

TEST REPORT

APPLICANT	: Foxx Development Inc.
PRODUCT NAME	: FOXXD LTE Tablet
MODEL NAME	: T8 A, T8 PRO, T8 PRO+
BRAND NAME	: FOXXD
FCC ID	: 2AQRM2022008
STANDARD(S)	: 47 CFR Part 15 Subpart C
RECEIPT DATE	: 2021-10-20
TEST DATE	: 2021-10-26 to 2021-11-29
ISSUE DATE	: 2022-05-11

Edited by:

Pong Mi

Peng Mi (Rapporteur)

Shon Approved by: -Shen Junsheng (Supervisor)

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Change History				
Version Date Reason for change				
1.0 2022-05-11		First edition		





1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Foxx Development Inc.	
Applicant Address	6689 Peachtree Industrial Blvd, STE B, Peachtree Corners, GA	
Applicant Address:	30092	
Manufacturer: SHENZHEN JREN TECHNOLOGY CO.,LTD		
Manufacturer Address	B Area, 9/F, A4 Building, Tianrui Industrial Park, No. 35, Fuyuan	
Manufacturer Address:	1st Road, Zhancheng, Fuhai, Baoan District, Shenzhen, China.	

1.2. Equipment Under Test (EUT) Description

Product Name:	FOXXD LTE Tablet		
Sample No.:	6#		
Hardware Version:	V3.0		
Software Version:	T8AV1, T8PROV	1	
Modulation Technology:	DSSS, OFDM		
Modulation Mode:	802.11b, 802.11g	j, 802.11n (HT20)	
Operating Frequency Range:	802.11b/g/ n (HT	20): 2412MHz–2462MHz	
Antenna Type:	FPC Antenna		
Antenna Gain:	1.47dBi		
	Battery		
	Brand Name:	JJA	
	Model No.:	30100105	
	Serial No.:	N/A	
Accessory Information:	Capacity:	4000mAh	
	Rated Voltage:	3.7V	
	Charge Limit:	4.2V	
	Manufacturer:	SHEN ZHEN JIAJINYUAN TECHNOLOGY CO.,LTD	





Note 1: According to the certificate holder, the three models T8 A, T8 PRO and T8 PRO+ have difference as below:

Configuration	onfiguration T8 A T8 PRO		T8 PRO+
Memory	2G+32G	3G+32G	3G+32G
Software	T8AV1	T8PROV1	T8PROV1
Plastic enclosure	The s	ame	Unlike the other two models

The main measuring model is T8 A, only the results for T8 A was recorded in this report. **Note 2:** We use the dedicated software to control the EUT continuous transmission.

Note 3: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3. Modulation Type and Data Rate of EUT

Modulation Technology	Modulation Type	Data Rate (Mbps) Note1
	DBPSK	1
DSSS (802.11b)	DQPSK	2
	ССК	5.5/ 11
	BPSK	6 / 9
OFDM (802.11g)	QPSK	12 / 18
	16QAM	24 / 36
	64QAM	48 / 54
	BPSK	6.5
OFDM	QPSK	13/19.5
(802.11n (HT20))	16QAM	26/39
	64QAM	52/58.5/65

Note1: The worst-case mode (bold face) in all data rates has been determined during the pre-scan, only the test data of the worst-case were recorded in this report.





1.4. The Channel Number and Frequency

Test Mode	Channel	Frequency (MHz)	Channel	Frequency (MHz)
	1	2412	8	2447
	2	2417	9	2452
	3	2422	10	2457
802.11b/g/n (HT20)	4	2427	11	2462
	5	2432		
	6	2437		
	7	2442		

Note 1: The black bold channels were selected for test.





1.5. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C for the EUT FCC ID Certification:

No	. Identity	Document Title	
1	47 CFR Part 15	Radio Frequency Devices	

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result	Method Determination /Remark
1	15.203	Antenna Requirement	N/A	N/A	PASS	No deviation
2	N/A	Duty Cycle of Test Signal	Oct 26, 2021	Su Xiaoxian	PASS	No deviation
3	15.247(b)	Maximum Peak and Average Conducted Output Power	Dec 04, 2021	Su Xiaoxian	PASS	No deviation
4	15.247(a)	Bandwidth	Dec 04, 2021	Su Xiaoxian	PASS	No deviation
5	15.247(d)	Conducted Spurious Emission and Band Edge	Dec 04, 2021	Su Xiaoxian	PASS	No deviation
6	15.247(e)	Power Spectral Density	Dec 04, 2021	Su Xiaoxian	PASS	No deviation
7	15.207	Conducted Emission	Dec 13, 2021	Yang Lian	PASS	No deviation
8	15.247(d)	Restricted Frequency Bands	Dec 28&29, 2021	Lin Jiayong	PASS	No deviation
9	15.209, 15.247(d)	Radiated Emission	Dec 28, 2021	Lin Jiayong	PASS	No deviation
	Note 1: The tests were performed according to the method of measurements prescribed in					rescribed in
	ANSIC63.10-2013, KDB558074 D01 v05r02.					he offset setting
NOLE	Note 2: The path loss during the RF test is calibrated to correct the results by the offset setting					





in the test equipments. The ref offset 11.0dB contains two parts that cable loss 1.0dB and Attenuator 10dB.

Note 3: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 4: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

1.6. Environmental Conditions

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

Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106





2.47 CFR Part 15C Requirements

2.1. Antenna Requirement

2.1.1. Applicable Standard

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

2.1.2. Test Result: Compliant

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.





2.2. Duty Cycle of Test Signal

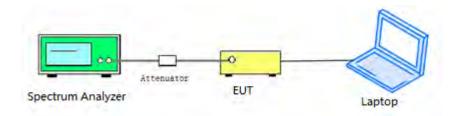
2.2.1. Requirement

Preferably, all measurements of maximum conducted (average) output power will be performed with the EUT transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%). When continuous operation cannot be realized, then the use of sweep triggering/signal gating techniques can be used to ensure that measurements are made only during transmissions at the maximum power control level. Such sweep triggering/signal gating techniques will require knowledge of the minimum transmission duration (T) over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation. Sweep triggering/signal gating techniques can be set such that it does not exceed T at any time that data are being acquired (i.e., no transmitter OFF-time is to be considered).

When continuous transmission cannot be achieved and sweep triggering/signal gating cannot be implemented, alternative procedures are provided that can be used to measure the average power; however, they will require an additional measurement of the transmitter duty cycle (D). Within this subclause, the duty cycle refers to the fraction of time over which the transmitter is ON and is transmitting at its maximum power control level. The duty cycle is considered to be constant if variations are less than ±2%; otherwise, the duty cycle is considered to be nonconstant.

2.2.2. Test Description

Test Setup:



ANSI C63.10 2013 Clause 11.6 was used in order to prove compliance.





