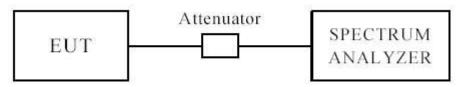
Report No.: TW2106339E Page 60 of 85

Date: 2021-07-12



### 12 Out of Band Measurement

# 12.1 Test Setup



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

### 12.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

### **12.3 Test Procedure**

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test. Peak values with RBW=VBW=1MHz and PK detector.

For bandage test, the spectrum set as follows: RBW=100 kHz, VBW=300 kHz. A conducted measurement used

Note: 1. For band-edge measurement, the frequency from 30MHz-25GHz was tested. And It met the FCC rule.

Report No.: TW2106339E Page 61 of 85

Date: 2021-07-12

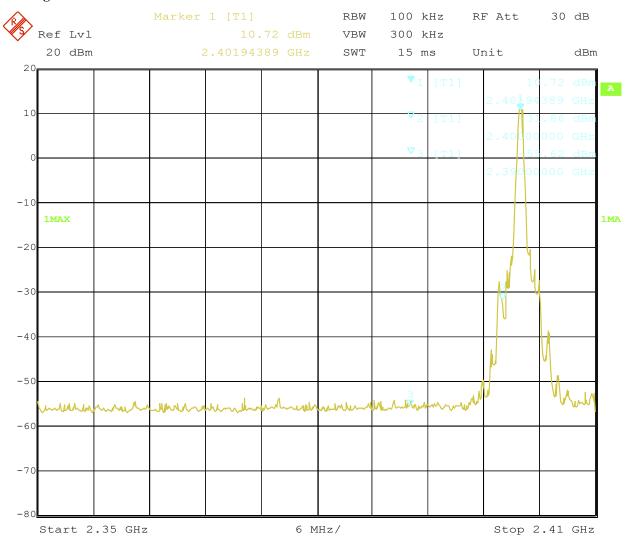


### Type of Modulation: GFSK

#### Band Edge Test Result 12.4

Product:	Bluetooth transmitter	Test Mode:	Low Channel
Mode	Keeping Transmitting	Input Voltage	120V~
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



Date: 7.JUL.2021 13:27:01 Report No.: TW2106339E Page 62 of 85

Date: 2021-07-12

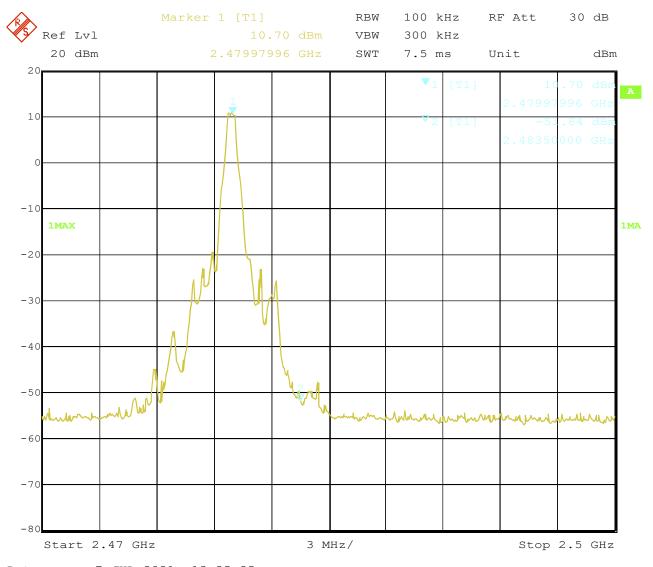


### Type of Modulation: GFSK

#### Band Edge Test Result 12.4

Product:	Bluetooth transmitter	Test Mode:	High Channel
Mode	Keeping Transmitting	Input Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



7.JUL.2021 13:25:25 Date:

