

CTC Laboratories, Inc.

2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China

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TEST REPORT				
Report No	CTC20210068E06			
Applicant	XonTel Technology Trd. Co. W.L.L			
Address:	Kuwait City, Qibla, Aladel Tower, F21, state of Kuwait			
Manufacturer	XonTel Technology Trd. Co. W.L.L			
Address	Kuwait City, Qibla, Aladel Tower, F21, state of Kuwait			
Product Name:	IP Phone			
Trade Mark	XonTel			
Model/Type reference:	XT-40G			
Listed Model(s):	N/A			
Standard:	ETSI EN 301 893 V2.1.1: 2017-05			
Date of receipt of test sample:	Mar. 10, 2020			
Date of testing	Mar. 11, 2020 to Mar. 23, 2020			
Date of issue	Jan. 20, 2021			
Result	PASS			
Compiled by:	Tanan Su			
(Printed name+signature)	Terry Su			
Supervised by:	poravillar Ma			
(Printed name+signature)	Miller Ma			
Approved by:	certification			
(Printed name+signature)	Walter Chen			
Testing Laboratory Name::	CTC Laboratories, Inc.			
Address:	2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China			

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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards: <u>ETSI EN 301893 V2.1.1 (2017-05)</u> – 5 GHz RLAN; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

1.2. Report version

Revised No.	Date of issue	Description
01	Jan. 20, 2021	Original

Note: Update applicant, manufacturer, trademark and model name, This report is based on the report of CTC20200268E12.





1.3. Test Description

Standards requirement ETSI EN301 893						
Test Item	Test require	Result	Test Engineer			
Centre Frequencies	Sub-clause 4.2.1	Pass	Ray Luo			
Nominal Channel Bandwidth and Occupied Channel Bandwidth	Sub-clause 4.2.2	Pass	Ray Luo			
RF Output Power, Transmit Power Control (TPC)	Sub-clause 4.2.3	Pass	Ray Luo			
Power Density	Sub-clause 4.2.3	Pass	Ray Luo			
Transmitter Unwanted Emissions Outside the 5 GHz RLAN Bands	Sub-clause 4.2.4.1	Pass	Ray Luo			
Transmitter Unwanted Emissions Within the 5 GHz RLAN Bands	Sub-clause 4.2.4.2	Pass	Ray Luo			
Receiver Spurious Emissions	Sub-clause 4.2.5	Pass	Ray Luo			
Dynamic Frequency Selection (DFS)	Sub-clause 4.2.6	N/A	N/A			
Adaptivity (Channel Access Mechanism)	Sub-clause 4.2.7	Pass	Ray Luo			
Receiver Blocking	Sub-clause 4.2.8	Pass	Ray Luo			
User Access Restrictions	Sub-clause 4.2.9	Pass	Ray Luo			
Geo-location Capability	Sub-clause 4.2.10	N/A	N/A			

Note:

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1. The measurement uncertainty is not included in the test result.

2. N/A: This test item is not applicable for this device according to the technology characteristic of device.

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1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China

Laboratory accreditation

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

CNAS-Lab Code: L5365

CTC Laboratories, Inc. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation .Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in th e identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Indus try Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (F CC) Federal Communications Commission. The acceptance letter from the FCC is maintained inour files. Registration 951311, Aug 26, 2017.

1.5. 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 CTC Laboratories, Inc. 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.

Below is the best measurement capability for CTC Laboratories, Inc.

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Test Items	Measurement Uncertainty	Notes
Maximum transmit power	±1.5dB	(1)
Power Spectral Density	±1.5dB	(1)
Duty Cycle, Tx-sequence, Tx-gap	±5%	(1)
Accumulated Transmit Time, Frequency Occupation and Hopping Sequence	±5%	(1)
Hopping Frequency Separation	±5%	(1)
Medium Utilization (MU) factor	±5%	(1)
Adaptively	±5%	(1)
Occupied Channel Bandwidth	±5%	(1)
Transmitter unwanted emissions in the out-of-band domain	±2.8dB	(1)
Transmitter unwanted emissions in the spurious domain	±2.8dB	(1)
Receiver spurious emissions	±2.8dB	(1)
Receiver Blocking	±2.8dB	(1)

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

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1.6. Environmental conditions

Normal Condition	Temperature	15 °C to +35 °C
	Relative humidity	20 % to 75 %.
	Voltage	The equipment shall be the nominal voltage for which the equipment was designed.
Extreme Condition	Temperature	Measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer.
	Voltage	Measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer.

Normal Condition	V _N =Normal Voltage	AC 230V
	T _N =Normal Temperature	25 °C
	V _L =Lower Voltage	AC 120V
Extrama Condition	V _H =Higher Voltage	AC 240V
Extreme condition	T _L =Lower Temperature	-20 °C
	T _H =Higher Temperature	55 °C





2. GENERAL INFORMATION

2.1. Client Information

Applicant:	XonTel Technology Trd. Co. W.L.L
Address:	Kuwait City, Qibla, Aladel Tower, F21, state of Kuwait
Manufacturer:	XonTel Technology Trd. Co. W.L.L
Address:	Kuwait City, Qibla, Aladel Tower, F21, state of Kuwait

