

Annex D - 15.209 Spurious Emissions at Antenna Terminals and Band Edges

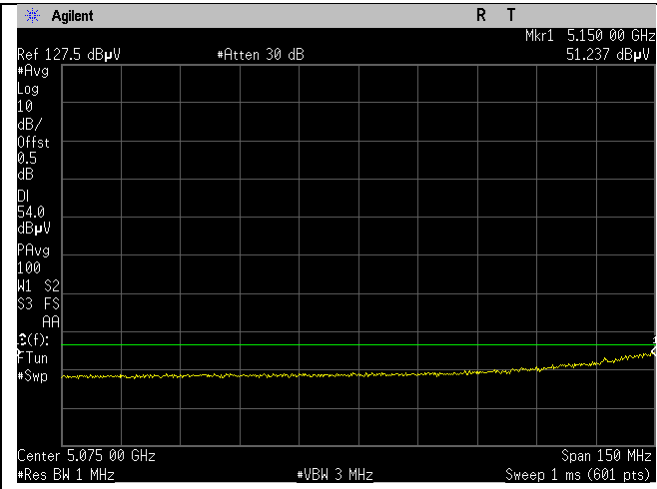
Note: below measurements are in units of dBuV/m at 3meters. These measurements are performed conducted in lieu of radiated as permitted by ANSI C63.10-2020. The following formula was used in making such conversions:

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.

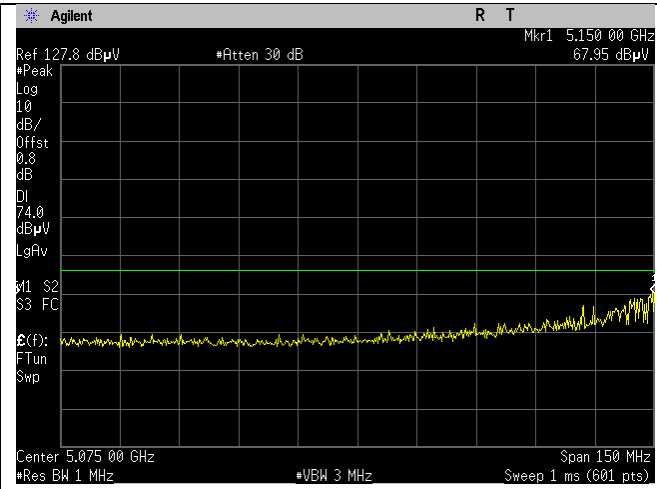
Note: cable loss is also included into offset.

Naming Convention

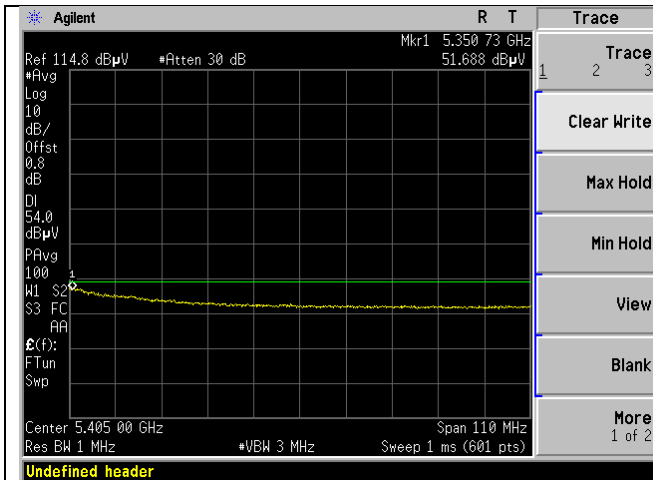
Band (U-NII-1, U-NII-2A, U-NII-2C, U-NII-3)_ Frequency (MHz)_ Channel (Low Ch, Mid Ch, High Ch)_ Bandwidth (MHz BW)_ Mode (a-mode, n/ac-mode, ac-mode)_ Measurement (15.209, Mask)_ Range (MHz, Lower Band Edge, Upper Band Edge) Type (Peak, Avg)



