# FCC Test Report

# Report No.: AGC05915170507FE04

FCC ID	:	2AB7K-T1240
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Eufy Genie
BRAND NAME	:	eufy
MODEL NAME	:	T1240
CLIENT	:	Anker technology Co., Limited
DATE OF ISSUE	:	June 08, 2017
STANDARD(S) TEST PROCEDURE(S)	:	FCC Part 15.247 KDB 558074 D01 DTS Meas Guidance v04
<b>REPORT VERSION</b>	:	V1.0



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# **Report Revise Record**

<b>Report Version</b>	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	June 08, 2017	Valid	Original Report

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Applicant	Anker technology Co., Limited		
Address	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong		
Manufacturer	Anker technology Co., Limited		
Address	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong		
Product Designation	Eufy Genie		
Brand Name	eufy		
Test Model	T1240		
Date of test	June 05, 2017~June 08, 2017		
Deviation	None		
Condition of Test Sample	Normal		
Test Result	Pass		
Report Template	AGCRT-US-BGN/RF		

# **1. VERIFICATION OF CONFORMITY**

We hereby certify that:

The above equipment was tested by Dongguan Precise Testing Service Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.247.

Max 2hang Tested by June 08, 2017 Max Zhang(Zhang Yi) Bong xie Reviewed by Bart Xie(Xie Xiaobin)) June 08, 2017 Approved by Solger Zhang(Zhang Hongyi) June 08, 2017

Authorized Officer

# 2. GENERAL INFORMATION

# 2.1. PRODUCT DESCRIPTION

The EUT is designed as "Eufy Genie". It is designed by way of utilizing the DSSS and OFDM technology to achieve the system operation.

rinajer teerinear accomption t	A major technical description of EOT is described as following			
<b>Operation Frequency</b>	2.412 GHz~2.462GHz			
Output Bower	IEEE 802.11b: <b>14.71</b> dBm; IEEE 802.11g: <b>12.74</b> dBm;			
Output Power	IEEE 802.11n(20): <b>11.63</b> dBm; IEEE 802.11n(40): <b>9.02</b> dBm			
Modulation	DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)			
Number of channels	11			
Hardware Version	1.0			
Software Version	1.0			
Antenna Designation	Integrated Antenna (Met 15.203 Antenna requirement)			
Antenna Gain	2dBi			
Power Supply	DC 5.0V			

A major technical description of EUT is described as following

Note: The USB port is only for charging.

## 2.2. TABLE OF CARRIER FREQUENCYS

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

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Data rate(Mbps) 800nsGI	
					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

#### 2.3. 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	

# 2.4. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AB7K-T1240** filing to comply with the FCC Part 15 requirements.

#### 2.5. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.247 rules KDB 558074 D01 DTS Meas Guidance v04.

#### 2.6. SPECIAL ACCESSORIES

Refer to section 5.2.

## 2.7. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

# **3. MEASUREMENT UNCERTAINTY**

Conducted measurement: +/- 3.18dB Radiated measurement: +/- 3.91dB

# 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION				
1	Low channel TX				
2	Middle channel TX				
3	High channel TX				
4	Normal operating				
Note: Transmit by 802.11b with Date rate (1/2/5.5/11) Transmit by 802.11g with Date rate (6/9/12/18/24/36/48/54) Transmit by 802.11g (20MHz) with Date rate (6.5/13/19.5/26/39/52/58.5/65)					

Transmit by 802.11n (20MHz) with Date rate (6.5/13/19.5/26/39/52/58.5/65)

Transmit by 802.11n (40MHz) with Date rate

(13.5/27/40.5/54/81/108/121.5/135)

#### Note:

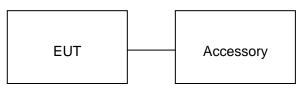
1. The EUT has been set to operate continuously on the lowest, middle and highest operation frequency Individually, and the eut is operating at its maximum duty cycle>or equal 98%

- 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.

# **5. SYSTEM TEST CONFIGURATION**

#### **5.1. CONFIGURATION OF EUT SYSTEM**

# Configure:



#### **5.2. EQUIPMENT USED IN EUT SYSTEM**

Item	Equipment	Model No.	ID or Specification	Remark
1	Eufy Genie	T1240	2AB7K-T1240	EUT
2	Adapter	ADPT1240	DC 5V 1A	Marketed

#### 5.3. SUMMARY OF TEST RESULTS

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	Compliant

# 6. TEST FACILITY

Site	Dongguan Precise Testing Service Co., Ltd.
Location	Building D, Baoding Technology Park, Guangming Road2, Dongcheng District, Dongguan, Guangdong, China.
FCC Registration No.	371540
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2014.

#### ALL TEST EQUIPMENT LIST

Radiated Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 3, 2016	July 2, 2017
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 3, 2016	July 2, 2017
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 3, 2016	July 2, 2017
RF Cable	SCHWARZBECK	AK9515E	96221	July 3, 2016	July 2, 2017
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 2, 2017	June 1, 2018
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Active loop antenna (9K-30MHz)	Schwarzbeck	FMZB1519	1519-038	June 2, 2017	June 1, 2018
Spectrum analyzer	Agilent	E4407B	MY46185649	June 2, 2017	June 1, 2018
Power Sensor	Agilent	U2021XA	MY55050474	June 2, 2017	June 1, 2018
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	June 2, 2017	June 1, 2018
Horn Ant (18G-40GHz)	Schwarzbeck	BBHA 9170	9170-181	June 2, 2017	June 1, 2018

Conducted Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	June 2, 2017	June 1, 2018
Artificial Mains Network	Narda	L2-16B	000WX31025	June 2, 2017	June 1, 2018
Artificial Mains Network (AUX)	Narda	L2-16B	000WX31026	June 2, 2017	June 1, 2018
RF Cable	SCHWARZBECK	AK9515E	96222	June 2, 2017	June 1, 2018
Shielded Room	CHENGYU	843	PTS-002	June 2, 2017	June 1, 2018

# 7. OUTPUT POWER

# 7.1. MEASUREMENT PROCEDURE

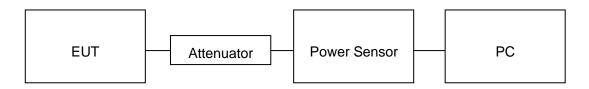
For average power test:

- 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 KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

# 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

# AVERAGE POWER SETUP



# 7.3. 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	14.68	30	Pass
2.437	14.71	30	Pass
2.462	14.53	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	12.36	30	Pass
2.437	12.74	30	Pass
2.462	12.18	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	11.55	30	Pass
2.437	11.63	30	Pass
2.462	11.27	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11n 40 with data rate 6.5

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.422	8.94	30	Pass
2.437	9.02	30	Pass
2.452	8.76	30	Pass

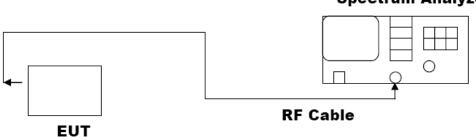
# 8.6 DB BANDWIDTH

## 8.1. 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 KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

# 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



#### **Spectrum Analyzer**

# 8.3. LIMITS AND MEASUREMENT RESULTS

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

LIMITS AND MEASUREMENT RESULT						
Applicable Limite		Applicable Limits				
Applicable Limits	Test Da	Criteria				
	Low Channel	9.555	PASS			
>500KHZ	Middle Channel	10.03	PASS			
	High Channel	9.084	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	Criteria				
	Low Channel	15.10	PASS			
>500KHZ	Middle Channel	15.11	PASS			
	High Channel	15.11	PASS			

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

LIMITS AND MEASUREMENT RESULT						
Applicable Limite	Applicable Limits					
Applicable Limits	Test Da	Criteria				
	Low Channel	15.10	PASS			
>500KHZ	Middle Channel	15.11	PASS			
	High Channel	15.11	PASS			

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11n 40 with data rate 65

LIMITS AND MEASUREMENT RESULT						
Annlinghla Limita	Applicable Limits					
Applicable Limits	Test Da	Criteria				
	Low Channel	33.82	PASS			
>500KHZ	Middle Channel	35.07	PASS			
	High Channel	33.79	PASS			



#### 802.11b TEST RESULT TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

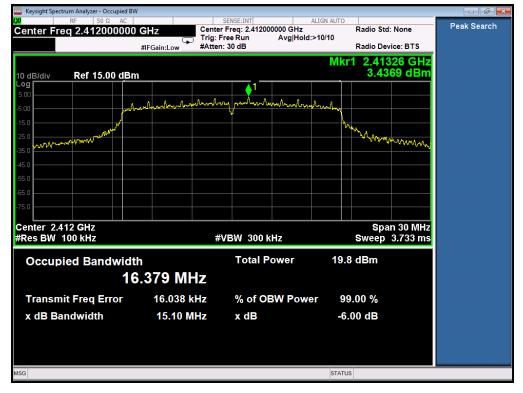


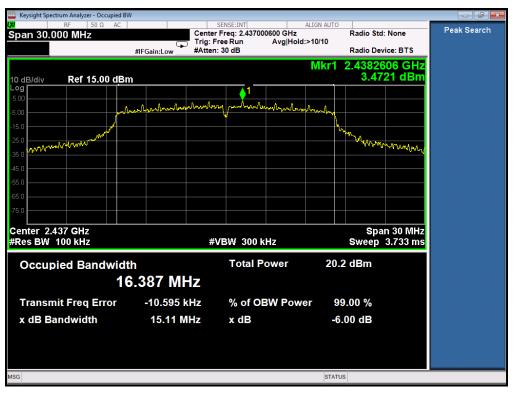


#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

# 802.11g TEST RESULT

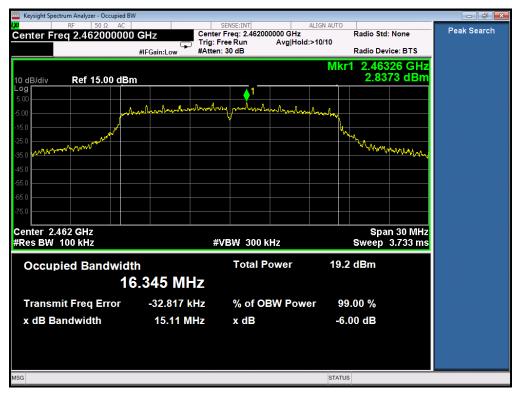
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL





#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

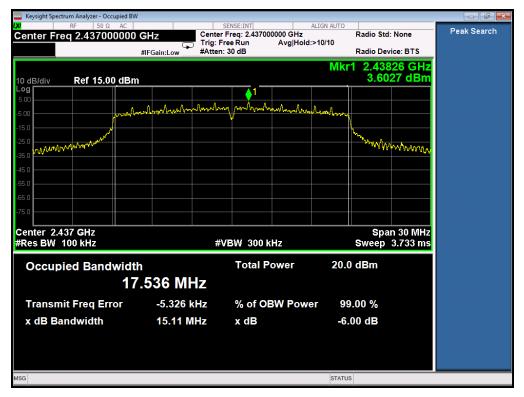


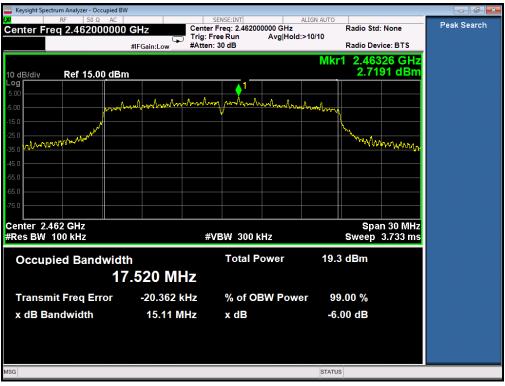


#### 802.11n (20) TEST RESULT

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



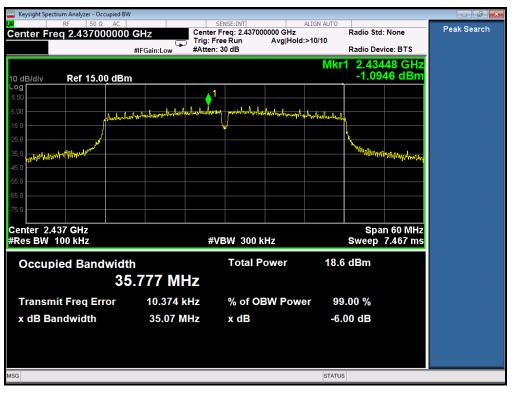


#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

## 802.11n (40) TEST RESULT

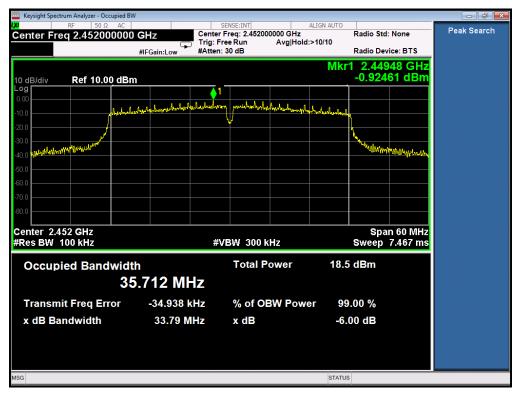
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL





#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



# 9. CONDUCTED SPURIOUS EMISSION

#### 9.1. 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 KDB 558074 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.

## 9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

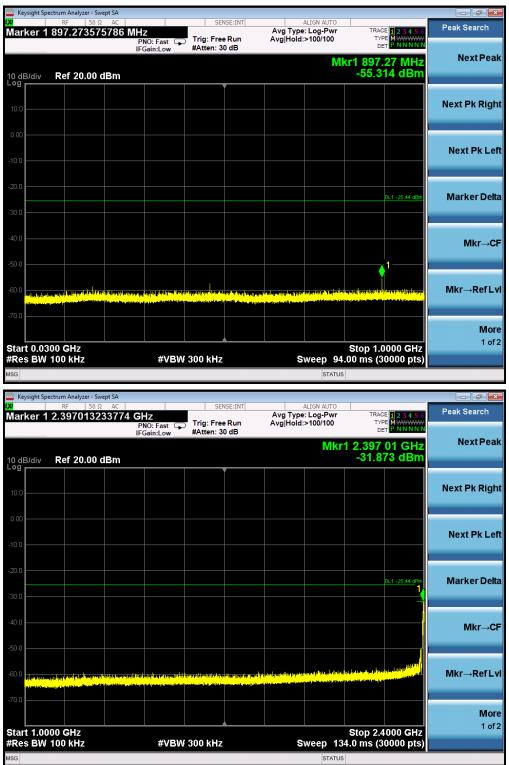
The same as described in section 8.2.

#### 9.3. MEASUREMENT EQUIPMENT USED

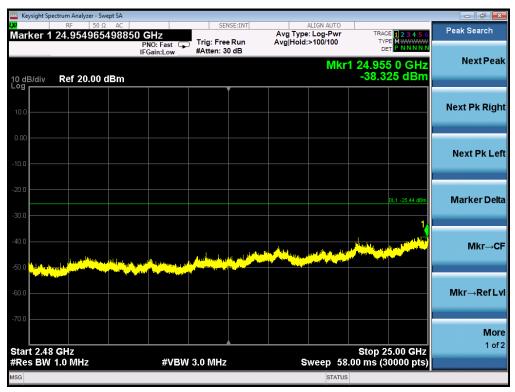
The same as described in section 6.

#### 9.4. LIMITS AND MEASUREMENT RESULT

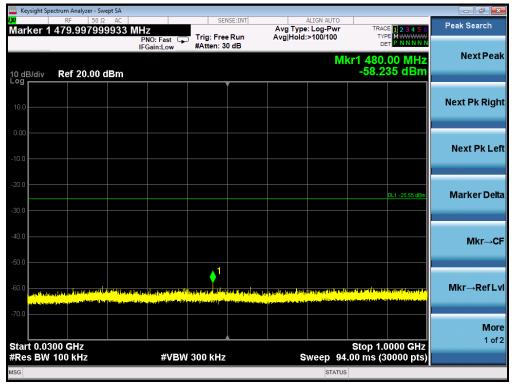
LIMITS AND MEASUREMENT RESULT						
Appliechie Limite	Measurement Result					
Applicable Limits	Test Data	Criteria				
In any 100 KHz Bandwidth Outside the	At least -30dBc than the limit					
frequency band in which the spread spectrum	Specified on the BOTTOM	PASS				
intentional radiator is operating, 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				



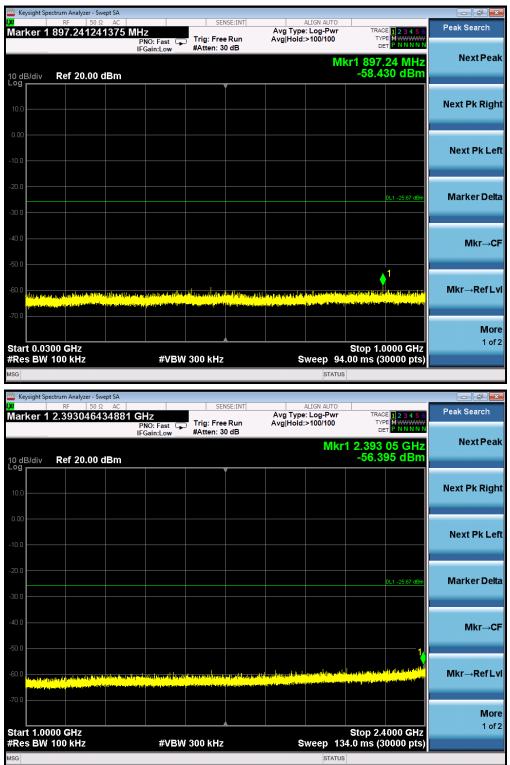
#### TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 802.11b FOR MODULATION IN LOW CHANNEL



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



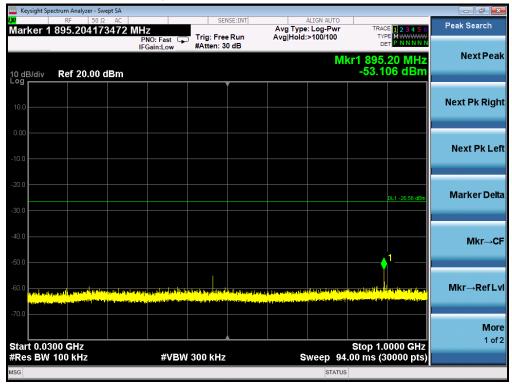
Keysight Sp 4	ectrum Analyzer - RF 50	DΩ AC		SEN	NSE:INT		ALIGN AUTO			
larker 1	2.392999	766659 G	Hz PNO: Fast 🕞				e: Log-Pwr :>100/100	TRAC	DE 123456 PE M WWW ET P N N N N N	Peak Search
		I	FGain:Low	#Atten: 30	0 dB		Mice		00 GHz	NextPea
dB/div	Ref 20.00	0 dBm					IVINI	-55.5	19 dBm	
0.0										Next Pk Rig
).00										Next Pk Le
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	000 GHz 100 kHz		#VBW	300 kHz		s	weep 13		4000 GHz 0000 pts)	1 0
			#VBW	300 kHz		S	sweep 13			1 01
Res BW	100 kHz ectrum Analyzer -		#VBW				STATUS			
Res BW	100 kHz ectrum Analyzer -	Ω AC	GHz	SEN	kse:INT  ■ Run	Avg Type	STATUS	4.0 ms (3	20000 pts)	
Res BW	100 kHz ectrum Analyzer - RF 50	Ω AC 00000000		SEN	Run		ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3	22 1 2 3 4 5 6 PET P NNNN	Peak Search
Res BW G Keysight Sp Arker 1	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3 TRAC TYI D 1 25.00	20000 pts)	Peak Search
Res BW sg Keysight Sp Iarker 1 0 dB/div	100 kHz ectrum Analyzer - RF 50	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3 TRAC TYI D 1 25.00	CE 123456 PNNNNN 0 0 GHz	Peak Search
Res BW G Keysight Sp larker 1	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3 TRAC TYI D 1 25.00	CE 123456 PNNNNN 0 0 GHz	Peak Search Next Pea
Res BW G Keysight Sp larker 1 0 dB/div O 0 0 0 0 0 0 0 0	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3 TRAC TYI D 1 25.00	CE 123456 PNNNNN 0 0 GHz	Peak Search Next Pea
Res BW G Keysight Sp larker 1 0 dB/div O 0 0 0 0 0 0 0 0	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3 TRAC TYI D 1 25.00	CE 123456 PNNNNN 0 0 GHz	Peak Search Next Pea Next Pk Rig
Res BW G G G G G G G G G G G G G G G G G G G	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3 TRAC TYI D 1 25.00	CE 123456 PNNNNN 0 0 GHz	Peak Search Next Pea Next Pk Rig
Res BW G G G G G G G G G G G G G G G G G G G	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3 TRAC TYI D 1 25.00	CE 123456 PNNNNN 0 0 GHz	Peak Search Next Pea Next Pk Rig
Res BW G G G G G G G G G G G G G G G G G G G	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3 TRAC TYI D 1 25.00	CE 123456 PNNNNN 0 0 GHz	Peak Search Next Pea Next Pk Rig Next Pk Lo
Res BW aa a Keysight Sp a Keys	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr : 55/100	4.0 ms (3 TRAC TYI D 1 25.00	00000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Lo
Res BW	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free	Run	Avg Type	ALIGN AUTO E: Log-Pwr : 55/100 MKr	4.0 ms (3	20000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Lo Marker De
Res BW a a a b c c a b c	100 kHz ectrum Analyzer - RF 50 25.00000	Ω AC 00000000	GHz PNO: Fast	) Trig: Free		Avg Type Avg Hold	ALIGN AUTO E: Log-Pwr : 55/100 Mkr	4.0 ms (3	20000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Lu
Res BW a a a b c c a b c	100 kHz ectrum Analyzer - RF 50 25.000000 Ref 20.00	Ω AC 00000000	GHz PNO: Fast	) Trig: Free		Avg Type Avg Hold	ALIGN AUTO E: Log-Pwr : 55/100 MKr	4.0 ms (3	20000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Lo Marker De
Res BW           G           Keysight Sp           Iarker 1           Iare	100 kHz ectrum Analyzer - RF 50 25.000000 Ref 20.00	Ω AC 00000000	GHz PNO: Fast	) Trig: Free		Avg Type Avg Hold	ALIGN AUTO E: Log-Pwr : 55/100 Mkr	4.0 ms (3	20000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Lo Marker De
Res         BW           SG	100 kHz ectrum Analyzer - RF 50 25.000000 Ref 20.00	Ω AC 00000000	GHz PNO: Fast	) Trig: Free		Avg Type Avg Hold	ALIGN AUTO E: Log-Pwr : 55/100 Mkr	4.0 ms (3	20000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Lo Marker De
Res BW G Keysight Sp larker 1 larker 1 0 dB/div 9 0 0 0	100 kHz ectrum Analyzer - RF 50 25.000000 Ref 20.00	Ω AC 00000000	GHz PNO: Fast	) Trig: Free		Avg Type Avg Hold	ALIGN AUTO E: Log-Pwr : 55/100 Mkr	4.0 ms (3	20000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Lo Marker De Mkr→C
Res BW G Keysight Sp arker 1 arker 1 og 0.0 0.	100 kHz ectrum Analyzer - 5( 25,000000 Ref 20.0(	Ω AC 00000000	GHz PNO: Fast	) Trig: Free		Avg Type Avg Hold	ALIGN AUTO E: Log-Pwr : 55/100 Mkr	4.0 ms (3	00000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Lo Marker De Mkr→C
Res BW G Keysight Sp larker 1 arker 1 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 kHz ectrum Analyzer - 5( 25,000000 Ref 20.0(	Ω AC 00000000	GHZ PNO: Fast FGain:Low	) Trig: Free		Avg Type Avg Hold	ALIGN AUTO E: Log-Pwr : 55/100 Mkr	4.0 ms (3	5.00 GHz	1 of Peak Search Next Pea Next Pk Rig Next Pk Le Marker De Mkr→Ref L Mo 1 of



