

10. 20 DB Bandwidth

10.1 Block Diagram Of Test Setup



10.2 Limit

N/A

10.3 Test Procedure

- 1. Set RBW = 30kHz.
- 2. Set the video bandwidth (VBW) \ge 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

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Edition:



8DPSK

Report No.: BCTC2207524177E

1.198

10.4 Test Result

Temperature :	26 ℃		Relative Humidity :	54%
Test Voltage :	DC 3.7V		Remark	N/A
Modulatio	n	Test Cha	Innel	Bandwidth(MHz)
GFSK		Low		0.872
GFSK		Middl	e	0.903
GFSK		High	1	0.885
π/4DQPS	ĸ	Low		1.23
π/4DQPS	ĸ	Middl	e	1.233
π/4DQPS	ĸ	High	1	1.241
8DPSK		Low		1.213
8DPSK		Middl	e	1.209

High









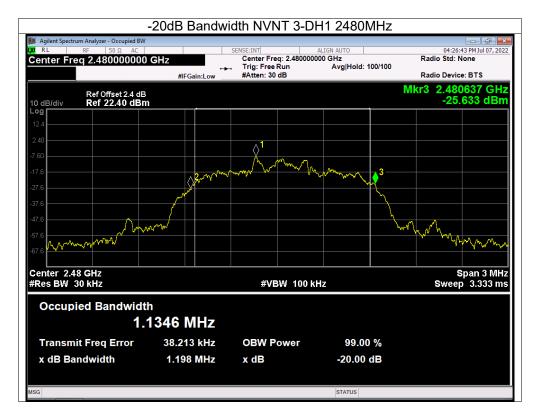














11. Maximum Peak Output Power

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)(1)	Peak Output Power	0.125 watt or 21dBm	2400-2483.5	PASS

11.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 2MHz. VBW = 6MHz. Sweep = auto; Detector Function = Peak.

3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

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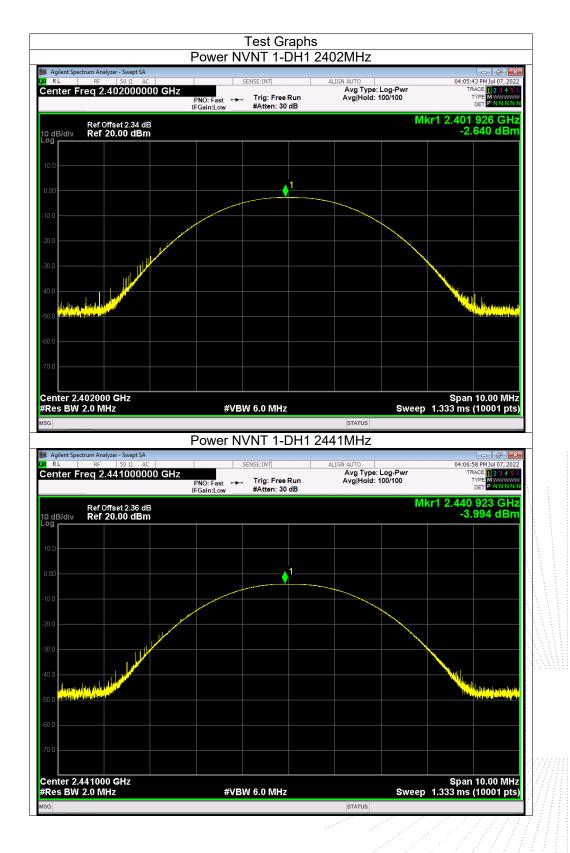