2.2. General Description of EUT

Product Name:	IP Phone			
Trade Mark:	XT-40G			
Model/Type reference:	N/A			
Listed Model(s):	N/A			
Power supply:	5Vdc/2A from AC/DC Adapter Supplied from POE			
Adapter 1 Model:	F12W8-050200SPAV Input: AC100-240V 50/60Hz 0.3A Output:5V/2A			
Adapter 2 Model:	F12W8-050200SPAB Input: AC100-240V 50/60Hz 0.3A Output:5V/2A			
Hardware version:	N/A			
Software version:	N/A			
Technical Index WIFI				
Support Type:	⊠ 802.11a ⊠ 802.11n ⊠ 802.11ac			
Support Bandwidth:	802.11a 🛛 20MHz			
	802.11n 🛛 20MHz 🖾 40MHz			
	802.11ac 🛛 20MHz 🖾 40MHz 🖾 80MHz 🗌 160MHz			
Operation Frequency:	Lower Band: 5150-5250MHz			
	Lower Band: 5250-5350MHz			
	Higher Band: 5470-5725MHz			
Modulation:	BPSK DQPSK D16QAM D64QAM			
Transmit Operating Modes	Single Antenna Equipment			
	Equipment with only 1 antenna			
	Equipment with diversity antennas but only 1 antenna active at any moment in time			
	Smart Antenna Systems with 2 or more antennas, but operating in a (legacy) mode where only 1 antenna is used.			
	Smart Antenna Systems - Multiple Antennas without beam forming			
	Single spatial stream/Standard throughput			
	High Throughput (> 1 spatial stream) using Nominal Channel			

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	Bandwidth 1				
	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2				
	Smart Antenna Systems - Multiple Antennas with beam forming				
	Single spatial stream/Standard throughput				
	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1				
	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2				
Antenna Type:	FPC Antenna				
Antenna Gain:	2.3dBi				
In case of Smart Antenna	The number of Receive chains:				
Systems or Multiple	The number of Transmit chains:				
Antenna Systems	Equal power distribution among the transmit chains: Yes				
	In case of beamforming, the maximum (additional) beamforming gain:dB				
TPC Deature Available:	☐ Yes ⊠No				
For Equipment Without a	⊠5 150 MHz to 5 350 MHz and 5 470 MHz to 5 725 MHz (Indoor)				
TPC Range:	Simultaneous transmissions in both sub-bands: Yes No				
	5 470 MHz to 5 725 MHz only (Outdoor only)				
	Indicate whether the power levels specified are Transmitter Output Power levels or e.i.r.p. levels in case of integrated antenna equipment. Power levels are specified for: Tout K EIRP				
Additional information provi	ded by the manufacturer				
Modulation	Can the transmitter operate un-modulated? Yes No				
Duty Cycle	Continuous duty Intermittent duty Continuous operation possible for testing purposes				
About the UUT	The equipment submitted are representative production models.				
	If not, the equipment submitted are pre-production models?				
	If pre-production equipment are submitted, the final production equipment will be identical in all respects with the equipment tested.				
	If not, supply full details:				
The equipment submitted is CE marked:					
	The CE marking does include the Class-II identifier (Alert Sign).				
	Body involved.				

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Operation Frequency List:

Band (MHz)		20MHz Bandwidth		40MHz Bandwidth		80MHz Bandwidth	
		Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
		36	5180	20	5100		
Lower sub-band	5150 5250	40	5200	56 5190	5190	12	5210
5150~5350	5150~5250	44	5220	46	5230	42 5210	5210
0100-0000		48	5240	40			

		Test Channel			
Clause	Test Item	Lower sub-band (5150-5350MHz)	Higher sub-band	
		5150-5250 MHz	5250-5350MHz	5470-5725MHz	
5.4.2	Centre Frequencies	C7 (See	note 1)	C8 (See note 1)	
5.4.3	Occupied Channel Bandwidth	C	7	C8	
5.4.4	Power, Power density	C1	C2	C3, C4	
5.4.5	Transmitter unwanted emissions outside 5 GHz RLAN bands	C7 (See	note 1)	C8 (See note 1)	
5.4.6	Transmitter unwanted emissions within 5 GHz RLAN bands	C1 C2		C3, C4	
5.4.7	Receiver spurious emissions	C7 (See	note 1)	C8 (See note 1)	
5.4.4	Transmit Power Control (TPC)	n.a. (See note 2)	C2(See note 1)	C3, C4(See note 1)	
5.4.8	DFS	n.a. (See note 2)	C5	C6(See note 3)	
5.4.9	Adaptivity	C9			
5.4.10	Receiver Blocking	C7 C8			
C1, C3:	The lowest declared channel for every declared nominal channel bandwidth within this band. For the power density testing, it is sufficient to only perform this test using the lowest nominal channel bandwidth.				

C2, C4: The highest declared channel for every declared nominal channel bandwidth within this band. For the power

density testing, it is sufficient to only perform this test using the lowest nominal channel bandwidth.

C5. C6: One channel out of the declared channels for this frequency range. If more than one nominal channel bandwidth has been declared for this sub-band, testing shall be performed using the lowest and highest nominal channel bandwidth.

C7, C8: One channel out of the declared channels for this sub-band. For Occupied Channel Bandwidth, testing shall be repeated for every declared Nominal Channel Bandwidth within this sub-band. C9: One channel (in case of single-channel testing) or a group of channels (in case of multi-channel testing) out of the declared channels.

Note 1: In case of more than one channel plan has been declared, testing of these specific requirements need only be performed using one of the declared channel plans.

Note 2: Testing is not required for nominal channel bandwidths that fall completely within the frequency range 5150MHz to 5250MHz.

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Note 3: Where the declared channel plan includes channels whose nominal channel bandwidth falls completely or partly within the 5 600 MHz to 5 650 MHz band, the tests for the Channel Availability Check (and where implemented, for the Off-Channel CAC) shall be performed on one of these channels in addition to a channel within the band 5 470 MHz to 5 600 MHz or within the band 5 650 MHz to 5 725 MHz.

2.3. EUT operation mode

The EUT has been tested under test mode condition. The Applicant provides software to control the EUT for staying in continuous transmitting and receiving mode for testing.