Report No.: TW2106339E Page 63 of 85

Date: 2021-07-12

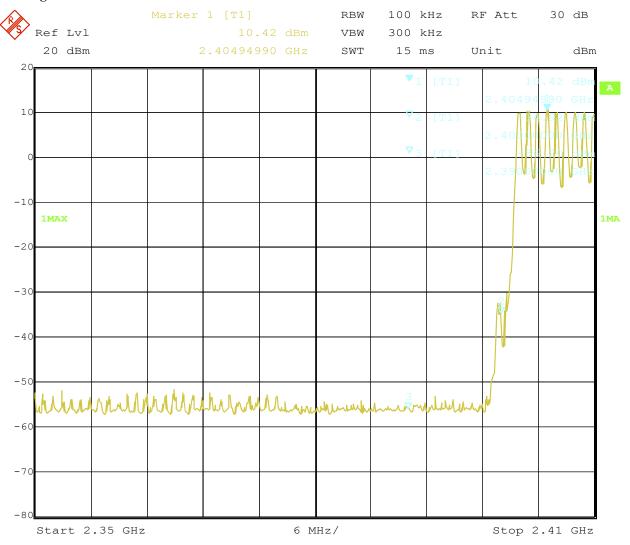


### Type of Modulation: GFSK

# Band Edge Test Result

Product:	Bluetooth transmitter	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



Date: 7.JUL.2021 13:18:43 Report No.: TW2106339E Page 64 of 85

Date: 2021-07-12

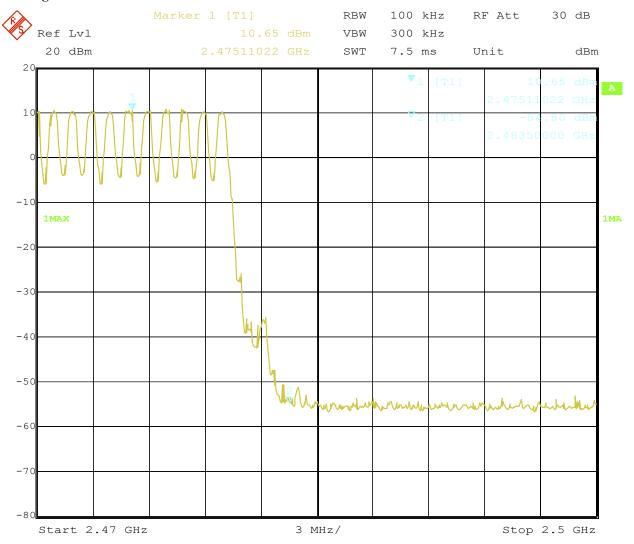


### Type of Modulation: GFSK

# Band Edge Test Result

Product:	Bluetooth transmitter	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



7.JUL.2021 13:22:16 Date:

Report No.: TW2106339E Page 65 of 85

Date: 2021-07-12

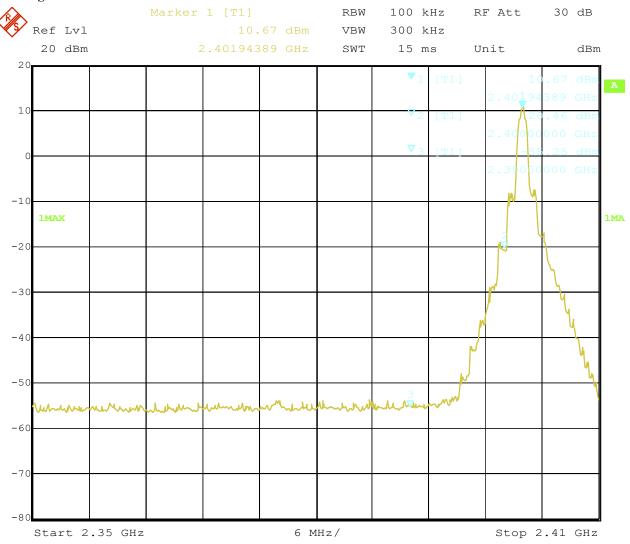


# Type of Modulation: Л/4D-QPSK

#### Out of Band Test Result 12.4

Product:	Bluetooth transmitter	Test Mode:	Low Channel
Mode	Keeping Transmitting	Input Voltage	120V~
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



