RF TEST REPORT

Applicant	Nokia ShangHai Bell Co., Ltd.
FCC ID	2ADZRG2426GB
Product	Nokia ONT
Brand	NOKIA
Model	G-2426G-B
Report No.	R2103A0256-R1
Issue Date	June 24, 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.

Prepared by: Peng Tao

Approved by: Kai Xu

TA Technology (Shanghai) Co., Ltd.

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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: April 12, 2021 ~ May 15, 2021 Date of Sample Received: March 17, 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
Contact:	Xu Kai
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	Nokia ShangHai Bell Co., Ltd.
Applicant address	No.388 Ningqiao Road, Pudong Jinqiao, Shanghai, 201206 CHINA
Manufacturer	Nokia ShangHai Bell Co., Ltd.
Manufacturer address	No.388 Ningqiao Road, Pudong Jinqiao, Shanghai, 201206 CHINA

2.2. General information

EUT Description		
Model	G-2426G-B	
SN	ALCLB3FC2AEA	
Hardware Version	PEM2	
Software Version	Null	
Power Supply	Battery / AC adapter	
Antenna Type	PCB Antenna	
Antenna Connector	A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)	
Antenna Gain	INPAQ	Antenna 1: 2.92 dBi Antenna 2: 2.86 dBi Antenna 3: 2.85 dBi Antenna 4: 2.94 dBi
	Galtronics	Antenna 1: 2.61dBi Antenna 2: 1.98dBi Antenna 3: 1.87dBi Antenna 4: 2.39dBi
Directional Gain	INPAQ	Without Beamforming Mode: 2.94dBi Beamforming Mode: 5.96dBi
	Galtronics	Without Beamforming Mode: 2.61dBi Beamforming Mode: 5.96dBi
Test Mode	802.11b, 802.11g, 802.11n(HT20/HT40) , 802.11ax(HE20/ HE40)	
Modulation Type	802.11b: DSSS 802.11g/n(HT20/HT40): OFDM 802.11ax(HE20/ HE40): OFDMA	
Max. Conducted Power	Wi-Fi 2.4G: 29.29dBm	

Operating Frequency Range(s)	802.11b/g/n(HT20)/ax(HE20): 2412 ~ 2462 MHz 802.11n(HT40) /ax(HE40): 2422 ~ 2452 MHz
EUT Accessory	
Adapter 1	Manufacturer: SHENZHEN HONOR ELECTRONIC CO.,LTD Model: ADS-40FKJ-12N 12036EPCU/9040108111201202R
Adapter 2	Manufacturer: SHENZHEN HONOR ELECTRONIC CO.,LTD Model: ADS-40FKJ-12N 12036EPCU/9040108111201201R
Adapter 3	Manufacturer: FUHUA ELECTRONIC CO., LTD Model: UES36WU-120300SPA/UE191205GWZF2RI
Adapter 4	Manufacturer: FUHUA ELECTRONIC CO., LTD Model: UES36WU-120300SPA/UE201222GWZF2RI
UPS 1	Manufacturer: CYBER POWER SYSTEMS INC Model: DTC36U12V3-G
UPS 2	Manufacturer: PowerTec Solutions International Model: PS36L-P7
PCB Antenna 1	Manufacturer: INPAQ
PCB Antenna 2	Manufacturer: Galtronics
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 Adapter/UPS, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 3/UPS 1) will be recorded in this report.	

Information of Configuration:

No.	Name	Model/Code No.	Edition	Serial No. or Quantity
1	EMA-G-2426G-B NAR	3FE49509AAXX	PEM2	1pc
2	EMA-G-2426G-B	3FE49509ABXX	PEM2	1pc
3	Power adapter	FUHUA: UES36WU-120300SPA/UE201222GWZF2RI	A/0	1pc
4	Power adapter	FUHUA: UES36WU-120300SPA/UE191205GWZF2RI	A/0	1pc
5	Power adapter	HONOR: ADS-40FKJ-12N 12036EPCU/9040108111201201R	A/0	1pc
6	Power adapter	HONOR: ADS-40FKJ-12N 12036EPCU/9040108111201202R	A/0	1pc
7	Power adapter	CyberPower: DTC36U12V3-G	--	1pc
8	Power adapter	PSI: PS36L-P7	--	1pc
Note: X can be replaced by alphanumeric characters A-Z/0-9 or blank.				

Mnemonic	Kit Code	EMA Code	Part Description	Power Adapter	
G-2426G-B	3FE49441AAXX	3FE49509AAXX	G-2426G-B, GPON ONT, NAR, US Plug, 1xUSB, 2xPOTS, 4xGE, 4x4 2.4G Wi-Fi 6, 4x4 5G Wi-Fi 6.	UES36WU-120300SPA/UE201222GWZF2RI	ADS-40FKJ-12N 12036EPCU/9040108111201201R
				DTC36U12V3-G	PS36L-P7
G-2426G-B	3FE49441ABXX	3FE49509ABXX	G-2426G-B, GPON ONT, US Plug, 1xUSB, 2xPOTS, 4xGE, 4x4 2.4G Wi-Fi 6, 4x4 5G Wi-Fi 6.	UES36WU-120300SPA/UE191205GWZF2RI	ADS-40FKJ-12N 12036EPCU/9040108111201202R
Note: X can be replaced by alphanumeric characters A-Z/0-9 or blank.					

Auxiliary equipment details

No.	Name	Brand name	Model	NSB code	Valid Until
1	BIGTAO	Xinertel	N.A	-	No Cal. Required
2	Mini-OLT	Nokia	N.A	-	No Cal. Required
3	PC	Thinkpad	N.A	-	No Cal. Required

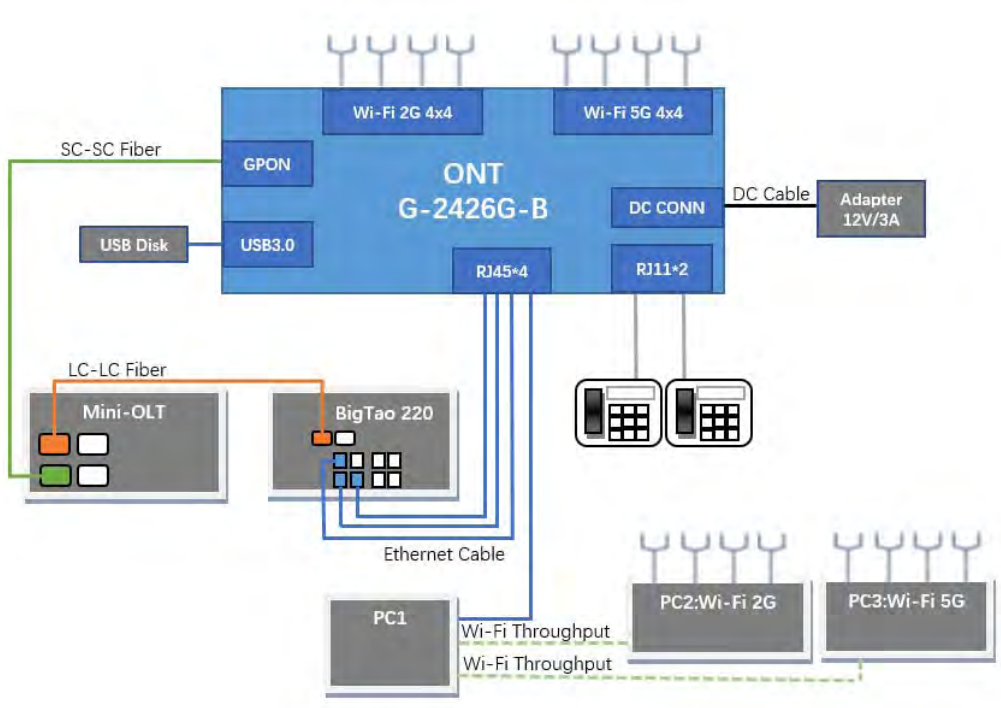
Information of Ports

No.	Port name	Number	Shielded or unshielded	Cable type (optic, twisted pair, etc.)	Max. Cable length

1	POWER	1	Unshielded	Power cord	1.2m
2	POTS	1	Unshielded	RJ11 twisted pair	1.5m
3	LAN	4	Unshielded	RJ45 twisted pair	100m
4	GPON	1	Unshielded	Optic fiber	10Km

Description: The G-2426G-B is a GPON ONT which has 1x GPON port, 4x GE ports, 2x POTS, 1x USB, supports 4x4 2.4G Wi-Fi 6 and 4x4 5G Wi-Fi 6.

The G-2426G-B basic functional test in normal room conditions consists of GPON-LAN traffic test, POTS connection test, Wi-Fi connection test, and USB read/write test. GPON linked with Mini-OLT, and traffic downstream should up to 1Gpbs. GE ports linked with BigTao in 1000Mpbs mode, and the traffic upstream each line should up to 300Mpbs. Traffic frame loss ratio less than 10^{-7}. Wi-Fi connection, POTS connection test should not be broken during and after test.



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	Antenna 3	Antenna 4	MIMO
802.11b	1 Mbps	1 Mbps	1 Mbps	1 Mbps	1 Mbps
802.11g	6 Mbps	6 Mbps	6 Mbps	6 Mbps	6 Mbps
802.11n HT20	MCS0	MCS0	MCS0	MCS0	MCS0_NSSS4
802.11n HT40	MCS0	MCS0	MCS0	MCS0	MCS0_NSSS4
802.11ax HE20	MCS0	MCS0	MCS0	MCS0	MCS0_NSSS4
802.11ax HE40	MCS0	MCS0	MCS0	MCS0	MCS0_NSSS4

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

Test Cases	Antenna 1	Antenna 2	Antenna 3	Antenna 4	MIMO
Maximum conducted output power	--	--	--	--	O
6dB Bandwidth	--	--	--	--	O
Band Edge	--	--	--	--	O
Power Spectral Density	--	--	--	--	O
Spurious RF Conducted Emissions	--	--	--	--	O
Unwanted Emissions	--	--	--	--	O
Conducted Emission	--	--	--	--	O
Note: “O”: test all bands					

According to RF Output power results in chapter 5.1, MIMO was selected as the worst antenna.

5. Test Case Results

5.1. Maximum output power

Ambient condition

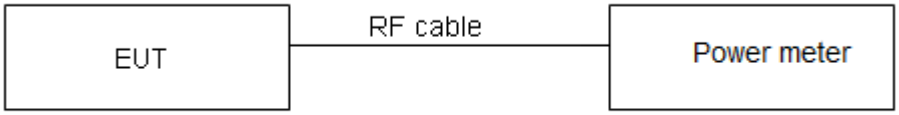
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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

INPAQ

Test Mode	T_{on} (ms)	$T_{(on+off)}$ (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11b	2.268	2.328	0.974	0.113
802.11g	2.076	2.136	0.972	0.124
802.11n HT20	2.082	2.142	0.972	0.123
802.11n HT40	2.004	2.058	0.974	0.115
802.11ax HE20	0.978	1.032	0.948	0.233
802.11ax HE40	1.848	1.902	0.972	0.125
Note: when Duty cycle⩾0.98, Duty cycle correction Factor not required.				

MIMO

Without Beamforming

Test Mode	Carrier frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		MIMO Antenna 3		MIMO Antenna 4		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)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11b	2412	23.22	23.33	20.76	20.87	21.21	21.32	21.65	21.76	27.95	30	PASS
	2437	23.56	23.67	23.16	23.27	23.06	23.17	22.82	22.93	29.29	30	PASS
	2462	22.96	23.07	22.56	22.67	22.13	22.24	23.26	23.37	28.88	30	PASS
802.11g	2412	18.10	18.22	17.25	17.37	15.95	16.07	16.86	16.98	23.25	30	PASS
	2437	21.93	22.05	20.80	20.92	20.57	20.69	20.32	20.44	27.09	30	PASS
	2462	19.65	19.77	18.32	18.44	17.34	17.46	18.96	19.08	24.79	30	PASS
802.11n HT20	2412	17.92	18.04	17.17	17.29	15.82	15.94	16.72	16.84	23.12	30	PASS
	2437	20.89	21.01	20.44	20.56	19.27	19.39	19.90	20.02	26.31	30	PASS
	2462	19.92	20.04	18.64	18.76	17.72	17.84	19.13	19.25	25.07	30	PASS
802.11n HT40	2422	17.19	17.31	16.62	16.74	15.08	15.20	16.04	16.16	22.44	30	PASS
	2437	20.38	20.50	19.51	19.63	18.78	18.90	19.12	19.24	25.63	30	PASS
	2452	18.02	18.14	16.73	16.85	15.71	15.83	16.74	16.86	23.01	30	PASS
802.11ax HE20	2412	16.83	17.06	16.24	16.47	15.12	15.35	15.40	15.63	22.20	30	PASS
	2437	20.97	21.20	19.75	19.98	19.50	19.73	19.72	19.95	26.28	30	PASS
	2462	18.66	18.89	18.31	18.54	17.32	17.55	18.91	19.14	24.59	30	PASS
802.11ax HE40	2422	16.12	16.25	15.49	15.62	14.74	14.87	14.96	15.09	21.51	30	PASS
	2437	21.25	21.38	20.26	20.39	19.83	19.96	19.78	19.91	26.47	30	PASS
	2452	16.25	16.38	15.36	15.49	14.86	14.99	15.57	15.70	21.68	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 =10log($10^{(\text{Power antenna1 in dBm/10})}$+$10^{(\text{Power antenna2 in dBm/10})}$+$10^{(\text{Power antenna3 in dBm/10})}$ +$10^{(\text{Power antenna4 in dBm/10})}$).

3. The manufacturer declared that the directional gain = 2.94dBi. So the power limt is 30dBm

With Beamforming

Test Mode	Carrier frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		MIMO Antenna 3		MIMO Antenna 4		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)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11b	2412	23.18	23.29	20.68	20.79	21.17	21.28	21.62	21.73	27.90	30	PASS
	2437	23.50	23.61	23.11	23.22	22.97	23.08	22.76	22.87	29.23	30	PASS
	2462	22.93	23.04	22.48	22.59	22.12	22.23	23.21	23.32	28.84	30	PASS
802.11g	2412	18.10	18.22	17.25	17.37	15.95	16.07	16.86	16.98	23.25	30	PASS
	2437	21.90	22.02	20.75	20.87	20.53	20.65	20.27	20.39	27.05	30	PASS
	2462	19.64	19.76	18.28	18.40	17.30	17.42	18.87	18.99	24.75	30	PASS
802.11n HT20	2412	17.86	17.98	17.12	17.24	15.78	15.90	16.69	16.81	23.07	30	PASS
	2437	20.83	20.95	20.39	20.51	19.21	19.33	19.86	19.98	26.26	30	PASS
	2462	19.85	19.97	18.57	18.69	17.68	17.80	18.97	19.09	24.98	30	PASS
802.11n HT40	2422	17.13	17.25	16.58	16.70	15.02	15.14	15.96	16.08	22.38	30	PASS
	2437	20.32	20.44	19.46	19.58	18.71	18.83	19.06	19.18	25.57	30	PASS
	2452	17.99	18.11	16.68	16.80	15.65	15.77	16.68	16.80	22.97	30	PASS
802.11ax HE20	2412	16.78	17.01	16.21	16.44	15.08	15.31	15.37	15.60	22.17	30	PASS
	2437	20.92	21.15	19.72	19.95	19.46	19.69	19.68	19.91	26.24	30	PASS
	2462	18.61	18.84	18.26	18.49	17.29	17.52	18.86	19.09	24.55	30	PASS
802.11ax HE40	2422	16.09	16.22	15.42	15.55	14.72	14.85	14.93	15.06	21.47	30	PASS
	2437	21.22	21.35	20.21	20.34	19.78	19.91	19.72	19.85	26.42	30	PASS
	2452	16.22	16.35	15.31	15.44	14.83	14.96	15.52	15.65	21.64	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 =10log($10^{(\text{Power antenna1 in dBm/10})}$+$10^{(\text{Power antenna2 in dBm/10})}$+$10^{(\text{Power antenna3 in dBm/10})}$ +$10^{(\text{Power antenna4 in dBm/10})}$).

3. The manufacturer declared that the directional gain = 5.96dBi. So the power limt is 30dBm

Galtronics

Test Mode	T_{on} (ms)	$T_{(on+off)}$ (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11b	2.268	2.328	0.974	0.113
802.11g	2.076	2.136	0.972	0.124
802.11n HT20	2.082	2.142	0.972	0.123
802.11n HT40	2.004	2.058	0.974	0.115
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Note: when Duty cycle≥0.98, Duty cycle correction Factor not required.				

MIMO

Without Beamforming

Test Mode	Carrier frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		MIMO Antenna 3		MIMO Antenna 4		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)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11b	2412	23.56	23.67	23.15	23.26	22.18	22.29	21.79	21.90	27.62	30	PASS
	2437	23.56	23.67	23.16	23.27	23.06	23.17	22.82	22.93	28.19	30	PASS
	2462	22.96	23.07	22.56	22.67	22.13	22.24	23.26	23.37	27.85	30	PASS
802.11g	2412	19.27	19.39	18.88	19.00	18.02	18.14	17.71	17.83	23.63	30	PASS
	2437	21.93	22.05	20.80	20.92	20.57	20.69	20.32	20.44	26.11	30	PASS
	2462	21.39	21.51	21.07	21.19	20.15	20.27	21.13	21.25	26.04	30	PASS
802.11n HT20	2412	18.87	18.99	18.76	18.88	17.53	17.65	17.75	17.87	23.36	30	PASS
	2437	20.89	21.01	20.44	20.56	19.27	19.39	19.90	20.02	25.23	30	PASS
	2462	20.14	20.26	19.95	20.07	19.12	19.24	20.13	20.25	24.99	30	PASS
802.11n HT40	2422	17.19	17.31	17.82	17.94	16.12	16.24	17.02	17.14	22.16	30	PASS
	2437	20.38	20.50	19.51	19.63	18.78	18.90	19.12	19.24	24.65	30	PASS
	2452	19.82	19.94	18.79	18.91	18.27	18.39	18.18	18.30	24.04	30	PASS
802.11ax HE20	2412	16.83	17.06	16.24	16.47	15.12	15.35	15.40	15.63	22.20	30	PASS
	2437	20.97	21.20	19.75	19.98	19.50	19.73	19.72	19.95	26.28	30	PASS
	2462	18.66	18.89	18.31	18.54	17.32	17.55	18.91	19.14	24.59	30	PASS
802.11ax HE40	2422	16.52	16.25	15.96	15.62	15.23	14.87	15.57	15.09	21.51	30	PASS
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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 =$10\log(10^{(\text{Power antenna1 in dBm/10})}+10^{(\text{Power antenna2 in dBm/10})}+10^{(\text{Power antenna3 in dBm/10})}+10^{(\text{Power antenna4 in dBm/10})})$.

3. The manufacturer declared that the directional gain = 2.61dBi. So the power limt is 30dBm

With Beamforming

Test Mode	Carrier frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		MIMO Antenna 3		MIMO Antenna 4		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)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11b	2412	23.52	23.63	23.08	23.19	22.13	22.24	21.75	21.86	28.81	30	PASS
	2437	23.50	23.61	23.11	23.22	22.97	23.08	22.76	22.87	29.23	30	PASS
	2462	22.93	23.04	22.48	22.59	22.12	22.23	23.21	23.32	28.84	30	PASS
802.11g	2412	19.21	19.33	18.84	18.96	17.96	18.08	17.68	17.80	24.61	30	PASS
	2437	21.90	22.02	20.75	20.87	20.53	20.65	20.27	20.39	27.05	30	PASS
	2462	21.35	21.47	21.02	21.14	20.10	20.22	21.08	21.20	27.06	30	PASS
802.11n HT20	2412	18.82	18.94	18.74	18.86	17.48	17.60	17.73	17.85	24.38	30	PASS
	2437	20.83	20.95	20.39	20.51	19.21	19.33	19.86	19.98	26.26	30	PASS
	2462	20.08	20.20	19.87	19.99	19.08	19.20	20.08	20.20	25.94	30	PASS
802.11n HT40	2422	17.18	17.30	17.63	17.75	16.10	16.22	16.98	17.10	23.14	30	PASS
	2437	20.32	20.44	19.46	19.58	18.71	18.83	19.06	19.18	25.57	30	PASS
	2452	19.78	19.90	18.72	18.84	18.23	18.35	18.11	18.23	24.90	30	PASS
802.11ax HE20	2412	16.78	17.01	16.21	16.44	15.08	15.31	15.37	15.60	22.17	30	PASS
	2437	20.92	21.15	19.72	19.95	19.46	19.69	19.68	19.91	26.24	30	PASS
	2462	18.61	18.84	18.26	18.49	17.29	17.52	18.86	19.09	24.55	30	PASS
802.11ax HE40	2422	16.49	16.25	15.91	15.62	15.22	14.87	15.57	15.09	21.51	30	PASS
	2437	21.22	21.35	20.21	20.34	19.78	19.91	19.72	19.85	26.42	30	PASS
	2452	15.68	16.38	14.82	15.49	14.25	14.99	14.51	15.70	21.68	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 $=10\log(10^{(\text{Power antenna1 in dBm/10})}+10^{(\text{Power antenna2 in dBm/10})}+10^{(\text{Power antenna3 in dBm/10})}+10^{(\text{Power antenna4 in dBm/10})})$.

3. The manufacturer declared that the directional gain = 5.96dBi. So the power limt is 30dBm

5.2. 99% Bandwidth and 6dB Bandwidth

Ambient condition

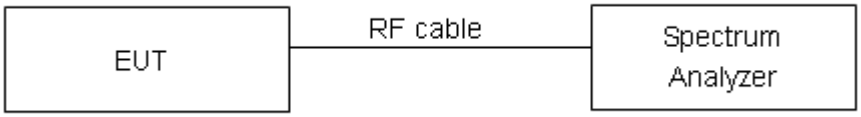
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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.

Test Results:

INPAQ:

Test Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11b	2412	14.889	8.058	500	PASS
	2437	15.266	9.528	500	PASS
	2462	15.989	9.984	500	PASS
802.11g	2412	16.416	15.040	500	PASS
	2437	16.586	16.270	500	PASS
	2462	16.631	16.280	500	PASS
802.11n HT20	2412	17.558	15.020	500	PASS
	2437	17.646	13.870	500	PASS
	2462	17.677	17.010	500	PASS
802.11n HT40	2422	36.011	33.860	500	PASS
	2437	36.043	34.980	500	PASS
	2452	36.025	31.580	500	PASS
802.11ax HE20	2412	18.844	17.730	500	PASS
	2437	18.955	15.700	500	PASS
	2462	18.970	17.300	500	PASS
802.11ax HE40	2422	34.586	37.470	500	PASS
	2437	37.705	37.270	500	PASS
	2452	37.606	36.710	500	PASS

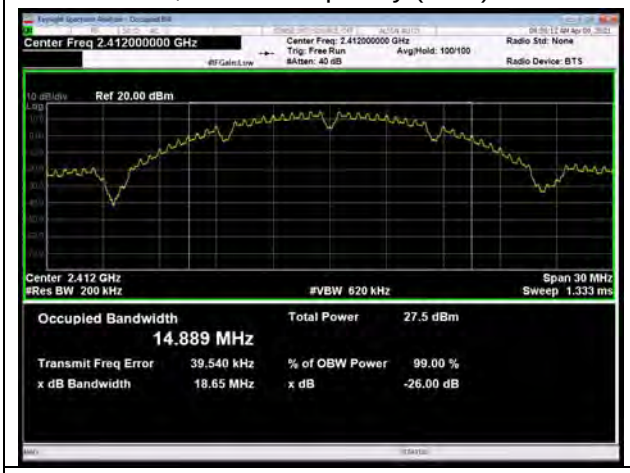
Galtronics:

Test Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11b	2412	14.889	8.058	500	PASS
	2437	15.266	9.528	500	PASS
	2462	15.989	9.984	500	PASS
802.11g	2412	16.416	15.040	500	PASS
	2437	16.586	16.270	500	PASS
	2462	16.631	16.280	500	PASS
802.11n HT20	2412	17.558	15.020	500	PASS
	2437	17.646	13.870	500	PASS
	2462	17.677	17.010	500	PASS
802.11n HT40	2422	36.011	33.860	500	PASS
	2437	36.043	34.980	500	PASS
	2452	36.025	31.580	500	PASS
802.11ax HE20	2412	18.844	17.730	500	PASS
	2437	18.955	15.700	500	PASS
	2462	18.970	17.300	500	PASS
802.11ax HE40	2422	34.586	37.470	500	PASS
	2437	37.705	37.270	500	PASS
	2452	37.606	36.710	500	PASS

99%bandwidth

INPAQ

802.11b, Carrier frequency (MHz): 2412

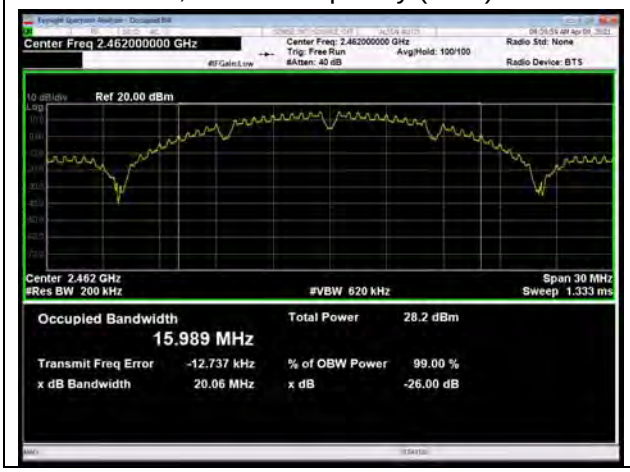


802.11g, Carrier frequency (MHz): 2412

802.11b, Carrier frequency (MHz): 2437

802.11g, Carrier frequency (MHz): 2437

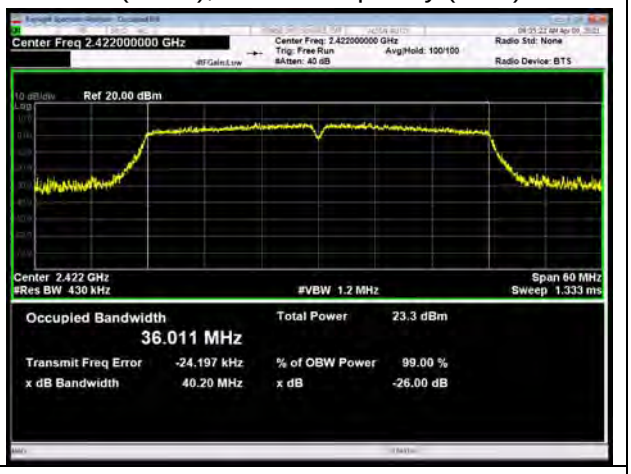
802.11b, Carrier frequency (MHz):2462



802.11g, Carrier frequency (MHz):2462

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

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

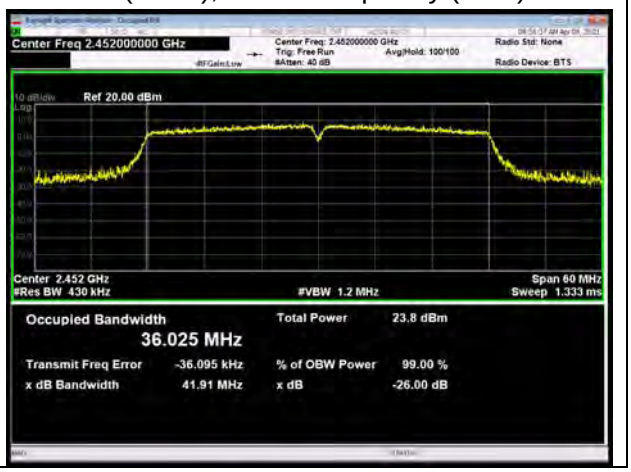


802.11n(HT20), Carrier frequency (MHz): 2437

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

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

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



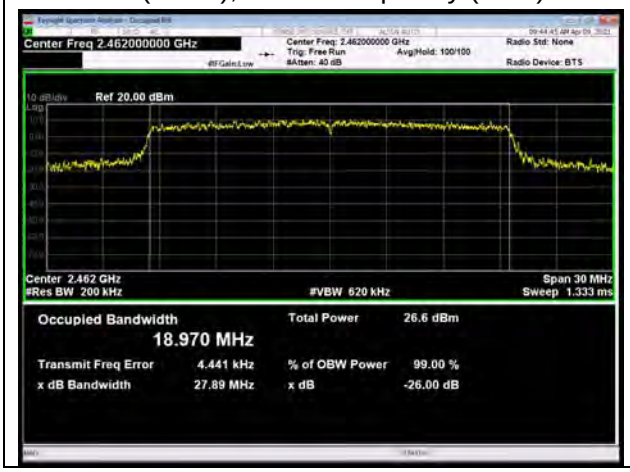
802.11ax(HE20), Carrier frequency (MHz): 2412

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

Galtronics

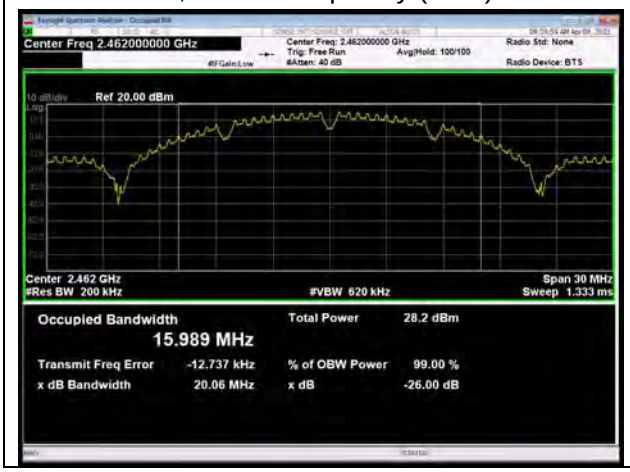
802.11b, Carrier frequency (MHz): 2412

802.11g, Carrier frequency (MHz): 2412

802.11b, Carrier frequency (MHz): 2437

802.11g, Carrier frequency (MHz): 2437

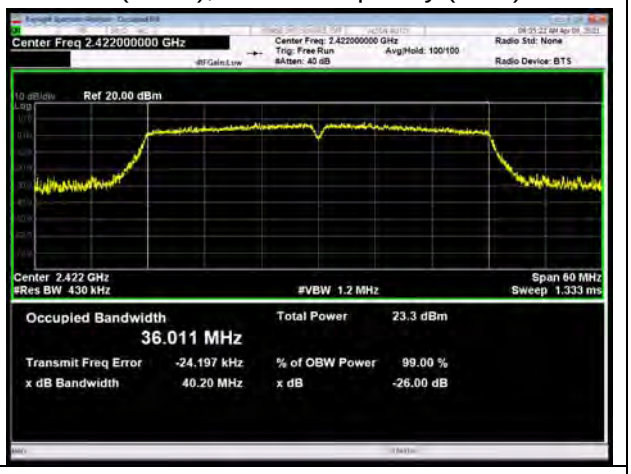
802.11b, Carrier frequency (MHz):2462



802.11g, Carrier frequency (MHz):2462

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

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

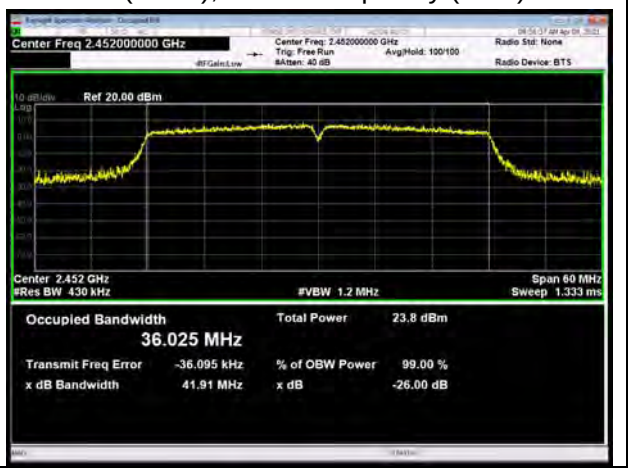


802.11n(HT20), Carrier frequency (MHz): 2437

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

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

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



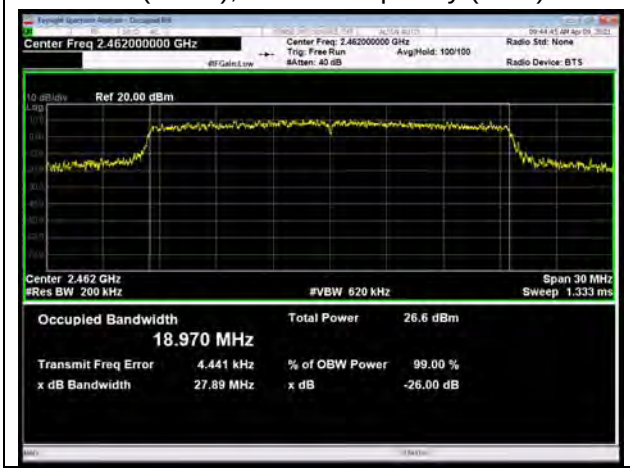
802.11ax(HE20), Carrier frequency (MHz): 2412

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

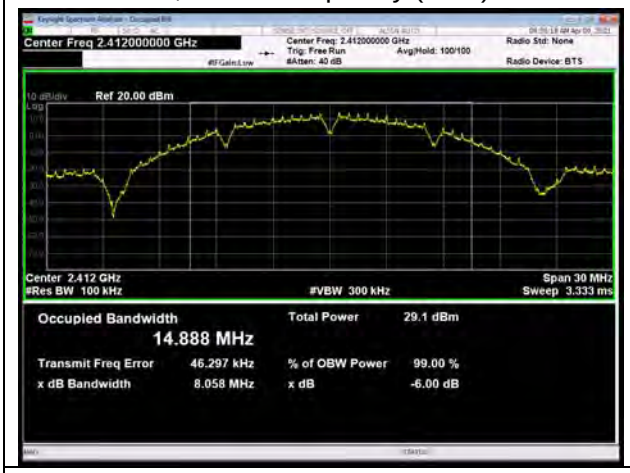


802.11ax(HE40), Carrier frequency (MHz):2452

6 dB bandwidth

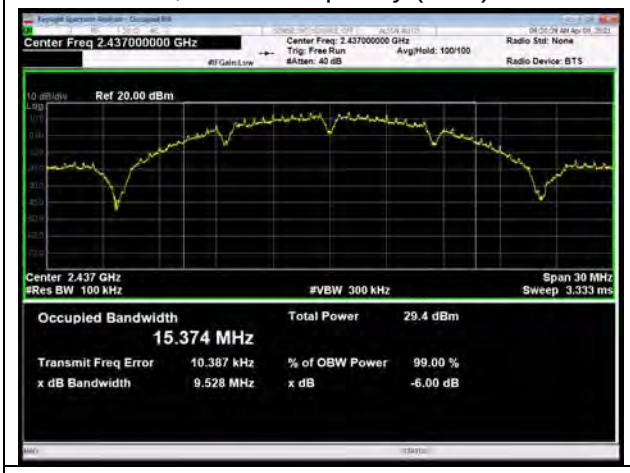
INPAQ

802.11b, Carrier frequency (MHz): 2412



802.11g, Carrier frequency (MHz): 2412

802.11b, Carrier frequency (MHz): 2437



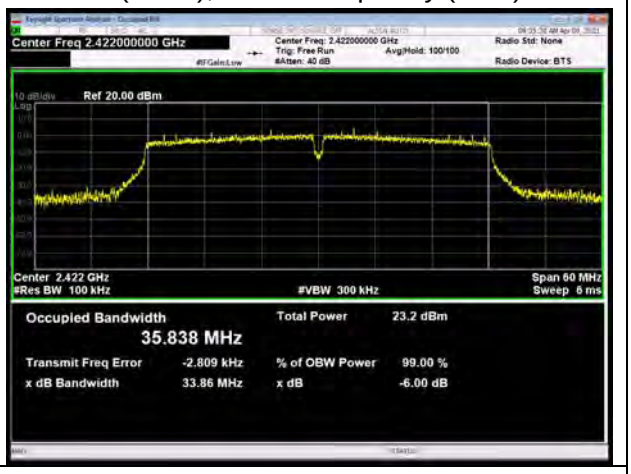
802.11g, Carrier frequency (MHz): 2437

802.11b, Carrier frequency (MHz):2462

802.11g, Carrier frequency (MHz):2462

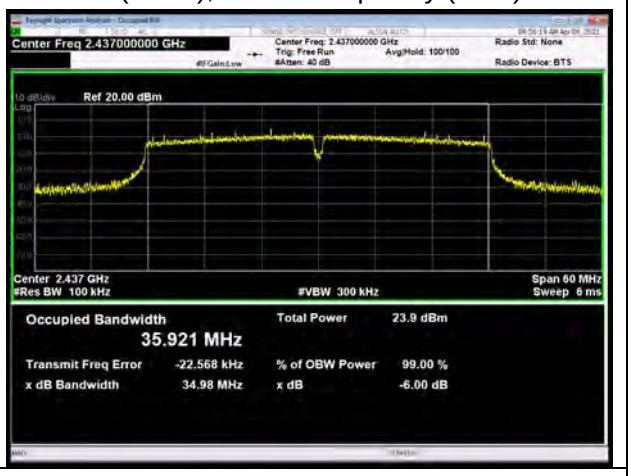
802.11n(HT20), Carrier frequency (MHz): 2412

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



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

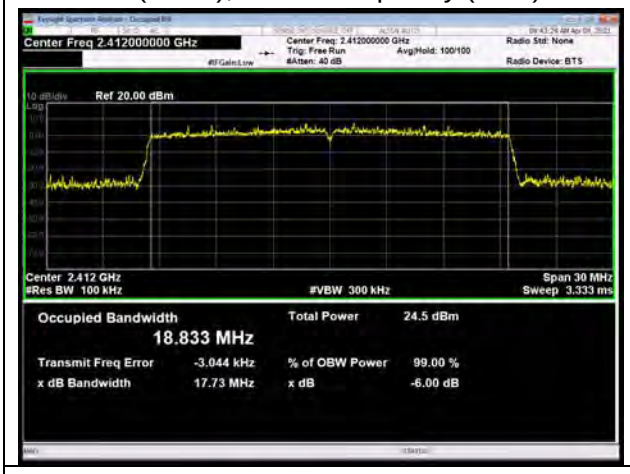
802.11n(HT40), Carrier frequency (MHz): 2437



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

Galtronics

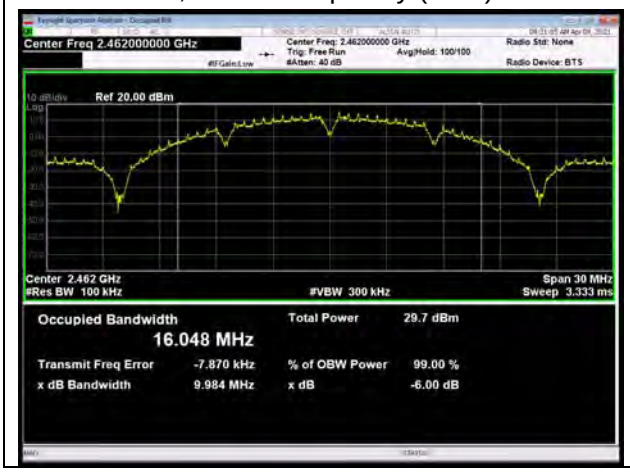
802.11b, Carrier frequency (MHz): 2412

802.11g, Carrier frequency (MHz): 2412

802.11b, Carrier frequency (MHz): 2437

802.11g, Carrier frequency (MHz): 2437

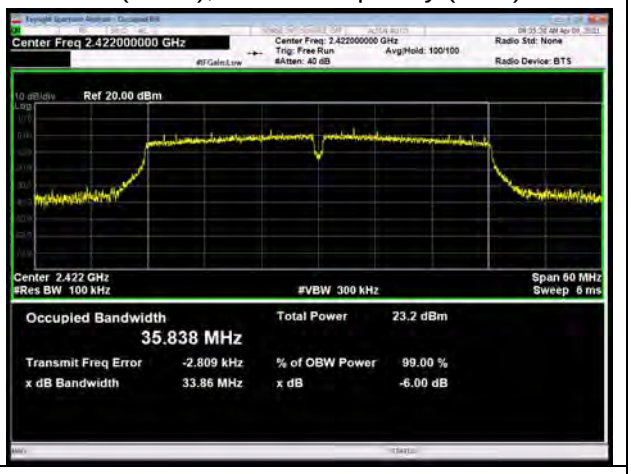
802.11b, Carrier frequency (MHz):2462



802.11g, Carrier frequency (MHz):2462

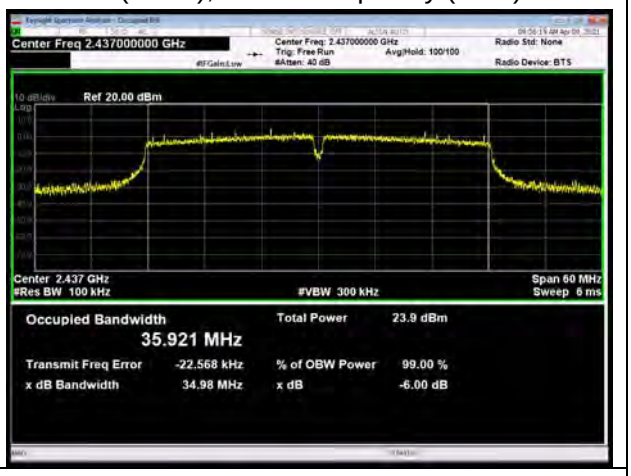
802.11n(HT20), Carrier frequency (MHz): 2412