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2.4. Measurement Instruments List

Tonsc	Tonscend JS0806-2 Test system								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated until			
1	Spectrum Analyzer	Rohde & Schwarz	FSU26	100105	Dec. 28, 2019	Dec. 27, 2020			
2	Spectrum Analyzer	Rohde & Schwarz	FUV40-N	101331	Mar. 16, 2020	Mar. 15, 2021			
3	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 28, 2019	Dec. 27, 2020			
4	Signal Generator	Agilent	E8257D	MY46521908	Dec. 28, 2019	Dec. 27, 2020			
5	Power Sensor	Agilent	U2021XA	MY5365004	Dec. 28, 2019	Dec. 27, 2020			
6	Power Sensor	Agilent	U2021XA	MY5365006	Dec. 28, 2019	Dec. 27, 2020			
7	Simultaneous Sampling DAQ	Agilent	U2531A	TW54493510	Dec. 28, 2019	Dec. 27, 2020			
8	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	116410	Dec. 28, 2019	Dec. 27, 2020			
9	Climate Chamber	ESPEC	MT3065	/	Dec. 28, 2019	Dec. 27, 2020			
10	300328 v2.2.2 test system	TONSCEND	v2.6	/	/	/			

Trans	Transmitter spurious emissions & Receiver spurious emissions								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated until			
1	EMI Test Receiver	Rohde & Schwarz	ESCI	100658	Dec. 28, 2019	Dec. 27, 2020			
2	High pass filter	micro-tranics	HPM50111	142	Dec. 28, 2019	Dec. 27, 2020			
3	Log-Bicon Antenna	Schwarzbeck	CBL6141A	4180	Dec. 28, 2019	Dec. 27, 2020			
4	Ultra-Broadba nd Antenna	ShwarzBeck	BBHA91 70	25841	Dec. 28, 2019	Dec. 27, 2020			
5	Loop Antenna	LAPLAC	RF300	9138	Dec. 28, 2019	Dec. 27, 2020			
6	Spectrum Analyzer	Rohde & Schwarz	FSU26	100105	Dec. 28, 2019	Dec. 27, 2020			
7	Horn Antenna	Schwarzbeck	BBHA 9120D	647	Dec. 28, 2019	Dec. 27, 2020			
8	Pre-Amplifier	HP	8447D	1937A03050	Dec. 28, 2019	Dec. 27, 2020			
9	Pre-Amplifier	EMCI	EMC05183 5	980075	Dec. 28, 2019	Dec. 27, 2020			
10	Antenna Mast	UC	UC3000	N/A	N/A	N/A			
11	Turn Table	UC	UC3000	N/A	N/A	N/A			
12	Cable Below 1GHz	Schwarzbeck	AK9515E	33155	Dec. 28, 2019	Dec. 27, 2020			
13	Cable Above 1GHz	Hubersuhner	SUCOFLE X102	DA1580	Dec. 28, 2019	Dec. 27, 2020			

Note: The cable loss has calculated in test result which connection between each test instruments.

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3. TEST ITEM AND RESULTS

3.1. Centre Frequencies

<u>Limit</u>

ETSI EN 301 893 Sub-clause 4.2.1.3

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

Test Configuration



Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.2.2.1.1 for the measurement method.

Test Mode

Continuous transmitting with Modulation.

Test Results

Bandwidth				20MHz				
Test conditions		Test	Meas	surement	Deviation	Limit		
Temperature	Voltage	(MHz)	data (MHz)		(ppm)	(ppm)	Result	
T _N	V _N	5180.00	517	9.9625	-7.239			
т	VL	5180.00	517	'9.9415	-11.293			
۱L	V _H	5180.00	517	9.9871	-2.490	±20	Pass	
Τ _Η	VL	5180.00	517	9.9625	-7.239			
	V _H	5180.00	517	9.9562	-8.456			

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Bandwidth				40MHz			
Test conditions Test Meas		surement	Deviation	Limit			
Temperature	Voltage	Channel (MHz)	data (MHz)		(ppm) (ppm)		Result
T _N	V _N	5190.00	518	39.9562	-8.439		
Т	VL	5190.00	518	39.9452	-10.559		
ιL	V _H	5190.00	518	39.9615	-7.418	±20	Pass
т	VL	5190.00	518	89.9715	-5.491		
Ч	V _H	5190.00	518	39.9224	-14.952		

Bandwidth				80MHz				
Test conditions		Test Meas		surement	Deviation	Limit	D U	
Temperature	Voltage	(MHz)	data (MHz)		(ppm)	(ppm)	Result	
T _N	V _N	5210.00	520	9.9625	-7.198			
т	VL	5210.00	520	9.9715	-5.470			
۱L	V _H	5210.00	520	9.9632	-7.063	±20	Pass	
Τ _Η	VL	5210.00	520	9.9715	-5.470			
	V _H	5210.00	520	9.9931	-1.324			



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3.2. Occupied Channel Bandwidth

<u>Limit</u>

ETSI EN 301 893Sub-clause 4.2.2.2

The Occupied Channel Bandwidth shall be between 80 % and 100 % of the declared Nominal Channel Bandwidth.

Test Configuration



Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.3.2.1 for the measurement method.

Test Mode

Continuous transmitting.



Channel bandwidth (MHz)	Mode	Test Channel (MHz)	OCB (MHz)	Limit (MHz)	Result
	802.11a	5180.00	16.384		
20MHz	802.11n	5180.00	17.582	16~20	Pass
	802.11ac	5180.00	17.582		
	802.11n	5190.00	36.044	22 40	Dooo
	802.11ac	5190.00	36.124	32~40	F 855
80MHz	802.11ac	5210.00	75.604	64~80	Pass

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Test plot as follows:

Bandwidth:	20MHz		Mode:	802.11a
		Spectrum		(∰) ⊽
		Ref Level 20.00 dBm Offset Att 30 dB SWT Count 10/10	t 14.07 dB 👄 RBW 100 kHz 1 s 👄 VBW 300 kHz Mod	le Auto Sweep
		1Rm View	N	11[1] -8.32 dBm 5.1802800 GHz
		0 dBm		10.383610384 MH2
		-10 dBm	MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	Assolution and a second s
5400.00		-20 dBm-		
5180.00		-30 dBm		
		-40 dBm		WWW. Warne
		-60 dBm		
		-70 dBm		
		CF 5.18 GHz	1001 pts	Span 40.0 MHz
		Date: 17.MAR.2020 10:06:18		
Bandwidth:	20MHz		Mode:	802.11n
		Spectrum	14.07 dp PDW 100 ldta	(TTT)
		Att 30 dB SWT Count 10/10 IPm View	1 s 🖶 VBW 300 kHz Mod	le Auto Sweep
			N	11[1] -8.31 dBm 5.1787210 GHz 105 Bw 17 58241589 MHz
		0 dBm		
		-10 dBm 7	when the post of t	Wertwent Wax
5180.00		-20 dBm		
3100.00		-30 dBm		
		-50 dBm		"With www.warmana
		-60 dBm		
		-70 dBm		
		CF 5.18 GHz	1001 pts	Span 40.0 MHz
		Date: 17.MAR.2020 10:15:13		
Bandwidth:	20MHz		Mode:	802.11ac
		Spectrum Ref Level 20.00 dBm Offset	t 14.07 dB 🕳 RBW 100 kHz	
		Att 30 dB SWT Count 10/10 IRm View	1 s 🖶 VBW 300 kHz Mod	le Auto Sweep
		10 dBm	C	11[1] -8.93 dBm 5.1786B10 GHz JCC Bw 17.582417582 MHz
		0 dBm	M1	
5180.00		-10 dBm	when when when the partition	Martan In 12
		-20 dBm		
		-40 dBm		
		And		
		-60 dBm		
		CF 5.18 GHz	1001 pts	Span 40.0 MHz
			Me	
		Date: 17.MAR.2020 10:29:07		

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Þ þ

Bandwidth:	40MHz		Mode:		802.11n
		Spectrum			
		Ref Level 20.00 dBm Offse Att 30 dB SWT Count 10/10 Count 10/10	nt 14.07 dB 👄 RBW 100 kH 1 s 👄 VBW 300 kH	Hz Hz Mode Auto Sweep	
		10 dBm		M1[1]	-11.19 dBm 5.1849650 GHz 26.040956044 MH-
		0 dBm			30.043930044 MHZ
		-10 dBm	M1		
5100.00		-20 dBm	Cherry Construction of the second of	normorphic Balling and the logity of 2	
5190.00		-30 dBm			
		=50 dBm			Murstmuseum
		-60 dBm			
		-70 dBm			
		CF 5.19 GHz	1001 ;	Measuring	Span 80.0 MHz
		Date: 17.MAR.2020 10:22:01			
Bandwidth:	40MHz		Mode:		802.11ac
		Spectrum Ref Level 20.00 dBm Offse	•t 14.07 dB ⊕ RBW 100 k⊦	Hz	
		● Att 30 dB ● SWT Count 10/10 ● 1Rm View	1 s 👄 VBW 300 kH	Hz Mode Auto Sweep	
		10 dBm-		M1[1]	-11.56 dBm 5.1874430 GHz 36.123876124 MHz
		0 dBm			
		-10 dBm	M1 hukulahuhala, ahibayahidadaan ji	while where the te	
5190.00		-20 dBm		a difference of the second second	
		-40 dBm			
		uso dBm		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Martine month and a low me
		-60 dBm			
		CF 5.19 GHz	1001 r	ats	Span 80.0 MHz
		Date: 17 MAR 2020 10:26:27	2002	Measuring	17.03.2020
		Date: 17.MAR.2020 10:36:27			
Bandwidth:	80MHz		Mode:		802.11ac
		Spectrum Ref Level 20.00 dBm Offse	t 14.07 dB e RBW 100 kH	Hz	
		Count 10/10	1 S 🖝 VBW 300 kH	MULLA MUL	-15.99.4Bm
		10 dBm		M1[1] 	-15.88 dBm 5.207440 GHz 75.604395604 MHz
		0 dBm			
5210.00		-10 dBm	այսու վաշվու	11111 11. 1 T2	
		-30 dBm	NAMICOV ^{Ma} telal Adamsed b	and a short with a short of the	
		-40 dBm			
		rest of the state of the solution of the solution			han a start and a
		-60 dBm			
		CF 5.21 GHz	1001 p	ots	Span 160.0 MHz
		Date: 17.MAR.2020 10:46:17		Neasuring	17.03.2020

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3.3. RF Output Power

Limit

ETSI EN 301 893 Sub-clause 4.2.3.2.1

Limits for RF output power and Power Density at the highest power level

Table 2: Mean e.i.r.p. limits for RF output power and Power Density at the highest power level (P_H)

Frequency	Mean e.i.r.p.	limit for P _H	Mean e.i.r.p. density limit			
range	(dBr	n)	(dBm/	MHZ)		
(MHz)	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: The ap	plicable limit is 20 dBm,	except for transmission	ons whose nominal bar	ndwidth falls		
comple	tely within the band 5 1	50 MHz to 5 250 MHz	, in which case the app	licable limit is		
23 dBn	1.					
NOTE 2: The ap	plicable limit is 7 dBm/N	IHz, except for transm	issions whose nominal	bandwidth falls		
comple	tely within the band 5 1	50 MHz to 5 250 MHz	, in which case the app	licable limit is		
10 dBm	10 dBm/MHz.					
NOTE 3: Slave devices without a Radar Interference Detection function shall comply with the I				with the limits for the		
frequer	ncy range 5 250 MHz to	5 350 MHz.				

Limit for RF output power at the lowest power level (PL) of the TPC range

Table 3: Mean e.i.r.p. limits for RF Output Power at the lowest power level of the TPC range

	Frequency range	Mean e.i.r.p. (dBm) limit for P _L				
5 2	250 MHz to 5 350 MHz	17				
5 4	470 MHz to 5 725 MHz	24 (see note)				
NOTE:	Slave devices without a Rac	lar Interference Detection function				
	shall comply with the limits for the band 5 250 MHz to 5 350 MHz					

Test Configuration



Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.4.2.1 for the measurement method.

