

FCC Test Report

Report No.: AGC14499231001FR02

FCC ID : 2BCUQ-I507W

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION: SIP Indoor Station

BRAND NAME : Fanvi

MODEL NAME : i507W, i505W, Y505W, Y507W

APPLICANT: Fanvil Link Technology Co., LTD

DATE OF ISSUE : Nov. 15, 2023

STANDARD(S) : FCC Part 15 Subpart E §15.407

REPORT VERSION: V1.0

Attestation of Global Conciliance (Shenzhen) Co., Ltd



Page 2 of 164

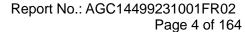
Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Nov. 15, 2023	Valid	Initial Release



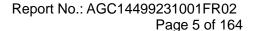
Table of Contents

1. General Information	5
2. Product Information	6
2.1 Product Technical Description	6
2.2 Table of Carrier Frequency	7
2.3 IEEE 802.11n Modulation Scheme	9
2.4 Related Submittal(S) / Grant (S)	10
2.5 Test Methodology	10
2.6 Special Accessories	10
2.7 Equipment Modifications	10
2.8 Antenna Requirement	10
2.9 Description of Test Software	11
3. Test Environment	12
3.1 Address of The Test Laboratory	12
3.2 Test Facility	12
3.3 Environmental Conditions	13
3.4 Measurement Uncertainty	13
3.5 List of Equipment Used	14
4.System Test Configuration	16
4.1 EUT Configuration	16
4.2 EUT Exercise	16
4.3 Configuration of Tested System	16
4.4 Equipment Used in Tested System	16
4.5 Summary of Test Results	17
5. Description of Test Modes	18
6. Duty Cycle Measurement	21
7. RF Output Power Measurement	24
7.1 Provisions Applicable	24
7.2 Measurement Procedure	24
7.3 Measurement Setup (Block Diagram of Configuration)	25
7.4 Measurement Result	25
8. 6dB&26dB Bandwidth Measurement	27
8.1 Provisions Applicable	27
8.2 Measurement Procedure	27
8.3 Measurement Setup (Block Diagram of Configuration)	27
8.4 Measurement Results	28





9. Power Spectral Density Measurement	51
9.1 Provisions Applicable	51
9.2 Measurement Procedure	51
9.3 Measurement Setup (Block Diagram of Configuration)	51
9.4 Measurement Result	52
10. Conducted Band Edge and Out-of-Band Emissions	71
10.1 Provisions Applicable	71
10.2 Measurement Procedure	71
10.3 Measurement Setup (Block Diagram of Configuration)	71
10.4 Measurement Results	72
11. Radiated Spurious Emission	115
11.1 Measurement Limit	115
11.2 Measurement Procedure	116
11.3 Measurement Setup (Block Diagram of Configuration)	118
11.4 Measurement Result	119
12. AC Power Line Conducted Emission Test	160
12.1 Measurement limit	160
12.2 Block Diagram of Line Conducted Emission Test	160
12.3 Preliminary Procedure of Line Conducted Emission Test	161
12.4 Final Procedure of Line Conducted Emission Test	161
12.5 Test Result of Line Conducted Emission Test	162
Appendix I: Photographs of Test Setup	164
Appendix II: Photographs of EUT	164





1. General Information

Applicant	Fanvil Link Technology Co., LTD
Address	Room 1517, Building G, Hualian City Panorama, 27 Region, Bao'an District;
	Shenzhen, China
Manufacturer	Fanvil Link Technology Co., LTD
Address	Room 1517, Building G, Hualian City Panorama, 27 Region, Bao'an District,
Address	Shenzhen, China
Factory	Fanvil Link Technology Co., LTD
Address	Room 1517, Building G, Hualian City Panorama, 27 Region, Bao'an District,
Address	Shenzhen, China
Product Designation	SIP Indoor Station
Brand Name	Fanvil
Test Model	i507W
Series Model(s)	i505W, Y505W, Y507W
Difference Description	Please see the page 6.
Date of receipt of test item	Oct. 18, 2023
Date of Test	Oct. 18, 2023 – Nov. 15, 2023
Deviation from Standard	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Test Report Form No	AGCER-FCC-5G WLAN-V1

Note: The test results of this report relate only to the tested sample identified in this report.

Reviewed By

Bibo Zhang
(Project Engineer)

Calvin Liu
(Reviewer)

Max Zhang
Authorized Officer

Nov. 15, 2023



Page 6 of 164

2. Product Information

2.1 Product Technical Description

Equipment Type	☐ Outdoor access points☐ Fixed P2P access points☐ Client devices		
Operation Frequency	 ☑ U-NII 1:5150MHz~5250MHz ☑ U-NII 2A: 5250MHz~5350MHz ☑ U-NII 3: 5725MHz~5850MHz 		
DFS Design Type	☐ Master ☐ Slave with radar detection ☐ Slave without radar detection		
TPC Function	☐ Yes ☐ No		
Hardware Version	Android 9		
Software Version	rk3326_m2g-userdebug 9 2.6.6.310 200431 test-keys		
Test Frequency Range	For 802.11a/n-HT20: 5180~5240MHz, 5260~5320MHz, 5500~5720MHz, 5745~5825MHz For 802.11n-HT40: 5190~5230MHz, 5270~5310MHz, 5510~5710MHz, 5755~5795MHz		
RF Output Power	IEEE 802.11a(HT20):13.45dBm; IEEE 802.11n(HT20):13.13dBm; IEEE802.11n(HT40):13.10dBm		
Modulation	802.11a/n:(64-QAM, 16-QAM, QPSK, BPSK) OFDM		
Data Rate	802.11a:6/9/12/18/24/36/48/54Mbps; 802.11n:up to 300Mbps;		
Number of channels	6 channels of U-NII-1 Band 6 channels of U-NII-2A Band 16 channels of U-NII-2C Band 7 channels of U-NII 3 Band		
Antenna Designation	PIFA Antenna		
Antenna Gain	6.1dBi		
Power Supply	DC 12V,1A by Adapter or DC 48V by POE		

Model Difference Description

Model	i507W	i505W	Y507W	Y505W
Display screen	10.1 inches (800*1280)	7 inches (1024*600)	10.1 inches (800*1280)	7 inches (1024*600)
Colors	Dark gun color	Dark gun color	White color	White color



Page 7 of 164

2.2 Table of Carrier Frequency

For 5180~5240MHz:

4 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

For 5260~5320MHz:

5 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz



Page 8 of 164

For 5500~5720MHz:

11 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

5 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

For 5745~5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20):

Channel Frequency		Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency	
151	5755 MHz	159	5795 MHz	



Page 9 of 164

2.3 IEEE 802.11n Modulation Scheme

MCS Index	Nss	Modulation	R	N _{BPSC}	N _C	N _{CBPS}		N _{CBPS} N _{DBPS}		Data (Mb 800)	. ,
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz	
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5	
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0	
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5	
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0	
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0	
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0	
6	1	64-QAM	3/4	6	312	648	234	489	58.5	121.5	
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0	

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



Page 10 of 164

2.4 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: **2BCUQ-I507W** filing to comply with the FCC Part 15 requirements.

2.5 Test Methodology

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
4	KDB 662911	662911 D01 Multiple Transmitter Output v02r01
5	KDB 789033	789033 D02 General U-NII Test Procedures New Rules v02r01

2.6 Special Accessories

Refer to section 4.4.

2.7 Equipment Modifications

Not available for this EUT intended for grant.

2.8 Antenna Requirement

Standard Requirement

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The non-detachable antenna inside the device cannot be replaced by the user at will. The antenna gain is 6.1dBi.



2.9 Description of Test Software

For IEEE 802.11 mode:

Software Setting Diagram

```
wlan0 mp_ant_tx:switch Tx antenna to a
wlan0 mp_channel:No change current channel:159
wlan0 mp_bandwidth:No change current bW 1

wlan0 np_bandwidth:No change current bW 1

wlan0 np_bandwidth:No change current bW 1

wlan0 np_tapower:Path Set power dbm=14
wlan0 mp_txpower:Path Set power dbm=14
wlan0 mp_txpower:Path Set power dbm:14.0

rk3326_m2g:/ # rtwpriv wlan0 stop
wlan0 stop:Set PMac Tx Mode OK

rk3326_m2g:/ # rtwpriv wlan0 36 0 a HTMCSO 1 2000 1500
config packet Period = 2000
config packet length =1500

Packet Pattern = random Byte
wlan0 mp_ant_tx:switch Tx antenna to a
wlan0 mp_ant_tx:switch Tx antenna to a
wlan0 mp_ant_tx:switch Tx antenna to a
wlan0 mp_bandwidth:Change bW 1 to BW 0

wlan0 36:Set PMac Tx Mode OK

rk3326_m2g:/ # rtwpriv wlan0 mp_txpower dbm=16
wlan0 mp_txpower:Path Set power dbm:16.0

rk3326_m2g:/ # rtwpriv wlan0 stop
wlan0 stop:Set PMac Tx Mode OK
```

Test Mode	Channel	Power Index	
802.11a	L/M/H	16	
802.11n(HT20)	L/M/H	16	
802.11n(HT40)	L/M/H	15	



Page 12 of 164

3. Test Environment

3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 Test Facility

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

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories.)

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.