11.4 Test Result

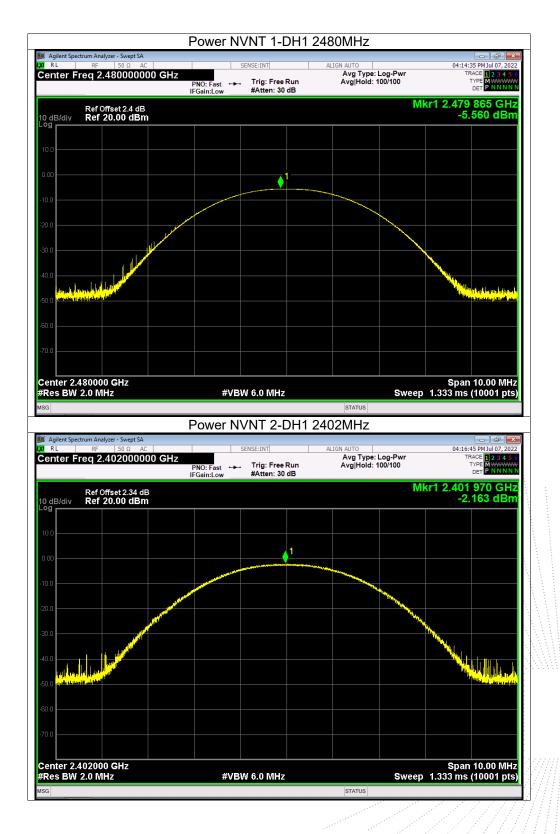
Temperature :	26 ℃	Relative Humidity :	54%	
Test Voltage :	DC 3.7V	Remark:	N/A	
Modulation	Test Channel	Output Power (dBm)		Limit (dBm)
GFSK	Low	-2.64		21
GFSK	Middle	-3.99		21
GFSK	High	-5.56		21
π/4DQPSK	Low	-2.16		21
π/4DQPSK	Middle	-3.45		21
π/4DQPSK	High	-5.05		21
8DPSK	Low	-1.44		21
8DPSK	Middle	-2.70		21
8DPSK	High	-4.30		21



