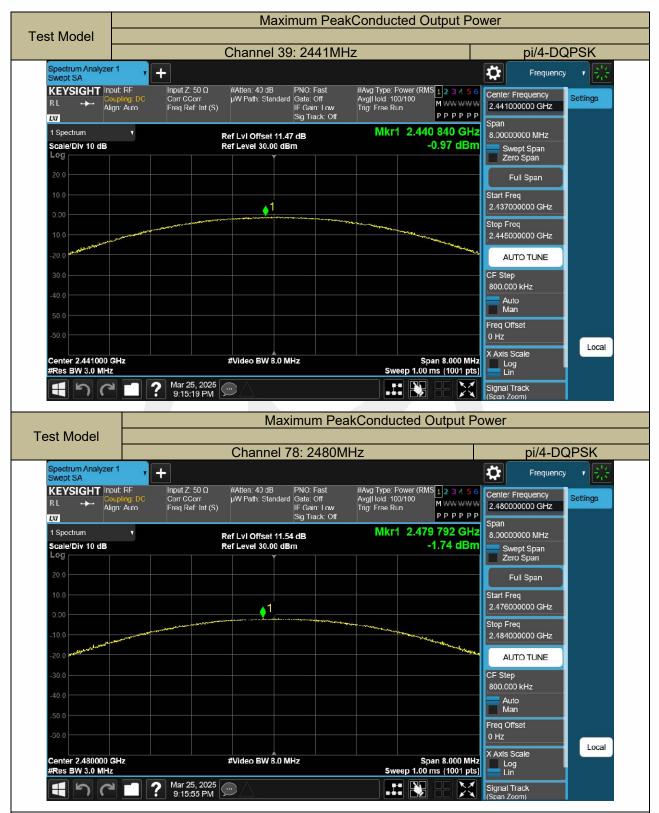


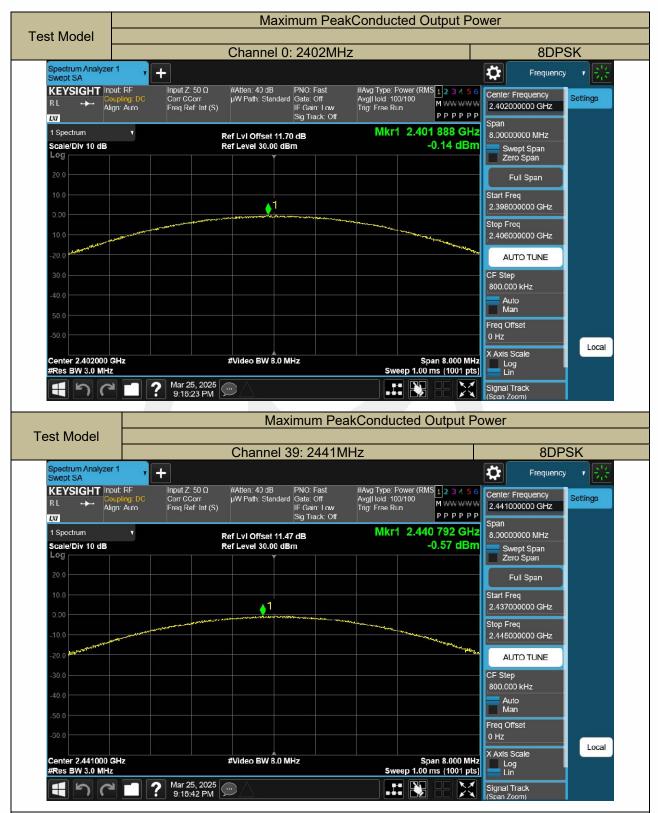
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Start Freq

CF Step 800.000 kHz Auto Man Freq Offset 0 Hz

X Axis Scale

Signal Track

Log Lin

Span 8.000 MHz

 $\geq$ 

Sweep 1.00 ms (1001 pts)

Local

2.476000000 GHz Stop Freq 2.484000000 GHz AUTO TUNE

Maximum PeakConducted Output Power 8DPSK Channel 79: 2480MHz + ₽ Frequency #Atten: 40 dB PNO: Fast μW Path: Standard Gate: Off IF Gain: Low Sig Track: Off Input Ζ: 50 Ω Corr CCorr Freq Ref: Int (S) #Avg Type: Power (RMS 1 2 3 4 5 6 Avg|I loid 100/100 Trig: Free Run Center Frequency Settings 2.480000000 GHz РРРРРР Span Mkr1 2.480 072 GHz Ref LvI Offset 11.54 dB 8.00000000 MHz -1.38 dBm Ref Level 30.00 dBm Swept Span Zero Span Full Span

1

#Video BW 8.0 MHz

**?** Mar 25, 2025 9:17:07 PM

**宁波市信测检测技术有限公司** EMTEK(Ningbo) Co., Ltd.

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**Test Model** 

Da

1 Spectrum

Scale/Div 10 dB

Center 2.480000 GHz

うる

#Res BW 3.0 MHz

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input: RF

Align' Auto



## 9.6 CONDUCTED SUPRIOUS EMISSION

### **Applicable Standard**

According to FCC Part 15.247(d) and 558074 D01 15.247 Meas Guidance V05r02

#### **Conformance Limit**

According to FCC Part 15.247(d):

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, provided the transmitter demonstrates compliance with the peak conducted power limits.

## **Test Configuration**

Test according to clause 7.1 radio frequency test setup 1

## **Test Procedure**

The transmitter output (antenna port) was connected to the spectrum analyzer

# Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DSS channel center frequency.

Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel.

Set the RBW = 100 kHz. Set the VBW  $\ge$  3 x RBW.

Set Detector = peak. Set Sweep time = auto couple.

Set Trace mode = max hold. Allow trace to fully stabilize.

Use the peak marker function to determine the maximum Maximum conduceted level.

Note that the channel found to contain the maximum conduceted level can be used to establish the reference level.

# Band-edge Compliance of RF Conducted Emissions

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation Set RBW  $\ge 1\%$  of the span=100kHzSet VBW  $\ge RBW$ 

Set Sweep = autoSetDetector function = peakSetTrace = max hold

Allow the trace to stabilize. Set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. The marker-delta value now displayed must comply with the limit specified in this Section.

Now, using the same instrument settings, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emissions caused by the hopping function also comply with the specified limit.

# ConducetedSpurious RF Conducted Emission

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic.(30MHz to 25GHz).Set RBW = 100 kHzSetVBW≥ RBW

Set Sweep = autoSetDetector function = peakSetTrace = max hold

Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section.

#### **Test Results**

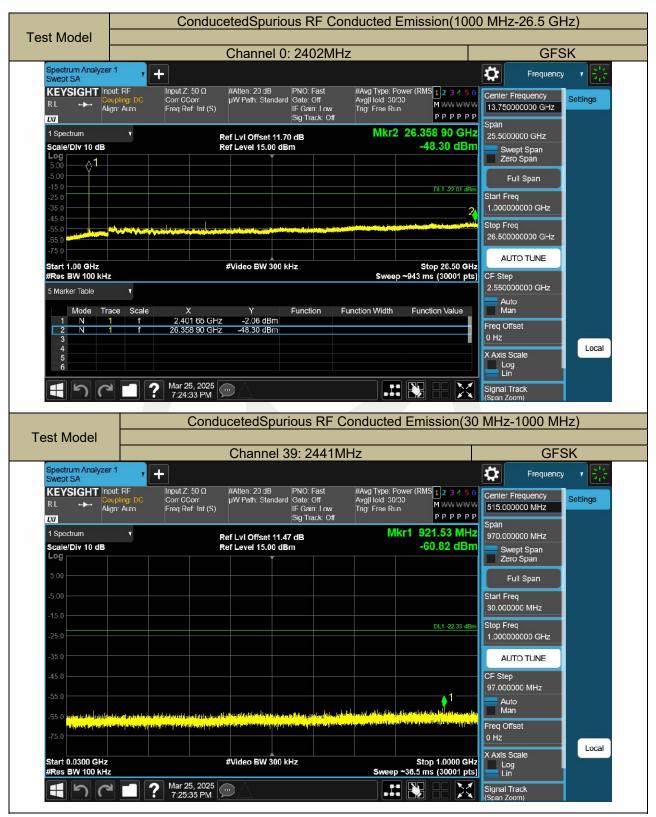
**宁波市信測检测技术有限公司** 地址 浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn



Bluetooth (GFSK, pi/4-DQPSK,8DPSK) mode have been tested, and the worst result(GFSK)was report as below: Band-edge Conducted Emissions **Test Model** Channel 0: 2402MHz GFSK Spectrum Analyzer 1 Swept SA + Ö Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Avg[Hold 100/100 Trig: Free Run #Atten: 30 dB PNO: Fast µW Path: Standard Gate: Off Input Z: 50 Ω KEYSIGHT Input: RF Center Frequency Corr CCorr Freq Ref: Int (S) Settings 2.352500000 GHz Align: Auto IF Gain: Low Sig Track: Off рррррр LXI Span Mkr5 2.350 190 GHz 1 Spectrum 105.000000 MHz Ref Lvi Offset 11.70 dB Ref Level 20.00 dBm -48.68 dBm Scale/Div 10 dB Swept Span Zero Span Full Span DL1 -22.01 Start Freq 2.300000000 GHz ▲5 **∆**3 4 Stop Freq 2.405000000 GHz AUTO TUNE Start 2.30000 GHz #Video BW 300 kHz Stop 2.40500 GHz #Res BW 100 kHz CF Step Sweep 3.87 ms (1001 pts) 10.500000 MHz 5 Marker Table v Auto Man Mode Trace Scale Function Function Width Function Value Freq Offset 2.400 000 GHz 2.390 000 GHz 2.310 000 GHz -50.45 dBm Ν 0 Hz N -52.46 dBm -51.77 dBm Local X Axis Scale 2.350 190 GHz -48.68 dBm 5 N Log Lin Mar 25, 2025 X ? 5 2 Signal Track (Span Zoom) ConducetedSpurious RF Conducted Emission(30 MHz-1000 MHz) Test Model Channel 0: 2402MHz GFSK Spectrum Analyzer 1 Swept SA + Ö Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) #Atten: 20 dB PNO: Fast µW Path: Standard Gate: Off #Avg Type: Power (RMS 1 2 3 4 5 6 KEYSIGHT Input: RF Center Frequency Settings Avg|Hold: 30/30 Trig: Free Run MWWWW 515.000000 MHz Align: Auto IF Gain: Low Sig Track: Off рррррр Da Spar Mkr1 867.27 MHz 1 Spectrum V Ref LvI Offset 11.70 dB Ref Level 15.00 dBm 970.000000 MHz -60.96 dBm Scale/Div 10 dB Swept Span Zero Span \_00 Full Span Start Freq 30.000000 MHz DL1 -22.01 dB Stop Freq 1.000000000 GHz AUTO TUNE CF Step 97.000000 MHz • Auto Man Freq Offset **Minna** III Local X Axis Scale Stop 1.0000 GHz ~36.5 ms (30001 pts) Start 0.0300 GHz #Video BW 300 kHz Res BW 100 kHz Sweep Lin ? Mar 25, 2025 7:23:45 PM X うる ÷ Signal Track