2.2.3. Test Result

A. Test Verdict:

Test Mode	Duty Cycle (%) (D)	Duty Factor (10*lg[1/D])
802.11b	98.72	0.06
802.11g	92.44	0.34
802.11n (HT20)	91.61	0.38

B. Test Plot:

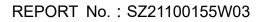


(Channel 1, 802.11b)



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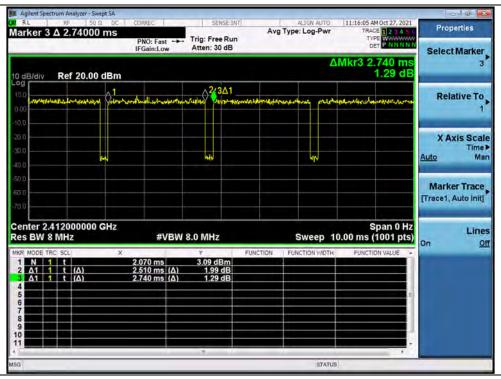
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rker 3 Δ 2.91000 m		Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr	11:18:32 AM Oct 27, 2021 TRACE 2 3 4 5 1 TYPE DET P NN NN N	Properties Select Marker
IB/div Ref 20.00 dl	3m			Mkr3 2.910 ms -0.15 dB	3
were physical provides where	motrimiter fins	7461441444444444444444444	2/301	ndreskaternader permanen	Relative To
					X Axis Sca Tim <u>Auto</u> M
					Marker Trac [Trace1, Auto Init
nter 2.412000000 GH BW 8 MHz		/ 8.0 MHz		Span 0 Hz 10.00 ms (1001 pts)	Lin
MODE TRG SCL N 1 t Δ1 1 t (Δ) Δ1 1 t (Δ)	X 3.500 ms 2.690 ms (Δ) 2.910 ms (Δ)	¥ 2,86 dBm 1.26 dB -0.15 dB	FUNCTION FUNCTION WIDTH	FUNCTION VALUE -	

(Channel 1, 802.11g)



(Channel 1, 802.11n (HT20))

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2.3. Maximum Peak and Average Conducted Output Power

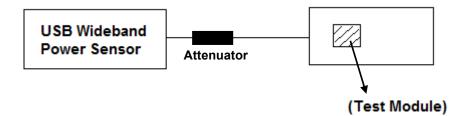
2.3.1. Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum peak conducted output power of the intentional radiator shall not exceed1 Watt.

2.3.2. Test Description

The measured output power was calculated by the reading of the USB Wideband Power Sensor and calibration.

Test Setup:



The EUT (Equipment under the test) which is coupled to the USB Wideband Power Sensor; the RF load attached to the EUT antenna terminal is 500hm; the path loss as the factor is calibrated to correct the reading.





2.3.3. Test Result

Maximum Peak Conducted Output Power

802.11b Mode

Channel	Channel Frequency (MHz)		Measured Output Peak Power		Limit		
Channel		dBm	W	dBm	W	Verdict	
1	2412	12.31	0.017			PASS	
6	2437	12.25	0.017	30	1	PASS	
11	2462	12.49	0.018			PASS	

802.11g Mode

Channel		Measured Output Peak Power		Limi	Verdict	
Channel	Frequency (MHz)	dBm	W	dBm	W	verdict
1	2412	16.61	0.046			PASS
6	2437	17.49	0.056	30	1	PASS
11	2462	17.84	0.061			PASS

802.11n (HT20) Mode

Channel	Channel Frequency (MHz)		Measured Output Peak Power		Limit		
Channel		dBm	W	dBm	W	Verdict	
1	2412	17.15	0.052			PASS	
6	2437	17.64	0.058	30	1	PASS	
11	2462	17.77	0.060			PASS	



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Maximum Average Conducted Output Power

802.11b Mode

	Fraguanay		Averag	le Power		Lin	nit	
Channel	Frequency (MHz)	Measured	Duty	Duty Factor	^r Calculated		IIIL	Verdict
	(INITZ)	dBm	Factor	dBm	W	dBm	W	
1	2412	8.41		8.47	0.007			PASS
6	2437	9.32	0.06	9.38	0.009	30	1	PASS
11	2462	9.85		9.91	0.010			PASS

802.11g Mode

	Fraguanay		Averag	le Power		Lin	mit	
Channel	Frequency (MHz)	Measured	Duty	Duty Factor	Calculated	Limit		Verdict
	(INITZ)	dBm	Factor	dBm	W	dBm	W	
1	2412	7.94		8.28	0.007			PASS
6	2437	8.17	0.34	8.51	0.007	30	1	PASS
11	2462	8.49		8.83	0.008			PASS

802.11n (HT20) Mode

	Frequency		Averag	le Power		Lin	mit		
Channel	Frequency (MHz)	Measured	Duty	Duty Factor	Calculated	Limit		Verdict	
	(101112)	dBm	Factor	dBm	W	dBm	W		
1	2412	7.56		7.94	0.006			PASS	
6	2437	8.54	0.38	8.92	0.008	30	1	PASS	
11	2462	8.81		9.19	0.008			PASS	



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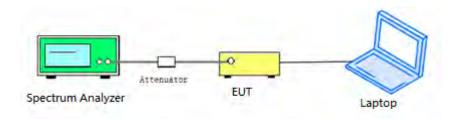


2.4.1. Requirement

According to FCC section 15.247(a) (2), Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

2.4.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 500hm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

2.4.3. Test Procedure

KDB 558074 Section 8.2 was used in order to prove compliance.





2.4.4. Test Result

802.11b Mode

A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	9.015	≥500	PASS
6	2437	8.574	≥500	PASS
11	2462	8.537	≥500	PASS

B. Test Plot:



(Channel 1, 802.11b)



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(Channel 6, 802.11b)



(Channel 11, 802.11b)



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802.11g Mode

A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	16.35	≥500	PASS
6	2437	16.33	≥500	PASS
11	2462	16.33	≥500	PASS

B. Test Plot:

enter Freq 2.412000000	Trig: F	SENSE:INT r Freq: 2.412000000 GH free Run Avg H 1: 10 dB	z old:>10/10	Radio De			eas Setup g/Hold Num
	an odinicow			Radio De	Nice: B15	On	10 Of
0 dB/div Ref 20.00 dBn 99 00		m markarhan	manning			Exp	Avg Mode Repea
Went as Miles		¥		where a	Andrewski		
ια φ							OBW Powe 99.00 %
enter 2.412 GHz les BW 100 kHz	#	VBW 300 kHz			n 30 MHz 3.733 ms		
Occupied Bandwidt	^h 5.398 MHz	Total Power	17.	0 dBm			x di
Transmit Freq Error x dB Bandwidth	23.760 kHz 16.35 MHz	OBW Power x dB		9.00 % .00 dB			-6,00 dE
							Mon 1 of 2
			STAT	JS	_		

(Channel 1, 802.11g)







(Channel 6, 802.11g)



(Channel 11, 802.11g)



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802.11n (HT20) Mode

A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	17.29	≥500	PASS
6	2437	17.29	≥500	PASS
11	2462	17.53	≥500	PASS

B. Test Plot:

enter Freq 2.412000000	Trig: f		ALIGNAUTO	Radio St			eas Setup
	#IFGain:Low #Atter	n: 10 dB		Radio De	vice: BTS	Av	g/Hold Num
o dB/div Ref 20.00 dBn	1					On	Off
00 00						Exp	Avg Mode Repeat
3.0	mannahardmann	in perturbutions	welson				
0.0				hangleyers.	We Walter House		
additional and a strange					a construction of a solution		
10						1	OBWPowe
9.0							99.00 %
enter 2.412 GHz Res BW 100 kHz	#	VBW 300 kHz			an 30 MHz 3.733 ms		
Occupied Bandwidt	h	Total Power	17.	1 dBm			
	.526 MHz						x dB
Transmit Freg Error	26.220 kHz	OBW Power	9	9.00 %			-6.00 dB
x dB Bandwidth	17.29 MHz	x dB	-6	.00 dB		-	_
							More
							1 of 2
s			STATU	IS	_		

(Channel 1, 802.11n (HT20))







(Channel 6, 802.11n (HT20))



(Channel 11, 802.11n (HT20))



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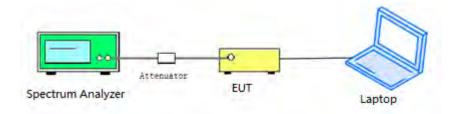
2.5. Conducted Spurious Emissions and Band Edge

2.5.1. Requirement

According to FCC section 15.247(c), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

2.5.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 500hm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

2.5.3. Test Procedure

KDB 558074 Section 8.5 and 8.7 was used in order to prove compliance.





