RF TEST REPORT

Applicant	ZTE Corporation
FCC ID	SRQ-ZTEA2322G
Product	5G Digital Mobile Phone
Model	ZTE A2322G
Report No.	R2105A0447-R7
Issue Date	August 11, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2020)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Summary of measurement results

Number	Test Case	Clause in FCC rules	Verdict
1	Maximum output power	15.247(b)(3)	PASS
2	6 dB bandwidth	15.247(a)(2)	PASS
3	Power spectral density	15.247(e)	PASS
4	Band Edge	15.247(d)	PASS
5	Spurious RF Conducted Emissions	15.247(d)	PASS
6	Unwanted Emissions	15.247(d),15.205,15.209	PASS
7	Conducted Emissions	15.207	PASS
Date of Testing: June 1, 2021 ~ August 2, 2021 Date of Sample Received: May 25, 2021			
Note: All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3. Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City:	Shanghai
Post code:	201201
Country:	P. R. China
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E-mail:	xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	ZTE Corporation
Applicant address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China
Manufacturer	ZTE Corporation
Manufacturer address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

2.2. General information

EUT Description	
Model	ZTE A2322G
IMEI	IMEI 1: 867210050001095 IMEI 2:867210050002697
Hardware Version	ZTE A2322GHW1.0
Software Version 1	GEN_NA_A2322G_V1.0
Software Version 2	TEL_MX_ZTE_A2322G_V1.0
Power Supply	Battery / AC adapter
Antenna Type	Internal Antenna
Antenna Connector	A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)
Antenna Gain	Antenna 1: -7.8dBi Antenna 2: -2.4dBi
additional beamforming gain	NA
Test Mode	802.11b, 802.11g, 802.11n(HT20/HT40) Bluetooth LE V5.1
Modulation Type	802.11b: DSSS 802.11g/n(HT20/HT40): OFDM Bluetooth LE: GFSK
Max. Conducted Power	Wi-Fi 2.4G: 22.37dBm Bluetooth LE: 10.56dBm
Operating Frequency Range(s)	802.11b/g/n(HT20): 2412 ~ 2462 MHz 802.11n(HT40): 2422 ~ 2452 MHz Bluetooth LE: 2402 ~2480 MHz
EUT Accessory	
Adapter 1	Manufacturer: Shenzhen KunXing Industrial Co Ltd Model: STC-A59152050AC-Z

Battery	Manufacturer: Ningde Amperex Technology Limited Model: Li3941T44PGh836548
Earphone 1	Manufacturer: Shen zhen FDC Electronic Co.,Ltd. Model: DEM-9B
Earphone 2	Manufacturer: JUWEI ELECTRONICS CO.,LTD Model: JWEP1092-Z01
USB Cable 1	Manufacturer: King Power Electronics Co.,Ltd Model: TC20-TC20-W-100-M-6A-HSF
USB Cable 2	Manufacturer: Luxshare-ICT Co., Ltd Model: TC20-TC20-W-100-M-6A-HSF
Type-C to 3.5 mm Headphone Jack Adapter	Manufacture: HUIZHOU JUWEI ELECTRONICS CO. ,LTD Model: JWUB1389-Z01
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. 2. There is more than one Earphone /USB cable, each one should be applied throughout the compliance test respectively, and however, only the worst case (USB cable 1and Earphone 2) will be recorded in this report. 3. The two different software versions are for different market requirement.	

3. Applied Standards

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

Test standards:

FCC CFR47 Part 15C (2020) Radio Frequency Devices

ANSI C63.10 (2013)

Reference standard:

KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 662911 D01 Multiple Transmitter Output v02r01

4. Test Configuration

Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the loop antenna is vertical, the others are vertical and horizontal. and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Test Mode	Data Rate		
	Antenna 1	Antenna 2	MIMO
802.11b	1 Mbps	1 Mbps	/
802.11g	6 Mbps	6 Mbps	/
802.11n HT20	MCS0	MCS0	MCS8
802.11n HT40	MCS0	MCS0	MCS8
802.11ax HE20	MCS0	MCS0	MCS0
802.11ax HE40	MCS0	MCS0	MCS0

The worst case Antenna mode for each of the following tests for Wi-Fi:

Test Cases	Antenna 1	Antenna 2	MIMO
Maximum conducted output power	O	O	802.11n HT20 802.11n HT40 802.11ax HE20 802.11ax HE 40
6dB Bandwidth	802.11b/g	--	802.11n HT20 802.11n HT40 802.11ax HE20 802.11ax HE 40
Band Edge	802.11b/g	--	802.11n HT20 802.11n HT40 802.11ax HE20 802.11ax HE 40
Power Spectral Density	O	O	802.11n HT20 802.11n HT40 802.11ax HE20 802.11ax HE 40
Spurious RF Conducted Emissions	802.11b/g	--	802.11n HT20 802.11n HT40 802.11ax HE20 802.11ax HE 40
Unwanted Emissions	802.11b/g	--	802.11n HT20 802.11n HT40 802.11ax HE20 802.11ax HE 40
Conducted Emission	802.11b/g	--	802.11n HT20 802.11n HT40 802.11ax HE20 802.11ax HE 40
Note: “O”: test all bands			

According to RF Output power results in chapter 5.1, MIMO was selected as the worst antenna for 802.11n HT20/ HT40 and 802.11ax HE20/ HE40. SISO Antenna 1 was selected as the worst SISO antenna for 802.11b/g.

5. Test Case Results

5.1. Maximum output power

Ambient condition

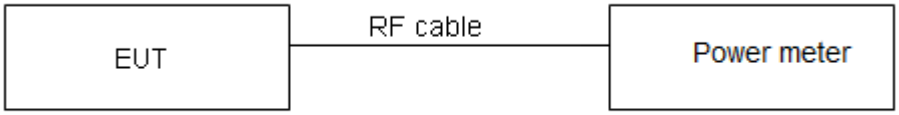
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to Power meter with a known loss. The EUT is max power transmission with proper modulation.

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test Setup



Limits

Rule Part 15.247 (b) (3) specifies that " For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz: 1 Watt."

Average Output Power	≤ 1W (30dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.44 dB.

Test Results

SISO Antenna Power Index								
Antenna	Channel	802.11b	802.11g	802.11n HT20	802.11ax HE20	Channel	802.11n HT40	802.11ax HE40
Antenna 1	CH1	19	17	16	16	CH3	13	13
	CH6	19	17	16	16	CH6	13	13
	CH11	19	17	16	16	CH9	13	13
Antenna 2	CH1	20	17	16	16	CH3	13	13
	CH6	20	17	16	16	CH6	13	13
	CH11	20	17	16	16	CH9	13	13
MIMO Antenna Power Index								
Antenna	Channel	802.11b	802.11g	802.11n HT20	802.11ax HE20	Channel	802.11n HT40	802.11ax HE40
Antenna 1/ 2	CH1	/	/	16	16	CH3	13	13
	CH6	/	/	16	16	CH6	13	13
	CH11	/	/	16	16	CH9	13	13

Test Mode	T_{on} (ms)	$T_{(on+off)}$ (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11b	1.00	1.00	1.00	NA
802.11g	1.00	1.00	1.00	NA
802.11n HT20	1.00	1.00	1.00	NA
802.11n HT40	1.00	1.00	1.00	NA
802.11ax HE20	1.00	1.00	1.00	NA
802.11ax HE40	1.00	1.00	1.00	NA
Bluetooth LE (1M)	0.38	0.62	0.615	2.109
Bluetooth LE (2M)	0.20	0.62	0.324	4.898
Note: when Duty cycle⩾0.98, Duty cycle correction Factor not required.				

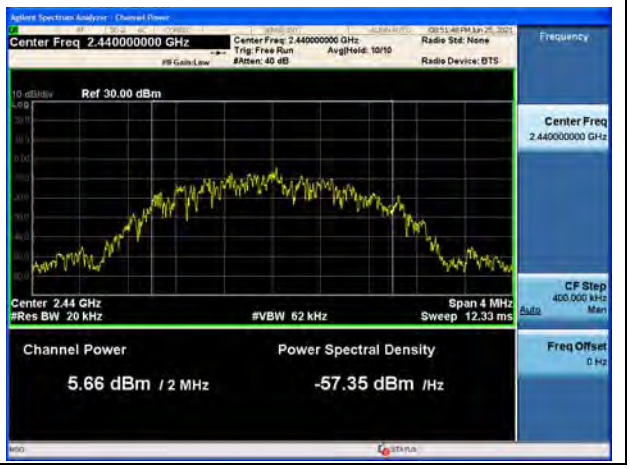
Test Mode	Carrier frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
Bluetooth (Low Energy) (1M)	2402	7.13	9.24	30	PASS
	2440	8.06	10.17	30	PASS
	2480	7.57	9.68	30	PASS
Bluetooth (Low Energy) (2M)	2402	4.47	9.37	30	PASS
	2440	5.66	10.56	30	PASS
	2480	5.14	10.04	30	PASS

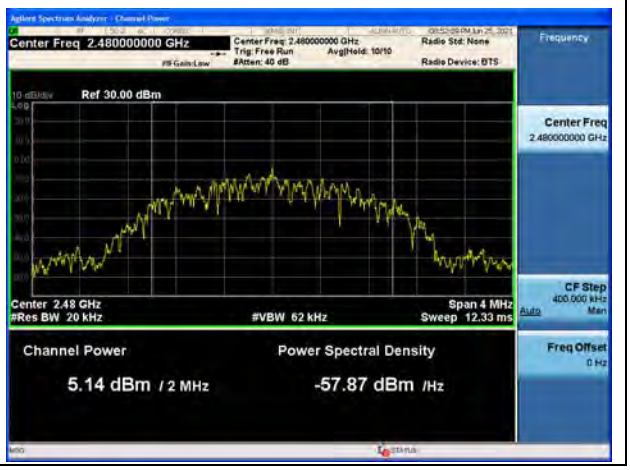
Bluetooth LE (1M) Carrier frequency (MHz): 2402

Bluetooth LE (2M) Carrier frequency (MHz): 2402

Bluetooth LE (1M) Carrier frequency (MHz): 2440

Bluetooth LE (2M) Carrier frequency (MHz): 2440



Bluetooth LE (1M) Carrier frequency (MHz): 2480	Bluetooth LE (2M) Carrier frequency (MHz): 2480
	

SISO Antenna 1

Test Mode	Carrier frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11b	2412	19.27	19.27	30	PASS
	2437	19.18	19.18	30	PASS
	2462	19.31	19.31	30	PASS
802.11g	2412	16.68	16.68	30	PASS
	2437	16.53	16.53	30	PASS
	2462	16.66	16.66	30	PASS
802.11n HT20	2412	15.52	15.52	30	PASS
	2437	15.33	15.33	30	PASS
	2462	15.28	15.28	30	PASS
802.11n HT40	2422	12.78	12.78	30	PASS
	2437	12.87	12.87	30	PASS
	2452	12.86	12.86	30	PASS
802.11ax HE20	2412	15.52	15.52	30	PASS
	2437	15.38	15.38	30	PASS
	2462	15.42	15.42	30	PASS
802.11ax HE40	2422	12.62	12.62	30	PASS
	2437	12.76	12.76	30	PASS
	2452	12.68	12.68	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

SISO Antenna 2

Test Mode	Carrier frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11b	2412	19.92	20.02	30	PASS
	2437	19.85	19.95	30	PASS
	2462	19.97	20.07	30	PASS
802.11g	2412	15.93	15.93	30	PASS
	2437	15.36	15.36	30	PASS
	2462	15.62	15.62	30	PASS
802.11n HT20	2412	14.82	14.82	30	PASS
	2437	14.08	14.08	30	PASS
	2462	14.32	14.32	30	PASS
802.11n HT40	2422	11.88	11.88	30	PASS
	2437	11.82	11.82	30	PASS
	2452	12.26	12.26	30	PASS
802.11ax HE20	2412	14.82	14.82	30	PASS
	2437	14.22	14.22	30	PASS
	2462	14.38	14.38	30	PASS
802.11ax HE40	2422	11.98	11.98	30	PASS
	2437	11.66	11.66	30	PASS
	2452	12.06	12.06	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

MIMO

Mode	Carrier frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11n HT20	2412	15.28	15.28	14.78	14.78	18.05	30	PASS
	2437	15.17	15.17	14.12	14.12	17.69	30	PASS
	2462	15.18	15.18	14.28	14.28	17.76	30	PASS
802.11n HT40	2422	12.63	12.63	11.82	11.82	15.25	30	PASS
	2437	12.76	12.76	11.78	11.78	15.31	30	PASS
	2452	12.81	12.81	12.06	12.06	15.46	30	PASS
802.11ax HE20	2412	15.42	15.42	14.88	14.88	18.17	30	PASS
	2437	15.33	15.33	14.26	14.26	17.84	30	PASS
	2462	15.24	15.24	14.39	14.39	17.85	30	PASS
802.11ax HE40	2422	12.46	12.46	11.68	11.68	15.10	30	PASS
	2437	12.68	12.68	11.63	11.63	15.20	30	PASS
	2452	12.62	12.62	11.91	11.91	15.29	30	PASS

Note: 1.Average Power with duty factor = Average Power Measured +Duty cycle correction factor

2. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)}$.

3. The manufacturer declared the transmitter output signals is CDD mode. And N_{ss}=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

4.If antenna gains are not equal, the user may use either of the following methods to calculate directional gain, provided that each transmit antenna is driven by only one spatial stream: Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

So directional gain = G_{ANT} + Array Gain =-2.4+0=-2.4dBi<6dBi. So the power limit is 30dBm

TB Mode

Band	T_{on} (ms)	$T_{(on+off)}$ (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11ax (HE20) 26-Tones	1.00	1.00	1.00	NA
802.11ax (HE20) 52-Tones	1.00	1.00	1.00	NA
802.11ax (HE20) 106-Tones	1.00	1.00	1.00	NA
802.11ax (HE20) 242-Tones	1.00	1.00	1.00	NA
802.11ax (HE40) 484-Tones	1.00	1.00	1.00	NA
Note: when Duty cycle>0.98, Duty cycle correction Factor not required.				

SISO Antenna1

Mode	Carrier frequency (MHz)	RU Size	Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limits (dBm)	Conclusion
802.11ax HE20 MU Mode	2412	26-Tones	0	14.68	14.68	30	PASS
	2437	26-Tones	4	15.39	15.39	30	PASS
	2462	26-Tones	8	14.58	14.58	30	PASS
	2412	52-Tones	37	15.08	15.08	30	PASS
	2437	52-Tones	39	15.45	15.45	30	PASS
	2462	52-Tones	40	14.76	14.76	30	PASS
	2412	106-Tones	53	15.29	15.29	30	PASS
	2437	106-Tones	53	15.57	15.57	30	PASS
	2462	106-Tones	54	14.96	14.96	30	PASS
802.11ax HE20 SU Mode	2412	242-Tones	61	15.73	15.73	30	PASS
	2437	242-Tones	61	15.62	15.62	30	PASS
	2462	242-Tones	61	14.93	14.93	30	PASS
802.11ax HE40 SU Mode	2422	484-Tones	65	12.92	12.92	30	PASS
	2437	484-Tones	65	13.03	13.03	30	PASS
	2452	484-Tones	65	12.95	12.95	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor							

SISO Antenna 2

Mode	Carrier frequency (MHz)	RU Size	Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limits (dBm)	Conclusion
802.11ax HE20 MU Mode	2412	26-Tones	0	13.68	13.68	30	PASS
	2437	26-Tones	4	14.25	14.25	30	PASS
	2462	26-Tones	8	13.59	13.59	30	PASS
	2412	52-Tones	37	13.98	13.98	30	PASS
	2437	52-Tones	39	14.27	14.27	30	PASS
	2462	52-Tones	40	13.69	13.69	30	PASS
	2412	106-Tones	53	14.38	14.38	30	PASS
	2437	106-Tones	53	14.32	14.32	30	PASS
	2462	106-Tones	54	13.87	13.87	30	PASS
802.11ax HE20 SU Mode	2412	242-Tones	61	15.01	15.01	30	PASS
	2437	242-Tones	61	14.56	14.56	30	PASS
	2462	242-Tones	61	14.67	14.67	30	PASS
802.11ax HE40 SU Mode	2422	484-Tones	65	12.14	12.14	30	PASS
	2437	484-Tones	65	12.02	12.02	30	PASS
	2452	484-Tones	65	12.33	12.33	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor							

MIMO

Mode	Carrier frequency (MHz)	Index	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
			Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11ax (HE20) 26-Tones	2412	0	14.68	14.68	13.52	13.52	17.15	30	PASS
	2437	4	15.38	15.38	14.08	14.08	17.79	30	PASS
	2462	8	14.62	14.62	13.38	13.38	17.05	30	PASS
802.11ax (HE20) 52-Tones	2412	37	14.92	14.92	13.88	13.88	17.44	30	PASS
	2437	38	15.49	15.49	14.21	14.21	17.91	30	PASS
	2462	40	14.69	14.69	13.52	13.52	17.15	30	PASS
802.11ax (HE20) 106-Tones	2412	53	15.31	15.31	14.32	14.32	17.85	30	PASS
	2437	53	15.52	15.52	14.21	14.21	17.92	30	PASS
	2462	54	14.95	14.95	13.77	13.77	17.41	30	PASS
802.11ax (HE20) 242-Tones	2412	61	15.81	15.81	14.87	14.87	18.38	30	PASS
	2437	61	15.56	15.56	14.42	14.42	18.04	30	PASS
	2462	61	14.91	14.91	14.58	14.58	17.76	30	PASS
802.11ax (HE40) 484-Tones	2422	65	12.84	12.84	11.92	11.92	15.41	30	PASS
	2437	65	13.01	13.01	11.89	11.89	15.50	30	PASS
	2452	65	12.93	12.93	12.18	12.18	15.58	30	PASS

Note: 1.Average Power with duty factor = Average Power Measured +Duty cycle correction factor

2. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)}$.

3. The manufacturer declared the transmitter output signals is CDD mode. And N_{ss}=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

4.If antenna gains are not equal, the user may use either of the following methods to calculate directional gain, provided that each transmit antenna is driven by only one spatial stream: Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

So directional gain = G_{ANT} + Array Gain =-2.4+0=-2.4dBi<6dBi. So the power limit is 30dBm

5.2. 99% Bandwidth and 6dB Bandwidth

Ambient condition

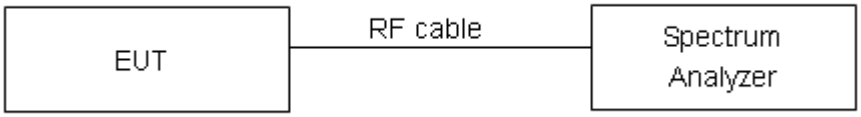
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 100 kHz; VBW is set to 300 kHz on spectrum analyzer.
Dector=Peak, Trace mode=max hold.

The EUT was connected to the spectrum analyzer through a known loss cable. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value.

Test Setup



Limits

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

minimum 6 dB bandwidth	≥ 500 kHz

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936 Hz.

RU mode

Test Results:

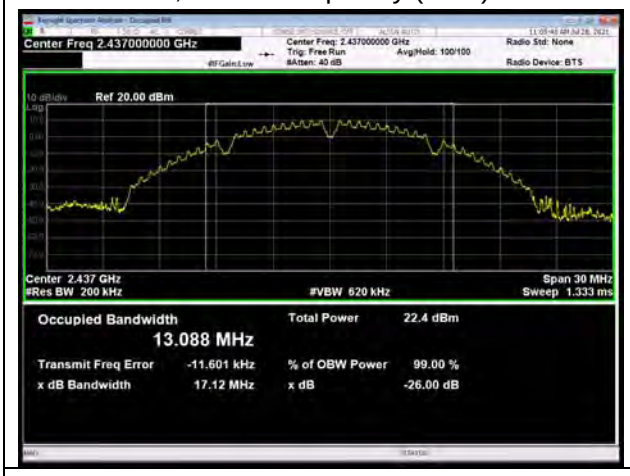
Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11b	2412	12.860	8.049	500	PASS
	2437	13.088	7.708	500	PASS
	2462	13.066	8.088	500	PASS
802.11g	2412	16.472	16.460	500	PASS
	2437	16.519	16.410	500	PASS
	2462	16.524	16.420	500	PASS
802.11n HT20	2412	17.486	16.650	500	PASS
	2437	17.533	17.550	500	PASS
	2462	17.531	16.910	500	PASS
802.11n HT40	2422	35.939	34.790	500	PASS
	2437	35.949	35.510	500	PASS
	2452	35.833	34.650	500	PASS
802.11ax HE20	2412	18.859	18.750	500	PASS
	2437	18.870	18.750	500	PASS
	2462	18.864	18.550	500	PASS
802.11ax HE40	2422	37.610	37.940	500	PASS
	2437	37.608	37.470	500	PASS
	2452	37.503	36.170	500	PASS
Bluetooth (Low Energy) (1M)	2402	1.025	0.670	500	PASS
	2440	1.024	0.669	500	PASS
	2480	1.024	0.667	500	PASS
Bluetooth (Low Energy) (2M)	2402	2.008	1.145	500	PASS
	2440	2.006	1.145	500	PASS
	2480	2.004	1.148	500	PASS

99%bandwidth

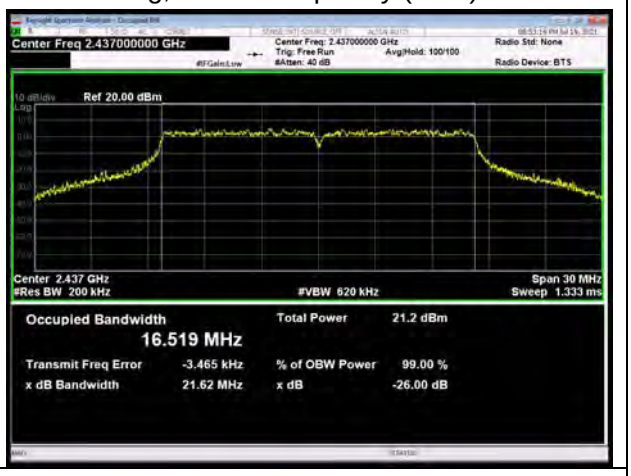
802.11b, Carrier frequency (MHz): 2412

802.11g, Carrier frequency (MHz): 2412

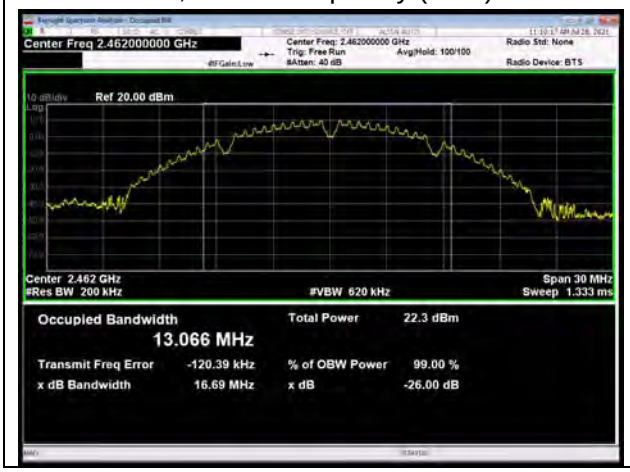
802.11b, Carrier frequency (MHz): 2437



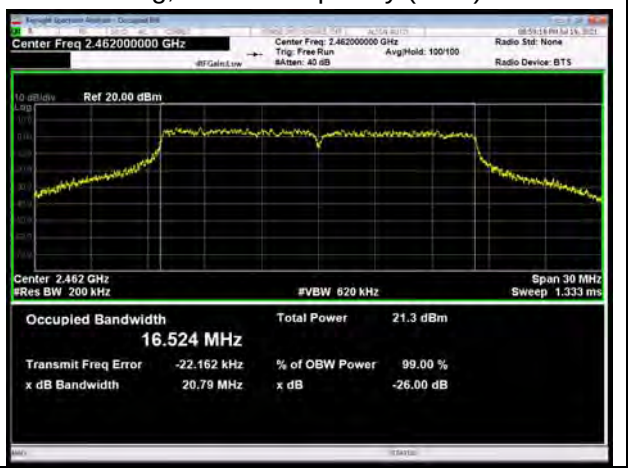
802.11g, Carrier frequency (MHz): 2437



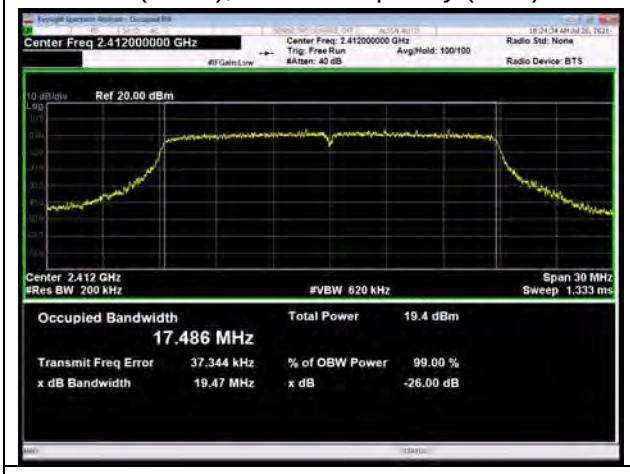
802.11b, Carrier frequency (MHz):2462



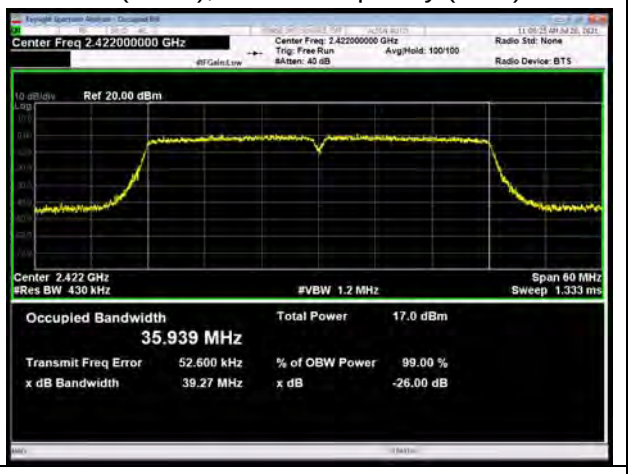
802.11g, Carrier frequency (MHz):2462



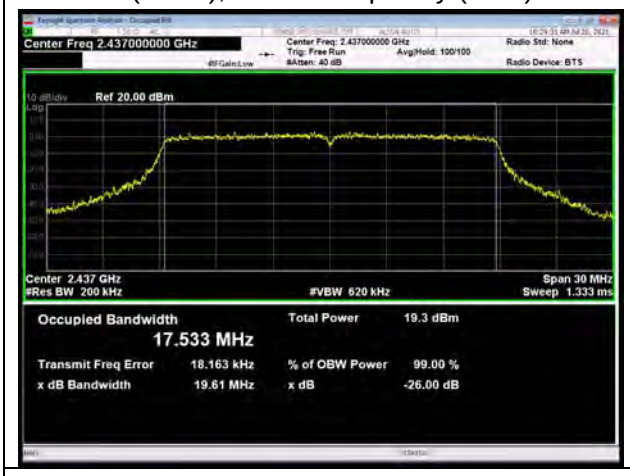
802.11n(HT20), Carrier frequency (MHz): 2412