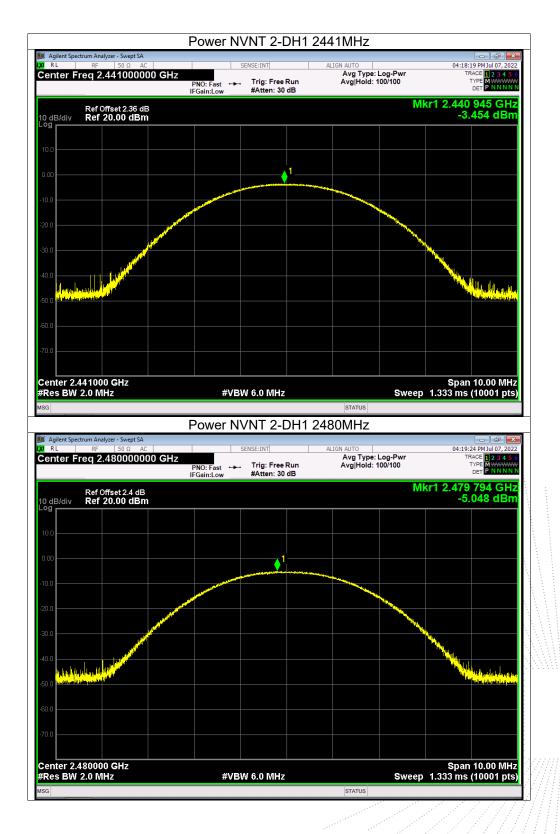




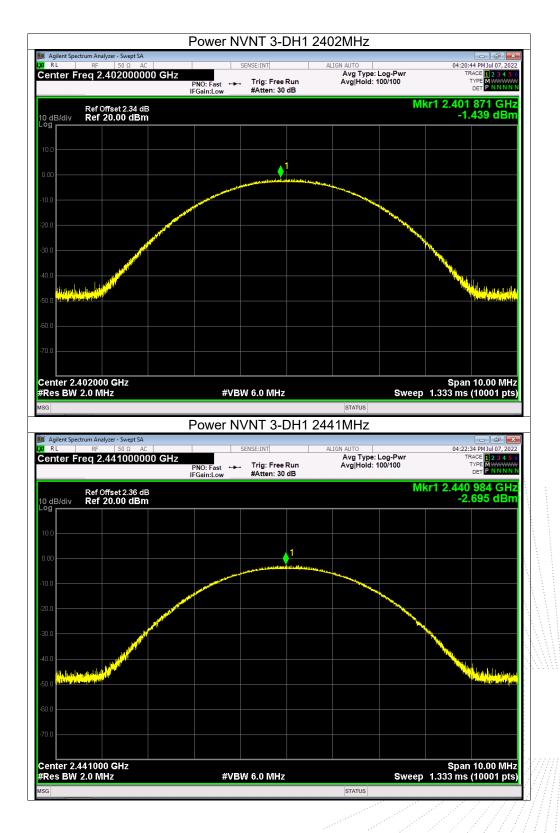




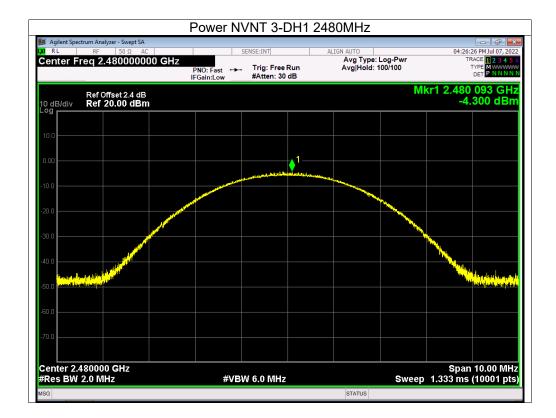














12. Hopping Channel Separation

12.1 Block Diagram Of Test Setup



12.2 Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 0.125W.

12.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 30kHz. VBW = 100kHz , Span = 2.0MHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

No.: BCTC/RF-EMC-005

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Edition: A.



12.4 Test Result

Modulation	Test Channel	Separation (MHz)	Limit(MHz)	Result
GFSK	Low	1.002	0.872	PASS
GFSK	Middle	1.002	0.903	PASS
GFSK	High	1.006	0.885	PASS
π/4DQPSK	Low	0.996	0.820	PASS
π/4DQPSK	Middle	0.998	0.822	PASS
π/4DQPSK	High	1	0.827	PASS
8DPSK	Low	1	0.809	PASS
8DPSK	Middle	1.004	0.806	PASS
8DPSK	High	0.998	0.799	PASS



Agilent Spectrum Analyzer - 1	Swept SA	FS NVNT 1-DH		
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RL RF 50.0 AC enter Freq 2.441500000 GHz	PNO: Wide IFGain:Low Trig: Free Rt #Atten: 30 df	11 2441MHz	04:44:41 PMJ07,2022 TRACE [] 2 3 4 5 0 TYPE MUNITI 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm
RL RF 50.0 AC enter Freq 2.441500000 GHz Ref Offset 2.36 dB Ref 20.00 dBm 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PNO: Wide IFGain:Low Trig: Free Ru #Atten: 30 df	11 2441MHz	04:44:41 PM Jul 07, 2022 TRACE [] 2 3 4 3 0 TYPE MUNUMU DET P NNNNN 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm 2,133 ms (1001 pts)
RL         RF         50.0         AC           enter Freq 2.441500000 GHz           IdB/div         Ref Offset 2.36 dB           IdB/div         Ref 20.00 dBm	PNO: Wide IFGain:Low Trig: Free Ru #Atten: 30 dl #VBW 100 kHz #VBW 100 kHz	11 2441MHz	04:44:41 PMJ07,2022 TRACE [] 2 3 4 5 0 TYPE MUNITI 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm
RL         RF         50.0         AC           enter Freq 2.441500000 GHz           Ref Offset 2.36 dB           dB/dlv         Ref 20.00 dBm           gg         1         1           and b/dlv         Ref 20.00 dBm           gg         1         1           and b/dlv         Ref 20.00 dBm         1         1           and b/dlv         Ref 20.00 GHz         2.441 868 G         3	PNO: Wide IFGain:Low Trig: Free Ru #Atten: 30 dl #VBW 100 kHz #VBW 100 kHz	11 2441MHz	04:44:41 PM Jul 07, 2022 TRACE [] 2 3 4 3 0 TYPE MUNUMU DET P NNNNN 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm 2,133 ms (1001 pts)
RL         RF         S0.0         AC           enter Freq 2.441500000 GHz           dB/div         Ref Offset 2.36 dB           dB/div         Ref 20.00 dBm           9	PNO: Wide IFGain:Low Trig: Free Ru #Atten: 30 dl #VBW 100 kHz #VBW 100 kHz	11 2441MHz	04:44:41 PM Jul 07, 2022 TRACE [] 2 3 4 3 0 TYPE MUNUMU DET P NNNNN 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm 2,133 ms (1001 pts)
RL         RF         S0.0         AC           enter Freq 2.441500000 GHz           dB/div         Ref Offset 2.36 dB           dB/div         Ref 20.00 dBm           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0           00         0 <td>PNO: Wide IFGain:Low Trig: Free Ru #Atten: 30 df</td> <td>11 2441MHz</td> <td>04:44:41 PM Jul 07, 2022 TRACE [] 2 3 4 3 0 TYPE MUNUMU DET P NNNNN 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm 2,133 ms (1001 pts)</td>	PNO: Wide IFGain:Low Trig: Free Ru #Atten: 30 df	11 2441MHz	04:44:41 PM Jul 07, 2022 TRACE [] 2 3 4 3 0 TYPE MUNUMU DET P NNNNN 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm 2,133 ms (1001 pts)
RL         RF         S0.0         AC           enter Freq 2.441500000 GHz           dB/div         Ref Offset 2.36 dB           dB/div         Ref 20.00 dBm           9	PNO: Wide IFGain:Low Trig: Free Ru #Atten: 30 df	11 2441MHz	04:44:41 PM Jul 07, 2022 TRACE [] 2 3 4 3 0 TYPE MUNUMU DET P NNNNN 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm 2,133 ms (1001 pts)
RL         RF         50.0         AC           Enter Freq 2.441500000 GHz           B/div         Ref Offset 2.36 dB           B/div         Ref 20.00 dBm           Image: State of the set o	PNO: Wide IFGain:Low       Trig: Free Ru #Atten: 30 dl         #VBW 100 kHz         #VBW 100 kHz         Hz       -6.103 dBm         Hz       -6.032 dBm	11 2441MHz	04:44:41 PM Jul 07, 2022 TRACE [] 2 3 4 3 0 TYPE MUNUMU DET P NNNNN 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm 2,133 ms (1001 pts)
RL         RF         50.0         AC           Inter Freq 2.441500000 GHz           Inter Freq 2.441500000 GHz           Inter Freq 2.441500 dBm           Inter Grifset 2.36 dB	PNO: Wide IFGain:Low Trig: Free Ru #Atten: 30 df	11 2441MHz	04:44:41 PM Jul 07, 2022 TRACE [] 2 3 4 3 0 TYPE MUNUMU DET P NNNNN 1 2.440 864 GHz -6,103 dBm -6,103 dBm -6,103 dBm -6,103 dBm 2,133 ms (1001 pts)



