



# TEST REPORT FOR BLUETOOTH TESTING

Report No.: SRTC2016-9004(F)-0006

Product Name: GSM/GPRS/EDGE/UMTS/LTE Digital Mobile Phone

with Bluetooth and WiFi

Product Model: Philips Xenium V787

Applicant: Shenzhen Sang Fei Consumer Communications Co.,Ltd.

Manufacturer: Shenzhen Sang Fei Consumer Communications Co.,Ltd.

Specification: FCC Part 15, Subpart C (August 20, 2015 edition)

FCC ID: VQRCTV787

The State Radio\_monitoring\_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-57996181 Fax: 86-10-57996288



# **CONTENTS**

1. GENERAL INFORMATION	2
1.1 NOTES OF THE TEST REPORT	
2 DESCRIPTION OF THE DEVICE UNDER TEST	4
2.1 FINAL EQUIPMENT BUILD STATUS	5
3 REFERENCE SPECIFICATION	6
4 KEY TO NOTES AND RESULT CODES	7
5 RESULT SUMMARY	8
6 TEST RESULT	9
6.1 OCCUPIED BANDWIDTH	
7 MEASUREMENT UNCERTAINTIES	30
8 TEST EQUIPMENTS	31
ADDENDIV	22



# **1. GENERAL INFORMATION**

# 1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio\_monitoring\_center Testing Center (SRTC).

The test results relate only to individual items of the samples which have been tested.

# 1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)	
Address:	No.80 Beilishi Road, Xicheng District	
City:	Beijing	
Country or Region:	P.R.China	
Contacted person:	liujia	
Tel:	+86 10 5799 6181	
Fax:	+86 10 5799 6288	
Email:	liujiaf@srtc.org.cn	

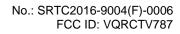
# 1.3 Applicant's details

Company:	Shenzhen Sang Fei Consumer Communications Co.,Ltd.	
Address:	11 Science & Technology Rd., Shenzhen Hi-tech Industrial Park, Nanshan	
	District	
City:	Shenzhen	
Country or Region:	P.R.China	
Grantee Code:	VQR	
Contacted person:	linda zhang	
Tel:	010-68300097	
Fax:	010-68300097	
Email:	linda.zhang@sangfei.com	

# 1.4 Manufacturer's details

Company:	Shenzhen Sang Fei Consumer Communications Co.,Ltd.	
Address:	11 Science & Technology Rd., Shenzhen Hi-tech Industrial Park, Nanshan	
	District	
City:	Shenzhen	
Country or Region:	P.R.China	
Contacted person:	linda zhang	
Tel:	010-68300097	
Fax:	010-68300097	
Email:	linda.zhang@sangfei.com	

Tel: 86-10-5799 6181 Fax: 86-10-5799 6288





# 1.5 Test Environment

Date of Receipt of test sample at SRTC:	2016.01.21
Testing Start Date:	2016.01.26
Testing End Date:	2016.01.27

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	38
Maximum Extreme	55	80
Minimum Extreme	-10	

Normal Supply Voltage (V d.c.):	3.80
Maximum Extreme Supply Voltage (V d.c.):	4.35
Minimum Extreme Supply Voltage (V d.c.):	3.50

Page number: 4 of 32

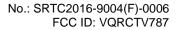


# 2 DESCRIPTION OF THE DEVICE UNDER TEST

# 2.1 Final Equipment Build Status

Frequency Range	2.4GHz~2.4835GHz
Number of Channel	40
Modulation Type	GFSK
Duplex Mode	TDD
Channel Spacing	1MHz
Data Rate	1Mbps
Antenna Type	Fixed Internal
Power Supply	Battery or Charger
Rated Power Supply Voltage	3.8V
HW Version	WMCVc
SW Version	Philips_V787_1553_V01_AG_FCC
IMEI	866636024833570

Fax: 86-10-5799 6288 Copyright © SRTC



Page number: 5 of 32

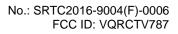


# 2.2 Support Equipment

The following support equipment was used to exercise the DUT during testing:

Equipment	Battery
Manufacturer	Zhongshan Tianmao Battery Co.
Model Number	AB5000AWML
Serial Number	

Fax: 86-10-5799 6288 Copyright © SRTC





# **3 REFERENCE SPECIFICATION**

Specification	Version	Title
15.35	Mar. 6, 2014	Measurement detector functions and bandwidths.
15.209	Oct. 30, 1997	Radiated emission limits; general requirements.
15.247	May 1, 2014	Operation within the bands 902-928 MHz, 2400-2483.5 MHz,
13.217	1,10, 1, 2011	and 5725-5850 MHz.