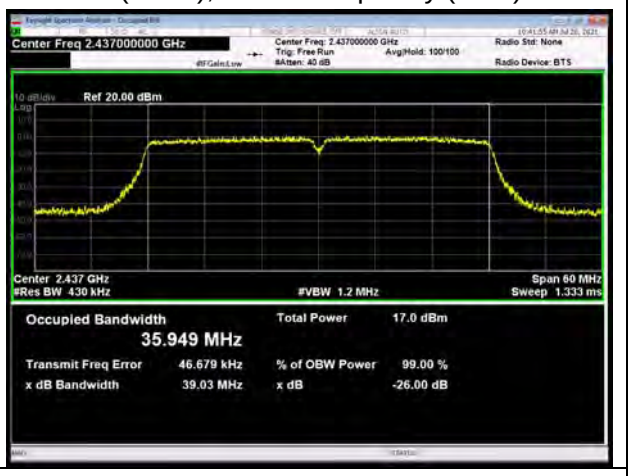
802.11n(HT40), Carrier frequency (MHz): 2422



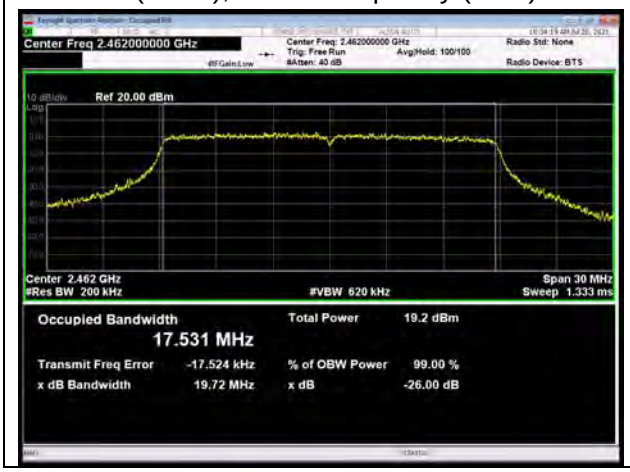
802.11n(HT20), Carrier frequency (MHz): 2437



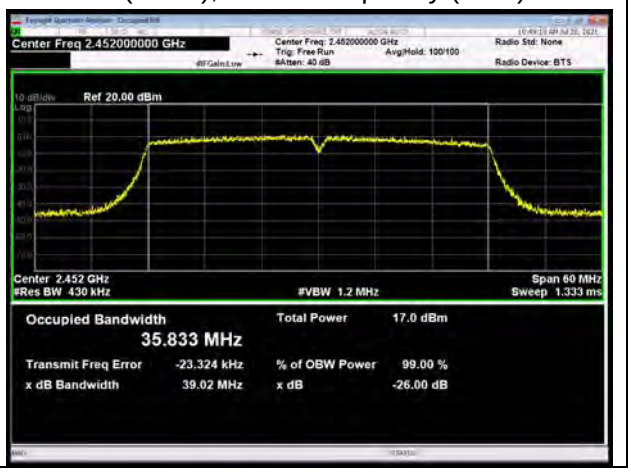
802.11n(HT40), Carrier frequency (MHz): 2437



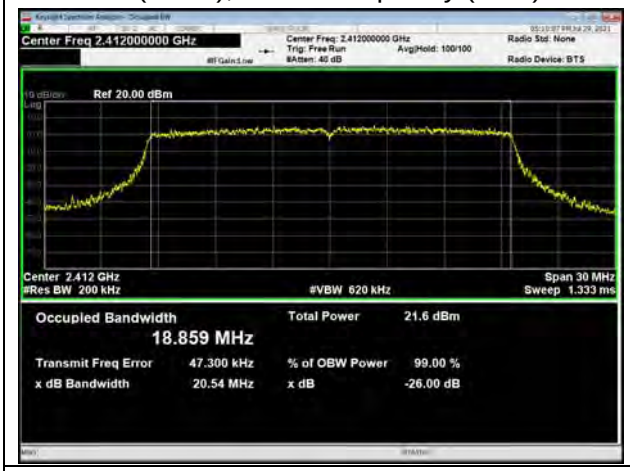
802.11n(HT20), Carrier frequency (MHz):2462



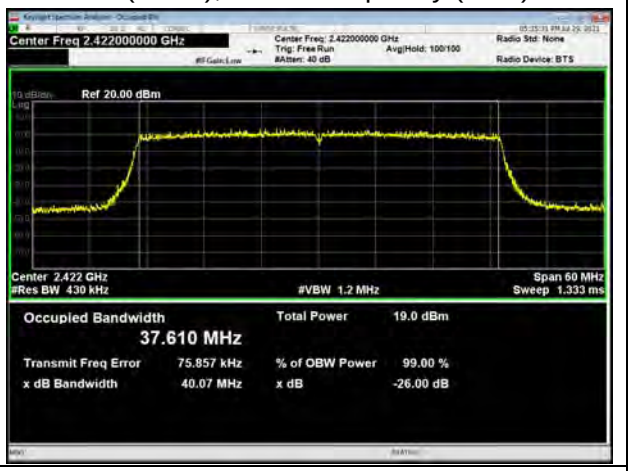
802.11n(HT40), Carrier frequency (MHz):2452



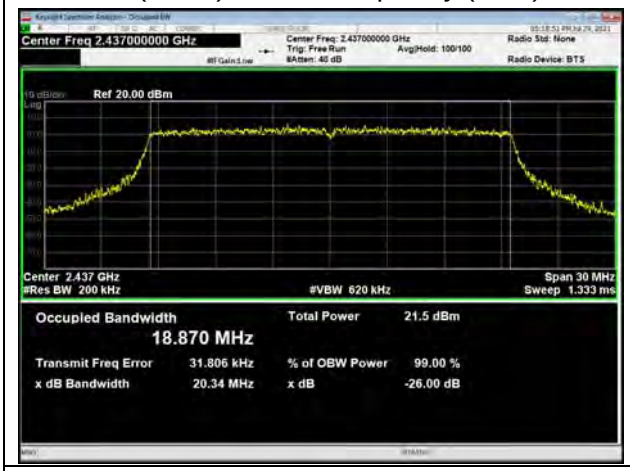
802.11ax(HE20), Carrier frequency (MHz): 2412



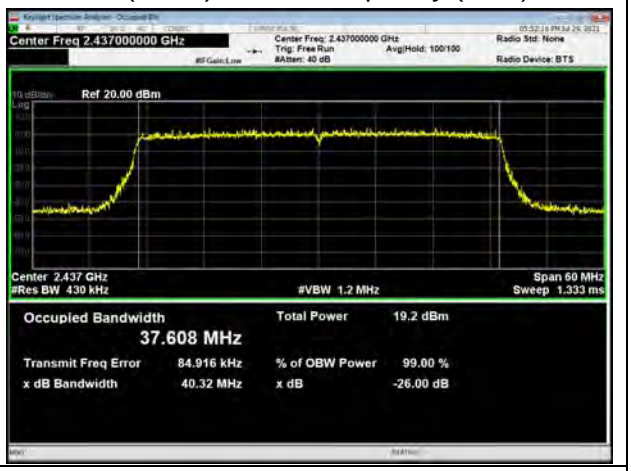
802.11ax(HE40), Carrier frequency (MHz): 2422



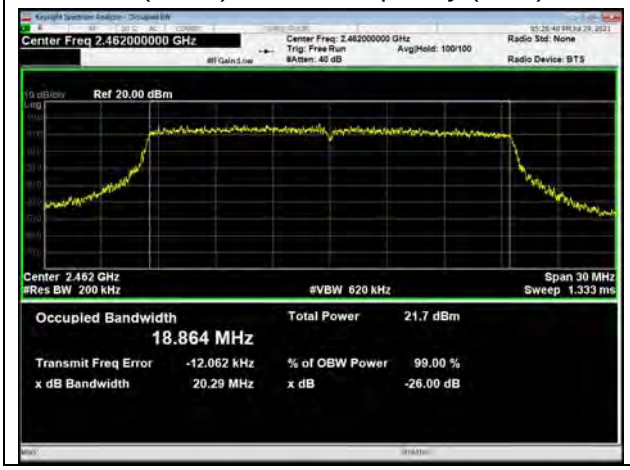
802.11ax(HE20), Carrier frequency (MHz): 2437



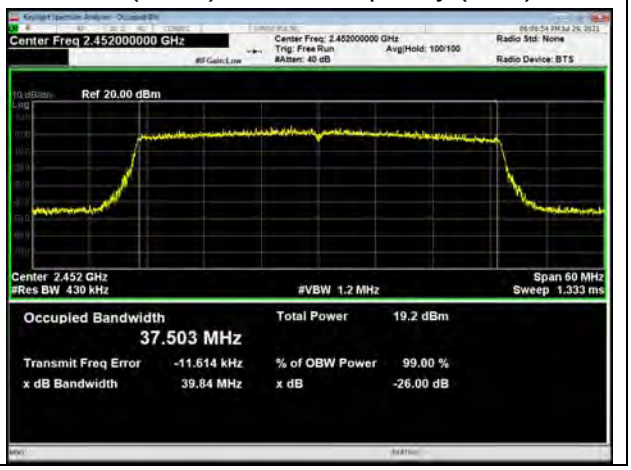
802.11ax(HE40), Carrier frequency (MHz): 2437



802.11ax(HE20), Carrier frequency (MHz):2462



802.11ax(HE40), Carrier frequency (MHz):2452



Bluetooth LE (1M) Carrier frequency (MHz): 2402

Bluetooth LE (2M) Carrier frequency (MHz): 2402

Bluetooth LE (1M) Carrier frequency (MHz): 2440

Bluetooth LE (2M) Carrier frequency (MHz): 2440

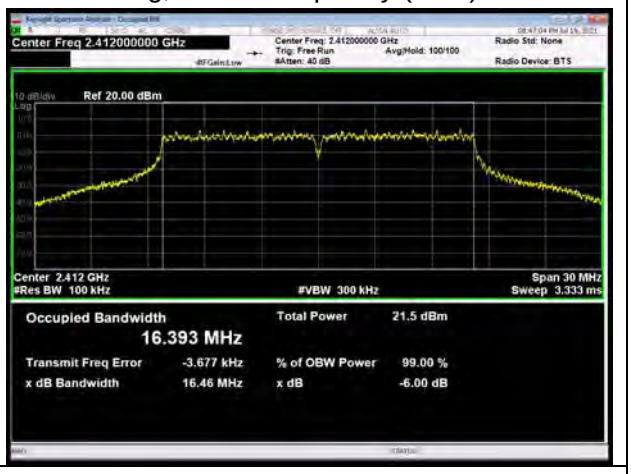
Bluetooth LE (1M) Carrier frequency (MHz): 2480

Bluetooth LE (2M) Carrier frequency (MHz): 2480

6 dB bandwidth

802.11b, Carrier frequency (MHz): 2412

802.11g, Carrier frequency (MHz): 2412



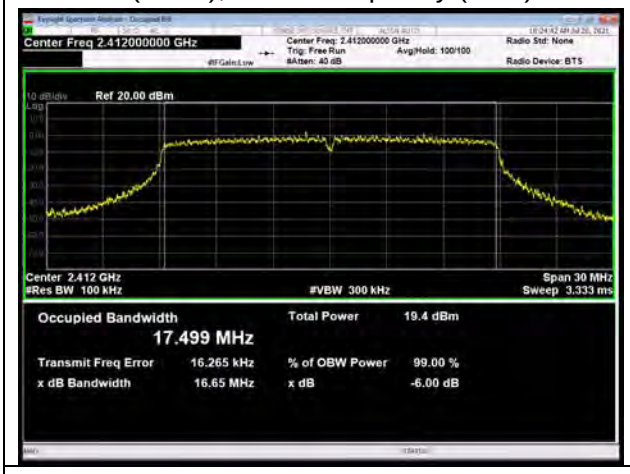
802.11b, Carrier frequency (MHz): 2437

802.11g, Carrier frequency (MHz): 2437

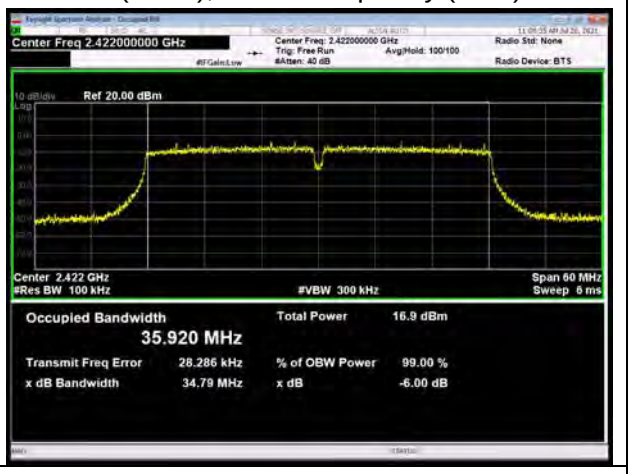
802.11b, Carrier frequency (MHz):2462

802.11g, Carrier frequency (MHz):2462

802.11n(HT20), Carrier frequency (MHz): 2412



802.11n(HT40), Carrier frequency (MHz): 2422

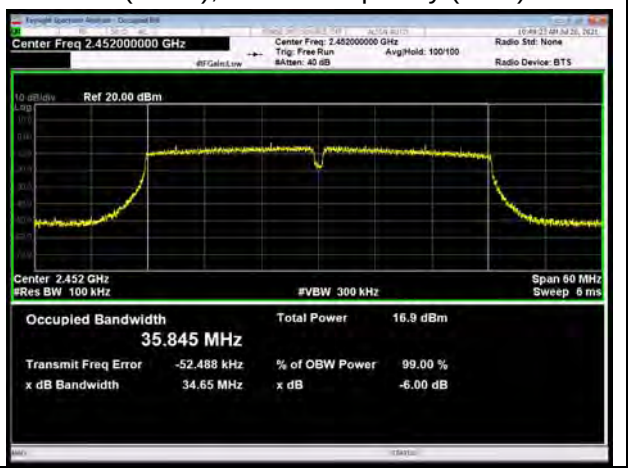


802.11n(HT20), Carrier frequency (MHz): 2437

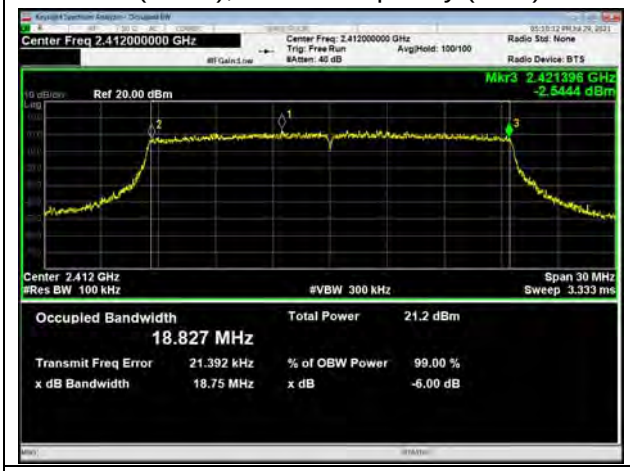
802.11n(HT40), Carrier frequency (MHz): 2437

802.11n(HT20), Carrier frequency (MHz):2462

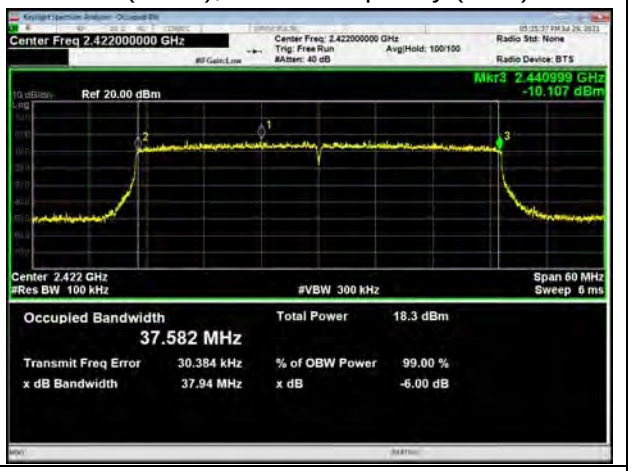
802.11n(HT40), Carrier frequency (MHz):2452



802.11ax(HE20), Carrier frequency (MHz): 2412



802.11ax(HE40), Carrier frequency (MHz): 2422



802.11ax(HE20), Carrier frequency (MHz): 2437

802.11ax(HE40), Carrier frequency (MHz): 2437

802.11ax(HE20), Carrier frequency (MHz):2462

802.11ax(HE40), Carrier frequency (MHz):2452

Bluetooth LE (1M) Carrier frequency (MHz): 2402

Bluetooth LE (2M) Carrier frequency (MHz): 2402

Bluetooth LE (1M) Carrier frequency (MHz): 2440

Bluetooth LE (2M) Carrier frequency (MHz): 2440

Bluetooth LE (1M) Carrier frequency (MHz): 2480

Bluetooth LE (2M) Carrier frequency (MHz): 2480

TB mode

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11ax HE20 26Tone	2412	18.122	1.990	500	PASS
	2437	15.735	2.571	500	PASS
	2462	17.685	15.770	500	PASS
802.11ax HE20 52Tone	2412	16.138	10.770	500	PASS
	2437	15.976	4.035	500	PASS
	2462	17.394	6.961	500	PASS
802.11ax HE20 106Tone	2412	14.597	18.000	500	PASS
	2437	15.683	15.830	500	PASS
	2462	17.112	17.040	500	PASS
802.11ax HE20 242Tone	2422	18.939	19.000	500	PASS
	2437	18.966	19.010	500	PASS
	2452	18.961	18.920	500	PASS
802.11ax HE40 484Tone	2422	37.839	38.050	500	PASS
	2437	37.937	38.050	500	PASS
	2452	37.845	38.010	500	PASS

99%bandwidth

802.11ax HE20 26Tone, Carrier frequency (MHz): 2412

802.11ax HE20 52Tone, Carrier frequency (MHz): 2412

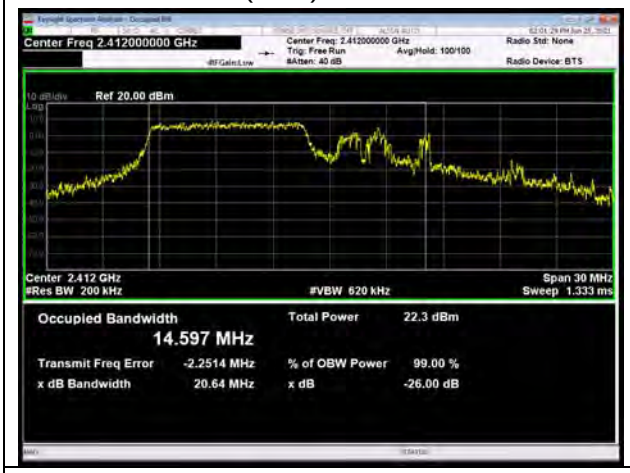
802.11ax HE20 26Tone, Carrier frequency (MHz): 2437

802.11ax HE20 52Tone, Carrier frequency (MHz): 2437

802.11ax HE20 26Tone, Carrier frequency (MHz):2462

802.11ax HE20 52Tone, Carrier frequency (MHz):2462

802.11ax HE20 106Tone, Carrier frequency (MHz): 2412

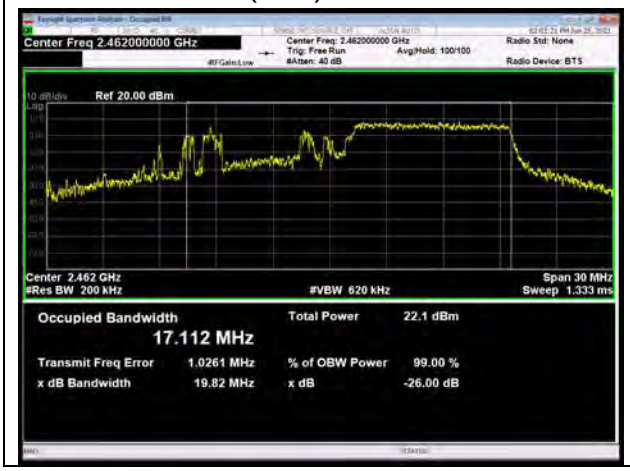


802.11ax HE20 242Tone, Carrier frequency (MHz): 2422

802.11ax HE20 106Tone, Carrier frequency (MHz): 2437

802.11ax HE20 242Tone, Carrier frequency (MHz): 2437

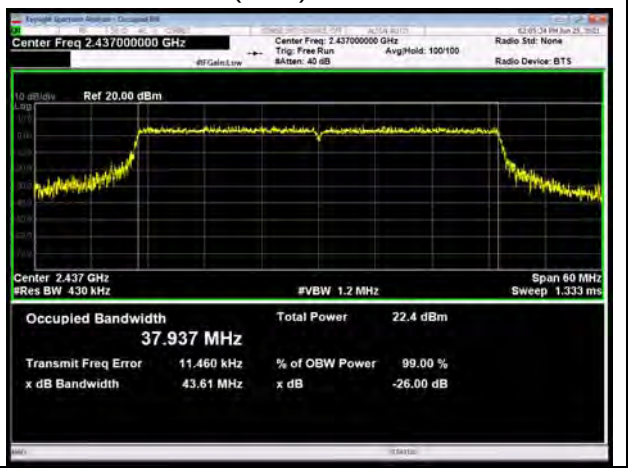
802.11ax HE20 106Tone, Carrier frequency (MHz):2462



