

Temperature:

Humidity:

(C)

%RH



# [TestMode: TX high channel]; [Polarity: Horizontal]

#### **Radiated Emission Measurement** Project No.: RE Data :#11 2023/2/13 11:46:41 107.0 dBuV/m 97 87 77 FCC Part15 (PK) 67 57 FCC Part15 (AV) 47 2 X 37 27 17 2478.000 2480.20 2500.00 2482.40 2484.60 2486.80 (MHz) 2491.20 2493.40 2497.80

Polarization: Horizontal

Site Limit: FCC Part15 (PK)

EUT: Bluetooth voice remote control

M/N: AN2704-1IP-003 Mode: BLE TX-H

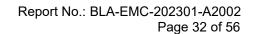
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	60.70	-3.96	56.74	74.00	-17.26	peak	
2	*	2483.500	48.79	-3.96	44.83	54.00	-9.17	AVG	
3		2484.732	60.57	-3.97	56.60	74.00	-17.40	peak	
4		2484.732	47.67	-3.97	43.70	54.00	-10.30	AVG	
5		2500.000	42.90	-4.00	38.90	74.00	-35.10	peak	

Power:

\*:Maximum data x:Over limit !:over margin \( \text{Reference Only}

**Test Result: Pass** 





[TestMode: TX high channel]; [Polarity: Vertical]

#### **Radiated Emission Measurement** Project No.: RE Data :#12 2023/2/13 11:48:58 107.0 dBuV/m 97 87 77 FCC Part15 (PK) 67 57 FCC Part15 (AV) 47 37 27 17 2478.000 2480.20 2500.00 2482.40 2484.60 2486.80 (MHz) 2491.20 2493.40 2497.80

Polarization:

Power:

Vertical

Temperature:

Humidity:

(C)

%RH

Site Limit: FCC Part15 (PK)

EUT: Bluetooth voice remote control

M/N: AN2704-1IP-003 Mode: BLE TX-H

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment		Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2483.500	51.43	-3.96	47.47	74.00	-26.53	peak	
2		2500.000	43.50	-4.00	39.50	74.00	-34.50	peak	

\*:Maximum data x:Over limit !:over margin \( \text{Reference Only}

**Test Result: Pass** 



Page 33 of 56

### Remark:

- 1. Final Level =Receiver Read level + Correct factor
- 2. Correct factor = Antenna Factor + Cable Loss Preamplifier Factor
- 3. The emission levels of other frequencies are very lower than the limit and not show in test report.





Page 34 of 56

#### 14 CONDUCTED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247				
Test Method	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11				
Test Mode (Pre-Scan)	TX				
Test Mode (Final Test)	TX				
Tester	Jozu				
Temperature	25℃				
Humidity	60%				

#### **14.1 LIMITS**

Limit:

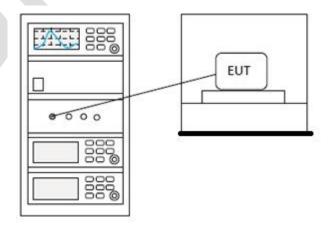
spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, 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)).

In any 100 kHz bandwidth outside the frequency band in which the spread

#### 14.2 BLOCK DIAGRAM OF TEST SETUP





Page 35 of 56

### 14.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details





Page 36 of 56

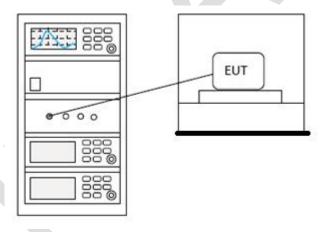
### 15 POWER SPECTRUM DENSITY

Test Standard	47 CFR Part 15, Subpart C 15.247				
Test Method	ANSI C63.10 (2013) Section 11.10.2				
Test Mode (Pre-Scan)	TX				
Test Mode (Final Test)	TX				
Tester	Jozu				
Temperature	25℃				
Humidity	60%				

#### **15.1 LIMITS**

**Limit:** | ≤8dBm in any 3 kHz band during any time interval of continuous transmission

#### 15.2 BLOCK DIAGRAM OF TEST SETUP



#### 15.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details



Report No.: BLA-EMC-202301-A2002 Page 37 of 56

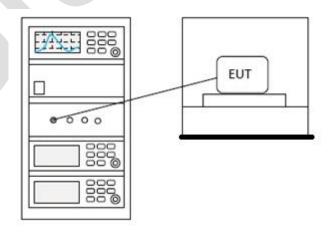
# **16 CONDUCTED PEAK OUTPUT POWER**

Test Standard	47 CFR Part 15, Subpart C 15.247				
Test Method	ANSI C63.10 (2013) Section 7.8.5				
Test Mode (Pre-Scan)	TX				
Test Mode (Final Test)	TX				
Tester	Jozu				
Temperature	25℃				
Humidity	60%				

