

Report No.: FR911110E



# **FCC RADIO TEST REPORT**

FCC ID : UZ7CC600

Equipment : Customer Concierge

Brand Name : ZEBRA Model name : CC600

Applicant : Zebra Technologies Corporation

1 Zebra Plaza, Holtsville, NY 11742

Manufacturer : Zebra Technologies Corporation

1 Zebra Plaza, Holtsville, NY 11742

Standard : FCC Part 15 SUBPART E §15.407

The product was received on Jan. 11, 2019 and testing was started from Feb. 21, 2019 and completed on Apr. 23, 2019. We, SPORTON INTERNATIONAL INC., EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Jones Tsai

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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Report Template No.: BU5-FR15EWLB4 AC MA Version 2.4

# History of this test report

Report No. : FR911110E

Report No.	Version	Description	Issued Date
FR911110E	01	Initial issue of report	Apr. 29, 2019

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## **Summary of Test Result**

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403 (i)	6dB & 26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407 (a)	Maximum Conducted Output Power	Pass	-
3.3	15.407 (a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	Under limit 3.06 dB at 11510.000 MHz
3.5	15.207	AC Conducted Emission	Pass	Under limit 6.51 dB at 0.5685 MHz
3.6	15.407 (c)	Automatically Discontinue Transmission	Pass	-
3.7	15.203 & 15.407 (a)	Antenna Requirement	Pass	-

### Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

### Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang

Report Producer: Natasha Hsieh

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# 1 General Description

# 1.1 Product Feature of Equipment Under Test

	Product Feature
Equipment	Customer Concierge
Brand Name	ZEBRA
Model Name	CC600
FCC ID	UZ7CC600
EUT supports Radios application	WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	DV
SW Version	01-15-15.00.OG-U00-PRD
FW Version	FUSION_QA_2_1.4.0.002_O
MFD	17JAN19
EUT Stage	Engineering Sample

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**Remark:** The above EUT's information was declared by manufacturer.

Specification of Accessories					
AC Adaptor Brand Name ZEBRA Part Number PWR-BUA5V16W0W				PWR-BUA5V16W0WW	
DC Cable	Brand Name	ZEBRA	Part Number	CBL-DC-383A1-01	
AC Cable	Brand Name	ZEBRA	Part Number	50-16000-182R	

Support Unit Used in Test Configuration and System				
POE	Brand Name	Microsemi	Part Number	PD-9501GR/AC

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# 1.2 Product Specification of Equipment Under Test

Standa	ards-related Product Specification
Tx/Rx Channel Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power to Antenna <cdd modes=""></cdd>	
Maximum Output Power <txbf modes=""></txbf>	802.11ac VHT40. 23.82 dBm / 0.2270 W  MIMO <ant. +="" 1="" 2=""> 802.11ac VHT20: 22.06 dBm / 0.1607 W 802.11ac VHT40: 22.61 dBm / 0.1824 W 802.11ac VHT80: 22.31 dBm / 0.1702 W</ant.>
99% Occupied Bandwidth <cdd modes=""></cdd>	<b>Ant. 1&gt;</b> 802.11a: 16.95 MHz 802.11n HT20: 18.05 MHz 802.11n HT40: 37.20 MHz 802.11ac VHT80: 77.16 MHz <b>Ant. 2&gt;</b> 802.11a: 17.25 MHz 802.11n HT20: 18.10 MHz 802.11n HT40: 36.80 MHz 802.11ac VHT80: 76.92 MHz <b>MIMO <ant. 1=""></ant.></b> 802.11a: 17.10 MHz 802.11a: 17.10 MHz 802.11n HT20: 20.75 MHz 802.11n HT40: 36.70 MHz 802.11ac VHT80: 77.28 MHz <b>MIMO <ant. 2=""></ant.></b> 802.11a: 16.90 MHz 802.11a: 16.90 MHz 802.11n HT20: 19.20 MHz 802.11n HT40: 37.00 MHz 802.11n HT40: 37.00 MHz 802.11ac VHT80: 76.80 MHz

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Standards-related Product Specification					
	1	10 <ant. 1=""></ant.>			
	802	.11ac VHT20 : 17.9	93 MHz		
	802	.11ac VHT40 : 36.5	56 MHz		
99% Occupied Bandwidth	802	.11ac VHT80 : 77.0	08 MHz		
<txbf modes=""></txbf>	MIN	/IO <ant. 2=""></ant.>			
	802	.11ac VHT20 : 17.8	33 MHz		
		.11ac VHT40 : 36.4	16 MHz		
802.11ac VHT80 : 76.84 MHz					
Antenna Gain / Gain	Ant. 1: PIFA Antenna with gain 2.40 dBi				
Antenna Gam / Gam	Ant. 2: PIFA Antenna with gain 4.40 dBi				
Type of Modulation	802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)				
Type of Modulation	802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)				(MA
			Ant. 1	Ant. 2	1
		802.11 a/n/ac	V	V	
Antonno Function Deceription		802.11 a/n/ac	V	V	
Antenna Function Description		MIMO	V	V	
		802.11ac	V	V	
		TXBF	V	V	

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Note: MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.

### 1.3 Modification of EUT

No modifications are made to the EUT during all test items.

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## 1.4 Testing Location

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978			
Test Site No.	Sporton	Site No.		
rest site No.	TH05-HY	CO05-HY		

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**Note:** The test site complies with ANSI C63.4 2014 requirement.

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No.
rest site NO.	03CH15-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW1190 and TW0007

## 1.5 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- + ANSI C63.10-2013

#### Remark:

- 1. All test items were verified and recorded according to the standards and without any deviation during the test.
- 2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

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## 2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane for Ant. 2 and MIMO Ant. 1+2, Y plane for Ant. 1) were recorded in this report.

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b. AC power line Conducted Emission was tested under maximum output power.

### 2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
	149	5745	157	5785
5725-5850 MHz Band 4 (U-NII-3)	151*	5755	159*	5795
	153	5765	161	5805
(3 : 111 0)	155#	5775	165	5825

#### Note:

- 1. The above Frequency and Channel in "\*" were 802.11n HT40 and 802.11ac VHT40.
- 2. The above Frequency and Channel in "#" were 802.11ac VHT80.

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## 2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

### **Single Mode**

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20 (Covered by HT20)	MCS0
802.11ac VHT40 (Covered by HT40)	MCS0
802.11ac VHT80	MCS0

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### **MIMO Mode**

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20 (Covered by HT20)	MCS0
802.11ac VHT40 (Covered by HT40)	MCS0
802.11ac VHT80	MCS0

### **TXBF Mode**

Modulation	Data Rate
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

	Test Cases
AC	Made 4 - WI AN (COLL) Link with VOID - Divisionth Link - VOID - LICE Date Link
Conducted	Mode 1: WLAN (5GHz) Link with VOIP + Bluetooth Link + VOIP + USB Data Link
Conducted	with Notebook (Notebook to SD Card) + POE + LAN Load with Notebook
Emission	, ,
Remark: Da	ta Link with Notebook means data application transferred mode between EUT and
No	etebook.

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### <CDD Mode>

	Ch #	Band IV: 5725-5850 MHz									
	Ch. #	802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80						
L	Low	149	149	151	-						
М	Middle	157	157	-	155						
Н	High	165	165	159	-						

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### <TXBF Mode>

	Ch #	Band IV : 5725-5850 MHz									
	Ch. #	802.11a	802.11ac VHT20	802.11ac VHT40	802.11ac VHT80						
L	Low	149	149	151	-						
М	Middle	157	157	-	155						
Н	High	165	165	159	-						

### <CDD Mode>

### <Ant. 1>

	802.11a RF Output Power (dBm)											
	Power vs. C	hannel			Powe	er vs D	ata Rat	:e				
Okamal	Frequency	Data Rate (bps)	ah ann al	Data Rate (bps)								
Channel	(MHz)	6M	channel	9M	12M	18M	24M	36M	48M	54M		
CH 149	5745	20.30										
CH 157	5785	21.00	CH 165	21.10	21.00	21.00	20.90	20.80	20.90	20.90		
CH 165	5825	21.20										

		802.11r	HT20 RF	Output	Power (	dBm)						
	Power vs. Channel			ower vs. Channel Power vs Data Rate								
Channal	Frequency	MCS Index	ahannal	MCS Inc				ex				
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7		
CH 149	5745	20.80										
CH 157	5785	20.30	CH 149	CH 149	20.70	20.60	20.60	20.50	20.40	20.50	20.40	
CH 165	5825	20.60										

		802.11r	HT40 RF	Output	Power (	dBm)						
	Power vs. Channel			nannel Power vs Data Rate								
Okamal	Frequency	MCS Index		MCS Index								
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7		
CH 151	5755	20.80	CLL454	20.70	20.70	20.00	20.70	20.50	20.40	20.40		
CH 159	5795	20.60	CH 151	20.70	20.70	20.60	20.70	20.50	20.40	20.40		

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		802.1	lac VHT20	RF Ou	itput Po	ower (d	Bm)				
F	Power vs. Cha	ver vs. Channel Power vs Data Rate									
Channal	Frequency	MCS Index	ahannal	MCS Index							
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
CH 149	5745	20.70									
CH 157	5785	20.20	CH 149	20.60	20.60	20.50	20.40	20.30	20.40	20.20	20.20
CH 165	5825	20.50									

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		802.11ac VHT40 RF Output Power (dBm)											
Р	ower vs. Cha		Power vs Data Rate										
Channel	Frequency	MCS Index	MCS Index										
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9	
CH 151	5755	20.70	CLL4E4	20.00	20.00	20.50	20.40	20.50	20.20	20.00	20.20	20.00	
CH 159	5795	20.50	CH 151	20.60	20.60	20.50	20.40	20.50	20.30	20.20	20.30	20.20	

	802.11ac VHT80 RF Output Power (dBm)											
Р	ower vs. Cha	nnel		Power vs Data Rate								
Channal	Frequency	MCS Index	MCS Index									
Channel	(MHz)	MCS0	cnannei	MCS1 MCS2 MCS3 MCS4 MCS5 MCS6 MCS7 MCS8 MCS9						MCS9		
CH155	5775	21.00	CH155	CH155 20.90 20.90 20.80 20.80 20.60 20.80 20.70 20.70 20.60						20.60		

### <Ant. 2>

	802.11a RF Output Power (dBm)												
	Power vs. C	hannel			Powe	er vs D	ata Rat	e					
Ohamal	ah ann al			Data	Rate (	bps)							
Channel	(MHz)	6M	channel	9M	12M	18M	24M	36M	48M	54M			
CH 149	5745	20.40											
CH 157	5785	21.00	CH 157	20.80	20.90	20.80	20.80	20.70	20.70	20.60			
CH 165	5825	20.60											

		802.11r	HT20 RF	Output	Power (	dBm)				
	Power vs. Char	nnel			Pov	ver vs D	ata Rat	е		
Channal	Frequency	MCS Index	ahannal			M	CS Inde	ex		
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 149	5745	20.70								
CH 157	5785	20.80	CH 157	20.70	20.70	20.60	20.50	20.60	20.40	20.30
CH 165	5825	20.40								

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		802.11r	HT40 RF	Output	Power (	dBm)						
	Power vs. Char	nnel			Pov	ver vs D	ata Rat	е				
Channel	Frequency	MCS Index	Index channel MCS Index					ex				
Channel	(MHz)	MCS0	channel MCS1 MCS2 MCS3 MCS4 MCS5 MCS6				MCS7					
CH 151	5755	20.90	CLIAEO	04.00	20.00	04.00	20.00	20.00	20.70	20.00		
CH 159	5795	21.10	CH 159	21.00	20.90	21.00	20.80	20.90	20.70	20.60		

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		802.1	ac VHT20	RF Οι	itput Po	ower (d	Bm)				
P	Power vs. Cha	nnel			ı	Power v	s Data	Rate			
Ob ann al	Frequency	MCS Index	-1				MCS	Index			
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
CH 149	5745	20.60									
CH 157	5785	20.70	CH 157	20.60	20.50	20.40	20.50	20.30	20.40	20.30	20.30
CH 165	5825	20.30									

		802	.11ac VH	T40 RF	Outpu	ıt Pow	er (dBn	n)						
P	ower vs. Cha	nnel				Pow	er vs D	ata Ra	te					
Ob ann al	Frequency	MCS Index	ab ann al	MCS Index										
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9		
CH 151	5755	20.80		159 20.90	20.00	20.00	20.70	20.00	20.00	20.70	20.00	20.00		
CH 159	5795	21.00	CH 159		20.90	20.80	20.70	20.80	20.80	20.70	20.60	20.80		

		802	.11ac VH	T80 RF	Outpu	ıt Pow	er (dBn	n)					
Р	ower vs. Cha	nnel				Pow	er vs D	ata Ra	te				
Channal	Frequency	MCS Index	channal	MCS Index									
Channel	(MHz)	MCS0	channel channel							MCS9			
CH155	5775	20.80	CH155										

### MIMO <Ant. 1+2>

	802.11a RF Output Power (dBm)											
	Power vs. C	hannel			Powe	er vs D	ata Rat	e				
	Frequency				Data	Rate (	bps)					
Channel	(MHz)	6M	channel	9M	12M	18M	24M	36M	48M	54M		
CH 149	5745	23.76										
CH 157	5785	22.02	CH 149	23.66	23.56	23.61	23.46	23.46	23.36	23.36		
CH 165	5825	23.46										

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		802.11r	n HT20 RF	Output	Power (	dBm)				
	Power vs. Char	nnel			Pov	ver vs D	ata Rat	е		
	Frequency	MCS Index				M	CS Inde	ex		
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 149	5745	24.16								
CH 157	5785	21.37	CH 149	24.06	24.01	23.96	24.01	23.86	23.91	23.76
CH 165	5825	23.76								

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		802.11r	HT40 RF	Output	Power (	dBm)				
	Power vs. Char	nnel			Pov	ver vs D	ata Rat	е		
	Frequency	MCS Index				M	CS Inde	ex		
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 151	5755	23.86	CU 450	00.00	00.70	22.72	2 22 77	23.63	22.02	23.47
CH 159	5795	23.92	CH 159	23.82	23.72	23.73	23.77	23.63	23.62	23.47

		802.1	lac VHT20	RF Ou	itput Po	ower (d	Bm)				
P	Power vs. Cha	nnel			F	ower v	s Data	Rate			
	Frequency	MCS Index					MCS	Index			
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
CH 149	5745	24.06									
CH 157	5785	21.27	CH 149	23.96	23.91	23.86	23.76	23.86	23.76	23.66	23.76
CH 165	5825	23.66									

		802	.11ac VH	T40 RF	Outpu	it Powe	er (dBn	n)					
Р	ower vs. Cha	nnel				Pow	er vs D	ata Ra	te				
	Frequency	MCS Index	MCS Index										
Channel	(MHz)	MCS0	channel MCS1 MCS2 MCS3 MCS				MCS4	MCS5	MCS6	MCS7	MCS8	MCS9	
CH 151	5755	23.76		23.72	22.62	00.70	22.57	22.57	22.57	22.62	22.52	22.42	
CH 159	5795	23.82	CH 159		23.62	23.72	23.57	23.57	23.57	23.62	23.52	23.42	

		802	.11ac VH	T80 RF	Outpu	ıt Pow	er (dBr	n)					
Р	ower vs. Cha	nnel				Pow	er vs D	ata Ra	te				
	Frequency	MCS Index		MCS Index									
Channel	(MHz)	MCS0	channel channel						MCS8	MCS9			
CH155	5775	23.56	CH155	CH155 23.46 23.41 23.41 23.31 23.31 23.26 23.16 23.21 23.06									

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### <TXBF Mode>

		802.1	ac VHT20	RF O	itput Po	ower (d	Bm)				
F	ower vs. Cha	nnel			F	Power v	s Data	Rate			
	Frequency	MCS Index					MCS	Index			
Channel	(MHz)	MCS0	channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
CH 149	5745	21.96									
CH 157	5785	22.01	CH 165	21.76	21.86	21.96	22.01	22.01	22.01	22.01	22.01
CH 165	5825	22.06									

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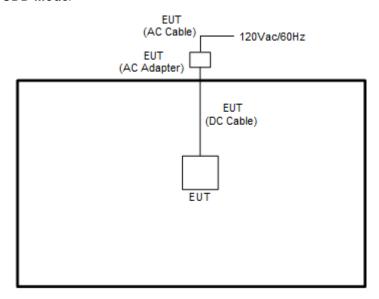
		802	.11ac VH	T40 RF	Outpu	ıt Pow	er (dBn	n)				
Р	ower vs. Cha	nnel				Pow	er vs D	ata Ra	te			
	Frequency	MCS Index					M	CS Inde	ex			
Channel	(MHz)	MCS0	channel MCS1 MCS2 MCS3 MCS4 MCS5 MCS6 MCS7 MCS							MCS8	MCS9	
CH 151	5755	22.61	CH 151	00.44	20.40	20.40	22.40	00.44	22.44	00.54	22.54	22.40
CH 159	5795	22.57								22.46		

		802	.11ac VH	T80 RF	Outpu	it Powe	er (dBn	n)			
Р	ower vs. Cha	nnel				Pow	er vs D	ata Ra	te		
Frequency MCS Index MCS Index											
Channel	(MHz)	MCS0	channel MCS1 MCS2 MCS3 MCS4 MCS5 MCS6 MCS7 MCS8 MCS9							MCS9	
CH155	5775	22.31	CH155   22.21   22.26   22.26   22.26   22.26   22.26   22.26   22.26   22.26								

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# 2.3 Connection Diagram of Test System

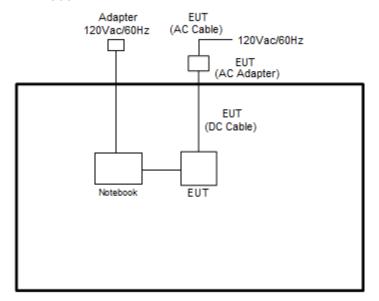
### <WLAN Tx for CDD Mode>



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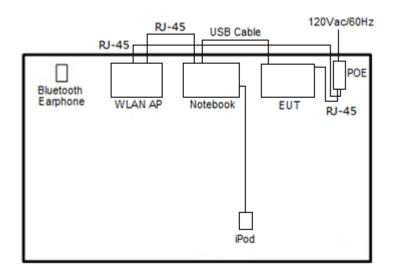
: 01

#### <WLAN Tx for TXBF Mode>



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### <AC Conducted Emission Mode>



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# 2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
3.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
4.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Notebook	ASUS	P2430U	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
6.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

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Report Template No.: BU5-FR15EWLB4 AC MA Version 2.4

### 2.5 EUT Operation Test Setup

The RF test items, utility "QRCT" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

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For TXBF mode, the modulation modes and data rates manipulated by the command lines in the engineering program made the EUT link to another EUT by power under the normal operation. The "adb" software tool was used to enable the EUT to transmit signals continuously.

### 2.6 Measurement Results Explanation Example

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

#### Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB). = 4.2 + 10 = 14.2 (dB)

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### 3 Test Result

## 3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

### 3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz. 26dB and 99% Occupied bandwidth are reporting only.

### 3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

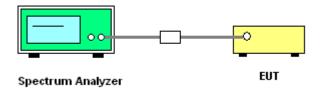
#### 3.1.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
 Section C) Emission bandwidth for the band 5.725-5.85GHz

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- 2. Set RBW = 100kHz.
- 3. Set the VBW  $\geq$  3 x RBW.
- Detector = Peak.
- 5. Trace mode = max hold
- 6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
- 7. Measure and record the results in the test report.

### 3.1.4 Test Setup



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## 3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

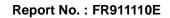
Test Engineer :	Kai Liao	Temperature :	<b>21~25</b> ℃
rest Engineer.	Nai Liau	Relative Humidity :	51~54%

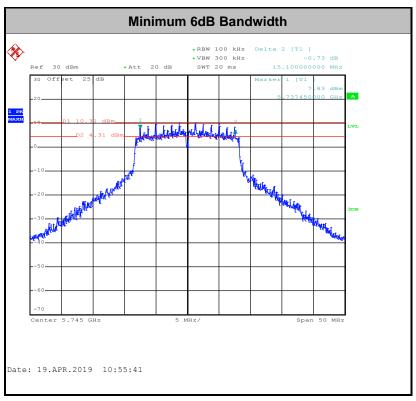
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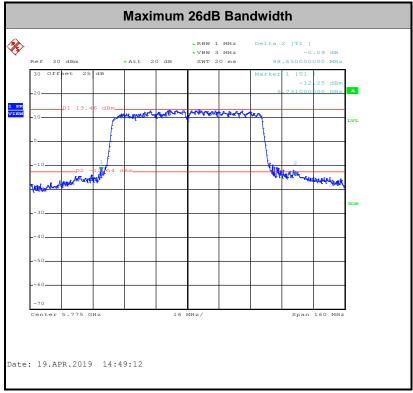
### <CDD Mode>

						I	Band IV	,				
Mod.	Data Rate	NTX	СН.	Freq. (MHz)	Band (M	)% width Hz)	Band (M	dB width Hz)		width Hz)	6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	8.20 15.50 15.80			
11a	6Mbps	1	149	5745	16.75	17.25	24.70			15.80	0.5	Pass
11a	6Mbps	1	157	5785	16.70	17.00	00 24.65 25.90 15.25 15.30		15.30	0.5	Pass	
11a	6Mbps	1	165	5825	16.95	16.95	27.35	25.40	15.40	15.30	0.5	Pass
HT20	MCS0	1	149	5745	18.05	18.00	29.15	28.30			0.5	Pass
HT20	MCS0	1	157	5785	18.05	18.10	28.50	27.75			0.5	Pass
HT20	MCS0	1	165	5825	18.05	18.00	27.15	26.50	16.50	16.15	0.5	Pass
HT40	MCS0	1	151	5755	36.80	36.60	42.12	41.94	35.10	35.37	0.5	Pass
HT40	MCS0	1	159	5795	37.20	36.80	61.38	42.12	35.01	34.92	0.5	Pass
VHT80	MCS0	1	155	5775	77.16	76.92	98.65	90.56	75.20	75.20	0.5	Pass
11a	6Mbps	2	149	5745	17.10	16.90	28.20	26.00	15.50	15.10	0.5	Pass
11a	6Mbps	2	157	5785	16.80	16.75	25.50	24.85	15.60	15.10	0.5	Pass
11a	6Mbps	2	165	5825	16.95	16.90	25.15	25.65	15.70	15.75	0.5	Pass
HT20	MCS0	2	149	5745	18.30	18.05	29.25	28.55	16.16	16.15	0.5	Pass
HT20	MCS0	2	157	5785	18.00	17.90	25.80	25.00	16.75	16.30	0.5	Pass
HT20	MCS0	2	165	5825	20.75	19.20	38.75	29.00	16.50	15.65	0.5	Pass
HT40	MCS0	2	151	5755	36.70	36.70	42.30	42.30	35.01	35.10	0.5	Pass
HT40	MCS0	2	159	5795	36.70	37.00	42.48	47.88	35.10	35.01	0.5	Pass
VHT80	MCS0	2	155	5775	77.28	76.80	96.08	85.28	75.20	75.15	0.5	Pass

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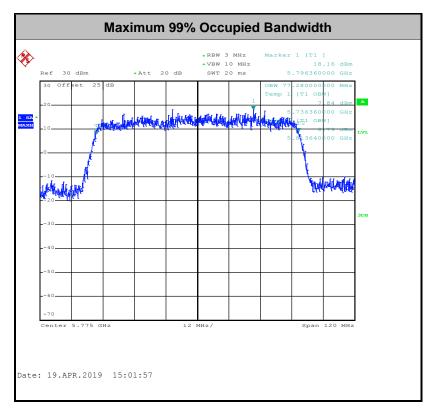






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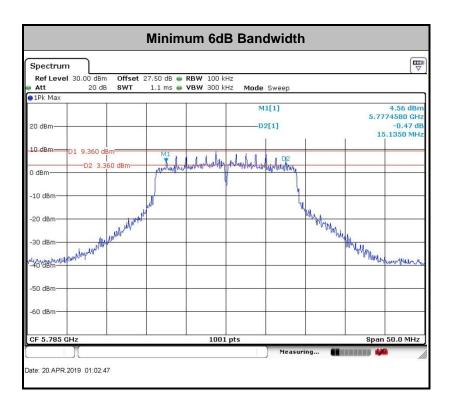
**Note:** The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

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### <TXBF Modes>

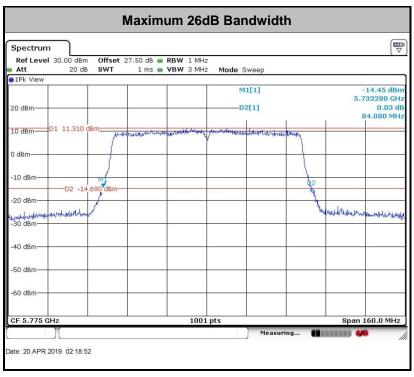
							Band IV	1				
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Band	)% width Hz)	Band	dB width Hz)	6 d Band (MI		6 dB Bandwidth Min. Limit	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	(MHz)	
VHT20	MCS0	2	149	5745	17.93	17.83	26.27	25.62	16.53	16.28	0.5	Pass
VHT20	MCS0	2	157	5785	17.88	17.83	25.33	25.77	15.14	15.88	0.5	Pass
VHT20	MCS0	2	165	5825	17.83	17.83	24.38	24.73	15.14	15.68	0.5	Pass
VHT40	MCS0	2	151	5755	36.46	36.46	41.54	41.36	35.34	36.05	0.5	Pass
VHT40	MCS0	2	159	5795	36.56	36.46	41.72	41.27	35.34	35.69	0.5	Pass
VHT80	MCS0	2	155	5775	77.08	76.84	81.36	84.08	75.60	75.12	0.5	Pass

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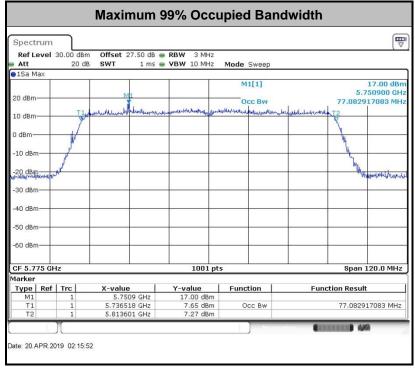


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Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

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### 3.2 Maximum Conducted Output Power Measurement

### 3.2.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

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If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

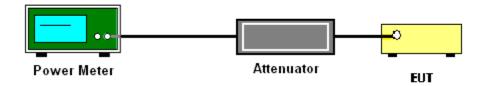
#### 3.2.3 Test Procedures

The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 for TXBF modes.