802.11ax HE20 242Tone, Carrier frequency (MHz):2462

802.11ax HE40 484Tone, Carrier frequency (MHz): 2422

802.11ax HE40 484Tone, Carrier frequency (MHz): 2437

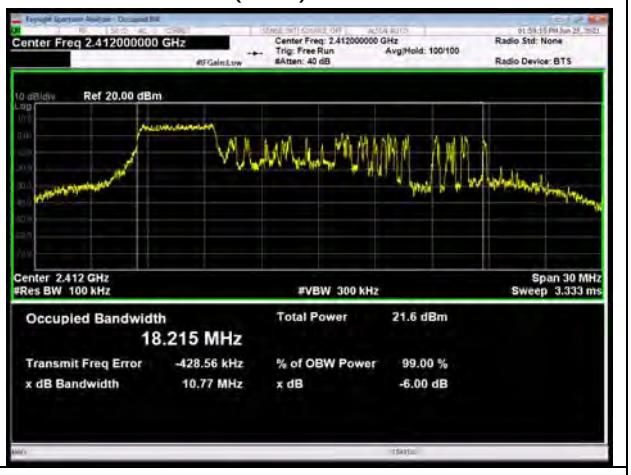


802.11ax HE40 484Tone, Carrier frequency (MHz):2452

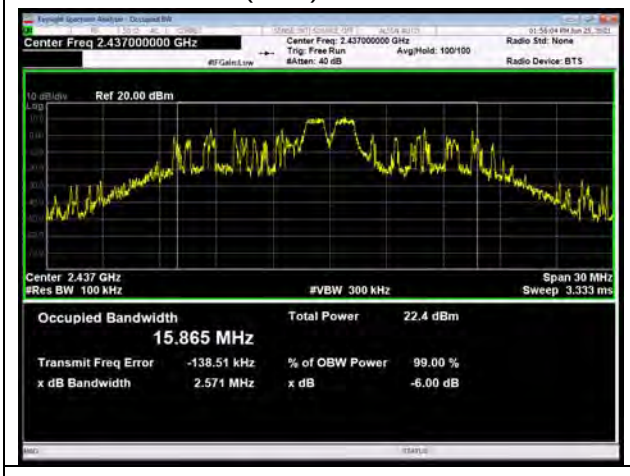
6 dB bandwidth

802.11ax HE20 26Tone, Carrier frequency (MHz): 2412

802.11ax HE20 52Tone, Carrier frequency (MHz): 2412



802.11ax HE20 26Tone, Carrier frequency (MHz): 2437



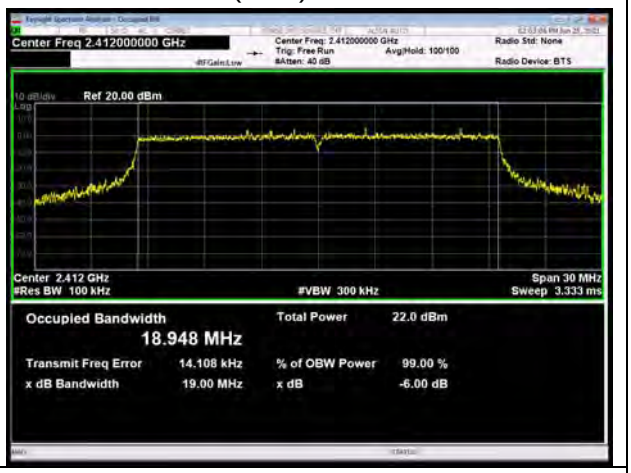
802.11ax HE20 52Tone, Carrier frequency (MHz): 2437

802.11ax HE20 26Tone, Carrier frequency (MHz):2462

802.11ax HE20 52Tone, Carrier frequency (MHz):2462

802.11ax HE20 106Tone, Carrier frequency (MHz): 2412

802.11ax HE20 242Tone, Carrier frequency (MHz): 2422

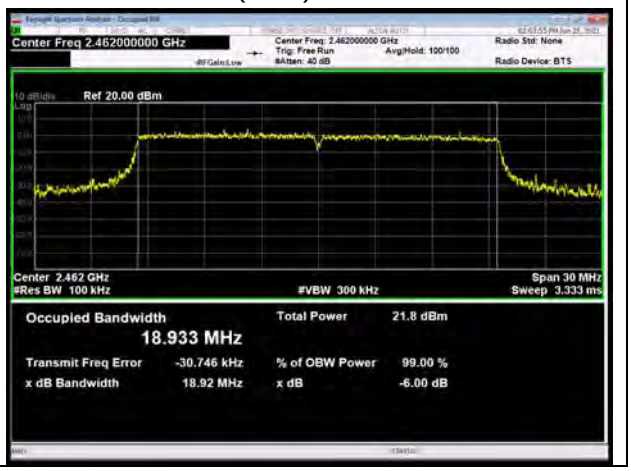


802.11ax HE20 106Tone, Carrier frequency (MHz): 2437

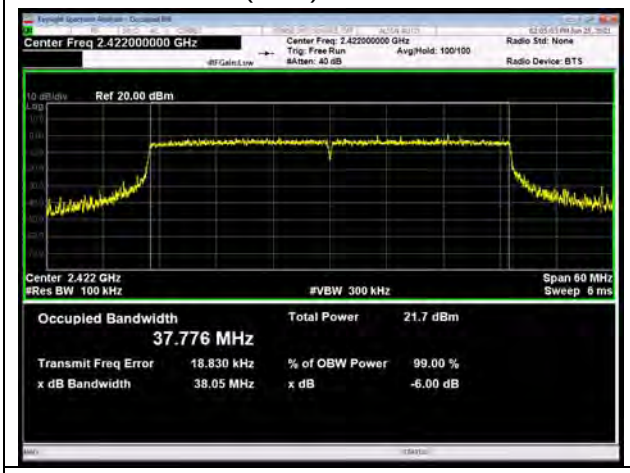
802.11ax HE20 242Tone, Carrier frequency (MHz): 2437

802.11ax HE20 106Tone, Carrier frequency (MHz):2462

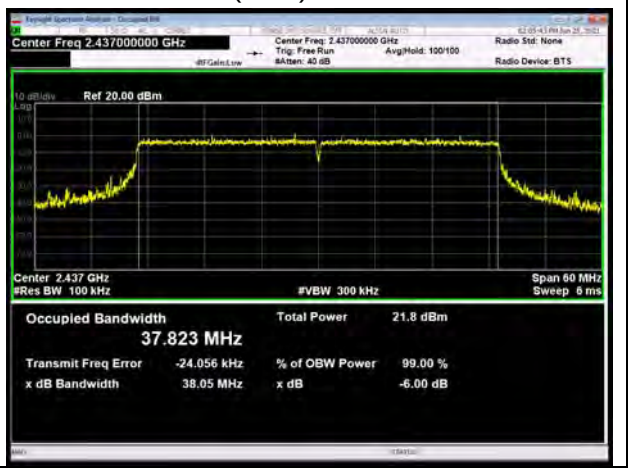
802.11ax HE20 242Tone, Carrier frequency (MHz):2462



802.11ax HE40 484Tone, Carrier frequency (MHz): 2422



802.11ax HE40 484Tone, Carrier frequency (MHz): 2437



802.11ax HE40 484Tone, Carrier frequency (MHz):2452

5.3. Band Edge

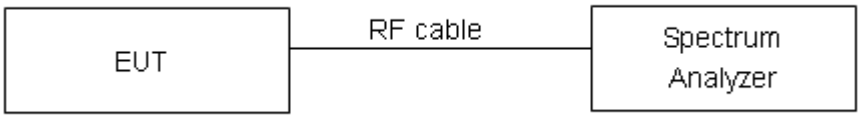
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.” If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.”

Measurement Uncertainty

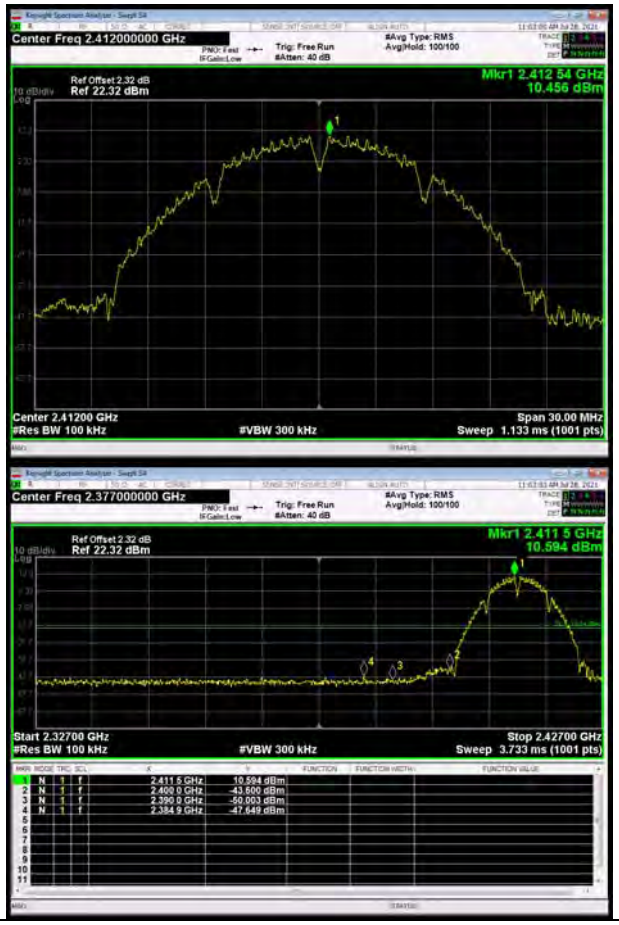
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96.