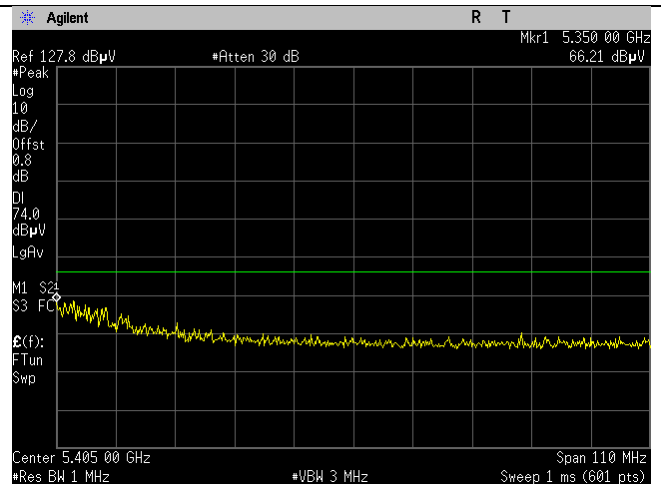
U-NII-1_5190MHz_High Ch_38_40MHz BW_n/ac-mode_15.209_Lower Band Edge Avg



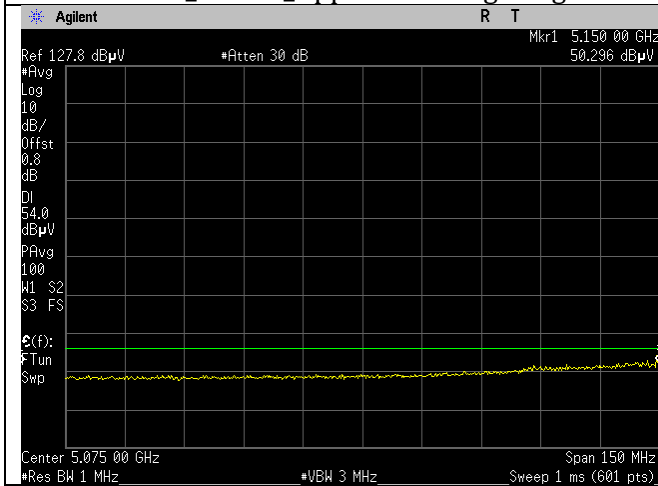
U-NII-1_5190MHz_High Ch_38_40MHz BW_n/ac-mode_15.209_Lower Band Edge Peak



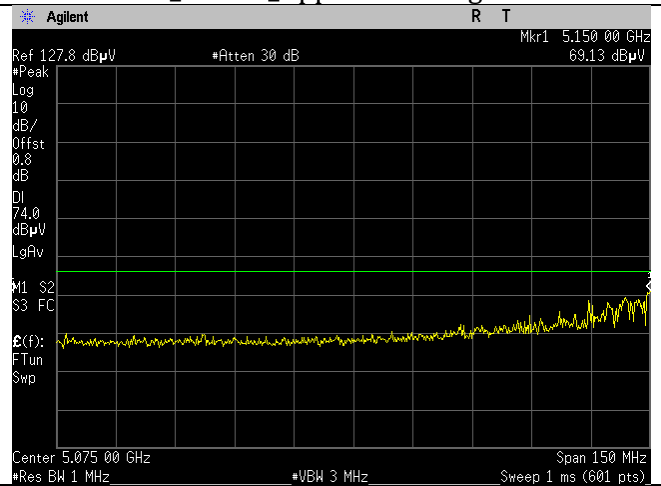
U-NII-2A_5310MHz_High Ch_62_40MHz BW_n/ac-mode_15.209_Upper Band Edge Avg



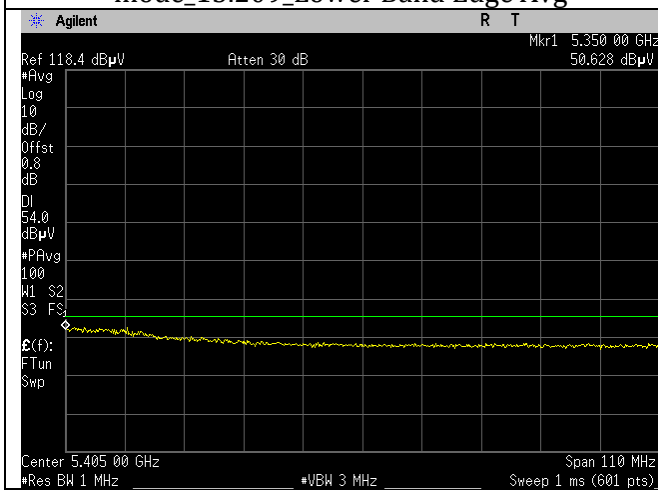
U-NII-2A_5310MHz_High Ch_62_40MHz BW_n/ac-mode_15.209_Upper Band Edge Peak



