

8.2 MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER

8.2.1 Applicable Standard

According to FCC Part15.247 (b)(3) and KDB 558074 D01 15.247 Meas Guidance v05r02

8.2.2 Conformance Limit

The maximum peak conducted output power of the intentional radiator for systems using digital modulation in the 2400 - 2483.5 MHz bands shall not exceed: 1 Watt (30dBm).

8.2.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

8.2.4 Test Procedure

- Set span to at least 1.5 times the OBW.
- Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
- Set VBW $\geq 3 \times$ RBW.
- Number of points in sweep $\geq 2 \times$ span / RBW. (This gives bin-to-bin spacing $\leq$ RBW/2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto.
- Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run” .
- Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

8.2.5 Test Results

Temperature:	23° C
Relative Humidity:	56%
ATM Pressure:	1011 mbar

Operation Mode	Channel Number	Channel Frequency (MHz)	Measurement Level (dBm)	Limit (dBm)	Verdict
802.11b	1	2412	14.85	30	PASS
	6	2437	15.19	30	PASS
	11	2462	15.14	30	PASS
802.11g	1	2412	11.70	30	PASS
	6	2437	12.16	30	PASS
	11	2462	12.08	30	PASS
802.11n (HT20)	1	2412	11.81	30	PASS
	6	2437	12.04	30	PASS
	11	2462	11.93	30	PASS

Test Model	Duty cycle 802.11b Channel 1: 2412MHz
------------	---



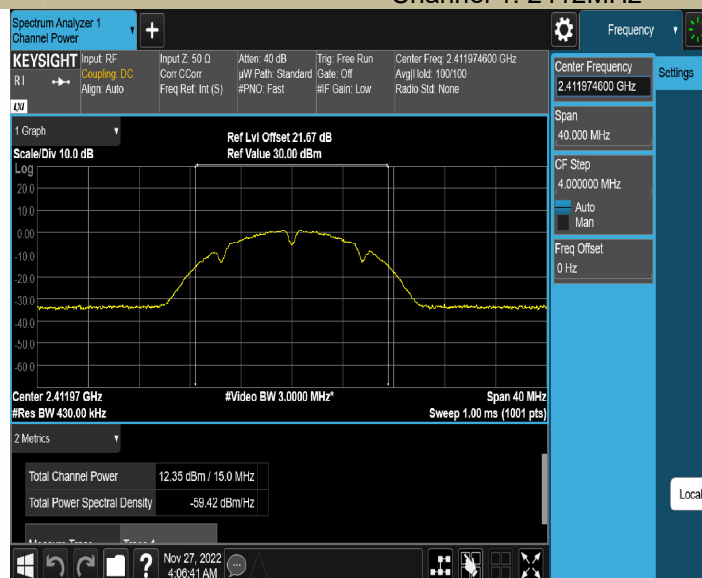
Test Model	Duty cycle 802.11g Channel 1: 2412MHz
------------	---



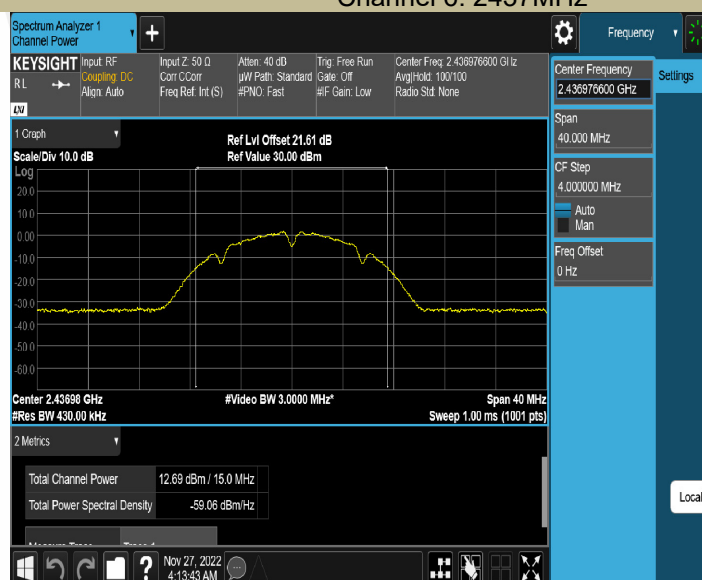
Test Model	Duty cycle 802.11n(HT20) Channel 1: 2412MHz
------------	---