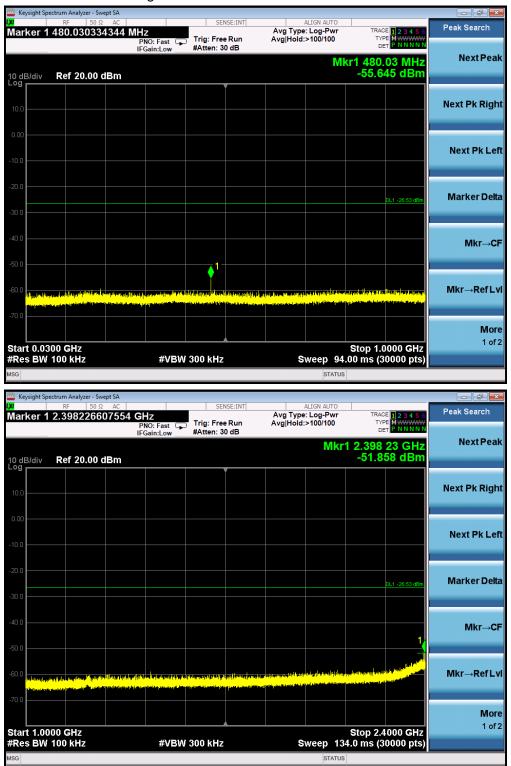
# TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11b FOR MODULATION IN HIGH CHANNEL



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



Keysight Sp	RF	50 Ω AC		SEN	ISE:INT		ALIGN AUTO			Peak Search
larker 1	2.3998	59995333	PNO: Fast 🗔	Trig: Free #Atten: 3			e: Log-Pwr :>100/100	TR. T	ACE 1 2 3 4 5 6 YPE M	Peak Search
			IFGain:Low	#Atten: 5	Jub		Mkr		9 86 GHz	NextPea
0 dB/div	Ref 20.	00 dBm						-28.	754 dBm	
°g				l )						
10.0										Next Pk Rig
0.00										
10.0										Next Pk Le
20.0									1	Marker De
30.0									DL1 -26.56 d	Marker De
40.0										Mkr→C
50.0										
30.0										
60.0	aritania (1996) aritari (197	alala ana ang ang ang ang ang ang ang ang an	a the share to be a state of the	alakeey ( etgladd fellen	alaan badar biyat bi		a na ang ang ang ang ang ang ang ang ang			Mkr→RefL
dabb Berk	in a start of the start of the	and a second	ng ing pangalakan pangang pang Pangang pangang	en des heten het de bien de	felas en la dilixada d					
70.0										Мо
				<u> </u>						1 0
start 1.00									.4000 GHz	
	000 GHz 100 kHz		#VBW	300 kHz		s	weep 13	4.0 ms (	30000 pts)	
Res BW		ng> saved	#VBW	300 kHz		S	Sweep 13			
Res BW	<b>100 kHz</b> <1_0036.p	-	#VBW	300 kHz		S				
Res BW	100 kHz <1_0036.p eectrum Analyze RF	er - Swept SA 50 Ω AC			ISE:INT		STATUS		(30000 pts)	Peak Search
Res BW	100 kHz <1_0036.p eectrum Analyze RF	er - Swept SA	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	STATUS	TR	30000 pts)	Peak Search
Res BW	100 kHz <1_0036.p eectrum Analyze RF	er - Swept SA 50 Ω AC	18 GHz	SEM	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	ACE 1 2 3 4 5 6 YPE MWWWW DET P N N N N	Peak Search
Res BW sg File Keysight Sp Arker 1	100 kHz <1_0036.p ectrum Analyze RF 24.9842	er - Swept SA 50 Ω AC	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search
Res BW sg i File Keysight Sp Aarker 1 0 dB/div	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea
Res BW sg i File Keysight Sp larker 1 0 dB/div	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea
Res BW sa i File keysight Sp Iarker 1 0 dB/div	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea
Res BW sa i File keysight Sp Iarker 1 0 dB/div	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea Next Pk Rig
Res BW sa i File Keysight Sp Narker 1 0 dB/div 0 dB/div 0 dB/div	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea Next Pk Rig
Res BW sa i File Keysight Sp Narker 1 0 dB/div 0 dB/div 0 dB/div	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea Next Pk Rig
Res BW sa i File Keysight Sp Iarker 1	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le
Res BW sa i File	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	ACE 123456 YPE MWWWWW DET PNNNN 342GHz	Peak Search Next Pea Next Pk Rig Next Pk Le
Res BW sa i File	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le
Res BW s a File Keysight Sp Tarker 1	100 kHz <1_0036.p ectrum Analyze RF 24.9842	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker De
Res BW           3G         File           3G         File <td>100 kHz           &lt;1_0036.p</td> sectrum Analyze           RF           124.9847           Ref 20.	100 kHz           <1_0036.p	r - Swept SA 50 Ω AC 2 23792459 00 dBm	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T T 1 24.98 -37.	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker De
Res         BW           sa         File           keysight Sp         Image: Sp           Marker 1         Image: Sp           0 dB/div         0	100 kHz           <1_0036.p	- Swept SA 50 Ω AC 23792459	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T T 1 24.98 -37.	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del
Res         BW           sa         File           Keysight Sp         Image: Sp           Marker 1         Image: Sp           0         dB/div           0	100 kHz           <1_0036.p	r - Swept SA 50 Ω AC 2 23792459 00 dBm	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T T 1 24.98 -37.	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del Mkr→C
Res         BW           sa         File           Keysight Sp         Image: Sp           Marker 1         Image: Sp           0         dB/div           0	100 kHz           <1_0036.p	r - Swept SA 50 Ω AC 2 23792459 00 dBm	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T T 1 24.98 -37.	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del Mkr→C
Res BW	100 kHz           <1_0036.p	r - Swept SA 50 Ω AC 2 23792459 00 dBm	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T T 1 24.98 -37.	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del Mkr→C
Res         BW           SG         File           Keysight Sp         I           Iarker 1         I           0         B/div           10         I           0         B/div           0 <td>100 kHz           &lt;1_0036.p</td> %E           124.9847           Ref 20.	100 kHz           <1_0036.p	r - Swept SA 50 Ω AC 2 23792459 00 dBm	18 GHz PNO: Fast	SEN Trig: Free	Run	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	TR. T	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker De Mkr→Ref L
Res         BW           SG         File           SKeysight Sp         Iarker 1           Iarker 1         Iarker 1           0         0	100 kHz           <1_0036.p	r - Swept SA 50 Ω AC 2 23792459 00 dBm	8 GHZ PNO: Fast IFGain:Low	SEN Trig: Free	Run	Avg Type Avg Hold	STATUS	TR T 1 24.98 -37.	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker De Mkr→RefL Mkr→RefL