Test Mode

ΞŇ

Normal operation.

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Test Result

802.11a			20MHz			
Test conditions		Test		Limit (dBm)	Pocult	
Temperature	Voltage	Channel(MHz)			Result	
T _N	V _N	5180.00	12.93			
т	VL	5180.00	12.84			
ΙL	V _H	5180.00	12.83	23	Pass	
т	VL	5180.00	12.79			
ГН	V _H	5180.00	12.90			

802.11n			20MHz		
Test conditions		Test		Limit (dBm)	Pocult
Temperature	Voltage	Channel(MHz)			Result
T _N	V _N	5180.00	12.66		
Т	VL	5180.00	12.51		
1	V _H	5180.00	12.48	23	Pass
T	VL	5180.00	12.56		
Ч	V _H	5180.00	12.41		

802.11ac			20MHz			
Test con	ditions	Test FIDD (dBm)		Lingit (dDmg)	Result	
Temperature Voltage		Channel(MHz)	EIRP (abm)	Limit (abm)		
T _N	V _N	5180.00	12.64			
т	VL	5180.00	12.43			
ΙL	V _H	5180.00	12.54	23	Pass	
	VL	5180.00	12.45			
Гн	V _H	5180.00	12.46			

802.11n			40MHz			
Test con	ditions	Test [JDD (dBm)		Limit (dPm)	Popult	
Temperature Voltage		Channel(MHz)	EIRF (UDIII)	Liniit (ubiii)	Result	
T _N	V _N	5190.00	12.26			
т	VL	5190.00	12.03			
ΙL	V _H	5190.00	12.11	23	Pass	
Т _н	VL	5190.00	12.15			
	V _H	5190.00	12.07			

802.11ac			40MHz			
Test con	ditions	Test		Limit (dBm)	Pocult	
Temperature Voltage		Channel(MHz)		Liniit (ubin)	Result	
T _N	V _N	5190.00	11.96			
т	VL	5190.00	11.84			
1	V _H	5190.00	11.73	23	Pass	
Т _н	VL	5190.00	11.86			
	V _H	5190.00	11.76			

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802.11ac			80MHz			
Test con	ditions	Test		Limit (dPm)	Decult	
Temperature Voltage		Channel(MHz)	annel(MHz)		Result	
T _N	V _N	5210.00	11.31			
т	VL	5210.00	11.23			
ΙL	V _H	5210.00	11.15	23	Pass	
Т _н	VL	5210.00	11.24			
	V _H	5210.00	11.13			

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3.4. Power Spectrum Density

<u>Limit</u>

ETSI EN 301 893 Sub-clause 4.2.3.2.1

Table 2: Mean e.i.r.p. limits for RF output power and Power Density at the highest power level (P_H)

Frequency range	Mean e.i.r.p. (dBi	Mean e.i.r.p. limit for P _H (dBm)		density limit MHz)		
(MHz)	with TPC	with TPC without TPC		without TPC		
5 150 to 5 35	23	20/23 (see note 1)	10	7/10 (see note 2)		
5 470 to 5 72	5 30 (see note 3)	30 (see note 3) 27 (see note 3) 17 (see note		14 (see note 3)		
NOTE 1: The applicable limit is 20 dBm, except for transmissions whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz, in which case the applicable limit is 23 dBm.						
NOTE 2: The applicable limit is 7 dBm/MHz, except for transmissions whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz, in which case the applicable limit is 10 dBm/MHz.						
NOTE 3: Slav freq	e devices without a <i>Radar</i> uency range 5 250 MHz to	Interference Detection 5 350 MHz.	n function shall comply	with the limits for the		

Test Configuration



Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.4.2.1 for the measurement method.

Test Mode

ΞN

Continuous transmitting.



<u>Test Result</u>

	Bandwidth			20MHz	
Mode	Test Channel (MHz)	Power Spectrum (dBm/MHz)		Limit (dBm)	Result
802.11a	5180.00	0.82		10	Pass
802.11n	5180.00	0.35		10	Pass
802.11ac	5180.00	0.2	26	10	Pass

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802.11ac(VHT20)	5180.00
Spectrum 🕎	Spectrum 🕎
Ref Level 20.00 dBm Offset 17.40 dB RBW 1 MHz	Ref Level 20.00 dBm Offset 17.40 dB RBW 1 MHz
Count 100/100	Att Solds Swi oo s Vow 3 min2 Mode Auto sweep
●1Pk Max	M1[1] 0.26 dBm
M1 M1[1] 12.85 dBm 5.1773950 GHz	10 dBm
10 dBm	0.dBm M1
0 dBm	
-10 dBm	-10 dBm
120 april	-20 dBm
20.40m	-30 dBm
-30 0011	-40 dBm
-40 dBm-	
-50 dBm	-50 dBm-
-60 dBm	-60 dBm
-70 dBm	-70 dBm
CF 5.18 GHz 691 pts Span 40.0 MHz	CF 5.177395 GHz 691 pts Span 3.0 MHz
Measuring	Ne asuring (1111111) (A) 17.03.2220
Date: 17.MAR.2020 10:27:21	Date: 17.MAR.2020 10:28:42

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3.5. Transmitter Unwanted Emissions Outside the 5 GHz RLAN Bands

Limit

ETSI EN 301 893 Sub-clause 4.2.4.1.2

Table 4: 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 Configuration



Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.5.2.1 for the measurement method.

Test Mode

Continuous transmitting.

Test Result

Note: 18GHz ~ 26GHz(5 times the carrier frequency) The EUT was pre-scanned the frequency band (18GHz~26GHz), found the radiated level (Background noise) lower than the limit, so don't show on the report. The signal which over the limit is the main wave signal.



