



# JAPAN RADIO TEST REPORT

**Equipment** : Wireless AC3000 Tri Band Gigabit Router  
**Brand Name** : ASUS  
**Model Name** : CT8  
**Applicant** : ASUSTeK COMPUTER INC.  
No. 15, Li-Te Rd., Peitou District, Taipei 112, Taiwan,  
R.O.C.  
**Manufacturer (1)** : Compal Networking (KunShan) Co., LTD.  
No. 520, Nanbang Rd., Economic & Technical  
Development Zone Kunshan, Jiangsu  
Province China  
**Manufacturer (2)** : ASKEY TECHNOLOGY (JIANG SU) LTD  
NO1388, Jiao Tong Road, Wujiang Economic  
Technological Development Area  
Jiangsu Province 215200 China  
**Standard** : MIC Certification Rule, Article 2 Paragraph 1 Item 19

The product was received on Jun. 07, 2019, and testing was started from Aug. 27, 2019 and completed on Sep. 02, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in MIC Notice No.88 Appendix No.43 and shown compliance with the applicable MIC Ordinance Regulating Radio Equipment Article 49.20 and ARIB STD-T66 technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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## History of this test report

TEL : 886-3-656-9065  
FAX : 886-3-656-9085  
Report Template No.: CB Ver1.0

Page Number : 3 of 20  
Issued Date : Sep. 19, 2019  
Report Version : 01



## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.1	RLE:6	Frequency Band	PASS	-
3.1	ORE:5	Frequency Error	PASS	-
3.2	ORE:6	Occupied Bandwidth	PASS	-
3.3	ORE:49.20	Antenna Power	PASS	-
3.3	ORE:14	Antenna Power Error	PASS	-
-	ORE:49.20	Antenna Beamwidth, EIRP Limit <sup>*1</sup>	N/A	-
-	ORE:49.20	Radiated EIRP <sup>*1</sup>	N/A	-
3.4	ORE:7, Table 3	Transmitter Spurious Emissions	PASS	-
3.5	ORE:24	Receiver Spurious Emissions	PASS	-
3.6	TR:9	Identification Code	PASS	-
-	TR:9	Carrier Sense <sup>*2</sup>	N/A	-
3.7	ORE:49.20	EUT Construction Protection	PASS	-

RLE: Radio Law Enforcement Regulations

ORE: Ordinance Regulating Radio Equipment

TR: Terminal and Other Equipment Regulations

NT: Notification of the Ministry of Internal Affairs and Communications

<sup>\*1</sup>: If EIRP power of EUT is lower than 12.14dBm/MHz (20MHz) and 9.1279dBm/MHz (40MHz), so "Antenna Beamwidth, EIRP Limit" and "Radiated EIRP" could be exempted tests.

<sup>\*2</sup>: If OFDM modulation and Occupied Bandwidth  $\geq$  26MHz, Carrier Sense shall be performed.

### Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

### Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

**Reviewed by: Sam Chen**

**Report Producer: Wendy Pan**

# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1.0	1TX

**Note:**

- ♦ Bluetooth LE uses a GFSK modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ Nss-Min is the minimum number of spatial streams.
- ♦ Nant is the number of outputs. e.g., 2(2, 3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

Mode	Declared Power (mW)
BT-LE(1Mbps)	2.54683

**1.1.2 Antenna Information**

Set	Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	1	PSA	RFDPA230505IMLB901	Dipole Antenna	I-PEX	Note 1
	2	2	PSA	RFDPA230510IMLB901	Dipole Antenna	I-PEX	
	3	3	PSA	RFDPA100610IM5B901	Dipole Antenna	I-PEX	
	4	4	PSA	RFDPA100607IM5B901	Dipole Antenna	I-PEX	
	5	5	PSA	RFDPA100608IM5B901	Dipole Antenna	I-PEX	
	6	6	PSA	RFDPA100605IM5B901	Dipole Antenna	I-PEX	
	7	1	PSA	-	Printed Antenna	N/A	
2	1	1	Whayu	C660-510478-A ANT1 2_5G	Dipole Antenna	I-PEX	
	2	2	Whayu	C660-510478-A ANT2 2_5G	Dipole Antenna	I-PEX	
	3	3	Whayu	C660-510478-A_ANT 3 5G	Dipole Antenna	I-PEX	
	4	4	Whayu	C660-510478-A_ANT 4 5G	Dipole Antenna	I-PEX	
	5	5	Whayu	C660-510478-A_ANT 5 5G	Dipole Antenna	I-PEX	
	6	6	Whayu	C660-510478-A_ANT 6 5G	Dipole Antenna	I-PEX	
3	1	1	Airgain	M2440DMCT-PK1-HSR3-LB1X52BU	Dipole Antenna	I-PEX	
	2	2	Airgain	M2440DMCT-PK1-HSY3-LB1X102BU	Dipole Antenna	I-PEX	
	3	3	Airgain	M5X30CT-PK1-HSE3-LBIX102BU	Dipole Antenna	I-PEX	
	4	4	Airgain	M5X30CT-PK1-HSA3-LB1X75BU	Dipole Antenna	I-PEX	
	5	5	Airgain	M5X30CT-PK1-HSW3-LB 1X85BU	Dipole Antenna	I-PEX	
	6	6	Airgain	M5X30CT-PK1-HSB3-LBIX52BU	Dipole Antenna	I-PEX	

Note 1:

Set	Ant.	Port	Gain (dBi) - CDD				
			2.4GHz	5GHz Band 1	5GHz Band 2	5GHz Band 3	Bluetooth
1	1	1	1.36	1.74	2.09	-	-
	2	2	1.36	1.74	2.09	-	-
	3	1	-	-	-	0.82	-
	4	2	-	-	-	0.82	-
	5	3	-	-	-	0.82	-
	6	4	-	-	-	0.82	-
	7	1	-	-	-	-	-2.93
2	1	1	1.17	1.69	1.48	-	-
	2	2	1.17	1.69	1.48	-	-
	3	1	-	-	-	0.45	-
	4	2	-	-	-	0.45	-
	5	3	-	-	-	0.45	-
	6	4	-	-	-	0.45	-
3	1	1	0.80	1.47	1.47	-	-
	2	2	0.80	1.47	1.47	-	-
	3	1	-	-	-	0.18	-
	4	2	-	-	-	0.18	-
	5	3	-	-	-	0.18	-
	6	4	-	-	-	0.18	-

Note2: The above information was declared by manufacturer.

The EUT has three sets of WLAN antenna and there are six antennas for each set.

There are three sets antenna are the same type antennas, only the higher gain antennas "Set 1" was tested and recorded in the report.

**For 2.4GHz function:**

**For IEEE 802.11b/g/n/VHT mode (2TX/2RX):**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

**For 5GHz Band 1 and Band 2 function:**

**For IEEE 802.11a/n/ac mode (2TX/2RX):**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

**For 5GHz Band 3 function:**

**For IEEE 802.11a/n/ac mode (4TX/4RX):**

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

**For Bluetooth function**

Only Port 1 can be used as transmitting/receiving antenna.