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

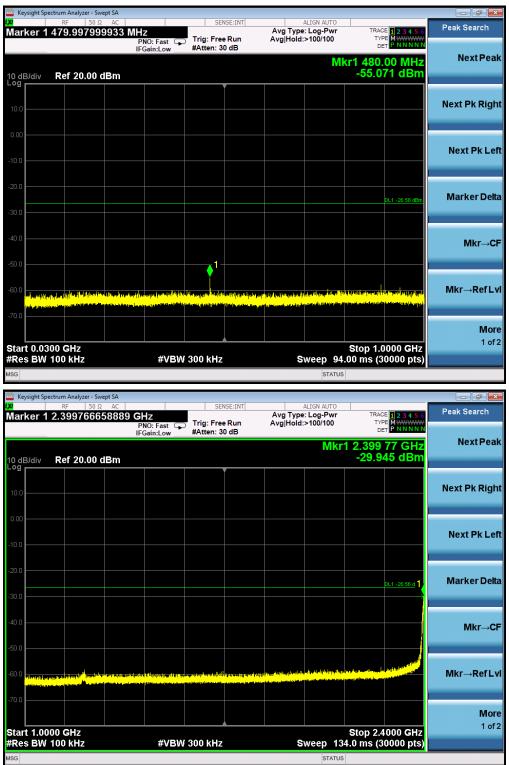


## TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE

OF 802.11g FOR MODULATION IN HIGH CHANNEL



Keysight Spectrum A	50 Ω AC		SENSE		ALIGN AUTO			Peak Search
larker 1 2.39	645321510	7 GHz PNO: Fast G	Trig: Free F		Type: Log-Pwr Hold:>100/100	TRACE	23456 WWWWW NNNNN	Peak Search
		IFGain:Low	#Atten: 30 d	B				NextPea
o and all Bot	20.00 dBm				Mkr	1 2.396 45 -54.683	dBm	NCALL C
0 dB/div Ref	20.00 06111		T T				-	
10.0								Next Pk Rig
10.0								
0.00								
								Next Pk L
10.0								
20.0								
						DL1	-27.16 dBm	Marker De
30.0								
40.0								
40.0								Mkr→C
50.0							1	
							also physical	
50.0 Deliverit (dee PP) of			a e canaliza de construir de la construir de l La construir de la construir de		n he film a least the distribution of the state of the st		A DESCRIPTION OF THE OWNER OF THE	Mkr→RefL
70.0								
								Мо
tart 1.0000 G	H7					Stop 2.400	0 GHz	1 0
Res BW 100	kHz	#VBV	V 300 kHz		Sweep 13	4.0 ms (300		
	kHz	#VBV	V 300 kHz		Sweep 13	4.0 ms (300		
Res BW 100		#VBV	V 300 kHz			4.0 ms (300		
Res BW 100	nalyzer - Swept SA		V 300 KHz		STATUS ALIGN AUTO	4.0 ms (300	00 pts)	Peak Search
Res BW 100	nalyzer - Swept SA	0 GHz PNO: Fast G	SENS	Avg Run Avg l	STATUS	4.0 ms (300		
Res BW 100   sg Keysight Spectrum A	nalyzer - Swept SA	0 GHz	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Res BW 100	nalyzer - Swept SA	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Search
Res BW 100 sg Keysight Spectrum A RF Marker 1 2.48	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Search Next Pea
Res BW 100	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Search Next Pea
Res BW 100 sc Keysight Spectrum / RF Marker 1 2.48 0 dB/div Ref	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Search
Res BW 100 sc Keysight Spectrum / RF Marker 1 2.48 0 dB/div Ref	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Search Next Pea Next Pk Rig
Res BW 100	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Search Next Pea Next Pk Rig
Res BW 100	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Search Next Pea Next Pk Rig
Res BW 100	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Search Next Pea Next Pk Rig Next Pk Lo
Res BW 100 s G Keysight Spectrum // RF Aarker 1 2.48 0 dB/div Ref 10.0 0.00 10.0 1 1	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 2 3 4 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Search Next Pea Next Pk Rig Next Pk Lo
Res BW 100 s G Keysight Spectrum // RF Aarker 1 2.48 0 dB/div Ref 10.0 0.00 10.0 1 1	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 NNNNN 5 GHz dBm	Peak Search Next Pea Next Pk Rig Next Pk Lo
Res         BW         100           sc         sc         sc           keysight Spectrum A         RF           Narker 1 2.48         Ref           0 dB/div         Ref           0 0.00	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avg l JB	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 NNNNN 5 GHz dBm	Peak Search Next Pea Next Pk Rig Next Pk Le Marker De
Res         BW         100           sq	inalyzer - Swept SA 50 Ω AC 350000000 20.00 dBm	0 GHz PNO: Fast G	SENSE	Avg Run Avg l	ALIGN AUTO Type: Log-Pwr Hold:>100/100 Mk	4.0 ms (300	2 3 4 5 6 NNNNN 5 GHz dBm	Peak Search Next Per Next Pk Rig Next Pk Lu Marker De
Res BW 100	inalyzer - Swept SA 50 Ω AC <b>33500000000</b>	0 GHz PNO: Fast G	SENSE	Avg Run Avgli JB	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	2 3 4 5 6 NNNNN 5 GHz dBm	Peak Search Next Pea Next Pk Rig Next Pk Lo Marker De
Res         BW         100           sc         sc         sc           Keysight Spectrum A         FF           Narker 1 2.48         FF           0 dB/div         Ref	inalyzer - Swept SA 50 Ω AC 350000000 20.00 dBm	0 GHz PNO: Fast G	SENSE	Avg Run Avgli JB	ALIGN AUTO Type: Log-Pwr Hold:>100/100 Mk	4.0 ms (300	2 3 4 5 6 NNNNN 5 GHz dBm	Peak Search Next Per Next Pk Rig Next Pk Lo Marker De Mkr→0
Res BW 100	inalyzer - Swept SA 50 Ω AC 350000000 20.00 dBm	0 GHz PNO: Fast G	SENSE	Avg Run Avgli JB	ALIGN AUTO Type: Log-Pwr Hold:>100/100 Mk	4.0 ms (300	2 3 4 5 6 NNNNN 5 GHz dBm	Peak Search Next Per Next Pk Rig Next Pk Lo Marker De Mkr→0
Res         BW         100           sc         sc         sc           Keysight Spectrum A         FF           Narker 1 2.48         FF           0 dB/div         Ref	inalyzer - Swept SA 50 Ω AC 350000000 20.00 dBm	0 GHz PNO: Fast G	SENSE	Avg Run Avgli JB	ALIGN AUTO Type: Log-Pwr Hold:>100/100 Mk	4.0 ms (300	2 3 4 5 6 NNNNN 5 GHz dBm	Peak Search Next Per Next Pk Rig Next Pk Lo Marker De Mkr→0
Res         BW         100           sa         sa         sa           Sa         sa         sa <td>inalyzer - Swept SA 50 Ω AC 350000000 20.00 dBm</td> <td>0 GHz PNO: Fast G</td> <td>SENSE</td> <td>Avg Run Avgli JB</td> <td>ALIGN AUTO Type: Log-Pwr Hold:&gt;100/100 Mk</td> <td>4.0 ms (300</td> <td>2 3 4 5 6 NNNNN 5 GHz dBm</td> <td>Peak Search Next Pea Next Pk Rig Next Pk Lu Marker De Mkr-xef L Mo</td>	inalyzer - Swept SA 50 Ω AC 350000000 20.00 dBm	0 GHz PNO: Fast G	SENSE	Avg Run Avgli JB	ALIGN AUTO Type: Log-Pwr Hold:>100/100 Mk	4.0 ms (300	2 3 4 5 6 NNNNN 5 GHz dBm	Peak Search Next Pea Next Pk Rig Next Pk Lu Marker De Mkr-xef L Mo
Res BW 100           33           Seysight Spectrum A           Iarker 1 2.48           0 dB/div           0 dB/div <tr< td=""><td>analyzer - Swept SA 50 Ω AC 350000000 20.00 dBm</td><td>0 GHz PNO: Fast G</td><td>SENSE</td><td>Avg Run Avgli JB</td><td>ALIGN AUTO Type: Log-Pwr Hold:&gt;100/100</td><td>4.0 ms (300</td><td>23 4 5 5 5 N N N N N 5 GHz dBm -27 15 dBn</td><td>Peak Search Next Per Next Pk Rig Next Pk Lo Marker De Mkr→C</td></tr<>	analyzer - Swept SA 50 Ω AC 350000000 20.00 dBm	0 GHz PNO: Fast G	SENSE	Avg Run Avgli JB	ALIGN AUTO Type: Log-Pwr Hold:>100/100	4.0 ms (300	23 4 5 5 5 N N N N N 5 GHz dBm -27 15 dBn	Peak Search Next Per Next Pk Rig Next Pk Lo Marker De Mkr→C



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

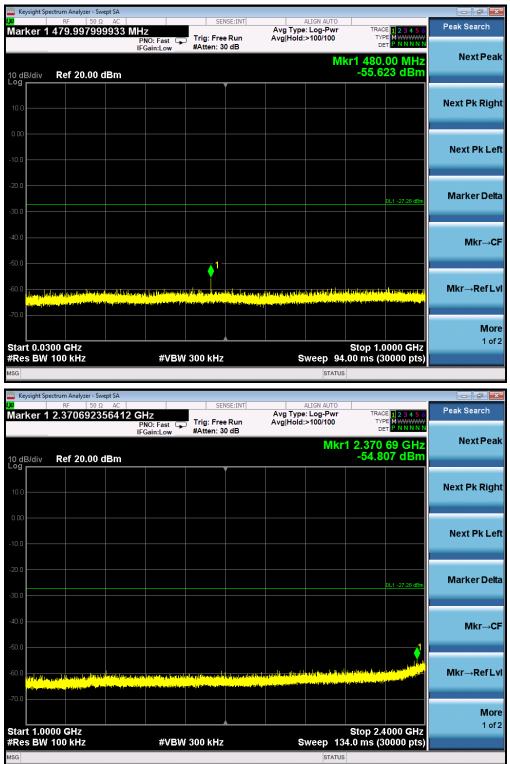


#### TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE

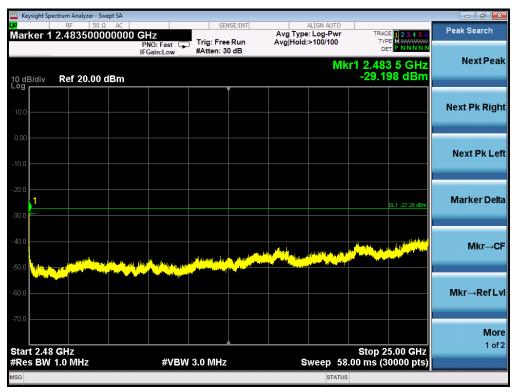
OF 802.11n20 FOR MODULATION IN MIDDLE CHANNEL

Keysight Spectrum A			0.51				
<sup>RF</sup> arker 1 895.	50 Ω AC 204173472	WHZ PNO:Fast ⊂			ALIGN AUTO : Log-Pwr :>100/100	TRACE 12345 TYPE MWWW DET PNNNN	N
dB/div <b>Ref</b>	20.00 dBm				Mkr	1 895.20 MH -54.116 dBn	z NextPea n
0.0							Next Pk Rig
.00							Next Pk Le
D.0 						DL1 -26.40 dB	m Marker De
D.O						1	Mkr→C
						weiter auf Antonio adar kine at synony fifer antonio at a state at a synony fifer	r Mkr→RefL
tart 0.0300 GI						Stop 1.0000 GH	<b>Mo</b> 1 o
Res BW 100 k	Hz	#VBW	/ 300 kHz	S	weep 94.0	0 ms (30000 pts	ē)

