

#### Shenzhen HUAK Testing Technology Co., Ltd. Report No.: HK2109063323-3ER

LAN TESTING	TEST REPORT SI EN 301 893 V2.1.1 (2017-05)	
Report Reference No Compiled by ( position+printed name+signature):	num restine	 V
Supervised by ( position+printed name+signature):	Technique principal Sliver Wan	m
Approved by ( position+printed name+signature):	Manager Jason Zhou Jason Zhou	
Date of issue	2021/09/18	
Representative Laboratory Name .:	Shenzhen HUAK Testing Technology Co., Ltd.	
Address	1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, Ch	, nina
Applicant's name	XonTel Technology Trd. Co. W.LL	
Address	Kuwait City, Qibla, Aladel Tower, F21, state of Kuwait	
Test specification:	WAKTES W	
Standard	ETSI EN 301 893 V2.1.1 (2017-05)	
TRF Originator Master TRF	Shenzhen HUAK Testing Technology Co., Ltd. Dated 2014-12	
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Test item description:	Wireless Access Point	
Trade Mark		
Model/Type reference:	XT-1800AX N/A	
ist Model	N/A	
۵۰	1/0.0	
	V2.0	
Hardware version		
Hardware version Software version	V2.0	
Hardware version: Software version Operation Frequency	V2.0	

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# TEST REPORT

Test Penert No.	HK240006222 2EB	2021/09/18
Test Report No. :	HK210906332-3ER	Date of issue
Equipment under Test	: Wireless Access Point	
Model /Type	: XT-1800AX	
Listed Models	N/A	
Applicant	: XonTel Technology Trd. Co. W.L	L Mun Mun
Address	: Kuwait City, Qibla, Aladel Tower	, F21, state of Kuwait
Manufacturer	: XonTel Technology Trd. Co. W.L	L O <sup>ne</sup> O <sup>ne</sup>
Address	: Kuwait City, Qibla, Aladel Tower	, F21, state of Kuwait

Test	Res	ult
Test	Res	ult

PASS

The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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# \*\* Modified History \*\*

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	2021/09/18	Jason Zhou
	-C		
STRAC	CTIME STIME	STIME	STIME

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Centre freque	ncies			
	nel Bandwidth and Occup			
<b>RF</b> output pow	ver, Transmit Power Contr	ol (TPC) and power	density	
	wer at the highest power - I		TESTING	
	wer at the lowest power lev	vel of the TPC range	e - PL 💦 HUM	
Power density	/ 🔍	w.		
Transmitter u	nwanted emissions			
4.5.1.	Transmitter unwanted emi	ssions outside the	5 GHz RLAN bands	
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	- · · · ·			
Adaptivity	lein e			
	KING			
Receiver Bloc				
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# 6. EXTERNAL AND INTERNAL PHOTOS OF THE EUT .....

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# 1. TEST STANDARDS

The tests were performed according to following standards:

ETSI EN 301 893 V2.1.1 (2017-05)-5 GHz RLAN; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU

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HUAK TESTING

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ACATION

# 2. <u>SUMMARY</u>

## 2.1. General Remarks

:	2021/09/06	
:	2021/09/06	TING
	JAK TES	AK TES
:6	2021/09/18	A HO
		: 2021/09/06

# 2.2. Product Description

Product Name:	Wireless Access Point
Model/Type reference:	XT-1800AX
List Model:	N/A www.
Difference descrption	N/A since tained
Power supply:	DC 48V From POE power or DC 12V From DC Power
POE information:	N/A
Antenna Type	Internal Antenna
Antenna Gain	3.0dBi
WLAN	Supported 802.11a/ 802.11n HT20/ 802.11n HT40/ 802.11ac HT20/ 802.11ac HT40/ 802.11ac HT80/ 802.11ax HT20/ 802.11ax HT40/ 802.11ax HT80
Operation frequency	IEEE 802.11a:5180MHz-5240MHz IEEE 802.11n HT20/IEEE 802.11ac HT20/ IEEE 802.11ax HT20:5180MHz- 5240MHz IEEE 802.11n HT40/IEEE 802.11ac HT40/IEEE 802.11ax HT40:5190MHz- 5230MHz IEEE 802.11ac HT80/ IEEE 802.11ax HT80:5210MHz
Modulation Type	IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11ac HT20: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac HT40: OFDM (256QAM, 64QAM, 16QAM, QPSK,BPSK) IEEE 802.11ac HT80: OFDM (256QAM, 64QAM, 16QAM, QPSK,BPSK) IEEE 802.11ac HT80: OFDM (256QAM, 64QAM, 16QAM, QPSK,BPSK) IEEE 802.11ax HT20: OFDM(1024AAM, 256QAM,64QAM, 16QAM, QPSK,
Mulan Mulan	BPSK) IEEE 802.11ax HT40: OFDM (1024AAM, 256QAM,64QAM, 16QAM, QPSK,BPSK) IEEE 802.11ax HT80: OFDM (1024AAM, 256QAM,64QAM, 16QAM, QPSK,BPSK) re identical in interior structure, electrical circuits and components, just model names

are different.

# 2.3. Equipment Under Test

## Power supply system utilised

Power supply voltage	:	Ο	230V / 50 Hz	Ο	120V / 60Hz
Des Des		0	12 V DC	0	24 V DC
AK TESTING			Other (specified in blank bel	ow)	ak TESTIN.

#### DC 48V From POE power or DC 12V From DC Power

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### Channel list:

e namer e	O CI (A) (Po	14	and here	110	11/20
	Channel			Frequency (MHz)	
	36			5180	
6	38		0	2190	
TESTING	40	TESTING	TESTING	5200	
HUAN	42	HUAN	HUAN	5210	HUAN
33	44			5220	
GIG	46	allG		5230	
KTESIN	48	WTEST		5240	

## 2.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- supplied by the manufacturer
- $\bigcirc$  supplied by the lab

ANCOR			(1977) ·	
0 /		M/N:	1	
		Manufacturer:	1	
	- 113			

## 2.5. Test summary

	est Requirement ESTI EN301983		Verdict
HUAK"	Section 4.2.1	O HUAN	Pass
KTESTING	Section 4.2.2	WTF STING	Pass
HOM OF	Section 4.2.3	A HOLE OF	Pass
STING	Section 4.2.4	STING	Pass
de la	Section 4.2.5	JAK IL	Pass
MNG	Section 4.2.6	STING	N/A
O HUAN	Section 4.2.7	C HUGH	Pass
HUAKTESTING	Section 4.2.8	HUNCTISTING	Pass
	Section 4.2.9		Pass
K TESTING	Section 4.2.10	AKTESTING	N/A
		Section 4.2.1 Section 4.2.2 Section 4.2.3 Section 4.2.4 Section 4.2.5 Section 4.2.6 Section 4.2.7 Section 4.2.7	ESTTEN301983Section 4.2.1Section 4.2.2Section 4.2.3Section 4.2.4Section 4.2.5Section 4.2.6Section 4.2.7Section 4.2.8Section 4.2.9

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### 2.6. Modifications

No modifications were implemented to meet testing criteria.

# 3. TEST ENVIRONMENT

### 3.1. Information of the Test Laboratory

Shenzhen HUAK Testing Technology Co., Ltd. 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Testing Laboratory Authorization: A2LA Accreditation Code is 4781.01. FCC Designation Number is CN1229. Canada IC CAB identifier is CN0045. CNAS Registration Number is L9589.

## 3.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature: 25 °C High Temperature: 40 °C Low Temperature: 10 °C Normal Voltage : DC 48.0V High Voltage:DC 52.8V Low Voltage:DC 43.2V Relative Humidity: 55 % Air Pressure: 989 hPa

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## 3.3. Test Channels:

			Test channels				
	Test Clause Lower sub-band (5 150 MHz to 5 350 MHz)		Higher sub-band 5 725 MHz to 5 850 MHz				
			5 150 MHz to 5 250 MHz	5 250 MHz to 5 350 MHz			
Centre fre	quencies	5.3.2	C7 (see	C7 (see note 1)			
Occupied Bandwidth		5.3.3	C	7	C8		
	wer density	5.3.4	C1	C2	C3, C4		
emissions	er unwanted outside the AN bands	5.3.5	C7 (see	note 1)	C8 (see note 1)		
Transmitte emissions	er unwanted within the AN bands	5.3.6	C1	C2	C3, C4		
Receiver s emissions		5.3.7	C7 (see	note 1)	C8 (see note 1)		
Transmit f (TPC)	Power Control	5.3.4	n.a. (see note 2)	C2 (see note 1)	C3, C4 (see note 1)		
Dynamic F Selection	Frequency (DFS)	5.3.8	n.a. (see note 2)	C5	C6 (see note 3)		
Adaptivity		5.3.9	C.	7	C8		
C1, C3: C2, C4: C5, C6: C7, C8:	density testing The highest de density testing One channel o bandwidth has nominal chann One channel o	, it is suffici eclared cha , it is suffici out of the de been declared bandwid out of the de	anel for every declared nomin ient to only perform this test u innel for every declared nomin ient to only perform this test u eclared channels for this frequ ared for this sub-band, testing th. eclared channels for this sub- clared nominal channel bandy	ising the lowest nominal chain nal channel bandwidth within using the lowest nominal chain uency range. If more than on g shall be performed using the band. For Occupied Channe	nnel bandwidth. this band. For the power nnel bandwidth. e nominal channel e lowest and highest I Bandwidth, testing shall		
NOTE 1:	be performed units in case of more	using the h e than one	ighest nominal channel bandy channel plan has been decla	width. red, testing of these specific			
NOTE 2:		required for	of the declared channel plans r nominal channel bandwidths		e frequency range		
NOTE 3:	partly within th implemented, t	e 5 600 MH for the <i>Off</i> -	nel plan includes channels wi Iz to 5 650 MHz band, the tes <i>Channel CAC</i> ) shall be perfor Iz to 5 600 MHz or within the	sts for the <i>Channel Availabili</i> med on one of these channe	ty Check (and where als in addition to a channel		

### 3.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics;Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics;Part 2 " and is documented in the Shenzhen Global Test Service Co.,Ltd quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen HUAK laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Frequency error	25 Hz	(1)
Transmitter power conducted	0.57dB	(1)
Transmitter power Radiated	2.20dB	(1)
Conducted spurious emission	1.60dB	(1)
Radiated spurious emission	2.20dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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## 3.5. Equipments Used during the Test

Centre frequencies & RF output power & Power density & OCB & TPC

e liequencies & Ri Oui	iput power & row			HUM	AND HOUSE
Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
Spectrum analyzer	Agilent	N9020A	HKE-048	2020/12/10	2021/12/09
Signal generator	Agilent	N5182A	HKE-029	2020/12/10	2021/12/09
Signal generator	Agilent	83630A	HKE-028	2020/12/10	2021/12/09
RF automatic control unit	Tonscend	JS0806-2	HKE-060	2020/12/10	2021/12/09
Power Sensor	Agilent	E9300A	HKE-086	2020/12/10	2021/12/09
Temperature and humidity meter	Boyang	HTC-1	HKE-075	2020/12/10	2021/12/09
	Test Equipment Spectrum analyzer Signal generator Signal generator RF automatic control unit Power Sensor Temperature and	Test EquipmentManufacturerSpectrum analyzerAgilentSignal generatorAgilentSignal generatorAgilentRF automatic control unitTonscendPower SensorAgilentTemperature andBoyang	Test EquipmentManufacturerModel No.Spectrum analyzerAgilentN9020ASignal generatorAgilentN5182ASignal generatorAgilent83630ARF automatic control unitTonscendJS0806-2Power SensorAgilentE9300ATemperature andBoyangHTC-1	Spectrum analyzerAgilentN9020AHKE-048Signal generatorAgilentN5182AHKE-029Signal generatorAgilent83630AHKE-028RF automatic control unitTonscendJS0806-2HKE-060Power SensorAgilentE9300AHKE-086Temperature andBoyangHTC-1HKE-075	Test EquipmentManufacturerModel No.Serial No.Calibration DateSpectrum analyzerAgilentN9020AHKE-0482020/12/10Signal generatorAgilentN5182AHKE-0292020/12/10Signal generatorAgilent83630AHKE-0282020/12/10RF automatic control unitTonscendJS0806-2HKE-0602020/12/10Power SensorAgilentE9300AHKE-0862020/12/10Temperature andBoyangHTC-1HKE-0752020/12/10

#### Adaptively & Receiver Blocking

1	Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
	1	Spectrum analyzer	R&S	FSP40	HKE-025	2020/12/10	2021/12/09
	2	Wireless Communication Test Set	R&S	CMU200	HKE-026	2020/12/10	2021/12/09
	3.00	Wireless Communication Test Set	R&S	CMW500	HKE-027	2020/12/10	2021/12/09
	4	RF automatic control unit	Tonscend	JS0806-2	HKE-060	2020/12/10	2021/12/09
-		100 100		ING	INC	- MC	ING

Trans	smitter spurious emissi	ons & Receiver sp	ourious emission	s 🔊		
lte m	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
1	Broadband antenna	Schwarzbeck	VULB 9163	HKE-012	2020/12/10	2021/12/09
2	Horn antenna	Schwarzbeck	9120D	HKE-013	2020/12/10	2021/12/09
3	Receiver	R&S	ESR-7	HKE-010	2020/12/10	2021/12/09
4	Position controller	Taiwan MF	MF7802	HKE-011	2020/12/10	2021/12/09
5	Preamplifier	EMCI	EMC05184 5SE	HKE-015	2020/12/10	2021/12/09
6	Preamplifier	Agilent	83051A	HKE-016	2020/12/10	2021/12/09
7	High pass filter unit	Tonscend	JS0806-F	HKE-055	2020/12/10	2021/12/09
8	Spectrum analyzer	Agilent	N9020A	HKE-048 🌑	2020/12/10	2021/12/09

The calibration interval is 1 year.