**1.1.3 EUT Information**

<b>EUT Power Type</b>	From Power Adapter
<b>Test Software Version</b>	Telnet
<b>Support Mode</b>	<input checked="" type="checkbox"/> LE 1M PHY: 1 Mb/s
	<input type="checkbox"/> LE Coded PHY (S=2): 500 Kb/s
	<input type="checkbox"/> LE Coded PHY (S=8): 125 Kb/s
	<input type="checkbox"/> LE 2M PHY: 2 Mb/s

**1.1.4 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	Tx-sequence(s)	Tx-gap(s)
BT-LE(1Mbps)	0.654	1.844	408.75u	216.25u

**1.1.5 Power Supply Voltage Fluctuation**

Fluctuation	AC Input Power(V)	DC Output Power(V)	Variation (%)
Normal Vol	100	19.2	-
High Vol	110	19.2	0.000000
Low Vol	90	19.2	0.000000

Note: Voltage Variation (%) = (Output High or Low Voltage - Output Normal Voltage)/Output Normal Voltage X 100.  
During the input supply voltage to the EUT from the external power source is varied by +/- 10%, if output voltage had been confirmed that the fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than +/- 1%. Exempt extremely high and low supply voltage condition tests, EUT only operated in normal voltage to test all regulations.

**1.1.6 Table for Radio information**

Radio	Band
1	5GHz Band 1 and Band 2
	2.4GHz
2	5GHz Band 3
3	Bluetooth

Note: The above information was declared by manufacturer.



## 1.2 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ MIC Ordinance Regulating Radio Equipment Article 49.20
- ◆ MIC Notice No.88 Appendix No.43

## 1.3 Testing Location Information

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL : 886-3-327-3456 FAX : 886-3-327-0973
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Lucas Huang	24.6~25.6°C / 59~60%	Aug. 27, 2019 ~ Sep. 02, 2019

## 1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Conducted Emission	2.4 dB	Confidence levels of 95%
Radio frequency	$5.1 \times 10^{-10}$	Confidence levels of 95%



## **2 Test Configuration of EUT**

### **2.1 Test Channel Mode**

<b>Mode</b>	<b>Power Setting</b>
BT-LE(1Mbps)	-
2402MHz	Default
2440MHz	Default
2480MHz	Default



## 2.2 The Worst Case Measurement Configuration

<b>Tests Item</b>	Frequency Error, Occupied Bandwidth, Antenna Power, Antenna Power Error, Transmitter Spurious Emissions, Receiver Spurious Emissions, Identification Code
<b>Test Condition</b>	Conducted measurement at transmit chains.

## 2.3 EUT Operation during Test

During the test, "Telnet" under WIN 7 was executed the test program to control the EUT continuously transmit/receive RF signal.

## 2.4 Accessories

Accessories				
Equipment Name	Brand Name	Model Name	Type	Rating
Adapter	ASUS	AD2088320	010-5LF	Input: 100-240V~50/60Hz, 0.8A Output: 19V, 1.75A
Equipment Name	Brand Name	Model Name	Remark	
RJ-45 cable	NIEN-YI	NYT976	Non-Shielding:1.5m	

## 2.5 Support Equipment

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

### 3 Test Result

#### 3.1 Frequency Error

##### 3.1.1 Frequency Error Limit

Frequency Error Limit
$\leq \pm 50 \text{ ppm}$

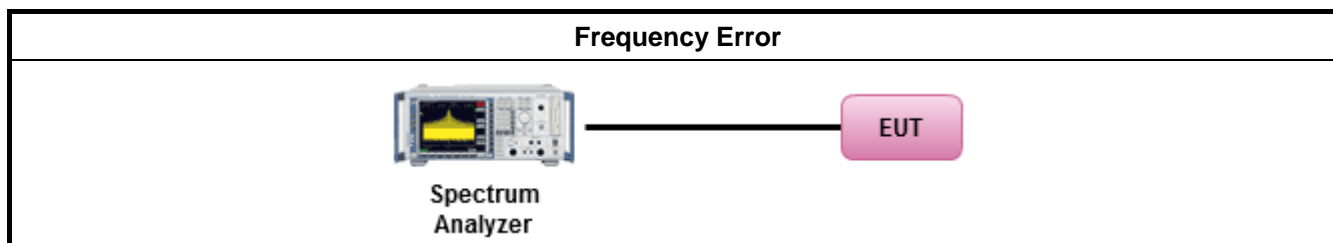
##### 3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

##### 3.1.3 Test Procedures

Test Method	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.43, clause 3.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.43, clause 3.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.43, clause 3.4
Presentation of Results	MIC Notice No.88 Appendix No.43, clause 3.5
Other Conditions	MIC Notice No.88 Appendix No.43, clause 3.6

##### 3.1.4 Test Setup



##### 3.1.5 Test Result of Frequency Error

Refer as Appendix A

## 3.2 Occupied Bandwidth

### 3.2.1 Occupied Bandwidth Limit

Occupied Bandwidth Limit	
FHSS	83.5 MHz
FHSS + DSSS	83.5 MHz
FHSS + OFDM	83.5 MHz
OFDM	38 MHz
Other	26 MHz

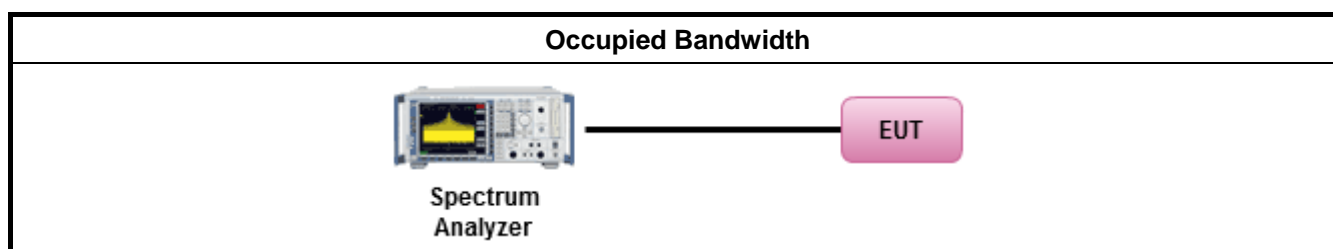
### 3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

### 3.2.3 Test Procedures

Test Method	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.43, clause 4.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.43, clause 4.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.43, clause 4.4
Presentation of Results	MIC Notice No.88 Appendix No.43, clause 4.5
Other Conditions	MIC Notice No.88 Appendix No.43, clause 4.6

