

## 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:

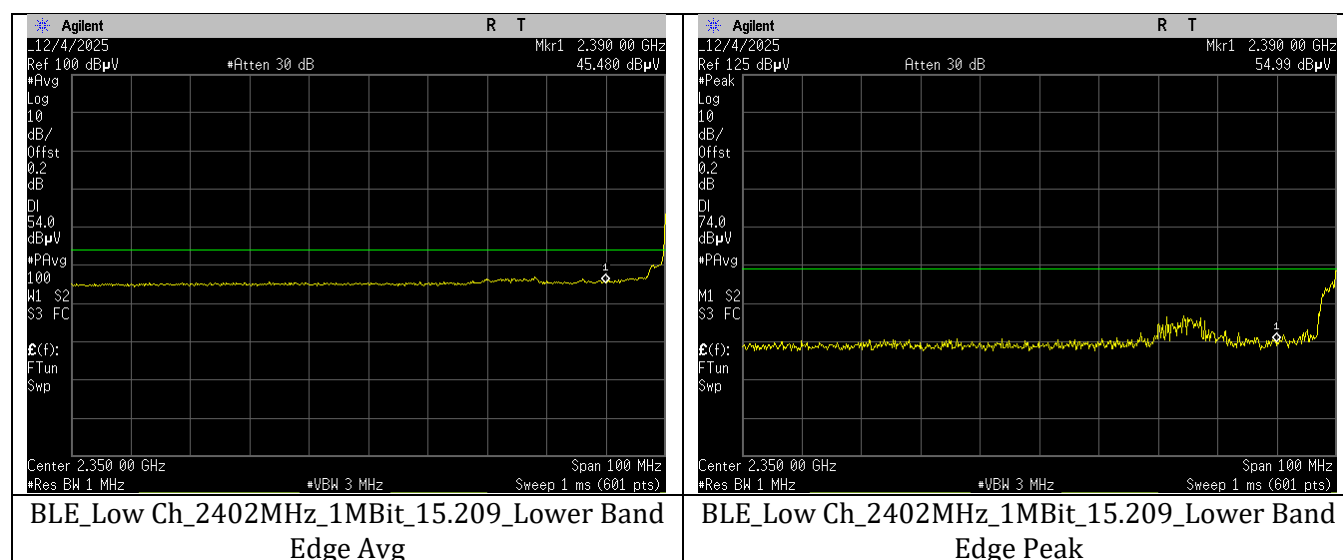
Above 1GHz:  $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{m}]) + 104.77$ , where E is field strength and d is distance at which the field strength limit is specified in the applicable requirements.  $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2$ ,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

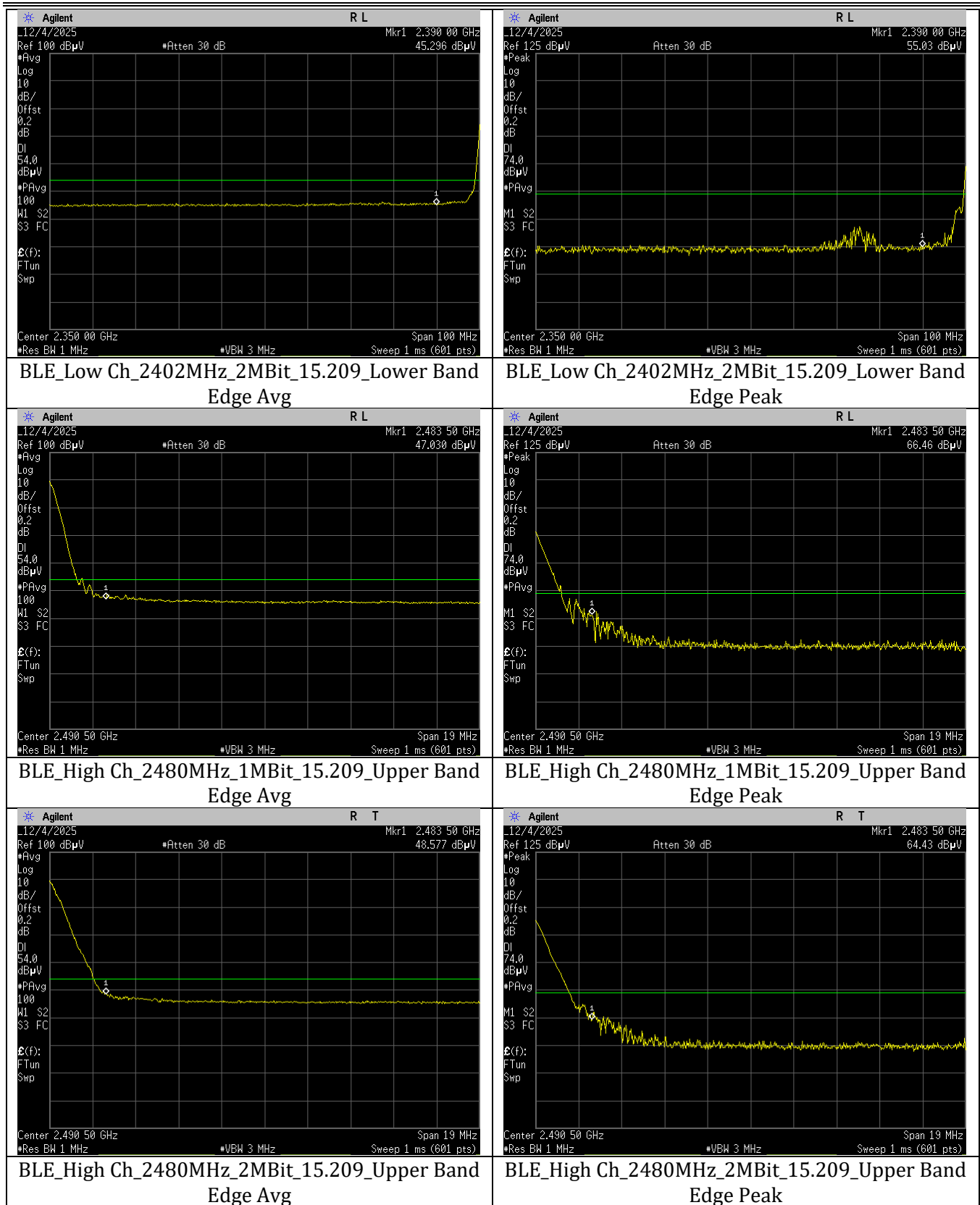
Note 1: Additional factors added to offset to consider attenuator + cable loss.

Note 2: Declared antenna gain is 1dBi but 2dBi is used as per ANSIC 63.10 section 11.12.2.6.

### Naming Convention

Radio (BLE)\_Channel (Low Ch, Mid Ch, High Ch)\_Frequency (MHz)\_Rate/Mode(Mbit)\_Measurement  
(15.209)\_Range (MHz, Lower Band Edge, Upper Band Edge, Peak, Avg)





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 BLE | 2402            | 1 Mbps        | 45.480          | 47.548                | 54                 | -6.452      |
|             | 2480            |               | 45.296          | 47.364                | 54                 | -6.636      |
|             | 2402            | 2 Mbps        | 47.030          | 52.030                | 54                 | -1.970      |
|             | 2480            |               | 48.577          | 53.577                | 54                 | -0.423      |

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

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