



3.6. Out-of-band Emissions

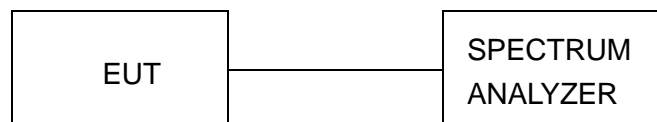
Limit

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. Attenuation below the general limits specified in §15.209(a) is not required.

Test Procedure

Connect the transmitter output to spectrum analyzer using a low loss RF cable, and set the spectrum analyzer to RBW=100 kHz, VBW= 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, band-edge and out-of-band emissions.

Test Configuration



Test Results

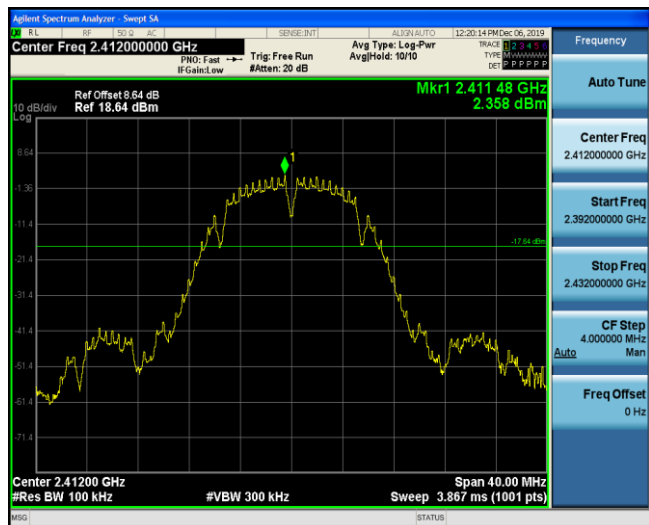
Remark: The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and band-edge measurement data. And record the worst data in the report.

Test plot as follows:

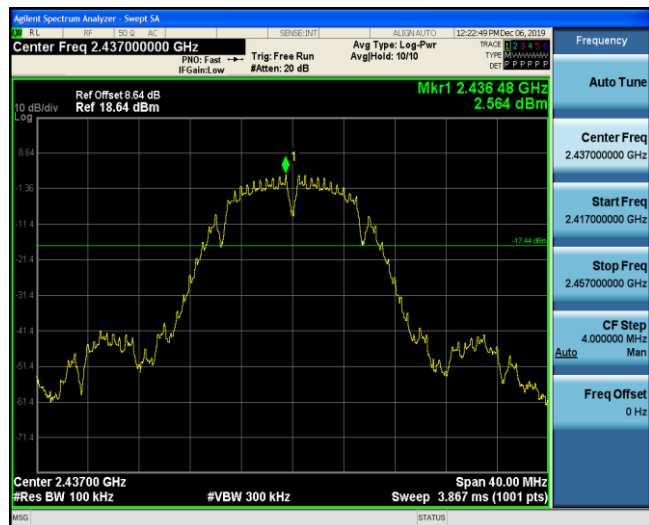


For ANT1:

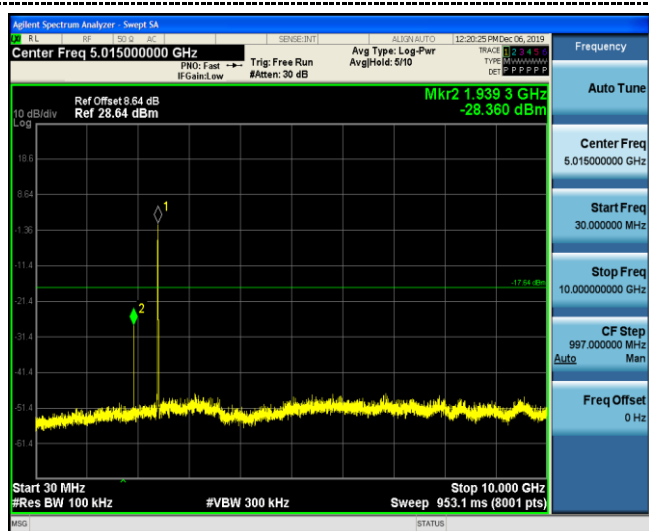
802.11b CH01



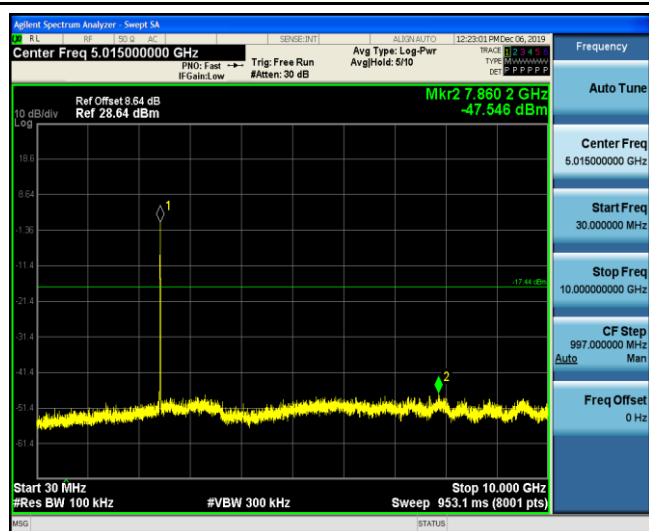
802.11b CH06



Reference



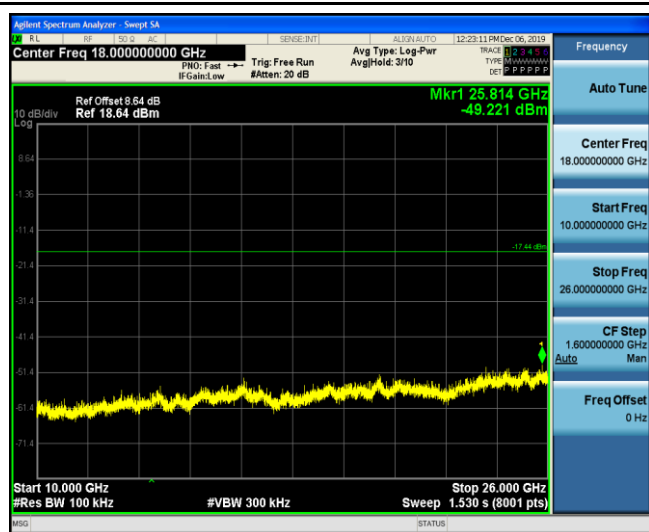
Reference



30MHz-10GHz



30MHz-10GHz



10GHz-26GHz



10GHz-26GHz

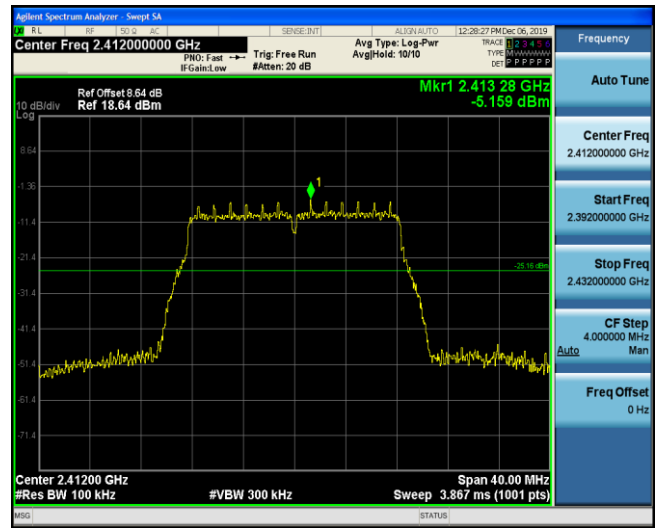




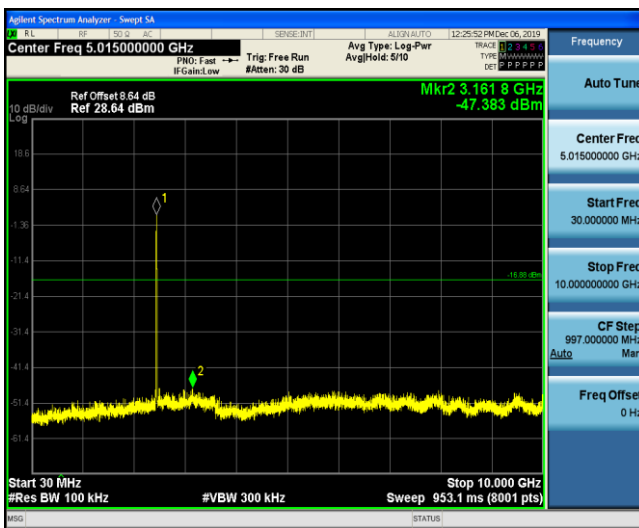
802.11b CH11



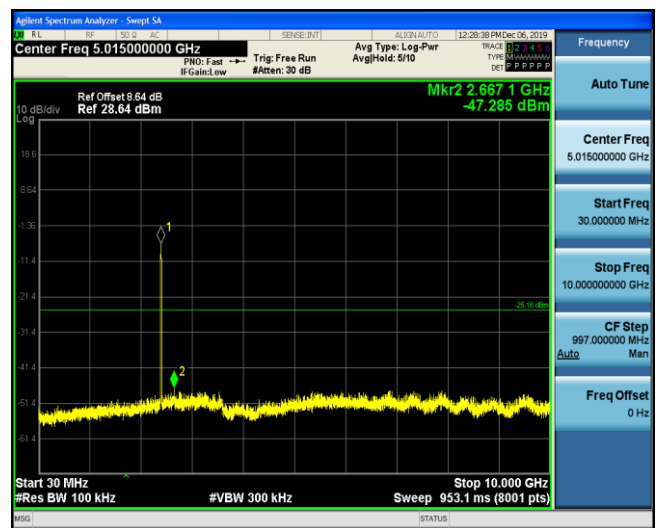
802.11g CH01



Reference



Reference



30MHz-10GHz



30MHz-10GHz

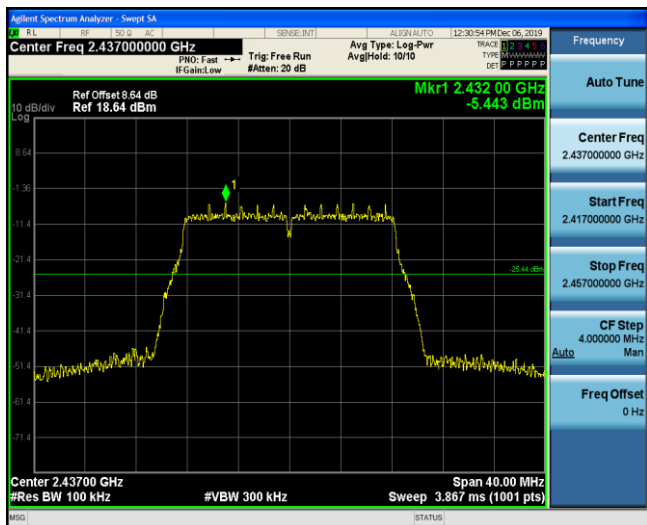


10GHz-26GHz

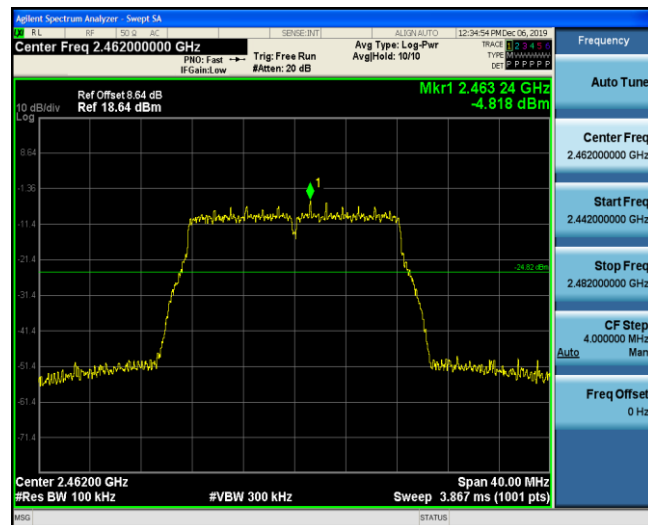
10GHz-26GHz



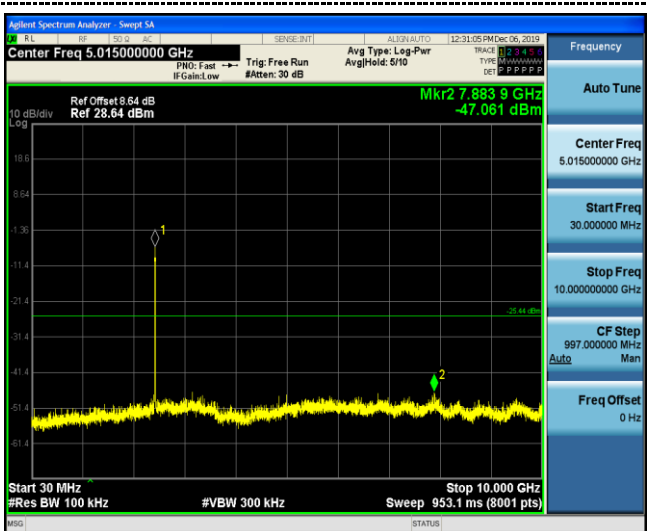