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

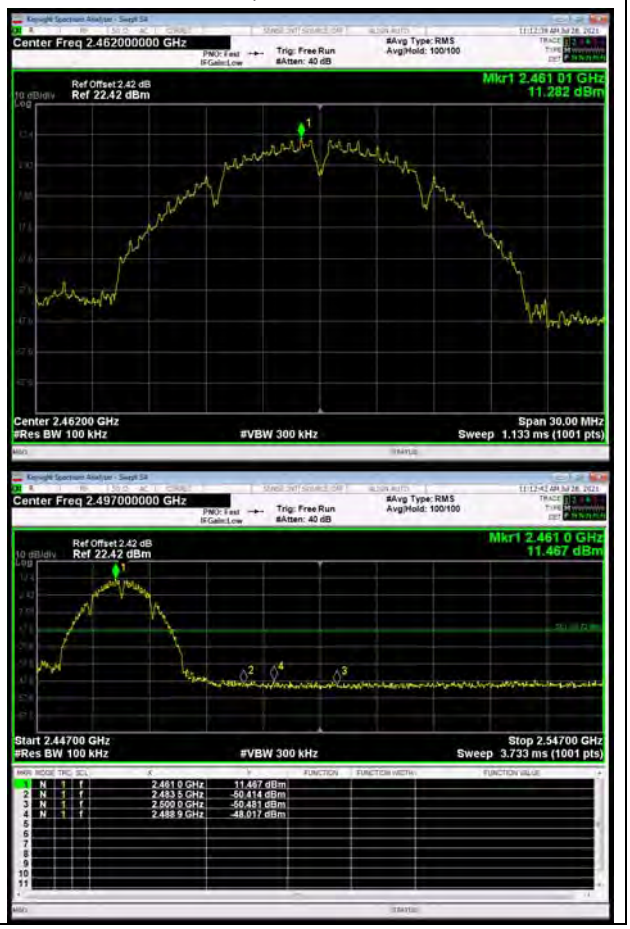
Test Results: PASS

RU mode

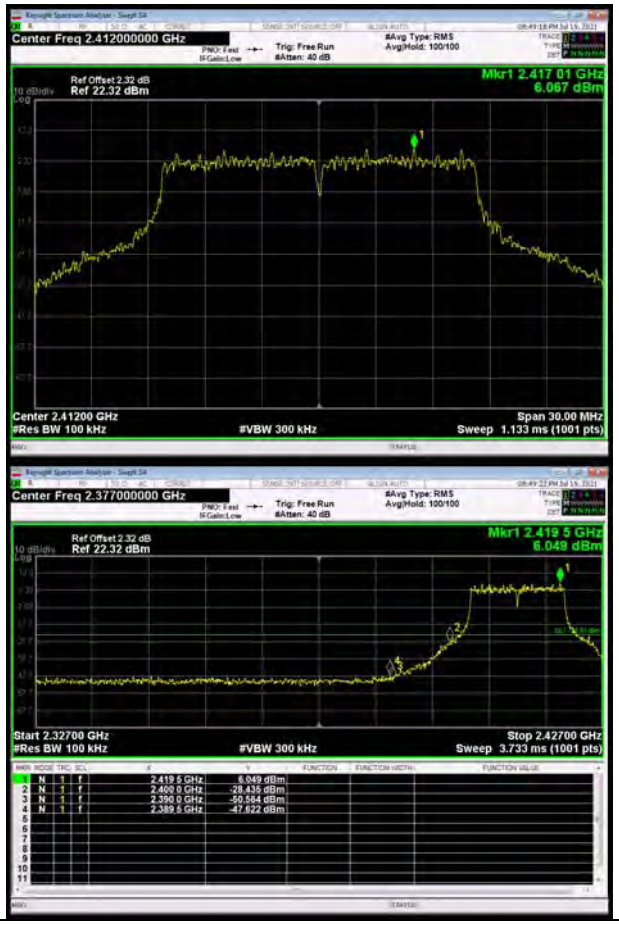
802.11b, Channel No.: 1



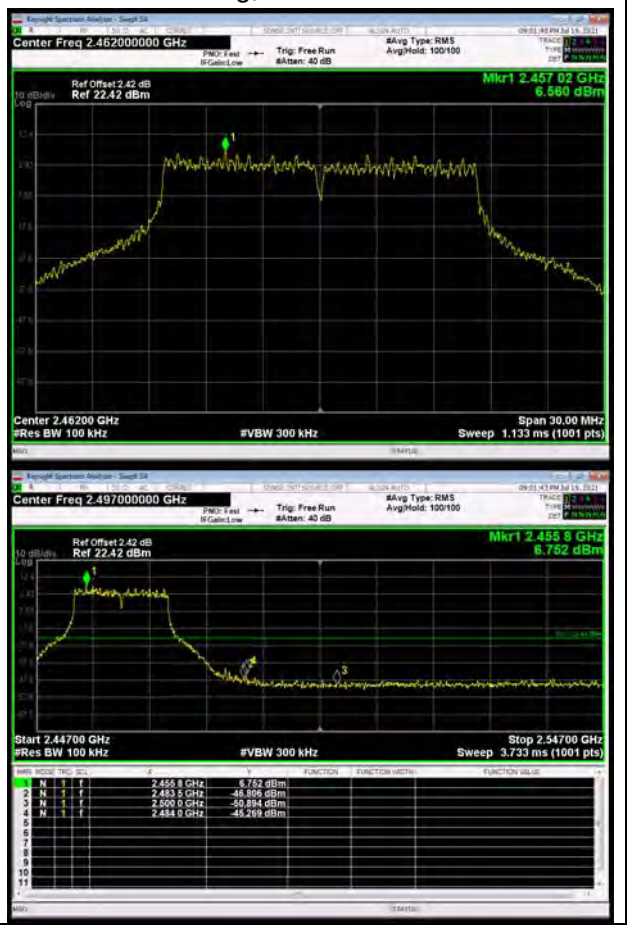
802.11b, Channel No.: 11



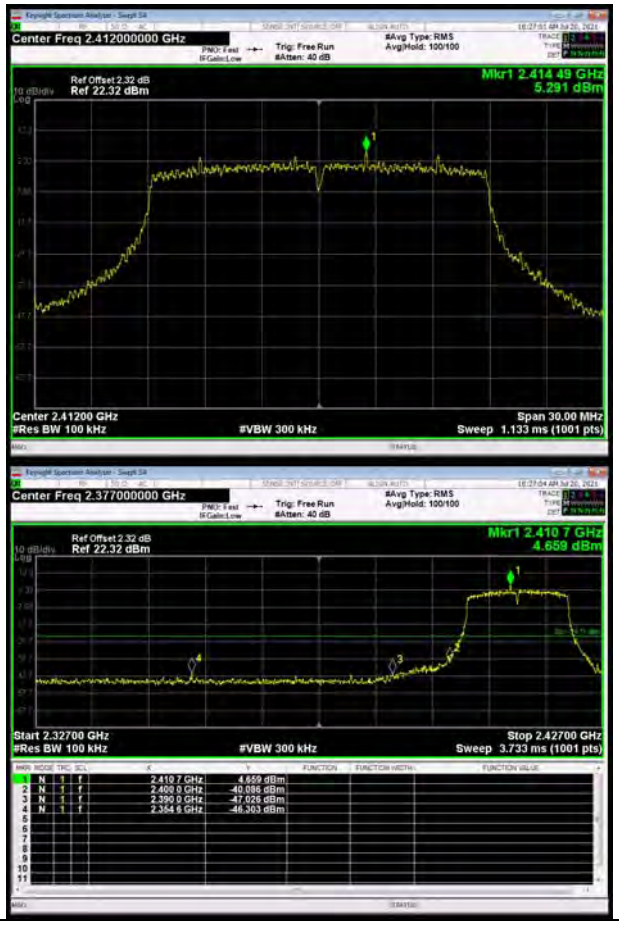
802.11g, Channel No.: 1



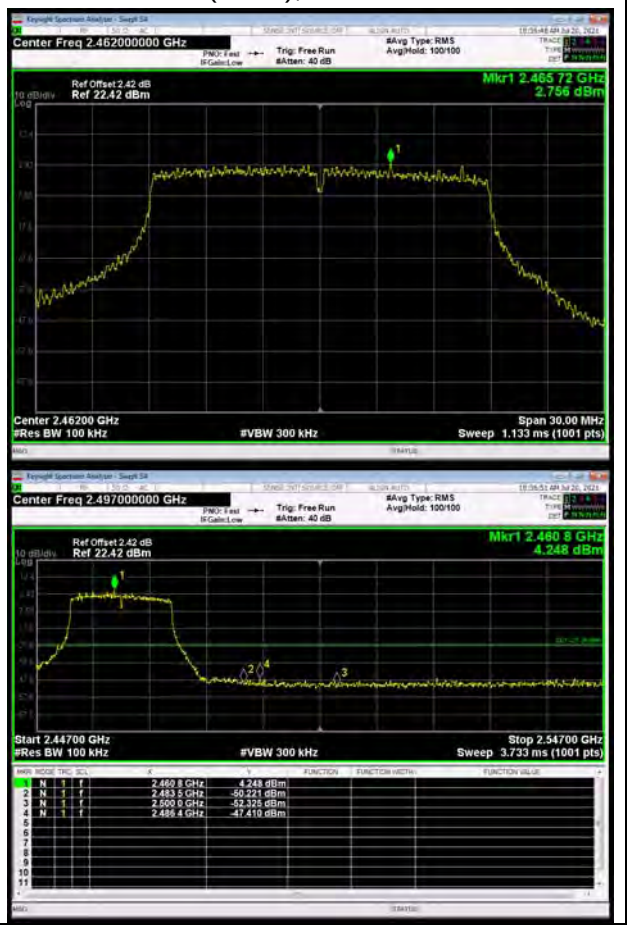
802.11g, Channel No.: 11



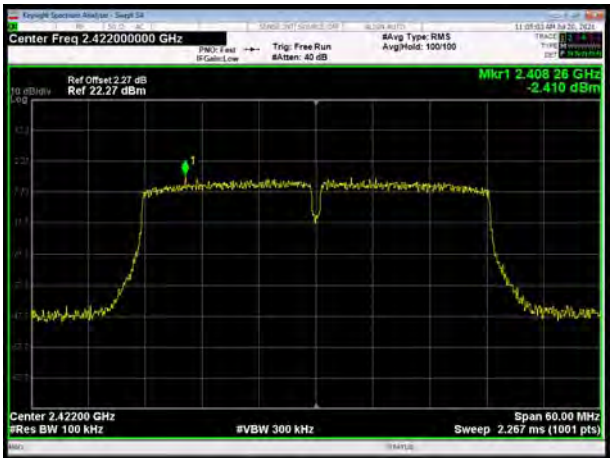
802.11n(HT20), Channel No.: 1

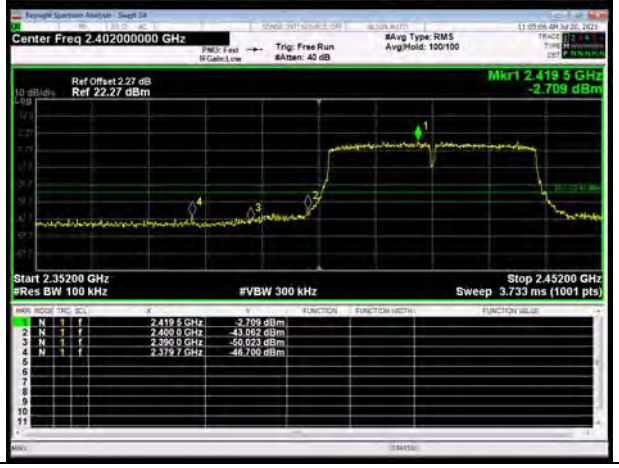


802.11n(HT20), Channel No.: 11

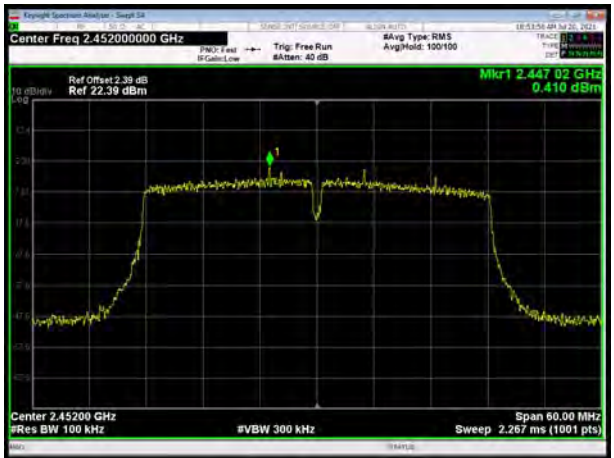


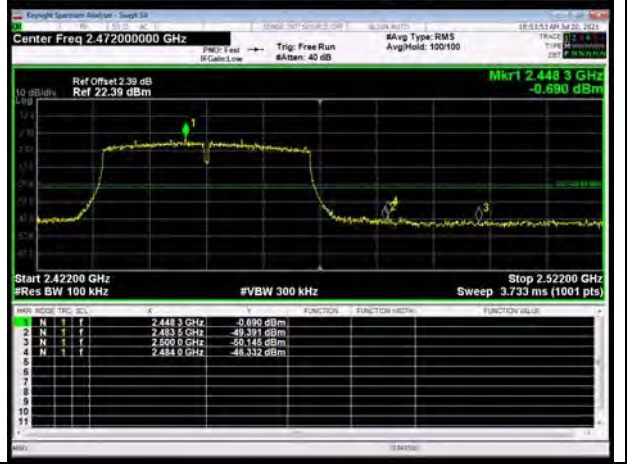
802.11n(HT40), Channel No.: 3



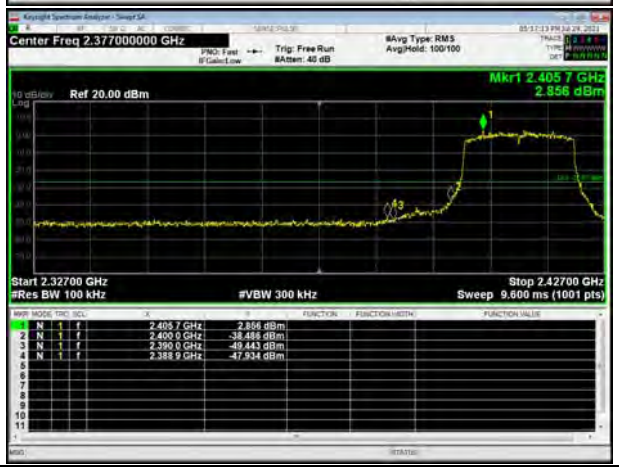


802.11n(HT40), Channel No.: 9



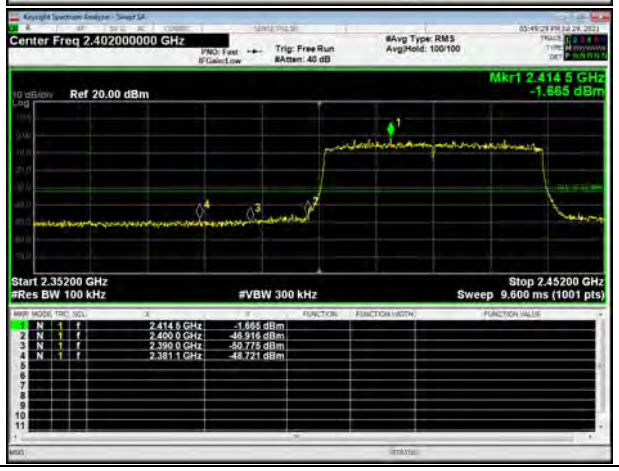


802.11ax(HE20), Channel No.: 1

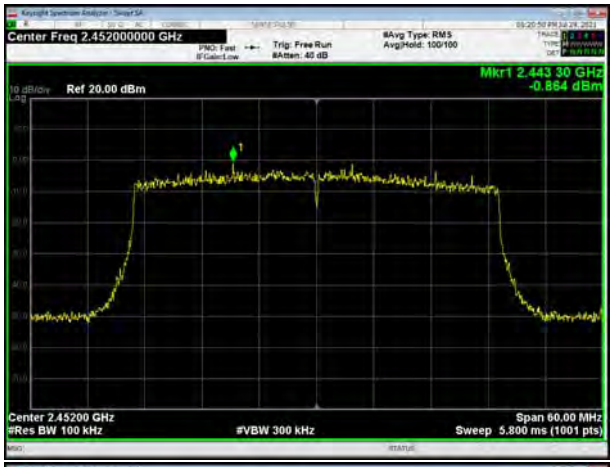


802.11ax (HE20), Channel No.: 11

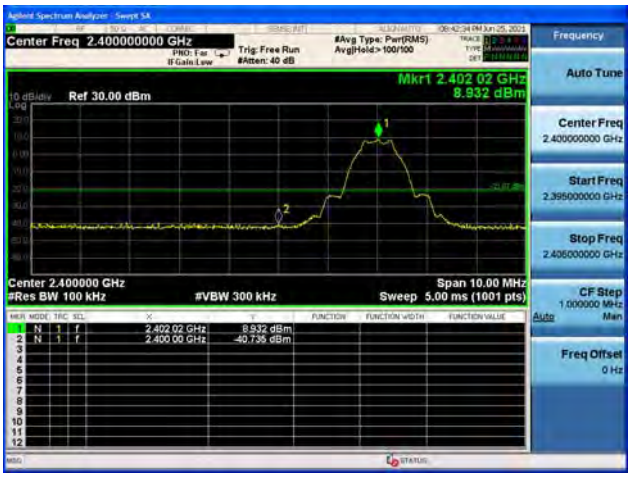
802.11ax(HE40), Channel No.: 3



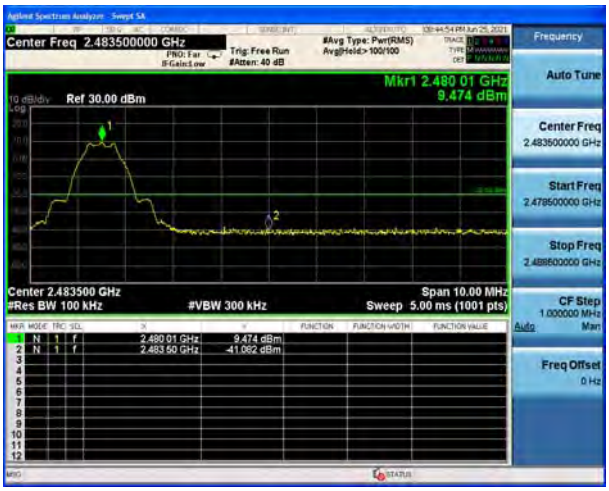
802.11ax(HE40), Channel No.: 9



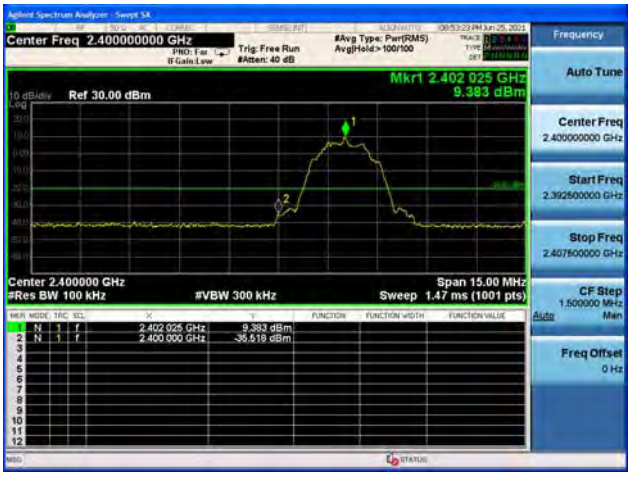
Bluetooth LE (1M), Channel No.: 0



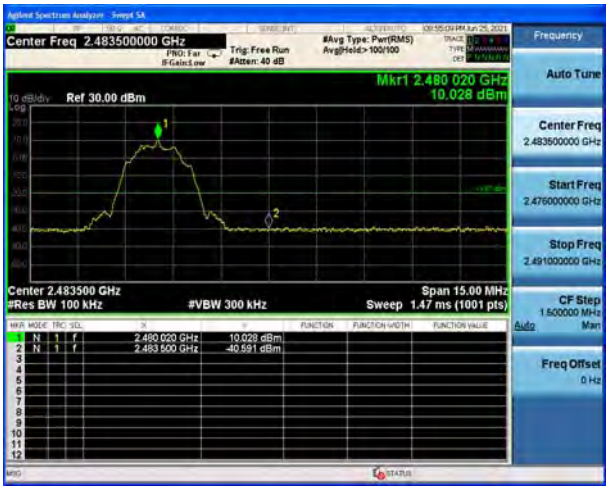
Bluetooth LE (1M), Channel No.: 39



Bluetooth LE (2M), Channel No.: 0

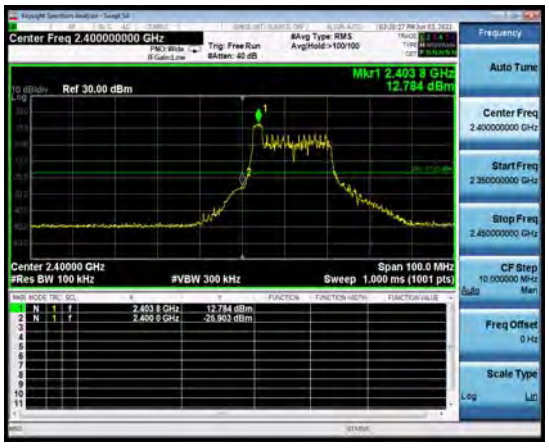


Bluetooth LE (2M), Channel No.: 39

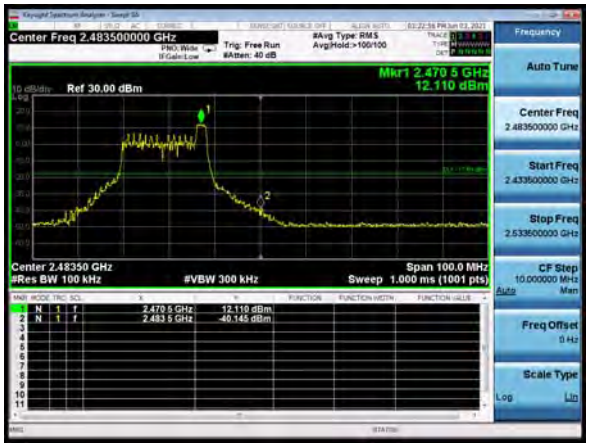


TB mode

802.11ax(HE20)-26Tone, Channel No.: 1



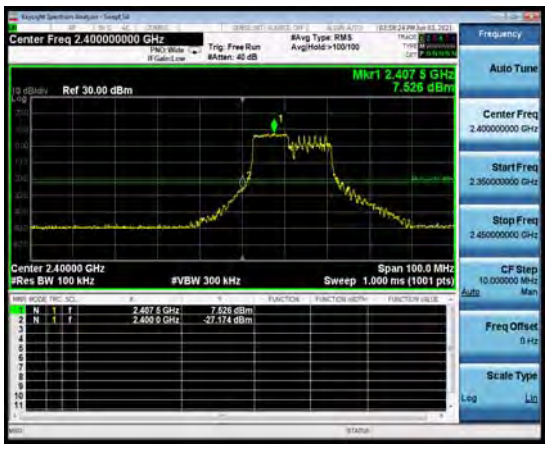
802.11ax(HE20) -26Tone, Channel No.: 11



802.11ax(HE20) -52Tone, Channel No.: 1

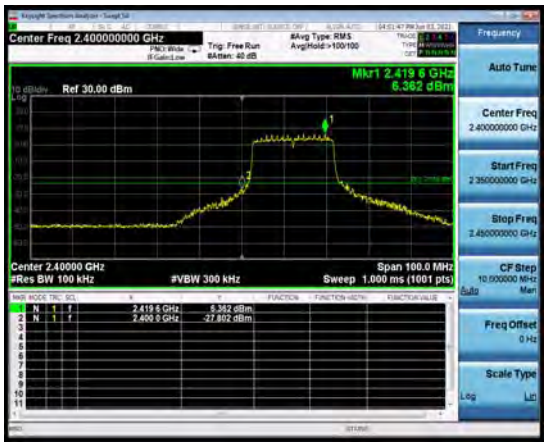
802.11ax(HE20) -52Tone, Channel No.: 11

802.11ax(HE20) -106Tone, Channel No.: 1



802.11ax(HE20) -106Tone, Channel No.: 11

802.11ax(HE20) -242Tone, Channel No.: 1



802.11ax(HE20) -242Tone, Channel No.: 11

802.11ax(HE40) -484Tone, Channel No.: 3

802.11ax(HE40) -484Tone, Channel No.: 9

5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

During the process of the testing, The EUT was connected to Spectrum Analyzer with a known loss. The EUT is max power transmission with proper modulation.

Method AVGPSD-1 was used for this test.

a) Set instrument center frequency to DTS channel center frequency

b) Set span to at least 1.5 times the OBW

c) Set RBW to:3kHz≤RBW≤100kHz

d) Set VBW≥[3x RBW]

e) Detector=power averaging(rms) or sample detector(when rms not available)

f) Ensure that the number of measurement points in the sweep 2[2 X span/RBWT]

g)Sweep time auto couple

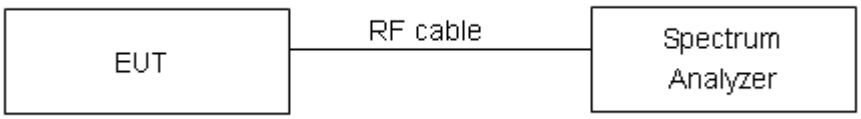
h) Employ trace averaging(rms) mode over a minimum of 100 traces

i) Use the peak marker function to determine the maximum amplitude level.

j) If the measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat(note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced)

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test setup



Limits

Rule Part 15.247(e) specifies that" For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. ''

Limits	≤ 8 dBm / 3kHz

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.75dB.

Test Results:

Test Mode	Channel Number	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
Bluetooth (Low Energy) (1M)	0	-9.81	-7.70	8	PASS
	19	-8.96	-6.85	8	PASS
	39	-9.06	-6.95	8	PASS
Bluetooth (Low Energy) (2M)	0	-13.59	-8.69	8	PASS
	19	-12.89	-7.99	8	PASS
	39	-12.63	-7.73	8	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

RU mode

SISO Antenna 1

Mode	Channel Number	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11b	1	-8.28	-8.28	8	PASS
	6	-7.71	-7.71	8	PASS
	11	-7.77	-7.77	8	PASS
802.11g	1	-14.34	-14.34	8	PASS
	6	-13.80	-13.80	8	PASS
	11	-13.79	-13.79	8	PASS
802.11n HT20	1	-18.07	-18.07	8	PASS
	6	-18.53	-18.53	8	PASS
	11	-17.97	-17.97	8	PASS
802.11n HT40	3	-23.96	-23.96	8	PASS
	6	-23.57	-23.57	8	PASS
	9	-23.17	-23.17	8	PASS
802.11ax HE20	1	-20.96	-20.96	8	PASS
	6	-21.41	-21.41	8	PASS
	11	-20.80	-20.80	8	PASS
802.11ax HE40	3	-27.17	-27.17	8	PASS
	6	-27.19	-27.19	8	PASS
	9	-26.28	-26.28	8	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

SISO Antenna 2

Mode	Channel Number	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11b	1	-6.86	-6.76	8	PASS
	6	-6.39	-6.29	8	PASS
	11	-6.71	-6.61	8	PASS
802.11g	1	-17.07	-17.07	8	PASS
	6	-17.89	-17.89	8	PASS
	11	-17.25	-17.25	8	PASS
802.11n HT20	1	-18.70	-18.70	8	PASS
	6	-19.33	-19.33	8	PASS
	11	-19.33	-19.33	8	PASS
802.11n HT40	3	-24.90	-24.90	8	PASS
	6	-24.69	-24.69	8	PASS
	9	-24.00	-24.00	8	PASS
802.11ax HE20	1	-15.44	-15.44	8	PASS
	6	-15.76	-15.76	8	PASS
	11	-15.67	-15.67	8	PASS
802.11ax HE40	3	-25.79	-25.79	8	PASS
	6	-26.23	-26.23	8	PASS
	9	-25.06	-25.06	8	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

MIMO

Mode	Channel Number	Power Spectral Density				Total PSD (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
		Antenna 1		Antenna 2				
		Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)			
802.11n HT20	1	-17.86	-17.86	-19.00	-19.00	-15.38	8	PASS
	6	-18.54	-18.54	-19.37	-19.37	-15.92	8	PASS
	11	-18.14	-18.14	-19.00	-19.00	-15.54	8	PASS
802.11n HT40	3	-24.15	-24.15	-25.05	-25.05	-21.56	8	PASS
	6	-23.87	-23.87	-24.73	-24.73	-21.27	8	PASS
	9	-23.19	-23.19	-24.05	-24.05	-20.59	8	PASS
802.11ax HE20	1	-18.99	-18.99	-15.08	-15.08	-13.60	8	PASS
	6	-19.57	-19.57	-16.00	-16.00	-14.42	8	PASS
	11	-18.82	-18.82	-15.84	-15.84	-14.07	8	PASS
802.11ax HE40	3	-25.30	-25.30	-25.99	-25.99	-22.62	8	PASS
	6	-25.30	-25.30	-25.64	-25.64	-22.45	8	PASS
	9	-24.83	-24.83	-25.40	-25.40	-22.10	8	PASS

Note: 1.Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}$

3. The manufacturer declared the transmitter output signals is CDD mode. And N_{SS}=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain. For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB, so directional gain=GANT+Array Gain=-0.84+10log(3/1)=4.81 <6dBi.

So the limit is 8+6-MAX(6, directional gain)dBm=8dBm

TB mode

SISO Antenna 1

Mode	RU Size	Channel Number	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11ax HE20 MU Mode	26-Tones	1	-15.30	-15.30	8	PASS
	26-Tones	6	-14.34	-14.34	8	PASS
	26-Tones	11	-14.94	-14.94	8	PASS
	52-Tones	1	-17.15	-17.15	8	PASS
	52-Tones	6	-17.49	-17.49	8	PASS
	52-Tones	11	-16.22	-16.22	8	PASS
	106-Tones	1	-9.45	-9.45	8	PASS
	106-Tones	6	-8.61	-8.61	8	PASS
	106-Tones	11	-10.00	-10.00	8	PASS
802.11ax HE20 SU Mode	242-Tones	1	-12.22	-12.22	8	PASS
	242-Tones	6	-11.71	-11.71	8	PASS
	242-Tones	11	-12.08	-12.08	8	PASS
802.11ax HE40 SU Mode	484-Tones	3	-23.66	-23.66	8	PASS
	484-Tones	6	-23.36	-23.36	8	PASS
	484-Tones	9	-22.99	-22.99	8	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor						

SISO Antenna 2

Mode	RU Size	Channel Number	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11ax HE20 MU Mode	26-Tones	1	-14.92	-14.92	8	PASS
	26-Tones	6	-16.13	-16.13	8	PASS
	26-Tones	11	-15.61	-15.61	8	PASS
	52-Tones	1	-17.92	-17.92	8	PASS
	52-Tones	6	-18.61	-18.61	8	PASS
	52-Tones	11	-18.02	-18.02	8	PASS
	106-Tones	1	-10.25	-10.25	8	PASS
	106-Tones	6	-10.60	-10.60	8	PASS
	106-Tones	11	-11.15	-11.15	8	PASS
802.11ax HE20 SU Mode	242-Tones	1	-13.32	-13.32	8	PASS
	242-Tones	6	-13.08	-13.08	8	PASS
	242-Tones	11	-13.73	-13.73	8	PASS
802.11ax HE40 SU Mode	484-Tones	3	-24.16	-24.16	8	PASS
	484-Tones	6	-24.27	-24.27	8	PASS
	484-Tones	9	-23.80	-23.80	8	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor						

MIMO

Mode	RU Size	Channel Number	MIMO Antenna 1		MIMO Antenna 2		Total PSD (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
			Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)			
802.11ax HE20 MU Mode	26-Tones	1	-14.32	-14.32	-15.59	-15.59	-11.90	8	PASS
	26-Tones	6	-14.79	-14.79	-15.09	-15.09	-11.93	8	PASS
	26-Tones	11	-14.70	-14.70	-15.58	-15.58	-12.11	8	PASS
	52-Tones	1	-17.64	-17.64	-17.95	-17.95	-14.78	8	PASS
	52-Tones	6	-17.83	-17.83	-18.76	-18.76	-15.26	8	PASS
	52-Tones	11	-16.73	-16.73	-17.72	-17.72	-14.19	8	PASS
	106-Tones	1	-9.09	-9.09	-11.05	-11.05	-6.95	8	PASS
	106-Tones	6	-9.84	-9.84	-10.60	-10.60	-7.20	8	PASS
	106-Tones	11	-10.17	-10.17	-11.41	-11.41	-7.74	8	PASS
802.11ax HE20 SU Mode	242-Tones	1	-12.58	-12.58	-13.31	-13.31	-9.92	8	PASS
	242-Tones	6	-11.46	-11.46	-13.26	-13.26	-9.26	8	PASS
	242-Tones	11	-12.32	-12.32	-13.72	-13.72	-9.95	8	PASS
802.11ax HE40 SU Mode	484-Tones	3	-23.53	-23.53	-24.23	-24.23	-20.85	8	PASS
	484-Tones	6	-23.69	-23.69	-24.06	-24.06	-20.86	8	PASS
	484-Tones	9	-23.18	-23.18	-23.45	-23.45	-20.30	8	PASS

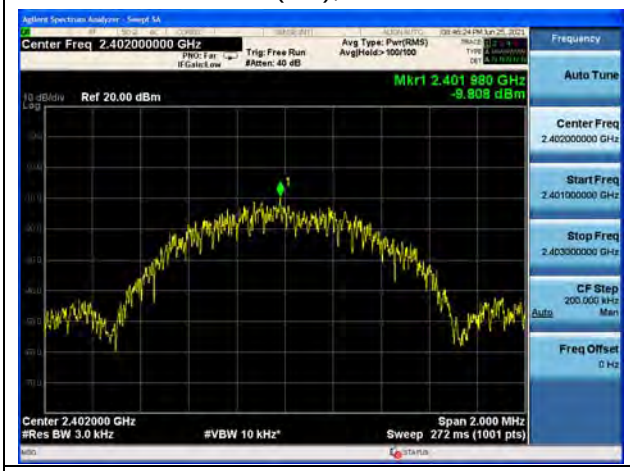
Note: 1.Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}$

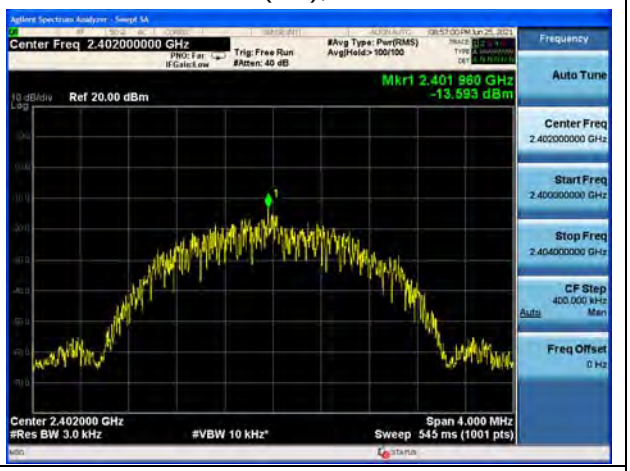
3. The manufacturer declared the transmitter output signals is CDD mode. And N_{ss}=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain. For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB, so directional gain=GANT+Array Gain=1.8+10log(3/1)=4.81 <6dBi.