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# 4. TEST CONDITIONS AND RESULTS

## 4.1. Centre frequencies

#### <u>Limit</u>

The actual centre frequency for any given channel declared by the manufacturer shall be maintained within the range fc  $\pm$  20 ppm.

### Test Procedure

- 1. For equipment can operating without modulation
  - a Connected The UUT to the spectrum and operated in an unmodulated mode.
  - b Set the centre frequency of spectrum to the frequency which UUT operated.
  - c Max Hold and waiting the trace stabilized.
  - d Search the peak value of the power envelope and noted.
- 2. For equipment operating with modulation
  - a Connected The UUT to the spectrum.
  - b Set the centre frequency of spectrum to the frequency which UUT operated.
  - c Max Hold and waiting the trace stabilized.
  - d Search the peak value of the power envelope and noted.
  - e Move the marker in a positive frequency increment until the upper, (relative to the centre frequency), -10 dBc point is reached, note this point as f1.
  - f Move the marker in a negative frequency increment until the lower, (relative to the centre frequency), -10 dBc point is reached, note this point as f2.
  - g The centre frequency is calculated as (f1 + f2) / 2.
- 3. These measurements shall be performed under both normal and extreme test conditions.
- 4. One channel out of the declared channels for each sub-band shall be tested.

#### Test Results

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Ant 1

MAN	man	Mar	MAR	AKTL	all an			
Test conditions		Test Channel		Measured Result	Erequency Deviation			
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)			
48.0	+25	802.11 a	3 <sup>3</sup>	5179.981457	3.58			
HUAN 50.0	-10		HUAK	5179.981845	3.50			
52.8	+40		802.11 a	802.11 a	802.11 a	802.11 a	CH36/ 5180MHz	5179.943126
12 D	-10	AKTESTING	010000112	5179.966901	6.39			
43.2	+40	C HUM	LAK TESTING	5179.948531	9.94			
Limit				20	ppm			
Result			PASS					
	a	No						

Test conditions		Test Channel		Frequency Deviation			
Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)			
+25			5179.965366	6.69			
-10	802.11 n HT 20	IS NOTES	5179.952555	9.16			
+40		AND DECEMBER AND	STREET, *	(S2000) *		5179.947269	10.18
-10			010011112	5179.977083	4.42		
+40		TING	5179.961274	7.48			
Li	mit	20	ppm				
Re	sult	P/	ASS				
	Temperature (℃)     +25     -10     +40     -10     +40     Lite	Temperature (°C )     Mode       +25     -10       +40     802.11 n HT 20	Temperature (°C)     Mode     /       +25     -10     802.11 n HT 20     CH36/ 5180MHz       -10     +40     Limit	Temperature (°C)     Mode     / Instrumt / Frequency     Measured Result (MHz)       +25     -10     802.11 n HT 20     5179.965366     5179.952555       -10     802.11 n HT 20     CH36/ 5180MHz     5179.947269     5179.947269       -10     5179.977083     5179.961274     5179.961274       Limit     20     20     20			

Test conditions		Test conditions Test Channel		Measured Result Frequen	Fraguency Deviation			
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)			
48.0	+25			5189.975002	4.82			
F2 9	-10	802.11 n HT 40	The		5189.952366	9.18		
52.8	+40					CH38/ 5190MHz	5189.955982	8.48
42.0	-10			0100Miliz	5189.936239	12.29		
43.2	+40		TING	5189.941123	11.34			
	Lir	mit	20	ppm				
	Re	sult	P/	ASS				
43.2	+40 Lir			5189.941123 <b>20</b>	11.34 ppm			

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Test conditions			Test Channel	Measured Result	Frequency Deviation			
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	(ppm)			
48.0	+25			5179.948826	9.88			
52.8	-10	+40 802.11 ac HT 20 -10	and HU.	6	5179.961748	7.38		
52.0	+40			atta HU.	and HO.	atta HO	CH36/ 5180MHz	5179.961939
42.0	-10		01000012	5179.946420	10.34			
43.2	+40		. G	5179.944867	10.64			
Limit				20 ppm				
Result				PASS				
		235.52						

Test c	Test conditions		Test Channel	Measured Result	Fraguency Deviation		
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)		
48.0	+25			5189.915737	16.24		
50.0	-10	802.11 ac HT		~51		5189.961655	7.39
52.8	+40						802.11 ac HT CH38/ 40 5190MHz
43.2	-10		5189.952108	9.23			
43.2	+40	.NG		5189.958087	8.08		
	Li	mit	20	ppm			
	Result				PASS		

Test conditions		Test Channel		Measured Result			
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)		
48.0	+25	802.11 ac HT	0	5209.991489	1.63		
50.0	-10					5209.947128	10.15
52.8	+40				802.11 ac H I 80	CH42/ 5210MHz	5209.960093
42 Q	-10	UNK TESTIN	OZ TOWNIZ	5209.954916	8.65		
43.2	+40	O HO.	O HU.	5209.958820	7.90		
	Limit				ppm		
	Result				PASS		

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EST -

Test conditions		Test Channel		Frequency Deviation				
Temperature (℃)	Mode	/ Frequency	(MHz)	(ppm)				
+25			5179.954665	8.75				
-10	802.11 ax HT 20	atta HU.	attas HO.	and HO.	and HO.	3	5179.955249	8.64
+40						atta VU	5179.947563	10.12
-10				01000012	5179.955467	8.60		
+40		. G	5179.949642	9.72				
Limit				20 ppm				
Result				PASS				
	Temperature (℃)     +25     -10     +40     -10     +40     Lin	Temperature (°C )     Mode       +25     -10       +40     802.11 ax HT 20       -10     +40       +40     Limit	Temperature (°C)     Mode     / Frequency       +25     -10     802.11 ax HT 20     CH36/ 5180MHz       -10     +40     Limit     CH36/	Temperature (°C)     Mode     / Frequency     Measured Result (MHz)       +25     -10     802.11 ax HT 20     5179.954665     5179.955249       -10     802.11 ax HT 20     CH36/ 5180MHz     5179.947563     5179.955467       -10     Limit     20     20     20     20				

Test conditions		Test Channel		Measured Result	Fraguency Deviation								
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)								
48.0	+25			5189.943105	10.96								
50.0	-10	802.11 ax HT 40				~5						5189.957774	8.14
52.8	+40						45	5189.951223	9.40				
12.2	-10		O HOM	5189.933952	12.73								
43.2	+40	- alG		5189.949580	9.71								
	Li	mit	20	ppm									
Result				PASS									

Test o	onditions		Test Channel	Measured Result	Erecuency Deviction
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)
48.0	+25	O HU.	0	5209.972285	5.32
ED 0	-10	802.11 ax HT 80	CH42/ 5210MHz	5209.959825	7.71
52.8	+40			5209.944398	10.67
42.2	-10	AN TESTIN		5209.936362	12.21
43.2	+40	O HU.		5209.945086	10.54
Limit			20 ppm		
	Result			PASS	

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Test conditions		Test Channe	Test Channel	Measured Result	Eroqueney Deviation
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)
48.0	+25	802.11 a	HUAKTES	5179.939215	11.73
50.0	-10		0	5179.964803	6.79
52.8	+40		+40 802.11 a	.11 a CH36/ 5180MHz	5179.946761
40.0	-10	HUAK	M HUAK IN TESTING	5179.965237	6.71
43.2	43.2 +40	HUAN	5179.945293	10.56	
Limit			20 ppm		
Result			P	ASS	

Test c	Test conditions		Test Channel	Measured Result	Fraguency Deviation
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)
48.0	+25	-STIN	à Alta	5179.972926	5.23
FO O	-10		HUAKTL	5179.957695	8.17
52.8	+40		CH36/ 5180MHz	5179.951041	9.45
43.2	-10			5179.959930	7.74
43.Z	+40			5179.948834	9.88
	Li	nit	•	20	ppm
	Result			PASS	

Test conditions			Test Channel	Measured Desult	Ensemble Paulistice
Voltage (V)	Temperature (℃)	Mode	/ Frequency	Measured Result (MHz)	Frequency Deviation (ppm)
48.0	+25	802.11 n HT		5189.970087	5.76
E2 0	-10		TESTING	5189.963060	7.12
52.8	+40		802.11 n HT CH38/ 40 5190MHz -	5189.961411	7.44
40.0	-10			5189.946719	10.27
43.2	+40	NK TESTING		5189.943974	10.79
Limit			20	ppm	
Result			PASS		

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Test c	Test conditions		Test Channel	Measured Result	Frequency Deviation
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	(ppm)
48.0	+25			5179.948575	9.93
52.8	-10		CH36/ 5180MHz	5179.951816	9.30
52.8	+40			5179.959537	7.81
42.0	-10	20	010011112	5179.940967	11.40
43.2	+40	W TESTING	.0	5179.948881	9.87
	Limit			20 ppm	
	Result			PASS	

Test c	onditions		Test Channel	Measured Result	Fraguency Deviation
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	Frequency Deviation (ppm)
48.0	+25	ý.		5189.913826	16.60
52.9	-10	802.11 ac HT	02.11 ac HT CH38/ 40 5190MHz	5189.952963	9.06
52.8	+40			5189.961381	7.44
43.2	-10	O HOM		5189.940179	11.53
43.2	+40	19		5189.951143	9.41
	Limit			20 ppm	
	Result			PASS	

Test c	Test conditions		Test Channel	Manager and Descult	
Voltage (V)	Temperature (℃)	Mode	/ Frequency	Measured Result (MHz)	Frequency Deviation (ppm)
48.0	+25	O HO.	0	5209.988841	2.14
50.0	-10	802.11 ac HT 80	HT CH42/ 5210MHz	5209.962153	7.26
52.8	+40			5209.952097	9.19
12.0	-10	UNK TESTIN	OZ TOWNIZ	5209.953688	8.89
43.Z	43.2 +40	O HO	5209.949263	9.74	
Limit			20 ppm		
Result			PASS		

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Test conditions		Test Channel	Macourad Deput		
Voltage (V)	Temperature (℃)	Mode	/ Frequency	Measured Result (MHz)	Frequency Deviation (ppm)
48.0	+25		6	5179.950065	9.64
FO 0	-10		HUAK I	5179.960876	7.55
52.8	+40		IT CH36/ 5180MHz _	5179.962279	7.28
KTESTING 10.0	-10			5179.940985	11.39
43.2	+40			5179.945160	10.59
	Li	mit		20	ppm
Result			PASS		

Test c	onditions		Test Channel	Measured Result (MHz)	Frequency Deviation (ppm)	
Voltage (V)	Temperature (℃)	Mode	/ Frequency			
48.0	+25			5189.932572	12.99	
52.0	-10	802.11 ax HT	* TESTING	S KTES	5189.947977	10.02
52.8	+40		.11 ax HT CH38/ 40 5190MHz	5189.962185	7.29	
43.2	-10			5189.933827	12.75	
MTES 43.2	+40	AK TESTING		5189.939684	11.62	
	Limit			20 ppm		
	Result			PASS		

Test c	onditions		Test Channel	Measured Result	Frequency Deviation
Voltage (V)	Temperature (℃)	Mode	/ Frequency	(MHz)	(ppm)
48.0	+25			5209.984748	2.93
F2 96	-10	802.11 ax HT	802.11 ax HT CH42/ 80 5210MHz	5209.955616	8.52
52.8	+40			5209.954753	8.68
42.0	-10			5209.947090	10.16
43.2	+40	GING		5209.959597	7.75
	Limit			20	ppm
	Result			PASS	

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## 4.2. Nominal Channel Bandwidth and Occupied Channel Bandwidth

#### <u>LIMIT</u>

The Nominal Channel Bandwidth for a single Operating Channel shall be 20 MHz

Alternatively, equipment may implement a lower Nominal Channel Bandwidth with a minimum of 5 MHz, providing they still comply with the Nominal Centre Frequencies defined in clause 4.2.1 (20 MHz raster).

The Occupied Channel Bandwidth shall be between 80 % and 100 % of the Nominal Channel Bandwidth. In case of smart antenna systems (devices with multiple transmit chains) each of the transmit chains shall meet this requirement.

The Occupied Channel Bandwidth might change with time/payload.

During a Channel Occupancy Time (COT), equipment may operate temporarily with an Occupied Channel Bandwidth of less than 80 % of its Nominal Channel Bandwidth with a minimum of 2 MHz

#### Test Procedure

1. Connect the UUT to the spectrum analyser and use the following settings:

Centre Frequency:	The centre frequency of the channel	nel under test
Resolution Bandwidth:	100 kHz	- STN
Video Bandwidth:	300 kHz	HUAK
Frequency Span:	2 × Nominal Bandwidth (e.g. 40 M MHz channel)	IHz for a 20
Detector Mode:	Peak	HUAKTESTIN
Trace Mode:	Max Hold	)

- 2. When the trace is complete, capture the trace.
- 3. Find the peak value of the trace and place the analyser marker on this peak.
- 4. Use the 99 % bandwidth function of the spectrum analyser to measure the Occupied Channel Bandwidth of the UUT. This value shall be recorded.
- 5. Repeated steps 1 to 3 above in case of simultaneous transmissions in non-adjacent channels.
- 6. These measurements shall be performed only under normal operating conditions.
- 7. One channel out of the declared channels for each sub-band shall be tested.

