

TEST REPORT

Applicant: Quanzhou SKYDROID Technology Co., Ltd.

Address of Applicant: 2nd Floor, Building A, Yucheng Base, Fengze District,
Quanzhou City, Fujian Province, China

Manufacturer/Factory: Quanzhou SKYDROID Technology Co., Ltd.

**Address of
Manufacturer/Factory:** 2nd Floor, Building A, Yucheng Base, Fengze District,
Quanzhou City, Fujian Province, China

Equipment Under Test (EUT)

Product Name: H16 remote control

Model No.: H16, H16PRO

Trade Mark: SKYDROID

Applicable standards: ETSI EN 301 893 V2.1.1 (2017-05)

Date of sample receipt: October 21, 2020

Date of Test: October 22, 2020-November 03, 2020

Date of report issue: November 04, 2020

Test Result : PASS *

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives. The protection requirements with respect to electromagnetic compatibility contained in Directive 2014/53/EU are considered.



Robinson Lo

Laboratory Manager

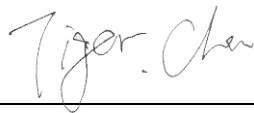
This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.



2 Version

Version No.	Date	Description
00	November 04, 2020	Original

Prepared By:

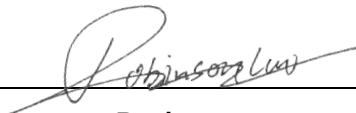


Date:

November 04, 2020

Project Engineer

Check By:



Date:

November 04, 2020

Reviewer

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 TEST SUMMARY	4
5 GENERAL INFORMATION	5
5.1 GENERAL DESCRIPTION OF EUT	5
5.2 TEST FACILITY	7
5.3 TEST LOCATION	7
5.4 DESCRIPTION OF SUPPORT UNITS	7
5.5 DEVIATION FROM STANDARDS	7
5.6 ABNORMALITIES FROM STANDARD CONDITIONS	7
5.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER	7
6 TEST INSTRUMENTS LIST	8
7 RADIO TECHNICAL REQUIREMENTS SPECIFICATION IN EN 301893	10
7.1 TEST ENVIRONMENT AND MODE	10
7.2 TRANSMITTER REQUIREMENT	11
7.2.1 <i>Norminal Centre Frequencies</i>	11
7.2.2 <i>Occupied Channel Bandwidth</i>	11
7.2.3 <i>RF output power</i>	12
7.2.4 <i>Power Density</i>	12
7.2.5 <i>Transmitter unwanted emissions outside 5GHz RLAN bands</i>	13
7.2.6 <i>Transmitter unwanted emissions within 5GHz RLAN band</i>	14
7.3 RECEIVER REQUIREMENTS	15
7.3.1 <i>Spurious emissions</i>	15
7.3.2 <i>Receiver Blocking</i>	16
7.4 ADAPTIVITY (CHANNEL ACCESS MECHANISM)	17
8 TEST SETUP PHOTO	17
9 EUT CONSTRUCTIONAL DETAILS	17

4 Test Summary

Radio Spectrum Matter (RSM) Part of Transmitter					
Test	Test Requirement	Test method	Limit/Severity	Uncertainty	Result
Norminal Centre Frequency	EN 301 893 clause 4.2.1	EN 301 893 clause 5.4.2	±20ppm	±1×10 ⁻⁶	Pass
Norminal Channel Bandwidth and Occupied Channel Bandwidth	EN 301 893 clause 4.2.2	EN 301 893 clause 5.4.3	80% and 100% of the declared nominal bandwidth	±1×10 ⁻⁶	Pass
RF output power, Transmit Power Control (TPC) and Power Density	EN 301 893 clause 4.2.3	EN 301 893 clause 5.4.4	Table 2& Table 3	±1,5 dB	Pass
Transmitter unwanted emissions outside the 5 GHz RLAN bands	EN 301 893 clause 4.2.4.1	EN 301 893 clause 5.4.5	Table 4	±1,5 dB	Pass
Transmitter unwanted emissions within the 5 GHz RLAN bands	EN 301 893 clause 4.2.4.2	EN 301 893 clause 5.4.6	Figure 1	±1,5 dB	Pass
Dynamic Frequency Selection (DFS)	EN 301 893 clause 4.2.6	EN 301 893 clause 5.4.8	Refer to DFS report		Pass
Adaptivity (Channel Access Mechanism)	EN 301 893 clause 4.2.7	EN 301 893 clause 5.4.9	Clause 4.2.7.3.3.3	N/A	Pass
Radio Spectrum Matter (RSM) Part of Receiver					
Receiver spurious emissions	EN 301 893 clause 4.2.5	EN 301 893 clause 5.4.7	Table 5	± 6dB	Pass
Receive Blocking	EN 301 893 clause 4.2.8	EN 301 893 clause 5.4.10	Table 9	N/A	Pass
Geo-location capability	EN 301 893 clause 4.2.10	N/A	N/A	N/A	N/A