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



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

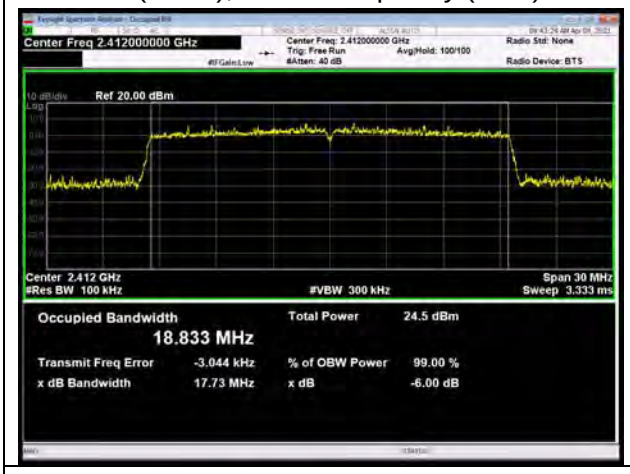
802.11n(HT40), Carrier frequency (MHz): 2437



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

5.3. Band Edge

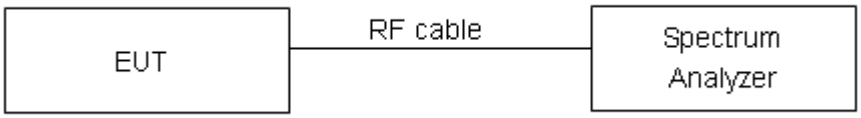
Ambient condition

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

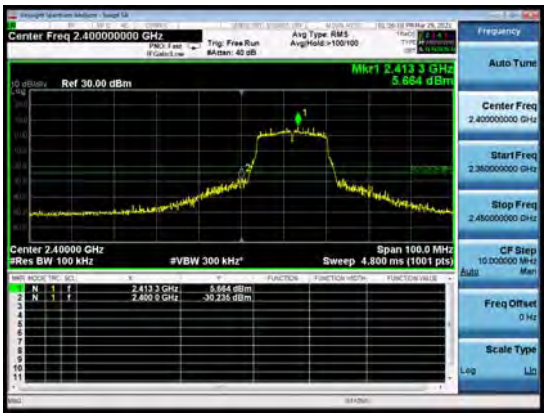
Test Results: PASS

INPAQ

802.11b, Channel No.: 1

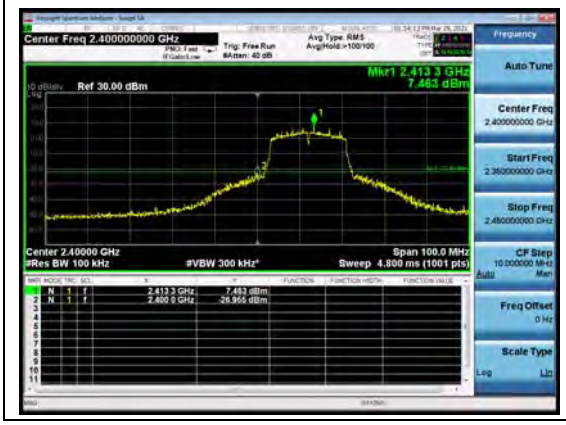
802.11b, Channel No.: 11

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

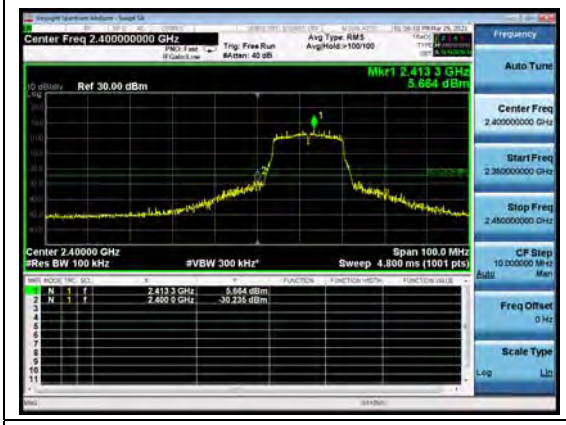
802.11ax(HE40), Channel No.: 9

Galtronics

802.11b, Channel No.: 1

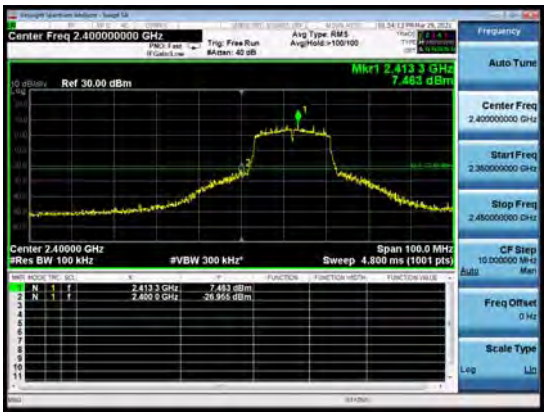
802.11b, Channel No.: 11

802.11g, Channel No.: 1



802.11g, Channel No.: 11

802.11n(HT20), Channel No.: 1

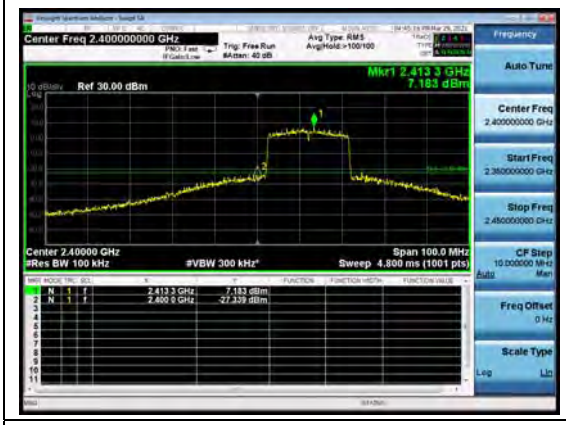


802.11n(HT20), Channel No.: 11

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

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-2 was used for this test.

a) Measure the duty cycle(D)of the transmitter output signal as described in 11.6

b) Set instrument center frequency to DTS channel center frequency

c)Set span to at least 1.5 times the OBW

d) Set RBW to:3kHz≤RBW≤100Kh

e) Set VBW≥[3x RBW]

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

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

h) Sweep time =auto couple

i) Do not use sweep triggering; allow sweep to "free run"

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

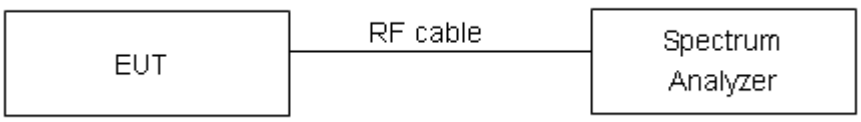
k) Use the peak marker function to determine the maximum amplitude level

l) Add [10 log(1/ D)], where D is the duty cycle measured in step a), to the measured PSD to compute the average PSD during the actual transmission time

m) If measured value exceeds requirement specified by regulatory agency then reduce RBW(but o 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:

INPAQ

MIMO Without Beamforming

Test Mode	Channel Number	Power Spectral Density								Total PSD	Limit (dBm / 3kHz)	Conclusion
		Antenna 1		Antenna 2		Antenna 3		Antenna 4				
		Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	(dBm / 3kHz)		
802.11b	1	-6.81	-6.69	-6.89	-6.77	-8.03	-7.92	-7.17	-7.05	-1.06	8.00	PASS
	6	-6.27	-6.16	-6.15	-6.03	-6.39	-6.27	-7.17	-7.06	-0.34	8.00	PASS
	11	-6.64	-6.53	-6.14	-6.02	-6.81	-6.70	-7.85	-7.73	-0.68	8.00	PASS
802.11g	1	-13.83	-13.71	-15.24	-15.12	-15.85	-15.72	-15.50	-15.37	-8.89	8.00	PASS
	6	-10.97	-10.85	-11.54	-11.42	-12.54	-12.42	-11.68	-11.56	-5.50	8.00	PASS
	11	-12.72	-12.60	-13.50	-13.38	-14.13	-14.01	-13.68	-13.56	-7.33	8.00	PASS
802.11n HT20	1	-14.11	-13.98	-15.61	-15.49	-15.87	-15.75	-15.57	-15.45	-9.09	8.00	PASS
	6	-11.54	-11.41	-12.46	-12.33	-13.32	-13.19	-12.17	-12.05	-6.18	8.00	PASS
	11	-12.60	-12.48	-13.29	-13.17	-14.07	-13.95	-13.38	-13.25	-7.16	8.00	PASS
802.11n HT40	3	-18.65	-18.53	-19.34	-19.23	-20.14	-20.02	-19.49	-19.38	-13.24	8.00	PASS
	6	-15.42	-15.30	-16.45	-16.34	-17.24	-17.12	-16.46	-16.35	-10.21	8.00	PASS
	9	-17.75	-17.64	-18.55	-18.43	-18.91	-18.80	-19.10	-18.99	-12.41	8.00	PASS
802.11ax HE20	1	-15.76	-15.53	-17.80	-17.56	-18.12	-17.89	-17.16	-16.92	-10.86	8.00	PASS
	6	-12.58	-12.35	-12.75	-12.52	-13.52	-13.29	-12.22	-11.99	-6.49	8.00	PASS
	11	-15.39	-15.16	-15.46	-15.22	-15.38	-15.15	-15.01	-14.77	-9.05	8.00	PASS
802.11ax HE40	3	-20.70	-20.57	-20.70	-20.58	-22.06	-21.94	-21.70	-21.58	-15.10	8.00	PASS
	6	-16.14	-16.01	-16.78	-16.65	-17.81	-17.68	-16.83	-16.70	-10.70	8.00	PASS
	9	-21.02	-20.89	-21.11	-20.98	-21.45	-21.32	-21.83	-21.70	-15.19	8.00	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=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})}+10^{(\text{PSD antenna4 in dBm/10})})$

3. The manufacturer declared that the directional gain=2.94dBi. So the power limt is 8+6-MAX(6, 2.94)dBm=8 dBm

MIMO With Beamforming

Test Mode	Channel Number	Power Spectral Density								Total PSD	Limit (dBm / 3kHz)	Conclusion
		Antenna 1		Antenna 2		Antenna 3		Antenna 4				
		Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	(dBm / 3kHz)		
802.11b	1	-7.35	-7.24	-6.72	-6.61	-7.90	-7.79	-7.30	-7.19	-1.16	8.00	PASS
	6	-6.47	-6.35	-6.42	-6.30	-6.68	-6.57	-6.57	-6.46	-0.40	8.00	PASS
	11	-6.50	-6.39	-6.57	-6.45	-7.08	-6.97	-6.95	-6.83	-0.63	8.00	PASS
802.11g	1	-13.85	-13.73	-14.89	-14.77	-15.76	-15.63	-15.37	-15.24	-8.76	8.00	PASS
	6	-10.95	-10.82	-11.56	-11.43	-12.29	-12.17	-11.44	-11.32	-5.39	8.00	PASS
	11	-12.96	-12.83	-13.13	-13.01	-14.21	-14.09	-13.62	-13.50	-7.31	8.00	PASS
802.11n HT20	1	-13.91	-13.79	-15.41	-15.29	-15.69	-15.56	-15.70	-15.58	-8.97	8.00	PASS
	6	-11.69	-11.57	-12.29	-12.16	-13.04	-12.92	-12.25	-12.13	-6.15	8.00	PASS
	11	-12.46	-12.33	-13.05	-12.92	-14.12	-14.00	-13.34	-13.22	-7.06	8.00	PASS
802.11n HT40	3	-18.66	-18.54	-18.81	-18.70	-19.88	-19.76	-19.29	-19.17	-13.00	8.00	PASS
	6	-15.75	-15.63	-16.31	-16.19	-17.30	-17.18	-16.47	-16.35	-10.28	8.00	PASS
	9	-17.82	-17.70	-18.29	-18.18	-19.28	-19.16	-18.89	-18.78	-12.40	8.00	PASS
802.11ax HE20	1	-15.16	-14.93	-18.01	-17.77	-17.70	-17.47	-17.21	-16.97	-10.61	8.00	PASS
	6	-12.79	-12.56	-13.38	-13.15	-13.80	-13.56	-12.84	-12.61	-6.93	8.00	PASS
	11	-15.18	-14.95	-16.03	-15.80	-16.95	-16.71	-15.91	-15.68	-9.72	8.00	PASS
802.11ax HE40	3	-20.83	-20.71	-21.14	-21.01	-22.15	-22.03	-21.02	-20.90	-15.11	8.00	PASS
	6	-16.73	-16.61	-17.27	-17.15	-17.91	-17.79	-17.39	-17.27	-11.16	8.00	PASS
	9	-20.70	-20.57	-21.30	-21.17	-22.72	-22.60	-22.82	-22.70	-15.64	8.00	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=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})}+10^{(\text{PSD antenna4 in dBm/10})})$

3. The manufacturer declared that the directional gain=5.96dBi. So the power limt is 8+6-MAX(6, 5.96)dBm=8 dBm

Galtronics

MIMO Without Beamforming

Test Mode	Channel Number	Power Spectral Density								Total PSD	Limit (dBm / 3kHz)	Conclusion
		Antenna 1		Antenna 2		Antenna 3		Antenna 4				
		Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	(dBm / 3kHz)		
802.11b	1	-5.66	-5.55	-5.71	-5.59	-6.26	-6.14	-5.68	-5.56	0.32	8.00	PASS
	6	-6.27	-6.16	-6.15	-6.03	-6.39	-6.27	-7.17	-7.06	-0.34	8.00	PASS
	11	-6.64	-6.53	-6.14	-6.02	-6.81	-6.70	-7.85	-7.73	-0.68	8.00	PASS
802.11g	1	-12.71	-12.58	-13.47	-13.35	-14.28	-14.16	-13.38	-13.26	-7.28	8.00	PASS
	6	-10.97	-10.85	-11.54	-11.42	-12.54	-12.42	-11.68	-11.56	-5.50	8.00	PASS
	11	-10.52	-10.39	-10.98	-10.86	-11.73	-11.61	-11.41	-11.29	-4.99	8.00	PASS
802.11n HT20	1	-12.99	-12.87	-14.06	-13.94	-14.83	-14.71	-13.89	-13.76	-7.75	8.00	PASS
	6	-11.54	-11.41	-12.46	-12.33	-13.32	-13.19	-12.17	-12.05	-6.18	8.00	PASS
	11	-11.75	-11.63	-12.45	-12.33	-12.93	-12.80	-12.57	-12.45	-6.26	8.00	PASS
802.11n HT40	3	-18.65	-18.53	-19.34	-19.23	-20.14	-20.02	-19.49	-19.38	-13.24	8.00	PASS
	6	-15.42	-15.30	-16.45	-16.34	-17.24	-17.12	-16.46	-16.35	-10.21	8.00	PASS
	9	-15.84	-15.72	-15.94	-15.83	-16.94	-16.82	-17.22	-17.11	-10.31	8.00	PASS
802.11ax HE20	1	-15.76	-15.53	-17.80	-17.56	-18.12	-17.89	-17.16	-16.92	-10.86	8.00	PASS
	6	-12.58	-12.35	-12.75	-12.52	-13.52	-13.29	-12.22	-11.99	-6.49	8.00	PASS
	11	-15.39	-15.16	-15.46	-15.22	-15.38	-15.15	-15.01	-14.77	-9.05	8.00	PASS
802.11ax HE40	3	-19.85	-19.72	-21.66	-21.54	-22.54	-22.41	-21.52	-21.40	-15.13	8.00	PASS
	6	-16.81	-16.69	-17.02	-16.89	-18.02	-17.89	-17.01	-16.88	-11.04	8.00	PASS
	9	-21.38	-21.26	-22.28	-22.15	-22.84	-22.72	-22.61	-22.48	-16.09	8.00	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=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})}+10^{(\text{PSD antenna4 in dBm/10})})$

3. The manufacturer declared that the directional gain=2.61dBi. So the power limt is 8+6-MAX(6, 2.94)dBm=8 dBm

MIMO With Beamforming

Test Mode	Channel Number	Power Spectral Density								Total PSD	Limit (dBm / 3kHz)	Conclusion
		Antenna 1		Antenna 2		Antenna 3		Antenna 4				
		Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	(dBm / 3kHz)		
802.11b	1	-7.01	-6.90	-6.30	-6.18	-7.33	-7.22	-6.49	-6.38	-0.63	8.00	PASS
	6	-6.47	-6.35	-6.42	-6.30	-6.68	-6.57	-6.57	-6.46	-0.40	8.00	PASS
	11	-6.50	-6.39	-6.57	-6.45	-7.08	-6.97	-6.95	-6.83	-0.63	8.00	PASS
802.11g	1	-12.97	-12.85	-13.45	-13.33	-14.56	-14.44	-13.54	-13.42	-7.45	8.00	PASS
	6	-10.95	-10.82	-11.56	-11.43	-12.29	-12.17	-11.44	-11.32	-5.39	8.00	PASS
	11	-10.30	-10.18	-11.01	-10.89	-11.88	-11.75	-11.43	-11.30	-4.97	8.00	PASS
802.11n HT20	1	-13.05	-12.92	-13.82	-13.70	-14.54	-14.41	-13.58	-13.46	-7.57	8.00	PASS
	6	-11.69	-11.57	-12.29	-12.16	-13.04	-12.92	-12.25	-12.13	-6.15	8.00	PASS
	11	-11.78	-11.65	-12.21	-12.08	-12.91	-12.79	-12.47	-12.35	-6.18	8.00	PASS
802.11n HT40	3	-18.66	-18.54	-18.81	-18.70	-19.88	-19.76	-19.29	-19.17	-13.00	8.00	PASS
	6	-15.75	-15.63	-16.31	-16.19	-17.30	-17.18	-16.47	-16.35	-10.28	8.00	PASS
	9	-15.57	-15.45	-16.00	-15.88	-17.16	-17.05	-16.70	-16.58	-10.18	8.00	PASS
802.11ax HE20	1	-15.16	-14.93	-18.01	-17.77	-17.70	-17.47	-17.21	-16.97	-10.61	8.00	PASS
	6	-12.79	-12.56	-13.38	-13.15	-13.80	-13.56	-12.84	-12.61	-6.93	8.00	PASS
	11	-15.18	-14.95	-16.03	-15.80	-16.95	-16.71	-15.91	-15.68	-9.72	8.00	PASS
802.11ax HE40	3	-20.83	-20.71	-21.34	-21.22	-22.66	-22.54	-21.64	-21.51	-15.42	8.00	PASS
	6	-16.80	-16.67	-17.26	-17.14	-17.82	-17.69	-17.60	-17.48	-11.21	8.00	PASS
	9	-21.01	-20.89	-22.46	-22.33	-23.60	-23.48	-23.08	-22.95	-16.28	8.00	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=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})}+10^{(\text{PSD antenna4 in dBm/10})})$

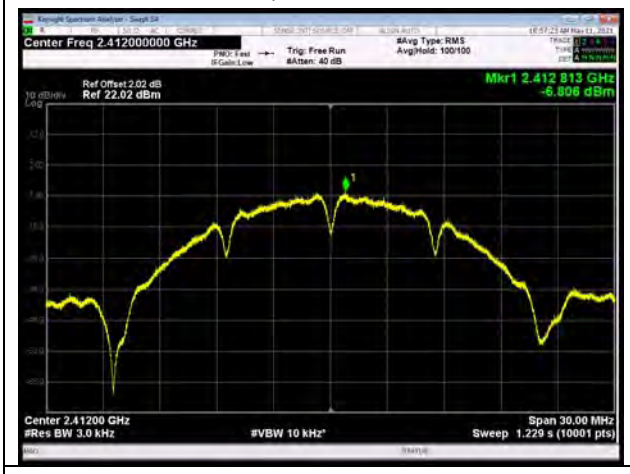
3. The manufacturer declared that the directional gain=5.96dBi. So the power limt is 8+6-MAX(6, 2.94)dBm=8 dBm

INPAQ:

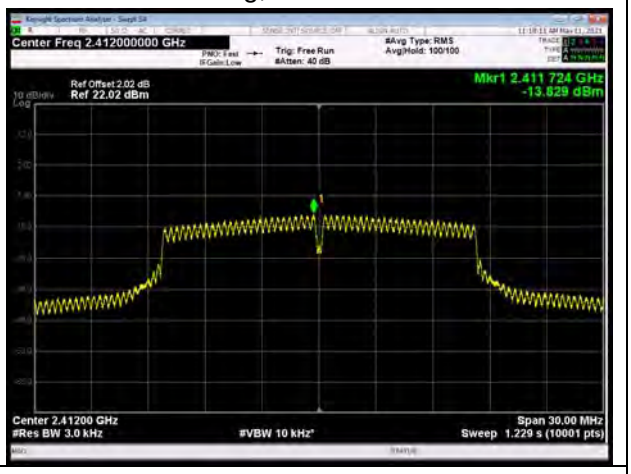
MIMO Without Beamforming

Antenna 1

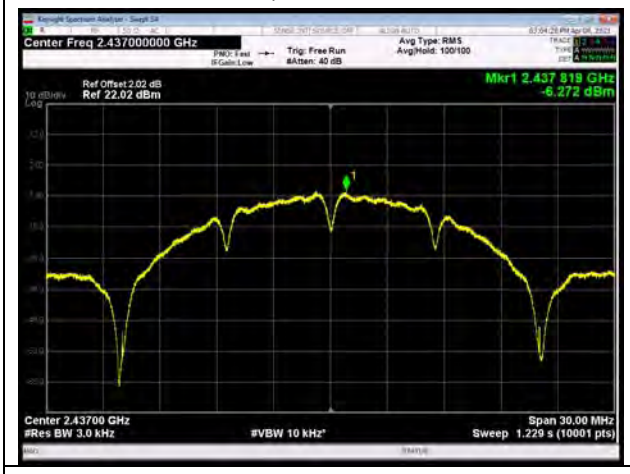
802.11b, Channel No.: 1



802.11g, Channel No.: 1

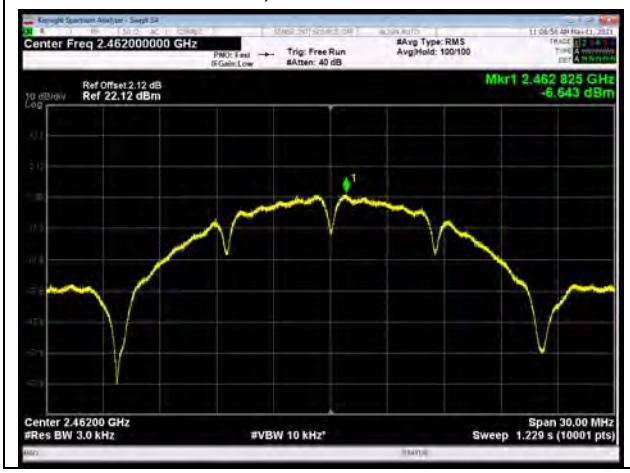


802.11b, Channel No.: 6

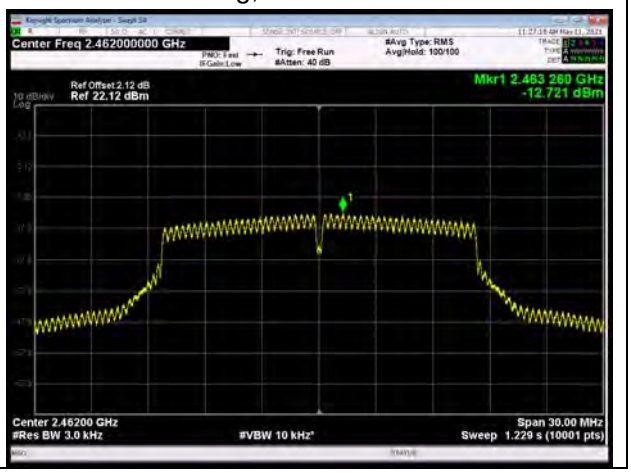


802.11g, Channel No.: 6

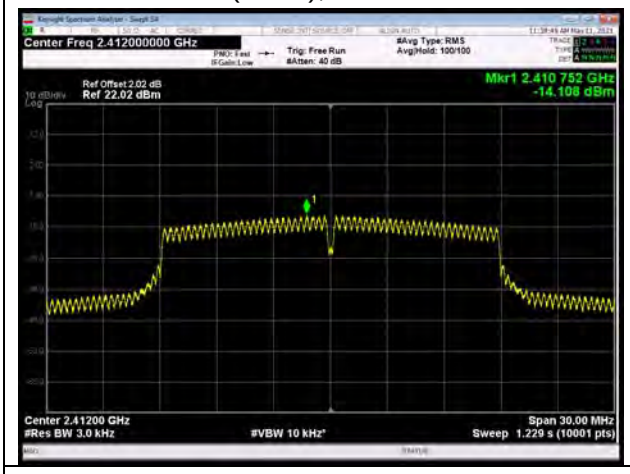
802.11b, Channel No.: 11



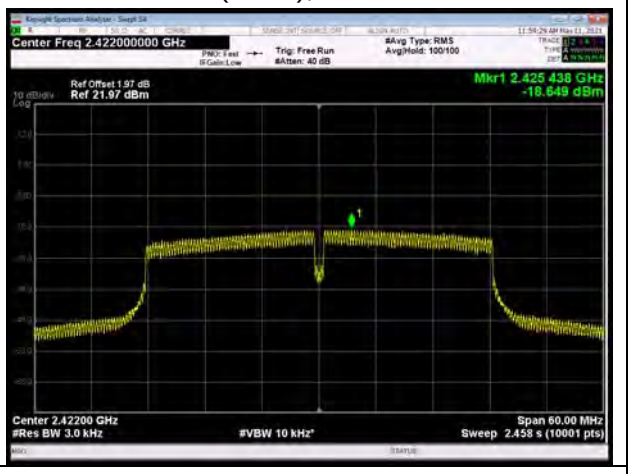
802.11g, Channel No.: 11



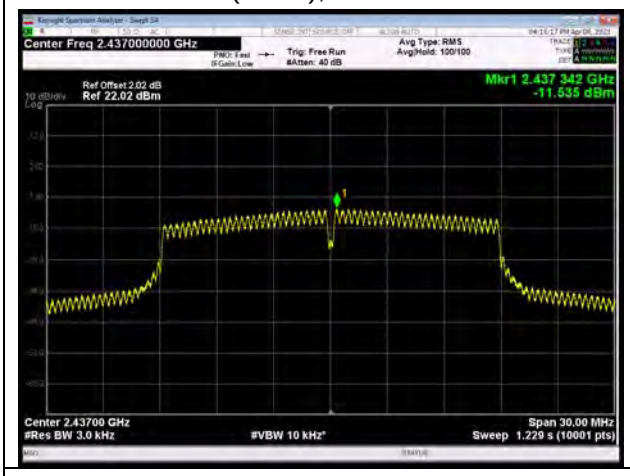
802.11n(HT20), Channel No. 1



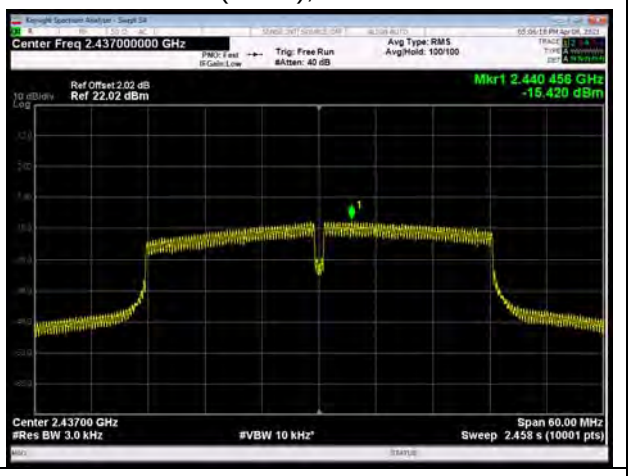
802.11n(HT40), Channel No. 3



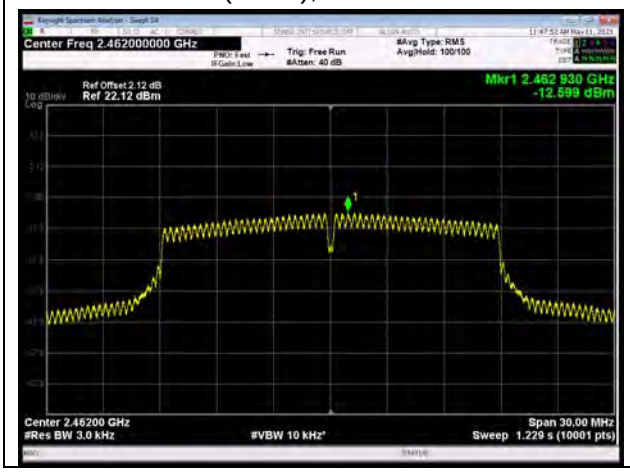
802.11n(HT20), Channel No. 6



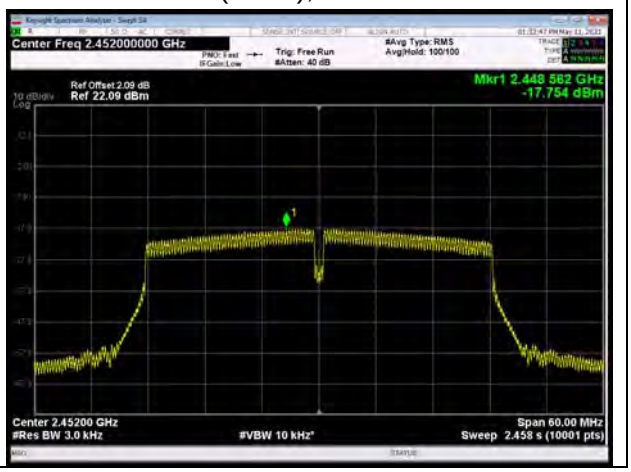
802.11n(HT40), Channel No. 6



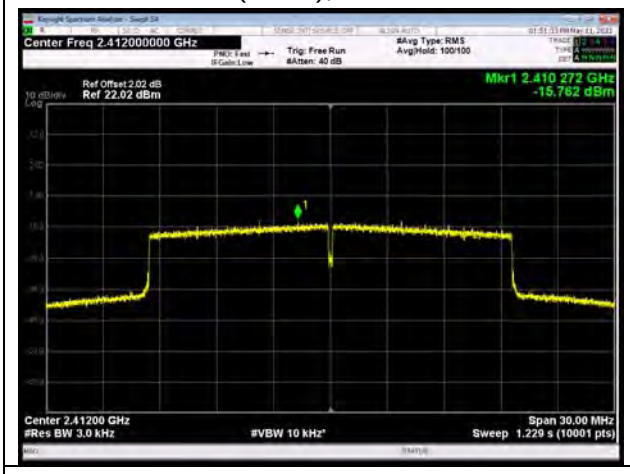
802.11n(HT20), Channel No. 11



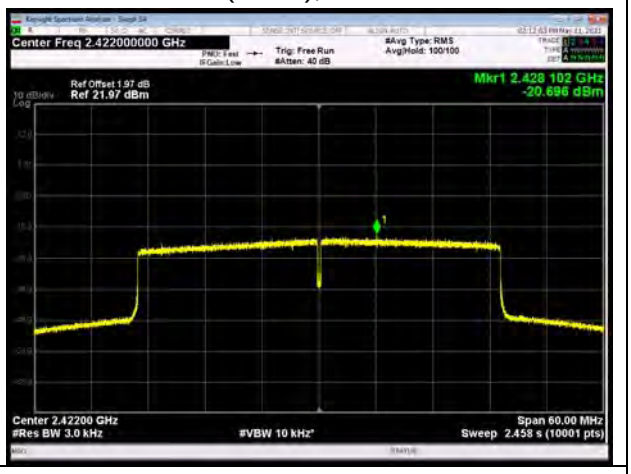
802.11n(HT40), Channel No. 9



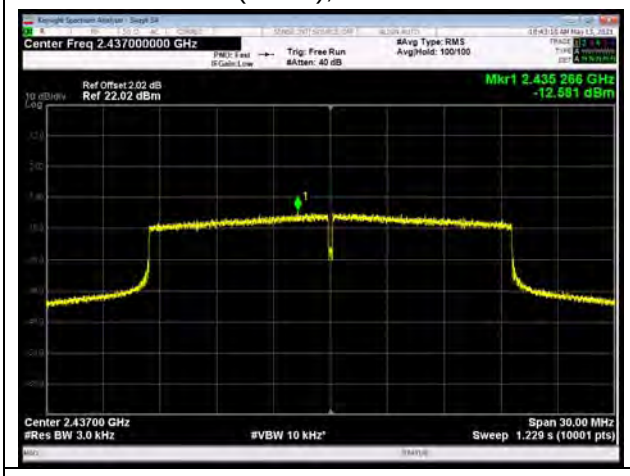
802.11ax(HE20), Channel No. 1



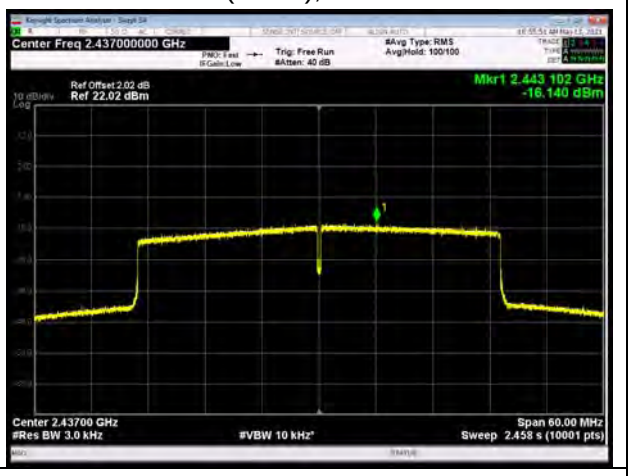
802.11ax(HE40), Channel No. 3



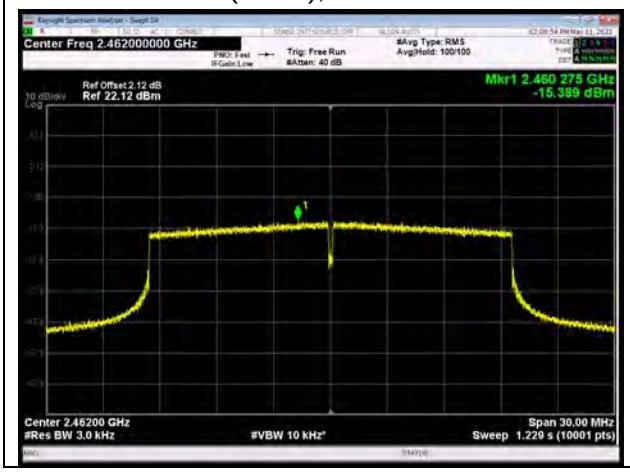
802.11ax(HE20), Channel No. 6



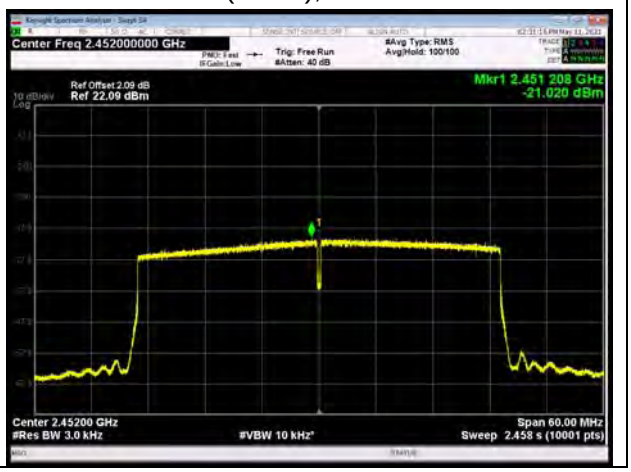
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