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Mode	Channel	Frequency (MHz)	99% bandwidth (MHz)	Result
802.11 a	CH36	5180	16.378	Pass
802.11 n HT 20	CH36	5180	17.603	Pass
802.11 n HT 40	CH38	5190	36.152	Pass
802.11 ac HT 20	CH36	5180	17.601	Pass
802.11 ac HT 40	CH38	5190	36.134	Pass
802.11 ac HT 80	CH42	5210	75.485	Pass
802.11 ax HT 20	CH36	5180	18.911	Pass
802.11 ax HT 40	CH38	5190	37.718	Pass
802.11 ax HT 80	CH42	5210	77.034	Pass

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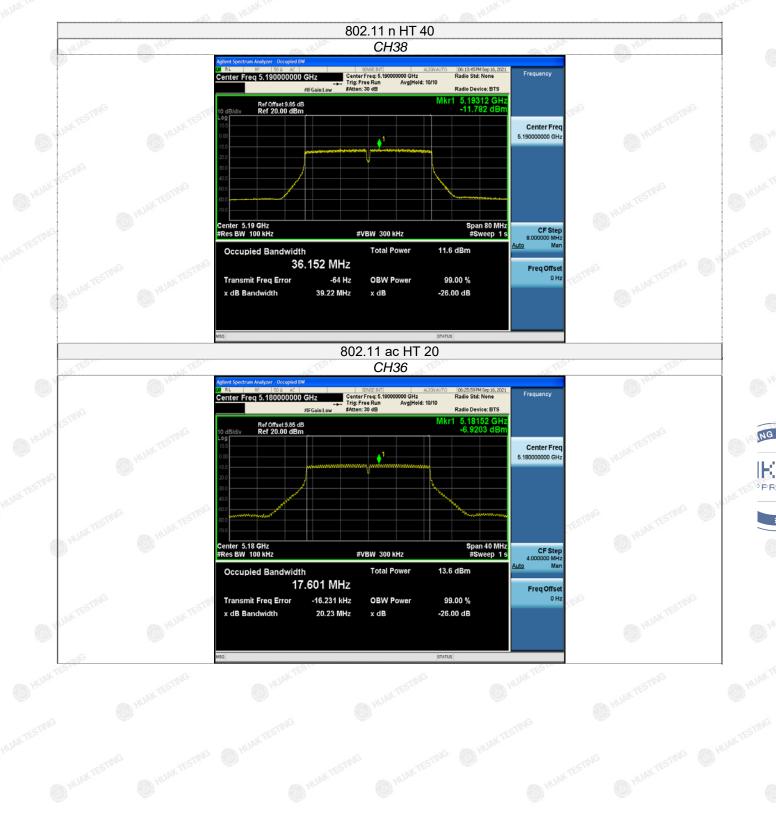
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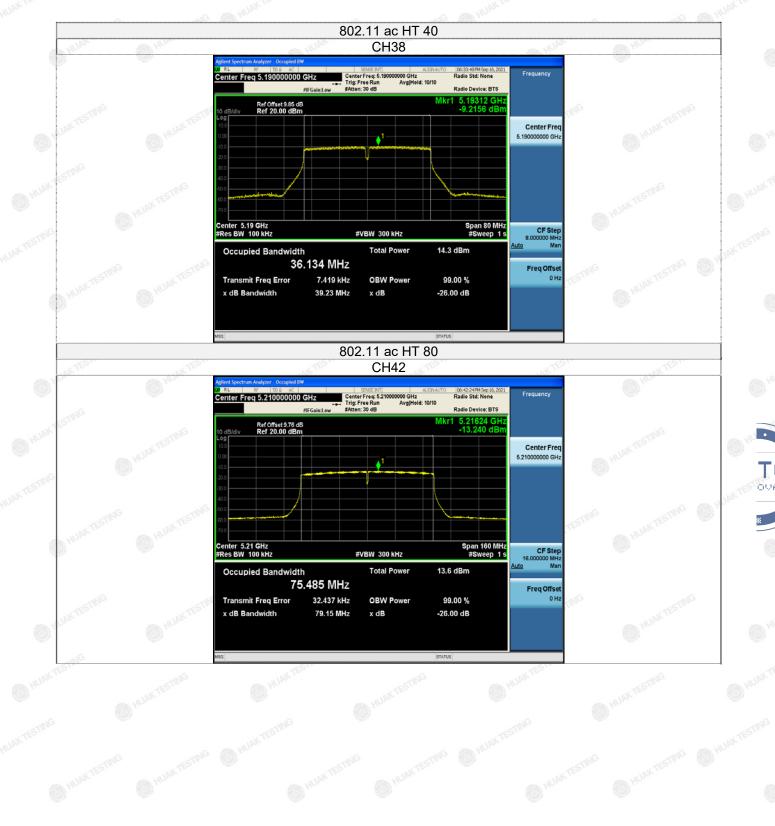
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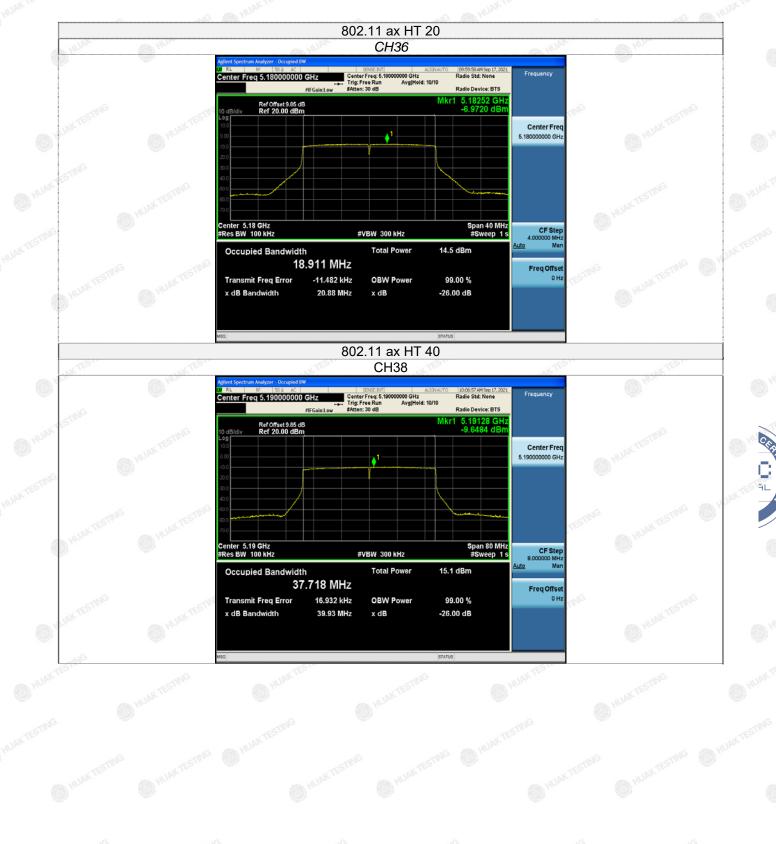
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FICATION

			802.11 ax HT	80		
HUAR	A HUM	- HU	CH42		HUAN	A HUM
3	w is the second	Agilent Spectrum Analyzer - Occupied BW				<u> </u>
		OX RL RF 50 Q AC Center Freq 5.210000000 GHz	Center Freg: 5.210000000 GHz	ALIGNAUTO 10:15:39 AM Sep 17, 2021 Radio Std: None	Frequency	
		#IFGai	Trig: Free Run Avg Hold	d: 10/10 Radio Device: BTS		
		Ref Offset 9.76 dB		Mkr1 5.2132 GHz -12.460 dBm		
		Log 10.0			Center Freq	
		0.00			5.210000000 GHz	
		-10.0				
		-20.0				
		-40.0				
		-50.0				
		-60.0				
		Center 5.21 GHz #Res BW 100 kHz	#VBW 300 kHz	Span 160 MHz #Sweep 1 s	CF Step 16.00000 MHz	
			Total Power	15.0 dBm	Auto Man	
		Occupied Bandwidth	4 MHz	15.0 0811		
					Freq Offset 0 Hz	
			B.699 kHz OBW Power	99.00 %	0 HZ	
		x dB Bandwidth 7	'9.54 MHz x dB	-26.00 dB		
		MSG		STATUS		

Note:Only the worst channel is reported for each modulation.

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nt 2				
Mode	Channel	Frequency (MHz)	99% bandwidth (MHz)	Result
802.11 a	CH36	5180	16.378	Pass
802.11 n HT 20	CH36	5180	17.606	Pass
802.11 n HT 40	CH38	5190	36.154	Pass
802.11 ac HT 20	CH36	5180	17.604	Pass
802.11 ac HT 40	CH38	5190	36.156	Pass
802.11 ac HT 80	CH42	5210	75.464	Pass
802.11 ax HT 20	CH36	5180	18.916	Pass
802.11 ax HT 40	CH38	5190	37.711	Pass
802.11 ax HT 80	CH42	5210	77.066	Pass

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FICATION

			802.11 ax HT	80		
HUAR	HUM	and HU	CH42		HUAN	A HUM
0		Agilent Spectrum Analyzer - Occupied BW				<u> </u>
		08 RL RF 50 R AC Center Freq 5.210000000 GHz	Center Freq: 6.21000000 GHz	Radio Std: None	Frequency	
		#IFGair		Radio Device: BTS		
		Ref Offset 10.94 dB 10 dB/div Ref 20.00 dBm		Mkr1 5.20888 GHz -15.536 dBm	- mul	
		10.0			Center Freq	
		10.0	1		5.21000000 GHz	
		-20.0				
		-40.0				
		-50.0				
		-70.0				
		Center 5.21 GHz #Res BW 100 kHz	#VBW 300 kHz	Span 160 MHz #Sweep 1 s	Cr Step	
		Occupied Bandwidth	Total Power	12.0 dBm	16.000000 MHz <u>Auto</u> Man	
			6 MHz		Freq Offset	
		Transmit Freq Error -10	01.16 kHz OBW Power	99.00 %	0 Hz (5	
		x dB Bandwidth 7	9.82 MHz x dB	-26.00 dB		
				STATUS		
		MSG		STATUS		

Note:Only the worst channel is reported for each modulation.

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## 4.3. RF output power, Transmit Power Control (TPC) and power density

#### <u>LIMIT</u>

The limits below are applicable to the system as a whole and in any possible configuration. Includes smart antenna systems (devices with multiple transmit chains).

In case of multiple (adjacent or non-adjacent) channels within the same sub-band, the total RF output power of all channels in that sub-band shall not exceed the limits defined below.

In case of multiple, non-adjacent channels operating in separate sub-bands, the total RF output power in each of the sub-bands shall not exceed the limits defined below.

TPC is not required for channels whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz.

For devices with TPC, the RF output power and the power density when configured to operate at the highest stated power level of the TPC range shall not exceed the levels given in table 1.

Devices are allowed to operate without TPC. See table 1 for the applicable limits in this case.

Table 1: Mean e.i.r.p. limits for RF output power and power density at the highest power level

•	Frequency Me range		.p. limit n]	Mean e.i.r.p. density limit [dBm/MHz]		
[MH:	z]	with TPC	without TPC	with TPC	without TPC	
5 150 to	5 350	23	20/23 (see note 1)	10	7/10 (see note 2)	
5 470 to	5 725	30 (see note 3)	27 (see note 3)	17 (see note 3)	14 (see note 3)	
NOTE 1:		plicable limit is 20 dBm, tely within the band 5 1 1.				
NOTE 2:		plicable limit is 7 dBm/N tely within the band 5 1 h/MHz.				
NOTE 3:		evices without a Radar 250 MHz to 5 350 MHz		n function shall comply	with the limits for the	

For devices using TPC, the RF output power during a transmission burst when configured to operate at the lowest stated power level of the TPC range shall not exceed the levels given in table 2. For devices without TPC, the limits in table 2 do not apply.

#### Table 2: Mean e.i.r.p. limits for RF output power at the lowest power level of the TPC range

Freq	uency range	Mean e.i.r.p. [dBm]				
5 250 M	Hz to 5 350 MHz	17				
5 470 M	Hz to 5 725 MHz	24 (see note)				
NOTE:	Slave devices with	thout a Radar Interference				
Detection function shall comply with the						
	limits for the ban	d 5 250 MHz to 5 350 MHz.				

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## 4.3.1. RF output power at the highest power - PH

#### **Test Procedure**

- 1. The UUT shall be configured to operate at:
  - The highest stated transmitter output power level of the TPC range; or
  - The maximum transmitter output power level in case the equipment has no TPC feature.
- 2. For equipment with continuous transmission capability or for equipment operating (or with the capability to operate) with a constant duty cycle reference clause 5.4.4.2.1.1.2 ETSI EN 301 893 V2.1.1 (2017-05)
- 3. For equipment without continuous transmission capability and operating (or with the capability to operate) in only one sub-band reference clause 5.4.4.2.1.1.3 ETSI EN 301 893 V2.1.1 (2017-05)
- 4. For equipment without continuous transmission capability and having simultaneous transmissions in both sub-bands reference clause 5.4.4.2.1.1.4 ETSI EN 301 893 V2.1.1 (2017-05)
- 5. These measurements shall be performed under both normal and extreme test conditions.

