

# **TEST REPORT**

Report No.:	BCTC2407562066-2E
Applicant:	Sentrax GmbH
Product Name:	Zenix LON-2
Test Model:	S008
Tested Date:	2024-07-11 to 2024-11-01
Issued Date:	2024-11-01

# Shenzhen BCTC Testing Co., Ltd.



No.: BCTC/RF-EMC-005

Page: 1 of 85

Edition: B.2



# FCC ID: 2BLVB-S008

Product Name:	Zenix LON-2
Trademark:	Sentrax GmbH
Model/Type reference:	S008
Prepared For:	Sentrax GmbH
Address:	Sentrax GmbH Platz 4 6039 Root Switzerland
Manufacturer:	Sentrax GmbH
Address:	Sentrax GmbH Platz 4 6039 Root Switzerland
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2024-07-11
Sample tested Date:	2024-07-11 to 2024-11-01
Issue Date:	2024-11-01
Report No.:	BCTC2407562066-2E
Test Standards:	FCC Part15.247 ANSI C63.10-2013
	ANSI 603.10-2013
Test Results:	PASS

Tested by:

Brave Zeng/ Project Handler

Approved by:

Zero Zhou/Reviewer

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# Table Of Content

-	Test	Report Declaration Pa	age
	1.	Version	5
1	2.	Test Summary	
	3.	Measurement Uncertainty	7
4	4.	Product Information And Test Setup	8
4	4.1	Product Information	
4	4.2	Test Setup Configuration	8
4	4.3	Support Equipment	9
4	4.4	Channel List	
	4.5	Test Mode	
	4.6	Table Of Parameters Of Text Software Setting	
	5.	Test Facility And Test Instrument Used	
	5.1	Test Facility	
	5.2	Test Instrument Used	
	6.	Conducted Emissions	
	6.1	Block Diagram Of Test Setup	
	6.2	Limit	
	6.3	Test Procedure	
	6.4	EUT Operating Conditions	
	6.5	Test Result	
	7.	Radiated Emissions	
	7.1	Block Diagram Of Test Setup	
	7.2	Limit	
	7.3	Test Procedure	
	7.4	EUT Operating Conditions	
	7.5	Test Result	
	8. • •	Radiated Band Emission Measurement And Restricted Bands Of Operation	
	8.1	Block Diagram Of Test Setup	
	8.2	Limit	
	8.3	Test Procedure EUT operating Conditions	
	8.4 8.5	Test Result	
	•	Test Result	
	9. 9.1	Power Spectral Density Test Block Diagram Of Test Setup Limit Test Procedure	
	9.1 9.2	Limit	
	9.2 9.3	LIIIII	
	9.3 9.4	FUIT Operating Conditions	
	9.4 9.5	EUT Operating Conditions Test Result	
	9.5 10.	Bandwidth Test	
	10.1	Bandwidth Test Block Diagram Of Test Setup	+∠ ∕19
	10.1	Limit	∠⊤۲∠ 12
	10.2		
	10.3		т∠ 12
	· U		······································



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(Note: N/A means not applicable)

Page: 4 of 85



# 1. Version

Report No.	Issue Date	Description	Approved
BCTC2407562066-2E	2024-11-01	Original	Valid



# 2. Test Summary

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No.	Results
1	Conducted Emission	15.207	PASS
2	6dB Bandwidth	15.247 (a)(2)	PASS
3	Peak Output Power	15.247 (b)	PASS
4	Radiated Spurious Emission	15.247 (d)	PASS
5	Power Spectral Density	15.247 (e)	PASS
6	Restricted Band of Operation	15.205	PASS
7	Band Edge (Out of Band Emissions)	15.247 (d)	PASS
8	Antenna Requirement	15.203	PASS



# 3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(9kHz-30MHz)	U=3.7dB
2	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission(150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59°C



# 4. Product Information And Test Setup

# 4.1 Product Information

Model/Type reference:	S008
Model differences:	N/A
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	802.11b/g/n20MHz:2412~2462 MHz 802.11n40MHz:2422~2452 MHz
Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n Up to 150Mbps
Type of Modulation:	OFDM/DSSS
Number Of Channel	802.11b/g/n20MHz:11 CH 802.11n40MHz: 7 CH
Antenna installation:	Internal antenna
Antenna Gain:	<ul> <li>1.3dBi</li> <li>Remark:</li> <li>The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information.</li> <li>The antenna gain of the product is provided by the customer, and the test data is affected by the customer, and the test data is affected by the customer.</li> </ul>
Ratings:	DC 12V from adapter/DC 48V from POE

# 4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Page: 8 of 85

Edition: B.2



# 4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Zenix LON-2	Sentrax GmbH	S008	N/A	EUT
E-2	Adapter	/	HXY-122000	N/A	Auxiliary
E-3	Router	HUAWEI	WS318	N/A	Auxiliary
E-4	POE Supply	Tenda	TEF1105P-4-63 W	N/A	Auxiliary
E-5	PC	Lenovo	ThinkPad S2	N/A	Auxiliary

ltem	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	OM	DC cable unshielded

#### Notes:

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.

# 4.4 Channel List

	Channel List for 802.11b/g/n(20)						
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)		
01	2412	02	2417	03	2422		
04	2427	05	2432	06	2437		
07	2442	08	2447	09	2452		
10	2457	11	2462				

	Channel List for 802.11n(40)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	
03	2422	04	2427	05	2432	
06	2437	07	2442	08	2447	
09	2452					



#### 4.5 Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Power supply mode	For All Mode	Description	Modulation Type
	Mode 1	CH01	
	Mode 2	CH20	GFSK
POE power supply	Mode 3	CH40	
	Mode 4	BT+WIFI+USB+LAN	
	Mode 5	CH01	
Adapter power supply	Mode 6	CH20	GFSK
	Mode 7	CH40	
	Mode 8	BT+WIFI+	-USB+LAN

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

# 4.6 Table Of Parameters Of Text Software Setting

During testing channel & power controlling software provided by the customer 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 customer and is going to be fixed on the firmware of the final end product power parameters

Test software Version	CMD				
Frequency	2412 MHz	2437 MHz	2462 MHz		
Parameters	DEF	DEF	DEF		
Frequency	2422MHz	2437MHz	2452MHz		
Parameters	DEF	DEF	DEF		



# 5. Test Facility And Test Instrument Used

# 5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards. FCC Test Firm Registration Number: 712850 A2LA certificate registration number is: CN1212 ISED Registered No.: 23583 ISED CAB identifier: CN0017

Conducted Emissions Test							
Equipment	Equipment Manufacturer Model# Serial# Last Cal. Next Cal.						
Receiver	R&S	ESR3	102075	May 16, 2024	May 15, 2025		
LISN	R&S	ENV216	101375	May 16, 2024	May 15, 2025		
Software	Frad	EZ-EMC	EMC-CON 3A1	/	/		
Pulse limiter	Schwarzbeck	VTSD9561-F	01323	May 16, 2024	May 15, 2025		

#### 5.2 Test Instrument Used

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power meter	Keysight	E4419	/	May 16, 2024	May 15, 2025
Power Sensor (AV)	Keysight	E9300A	/	May 16, 2024	May 15, 2025
Signal Analyzer20kH z-26.5GHz	Keysight	N9020A	MY49100060	May 16, 2024	May 15, 2025
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 16, 2024	May 15, 2025
Radio frequency control box	MAIWEI	MW100-RFC B	L mananananananananananananananananananan		
Software	MAIWEI	MTS 8310		· · · · · · · · · · · · · · · · · · ·	f

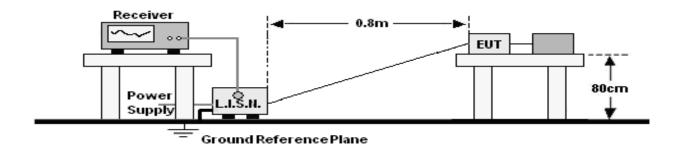


Radiated Emissions Test (966 Chamber01)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May 16, 2024	May 15, 2025
Receiver	R&S	ESR3	102075	May 16, 2024	May 15, 2025
Receiver	R&S	ESRP	101154	May 16, 2024	May 15, 2025
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 16, 2024	May 15, 2025
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 21, 2024	May 20, 2025
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 21, 2024	May 20, 2025
Amplifier	SKET	LAPA_01G18 G-45dB	SK202104090 1	May 16, 2024	May 15, 2025
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 21, 2024	May 20, 2025
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 16, 2024	May 15, 2025
Horn Antenna(18G Hz-40GHz)	Schwarzbeck	BBHA9170	00822	May 21, 2024	May 20, 2025
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 16, 2024	May 15, 2025
Software	Frad	EZ-EMC	FA-03A2 RE	\	/



# 6. Conducted Emissions

# 6.1 Block Diagram Of Test Setup



#### 6.2 Limit

	Limit (d	dBuV)
FREQUENCY (MHz)	Quas-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00
Notos:		

Notes:

1. \*Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

#### 6.3 Test Procedure

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

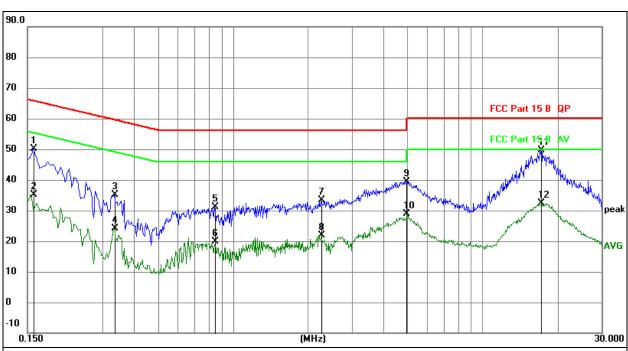
# 6.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



# 6.5 Test Result

Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Line
Test Voltage :	DC 12V from adapter	Test Mode:	Mode 8(Adapter)



#### Remark:

All readings are Quasi-Peak and Average values.
 Factor = Insertion Loss + Cable Loss.

3. Measurement=Reading Level+ Correct Factor

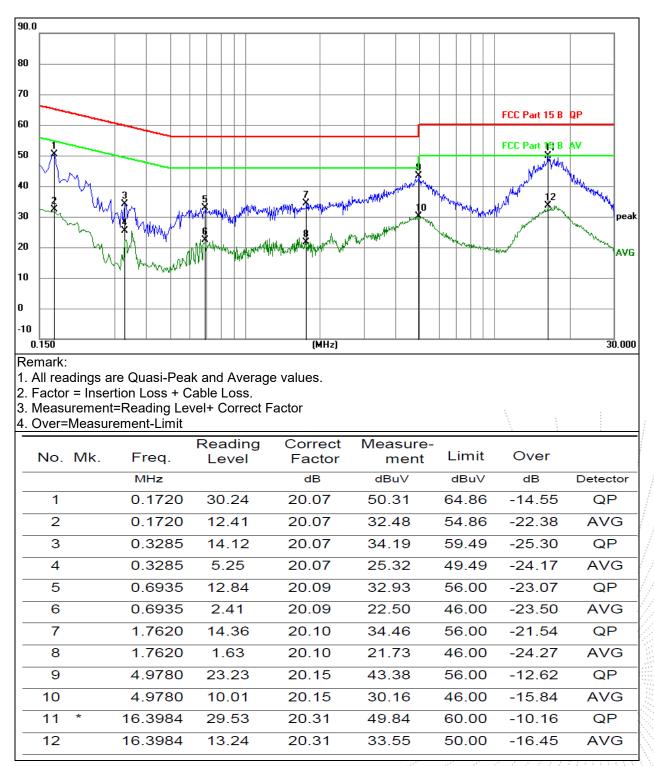
4. Over=Measurement-Limit

		Reading	Correct	Measure-			
No. Mk.	Freq.	Level	Factor	ment	Limit	Over	
	MHz		dB	dBuV	dBuV	dB	Detector
1	0.1590	29.96	20.07	50.03	65.52	-15.49	QP
2	0.1590	14.94	20.07	35.01	55.52	-20.51	AVG
3	0.3345	14.94	20.07	35.01	59.34	-24.33	QP
4	0.3345	3.99	20.07	24.06	49.34	-25.28	AVG
5	0.8474	11.09	20.09	31.18	56.00	-24.82	QP
6	0.8474	-0.18	20.09	19.91	46.00	-26.09	AVG
7	2.2513	13.35	20.11	33.46	56.00	-22.54	QP
8	2.2513	1.86	20.11	21.97	46.00	-24.03	AVG
9	4.9694	19.35	20.15	39.50	56.00	-16.50	QP
10	4.9694	8.69	20.15	28.84	46.00	-17.16	AVG
11 *	17.1195	29.34	20.32	49.66	60.00	-10.34	QP
12	17.1195	12.06	20.32	32.38	50.00	-17.62	AVG