#### **16.1 LIMITS**

Frequency range(MHz)	Output power of the intentional radiator(watt)			
	1 for ≥50 hopping channels			
902-928	0.25 for 25≤ hopping channels <50			
	1 for digital modulation			
	1 for ≥75 non-overlapping hopping channels			
2400-2483.5	0.125 for all other frequency hopping systems			
	1 for digital modulation			
5505 5050	1 for frequency hopping systems and digital			
5725-5850	modulation			

# 16.2 BLOCK DIAGRAM OF TEST SETUP





Page 38 of 56

# 16.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details





Page 39 of 56

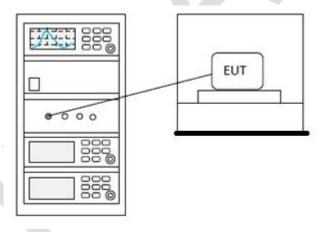
# 17 MINIMUM 6DB BANDWIDTH

Test Standard	47 CFR Part 15, Subpart C 15.247				
Test Method	ANSI C63.10 (2013) Section 11.8.1				
Test Mode (Pre-Scan)	TX				
Test Mode (Final Test)	TX				
Tester	Jozu				
Temperature	25℃				
Humidity	60%				

#### **17.1 LIMITS**

Limit:	≥500 kHz			
L'IIIII.	_500 K112			

#### 17.2 BLOCK DIAGRAM OF TEST SETUP



### 17.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details



18 APPENDIX

Report No.: BLA-EMC-202301-A2002

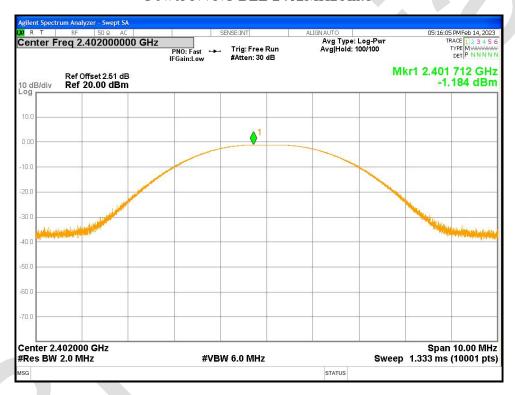
Page 40 of 56

# Appendix1

#### **Maximum Conducted Output Power**

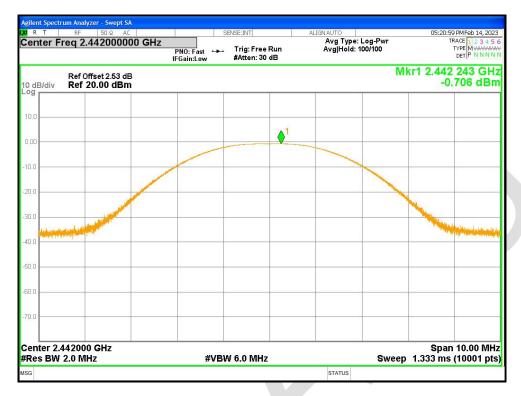
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant1	-1.184	30	Pass
NVNT	BLE	2442	Ant1	-0.706	30	Pass
NVNT	BLE	2480	Ant1	-0.405	30	Pass

# Power NVNT BLE 2402MHz Ant1



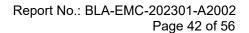


### Power NVNT BLE 2442MHz Ant1



### Power NVNT BLE 2480MHz Ant1







#### -6dB Bandwidth

Condition	Mode	Frequency	Antenna	-6 dB Bandwidth	Limit -6 dB	Verdict
		(MHz)		(MHz)	Bandwidth (MHz)	
NVNT	BLE	2402	Ant1	0.655	0.5	Pass
NVNT	BLE	2442	Ant1	0.654	0.5	Pass
NVNT	BLE	2480	Ant1	0.664	0.5	Pass

### -6dB Bandwidth NVNT BLE 2402MHz Ant1



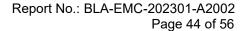


## -6dB Bandwidth NVNT BLE 2442MHz Ant1



### -6dB Bandwidth NVNT BLE 2480MHz Ant1







#### **Occupied Channel Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE	2402	Ant1	1.0627
NVNT	BLE	2442	Ant1	1.0773
NVNT	BLE	2480	Ant1	1.0758