Remark:

Temperature (Uncertainty): ±1°C Humidity(Uncertainty): ±5%

5 General Information

5.1 General Description of EUT

Product Name:	H16 remote control
Model No.:	H16, H16PRO
Test Model No.:	H16
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is model name for commercial purpose.	
Operation Frequency:	5180MHz~5240MHz; (802.11a/n/ac(HT20) @ 5G band) 5190MHz~5230MHz; (802.11n/ac(HT40) @ 5G band) 5210MHz; (802.11ac(HT80) @ 5G band)
Channel numbers:	4 channels for 802.11a/n/ac(HT20); 2 channels for 802.11n/ac(HT40) 1 channels for 802.11ac(HT80)
Modulation technology:	802.11a/n/ac: OFDM
Antenna Type:	Integral Antenna
Antenna gain:	0dBi
Power supply:	ADAPTOR MODEL:KXS-012 INPUT: 110V-240V~50/60Hz 0.5A max OUTPUT: 3.6V-6V== 3A or 6V-9V== 32A or 9V-12V== 31.5A Or DC 3.7V Battery

Channel List							
802.11a, 802.11n(HT20), 802.11ac(HT20)							
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
36	5180	40	5200	44	5220	48	5240
802.11n(HT40), 802.11ac(HT40)							
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
38	5190	46	5230				
802.11ac(HT80)							
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
39	5210						

5.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

- **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A.

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.3 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.4 Description of Support Units

None

5.5 Deviation from Standards

None.

5.6 Abnormalities from Standard Conditions

None.

5.7 Other Information Requested by the Customer

None.

6 Test Instruments List

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 25 2020	June. 24 2021
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 25 2020	June. 24 2021
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 25 2020	June. 24 2021
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 25 2020	June. 24 2021
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 25 2020	June. 24 2021
9	Coaxial Cable	GTS	N/A	GTS211	June. 25 2020	June. 24 2021
10	Coaxial cable	GTS	N/A	GTS210	June. 25 2020	June. 24 2021
11	Coaxial Cable	GTS	N/A	GTS212	June. 25 2020	June. 24 2021
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 25 2020	June. 24 2021
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 25 2020	June. 24 2021
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 25 2020	June. 24 2021
15	Band filter	Amindeon	82346	GTS219	June. 25 2020	June. 24 2021
16	Power Meter	Anritsu	ML2495A	GTS540	June. 25 2020	June. 24 2021
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 25 2020	June. 24 2021
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 25 2020	June. 24 2021
19	Splitter	Agilent	11636B	GTS237	June. 25 2020	June. 24 2021
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 25 2020	June. 24 2021
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 18 2020	Oct. 17 2021
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 18 2020	Oct. 17 2021
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 18 2020	Oct. 17 2021
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 25 2020	June. 24 2021

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 25 2020	June. 24 2021
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 25 2020	June. 24 2021
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 25 2020	June. 24 2021
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 25 2020	June. 24 2021
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 25 2020	June. 24 2021
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 25 2020	June. 24 2021
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 25 2020	June. 24 2021

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021
2	Barometer	ChangChun	DYM3	GTS255	June. 25 2020	June. 24 2021

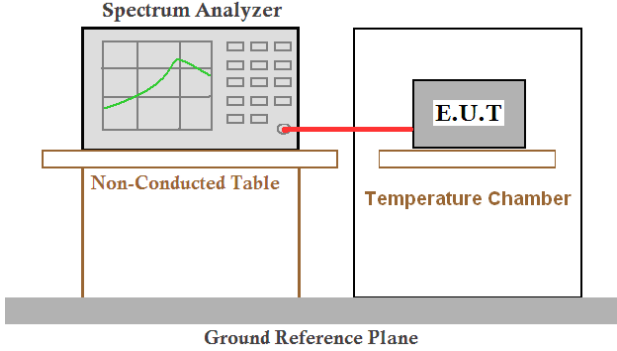
7 Radio Technical Requirements Specification in EN 301893

7.1 Test Environment and Mode

Test mode:			
Transmitting mode:		Keep the EUT in transmitting mode with modulation.	
Receiving mode:		Keep the EUT in receiving mode.	
Operating Environment:			
Item	Normal condition	Extreme condition	
		HT	LT
Temperature	+15°C to + 35°C	+40°C	0°C
Humidity	20%-95%		
Atmospheric Pressure:	1008 mbar		

