

TEST REPORT

FCC PART 15 SUBPART C 15.247

Test report On Behalf of SHENZHEN NEO ELECTRONICS CO., LTD For WiFi door sensor Model No.: NAS-DS01W0

FCC ID: Z52NAS-DS01W0

Prepared for : SHENZHEN NEO ELECTRONICS CO., LTD East 6/F Building 2, Laobing industry, Baoan District, Shenzhen.

Prepared By : SHENZHEN NEO ELECTRONICS CO., LTD East 6/F Building 2, Laobing industry, Baoan District, Shenzhen.

 Date of Test:
 Sep. 15, 2018 ~ Sep. 21, 2018

 Date of Report:
 Sep. 21, 2018

 Report Number:
 HK1809201131E



TEST RESULT CERTIFICATION

Applicant's name:	SHENZHEN NEO ELECTRONICS CO., LTD
Address:	East 6/F Building 2, Laobing industry, Baoan District, Shenzhen.
Manufacture's Name:	SHENZHEN NEO ELECTRONICS CO., LTD
Address	East 6/F Building 2, Laobing industry, Baoan District, Shenzhen.
Product description	
Trade Mark:	NEO Coolcam
Product name:	WiFi door sensor
Model and/or type reference:	NAS-DS01W0
Serial Model	GN-SS001
Difference Description	All the same except for model name.
Standards	47 CFR FCC Part 15 Subpart C 15.247

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Date of Test	
Date (s) of performance of tests	Sep. 15, 2018 to Sep. 21, 2018
Date of Issue	Sep. 21, 2018
Test Result	Pass

:

2

Testing Engineer

Gog Bian (Gary Qian) Edan Mu

Technical Manager

(Eden Hu)

Authorized Signatory :

ason Z

(Jason Zhou)



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1.SUMMARY

1.1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

ANSI C63.10:2013 : American National Standard for Testing Unlicensed Wireless Devices

KDB558074 D01 15.247 Meas Guidance v05: Guidance for compliance measurements on Digital transmission system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the FCC rules.

1.2 TEST DESCRIPTION

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Output Power	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247	Conducted Spurious Emission	Compliant
§15.247	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Line Conduction Emission	N/A

NOTE: N/A stands for not applicable.



1.3 TEST FACILITY

1.3.1 Address of the test laboratory

Shenzhen HUAK Testing Technology Co., Ltd.

Add.:1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park,Heping Community, Fuhai Street, Bao'an District, Shenzhen, China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 32/EN 55032 requirements.

1.3.2 Laboratory accreditation

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

IC Registration No.: 21210

The 3m alternate test site of Shenzhen HUAK Testing Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration No.: 21210 on May 24, 2016.

FCC Registration No.: CN1229

Test Firm Registration Number : 616276

1.4 STATEMENT OF THE MEASUREMENT UNCERTAINTY

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Shenzhen HUAK Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for HUAK laboratory is reported:

Test	Measurement Uncertainty	Notes
Transmitter power conducted	±0.57 dB	(1)
Transmitter power Radiated	±2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	±2.20 dB	(1)
Occupied Bandwidth	±0.01ppm	(1)
Radiated Emission 30~1000MHz	±4.10dB	(1)
Radiated Emission Above 1GHz	±4.32dB	(1)
Conducted Disturbance0.15~30MHz	±3.20dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95%

confidence level using a coverage factor of k=2.



2.GENERAL INFORMATION

2.1 ENVIRONMENTAL CONDITIONS

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

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2 GENERAL DESCRIPTION OF EUT

Product Name:	WiFi door sensor
Model/Type reference:	NAS-DS01W0
Power supply:	DC3V by Battery
Modulation	DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)
Supported modes	802.11 b/g/n20
Operation Frequency	2.412 GHz~2.462GHz
Channel number:	11
Antenna type:	Fixed Antenna
Antenna gain:	0dBi
Hardware Version:	V4
Software Version:	V1.0

Note: For more details, refer to the user's manual of the EUT.

2.3 DESCRIPTION OF TEST MODES AND TEST FREQUENCY

Frequency Band	Channel Number	Frequency
	1	2412 MHZ
	2	2417 MHZ
	3	2422 MHZ
	4	2427 MHZ
	5	2432 MHZ
2400~2483.5MHZ	6	2437 MHZ
	7	2442 MHZ
	8	2447 MHZ
	9	2452 MHZ
	10	2457 MHZ
	11	2462 MHZ

Note: For 20MHZ bandwidth system use Channel 1 to Channel 11, For 40MHZ bandwidth system use Channel 3 to Channel 9



NO.	TEST MODE DESCRIPTION			
1	Low channel TX			
2	Middle channel TX			
3	High channel TX			
4	Normal operating			
Transm Transm				

Note:

- 1. The EUT has been set to operate continuously on the lowest, middle and highest operation frequency Individually, and the eut is operating at its maximum duty cycle>or equal 98%
- 2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
- 3. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

2.4 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.5 MODIFICATIONS

No modifications were implemented to meet testing criteria.

MCS Index	Nss	Modulation	R	NBPSC	NCI	BPS	NDI	BPS	rate(N	ata Mbps) nsGl
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	489	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0

2.6. IEEE 802.11N MODULATION SCHEME



Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	Guard interval

2.7 EQUIPMENT USED

	Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
	1.	L.I.S.N. Artificial Mains Network	R&S	ENV216	HKE-002	Dec. 28, 2017	1 Year
	2.	Receiver	R&S	ESCI 7	HKE-010	Dec. 28, 2017	1 Year
	3.	RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 28, 2017	1 Year
	4.	Spectrum analyzer	R&S	FSP40	HKE-025	Dec. 28, 2017	1 Year
	5.	Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 28, 2017	1 Year
	6.	Preamplifier	Schwarzbeck	BBV 9743	HKE-006	Dec. 28, 2017	1 Year
	7.	EMI Test Receiver	Rohde & Schwarz	ESCI 7	HKE-010	Dec. 28, 2017	1 Year
	8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	HKE-012	Dec. 28, 2017	1 Year
	9.	Loop Antenna	Schwarzbeck	FMZB 1519 B	HKE-014	Dec. 28, 2017	1 Year
	10.	Horn Antenna	Schewarzbeck	9120D	HKE-013	Dec. 28, 2017	1 Year
	11.	Pre-amplifier	EMCI	EMC051845 SE	HKE-015	Dec. 28, 2017	1 Year
	12.	Pre-amplifier	Agilent	83051A	HKE-016	Dec. 28, 2017	1 Year
	13.	EMI Test Software EZ-EMC	Tonscend	JS1120-B Version	HKE-083	Dec. 28, 2017	N/A
	14.	Power Sensor	Agilent	E9300A	HKE-086	Dec. 28, 2017	1 Year
	15.	Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 28, 2017	1 Year
	16.	Signal generator	Agilent	N5182A	HKE-029	Dec. 28, 2017	1 Year
	17.	Signal Generator	Agilent	83630A	HKE-028	Dec. 28, 2017	1 Year
ľ	18.	Shielded room	Shiel Hong	4*3*3	HKE-039	Dec. 28, 2017	3 Year

The calibration interval was one year



3. OUTPUT POWER

3.1. MEASUREMENT PROCEDURE

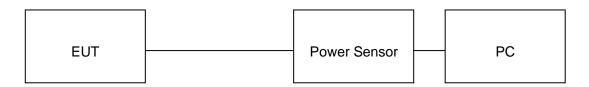
For average power test:

- 1. Connect EUT RF output port to power sensor through an RF attenuator.
- 2. Connect the power sensor to the PC.
- 3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 4. Record the maximum power from the software.

Note : The EUT was tested according to ANSI C63.10 (2013) for compliance to FCC 47CFR 15.247 requirements.

3.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

AVERAGE POWER SETUP





3.3. LIMITS AND MEASUREMENT RESULT

TEST ITEM	OUTPUT POWER
TEST MODE	802.11b with data rate 1

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	9.24	30	Pass
2.437	9.12	30	Pass
2.462	8.52	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11g with data rate 6

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	7.51	30	Pass
2.437	6.85	30	Pass
2.462	7.15	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11n 20 with data rate 6.5

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	6.84	30	Pass
2.437	6.72	30	Pass
2.462	6.02	30	Pass



4.6 DB BANDWIDTH

4.1. MEASUREMENT PROCEDURE

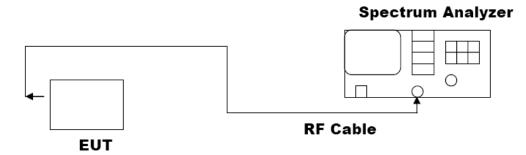
1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator

2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.

- 3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW \ge 3×RBW.
- 4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to ANSI C63.10 (2013) for compliance to FCC 47CFR 15.247 requirements.

4.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)





4.3. LIMITS AND MEASUREMENT RESULTS

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11b with data rate 11

LIMITS AND MEASUREMENT RESULT				
Annlinghla Limita	Applicable Limits			
Applicable Limits	Test Da	ta (MHz)	Criteria	
	Low Channel	8.545	PASS	
>500KHZ	Middle Channel	7.649	PASS	
	High Channel	8.027	PASS	

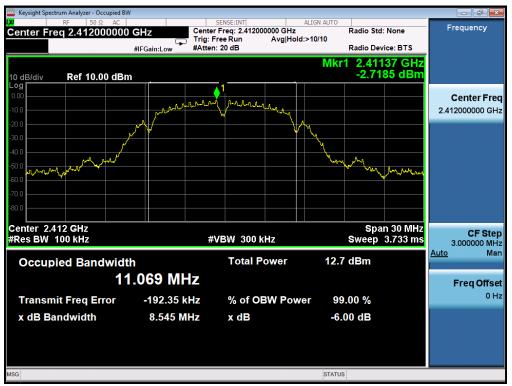
TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11g with data rate 54

LIMITS AND MEASUREMENT RESULT				
Annlinghla Limita	Applicable Limits			
Applicable Limits	Test Da	ita (MHz)	Criteria	
	Low Channel	15.70	PASS	
>500KHZ	Middle Channel	15.69	PASS	
	High Channel	16.02	PASS	

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11n 20 with data rate 65

	LIMITS AND MEAS	UREMENT RESULT	
Applicable Limite		Applicable Limits	
Applicable Limits	Test Da	ita (MHz)	Criteria
	Low Channel	15.76	PASS
>500KHZ	Middle Channel	16.00	PASS
	High Channel	16.02	PASS





802.11b TEST RESULT TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL







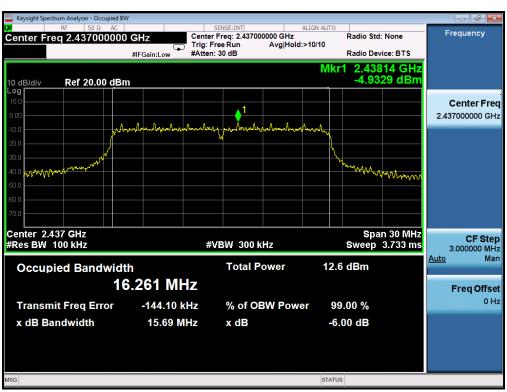
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