#### OBW NVNT BLE 2402MHz Ant1



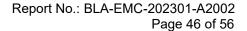


### OBW NVNT BLE 2442MHz Ant1



#### OBW NVNT BLE 2480MHz Ant1



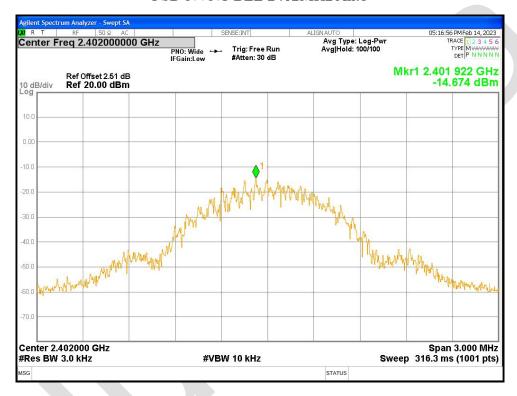




**Maximum Power Spectral Density Level** 

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant1	-14.674	8	Pass
NVNT	BLE	2442	Ant1	-14.299	8	Pass
NVNT	BLE	2480	Ant1	-14.019	8	Pass

### PSD NVNT BLE 2402MHz Ant1

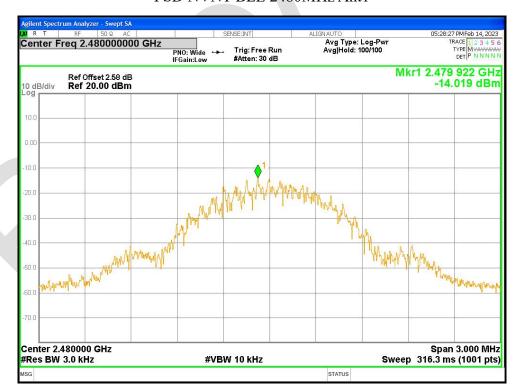


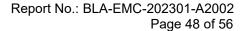


### PSD NVNT BLE 2442MHz Ant1



### PSD NVNT BLE 2480MHz Ant1



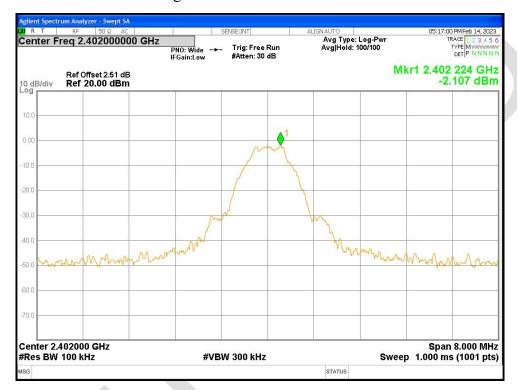




#### **Band Edge**

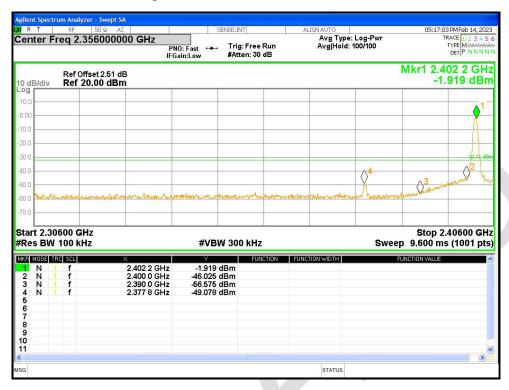
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE	2402	Ant1	-46.96	-30	Pass
NVNT	BLE	2480	Ant1	-44.38	-30	Pass