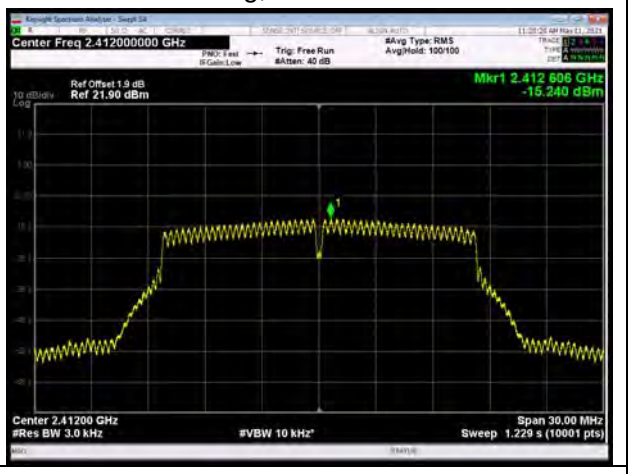
802.11ax(HE40), Channel No. 9



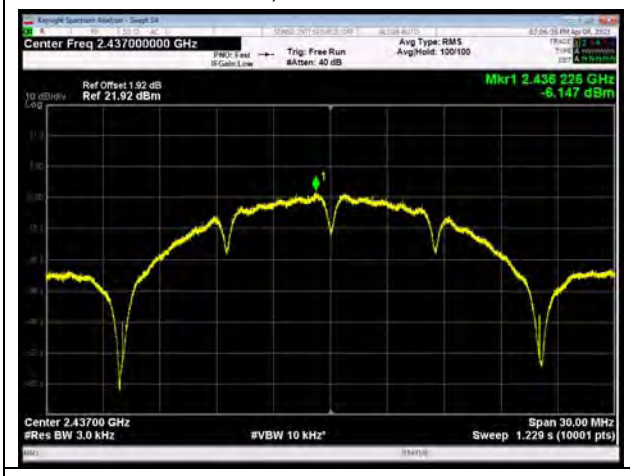
Antenna 2

802.11b, Channel No.: 1

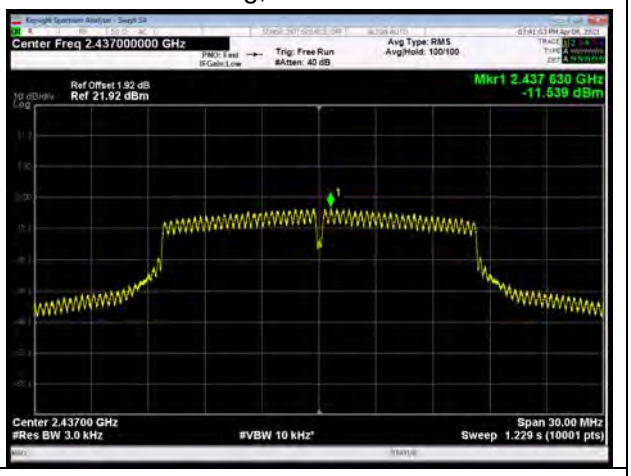
802.11g, Channel No.: 1



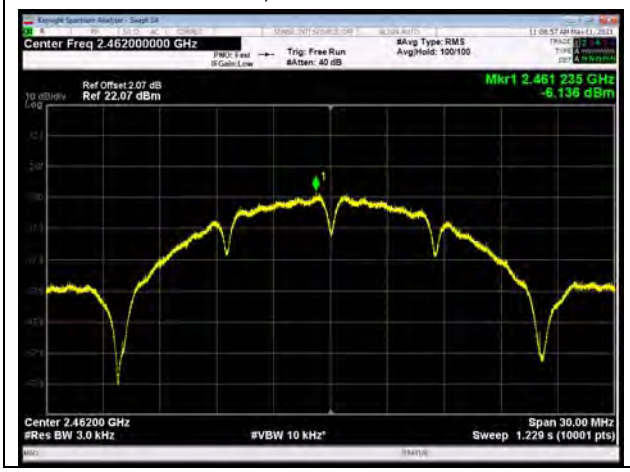
802.11b, Channel No.: 6



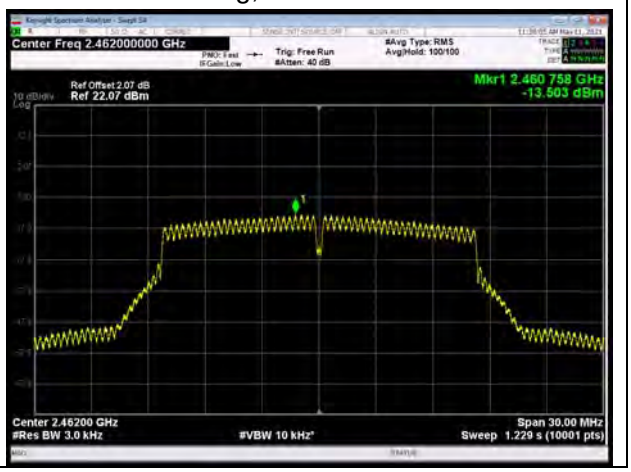
802.11g, Channel No.: 6



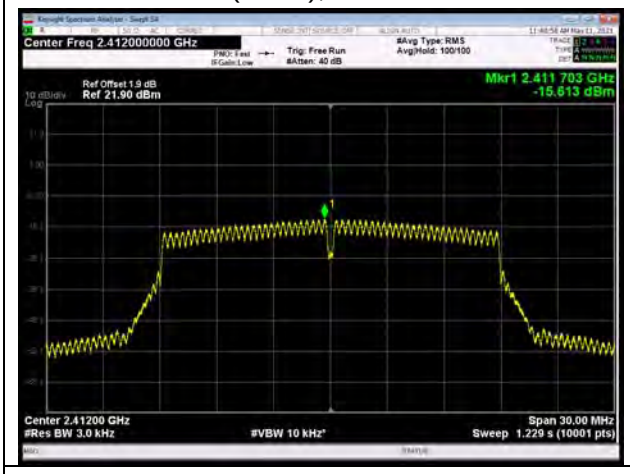
802.11b, Channel No.: 11



802.11g, Channel No.: 11

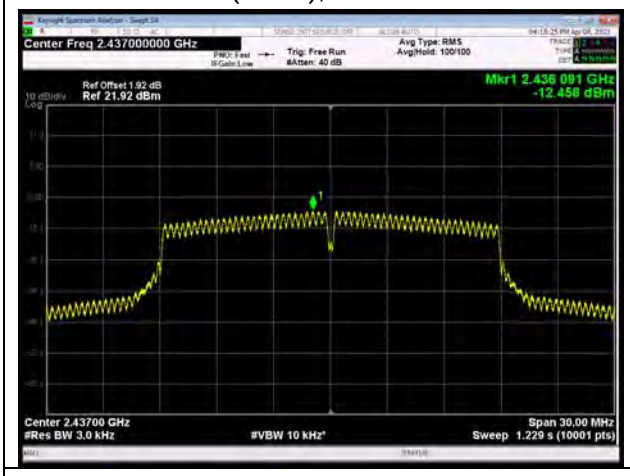


802.11n(HT20), Channel No. 1

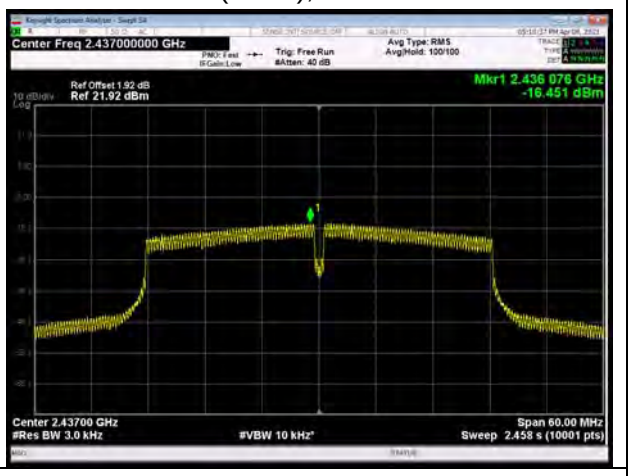


802.11n(HT40), Channel No. 3

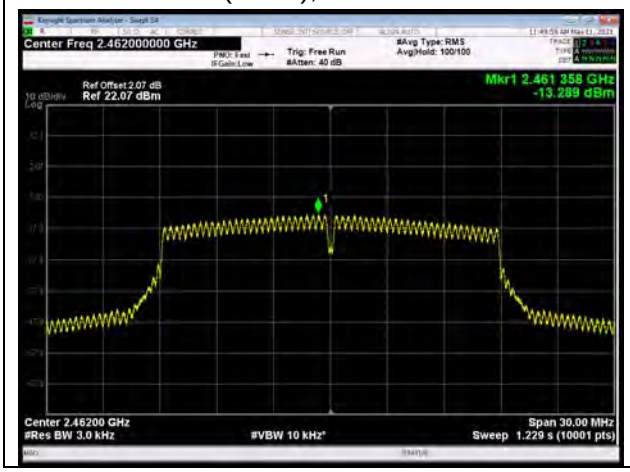
802.11n(HT20), Channel No. 6



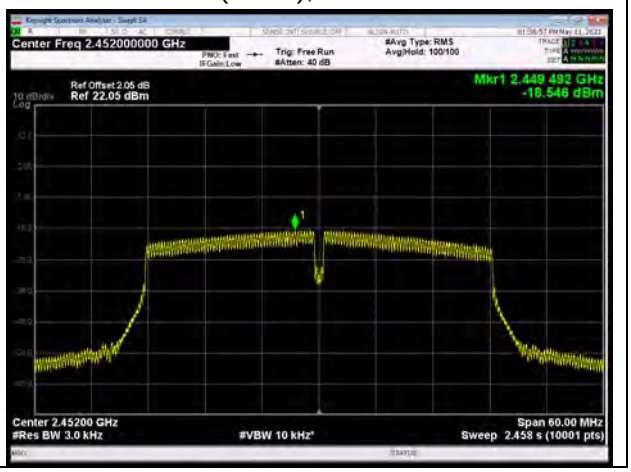
802.11n(HT40), Channel No. 6



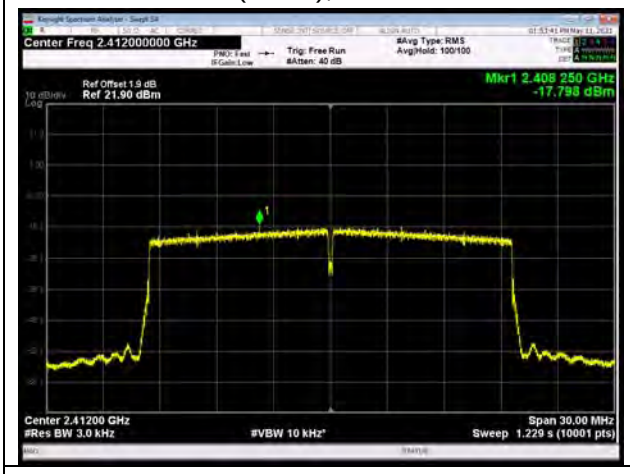
802.11n(HT20), Channel No. 11



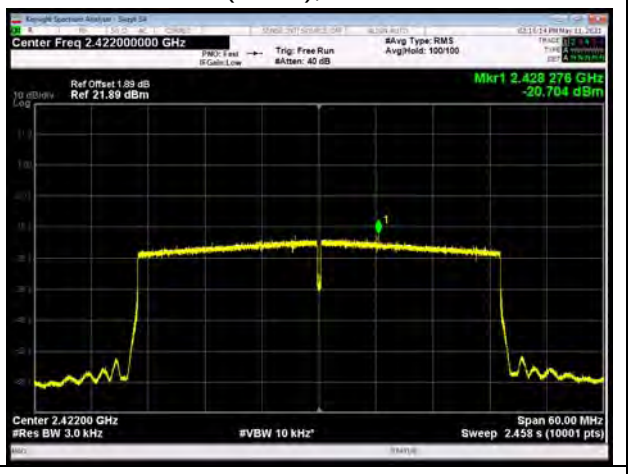
802.11n(HT40), Channel No. 9



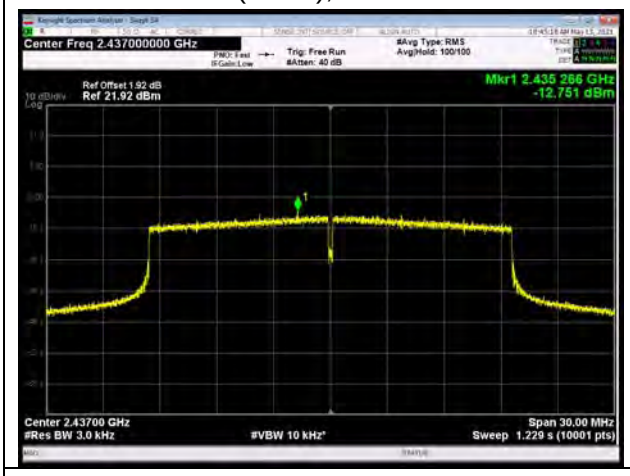
802.11ax(HE20), Channel No. 1



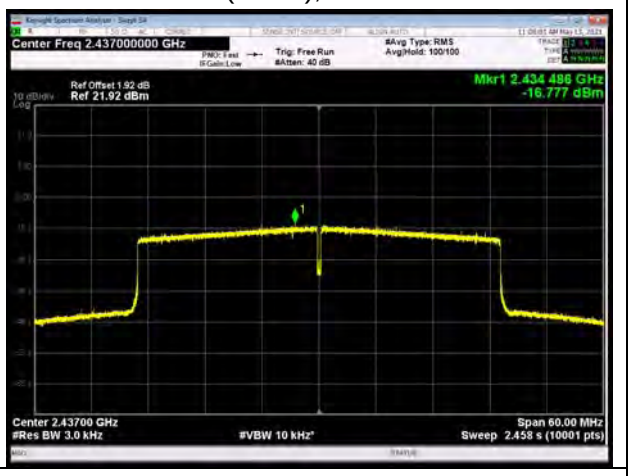
802.11ax(HE40), Channel No. 3



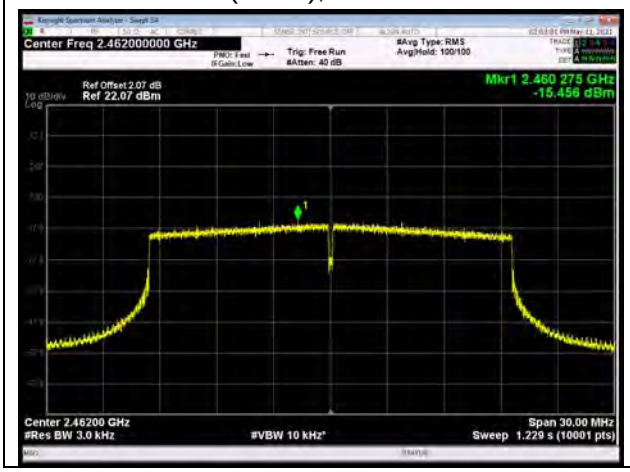
802.11ax(HE20), Channel No. 6



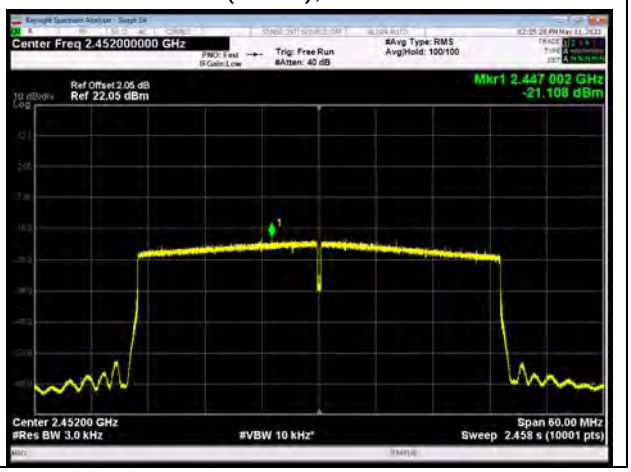
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



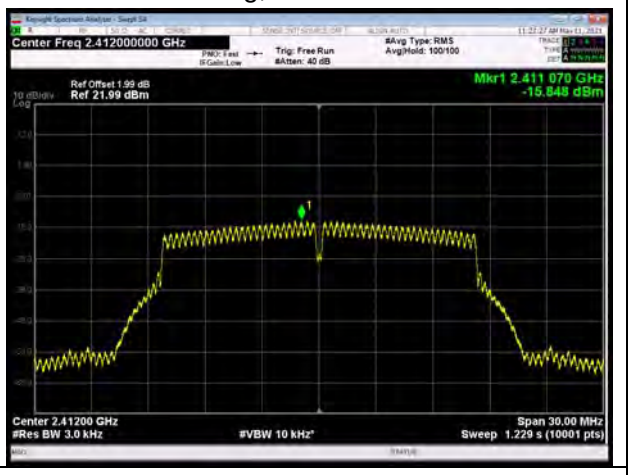
802.11ax(HE40), Channel No. 9



Antenna 3

802.11b, Channel No.: 1

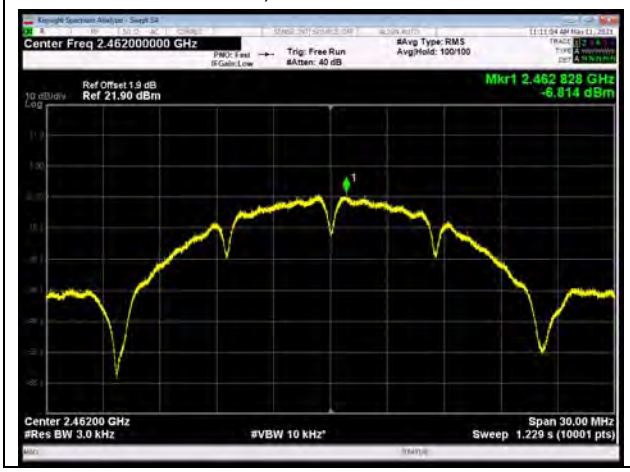
802.11g, Channel No.: 1



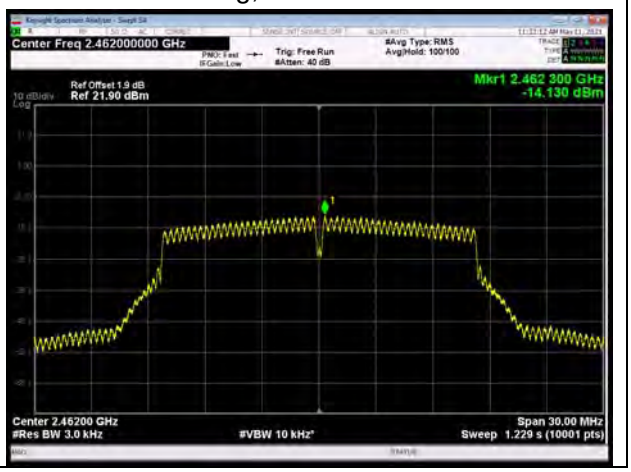
802.11b, Channel No.: 6

802.11g, Channel No.: 6

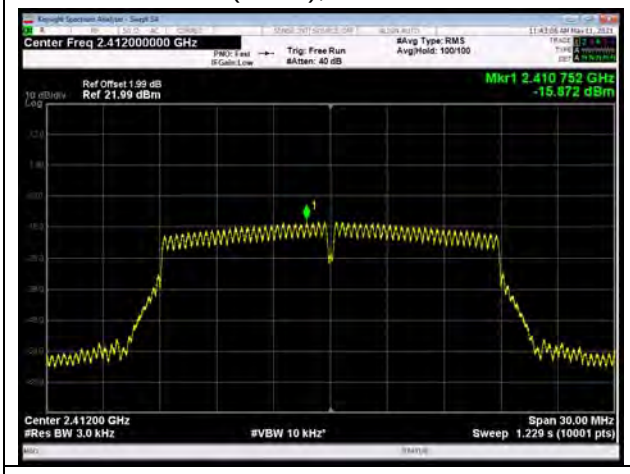
802.11b, Channel No.: 11



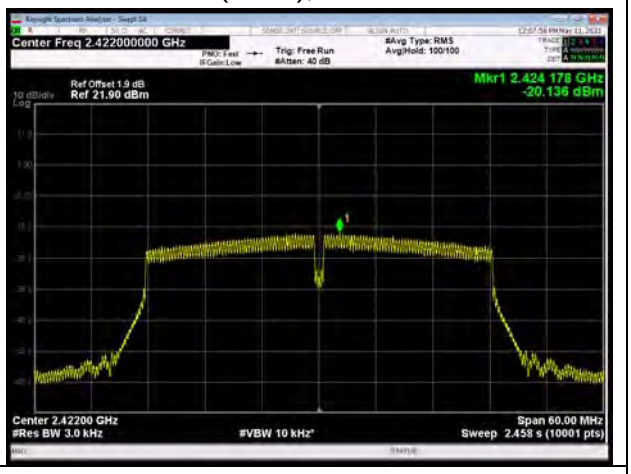
802.11g, Channel No.: 11



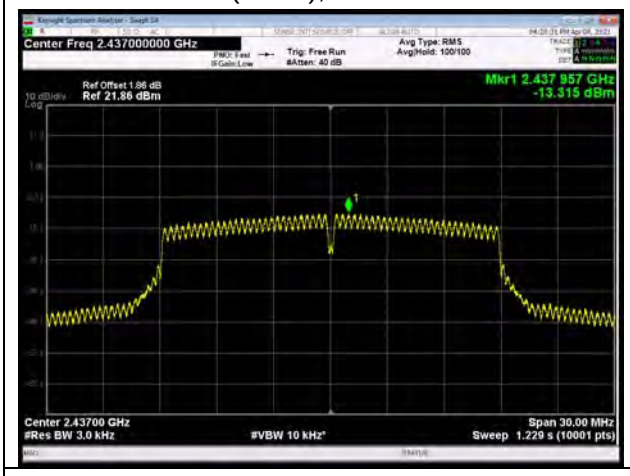
802.11n(HT20), Channel No. 1



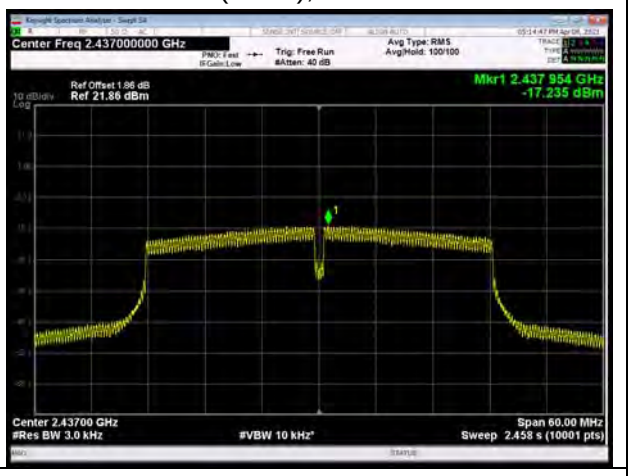
802.11n(HT40), Channel No. 3



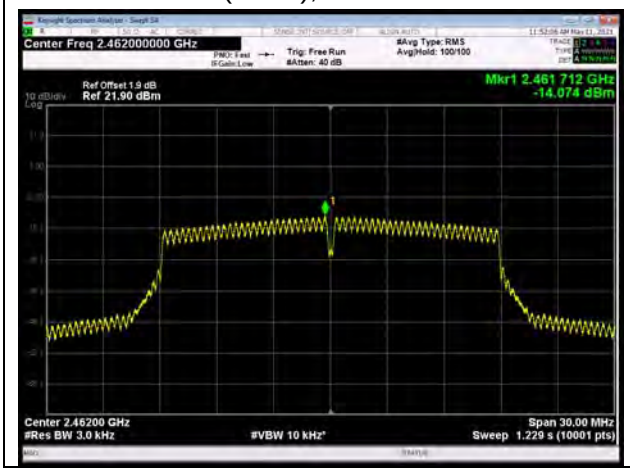
802.11n(HT20), Channel No. 6



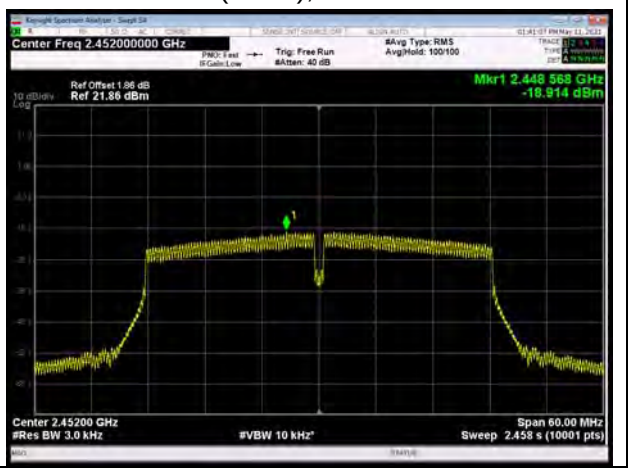
802.11n(HT40), Channel No. 6



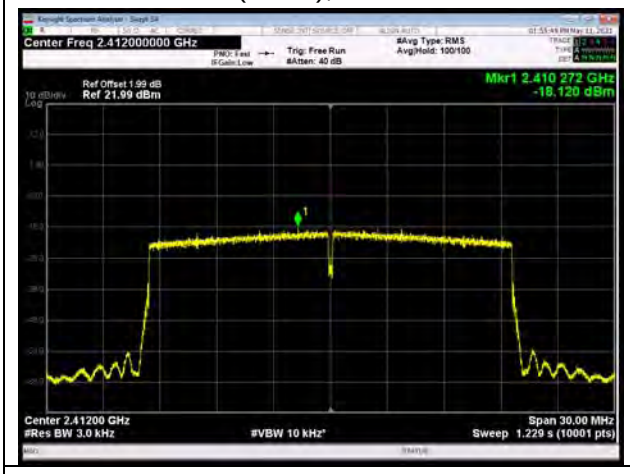
802.11n(HT20), Channel No. 11



802.11n(HT40), Channel No. 9

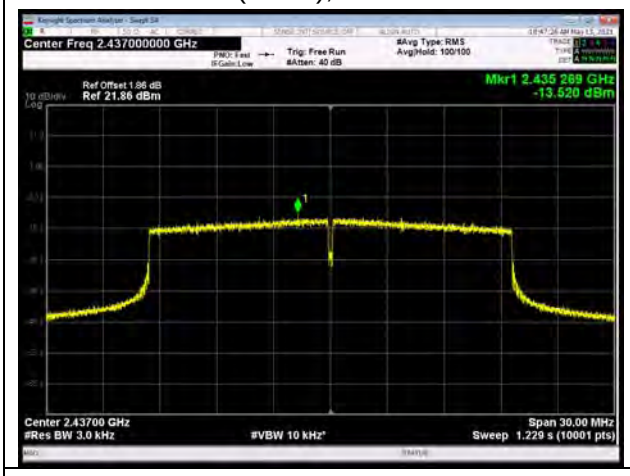


802.11ax(HE20), Channel No. 1

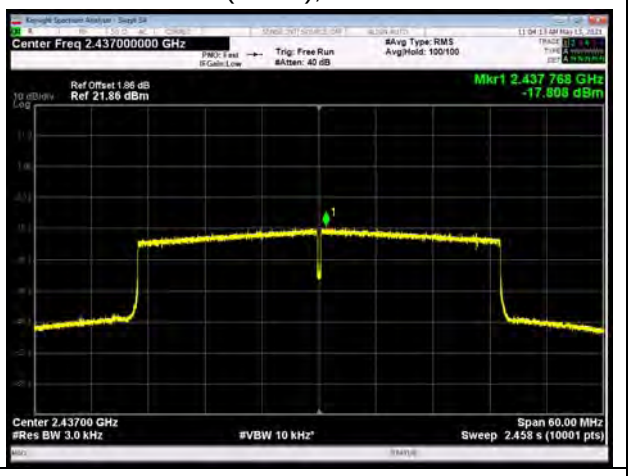


802.11ax(HE40), Channel No. 3

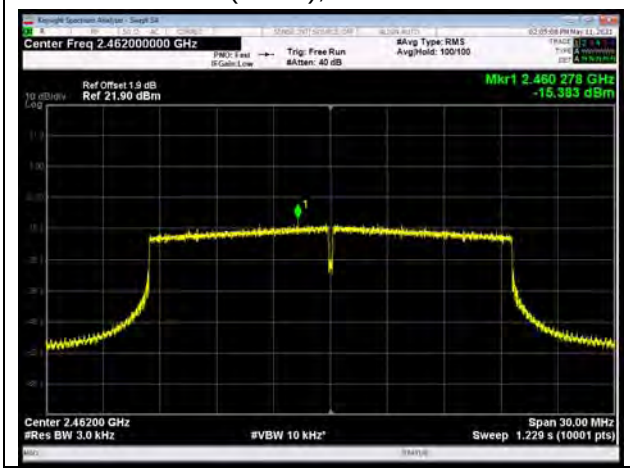
802.11ax(HE20), Channel No. 6



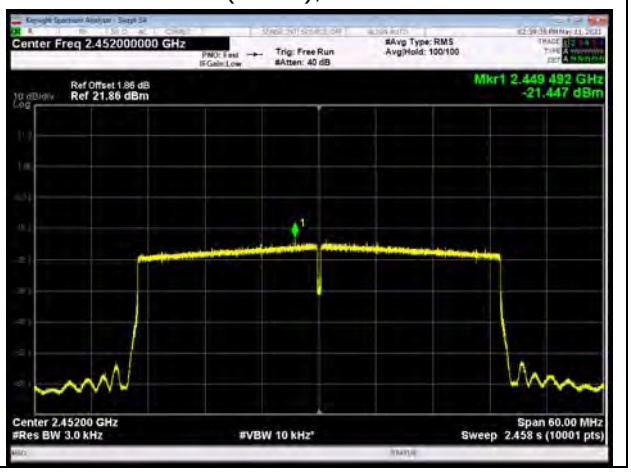
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



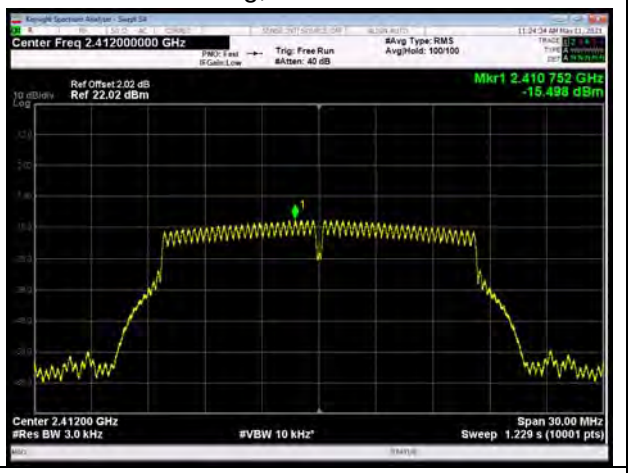
802.11ax(HE40), Channel No. 9



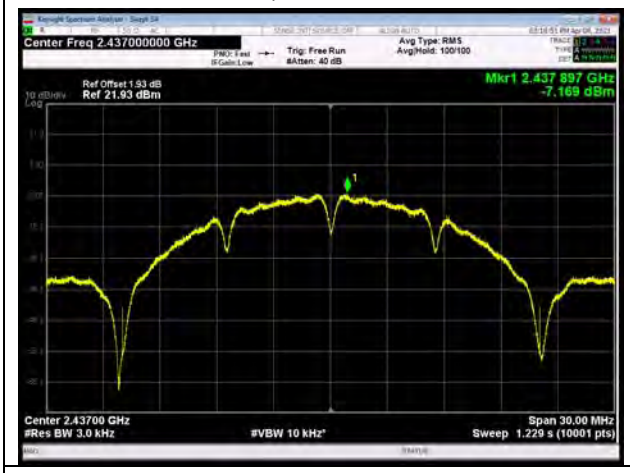
Antenna 4

802.11b, Channel No.: 1

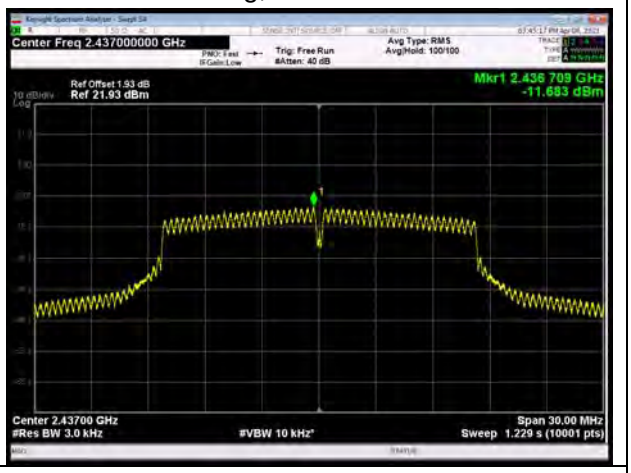
802.11g, Channel No.: 1



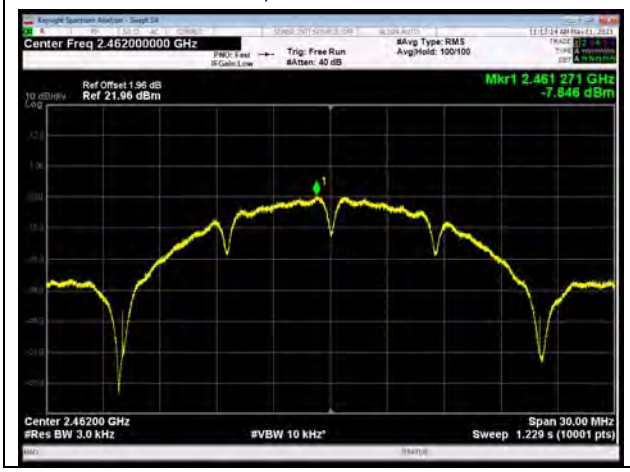
802.11b, Channel No.: 6



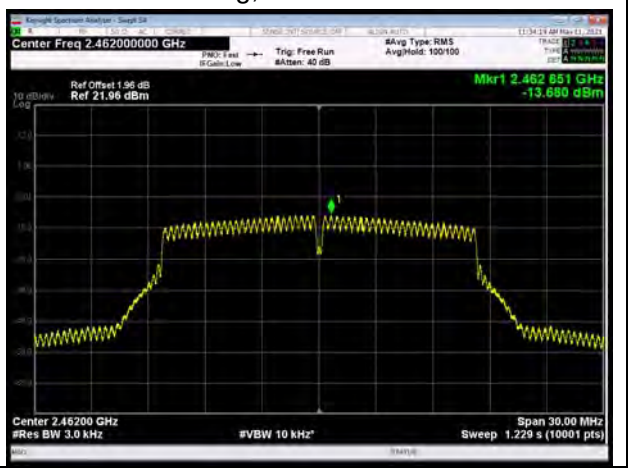
802.11g, Channel No.: 6



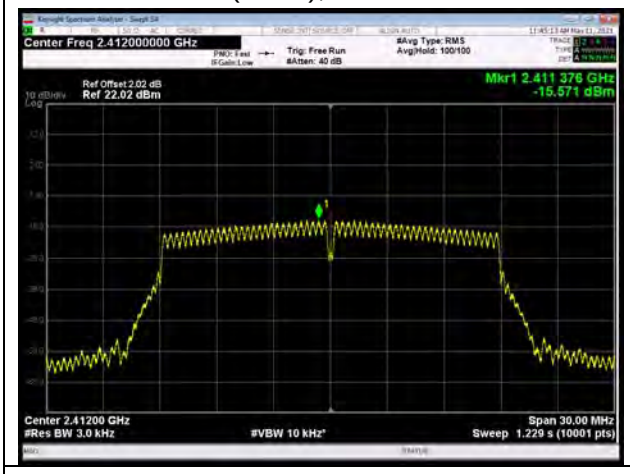
802.11b, Channel No.: 11



802.11g, Channel No.: 11

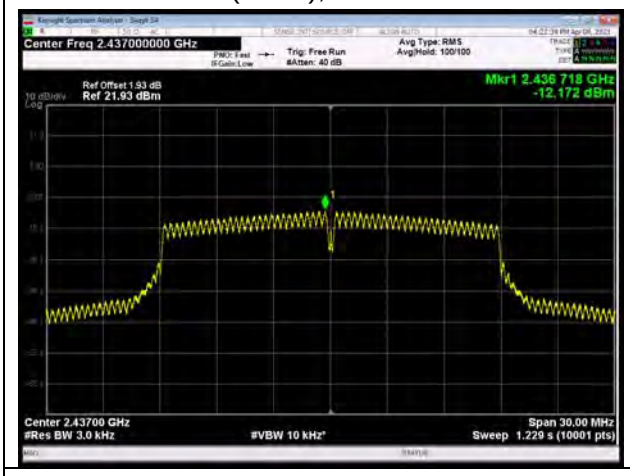


802.11n(HT20), Channel No. 1



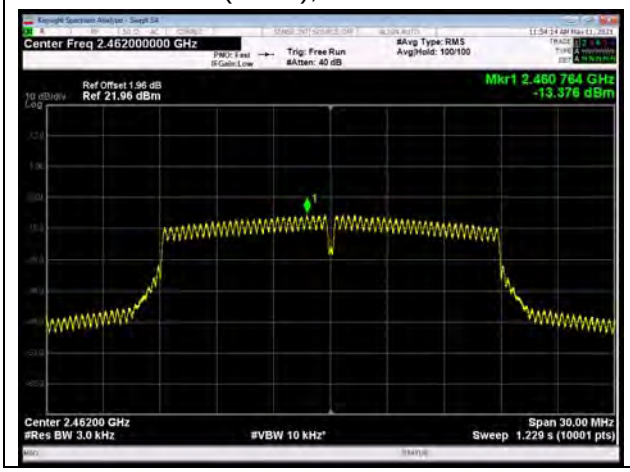
802.11n(HT40), Channel No. 3

802.11n(HT20), Channel No. 6

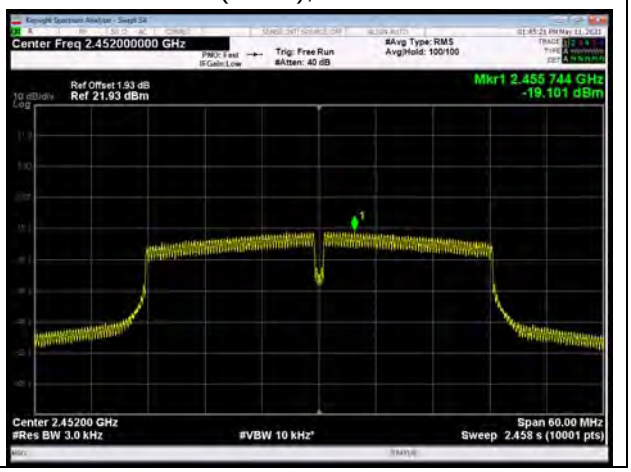


802.11n(HT40), Channel No. 6

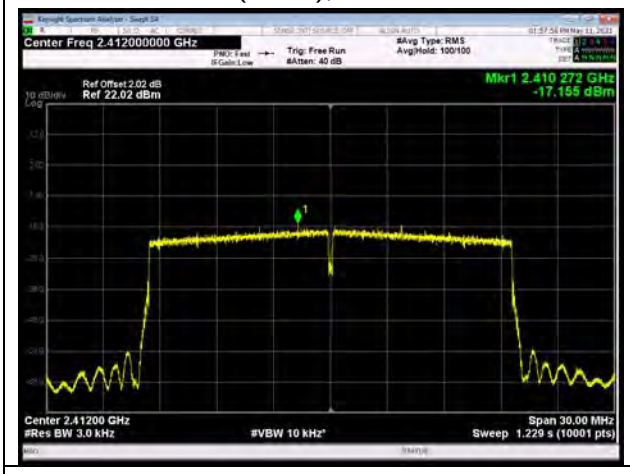
802.11n(HT20), Channel No. 11



802.11n(HT40), Channel No. 9

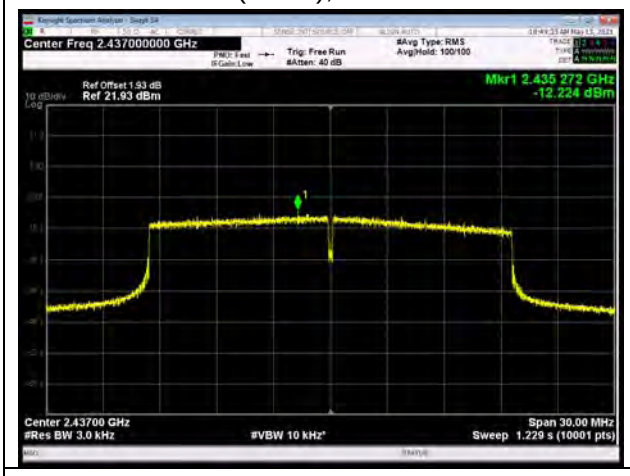


802.11ax(HE20), Channel No. 1

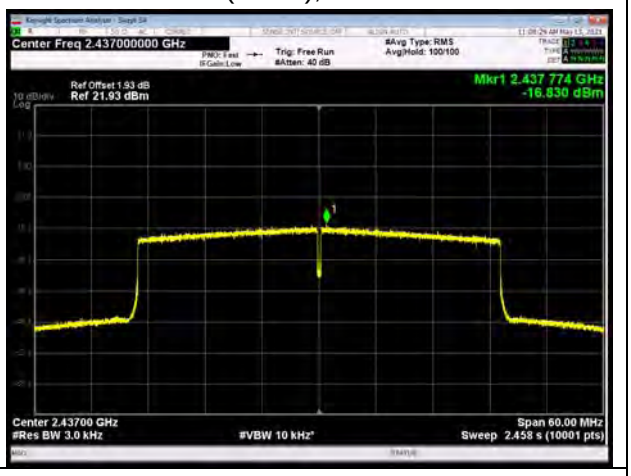


802.11ax(HE40), Channel No. 3

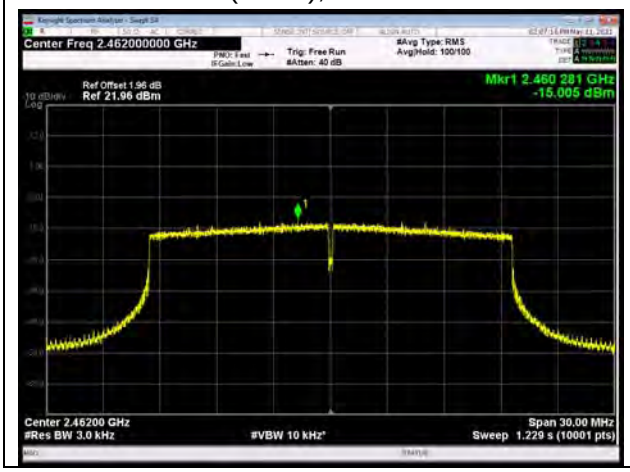
802.11ax(HE20), Channel No. 6



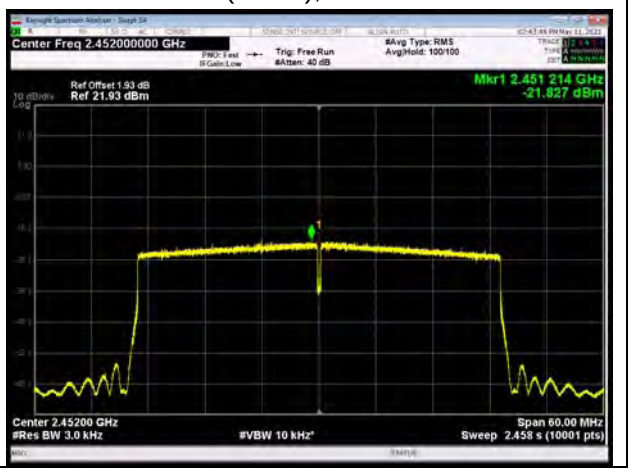
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