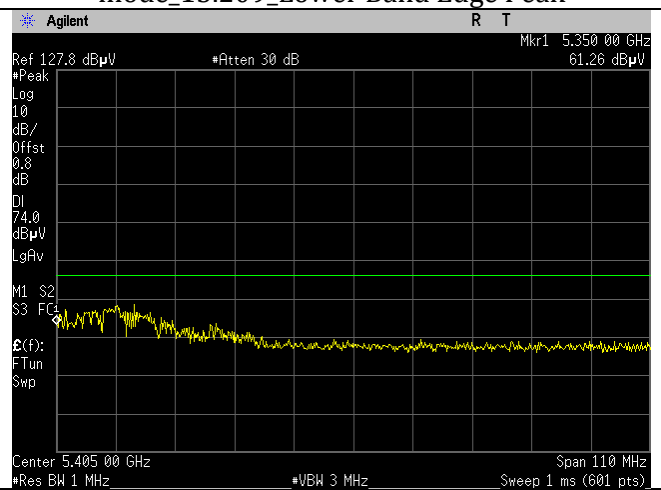
U-NII-1_5210MHz_Ch_42_80MHz BW_ac-mode_15.209_Lower Band Edge Avg



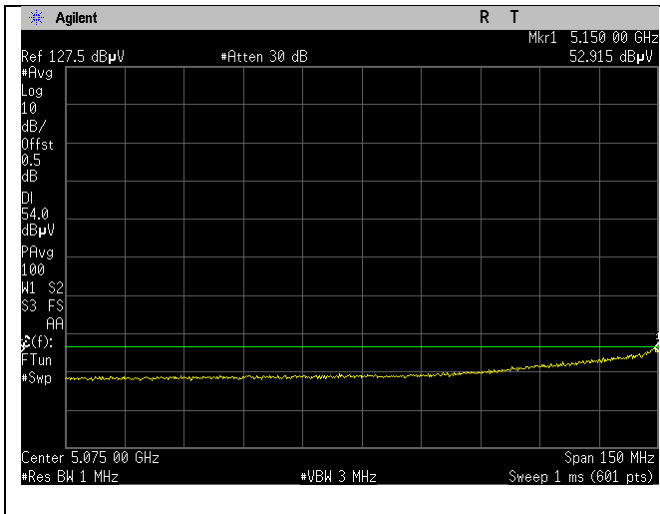
U-NII-1_5210MHz_Ch_42_80MHz BW_ac-mode_15.209_Lower Band Edge Peak



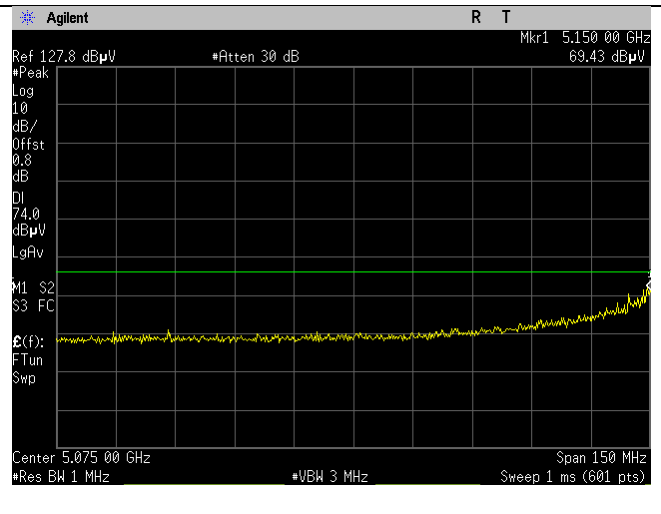
U-NII-1_5290MHz_Ch_58_80MHz BW_ac-mode_15.209_Upper Band Edge Avg