Method PM-G (Measurement using a gated RF average power meter):

- 1. Measurement is performed using a wideband RF power meter.
- 2. The EUT is configured to transmit at its maximum power control level.
- 3. Measure the average power of the transmitter
- 4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

### 3.2.4 Test Setup



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## 3.2.5 Test Result of Maximum Conducted Output Power

Test Engineer :	Kai Liao	Temperature :	<b>21~25</b> ℃
rest Engineer.	Nai Liau	Relative Humidity :	51~54%

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### <CDD Mode>

							Ban	d IV						
Mod.	Data Rate	NTX	СН.	Freq. (MHz)		ity ctor B)	Co	Average onducte Power (dBm)		Cond Power	ucted Limit		G Bi)	Pass/Fail
							Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	0.00			20.40		30.00	30.00	2.40	4.40	Pass
11a	6Mbps	1	157	5785	0.00 0.00		21.00	21.00		30.00	30.00	2.40	4.40	Pass
11a	6Mbps	1	165	5825			21.20	20.60		30.00	30.00	2.40	4.40	Pass
HT20	MCS0	1	149	5745	0.00	0.00	20.80	20.70		30.00	30.00	2.40	4.40	Pass
HT20	MCS0	1	157	5785	0.00	0.00	20.30	20.80		30.00	30.00	2.40	4.40	Pass
HT20	MCS0	1	165	5825	0.00	0.00	20.60	20.40		30.00	30.00	2.40	4.40	Pass
HT40	MCS0	1	151	5755	0.00	0.00	20.80	20.90		30.00	30.00	2.40	4.40	Pass
HT40	MCS0	1	159	5795	0.00	0.00	20.60	21.10	_	30.00	30.00	2.40	4.40	Pass
VHT20	MCS0	1	149	5745	0.00	0.00	20.70	20.60		30.00	30.00	2.40	4.40	Pass
VHT20	MCS0	1	157	5785	0.00	0.00	20.20	20.70		30.00	30.00	2.40	4.40	Pass
VHT20	MCS0	1	165	5825	0.00	0.00	20.50	20.30		30.00	30.00	2.40	4.40	Pass
VHT40	MCS0	1	151	5755			20.70	20.80		30.00	30.00	2.40	4.40	Pass
VHT40	MCS0	1	159	5795			20.50	21.00		30.00	30.00	2.40	4.40	Pass
VHT80	MCS0	1	155	5775	0.00	0.00	21.00	20.80		30.00	30.00	2.40	4.40	Pass

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VHT80

MCS0

2

155

5775

0.00

0.00

20.40

20.70

23.56

30.00

4.40

: 01

Pass

**Band IV FCC** Average Duty Conducted Conducted DG **Factor** Data Freq. Power **Power Limit** (dBi) Mod. NTX CH. Pass/Fail Rate (MHz) (dB) (dBm) (dBm) Ant 1 Ant 1 Ant 2 Ant 2 SUM Ant 2 Ant 1 Ant 2 Ant 1 5745 0.00 20.60 20.90 23.76 30.00 11a 6Mbps 2 149 0.00 4.40 Pass 11a 6Mbps 2 157 5785 0.00 0.00 18.70 19.30 22.02 30.00 4.40 Pass 11a 6Mbps 165 5825 0.00 0.00 20.30 20.60 23.46 30.00 4.40 **Pass** 2 149 5745 21.10 21.20 24.16 30.00 4.40 HT20 MCS0 0.00 0.00 Pass HT20 MCS0 2 157 5785 18.10 18.60 21.37 30.00 4.40 0.00 0.00 Pass HT20 MCS0 165 5825 0.00 0.00 20.60 20.90 23.76 30.00 4.40 Pass 4.40 MCS0 2 151 20.70 21.00 23.86 30.00 HT40 5755 0.00 0.00 Pass HT40 159 20.60 23.92 30.00 4.40 MCS<sub>0</sub> 2 5795 0.00 0.00 21.20 Pass VHT20 MCS0 2 149 5745 0.00 0.00 21.00 21.10 24.06 30.00 4.40 Pass 2 21.27 VHT20 MCS0 157 5785 0.00 0.00 18.00 18.50 30.00 4.40 Pass VHT20 MCS<sub>0</sub> 2 165 5825 0.00 0.00 20.50 20.80 23.66 30.00 4.40 Pass VHT40 MCS0 2 151 5755 0.00 0.00 20.60 20.90 23.76 30.00 4.40 Pass 21.10 23.82 VHT40 MCS0 2 159 5795 0.00 0.00 20.50 30.00 4.40 Pass

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### <TXBF Mode>

							Ban	d IV													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Fac	ity ctor B)		Average onducte Power (dBm)		Cond	CC ucted r Limit Bm)	D (dl	G Bi)	Pass/Fail							
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2								
VHT20	MCS0	2	149	5745	0.00	0.00	18.90	19.00	21.96	29	.53	6.4	47	Pass							
VHT20	MCS0	2	157	5785	0.00	0.00	18.80	19.20	22.01	29.53		29.53		6.4	47	Pass					
VHT20	MCS0	2	165	5825	0.00	0.00	18.90	19.20	22.06 29.53		29.53 6.47		47	Pass							
VHT40	MCS0	2	151	5755	0.00	0.00	19.50 19.70 22.61		29.53		29.53		29.53		29.53		29.53		6.4	47	Pass
VHT40	MCS0	2	159	5795	0.00 0.00 19.30 19.80 22.5			22.57	29	29.53 6.47		47	Pass								
VHT80	MCS0	2	155	5775	0.00 0.00 19.20 19.40 22			22.31	29	.53	6.47		Pass								

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### 3.3 Power Spectral Density Measurement

### 3.3.1 Limit of Power Spectral Density

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

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If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

#### <CDD Modes>

#### # Method SA-2 #

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW ≥ 1 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(500kHz/RBW) to the test result.
- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

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#### <TXBF Modes>

#### # Method SA-3 #

(power averaging (rms) detection with max hold):

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW ≥ 1 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time ≤ (number of points in sweep) × T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

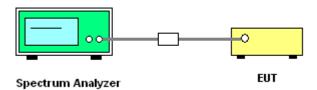
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- Detector = power averaging (rms).
- Trace mode = max hold.
- Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
- 1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
- 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
- For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (c): Measure and add 10 log(N<sub>ANT</sub>) dB.

With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity  $10 \log(N_{ANT})$  dB is added to each spectrum value before comparing to the emission limit. The addition of  $10 \log(N_{ANT})$  dB serves to apportion the emission limit among the  $N_{ANT}$  outputs so that each output is permitted to contribute no more than  $1/N_{ANT}$  th of the PSD limit.

### 3.3.4 Test Setup



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## 3.3.5 Test Result of Power Spectral Density

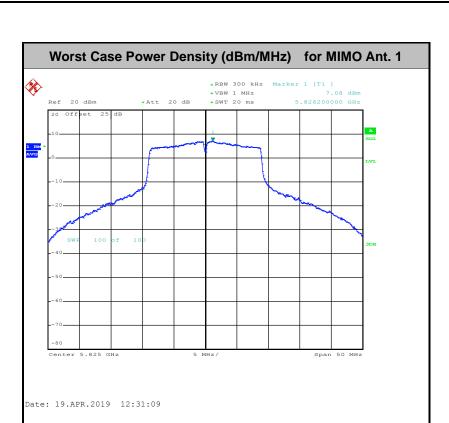
Test Engineer :	Kai Liao	Temperature :	<b>21~25</b> ℃
rest Engineer.	Nai Liao	Relative Humidity :	51~54%

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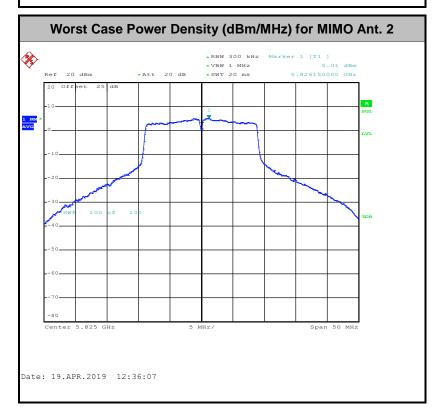
### <CDD Modes>

								Band	IV							
Mod.	Data Rate	NTX	СН.	Freq.	Fac	ity ctor B)	(500 /RE Facto	log kHz BW) r (dB)	[dBi	Power Density m/500k	/ kHz)			DG (dBi)		Pass /Fail
11a	6Mbps	1	149	5745	0.23	0.22	2.22 2.22		4.67	8.10		30.00	30.00	2.40	4.40	Pass
11a	6Mbps	1	157	5785	0.23	0.22	2.22 2.22		4.30	7.05		30.00	30.00	2.40	4.40	Pass
11a	6Mbps	1	165	5825	0.23	0.22	2.22 2.22		8.22	6.63		30.00	30.00	2.40	4.40	Pass
HT20	MCS0	1	149	5745	0.25	0.24	2.22 2.22		7.63	6.75		30.00	30.00	2.40	4.40	Pass
HT20	MCS0	1	157	5785	0.25	0.24	2.22 2.22		7.28	6.78		30.00	30.00	2.40	4.40	Pass
HT20	MCS0	1	165	5825	0.25	0.24	2.22	2.22	7.30	6.34		30.00	30.00	2.40	4.40	Pass
HT40	MCS0	1	151	5755	0.35	0.37	2.22	2.22	4.62	3.71		30.00	30.00	2.40	4.40	Pass
HT40	MCS0	1	159	5795	0.35	0.37	2.22	2.22	5.89	3.67		30.00	30.00	2.40	4.40	Pass
VHT80	MCS0	1	155	5775	0.70	0.69	2.22	2.22	1.93	0.57		30.00	30.00	2.40	4.40	Pass
11a	6Mbps	2	149	5745	0.23	0.19	2.:	22	7.88	7.22	10.89	29.	.53	6.	47	Pass
11a	6Mbps	2	157	5785	0.23	0.19	2.:	22	5.70	5.23	8.71	29.	.53	6.	47	Pass
11a	6Mbps	2	165	5825	0.23	0.19	2.:	22	7.25	6.93	10.26	29.	.53	6.4	47	Pass
HT20	MCS0	2	149	5745	0.24	0.24	2.:	22	7.65	7.21	10.66	29.	.53	6.4	47	Pass
HT20	MCS0	2	157	5785	0.24	0.24	2.:	22	4.55	4.28	7.56	29.	.53	6.4	47	Pass
HT20	MCS0	2	165	5825	0.24	0.24	2.22		9.54	7.47	12.55	29.	.53	6.	47	Pass
HT40	MCS0	2	151	5755	0.39	0.35	2.22		4.62	3.66	7.63	29.	.53	6.	47	Pass
HT40	MCS0	2	159	5795	0.39	0.35	2.22		4.32	3.79	7.33	3 29.53		6.	47	Pass
VHT80	MCS0	2	155	5775	0.68	0.65	2.	2.22		0.50	4.35	29.	.53	6.47		Pass

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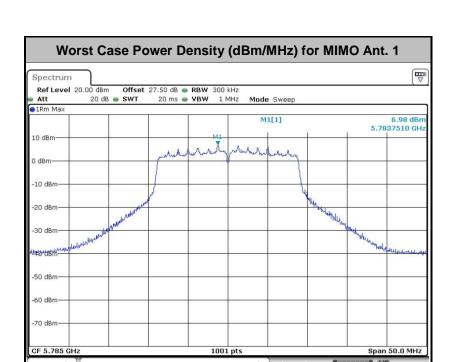
### <TXBF Modes>

								Band	IV											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Fac	ity ctor B)	(500 /RE	log kHz BW) r (dB)		Averag Power Density 3m/500l	, /	PS	nit		G Bi)	Pass /Fail				
					Ant 1	Ant 2	2 Ant 1 Ant 2		Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2					
VHT20	MCS0	2	149	5745	0.00	0.00	2.:	22	9.18	9.40	12.41	29	.53	6.	47	Pass				
VHT20	MCS0	2	157	5785	0.00	0.00	2.5	22	9.20	9.73	12.74	29.53		6.	47	Pass				
VHT20	MCS0	2	165	5825	0.00	0.00	2.:	22	8.97	9.52	12.53	3 29.53		3 6.47		Pass				
VHT40	MCS0	2	151	5755	0.00	0.00	2.22		6.46	5.78	9.47	29.53		6.	47	Pass				
VHT40	MCS0	2	159	5795	0.00	0.00	2.22		2.22		5.81	6.65	9.66	29.53		29.53		6.	47	Pass
VHT80	MCS0	2	155	5775	0.00	0.00	2.22		2.22		4.82	3.23	7.83	29.53		6.	47	Pass		

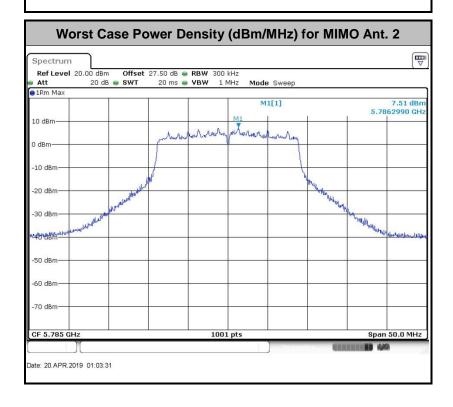
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Date: 20.APR.2019 01:01:11



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### 3.4 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

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#### 3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.725-5.85 GHz band: 15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table,

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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:** The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3}$$
 µV/m, where P is the eirp (Watts)

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EIRP (dBm)	Field Strength at 3m (dBµV/m)
- 27	68.3

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- (3) KDB789033 D02 v02r01 G)2)c)
  - (i) Section 15.407(b)(1) to (b)(3) specify the unwanted emission limits for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.3
  - (ii) Section 15.407(b)(4) specifies the unwanted emission limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are in terms of a Peak detector. An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the devices using the alternative limit.<sup>4</sup>
  - Note 3: An out-of-band emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz peak emission limit.
  - Note 4: Only devices with antenna gains of 10 dBi or less may be approved using the emission limits specified in Section 15.247(d) till March 2, 2018; all other devices operating in this band must use the mask specified in Section 15.407(b)(4)(i).

### 3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

### 3.4.3 Test Procedures

- The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
   Section G) Unwanted emissions measurement.
  - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
    - RBW = 120 kHz
    - VBW = 300 kHz
    - Detector = Peak
    - Trace mode = max hold
  - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
    - RBW = 1 MHz
    - VBW ≥ 3 MHz
    - Detector = Peak
    - Sweep time = auto
    - Trace mode = max hold

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(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

• RBW = 1 MHz

- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

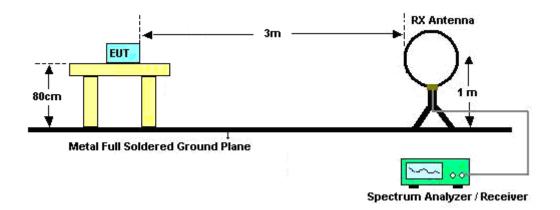
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- 2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
- 3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- 4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- 5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- 6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
- 7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

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## 3.4.4 Test Setup

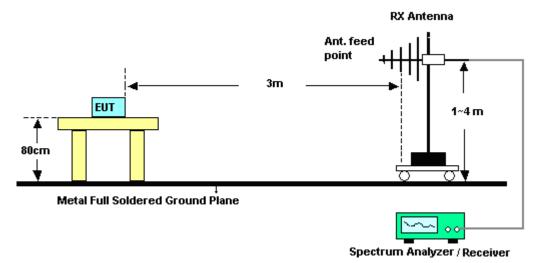
#### For radiated emissions below 30MHz



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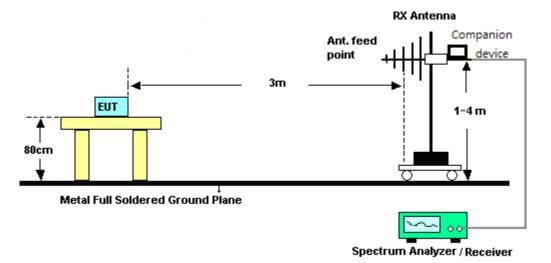
: 01

# For radiated emissions from 30MHz to 1GHz <CDD Mode>



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#### <TXBF Modes>



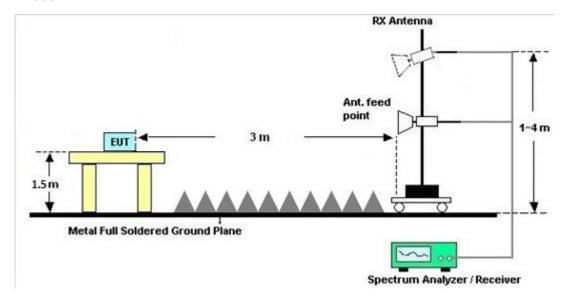
Report No.: FR911110E

: 01

Report Version

#### For radiated emissions above 1GHz

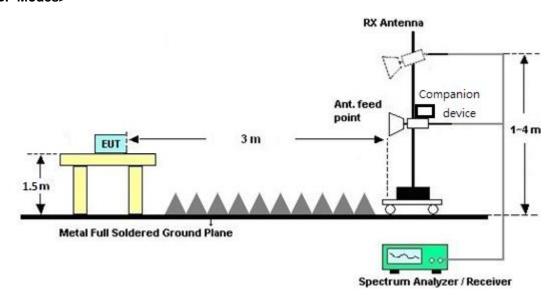
#### <CDD Mode>



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Report Template No.: BU5-FR15EWLB4 AC MA Version 2.4

#### <TXBF Modes>



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#### 3.4.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

#### 3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix B and C.

#### 3.4.7 Duty Cycle

Please refer to Appendix D.

#### 3.4.8 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B and C.

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#### 3.5 AC Conducted Emission Measurement

#### 3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

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Frequency of emission (MHz)	Conducted limit (dBμV)				
Frequency or emission (MH2)	Quasi-peak	Average			
0.15-0.5	66 to 56*	56 to 46*			
0.5-5	56	46			
5-30	60	50			

<sup>\*</sup>Decreases with the logarithm of the frequency.

#### 3.5.2 Measuring Instruments

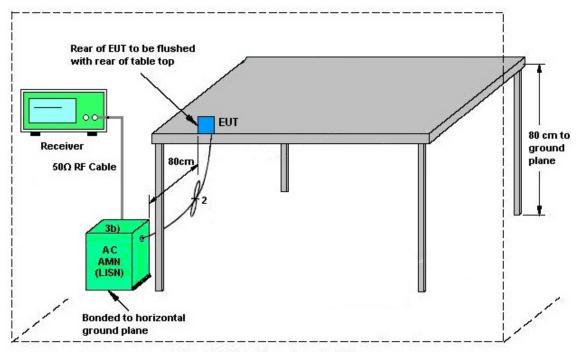
See list of measuring equipment of this test report.

#### 3.5.3 Test Procedures

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- 6. Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

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### 3.5.4 Test Setup



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AMN = Artificial mains network (LISN)

AE = Associated equipment

EUT = Equipment under test

ISN = Impedance stabilization network

#### 3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix A.

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## 3.6 Automatically Discontinue Transmission

#### 3.6.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

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#### 3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.6.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

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## 3.7 Antenna Requirements

#### 3.7.1 Standard Applicable

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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#### 3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

#### 3.7.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = GANT + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(NANT/NSS=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with

GANT set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain  $G_{ANT}$  is set equal to the antenna having the highest gain, i.e., F(2)f(i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

<cdd mod<="" th=""><th>es&gt;</th><th></th><th></th><th></th><th></th><th></th></cdd>	es>					
			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant. 1	Ant. 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
Band IV	2.40	4.40	4.40	6.47	0.00	0.47

Power Limit Reduction = DG(Power) - 6dBi, ( min = 0 )

 $PSD \ Limit \ Reduction = DG(PSD) - 6dBi, \ (min = 0)$ 

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#### **TXBF** modes

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

$$Directional Gain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^{2}}{N_{ANT}} \right]$$

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where

Each antenna is driven by no more than one spatial stream;

 $N_{SS}$  = the number of independent spatial streams of data;

 $N_{ANT}$  = the total number of antennas

 $g_{j,k} = 10^{G_k/20}$  if the kth antenna is being fed by spatial stream j, or zero if it is not;  $G_k$  is the gain in dBi of the kth antenna.

The EUT supports beamforming for 802.11ac modes.

The directional gain calculation is following F)2)e)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant 1	Ant 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
Band IV	2.40	4.40	6.47	6.47	0.47	0.47

Power Limit Reduction = DG(Power) - 6dBi, (min = 0)

 $PSD \ Limit \ Reduction = DG(PSD) - 6dBi, \ (min = 0)$ 

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# 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	DTM-303A	TP157075	N/A	Nov. 05, 2018	Feb. 21, 2019~ Apr. 23, 2019	Nov. 04, 2019	Conducted (TH05-HY)
Power Meter	Anritsu	ML2495A	1132003	N/A	Aug. 16, 2018	Feb. 21, 2019~ Apr. 23, 2019	Aug. 15, 2019	Conducted (TH05-HY)
Power Sensor	DARE	RadiPower	15l00041S NO09	10MHz~6GHz	May 07, 2018	Mar. 04, 2019~ Apr. 23, 2019	May 06, 2019	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1126017	300MHz~40GH z	Aug. 16, 2018	Feb. 21, 2019~ Apr. 23, 2019	Aug. 15, 2019	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 21, 2018	Feb. 21, 2019~ Apr. 23, 2019	Nov. 20, 2019	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV 30	100895	9kHz~30GHz	Apr. 20, 2018	Mar. 04, 2019~ Apr. 23, 2019	Apr. 19, 2019	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC130048 4	N/A	Apr. 17, 2018	Feb. 21, 2019~ Apr. 15, 2019	Apr. 16, 2019	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC120838 2	N/A	Mar. 27, 2019	Apr. 15, 2019~ Apr. 23, 2019	Mar. 26, 2020	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Mar. 12, 2019	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9KHz~3.6GHz	Nov. 12, 2018	Mar. 12, 2019	Nov. 11, 2019	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Mar. 15, 2018	Mar. 12, 2019	Mar. 14, 2019	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 14, 2018	Mar. 12, 2019	Nov. 13, 2019	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 09, 2018	Mar. 12, 2019	Nov. 08, 2019	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Mar. 12, 2019	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Dec. 31, 2018	Mar. 12, 2019	Dec. 30, 2019	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Dec. 31, 2018	Mar. 12, 2019	Dec. 30, 2019	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Jan. 07, 2019	Mar. 21, 2019~ Apr. 03, 2019	Jan. 06, 2020	Radiation (03CH15-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 06, 2018	Mar. 21, 2019~ Apr. 03, 2019	Dec. 05, 2019	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL6111D&0 0802N1D01N- 06	47020&06	30MHz to 1GHz	Oct. 13, 2018	Mar. 21, 2019~ Apr. 03, 2019	Oct. 12, 2019	Radiation (03CH15-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120D	9120D-162 0	1G~18GHz	Oct. 17, 2018	Mar. 21, 2019~ Apr. 03, 2019	Oct. 16, 2019	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA9170 576	18GHz ~ 40GHz	May 08, 2018	Mar. 21, 2019~ Apr. 03, 2019	May 07, 2019	Radiation (03CH15-HY)
Amplifier	SONOMA	310N	363440	9kHz~1GHz	Dec. 28, 2018	Mar. 21, 2019~ Apr. 03, 2019	Dec. 27, 2019	Radiation (03CH15-HY)
Preamplifier	Jet-Power	JPA0118-55-3 03	171000180 00550006	1GHz~18GHz	Jul. 10, 2018	Mar. 21, 2019~ Apr. 03, 2019	Jul. 09, 2019	Radiation (03CH15-HY)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Preamplifier	Keysight	83017A	MY532701 95	1GHz~26.5GHz	Aug. 23, 2018	Mar. 21, 2019~ Apr. 03, 2019	Aug. 22, 2019	Radiation (03CH15-HY)
EMI Test Receiver	Keysight	N9038A (MXE)	MY541300 85	20Hz ~ 8.4GHz	Nov. 01, 2018	Mar. 21, 2019~ Apr. 03, 2019	Oct. 31, 2019	Radiation (03CH15-HY)
Spectrum Analyzer	Agilent	E4446A	MY501801 36	3Hz~44GHz	Apr. 25, 2018	Mar. 21, 2019~ Apr. 03, 2019	Apr. 24, 2019	Radiation (03CH15-HY)
Controller	ChainTek	3000-1	N/A	Control Turn table & Ant Mast	N/A	Mar. 21, 2019~ Apr. 03, 2019	N/A	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Mar. 21, 2019~ Apr. 03, 2019	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Mar. 21, 2019~ Apr. 03, 2019	N/A	Radiation (03CH15-HY)
Software	Audix	E3 6.2009-8-24	RK-00045 1	N/A	N/A	Mar. 21, 2019~ Apr. 03, 2019	N/A	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY36980/ 4	30M-18G	Apr. 16, 2018	Mar. 21, 2019~ Apr. 03, 2019	Apr. 15, 2019	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9838/4	30M-18G	Apr. 16, 2018	Mar. 21, 2019~ Apr. 03, 2019	Apr. 15, 2019	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	MTJ	000000-M T18A-100 D3210	30M-18G	Apr. 16, 2018	Mar. 21, 2019~ Apr. 03, 2019	Apr. 15, 2019	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz-40GHz	Mar. 13, 2019	Mar. 21, 2019~ Apr. 03, 2019	Mar. 12, 2020	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY4274/2	30MHz-40GHz	Mar. 13, 2019	Mar. 21, 2019~ Apr. 03, 2019	Mar. 12, 2020	Radiation (03CH15-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000 -40ST	SN3	6.75 GHz Highpass	Sep. 16, 2018	Mar. 21, 2019~ Apr. 03, 2019	Sep. 15, 2019	Radiation (03CH15-HY)
Filter	Wainwright	WLK4-1000-1 530-8000-40S S	SN11	1G Low Pass	Sep. 16, 2018	Mar. 21, 2019~ Apr. 03, 2019	Sep. 15, 2019	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-270 0-3000-18000 -60ST	SN1	3 GHz Highpass	Sep. 16, 2018	Mar. 21, 2019~ Apr. 03, 2019	Sep. 15, 2019	Radiation (03CH15-HY)
Hygrometer	TECPEL	DTM-302	SN1	N/A	Jul. 22, 2018	Mar. 21, 2019~ Apr. 03, 2019	Jul. 21, 2019	Radiation (03CH15-HY)

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## 5 Uncertainty of Evaluation

#### <u>Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)</u>

Measuring Uncertainty for a Level of Confidence of	2.20
95% (U = $2Uc(y)$ )	2.20

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#### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of	5.20
95% (U = $2Uc(y)$ )	5.20

#### <u>Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)</u>

Measuring Uncertainty for a Level of Confidence of	5.50
95% (U = $2Uc(y)$ )	5.50

#### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

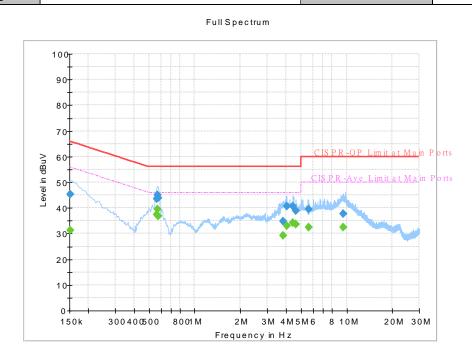
M : 11 (11 ( ) ( ) ( ) ( ) ( ) ( )	T
Measuring Uncertainty for a Level of Confidence of	F 20
95% (U = 2Uc(y))	5.20
3378 (S = 233(y))	

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## **Appendix A. AC Conducted Emission Test Results**

Test Engineer :		Temperature :	<b>22~24</b> ℃
	RICK LIII	Relative Humidity :	55~58%
Test Voltage :	120Vac / 60Hz	Phase :	Line

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#### Final Result:

Frequency	QuasiPeak	CAverage	Limit	Margin	Line	Filter	Corr.
(MHz)	(dBuV)	(dBuV)	(dBuV)	(dB)			(dB)
0.152250		31.40	55.88	24.48	L1	OFF	19.5
0.152250	45.22		65.88	20.66	L1	OFF	19.5
0.559500		37.28	46.00	8.72	L1	OFF	19.5
0.559500	43.65		56.00	12.35	L1	OFF	19.5
0.568500		39.49	46.00	6.51	L1	OFF	19.5
0.568500	45.06		56.00	10.94	L1	OFF	19.5
0.577500		36.92	46.00	9.08	L1	OFF	19.5
0.577500	43.75		56.00	12.25	L1	OFF	19.5
3.817500		29.11	46.00	16.89	L1	OFF	19.6
3.817500	34.78		56.00	21.22	L1	OFF	19.6
4.020000		32.97	46.00	13.03	L1	OFF	19.6
4.020000	40.62		56.00	15.38	L1	OFF	19.6
4.443000		34.35	46.00	11.65	L1	OFF	19.6
4.443000	40.59		56.00	15.41	L1	OFF	19.6
4.638750		33.69	46.00	12.31	L1	OFF	19.6
4.638750	38.81		56.00	17.19	L1	OFF	19.6
5.588250		32.52	50.00	17.48	L1	OFF	19.6
5.588250	39.34		60.00	20.66	L1	OFF	19.6
9.456000		32.55	50.00	17.45	L1	OFF	19.7
9.456000	37.81		60.00	22.19	L1	OFF	19.7

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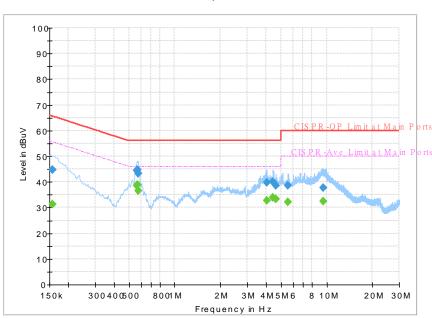
 Test Engineer :
 Rick Lin
 Temperature :
 22~24°C

 Relative Humidity :
 55~58%

 Test Voltage :
 120Vac / 60Hz
 Phase :
 Neutral

Report No. : FR911110E





#### Final Result:

Frequency	QuasiPeak	CAverage	Limit	Margin	Line	Filter	Corr.
(MHz)	(dBuV)	(dBuV)	(dBuV)	(dB)			(dB)
0.156750		31.40	55.63	24.23	N	OFF	19.5
0.156750	44.82		65.63	20.81	N	OFF	19.5
0.564000		38.71	46.00	7.29	N	OFF	19.5
0.564000	44.47		56.00	11.53	N	OFF	19.5
0.570750		38.88	46.00	7.12	N	OFF	19.5
0.570750	44.72		56.00	11.28	N	OFF	19.5
0.577500		36.57	46.00	9.43	N	OFF	19.5
0.577500	43.41		56.00	12.59	N	OFF	19.5
4.017750		32.89	46.00	13.11	N	OFF	19.6
4.017750	39.89		56.00	16.11	N	OFF	19.6
4.443000		34.06	46.00	11.94	N	OFF	19.6
4.443000	40.18		56.00	15.82	N	OFF	19.6
4.641000		33.22	46.00	12.78	N	OFF	19.6
4.641000	38.61		56.00	17.39	N	OFF	19.6
5.559000		32.16	50.00	17.84	N	OFF	19.6
5.559000	38.74		60.00	21.26	N	OFF	19.6
9.456000		32.41	50.00	17.59	N	OFF	19.7
9.456000	37.72		60.00	22.28	N	OFF	19.7

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# Appendix B. Radiated Spurious Emission

Test Engineer :	Watt Tseng \ Karl Hou	NagShow Wang	Temperature :	24~26°C
rest Engineer.	Walt Iselig • Kali ilou		Relative Humidity :	52~57%

