

# **FCC Test Report**

Report No.: AGC10232240701FR04

**FCC ID** : 2AEAN-0558

**APPLICATION PURPOSE** : Original Equipment

**PRODUCT DESIGNATION**: Video and Audio Production Console

**BRAND NAME** : RØDE

**MODEL NAME** : RØDECASTER VIDEO

**APPLICANT** : Rode Microphones

**DATE OF ISSUE** : Aug. 13, 2024

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

**REPORT VERSION**: V1.0

Attestation of Global Conciliance (Shenzhen) Co., Ltd



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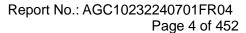
# **Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Aug. 13, 2024	Valid	Initial Release



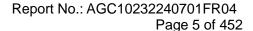
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## 1. General Information

Applicant	Rode Microphones
Address	107 Carnarvon Street, Silverwater 2128, Australia
Manufacturer	Rode Microphones
Address	107 Carnarvon Street, Silverwater 2128, Australia
Factory	Rode Microphones
Address	107 Carnarvon Street, Silverwater 2128, Australia
Product Designation	Video and Audio Production Console
Brand Name	RØDE
Test Model	RØDECASTER VIDEO
Series Model(s)	N/A
Difference Description	N/A
Date of receipt of test item	Jul. 11, 2024
Date of Test	Jul. 11, 20243~ Aug. 12, 2024
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.

Prepared By	Jouk Gai	
	<b>Jack Gui</b> (Project Engineer)	Aug. 12, 2024
Reviewed By	Calin Lin	
	Calvin Liu (Reviewer)	Aug. 12, 2024
Approved By	Max Zhang	
	Max Zhang (Authorized Officer)	Aug. 12, 2024



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## 2. Product Information

## 2.1 Product Technical Description

Equipment Type	<ul><li>☐ Outdoor access points</li><li>☐ Fixed P2P access points</li><li>☐ Client devices</li></ul>		
Operation Frequency	<ul> <li>☑ U-NII 1:5150MHz~5250MHz</li> <li>☑ U-NII 2A: 5250MHz~5350MHz</li> <li>☑ U-NII 3: 5725MHz~5850MHz</li> </ul>		
DFS Design Type	☐ Master ☐ Slave with radar detection ☐ Slave without radar detection		
TPC Function	☐ Yes ☐ No		
Hardware Version	V1.0		
Software Version	V1.0		
Test Frequency Range	For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5180~5240MHz/5260~5320MHz/5500~5720MHz/5745~5825MHz; For 802.11n-HT40/ac-VHT40/ax-HE40: 5190~5230MHz/5270~5310MHz/5510~5710MHz/5755~5795MHz; For 802.11ac-VHT80/ ax-HE80: 5210MHz/5290MHz/5530~5610MHz/5775MHz		
RF Output Power	802.11a:13.08dBm,802.11n(HT20):11.88dBm; 802.11n(HT40):12.18dBm; 802.11ac (VHT20):12.05dBm;802.11ac (VHT40):12.29dBm; 802.11ac (VHT80):11.18dBm;802.11ax (HE20):12.11dBm; 802.11ax (HE40):11.91dBm;802.11ax (HE80):10.48dBm		
RF Output Power(MIMO)	802.11a:14.52dBm,802.11n(HT20):13.61dBm; 802.11n(HT40):14.52dBm; 802.11ac (VHT20):14.50dBm;802.11ac (VHT40):14.50dBm; 802.11ac (VHT80):13.49dBm;802.11ax (HE20):14.61dBm; 802.11ax (HE40):14.44dBm;802.11ax (HE80):12.79dBm		
Modulation	802.11a/n:(64-QAM, 16-QAM, QPSK, BPSK) OFDM 802.11ac :(256-QAM, 64-QAM, 16-QAM, QPSK, BPSK) OFDM 802.11ax :(1024-QAM,256-QAM, 64-QAM, 16-QAM, QPSK, BPSK) OFDMA		
Data Rate	802.11a:6/9/12/18/24/36/48/54Mbps; 802.11n: up to 300Mbps; 802.11ac: up to 866.6Mbps; 802.11ax: up to 1201Mbps		
Number of channels	7 channels of U-NII-1 Band;7 channels of U- NII-2A Band 18 channels of U-NII-2C Band;8 channels of U- NII 3 Band		
Antenna Designation	Reverse SMA Antenna		
Antenna Gain	Refer to Chapter 2.9 of the report.		
Power Supply	DC 20V by adapter		



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#### 2.2 Table of Carrier Frequency

#### For 5180~5240MHz:

## 4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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

## 2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

## 1 channel is provided for 802.11ac (VHT80), 802.11ax (VHT80):

Channel	Frequency	Channel	Frequency
42	5210 MHz		

#### For 5260~5320MHz:

## 5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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

## 2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

## 1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
58	5290 MHz		



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## For 5500~5700MHz:

## 11 Channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Channel Frequency		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), 802.11ac (VHT40), 802.11ax (HE40):

