



7 June, 2012

Huawei Technologies Co.,Ltd  
Bantian, Longgang District, Shenzhen, China

Dear Mr. Zhang Xinghai:

Enclosed you will find your file copy of a Part 15 report (FCC ID: QISU8186-7).

For your reference, TCB will normally take another one week for reviewing the report. Approval will then be granted when no query is sorted.

Please contact me if you have any questions regarding the enclosed material.

Sincerely,

A handwritten signature in black ink, appearing to read "Shawn Xing", with a long horizontal stroke extending to the right.

Shawn Xing  
Manager

Enclosure



## Huawei Technologies Co.,Ltd

Application  
For  
Certification

HUAWEI Ascend Y 101; HSDPA/UMTS/GPRS/GSM/EDGE Mobile  
Phone with Bluetooth  
(WiFi Transceiver)

**(FCC ID: QISU8186-7)**

Model: HUAWEI U8186-7/U8186-7

SZ12050427-12

Billy Li

7 June, 2012

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
- This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results referenced from this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.
- For Terms And Conditions of the services, it can be provided upon request.
- The evaluation data of the report will be kept for 3 years from the date of issuance.

TRF no.: FCC 15C\_Tx\_b  
FCC ID: QISU8186-7

**Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch**

6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China  
Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6751 Website: [www.china.intertek-etlsemko.com](http://www.china.intertek-etlsemko.com)

**LIST OF EXHIBITS**

*INTRODUCTION*

<i>EXHIBIT 1:</i>	Summary of Tests
<i>EXHIBIT 2:</i>	General Description
<i>EXHIBIT 3:</i>	System Test Configuration
<i>EXHIBIT 4:</i>	Measurement Results
<i>EXHIBIT 5:</i>	Equipment Photographs
<i>EXHIBIT 6:</i>	Product Labeling
<i>EXHIBIT 7:</i>	Technical Specifications
<i>EXHIBIT 8:</i>	Instruction Manual
<i>EXHIBIT 9:</i>	Miscellaneous Information
<i>EXHIBIT 10:</i>	Test Equipment List

INTERTEK TESTING SERVICES

MEASUREMENT/TECHNICAL REPORT

Huawei Technologies Co.,Ltd - MODEL: HUAWEI U8186-7/U8186-7

FCC ID: QISU8186-7

This report concerns (check one) Original Grant  Class II Change

Equipment Type: DTS - Part 15 Digital Transmission Systems (WiFi transmitter portion)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes  No

If yes, defer until :   
date

Company Name agrees to notify the Commission by:   
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes  No

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-11 Edition] provision.

Report prepared by:



Shawn Xing  
Intertek Testing Services Shenzhen Ltd.  
Kejiyuan Branch  
6F, Block D, Huahan Building, Langshan Road,  
Nanshan District, Shenzhen, P. R. China  
Phone: (86 755) 8601 6288  
Fax: (86 755) 8601 6751

# INTERTEK TESTING SERVICES

---

## Table of Contents

<b>1.0 <u>Summary of test results</u></b> .....	2
<b>2.0 <u>General Description</u></b> .....	4
2.1 Product Description .....	4
2.2 Related Submittal(s) Grants .....	5
2.3 Test Methodology .....	5
2.4 Test Facility .....	5
<b>3.0 <u>System Test Configuration</u></b> .....	7
3.1 Justification .....	7
3.2 EUT Exercising Software .....	7
3.3 Details of EUT and Description of Peripherals .....	8
3.4 Measurement Uncertainty .....	8
3.5 Equipment Modification .....	8
3.6 Support Equipment List and Description .....	9
<b>4.0 <u>Measurement Results</u></b> .....	11
4.1 Maximum Conducted Output Power at Antenna Terminals .....	11
4.2 Minimum 6dB RF Bandwidth .....	16
4.3 Maximum Power Density .....	22
4.4 Out of Band Conducted Emissions .....	28
4.5 Out of Band Radiated Emissions .....	38
4.6 Transmitter Radiated Emissions in Restricted Bands .....	39
4.7 Field Strength Calculation .....	40
4.8 Radiated Spurious Emission .....	41
4.9 Conducted Emission .....	52
4.10 Radiated Emission from Digital Section of Transceiver .....	55
4.11 Transmitter Duty Cycle Calculation and Measurements .....	56
<b>5.0 <u>Equipment Photographs</u></b> .....	58
<b>6.0 <u>Product Labelling</u></b> .....	60
<b>7.0 <u>Technical Specifications</u></b> .....	62
<b>8.0 <u>Instruction Manual</u></b> .....	64
<b>9.0 <u>Miscellaneous Information</u></b> .....	66
<b>10.0 <u>Test Equipment List</u></b> .....	68

## INTERTEK TESTING SERVICES

---

### List of attached file

<b>Exhibit Type</b>	<b>File Description</b>	<b>Filename</b>
Cover Letter	Letter of Agency	agency.pdf
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
Operation Description	Technical Description	descri.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
RF Exposure info	SAR Report	sar report. pdf

# **INTERTEK TESTING SERVICES**

---

## **EXHIBIT 1**

### **SUMMARY OF TEST RESULTS**

## INTERTEK TESTING SERVICES

---

### 1.0 Summary of Test

**Huawei Technologies Co.,Ltd - MODEL: HUAWEI U8186-7/U8186-7**

**FCC ID: QISU8186-7**

TEST	REFERENCE	RESULTS
Max. Output power	15.247(b)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
AC Conducted Emission	15.207	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

# **INTERTEK TESTING SERVICES**

---

## **EXHIBIT 2**

### **GENERAL DESCRIPTION**

## INTERTEK TESTING SERVICES

---

### 2.0 General Description

#### 2.1 Product Description

The Equipment Under Test (EUT) is a middle and high end dual mode Mobile Phone with internal WiFi function operating at 2412-2462MHz for 802.11b/g/n-20MHz, 11 channels with 5MHz channel spacing. It is powered by internal 3.7V rechargeable battery and charged by AC adapter with Input: 100-240VAC, 50~60Hz, 0.2A, Output: 5.0 VDC, 400mA. For more detailed features description, please refer to the user's manual.

EUT Accessory List:

Accessory	Model	Manufacturer
Battery	HB4J1	BYD
		GuangYu
Headset	125G#+3261# 3.5MM-2	QuanCheng
	MEMD1532A761A00	LianChuang
USB Cable	LSA00350	LianSheng
	H09-000167	PengYi
AC Adapter	HS-050040U6	BYD
		HangJia

Type of Modulation: CCK, DQPSK, DBPSK for 802.11b, OFDM for 802.11g/n.  
Antenna Type: Integral Antenna.

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

## INTERTEK TESTING SERVICES

---

### 2.2 Related Submittal(s) Grants

This is an application for certification of:

DTS- Part 15 Digital Transmission Systems (WiFi transmitter portion)

### 2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009) and KDB 558074. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

### 2.4 Test Facility

The Semi-Anechoic chamber and shield room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: 242492).

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 3**

**SYSTEM TEST CONFIGURATION**

# INTERTEK TESTING SERVICES

## 3.0 System Test Configuration

### 3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. It was powered by the fully charged batteries and charged by AC adapter described in page 2 during the test. Only the worst case data was reported.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

### 3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:

During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

Power Parameters of IEEE 802.11b/g/n

Test software setting of IEEE 802.11b/g/n			
Channel No.	Output Power	Data rate	Modulation type
1,6,11	15.0	802.11b: 1-11Mbps	802.11b: CCK, DQPSK, DBPSK
	15.0	802.11g: 6-54Mbps	802.11g: OFDM
	6.0	802.11n: 7.2-72Mbps	802.11n-20M: OFDM

We test all data rate and only the worst – case data is shown in the report.

## INTERTEK TESTING SERVICES

---

### 3.3 Special Accessories

N/A

### 3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance – Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

### 3.5 Equipment Modification

Any modifications installed previous to testing by Huawei Technologies Co.,Ltd will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch.

## INTERTEK TESTING SERVICES

### 3.6 Support Equipment List and Description

This product was tested in the following configuration:

Refer List:

Description	Manufacturer	Model No.
Headset	QuanCheng	125G#+3261# 3.5MM-2
Headset	LianChuang	MEMD1532A761A00
1.2m shielded USB Cable	LianSheng	LSA00350
1.2m shielded USB Cable	PengYi	H09-000167
Mini SD Card	SanDisk	2G
AC Adapter	BYD	HS-050040U6 Input: 100-240VAC, 50~60Hz, 0.2A Output: 5.0 VDC, 400mA
AC Adapter	HangJia	HS-050040U6 Input: 100-240VAC, 50~60Hz, 0.2A Output: 5.0 VDC, 400mA

All the items listed under section 3.0 of this report are

*Confirmed by:*

*Shawn Xing*  
*Manager*  
*Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch*  
*Agent for HUAWEI TECHNOLOGIES CO.,LTD*



\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*7 June, 2012*      *Date*

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 4**

**MEASUREMENT RESULTS**

## INTERTEK TESTING SERVICES

---

Applicant: Huawei Technologies Co.,Ltd

Date of Test: 7 June, 2012

Model: HUAWEI U8186-7/U8186-7

### 4.0 Measurement Results

#### 4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

- The antenna power of the EUT was connected to the input of a spectrum analyzer. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.
- The antenna port of the EUT was connected to the input of a spectrum analyzer. The analyzer was set according to the FCC KDB 558074 spectrum analyzer's integrated band power measurement function with band limits set equal to the EBW band edges and power was read directly in dBm. External attenuation and cable loss were compensated from the measured value.

For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).

IEEE 802.11b ( 6dBi >Antenna Gain≥-1dBi) (CCK, 1Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	18.36	68.55
Middle Channel: 2437	18.53	71.29
High Channel: 2462	18.86	76.91

IEEE 802.11g ( 6dBi >Antenna Gain≥-1dBi) (OFDM, 6Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	20.09	102.09
Middle Channel: 2437	20.20	104.71
High Channel: 2462	20.42	110.15

IEEE 802.11n 20M ( 6dBi >Antenna Gain≥-1dBi) (OFDM, 7.2Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	11.93	15.60
Middle Channel: 2437	12.30	16.98
High Channel: 2462	12.67	18.49

## INTERTEK TESTING SERVICES

---

Cable loss: 0.3 dB External Attenuation: 0 dB

Cable loss and External Attenuation have been included in the value of Conducted Output Power above.

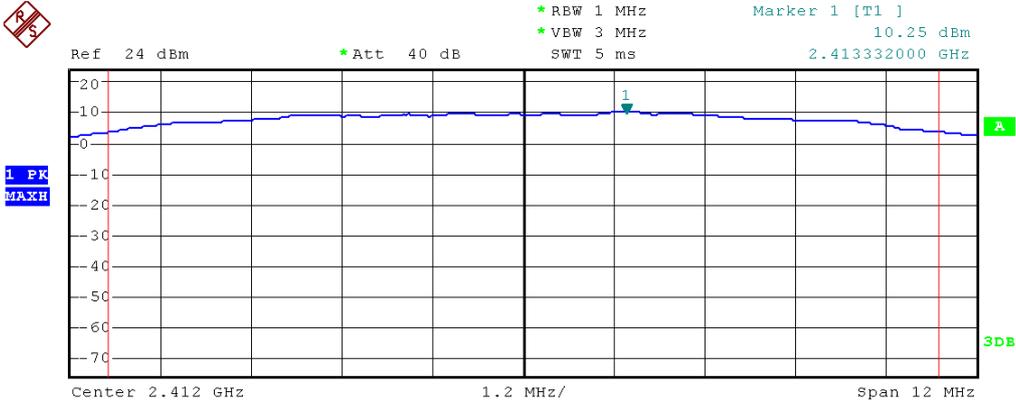
EUT dBm max. output level = 20.42dBm

For RF Exposure, the information is saved with filename: sar report.pdf.

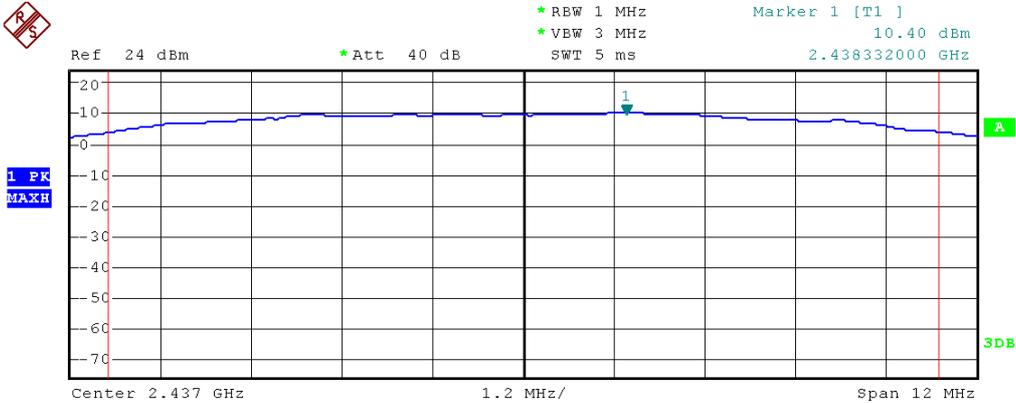
The test plots are attached as below.

