

TEST REPORT

Application No.: BTEK260227005A01E01
Applicant: LTL Relation Co., Ltd.
Address of Applicant: 103-0004 Tokyo, Chuo-ku, Higashinohonbashi 2-25-8 Mitsui Higashinohonbashi Biru 5F
Manufacturer: Dongguan G.K Technology Co.,Ltd
Address of Manufacturer: No. 7, Donger Street, Xingfa South Road, Wusha, Chang'an Town, Dongguan City, Guangdong, China
Equipment Under Test (EUT):
EUT Name: Bluetooth headphones
Model No.: TWSOP03
Adding Model(s): /
Trade Mark: /
Standard(s) : MIC Item 19 of Article 2 Paragraph 1
MIC Notice No.88 Appendix No. 43
Date of Receipt Sample(s): 2026-02-28
Date of Test: 2026-02-28 to 2026-03-02
Date of Issue: 2026-03-03

Test Result:**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

Alex. Wang

Alex Wang/ Approved & Authorized
EMC Laboratory Manager



Revision Record			
Version	Issue Date	Revisions	Remarks
V0	2026-03-03	Initial	Valid

Authorized for issue by:			
		Karl Liu	
		Karl Liu / File Editor	
		June Li	
		June Li/Reviewer	

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.



2 Test Summary

Item	Method	Requirement	Result
Antenna Requirement	N/A	MIC Item 19 of Article 2 Paragraph 1	Pass
Interference prevention capability	MIC Notice No.88 Appendix No.43	MIC Item 19 of Article 2 Paragraph 1	Pass
RF accessibility	N/A	MIC Item 19 of Article 2 Paragraph 1	Pass

Item	Method	Requirement	Result
Frequency Error	MIC Notice No.88 Appendix No.43	MIC Item 19 of Article 2 Paragraph 1	Pass
Occupied Bandwidth(99%)	MIC Notice No.88 Appendix No.43	MIC Item 19 of Article 2 Paragraph 1	Pass
Spread spectrum Bandwidth(90%)	MIC Notice No.88 Appendix No.43	MIC Item 19 of Article 2 Paragraph 1	Pass
Antenna Power	MIC Notice No.88 Appendix No.43	MIC Item 19 of Article 2 Paragraph 1	Pass
Dwell time	MIC Notice No.88 Appendix No.43	MIC Item 19 of Article 2 Paragraph 1	Pass
Spurious emission Intensity	MIC Notice No.88 Appendix No.43	MIC Item 19 of Article 2 Paragraph 1	Pass
Limit of secondary radiated emissions	MIC Notice No.88 Appendix No.43	MIC Item 19 of Article 2 Paragraph 1	Pass



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4 General Information

4.1 Details of E.U.T.

Power supply:	Type-C INPUT: DC 5V 1A, Output DC 5V 0.2 to Headphone storage box Headphone storage box output:DC 3.7V 200mAh to earphones Earphones battery capacity:3.7V 40mAh 0.148wh
Bluetooth Version:	V5.3
Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Channel Spacing:	1MHz
Number of Channels:	79
Antenna Type:	Ceramic chip antenna
Antenna Gain:	2.7dBi
Hardware Version	C01-V2.0
Software Version	V1
Model(s) Difference Statement	☒ Singel Model.
	☐ Multi-Models:

4.2 Test Conditions

Supply Voltage				
	EUT supply power V	module input power V	Rated module power V	Tolerance (%)
Normal	3.70	3.3	3.3	
+10%	4.08	3.3	3.3	
-10%	3.32	3.3	3.3	
Others				
Temperature (°C)		23.8		
Relative humidity		62 %.		
ATM Pressure:		1017 mbar		
Note 1: When the input voltage is reduced or increased by 10%, the regulator voltage changes of less than 1%. So the following test items are conducted in the normal voltage.				

BDR/EDR	
Channel	Frequency (MHz)
00	2402
01	2403
:	:
39	2441
:	:
77	2479
78	2480



Test Mode List		
Test Mode	Description	Remark
1	Low/Middle/High Channel	DH5,2DH5,3DH5
2	Hoppling	DH5,2DH5,3DH5
Remark: Through pre-scan found the worst case is the lowest channel. Only show the DH5,2DH5,3DH5 worst case in the test report		

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--
The EUT has been tested as an independent unit.			