Date: 7.JUL.2021 13:29:53

Page 66 of 85

Report No.: TW2106339E

Date: 2021-07-12

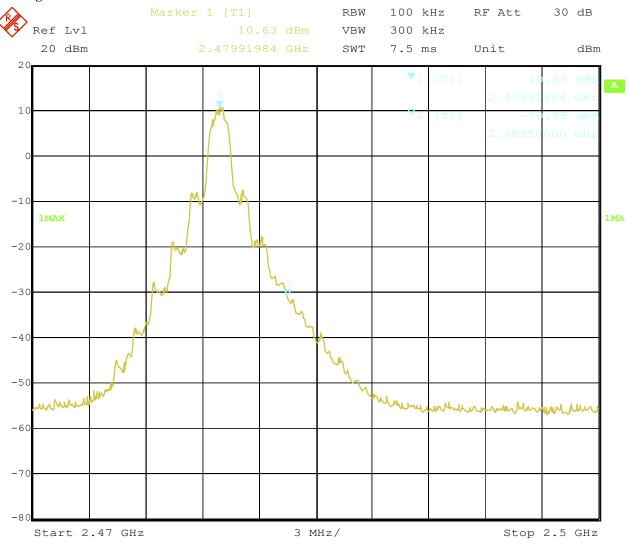


# Type of Modulation: Л/4D-QPSK

# Band Edge Test Result

Product:	Bluetooth transmitter	Test Mode:	High Channel
Mode	Keeping Transmitting	Input Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



Date: 7.JUL.2021 13:43:24 Report No.: TW2106339E Page 67 of 85

Date: 2021-07-12

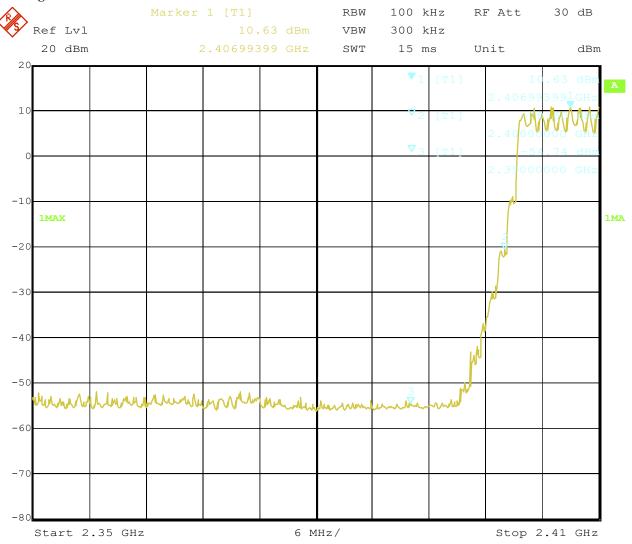


# Type of Modulation: Л/4D-QPSK

# Out of Band Test Result

Product:	Bluetooth transmitter	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



Date: 7.JUL.2021 13:16:50

Page 68 of 85

Report No.: TW2106339E

Date: 2021-07-12

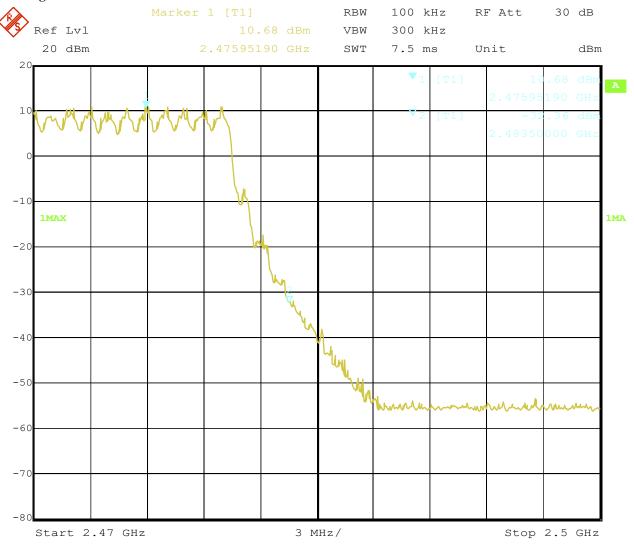


# Type of Modulation: Л/4D-QPSK

# Out of Band Test Result

Product:	Bluetooth transmitter	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



