



IC: 457A-BT700

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RADIO TEST REPORT FCC 47 CFR PART 15 SUBPART C

Test Standard	FCC Part 15.247 RSS-247 issue 2 and RSS-GEN issue 5
Product name	Bluetooth USB adapter
Brand Name	οίγ
Model No.	BT700
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory)

Approved by:

Komil Ison

Kevin Tsai **Deputy Manager**

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	October 30, 2020	Initial Issue	ALL	Mita Wu



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1. GENERAL INFORMATION

1.1 EUT INFORMATION

FCC Applicant	Plantronics Inc 345 Encinal Street Santa Cruz, CA 95060 USA
IC Applicant	PLANTRONICS INC 345 Encinal Street, Santa Cruz CA 95060 United States Of America(Excluding The States Of Alaska
FCC Manufacturer	Plantronics, Inc. 345 Encinal Street Santa Cruz, CA 95060 USA
IC Manufacturer	PLANTRONICS INC 345 Encinal Street, Santa Cruz CA 95060 United States Of America(Excluding The States Of Alaska
Equipment	Bluetooth USB adapter
Model No.	ВТ700
Model Discrepancy	N/A
Trade Name	Poly
Received Date	September 3, 2020
Date of Test	September 9 ~ September 24, 2020
Power Supply	EUT Power from Host System.
S.W Version	V76_308
H.W: Version	V01
EUT Serial #	BT700 RF# 1



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1.2 EUT CHANNEL INFORMATION

Frequency Range	2402MHz-2480MHz
Modulation Type	GFSK for BLE 1 Mbps & 2 Mbps
Number of channels	40 Channels

Remark:

Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested					
Frequency range inNumber ofLocation in frequencywhich device operatesfrequenciesrange of operation					
1 MHz or less	1	Middle			
1 MHz to 10 MHz	2	1 near top and 1 near bottom			
More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom			

1.3 ANTENNA INFORMATION

Antenna Type	🗌 PIFA 🖾 PCB 🗌 Dipole 🗌 Chip			
Antenna Gain	2.54 dBi			
Antenna Connector	N/A			



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1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 0.0014
RF output power, conducted	+/- 1.14
Power density, conducted	+/- 1.40
3M Semi Anechoic Chamber / 30M~200M	+/- 4.12
3M Semi Anechoic Chamber / 200M~1000M	+/- 4.68
3M Semi Anechoic Chamber / 1G~8G	+/- 5.18
3M Semi Anechoic Chamber / 8G~18G	+/- 5.47
3M Semi Anechoic Chamber / 18G~26G	+/- 3.81
3M Semi Anechoic Chamber / 26G~40G	+/- 3.87

Remark:

1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2

2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.



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1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room	Rick Lee	-
Radiation	Jerry Chang	-
RF Conducted	Rick Lee	-

Remark: The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site						
Equipment	Manufacturer	Model	Serial Number	Cal Date	Cal Due	
Coaxial Cable	Woken	WC12	CC003	06/29/2020	06/28/2021	
EXA Signal Analyzer	KEYSIGHT	N9010B	MY55460167	09/07/2020	09/06/2021	
Power Meter	Anritsu	ML2487A	6K00003260	05/21/2020	05/20/2021	
Power sensor	Anritsu	MA2490A	032910	05/21/2020	05/20/2021	
Software	N/A					

Conducted Emission Room # B						
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due	
CABLE	EMCI	CFD300-NL	CERF	06/29/2020	06/28/2021	
EMI Test Receiver	R&S	ESCI	100064	07/17/2020	07/16/2021	
LISN	SCHAFFNER	NNB 41	03/10013	02/13/2020	02/12/2021	
Software	EZ-EMC(CCS-3A1-CE)					

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R. = No Calibration Required.



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3M 966 Chamber Test Site						
Equipment	Manufacturer	Model	Serial Number	Cal Date	Cal Due	
Band Reject Filters	MICRO TRONICS	BRM 50702	120	02/25/2020	02/24/2021	
Bilog Antenna	Sunol Sciences	JB3	A030105	07/24/2020	07/23/2021	
Coaxial Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	02/25/2020	02/24/2021	
Coaxial Cable	EMCI	EMC105	190914+25111	09/19/2020	09/18/2021	
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	01/15/2020	01/14/2021	
double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	10/04/2019	10/03/2020	
Loop Ant	COM-POWER	AL-130	121051	03/27/2020	03/26/2021	
Pre-Amplifier	EMEC	EM330	060609	02/25/2020	02/24/2021	
Pre-Amplifier	HP	8449B	3008A00965	02/25/2020	02/24/2021	
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	07/24/2020	07/23/2021	
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R	
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R	
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R	
Software	e3 6.11-20180413					

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R. = No Calibration Required.



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1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

	EUT Accessories Equipment							
No. Equipment Brand Model Series No. FCC ID								
	N/A							

	Support Equipment							
No.	Equipment	Brand	Model	Series No.	FCC ID			
	N/A							

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 558074 D01, RSS-247 Issue 2 and RSS-GEN Issue 5



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2. TEST SUMMARY

FCC Standard Section	IC Standard Section	Report Section	Test Item	Result
15.203	-	1.3	Antenna Requirement	Pass
15.207(a)	RSS-GEN 8.8	4.1	AC Conducted Emission	Pass
15.247(a)(2)	RSS-247(5.2)(a)	4.2	6 dB Bandwidth	Pass
-	RSS-GEN 6.7	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	RSS-247(5.4)(d)	4.3	Output Power Measurement	Pass
15.247(e)	RSS-247(5.2)(b)	4.4	Power Spectral Density	Pass
15.247(d)	RSS-247(5.5)	4.5	Conducted Band Edge	Pass
15.247(d)	RSS-247(5.5)	4.5	Conducted Spurious Emission	Pass
15.247(d)	RSS-GEN 8.9, 8.10	4.6	Radiation Band Edge	Pass
15.247(d)	RSS-GEN 8.9, 8.10	4.6	Radiation Spurious Emission	Pass



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3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	BLE Mode (1Mbps) BLE Mode (2Mbps)
Test Channel Frequencies	1.Lowest Channel : 2402MHz 2.Middle Channel : 2440MHz 3.Highest Channel : 2480MHz

Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.



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3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission						
Test Condition	Test Condition AC Power line conducted emission for line and neutral					
Power supply Mode	Mode 1: EUT power by host system					
Worst Mode Mode 1 Mode 2 Mode 3 Mode 4						

Radiated Emission Measurement Below 1G						
Test Condition Radiated Emission Below 1G						
Power supply Mode	Power supply Mode Mode 1: EUT power by host system					
Worst Mode Mode 1 Mode 2 Mode 3 Mode 4						

Radiated Emission Measurement Above 1G						
Test Condition	Radiated Emission Above 1G					
Power supply Mode	Power supply Mode Mode 1: EUT power by host system					
Worst Mode	Mode 1 Mode 2 Mode 3 Mode 4					
Worst Position	 Placed in fixed position. Placed in fixed position at X-Plane (E2-Plane) Placed in fixed position at Y-Plane (E1-Plane) Placed in fixed position at Z-Plane (H-Plane) 					

Remark:

1. The worst mode was record in this test report.

2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(X-Plane) were recorded in this report

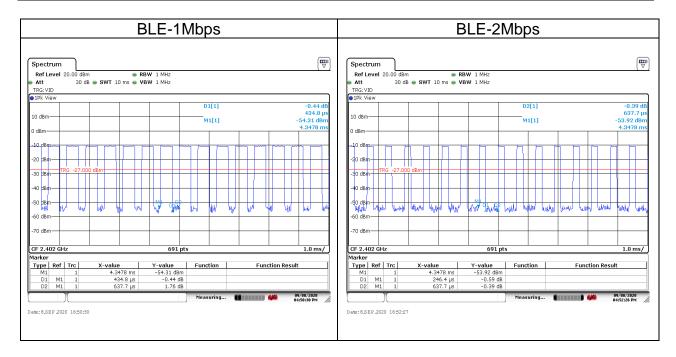


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3.3 EUT DUTY CYCLE

Temperature:	25°C	Humidity:	50% RH
Tested by:	Rick Lee		

Duty Cycle								
Configuration	Duty Cycle (%)	Duty Factor (dB)	1/T (kHz)	VBW Setting (kHz)				
BLE-1Mbps	65.60%	1.83	2.44	3.00				
BLE-2Mbps	37.30%	4.28	1.59	2.00				