Report No.: FR911110E

<CDD Mode>

## Band 4 - 5725~5850MHz WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	(dB)	( cm )	( deg )	(P/A)	(H/V)
		5604.4	49.84	-18.36	68.2	39.09	31.8	9.16	30.21	214	27	Р	Н
		5698.6	57.33	-46.84	104.17	46.45	31.8	9.33	30.25	214	27	Р	Н
		5716	75.67	-34.01	109.68	64.7	31.87	9.36	30.26	214	27	Р	Н
		5724.6	81.17	-40.12	121.29	70.12	31.93	9.38	30.26	214	27	Р	Н
	*	5745	108.2	-	-	97.05	32	9.42	30.27	214	27	Р	Н
	*	5745	100.39	-	-	89.24	32	9.42	30.27	214	27	Α	Н
000 44 -													Н
802.11a CH 149													Н
5745MHz		5640.8	52.48	-15.72	68.2	41.74	31.73	9.23	30.22	222	116	Р	V
3743WITIZ		5699.8	67.16	-37.89	105.05	56.28	31.8	9.33	30.25	222	116	Р	V
		5717.8	84.9	-25.28	110.18	73.86	31.93	9.37	30.26	222	116	Р	V
		5724.8	91.16	-30.58	121.74	80.11	31.93	9.38	30.26	222	116	Р	V
	*	5745	117.54	-	-	106.39	32	9.42	30.27	222	116	Р	V
	*	5745	109.8	-	-	98.65	32	9.42	30.27	222	116	Α	V
													V
													V

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WIFI Preamp Note Level Over Limit Read Antenna Path Ant **Table** Peak Pol. **Frequency** Ant. Limit Line Level **Factor** Loss **Factor** Pos Pos Avg. (dBµV/m) ( deg ) (P/A) (H/V) (MHz) (dB) (dBµV/m) (dB<sub>µ</sub>V) ( dB/m ) (dB) (dB) ( cm ) 5648.2 50.01 -18.19 68.2 39.26 31.73 9.24 30.22 211 25 Н Ρ 5684.4 50.86 -42.83 93.69 40 31.8 9.31 30.25 211 25 Н 5719.8 50.74 -60 110.74 39.7 31.93 9.37 30.26 211 25 Ρ Н Ρ 5723.2 50.16 -67.94 118.1 39.11 31.93 9.38 30.26 211 25 Н \* 5785 106.43 95.11 32.13 9.49 30.3 211 25 Ρ Н \_ \* 5785 99.01 87.69 32.13 9.49 30.3 211 25 Н Α 5854.4 50.29 -61.88 112.17 38.81 32.23 9.58 30.33 211 25 Р Н 5869.8 51.19 -55.46 106.65 39.7 32.23 9.6 30.34 211 25 Ρ Н 5885.4 50.67 -46.81 97.48 39.14 32.27 9.62 30.36 211 25 Ρ Н Р Н 5935 51.94 -16.2668.2 40.27 32.37 9.68 30.38 211 25 Η 802.11a Н **CH 157** 5612 -17.71 Ρ ٧ 50.49 68.2 39.73 31.8 9.17 30.21 240 133 5785MHz Ρ ٧ 5687.8 51.45 -44.75 96.2 40.59 31.8 9.31 30.25 240 133 5720 52.73 -58.07 110.8 41.69 31.93 9.37 30.26 240 133 Ρ ٧ 5724.6 53.01 -68.28 121.29 41.96 31.93 9.38 30.26 240 133 Ρ ٧ 240 Ρ ٧ 5785 115.59 104.27 32.13 9.49 30.3 133 \* 32.13 30.3 240 ٧ 5785 108.21 96.89 9.49 133 Α 5852.6 53.05 -63.22 116.27 41.6 32.2 9.58 30.33 240 133 Ρ ٧ Ρ ٧ 5856.8 53.42 -56.88 110.3 41.93 32.23 9.59 30.33 240 133 Ρ ٧ 5919.8 52.32 -19.71 72.03 40.7 32.33 9.66 30.37 240 133 Р 5931.4 51.5 -16.7 68.2 39.83 32.37 9.67 30.37 240 133 ٧ ٧ ٧

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Po
Ant. 1		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos ( cm )		Avg. (P/A)	(H/\
	*	5825	108.43	-	-	97	32.2	9.55	30.32	224	28	Р	Н
	*	5825	100.91	-	-	89.48	32.2	9.55	30.32	224	28	Α	Н
		5850	69.12	-53.08	122.2	57.67	32.2	9.58	30.33	224	28	Р	Н
		5855.2	62.51	-48.23	110.74	51.03	32.23	9.58	30.33	224	28	Р	Н
		5877.2	53.16	-50.41	103.57	41.62	32.27	9.61	30.34	224	28	Р	Н
		5940.4	51.34	-16.86	68.2	39.64	32.4	9.68	30.38	224	28	Р	Н
													Н
802.11a													Н
CH 165	*	5825	117.78	-	-	106.35	32.2	9.55	30.32	247	132	Р	V
5825MHz	*	5825	109.88	-	-	98.45	32.2	9.55	30.32	247	132	Α	٧
		5850.6	80.41	-40.42	120.83	68.96	32.2	9.58	30.33	247	132	Р	V
		5855.2	73.18	-37.56	110.74	61.7	32.23	9.58	30.33	247	132	Р	V
		5877.8	60.72	-42.4	103.12	49.18	32.27	9.61	30.34	247	132	Р	V
		5944.6	52.03	-16.17	68.2	40.32	32.4	9.69	30.38	247	132	Р	V
													V
													V
													V

Report No. : FR911110E

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<sup>2.</sup> All results are PASS against Peak and Average limit line.

## Band 4 5725~5850MHz WIFI 802.11a (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V
		11490	56.45	-17.55	74	63.38	40.17	13.92	61.02	302	298	Р	Н
		11490	47.45	-6.55	54	54.38	40.17	13.92	61.02	302	298	Α	Н
		17235	49.15	-19.05	68.2	50.09	40.7	17.88	59.52	100	0	Р	Н
802.11a													Н
CH 149		11490	57.8	-16.2	74	64.73	40.17	13.92	61.02	306	8	Р	V
5745MHz		11490	48.56	-5.44	54	55.49	40.17	13.92	61.02	306	8	Α	V
		17235	49.71	-18.49	68.2	50.65	40.7	17.88	59.52	100	0	Р	V
													V
		11570	49.61	-24.39	74	56.6	40	13.95	60.94	100	0	Р	Н
		17355	49.73	-18.47	68.2	49.64	41.4	18.06	59.37	100	0	Р	Н
													Н
802.11a													Н
CH 157		11570	49.69	-24.31	74	56.68	40	13.95	60.94	100	0	Р	V
5785MHz		17355	50.01	-18.19	68.2	49.92	41.4	18.06	59.37	100	0	Р	V
													V
													V
		11650	55.79	-18.21	74	63.03	39.66	13.98	60.88	276	339	Р	Н
		11650	46.4	-7.6	54	53.64	39.66	13.98	60.88	276	339	Α	Н
		17475	49.95	-18.25	68.2	48.56	42.43	18.19	59.23	100	0	Р	Н
802.11a													Н
CH 165		11650	57.12	-16.88	74	64.36	39.66	13.98	60.88	300	9	Р	V
5825MHz		11650	47.5	-6.5	54	54.74	39.66	13.98	60.88	300	9	Α	V
		17475	50.39	-17.81	68.2	49	42.43	18.19	59.23	100	0	Р	V
													V

#### Remark

- 1. No other spurious found.
- 2. All results are PASS against Peak and Average limit line.

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## Band 4 5725~5850MHz WIFI 802.11n HT20 (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 1		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos ( cm )	Pos ( deg )	Avg. (P/A)	i l
•		5636.8	49.77	-18.43	68.2	39.04	31.73	9.22	30.22	226	26	P	Η
												-	
		5699.6	60.26	-44.65	104.91	49.38	31.8	9.33	30.25	226	26	Р	Н
		5720	76.46	-34.34	110.8	65.42	31.93	9.37	30.26	226	26	Р	Н
		5723.6	83.57	-35.44	119.01	72.52	31.93	9.38	30.26	226	26	Р	Н
	*	5745	108.87	-	-	97.72	32	9.42	30.27	226	26	Р	Н
	*	5745	100.22	-	-	89.07	32	9.42	30.27	226	26	Α	Н
802.11n													Н
HT20													Н
CH 149		5640.6	50.59	-17.61	68.2	39.85	31.73	9.23	30.22	222	115	Р	٧
5745MHz		5699	68.92	-35.54	104.46	58.04	31.8	9.33	30.25	222	115	Р	٧
		5720	86.79	-24.01	110.8	75.75	31.93	9.37	30.26	222	115	Р	٧
		5725	93.87	-28.33	122.2	82.82	31.93	9.38	30.26	222	115	Р	٧
	*	5745	118.12	-	-	106.97	32	9.42	30.27	222	115	Р	٧
	*	5745	109.54	-	-	98.39	32	9.42	30.27	222	115	Α	٧
													٧
													V

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WIFI Preamp Note **Frequency** Level Over Limit Read Antenna Path Ant **Table** Peak Pol. Ant. Limit Line Level **Factor** Loss **Factor** Pos Pos Avg. (dBµV/m) ( deg ) (P/A) (H/V) (MHz) (dB) (dBµV/m) (dB<sub>µ</sub>V) ( dB/m ) (dB) (dB) (cm) 5612.2 50.43 -17.77 68.2 39.67 31.8 30.21 Н 9.17 214 29 Ρ 5679.6 50.65 -39.49 90.14 39.85 31.75 9.3 30.25 214 29 Н 5715.2 49.56 -59.9 109.46 38.59 31.87 9.36 30.26 214 29 Ρ Н Ρ 5722 50.04 -65.32 115.36 38.99 31.93 9.38 30.26 214 29 Н \* 5785 108.74 97.42 32.13 30.3 214 Ρ Н 9.49 29 \* 5785 100.34 89.02 32.13 9.49 30.3 214 29 Н Α 5851.4 50.93 -68.08 119.01 39.48 32.2 9.58 30.33 214 29 Р Н 5868.8 50.3 -56.63 106.93 38.81 32.23 9.6 30.34 214 29 Ρ Н 5913.4 50.88 -25.88 76.76 39.27 32.33 9.65 30.37 214 29 Ρ Н Р 32.37 Н 5938.2 51.78 -16.42 68.2 40.11 9.68 30.38 214 29 Η 802.11n HT20 Н **CH 157** -17.43 31.77 Ρ ٧ 5625.2 50.77 68.2 40.01 9.2 30.21 238 133 5785MHz Ρ ٧ 5697 51.44 -51.55 102.99 40.56 31.8 9.33 30.25 238 133 5719.8 54.96 -55.78 110.74 43.92 31.93 9.37 30.26 238 133 Ρ ٧ 5725 61.09 -61.11 122.2 50.04 31.93 9.38 30.26 238 133 Ρ ٧ 238 Ρ ٧ 5785 118 106.68 32.13 9.49 30.3 133 \* 32.13 30.3 238 ٧ 5785 109.71 98.39 9.49 133 Α 5851.2 57.13 -62.33 119.46 45.68 32.2 9.58 30.33 238 133 Ρ ٧ Ρ ٧ 5855.6 56.19 -54.44 110.63 44.71 32.23 9.58 30.33 238 133 Ρ ٧ 5884.6 52.62 -45.45 98.07 41.09 32.27 9.62 30.36 238 133 Р 5933 51.85 -16.35 68.2 40.18 32.37 9.67 30.37 238 133 V ٧ ٧

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WIFI Limit Read Antenna Path Preamp Table Peak Pol. Note Frequency Level Over Ant Ant. Limit Line Level **Factor** Factor Pos Pos Loss Avg. (dB/m) (dBµV/m) ( dB ) ( dB \( V/m \) ( deg ) (P/A) (H/V) (MHz) (dBµV) (dB) (dB) ( cm ) \* 108.98 5825 97.55 32.2 9.55 30.32 221 25 Η 5825 100.77 89.34 32.2 9.55 30.32 25 Н -221 Α 5850.6 73.52 -47.31 120.83 62.07 32.2 9.58 30.33 221 25 Ρ Н 5855.6 32.23 9.58 30.33 221 25 Ρ Н 63.29 -47.34 110.63 51.81 5879.2 52.33 -49.75 102.08 40.79 32.27 9.61 30.34 221 25 Ρ Н Р 5937.2 51.12 -17.08 68.2 39.45 32.37 9.68 30.38 221 25 Н Н 802.11n HT20 Н **CH 165** 5825 117.82 106.39 32.2 9.55 30.32 247 133 ٧ 5825MHz ٧ 5825 98.18 32.2 9.55 30.32 247 133 Α 109.61 \_ -122.2 32.2 9.58 30.33 247 133 Р ٧ 5850 82.99 -39.21 71.54 ٧ 5855.2 73.62 -37.12 110.74 62.14 32.23 9.58 30.33 247 133 Ρ 5875 59.54 -45.66 105.2 48 32.27 9.61 30.34 247 133 Ρ V ٧ Ρ 5932.4 51.89 -16.31 68.2 40.22 32.37 9.67 30.37 247 133 ٧ ٧ No other spurious found. Remark All results are PASS against Peak and Average limit line.

Report No.: FR911110E

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## Band 4 5725~5850MHz WIFI 802.11n HT20 (Harmonic @ 3m)

Report No.: FR911110E

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	( dBµV/m )	( dB )	( dBµV/m )	(dBµV)	( dB/m )	(dB)	(dB)	( cm )	( deg )	(P/A)	(H/V
		11490	56.05	-17.95	74	62.98	40.17	13.92	61.02	316	296	Р	Н
		11490	47.16	-6.84	54	54.09	40.17	13.92	61.02	316	296	Α	Н
802.11n		17235	48.14	-20.06	68.2	49.08	40.7	17.88	59.52	100	0	Р	Н
HT20													Н
CH 149		11490	57.38	-16.62	74	64.31	40.17	13.92	61.02	308	7	Р	V
5745MHz		11490	48.26	-5.74	54	55.19	40.17	13.92	61.02	308	7	Α	V
		17235	48.58	-19.62	68.2	49.52	40.7	17.88	59.52	100	0	Р	٧
													V
		11570	56.74	-17.26	74	63.73	40	13.95	60.94	316	301	Р	Н
		11570	46.54	-7.46	54	53.53	40	13.95	60.94	316	301	Α	Н
802.11n		17355	49.46	-18.74	68.2	49.37	41.4	18.06	59.37	100	0	Р	Н
HT20													Н
CH 157		11570	57.22	-16.78	74	64.21	40	13.95	60.94	294	9	Р	V
5785MHz		11570	47.36	-6.64	54	54.35	40	13.95	60.94	294	9	Α	V
		17355	50.07	-18.13	68.2	49.98	41.4	18.06	59.37	100	0	Р	V
													V
		11650	55.52	-18.48	74	62.76	39.66	13.98	60.88	301	338	Р	Н
		11650	45.94	-8.06	54	53.18	39.66	13.98	60.88	301	338	Α	Н
802.11n		17475	50.09	-18.11	68.2	48.7	42.43	18.19	59.23	100	0	Р	Н
HT20													Н
CH 165		11650	56.62	-17.38	74	63.86	39.66	13.98	60.88	288	10	Р	V
5825MHz		11650	46.52	-7.48	54	53.76	39.66	13.98	60.88	288	10	Α	V
		17475	49.93	-18.27	68.2	48.54	42.43	18.19	59.23	100	0	Р	V
													V

## Remark

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

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## Band 4 5725~5850MHz WIFI 802.11n HT40 (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 1		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos (cm)	Pos ( deg )	Avg. (P/A)	(H/V)
		5635.6	50.64	-17.56	68.2	39.91	31.73	9.22	30.22	216	25	Р	Н
		5699.4	67.88	-36.88	104.76	57	31.8	9.33	30.25	216	25	Р	Н
		5718.2	81.1	-29.2	110.3	70.06	31.93	9.37	30.26	216	25	Р	Н
		5723.8	82.56	-36.9	119.46	71.51	31.93	9.38	30.26	216	25	Р	Н
	*	5755	105.62	-	-	94.38	32.07	9.44	30.27	216	25	Р	Н
	*	5755	97.71	-	-	86.47	32.07	9.44	30.27	216	25	Α	Н
		5852.6	51.53	-64.74	116.27	40.08	32.2	9.58	30.33	216	25	Р	Н
		5856.8	52.47	-57.83	110.3	40.98	32.23	9.59	30.33	216	25	Р	Н
		5890.8	51.64	-41.83	93.47	40.08	32.3	9.62	30.36	216	25	Р	Н
		5945.8	50.57	-17.63	68.2	38.86	32.4	9.69	30.38	216	25	Р	Н
802.11n													Н
HT40													Н
CH 151		5639	57.63	-10.57	68.2	46.9	31.73	9.22	30.22	236	115	Р	V
5755MHz		5698.6	76.84	-27.33	104.17	65.96	31.8	9.33	30.25	236	115	Р	V
		5719	90.56	-19.96	110.52	79.52	31.93	9.37	30.26	236	115	Р	V
		5722	91.55	-23.81	115.36	80.5	31.93	9.38	30.26	236	115	Р	V
	*	5755	114.93	-	-	103.69	32.07	9.44	30.27	236	115	Р	V
	*	5755	107.01	-	-	95.77	32.07	9.44	30.27	236	115	Α	V
		5853	57.65	-57.71	115.36	46.2	32.2	9.58	30.33	236	115	Р	V
		5858.6	57.56	-52.23	109.79	46.08	32.23	9.59	30.34	236	115	Р	V
		5875.4	55.51	-49.39	104.9	43.97	32.27	9.61	30.34	236	115	Р	V
		5929.8	52.25	-15.95	68.2	40.58	32.37	9.67	30.37	236	115	Р	V
													V
		_											V

TEL: 886-3-327-3456 Page Number: B9 of B54



WIFI Preamp Note **Frequency** Level Over Limit Read Antenna Path Ant **Table** Peak Pol. Ant. Limit Line Level **Factor** Loss Factor Pos Pos Avg. (dBµV/m) ( deg ) (P/A) (H/V) (MHz) (dB) (dBµV/m) (dBµV) ( dB/m ) (dB) (dB) (cm) 5632.8 50.5 -17.7 68.2 39.78 31.73 9.21 30.22 215 28 Н 105.05 Ρ 5699.8 53.39 -51.66 42.51 31.8 9.33 30.25 215 28 Н 5720 59.57 -51.23 110.8 48.53 31.93 9.37 30.26 215 28 Ρ Н Ρ 5720.2 61.96 -49.3 111.26 50.92 31.93 9.37 30.26 215 28 Н 5795 105.97 94.56 32.2 9.51 30.3 215 28 Ρ Н \_ \* 5795 98.09 86.68 32.2 9.51 30.3 215 28 Α Н 5850.4 66.55 -54.74 121.29 55.1 32.2 9.58 30.33 215 28 Р Н 5856.8 66.7 -43.6 110.3 55.21 32.23 9.59 30.33 215 28 Ρ Н 5877.6 56.77 -46.5 103.27 45.23 32.27 9.61 30.34 215 28 Н Р 32.4 30.38 215 Н 5945.6 51.9 -16.368.2 40.19 9.69 28 Η 802.11n **HT40** Н **CH 159** -15.76 41.71 31.73 237 Ρ ٧ 5640 52.44 68.2 9.22 30.22 133 5795MHz ٧ 5699.2 60.45 -44.16 104.61 49.57 31.8 9.33 30.25 237 133 5713.2 70.63 -38.27108.9 59.66 31.87 9.36 30.26 237 133 Ρ ٧ 5724.6 70.53 -50.76 121.29 59.48 31.93 9.38 30.26 237 133 Ρ ٧ 5795 104.01 Ρ ٧ 115.42 32.2 9.51 30.3 237 133 \* 107.47 32.2 30.3 237 133 ٧ 5795 96.06 9.51 Α 5850 76.81 -45.39 122.2 65.36 32.2 9.58 30.33 237 133 ٧ Ρ ٧ 5855.4 74.93 -35.76 110.69 63.45 32.23 9.58 30.33 237 133 Ρ ٧ 5877 67.28 -36.43 103.71 55.74 32.27 9.61 30.34 237 133 Р 5925.4 55.71 -12.49 68.2 44.05 32.37 9.66 30.37 237 133 ٧ ٧ ٧

Report No.: FR911110E

### Remark

No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B10 of B54

## Band 4 5725~5850MHz WIFI 802.11n HT40 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 1		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos ( cm )	Pos ( deg )	Avg. (P/A)	(H/V)
		11510	54.26	-19.74	74	61.12	40.2	13.93	60.99	304	326	Р	Н
		11510	45.83	-8.17	54	52.69	40.2	13.93	60.99	304	326	Α	Н
802.11n		17265	49.3	-18.9	68.2	50.05	40.8	17.93	59.48	100	0	Р	Н
HT40													Н
CH 151		11510	54.94	-19.06	74	61.8	40.2	13.93	60.99	307	7	Р	V
5755MHz		11510	46.5	-7.5	54	53.36	40.2	13.93	60.99	307	7	Α	V
		17265	48.5	-19.7	68.2	49.25	40.8	17.93	59.48	100	0	Р	V
		11590	53.85	-20.15	74	60.87	39.95	13.96	60.93	308	299	Р	V
		11590	45.22	-8.78	54	52.24	39.95	13.96	60.93	308	299	A	Н
802.11n		17385	50.82	-17.38	68.2	50.35	41.73	18.08	59.34	100	0	Р	Н
HT40													Н
CH 159		11590	54.71	-19.29	74	61.73	39.95	13.96	60.93	299	8	Р	V
5795MHz		11590	46.22	-7.78	54	53.24	39.95	13.96	60.93	299	8	Α	٧
		17385	49.84	-18.36	68.2	49.37	41.73	18.08	59.34	100	0	Р	٧
													٧

#### Remark

No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B11 of B54

## Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Band Edge @ 3m)

Report No.: FR911110E

WIFI Ant. 1	Note	Frequency ( MHz )	Level	Over Limit ( dB )	Limit Line ( dBµV/m )	Read Level ( dBµV )	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Pos	Peak Avg. (P/A)	
•		5645.4	53.65	-14.55	68.2	42.91	31.73	9.23	30.22	215	26	P	Н
		5695.4	73.89	-27.92	101.81	63.01	31.8	9.33	30.25	215	26	Р	Н
		5718.8	76.84	-33.62	110.46	65.8	31.93	9.37	30.26	215	26	Р	Н
		5720.8	76.64	-35.98	112.62	65.6	31.93	9.37	30.26	215	26	Р	Н
	*	5775	101.04	-	-	89.73	32.13	9.47	30.29	215	26	Р	Н
	*	5775	93.48	-	-	82.17	32.13	9.47	30.29	215	26	Α	Н
		5852.4	70.75	-45.98	116.73	59.3	32.2	9.58	30.33	215	26	Р	Н
		5857	69.7	-40.54	110.24	58.21	32.23	9.59	30.33	215	26	Р	Н
		5879.2	66.23	-35.85	102.08	54.69	32.27	9.61	30.34	215	26	Р	Н
		5935.6	51.21	-16.99	68.2	39.54	32.37	9.68	30.38	215	26	Р	Н
802.11ac													Н
VHT80													Н
CH 155		5649.2	62.46	-5.74	68.2	51.71	31.73	9.24	30.22	235	116	Р	V
5775MHz		5695.4	82.83	-18.98	101.81	71.95	31.8	9.33	30.25	235	116	Р	٧
		5720	85.72	-25.08	110.8	74.68	31.93	9.37	30.26	235	116	Р	V
		5720.6	86.98	-25.19	112.17	75.94	31.93	9.37	30.26	235	116	Р	V
	*	5775	110.58	-	-	99.27	32.13	9.47	30.29	235	116	Р	V
	*	5775	102.88	-	-	91.57	32.13	9.47	30.29	235	116	Α	V
		5853	80.95	-34.41	115.36	69.5	32.2	9.58	30.33	235	116	Р	V
		5858.6	81.04	-28.75	109.79	69.56	32.23	9.59	30.34	235	116	Р	V
		5875	73.85	-31.35	105.2	62.31	32.27	9.61	30.34	235	116	Р	V
		5929.4	57.7	-10.5	68.2	46.03	32.37	9.67	30.37	235	116	Р	٧
													V
													V

# Remark 2.

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B12 of B54

## Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	( dB )	( cm )	( deg )	(P/A)	(H/V)
		11550	51.53	-22.47	74	58.49	40.05	13.95	60.96	313	297	Р	Н
		11550	42.73	-11.27	54	49.69	40.05	13.95	60.96	313	297	Α	Н
802.11ac		17325	50.45	-17.75	68.2	50.77	41.07	18.02	59.41	100	0	Р	Н
VHT80													Н
CH 155		11550	53.77	-20.23	74	60.73	40.05	13.95	60.96	298	7	Р	V
5775MHz		11550	43.08	-10.92	54	50.04	40.05	13.95	60.96	298	7	Α	V
		17325	50.35	-17.85	68.2	50.67	41.07	18.02	59.41	100	0	Р	V
													V

## Remark

2. All results are PASS against Peak and Average limit line.

No other spurious found.

TEL: 886-3-327-3456 Page Number: B13 of B54

## **Emission below 1GHz** 5GHz WIFI 802.11ac VHT80 (LF @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 1		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level (dBµV)	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos ( cm )		Avg. (P/A)	
		71.71	31	-9	40	49.8	12.64	1.11	32.55			Р	Н
		139.61	37.75	-5.75	43.5	51.14	17.6	1.51	32.5	204	221	Q	Н
		238.55	29.22	-16.78	46	42.62	17.13	1.98	32.51			Р	Н
		297.72	33.49	-12.51	46	44.57	19.25	2.21	32.54			Р	Н
		607.15	28.23	-17.77	46	31.99	25.76	3.07	32.59			Р	Н
		911.73	32.2	-13.8	46	30.67	29.33	3.75	31.55			Р	Н
													Н
													Н
													Н
													Н
5GHz													Н
802.11ac													Н
VHT80		37.76	34.24	-5.76	40	44.96	21.12	0.77	32.61	100	338	Q	V
LF		146.4	34.94	-8.56	43.5	48.53	17.34	1.57	32.5			Р	V
		305.48	29.99	-16.01	46	41.02	19.3	2.21	32.54			Р	V
		612	27.44	-18.56	46	31.25	25.7	3.07	32.58			Р	V
		729.37	29.35	-16.65	46	30.74	27.66	3.29	32.34			Р	V
		900.09	31.92	-14.08	46	30.95	28.9	3.72	31.65			Р	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.