Fax: 86-10-5799 6288

Copyright © SRTC

Page number: 6 of 32

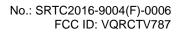
Page number: 7 of 32



# **4 KEY TO NOTES AND RESULT CODES**

Code	Meaning
PASS	Test result shows that the requirements of the relevant specification have been met.
FAIL	Test result shows that the requirements of the relevant specification have not been met.
N/T	Test case is not tested.
NTC	Nominal voltage, Normal Temperature
HV	High voltage, Normal Temperature
LV	Low voltage, Normal Temperature
HTHV	high voltage, High Temperature
LTHV	High voltage, Low Temperature
HTLV	Low voltage, High Temperature
LTLV	Low voltage, Low Temperature

Fax: 86-10-5799 6288 Copyright © SRTC





# **5 RESULT SUMMARY**

No.	Test case	FCC reference	Verdict
1	Occupied Bandwidth	15.247(a)(2)	Pass
2	Peak Power Output	15.247(b)(3)	Pass
3	Transmitter Power Spectral Density	15.247(e)	Pass
4	Conducted Out of band emission measurement	15.247(d)	Pass
5	Spurious Radiated Emissions	15.247(d)/15.35(b)/15.209	Pass
6	AC Power line Conducted Emission	15.207	Pass

This Test Report Is Issued by: Mr. Tao Hongbo	Checked by: Mr. Li Boyu
不到本 18	李博子
Tested by:	Issued date:
Mr. Jiang Shuo	
ivaa	2016/3/23

Page number: 8 of 32



# **6 TEST RESULT**

# 6.1 Occupied Bandwidth

#### 6.1.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.5kPa

#### **6.1.2 Test Description**

The bandwidth at 6dB down from the highest in-band spectral density is measured with a spectrum analyzer and Bluetooth test set via a power splitter with a known loss. Which connected to the transmitter antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies. All modes of operation were investigated and the worst case configuration results are reported in this section.

#### 6.1.3 Test limit

Part15.247(a)(2)

The minimum permissible 6dB bandwidth is 500 kHz

#### 6.1.4 Test Procedure Used

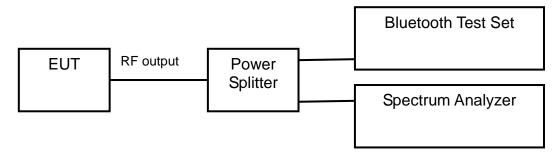
KDB 558074 D01 v03r02 - Section 8.1 Option 1

#### 6.1.5 Test Settings

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq$  3 x RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) 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.

#### 6.1.6 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



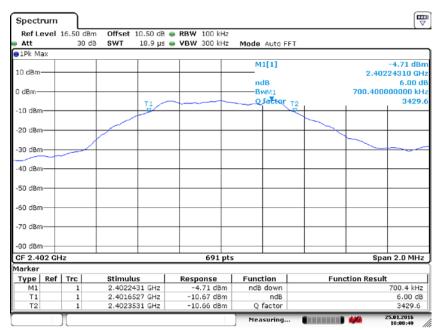
Tel: 86-10-5799 6181 Fax: 86-10-5799 6288



#### 6.1.7 Test result

Modulation type: GFSK (LE)

Carrier frequency (MHz)	Channel No.	6 dB bandwidth(kHz)
2402	0	700.4
2440	19	700.4
2480	39	691.8

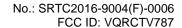


Date: 25.JAN.2016 10:08:48

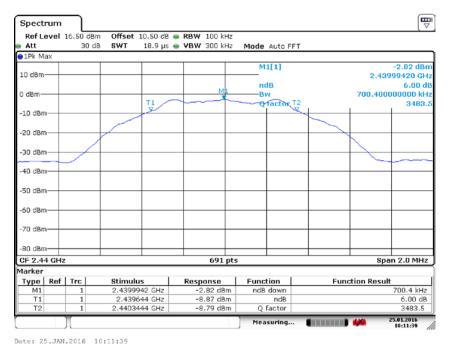
Carrier frequency (MHz): 2402 Channel No.:0 Modulation type: GFSK (LE)