No.: BCTC/RF-EMC-005

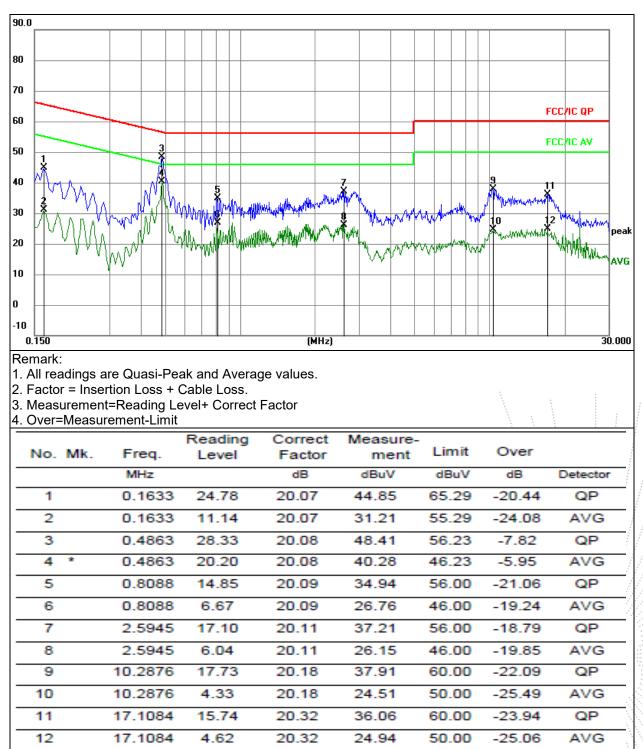


Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Neutral
Test Voltage :	AC120V/60Hz	Test Mode:	Mode 5



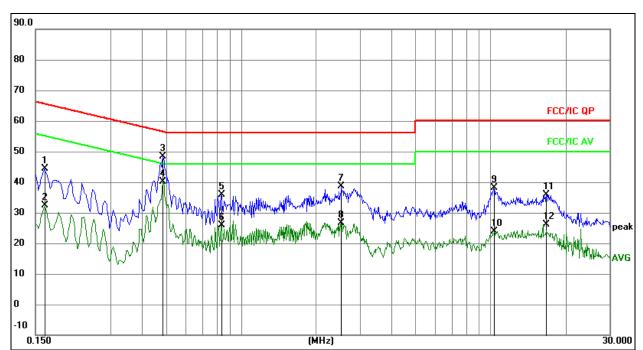


Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Line
Test Voltage :	DC 48V from POE	Test Mode:	Mode 4(POE)





Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Neutral
Test Voltage :	DC 48V from POE	Test Mode:	Mode 4



Remark:

All readings are Quasi-Peak and Average values.
 Factor = Insertion Loss + Cable Loss.
 Measurement=Reading Level+ Correct Factor

4. Over=Measurement-Limit

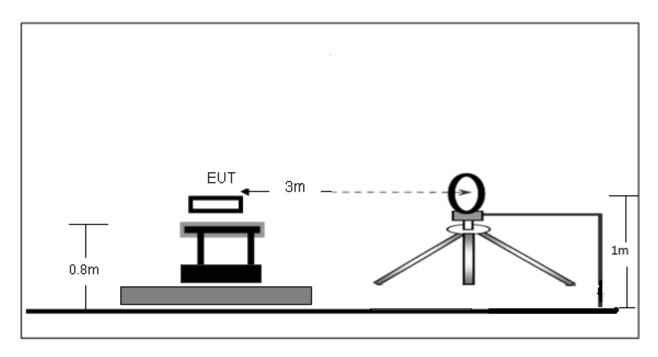
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.1633	24.38	20.07	44.45	65.29	-20.84	QP
2		0.1633	12.21	20.07	32.28	55.29	-23.01	AVG
3		0.4863	28.24	20.08	48.32	56.23	-7.91	QP
4	*	0.4863	20.08	20.08	40.16	46.23	-6.07	AVG
5		0.8305	15.87	20.09	35.96	56.00	-20.04	QP
6		0.8305	5.80	20.09	25.89	46.00	-20.11	AVG
7		2.5266	18.56	20.11	38.67	56.00	-17.33	QP
8		2.5266	6.46	20.11	26.57	46.00	-19.43	AVG
9		10.2876	17.94	20.18	38.12	60.00	-21.88	QP
10		10.2876	3.59	20.18	23.77	50.00	-26.23	AVG
11		16.7497	15.57	20.32	35.89	60.00	-24.11	QP
12		16.7497	5.71	20.32	26.03	50.00	-23.97	AVG

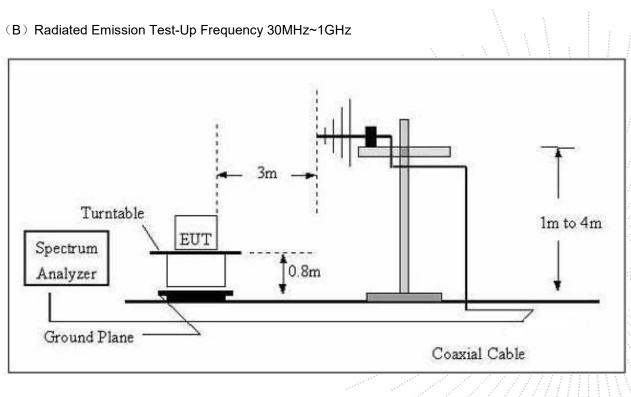


# 7. Radiated Emissions

# 7.1 Block Diagram Of Test Setup

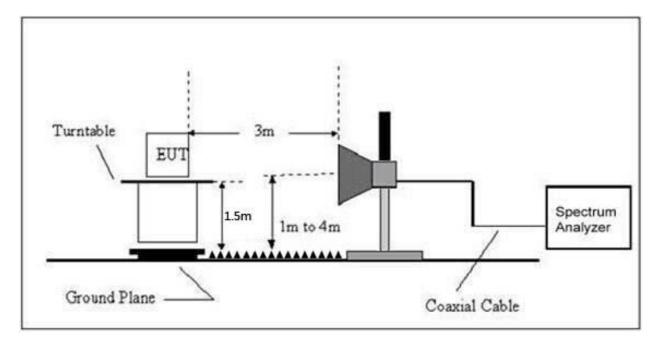
# (A) Radiated Emission Test-Up Frequency Below 30MHz







#### (C) Radiated Emission Test-Up Frequency Above 1GHz



# 7.2 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency	Field Strength	Distance	Field Strength Li	mit at 3m Distance
(MHz)	uV/m	(m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	20log <sup>(2400/F(kHz))</sup> + 80
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	20log <sup>(24000/F(kHz))</sup> + 40
1.705 ~ 30	30	30	100 * 30	20log <sup>(30)</sup> + 40
30 ~ 88	100	3	100	20log <sup>(100)</sup>
88 ~ 216	150	3	150	20log <sup>(150)</sup>
216 ~ 960	200	3	200	20log <sup>(200)</sup>
Above 960	500	3	500	20log <sup>(500)</sup>

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBu\	//m) (at 3M)
FREQUENCI (MHZ)	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).



#### FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 <sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower

#### 7.3 Test Procedure

Receiver Parameter	Setting
Attenuation	Auto
9kHz~150kHz	RBW 200Hz for QP
150kHz~30MHz	RBW 9kHz for QP
30MHz~1000MHz	RBW 120kHz for QP

Spectrum Parameter	Setting
1-25GHz	RBW 1 MHz /VBW 1 MHz for Peak, RBW 1 MHz / VBW 10Hz for Average

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).

h. Test the EUT in the lowest channel, the middle channel ,the Highest channel. Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.



Above 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the Highest channel. Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

# 7.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

#### 7.5 Test Result

Below 30MHz

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
			and the second	PASS
		<u> </u>	and the second	PASS

Note:

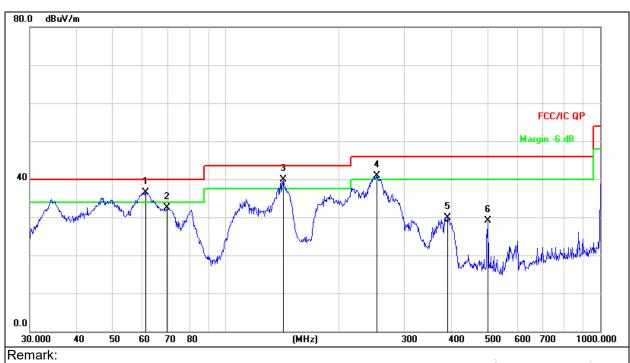
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB); Limit line = specific limits(dBuv) + distance extrapolation factor.



Between 30MHz - 1GHz

Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Horizontal
Test Mode:	DC 48V from POE	Test Mode:	Mode 4



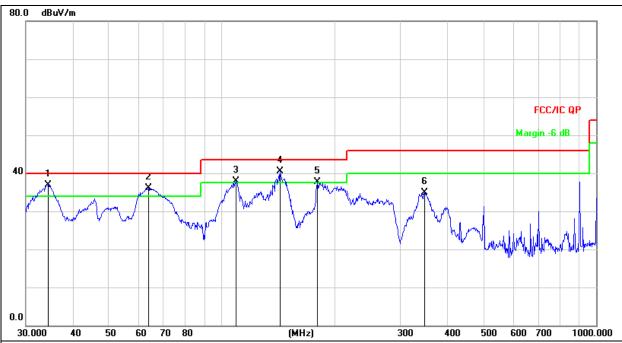
1.Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2. Measurement=Reading Level+ Correct Factor 3. Over= Measurement-Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	61.1315	52.08	-15.56	36.52	40.00	-3.48	QP
2		69.6004	50.34	-17.89	32.45	40.00	-7.55	QP
3	İ	142.3243	58.80	-18.89	39.91	43.50	-3.59	QP
4	İ	252.9482	55.14	-14.23	40.91	46.00	-5.09	QP
5		392.0951	40.80	-10.94	29.86	46.00	-16.14	QP
6		501.1789	37.76	-8.65	29.11	46.00	-16.89	QP



Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 5	Remark:	N/A



#### Remark:

1.Factor = Antenna Factor + Cable Loss – Pre-amplifier.