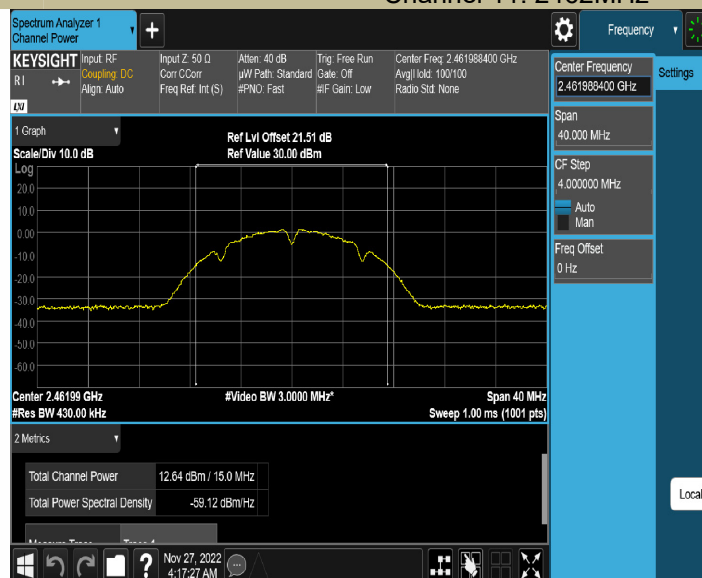
Test Model	MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER 802.11b Channel 1: 2412MHz
------------	--



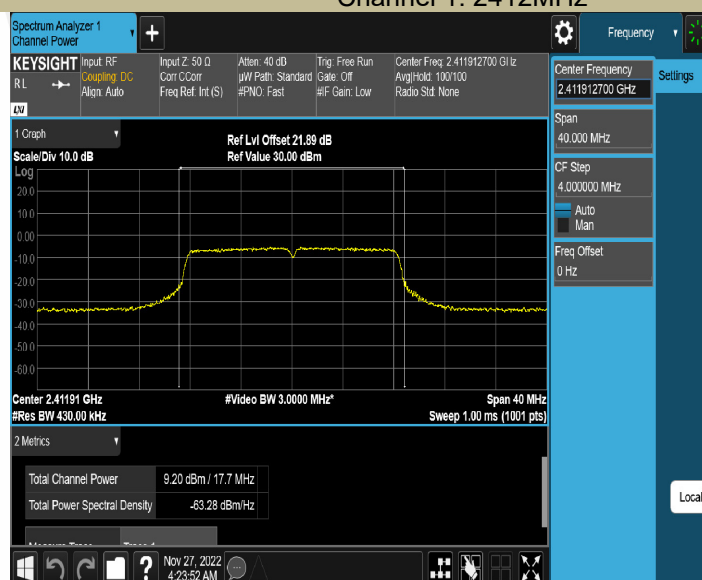
Test Model	MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER 802.11b Channel 6: 2437MHz
------------	--



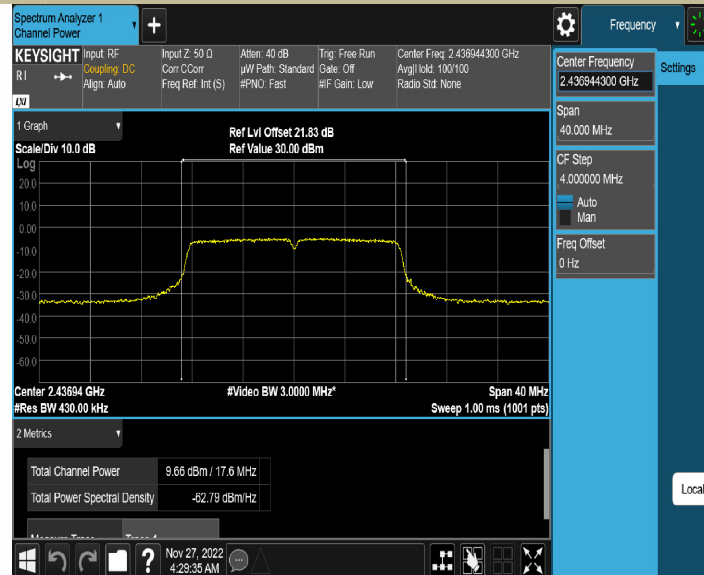
Test Model	MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER 802.11b Channel 11: 2462MHz
------------	---