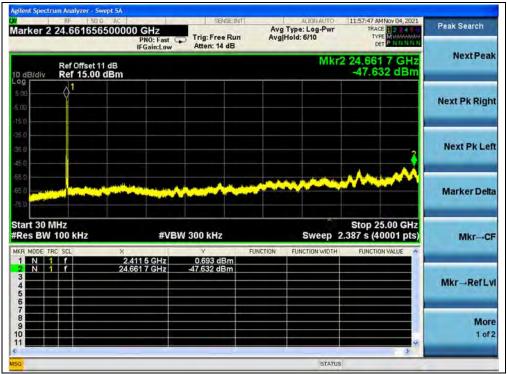
2.5.4. Test Result

802.11b Mode

A. Test Verdict:

		Measured Max. Out	Limit	t (dBm)		
Channel	Frequency (MHz)	of Band Emission	Carrier	Calculated	Verdict	
		(dBm)	Level	-20dBc Limit		
1	2412	-47.63	0.69	-19.31	PASS	
6	2437	-48.41	3.26	-16.74	PASS	
11	2462	-48.02	3.01	-16.99	PASS	

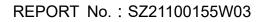
B. Test Plot:



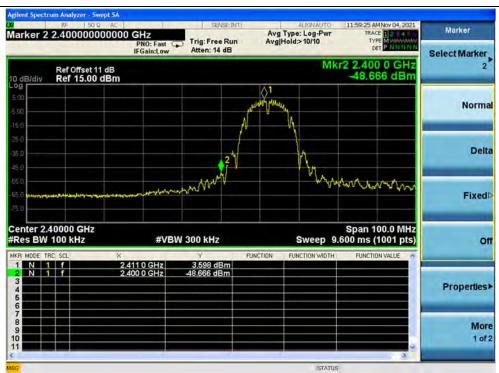
(30MHz to 25GHz, Channel 1, 802.11b)



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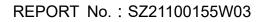
(Band Edge, Channel 1, 802.11b)



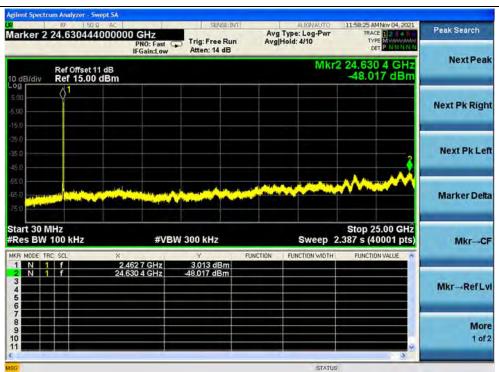
(30MHz to 25GHz, Channel 6, 802.11b)



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(Band Edge, Channel 11, 802.11b)



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802.11g Mode

A. Test Verdict:

	Measured Max. Out		Limi	t (dBm)	
Channel	Frequency (MHz)	of Band Emission	Carrier	Calculated	Verdict
		(dBm)	Level	-20dBc Limit	
1	2412	-46.81	-3.68	-23.68	PASS
6	2437	-47.93	-1.58	-21.58	PASS
11	2462	-46.48	-1.81	-21.81	PASS

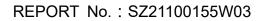
B. Test Plot:



(30MHz to 25GHz, Channel 1, 802.11g)



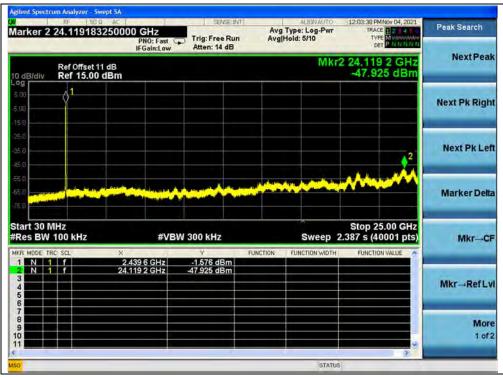
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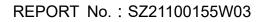
(Band Edge, Channel 1, 802.11g)



(30MHz to 25GHz, Channel 6, 802.11g)



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	12:01:18 PM Nov 04, 2021 TRACE 2 4 5 TYPE MMAAAAAA	ALIGNAUTO Type: Log-Pwr Hold: 5/10	Av	SENSE	0 GHz PNO: Fast	67105000	2 24.61	rker 2
Next Pea	24.616 7 GHz	Mkr2		Atten: 14 di	IFGain:Low			
	-46.480 dBm					fset 11 dB 5.00 dBm		B/div
Next Pk Rig								1)
Next Pk Le	3							9 0 0 0
Marker Del	Maria	w	and the second second					
Mkr→C	Stop 25.00 GHz .387 s (40001 pts)	Sweep 2.3		300 kHz	#VBV	Iz	W 100 kH	
	Stop 25.00 GHz 387 s (40001 pts) FUNCTION VALUE	Sweep 2.3	FUNCTION	¥		×	W 100 KH	MODE T
	.387 s (40001 pts)	the second se			#VBV 165 8 GHz 116 7 GHz	×	W 100 kł	MODE T





(Band Edge, Channel 11, 802.11g)



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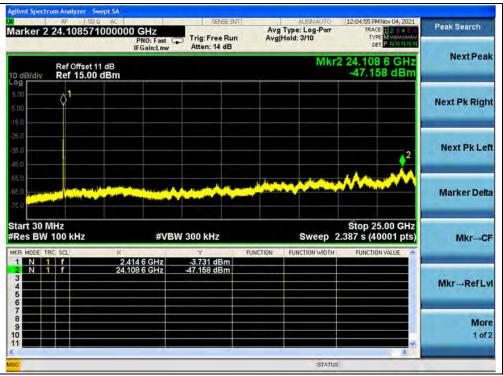


802.11n (HT20) Mode

A. Test Verdict:

		Measured Max. Out	Limi		
Channel	Frequency (MHz)	of Band Emission	Carrier	Calculated	Verdict
		(dBm)	Level	-20dBc Limit	
1	2412	-47.16	-3.73	-23.73	PASS
6	2437	-47.24	0.95	-19.05	PASS
11	2462	-46.01	-1.59	-21.59	PASS

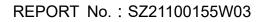
B. Test Plot:



(30MHz to 25GHz, Channel 1, 802.11n (HT20))



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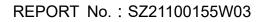
(Band Edge, Channel 1, 802.11n (HT20))



(30MHz to 25GHz, Channel 6, 802.11n (HT20))



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	12:05:20 PM Nov 04, 2021 TRACE	ALIGNAUTO		SENSE:IN		51421350		ker 2
	DET P N DN N N	Hold: 4/10		Trig: Free Run Atten: 14 dB	PNO: Fast G	71421330	244.0	ACT Z
NextPea	24.614 2 GHz -46.005 dBm	Mkr2				Offset 11 dl f 15.00 dB	Ref (Ref	B/div
Next Pk Rig						1	1	
Next Pk Le								
Marker De		www						Trease in a
								t 30 I
Mkr→G	Stop 25.00 GHz 387 s (40001 pts)	Sweep 2.3		300 kHz	#VBV	kHz	/ 100 k	s BW
		Sweep 2.3	FUNCTION	Ŷ	<	kHz	TRC SCL	MODE T
	387 s (40001 pts)		FUNCTION			kHz	TRC SCL	

(30MHz to 25GHz, Channel 11, 802.11n (HT20))



(Band Edge, Channel 11, 802.11n (HT20))



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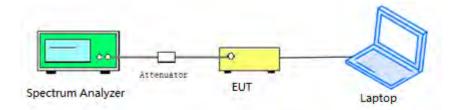
2.6. Power Spectral Density

2.6.1. Requirement

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

2.6.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 500hm; the path loss as the factor is calibrated to correct the reading.

2.6.3. Test Procedure

KDB 558074 Section 8.4 was used in order to prove compliance.





