2480(CH39)	-2.76	Р



# A.3 Peak Power Spectral Density

Method of Measurement: See ANSI C63.10-clause 11.10.2

### **Measurement Limit:**

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

### **Measurement Results:**

Mode	Frequency (MHz)	Peak Power Spectral Density (dBm)		Conclusion
	2402(CH0)	Fig.1	-26.76	Р
GFSK	2440(CH19)	Fig.2	-27.24	Р
	2480(CH39)	Fig.3	-27.20	Р

See below for test graphs.

**Conclusion: PASS** 

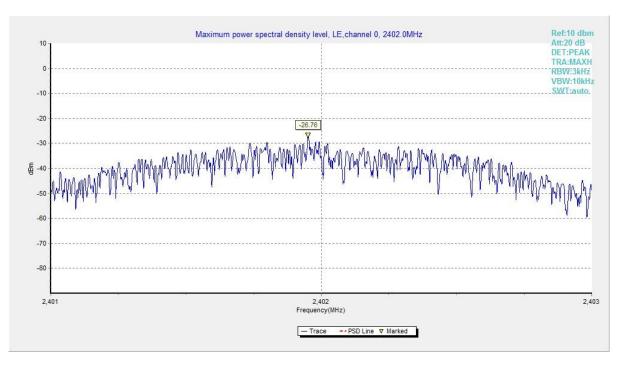


Fig.1 Power Spectral Density (Ch 0)



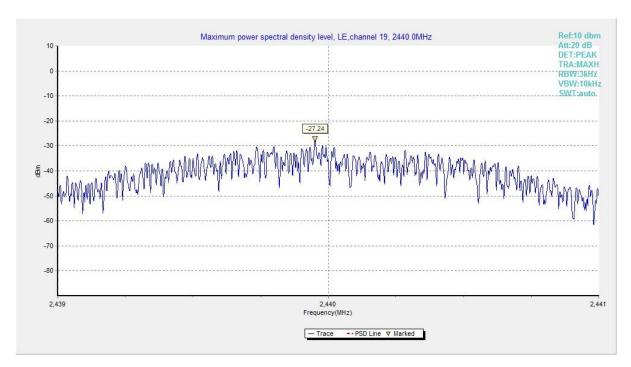


Fig.2 Power Spectral Density (Ch 19)



Fig.3 Power Spectral Density (Ch 39)



### A.4 6dB Bandwidth

#### **Measurement Limit:**

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

### **Measurement Result:**

Mode	Frequency (MHz)	Test Results (kHz)		Conclusion
	2402(CH0)	Fig.4	1113.50	Р
GFSK	2440(CH19)	Fig.5	1113.50	Р
	2480(CH39)	Fig.6	1114.00	Р

See below for test graphs.

**Conclusion: PASS** 

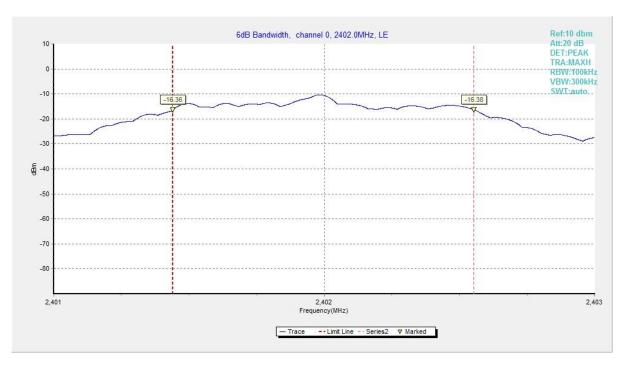


Fig.4 6dB Bandwidth (Ch 0)