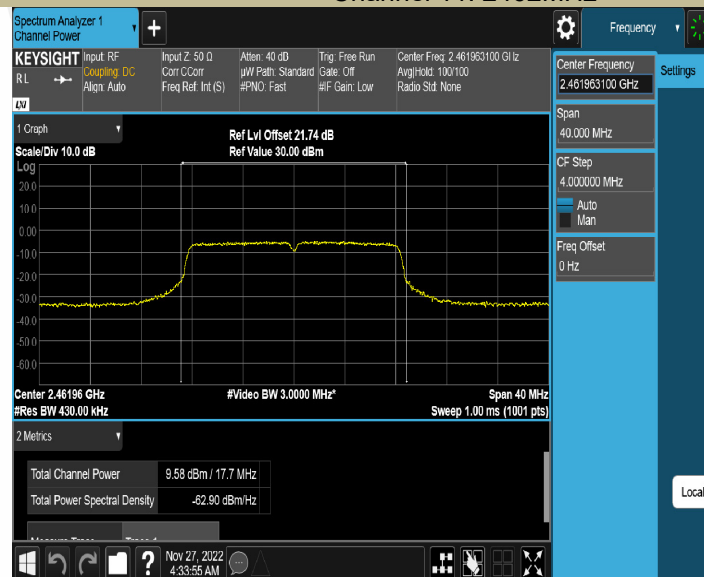
Test Model	MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER 802.11g Channel 1: 2412MHz
------------	--



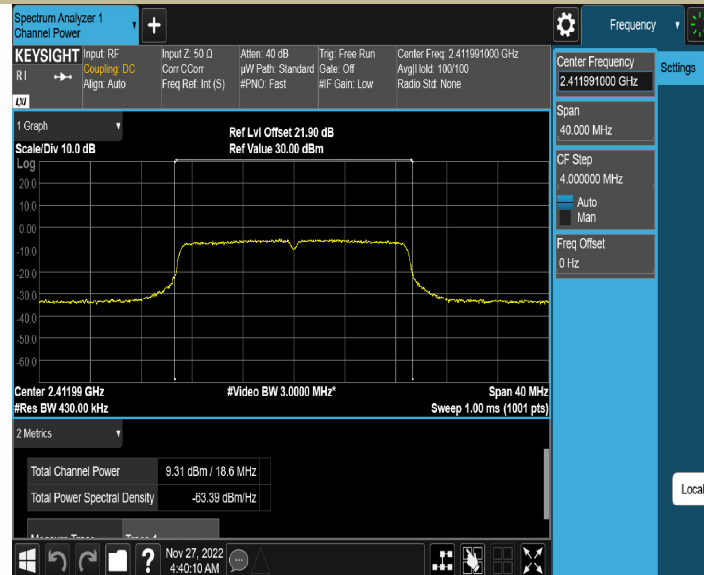
Test Model	MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER 802.11g Channel 6: 2437MHz
------------	--



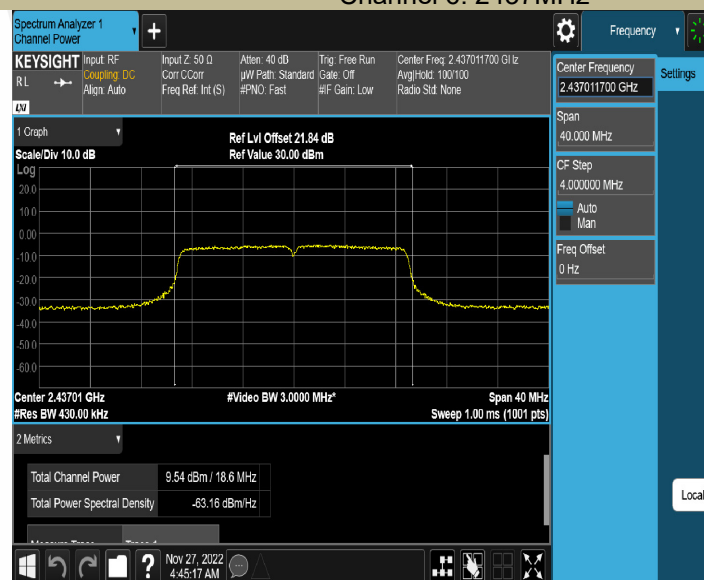
Test Model	MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER 802.11g Channel 11: 2462MHz
------------	---