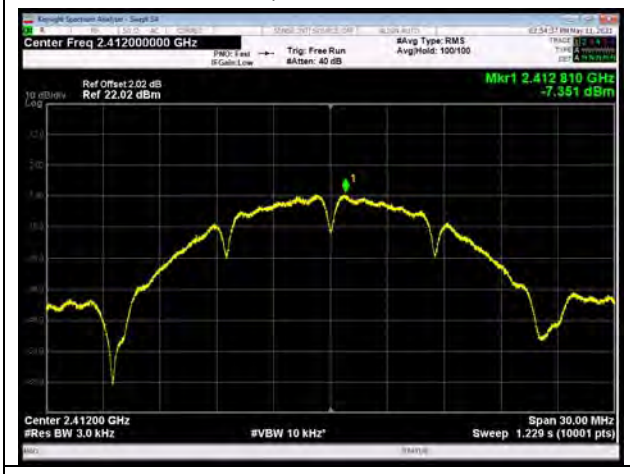
802.11ax(HE40), Channel No. 9



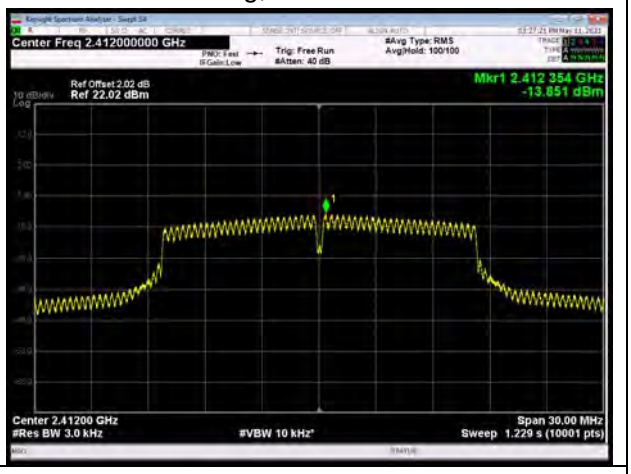
MIMO With Beamforming

Antenna 1

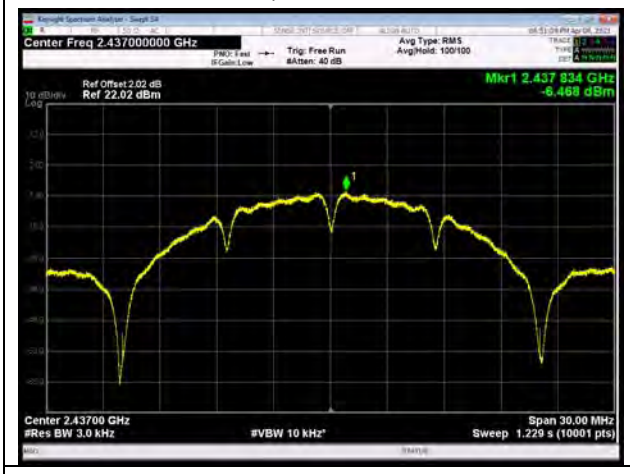
802.11b, Channel No.: 1



802.11g, Channel No.: 1

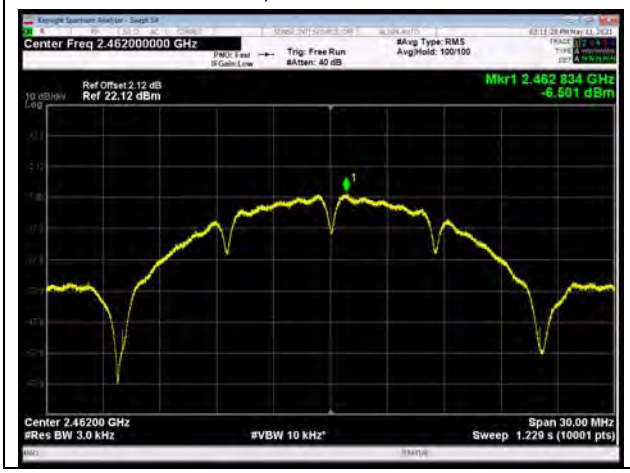


802.11b, Channel No.: 6

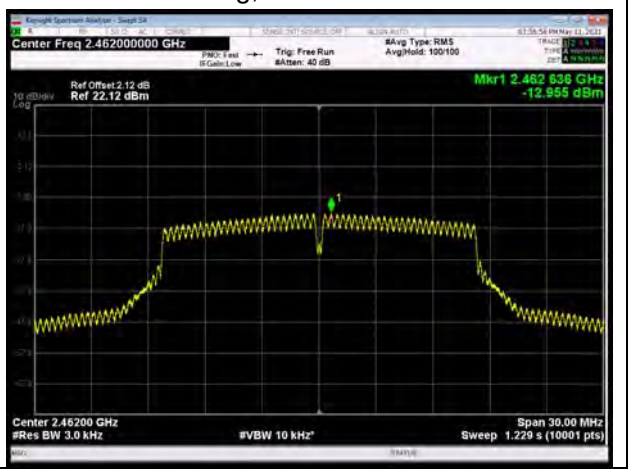


802.11g, Channel No.: 6

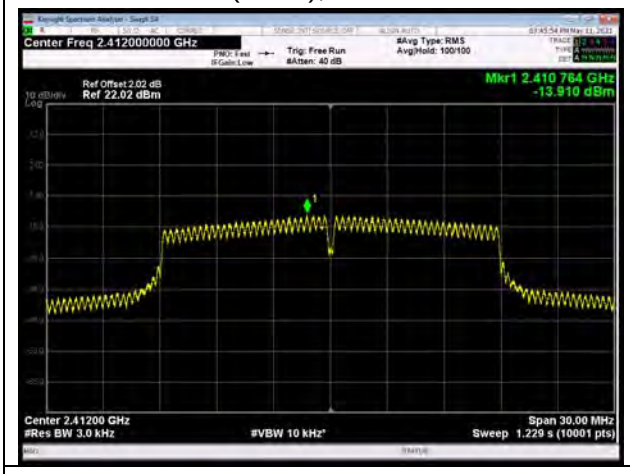
802.11b, Channel No.: 11



802.11g, Channel No.: 11

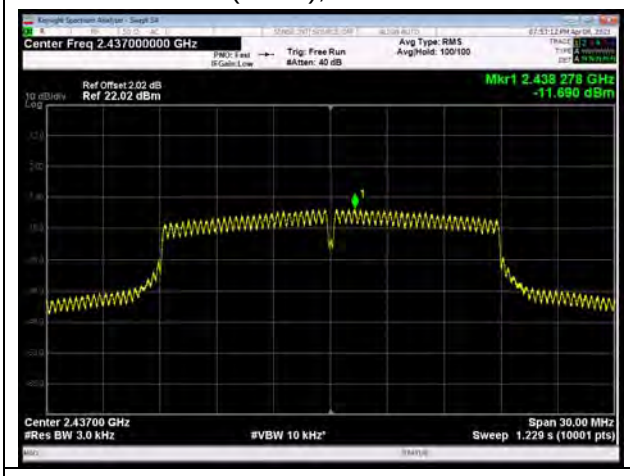


802.11n(HT20), Channel No. 1



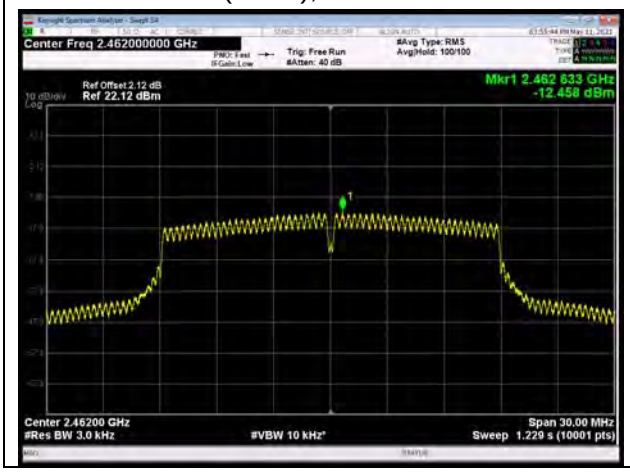
802.11n(HT40), Channel No. 3

802.11n(HT20), Channel No. 6



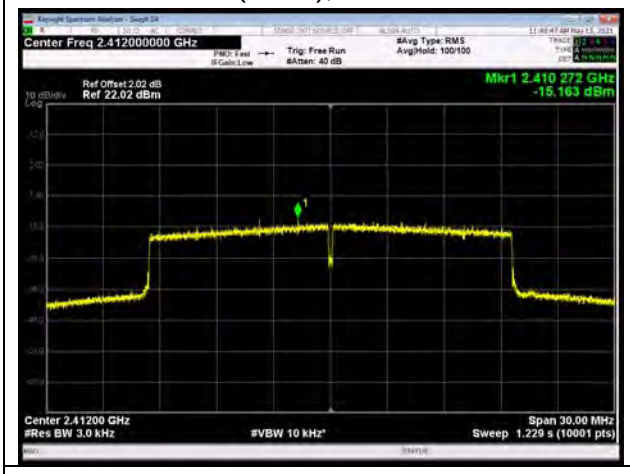
802.11n(HT40), Channel No. 6

802.11n(HT20), Channel No. 11

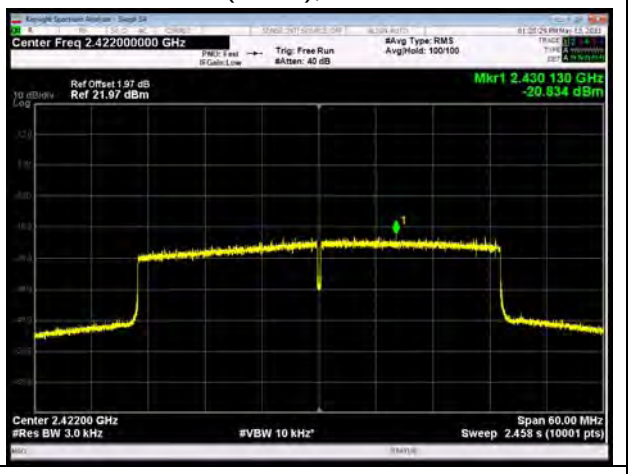


802.11n(HT40), Channel No. 9

802.11ax(HE20), Channel No. 1

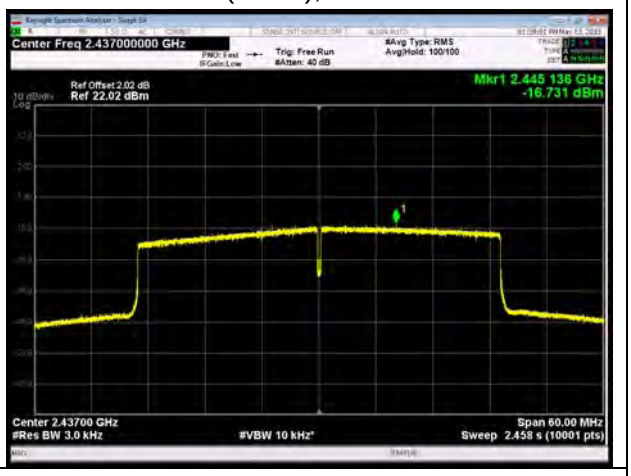


802.11ax(HE40), Channel No. 3

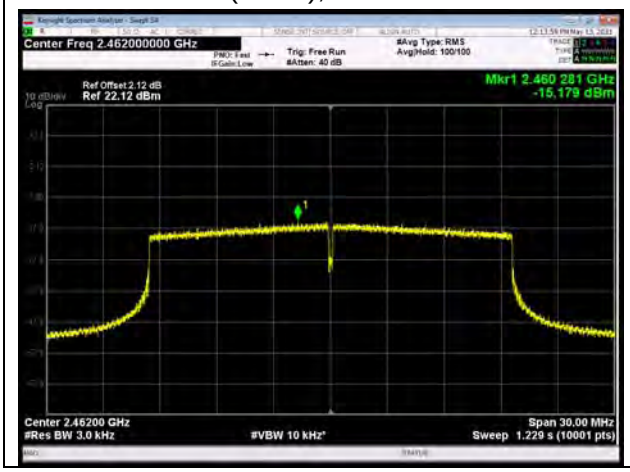


802.11ax(HE20), Channel No. 6

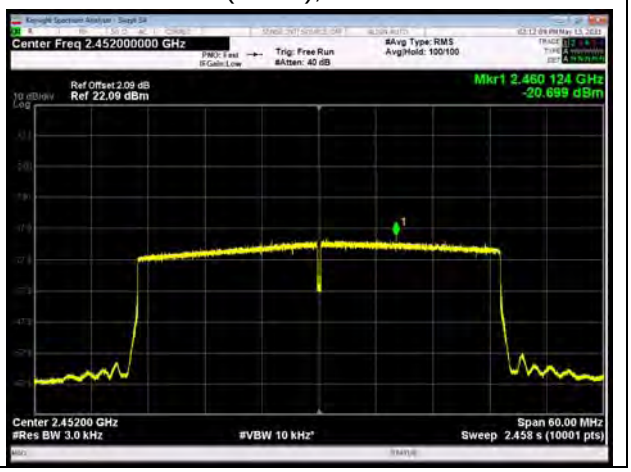
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



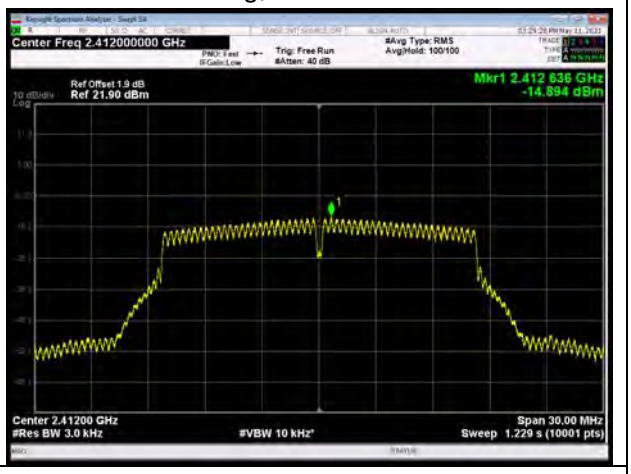
802.11ax(HE40), Channel No. 9



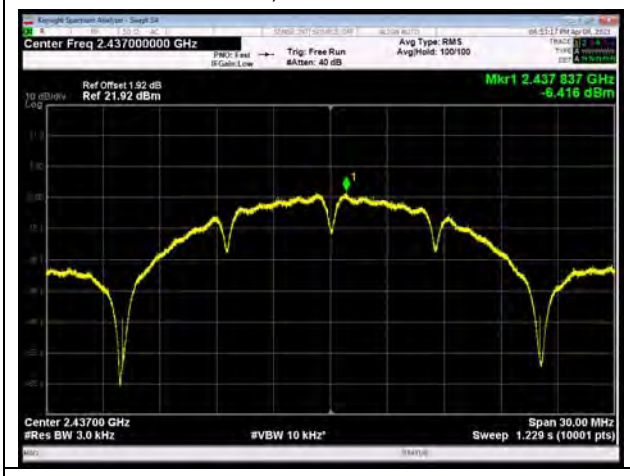
Antenna 2

802.11b, Channel No.: 1

802.11g, Channel No.: 1

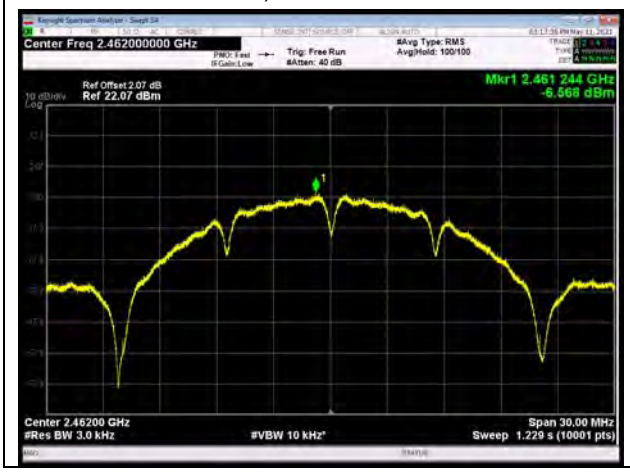


802.11b, Channel No.: 6

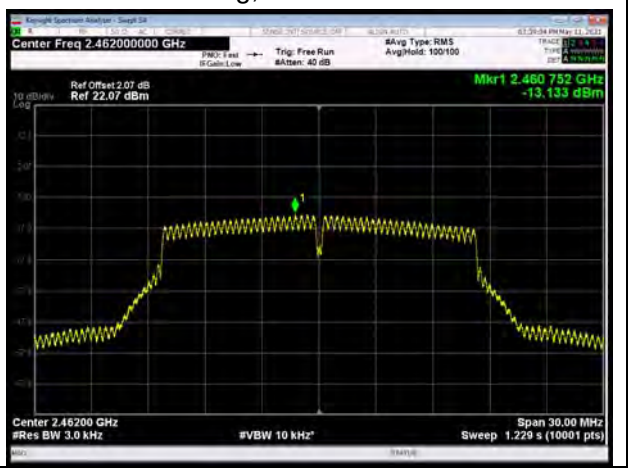


802.11g, Channel No.: 6

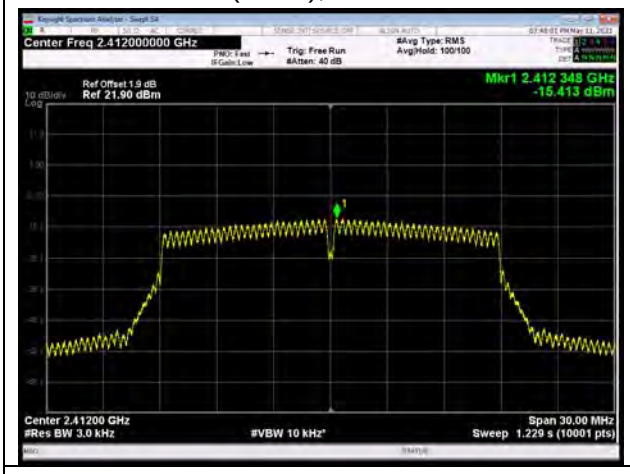
802.11b, Channel No.: 11



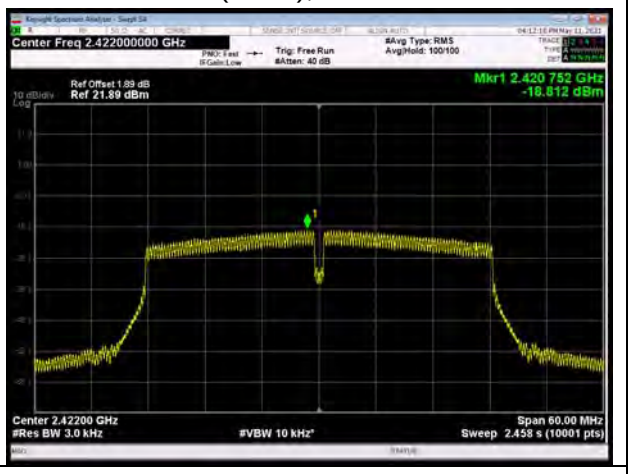
802.11g, Channel No.: 11



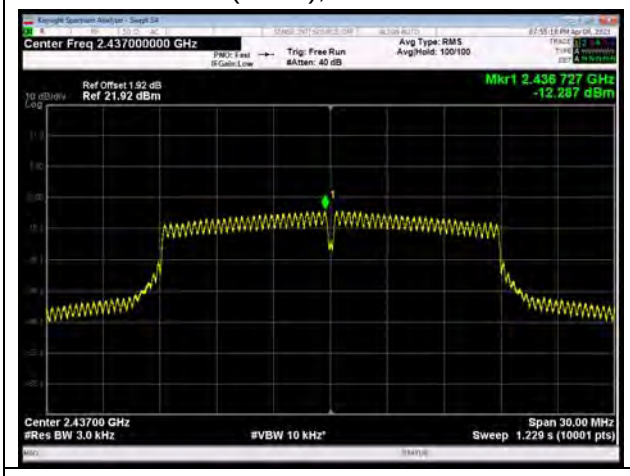
802.11n(HT20), Channel No. 1



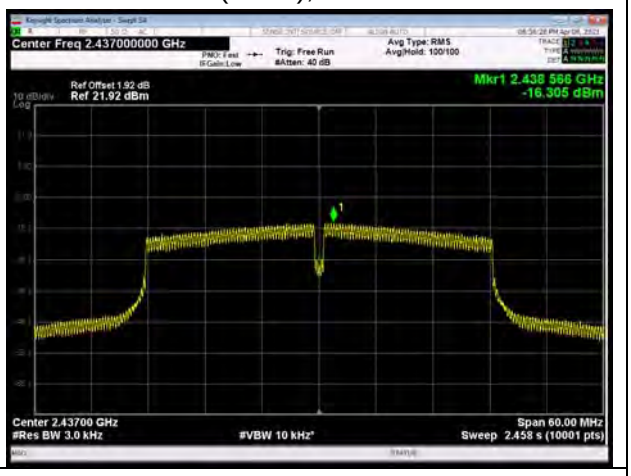
802.11n(HT40), Channel No. 3



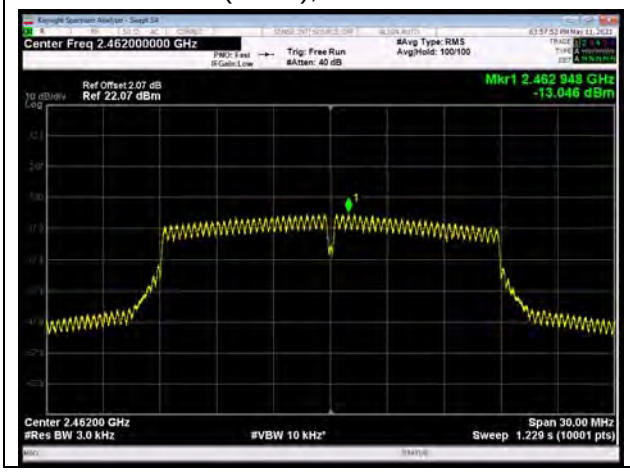
802.11n(HT20), Channel No. 6



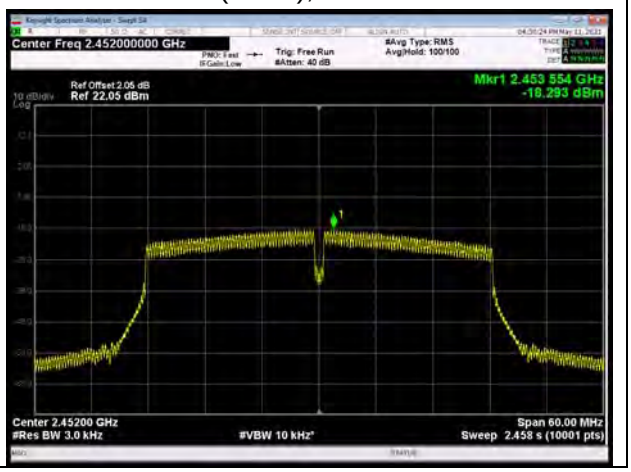
802.11n(HT40), Channel No. 6



802.11n(HT20), Channel No. 11

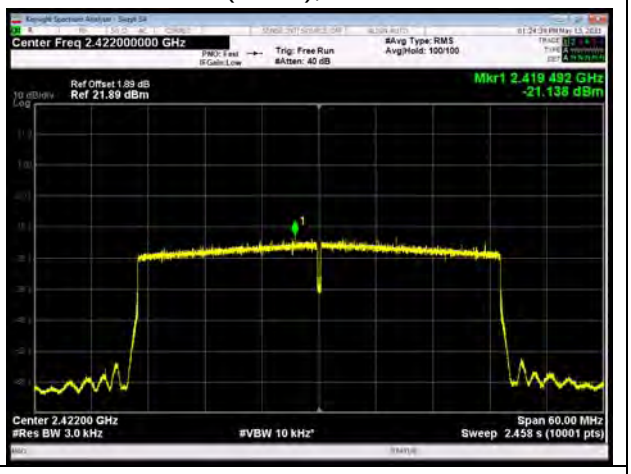


802.11n(HT40), Channel No. 9

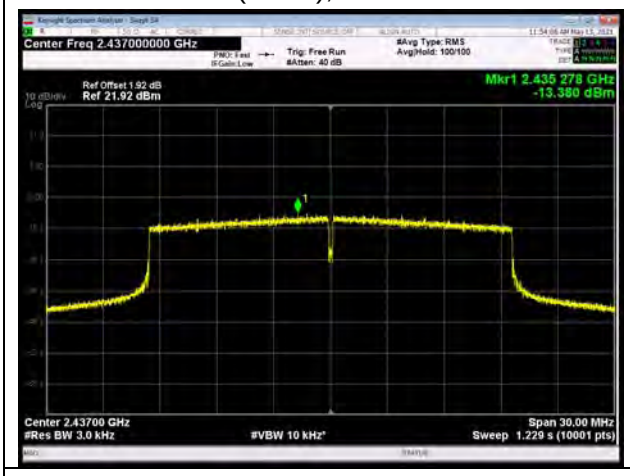


802.11ax(HE20), Channel No. 1

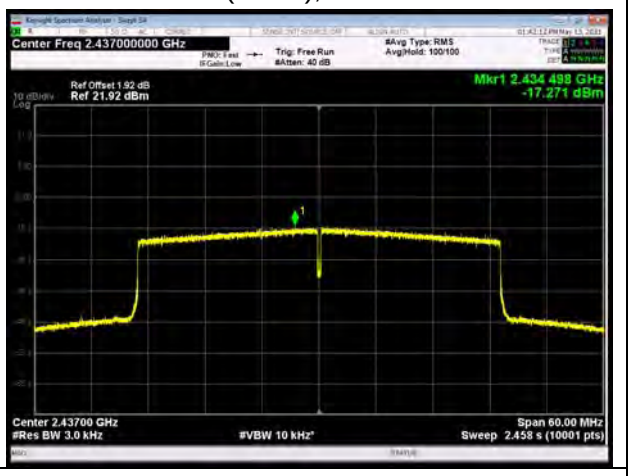
802.11ax(HE40), Channel No. 3



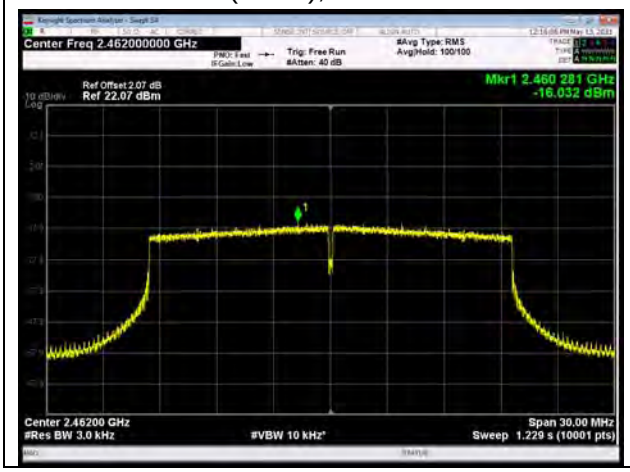
802.11ax(HE20), Channel No. 6



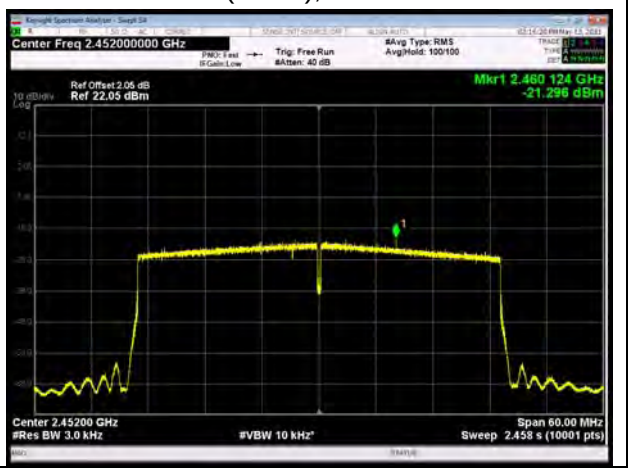
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



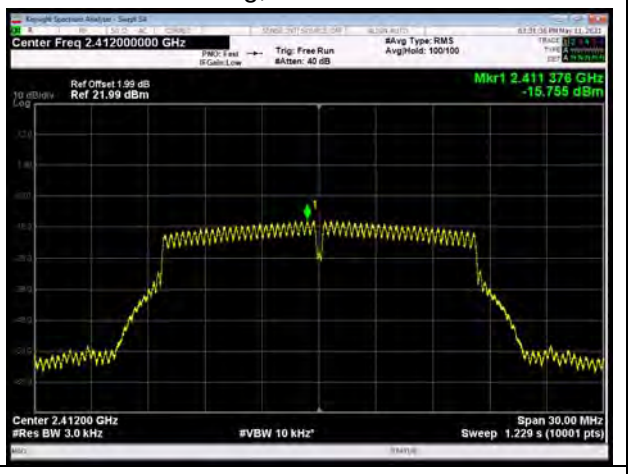
802.11ax(HE40), Channel No. 9



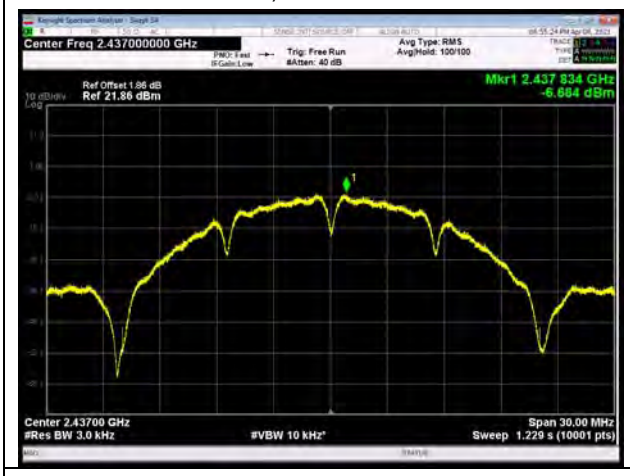
Antenna 3

802.11b, Channel No.: 1

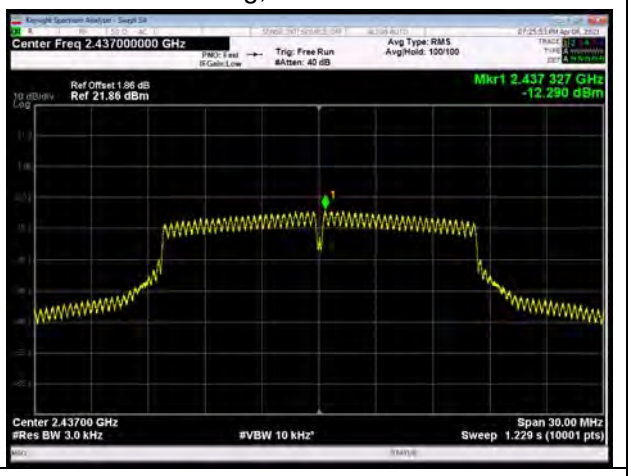
802.11g, Channel No.: 1



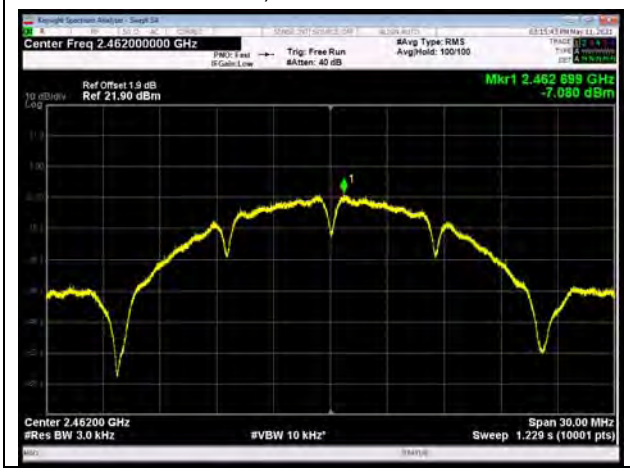
802.11b, Channel No.: 6



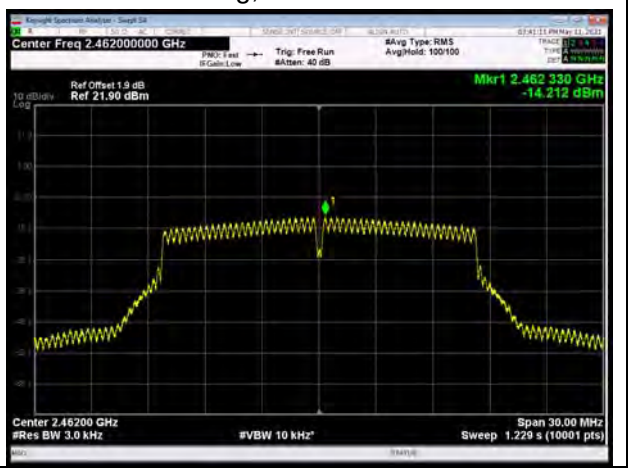
802.11g, Channel No.: 6



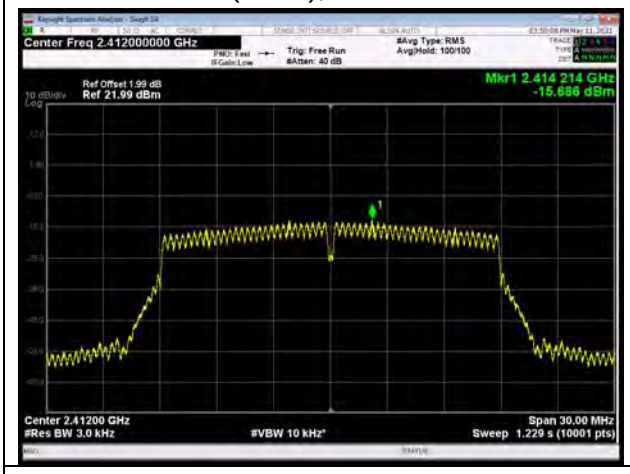
802.11b, Channel No.: 11



802.11g, Channel No.: 11

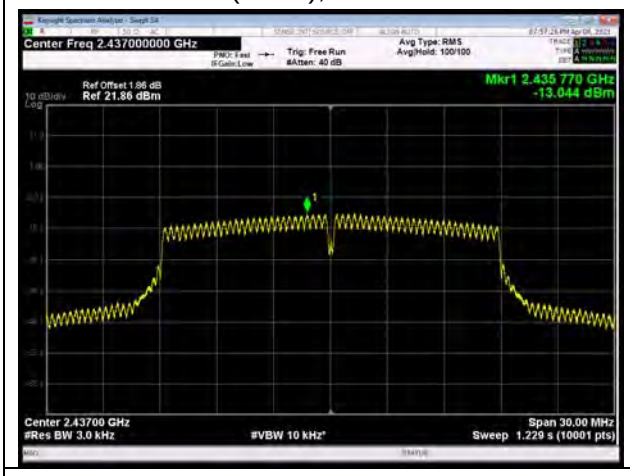


802.11n(HT20), Channel No. 1



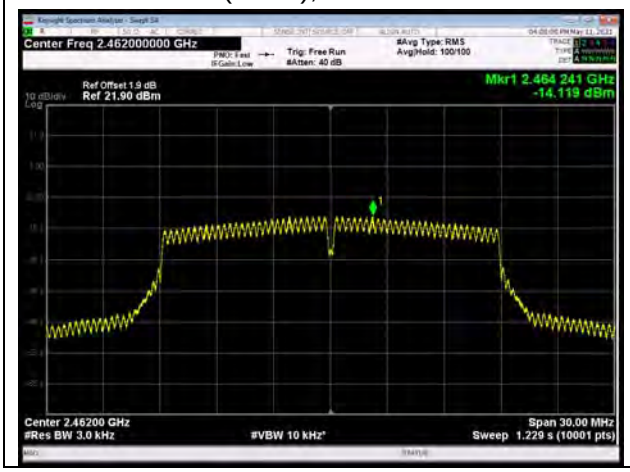
802.11n(HT40), Channel No. 3

802.11n(HT20), Channel No. 6

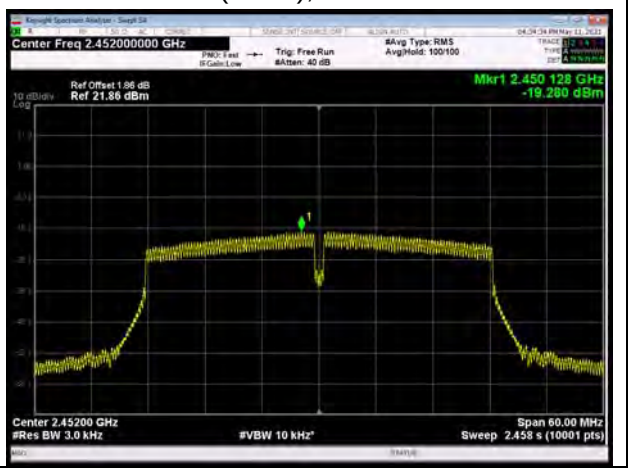


802.11n(HT40), Channel No. 6

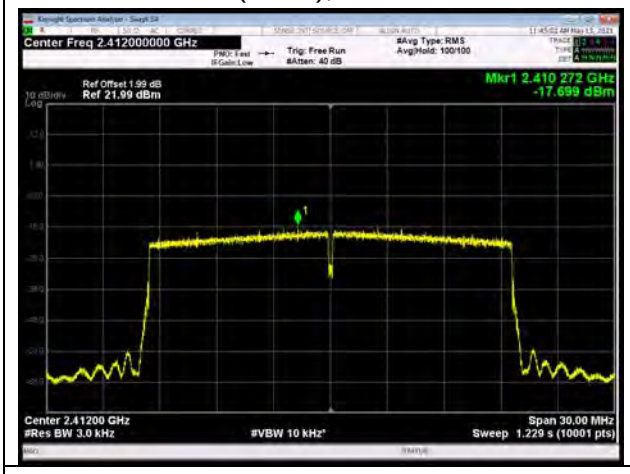
802.11n(HT20), Channel No. 11



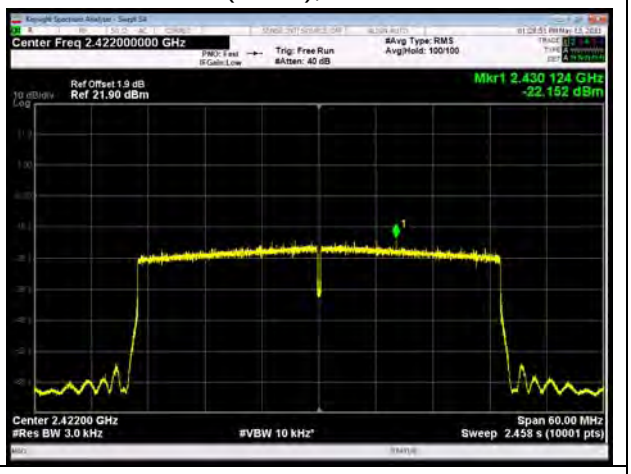
802.11n(HT40), Channel No. 9



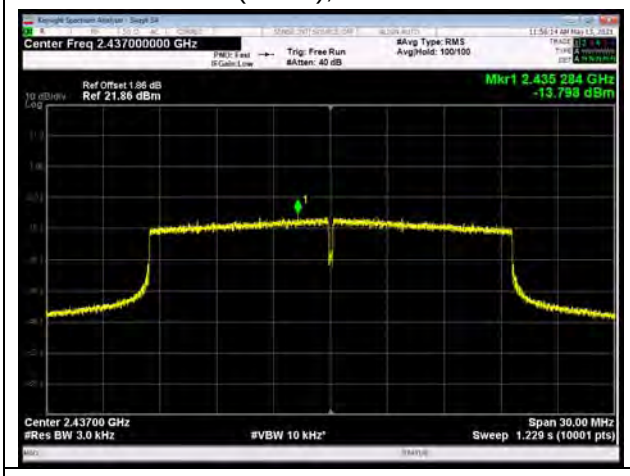
802.11ax(HE20), Channel No. 1



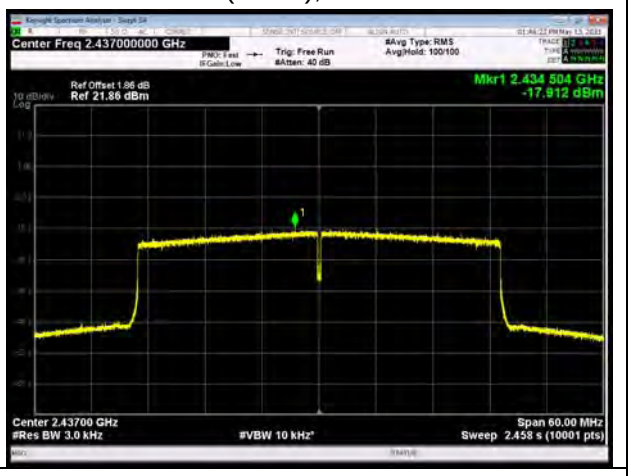
802.11ax(HE40), Channel No. 3



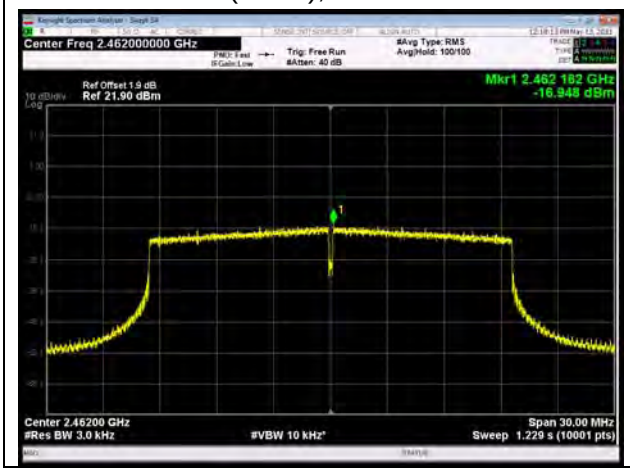
802.11ax(HE20), Channel No. 6



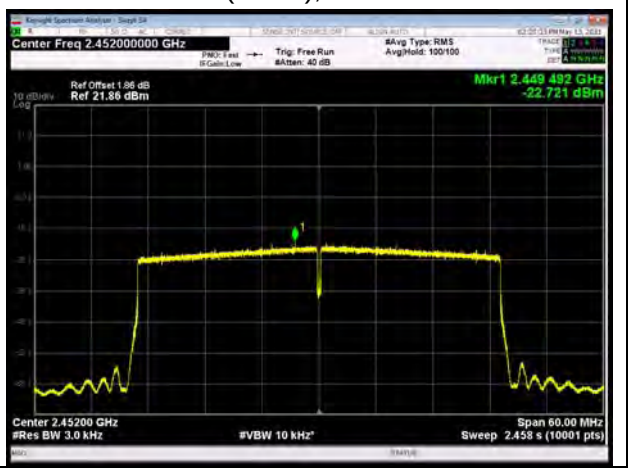
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



