## TEST REPORT

FCC ID: 2AMY3-ACERT8129L Product: Tablet PC Model No.: Acer One 10 T8-129L Additional Model No.: Acer\_One\_10\_T8-129L Trade Mark: Acer Report No.: TCT200622E066 Issued Date: Jul. 28, 2020

Issued for:

Acer India Pvt Ltd. Embassy Heights 6th Floor, No.13, Magrath Road, (Next to Hosmat Hospital) Bangalore, 560025 India

Issued By:

Shenzhen Tongce Testing Lab. 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China TEL: +86-755-27673339

FAX: +86-755-27673332

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## TCT通测检测 1. Test Certification

Report No.: TCT200622E066

Product:	Tablet PC
Model No.:	Acer One 10 T8-129L
Additional Model No.:	Acer_One_10_T8-129L
Trade Mark:	Acer
Applicant:	Acer India Pvt Ltd.
Address:	Embassy Heights 6th Floor, No.13, Magrath Road, (Next to Hosmat Hospital) Bangalore, 560025 India
Manufacturer:	HUNAN GREATWALL COMPUTER SYSTEM CO., LTD
Address:	HUNAN GREATWALL INDUSTRIAL PARK, TIANYI SCIENCE AND TECHNOLOGY CITY, XIANGYUN MIDDLE ROAD, TIANYUAN DISTRICT, ZHUZHOU, HUNAN PROVINCE, CHINA
Date of Test:	Jun. 23, 2020 – Jul. 27, 2020
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247 FCC KDB 558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10:2013

The above equipment has been tested by Shenzhen Tongce Testing Lab. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:	Brens Xu	Date:	Jul. 27, 2020
	Brews Xu	—	
Reviewed By:	Beny That	Date:	Jul. 28, 2020
	Beryl Zhao		
Approved By:	Tomsin	Date:	Jul. 28, 2020
$\langle \mathcal{C} \rangle$	Tomsin	_	$\langle \mathcal{O} \rangle$

## 2. Test Result Summary

Report No.: TC	T200622E066
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Requirement	CFR 47 Section	Result	No.
Antenna requirement	§15.203/§15.247 (c)	PASS	
AC Power Line Conducted Emission	§15.207	PASS	
Conducted Peak Output Power	§15.247 (b)(3)	PASS	
6dB Emission Bandwidth	§15.247 (a)(2)	PASS	
Power Spectral Density	§15.247 (e)	PASS	
Band Edge	§15.247(d)	PASS	
Spurious Emission	§15.205/§15.209	PASS	

#### Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

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## 3. EUT Description

Product:	Tablet PC
Model No.:	Acer One 10 T8-129L
Additional Model No.:	Acer_One_10_T8-129L
Trade Mark:	Acer
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)) 2422MHz~2452MHz (802.11n(HT40))
Channel Separation:	5MHz
Number of Channel:	11 for 802.11b/802.11g/802.11n(HT20) 7 for 802.11n(HT40)
Modulation Technology (IEEE 802.11b):	Direct Sequence Spread Spectrum (DSSS)
Modulation Technology (IEEE 802.11g/802.11n):	Orthogonal Frequency Division Multiplexing(OFDM)
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Data speed (IEEE 802.11n):	Up to 150Mbps
Antenna Type:	PIFA Antenna
Antenna Gain:	1.5dBi
Power Supply:	Rechargeable Li-ion Battery DC 7.4V
AC adapter:	Adapter Information: MODEL: JK050200-S37USVU INPUT: AC 100-240V, 50/60Hz, 0.5A OUTPUT: DC 5.0V, 2.0A, 10.0W
Remark:	All models above are identical in interior structure, electrical circuits and components, just model names and memory chip models are different for the marketing requirement.

**Note:** The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

## 

Report No.: TCT200622E066

### **Operation Frequency each of channel For 802.11b/g/n(HT20)**

С	hannel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
	1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
	2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
	3	2422MHz	6	2437MHz	9	2452MHz		

## **Operation Frequency each of channel For 802.11n (HT40)**

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
	-	4	2427MHz	7	2442MHz		
	-(.6	5	2432MHz	8	2447MHz	$(\mathbf{G})$	
3	2422MHz	6	2437MHz	9	2452MHz		

#### Note:

In section 15.31(*m*), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

#### 802.11b/802.11g/802.11n (HT20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The Highest channel	2462MHz

### 802.11n (HT40)

Channel	Frequency
The lowest channel	2422MHz
The middle channel	2437MHz
The Highest channel	2452MHz

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## 4. General Information

## 4.1. Test environment and mode

Operating Environment:
------------------------

Condition	Conducted Emission	Radiated Emission	
Temperature:	25.0 °C	25.0 °C	
Humidity:	55 % RH	55 % RH	
Atmospheric Pressure:	1010 mbar	1010 mbar	

### Test Mode:

Engineering mode: Keep the EUT in continuous transmitting by select channel and modulations with Fully-charged battery

The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case(Z axis) are shown in Test Results of the following pages.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	6.5Mbps
802.11n(H40)	13.5Mbps

## **Final Test Mode:**

Operation mode:	Keep the EUT in continuous transmitting
	with modulation

1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

2.According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup" 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20), 13.5Mbps for 802.11n(H40). Duty cycle setting during the transmission is 98.46% with maximum power setting for all modulations.

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## 「CT通测检测 4.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
			/	

#### Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
- 3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

## 5. Facilities and Accreditations

## 5.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

• FCC - Registration No.: 645098 Shenzhen Tongce Testing Lab.

The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

 IC - Registration No.: 10668A-1 The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

## 5.2. Location

Shenzhen Tongce Testing Lab.

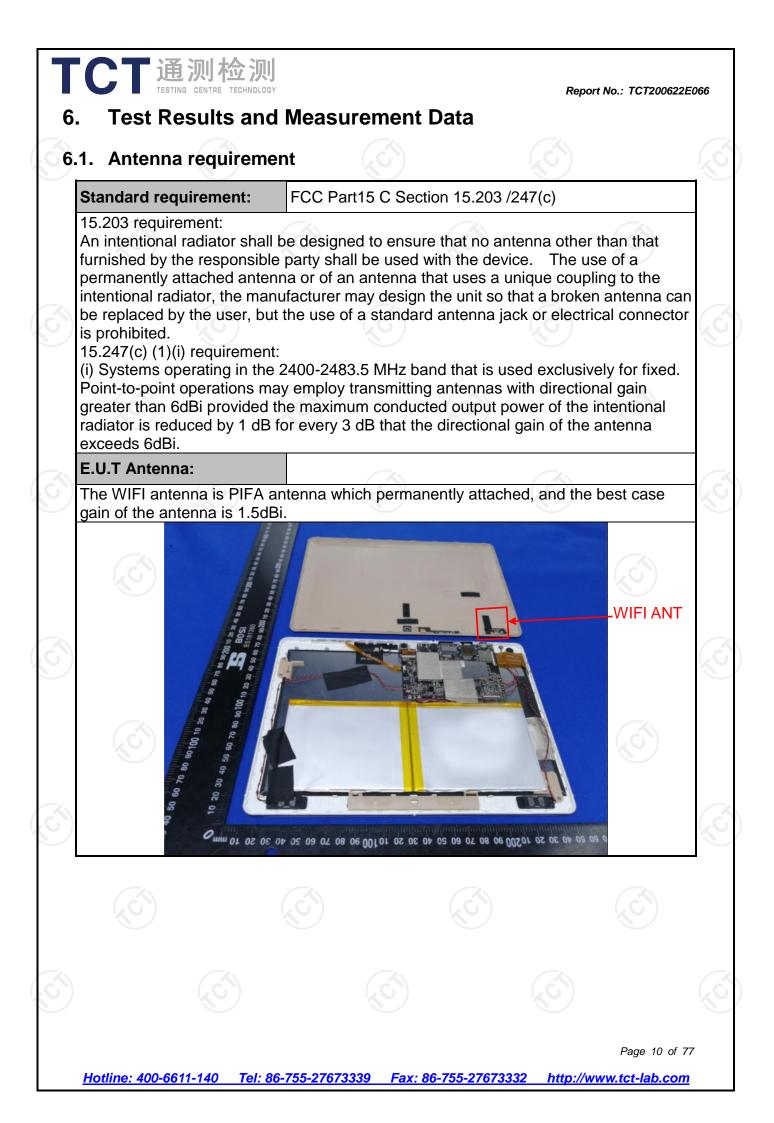
Address: 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China

TEL: +86-755-27673339

## 5.3. Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

oonna			_
No.	Item	MU	
1	Conducted Emission	±2.56dB	6
2	RF power, conducted	±0.12dB	
3	Spurious emissions, conducted	±0.11dB	
4	All emissions, radiated(<1G)	±3.92dB	
5	All emissions, radiated(>1G)	±4.28dB	
6	Temperature	±0.1°C	
7	Humidity	±1.0%	



.1. Test Specification			
Test Requirement:	FCC Part15 C Section	15.207	
Test Method:	ANSI C63.10:2013		
Frequency Range:	150 kHz to 30 MHz		
Receiver setup:	RBW=9 kHz, VBW=30	kHz, Sweep time	=auto
Limits:	Frequency range (MHz) 0.15-0.5 0.5-5 5-30	Limit (c Quasi-peak 66 to 56* 56 60	dBuV) Average 56 to 46* 46 50
Test Setup:	E.U.T AC power		— AC power
	Test table/Insulation plane Remarkc E.U.T: Equipment Under Test LISN: Line Impedence Stabilization Ne Test table height=0.8m	Receiver	
Test Mode:	Remarkc E.U.T: Equipment Under Test LISN: Line Impedence Stabilization Ne	etwork	
Test Mode: Test Procedure:	Remark: E.U.T: Equipment Under Test LISN: Line Impedence Stabilization Ne Test table height=0.8m	g with modulation cted to the main p bilization network 50uH coupling im nt. ces are also conner SN that provides with 50ohm term diagram of the line are checken ce. In order to fir e positions of equi-	(L.I.S.N.). This pedance for the ected to the main a 500hm/50uH hination. (Please test setup and d for maximum hd the maximum ipment and all of ed according to