2.6.4. Test Result

802.11b Mode

A. Test Verdict:

Spectral power density (dBm/3kHz)							
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict			
1	2412	-10.82	8	PASS			
6	2437	-8.35	8	PASS			
11	2462	-5.65	8	PASS			

B. Test Plot:

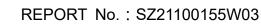


(Channel 1, 802.11b)



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(Channel 6, 802.11b)



(Channel 11, 802.11b)



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802.11g Mode

A. Test Verdict:

Spectral power density (dBm/3kHz)							
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict			
1	2412	-14.43	8	PASS			
6	2437	-13.47	8	PASS			
11	2462	-13.59	8	PASS			

B. Test Plot:



(Channel 1, 802.11g)



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(Channel 6, 802.11g)



(Channel 11, 802.11g)

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802.11n (HT20) Mode

A. Test Verdict:

	Spectral power density (dBm/3kHz)												
Channel	Frequency	Measured PSD (dBm/3kHz)	Limit	Verdict									
Channel	(MHz)	Measured FSD (UDIII/SKHZ)	(dBm/3kHz)	verdict									
1	2412	-13.32	8	PASS									
6	2437	-11.61	8	PASS									
11	2462	-11.81	8	PASS									

B. Test Plot:



(Channel 1, 802.11n (HT20))



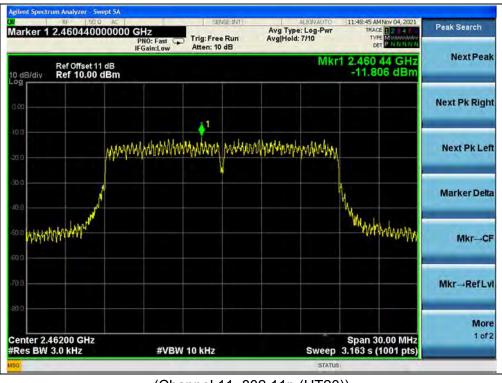
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(Channel 6, 802.11n (HT20))



(Channel 11, 802.11n (HT20))

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2.7. Conducted Emission

2.7.1. Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μ H/ 50Ω line impedance stabilization network (LISN).

Frequency Penge (MHz)	Conducted Limit (dBµV)				
Frequency Range (MHz)	Quai-peak	Average			
0.15 - 0.50	66 to 56	56 to 46			
0.50 - 5	56	46			
5 - 30	60	50			

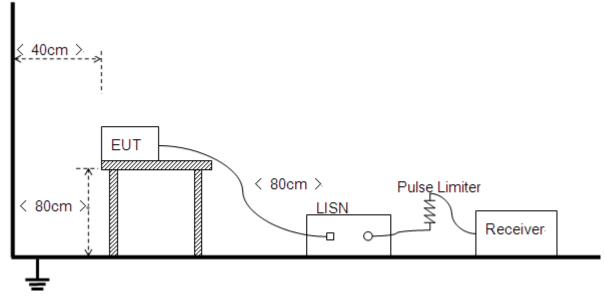
NOTE:

(a) The lower limit shall apply at the band edges.

(b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.7.2. Test Description

Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10 2013.

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2.7.3. Test Result

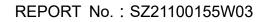
The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Set RBW=9kHz, VBW=30kHz. Refer to recorded points and plots below.

Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test Setup:

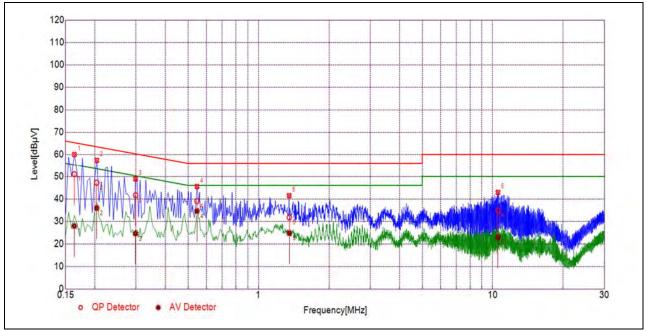
Test Mode: EUT+Adapter+Earphone + WIFI TX Test Voltage: AC 120V/60Hz The measurement results are obtained as below: $E [dB\mu V] = U_R + L_{Cable loss} [dB] + A_{Factor}$ U_R: Receiver Reading AFactor: Voltage division factor of LISN







B. Test Plot:

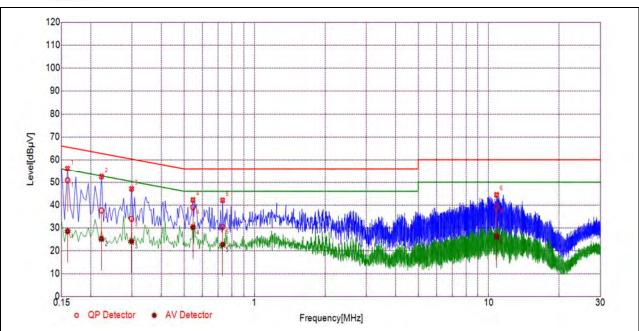


(L Phase)

No.	Fre.	Emission L	.evel (dBµV)	Limit (dBµV)	Power-line	Verdict	
	(MHz)	Quai-peak	Quai-peak Average Quai-peak Av		Average		. e. alot	
1	0.1635	50.99	27.89	65.29	55.29		PASS	
2	0.2038	47.22	35.89	63.45	53.45		PASS	
3	0.2986	41.59	24.55	60.28	50.28	Line	PASS	
4	0.5460	38.99	34.55	56.00	46.00	Line	PASS	
5	1.3527	31.72	24.77	56.00	46.00		PASS	
6	10.5352	34.88	22.84	60.00	50.00		PASS	







(N	Phase)	
· · ·		

No.	Fre.	Emission L	evel (dBµV)	Limit (dBµV)	Power-line	Verdict	
	(MHz)	Quai-peak	Average	Quai-peak Average			alot	
1	0.1592	50.82	28.41	65.51	55.51		PASS	
2	0.2220	37.54	25.14	62.74	52.74		PASS	
3	0.2984	33.92	24.02	60.29	50.29	Neutral	PASS	
4	0.5458	38.98	30.22	56.00	46.00	neutrai	PASS	
5	0.7303	30.32	22.60	56.00	46.00		PASS	
6	10.7995	39.23	26.22	60.00	50.00		PASS	

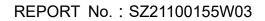


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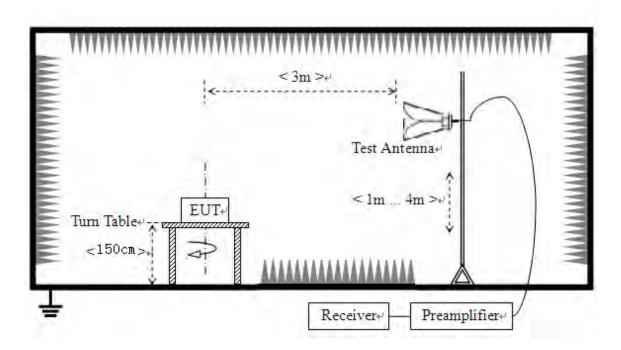
2.8. Restricted Frequency Bands

2.8.1. Requirement

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

2.8.2. Test Description

Test Setup

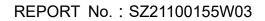


The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.







2.8.3. Test Procedure

Span = wide enough to fully capture the emission being measured RBW = 1 MHz for $f \ge 1$ GHz, 100 kHz for f < 1GHz VBW = 3 MHz Sweep = auto Detector function = peak/average Trace = max hold

Allow the trace to stabilize

2.8.4. Test Result

The lowest and highest channels are tested to verify Restricted Frequency Bands.

