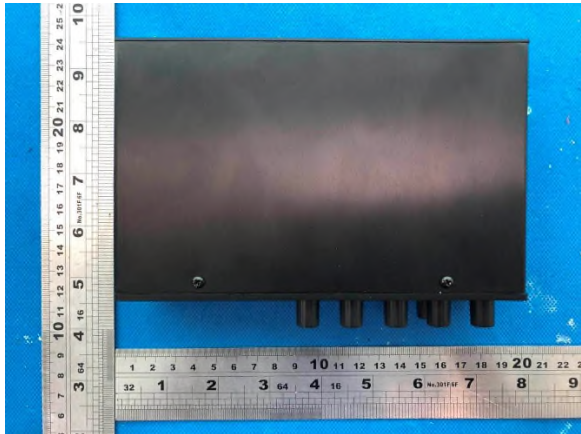


Prüfbericht-Nr.: Test report no.:	50264149 002	Auftrags-Nr.: Order no.:	170282574	Seite 1 von 13 Page 1 of 13
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date.:	2021.08.19	
Auftraggeber: Client:	Dongguan Jingheng Electron Co., Ltd. Room 101, Building 1, No.15, Shenle 1st Road, Hengli Town, Dongguan City 523465 Guangdong, P.R. China			
Prüfgegenstand: Test item:	AMPLIFIER			
Bezeichnung / Typ-Nr.: Identification / Type No.:	PA-20B, PA-20HB, PA-40B, PA-40HB			
Auftrags-Inhalt: Order content:	TÜV Rheinland RED service			
Prüfgrundlage: Test specification:	EN 300328 V2.2.2:2019 EN 62479:2010			
Wareneingangsdatum: Date of sample receipt:	2021.11.17			
Prüfmuster-Nr.: Test sample No.:	A003144863-001			
Prüfzeitraum: Testing period:	Refer to test report			
Ort der Prüfung: Place of testing:	Refer to section 2.1			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: Test result*:	Pass			
überprüft von: reviewed by:	genehmigt von: authorized by:			
Datum: 2022.05.23 Date:	Datum: 2022.05.23 Date:			
Stellung/Position: Storm Shu/Project Manager	Stellung/Position: Amy Wang/TC			
Sonstiges / Other: This report is for Radio Spectrum and Health requirements only.				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.				

Prüfbericht - Nr.: 50264149 002
Test Report No.

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Test Summary

5.1.1 RECEIVER BLOCKING
RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

None.

2 Test Sites

2.1 Test Facilities

Shenzhen STS Test Services Co., Ltd.

1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Heping community,
Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

CNAS Registration No.: L7649

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Shenzhen STS Test Services Co.,Ltd.

Blocking				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
MIMO Power measurement test Set	Keysight	U2021XA	MY55520005	2022.10.09
			MY55520006	2022.10.09
			MY56120038	2022.10.09
			MY56280002	2022.10.09
Signal Generator	Agilent	N5182A	MY46240556	2022.10.09
Signal Analyzer	Agilent	N9020A	MY49100060	2022.10.11
Universal Radio communication tester	R&S	CMU200	111058	2022.10.11
Wireless Communications Test Set	R&S	CMW 500	131428	2022.03.03
Temperature & Humidity	HH660	Mieo	N/A	2022.10.12
Temperature& Humidity test chamber	Safety test	AG80L	171200018	2022.03.03
Programmable power supply	Agilent	E3642A	MY40002025	2022.10.11
Attenuator	HP	8494B	DC-18G	2022.04.29
AC Power Source	APC	KDF-11010G	F214050035	N.C.R
Router	WAVLINK	WL-WN575A2	WL1512260336	N.C.R

3 General Product Information

3.1 Replacement of Standard

The standard EN 300328 V2.1.1:2016 is replaced by EN 300328 V2.2.2:2019.

The different requirement between the replaced standard and the updated standard please refer to section 3.2.

3.2 Product Function and Intended Use

The tested samples are Amplifiers for professional use with model numbers as shown in the cover page of test report for approval of upgrading.

The tested samples have Bluetooth function.

This test report is for standards upgrade of EN 300328 based on test reports 50264149 001. As consideration of identities and differences between the updated standards versions, the Receiver blocking(Radio) of standard EN 300 328 test item is necessary for retest, the other test data refer to original test reports 50264149 001.