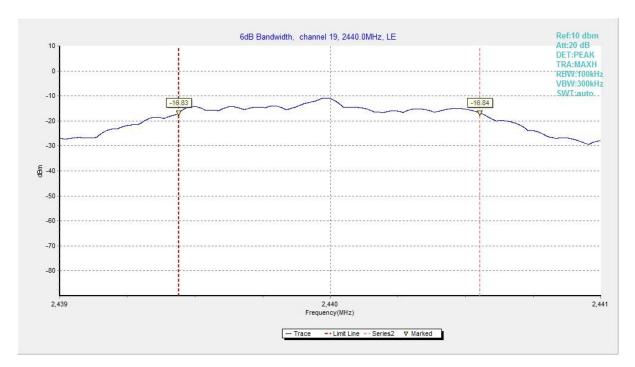


Fig.5 6dB Bandwidth (Ch 19)

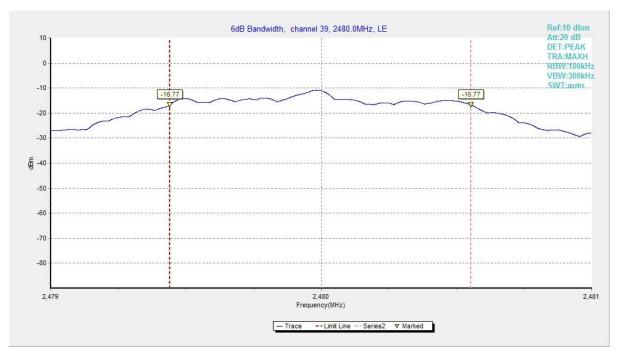


Fig.6 6dB Bandwidth (Ch 39)



# A.5 Band Edges Compliance

#### **Measurement Limit:**

Standard	Limit (dB)	
FCC 47 CFR Part 15.247 (d)	> 20	

### **Measurement Result:**

Mode	Frequency (MHz)	Test Results		Conclusion
CESK	2402(CH0)	Fig.7	48.41	Р
GFSK	2480(CH39)	Fig.8	54.73	Р

See below for test graphs.

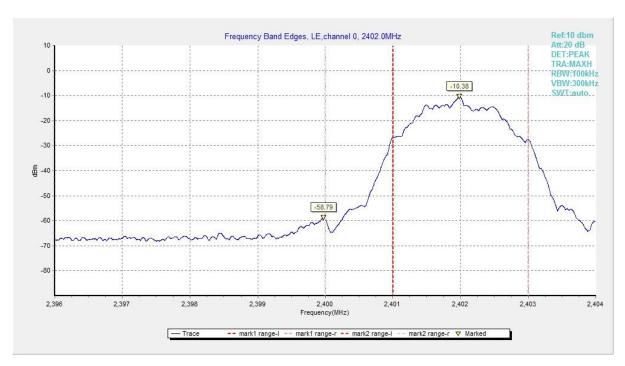


Fig.7 Band Edges (Ch 0)



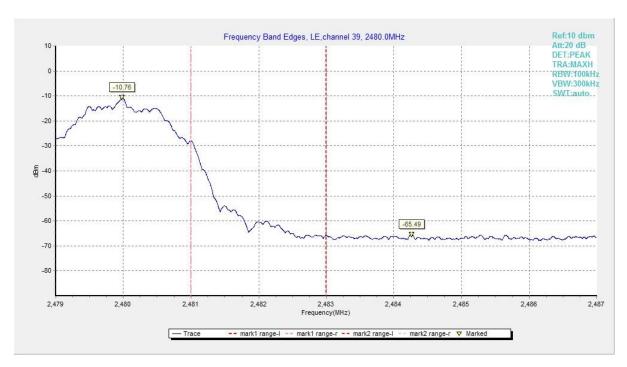


Fig.8 Band Edges (Ch 39)



# A.6 Transmitter Spurious Emission - Conducted

### **Measurement Limit:**

Standard	Limit	
FCC 47 CFD Dow 45 247 (4)	20dB below peak output power in 100 kHz	
FCC 47 CFR Part 15.247 (d)	bandwidth	

#### **Measurement Results:**

MODE	Channel	Frequency Range	Test Results	Conclusion
		2.402 GHz	Fig.9	Р
	0	1GHz -3GHz	Fig.10	Р
		3GHz-10GHz	Fig.11	Р
		2.440 GHz	Fig.12	Р
	GFSK 19 1GHz -3GHz 3GHz-10GHz 2.480 GHz 39 1GHz -3GHz 3GHz-10GHz	1GHz -3GHz	Fig.13	Р
GFSK		3GHz-10GHz	Fig.14	Р
		2.480 GHz	Fig.15	Р
		1GHz -3GHz	Fig.16	Р
		3GHz-10GHz	Fig.17	Р
	All channels	30MHz-1GHz	Fig.18	Р
	All channels	10GHz-26GHz	Fig.19	Р

See below for test graphs.