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

## 2 Channels are provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	nel Frequency Channel		Frequency
106	5530 MHz	122	5610 MHz



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## For 5745~5825MHz:

## 5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency Channel		Frequency
151	5755 MHz	159	5795 MHz

## 1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	nel Frequency Channel		Frequency
155	5775 MHz		



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## 2.3 IEEE 802.11n Modulation Scheme

MCS Index	Nss	Modulation	R	N <sub>BPSC</sub>	N <sub>C</sub>	BPS	N <sub>D</sub>	BPS	(Mb	rate ops) nsGI
					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



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## 2.4 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: 2AEAN-0558 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 detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna refer to Section 2.9 of the report



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#### 2.9 Description of Available Antennas

Antenna	Frequency	TX	Bandwidth	Max Peak (	Gain (dBi)	Max Directional Gain	
Type	Band (MHz)	Paths	Paths (MHz)	(MHz)	Chain A	Chain B	(dBi)
5G WIFI Reverse SMA Antenna List (5GHz 2*2 MIMO)							
	5150 ~ 5250	2	20,40,80	0.38	0.38	3.39	
Reverse SMA	5250 ~ 5350	2	20,40,80	0.38	0.38	3.39	
Antenna	5470 ~ 5725	2	20,40,80	1.40	1.40	4.41	
	5725 ~ 5850	2	20,40,80	1.48	1.48	4.49	

Note 1: The EUT supports Cyclic Delay Diversity (CDD) technology for 802.11n/ac/ax mode.

Note 2: The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

If all antennas have the same gain, Gant, Directional gain = Gant + Array Gain, where Array Gain is as follows.

• For power spectral density (PSD) measurements on devices:

Array Gain =  $10 \log (N_{ANT}/N_{SS}) dB = 3.01$ ;

For power measurements on IEEE 802.1devices:

Array Gain = 0 dB for  $N_{ANT} \le 4$ ;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥40 MHz for any NANT;

Array Gain = 5 log(Nant/Nss) dB or 3 dB, whichever is less, for 20 MHz channel widths with Nant ≥ 5.

If antenna gains are not equal, 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.

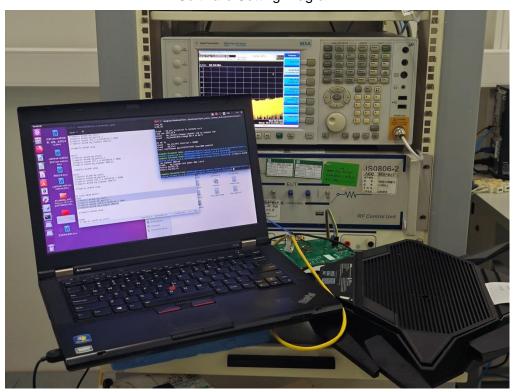


# 2.10 Description of Test Software

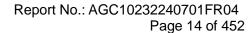
## For IEEE 802.11 mode:

The test utility software used during testing was "rtwpriv\_release\_v5.8.0.20220302".

## Software Setting Diagram



Test Mode-U-NII 1	Channel	Powe	er Index
Test Wode-O-NIT I	Channel	Chain A	Chain B
802.11a	L/M/H	14	13
802.11n(HT20)	L/M/H	13	12
802.11n(HT40)	L/M/H	13	12
802.11ac(VHT20)	L/M/H	13	12
802.11ac(VHT40)	L/M/H	13	12
802.11ac(VHT80)	L/M/H	13	11
802.11ax(HE20)	L/M/H	13	12
802.11ax(HE40)	L/M/H	13	12
802.11ax(HE80)	L/M/H	12	11





Toot Made II NII 24	Channel	Powe	er Index
Test Mode-U-NII 2A	Channel	Chain A	Chain B
802.11a	L/M/H	14	13
802.11n(HT20)	L/M/H	13	12
802.11n(HT40)	L/M/H	13	12
802.11ac(VHT20)	L/M/H	13	12
802.11ac(VHT40)	L/M/H	13	12
802.11ac(VHT80)	L/M/H	13	11
802.11ax(HE20)	L/M/H	13	12
802.11ax(HE40)	L/M/H	13	12
802.11ax(HE80)	L/M/H	12	11
Test Mode-U-NII 2C	Channel	Powe	er Index
Test Mode-0-INIT 2C	Channel	Chain A	Chain B
802.11a	L/M/H	14	12
802.11n(HT20)	L/M/H	13	11
802.11n(HT40)	L/M/H	13	11
802.11ac(VHT20)	L/M/H	13	11
802.11ac(VHT40)	L/M/H	13	11
802.11ac(VHT80)	L/M/H	12	10
802.11ax(HE20)	L/M/H	13	11
802.11ax(HE40)	L/M/H	13	11
802.11ax(HE80)	L/M/H	12	10
Test Mode-U-NII 3	Channel	Power Index	
rest wode-o-ivii 5	Chamilei	Chain A	Chain B
802.11a	L/M/H	14	12
802.11n(HT20)	L/M/H	13	11
802.11n(HT40)	L/M/H	13	11
802.11ac(VHT20)	L/M/H	13	11
802.11ac(VHT40)	L/M/H	13	11
802.11ac(VHT80)	L/M/H	12	10
802.11ax(HE20)	L/M/H	13	11
802.11ax(HE40)	L/M/H	13	11
802.11ax(HE80)	L/M/H	12	10



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#### 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.



