

Annex E – Spurious Emissions 15.209

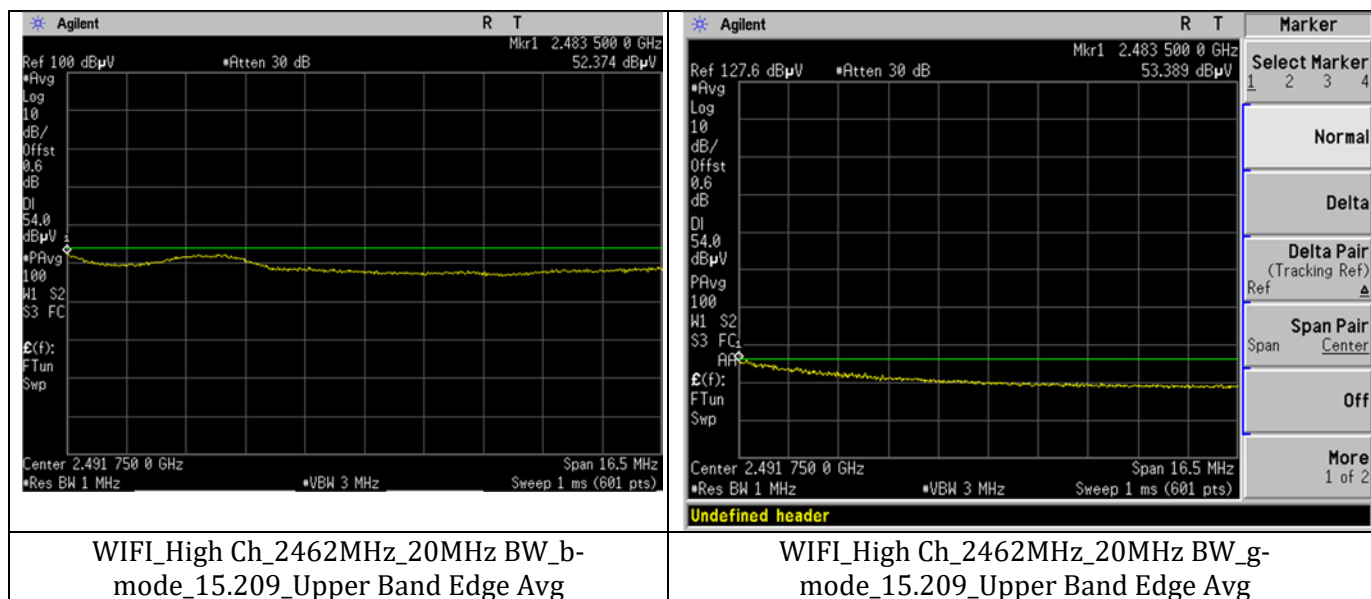
Note: below measurements are in units of dBuV/m at 3meters. These measurements are performed conducted in lieu of radiated as permitted by ANSI C63.10-2020. The following formula was used in making such conversions:

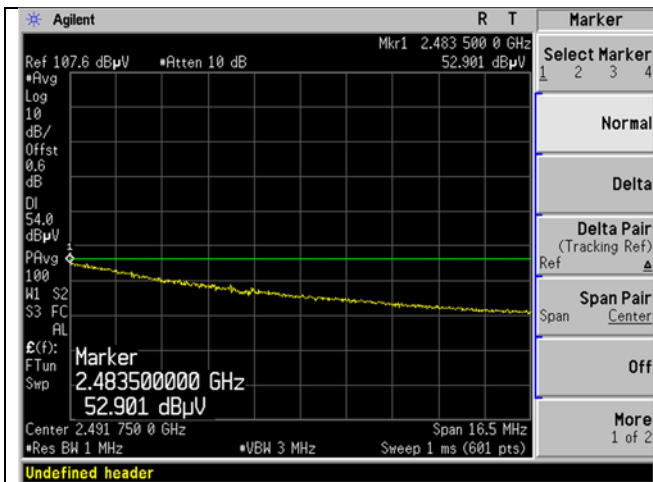
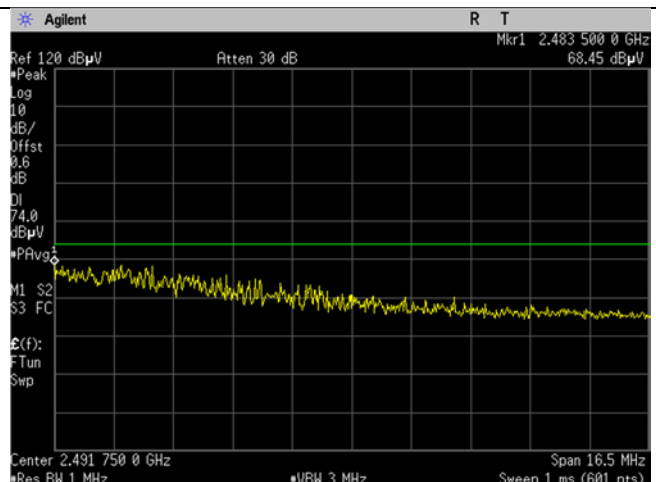
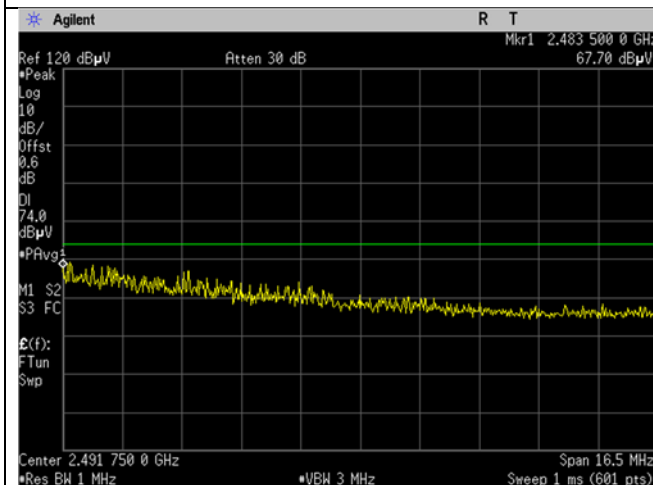
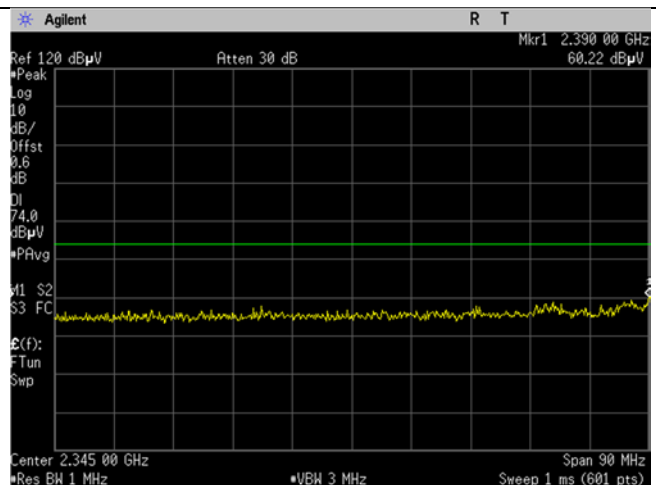
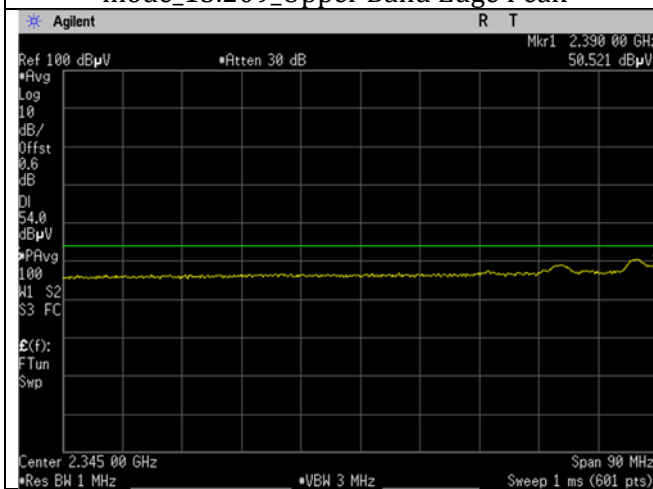
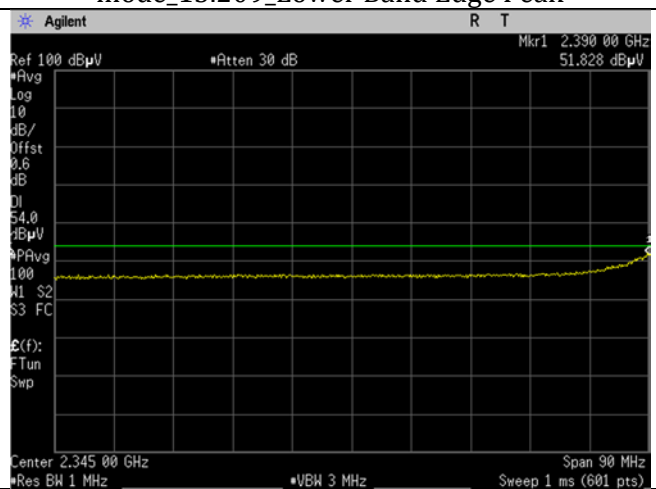
Above 1GHz: $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{m}]) + 104.77$, where E is field strength and d is distance at which the field strength limit is specified in the applicable requirements. $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2$, for $d = 3 \text{ m}$. Straight conversion between $E[\text{dB}\mu\text{V}/\text{m}]$ and $\text{EIRP}[\text{dBm}] = 107$. Thus offset for dBuV/m at 3meters is $95.2 - 107 + \text{antenna gain}$. 2dBi antenna gain to be assumed if actual is less than 2dBi.