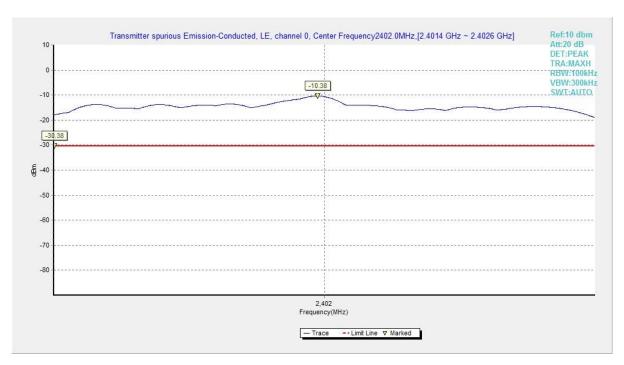


Fig.9 Conducted Spurious Emission (Ch0, Center Frequency)



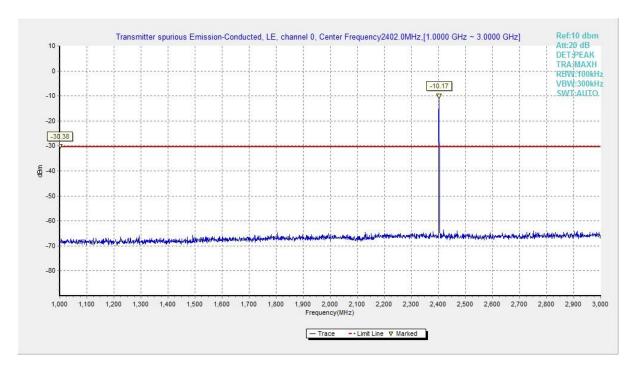


Fig.10 Conducted Spurious Emission (Ch0, 1 GHz-3 GHz)

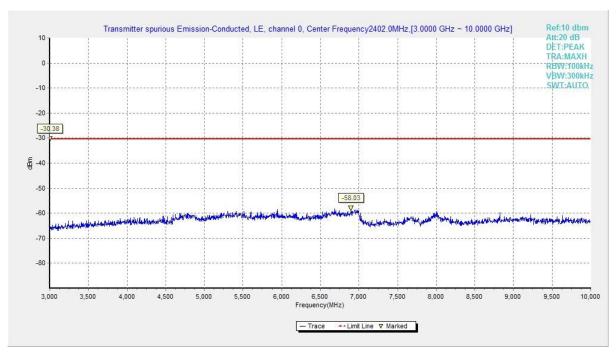


Fig.11 Conducted Spurious Emission (Ch0, 3 GHz-10 GHz)



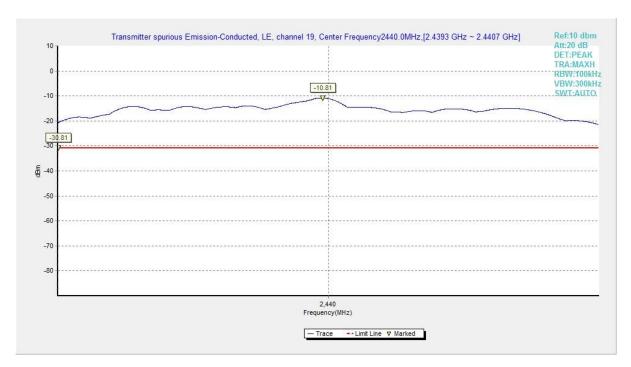


Fig.12 Conducted Spurious Emission (Ch19, Center Frequency)