So the limit is 8+6-MAX(6, directional gain)dBm=8 dBm

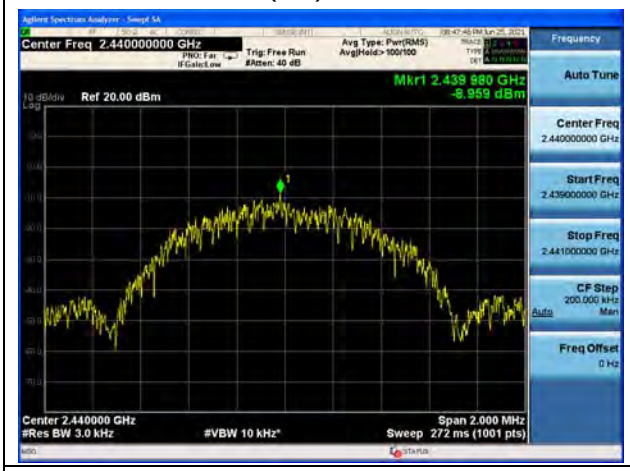
Bluetooth LE (1M), Channel No.: 0



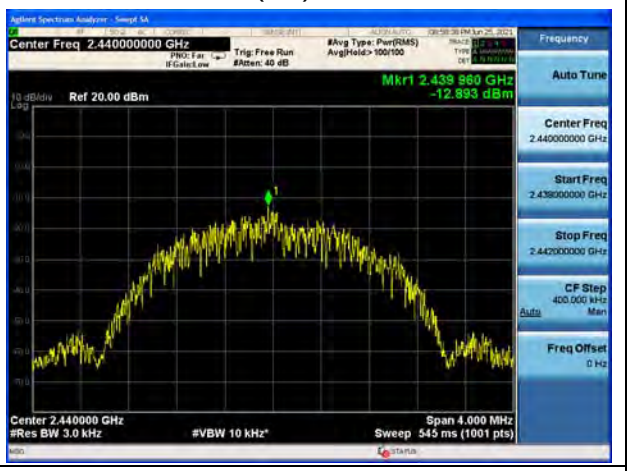
Bluetooth LE (2M), Channel No.: 0



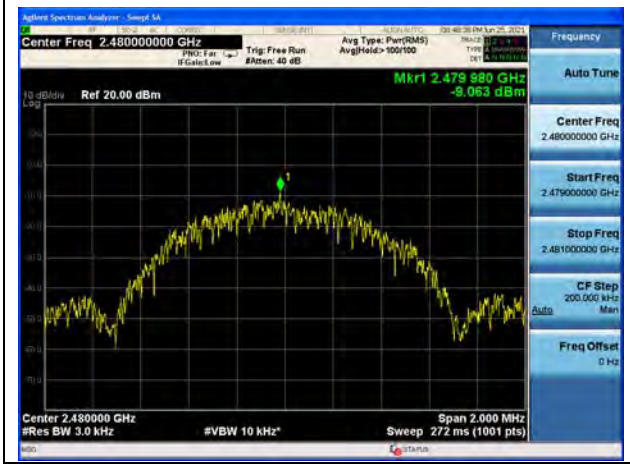
Bluetooth LE (1M), Channel No.: 19



Bluetooth LE (2M), Channel No.: 19



Bluetooth LE (1M), Channel No.: 39

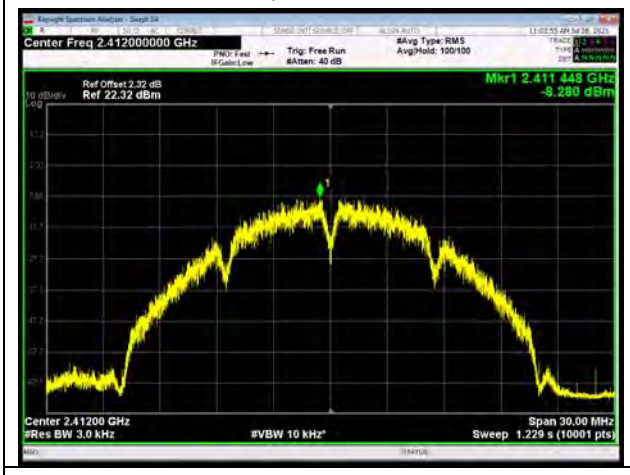


Bluetooth LE (2M), Channel No.: 39

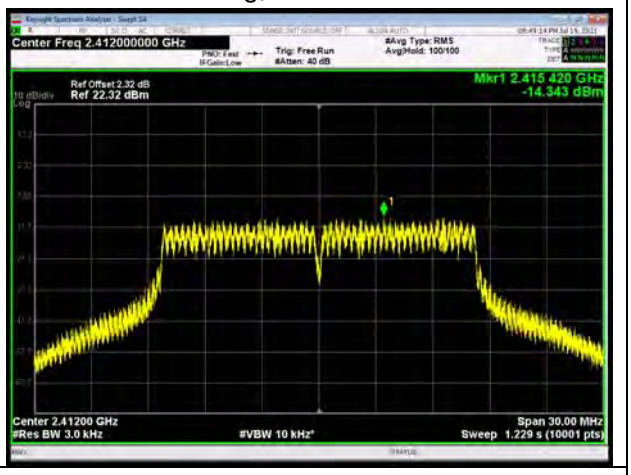
RU Mode

SISO Antenna 1

802.11b, Channel No.: 1

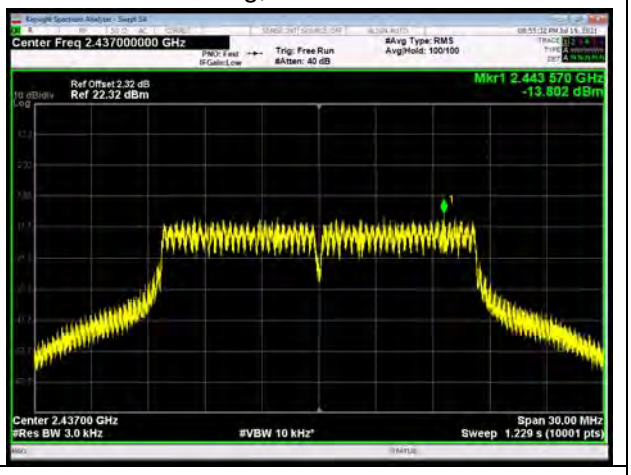


802.11g, Channel No.: 1

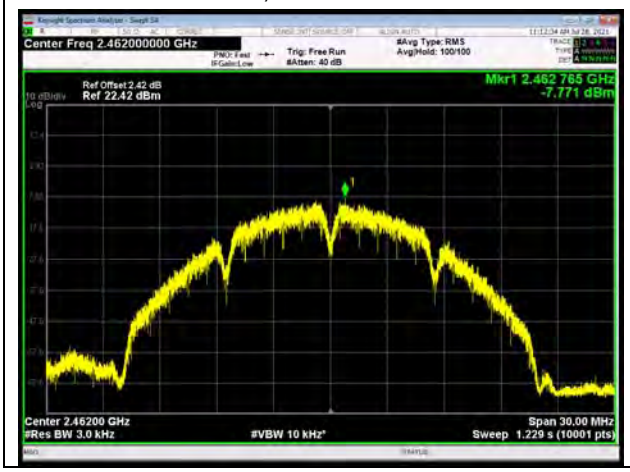


802.11b, Channel No.: 6

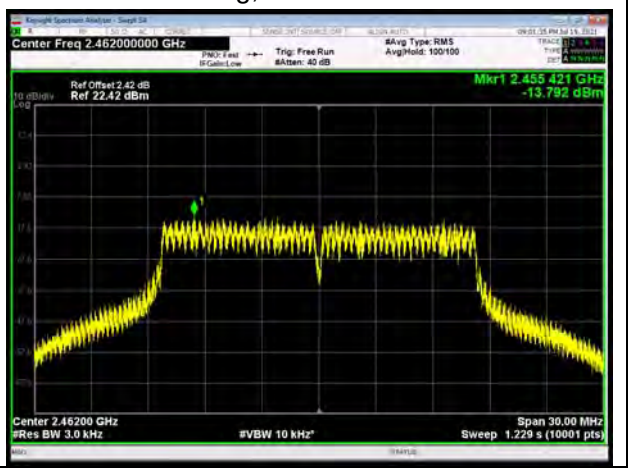
802.11g, Channel No.: 6



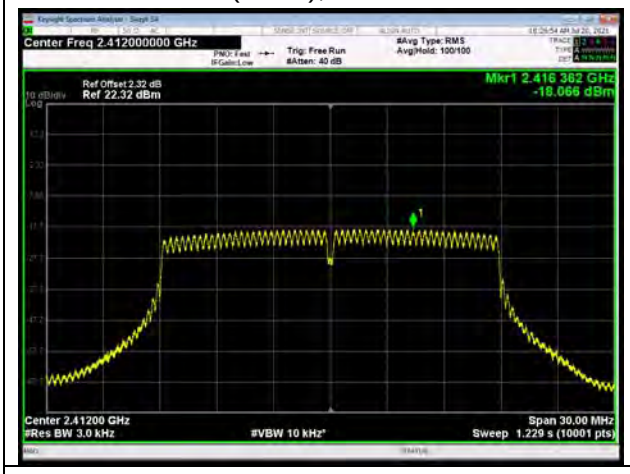
802.11b, Channel No.: 11



802.11g, Channel No.: 11

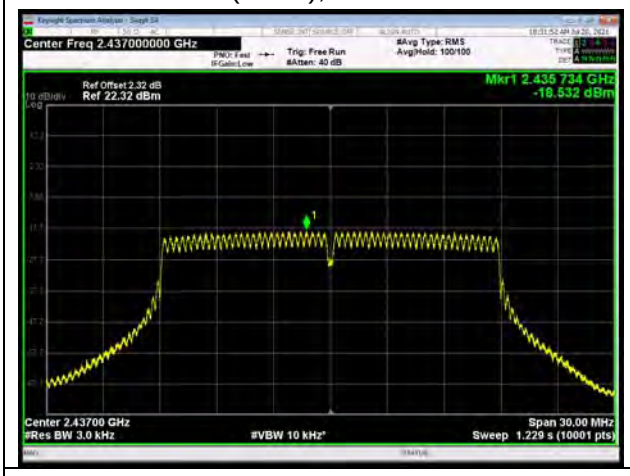


802.11n(HT20), Channel No. 1

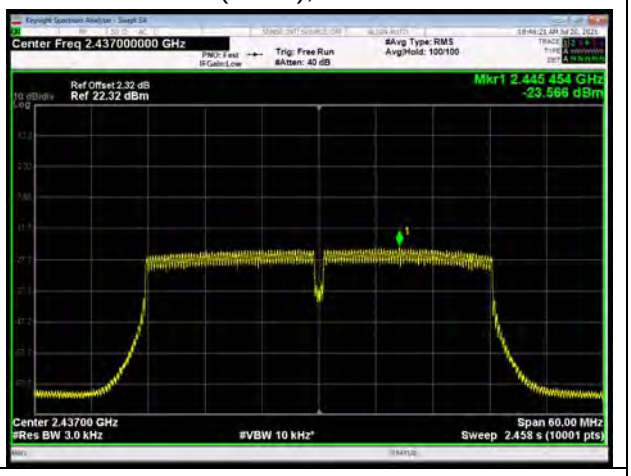


802.11n(HT40), Channel No. 3

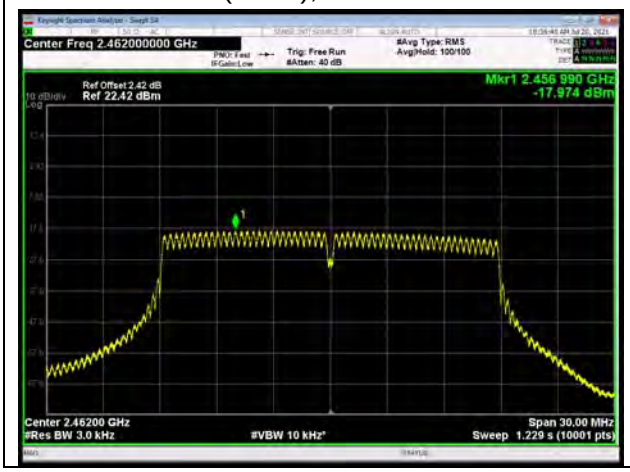
802.11n(HT20), Channel No. 6



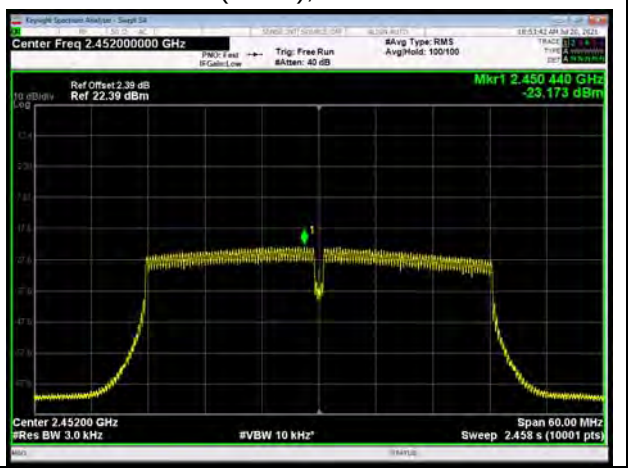
802.11n(HT40), Channel No. 6



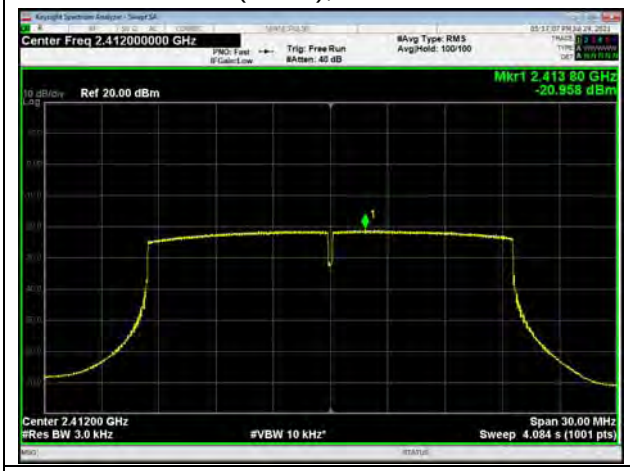
802.11n(HT20), Channel No. 11



802.11n(HT40), Channel No. 9



802.11ax(HE20), Channel No. 1



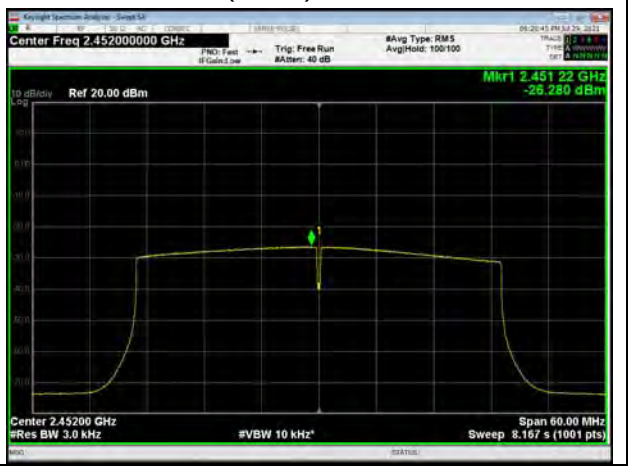
802.11ax(HE40), Channel No. 3

802.11ax(HE20), Channel No. 6

802.11ax(HE40), Channel No. 6

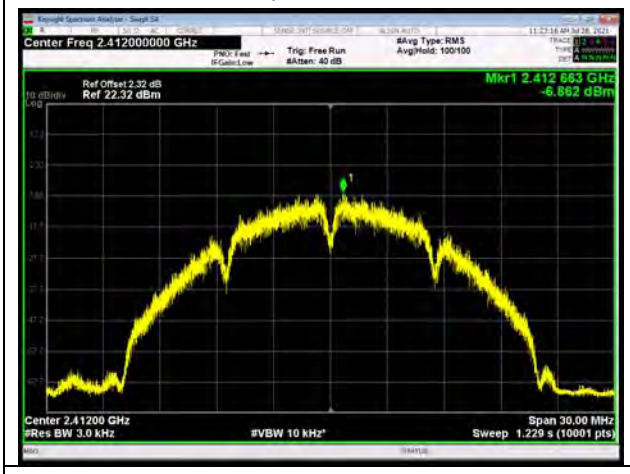
802.11ax(HE20), Channel No. 11

802.11ax(HE40), Channel No. 9

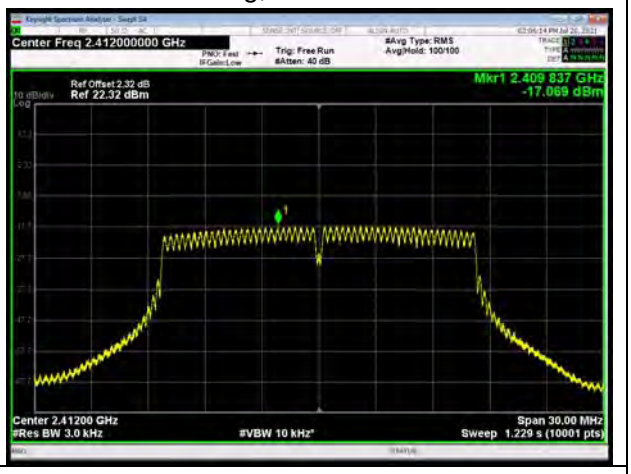


SISO Antenna 2

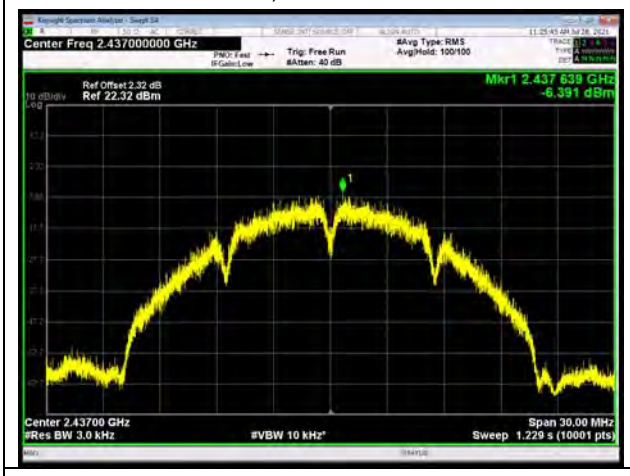
802.11b, Channel No.: 1



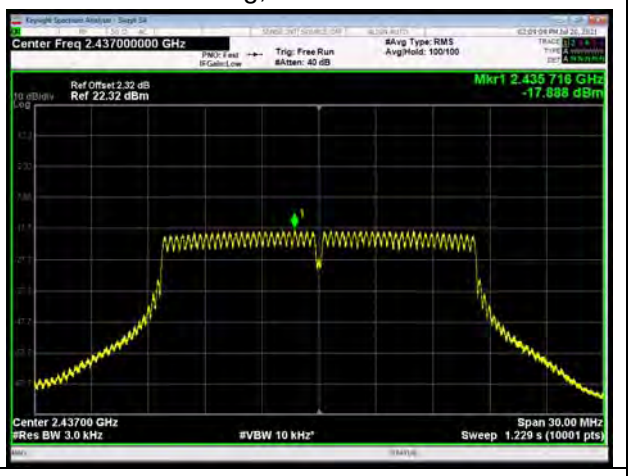
802.11g, Channel No.: 1



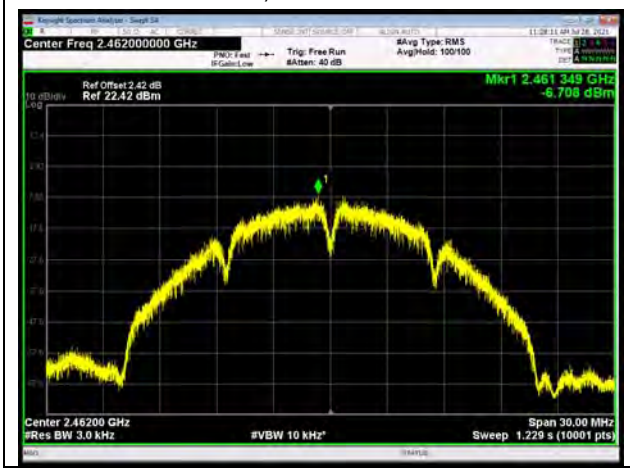
802.11b, Channel No.: 6



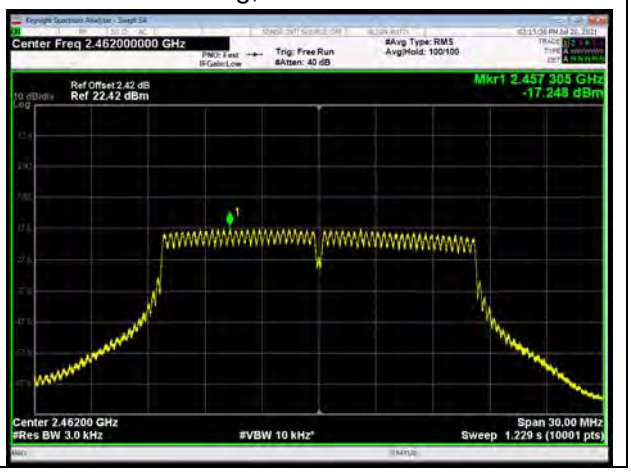
802.11g, Channel No.: 6



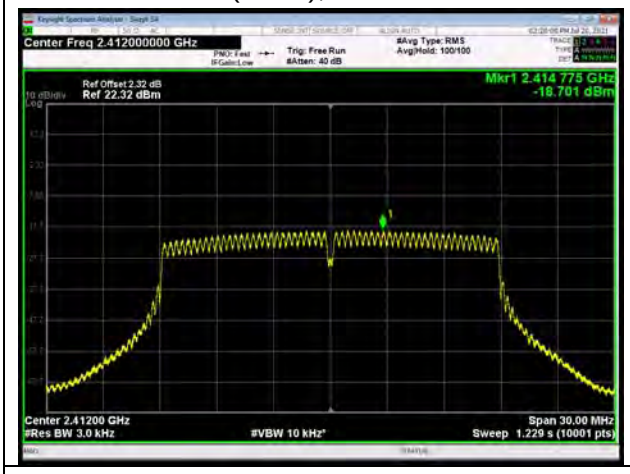
802.11b, Channel No.: 11



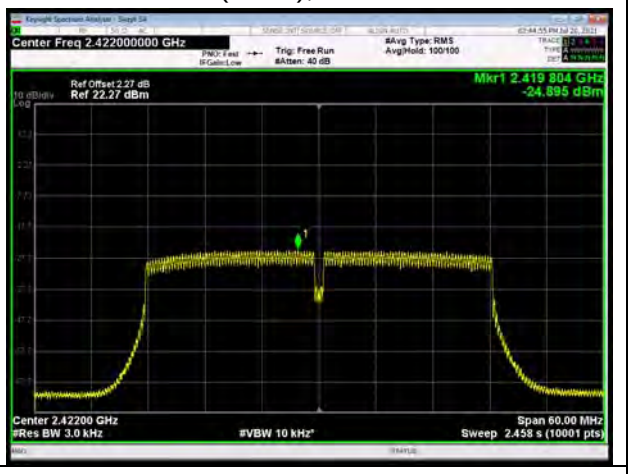
802.11g, Channel No.: 11



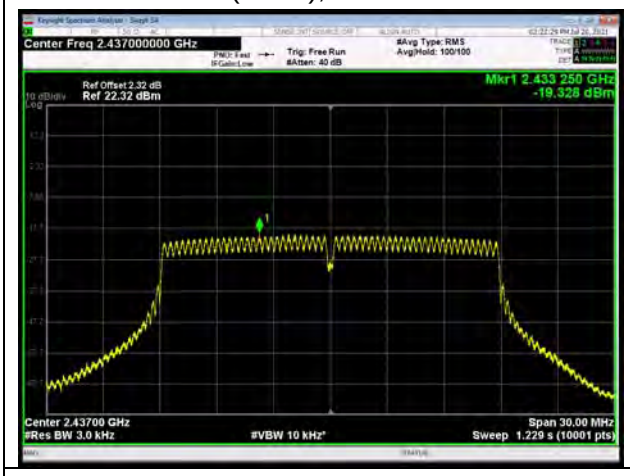
802.11n(HT20), Channel No. 1



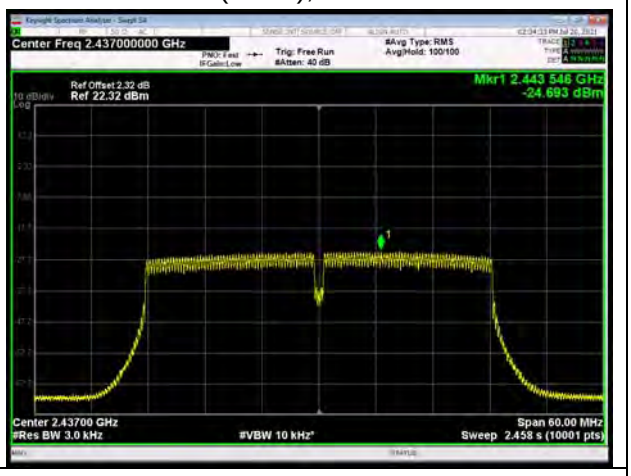
802.11n(HT40), Channel No. 3



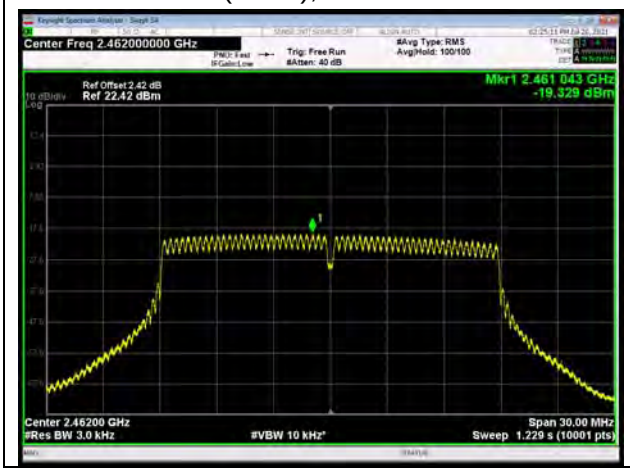
802.11n(HT20), Channel No. 6



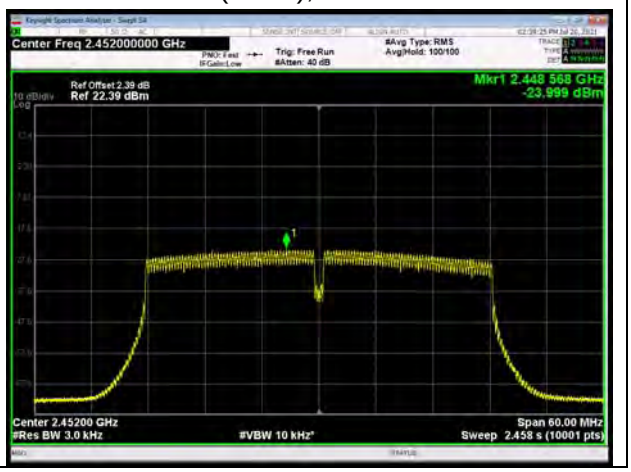
802.11n(HT40), Channel No. 6



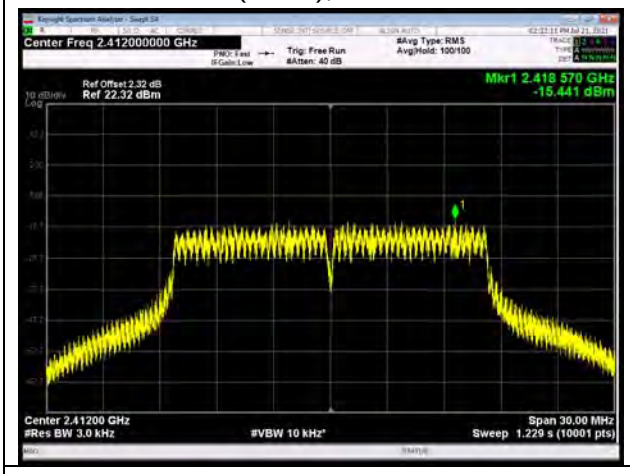
802.11n(HT20), Channel No. 11



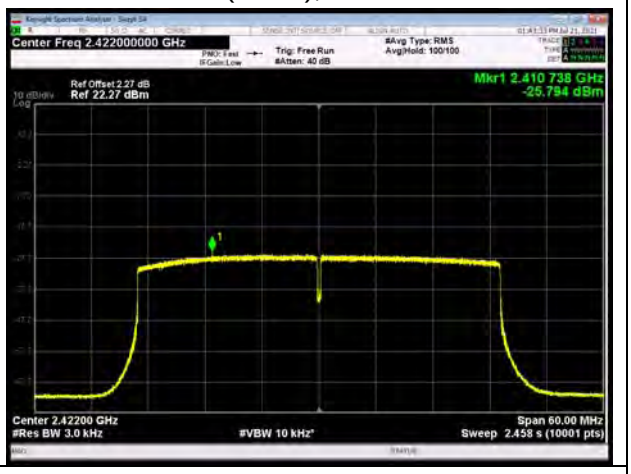
802.11n(HT40), Channel No. 9



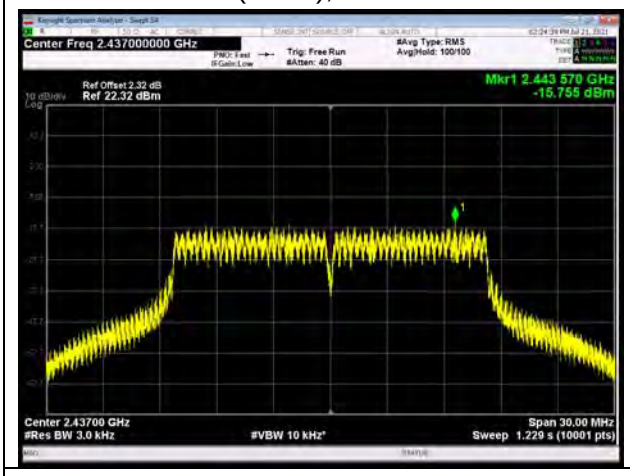
802.11ax(HE20), Channel No. 1



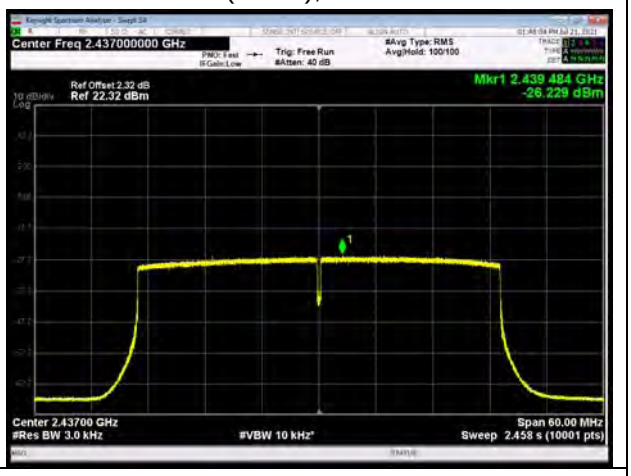
802.11ax(HE40), Channel No. 3



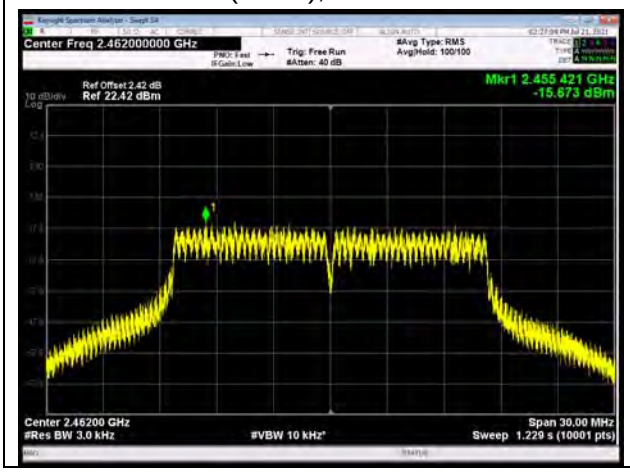
802.11ax(HE20), Channel No. 6



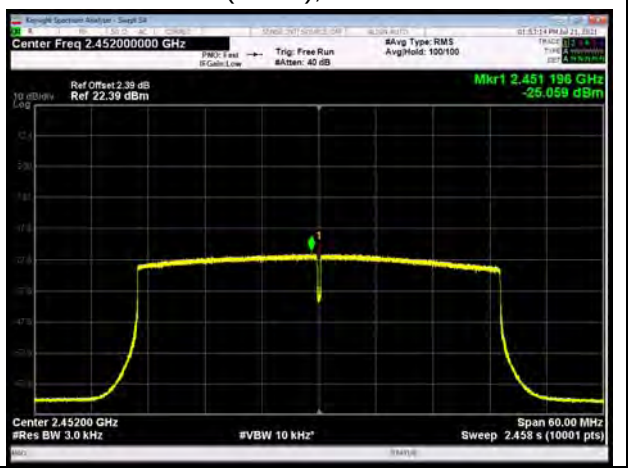
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



