

Temperature :	26%	Relative Humidity:	54%
Pressure :	101kPa	Test Voltage :	DC 3.7V
Test Mode :	TX n Mode(20M)		

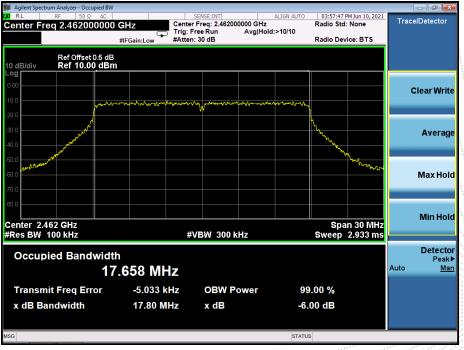
Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
2412	17.78	500	Pass
2437	17.80	500	Pass
2462	17.80	500	Pass

Magilent Spectrum Analyzer		-								
Center Freq 2.41	50 Ω AC 2000000 GI	-lz	Center Fre	SE:INT eq: 2.41200	0000 GHz	ALIGN AUTO	04:00:12 Radio Std	PM Jun 10, 2021 : None	Trace	Detector
		<u> </u>	Trig: Free #Atten: 30		Avg Hold	:>10/10	Radio Dev	ice: BTS		
		Guinteow								
	fset 0.5 dB 0.00 dBm									
Log										
0.00									c	lear Write
-10.0	Mr. your	www.ww	many	mannan	him	mmm				
-20.0			uų.				t			
-30.0	/`						Long -			Average
-40.0							Nove I			J
-50.0							~~	The second se		
-60.0 milyman -								an when the		Max Hold
-70.0										Maxilolu
-80.0										Min Hald
Center 2.412 GHz							Spa	n 30 MHz		Min Hold
#Res BW 100 kHz			#VB	W 300 k	Hz		Sweep	2.933 ms		
Occupied Ba	ndwidth									Detector
		EO MIL	_						Auto	Peak▶ Man
	17.6	53 MH	Z						, late	
Transmit Freq	Error	-5.254 kH	z	OBW Po	ower	99	.00 %			
x dB Bandwidt	th	17.78 MH	z	x dB		-6.	00 dB			
MSG						STATUS	5			
						011100				





#### TX CH 06





Temperature :	26%	Relative Humidity:	54%
Pressure :	101kPa	Test Voltage :	DC 3.7V
Test Mode :	TX n Mode(40M)		

Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
2422	36.48	500	Pass
2437	36.48	500	Pass
2452	36.48	500	Pass

	m Analyzer - Occu										
Center Fre	RF 50 Ω		17		NSE:INT req: 2.42200	00000 GHz	ALIGN AUTO	03:56:40 F Radio Std:	M Jun 10, 2021	Trac	e/Detector
	q 2. 12200		Gain:Low	Trig: Fre #Atten: 3		Avg Hold	:>10/10	Radio Dev	ice: BTS		
			Galli.LOw	witten. e				radio Der			
10 dB/div	Ref Offset Ref 10.0										
Log											
0.00										(	Clear Write
-10.0		and a more and			havenue		and manually	<u></u>			
-20.0					¥						
-30.0	ار ا							۲ <u>ر</u>			Average
-40.0								No.d			
-50.0	when the							- "Y ] Verre	1 marine and		
-60.0 <b>WWWWWW</b>											Max Hold
-70.0											
-80.0											
											Min Hold
Center 2.42 #Res BW 1				#VI	3W 300 k	Hz			n 60 MHz p 5.8 ms		
									p ele llo		Detector
Occupi	ed Band										Peak►
		36.0	47 MF	ΙZ						Auto	Man
Transmi	t Freq Err	or	15.254 k	Hz	OBW P	ower	99	.00 %			
x dB Bar			36.48 M	Hz	x dB		-6 (	00 dB			
							0.				
MSG							STATUS				
Mag							STATUS				