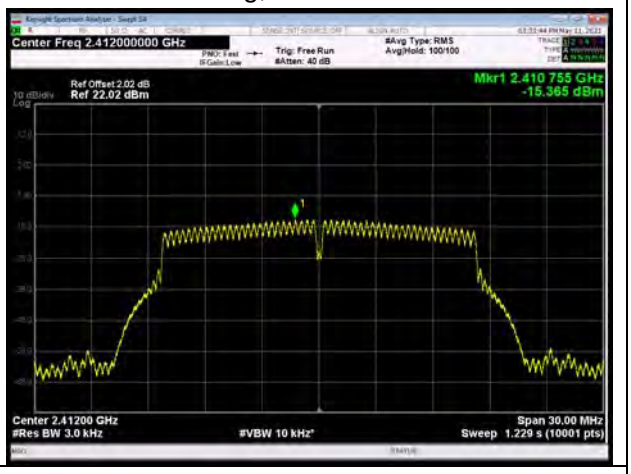
802.11ax(HE40), Channel No. 9



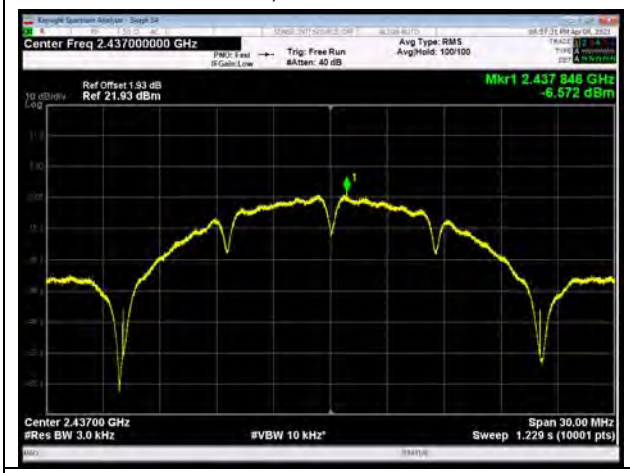
Antenna 4

802.11b, Channel No.: 1

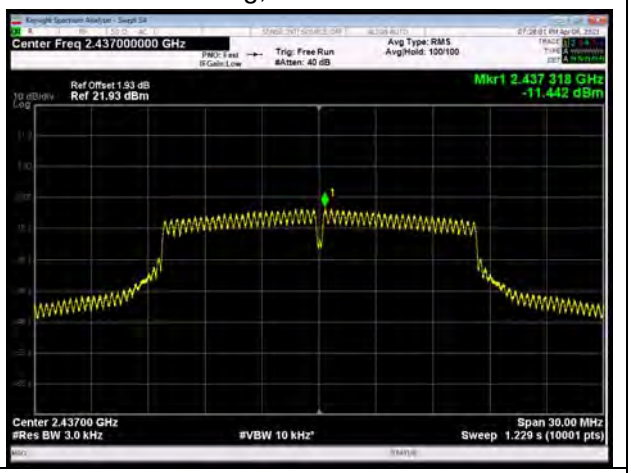
802.11g, Channel No.: 1



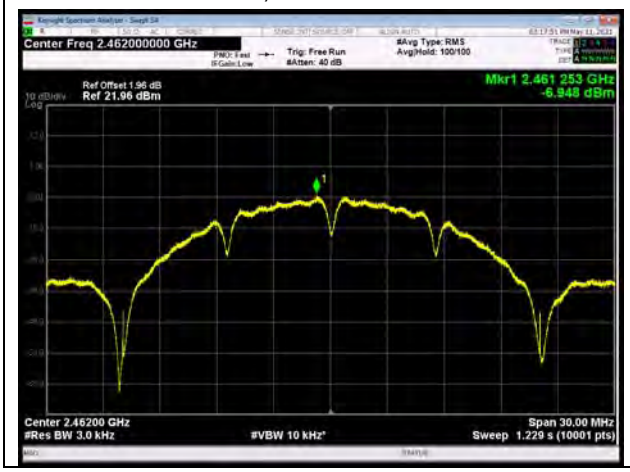
802.11b, Channel No.: 6



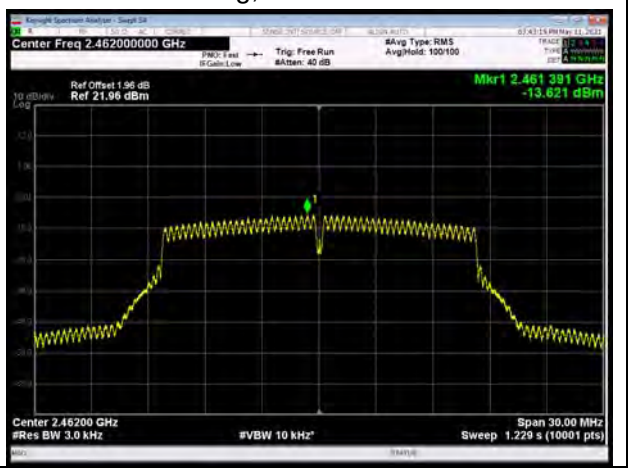
802.11g, Channel No.: 6



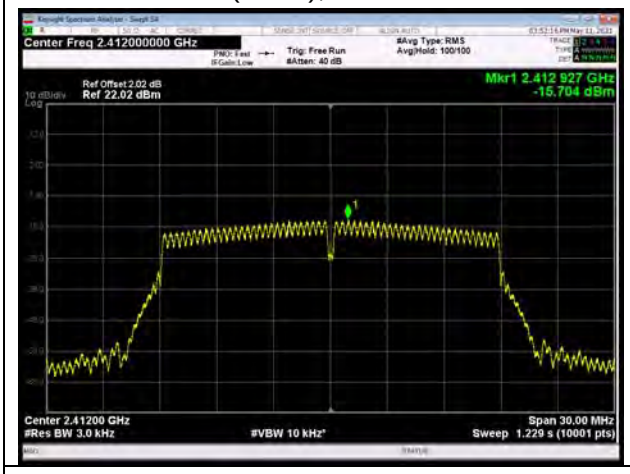
802.11b, Channel No.: 11



802.11g, Channel No.: 11

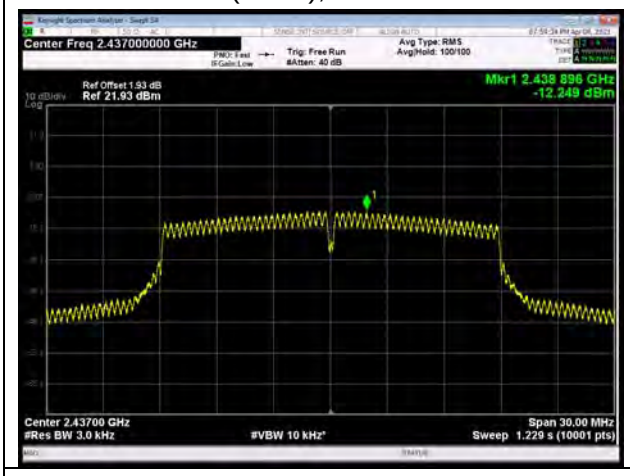


802.11n(HT20), Channel No. 1

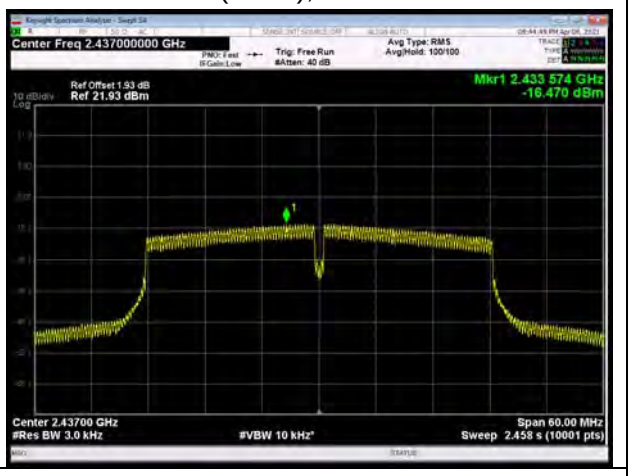


802.11n(HT40), Channel No. 3

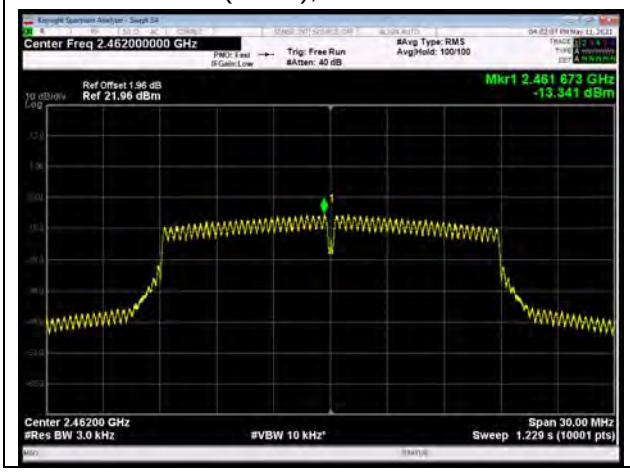
802.11n(HT20), Channel No. 6



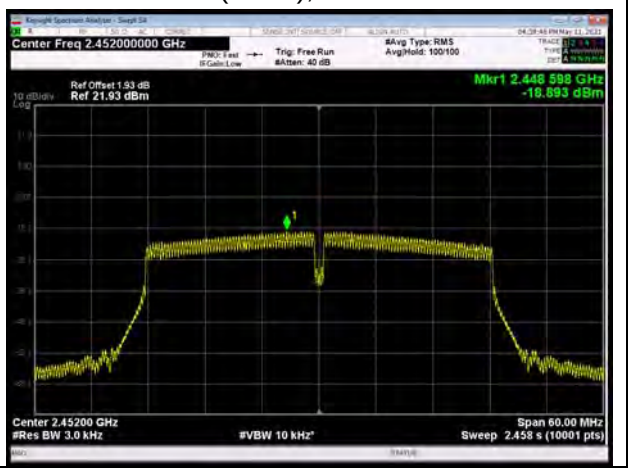
802.11n(HT40), Channel No. 6



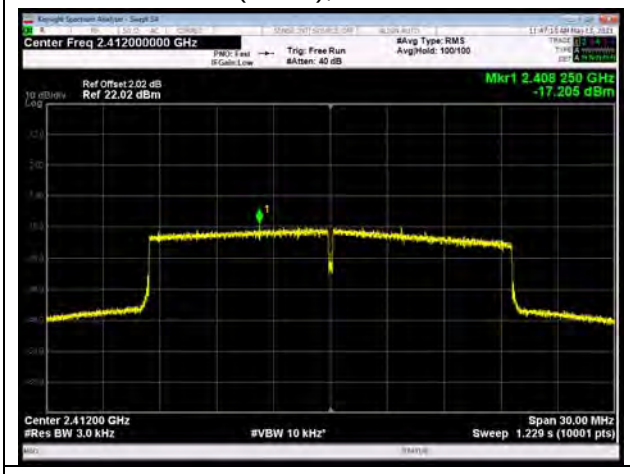
802.11n(HT20), Channel No. 11



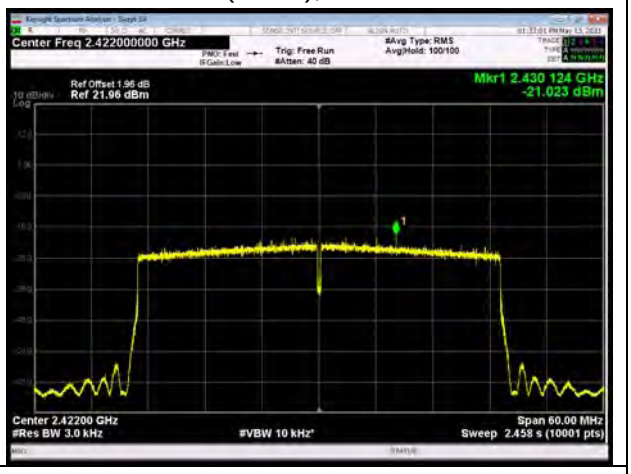
802.11n(HT40), Channel No. 9



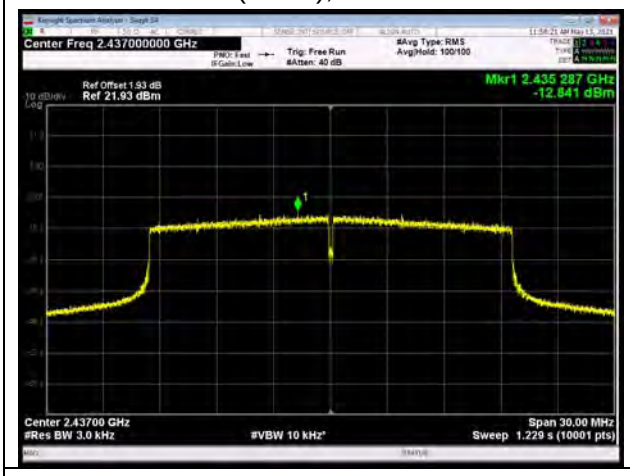
802.11ax(HE20), Channel No. 1



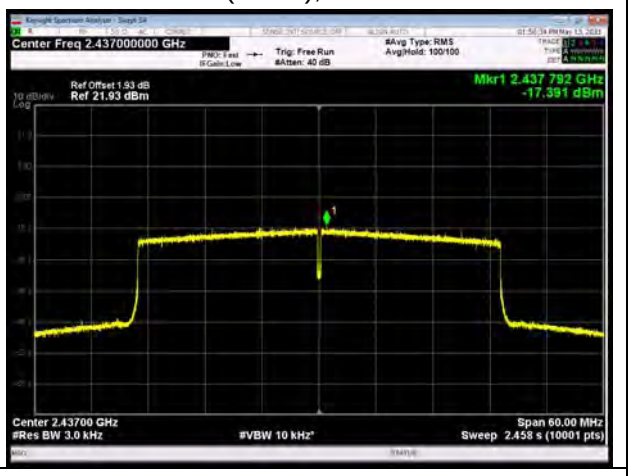
802.11ax(HE40), Channel No. 3



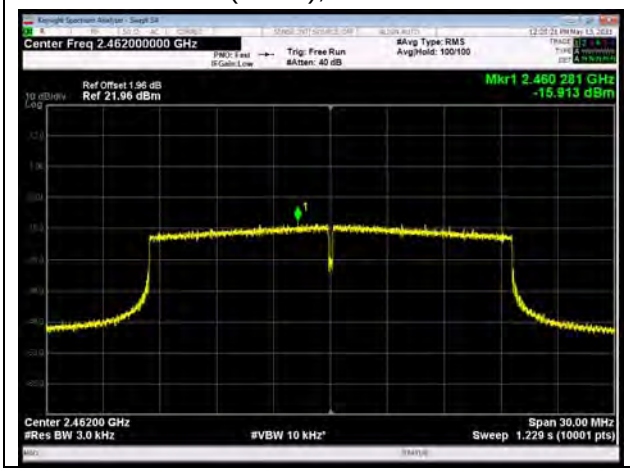
802.11ax(HE20), Channel No. 6



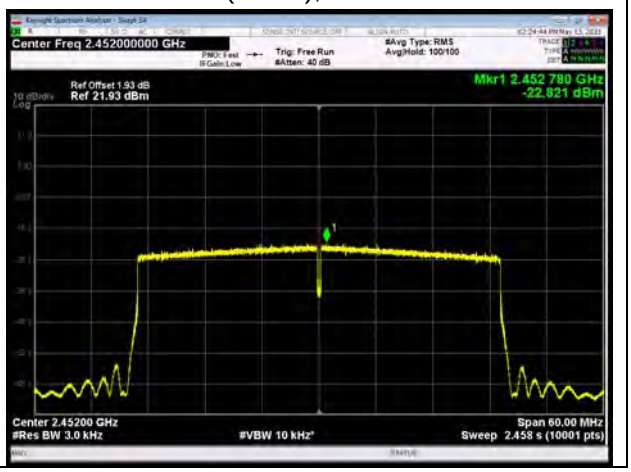
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



802.11ax(HE40), Channel No. 9

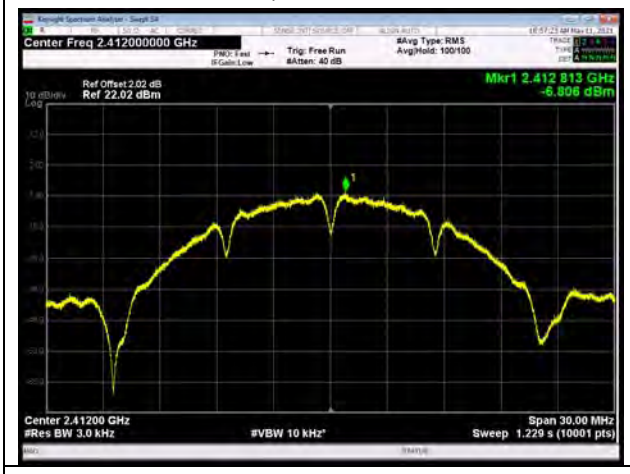


Galtronics:

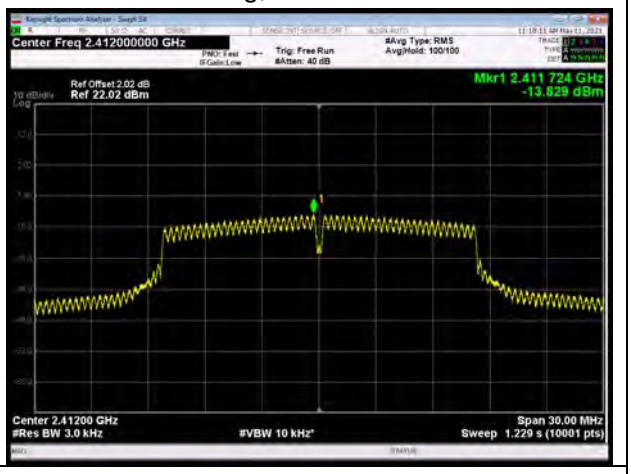
MIMO Without Beamforming

Antenna 1

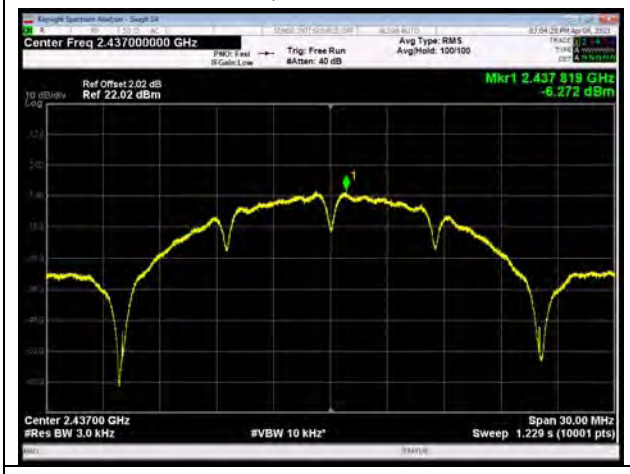
802.11b, Channel No.: 1



802.11g, Channel No.: 1

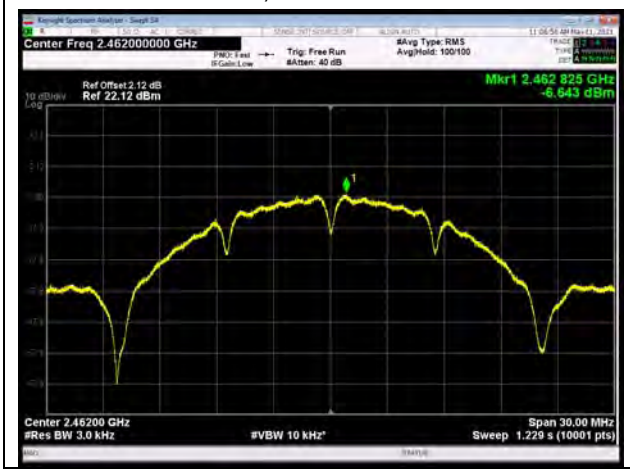


802.11b, Channel No.: 6

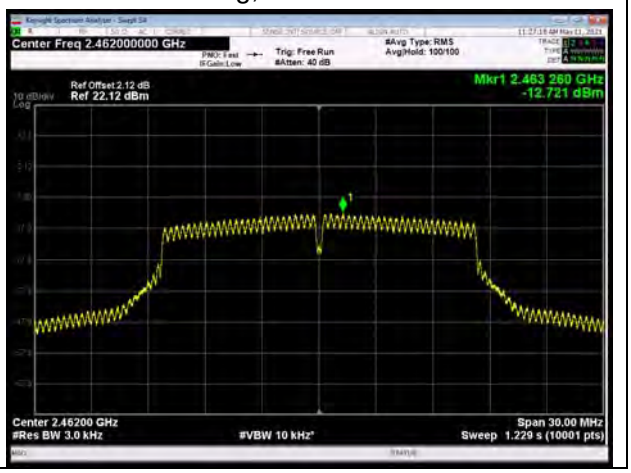


802.11g, Channel No.: 6

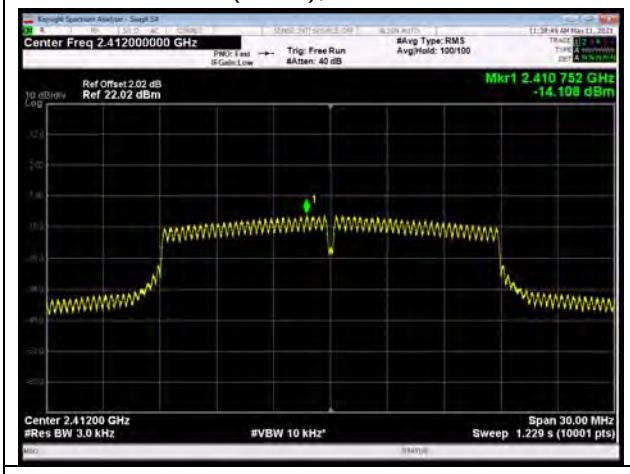
802.11b, Channel No.: 11



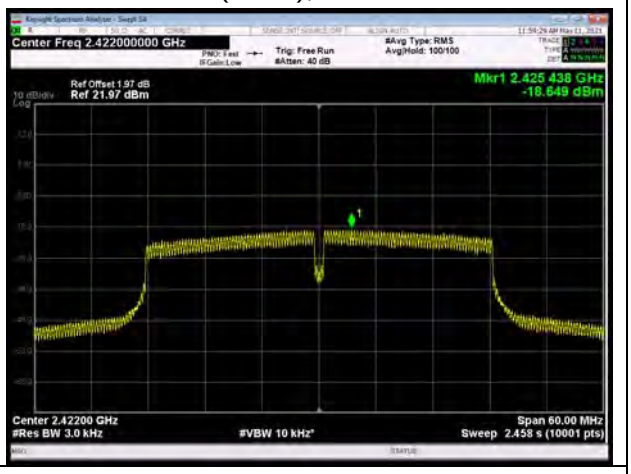
802.11g, Channel No.: 11



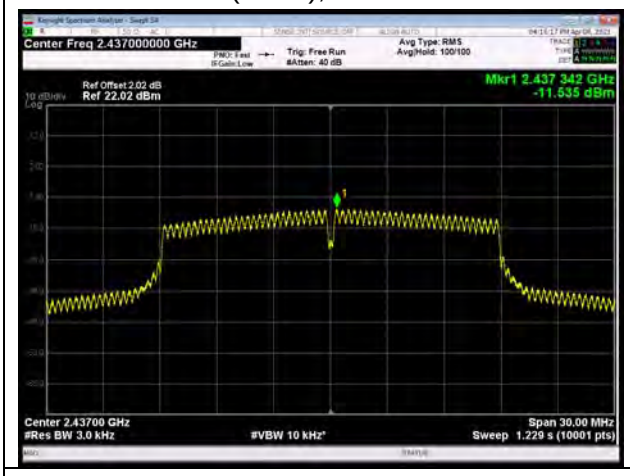
802.11n(HT20), Channel No. 1



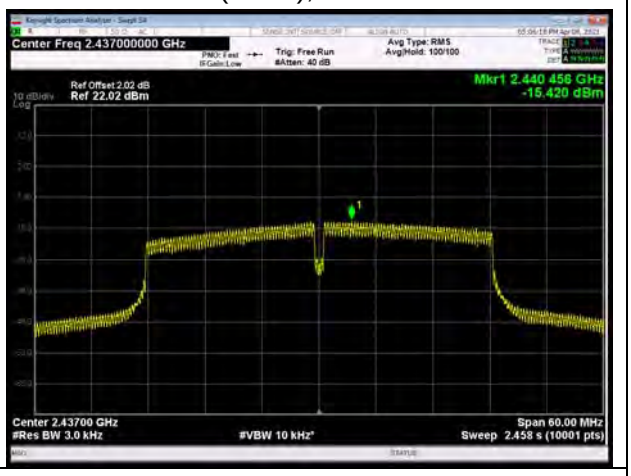
802.11n(HT40), Channel No. 3



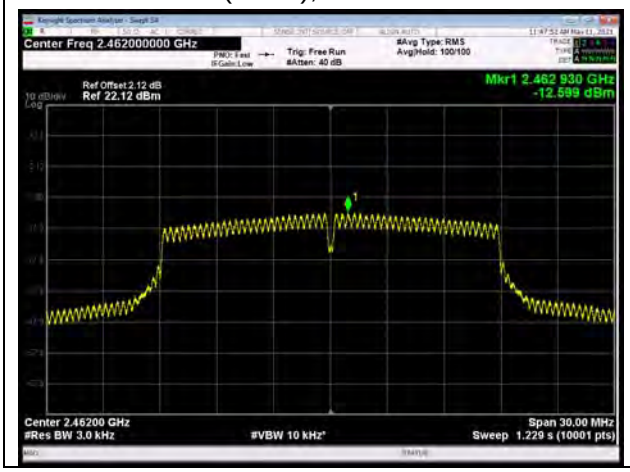
802.11n(HT20), Channel No. 6



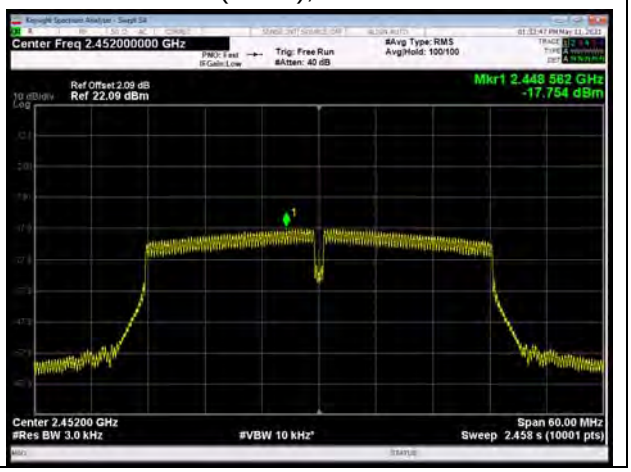
802.11n(HT40), Channel No. 6



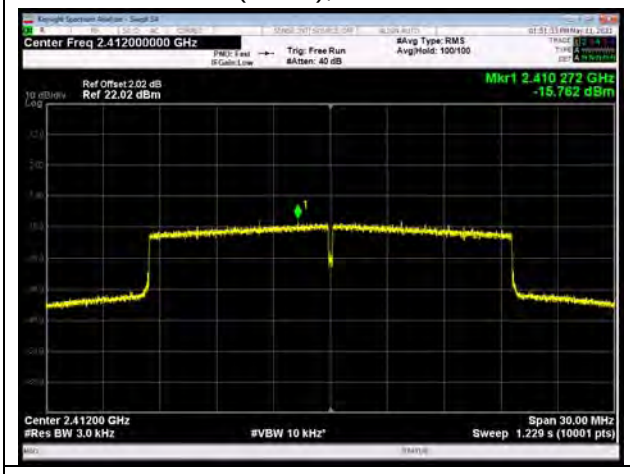
802.11n(HT20), Channel No. 11



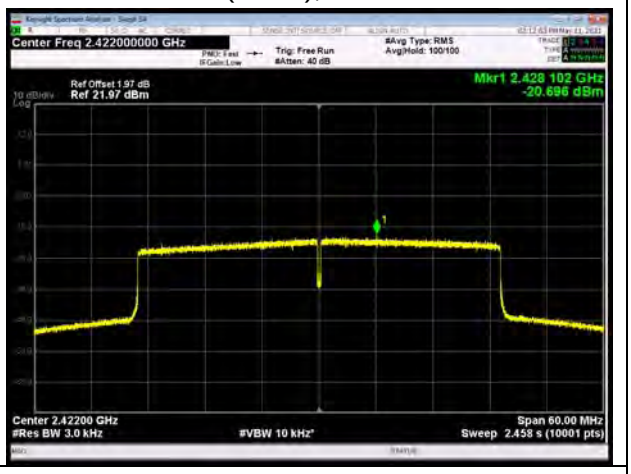
802.11n(HT40), Channel No. 9



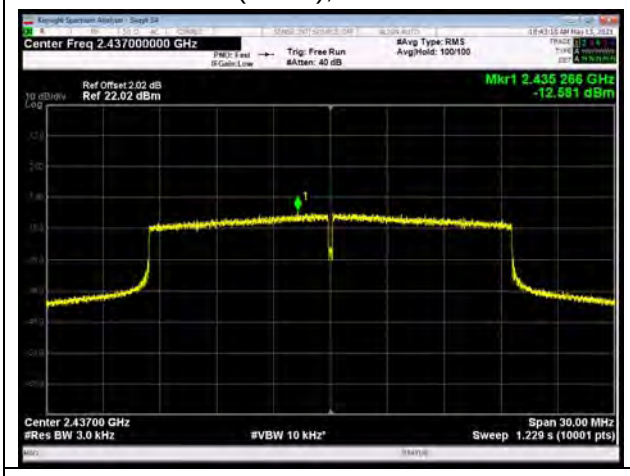
802.11ax(HE20), Channel No. 1



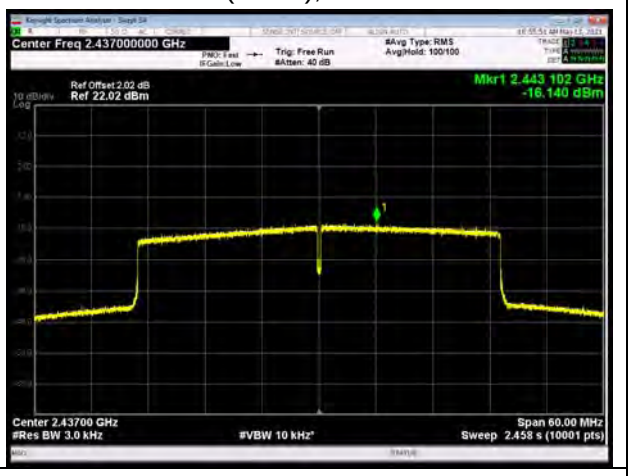
802.11ax(HE40), Channel No. 3



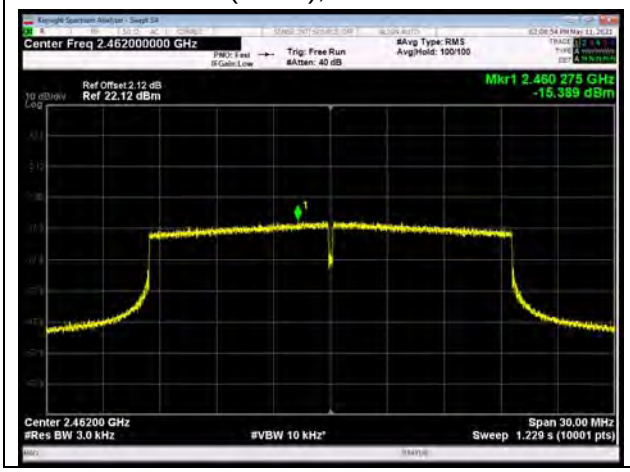
802.11ax(HE20), Channel No. 6



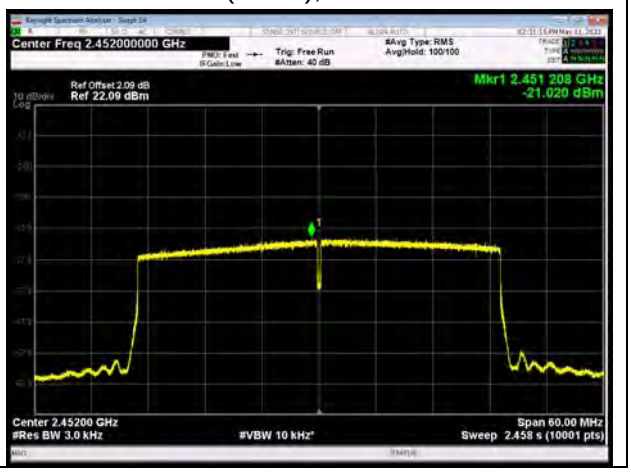
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