Page 13 of 164

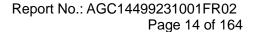
3.3 Environmental Conditions

	Normal Conditions
Temperature range (°C)	15 - 35
Relative humidity range	20% - 75%
Pressure range (kPa)	86 - 106
Power supply	12V

3.4 Measurement Uncertainty

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
Uncertainty of Conducted Emission for AC Port	$U_c = \pm 2.9 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.9 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$
Uncertainty of spurious emissions, conducted	$U_c = \pm 2 \%$
Uncertainty of Occupied Channel Bandwidth	$U_c = \pm 2.7 \%$
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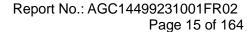


3.5 List of Equipment Used

• R	RF Conducted Test System								
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)		
	AGC-ER-E036	Spectrum Analyzer	Agilent	N9020A	MY49100060	2023-06-01	2024-05-31		
\boxtimes	AGC-ER-E062	Power Sensor	Agilent	U2021XA	MY54110007	2023-03-03	2024-03-02		
\boxtimes	AGC-ER-E063	Power Sensor	Agilent	U2021XA	MY54110009	2023-03-03	2024-03-02		
\boxtimes	AGC-EM-A152	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2024-06-08		
\boxtimes	AGC-ER-E083	Signal Generator	Agilent	E4421B	US39340815	2023-06-01	2024-05-31		
	N/A	RF Connection Cable	N/A	1#	N/A	Each time	N/A		
	N/A	RF Connection Cable	N/A	2#	N/A	Each time	N/A		

• F	Radiated Spurious Emission									
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)			
	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	10096	2023-02-18	2024-02-17			
\boxtimes	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2023-06-03	2024-06-02			
\boxtimes	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2023-06-01	2024-05-31			
\boxtimes	AGC-EM-E086	Loop Antenna	ZHINAN	ZN30900C	18051	2022-03-12	2024-03-11			
\boxtimes	AGC-EM-E001	Wideband Antenna	SCHWARZBECK	VULB9168	D69250	2023-05-11	2025-05-10			
\boxtimes	AGC-EM-E029	Broadband Ridged Horn Antenna	ETS	3117	00034609	2023-03-23	2024-03-22			
\boxtimes	AGC-EM-E082	Horn Antenna	SCHWARZBECK	BBHA 9170	#768	2021-10-31	2023-10-30			
\boxtimes	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2022-08-04	2024-08-03			
\boxtimes	AGC-EM-A118	5G Filter	SongYi	BRM50716	N/A	2023-06-01	2024-05-31			
\boxtimes	AGC-EM-A138	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2024-06-08			
	AGC-EM-A139	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2024-06-08			

A	AC Power Line Conducted Emission									
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)			
\boxtimes	AGC-EM-E045	EMI Test Receiver	R&S	ESPI	101206	2023-06-03	2024-06-02			
\boxtimes	AGC-EM-E023	AMN	R&S	100086	ESH2-Z5	2023-06-03	2024/06/02			
\boxtimes	AGC-EM-A130	6dB Attenuator	Eeatsheep	LM-XX-6-5W	DC-6GZ	2023-06-09	2024-06-08			





• Te	Test Software									
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Version Information					
\boxtimes	AGC-EM-S003	RE Test System	FARA	EZ-EMC	V.RA-03A					
\boxtimes	AGC-EM-S011	RSE Test System	Tonscend	TS ⁺ Ver2.1(JS36-RSE)	4.0.0.0					
\boxtimes	AGC-EM-S001	CE Test System	R&S	ES-K1	V1.71					
\boxtimes	AGC-ER-S009	BT/WIFI Test System	Tonscend	JS1120-3	2.6.77.0518					



Page 16 of 164

4. System Test Configuration

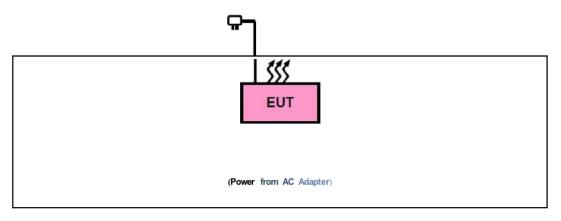
4.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

4.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

4.3 Configuration of Tested System



4.4 Equipment Used in Tested System

The following peripheral devices and interface cables were connected during the measurement:

☐ Test Accessories Come From The Laboratory

No	. Equipment	Model No.	Manufacturer	Specification Information	Cable
1	Adapter	JF012WR-0900150UH	JFEC		

☐ Test Accessories Come From The Manufacturer

No.	Equipment Model No. Manufa		Manufacturer	Specification Information	Cable
1		-			



Page 17 of 164

4.5 Summary of Test Results

Item	FCC Rules	Description Of Test	Result
1	§15.203	Antenna Equipment	Pass
2	§15.407(a/1/2/3)	RF Output Power	Pass
3	§15.407(e)	6dB Bandwidth Measurement	Pass
4	§2.1049	26dB bandwidth Measurement	Pass
5	§15.407(a/1/2/3)	Power Spectral Density	Pass
6	§15.407(b)(1/2/3/4)	Conducted Spurious Emission	Pass
7	§15.209,§15.407(b)(1/2/3/4)	Radiated Emission& Band Edge	Pass
8	§15.207	AC Power Line Conducted Emission	Pass



Page 18 of 164

5. Description of Test Modes

EUT Configure Mode		Applic	cable To		Description	
201 Comigare Mode	RE > 1G	RE<1G	PLC	APCM	Description	
Α	\boxtimes	\boxtimes	\boxtimes	\boxtimes	Powered by Adapter with WIFI(5G) Link	
В					Powered by Battery with WIFI(5G) Link	
С					Powered by USB with WIFI(5G) Link	

Where. RE > 1G: Radiated Emission above 1GHz PLC: Power Line Conducted Emission

NOTE 1: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on X-plane.

NOTE 2: "--"means no effect.

• Radiated Emission Test (Above 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations be Meen available modulations, data rates and antenna ports (IF EUT with antenna diversity architecture).

The device under test has multiple antennas. The mode that supports MIMO technology records the worst data, and the mode that does not support MIMO technology records antenna 1 as the worst data.

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Freq. Band (MHz)	Available Channel	Tested Channel	Modulation	Data Rate (Mbps)
Α	802.11n (20MHz)	5180-5240	36 to 48	36, 40, 48	OFDM	6.5
Α	802.11n (20MHz)	5260-5320	52 to 64	52, 60, 64	OFDM	6.5
Α	802.11n (20MHz)	5500-5700	100 to 140	100, 120, 140	OFDM	6.5
Α	802.11n (20MHz)	5745-5825	149 to 165	149, 157, 165	OFDM	6.5



Page 19 of 164

Radiated Emission Test (Below 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations be Meen available modulations, data rates and antenna ports (If EUT with antenna diversity architecture).

The device under test has multiple antennas. The mode that supports MIMO technology records the worst data, and the mode that does not support MIMO technology records antenna 1 as the worst data.

☐ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Freq. Band (MHz)	Available Channel	Tested Channel	Modulation	Data Rate (Mbps)
Α	802.11n(20MHz)	5180-5240	36 to 48	36	OFDM	6.5

Power Line Conducted Emission Test:

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations be Meen available modulations, data rates and antenna ports (If EUT with antenna diversity architecture).

☐ The device under test has multiple antennas. The mode that supports MIMO technology records the worst data, and the mode that does not support MIMO technology records antenna 1 as the worst data.

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Freq. Band (MHz)	Available Channel	Tested Channel	Modulation	Data Rate (Mbps)
Α	802.11n(20MHz)	5180-5240	36 to 48	36	OFDM	6.5

Band edge Measurement:

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations be Meen available modulations, data rates and antenna ports (If EUT with antenna diversity architecture).

The device under test has multiple antennas. The mode that supports MIMO technology records the worst data, and the mode that does not support MIMO technology records antenna 1 as the worst data.

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Freq. Band (MHz)	Available Channel	Tested Channel	Modulation	Data Rate (Mbps)
Α	802.11n (20MHz)	5180-5240	36 to 48	36, 40, 48	OFDM	6.5
Α	802.11n (40MHz)	5160-5240	38 to 46	38, 46	OFDM	13.5
Α	802.11n (20MHz)	5260-5320	52 to 64	52, 60, 64	OFDM	6.5
Α	802.11n (40MHz)	5260-5520	54 to 62	54, 62	OFDM	13.5
Α	802.11n (20MHz)	5500-5700	100 to 140	100, 120, 140	OFDM	6.5
Α	802.11n (40MHz)	5500-5700	102 to 134	102, 118, 134	OFDM	13.5
А	802.11n (20MHz)	5745-5825	149 to 165	149, 157, 165	OFDM	6.5
А	802.11n (40MHz)	5745-5625	151 to 159	151, 159	OFDM	13.5



Page 20 of 164

• Antenna Port Conducted Measurement:

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations be Meen available modulations, data rates and antenna ports (If EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Freq. Band (MHz)	Available Channel	Tested Channel	Modulation	Data Rate (Mbps)
Α	802.11a		36 to 48	36, 40, 48	OFDM	6.0
Α	802.11n (20MHz)	5180-5240	36 to 48	36, 40, 48	OFDM	6.5
Α	802.11n (40MHz)		38 to 46	38, 46	OFDM	13.5
Α	802.11a		52 to 64	52, 60, 64	OFDM	6.0
А	802.11n (20MHz)	5260-5320	52 to 64	52, 60, 64	OFDM	6.5
Α	802.11n (40MHz)		54 to 62	54, 62	OFDM	13.5
Α	802.11a		100 to 140	100, 120, 140	OFDM	6.0
Α	802.11n (20MHz)	5500-5700	100 to 140	100, 120, 140	OFDM	6.5
Α	802.11n (40MHz)		102 to 134	102, 118, 134	OFDM	13.5
А	802.11a		149 to 165	149, 157, 165	OFDM	6.0
А	802.11n (20MHz)	5745-5825	149 to 165	149, 157, 165	OFDM	6.5
А	802.11n (40MHz)		151 to 159	151, 159	OFDM	13.5