Copyright © SRTC

Page number: 10 of 32

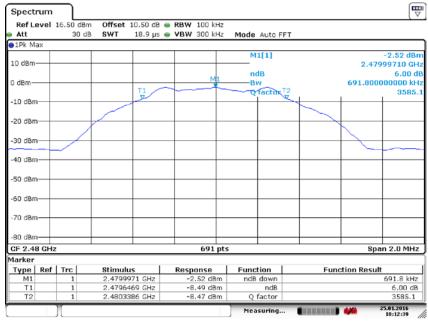






Nate: 25.JAN.2016 10:11:39

Carrier frequency (MHz): 2440 Channel No.:19 Modulation type: GFSK (LE)



Date: 25.JAN.2016 10:12:39

Carrier frequency (MHz): 2480 Channel No.:39 Modulation type: GFSK (LE)

Tel: 86-10-5799 6181 Fax: 86-10-5799 6288



# 6.2 Peak Power Output

#### 6.2.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.5kPa

#### 6.2.2 Test Description

The transmitter antenna terminal of the EUT is connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. Measurements are made while the EUT is operating at maximum power and at the appropriate frequencies.

#### 6.2.3 Test limit

Part15.247(b)(3)

The maximum permissible conducted output power is 1 Watt. Used conversion factor: Limit (dBm) = 10 log (Limit (W)/1mW)

==> Maximum Output Power: 30.0 dBm

#### 6.2.4 Test Procedure Used

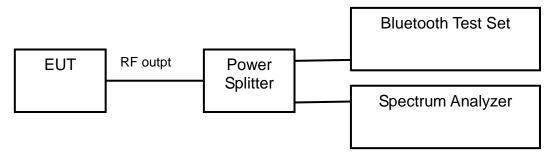
KDB 558074 D01 v03r02 - Section 9.1.1

## 6.2.5 Test Settings

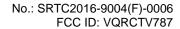
- a) RBW = 2 MHz
- b) VBW = 10 MHz
- c) span ≥ 3 x RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

#### 6.2.6 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



The State Radio\_monitoring\_center Testing Center (SRTC) Tel: 86-10-5799 6181



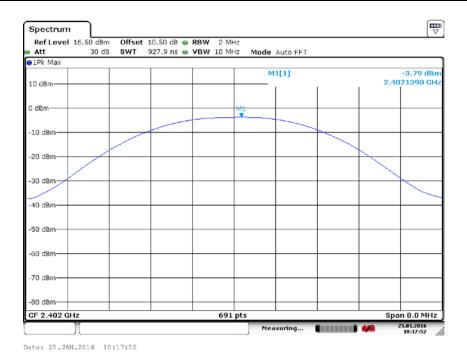
Page number: 13 of 32



#### 6.2.7 Test result

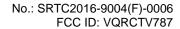
	Average Power Output (dBm)		
Modulation type	2402MHz	2440MHz	2480MHz
	(Ch0)	(Ch19)	(Ch39)
GFSK (LE)	-4.21	-2.01	-1.92

	Peak Power Output (dBm)		
Modulation type	2402MHz	2440MHz	2480MHz
	(Ch0)	(Ch19)	(Ch39)
GFSK (LE)	-3.79	-1.89	-1.61



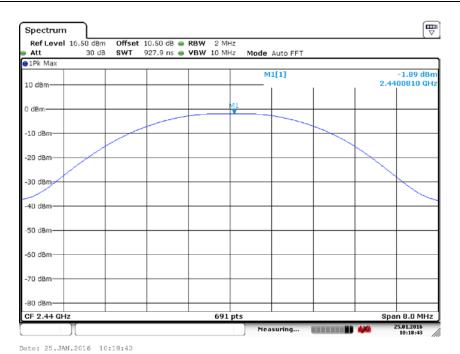
Carrier frequency (MHz): 2402 Channel No.:0 Modulation type: GFSK (LE)