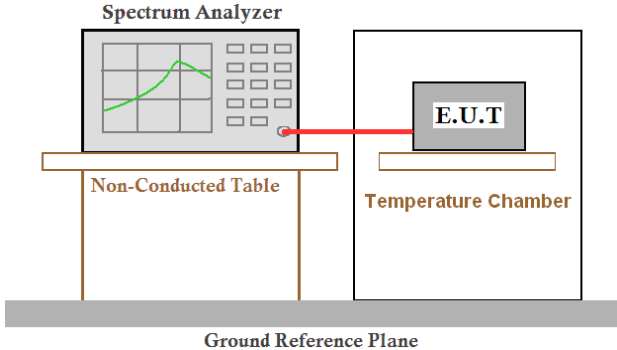
7.2 Transmitter requirement

7.2.1 Norminal Centre Frequencies

Test Requirement:	EN 301 893 clause 4.2.1
Test Method:	EN 301 893 clause 5.4.2.2.1
Limit:	$f_c \pm 20\text{ppm}$
Test setup:	
Test mode:	Keep the EUT in transmitting with un-modulation.
Test Instruments:	Refer to section 6.0 for details
Measurement Record:	Uncertainty: $\pm 1 \times 10^{-6}$

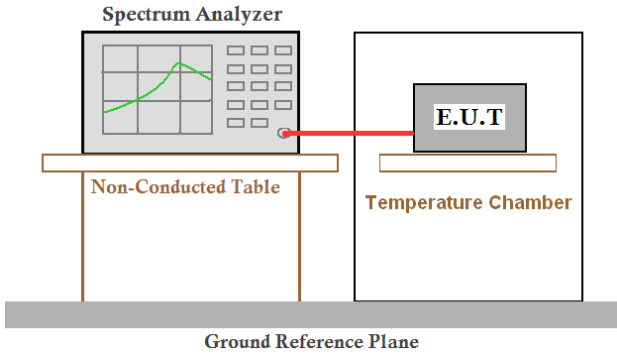
Measurement Data: The detailed test data see Appendix for WIFI 5G

7.2.2 Occupied Channel Bandwidth

Test Requirement:	EN 301893 clause 4.2.2
Test Method:	EN 301893 clause 5.4.3
Limit:	Between 80 % and 100 % of the declared nominal channel bandwidth
Test setup:	
Test mode:	Keep the EUT in transmitting with modulation.
Test Instruments:	Refer to section 6 for details
Measurement Record:	Uncertainty: $\pm 1 \times 10^{-6}$

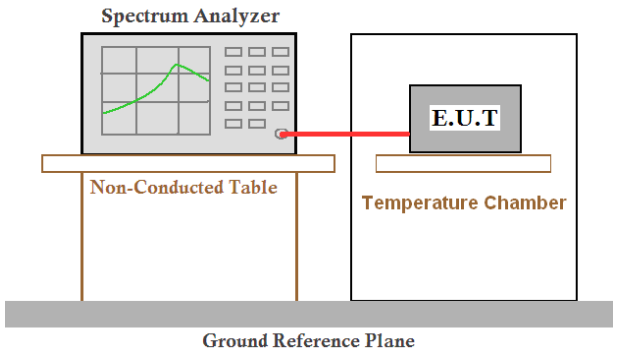
Measurement Data: The detailed test data see Appendix for WIFI 5G

7.2.3 RF output power

Test Requirement:	EN 301893 clause 4.2.3
Test Method:	EN 301893 clause 5.4.4.2
Limit:	Table 2 & table 3
Test setup:	
Test mode:	Keep the EUT in transmitting with modulation.
Test Instruments:	Refer to section 6.0 for details
Measurement Record:	Uncertainty: 0.65dB