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Test Model	Conduc	cetedSpurious RF	Conducted E	Emission(30 I	MHz-1000 MHz)	
	(	Channel 78: 2480N	ЛНz		GFSK	
Spectrum Analyzer 1	+				Frequency 🔹	
KEYSIGHT Input. RF	Input Z. 50 Ω Corr CCorr	#Atten. 20 dB PNO. Fast µW Path: Standard Gate: Off	#Avg Type. Pow Avg[Hold: 30/30	ver (RMS 1 2 3 4 5 6	Center Frequency Settings	
RL +++ Align: Auto	Freq Ref: Int (S)	IF Gain: Low Sig Track: Of	Trig: Free Run	M <del>WWWWW</del> PPPPP	515.000000 MHz	
1 Spectrum v	R	ef LvI Offset 11.54 dB	CA	1 971.42 MHz	Span 970.000000 MHz	
Scale/Div 10 dB		ef Level 15.00 dBm		-61.27 dBm	Swept Span Zero Span	
5.00					Full Span	
-5.00					Start Freq	
15.0					30.000000 MHz	
-25.0				DL1 -23.19 dBm	Stop Freq 1.000000000 GHz	
-35.0					AUTO TUNE	
-45.0					CF Step	
55.0					97.000000 MHz	
-65.0 maintaintiliperalitiestertette	ner den scher die softwart feld meers as Mar	والمتلوان أوالمتعاولة والمراقبة والمتلفظ المتلوف والمتلقة والمساورة والمتلقة	Law as suich, gashi kumu suid du	de autor de la desta de la calega	Auto Man	
	and a start of the second s	and any polyant product of the set	determinele for still a sea of the line party of the sea	anfiloson yang berkenik yang bahar bahar ba	Freq Offset 0 Hz	
					X Axis Scale	
Start 0.0300 GHz #Res BW 100 kHz		#Video BW 300 kHz	Sweep ~	Stop 1.0000 GHz 36.5 ms (30001 pts)	Log Lin	
<b>1</b> 5 6 <b>1</b>	? Mar 25, 2025 7:28:15 PM	$\Box$			Signal Track (Span Zoom)	
	Conduc	cetedSpurious RF	Conducted F	-mission(100	0 MHz-26 5 GHz)	
Test Model	Conduc	etedSpurious RF	Conducted E	Emission(100	00 MHz-26.5 GHz)	
	Conduc	cetedSpurious RF Channel 78: 2480		Emission(100	GFSK	
Spectrum Analyzer 1	+	Channel 78: 2480	MHz			
Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF BI	+ Input Z: 50 Ω Corr CCorr	Channel 78: 2480 #Atten: 20 dB PNO: Fast µW Path: Standard Gate. Off	MHZ #Avg Type: Pow Avg Hold: 30/30	ver (RMS123456	GFSK	
Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF	+ Input Ζ: 50 Ω	Channel 78: 2480 #Atten: 20 dB PNO: Fast	MHZ #Avg Type: Pow Avg[Hold 30/30 Trig: Free Run f	иег (RMS ] 2 3 4 5 6 М <del>WW W W</del> Р Р Р Р Р Р	GFSK Frequency V K Center Frequency 13.75000000 GHz Settings	
Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF R L ++ Coupling: DC Align: Auto 1 Spectrum	+ Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) R	Channel 78: 2480 #Atten: 20 dB PNO: Fast µW Path: Standard Gate Off IF Gain: Low Sig Track. Of ef Lvi Offset 11.54 dB	MHZ #Avg Type: Pow Avg[Hold 30/30 Trig: Free Run f	иег (RMS <u>1</u> 23456 М <del>W W W W</del> Р Р Р Р Р Р <b>9.919 90 GHz</b>	GFSK Frequency Center Frequency 13.75000000 GHz Span 25.5000000 GHz	
Spectrum Analyzer 1 Swept SA KEYSIGHT R L ++ Coupling: DC Align: Auto Lvr 1 Spectrum 1 Spectrum V Scale/Div 10 dB Log	+ Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) R	Channel 78: 2480 #Atten: 20 dB PNO: Fast µW Path: Standard Gate: Off IF Gain: Low Sig Track: Of	MHZ #Avg Type: Pow Avg[Hold 30/30 Trig: Free Run f	иег (RMS ] 2 3 4 5 6 М <del>WW W W</del> Р Р Р Р Р Р	GFSK Frequency Center Frequency 13.75000000 GHz Span	
Spectrum Analyzer 1 Swept SA KEYSIGHT R L ··· Coupling: DC Align: Auto EV Scale/Div 10 dB Log 5.00 5.00	+ Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) R	Channel 78: 2480 #Atten: 20 dB PNO: Fast µW Path: Standard Gate Off IF Gain: Low Sig Track. Of ef Lvi Offset 11.54 dB	MHZ #Avg Type: Pow Avg[Hold 30/30 Trig: Free Run f	иег (RMS <u>1</u> 23456 М <del>W W W W</del> Р Р Р Р Р Р <b>9.919 90 GHz</b>	GFSK Frequency V X Center Frequency 13.75000000 GHz Span 25.5000000 GHz Swept Span	
Spectrum Analyzer 1         ✓           Swept SA         ✓           KEYSIGHT         Input: RF           R L         ✓           1 Spectrum         ✓           Scale/Div 10 dB         ✓           5.00         ✓           15.0         ✓           -25.0         ✓	+ Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) R	Channel 78: 2480 #Atten: 20 dB PNO: Fast µW Path: Standard Gate Off IF Gain: Low Sig Track. Of ef Lvi Offset 11.54 dB	MHZ #Avg Type: Pow Avg[Hold 30/30 Trig: Free Run f	иег (RMS <u>1</u> 23456 М <del>W W W W</del> Р Р Р Р Р Р <b>9.919 90 GHz</b>	GFSK Frequency V Center Frequency 13.75000000 GHz Span 25.5000000 GHz Swept Span Zero Span Full Span Start Freq	
Spectrum Analyzer 1         ▼           Swept SA         ▼           KEYSIGHT         Input: RF           Coupling: DC         Align: Auto           Lv         ▼           1 Spectrum         ▼           Scale/Div 10 dB         ▼           5.00         ↓           15.0         ↓           -25.0         ↓           -35.0         ↓           -45.0         ↓	+ Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) R	Channel 78: 2480 #Atten: 20 dB PNO: Fast µW Path: Standard Gate Off IF Gain: Low Sig Track. Of ef Lvi Offset 11.54 dB	MHZ #Avg Type: Pow Avg[Hold 30/30 Trig: Free Run f	ver (RMS] 1 2 3 4 5 6 M WWW P P P P P P 9.919 90 GHz -45.74 dBm	GFSK Frequency V Settings Center Frequency 13.75000000 GHz Span 25.500000 GHz Swept Span Zero Span Full Span Start Freq 1.00000000 GHz	
Spectrum Analyzer 1         ▼           Swept SA         ▼           KEYSIGHT         Input: RF           RL         →→           Lvr         1 Spectrum           1 Spectrum         ▼           Scale/Div 10 dB         1           5.00         1           5.00         1           -5.0         -35.0	+ Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) R	Channel 78: 2480 #Atten: 20 dB PNO: Fast µW Path: Standard Gate Off IF Gain: Low Sig Track. Of ef Lvi Offset 11.54 dB	MHZ #Avg Type: Pow Avg[Hold 30/30 Trig: Free Run f	ver (RMS] 1 2 3 4 5 6 M WWW P P P P P P 9.919 90 GHz -45.74 dBm	GFSK Frequency V Center Frequency 13.75000000 GHz Span 25.5000000 GHz Swept Span Zero Span Full Span Start Freq	
Spectrum Analyzer 1         ✓           Swept SA         ✓           KEYSIGHT RL         Input: RF Compling: DC Align: Auto           I Spectrum         ✓           Scale/Div 10 dB         ✓           5:00         ✓           5:00         ✓           -5:0         ✓           -5:0         ✓           -5:0         ✓           -5:0         ✓           -7:0         ✓	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)  Re Re	Channel 78: 2480	MHZ #Avg Type: Pow Avg[Hold 30/30 Trig: Free Run f	ver (RMS ] 2 3 4 5 6 M WW WWW P P P P P P 9.919 90 GHz -45.74 dBm DL1-23 19 dBm	GFSK Frequency Settings Center Frequency 13.75000000 GHz Span 25.5000000 GHz Swept Span Zero Span Full Span Start Freq 1.00000000 GHz Stop Freq	
Spectrum Analyzer 1         ✓           Swept SA         ✓           KEYSIGHT         Input RF           RL         ✓           1 Spectrum         ✓           Scale/Div 10 dB         ✓           Log         1           5.00         1           -5.0         -           -35.0         -           -55.0         -	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)  Re Re	Channel 78: 2480 #Atten: 20 dB PNO: Fast µW Path: Standard Gate Off IF Gain: Low Sig Track. Of ef Lvi Offset 11.54 dB	MHZ #Avg Type: Pow Avg Hold 30/30 Trig: Free Run f MKr2	ver (RMS] 1 2 3 4 5 6 M WWW P P P P P P 9.919 90 GHz -45.74 dBm	GFSK Frequency Settings Center Frequency 13.75000000 GHz Span 25.5000000 GHz Swept Span Full Span Start Freq 1.00000000 GHz Stop Freq 26.50000000 GHz Stop Freq 26.50000000 GHz	
Spectrum Analyzer 1         ✓           Swept SA         ✓           KEYSIGHT         Input: RF           R L         ✓           1 Spectrum         ✓           Scale/Div 10 dB         ✓           5:00         ✓           5:00         ✓           5:00         ✓           5:00         ✓           5:00         ✓           5:00         ✓           5:00         ✓           -25:0         ✓           -35:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -55:0         ✓           -75:0         ✓           Start 1.00 GHz         ✓	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)  Re Re	Channel 78: 2480	MHZ #Avg Type: Pow Avg Hold 30/30 Trig: Free Run f MKr2	/er (RMS 1 2 3 4 5 6 M WW WWW P P P P P P 9.919 90 GHz -45.74 dBm UL1 -23 19 dBm	GFSK Frequency Settings Center Frequency 13.75000000 GHz Span 25.5000000 GHz Swept Span Full Span Start Freq 1.00000000 GHz Stop Freq 26.50000000 GHz Stop Freq 26.50000000 GHz	
Spectrum Analyzer 1 Swept SA KEYSIGHT Input RF RL Scale/Div 10 dB Log 5.00 -5.0 -7.0 -5.0 -7.0 -5.0 -7.0	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)	Channel 78: 2480	MHZ #Avg Type: Pow Avg Hold 30/30 Trig: Free Run f MKr2	/er (RMS 1 2 3 4 5 6 M WW WWW P P P P P P 9.919 90 GHz -45.74 dBm UL1 -23 19 dBm	GFSK Frequency V Settings Center Frequency 13.75000000 GHz Span 26.5000000 GHz Swept Span Zero Span Full Span Start Freq 1.00000000 GHz Stop Freq 26.50000000 GHz CF Step 2.550000000 GHz Auto Man	
Spectrum Analyzer 1         V           Swept SA         Input: RF           RL         Imput: RF           RL         Imput: RF           Scale/Div 10 dB         Imput: RF           Scale/Div 10 dB         Imput: RF           5:0         Imput: RF           7:0         Imput: RF           Start 1.00 GHz         Imput: RF           Imput: RF         Imput: RF           Imput: RF         Imput: RF           Imput: RF         Imput: RF           Start 1.00 GHz         Imput: RF           Imput: RF         Imput: RF           Imput: RF         Imput: RF           Imput: RF         Imput: RF           Imput: RF         Imput: RF	H Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) R R R	Channel 78: 2480	MHZ #Avg Type: Pow AvgHold 30/3 Trig: Free Run MKr2	ver (RMS ] 2 3 4 5 6 M WW WW P P P P P P 9.919 90 GHz -45.74 dBm UL1-23 19 dbm UL1-23 19 dbm Stop 26.50 GHz -943 ms (30001 pts)	GFSK Frequency Frequency Settings Center Frequency Settings Span 25.5000000 GHz Swept Span Eull Span Start Freq 1.00000000 GHz Start Freq 2.550000000 GHz CF Step 2.550000000 GHz Auto TUNE CF Step 2.55000000 GHz Auto TUNE CF Step 2.55000000 GHz Auto Man Freq Offset 0 Hz	
Spectrum Analyzer 1 Swept SA KEYSIGHT RL ··· RL Input: RF Coupling: DC Align: Auto CC 1 Spectrum · Scale/Div 10 dB Log 5.00 -15.0 -25.0 -35.0 -55.0	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)	Channel 78: 2480	MHZ #Avg Type: Pow AvgHold 30/3 Trig: Free Run MKr2	ver (RMS ] 2 3 4 5 6 M WW WW P P P P P P 9.919 90 GHz -45.74 dBm UL1-23 19 dbm UL1-23 19 dbm Stop 26.50 GHz -943 ms (30001 pts)	GFSK Frequency V Settings Center Frequency 13.75000000 GHz Span 25.5000000 GHz Swept Span Zero Span Full Span Start Freq 1.00000000 GHz Start Freq 2.550000000 GHz CF Step 2.550000000 GHz CF Step 2.55000000 GHz Man Freq Offset 0 Hz X Axis Scale	
Spectrum Analyzer 1         Swept SA         KEYSIGHT       Input: RF         R L       Imput: RF         Scale/Div 10 dB         Log       1         5.00       1         5.00       1         5.00       1         5.00       1         5.00       1         5.00       1         5.00       1         5.00       1         -5.0	<ul> <li>Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)</li> <li>Re Ref</li> <li>Re</li> <li>Re<!--</td--><td>Channel 78: 2480</td><td>MHZ #Avg Type: Pow Avg Hold 30/3 Trig: Free Run f Mkr2</td><td>ver (RMS ] 2 3 4 5 6 M WW WW P P P P P P 9.919 90 GHz -45.74 dBm UL1-23 19 dbm UL1-23 19 dbm Stop 26.50 GHz -943 ms (30001 pts)</td><td>GFSK Frequency Frequency Settings Center Frequency Span 26.5000000 GHz Swept Span Zero Span Full Span Start Freq 1.00000000 GHz Stop Freq 26.50000000 GHz CF Step 2.550000000 GHz Auto TUNE CF Step 2.550000000 GHz Auto Man Freq Offset 0 Hz</td><td></td></li></ul>	Channel 78: 2480	MHZ #Avg Type: Pow Avg Hold 30/3 Trig: Free Run f Mkr2	ver (RMS ] 2 3 4 5 6 M WW WW P P P P P P 9.919 90 GHz -45.74 dBm UL1-23 19 dbm UL1-23 19 dbm Stop 26.50 GHz -943 ms (30001 pts)	GFSK Frequency Frequency Settings Center Frequency Span 26.5000000 GHz Swept Span Zero Span Full Span Start Freq 1.00000000 GHz Stop Freq 26.50000000 GHz CF Step 2.550000000 GHz Auto TUNE CF Step 2.550000000 GHz Auto Man Freq Offset 0 Hz	