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4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a) and RSS-GEN section 8.8,

Frequency Range	Limits(dBµV)		
(MHz)	Quasi-peak	Average	
0.15 to 0.50	66 to 56*	56 to 46*	
0.50 to 5	56	46	
5 to 30	60	50	

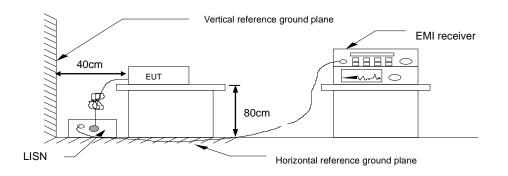
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

- 1. The EUT was placed above horizontal ground plane and 0.4m above vertical ground plane
- 2. EUT connected to the line impedance stabilization network (LISN)
- 3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. Recorded Line for Neutral and Line.

4.1.3 Test Setup



4.1.4 Test Result

PASS

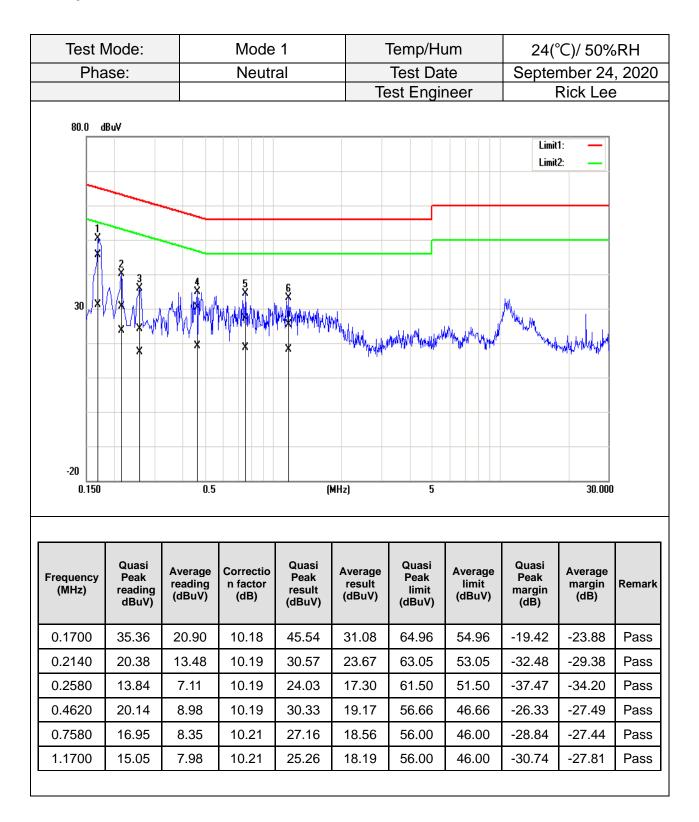


Test Data

Test N	Node:		Mode	1		Temp/Hu	um	24(°	°C)/ 50%	RH
Phase:			Line			Test Date		September 24, 20		, 2020
					Te	est Engii	neer	F	Rick Lee)
80.0 d	Bu¥							Limit Limit		
-20 0.150		.5	\$ * *						30.000	
Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (d uV)	Correctio n factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remarl
0.1660	37.80	22.75	10.21	48.01	32.96	65.16	55.16	-17.15	-22.20	Pass
0.1940	30.27	15.86	10.21	40.48	26.07	63.86	53.86	-23.38	-27.79	Pass
0.2420	26.00	13.83	10.21	36.21	24.04	62.03	52.03	-25.82	-27.99	Pass
	21.12	11.39	10.22	31.34	21.61	56.51	46.51	-25.17	-24.90	Pass
0.4700					05.00	50.00	40.00	-23.08	20.02	Deee
0.4700 0.5500	22.70	14.86	10.22	32.92	25.08	56.00	46.00	-23.00	-20.92	Pass



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4.26dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

4.2.1 Test Limit

According to §15.247(a)(2) and RSS-247 section 5.2(a)

6 dB Bandwidth :

Limit

Shall be at least 500kHz

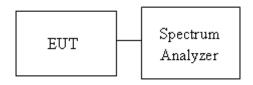
Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

Test method Refer as KDB 558074 D01 and ANSI C63.10: 2013 clause 6.9.2,

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT.
- 3. SA set RBW =100KHz, VBW = 300KHz and Detector = Peak, to measurement 6dB Bandwidth.
- 4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth.
- 5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup





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4.2.4 Test Result

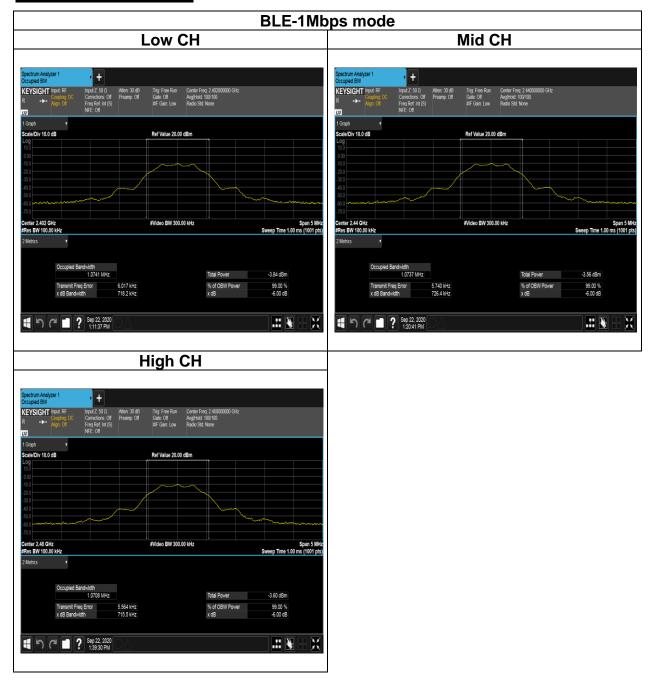
Temperature:	25°C	Humidity:	50% RH
Tested by:	Rick Lee		

	Test mode: BLE-1Mbps mode / 2402-2480 MHz										
Channel	Frequency (MHz)	OBW (99%) (MHz)									
Low	2402	0.6453	0.7182								
Mid	2442	0.6468	0.7264	>500							
High	2480	0.6447	0.7155								
	Test mode: BLE-2Mbps mode / 2402-2480 MHz										
Low	2402	0.4499	1.266								
Mid	2442	0.4490	1.209	>500							
High	2480	0.4493	1.207								



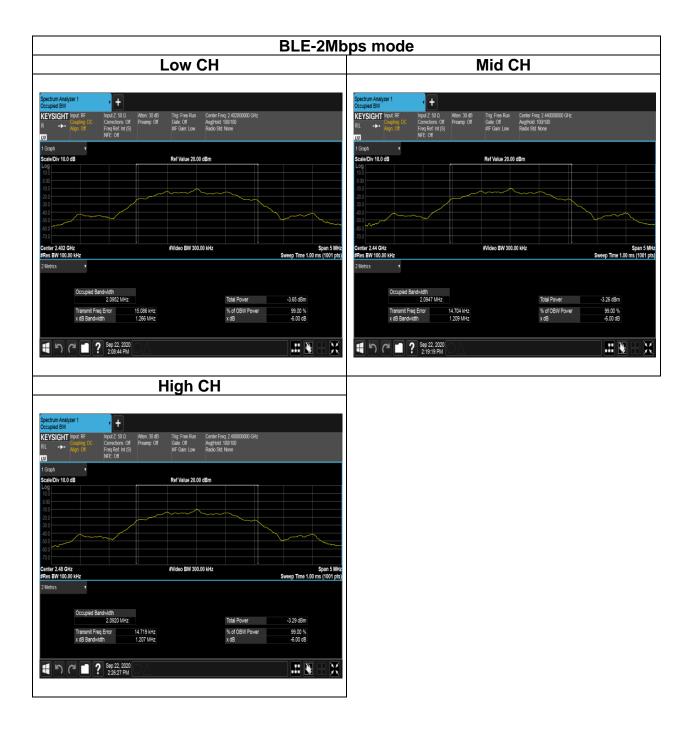
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Test Data 6dB BANDWIDTH