802.11g TEST RESULT

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

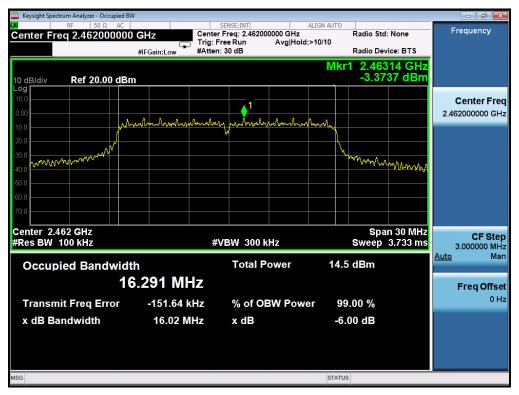
🤤 Keysight Spectrum Analyzer - Occupied BW 🛛				
KP 50 Ω AC Center Freq 2.412000000 C #		Freq: 2.412000000 GHz ee Run Avg Hold::	ALIGN AUTO Radio Std: No >10/10 Radio Device	
10 dB/div Ref 20.00 dBm			Mkr1 2.41311 -5.2158	
10.0 0.00 -10.0	A-AnnAngelun Ang	1 y parlowelyelandung	hurty	Center Freq 2.412000000 GHz
-20.0 -30.0 -40.0			mmmm	Marrison d
-50.0				
Center 2.412 GHz #Res BW 100 kHz	#V	/BW 300 kHz	Span 3 Sweep 3.7	5.000000 Mil 12
Occupied Bandwidth 16.	266 MHz	Total Power	12.5 dBm	Auto Man Freq Offset
Transmit Freq Error	-145.64 kHz	% of OBW Powe	r 99.00 %	0 Hz
x dB Bandwidth	15.70 MHz	x dB	-6.00 dB	
MSG			STATUS	





TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL





alvzer - Occupied BV ALIGN AUTO Center Freq: 2.412000000 GHz Trig: Free Run Avg|Hold:>10/10 #Atten: 30 dB Frequency Center Freq 2.412000000 GHz Radio Std: None \bigcirc #IFGain:Low Radio Device: BTS 2.40561 GHz -4.5577 dBm Mkr1 10 dB/div Ref 20.00 dBm og **Center Freq** 2.412000000 GHz manho whomas ~~~ mann Center 2.412 GHz #Res BW 100 kHz Span 30 MHz Sweep 3.733 ms CF Step 3.000000 MHz #VBW 300 kHz <u>Auto</u> Man **Total Power** 13.0 dBm **Occupied Bandwidth** 17.200 MHz **Freq Offset** 0 Hz -142.09 kHz % of OBW Power 99.00 % Transmit Freq Error x dB Bandwidth 15.76 MHz x dB -6.00 dB STATUS MSG

802.11n (20) TEST RESULT

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

Keysight Spectrum Analyzer - Occupied B\	N				
KF 50 Ω AC Center Freq 2.437000000	GHz Cente	SENSE:INT Freq: 2.437000000 GHz		td: None	Frequency
		Free Run Avg Hold n: 30 dB		evice: BTS	
	an dam.cow		Mkr1 2.43	814 GHz	
10 dB/div Ref 20.00 dBr	n			161 dBm	
10.0					Center Freq
0.00		1			2.437000000 GHz
-10.0	mahandrahandrahan	m markanter handres	Am Marine		
-20.0		<u> </u>			
-30.0			1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1		
-40.0 Junhanna -				\sim	
-60.0					
-70.0					
				0.0 8.011	
Center 2.437 GHz #Res BW 100 kHz	#	VBW 300 kHz	SI Sweer	oan 30 MHz 5 3.733 ms	CF Step 3.000000 MHz
					Auto Man
Occupied Bandwidt		Total Power	12.1 dBm		
17	7.189 MHz				Freq Offset
Transmit Freq Error	-139.16 kHz	% of OBW Pow	er 99.00 %		0 Hz
x dB Bandwidth	16.00 MHz	x dB	-6.00 dB		
MSG			STATUS		



	. 201 01 0/1				
Keysight Spectrum Analyzer - Occupied I	3W				- J J
Center Freq 2.46200000	Trig: f	SENSE:INT A r Freq: 2.462000000 GHz Free Run Avg Hold:> 1: 30 dB	LIGN AUTO Radio Std: 10/10 Radio Dev		Frequency
10 dB/div Ref 20.00 dB	m		Mkr1 2.463 -2.63	14 GHz 67 dBm	
10.0 0.00	-	1 n purhantinguhantanta	A		Center Fre 2.462000000 GH
20.0					
30.0				mmyyyMy	
70.0					
Center 2.462 GHz Res BW 100 kHz	#	VBW 300 kHz		n 30 MHz 3.733 ms	CF Ste 3.000000 MH
Occupied Bandwid	th 7.266 MHz	Total Power	15.0 dBm		<u>Auto</u> Ma
• Transmit Freq Error	-152.17 kHz	% of OBW Powe	r 99.00 %		FreqOffse 0⊦
x dB Bandwidth	16.02 MHz	x dB	-6.00 dB		
ISG			STATUS		

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



5. CONDUCTED SPURIOUS EMISSION

5.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Trace 1 Max hold, then View.
- **Note:** The EUT was tested according to ANSI C63.10 (2013) for compliance to FCC 47CFR 15.247 requirements. Owing to satisfy the requirements of the number of measurement points, we set the RBW=1MHz, VBW>RBW, scan up through 10th harmonic, and consider the tested results as the worst case, if the tested results conform to the requirement, we can deem that the real tested results(set the RBW=100KHz, VBW>RBW) are conform to the requirement.

5.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 4.2.

5.3. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEA	SUREMENT RESULT				
Applieghte Limite	Measurement Result				
Applicable Limits	Test Data	Criteria			
In any 100 KHz Bandwidth Outside the	At least -30dBc than the limit				
frequency band in which the spread spectrum	Specified on the BOTTOM	PASS			
intentional radiator is operating, the radio frequency	Channel				
power that is produce by the intentional radiator shall be at least 30 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power. In addition, radiation 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))	At least -30dBc than the limit Specified on the TOP Channel	PASS			



Peak Search	TRACE 123456	ALIGN AUTO		SENSE:INT	S		2 AC	ectrum Analyzer - Sv RF 50 S	
		e: Log-Pwr I:>100/100	Avg Hold	ree Run 30 dB	Trig: Fr Atten:	IZ PNO: Fast G FGain:Low	P	256.52491	larker 1
NextPea	1 256.525 MHz -59.590 dBm	Mkr1					dBm	Ref 20.00) dB/div
				Ť					
Next Pk Rigi									10.0
).00
Next Pk Le									0.0
									0.0
Marker Del									0.0
	DL1 -32.74 dBm								
Mkr→C									10.0
							▲ 1		i0.0
Mkr→RefL			wayal Mitanta Jakas Kutan		ng kanang sa	Updatere deletition	nda handa da d	and a full or other P internet	i0.0 <mark>. Halabalh</mark>
			u) etter sör säg af på söken för det söke för det söke söke söke söke söke söke söke söke	d ibe Déble distant i a	in a second s	a produce de la constituité	in an	and the state of the second second	0.0
Mo 1 of	Stop 1 0000 CHz								tart 0.02
	Stop 1.0000 GHz 33 ms (40000 pts)	Sweep 93.33	s	z	N 300 kH	#VBV		000 GHz 100 kHz	tart 0.03 Res BW
1 of	Stop 1.0000 GHz 33 ms (40000 pts)	Sweep 93.33		z	N 300 kH	#VBV		100 kHz	Res BW
	33 ms (40000 pts)	Sweep 93.33 STATUS ALIGN AUTO		Z			2 AC	100 kHz ectrum Analyzer - Sv RF 50 S	Res BW
1 of	Stop 1.0000 GHz 33 ms (40000 pts) TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P.NNNNN	Sweep 93.33 STATUS ALIGN AUTO e: Log-Pwr		SENSE:INT	S	#VBV HZ PN0: Fast ↔ FGain:Low	2 AC 68747 G	100 kHz ectrum Analyzer - Sv	Res BW
1 of	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW
1 of Peak Search Next Pea	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S	Res BW
1 of	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW G Keysight Sp Arker 1 O dB/div
1 of Peak Search Next Pea Next Pk Righ	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW Reysight Sp larker 1 odB/div
1 of Peak Search Next Pea	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW G Keysight Sp larker 1 0 dB/div
1 of Peak Search Next Pea Next Pk Righ	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW G Arkeysight Sp arker 1 0 dB/div og 0.00
1 of Peak Search Next Pea Next Pk Righ	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW G Arker 1 O dB/div O dB/div O dB/div O dB/div O dB/div O dB/div
1 of Peak Search Next Pea Next Pk Righ	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW G G G G G G G G G G G G G G G G G G G
1 of Peak Search Next Pea Next Pk Righ	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW G G G G G G G G G G G G G G G G G G G
1 of Peak Search Next Pea Next Pk Righ Next Pk Le	33 ms (40000 pts)	Sweep 93.33 status status ALIGN AUTO et Log-Pwr et Log-Pwr et Log-Pwr Mkr1 2	Avg Typ	SENSE:INT	S	HZ PNO: Fast ↔	2 AC 68747 G P IF	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW G G G G G G G G G G G G G G G G G G G
1 of Peak Search Next Pea Next Pk Righ Next Pk Le	33 ms (40000 pts)	Sweep 93.33 Istatus ALIGN AUTO e: Log-Pwr 1: 100/100 MIKT1 2.	Avg Typ- Avg Hold	SENSE:INT	Trig: Fr Atten: :	HZ PRO: Fast	2 AC 168747 G P P dBm - - - - - - - - - - - - -	100 kHz ectrum Analyzer - Sv RF 50 S 2.3947498	Res BW G G G G G G G G G G G G G G G G G G G
1 of Peak Search Next Pea Next Pk Righ Next Pk Le Marker Deh Mkr→C	33 ms (40000 pts)	Sweep 93.33 Istatus ALIGN AUTO e: Log-Pwr 1: 100/100 MIKT1 2.	Avg Typ- Avg Hold	SENSE:INT	Trig: Fr Atten: :	HZ PRO: Fast	2 AC 168747 G P P dBm - - - - - - - - - - - - -	100 kHz ectrum Analyzer - 50 c 2.3947498 Ref 20.00	Res BW G G G G G G G G G G G G G G G G G G G
1 of Peak Search Next Pea Next Pk Righ Next Pk Le Marker Del Mkr→C	33 ms (40000 pts)	Sweep 93.33 Status ALIGN AUTO e: Log-Pwr t: 100/100 Mikr1 2. Mikr1 2. Interviewer Interviewer Interviewer Interviewer	Avg Typ- Avg Hold	SENSE:INT	Trig: Fr Atten: :	HZ PRO: Fast	2 AC 168747 G P P dBm - - - - - - - - - - - - -	100 kHz	Res BW G G G G G G G G G G G G G G G G G G G

TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 802.11b FOR MODULATION IN LOW CHANNEL

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TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11b FOR MODULATION IN MIDDLE CHANNEL





Keysight S	pectrum Analyzer - 1 RF 50	Ω AC			NSE:INT		ALIGN AUTO	1		
Marker '	1 2.239870	996775 G	Hz NO:Fast ↔	. Trig: Free	eRun	Avg Type Avg Hold	e: Log-Pwr	TRAC TYP	E 1 2 3 4 5 6 E M W W W W T P N N N N N	Peak Search
	-		Gain:Low	Atten: 30) dB		Mkr1		71 GHz	NextPea
0 dB/div	Ref 20.00	dBm						-55.9	21 dBm	
										Next Pk Righ
10.0										nextrang
0.00										
10.0										Next Pk Le
.0.0										
.0.0										Marker Del
30.0									DL1 -33.64 dBm	
10.0										Mkr→C
50.0										
20.0								en produkter a defini	atilet pathe separate and	Mkr→RefL
50.0 <mark>Weithurk</mark> Weither Alm	and a loose in the standard state And a standard state of the state of		la secolaria de la com	inger () in the property of a	de la producer de la compañía.	n aya mali analisi Mangana katakata	and the second	and a local day of the local day	Calify the provint, statistics, the full	WIKI → KEI L
70.0										Mor
itart 1.0	000 GHz			· · · · · · · · · · · · · · · · · · ·				Stop 2.4	.000 GHz	1 of
Res BW	000 GHz / 100 kHz		#VBW	/ 300 kHz	<u> </u>	\$	weep 136		000 GHz 0000 pts)	1 of
Res BW	000 GHz / 100 kHz		#VBW	/ 300 kHz		S	status			1 of
Res BM	Pectrum Analyzer - 100 RF 50	ΩAC			NSE:INT		STATUS ALIGN AUTO	6.0 ms (4	0000 pts)	
Res BM	/ 100 kHz	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT		STATUS ALIGN AUTO e: Log-Pwr	5.0 ms (4		
Res BM	/ 100 kHz pectrum Analyzer - 3 RF 50 1 4.873686	Ω AC 229656 G	iHz	SEI	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	1.0 ms (4	0000 pts)	Peak Search
Res BM	Pectrum Analyzer - 100 RF 50	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	1.0 ms (4	0000 pts)	Peak Search
Res BW G Keysight S larker '	/ 100 kHz pectrum Analyzer - 3 RF 50 1 4.873686	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	1.0 ms (4	0000 pts)	Peak Search Next Pea
Res BW	/ 100 kHz pectrum Analyzer - 3 RF 50 1 4.873686	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	1.0 ms (4	0000 pts)	Peak Search Next Pea
Res BW	/ 100 kHz pectrum Analyzer - 3 RF 50 1 4.873686	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	1.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ
Res BM Galarker / Callorer / Callor / Callorer / Callorer / Callorer / Callorer /	/ 100 kHz pectrum Analyzer - 3 RF 50 1 4.873686	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	1.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ
Res BM sa keysight S larker ' 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	/ 100 kHz pectrum Analyzer - 3 RF 50 1 4.873686	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	1.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ
Res BM sa keysight S larker ' 0 dB/div 9 0.00 0	/ 100 kHz Pectrum Analyzer RE 50 1 4.873686 Ref 20.00	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	5.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ
Res BW Galacia	/ 100 kHz pectrum Analyzer - 3 RF 50 1 4.873686	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	5.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Le
Res BW Galacia	/ 100 kHz Pectrum Analyzer RE 50 1 4.873686 Ref 20.00	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	NSE:INT	Avg Type	STATUS ALIGN AUTO e: Log-Pwr : 100/100	5.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Le
Res BW 3G Seysight S Iarker 0 dB/div 0 0	/ 100 kHz Pectrum Analyzer RE 50 1 4.873686 Ref 20.00	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	vse:INT ■ Run dB	Avg Typ- Avg Hold	STATUS ALIGN AUTO e: Log-Pwr : 100/100	5.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Le
Res BW 33 34 35 36 37 38 39 39 30 30 31 32 32 33 34 35 36 37 38 39 39 30 30 30 300	/ 100 kHz	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	vse:INT		ALIGN AUTO E: Log-Pwr : 100/100 MIKT	5.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Lee Marker Def
Res BW SG SG	/ 100 kHz	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	vse:INT		STATUS	5.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Lee Marker Def
Res BW SG SG	/ 100 kHz	Ω AC 229656 G	Hz PNO: Fast ↔	, Trig: Free	vse:INT		STATUS	5.0 ms (4	0000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Del MkrC MkrRef L
Res BW SG SG SG SG Iarker	100 kHz	Ω AC 229656 G	HZ PNO: Fast Gain:Low	, Trig: Free	vsE:INT		STATUS	5.0 ms (4	0000 pts)	

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Keysight Spi Ki	ectrum Analyzer - Sw RF 50 ເກ	AC		SEI	NSE:INT		ALIGN AUTO			
larker 1	30.024250		Z PNO: Fast ↔	Trig: Free	e Run	Avg Type Avg Hold	e: Log-Pwr : 100/100	TY	CE 123456 /PE MWWWW	Peak Search
			FGain:Low	Atten: 30					ET P N N N N N	NextPea
							Mk	(r1 30.0	024 MHz 060 dBm	NextPea
0 dB/div .og	Ref 20.00	dBm		· · · · · ·	•			-36.0		
										Next Pk Rig
10.0										NEXTERNIN
0.00										
										Next Pk Le
10.0										
20.0										
20.0										Marker De
30.0									DL1 -30.94 dBm	
40.0										Mkr→C
50.0										
1										
60.0 Hankata	وروارا اللورارية والمقرو	And Marsher	المنطور وماورين والله	المرابع <mark>المرابع المربعة</mark>	والمراجع والمروجة والمسالية	ali da mangi na dalamati da	a that is a state of the state of		anterpotente interester	Mkr→RefL
70.0	inter an ai thairt air an air	Wards and the second	alisi cada Landisina sans	NAMES OF TAXABLE PARTY OF TAXABLE	- Andrew (Stational of the	أساحانين إطع ومعاورهما ومروع	<mark>, and a share a start a s</mark> tart a start a	انظ الطر <mark>ر بعد أختر زيدا أن</mark>		
/0.0										Мо
										1 0
Mart 0 02									0000 00-	10
Start 0.03 #Res BW	00 GHz 100 kHz		#VBV	N 300 kHz	·		weep 93.	.33 ms (4	0000 GHz 40000 pts)	
Start 0.03 #Res BW	000 GHz 100 kHz		#VBV	V 300 kHz		s	Sweep 93.	Stop 1. .33 ms (4	0000 GHz 40000 pts)	
#Res BW	100 kHz	ant SA	#VBV	N 300 KHz		3		Stop 1. 33 ms (4	0000 GHz 40000 pts)	
#Res BW	100 KHz ectrum Analyzer - Sw RF 50 Si	2 AC			NSE:INT		STATUS ALIGN AUTO	33 ms (4	40000 pts)	
FRES BW	100 kHz ectrum Analyzer - Sw	a AC 00495 C	GHz PNO: Fast ↔	SEr → Trig: Free	NSE:INT		STATUS	33 ms (4	40000 pts)	
FRES BW	100 KHz ectrum Analyzer - Sw RF 50 Si	a AC 00495 C	SHz	SE	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	2 3 4 5 6 PE M WWWW PET P NNNN	
Res BW sg Keysight Sp Keysight Sp Aarker 1	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEr → Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search
Keysight Spr Keysight Spr Aarker 1 0 dB/div	100 KHz ectrum Analyzer - Sw RF 50 Si	2 AC 00495 (GHz PNO: Fast ↔	SEr → Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search
Keysight Spr Keysight Spr Arker 1	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEr → Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea
Keysight Spr Keysight Spr Arker 1	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEr → Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea
Res BW sc Keysight Spo 9 Aarker 1 0 dB/div 9 10 0	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEr → Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea
Res BW sc keysight Spr Aarker 1 0 dB/div 0 0 10.0	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEr → Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea Next Pk Rig
Res BW sa a Keysight Spr Aarker 1 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEr → Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea Next Pk Rig
FRES BW	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEr → Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le
Res BW sa a Keysight Sp a Keysight Sp b Aarker 1 b Aark	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEP	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le
Res BW sa a Keysight Sp a Keysight Sp b Aarker 1 b Aark	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEP	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le
Res BW SG Keysight Spi Arrise Aarker 1 0 dB/div 0 0	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEP	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le
Res BW SG Keysight Spi Arrise Aarker 1 0 dB/div 0 0	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEP	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le
Res BW sc	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	2 AC 00495 (GHz PNO: Fast ↔	SEP	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	33 ms (4	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le
Ress BW SG	100 kHz ectrum Analyzer - 50 g 2.3920198 Ref 20.00	≥ AC 00495 C I dBm	SHZ PNO: Fast ↔ FGain:Low	Trig: Free Atten: 30	NSE:INT	Avg Typ- Avg Hold	ALIGN AUTO e: Log-Pwr : 100/100 MIKr1	33 ms (² TRA TY 2.392 (-56.1	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del
Res BW SG Keysight Spr Marker 1 0 <t< td=""><td>100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198</td><td>≥ AC 00495 C I dBm</td><td>SHZ PNO: Fast ↔ FGain:Low</td><td>Trig: Free Atten: 30</td><td>NSE:INT</td><td>Avg Typ- Avg Hold</td><td>ALIGN AUTO e: Log-Pwr : 100/100 MIKr1</td><td>33 ms (4</td><td>40000 pts)</td><td>Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del</td></t<>	100 kHz ectrum Analyzer - Sw RF 50 Ω 2.3920198	≥ AC 00495 C I dBm	SHZ PNO: Fast ↔ FGain:Low	Trig: Free Atten: 30	NSE:INT	Avg Typ- Avg Hold	ALIGN AUTO e: Log-Pwr : 100/100 MIKr1	33 ms (4	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del
#Res BW SG Keysight Spr Aarker 1 0 10 0 0 0 10 0 10 0 10 0 10 10 10 10 10 10 10 10 10	100 kHz ectrum Analyzer - 50 g 2.3920198 Ref 20.00	≥ AC 00495 C I dBm	SHZ PNO: Fast ↔ FGain:Low	Trig: Free Atten: 30	NSE:INT	Avg Typ- Avg Hold	ALIGN AUTO e: Log-Pwr : 100/100 MIKr1	33 ms (² TRA TY 2.392 (-56.1	40000 pts)	Peak Search Next Pea Next Pk Rig
Ress BW SG	100 kHz ectrum Analyzer - 50 g 2.3920198 Ref 20.00	≥ AC 00495 C I dBm	SHZ PNO: Fast ↔ FGain:Low	Trig: Free Atten: 30	NSE:INT	Avg Typ- Avg Hold	ALIGN AUTO e: Log-Pwr : 100/100 MIKr1	33 ms (² TRA TY 2.392 (-56.1	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del
Res BW sc	100 kHz	≥ AC 00495 C I dBm	SHZ PNO: Fast ↔ FGain:Low	Trig: Free Atten: 30	NSE:INT	Avg Typ- Avg Hold	ALIGN AUTO e: Log-Pwr : 100/100 MIKr1	33 ms (2 TRA TV 2.392 (-56.1 -56.1	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker De Mkr→C
Res BW SG Keysight Spr Marker 1 0 <t< td=""><td>100 kHz</td><td>≥ AC 00495 C I dBm</td><td>SHZ PNO: Fast ↔ FGain:Low</td><td>Trig: Free Atten: 30</td><td>NSE:INT</td><td></td><td>ALIGN AUTO e: Log-Pwr : 100/100 MIKr1</td><td>33 ms (2 TRA TV 2.392 (-56.1 56.1 510 2.</td><td>40000 pts)</td><td>Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del Mkr→C</td></t<>	100 kHz	≥ AC 00495 C I dBm	SHZ PNO: Fast ↔ FGain:Low	Trig: Free Atten: 30	NSE:INT		ALIGN AUTO e: Log-Pwr : 100/100 MIKr1	33 ms (2 TRA TV 2.392 (-56.1 56.1 510 2.	40000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del Mkr→C