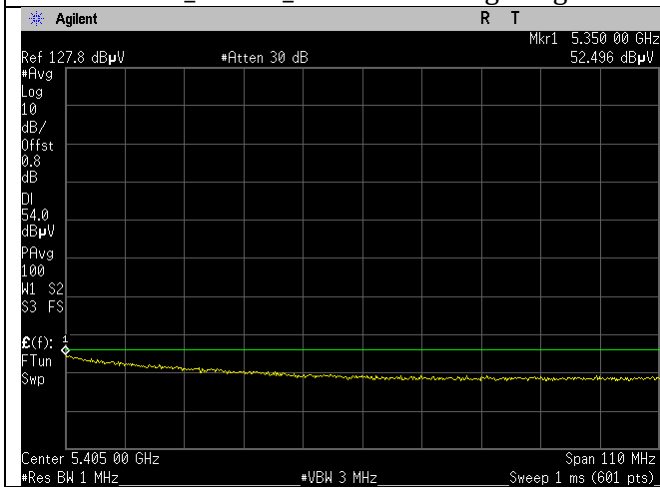
U-NII-1_5290MHz_Ch_58_80MHz BW_ac-mode_15.209_Upper Band Edge Peak



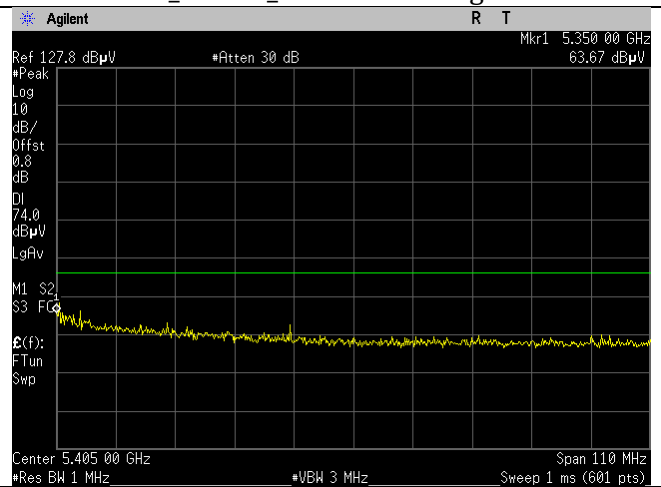
U-NII-1_5180MHz_Low Ch_36_20MHz BW_a-mode_15.209_Lower Band Edge Avg



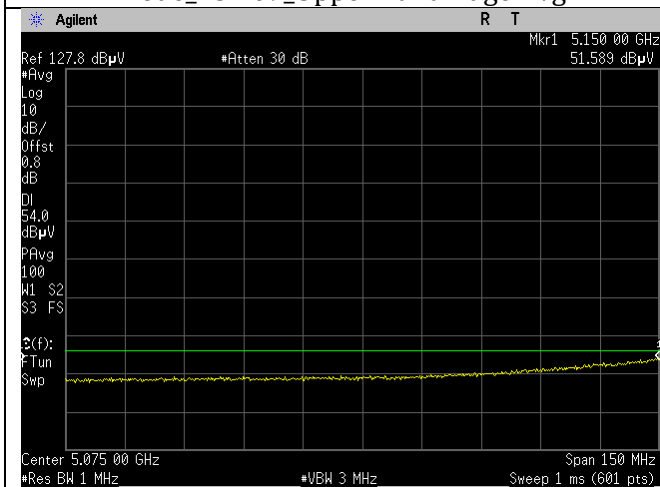
U-NII-1_5180MHz_Low Ch_36_20MHz BW_a-mode_15.209_Lower Band Edge Peak



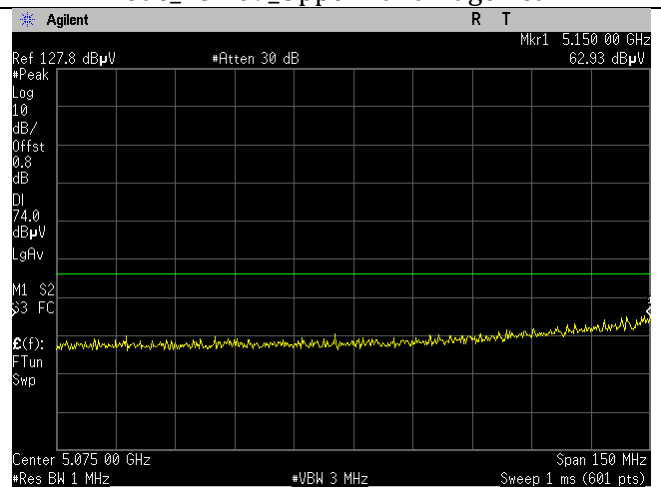
U-NII-2A_5320MHz_High Ch_64_20MHz BW_a-mode_15.209_Upper Band Edge Avg