4.4 Measurement Uncertainty

Test Item	Measurement Uncertainty
Frequency Error	$\pm 7.25 \times 10^{-8}$
Occupied Bandwidth(99%)	$\pm 3\%$
Spread spectrum Bandwidth(90%)	$\pm 3\%$
Antenna Power	$\pm 0.75\text{dB}$
Dwell time	$\pm 0.37\%$
Spurious emission Intensity	$\pm 0.75\text{dB}$
Limit of secondary radiated emissions	$\pm 0.75\text{dB}$

4.5 Test Location

All tests were performed at:

Shenzhen BANTEK Testing Co., Ltd.

A5&A6, Building B1&B2, No.45 Gangtuo Road, Bogang Community, Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104

Tel: 0755-2334 4200

Fax: 0755-2334 4200

No tests were sub-contracted.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



5 Equipment List

RF Conducted					
Equipment	Manufacturer	Model No	Serial No	Cal Date	Cal Due Date
Shielding Room	YIHENG ENETRONIC	5.5*3.1*3	YH-BT- 220304-03	2025-02-15	2028-02-14
EXA Signal Analyzer	KEYSIGHT	N9020A	MY54230486	2025-06-19	2026-06-18
DC Power Supply	E3632A	E3642A	KR75304416	2025-06-19	2026-06-18
Attenuator	RswTech	SMA-JK-6dB	N/A	2025-06-19	2026-06-18
Attenuator	RswTech	SMA-JK-3dB	N/A	2025-06-19	2026-06-18
RF Control Unit	Techy	TR1029-1	N/A	2025-06-19	2026-06-18
RF Sensor Unit	Techy	TR1029-2	N/A	2025-06-19	2026-06-18
WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	141258	2025-06-19	2026-06-18
MXG Vector Signal Generator	Agilent	N5182A	US46240522	2025-06-19	2026-06-18
Programmable Temperature&Humidity Chamber	GRT	GR-HWX1000	GR22051001	2025-06-19	2026-06-18
Measurement Software	TACHOY	RF TestSoft	N/A	N/A	N/A
Digital Oscilloscope	TEKTRONIX	TBS1102C	C022775	2025-06-19	2026-06-18

Calibration laboratory: Ti Testing & Certification Group Co., Ltd. Shenzhen Branch

Calibration Method:

- ☐ (a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) 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 Act
- ☒ (c) Calibration conducted in foreign countries, which is equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1), Radio Act
- ☐ (d) Calibration, etc. conducted by using measuring instruments and other equipment listed in the right column of appended table No.3, Radio Act, which is to have been given any type of calibration, etc. listed above from (a) through (c)



6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

MIC Item 19 of Article 2 Paragraph 1

6.1.2 Conclusion

This product has a permanent antenna, fulfill the requirement of this section.



6.2 Interference prevention capability

6.2.1 Test Requirement:

MIC Item 19 of Article 2 Paragraph 1

Limit: The device shall have the function of automatic transmission or reception of identification code.

6.2.2 Conclusion

Standard Requirement:

1) Measurement system diagram as shown above and test equipment keep transmitting identification code.

2) Condition of measuring instrument

(1) Demodulator must be able to demodulate the transmitting signal emitted by test equipment and to indicate the identification code.

3) Condition of test equipment The mode of normal use.

4) Measuring operation procedure

(1) When test equipment has the function to transmit identification code automatically:

A) Transmit the predetermined identification code from test equipment.

B) Confirm the transmitted identification code by demodulator.

EUT Details:

41:42:FF:FF:28:06

The unit does meet the requirements (Good).



6.3 RF accessibility

6.3.1 Test Requirement:

MIC Item 19 of Article 2 Paragraph 1

6.3.2 Conclusion

Standard Requirement:

The EUT shall be constructed in such a way that sensitive RF parts, (like modulation and oscillator parts) cannot be reached easily by the user. These parts shall be covered by soldered metal caps or glue or by other mechanical covers. If the covers are fixed with screws, these shall be not the common type(s) like a Phillips, but special versions like Torx, so that the user cannot open the device with common tools.