802.11g CH06



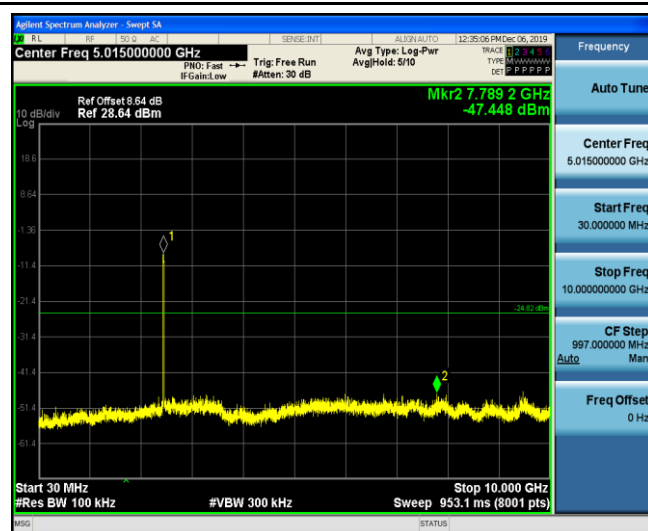
802.11g CH11



Reference



Reference



30MHz-10GHz



30MHz-10GHz



10GHz-26GHz

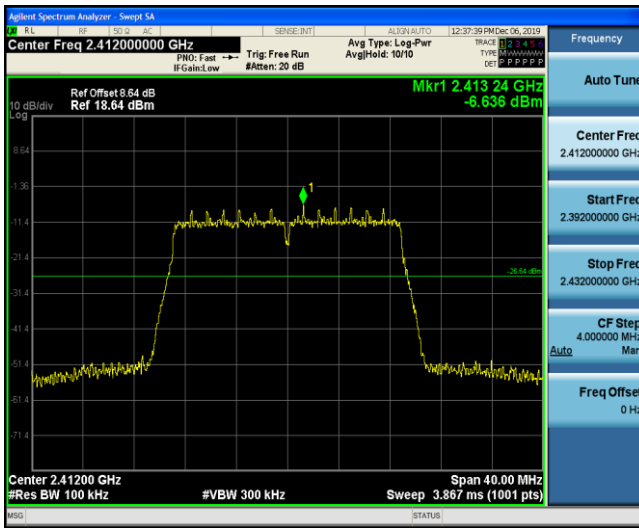


10GHz-26GHz

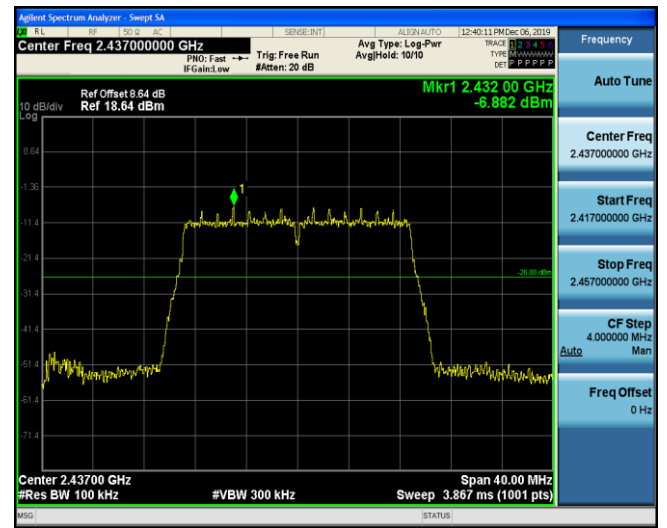




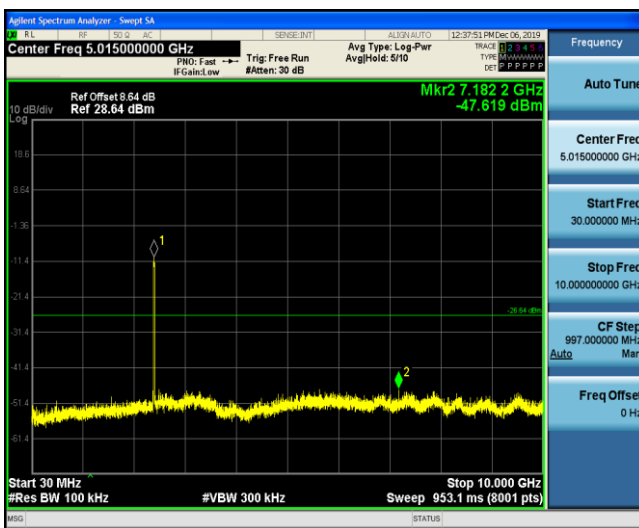
802.11n(HT20) CH01



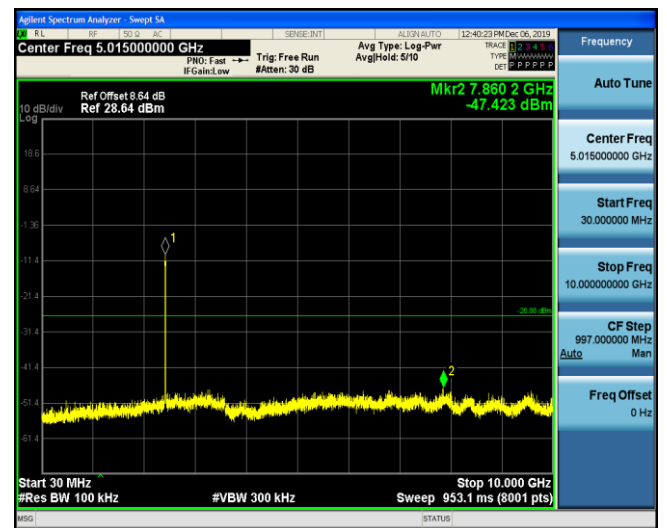
802.11n(HT20) CH06



Reference



Reference



30MHz-10GHz



30MHz-10GHz



10GHz-26GHz



10GHz-26GHz

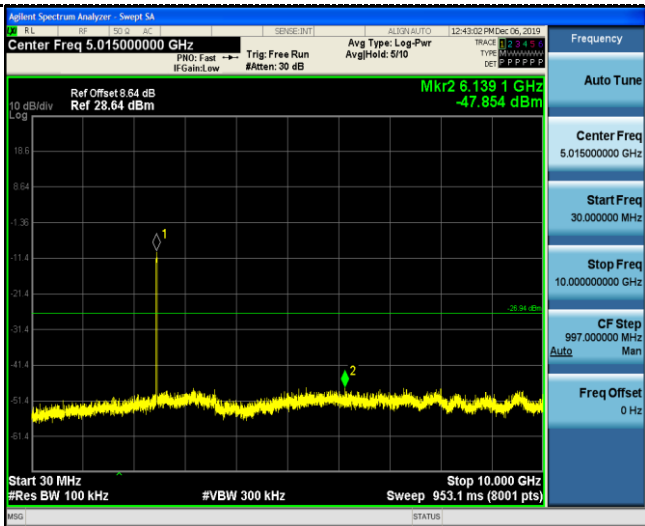




802.11n(HT20) CH11



Reference



30MHz-10GHz



10GHz-26GHz



For ANT2:

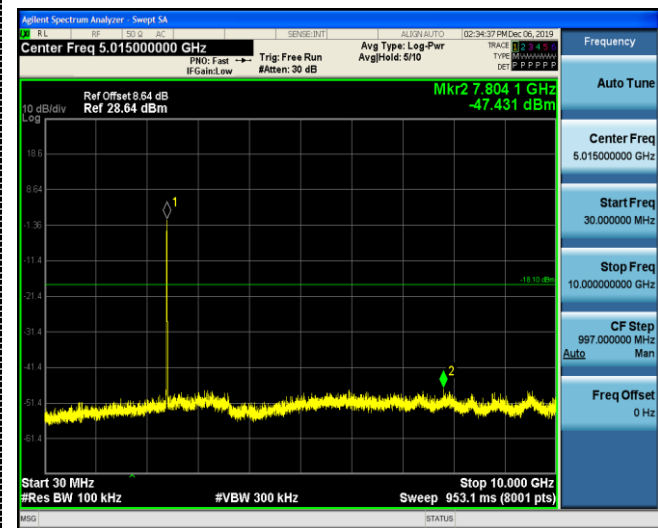
802.11b CH01



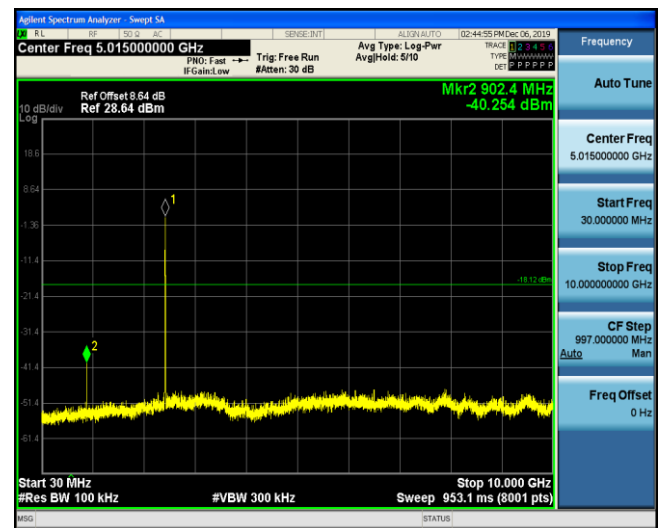
802.11b CH06



Reference



Reference



30MHz-10GHz



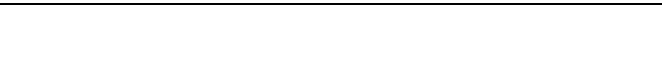
30MHz-10GHz



10GHz-26GHz



10GHz-26GHz

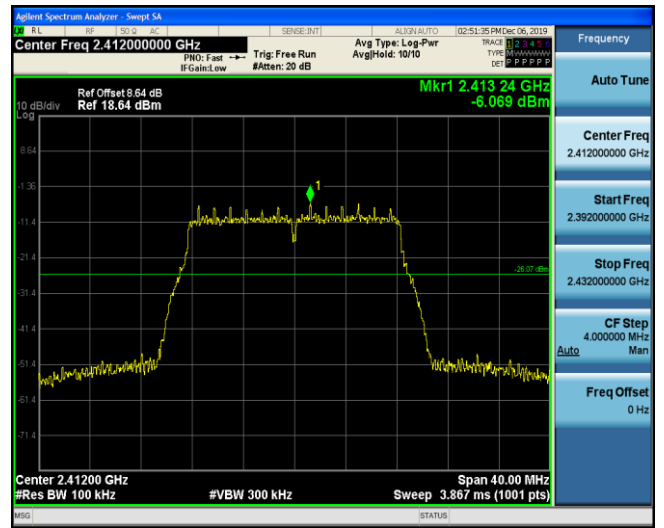




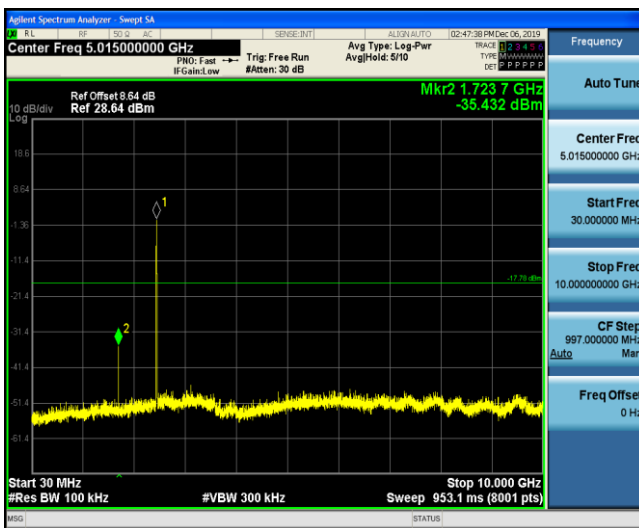
802.11b CH11



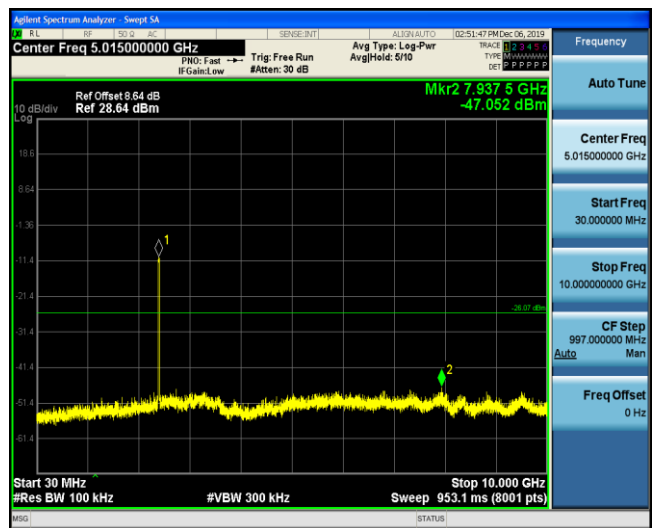
802.11g CH01



Reference