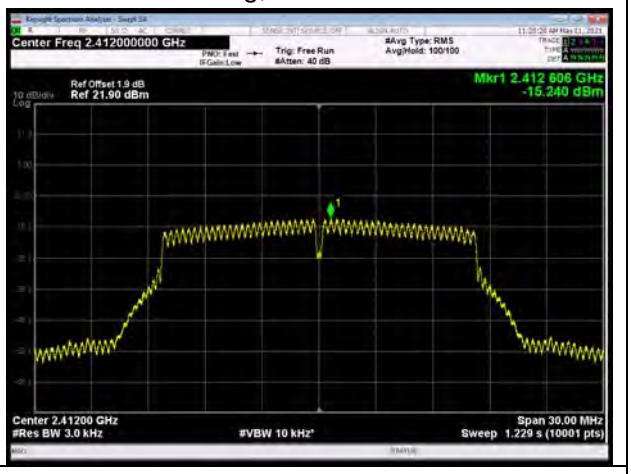
802.11ax(HE40), Channel No. 9



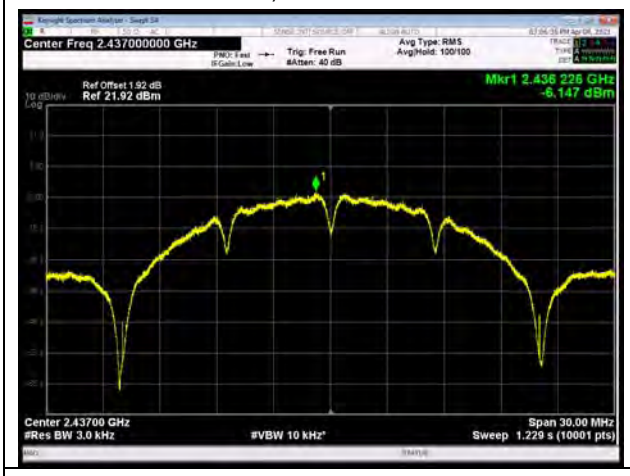
Antenna 2

802.11b, Channel No.: 1

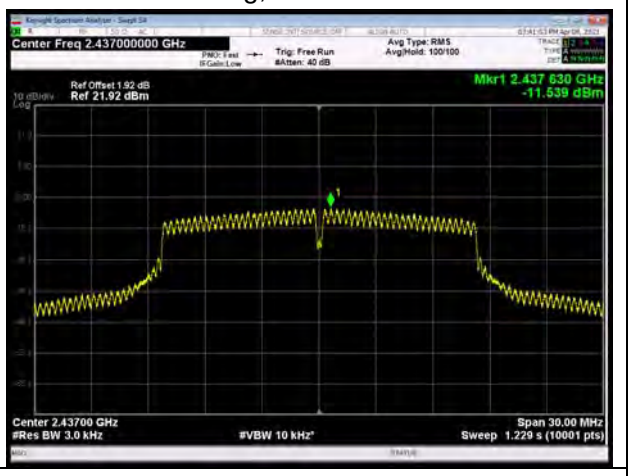
802.11g, Channel No.: 1



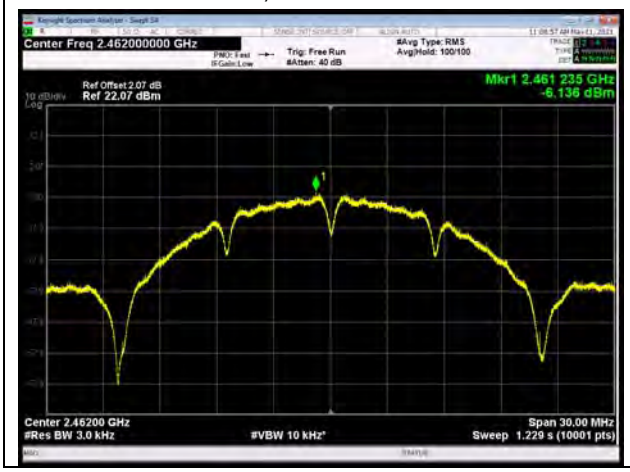
802.11b, Channel No.: 6



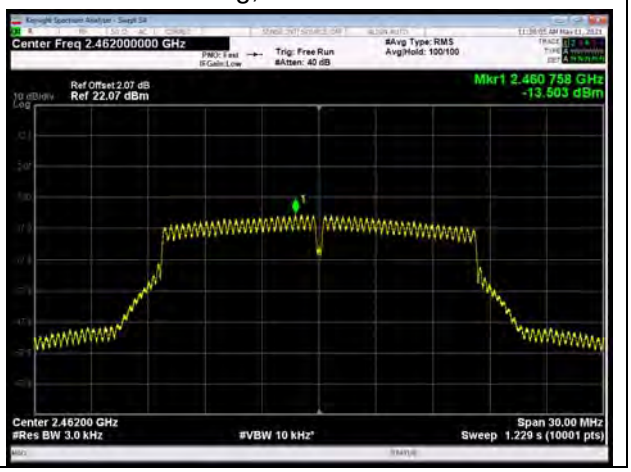
802.11g, Channel No.: 6



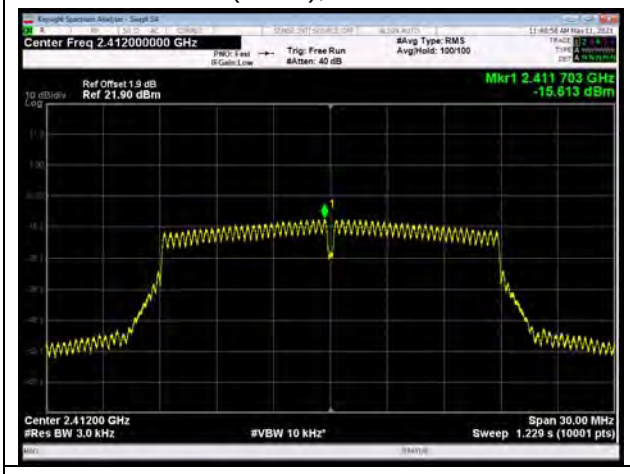
802.11b, Channel No.: 11



802.11g, Channel No.: 11

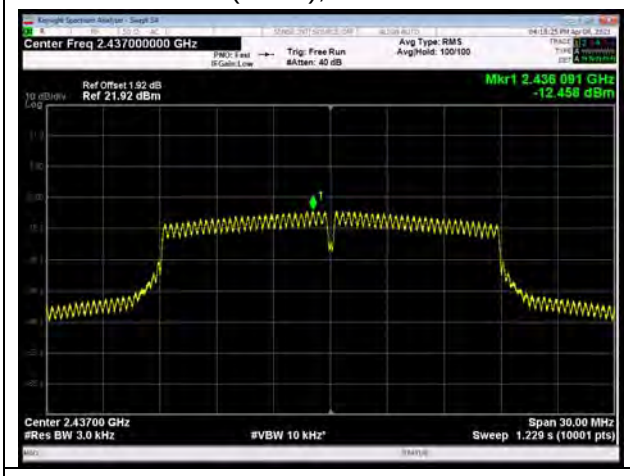


802.11n(HT20), Channel No. 1

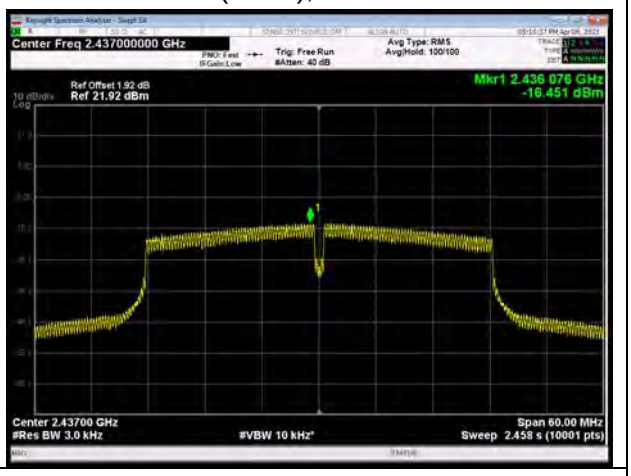


802.11n(HT40), Channel No. 3

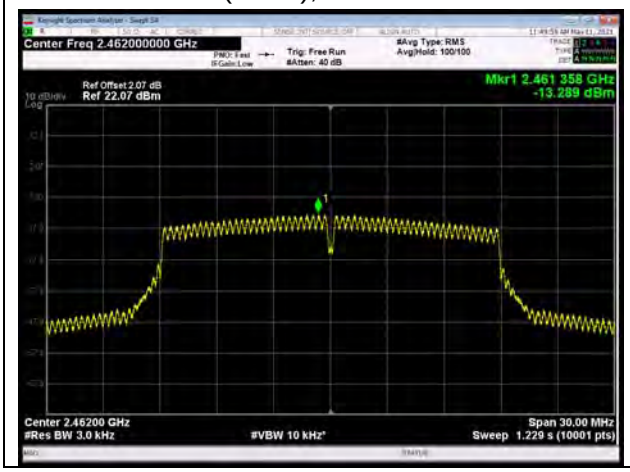
802.11n(HT20), Channel No. 6



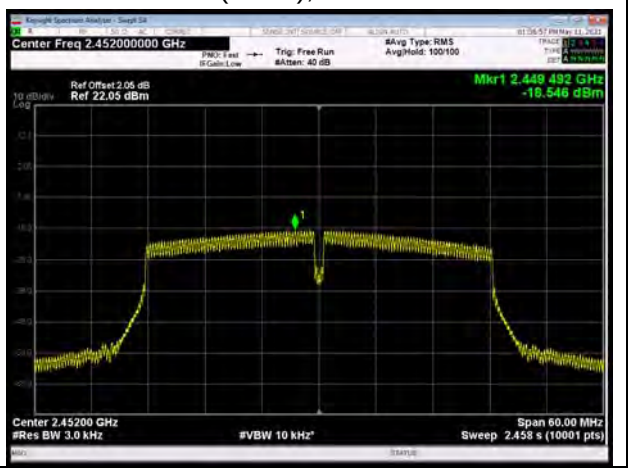
802.11n(HT40), Channel No. 6



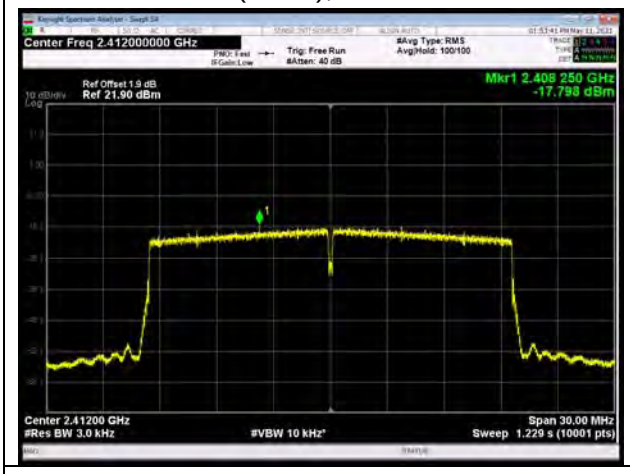
802.11n(HT20), Channel No. 11



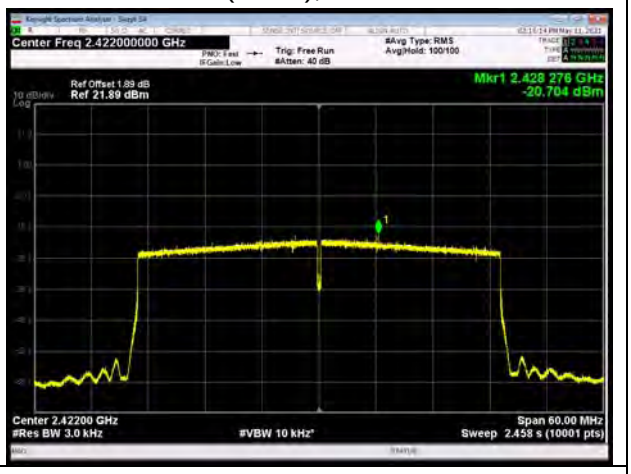
802.11n(HT40), Channel No. 9



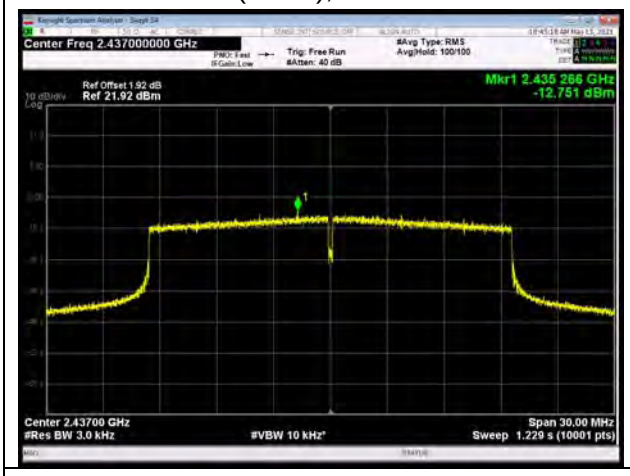
802.11ax(HE20), Channel No. 1



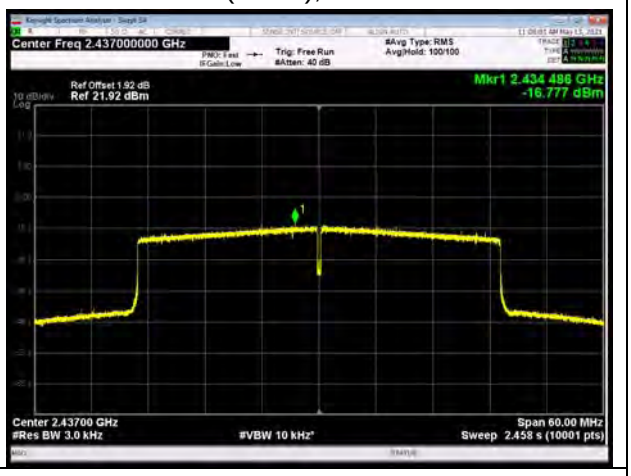
802.11ax(HE40), Channel No. 3



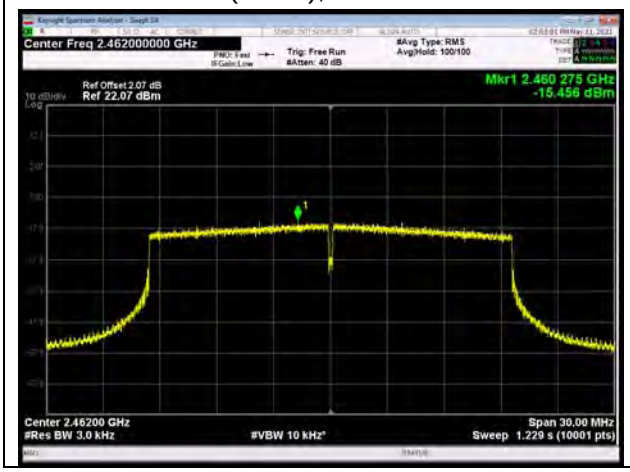
802.11ax(HE20), Channel No. 6



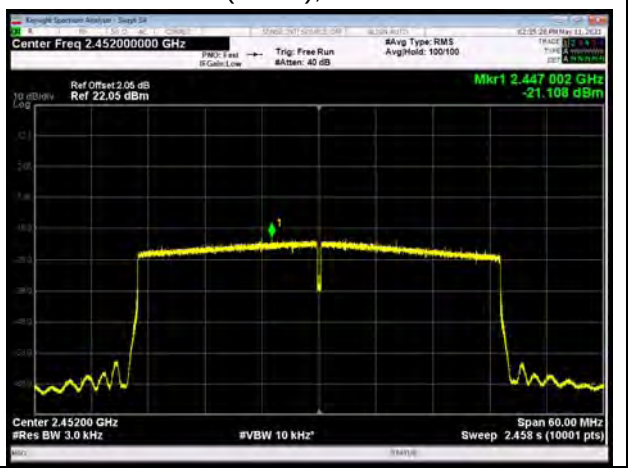
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



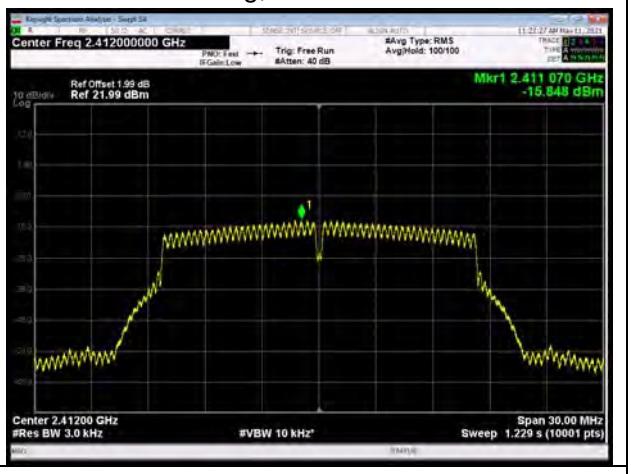
802.11ax(HE40), Channel No. 9



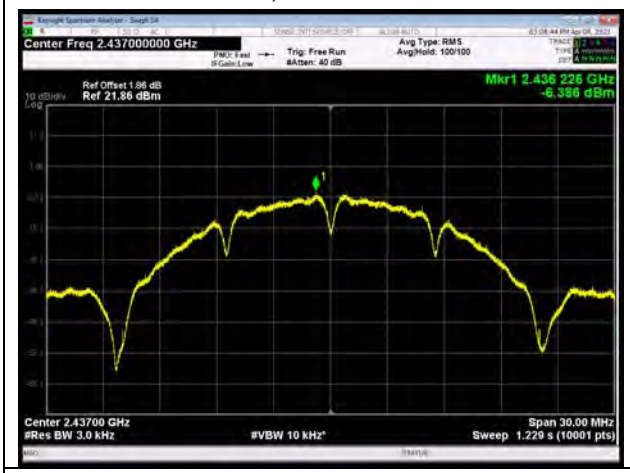
Antenna 3

802.11b, Channel No.: 1

802.11g, Channel No.: 1

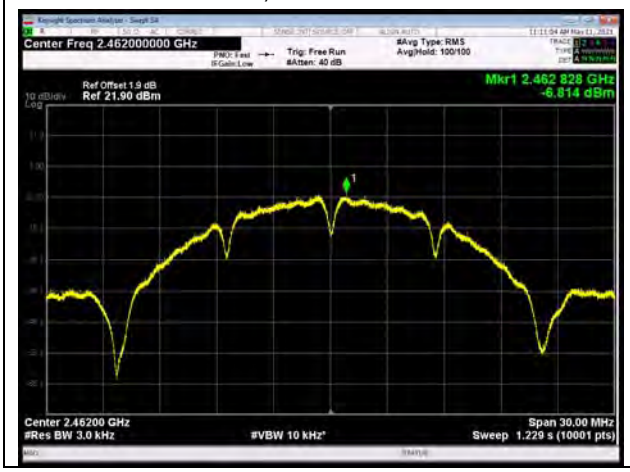


802.11b, Channel No.: 6

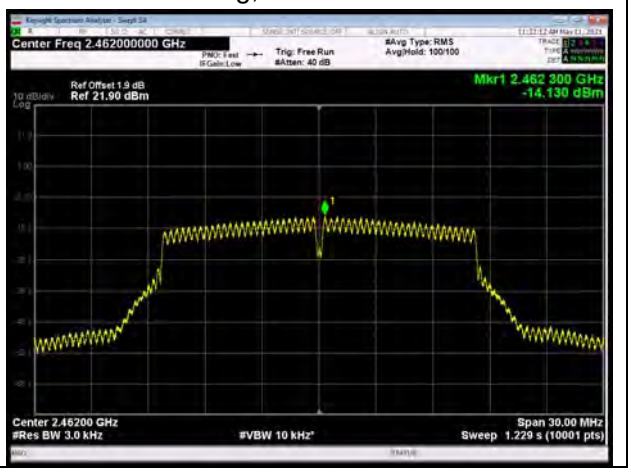


802.11g, Channel No.: 6

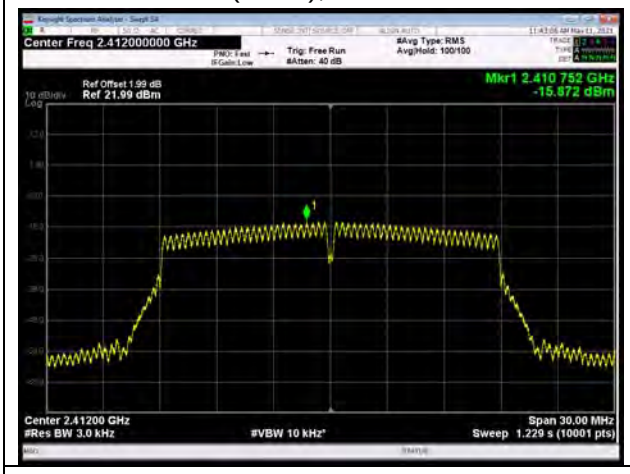
802.11b, Channel No.: 11



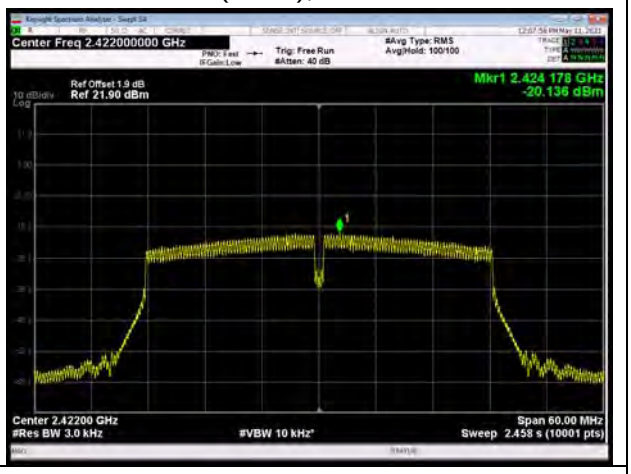
802.11g, Channel No.: 11



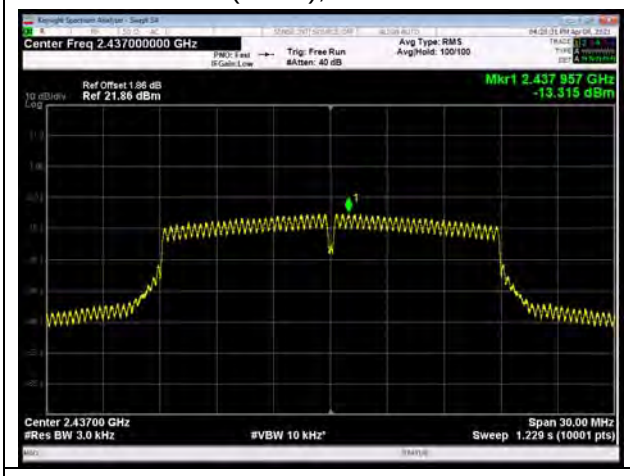
802.11n(HT20), Channel No. 1



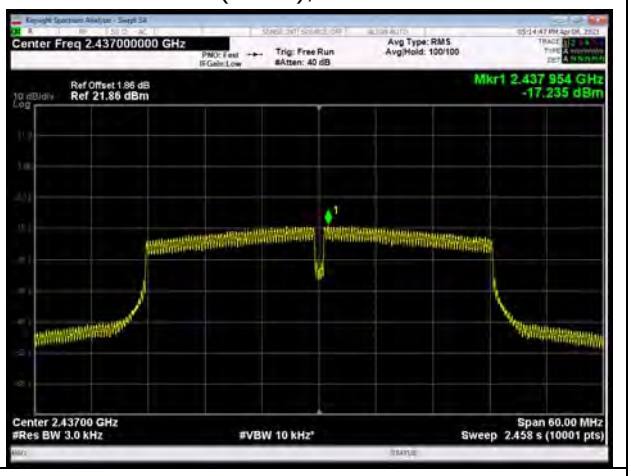
802.11n(HT40), Channel No. 3



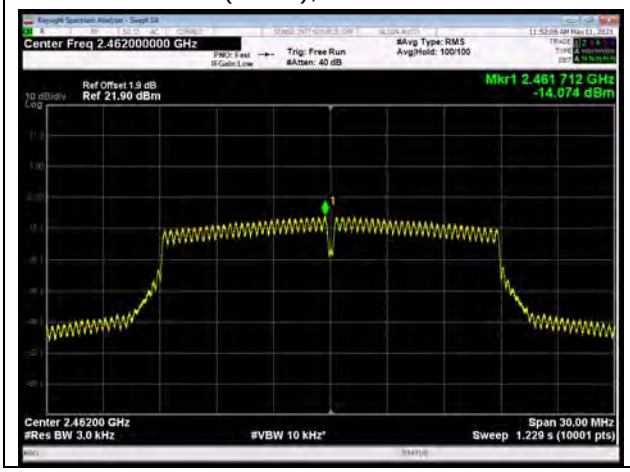
802.11n(HT20), Channel No. 6



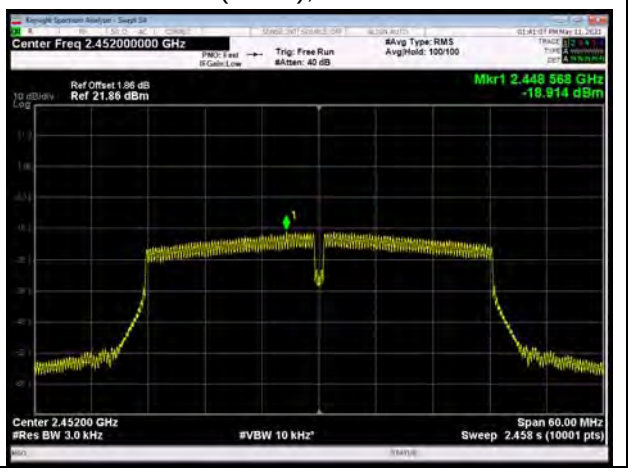
802.11n(HT40), Channel No. 6



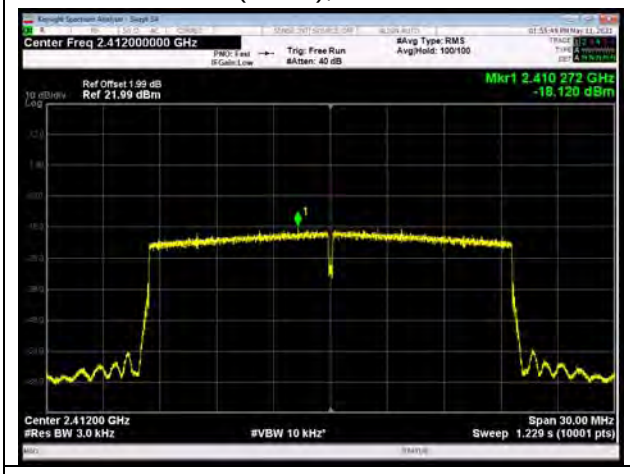
802.11n(HT20), Channel No. 11



802.11n(HT40), Channel No. 9

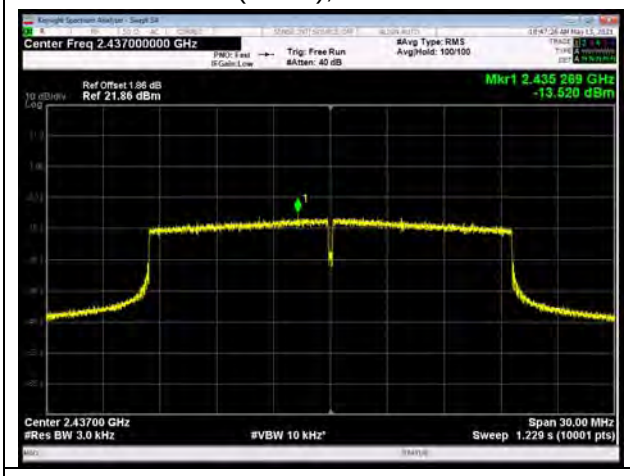


802.11ax(HE20), Channel No. 1

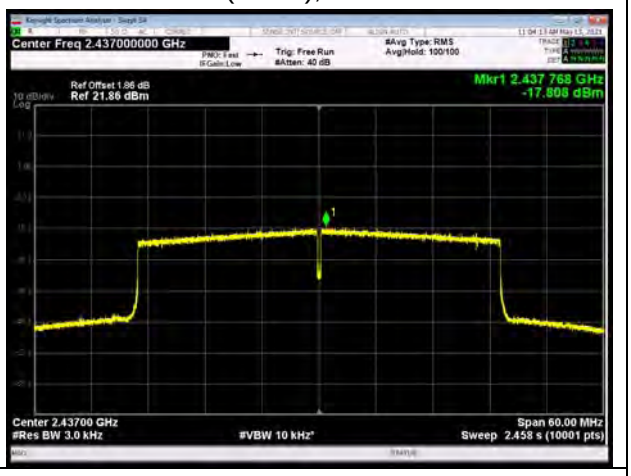


802.11ax(HE40), Channel No. 3

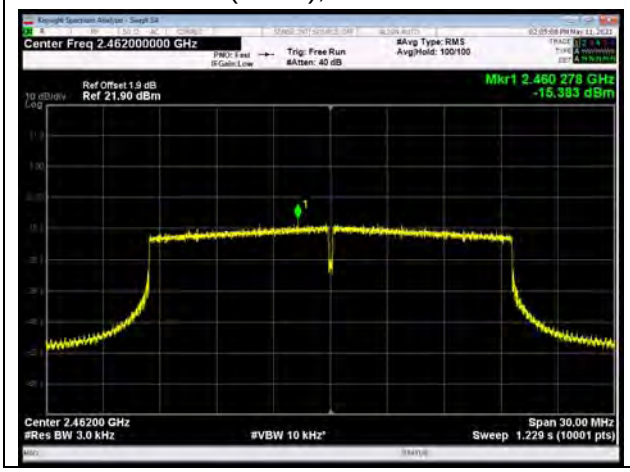
802.11ax(HE20), Channel No. 6



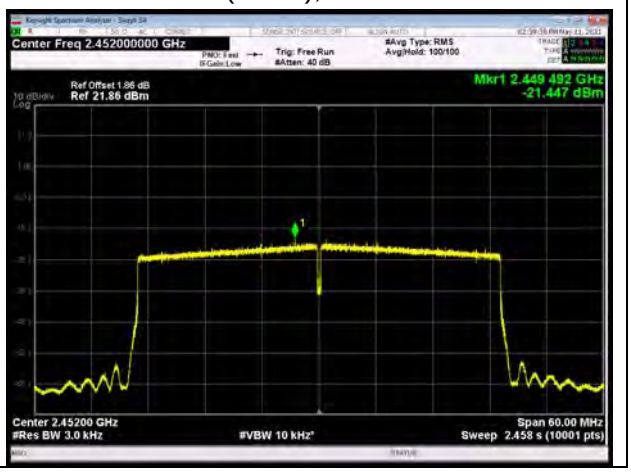
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



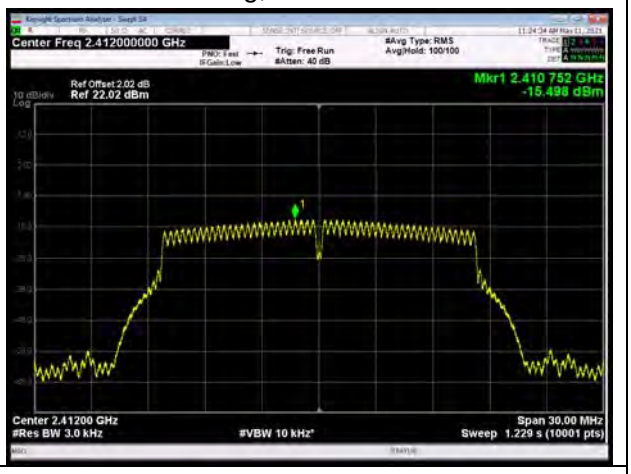
802.11ax(HE40), Channel No. 9



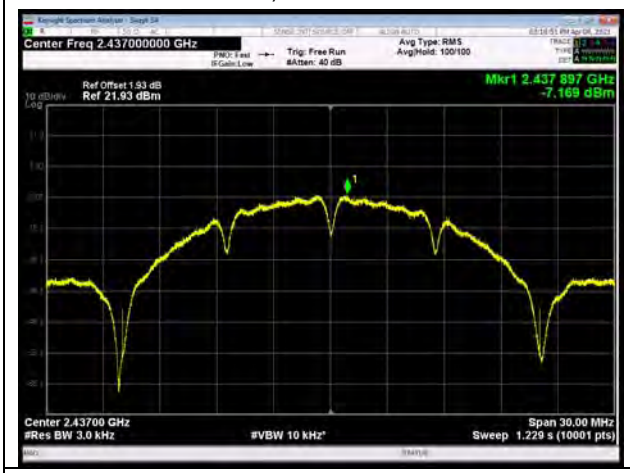
Antenna 4

802.11b, Channel No.: 1

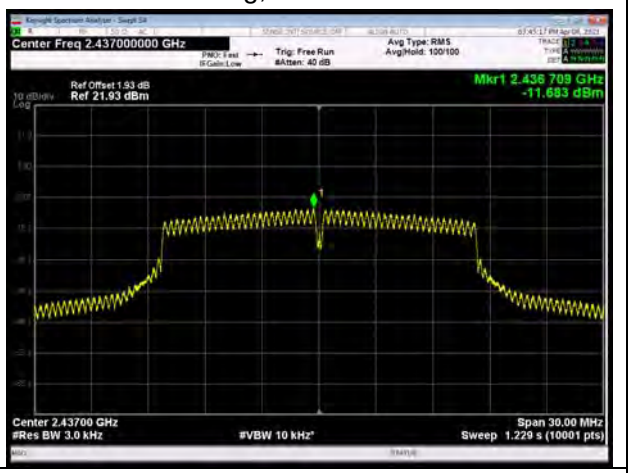
802.11g, Channel No.: 1



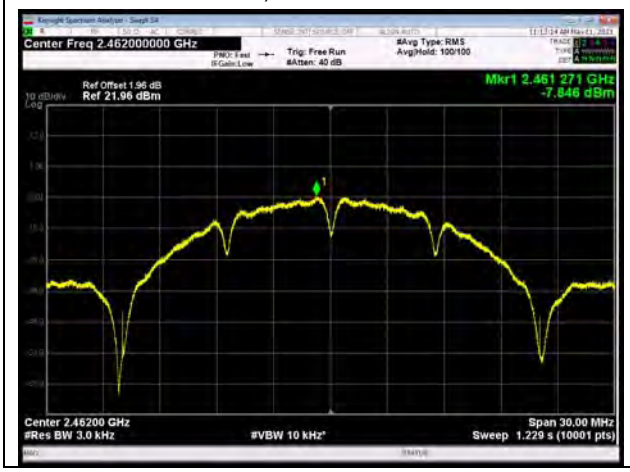
802.11b, Channel No.: 6



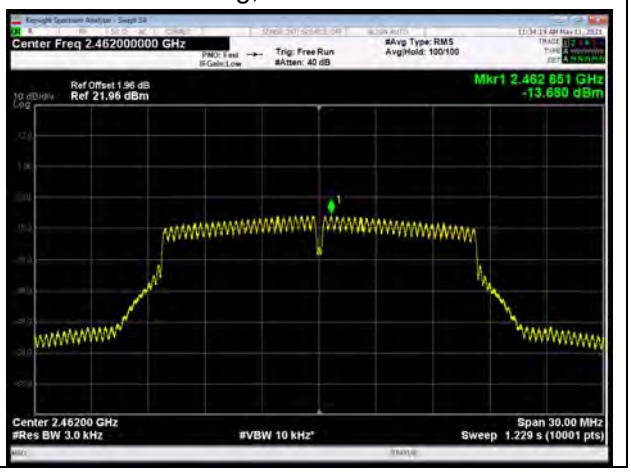
802.11g, Channel No.: 6



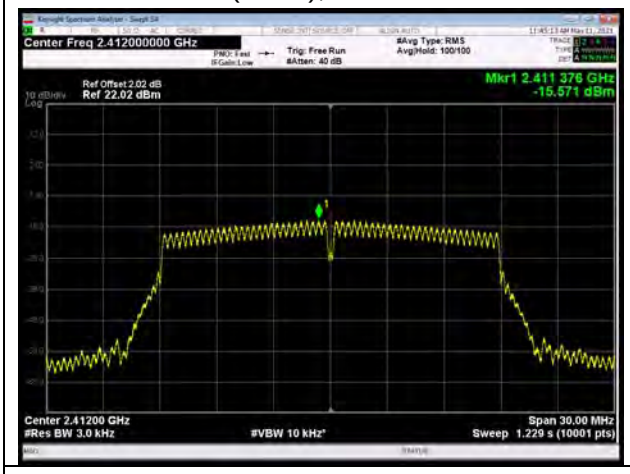
802.11b, Channel No.: 11



802.11g, Channel No.: 11

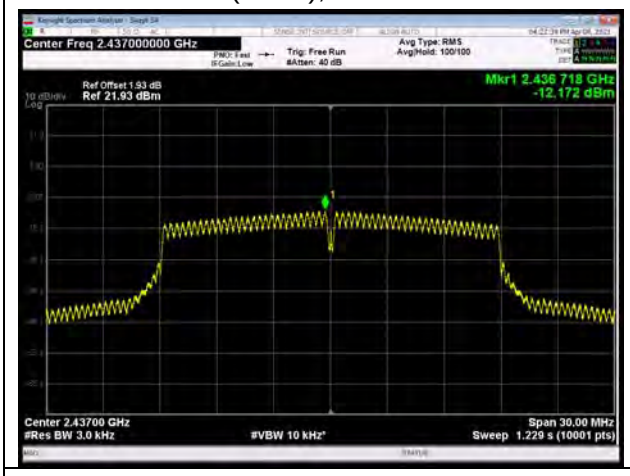


802.11n(HT20), Channel No. 1



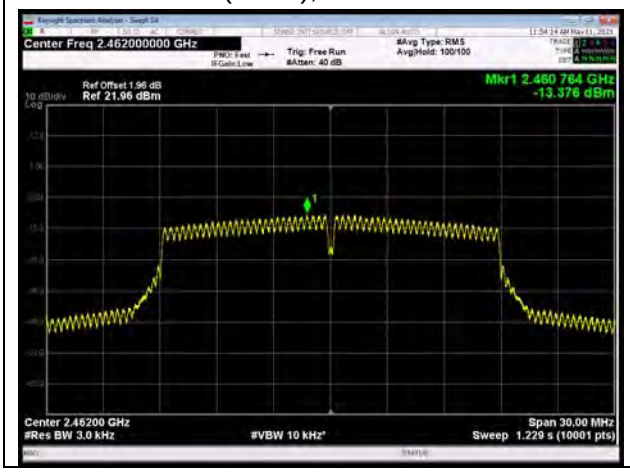
802.11n(HT40), Channel No. 3

802.11n(HT20), Channel No. 6

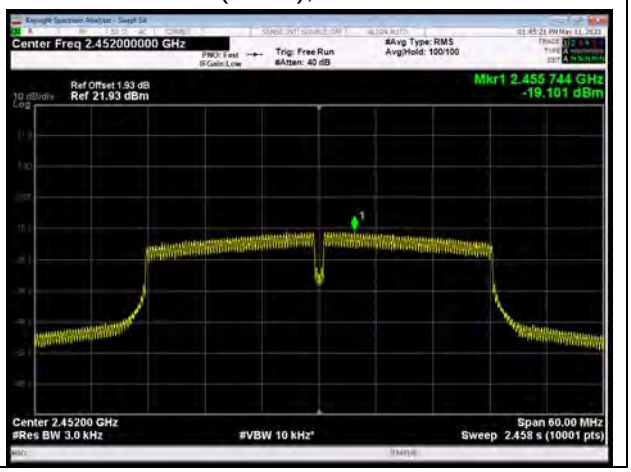


802.11n(HT40), Channel No. 6

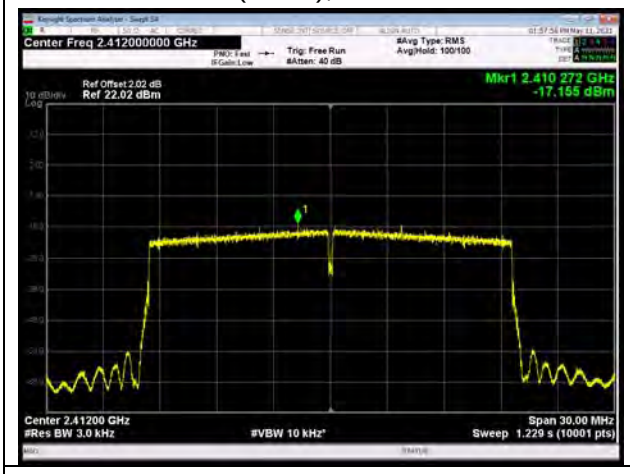
802.11n(HT20), Channel No. 11



802.11n(HT40), Channel No. 9

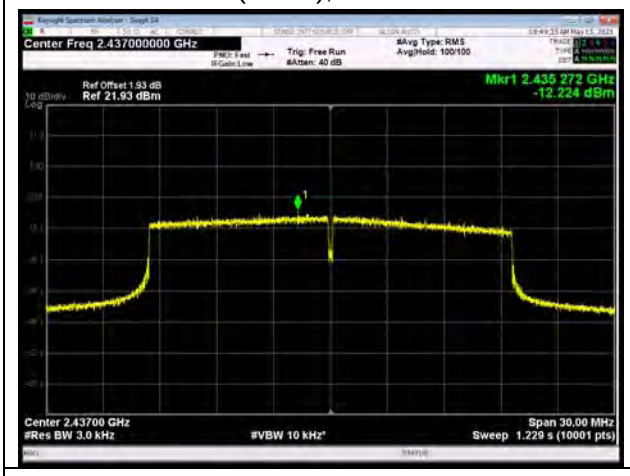


802.11ax(HE20), Channel No. 1

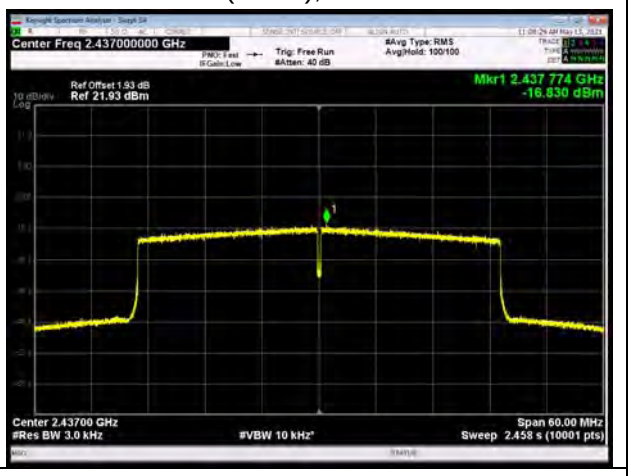


802.11ax(HE40), Channel No. 3

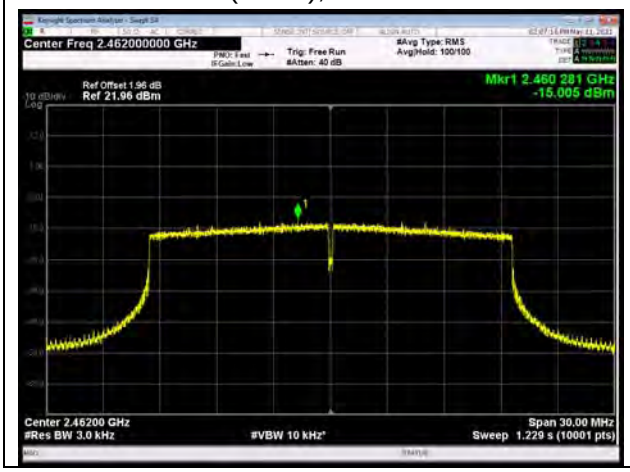
802.11ax(HE20), Channel No. 6



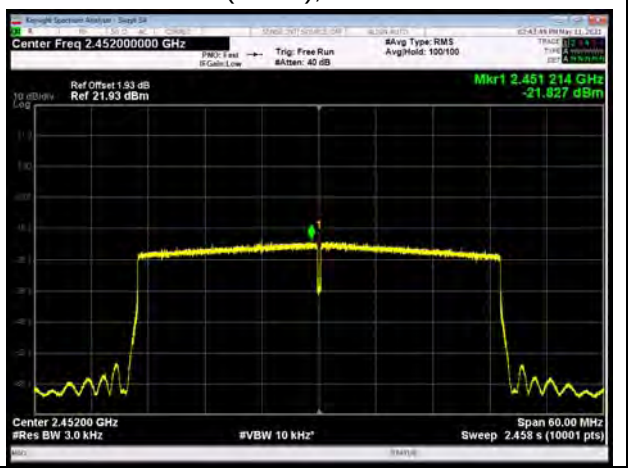
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