Page 21 of 164

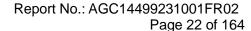
6. Duty Cycle Measurement

5GHz WLAN (NII) operation is possible in 20MHz, 40MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = Peak. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

than 100. The duty cycles	arc as ionows		 							
Operating mode	Data rates (Mbps)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/ T Minimum VBW (kHz)	Average Factor (dB)					
	Band U-NII1:5150MHz-5250MHz									
802.11a	6	80.11	0.96	0.49	-1.93					
802.11n_HT20	MCS0	78.91	1.03	0.53	-2.06					
802.11n_HT40	MCS0	64.91	1.88	1.08	-3.75					
	Ва	nd U-NII 2A:5250	MHz-5350MHz							
802.11a	6	80.15	0.96	0.49	-1.92					
802.11n_HT20	MCS0	78.91	1.03	1.03	-2.06					
802.11n_HT40	MCS0	64.92	1.88	1.88	-3.75					
	Ва	nd U-NII 2C:5470	MHz-5725MHz							
802.11a	6	80.14	0.96	0.49	-1.92					
802.11n_HT20	MCS0	78.92	1.03	0.53	-2.06					
802.11n_HT40	MCS0	64.76	1.89	1.08	-3.77					
	Band U-NII 3:5745MHz-5825MHz									
802.11a	6	40.59	3.92	0.97	-7.83					
802.11n_HT20	MCS0	83.10	0.80	0.50	-1.61					
802.11n_HT40	MCS0	78.13	1.02	0.53	-2.03					

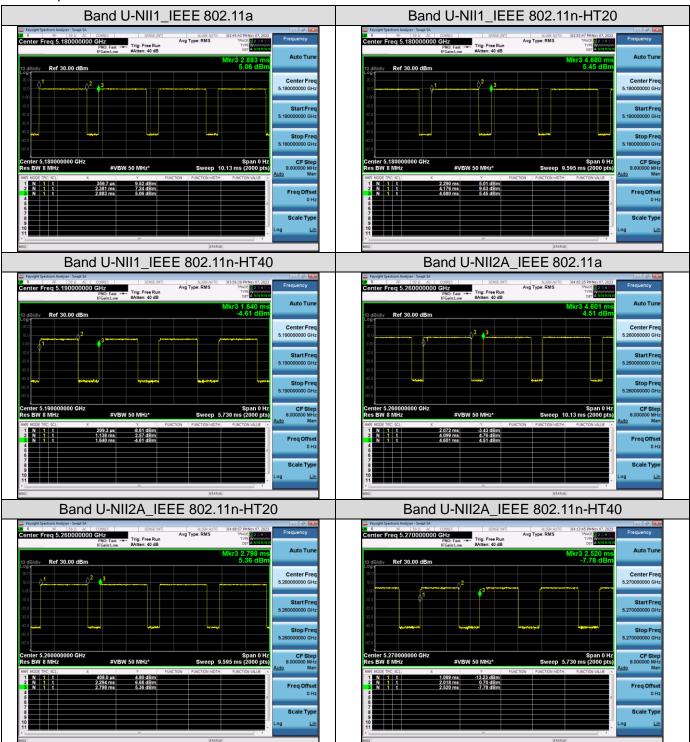
Remark:

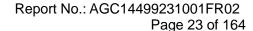
- 1. Duty Cycle factor = 10 * log (1/ Duty cycle), Average factor = 20 log10 Duty Cycle
- 2. The duty cycle of each frequency band mode reflects the determination requirements of the low channel measurement value.
- 3. Involving the test items of duty cycle compensation coefficient, the final results have been added and calculated by the software and presented.



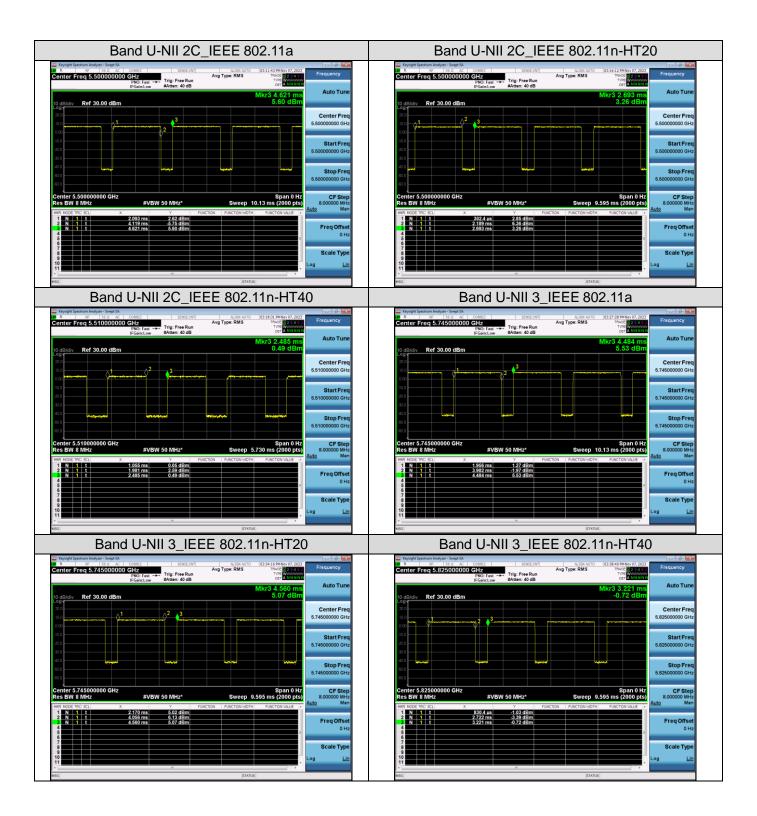


The test plots as follows:











Page 24 of 164

7. RF Output Power Measurement

7.1 Provisions Applicable

Operation Band		EUT Category	LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p < 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
J		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	\boxtimes	Client devices	250mW (23.98 dBm)
U-NII-2A		/	250mW (23.98 dBm) or 11 dBm+10 log B*
U-NII-2C	/		250mW (23.98 dBm) or 11 dBm+10 log B*
U-NII-3		/	1 Watt (30 dBm)

Note: Where B is the 26dB emission bandwidth in MHz.

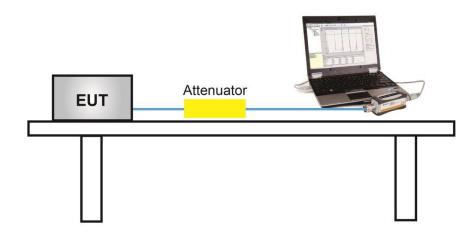
7.2 Measurement Procedure

Method PM is Measurement using an RF average power meter. The procedure for this method is as follows:

- 1. The testing follows the ANSI C63.10 Section 12.3.3.1
- 2. Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
- 3. The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
- 4. At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
- 5. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
- 6. Determine according to the duty cycle of the equipment: when it is less than 98%, follow the steps below.
- 7. Measure the average power of the transmitter. This measurement is an average over both the ON and OFF periods of the transmitter.
- 8. Adjust the measurement in dBm by adding [10 log (1 / D)], where D is the duty cycle {e.g., [10 log (1 / 0.25)], if the duty cycle is 25%}.
- 9. Record the test results in the report.



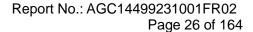
7.3 Measurement Setup (Block Diagram of Configuration)



7.4 Measurement Result

Test Data of Conducted Output Power for band 5.15-5.25 GHz										
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail						
	5180	13.32	23.88	Pass						
802.11a	5200	12.68	23.88	Pass						
	5240	11.87	23.88	Pass						
	5180	12.94	23.88	Pass						
802.11n20	5200	12.64	23.88	Pass						
	5240	11.70	23.88	Pass						
802.11n40	5190	12.81	23.88	Pass						
002.1111 4 0	5230	12.06	23.88	Pass						

Test Data of Conducted Output Power for band 5.25-5.35 GHz						
Test Mode	Test Channel (MHz)			Pass or Fail		
	5260	11.02	23.88	Pass		
802.11a	5300	10.20	23.88	Pass		
	5320	10.22	23.88	Pass		
802.11n20	5260	11.07	23.88	Pass		
	5300	10.37	23.88	Pass		
	5320	10.23	23.88	Pass		
802.11n40	5270	10.79	23.88	Pass		
	5310	10.27	23.88	Pass		





Test Data of Conducted Output Power for band 5.470-5.725 GHz						
Test Mode	Test Channel (MHz)	Average Power Limits (dBm) (dBm)		Pass or Fail		
	5500	10.29	23.88	Pass		
802.11a	5600	13.45	23.88	Pass		
	5700	11.89	23.88	Pass		
	5500	10.12	23.88	Pass		
802.11n20	5600	13.13	23.88	Pass		
	5700	11.54	23.88	Pass		
	5510	10.34	23.88	Pass		
802.11n40	5590	13.10	23.88	Pass		
	5670	12.54	23.88	Pass		

Test Data of Conducted Output Power for band 5.725-5.850 GHz					
Test Mode	Test Channel (MHz)	Average Power Limits (dBm) (dBm)		Pass or Fail	
	5745	10.53	29.9	Pass	
802.11a	5785	9.89	29.9	Pass	
	5825	8.16	29.9	Pass	
802.11n20	5745	10.63	29.9	Pass	
	5785	9.84	29.9	Pass	
	5825	8.11	29.9	Pass	
802.11n40	5755	10.42	29.9	Pass	
	5795	9.60	29.9	Pass	



Page 27 of 164

8. 6dB&26dB Bandwidth Measurement

8.1 Provisions Applicable

The minimum 6dB bandwidth shall be at least 500 kHz.

8.2 Measurement Procedure

-6dB bandwidth (DTS bandwidth) Test setting:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on operation frequency individually.
- 3. Set RBW = 100kHz.
- 4. Set the VBW $\geq 3*RBW$. Detector = Peak. Trace mode = max hold.
- 5. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.

♦ 99% occupied bandwidth test setting:

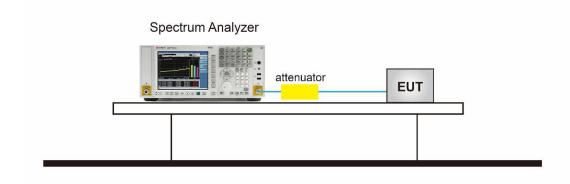
- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set Span = approximately 1.5 to 5 times the OBW, centered on a nominal channel
 The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW; Sweep = auto; Detector function = peak
- 4. Set SPA Trace 1 Max hold, then View.

