

9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D0115.247 Meas Guidance v05r02

9.1 APPLICABLE STANDARD

in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in§15.205(a), must also comply with the radiated emission limits specified in15.209(a).

9.2 TEST PROCEDURE

Using the following spectrum analyzer setting:

- A) Set the RBW = 100KHz.
- B) Set the VBW = 300KHz.
- C) Sweep time = auto couple.
- D) Detector function = peak.
- E) Trace mode = max hold.
- F) Allow trace to fully stabilize.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

9.6 TEST RESULTS

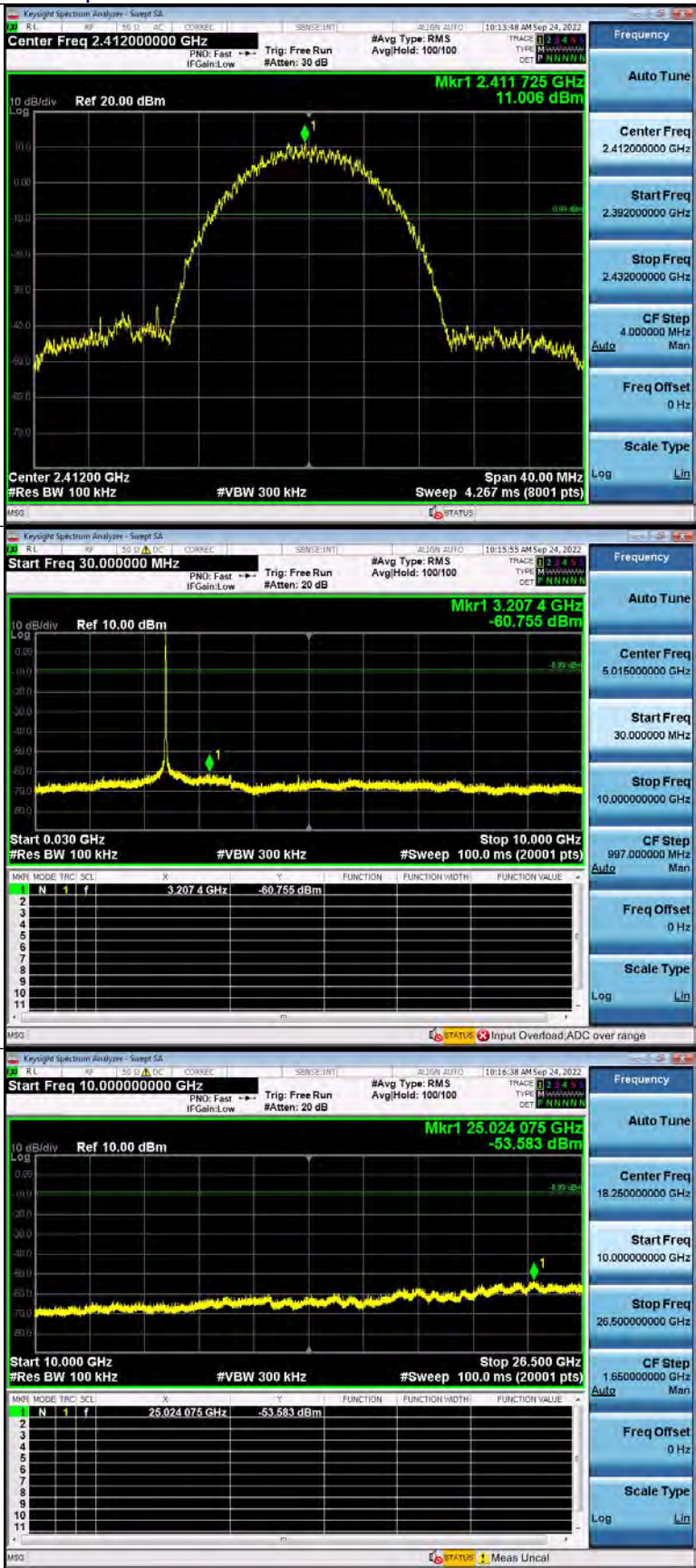
Test plot as follows:

ANT1

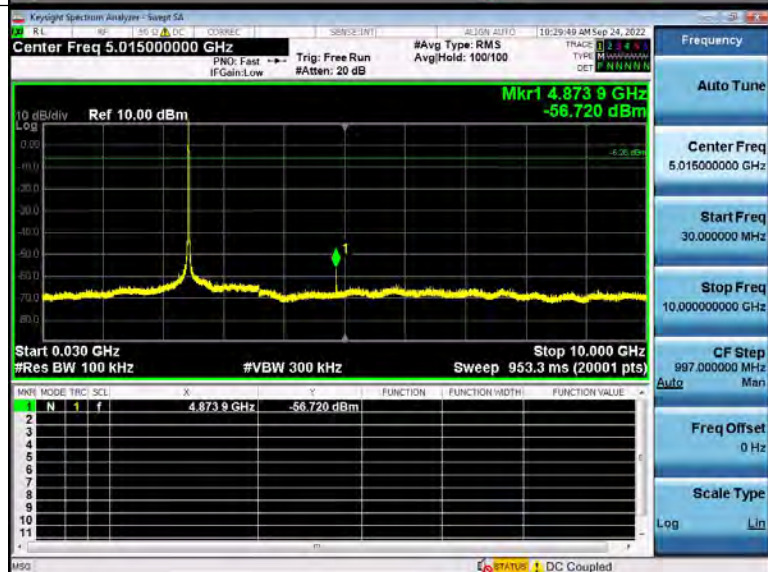
802.11b Modulation

Spurious emission

Low Channel



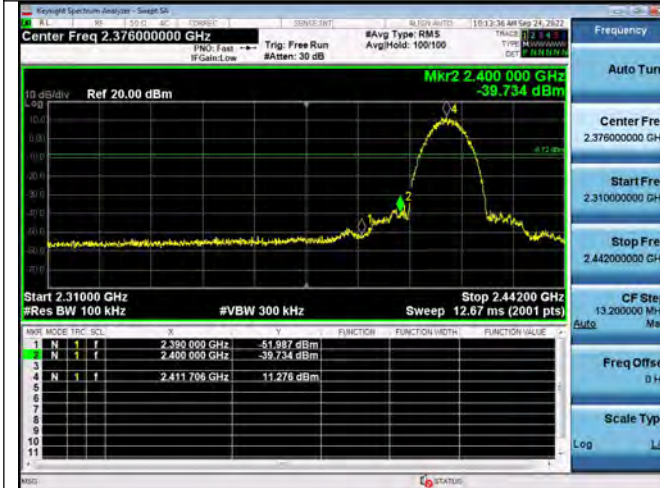
Middle Channel



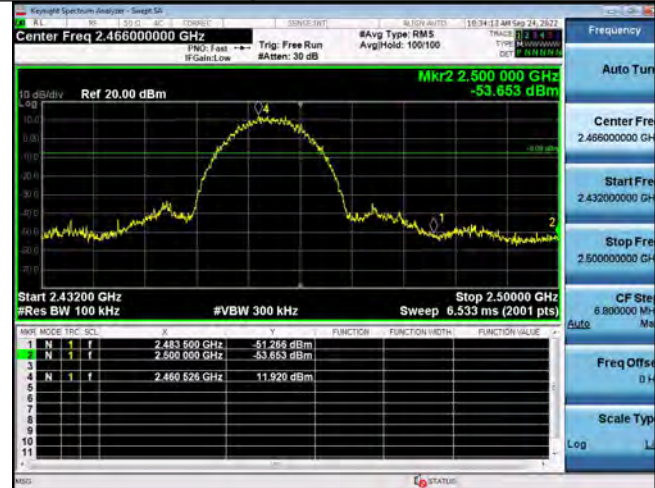


High Channel

Lowest Channel



Highest Channel



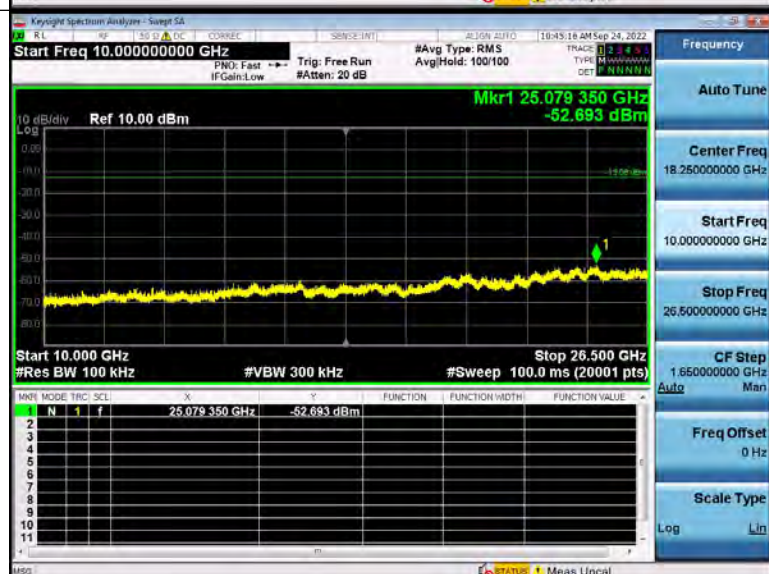
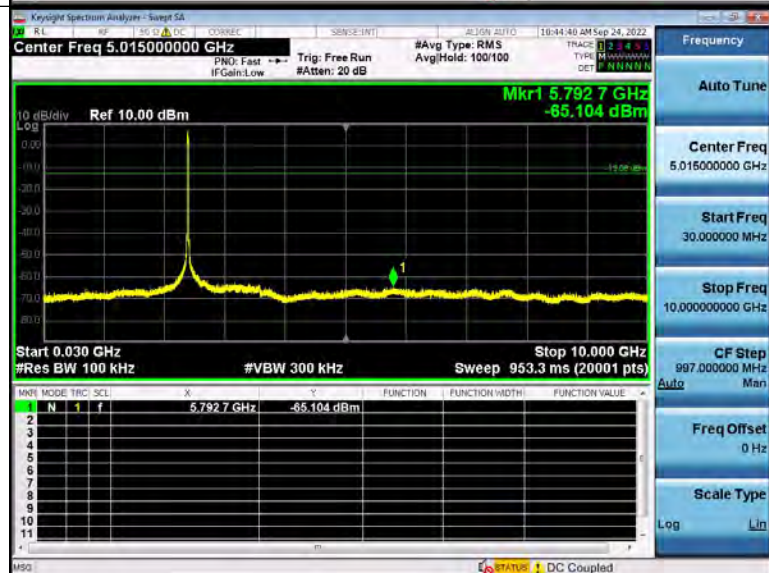
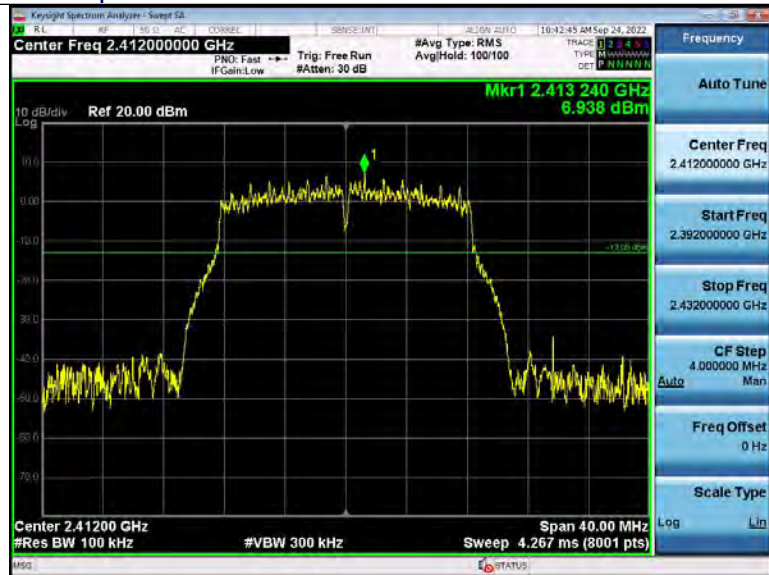
Left Band Edge

Right Band Edge

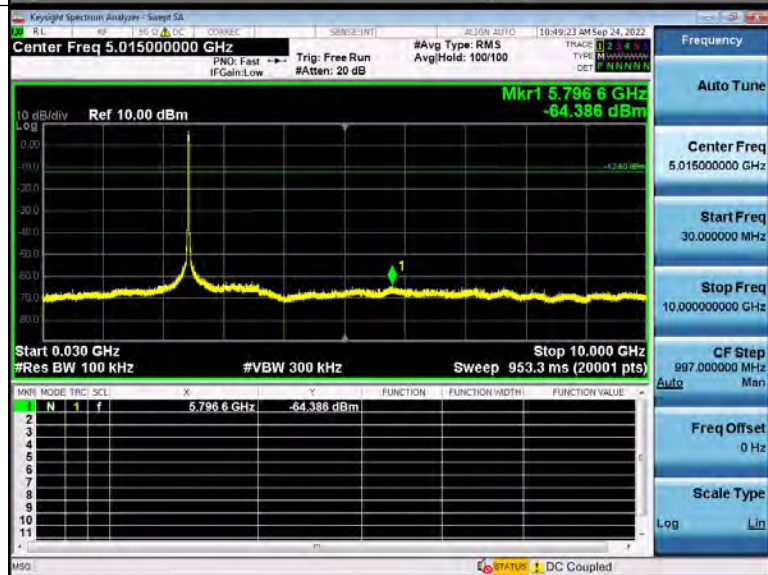
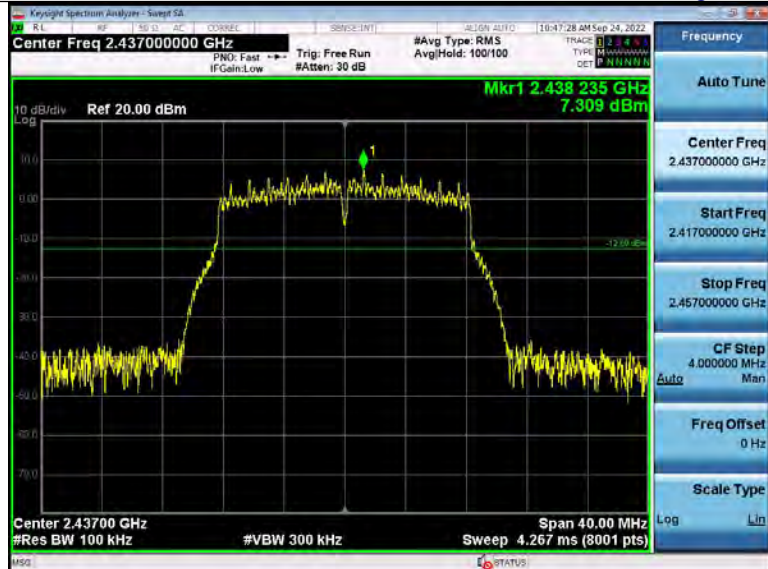
802.11g Modulation