# INTERTEK TESTING SERVICES

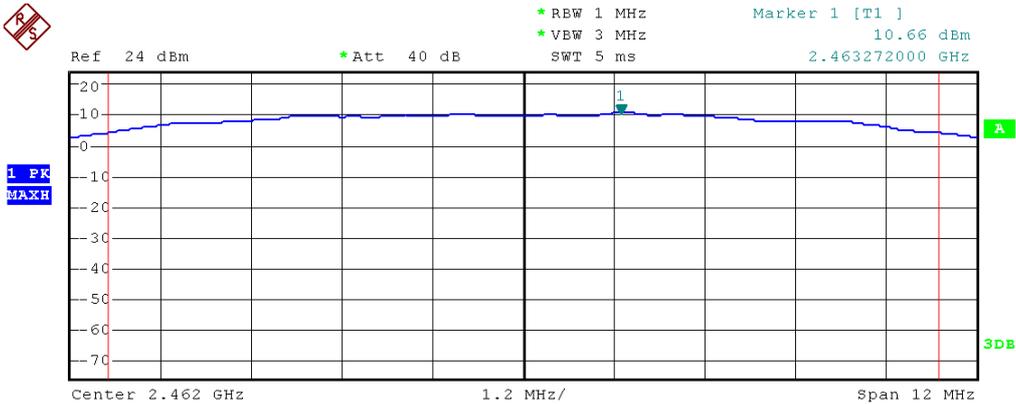
802.11b



**Tx Channel**  
 Bandwidth                      11 MHz      Power                      18.06 dBm



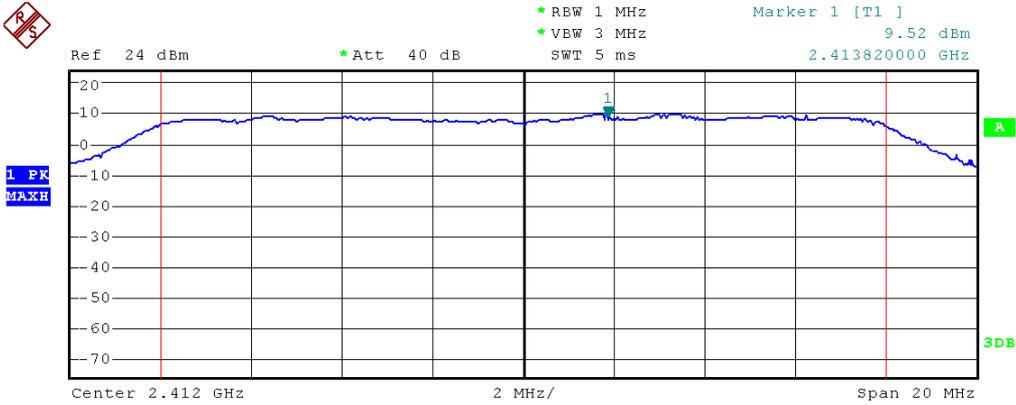
**Tx Channel**  
 Bandwidth                      11 MHz      Power                      18.23 dBm



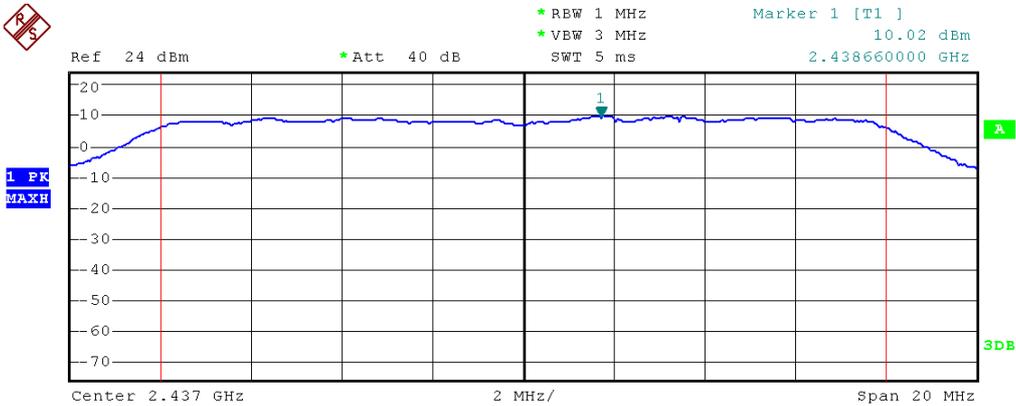
**Tx Channel**  
 Bandwidth                      11 MHz      Power                      18.56 dBm

# INTERTEK TESTING SERVICES

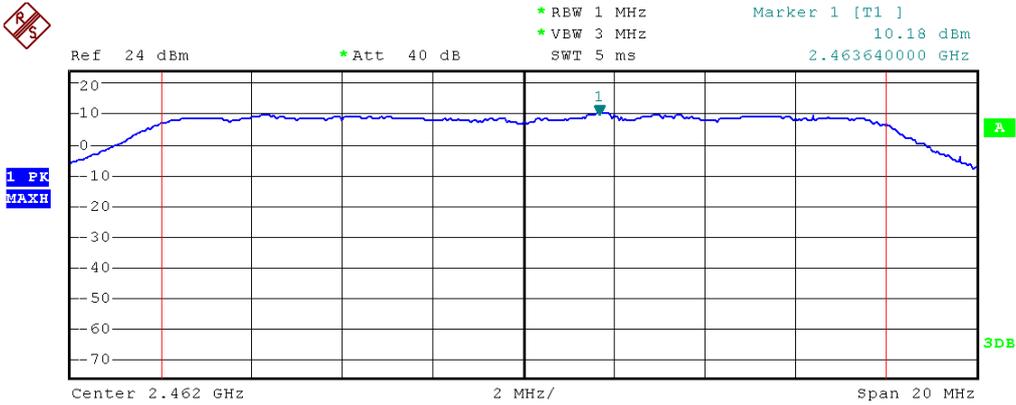
802.11g



**Tx Channel**  
 Bandwidth 17 MHz      Power 19.79 dBm



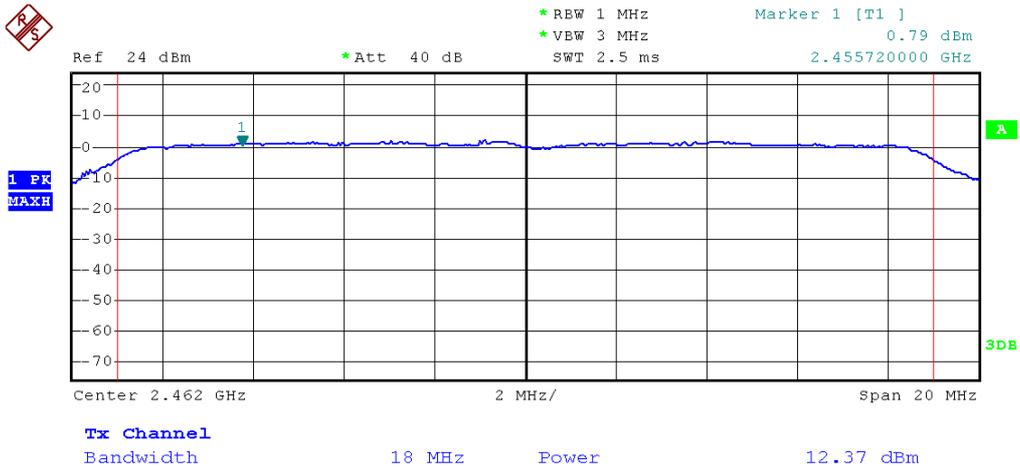
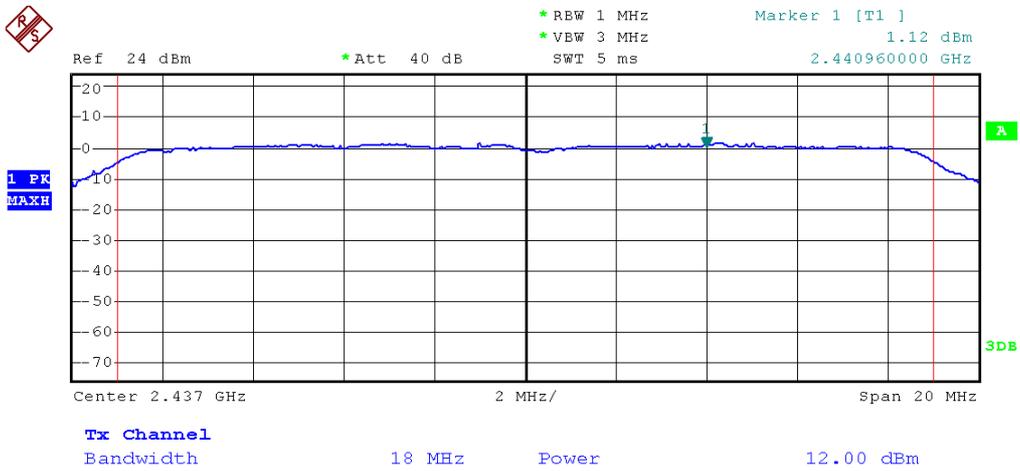
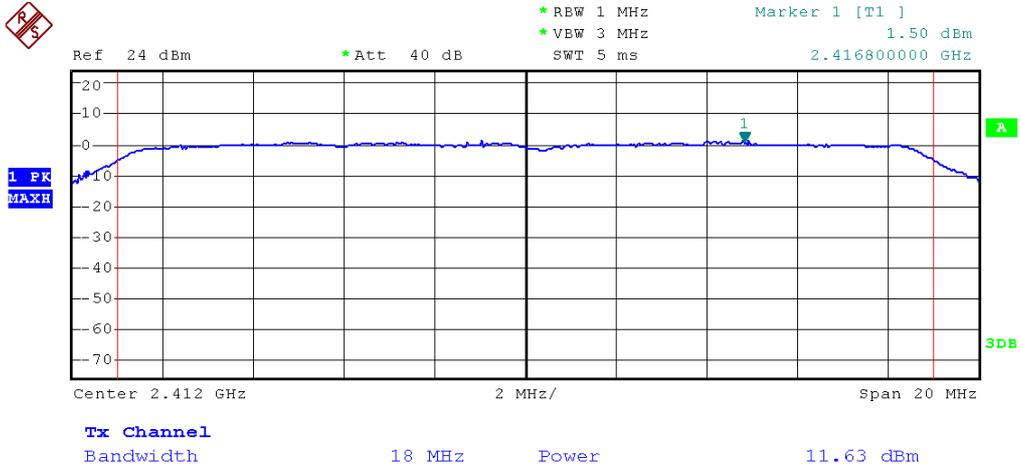
**Tx Channel**  
 Bandwidth 17 MHz      Power 19.90 dBm



**Tx Channel**  
 Bandwidth 17 MHz      Power 20.12 dBm

# INTERTEK TESTING SERVICES

802.11n (HT-20)



## INTERTEK TESTING SERVICES

---

Applicant: Huawei Technologies Co.,Ltd

Date of Test: 7 June, 2012

Model: HUAWEI U8186-7/U8186-7

### 4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a)(2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 1-5 % of the emission bandwidth according to FCC KDB 558074. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Limit: The 6 dB Bandwidth is at least 500 kHz.

IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	10.32
2437	10.32
2462	10.32

IEEE 802.11g (OFDM, 6Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	16.68
2437	16.64
2462	16.68

IEEE 802.11n 20M (OFDM, 7.2Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	17.88
2437	17.84
2462	17.80

The test plots are attached as below.





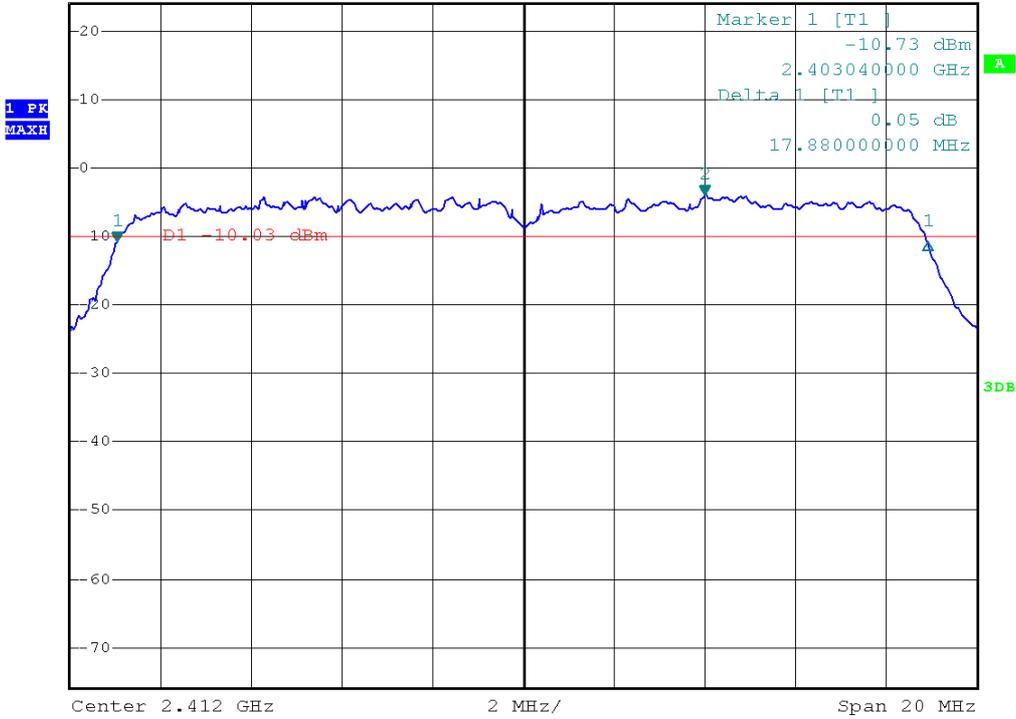


# INTERTEK TESTING SERVICES

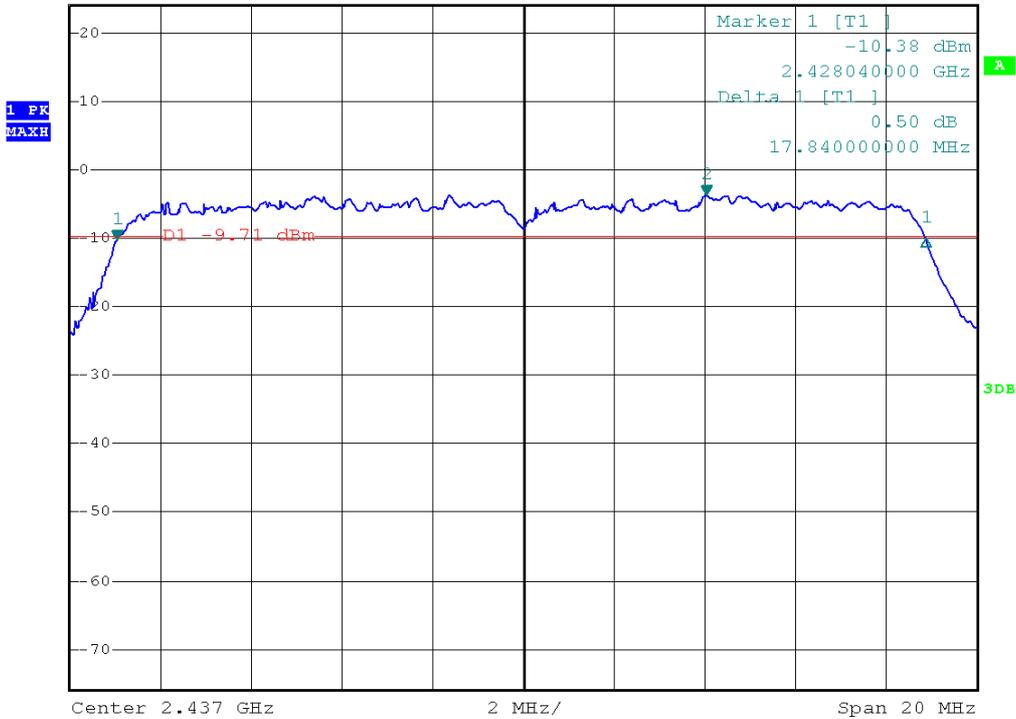
802.11n (HT-20)