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3.6. Transmitter unwanted emissions in the spurious domain-Radiated measurements

Limit

ETSI EN 301 893 Sub-clause 4.2.4.1.2

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in the below table

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 12,75 GHz	-30 dBm	1 MHz

Test Configuration



Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.5.2.1 for the measurement method.

Test Mode

Continuous transmitting.

Test Result

Note:

- By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it 1. was found that "Z axis" position was the worst, and test data recorded in this report.
- 2. Pre-scan all bandwidth found the 20MHz CH100 which it is worse case, so only show the test data for worse case.
- 18GHz ~ 26GHz(5 times the carrier frequency) 3.

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The EUT was pre-scanned the frequency band (18GHz~26GHz), found the radiated level (Background noise) lower than the limit, so don't show on the report.

(1) Below 1G



Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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(2) Above 1G

Test Channel: 36 Polarity: Horizontal -20.0 dbm EN 301 893 1X Margin -6 dB -70 - - - - - Margin -6 dB -70 -												
-20.0 dBm -20.0 dBm	Те	st Chai	nnel:	36			Polarity: Horizontal					
No. Frequency (MHz) Factor (dB) Reading (dBm) Level (dBm) Limit (dBm) Margin (dBm) Detector (dB) 1 3761.250 -5.81 -58.18 -63.99 -30.00 -33.99 peak 2 4971.500 -2.35 -58.43 -60.78 -30.00 -30.78 peak 3 6687.000 2.56 -58.73 -56.17 -30.00 -26.17 peak 4 7944.250 4.56 -60.48 -55.92 -30.00 -26.43 peak 5 8625.750 4.67 -61.10 -56.43 -30.00 -26.43 peak 6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak	-2	0.0 dBm										
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No. Frequency (MHz) Factor (dB) Reading (dBm) Level (dBm) Limit (dBm) Margin (dBm) Detector (dB) 1 3761.250 -5.81 -58.18 -63.99 -30.00 -33.99 peak 3 6687.000 2.56 -58.13 -60.78 -30.00 -30.78 peak 3 6687.000 2.56 -58.73 -56.17 -30.00 -25.92 peak 4 7944.250 4.56 -60.48 -55.92 -30.00 -25.92 peak 5 8625.750 4.67 -61.10 -56.43 -30.00 -26.43 peak 6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak										м	argin -6	i dB
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No. Frequency (MHz) Factor (dB) Reading (dBm) Level (dBm) Limit (dBm) Margin (dB) Detector 1 3761.250 -5.81 -58.18 -63.99 -30.00 -33.99 peak 2 4971.500 -2.35 -58.43 -60.78 -30.00 -30.78 peak 3 6687.000 2.56 -58.73 -56.17 -30.00 -26.17 peak 4 7944.250 4.56 -60.48 -55.92 -30.00 -25.92 peak 5 8625.750 4.67 -61.10 -56.43 -30.00 -26.43 peak 6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak	-12	U 1000.000	2175.00 3350.0	0 452	5.00 570	0.00 687	5.00	8050.00	9225.00 1	0400.00		12750.00 MHz
No. Hequency (MHz) Hactor (dB) Reading (dBm) Leven (dBm) Linit (dBm) Margin (dB) Detector 1 3761.250 -5.81 -58.18 -63.99 -30.00 -33.99 peak 2 4971.500 -2.35 -58.43 -60.78 -30.00 -30.78 peak 3 6687.000 2.56 -58.73 -56.17 -30.00 -26.17 peak 4 7944.250 4.56 -60.48 -55.92 -30.00 -25.92 peak 5 8625.750 4.67 -61.10 -56.43 -30.00 -26.43 peak 6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak	Г		Frequency		actor	Readir			Limi	Ma	rain	
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1 3761.250 -5.81 -58.18 -63.99 -30.00 -33.99 peak 2 4971.500 -2.35 -58.43 -60.78 -30.00 -30.78 peak 3 6687.000 2.56 -58.73 -56.17 -30.00 -26.17 peak 4 7944.250 4.56 -60.48 -55.92 -30.00 -25.92 peak 5 8625.750 4.67 -61.10 -56.43 -30.00 -26.43 peak 6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak	\vdash		(10112)	<u> </u>			/				2,00	
2 4971.500 -2.35 -58.43 -60.78 -30.00 -30.78 peak 3 6687.000 2.56 -58.73 -56.17 -30.00 -26.17 peak 4 7944.250 4.56 -60.48 -55.92 -30.00 -25.92 peak 5 8625.750 4.67 -61.10 -56.43 -30.00 -26.43 peak 6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak		1	3761.250	-	5.81	-58.18	8	-63.99	-30.0	0 -33	5.99	реак
3 6687.000 2.56 -58.73 -56.17 -30.00 -26.17 peak 4 7944.250 4.56 -60.48 -55.92 -30.00 -25.92 peak 5 8625.750 4.67 -61.10 -56.43 -30.00 -26.43 peak 6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak		2	4971.500) -	2.35	-58.43	3	-60.78	-30.0	0 -30).78	peak
4 7944.250 4.56 -60.48 -55.92 -30.00 -25.92 peak 5 8625.750 4.67 -61.10 -56.43 -30.00 -26.43 peak 6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak		3	6687.000)	2.56	-58.73	3	-56.17	′ -30.0	0 -26	6.17	peak
5 8625.750 4.67 -61.10 -56.43 -30.00 -26.43 peak 6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak		4	7944.250) .	4.56	-60.48	8	-55.92	2 -30.0	0 -25	5.92	peak
6 10776.000 7.62 -62.28 -54.66 -30.00 -24.66 peak		5	8625.750) .	4.67	-61.10	0	-56.43	-30.0	0 -26	6.43	peak
		6	10776.00	0	7.62	-62.28	8	-54.66	30.0	0 -24	1.66	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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3.7. Transmitter Unwanted Emission Within 5GHz R-LAN Bands

<u>Limit</u>

ETSI EN 301 893Sub-clause 4.2.4.2.2



NOTE: dBc is the spectral density relative to the maximum spectral power density of the transmitted signal.