◆ -26dB Bandwidth test setting:

- 1. Set RBW = approximately 1% of the emission bandwidth.
- 2. Set the VBW > RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

Note: The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

8.3 Measurement Setup (Block Diagram of Configuration)



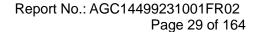


Page 28 of 164

8.4 Measurement Results

Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.15-5.25 GHz-ANT 1					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
	5180	16.252	18.964	N/A	Pass
802.11a	5200	16.263	19.328	N/A	Pass
	5240	16.250	18.965	N/A	Pass
	5180	17.388	19.864	N/A	Pass
802.11n20	5200	17.389	19.776	N/A	Pass
	5240	17.391	19.825	N/A	Pass
802.11n40	5190	35.329	37.893	N/A	Pass
	5230	35.370	37.848	N/A	Pass

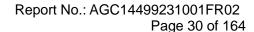
Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.25-5.35 GHz					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5260	16.276	18.888	N/A	Pass
	5300	16.274	19.329	N/A	Pass
	5320	16.310	20.146	N/A	Pass
	5260	17.372	20.206	N/A	Pass
802.11n20	5300	17.392	19.968	N/A	Pass
	5320	17.407	19.842	N/A	Pass
802.11n40	5270	35.393	37.876	N/A	Pass
	5310	35.354	37.965	N/A	Pass





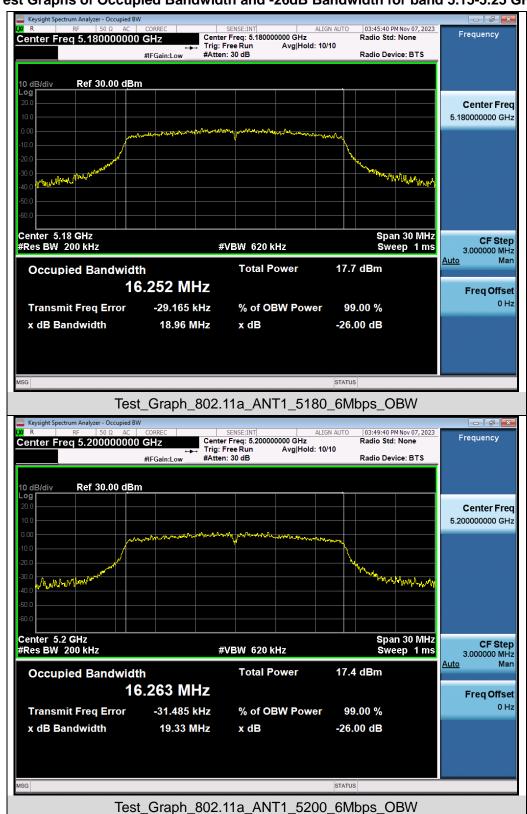
Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.47-5.725 GHz					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
	5500	16.400	24.173	N/A	Pass
802.11a	5600	16.274	19.188	N/A	Pass
	5700	16.344	19.288	N/A	Pass
802.11n20	5500	17.458	23.368	N/A	Pass
	5600	17.408	20.084	N/A	Pass
	5700	17.424	20.035	N/A	Pass
802.11n40	5510	35.342	46.228	N/A	Pass
	5590	35.378	37.889	N/A	Pass
	5670	35.361	37.944	N/A	Pass

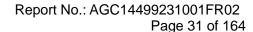
Test Data of Occupied Bandwidth and DTS Bandwidth for band 5.725-5.85 GHz					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	DTS Bandwidth (MHz)	Limits (MHz)	Pass or Fail
	5745	16.406	15.095	0.5	Pass
802.11a	5785	16.409	13.759	0.5	Pass
	5825	16.401	13.829	0.5	Pass
	5745	17.500	15.011	0.5	Pass
802.11n20	5785	17.524	15.018	0.5	Pass
	5825	17.539	15.096	0.5	Pass
802.11n40	5755	35.465	33.805	0.5	Pass
	5795	35.501	33.802	0.5	Pass



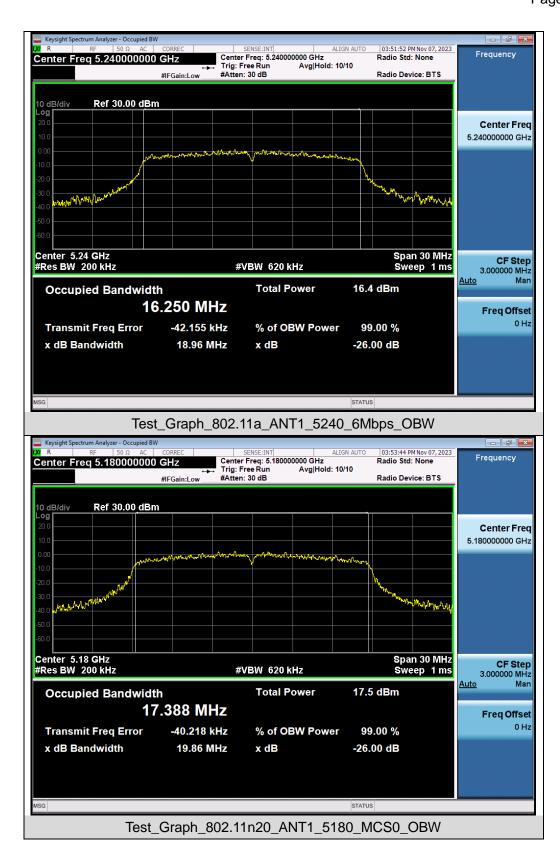


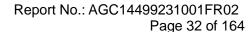
Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.15-5.25 GHz