Date: 7.JUL.2021 13:12:15 Report No.: TW2106339E Page 69 of 85

Date: 2021-07-12

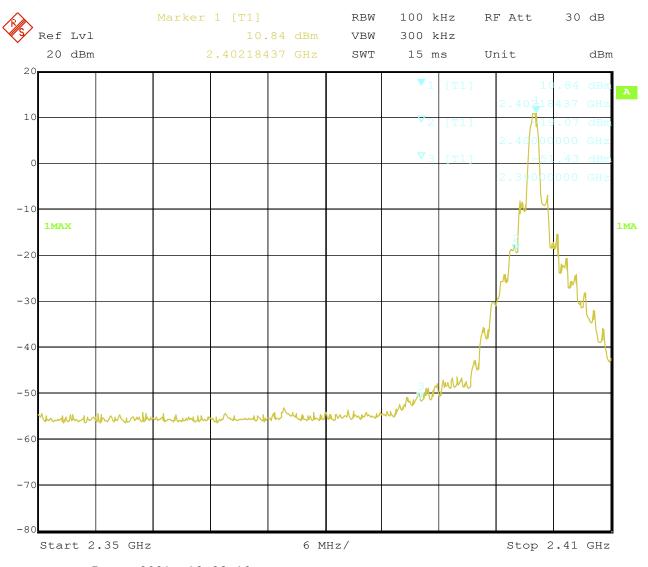


# **Type of Modulation: 8DPSK**

#### Band Edge Test Result 12.4

Product:	Bluetooth transmitter	Test Mode:	Low Channel
Mode	Keeping Transmitting	Input Voltage	120V~
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

### **Test Figure:**



Date: 7.JUL.2021 13:33:12 Report No.: TW2106339E Page 70 of 85

Date: 2021-07-12

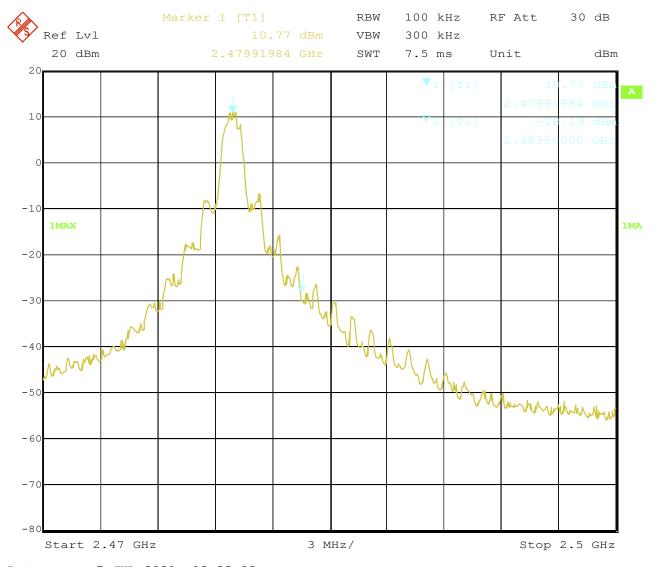


### **Type of Modulation: 8DPSK**

#### Band Edge Test Result 12.4

Product:	Bluetooth transmitter	Test Mode:	High Channel
Mode	Keeping Transmitting	Input Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



7.JUL.2021 13:35:03 Date:

Report No.: TW2106339E Page 71 of 85

Date: 2021-07-12

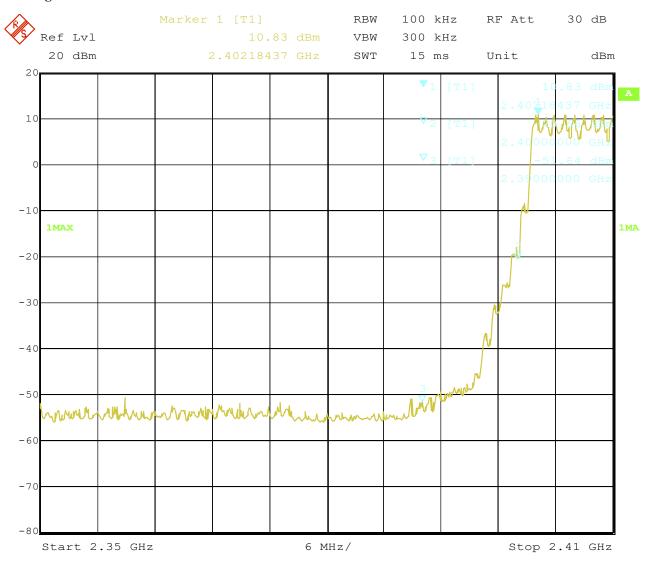


### **Type of Modulation: 8DPSK**

# Band Edge Test Result

Product:	Bluetooth transmitter	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