Test Model	Conduc	etedSpurious RF C	Conducted Emi	ission(30	MHz-1000 MHz)	
		Hopping Mode			GFSK	
Spectrum Analyzer 1 Swept SA	<b>• +</b>				Frequency 7	
KEYSIGHT Input. RF R L ↔ Coupling: D Align: Auto	C Corr CCorr µ	Atten. 20 dB PNO. Fast W Path: Standard Gate: Off IF Gain: Low Sig Track: Off	#Avg Type. Power (RM Avg Hold_30/30 Trig: Free Run	15 1 2 3 4 5 6 M WW WW W P P P P P P P	Center Frequency Settings	
1 Spectrum v		LvI Offset 11.47 dB		44.00 MHz	Span 970.000000 MHz	
Scale/Div 10 dB	Ref	Level 15.00 dBm	-6	61.15 dBm	Swept Span Zero Span	
5.00					Full Span	
-5.00					Start Freq 30.000000 MHz	
15.0				DL1 -22.73 dBm	Stop Freq	
-25.0					1.000000000 GHz	
-35.0					AUTO TUNE CF Step	
55.0				1	97.000000 MHz	
-65.0 zejatteta a hendideki intern	ana ang mang mang mang mang mang mang ma	ومحمد وأرار والمتعادة المعدون والمحاولة فالمغالب والمقرار وعمر	hanna ha sa shek kana da sa dana.	alization of the state of the s	Auto Man	
75.0	-to a particular sector of the	ang pang mang pang pang bang bang bang pang pang pang pang pang pang pang p	i Branagell an ang partagan ang ng panaga lina	ine an the first of the second se	Freq Offset 0 Hz	
Start 0.0300 GHz	#	Video BW 300 kHz	Ste	op 1.0000 GHz	X Axis Scale	
#Res BW 100 kHz			Sweep ~36.5 m		Log Lin	
	Mar 25, 2025 7:48:23 PM				Signal Track (Span Zoom)	
	Conducet	tedSpurious RF Co	nducted Emiss	sion(1000	MHz-26.5 GHz)	
Test Model						
		Honning Mode			CESK	
Spectrum Analyzer 1	<b>v</b> +	Hopping Mode				
Swept SA		Atten: 20 dB PNO: Fast	#Avg Type: Power (RM		Frequency V	
Swept SA	Input Ζ: 50 Ω #.		#Avg Type: Power (RM AvgHold 30/30 Ing: Free Run	IS <u>1</u> 2 3 4 5 6 М <del>WW WWW</del> Р Р Р Р Р Р	Frequency     Frequency       Center Frequency     Settings       13.750000000 GHz     Settings	
Swept SA KEYSIGHT Input: RF RL +	G Corr CCorr u Freq Ref: Int (S)	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off IF Gan: Low Sig Track: Off LVI Offset 11.47 dB	Avg Hold 30/30 Ing: Free Run Mkr2 9.7(	м ww ww w рррррр 64 35 GHz	Frequency V	
Swept SA KEYSIGHT Input: RF RL +	G Corr CCorr u Freq Ref: Int (S)	Atten: 20 dB PNO: Fast W Path: Standard Gato: Off IF Gan: Low Sig Track: Off	Avg Hold 30/30 Ing: Free Run Mkr2 9.7(	M WW WWW PPPPP	Frequency Center Frequency 13.75000000 GHz Span	
Swept SA KEYSIGHT Input: RF RL → Align: Auto 202 1 Spectrum Scale/Div 10 dB Log 5.00 -5.00	G Corr CCorr u Freq Ref: Int (S)	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off IF Gan: Low Sig Track: Off LVI Offset 11.47 dB	Avg Hold 30/30 Ing: Free Run Mkr2 9.7(	M WWWWW P P P P P P 64 35 GHz 46.86 dBm	Frequency  Frequency Settings Span 25.5000000 GHz Span Swept Span	
Swept SA KEYSIGHT Input: RF RL + Align: Auto 207 1 Spectrum V Scale/Div 10 dB Log 5.00 -15.0 -25.0	G Corr CCorr u Freq Ref: Int (S)	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off IF Gan: Low Sig Track: Off LVI Offset 11.47 dB	Avg Hold 30/30 Ing: Free Run Mkr2 9.7(	м ww ww w рррррр 64 35 GHz	Frequency       Settings         Center Frequency       Settings         13.75000000 GHz       Settings         Span       25.5000000 GHz         Swept Span       Zero Span         Full Span       Start Freq	
Swept SA KEYSIGHT Input: RF RL 1 Spectrum Scale/Div 10 dB Log 5 00 -5 .00 -5 .00 -5 .0 -25 .0 -45 .0 -5	G Corr CCorr u Freq Ref: Int (S)	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off IF Gan: Low Sig Track: Off LVI Offset 11.47 dB	Avg Hold 30/30 Ing: Free Run Mkr2 9.7(	M WWWWW P P P P P P 64 35 GHz 46.86 dBm	Frequency Fieduency Center Frequency 13.75000000 GHz Span 25.5000000 GHz Swept Span Zero Span Full Span Start Freq 1.000000000 GHz Stop Freq	
Swept SA KEYSIGHT Input: RF RL ↔ Align: Auto VV 1 Spectrum v Scale/Div 10 dB Log 5.00 -5.00 -5.00 -25.0 -35.0	G Corr CCorr u Freq Ref: Int (S)	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off IF Gan: Low Sig Track: Off LVI Offset 11.47 dB	Avg Hold 30/30 Ing: Free Run Mkr2 9.7(	M WWWWW P P P P P P 64 35 GHz 46.86 dBm	Frequency       Settings         Center Frequency       Settings         13.75000000 GHz       Settings         Span       25.500000 GHz         Swept Span       Zero Span         Full Span       Start Freq         1.000000000 GHz       Stop Freq         26.500000000 GHz       Stop Freq	
Swept SA KEYSIGHT Input: RF RL Align: Auto 202 1 Spectrum V Scale/Div 10 dB Log 5.00 -5.00	Corr Corr Hreq Ref: Int (S)	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off IF Gan: Low Sig Track: Off LVI Offset 11.47 dB	AvgHold 30:30 Ing: Free Run 4	M WW WWW P P P P P P 64 35 GHz 46.86 dBm DI 122 73 dBm	Frequency       Settings         Center Frequency       Settings         13.75000000 GHz       Settings         Span       25.5000000 GHz         Swept Span       Zero Span         Full Span       Start Freq         1.000000000 GHz       Stop Freq         26.5000000 GHz       AUTO TUNE	
Swept SA           KEYSIGHT         Input: RF           RL         Paign: Auto           Data         Paign: Auto           Scale/Div 10 dB         Paign: Auto           Scale/Div 10 dB         Paign: Auto           -500         Paign: Auto	Corr Corr Hreq Ref: Int (S)	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off IF Gan: Low Sig Track: Off Level 15.00 dBm	AvgHold 30:30 Ing: Free Run 4	M WW WWW P P P P P P 64 35 GHz 46.86 dBm	Frequency       Settings         Center Frequency       Settings         13.75000000 GHz       Settings         Span       25.5000000 GHz         Swept Span       Zero Span         Full Span       Start Freq         1.000000000 GHz       Stop Freq         26.5000000 GHz       Stop Freq         26.50000000 GHz       CF Step         2.550000000 GHz       Stop Freq         Stop Freq       Stop Freq         Stop Freq	
Swept SA KEYSIGHT Input: RF RL → Auto 202 1 Spectrum V Scale/Div 10 dB Log 5.00 -7.50 -5.00 -5.00 -5.00	C Input Z: 50 Ω # Corr CCorr Freq Ref: Int (S) C 2 C 2 Corr CCorr Freq Ref: Int (S) C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off II: Gan: Low Sig Track: Off Level 15.00 dBm	Avg Hold 30/30 Ing: Free Run -4	M WW WWW P P P P P P 64 35 GHz 46.86 dBm DI 122 73 dBm	Frequency       Settings         Center Frequency       Settings         13.75000000 GHz       Settings         Span       25.5000000 GHz         Swept Span       Zero Span         Full Span       Start Freq         1.000000000 GHz       Stop Freq         26.5000000 GHz       Stop Freq         26.5000000 GHz       Stop Freq         26.50000000 GHz       GF Step	
Swept SA KEYSIGHT Input: RF RL 1 Spectrum Scale/Div 10 dB Log 5 00 -5 00 -5 00 -5 0 -5 0 -7 5 0 -5 0 -5 0 -7 5 0 -5 0 -7 5 0 -5 0	C Input Z: 50 Ω #, Corr CCorr μ Hreq Ref: Int (S) Ref Ref	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off IF Gan: Low Sig Track: Off	Avg Hold 30/30 Ing: Free Run -4	M WW WWW P P P P P P 64 35 GHz 46.86 dBm DI 1.22 73 dBm DI 1.22 73 dBm top 26.50 GHz ns (30001 pts)	Frequency       Settings         Center Frequency       Settings         13.75000000 GHz       Settings         Span       25.5000000 GHz         Swept Span       Zero Span         Full Span       Start Freq         1.000000000 GHz       Stop Freq         26.50000000 GHz       Stop Freq         26.50000000 GHz       CF Step         2.550000000 GHz       Auto	
Swept SA KEYSIGHT Input: RF RL RL Scale/Div 10 dB Log 500	C Input Z: 50 Q # Corr CCorr Pred Ref: Int (S) Ref Ref	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off IF-Gan: Low Sig Track: Off	Avg Hold 30/30 Ing: Free Run -4	M WW WWW P P P P P P 64 35 GHz 46.86 dBm DI 1.22 73 dBm DI 1.22 73 dBm top 26.50 GHz ns (30001 pts)	Frequency       Settings         Center Frequency       Settings         13.75000000 GHz       Settings         Span       25.5000000 GHz         Swept Span       Zero Span         Full Span       Start Freq         1.000000000 GHz       Start Freq         2.55000000 GHz       Start Freq         2.0000000 GHz       Start Freq         2.550000000 GHz       Start Freq         2.550000000 GHz       Auto         Man       Freq Offset         0 Hz       Local	
Swept SA         KEYSIGHT         RL         I Spectrum         1 Spectrum         Scale/Div 10 dB         Log         5.00         -1         5.00         -25.0         -35.0         -45.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -55.0         -57.0         Start 1.00 GHz         #Res BW 100 kHz         5 Marker Table         1         1         2         1         3         4	C Input Z: 50 Q #, Corr CCorr P Freq Ref: Int (S) Corr CCorr CCorr P Freq Ref: Int (S) P Freq Ref P FreqP Freq Ref P Freq Ref P Freq Ref P Fref	Atten: 20 dB PNO: Fast W Path: Standard Gate: Off II: Gan: Low Sig Track: Off Level 15.00 dBm	Avg Hold 30/30 Ing: Free Run -4	M WW WWW P P P P P P 64 35 GHz 46.86 dBm DI 122 73 dBm DI 122 73 dBm top 26.50 GHz ns (30001 pts)	Frequency       Settings         Center Frequency       Settings         13.75000000 GHz       Settings         Span       25.5000000 GHz         Swept Span       Zero Span         Full Span       Start Freq         1.000000000 GHz       Stop Freq         26.500000000 GHz       Stop Freq         2.550000000 GHz       CF Step         2.550000000 GHz       Auto         Man       Freq Offset         0 Hz       Local	



