

## ANNEX D - 100 kHz Bandwidth of Band Edges and Spurious Emissions at Antenna Terminals

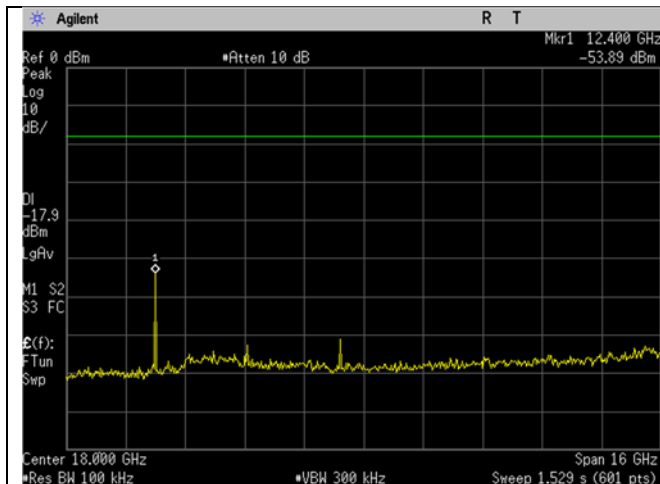
### Naming Convention

Radio (BLE)\_Channel (Low, Mid, High)\_Frequency (MHz)\_Rate (1Mbit, 2Mbit)\_Measurement (-20dBc, 15.209)\_Frequency Range (MHz, GHz, Upper Band Edge, Lower Band Edge)\_Type (Peak, Avg)

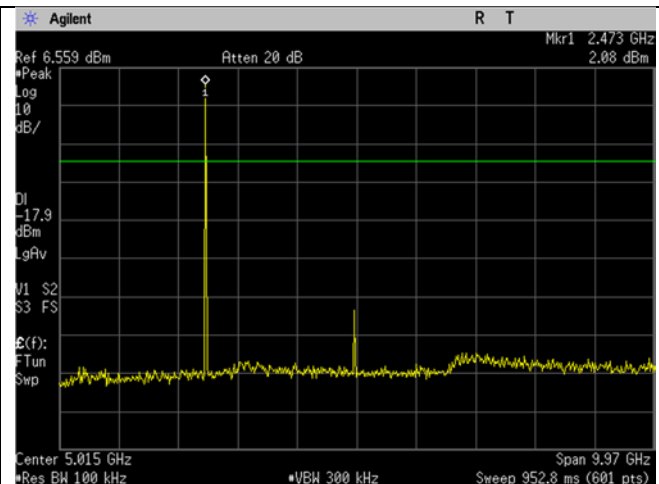
Note for 15.209 measurements: below measurements are in units of dBuV/m at 3meters. These measurements are performed conducted in lieu of radiated as permitted by ANSI C63.10-2013. The following formula was used in making such conversions:

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  $95.2 - 107 + \text{antenna gain}$ .