JS0806-2 Test System Temperature Chamber EUT 00 Non-Conducted Table Ground Reference Plane

Test Configuration

Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.6.2.1 for the measurement method.

Test Mode

Continuous transmitting.

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Test Result

Mode:	802.11a	Bandwidth:	20MHz	5180.00
Spectrum Ref Level 30.00 dBm Offset 14.07 dB = RBW • IAT 40 dB = SWT 60 s = VBW • ILmit Check PASS 10 dBm 0 10 dBm 0 dBm 0 10 dBm -10 dBm - - -20 dBm - - -30 dBm - - -60 dBm - - -60 dBm - - -60 dBm - -	1 MH2 30 HH2 Mode Auto Sweep 10000 pts Span 40.0 MHz	Spectrum Ref Level 30.00 dBm Offset Att 40 dB SWT Rm View IRm View Init Check Une Unit 20 dBm 0 dBm10 dBm20 dBm20 dBm30 dBm60 dBm	14.07 dB @ RBW 1 MHz 60 s @ VBW 30 kHz Mode Auto Sweep PASS PASS	(₩)
Date: 17.MAR.2020 10:07:45	Measuring	Date: 17.MAR.2020 10:09:06	Measuring	





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3.8. Receiver Spurious Emissions

<u>Limit</u>

ETSI EN 301 893 Sub-clause 4.2.5.2

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 Configuration



Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.6.2.1 for the measurement method.

Test Mode

Normal operation.



Test Result







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3.9. Receiver spurious emissions-Radiated measurements

Limit

ETSI EN 301 893 Sub-clause 4.2.5.2

The spurious emissions of the receiver shall not exceed the values given in the below table

Frequency range	Maximum power	Measurement bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 12,75 GHz	-47 dBm	1 MHz

Test Configuration



Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.6.2.1 for the measurement method.

Test Mode

Continuous receiving.

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Test Result

Note:

- 1. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "Z axis" position was the worst, and test data recorded in this report.
- 2. Pre-scan all bandwidth found the 20MHz CH100 which it is worse case, so only show the test data for worse case.
- 3. 18GHz ~ 26GHz(5 times the carrier frequency) The EUT was pre-scanned the frequency band (18GHz~26GHz), found the radiated level (Background noise) lower than the limit, so don't show on the report.

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(1) Below 1G

Test Channel: 36 Polarity: Horizonta						Horizontal		
-2	D.O dBm							
							EN 301 8 Margin	93 RX 6 dB
-7	art and and	Lunguy Mark		how we want	were a start when were the	\$ yul ^{nil} hwkiyyuuuh	Same and a second second	SX American A
	30.000	40 50 60	70 80	(MHz)	3	800 400	500 600 700) 1000.000
	No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
	1	37.5479	-17.63	-76.72	-94.35	-57.00	-37.35	peak
	2	106.3850	-20.44	-60.88	-81.32	-57.00	-24.32	peak
	3	214.5143	-20.39	-64.84	-85.23	-57.00	-28.23	peak
	4	350.4768	-16.71	-60.10	-76.81	-57.00	-19.81	peak
	5	586.8437	-12.46	-71.92	-84.38	-57.00	-27.38	peak
	6	972.3374	-7.16	-73.16	-80.32	-57.00	-23.32	peak
Re	marks							

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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(2) Above 1G

-20.0 dBm	Test Cha	nnel:	36	P	olarity:	Hc	Horizontal		
Image: No. Frequency (MHz) Factor (dB) Reading (dBm) Level (dBm) Limit (dBm) Margin (dBm) Detector	-20.0 dBm	1							
							EN 301 8	93 RX	
-70 -70 -70 -70 -70 -70 -70 -70							Margin	6-dB	
-70 -70 - 70 - 70 - 70 - 70 - 70 - 70 -				monthaman	wannaman in	www.manuerrowwww.	Mar Anton	monorthe	
-70 -70 -70 -70 -70 -70 -70 -70	Marca and a second	1 San Haleson Strategistan Strager	and water a support and a second	*******					
Image: state	-70	All Address and							
-120 -120 1000.000 2175.00 3350.00 4525.00 5700.00 6875.00 8050.00 9225.00 10400.00 12750.00 MHz No. Frequency Factor Reading Level Limit Margin (dBm) (dBm) (dBm) Detector									
Image: No. Frequency (MHz) Factor (dB) Reading (dBm) Level (dBm) Limit (dBm) Margin (dB) Detector									
-120 -120 1000.000 2175.00 3350.00 4525.00 5700.00 6875.00 8050.00 9225.00 10400.00 12750.00 MHz No. Frequency Factor Reading Level Limit Margin (dBm) (dBm) (dBm) Detector (MHz) (dB) (dBm) (dBm) (dBm) 0.02 model									
-120 1000.000 2175.00 3350.00 4525.00 5700.00 6875.00 8050.00 9225.00 10400.00 12750.00 MHz No. Frequency Factor (dB) (dBm) (dBm) (dBm) (dBm) Detector (MHz) (dB) 50.01 50.01 (dBm) (dBm) (dBm) (dBm) (dB) (dBm) (dB) (dBm) (dB) (dBm) (dB) (dBm) (dBm) (dB) (dBm) (dBm) (dB) (dBm) (dB) (dBm) (dB) (dBm) (dBm) (dB) (dBm) (dBm) (dB) (dBm) (dBm) (dBm) (dB) (dBm) (d									
-120 Image: constraint of the second se									
No. Frequency (MHz) Factor (dB) Reading (dBm) Level (dBm) Limit (dBm) Margin (dBm) Detector 1 6896 750 2.01 50.14 56.22 47.00 0.22 10.02	-120								
No.Frequency (MHz)Factor (dB)Reading (dBm)Level (dBm)Limit (dBm)Margin (dBm)Detector16896 7502.0150.1456.2247.000.22mark	1000.000	2175.00 3350.0	0 4525.00 57	00.00 6875.00	8050.00	9225.00 10400.	.00	12750.00 MHz	
No. (MHz) (dB) (dBm) (dBm) (dBm) (dBm) Detector 1 6886.750 2.01 50.14 56.22 47.00 0.22 model		Frequenc	/ Factor	Reading	Level	Limit	Margin		
	No.	(MHz)	(dB)	(dBm)	(dBm)	(dBm)	(dB)	Detector	
I 0000./50 Z.91 -59.14 -50.25 -47.00 -9.25 peak	1	6886.750	2.91	-59.14	-56.23	-47.00	-9.23	peak	
2 7568.250 3.88 -60.74 -56.86 -47.00 -9.86 peak	2	7568.250	3.88	-60.74	-56.86	-47.00	-9.86	peak	
3 8743.250 4.78 -61.50 -56.72 -47.00 -9.72 peak	3	8743.250	4.78	-61.50	-56.72	-47.00	-9.72	peak	
4 9812.500 5.51 -62.41 -56.90 -47.00 -9.90 peak	4	9812.500	5.51	-62.41	-56.90	-47.00	-9.90	peak	
5 11187.250 7.83 -63.52 -55.69 -47.00 -8.69 peak	5	11187.25	0 7.83	-63.52	-55.69	-47.00	-8.69	peak	
6 11434.000 7.52 -63.78 -56.26 -47.00 -9.26 peak	6	11434.00	0 7.52	-63.78	-56.26	-47.00	-9.26	peak	