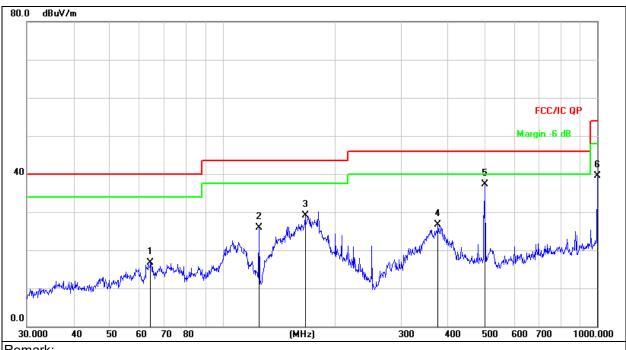
2. Measurement=Reading Level+ Correct Factor

3. Over= Measurement-Limit
----------------------------

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	34.3963	52.79	-15.80	36.99	40.00	-3.01	QP
2	İ	63.7588	52.37	-16.28	36.09	40.00	-3.91	QP
3	İ	109.4116	54.57	-16.59	37.98	43.50	-5.52	QP
4	İ	143.3260	59.43	-18.96	40.47	43.50	-3.03	QP
5	İ	180.0165	54.84	-17.20	37.64	43.50	-5.86	QP
6		348.0274	46.38	-11.55	34.83	46.00	-11.17	QP



Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Vertical
Test Voltage :	DC 12V from Adapter	Test Mode:	Mode 8



Remark:

1.Factor = Antenna Factor + Cable Loss – Pre-amplifier.
 2. Measurement=Reading Level+ Correct Factor

3. Over=Measurement-Limit

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		64.2074	33. <mark>1</mark> 8	-16.41	16.77	40.00	-23.23	QP
2		125.0066	43.50	-17.68	25.82	43.50	-17.68	QP
3		166.0680	47.40	-18.24	29.16	43.50	-14.34	QP
4		375.9385	37.81	-11.15	26.66	46.00	-19.34	QP
5	*	501.1790	46.04	-8.65	37.39	46.00	-8.61	QP
6		1000.000	41.90	-2.36	39.54	54.00	-14.46	QP



Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Horizontal
Test Voltage :	DC 12V from Adapter	Test Mode:	Mode 8



#### Remark:

1.Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2. Measurement=Reading Level+ Correct Factor

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		37.0248	43.14	-15.29	27.85	40.00	-12.15	QP
2		63.7588	49.95	-16.28	33.67	40.00	-6.33	QP
3	ļ	125.0066	55.67	-17.68	37.99	43.50	-5.51	QP
4	*	167.8243	56.45	-18.11	38.34	43.50	-5.16	QP
5		501.1790	44.66	-8.65	36.01	46.00	-9.99	QP
6		1000.000	37.45	-2.36	35.09	54.00	-18.91	QP

3. Over=Measurement-Limit



#### Between 1GHz – 25GHz 802.11b

Polar	Fre- quency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Туре
		•	Low channe	el:2412MHz	•		
V	4824.00	68.41	-19.95	48.46	74.00	-25.54	PK
V	4824.00	59.55	-19.95	39.60	54.00	-14.40	AV
V	7236.00	61.15	-14.14	47.01	74.00	-26.99	PK
V	7236.00	51.81	-14.14	37.67	54.00	-16.33	AV
Н	4824.00	64.17	-19.95	44.22	74.00	-29.78	PK
Н	4824.00	54.12	-19.95	34.17	54.00	-19.83	AV
Н	7236.00	59.00	-14.14	44.86	74.00	-29.14	PK
Н	7236.00	51.29	-14.14	37.15	54.00	-16.85	AV
			Middle chan	nel:2437MHz			
V	4874.00	67.39	-19.85	47.54	74.00	-26.46	PK
V	4874.00	61.37	-19.85	41.52	54.00	-12.48	AV
V	7311.00	56.46	-13.93	42.53	74.00	-31.47	PK
V	7311.00	47.30	-13.93	33.37	54.00	-20.63	AV
Н	4874.00	62.77	-19.85	42.92	74.00	-31.08	PK
Н	4874.00	52.98	-19.85	33.13	54.00	-20.87	AV
Н	7311.00	54.12	-13.93	40.19	74.00	-33.81	PK
Н	7311.00	45.20	-13.93	31.27	54.00	-22.73	AV
			High chann	el:2462MHz		5	
V	4924.00	68.92	-19.75	49.17	74.00	-24.83	PK
V	4924.00	60.15	-19.75	40.40	54.00	-13.60	AV
V	7386.00	61.82	-13.72	48.10	74.00	-25.90	PK
V	7386.00	51.40	-13.72	37.68	54.00	-16.32	AV
Н	4924.00	66.04	-19.75	46.29	74.00	-27.71	PK
Н	4924.00	56.62	-19.75	36.87	54.00	-17.13	AV
Н	7386.00	59.87	-13.72	46.15	74.00	-27.85	PK
Н	7386.00	52.82	-13.72	39.10	54.00	-14.90	AV

#### Remark:

1.Measurement = Reading Level + Correct Factor,

Correct Factor = Antenna Factor + Cable Loss - Pre-amplifier,

Over= Measurement - Limit

2.If peak below the average limit, the average emission was no test.

3. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB 4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



#### 802.11g

Polar	Fre- quency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Туре
			Low channe	el:2412MHz			
V	4824.00	68.60	-19.95	48.65	74.00	-25.35	PK
V	4824.00	58.79	-19.95	38.84	54.00	-15.16	AV
V	7236.00	57.88	-14.14	43.74	74.00	-30.26	PK
V	7236.00	46.89	-14.14	32.75	54.00	-21.25	AV
Н	4824.00	66.37	-19.95	46.42	74.00	-27.58	PK
Н	4824.00	57.06	-19.95	37.11	54.00	-16.89	AV
Н	7236.00	56.84	-14.14	42.70	74.00	-31.30	PK
Н	7236.00	49.32	-14.14	35.18	54.00	-18.82	AV
			Middle chan	nel:2437MHz			
V	4874.00	64.98	-19.85	45.13	74.00	-28.87	PK
V	4874.00	56.81	-19.85	36.96	54.00	-17.04	AV
V	7311.00	54.50	-13.93	40.57	74.00	-33.43	PK
V	7311.00	46.29	-13.93	32.36	54.00	-21.64	AV
Н	4874.00	62.94	-19.85	43.09	74.00	-30.91	PK
Н	4874.00	52.00	-19.85	32.15	54.00	-21.85	AV
Н	7311.00	52.72	-13.93	38.79	74.00	-35.21	PK
Н	7311.00	45.26	-13.93	31.33	54.00	-22.67	AV
			High chann	el:2462MHz			
V	4924.00	67.16	-19.75	47.41	74.00	-26.59	PK
V	4924.00	57.37	-19.75	37.62	54.00	-16.38	AV
V	7386.00	59.47	-13.72	45.75	74.00	-28.25	PK
V	7386.00	48.50	-13.72	34.78	54.00	-19.22	AV
Н	4924.00	64.35	-19.75	44.60	74.00	-29.40	PK
Н	4924.00	54.59	-19.75	34.84	54.00	-19.16	AV
Н	7386.00	57.22	-13.72	43.50	74.00	-30.50	PK
Н	7386.00	48.52	-13.72	34.80	54.00	-19.20	AV

#### Remark:

1.Measurement = Reading Level + Correct Factor,

Correct Factor = Antenna Factor + Cable Loss - Pre-amplifier,

Over= Measurement - Limit

2.If peak below the average limit, the average emission was no test.

In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
 The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



#### 802.11n20

Polar	Fre- quency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Туре
			Low channe	el:2412MHz			
V	4824.00	70.08	-19.95	50.13	74.00	-23.87	PK
V	4824.00	59.60	-19.95	39.65	54.00	-14.35	AV
V	7236.00	61.96	-14.14	47.82	74.00	-26.18	PK
V	7236.00	52.56	-14.14	38.42	54.00	-15.58	AV
Н	4824.00	67.36	-19.95	47.41	74.00	-26.59	PK
Н	4824.00	57.82	-19.95	37.87	54.00	-16.13	AV
Н	7236.00	59.14	-14.14	45.00	74.00	-29.00	PK
Н	7236.00	50.80	-14.14	36.66	54.00	-17.34	AV
			Middle chan	nel:2437MHz			
V	4874.00	66.54	-19.85	46.69	74.00	-27.31	PK
V	4874.00	58.18	-19.85	38.33	54.00	-15.67	AV
V	7311.00	56.66	-13.93	42.73	74.00	-31.27	PK
V	7311.00	47.13	-13.93	33.20	54.00	-20.80	AV
Н	4874.00	63.83	-19.85	43.98	74.00	-30.02	PK
Н	4874.00	54.16	-19.85	34.31	54.00	-19.69	AV
Н	7311.00	54.42	-13.93	40.49	74.00	-33.51	PK
Н	7311.00	46.04	-13.93	32.11	54.00	-21.89	AV
			High chann	el:2462MHz			
V	4924.00	68.78	-19.75	49.03	74.00	-24.97	PK
V	4924.00	58.32	-19.75	38.57	54.00	-15.43	AV
V	7386.00	60.20	-13.72	46.48	74.00	-27.52	PK
V	7386.00	49.56	-13.72	35.84	54.00	-18.16	AV
Н	4924.00	67.58	-19.75	47.83	74.00	-26.17	PK
Н	4924.00	57.76	-19.75	38.01	54.00	-15.99	AV
Н	7386.00	58.28	-13.72	44.56	74.00	-29.44	PK
Н	7386.00	49.94	-13.72	36.22	54.00	-17.78	AV

#### Remark:

1.Measurement = Reading Level + Correct Factor,

Correct Factor = Antenna Factor + Cable Loss - Pre-amplifier,

Over= Measurement - Limit

2.If peak below the average limit, the average emission was no test.

3. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



#### 802.11n40

Polar	Fre- quency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Туре
		•	Low channe	el:2422MHz			
V	4844.00	69.36	-19.91	49.45	74.00	-24.55	PK
V	4844.00	61.18	-19.91	41.27	54.00	-12.73	AV
V	7266.00	61.06	-14.06	47.00	74.00	-27.00	PK
V	7266.00	51.69	-14.06	37.63	54.00	-16.37	AV
Н	4844.00	66.21	-19.91	46.30	74.00	-27.70	PK
Н	4844.00	56.62	-19.91	36.71	54.00	-17.29	AV
Н	7266.00	59.13	-14.06	45.07	74.00	-28.93	PK
Н	7266.00	52.10	-14.06	38.04	54.00	-15.96	AV
			Middle chani	nel:2437MHz			
V	4874.00	68.09	-19.85	48.24	74.00	-25.76	PK
V	4874.00	59.99	-19.85	40.14	54.00	-13.86	AV
V	7311.00	59.66	-13.93	45.73	74.00	-28.27	PK
V	7311.00	50.30	-13.93	36.37	54.00	-17.63	AV
Н	4874.00	65.48	-19.85	45.63	74.00	-28.37	PK
Н	4874.00	55.30	-19.85	35.45	54.00	-18.55	AV
Н	7311.00	58.03	-13.93	44.10	74.00	-29.90	PK
Н	7311.00	49.04	-13.93	35.11	54.00	-18.89	AV
			High chann	el:2452MHz			
V	4904.00	69.36	-19.79	49.57	74.00	-24.43	PK
V	4904.00	58.57	-19.79	38.78	54.00	-15.22	AV
V	7356.00	61.45	-13.80	47.65	74.00	-26.35	PK
V	7356.00	51.04	-13.80	37.24	54.00	-16.76	AV
Н	4904.00	67.43	-19.79	47.64	74.00	-26.36	PK
Н	4904.00	57.99	-19.79	38.20	54.00	-15.80	AV
Н	7356.00	59.61	-13.80	45.81	74.00	-28.19	PK
Н	7356.00	51.11	-13.80	37.31	54.00	-16.69	AV

#### Remark:

1.Measurement = Reading Level + Correct Factor,

Correct Factor = Antenna Factor + Cable Loss - Pre-amplifier,

Over= Measurement - Limit

2.If peak below the average limit, the average emission was no test.