#### TX CH 06





# 11. PEAK OUTPUT POWER TEST

## 11.1 Block Diagram Of Test Setup



## 11.2 Limit

FCC Part15 (15.247), Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

## 11.3 Test procedure

a. The EUT was directly connected to the Power meter

## 11.4 EUT operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

Note: Power Spectral Density(dBm)=Reading+Cable Loss



# 11.5 Test Result

Temperature :	260	Relative Humidity:	54%
Pressure :	101kPa	Test Voltage :	DC 3.7V

	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
	2412 8.33		30
802.11b	2437	8.45	30
	2462	8.58	30
	2412	6.83	30
802.11g	2437	7.19	30
	2462	7.59	30
	2412	5.97	30
802.11n20	2437	6.27	30
	2462	6.63	30
	2422	5.14	30
802.11n40	2437	5.34	30
	2452	5.64	30



## 12. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

## 12.1 Block Diagram Of Test Setup



## 12.2 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

## 12.3 Test procedure

Using the following spectrum analyzer setting:

- a) Set the RBW = 100KHz.
- b) Set the VBW = 300KHz.
- c) Sweep time = auto couple.
- d) Detector function = peak.
- e) Trace mode = max hold.
- f) Allow trace to fully stabilize..

## 12.4 EUT operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

Note: Power Spectral Density(dBm)=Reading+Cable Loss



## 12.5 Test Result

Temperature :	26%	Relative Humidity:	54%
Pressure :	101kPa	Test Voltage :	DC 3.7V

## 802.11b: Band Edge, Left Side



## 802.11b: Band Edge, Right Side





📁 Agilent Spectrum Analyzer - Swept SA				- ē 💌
Marker 1 2.409480000000		ALIGN AUTO 0 Avg Type: Log-Pwr Avg Hold:>100/100	4:20:27 PM Jun 10, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Peak Search
Ref Offset 0.5 dB 10 dB/div Ref 10.00 dBm	PNO: Fast Trig: Free Run IFGain:Low Atten: 20 dB	Mkr1 2	409 48 GHz 10.442 dBm	Next Peak
-10.0 -20.0			1	Next Pk Right
-30.0			-30.44 dBm	Next Pk Left
-60.0 -70.0 -80.0	unterformer for the property and the second s	Segt-ullsudesater		Marker Delta
Start 2.31000 GHz      #Res BW 100 kHz      MKR_MODE TRC SCL    X	#VBW 300 kHz		p 2.43000 GHz ms (1001 pts)	Mkr→CF
2 N 1 f 2.40 3 N 1 f 2.33 4 5 6 6	09 48 GHz -10.442 dBm 00 00 GHz -46.310 dBm 98 76 GHz -52.804 dBm		=	Mkr→RefLvl
7 8 9 9 10 11 11 4				More 1 of 2
MSG		STATUS		