## 6.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Test Receiver	R&S	ESPI	101402	Jul. 29, 2020
LISN	Schwarzbeck	NSLK 8126	8126453	Sep. 11, 2020
Coax cable (9KHz-30MHz)	тст	CE-05	N/A	Sep. 08, 2020
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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**CT**通测检》 TESTING CENTRE TECHNOLOGY Report No.: TCT200622E066 6.2.3. Test data Please refer to following diagram for individual Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz) dBu¥ 80.0 70 Conduction(QF 60 (AV6 50 White the state of MAM 40 peal 30 20 AVG 10 0.0 0.800 5.000 0.150 0.500 (MHz) 30.000 25 (C) Site L1 Temperature: Phase: Humidity: 55 %RH Limit: FCC Part 15C Conduction(QP) Power: Reading Correct Measure-No. Mk. Limit Over Freq. Level Factor ment MHz dBuV dB dBuV dBuV dB Detector Comment 0.1660 42.23 10.12 52.35 65.16 -12.81 QP 1 0.1660 28.20 10.12 38.32 55.16 -16.84 AVG 2 3 0.2060 38.05 10.13 48.18 63.37 -15.19 QP 0.2060 23.98 10.13 34.11 53.37 -19.26 4 AVG 0.2460 35.28 10.13 61.89 -16.48 QP 5 45.41 0.2460 32.28 51.89 -19.61 6 22.15 10.13 AVG QP 7 0.6060 33.23 10.13 43.36 56.00 -12.64

Note:

8

9

10

11

12

Freq. = Emission frequency in MHz

22.50

31.83

15.22

40.82

22.29

Reading level  $(dB\mu V) = Receiver reading$ 

Corr. Factor (dB) = LISN factor + Cable loss

Measurement  $(dB\mu V)$  = Reading level  $(dB\mu V)$  + Corr. Factor (dB)

10.13

10.12

10.12

10.14

10.14

32.63

41.95

25.34

50.96

32.43

 $Limit (dB\mu V) = Limit stated in standard$ 

Margin (dB) = Measurement (dB $\mu$ V) – Limits (dB $\mu$ V) Q.P. =Quasi-Peak

AVG =average

0.6060

1.8580

1.8580

8.7260

8.7260

\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

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Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

46.00 -13.37

56.00 -14.05

46.00 -20.66

60.00 -9.04

50.00 -17.57

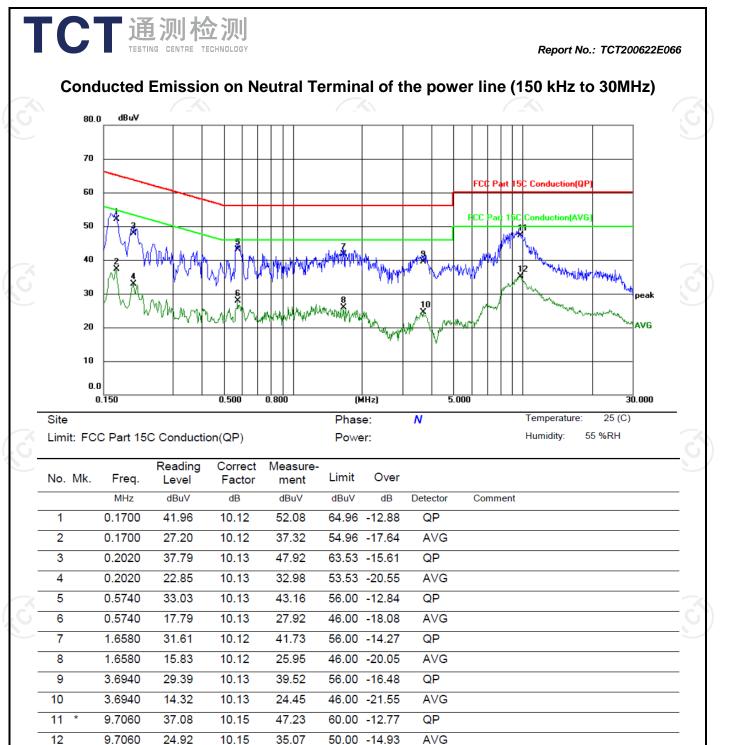
AVG

QP

AVG

QP

AVG



#### Note:

Freq. = Emission frequency in MHz

Reading level ( $dB\mu V$ ) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement  $(dB\mu V) = Reading \, level \, (dB\mu V) + Corr. Factor (dB)$ 

 $Limit (dB\mu V) = Limit stated in standard$ 

Margin (dB) = Measurement (dB $\mu$ V) – Limits (dB $\mu$ V)

Q.P. =Quasi-Peak

AVG =average

\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

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3. Maximum Condu	cted (Average) Output Power
.1. Test Specification	
Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB 558074 D01 v05r02
Limit:	30dBm
Test Setup:	
	Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
	1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss

measurement.

PASS

EUT transmit continuously.

results in the test report.

### 6.3.2. Test Instruments

**Test Result:** 

**Test Procedure:** 

┓ 通知 協加

RF Test Room				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2020
RF Cable (9KHz-26.5GHz)	тст	RE-06	N/A	Sep. 11, 2020
Antenna Connector	TCT	RFC-01	N/A	Sep. 11, 2020

was compensated to the results for each

2. Set to the maximum power setting and enable the

3. Measure the conducted output power and record the

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

	Report No.: TCT200622E0	066
6.4.1. Test Specification		
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)	
Test Method:	KDB 558074 D01 v05r02	
Limit:	>500kHz	
Test Setup:	Spectrum Analyzer EUT	
Test Mode:	Transmitting mode with modulation	
Test Procedure:	<ol> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz.</li> <li>Measure and record the results in the test report.</li> </ol>	
Test Result:	PASS	

### 6.4.2. Test Instruments

RF Test Room				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2020
RF Cable (9KHz-26.5GHz)	тст	RE-06	N/A	Sep. 11, 2020
Antenna Connector	TCT	RFC-01	N/A	Sep. 11, 2020

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



<b>FCT</b> 通测检测 TESTING CENTRE TECHNOLOGY	Report No.: TCT200622E066
6.5. Power Spectral Den	sity
6.5.1. Test Specification	
Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB 558074
Limit:	The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.
Test Setup:	
Test Mode:	Spectrum Analyzer         EUT           Transmitting mode with modulation
Test Procedure:	<ol> <li>The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. Set the span to at least 1.5 times the OBW.</li> <li>Detector = RMS, Sweep time = auto couple.</li> <li>Employ trace averaging (RMS) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level.</li> <li>Measure and record the results in the test report.</li> </ol>
Test Result:	PASS

### 6.5.2. Test Instruments

RF Test Room				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2020
RF Cable (9KHz-26.5GHz)	ТСТ	RE-06	N/A	Sep. 11, 2020
Antenna Connector	ТСТ	RFC-01	N/A	Sep. 11, 2020

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

## 6.6. Conducted Band Edge and Spurious Emission Measurement

6.6.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074
Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).
Test Setup:	
	Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol> <li>The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).</li> <li>Measure and record the results in the test report.</li> <li>The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> </ol>
Test Result:	PASS

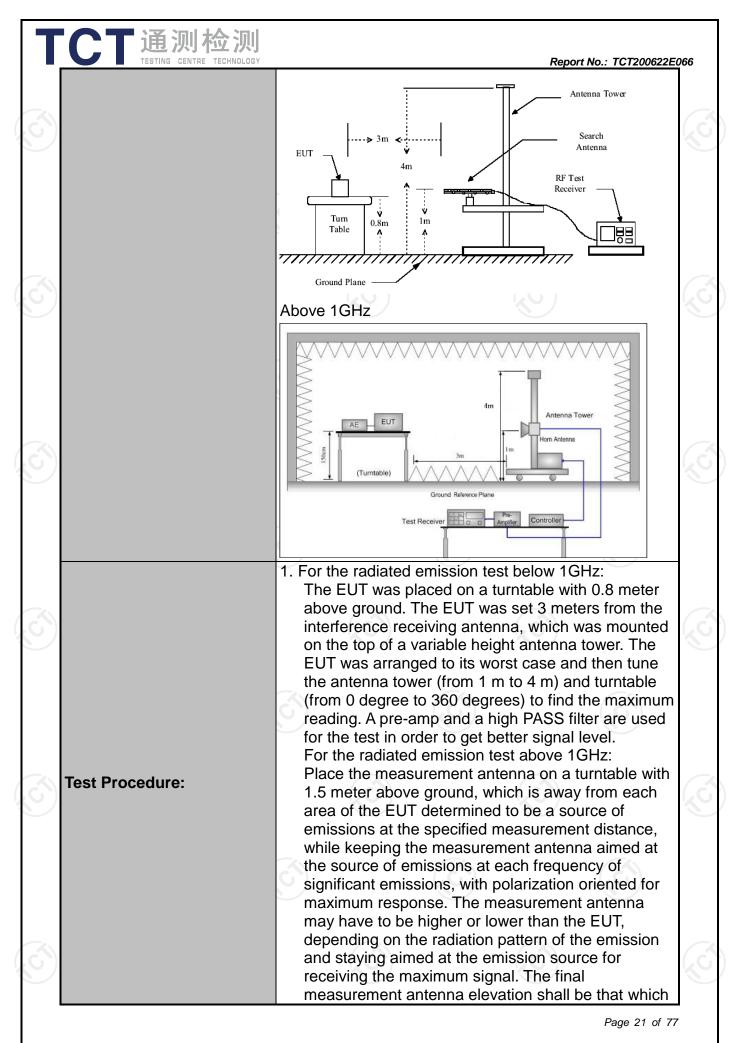
## **RF Test Room** Equipment Manufacturer Model **Serial Number Calibration Due** Sep. 11, 2020 Spectrum Analyzer N9020A MY49100619 Agilent **RF** Cable TCT Sep. 11, 2020 **RE-06** N/A (9KHz-26.5GHz) TCT Antenna Connector **RFC-01** N/A Sep. 11, 2020 Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI). Page 19 of 77

## 6.7. Radiated Spurious Emission Measurement

6.7.1. Test Specification

TCT通测检测 TESTING CENTRE TECHNOLOGY

Test Requirement:	FCC Part15	C Section	15.209			
Test Method:	ANSI C63.10	): 2013				1
Frequency Range:	9 kHz to 25 (	GHz	$\langle \mathbf{O} \rangle$		1	( <b>0</b> )
Measurement Distance:	3 m					
Antenna Polarization:	Horizontal &	Vertical				
Operation mode:	Transmitting	mode wit	h modulat	ion		
	Frequency	Detector	RBW	VBW	P	emark
	9kHz- 150kHz	Quasi-peak		1kHz		peak Value
Receiver Setup:	150kHz- 30MHz	Quasi-peak	4	30kHz		peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-	peak Value
	Above 1GHz	Peak	1MHz	3MHz		ak Value
	Above TGHZ	Peak	1MHz	10Hz	Avera	age Value
	Frequen	су	Field Stre (microvolts			surement ce (meters)
	0.009-0.4	490	2400/F(ł			300
	0.490-1.7	24000/F(		30		
	1.705-30		30		30	
	30-88	1.4	100		3	
Limit	88-216		150		1	3
Limit:	216-96 Above 9	<u>200</u> 500			<u>3</u> 3	
	Frequency		eld Strength crovolts/meter)		се	Detector
	Above 1GHz	7	500	3	-/	Average
		- I.,	5000	3		Peak
	For radiated	emissions	s below 30	)MHz		
Test setup:	0.sm		1 Plane		Computer Amplifier	
Test setup:		Turn table			Amplifier	
Test setup:		Turn table			Amplifier	