The measurement results are obtained as below:

 $E [dB\mu V/m] = U_R + A_T + A_{Factor} [dB]; A_T = L_{Cable loss} [dB] - G_{preamp} [dB]$

A_T: Total correction Factor except Antenna

U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

A_{Factor}: Antenna Factor at 3m

Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

802.11b Mode

A. Test Verdict:

	Frequency	Detector	Receiver Reading	AT	A _{Factor}	Max. Emission	Limit	Verdict
Channel	(MHz)	PK/ AV	U _R (dBµV)	(dB)	(dB@3m)	E (dBµV/m)	(dBµV/m)	
1	2379.65	PK	26.54	6.74	27.20	60.48	74	PASS
1	2390.00	AV	13.71	6.74	27.20	47.65	54	PASS
11	2485.37	PK	26.54	6.74	27.20	60.48	74	PASS
11	2483.50	AV	13.96	6.74	27.20	47.90	54	PASS





B. Test Plot:

	RF PRESEL 50			SENSE:1	VT	ALIGN AUTO	01:51:57	AM Nov 29, 2021	100000
rker 1	2.379648 PREAMP	8000000	CHZ PNO: Fast C IFGain:Low	Trig: Free Ru	n Avg	Type: Voltage Hold:>100/100	TF	ACE 123456 TYPE MWWWWWW DET PPNNNN	Marker
B/div	Ref 86.9	9 dBµV	I Gam.Low			Mk	r1 2.37 26.5	9 65 GHz 41 dBµV	Select Marker 1
9 0 .0									Norm
0	وال من المراجع					, 1	¢ ²		Del
10 19									Fixed
	0000 GHz (CISPR) 1	MHz	#VB	W 3.0 MHz	FUNCTION	Sweep	1.000 ms	41200 GHz (1001 pts)	c
N 1	f f		79 65 GHz 90 00 GHz	26,541 dBµV 24,930 dBµV					Properties
									Mo 1 of
ية وعد إ									

(PEAK, Channel 1, 802.11b)



(AVERAGE, Channel 1, 802.11b)

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0.6	01:57:17 AM Nov 29, 2021	ALIGN AUTO	I	SENSE:IM		lyzer - Swept SA L 50 Ω DC		RL
Marker	TRACE 1 2 3 4 5 4 TYPE MWWWWWW DET P P N N N	Type: Voltage Hold:>100/100		Trig: Free Run #Atten: 10 dB	PNO: Fast	368000000	2 2.485	rker
Select Marker 2	2.485 368 GHz 26.539 dBµV	Mkr2		intent to do	IP Gam: Low	36.99 dBµV		dB/di
Norm								
Del					and the second second	Im		
Fixed								9 9
	Stop 2,50000 GHz 000 ms (1001 pts)	Sweep 1.	FUNCTION	3.0 MHz		R) 1 MHz ×	TRC SCL	MODE
Properties	E C			25.109 dBµV 26.539 dBµV	500 GHz 368 GHz	2.483 2,485	1 f	N
Mo 1 o								
	O							_

(PEAK, Channel 11, 802.11b)



(AVERAGE, Channel 11, 802.11b)

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802.11g Mode

A. Test Verdict:

Channel	Frequency	Detector	Receiver Reading	A _T	A _{Factor}	Max. Emission	Limit	Verdict
Channel	(MHz)	PK/ AV	U _R (dBµV)	(dB)	(dB@3m)	E (dBµV/m)	(dBµV/m)	verdict
1	2383.29	PK	27.24	6.74	27.20	61.18	74	PASS
1	2390.00	AV	15.05	6.74	27.20	48.99	54	PASS
11	2483.50	PK	25.63	6.74	27.20	59.57	74	PASS
11	2483.50	AV	13.17	6.74	27.20	47.11	54	PASS

B. Test Plot:



(PEAK, Channel 1, 802.11g)



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Trace/Detector	AM Nov 29, 2021 ACE 1 2 3 4 5 YPE MWWWWWWW DET P N N N N N	TR	ALIGN AUTO Type: Voltage Iold:>100/100		rig: Free Run Atten: 10 dB	NO: Fast 😱 Sain:Low		RESEL 50	BW	RL
1	3 29 GHz 70 dBµV		Mkr				dBµV	ef 86.9	liv	dB/d
Clear Writ										
Trace Averag	\int									0
Max Ho) ²	↓ ¹							0 19 11
Min Ho	1200 GHz (1001 pts)	71.3 ms		FUNCTION	0 Hz	#VBW	MHz ×	0 GHz SPR) 1		es E
View Blank Trace On					970 dBµV 050 dBµV		2.383 2.390		1	N
Moi 1 of										

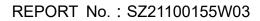
(AVERAGE, Channel 1, 802.11g)



(PEAK, Channel 11, 802.11g)

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eysight Spectrum Analyzer								_	0 0 2
BO BW 750 Hz	50 Ω DC	PNO: Fast C	Trig: Free R #Atten: 10 d	un	Avg Type: Voltage Avg Hold:>100/100	TRACE	Nov 29, 2021		BW Res BV
	99 dBµV	II Guin.cow			Mkr2 2	483 812	0 GHz I dBµV	Auto	1 MH <u>Ma</u>
								Auto	Video B 750 H Ma
								VBV	V:3dB RB
				() ²				Auto	M
								Tree	
t 2.46200 GHz s BW (CISPR)	1 MHz	#VB	W 750 Hz		Sweep 5	Stop 2.50 8.33 ms (5	000 GHz 001 pts)		
MODE TRC SCL	× 2.483 5 2.483 8	00 0 GHz 12 0 GHz	¥ 13.165 dBµV 13.001 dBµV		ON FUNCTION WIDTH	FUNCTIO	N VALUE		
کر ان کر ان ان کر ان کر ان کر	2.1000						E		
					STATUS			-	

(AVERAGE, Channel 11, 802.11g)



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802.11n (HT20) Mode

A. Test Verdict:

Channel	Frequency	Detector	Receiver Reading	A _T	A _{Factor}	Max. Emission E	Limit	Verdict
	(MHz)	PK/ AV	U _R (dBµV)	(dB)	(dB@3m)	⊏ (dBµV/m)	(dBµV/m)	
1	2386.65	PK	26.62	6.74	27.20	60.56	74	PASS
1	2390.00	AV	15.17	6.74	27.20	49.11	54	PASS
11	2483.50	PK	28.13	6.74	27.20	62.07	74	PASS
11	2483.50	AV	15.01	6.74	27.20	48.95	54	PASS

B. Test Plot:



(PEAK, Channel 1, 802.11n (HT20))







o BV	N 750 Hz		PNO: Fast	SENSE:	Avg	ALIGN AUTO Type: Voltage Hold:>100/100	03:23:31 AM Nov TRACE TYPE	3456	BW
-	PREAMP	_	IFGain:Low	#Atten: 10 dB			DET	NNNN	Res E
B/dív	Ref 86.	99 dBµV				Mkr	1 2.386 65 14.917 d	GHz BµV	1 N <u>N</u>
									Video
									750
								Auto	1
								VBV	V:3dB R
								Auto	
-			_			• • • • •	2^2	1000	0.000.000
-									
1 2 30	0000 GHz						Stop 2.41200	GHZ	_
	(CISPR)		#VB	W 750 Hz		Sweep 1	71.3 ms (100	1 pts)	
HODE TH		x		*	FUNCTION	FUNCTION WIDTH	FUNCTION VAL	LVE -	
N			86 65 GHz 90 00 GHz	14.917 dBµV 15.171 dBµV					
								Е	
								- 1	
د د می د می د می									

(AVERAGE, Channel 1, 802.11n (HT20))



(PEAK, Channel 11, 802.11n (HT20))



Fax: 86-755-36698525



all street	03:27:14 AM Nov 29, 2021	ALIGN AUTO		SENSE:1		50 Q DC	RF PRESEL	RL
Marker		Type: Voltage Hold:>100/100		Trig: Free Ru #Atten: 10 dB	PNO: Fast	648000000	a long	arker 2
Select Marker 2	2.484 648 GHz 14.754 dBµV	Mkr2		#Atten: 10 db	IFGain:Low	6.99 dBµV	PREAMP	dB/div
Norma								
Dell			.1.0					0
Fixed								99
C	Stop 2.50000 GHz 8.13 ms (1001 pts) FUNCTION VALUE	Sweep 58	FUNCTION	750 Hz		R) 1 MHz ×	RC SCL	
Properties	<u>е</u>			15.011 dBµV 14.754 dBµV	500 GHz 648 GHz			N
Mor 1 of								

(AVERAGE, Channel 11, 802.11n (HT20))





2.9. Radiated Emission

2.9.1. Requirement

According to FCC section 15.247(d), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (µV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note1: For above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit. **Note2:** For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK). In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table).