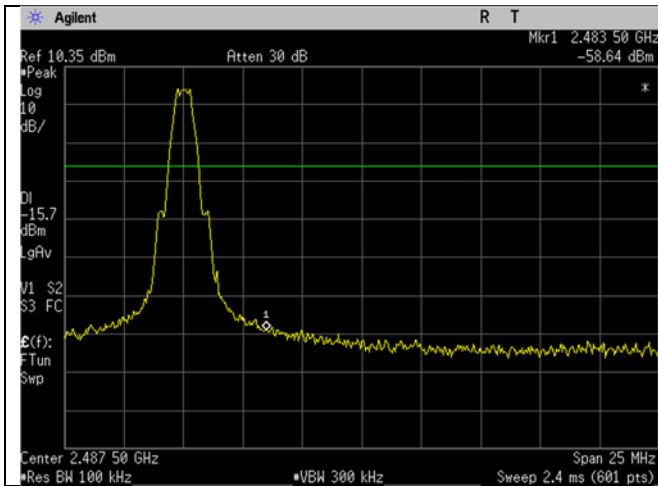
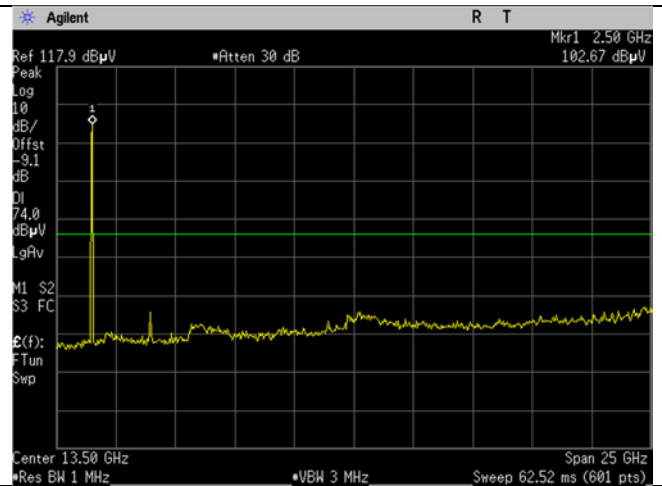
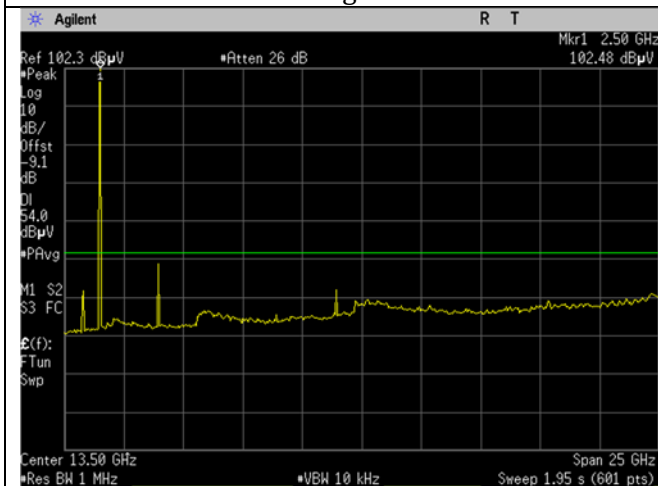
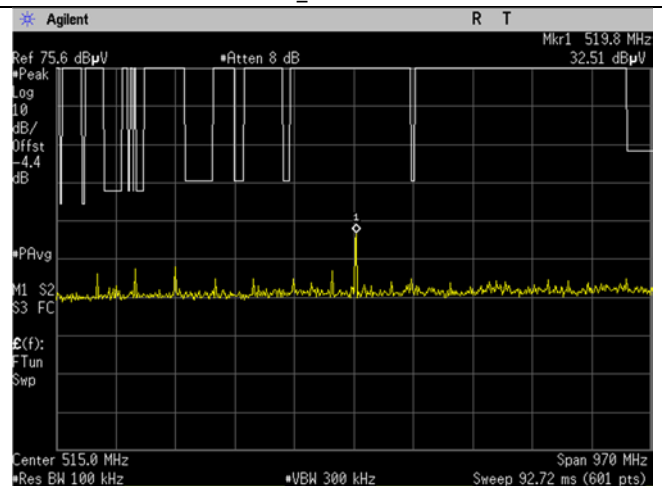
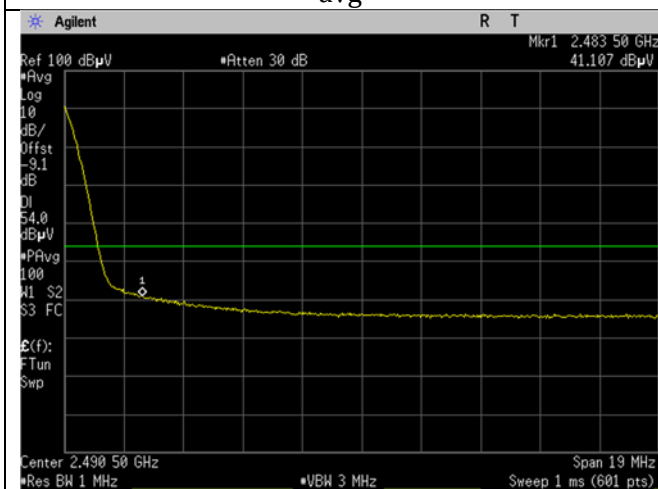
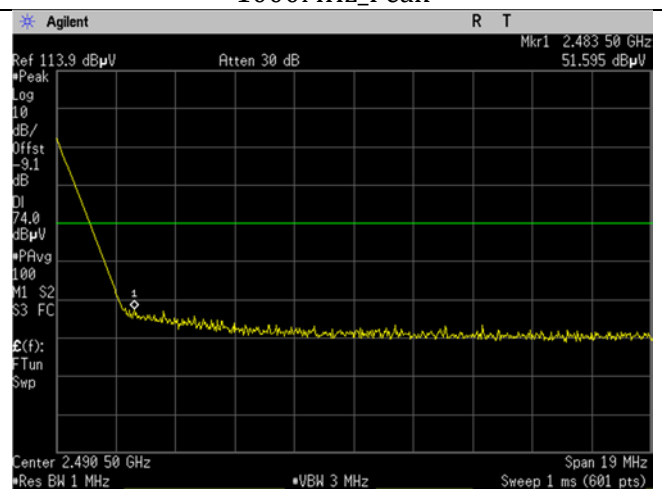
Below 1GHz: above is true in addition to adding ground plane contribution of 4.7dB. thus offset for dBuV/m at 3meters is  $95.2 - 107 + 4.7 + \text{antenna gain}$ .