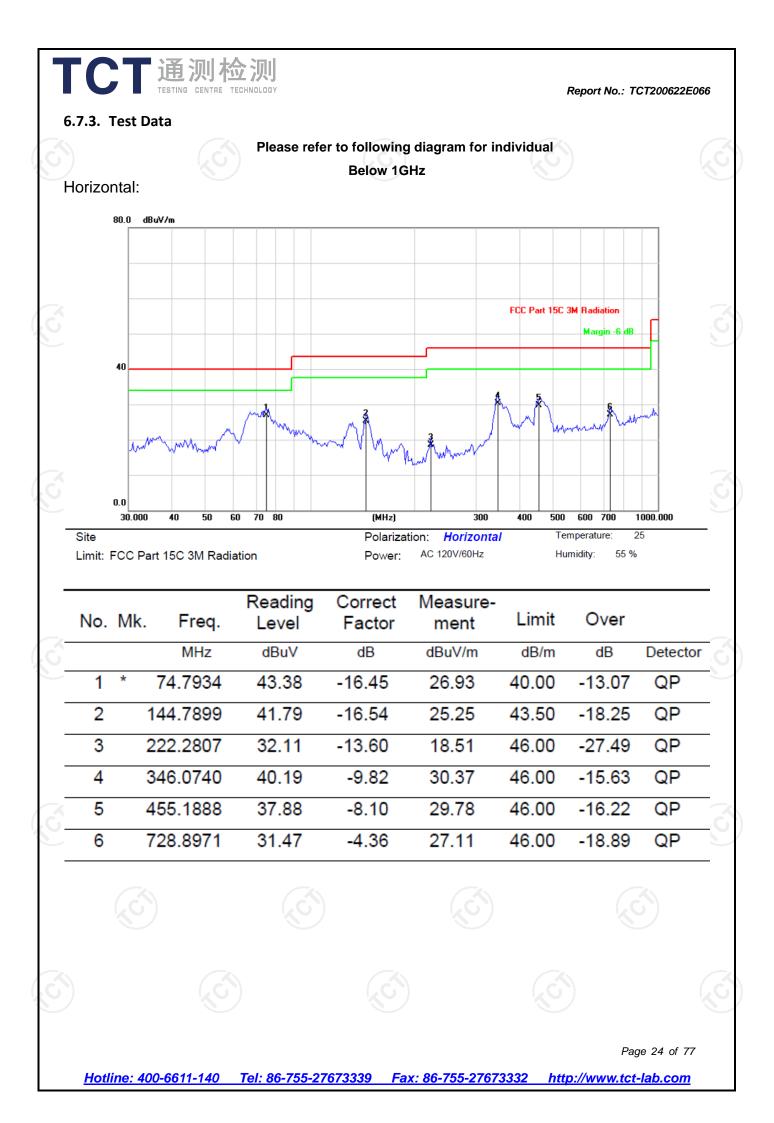
TCT		ante restr abov 3. Corre Rea 4. For n of th lowe leve mea dete	<ul> <li>Report No.: TCT200622E066</li> <li>maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.</li> <li>Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level</li> <li>For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.</li> <li>Use the following spectrum analyzer settings:</li> </ul>						
Test resu	Ilts:	(1) S (2) S (2) S (3) S (3) S (3) S (4) For duty whe the r trans	Span shall wide mission being Set RBW=120 Sweep = auto; hax hold; Set RBW = 1 M eak measurer average meas cycle is no le n duty cycle is minimum trans smitter is on a <u>er control leve</u>	e enough to fu measured; kHz for f < 1 ( Detector func IHz, VBW= 31 nent. surement: VBV ss than 98 pe less than 98 smission dura nd is transmit	Illy capture th GHz; VBW ≥ tion = peak; MHz for f >1 V = 10 Hz, w rcent. VBW ≥ percent whe tion over whi ting at its ma	ne RBW; Trace = GHz for /hen ≥ 1/T, ere T is ich the uximum			
						(č			
J J						J J			

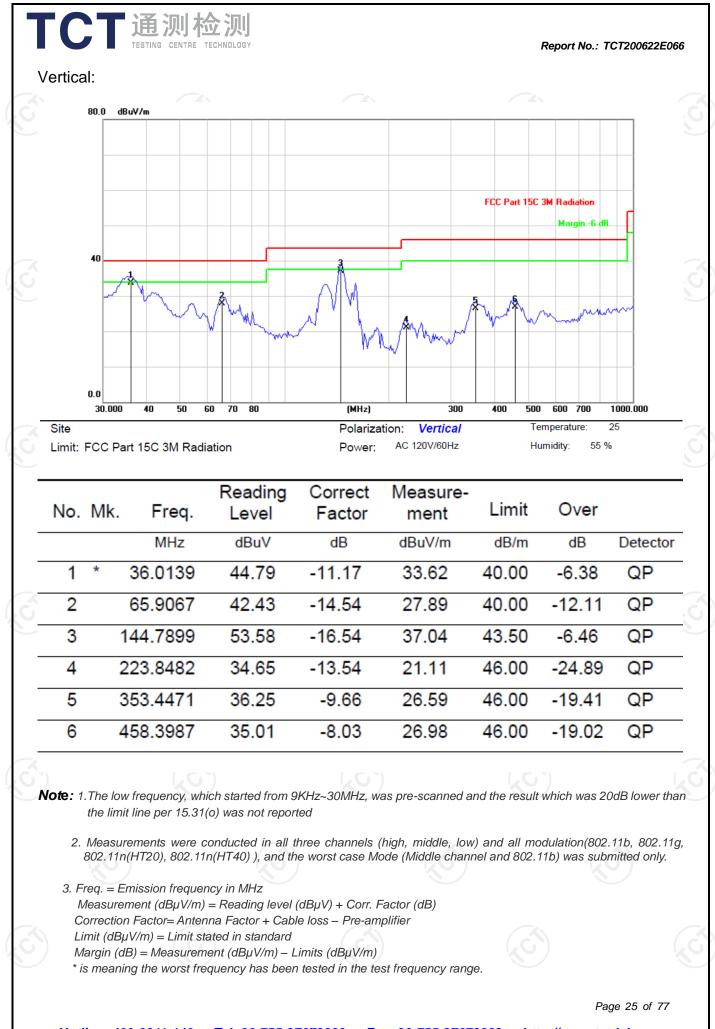
## 6.7.2. Test Instruments

	Radiated Em	ission Test Site	e (966)	
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Test Receiver	ROHDE&SCHW ARZ	ESIB7	100197	Jul. 27, 2021
Spectrum Analyzer	ROHDE&SCHW ARZ	FSQ40	200061	Sep. 11, 2020
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Sep. 08, 2020
Pre-amplifier	HP	8447D	2727A05017	Sep. 08, 2020
Loop antenna	ZHINAN	ZN30900A	12024	Oct. 27, 2020
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 06, 2020
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 06, 2020
Horn Antenna	A-INFO	LB-180400-KF	J211020657	Sep. 06, 2020
Antenna Mast	Keleto	RE-AM	N/A	N/A
Coax cable (9KHz-40GHz)	тст	RE-high-02	N/A	Sep. 08, 2020
Coax cable (9KHz-40GHz)	тст	RE-high-04	N/A	Sep. 08, 2020
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

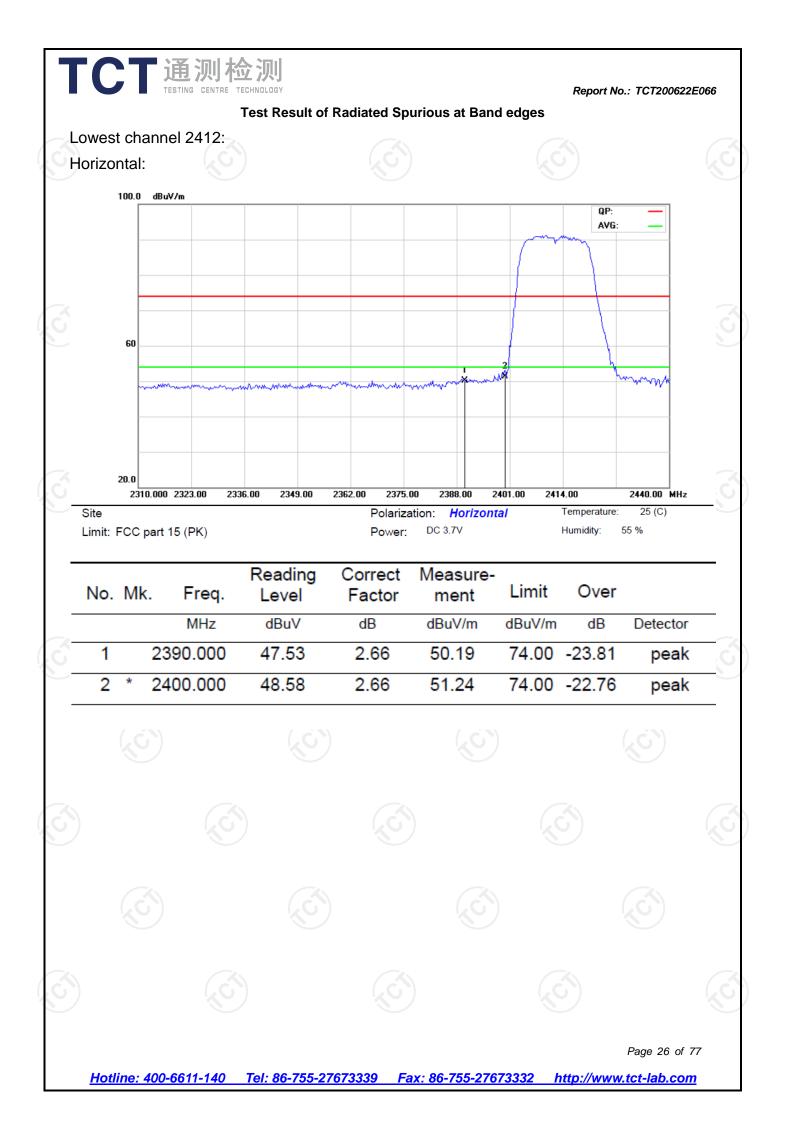
**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