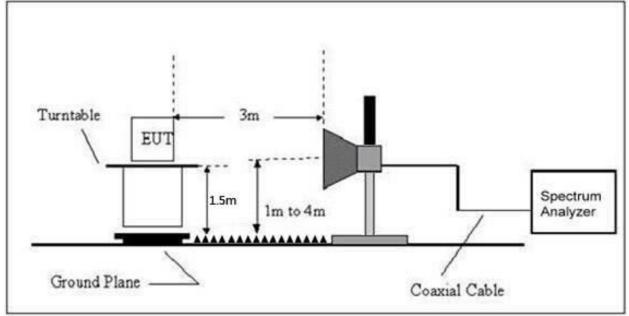
In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
 The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



# 8. Radiated Band Emission Measurement And Restricted Bands Of Operation

# 8.1 Block Diagram Of Test Setup

#### Radiated Emission Test-Up Frequency Above 1GHz



# 8.2 Limit

FCC Part15 C Section 15.209 and 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	( <sup>2</sup> )
13.36-13.41			



#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

	Limit (dBu\	//m) (at 3M)
FREQUENCY (MHz)	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

#### 8.3 Test Procedure

Receiver Parameter	Setting
Attenuation	Auto
Start Frequency	2300MHz
Stop Frequency	2520
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Above 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the Highest channel. Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

# 8.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



# 8.5 Test Result

	Polar (H/V)	Fre- quency	Reading Level	Correct Factor	Measure- ment (dBuV/m)	Lin (dBu	nits V/m)	Result
		(MHz)	(dBuV/m)	(dB)	PK	PK	AV	
			L	ow Channe	l 2412MHz			
	Н	2390.00	72.87	-25.43	47.44	74.00	54.00	PASS
	Н	2400.00	76.54	-25.40	51.14	74.00	54.00	PASS
	V	2390.00	72.19	-25.43	46.76	74.00	54.00	PASS
802.11b	V	2400.00	76.04	-25.40	50.64	74.00	54.00	PASS
002.110			F	ligh Channe	el 2462MHz			
	Н	2483.50	71.83	-25.15	46.68	74.00	54.00	PASS
	Н	2500.00	70.54	-25.10	45.44	74.00	54.00	PASS
	V	2483.50	72.05	-25.15	46.90	74.00	54.00	PASS
	V	2500.00	70.61	-25.10	45.51	74.00	54.00	PASS
			L	ow Channe	l 2412MHz			
	Н	2390.00	73.36	-25.43	47.93	74.00	54.00	PASS
	Н	2400.00	76.81	-25.40	51.41	74.00	54.00	PASS
	V	2390.00	74.21	-25.43	48.78	74.00	54.00	PASS
802.11g	V	2400.00	75.03	-25.40	49.63	74.00	54.00	PASS
002.11g			F	ligh Channe	el 2462MHz			
	Н	2483.50	73.06	-25.15	47.91	74.00	54.00	PASS
	Н	2500.00	69.39	-25.10	44.29	74.00	54.00	PASS
	V	2483.50	74.28	-25.15	49.13	74.00	54.00	PASS
	V	2500.00	71.64	-25.10	46.54	74.00	54.00	PASS

#### Remark:

1.Measurement = Reading Level + Correct Factor,

Correct Factor = Antenna Factor + Cable Loss - Pre-amplifier,

Over= Measurement - Limit

2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB 4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



	Polar (H/V)	Fre- quency	Reading Level (dBuV/m)	Correct Factor (dB)	Measure- ment (dBuV/m)	Limits (dBuV/m)		Result
	<b>、</b>	(MHz)			PK	PK	AV	
	Low Channel 2412MHz							
802.11	Н	2390.00	73.40	-25.43	47.97	74.00	54.00	PASS
	Н	2400.00	76.38	-25.40	50.98	74.00	54.00	PASS
	V	2390.00	72.88	-25.43	47.45	74.00	54.00	PASS
	V	2400.00	76.07	-25.40	50.67	74.00	54.00	PASS
n20	High Channel 2462MHz							
	Н	2483.50	72.68	-25.15	47.53	74.00	54.00	PASS
	Н	2500.00	69.45	-25.10	44.35	74.00	54.00	PASS
	V	2483.50	71.33	-25.15	46.18	74.00	54.00	PASS
	V	2500.00	68.79	-25.10	43.69	74.00	54.00	PASS
	Low Channel 2422MHz							
802.11 n40	Н	2390.00	72.02	-25.43	46.59	74.00	54.00	PASS
	Н	2400.00	76.83	-25.40	51.43	74.00	54.00	PASS
	V	2390.00	72.07	-25.43	46.64	74.00	54.00	PASS
	V	2400.00	75.14	-25.40	49.74	74.00	54.00	PASS
	High Channel 2452MHz							
	Н	2483.50	72.50	-25.15	47.35	74.00	54.00	PASS
	Н	2500.00	68.07	-25.10	42.97	74.00	54.00	PASS
	V	2483.50	71.95	-25.15	46.80	74.00	54.00	PASS
	V	2500.00	70.69	-25.10	45.59	74.00	54.00	PASS

#### Remark:

1.Measurement = Reading Level + Correct Factor, Correct Factor = Antenna Factor + Cable Loss – Pre-amplifier,

Over= Measurement - Limit

2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB 4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



# 9. Power Spectral Density Test

#### 9.1 Block Diagram Of Test Setup



#### 9.2 Limit

FCC Part15 (15.247) , Subpart C						
Section	Section Test Item		Frequency Range (MHz)	Result		
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS		

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

#### 9.3 Test Procedure

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to 1.5 times the DTS bandwidth.
- 3. Set the RBW to: 3 kHz
- 4. Set the VBW  $\ge$  3 x RBW.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level within the RBW.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

#### 9.4 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



# 9.5 Test Result

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 12V

Test Mode	Frequency (MHz)	Power Spectral Density (dBm/10kHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result	
b	2412	-5.46	-10.69	8	PASS	
b	2437	-5.17	-10.40	8	PASS	
b	2462	-4.75	-9.98	8	PASS	
g	2412	-8.78	-14.01	8	PASS	
g	2437	-8.54	-13.77	8	PASS	
g	2462	-8.09	-13.32	8	PASS	
n20	2412	-9.05	-14.28	8	PASS	
n20	2437	-8.69	-13.92	8	PASS	
n20	2462	-8.27	-13.50	8	PASS	
n40	2422	-11.41	-16.64	8	PASS	
n40	2437	-11.32	-16.55	8	PASS	
n40	2452	-10.85	-16.08	8	PASS	
Note: Correction Factor = 10log(3KHz/RBW in measurement) =-5.23						

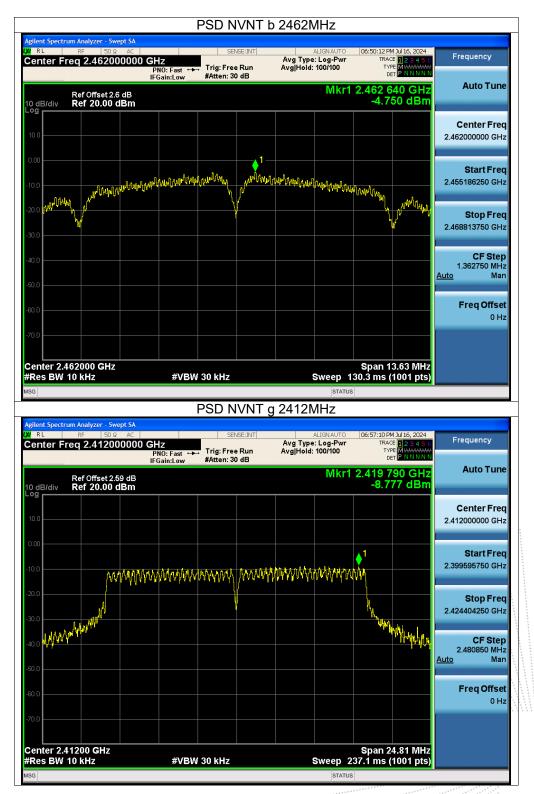
Power Spectral Density (dBm/3kHz)= Power Spectral Density (dBm/10kHz)-5.23



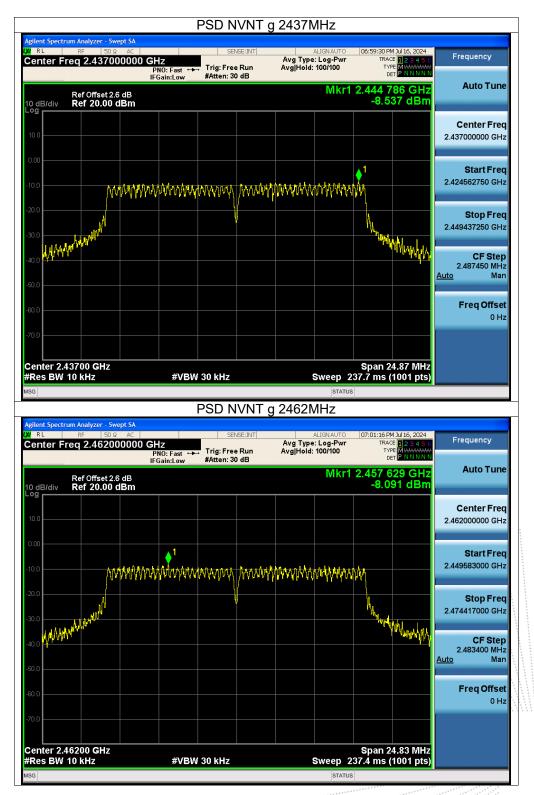








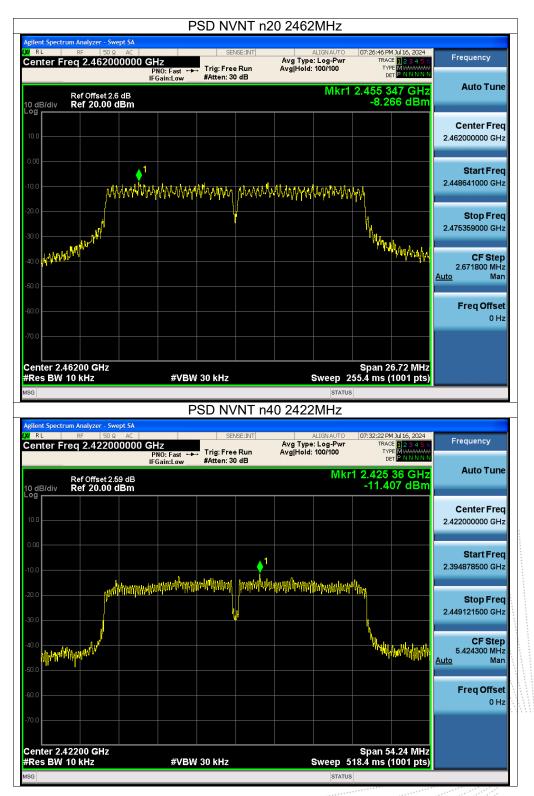




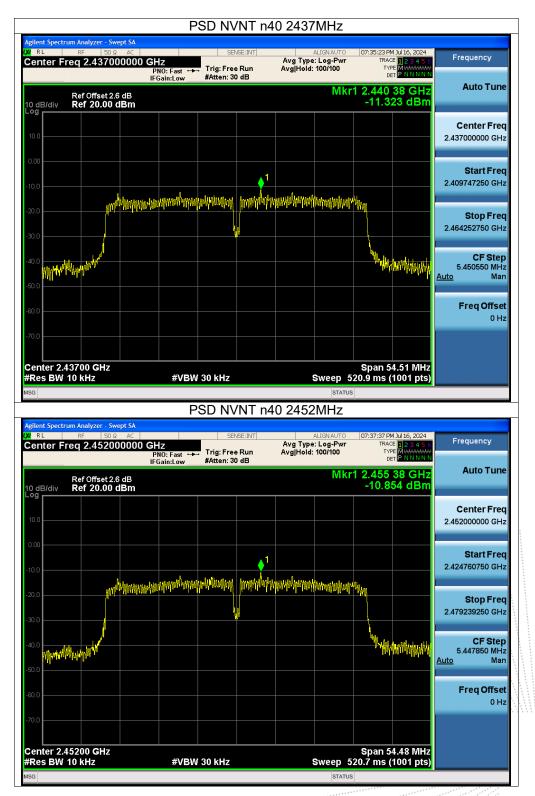














## 10. Bandwidth Test

#### 10.1 Block Diagram Of Test Setup



#### 10.2 Limit

		FCC Part15 (15.247)	) , Subpart C	
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

#### 10.3 Test Procedure

- 1. Set RBW = 100 kHz.
- 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 6 dB relative to the maximum level measured in the fundamental emission.