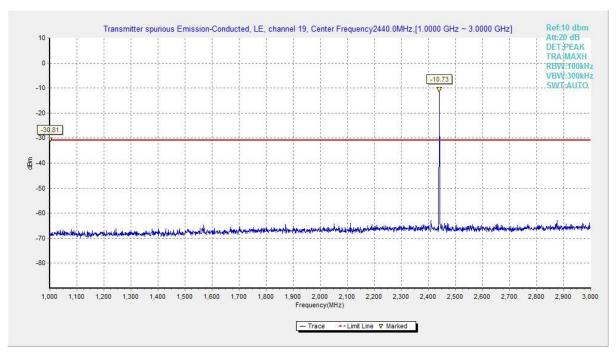


Fig.13 Conducted Spurious Emission (Ch19, 1 GHz-3 GHz)



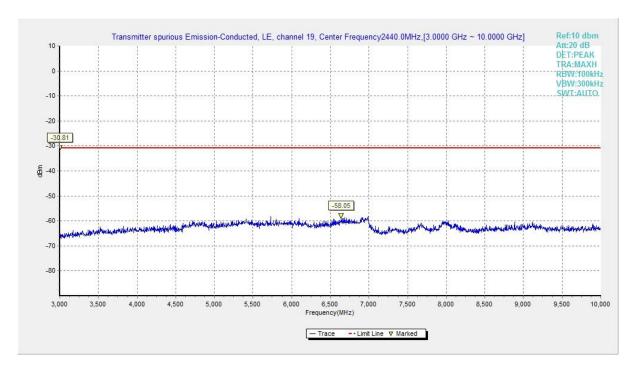


Fig.14 Conducted Spurious Emission (Ch19, 3 GHz-10 GHz)

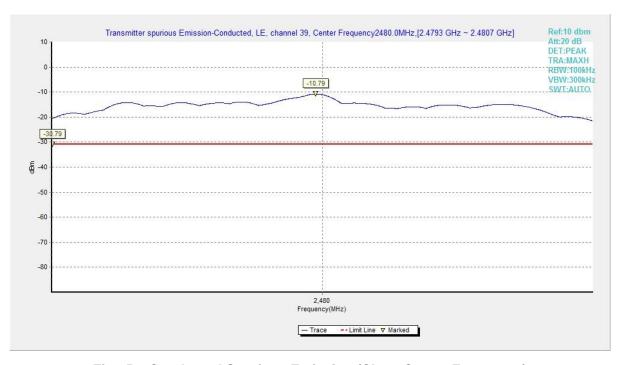


Fig.15 Conducted Spurious Emission (Ch39, Center Frequency)



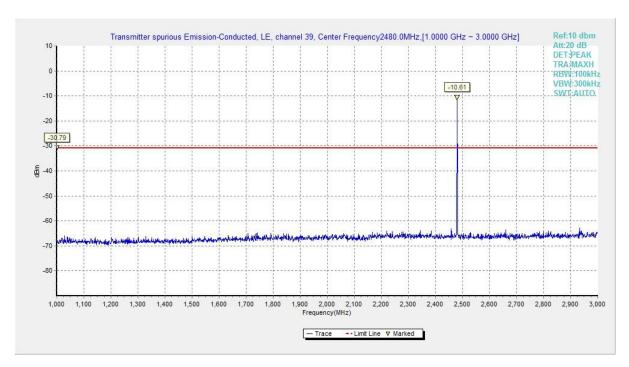


Fig.16 Conducted Spurious Emission (Ch39, 1 GHz-3 GHz)

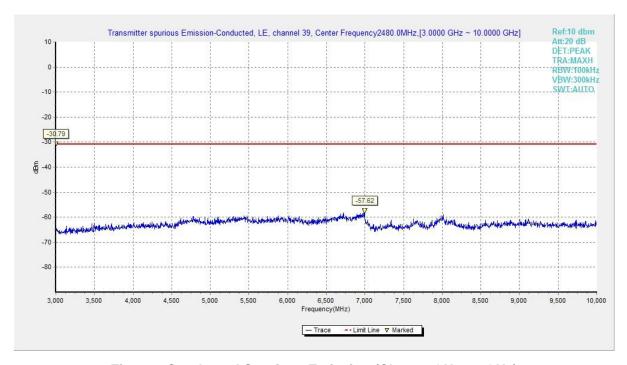


Fig.17 Conducted Spurious Emission (Ch39, 3 GHz-10 GHz)



