

RF - TEST REPORT

Report Number : **64.940.16.06187.01R** Date of Issue: **May 23, 2017**

Model : **P326.833**

Product Type : **Notos Bluetooth speaker**

Applicant : **Xindao B.V.**

Address : **Verrijn Stuartlaan 1d, 2288 EK Rijswijk, THE NETHERLANDS**

Production Facility : **Xindao B.V.**

Test Result : ☒ **Positive** ☐ **Negative**



Total pages including Appendices : **32**

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Table of Contents

1	Report Version	3
2	General Information	4
2.1	Notes	4
2.2	Testing Laboratory	5
2.3	Application Details	5
2.4	Applied Standard	6
2.5	Test Summary	6
Table1. Summary of results		6
3	Equipment Specification.....	7
3.1	General Description	7
3.2	Technical Data	7
Table 2 Work Frequency.....		7
4	Product Description –manufacturer description	8
4.1	Type of Equipment	8
4.2	Extreme operating condition as declared by manufacturer	8
4.3	Type of FHSS used	8
4.4	FHSS parameters.....	9
4.5	Transmit operating mode	9
4.6	Operating Frequency Range	9
4.7	Modulation type	9
4.8	Occupied frequency bandwidth (single frequency hopping)	10
4.9	Equipment type tested path	10
4.10	Type of antenna	10
4.11	Additional information	10
5	Measurements Result	12
5.1	Maximum transmit power	12
5.2	Occupied Channel Bandwidth	14
5.3	Maximun Accumulated Dwell Time, Minimum Frequency Occupation Time and Hopping Sequence.....	17
5.4	Hopping Frequency Separation	19
5.5	Transmitter unwanted emissions in the out-of-band domain	20
5.6	Spurious emissions	22
Radiated Spurious Emissions Limits for Transmitter.....		24
Radiated Spurious Emissions Limits for Receiver		24
6	Main Test Instruments	28
7	System Measurement Uncertainty.....	29
8	Estimation of Exposure of Human to Electromagnetic Fields	30
9	Photographs of Test Set-up	31
10	Photographs of EUT	32

1 Report Version

Revision	Release Date	History/Memo.
1.0	2017-05-23	Initial Release

2 General Information

2.1 Notes

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Prepared By

2017-05-23

Date

Wendy Ye

Name



Approved by

2017-05-23

Date

Peter Jia

Name

Signature

2.2 Testing Laboratory

Test Laboratory:

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Address: Building 12&13, Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2, Nanshan District,
Shenzhen City, 518052,
P. R. China

Phone: +86-755-8828 6998

Fax: +86-755-8828 5299

2.3 Application Details

Date of receipt of order:	2017-01-09
Date of receipt of test item:	2017-01-09
Date of test:	2017-01-09 to 2017-01-11

2.4 Applied Standard

Test Standards	
EN 300 328 V1.9.1 (2015-02)	Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
EN 62479:2010	Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)

2.5 Test Summary

Table1. Summary of results

Conformance requirement according to ETSI EN 300 328 V1.9.1 (2015-02)		Result
Essential parameter	Corresponding technical requirements	
Transmitter requirements	4.3.1.2 RF output power	PASS
	4.3.1.3 Duty Cycle, Tx-sequence, Tx-gap (apply to non-adaptive frequency hopping equipment or to adaptive frequency hopping equipment operating in a non-adaptive mode)*	N/A
	4.3.1.4 Dwell time, Minimum Frequency Occupation and Hopping Sequence	PASS
	4.3.1.5 Hopping Frequency Separation	PASS
	4.3.1.6 Medium Utilisation (MU) factor (does not apply to adaptive equipment unless operating in a non-adaptive mode.) *	N/A
	4.3.1.7 Adaptivity (Adaptive Frequency Hopping) (does not apply to non-adaptive equipment or adaptive equipment operating in a non-adaptive mode)*	N/A
	4.3.1.8 Occupied Channel Bandwidth	PASS
	4.3.1.9 Transmitter unwanted emissions in the out-of-band domain	PASS
	4.3.1.10 Transmitter unwanted emissions in the spurious domain	PASS
Receiver requirements	4.3.1.11 Receiver spurious emissions	PASS
	4.3.1.12 Receiver Blocking (does not apply to non-adaptive equipment or adaptive equipment operating in a non-adaptive mode)*	N/A

Note1: NA = Not Applicable; NP = Not Performed

Note2: Measurement taken is within the measurement uncertainty of measurement system.

Note3: “*” This requirement does not apply to adaptive equipment unless operating in a non-adaptive mode.

Note4: “***” These requirements do not apply for equipment with a maximum declared RF Output power of less than 10 dBm e.i.r.p.

3 Equipment Specification

3.1 General Description

The EUT is a Bluetooth speaker which can play music by connecting BT.
This test report is only for BT4.1 function.