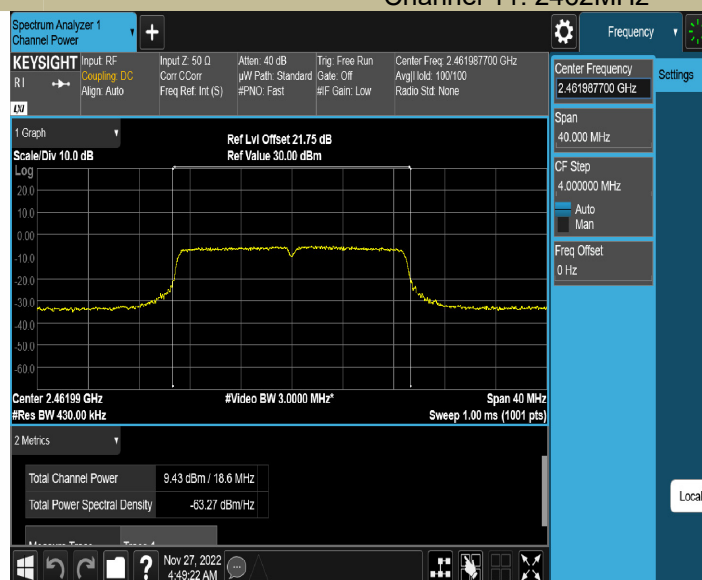
Test Model	MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER 802.11n(HT20) Channel 1: 2412MHz
------------	--



Test Model	MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER 802.11n(HT20) Channel 6: 2437MHz
------------	--



Test Model	MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER 802.11n(HT20) Channel 11: 2462MHz
------------	---



8.3 MAXIMUM POWER SPECTRAL DENSITY

8.3.1 Applicable Standard

According to FCC Part15.247(e) and KDB 558074 D01 15.247 Meas Guidance v05r02

8.3.2 Conformance Limit

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.3.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

8.3.4 Test Procedure

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance

The transmitter output (antenna port) was connected to the spectrum analyzer

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz

Set the VBW to:10 kHz.

Set Detector = peak.

Set Sweep time = auto couple.

Set Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level within the RBW.

Note: If antenna Gain exceeds 6 dBi, then PSD Limit=8-(Gain- 6)

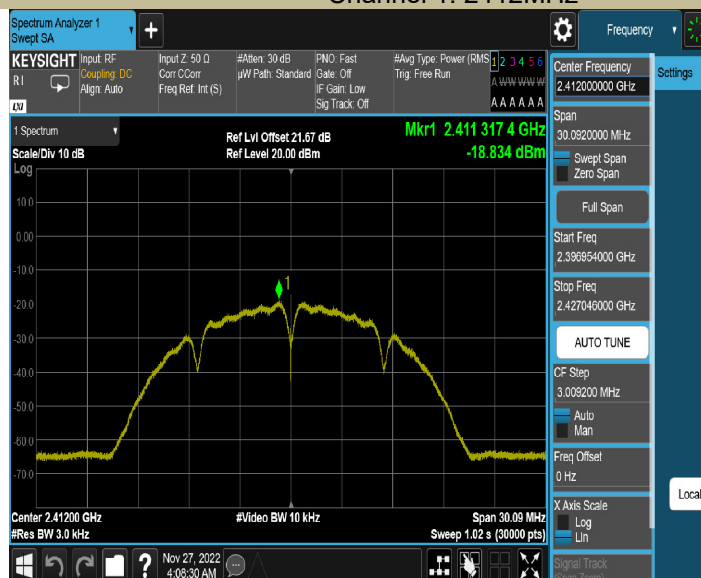
8.3.5 Test Results

Temperature:	23° C
Relative Humidity:	56%
ATM Pressure:	1011 mbar

Operation Mode	Channel Number	Channel Frequency (MHz)	Measurement Level (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11b	1	2412	-18.83	8	PASS
	6	2437	-18.36	8	PASS
	11	2462	-18.62	8	PASS
802.11g	1	2412	-24.65	8	PASS
	6	2437	-24.16	8	PASS
	11	2462	-24.35	8	PASS
802.11n (HT20)	1	2412	-25.06	8	PASS
	6	2437	-24.61	8	PASS
	11	2462	-24.14	8	PASS