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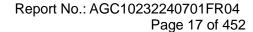
## 3.3 Environmental Conditions

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

## 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%.

Measurement Uncertainty		
$U_c = \pm 2.9 \text{ dB}$		
$U_c = \pm 3.9 \text{ dB}$		
$U_c = \pm 4.9 \text{ dB}$		
$U_c = \pm 0.8 \text{ dB}$		
$U_c = \pm 2.6 \text{ dB}$		
U <sub>c</sub> = ±2 %		
$U_c = \pm 2.7 \%$		



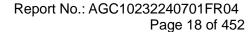


## 3.5 List of Equipment Used

• 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	2024-05-24	2025-05-23			
$\boxtimes$		Agilent	U2021XA	MY54110007	2024-02-01	2025-01-31				
$\boxtimes$		Agilent	U2021XA	MY54110009	2024-02-01	2025-01-31				
$\boxtimes$	AGC-EM-A152	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-09-21	2025-09-20			
$\boxtimes$	AGC-ER-E083	Signal Generator	Agilent	E4421B	US39340815	2024-05-23	2025-05-22			
	N/A	RF Connection Cable	N/A	1#	N/A	Each time	N/A			
	DE Connection		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	2024-02-01	2025-01-31			
$\boxtimes$	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2024-05-24	2025-05-23			
$\boxtimes$	<ul><li>✓ AGC-EM-E061 Spectrum Analyzer</li><li>✓ AGC-EM-E086 Loop Antenna</li></ul>		Agilent	N9010A	MY53470504	2024-05-28	2025-05-27			
$\boxtimes$			ZHINAN	ZN30900C	18051	2024-03-05	2026-03-04			
$\boxtimes$	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	2024-03-31	2025-03-30			
$\boxtimes$	AGC-EM-E082	Horn Antenna	SCHWARZBECK	BBHA 9170	#768	2023-09-24	2025-09-23			
$\boxtimes$	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2024-07-24	2026-07-23			
$\boxtimes$	AGC-EM-A118	5G Filter	SongYi	N/A	N/A	2024-05-23	2025-05-22			
$\boxtimes$	□ AGC-EM-A138 6dB Attenuator		Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2025-06-08			
	AGC-EM-A139	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2025-06-08			

• 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	2024-05-28	2025-05-27				
	□ AGC-EM-A130 6dB Attenuator E		Eeatsheep	LM-XX-6-5W	DC-6GZ	2023-06-09	2025-06-08				
$\boxtimes$	AGC-EM-E023	AMN	R&S	100086	ESH2-Z5	2024-05-28	2025-05-27				





• Tes	Test Software										
Used	Used Equipment No. Test Equipment		uipment No. Test Equipment Manufacturer		Version Information						
$\boxtimes$	AGC-EM-S001	CE Test System	R&S	ES-K1	V1.71						
$\boxtimes$	AGC-EM-S003	RE Test System	FARA	EZ-EMC	VRA-03A						
$\boxtimes$	AGC-ER-S012	BT/WIFI Test System	Tonscend	JS1120-2	2.6						
$\boxtimes$	AGC-EM-S011	RSE Test System	Tonscend	TS+-Ver2.1(JS36-RSE)	4.0.0.0						



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# 4. System Test Configuration

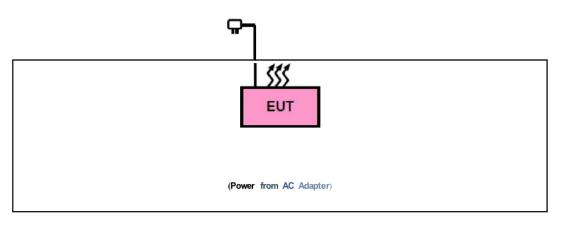
#### 4.1 EUT Configuration

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	Manufacturer	Model No.	Specification Information	Cable
1	Control Box	USB-TTL			
2			PA-1650-58	Input: AC 100-240 V; 1.6A; Output: DC5V 3A; DC9V 3A; DC12V 3A; DC15V 3A; DC20V 3.25A	
3	Test Board				

#### ☐ Test Accessories Come From The Manufacturer

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



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## 4.5 Summary of Test Results

Item	FCC Rules	FCC Rules Description of Test			
1	§15.203	Antenna Equipment	Pass		
2	§15.407(a/1/2/3)	RF Output Power	Pass		
3	§15.407(e)	6 dB Bandwidth	Pass		
4	§15.403(i) 99% Occupied Bandwidth		Pass		
5	§15.407(a/1/2/3)	Power Spectral Density	Pass		
6	§15.407(g)	Frequency Stability	Pass (See Note 1)		
7	§15.407(c)	Transmission Discontinuation Requirement	Pass (See Note 2)		
8	§15.407(b)(1/2/3/4)	Conducted Band Edge and Out-of-Band Emissions	Pass		
9	§15.209,§15.407(b)(1/2/3/4)	Radiated Spurious Emission	Pass		
10	§15.207	AC Power Line Conducted Emission	Pass		

#### Note:

- 1. Refer to the manufacturer's declaration in the user manual.
- 2. The device operates without the transmission of information.