Remarks:

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1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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3.10. Adaptivity

Limit

ETSI EN 301893 Sub-clause 4.2.7.3

This requirement applies to all equipment within the scope of the present document.

The present document defines 2 types of Adaptive equipment: Frame Based Equipment and Load Based Equipment.

Whilst the mechanisms described in this clause define conditions under which the equipment may transmit, transmissions are only allowed providing they are not prohibited by any of the DFS requirements in clause 4.7.

Short Control Signaling Transmissions

If implemented, Short Control Signalling Transmissions of Adaptive equipment shall have a maximum duty cycle of 5 % within an observation period of 50 ms.

Test Configuration



Test Procedure

Please refer to ETS EN 301 893 Sub-clause 5.4.9.2.2 for the measurement method.

Test Mode

Normal operation.





Test Result

Test Mode	Antenna	Channel	Priority Class	COT Num [n]	Max. COT [ms]	Limit [ms]	Min.Idel Time[ms]	Limit [ms]	Idle Period probability	Verdict
11A	Ant1	5180	2	10012	4.800	6.000	0.028	0.027	See the graph	PASS
11N40	Ant1	5190	2	10066	0.236	6.000	0.075	0.027	See the graph	PASS

Test Mode	Antenna	Channel	Interference Type	Add interference Time [ms]	Interference Level [dBm/MHz]	Max. Short Control number [n]	Limit [n]	Max. Short Control Time [ms]	Limit [ms]	Verdict
			AWGN	2100	-72.7	0	50	0.00	2.5	PASS
11A Ant1	5180	OFDM	2100	-72.7	0	50	0.00	2.5	PASS	
		LTE	2100	-72.7	0	50	0.00	2.5	PASS	
			AWGN	2100	-75.2	0	50	0.00	2.5	PASS
11N40 Ant1	Ant1	5190	OFDM	2100	-75.2	0	50	0.00	2.5	PASS
			LTE	2100	-75.2	0	50	0.00	2.5	PASS







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3.11. Recover Blocking

Limit

ETSI EN 301 893 Sub-clause 4.2.8.4

Performance Criteria: The minimum performance criterion shall be a PER less than or equal to 10 %. The manufacturer may declare alternative performance criteria as long as that is appropriate for the intended use of the equipment

Wanted signal mean power	Blocking signal frequency	Blocking signa (see n	Type of blocking					
from companion device (dBm)	(MHz)	Master or Slave with radar detection (see table D.2, note 2)	Slave without radar detection (see table D.2, note 2)	signal				
Pmin + 6 dB	5 100	-53	-59	Continuous Wave				
Pmin + 6 dB	4 900 5 000 5 975	-47	-47 -53					
NOTE 1: P _{min} is the	e minimum level of t	he wanted signal (in	dBm) required to mee	t the minimum				
 non-min to an an								

Test Configuration



Test Procedure

Please refer to ETSI EN 301 893 Sub-clause 5.4.10.2.1 for the measurement method.

Test Mode

Normal operation.

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<u>Test Result</u>

Mode	Bandwidth	Frequency (MHz)	Wanted signal power (dBm)	Blocking signal Frequency (MHz)	Blocking signal power (dBm)	Test PER(%)	Limit(%)	Result
				4900	-53.00	2.3	<10	Pass
802.11a 2	201414-7	5180.00	-67.00	5000	-53.00	1.2		
				5100	-59.00	3.6		
				5975	-53.00	4.1		
	40MHz	lz 5190.00	-67.00	4900	-53.00	4.2	<10	Pass
802 11n				5000	-53.00	1.1		
002.1111				5100	-59.00	2.6		
				5975	-53.00	3.4		
			-67.00	4900	-53.00	5.1		Pass
802.11ac		30MHz 5210.00		5000	-53.00	4.6	<10	
	OUMITZ			5100	-59.00	2.8		
				5975	-53.00	3.4		



3.12. 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

Test Results

Note: supplied by the manufacturer.

The equipment constructed that settings (hardware and / or software) compliant requirements.







Reference to the test report No.: CTC20210068E03.

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5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

Reference to the test report No.: CTC20210068E02.

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