## 10.4 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



Pass

Pass

Pass

## 10.5 Test Result

n40

n40

n40

2422

2437

2452

Temperature:	<b>26</b> ℃	Relative	Humidity:	54%	
Pressure:	101kPa	Test Volt	age:	DC 12V	
Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 Bandwidth		Verdict
b	2412	9.522	0.5		Pass
b	2437	9.531	0.5		Pass
b	2462	9.085	0.5		Pass
g	2412	16.539	0.5		Pass
g	2437	16.583	0.5		Pass
g	2462	16.556	0.5		Pass
n20	2412	17.796	0.5		Pass
n20	2437	17.758	0.5		Pass
n20	2462	17.812	0.5		Pass

36.162

36.337

36.319

0.5

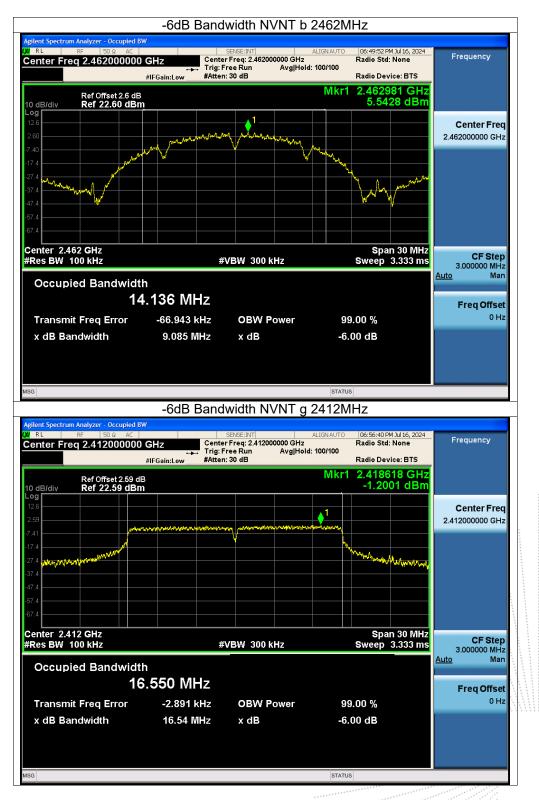
0.5

0.5

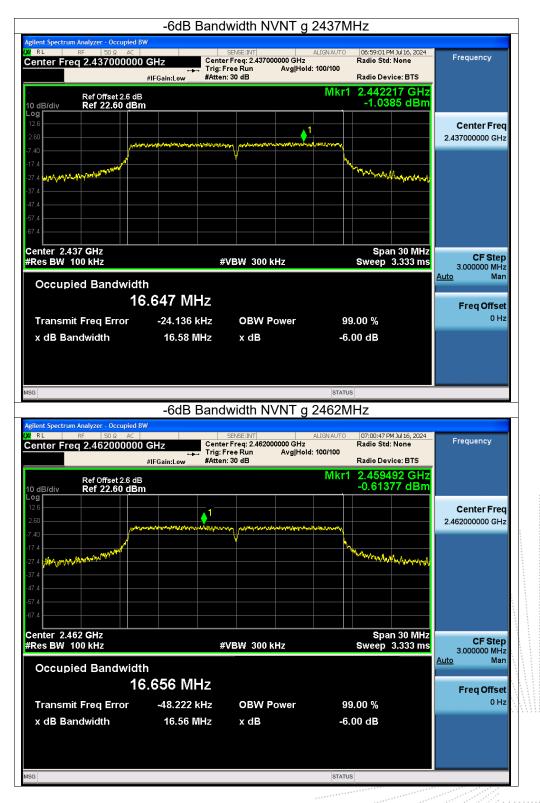




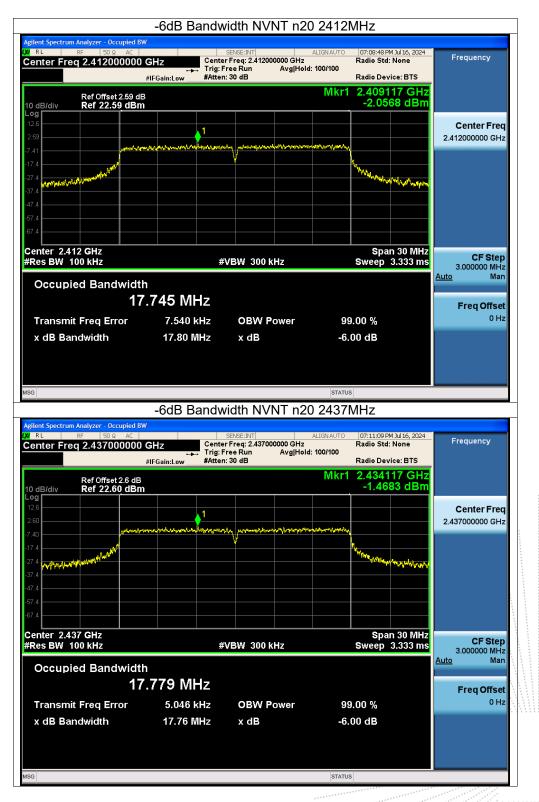




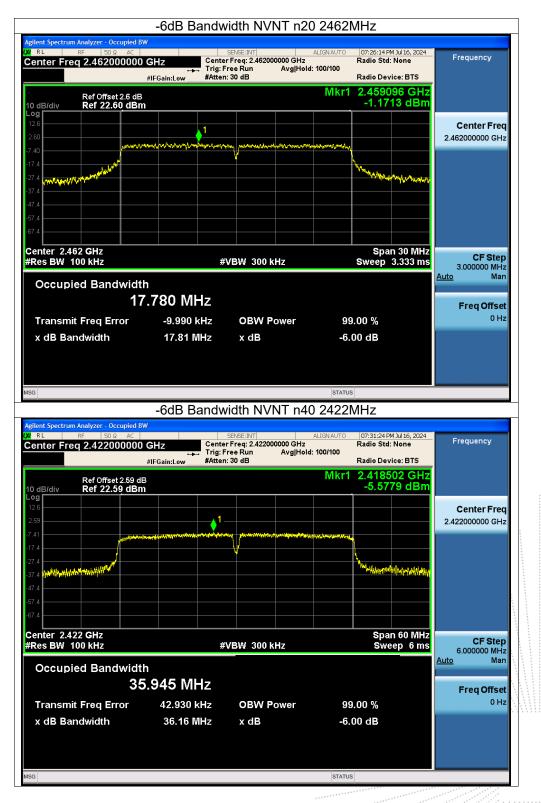




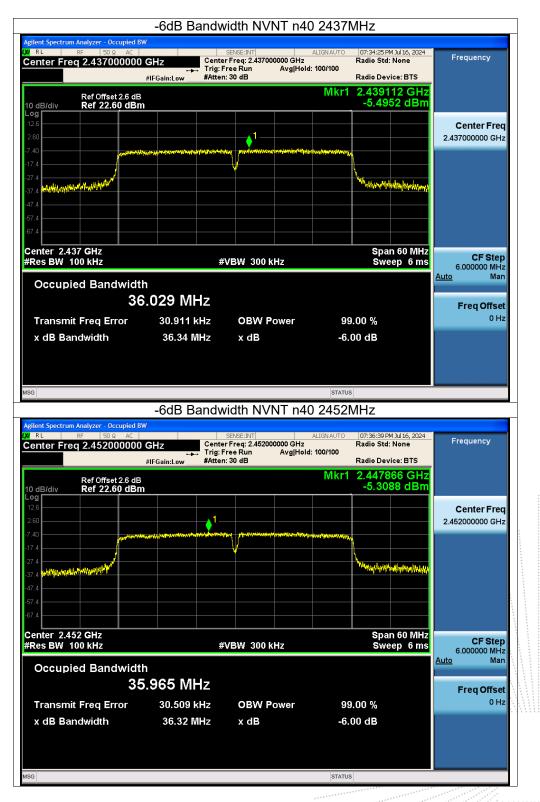














## 11. Peak Output Power Test

#### 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

Page: 50 of 85



# 11.5 Test Result

Mode	Frequency (MHz)	Conducted	Limit (dBr	m)	Verdict
1 1635016.		1031 101	bige.	0 12 0	
Pressure:	101kPa	Test Volta		C 12V	
Temperature:	<b>26</b> ℃	Relative I	Humidity: 54	1%	

Mode	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict
b	2412	16.94	30	Pass
b	2437	17.33	30	Pass
b	2462	17.93	30	Pass
g	2412	16	30	Pass
g	2437	16.37	30	Pass
g	2462	16.6	30	Pass
n20	2412	15.95	30	Pass
n20	2437	15.39	30	Pass
n20	2462	15.69	30	Pass
n40	2422	14.17	30	Pass
n40	2437	14.56	30	Pass
n40	2452	14.75	30	Pass