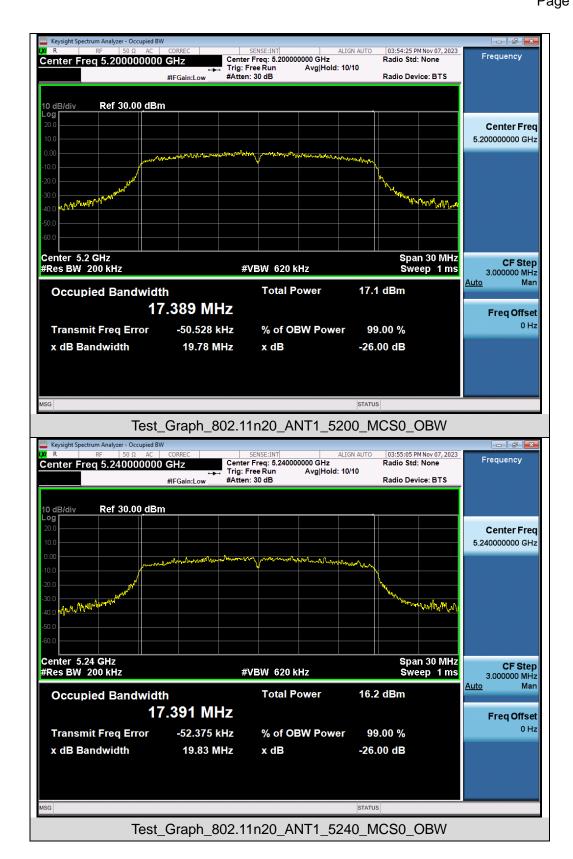


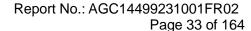




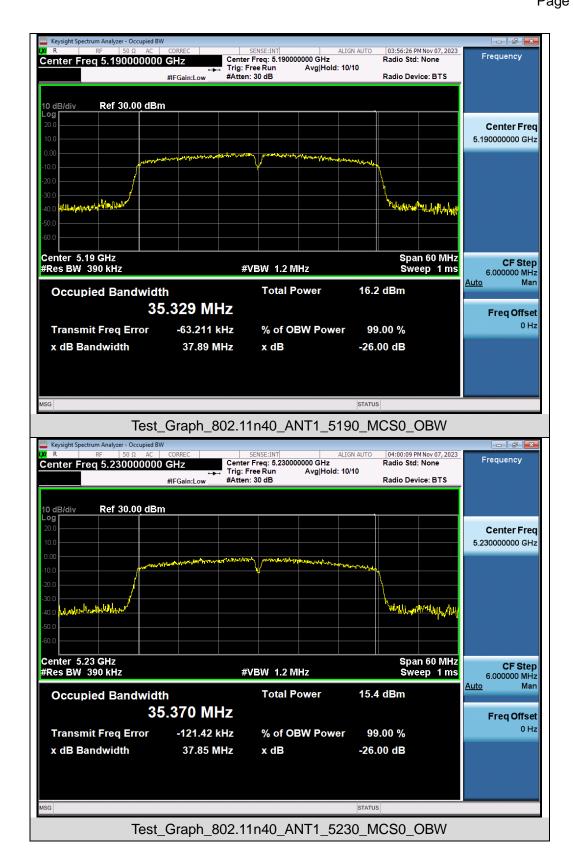




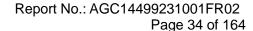






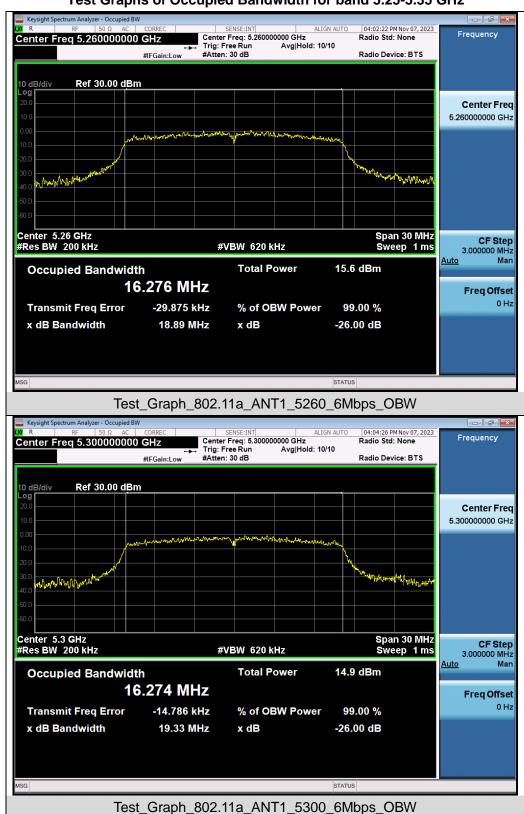


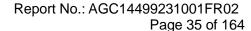
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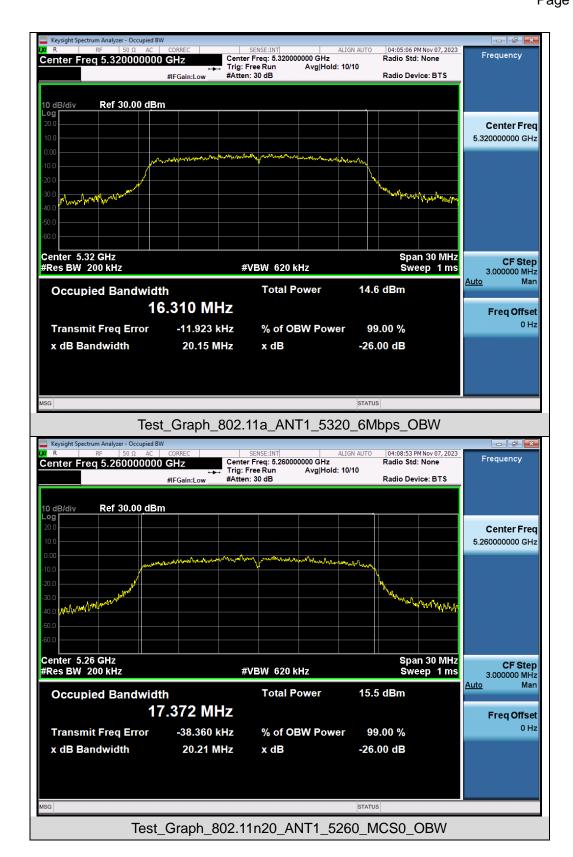


Test Graphs of Occupied Bandwidth for band 5.25-5.35 GHz

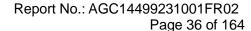




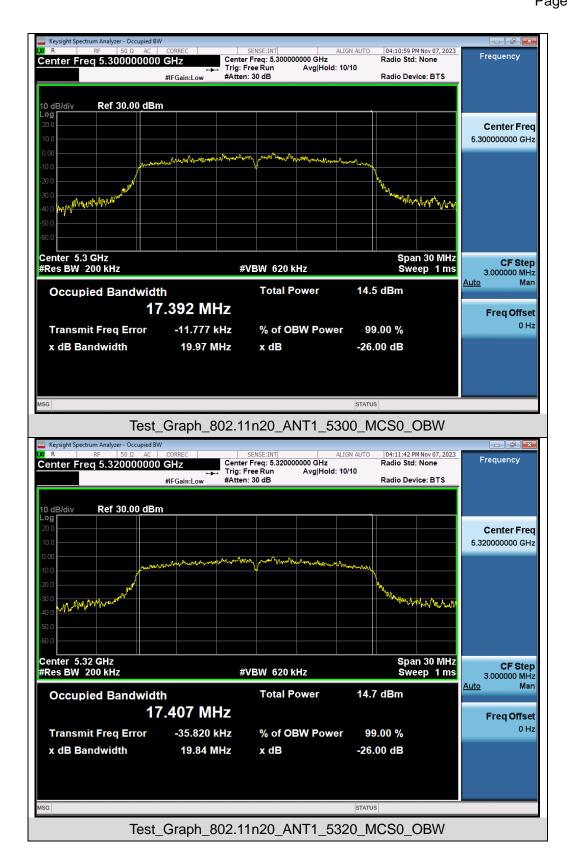


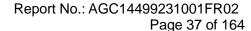


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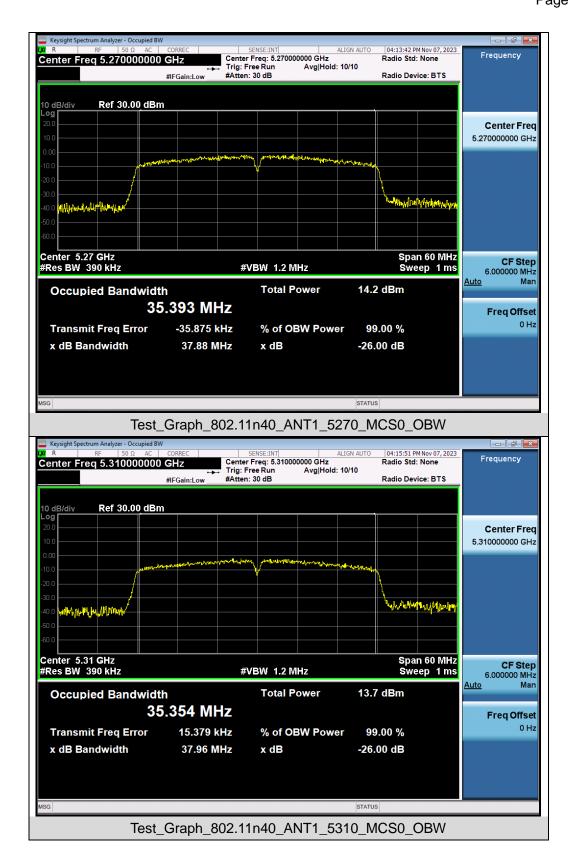