3.2 Technical Data

Description:	Bluetooth speaker
Model:	P326.833
Hardware edition	BK3254 Datasheet v0.5, LP4054-datasheet V1.0
Software version	BK3254-32J-Vibe speaker-PWD-MIC-BT-AUX-YSS-V16-20170510_JT5_8f28_TD5_B365.BK1
Input Rated Voltage:	5VDC

Table 2 Work Frequency

Mode	Work Frequency	
	Transmitt Frequency (MHz)	Receive Frequency (MHz)
Bluetooth	2402MHz-2480 MHz	2402MHz-2480 MHz



Figure 1. P326.833

4 Product Description –manufacturer description

4.1 Type of Equipment

<input checked="" type="checkbox"/> Bluetooth	<input type="checkbox"/> IEEE 802.11	<input type="checkbox"/> Zigbee IEEE 802.15	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> Stand-alone	<input type="checkbox"/> Plug-in radio	<input type="checkbox"/> Combined equipment	<input type="checkbox"/> Other

4.2 Extreme operating condition as declared by manufacturer

EXTREME TEMPERATURE RANGE [manufacturer declared]			
Environment class /Operating Temperature	TL = Minimum Temperature [°C]	TN = Normal Temperature [°C]	TH = Maximum Temperature [°C]
<input type="checkbox"/> Outdoor and indoor usage	-20	25	55
<input checked="" type="checkbox"/> Indoor usage only	0	25	35
<input type="checkbox"/> Other [declared by manufacturer in UM]	0		40

Power source description	
<input type="checkbox"/> AC mains voltage	<input checked="" type="checkbox"/> DC voltage Nominal
Type of DC	
<input type="checkbox"/> Internal Power Supply	<input type="checkbox"/> External AC/DC Adapter
<input checked="" type="checkbox"/> Battery	<input checked="" type="checkbox"/> Other:through USB port

4.3 Type of FHSS used

<input type="checkbox"/> Non-adaptive	<input checked="" type="checkbox"/> Adaptive	<input type="checkbox"/> LBT	<input type="checkbox"/> Non LBT
	<input type="checkbox"/> The system can operate in more than one adaptive mode	<input type="checkbox"/> System can operate both adaptive & non adaptive mode	
	<input type="checkbox"/> Frame Based Equipment	<input checked="" type="checkbox"/> Load Based Equipment	
		CCA time implemented [uS]	>20
		q as referred by 4.3.2.5.2.2.2	4-32

4.4 FHSS parameters

Number of hopping frequency *	Dwell time [mS]	Maximum channel occupation time [mS]
79	<400mS	----

4.5 Transmit operating mode

<input checked="" type="checkbox"/>	Single antenna equipment		
<input type="checkbox"/>	Multiple antenna without beam forming		
<input type="checkbox"/>	Multiple antenna with beam forming	Beam forming gain Y =	[dB]

4.6 Operating Frequency Range

Transmitter / Receiver Frequency Range				
[<input checked="" type="checkbox"/>]	Range 1 : from :	2402 MHz	To	2480 MHz
[<input type="checkbox"/>]	Range 2 : from :			
[<input type="checkbox"/>]	Other - (include frequency ranges supported):			

4.7 Modulation type

Modulation type	
<input checked="" type="checkbox"/>	GFSK
<input checked="" type="checkbox"/>	$\pi/4$ -DQPSK
<input checked="" type="checkbox"/>	8DPSK

4.8 Occupied frequency bandwidth (single frequency hopping)

Modulation	GFSK	8DPSK
Bandwidth [MHz]	0.86	1.16

4.9 Equipment type tested path

Transmitter operate modulation:

☒ Bluetooth

☐ IEEE 802.11 [i3]

☐ Other supply full details: _____

4.10 Type of antenna

Type of antenna		
Type of Transmitter's antenna	<input checked="" type="checkbox"/>	Integrated Antenna(s)
	<input type="checkbox"/>	Antenna connector for dedicated antenna(s)
Antenna gain:	0dBi	
Temporary RF connector provided	<input checked="" type="checkbox"/>	
No temporary RF connector provided	<input type="checkbox"/>	

4.11 Additional information

The transmitter can operate only:

☒ Modulated

☐ Un-modulated

ITU Class of emissions 1. 22

Duty Cycle: The transmitter is intended for

☐ Continuous duty

☐ Intermittent duty Cycle :

☒ Continuous operation possible for testing purposes

About the EUT:

- ☒ The equipment submitted are representative production models.
- ☐ If not, the equipment submitted are pre-production models.
- ☐ If preproduction equipment are submitted, the final production equipment will be identical in all respects with the equipment tested.
- ☐ If not, supply full details: _____

5 Measurements Result

5.1 Maximum transmit power

5.1.1 Test condition

Date of testing:	2017-01-09
Test Mode:	Transmitting
Ambient temperature:	23.7°C
Relative humidity:	53.7%
Ambient Pressure	102.0Kpa

5.1.2 Test result

GFSK:

Test condition: GFSK / DH5

Antenna gain: 0dBi

Test method:

[]

Radiated

[☒]

Conducted

Rel. Humidity: 53.7 %

Test results (dBm)

T_{nom}(25°C)

Vnom

0.6

T_{min}(0°C)

Vnom

0.5

T_{max}(35°C)

Vnom

0.5

Limit: 20dBm (100mW)

Measurement uncertainty (dB): ±0.76dB

π/4-DQPSK:

DQPSK:			
Test condition: $\pi/4$ -DQPSK / 2DH5			
Antenna gain: 0dBi			
Test method:		[] Radiated	[<input checked="" type="checkbox"/>] Conducted
Rel. Humidity: 53.7%		Test results (dBm)	
T _{nom} (25°C)	Vnom	-3.3	
T _{min} (0°C)	Vnom	-3.5	
T _{max} (35°C)	Vnom	-3.3	
Limit: 20dBm (100mW)			
Measurement uncertainty (dB): ±0.76dB			

8-DPSK:



Test condition: 8DPSK / 3DH5		
Antenna gain: 0dBi		
Test method: [] Radiated [<input checked="" type="checkbox"/>] Conducted		
Rel. Humidity: 53.7%	Test results (dBm)	
T _{nom} (25°C)	Vnom	-3.3
T _{min} (0°C)	Vnom	-3.5
T _{max} (35°C)	Vnom	-3.4
Limit: 20dBm (100mW)		
Measurement uncertainty (dB): ±0.76dB		

5.1.3 Result

The equipment met the requirement of this clause.