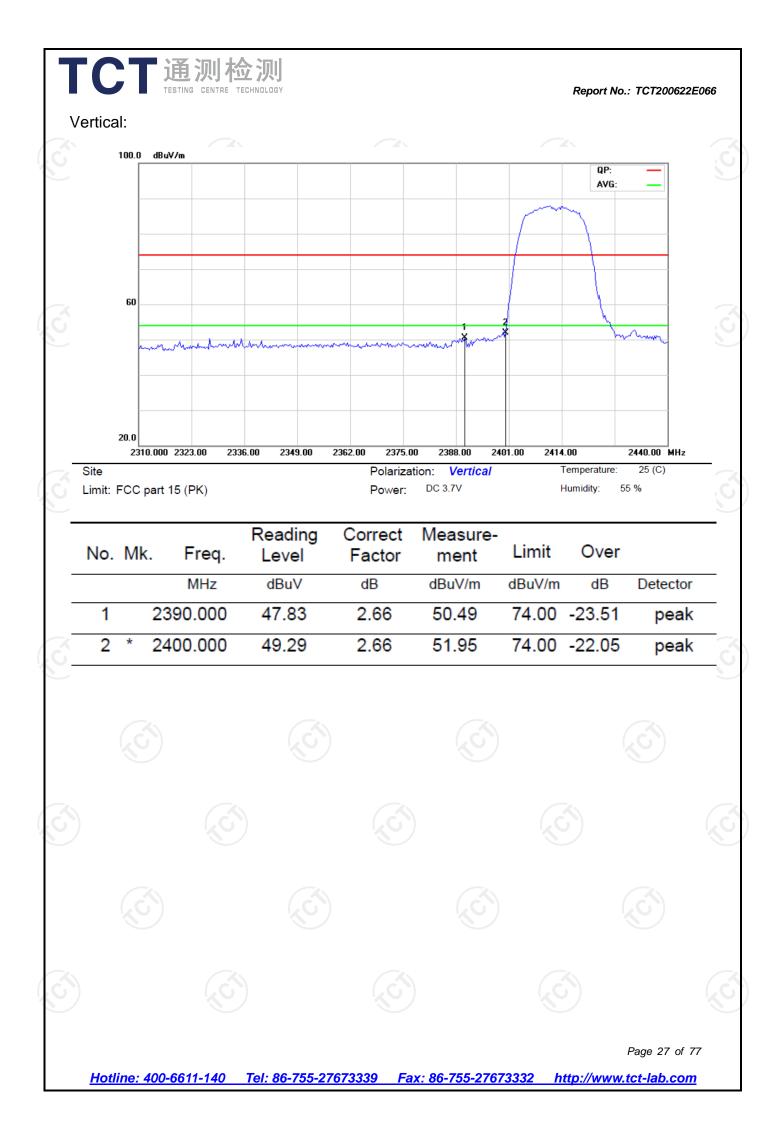
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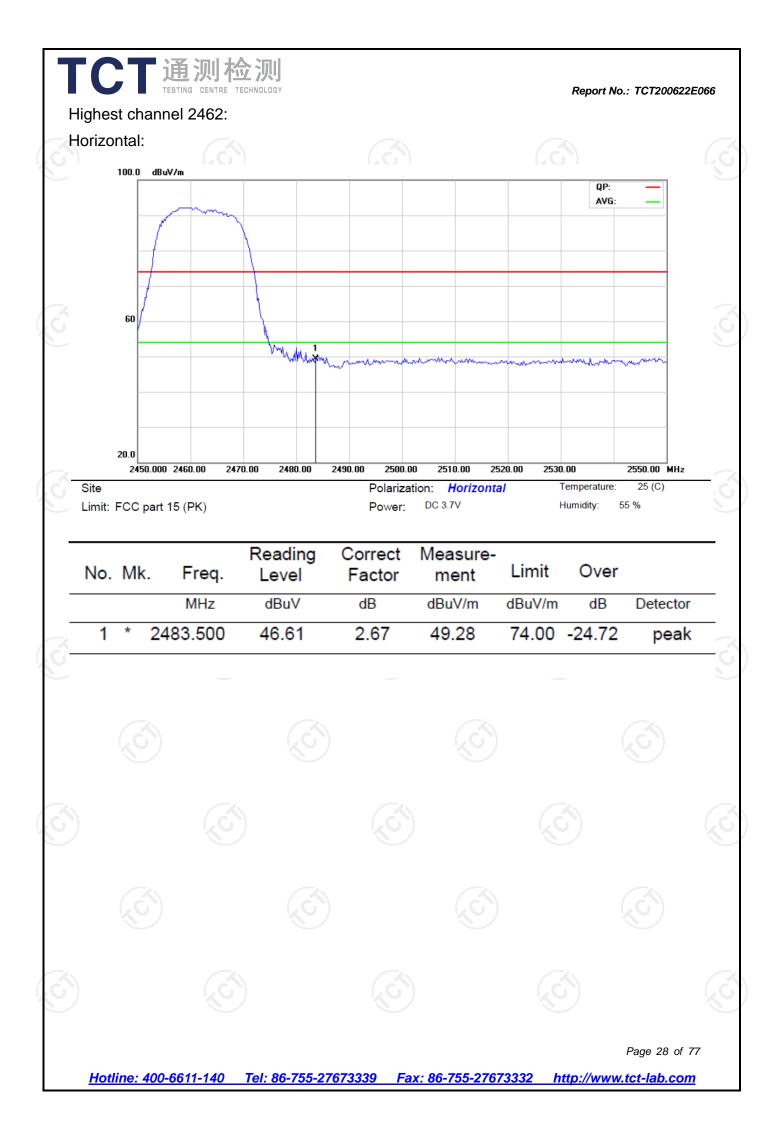


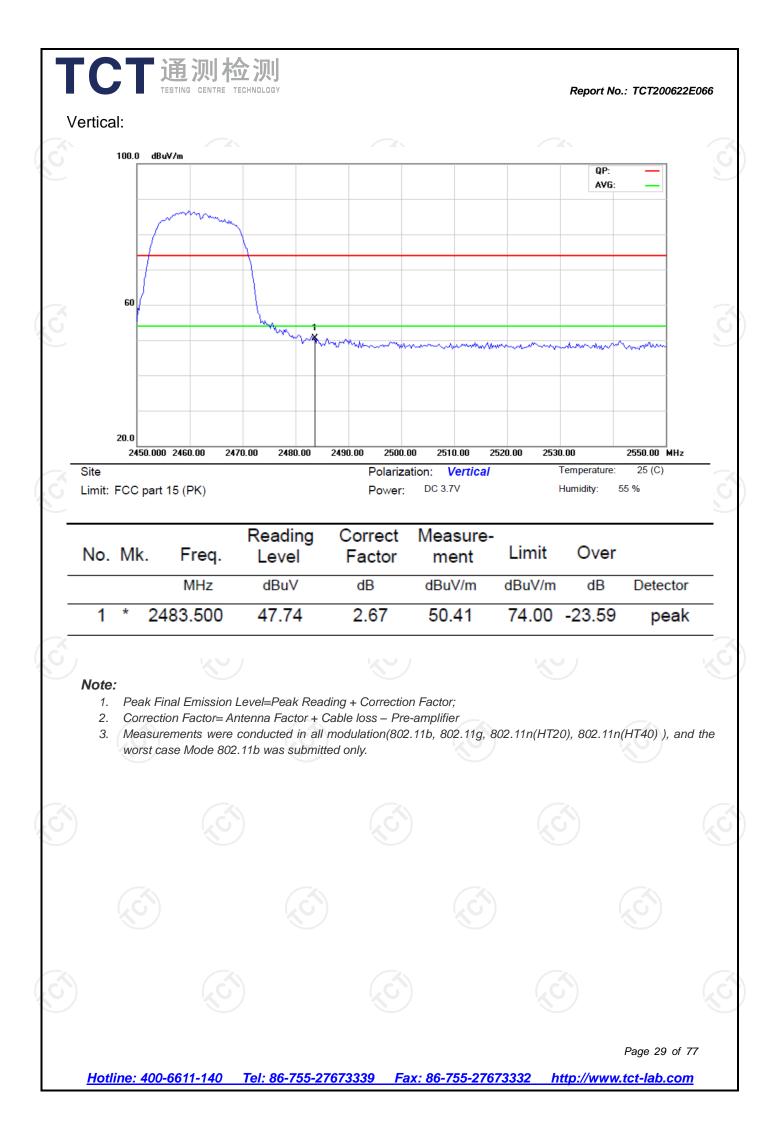


Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com









TC		测检 CENTRE TECH					Rep	ort No.: TCT2	00622E066
				Above	-				
			M	odulation T	ype: 802.1 <i>*</i>	1b			
			L	ow channe	I: 2412 MH	Z			
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Emissic Peak (dBµV/m)	n Level AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4824	Н	50.21		0.75	50.96		74	54	-3.04
7236	Н	41.81		9.87	51.68		74	54	-2.32
	<b>X</b> H					×			
	$(\mathbf{G})$	•			(	$\mathcal{C}$	•		
4824	V	49.51		0.75	50.26		74	54	-3.74
7236	V	43.56		9.87	53.43		74	54	-2.57
	V								
X.			-		X				
		(.C)	Μ	iddle chanr	el: 2437MH	Ηz	(G)		
Frequency	Ant. Pol.	Peak	AV reading	Correction	Emissio	on Level	Peak limit	AV limit	Margin

			101	idale enam					
Frequency	/ Ant Pol	Peak		Correction	Emissio	on Level	Peak limit	AV limit	Margin
(MHz)	/ Ant. Pol. H/V	reading (dBµV)	AV reading (dBµV)	Factor (dB/m)	Peak (dBµV/m)	AV (dBµV/m)	(dBµV/m)	(dBµV/m)	(dB)
4874	Н	49.16		0.97	50.13		74	54	-3.87
7311	Н	41.48		9.83	51.31		74	54	-2.69
	КЧ		<u>k</u> o	/		N T		<u>×</u>	
4874	V	48.86		0.97	49.83		74	54	-4.17
7311	V	41.39		9.83	51.22		74	54	-2.78
×	V			(					
5)					( د				

			F	ligh channe	el: 2462 MH	Z			9
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emissic Peak (dBµV/m)	n Level AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4924	Н	49.34	(	1.18	50.52		74	54	-3.48
7386	Н	40.32	<u> </u>	10.07	50.39		74	54	-3.61
	H								
4924	V	47.61		1.18	48.79		74	54	-5.21
7386	V	41.74		10.07	51.81		74	54	-2.19
/	V	K-			/				K

#### Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss - Pre-amplifier

2. Margin (dB) = Emission Level (Peak) (dBµV/m)-Average limit (dBµV/m)

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 25GHz.

5. Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

6. All the restriction bands are compliance with the limit of 15.209.

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				odulation T ow channe	I: 2412 MH	z		[]	
requency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Emissic Peak (dBµV/m)	on Level AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4824	Н	50.13		0.75	50.88		74	54	-3.12
7236	Н	41.93		9.87	51.80		74	54	-2.20
	Н								
4824	<u>S</u> V	49.55	<u> </u>	0.75	50.3		74	54	-3.70
7236	V	42.79		9.87	52.66		74	54	-1.34
	V								
		<u> </u>	M	iddle chanr	ol: 2/37ML	47	<u> </u>		
		Peak		Correction		n Level			
requency (MHz)	Ant. Pol. H/V	reading (dBµV)	AV reading (dBµV)	Factor (dB/m)	Peak (dBµV/m)	AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4874	Н	49.16		0.97	50.13		74	54	-3.87
7311	H	41.47		9.83	51.30		74	54	-2.70
	H		+-~					+	
			KO.	)				KO /	
4874	V	48.88		0.97	49.85		74	54	-4.15
7311	V	41.42		9.83	51.25		74	54	-2.75
	V								
									(
			F	ligh channe			KO /		
requency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emissic Peak (dBµV/m)	AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4924	H	49.34		1.18	50.52		74	54	-3.48
7386	Н	40.32		10.07	50.39		74	54	-3.61
	Н								
4924	V	47.27		1.18	48.45		74	54	-5.55
7386	V	41.46		10.07	51.53		74	54	-2.47
	V	41.40		10.07	- 51.55		14		-2.41
Note:	v	$(x^{G})$			5)		$(\mathbf{x}\mathbf{G})$		
1. Emissi 2. Margir	n (dB) = Emis	ssion Level	η + Correction (Peak) (dBμV equencies are	//m)-Average	limit (dBµV/	m)			amplifier

5. Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

6. All the restriction bands are compliance with the limit of 15.209.

	通 TESTING	CENTRE TECHI	Mology Modu	lation Type:	· 802 11n (H	HT20)	Rep	ort No.: TCT2	00622E066
				.ow channe					
requency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Emissic Peak (dBµV/m)	n Level AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4824	Н	50.26		0.75	51.01		74	54	-2.99
7236	Н	41.92		9.87	51.79		74	54	-2.21
	Н								
4824	<u>G</u> V	49.42	50	0.75	50.17	$\langle O \rangle$	74	54	-3.83
7236	V	42.59		9.87	52.46		74	54	-1.54
	V								
			N/	iddle chann	ol: 2/27ML	1-			
		Peak		Correction		n Level			
requency (MHz)	Ant. Pol. H/V	reading (dBµV)	AV reading (dBµV)	Factor (dB/m)	Peak (dBµV/m)	AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4874	Н	49.12		0.97	50.09		74	54	-3.91
7311	Н	41.48		9.83	51.31		74	54	-2.69
/	H								
			KO.	)				K C	
4874	V	49.08		0.97	50.05		74	54	-3.95
7311	V	41.39		9.83	51.22		74	54	-2.78
	V								
		KU)	F	ligh channe			( U)		1
requency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emissic Peak (dBµV/m)	n Level AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4924	H	49.31		1.18	50.49		74	54	-3.51
7386	Н	40.38		10.07	50.45		74	54	-3.55
	Н								
4924	V	48.78		1.18	49.96		74	54	-4.04
7386	V	40.70		10.07	49.90		74	54 54	-4.04
7300	V	41.04		10.07	 				-2.29
Note:	v	$\left( \overline{\mathbf{G}} \right)$			)				

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 25GHz.

5. Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

6. All the restriction bands are compliance with the limit of 15.209.

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	TESTING	CENTRE TECH		lation Type:	: 802.11n (H	HT40)	Rep	ort No.: TCT2	<i>00622E066</i>
					I: 2422 MH				
requency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Emissic Peak (dBµV/m)	n Level AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4844	Н	44.87		0.75	45.62		74	54	-6.38
7266	Н	38.61		9.87	48.48		74	54	-5.52
	Н								
4824	<u>S</u> V	45.93		0.75	46.68	<u>{</u>	74	54	-9.32
7236	V	35.65		9.87	45.52		74	54	-8.48
	V								
			M	iddle chann	el: 2437M⊦				
requency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emissic Peak (dBµV/m)	n Level AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4874	Н	42.76		0.97	43.73		74	54	-10.27
7311	Н	34.94		9.83	44.77		74	54	-9.23
/	Н				/				
	( <b>0</b> )		KO.	)				KO /	
4874	V	43.72		0.97	44.69	<u> </u>	74	54	-9.31
7311	V	37.88		9.83	47.71		74	54	-6.29
	V								
									(
)			F		el: 2452 MH	Z			
requency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emissic Peak (dBµV/m)	n Level AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
4904	H	45.61		1.18	46.79		74	54	-7.21
7356	Н	36.93		10.07	47.00		74	54	-7.00
	Н								
4904	V	44.28		1.18	45.46		74	54	-8.54
7356	V	38.41		10.07	48.48		74	54	-5.52
	V								(
Note:		KU)		X	)				X

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 25GHz.

5. Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

6. All the restriction bands are compliance with the limit of 15.209.

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# TCT通测检测 Appendix A: Test Result of Conducted Test