### 3.2.4 Test Setup



### 3.2.5 Test Result of Occupied Bandwidth

Refer as Appendix B

### 3.3 Antenna Power, Antenna Power Error

#### 3.3.1 Antenna Power and Antenna Power Error Limit

Antenna Power Limit (mW/MHz)
$\leq 3\text{mW/MHz}$ (FHSS, FHSS+DSSS, FHSS+OFDM from 2427~2470.75 MHz) $\leq 10\text{mW/MHz}$ (DSSS from 2400~2483.5MHz) $\leq 10\text{mW/MHz}$ (OFDM from 2400~2483.5MHz) – [OBW $\leq 26\text{MHz}$ ] $\leq 5\text{mW/MHz}$ (OFDM from 2400~2483.5MHz) – [26MHz<OBW $\leq 38\text{MHz}$ ] $\leq 10\text{mW}$ (Other from 2400~2483.5MHz)

Antenna Power Error Limit (%)
+20% ~ -80%

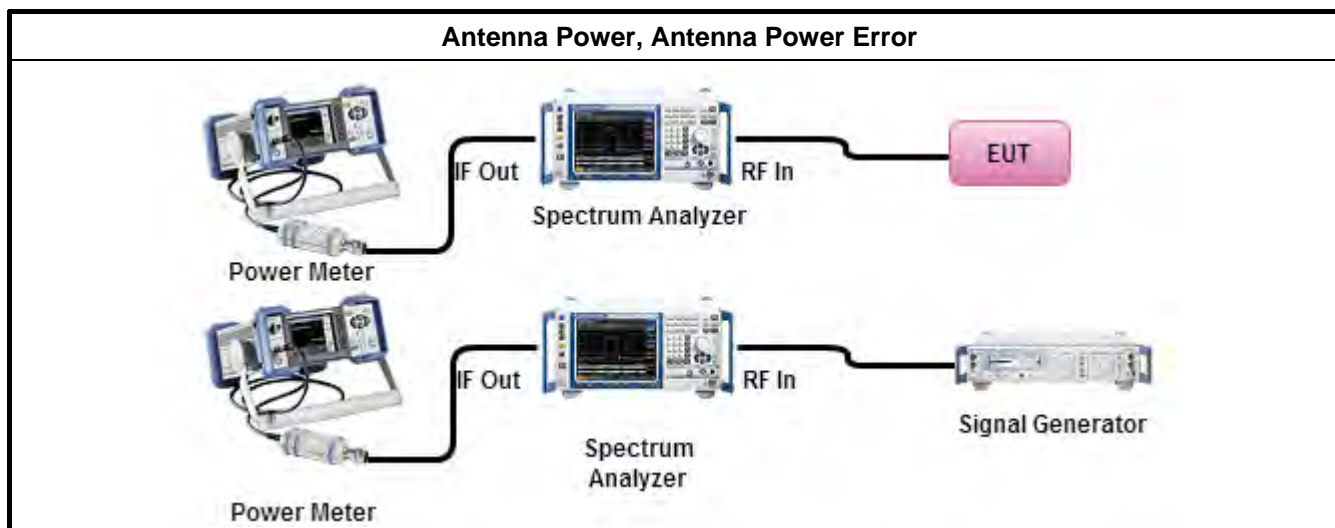
#### 3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

#### 3.3.3 Test Procedures

Test Method	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.43, clause 6.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.43, clause 6.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.43, clause 6.4
Presentation of Results	MIC Notice No.88 Appendix No.43, clause 6.5
Other Conditions	MIC Notice No.88 Appendix No.43, clause 6.6

#### 3.3.4 Test Setup



#### 3.3.5 Test Result of Antenna Power and Antenna Power Error

Refer as Appendix C

### 3.4 Transmitter Spurious Emissions

#### 3.4.1 Transmitter Spurious Emissions Limit

Transmitter Spurious Emissions		Limit	
Range (MHz)		uW/MHz	dBm/MHz
30	2387	2.5	-26
2387	2400	25	-16
2483.5	2496.5	25	-16
2496.5	12500	2.5	-26

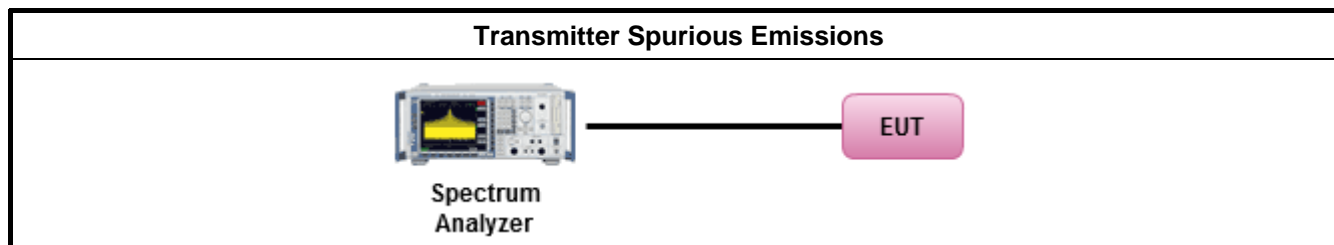
#### 3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

#### 3.4.3 Test Procedures

Test Method	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.1, clause 1.3
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.1, clause 1.4
Measuring Operation Procedures	MIC Notice No.88 Appendix No.1, clause 1.5
Presentation of Results	MIC Notice No.88 Appendix No.1, clause 1.6

#### 3.4.4 Test Setup



#### 3.4.5 Test Result of Transmitter Spurious Emissions

Refer as Appendix D



## 3.5 Receiver Spurious Emissions

### 3.5.1 Receiver Spurious Emissions Limit

RX Spurious Emission		Limit			
Range (MHz)		nW		dBm	
30	1000	4	4	-54	-54
1000	12500	20	20	-47	-47

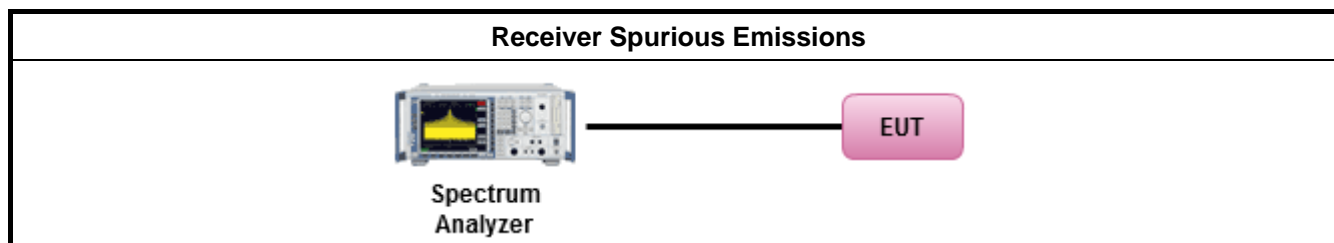
### 3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

### 3.5.3 Test Procedures

Test Method	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.43, clause 7.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.43, clause 7.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.43, clause 7.4
Presentation of Results	MIC Notice No.88 Appendix No.43, clause 7.5
Other Conditions	MIC Notice No.88 Appendix No.43, clause 7.6