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### <u>Test Results</u>

802.11a										
Test con	Test conditions		Ant 1	Ant 2	Mimo					
Temperatur e	Voltage	Channel/ Frequency	power	power	power (dBm)	Limit (dBm)	Result			
(°C)	(V)		(dBm)	(dBm)						
<b>+25</b> ℃	48.0V		10.35	10.29	/	ING	Pass			
10°0	52.8V	WAX TE	10.53	10.95	/ WAKT	SIN	Pass			
<b>-10</b> ℃	43.2V	36/5180	10.20	10.65	1	23	Pass			
10°0	52.8V	Black	11.32	10.91	1	0	Pass			
<b>+40</b> ℃	43.2V	- WAKTESTIN	11.28	10.25	- MAY TEST		Pass			

			802.11 n H	IT 20			
Test cond	Test conditions		Ant 1	Ant 2	Mimo		
Temperatur e	Voltage	Channel/ Frequency	power	power	power (dBm)	Limit (dBm)	Result
(°C)	(V)		(dBm)	(dBm)	(		
<b>+25</b> ℃	48.0V		9.44	10.05	12.77	STING	Pass
40°0	52.8V	HUAKT	9.18	8.74	11.98		Pass
<b>-10</b> ℃	43.2V	36/5180	9.71	9.05	12.40	23	Pass
· 10°C	52.8V	STING	8.59	8.66	11.64		Pass
<b>+40</b> ℃	43.2V	HUAKTES	8.14	10.11	12.25	1	Pass
STING	TESTIN	w la	STING	TESTIN	w.	STING	TES

			802.11 n H	IT 40				
Test con	Test conditions				Ant 2	Mimo		
Temperatur e (℃)	Voltage (V)	Channel/ Frequency	power (dBm)	power (dBm)	power (dBm)	Limit (dBm)	Result	
+25℃	48.0V	HUAK	6.93	7.84	10.42	· · · · · · · · · · · · · · · · · · ·	Pass	
1000	52.8V		7.66	7.30	10.49		Pass	
- <b>10</b> ℃	43.2V	38/5190	7.25	7.06	10.17	23	Pass	
. 10%	52.8V	HUAKTES	6.69	6.32	9.52	1	Pass	
<b>+40</b> ℃	43.2V		7.30	7.34	10.33	TESTING	Pass	

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	802.11 ac HT 20										
Test con	Test conditions		Ant 1	Ant 2	Mimo						
Temperatur e	Voltage	Channel/ Frequency	power	power	power (dBm)	Limit (dBm)	Result				
(°C)	(V)		(dBm)	(dBm)	(abiii)						
+25℃	48.0V		6.91	6.46	9.70	G	Pass				
10%	52.8V	I LAK TH	6.52	7.04	9.80	STIL	Pass				
<b>-10</b> ℃	43.2V	36/5180	5.98	6.27	9.14	23	Pass				
	52.8V	- Olympic - Olym	7.07	6.93	10.01	C C	Pass				
<b>⊷ +40</b> °C	43.2V	NIAK TESTAN	6.95	6.41	9.70	<u> </u>	Pass				

			802.11 ac H	HT 40			
Test conditions		Ant 1		Ant 2	Mimo		
Temperatur e	Voltage	Channel/ Frequency	power	power	power (dBm)	Limit (dBm)	Result
(°C)	(V)		(dBm)	(dBm)	()		
<b>+25</b> ℃	48.0V		6.17	5.65	8.93	CTING	Pass
10°0	52.8V	HUAKT	7.52	6.41	10.01	2	Pass
<b>-10</b> ℃	43.2V	38/5190	5.76	5.74	8.76	23	Pass
100	52.8V	STING	5.69	4.82	8.29		Pass
<b>+40</b> ℃	43.2V	HUAK TES	6.78	6.94	9.87	1	Pass
all	-Thu	10193	NG	The	1.5193	Ola	

			802.11 ac I	HT 80			
Test cond	Test conditions Ant 1	Ant 2	Mimo				
Temperatur e (℃)	Voltage (V)	Channel/ Frequency	power (dBm)	power (dBm)	power (dBm)	Limit (dBm)	Result
<b>+25</b> ℃	48.0V		5.71	6.47	9.12	STING	Pass
10°0	52.8V	HUAK	6.77	6.56	9.68	1	Pass
-10℃	43.2V	42/5210	5.58	5.73	8.67	23	Pass
140°C	52.8V	TESTING	5.84	5.30	8.59		Pass
<b>+40</b> ℃	43.2V	HUAK	6.71	6.02	9.39	. G	Pass
«STIL	TES		STIL	TES	1911 - C	STIL	TE

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802.11 ax HT 20										
Test conditions		Ant 1 Channel/	Ant 2	Mimo						
Temperatur e	Voltage (V)	Frequency	power (dBm)	power (dBm)	power (dBm)	Limit (dBm)	Result			
(°C)	(-)		(abiii)	(abiii)						
<b>+25</b> ℃	48.0V		7.00	6.54	9.79	ESTING	Pass			
-10°C	52.8V	ILAK TE	6.15	7.13	9.68		Pass			
-10 C	43.2V	36/5180	6.18	6.38	9.29	23	Pass			
100	52.8V	Ole	7.20	7.03	10.13	0	Pass			
<b>+40</b> ℃	43.2V	WIAK TESTIN	6.92	6.25	9.61	1	Pass			

802.11 ax HT 40											
Test conditions		Channel/	Ant 1	Ant 2	Mimo						
Temperatur e	Voltage (V)	Frequency	power	power (dBm)	power (dBm)	Limit (dBm)	Result				
(°C)	(•)		(dBm)	(dBm)							
<b>+25</b> ℃	48.0V		5.91	5.80	8.87	STING	Pass				
-10℃	52.8V	HUAKT	7.01	6.28	9.67		Pass				
	43.2V	38/5190	5.39	5.83	8.63	23	Pass				
<b>+40</b> ℃	52.8V	STING	5.66	4.53	8.14		Pass				
	43.2V	HUAKTES	6.90	6.42	9.68	Ì	Pass				
Bla	The	1.5.22	NG	The	10192	Ola					

			802.11 ax H	HT 80			
Test conditions		Channell	Ant 1	Ant 2	Mimo		
Temperatur e (℃)	Voltage (V)	Channel/ Frequency	power (dBm)	power (dBm)	power (dBm)	Limit (dBm)	Result
<b>+25</b> ℃	48.0V		5.93	6.48	9.22	TISTING	Pass
<b>-10</b> ℃	52.8V	HUAK	6.54	6.64	9.60		Pass
	43.2V	42/5210	5.92	6.02	8.98	23	Pass
<b>+40</b> ℃	52.8V	TESTING	5.70	5.08	8.41		Pass
	43.2V	HUAK	6.40	5.81	9.13	Qe	Pass
~STILL	TES		~STILL	TES		~STIL	TE

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FICATION

## 4.3.2. RF output power at the lowest power level of the TPC range - PL

#### Test Procedure

- 1. The UUT shall be configured to operate at the lowest stated transmitter output power level of the TPC range.
- 2. For equipment with continuous transmission capability or for equipment operating (or with the capability to operate) with a constant duty cycle (e.g. Frame Based equipment) reference clause 5.4.4.2.1.2.2 ETSI EN 301 893 V2.1.1 (2017-05)
- 3. For equipment without continuous transmission capability and operating (or with the capability to operate) in only one sub-band reference clause 5.4.4.2.1.2.3 ETSI EN 301 893 V2.1.1 (2017-05)
- 4. For equipment without continuous transmission capability and having simultaneous transmissions in both sub-bands reference clause 5.4.4.2.1.2.4 ETSI EN 301 893 V2.1.1 (2017-05)
- 5. These measurements shall be performed under both normal and extreme test conditions.
- 6. This test is only required for equipment with a TPC feature.

#### **Test Results**

This test item is not applicable for the EUT without TPC featur.

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## 4.4. Power density

#### **Test Procedure**

- 1. The UUT shall be configured to operate at:
  - The highest stated transmitter output power level of the TPC range; or
  - The maximum transmitter output power level in case the equipment has no TPC feature.
- For equipment with continuous transmission capability or for equipment operating (or with the capability to operate) with a constant duty cycle (e.g. Frame Based equipment) reference clause 5.4.4.2.1.3.2 ETSI EN 301 893 V2.1.1 (2017-05).
- 3. For equipment without continuous transmission capability and without the capability to transmit with a constant duty cycle reference clause 5.4.4.2.1.3.3 ETSI EN 301 893 V2.1.1 (2017-05).
- 4. These measurements shall only be performed at normal test conditions.

### Test Results

Mode	Channel/ Frequency	Ant 1 Ant 2		Mimo	Limit	Result
Mode	(MHz)	PSD (dBm/MHz)	PSD (dBm/MHz)	PSD (dBm/MHz)	(dBm/MHz)	Result
802.11a	36/5180	-0.58	0.67	1 151	<sup>©</sup> 10	Pass
802.11n HT 20	36/5180	-1.37	0.08	2.43	10	Pass
802.11n HT 40	38/5190	-3.97	-3.70	-0.82	10	Pass
802.11ac HT 20	36/5180	2.06	-0.86	3.85	10	Pass
802.11ac HT 40	38/5190	-0.87	-2.55	1.38	10	Pass
802.11ac HT 80	42/5210	-4.64	-5.85	-2.19	10	Pass
802.11ax HT 20	36/5180	2.07	-0.22	4.08	10	Pass
802.11ax HT 40	38/5190	-0.21	-3.09	1.59	10	Pass
802.11ax HT 80	42/5210	-3.18	-5.88	-1.31	10	Pass

Note:Only the worst channel is reported for each modulation.

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# The test plots as follow:



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Ant 2



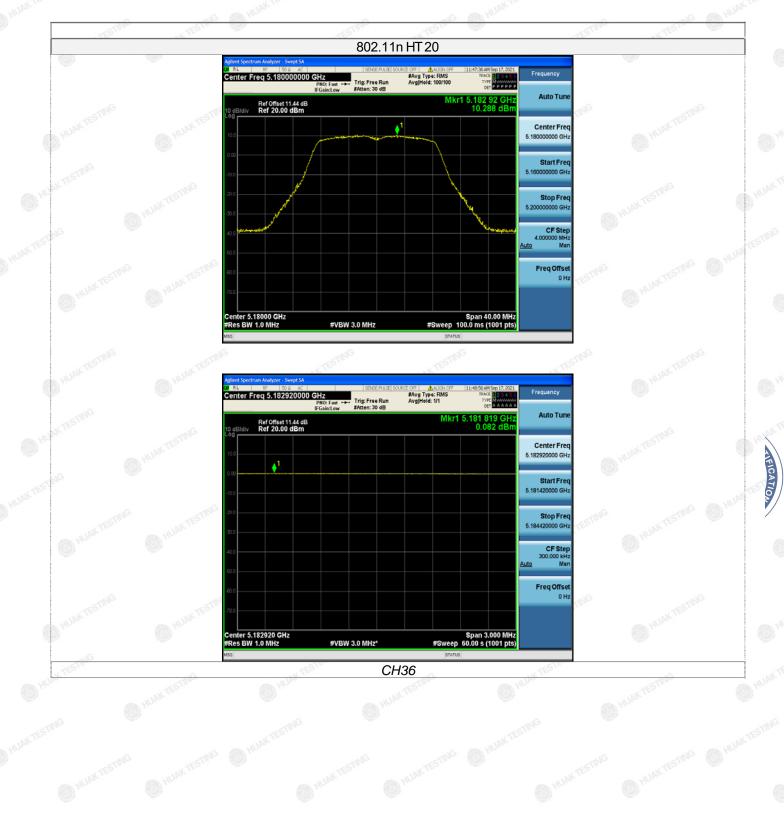
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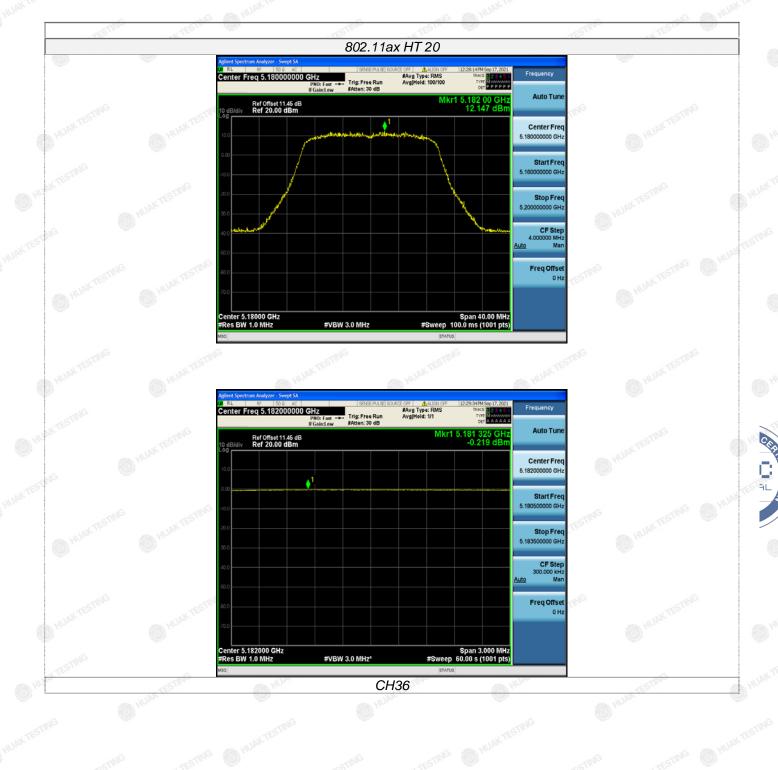
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## 4.5. Transmitter unwanted emissions

## 4.5.1. Transmitter unwanted emissions outside the 5 GHz RLAN bands

### Limit

The level of unwanted emission shall not exceed the limits given in table 3.

## Table 3: Transmitter unwanted emission limits outside the 5 GHz RLAN bands

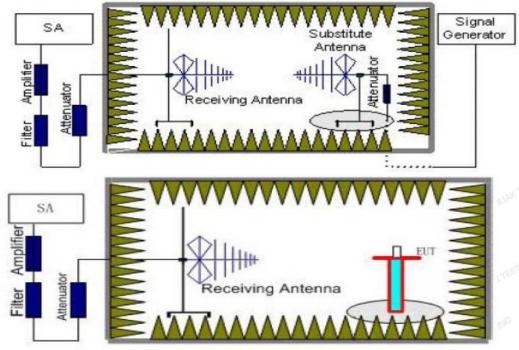
Frequency range	Maximum power	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 862 MHz	-54 dBm	100 kHz
862 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 5,15 GHz	-30 dBm	1 MHz
5,35 GHz to 5,47 GHz	-30 dBm	1 MHz
5,725 GHz to 26 GHz	-30 dBm	1 MHz

### **Test Procedure**

- 1. The measurement procedure follows ETSI EN 301 893 (V2.1.1) Sub-clause 5.4.5.2.2
- 2. The measurement shall only be performed at normal test conditions. One channel out of the declared channels for each sub-band shall be tested.