\*RBW 300 kHz Marker 2 [T1 ]  
 \*VBW 1 MHz -4.03 dBm  
 Ref 24 dBm \*Att 40 dB SWT 2.5 ms 2.416000000 GHz



\*RBW 300 kHz Marker 2 [T1 ]  
 \*VBW 1 MHz -3.71 dBm  
 Ref 24 dBm \*Att 40 dB SWT 2.5 ms 2.441040000 GHz



TRF No.: FCC 15C\_TX\_b  
 FCC ID: QISU8186-7



## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd

Date of Test: 7 June, 2012

Model: HUAWEI U8186-7/U8186-7

### 4.3 Maximum Power Density Reading, FCC Rule 15.247(e) :

The Measurement Procedure PKPSD was set according to the FCC KDB 558074. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW and then scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3 \text{ kHz}/100 \text{ kHz}) = -15.2 \text{ dB}$ .

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

Limit: The Power Density does not exceed 8dBm/ 3 kHz.

IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	Power Density (dBm/3kHz)
2411.736	-12.1
2436.758	-11.4
2461.736	-11.1

IEEE 802.11g (OFDM, 6Mbps)	
Frequency (MHz)	Power Density (dBm/3kHz)
2416.960	-14.7
2441.960	-14.5
2455.720	-14.4

IEEE 802.11n 20M (OFDM, 7.2Mbps)	
Frequency (MHz)	Power Density (dBm/3kHz)
2417.000	-21.7
2442.000	-21.4
2456.960	-21.7

Cable loss: 0.3 dB External Attenuation: 0 dB

Cable loss and External Attenuation have been included in the value of Power Density above.

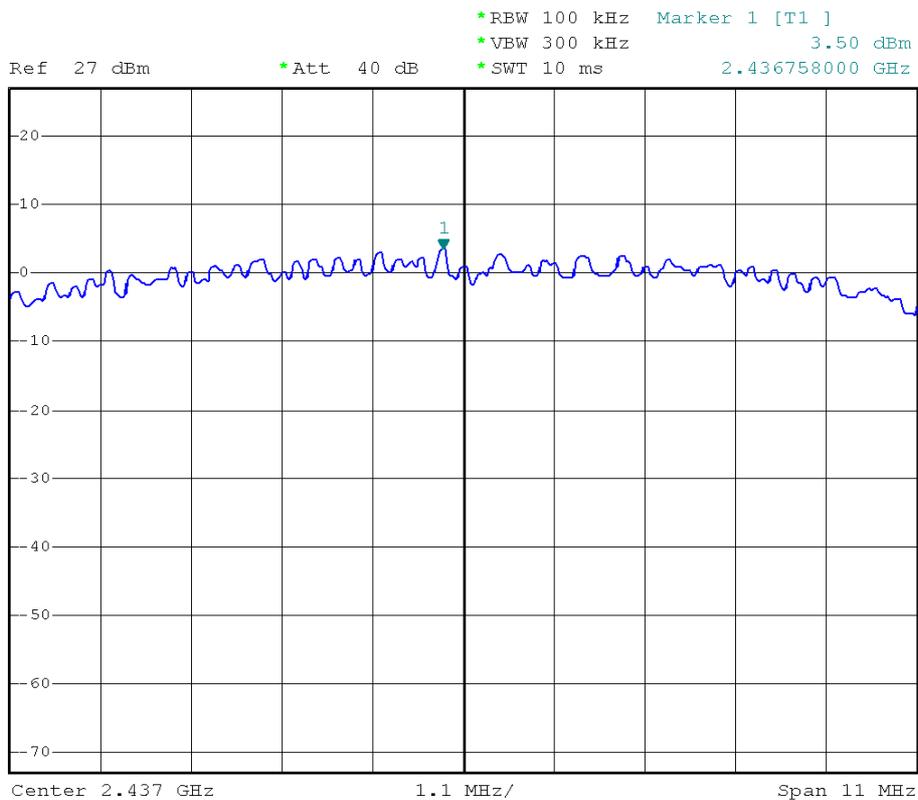
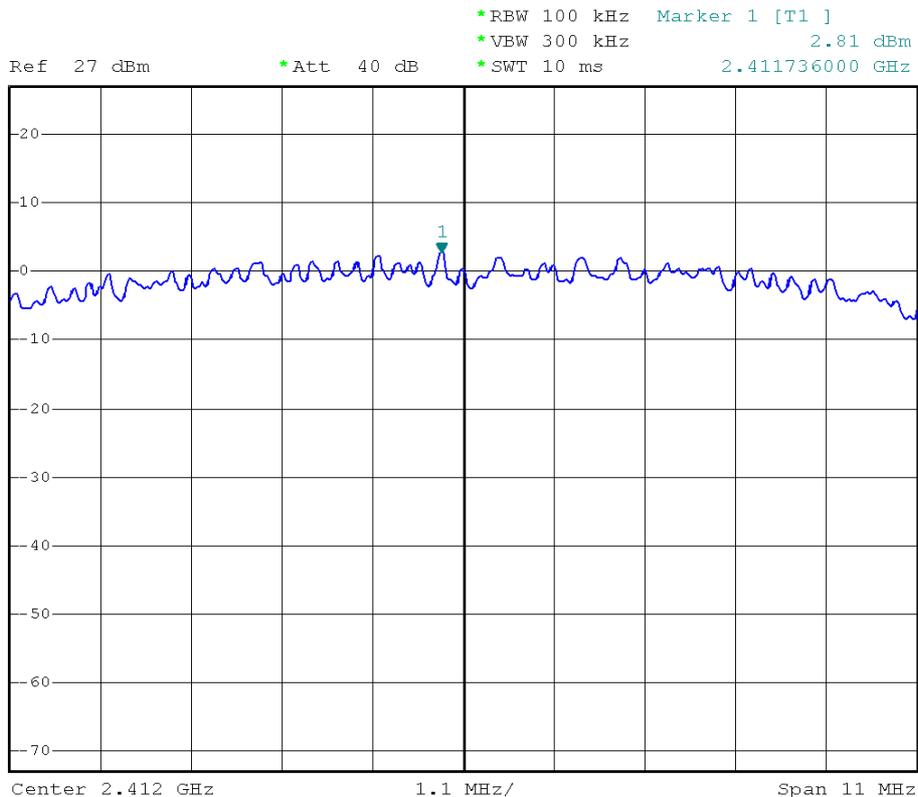
The test plots are attached as below.

TRF No.: FCC 15C\_TX\_b

FCC ID: QISU8186-7

# INTERTEK TESTING SERVICES

802.11b

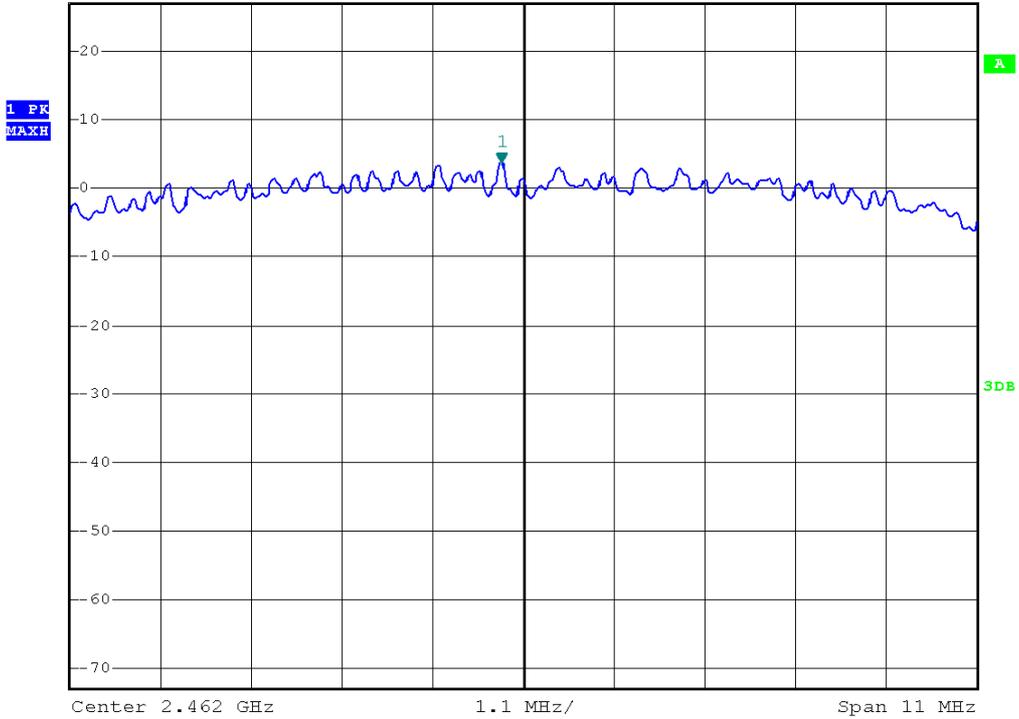


TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

# INTERTEK TESTING SERVICES



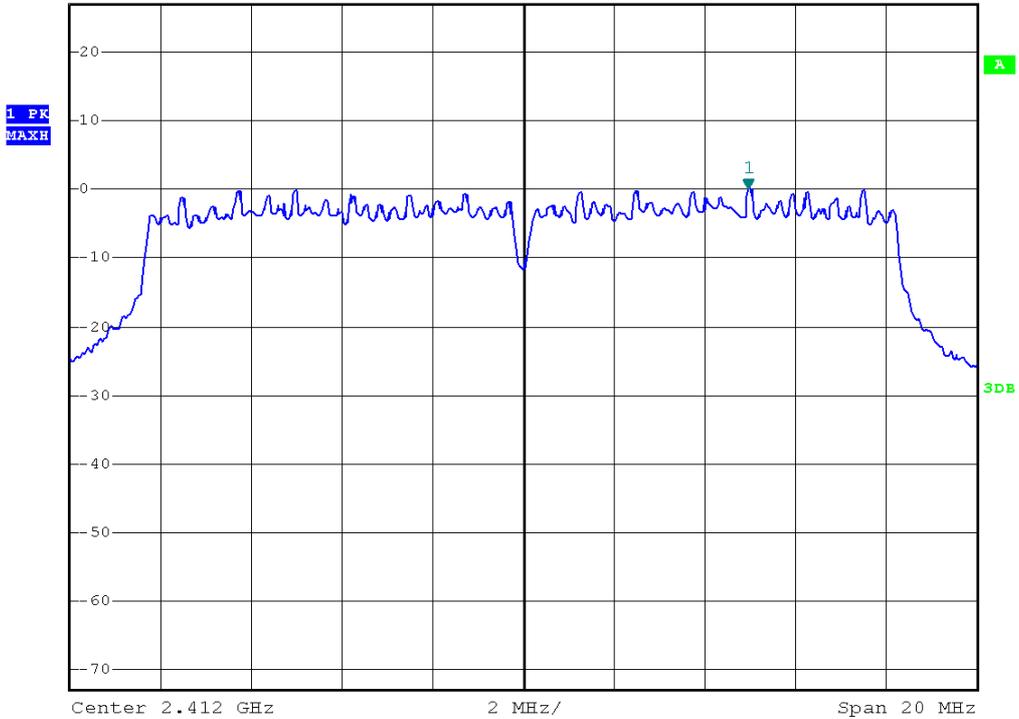
Ref 27 dBm \*Att 40 dB \*RBW 100 kHz Marker 1 [T1] 3.84 dBm  
\*VBW 300 kHz \*SWT 10 ms 2.461736000 GHz



802.11g



Ref 27 dBm \*Att 40 dB \*RBW 100 kHz Marker 1 [T1] 0.17 dBm  
\*VBW 300 kHz \*SWT 10 ms 2.416960000 GHz