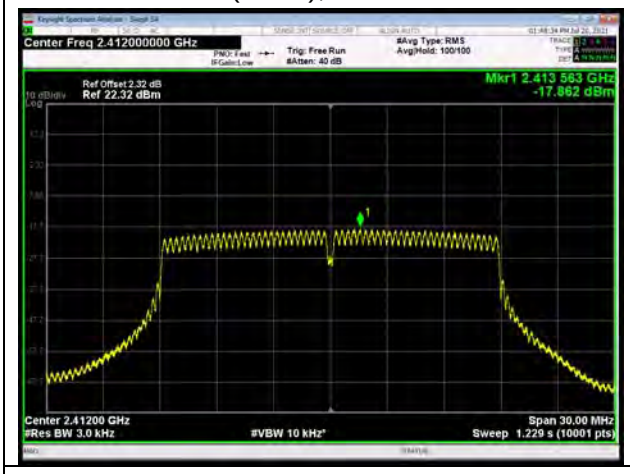
802.11ax(HE40), Channel No. 9



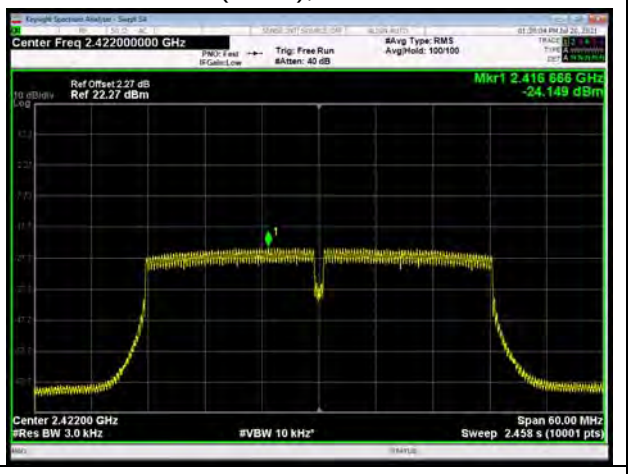
MIMO

SISO Antenna 1

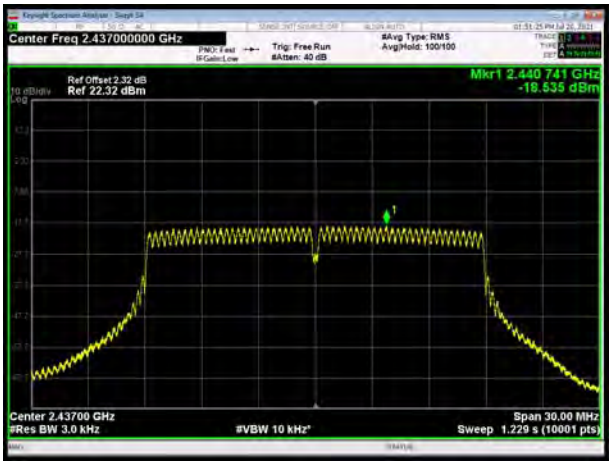
802.11n(HT20), Channel No. 1



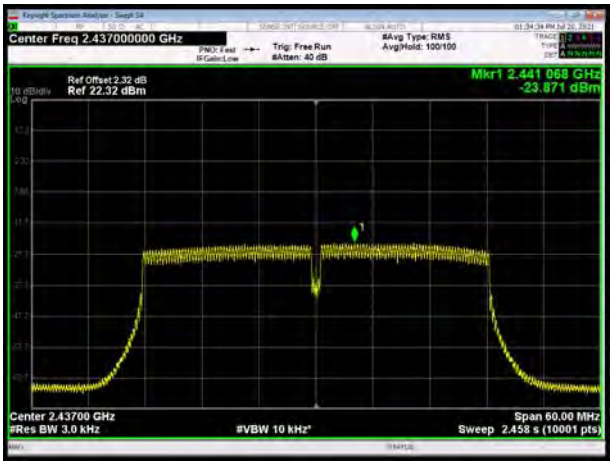
802.11n(HT40), Channel No. 3



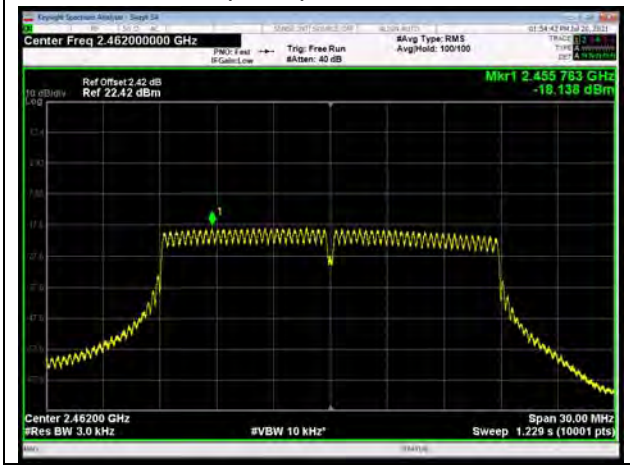
802.11n(HT20), Channel No. 6



802.11n(HT40), Channel No. 6

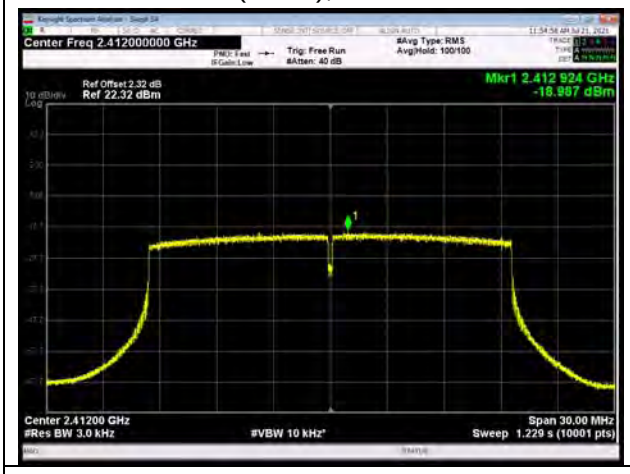


802.11n(HT20), Channel No. 11

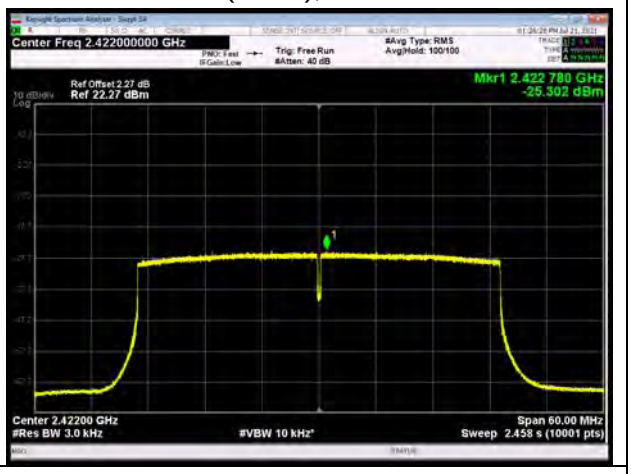


802.11n(HT40), Channel No. 9

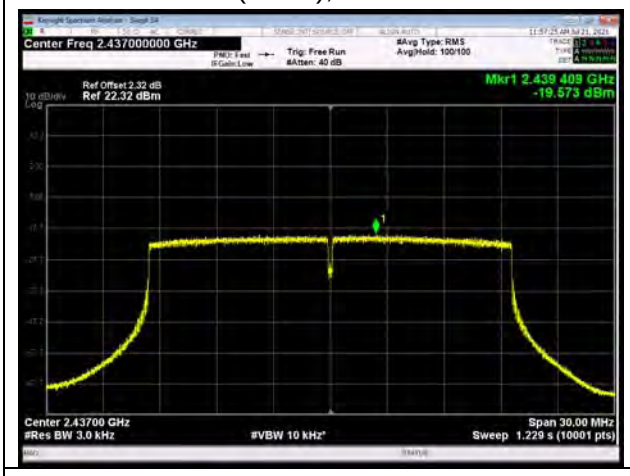
802.11ax(HE20), Channel No. 1



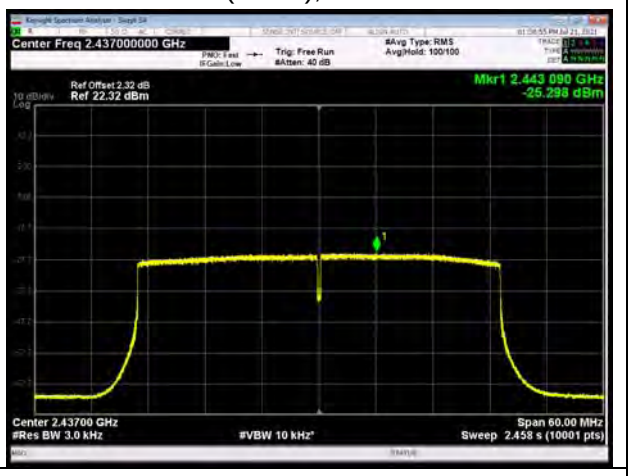
802.11ax(HE40), Channel No. 3



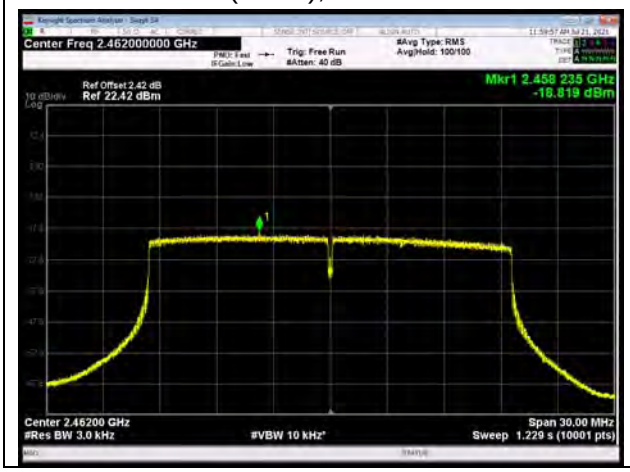
802.11ax(HE20), Channel No. 6



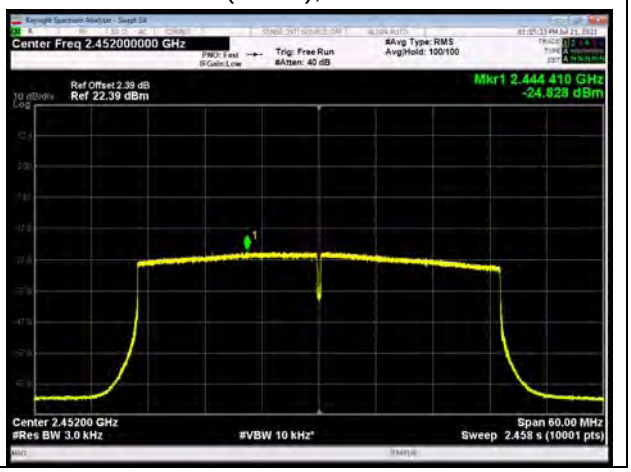
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11

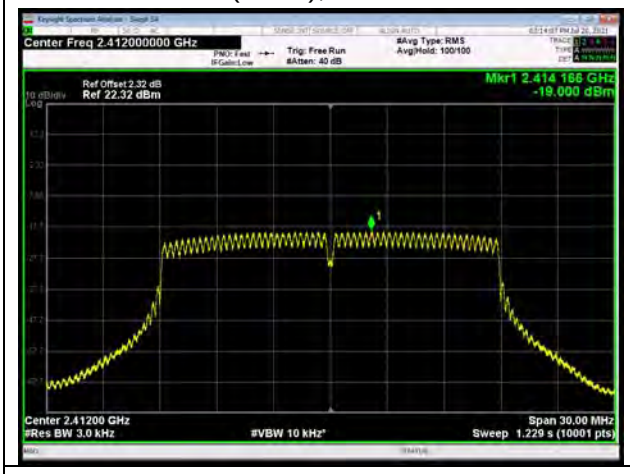


802.11ax(HE40), Channel No. 9



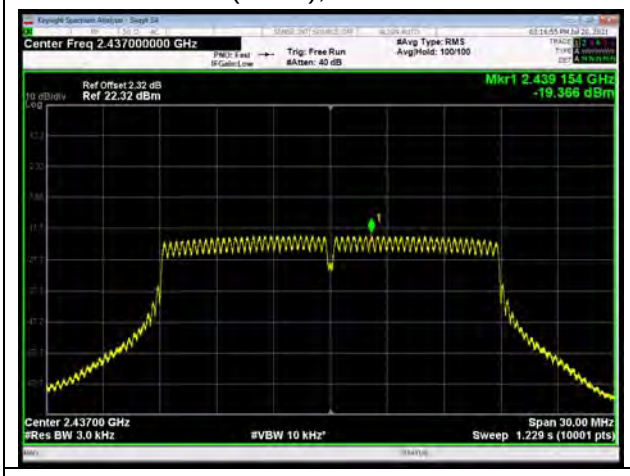
AIAO Antenna 2

802.11n(HT20), Channel No. 1

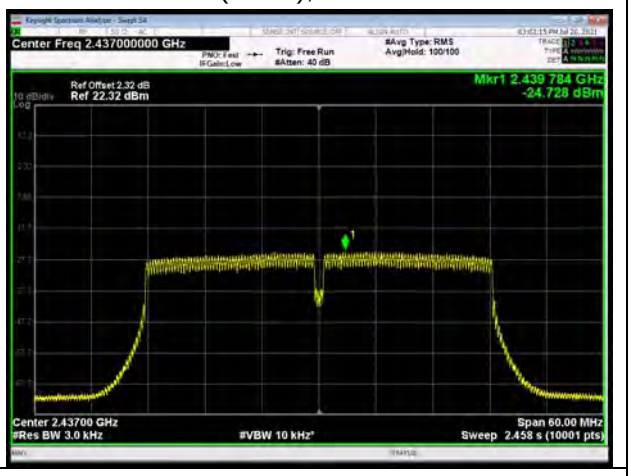


802.11n(HT40), Channel No. 3

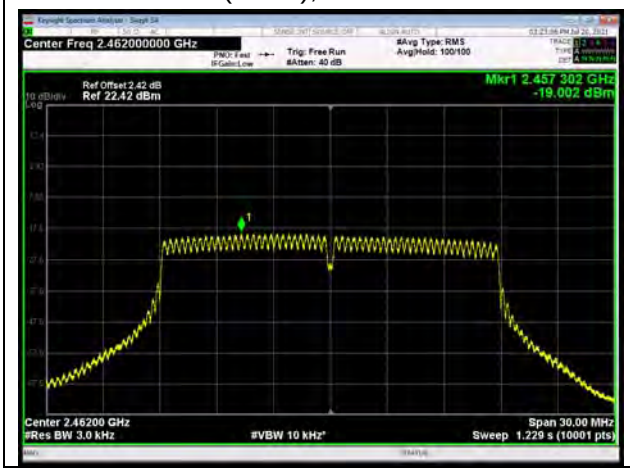
802.11n(HT20), Channel No. 6



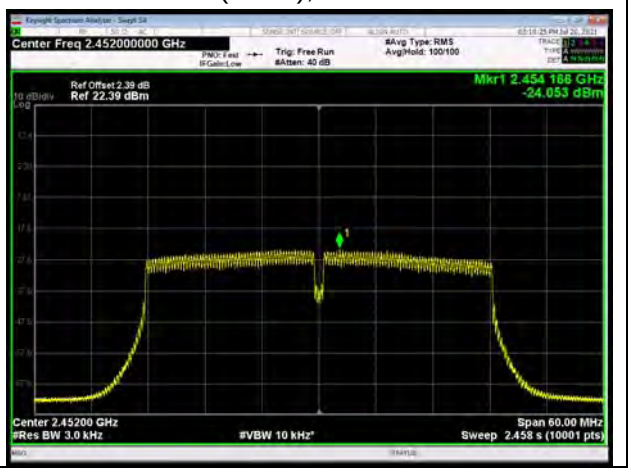
802.11n(HT40), Channel No. 6



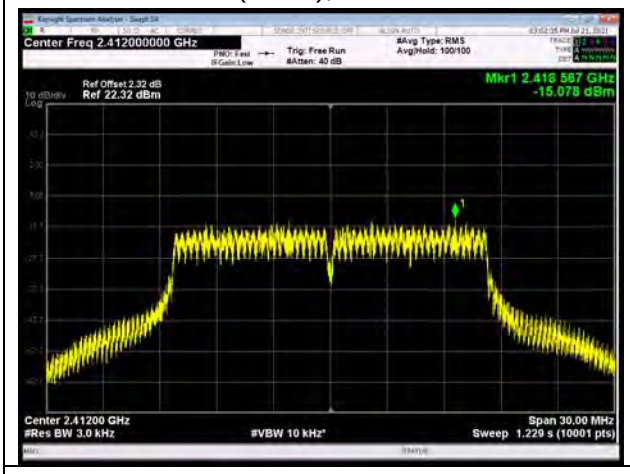
802.11n(HT20), Channel No. 11



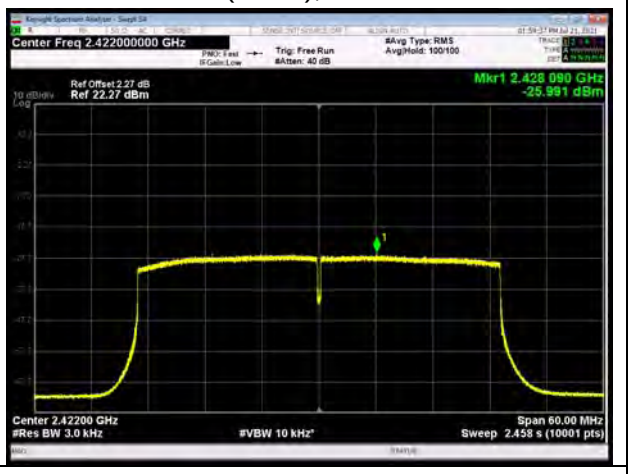
802.11n(HT40), Channel No. 9



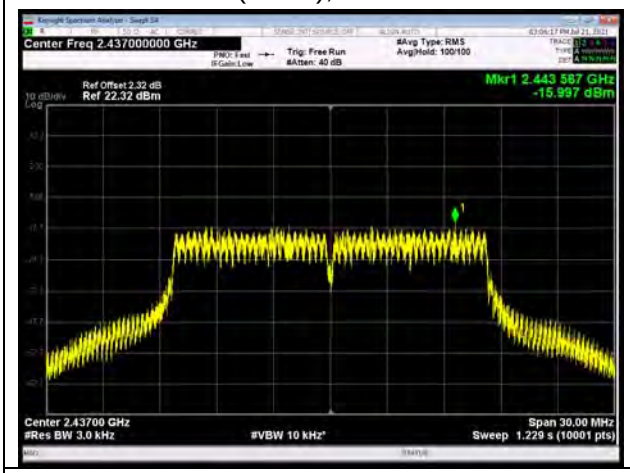
802.11ax(HE20), Channel No. 1



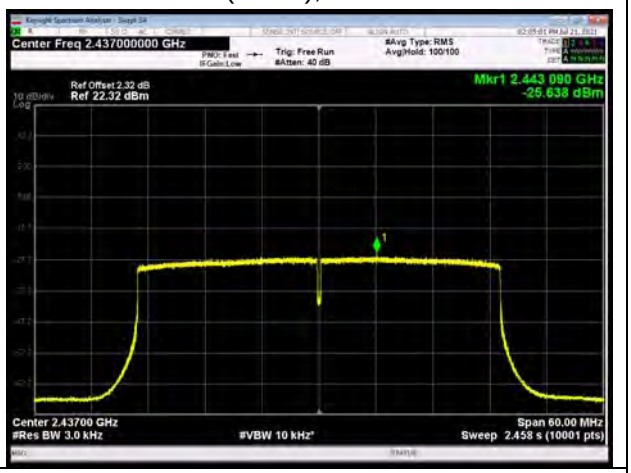
802.11ax(HE40), Channel No. 3



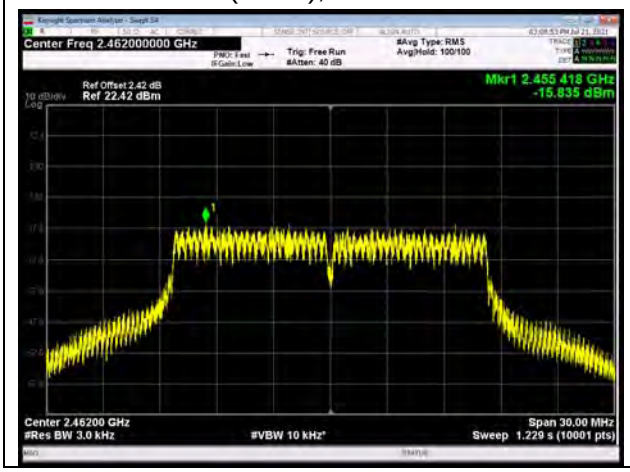
802.11ax(HE20), Channel No. 6



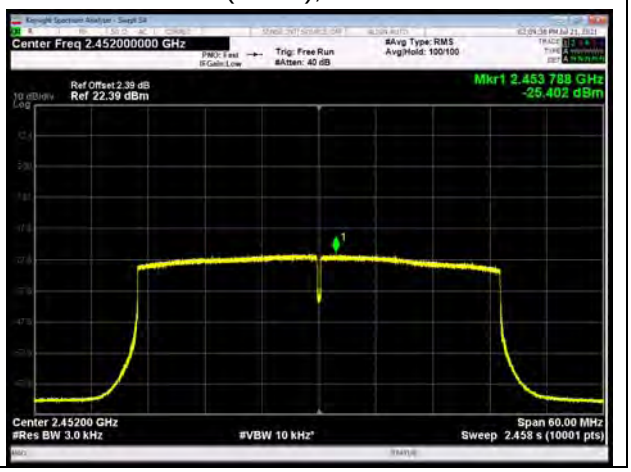
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