		Band-edg	e Conducted Emission	S
Test Model		Hopping Mode		GFSK
Spectrum Analyzer 1 Swept SA	+	Tropping mode		
KEYSIGHT Input. R RL ++ Align: A	g: DC Corr CCorr	#Atten, 30 dB PNO. Fast μW Path: Standard Gate: Off IF Gain: Low Sig Track: Off	#Avg Type. Power (RMS <u>1</u> 2 3 4 5 6 Avg Hoid 100/100 Trig. Free Run рррррр	Center Frequency Settings
1 Spectrum Scale/Div 10 dB Log		ef LvI Offset 11.44 dB ef Level 20.00 dBm	Mkr5 2.357 645 GHz -48.76 dBm	105.000000 MHz
0.00 10.0 -20.0 -30.0 -40.0		5	DL1-22.93 (194	Full Span Start Freq 2.300000000 GHz
-50.0		and a second and a s		Stop Freq 2.405000000 GHz AUTO TUNE
Start 2.30000 GHz #Res BW 100 kHz 5 Markor Tablo Mode Trace	• Scale X	#Video BW 300 kHz	Stop 2.40500 GHz Sweep 3.87 ms (1001 pts) Function Width Function Value	
Mode         Interest           1         N         1           2         N         1           3         N         1           4         N         1           5         N         1           6	Scale         A           f         2.403 950 CHz           f         2.400 000 GHz           f         2.300 000 GHz           f         2.310 000 GHz           f         2.357 645 GHz	-2.93 dBm -51.02 dBm -52.57 dBm -53.36 dBm -48.76 dBm		Trcq Offsst 0 Hz X Axis Scale Log Lin
Spectrum Analyzer 1 Swept SA	Mar 25, 2025 8:41:03 PM			Signal Track (Span Zoom)
KEYSIGHT Input: R R L ↔ Couplin Align: A	g: DC Corr CCorr	#Atten: 30 dB PNO: Fast µW Path: Standard Gate: Off IF Gain: Low Sig Track: Off	#Avg Type: Power (RMS 1 2 3 4 5 6 Avg Hoid 100/100 Trig: Free Run P P P P P P	Center Frequency 2.51000000 GHz
1 Spectrum Scale/Div 10 dB Log 10.0 0.00		ef LvI Offset 11.49 dB ef Level 20.00 dBm	Mkr4 2.534 08 GHz -44.05 dBm	80.0000000 MHz Swept Span Zero Span
-100 -200 -300 -400 -500 -500	2	3	DL1-24.64 dBm	Full Span Start Freq 2.470000000 GHz Stop Freq 2.550000000 GHz
-70 0 Start 2.47000 GHz #Res BW 100 kHz		#Video BW 300 kHz	Stop 2.55000 GHz Sweep 3.00 ms (1001 pts)	
5 Marker Table Mode Trace 1 N 1 2 N 1 3 N 1	Scale         X           f         2.475 92 GHz           f         2.483 50 GHz           f         2.500 00 GHz	Y Function -4.54 dBm -52.02 dBm -51.08 dBm	Function Width Function Value	Auto Man Freq Offset 0 Hz
4 N 1 5 6	f 2.534 08 GHz	-44.05 dBm		X Axis Scale
<b>1</b> 7 7	<b>1 ?</b> Mar 25, 2025 8:43:31 PM	$\Theta \triangle$		Signal Track (Span Zoom)

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Report No. ENB2502240064W00201R



## 9.7 RADIATED SPURIOUS EMISSION

### **Applicable Standard**

According to FCC Part 15.247(d) and 15.209 and 558074 D01 15.247 Meas Guidance V05r02

#### **Conformance Limit**

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). According to FCC Part15.205, Restricted bands

7 10001 alling to 1 00 1 altito	.200, 1000110100 501100		
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	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	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	(2)
13.36-13.41			

According to FCC Part15.209, the level of any transmitter spurious emission in Restricted bands shall not exceed the level of the emission specified in the following table

Restricted	Field Strength (µV/m)	Field Strength	Measurement
Frequency(MHz)		(dBµV/m)	Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	24000/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

# **Test Configuration**

Test according to clause 7.2 radio frequency test setup 2

# **Test Procedure**

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

The EUT was placed on a turn table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured

```
\begin{array}{l} \mathsf{RBW} = 1 \; \mathsf{MHz} \; \mathsf{for} \; f \geq 1 \; \mathsf{GHz}(1\mathsf{GHz} \; \mathsf{to} \; 25\mathsf{GHz}), \; 100 \; \mathsf{kHz} \; \mathsf{for} \; \mathsf{f} < 1 \; \mathsf{GHz}(30\mathsf{MHz} \; \mathsf{to} \; 1\mathsf{GHz}) \\ \mathsf{VBW} \geq \mathsf{RBW} \\ \mathsf{Sweep} = \mathsf{auto} \\ \mathsf{Detector} \; \mathsf{function} = \mathsf{peak} \\ \mathsf{Trace} = \mathsf{max} \; \mathsf{hold} \end{array}
```

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Follow the guidelines in ANSI C63.10-2014 respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.

Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log(dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

Repeat above procedures until all frequency measured was complete.