Reference



30MHz-10GHz



30MHz-10GHz

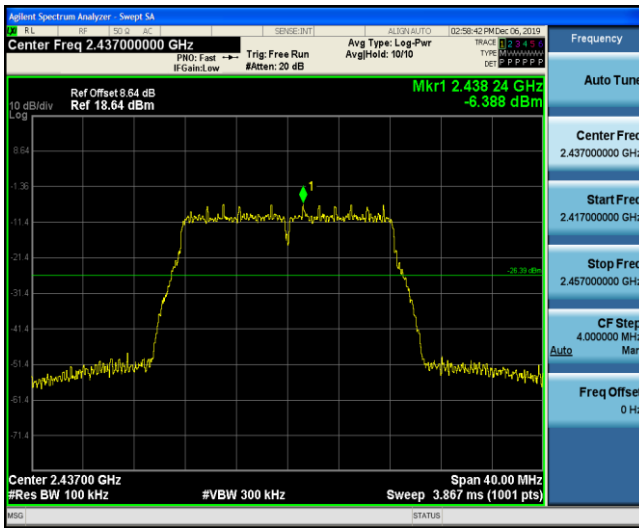


10GHz-26GHz

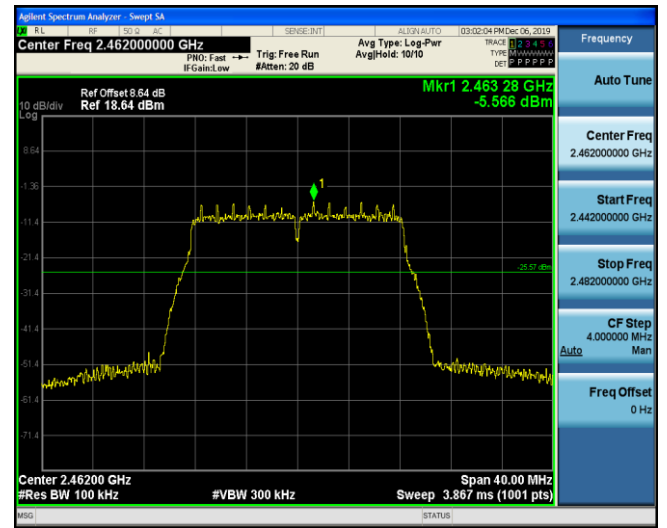
10GHz-26GHz



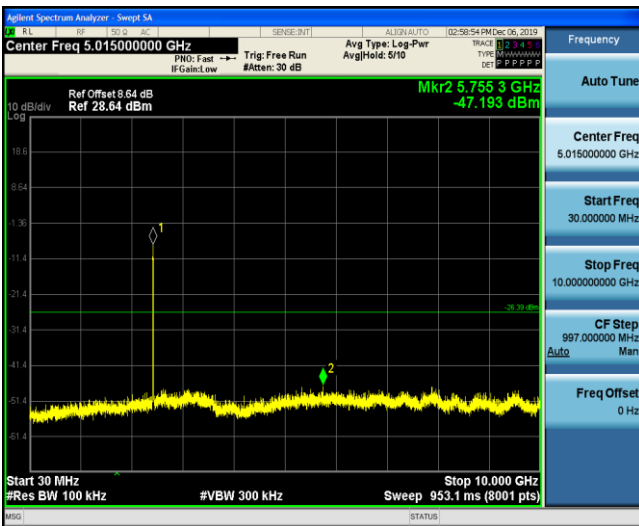
802.11g CH06



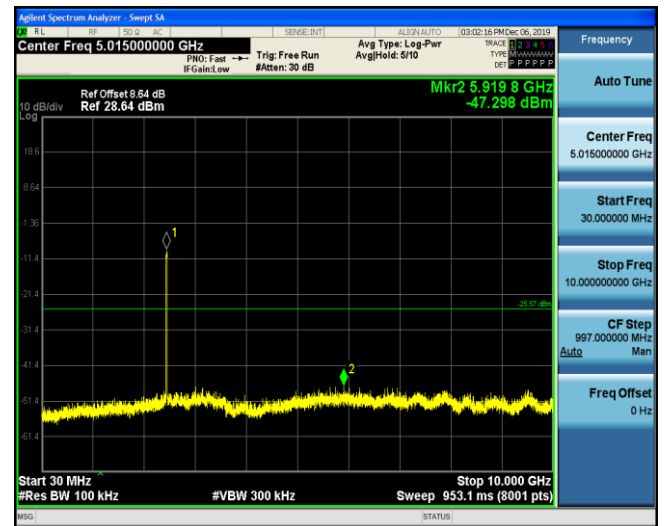
802.11g CH11



Reference



Reference



30MHz-10GHz



30MHz-10GHz

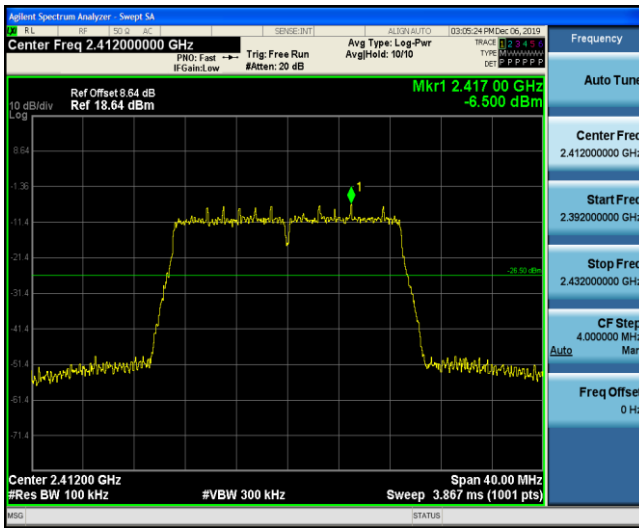


10GHz-26GHz

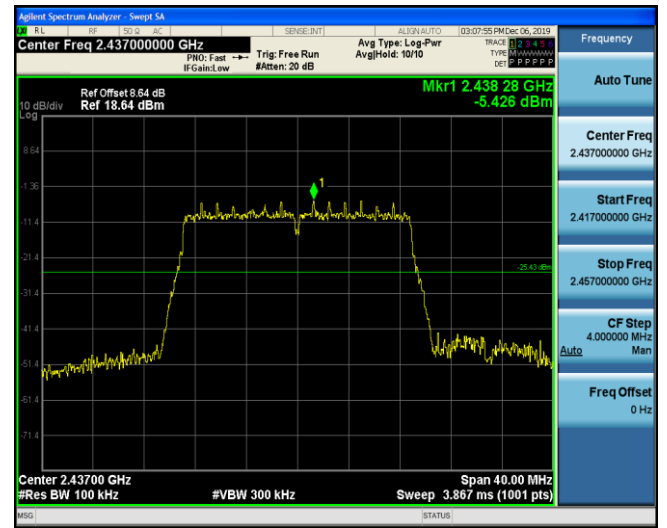