2. All results are PASS against limit line.

TEL: 886-3-327-3456 : B14 of B54 Page Number

## Band 4 - 5725~5850MHz WIFI 802.11a (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		, <b></b> .		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	i i
2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dB <sub>µ</sub> V)	( dB/m )	( dB )	(dB)	( cm )	( deg )	(P/A)	(H/V)
		5622.6	51.85	-16.35	68.2	41.1	31.77	9.19	30.21	282	152	Р	Н
		5700	56.69	-48.51	105.2	45.8	31.8	9.34	30.25	282	152	Р	Н
		5720	67.45	-43.35	110.8	56.41	31.93	9.37	30.26	282	152	Р	Н
		5724.4	79.81	-41.02	120.83	68.76	31.93	9.38	30.26	282	152	Р	Н
	*	5745	117.88	-	-	106.73	32	9.42	30.27	282	152	Р	Н
	*	5745	110.42	-	-	99.27	32	9.42	30.27	282	152	Α	Н
802.11a													Н
CH 149													Н
5745MHz		5629.8	50.14	-18.06	68.2	39.38	31.77	9.21	30.22	345	222	Р	V
07 40WHZ		5691.8	51.84	-47.31	99.15	40.97	31.8	9.32	30.25	345	222	Р	V
		5719.6	60.96	-49.73	110.69	49.92	31.93	9.37	30.26	345	222	Р	V
		5725	76.89	-45.31	122.2	65.84	31.93	9.38	30.26	345	222	Р	V
	*	5745	113.49	-	-	102.34	32	9.42	30.27	345	222	Р	٧
	*	5745	105.25	-	-	94.1	32	9.42	30.27	345	222	Α	V
													V
													V

TEL: 886-3-327-3456 Page Number : B15 of B54



WIFI Preamp Note Level Over Limit Read Antenna Path Ant **Table** Peak Pol. **Frequency** Ant. Limit Line Level **Factor** Loss **Factor** Pos Pos Avg. (dBµV/m) ( deg ) (P/A) (H/V) 2 (MHz) (dB) (dBµV/m) (dBµV) ( dB/m ) (dB) (dB) (cm) 5608.6 51.15 -17.05 68.2 40.39 31.8 30.21 290 152 Н 9.17 Ρ 5693.8 51.86 -48.77 100.63 40.99 31.8 9.32 30.25 290 152 Н 5717.4 53.41 -56.66 110.07 42.43 31.87 9.37 30.26 290 152 Ρ Н Ρ 5724.6 53.53 -67.76 121.29 42.48 31.93 9.38 30.26 290 152 Н \* 5785 118.08 106.76 32.13 30.3 290 152 Ρ Н \_ 9.49 \* 5785 110.51 99.19 32.13 9.49 30.3 290 152 Н Α 5851.6 53.41 -65.14 118.55 41.96 32.2 9.58 30.33 290 152 Р Н 5855.6 52.82 -57.81 110.63 41.34 32.23 9.58 30.33 290 152 Ρ Н 5883 53.01 -46.2599.26 41.46 32.27 9.62 30.34 290 152 Н Р 5944 290 Н 52.69 -15.51 68.2 40.98 32.4 9.69 30.38 152 Η 802.11a Н **CH 157** -17.81 31.73 Ρ ٧ 5642.6 50.39 68.2 39.65 9.23 30.22 308 219 5785MHz ٧ 5686.8 50.2 -45.26 95.46 39.34 31.8 9.31 30.25 308 219 Ρ 5713.4 50.47 -58.48 108.95 39.5 31.87 9.36 30.26 308 219 Ρ ٧ 5724.6 50.18 -71.11 121.29 39.13 31.93 9.38 30.26 308 219 Ρ ٧ 101.31 308 Ρ ٧ 5785 112.63 32.13 9.49 30.3 219 \* 32.13 30.3 ٧ 5785 105.22 93.9 9.49 308 219 Α 5852 52.59 -65.05 117.64 41.14 32.2 9.58 30.33 308 219 Ρ ٧ Ρ ٧ 5863.4 51.16 -57.29 108.45 39.68 32.23 9.59 30.34 308 219 Ρ ٧ 5921.4 -19.13 70.85 40.1 32.33 9.66 30.37 308 219 51.72 Р 5944 51.45 -16.75 68.2 39.74 32.4 9.69 30.38 308 219 V ٧ ٧

Report No.: FR911110E

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos		Avg.	1
2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	( dB )	( cm )	(deg)	(P/A)	(H/\
	*	5825	117.91	-	-	106.48	32.2	9.55	30.32	297	161	Р	Н
	*	5825	110.27	-	-	98.84	32.2	9.55	30.32	297	161	Α	Н
		5850	80.11	-42.09	122.2	68.66	32.2	9.58	30.33	297	161	Р	Н
		5856	72.36	-38.16	110.52	60.88	32.23	9.58	30.33	297	161	Р	Н
		5877.4	59.4	-44.02	103.42	47.86	32.27	9.61	30.34	297	161	Р	Н
		5945.6	52.65	-15.55	68.2	40.94	32.4	9.69	30.38	297	161	Р	Н
													Н
802.11a													Н
CH 165	*	5825	112.81	-	-	101.38	32.2	9.55	30.32	397	193	Р	V
5825MHz	*	5825	105.07	-	-	93.64	32.2	9.55	30.32	397	193	Α	V
		5850	74.07	-48.13	122.2	62.62	32.2	9.58	30.33	397	193	Р	٧
		5855.6	66.17	-44.46	110.63	54.69	32.23	9.58	30.33	397	193	Р	٧
		5878.8	55.24	-47.14	102.38	43.7	32.27	9.61	30.34	397	193	Р	V
		5930.8	51.41	-16.79	68.2	39.74	32.37	9.67	30.37	397	193	Р	V
													V
													V
													V

Report No. : FR911110E

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number : B17 of B54

## Band 4 5725~5850MHz WIFI 802.11a (Harmonic @ 3m)

Report No.: FR911110E

WIFI Ant. 2	Note	Frequency ( MHz )	Level	Over Limit ( dB )	Limit Line ( dBµV/m )	Read Level ( dBµV )	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Pos	Peak Avg. (P/A)	
		11490	49.98	-24.02	74	56.91	40.17	13.92	61.02	100	0	P	Н
		17235	50.06	-18.14	68.2	51	40.7	17.88	59.52	100	0	P	Н
												-	Н
802.11a													Н
CH 149		11490	54.42	-19.58	74	61.35	40.17	13.92	61.02	100	69	Р	V
5745MHz		11490	45.12	-8.88	54	52.05	40.17	13.92	61.02	100	69	Α	V
		17235	49.14	-19.06	68.2	50.08	40.7	17.88	59.52	100	0	Р	V
													V
		11570	49.53	-24.47	74	56.52	40	13.95	60.94	100	0	Р	Н
		17355	50.77	-17.43	68.2	50.68	41.4	18.06	59.37	100	0	Р	Н
802.11a													Н
CH 157													Н
5785MHz		11570	49.77	-24.23	74	56.76	40	13.95	60.94	100	0	Р	V
01 00111112		17355	50.08	-18.12	68.2	49.99	41.4	18.06	59.37	100	0	Р	V
													V
													V
		11650	48.43	-25.57	74	55.67	39.66	13.98	60.88	100	0	Р	Н
		17475	50.49	-17.71	68.2	49.1	42.43	18.19	59.23	100	0	Р	Н
802.11a													Н
CH 165													Н
5825MHz		11650	52.6	-21.4	74	59.84	39.66	13.98	60.88	100	67	Р	V
_		11650	42.66	-11.34	54	49.9	39.66	13.98	60.88	100	67	Α	V
		17475	50.37	-17.83	68.2	48.98	42.43	18.19	59.23	100	0	Р	V
													V

#### Remark

- 1. No other spurious found.
- 2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B18 of B54

## Band 4 5725~5850MHz WIFI 802.11n HT20 (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 2		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos ( cm )	Pos ( deg )	Avg. (P/A)	i i
		5647	51.54	-16.66	68.2	40.79	31.73	9.24	30.22	279	154	Р	Н
		5694.8	56.24	-45.13	101.37	45.36	31.8	9.33	30.25	279	154	Р	Н
		5720	73.03	-37.77	110.8	61.99	31.93	9.37	30.26	279	154	Р	Н
		5724.2	82.75	-37.63	120.38	71.7	31.93	9.38	30.26	279	154	Р	Н
	*	5745	117.67	-	-	106.52	32	9.42	30.27	279	154	Р	Н
	*	5745	109.86	-	-	98.71	32	9.42	30.27	279	154	Α	Н
802.11n													Н
HT20													Н
CH 149		5615	50.4	-17.8	68.2	39.63	31.8	9.18	30.21	362	223	Р	V
5745MHz		5695.6	52.18	-49.78	101.96	41.3	31.8	9.33	30.25	362	223	Р	V
		5720	66.22	-44.58	110.8	55.18	31.93	9.37	30.26	362	223	Р	V
		5724.2	78.18	-42.2	120.38	67.13	31.93	9.38	30.26	362	223	Р	V
	*	5745	112.78	-	-	101.63	32	9.42	30.27	362	223	Р	V
	*	5745	104.84	-	-	93.69	32	9.42	30.27	362	223	Α	V
													V
													V

TEL: 886-3-327-3456 Page Number : B19 of B54



WIFI Preamp Note Level Over Limit Read Antenna Path Ant **Table** Peak Pol. **Frequency** Ant. Limit Line Level **Factor** Loss **Factor** Pos Pos Avg. (dBµV/m) ( deg ) (P/A) (H/V) 2 (MHz) (dB) (dBµV/m) (dBµV) ( dB/m ) (dB) (dB) (cm) 5617.6 50.85 -17.3568.2 40.11 31.77 30.21 290 152 Н 9.18 51.73 99.01 Ρ 5691.6 -47.28 40.86 31.8 9.32 30.25 290 152 Н 5719 52.35 -58.17 110.52 41.31 31.93 9.37 30.26 290 152 Ρ Н Ρ 5723.2 54.4 -63.7 118.1 43.35 31.93 9.38 30.26 290 152 Н \* 5785 117.98 106.66 32.13 9.49 30.3 290 152 Ρ Н \_ \_ \* 5785 109.87 98.55 32.13 9.49 30.3 290 152 Н Α 5851.4 53.78 -65.23 119.01 42.33 32.2 9.58 30.33 290 152 Р Н 5855.4 53.83 -56.86 110.69 42.35 32.23 9.58 30.33 290 152 Ρ Н 5877.6 51.82 -51.45 103.27 40.28 32.27 9.61 30.34 290 152 Н Р 30.38 290 Н 5941.8 51.5 -16.7 68.2 39.8 32.4 9.68 152 Η 802.11n HT20 Н **CH 157** -17.37 31.73 Ρ ٧ 5642 50.83 68.2 40.09 9.23 30.22 343 219 5785MHz ٧ 5683.8 50.47 -42.78 93.25 39.61 31.8 9.31 30.25 343 219 Ρ 5714.2 52.3 -56.88 109.18 41.33 31.87 9.36 30.26 343 219 Ρ ٧ 5725 51.4 -70.8 122.2 40.35 31.93 9.38 30.26 343 219 Ρ ٧ Ρ ٧ 5785 112.62 101.3 32.13 9.49 30.3 343 219 \* 104.69 32.13 30.3 343 ٧ 5785 93.37 9.49 219 Α 5851 51 -68.92 119.92 39.55 32.2 9.58 30.33 343 219 Ρ ٧ Ρ ٧ 5864.4 51.32 -56.85 108.17 39.84 32.23 9.59 30.34 343 219 Ρ ٧ 5876.2 51.27 -53.04 104.31 39.73 32.27 9.61 30.34 343 219 Р 5935.4 50.85 -17.35 68.2 39.18 32.37 9.68 30.38 343 219 V ٧ ٧

Report No.: FR911110E

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
	*	5825	117.91	-	-	106.48	32.2	9.55	30.32	298	160	Р	Н
	*	5825	109.96	-	-	98.53	32.2	9.55	30.32	298	160	Α	Н
		5850.2	83.77	-37.97	121.74	72.32	32.2	9.58	30.33	298	160	Р	Н
		5855	73.8	-37	110.8	62.32	32.23	9.58	30.33	298	160	Р	Н
		5885.8	60.72	-36.46	97.18	49.19	32.27	9.62	30.36	298	160	Р	Н
		5947.4	52.52	-15.68	68.2	40.81	32.4	9.69	30.38	298	160	Р	Н
802.11n													Н
HT20													Н
CH 165	*	5825	112.45	-	-	101.02	32.2	9.55	30.32	397	193	Р	٧
5825MHz	*	5825	104.49	-	-	93.06	32.2	9.55	30.32	397	193	Α	٧
		5850.2	79.25	-42.49	121.74	67.8	32.2	9.58	30.33	397	193	Р	٧
		5856.2	65.92	-44.54	110.46	54.44	32.23	9.58	30.33	397	193	Р	٧
		5875	54.71	-50.49	105.2	43.17	32.27	9.61	30.34	397	193	Р	V
		5941.8	51.79	-16.41	68.2	40.09	32.4	9.68	30.38	397	193	Р	V
													V
													٧
Remark		o other spurio		st Peak	and Averag	ge limit lin	e.						

Report No. : FR911110E

TEL: 886-3-327-3456 Page Number : B21 of B54

## Band 4 5725~5850MHz WIFI 802.11n HT20 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		( BALL - )	( alD::\//aa \	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	/11/5/
2		( MHz )	( dBµV/m )		( dBµV/m )		( dB/m )	(dB)	(dB)	( cm )		(P/A)	
		11490	49.37	-24.63	74	56.3	40.17	13.92	61.02	100	0	Р	Н
		17235	48.73	-19.47	68.2	49.67	40.7	17.88	59.52	100	0	Р	Н
802.11n													Н
HT20													Н
CH 149		11490	54.99	-19.01	74	61.92	40.17	13.92	61.02	100	68	Р	V
5745MHz		11490	43.7	-10.3	54	50.63	40.17	13.92	61.02	100	68	Α	V
		17235	48.42	-19.78	68.2	49.36	40.7	17.88	59.52	100	0	Р	V
													V
		11570	49.47	-24.53	74	56.46	40	13.95	60.94	100	0	Р	Н
		17355	49.11	-19.09	68.2	49.02	41.4	18.06	59.37	100	0	Р	Н
802.11n													Н
HT20													Н
CH 157		11570	52.73	-21.27	74	59.72	40	13.95	60.94	100	68	Р	٧
5785MHz		11570	42.48	-11.52	54	49.47	40	13.95	60.94	100	68	Α	V
		17235	49.24	-18.96	68.2	50.18	40.7	17.88	59.52	100	0	Р	V
													V
		11650	48.24	-25.76	74	55.48	39.66	13.98	60.88	100	0	Р	Н
		17475	49.68	-18.52	68.2	48.29	42.43	18.19	59.23	100	0	Р	Н
802.11n													Н
HT20													Н
CH 165		11650	48.76	-25.24	74	56	39.66	13.98	60.88	100	0	Р	V
5825MHz		17475	49.79	-18.41	68.2	48.4	42.43	18.19	59.23	100	0	Р	V
													V
													٧

#### Remark

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

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## Band 4 5725~5850MHz WIFI 802.11n HT40 (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 2		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor ( dB )	Pos ( cm )	Pos ( deg )	Avg. (P/A)	(H/V)
		5641.6	52.86	-15.34	68.2	42.12	31.73	9.23	30.22	292	152	Р	Н
		5700	60.41	-44.79	105.2	49.52	31.8	9.34	30.25	292	152	Р	Н
		5719	82.46	-28.06	110.52	71.42	31.93	9.37	30.26	292	152	Р	Н
		5724.8	84.27	-37.47	121.74	73.22	31.93	9.38	30.26	292	152	Р	Н
	*	5755	115.35	-	-	104.11	32.07	9.44	30.27	292	152	Р	Н
	*	5755	107.2	-	-	95.96	32.07	9.44	30.27	292	152	Α	Н
		5854.2	54.77	-57.85	112.62	43.29	32.23	9.58	30.33	292	152	Р	Н
		5857	52.98	-57.26	110.24	41.49	32.23	9.59	30.33	292	152	Р	Н
		5909.8	53.09	-26.33	79.42	41.48	32.33	9.65	30.37	292	152	Р	Н
		5944.6	51.51	-16.69	68.2	39.8	32.4	9.69	30.38	292	152	Р	Н
802.11n													Н
HT40													Н
CH 151		5644	51.12	-17.08	68.2	40.38	31.73	9.23	30.22	398	207	Р	V
5755MHz		5699.8	54.47	-50.58	105.05	43.59	31.8	9.33	30.25	398	207	Р	V
		5719.2	76.07	-34.51	110.58	65.03	31.93	9.37	30.26	398	207	Р	V
		5724.2	77.35	-43.03	120.38	66.3	31.93	9.38	30.26	398	207	Р	V
	*	5755	109.56	-	-	98.32	32.07	9.44	30.27	398	207	Р	V
	*	5755	101.77	-	-	90.53	32.07	9.44	30.27	398	207	Α	V
		5851.8	50.54	-67.56	118.1	39.09	32.2	9.58	30.33	398	207	Р	V
		5864.4	50.7	-57.47	108.17	39.22	32.23	9.59	30.34	398	207	Р	V
		5898.8	51.45	-36.1	87.55	39.88	32.3	9.63	30.36	398	207	Р	V
		5933.2	51.44	-16.76	68.2	39.77	32.37	9.67	30.37	398	207	Р	V
													V
													V

TEL: 886-3-327-3456 Page Number: B23 of B54



WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Pos	Peak Avg.	
2		( MHz )	( dBµV/m )	( dB )	( dBµV/m )	(dB <sub>µ</sub> V)	( dB/m )	( dB )	( dB )	( cm )		(P/A)	
		5639.6	51.04	-17.16	68.2	40.31	31.73	9.22	30.22	287	180	Р	Н
		5691.4	52.88	-45.98	98.86	42.01	31.8	9.32	30.25	287	180	Р	Н
		5718.8	56.22	-54.24	110.46	45.18	31.93	9.37	30.26	287	180	Р	Н
		5723.6	57.26	-61.75	119.01	46.21	31.93	9.38	30.26	287	180	Р	Н
	*	5795	114.77	ı	-	103.36	32.2	9.51	30.3	287	180	Р	Н
	*	5795	106.78	1	-	95.37	32.2	9.51	30.3	287	180	Α	Н
		5851.8	64.28	-53.82	118.1	52.83	32.2	9.58	30.33	287	180	Р	Н
		5856.2	62.16	-48.3	110.46	50.68	32.23	9.58	30.33	287	180	Р	Н
		5875.8	58.43	-46.18	104.61	46.89	32.27	9.61	30.34	287	180	Р	Н
		5932.8	52.79	-15.41	68.2	41.12	32.37	9.67	30.37	287	180	Р	Н
802.11n													Н
HT40													Н
CH 159		5642.2	50.48	-17.72	68.2	39.74	31.73	9.23	30.22	399	194	Р	V
5795MHz		5693.6	51.59	-48.89	100.48	40.72	31.8	9.32	30.25	399	194	Р	V
		5719	53.03	-57.49	110.52	41.99	31.93	9.37	30.26	399	194	Р	V
		5724.6	55.14	-66.15	121.29	44.09	31.93	9.38	30.26	399	194	Р	V
	*	5795	109.65	-	-	98.24	32.2	9.51	30.3	399	194	Р	V
	*	5795	101.55		-	90.14	32.2	9.51	30.3	399	194	Α	V
		5852.6	61.08	-55.19	116.27	49.63	32.2	9.58	30.33	399	194	Р	V
		5856.4	58.62	-51.79	110.41	47.14	32.23	9.58	30.33	399	194	Р	V
		5877.6	54.33	-48.94	103.27	42.79	32.27	9.61	30.34	399	194	Р	V
		5946.4	51.04	-17.16	68.2	39.33	32.4	9.69	30.38	399	194	Р	V
													V
													V

Report No. : FR911110E

# Remark 2.

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B24 of B54

## Band 4 5725~5850MHz WIFI 802.11n HT40 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	( dB )	( cm )	( deg )	(P/A)	i .
		11510	48.71	-25.29	74	55.57	40.2	13.93	60.99	100	0	Р	Н
		17265	49.01	-19.19	68.2	49.76	40.8	17.93	59.48	100	0	Р	Н
802.11n													Н
HT40													Н
CH 151		11510	49.41	-24.59	74	56.27	40.2	13.93	60.99	100	0	Р	V
5755MHz		17265	48.72	-19.48	68.2	49.47	40.8	17.93	59.48	100	0	Р	V
													V
													V
		11590	48.85	-25.15	74	55.87	39.95	13.96	60.93	100	0	Р	Н
		17385	49.95	-18.25	68.2	49.48	41.73	18.08	59.34	100	0	Р	Н
802.11n													Н
HT40													Н
CH 159		11590	49.06	-24.94	74	56.08	39.95	13.96	60.93	100	0	Р	V
5795MHz		17385	50.4	-17.8	68.2	49.93	41.73	18.08	59.34	100	0	Р	V
													V
													V

#### Remark

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B25 of B54

## Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Band Edge @ 3m)

Report No.: FR911110E

Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
			Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
	(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V
	5637.4	59.41	-8.79	68.2	48.68	31.73	9.22	30.22	270	152	Р	Н
	5696.6	79.74	-22.95	102.69	68.86	31.8	9.33	30.25	270	152	Р	Н
	5720	82.23	-28.57	110.8	71.19	31.93	9.37	30.26	270	152	Р	Н
	5720.6	84.19	-27.98	112.17	73.15	31.93	9.37	30.26	270	152	Р	Н
*	5775	111.53	-	-	100.22	32.13	9.47	30.29	270	152	Р	Н
*	5775	103.75	1	-	92.44	32.13	9.47	30.29	270	152	Α	Н
	5853	79.42	-35.94	115.36	67.97	32.2	9.58	30.33	270	152	Р	Н
	5855.6	78.65	-31.98	110.63	67.17	32.23	9.58	30.33	270	152	Р	Н
	5875.6	72.27	-32.48	104.75	60.73	32.27	9.61	30.34	270	152	Р	Н
	5931.6	54.77	-13.43	68.2	43.1	32.37	9.67	30.37	270	152	Р	Н
												Н
												Н
	5637.2	54.39	-13.81	68.2	43.66	31.73	9.22	30.22	380	222	Р	V
	5695.2	72.46	-29.2	101.66	61.58	31.8	9.33	30.25	380	222	Р	V
	5720	75.42	-35.38	110.8	64.38	31.93	9.37	30.26	380	222	Р	V
	5720.4	77.85	-33.86	111.71	66.81	31.93	9.37	30.26	380	222	Р	V
*	5775	106.3	-	-	94.99	32.13	9.47	30.29	380	222	Р	V
*	5775	98.53	-	-	87.22	32.13	9.47	30.29	380	222	Α	V
	5853.8	75.33	-38.21	113.54	63.85	32.23	9.58	30.33	380	222	Р	V
	5855	72.85	-37.95	110.8	61.37	32.23	9.58	30.33	380	222	Р	V
	5875.2	66.2	-38.85	105.05	54.66	32.27	9.61	30.34	380	222	Р	V
	5925.6	52.84	-15.36	68.2	41.18	32.37	9.66	30.37	380	222	Р	V
												V
												V
	*	(MHz) 5637.4 5696.6 5720 5720.6 * 5775 * 5775 5853 5855.6 5875.6 5931.6  5637.2 5695.2 5720 5720.4 * 5775 * 5775 * 5853.8 5855 5875.2	(MHz) (dBµV/m)  5637.4 59.41  5696.6 79.74  5720 82.23  5720.6 84.19  * 5775 111.53  * 5775 103.75  5853 79.42  5855.6 78.65  5875.6 72.27  5931.6 54.77  5637.2 54.39  5695.2 72.46  5720 75.42  5720.4 77.85  * 5775 98.53  5853.8 75.33  5855 72.85  5875.2 66.2	(MHz) (dBµV/m) (dB)  5637.4 59.41 -8.79  5696.6 79.74 -22.95  5720 82.23 -28.57  5720.6 84.19 -27.98  * 5775 111.53 -  * 5775 103.75 -  5853 79.42 -35.94  5875.6 72.27 -32.48  5931.6 54.77 -13.43  5695.2 72.46 -29.2  5720 75.42 -35.38  5720.4 77.85 -33.86  * 5775 106.3 -  * 5775 98.53 -  5853.8 75.33 -38.21  5855 72.85 -37.95  5875.2 66.2 -38.85	(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)           5637.4         59.41         -8.79         68.2           5696.6         79.74         -22.95         102.69           5720         82.23         -28.57         110.8           5720.6         84.19         -27.98         112.17           *         5775         111.53         -         -           *         5775         103.75         -         -           5853         79.42         -35.94         115.36           5855.6         78.65         -31.98         110.63           5875.6         72.27         -32.48         104.75           5931.6         54.77         -13.43         68.2           5695.2         72.46         -29.2         101.66           5720         75.42         -35.38         110.8           5720.4         77.85         -33.86         111.71           *         5775         106.3         -         -           *         5775         98.53         -         -           *         5775         98.53         -         -           5853.8         75.33         -	(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)         Level (dBμV/m)           5637.4         59.41         -8.79         68.2         48.68           5696.6         79.74         -22.95         102.69         68.86           5720         82.23         -28.57         110.8         71.19           5720.6         84.19         -27.98         112.17         73.15           *         5775         111.53         -         -         100.22           *         5775         103.75         -         -         92.44           5853         79.42         -35.94         115.36         67.97           5855.6         78.65         -31.98         110.63         67.17           5875.6         72.27         -32.48         104.75         60.73           5931.6         54.77         -13.43         68.2         43.1           5637.2         54.39         -13.81         68.2         43.66           5695.2         72.46         -29.2         101.66         61.58           5720.4         77.85         -33.86         111.71         66.81           *         5775         98.53         -	(MHz)         (dBµV/m)         Limit (dB)         Line (dBµV/m)         Level (dBµV/m)         Factor (dBµ/m)           5637.4         59.41         -8.79         68.2         48.68         31.73           5696.6         79.74         -22.95         102.69         68.86         31.8           5720         82.23         -28.57         110.8         71.19         31.93           5720.6         84.19         -27.98         112.17         73.15         31.93           * 5775         111.53         -         -         100.22         32.13           * 5775         103.75         -         -         92.44         32.13           5853         79.42         -35.94         115.36         67.97         32.2           5855.6         78.65         -31.98         110.63         67.17         32.23           5875.6         72.27         -32.48         104.75         60.73         32.27           5931.6         54.77         -13.43         68.2         43.1         32.37           5695.2         72.46         -29.2         101.66         61.58         31.8           5720.4         77.85         -33.86         111.71         66.81 <td>(MHz)         Limit (dBµV/m)         Line (dBµV/m)         Level (dBµV)         Factor (dB/m)         Loss (dB)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33           5720         82.23         -28.57         110.8         71.19         31.93         9.37           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37           * 5775         111.53         -         -         100.22         32.13         9.47           * 5775         103.75         -         -         92.44         32.13         9.47           5853         79.42         -35.94         115.36         67.97         32.2         9.58           5875.6         78.65         -31.98         110.63         67.17         32.23         9.58           5875.6         72.27         -32.48         104.75         60.73         32.27         9.61           5931.6         54.77         -13.43         68.2         43.66         31.73         9.22           5695.2         72.46</td> <td>(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)         Level (dBμV/m)         Factor (dBm)         Loss (dB)         Factor (dB)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22         30.22           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33         30.25           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37         30.26           * 5775         111.53         -         -         100.22         32.13         9.47         30.29           * 5775         103.75         -         -         92.44         32.13         9.47         30.29           * 5855.6         78.65         -31.98         110.63         67.97         32.2         9.58         30.33           5875.6         72.27         -32.48         104.75         60.73         32.27         9.61         30.34           5931.6         54.77         -13.43         68.2         43.66         31.73         9.22         30.22           5637.2         54.39         -13.81         68.2         43.66         31.73         9.22         <t< td=""><td>(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)         Level (dBμV)         Factor (dB/m)         Loss (dB)         Factor (dB)         Pos (cm)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22         30.22         270           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33         30.25         270           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37         30.26         270           * 5775         111.53         -         -         100.22         32.13         9.47         30.29         270           * 5775         103.75         -         -         92.44         32.13         9.47         30.29         270           * 5775         103.75         -         -         92.44         32.13         9.47         30.29         270           * 5875.6         78.65         -31.98         110.63         67.17         32.23         9.58         30.33         270           * 5875.6         72.27         -32.48         104.75         60.73         32.27         9.61         30.34         270</td><td>(MHz)         (dBμV/m)         Limit (dB)         Livel (dBμV/m)         Factor (dBμV)         Loss (dB)         Factor (dB)         Pos (deg)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22         30.22         270         152           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33         30.25         270         152           5720         82.23         -28.57         110.8         71.19         31.93         9.37         30.26         270         152           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37         30.26         270         152           * 5775         111.53         -         -         100.22         32.13         9.47         30.29         270         152           * 5775         103.75         -         -         92.44         32.13         9.47         30.29         270         152           5853         79.42         -35.94         115.36         67.97         32.2         9.58         30.33         270         152           5875.6         72.27         -32.48         104.75&lt;</td><td>(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)         Level (dBμV)         Factor (dB/m)         Loss (dB)         Factor (dB)         Pos (deg)         Pos (deg)</td></t<></td>	(MHz)         Limit (dBµV/m)         Line (dBµV/m)         Level (dBµV)         Factor (dB/m)         Loss (dB)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33           5720         82.23         -28.57         110.8         71.19         31.93         9.37           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37           * 5775         111.53         -         -         100.22         32.13         9.47           * 5775         103.75         -         -         92.44         32.13         9.47           5853         79.42         -35.94         115.36         67.97         32.2         9.58           5875.6         78.65         -31.98         110.63         67.17         32.23         9.58           5875.6         72.27         -32.48         104.75         60.73         32.27         9.61           5931.6         54.77         -13.43         68.2         43.66         31.73         9.22           5695.2         72.46	(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)         Level (dBμV/m)         Factor (dBm)         Loss (dB)         Factor (dB)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22         30.22           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33         30.25           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37         30.26           * 5775         111.53         -         -         100.22         32.13         9.47         30.29           * 5775         103.75         -         -         92.44         32.13         9.47         30.29           * 5855.6         78.65         -31.98         110.63         67.97         32.2         9.58         30.33           5875.6         72.27         -32.48         104.75         60.73         32.27         9.61         30.34           5931.6         54.77         -13.43         68.2         43.66         31.73         9.22         30.22           5637.2         54.39         -13.81         68.2         43.66         31.73         9.22 <t< td=""><td>(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)         Level (dBμV)         Factor (dB/m)         Loss (dB)         Factor (dB)         Pos (cm)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22         30.22         270           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33         30.25         270           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37         30.26         270           * 5775         111.53         -         -         100.22         32.13         9.47         30.29         270           * 5775         103.75         -         -         92.44         32.13         9.47         30.29         270           * 5775         103.75         -         -         92.44         32.13         9.47         30.29         270           * 5875.6         78.65         -31.98         110.63         67.17         32.23         9.58         30.33         270           * 5875.6         72.27         -32.48         104.75         60.73         32.27         9.61         30.34         270</td><td>(MHz)         (dBμV/m)         Limit (dB)         Livel (dBμV/m)         Factor (dBμV)         Loss (dB)         Factor (dB)         Pos (deg)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22         30.22         270         152           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33         30.25         270         152           5720         82.23         -28.57         110.8         71.19         31.93         9.37         30.26         270         152           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37         30.26         270         152           * 5775         111.53         -         -         100.22         32.13         9.47         30.29         270         152           * 5775         103.75         -         -         92.44         32.13         9.47         30.29         270         152           5853         79.42         -35.94         115.36         67.97         32.2         9.58         30.33         270         152           5875.6         72.27         -32.48         104.75&lt;</td><td>(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)         Level (dBμV)         Factor (dB/m)         Loss (dB)         Factor (dB)         Pos (deg)         Pos (deg)</td></t<>	(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)         Level (dBμV)         Factor (dB/m)         Loss (dB)         Factor (dB)         Pos (cm)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22         30.22         270           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33         30.25         270           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37         30.26         270           * 5775         111.53         -         -         100.22         32.13         9.47         30.29         270           * 5775         103.75         -         -         92.44         32.13         9.47         30.29         270           * 5775         103.75         -         -         92.44         32.13         9.47         30.29         270           * 5875.6         78.65         -31.98         110.63         67.17         32.23         9.58         30.33         270           * 5875.6         72.27         -32.48         104.75         60.73         32.27         9.61         30.34         270	(MHz)         (dBμV/m)         Limit (dB)         Livel (dBμV/m)         Factor (dBμV)         Loss (dB)         Factor (dB)         Pos (deg)           5637.4         59.41         -8.79         68.2         48.68         31.73         9.22         30.22         270         152           5696.6         79.74         -22.95         102.69         68.86         31.8         9.33         30.25         270         152           5720         82.23         -28.57         110.8         71.19         31.93         9.37         30.26         270         152           5720.6         84.19         -27.98         112.17         73.15         31.93         9.37         30.26         270         152           * 5775         111.53         -         -         100.22         32.13         9.47         30.29         270         152           * 5775         103.75         -         -         92.44         32.13         9.47         30.29         270         152           5853         79.42         -35.94         115.36         67.97         32.2         9.58         30.33         270         152           5875.6         72.27         -32.48         104.75<	(MHz)         (dBμV/m)         Limit (dB)         Line (dBμV/m)         Level (dBμV)         Factor (dB/m)         Loss (dB)         Factor (dB)         Pos (deg)         Pos (deg)

# Remark 2.

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

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## Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	İ
2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	( dB )	( cm )	( deg )	(P/A)	(H/V)
		11550	48.01	-25.99	74	54.97	40.05	13.95	60.96	100	0	Р	Н
		17325	50.21	-17.99	68.2	50.53	41.07	18.02	59.41	100	0	Р	Н
802.11ac													Н
VHT80													Н
CH 155		11550	48.73	-25.27	74	55.69	40.05	13.95	60.96	100	0	Р	V
5775MHz		17325	50.14	-18.06	68.2	50.46	41.07	18.02	59.41	100	0	Р	V
													V
													V

## Remark

2. All results are PASS against Peak and Average limit line.

No other spurious found.