### 3.5.4 Test Setup



### 3.5.5 Test Result of Receiver Spurious Emissions

Refer as Appendix E

## 3.6 Identification Code

### 3.6.1 Identification Code Limit

Identification Code Limit
≤ 48 bits

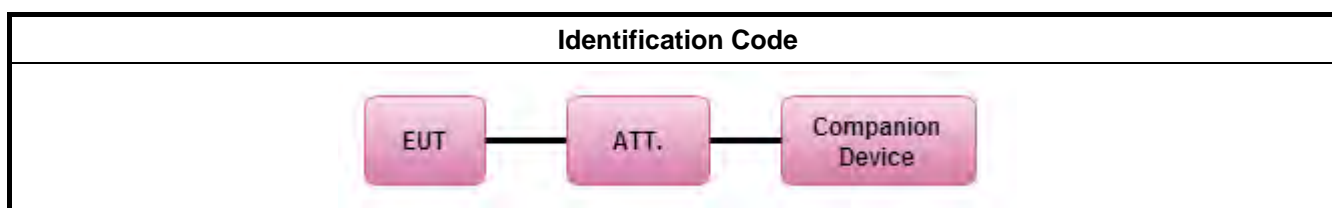
### 3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

### 3.6.3 Test Procedures

Test Method	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.43, clause 12.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.43, clause 12.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.43, clause 12.4
Presentation of Results	MIC Notice No.88 Appendix No.43, clause 12.5
Other Conditions	MIC Notice No.88 Appendix No.43, clause 12.6

### 3.6.4 Test Setup



### 3.6.5 Test Result of Identification Code

Refer as Appendix F



### **3.7 EUT Construction Protection**

#### **3.7.1 EUT Construction Protection Limit**

<b>EUT Construction Protection Limit</b>	
The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.	

#### **3.7.2 EUT Construction Protection**

<b>EUT Construction Protection</b>	
<b>Protected Method</b>	<b>Description</b>
Shielding Case	RF and Modulation components are covered with shielding case and this shielding case is soldered

### 3.7.3 Reference Documents

Photo



## 4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Calibration Method	Calibration Agent Name	Remark
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Feb. 25, 2019	Feb. 24, 2020	c)	C	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz ~ 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	c)	B	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz ~ 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	c)	B	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz ~ 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	c)	B	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz ~ 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	c)	B	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz ~ 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	c)	B	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz ~ 26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	c)	B	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	c)	A	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	c)	A	Conducted (TH01-CB)
Digital Multimeters	Fluke	15B+	42390498WS	N/A	Oct. 18, 2018	Oct. 17, 2019	c)	A	Conducted (TH01-CB)

### Note:

- Calibration Interval of instruments listed above is one year.
- N.C.R. means Non-Calibration required.
- Calibration Agent Name: Describe calibration agent name with its country name, and symbols in "Calibration Agent Name" shows the agent names as follows,
  - A: Electronics Testing Center, Taiwan.
  - B: Sporton International Inc., Taiwan.
  - C: ROHDE&SCHWARZ, Taiwan.
- Calibration Method
  - a) : Calibration conducted by the National Institute of Information and Communications Technology or a designated calibration agency under Article 102-18 paragraph (1)
  - b) : Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992)
  - c) : Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)
  - d) : Calibration conducted by using other equipment that listed above from a) to c)



**Summary**

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port
2.4-2.4835GHz	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44G	2.43999853G	-0.6023	±50	1



**Result**

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.402G	2.40199867G	-0.5536	±50	1
2440MHz_TnomVnom	Pass	2.44G	2.43999853G	-0.6023	±50	1
2480MHz_TnomVnom	Pass	2.48G	2.47999854G	-0.5906	±50	1



**Summary**

Mode	Max-OBW (Hz)	ITU-Code	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-
BT-LE(1Mbps)	1.313M	1M31F1D	1.311M

**Max-OBW** = Maximum 99% occupied bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

**Result**

Mode	Result	Limit (Hz)	P1-OBW (Hz)
BT-LE(1Mbps)	-	-	-
2402MHz_TnomVnom	Pass	26M	1.313M
2440MHz_TnomVnom	Pass	26M	1.312M
2480MHz_TnomVnom	Pass	26M	1.311M

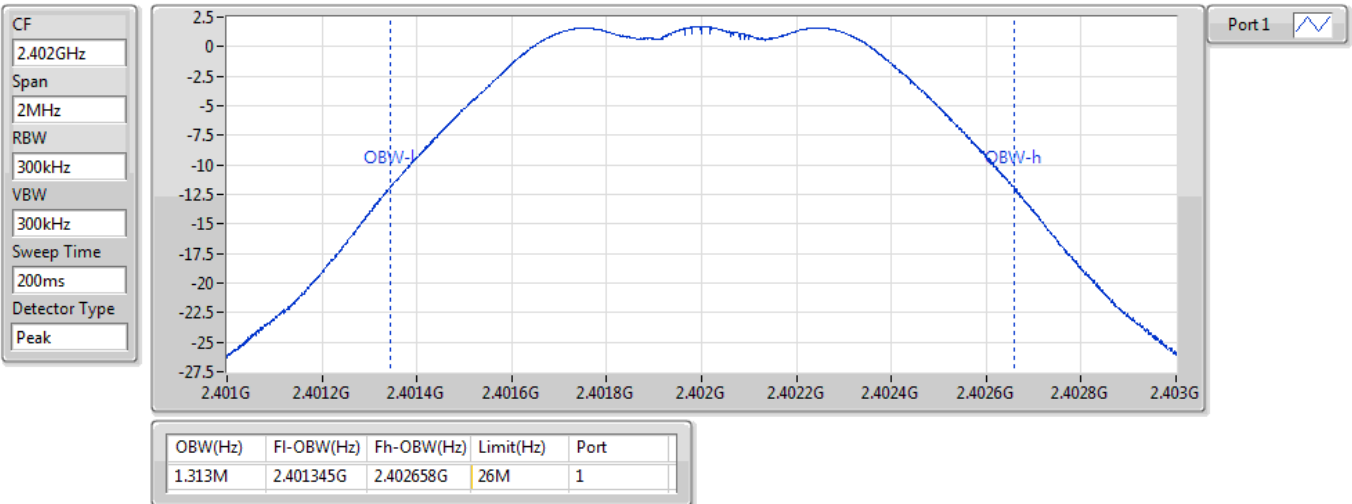
**P1-OBW** = Port 1 99% occupied bandwidth; **P2-OBW** = Port 2 99% occupied bandwidth; **Pn-OBW** = Port n 99% occupied bandwidth