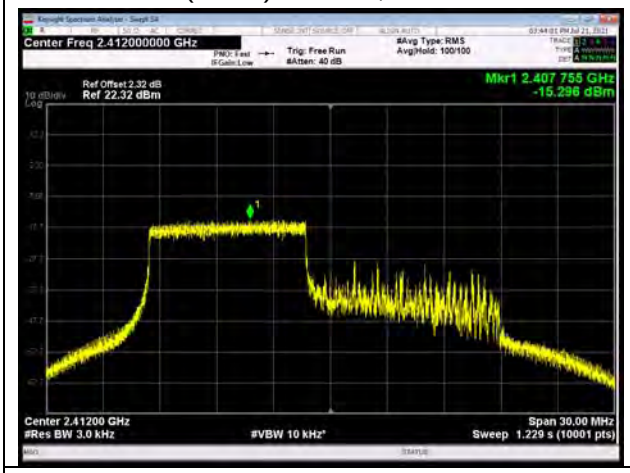
802.11ax(HE40), Channel No. 9



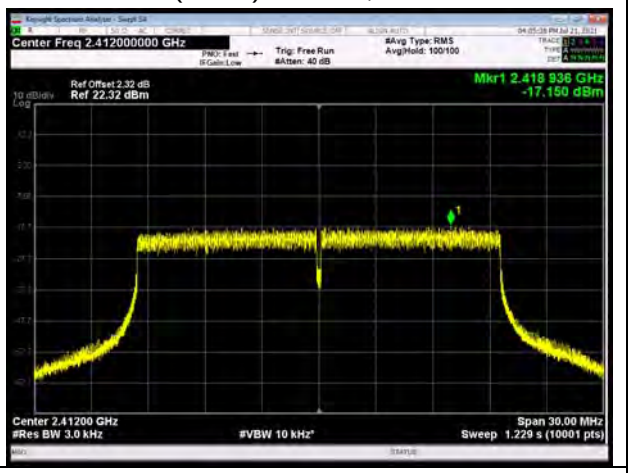
TB mode

SISO Antenna 1

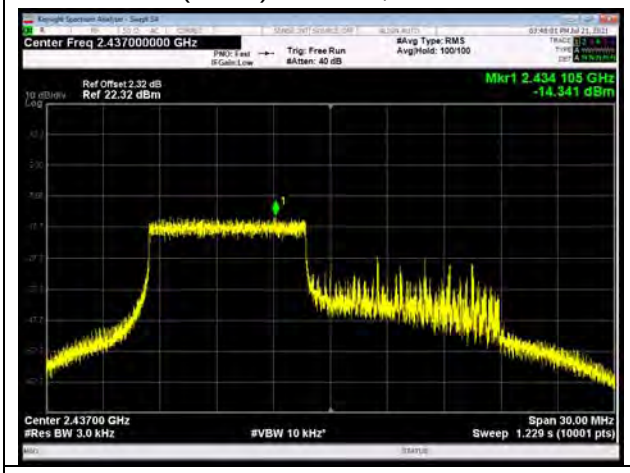
802.11ax(HE20)-26Tone, Channel No. 1



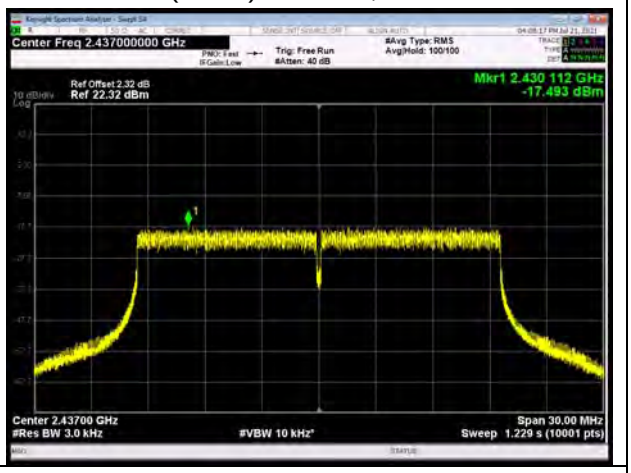
802.11ax(HE20)-52Tone, Channel No. 1



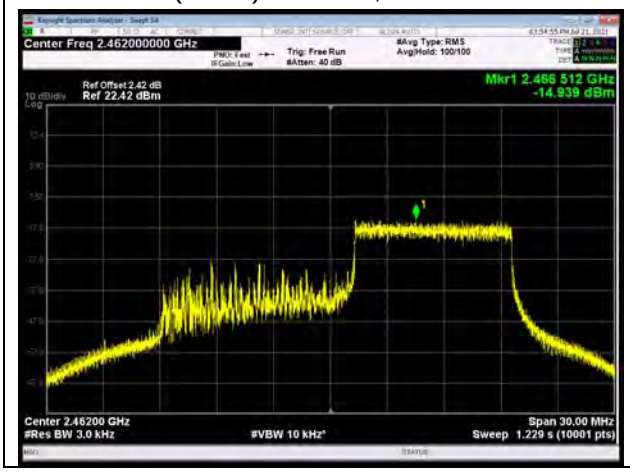
802.11ax(HE20) -26Tone, Channel No. 6



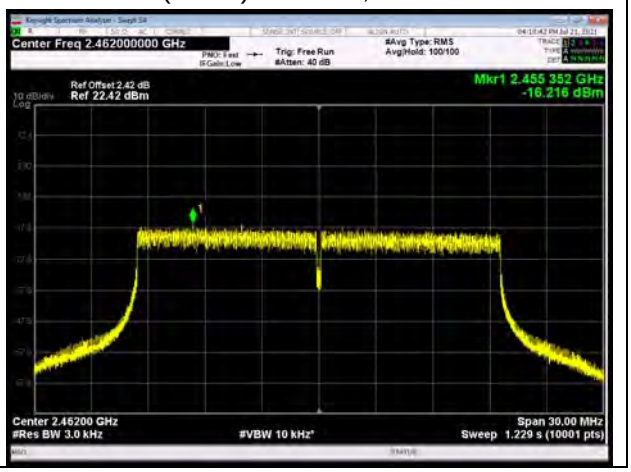
802.11ax(HE20) -52Tone, Channel No. 6



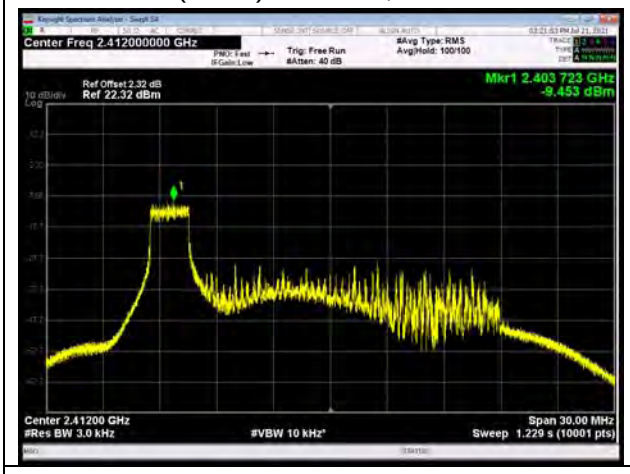
802.11ax(HE20) -26Tone, Channel No. 11



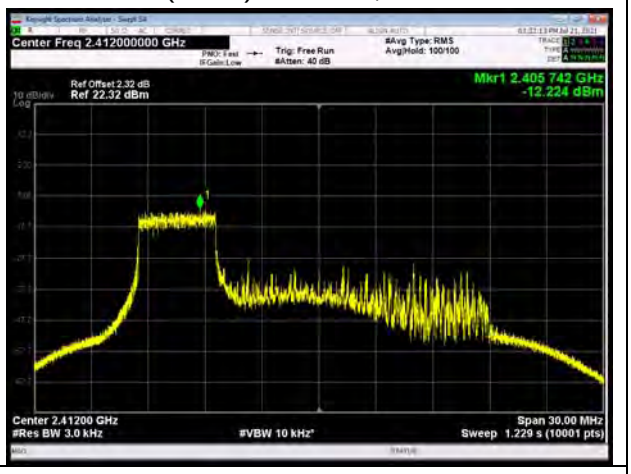
802.11ax(HE20) -52Tone, Channel No. 11



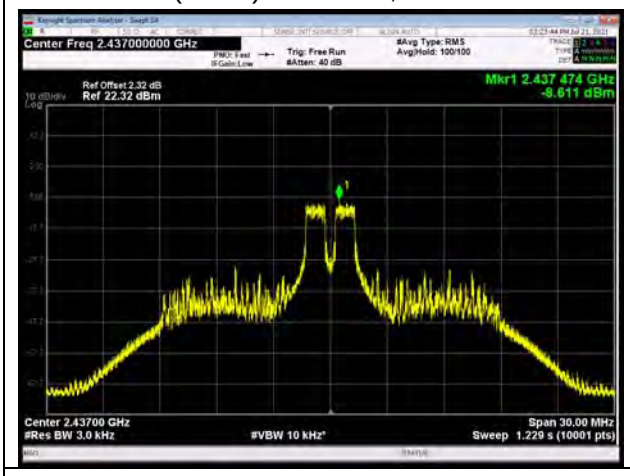
802.11ax(HE20)-106Tone, Channel No. 1



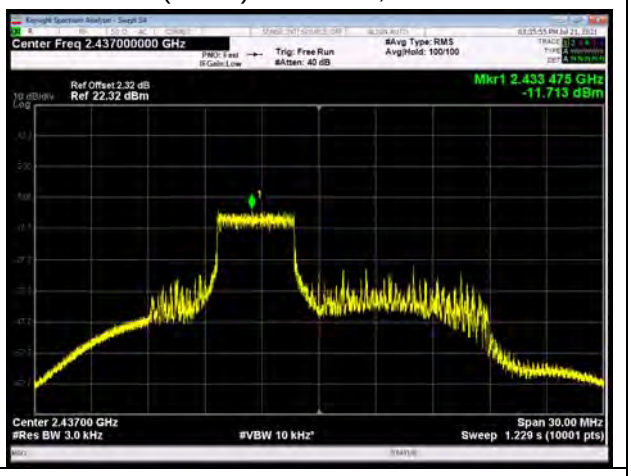
802.11ax(HE20)-242Tone, Channel No. 1



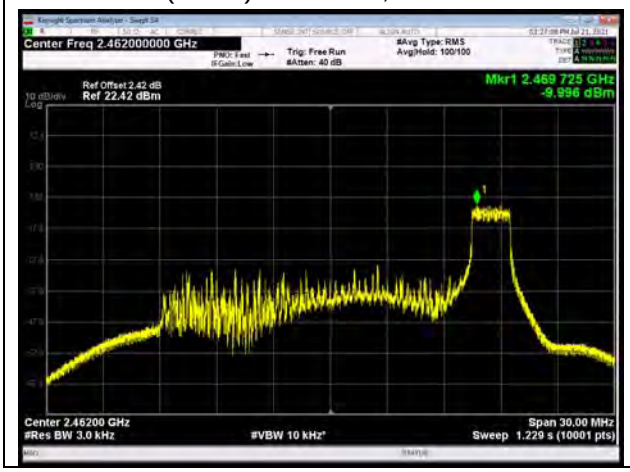
802.11ax(HE20) -106Tone, Channel No. 6



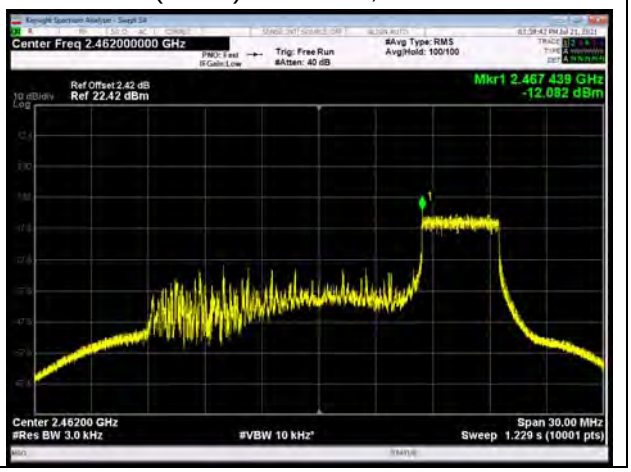
802.11ax(HE20) -242Tone, Channel No. 6



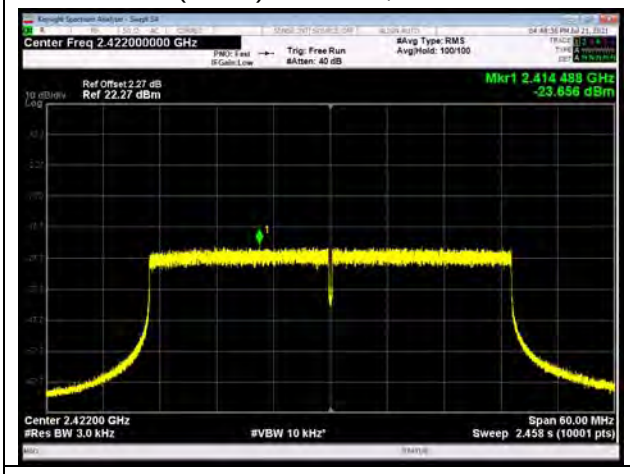
802.11ax(HE20) -106Tone, Channel No. 11



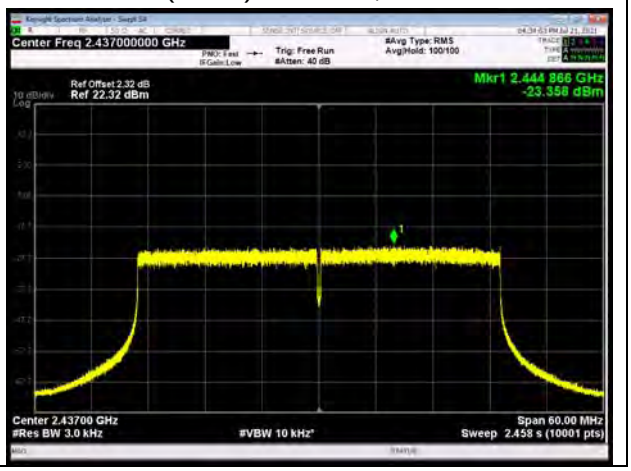
802.11ax(HE20) -242Tone, Channel No. 11



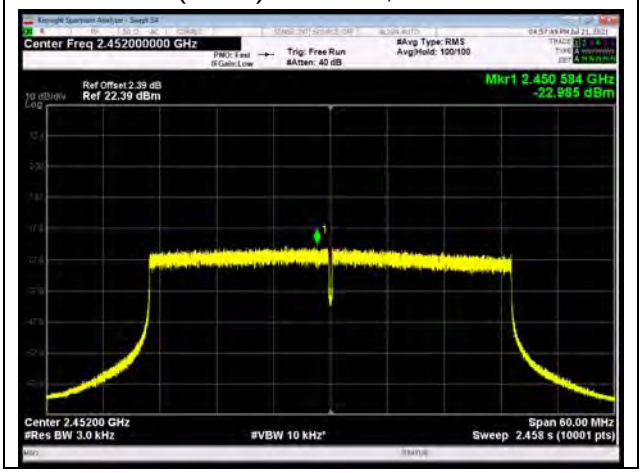
802.11ax(HE40)-484Tone, Channel No. 3



802.11ax(HE40)-484Tone, Channel No. 6

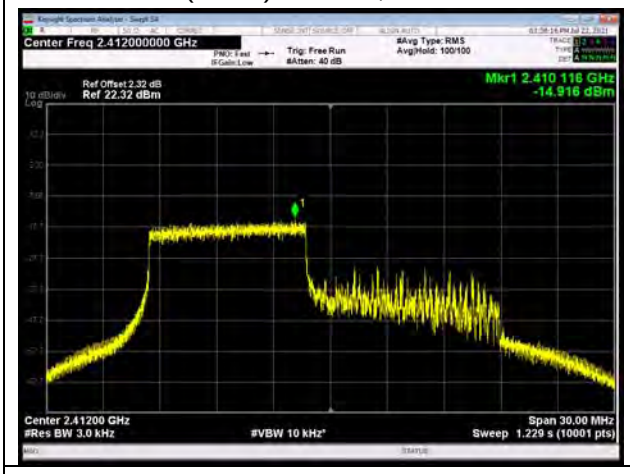


802.11ax(HE40)-484Tone, Channel No. 9

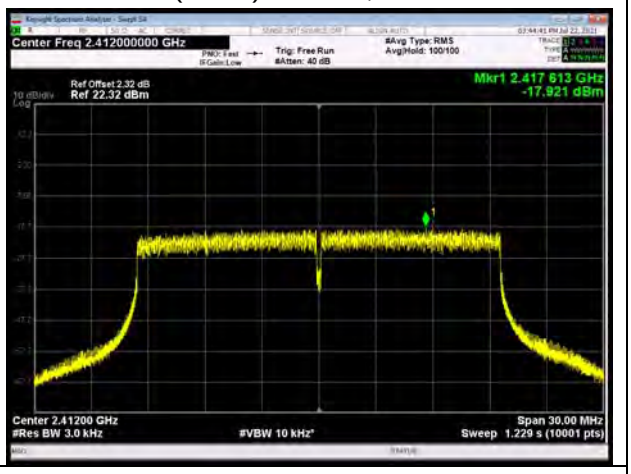


SISO Antenna 2

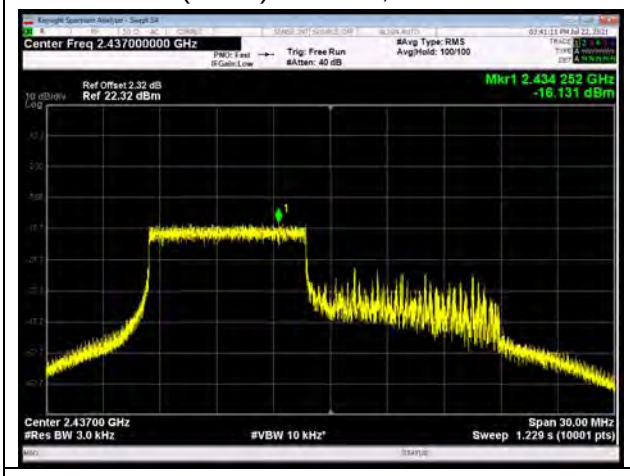
802.11ax(HE20)-26Tone, Channel No. 1



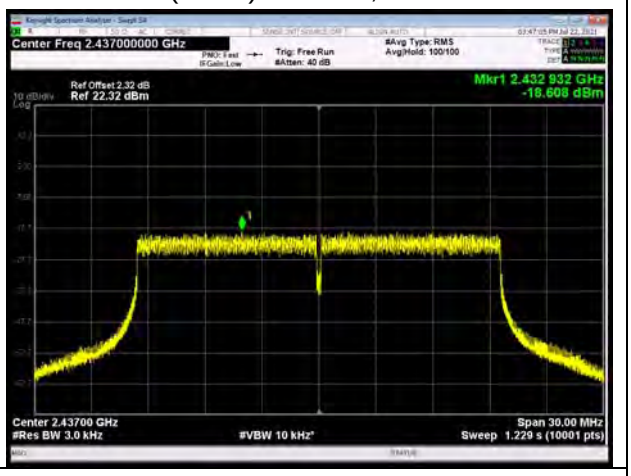
802.11ax(HE20)-52Tone, Channel No. 1



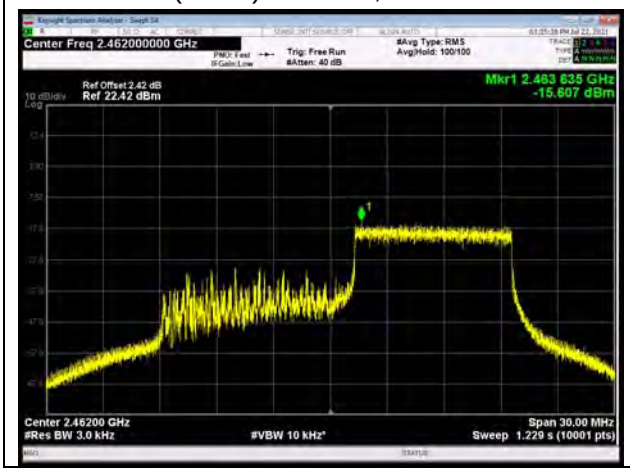
802.11ax(HE20) -26Tone, Channel No. 6



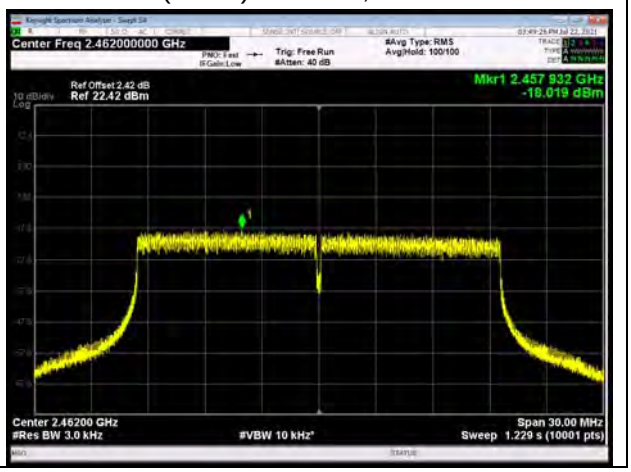
802.11ax(HE20) -52Tone, Channel No. 6



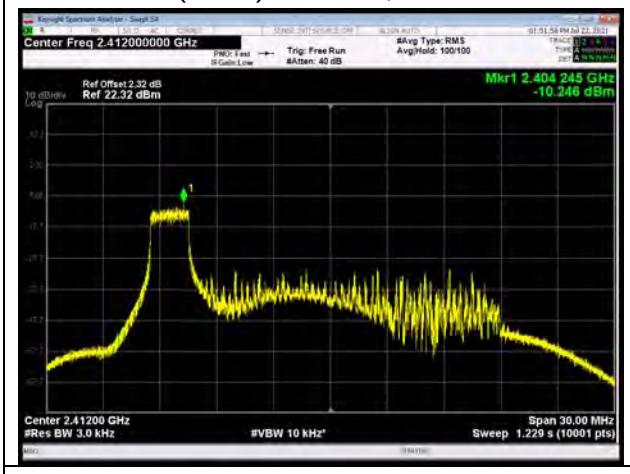
802.11ax(HE20) -26Tone, Channel No. 11



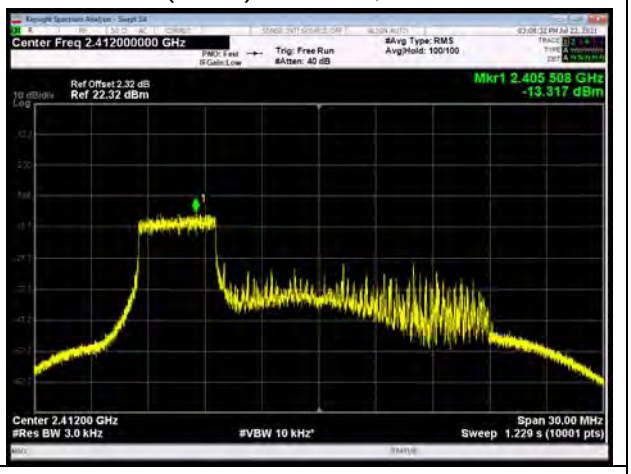
802.11ax(HE20) -52Tone, Channel No. 11



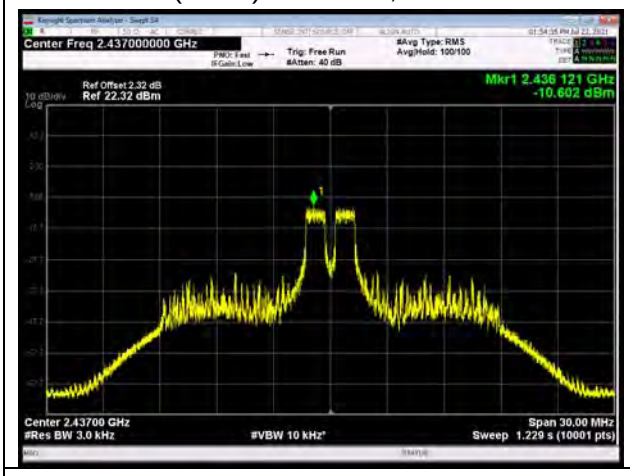
802.11ax(HE20)-106Tone, Channel No. 1



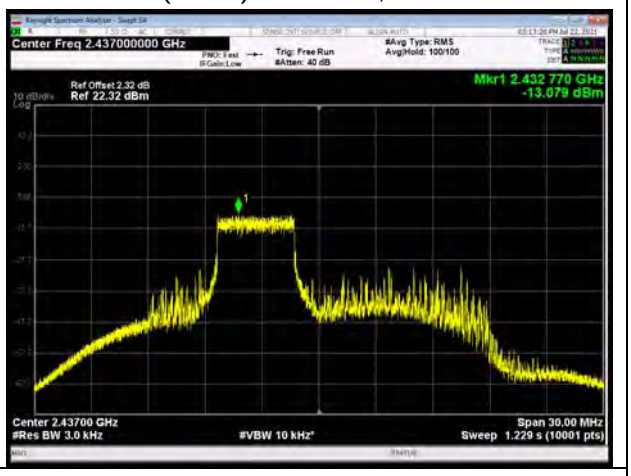
802.11ax(HE20)-242Tone, Channel No. 1



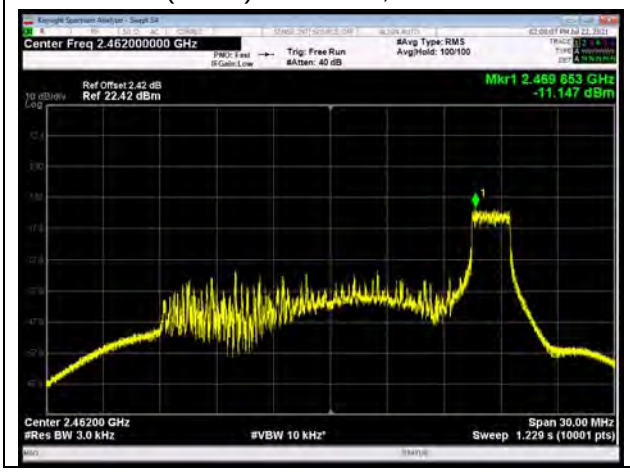
802.11ax(HE20) -106Tone, Channel No. 6