TEL: 886-3-327-3456 Page Number: B27 of B54

# Emission below 1GHz 5GHz WIFI 802.11ac VHT80 (LF @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 2		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level (dBµV)	Factor ( dB/m )	Loss (dB)	Factor ( dB )	Pos ( cm )	Pos ( deg )	Avg. (P/A)	(H/V)
		70.74	31.59	-8.41	40	50.6	12.45	1.1	32.56			Р	Н
		140.58	39.28	-4.22	43.5	52.72	17.54	1.52	32.5	209	295	Q	Н
		307.42	35.8	-10.2	46	46.83	19.3	2.21	32.54			Р	Н
		488.81	24.76	-21.24	46	30.84	23.78	2.71	32.57			Р	Н
		644.98	28.47	-17.53	46	31.15	26.7	3.13	32.51			Р	Н
		750.71	31.38	-14.62	46	31.96	28.4	3.32	32.3			Р	Н
													Н
													Н
													Н
													Н
5GHz													Н
802.11ac													Н
VHT80		37.76	34.89	-5.11	40	45.61	21.12	0.77	32.61	100	326	Q	V
LF		151.25	37.02	-6.48	43.5	50.77	17.15	1.6	32.5			Р	V
		302.57	28.43	-17.57	46	39.46	19.3	2.21	32.54			Р	V
		562.53	27.13	-18.87	46	30.39	26.35	2.98	32.59			Р	V
		756.53	31.02	-14.98	46	31.57	28.4	3.34	32.29			Р	V
		967.99	35.05	-18.95	54	30.93	31.24	3.95	31.07			Р	V
													V
													V
													V
													V
													V
													V

#### Remark

- 1. No other spurious found.
- 2. All results are PASS against limit line.

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## Band 4 - 5725~5850MHz WIFI 802.11a (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		<b>,</b> .		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	i i
1+2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dB <sub>µ</sub> V)	( dB/m )	( dB )	(dB)	( cm )	( deg )	(P/A)	(H/V)
		5615.4	49.8	-18.4	68.2	39.03	31.8	9.18	30.21	100	281	Р	Н
		5698.4	54.86	-49.16	104.02	43.98	31.8	9.33	30.25	100	281	Р	Н
		5719.8	68.79	-41.95	110.74	57.75	31.93	9.37	30.26	100	281	Р	Н
		5724.6	79.69	-41.6	121.29	68.64	31.93	9.38	30.26	100	281	Р	Н
	*	5745	115.88	ı	-	104.73	32	9.42	30.27	100	281	Р	Н
	*	5745	108.76	-	-	97.61	32	9.42	30.27	100	281	Α	Н
802.11a													Н
602.11a CH 149													Н
5745MHz		5610.6	50.4	-17.8	68.2	39.64	31.8	9.17	30.21	399	189	Р	V
37 43141112		5693.6	51.47	-49.01	100.48	40.6	31.8	9.32	30.25	399	189	Р	V
		5720	60.72	-50.08	110.8	49.68	31.93	9.37	30.26	399	189	Р	V
		5725	72.71	-49.49	122.2	61.66	31.93	9.38	30.26	399	189	Р	V
	*	5745	112.4	-	-	101.25	32	9.42	30.27	399	189	Р	٧
	*	5745	105.01	ı	-	93.86	32	9.42	30.27	399	189	Α	٧
													٧
													V

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WIFI Preamp Note Level Over Limit Read Antenna Path Ant **Table** Peak Pol. **Frequency** Ant. Limit Line Level **Factor** Loss **Factor** Pos Pos Avg. ( deg ) (P/A) (H/V) 1+2 (MHz) (dBµV/m) (dB) (dBµV/m) (dBµV) ( dB/m ) (dB) (dB) ( cm ) 5645.2 50.65 -17.55 68.2 39.91 31.73 9.23 30.22 100 287 Н 52.47 104.02 41.59 Ρ 5698.4 -51.55 31.8 9.33 30.25 100 287 Н 5717.8 51.88 -58.3 110.18 40.84 31.93 9.37 30.26 100 287 Ρ Н Ρ 5724.6 52.94 -68.35 121.29 41.89 31.93 9.38 30.26 100 287 Н \* 5785 117.66 49.46 106.34 32.13 30.3 100 287 Ρ Н 68.2 9.49 \* 5785 110.27 56.27 54 98.95 32.13 9.49 30.3 100 287 Н Α 5852 54.11 -63.53 117.64 42.66 32.2 9.58 30.33 100 287 Ρ Н 5856.8 52.94 -57.36 110.3 41.45 32.23 9.59 30.33 100 287 Ρ Н 5880.4 53.96 -47.23101.19 42.42 32.27 9.61 30.34 100 287 Ρ Н Р 100 287 Н 5943.2 52.03 -16.17 68.2 40.33 32.4 9.68 30.38 Н 802.11a Н **CH 157** 5601.6 Ρ ٧ 51.26 -16.94 68.2 40.5 31.8 9.15 30.19 359 193 5785MHz Ρ ٧ 5675.4 50.19 -36.85 87.04 39.38 31.75 9.29 30.23 359 193 5707.6 50.88 -56.45 107.33 39.92 31.87 9.35 30.26 359 193 Ρ ٧ 5723.4 51.7 -66.85 118.55 40.65 31.93 9.38 30.26 359 193 Ρ ٧ 359 Ρ ٧ 5785 116.78 48.58 68.2 105.46 32.13 9.49 30.3 193 \* 30.3 359 ٧ 5785 106.39 52.39 54 95.07 32.13 9.49 193 Α 5852 50.74 -66.9 117.64 39.29 32.2 9.58 30.33 359 193 Ρ ٧ Ρ ٧ 5858.4 53.33 -56.52 109.85 41.85 32.23 9.59 30.34 359 193 Ρ ٧ 5889.6 52.07 -42.2994.36 40.51 32.3 9.62 30.36 359 193 Р 5948.6 51.21 -16.99 68.2 39.5 32.4 9.69 30.38 359 193 V ٧ ٧

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol
Ant. 1+2		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos ( cm )	Pos ( deg )	Avg. (P/A)	i
	*	5825	118.87	-	-	107.44	32.2	9.55	30.32	100	284	Р	Н
	*	5825	111.59	-	-	100.16	32.2	9.55	30.32	100	284	Α	Н
		5850.2	76.84	-44.9	121.74	65.39	32.2	9.58	30.33	100	284	Р	Н
		5855.8	69.81	-40.77	110.58	58.33	32.23	9.58	30.33	100	284	Р	Н
		5875	59.91	-45.29	105.2	48.37	32.27	9.61	30.34	100	284	Р	Н
		5944.6	52.26	-15.94	68.2	40.55	32.4	9.69	30.38	100	284	Р	Н
													Н
802.11a													Н
CH 165	*	5825	114.97	-	-	103.54	32.2	9.55	30.32	352	190	Р	V
5825MHz	*	5825	107.79	-	-	96.36	32.2	9.55	30.32	352	190	Α	V
		5850	70.01	-52.19	122.2	58.56	32.2	9.58	30.33	352	190	Р	V
		5855	62.82	-47.98	110.8	51.34	32.23	9.58	30.33	352	190	Р	V
		5875.2	53.79	-51.26	105.05	42.25	32.27	9.61	30.34	352	190	Р	V
		5939.2	51.25	-16.95	68.2	39.55	32.4	9.68	30.38	352	190	Р	V
													V
													V
													V

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Remark 2. All results are PASS against Peak and Average limit line.

## Band 4 5725~5850MHz WIFI 802.11a (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	( dBµV/m )	, ,	( dBµV/m )	(dB <sub>µ</sub> V)	( dB/m )	( dB )	(dB)	(cm)	( deg )		
		11490	56.28	-17.72	74	63.21	40.17	13.92	61.02	100	225	Р	Н
		11490	47.58	-6.42	54	54.51	40.17	13.92	61.02	100	225	Α	Н
902 44 6		17235	48.68	-19.52	68.2	49.62	40.7	17.88	59.52	100	0	Р	Н
802.11a													Н
CH 149		11490	60.03	-13.97	74	66.96	40.17	13.92	61.02	100	207	Р	V
5745MHz		11490	50.68	-3.32	54	57.61	40.17	13.92	61.02	100	207	Α	V
		17235	48.64	-19.56	68.2	49.58	40.7	17.88	59.52	100	0	Р	V
													V
		11570	56.05	-17.95	74	63.04	40	13.95	60.94	100	225	Р	Н
		11570	46.39	-7.61	54	53.38	40	13.95	60.94	100	225	Α	Н
		17355	50.19	-18.01	68.2	50.1	41.4	18.06	59.37	100	0	Р	Н
802.11a													Н
CH 157		11570	57.13	-16.87	74	64.12	40	13.95	60.94	100	207	Р	V
5785MHz		11570	47.88	-6.12	54	54.87	40	13.95	60.94	100	207	Α	V
		17355	49.35	-18.85	68.2	49.26	41.4	18.06	59.37	100	0	Р	V
													V
		11650	58.22	-15.78	74	65.46	39.66	13.98	60.88	100	223	Р	Н
		11650	47.91	-6.09	54	55.15	39.66	13.98	60.88	100	223	Α	Н
		17475	49.89	-18.31	68.2	48.5	42.43	18.19	59.23	100	0	Р	Н
802.11a													Н
CH 165		11650	58.8	-15.2	74	66.04	39.66	13.98	60.88	100	207	Р	V
5825MHz		11650	48.75	-5.25	54	55.99	39.66	13.98	60.88	100	207	Α	V
		17475	50.46	-17.74	68.2	49.07	42.43	18.19	59.23	100	0	Р	V
													V

#### Remark

- 1. No other spurious found.
- 2. All results are PASS against Peak and Average limit line.

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## Band 4 5725~5850MHz WIFI 802.11n HT20 (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 1+2		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos ( cm )	Pos ( deg )	Avg. (P/A)	i l
		5606.8	50.43	-17.77	68.2	39.68	31.8	9.16	30.21	100	285	P	Н
		5699.6	56.64	-48.27	104.91	45.76	31.8	9.33	30.25	100	285	Р	Н
		5719.2	72.49	-38.09	110.58	61.45	31.93	9.37	30.26	100	285	Р	Н
		5725	81.21	-40.99	122.2	70.16	31.93	9.38	30.26	100	285	Р	Н
	*	5745	115.57	-	-	104.42	32	9.42	30.27	100	285	Р	Н
	*	5745	107.76	-	-	96.61	32	9.42	30.27	100	285	Α	Н
802.11n													Н
HT20													Н
CH 149		5634.2	49.63	-18.57	68.2	38.91	31.73	9.21	30.22	400	205	Р	٧
5745MHz		5695.4	51.85	-49.96	101.81	40.97	31.8	9.33	30.25	400	205	Р	٧
		5720	66.35	-44.45	110.8	55.31	31.93	9.37	30.26	400	205	Р	٧
		5721.4	73.78	-40.21	113.99	62.74	31.93	9.37	30.26	400	205	Р	٧
	*	5745	111.68	-	-	100.53	32	9.42	30.27	400	205	Р	V
	*	5745	104.2	-	-	93.05	32	9.42	30.27	400	205	Α	٧
													٧
													V

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WIFI Preamp Note Level Over Limit Read Antenna Path Ant **Table** Peak Pol. **Frequency** Ant. Limit Line Level **Factor** Loss **Factor** Pos Pos Avg. (dBµV/m) ( deg ) (P/A) (H/V) 1+2 (MHz) (dB) (dBµV/m) (dBµV) ( dB/m ) (dB) (dB) ( cm ) 5606.6 50.61 -17.59 68.2 39.86 31.8 30.21 100 290 Н 9.16 51.3 101.37 Ρ 5694.8 -50.07 40.42 31.8 9.33 30.25 100 290 Н 5710.6 53.94 -54.23 108.17 42.98 31.87 9.35 30.26 100 290 Ρ Н Ρ 5723.2 52.45 -65.65 118.1 41.4 31.93 9.38 30.26 100 290 Н \* 5785 118.02 106.7 32.13 30.3 100 290 Ρ Н \_ 9.49 \* 5785 110.5 99.18 32.13 9.49 30.3 100 290 Н Α 5850.2 53.23 -68.51 121.74 41.78 32.2 9.58 30.33 100 290 Р Н 5855.2 53.05 -57.69 110.74 41.57 32.23 9.58 30.33 100 290 Ρ Н 5913.4 52.66 -24.1 76.76 41.05 32.33 9.65 30.37 100 290 Н Р 32.37 100 290 Н 5931 52.48 -15.72 68.2 40.81 9.67 30.37 Н 802.11n **HT20** Н **CH 157** 5644.8 31.73 Ρ ٧ 50.08 -18.12 68.2 39.34 9.23 30.22 330 199 5785MHz Ρ ٧ 5671.4 51.81 -32.27 84.08 41.01 31.75 9.28 30.23 330 199 5713.6 51.32 -57.69 109.01 40.35 31.87 9.36 30.26 330 199 Ρ ٧ 120.83 5724.4 51.45 -69.38 40.4 31.93 9.38 30.26 330 199 Ρ ٧ Ρ ٧ 5785 114.72 103.4 32.13 9.49 30.3 330 199 \* 32.13 30.3 330 ٧ 5785 106.98 95.66 9.49 199 Α 5850.8 51.94 -68.44 120.38 40.49 32.2 9.58 30.33 330 199 Ρ ٧ Ρ ٧ 5867 51 -56.44 107.44 39.51 32.23 9.6 30.34 330 199 Ρ ٧ 5883.8 51.47 -47.2 98.67 39.94 32.27 9.62 30.36 330 199 Р 5943 50.91 -17.29 68.2 39.21 32.4 9.68 30.38 330 199 V ٧ ٧

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	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
	( MHz )	( dBµV/m )	Limit ( dB )	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor ( dB )	Pos ( cm )		Avg. (P/A)	(H/V
*	5825	118.35	1	-	106.92	32.2	9.55	30.32	100	198	Р	Н
*	5825	110.51	-	-	99.08	32.2	9.55	30.32	100	198	Α	Н
	5850.2	79.86	-41.88	121.74	68.41	32.2	9.58	30.33	100	198	Р	Н
	5857	69.3	-40.94	110.24	57.81	32.23	9.59	30.33	100	198	Р	Н
	5875	57.08	-48.12	105.2	45.54	32.27	9.61	30.34	100	198	Р	Н
	5940	51.5	-16.7	68.2	39.8	32.4	9.68	30.38	100	198	Р	Н
												Н
												Н
*	5825	114.8	-	-	103.37	32.2	9.55	30.32	323	189	Р	V
*	5825	106.84	-	-	95.41	32.2	9.55	30.32	323	189	Α	V
	5850	77.55	-44.65	122.2	66.1	32.2	9.58	30.33	323	189	Р	V
	5855.8	64.09	-46.49	110.58	52.61	32.23	9.58	30.33	323	189	Р	V
	5875	53.85	-51.35	105.2	42.31	32.27	9.61	30.34	323	189	Р	V
	5932	50.96	-17.24	68.2	39.29	32.37	9.67	30.37	323	189	Р	V
												V
												V
	*	* 5825  * 5825  * 5825  5850.2  5857  5875  5940  * 5825  * 5825  5850  5855.8  5875	* 5825 118.35  * 5825 110.51  5850.2 79.86  5857 69.3  5875 57.08  5940 51.5   * 5825 114.8  * 5825 106.84  5850 77.55  5855.8 64.09  5875 53.85	(MHz)     (dBμV/m)     (dB)       * 5825     118.35     -       * 5825     110.51     -       5850.2     79.86     -41.88       5857     69.3     -40.94       5875     57.08     -48.12       5940     51.5     -16.7       * 5825     114.8     -       * 5825     106.84     -       5850     77.55     -44.65       5855.8     64.09     -46.49       5875     53.85     -51.35	(MHz)     (dBμV/m)     (dB)     (dBμV/m)       * 5825     118.35     -     -       * 5825     110.51     -     -       5850.2     79.86     -41.88     121.74       5857     69.3     -40.94     110.24       5875     57.08     -48.12     105.2       5940     51.5     -16.7     68.2       * 5825     114.8     -     -       * 5825     106.84     -     -       5850     77.55     -44.65     122.2       5855.8     64.09     -46.49     110.58       5875     53.85     -51.35     105.2	(MHz)     (dBμV/m)     (dBμV/m)     (dBμV/m)     (dBμV/m)       * 5825     118.35     -     -     106.92       * 5825     110.51     -     -     99.08       5850.2     79.86     -41.88     121.74     68.41       5857     69.3     -40.94     110.24     57.81       5875     57.08     -48.12     105.2     45.54       5940     51.5     -16.7     68.2     39.8       * 5825     114.8     -     -     103.37       * 5825     106.84     -     -     95.41       5850     77.55     -44.65     122.2     66.1       5855.8     64.09     -46.49     110.58     52.61       5875     53.85     -51.35     105.2     42.31	(MHz)     (dBμV/m)     (dB)     (dBμV/m)     (dBμV/m)     (dBμV)       *     5825     118.35     -     -     106.92     32.2       *     5825     110.51     -     -     99.08     32.2       5850.2     79.86     -41.88     121.74     68.41     32.2       5857     69.3     -40.94     110.24     57.81     32.23       5875     57.08     -48.12     105.2     45.54     32.27       5940     51.5     -16.7     68.2     39.8     32.4       *     5825     114.8     -     -     103.37     32.2       *     5825     106.84     -     -     95.41     32.2       5850     77.55     -44.65     122.2     66.1     32.2       5855.8     64.09     -46.49     110.58     52.61     32.23       5875     53.85     -51.35     105.2     42.31     32.27	(MHz)       (dBμV/m)       (dB)       (dBμV/m)       (dBμV/m)       (dB/m)       (dB)         *       5825       118.35       -       -       106.92       32.2       9.55         *       5825       110.51       -       -       99.08       32.2       9.55         5850.2       79.86       -41.88       121.74       68.41       32.2       9.58         5857       69.3       -40.94       110.24       57.81       32.23       9.59         5875       57.08       -48.12       105.2       45.54       32.27       9.61         5940       51.5       -16.7       68.2       39.8       32.4       9.68         *       5825       114.8       -       -       103.37       32.2       9.55         *       5825       106.84       -       -       95.41       32.2       9.55         5850       77.55       -44.65       122.2       66.1       32.2       9.58         5855.8       64.09       -46.49       110.58       52.61       32.23       9.58         5875       53.85       -51.35       105.2       42.31       32.27       9.61 </td <td>(MHz)         (dBμV/m)         (dBμV/m)         (dBμV/m)         (dBμV)         (</td> <td>(MHz)         (dBμV/m)         (dBμV/m)         (dBμV)         (dBμV)         (dB/m)         (dB</td> <td>(MHz)         (dBμV/m)         (dB)         (dBμV/m)         (dBμV)         (dBμν)         (dB)         (dB)         (cm)         (deg)           *         5825         118.35         -         -         106.92         32.2         9.55         30.32         100         198           *         5825         110.51         -         -         99.08         32.2         9.55         30.32         100         198           5850.2         79.86         -41.88         121.74         68.41         32.2         9.58         30.33         100         198           5857         69.3         -40.94         110.24         57.81         32.23         9.59         30.33         100         198           5875         57.08         -48.12         105.2         45.54         32.27         9.61         30.34         100         198           5940         51.5         -16.7         68.2         39.8         32.4         9.68         30.38         100         198           *         5825         106.84         -         -         95.41         32.2         9.55         30.32         323         189           *         5850</td> <td>(MHz)         (dBμV/m)         (dBμV/m)         (dBμV)         (dB/m)         (dB)         (dB)         (cm)         (deg)         (P/A)           *         5825         118.35         -         -         106.92         32.2         9.55         30.32         100         198         P           *         5825         110.51         -         -         99.08         32.2         9.55         30.32         100         198         A           5850.2         79.86         -41.88         121.74         68.41         32.2         9.58         30.33         100         198         P           5857         69.3         -40.94         110.24         57.81         32.23         9.59         30.33         100         198         P           5875         57.08         -48.12         105.2         45.54         32.27         9.61         30.34         100         198         P           5940         51.5         -16.7         68.2         39.8         32.4         9.68         30.38         100         198         P           *         5825         114.8         -         -         103.37         32.2         9.55         30</td>	(MHz)         (dBμV/m)         (dBμV/m)         (dBμV/m)         (dBμV)         (	(MHz)         (dBμV/m)         (dBμV/m)         (dBμV)         (dBμV)         (dB/m)         (dB	(MHz)         (dBμV/m)         (dB)         (dBμV/m)         (dBμV)         (dBμν)         (dB)         (dB)         (cm)         (deg)           *         5825         118.35         -         -         106.92         32.2         9.55         30.32         100         198           *         5825         110.51         -         -         99.08         32.2         9.55         30.32         100         198           5850.2         79.86         -41.88         121.74         68.41         32.2         9.58         30.33         100         198           5857         69.3         -40.94         110.24         57.81         32.23         9.59         30.33         100         198           5875         57.08         -48.12         105.2         45.54         32.27         9.61         30.34         100         198           5940         51.5         -16.7         68.2         39.8         32.4         9.68         30.38         100         198           *         5825         106.84         -         -         95.41         32.2         9.55         30.32         323         189           *         5850	(MHz)         (dBμV/m)         (dBμV/m)         (dBμV)         (dB/m)         (dB)         (dB)         (cm)         (deg)         (P/A)           *         5825         118.35         -         -         106.92         32.2         9.55         30.32         100         198         P           *         5825         110.51         -         -         99.08         32.2         9.55         30.32         100         198         A           5850.2         79.86         -41.88         121.74         68.41         32.2         9.58         30.33         100         198         P           5857         69.3         -40.94         110.24         57.81         32.23         9.59         30.33         100         198         P           5875         57.08         -48.12         105.2         45.54         32.27         9.61         30.34         100         198         P           5940         51.5         -16.7         68.2         39.8         32.4         9.68         30.38         100         198         P           *         5825         114.8         -         -         103.37         32.2         9.55         30

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## Band 4 5725~5850MHz WIFI 802.11n HT20 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	( dBµV/m )	( dB )	( dBµV/m )	(dBµV)	( dB/m )	(dB)	(dB)	( cm )	(deg)	(P/A)	(H/V
		11490	57.92	-16.08	74	64.85	40.17	13.92	61.02	100	225	Р	Н
		11490	47.97	-6.03	54	54.9	40.17	13.92	61.02	100	225	Α	Н
802.11n		17235	49.78	-18.42	68.2	50.72	40.7	17.88	59.52	100	0	Р	Н
HT20													Н
CH 149		11490	60.2	-13.8	74	67.13	40.17	13.92	61.02	100	208	Р	V
5745MHz		11490	50.71	-3.29	54	57.64	40.17	13.92	61.02	100	208	Α	V
		17235	49.71	-18.49	68.2	50.65	40.7	17.88	59.52	100	0	Р	V
													V
		11570	58.9	-15.1	74	65.89	40	13.95	60.94	100	226	Р	Н
		11570	46.85	-7.15	54	53.84	40	13.95	60.94	100	226	Α	Н
802.11n		17355	50.19	-18.01	68.2	50.1	41.4	18.06	59.37	100	0	Р	Н
HT20													Н
CH 157		11570	60.98	-13.02	74	67.97	40	13.95	60.94	100	206	Р	V
5785MHz		11570	49.78	-4.22	54	56.77	40	13.95	60.94	100	206	Α	V
		17355	49.44	-18.76	68.2	49.35	41.4	18.06	59.37	100	0	Р	V
													V
		11650	58.28	-15.72	74	65.52	39.66	13.98	60.88	100	273	Р	Н
		11650	47.24	-6.76	54	54.48	39.66	13.98	60.88	100	273	Α	Н
802.11n		17475	49.75	-18.45	68.2	48.36	42.43	18.19	59.23	100	0	Р	Н
HT20													Н
CH 165		11650	58.59	-15.41	74	65.83	39.66	13.98	60.88	100	208	Р	V
5825MHz		11650	48.83	-5.17	54	56.07	39.66	13.98	60.88	100	208	Α	V
		17475	49.86	-18.34	68.2	48.47	42.43	18.19	59.23	100	0	Р	V
													V

#### Remark

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

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## Band 4 5725~5850MHz WIFI 802.11n HT40 (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 1+2		( MHz )	( dBµV/m )	Limit	Line ( dBµV/m )	Level	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos	Pos ( deg )	Avg.	(1177)
172		5647.6	57.01	-11.19	68.2	46.26	31.73	9.24	30.22	(cm) 100	284	P	(п <b>/ v )</b> Н
		5697.4	77.7	-25.58	103.28	66.82	31.8	9.33	30.25	100	284	Р	Н
		5718.8	91.26	-19.2	110.46	80.22	31.93	9.37	30.26	100	284	Р	Н
		5720.6	92.76	-19.41	112.17	81.72	31.93	9.37	30.26	100	284	Р	Н
	*	5755	117.06	-	-	105.82	32.07	9.44	30.27	100	284	Р	Н
	*	5755	108.78	-	-	97.54	32.07	9.44	30.27	100	284	Α	Н
		5850.2	58.45	-63.29	121.74	47	32.2	9.58	30.33	100	284	Р	Н
		5867.6	58.65	-48.62	107.27	47.16	32.23	9.6	30.34	100	284	Р	Н
		5875	55.35	-49.85	105.2	43.81	32.27	9.61	30.34	100	284	Р	Н
		5925	52.68	-15.52	68.2	41.02	32.37	9.66	30.37	100	284	Р	Н
802.11n													Н
HT40													Н
CH 151		5646.8	52.71	-15.49	68.2	41.96	31.73	9.24	30.22	331	189	Р	V
5755MHz		5697.6	69.83	-33.6	103.43	58.95	31.8	9.33	30.25	331	189	Р	V
		5716.8	86.85	-23.06	109.91	75.87	31.87	9.37	30.26	331	189	Р	V
		5720.8	86.81	-25.81	112.62	75.77	31.93	9.37	30.26	331	189	Р	V
	*	5755	113.09	-	-	101.85	32.07	9.44	30.27	331	189	Р	V
	*	5755	105.3	-	-	94.06	32.07	9.44	30.27	331	189	Α	V
		5851.4	52.39	-66.62	119.01	40.94	32.2	9.58	30.33	331	189	Р	V
		5859.2	54.44	-55.18	109.62	42.96	32.23	9.59	30.34	331	189	Р	V
		5900.8	51.72	-34.35	86.07	40.14	32.3	9.64	30.36	331	189	Р	V
		5935.2	51.31	-16.89	68.2	39.64	32.37	9.68	30.38	331	189	Р	V
													V
		_											V

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WIFI Preamp Note **Frequency** Level Over Limit Read Antenna Path Ant **Table** Peak Pol. Ant. Limit Line Level **Factor** Loss Factor Pos Pos Avg. (dBµV/m) ( deg ) (P/A) (H/V) 1+2 (MHz) (dB) (dBµV/m) (dB<sub>µ</sub>V) ( dB/m ) (dB) (dB) ( cm ) 5637.8 51.17 -17.03 68.2 40.44 31.73 9.22 30.22 100 283 Н 47.85 Ρ 5699.8 58.73 -46.32 105.05 31.8 9.33 30.25 100 283 Н 5719.8 67.03 -43.71 110.74 55.99 31.93 9.37 30.26 100 283 Ρ Н Ρ 5724.6 70.43 -50.86 121.29 59.38 31.93 9.38 30.26 100 283 Н 5795 116.73 105.32 32.2 9.51 30.3 100 283 Ρ Н \* 5795 108.39 96.98 32.2 9.51 30.3 100 283 Α Н 5854 72.71 -40.37 113.08 61.23 32.23 9.58 30.33 100 283 Р Н 5857.6 72.84 -37.23 110.07 61.35 32.23 9.59 30.33 100 283 Ρ Н 5875.4 62.86 -42.04 104.9 51.32 32.27 9.61 30.34 100 283 Н Р 32.37 30.37 100 283 Н 5925 54.86 -13.34 68.2 43.2 9.66 Н 802.11n **HT40** Н **CH 159** 5644.4 -17.69 31.73 Ρ ٧ 50.51 68.2 39.77 9.23 30.22 331 189 5795MHz ٧ 5698.8 53.24 -51.08 104.32 42.36 31.8 9.33 30.25 331 189 5718.8 59.57 -50.89 110.46 48.53 31.93 9.37 30.26 331 189 Ρ ٧ 5722 61.73 -53.63 115.36 50.68 31.93 9.38 30.26 331 189 Ρ ٧ 189 Ρ ٧ 5795 112.91 101.5 32.2 9.51 30.3 331 \* 32.2 30.3 331 ٧ 5795 104.97 -93.56 9.51 189 Α 5854.6 68.99 -42.72 111.71 57.51 32.23 9.58 30.33 331 189 ٧ Ρ ٧ 5855.2 67.86 -42.88 110.74 56.38 32.23 9.58 30.33 331 189 Ρ ٧ 5876.2 59.21 -45.1 104.31 47.67 32.27 9.61 30.34 331 189 Р 5929.4 52.34 -15.86 68.2 40.67 32.37 9.67 30.37 331 189 V ٧ ٧

Report No.: FR911110E

### Remark

No other spurious found.