5.2 Occupied Channel Bandwidth

5.2.1 Test condition

Date of testing:	2017-01-09
Test Mode:	Transmitting
Ambient temperature:	23.7°C
Relative humidity:	53.7%
Ambient Pressure	102.0Kpa

5.2.2 Limit

The Occupied Channel Bandwidth (that contains 99 % of the power of the signal) for each hopping frequency shall fall completely within the band given in clause 1.

For non-adaptive Frequency Hopping equipment with e.i.r.p greater than 10 dBm, the Occupied Channel Bandwidth for every occupied hopping frequency shall be equal to or less than the value declared by the supplier. This declared value shall not be greater than 5MHz.

5.2.3 Test Result

Modulation	Channel	Center Frequency	Low frequency (99% power)	High frequency 99% power	Limit [MHz]	Result
GFSK	Bottom	2402MHz	2401.58MHz	--	2400	Pass
GFSK	Top	2480MHz	--	2480.4MHz	2483.5	Pass

Modulation	Channel	Center Frequency	Low frequency (99% power)	High frequency 99% power	Limit [MHz]	Result
8DPSK	Bottom	2402MHz	2401.3MHz	--	2400	Pass
8DPSK	Top	2480MHz	--	2480.6MHz	2483.5	Pass

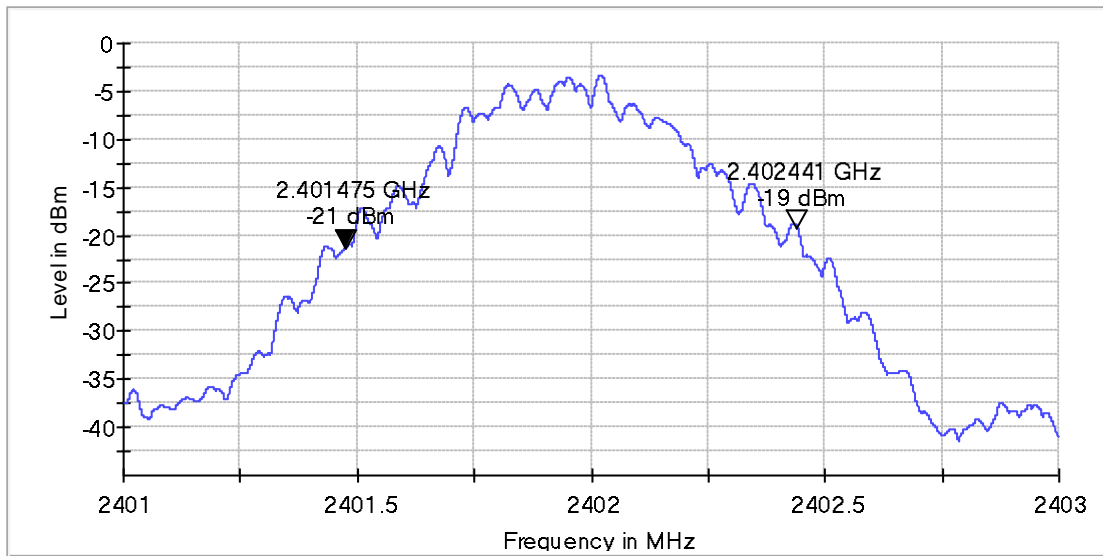
Occupied Bandwidth GFSK Modulation

Frequency	99% Bandwidth (kHz)	Limit [MHz]	Result
2402MHz	965.6	< 5 MHz	Pass
2480MHz	962.6	< 5 MHz	Pass