## BT-LE(1Mbps)

## OBW

### 2402MHz\_TnomVnom

28/08/2019

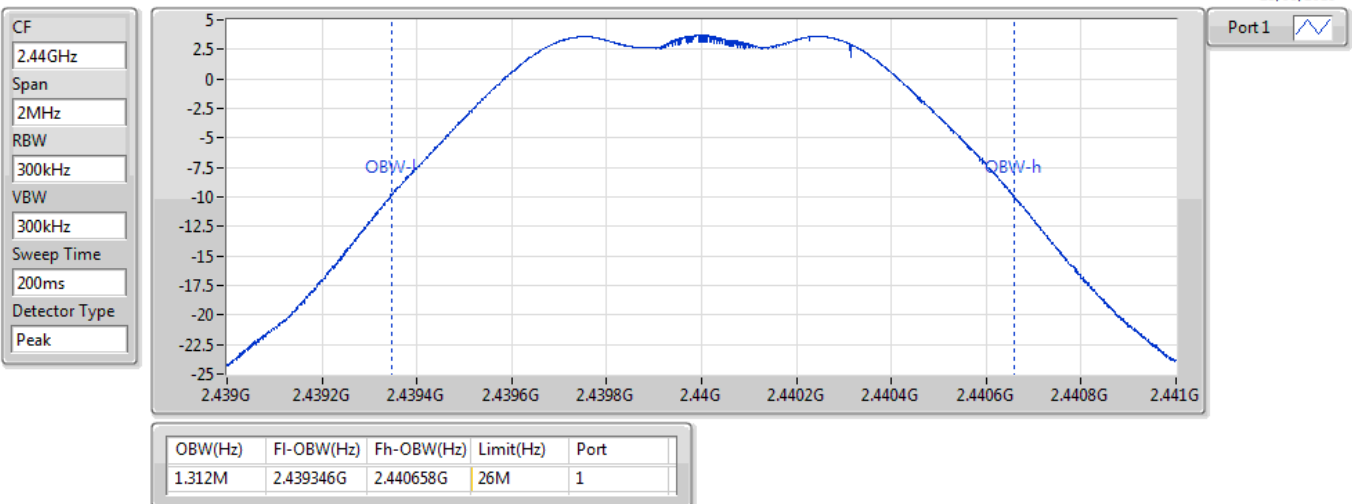


## BT-LE(1Mbps)

## OBW

### 2440MHz\_TnomVnom

28/08/2019



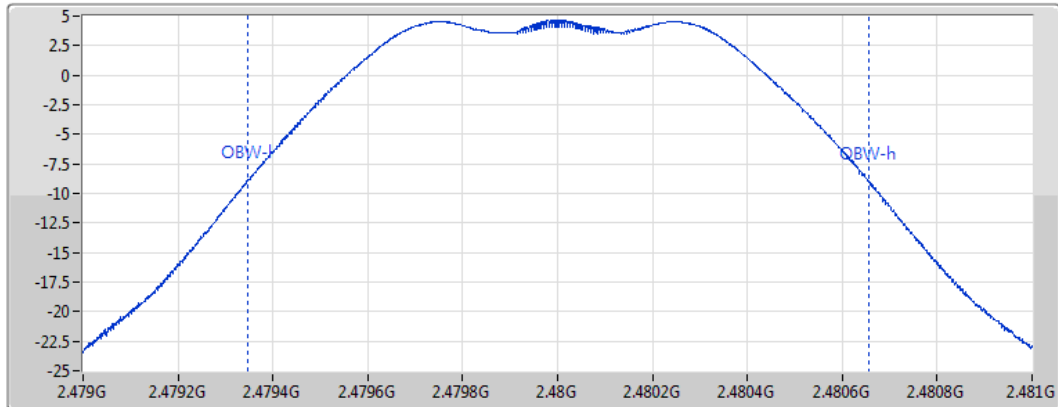
BT-LE(1Mbps)

OBW

2480MHz\_TnomVnom

28/08/2019

CF  
2.48GHz  
Span  
2MHz  
RBW  
300kHz  
VBW  
300kHz  
Sweep Time  
200ms  
Detector Type  
Peak



Port1

OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.311M	2.479346G	2.480657G	26M	1



### Summary

Mode	Power (dBm)	Power (mW)	EIRP (dBm)	EIRP (mW)
2.4-2.4835GHz	-	-	-	-
BT-LE(1Mbps)	4.06	2.547	1.13	1.297

**P1** = Port 1 output power; **P2** = Port 2 output power; **P3** = Port 3 output power; **P4** = Port 4 output power;  
**Power** = Total power sum by **P1~PN**;

### Result

Mode	Result	Gain (dBi)	Power (dBm)	Power (mW)	Power Lim. (mW)	EIRP (dBm)	EIRP (mW)	EIRP Lim. (mW)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	-2.93	1.19	1.315	10	-1.74	0.670	16.368
2440MHz_TnomVnom	Pass	-2.93	2.98	1.986	10	0.05	1.012	16.368
2480MHz_TnomVnom	Pass	-2.93	4.06	2.547	10	1.13	1.297	16.368

**P1** = Port 1 output power; **P2** = Port 2 output power; **P3** = Port 3 output power; **P4** = Port 4 output power;  
**Power** = Total power sum by **P1~PN**;

**Summary**

Mode	Result	Antenna Power (dBm)	Antenna Power (dBm)	Declare (mW)	Tolerance (%)	Limit+ (%)	Limit- (%)
2.4-2.4835GHz	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	4.06	2.54683	2.54683	0.00	20	-80

**Result**

Mode	Result	Antenna Power (dBm)	Antenna Power (dBm)	Declare (mW)	Tolerance (%)	Limit+ (%)	Limit- (%)
BT-LE(1Mbps)	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	1.19	1.31522	1.31522	0.00	20	-80
2440MHz_TnomVnom	Pass	2.98	1.98609	1.98609	0.00	20	-80
2480MHz_TnomVnom	Pass	4.06	2.54683	2.54683	0.00	20	-80



Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Freq (Hz)	Psum (dBm/MHz)	Psum (uW/MHz)	Limit (dBm/MHz)	Limit (uW/MHz)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.387G	2.4G	1M	2.39997G	-25.44	2.85759	-16.02	25