EUT Details:



Construction Protection Confirmation Method

☐	The product RF module is protected by a metal shield, which cannot be easily opened by the user. Detail please see the photo.
☐	The RF module IC of this product has __pins more than 10, and the distance between the pins is __mm<1mm, so it is not easy for users to change the RF circuit.. Detail please see the photo.
☐	The product's shell uses a special snap that cannot be opened easily and requires a special tool to open it.
☒	The Product shell is sealed by Glue, it cannot be easily open, and otherwise it will be damaged. Detail please see the photo.

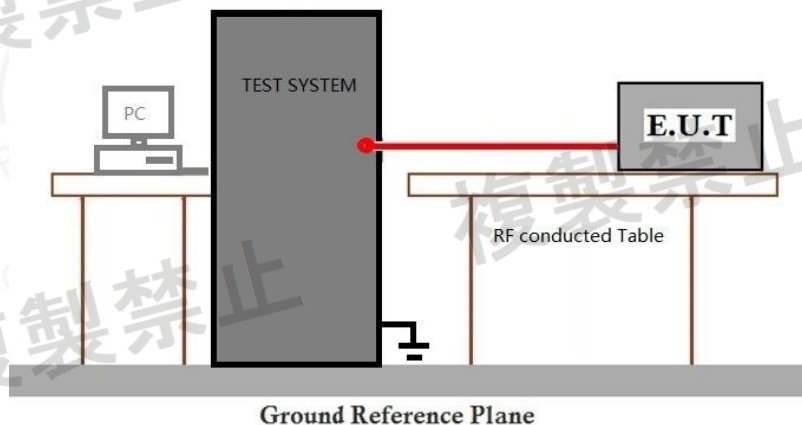


7 Radio Spectrum Matter Test Results

7.1 Frequency Error

Test Requirement	MIC Item 19 of Article 2 Paragraph 1
Test Method:	MIC Notice No.88 Appendix No.43
Limit:	Tolerance of frequency: $\pm 50E-6$

7.1.1 Test Setup Diagram



7.1.2 Measurement Procedure and Data

- Test Conditions:
Spectrum Analyzer is used for measurement.
- EUT conditions:
Modulation/Spread/Hopping OFF, CW Tx
- Spectrum Analyzer conditions:
Frequency: Test Frequency
Span 1MHz
RBW 10 kHz (Modulation OFF),
VBW 30 kHz (Modulation OFF),
Sweep Time Auto
Detector mode Positive peak
Indication mode Max hold
Alternative method:
Frequency: Test Frequency
Span 2 times channel bandwidth
RBW 100 kHz (Modulation ON),
VBW 100 kHz (Modulation ON),
Sweep Time Auto
Detector mode Positive peak
Indication mode Max hold

Please Refer to Appendix for Details



7.2 Occupied Bandwidth(99%)

Test Requirement MIC Item 19 of Article 2 Paragraph 1

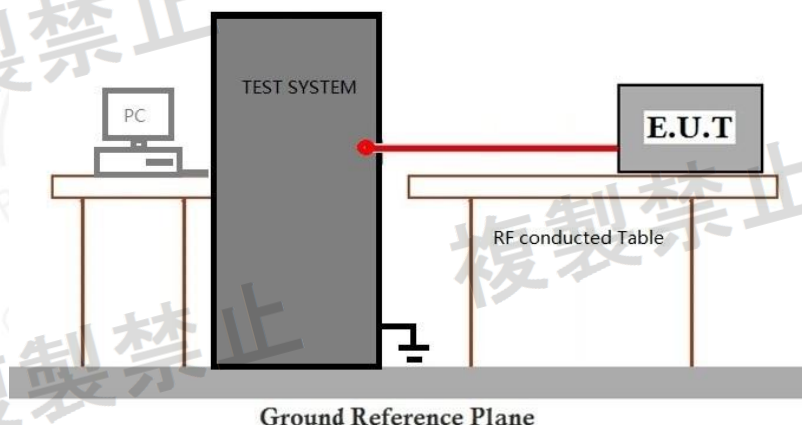
Test Method: MIC Notice No.88 Appendix No.43

Limit:

83.5MHz for FHSS

For DS system;(Spreading bandwidth) / (Frequency corresponding to transmission rate) ≥ 5

7.2.1 Test Setup Diagram



7.2.2 Measurement Procedure and Data

1. Test Conditions:

Spectrum Analyzer is used for measurement.