## 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

Page: 52 of 85



# 12.5 Test Result



















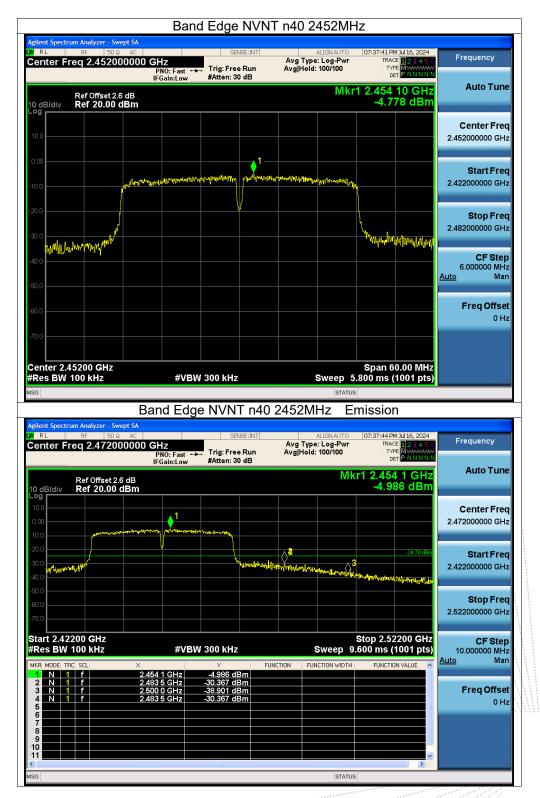




























-ilant Construm Andreas - Curren		Spurious N	VNT g 2412MH	Z	
gilent Spectrum Analyzer - Swep RL RF 50 Ω Center Freq 2.412000	AC 0000 GHz PNO: Fast +	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:57:22 PM Jul 16, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N N	Frequency
Ref Offset 2.59 0 dB/div Ref 20.00 dE		#Atten: 30 dB	Mkr	1 2.416 14 GHz -1.197 dBm	Auto Tune
- <b>09</b> 10.0			<u>1</u>		Center Freq 2.412000000 GHz
10.0		non Mana	and have been worked and have been been and have been and have been and have been and have been and have been a		Start Freq 2.397000000 GHz
20.0 30.0 <mark>1/14/14/14/14/14/14/14/14/14/14/14/14/14</mark>			\	hand when the house	Stop Fred 2.427000000 GHz
40.0					CF Step 3.000000 MHz <u>Auto</u> Man
70.0					Freq Offset 0 Hz
Center 2.41200 GHz Res BW 100 kHz	#VB	W 300 kHz	Sween 2	Span 30.00 MHz .933 ms (1001 pts)	
			JWCCP Z	.955 ms (1001 pts)	
SG			STATUS		
		ious NVNT (	STATUS		
g <mark>ilent Spectrum Analyzer - Swep</mark> RL RF 50 Ω	t SA AC DOOOO GHz PNO: Fast +	SENSE:INT	STATUS	nission	Frequency
glient Spectrum Analyzer Swep (RL BF 50.0 center Freq 13.26500 Ref Offset 2.59 0 dB/div Ref 20.00 dB	AC PNO: Fast IFGain:Low	SENSE:INT	STATUS D 2412MHz En ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10	nission	
glient Spectrum Analyzer - Swep           RL         RF         50 Ω           Center Freq 13.26500         Ref Offset 2.59           0 dB/div         Ref 20.00 dE           0 0         1	AC PNO: Fast IFGain:Low	SENSE:INT	STATUS D 2412MHz En ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10	06:57:52 PM 3/16, 2024	Auto Tune Center Fred
glient Spectrum Analyzer - Swep R L RF 50.0 Center Freq 13.26500 Ref Offset 2.59 Ref 20.00 dB 10 0 0 0 0 0 0 0 0 0 0 0 0 0	AC PNO: Fast IFGain:Low	SENSE:INT	STATUS D 2412MHz En ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10	06:57:52 PM 3/16, 2024	Auto Tune Center Frec 13.26500000 GH Start Frec
10 dB/div Ref 20.00 dB 0 dB/div 100 10 0 10 0	tSA AC D0000 GHz PN0: Fast = IFGain:Low dB Bm	SENSE:INT	STATUS g 2412MHz En ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10	nission	Auto Tune Center Freq 13.26500000 GHz Start Freq 30.000000 MHz Stop Freq
glient Spectrum Analyzer - Swep (RL BF 500 Center Freq 13.26500 Ref Offset 2.59 10 dB/div Ref 20.00 dB 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ESA AC DOUDO GHZ PNO: Fast + IFGain:Low D dB 3m 4 4 5 4 4 5 8 8 4 8 8 8 8 8 8 8 8 8 8 8	SENSE:INT	Strus 2 2412MHz En ALIGNAUTO Avg Type: Log-Pwr Avg]Hold: 10/10 N N Sweep	nission OG:57:52 PM Jul 16, 2024 TRACE D28 4 5 G TYPE MANNAN 1kr1 2.412 GHz -1.526 dBm -21:2000 -21:2000 Stop 26.50 GHz 2.530 s (1001 pts)	Auto Tune Center Freq 13.265000000 GHz Start Freq 30.000000 MHz Stop Freq 26.500000000 GHz CF Step 2.647000000 GHz
glient Spectrum Analyzer - Swep R L RF 50 @ center Freq 13.26500 Ref Offset 2.59 0 dB/div Ref 20.00 dB 0 00 0  00 0 00 0 00 0 00 0 00 0 00 0 00 0 00 0 00 0 000	tSA AC D0000 GHz PNO: Fast - IFGain:Low dB 3m	SENSE:INT	STATUS	nission	Auto Tune Center Freq 13.265000000 GHz Start Freq 30.000000 MHz Stop Freq 26.500000000 GHz CF Step 2.647000000 GHz









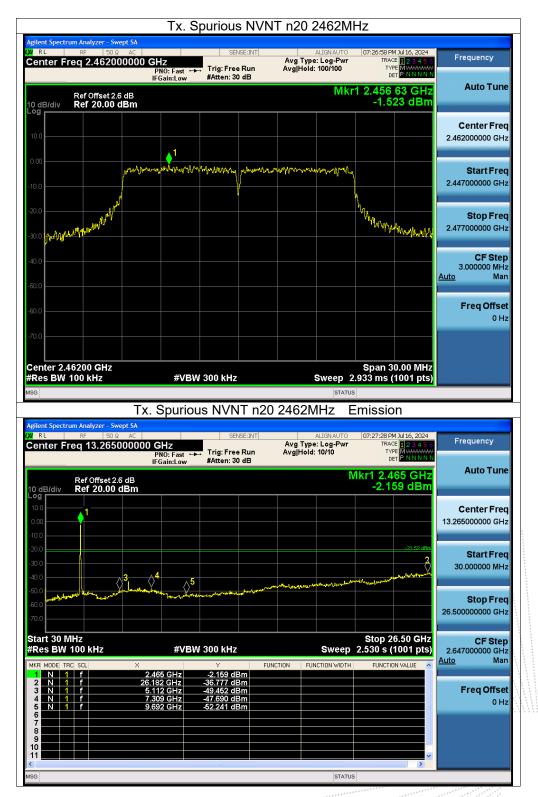




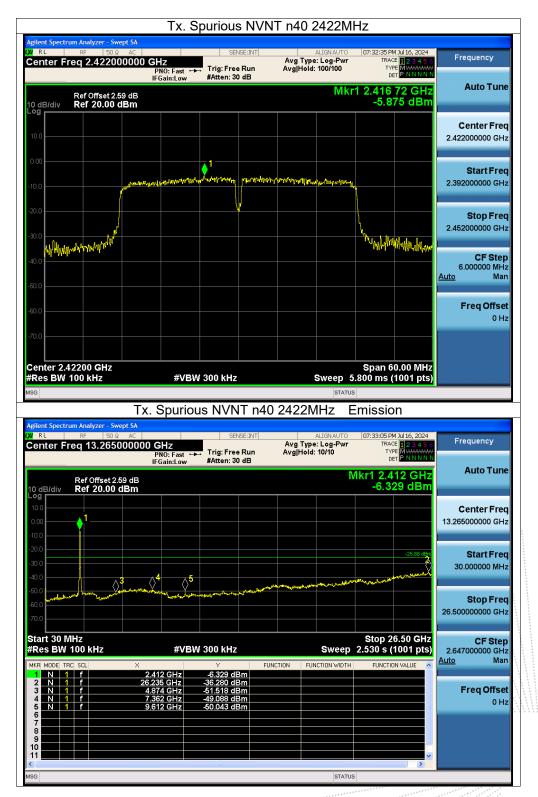




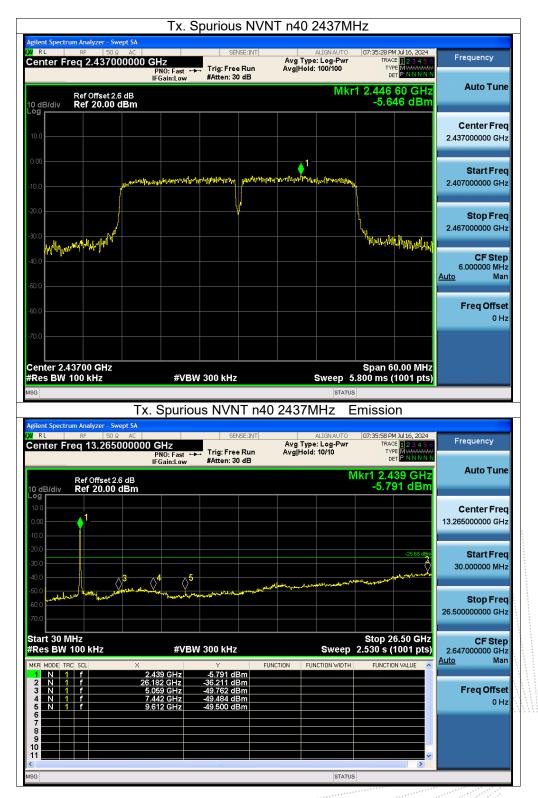




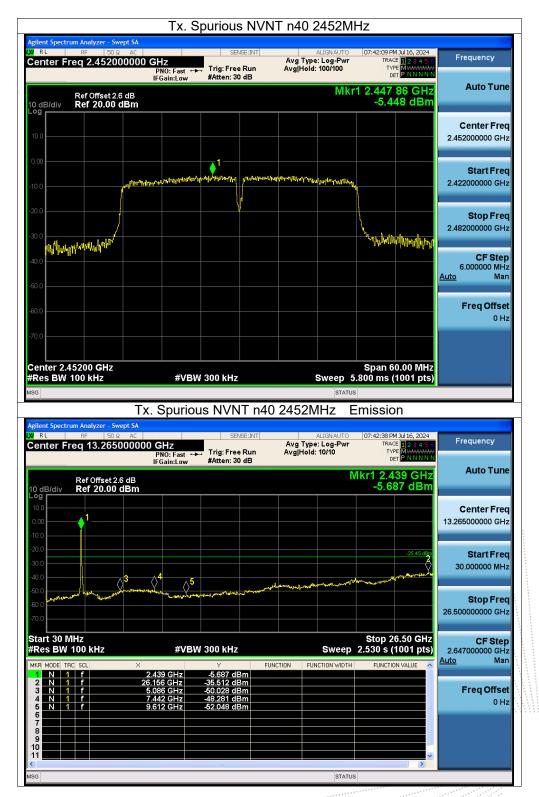














### 13. Duty Cycle Of Test Signal

#### 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

Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
b	2412	100	0	0
b	2437	100	0	0
b	2462	100	0	0
g	2412	100	0	0
g	2437	100	0	0
g	2462	100	0	0
n20	2412	100	0	0
n20	2437	100	0	0
n20	2462	100	0	0
n40	2422	100	0	0
n40	2437	100	0	0
n40	2452	100	0	0



RL RF 50 enter Freq 2.4120	000000 GHz PN0: Fast +	SENSE:INT → Trig: Free Run #Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr	07:56:24 PM Jul 16, 2024 TRACE 123456 TYPE WWWWWW DET PNNNNN	Frequency
Ref Offset 2	IFGain:Low _	#Atten: 30 dB		Mkr1 50.00 ms 13.76 dBm	Auto Tune
0 dB/div Ref 22.59					Center Freq 2.412000000 GHz
17.4           27.4           37.4					Start Freq 2.412000000 GHz
47.4 57.4 67.4					<b>Stop Fred</b> 2.412000000 GHz
Center 2.412000000 Res BW 8 MHz IKR MODE TRC SCL	#VB		Sweep 10	Span 0 Hz 00.0 ms (10001 pts) FUNCTION VALUE	CF Step 8.000000 MHz <u>Auto</u> Man
1         N         1         t           2	50.00 ms	13.76 dBm			Freq Offset 0 Hz
3G gilent Spectrum Analyzer - S		uty Cycle NVI	statu NT b 2437MHz		
	000000 GHz PN0: Fast +	SENSE:INT → Trig: Free Run #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr	07:56:55 PM Jul 16, 2024 TRACE 123456 TYPE WWWWWW DET P N N N N N	Frequency
Center Freq 2.4370 Ref Offset: 0 dB/div Ref 22.60	2.6 dB	► Trig: Free Run #Atten: 30 dB		07:56:55 PM JJ 16, 2024 TRACE 12 3 4 5 6 TYPE DET PNNNNN Mkr1 50.00 ms 15.20 dBm	
Ref Offset: 0 dB/div 2 60 7 40	2.6 dB	▶→ Trig: Free Run		TRACE 123456 TYPE WWWWWW DET P NNNNN Mkr1 50.00 ms	Frequency Auto Tune Center Freq 2.437000000 GHz
Ref Offset: 0 dB/div 260 7.40 7.40 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4	2.6 dB	► Trig: Free Run #Atten: 30 dB		TRACE 123456 TYPE WWWWWW DET P NNNNN Mkr1 50.00 ms	Auto Tune Center Freq
0 dB/div Ref 22.60	2.6 dB 0 dBm	► Trig: Free Run #Atten: 30 dB		Mkr1 50.00 ms 15.20 dBm	Auto Tune Center Freq 2.437000000 GHz Start Freq
Ref Offset: 0 dB/div Ref 22.60 99 12.6 2.60 7.40 17.4 27.4 37.4 47.4	COUCOUCHER PNO: Fast - IFGain:Low 2.6 dB 0 dBm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 123456 TYPE WWWWWW DET P NNNNN Mkr1 50.00 ms	Auto Tune Center Freq 2.437000000 GHz Start Freq 2.437000000 GHz Stop Freq