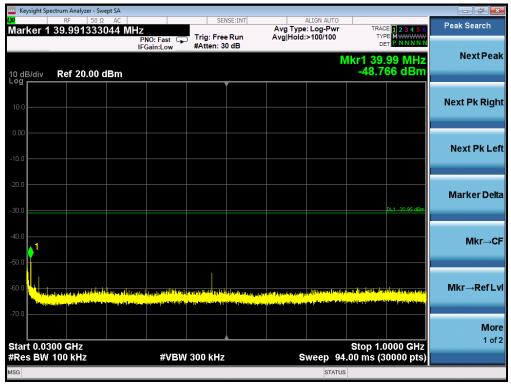
Keysight Sp	RF 5	0Ω AC		SEI	NSE:INT		ALIGN AUTO			
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										Next Dis Dire
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									1	IVIKI→C
50.0										
60.0				Level In			hanna fean adaile	والعطارة والمسأدن وال		Mkr→RefL
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										4 - 5
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			#VBW	/ 300 kHz		S	Sweep 13	4.0 ms (	.4000 GHz (30000 pts)	1 of
#Res BW	100 kHz		#VBW				STATUS	4.0 ms (	.4000 GHz (30000 pts)	
FRes BW	100 kHz	OΩ AC		SEI	VSE:INT	Avg Type	ALIGN AUTO	4.0 ms (	30000 pts)	
FRes BW	RF 5	0 Ω AC 96549885		SEI	NSE:INT	Avg Type	STATUS ALIGN AUTO	4.0 ms (	4000 GHz (30000 pts)	- 8
Res BW	RF 5	0 Ω AC 96549885	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type	ALIGN AUTO a: Log-Pwr :>100/100	14.0 ms ( TR TR T T T T T T T	ACE 123456 YPE MWWWW DET PNNNN 0555GHz	Peak Search
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#Res BW       ssg       Keysight Sp       Ø       Marker 1       0 dB/div       0 0       0.00       0.00       20.0	2 100 kHz	0 Ω AC 96549885	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type	ALIGN AUTO a: Log-Pwr :>100/100	14.0 ms ( TR TR T T T T T T T	ACE 123456 YPE MWWWW DET PNNNN 0555GHz	Peak Search Next Pea Next Pk Rigi
#Res BW       ssg       Keysight Sp       Ø       Marker 1       0 dB/div       0 0       0.00       0.00       20.0	2 100 kHz	0 Ω AC 96549885	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type	ALIGN AUTO a: Log-Pwr :>100/100	14.0 ms ( TR TR T T T T T T T	30000 pts)	Peak Search Next Pea Next Pk Rig
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Kes BW so Keysight Sp Aarker 1 Aarker 1 0 dB/div 0 00 0 00 0 00 0 00 0 00 0 00 0 00 0	2 100 kHz Ref 20.0	0 Ω AC 96549885 0 dBm	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type Avg Hold	STATUS	14.0 ms ( TR TR T T T T T T T	30000 pts)	Peak Search Next Pea Next Pk Rigi
Keysight Sp           Keysight Sp           Aarker 1           0 dB/div           0 0	2 100 kHz	0 Ω AC 96549885 0 dBm	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type Avg Hold	status align auto e: Log-Pwr :>100/100	14.0 ms (	30000 pts)	Peak Search Next Pea Next Pk Rigi Next Pk Le
fRes         BW           Iss         Iss           Keysight Sp         Iss           Aarker 1         Iss           0 dB/div         Iss           0 0 0         Iss <td< td=""><td>2 100 kHz Pectrum Analyzer RF 5 24.99545 Ref 20.0</td><td>0 Ω AC 96549885 0 dBm</td><td>GHz PNO: Fast G</td><td>) Trig: Free</td><td>NSE:INT</td><td>Avg Type Avg Hold</td><td>STATUS</td><td>14.0 ms (</td><td>30000 pts)</td><td>Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del</td></td<>	2 100 kHz Pectrum Analyzer RF 5 24.99545 Ref 20.0	0 Ω AC 96549885 0 dBm	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type Avg Hold	STATUS	14.0 ms (	30000 pts)	Peak Search Next Pea Next Pk Rig Next Pk Le Marker Del
fRes         BW           Iss         Iss           Keysight Sp         Iss           Aarker 1         Iss           0 dB/div         Iss           0 0 0         Iss <td< td=""><td>2 100 kHz Pectrum Analyzer RF 5 24.99545 Ref 20.0</td><td>0 Ω AC 96549885 0 dBm</td><td>GHz PNO: Fast G</td><td>) Trig: Free</td><td>NSE:INT</td><td>Avg Type Avg Hold</td><td>STATUS</td><td>14.0 ms (</td><td>30000 pts)</td><td>Peak Search Next Pea Next Pk Righ Next Pk Le Marker Def</td></td<>	2 100 kHz Pectrum Analyzer RF 5 24.99545 Ref 20.0	0 Ω AC 96549885 0 dBm	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type Avg Hold	STATUS	14.0 ms (	30000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Def
#Res         BW           Iss         Iss           Keysight Sp         Iss           Marker 1         Iss           0         dB/div           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           10         0	2 100 kHz Pectrum Analyzer RF 5 24.99545 Ref 20.0	0 Ω AC 96549885 0 dBm	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type Avg Hold	STATUS	14.0 ms (	30000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Def
Kess BW           SG           Keysight Sp           Aarker 1           Aarker 1           0 dB/div           9           10.0           30.0           40.0           50.0           50.0           50.0	2 100 kHz Pectrum Analyzer RF 5 24.99545 Ref 20.0	0 Ω AC 96549885 0 dBm	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type Avg Hold	STATUS	14.0 ms (	30000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Def Mkr→Ref L
Kess BW           SG           Keysight Sp           Aarker 1           Aarker 1           0 dB/div           0 0 0	2 100 kHz	0 Ω AC 96549885 0 dBm	GHz PNO: Fast G	) Trig: Free	NSE:INT	Avg Type Avg Hold	STATUS	14.0 ms (	30000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Del Mkr→C
Keysight Sp           Keysight Sp           Aarker 1           0 dB/div           0	2 100 kHz	0 Ω AC 96549885 0 dBm	CHZ PNO: Fast IF Gain:Low	) Trig: Free	VSE:INT	Avg Type Avg Hold	ALIGN AUTO E: Log-Pwr :>100/100 MKT	14.0 ms (	30000 pts)	Peak Search Next Pea Next Pk Righ Next Pk Le Marker Delt Mkr→Ref Li Mor 1 of



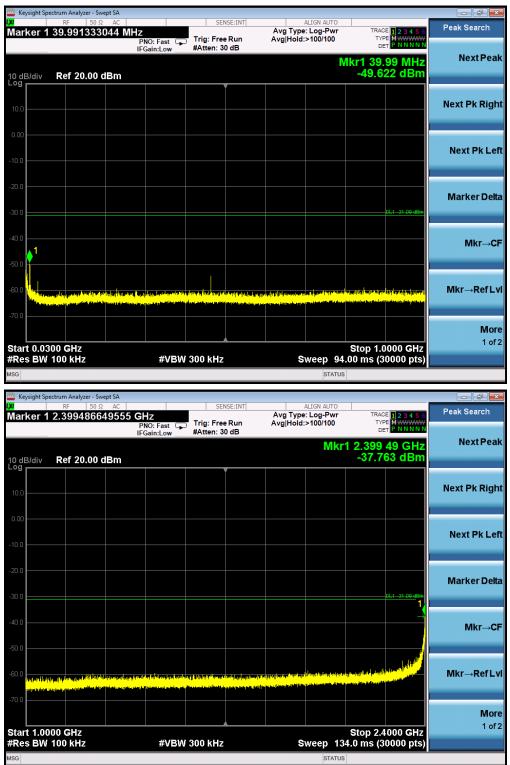
# TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11n20 FOR MODULATION IN HIGH CHANNEL



### TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 802.11n40 FOR MODULATION IN LOW CHANNEL



Keysight Sp	RF 50	Ω AC		CE1	NSE:INT		ALIGN AUTO	1		
Marker 1	2.394493		Hz			Avg Type	e: Log-Pwr	TRACI	<b>1 2 3 4 5</b> 6	Peak Search
		1	PNO:Fast 🕞 FGain:Low	Trig: Free #Atten: 3		Avg Hold	:>100/100			
							Mkr1	2.394	49 GHz	NextPea
0 dB/div og	Ref 20.00	dBm						-32.48	34 dBm	
.°g				) j	Í					
10.0										Next Pk Rig
0.00										
10.0										Next Pk Le
20.0										Marker Del
30.0									DL1 -30.95 d.	Marker Del
									Y	
40.0									<mark>/</mark>	Mkr→C
50.0										
60.0				the second second states	an all a shire			participation of the		Mkr→RefL
and the first of the second se		and the second	tin Detining a statistic	a program (trace), library	and the product of the	and a state of the state of the	a alla ang kenangan pangangan pangangan pangangan pangangan pangangan pangangan pangangan pangangan pangangan p Panganganganganganganganganganganganganga	<mark>a para dia minina dia ka</mark>		
70.0										
										Mo
				<u> </u>	<u> </u>		<u> </u>			1 of
Start 1.00			#\/B\A	( 300 kHz			ween 134	Stop 2.4	000 GHz	1 of
#Res BW	100 kHz	> saved	#VBW	V 300 kHz		S	weep 134	Stop 2.4 .0 ms (3	000 GHz 0000 pts)	1 of
Res BW		> saved	#VBW	√ 300 kHz		S	status	Stop 2.4 .0 ms (3	000 GHz 0000 pts)	
<b>¢Res BW</b> Isg ∰File	<b>100 kHz</b> <1_0039.png:		#VBW		NSE:INT		weep 134	.0 ms (3	0000 pts)	
File	<b>100 kHz</b> <1_0039.png:	Swept SA Ω AC <b>7924598</b>	GHz	SE	NSE:INT	Avg Type	status	.0 ms (3)	0000 pts)	
Res BW	<b>100 KHz</b> <1_0039.png: cectrum Analyzer - 3 RF 50	Swept SA Ω AC <b>7924598</b>		SE	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	.0 ms (30 TRACI	0000 pts)	Peak Search
Res BW sg DFile Keysight Sp Aarker 1	100 kHz <1_0039.png eectrum Analyzer - 1 RF 50 24.98423	Swept SA Ω AC   7924598	GHz PNO: Fast	) Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	.0 ms (3)	0000 pts)	Peak Search
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Res BW sg File Keysight Sp Marker 1 0 dB/div	100 kHz <1_0039.png eectrum Analyzer - 1 RF 50 24.98423	Swept SA Ω AC   7924598	GHz PNO: Fast	) Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	.0 ms (3)	0000 pts)	Peak Search Next Pea
Res BW	100 kHz <1_0039.png eectrum Analyzer - 1 RF 50 24.98423	Swept SA Ω AC   7924598	GHz PNO: Fast	) Trig: Free	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr :>100/100	.0 ms (3)	0000 pts)	Peak Search Next Pea
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Res         BW           sa         > File           Arker 1           10.0           30.0           40.0           50.0           40.0           50.0           40.0	100 kHz        <1_0039.png:	Swept SA Ω AC   7924598	GHz PNO: Fast	) Trig: Free	vse:int e Run 0 dB	Avg Type Avg Hold	sweep         134           status	.0 ms (30	0000 pts)	Peak Search Next Pea Next Pk Rigi Next Pk Le Marker Del Mkr→C
Res         BW           SG         File           SG         File           Iarker 1           Iarker 1           0 </td <td><pre>100 kHz &lt;1_0039.png: cectrum Analyzer - &gt;</pre></td> <td>Swept SA Ω AC   7924598</td> <td>GHz PNO: Fast</td> <td>) Trig: Free</td> <td>vse:int e Run 0 dB</td> <td>Avg Type Avg Hold</td> <td>align AUTO           align AUTO           e: Log-Pwr           &gt;100/100</td> <td>.0 ms (30</td> <td>0000 pts)</td> <td>Peak Search Next Pea Next Pk Rigi Next Pk Le Marker Del Mkr→C</td>	<pre>100 kHz &lt;1_0039.png: cectrum Analyzer - &gt;</pre>	Swept SA Ω AC   7924598	GHz PNO: Fast	) Trig: Free	vse:int e Run 0 dB	Avg Type Avg Hold	align AUTO           align AUTO           e: Log-Pwr           >100/100	.0 ms (30	0000 pts)	Peak Search Next Pea Next Pk Rigi Next Pk Le Marker Del Mkr→C
Res         BW           SG         File           Keysight Sp         Marker 1           Aarker 1         Marker 1           0         0	100 kHz     <1_0039.png: <ul> <li>(1_0039.png:)</li> <li>(1_0498423)</li> <li>(1_24.98423)</li> </ul>	Swept SA Ω AC   7924598	GHZ PNO: Fast FGain:Low	) Trig: Free	vse:int e Run 0 dB	Avg Type Avg Hold	sweep         134           status	.0 ms (30	0000 pts)	