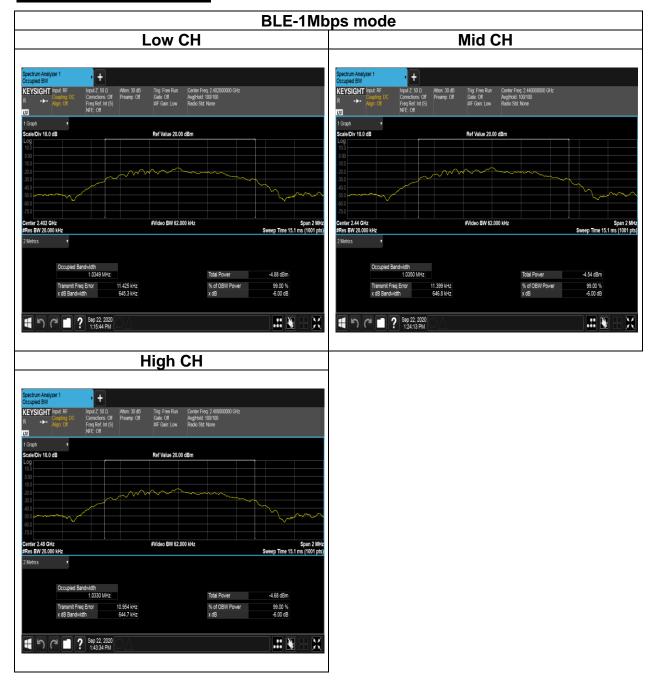
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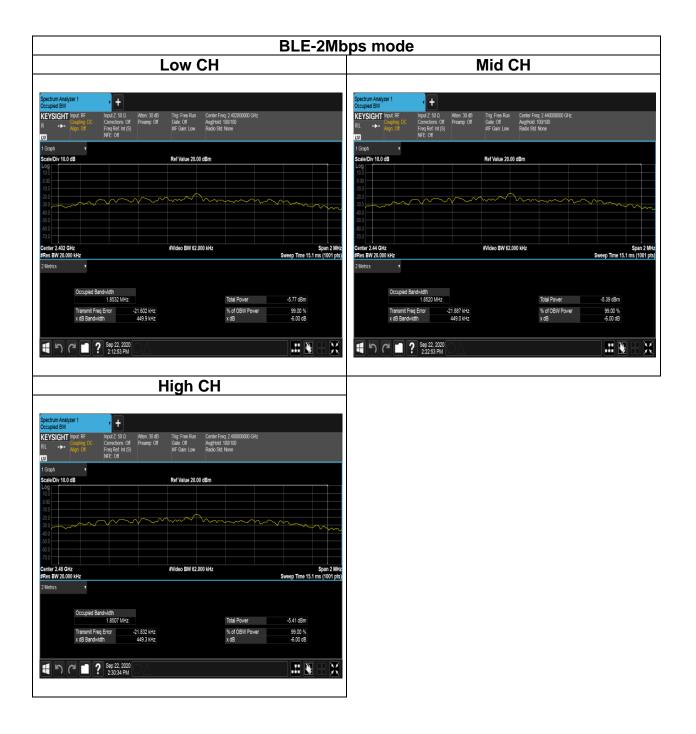
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<u>Test Data</u> BANDWIDTH (99%)





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4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b)(3) and RSS-247 section 5.4(d)

Peak output power :

FCC

Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

IC

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	 Antenna not exceed 6 dBi : 30dBm Antenna with DG greater than 6 dBi
	[Limit = 30 – (DG – 6)]

Average output power : For reporting purposes only.



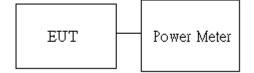
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4.3.2 Test Procedure

Test method Refer as KDB 558074 D01.

- 1. The EUT RF output connected to the power meter by RF cable.
- 2. Setting maximum power transmit of EUT.
- 3. The path loss was compensated to the results for each measurement.
- 4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup





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4.3.4 Test Result

Temperature:	25°C	Humidity:	50% RH
Tested by:	Rick Lee	Test Date:	September 22, 2020

Peak output power :

				I	BLE Mode				
Config.	СН	Freq. (MHz)	Power Settin g	PK Power (dBm)	EIRP PK Power (dBm)	PK Power (W)	EIRP PK Power (W)	FCC/IC Limit (dBm)	IC EIRP Limit (dBm)
BLE	0	2402	Default	2.29	4.83	0.0017	0.0030		
Data rate: 1Mbps	19	2442	Default	2.27	4.81	0.0017	0.0030	30	36
	39	2480	Default	2.59	5.13	0.0018	0.0033		
BLE	0	2402	Default	3.62	6.16	0.0023	0.0041		
Data rate:	19	2442	Default	2.40	4.94	0.0017	0.0031	30	36
2Mbps	39	2480	Default	2.14	4.68	0.0016	0.0029		

Average output power :

	BLE Mode										
Config.	СН	Freq. (MHz)	AV Power (dBm)								
BLE	0	2402	1.14								
Data rate:	19	2442	1.03								
1Mbps	39	2480	1.05								
BLE	0	2402	2.94								
Data rate:	19	2442	1.05								
2Mbps	39	2480	1.03								



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4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.247(e) and RSS-247 section 5.2(b)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Limit

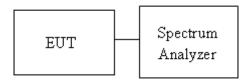
Antenna not exceed 6 dBi : 8dBm Antenna with DG greater than 6 dBi [Limit = 8 - (DG - 6)] Point-to-point operation :

4.4.2 Test Procedure

Test method Refer as KDB 558074 D01.

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT
- 3. SA set RBW = 3kHz, VBW = 10kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
- 4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
- 5. Mark the maximum level.
- 6. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup





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4.4.4 Test Result

Temperature:	25°C	Humidity:	50% RH
Tested by:	Rick Lee		

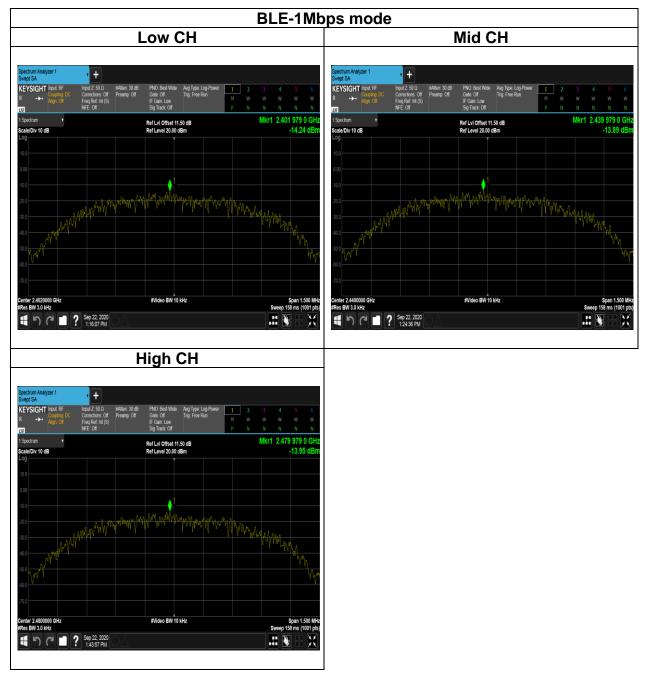
	Test mode: BLE-1Mbps mode / 2402-2480 MHz											
Channel	Frequency (MHz)	PSD (dBm)	FCC limit (dBm)									
Low	2402	-14.24										
Mid	2442	-13.89	8									
High	2480	-13.95										