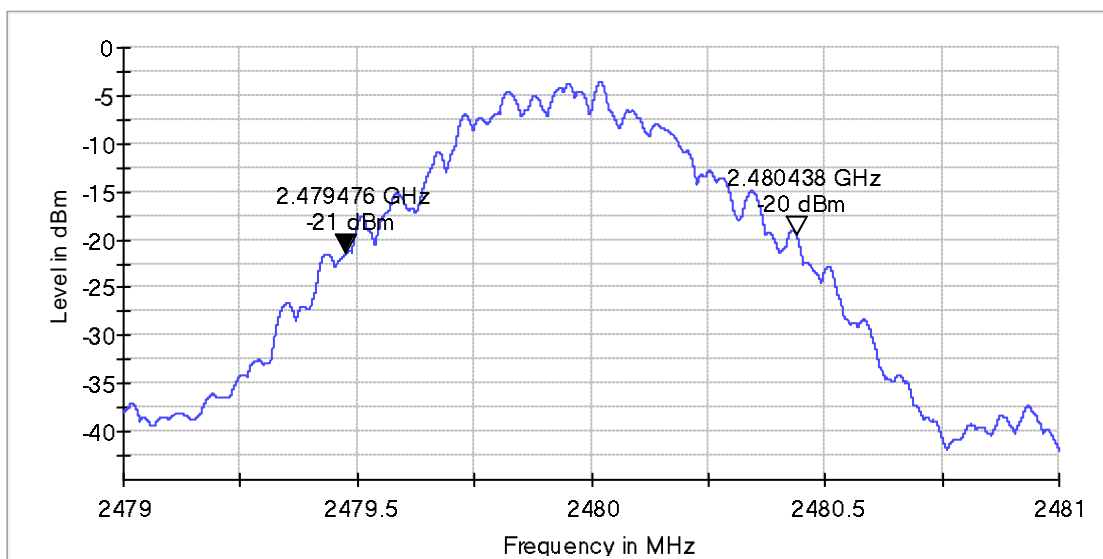
Occupied Bandwidth 8DPSK Modulation

Frequency	99% Bandwidth (kHz)	Limit [MHz]	Result
2402MHz	1226.3	< 5 MHz	Pass
2480MHz	1228.3	< 5 MHz	Pass

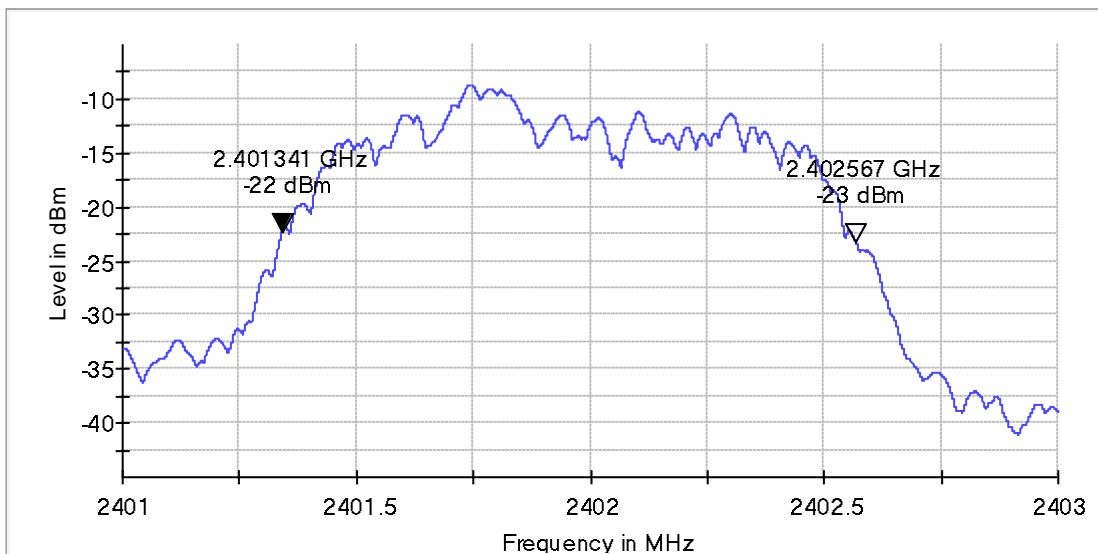
GFSK Modulation: 2402MHz



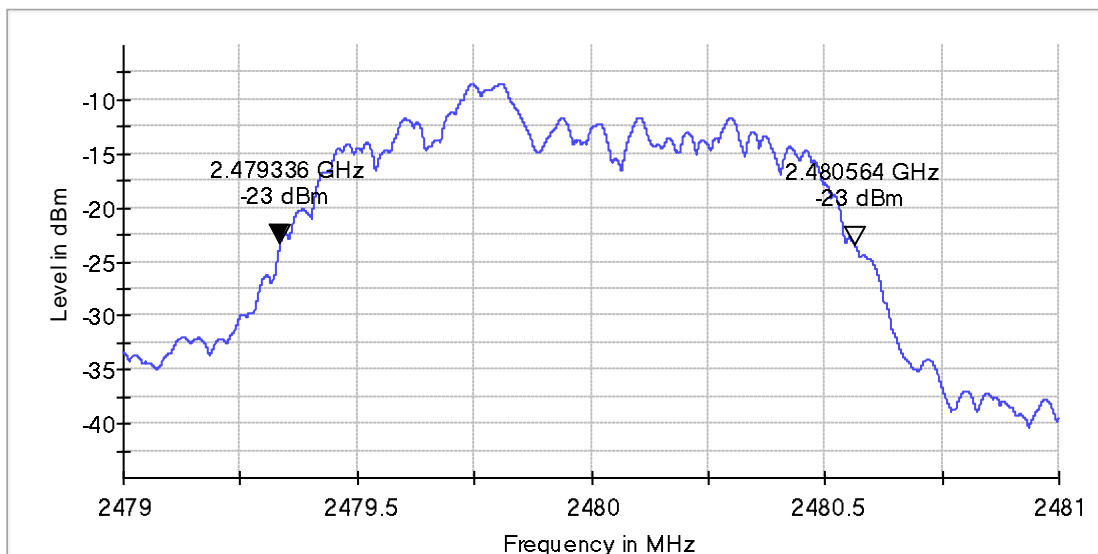
GFSK Modulation: 2480MHz



8DPSK Modulation: 2402MHz



8DPSK Modulation: 2480MHz



5.2.4 Result

The equipment met the requirement of this clause.