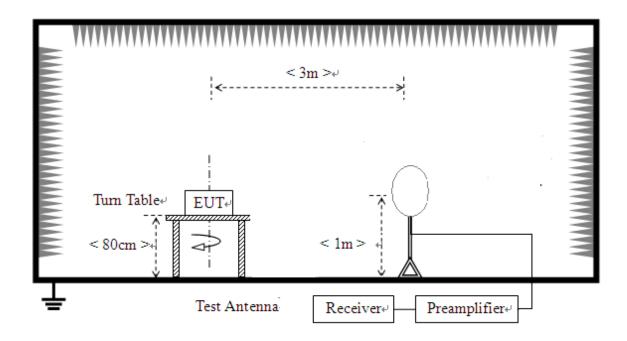




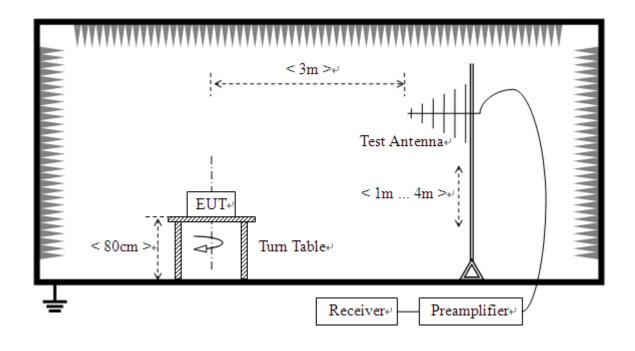
2.9.2. Test Description

Test Setup:

1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz

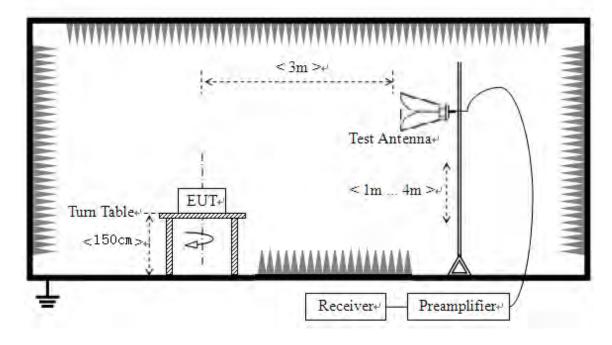




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3) For radiated emissions above 1GHz



The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz.The antenna to EUT distance is 3meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 30MHz, the emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9kHz-90 kHz, 110kHz-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

For measurements below 1GHz the resolution bandwidth is set to 100kHz for peak detection measurements or 120kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements and as applicable for average measurements.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.





2.9.3. Test Result

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak (or average) limit, it is unnecessary to perform an quasi-peak measurement (or average).

The measurement results are obtained as below:

 $E [dB\mu V/m] = U_R + A_T + A_{Factor} [dB]; A_T = L_{Cable loss} [dB] - G_{preamp} [dB]$

A_T: Total correction Factor except Antenna

U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

A_{Factor}: Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

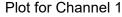
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

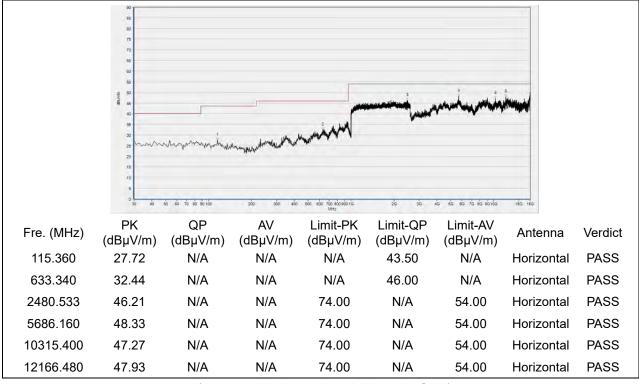
Note3: For the frequency, which started from 18GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.



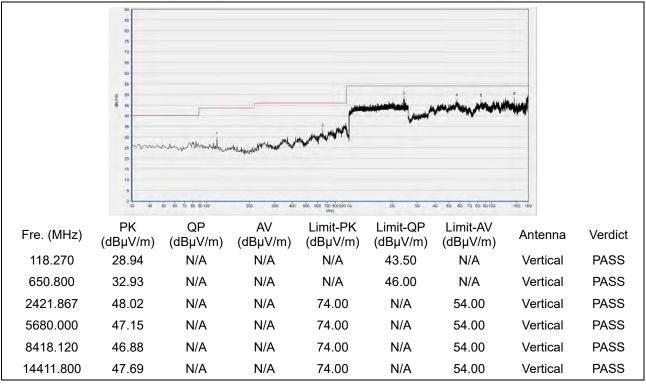


802.11b Mode





(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)



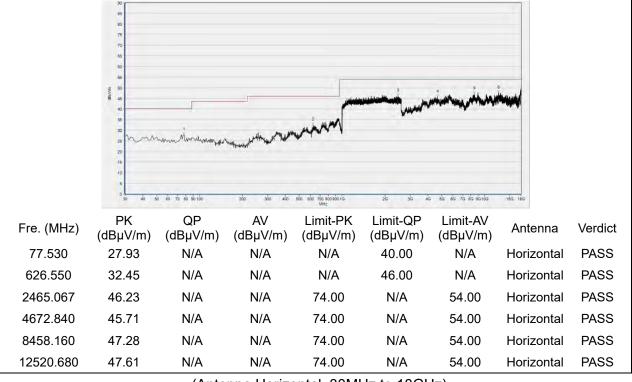
Shenzhen Morlab Communications Technology Co., Ltd. FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China Tel: 86-755-36698555

Fax: 86-755-36698525

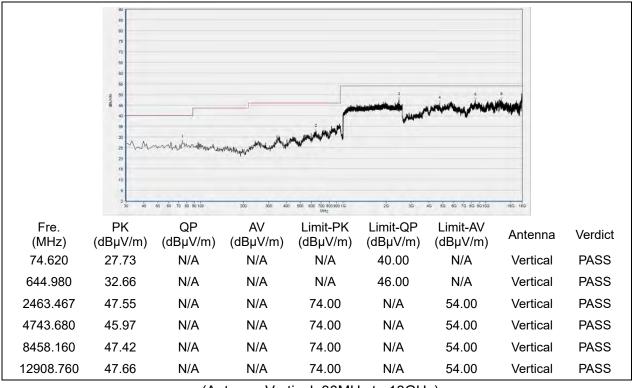
Http://www.morlab.cn



Plot for Channel 6



(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)



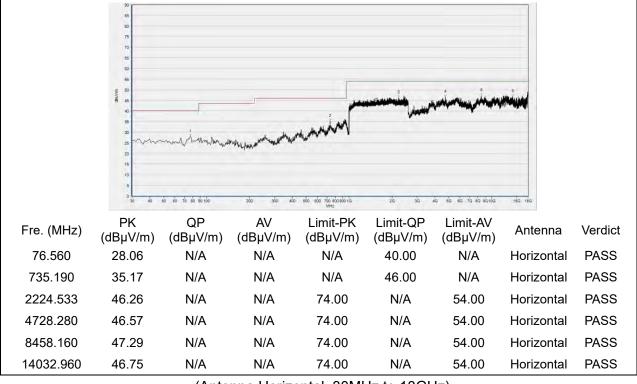
Shenzhen Morlab Communications Technology Co., Ltd. FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China Tel: 86-755-36698555