	Test mode: BLE-2Mbps mode / 2402-2480 MHz										
Channel Frequency (MHz)		PSD (dBm)	FCC limit (dBm)								
Low	2402	-17.02									
Mid	2442	-16.73	8								
High	2480	-16.75									



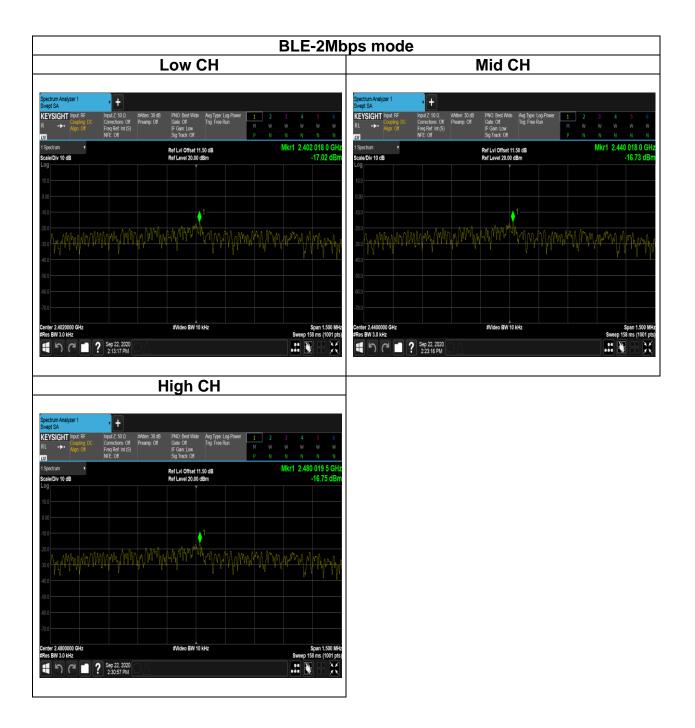
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Test Data





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4.5 CONDUCTED BAND EDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

According to §15.247(d) and RSS-247 section 5.5

FCC: In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement 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).

IC: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

4.5.2 Test Procedure

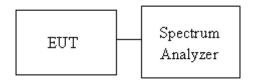
Test method Refer as KDB 558074 D01.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

4.5.3 Test Setup





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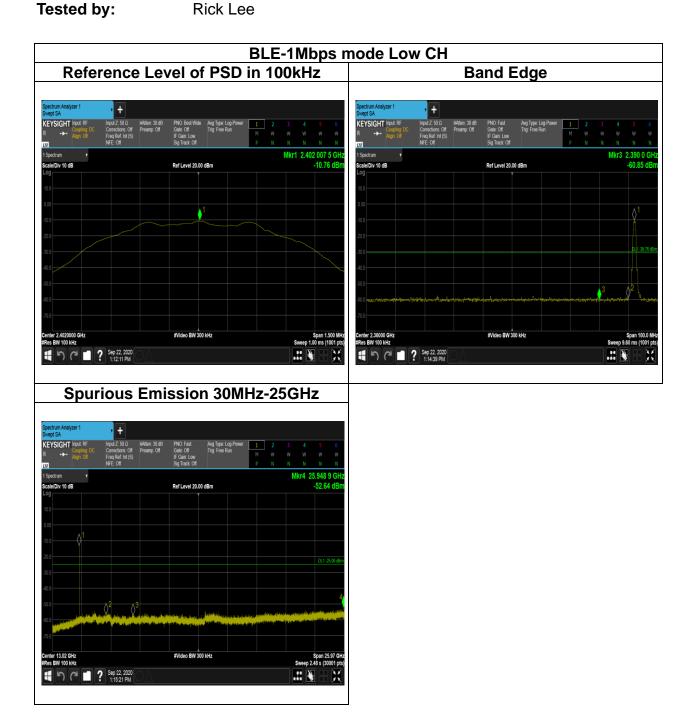
Humidity: 50% RH

4.5.4 Test Result

Test Data

Temperature:

25°C Rick Lee

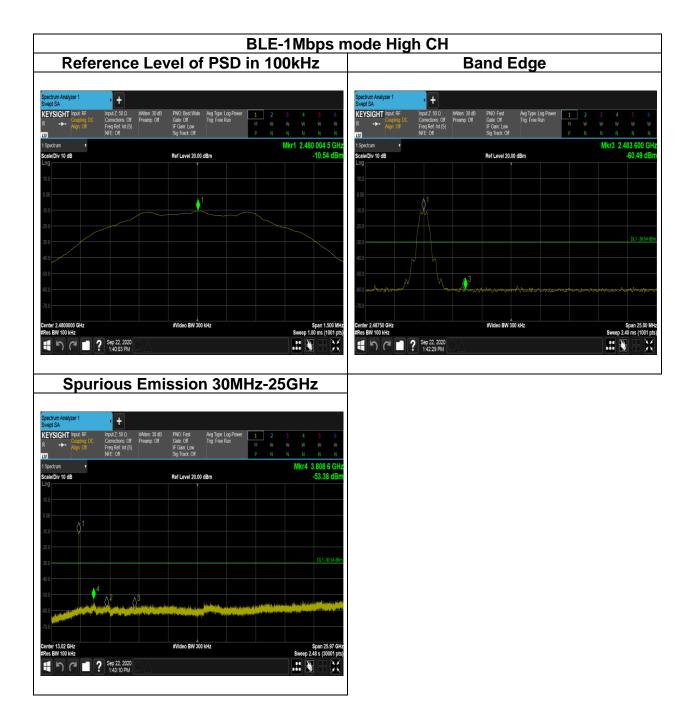




Reference Level of PSD in 100kHz								Spurious Emission 30MHz-25GHz								
Spectrum Analyzer 1 Swept SA	• +							Spectrum Analys Swept SA	zer 1	• +						
EYSIGHT Input: RF Coupling DC Align: Off	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Off	#Atten: 30 dB Preamp: Off	PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Trig: Free Run	1 2 M ₩ P N	3 4 ₩ ₩ N N		KEYSIGHT R ↔→	Input: RF Coupling: DC Align: Off	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Off	#Atten: 30 dB Preamp: Off	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Trig: Free Run	1 2 M ₩ P N	3 4 ₩ ₩ N N	5 6 ₩ ₩ N N
Spectrum •			Ref Level 20.0) dBm		Mkr1 2.4	140 255 0 GHz -59.02 dBm	1 Spectrum Scale/Div 10 dE	•			Ref Level 20.0	0 dBm		Mkr4	25.723 0 G -53.26 dl
10 0								Log								
								0.00								
								-10.0								
								-20.0								DL1-30.50
								-40.0								
					1			-50.0		Λ ² Λ	3					n as a sheata a sal
0.0 <u>manalanya m</u> a			www.com		Andrewskinst	-man	wine way when	-60.0						a a print in the second	o in a chaile an in	ر عاري ۽ تلھائي . روياني ۽ تلھائي
								-70.0								
enter 2.4400000 GHz Res BW 100 kHz			#Video BW 30	0 kHz		Sweep	Span 1.500 MHz 1.00 ms (1001 pts)	Center 13.02 Gi #Res BW 100 ki				#Video BW 30	10 kHz		Sweep	Span 25.97 2.48 s (30001
4 h A 1	Sep 22, 2020 1:26:54 PM						N - X	1 50	3	Sep 22, 2020 1:23:50 PM						