5.3 Maximum Accumulated Dwell Time, Minimum Frequency Occupation Time and Hopping Sequence

5.3.1 Test condition

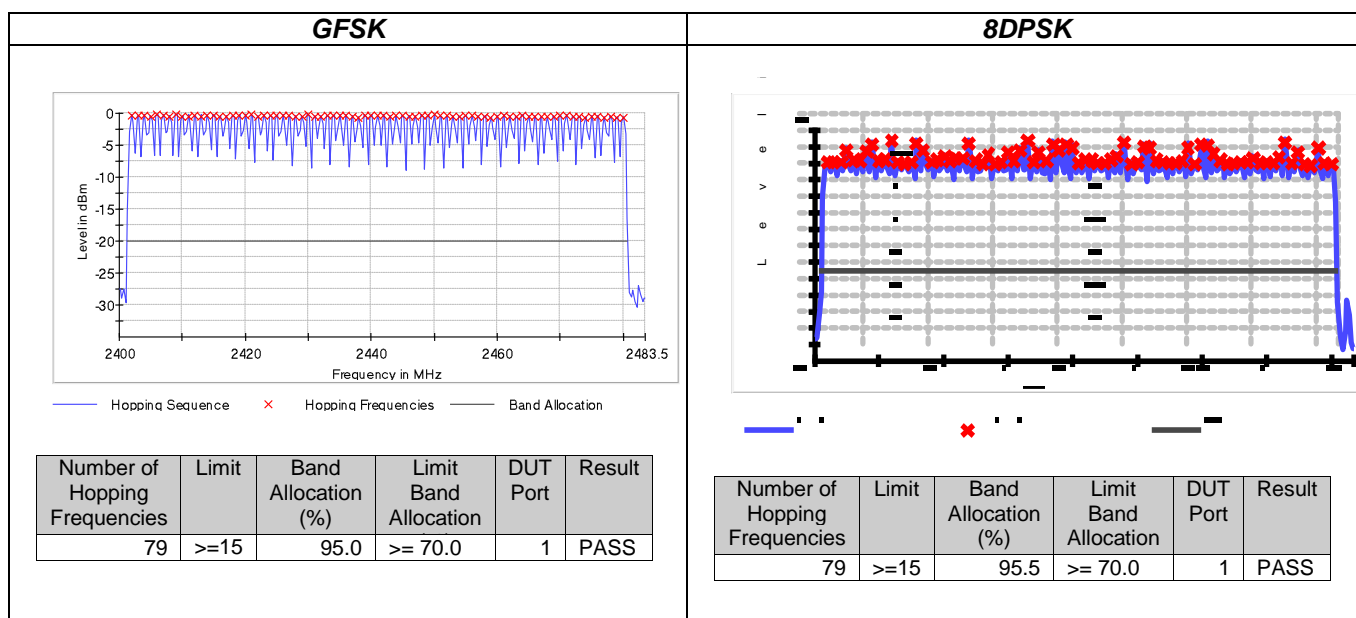
Date of testing:	2017-01-09
Test Mode:	Transmitting
Ambient temperature:	23.7°C
Relative humidity:	53.7%
Ambient Pressure	102.0Kpa

5.3.2 Hopping Sequence

The hopping sequence(s) shall contain for non-adaptive systems at least N hopping frequencies where N is 15 or 15 divided by the minimum Hopping Frequency Separation in MHz, whichever is the greater.

Number of Hopping Frequencies (N)	limit	Test result
79	≥15	Pass

Number of Hopping Frequencies	Limit	Band Allocation (%)	Limit Band Allocation (%)	DUT Port	Result
79	≥ 15	95.5	≥ 70.0	1	PASS



5.3.3 Maximum Accumulated Dwell Time

Test Result (Packet DH5, 3DH5, the worse result was reported to show compliance):

Channel	Modulation	Packet	Accumulated Dwell time (ms)	Limit (ms)
2402 MHz	GFSK	DH5	349.7	400
2480 MHz	GFSK	DH5	349.7	400
2402 MHz	8DPSK	3DH5	332.9	400
2480 MHz	8DPSK	3DH5	349.7	400

5.3.4 Minimum Frequency Occupation Time

The Minimum Frequency Occupation Time shall be equal to one dwell time within a period not exceeding four times the product of the dwell time per hop and the number of hopping frequencies in use.

Test Result (Packet DH1, 3DH1, the worse result was reported to show compliance):

The Observation Time = Dwell Time * Total Hops * 4

Channel	Modulation	Packet	Accumulated Dwell time (ms)	Limit (ms)
2402 MHz	GFSK	DH1	28.8	>0
2480 MHz	GFSK	DH1	29.9	>0
2402 MHz	8DPSK	3DH1	28.8	>0
2480 MHz	8DPSK	3DH1	29.5	>0

5.3.5 Result

The equipment met the requirement of this clause.

5.4 Hopping Frequency Separation

5.4.1 Test condition

Date of testing:	2017-01-10
Test Mode:	Transmitting
Ambient temperature:	23.7 °C
Relative humidity:	53.7%
Ambient Pressure	102.0Kpa

5.4.2 Limit

The minimum Hopping Frequency Separation shall be equal to Occupied Channel Bandwidth of a single hop with a minimum separation of 100 kHz.