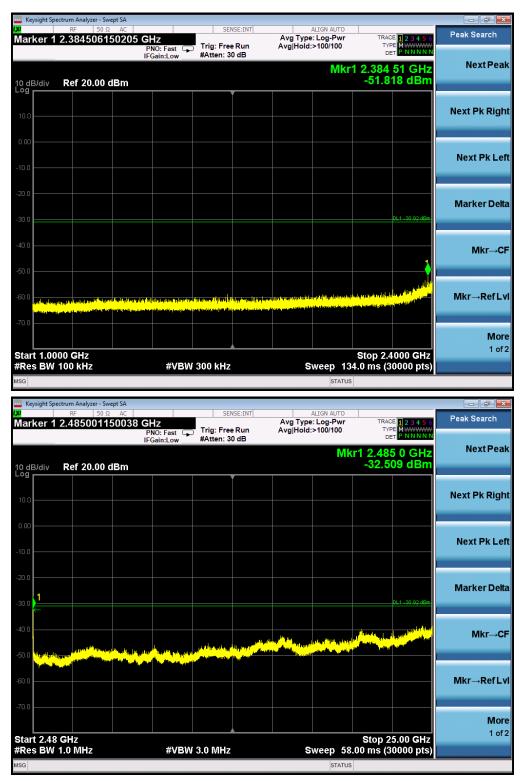
# TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11n40 FOR MODULATION IN MIDDLE CHANNEL



## TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE

OF 802.11n40 FOR MODULATION IN HIGH CHANNEL

		ALIGN AUTO		ENSE:INT	SE		alyzer - Swept SA 50 Ω AC	rsight Spectrum / RF
Peak Search	TRACE <b>1 2 3 4 5 6</b> TYPE <b>M</b> DET <b>P N N N N</b>	e: Log-Pwr :>100/100			Trig: Fre #Atten: 3	PNO: Fast G	23667456 MI	ker 1 40.0
NextPea	kr1 40.02 MHz -50.414 dBm	Μ					20.00 dBm	3/div <b>Re</b> f
Next Pk Rig								
Next Pk Lo								
Marker De	DL1 -30.92 dBm							
Mkr→C								<u>1</u>
Mkr→RefL	arya yan kizali ya yaza dalah ya kata ya zanyi yanang. Na kiza anya na manang ka katana may miyan kaga						a fa se a	
<b>Mo</b> 1 o	Stop 1.0000 GHz							t 0.0300 G
	00 ms (30000 pts)	status	8	2	/ 300 kHz	#VBW		5 BW 100



Note: The 100kHz RBW used in the conducted spurious test from 2.4835GHz to 25GHz may result in long measuring times, To avoid such long measuring times, the 1MHz RBW can be used for pre-test. If the emission level exceeded the limit at one or more frequencies, the 100kHz RBW would be used for final test at the special frequency.

## **10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY**

## **10.1 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 PKPSD in the KDB 558074 item 10.2 was used in this testing.

### **10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)**

Refer To Section 8.2.

### **10.3 MEASUREMENT EQUIPMENT USED**

Refer To Section 6.

### **10.4 LIMITS AND MEASUREMENT RESULT**

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

Channel No.	PSD (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	-1.742	8	Pass
Middle Channel	-0.550	8	Pass
High Channel	-1.371	8	Pass

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

Channel No.	PSD (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	-8.961	8	Pass
Middle Channel	-6.673	8	Pass
High Channel	-8.268	8	Pass

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

Channel No.	PSD (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	-7.164	8	Pass
Middle Channel	-6.587	8	Pass
High Channel	-7.355	8	Pass

TEST ITEM	POWER PECTRAL DENSITY
TEST MODE	802.11n 40 with data rate 6.5

Channel No.	PSD (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	-8.992	8	Pass
Middle Channel	-8.176	8	Pass
High Channel	-8.734	8	Pass



## 802.11b TEST RESULT TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

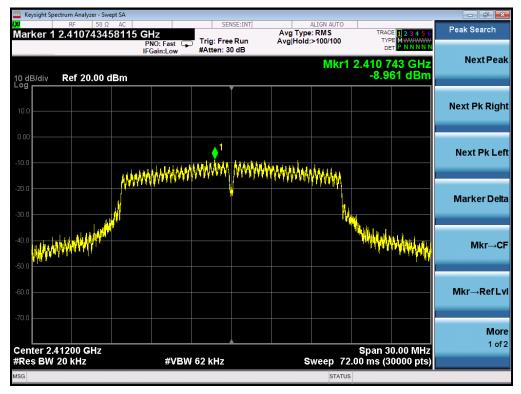


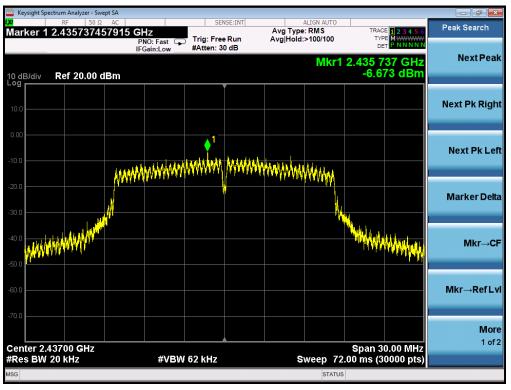


TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

## 802.11g TEST RESULT

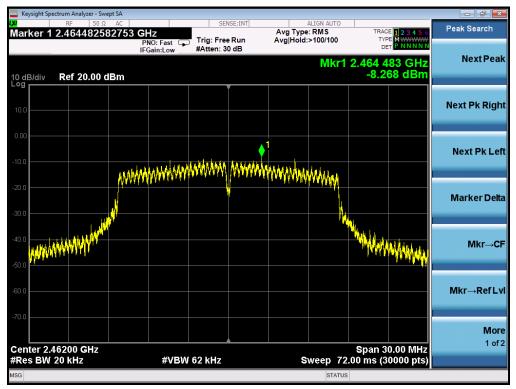
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

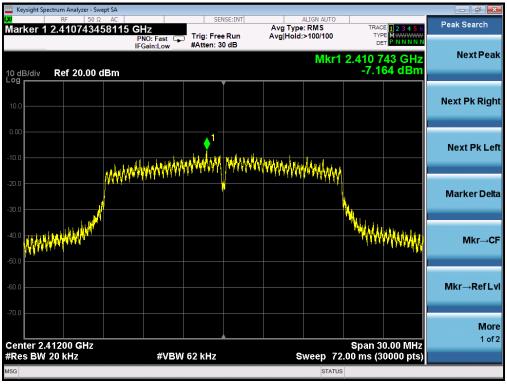




TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

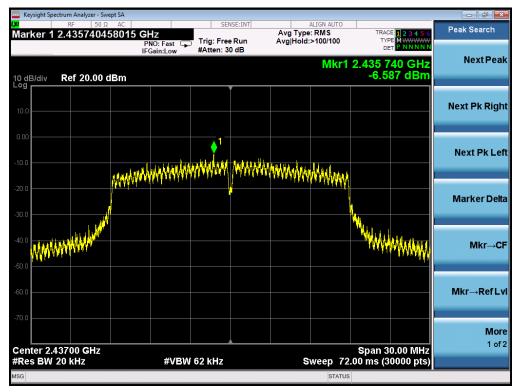
### TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