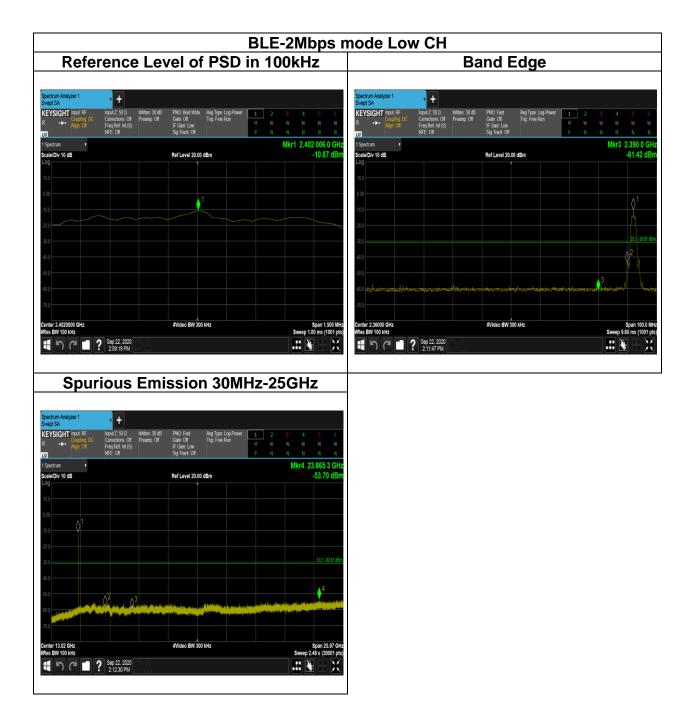


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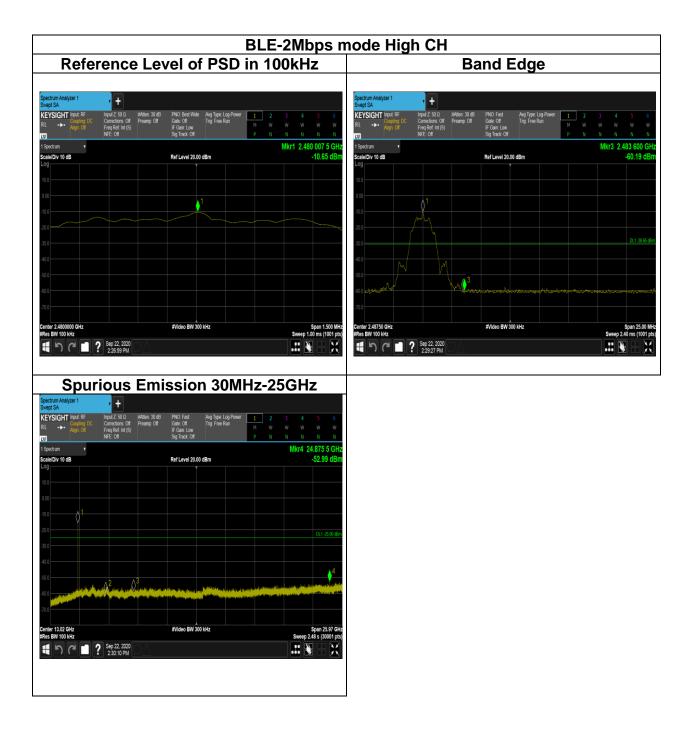




Reference Level of PSD in 100kHz								Spurious Emission 30MHz-25GHz									
ipectrum Analyzer 1 Wept SA	, +							Spectrum And Swept SA	·	, +							
EYSIGHT Input: RF Coupling: DC Align: Off	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Off	#Atten: 30 dB Preamp: Off	PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Trig: Free Run	1 2 M ₩ P N		4 5 6 ₩ ₩ ₩ N N N	KEYSIGH		Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Off	#Atten: 30 dB Preamp: Off	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Trig: Free Run	1 2 M ₩ P N	3 4 ₩ ₩ N N		
Spectrum v						Mkr1 2	.440 007 5 GHz	1 Spectrum	,						Mkr4	25.730 8 0	
cale/Div 10 dB			Ref Level 20.00) dBm			-10.61 dBm	Scale/Div 10	dB			Ref Level 20.0	0 dBm			-52.89 d	
								10.0									
								0.00									
			•					0.00									
								-10.0	\Diamond								
								-20.0								DL1-25.00	
								-30.0									
								-40.0									
								-50.0		A ² ∧	3						
								-60.0		VI marked	ay and the way of a	the Data of Street	and the second second	Weight and a second second	ina katika jira. Kata se	opening a second second second	
								-70.0									
enter 2.4400000 GHz Res BW 100 kHz			#Video BW 30	0 kHz		Swee	Span 1.500 MHz ep 1.00 ms (1001 pts)	Center 13.02 #Res BW 100				#Video BW 30	10 kHz		Swee	Span 25.97 p 2.48 s (30001	
1901	? Sep 22, 2020 2:19:53 PM							1 5	C 1	Sep 22, 2020 2:22:29 PM							



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4.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

IC according to RSS-247 section 5.5, RSS-Gen, Section 8.9 and 8.10

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (meters)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency	Field Strength microvolts/m at 3 meters (watts, e.i.r.p.)				
(MHz)	Transmitters	Receivers			
30-88	100 (3 nW)	100 (3 nW)			
88-216	150 (6.8 nW)	150 (6.8 nW)			
216-960	200 (12 nW)	200 (12 nW)			
Above 960	500 (75 nW)	500 (75 nW)			

Remark:

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.



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IC according to RSS-247 section 5.5, RSS-Gen, Section 8.9 and 8.10

<u>RSS-Gen Table 3 and Table 5 – General Field Strength Limits for Transmitters and</u> <u>Receivers at Frequencies Above 30 MHz</u> (Note)

Frequency	Field Strength microvolts/m at 3 meters (watts, e.i.r.p.)				
(MHz)	Transmitters	Receivers			
30-88	100 (3 nW)	100 (3 nW)			
88-216	150 (6.8 nW)	150 (6.8 nW)			
216-960	200 (12 nW)	200 (12 nW)			
Above 960	500 (75 nW)	500 (75 nW)			

Note: Measurements for compliance with the limits in table 3 may be performed at distances other than 3 meters, in accordance with Section 6.6.

<u>RSS-Gen Table 6: General Field Strength Limits for Transmitters at Frequencies</u> <u>Below 30 MHz (Transmit)</u>

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement Distance (m)
9-490 kHz ^{Note}	6.37/F (F in kHz)	300
490-1,705 kHz	63.7/F (F in kHz)	30
1.705-30 MHz	0.08	30

Note: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.



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4.6.2 Test Procedure

Test method Refer as KDB 558074 D01.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9KHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Remark:

 Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.
 No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

- 4. The SA setting following :
 - (1) Below 1G : RBW = 100kHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2) Above 1G :
 - (2.1) For Peak measurement : RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2.2) For Average measurement : RBW = 1MHz, VBW

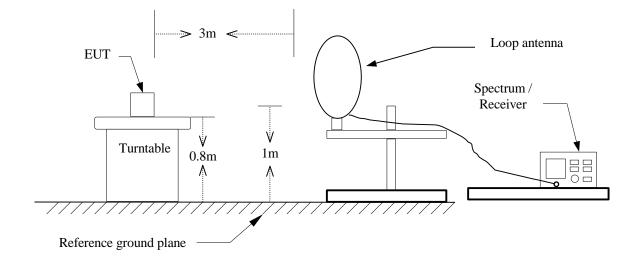
If Duty Cycle \geq 98%, VBW=10Hz.

'If Duty Cycle < 98%, VBW=1/T.