Fax: 86-10-5799 6288 Copyright © SRTC



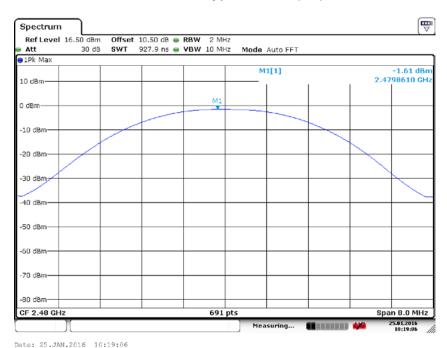
Page number: 14 of 32





Carrier frequency (MHz): 2440 Channel No.:19

Modulation type: GFSK (LE)



Carrier frequency (MHz): 2480 Channel No.:39 Modulation type: GFSK (LE)

Tel: 86-10-5799 6181 Fax: 86-10-5799 6288 Copyright © SRTC

Page number: 15 of 32



# 6.3 Transmitter Power Spectral Density

#### 6.3.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.5kPa

## 6.3.2 Test Description

The peak power density is measured with a spectrum analyzer and Bluetooth test set via a power splitter with a known loss connected to the antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies.

#### 6.3.3 Test limit

Part15.247(e)

The maximum permissible power spectral density is 8.0 dBm in any 3 kHz band.

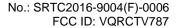
#### 6.3.4 Test Procedure Used

KDB 558074 D01 v03r02 Section 10.2.

#### 6.3.5 Test Settings

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- d) Set the VBW  $\geq$  3 x RBW.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.
- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

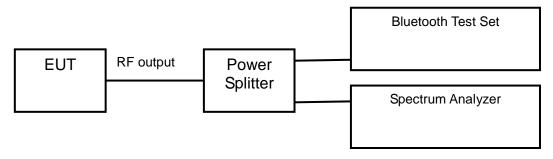
Tel: 86-10-5799 6181 Fax: 86-10-5799 6288 Copyright © SRTC





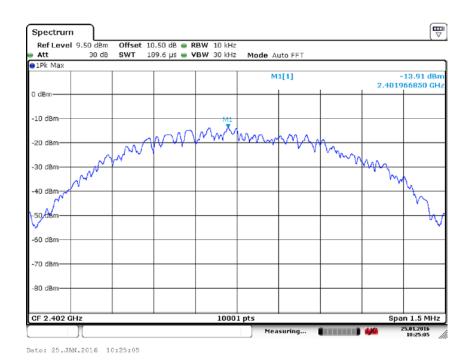
#### 6.3.6 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



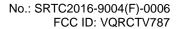
#### 6.3.7 Test result:

Carrier frequency (MHz)	Channel No	Power Density
2402	0	-13.91
2440	19	-11.83
2480	39	-11.62



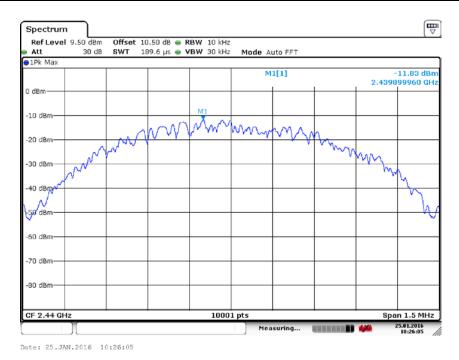
Carrier frequency (MHz): 2402 Channel No.:0 Modulation type: GFSK (LE)

Page number: 16 of 32

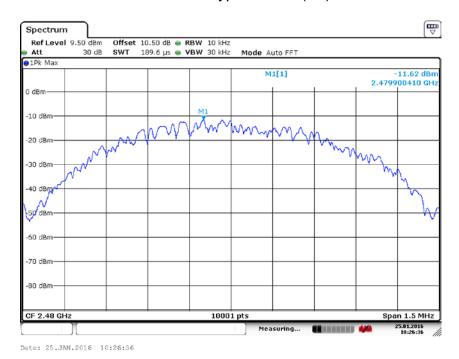


Page number: 17 of 32





Carrier frequency (MHz): 2440 Channel No.:19 Modulation type: GFSK (LE)



Carrier frequency (MHz): 2480 Channel No.:39 Modulation type: GFSK (LE)

Tel: 86-10-5799 6181 Fax: 86-10-5799 6288 Copyright © SRTC

Page number: 18 of 32



#### 6.4 Conducted Out of band emission measurement

#### 6.4.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.5kPa

#### 6.4.2 Test Description

For the following out of band conducted spurious emissions plots, the EUT was set to transmit at maximum power with the largest packet size available. The worst case spurious emissions were found in this configuration.