2. EUT conditions:

Modulation/Spread/Hopping ON, Modulation Tx

For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

3. Spectrum Analyzer conditions:

Frequency: Test Frequency

Span 83.5 MHz (FHSS); 40/60 MHz (OFDM; DSSS); 2-5 times OBW (Others)

RBW 1 MHz (FHSS); 300kHz (OFDM; DSSS); 3% OBW (Others)

VBW 3 MHz (FHSS); 300kHz (OFDM; DSSS); 3 times RBW (Others)

Sweep Time Auto

detector mode Positive peak

Indication mode Max hold

OBW 99%

Please Refer to Appendix for Details



7.3 Spread spectrum Bandwidth(90%)

Test Requirement MIC Item 19 of Article 2 Paragraph 1

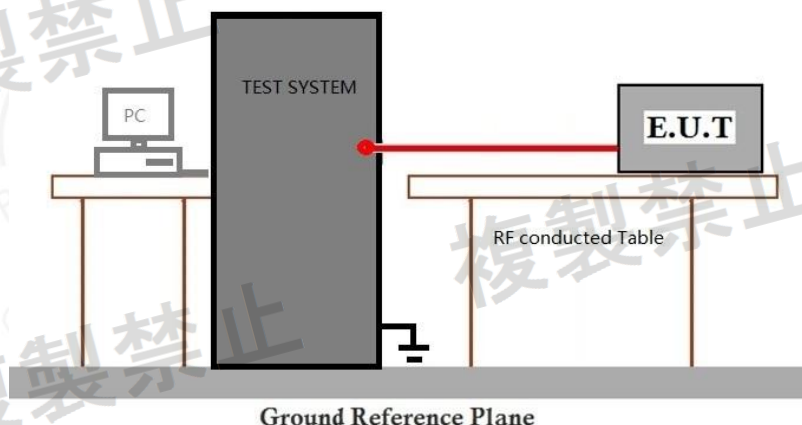
Test Method: MIC Notice No.88 Appendix No.43

Limit:

DS, FH, FH+DS, FH+OFDM: 500kHz or more

For DS system;(Spreading bandwidth) / (Frequency corresponding to transmission rate) ≥ 5

7.3.1 Test Setup Diagram



7.3.2 Measurement Procedure and Data

1. Test Conditions:

Spectrum Analyzer is used for measurement.

2. EUT conditions:

Modulation/Spread/Hopping ON, Modulation Tx

For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

3. Spectrum Analyzer conditions:

Frequency: Test Frequency

Span 83.5 MHz (FHSS); 40/60 MHz (OFDM; DSSS)

RBW 1 MHz (FHSS); 300kHz (OFDM; DSSS)

VBW 3 MHz (FHSS); 300kHz (OFDM; DSSS)

Sweep Time Auto

detector mode Positive peak

Indication mode Max hold

OBW 90%

Please Refer to Appendix for Details



7.4 Antenna Power

Test Requirement MIC Item 19 of Article 2 Paragraph 1

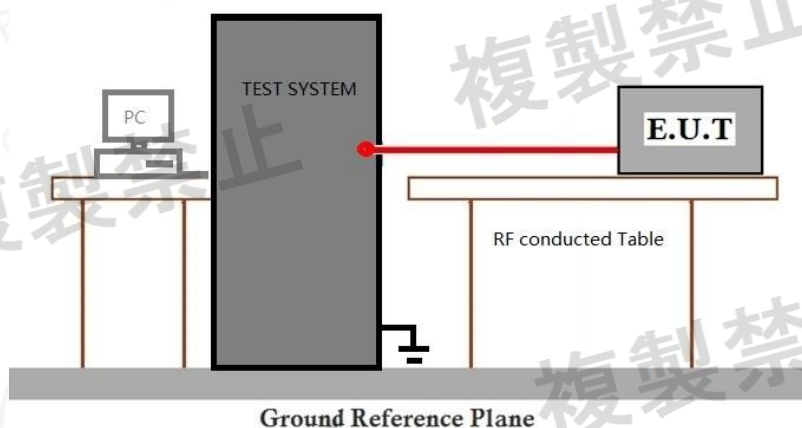
Test Method: MIC Notice No.88 Appendix No.43