2. All results are PASS against Peak and Average limit line.

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## Band 4 5725~5850MHz WIFI 802.11n HT40 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	( dBµV/m )	( dB )	( dBµV/m )	(dBµV)	( dB/m )	(dB)	( dB )	( cm )	( deg )	(P/A)	(H/V
		11510	57.17	-16.83	74	64.03	40.2	13.93	60.99	100	234	Р	Н
		11510	48.72	-5.28	54	55.58	40.2	13.93	60.99	100	234	Α	Н
802.11n		17265	47.98	-20.22	68.2	48.73	40.8	17.93	59.48	100	0	Р	Н
HT40													Н
CH 151		11510	58.66	-15.34	74	65.52	40.2	13.93	60.99	100	205	Р	V
5755MHz		11510	50.94	-3.06	54	57.8	40.2	13.93	60.99	100	205	Α	V
		17265	48.3	-19.9	68.2	49.05	40.8	17.93	59.48	100	0	Р	V
													V
		11590	55.08	-18.92	74	62.1	39.95	13.96	60.93	100	273	Р	Н
		11590	46.04	-7.96	54	53.06	39.95	13.96	60.93	100	273	Α	Н
802.11n		17385	51.54	-16.66	68.2	51.07	41.73	18.08	59.34	100	0	Р	Н
HT40													Н
CH 159		11590	57.01	-16.99	74	64.03	39.95	13.96	60.93	222	205	Р	V
5795MHz		11590	48.31	-5.69	54	55.33	39.95	13.96	60.93	222	205	Α	V
		17385	51.37	-16.83	68.2	50.9	41.73	18.08	59.34	100	0	Р	V
													V

#### Remark

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B39 of B54

## Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Band Edge @ 3m)

Report No.: FR911110E

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Pos	Peak Avg.	
1+2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	( cm )	(deg)	(P/A)	(H/V
		5649.4	64.9	-3.3	68.2	54.15	31.73	9.24	30.22	100	287	Р	Н
		5699.2	83.74	-20.87	104.61	72.86	31.8	9.33	30.25	100	287	Р	Н
		5718.8	87.28	-23.18	110.46	76.24	31.93	9.37	30.26	100	287	Р	Н
		5720.8	88.21	-24.41	112.62	77.17	31.93	9.37	30.26	100	287	Р	Н
	*	5775	113.13	-	-	101.82	32.13	9.47	30.29	100	287	Р	Н
	*	5775	105.09	1	-	93.78	32.13	9.47	30.29	100	287	Α	Н
		5850.4	80.51	-40.78	121.29	69.06	32.2	9.58	30.33	100	287	Р	Н
		5860.8	82.83	-26.34	109.17	71.35	32.23	9.59	30.34	100	287	Р	Н
		5877	74.56	-29.15	103.71	63.02	32.27	9.61	30.34	100	287	Р	Н
		5925.8	57.44	-10.76	68.2	45.78	32.37	9.66	30.37	100	287	Р	Н
802.11ac													Н
VHT80													Н
CH 155		5646.8	55.41	-12.79	68.2	44.66	31.73	9.24	30.22	330	203	Р	V
5775MHz		5689.6	73.22	-24.31	97.53	62.35	31.8	9.32	30.25	330	203	Р	V
		5719	80.39	-30.13	110.52	69.35	31.93	9.37	30.26	330	203	Р	V
		5723.2	80.66	-37.44	118.1	69.61	31.93	9.38	30.26	330	203	Р	V
	*	5775	108.87	-	-	97.56	32.13	9.47	30.29	330	203	Р	V
	*	5775	101.35	-	-	90.04	32.13	9.47	30.29	330	203	Α	V
		5850	77.61	-44.59	122.2	66.16	32.2	9.58	30.33	330	203	Р	V
		5868	74.27	-32.89	107.16	62.78	32.23	9.6	30.34	330	203	Р	V
		5883.2	66.36	-32.75	99.11	54.81	32.27	9.62	30.34	330	203	Р	٧
		5927.4	53.63	-14.57	68.2	41.96	32.37	9.67	30.37	330	203	Р	٧
													V
													V

# Remark 2.

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B40 of B54

## Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.	İ			Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	( dB )	( cm )	(deg)	(P/A)	(H/V)
		11550	52.94	-21.06	74	59.9	40.05	13.95	60.96	100	225	Р	Н
		11550	45.1	-8.9	54	52.06	40.05	13.95	60.96	100	225	Α	Н
802.11ac		17325	50.76	-17.44	68.2	51.08	41.07	18.02	59.41	100	0	Р	Н
VHT80													Н
CH 155		11550	55.35	-18.65	74	62.31	40.05	13.95	60.96	100	206	Р	٧
5775MHz		11550	46.89	-7.11	54	53.85	40.05	13.95	60.96	100	206	Α	V
		17325	50.33	-17.87	68.2	50.65	41.07	18.02	59.41	100	0	Р	V
													٧

### Remark

2. All results are PASS against Peak and Average limit line.

No other spurious found.

TEL: 886-3-327-3456 Page Number: B41 of B54

# Emission below 1GHz 5GHz WIFI 802.11ac VHT80 (LF @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 1+2		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level (dBµV)	Factor ( dB/m )	Loss (dB)	Factor ( dB )	Pos ( cm )	Pos ( deg )	Avg. (P/A)	(H/V)
		70.74	31.09	-8.91	40	50.1	12.45	1.1	32.56	, ,		Р	Н
		139.61	38.14	-5.36	43.5	51.53	17.6	1.51	32.5	201	294	Q	Н
		238.55	31.56	-14.44	46	44.96	17.13	1.98	32.51			Р	Н
		307.42	35.47	-10.53	46	46.5	19.3	2.21	32.54			Р	Н
		472.32	24.76	-21.24	46	31.16	23.5	2.66	32.56			Р	Н
		872.93	32.8	-13.2	46	31.91	29	3.69	31.8			Р	Н
													Н
													Н
													Н
													Н
5GHz													Н
802.11ac													Н
VHT80		37.76	33.3	-6.7	40	44.02	21.12	0.77	32.61	100	339	Q	V
LF		153.19	36.46	-7.04	43.5	50.44	16.9	1.62	32.5			Р	V
		237.58	24.66	-21.34	46	38.19	17.01	1.97	32.51			Р	V
		305.48	29.47	-16.53	46	40.5	19.3	2.21	32.54			Р	V
		627.52	27.36	-18.64	46	30.55	26.25	3.11	32.55			Р	V
		878.75	31.48	-14.52	46	30.55	29	3.7	31.77			Р	V
													V
													V
													V
													V
													V
													V

#### Remark

1. No other spurious found.

2. All results are PASS against limit line.

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#### <TXBF Mode>

## Band 4 5725~5850MHz WIFI 802.11ac VHT20 (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	(dB)	( cm )	( deg )	(P/A)	(H/V)
		5644.6	51.01	-17.19	68.2	40.27	31.73	9.23	30.22	100	151	Р	Н
		5683.2	56.87	-35.93	92.8	46.07	31.75	9.3	30.25	100	151	Р	Н
		5719.8	61.01	-49.73	110.74	49.97	31.93	9.37	30.26	100	151	Р	Н
		5724.4	64.64	-56.19	120.83	53.59	31.93	9.38	30.26	100	151	Р	Η
	*	5745	115.46	-	-	104.31	32	9.42	30.27	100	151	Р	Н
	*	5745	100.85	-	-	89.7	32	9.42	30.27	100	151	Α	Н
802.11ac													Н
VHT20													Н
CH 149		5609.4	50.13	-18.07	68.2	39.37	31.8	9.17	30.21	400	224	Р	V
5745MHz		5698.4	54.55	-49.47	104.02	43.67	31.8	9.33	30.25	400	224	Р	٧
		5715.6	56.82	-52.75	109.57	45.85	31.87	9.36	30.26	400	224	Р	٧
		5725	61.57	-60.63	122.2	50.52	31.93	9.38	30.26	400	224	Р	٧
	*	5745	111.2	-	-	100.05	32	9.42	30.27	400	224	Р	٧
	*	5745	96.36	-	-	85.21	32	9.42	30.27	400	224	Α	V
													V
													V

TEL: 886-3-327-3456 Page Number: B43 of B54



WIFI Preamp Note **Frequency** Level Over Limit Read Antenna Path Ant **Table** Peak Pol. Ant. Limit Line Level **Factor** Loss Factor Pos Pos Avg. (dBµV/m) ( deg ) (P/A) (H/V) 1+2 (MHz) (dB) (dBµV/m) (dBµV) ( dB/m ) (dB) (dB) (cm) 5625 51.08 -17.12 68.2 40.32 31.77 30.21 100 152 Н 9.2 76.52 Ρ 5661.2 50.34 -26.18 39.61 31.7 9.26 30.23 100 152 Н 5717.2 53.01 -57.01 110.02 42.03 31.87 9.37 30.26 100 152 Ρ Н Ρ 5722.8 54.13 -63.05 117.18 43.08 31.93 9.38 30.26 100 152 Н \* 5785 115.81 104.49 32.13 30.3 100 152 Ρ Н \_ \_ 9.49 \* 5785 101 89.68 32.13 9.49 30.3 100 152 Н Α 5851.2 52.22 -67.24 119.46 40.77 32.2 9.58 30.33 100 152 Р Н 5869.4 51.88 -54.89 106.77 40.39 32.23 9.6 30.34 100 152 Ρ Н 5898 51.82 -36.3288.14 40.25 32.3 9.63 30.36 100 152 Н Р 32.37 100 Н 5933 52.07 -16.13 68.2 40.4 9.67 30.37 152 Н 802.11ac VHT20 Н CH 157 5608.8 -17.48 Ρ ٧ 50.72 68.2 39.96 31.8 9.17 30.21 360 220 5785MHz Ρ ٧ 5680.8 49.97 -41.06 91.03 39.17 31.75 9.3 30.25 360 220 5703.8 50.01 -56.26 106.27 39.05 31.87 9.34 30.25 360 220 Ρ ٧ 5722.6 52.14 -64.59 116.73 41.09 31.93 9.38 30.26 360 220 Ρ ٧ Ρ ٧ 5785 112.08 100.76 32.13 9.49 30.3 360 220 \* 32.13 30.3 ٧ 5785 96.86 -85.54 9.49 360 220 Α 5853.4 49.65 -64.8 114.45 38.2 32.2 9.58 30.33 360 220 Ρ ٧ Ρ ٧ 5871.6 51.72 -54.43 106.15 40.19 32.27 9.6 30.34 360 220 Ρ ٧ 5901 -34.7985.92 39.55 32.3 9.64 30.36 360 220 51.13 Р 5931.4 51.46 -16.74 68.2 39.79 32.37 9.67 30.37 360 220 V ٧ ٧

Report No.: FR911110E

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol
Ant. 1+2		( MHz )	( dBµV/m )	Limit (dB)	Line ( dBµV/m )	Level ( dBµV )	Factor ( dB/m )	Loss (dB)	Factor (dB)	Pos ( cm )	Pos ( deg )	Avg. (P/A)	(H/\
	*	5825	115.59	-	-	104.16	32.2	9.55	30.32	100	156	Р	Н
	*	5825	101.03	-	-	89.6	32.2	9.55	30.32	100	156	Α	Н
		5850.8	62.05	-58.33	120.38	50.6	32.2	9.58	30.33	100	156	Р	Н
		5858.4	61.6	-48.25	109.85	50.12	32.23	9.59	30.34	100	156	Р	Н
		5914.8	54.63	-21.09	75.72	43.02	32.33	9.65	30.37	100	156	Р	Н
		5948.6	52.09	-16.11	68.2	40.38	32.4	9.69	30.38	100	156	Р	Н
802.11ac													Н
VHT20													Н
CH 165	*	5825	111.87	-	-	100.44	32.2	9.55	30.32	399	195	Р	V
5825MHz	*	5825	96.47	-	-	85.04	32.2	9.55	30.32	399	195	Α	V
		5851.6	59.72	-58.83	118.55	48.27	32.2	9.58	30.33	399	195	Р	V
		5857.6	59.3	-50.77	110.07	47.81	32.23	9.59	30.33	399	195	Р	V
		5875.2	55.75	-49.3	105.05	44.21	32.27	9.61	30.34	399	195	Р	V
		5930.6	51.57	-16.63	68.2	39.9	32.37	9.67	30.37	399	195	Р	V
													V
													V

Report No.: FR911110E

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## Band 4 5725~5850MHz WIFI 802.11ac VHT20 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	( dBµV/m )	( dB )	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V
		11490	47.71	-26.29	74	54.64	40.17	13.92	61.02	100	0	Р	Н
		17235	49.34	-18.86	68.2	50.28	40.7	17.88	59.52	100	0	Р	Н
802.11ac													Н
VHT20													Н
CH 149		11490	48.61	-25.39	74	55.54	40.17	13.92	61.02	100	0	Р	V
5745MHz		17235	48.35	-19.85	68.2	49.29	40.7	17.88	59.52	100	0	Р	V
													V
													V
		11570	47.81	-26.19	74	54.8	40	13.95	60.94	100	0	Р	Н
		17355	50.58	-17.62	68.2	50.49	41.4	18.06	59.37	100	0	Р	Н
802.11ac													Н
VHT20													Н
CH 157		11570	48.18	-25.82	74	55.17	40	13.95	60.94	100	0	Р	V
5785MHz		17355	50.03	-18.17	68.2	49.94	41.4	18.06	59.37	100	0	Р	V
													V
													V
		11650	47.86	-26.14	74	55.1	39.66	13.98	60.88	100	0	Р	Н
		17475	49.66	-18.54	68.2	48.27	42.43	18.19	59.23	100	0	Р	Н
802.11ac													Н
VHT20													Н
CH 165		11650	47.83	-26.17	74	55.07	39.66	13.98	60.88	100	0	Р	V
5825MHz		17475	50.67	-17.53	68.2	49.28	42.43	18.19	59.23	100	0	Р	V
													V
													V

## Remark

- 1. No other spurious found.
- 2. All results are PASS against Peak and Average limit line.

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## Band 4 5725~5850MHz WIFI 802.11ac VHT40 (Band Edge @ 3m)

Report No. : FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		, <b></b> .	,	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	( dBµV/m )	, ,	( dBµV/m )	(dBµV)	( dB/m )	( dB )	( dB )	(cm)	( deg )		, ,
		5644.8	53.67	-14.53	68.2	42.93	31.73	9.23	30.22	100	155	Р	Н
		5697	63.14	-39.85	102.99	52.26	31.8	9.33	30.25	100	155	Р	Н
		5718.6	65.86	-44.55	110.41	54.82	31.93	9.37	30.26	100	155	Р	Н
		5723.2	67.81	-50.29	118.1	56.76	31.93	9.38	30.26	100	155	Р	Н
	*	5755	113.28	-	-	102.04	32.07	9.44	30.27	100	155	Р	Н
	*	5755	102.22	-	-	90.98	32.07	9.44	30.27	100	155	Α	Н
		5853.6	53.1	-60.89	113.99	41.62	32.23	9.58	30.33	100	155	Р	Н
		5856	54.57	-55.95	110.52	43.09	32.23	9.58	30.33	100	155	Р	Н
		5876.4	51.89	-52.27	104.16	40.35	32.27	9.61	30.34	100	155	Р	Н
		5947.4	51.36	-16.84	68.2	39.65	32.4	9.69	30.38	100	155	Р	Н
802.11ac													Н
VHT40													Н
CH 151		5637.6	50.36	-17.84	68.2	39.63	31.73	9.22	30.22	363	222	Р	V
5755MHz		5692.4	59.13	-40.47	99.6	48.26	31.8	9.32	30.25	363	222	Р	V
		5719.6	62.93	-47.76	110.69	51.89	31.93	9.37	30.26	363	222	Р	V
		5723.2	63.62	-54.48	118.1	52.57	31.93	9.38	30.26	363	222	Р	٧
	*	5755	109.23	-	-	97.99	32.07	9.44	30.27	363	222	Р	V
	*	5755	98.9	-	-	87.66	32.07	9.44	30.27	363	222	Α	V
		5852.4	50.86	-65.87	116.73	39.41	32.2	9.58	30.33	363	222	Р	٧
		5855.8	51.84	-58.74	110.58	40.36	32.23	9.58	30.33	363	222	Р	V
		5894.8	51.68	-38.83	90.51	40.11	32.3	9.63	30.36	363	222	Р	V
		5929.4	50.75	-17.45	68.2	39.08	32.37	9.67	30.37	363	222	Р	V
													V
													V
													V

TEL: 886-3-327-3456 Page Number: B47 of B54



WIFI Preamp Note **Frequency** Level Over Limit Read Antenna Path Ant **Table** Peak Pol. Ant. Limit Line Level **Factor** Loss Factor Pos Pos Avg. (dBµV/m) ( deg ) (P/A) (H/V) 1+2 (MHz) (dB) (dBµV/m) (dBµV) ( dB/m ) (dB) (dB) ( cm ) 50.3 -17.9 68.2 39.54 31.77 9.21 30.22 100 185 Н 5631 52.48 41.62 Ρ 5684 -40.92 93.4 31.8 9.31 30.25 100 185 Н 5707.8 54.59 -52.8 107.39 43.63 31.87 9.35 30.26 100 185 Ρ Н Ρ 5720.6 53.14 -59.03 112.17 42.1 31.93 9.37 30.26 100 185 Н 5795 113.54 102.13 32.2 9.51 30.3 100 185 Ρ Н \* 5795 103.22 91.81 32.2 9.51 30.3 100 185 Α Н 5852.4 57.05 -59.68 116.73 45.6 32.2 9.58 30.33 100 185 Р Н 5862.8 61.67 -46.94 108.61 50.19 32.23 9.59 30.34 100 185 Ρ Н 5880.6 56.95 -44.09 101.04 45.41 32.27 9.61 30.34 100 185 Н Р -14.97 32.37 30.37 100 185 Н 5925 53.23 68.2 41.57 9.66 Η 802.11ac VHT40 Н **CH 159** 5618.8 -17.5 31.77 Ρ ٧ 50.7 68.2 39.96 9.18 30.21 397 220 5795MHz ٧ 5699.2 51.98 -52.63 104.61 41.1 31.8 9.33 30.25 397 220 5716.6 51.83 -58.02 109.85 40.85 31.87 9.37 30.26 397 220 Ρ ٧ 5721 51.6 -61.48 113.08 40.56 31.93 9.37 30.26 397 220 Ρ ٧ 220 Ρ ٧ 5795 108.83 97.42 32.2 9.51 30.3 397 \* 32.2 30.3 ٧ 5795 98.7 87.29 9.51 397 220 Α 5850.6 52.47 -68.36 120.83 41.02 32.2 9.58 30.33 397 220 ٧ Ρ ٧ 5856.6 54.55 -55.8 110.35 43.06 32.23 9.59 30.33 397 220 Ρ ٧ 5904.8 52.4 -30.71 83.11 40.79 32.33 9.64 30.36 397 220 Р 5933.4 51.86 -16.34 68.2 40.19 32.37 9.67 30.37 397 220 ٧ ٧ ٧

Report No.: FR911110E

### Remark

No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B48 of B54

## Band 4 5725~5850MHz WIFI 802.11ac VHT40 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	( dB )	( cm )	( deg )	(P/A)	(H/V)
		11510	48.8	-25.2	74	55.66	40.2	13.93	60.99	100	0	Р	Н
		17265	48.03	-20.17	68.2	48.78	40.8	17.93	59.48	100	0	Р	Н
802.11ac													Н
VHT40													Н
CH 151		11510	48.82	-25.18	74	55.68	40.2	13.93	60.99	100	0	Р	V
5755MHz		17265	48.17	-20.03	68.2	48.92	40.8	17.93	59.48	100	0	Р	V
													V
													V
		11590	48.91	-25.09	74	55.93	39.95	13.96	60.93	100	0	Р	Н
		17385	50.25	-17.95	68.2	49.78	41.73	18.08	59.34	100	0	Р	Н
802.11ac													Н
VHT40													Н
CH 159		11590	49.32	-24.68	74	56.34	39.95	13.96	60.93	100	0	Р	V
5795MHz		17385	51	-17.2	68.2	50.53	41.73	18.08	59.34	100	0	Р	٧
													V
													V

#### Remark

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number: B49 of B54

## Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Band Edge @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	(dB)	( cm )	( deg )	(P/A)	(H/V)
		5617	52.72	-15.48	68.2	41.98	31.77	9.18	30.21	100	156	Р	Н
		5700	63.43	-41.77	105.2	52.54	31.8	9.34	30.25	100	156	Р	Н
		5710	64.55	-43.45	108	53.59	31.87	9.35	30.26	100	156	Р	Н
		5721	65.08	-48	113.08	54.04	31.93	9.37	30.26	100	156	Р	Н
	*	5775	112.4	-	-	101.09	32.13	9.47	30.29	100	156	Р	Н
	*	5775	99.18	-	-	87.87	32.13	9.47	30.29	100	156	Α	Н
		5851.4	60.07	-58.94	119.01	48.62	32.2	9.58	30.33	100	156	Р	Н
		5855.6	60.85	-49.78	110.63	49.37	32.23	9.58	30.33	100	156	Р	Н
		5883.4	54.29	-44.67	98.96	42.76	32.27	9.62	30.36	100	156	Р	Н
		5942.8	51.85	-16.35	68.2	40.15	32.4	9.68	30.38	100	156	Р	Н
802.11ac													Н
VHT80													Н
CH 155		5642.6	50.68	-17.52	68.2	39.94	31.73	9.23	30.22	378	226	Р	V
5775MHz		5698	57.01	-46.72	103.73	46.13	31.8	9.33	30.25	378	226	Р	V
		5710	59.09	-48.91	108	48.13	31.87	9.35	30.26	378	226	Р	V
		5721.4	60.4	-53.59	113.99	49.36	31.93	9.37	30.26	378	226	Р	V
	*	5775	107.68	-	-	96.37	32.13	9.47	30.29	378	226	Р	V
	*	5775	95.27	-	-	83.96	32.13	9.47	30.29	378	226	Α	V
		5852.8	59.47	-56.35	115.82	48.02	32.2	9.58	30.33	378	226	Р	V
		5858	58.18	-51.78	109.96	46.7	32.23	9.59	30.34	378	226	Р	V
		5878.4	53.02	-49.65	102.67	41.48	32.27	9.61	30.34	378	226	Р	V
		5936.4	51.73	-16.47	68.2	40.06	32.37	9.68	30.38	378	226	Р	V
													V
													V

### Remark

1. No other spurious found.

2. All results are PASS against Peak and Average limit line.

TEL: 886-3-327-3456 Page Number : B50 of B54

## Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Harmonic @ 3m)

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	į .
1+2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	( dB )	( cm )	(deg)	(P/A)	(H/V
		11550	49.75	-24.25	74	56.71	40.05	13.95	60.96	100	0	Р	Н
		17325	49.19	-19.01	68.2	49.51	41.07	18.02	59.41	100	0	Р	Н
802.11ac													Н
VHT80													Н
CH 155		11550	48.6	-25.4	74	55.56	40.05	13.95	60.96	100	0	Р	V
5775MHz		17325	50.16	-18.04	68.2	50.48	41.07	18.02	59.41	100	0	Р	V
													V
													V

## Remark

2. All results are PASS against Peak and Average limit line.

No other spurious found.

TEL: 886-3-327-3456 Page Number: B51 of B54

# Emission below 1GHz 5GHz WIFI 802.11ac VHT40 (LF @ 3m)

Report No.: FR911110E

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	( dBµV/m )	(dB)	( dBµV/m )	(dBµV)	( dB/m )	(dB)	(dB)	( cm )	( deg )	(P/A)	(H/V
		82.38	33.31	-6.69	40	50.88	13.78	1.1	32.54			Р	Н
		138.64	37.04	-6.46	43.5	50.44	17.6	1.41	32.5	184	173	Q	Н
		306.45	34.98	-11.02	46	46.01	19.3	2.09	32.54			Р	Н
		455.83	33.12	-12.88	46	39.85	23.22	2.52	32.56			Р	Н
		623.64	31.38	-14.62	46	34.81	26.02	2.95	32.55			Р	Н
		768.17	35.15	-10.85	46	35.59	28.44	3.24	32.26			Р	Н
													Н
													Н
													Н
													Н
5GHz													Н
802.11ac													Н
VHT40		31.94	35.34	-4.66	40	43.13	24.14	0.69	32.62	100	0	Q	V
LF		149.31	36.16	-7.34	43.5	49.9	17.17	1.46	32.5			Р	V
		302.57	32.05	-13.95	46	43.08	19.3	2.08	32.54			Р	V
		455.83	31.96	-14.04	46	38.69	23.22	2.52	32.56			Р	V
		551.86	30.59	-15.41	46	34.82	25.4	2.77	32.59			Р	V
		768.17	33.4	-12.6	46	33.84	28.44	3.24	32.26			Р	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.

2. All results are PASS against limit line.

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### Note symbol

Report No.: FR911110E

*	Fundamental Frequency which can be ignored. However, the level of any
	unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is <b>over limit</b> line.
P/A	Peak or Average
H/V	Horizontal or Vertical

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#### A calculation example for radiated spurious emission is shown as below:

Report No.: FR911110E

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	( dBµV/m )	(dB)	(dBµV/m)	(dB <sub>µ</sub> V)	( dB/m )	( dB )	( dB )	( cm )	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	Р	Н
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	Α	Н

- 1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
- 2. Level( $dB\mu V/m$ ) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level( $dB\mu V$ ) Preamp Factor(dB)
- 3. Over Limit(dB) = Level(dB $\mu$ V/m) Limit Line(dB $\mu$ V/m)

#### For Peak Limit @ 2390MHz:

- 1. Level(dBµV/m)
- = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBµV) Preamp Factor(dB)
- $= 32.22(dB/m) + 4.58(dB) + 54.51(dB\mu V) 35.86 (dB)$
- $= 55.45 (dB\mu V/m)$
- 2. Over Limit(dB)
- = Level( $dB\mu V/m$ ) Limit Line( $dB\mu V/m$ )
- $= 55.45(dB\mu V/m) 74(dB\mu V/m)$
- = -18.55(dB)

#### For Average Limit @ 2390MHz:

- 1. Level(dBµV/m)
- = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dB $\mu$ V) Preamp Factor(dB)
- $= 32.22(dB/m) + 4.58(dB) + 42.6(dB\mu V) 35.86 (dB)$
- $= 43.54 (dB\mu V/m)$
- 2. Over Limit(dB) = Level(dB $\mu$ V/m) Limit Line(dB $\mu$ V/m)
- $= 43.54(dB\mu V/m) 54(dB\mu V/m)$
- = -10.46(dB)

Both peak and average measured complies with the limit line, so test result is "PASS".