	CFS NVNT 3-DH1	2480MHz	
📕 Agilent Spectrum Analyzer - Swept SA			- ē 론
X RL RF 50Ω AC	SENSE:INT	ALIGN AUTO	04:48:00 PM Jul 07, 2022
Center Freq 2.479500000 GHz	PNO: Wide Trig: Free Run IFGain:Low #Atten: 30 dB	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN
Ref Offset 2.4 dB 10 dB/div Ref 20.00 dBm		М	kr1 2.478 868 GHz -7.463 dBm
10.0			
0.00		. 2	
-10.0			
-20.0		$\sim$	
-30.0			
-40.0			
-50.0			
-60.0			
-70.0			
Center 2.479500 GHz #Res BW 30 kHz	#VBW 100 kHz	0	Span 2.000 MHz p 2.133 ms (1001 pts
MKR MODE TRC SCL X  1 N 1 f 2.478 868 GH	Y FUNCTION 12 -7.463 dBm	FUNCTION WIDTH	FUNCTION VALUE
2 N 1 f 2.479 866 GH			
4			
5			
7			
9			
			*



## **13. Number Of Hopping Frequency**

## 13.1 Block Diagram Of Test Setup



#### 13.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

#### 13.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

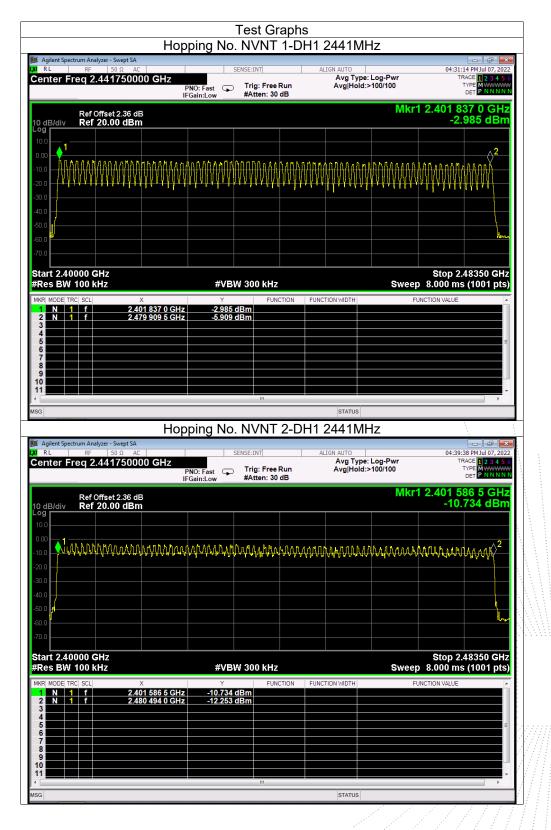
2. Set the spectrum analyzer: RBW = 100kHz. VBW = 300kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.
 Set the spectrum analyzer: Start Frequency = 2.4GHz, Stop Frequency = 2.4835GHz. Sweep=auto;