5.4.3 Test Result

GFSK:

Carrier Frequency Separation kHz	Limit (kHz)	Result
1002.9	≥100	Pass

8DPSK:

Carrier Frequency Separation kHz	Limit (kHz)	Result
997.5	≥100	Pass

5.4.4 Result

The equipment met the requirement of this clause.

5.5 Transmitter unwanted emissions in the out-of-band domain

5.5.1 Test condition

Date of testing:	2017-01-09
Test Mode:	Transmitting
Ambient temperature:	23.7°C
Relative humidity:	53.7%
Ambient Pressure	102.0Kpa

5.5.2 Test Procedure and limit

The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in figure 1.

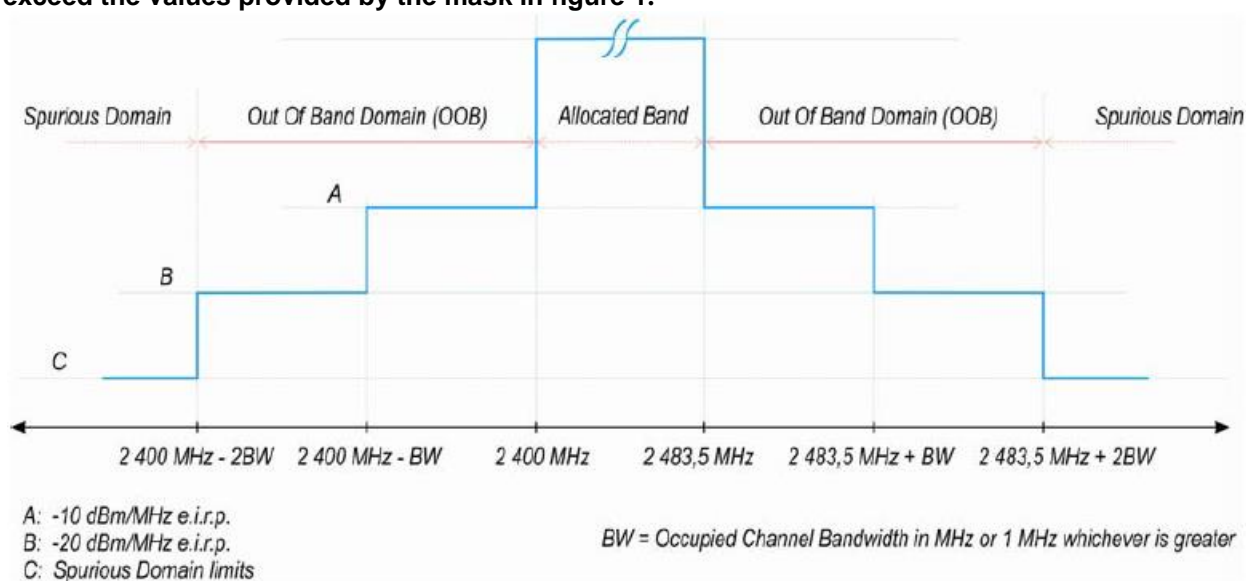


Figure 1: Transmit mask

5.5.3 Test Result GFSK

Test condition:	Test frequency (MHz)	Test segment (MHz)	Max. Reading (dBm/MHz)	Limit (dBm/MHz)
Tnom(25°C) Vnom	2402	2400-BW to 2400	-30.0	-10
		2400-2BW to 2400-BW	-30.4	-20
	2480	2483.5 to 2483.5+BW	-31.8	-10
		2483.5+BW to 2483.5+2BW	-36.4	-20
Tmin(0°C) Vnom	2402	2400-BW to 2400	-30.1	-10
		2400-2BW to 2400-BW	-30.6	-20
	2480	2483.5 to 2483.5+BW	-31.7	-10
		2483.5+BW to 2483.5+2BW	-36.2	-20
Tmax(35°C) Vnom	2402	2400-BW to 2400	-30.5	-10
		2400-2BW to 2400-BW	-30.7	-20
	2480	2483.5 to 2483.5+BW	-32.0	-10
		2483.5+BW to 2483.5+2BW	-36.8	-20

8DPSK

Test condition:	Test frequency (MHz)	Test segment (MHz)	Max. Reading (dBm/MHz)	Limit (dBm/MHz)
Tnom(25°C) Vnom	2402	2400-BW to 2400	-30.6	-10
		2400-2BW to 2400-BW	-30.5	-20
	2480	2483.5 to 2483.5+BW	-31.8	-10
		2483.5+BW to 2483.5+2BW	-36.3	-20
Tmin(0°C) Vnom	2402	2400-BW to 2400	-30.7	-10
		2400-2BW to 2400-BW	-30.8	-20
	2480	2483.5 to 2483.5+BW	-31.9	-10
		2483.5+BW to 2483.5+2BW	-36.5	-20
Tmax(35°C) Vnom	2402	2400-BW to 2400	-30.6	-10
		2400-2BW to 2400-BW	-30.7	-20
	2480	2483.5 to 2483.5+BW	-32.0	-10
		2483.5+BW to 2483.5+2BW	-36.4	-20

5.5.4 Result

The equipment met the requirement of this clause.