		Duty Cycle N		-	
Agilent Spectrum Analyzer - S					
RL RF 50 Center Freq 2.462		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	07:57:17 PM Jul 16, 2024 TRACE 1 2 3 4 5 6	Frequency
senter rreg 2.402	PNO: Fa:	st 🛶 Trig: Free Run		TYPE WWWAAAAAAAA DET P N N N N N	
	IFGain:Lo	w #Atten: 30 dB			Auto Tune
Ref Offset	2.6 dB			Mkr1 50.00 ms	ruco runo
10 dB/div Ref 22.60	0 dBm			15.20 dBm	
12.6	<u> </u>	1	~	~	Center Fred
2.60					2.462000000 GHz
-7.40					
17.4					
-27.4					Start Free
37.4					2.462000000 GH:
47.4					
					Stop Free
57.4					2.462000000 GH
67.4					
Center 2.46200000	0 GHz			Span 0 Hz	CF Step
Res BW 8 MHz	#	VBW 8.0 MHz	Sweep 100	0.0 ms (10001 pts)	8.000000 MH
MKR MODE TRC SCL	×	Y	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
1 N 1 t 2	50.00 ms	s 15.20 dBm			
3					Freq Offse
4 5					0 H:
6 7					
8					
9					
11				✓	
				<u>&gt;</u>	
SG			STATUS		
		Duty Cycle N	VNT g 2412MHz	•	
gilent Spectrum Analyzer - S					
RL RF 50 Center Freq 2.412		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	07:57:58 PM Jul 16, 2024 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fa	st ⊶⊶ Trig:Free Run	• •	TRACE 123456 TYPE WWWWWW DET PNNNNN	
	IFGain:Lo	ow#Atten: 30 dB			Auto Tune
Ref Offset	2.59 dB			Mkr1 50.00 ms	
10 dB/div Ref 22.5				13 /0 dDm	
	9 dBm			13.48 dBm	
	9 dBm	onstantid Happeneasurid Have 1 cm 1	What consistent will be a process of the support of the supervision of		Center Fred
og	9 dBm	and sound by Happen second birth to be a read of	11101 eran essenta 1110 eranar eran 1110 eranar eran 11		
- <b>09</b> 12.6 2.59	9 dBm	anatomitiki derrena anan kidika 1 mmt			
-og 12.6 2.59 7.41	9 dBm				2.412000000 GH
• og	9 dBm				2.412000000 GH: Start Free
Og 12.6 7.41 7.4 7.4 7.4	9 dBm				2.412000000 GH: Start Free
• Og         Internet of the former of t	9 dBm				2.412000000 GH: Start Free
Og	9 dBm				2.412000000 GH: Start Fred 2.412000000 GH:
Og         Marconsentillity connectility           2.59	9 dBm				2.412000000 GH: Start Free 2.412000000 GH: Stop Free
Og         Marconsentillity connectility           2.59	9 dBm				2.412000000 GH: Start Free 2.412000000 GH: Stop Free
og         og           12.6	9 dBm			Span 0 Hz	2.41200000 GH: Start Free 2.41200000 GH: Stop Free 2.412000000 GH:
og         mensentilligeneretillisenetetilligeneretillisenetetilligeneretilligeneretillig	9 dBm	VBW 8.0 MHz			2.412000000 GH: Start Free 2.412000000 GH: Stop Free 2.412000000 GH: CF Step 8.000000 MH:
-og 12.6 2.59 7.41 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4	9 dBm 	VBW 8.0 MHz		Span 0 Hz	2.412000000 GH: Start Free 2.412000000 GH: Stop Free 2.412000000 GH: CF Step 8.000000 MH:
- og 12.6 2.59 7.41 7.41 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4	9 dBm 	VBW 8.0 MHz	Sweep 10	Span 0 Hz 0.0 ms (10001 pts)	Center Frec 2.41200000 GHz Start Frec 2.41200000 GHz Stop Frec 2.41200000 GHz CF Step 8.00000 MHz Auto Mar
-09         International Hills associated with the second se	9 dBm 	VBW 8.0 MHz	Sweep 10	Span 0 Hz 0.0 ms (10001 pts)	2.41200000 GH: Start Free 2.41200000 GH: Stop Free 2.41200000 GH: CF Step 8.00000 MH: <u>Auto</u> Mar Free Offset
Og         Mitesterinille sources UU           12.6	9 dBm 	VBW 8.0 MHz	Sweep 10	Span 0 Hz 0.0 ms (10001 pts)	2.412000000 GH2 Start Free 2.412000000 GH2 Stop Free 2.412000000 GH2 CF Step 8.000000 MH2
- Og -	9 dBm 	VBW 8.0 MHz	Sweep 10	Span 0 Hz 0.0 ms (10001 pts)	2.41200000 GH: Start Free 2.41200000 GH: Stop Free 2.41200000 GH: CF Step 8.00000 MH: <u>Auto</u> Mar Free Offset
- Og -	9 dBm 	VBW 8.0 MHz	Sweep 10	Span 0 Hz 0.0 ms (10001 pts)	2.41200000 GH: Start Free 2.41200000 GH: Stop Free 2.41200000 GH: CF Step 8.00000 MH: <u>Auto</u> Mar Free Offset
Og         Mitrature Miller         Mitrature Miller           12.6         Mitrature Miller         Mitrature Miller           259	9 dBm 	VBW 8.0 MHz	Sweep 10	Span 0 Hz 0.0 ms (10001 pts)	2.41200000 GH: Start Free 2.41200000 GH: Stop Free 2.41200000 GH: CF Step 8.00000 MH: <u>Auto</u> Mar Free Offset
• 09 12.6 12.6 12.59 12.7 12.6 12.59 12.6 12.59 12.6 12.59 12.6 12.59 12.6 12.59 12.5	9 dBm 	VBW 8.0 MHz	Sweep 10	Span 0 Hz 0.0 ms (10001 pts) FUNCTION VALUE	2.41200000 GH: Start Free 2.41200000 GH: Stop Free 2.41200000 GH: CF Step 8.00000 MH: <u>Auto</u> Mar Free Offset
og         og         og           12.6         12.6         12.6           2.59         2.69         2.69           7.41         2.7         2.7           27.4         2.7         2.7           37.4         2.7         2.7           37.4         2.7         2.7           37.4         2.7         2.7           37.4         2.7         2.7           37.4         2.7         2.7           47.4         2.7         2.7           57.4         2.7         2.7           6         2.7         2.7           6         2.7         2.7           7         2.7         2.7           8         2.7         2.7           9         2.7         2.7	9 dBm 	VBW 8.0 MHz	Sweep 10	Span 0 Hz 0.0 ms (10001 pts)	2.41200000 GH: Start Free 2.41200000 GH: Stop Free 2.41200000 GH: CF Step 8.00000 MH: <u>Auto</u> Mar Free Offset



	D	uty Cycle N\	/NT g 2437MHz		
ilent Spectrum Analyzer - S R L RF 50		SENSE:INT	ALIGN AUTO	07:58:23 PM Jul 16, 2024	
enter Freq 2.4370	DOOOOO GHz PNO: Fast * IFGain:Low		Avg Type: Log-Pwr	TRACE 123456 TYPE WWWWWW DET P N N N N	Frequency
Ref Offset: dB/div Ref 22.60	2.6 dB		1	/lkr1 50.00 ms 13.10 dBm	Auto Tun
		neerand With an an an an an an an an an an an an an	an All Managana ann Mikepurpar an All Mangaran a	u Winnennun Winnennen Wi	Center Fre
.60					2.437000000 GH
7.4					Start Fre
7.4					2.437000000 GH
7.4					Stop Free 2.437000000 GH
7.4					2.437000000 GH
enter 2.437000000 es BW 8 MHz		W 8.0 MHz	Sweep 100	Span 0 Hz 0 ms (10001 pts).	CF Step 8.000000 MH
KR MODE TRC SCL	× 50.00 ms	Y 13.10 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
2 3					Freq Offse
4 5				3	0 H
6 7 8					
9					
1				~	
3		IIII	STATUS		
	Di	uty Cycle N\	/NT g 2462MHz		
ilent Spectrum Analyzer - S					
RL RF 50 enter Freq 2.4620	DOOOOO GHz PNO: Fast *	SENSE:INT → Trig: Free Run #Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr	07:59:04 PM Jul 16, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	Frequency
Ref Offset: dB/div Ref 20.00	) dBm			/lkr1 50.00 ms 12.49 dBm	Auto Tun
		and calify and 21 mar			Center Fre
.00					2.462000000 GH
0.0					
0.0					Start Free
0.0					2.462000000 GH
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0.0					2.462000000 GH
enter 2.462000000	GH7			Span 0 Hz	CF Ste
es BW 8 MHz	#VB	W 8.0 MHz	-	.0 ms (10001 pts)	8.000000 MH Auto Ma
KR MODE TRC SCL	× 50.00 ms	ү 12.49 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	ina ina
2 3					Freq Offse
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3			STATUS		