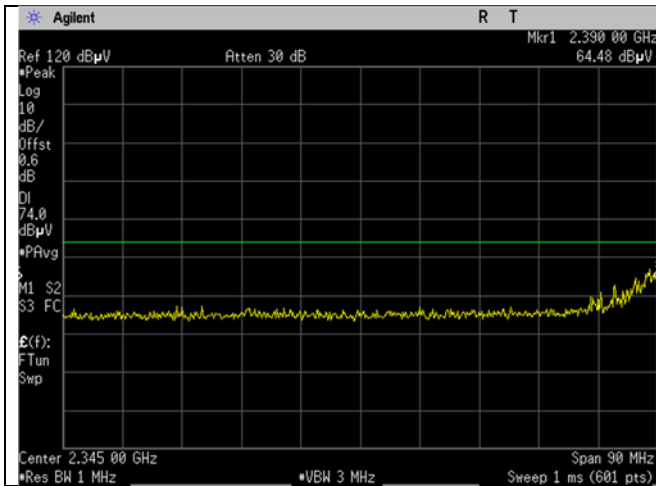
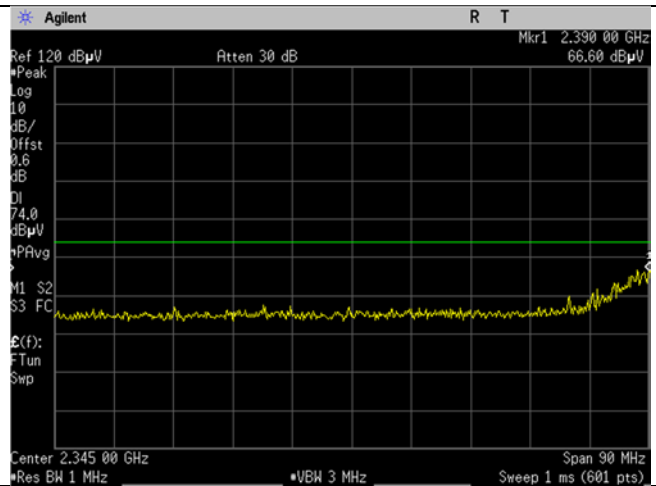
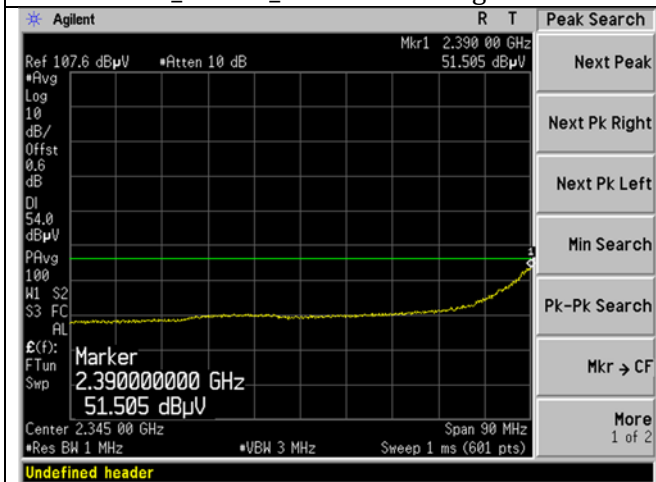
Note: cable loss is also included into offset.