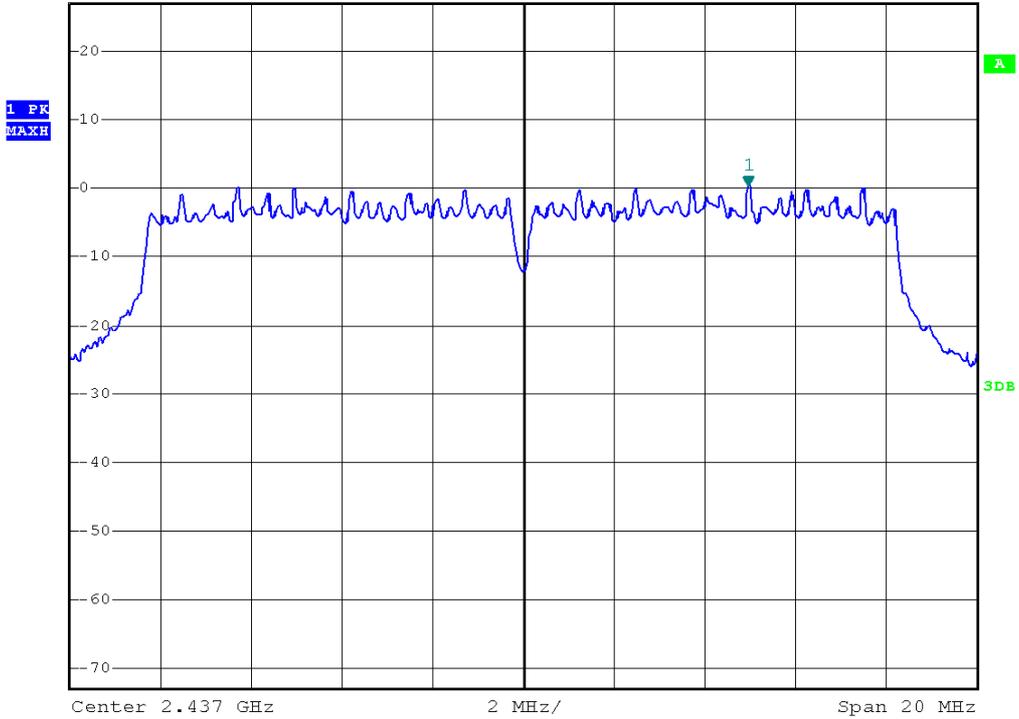


TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

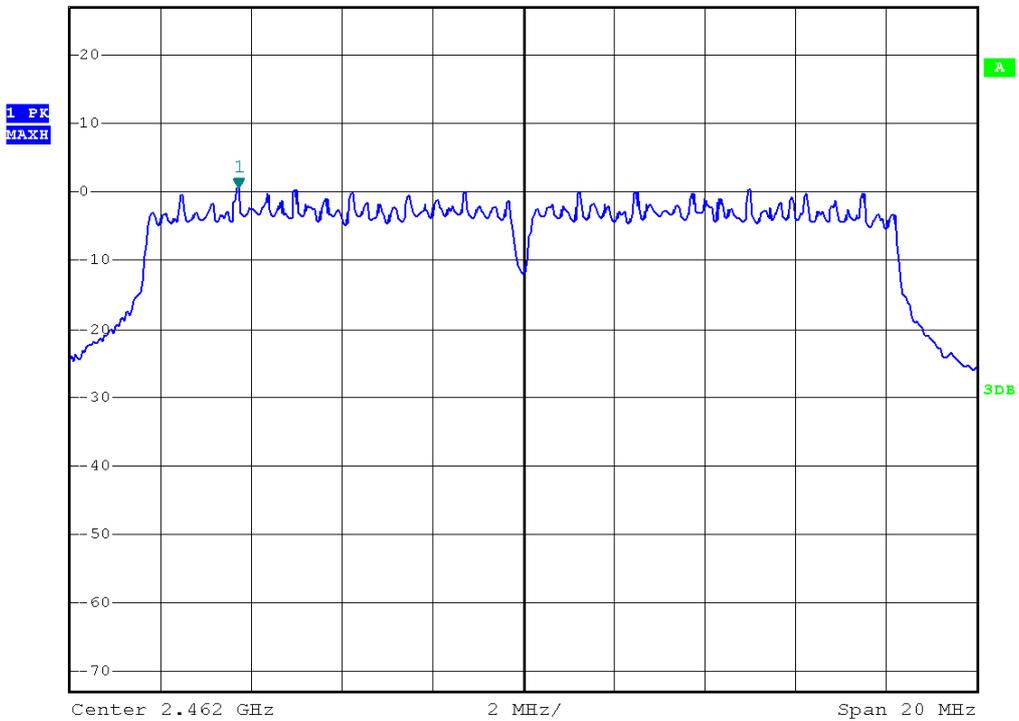
# INTERTEK TESTING SERVICES



Ref 27 dBm      \*Att 40 dB      \*RBW 100 kHz      Marker 1 [T1]      0.38 dBm  
\*VBW 300 kHz      \*SWT 10 ms      2.441960000 GHz



Ref 27 dBm      \*Att 40 dB      \*RBW 100 kHz      Marker 1 [T1]      0.52 dBm  
\*VBW 300 kHz      \*SWT 10 ms      2.455720000 GHz



# INTERTEK TESTING SERVICES

802.11n (HT-20)

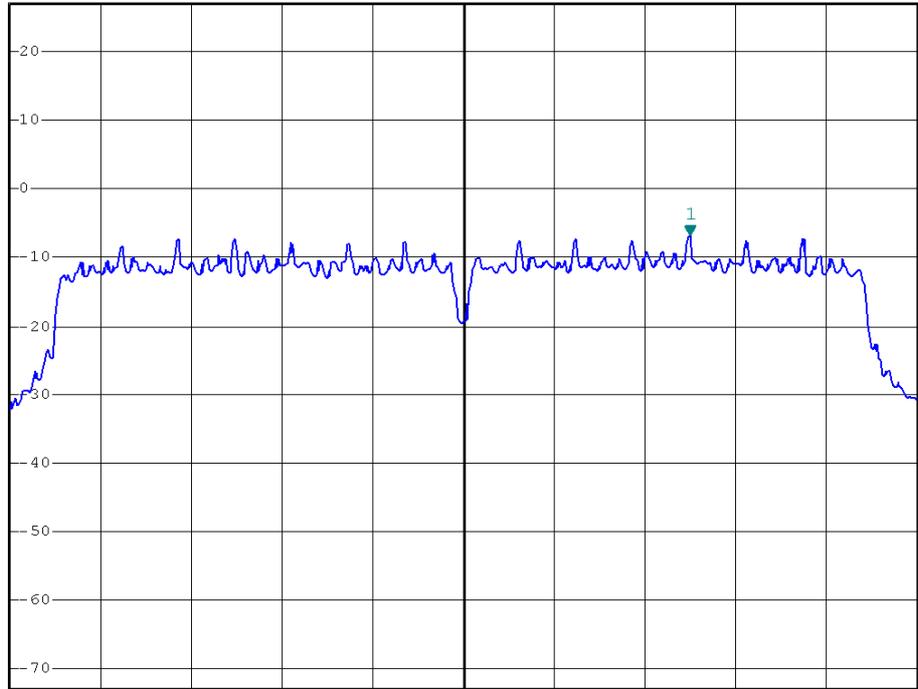


\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -6.84 dBm  
\*SWT 10 ms 2.417000000 GHz

Ref 27 dBm

\*Att 40 dB

1 PK  
MAXH



Center 2.412 GHz

2 MHz/

Span 20 MHz

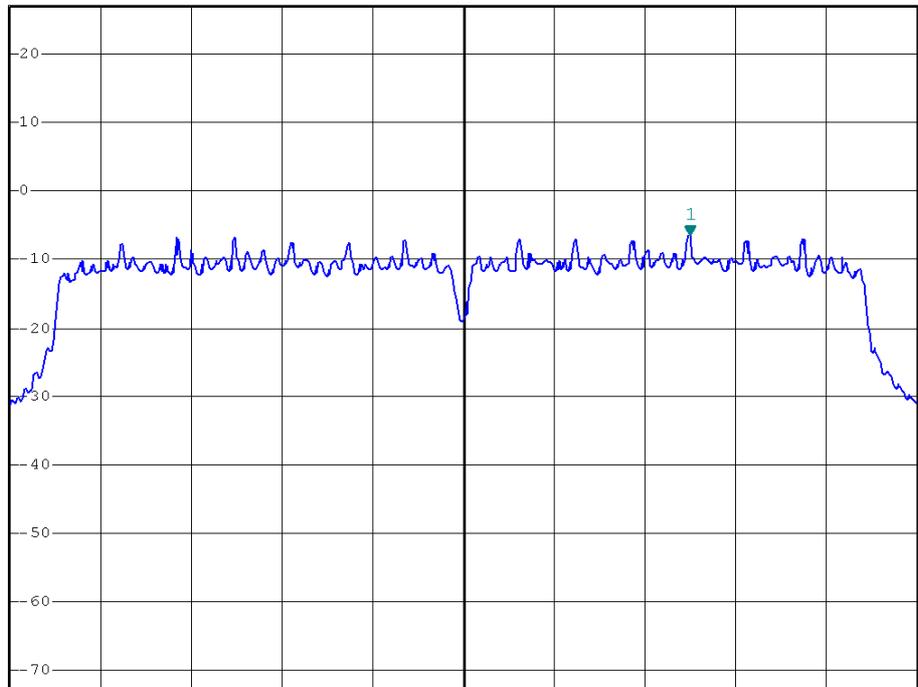


\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -6.50 dBm  
\*SWT 10 ms 2.442000000 GHz

Ref 27 dBm

\*Att 40 dB

1 PK  
MAXH



Center 2.437 GHz

2 MHz/

Span 20 MHz

TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

# INTERTEK TESTING SERVICES

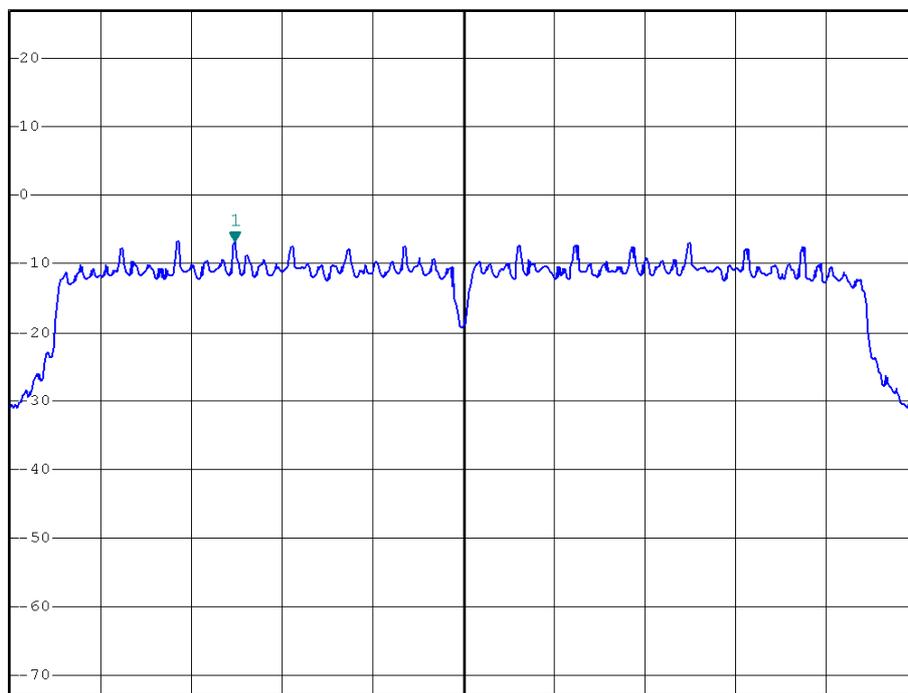


\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -6.82 dBm  
\*SWT 10 ms 2.456960000 GHz

Ref 27 dBm

\*Att 40 dB

1 PK  
MAXH



Center 2.462 GHz

2 MHz/

Span 20 MHz

## INTERTEK TESTING SERVICES

---

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7

#### 4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

In any 100 kHz bandwidth outside the EUT passband, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20dB below that of the maximum in-band 100 kHz emission, or else shall meet the general limits for radiated emissions at frequencies outside the passband, whichever results in lower attenuation. The Measurement Procedure was set according to the FCC KDB 558074.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

Refer to the attached test plot for out of band conducted emissions data with rate of 1Mbps for 802.11b, 6Mbps for 802.11g and 7.2Mbps for 802.11n HT20.