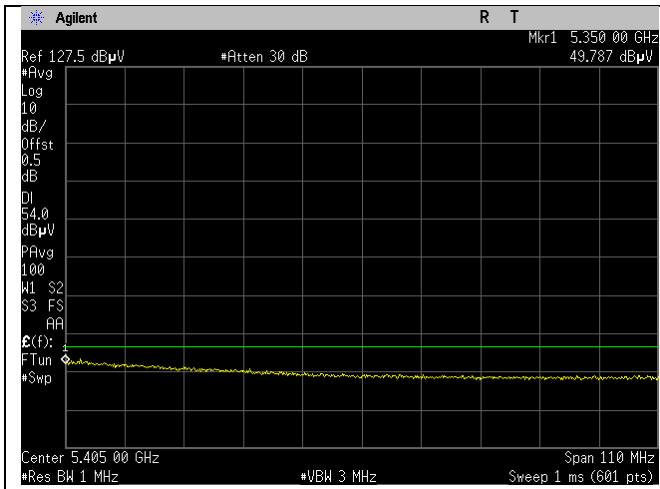
U-NII-2A_5320MHz_High Ch_64_20MHz BW_a-mode_15.209_Upper Band Edge Peak



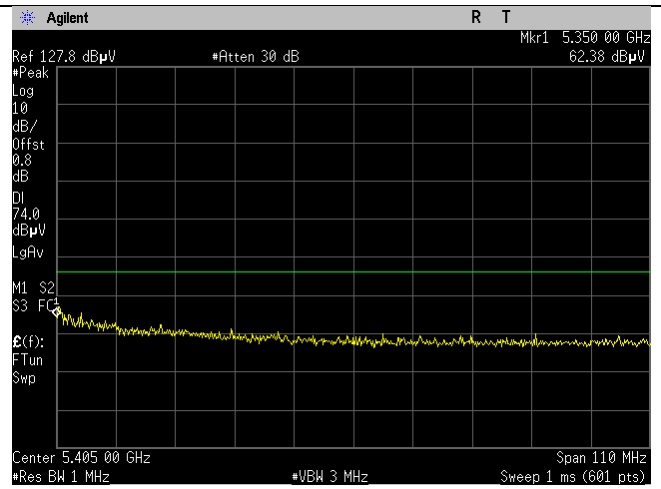
U-NII-1_5180MHz_Low Ch_36_20MHz BW_n/ac-mode_15.209_Lower Band Edge Avg



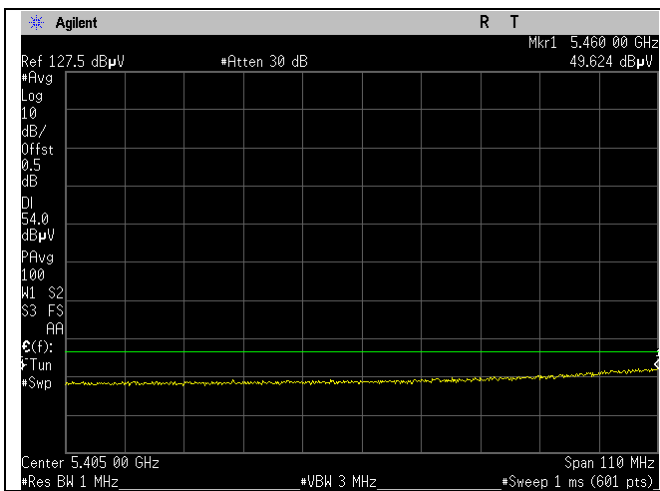
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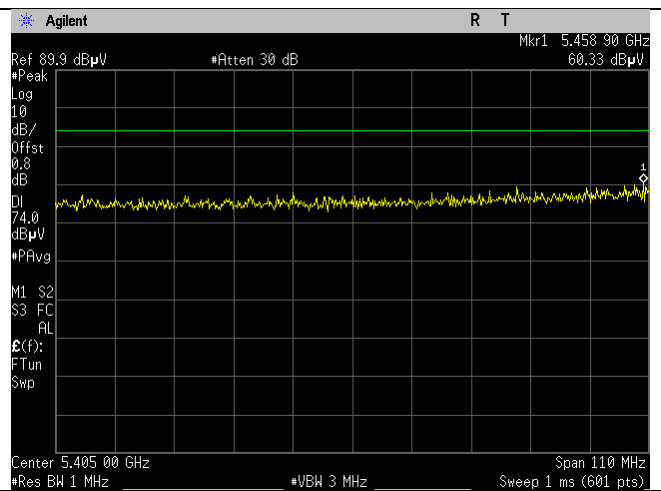
U-NII-2A_5320MHz_High Ch_64_20MHz BW_n/ac-mode_15.209_Upper Band Edge Avg