## **Test Configuration**

### Effective Radiated Power measurement (30 MHz to 26 GHz)



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### TEST RESULTS

Remark: We tested at 802.11a/802.11n HT20/802.11n HT40/802.11ac HT20/802.11ac HT40/802.11ac HT80/802.11ax HT20/802.11ax HT40/802.11ax HT80 mode at the antenna single transmitting mode and the Mimo mode, and recorded the worst case 802.11n HT 20 mode at the Mimo mode. 18GHz-26GHz not recorded for no spurious point have a margin of less than 6 dB with respect to the limits.

### 802.11n HT 20, CH 36, Horizontal/Vertical

ANT. Pol.	Result (dBm)	Limit	Margin	Conclusion
WARTEST	ING HUAK	resting O	(n.	AK TESTING
V	-77.03	-54	-23.03	PASS
V	-77.91	-54	-23.91	PASS
V	-75.91	-36	-39.91	PASS
V MC	-78.94	-36	-42.94	PASS
V	-75.91	-54	-21.91	PASS
V	-80.66	-36	-44.66	PASS
HHARTES	-75.75	-54	-21.75	PASS
н	-77.79	-36	-41.79	PASS
H	-71.53	-36	-35.53	PASS
● н	-74.12	-36	-38.12	PASS
HUNTH	-71.44	-54	-17.44	PASS
Н	-77.87	-36	-41.87	PASS
	V V V V V V V H H H H	ANT. Pol. (dBm)   V -77.03   V -77.91   V -75.91   H -75.75   H -77.79   H -71.53   H -71.44	ANT. Pol.   (dBm)   Limit     V   -77.03   -54     V   -77.91   -54     V   -75.91   -36     V   -78.94   -36     V   -75.91   -54     H   -75.75   -54     H   -77.79   -36     H   -71.53   -36     H   -74.12   -36     H   -71.44   -54	ANT. Pol.     (dBm)     Limit     Margin       V     -777.03     -54     -23.03       V     -777.91     -54     -23.91       V     -775.91     -36     -39.91       V     -78.94     -36     -42.94       V     -75.91     -54     -21.91       V     -75.91     -54     -21.91       V     -75.75     -54     -21.91       V     -80.66     -36     -44.66       H     -75.75     -54     -21.75       H     -77.79     -36     -41.79       H     -771.53     -36     -35.53       H     -74.12     -36     -38.12       H     -71.44     -54     -17.44

Note:

Cable loss and antenna gain was combined in the calculated result.
Other point of the measurements are below 20dB from the limit.

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Fre. (MHz)	ANT. Pol.	Result (dBm)	Limit	Margin	Conclusion
Above 1GHz:					
2019.32	Vertisi	-55.16	-30	-25.16	PASS
2617.69	Vino	-56.82	-30	-26.82	PASS
3649.50	V	-56.69	-30	-26.69	PASS
4372.59	TESTING V	-58.83	-30	-28.83	PASS
5607.75	V	-51.65	-30	-21.65	PASS
6038.41	v	-53.49	-30	-23.49	PASS
2232.02	Н	-54.75	-30	-24.75	PASS
2371.80	O H	-59.70	-30	-29.70	PASS
3075.38	HING	-54.27	-30	-24.27	PASS
3862.23	н	-53.71	-30	-23.71	PASS
4791.15	N TESTING H	-53.83	-30	-23.83	PASS
6751.77	HUAKTES	-53.54	-30	-23.54	PASS
	00000			00000	

Note:

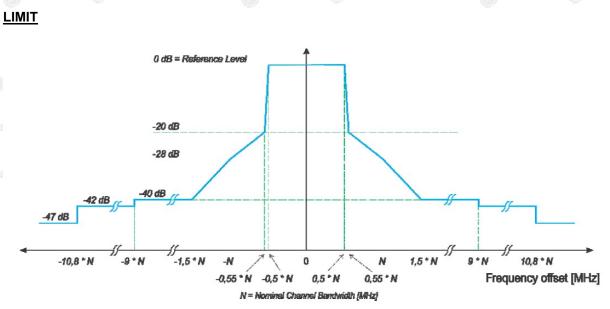
Cable loss and antenna gain was combined in the calculated result.
Other point of the measurements are below 20dB from the limit.

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## 4.5.2. Transmitter unwanted emissions within the 5 GHz RLAN bands



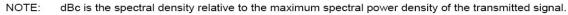


Figure 1: Transmit spectral power mask

### Test Procedure

- 1. The measurement procedure follows ETSI EN 301 893 (V2.1.1) Sub-clause .4.6.2.1.
- 2. The measurement shall only be performed at normal test conditions.

### Test Result

The test plots as follow:

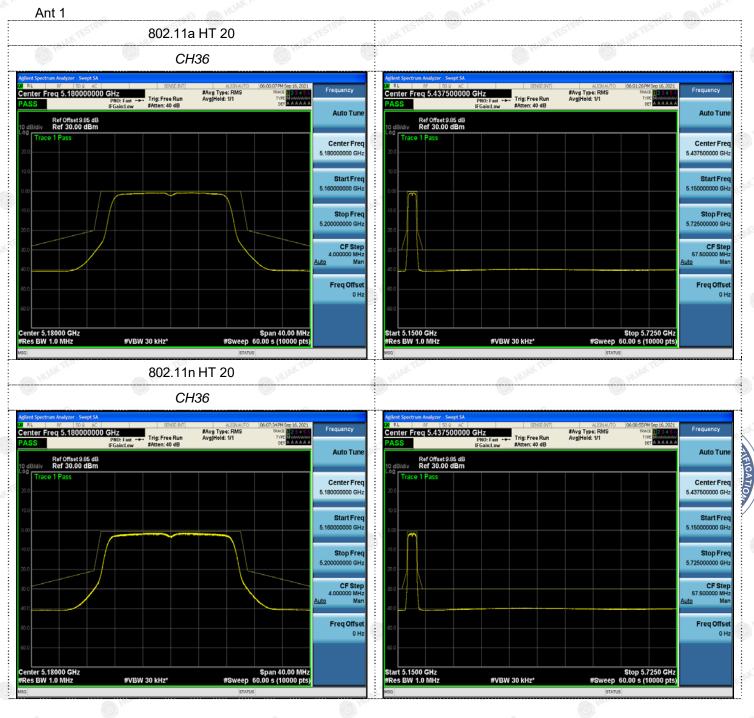
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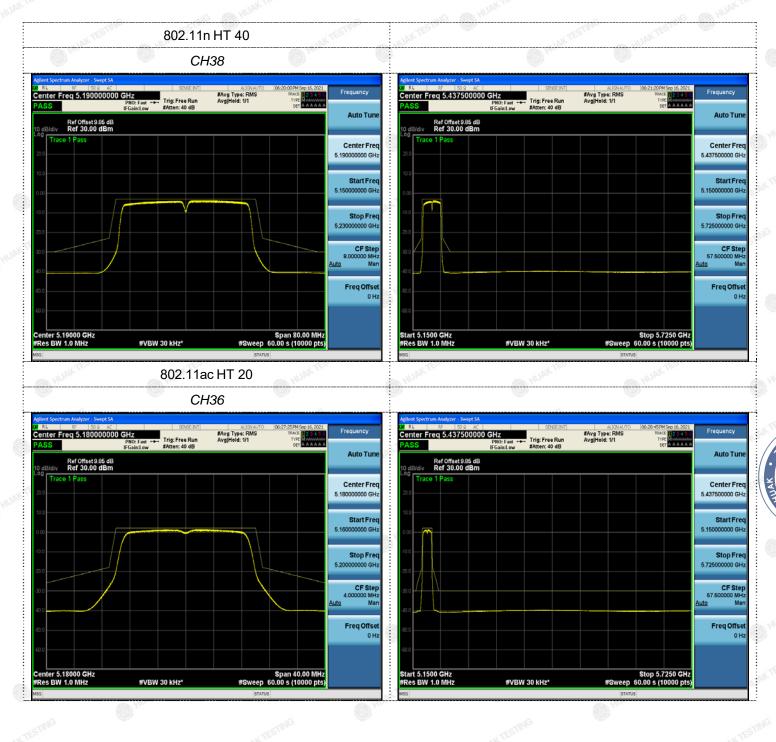
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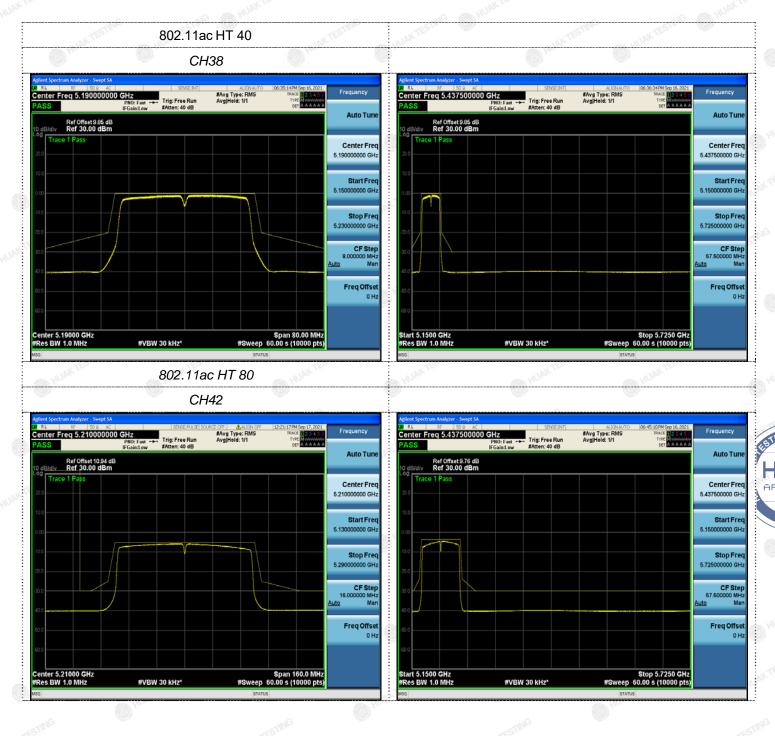
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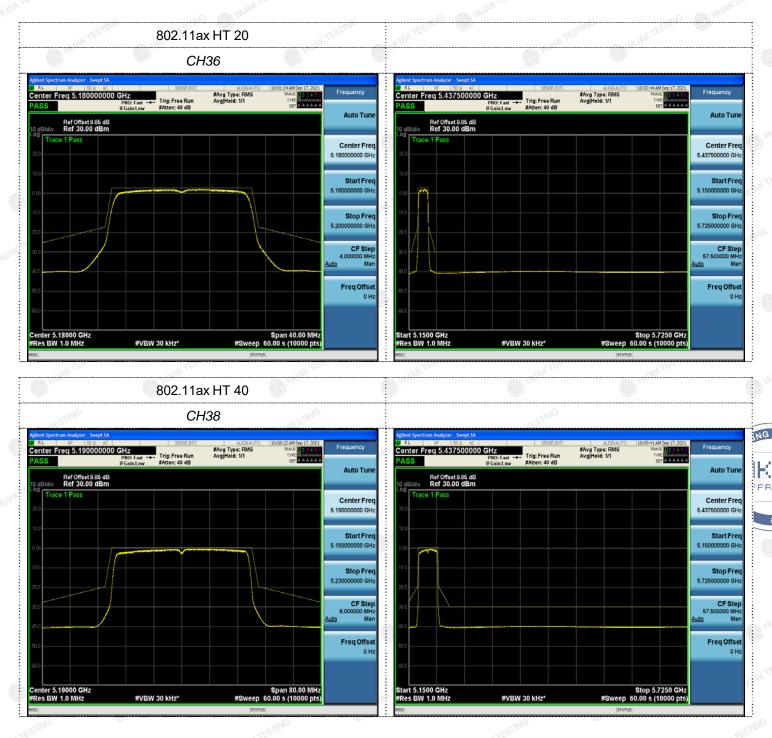
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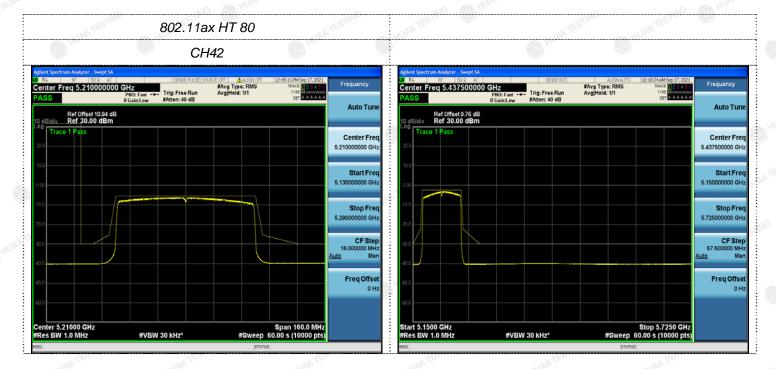
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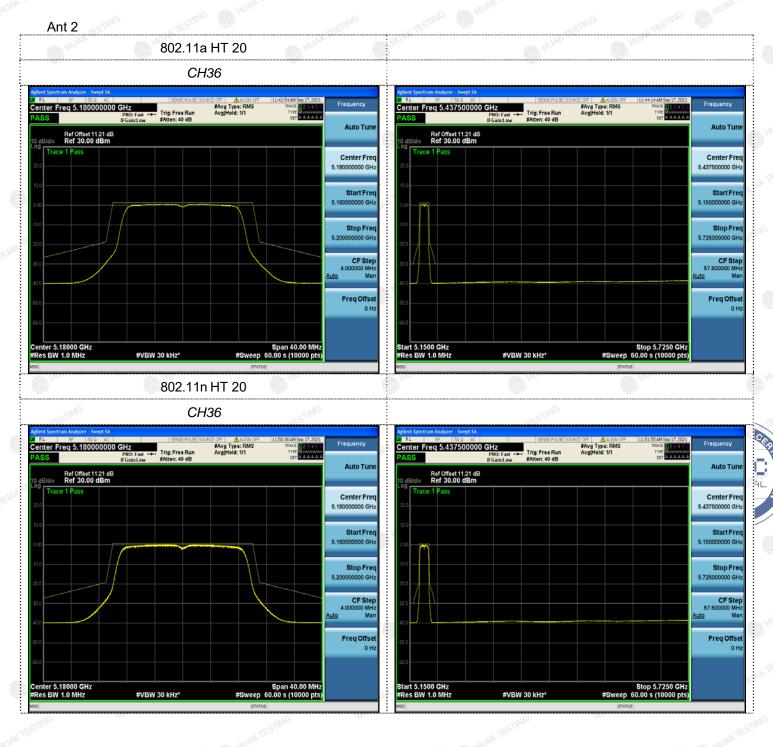
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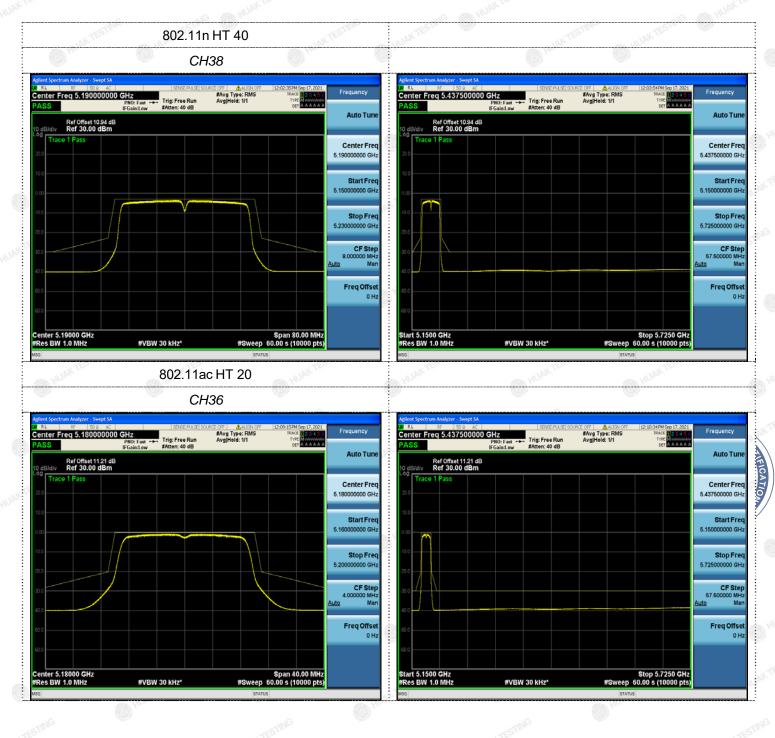
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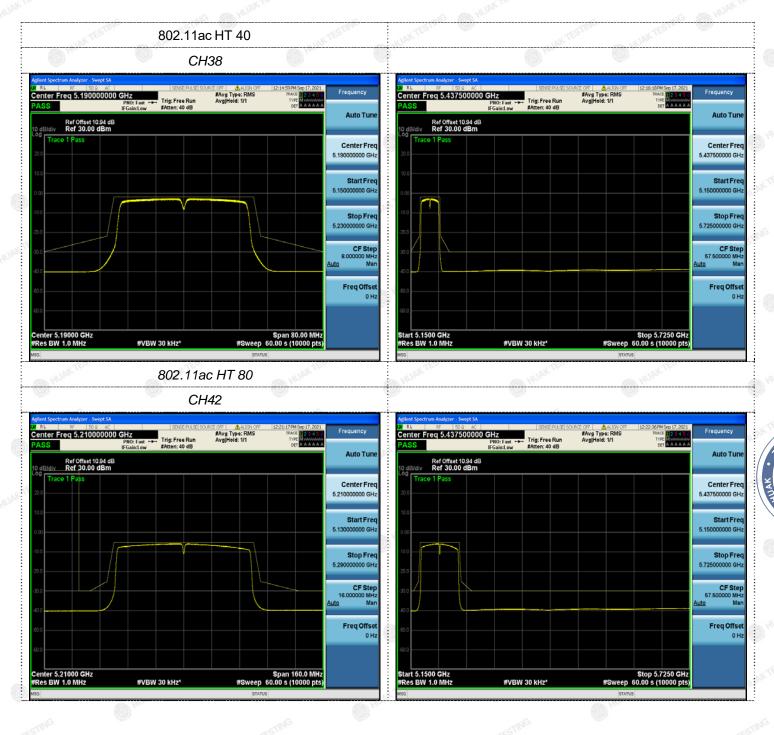
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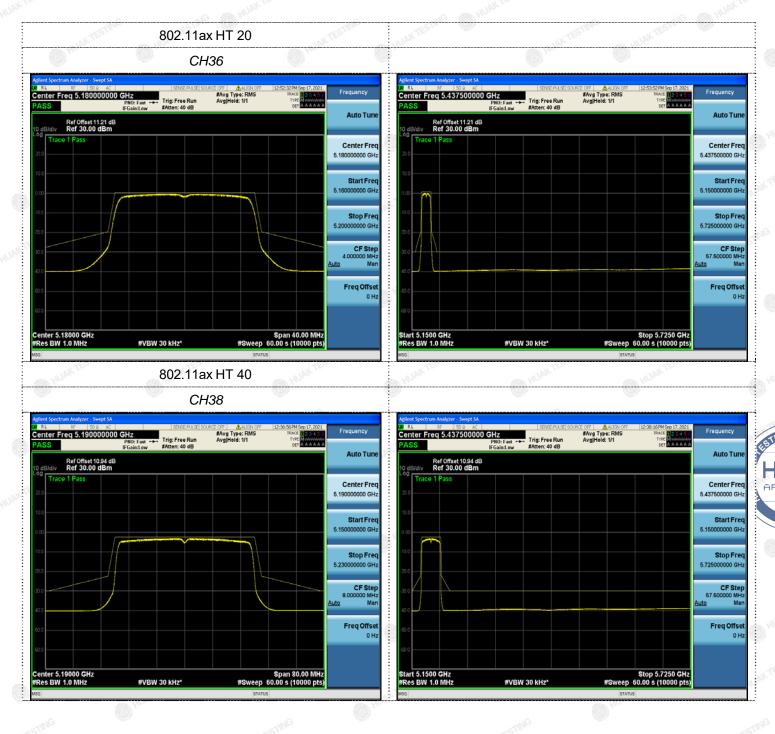
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# 4.6. Receiver spurious emissions