Fax: 86-755-36698525

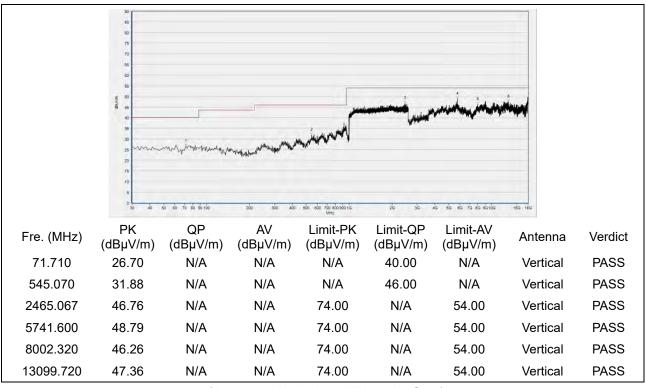
Http://www.morlab.cn



Plot for Channel 11



(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)



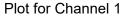
Shenzhen Morlab Communications Technology Co., Ltd. FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China Tel: 86-755-36698555

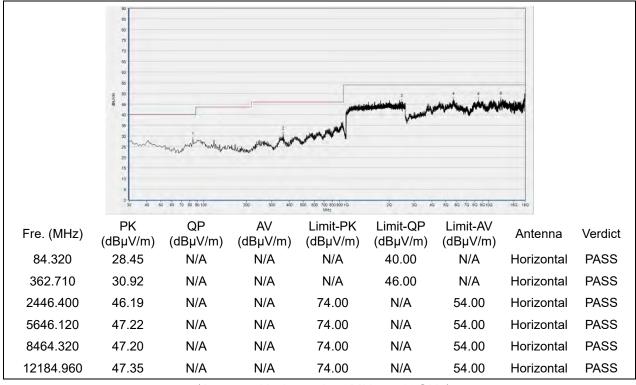
Fax: 86-755-36698525

Http://www.morlab.cn

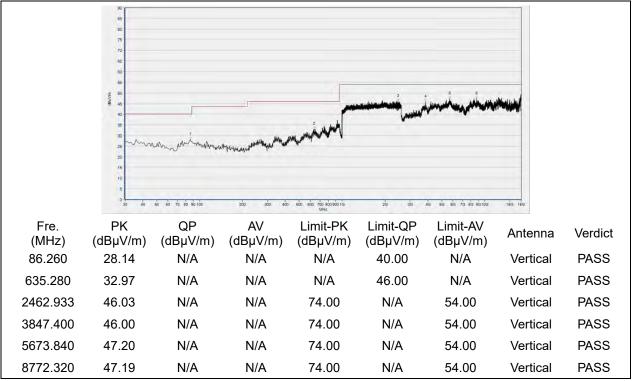


802.11g Mode





(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)



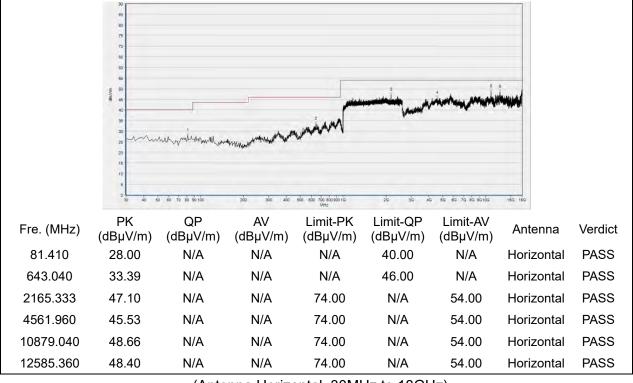
Shenzhen Morlab Communications Technology Co., Ltd. FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China Tel: 86-755-36698555

Fax: 86-755-36698525

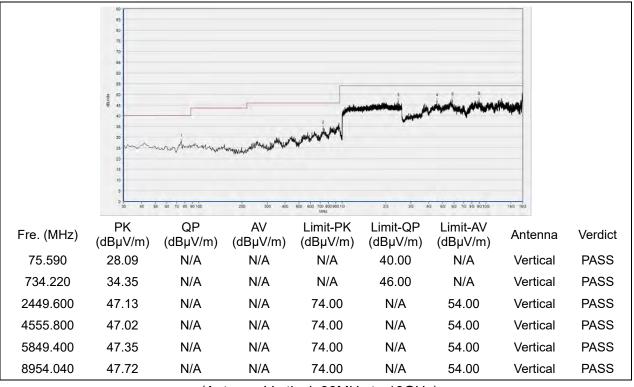
Http://www.morlab.cn



Plot for Channel 6



(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)



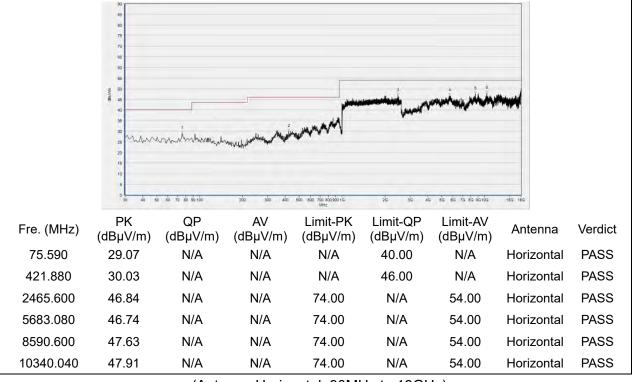
Shenzhen Morlab Communications Technology Co., Ltd. FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China Tel: 86-755-36698555

Fax: 86-755-36698525

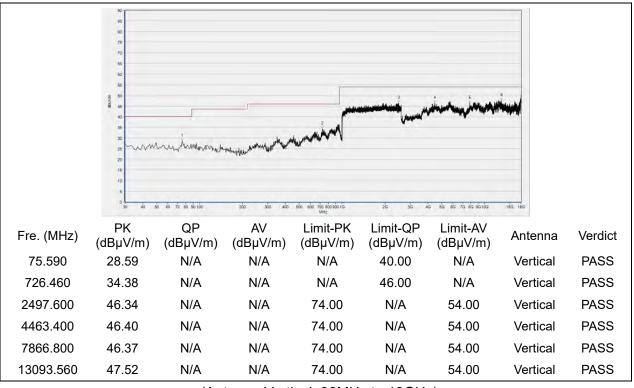
Http://www.morlab.cn



Plot for Channel 11



(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)



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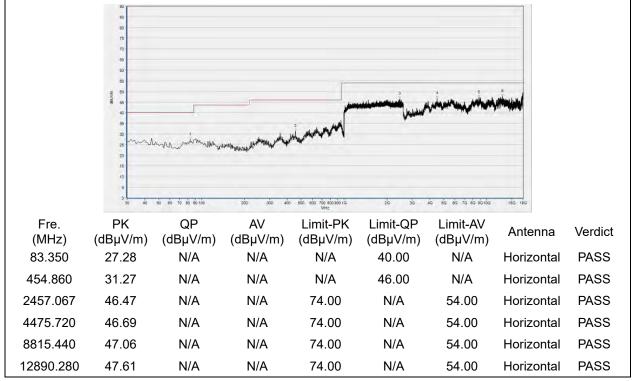
Fax: 86-755-36698525