**Result**

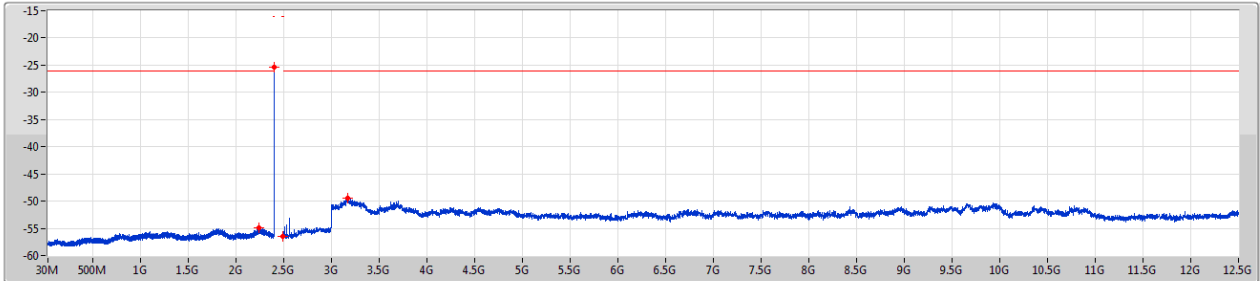
Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Freq (Hz)	Psum (dBm/MHz)	Psum (uW/MHz)	Limit (dBm/MHz)	Limit (uW/MHz)	Margin (dB)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	30M	2.387G	1M	2.23792G	-54.91	0.00323	-26.02	2.5	-28.89
2402MHz_TnomVnom	Pass	2.387G	2.4G	1M	2.39997G	-25.44	2.85759	-16.02	25	-9.42
2402MHz_TnomVnom	Pass	2.4835G	2.4965G	1M	2.49263G	-56.40	0.00229	-16.02	25	-40.38
2402MHz_TnomVnom	Pass	2.4965G	12.5G	1M	3.16924G	-49.47	0.0113	-26.02	2.5	-23.45
2440MHz_TnomVnom	Pass	30M	2.387G	1M	2.25619G	-55.02	0.00315	-26.02	2.5	-29.00
2440MHz_TnomVnom	Pass	2.387G	2.4G	1M	2.38812G	-56.21	0.00239	-16.02	25	-40.19
2440MHz_TnomVnom	Pass	2.4835G	2.4965G	1M	2.49211G	-55.93	0.00255	-16.02	25	-39.91
2440MHz_TnomVnom	Pass	2.4965G	12.5G	1M	3.18049G	-49.42	0.01143	-26.02	2.5	-23.40
2480MHz_TnomVnom	Pass	30M	2.387G	1M	2.32395G	-54.79	0.00332	-26.02	2.5	-28.77
2480MHz_TnomVnom	Pass	2.387G	2.4G	1M	2.39444G	-56.45	0.00226	-16.02	25	-40.43
2480MHz_TnomVnom	Pass	2.4835G	2.4965G	1M	2.48353G	-38.76	0.13305	-16.02	25	-22.74
2480MHz_TnomVnom	Pass	2.4965G	12.5G	1M	3.17049G	-49.76	0.01057	-26.02	2.5	-23.74



BT-LE(1Mbps)

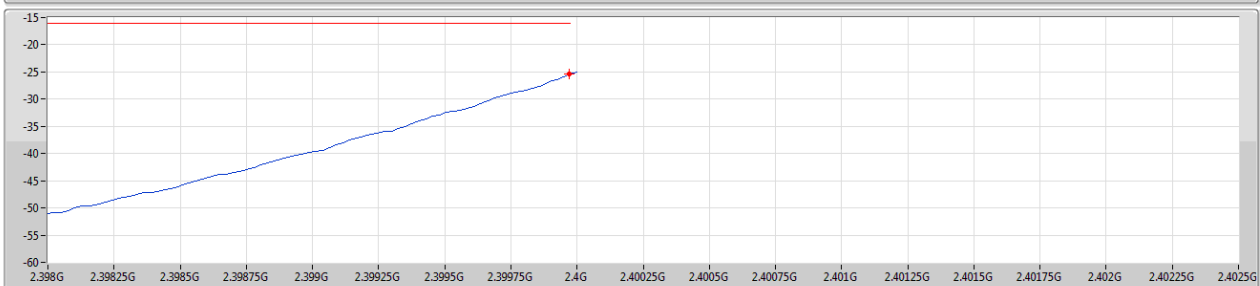
CSE-TX-DTS

2402MHz\_TnomVnom



28/08/2019

Limit  
Port1

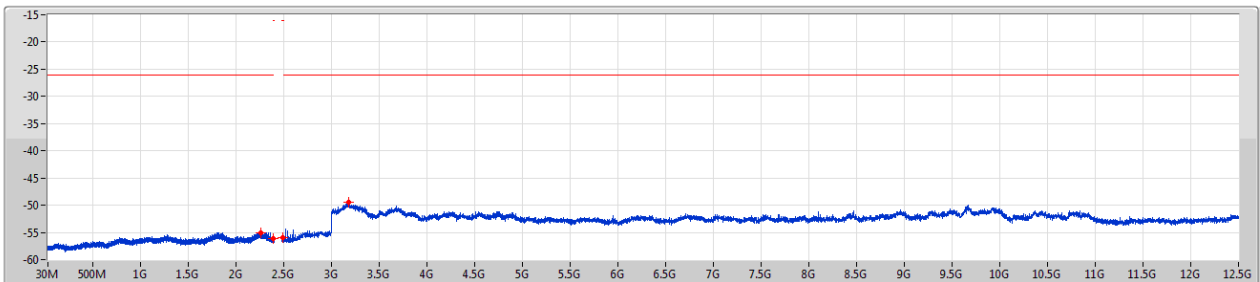


F-Start(Hz)	F-Stop(Hz)	Freq(Hz)	Psum(dBm)	Limit(dBm)	Margin(dB)	P1(dBm)
30M	2.387G	2.23792G	-54.91	-26.02	-28.89	-54.91
2.387G	2.4G	2.39997G	-25.44	-16.02	-9.42	-25.44
2.4835G	2.4965G	2.49263G	-56.40	-16.02	-40.38	-56.40
2.4965G	12.5G	3.16924G	-49.47	-26.02	-23.45	-49.47

BT-LE(1Mbps)