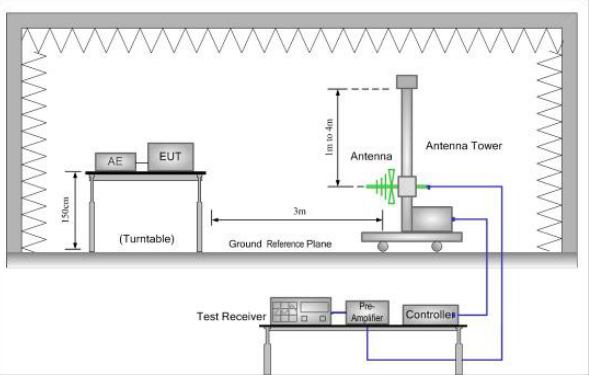
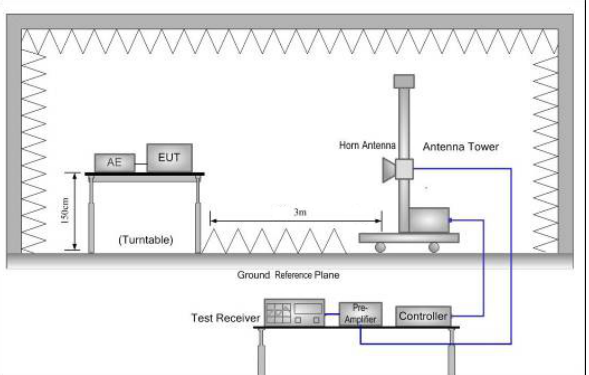
Measurement Data: The detailed test data see Appendix for WIFI 5G

7.2.4 Power Density

Test Requirement:	EN 301893 clause 4.2.3
Test Method:	EN 301893 clause 5.4.4.2.1.3
Limit:	Table 2 & table 3
Test setup:	
Test mode:	Keep the EUT in transmitting mode with modulation.
Test Instruments:	Refer to section 6 for details
Measurement Record:	Uncertainty: 1.31dB

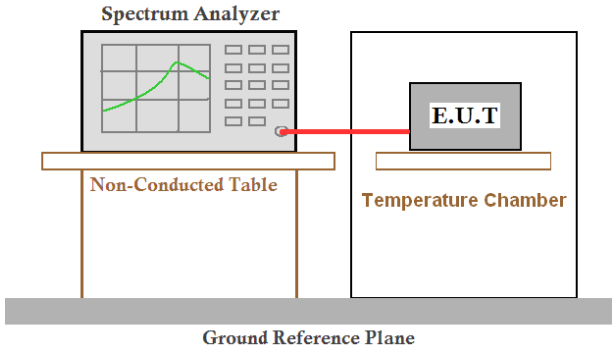
Measurement Data: The detailed test data see Appendix for WIFI 5G

7.2.5 Transmitter unwanted emissions outside 5GHz RLAN bands

Test Requirement:	EN 301893 clause 4.2.4.1
Test Method:	EN 301893 clause 5.4.6
Limit:	Table 4
Test setup:	Below 1GHz  Above 1GHz 
Test mode:	Keep the EUT in transmitting with modulation.
Test Instruments:	Refer to section 6 for details
Measurement Record:	Uncertainty: 4.64dB

Measurement Data: The detailed test data see Appendix for WIFI 5G

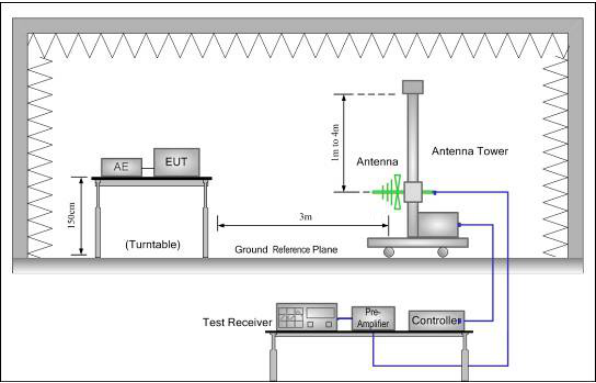
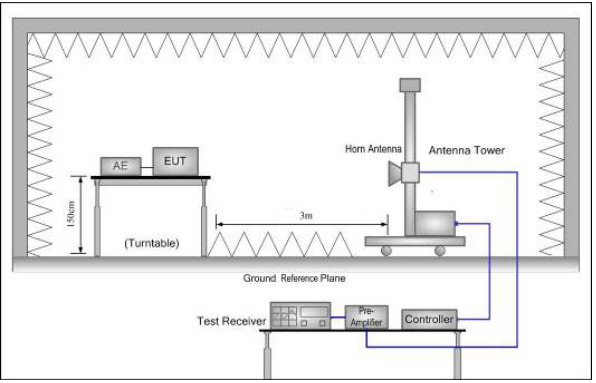
7.2.6 Transmitter unwanted emissions within 5GHz RLAN band

Test Requirement:	EN 301893 clause 4.2.4.2
Test Method:	EN 301893 clause 5.4.6
Limit:	Figure 1
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is positioned on a Non-Conducted Table. A red cable connects the Spectrum Analyzer to an E.U.T. (Equipment Under Test) located inside a Temperature Chamber. The Temperature Chamber is also on the Non-Conducted Table. Both the table and the chamber are placed on a Ground Reference Plane.
Test mode:	Keep the EUT in transmitting with modulation.
Test Instruments:	Refer to section 6 for details
Measurement Record:	Uncertainty: $\pm 6\text{dB}$