10GHz-26GHz



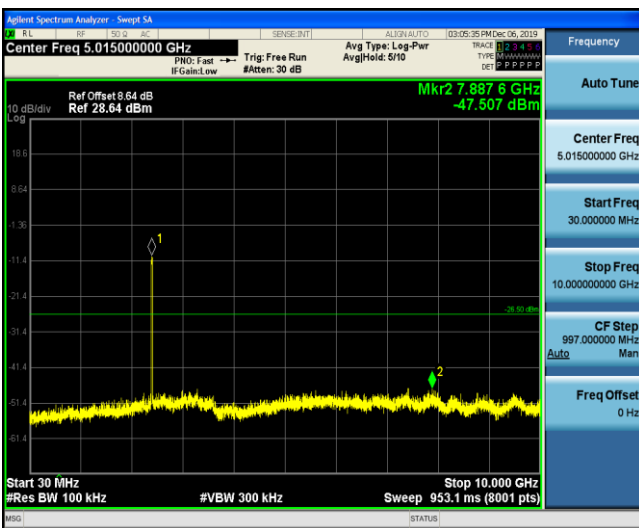
802.11n(HT20) CH01



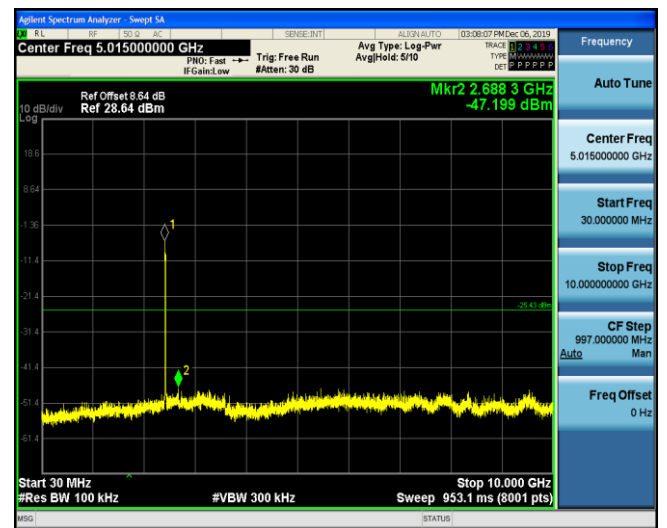
802.11n(HT20) CH06



Reference



Reference



30MHz-10GHz



30MHz-10GHz

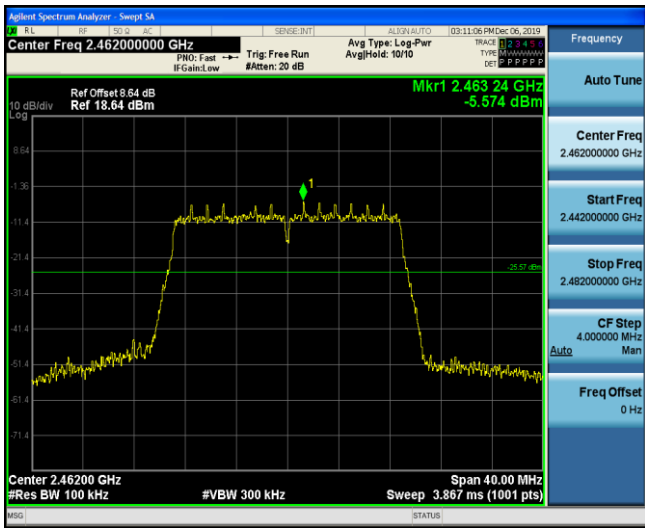


10GHz-26GHz

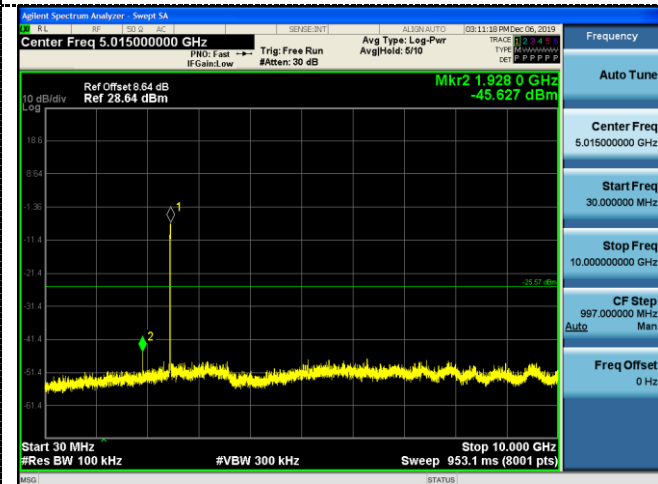
10GHz-26GHz



802.11n(HT20) CH11



Reference



30MHz-10GHz

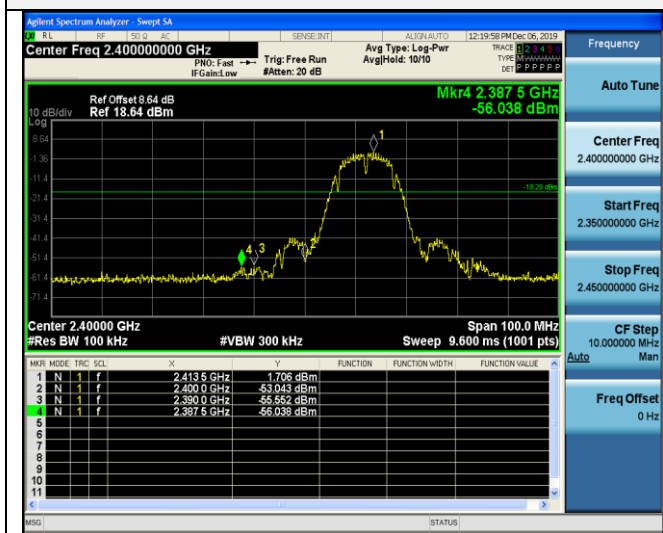


10GHz-26GHz