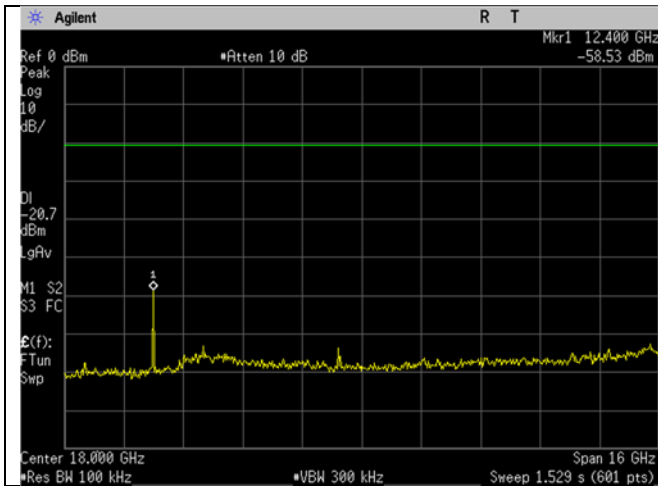


BLE\_High Ch\_2480MHz\_1MBit\_-20dBc\_10-26GHz

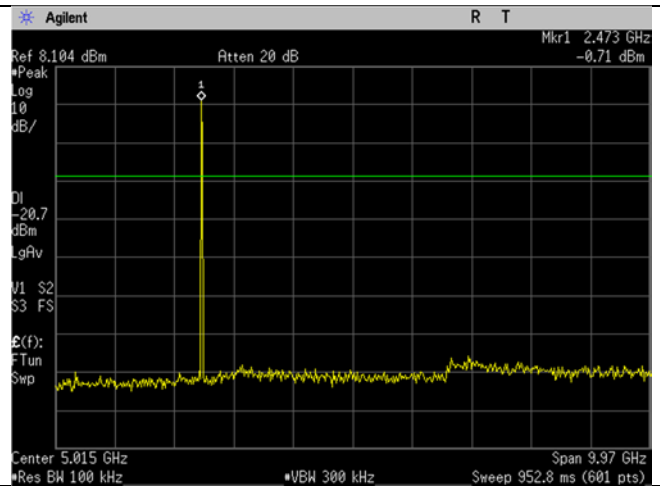


BLE\_High Ch\_2480MHz\_1MBit\_-20dBc\_30MHz-10GHz

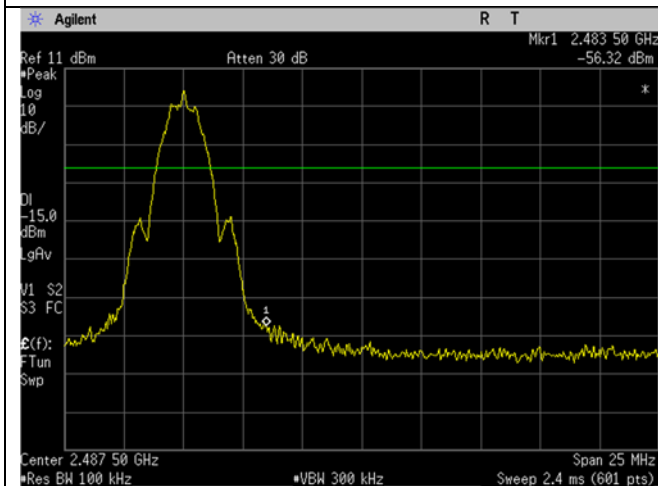
BLE\_High Ch\_2480MHz\_1MBit\_-20dBc\_Upper Band  
EdgeBLE\_High Ch\_2480MHz\_1MBit\_15.209\_1-26GHz  
\_PeakBLE\_High Ch\_2480MHz\_1MBit\_15.209\_1-26GHz  
avgBLE\_High Ch\_2480MHz\_1MBit\_15.209\_30-  
1000MHz\_PeakBLE\_High Ch\_2480MHz\_1MBit\_15.209\_Upper Band  
Edge AvgBLE\_High Ch\_2480MHz\_1MBit\_15.209\_Upper Band  
Edge Peak



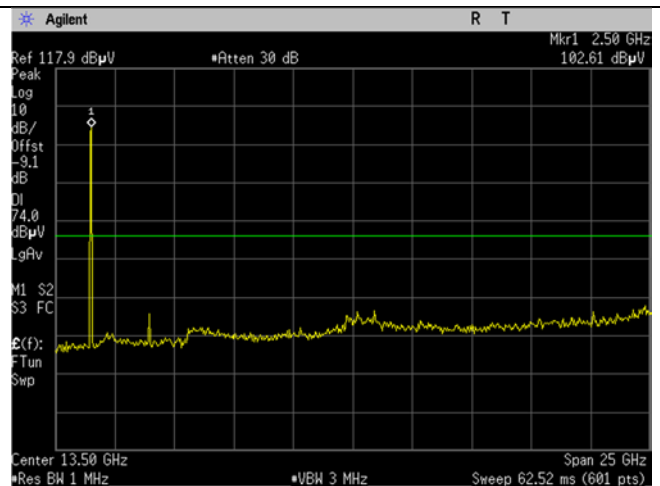
BLE\_High Ch\_2480MHz\_2MBit\_-20dBc\_10-26GHz



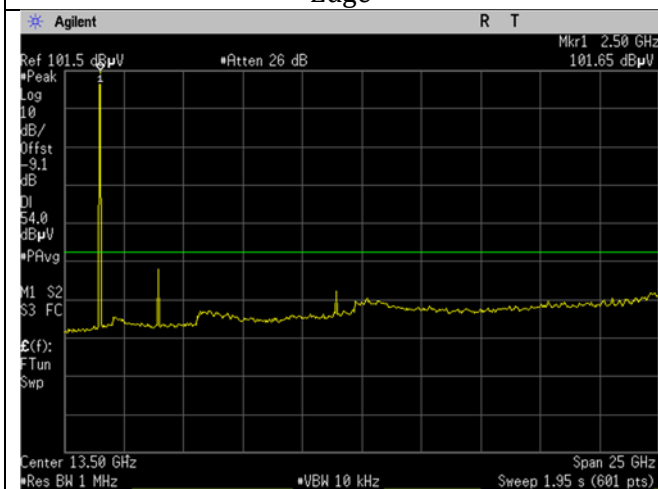
BLE\_High Ch\_2480MHz\_2MBit\_-20dBc\_30MHz-10GHz



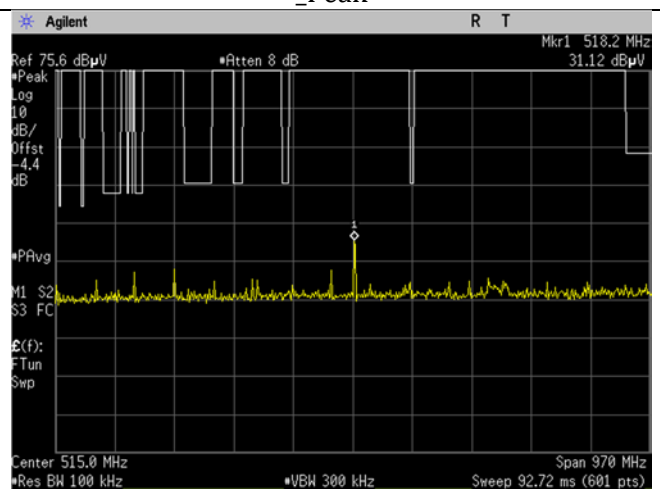
BLE\_High Ch\_2480MHz\_2MBit\_-20dBc\_Upper Band Edge