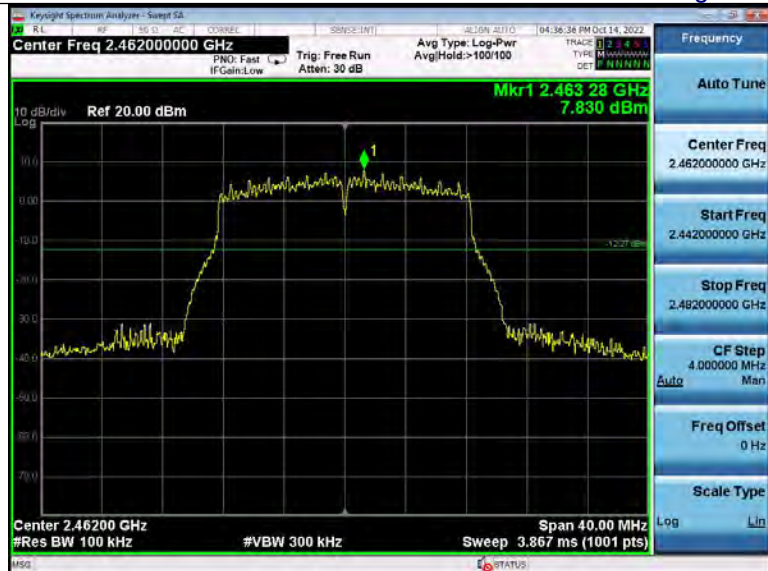
Spurious emission

Low Channel

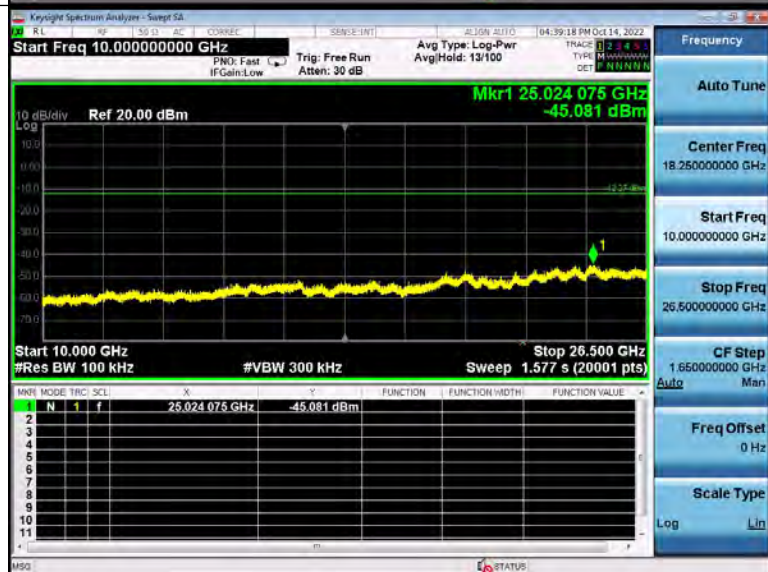
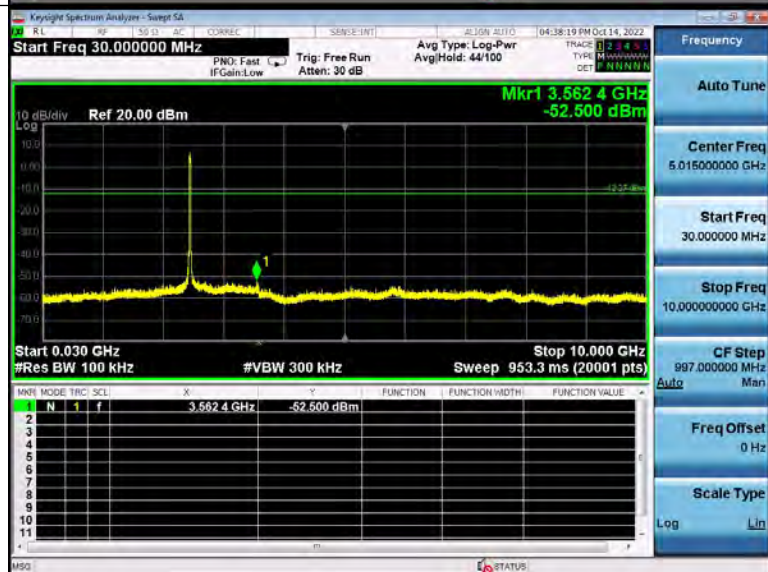


Middle Channel

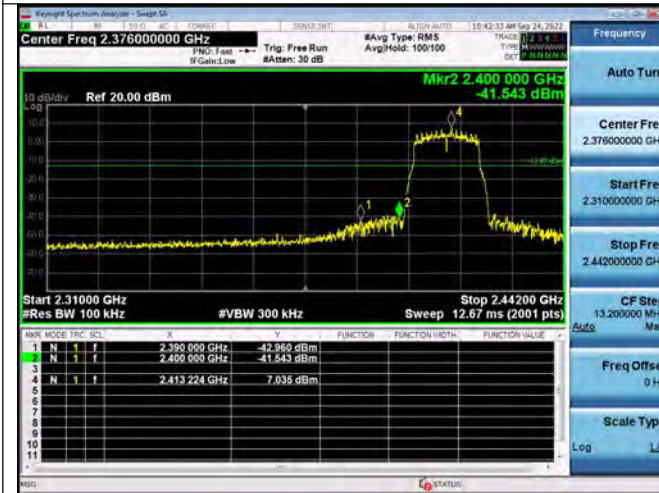




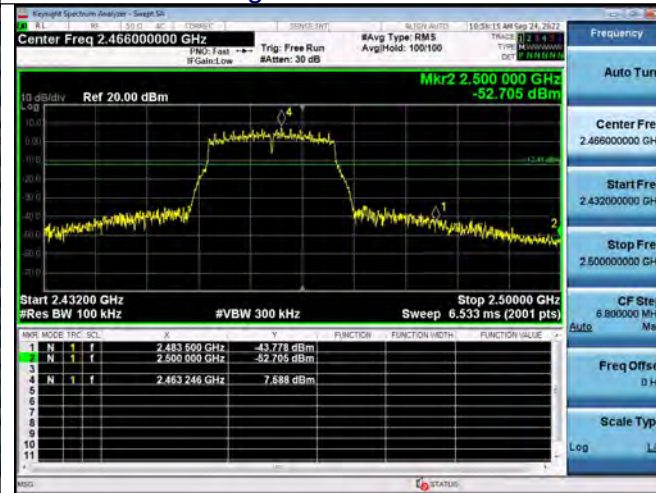
High Channel



Lowest Channel



Highest Channel



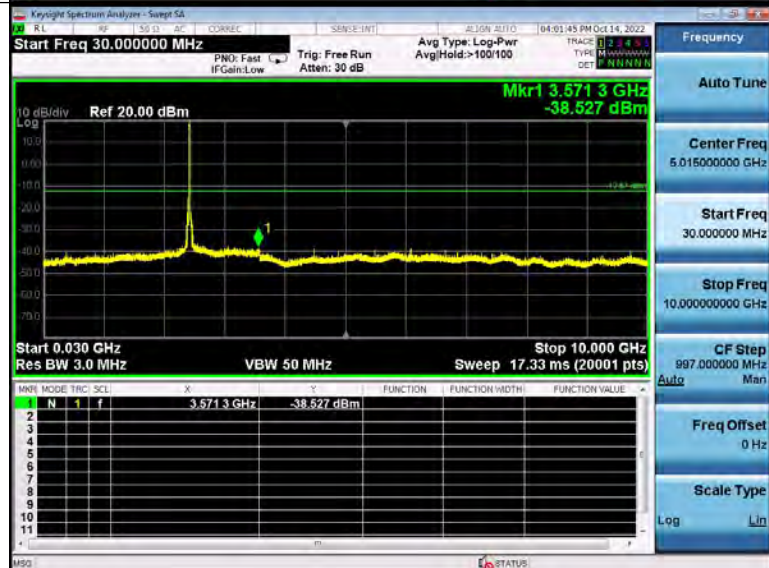
Left Band Edge

Right Band Edge

802.11n20 Modulation

Spurious emission

Low Channel





Middle Channel



Keysight Spectrum Analyzer - Setup SA

RF: 1 50.0 GHz CORREL: 1 SOURCE: INT1 ALIGN: AUTO [11:56:44 AM Sep 24, 2022]

Center Freq 2.46200000 GHz #Avg Type: RMS Avg/Hold: 100/100

Trig: Free Run #Atten: 30 dB

Trace 1 1 3 4 1
Type: M Maximum
Det: P Peak

10 dB/div Ref 20.00 dBm

Log

Mkr1 2.463 265 GHz
6.377 dBm

Center Freq 2.46200000 GHz

Start Freq 2.442000000 GHz

Stop Freq 2.482000000 GHz

CF Step 4.000000 MHz Man

Auto

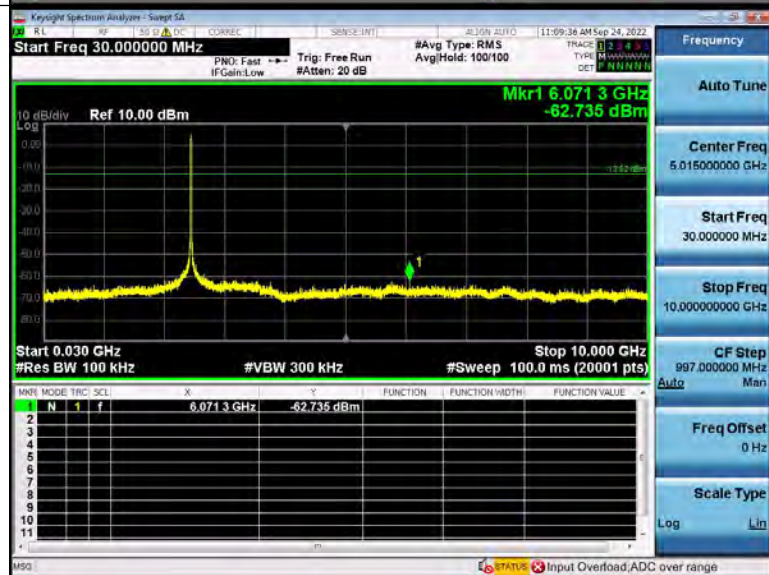
Freq Offset 0 Hz

Scale Type Log Lin

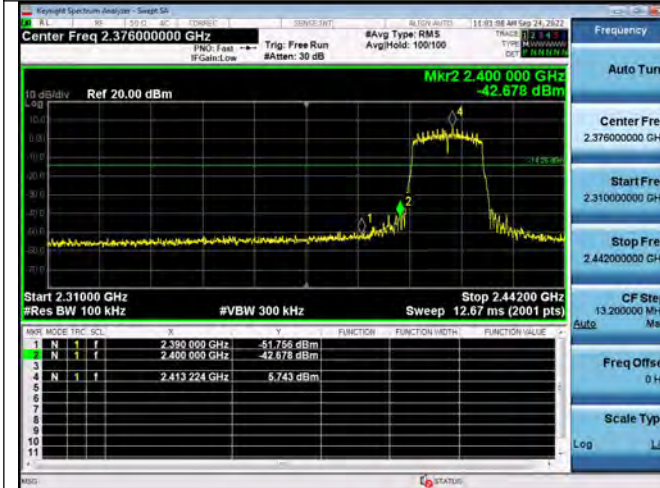
Center 2.46200 GHz Span 40.00 MHz

#Res BW 100 kHz #VBW 300 kHz Sweep 4.267 ms (8001 pts)