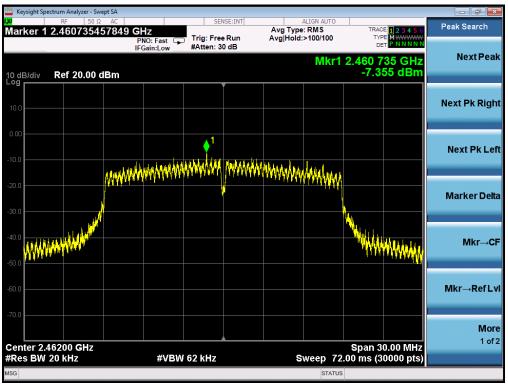




## 802.11n 20 TEST RESULT TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

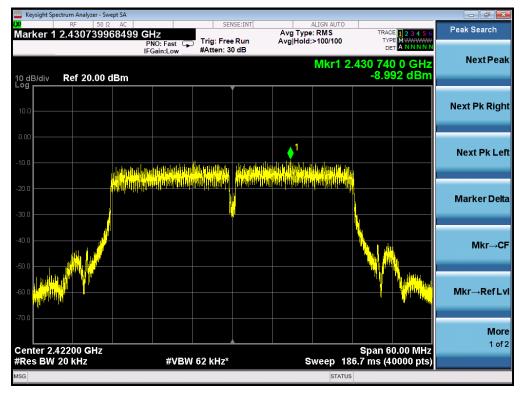


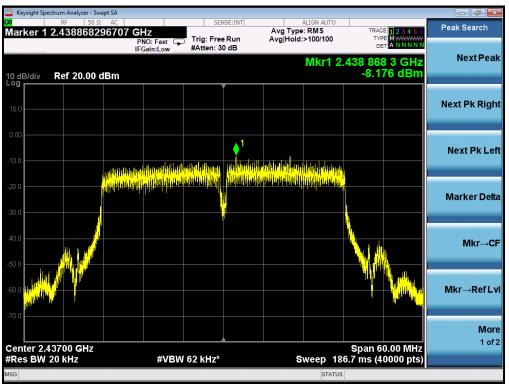


TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

### 802.11n 40 TEST RESULT

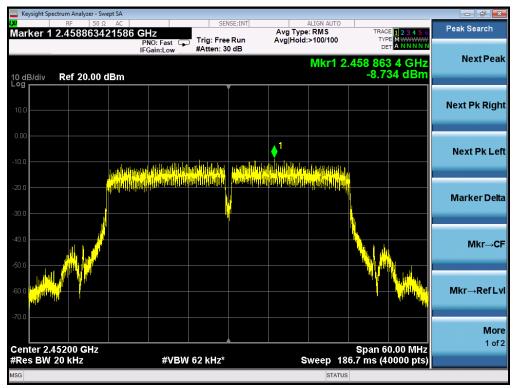
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL





## TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

### TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



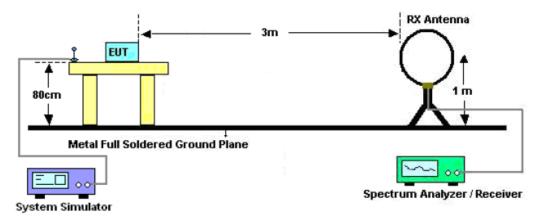
# **11. RADIATED EMISSION**

## **11.1. MEASUREMENT PROCEDURE**

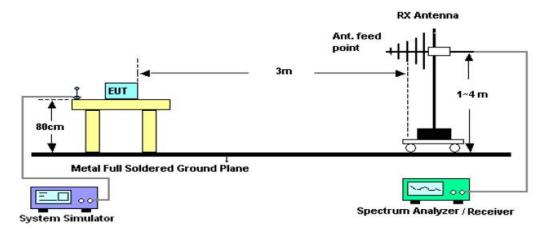
- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated 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 VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer. 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.

### 11.2. TEST SETUP

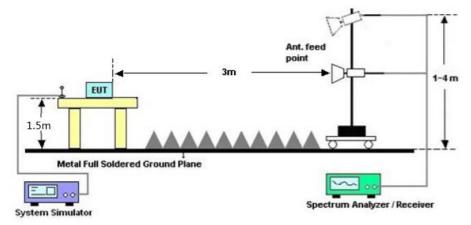
Radiated Emission Test-Setup Frequency Below 30MHz



### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



## RADIATED EMISSION TEST SETUP ABOVE 1000MHz



### **11.3. 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.

## 11.4. TEST RESULT

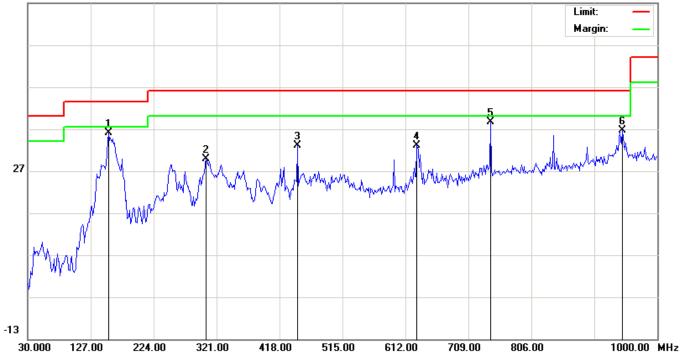
### **RADIATED EMISSION BELOW 30MHZ**

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

### **RADIATED EMISSION BELOW 1GHZ**

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal

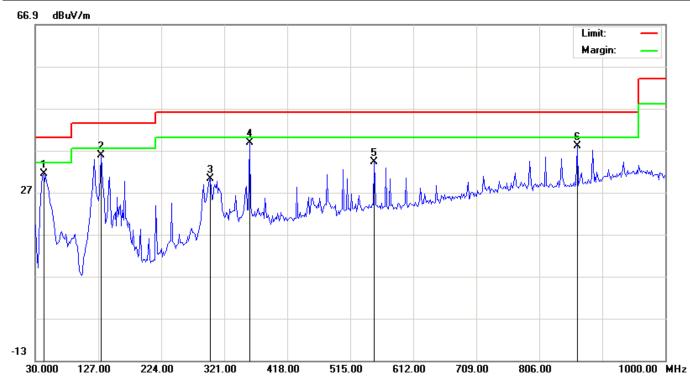
66.9 dBuV/m



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		154.4833	20.69	15.29	35.98	43.50	-7.52	peak			
2		304.8333	14.08	15.73	29.81	46.00	-16.19	peak			
3		445.4832	12.46	20.45	32.91	46.00	-13.09	peak			
4		629.7833	9.56	23.40	32.96	46.00	-13.04	peak			
5	*	742.9500	12.27	26.43	38.70	46.00	-7.30	peak			
6		946.6499	6.75	29.91	36.66	46.00	-9.34	peak			

### **RESULT: PASS**

EUT	Eufy Genie	Model Name	T1240
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		42.9333	22.67	8.71	31.38	40.00	-8.62	peak			
2		131.8499	24.09	11.80	35.89	43.50	-7.61	peak			
3		299.9832	14.84	15.41	30.25	46.00	-15.75	peak			
4	*	359.8000	19.94	18.80	38.74	46.00	-7.26	peak			
5		552.1833	11.67	22.49	34.16	46.00	-11.84	peak			
6		864.2000	10.28	27.68	37.96	46.00	-8.04	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 ABOVE 1GHZ**

EUT	Eufy Genie	Model Name	T1240
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 rype
4824.026	48.69	3.72	52.41	74	-21.59	peak
4824.038	43.15	3.72	46.87	54	-7.13	AVG
7236.069	42.32	8.15	50.47	74	-23.53	peak
7236.038	36.07	8.15	44.22	54	-9.78	AVG
Remark:	•		•		•	•
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Eufy Genie	Model Name	T1240
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 Type
4824.087	47.85	3.72	51.57	74	-22.43	peak
4824.056	42.36	3.72	46.08	54	-7.92	AVG
7236.094	41.84	8.15	49.99	74	-24.01	peak
7236.072	35.16	8.15	43.31	54	-10.69	AVG
Remark:						
actor = Ante	enna Factor + Ca	able Loss – I	Pre-amplifier.			

## Report No.: AGC05915170507FE04 Page 57 of 89

EUT	Eufy Genie	Model Name	T1240
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 Type
4874.023	46.42	3.75	50.17	74	-23.83	peak
4874.020	41.02	3.75	44.77	54	-9.23	AVG
7311.060	40.98	8.16	49.14	74	-24.86	peak
7311.053	35.47	8.16	43.63	54	-10.37	AVG
Remark:						
-actor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Eufy Genie	Model Name	T1240
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
4874.060	45.34	3.75	49.09	74	-24.91	peak
4874.084	40.04	3.75	43.79	54	-10.21	AVG
7311.094	41.25	8.16	49.41	74	-24.59	peak
7311.026	36.01	8.16	44.17	54	-9.83	AVG
Bomork						
Remark:						
-actor = Ante	enna Factor + Ca	able Loss – F	Pre-amplifier.			

#### Report No.: AGC05915170507FE04 Page 58 of 89

EUT	Eufy Genie	Model Name	T1240
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 i ype
4924.066	48.54	3.81	52.35	74	-21.65	peak
4924.064	43.05	3.81	46.86	54	-7.14	AVG
7386.054	41.57	8.19	49.76	74	-24.24	peak
7386.077	36.29	8.19	44.48	54	-9.52	AVG
Remark:						
actor = Ante	enna Factor + Ca	able Loss – F	Pre-amplifier.			

EUT	Eufy Genie	Model Name	T1240
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
4924.037	47.33	3.81	51.14	74	-22.86	peak
4924.076	42.04	3.81	45.85	54	-8.15	AVG
7386.051	41.22	8.19	49.41	74	-24.59	peak
7386.037	35.48	8.19	43.67	54	-10.33	AVG
Remark:						
-actor = Ante	enna Factor + Ca	able Loss – F	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.

# **12. BAND EDGE EMISSION**

## **12.1. 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

### 12.2. TEST SET-UP

same as 11.2

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( $\mu$ V) to represent the Amplitude. Use the F dB( $\mu$ V/m) to represent the Field Strength. So A=F.