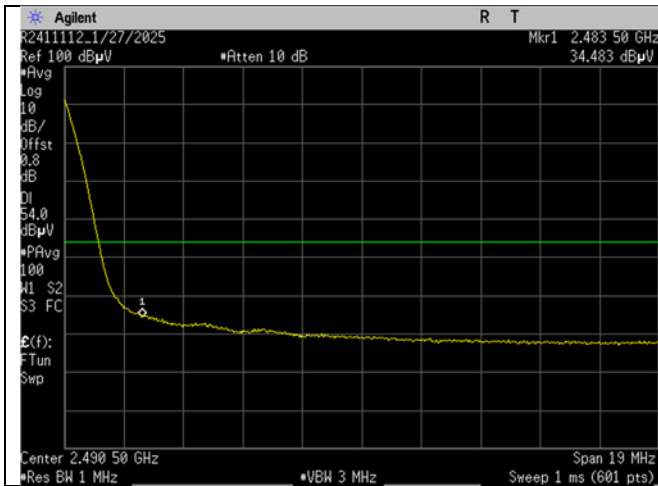
Naming Convention

Radio (WIFI, BLE)_Channel (Low Ch, Mid Ch, High Ch)_Frequency (MHz)_Bandwidth (MHz BW)_Rate/Mode(b-mode, g-mode, n-mode ,Mbit)_Measurement (15.209)_Range (MHz, Lower Band Edge, Upper Band Edge, Peak, Avg)

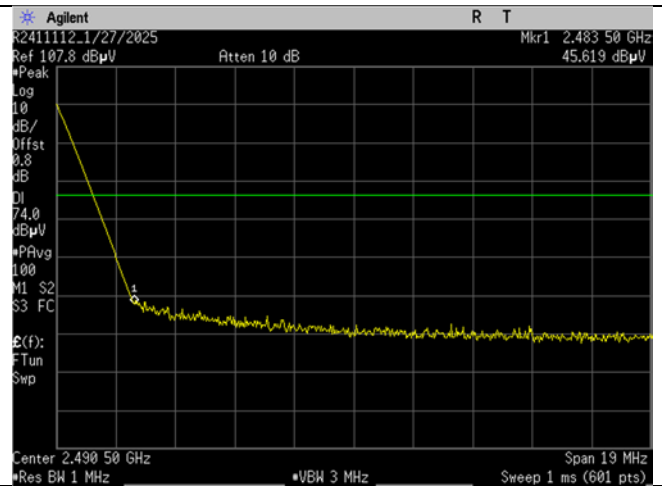


WIFI_High Ch_2462MHz_20MHz BW_n-
mode_15.209_Upper Band Edge AvgWIFI_High Ch_2462MHz_20MHz BW_g-
mode_15.209_Upper Band Edge PeakWIFI_High Ch_2462MHz_20MHz BW_n-
mode_15.209_Upper Band Edge PeakWIFI_Low Ch_2412MHz_20MHz BW_b-
mode_15.209_Lower Band Edge PeakWIFI_Low Ch_2412MHz_20MHz BW_b-
mode_15.209_Lower Band Edge AvgWIFI_Low Ch_2412MHz_20MHz BW_g-
mode_15.209_Lower Band Edge Avg