According to the above information, the Receiver blocking (Radio) test item is necessary for retest.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.3 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	Amplifiers
Type Designation	PA-20B, PA-20HB, PA-40B, PA-40HB
Type of Device	Adaptive Frequency Hopping (non-LBT based)
Classification of Receiver	Category 2
Operating Temperature Range	-20 °C ~ +35 °C
Operating Voltage	100-240V~; 50/60Hz Powered by Adapter; XinSPower: A361-1502000E(2A, for PA-20B, PA-20HB) A361-1504000E(4A, for PA-40B, PA-40HB)
Testing Voltage	AC 230V 50Hz
Technical Specification of Bluetooth 4.0 Smart(dual mode)	
Operating Frequency	2402 - 2480 MHz
Type of Modulation	GFSK, ($\pi/4$)DQPSK, 8DPSK
Equipment types	FHSS with Adaptive (LBT based DAA) DSSS with Adaptive (LBT based DAA) Only one adaptive mode is implemented and could not operate in a non-adaptive mode
Channel Number	79 Channels(for FHSS) 40 Channels(for DSSS)
Channel Spacing	1 MHz (for FHSS) 2 MHz (for DSSS)
Antenna Type	PCB Layout Antenna
Antenna Gain	0 dBi

3.4 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth receiving mode
- B. On, Operating on normal mode
- C. Off

3.5 Noise Generating and Noise Suppressing Parts

For details refer to the Circuit Diagram.

3.6 Submitted Documents

- Application Form

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5 - 7.

The EUT belongs to Receiver Category 2 equipment.

4.3 Special Accessories and Auxiliary Equipment

Table 3: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
N/A	N/A	N/A	N/A	N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

5 Test Results ERM

5.1 Receiver Requirement & Test Suites

5.1.1 Receiver Blocking

RESULT:**Pass****Test Specification**

Test standard	: EN 300 328 V2.2.2:2019
Test requirement	: EN 300 328 V2.2.2:2019, Clause 4.3.1.12
Limit	: EN 300 328 V2.2.2:2019, Clause 4.3.1.12.4
Test suites	: EN 300 328 V2.2.2:2019, Clause 5.4.11

Test Setup

Date of testing	: 17.11.2021
Test voltage	: AC 230V
Test environment	: Normal temperature
Operation mode	: A
Ambient temperature	: 24°C
Relative humidity	: 54 %
Atmospheric pressure	: 101 kPa

The EUT belongs to receiver category 2 equipment. (Refer to previous report 50264149)

BDR mode

Wanted signal mean power from companion device (dBm)	Test Channel	Blocking signal frequency (MHz)	Blocking signal power(dBm) CW	PER	Limit	Results
-69.69	Low	2300 2380	-34	0.35%	≤10%	PASS
				0.61%		
	High	2504 2584		0.74%		
				0.51%		

NOTE 1: OCBW is 854000Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to $P_{min} + 30$ dB where P_{min} is the

minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements,

this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

EDR mode

Wanted signal mean power from companion device (dBm)	Test Channel	Blocking signal frequency (MHz)	Blocking signal power(dBm) CW	PER	Limit	Results
-68.41	Low	2300 2380	-34	0.43%	≤10%	PASS
				0.47%		
	High	2504 2584		0.57%		
				0.75%		

NOTE 1: OCBW is 1146000Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to $P_{min} + 30$ dB where P_{min} is the

minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements,

this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

BLE mode

Wanted signal mean power from companion device (dBm)	Test Channel	Blocking signal frequency (MHz)	Blocking signal power(dBm) CW	PER	Limit	Results
-68.87	Low	2300 2380	-34	0.51%	≤10%	PASS
				0.60%		
	High	2504 2584		0.47%		
				0.52%		

NOTE 1: OCBW is 1029700Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to $P_{min} + 30$ dB where P_{min} is the

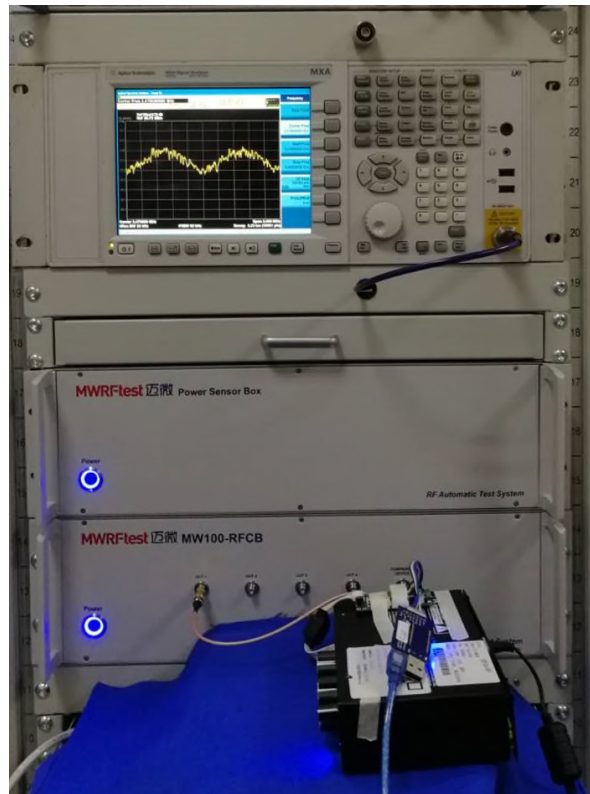
minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements,

this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

6 Photographs of the Test Set-Up

Photograph 1: Set-up for Radio Spectrum Testing, Normal Condition



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