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# 13.4 Test Result







	trum Analyzer - S						- đ <b>-</b>
enter F		Ω AC 750000 GHz	PNO: Fast	Trig: Free Run #Atten: 30 dB		pe: Log-Pwr d:>100/100	04:45:30 PM Jul 07, 202 TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN
0 dB/div	Ref Offset Ref 20.0					Mkr1	2.401 586 5 GHz -9.020 dBm
10.0	<u>, . (. 1977)</u>		44.00000	AVANA AVA	YAAAYWAAAA	ЛАЛИЛАДАЛ	
30.0 40.0 50.0 60.0							
70.0 Start 2.40 Res BW	000 GHz 100 kHz		#VB	W 300 kHz		Sweep	Stop 2.48350 GHz 8.000 ms (1001 pts
IKR MODE TR	RC  SCL	× 2.401 586 5 GH	Y -9.020		FUNCTION WIDTH	FUI	ICTION VALUE
2 N 1 3 4 5 5 7 8 9 10		2.479 909 5 GH					
11							



# 14. Dwell Time

## 14.1 Block Diagram Of Test Setup



#### 14.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

#### 14.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set spectrum analyzer span = 0. Centred on a hopping channel;

3. Set RBW = 1MHz and VBW = 3MHz.Sweep = as necessary to capture the entire dwell time per hopping channel. Set the EUT for DH5, DH3 and DH1 packet transmitting.

4. Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

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# 14.4 Test Result

DH5 Packet permit maximum 1600 / 79 / 6 hops per second in each channel (5 time slots RX, 1 time slot TX).

DH3 Packet permit maximum 1600 / 79 / 4 hops per second in each channel (3 time slots RX, 1 time slot TX).

DH1 Packet permit maximum 1600 / 79 /2 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the Dwell Time can be calculated as follows:

DH5:1600/79/6*0.4*79*(MkrDelta)/1000 DH3:1600/79/4*0.4*79*(MkrDelta)/1000 DH1:1600/79/2*0.4*79*(MkrDelta)/1000 Remark: Mkr Delta is once pulse time.

Modulation	Channel Data	Packet	pulse time(ms)	Dwell Time(s)	Limits(s)
		DH1	0.39	0.125	0.4
GFSK	Middle	DH3	1.645	0.263	0.4
		DH5	2.891	0.308	0.4
		2DH1	0.399	0.128	0.4
π/4DQPSK	Middle	2DH3	1.651	0.264	0.4
		2DH5	2.896	0.309	0.4
		3DH1	0.398	0.127	0.4
8DPSK	Middle	3DH3	1.648	0.264	0.4
		3DH5	2.898	0.309	0.4