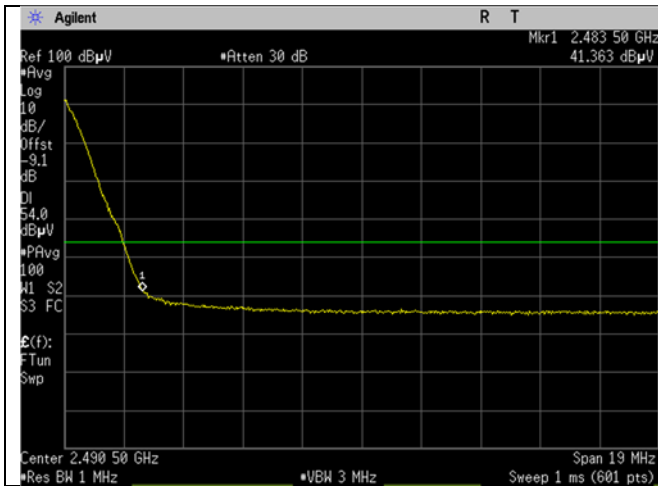
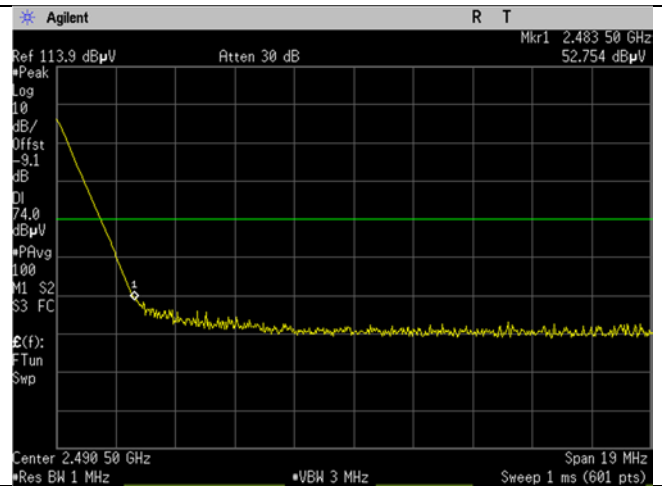
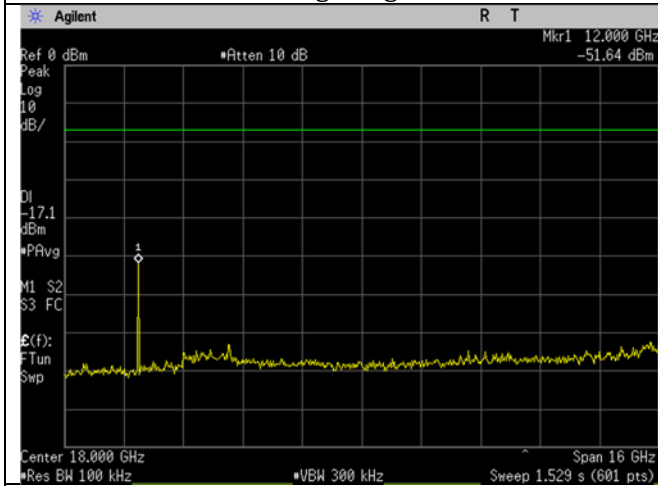
BLE\_High Ch\_2480MHz\_2MBit\_15.209\_1-26GHz\_Peak



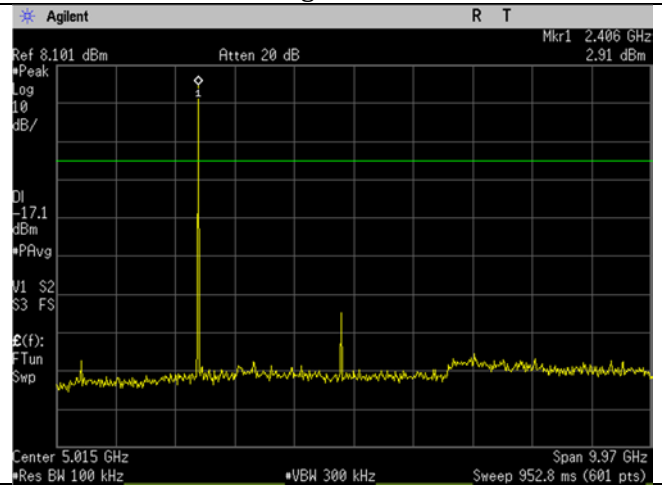
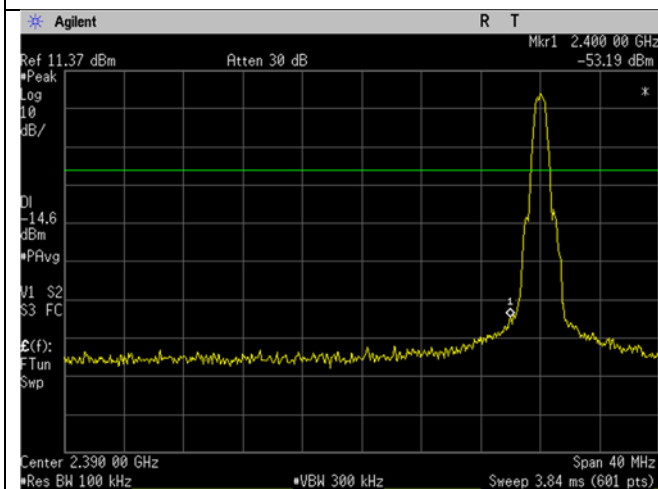
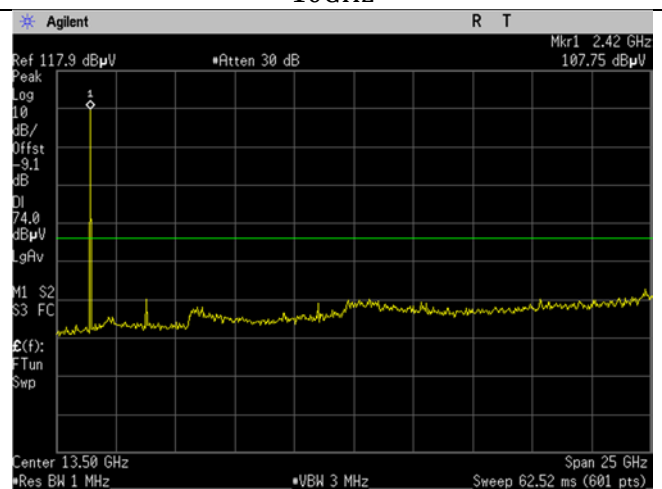
BLE\_High Ch\_2480MHz\_2MBit\_15.209\_1-26GHz avg