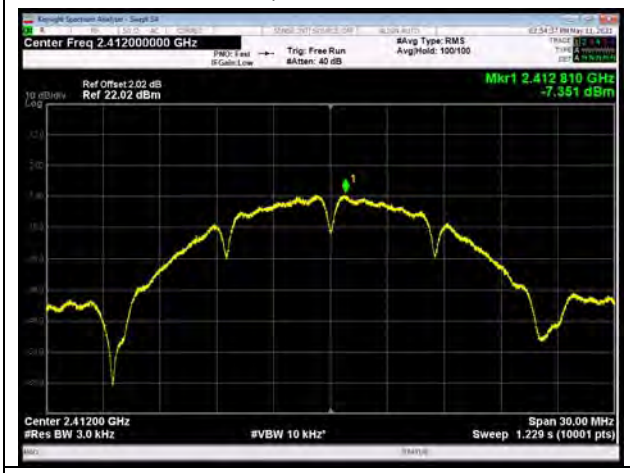
802.11ax(HE40), Channel No. 9



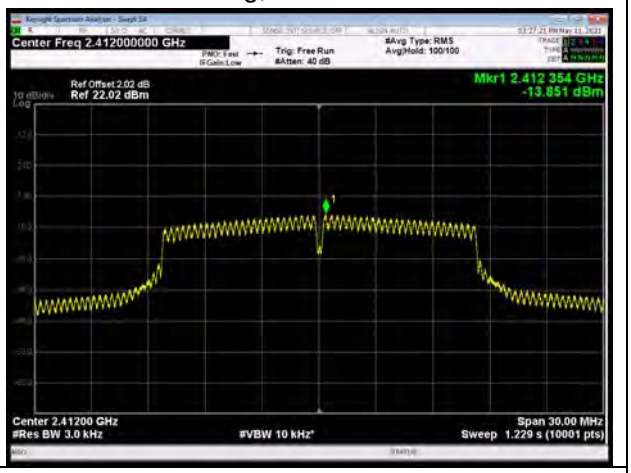
MIMO With Beamforming

Antenna 1

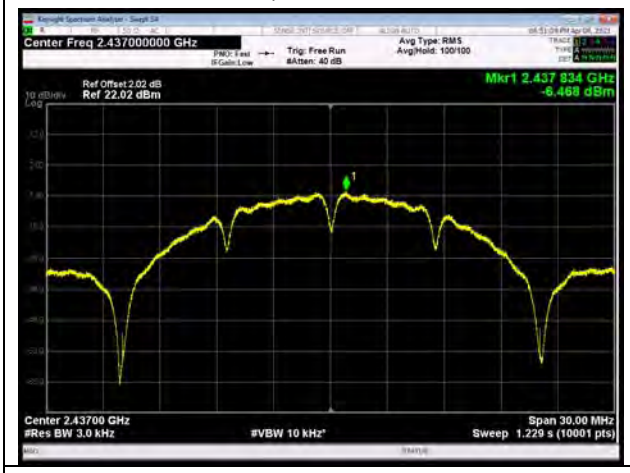
802.11b, Channel No.: 1



802.11g, Channel No.: 1

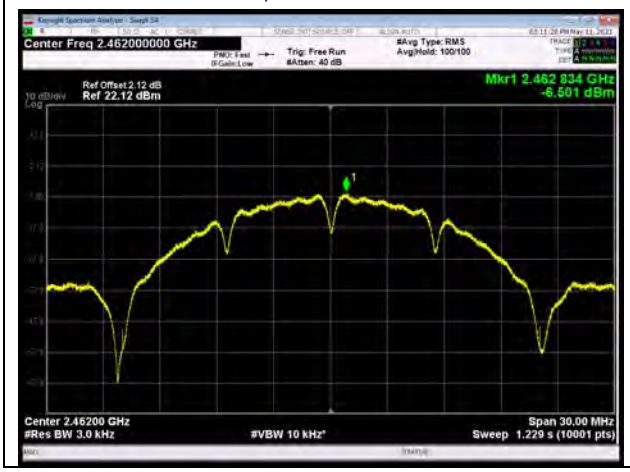


802.11b, Channel No.: 6

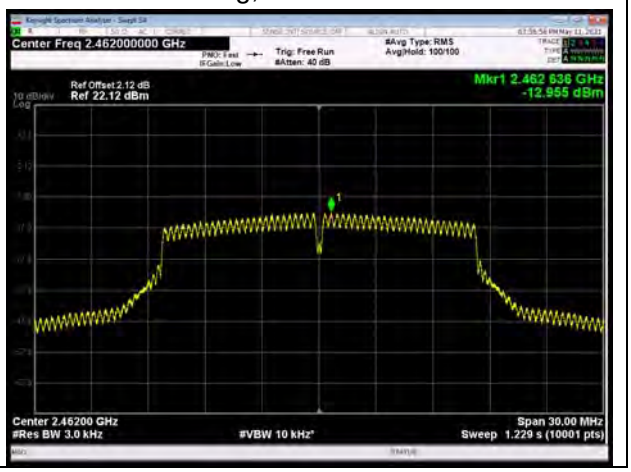


802.11g, Channel No.: 6

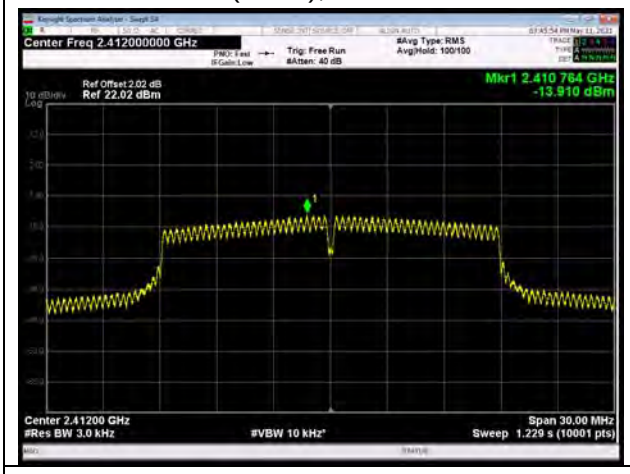
802.11b, Channel No.: 11



802.11g, Channel No.: 11

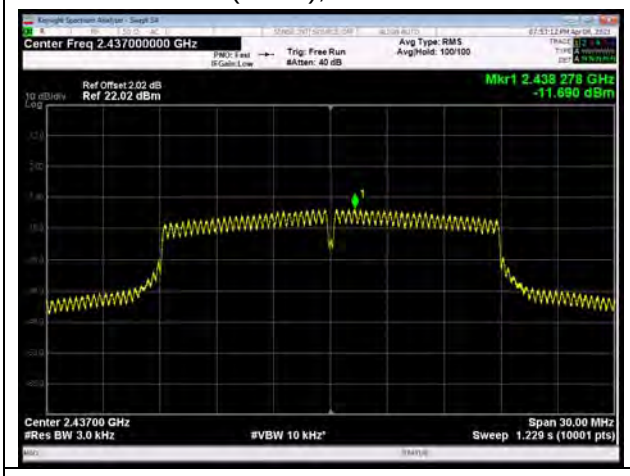


802.11n(HT20), Channel No. 1



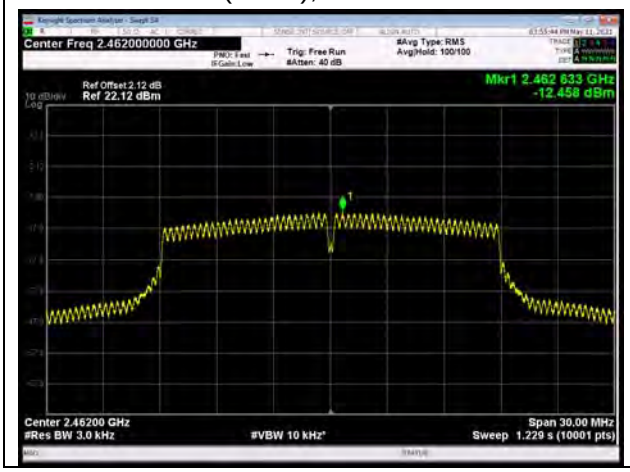
802.11n(HT40), Channel No. 3

802.11n(HT20), Channel No. 6



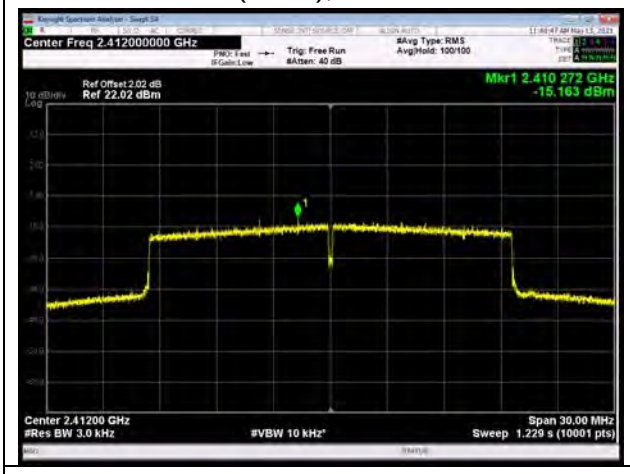
802.11n(HT40), Channel No. 6

802.11n(HT20), Channel No. 11

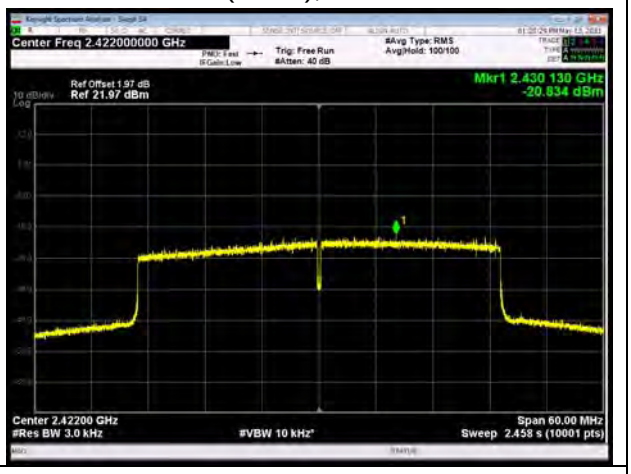


802.11n(HT40), Channel No. 9

802.11ax(HE20), Channel No. 1

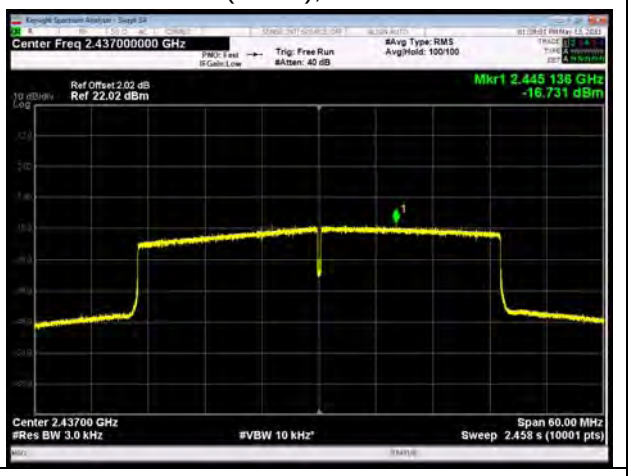


802.11ax(HE40), Channel No. 3

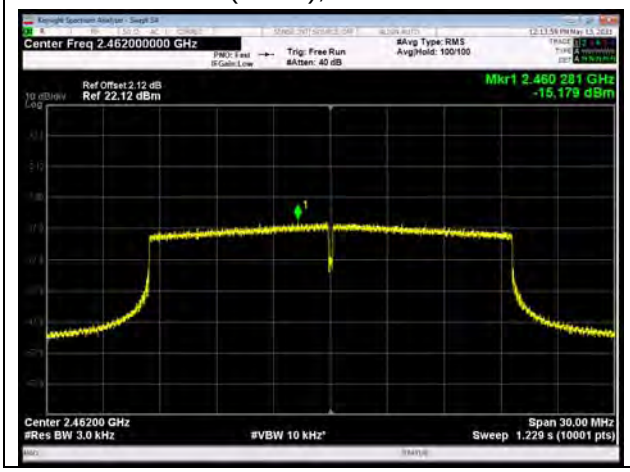


802.11ax(HE20), Channel No. 6

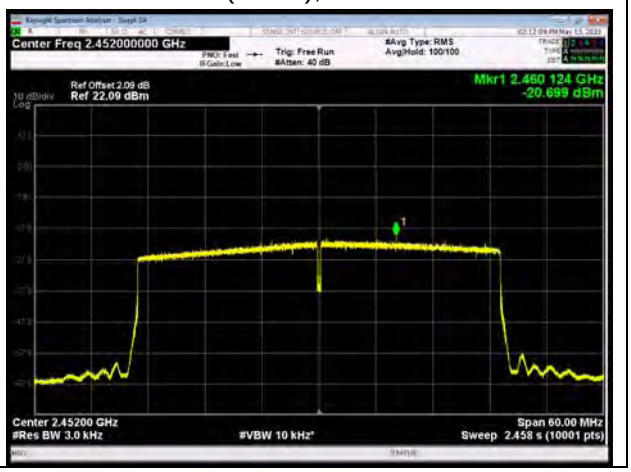
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



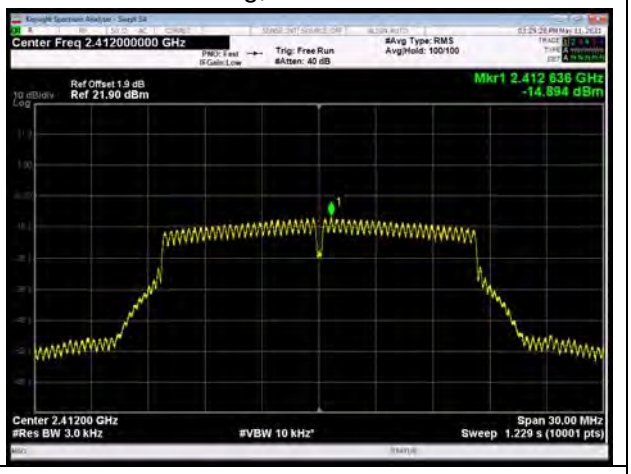
802.11ax(HE40), Channel No. 9



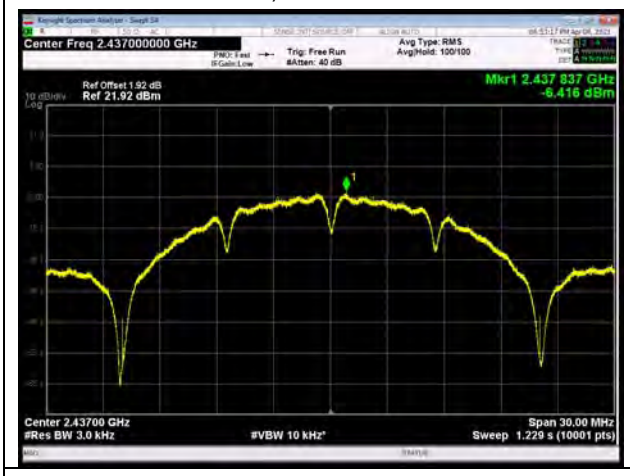
Antenna 2

802.11b, Channel No.: 1

802.11g, Channel No.: 1

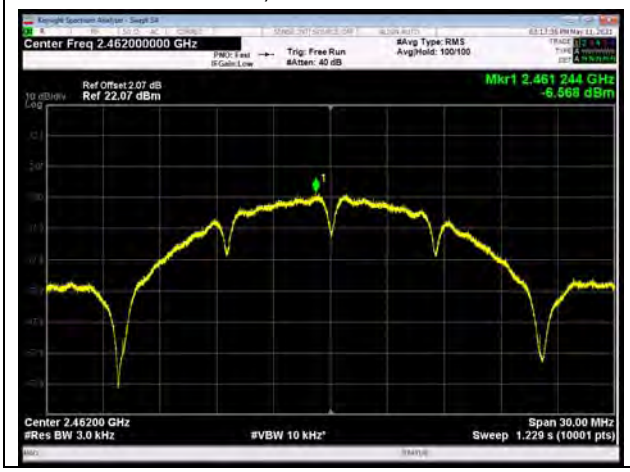


802.11b, Channel No.: 6

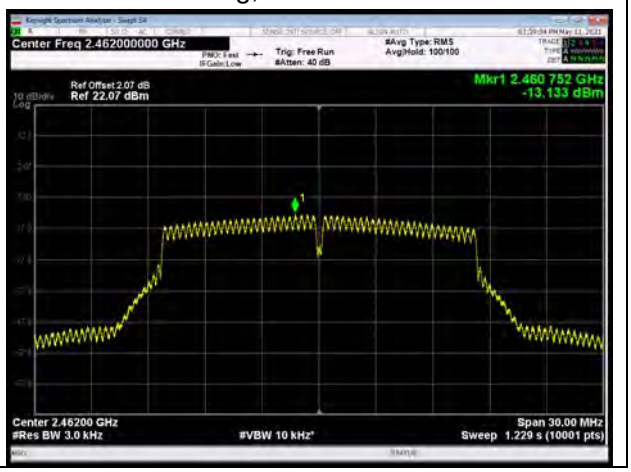


802.11g, Channel No.: 6

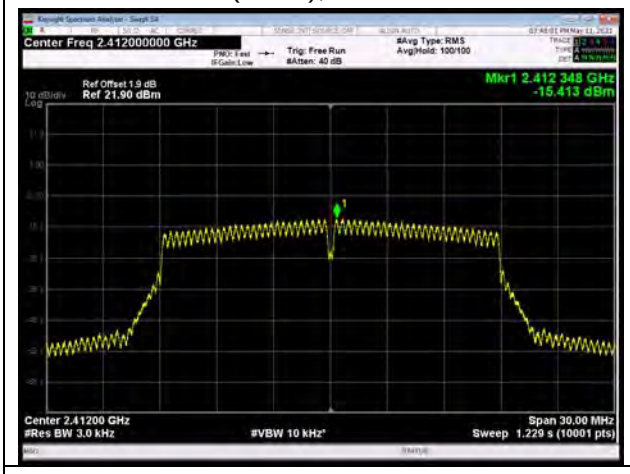
802.11b, Channel No.: 11



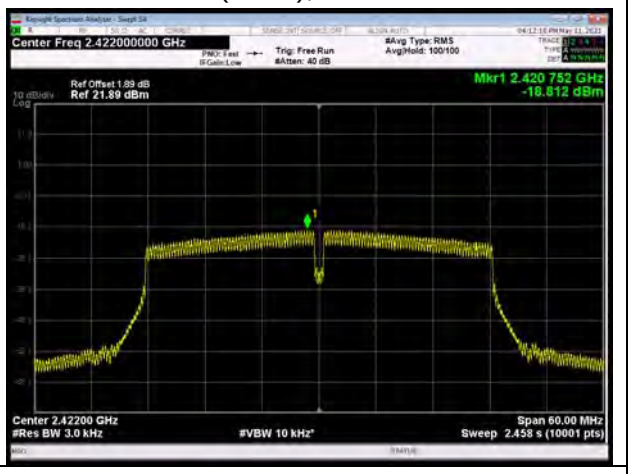
802.11g, Channel No.: 11



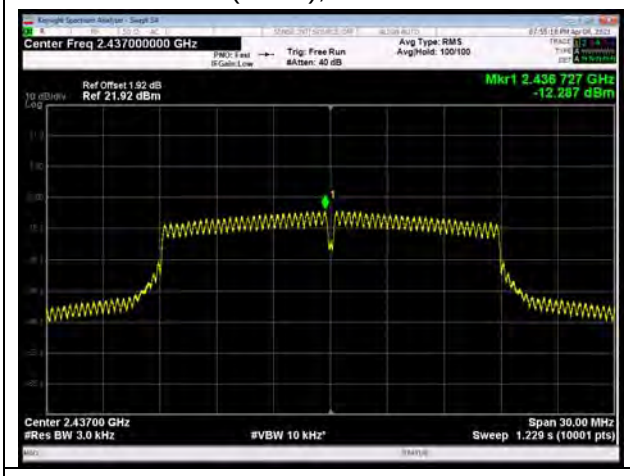
802.11n(HT20), Channel No. 1



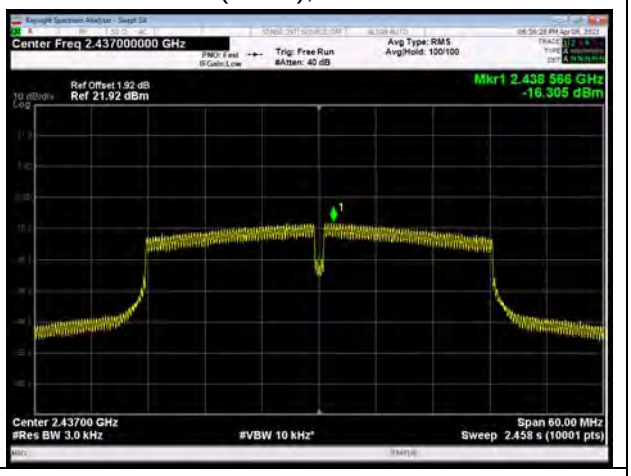
802.11n(HT40), Channel No. 3



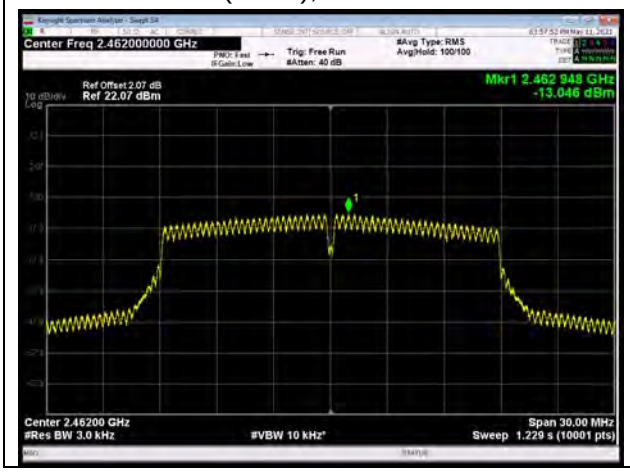
802.11n(HT20), Channel No. 6



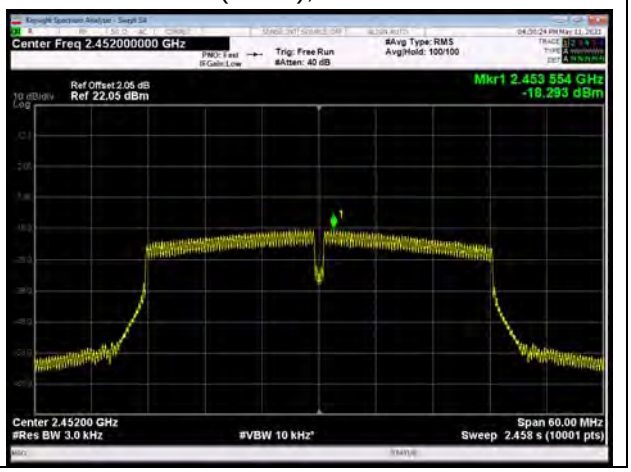
802.11n(HT40), Channel No. 6



802.11n(HT20), Channel No. 11

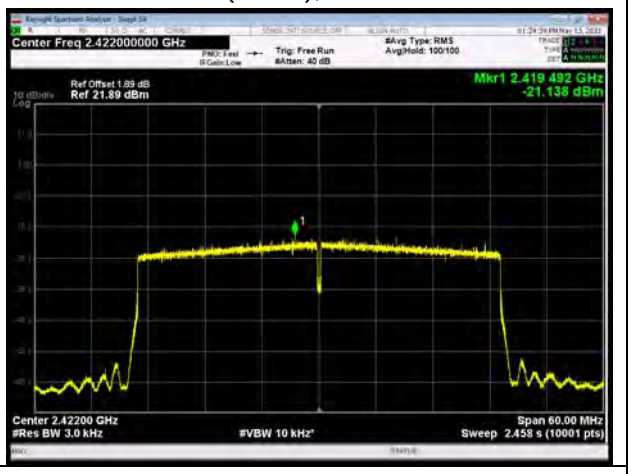


802.11n(HT40), Channel No. 9

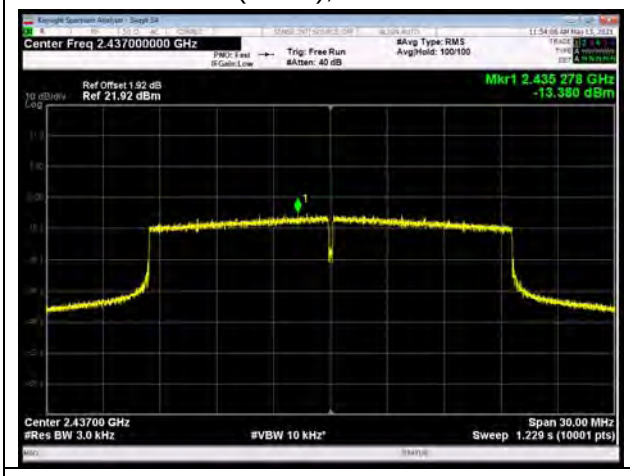


802.11ax(HE20), Channel No. 1

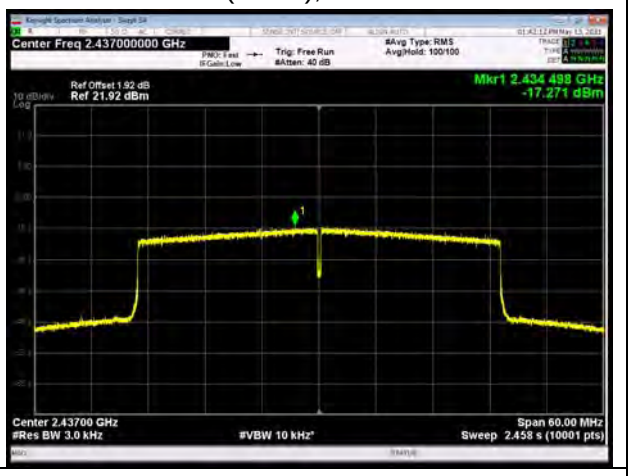
802.11ax(HE40), Channel No. 3



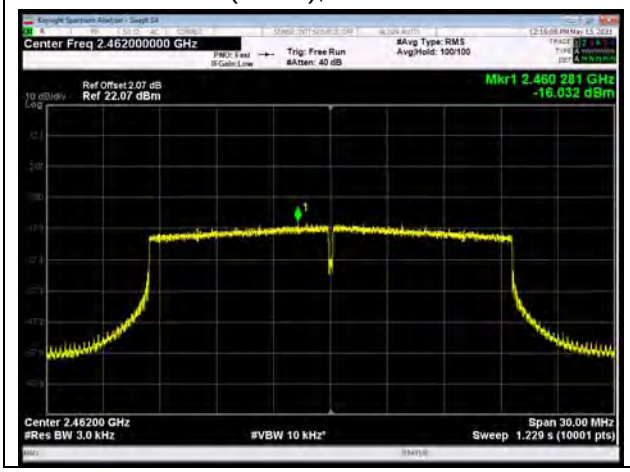
802.11ax(HE20), Channel No. 6



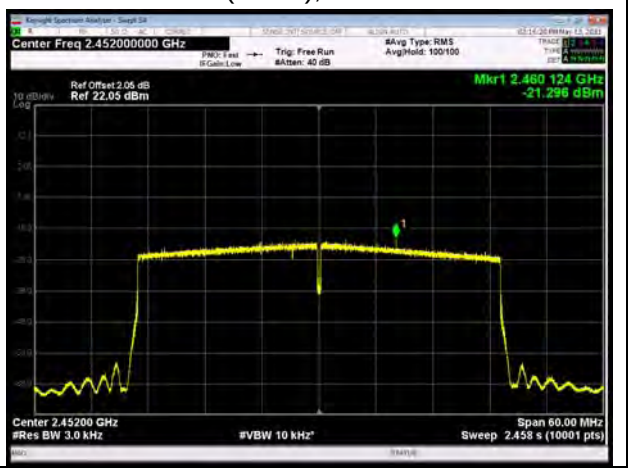
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



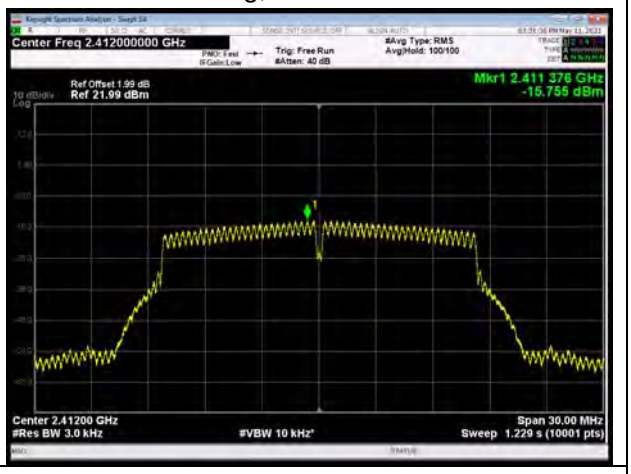
802.11ax(HE40), Channel No. 9



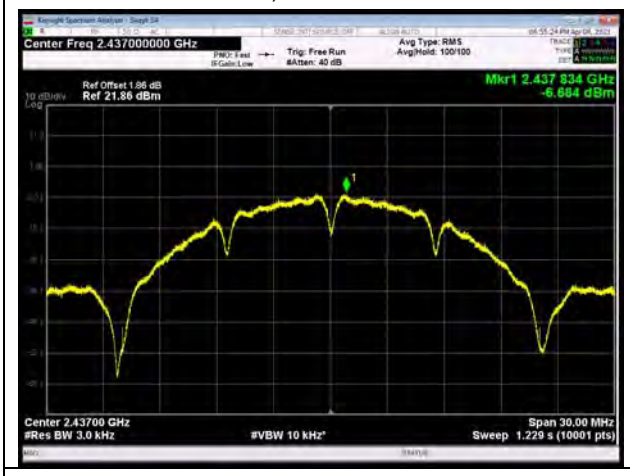
Antenna 3

802.11b, Channel No.: 1

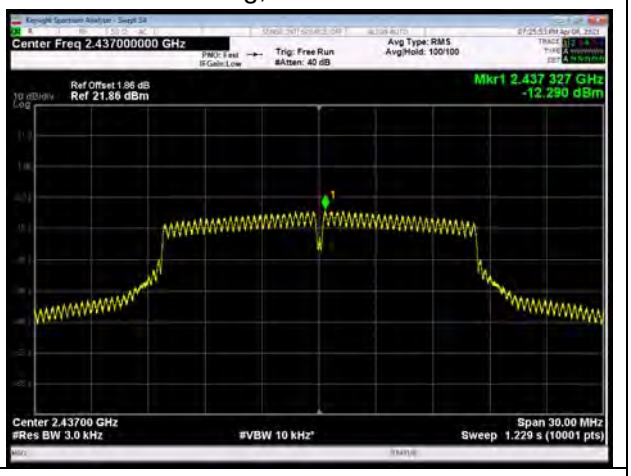
802.11g, Channel No.: 1



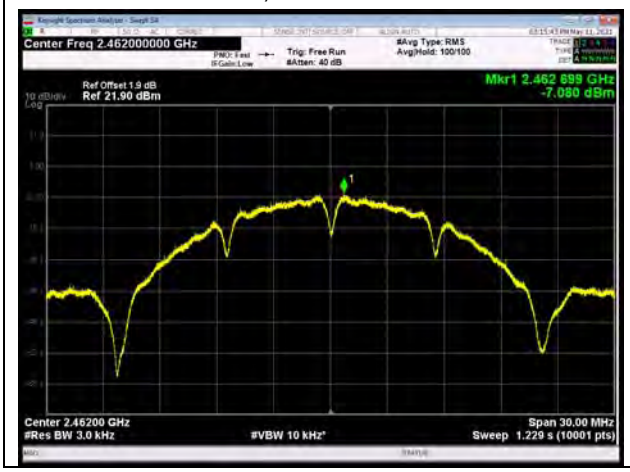
802.11b, Channel No.: 6



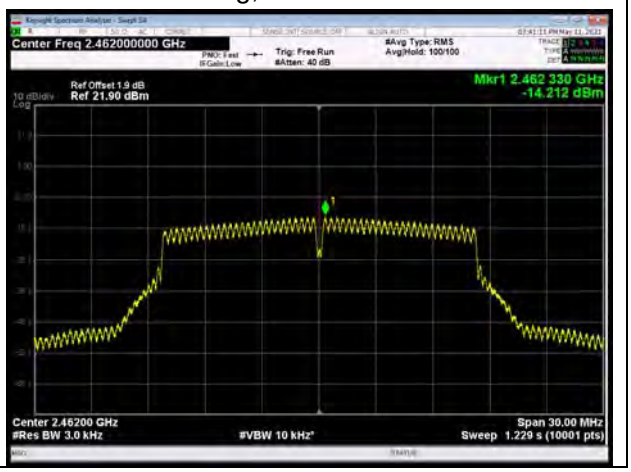
802.11g, Channel No.: 6



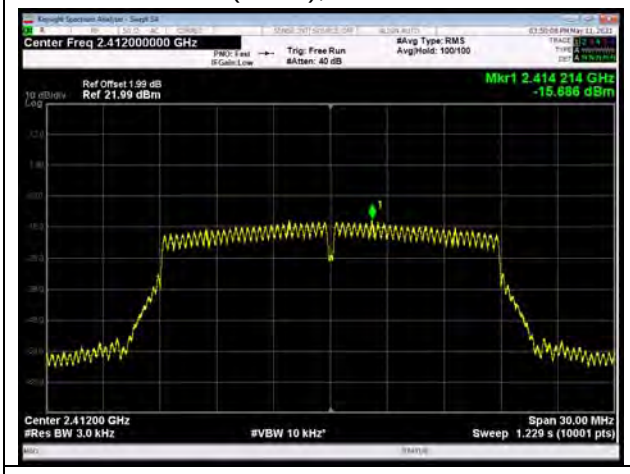
802.11b, Channel No.: 11



802.11g, Channel No.: 11

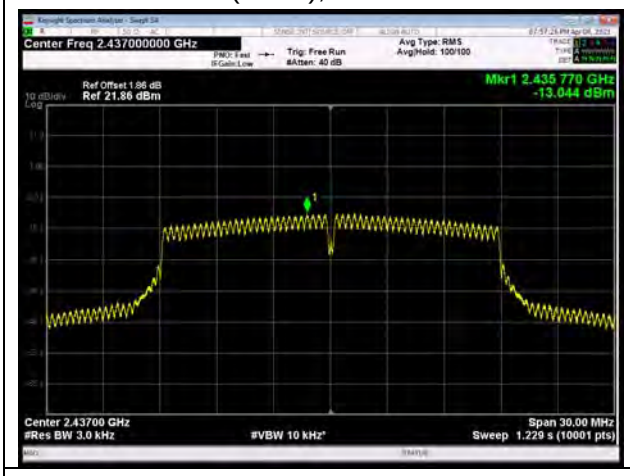


802.11n(HT20), Channel No. 1



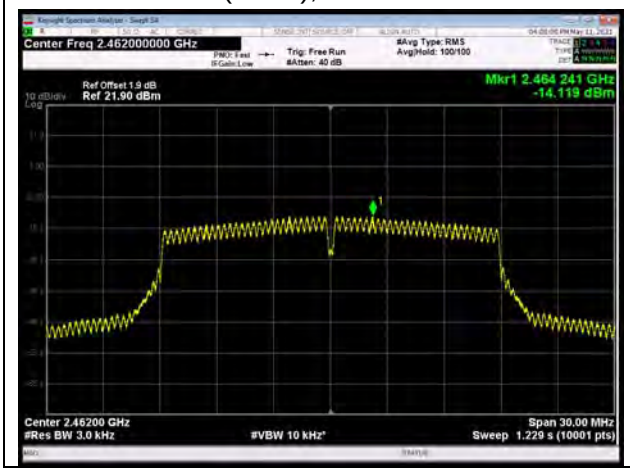
802.11n(HT40), Channel No. 3

802.11n(HT20), Channel No. 6

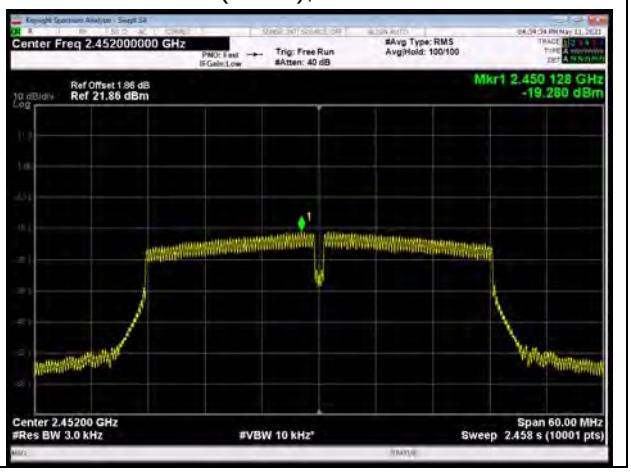


802.11n(HT40), Channel No. 6

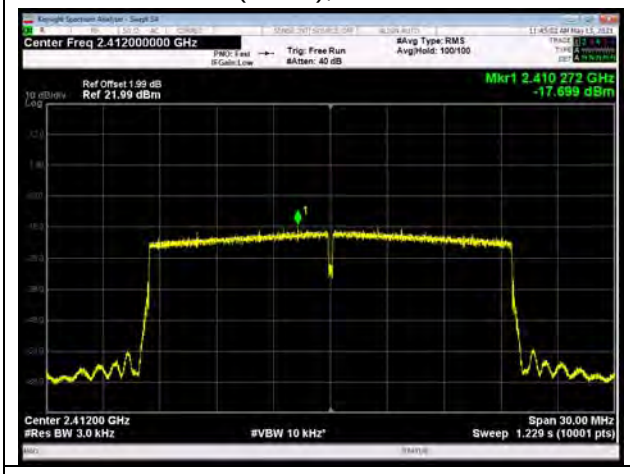
802.11n(HT20), Channel No. 11



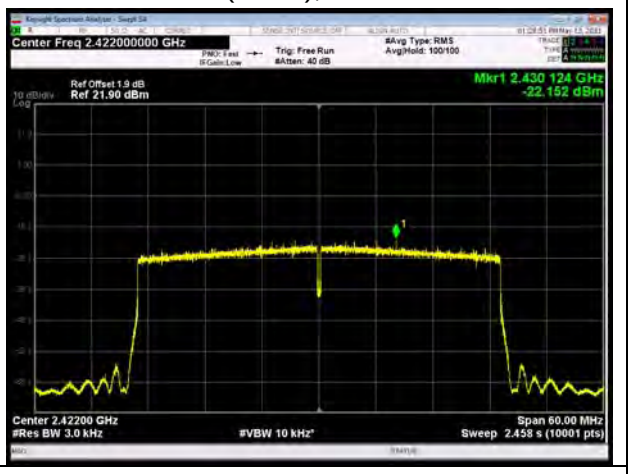
802.11n(HT40), Channel No. 9



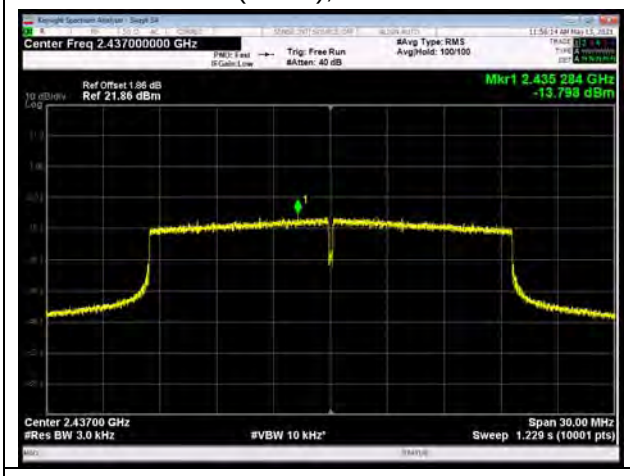
802.11ax(HE20), Channel No. 1



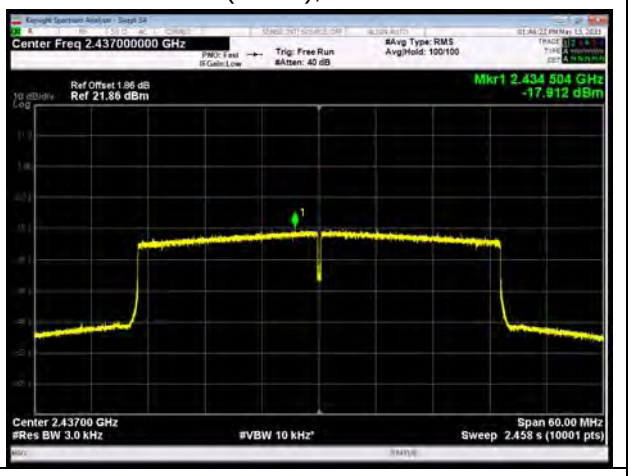
802.11ax(HE40), Channel No. 3



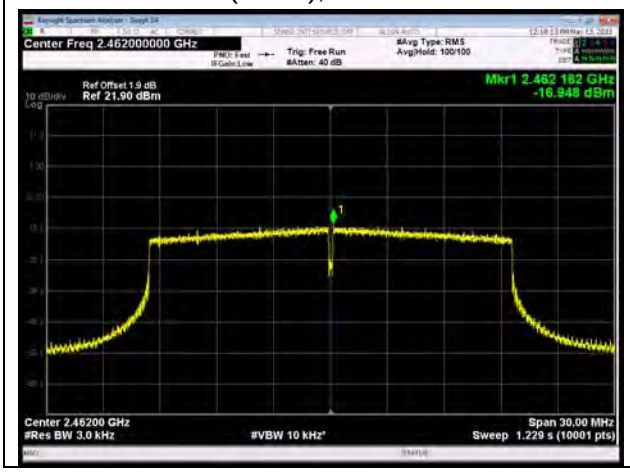
802.11ax(HE20), Channel No. 6



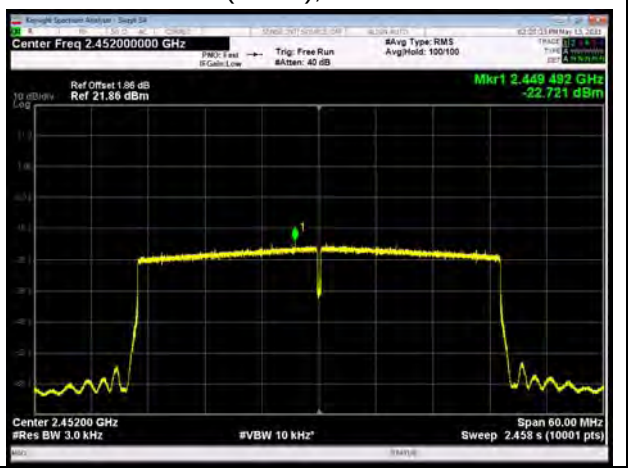
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