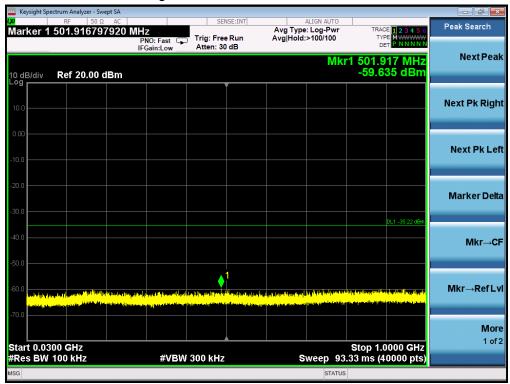
TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11b FOR MODULATION IN HIGH CHANNEL

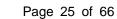


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Keysight Sp	ectrum Analyzer - Sw									
arker 1	RF 50 Ω		SHz		NSE:INT	Avg Type	ALIGN AUTO		E 1 2 3 4 5 6	Peak Search
			PNO: Fast 📮 FGain:Low	Trig: Free Atten: 30		Avg Hold:	: 100/100	DE		
							Mk	r1 4.92	3 8 GHz	NextPea
0 dB/div og	Ref 20.00 d	lBm						-43.7	43 dBm	
°9					Ĭ					
10.0										Next Pk Rig
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40.0 	1									Mkr→C
50.0						H w I		. dial in an	h the state in the state	
	رايير. رايير <mark>الالاسل</mark> ر السير			ار را در از از از ای را در ا	an and a shirt of	and the set	A showing the second	in the second	the sublease of the state	Mkr→RefL
60.0 <mark>htp://www.</mark>	Constraint States	التيوريين. ان عني دانيمانين	an a	na National Anticipation of the state	na ang ang ang ang ang ang ang ang ang a	and a start	AND A DESCRIPTION OF A			wiki→Rei L
70.0	les, ettal									
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								Otom 0	5 00 011-	1 of
tart 2.48 Res BW	s GHZ 100 kHz		#VBW	300 kHz			Sweep 2	Stop 2 2.152 s (4	5.00 GHz 0000 pts)	
G							STATUS			

TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 802.11g FOR MODULATION IN LOW CHANNEL







Keysight Sj	pectrum Analyzer - Sw							- 5 ×
<mark>.x</mark> Marker 1	RF 50 Ω 1 1.9440086	AC 00215 G	iHz	SENSE:	Avg Ty	ALIGN AUTO pe: Log-Pwr	TRACE 1 2 3 4 5 6	Peak Search
maintoi		F	PNO: Fast 🖵 Gain:Low	Trig: Free R Atten: 30 dE		d:>100/100		
			Guineon			Mkr1 [·]	1.944 009 GHz	Next Peak
10 dB/div Log	Ref 20.00	dBm					-52.930 dBm	
				Ĭ				
10.0								Next Pk Right
0.00								
-10.0								Next Pk Left
-10.0								
-20.0								
								Marker Delta
-30.0							DL1 -35.22 dBm	
-40.0								
								Mkr→CF
-50.0						1		
								Mkr→RefLvl
-60.0	etropic Highling of Party	Newpolya believer Nice Mathematica					la de la companya de	wiki→kei ∟vi
-70.0	- Marchael and a second							
								More
Start 1.0	000 GHz			A			Stop 2.4000 GHz	1 of 2
#Res BW	/ 100 kHz		#VBW	300 kHz		Sweep 136	.0 ms (40000 pts)	
MSG						STATUS		
🔤 Keysight S	pectrum Analyzer - Sw							- 6 🔀
L <mark>XI</mark>		AC	GHz	SENSE:	Avg Ty	ALIGN AUTO	TRACE 1 2 3 4 5 6	Peak Search
LXI	RF 50 Ω	AC 748444	GHz PNO: Fast G Gain:Low		Avg Ty un Avg Ho		TRACE 12345 6 TYPE MWWWWW DET P NNNN	Peak Search
Marker '	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search
Marker '	RF 50 Ω	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100		Peak Search
Marker '	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search Next Peak
Marker '	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search Next Peak
Marker 10 dB/div	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search Next Peak
Marker 10 dB/div	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search Next Peak Next Pk Right
Marker 10 dB/div	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search Next Peak Next Pk Right
10 dB/div 10 dB/div 10.0	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search Next Peak Next Pk Right
Marker 10 dB/div Log	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search Next Peak Next Pk Right Next Pk Left
10 dB/div Log 10.0 -20.0	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search Next Peak Next Pk Right Next Pk Left
10 dB/div 10 0 dB/div 10 0	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz	Peak Search Next Peak Next Pk Right Next Pk Left
10 dB/div 10 0 D- 10 0	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz -48.587 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
10 dB/div 10.0 10.0 -10.0 -20.0 -30.0 -40.0	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty un Avg Ho	pe: Log-Pwr ld: 100/100	24.587 9 GHz -48.587 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
10 dB/div Log 10.0 -10.0 -20.0	RF 50 Ω 1 24.587937	AC 748444 F	PNO: Fast 🗔	Trig: Free Re Atten: 30 dE	Avg Ty Avg Ho	pe: Log-Pwr ld: 100/100	DET P NNNNN 24.587 9 GHz -48.587 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
10 dB/div 10.0 10.0 -0.00 -10.0 -20.0 -40.0 -50.0	RF 50 Ω 1 24.587937 Ref 20.00 (AC 748444 F	PNO: Fast 🗔	Trig: Free R	Avg Ty Avg Ho 3	pe: Log-Pwr d: 100/100 Mkr1	24.587 9 GHz -48.587 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
10 dB/div 10.0	RF 50 2 1 24.587937 Ref 20.00 (AC 748444 F	PNO: Fast Gain:Low	Trig: Free Re Atten: 30 dE	Avg Ty Avg Ho 3	pe: Log-Pwr ld: 100/100	DET PNNNNN 24.587 9 GHz -48.587 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
10 dB/div 10.0 10.0 .000 .10.0 .20.0 .30.0 .40.0	RF 50 2 1 24.587937 Ref 20.00 (AC 748444 F	PNO: Fast Gain:Low	Trig: Free Ri Atten: 30 dE	Avg Ty Avg Ho 3	pe: Log-Pwr d: 100/100 Mkr1	DET PNNNNN 24.587 9 GHz -48.587 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
10 dB/div 10.0	RF 50 2 1 24.587937 Ref 20.00 (AC 748444 F	PNO: Fast Gain:Low	Trig: Free Ri Atten: 30 dE	Avg Ty Avg Ho 3	pe: Log-Pwr d: 100/100 Mkr1	DET PNNNNN 24.587 9 GHz -48.587 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→Ref Lvl More
10 dB/div Log	Ref 20.00 (AC 748444 F	PNO: Fast Gain:Low	Trig: Free Rd Atten: 30 de	Avg Ty Avg Ho 3	pe: Log-Pwr d: 100/100 MKr1	24.587 9 GHz -48.587 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→Ref Lvl More
10 dB/div 10.0	Ref 20.00 (AC 748444 F	PNO: Fast Gain:Low	Trig: Free Ri Atten: 30 dE	Avg Ty Avg Ho 3	pe: Log-Pwr d: 100/100 MKr1	DL1 -35 22 dBm	Peak Search



tart 1.00	00 GHZ 100 kHz	#VBW	300 kHz	Sweep 13	Stop 2.4000 GHz 6.0 ms (40000 pts)	
					Oton 2 1022 Ot	More 1 of 2
1000	in a start of the st	and the second population of the second s	ta jaté keny Katarén papunan dalak	in na maine di sa kaline nelle bil kanina di sida de pelle pelle pinanden de pelle		
50.0	and a state of the	an fillen af all an an filment for an farman far a farman f	g was an anna a tha anna 1 a gu anna agus an an	nenergen fregelange bester der bestere bestere		Mkr→RefLv
io.o					1	
10.0						Mkr→CF
.0.0					DL1 -34.93 dBm	
20.0						Marker Delta
10.0						
1.00						Next Pk Lef
10.0						Next P K Kigh
^{og}						Next Pk Righ
0 dB/div	Ref 20.00 dB	m		Mkr1	2.239 906 GHz -55.189 dBm	Next Peal
larker 1	2.239905997	PNO: Fast IFGain:Low	Trig: Free Run Atten: 30 dB	Avg Hold:>100/100	DET PNNNNN	NextBer
		AC	SENSE:INT	ALIGN AUTO	TRACE 123456	Peak Search
ŝG				STATUS		
tart 0.03 Res BW		#VBW	300 kHz	Sweep 93	Stop 1.0000 GHz .33 ms (40000 pts)	1 012
						Mor 1 of
70.0		(P. Triji W.), polyny i hysylyny i hilysylyny i hysylyny i hydyny i hydyny i hydyny i hydyny i hydyny i hydyny Aleffar y ganga ar chyfrae yn y hilfer yn y gan â hydd ar	in an	11 is in a sum of a filling of a single of the second second second second second second second second second s The provide second se	n na fan sen en fan skrie fan	
50.0				↓ 1		Mkr→RefL
50.0						Mkr→Cl
10.0					DL1 -34.93 dBm	
30.0						Marker Delta
20.0						
10.0						Next Pk Lef
).00 						
10.0						Next Pk Righ
0 dB/div og	Ref 20.00 dB	m		WIN	-59.368 dBm	
		PNO: Fast 🖵 IFGain:Low	Trig: Free Run Atten: 30 dB	Avg Hold:>100/100	TYPE MWWWW DET PNNNNN 1747.794 MHz	NextPea
larker 1	747.7936948	42 MHz	SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6	Peak Search

TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11g FOR MODULATION IN MIDDLE CHANNEL