**DTS Bandwidth** 

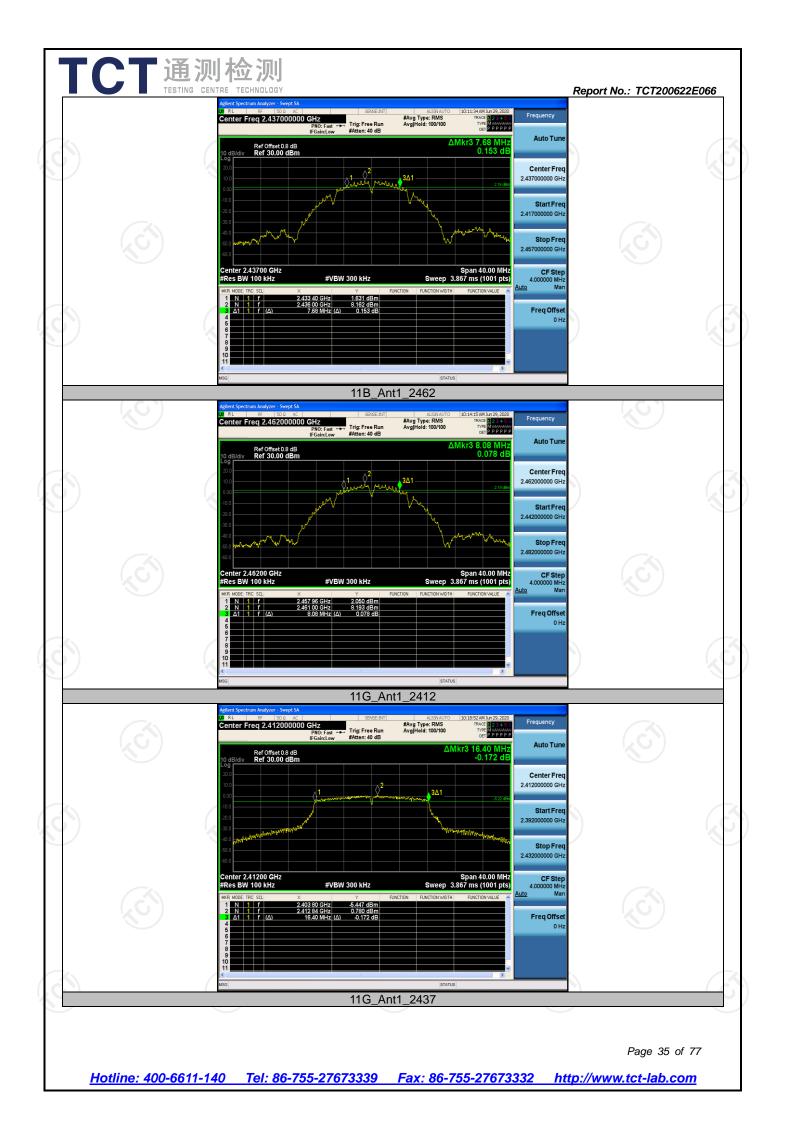
Report No.: TCT200622E066

#### Test Result

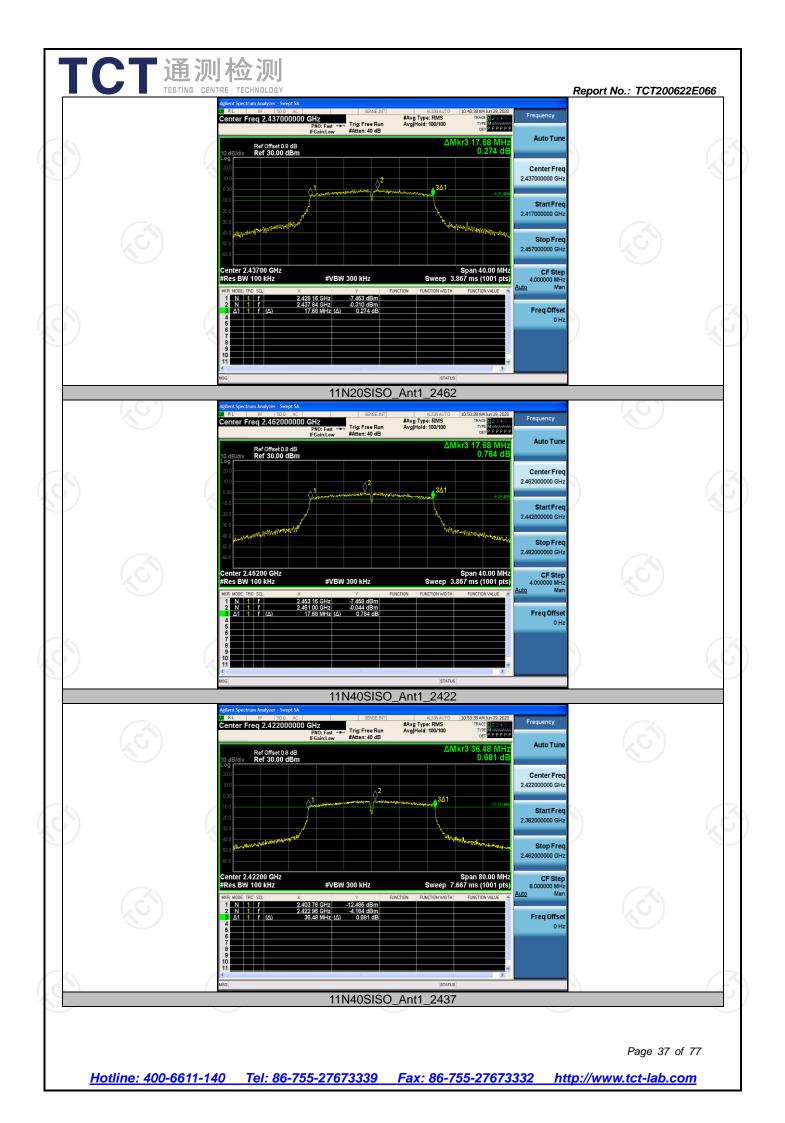
Antenna	Channel	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
	2412	7.640	2408.440	2416.080	0.5	PASS
Ant1	2437	7.680	2433.400	2441.080	0.5	PASS
	2462	8.080	2457.960	2466.040	0.5	PASS
Ant1	2412	16.400	2403.800	2420.200	0.5	PASS
	2437	16.400 🚫	2428.800	2445.200	0.5	PASS
	2462	16.400	2453.800	2470.200	0.5	PASS
	2412	17.680	2403.160	2420.840	0.5	PASS
Ant1	2437	17.680	2428.160	2445.840	0.5	PASS
*)	2462	17.680	2453.160	2470.840	0.5	PASS
	2422	36.480	2403.760	2440.240	0.5	PASS
Ant1	2437	36.080	2419.160	2455.240	0.5	PASS
	2452	36.480	2433.760	2470.240	0.5	PASS
	Ant1 Ant1 Ant1	Ant1 2412 2462 2462 2462 2412 Ant1 2437 2462 2412 Ant1 2437 2462 2412 Ant1 2437 2462 2422 Ant1 2437	Antenna         Channel         [MHz]           Ant1         2412         7.640           Ant1         2437         7.680           2462         8.080         2462           Ant1         2437         16.400           Ant1         2437         16.400           Ant1         2462         16.400           Ant1         2437         16.400           Ant1         2437         17.680           Ant1         2437         17.680           Ant1         2422         36.480           Ant1         2437         36.080	Antenna         Channel         [MHz]         FL [MHz]           Ant         2412         7.640         2408.440           Ant1         2437         7.680         2433.400           2462         8.080         2457.960           2462         8.080         2457.960           Ant1         2437         16.400         2403.800           Ant1         2437         16.400         2428.800           2462         16.400         2453.800           2462         17.680         2403.160           Ant1         2437         17.680         2428.160           Ant1         2432         36.480         2403.760           Ant1         2437         36.080         2419.160	AntennaChannel[MHz]FL [MHz]FH [MHz]Antenna24127.6402408.4402416.080Ant124377.6802433.4002441.08024628.0802457.9602466.04024628.0802457.9602466.040Ant1243716.4002403.8002420.200Ant1243716.4002453.8002445.200246216.4002453.8002470.200Ant1243717.6802403.1602420.840Ant1243717.6802453.1602445.840Ant1242236.4802403.7602440.240Ant1243736.0802419.1602455.240	Antenna         Channel         [MHz]         FL [MHz]         FH [MHz]         [MHz]           Ant1         2412         7.640         2408.440         2416.080         0.5           Ant1         2437         7.680         2433.400         2441.080         0.5           2462         8.080         2457.960         2466.040         0.5           2412         16.400         2403.800         2420.200         0.5           Ant1         2437         16.400         2428.800         2445.200         0.5           Ant1         2437         16.400         2453.800         2470.200         0.5           2462         16.400         2453.800         2470.200         0.5           2462         16.400         2453.800         2470.200         0.5           2462         16.400         2453.800         2470.840         0.5           Ant1         2437         17.680         2403.160         2445.840         0.5           Ant1         2437         17.680         2453.160         2440.240         0.5           Ant1         2437         36.080         2419.160         2455.240         0.5