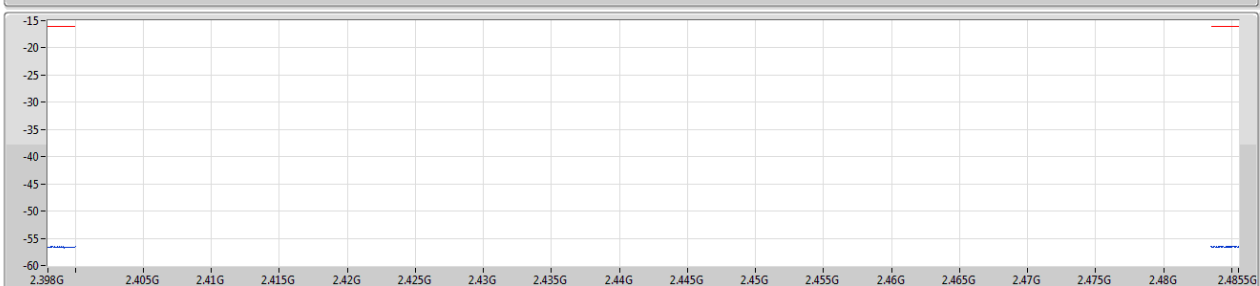
CSE-TX-DTS

2440MHz\_TnomVnom



28/08/2019

Limit  
Port1

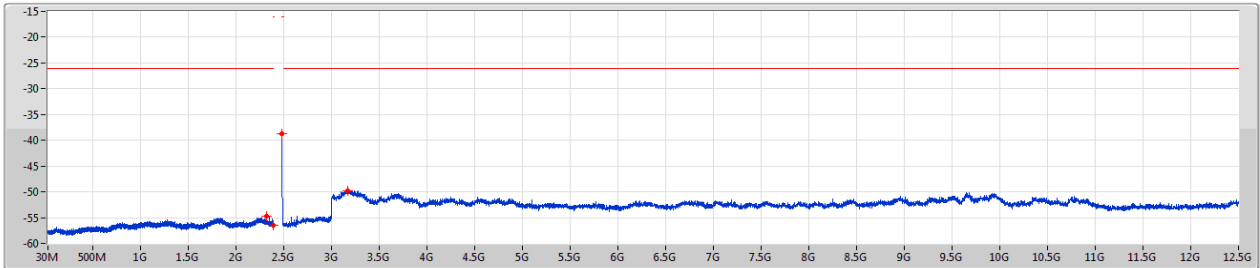


F-Start(Hz)	F-Stop(Hz)	Freq(Hz)	Psum(dBm)	Limit(dBm)	Margin(dB)	P1(dBm)
30M	2.387G	2.25619G	-55.02	-26.02	-29.00	-55.02
2.387G	2.4G	2.38812G	-56.21	-16.02	-40.19	-56.21
2.4835G	2.4965G	2.49211G	-55.93	-16.02	-39.91	-55.93
2.4965G	12.5G	3.18049G	-49.42	-26.02	-23.40	-49.42

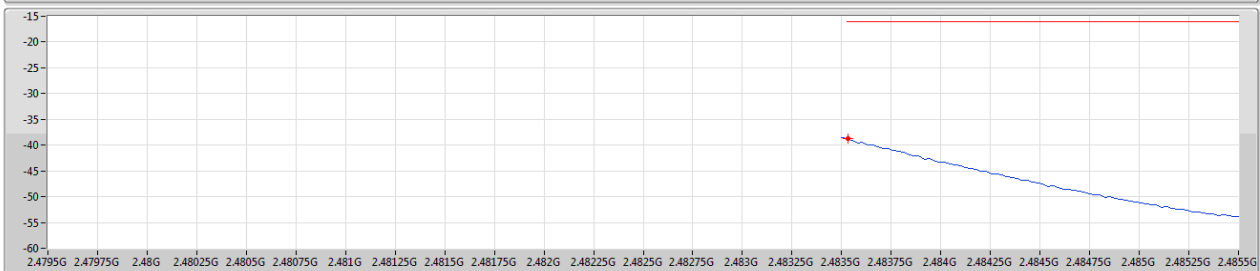
BT-LE(1Mbps)

CSE-TX-DTS

2480MHz\_TnomVnom



28/08/2019  
Limit  
Port 1



F-Start(Hz)	F-Stop(Hz)	Freq(Hz)	Psum(dBm)	Limit(dBm)	Margin(dB)	P1(dBm)
30M	2.387G	2.32395G	-54.79	-26.02	-28.77	-54.79
2.387G	2.4G	2.39444G	-56.45	-16.02	-40.43	-56.45
2.4835G	2.4965G	2.48353G	-38.76	-16.02	-22.74	-38.76
2.4965G	12.5G	3.17049G	-49.76	-26.02	-23.74	-49.76



Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Freq (Hz)	Psum (dBm/MHz)	Psum (uW/MHz)	Limit (dBm/MHz)	Limit (uW/MHz)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.4965G	12.5G	1M	3.15673G	-49.30	0.01175	-26.02	2.5

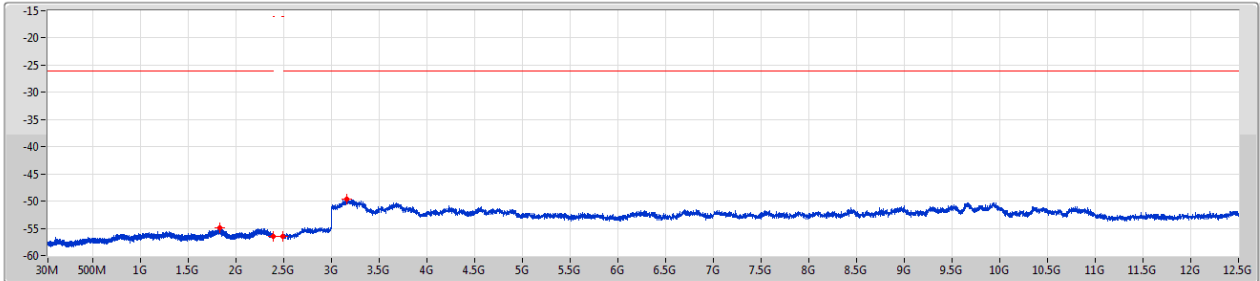
**Result**

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Freq (Hz)	Psum (dBm/MHz)	Psum (uW/MHz)	Limit (dBm/MHz)	Limit (uW/MHz)	Margin (dB)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	30M	2.387G	1M	1.82692G	-54.91	0.00323	-26.02	2.5	-28.89
2402MHz_TnomVnom	Pass	2.387G	2.4G	1M	2.39301G	-56.44	0.00227	-16.02	25	-40.42
2402MHz_TnomVnom	Pass	2.4835G	2.4965G	1M	2.49413G	-56.43	0.00228	-16.02	25	-40.41
2402MHz_TnomVnom	Pass	2.4965G	12.5G	1M	3.15673G	-49.63	0.01089	-26.02	2.5	-23.61
2440MHz_TnomVnom	Pass	30M	2.387G	1M	2.30686G	-54.91	0.00323	-26.02	2.5	-28.89
2440MHz_TnomVnom	Pass	2.387G	2.4G	1M	2.38827G	-56.45	0.00226	-16.02	25	-40.43
2440MHz_TnomVnom	Pass	2.4835G	2.4965G	1M	2.48366G	-56.44	0.00227	-16.02	25	-40.42
2440MHz_TnomVnom	Pass	2.4965G	12.5G	1M	3.15673G	-49.30	0.01175	-26.02	2.5	-23.28
2480MHz_TnomVnom	Pass	30M	2.387G	1M	2.27828G	-55.06	0.00312	-26.02	2.5	-29.04
2480MHz_TnomVnom	Pass	2.387G	2.4G	1M	2.38911G	-56.44	0.00227	-16.02	25	-40.42
2480MHz_TnomVnom	Pass	2.4835G	2.4965G	1M	2.48532G	-56.41	0.00229	-16.02	25	-40.39
2480MHz_TnomVnom	Pass	2.4965G	12.5G	1M	3.17424G	-49.36	0.01159	-26.02	2.5	-23.34

BT-LE(1Mbps)