#### 6.4.3 Test limit

Part 15.247(d)

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth.

#### 6.4.4 Test Procedure Used

KDB 558074 D01 v03r02 Section 11.3

## 6.4.5 Test Settings

- a) Set the center frequency and span to encompass frequency range to be measured.
- b) Set the RBW = 100kHz.
- c) Set the VBW ≥ 300kHz.
- d) Detector = peak.
- e) Set span to encompass the spectrum to be examined
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level.

#### 6.4.6 Test Setup

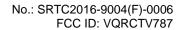
The EUT and measurement equipment were set up as shown in 2.2.3.6

#### 6.4.7 Test result

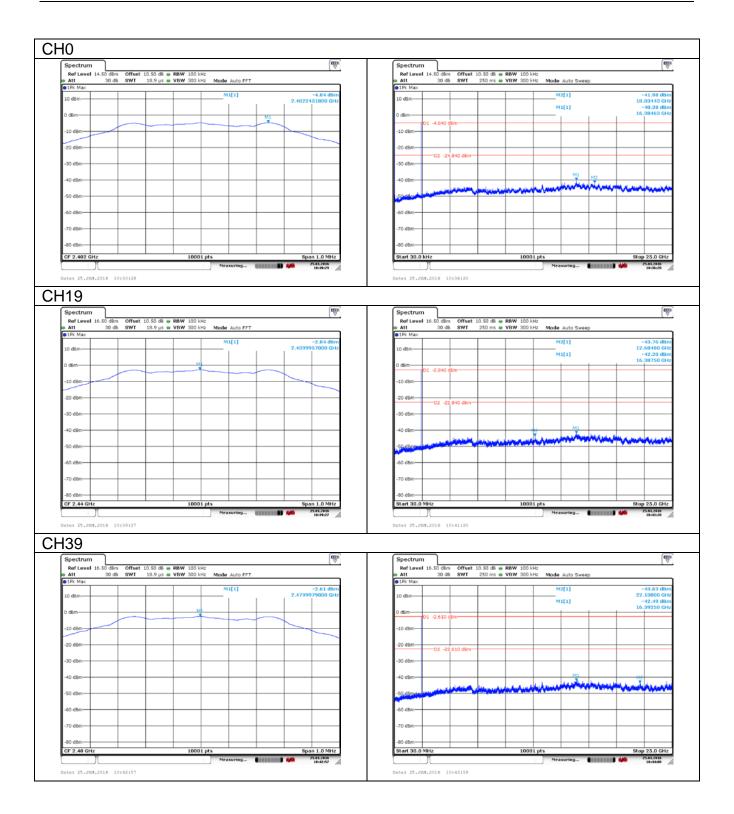
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

The State Radio\_monitoring\_center Testing Center (SRTC) Tel: 86-10-5799 6181

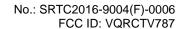
Fax: 86-10-5799 6288 Copyright © SRTC







Fax: 86-10-5799 6288 Copyright © SRTC





# 6.5 Spurious Radiated Emissions

#### 6.5.1 Ambient condition

Temperature	Relative humidity	Pressure
20.8°C	36.5%	100.9kPa

#### 6.5.2 Test Description

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

#### 6.5.3 Test limit

Part15.205, 15.209, 15.247(d);

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in below Table per Section 15.209.