7.JUL.2021 11:11:17 Date:

Report No.: TW2106339E Page 72 of 85

Date: 2021-07-12

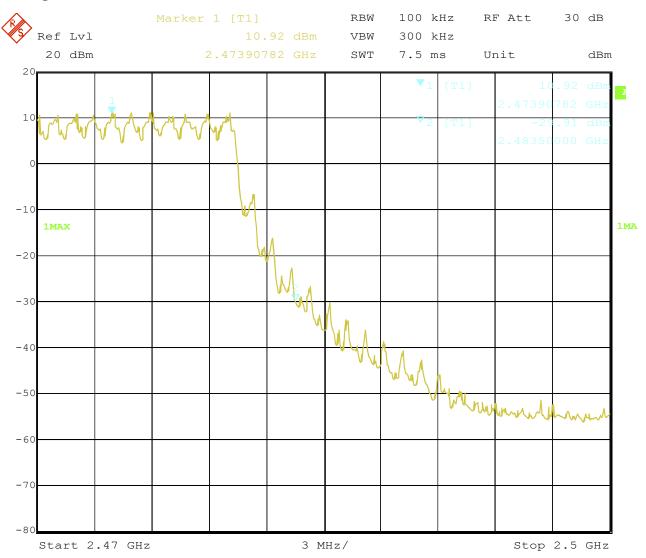


### **Type of Modulation: 8DPSK**

# Band Edge Test Result

Product:	Bluetooth transmitter	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

# **Test Figure:**



7.JUL.2021 13:41:03 Date:

Report No.: TW2106339E Page 73 of 85

Date: 2021-07-12



#### 12.4 Restrict Band Measurement

	EUT	Bluet	ooth transr	nitter	N	/lodel			BTH01	
	Mode	Keep Transmitting			Input Voltage			120V~		
Те	emperature	24 deg. C,		Hu	Humidity		56% RH			
T	est Result:		Pass		Modul	ation Typ	e		8DPSK	
1.2E-		-2							M1	
	90-									
evel (dbuV/m)	70-			hadana baaha			John Market	alaka kalaka kara kara kara kara kara ka		
level (dbuV/m)	50 - 50 - 40 - 20 -			And the state of t		U A A A A A A A A A A A A A A A A A A A	Jan	Addish de la		A LANGE TO SERVICE TO
level (dBuV/m)	50- 50- 40- 30-			And the state of t	Frequency (MHz)		And Land Land Market	Adam de la constitución de la co		2410
level (dBuV/m)	50	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MHz)  Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	