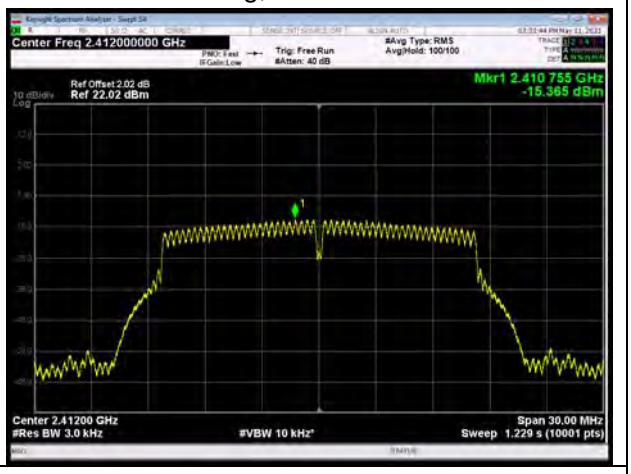
802.11ax(HE40), Channel No. 9



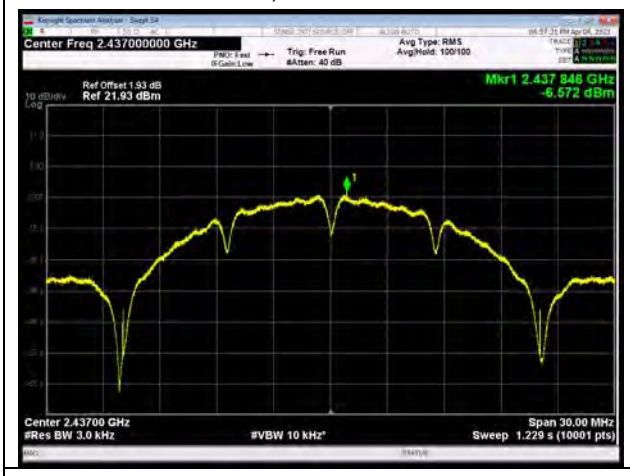
Antenna 4

802.11b, Channel No.: 1

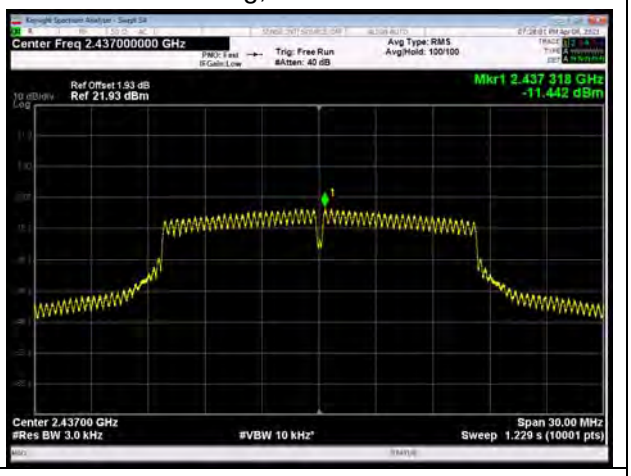
802.11g, Channel No.: 1



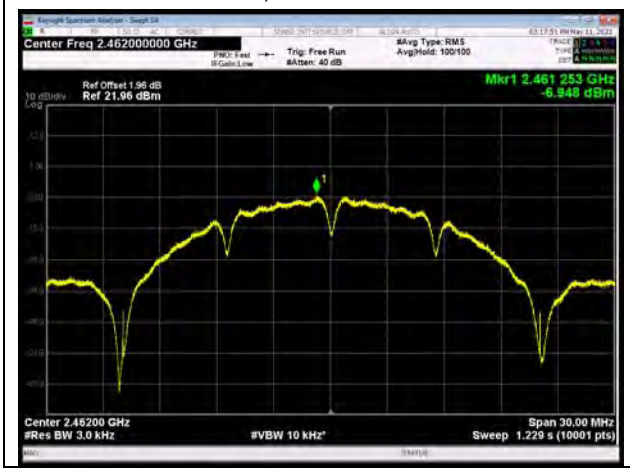
802.11b, Channel No.: 6



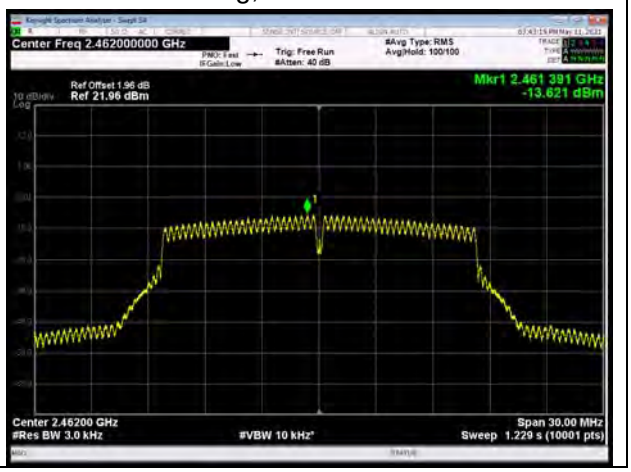
802.11g, Channel No.: 6



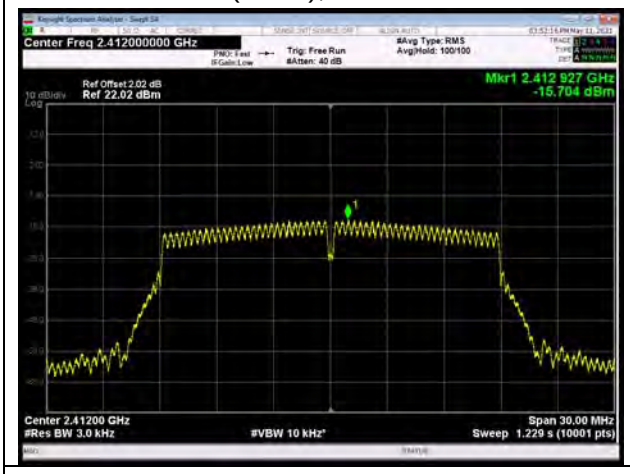
802.11b, Channel No.: 11



802.11g, Channel No.: 11

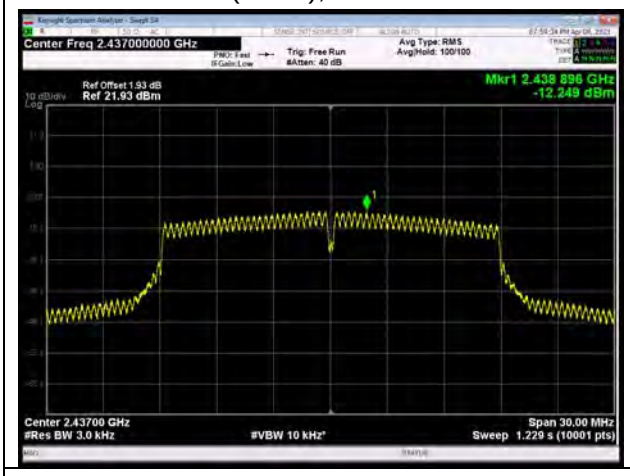


802.11n(HT20), Channel No. 1

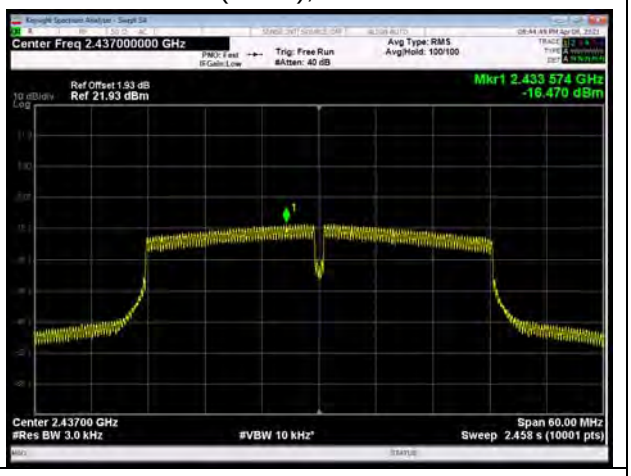


802.11n(HT40), Channel No. 3

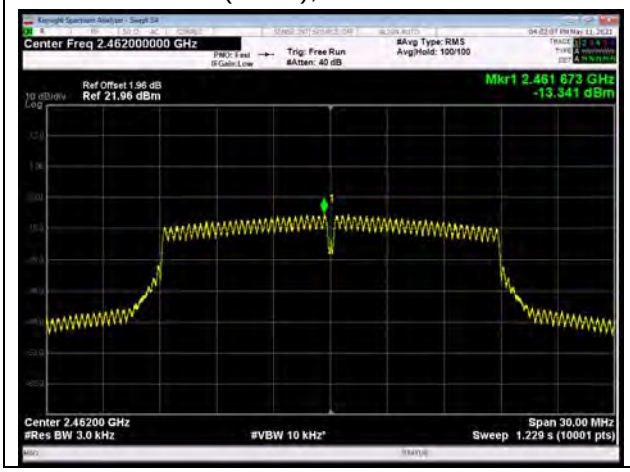
802.11n(HT20), Channel No. 6



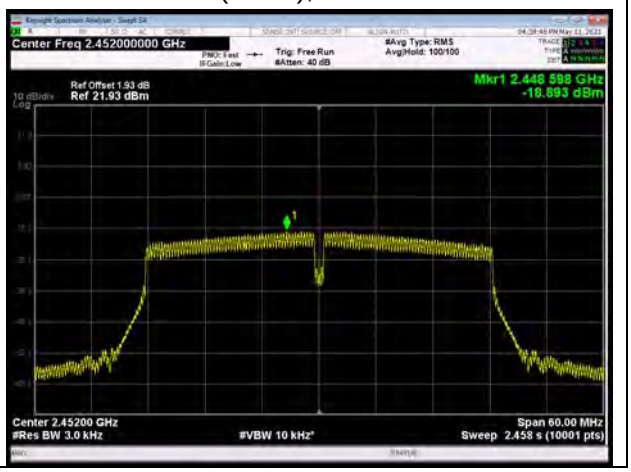
802.11n(HT40), Channel No. 6



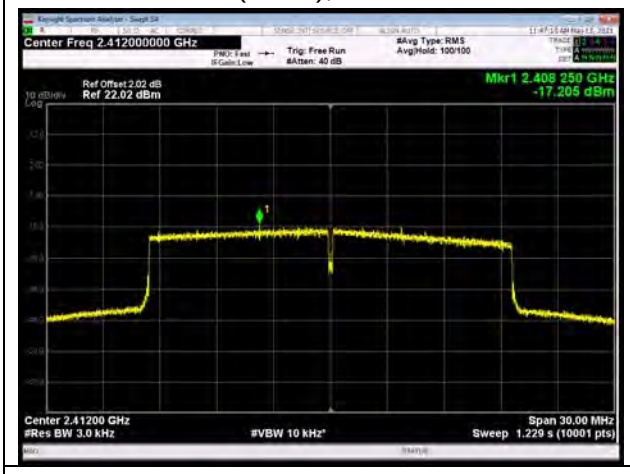
802.11n(HT20), Channel No. 11



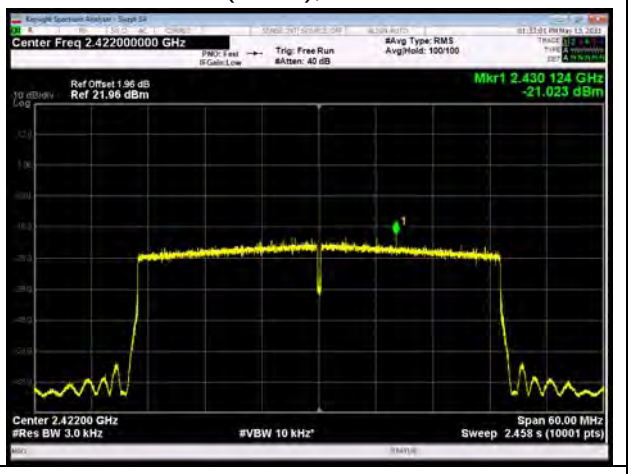
802.11n(HT40), Channel No. 9



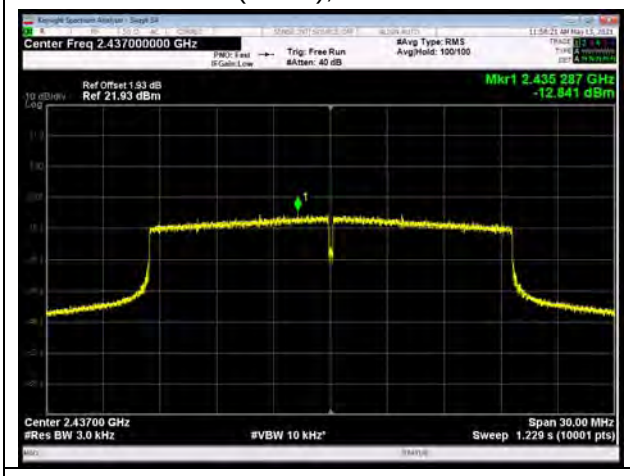
802.11ax(HE20), Channel No. 1



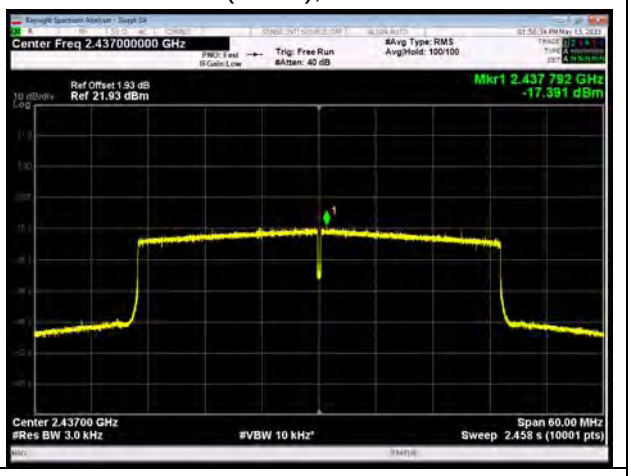
802.11ax(HE40), Channel No. 3



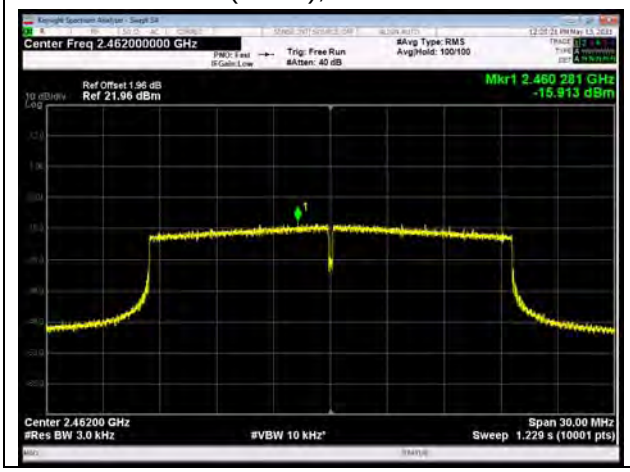
802.11ax(HE20), Channel No. 6



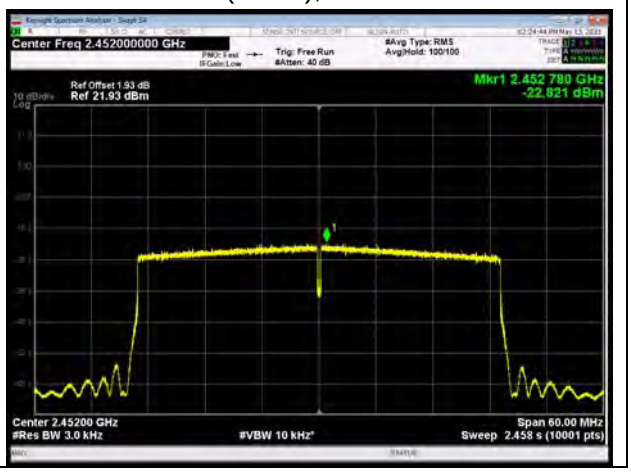
802.11ax(HE40), Channel No. 6



802.11ax(HE20), Channel No. 11



802.11ax(HE40), Channel No. 9



5.5. Spurious RF Conducted Emissions

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 with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW to 100 kHz and VBW to 300 kHz, Sweep is set to ATUO.
The test is in transmitting mode.

Test setup

Limits

Rule Part 15.247(d) pacifies 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. ”

INPAQ:

Test Mode	Carrier frequency (MHz)	Reference value (dBm)	Limit
802.11b	2412	15.26	-14.74
	2437	15.57	-14.43
	2462	9.99	-20.01
802.11g	2412	11.60	-18.40
	2437	12.19	-17.81
	2462	8.99	-21.01
802.11n HT20	2412	10.40	-19.60
	2437	11.56	-18.44
	2462	6.55	-23.45
802.11n HT40	2422	7.99	-22.01
	2437	7.93	-22.07

	2452	16.45	-13.55
802.11ax HE20	2412	9.55	-20.45
	2437	10.60	-19.40
	2462	11.66	-18.34
802.11ax HE40	2422	5.65	-24.35
	2437	7.92	-22.08
	2452	5.61	-24.39

GALTRONICS:

Test Mode	Carrier frequency (MHz)	Reference value (dBm)	Limit
802.11b	2412	15.26	-14.74
	2437	15.57	-14.43
	2462	9.99	-20.01
802.11g	2412	11.60	-18.40
	2437	12.19	-17.81
	2462	8.99	-21.01
802.11n HT20	2412	10.40	-19.60
	2437	11.56	-18.44
	2462	6.55	-23.45
802.11n HT40	2422	7.99	-22.01
	2437	7.93	-22.07
	2452	16.45	-13.55
802.11ax HE20	2412	9.55	-20.45
	2437	10.60	-19.40
	2462	11.66	-18.34
802.11ax HE40	2422	5.65	-24.35
	2437	7.92	-22.08
	2452	5.61	-24.39

Measurement Uncertainty

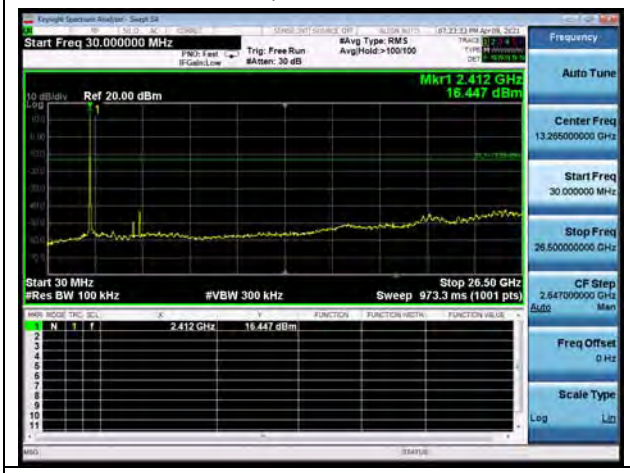
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

Test Results:

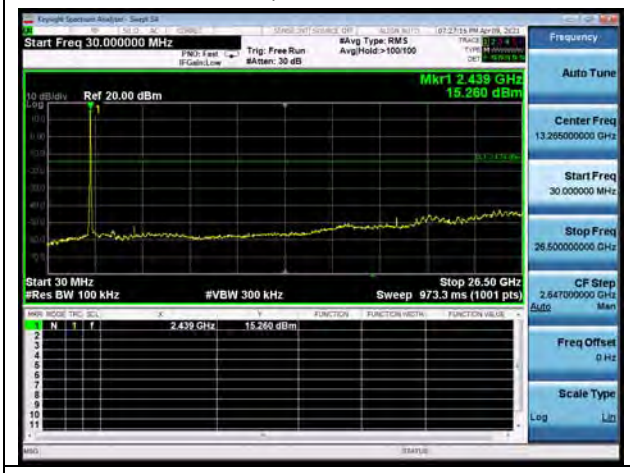
INPAQ:

802.11b, Channel No.: 1



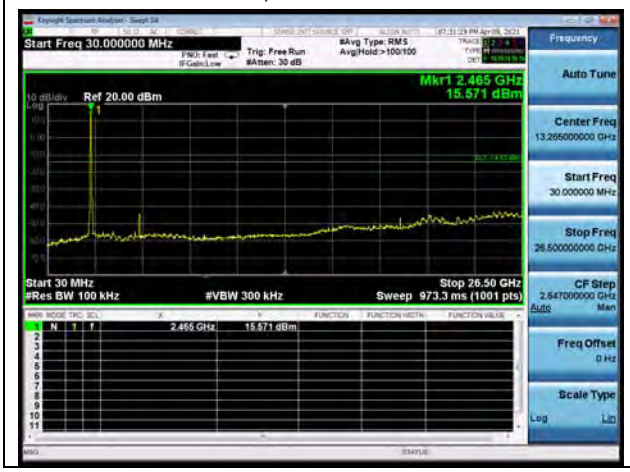
802.11g, Channel No.: 1

802.11b, Channel No.: 6



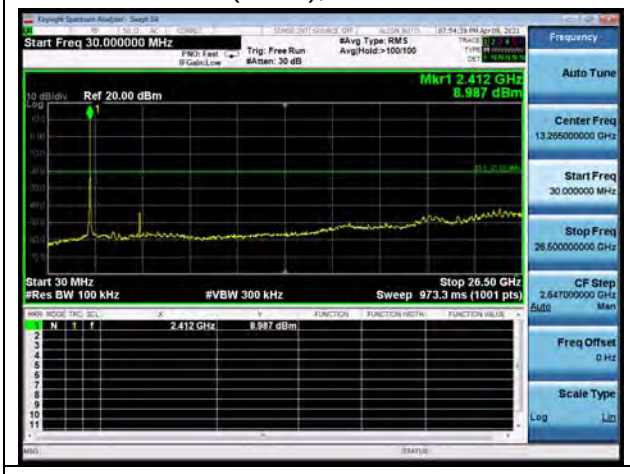
802.11g, Channel No.: 6

802.11b, Channel No.: 11



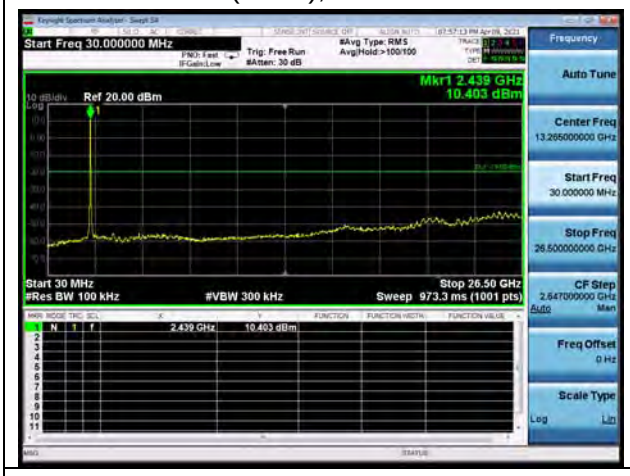
802.11g, Channel No.: 11

802.11n(HT20), Channel No. 1



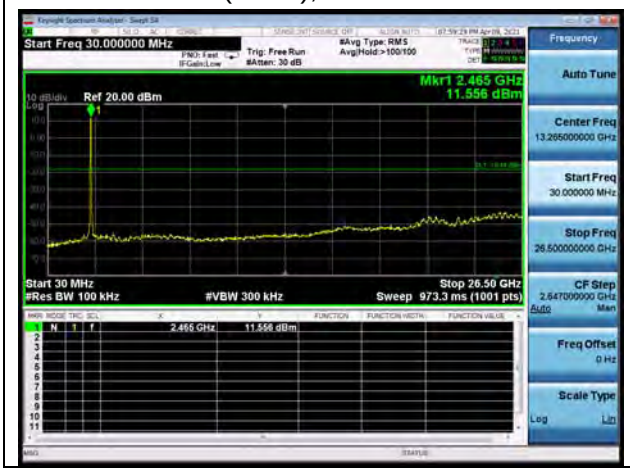
802.11n(HT40), Channel No. 3

802.11n(HT20), Channel No. 6



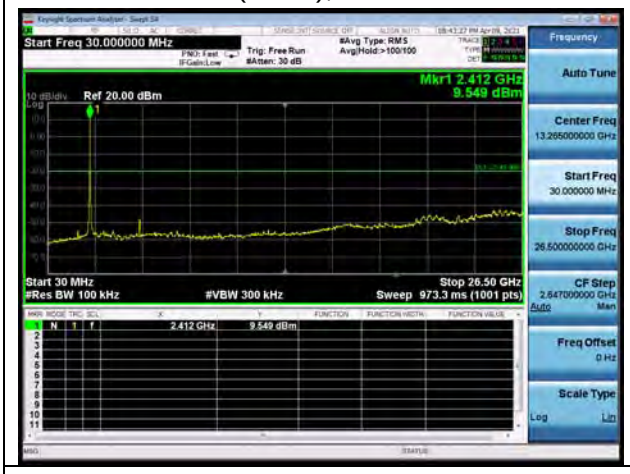
802.11n(HT40), Channel No. 6

802.11n(HT20), Channel No. 11



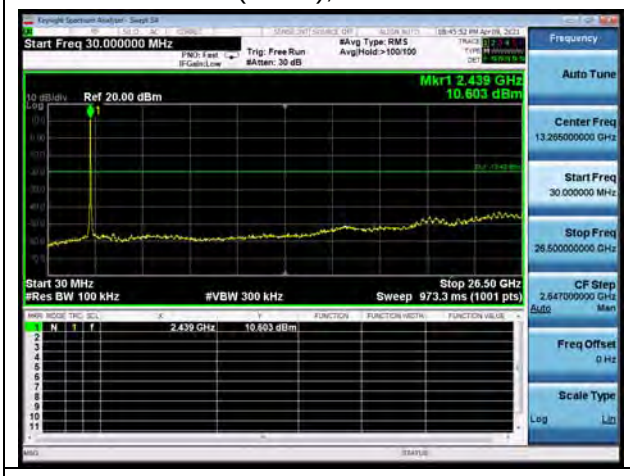
802.11n(HT40), Channel No. 9

802.11ax(HE20), Channel No. 1



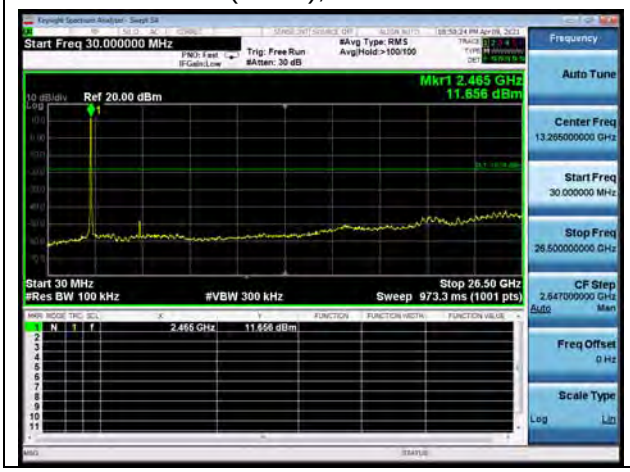
802.11ax(HE40), Channel No. 3

802.11ax(HE20), Channel No. 6



802.11ax(HE40), Channel No. 6

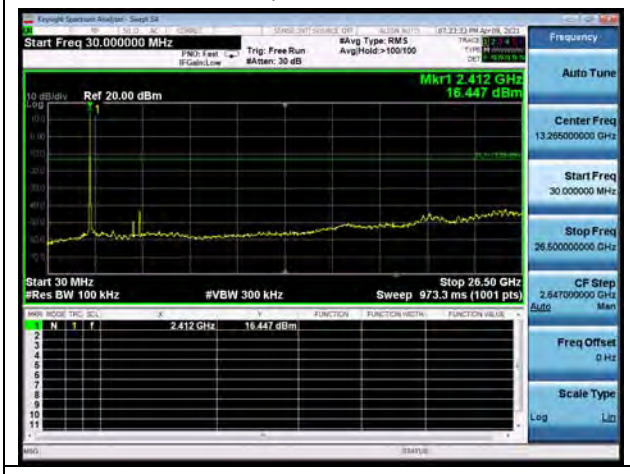
802.11ax(HE20), Channel No. 11



802.11ax(HE40), Channel No. 9

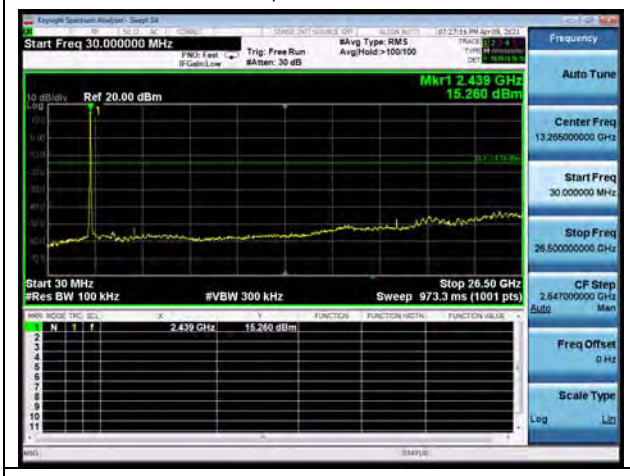
Galtronics:

802.11b, Channel No.: 1



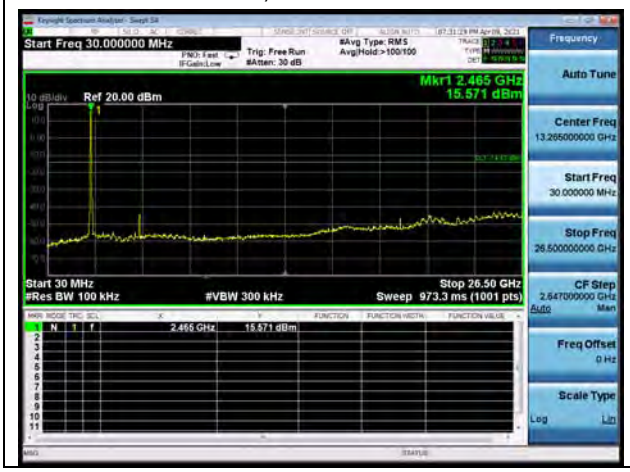
802.11g, Channel No.: 1

802.11b, Channel No.: 6



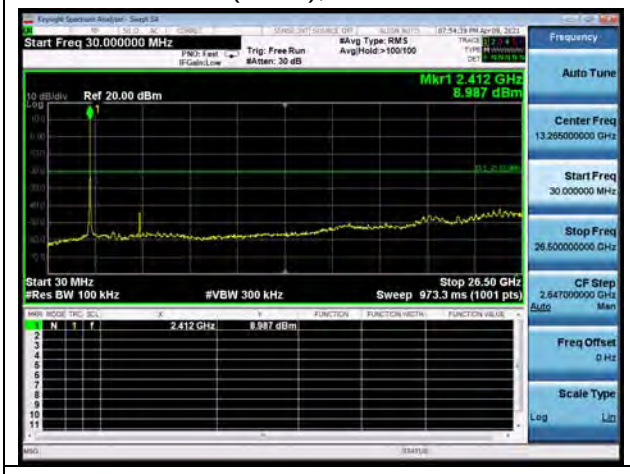
802.11g, Channel No.: 6

802.11b, Channel No.: 11



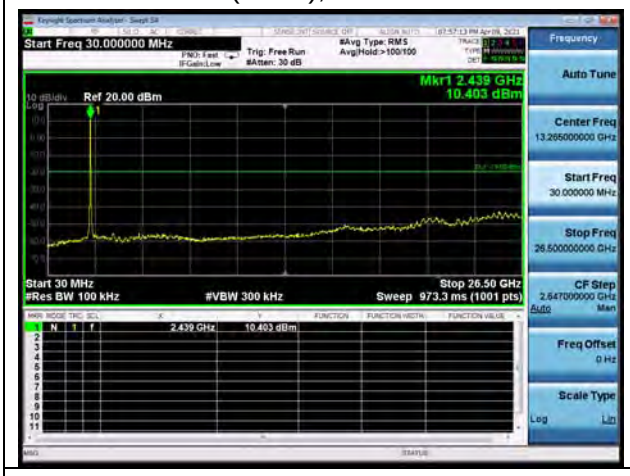
802.11g, Channel No.: 11

802.11n(HT20), Channel No. 1



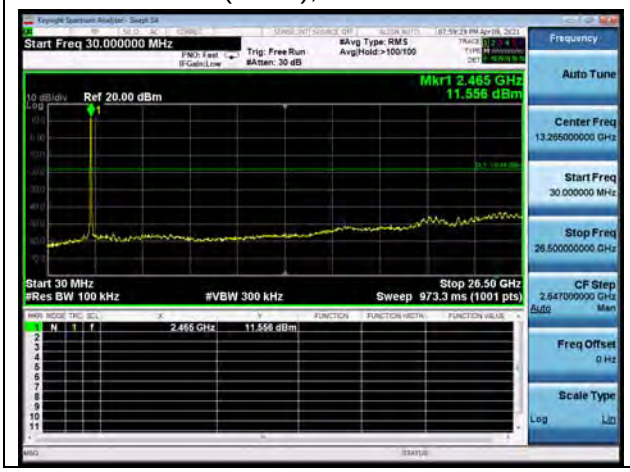
802.11n(HT40), Channel No. 3

802.11n(HT20), Channel No. 6



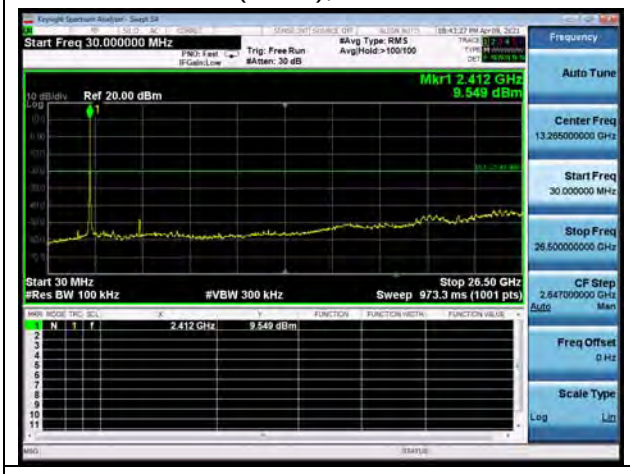
802.11n(HT40), Channel No. 6

802.11n(HT20), Channel No. 11



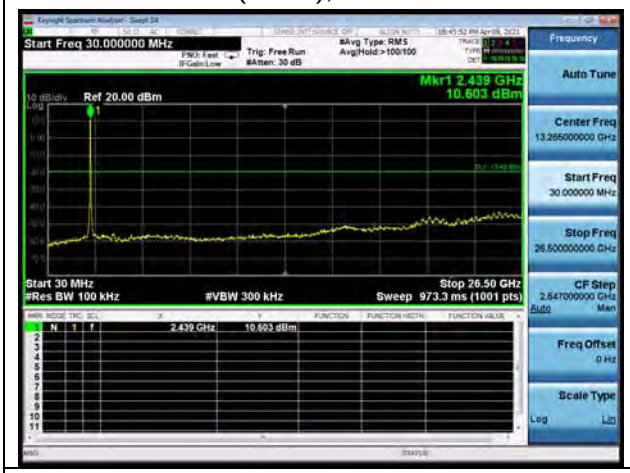
802.11n(HT40), Channel No. 9

802.11ax(HE20), Channel No. 1



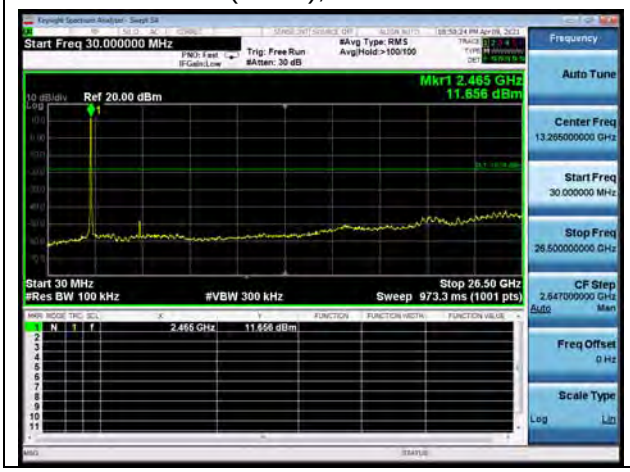
802.11ax(HE40), Channel No. 3

802.11ax(HE20), Channel No. 6



802.11ax(HE40), Channel No. 6

802.11ax(HE20), Channel No. 11



802.11ax(HE40), Channel No. 9

5.6. Unwanted Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	102.5kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10.
The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.

The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna.The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. Sweep the Restricted Band and the emissions less than 20 dB below the permissible value are reported.
The radiated emissions measurements were made in a typical installation configuration.
Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

This method refer to ANSI C63.10.
The procedure for peak unwanted emissions measurements above 1000 MHz is as follows:
Set the spectrum analyzer in the following:
9kHz~150 kHz
RBW=200Hz, VBW=1kHz/ Sweep=AUTO
150 kHz~30MHz
RBW=9KHz, VBW=30KHz,/ Sweep=AUTO
Below 1GHz
RBW=100kHz / VBW=300kHz / Sweep=AUTO
a) Peak emission levels are measured by setting the instrument as follows:
Above 1GHz
PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO
b) Average emission levels are measured by setting the instrument as follows:
Above 1GHz
AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO
c) Detector: The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage

averaging. Log or dB averaging shall not be used.)

e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is [20 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

The test is in transmitting mode.