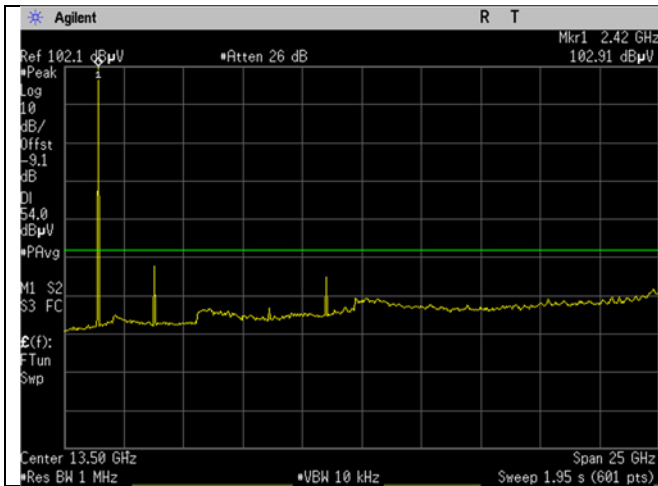
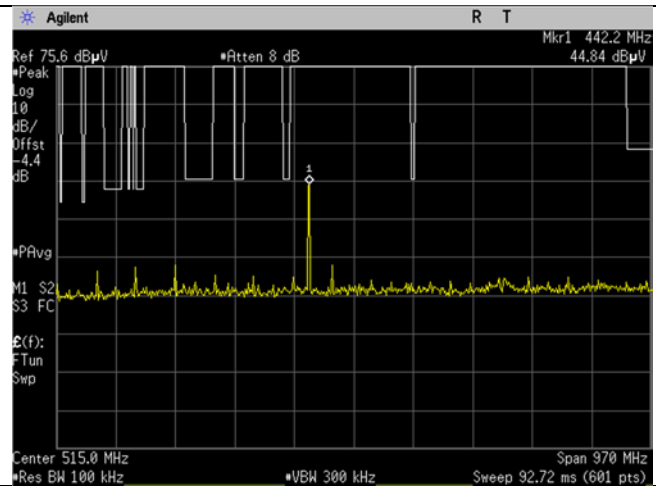
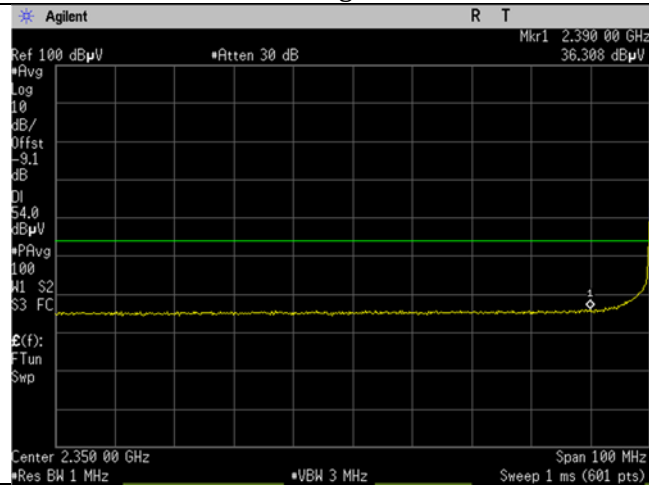
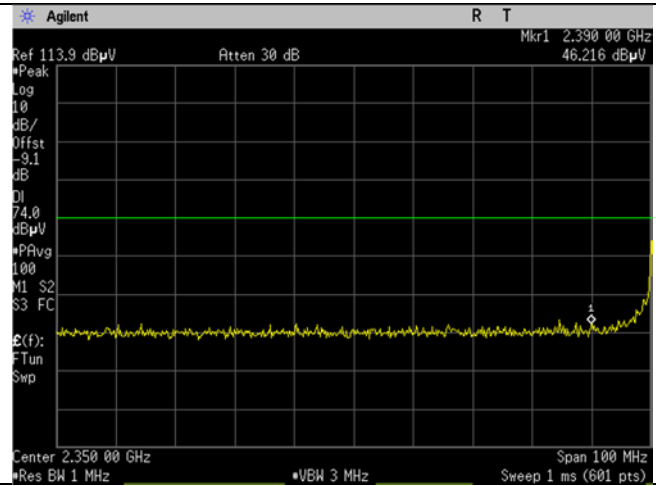
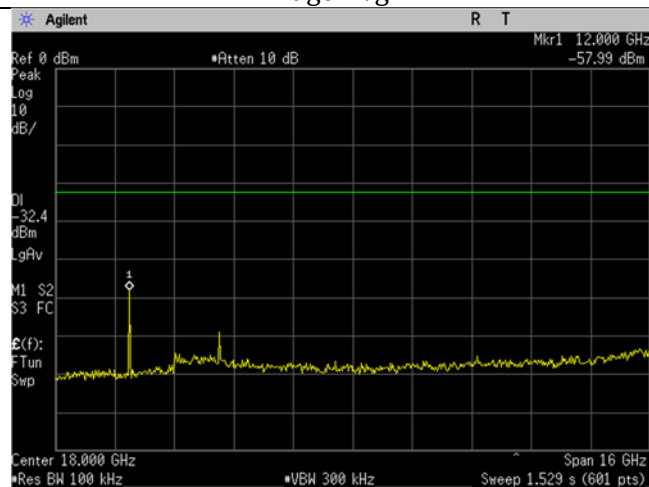


BLE\_High Ch\_2480MHz\_2MBit\_15.209\_30-1000MHz\_Peak

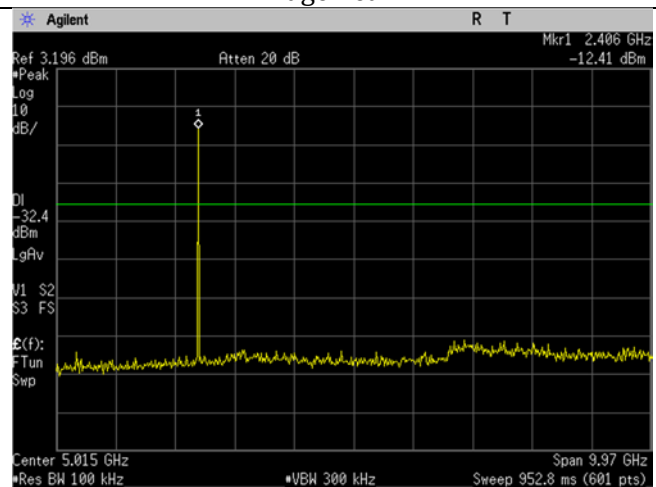
BLE\_High Ch\_2480MHz\_2MBit\_15.209\_Upper Band  
Edge AvgBLE\_High Ch\_2480MHz\_2MBit\_15.209\_Upper Band  
Edge Peak