Limit:

Designated value

- (1) FH, FH+DS, FH+OFDM: 3mW/MHz
(used in the range of 2427 - 2470.75 MHz)
 - (2) OFDM, DS other than (1) 10mW/MHz
 - (3) Other than (1) & (2) 10mW
 - (4) OFDM OBW 26 - 38MHz: 5mW/MHz
- Tolerance: +20%

7.4.1 Test Setup Diagram



7.4.2 Measurement Procedure and Data

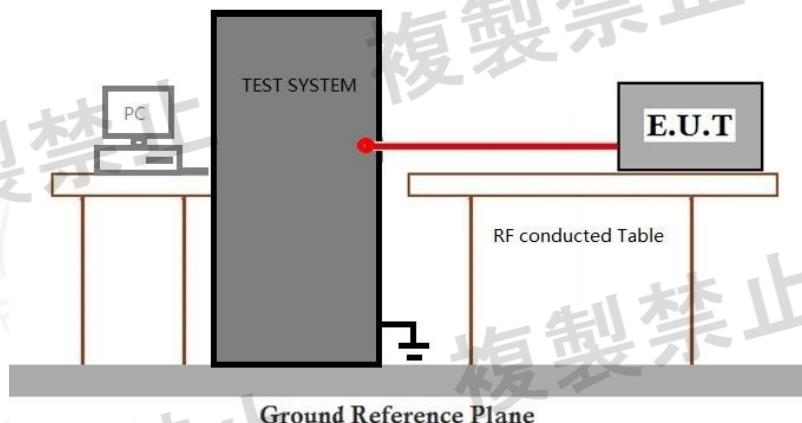
Please Refer to Appendix for Details



7.5 Dwell time

Test Requirement	MIC Item 19 of Article 2 Paragraph 1
Test Method:	MIC Notice No.88 Appendix No.43
Limit:	Less than 0.4sec

7.5.1 Test Setup Diagram



7.5.2 Measurement Procedure and Data

1. Test Conditions:

Spectrum Analyzer is used for measurement.

2. EUT conditions:

Modulation/Spread/Hopping ON, Hopping frequency is fixed, Bluetooth equipment is setting DH5 mode

For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

3. Spectrum Analyzer conditions:

Frequency: Test Frequency (fixed hopping frequency)

Span 0 Hz

RBW 1 MHz

VBW 1 MHz

Sweep Time EUT condition

Trigger Video Trigger

Measures the Transmission time of 1 burst (sec)

Measures the Burst cycle (sec)

4. Calculation procedure:

Dwell time = $(0.4(s) \times [\text{spreading rate}] \times [\text{Transmission time of 1 burst(s)}]) / ([\text{burst cycle(s)}] \times [\text{No. of hopping channel}])$

Note:

* Spreading rate = $[\text{Spread bandwidth (actual measurement value)}] / [\text{Transmission rate}]$

Please Refer to Appendix for Details



7.6 Spurious emission Intensity

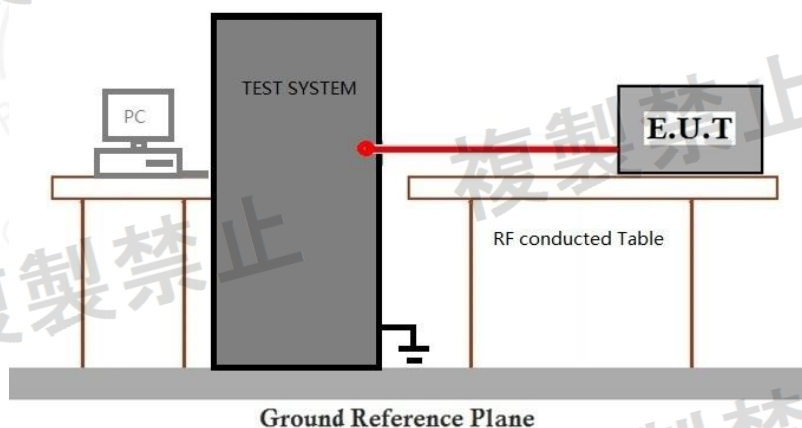
Test Requirement MIC Item 19 of Article 2 Paragraph 1

Test Method: MIC Notice No.88 Appendix No.43

Limit:

- (1) Below 2387 MHz: $2.5 \mu\text{W/MHz}$
- (2) 2387 to 2400 MHz: $25 \mu\text{W/MHz}$
- (3) 2483.5 through 2496.5 MHz: $25 \mu\text{W/MHz}$
- (4) Over 2496.5 MHz: $2.5 \mu\text{W/MHz}$

7.6.1 Test Setup Diagram



7.6.2 Measurement Procedure and Data

1. Test Conditions:

Spectrum Analyzer is used for measurement.