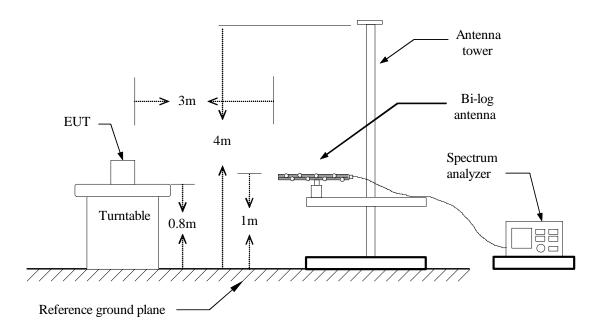


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4.6.3 Test Setup <u>9kHz ~ 30MHz</u>



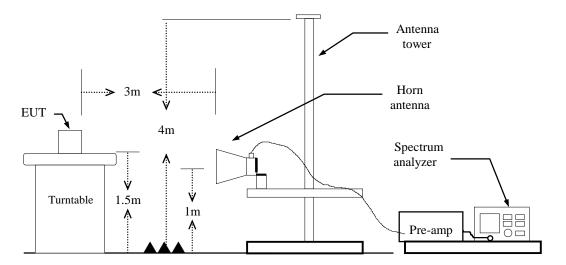
<u>30MHz ~ 1GHz</u>





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Above 1 GHz





4.6.4 Test Result

Model: MDBT42T (chip Antenna)

Band Edge Test Data

Test Mo	de:	BLE-1Mbps Low (CH Te	emp/Hum	25.0(°C)/ 42%RH
Test Ite	em	Band Edge	Т	est Date	Septemb	er 22, 202
Polariz	ze	Vertical	Tes	t Engineer	Jerry	Chang
Detect	or	Peak / Average				
120 Level (dBu	JV/m)	i i	i	i i		
110			 	I I I +		
90				+		
70						
50			 			
					2	
30						1
10						
0 2310	2330.	2350.	23	870.	2390.	2410
2310	2330.		equency (MHz)		2390.	2410
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	•	dB	dBµV/m	dBµV/m	dB
2390.00	Peak	49.33	1.25	50.58	74.00	-23.42
2390.00	Average	36.90	1.25	38.15	54.00	-15.85

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Test Mode: BLE-1Mbps Low CH		CH Te	emp/Hum	25.0(°C)/ 42%RI		
Test Ite	m	Band Edge	Т	est Date	Septemb	er 22, 202
Polariz	e	Horizontal	Tes	st Engineer	Jerry	[,] Chang
Detect	or	Peak / Average				
120 Level (dBu	V/m)					
110						
90						
70			 			
					1	
50					,	
30						
10				 		
0 <mark></mark> 2310	2330.	2350.	23	70.	2390.	2410
		Fr	equency (MHz)			
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2390.00	Peak	49.65	1.25	50.90	74.00	-23.10
2390.00	Average	36.95	1.25	38.20	54.00	-15.80



Test Mo	de: B	LE-1Mbps High (CH Te	emp/Hum	25.0(°C)/ 42%Rł
Test Ite	em	Band Edge	Т	est Date	Septemb	er 22, 20
Polariz	ze	Vertical	Tes	t Engineer	Jerry	Chang
Detect	or	Peak / Average				
120 Level (dBu	V/m)					
110						
90						
70						
50				· · · · · · · · · · · · · · · · · · ·		
30						
10						
0 <mark></mark> 2475	2480.	2485. Fre	24 equency (MHz)	90.	2495.	2500
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2483.50	Peak	48.54	1.62	50.16	74.00	-23.84
2483.50	Average	36.41	1.62	38.03	54.00	-15.97



Test Mo	de: B	LE-1Mbps High (CH Te	emp/Hum	25.0(°C)/ 42%RF
Test Ite	m	Band Edge	Т	est Date	Septemb	er 22, 20
Polariz	e	Horizontal	Tes	t Engineer	Jerry	Chang
Detect	or	Peak / Average				
120 Level (dBu	V/m)					
110						
90						
70						
50		2				
30						
10						
0 2475	2480.	2485.		90.	2495.	2500
		Fre	equency (MHz)			
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
2483.50	Peak	48.68	1.62	50.30	74.00	-23.70
	1	36.58	1.62	38.20	54.00	



Test Mode:		BLE-2Mbps Low CH		emp/Hum	25.0(°C)/ 42%R	
Test Ite	m	Band Edge	Т	est Date	Septemb	er 22, 20
Polariz	e	Vertical	Tes	t Engineer	Jerry	Chang
Detect	or	Peak / Average				
120 Level (dBu	V/m)					
110						
90						
70						
50						
30						
10						
0 <mark>2310</mark>	2330.	2350. Fre	23 equency (MHz)	370.	2390.	2410
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2390.00	Peak	49.52	1.25	50.77	74.00	-23.23
2390.00	Average	36.87	1.25	38.12	54.00	-15.88



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Test Mode:		BLE-2Mbps Low CH		emp/Hum	25.0(°C)/ 42%R	
Test Ite	m	Band Edge	1	Fest Date	Septemb	er 22, 202
Polariz	e	Horizontal	Tes	st Engineer	Jerry	[,] Chang
Detect	or	Peak / Average				
120 Level (dBu	V/m)					
110						
90			1 			
70						
50						
					2	
30						
10			 			
				1 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
0 <mark>2310</mark>	2330.	2350. Fre	23 equency (MHz)	370.	2390.	2410
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2390.00	Peak	49.86	1.25	51.11	74.00	-22.89
2390.00	Average	36.82	1.25	38.07	54.00	-15.93



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Test Mo	de: B	LE-2Mbps High (CH Te	emp/Hum	25.0(°C)/ 42%RH
Test Ite	m	Band Edge	1	est Date	Septemb	er 22, 202
Polariz	e	Vertical	Tes	st Engineer	Jerry	Chang
Detect	or	Peak / Average				
120 Level (dBu	V/m)	i i		i i		
110				1 I 4		
90						
70						
50	 			I I I I I I I I I I I I I I I I I I I I		
		2				
30			 	1 I 4		
10						
0 2475	2480.	2485. Fre	24 equency (MHz)	190.	2495.	2500
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
	Peak	48.92	1.62	50.54	74.00	-23.46
2483.50						



Test Mo	de: B	LE-2Mbps High	CH Te	emp/Hum	25.0(°C)/ 42%RF
Test Ite	em	Band Edge	Т	est Date	Septemb	er 22, 20
Polariz	ze	Horizontal	Tes	t Engineer	Jerry	Chang
Detect	or	Peak / Average				
120	V/m)					
110						
90						
70						
50		2				
30						
10						
0 <mark></mark> 2475	2480.	2485. Fr	24 equency (MHz)	90.	2495.	2500
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2483.50	Peak	51.37	1.62	52.99	74.00	-21.01
2483.50	Average	37.90	1.62	39.52	54.00	-14.48



-17.40

46.00

	lest Data					
Test Mo	ode:	BLE-1Mbps Mc	de	Temp/Hum	25.0(°C	2)/ 42%RF
Test Ite	em	30MHz-1GHz	Z	Test Date	Septem	ber 9, 202
Polariz	ze	Vertical	Te	est Engineer	Jerry	/ Chang
Detect	tor	Peak				
100 Level (dB	uV/m)					·
90						
80						
70						
60						
50	· · · · · · · · · · · · · · · · · · ·					
40	_					
301	2 3				- 5	6
20			4			
10						
0 <mark></mark>	224.	418.		612.	806.	1000
30	224.		Frequency (MHz)	012.	000.	1000
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
-	Mode	Reading Level		FS	@3m	
MHz	PK/QP/A	/ dBµV	dB	dBµV/m	dBµV/m	dB
62.98	Peak	44.20	-15.77	28.43	40.00	-11.57
02.00	_		1		1	
172.59	Peak	35.89	-11.00	24.89	43.50	-18.61
	Peak Peak	35.89 35.26	-11.00 -10.75	24.89 24.51	43.50 46.00	-18.61 -21.49
172.59						
172.59 240.49	Peak	35.26	-10.75	24.51	46.00	-21.49