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## 5. Description of Test Modes

EUT Configure Mode		Applic	cable To	Description	
201 Configure 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.

NOTE 3: The radiation part tests the dual-antenna MIMO as the worst combination.

#### 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).
- Support 802.11ax, device debugging is tested in Full RU state
- 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 Chain A 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)
А	802.11ax (20MHz)	5180-5240	36 to 48	36, 40, 48	OFDM	MCS0
Α	802.11ax (20MHz)	5260-5320	52 to 64	52, 60, 64	OFDM	MCS0
Α	802.11ax (20MHz)	5500-5700	100 to 140	100, 116, 140	OFDM	MCS0
Α	802.11ax (20MHz)	5745-5825	149 to 165	149, 157, 165	OFDM	MCS0



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#### 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 Chain A 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	802.11ax(20MHz)	5500-5700	102 to 134	102	OFDM	MCS0

#### 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 Chain A 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	802.11ax(20MHz)	5500-5700	102 to 134	102	OFDM	MCS0

#### 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).
- Support 802.11ax, device debugging is tested in Full RU state
- 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 Chain A 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	802.11a		36 to 48	36	OFDM	6.0
Α	802.11n (40MHz)	5180-5240	38 to 46	38	OFDM	MCS0
Α	802.11ac (80MHz)	5160-5240	42	42	OFDM	MCS0
Α	802.11ax (80MHz)		42	42	OFDMA	MCS0
Α	802.11a		52 to 64	64	OFDM	6.0
Α	802.11n (40MHz)	5260-5320	54 to 62	62	OFDM	MCS0
Α	802.11ac (80MHz)	5200-5520	58	58	OFDM	MCS0
А	802.11ax (80MHz)		58	58	OFDMA	MCS0
А	802.11a		100 to 140	100	OFDM	6.0
А	802.11n (40MHz)	5500-5700	102 to 134	102	OFDM	MCS0
А	802.11ac (80MHz)		106	106	OFDM	MCS0
A	802.11ax (80MHz)		106	106	OFDMA	MCS0



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## • 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).

- Support 802.11ax, device debugging is tested in Full RU state
- 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)
А	802.11a		36 to 48	36, 40, 48	OFDM	6.0
Α	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
Α	802.11n (40MHz)		38 to 46	38, 46	OFDM	MCS0
Α	802.11ac (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
Α	802.11ac (40MHz)	5180-5240	38 to 46	38, 46	OFDM	MCS0
Α	802.11ac (80MHz)		42	42	OFDM	MCS0
Α	802.11ax (20MHz)		36 to 48	36, 40, 48	OFDMA	MCS0
Α	802.11ax (40MHz)		38 to 46	38, 46	OFDMA	MCS0
Α	802.11ax (80MHz)		42	42	OFDMA	MCS0
Α	802.11a		52 to 64	52, 60, 64	OFDM	6.0
Α	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
А	802.11n (40MHz)		54 to 62	54, 62	OFDM	MCS0
А	802.11ac (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
А	802.11ac (40MHz)	5260-5320	54 to 62	54, 62	OFDM	MCS0
А	802.11ac (80MHz)		58	58	OFDM	MCS0
А	802.11ax (20MHz)		52 to 64	52, 60, 64	OFDMA	MCS0
А	802.11ax (40MHz)		54 to 62	54, 62	OFDMA	MCS0
А	802.11ax (80MHz)		58	58	OFDMA	MCS0
А	802.11a		100 to 140	100, 116, 140	OFDM	6.0
Α	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	MCS0
А	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	MCS0
А	802.11ac (20MHz)		100 to 140	100, 116, 140	OFDM	MCS0
А	802.11ac (40MHz)	5500-5700	102 to 134	102, 110, 134	OFDM	MCS0
А	802.11ac (80MHz)		106,122	106,122	OFDM	MCS0
А	802.11ax (20MHz)		100 to 140	100, 116, 140	OFDMA	MCS0
А	802.11ax (40MHz)		102 to 134	102, 110, 134	OFDMA	MCS0
Α	802.11ax (80MHz)		106,122	106,122	OFDMA	MCS0
А	802.11a		149 to 165	149, 157, 165	OFDM	6.0
А	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	MCS0
А	802.11n (40MHz)		151 to 159	151, 159	OFDM	MCS0
А	802.11ac (20MHz)		149 to 165	149, 157, 165	OFDM	MCS0
А	802.11ac (40MHz)	5745-5825	151 to 159	151, 159	OFDM	MCS0
А	802.11ac (80MHz)		155	155	OFDM	MCS0
Α	802.11ax (20MHz)		149 to 165	149, 157, 165	OFDM	MCS0
А	802.11ax (40MHz)		151 to 159	151, 159	OFDM	MCS0
А	802.11ax (80MHz)		155	155	OFDMA	MCS0