2. EUT conditions:

Modulation/Spread/Hopping ON, , Modulation Tx

For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

3. Spectrum Analyzer conditions:

Step 1

All spurious are measured from 30 MHz to 13 GHz by peak mode.

Step 2

IF the value measured by Step1 is 2 dB or less, measure in average mode.

Test setup for Step 1:

Frequency: 30 MHz - 2400 MHz , 2483.5 MHz -13 GHz

RBW 1 MHz

VBW 1 MHz

Sweep Time Auto

detector mode Positive peak

Indication mode Max hold

Test setup for Step 2:

Frequency: Spurious Frequency

RBW 1 MHz

VBW 1 MHz

Sweep Time Auto

detector mode Sample

Indication mode Max hold



Please Refer to Appendix for Details

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複製禁止

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7.7 Limit of secondary radiated emissions

Test Requirement MIC Item 19 of Article 2 Paragraph 1

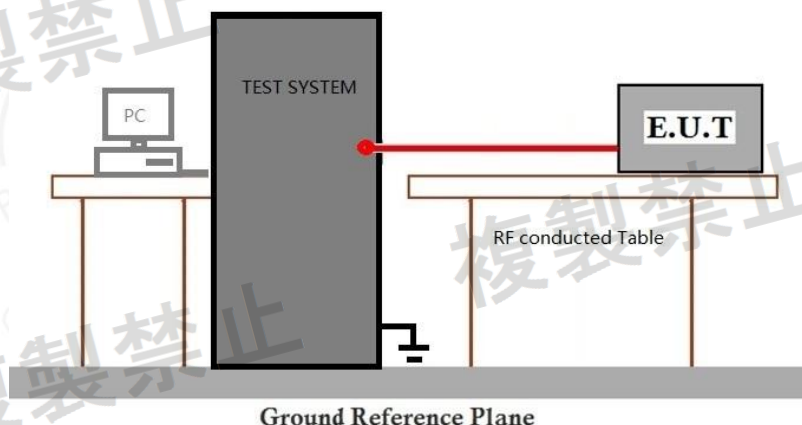
Test Method: MIC Notice No.88 Appendix No.43

Limit:

(1) Below 1 GHz: 4 nW or less

(2) 1 GHz and over: 20 nW or less

7.7.1 Test Setup Diagram



7.7.2 Measurement Procedure and Data

1. Test Conditions:

Spectrum Analyzer is used for measurement.

2. EUT conditions:

Modulation/Spread/Hopping ON

For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

3. Spectrum Analyzer conditions:

Step 1

All spurious are measured from 30 MHz to 13 GHz by peak mode.

Step 2

IF the value measured by Step1 is 2 dB or less, measure in average mode.

Test setup for Step 1:

Frequency: 30 MHz - 2400 MHz , 2483.5 MHz -13 GHz

RBW 100 kHz (30 - 1GHz) , 1 MHz (over 1GHz)

VBW 100 kHz (30 - 1GHz) , 1 MHz (over 1GHz)

Sweep Time Auto

detector mode Positive peak

Indication mode Max hold

Test setup for Step 2:

Frequency: Spurious Frequency

Span 0 Hz

RBW 100 kHz (30 - 1GHz) , 1 MHz (over 1GHz)

VBW 100 kHz (30 - 1GHz) , 1 MHz (over 1GHz)

Sweep Time Auto

detector mode Sample

Indication mode Max hold

Please Refer to Appendix for Details



8 Test Setup Photo



9 EUT Constructional Details (EUT Photos)

Please Refer to Appendix - Photographs of EUT Constructional Details for BTEK260227005A01E01.

- End of the Report -