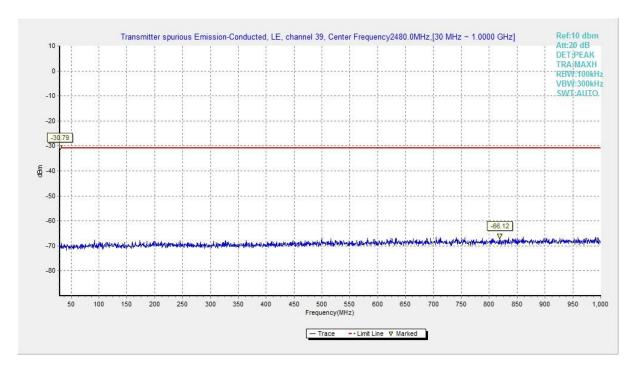


Fig.18 Conducted Spurious Emission (All channels, 30 MHz-1 GHz)

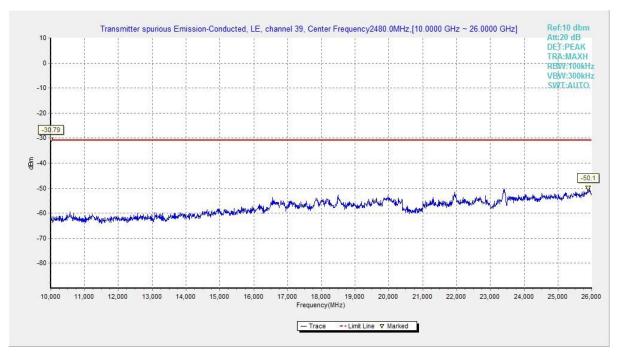


Fig.19 Conducted Spurious Emission (All channels, 10 GHz-26 GHz)



# A.7 Transmitter Spurious Emission - Radiated

#### **Measurement Limit:**

Standard	Limit	
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power	

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(µV/m)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	88-216 150	3
216-960	200	3
Above 960	500	3

#### **Test Condition:**

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)
30-1000	120kHz/300kHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

Note: According to the performance evaluation, the radiated emission margin of EUT is over 20dB in the band from 9kHz to 30MHz. Therefore, the measurement starts from 30MHz to tenth harmonic. The measurement results include the horizontal polarization and vertical polarization measurements.



# **Measurement Results:**

Mode	Channel	Frequency Range	Test Results	Conclusion
	0	1 GHz ~18 GHz	Fig.20	Р
		9 kHz ~30 MHz	Fig.21	Р
	19	30 MHz ~1 GHz	Fig.22	Р
GFSK		1 GHz ~18 GHz	Fig.23	Р
GFSK		18 GHz~ 26.5 GHz	Fig.24	Р
	39	1 GHz ~18 GHz	Fig.25	Р
	Restricted Band(CH0) 2.3	2.38 GHz ~ 2.45 GHz	Fig.26	Р
	Restricted Band(CH39)	2.45 GHz ~ 2.5 GHz	Fig.27	Р

# GFSK CH0 (1-18GHz)

Frequency	MaxPeak	Limit	Margin	Pol	Corr.
(MHz)	(dBuV/m)	(dBuV/m)	(dB)		(dB)
13949.500000	56.22	74.00	17.78	V	18.2
14650.000000	56.21	74.00	17.79	Н	19.0
15577.500000	56.56	74.00	17.44	Н	20.8
15677.000000	59.26	74.00	14.74	V	21.3
16713.500000	58.52	74.00	15.48	Н	22.1
17693.500000	58.06	74.00	15.94	Н	23.6