## 802.11g: Band Edge, Left Side

802.11g: Band Edge, Right Side







## 802.11n-HT20: Band Edge, Left Side

802.11n-HT20: Band Edge, Right Side







#### 802.11n-HT40: Band Edge, Left Side

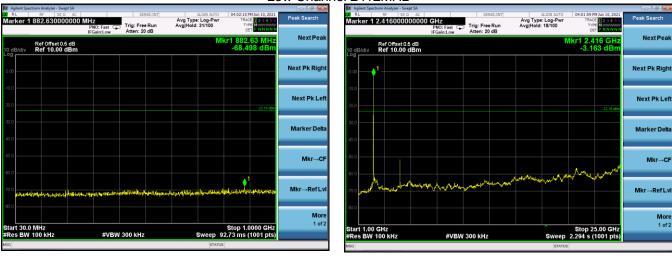
802.11n-HT40: Band Edge, Right Side





## CONDUCTED EMISSION MEASUREMENT

#### 802.11b



## Low Channel 2412MHz

#### Middle Channel 2437MHz





Avg Type: Log-Pwr Avg|Hold: 8/100

NextPea

Next Pk Rig

Next Pk Le

Marker Delt

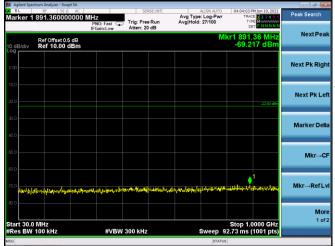
Mkr→Cl

More 1 of 2

Mkr→RefL

st 🕞 Trig: Free Run

#VBW 300 kHz



#### High Channel 2462MHz

Marker 1 2.464000000000 GHz

Ref Offset 0.5 dB Ref 10.00 dBm

1.00 GHz

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Edition : A.3

Stop 25.00 GH: Sweep 2.294 s (1001 pts

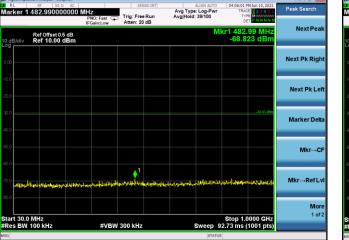


#### 802.11g

#### Image: Section Analyzer Swept SA Section Analyzer Swept SA Off RL RF 50 g. Ac Section Analyzer Swept SA Marker 1 745.860000000 MHz Trig: Free Run Analyzer 20 dB Section Analyzer 20 dB Aug Type: Log-Pwr Avg Hold: 87/100 Peak Search NextP 1 745.86 N -67.912 d Ref Offset 0.5 dB Ref 10.00 dBm Next Pk Righ Next Pk Lef Marker Del Mkr→Cl **♦**<sup>1</sup> Mkr→RefLv More 1 of 2 art 30.0 MHz Res BW 100 kHz Stop 1.0000 GF Sweep 92.73 ms (1001 pt #VBW 300 kHz



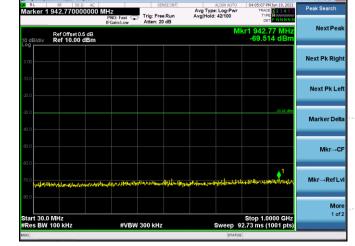
#### Middle Channel 2437MHz





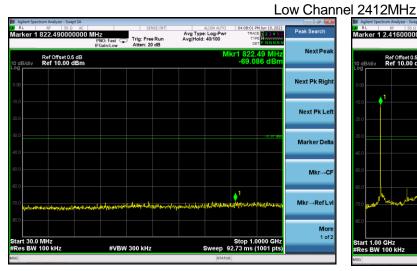
#### High Channel 2462MHz





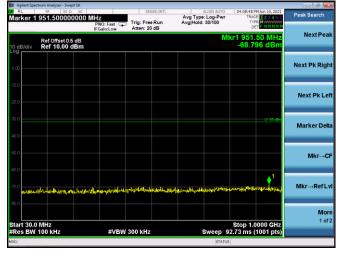


#### 802.11n20



# International system Local system Local system Morker 1 2.416000000000 GHz PR0: FRG: Local System Auton Auro OHC745 PK Jun 10, 2021 PR0: FRG: Local System <th colspa

#### Middle Channel 2437MHz





## High Channel 2462MHz





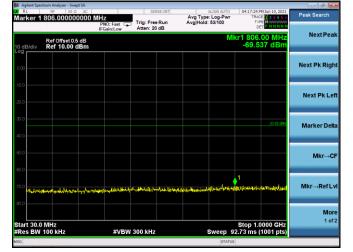


#### 802.11n40

#### Image: Section Analyzer Swept SA Section Analyzer Swept SA Off RL RF 50 g. Ac Section Analyzer Swept SA Marker 1 974.780000000 MHz Trig: Free Run Analyzer 20 dB Section Analyzer 20 dB 04:18:19 PM Jun 10, 20 TRACE 1 2 3 4 Aug Type: Log-Pwr Avg Hold: 40/100 Peak Search NextP 1 974.78 N -69.210 d Ref Offset 0.5 dB Ref 10.00 dBm Next Pk Righ Next Pk Le Marker Del Mkr→Cl Mkr→RefLv More 1 of 2 tart 30.0 MHz Res BW 100 kHz Stop 1.0000 GH Sweep 92.73 ms (1001 pt #VBW 300 kHz