#### **Test Graphs**



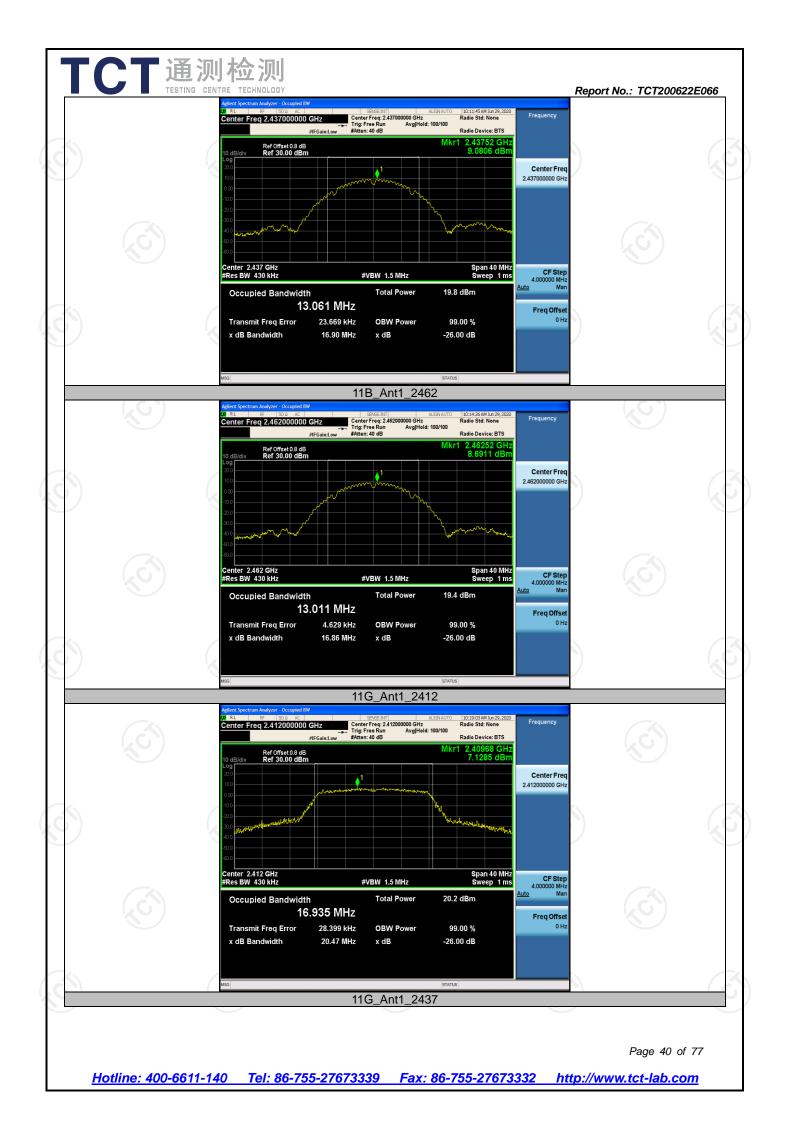


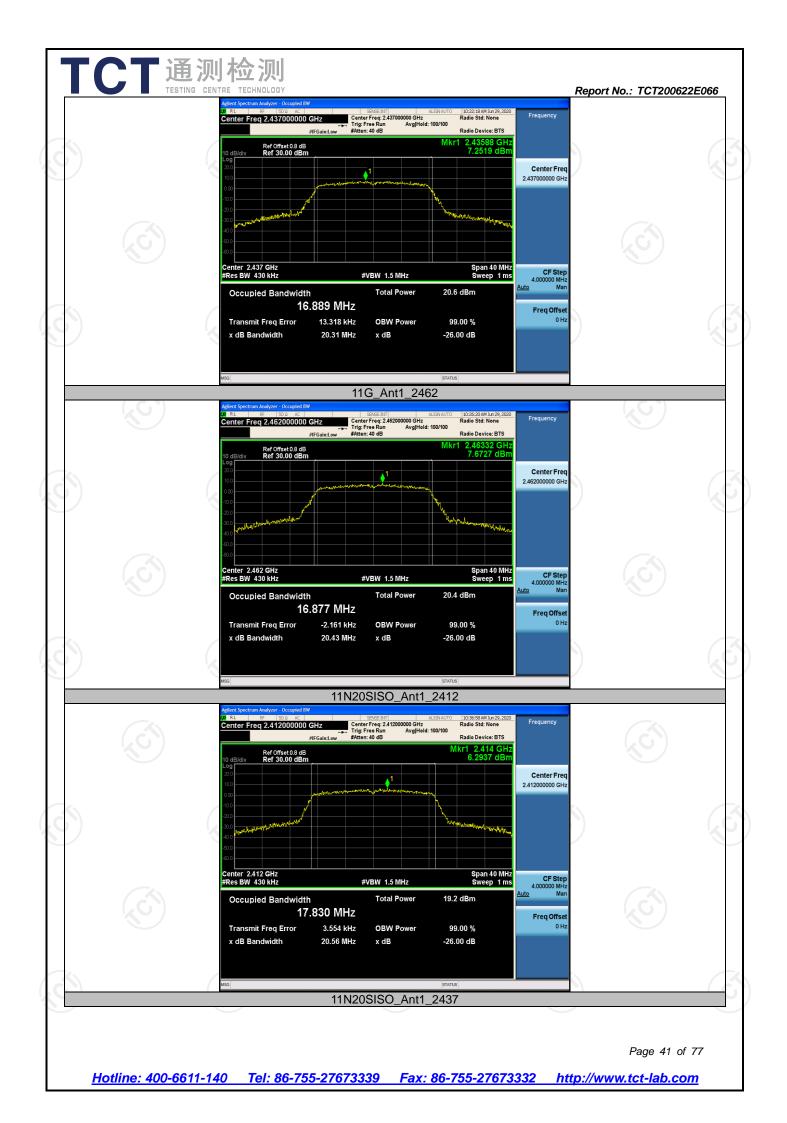


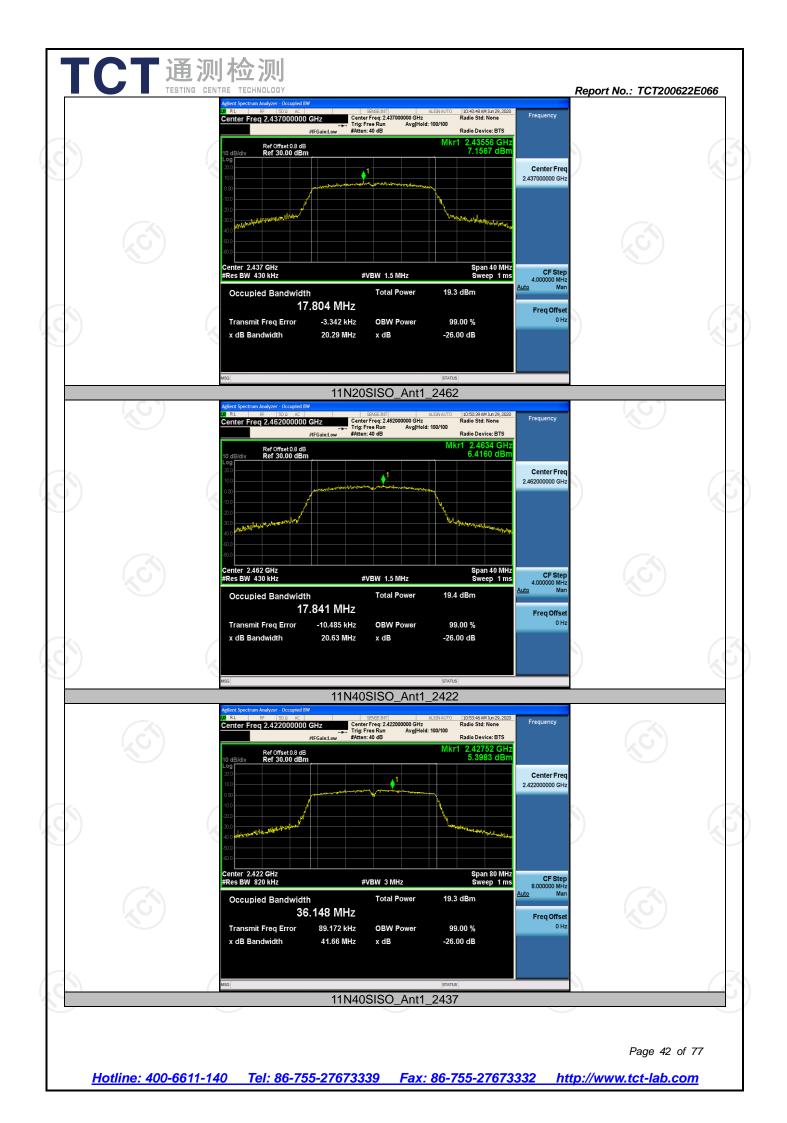




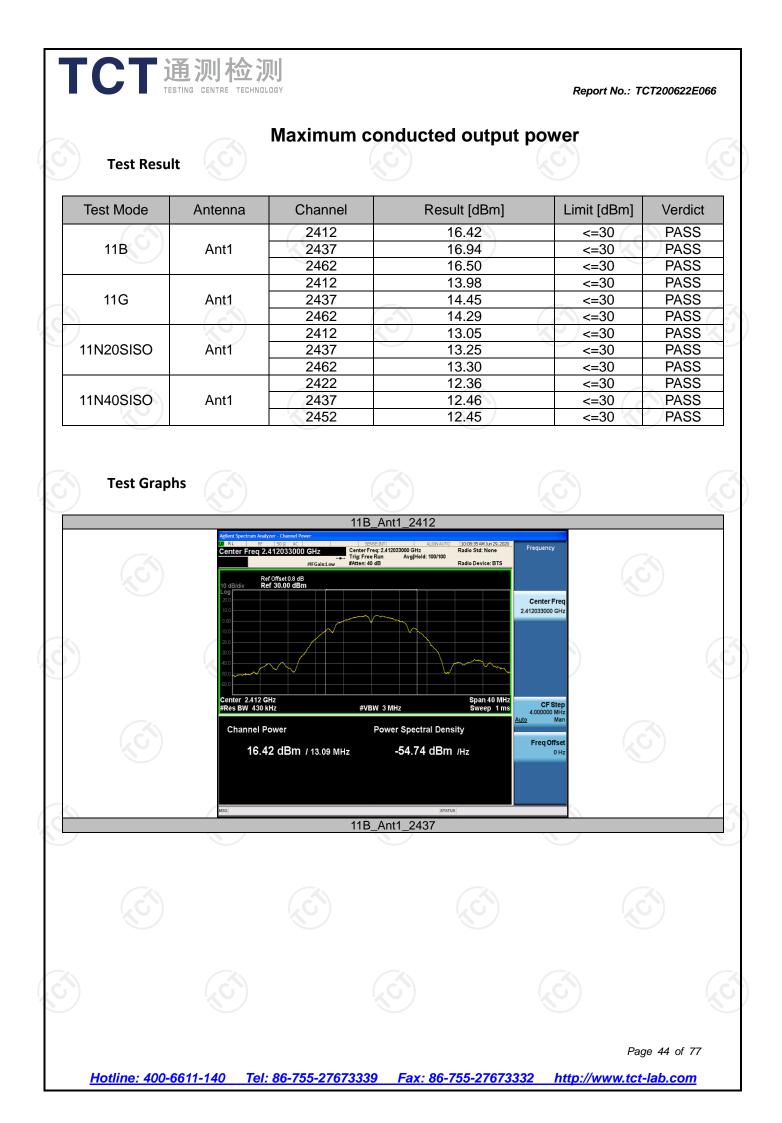
	Test Re	sult			Channel Bai				
		Test Mode	Antenna	Channel	OCB [MHz]	Limit [MHz]	Verdict		
		11B	Ant1	2412	13.088		PASS		
				2437	13.061		PASS		
				2462	13.011		PASS		
				2412	16.935		PASS		
		11G	Ant1	2437	16.889		PASS	_	
		66		2462	16.877	(_C	PASS	_	
		11N20SISO		2412	17.830		PASS		
			Ant1	2437	17.804		PASS	-	
				2462	17.841		PASS	-	
	(c	11N40SISO	Ant1	2422	36.148		PASS PASS		
				2437 2452	36.185 36.245		PASS	$(\mathbf{O})$	
	Ś	C)CI RL	Ref Offset 0.8 dB	SENSE:INT	Radio Device Mkr1 2.4125/ 8.6413	BTS GHZ		J.	
		Image: Network         Image:	EF         930 AC           Freq 2.412000000 G         #           Ref Offset 0.8 dB         #           Ref 30.00 dBm         #           2.412 GHz         #           WW 430 kHz         #	Hz FGainLow Center Freq. 2 Trig: Free Run SAtten: 40 dB #VBW 1 #VBW 1 Tot 088 MHz 32.902 kHz OB 16.91 MHz x dB	A 12000000 GH2 A 42000000 GH2 A 4vg Held: 100/100 A 4vg Held: 100/100 A 4vg Held: 100/100 A 4vg Held: 100/100 A 4d0 Device Mkr1 2,4125/ 8,6413 A 4d0 Device A 4d0	Prequency     BTS     Center Freq     2.412000000 GHz		J J	
		Image: Network         Image:	EF         930 AC           Freq 2.412000000 G         #           Ref Offset 0.8 dB         #           Ref 30.00 dBm         #           2.412 GHz         #           supjed Bandwidth         13.           nsmit Freq Error         #	Hz FGainLow Center Freq. 2 Trig: Free Run SAtten: 40 dB #VBW 1 #VBW 1 Tot 088 MHz 32.902 kHz OB 16.91 MHz x dB	A 12000000 GH2 A vgjHeid: 100/100 Radio Std: Nr Radio Device Mkr1 2,41255 8,6413 Mkr1 2,41255 Mkr1 2,	O MHz     O MHz     CF Step     4.00000 MHz     Auto Man     Freq Offset		3	
		Image: Network         Image:	EF         930 AC           Freq 2.412000000 G         #           Ref Offset 0.8 dB         #           Ref 30.00 dBm         #           2.412 GHz         #           supjed Bandwidth         13.           nsmit Freq Error         #	Hz FGainLow Center Freq. 2 Trig: Free Run SAtten: 40 dB #VBW 1 #VBW 1 Tot 088 MHz 32.902 kHz OB 16.91 MHz x dB	A 12000000 GH2 A 42000000 GH2 A 4vg Held: 100/100 A 4vg Held: 100/100 A 4vg Held: 100/100 A 4vg Held: 100/100 A 4d0 Device Mkr1 2,4125/ 8,6413 A 4d0 Device A 4d0	O MHz     O MHz     CF Step     4.00000 MHz     Auto Man     Freq Offset		3	