The spurious emissions of the receiver shall not exceed the limits given in table 4.

### Table 4: Spurious radiated emission limits

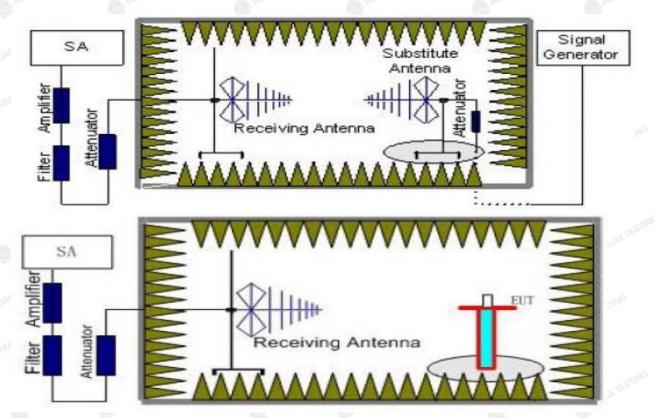
Frequency range	Maximum power	Measurement bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 26 GHz	-47 dBm	1 MHz

### Test Procedure

- 1. The measurement procedure follows ETSI EN 301 893 (V2.1.1) Sub-clause 5.4.7.2.2
- 2. The measurement shall only be performed at normal test conditions.
- 3. One channel out of the declared channels for each sub-band shall be tested.

## Test Configuration

## Effective Radiated Power measurement (30 MHz to 26 GHz)



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### TEST RESULTS

Note:We tested at 802.11a/802.11n HT20/802.11n HT40/802.11ac HT20/802.11ac HT40/802.11ac HT80/802.11ax HT20/802.11ax HT40/802.11ax HT80 mode at the antenna single receiver mode and the Mimo mode, and recorded the worst case 802.11n HT 20 mode at the Mimo mode. 18GHz-26GHz not recorded for no spurious point have a margin of less than 6 dB with respect to the limits.

Fre. (MHz)	ANT. Pol.	Result (dBm)	Limit	Margin	Conclusion	
Below 1GHz:		TING TSTING		HUAKTE	STING	
209.72	V	-72.72	-57	-15.72	PASS	
246.65	V	-73.79	-57	-16.79	PASS	
345.60	V	-79.35	-57	-22.35	PASS	
459.20	V	-73.01	-57	-16.01	PASS	
555.34	V	-79.83	-57	-22.83	PASS	
850.01	TESTING V	-82.66	-57	-25.66	PASS	
261.00	H	-80.39	-57	-23.39	PASS	
281.21	H	-76.98	-57	-19.98	PASS	
328.20	Н	-80.34	-57	-23.34	PASS	
441.67	• "H"	-79.77	-57	-22.77	PASS	
625.54	HING	-77.06	-57	-20.06	PASS	
847.47	н	-71.82	-57	-14.82	PASS	
1007					1000	

#### 802.11n HT 20, CH 36, Horizontal/Vertical

Note:

1.Cable loss and antenna gain was combined in the calculated result.

2. Other point of the measurements are below 20dB from the limit.

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Fre. (MHz)	ANT. Pol.	Result (dBm)	Limit	Margin	Conclusion
Below 1GHz:					
2263.67	W. Testin	-73.74	-47	-26.74	PASS
2373.77	Vino	-75.60	-47	-28.60	PASS
3507.99	V	-71.25	-47	-24.25	PASS
4268.77	TESTING V	-76.41	-47	-29.41	PASS
5584.43	V	-73.89	-47	-26.89	PASS
5953.21	v	-75.98	-47	-28.98	PASS
2282.57	H	-72.16	-47	-25.16	PASS
2433.90	O "H	-76.33	-47	-29.33	PASS
3235.17	HING	-75.30	-47	-28.30	PASS
3875.23	н	-75.24	-47	-28.24	PASS
4933.66	H H	-74.96	-47	-27.96	PASS
6758.09	HUNTES	-80.59	-47	-33.59	PASS
	PERCENT A			PERSONAL AVAILABLE AV	

Note:

Cable loss and antenna gain was combined in the calculated result.
Other point of the measurements are below 20dB from the limit.

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# 4.7. Dynamic Frequency Selection (DFS)

### DFS parameters

# Table D.1: DFS requirement values

Parameter	Value				
Channel Availability Check Time	60 s (see note 1)				
Minimum Off-Channel CAC Time	6 minutes (see note 2)				
Maximum Off-Channel CAC Time	4 hours (see note 2)				
Channel Move Time	10 s				
Channel Closing Transmission Time	1 s				
Non-Occupancy Period	30 minutes				
	bandwidth falls completely or partly within the z, the <i>Channel Availability Check Time</i> shall be				
	bandwidth falls completely or partly within the z, the <i>Off-Channel CAC Time</i> shall be within the				

# Table D.2: Interference threshold values

e.i.r	.p. Spectral Density dBm/MHz	Value (see notes 1 and 2)				
	10	-62 dBm				
10 NOTE 1: This is the level at the inpu- with a maximum e.i.r.p. de 0 dBi receive antenna. For spectral density and/or a c the DFS threshold level at relationship: DFS Detection Threshold Density (dBm/MHz) + G (c shall not be lower than -64 antenna gain.		at of the receiver of an RLAN device nsity of 10 dBm/MHz and assuming a devices employing different e.i.r.p. lifferent receive antenna gain G (dBi) the receiver input follows the following (dBm) = -62 + 10 - e.i.r.p. Spectral (Bi), however the DFS threshold level dBm assuming a 0 dBi receive				
NOTE 2:	Slave devices with a maximum e.i.r.p. of less than 23 dBm do not have to implement radar detection.					

# Table D.3: Parameters of the reference DFS test signal

Pulse width	Pulse repetition	Pulses per burst
W [µs]	frequency PRF [PPS]	[PPB]
1	700	18

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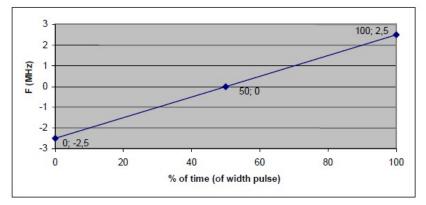
#### Report No.: HK2109063323-3ER

Radar test signal #		width [µs]		ion frequency (PPS)	Number of different	Pulses per burst for each
(see notes 1 to 3)	Min	Max	Min	Max	PRFs	PRF (PPB) (see note 5)
1	0,5	5	200	1 000	1	10 (see note 6)
2	0,5	15	200	1 600	1	15 (see note 6)
3	0,5	15	2 300	4 000	1	25
4	20	30	2 000	4 000	1	20
5	0,5	2	300	400	2/3	10 (see note 6)
6	0,5	2	400	1 200	2/3	15 (see note 6)

#### Table D.4: Parameters of radar test signals

NOTE 1: Radar test signals 1 to 4 are constant PRF based signals. See figure D.1. These radar test signals are intended to simulate also radars using a packet based Staggered PRF. See figure D.2.

NOTE 2: Radar test signal 4 is a modulated radar test signal. The modulation to be used is a chirp modulation with a ±2,5 MHz frequency deviation which is described below.