Http://www.morlab.cn

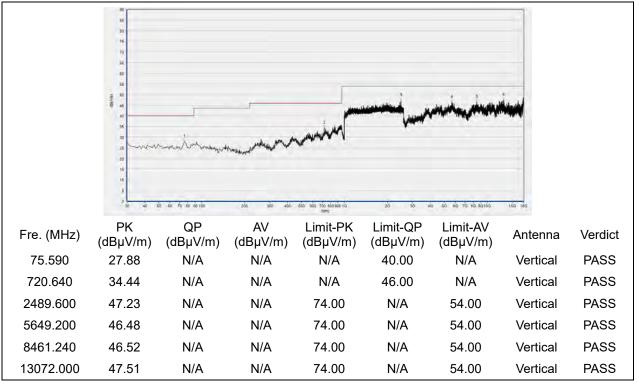


802.11n (HT20) Mode





(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)



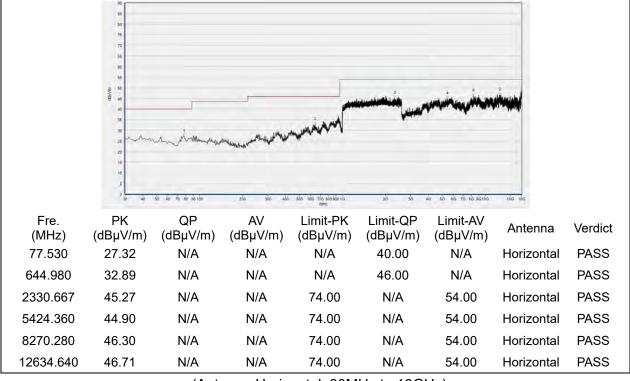
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Fax: 86-755-36698525

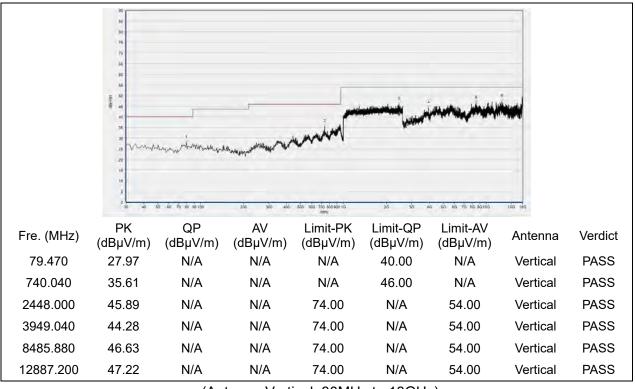
Http://www.morlab.cn



Plot for Channel 6



(Antenna Horizontal, 30MHz to 18GHz)



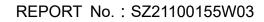
(Antenna Vertical, 30MHz to 18GHz)



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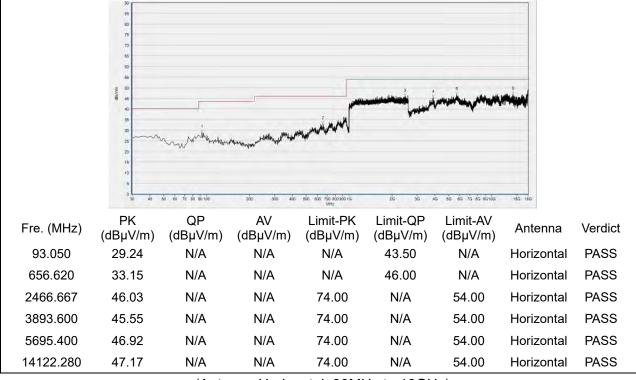
Fax: 86-755-36698525

Http://www.morlab.cn

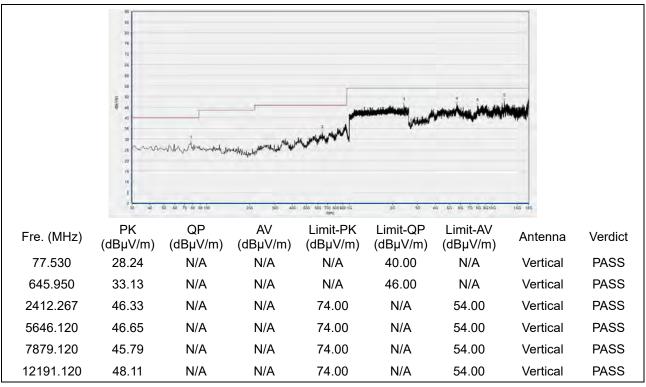




Plot for Channel 11



(Antenna Horizontal, 30MHz to 18GHz)



(Antenna Vertical, 30MHz to 18GHz)



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Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test Items	Uncertainty
Peak Output Power	±2.22dB
Power Spectral Density	±2.22dB
Bandwidth	±5%
Conducted Spurious Emission	±2.77dB
Restricted Frequency Bands	±5%
Radiated Emission	±2.95dB
Conducted Emission	±2.44dB

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



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Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.			
	FL.3, Building A, FeiYang Science Park, No.8 LongChang			
Laboratory Address:	Road, Block 67, BaoAn District, ShenZhen, GuangDong			
	Province, P. R. China			
Telephone:	+86 755 36698555			
Facsimile:	+86 755 36698525			

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
	FL.3, Building A, FeiYang Science Park, No.8 LongChang
Address:	Road, Block 67, BaoAn District, ShenZhen, GuangDong
	Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.





4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment Name	Serial No.	Туре	Manufacturer	Cal. Date	Due Date
Attenuator 1	(N/A.)	10dB	Resent	N/A	N/A
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2021.03.25	2022.03.24
USB Wideband Power Sensor	MY54180008	U2021XA	Agilent	2021.10.21	2022.10.20
RF Cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial Cable	CB02	RF02	Morlab	N/A	N/A
SMA Connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Туре	Manufacturer	Cal. Date	Due Date
Receiver	MY56400093	N9038A	KEYSIGHT	2021.03.09	2022.03.08
LISN	812744	NSLK 8127	Schwarzbeck	2021.03.09	2022.03.08
Pulse Limiter	VTSD 9561	VTSD	Schwarzbeck	2021.07.21	2022.07.20
(10dB)	F-B #206	9561-F	Schwarzbeck	2021.07.21	2022.07.20
Coaxial					
Cable(BNC)	CB01	EMC01	Morlab	N/A	N/A
(30MHz-26GHz)					
NOTEBOOK	DF2DR A01	VOSTRO	DELL N/A	NI/A	
NOTEBOOK	DPC	5370	DELL	IN/A	N/A
ADAPTER	окхттw	LA45NM1	DELL	N/A	N/A
ADAPTER	UNATIW	40	DELL	IN/A	IN/A

4.3 List of Software Used

Description	Manufacturer	Software Version
Test System	Tonscend	V2.5.77.0418
Morlab EMCR V1.2	Morlab	V1.0
TS+ -[JS32-CE]	Tonscend	V2.5.0.0





4.4 Radiated Test Equipments

Equipment Name	Serial No.	Туре	Manufacturer	Cal. Date	Due Date
Receiver	MY54130016	N9038A	Agilent	2021.07.16	2022.07.15
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.24	2022.05.23
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2019.02.14	2022.02.13
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2019.07.26	2022.07.25
Test Antenna – Horn	BBHA9170 #774	BBHA9170	Schwarzbeck	2019.07.26	2022.07.25
Coaxial Cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial Cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial Cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
Coaxial Cable (N male) (30MHz-40GHz)	CB05	EMC05	Morlab	N/A	N/A
1-18GHz pre-Amplifier	61171/61172	S020180L32 03	Tonscend	2021.07.16	2022.07.15
18-26.5GHz pre-Amplifier	46732	S10M100L38 02	Tonscend	2021.07.16	2022.07.15
26-40GHz pre-Amplifier	56774	S40M400L40 02	Tonscend	2021.07.16	2022.07.15
Notch Filter	N/A	WRCG-2400- 2483.5-60SS	Wainwright	2021.07.16	2022.07.15
Anechoic Chamber	N/A	9m*6m*6m	CRT	2020.01.06	2023.01.05

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