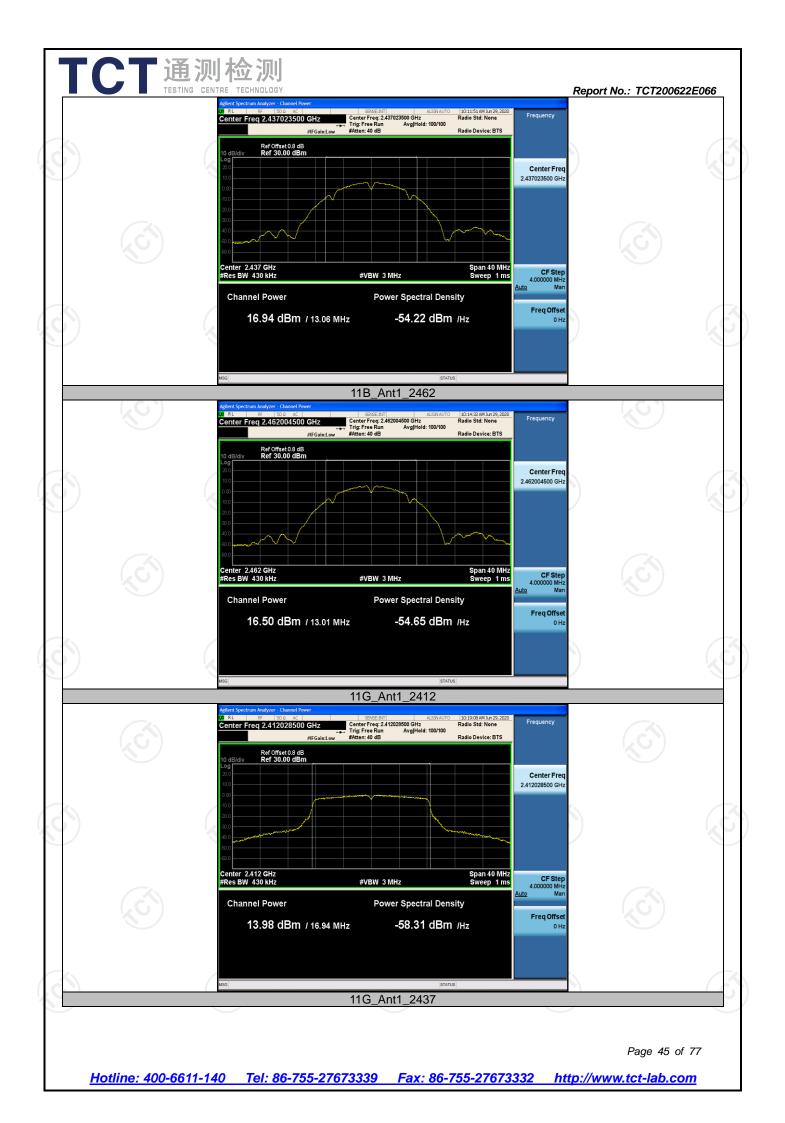


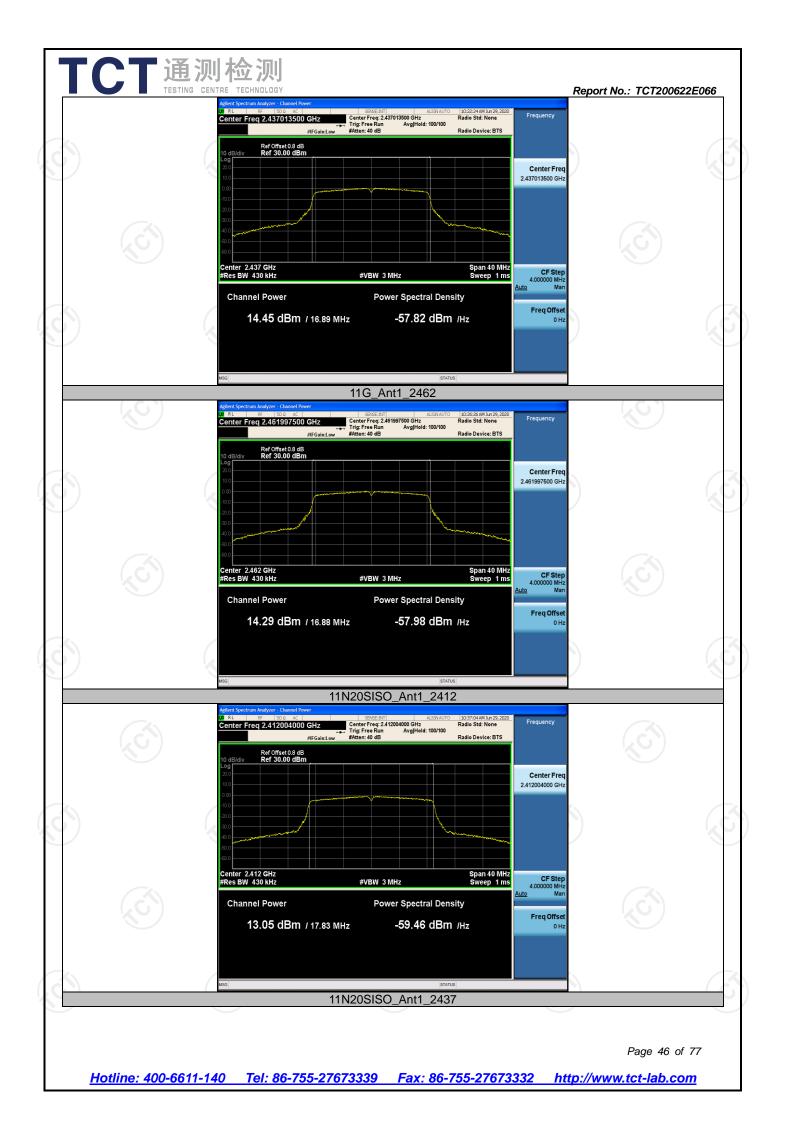


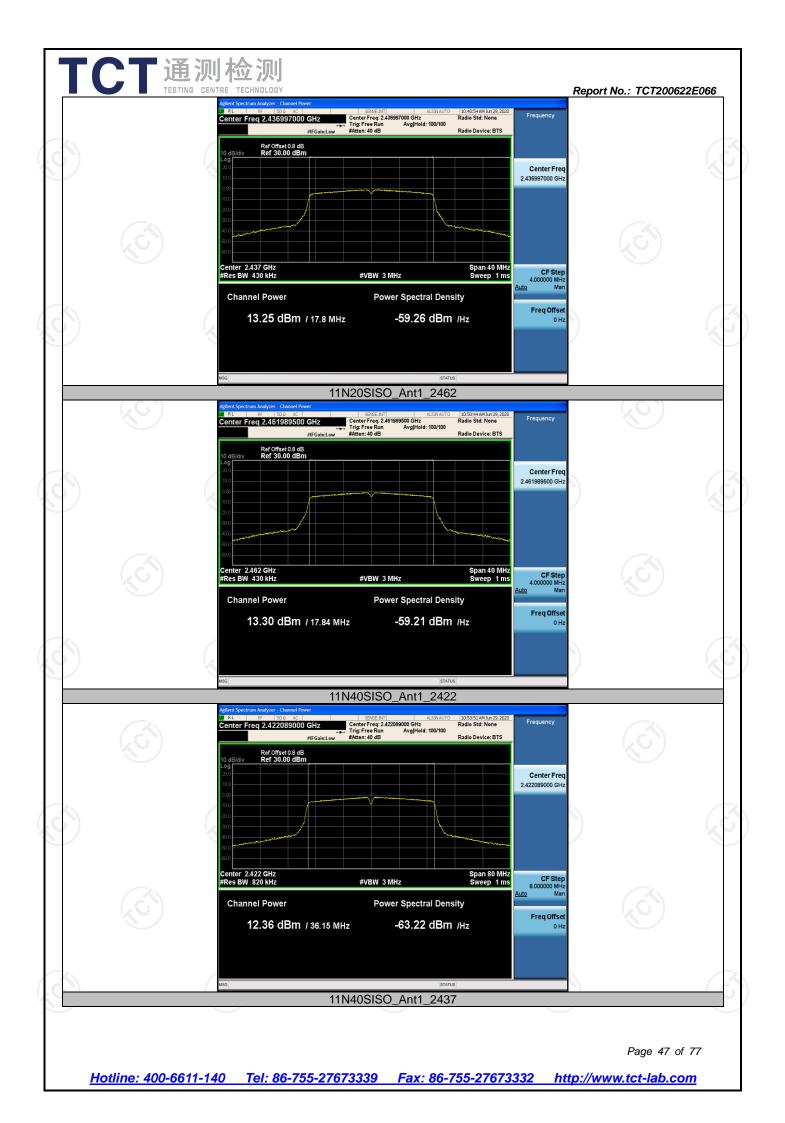


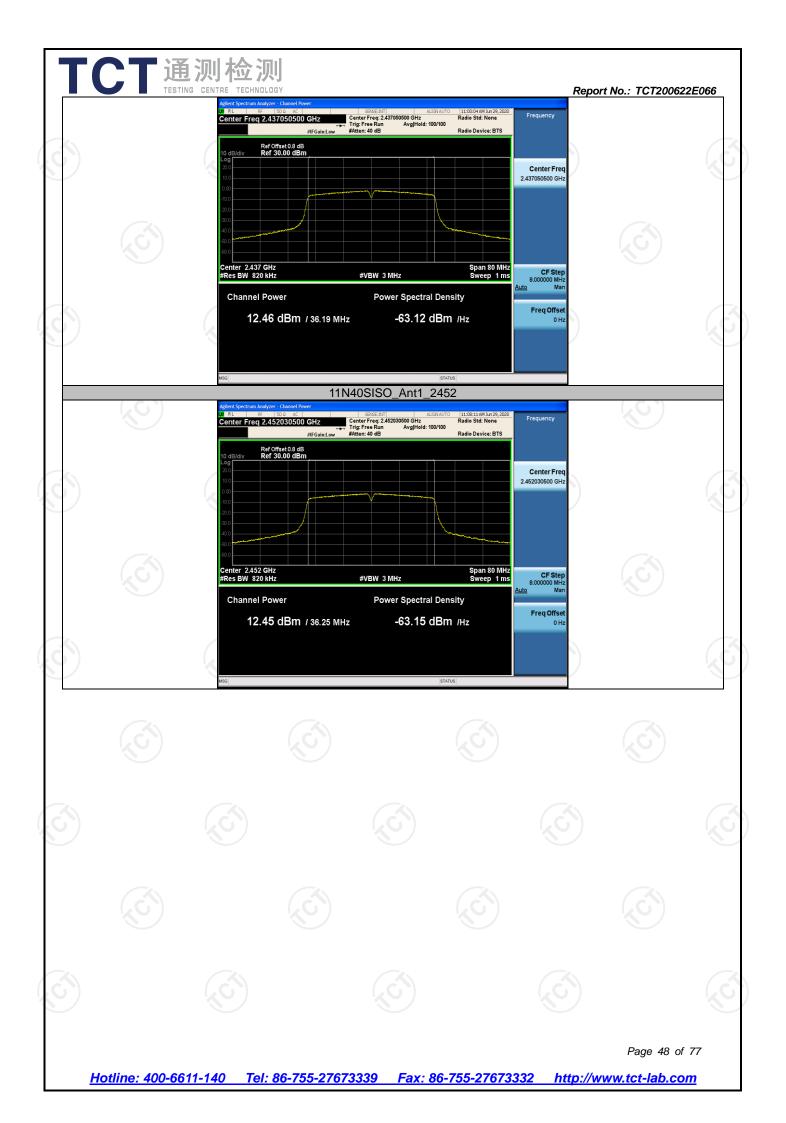














Maximum power spectral density

## Test Result

Test Mode	Channel	Result [dBm/30kHz]	Correction Factor	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
	2412	-4.77	-10	-14.77	<=8	PASS
11B	2437	-4.71	-10	-14.71	<=8	PASS
	2462	-4.67	-10	-14.67	<=8	PASS
	2412	-9.53	-10	-19.53	<=8	PASS
11G	2437	-9.24	-10	-19.24	<=8	PASS
	2462	-9.51	-10	-19.51	<=8	PASS
	2412	-10.60	-10	-20.60	<=8	PASS
11N20SISO	2437	-10.59	-10	-20.59	<=8	PASS
	2462	-10.01	-10	-20.01	<=8	PASS
	2422	-14.20	-10	-24.20	<=8	PASS
11N40SISO	2437	-14.13	-10	-24.13	<=8	PASS
	2452	-13.87	-10	-23.87	<=8	PASS

Note: CorrectionFactor = 10log(3KHz/RBW used in measurement)

## Test Graphs