Report No.: TW2106339E Page 74 of 85

Date: 2021-07-12



#### 12.4 Restrict Band Measurement

	EUT	Bluet	ooth transmi	itter	Mode	el		BT	H01		
	Mode	Kee	Keep Transmitting		Input Voltage Humidity		120V~				
Τ	emperature	24 deg. C,					56% RH				
]	Test Result:		Pass		Modulation	n Type		8D	PSK		
	t 15C Class B 1GHz-18GHz	2				•					
								M1	0		
	E+2-							~	\		
1.0	E+2-								1		
	90-								1		
	80-							$\rightarrow$			
	70-										
								1	- 7		
	60-							1			
	50-					M2	n did nix		Jan	No. 1	
	50-	والمساورة والمسا	Nukalik islati bidha basika a	والمناوعة المستعمل والمناوات المناوات	Selection of the select	M2	Mary Japan Alder		M	Mary day	
	49(8)	uvachatyskáldskáldskáldskáldskáldskáldskáldskáld	Hiskoriska sikili kobellur, dapo kesan	estational and proceedings.	Notes of the Addition of the Second	M2	Maddyn Ald Ma		July July July July July July July July	No and short	
	50- 40	مايد جملة من أجارة المرابطة المربية ما يعد س	iliydadda allay abdda Astalayda	erin dirika saliparan dan salipa	telero of he world through to he had no	M2	Maddy-Aldub		July July	and the state of t	
	50- 40- 30- 20-	washadanishhiridakkanakha	Phylodolic slikkly biblios depoleces	and high a significant and a significant	tales of the section of the best of	M2	hiprothespend labor		, A	**************************************	
	50 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -	umachadh na dha dha na bha na bh	Nighelde alley thirty was been	este, different franchisco	Nilsen old Larviddinselph Shadway	M2	April Journal of April			and the state of t	
	50- 40- 30- 20-	يدره في المرافع المراف	Nighelde alley tolehor des here		requency (MHz)	M2	April John St.			2410	
	50 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -	Results	Factor			Detector	Table	Height	ANT	000000000	
	50 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -			Fi	requency (MHz)	The second secon			ANT	2410 Verdical	

Report No.: TW2106339E Page 75 of 85

Date: 2021-07-12



### Dostriet Dand Massurament

EUT	Blue	tooth transmi	ittar	1	Model			BTH01	
Mode	+	p Transmittir	ng		ut Voltage			120V~	
Temperatu	re	24 deg. C,		H	umidity			56% RH	
Test Resul	t:	Pass		Modu	ılation Typ	oe e		8DPSK	
C Part 15C Class B 1G	Hz-18GHz -2								
1.1E+2- 1.0E+2- 90- 80-	المنظمان المناسبة ال		A A A						
70- 60- 50- 40- 30-	Angelin de la		M.2	"Low work was a finish of the state of the s					
40- 30- 20- 10-	Land to the state of the state		•	They were the same of the same					
30-	karengerkilista da kareka lakekilista da kareka lakekilista da kareka lakekilista da kareka lakekilista da kare		2483.5	equency (MHz)					2500
30 - 20 - 10 - 2470		Factor I	2483.5		Detector	Table	Height	ANT	2500 Verdict
30 - 20 - 10 - 2470			2483.5 Fre	equency (MHz)			and according to the	ANT	*********
10 - 2470 No. Freque	ncy Results (dBuV/m)	(dB) (	2483.5 Fre	equency (MHz)		Table	Height	ANT Horizontal	*********

No.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(0)	(cm)		
2	2483.264	68.43	-3.57	74.0	-5.57	Peak	288.00	100	Horizontal	Pass
2**	2483.264	50.78	-3.57	54.0	-3.22	AV	288.00	100	Horizontal	Pass

Page 76 of 85

Report No.: TW2106339E

Date: 2021-07-12



#### Restrict Band Measurement 12.4

ŀ	EUT	Biueit	oth transm	nitter	Mo	odel		В	3TH01	
N	Mode	Keep	Transmitt	ing	Input '	Voltage		1	20V~	
Tem	perature	2	24 deg. C,		Hun	nidity		56	5% RH	
Test	t Result:		Pass		Modulat	tion Type		8	DPSK	
1.2E+2- 1.1E+2- 1.0E+2- 90- 80	Class B 1GHz-18GHz	-2								
	المنافرة والمنافرة والمناف	der bestelligt der bestelligt der bestellige der bestellige der bestellige der bestellige der bestellige der b		M2	The same of the sa	had have been specifically	oblidie producer had brown	istorial describations of	مراه والمارية	ng di serie Malessa
(W/\ngp) 50- 30- 20- 10-		Andrewskie de		•	A STATE OF THE STA	his his sort on the light	oddyfellic den gyfridding	atante de colonia de la constanta de la colonia de la colo	hill gallet and the Jacobson of the Jacobson o	
(W//ngp)   50- 30- 20-		Andrew Market		2483	A STATE OF THE STA	his his sort on the light	oddyfellic den gyfridding	atante de la terreta de la constanta de la con	A REPORT OF THE LA	2500
(a) (A) (b) (a) (b) (a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c		Results (dBuV/m)	Factor (dB)	•	3.5	Detector	Table (o)	Height (cm)	ANT	
(w/\rightarrow \frac{60}{50} =	Frequency	Results		248s	3.5 Frequency (MHz)		Table	Height		2500

Note: 1. For Restricted band test, All modulation mode was tested and only the worst case was reported. 8DPSK was the worst case.