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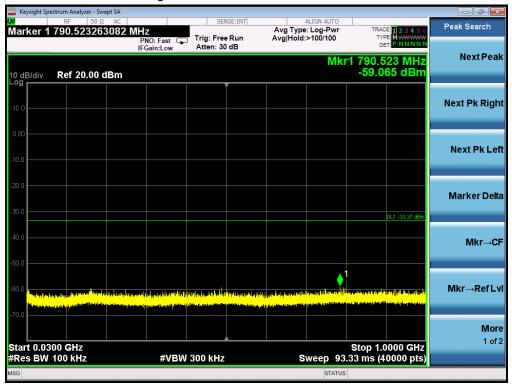




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TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE

OF 802.11g FOR MODULATION IN HIGH CHANNEL





🔤 Keysight Sp	pectrum Analyzer - S	wept SA								
(X) Markor (RF 50		-	SEN	ISE:INT	Ava Tvo	ALIGN AUTO e: Log-Pwr	TRAC	E 1 2 3 4 5 6	Peak Search
Marker	2.3999295	PN	0: Fast 🖵	Trig: Free			l:>100/100	TYP	E 1 2 3 4 5 6 E M WWWW T P N N N N N	
		IFGa	ain:Low	Atten: 30	dB					Next Peak
	B-600.00	-1					MKC1 2	-56 /	30 GHz 35 dBm	
10 dB/div Log	Ref 20.00	aBm						-00.4		
10.0										Next Pk Right
0.00										
10.0										Next Pk Left
-10.0										
-20.0										
										Marker Delta
-30.0									DL1 -33.37 dBm	
									DL1 -33.37 dBm	
-40.0										Mkr→CF
-50.0									1	
							i a ta a leba	المارية المراجعة وا	tilles biograph	Min Defini
-60.0	<mark>e aspender blen beter beredet</mark>		erdinada hitata			The second reaction of the second	and a second		his bit particular of the	Mkr→RefLvl
-70.0	and a start of the	n an an the state of	اللغة فانتلكوها. <mark>أ</mark> طحتك	ىدە خەلەكىل يەندۇر <u>تە</u>	e, kalutan da balak					
-70.0										More
										1 of 2
Start 1.00 #Res BW			#\/D\M	300 kHz				Stop 2.4	000 GHz	
#Res DW										
1100			#VDVV	300 KHZ		8	Sweep 136	.0 MS (4	0000 pts)	
MSG			#VDW	JUU KHZ		8	Sweep 136 STATUS	.0 MS (4	0000 pts)	
	pectrum Analyzer - S	wept SA	#VBW				STATUS	.0 ms (4	0000 pts)	
	pectrum Analyzer - S RF 50	ΩAC			ISE:INT		STATUS ALIGN AUTO			Peak Search
	pectrum Analyzer - S	Ω AC 694667 GH	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	STATUS			
	pectrum Analyzer - S RF 50	Ω AC 694667 GH	Z	SEN	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	TRAC TYP DE	E 1 2 3 4 5 6 E M WWWW T P N N N N N	
Keysight Sp (X) Marker 1	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	ткас тур DE 1 4.923		Peak Search
	pectrum Analyzer - S RF 50	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	ткас тур DE 1 4.923	E 1 2 3 4 5 6 E M WWWW T P N N N N N	Peak Search
Keysight Sp XV Marker 1 10 dB/div	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	ткас тур DE 1 4.923		Peak Search Next Peak
Keysight Sp XV Marker 1 10 dB/div	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	ткас тур DE 1 4.923		Peak Search
Marker 1 Marker 1 10 dB/div Log	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	ткас тур DE 1 4.923		Peak Search Next Peak
Marker 1 Marker 1	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	ткас тур DE 1 4.923		Peak Search Next Peak Next Pk Right
Marker 1 10 dB/div Log	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	TRAC TYP DE 1 4.923		Peak Search Next Peak
Marker 1 10 dB/div 10.0	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	TRAC TYP DE 1 4.923		Peak Search Next Peak Next Pk Right
Marker 1 10 dB/div Log	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	TRAC TYP DE 1 4.923		Peak Search Next Peak Next Pk Right
Keysight Sp Marker 1 10 dB/div -0 g 10.0 -10.0	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	TRAC TYP DE 1 4.923		Peak Search Next Peak Next Pk Right
Keysight Sp Marker 1 10 dB/div -0 g 10.0 -10.0	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	тас түр De 1 4.923 -42.8	8 GHz 202 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
Keysight Sp. Marker 1 10 dB/div 10.0 10.0 -10.0 -10.0 -30.0	Ref 20.00	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	тас түр De 1 4.923 -42.8		Peak Search Next Peak Next Pk Right Next Pk Left
Keysight Sp. Marker 1 10 dB/div Log 10.0 -10.0 -20.0	pectrum Analyzer - S RF 50 1 4.9237866	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	тас түр De 1 4.923 -42.8	8 GHz 202 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
Keysight Sp. Marker 1 10 dB/div 10.0 -10.0 -20.0 -30.0 -40.0	Ref 20.00	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr I: 100/100	тас түр De 1 4.923 -42.8	8 GHz 202 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Keysight Sp X Marker 1 10 0 0.00 -10.0 -30.0 -30.0 -30.0 -10.	Ref 20.00	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr 1: 100/100 Mkr	тас түр De 1 4.923 -42.8	012 3 4 5 6 MANNAN 7 PINININ 3 8 GHz 02 dBm 011 -33 37 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Keysight Sp. Marker 1 10.0	Ref 20.00	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free		Avg Type Avg Hold	STATUS	TRAC TYP DE 1 4.923 -42.80	012 3 4 5 6 MANNAN 7 PINININ 3 8 GHz 02 dBm 011 -33 37 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Keysight Sp. Marker 1 10 dB/div 10.0 -10.0 -20.0 -30.0 -40.0	Ref 20.00	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free		Avg Type	ALIGN AUTO e: Log-Pwr 1: 100/100 Mkr	TRAC TYP DE 1 4.923 -42.80	012 3 4 5 6 MANNAN 7 PINININ 3 8 GHz 02 dBm 011 -33 37 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Keysight Sp. Marker 1 10.0	Ref 20.00	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free		Avg Type Avg Hold	STATUS	TRAC TYP DE 1 4.923 -42.80	012 3 4 5 6 MANNAN 7 PINININ 3 8 GHz 02 dBm 011 -33 37 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Keysight Sp. Marker 1 10.0	Ref 20.00	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free		Avg Type Avg Hold	STATUS	TRAC TYP DE 1 4.923 -42.80	012 3 4 5 6 MANNAN 7 PINININ 3 8 GHz 02 dBm 011 -33 37 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl
Keysight Sp. Marker 1 10.0 10.0 -10.0 -20.0 -30.0 -40.0 -60.0 -20.0	Pectrum Analyzer - S RF 50 Ref 20.00	Ω AC 594667 GH PN IFGa	Z 0: Fast 🖵) Trig: Free		Avg Type Avg Hold	STATUS	TRAC TYP DE 1 4.923 -42.8	0L1 -33.37 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More
Keysight Sp. Marker 1 10.0	Pectrum Analyzer - 5 RF 50 Ref 20.00 14.9237866 	Ω AC 594667 GH PN IFGa	Z O: Fast Low	SEN Trig: Free Atten: 30		Avg Type Avg Hold	STATUS	ткас тур De 1 4.923 -42.80	0.1 - 39 37 den	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl
Keysight Sp XM Marker 1 10.0 .0.000 .0.000 .0.0000 .0.000000 .0.0000 .0.000000	Pectrum Analyzer - 5 RF 50 Ref 20.00 14.9237866 	Ω AC 594667 GH PN IFGa	Z O: Fast Low) Trig: Free		Avg Type Avg Hold	STATUS	ткас тур De 1 4.923 -42.80	0.1 - 39 37 den	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More

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						Swent SA	ectrum Analyzer - 1	Keysight Sp
Peak Search	TRACE 123456	ALIGN AUTO	Avg Typ	SENSE:INT	z	Ω AC	RF 50 979.8719	
		:>100/100	Avg Hold	rig: Free Run .tten: 30 dB	NO: Fast 🖵 Gain:Low	Р		
NextPea	1 979.872 MHz -59.364 dBm	Mkr1				dBm	Ref 20.00	dB/div
				Ĭ			Rei 20.00	
Next Pk Rig).0
Next Pk Le								
								1.0
Marker Del								
	DL1 -34.56 dBm							
Mice (1.0
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	1							1.0
Mkr→RefL			hay control in the film		n piti ni na minati i i n			I.O <mark>tananity</mark>
		and the stand of the			he picture of the set of the set of the set	and a product of tradital		
Mo 1 of								
	Stop 1.0000 GHz 33 ms (40000 pts)	sweep 93.3		0 kHz	#VBW		00 GHz 100 kHz	
	Stop 1.0000 GHz 33 ms (40000 pts)	sweep 93.3		0 kHz	#VBW			
1 of	Stop 1.0000 GHz 33 ms (40000 pts)	status			#VBW		100 kHz	les BW
1 of	33 ms (40000 pts)	weep 93.3	Avg Typ	SENSE:INT	Hz	Ω AC 322444 G	100 kHz	Res BW
1 of	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT		Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 1 RF 50 2.399673	Kes BW Keysight Sp arker 1
1 of	33 ms (40000 pts) TRACE 1 2 3 4 5 6 TYPE M	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 1 RF 50	Res BW
1 of	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 1 RF 50 2.399673	Kes BW Keysight Sp arker 1
1 of Peak Search Next Pea	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 1 RF 50 2.399673	Keysight Sp arker 1 dB/div
1 of Peak Search Next Pea	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 1 RF 50 2.399673	Keysight Sp arker 1 dB/div
1 of Peak Search Next Pea Next Pk Rig	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 1 RF 50 2.399673	Keysight Sp arker 1 dB/div
1 of Peak Search Next Pea Next Pk Rig	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 1 RF 50 2.399673	Keysight Sp arker 1 dB/div
1 of Peak Search Next Pea Next Pk Rig	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 3 RF 50 2.399673	kes BW s keysight Sp arker 1 dB/div g g 0.0 00 00
1 of Peak Search Next Peak Next Pk Rig Next Pk Le	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 3 RF 50 2.399673	Keysight Sp arker 1 arker 1 00 00 00
1 of Peak Search Next Pea Next Pk Rig	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 3 RF 50 2.399673	Keysight Sp arker 1 arker 1 0.0 0.0 0.0
1 of Peak Search Next Peak Next Pk Rig Next Pk Le	33 ms (40000 pts)	ALIGN AUTO :> 100/100	Avg Typ	SENSE:INT	Hz NO: Fast 😱	Ω AC 322444 G P IF	100 kHz ectrum Analyzer - 3 RF 50 2.399673	Keysight Sp arker 1 arker 1 00 00 00
1 of Peak Search Next Peak Next Pk Rig Next Pk Le	33 ms (40000 pts)	ALIGN AUTO E: Log-PWr :>100/100 MIKr1	Avg Typ Avg Hold	SENSE:INT	Hz N0: Fast Gain:Low	Ω AC 322444 G P IF	100 kHz ctrum Analyzer - 50 2.399673 Ref 20.00	Keysight Sp arker 1 0.0 0.0 0.0 0.0
1 of Peak Search Next Pe Rig Next Pk Le Marker Del	33 ms (40000 pts)	ALIGN AUTO E: Log-PWr :>100/100 MIKr1	Avg Typ Avg Hold	SENSE:INT	Hz N0: Fast Gain:Low	Ω AC 322444 G P IF	100 kHz ctrum Analyzer - 50 2.399673 Ref 20.00	Keysight Sp arker 1 0.0 0.0 0.0 0.0
1 of Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del Mkr→C	33 ms (40000 pts)	ALIGN AUTO E: Log-PWr :>100/100 MIKr1	Avg Typ Avg Hold	SENSE:INT	Hz N0: Fast Gain:Low	Ω AC 322444 G P IF	100 kHz ctrum Analyzer - 50 2.399673 Ref 20.00	Keysight Sp arker 1 g g g g g g g g g g g g g g g g g g g
1 of Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del Mkr→C	33 ms (40000 pts)	ALIGN AUTO ALIGN AUTO CLOG-PWr COUNT CO		SENSE:INT	Hz N0: Fast Gain:Low	Ω AC 322444 G P IF	100 kHz ctrum Analyzer - 50 2.399673 Ref 20.00	Keysight Sp arker 1 arker 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 802.11n20 FOR MODULATION IN LOW CHANNEL