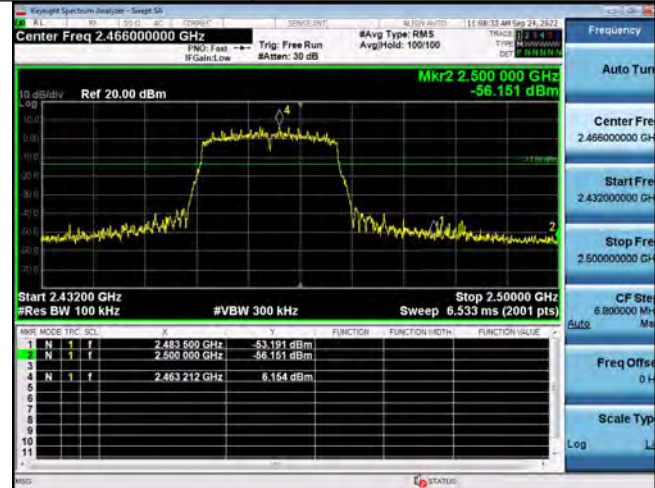
MSO STATUS



Lowest Channel



Highest Channel



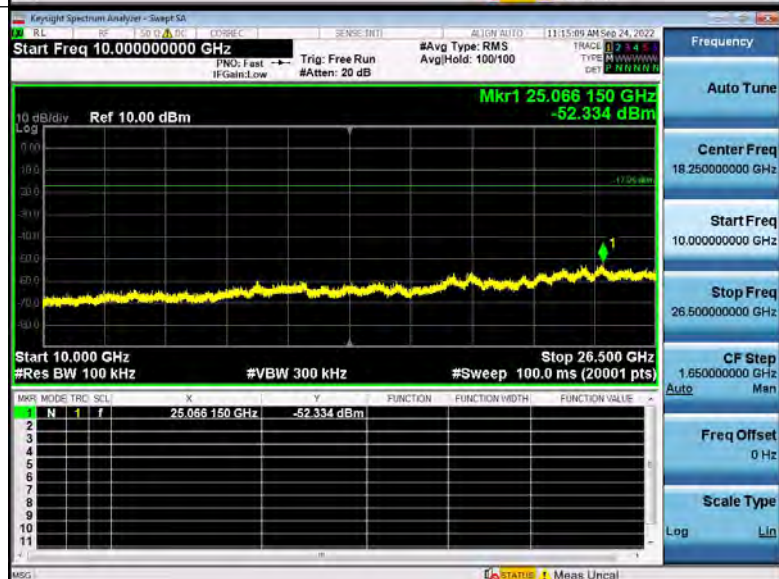
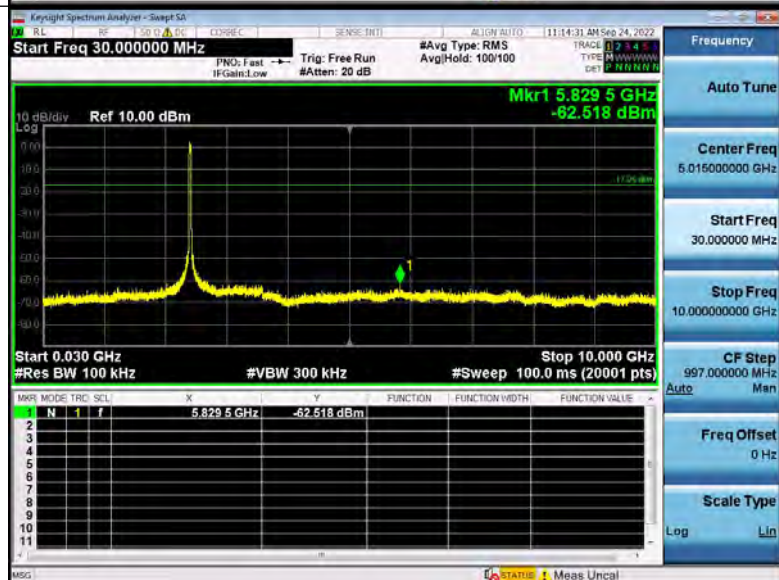
Left Band Edge

Right Band Edge

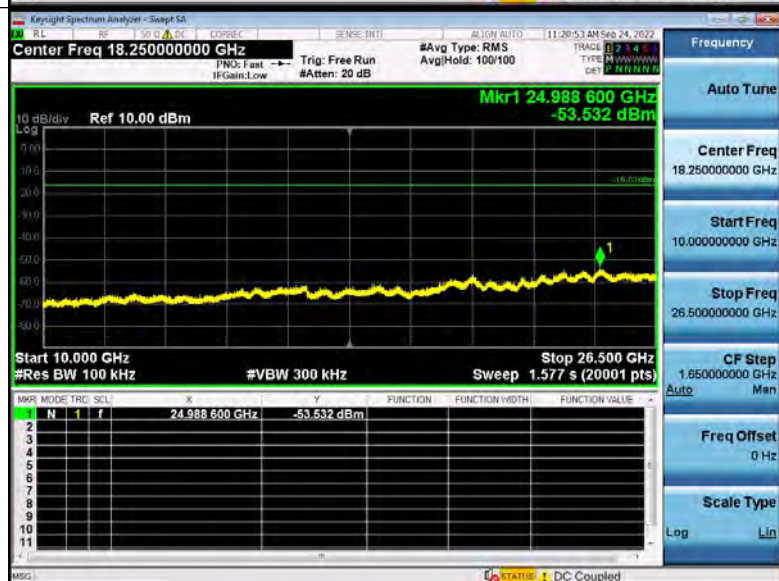
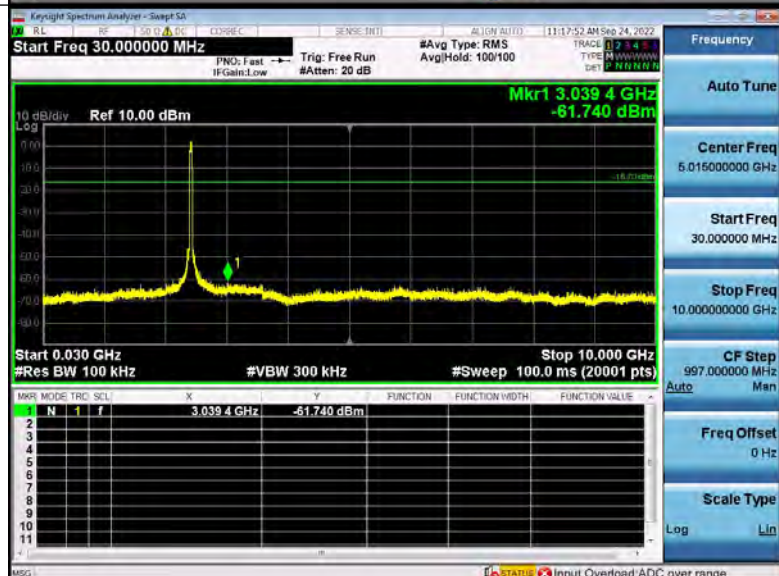
802.11n40 Modulation

Spurious emission

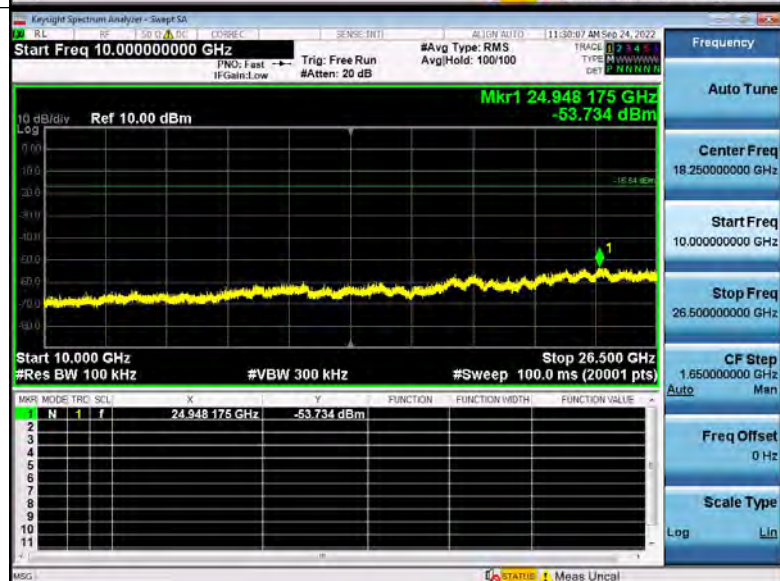
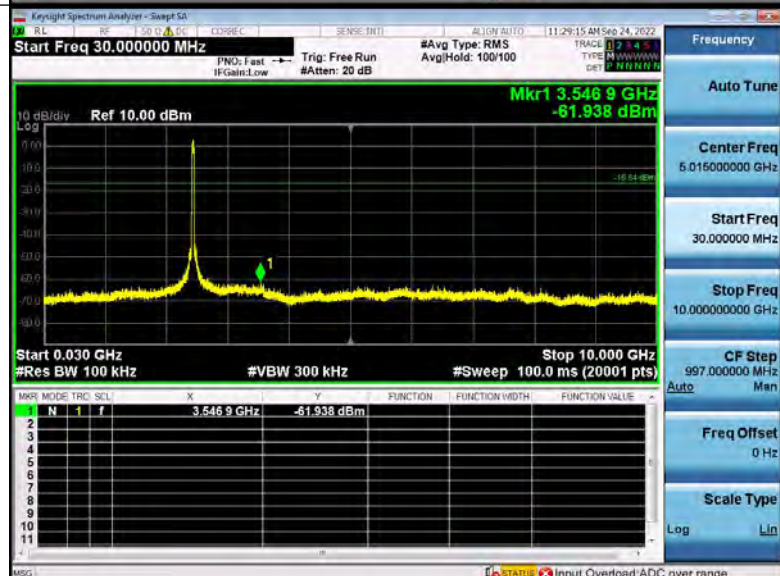
Low Channel



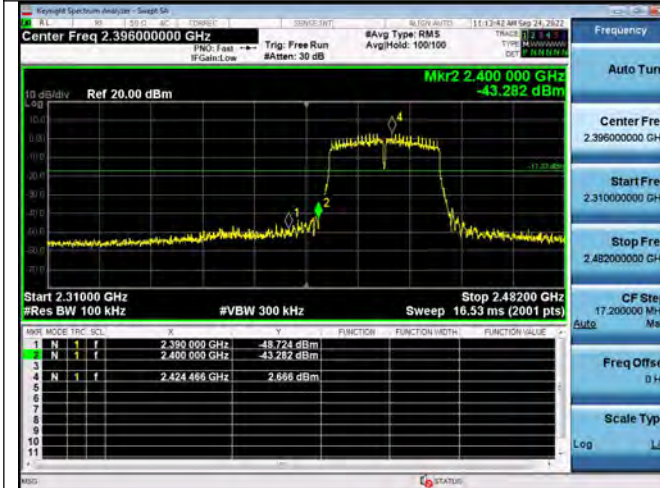
Middle Channel



High Channel

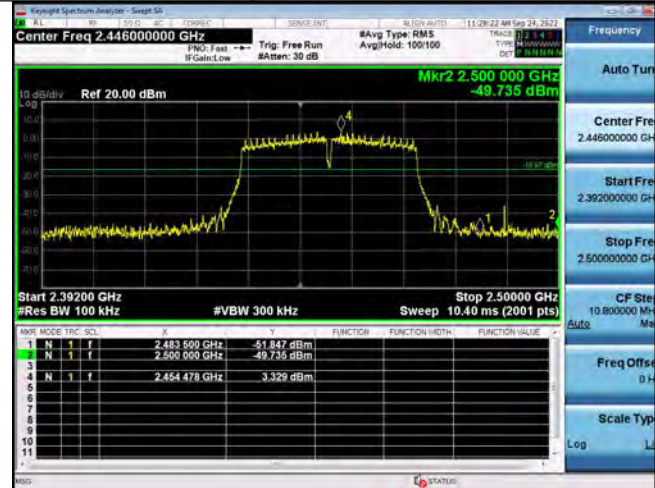


Lowest Channel



Left Band Edge

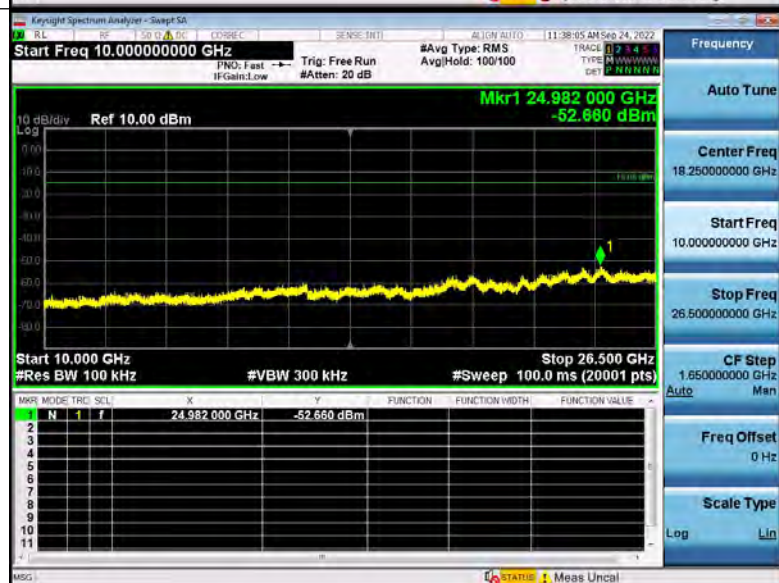
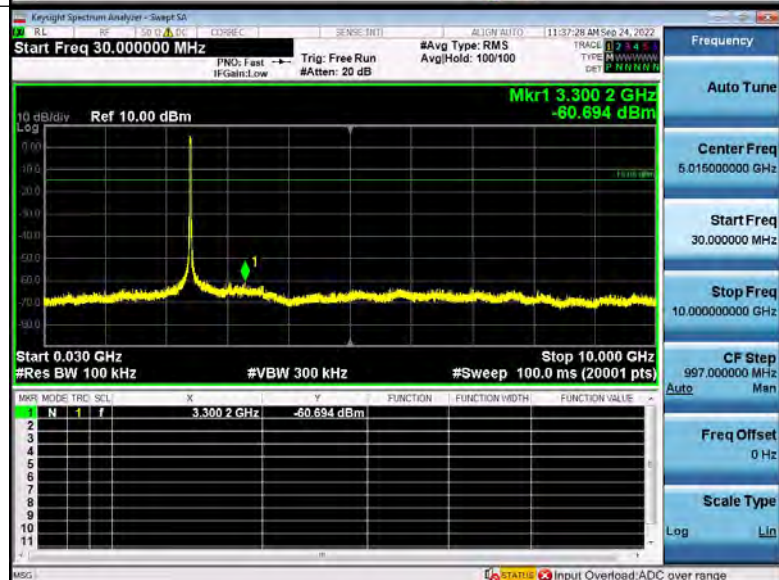
Highest Channel



Right Band Edge

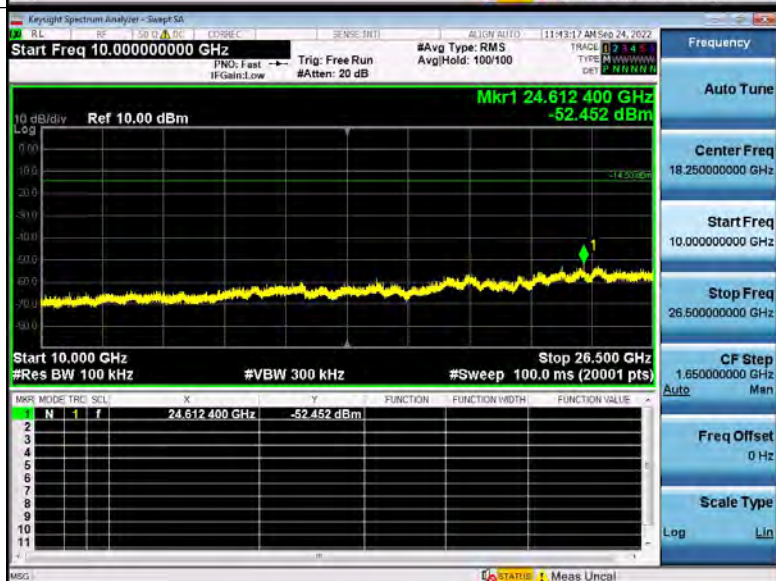
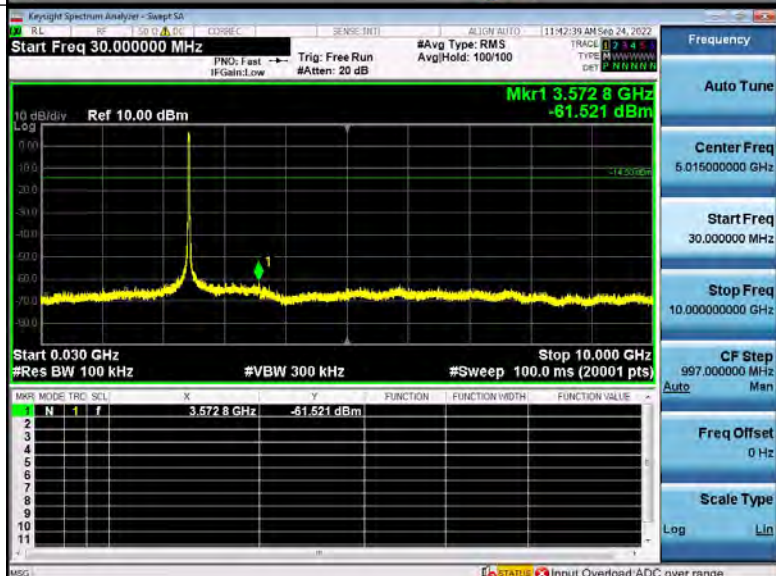
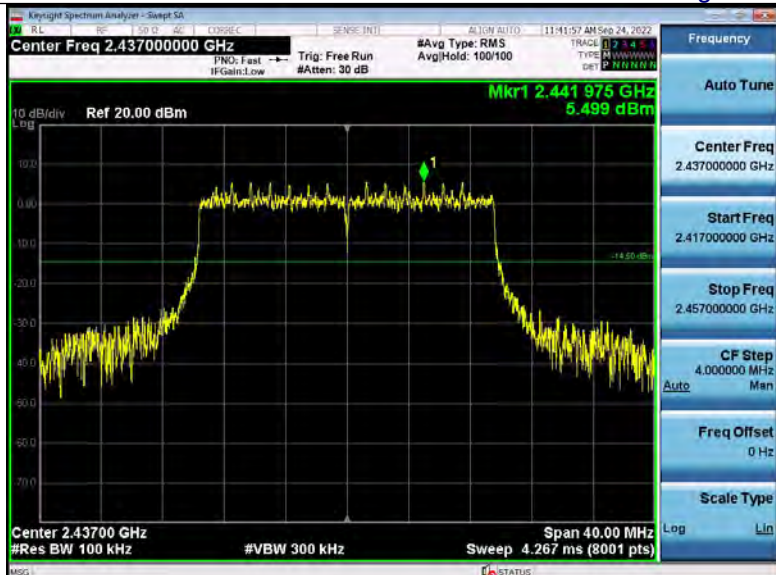
802.11ax20 Modulation

Spurious emission

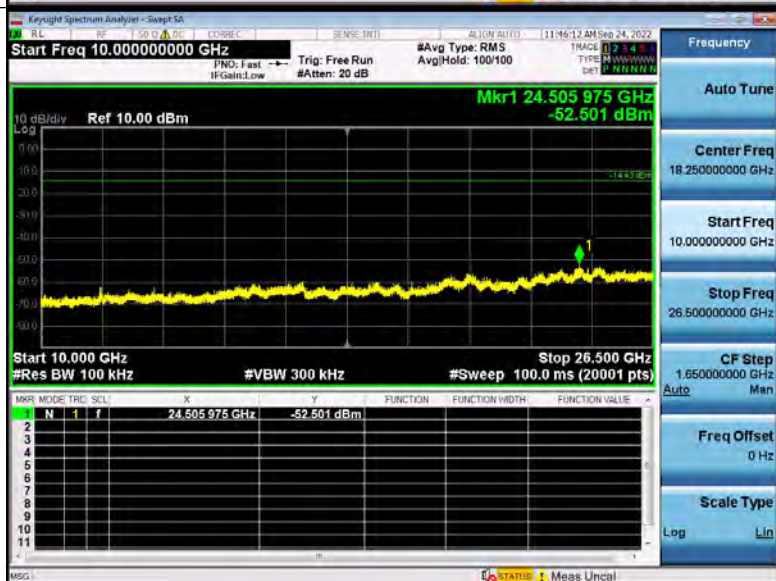
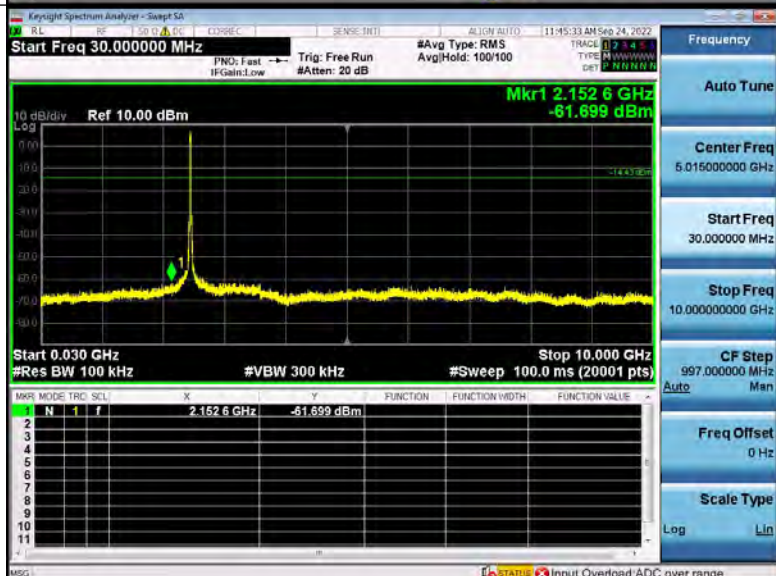
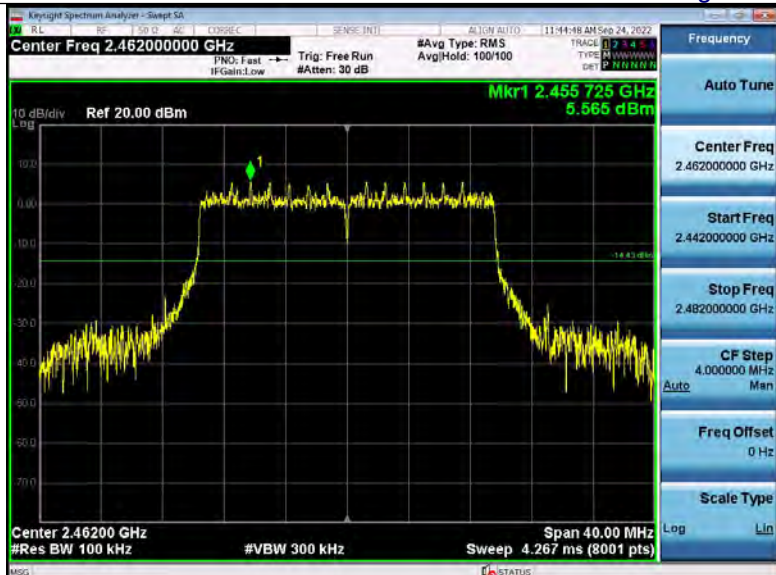


Low Channel

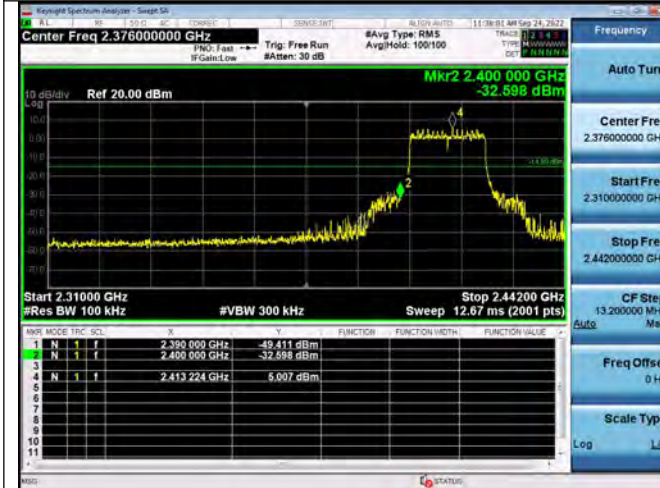
Middle Channel



High Channel

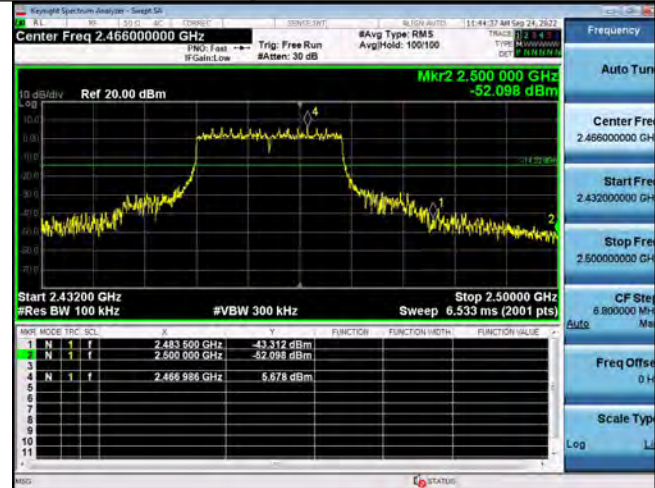


Lowest Channel



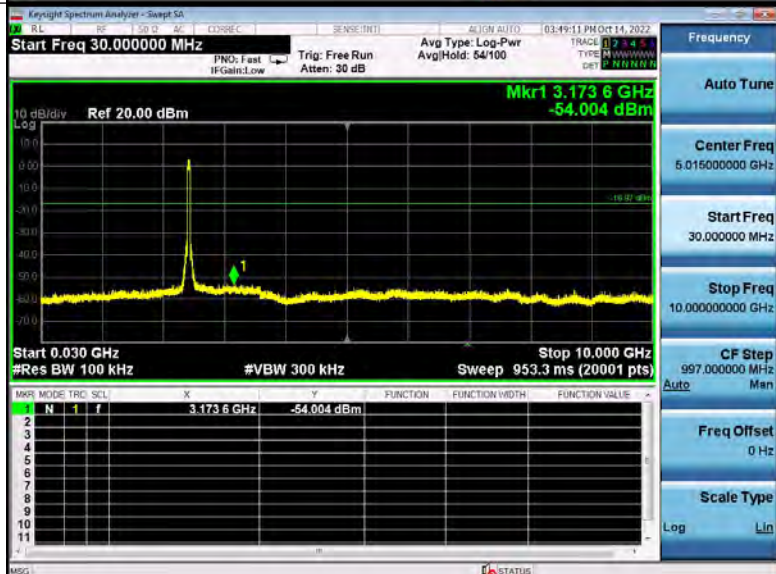
Left Band Edge

Highest Channel

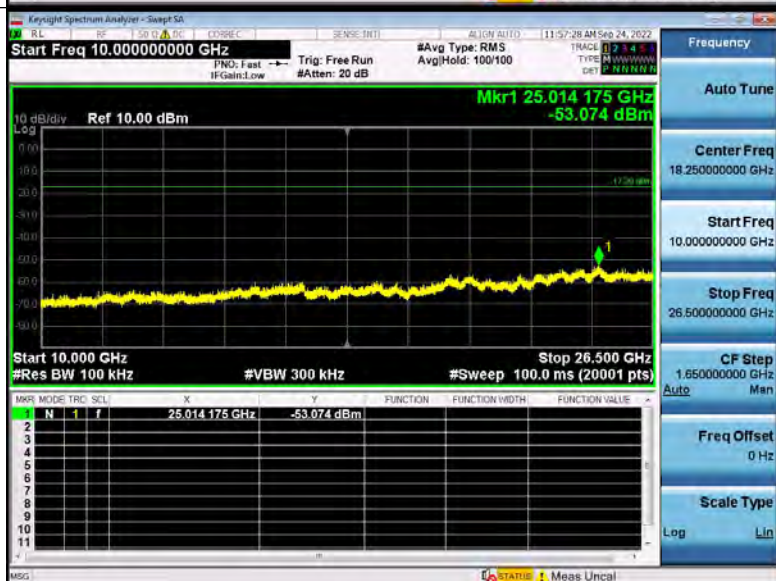
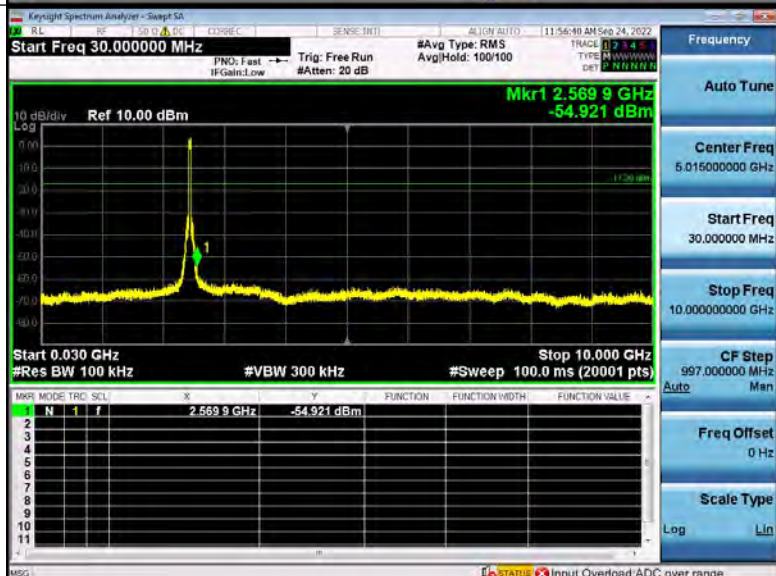


Right Band Edge

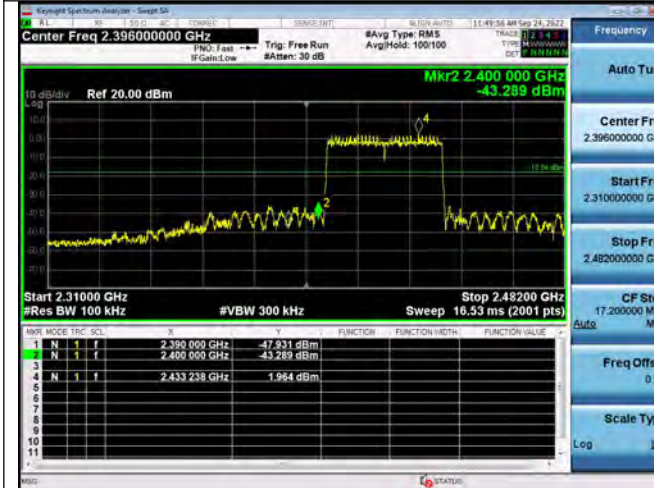
Middle Channel



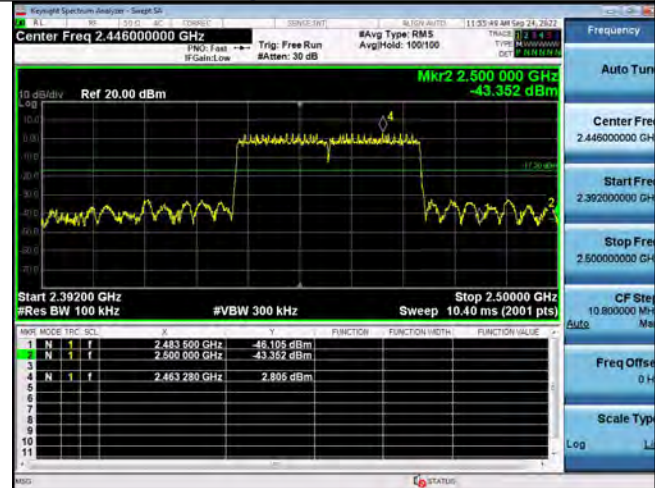
High Channel



Lowest Channel



Highest Channel



Left Band Edge

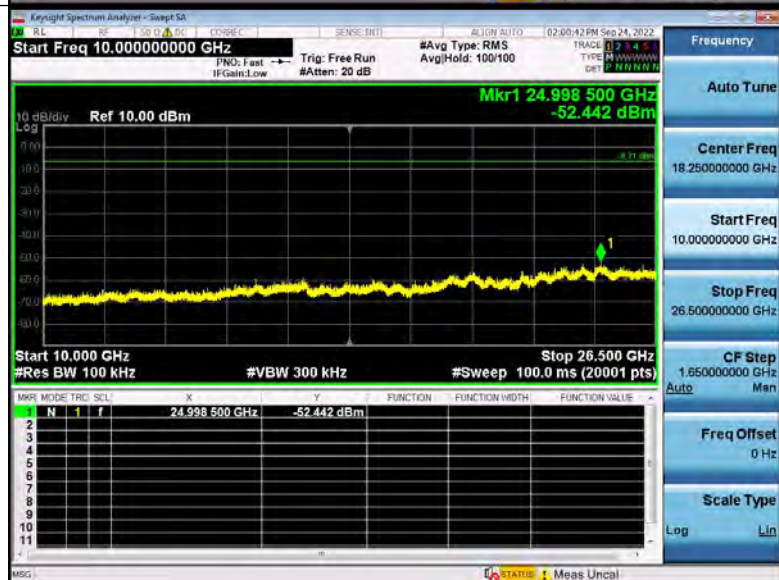
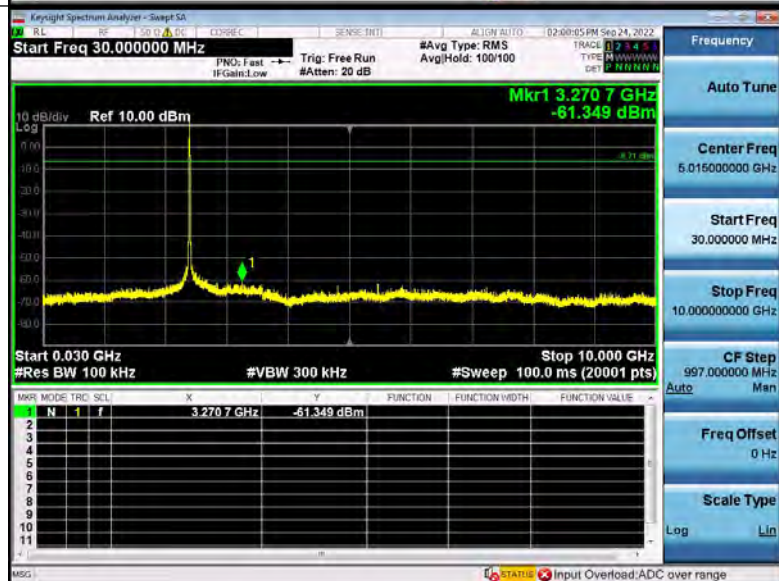
Right Band Edge

ANT2

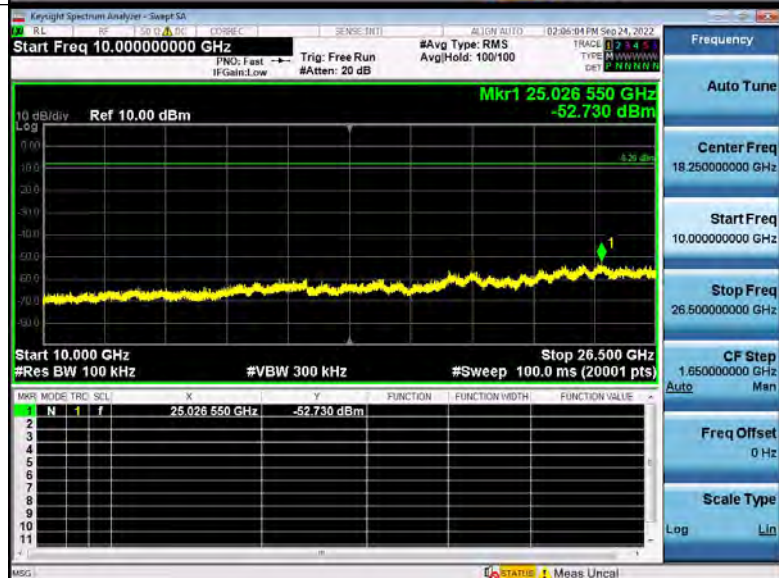
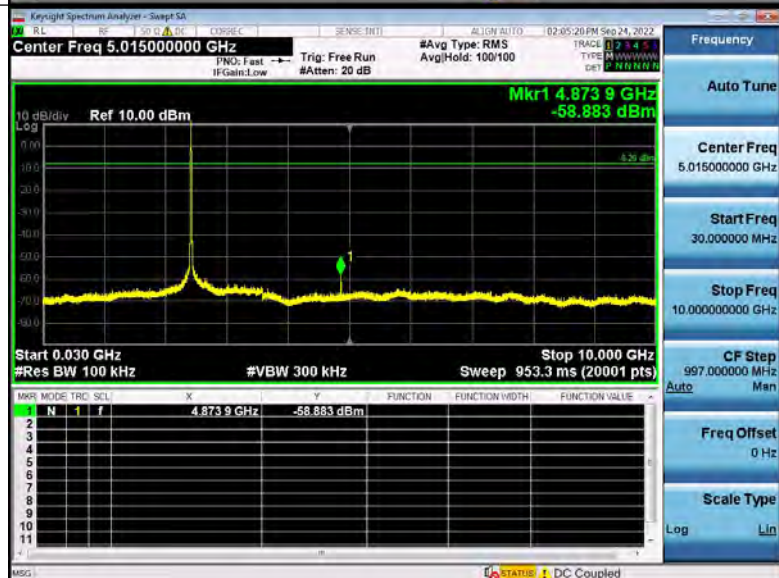
802.11b Modulation

Spurious emission

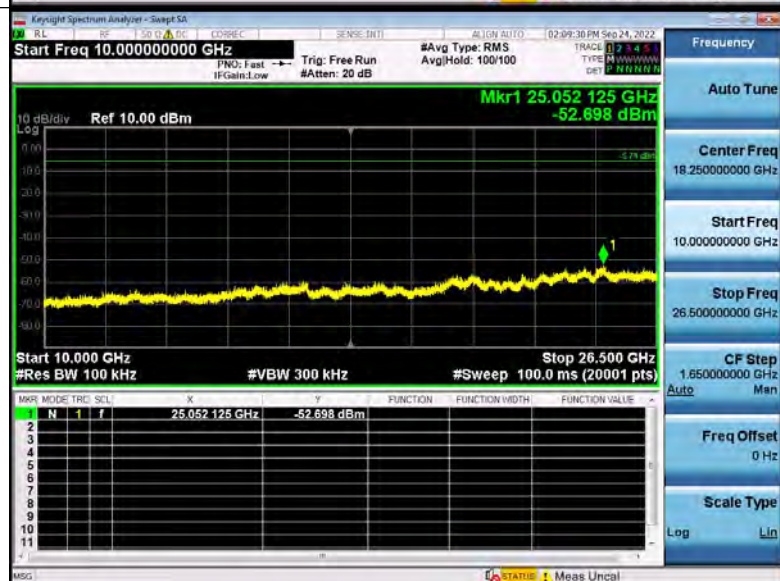
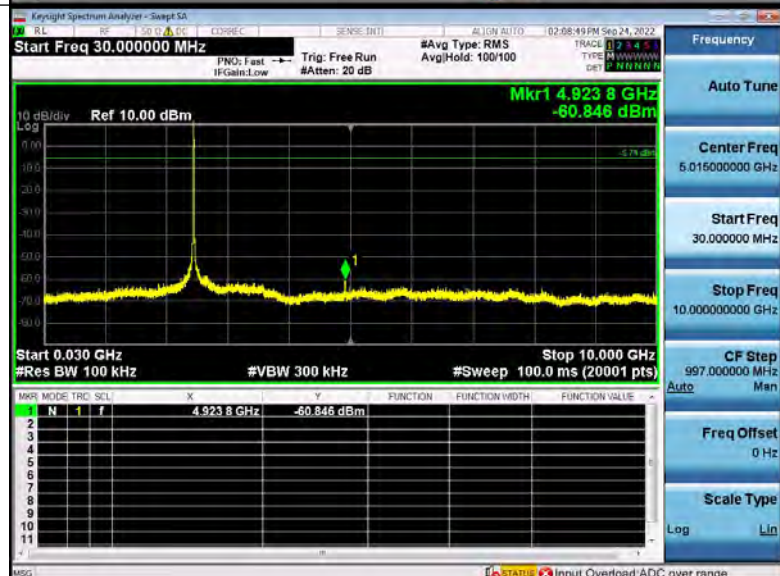
Low Channel