2. The measured PK value less than the AV limit, no necessary to take down the AV measurement result.

Report No.: TW2106339E

Date: 2021-07-12



# Page 77 of 85

# 13.0 Antenna Requirement

# 13.1 Standard Applicable

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 transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

### 13.2 Antenna Connected constructions

PCB antenna used. The gain of the antennas is 2.0dBi.

Report No.: TW2106339E Page 78 of 85

Date: 2021-07-12



### 14.0 FCC ID Label

# FCC ID: 2ABFFTVX59D

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

### **Mark Location:**



Report No.: TW2106339E Page 79 of 85

Date: 2021-07-12



#### 15.0 **Photo of testing**

Conducted Emission Test Setup:



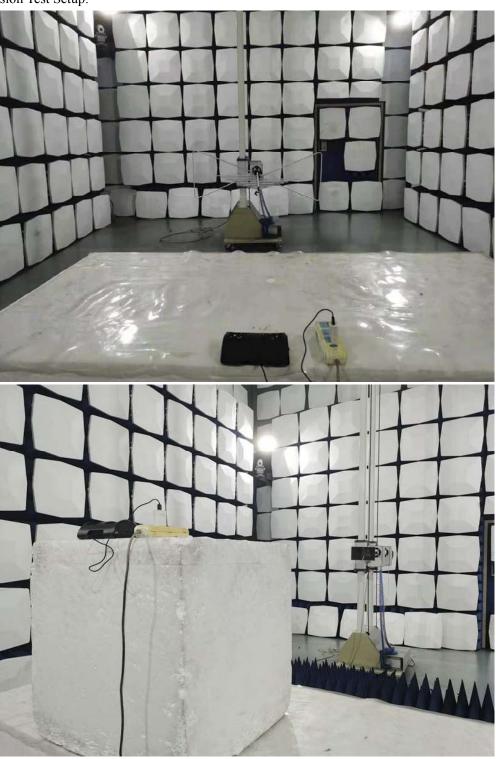
Page 80 of 85

Report No.: TW2106339E

Date: 2021-07-12



# Radiated Emission Test Setup:



Page 81 of 85

Report No.: TW2106339E

Date: 2021-07-12



Outside View





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Page 82 of 85 Report No.: TW2106339E

Date: 2021-07-12



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Page 83 of 85

Report No.: TW2106339E

Date: 2021-07-12



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Page 84 of 85

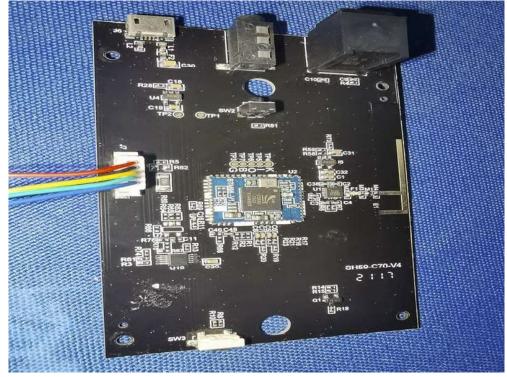
Report No.: TW2106339E

Date: 2021-07-12



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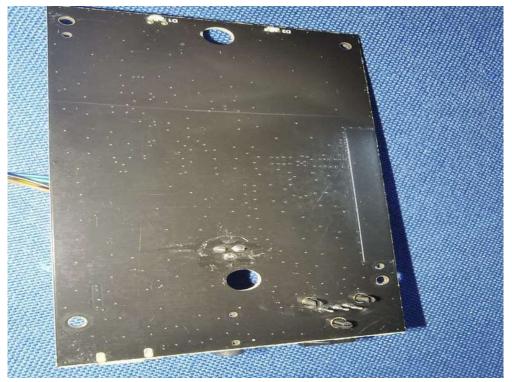
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Report No.: TW2106339E Page 85 of 85

Date: 2021-07-12



Inside View



-- End of Report--