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		ALIGN AUTO		SE:INT	CE		AC	trum Analyzer - Sw RF 50 G	Keysight Spe
Peak Search	TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N	e: Log-Pwr	Avg Typ Avg Hold	Run		HZ PNO: Fast ⊂⊾ Gain:Low	58351 G	1.8213340	arker 1
Next Pe	1 4.821 3 GHz -46.736 dBm	Mkr			Atten: 5	-Gain:Low		Ref 20.00	dB/div
Next Pk Rig).0
Next Pk L									.0
Marker De	DL1 -34,56 dBm								.0
Mkr→	UL1 -34.36 dBm							1	.0
Mkr→RefL	andre de Alexandre en angele en de angele en angel <mark>Angele en angele en an Angele en angele en a</mark>	land the first provide	in and and a state	dega sha kasadha ku Tana Mayana Mayana Tana Mayana Mayana	en distanta di alla di Recentrativa di alla di a	llitter elipsissure P ^{el} strans st _{al} ter	an a	يدايقيهم الأليبية القوريق	.0 <mark>Northeast</mark>
M 0 1 o	Stop 25.00 GHz 152 s (40000 pts)	Sweep_2			300 kHz	#VBW		GHz 00 kHz	art 2.48
		STATUS							3

TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE

OF 802.11n20 FOR MODULATION IN MIDDLE CHANNEL



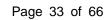


- J		ALIGN AUTO		SENSE:INT		Swept SA 0 Ω AC	RF 5	
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	Stop 2.4000 GHz 5.0 ms (40000 pts)	Sweep 136. Status		kHz	#VBW 3		00 GHz 100 kHz	art 1.00 Res BW
	Stop 2.4000 GHz 5.0 ms (40000 pts)	Sweep 136.			#VBW 3		100 kHz	Res BW
1 o	5.0 ms (40000 pts)	ALIGN AUTO e: Log-Pwr	Avg Ty	SENSE:INT	Hz	0 Ω AC 5229656 C	100 kHz ectrum Analyzer - RF 5	Res BW
1 o	5.0 ms (40000 pts)	Sweep 136. STATUS ALIGN AUTO e: Log-Pwr I: 100/100	Avg Ty		Hz	οΩ AC 5229656 C	100 kHz ectrum Analyzer - RF 5	Res BW
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1 o	5.0 ms (40000 pts) TRACE 123 4 5 6 TYPE MANNAN DET # NNNN r1 4.873 7 GH2	Sweep 136. STATUS ALIGN AUTO e: Log-Pwr I: 100/100	Avg Ty	SENSE:INT	Hz NO: Fast	0 Ω AC 6229656 C	100 kHz ctrum Analyzer - RF 5 4.873686	Res BW Keysight Spe arker 1
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1 o Peak Search Next Pe Next Pk Rig Next Pk Lu Marker De	5.0 ms (40000 pts) TRACE 123 4 5 6 TYPE MANNAN DET # NNNN r1 4.873 7 GH2	Sweep 136. STATUS ALIGN AUTO e: Log-Pwr I: 100/100	Avg Ty	SENSE:INT	Hz NO: Fast	0 Ω AC 6229656 C	100 kHz ctrum Analyzer - 5 4.873686 Ref 20.0	keysight Sport
Peak Search Next Pe Next Pk Rig	6.0 ms (40000 pts)	Sweep 136.	Avg Ty	SENSE:INT	Hz NO: Fast	0 dBm	100 kHz	Keysight Spe arker 1 dB/div g
1 o Peak Search Next Pe Next Pk Rig Next Pk Lu Marker De	5.0 ms (40000 pts)	ALIGN AUTO E: Log-Pwr : 100/100 MIKT1	Avg Ty Avg Ho	SENSE:INT	Hz No: Fast Gain:Low	0 Ω AC 6229656 C	100 kHz	Keysight Spe arker 1 alker 1
1 o Peak Search Next Pe Next Pk Rig Next Pk Li Marker De	6.0 ms (40000 pts)	ALIGN AUTO E: Log-Pwr : 100/100 MKC1 		SENSE:INT	Hz No: Fast Gain:Low	0 dBm	100 kHz	Keysight Spe arker 1 arker 1 ab div g g g g g g g g g g g g g g g g g g g



		ALIGN AUTO		SENSE:INT				trum Analyzer - S		KI 🛛
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		>100/100	Avginoi		Atten:	PNO: Fast 🕞 FGain:Low				
NextPe	1 982.370 MHz	Mkr1								
	-59.375 dBm						dBm	Ref 20.00	B/div	0 di og
				Ĭ						-a
Next Pk Rig										
									\vdash	
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	DL1 -32.64 dBm									30.0
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	33 ms (40000 pts)	weep 93.3		z	V 300 kH	#VBV			s BW	Re
	33 ms (40000 pts)	weep 93.3 STATUS		z	V 300 kH	#VBV		0 GHZ 00 kHz	s BW	Re sg
	33 ms (40000 pts)	weep 93.3		Z	V 300 KH	#VBV		00 kHz		SG
		weep 93.3 status				#VBV				SG
Peak Search	TRACE 123456	ALIGN AUTO	Avg Typ	GENSE:INT	<u> </u>) GHz	Ω AC 954499 (00 kHz	eysight Spe	SG Ke
Peak Search	TRACE 23450 TYPE M	weep 93.3 STATUS	Avg Typ	SENSE:INT	<u> </u>		Ω AC 954499 (00 kHz trum Analyzer - S RF 50	eysight Spe	SG Ke
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Peak Search	TRACE 23450 TYPE M	weep 93.3 STATUS	Avg Typ	SENSE:INT	Trig: Fr	Hz PNO: Fast	Ω AC 954499 (00 kHz trum Analyzer - S RF 50	eysight Spe	sg Ke lar
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Peak Search Next Pe	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNN 2.398 180 GHz	weep 93.3 STATUS	Avg Typ	SENSE:INT	Trig: Fr	Hz PNO: Fast	Ω AC 954499 (00 kHz trum Analyzer - S RF 50 2.398179	eysight Spe Ker 1	G Ke lar
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Peak Search Next Pe Next Pk Rig	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNN 2.398 180 GHz	weep 93.3 STATUS	Avg Typ	SENSE:INT	Trig: Fr	Hz PNO: Fast	Ω AC 954499 (00 kHz trum Analyzer - S RF 50 2.398179	eysight Spe Ker 1	ig ke lar 0 di 0 di 0 di 0 di 0 di 0 di 0 di 0 di
Peak Search Next Pe Next Pk Rig	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNN 2.398 180 GHz	weep 93.3 STATUS	Avg Typ	SENSE:INT	Trig: Fr	Hz PNO: Fast	Ω AC 954499 (00 kHz trum Analyzer - S RF 50 2.398179	eysight Spe Ker 1	ig ke lar 0 di 0 di 0 di 0 di 0 di 0 di 0 di 0 di
Peak Search Next Pe Next Pk Rig Next Pk L	TRACE 123456 TYPE WWWWW DET P NNNNN 2.398 180 GHz -55.222 dBm	weep 93.3 STATUS	Avg Typ	SENSE:INT	Trig: Fr	Hz PNO: Fast	Ω AC 954499 (00 kHz trum Analyzer - S RF 50 2.398179	eysight Spe Ker 1	G Key ar ar 0.0
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Peak Search Next Pe Next Pk Rig Next Pk L Marker De Mkr→	TRACE 123456 TYPE WWWWW DET P NNNNN 2.398 180 GHz -55.222 dBm	weep 93.3 STATUS ALIGN AUTO :: Log-Pwr >100/100 Mkr1 2 	Avg Tyj Avg Hol	SENSE :INT	→ Trig: Fi Atten:	PNO: Fast Gain:Low	Ω AC 954499 C	00 KHz	B/div	6G Ke lar 10.0 10.0 20.0 10.0 10.0 10.0
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Peak Search Next Pe Next Pk Rig Next Pk L Marker De Mkr→Ref	TRACE 1 2 3 4 5 6 TYPE MYWWWY DET PNNNN 2.398 180 GHz -55.222 dBm 0.1 -32 64 dBm 0.1 -32 64 dBm 0.1 -32 64 dBm	weep 93.3 STATUS ALIGN AUTO :: Log-Pwr >100/100 MKr1 2	Avg Tyj Avg Hol	SENSE :INT	→ Trig: Fi Atten:	PNO: Fast Gain:Low	Ω AC 954499 C	00 KHz	B/div	6G 6G 10.0
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TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11n20 FOR MODULATION IN HIGH CHANNEL





Keysight Spe	ectrum Analyzer - Swept SA								
arker 1	RF 50 Ω AC 4.9299788869	72 GHz	SENS	E:INT		ALIGN AUTO	TRAC	E 1 2 3 4 5 6	Peak Search
	4.32337000031	PNO: Fast 😱	Trig: Free I		Avg Hold			E M WWWW	
		IFGain:Low	Atten: 30 d	18		_			NextPea
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									Mor
art 2.48	GHz			^			Stop 2	5.00 GHz	1 of
	100 kHz	#VBW	300 kHz			Sweep	2.152 s (4	0000 pts)	
G						STATU	s		



6. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

6.1 MEASUREMENT PROCEDURE

- (1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (3). Set SPA Trace 1 Max hold, then View.

Note: The method of AVGPSD-1 in the ANSI C63.10 (2013) item 11.10 was used in this testing.

6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 4.2.