NOTE 3: Radar test signals 5 and 6 are single pulse based Staggered PRF radar test signals using 2 or 3 different PRF values. For radar test signal 5, the difference between the PRF values chosen shall be between 20 PPS and 50 PPS. For radar test signal 6, the difference between the PRF values chosen shall be between 80 PPS and 400 PPS. See figure D.3.

NOTE 4: Apart for the Off-Channel CAC testing, the radar test signals above shall only contain a single burst of pulses. See figures D.1, D.3 and D.4.
For the Off-Channel CAC testing, repetitive bursts shall be used for the total duration of the test. See figures D.2 and D.5. See also clauses 4.7.2.2, 5.3.8.2.1.3.1 and 5.3.8.2.1.3.2.

NOTE 5: The total number of pulses in a burst is equal to the number of pulses for a single PRF multiplied by the number of different PRFs used.

NOTE 6: For the CAC and Off-Channel CAC requirements, the minimum number of pulses (for each PRF) for any of the radar test signals to be detected in the band 5 600 MHz to 5 650 MHz shall be 18.

	vice Monitoring	Detection Probability (P <sub>d</sub> )					
P	arameter	Channels whose nominal bandwidth falls partly or completely within the 5 600 MHz to 5 650 MHz band	Other channels				
CAC, Off-Channel CAC		99,99 %	60 %				
In-Serv	vice Monitoring	60 %	60 %				
NOTE: P <sub>d</sub> gives the pr level of detection		bability of detection per simulated radar burst and represents a minimum on performance under defined conditions. Therefore P <sub>d</sub> does not overall detection probability for any particular radar under real life condition					

#### Table D.5: Detection probability

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#### Test set-ups

#### Set-up A

Set-up A is a set-up whereby the UUT is an RLAN device operating in master mode. Radar test signals are injected into the UUT. This set-up also contains an RLAN device operating in slave mode which is associated with the UUT.

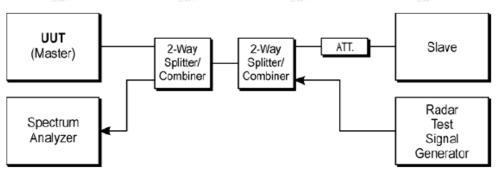
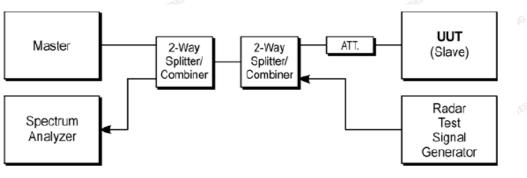
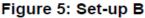


Figure 4: Set-up A

#### Set-up B

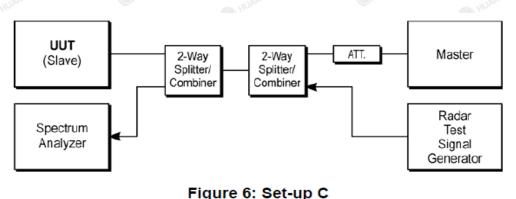
Set-up B is a set-up whereby the UUT is an RLAN device operating in slave mode, with or without Radar Interference Detection function. This set-up also contains an RLAN device operating in master mode. The radar test signals are injected into the master device. The UUT (slave device) is associated with the master device.





#### Set-up C

The UUT is an RLAN device operating in slave mode with Radar Interference Detection function. Radar test signals are injected into the slave device. This set-up also contains an RLAN device operating in master mode. The UUT (slave device) is associated with the master device.



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#### **DFS technical requirements specifications**

Follow table lists the DFS related technical requirements and their applicability for every operational mode. If the RLAN device is capable of operating in more than one operational mode then every operating mode shall be assessed separately.

Requirement		DFS Operational n	node 🔍 🔍
STING	Master	Slave without radar detection	Slave with radar detection (see table D.2, note 2)
Channel Availability Check	$\checkmark$	Not required	√ (see note 2)
Off-Channel CAC (see note 1)		Not required	√ (see note 2)
In-Service Monitoring	$\checkmark$	Not required	$\checkmark$
Channel Shutdown	VSTNG	TISTING V	
Non-Occupancy Period	WALL -	Not required	VIN VILLAN
Uniform Spreading	<b>↓</b>	Not required	Not required

initial use of the channel but only after the slave has detected a radar signal on the Operating Channel by In-Service Monitoring.

# TEST RESULTS

Testing is not required for nominal channel bandwidths that fall completely within the frequency range 5 150 MHz to 5 250 MHz. So this test item is not applicable for the EUT.

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# 4.8. Adaptivity

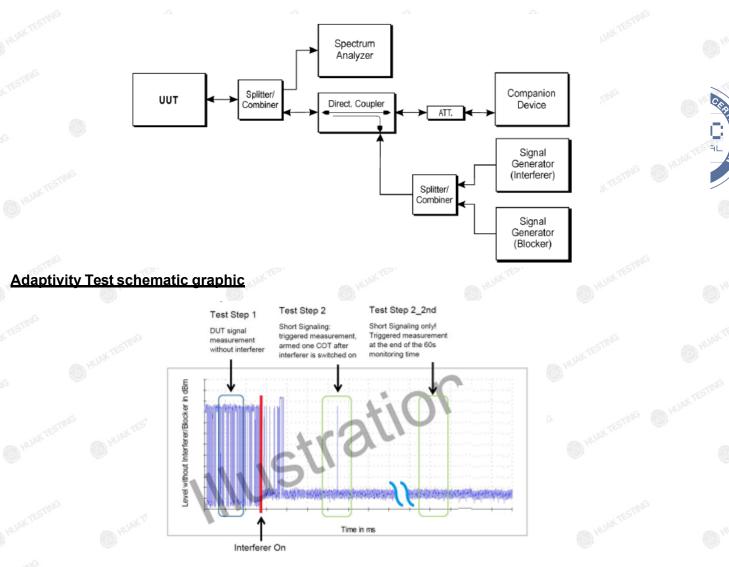
# **Requirements and limits**

When interference signal detected by relevant channel access mechanism UUT used. The UUT should stops transmissions on the current operating channel, apart from Short Control Signaling Transmissions with a maximum duty cycle of 5 % within an observation period of 50 ms,

# Test Procedure

- The measurement procedure follows the clause 5.3.9.2.1 of the ETSI EN 301 893 V2.1.1 (2017-05).
- 2. The inference signal used shall be a band limited noise signal with a 100 % duty cycle.
- 3. Testing shall be performed at one channel out of the declared channels for each sub-band and the highest nominal channel bandwidth.

# **Test Configuration**



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Test Step 2 :We add the Additive white Gaussian noise (AWGN) as interference Signal

Test step 3 and Test step 3\_2nd : We Repeat Test Step 2 and Test Step 2\_2nd ,but We add the OFDM test signal as interference Signal

Test step 4 and Test step 4\_2nd : We Repeat Test Step 2 and Test Step 2\_2nd ,but We add LTE test signal as interference Signal

#### TEST RESULTS

#### Ant 1 Adaptivity 1

				all in			- Na
Test Mode	Test Channel	Priority Class	COT Num[n]	Max.COT [ms]	Limit [ms]	Min. Idel Time [ms]	Limit [ms]
802.11a	5180	2	868	1.136	<=6	0.052	>0.027
802.11n HT 20	5180	2	932	0.258	<=6	0.044	>0.027
802.11n HT 40	5190	ano 2	925	0.234	<=6	0.053	>0.027
802.11ac HT 20	5180	2	847	1.158	<=6	0.038	>0.027
802.11ac HT 40	5190	2	943	0.174	<=6	0.044	>0.027
802.11ac HT 80	5210	2	917	0.191	<=6	0.051	>0.027
802.11ax HT 20	5180	2	847	1.152	<=6	0.036	>0.027
802.11ax HT 40	5190	2	943	0.176	<=6	0.042	>0.027
802.11ax HT 80	5210	2	917	0.195	<=6	0.054	>0.027
16		- iG		6	19		- iG

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Test Mode	Test Channel	Interference signal Type	Add interference signal Time[ms]	Interfere nce signal Level [dBm/M Hz]	Max.Short Control number[n]	Limit [n]	Max.Short Control Time [ms]	Limit [ms]
802.11a	5180	LTE	2000	-75	5 HUAN	<=50	1.24	<2.5
802.11a	5180	OFDM	2000	-75	5	<=50	0.23	<2.5
802.11a	5180	AWGN	2000	-75	5 JAK TEST	<=50	0.04	<2.5
802.11n HT 20	5180	LTE	2000	-75	5	<=50	0.67	<2.5
802.11n HT 20	5180	OFDM	2000	-75	5	<=50	0.16	<2.5
802.11n HT 20	5180	AWGN	2000	-75	5	<=50	0.29	<2.5
802.11n HT 40	5190	LTE	2000	-75	5	<=50	0.06	<2.5
802.11n HT 40	5190	OFDM	2000	-75	5	<=50	0.61	<2.5
802.11n HT 40	5190	AWGN	2000	-75	5	<=50	0.52	<2.5
802.11ac HT 20	5180	LTE	2000	-75	5.04 155	<=50	0.16	<2.5
802.11ac HT 20	5180	OFDM	2000	-75	5	<=50	0.61	<2.5
802.11ac HT 20	5180	AWGN	2000	-75	5	<=50	2.14	<2.5
802.11ac HT 40	5190	LTE	2000	-75	5	<=50	0.30	<2.5
802.11ac HT 40	5190	OFDM	2000	-75	5	<=50	0.40	<2.5
802.11ac HT 40	5190	AWGN	2000	-75	5 10.04	<=50	1.96	<2.5
802.11ac HT 80	5210	LTE	2000	-75	5	్ర <=50	0.62	<2.5
802.11ac HT 80	5210	OFDM	2000	-75	5	<=50	0.65	<2.5
802.11ac HT 80	5210	AWGN	2000	-75	5.116	<=50	0.52	<2.5
802.11ax HT 20	5180	LTE	2000	-75	5	<=50	0.37	<2.5
802.11ax HT 20	5180	OFDM	2000	-75	5	<=50	0.25	<2.5
802.11ax HT 20	5180	AWGN	2000	-75	5	<=50	2.04	<2.5

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	802.11ax HT 40	5190	LTE	2000	-75	5	<=50	0.15	<2.5
	802.11ax HT 40	5190	OFDM	2000	-75	5	<=50	0.48	<2.5
	802.11ax HT 40	5190	AWGN	2000	-75	5	<=50	2.11	<2.5
C.	802.11ax HT 80	5210	LTE	2000	-75	5	<=50	0.68	<2.5
NP	802.11ax HT 80	5210	OFDM	2000	-75	5 UNTEST	<=50	0.62	<2.5
TI	802.11ax HT 80	5210	AWGN	2000	-75	5	<=50	0.64	<2.5

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Test Channel	Priority Class	COT Num[n]	Max.COT [ms]	Limit [ms]	Min. Idel Time [ms]	Limit [ms]
5180	2	868	1.145	<=6	0.041	>0.027
5180	2	932	0.246	<=6	0.048	>0.027
5190	2 💿	925	0.231	<=6	0.044	>0.027
5180	2	847	1.155	<=6	0.036	>0.027
5190	2	943	0.176	<=6	0.043	>0.027
5210	2	917	0.192	<=6	0.050	>0.027
5180	on 2	847	1.153	<=6	0.036	>0.027
5190	2	943	0.176	<=6	0.043	>0.027
5210	2	917	0.195	<=6	0.051	>0.027
	Channel     5180     5180     5190     5180     5180     5180     5190     5190     5190     5190     5190     5190     5190     5190     5190	Channel Class   5180 2   5180 2   5190 2   5180 2   5180 2   5180 2   5190 2   5190 2   5190 2   5190 2   5190 2   5180 2   5180 2   5180 2   5180 2	ChannelClassNum[n]5180286851802932519029255180284751902943521029175180284751902943	ChannelClassNum[n][ms]518028681.145518029320.246519029250.231518028471.155519029430.176521029170.192518028471.153519029430.176	ChannelClassNum[n][ms][ms]518028681.145<=6	Test ChannelPriority ClassCOT Num[n]Max.COT [ms]Limit [ms]Idel Time [ms]518028681.145 $<=6$ 0.041518029320.246 $<=6$ 0.048519029250.231 $<=6$ 0.044518028471.155 $<=6$ 0.036519029430.176 $<=6$ 0.043521029170.192 $<=6$ 0.036518028471.153 $<=6$ 0.036518029430.176 $<=6$ 0.036519029430.176 $<=6$ 0.043

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Test Mode	Test Channel	Interference signal Type	Add interference signal Time[ms]	Interfere nce signal Level [dBm/M Hz]	Max.Short Control number[n]	Limit [n]	Max.Short Control Time [ms]	Limit [ms]
802.11a	5180	LTE	2000	-75	5 HUAN	<=50	0.64	<2.5
802.11a	5180	OFDM	2000	-75	5	<=50	0.27	<2.5
802.11a	5180	AWGN	2000	-75	5 JAK TEST	<=50	0.58	<2.5
802.11n HT 20	5180	LTE	2000	-75	5	<=50	0.07	<2.5
802.11n HT 20	5180	OFDM	2000	-75	5	<=50	0.41	<2.5
802.11n HT 20	5180	AWGN	2000	-75	5	<=50	0.83	<2.5
802.11n HT 40	5190	LTE	2000	-75	5	<=50	0.06	<2.5
802.11n HT 40	5190	OFDM	2000	-75	5	<=50	0.25	<2.5
802.11n HT 40	5190	AWGN	2000	-75	5	<=50	0.82	<2.5
802.11ac HT 20	5180	LTE	2000	-75	5	<=50	0.15	<2.5
802.11ac HT 20	5180	OFDM	2000	-75	5	<=50	0.10	<2.5
802.11ac HT 20	5180	AWGN	2000	-75	5	<=50	1.82	<2.5
802.11ac HT 40	5190	LTE	2000	-75	5 🔊	<=50	0.13	<2.5
802.11ac HT 40	5190	OFDM	2000	-75	5	<=50	0.19	<2.5
802.11ac HT 40	5190	AWGN	2000	-75	5 1004	<=50	1.86	<2.5
802.11ac HT 80	5210	LTE	2000	-75	5	ം <=50	0.59	<2.5
802.11ac HT 80	5210	OFDM	2000	-75	5	<=50	0.68	<2.5
802.11ac HT 80	5210	AWGN	2000	-75	5.00	<=50	0.30	<2.5
802.11ax HT 20	5180	LTE	2000	-75	5	<=50	0.37	<2.5
802.11ax HT 20	5180	OFDM	2000	-75	5	<=50	0.65	<2.5
802.11ax HT 20	5180	AWGN	2000	-75	5	<=50	1.95	<2.5