5.6 Spurious emissions

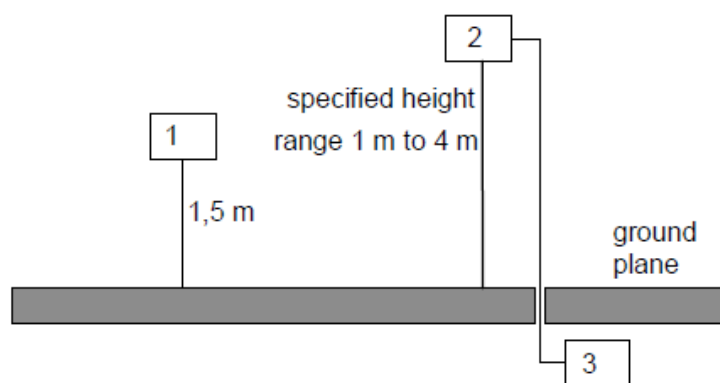
5.6.1 Test Procedure and limit

A test site fulfilling the requirements of ITU-R Recommendation was used. The EUT was placed on a non-conducting support in the anechoic chamber and was operated from a power source via an RF filter to avoid radiation from the power leads.

Step 1 Radiated measurements:

A test site which fulfils the requirements of the specified frequency range of this measurement shall be used. The test antenna shall be oriented initially for vertical polarization unless otherwise stated and the transmitter under test shall be placed on the support in its standard position and switched on;

The measurement equipment shall be connected to the measurement antenna and set-up according to the specifications of the test.



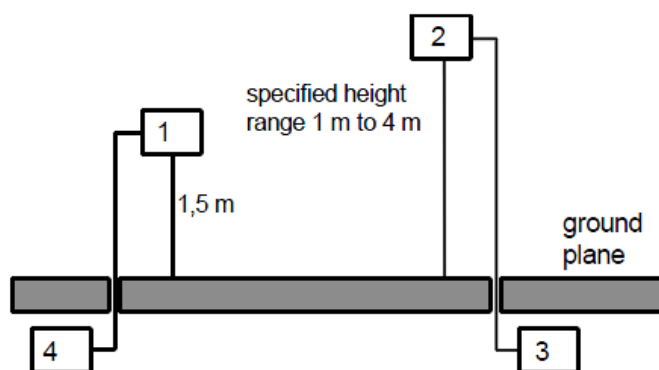
- 1) UUT
- 2) Measurement antenna
- 3) Measurement equipment

The UUT shall be rotated through 360° in a horizontal plane until a higher maximum signal is received.

The measurement antenna shall be raised or lowered again through the specified height range until a maximum is obtained. This level shall be recorded.

Step 2 Substitution measurements:

Replacing the UUT with the substitution antenna. The substitution antenna will have vertical polarization.



- 1) Substitution antenna.
- 2) Measurement antenna
- 3) Measurement equipment
- 4) Signal generator.

Connect a signal generator to the substitution antenna, and adjust it to the measurement frequency.

The measurement antenna shall be raised or lowered, to ensure that the maximum signal is received.

Subsequently, the power of the signal generator is adjusted until the same level is obtained again at the measurement equipment.

The radiated power is equal to the power supplied by the signal generator, increased the substitution antenna gain minus the cable losses (values in dB).

This measurement shall be repeated with horizontal polarization.

Radiated Spurious Emissions Limits for Transmitter

Frequency range	Maximum Power e.r.p(≤1G) e.i.r.p(>1G)	Measurement Bandwidth
30MHz to 47MHz	-36dBm	100kHz
47MHz-74MHz	-54dBm	100kHz
74MHz-87.5MHz	-36dBm	100kHz
87.5MHz-118MHz	-54dBm	100kHz
118MHz-174MHz	-36dBm	100kHz
174MHz-230MHz	-54dBm	100kHz
230MHz-470MHz	-36dBm	100kHz
470MHz-862MHz	-54dBm	100kHz
862MHz-1GHz	-36dBm	100kHz
Above 1GHz to 12.75GHz	-30dBm	1MHz

Radiated Spurious Emissions Limits for Receiver

Frequency range	Maximum power, e.r.p	Measurement Bandwidth
30MHz to 1GHz	-57dBm	100kHz
Above 1GHz to 12.75GHz	-47dBm	1MHz

Measurement Uncertainty

Spurious Emissions	U=3.42dB(k=2) (30MHz-1G)
Spurious Emissions	U=3.84dB(k=2)(1GHz – 6GHz)
Spurious Emissions	U=4.58dB(k=2)(6GHz – 18GHz)

Test condition

Date of testing:	2017-01-11
Test Mode:	Transmitting
Ambient temperature:	23.2°C
Relative humidity:	52.5%
Ambient Pressure	101.9Kpa

5.6.2 Test Result

The testing was applied on all the modes, only the worst case data was shown in the report.