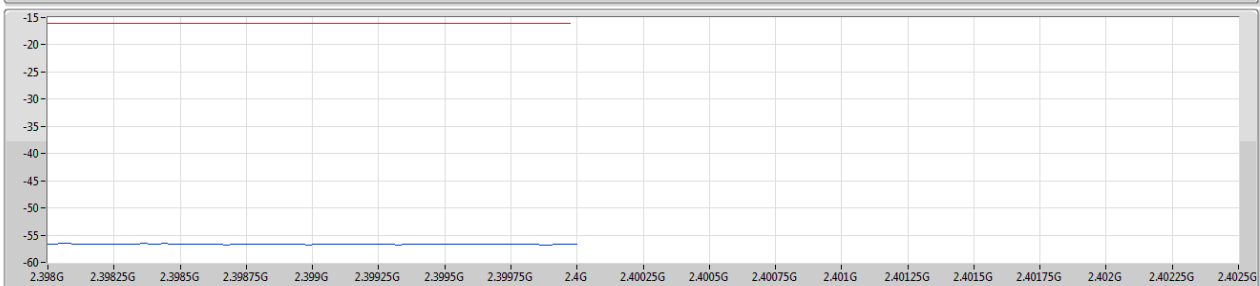
CSE-RX-DTS

2402MHz\_TnomVnom



28/08/2019

Limit  
Port 1

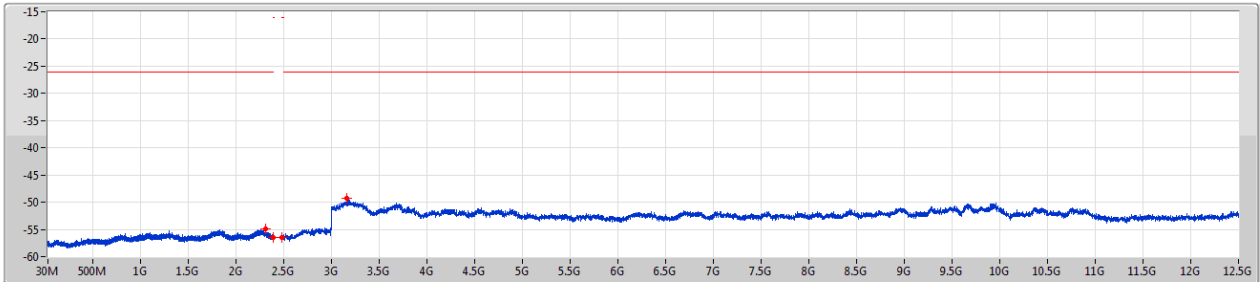


F-Start(Hz)	F-Stop(Hz)	Freq(Hz)	Psum(dBm)	Limit(dBm)	Margin(dB)	P1(dBm)
30M	2.387G	1.82692G	-54.91	-26.02	-28.89	-54.91
2.387G	2.4G	2.39301G	-56.44	-16.02	-40.42	-56.44
2.4835G	2.4965G	2.49413G	-56.43	-16.02	-40.41	-56.43
2.4965G	12.5G	3.15673G	-49.63	-26.02	-23.61	-49.63

BT-LE(1Mbps)

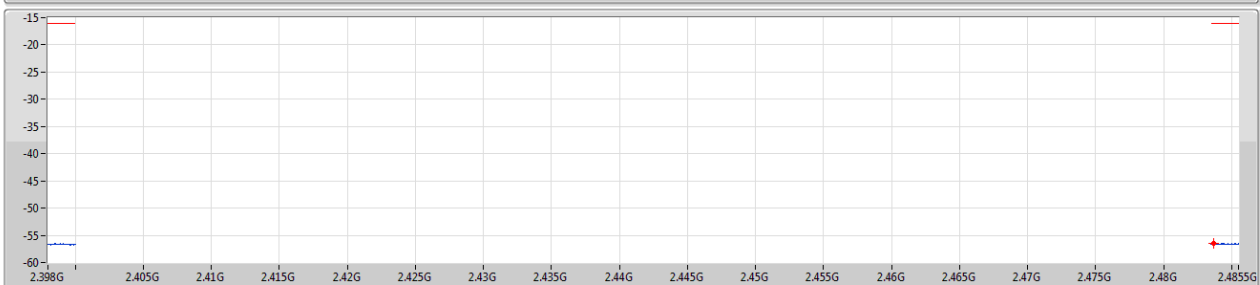
CSE-RX-DTS

2440MHz\_TnomVnom



28/08/2019

Limit  
Port 1



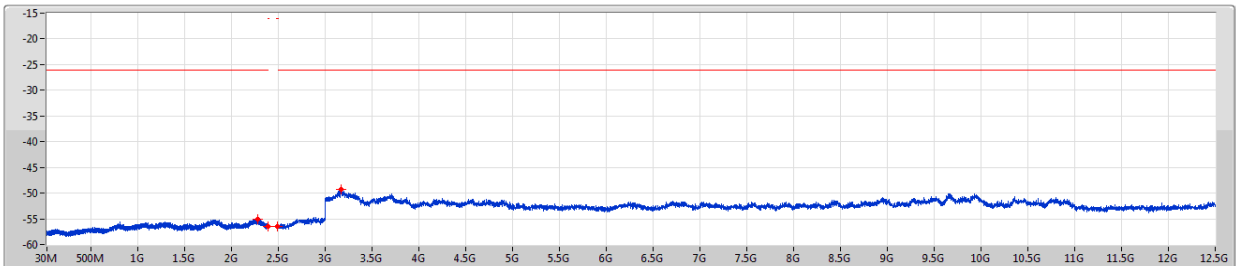
F-Start(Hz)	F-Stop(Hz)	Freq(Hz)	Psum(dBm)	Limit(dBm)	Margin(dB)	P1(dBm)
30M	2.387G	2.30686G	-54.91	-26.02	-28.89	-54.91
2.387G	2.4G	2.38827G	-56.45	-16.02	-40.43	-56.45
2.4835G	2.4965G	2.48366G	-56.44	-16.02	-40.42	-56.44
2.4965G	12.5G	3.15673G	-49.30	-26.02	-23.28	-49.30

BT-LE(1Mbps)

CSE-RX-DTS

2480MHz\_TnomVnom

28/08/2019

Limit  
Port 1

F-Start(Hz)	F-Stop(Hz)	Freq(Hz)	Psum(dBm)	Limit(dBm)	Margin(dB)	P1(dBm)
30M	2.387G	2.27828G	-55.06	-26.02	-29.04	-55.06
2.387G	2.4G	2.38911G	-56.44	-16.02	-40.42	-56.44
2.4835G	2.4965G	2.48532G	-56.41	-16.02	-40.39	-56.41
2.4965G	12.5G	3.17424G	-49.36	-26.02	-23.34	-49.36

**Summary**

Mode	Result	MAC	ID Length	ID Limit	Function
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	Pass	04:D9:F5:BF:A9:2D	48 bits	48 bits	Good

**Result**

Mode	Result	ID Length	ID Limit	Function
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	48 bits	48 bits	Good
2440MHz_TnomVnom	Pass	48 bits	48 bits	Good
2480MHz_TnomVnom	Pass	48 bits	48 bits	Good