# Band Edge NVNT BLE 2402MHz Ant1 Ref

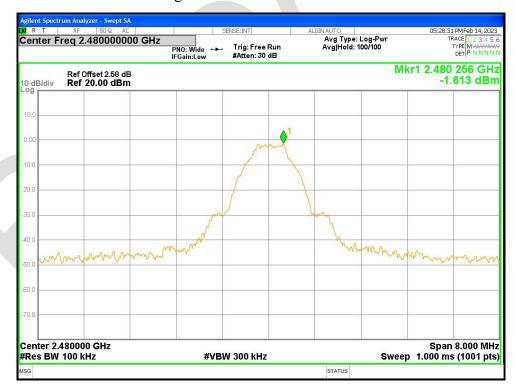




# Band Edge NVNT BLE 2402MHz Ant1 Emission

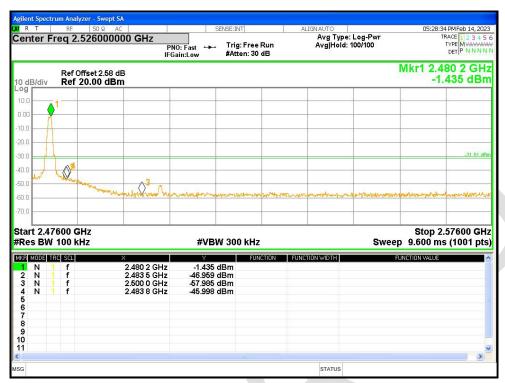


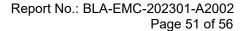
Band Edge NVNT BLE 2480MHz Ant1 Ref



Band Edge NVNT BLE 2480MHz Ant1 Emission









#### **Conducted RF Spurious Emission**

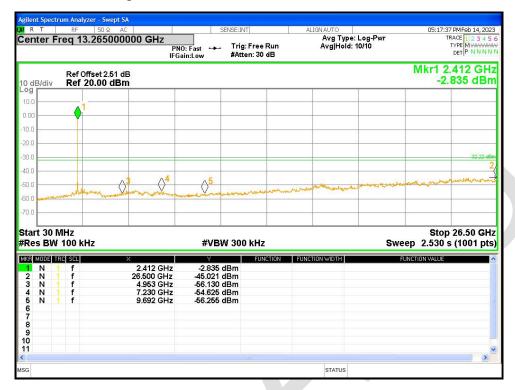
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE	2402	Ant1	-42.8	-30	Pass
NVNT	BLE	2442	Ant1	-43.2	-30	Pass
NVNT	BLE	2480	Ant1	-43.78	-30	Pass

Tx. Spurious NVNT BLE 2402MHz Ant1 Ref





Tx. Spurious NVNT BLE 2402MHz Ant1 Emission

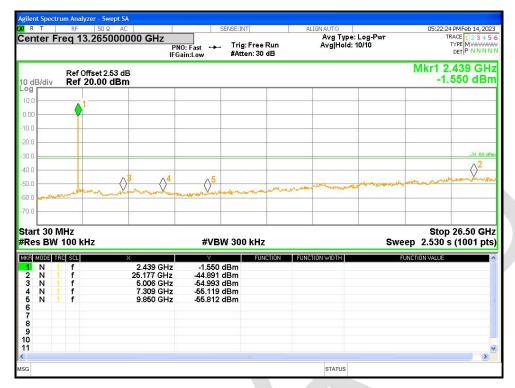


Tx. Spurious NVNT BLE 2442MHz Ant1 Ref



Tx. Spurious NVNT BLE 2442MHz Ant1 Emission



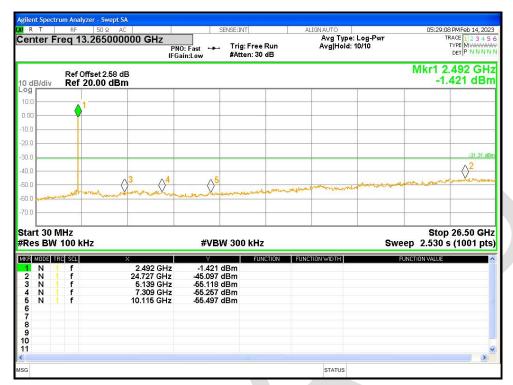


Tx. Spurious NVNT BLE 2480MHz Ant1 Ref



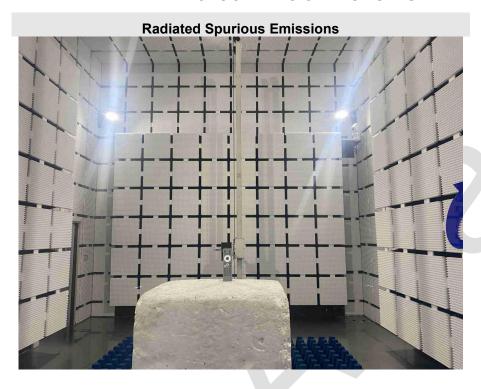
Tx. Spurious NVNT BLE 2480MHz Ant1 Emission

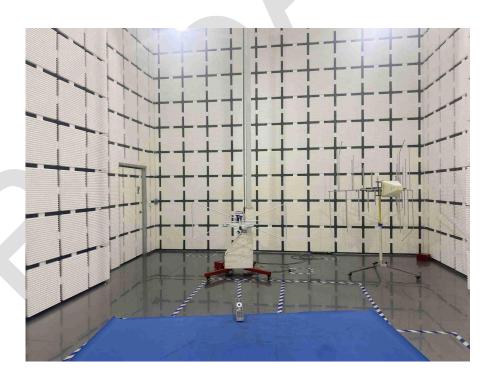






# **APPENDIX A: PHOTOGRAPHS OF TEST SETUP**







Page 56 of 56

#### APPENDIX B: PHOTOGRAPHS OF EUT

Reference to the test report No. BLA-EMC-202301-A2001

# ----END OF REPORT----

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