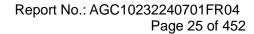


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# 6. Duty Cycle Measurement

5GHz WLAN (NII) operation is possible in 20MHz, 40MHz and 80MHz 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 = Average. 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:

	, ,						
Operating mode	Data rates (Mbps)	Duty Cycle (%)	Duty Cycle Factor (dB)				
Band U-NII1:5150MHz-5250MHz Chain A							
802.11a	6	35.23	4.53				
802.11n_HT20	MCS0	33.77	4.71				
802.11n_HT40	MCS0	20.24	6.94				
802.11ac_VHT20	MCS0	20.35	6.91				
802.11ac_VHT40	MCS0	11.28	9.48				
802.11ac_VHT80	MCS0	28.31	5.48				
802.11ax_HE20	MCS0	17.12	7.66				
802.11ax_HE40	MCS0	89.26	0.49				
802.11ax_HE80	MCS0	10.06	9.97				
Ban	Band U-NII 2A:5250MHz-5350MHz Chain A						
802.11a	6	35.25	4.53				
802.11n_HT20	MCS0	33.64	4.73				
802.11n_HT40	MCS0	20.11	6.97				
802.11ac_VHT20	MCS0	33.84	4.71				
802.11ac_VHT40	MCS0	20.32	6.92				
802.11ac_VHT80	MCS0	11.28	9.48				
802.11ax_HE20	MCS0	28.22	5.49				
802.11ax_HE40	MCS0	17.24	7.63				
802.11ax_HE80	MCS0	10.07	9.97				
Band U-NII 2C:5470MHz-5725MHz Chain A							
802.11a	6	35.23	4.53				
802.11n_HT20	MCS0	33.74	4.72				
802.11n_HT40	MCS0	20.21	6.94				
802.11ac_VHT20	MCS0	33.7	4.72				
		H					





802.11ac_VHT40	MCS0	20.21	6.94
802.11ac_VHT80	MCS0	11.28	9.48
802.11ax_HE20	MCS0	28.23	5.49
802.11ax_HE40	MCS0	17.24	7.63
802.11ax_HE80	MCS0	10.07	9.97
Ва	and U-NII 3:5725MHz	-5850MHz Chain A	
802.11a	6	35.25	4.53
802.11n_HT20	MCS0	33.7	4.72
802.11n_HT40	MCS0	20.11	6.97
802.11ac_VHT20	MCS0	33.86	4.7
802.11ac_VHT40	MCS0	20.32	6.92
802.11ac_VHT80	MCS0	11.13	9.54
802.11ax_HE20	MCS0	28.19	5.5
802.11ax_HE40	MCS0	17.22	7.64
802.11ax_HE80	MCS0	9.93	10.03

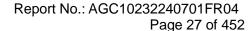
Operating mode Data rates (M		Duty Cycle (%)	Duty Cycle Factor (dB)				
Band U-NII1:5150MHz-5250MHz Chain B							
802.11a	6	35.23	4.53				
802.11n_HT20	MCS0	33.61	4.74				
802.11n_HT40	MCS0	20.23	6.94				
802.11ac_VHT20	MCS0	33.73	4.72				
802.11ac_VHT40	MCS0	20.21	6.94				
802.11ac_VHT80	MCS0	11.25	9.49				
802.11ax_HE20	MCS0	28.35	5.47				
802.11ax_HE40	MCS0	17.19	7.65				
802.11ax_HE80	MCS0	10.06	9.97				
Band U-NII 2A:5250MHz-5350MHz Chain B							
802.11a	6	35.25	4.53				
802.11n_HT20	MCS0	33.64	4.73				
802.11n_HT40	MCS0	20.24	6.94				



802.11ac_VHT20	MCS0	33.86	4.70
802.11ac_VHT40	MCS0	20.35	6.91
802.11ac_VHT80	MCS0	11.28	9.48
802.11ax_HE20	MCS0	28.35	5.47
802.11ax_HE40	MCS0	17.21	7.64
802.11ax_HE80	MCS0	10.07	9.97
В	and U-NII 2C:5470MHz	z-5725MHz Chain B	
802.11a	6	35.23	4.53
802.11n_HT20	MCS0	33.69	4.72
802.11n_HT40	MCS0	20.10	6.97
802.11ac_VHT20	MCS0	33.46	4.75
802.11ac_VHT40	MCS0	20.24	6.94
802.11ac_VHT80	MCS0	11.26	9.48
802.11ax_HE20	MCS0	2.86	15.44
802.11ax_HE40	MCS0	17.24	7.63
802.11ax_HE80	MCS0	9.92	10.03
E	Band U-NII 3:5725MHz	-5850MHz Chain B	
802.11a	6	35.23	4.53
802.11n_HT20	MCS0	33.74	4.72
802.11n_HT40	MCS0	20.24	6.94
802.11ac_VHT20	MCS0	33.69	4.72
802.11ac_VHT40	MCS0	20.36	6.91
802.11ac_VHT80	MCS0	11.25	9.49
802.11ax_HE20	MCS0	28.35	5.47
802.11ax_HE40	MCS0	17.18	7.65
802.11ax_HE80	MCS0	9.96	10.02