	D	uty Cycle N\	/NT n20	) 2412MH	z	
Agilent Spectrum Analyzer - S		CENICE IN	T		07-50-55 PM 3-446-2024	
Center Freq 2.412			Avg	ALIGNAUTO Type: Log-Pwr	07:59:55 PM Jul 16, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWWW DET P N N N N N	Frequency
Ref Offset	2.59 dB	W Whiteh of all			Mkr1 50.00 ms 13.94 dBm	Auto Tune
- <b>og</b> 12.6 <b>Handriden Subipa</b>			htilletterfice of defigues	atumli dinisatenal pili	n sin an an an an an an an an an an an an an	Center Freq
2.59						2.412000000 GHz
-17.4						Start Fred 2.412000000 GHz
47.4						Stop Freq
-57.4						2.412000000 GHz
Center 2.412000000 Res BW 8 MHz		VBW 8.0 MHz		Sweep 10	Span 0 Hz 0.0 ms (10001 pts)	CF Step 8.000000 MHz
MKR MODE TRC SCL	× 50.00 ms	۲ 13.94 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto Man
2	30.00 ms	13.34 dBm				Freq Offset
4						0 Hz
6						
7						
9						
11 <u> </u>					×	
SG				STATUS		
	D	uty Cycle N\	/NT n20	) 2437MH	z	
gilent Spectrum Analyzer - S				-		
RL RF 50 Center Freq 2.437	000000 GHz PNO: Fas		Avg	ALIGN AUTO Type: Log-Pwr	08:01:54 PM Jul 16, 2024 TRACE 123456 TYPE WMMMMM DET PNNNNN	Frequency
Ref Offset		w #Atten: 30 dB			Mkr1 50.00 ms 13.89 dBm	Auto Tune
I0 dB/div Ref 20.00			al she di sana ata sana i similia	aa maa waada dar baas to maa combaa		
10.0 10.0			an be separate out the second second	and allow, (a.t. shine the status with	a in a substantia substantia and a substantia and	Center Fred
0.00						2.437000000 GHz
-10.0						
-20.0						Start Fred
-30.0						2.437000000 GHz
-40.0						
-60.0						Stop Fred
-70.0						2.437000000 GHz
Contor 2 427000000						OF Of an
Res BW 8 MHz	#\	VBW 8.0 MHz	ELINE TION.		Span 0 Hz 0.0 ms (10001 pts)	CF Step 8.000000 MHz Auto Mar
Res BW 8 MHz		Y	FUNCTION	Sweep 10 FUNCTION WIDTH		8.000000 MHz
Res BW 8 MHZ	#\ ×	Y	FUNCTION		0.0 ms (10001 pts)	8.000000 MH: <u>Auto</u> Mar
Res BW 8 MHz           MKR MODE TRC SCL           1         N           2           3           4	#\ ×	Y	FUNCTION		0.0 ms (10001 pts)	8.000000 MH <del>i</del> Auto Mar Freq Offse
2 3 4 5 6	#\ ×	Y	FUNCTION		0.0 ms (10001 pts)	8.000000 MHz
Res         BW/         8 MHz           MKR         MODE         TRC         SCL           1         N         1         t           2	#\ ×	Y	FUNCTION		0.0 ms (10001 pts)	8.000000 MH <del>i</del> Auto Mar Freq Offse
Res BW 8 MHz           MKR MODE TRC SCL           1         1           2         1           3         1           4         1           5         1           6         1           7         1           8         1           9         1           10         1	#\ ×	Y	FUNCTION		0.0 ms (10001 pts)	8.000000 MH <del>i</del> Auto Mar Freq Offse
Res BW 8 MHz           MKR MODE         TRC SCL           1         N         1         t           2	#\ ×	Y	FUNCTION		0.0 ms (10001 pts)	8.000000 MH <del>i</del> Auto Mar Freq Offse



	Du	ty Cycle NV	NT n20 2462MH	lz	
Agilent Spectrum Analyzer -					
RL RF 5 Center Freq 2.462	000000 GHz PNO: Fast	SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	08:03:19 PM Jul 16, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	Frequency
Ref Offset	IFGain:Low	#Atten: 30 dB		Mkr1 50.00 ms 12.86 dBm	Auto Tune
_og	v ubm eelpikeleneteiteiteiteite	institution in the state of the	son politica in the investment of the state		
10.0	ning fan de saket a sakita ykonika, nasika Jinate si is ar ala tini, (dan t	nan man in a salah penan misintakak silam disebut sebut	an an Anna Tarlo, an an Anna an Aine an Anna Anna Anna Anna Anna Anna Anna	a (a) ann i an Shinani (a) an Shinani (a) (a) an Shinani (a) an Shinani (a) Shina (a)	Center Fred 2.462000000 GHz
-10.0					2.40200000 GHz
-20.0					Start Fred
-30.0					2.462000000 GH
-40.0					
-60.0					Stop Free
-70.0					2.462000000 GH:
Center 2.46200000				Span 0 Hz	CF Step
Res BW 8 MHz		3W 8.0 MHz		0.0 ms (10001 pts)	8.000000 MH <u>Auto</u> Mar
MKR MODE TRC SCL	× 50.00 ms	∀ 12.86 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	
2 3					Freq Offse
4 5				-	0 H:
6 7					
8 9					
10				~	
< ISG		Ш	STATUS	>	
	Du	ty Cycle NV	NT n40 2422MH		
Agilent Spectrum Analyzer -			NT 1140 2422IVII	IZ	
KIRL RF 5	DΩ AC	SENSE:INT	ALIGN AUTO	08:04:06 PM Jul 16, 2024	Frequency
Center Freq 2.422	PNO: Fast	→→ Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 123456 TYPE WWWWWW DET PINNNN	
	IFGain:Low	#Atten: 30 dB		Mkr1 50.00 ms	Auto Tune
Ref Offset 10 dB/div Ref 20.0				7.48 dBm	
10.0 months and state and	and the data stranger and a stranger	1	pro-transfer in the property of the second section of the second	a for sea to a state of the state of the sea of the sea to a state of the	Center Free
0.00			ni aki u titi u mataja muni dila sit phi ini nali si mati utit		2.422000000 GH
-10.0					
-20.0					Start Free
-30.0					2.422000000 GH
-40.0					
-60.0					Stop Free
-70.0					2.422000000 GH
Center 2.42200000	0 GHz			Span 0 Hz	CF Step
Res BW 8 MHz		3W 8.0 MHz	Sweep 10	0.0 ms (10001 pts)	8.000000 MH
MKR MODE TRC SCL	× 50.00 ms	ү 7.48 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
2 3	00.00 ms				Freq Offse
4 5					0 Hz
6 7					
8					
10					
				×	
<				>	



	D	uty Cycle NV	NT n40 2437MH	z	
gilent Spectrum Analyzer -				00.04.07.014.146.0004	
RL RF 50 Center Freq 2.437		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	08:04:27 PM Jul 16, 2024 TRACE 123456	Frequency
	PNO: Fast IFGain:Lov			DET P N N N N	
	IFGain:Lov	/ #Atten: 50 dB		Miked EQ 00 mod	Auto Tune
Ref Offset				Mkr1 50.00 ms 7.63 dBm	
0 dB/div Ref 20.0	U dBM	<b>1</b>		7.00 abiii	
10.0 miles tests tille externa d	the state of the s		diamante administratival la antina di	defenses and the same defended by some	Center Free
0.00					2.437000000 GH
10.0					
20.0					
80.0					Start Free
					2.437000000 GH
10.0					
50.0					Stop Free
60.0					2.437000000 GH
0.0					
enter 2.43700000	) GHz			Span 0 Hz	OF CH
es BW 8 MHz		/BW 8.0 MHz	Sweep_10	0.0 ms (10001 pts)	CF Stej 8.000000 MH
KR MODE TRC SCL	×	v I	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
1 N 1 t	50.00 ms	7.63 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	
2					Freq Offse
4					0 H
5 6					011
7					
8					
0					
1		ш		~	
G			STATUS		
	<b>D</b>				
	D	uty Cycle INV	NT n40 2452MH	Z	
ilent Spectrum Analyzer -				07.40.07.01	
RL RF 50 enter Freq 2.452		SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	07:43:07 PM Jul 16, 2024 TRACE 123456	Frequency
	PNO: Fast		• •	TYPE WWWWWWWW DET P N N N N N	
	IFGain:Lov	w #Atten: 30 dB			Auto Tun
Ref Offset				Mkr1 50.00 ms	Auto Full
OdB/div Ref 20.0	0 dBm			11.96 dBm	
0.0 delate telefont de selle atte	na an ann an an an Alla an tarais da	diteration of the state of the		e sui la essente de la la transmissione d'un	Center Fre
).00					2.452000000 GH
0.0					
20.0					
					Start Fre
30.0					2.452000000 GH
0.0					
50.0					Stop Fre
60.0					2.452000000 GH
0.0					2.40200000 00
enter 2.45200000				Span 0 Hz	
		/BW 8.0 MHz	Sween_10	Span 0 Hz 0.0 ms (10001 pts)	CF Stej 8.000000 MH
es BW 8 MHz		~			Auto Ma
		Y	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	
KR MODE TRC SCL	× 50.00 ms	11.96 dBm			
KR MODE TRC SCL	× 50.00 ms	11.96 dBm			Eron Offer
KR MODE TRC SCL 1 N 1 t 2 3		11.96 dBm			· · · · · · · · · · · · · · · · · · ·
2 3 4 5		11.96 dBm			<b>Freq Offse</b> 0 H
KR MODE TRC SCL 1 N 1 t 2 3 4		11.96 dBm			· · · · · · · · · · · · · · · · · · ·
KR MODE TRC SCL 1 N 1 t 3 4 4 5 6 5 7 8		11.96 dBm			· · · · · · · · · · · · · · · · · · ·
KR         MODE         TRC         SCL           1         N         1         t           2		11.96 dBm			· · · · · · · · · · · · · · · · · · ·
KR         MODE         TRC         SCL           1         N         1         t           2         3         -         -           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -           7         -         -         -           8         -         -         -           9         -         -         -		11.96 dBm			· · · · · · · · · · · · · · · · · · ·
KR         MODE         TRC         SCL           1         N         1         t           2         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -           8         -         -         -           9         -         -         -		11.96 dBm	STATUS	×	· · · · · · · · · · · · · · · · · · ·



### 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.

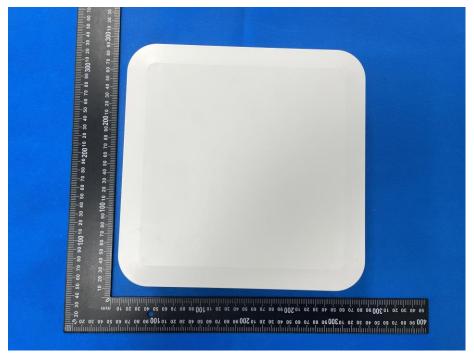
#### 14.2 Test Result

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



### 15. EUT Photographs

### EUT Photo 1



#### EUT Photo 2

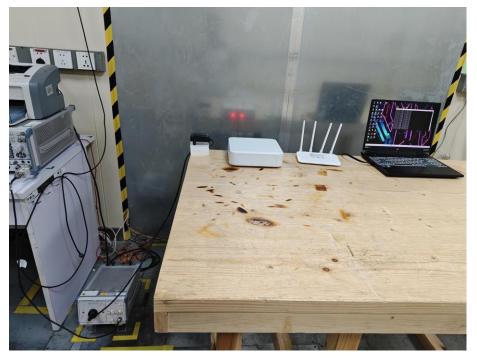


#### NOTE: Appendix-Photographs Of EUT Constructional Details.



### 16. EUT Test Setup Photographs

# Conducted emissions Photo (Adapter)

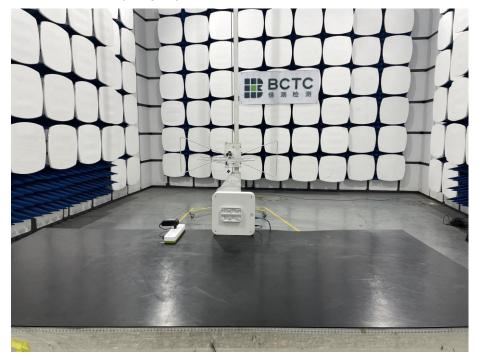


POE





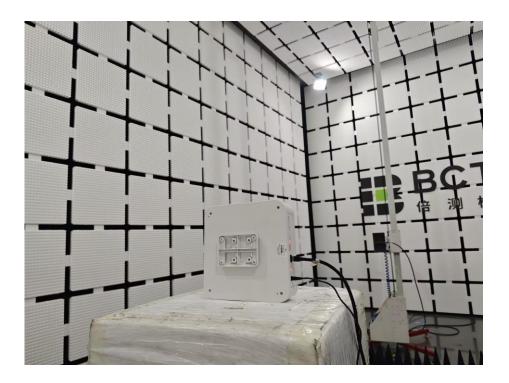
#### Radiated Measurement Photos(Adapter)



POE







No.: BCTC/RF-EMC-005

Page: 84 of 85



### 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 the "special seal for inspection and testing".

4. The test report is invalid without the signature of the approver.

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

6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.

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

8. If there is any objection to this test 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, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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Complaint/Advice E-mail: advice@bctc-lab.com.cn

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

No.: BCTC/RF-EMC-005

Page: 85 of 85