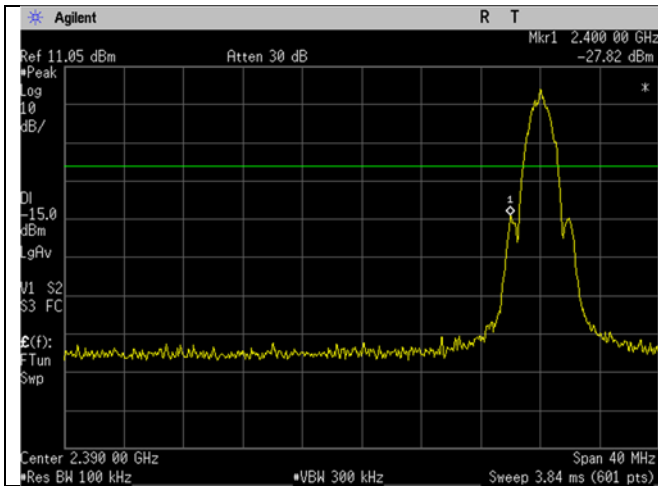
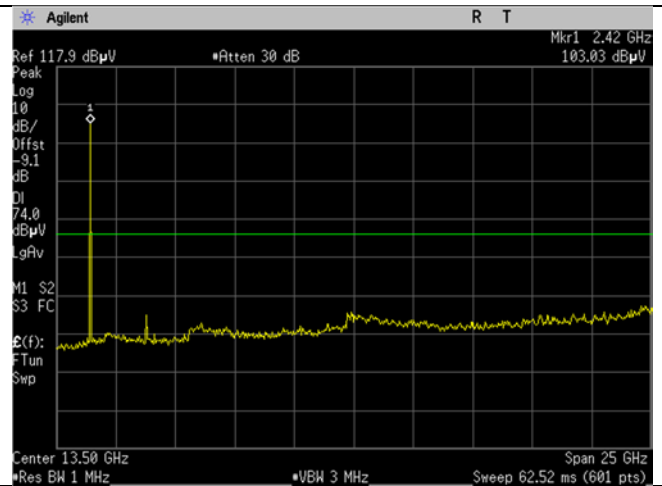
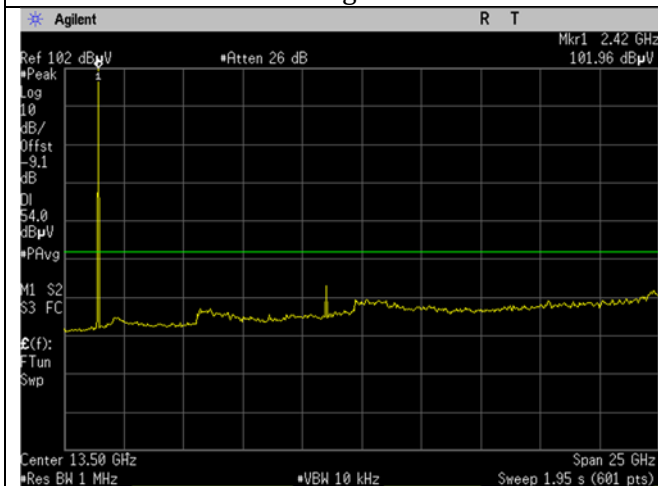
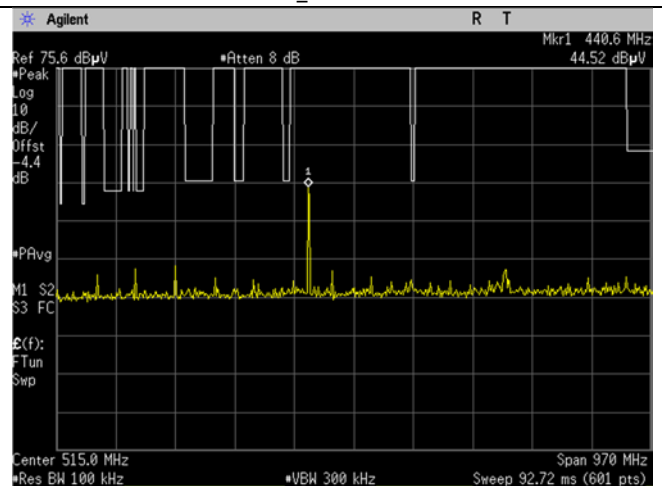
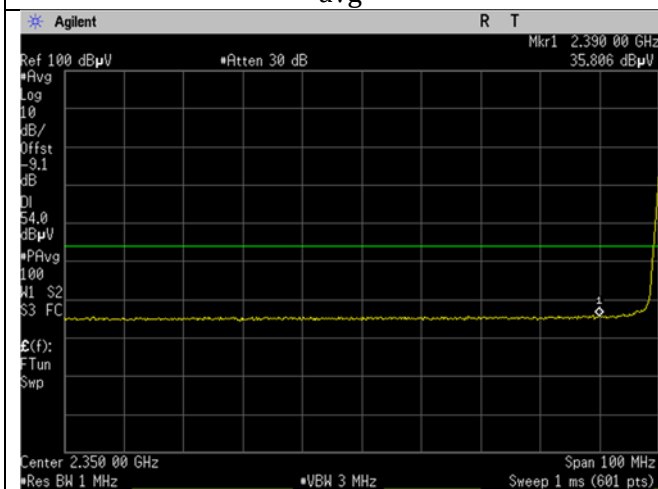
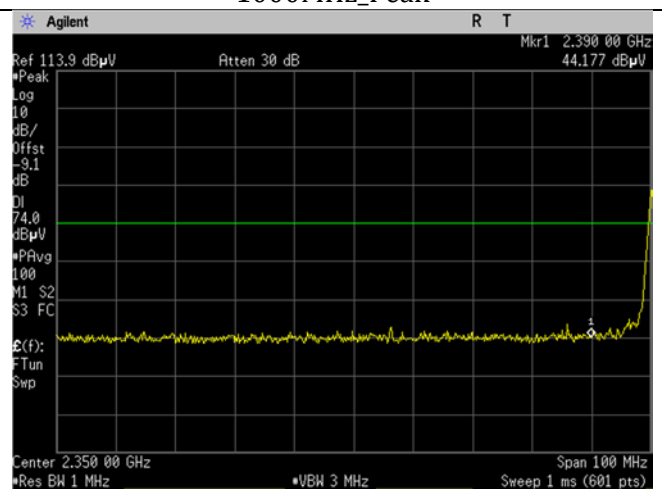
BLE\_Low Ch\_2402MHz\_1MBit\_-20dBc\_10-26GHz