### 12.3. TEST RESULT

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Horizontal





larker 1 2.4129	42942943 GHz PNO: Fast IFGain:Low		Avg Type: RMS Avg Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN	Peak Search
0 dB/div Ref 11	5.99 dBµV		Mkr	1 2.412 94 GHz 101.389 dBµV	Next Pea
<b>og</b> 106 36.0					Next Pk Rig
56.0 56.0 56.0					Next Pk L
46.0 66.0 26.0		2			Marker De
tart 2.37000 GH2 Res BW 1.0 MHz	#V ×			Stop 2.42500 GHz .066 ms (1000 pts)	Mkr→(
1 N 1 f 2 N 1 f 3 4 5 6	2.412 94 GHz 2.390 00 GHz	101.379 dBµV 38.882 dBµV		±	Mkr→RefL
7					Mo

ΡK

#### Report No.: AGC05915170507FE04 Page 61 of 89

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Vertical







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EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Horizontal







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#### Report No.: AGC05915170507FE04 Page 63 of 89

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Vertical



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#### Report No.: AGC05915170507FE04 Page 64 of 89

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Horizontal







#### Report No.: AGC05915170507FE04 Page 65 of 89

EUT	Eufy Genie	Model Name	T1240
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

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EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Horizontal







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### Report No.: AGC05915170507FE04 Page 67 of 89

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Vertical



ΡK

	RF 50 Q AC 46096096096 4	I GHz PNO: Fast IFGain:Low	Trig: Free Run #Atten: 20 dB	Avg	ALIGN AUTO Type: RMS Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN	Peak Search
0 dB/div R	ef 115.99 dBµ\	,			Mkr	1 2.460 96 GHz 91.648 dBµV	Next Pea
106 96.0 86.0	1						Next Pk Rig
76.0 66.0							Next Pk Le
46.0 36.0 26.0					¢ <sup>2</sup>		Marker De
Res BW 1.0			W 3.0 MHz*	FUNCTION	Sweep 1.	Stop 2.50000 GHz 066 ms (1000 pts)	Mkr→C
1 N 1 2 2 N 1 3 4 5 6	f 2.4 f 2.4	60 96 GHz 83 50 GHz	91.620 dBµV 45.300 dBµV			E	Mkr→RefL
0 7 8 9 0							<b>M</b> a 1 o
			m			F	

#### Report No.: AGC05915170507FE04 Page 68 of 89

EUT	Eufy Genie	Model Name	T1240		
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		
PK					





Keysight Spectrum Analyzer - Swept SA			
Marker 1 2.412832832833	GHz SENSE:INT	ALIGN AUTO Avg Type: RMS TRA	CE 1 2 3 4 5 6 Peak Search
	PNO: Fast Free Run IFGain:Low #Atten: 20 dB		
		Mkr1 2.412	83 GHz Next Peak
10 dB/div Ref 115.99 dBµV		33.11	4 abpv
106		1	Next Pk Right
96.0			Next 1 K Right
86.0			
76.0			Next Pk Left
66.0			Next PR Lett
56.0	- Alexandre		
46.0			Marker Delta
26.0			Marker Della
Start 2.37000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz*	Stop 2.4 Sweep 1.066 ms	2500 GHz (1000 pts) Mkr→CF
MKRI MODELTRCI SCLI X	#VBW 3.0 MHZ		
1 N 1 f 2.41	12 83 GHz 93.179 dBµV	FUNCTION FUNCTION WIDTH FUNCT	
2 N 1 f 2.39	90 00 GHz 48.588 dBµV		Mkr→RefLvl
4 5			
6			
8			More
10			1 of 2
	III		
MSG		STATUS	

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EUT	Eufy Genie	Model Name	T1240
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







#### Report No.: AGC05915170507FE04 Page 70 of 89

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20with data rate 6.5 2462MHZ	Antenna	Horizontal







### Report No.: AGC05915170507FE04 Page 71 of 89

EUT	Eufy Genie	Model Name	T1240
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



AV

		962963 GH2	: Fast In:Low #Atten: 20	Avg T Run Avg H	ALIGN AUTO ype: RMS old:>100/100	TRACE 12 TYPE A W DET A N	
0 dB/div	Ref 115.9	99 dBµV			Mkr	1 2.462 96 90.511 d	
- <b>og</b> 106 96.0		1					Next Pk Rig
76.0 66.0 56.0					2		Next Pk Le
46.0 36.0 26.0							Marker Del
tart 2.45 Res BW	1.0 MHz	X	#VBW 3.0 MHz*		Sweep 1	Stop 2.50000 .066 ms (1000	0 pts) Mkr→C
1 N 1 2 N 1 3 4 5 6	f	2.462 96 2.483 50					Mkr→RefL
7 8 9 0							<b>Mo</b> 1 o
sg			m		STATUS		+

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#### Report No.: AGC05915170507FE04 Page 72 of 89

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 6.5 2422MHZ	Antenna	Horizontal





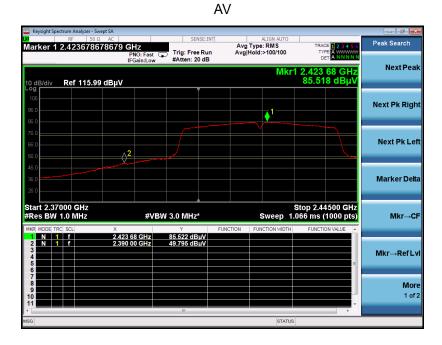


#### Report No.: AGC05915170507FE04 Page 73 of 89

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 6.5 2422MHZ	Antenna	Vertical







ΡK

#### Report No.: AGC05915170507FE04 Page 74 of 89

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40with data rate 6.5 2452MHZ	Antenna	Horizontal

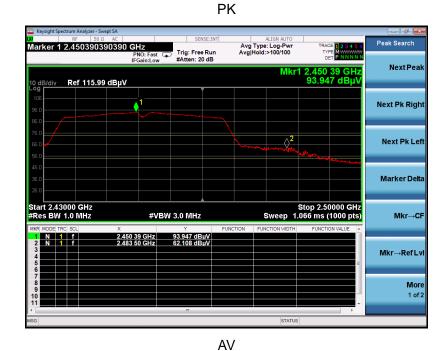


larker 1 2.4500	50 Ω AC 40040040 GHz PNO: Fast IFGain:Loo	Trig: Free Run #Atten: 20 dB	ALIGN AUTO Avg Type: RMS Avg Hold:>100/100	TRACE 123456 TYPE A WWWW DET A N N N N N	Peak Search
0 dB/div Ref 11	5.99 dBµV		Mk	r1 2.450 04 GHz 87.131 dBµV	Next Pe
og 106 96.0	1				Next Pk Rig
76.0 56.0			¢ <sup>z</sup>		Next Pk L
46.0 36.0 26.0					Marker De
tart 2.43000 GH Res BW 1.0 MHz	#\ ×		Sweep	Stop 2.50000 GHz 1.066 ms (1000 pts)	Mkr→(
1         N         1         f           2         N         1         f           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -         -	2.450 04 GHz 2.483 50 GHz	87.136 dBµV 50.882 dBµV			Mkr→RefL
7					Ma

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#### Report No.: AGC05915170507FE04 Page 75 of 89

EUT	Eufy Genie	Model Name	T1240
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 6.5 2452MHZ	Antenna	Vertical





**RESULT: PASS** 

# **13. FCC LINE CONDUCTED EMISSION TEST**

## **13.1. LIMITS OF LINE CONDUCTED EMISSION TEST**

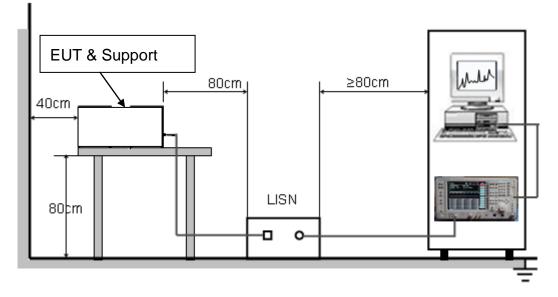
Frequency	Maximum RF Line Voltage							
Frequency	Q.P.( dBuV)	Average( dBuV)						
150kHz~500kHz	66-56	56-46						
500kHz~5MHz	56	46						
5MHz~30MHz	60	50						

Note:

1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

## 13.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



## 13.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

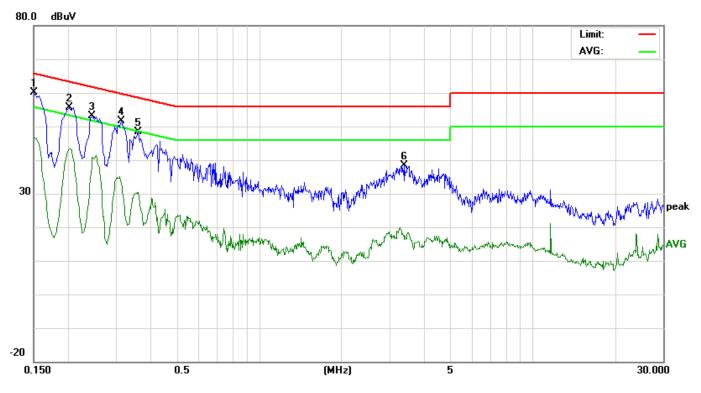
- The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipments received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received 120V/60Hzpower by a LISN..
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

### 13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.

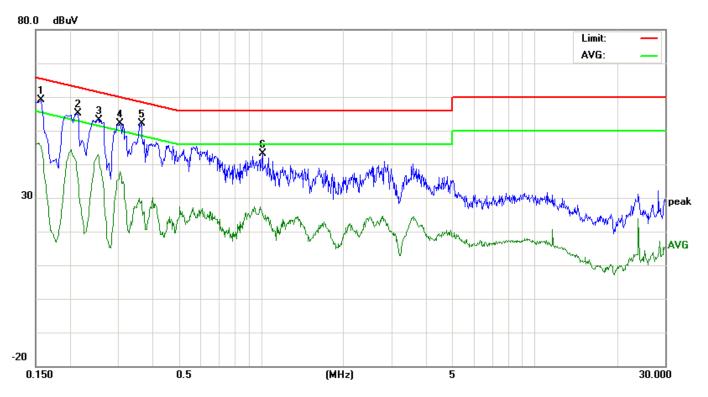
### 13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST



Line Conducted Emission Test Line 1-L

	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1499	49.94		36.55	10.16	60.10		46.71	66.00	56.00	-5.90	-9.29	Р	
2	0.2020	45.51		33.17	10.22	55.73		43.39	63.52	53.52	-7.79	-10.13	Р	
3	0.2459	42.76		30.52	10.27	53.03		40.79	61.89	51.89	-8.86	-11.10	Р	
4	0.3140	41.33		22.52	10.30	51.63		32.82	59.86	49.86	-8.23	-17.04	Р	
5	0.3619	38.09		20.04	10.31	48.40		30.35	58.68	48.68	-10.28	-18.33	Р	
6	3.3940	27.96		7.20	10.52	38.48		17.72	56.00	46.00	-17.52	-28.28	Р	

#### **RESULT: PASS**



## Line Conducted Emission Test Line 2-N

	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1580	48.98		34.63	10.17	59.15		44.80	65.56	55.56	-6.41	-10.76	Р	
2	0.2140	44.78		25.07	10.23	55.01		35.30	63.04	53.04	-8.03	-17.74	Р	
3	0.2548	42.92		31.96	10.27	53.19		42.23	61.60	51.60	-8.41	-9.37	Р	
4	0.3060	41.75		27.62	10.29	52.04		37.91	60.08	50.08	-8.04	-12.17	Р	
5	0.3660	41.92		18.74	10.32	52.24		29.06	58.59	48.59	-6.35	-19.53	Р	
6	1.0140	32.80		14.90	10.37	43.17		25.27	56.00	46.00	-12.83	-20.73	Р	

### **RESULT: PASS**

# APPENDIX A: PHOTOGRAPHS OF TEST SETUP FCC LINE CONDUCTED EMISSION TEST SETUP



FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ