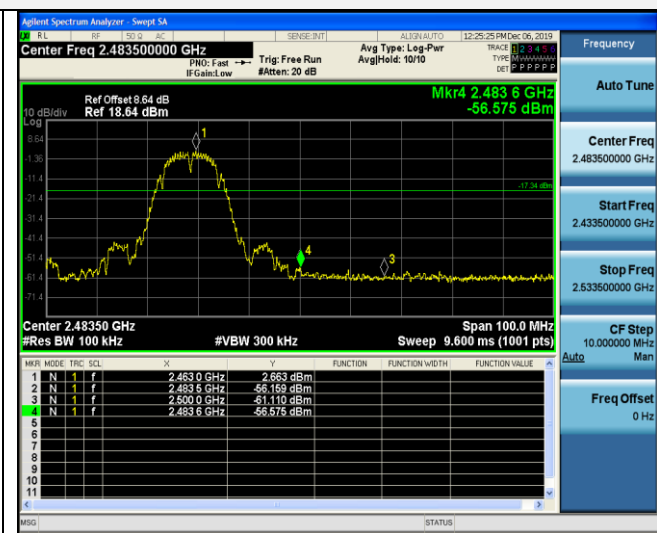


**Band-edge Measurements for RF Conducted Emissions:
For ANT1:**

802.11b

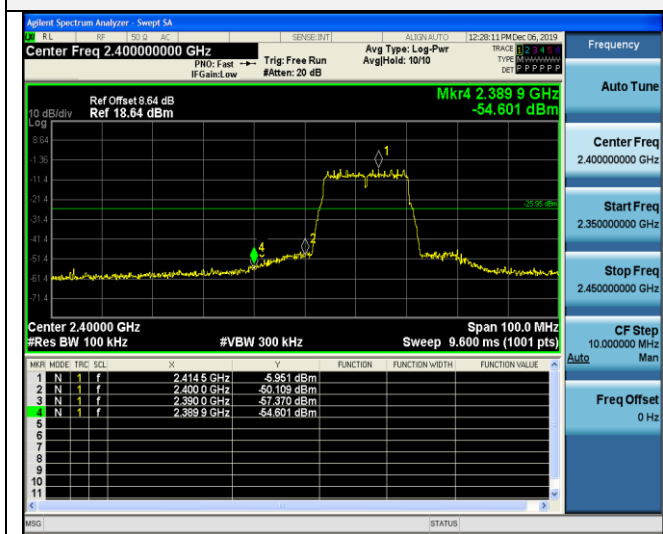


2412



2462

802.11g



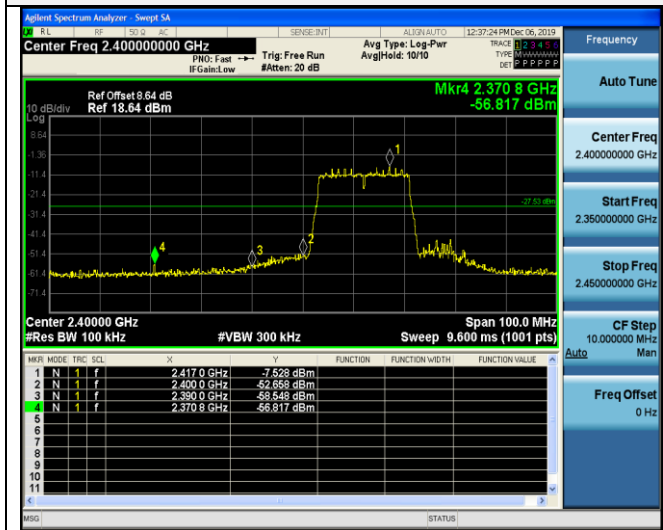
2412



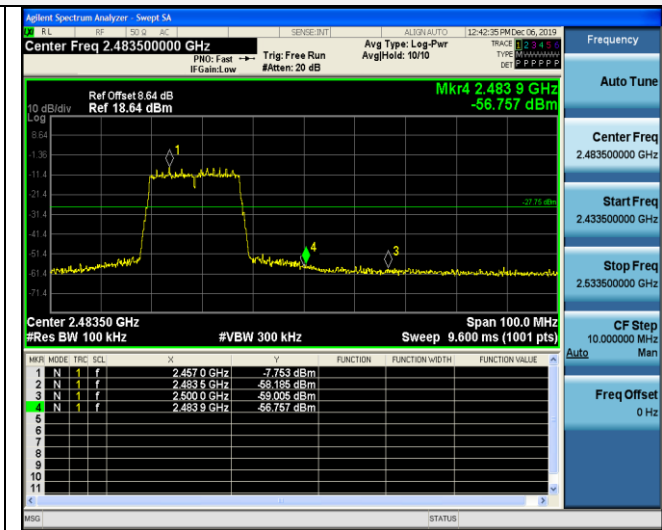
2462



802.11n HT20



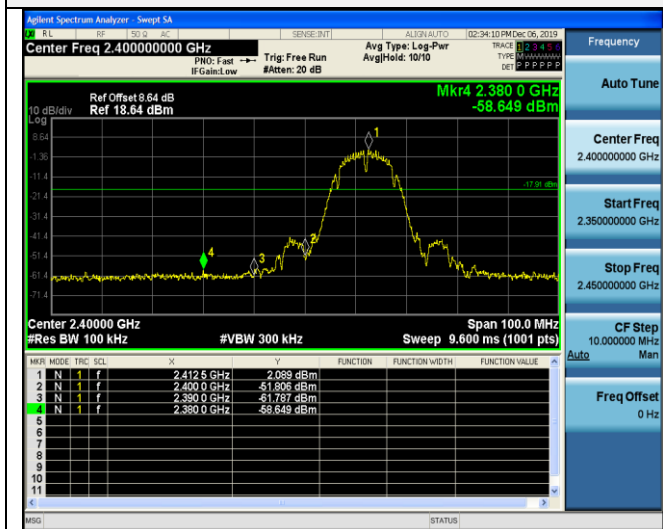
2412



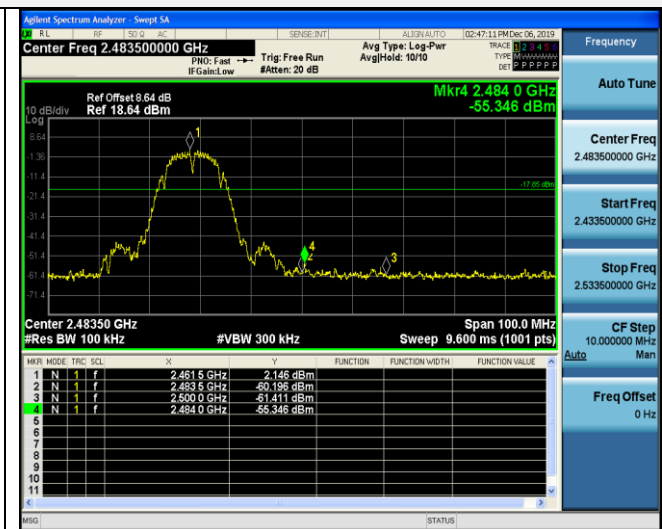
2462

For ANT2:

802.11b

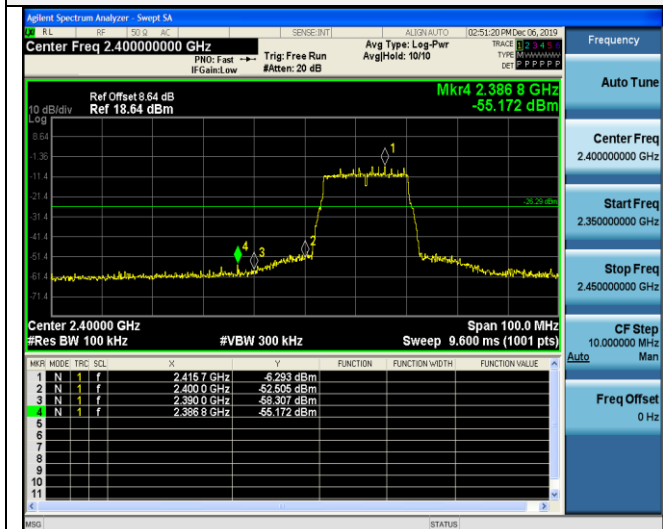


2412

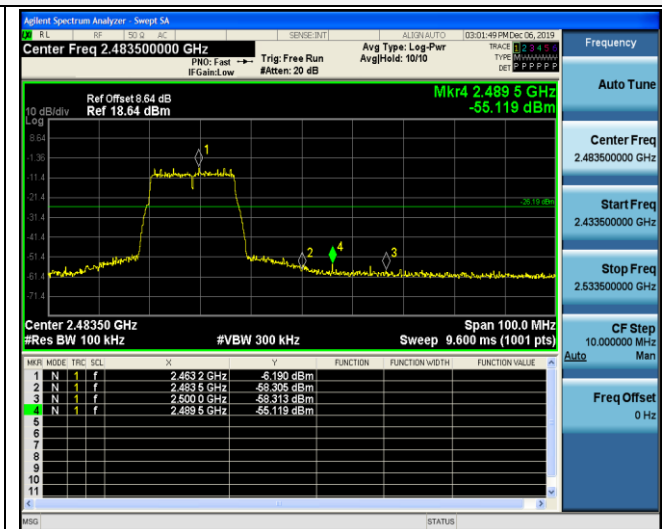


2462

802.11g



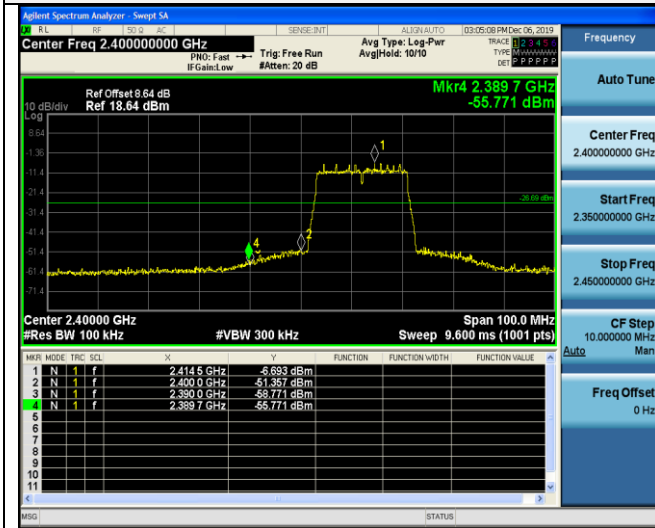
2412



2462



802.11n HT20



2412



2462



3.7. Antenna Requirement

Standard Applicable

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited

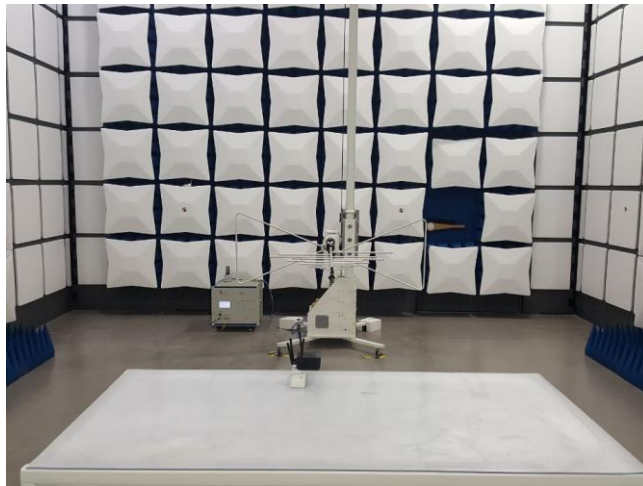
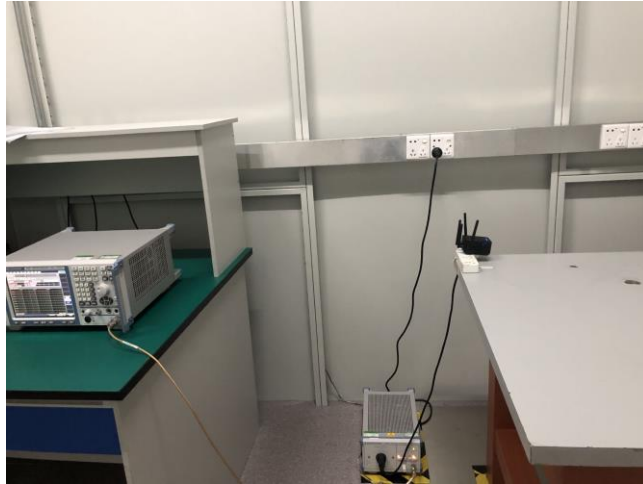
FCC CFR Title 47 Part 15 Subpart C Section 15.247I (1) (I):

Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

Test Result:

Use External antennas connect to PCB Boards, The maximum gain of each antenna was 2.00dBi for 2.4G WIFI, Maximum directional gain is 5.01dBi.

4. Test Setup Photos of the EUT





5. The Photos of the EUT

External photos

Please refer to separated files for External Photos of the EUT.

Internal photos

Please refer to separated files for Internal Photos of the EUT.

***** **End of Report** *****