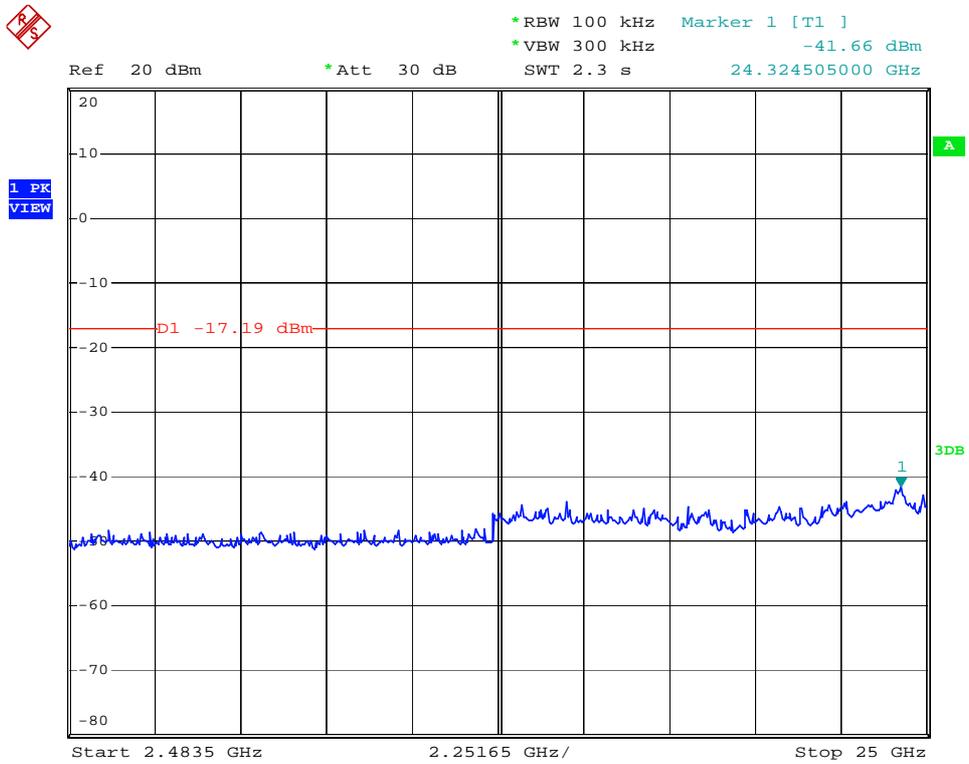
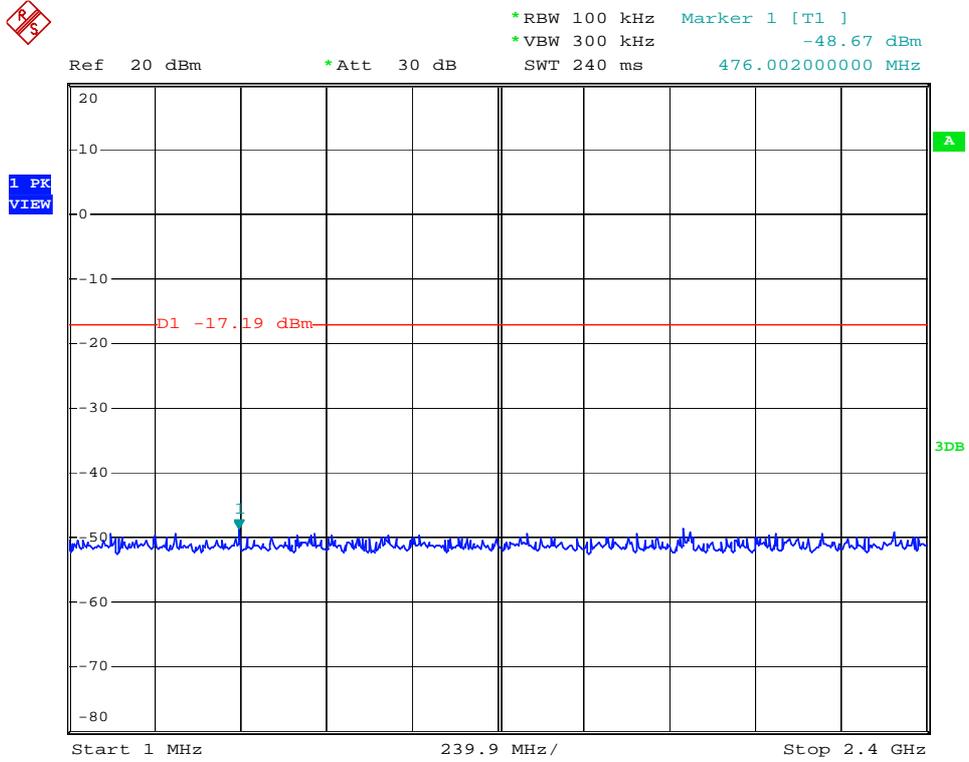
The test plots showed all spurious emission and up to the tenth harmonic was measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

# INTERTEK TESTING SERVICES

802.11b

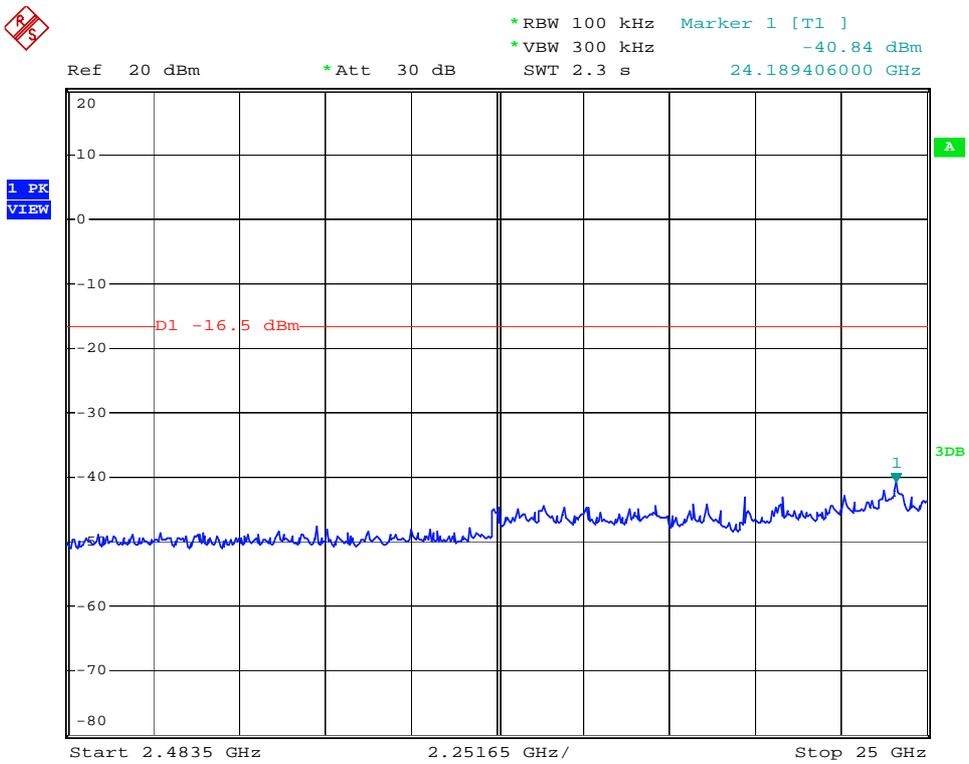
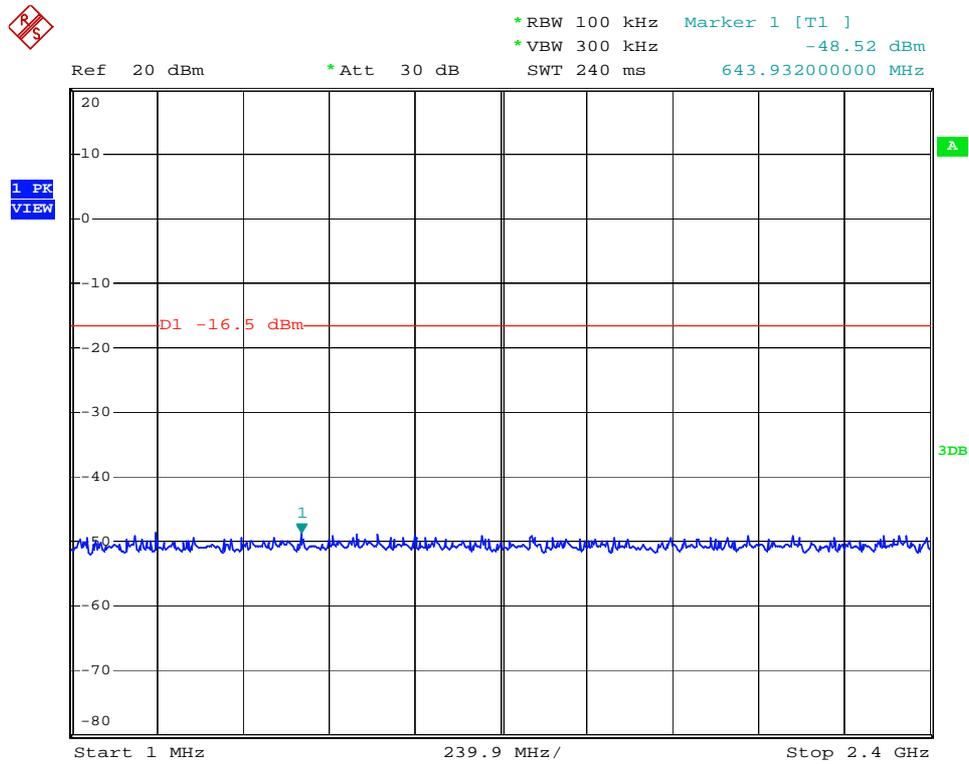
Channel 1 (2412MHz) Reference Level: 2.81dBm



TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

# INTERTEK TESTING SERVICES

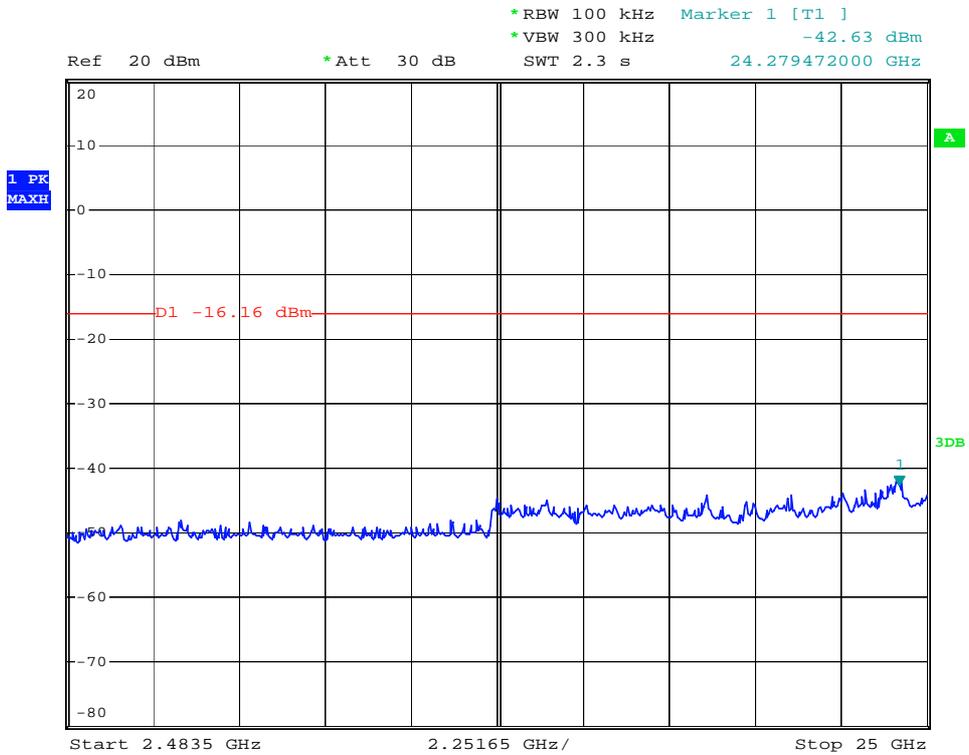
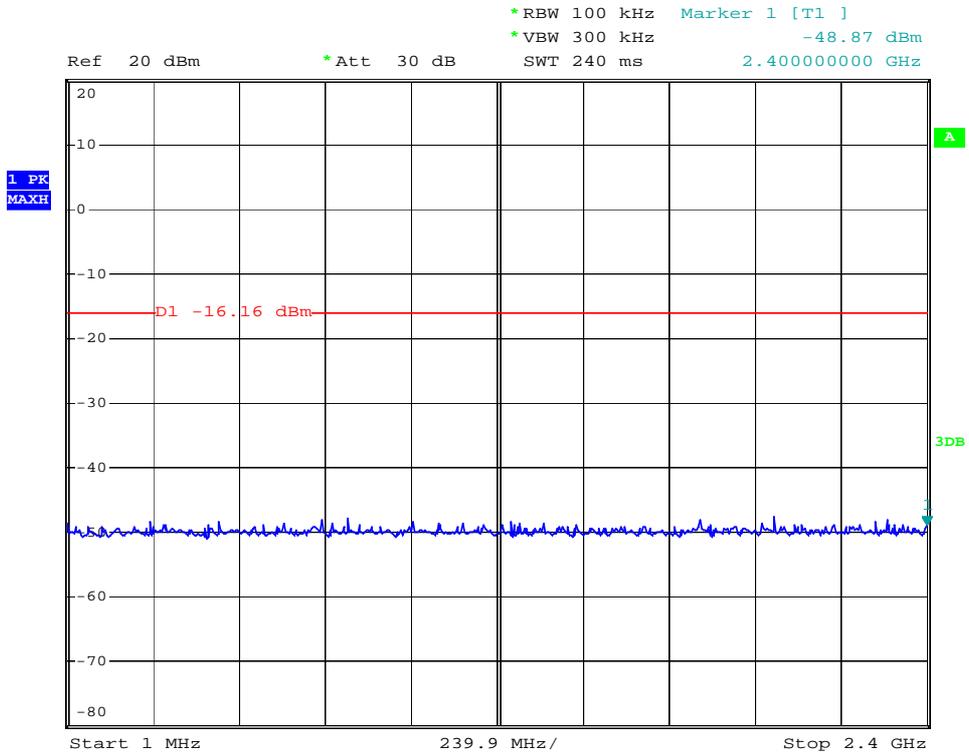
Channel 6 (2437MHz) Reference Level: 3.50dBm



TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

# INTERTEK TESTING SERVICES

Channel 11 (2462MHz) Reference Level: 3.84dBm

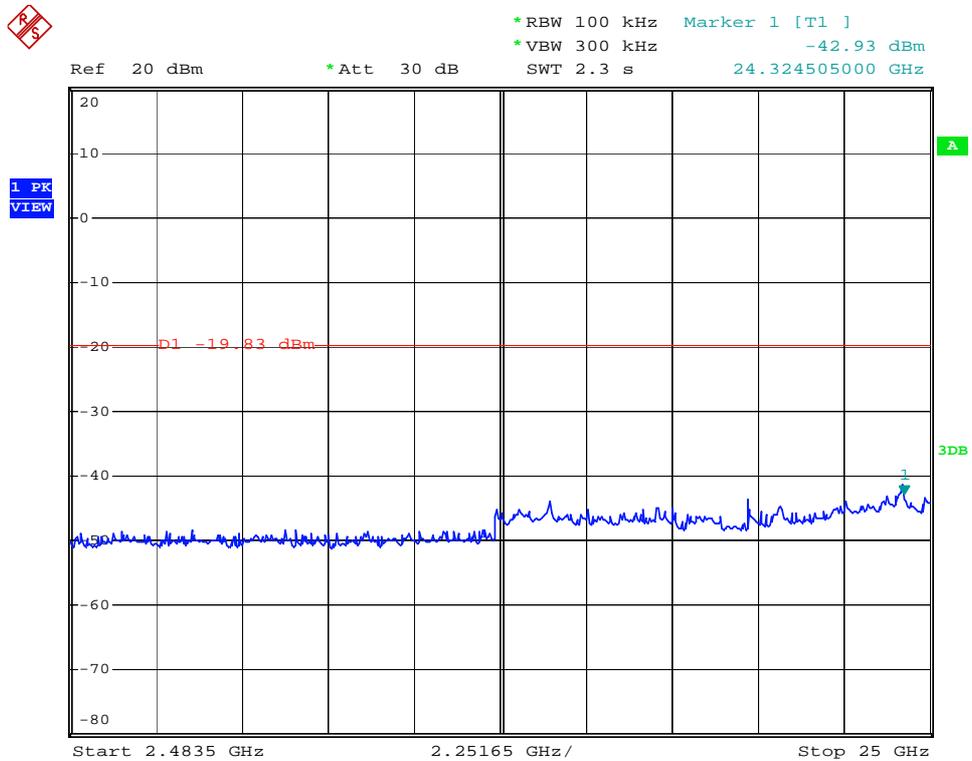
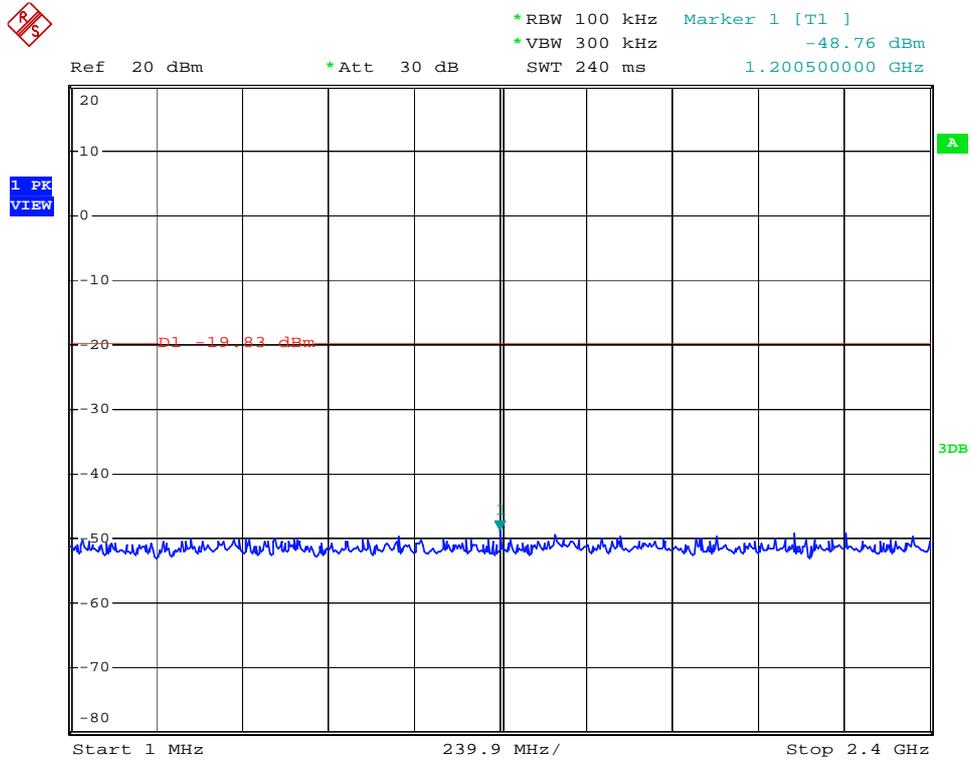


TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

# INTERTEK TESTING SERVICES

802.11g

Channel 1 (2412MHz) Reference Level: 0.17dBm



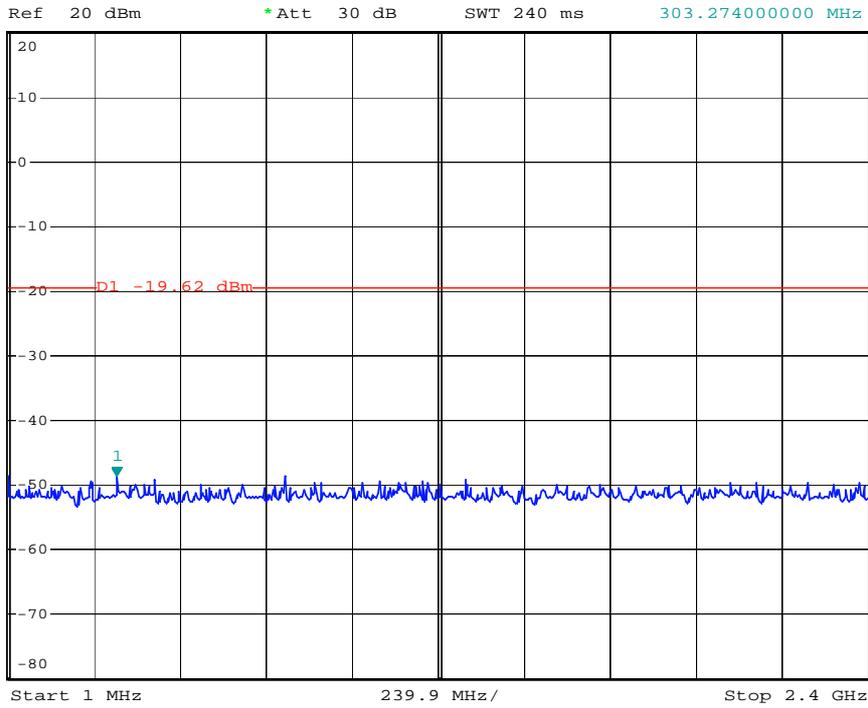
TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

# INTERTEK TESTING SERVICES

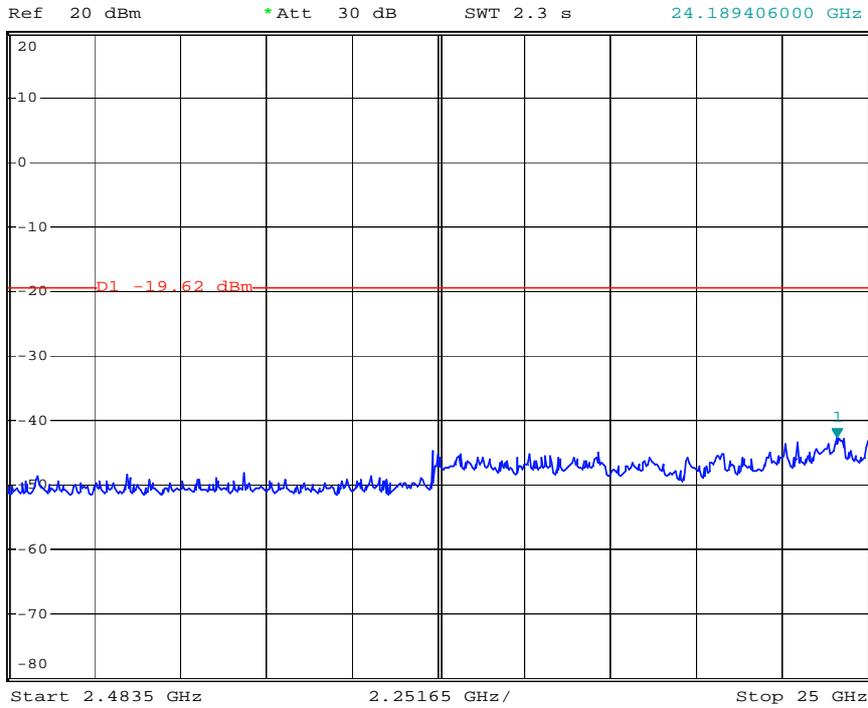
Channel 6 (2437MHz) Reference Level: 0.38dBm



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -48.60 dBm  
SWT 240 ms 303.27400000 MHz



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -42.72 dBm  
SWT 2.3 s 24.189406000 GHz



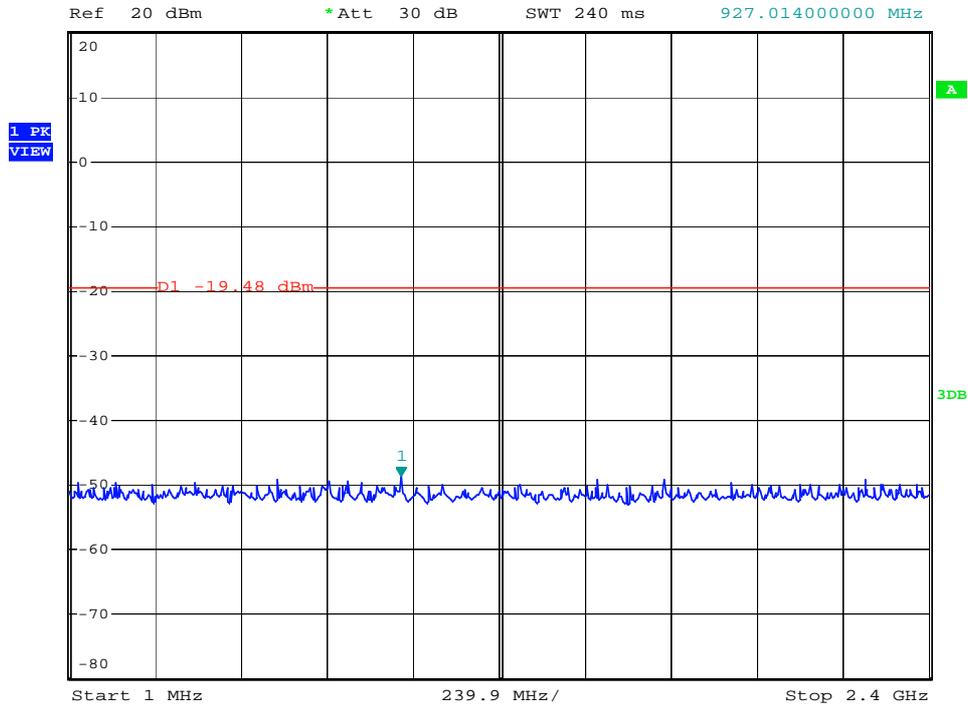
TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

# INTERTEK TESTING SERVICES

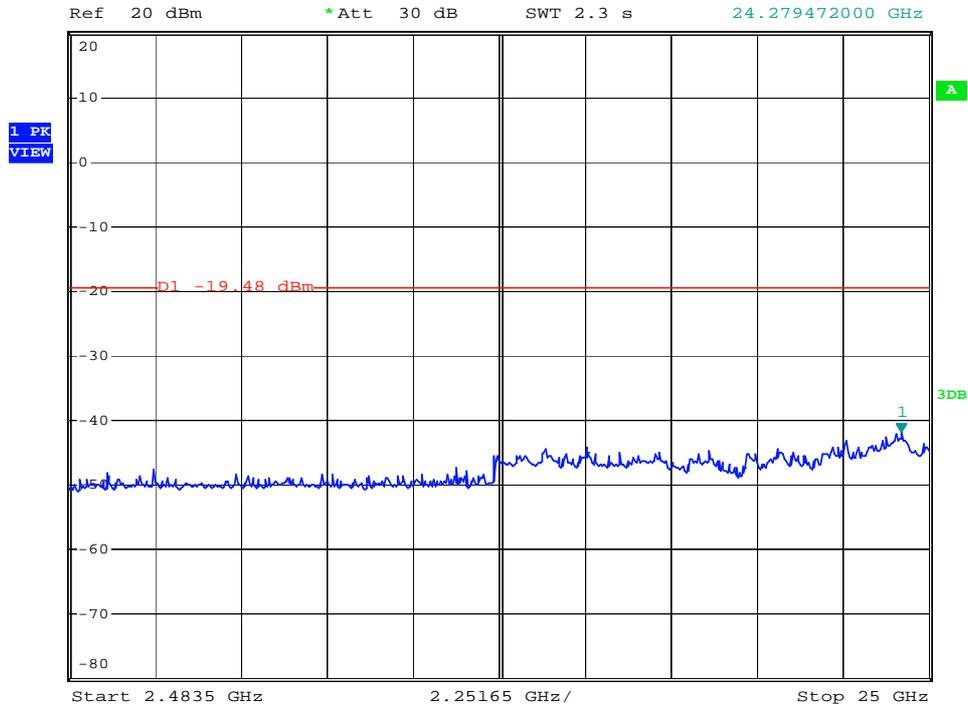
Channel 11 (2462MHz) Reference Level: 0.52dBm



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -48.59 dBm  
SWT 240 ms 927.01400000 MHz



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -41.82 dBm  
SWT 2.3 s 24.279472000 GHz



TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

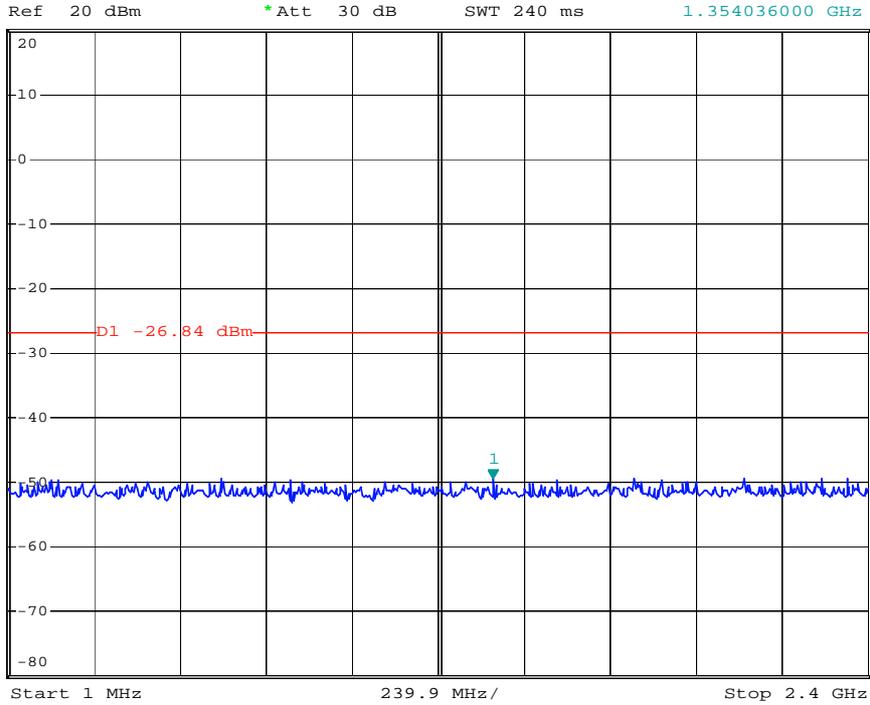
# INTERTEK TESTING SERVICES

802.11n (HT-20)

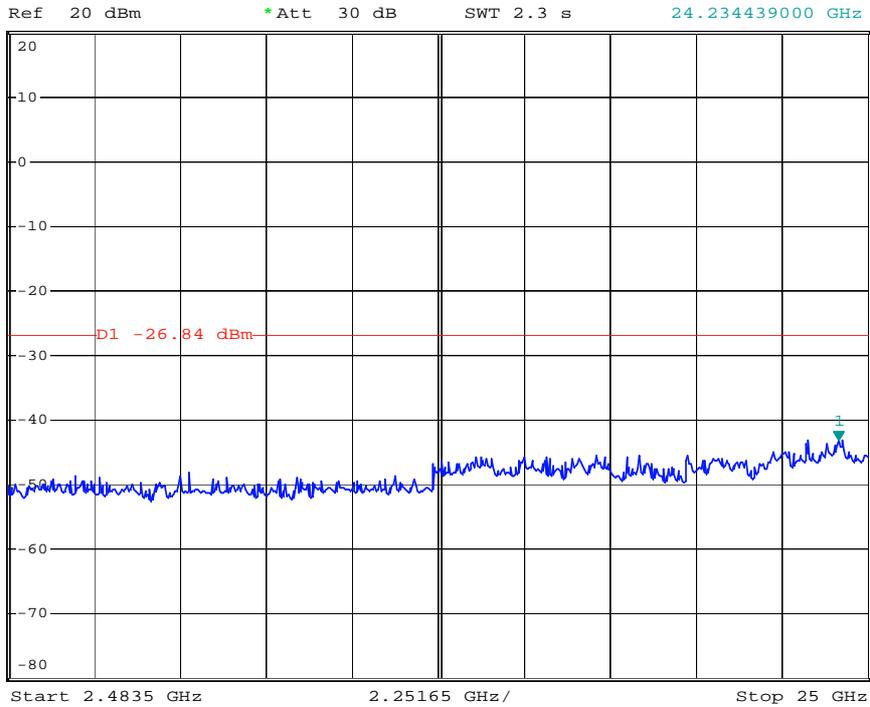
Channel 1 (2412MHz) Reference Level: -6.84dBm



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -49.40 dBm  
SWT 240 ms 1.354036000 GHz



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -43.07 dBm  
SWT 2.3 s 24.234439000 GHz



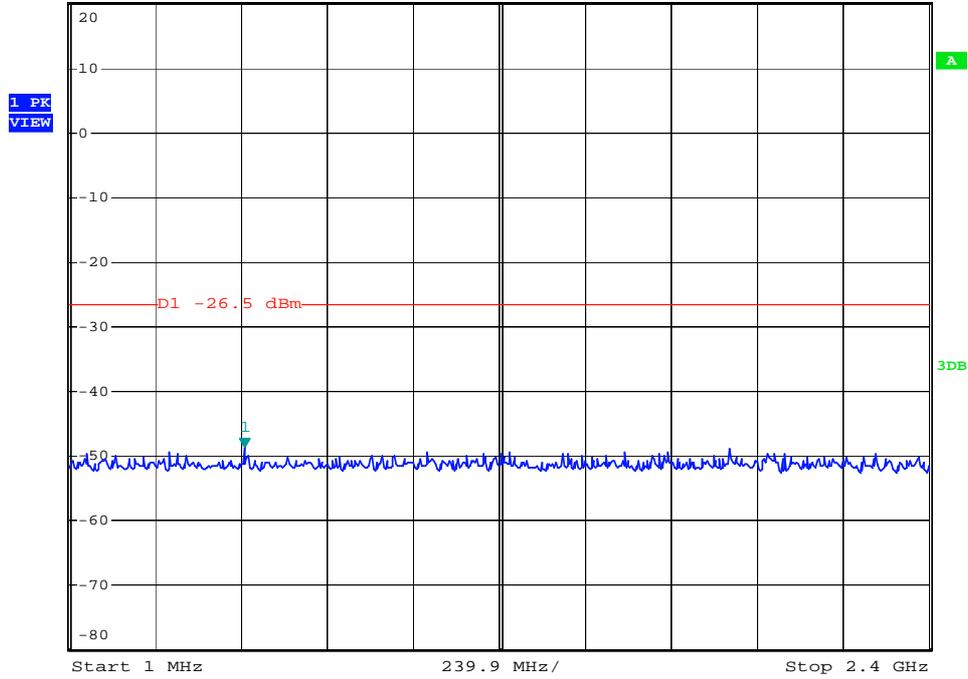
# INTERTEK TESTING SERVICES

Channel 6 (2437MHz) Reference Level: -6.50dBm



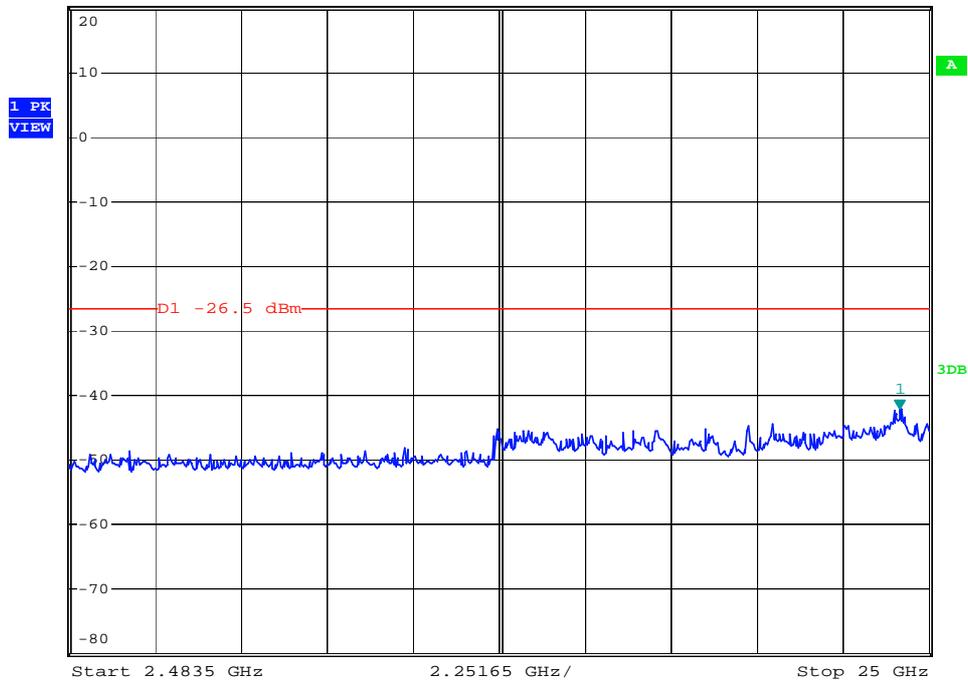
\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -48.65 dBm  
SWT 240 ms 490.396000000 MHz

Ref 20 dBm \*Att 30 dB



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -41.99 dBm  
SWT 2.3 s 24.234439000 GHz

Ref 20 dBm \*Att 30 dB



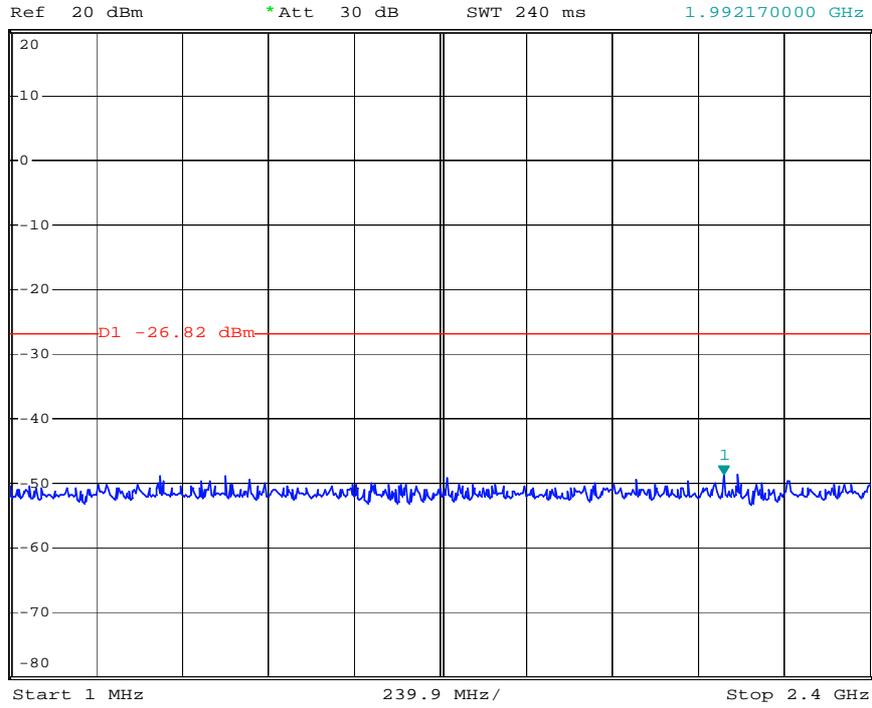
TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

# INTERTEK TESTING SERVICES

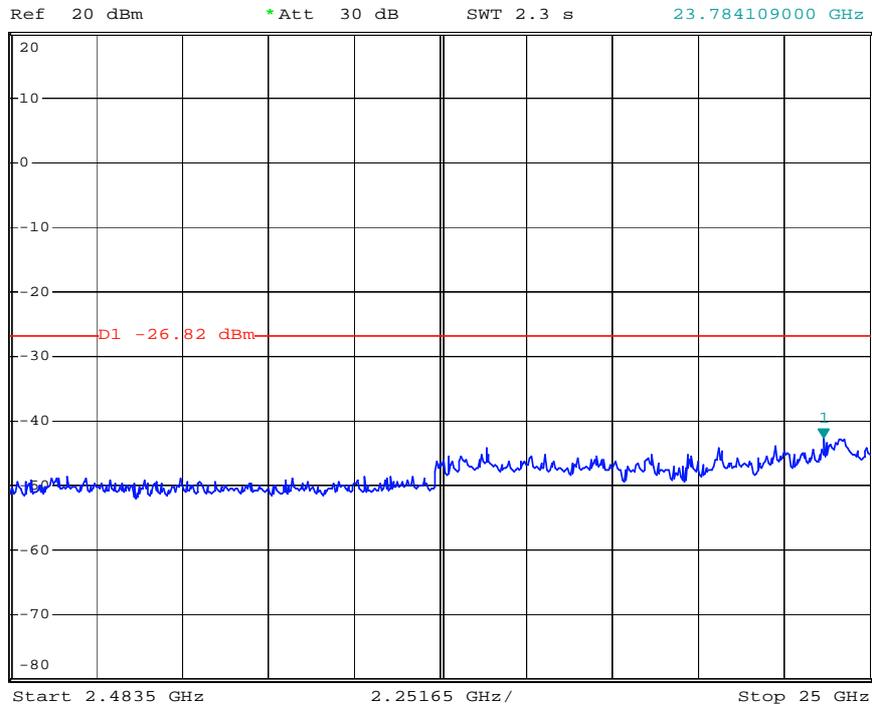
Channel 11 (2462MHz) Reference Level: -6.82dBm



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -48.55 dBm  
SWT 240 ms 1.992170000 GHz



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -42.62 dBm  
SWT 2.3 s 23.784109000 GHz



TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

## INTERTEK TESTING SERVICES

---

Applicant: Huawei Technologies Co.,Ltd.

Date of Test: 7 June, 2012

Model: HUAWEI U8186-7/U8186-7

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

- Not required, since all emissions are more than 20dB below fundamental  
 See attached data sheet

## INTERTEK TESTING SERVICES

---

Applicant: Huawei Technologies Co.,Ltd

Date of Test: 7 June, 2012

Model: HUAWEI U8186-7/U8186-7

### 4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance. The simultaneous transmission has been considered when perform spurious radiation test.