Agilent Spectrum Analyzer - Swep		NVNT 1	-DH1 2	441MH	Iz One I	Burst		
RL RF 50 Ω enter Freg 2.44100	AC		SENSE:INT Trig Delay	-500.0 µs	ALIGN AUTO Avg Typ	e: Log-Pwr	04:31 T	21 PM Jul 07, 2022
	P	NO: Fast ↔ Gain:Low	Trig: Video #Atten: 30					
Ref Offset 2.3 dB/div Ref 20.00 (							ΔMkr1	390.0 μs 8.23 dB
X2								TRIG LVL
1.0								
	April 1							turnta .
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1.0	· Joint ·	and the second	141. 11	10 J .	<u>141 Ab.</u>			
enter 2.441000000 G es BW 1.0 MHz	GHz	#VB	W 3.0 MHz			Sween	10.00 ms	Span 0 Hz (10001 pts)
R MODE TRC SCL	X	Y	FUN		ICTION WIDTH		JNCTION VALUE	(Tooor pts
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								=
7 <b></b>								
3								
					STATUS			
	Dwell	NVNT 1	-DH3 2	441MH		Burst		
		NVNT 1	-DH3 2	441MH		Burst		
RL RF 50 Ω	AC		SENSE:INT Trig Delay	-500.0 µs	Iz One I	Burst e: Log-Pwr		19 PM Jul 07, 2022 RACE 1 2 3 4 5
RL RF 50 Ω	pt SA AC 00000 GHz P		SENSE:INT	-500.0 µs	Iz One I			:19 PM Jul 07, 2022
RL RF 50 Ω enter Freq 2.44100 Ref Offset 2.3	Pt SA AC       DOOOO GHZ   F IF 36 dB	NO: Fast ↔	SENSE:INT Trig Delay Trig: Video	-500.0 µs	Iz One I		Т	19 PMJul 07, 2022 RACE 1 2 3 4 5 0 TYPE WWWWW DET P NNNN 1.645 ms
RL         Rf         50 Ω           enter Freq 2.44100         Ref Offset 2.3           Ref Offset 2.0         Ref 20.00 0           9         9	Pt SA AC       DOOOO GHZ   F IF 36 dB	NO: Fast ↔	SENSE:INT Trig Delay Trig: Video	-500.0 µs	Iz One I		Т	19 PM Jul 07, 2022 RACE 1 2 3 4 5 TYPE WWWWWW DET P N N N N
RL         Rf         50 Ω           enter Freq 2.44100         Ref 0ffset 2.3           dB/div         Ref 20.00 c           9         0	Pt SA AC       DOOOO GHZ   F IF 36 dB	NO: Fast ↔	SENSE:INT Trig Delay Trig: Video	-500.0 µs	Iz One I		Т	19 PMJul 07, 2022 RACE 1 2 3 4 5 0 TYPE WWWWW DET P NNNN 1.645 ms
enter Freq 2.44100 Ref Offset 2.3	AC 00000 GHz P 16 36 dB 18 19 19 19 19 19 19 19 19 19 10 19 10 10 10 10 10 10 10 10 10 10 10 10 10	NO: Fast ↔	SENSE:INT Trig Delay Trig: Video	-500.0 µs	Iz One I		Т	19 PM Jul 07, 2022 RACE 1 2 3 4 5 ( TYPE WASHINGTON DET P NNNN 1.645 ms 8.38 dB
RL         Rf         50 Ω           enter Freq 2.44100         Ref Offset 2.3         Ref Offset 2.3           dB/div         Ref 2.000 c         Ref 2.000 c	AC 00000 GHz P 16 36 dB 18 19 19 19 19 19 19 19 19 19 10 19 10 10 10 10 10 10 10 10 10 10 10 10 10	NO: Fast ↔	SENSE:INT Trig Delay Trig: Video	-500.0 µs	Iz One I		Т	19 PMJul 07, 2022 RACE 1 2 3 4 5 0 TYPE WWWWW DET P NNNN 1.645 ms
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RL RF 50 Ω enter Freq 2.44100 Ref Offset 2.3 dB/div Ref 20.00 d 9 9 2 0 0 0 0 0 0 0 0 0 0 0 0 0	AC DOUDOO GHZ DOUDOO GHZ P IF 36 dB dBm 1Δ2	NO: Fast →→ Gain:Low	SENSE:INT Trig Delay Trig: Videc #Atten: 30	-500.0 µs dB		e: Log-Pwr	T AMKr1	19 PM Jul 07, 2022 RACE    2, 3, 4, 5, 4 DET PNNNN 1.645 ms 8.38 dB
RL         RF         50 Ω           enter Freq 2.44100         Ref Offset 2.3         Ref Offset 2.3           dB/div         Ref 20.00 d         Ref 20.00 d           g         2         2           00         2         2           00         2         2           00         2         2           00         2         2           00         3         3           00         4         2           00         4         2           00         4         2           00         4         3           01         4         4           02         4         4           03         4         4           04         4         4           05         4         4           06         4         4           07         4         4           08         4         4           09         4         4           100         4         4           100         4         4           100         4         4           100         4 <td>pt SA AC D00000 GHz F F 36 dB dBm 1Δ2</td> <td>NO: Fast Gain:Low</td> <td>SENSE:INT  Trig Delay #Atten: 30</td> <td></td> <td></td> <td>e: Log-Pwr</td> <td></td> <td>19 PM Jul 07, 2022 RACE 11 2 3 4 5 1 TYPE VIEW 12 5 1 TYP</td>	pt SA AC D00000 GHz F F 36 dB dBm 1Δ2	NO: Fast Gain:Low	SENSE:INT  Trig Delay #Atten: 30			e: Log-Pwr		19 PM Jul 07, 2022 RACE 11 2 3 4 5 1 TYPE VIEW 12 5 1 TYP
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RL         RF         50 Ω           enter Freq 2.44100         Ref Offset 2.3         Ref Offset 2.3           dB/div         Ref 20.00 d         Ref 20.00 d           0         2         2           00         2         2           00         2         2           00         2         2           00         2         2           00         2         2           00         2         2           00         2         2           00         2         2           00         4         4           00         4         4           00         4         4           00         4         4           00         4         4           00         4         4           00         4         4           00         4         4           00         4         4           00         4         4           00         4         4           00         4         4           00         4         4           00         4	pt SA AC D00000 GHz F F S6 dB dBm 1Δ2 1Δ2 CH2 CH2 CH2 CH2 CH2 CH2 CH2 CH2 CH2 CH	NO: Fast Gain:Low	SENSE:INT Trig Delay Trig: Videc #Atten: 30	-500.0 µs D dB	ALIGN AUTO Avg Typ	e: Log-Pwr	T AMkr1	19 PM Jul 07, 2022 RACE 11 2 3 4 5 1 TYPE VIEW 12 5 1 TYP
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RL RF 50 Ω AC enter Freq 2.441000000 GH2	Trig Delay-500.0 µs PNO: Fast ↔ Trig: Video	GN AUTO ( Avg Type: Log-Pwr	4:50:07 PM Jul 07, 202 TRACE 1 2 3 4 5 TYPE WWWWWW
	IFGain:Low #Atten: 30 dB		
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4 5 6			=
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Agilent Spectrum Analyzer - Swept SA	ell NVNT 2-DH1 2441MHz	One Burst	
		GN AUTO G Avg Type: Log-Pwr	4:39:45 PM Jul 07, 202: TRACE 1 2 3 4 5
enter Freq 2.44 1000000 GH2	PNO: Fast +++ Trig: Video IFGain:Low #Atten: 30 dB	Arg type. Log t m	
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dB/div Ref 20.00 dBm			7.16 dB
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		a lina una santa antena sutora na isano ar tera degra	dit of readiantant allow of
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00     0       00     0       00     0       00     0       01     0       02     0       03     0       04     0       05     0       06     0       07     0       08     0       09     0       00     0       01     0       02     0       02     0       03     0       04     0       04     0       05     0       06     0       07     0       08     0       09     0       00     0       01     0       02     0       03     0       04     0       04     0       05     0       06     0       07     0       08     0       09     0       09     0       00     0       01     0       02     0       03     0       04     0       04     0	#vBW 3.0 MHz	Sweep 10.00	Span 0 Hz ms (10001 pts
0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0         1           0.0	#WP (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1	Sweep 10.00	Span 0 Hz ms (10001 pts
00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00     1       00 <td>#WP (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1</td> <td>Sweep 10.00</td> <td>Span 0 Hz ms (10001 pts</td>	#WP (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1	Sweep 10.00	Span 0 Hz ms (10001 pts
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RL RF 50 Ω enter Freq 2.441000	0000 GHz	Fast ++- Trig Delay-500 Fullow #Atten: 30 dB	ALIGN AUTO 0.0 µs Avg Type: Lo	04:50 • <b>g-Pwr</b> ⊤	57 PM Jul 07, 202 RACE 1 2 3 4 5 TYPE WWWWWW DET P N N N N
Ref Offset 2.36 dB/div <b>Ref 20.00 d</b>	dB 3m			ΔMkr1	1.651 ms 5.42 dB
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		ulioneteretteretteretteret			
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enter 2.441000000 GF	47				Span 0 Hz
es BW 1.0 MHz	X	#VBW 3.0 MHz	N FUNCTION WIDTH	Sweep 10.00 ms	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1.651 ms (Δ) 497.0 μs			POINC HON VALUE	
4 5					=
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s			STATUS		
Agilent Spectrum Analyzer - Swept :		VNT 2-DH5 244	1MHz One Bu	rst	
RL RF 50 Ω enter Freq 2.441000		SENSE:INT Trig Delay-500 Fast →→ Trig: Video	ALIGN AUTO 0.0 µs Avg Type: Lo	04:51 pg-Pwr T	54 PM Jul 07, 202 RACE 1 2 3 4 5 TYPE WWWWWW
Ref Offset 2.36	IFGaiı	1 uot -		ΔMkr1	2.896 ms
dB/div Ref 20.00 dE					0.68 dE
0.0					
o.o National Angles Angles Angles Angles and Angl	وارينا. با و ماد العارجي و با وراله <mark>الغار و روار الغار ال</mark>	142			TRIG LVL
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0.0 <mark>1.1 1.1/</mark>		- Alexandra and Alexandra and a local data of the second se	a fa de arrenda a freda	a direction in the state of the s	, litter and a litter and a litter and a litter a
enter 2.441000000 GH es BW 1.0 MHz	łz	#VBW 3.0 MHz		Sweep 10.00 ms	Span 0 Hz
	X 2,896 mc (A)	Y FUNCTION	N FUNCTION WIDTH	FUNCTION VALUE	(1000) pro
2 F 1 t 3 4	2.896 ms (Δ) 485.0 μs	-20.57 dBm			
5 6 7					=



Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC		SENSE:INT	ALIGN AUTO		5:37 PM Jul 07, 2022
enter Freq 2.44100000	0 GHz PNO: Fast IFGain:Low	Trig Delay-500.0 → Trig: Video #Atten: 30 dB	µs Avg Type: L	og-Pwr	TYPE WWWWWWWW
Ref Offset 2.36 dB 0 dB/div Ref 20.00 dBm				ΔMkr	1 398.0 µs 2.77 dB
0 dB/div Ref 20.00 dBm					
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enter 2.441000000 GHz		(D)N( 0 0 D(U)-		0	Span 0 Hz
	#1	/BW 3.0 MHz	FUNCTION WIDTH	Sweep 10.00 ms	(10001 pts)
1 Δ2 1 t (Δ) 2 F 1 t	<u>398.0 μs</u> (Δ) 494.0 μs -19.	2.77 dB 19 dBm			
3					
6 7					
89 9					
		m			
SG			STATUS		
	Dwell NVNT	3-DH3 2441	MHz One Bu	rst	
Agilent Spectrum Analyzer - Swept SA           RL         RF         50 Ω         AC           Center Freq 2.44100000		SENSE:INT Trig Delay-500.0	ALIGN AUTO		2:50 PM Jul 07, 2022 TRACE 1 2 3 4 5 6
	PNO: Fast • IFGain:Low	Televa Milata a			DET PNNNN
Ref Offset 2.36 dB				ΔMkr1	1.648 ms 2.31 dB
0 dB/div Ref 20.00 dBm					2.01 02
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enter 2.441000000 GHz					Span 0 Hz
	#\	BW 3.0 MHz	FUNCTION WIDTH	Sweep 10.00 ms	
IKR MODE         TRC         SCL         X           1         Δ2         1         t         (Δ)           2         F         1         t	<u>1.648 ms</u> (Δ) 494.0 μs -19.	2.31 dB 20 dBm		FONCTION VALUE	
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					E
5 6 7					