TEL: 886-3-327-3456 Page Number: B54 of B54

## **Appendix C. Radiated Spurious Emission Plots**

Test Engineer :	Watt Tseng \ Karl Hou	Temperature :	24~26°C
rest Engineer.	Wall Iselig Rail Hou	Relative Humidity :	52~57%

Report No.: FR911110E

## Note symbol

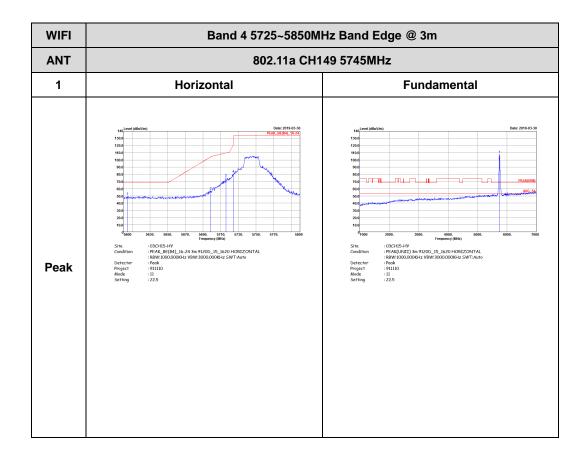
-L	Low channel location
-R	High channel location

TEL: 886-3-327-3456 Page Number : C1 of C104

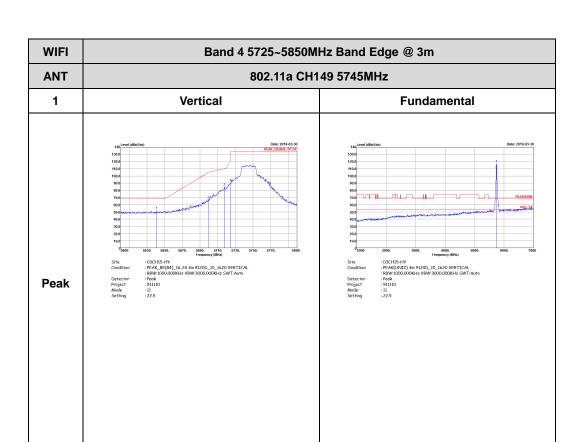
#### <CDD Mode>

Band 4 - 5725~5850MHz WIFI 802.11a (Band Edge @ 3m)

Report No.: FR911110E



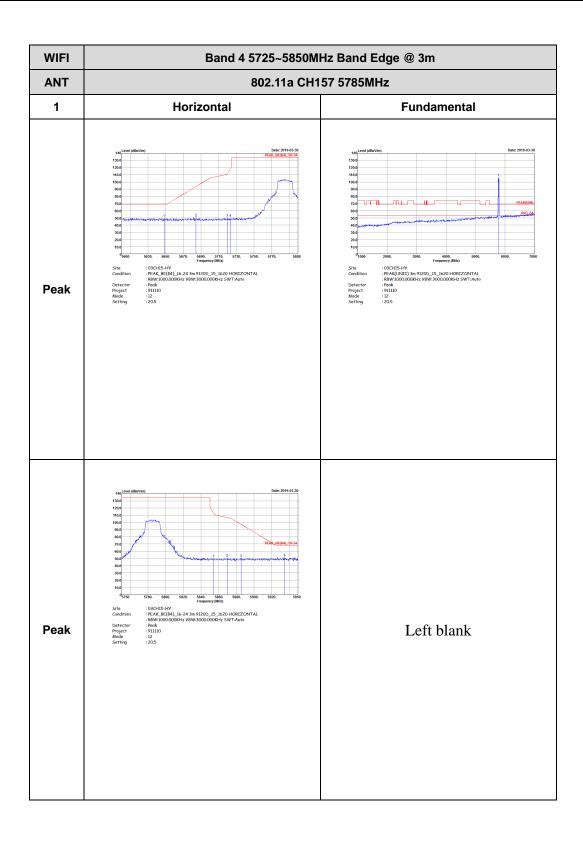
TEL: 886-3-327-3456 Page Number : C2 of C104



Report No.: FR911110E

TEL: 886-3-327-3456 Page Number : C3 of C104

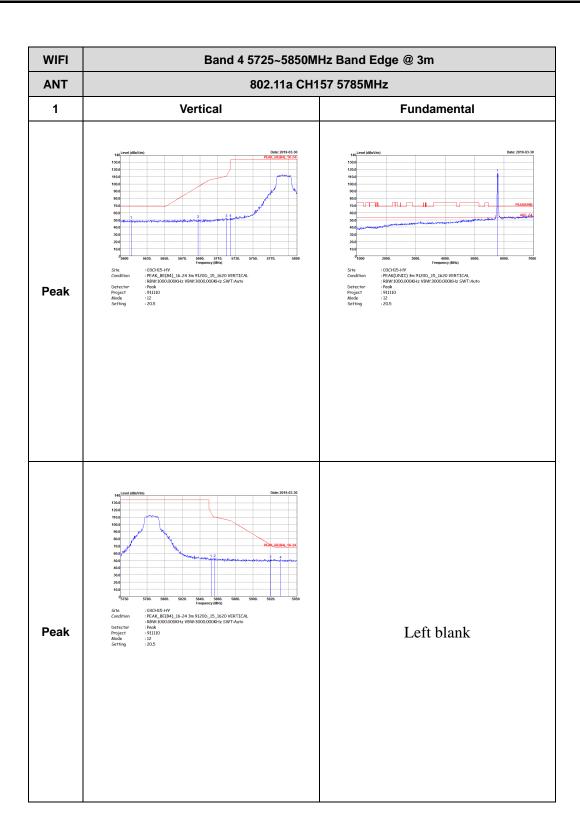




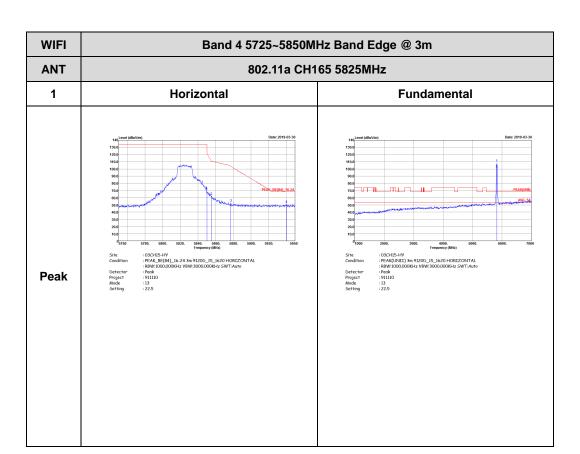
Report No.: FR911110E

TEL: 886-3-327-3456 Page Number : C4 of C104

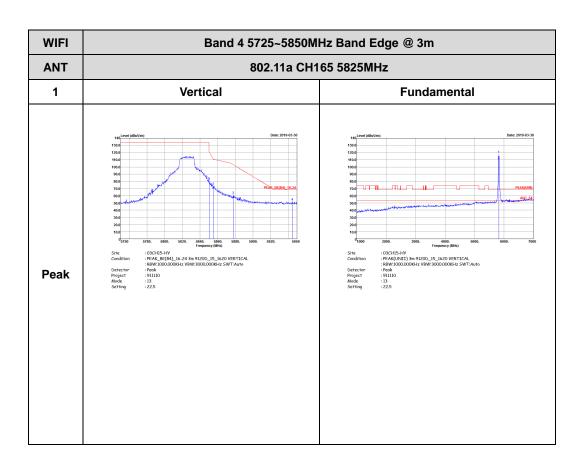




TEL: 886-3-327-3456 Page Number : C5 of C104



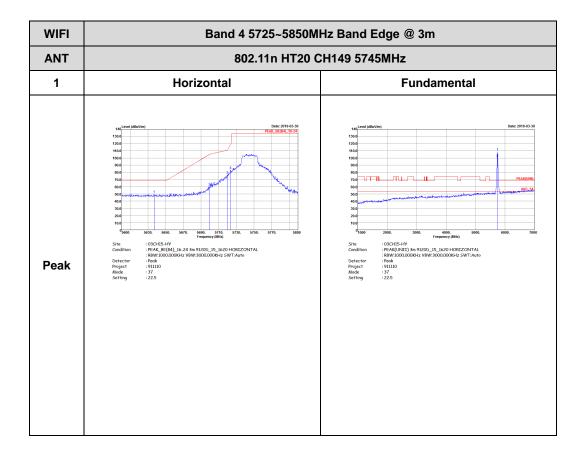
TEL: 886-3-327-3456 Page Number : C6 of C104



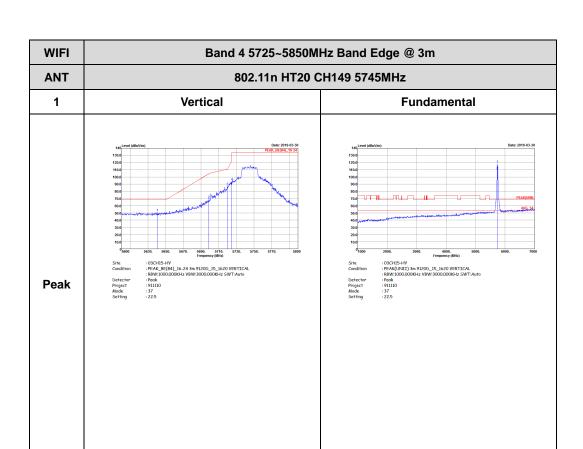
TEL: 886-3-327-3456 Page Number : C7 of C104

## Band 4 5725~5850MHz WIFI 802.11n HT20 (Band Edge @ 3m)

Report No. : FR911110E

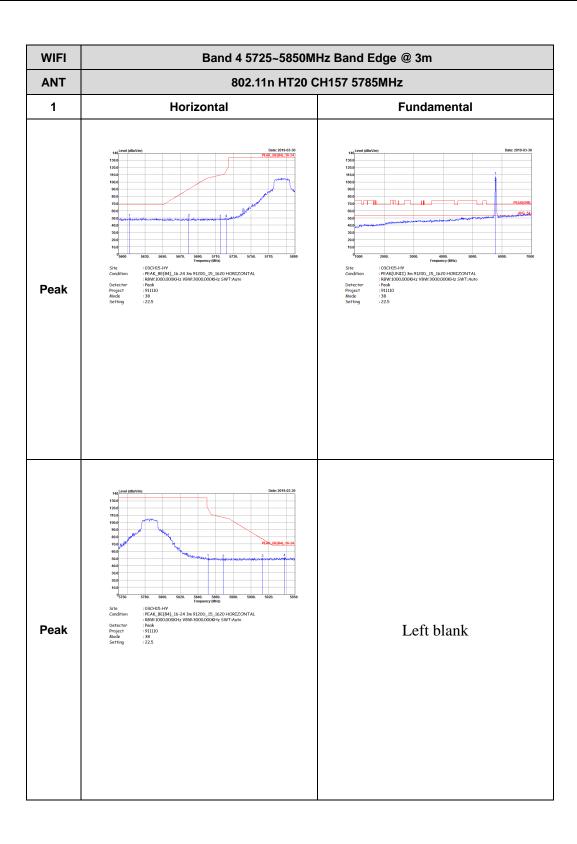


TEL: 886-3-327-3456 Page Number : C8 of C104



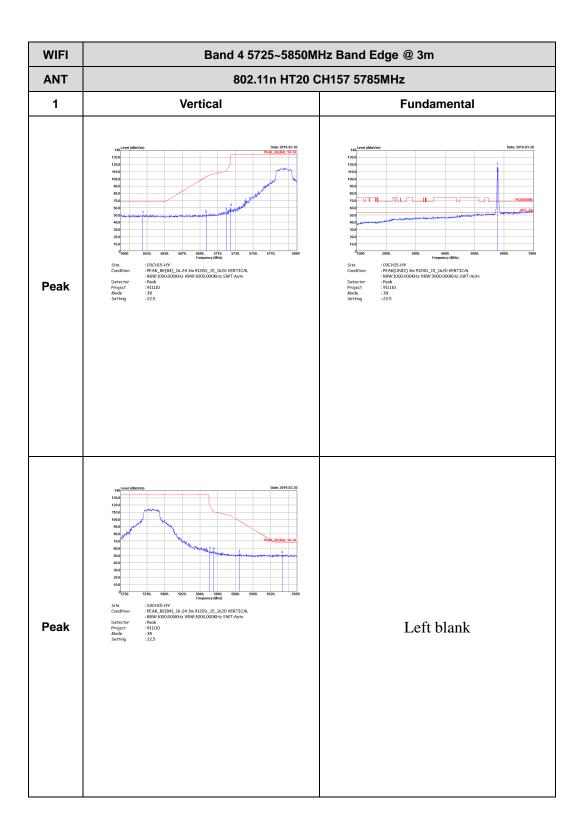
TEL: 886-3-327-3456 Page Number : C9 of C104



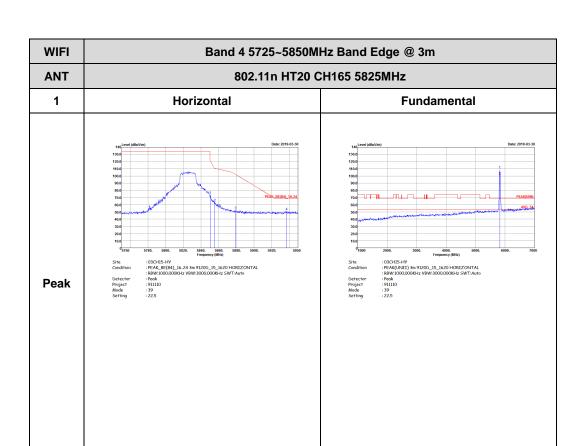


: C10 of C104 TEL: 886-3-327-3456 Page Number

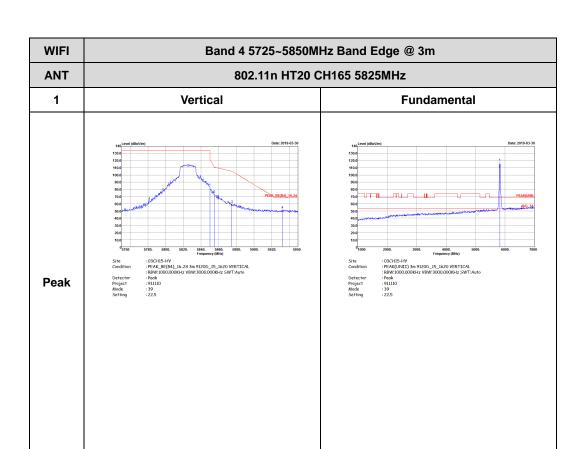




TEL: 886-3-327-3456 Page Number : C11 of C104



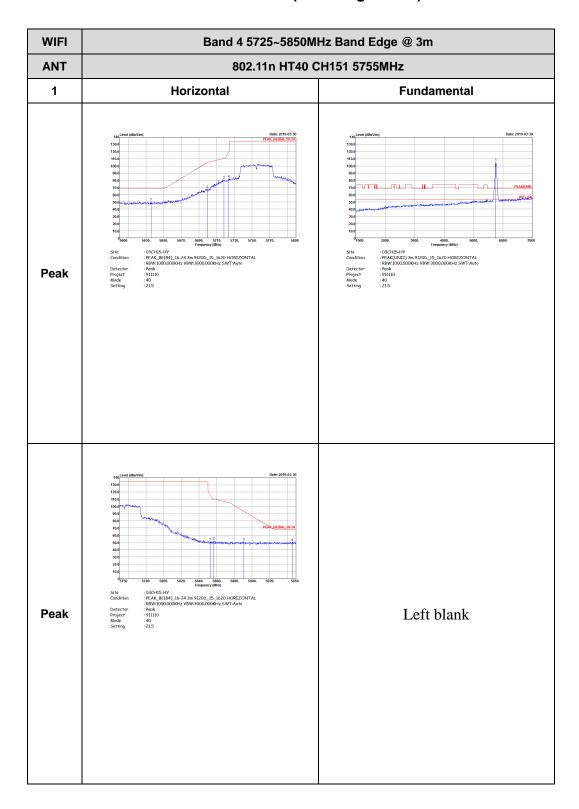
TEL: 886-3-327-3456 Page Number : C12 of C104



TEL: 886-3-327-3456 Page Number : C13 of C104

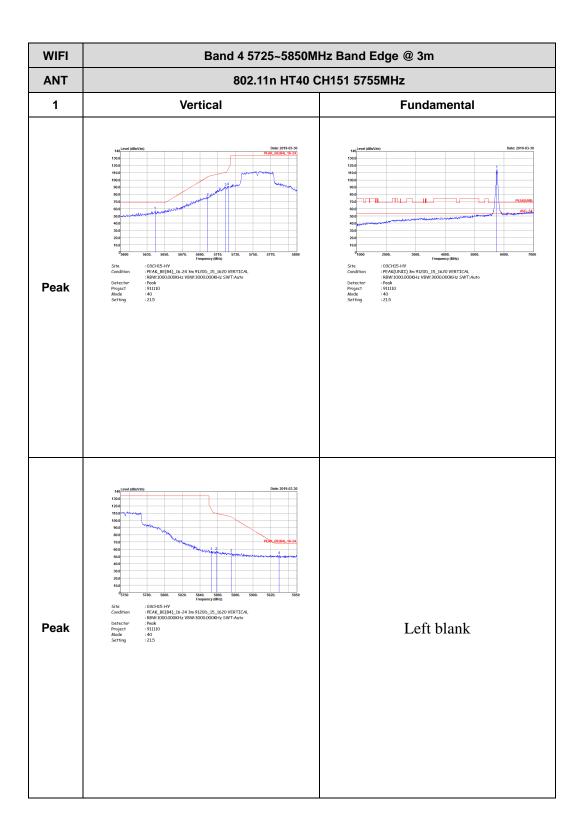
### Band 4 5725~5850MHz WIFI 802.11n HT40 (Band Edge @ 3m)

Report No. : FR911110E



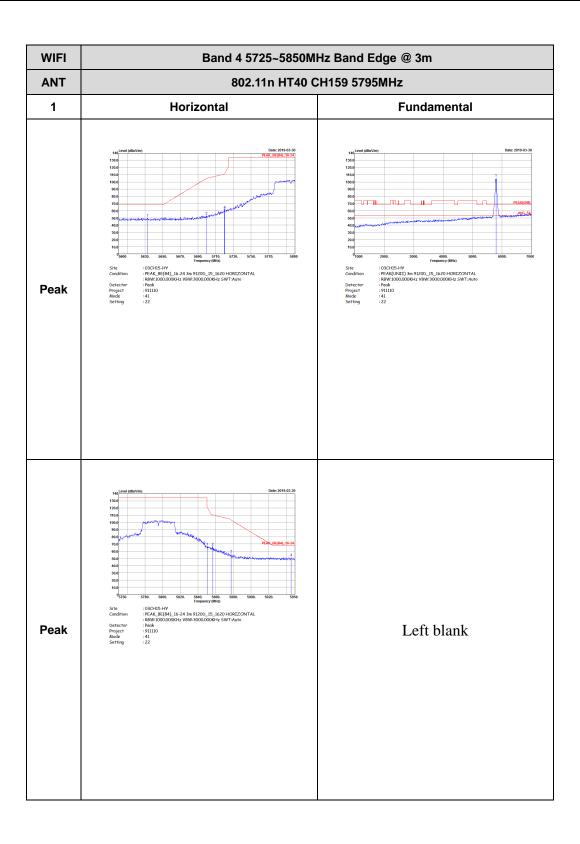
TEL: 886-3-327-3456 Page Number : C14 of C104





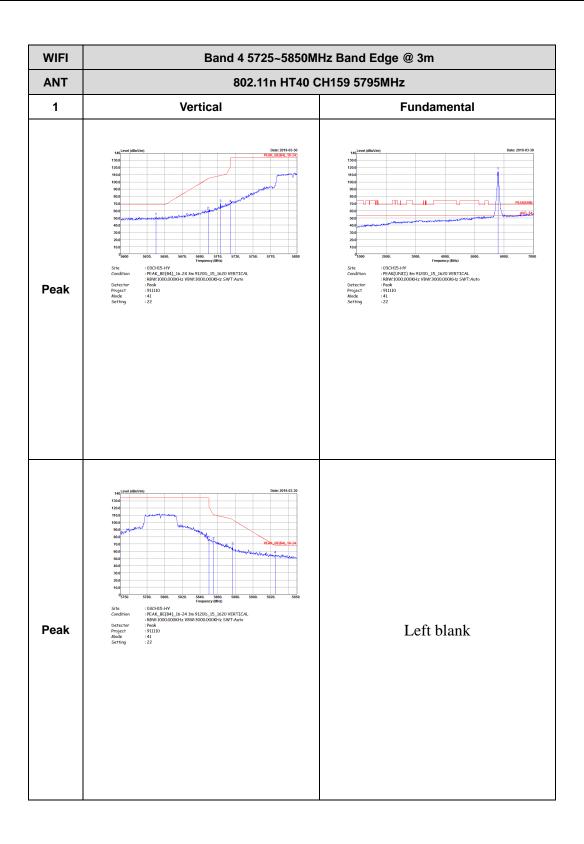
TEL: 886-3-327-3456 Page Number : C15 of C104





: C16 of C104 TEL: 886-3-327-3456 Page Number

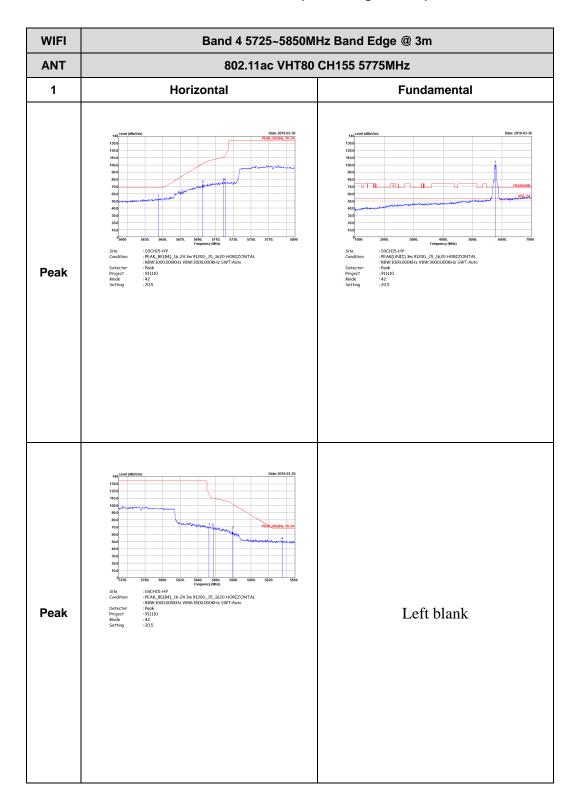




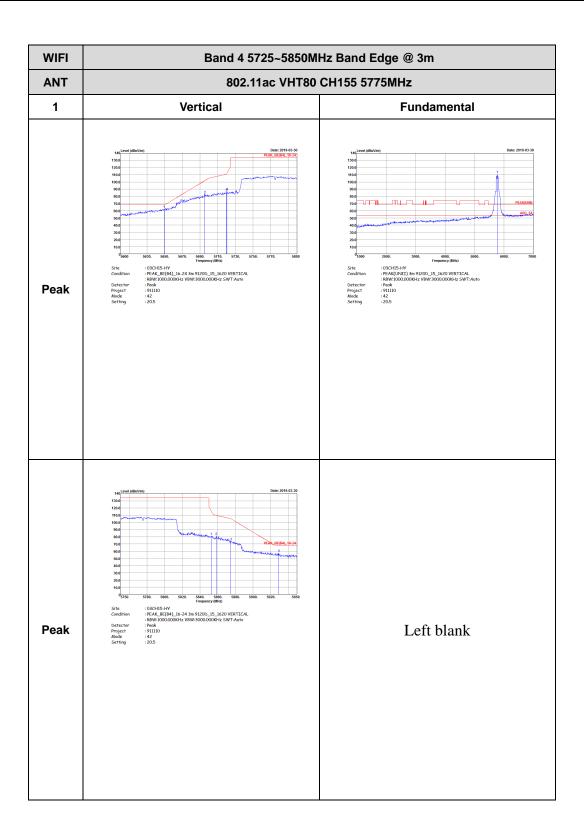
TEL: 886-3-327-3456 Page Number : C17 of C104

#### Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Band Edge @ 3m)

Report No. : FR911110E



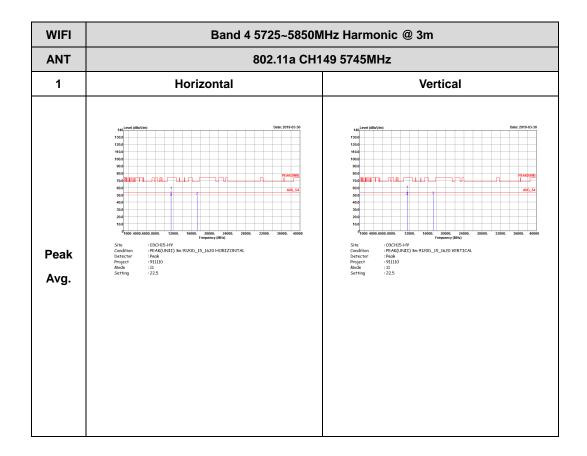
TEL: 886-3-327-3456 Page Number : C18 of C104



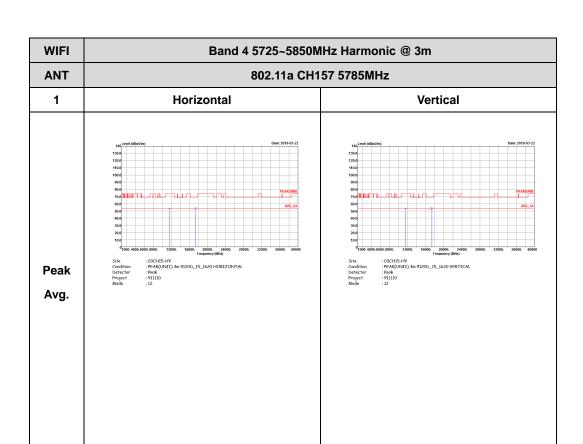
: C19 of C104 TEL: 886-3-327-3456 Page Number

### Band 4 - 5725~5850MHz WIFI 802.11a (Harmonic @ 3m)

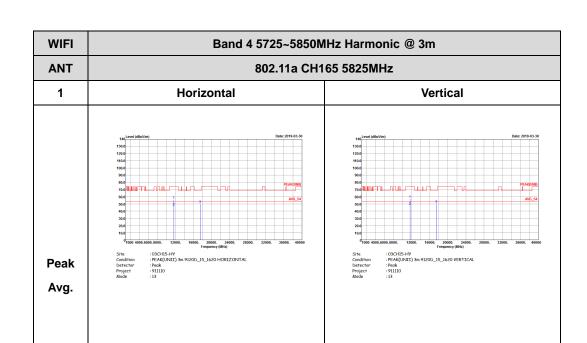
Report No. : FR911110E



TEL: 886-3-327-3456 Page Number : C20 of C104



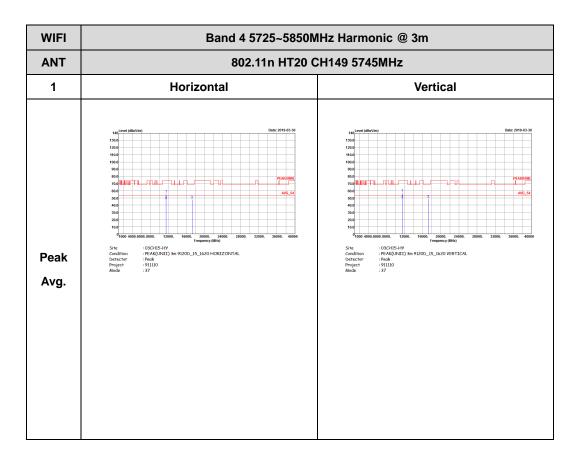
TEL: 886-3-327-3456 Page Number : C21 of C104



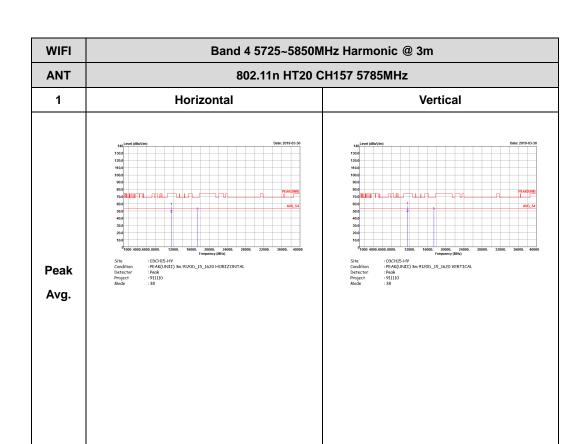
TEL: 886-3-327-3456 Page Number : C22 of C104

#### Band 4 5725~5850MHz WIFI 802.11n HT20 (Harmonic @ 3m)

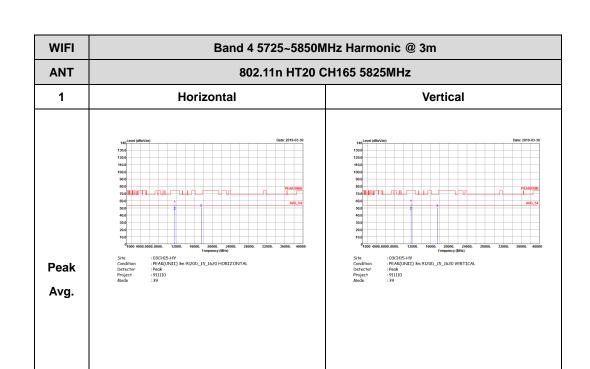
Report No.: FR911110E



TEL: 886-3-327-3456 Page Number : C23 of C104



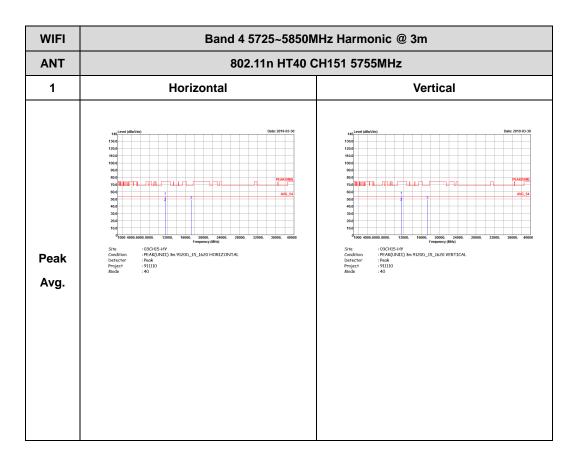
TEL: 886-3-327-3456 Page Number : C24 of C104