Frequency [MHz]	Field strength [ µV/m ]	Measured Distance [meters]
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

**Radiated Limits** 

#### Part15.35(b):

there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit

Used conversion factor: Limit  $(dBuV/m) = 20 \log (Limit (uV/m)/1uV/m)$ 

Osed Conversion factor. Limit (dbpv/m) - 20 log (Limit (pv/m) rpv/m)			
Frequency [MHz]	Detector	Unit (dBµV/m)	
30~88	Quasi-peak	40.0	
88~216	Quasi-peak	43.5	
216~960	Quasi-peak	46.0	
960~1000	Quasi-peak	54.0	
1000∼5th harmonic of the highest frequency	Average	54.0	
or 40GHz, whichever is lower	Peak	74.0	

**Conversion Radiated limits** 

The State Radio\_monitoring\_center Testing Center (SRTC) Page number: 20 of 32





#### 6.5.4 Test Procedure Used

KDB 558074 D01 v03r02 - Section 12.2.5 (average power measurements)

KDB 558074 D01 v03r02 - Section 12.2.4 (peak power measurements)

#### 6.5.5 Test Settings

### Average Field Strength Measurements per Section 12.2.5.3 of KDB 558074 v03r02

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3kHz > 1/T
- 4. Averaging type was set to RMS to ensure that video filtering was applied in the power domain
- 5. Detector = peak
- 6. Sweep time = auto
- 7. Trace mode = max hold
- 8. Trace was allowed to run for at least 50 times (1/duty cycle) traces

#### Peak Field Strength Measurements per Section 12.2.4 of KDB 558074 v03r02

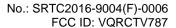
- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW is set depending on measurement frequency, as specified in following table

Frequency	RBW		
9-150kHz	200-300Hz		
0.15-30MHz	9-10kHz		
30-1000MHz	100-120kHz		
>1000MHz	1MHz		

- 3. VBW = 3MHz
- 4. Detector = peak
- 5. Sweep time = auto couple
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize

Tel: 86-10-5799 6181 Fax: 86-10-5799 6288 Copyright © SRTC

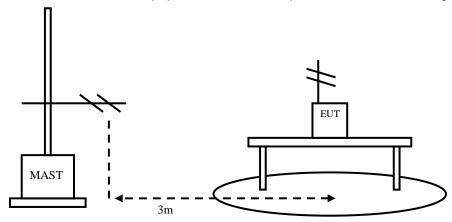
Page number: 21 of 32





#### 6.5.6 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below

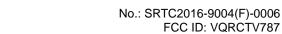


The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz or above, using receive log period antenna HL562 or Ridge horn antenna HF906.

During the test, the antenna height and EUT azimuth were varied in order to identify the maximum level of emission from the EUT. The height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees. The measurements shall be repeated with orthogonal polarization of the test antenna. The results shall be showed the worst case of the three orthogonal axes.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Tel: 86-10-5799 6181 Fax: 86-10-5799 6288 Copyright © SRTC





#### 6.5.7 Test result

The worst case attitude: The mobile lay down.

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK (LE)

Polarity: Vertical Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	92.54	58.54	N/A	N/A	8.90	25.10
2	2390	46.10	12.10	-27.90	74.0	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK (LE)
Polarity: Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	89.18	55.18	N/A	N/A	8.90	25.10
2	2390	45.43	11.43	-28.57	74.0	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

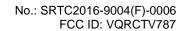
Test Mode: GFSK (LE)

Polarity: Vertical Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	88.02	54.02	N/A	N/A	8.90	25.10
2	2390	40.23	6.23	-13.77	54.0	8.90	25.10

Fax: 86-10-5799 6288 Copyright © SRTC

Page number: 23 of 32





Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK (LE) Polarity: Horizontal Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	85.60	51.60	N/A	N/A	8.90	25.10
2	2390	39.80	5.80	-14.20	54.0	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:39

Test Mode: GFSK (LE)

Polarity: Vertical Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	95.38	61.38	N/A	N/A	8.90	25.10
2	2483.5	48.68	14.68	-25.32	74.0	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:39

Test Mode: GFSK (LE)
Polarity: Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	91.20	57.20	N/A	N/A	8.90	25.10
2	2483.5	45.49	11.49	-28.51	74.0	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:39

Test Mode: GFSK (LE) Polarity: Vertical Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	88.45	54.45	N/A	N/A	8.90	25.10
2	2483.5	40.83	6.83	-13.17	54.0	8.90	25.10

Tel: 86-10-5799 6181 Fax: 86-10-5799 6288



No.: SRTC2016-9004(F)-0006 FCC ID: VQRCTV787

Carrier frequency (MHz): 2480

Channel No.:39

Test Mode: GFSK (LE)
Polarity: Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	86.89	52.89	N/A	N/A	8.90	25.10
2	2483.5	39.32	5.32	-14.68	54.0	8.90	25.10

#### Sample Calculations

**Determining Spurious Emissions Levels** 

A "reference path loss" is established and the  $A_{Rpl}$  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:

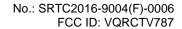
Result=  $P_{mea} + A_{Rpl}$ 

The worst case attitude: The mobile lay down.