#### Middle Channel 2437MHz





#### High Channel 2452MHz







# 13. DUTY CYCLE OF TEST SIGNAL

## 13.1 Standard requirement

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

## 13.2 Formula

Duty Cycle = Ton / (Ton+Toff)

13.3 Test procedure

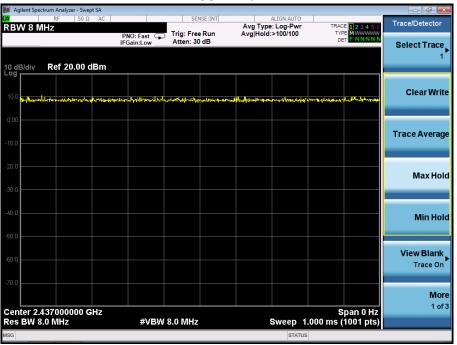
- 1.Set span = Zero
- 2. RBW = 8MHz
- 3. VBW = 8MHz,
- 4. Detector = Peak

## 13.4 Test Result

	Duty Cycle	Duty Fator (dB)
		(05)
802.11b	1	
802.11g	1	0
802.11n(HT20)	1	0
802.11n(HT40)	1	0

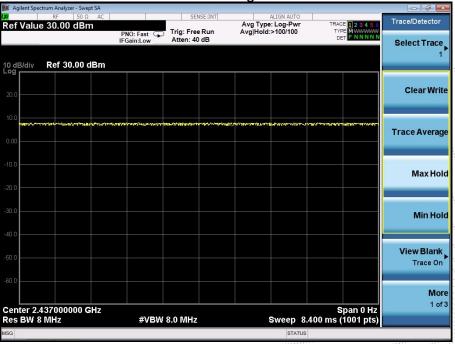




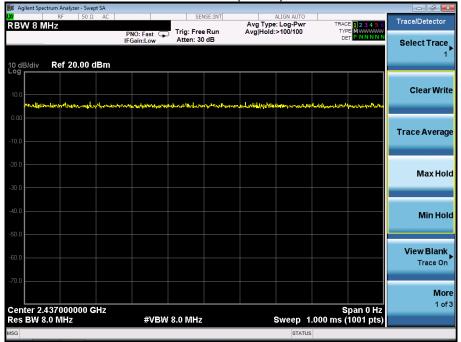


802.11b

802.11g

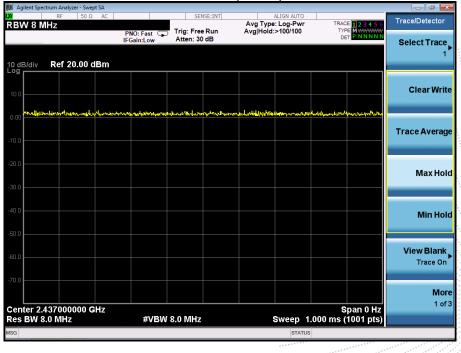






#### 802.11n(HT20)

#### 802.11n(HT40)





# 14. ANTENNA REQUIREMENT

## 14.1 Limit

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall

be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

## 14.2 Test Result

The EUT antenna is FPC antenna, fulfill the requirement of this section.



# **15. EUT PHOTOGRAPHS**

## EUT Photo 1







## Conducted emissions



## **Radiated Measurement Photos**







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# STATEMENT

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without stamp of laboratory.

4. The test report is invalid without signature of person(s) testing and authorizing.

5. The test process and test result is only related to the Unit Under Test.

6. The quality system of our laboratory is in accordance with ISO/IEC17025.

7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website : http://www.chnbctc.com

E-Mail : <u>bctc@bctc-lab.com.cn</u>

\*\*\*\*\* END \*\*\*\*\*

No. : BCTC/RF-EMC-005