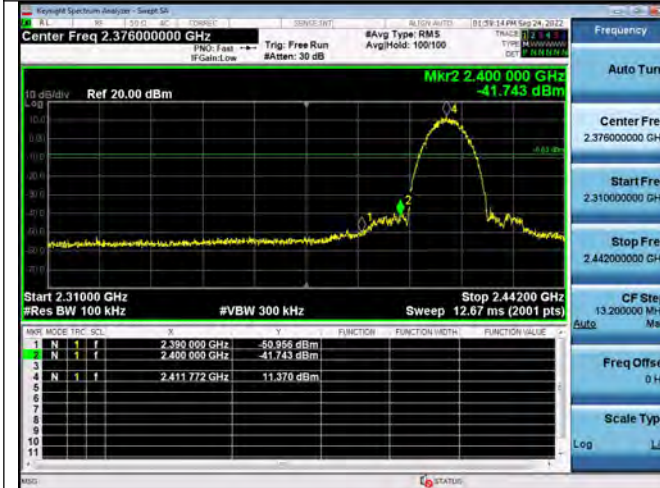
Middle Channel



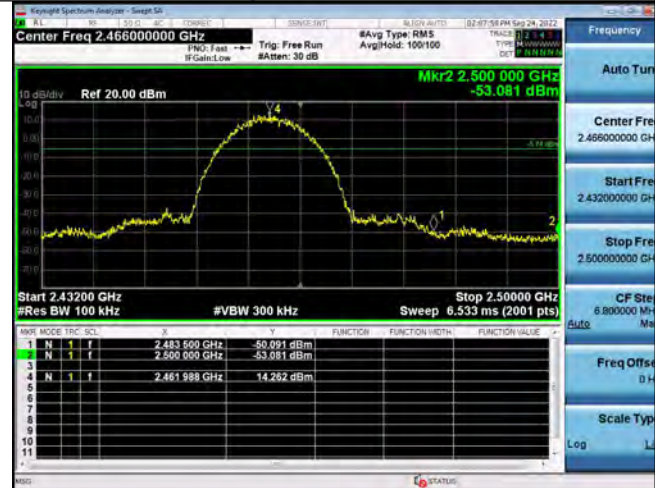
High Channel



Lowest Channel



Highest Channel



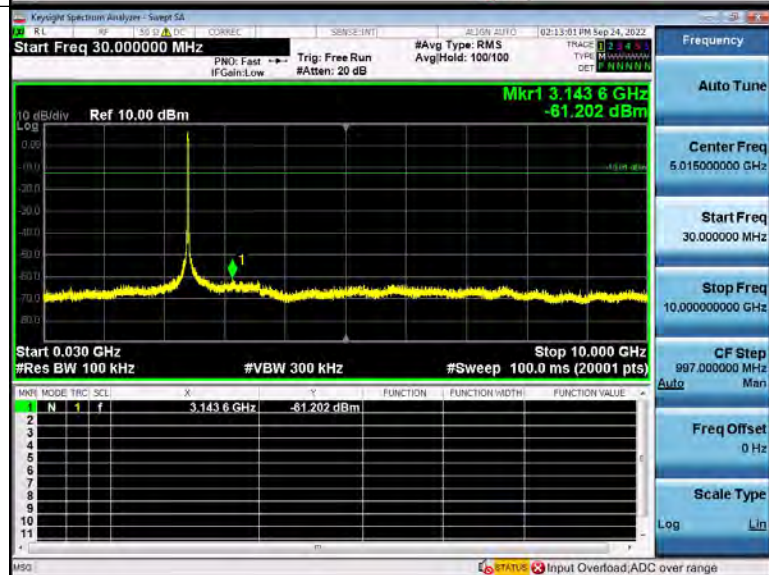
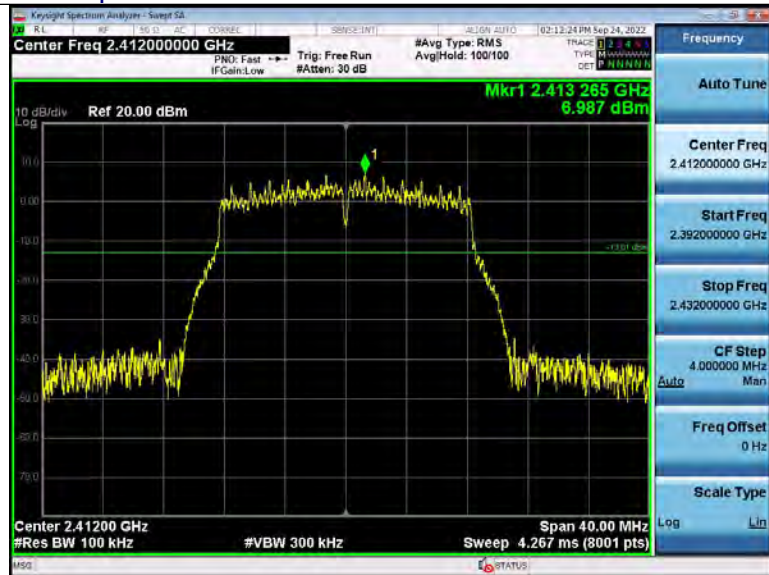
Left Band Edge

Right Band Edge

802.11g Modulation

Spurious emission

Low Channel



Keylight Spectrum Analyzer - Setup SA

RF: 1 RB: 10 AC: CORRECT: 1 SOURCE: INT1 ALIGN: AUTO 02:15:54 PM Sep 24, 2022

Center Freq 2.437000000 GHz #Avg Type: RMS #Att: 30 dB

PRN: Fast IF Gain: Low Trig: Free Run Avg/Hold: 100/100

TRACE 1 3 4 5 TYPE: M M M M M M M M DET: P M M M M M M M

10 dB/div Ref 20.00 dBm

Mkr1 2.435 715 GHz 6.975 dBm

Center 2.43700 GHz #Res BW 100 kHz #VBW 300 kHz Span 40.00 MHz Sweep 4.267 ms (8001 pts)