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	802.11ax HT 40	5190	LTE	2000	-75	5	<=50	0.19	<2.5
	802.11ax HT 40	5190	OFDM	2000	-75	5	<=50	0.46	<2.5
	802.11ax HT 40	5190	AWGN	2000	-75	5	<=50	1.80	<2.5
	802.11ax HT 80	5210	LTE	2000	-75	5	<=50	0.41	<2.5
NP	802.11ax HT 80	5210	OFDM	2000	-75	5 Jun Test	<=50	0.50	<2.5
Th	802.11ax HT 80	5210	AWGN	2000	-75	5	<=50	0.91	<2.5

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# 4.9. Receiver Blocking

### Limits

### ETSI EN 301 893 Sub-4.2.8.4

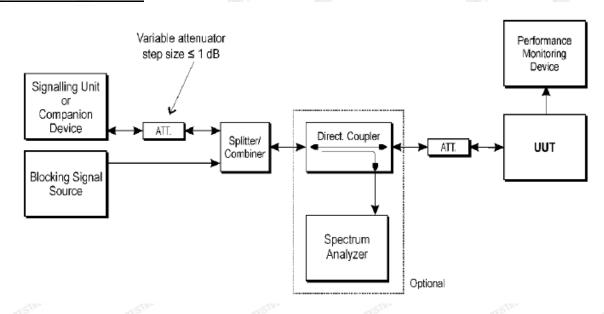
While maintaining the minimum performance criteria as defined in clause 4.2.8.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined in table 9.

Wanted signal mean power			• • •	Type of blocking
from companion device (dBm)	(MHz)			signal
Pmin + 6 dB	5 100	-53	-59	Continuous Wave
Pmin + 6 dB	4 900 5 000 5 975	-47	-53	Continuous Wave
NOTE 1: P <sub>min</sub> is the	e minimum level of t	he wanted signal (in	dBm) required to mee	t the minimum
NOTE 2: The level	s specified are level	is in front of the UUT	he absence of any blo antenna. In case of co t the antenna connect	onducted

# Table 9: Receiver Blocking parameters

# **TEST CONFIGURATION:**

of antenna gain



# TEST PROCEDURE

# Please refer to ETSI EN 301 893 Sub-clause 4.2.8.2 for the measurement method...

# TEST RESULTS

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# For ANT 1

#### For 11a

#### 5180MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
JK TES	5100	-53	10%	6%	PASS
Dmin L 6dD	4900	-47	10%	4%	PASS
Pmin + 6dB	5000	-47	10%	5%	PASS
NG	5975	-47	10%	4%	PASS

# For 11n HT20

### 5180MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
0.	5100	-53	10%	4%	PASS
Dmin L 6dP	4900	-47	10%	5%	PASS
Pmin + 6dB	5000	-47	10%	6%	PASS
	5975	-47	10%	6%	PASS

### For 11n HT40

#### 5180MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
	5100	-53	10%	5%	PASS
Dmin <sup>o</sup> l 6dD	4900	-47	10%	4%	PASS
Pmin + 6dB	5000	-47	10%	6%	PASS
	5975	-47	10%	5%	PASS

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For 11ac HT20

5180MHz					
Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
LAK TES	5100	-53	10%	5%	PASS
	4900	-47	10%	6%	PASS
Pmin + 6dB	5000	-47	10%	4%	PASS
STING	5975	-47	10%	6%	PASS

#### For 11ac HT40

5190MHz	TING OD HO	Din	TING D HE	Dia	TING
Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
	5100	-53	10%	4%	PASS
Pmin + 6dB	4900	-47	10%	4%	PASS
PIIIIII + OUD	5000	-47	10%	5%	PASS
	5975	-47 🔍	10%	4%	PASS

#### For 11ac HT80

#### 5210MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
0," 0.	5100	-53	10%	6%	PASS
Dmin L 6dD	4900	-47	10%	4%	PASS
Pmin + 6dB	5000	-47	10%	5%	PASS
G	5975	-47	10%	4%	PASS

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For 11ax HT20

5180MHz					
Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
LAK TES	5100	-53	10%	5%	PASS
	4900	-47	10%	5%	PASS
Pmin + 6dB	5000	-47	10%	6%	PASS
STING	5975	-47	10%	5%	PASS

#### For 11ax HT40

5190MHz	TING OD THE	Din	TING DIA	Dia	TING
Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
	5100	-53	10%	5%	PASS
Durain L CalD	4900	-47	10%	6%	PASS
Pmin + 6dB	5000	-47	10%	5%	PASS
)````O`	5975 🤍	-47	10%	5%	PASS

#### For 11ax HT80

#### 5210MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
0,	5100	-53	10%	4%	PASS
Dmin L 6dD	4900	-47	10%	5%	PASS
Pmin + 6dB	5000	-47	10%	4%	PASS
G	5975	-47	10%	5%	PASS

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# For ANT 2

# For 11a

# 5180MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
STING	5100	-53	10%	4%	PASS
Dmin L 6dD	4900	-47	10%	5%	PASS
Pmin + 6dB	5000	-47	10%	6%	PASS
HUM	5975	-47	10%	5%	PASS

# For 11n HT20

# 5180MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
UNAK IL	5100	-53	10%	6%	PASS
Dmin L 6dP	4900	-47	10%	5%	PASS
Pmin + 6dB	5000	-47	10%	4%	PASS
TESTING	5975	-47	10%	4%	PASS

# For 11n HT40

#### 5180MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
Pmin + 6dB	5100	-53	10%	5%	PASS
	4900	-47	10%	5%	PASS
	5000	-47	10%	4%	PASS
	5975	-47	10%	6%	PASS

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# For 11ac HT20

5180MHz				(O) /	
Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
HP. AL	5100	-53	10%	4%	PASS
	4900	-47	10%	6%	PASS
Pmin + 6dB	5000	-47	10%	4%	PASS
	5975	-47	10%	4%	PASS

#### For 11ac HT40

#### 5190MHz Wanted signal mean power from Blocking signal Blocking signal test Limit(PER) Result value(PER) companion device frequency (MHz) power (dBm) (dBm) 5100 -53 10% 5% PASS 4900 -47 10% 6% PASS Pmin + 6dB 5000 -47 10% 6% PASS 5975 10% 4% -47 PASS

#### For 11ac HT80

#### 5210MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
Pmin + 6dB	5100	-53	10%	6%	PASS
	4900	-47	10%	4%	PASS
	5000	-47	10%	5%	PASS
	5975	-47	10%	5%	PASS

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For 11ax HT20

5180MHz		HUAK		HUAK	HUM
Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
LAK TES	5100	-53	10%	5%	PASS
	4900	-47	10%	5%	PASS
Pmin + 6dB	5000	-47	10%	4%	PASS
STING	5975	-47	10%	5%	PASS

#### For 11ax HT40

# 5190MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
Pmin + 6dB	5100	-53	10%	6%	PASS
	4900	-47	10%	6%	PASS
	5000	-47	10%	4%	PASS
	5975	-47	10%	5%	PASS

# For 11ax HT80

# 5210MHz

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Limit(PER)	test value(PER)	Result
Pmin + 6dB	5100	-53	10%	5%	PASS
	4900	-47	10%	6%	PASS
	5000	-47	10%	6%	PASS
	5975	-47	10%	5%	PASS

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# 4.10. User Access Restrictions

#### **Requirement**

The equipment shall be so constructed that settings (hardware and/or software) related to DFS shall not be accessible to the user if changing those settings result in the equipment no longer being compliant with the DFS requirements in EN301893 (clause 4.7) The above requirement includes the prevention of indirect access to any setting that impacts DFS.

#### <u>Result</u>

The EUT do not use the DFS Band and The customers will not obtain the information to set hardware and/ software related to DFS, if the product is on sales. So The EUT meets this requirement.

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#### 4.11. Geo-location capability

#### <u>Requirement</u>

Geo-location capability is a feature of the RLAN device to determine its geographical location with the purpose to configure itself according to the regulatory requirements applicable at the geographical location where it operates. The geo-location capability may be present in the equipment or in an external device (temporary) associated with the equipment operating at the same geographical location during the initial power up of the equipment. The geographical location may also be available in equipment already installed and operating at the same geographical location.

The geographical location determined by the equipment as defined in the above shall not be accessible to the user.

#### Result

This requirement only applies to equipment with geo-location capability, and the EUT do not support this fuction. So this requirement is not applicable for the EUT.

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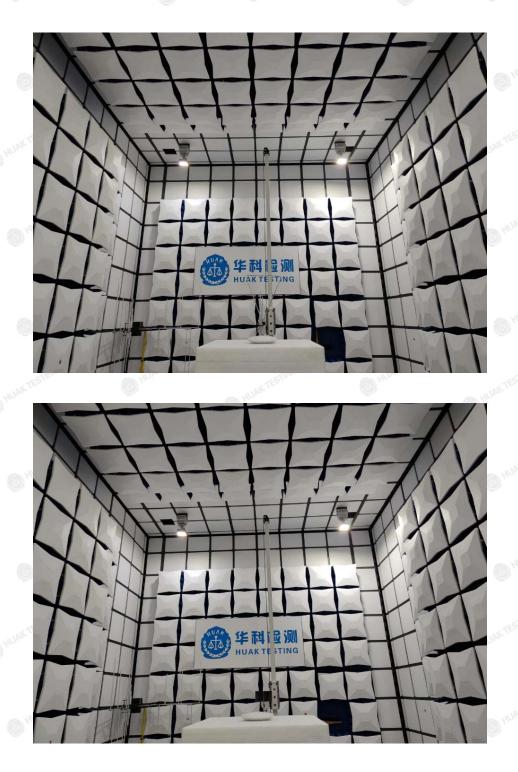
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# 5. Test Setup Photos of the EUT



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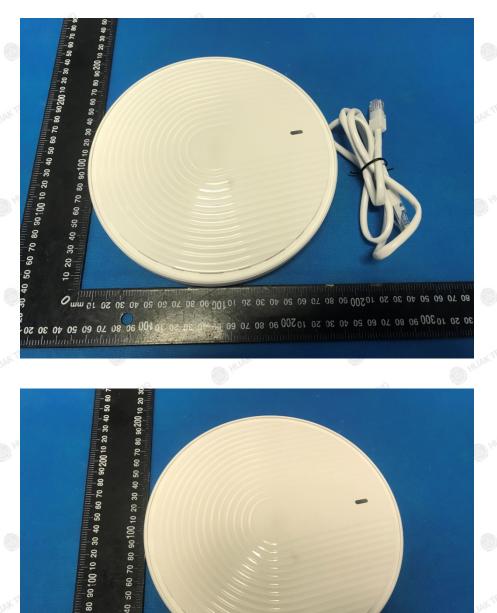


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# 6. External and Internal Photos of the EUT



a so so 10500 so so 70 eo 50 40 30 20 10100 so 80 70 eo 50 40 31 20 20 20 S *80 10 60 20 40 30* 30 10500 30 80 10 60 60 40 30 50 10100 30 80

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80 10 60 20 40 30 50 10 500 a0 80 10 60 60 60 40 30 50 10100 a0 80 10 60 20 40

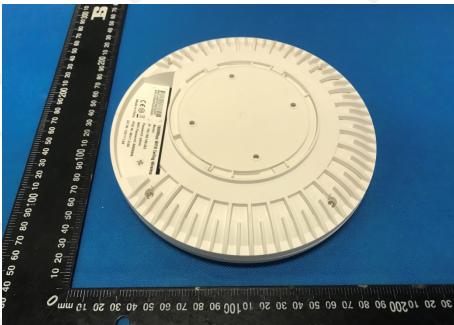
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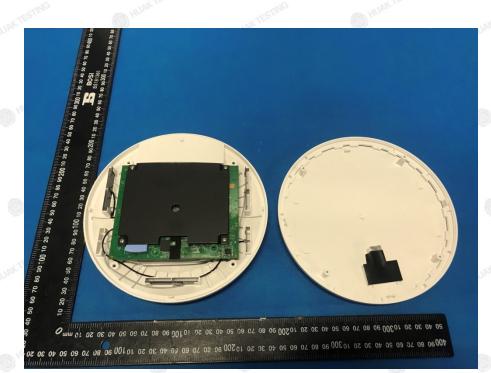


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00 10 00 20 40 30 50 10 500 30 80 10 00 20 40 30 50 10 100 30 80 10 00 20 40 30 50



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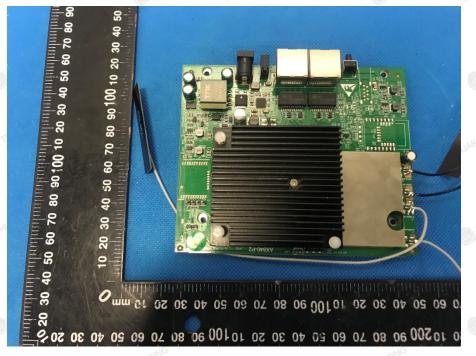


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INFIGATION



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