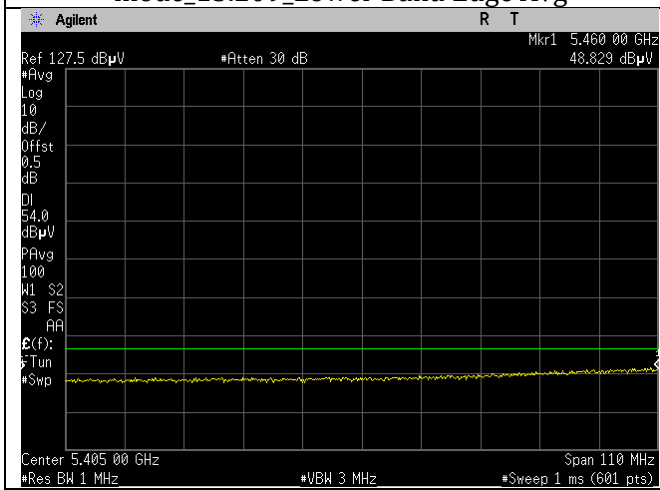
U-NII-2A_5320MHz_High Ch_64_20MHz BW_n/ac-mode_15.209_Upper Band Edge Peak



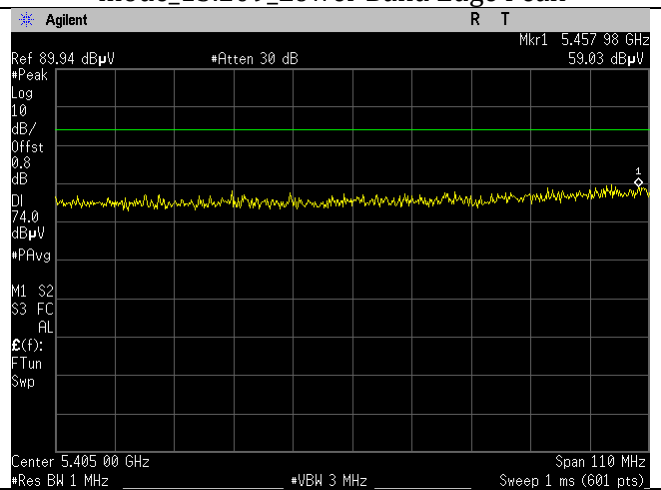
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_a-mode_15.209_Lower Band Edge Avg