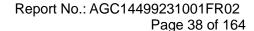






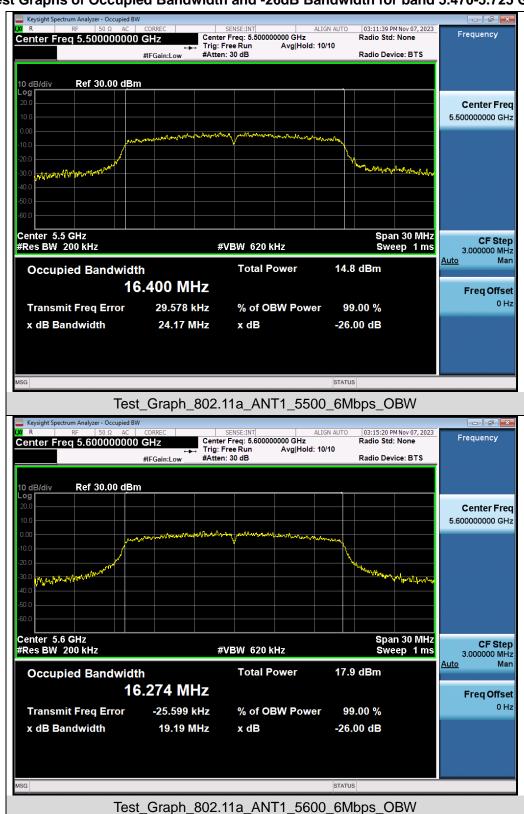


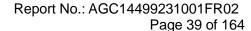




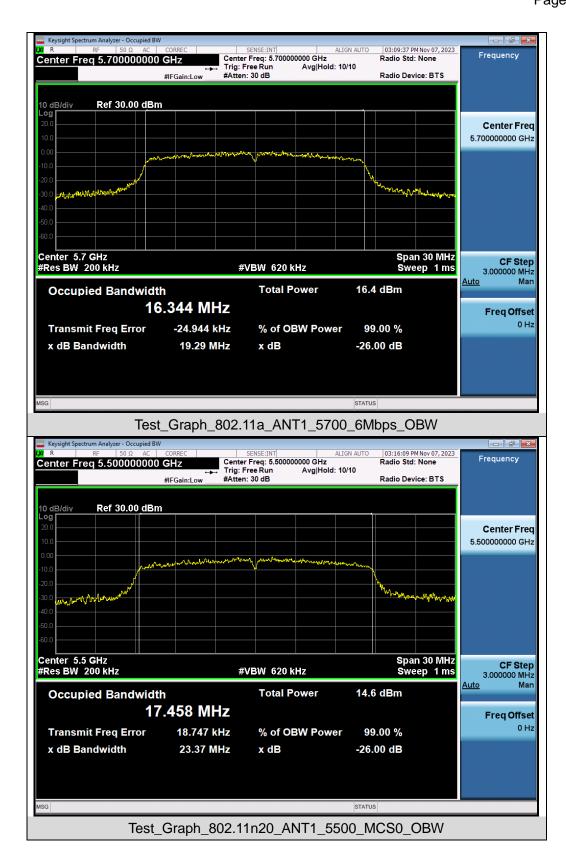


Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.470-5.725 GHz

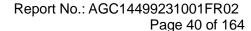




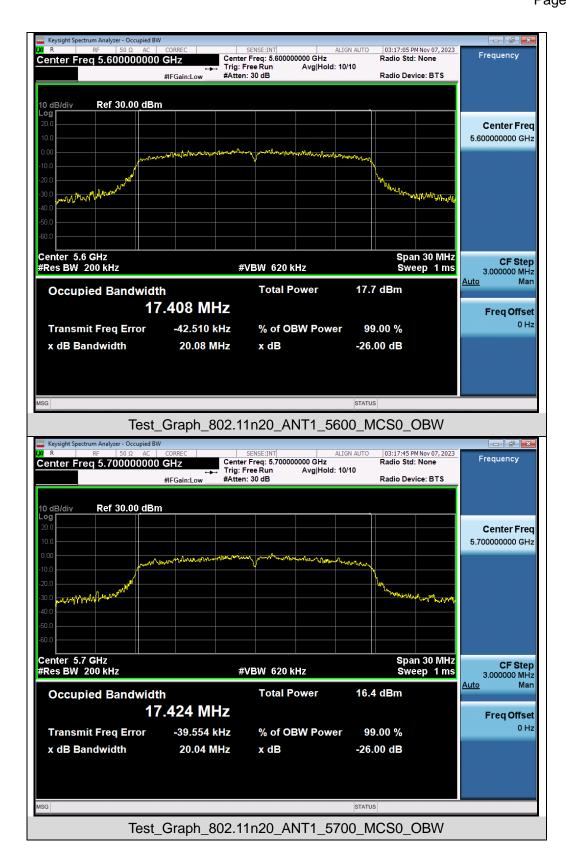




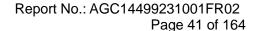
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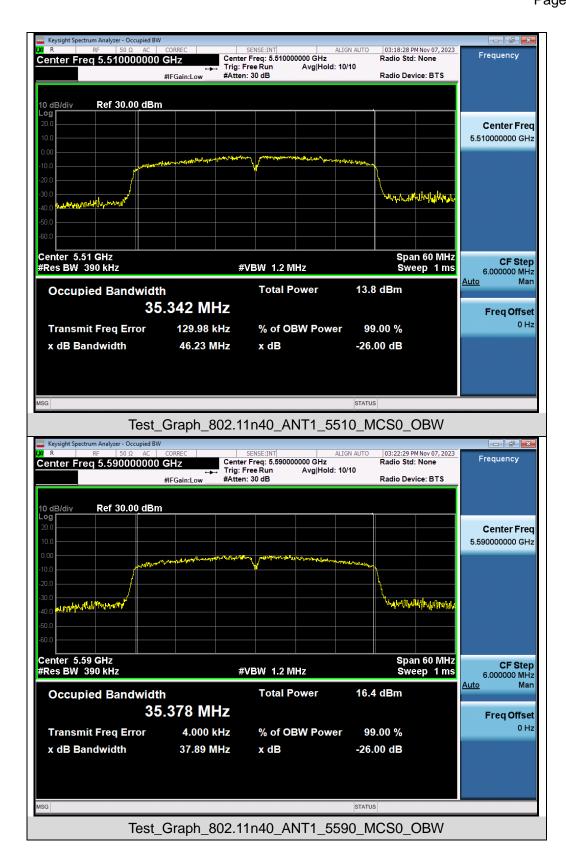


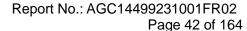


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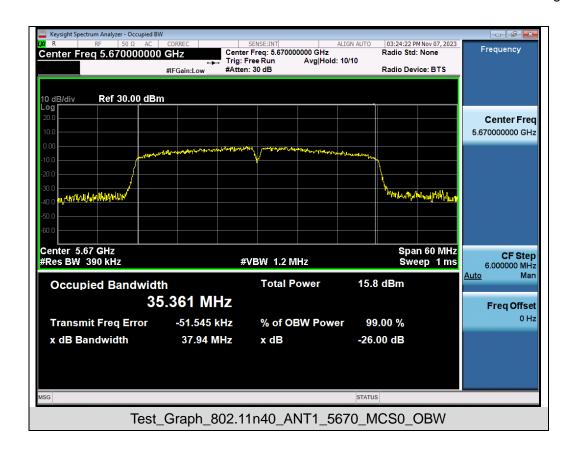


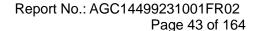






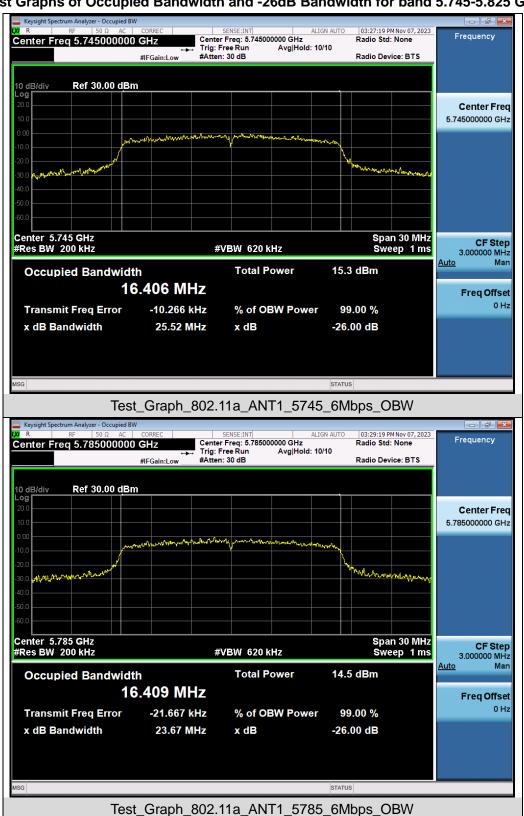


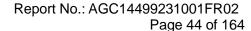




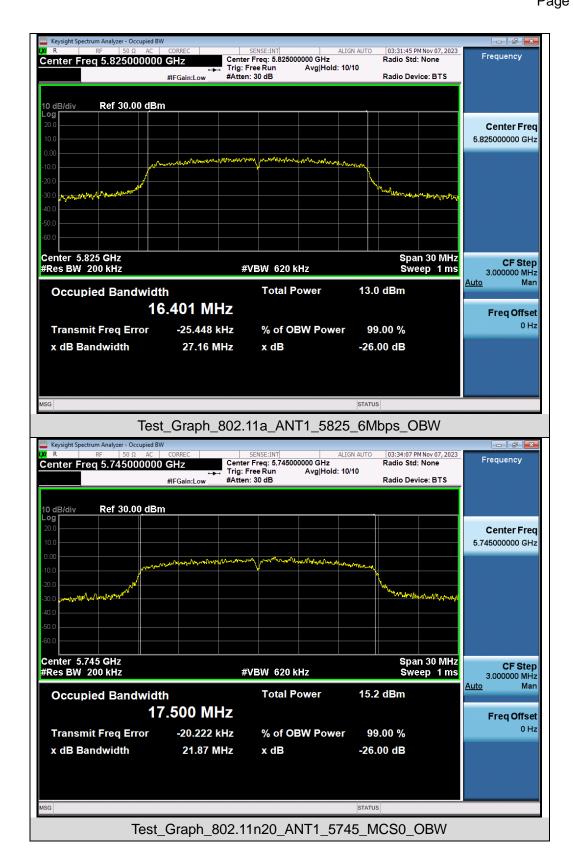


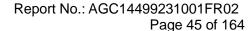
Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.745-5.825 GHz



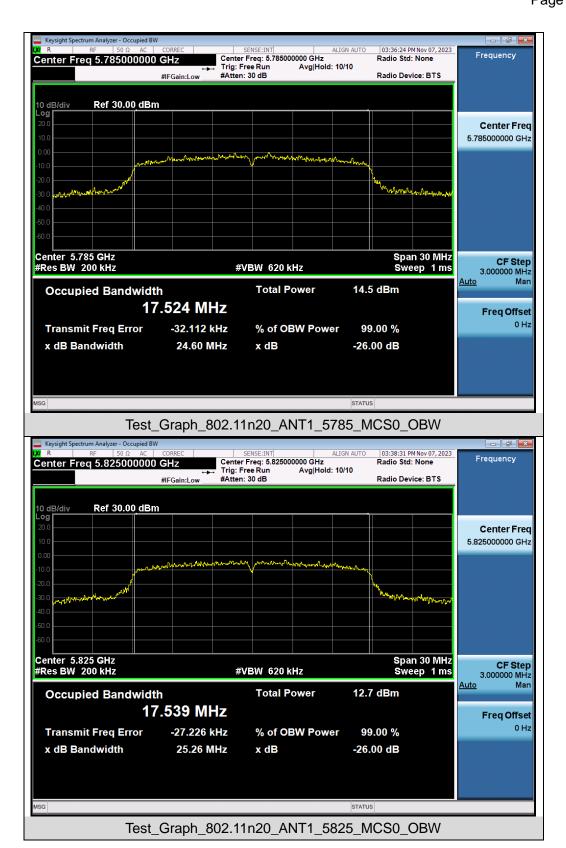




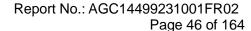




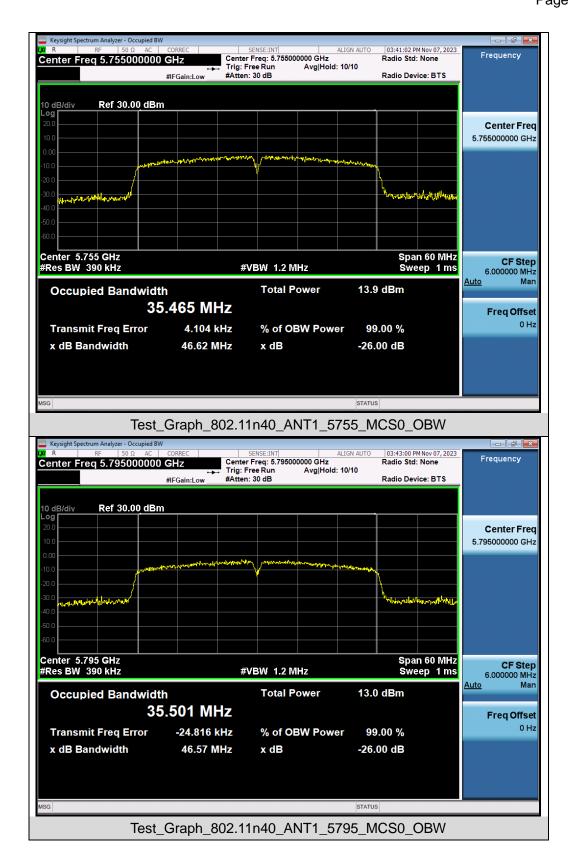


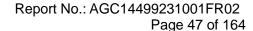


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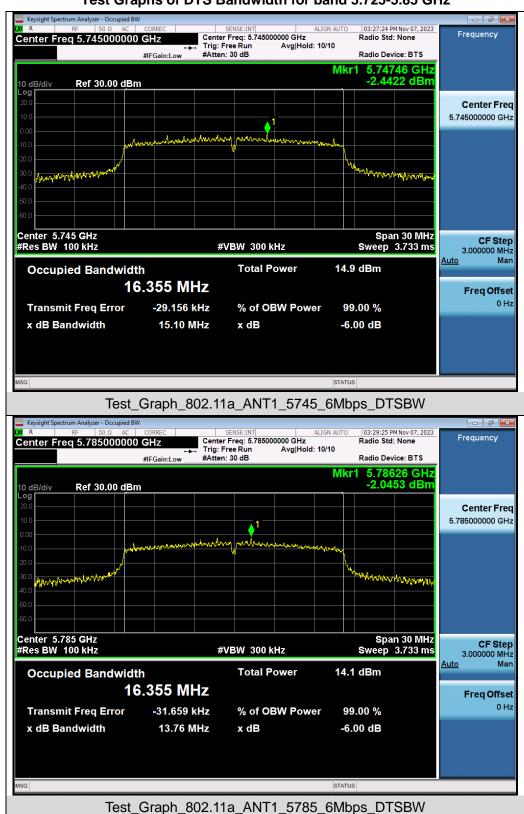