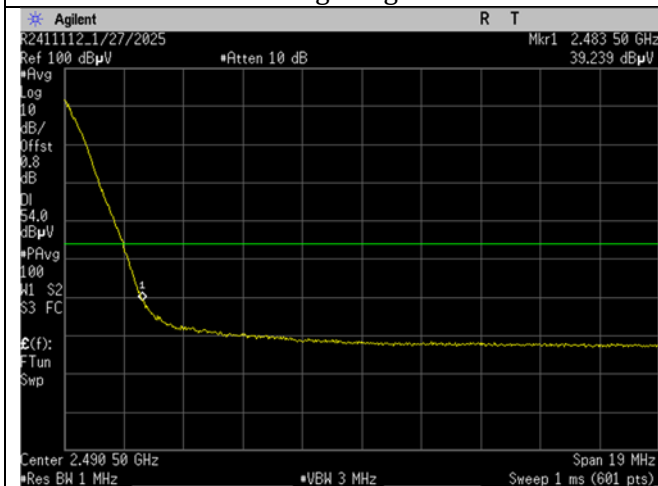
WIFI_Low Ch_2412MHz_20MHz BW_g-
mode_15.209_Lower Band Edge PeakWIFI_Low Ch_2412MHz_20MHz BW_n-
mode_15.209_Lower Band Edge PeakWIFI_Low Ch_2412MHz_20MHz BW_n-
mode_15.209_Lower Band Edge Avg



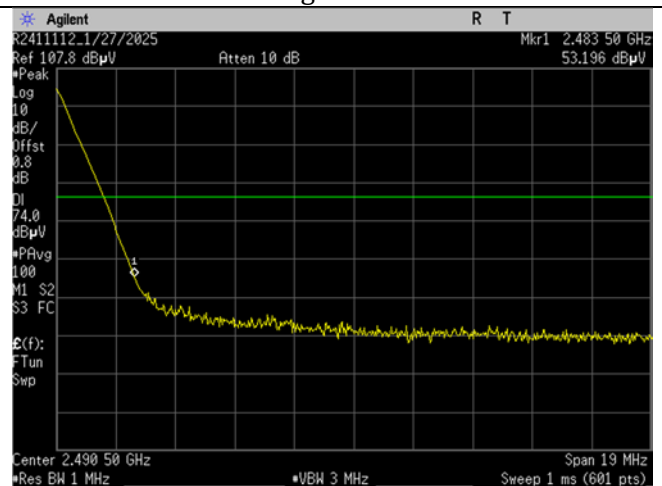
BLE_High Ch_2480MHz_1MBit_15.209_Upper Band
Edge Avg



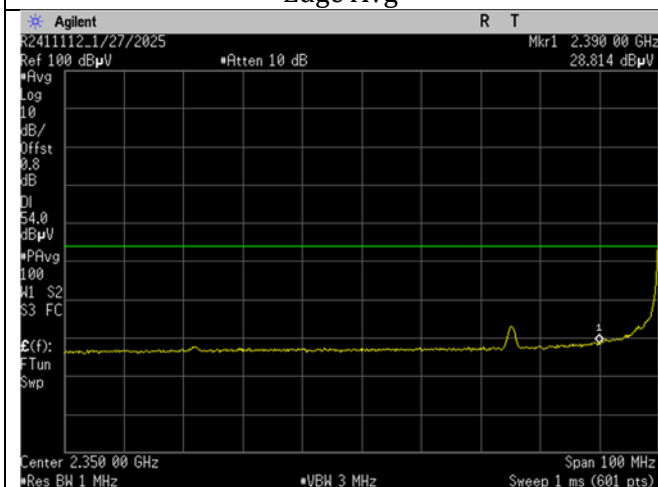
BLE_High Ch_2480MHz_1MBit_15.209_Upper Band
Edge Peak



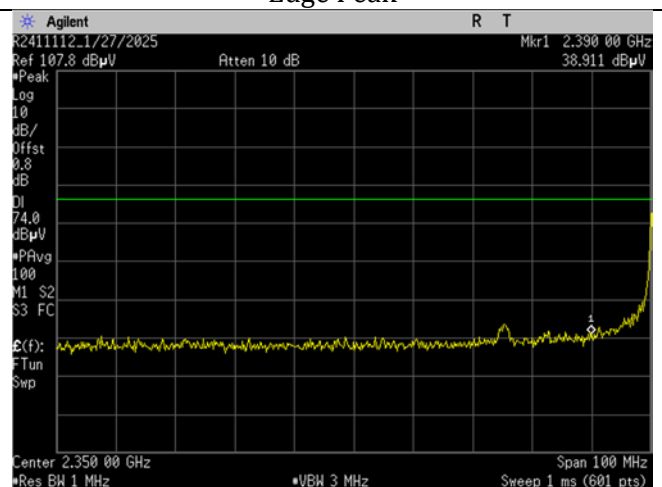
BLE_High Ch_2480MHz_2MBit_15.209_Upper Band
Edge Avg