Dwel	I NVNT 3-D	7H5 Z44 II		Duisi		
RL RF 50 Ω AC enter Freq 2.441000000 GHz	PNO: East +++ T	E:INT rig Delay-500.0 μ rig: Video Atten: 30 dB	ALIGN AUTO s Avg Tyj	pe: Log-Pwr	TF	38 PM Jul 07, 20 RACE 1 2 3 4 TYPE WWWWW DET P N N N
Ref Offset 2.36 dB 0 dB/div Ref 20.00 dBm					ΔMkr1	2.898 m 2.47 d
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80.0     trigger       80.0     trigger       90.0     trigger	#VBW 3	.0 MHz		Sweep	allan para an	Span 0 H
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	#VBW 3	.0 MHz	layon og starket og star I	Sweep	10.00 ms	Span 0 H



## 15. Antenna Requirement

## 15.1 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.

## 15.2 Test Result

The EUT antenna is PCB antenna, The antenna gain is -0.58dBi, fulfill the requirement of this section.

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## 16. EUT Photographs

#### **EUT Photo 1**



**EUT Photo 2** 





# 17. EUT Test Setup Photographs

# **Conducted Measurement Photo**



<image>





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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: bctc@bctc-lab.com.cn

## ***** END *****

No.: BCTC/RF-EMC-005

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