6.3 LIMITS AND MEASUREMENT RESULT

TEST ITEM	POWER SPECTRAL DENSITY
TEST MODE	802.11b with data rate 1

Channel No.	Power density (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	-4.907	8	Pass
Middle Channel	-4.379	8	Pass
High Channel	-4.662	8	Pass

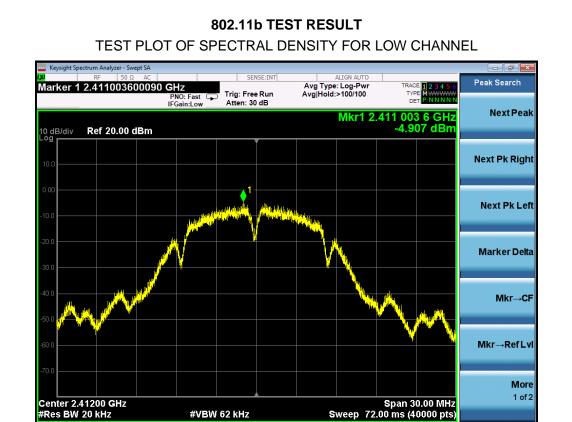
TEST ITEM	POWER SPECTRAL DENSITY
TEST MODE	802.11g with data rate 6

Channel No.	Power density (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	-10.280	8	Pass
Middle Channel	-10.574	8	Pass
High Channel	-9.315	8	Pass

TEST ITEM	POWER SPECTRAL DENSITY
TEST MODE	802.11n 20 with data rate 6.5

Channel No.	Power density (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	-9.856	8	Pass
Middle Channel	-10.006	8	Pass
High Channel	-8.508	8	Pass





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TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL





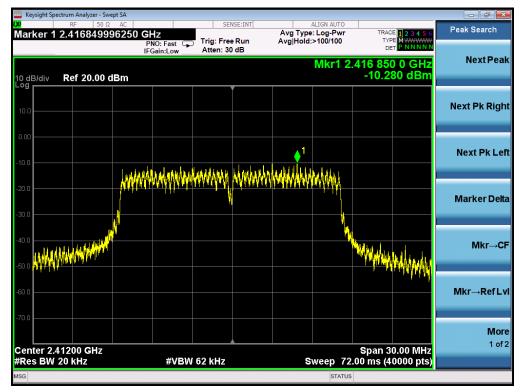


TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

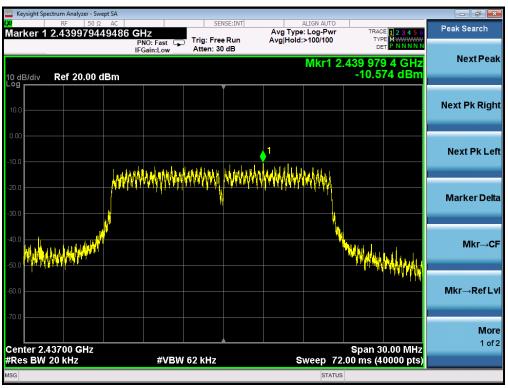
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802.11g TEST RESULT

TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



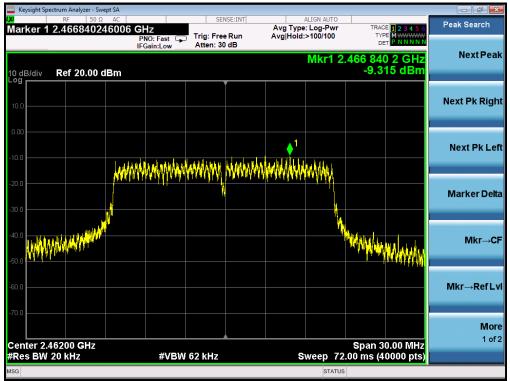




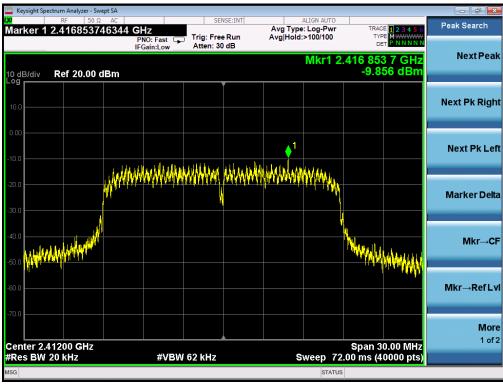
TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

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TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



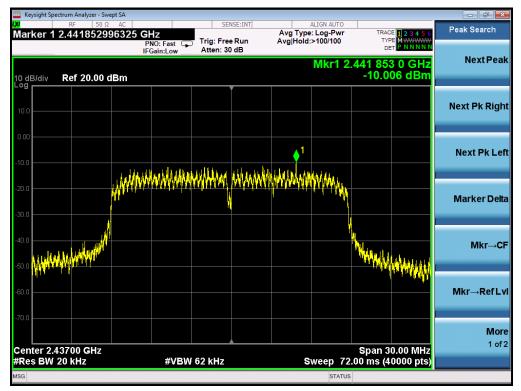




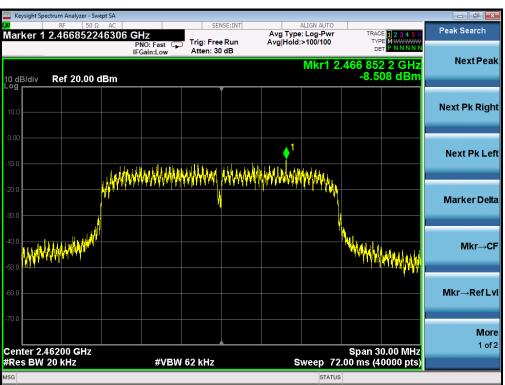
802.11n 20 TEST RESULT TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

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TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL







TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

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7. RADIATED EMISSION

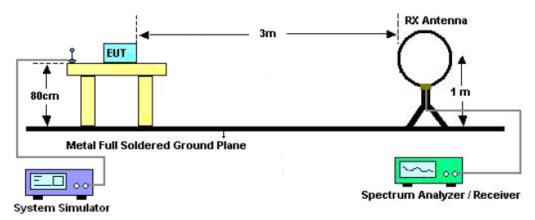
7.1. MEASUREMENT PROCEDURE

- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8.If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.

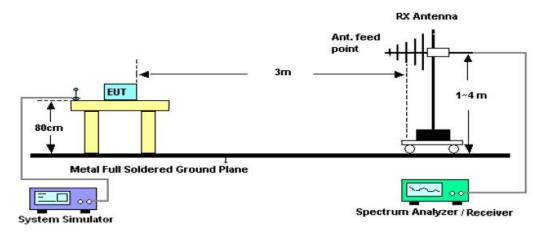


7.2. TEST SETUP

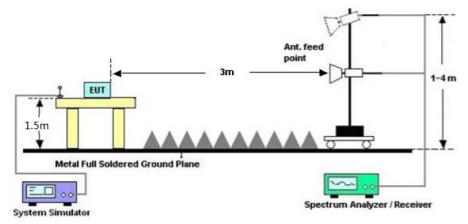
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz





7.3. LIMITS AND MEASUREMENT RESULT

15.209(a) Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
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

Note: All modes were tested For restricted band radiated emission,

the test records reported below are the worst result compared to other modes.

7.4. TEST RESULT

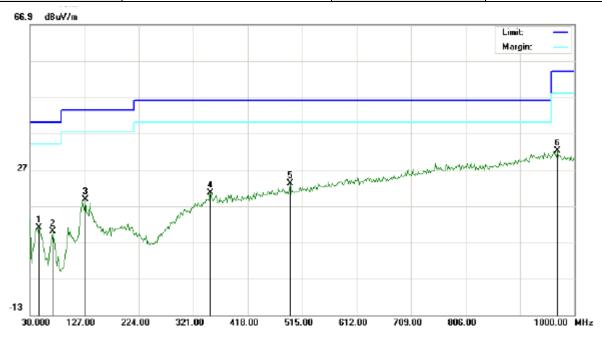
RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.



RADIATED EMISSION BELOW 1GHZ

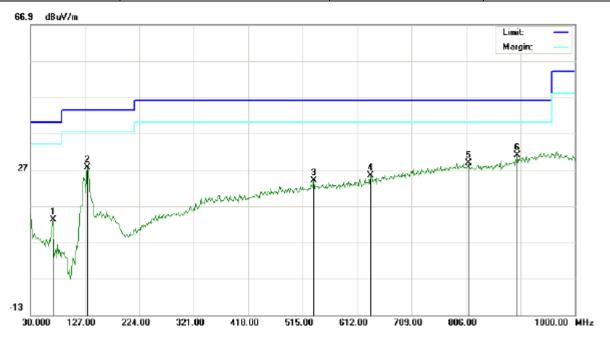
EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector		Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree		
1		46.1666	-0.53	11.49	10.96	40.00	-29.04	peak				
2		70.4167	0.21	9.85	10.06	40.00	-29.94	peak				
3		128.6167	8.89	9.88	18.77	43.50	-24.73	peak				
4		351.7167	1.80	18.75	20.55	46.00	-25.45	peak				
5		493.9832	2.05	21.06	23.11	46.00	-22.89	peak				
6	*	969.2833	2.32	29.81	32.13	54.00	-21.87	peak				



EUT	WiFi door sensor Model Name		NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector		Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree		
1		70.4167	9.10	4.16	13.26	40.00	-26.74	peak				
2		131.8500	15.81	11.80	27.61	43.50	-15.89	peak				
3		534.4000	1.93	22.06	23.99	46.00	-22.01	peak				
4		636.2500	1.95	23.54	25.49	46.00	-20.51	peak				
5		810.8500	1.50	27.32	28.82	46.00	-17.18	peak				
6	*	896.5333	2.45	28.52	30.97	46.00	-15.03	peak				

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The "Factor" value can be calculated automatically by software of measurement system.

3. All test modes had been pre-tested. The 802.11b at low channel is the worst case and recorded in the report.



RADIATED EMISSION ABC	OVE 1GHZ
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EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type		
4824.115	44.25	3.72	47.97	74	-26.03	peak		
4824.061	40.69	3.72	44.41	54	-9.59	AVG		
7236.069	43.71	8.15	51.86	74	-22.14	peak		
7236.043	41.35	8.15	49.5	54	-4.5	AVG		
emark:								
actor = Antenna Factor + Cable Loss – Pre-amplifier.								
actor = Ante	enna ⊢actor + Ca	able Loss – I	-re-amplifier.					

EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value rype		
4824.055	44.71	3.72	48.43	74	-25.57	peak		
4824.073	40.36	3.72	44.08	54	-9.92	AVG		
7236.067	43.27	8.15	51.42	74	-22.58	peak		
7236.045	34.68	8.15	42.83	54	-11.17	AVG		
Remark:								
-actor = Ante	actor = Antenna Factor + Cable Loss – Pre-amplifier.							



EUT	WiFi door sensor	Model Name	NAS-DS01W0	
Temperature	25°C	Relative Humidity	55.4%	
Pressure	960hPa	Test Voltage	Normal Voltage	
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Horizontal	

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value rype		
4874.098	46.39	3.75	50.14	74	-23.86	peak		
4874.102	43.41	3.75	47.16	54	-6.84	AVG		
7311.101	43.28	8.16	51.44	74	-22.56	peak		
7311.116	39.72	8.16	47.88	54	-6.12	AVG		
Remark:								
-actor = Ante	actor = Antenna Factor + Cable Loss – Pre-amplifier.							

EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type		
4874.047	46.73	3.75	50.48	74	-23.52	peak		
4874.066	41.81	3.75	45.56	54	-8.44	AVG		
7311.114	44.36	8.16	52.52	74	-21.48	peak		
7311.038	40.47	8.16	48.63	54	-5.37	AVG		
Remark:								
Factor = Antenna Factor + Cable Loss – Pre-amplifier.								



EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value rype	
4924.041	46.53	3.81	50.34	74	-23.66	peak	
4924.112	40.21	3.81	44.02	54	-9.98	AVG	
7386.083	46.39	8.19	54.58	74	-19.42	peak	
7386.032	41.62	8.19	49.81	54	-4.19	AVG	
Remark:							
-actor = Ante	enna Factor + Ca	able Loss – I	Pre-amplifier.				

EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type	
4924.097	43.41	3.81	47.22	74	-26.78	peak	
4924.077	41.77	3.81	45.58	54	-8.42	AVG	
7386.100	44.23	8.19	52.42	74	-21.58	peak	
7386.043	38.38	8.19	46.57	54	-7.43	AVG	
Pomark:							
temark.							
Remark: Factor = Ante	enna Factor + Ca	able Loss –	Pre-amplifier.				

RESULT: PASS

Note:

Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report. Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

All test modes had been pre-tested. The 802.11b mode is the worst case and recorded in the report.



8. BAND EDGE EMISSION

8.1. MEASUREMENT PROCEDURE

Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

8.2. TEST SET-UP

same as 7.2

Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level

2. The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μ V) to represent the Amplitude. Use the F dB(μ V/m) to represent the Field Strength. So A=F.

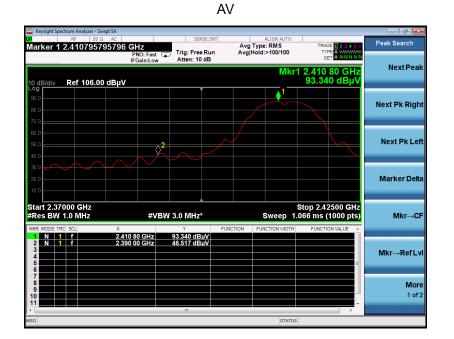


8.3. TEST RESULT

EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Horizontal

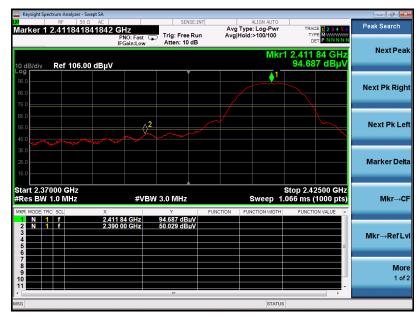


ΡK

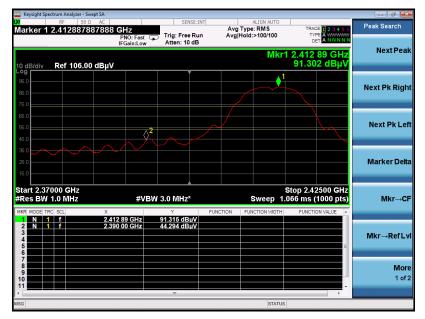




EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Vertical



AV





EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Horizontal









EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Vertical









EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Horizontal



AV

	ectrum Analyzer - Swept SA RF 50 Ω AC		SENSE:I		ALIGN AUTO	TRACI	123456	Peak Search
0 dB/div	2.4148698698 Ref 106.00 dB	PNO: Fast IFGain:Low	Trig: Free Ru Atten: 10 dB	n Avg	Hold:>100/100	TYP DE 1 2.414	AWWWW	NextPea
og 36.0 36.0						↓ ¹		Next Pk Rigl
6.0 6.0			2					Next Pk Le
6.0 6.0 6.0								Marker De
	7000 GHz 1.0 MHz	#VE	SW 3.0 MHz*	FUNCTION	Sweep 1	Stop 2.42 .066 ms (1	000 pts)	Mkr→0
1 N 1 2 N 1 3 4 5 5	1 f 1 f	2.414 87 GHz 2.390 00 GHz	88.094 dBµV 43.706 dBµV				=	Mkr→RefL
6 7 8 9 0								Mo 1 o
G			m		STATU	5	•	



EUT	WiFi door sensor	Model Name NAS-DS01W0	
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Vertical

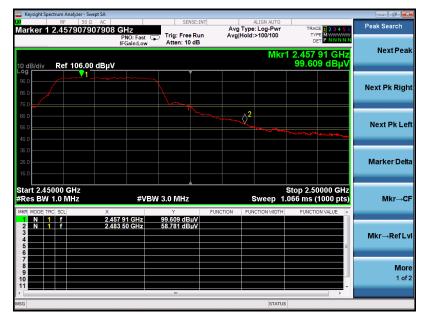


AV





EUT	WiFi door sensor	Model Name NAS-DS01W0	
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Horizontal









EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Vertical









EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Horizontal



AV

Keysight Spectrum Analyzer - Swept SA				
Marker 1 2.414649649650		ALIGN AUTO Avg Type: RMS Avg Hold:>100/100	TRACE 1 2 3 4 5 6	Peak Search
10 dB/div Ref 106.00 dBµV	IFGain:Low Atten: 10 dB	-	1 2.414 65 GHz 88.335 dBµV	Next Pea
• 99 . 0			↓ 1	Next Pk Rigl
66.0	2			Next Pk Le
36.0				Marker De
ttart 2.37000 GHz Res BW 1.0 MHz	#VBW 3.0 MHz*	Sweep 1	Stop 2.42500 GHz .066 ms (1000 pts)	Mkr→0
	14 65 GHz 88.347 dBµV 90 00 GHz 46.148 dBµV			Mkr→RefL
9 9 0				Mo 1 o
sg	m	STATU	۱.	



EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Vertical



AV





EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Horizontal









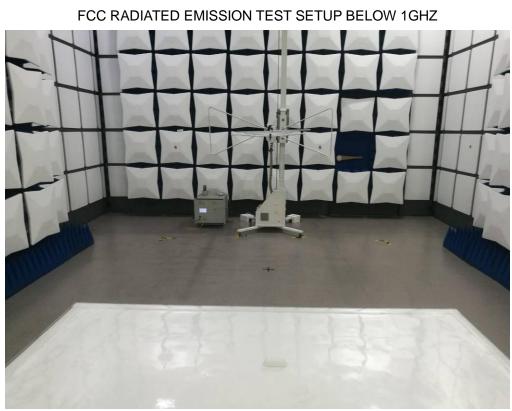
EUT	WiFi door sensor	Model Name	NAS-DS01W0
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Vertical











APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ





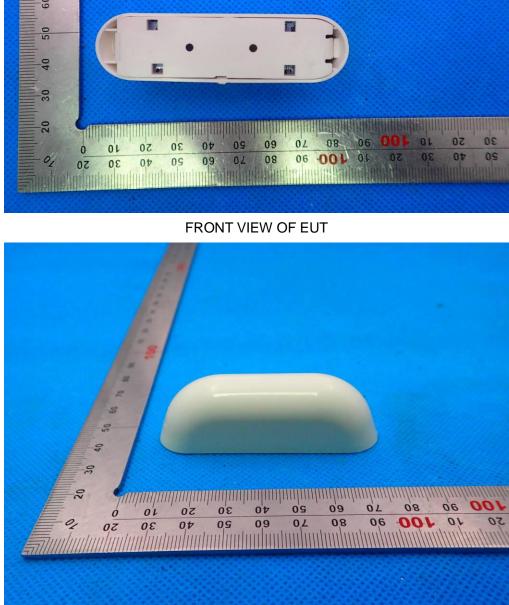


APPENDIX B: PHOTOGRAPHS OF EUT

ALL VIEW OF EUT

TOP VIEW OF EUT







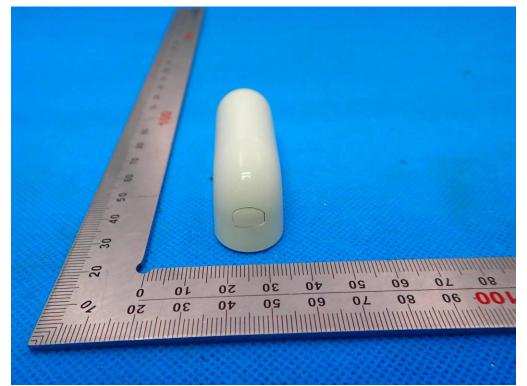


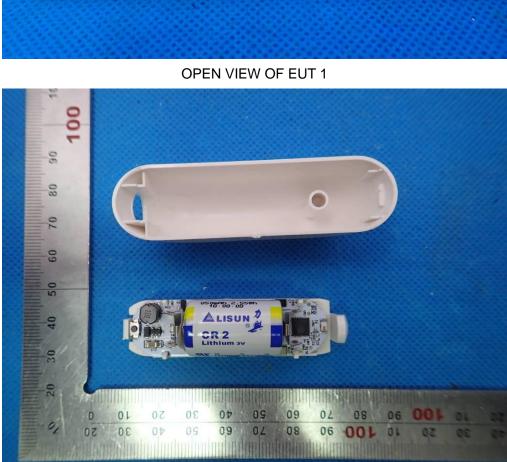
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BACK VIEW OF EUT



LEFT VIEW OF EUT





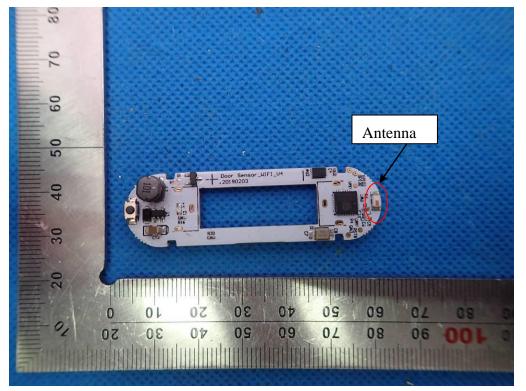


RIGHT VIEW OF EUT

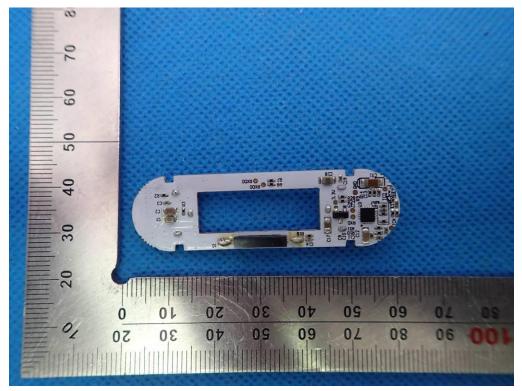




OPEN VIEW OF EUT 2



INTERNAL VIEW OF EUT-1



----END OF REPORT----