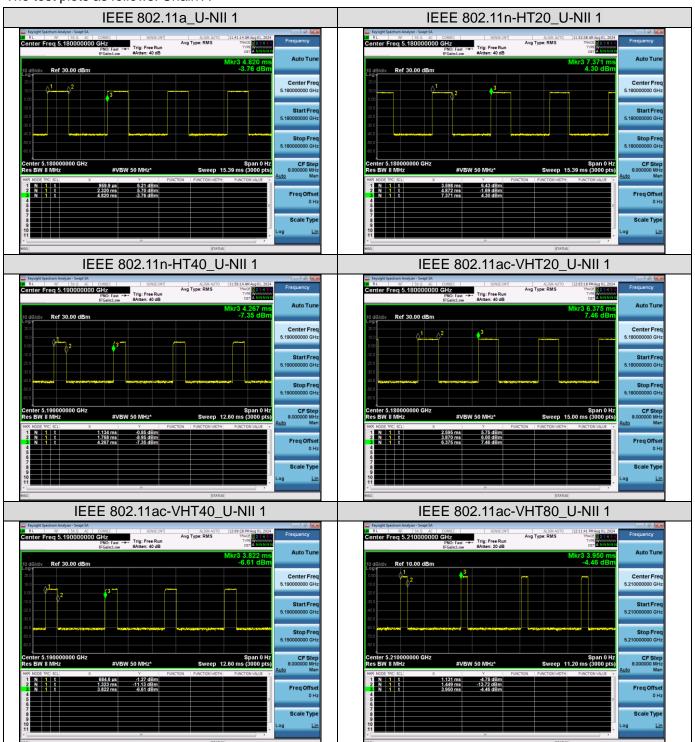
#### Remark:

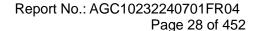
- 1. Duty Cycle factor = 10 \* log (1/ Duty cycle)
- 2. The duty cycle of each frequency band mode reflects the determination requirements of the low channel measurement value.
- 3. Involving the test items of duty cycle compensation coefficient, the final results have been added and calculated by the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