Frequency	Average	Limit	Margin	Pol	Corr.
(MHz)	(dBuV/m)	(dBuV/m)	(dB)		(dB)
13954.500000	42.74	54.00	11.26	Н	18.1
14559.500000	43.72	54.00	10.28	V	19.0
15577.000000	45.03	54.00	8.97	Н	20.8
15647.000000	46.34	54.00	7.66	V	21.2
16648.000000	46.57	54.00	7.43	V	22.7
17703.500000	46.01	54.00	7.99	V	23.7

# **GFSK CH19 (1-18GHz)**

Frequency	MaxPeak	Limit	Margin	Pol	Corr.
(MHz)	(dBuV/m)	(dBuV/m)	(dB)		(dB)
13980.000000	55.12	74.00	18.88	Н	18.0
14590.500000	55.87	74.00	18.13	Н	19.0
15139.000000	56.55	74.00	17.45	V	19.6
16259.500000	58.31	74.00	15.69	Н	22.2
16586.000000	59.12	74.00	14.88	Н	23.1
17686.500000	57.87	74.00	16.13	Н	23.5



Frequency	Average	Limit	Margin	Pol	Corr.
(MHz)	(dBuV/m)	(dBuV/m)	(dB)		(dB)
13948.000000	42.75	54.00	11.25	Н	18.2
14569.500000	43.52	54.00	10.48	V	19.0
15572.500000	45.14	54.00	8.86	Н	20.7
15644.000000	46.27	54.00	7.73	V	21.2
16627.500000	46.60	54.00	7.40	Н	22.9
17699.500000	45.91	54.00	8.09	Н	23.7

#### **GFSK CH39 (1-18GHz)**

Frequency	MaxPeak	Limit	Margin	Del	Corr.
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	Pol	(dB)
13910.500000	55.15	74.00	18.85	Н	18.3
14586.000000	56.01	74.00	17.99	Н	19.0
15566.500000	57.43	74.00	16.57	V	20.7
16211.000000	58.96	74.00	15.04	V	22.6
16635.500000	58.06	74.00	15.94	Н	22.8
17705.000000	57.80	74.00	16.20	V	23.7

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol	Corr. (dB)
13948.500000	42.94	54.00	11.06	V	18.2
14546.000000	43.58	54.00	10.42	Н	19.0
15577.000000	45.06	54.00	8.94	V	20.8
15670.500000	46.29	54.00	7.71	Н	21.3
16648.000000	46.75	54.00	7.25	V	22.7
17699.500000	45.94	54.00	8.06	Н	23.7

#### Note:

A "reference path loss" is established and the  $A_{Rpl}$  is the attenuation of "reference path loss", and Antenna Factor, the gain of the preamplifier, the cable loss.  $P_{Mea}$  is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result =  $P_{Mea}$  + Cable Loss + Antenna Factor - Gain of the preamplifier

See below for test graphs.



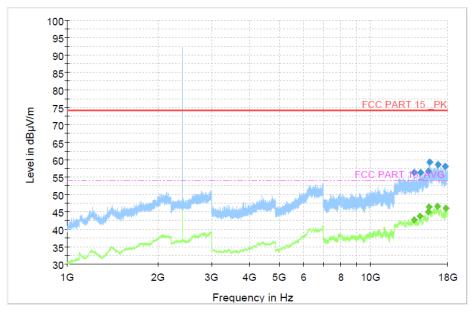


Fig.20 Radiated Spurious Emission (GFSK, Ch0, 1 GHz ~18 GHz)

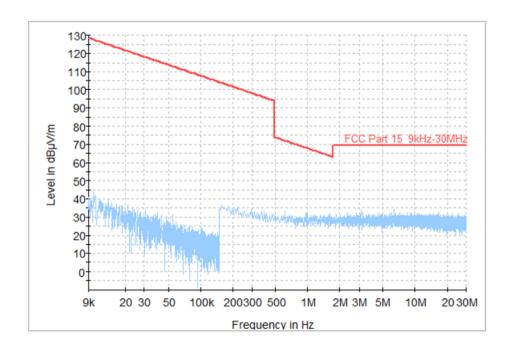


Fig.21 Radiated Spurious Emission (Ch19, 9 kHz-30 MHz)