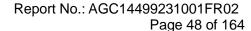




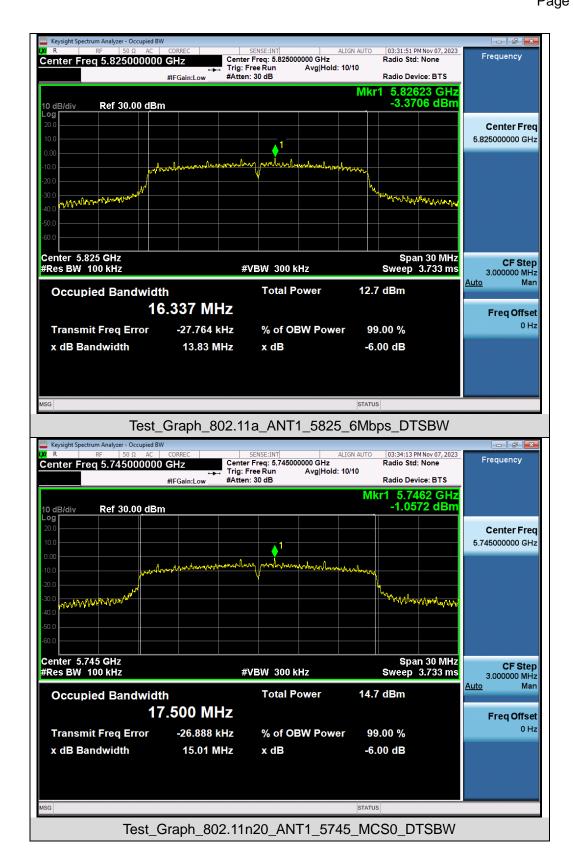


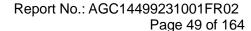
Test Graphs of DTS Bandwidth for band 5.725-5.85 GHz



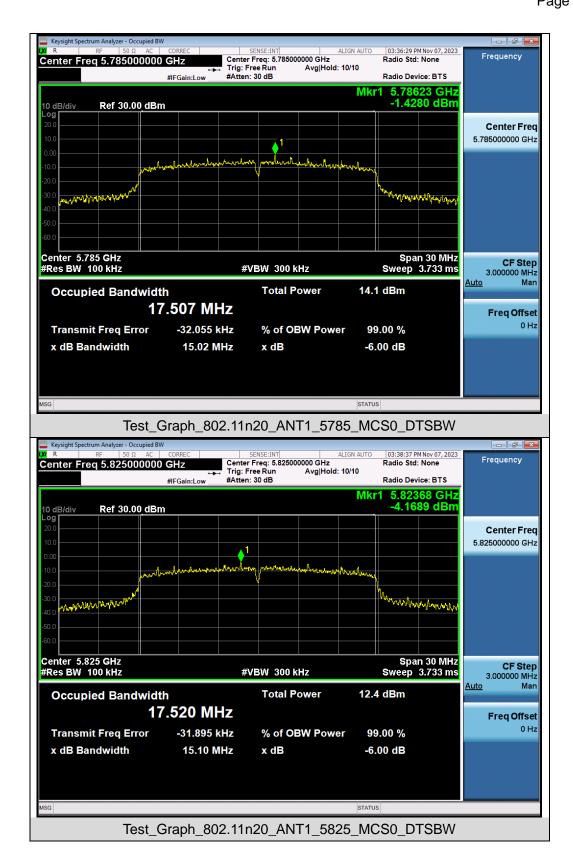




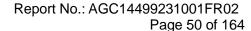




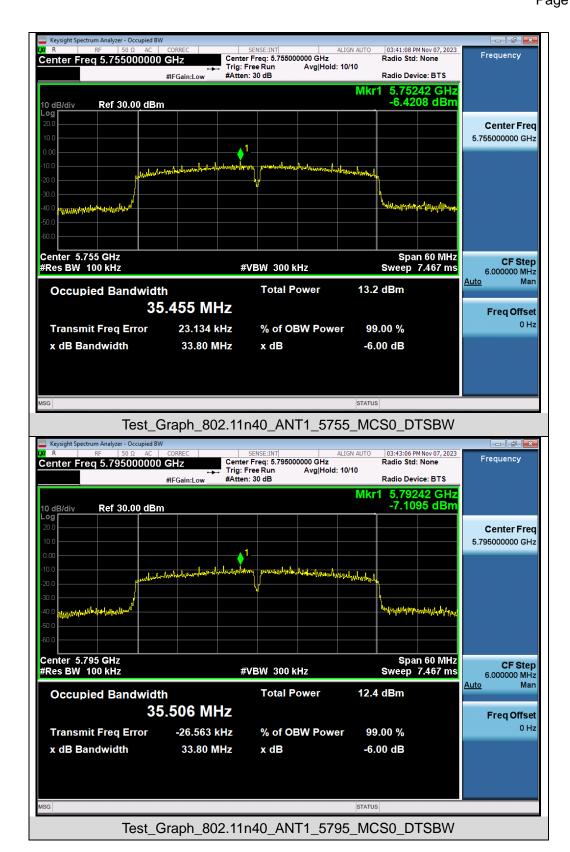




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9. Power Spectral Density Measurement

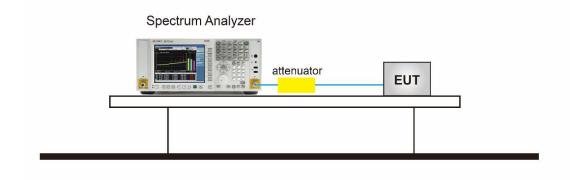
9.1 Provisions Applicable

Operation Band	EUT Category		LIMIT	
		Outdoor Access Point	17dBm/ MHz	
U-NII-1		Fixed point-to-point Access Point	17dBm/ MHz	
O-INII- I		Indoor Access Point	17dBm/ MHz	
	\boxtimes	Client devices	11dBm/ MHz	
U-NII-2A	/		11dBm/ MHz	
U-NII-2C	/		11dBm/ MHz	
U-NII-3	/		30 dBm/500kHz	

9.2 Measurement Procedure

- Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator.
- 2. Span was set to encompass the entire 26dB EBW of the signal.
- 3. RBW = 1MHz.
- 4. If measurement bandwidth of Maximum PSD is specified in 500 kHz, RBW = 100KHz
- 5. Set VBW≥[3×RBW].
- 6. Sweep Time=Auto couple.
- 7. Detector function=RMS (i.e., power averaging).
- 8. Trace average at least 100 traces in power averaging (rms) mode.
- 9. When the measurement bandwidth of Maximum PSD is specified in 100 kHz, add a constant factor 10*log(500kHz/100kHz) = 6.99 dB to the measured result.
- 10. Determine according to the duty cycle of the equipment: when it is less than 98%, follow the steps below.
- 11. Add [10 log (1/D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is 25%.
- 12. Record the test results in the report.

9.3 Measurement Setup (Block Diagram of Configuration)



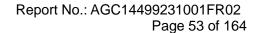




9.4 Measurement Result

Test Data of Conducted Output Power Density for band 5.15-5.25 GHz					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail	
	5180	3.178	10.9	Pass	
802.11a	5200	2.761	10.9	Pass	
	5240	1.721	10.9	Pass	
	5180	2.904	10.9	Pass	
802.11n20	5200	2.397	10.9	Pass	
	5240	1.459	10.9	Pass	
802.11n40	5190	-0.074	10.9	Pass	
	5230	-0.304	10.9	Pass	

Test Data of Conducted Output Power Density for band 5.25-5.35 GHz				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11a	5260	1.064	10.9	Pass
	5300	0.393	10.9	Pass
	5320	0.071	10.9	Pass
802.11n20	5260	0.662	10.9	Pass
	5300	0.060	10.9	Pass
	5320	0.168	10.9	Pass
802.11n40	5270	-2.282	10.9	Pass
	5310	-3.867	10.9	Pass

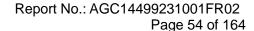




Test Data of Conducted Output Power Density for band 5.470-5.725 GHz					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail	
	5500	0.059	10.9	Pass	
802.11a	5600	3.315	10.9	Pass	
	5700	2.064	10.9	Pass	
802.11n20	5500	-0.065	10.9	Pass	
	5600	3.222	10.9	Pass	
	5700	1.463	10.9	Pass	
802.11n40	5510	-2.543	10.9	Pass	
	5590	0.628	10.9	Pass	
	5670	-0.677	10.9	Pass	

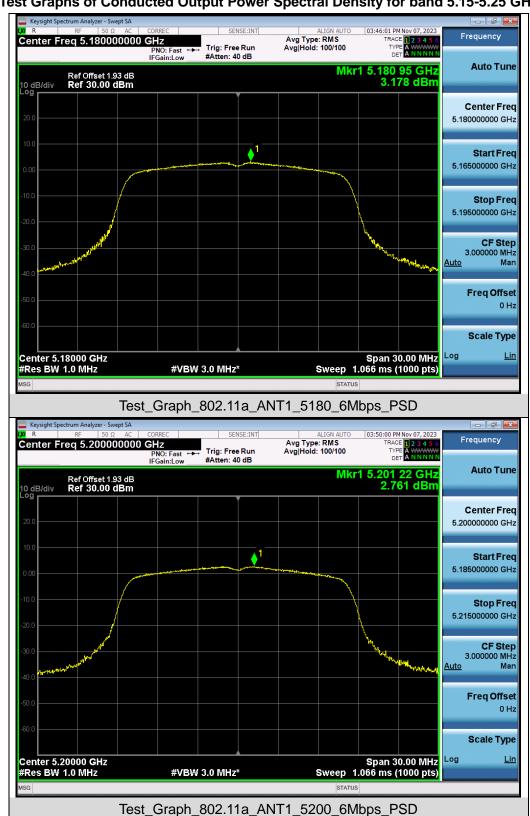
Test Data of Conducted Output Power Density for band 5.725-5.85 GHz					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/100kHz)	Average Power Density (dBm/500kHz)	Limits (dBm/500kHz)	Pass or Fail
802.11a	5745	-8.308	-1.318	29.9	Pass
	5785	-9.031	-2.041	29.9	Pass
	5825	-10.542	-3.552	29.9	Pass
802.11n20	5745	-8.520	-1.530	29.9	Pass
	5785	-9.196	-2.206	29.9	Pass
	5825	-10.152	-3.162	29.9	Pass
802.11n40	5755	-11.341	-4.351	29.9	Pass
	5795	-12.312	-5.322	29.9	Pass

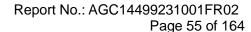
Note:1.Power density(dBm/500kHz) = Power density(dBm/100kHz)+10*log(500/100).