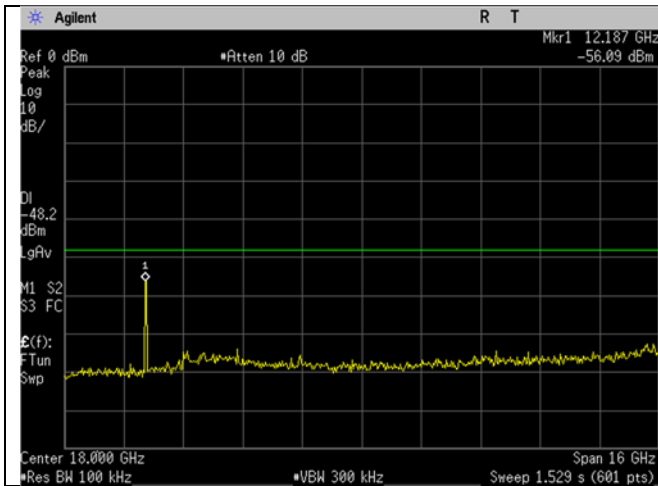
BLE\_Low Ch\_2402MHz\_1MBit\_-20dBc\_30MHz-  
10GHzBLE\_Low Ch\_2402MHz\_1MBit\_-20dBc\_Lower Band  
EdgeBLE\_Low Ch\_2402MHz\_1MBit\_15.209\_1-26GHz  
\_Peak

BLE\_Low Ch\_2402MHz\_1MBit\_15.209\_1-26GHz  
avgBLE\_Low Ch\_2402MHz\_1MBit\_15.209\_30-  
1000MHz\_PeakBLE\_Low Ch\_2402MHz\_1MBit\_15.209\_Lower Band  
Edge AvgBLE\_Low Ch\_2402MHz\_1MBit\_15.209\_Lower Band  
Edge Peak

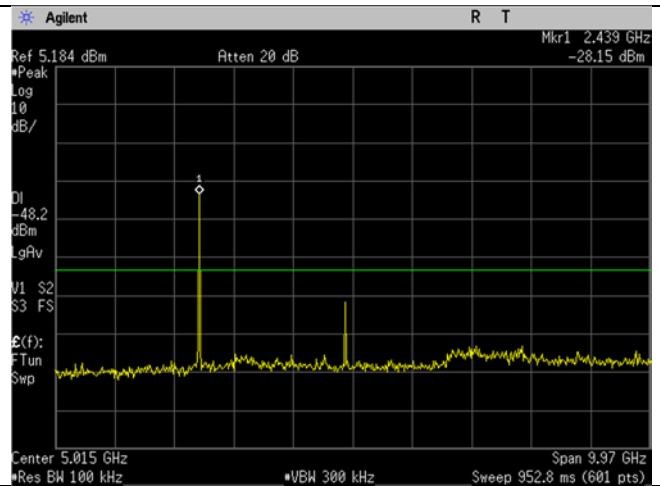
BLE\_Low Ch\_2402MHz\_2MBit\_-20dBc\_10-26GHz

BLE\_Low Ch\_2402MHz\_2MBit\_-20dBc\_30MHz-  
10GHz

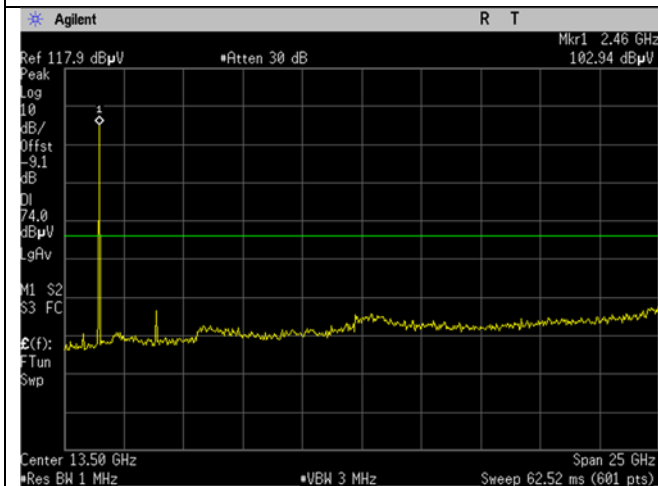
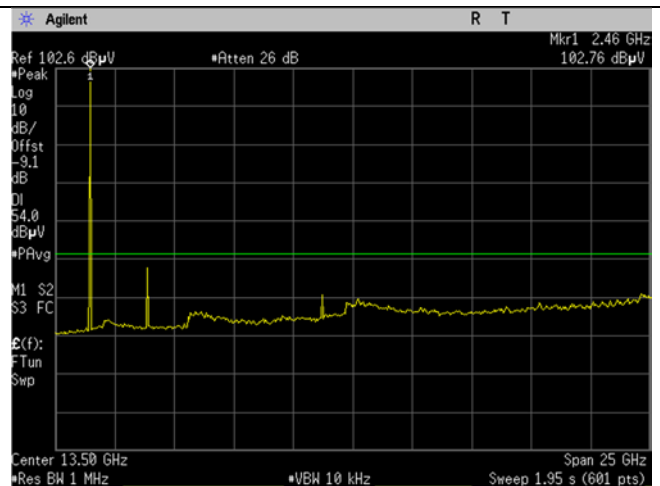
BLE\_Low Ch\_2402MHz\_2MBit\_-20dBc\_Lower Band  
EdgeBLE\_Low Ch\_2402MHz\_2MBit\_15.209\_1-26GHz  
\_PeakBLE\_Low Ch\_2402MHz\_2MBit\_15.209\_1-26GHz  
avgBLE\_Low Ch\_2402MHz\_2MBit\_15.209\_30-  
1000MHz\_PeakBLE\_Low Ch\_2402MHz\_2MBit\_15.209\_Lower Band  
Edge AvgBLE\_Low Ch\_2402MHz\_2MBit\_15.209\_Lower Band  
Edge Peak