Measurement Data: The detailed test data see Appendix for WIFI 5G

7.3 Receiver Requirements

7.3.1 Spurious emissions

Test Requirement:	EN 301893 clause 4.2.5						
Test Method:	EN 301893 clause 5.4.7						
Receiver setup:	Frequency<1000MHz; RBW=100KHz, VBW=300KHz, Detector= peak Frequency>=1000MHz; RBW=1MHz, VBW=3MHz, Detector=peak.						
Limit:	<table> <tr> <th>Frequency</th><th>Limit</th></tr> <tr> <td>30MHz to 1000 MHz</td><td>2nW(-57dBm)</td></tr> <tr> <td>Above 1GHz</td><td>20nW(-47dBm)</td></tr> </table>	Frequency	Limit	30MHz to 1000 MHz	2nW(-57dBm)	Above 1GHz	20nW(-47dBm)
Frequency	Limit						
30MHz to 1000 MHz	2nW(-57dBm)						
Above 1GHz	20nW(-47dBm)						
Test Frequency range:	30MHz to 26GHz						
Test setup:	Below 1GHz  Above 1GHz 						
Test mode:	Kept Rx in receive mode.						
Test Instruments:	Refer to section 6.0 for details						
Measurement Record:	Uncertainty: 4.64dB						

Measurement Data: The detailed test data see Appendix for WIFI 5G

7.3.2 Receiver Blocking

Test Requirement:	EN 301893 clause 4.2.8																	
Test Method:	EN 301893 clause 5.4.10.2																	
Limit:	While maintaining the minimum performance criteria as defined in clause 4.2.8.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined in table 9. Table 9: Receiver Blocking parameters <table><tr><th rowspan="2">Wanted signal mean power from companion device (dBm)</th><th rowspan="2">Blocking signal frequency (MHz)</th><th colspan="2">Blocking signal power (dBm) (see note 2)</th><th rowspan="2">Type of blocking signal</th></tr><tr><th>Master or Slave with radar detection (see table D.2, note 2)</th><th>Slave without radar detection (see table D.2, note 2)</th></tr><tr><td>Pmin + 6 dB</td><td>5 100</td><td>-53</td><td>-59</td><td>Continuous Wave</td></tr><tr><td>Pmin + 6 dB</td><td>4 900 5 000 5 975</td><td>-47</td><td>-53</td><td>Continuous Wave</td></tr></table> NOTE 1: P_{min} is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined clause 4.2.8.3 in the absence of any blocking signal. NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the same levels should be used at the antenna connector irrespective of antenna gain.	Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)		Type of blocking signal	Master or Slave with radar detection (see table D.2, note 2)	Slave without radar detection (see table D.2, note 2)	Pmin + 6 dB	5 100	-53	-59	Continuous Wave	Pmin + 6 dB	4 900 5 000 5 975	-47	-53	Continuous Wave
Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)			Blocking signal power (dBm) (see note 2)			Type of blocking signal											
		Master or Slave with radar detection (see table D.2, note 2)	Slave without radar detection (see table D.2, note 2)															
Pmin + 6 dB	5 100	-53	-59	Continuous Wave														
Pmin + 6 dB	4 900 5 000 5 975	-47	-53	Continuous Wave														
Test setup:	Figure 18: Test Set-up for receiver blocking																	
Test mode:	Normal link mode																	
Test Instruments:	Refer to section 6.0 for details																	
Measurement Record:	Uncertainty: N/A																	

Measurement Data: The detailed test data see Appendix for WIFI 5G

7.4 Adaptivity (Channel Access Mechanism)

Test Requirement:	EN 301893 clause 4.2.7
Test Method:	EN 301893 clause 5.4.9
Limit:	Clause 4.2.7.3.3.3
Test setup:	<pre> graph LR TS[Traffic Source] --> UUT[UUT] UUT <--> SC1[Splitter/Combiner] SC1 --> SA[Spectrum Analyzer] SC1 <--> SC2[Splitter/Combiner] SC2 <--> ATT[ATT.] ATT <--> CD[Companion Device] CD <--> SIG[Signal Generator Interferer] </pre>
Test mode:	Keep the EUT in transmitting mode with modulation.
Test Instruments:	Refer to section 6.0 for details
Measurement Record:	Uncertainty: $\pm 1.5\text{dB}$

Measurement Data: The detailed test data see Appendix for WIFI 5G

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

-----End-----