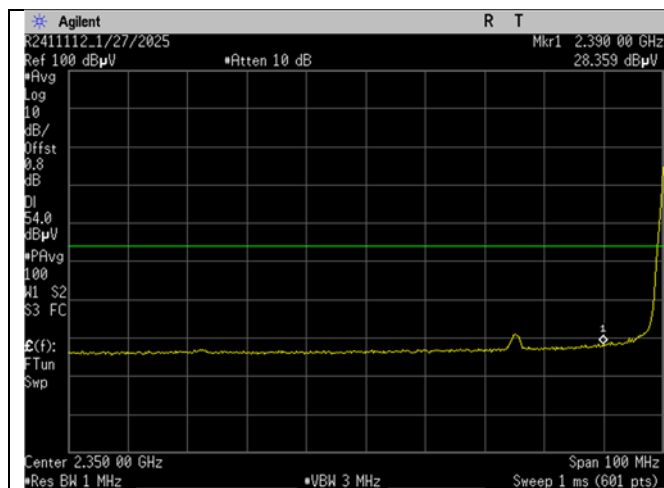
BLE_High Ch_2480MHz_2MBit_15.209_Upper Band
Edge Peak



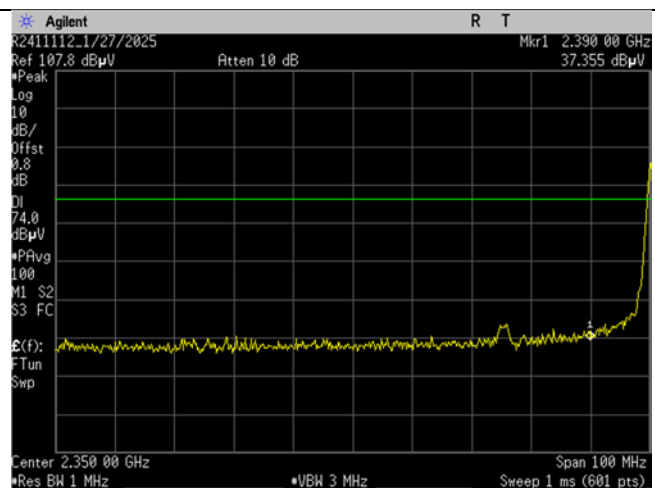
BLE_Low Ch_2402MHz_1MBit_15.209_Lower Band
Edge Avg



BLE_Low Ch_2402MHz_1MBit_15.209_Lower Band
Edge Peak



BLE_Low Ch_2402MHz_2MBit_15.209_Lower Band
Edge Avg



BLE_Low Ch_2402MHz_2MBit_15.209_Lower Band
Edge Peak

The below table applies an additional Duty Cycle Correction Factor (DCCF) to the above Average Band Edge measurements in order to accurately compare to the appropriate limit.

Radio	Frequency (MHz)	Configuration	BE (dBuV/m @3m)	BE Final (dBuV/m @3m)	Limit (dBuV/m @3m)	Margin (dB)
2.4 GHz Wi-Fi	2412	802.11b	50.521	50.664	54	-3.336
	2462		52.374	52.517	54	-1.483
	2412	802.11g	51.828	52.340	54	-1.660
	2462		53.389	53.901	54	-0.099
	2412	802.11n20	51.505	52.220	54	-1.780
	2462		52.901	53.616	54	-0.384
2.4 GHz BLE	2402	1 Mbps	28.824	30.816	54	-23.184
	2480		34.483	36.475	54	-17.525
	2402	2 Mbps	28.359	33.255	54	-20.745
	2480		39.239	44.135	54	-9.865

Note: BE = Corrected Band Edge average measurement prior to applying DCCF.

Note: BE Final [dBuV/m@3m] = BE + DCCF