## **Test Results**

Spurious Emission below 30MHz(9KHz to 30MHz)

Temperature:	<b>23</b> ℃	Test Date:	March 26, 2025
Humidity:	51 %	Test By:	Victor Chen
Test mode:	TX Mode		

Freq.	Ant.Pol.	Emis Level(d	sion BuV/m)	Limit 3m(	(dBuV/m)	Ove	er(dB)
(MHz)	H/V	PK È	ÁÝ	PK	AV	PK	AV

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor =40log(Specific distance/ test distance)( dB);

Limit line=Specific limits(dBuV) + distance extrapolation factor

Spurious Emission Above 1GHz(1GHz to 25GHz)

Bluetooth (GFSK, pi/4-DQPSK,8DPSK, non hopping) mode have been tested, and the worst result(GFSK)was report as below:

Temperature:	<b>23</b> ℃	Test Date:	March 26, 2025
Humidity:	51 %	Test By:	Victor Chen
Test mode:	GFSK	Frequency:	Channel 0: 2402MHz

Freq.	Ant.Pol.		ssion dBuV/m)	Limit 3m	(dBuV/m)	Ove	er(dB)
(MHz)	H/V	PK `	AV	PK	AV	PK	AV
4804.000	V	39.18	27.69	74.00	54.00	-34.82	-26.31
9608.000	V	51.34	39.46	74.00	54.00	-22.66	-14.54
17979.500	V	56.04	42.71	74.00	54.00	-17.96	-11.29
4804.000	Н	43.47	30.67	74.00	54.00	-30.53	-23.33
13948.000	Н	53.34	29.12	74.00	54.00	-20.66	-24.88
17950.000	Н	55.22	41.08	74.00	54.00	-18.78	-12.92

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Temperature: Humidity: Test mode:	23℃ 51 % GFSK		Test Da Test By Frequei	:	March 26 Victor Ch Channel		<u>z</u>
Freq.	Ant.Pol.		ssion BuV/m)	Limit 3m	(dBuV/m)	Ove	r(dB)
(MHz)	H/V	PK `	ÁV	PK	AV	PK	AV
4881.500	V	41.59	28.69	74.00	54.00	-32.41	-25.31
9763.500	V	52.07	40.32	74.00	54.00	-21.93	-13.68
17947.500	V	55.13	42.20	74.00	54.00	-18.87	-11.80
4882.000	Н	45.00	32.40	74.00	54.00	-29.00	-21.60
9764.000	Н	52.93	39.73	74.00	54.00	-21.07	-14.27
17984.000	Н	55.47	40.14	74.00	54.00	-18.53	-13.86
Temperature: Humidity: Test mode:	23℃ 51 % GFSK		Test Da Test By Freque	:	March 26 Victor Ch Channel	•	2
Freq.	Ant.Pol.		ssion BuV/m)	Limit 3m	(dBuV/m)	Ove	r(dB)
(MHz)	H/V	PK	ÁV	PK	AV	PK	AV
4960.000	V	42.92	29.12	74.00	54.00	-31.08	-24.88
9920.000	V	52.13	40.37	74.00	54.00	-21.87	-13.63
13923.000	V	54.24	41.55	74.00	54.00	-19.76	-12.45
4960.000	Н	42.03	27.16	74.00	54.00	-31.97	-26.84

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).

38.54

39.08

(2) Emission Level= Reading Level+Correct Factor +Cable Loss.

(3) Correct Factor= Ant\_F + Cab\_L - Preamp

51.67

54.10

н

Н

(4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

74.00

74.00

54.00

54.00

-22.33

-19.90

-15.46

-14.92

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Report No. ENB2502240064W00201R

11611.500

17500.500



Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz Bluetooth (GFSK, pi/4-DQPSK,8DPSK) mode have been tested, and the worst result(GFSK, Hopping) was report as below:

Temperature Humidity:	: 23℃ 51 %		Test Date: Test By:		arch 26, 2025 ctor Chen		
Test mode:	GFS		Frequency		annel 0: 2402Ml	Hz	
Frequency (MHz)	Polarity H/V	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over (dB)
2370.810	Н	58.01	74.00	-15.99	44.00	54.00	-10.00
2356.297	V	57.65	74.00	-16.35	43.52	54.00	-10.48
Temperature Humidity: Test mode:	: 23℃ 51 % GFS	, 0	Test Date: Test By: Frequency	Vic	arch 26, 2025 ctor Chen annel 78: 2480N	ЛНz	
Frequency (MHz)	Polarity H/V	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over (dB)
2483.970	н	58.20	74.00	-15.80	43.29	54.00	-10.71
2495.811	V	58.48	74.00	-15.52	45.61	54.00	-8.39
Temperature Humidity: Test mode:	: 23℃ 51 % GFS	, 0	Test Date: Test By: Frequency	Vic	arch 26, 2025 ctor Chen pping		
Frequency (MHz)	Polarity H/V	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over (dB)
2399.984	Н	65.72	74.00	-8.28	50.23	54.00	-3.77
2483.489	Н	65.74	74.00	-8.26	50.64	54.00	-3.36
2399.867	V	64.72	74.00	-9.28	49.36	54.00	-4.64
2483.489	V	65.55	74.00	-8.45	50.03	54.00	-3.97

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).

(2) Emission Level= Reading Level+Correct Factor +Cable Loss.

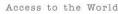
(3) Correct Factor= Ant\_F + Cab\_L - Preamp

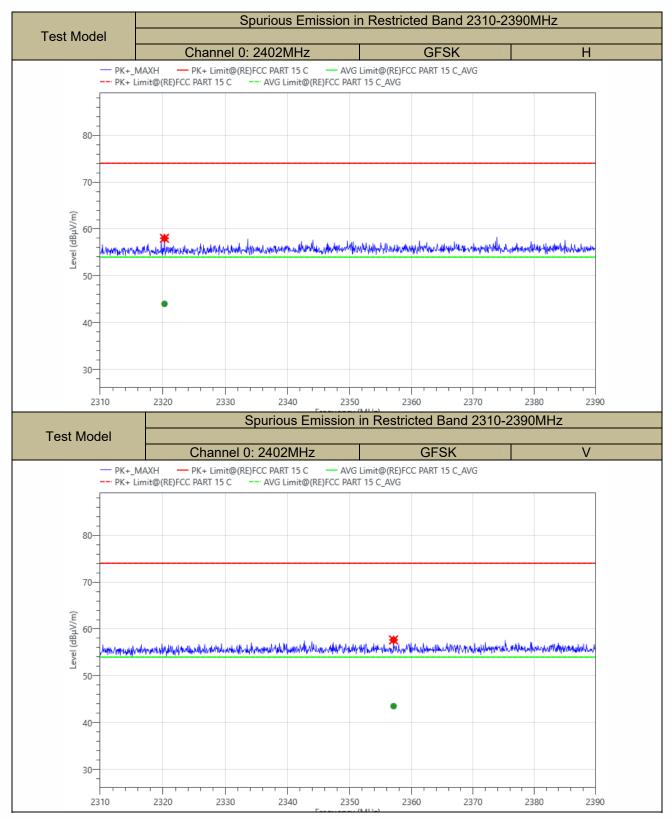
(4) The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

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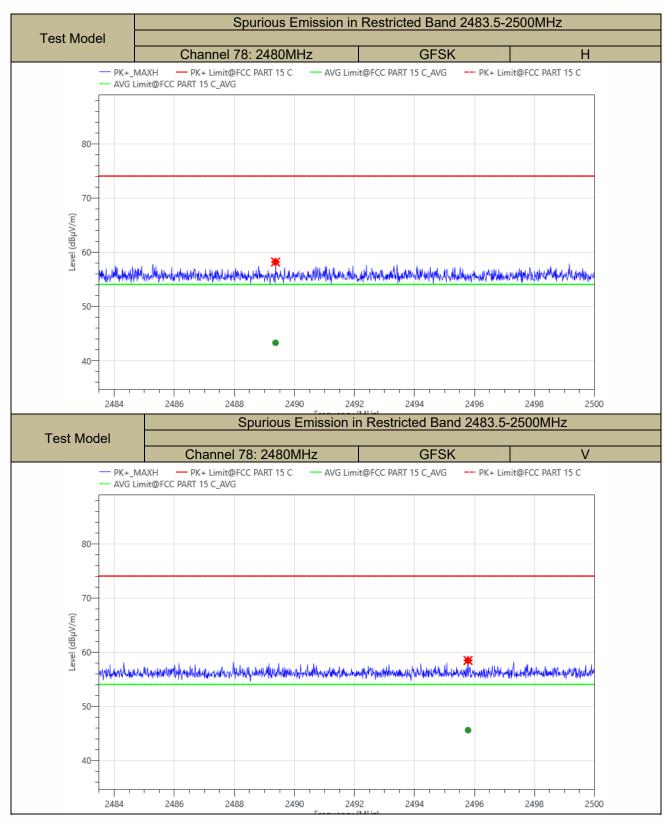