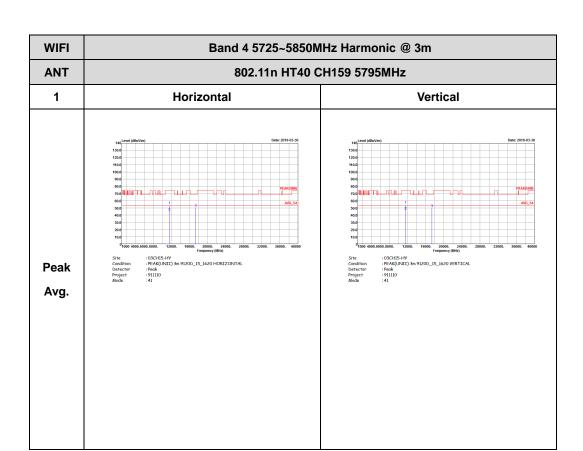
TEL: 886-3-327-3456 Page Number : C25 of C104

#### Band 4 5725~5850MHz WIFI 802.11n HT40 (Harmonic @ 3m)

Report No.: FR911110E



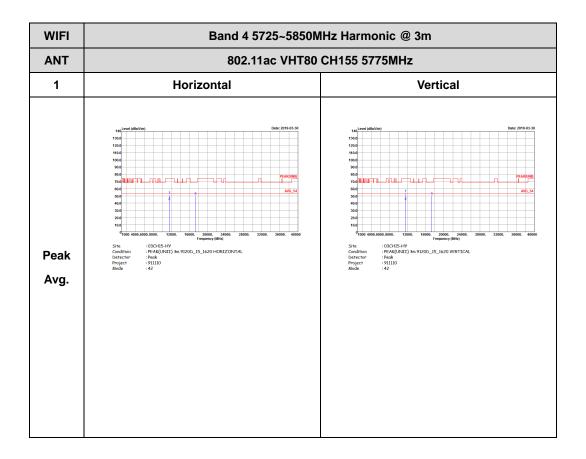
TEL: 886-3-327-3456 Page Number : C26 of C104



TEL: 886-3-327-3456 Page Number : C27 of C104

## Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Harmonic @ 3m)

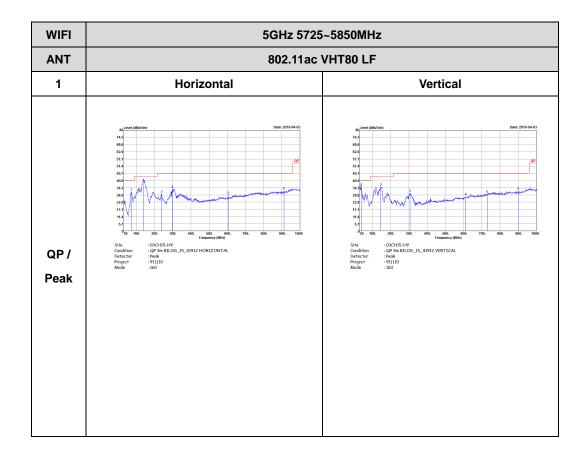
Report No.: FR911110E



TEL: 886-3-327-3456 Page Number : C28 of C104

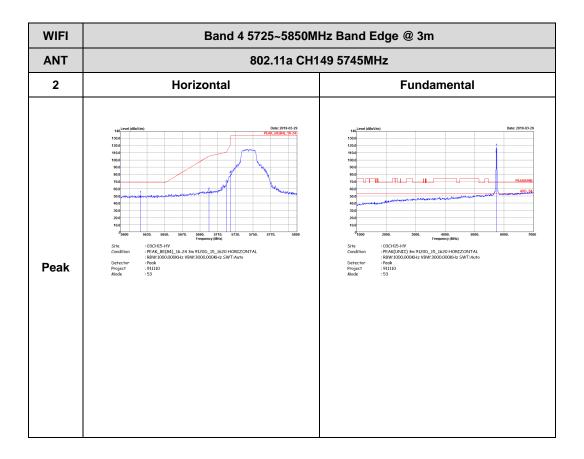
### Emission below 1GHz 5GHz WIFI 802.11ac VHT80 (LF)

Report No.: FR911110E

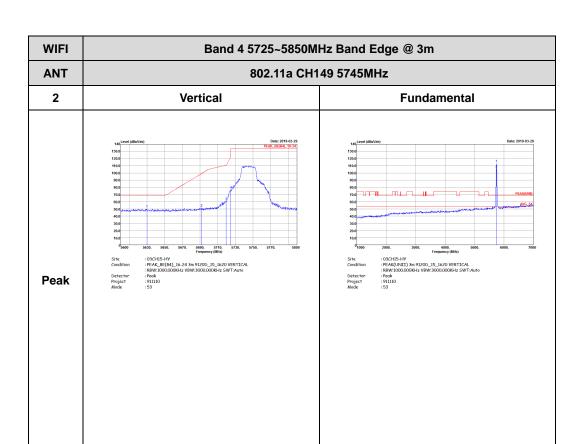


TEL: 886-3-327-3456 Page Number : C29 of C104

Band 4 - 5725~5850MHz WIFI 802.11a (Band Edge @ 3m)

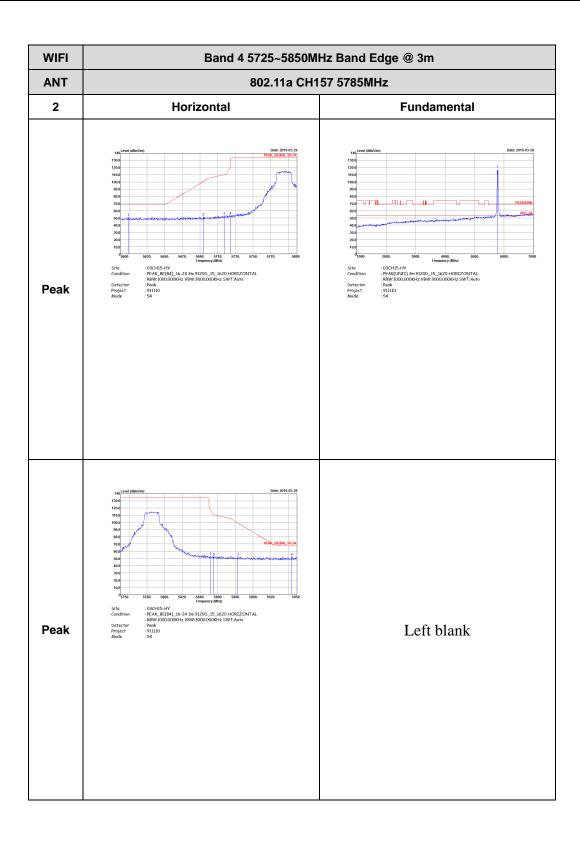


TEL: 886-3-327-3456 Page Number : C30 of C104



TEL: 886-3-327-3456 Page Number : C31 of C104





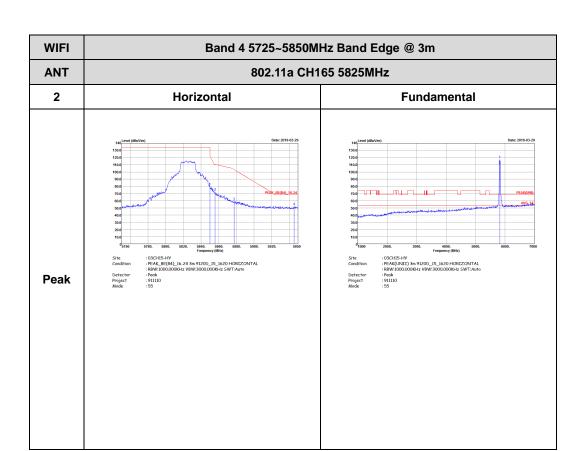
TEL: 886-3-327-3456 Page Number : C32 of C104



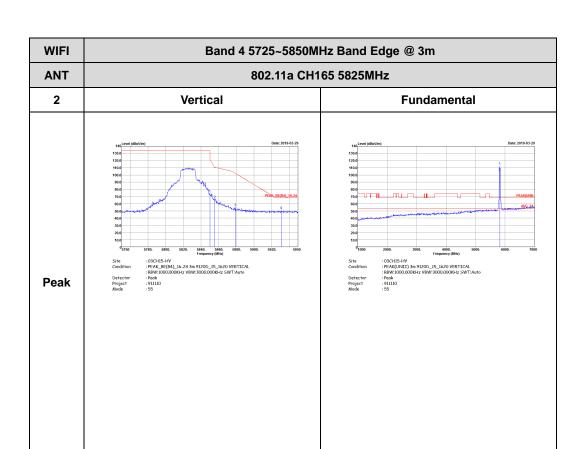
WIFI Band 4 5725~5850MHz Band Edge @ 3m **ANT** 802.11a CH157 5785MHz 2 Vertical **Fundamental** Peak : 03CH15-HV :PEAK, BE(84)\_16-24 3m 9120D\_15\_1620 VERTICAL :BRW:1000.000KHz VBW:3000.000KHz SWT:Auto :Peak :911110 :54 Peak Left blank

Report No.: FR911110E

TEL: 886-3-327-3456 Page Number : C33 of C104



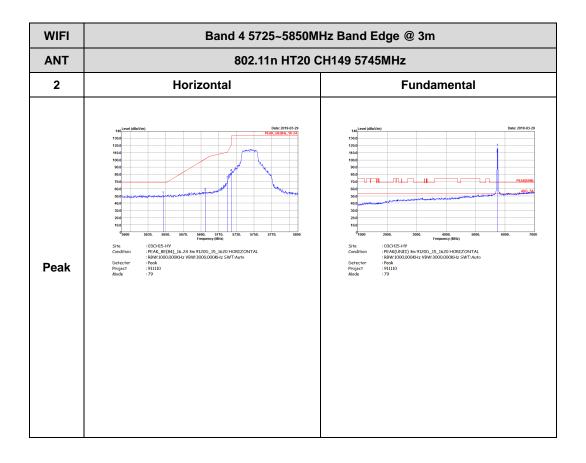
TEL: 886-3-327-3456 Page Number : C34 of C104



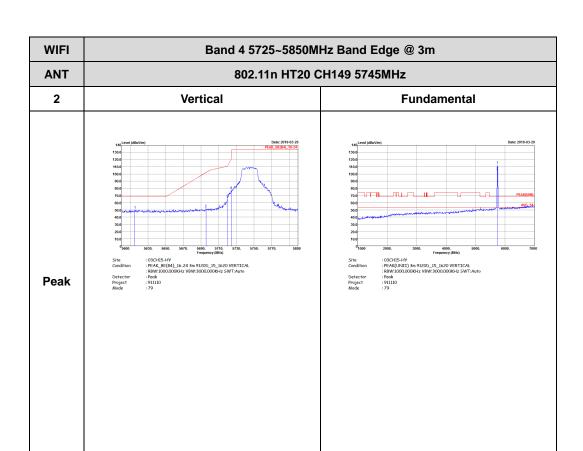
TEL: 886-3-327-3456 Page Number : C35 of C104

# Band 4 5725~5850MHz WIFI 802.11n HT20 (Band Edge @ 3m)

Report No.: FR911110E

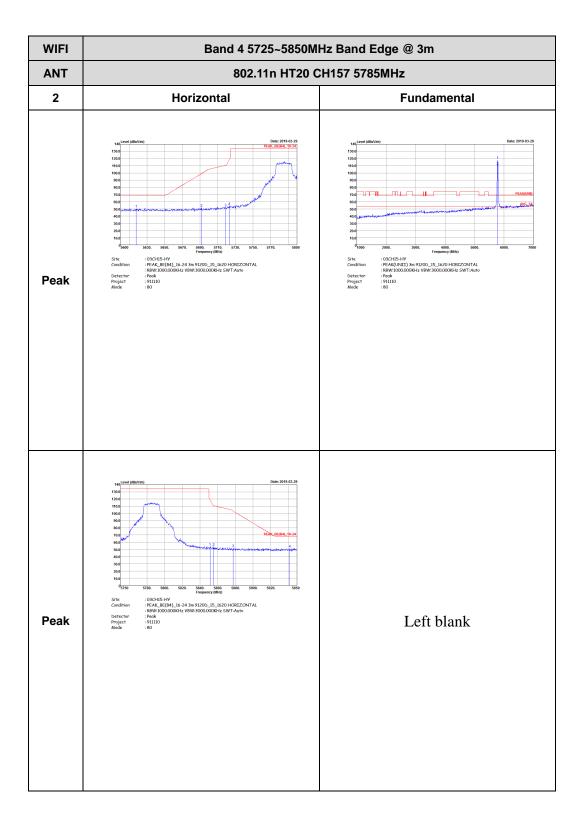


TEL: 886-3-327-3456 Page Number : C36 of C104



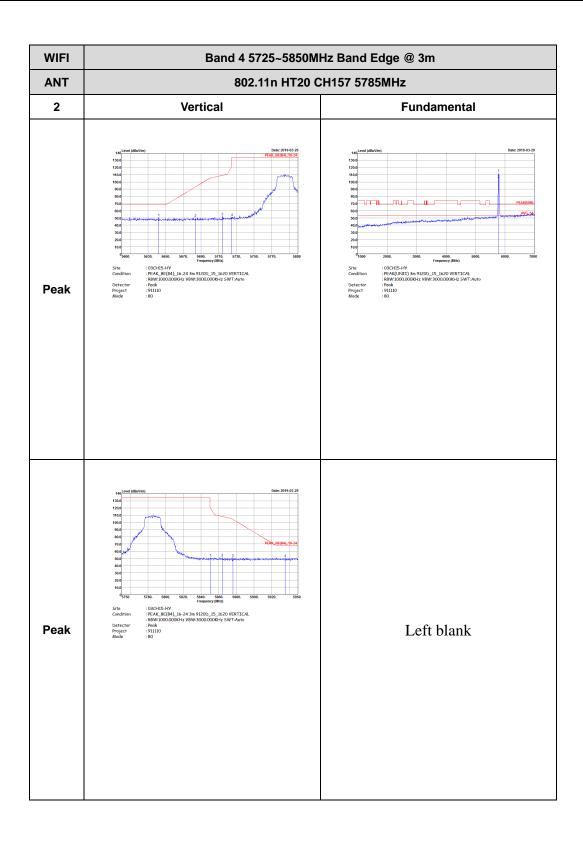
TEL: 886-3-327-3456 Page Number : C37 of C104



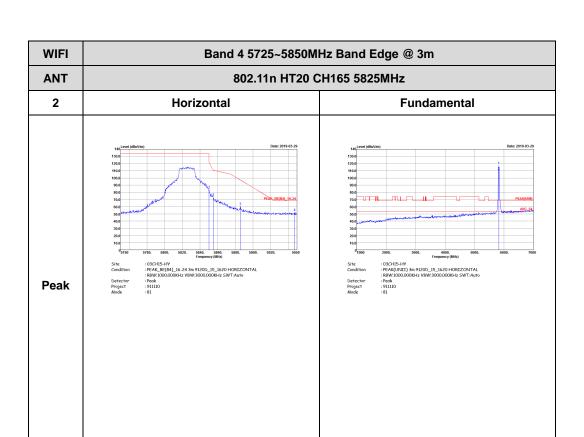


TEL: 886-3-327-3456 Page Number : C38 of C104

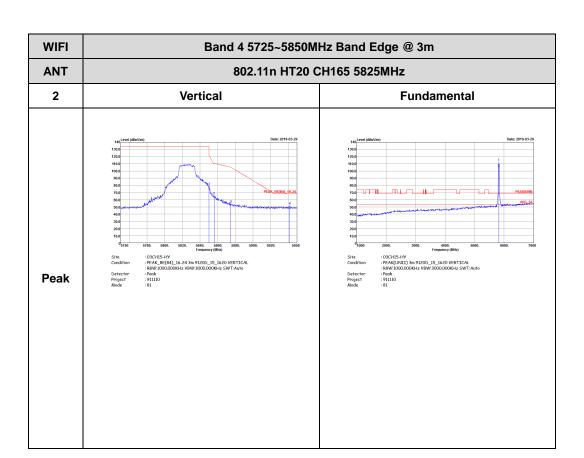




TEL: 886-3-327-3456 Page Number : C39 of C104



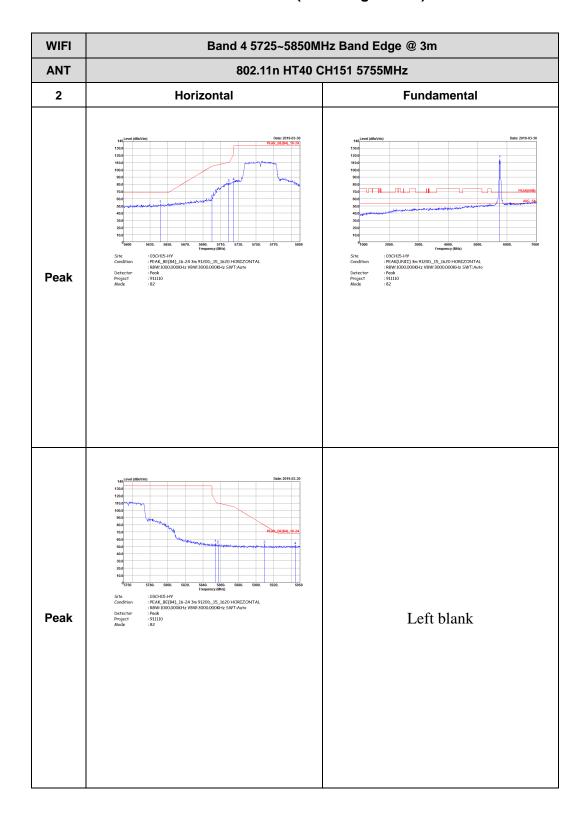
TEL: 886-3-327-3456 Page Number : C40 of C104



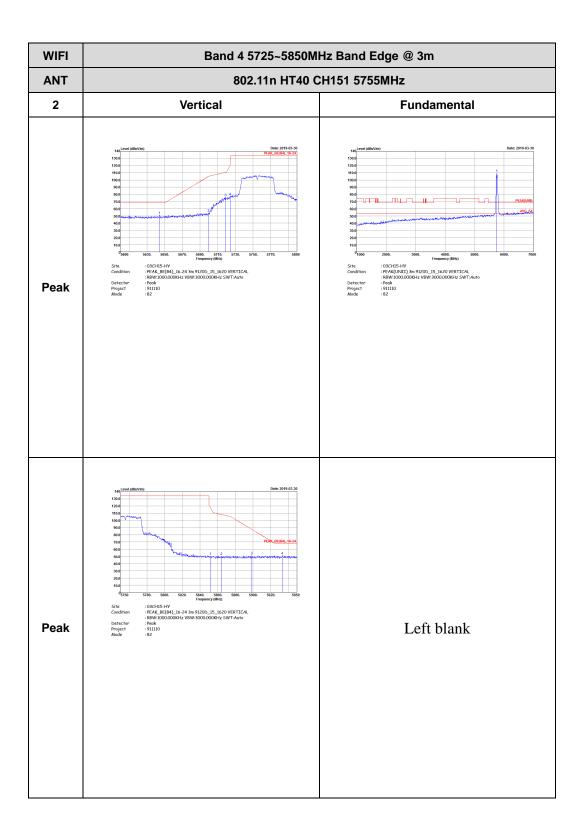
TEL: 886-3-327-3456 Page Number : C41 of C104

## Band 4 5725~5850MHz WIFI 802.11n HT40 (Band Edge @ 3m)

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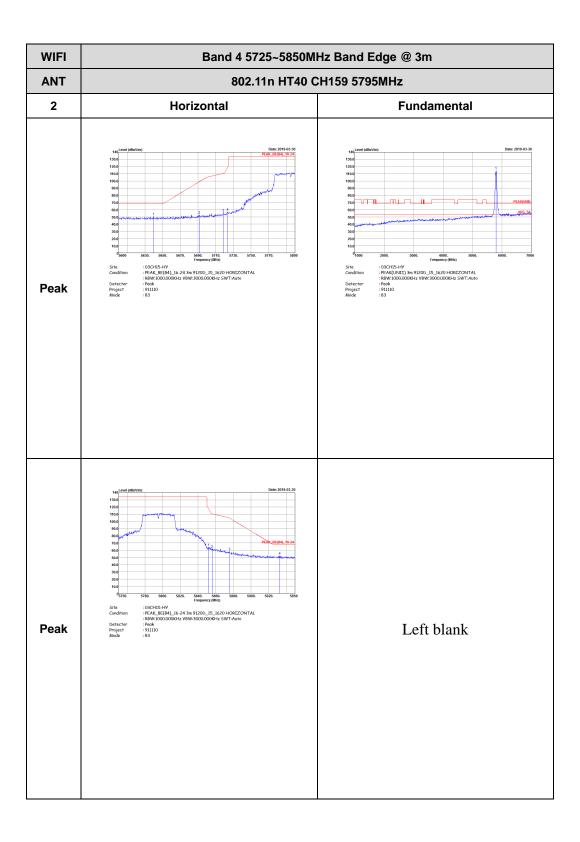


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TEL: 886-3-327-3456 Page Number : C44 of C104



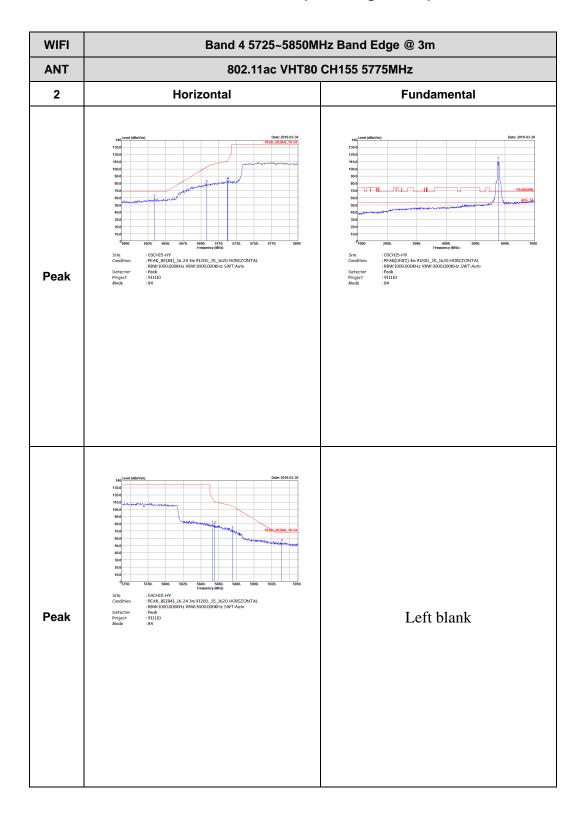
WIFI Band 4 5725~5850MHz Band Edge @ 3m **ANT** 802.11n HT40 CH159 5795MHz 2 Vertical **Fundamental** Peak :03CH15-HY Frequency (MHz)
:DAG-H15-HY :PEAK\_BE(94)\_16-24 3m 91200\_15\_1620 VERTICAL:
:B8W:1000.000KHz VBW:3000.000KHz SWT:Auto
:Peak
:911110
:33 Peak Left blank

Report No. : FR911110E

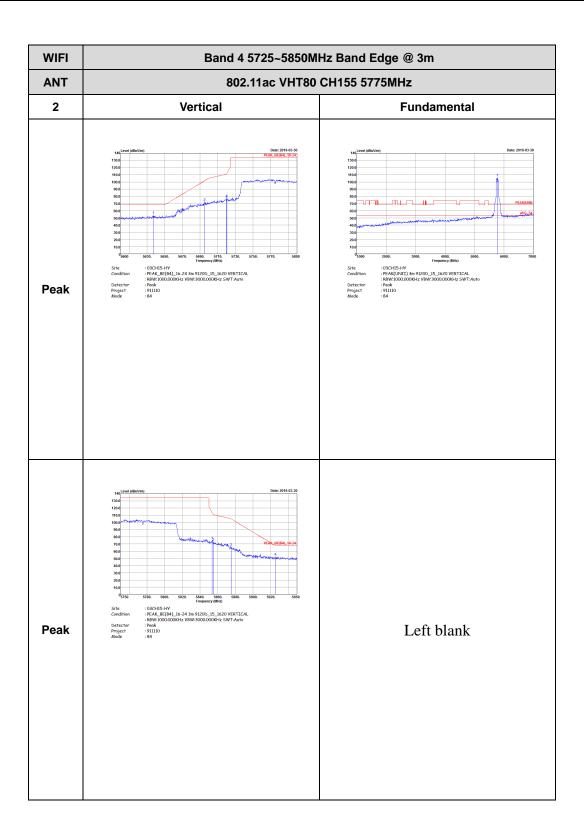
TEL: 886-3-327-3456 Page Number : C45 of C104

#### Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Band Edge @ 3m)

Report No. : FR911110E

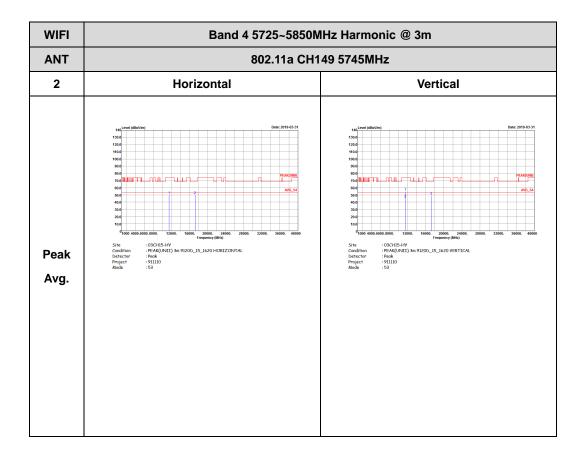


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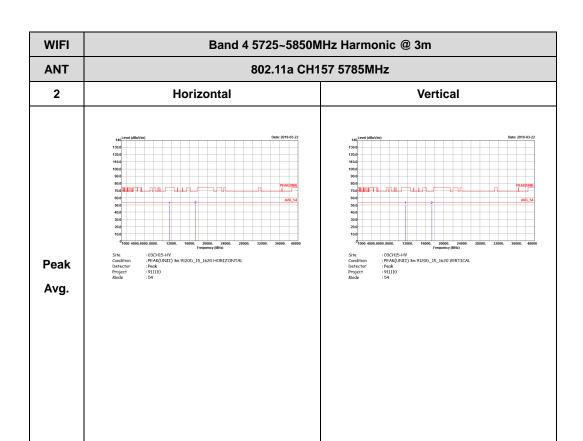


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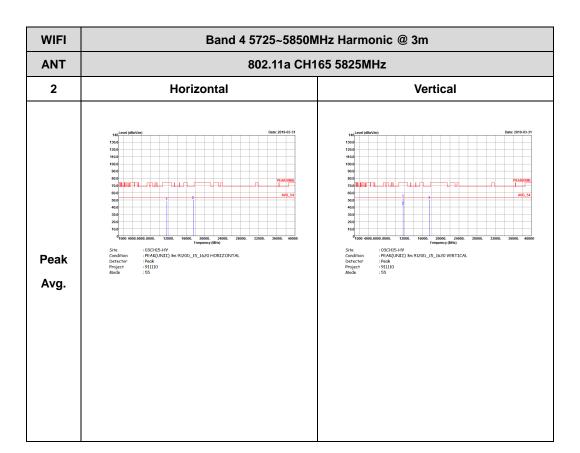
Band 4 - 5725~5850MHz WIFI 802.11a (Harmonic @ 3m)



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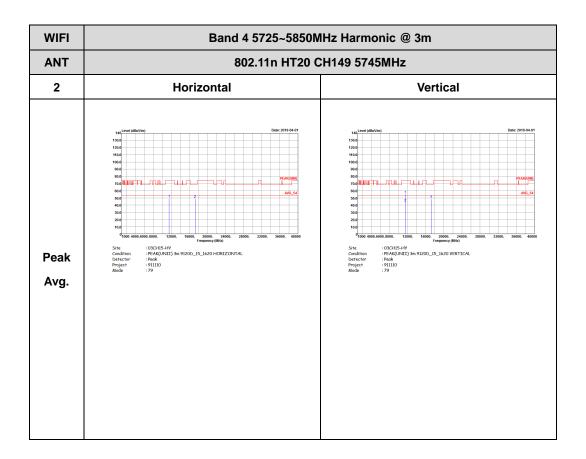
TEL: 886-3-327-3456 Page Number : C49 of C104



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## Band 4 5725~5850MHz WIFI 802.11n HT20 (Harmonic @ 3m)

Report No. : FR911110E



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