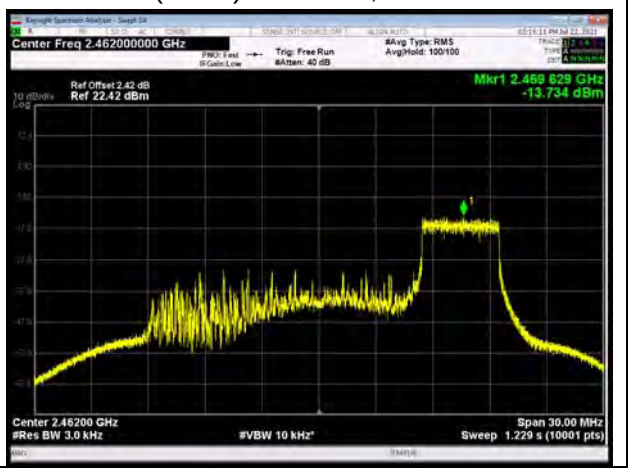
802.11ax(HE20) -242Tone, Channel No. 6



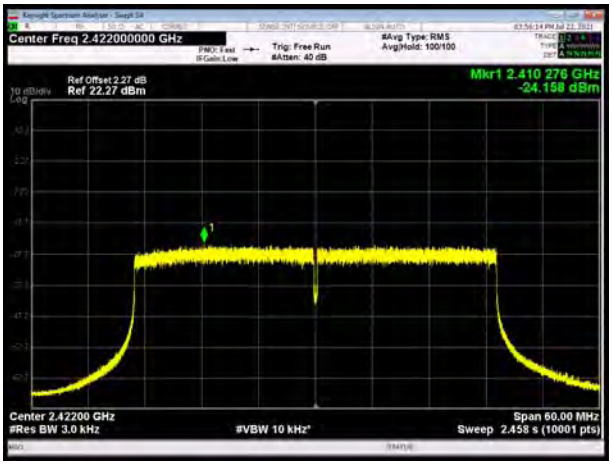
802.11ax(HE20) -106Tone, Channel No. 11



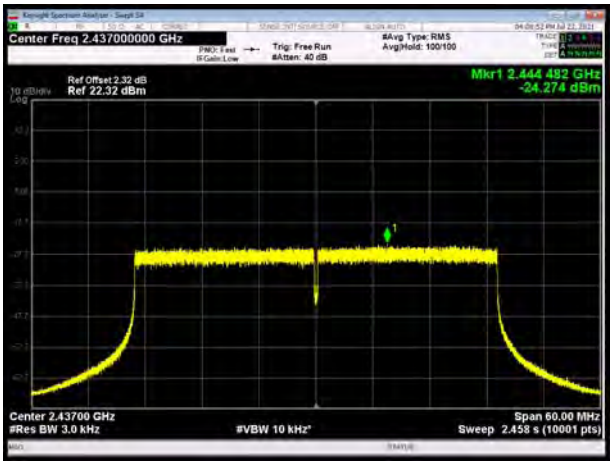
802.11ax(HE20) -242Tone, Channel No. 11



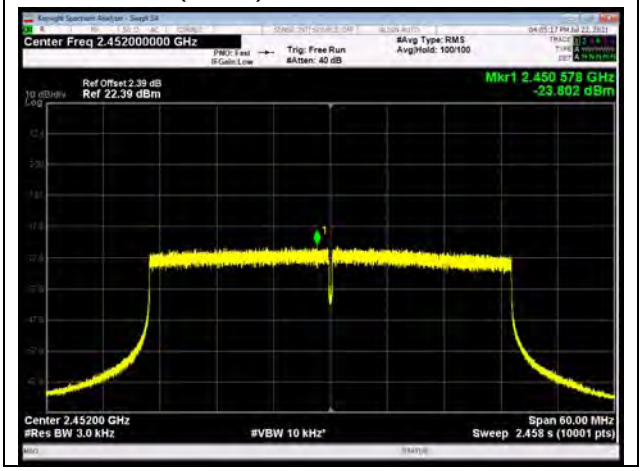
802.11ax(HE40)-484Tone, Channel No. 3



802.11ax(HE40)-484Tone, Channel No. 6



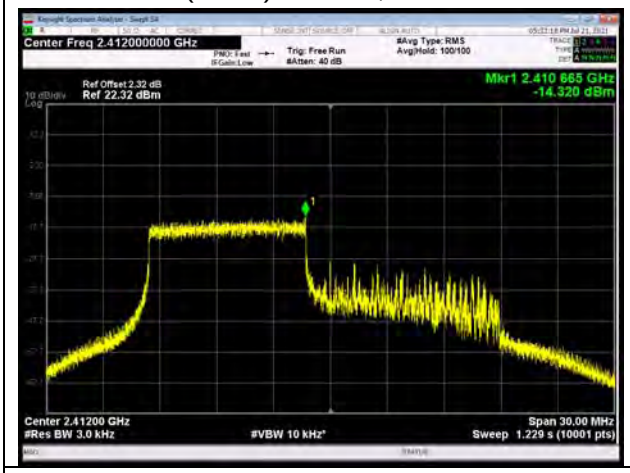
802.11ax(HE40)-484Tone, Channel No. 9



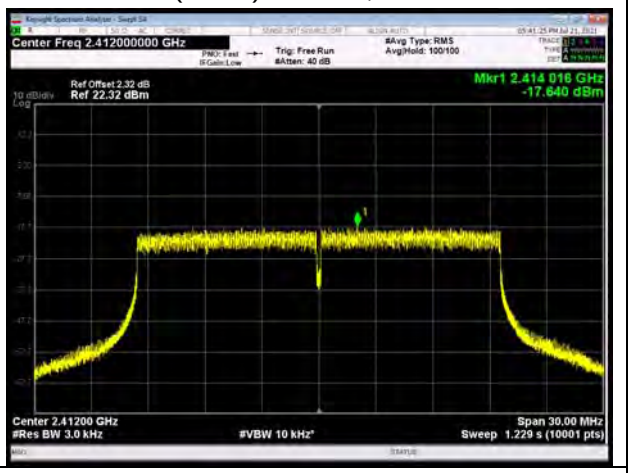
MIMO

SISO Antenna 1

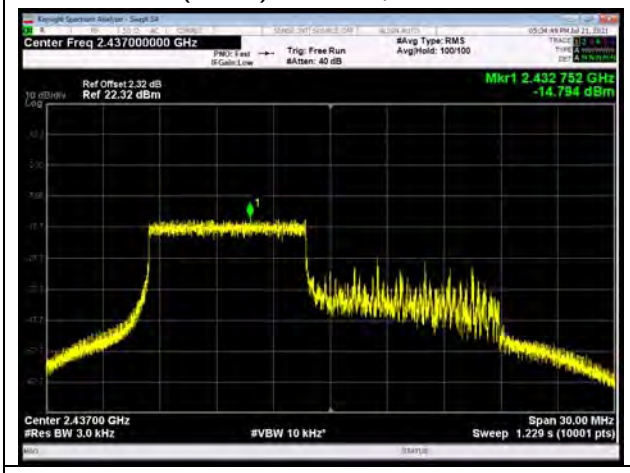
802.11ax(HE20)-26Tone, Channel No. 1



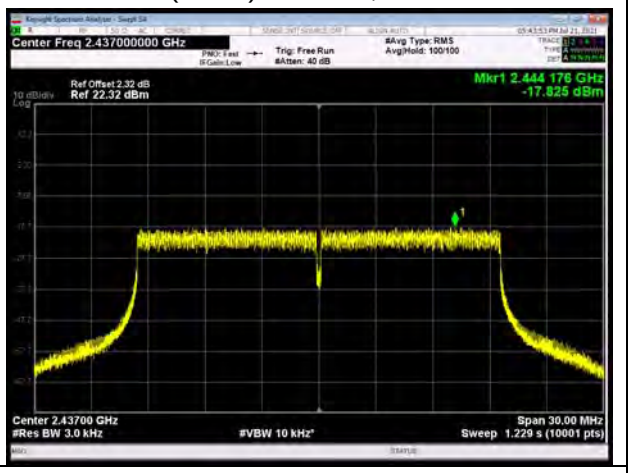
802.11ax(HE20)-52Tone, Channel No. 1



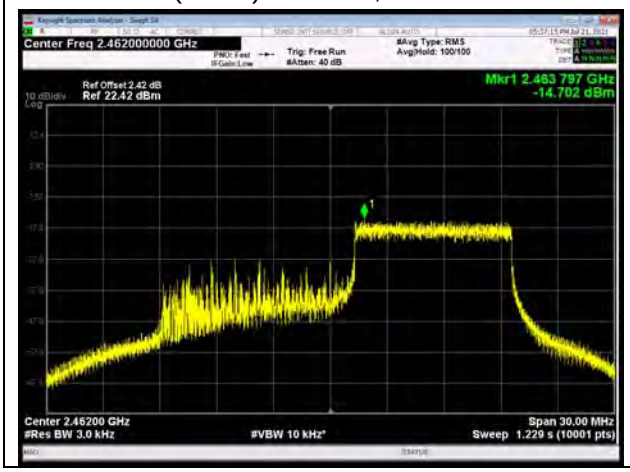
802.11ax(HE20) -26Tone, Channel No. 6



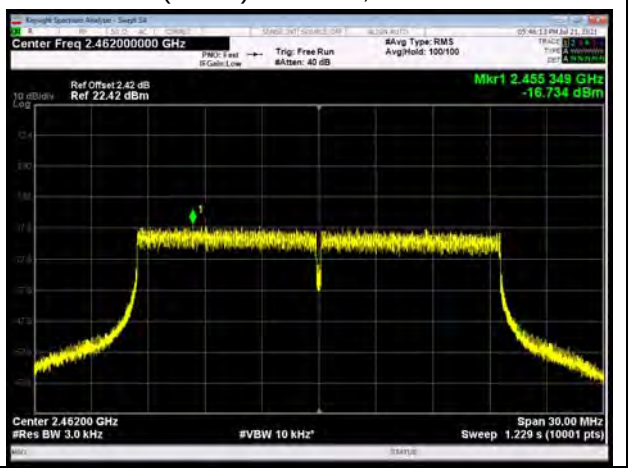
802.11ax(HE20) -52Tone, Channel No. 6



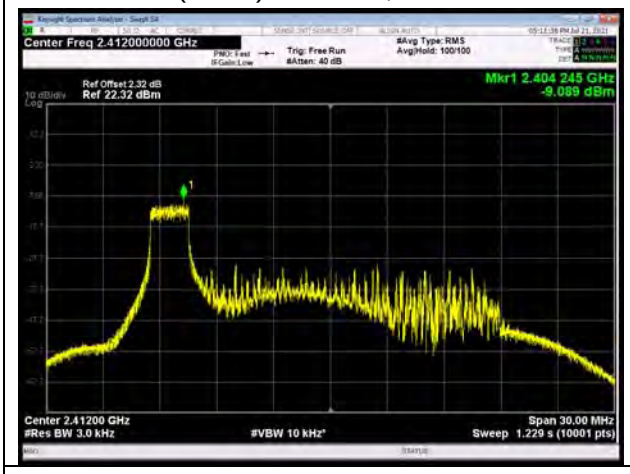
802.11ax(HE20) -26Tone, Channel No. 11



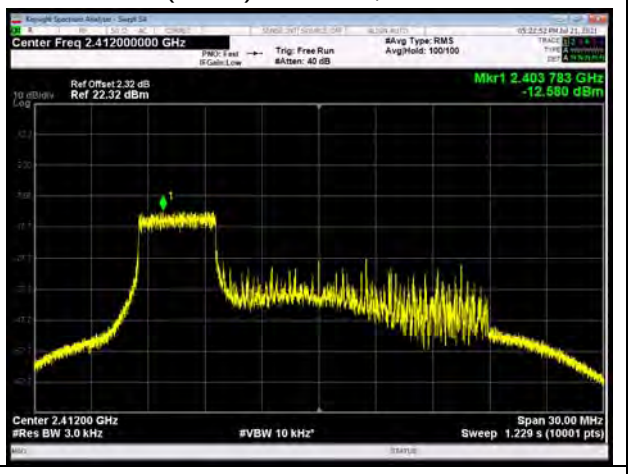
802.11ax(HE20) -52Tone, Channel No. 11



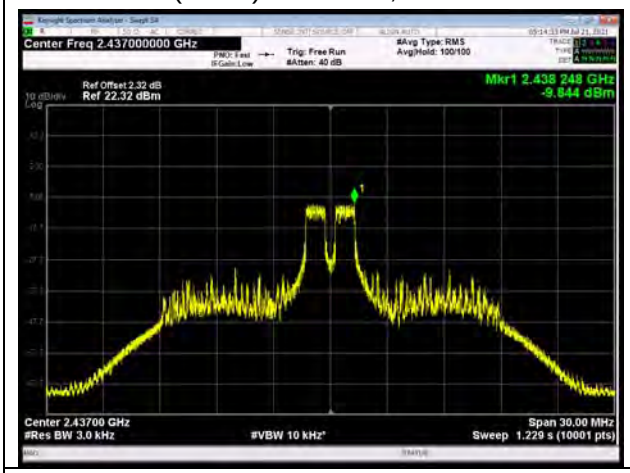
802.11ax(HE20)-106Tone, Channel No. 1



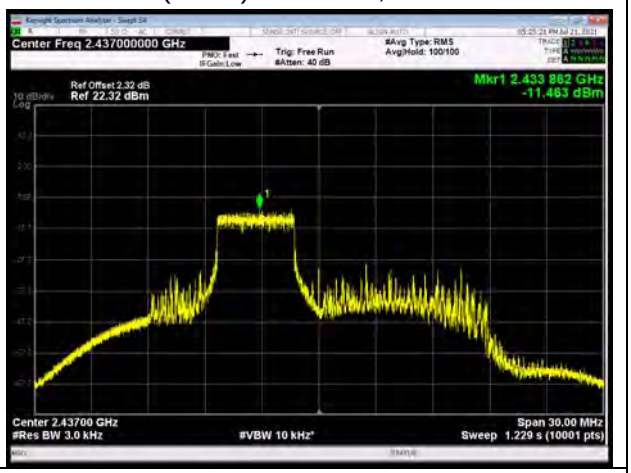
802.11ax(HE20)-242Tone, Channel No. 1



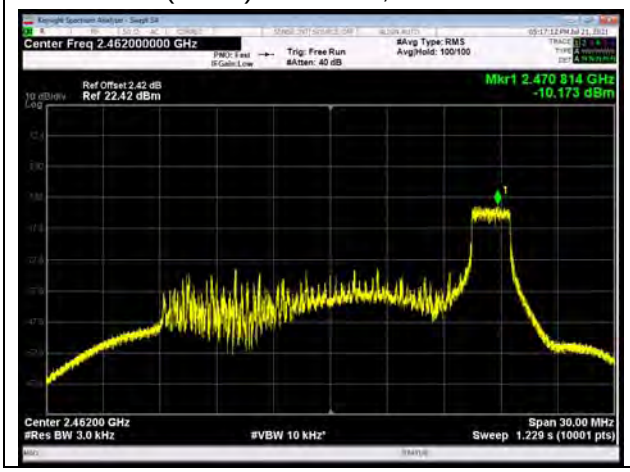
802.11ax(HE20) -106Tone, Channel No. 6



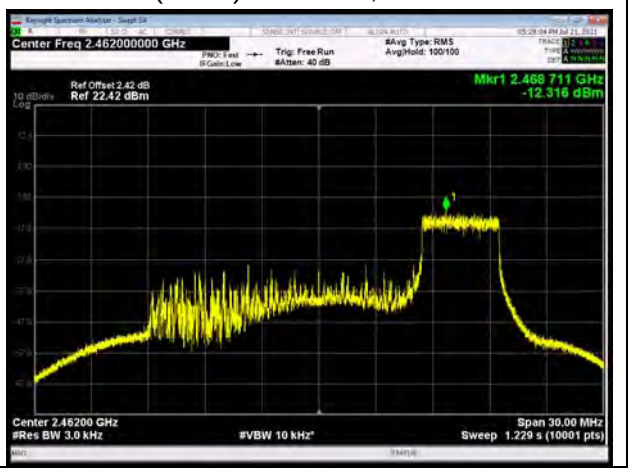
802.11ax(HE20) -242Tone, Channel No. 6



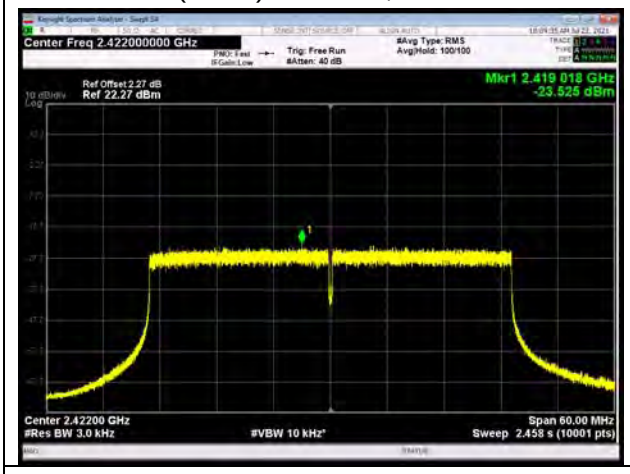
802.11ax(HE20) -106Tone, Channel No. 11



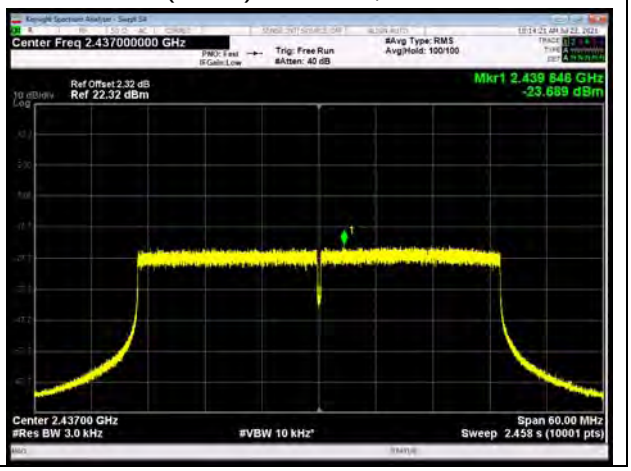
802.11ax(HE20) -242Tone, Channel No. 11



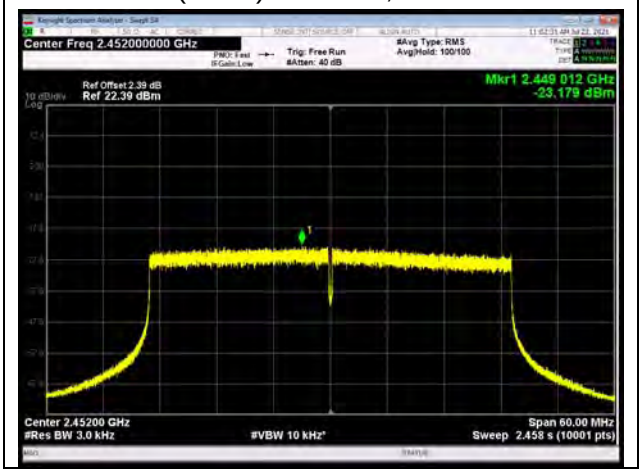
802.11ax(HE40)-484Tone, Channel No. 3



802.11ax(HE40)-484Tone, Channel No. 6

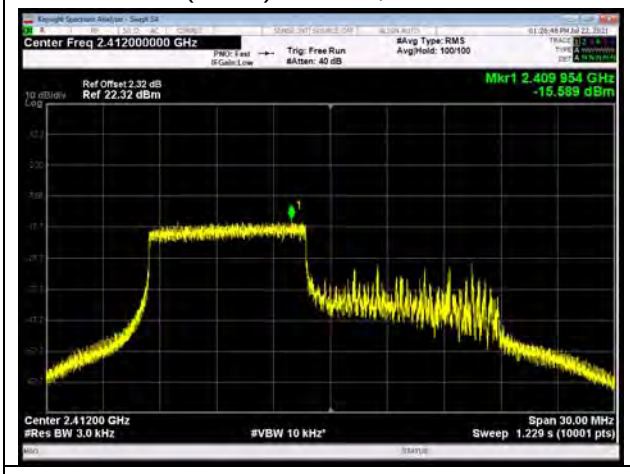


802.11ax(HE40)-484Tone, Channel No. 9

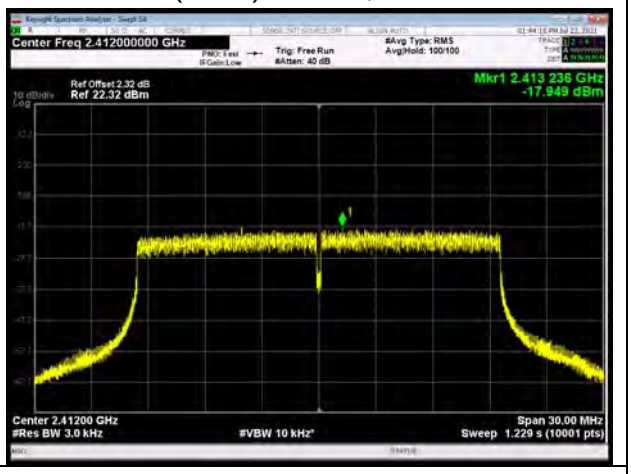


SISO Antenna 2

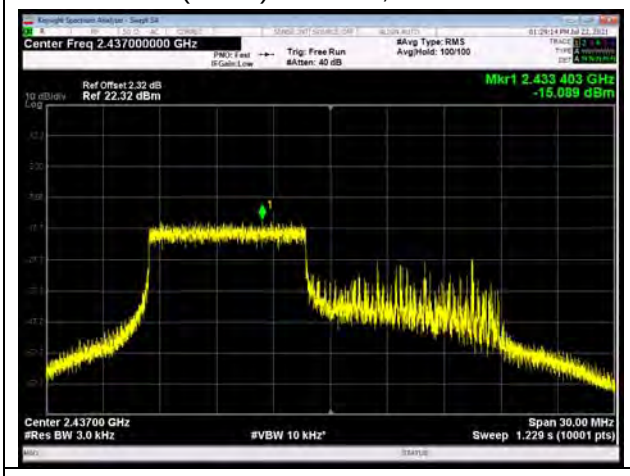
802.11ax(HE20)-26Tone, Channel No. 1



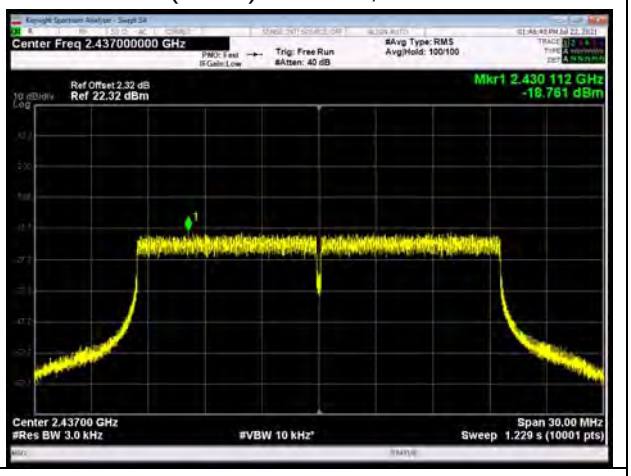
802.11ax(HE20)-52Tone, Channel No. 1



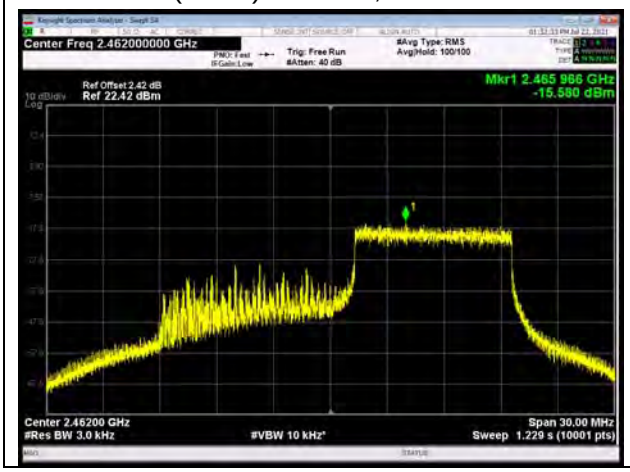
802.11ax(HE20) -26Tone, Channel No. 6



802.11ax(HE20) -52Tone, Channel No. 6



802.11ax(HE20) -26Tone, Channel No. 11



802.11ax(HE20) -52Tone, Channel No. 11