Frequency Auto Tune

Center Freq 2.437000000 GHz

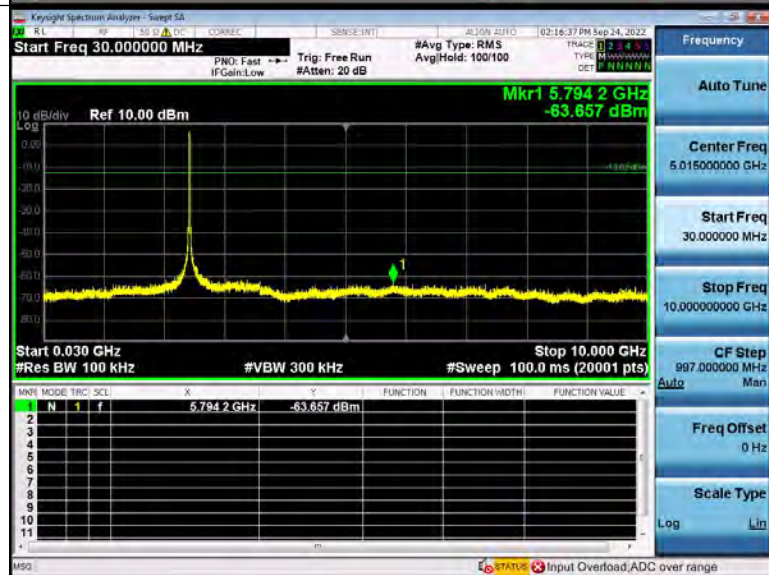
Start Freq 2.417000000 GHz

Stop Freq 2.457000000 GHz

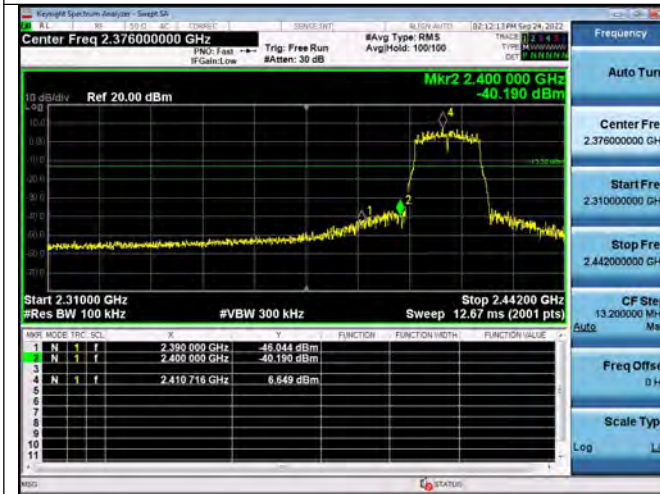
CF Step 4.000000 MHz Auto Man

Freq Offset 0 Hz

Scale Type Log Lin

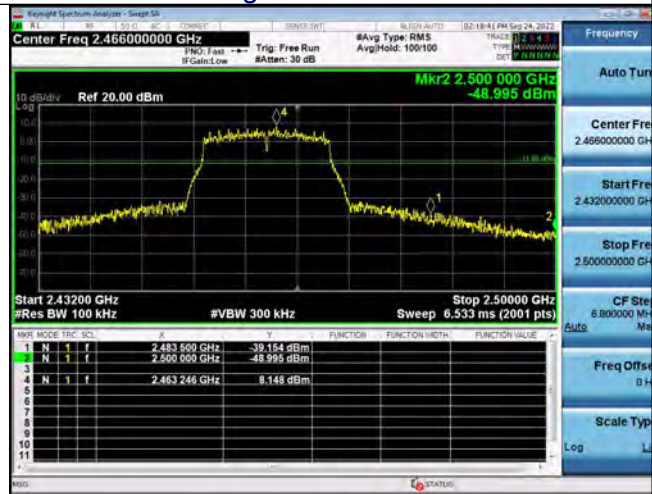


Lowest Channel



Left Band Edge

Highest Channel

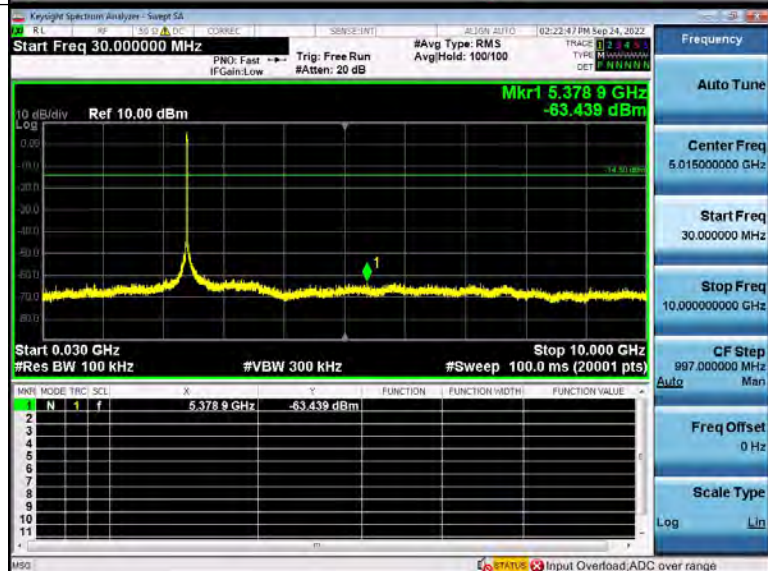


Right Band Edge

802.11n20 Modulation

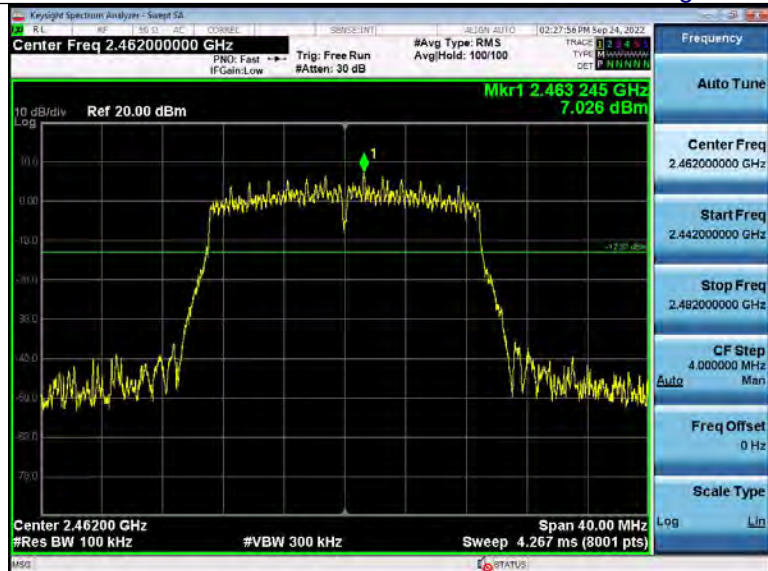
Spurious emission

Low Channel

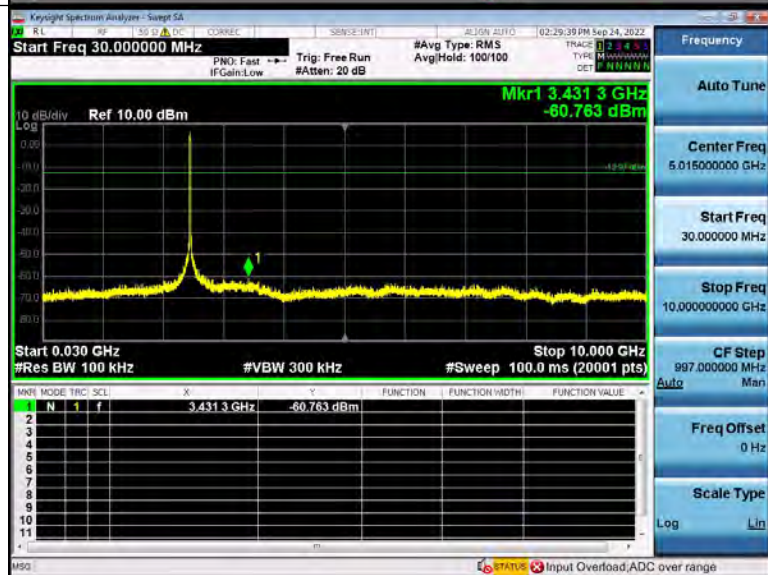




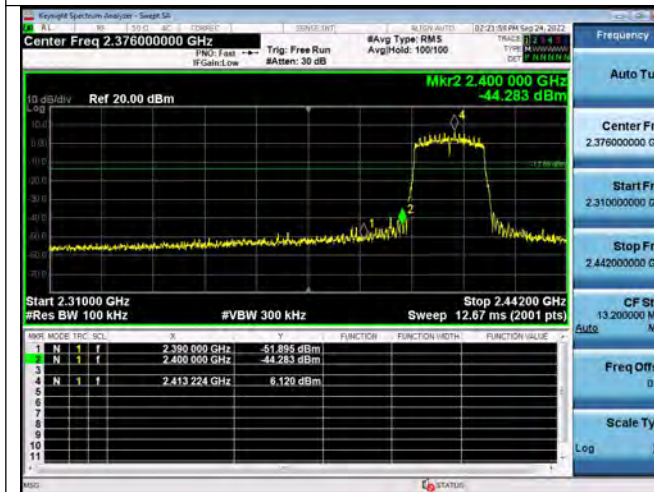
Middle Channel



High Channel

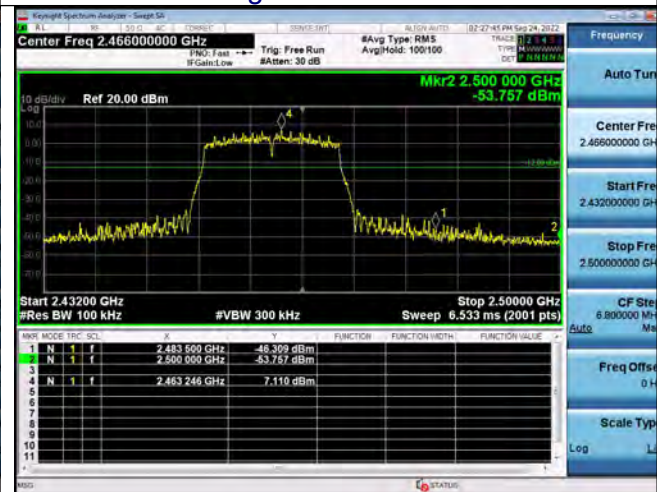


Lowest Channel

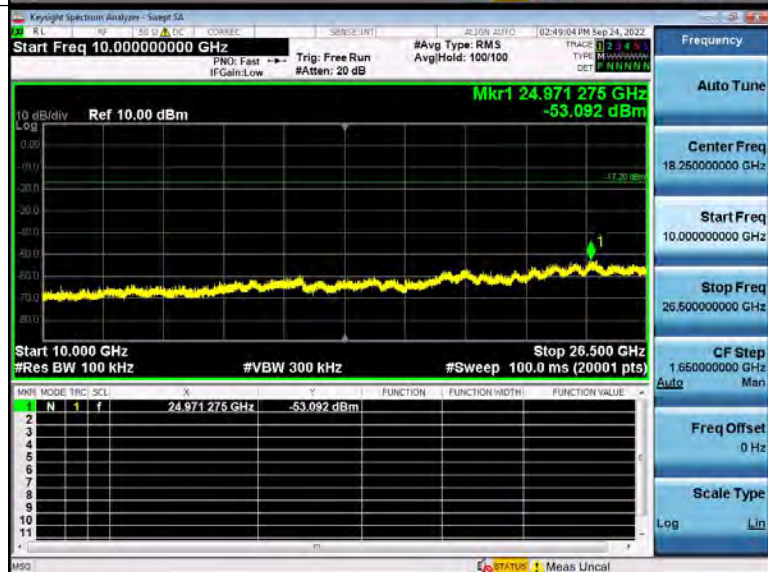


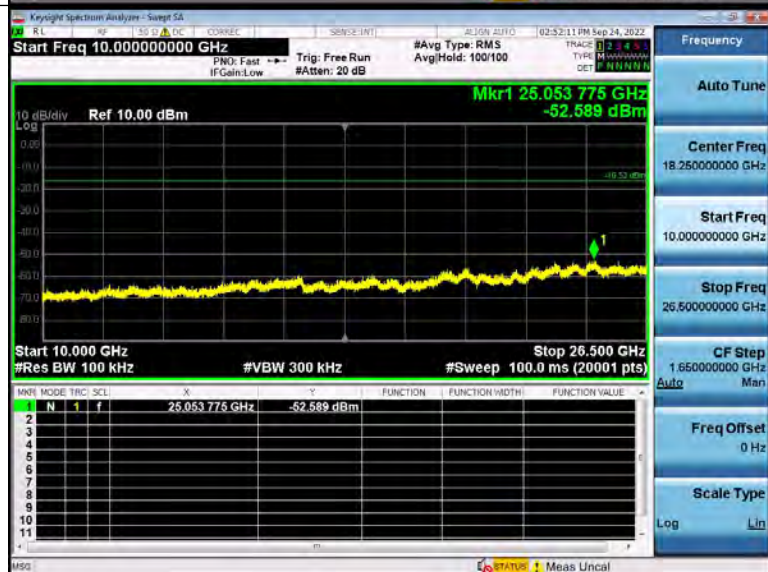
Left Band Edge

Highest Channel



Right Band Edge

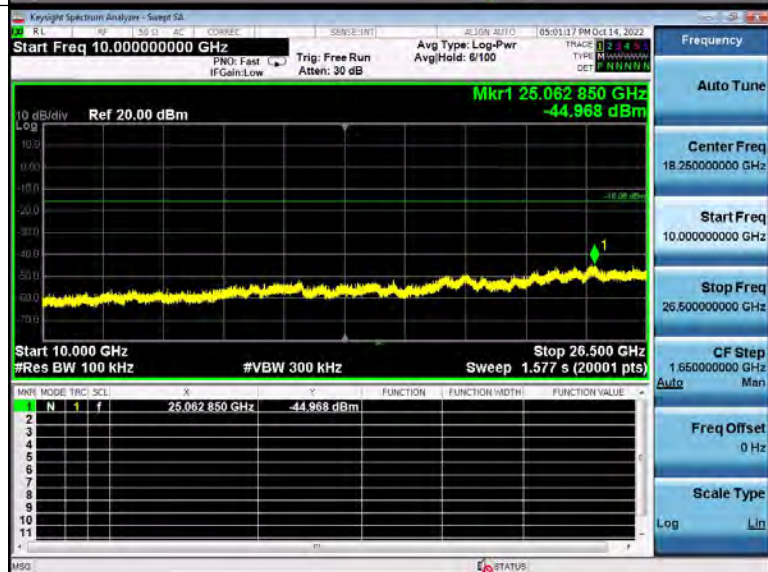
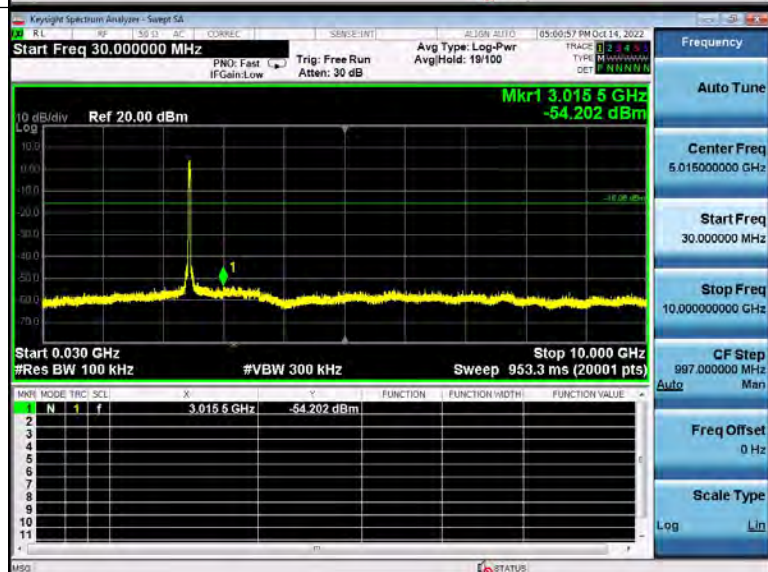




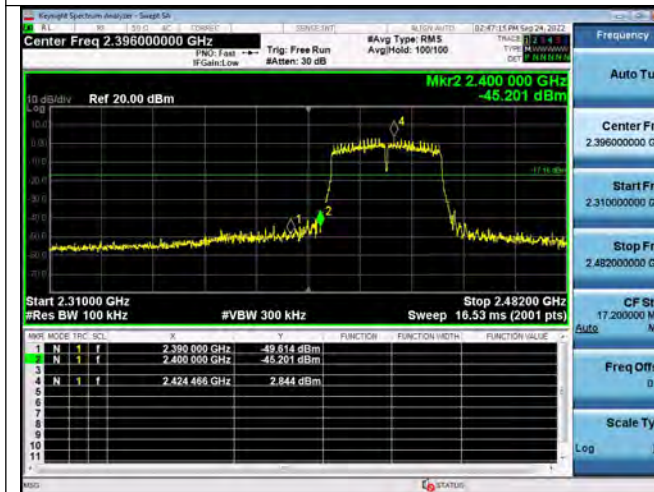
Middle Channel



High Channel

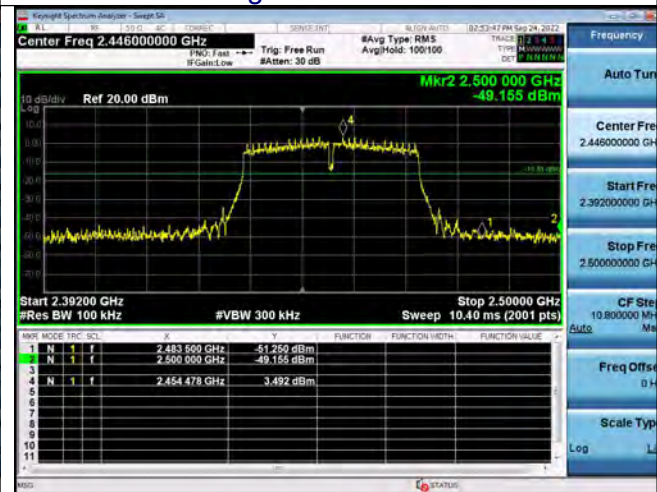


Lowest Channel



Left Band Edge

Highest Channel

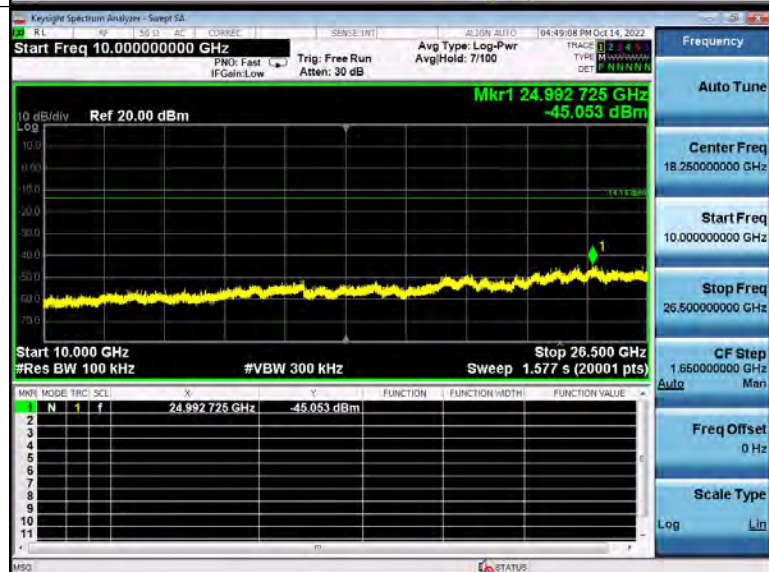
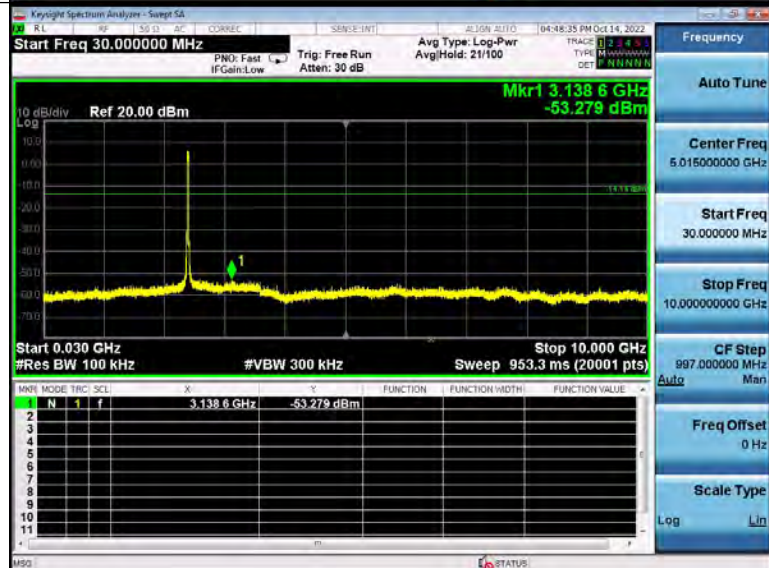


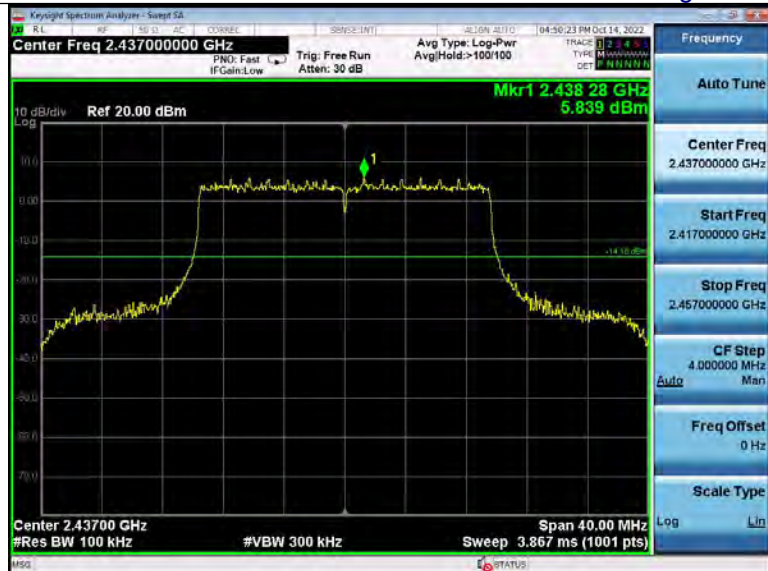
Right Band Edge

802.11ax20 Modulation

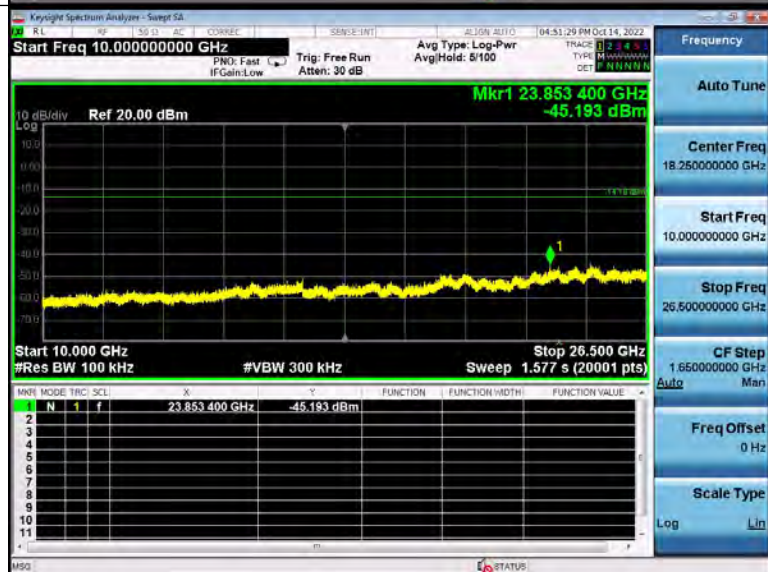
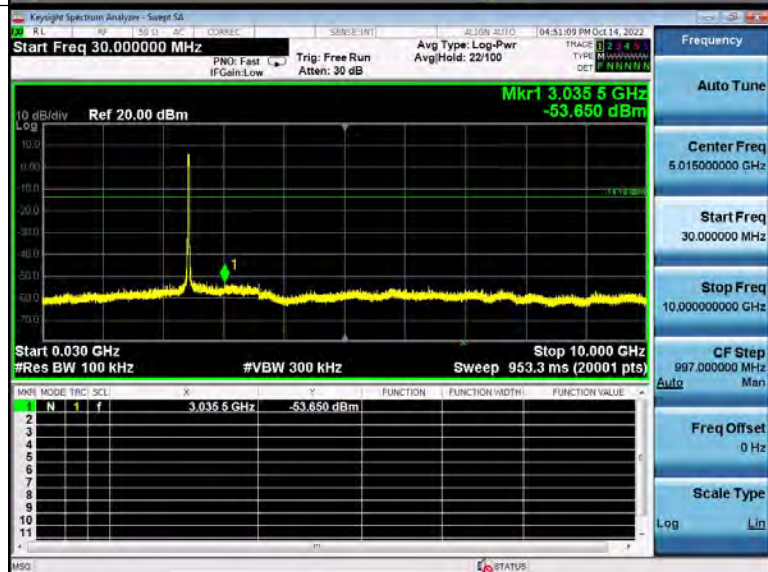
Spurious emission