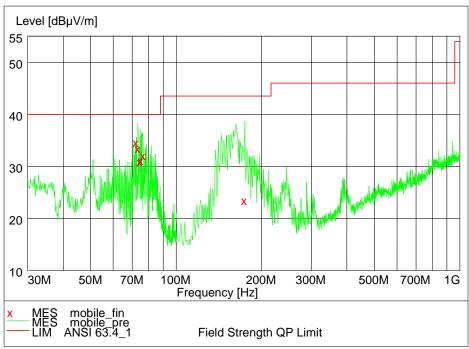
For GFSK (LE) Channel No.:19

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
86.813627	21.50	10.80	10.70	Vertical	40.0
91.442886	23.10	11.20	11.90	Vertical	43.5
94.529058	31.30	11.30	20.00	Vertical	43.5
97.474950	27.00	11.90	15.10	Horizontal	43.5
101.603206	25.00	12.20	12.80	Horizontal	43.5
118.436874	23.80	13.00	10.80	Horizontal	43.5

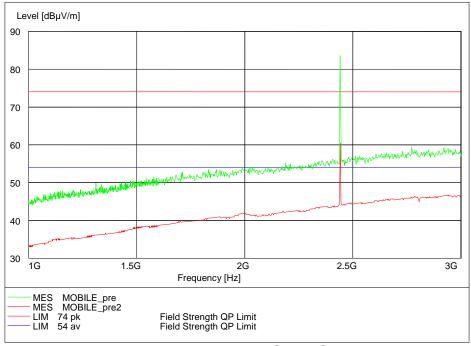
Tel: 86-10-5799 6181 Fax: 86-10-5799 6288



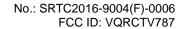




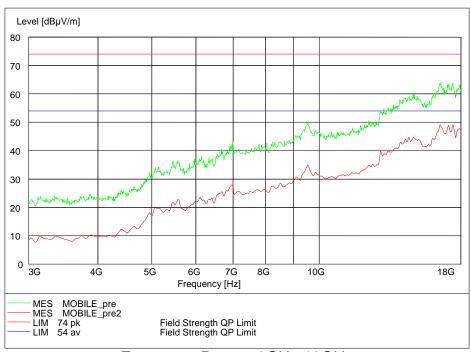
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: GFSK (LE)



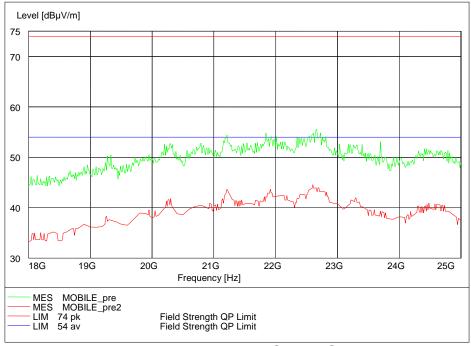
Frequency Range: 1GHz-3GHz Detector: Av mode and PK mode Modulation type: GFSK (LE)



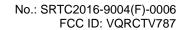




Frequency Range: 3GHz-18GHz Detector: Av mode and PK mode Modulation type: GFSK (LE)



Frequency Range: 18GHz-25GHz Detector: Av mode and PK mode Modulation type: GFSK (LE)





# 6.6 AC Power line Conducted Emission

# 6.6.1 Ambient condition

Temperature	Relative humidity	Pressure
20.8°C	36.5%	100.9kPa

#### 6.6.2 Test limit

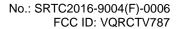
#### FCC Part15.207

Frequency of Emission (MHz)	Conducted Limit (dBuV)				
	Quasi-peak	Average			
0.15-0.5	66 to 56 *	56 to 46 *			
0.5-5	56	46			
5-30	60	50			

<sup>\*</sup> Decreases with the logarithm of the frequency.