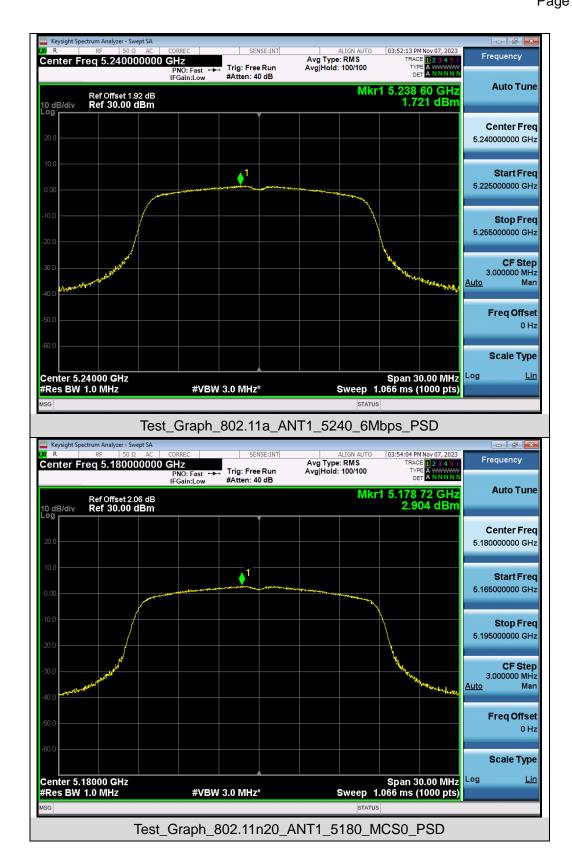


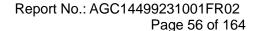
Test Graphs of Conducted Output Power Spectral Density for band 5.15-5.25 GHz



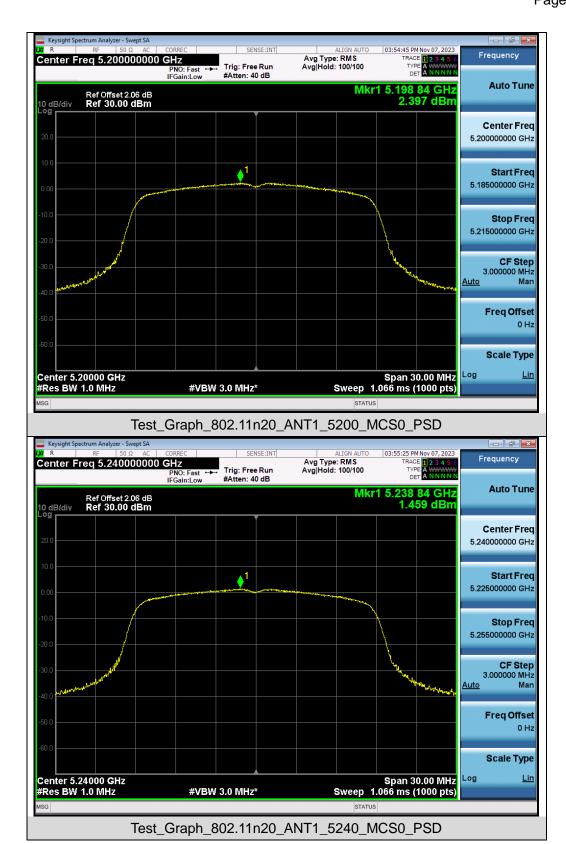


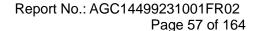






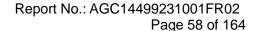






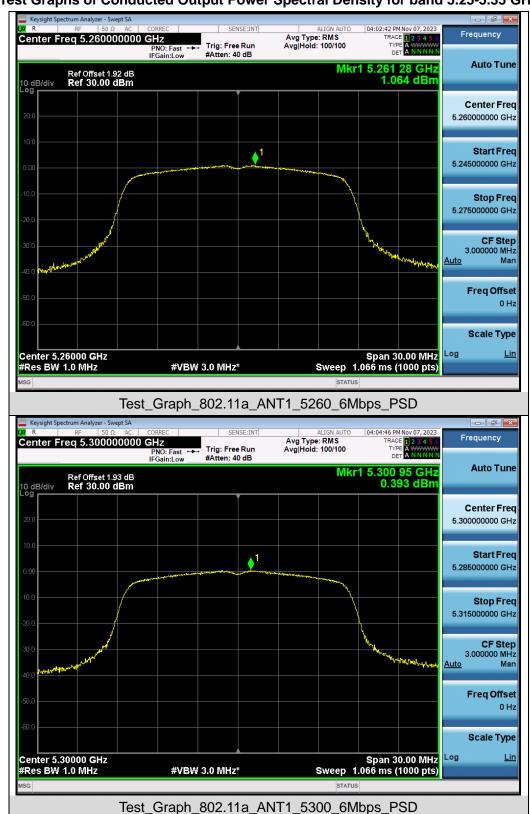


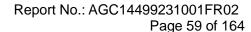




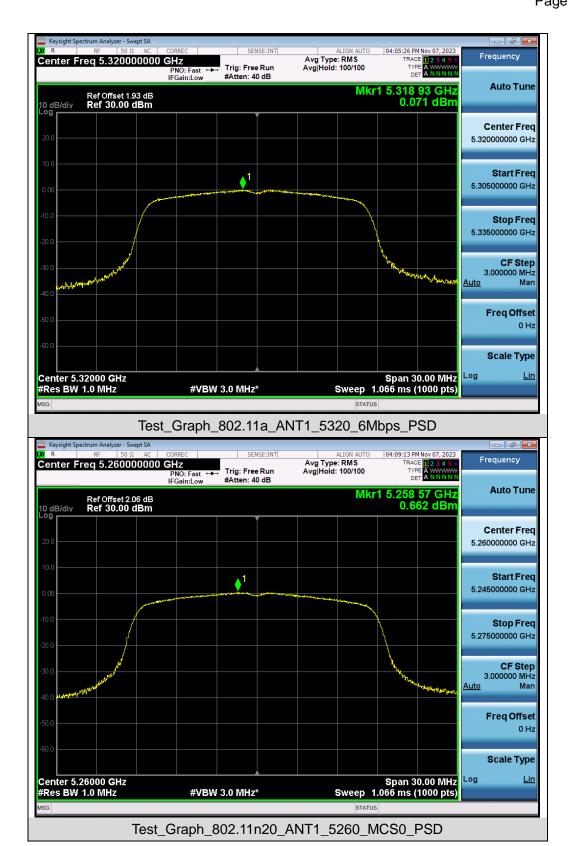


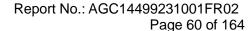
Test Graphs of Conducted Output Power Spectral Density for band 5.25-5.35 GHz



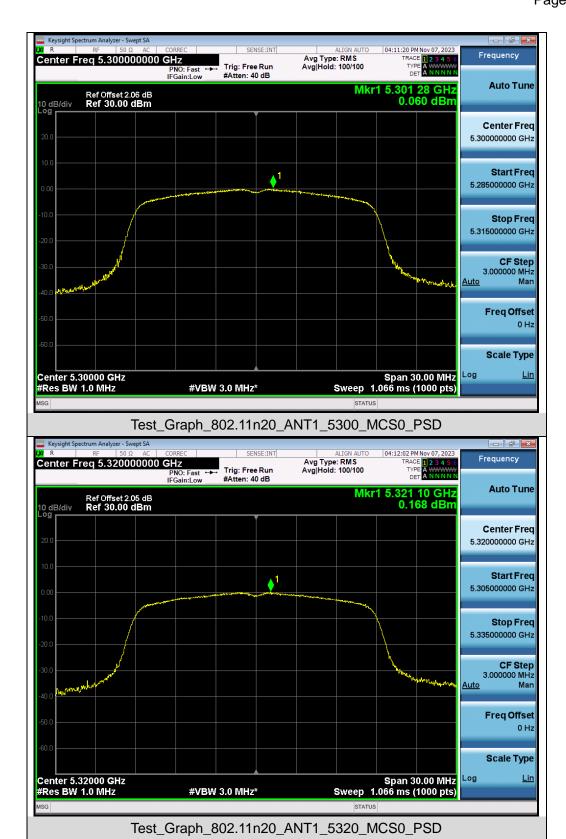


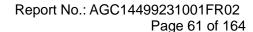






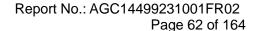














Test Graphs of Conducted Output Power Spectral Density for band 5.470-5.725 GHz