Below 1G Test Data

947.62

Peak

Note: No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

24.36

4.24

28.60



932.10

Peak

Report No.: T200903W03-RP2

IEST MC	ode:	BLE-1Mbps Mc	de	Temp/Hum	25.0(°C	C)/ 42%Rł
Test Ite	əm	30MHz-1GHz	z	Test Date	Septem	ber 9, 202
Polari	ze	Horizontal	1	Fest Engineer	Jerry	/ Chang
Detect	tor	Peak				
100	uV/m)					:
90						
80						
70					1 1 1 1 1	1 1 1
60						·
50					 	· · · · · · · · · · · · · · · · · · ·
40	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·		
30		s		5		66
20			4			
10	· · · · · · · · · · · · · · · · · · ·					
		i i	i i	i i i	i	i l
030	224.	418.		612.	806.	: I 1000
0 30	224.	418. F	Frequency (MHz)	612.	806.	1000
0 <mark></mark> 30	224.		Frequency (MHz)	612.	806.	1000
0 ₃₀ Freq.	224.	F	Frequency (MHz)	Actual	Limit	1000 Margin
Freq.	Detector Mode	F Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
Freq. MHz	Detector Mode PK/QP/AV	F Spectrum Reading Level dBµV	Factor	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
Freq. MHz 67.83	Detector Mode PK/QP/AV Peak	F Spectrum Reading Level dBµV 37.71	Factor dB -15.07	Actual FS dBµV/m 22.64	Limit @3m dBµV/m 40.00	Margin dB -17.36
Freq. MHz	Detector Mode PK/QP/AV	F Spectrum Reading Level dBµV	Factor	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
Freq. MHz 67.83	Detector Mode PK/QP/AV Peak	F Spectrum Reading Level dBµV 37.71	Factor dB -15.07	Actual FS dBµV/m 22.64	Limit @3m dBµV/m 40.00	Margin dB -17.36
Freq. MHz 67.83 188.11	Detector Mode PK/QP/AV Peak Peak	F Spectrum Reading Level dBµV 37.71 40.20	Factor dB -15.07 -11.24	Actual FS dBμV/m 22.64 28.96	Limit @3m dBμV/m 40.00 43.50	Margin dB -17.36 -14.54

Note: No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

3.58

26.51

46.00

-19.49

22.93



Test Mo	de:	BLE-2Mbps Mo	de	Temp/Hum	25.0(°C	C)/ 42%RH
Test Ite	m	30MHz-1GHz	:	Test Date	Septem	ber 9, 202
Polariz	e	Vertical		Test Engineer	Jerry	/ Chang
Detecto	or	Peak				_
100 Level (dBu	V/m)					
90						
80						
70						
60						
50						
40						1
3012						6
20			4	5		
10						
0 <mark></mark> 30	224.	418. F	requency (MI	612. iz)	806.	1000
F	Defector	0	Fastar	• •	1	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
56.19	Peak	43.56	-16.19	27.37	40.00	-12.63
104.69	Peak	38.56	-11.41	27.15	43.50	-16.35
207.51	Peak	40.11	-11.80	28.31	43.50	-15.19
478.14	Peak	25.13	-3.40	21.73	46.00	-24.27
734.22	Peak	24.18	0.47	24.65	46.00	-21.35
924.34	Peak	24.94	3.35	28.29	46.00	-17.71



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Test Mo	ode:	BLE-2Mbps Mo	de	Temp/Hum	25.0(°C	C)/ 42%Rł	
Test Ite	em	30MHz-1GHz		Test Date	Septem	September 9, 202	
Polariz	ze	Horizontal	-	Test Engineer	· Jerry	erry Chang	
Detect	tor	Peak					
100 Level (dBu	JV/m)						
90					1	1 1 1 1	
80					 	1 1 1	
70							
60							
50						· · · · · · · · · · · · · · · · · · ·	
40						·	
302					6		
20			4		,		
10							
0 30							
-30	224.	418. F	requency (MHz)	612.	806.	1000	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin	
	Mode	Reading Level		FS	@3m	J	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
51.34	Peak	38.90	-15.68	23.22	40.00	-16.78	
103.72	Peak	39.25	-11.91	27.34	43.50	-16.16	
234.67	Peak	39.87	-10.98	28.89	46.00	-17.11	
570.29	Peak	24.16	-2.05	22.11	46.00	-23.89	
	Peak	24.08	0.76	24.84	46.00	-21.16	
746.83							



Test Mode:	BLE-	1Mbps Low CH	Temp/Hu	m 25.0(°C)/ 42%R
Test Item		Harmonic	Test Dat	e Septer	mber 9, 20
Polarize		Vertical	Test Engin	eer Jei	rry Chang
Detector		Peak			
120					-:
110					
90					
70					
50	1				
30					
10					
0 <mark></mark>	6100.	11200. Frequer	16300. Icy (MHz)	21400.	2650

Above 1G Test Data

Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4804.00	Peak	37.51	3.36	40.87	74.00	-33.13
7206.00	Peak	37.42	10.77	48.19	74.00	-25.81
N/A						

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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Test Mo	ode: E	BLE-1Mbps Low	CH	Temp/Hum	25.0(°C	C)/ 42%Rł	
Test It	em	Harmonic		Test Date	Septem	September 9, 20	
Polari	ze	Horizontal		Test Engineer		Chang	
Detec	tor	Peak					
	I						
120 Level (dBu	JV/m)						
110					 	 	
90						 	
70							
50							
	1						
30							
10							
0 <mark></mark> 1000	6100.	11200. Fi	requency (MHz)	16300.	21400.	26500	
_			_				
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
4804.00	Peak	39.74	3.36	43.10	74.00	-30.90	
	Peak	37.96	10.77	48.73	74.00	-25.27	
7206.00							
7206.00 N/A							

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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Test Mo	ode: E	BLE-1Mbps Mid	CH	Temp/Hum	25.0(°C	:)/ 42%RF	
Test Ite	em	Harmonic		Test Date	Septem	September 9, 202	
Polari	ze	Vertical	cal Test Enginee		Jerry	[,] Chang	
Detect	tor	Peak					
Loval (dDr	•V/m						
120 Level (dBu							
110							
90						 	
50							
70						 	
50	1	2					
30					1 1 1	1 1 1 1	
50							
10			 			 	
0 <mark>1000</mark>	6100.	11200.	: 1	6300.	21400.	26500	
		F	requency (MHz)				
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin	
-	Mode	Reading Level		FS	@3m	-	
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB	
MHz 4880.00	Mode PK/QP/AV Peak	Reading Level dBµV 37.62	dB 3.51	FS dBμV/m 41.13	@ 3m dBµV/m 74.00	dB -32.87	
MHz 4880.00 7320.00	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB	
MHz 4880.00	Mode PK/QP/AV Peak	Reading Level dBµV 37.62	dB 3.51	FS dBμV/m 41.13	@ 3m dBµV/m 74.00	dB -32.87	
MHz 4880.00 7320.00	Mode PK/QP/AV Peak	Reading Level dBµV 37.62	dB 3.51	FS dBμV/m 41.13	@ 3m dBµV/m 74.00	dB -32.87	

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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Test Mo	ode: E	BLE-1Mbps Mid	СН	Temp/Hum	25.0(°C	:)/ 42%RF	
Test Ite	em	Harmonic		Test Date	Septem	September 9, 202	
Polariz	ze	Horizontal	٦	Fest Engineer	Jerry	[,] Chang	
Detect	or	Peak					
120	ıV/m)						
110							
90							
70						I I I I	
50	1	2					
30							
10							
0 <mark></mark> 1000	6100.	11200. Fi	requency (MHz)	16300.	21400.	26500	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin	
•	Mode	Reading Level		FS	@3m	•	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
4880.00	Peak	36.94	3.51	40.45	74.00	-33.55	
7320.00	Peak	34.84	11.03	45.87	74.00	-28.13	
N/A							