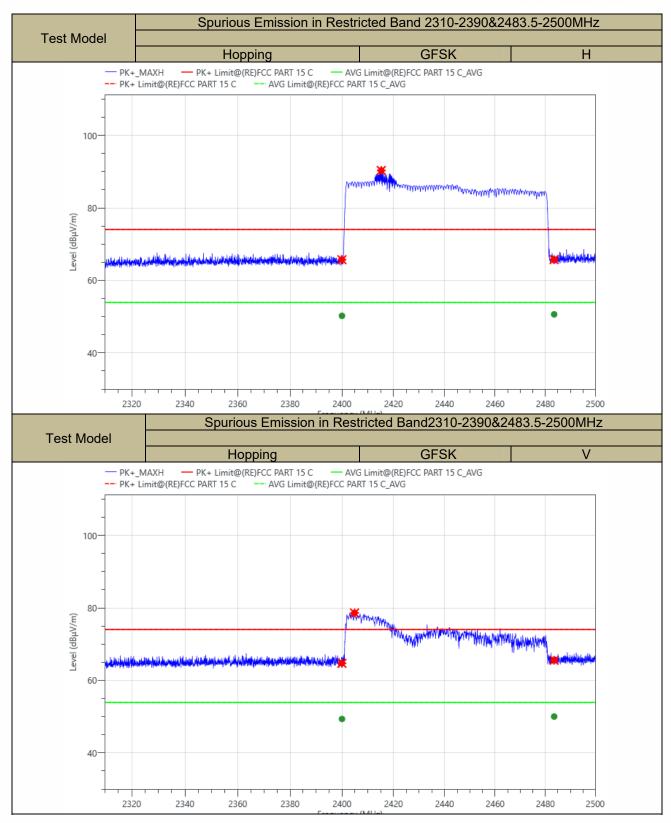


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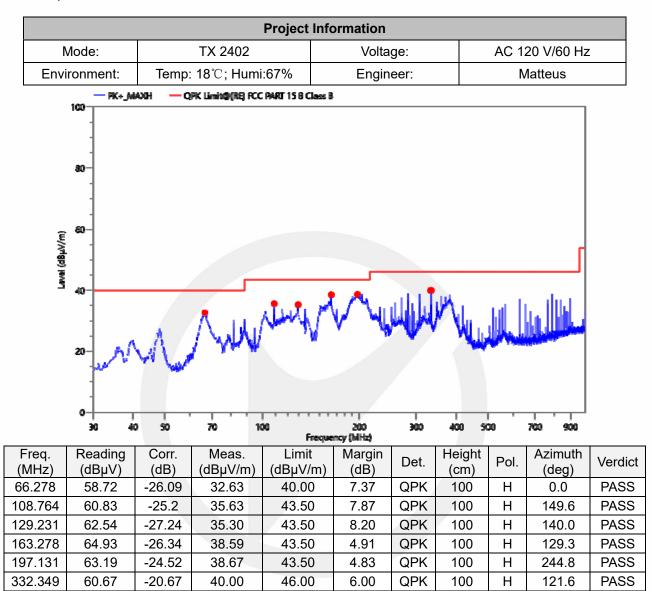






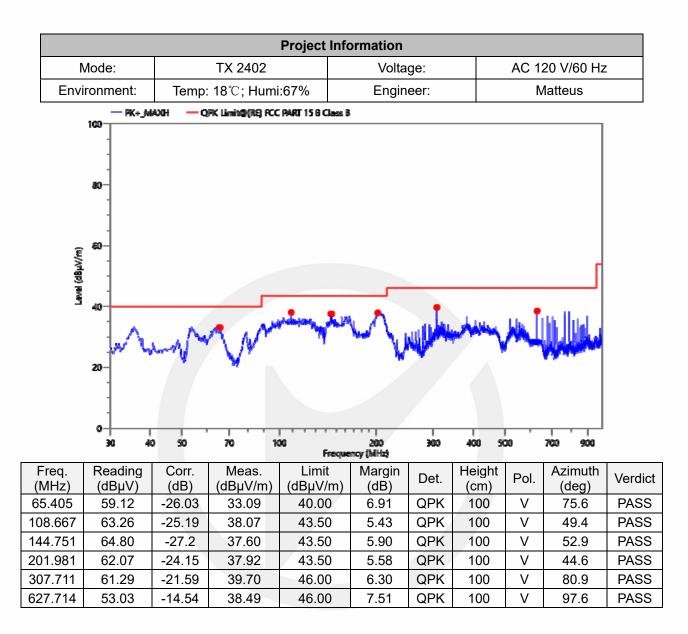
Spurious Emission below 1GHz(30MHz to 1GHz)

Bluetooth (GFSK, pi/4-DQPSK,8DPSK)mode have been tested, and the worst result(GFSK) recorded was report as below:



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		-		Project Info	ormation				
ſ	Node:		TX 2440		Volta	ge:		AC 1	20 V/60 Hz
Env	ronment:	Temp	: <b>18</b> ℃; Humi	:67%	Engin	eer:		Ν	/latteus
	— PK+_M	AXH — Q	PK Limit@(RB) PCC	PART 15 6 Class B			•		
Ē	- - - - - - - - - - - - - - - - - - -								
Laval (dBuv/m)	40 20- 0	W	North	rimp"	we and the	HUUH	Muy		
Level (dBuV/	20- 				200 ncy (MHz)		400 9	20	700 900
Freq. (MHz)	20- 0-				2000 mcy (MHz) Margin (dB)	300 Det.	400 se Height (cm)	DO POI.	700 900 Azimuth (deg)
Freq. (MHz)	20- 30 40 Reading	50 50 Corr.	<b>70 K</b> Meas.	00 Freque Limit	Margin		Height		Azimuth
Freq.	Reading (dBµV)	<b>50</b> Corr. (dB)	<b>70 1</b> 4 Meas. (dBµV/m)	00 Freque Limit (dBμV/m)	ncy (MHz) Margin (dB)	Det.	Height (cm)	Pol.	Azimuth (deg)
Freq. (MHz) 65.405	20- 20- 30 4 Reading (dBμV) 58.65	<b>50</b> Corr. (dB) -26.03	<b>70 Ν</b> Meas. (dBμV/m) 32.62	00 Freque Limit (dBµV/m) 40.00	ncy (MHz) Margin (dB) 7.38	Det. QPK	Height (cm) 100	Pol. H	Azimuth (deg) 348.6
Freq. (MHz) 65.405 101.974	<b>20</b> - <b>30</b> <b>30</b> <b>4</b> <b>α</b> <b>α</b> <b>α</b> <b>α</b> <b>α</b> <b>α</b> <b>α</b> <b>α</b> <b>α</b> <b>α</b>	<b>50</b> Corr. (dB) -26.03 -24.47	<b>70 1</b> Meas. (dBμV/m) 32.62 33.55	00 Freque Limit (dBμV/m) 40.00 43.50	ncy (MHz) Margin (dB) 7.38 9.95	Det. QPK QPK	Height (cm) 100 100	Pol. H H	Azimuth (deg) 348.6 144.4
Freq. (MHz) 65.405 101.974 108.764	<b>20</b> - <b>20</b> - <b>30</b> <b>30</b> <b>4</b> <b>Reading</b> (dBμV) 58.65 58.02 61.73	<b>50</b> Corr. (dB) -26.03 -24.47 -25.2	70         14           Meas.         (dBμV/m)           32.62         33.55           36.53         36.53	<b>60</b> Limit (dBμV/m) 40.00 43.50 43.50	ncy (MHz) Margin (dB) 7.38 9.95 6.97	Det. QPK QPK QPK	Height (cm) 100 100 100	Pol. H H H	Azimuth (deg) 348.6 144.4 159.9

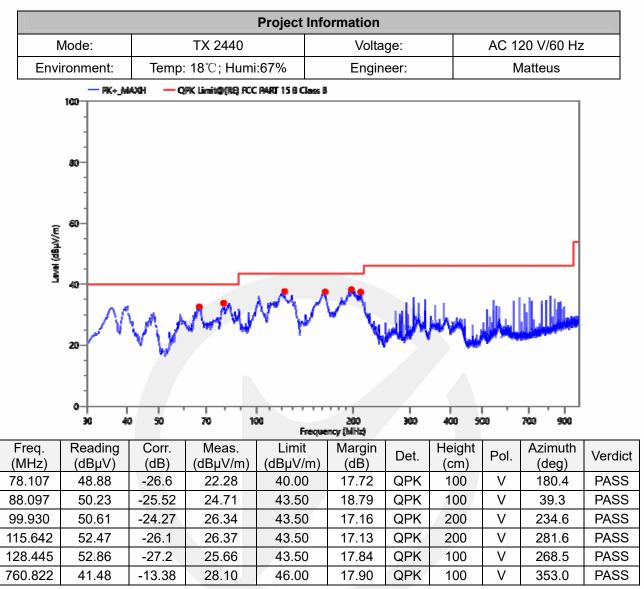
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Ver. 1. 0