The measurement is made according to ANSI C63.4-2014

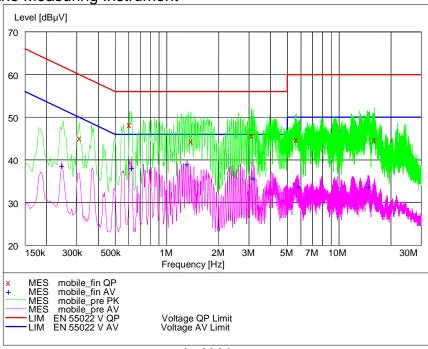
Page number: 28 of 32





#### 6.6.3 Test result

Noise Level of the Measuring Instrument



L+N Line

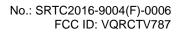
# MEASUREMENT RESULT: "MOBILE\_fin QP"

Frequency	Level	Transd	Limit	Margin	Line
MHz	dΒμV	dB	$dB\mu V$	dB	
0.310000	45.30	29.6	60	14.7	L
0.605000	48.40	29.7	56	7.6	N
1.380000	44.60	29.7	56	11.4	L
3.100000	45.90	29.7	56	10.1	L
5.640000	44.90	29.8	60	15.1	N
16.020000	45.00	30.0	60	15.0	L

#### MEASUREMENT RESULT: "MOBILE\_fin AV"

Frequency	Level	Transd	Limit	Margin	Line
MHz	dΒμV	dB	dΒμV	dB	
0.245000	38.80	29.6	52	13.1	L
0.625000	38.30	29.7	46	7.7	N
1.310000	39.20	29.7	46	6.8	L
3.175000	35.90	29.7	46	10.1	L
5.790000	34.00	29.8	50	16.0	N
14.870000	33.90	29.9	50	16.1	L

Page number: 29 of 32



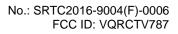
Page number: 30 of 32



# **7 MEASUREMENT UNCERTAINTIES**

Items	Uncertainty		
Occupied Bandwidth	3kHz		
Peak power output	0.67dB		
Band edge compliance	1.20dB		
	30MHz~1GHz	2.83dB	
Spurious emissions	1GHz~12.75GHz	2.50dB	
	12.75GHz~25GHz	2.75dB	

Tel: 86-10-5799 6181
Fax: 86-10-5799 6288
Copyright © SRTC

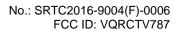




# **8 TEST EQUIPMENTS**

No.	Name/ Model	Manufacturer	S/N	Cal Due date
1.	Spectrum Analyzer FSV	ROHDE&SCHWARZ	101065	2016.08.20
2.	Signal Generator MG3700A	Anritsu	6200677084	2016.08.20
3.	Bluetooth Test Set MT8852B	Anritsu	1142010	2016.02.29
4.	Cable 104EA	SUCOFLEX	9272/4EA	2016.08.20
5.	Cable 104EA	SUCOFLEX	9266/4EA	2016.08.20
6.	Power Splitter 11850C	Agilent	026057	2016.08.20
7.	12.65m×8.03m×7.50m Fully-Anechoic Chamber	FRANKONIA		
8.	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA		
9.	Turn table Diameter:1m	HD		
10.	Turn table Diameter:5m	HD		
11.	Antenna master FAC(MA4.0)	MATURO		
12.	Antenna master SAC(MA4.0)	MATURO		
13.	9.080m×5.255m×3.525m Shielding room	FRANKONIA		
14.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	2016.08.20
15.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	2016.08.20
16.	HL562 Ultra log antenna	R&S	100016	2016.08.20
17.	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2016.08.20
18.	ESI 40 EMI test receiver	R&S	100015	2016.08.20
19.	Radio tester	CMU 200	114667	2016.08.20
20.	ESCS30 EMI test receiver	R&S	100029	2016.08.20
21.	HL562 Receive antenna	R&S	100167	2016.08.20
22.	ESH3-Z5 LISN	R&S	100020	2016.08.20

Tel: 86-10-5799 6181 Fax: 86-10-5799 6288





# **APPENDIX**

Appendix Test Setup

---End of Test Report---