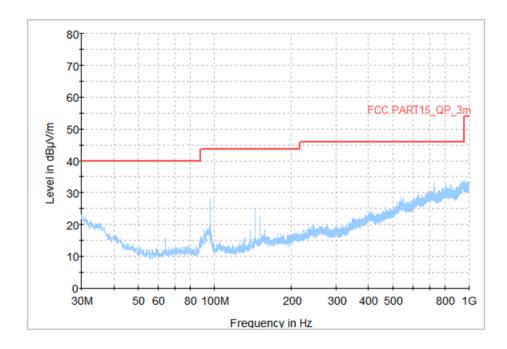


Fig.22 Radiated Spurious Emission (Ch19, 30 MHz-1 GHz)

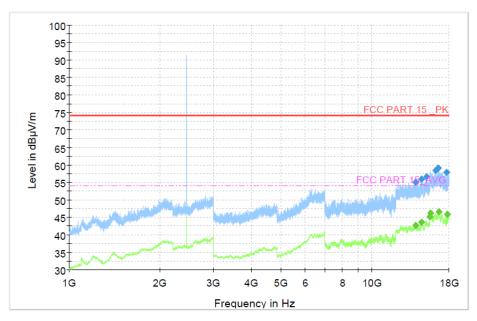


Fig.23 Radiated Spurious Emission (Ch19, 1 GHz- 18 GHz)



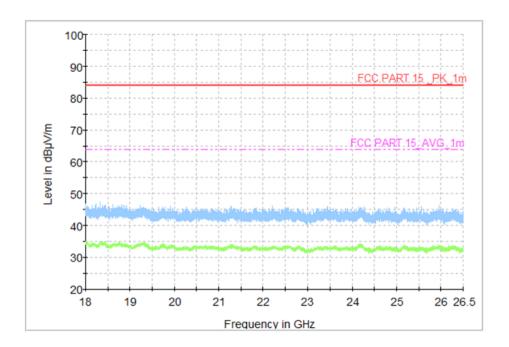


Fig.24 Radiated Spurious Emission (Ch19, 18 GHz-26.5 GHz)

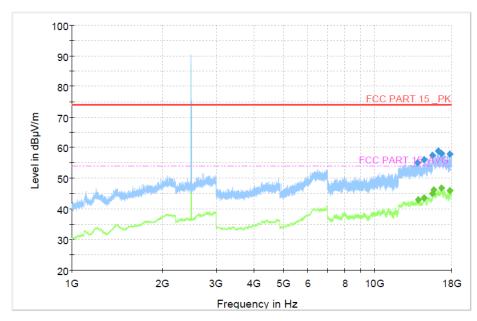


Fig.25 Radiated Spurious Emission (Ch39, 1 GHz-18 GHz)



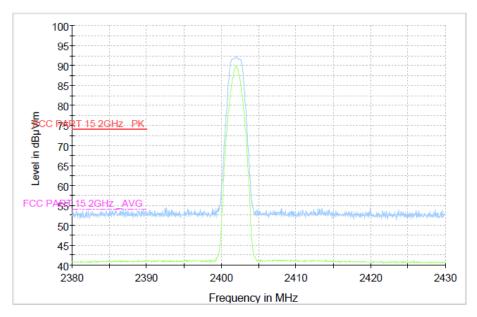


Fig.26 Radiated Band Edges (GFSK, Ch0, 2380GHz~2450GHz)

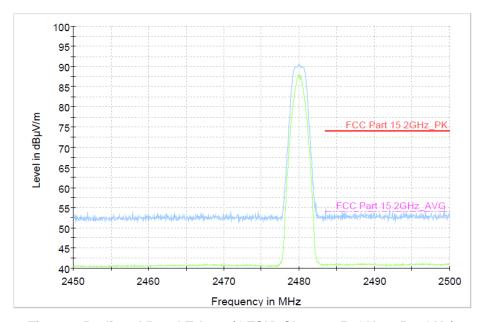


Fig.27 Radiated Band Edges (GFSK, Ch39, 2450GHz~2500GHz)