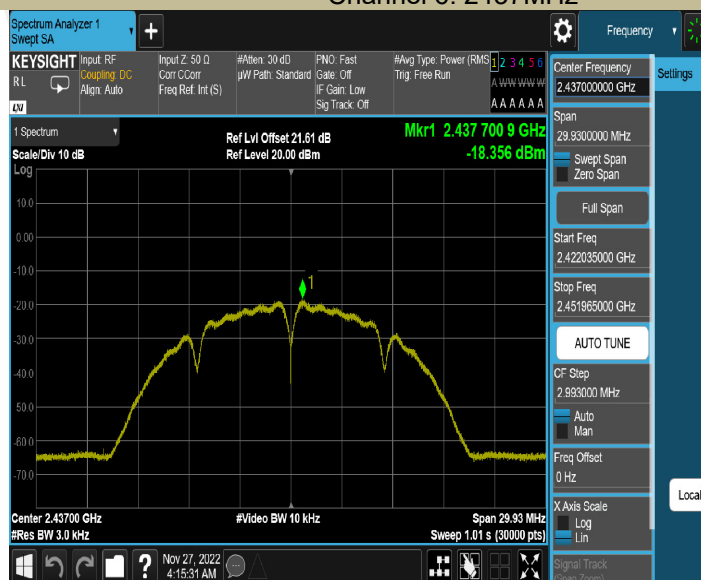
Test Model

Power Spectral Density
802.11b
Channel 1: 2412MHz



Test Model

Power Spectral Density
802.11b
Channel 6: 2437MHz



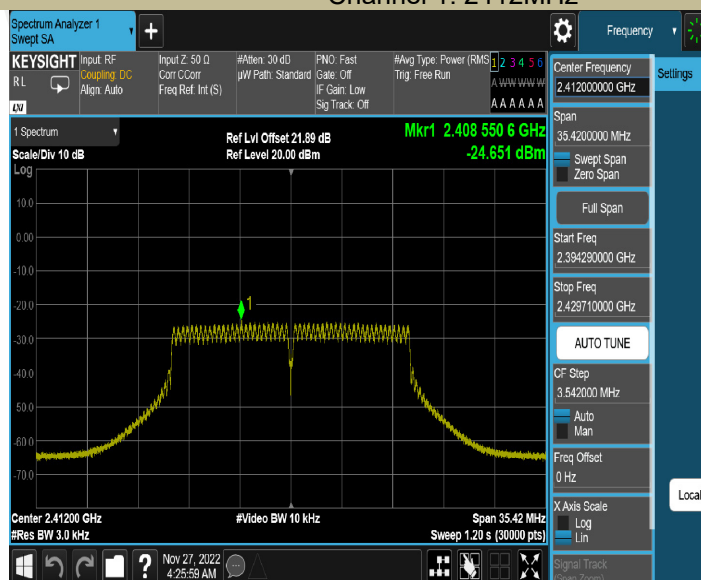
Test Model

Power Spectral Density
802.11b
Channel 11: 2462MHz

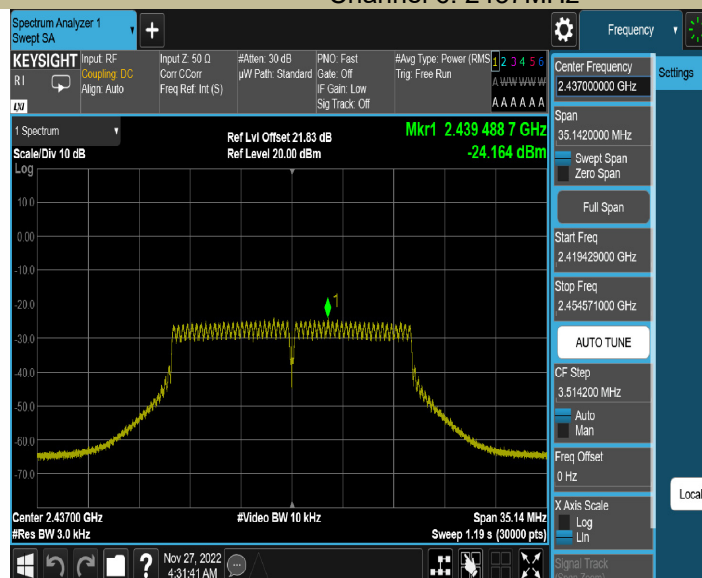


Test Model

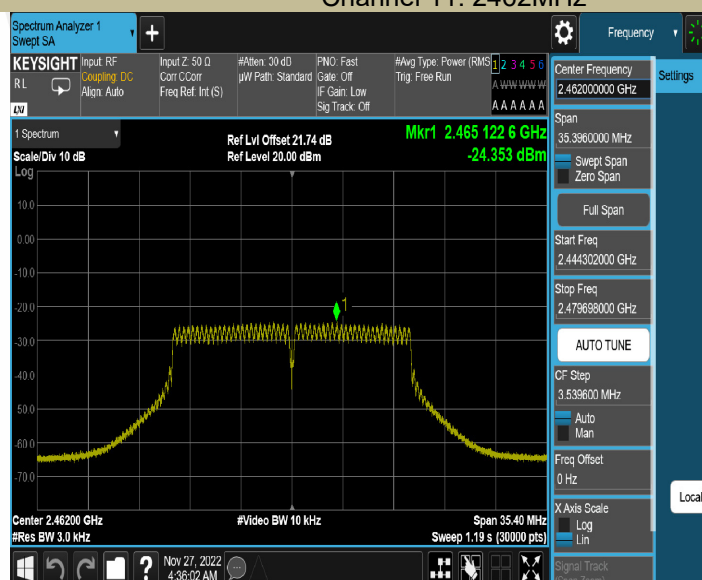
Power Spectral Density
802.11g
Channel 1: 2412MHz