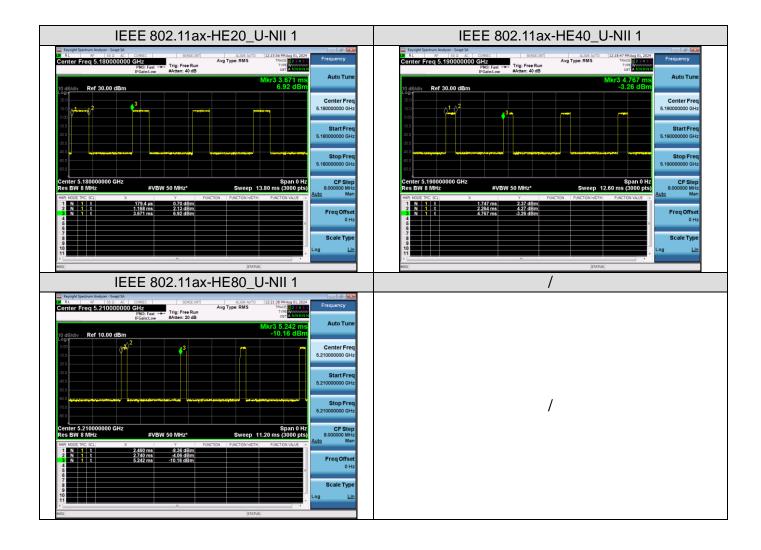


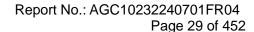
The test plots as follows: Chain A



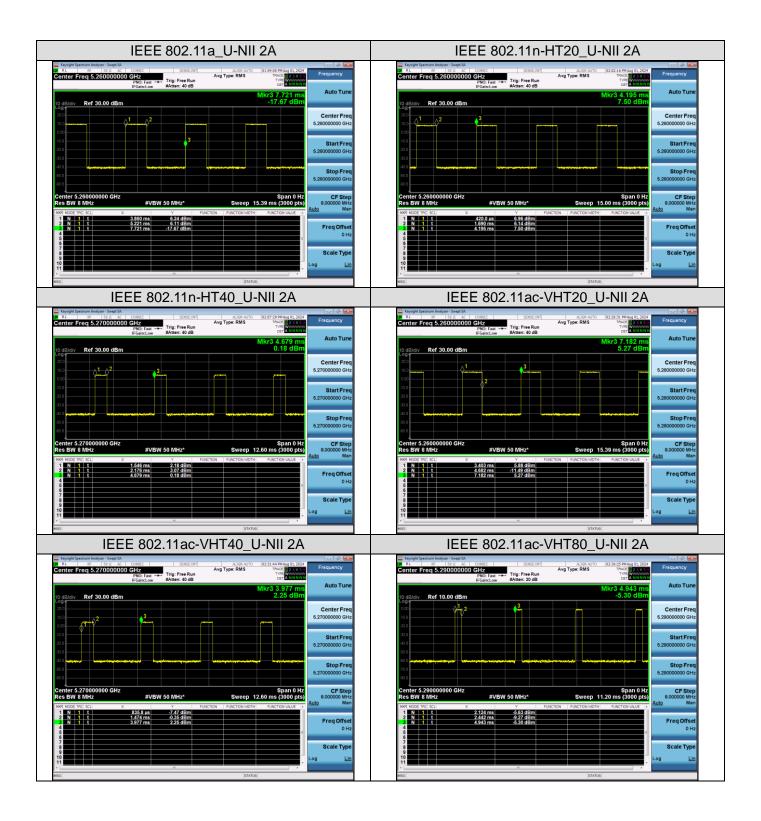


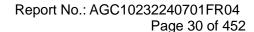




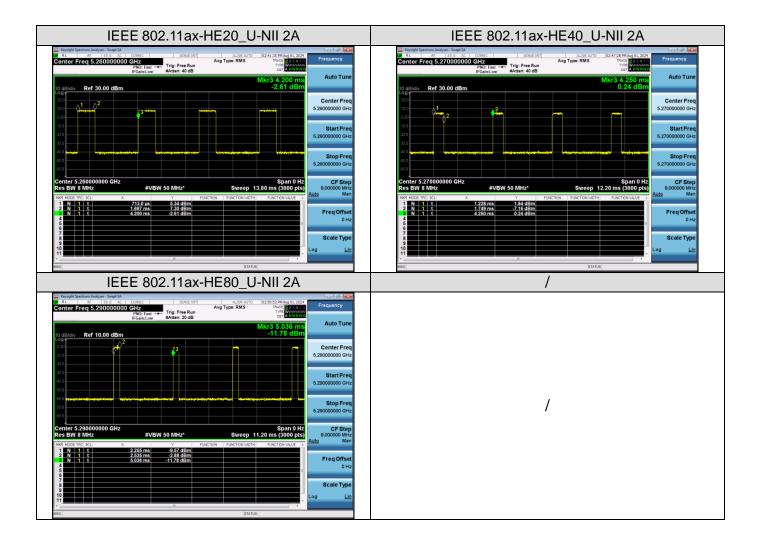


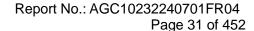




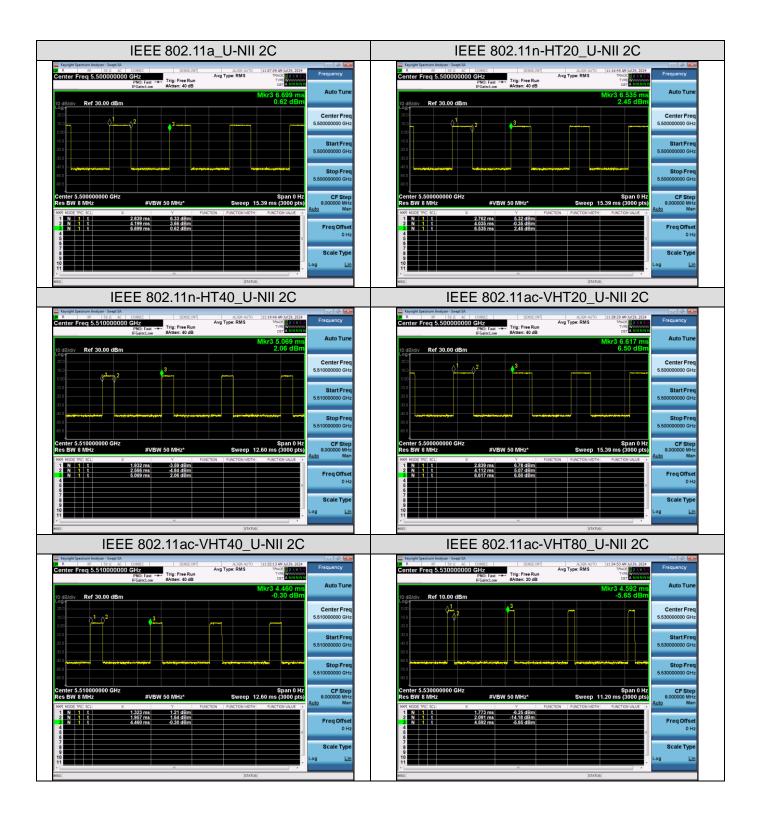