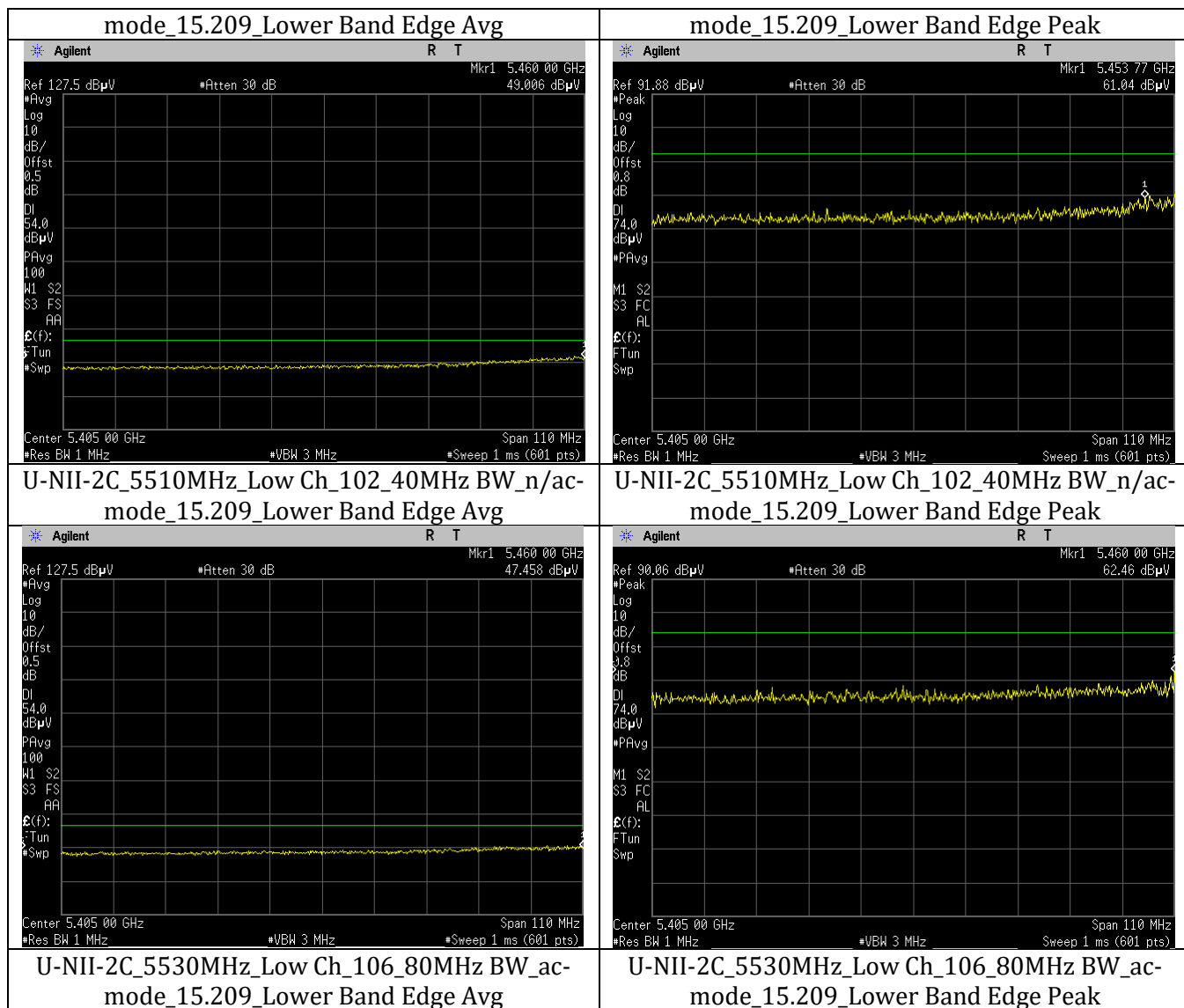
U-NII-2C_5500MHz_Low Ch_100_20MHz BW_a-mode_15.209_Lower Band Edge Peak



U-NII-2C_5500MHz_Low Ch_100_20MHz BW_n/ac-



U-NII-2C_5500MHz_Low Ch_100_20MHz BW_n/ac-



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.

U-NII-1 and 2A

Mode	Frequency (MHz)	BE (dBuV/m @3m)	BE Corr (dBuV/m @3m)	Limit (dBuV/m @3m)	Margin (dB)
802.11a	5180	52.915	53.753	54	-0.247
	5320	52.496	53.334	54	-0.666
802.11n/ac20	5180	51.589	53.854	54	-0.146
	5320	49.787	52.052	54	-1.948
802.11n/ac40	5190	51.237	53.512	54	-0.488
	5310	51.688	53.963	54	-0.037
802.11ac80	5210	50.296	53.963	54	-0.037

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

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

U-NII-2C

Mode	Frequency (MHz)	BE (dBuV/m @3m)	BE Corr (dBuV/m @3m)	Limit (dBuV/m @3m)	Margin (dB)
802.11a	5500	49.624	50.462	54	-3.538
802.11n/ac20	5500	48.829	51.094	54	-2.906
802.11n/ac40	5510	49.006	51.281	54	-2.719
802.11ac80	5530	47.458	51.125	54	-2.875

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

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