Low Channel





Middle Channel

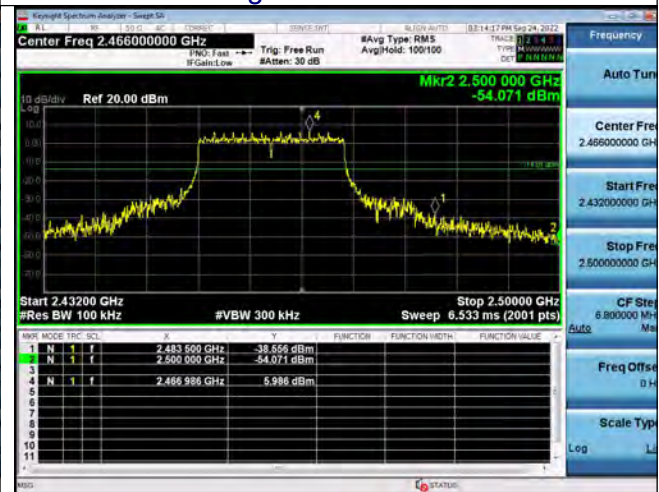


Lowest Channel



Left Band Edge

Highest Channel

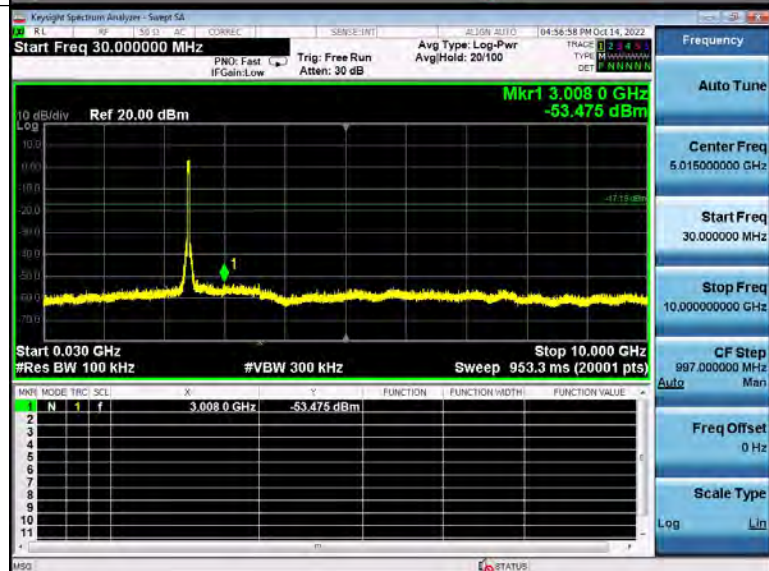


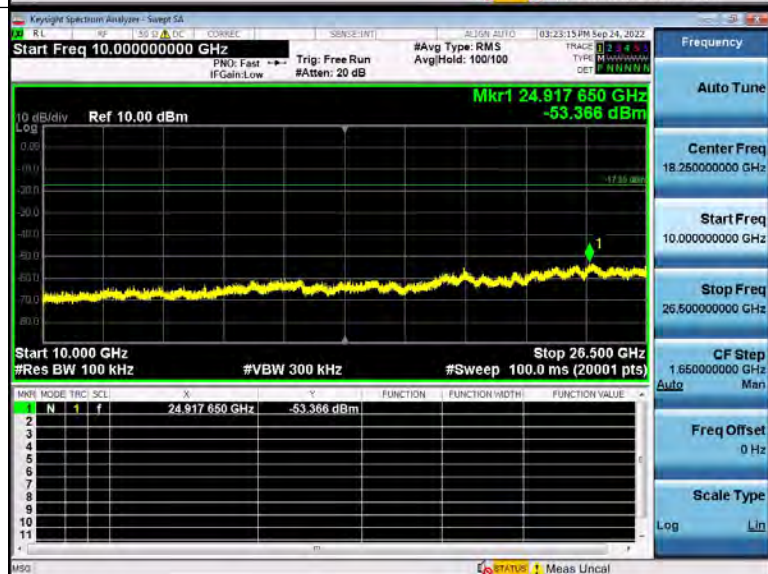
Right Band Edge

802.11ax40 Modulation

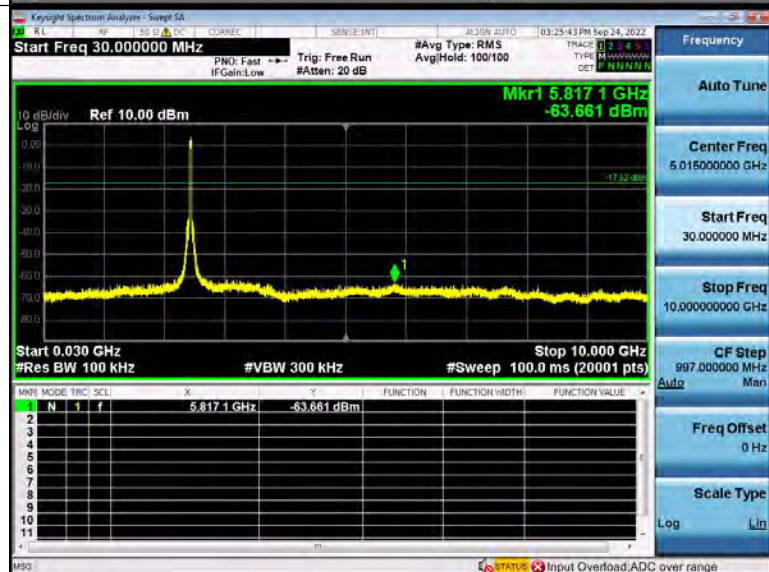
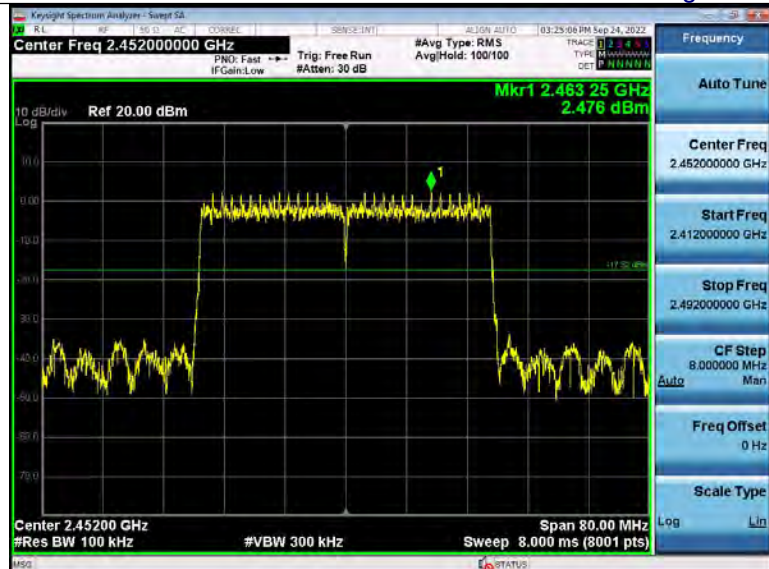
Spurious emission

Low Channel

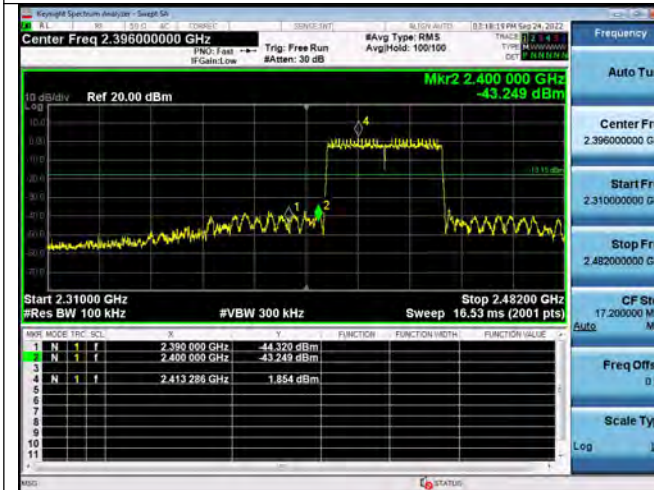




High Channel

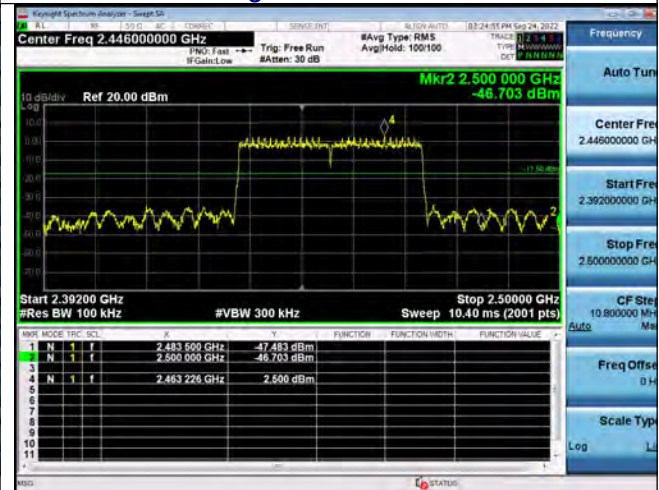


Lowest Channel



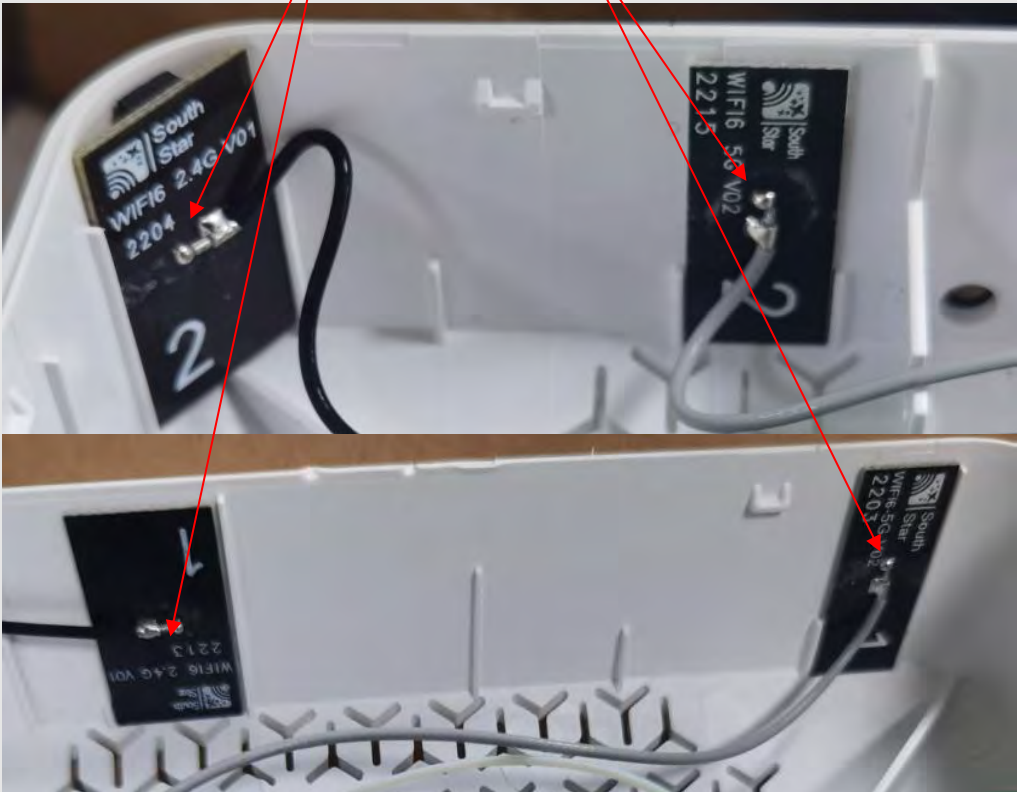
Left Band Edge

Highest Channel



Right Band Edge

10. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. Refer to statement below for compliance. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed. Antenna Connected Construction The antenna used in this product are FPC antenna, and the best case gain of the antenna is antenna port 1: 2dBi and Antenna port 2:2dBi. EUT Antenna: 2.4GWIFI ANT 5GWIFI ANT 	

11. TEST SETUP PHOTO





12. EUT CONSTRUCTIONAL DETAILS

Reference to the external photos file and internal photos file for details.

***** END OF REPORT *****