## INTERTEK TESTING SERVICES

---

Applicant: Huawei Technologies Co.,Ltd

Date of Test: 7 June, 2012

Model: HUAWEI U8186-7/U8186-7

### 4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD$$

Where

- FS = Field Strength in dB $\mu$ V/m
- RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V
- CF = Cable Attenuation Factor in dB
- AF = Antenna Factor in dB
- AG = Amplifier Gain in dB
- PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD$$

#### Example

Assume a receiver reading of 62.0 dB $\mu$ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 32 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

$$RA = 62.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$PD = 0 \text{ dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 \text{ dB}\mu\text{V/m}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(42 \text{ dB}\mu\text{V/m})/20] = 125.9 \mu\text{V/m}$$

## INTERTEK TESTING SERVICES

---

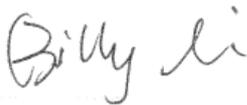
Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7

### 4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission (802.11b) at 7386.000MHz is passed by 0.3 dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

### **TEST PERSONNEL:**



---

*Signature*

Billy Li, Team Leader  
*Typed/Printed Name*

7 June, 2012  
*Date*

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Worst Case Operating Mode: Transmit

Table 1

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	88.220	24.2	20.0	7.7	11.9	43.5	-31.6
Horizontal	173.560	23.8	20.0	10.2	14.0	43.5	-29.5
Horizontal	302.570	24.2	20.0	15.5	19.7	46.0	-26.3
Vertical	33.860	30.4	20.0	16.2	26.6	40.0	-13.4
Vertical	41.640	28.7	20.0	11.9	20.6	40.0	-19.4
Vertical	82.865	30.0	20.0	6.8	16.8	40.0	-23.2

- NOTES:
1. Quasi-Peak detector is used except for others stated.
  2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
  3. Negative value in the margin column shows emission below limit.
  4. All emissions are below the QP limit.

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Mode: 802.11b (TX-Channel 01)

Table 2  
**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	*4824.000	50.1	36.1	34.1	48.1	54.0	-5.9
Horizontal	*2389.496	53.1	36.7	27.2	43.6	54.0	-10.4

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Mode: 802.11b (TX-Channel 06)

Table 3  
**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	*4874.000	49.4	36.1	34.5	47.8	54.0	-6.2
Horizontal	*7311.000	51.3	35.6	37.1	52.8	54.0	-1.2

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

\* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Mode: 802.11b (TX-Channel 11)

Table 4  
**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	*4924.000	49.3	36.1	34.7	47.9	54.0	-6.1
Horizontal	*7386.000	52.1	35.6	37.2	53.7	54.0	-0.3
Horizontal	*2483.525	53.6	36.7	27.7	44.6	54.0	-9.4

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Mode: 802.11g (TX-Channel 01)

Table 5  
**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	*4824.000	50.8	36.1	34.1	48.8	54.0	-5.2
Horizontal	*2389.470	53.1	36.7	27.2	43.6	54.0	-10.4

- NOTES:
1. Peak detector is used for the emission measurement.
  2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
  3. Negative value in the margin column shows emission below limit.
  4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Mode: 802.11g (TX-Channel 06)

Table 6  
**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	*4874.000	49.4	36.1	34.5	47.8	54.0	-6.2
Horizontal	*7311.000	51.5	35.6	37.1	53.0	54.0	-1.0

- NOTES:
1. Peak detector is used for the emission measurement.
  2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
  3. Negative value in the margin column shows emission below limit.
  4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Mode: 802.11g (TX-Channel 11)

Table 7  
**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	*4924.000	49.9	36.1	34.7	48.5	54.0	-5.5
Horizontal	*7386.000	52.0	35.6	37.2	53.6	54.0	-0.4
Horizontal	*2483.524	53.0	36.7	27.7	44.0	54.0	-10.0

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Mode: 802.11n-20M (TX-Channel 01)

Table 8  
**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	*4824.000	50.0	36.1	34.1	48.0	54.0	-6.0
Horizontal	*2389.685	53.2	36.7	27.2	43.7	54.0	-10.3

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Mode: 802.11n-20M (TX-Channel 06)

Table 9  
**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	*4874.000	48.8	36.1	34.5	47.2	54.0	-6.8
Horizontal	*7311.000	51.4	35.6	37.1	52.9	54.0	-1.1

- NOTES:
1. Peak detector is used for the emission measurement.
  2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
  3. Negative value in the margin column shows emission below limit.
  4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

## INTERTEK TESTING SERVICES

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7  
Mode: 802.11n-20M (TX-Channel 11)

Table 10  
**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	*4924.000	49.2	36.1	34.7	47.8	54.0	-6.2
Horizontal	*7386.000	52.0	35.6	37.2	53.6	54.0	-0.4
Horizontal	*2483.521	53.5	36.7	27.7	44.5	54.0	-9.5

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.
- \*\* Fundamental emissions were measured for determining band-edge compliance of using delta measurements technique.

## INTERTEK TESTING SERVICES

---

### 4.9 Conducted Emission

Worst Case Line-Conducted emission at 0.534MHz is Passed by 12.4 dB margin

For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

#### **TEST PERSONNEL:**



---

*Signature*

Billy Li, Team Leader  
*Typed/Printed Name*

7 June, 2012  
*Date*

## INTERTEK TESTING SERVICES

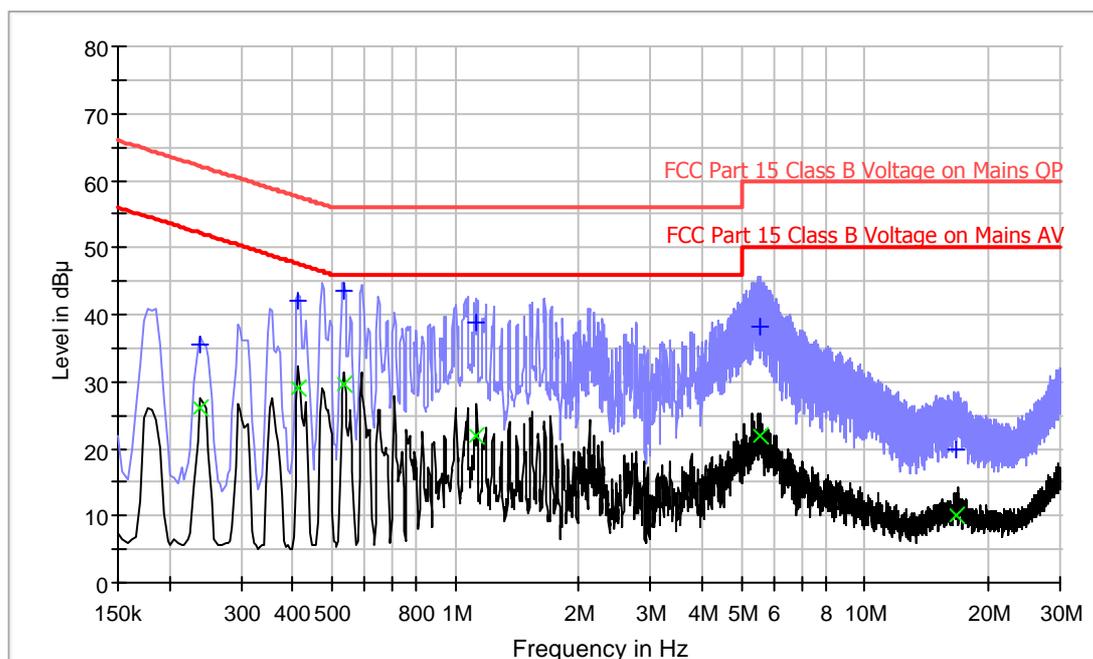
Company: Huawei Technologies Co.,Ltd

Date of Test: 7 June, 2012

Model: HUAWEI U8186-7/U8186-7

Worst Case Operating Mode: Transmit (802.11n-20M 2437MHz)

### Conducted Emission Test - FCC



#### Result Table-QP

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.238000	35.7	L1	9.6	26.5	62.2
0.414000	42.1	L1	9.6	15.5	57.6
0.534000	43.6	L1	9.6	12.4	56.0
1.126000	38.9	L1	9.7	17.1	56.0
5.538000	38.3	L1	9.8	21.7	60.0
16.650000	19.8	L1	10.4	40.2	60.0

#### Result Table-AV

Frequency (MHz)	Average (dB $\mu$ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.238000	26.0	L1	9.6	26.2	52.2
0.414000	29.1	L1	9.6	18.5	47.6
0.534000	29.7	L1	9.6	16.3	46.0
1.126000	21.9	L1	9.7	24.1	46.0
5.538000	21.8	L1	9.8	28.2	50.0
16.650000	10.0	L1	10.4	40.0	50.0

TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

## INTERTEK TESTING SERVICES

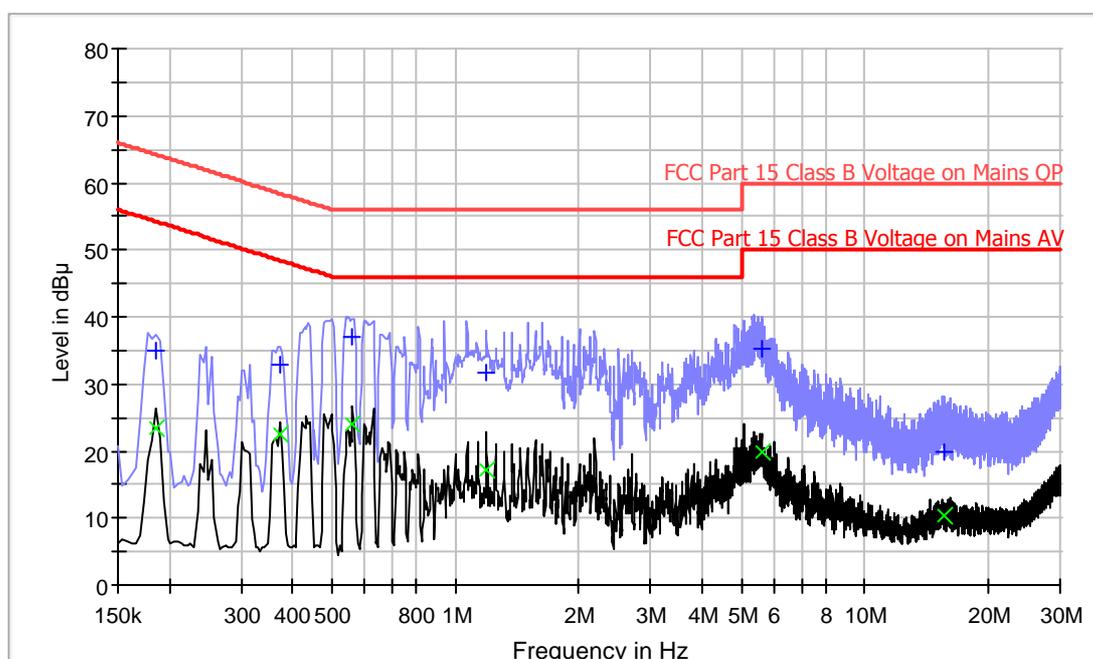
Company: Huawei Technologies Co.,Ltd

Date of Test: 7 June, 2012

Model: HUAWEI U8186-7/U8186-7

Worst Case Operating Mode: Transmit (802.11n-20M 2437MHz)

### Conducted Emission Test - FCC



### Result Table-QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.186000	34.8	N	9.6	29.4	64.2
0.374000	33.0	N	9.6	25.4	58.4
0.562000	37.2	N	9.6	18.8	56.0
1.190000	31.8	N	9.8	24.2	56.0
5.582000	35.1	N	9.8	24.9	60.0
15.658000	20.0	N	10.3	40.0	60.0

### Result Table-AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.186000	23.3	N	9.6	30.9	54.2
0.374000	22.4	N	9.6	26.0	48.4
0.562000	24.1	N	9.6	21.9	46.0
1.190000	17.1	N	9.8	28.9	46.0
5.582000	19.8	N	9.8	30.2	50.0
15.658000	10.4	N	10.3	39.6	50.0

TRF No.: FCC 15C\_TX\_b  
FCC ID: QISU8186-7

## INTERTEK TESTING SERVICES

---

Applicant: Huawei Technologies Co.,Ltd

Date of Test: 7 June, 2012

Model: HUAWEI U8186-7/U8186-7

4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

Not required - No digital part

Test results are attached

Included in the separated report.

## INTERTEK TESTING SERVICES

---

Applicant: Huawei Technologies Co.,Ltd  
Date of Test: 7 June, 2012  
Model: HUAWEI U8186-7/U8186-7

### 4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for Transmitter timing
	See Transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 5**

**EQUIPMENT PHOTOGRAPHS**

## INTERTEK TESTING SERVICES

---

### 5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.doc & internal photos.pdf.

# **INTERTEK TESTING SERVICES**

---

## **EXHIBIT 6**

### **PRODUCT LABELLING**

## INTERTEK TESTING SERVICES

---

### 6.0 Product Labelling

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 7**  
**TECHNICAL SPECIFICATIONS**

## INTERTEK TESTING SERVICES

---

### 7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 8**

**INSTRUCTION MANUAL**

## INTERTEK TESTING SERVICES

---

### 8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 9**

**MISCELLANEOUS INFORMATION**

### 9.0 **Discussion of Pulse Desensitization**

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF*.

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 10**

**TEST EQUIPMENT LIST**

## INTERTEK TESTING SERVICES

### 10.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	02-Jul-11	02-Jan-13
SZ185-01	EMI Receiver	R&S	ESCI	100547	11-Mar-12	11-Mar-13
SZ061-08	Horn Antenna	ETS	3115	00092346	15-Oct-11	15-Oct-12
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	11-Mar-12	11-Mar-13
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	11-Mar-12	11-Mar-13
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	11-Mar-12	11-Mar-13
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	03-Mar-12	03-Mar-13
SZ062-02	RF Cable	RADIALL	RG 213U	--	17-Mar-12	17-Sep-12
SZ062-06	RF Cable	RADIALL	0.04-26.5GHz	--	01-Nov-11	01-Nov-12
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	25-Feb-12	25-Aug-12
SZ067-04	Notch Filter	Micro-Tronics	BRM5070 2-02	--	15-Jul-11	15-Jul-12
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	05-Nov-11	05-Nov-12
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	05-Nov-11	05-Nov-12
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	05-Nov-11	05-Nov-12
SZ188-03	Shielding Room	ETS	RFD-100	4100	16-Sep-10	16-Sep-13