### A.8 AC Power line Conducted Emission

#### **Test Condition:**

Voltage (V)	Frequency (Hz)		
120	60		

#### **Measurement Result and limit:**

BLE (Quasi-peak Limit)

, ,	,						
Frequency	Quasi-peak	Result (dBμV)		Result (dBμV)		Conclusion	
range (MHz)	Limit (dBμV)	Traffic	Idle	Conclusion			
0.15 to 0.5	66 to 56						
0.5 to 5	56	Fig.28	Fig.29	Р			
5 to 30	60						

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

BLE (Average Limit)

Frequency	Average-peak	Result	Canalysian	
range (MHz)	Limit (dBμV)	Traffic	ldle	Conclusion
0.15 to 0.5	56 to 46			
0.5 to 5	46	Fig.28	Fig.29	Р
5 to 30	50			

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

Note: The measurement results include the L1 and N measurements.

See below for test graphs.



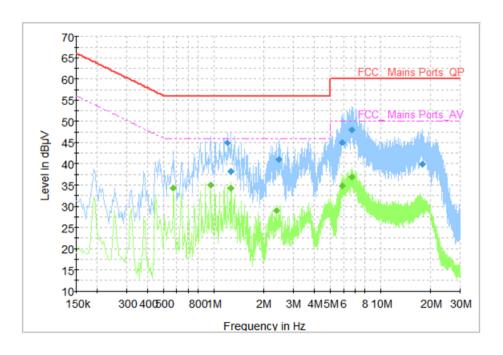


Fig.28 AC Power line Conducted Emission (Traffic)

### Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
1.206000	44.87	56.00	11.13	N	ON	9.7
1.274000	38.21	56.00	17.79	L1	ON	9.7
2.442000	40.92	56.00	15.08	N	ON	9.7
5.874000	45.12	60.00	14.88	N	ON	9.8
6.730000	47.89	60.00	12.11	N	ON	9.8
17.794000	39.86	60.00	20.14	N	ON	10.2

# Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.574000	34.26	46.00	11.74	L1	ON	9.7
0.954000	34.96	46.00	11.04	N	ON	9.7
1.274000	34.25	46.00	11.75	N	ON	9.7
2.382000	28.95	46.00	17.05	N	ON	9.7
5.894000	34.83	50.00	15.17	N	ON	9.8
6.738000	36.84	50.00	13.16	N	ON	9.8



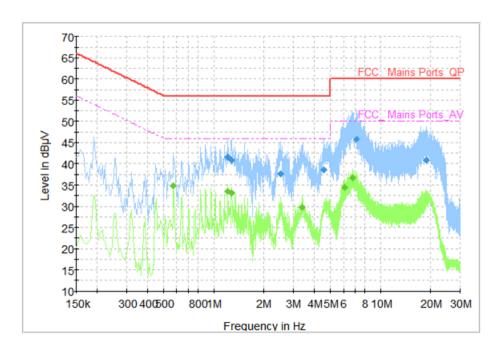


Fig.29 AC Power line Conducted Emission (Idle)

#### Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
1.214000	41.66	56.00	14.34	N	ON	9.7
1.278000	40.80	56.00	15.20	N	ON	9.7
2.518000	37.69	56.00	18.31	N	ON	9.7
4.582000	38.62	56.00	17.38	N	ON	9.7
7.154000	45.83	60.00	14.17	N	ON	9.8
18.770000	40.78	60.00	19.22	N	ON	10.3

# Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.574000	34.78	46.00	11.22	L1	ON	9.7
1.214000	33.60	46.00	12.40	N	ON	9.7
1.278000	33.10	46.00	12.90	N	ON	9.7
3.406000	29.76	46.00	16.24	N	ON	9.7
6.102000	34.48	50.00	15.52	N	ON	9.8
6.774000	36.71	50.00	13.29	N	ON	9.8

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