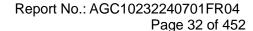




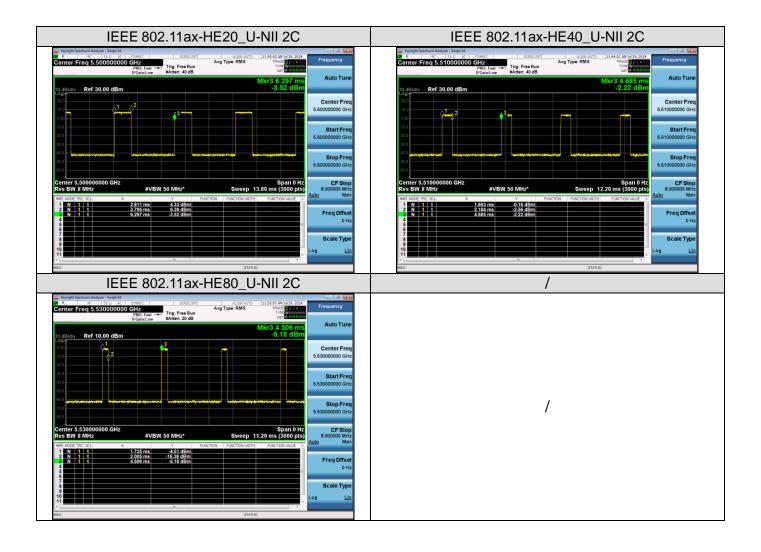


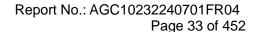




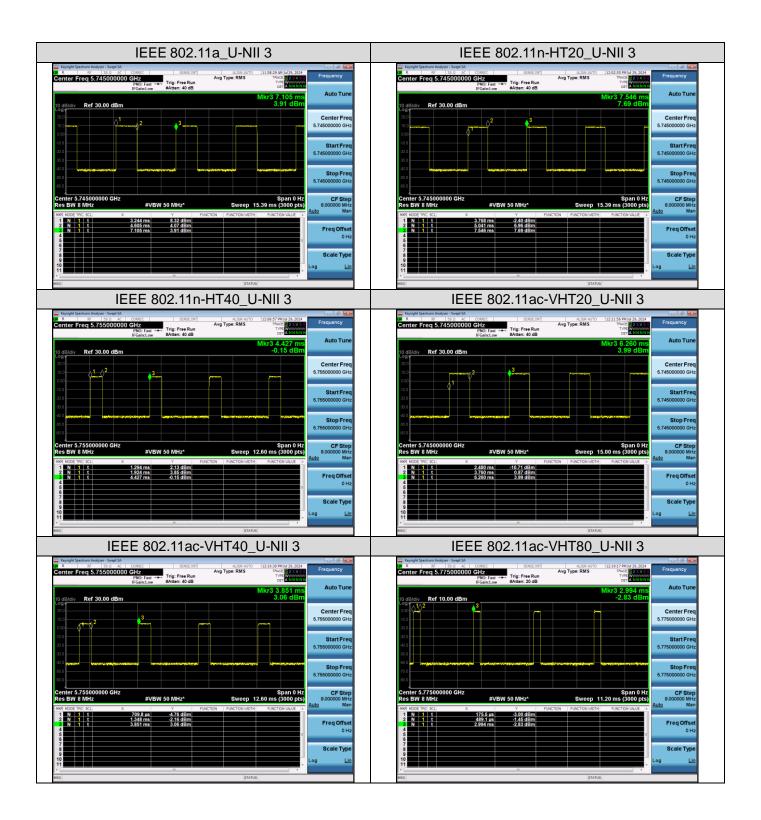


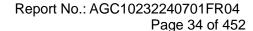




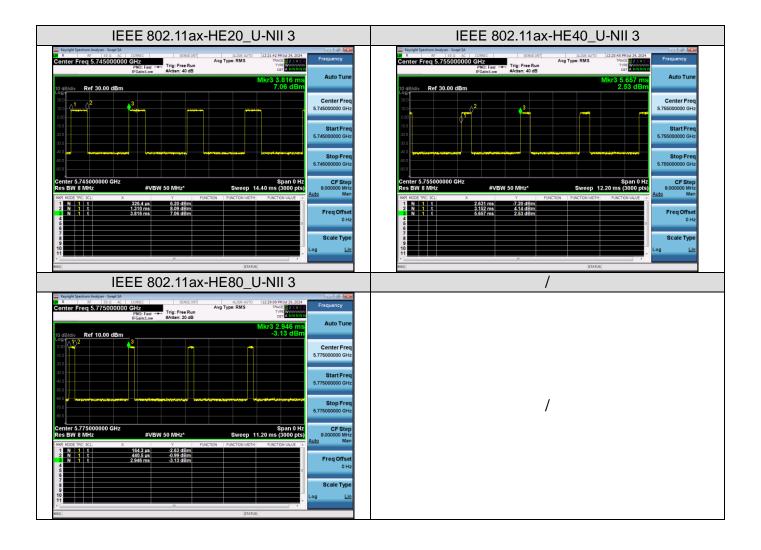


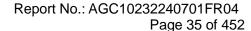














The test plots as follows: Chain B