5.6.2.1 Test result for Transmitter

EUT: P326.833

Operating Condition: Tx 2402MHz, Lowest Channel

Mode: GFSK modulation

Invested Frequency Range(MHz)	Frequency(MHz)	Maximum Emission Observed(dBm)	Polarization	Limit (dBm)	Margin (dB)
30-1000	58.4533	-71.8	Horizontal	-54	17.8
30-1000	715.8439	-72.2	Vertical	-54	18.2
1000-12750	4803.75	-43.58	Horizontal	-30	13.58
1000-12750	4804.0546	-43.43	Vertical	-30	13.43
1000-12750	10679.039	-45.32	Horizontal	-30	15.32
1000-12750	10030.3593	-44.23	Vertical	-30	14.23

EUT: P326.833

Operating Condition: Tx 2480MHz, Highest Channel

Mode: GFSK modulation

Invested Frequency Range(MHz)	Frequency(MHz)	Maximum Emission Observed(dBm)	Polarization	Limit (dBm)	Margin (dB)
30-1000	49.3461	-75.15	Horizontal	-54	21.15
30-1000	603.8627	-74.62	Vertical	-54	20.62
1000-12750	4959.75	-37.7	Horizontal	-30	7.7
1000-12750	4960.0546	-40.53	Vertical	-30	10.53

EUT: P326.833

Operating Condition: Tx 2402MHz, Lowest Channel

Mode: 8DPSK modulation

Invested Frequency Range(MHz)	Frequency(MHz)	Maximum Emission Observed(dBm)	Polarization	Limit (dBm)	Margin (dB)
1000-12750	2488.875	-49.97	Horizontal	-30	19.97
1000-12750	2489.125	-50.85	Vertical	-30	20.85
1000-12750	4802.8359	-42.46	Horizontal	-30	12.46
1000-12750	4804.9687	-41.23	Vertical	-30	11.23

EUT: P326.833

Operating Condition: Tx 2480MHz, Highest Channel

Mode: 8DPSK modulation

Invested Frequency Range(MHz)	Frequency(MHz)	Maximum Emission Observed(dBm)	Polarization	Limit (dBm)	Margin (dB)
1000-12750	2399.8125	-42.44	Horizontal	-30	12.44
1000-12750	2399.125	-48.83	Vertical	-30	18.83
1000-12750	4959.4453	-38.45	Horizontal	-30	8.45
1000-12750	4960.0546	-40.63	Vertical	-30	10.63

Note: The detected value is noise floor or below the limit 20dB.

5.6.3 Test Result

The testing was applied on all the modes, only the worst case data was shown in the report.

5.6.3.1 Test result for receiver

EUT: P326.833

Operating Condition: Rx

Invested Frequency Range(MHz)	Frequency(MHz)	Maximum Emission Observed(dBm)	Polarization	Limit (dBm)	Margin (dB)
30-1000	887.5338	-72.72	Vertical	-57	15.72
30-1000	58.3455	-69.04	Horizontal	-57	12.04
1000-12750	3000.0703	-60.12	Horizontal	-47	13.12
1000-12750	10716.1484	-58.95	Horizontal	-47	11.95
1000-12750	3000.0703	-60.9	Vertical	-47	13.9
1000-12750	10684.9375	-58.17	Vertical	-47	11.17

Note: The detected values which are noise floor or below the limit 20dB will not be recorded.

5.6.4 Result

The equipment met the requirement of this clause.

6 Main Test Instruments

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
C	Signal Generator	Rohde & Schwarz	SMB100A	108272	2017-8-17
	Signal Analyzer	Rohde & Schwarz	FSV40	101030	2017-8-17
	Vector Signal Generator	Rohde & Schwarz	SMU 200A	105324	2017-8-17
	RF Switch Module	Rohde & Schwarz	OSP120/OS P-B157	101226/100851	2017-8-17
RE	EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2017-8-17
	Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2017-8-17
	Horn Antenna	Rohde & Schwarz	HF907	102294	2017-8-17
	Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2017-8-17
	3m Semi-anechoic chamber	TDK	9X6X6	----	2019-5-29

Conducted RF tests –C

- Conducted peak output power
- Power Spectral Density
- Duty Cycle, Tx-sequence, Tx-gap
- Dwell time, Minimum Frequency Occupation and Hopping Sequence
- Carrier frequency separation
- Number of hopping frequencies
- Medium Utilisation
- Adaptivity
- Occupied Channel Bandwidth
- Transmitter unwanted emissions OOB
- Receiver Blocking

- Radiated RF tests -RE

- Radiated unwanted emissions spurious TX
- Radiated unwanted emissions spurious RX

7 System Measurement Uncertainty

For the test methods, according to the harmonized standard and conformance testing standard, the measurement uncertainty figures shall be calculated in accordance with TR 100 028 and shall correspond to an expansion factor (coverage factor) $k = 1.96$ (which provides a confidence level of 95 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Total RF power, conducted	± 1.5 dB
Spurious emissions, conducted	± 3.0 dB
All emission, radiated	± 6.0 dB
Temperature	± 1 °C
Humidity	± 5 %
DC and low frequency voltages	± 3 %

8 Estimation of Exposure of Human to Electromagnetic Fields

Estimation of Exposure of Human to Electromagnetic Fields

Product: speaker
Model No.: P326.833

The product has an operation frequency of [2402-2480MHz], and the maximum transmitted power is 0.6dBm (1.148mW).

According with EN 62479: 2010, clause 4.2, Low-power electronic and electrical equipment is deemed to comply with the provisions of this standard if it can be demonstrated using routes B, C or D that the available antenna power and/or the average total radiated power is less than or equal to the applicable low-power exclusion level P_{max} . The peak output power of [P326.833] is 1.148mW; it is less than the limit 20mW which list in the table A1, so the equipment complies with EMF basic restrictions in EN 62479: 2010.

9 Photographs of Test Set-up

Radiated emission test below 1GHz



Radiated emission test above 1GHz



10 Photographs of EUT

Please refer to report No.: 64.912.16.06187.01E