Test Model	Power Spectral Density 802.11g Channel 6: 2437MHz
------------	---

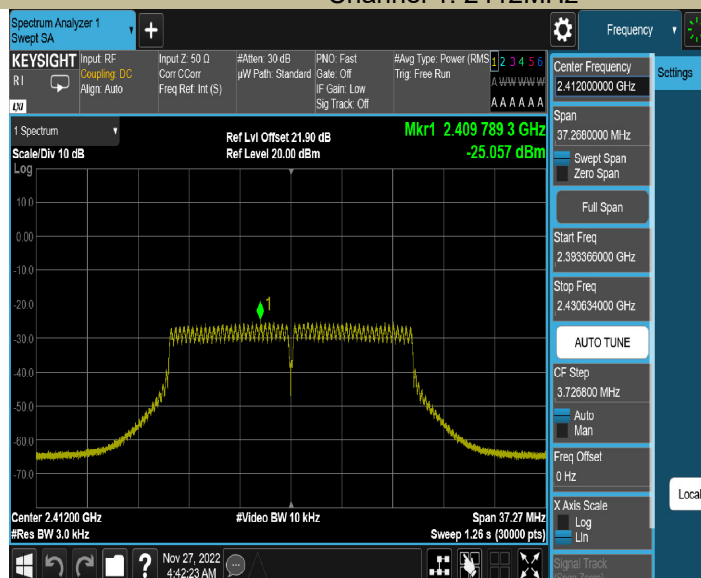


Test Model	Power Spectral Density 802.11g Channel 11: 2462MHz
------------	--



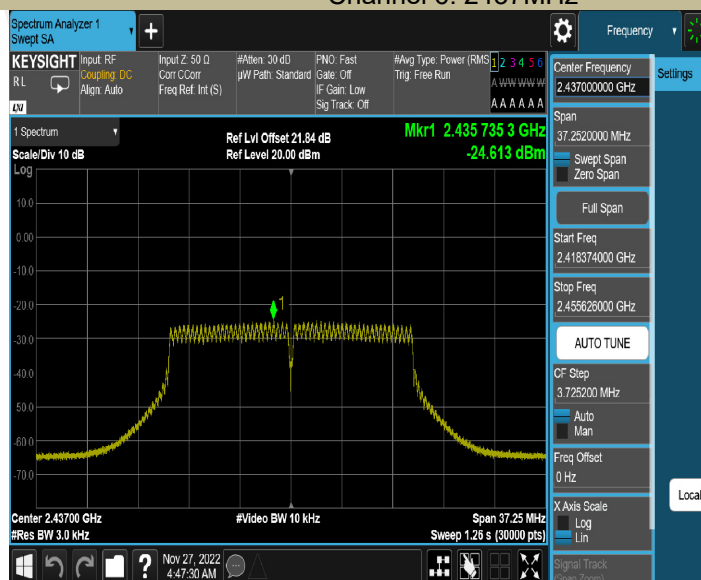
Test Model

Power Spectral Density
802.11n (HT20)
Channel 1: 2412MHz



Test Model

Power Spectral Density
802.11n (HT20)
Channel 6: 2437MHz



Test Model	Power Spectral Density 802.11n (HT20) Channel 11: 2462MHz
------------	---