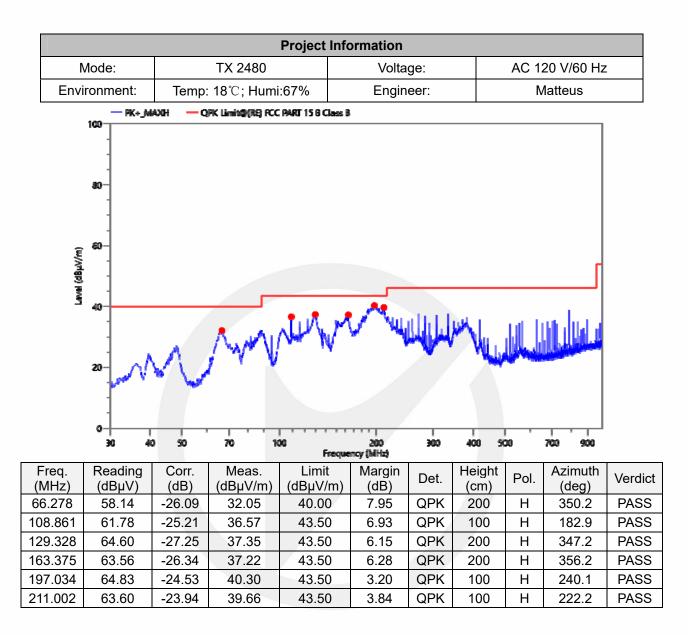


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Report No. ENB2502240064W00201R







				Project Info	ormation					
Ν	/lode:		TX 2480		Volta	ge:		AC 1	20 V/60 Hz	
Envi	ronment:	Temp:	. <b>18</b> ℃; Humi	:67%	Engin	eer:		Ν	latteus	
	— PK+_M#	wati — Q	PK Limit@(RE) PCC	PART 15 6 Class B			•			
	- - 80- - -									
Levvel (dBuV/m)			70 K	Freque	200 ncy (MHz)	300	400 50	20		
(W/M199) INNET		So Corr. (dB)	70 1x Meas. (dBµV/m)	00 Freque Limit (dBµV/m)	2000 mcy (MHz) Margin (dB)	<b>300</b> Det.	400 st Height (cm)	Dol.	700 900 Azimuth (deg)	Verd
Freq.	40 20 30 40 Reading	Corr.	Meas.	Freque Limit	ncy (MHz) Margin		Height		Azimuth	Verd
Freq. (MHz)	40 20 30 40 20 30 40 Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Freque Limit (dBµV/m)	ncy (MHz) Margin (dB)	Det.	Height (cm)	Pol.	Azimuth (deg)	PAS
Freq. (MHz) 35.626	40 20 30 40 Reading (dBμV) 59.22	Corr. (dB) -24.36	Meas. (dBµV/m) 34.86	Freque Limit (dBµV/m) 40.00	ncy (MHz) Margin (dB) 5.14	Det. QPK	Height (cm) 100	Pol. V	Azimuth (deg) 2.2	PAS PAS
Freq. (MHz) 35.626 31.604 02.071	40 20 30 40 40 20 40 40 40 40 40 40 40 40 40 4	Corr. (dB) -24.36 -26.43	Meas. (dBµV/m) 34.86 35.85	Freque Limit (dBµV/m) 40.00 40.00	ncy (MHz) Margin (dB) 5.14 4.15	Det. QPK QPK	Height (cm) 100 100	Pol. V V	Azimuth (deg) 2.2 230.1	PAS PAS PAS
Freq. (MHz) 35.626 31.604	<b>20</b> <b>20</b> <b>30</b> <b>40</b> <b>20</b> <b>30</b> <b>40</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b>	Corr. (dB) -24.36 -26.43 -24.48	Meas. (dBµV/m) 34.86 35.85 38.30	Freque Limit (dBµV/m) 40.00 40.00 43.50	ncy (MHz) Margin (dB) 5.14 4.15 5.20	Det. QPK QPK QPK	Height (cm) 100 100 100	Pol. V V V	Azimuth (deg) 2.2 230.1 131.9	

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Report No. ENB2502240064W00201R



## 9.8 CONDUCTED EMISSION TEST

### **Applicable Standard**

According to FCC Part 15.207(a)

# **Conformance Limit**

Conducted Emission Limit				
Frequency(MHz)	Quasi-peak	Average		
0.15-0.5	66-56	56-46		
0.5-5.0	56	46		
5.0-30.0	60	50		

Note: 1. The lower limit shall apply at the transition frequencies

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

# **Test Configuration**

Test according to clause 7.3 conducted emission test setup

# Test Procedure

The EUT was placed on a table which is 0.1m above ground plane. Maximum procedure was performed on the highest emissions to ensure EUT compliance. Repeat above procedures until all frequency measured were complete.

#### **Test Results**

Pass.

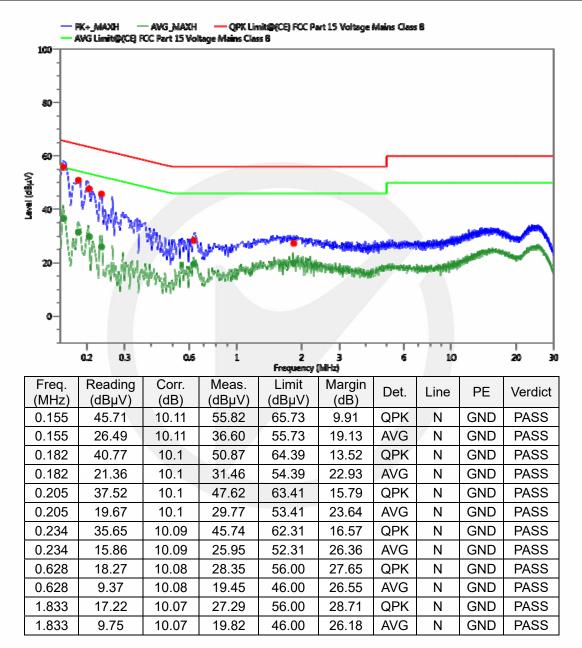
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All mode have been tested, and the worst result recorded was report as below:

Project Information				
Mode:	TX 2402	Voltage:	AC 120V/60Hz	
Environment:	Temp: 18℃; Humi:58%	Engineer:	Kevin	



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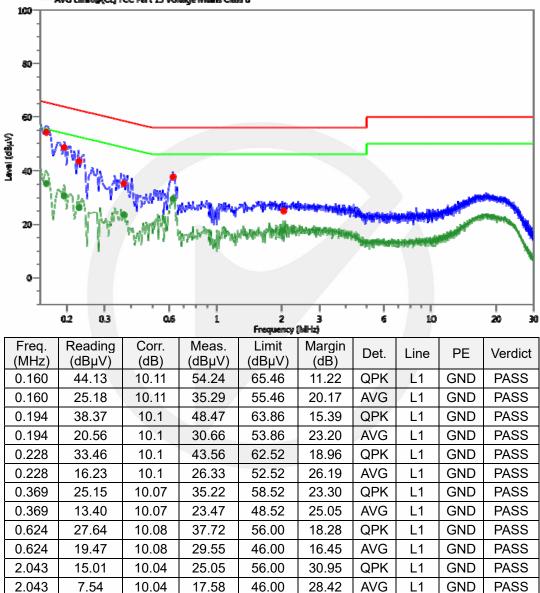
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Report No. ENB2502240064W00201R



Project Information				
Mode:	TX2402	Voltage:	AC 120V/60Hz	
Environment:	Temp: 18℃; Humi:58%	Engineer:	Kevin	





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Report No. ENB2502240064W00201R



### 9.9 ANTENNA APPLICATION

#### Antenna Requirement

Ctandard	Deguingment		
Standard	Requirement		
FCC CRF Part15.203	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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217,§15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.		

For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

# Result

Pass.

Note:

The EUT has 1 PCB Antenna: The PCB Antenna Gain is 1.2 dBi;

Antenna use a permanently attached antenna which is not replaceable.

Not using a standard antenna jack or electrical connector for antenna replacement The antenna has to be professionally installed (please provide method of installation)

which in accordance to section 15.203, please refer to the internal photos.

\*\*\* End of Report \*\*\*

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