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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MHz 4960.00	Mode PK/QP/AV Peak	Reading Level dBµV 35.65	dB 4.46	FS dBμV/m 40.11	@ 3m dBµV/m 74.00	dB -33.89
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
0 <mark>.</mark> 1000	6100.	11200. F	requency (MHz)	16300.	21400.	26500
10						
30						
50	1	2			 	
70						
90						
110						
120 Level (dBu	iV/m)					
Detect	or	Peak				
Polariz		Vertical		est Engineer		Chang
Test Ite		LE-1Mbps High Harmonic	СП	Temp/Hum Test Date	25.0(°C)/ 42%RH September 9, 202	

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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	Harmonic Horizontal Peak		Test Date	· ·	ber 9, 202
			Toot Engineer		
	Poak		Test Engineer	Jerry	/ Chang
	r can				
1)					
<i>y</i>					
				+	
					1
1	2		·	 	
		1			
6100	11200	1	16300	21400	26500
01001		requency (M		211001	20000
Detector	Spectrum	Facto	Actual	Limit	Margin
Mode	Reading Level		FS	@3m	5
PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
Peak	37.36	4.46	41.82	74.00	-32.18
Peak	36.46	10.66	47.12	74.00	-26.88
	6100. Detector Mode PK/QP/AV Peak	DetectorSpectrumModeReading LevelPK/QP/AVdBµVPeak37.36	6100. 11200. 6100. 11200. Frequency (Mi Detector Spectrum Mode Frequency (Mi PK/QP/AV dBµV Detak 37.36	Detector Spectrum Frequency (MHz) Detector Spectrum Factor Mode Reading Level FS PK/QP/AV dBµV dB dBµV/m Peak 37.36 4.46 41.82	6100.11200.16300.21400.Frequency (MHz)DetectorSpectrumFactorActualLimitModeReading LevelGBGBµV/mGBµV/mPK/QP/AVdBµVdBdBµV/mdBµV/mPeak37.364.4641.8274.00

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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Test Mo	ode: E	BLE-2Mbps Low	СН	Temp/Hum	25.0(°C)/ 42%RF	
Test Ite	em	Harmonic		Test Date	Septem	September 9, 202	
Polariz	ze	Vertical		Test Engineer	Jerry	' Chang	
Detect	tor	Peak					
120 Level (dBu	JV/m)						
110							
90							
70		· · · · · · · · · · · · · · · · · · ·			 	 - 	
50	1	2					
30							
10							
0 <mark></mark>	6100.	11200.		16300.	21400.	26500	
		r	requency (MHz	L)			
_							
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
4804.00	Peak	37.46	3.36	40.82	74.00	-33.18	
7206.00	Peak	37.30	10.77	48.07	74.00	-25.93	
N/A							

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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Test Mode:		BLE-2Mbps Low CH		Temp/Hum	25.0(°C	C)/ 42%Rł	
Test Ite	em	Harmonic Horizontal Peak		Test Date	Septem	ber 9, 202	
Polari	ze			est Engineer	Jerry	Jerry Chang	
Detec	tor			_			
120 Level (dBu	V/m)						
110					 	1 1 1 1 1	
90					 	1 	
70					 	1 1 1 1	
50	1		 		 	1 1 1	
30							
10							
0 <mark></mark>	6100.	11200.		16300.	21400.	26500	
		F	requency (MHz)				
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin	
	Mode	Reading Level		FS	@3m		
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
4804.00	Peak	39.85	3.36	43.21	74.00	-30.79	
7206.00	Peak	37.83	10.77	48.60	74.00	-25.40	
N1/A							
N/A						1	
N/A							

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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Polari		Vertical Peak		Test Engineer		/ Chang
Detec	tor	Реак				
120 Level (dBu	iV/m)					
110						
90						
70						
50	1					
30			 		 	
40						
10						1
0 <mark>.</mark> 1000	6100.	11200. F	requency (MHz)	16300.	21400.	26500
		Spectrum	Factor	Actual	Limit	Margin
Freq.	Detector	Spectrum				•
Freq.	Detector Mode	Reading Level		FS	@3m	
Freq. MHz		-	dB	FS dBµV/m	@3m dBµV/m	dB
Ē	Mode	Reading Level	dB 3.51	_		dB -32.91
MHz	Mode PK/QP/AV	Reading Level dBµV		dBµV/m	dBµV/m	

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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Test Mo	ode: E	BLE-2Mbps Mid CH		Temp/Hum	25.0(°C	25.0(°C)/ 42%RI	
Test Ite	em	Harmonic		Test Date	Septem	September 9, 202	
Polariz	ze	Horizontal Peak		est Engineer	Jerry Chang		
Detect	tor						
120	ıV/m)						
						1	
110						1	
90						- - - 	
70						I I I	
						1	
50	1	2			 	 	
30					 I I I I	I	
10						 	
0 1000		11000		40000			
1000	6100.	11200. Fi	equency (MHz)	16300.	21400.	26500	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin	
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB	
4880.00	Peak	37.07	3.51	40.58	74.00	-33.42	
7320.00	Peak	34.93	11.03	45.96	74.00	-28.04	
N/A			11.00	10.00	1 1.00	20.04	
11/7							

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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Test Mode:		BLE-2Mbps High CH		Temp/Hum	25.0(°C	25.0(°C)/ 42%RI	
Test Ite	em	Harmonic		Test Date	Septem	September 9, 202	
Polarize		Vertical Peak		Test Engineer	Jerry	Jerry Chang	
Detector							
120 Level (dBu	V/m)						
110						 	
110							
90					 	 	
70						 	
50	1	2			 I I I I	I I I I	
30					 	1 1 1 1	
10							
0 <mark></mark>	6 100.	11200.	:	16300.	21400.	26500	
		F	requency (MHz)			
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin	
•	Mode	Reading Level		FS	@3m		
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
4960.00	Peak	35.71	4.46	40.17	74.00	-33.83	
7440.00	Peak	34.93	10.66	45.59	74.00	-28.41	
N/A							

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit



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Test Mode:		BLE-2Mbps High CH		Temp/Hum	25.0(°C)/ 42%RF	
Test Item		Harmonic		Test Date	Septemb	September 9, 202	
Polaria	ze	Horizontal		est Engineer	Jerry	Jerry Chang	
Detector		Peak					
120 Level (dBu	IV/m)						
110		·					
90							
70							
50		2	 		 		
30	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·					
10							
0		11200.					
1000	6100.			6300.	21400.	26500	
0 <mark></mark> 1000	6100.		1 requency (MHz)	6300.	21400.	26500	
³ 1000	6100.			6300.	21400.	26500	
Freq.	Detector	Fr		Actual	Limit	26500 Margin	
Freq.	Detector Mode	Fr Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin	
Freq. MHz	Detector Mode PK/QP/AV	Fr Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB	
Freq. MHz 4960.00	Detector Mode PK/QP/AV Peak	Fr Spectrum Reading Level dBµV 37.25	Factor dB 4.46	Actual FS dBµV/m 41.71	Limit @3m dBµV/m 74.00	Margin dB -32.29	
Freq. MHz 4960.00 7440.00	Detector Mode PK/QP/AV	Fr Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB	
Freq. MHz 4960.00	Detector Mode PK/QP/AV Peak	Fr Spectrum Reading Level dBµV 37.25	Factor dB 4.46	Actual FS dBµV/m 41.71	Limit @3m dBµV/m 74.00	Margin dB -32.29	
Freq. MHz 4960.00 7440.00	Detector Mode PK/QP/AV Peak	Fr Spectrum Reading Level dBµV 37.25	Factor dB 4.46	Actual FS dBµV/m 41.71	Limit @3m dBµV/m 74.00	Margir dB -32.29	
Freq. MHz 4960.00 7440.00	Detector Mode PK/QP/AV Peak	Fr Spectrum Reading Level dBµV 37.25	Factor dB 4.46	Actual FS dBµV/m 41.71	Limit @3m dBµV/m 74.00	Margin dB -32.29	

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

--End of Test Report--