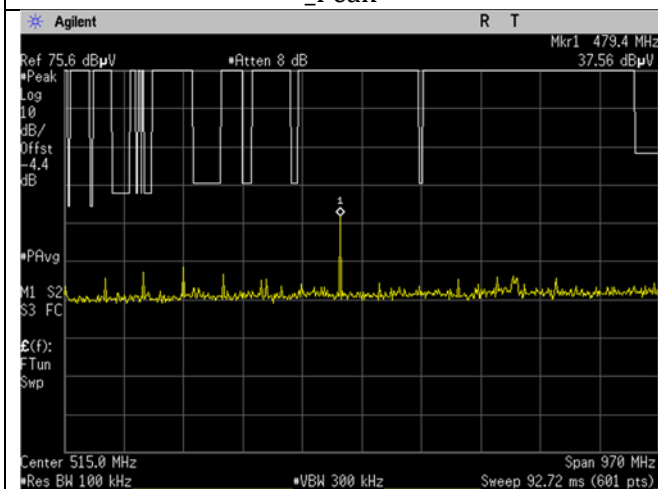
BLE\_Mid Ch\_2440MHz\_1MBit\_-20dBc\_10-26GHz



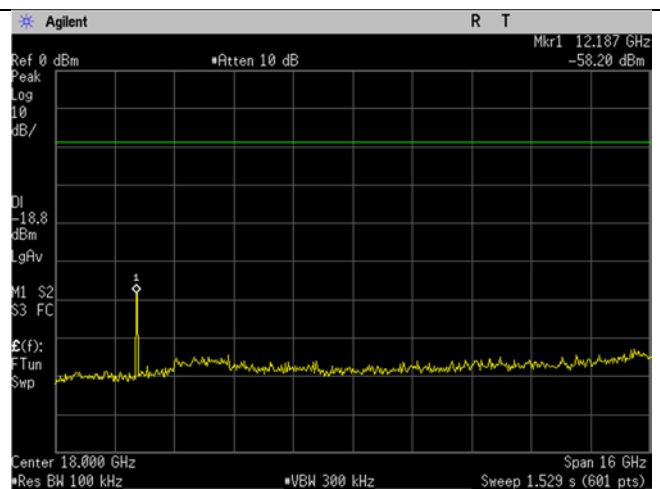
BLE\_Mid Ch\_2440MHz\_1MBit\_-20dBc\_30MHz-10GHz

BLE\_Mid Ch\_2440MHz\_1MBit\_15.209\_1-26GHz  
\_Peak

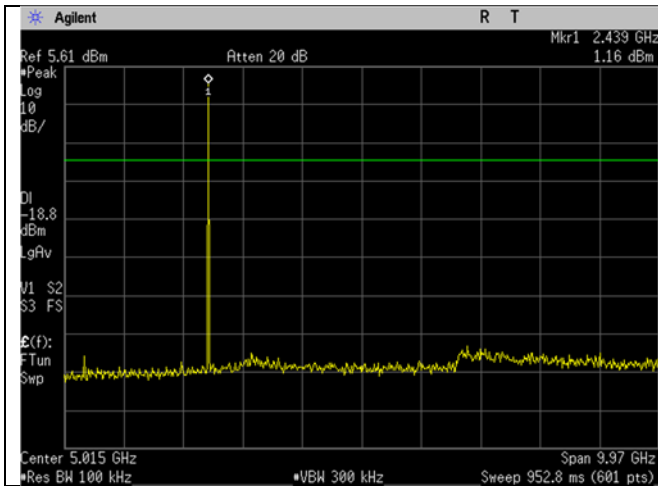
BLE\_Mid Ch\_2440MHz\_1MBit\_15.209\_1-26GHz avg



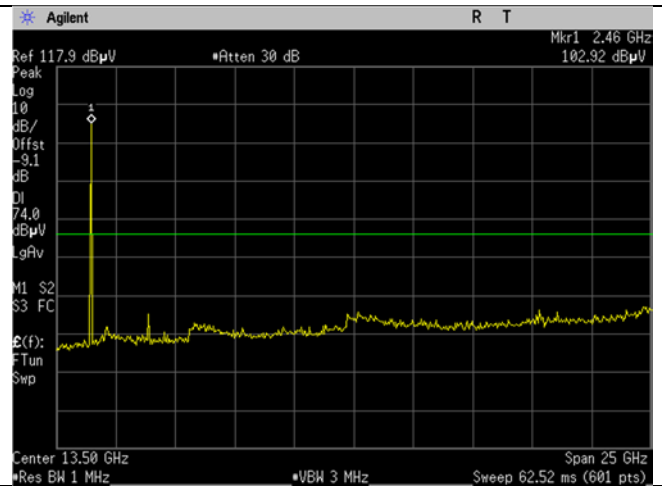
BLE\_Mid Ch\_2440MHz\_1MBit\_15.209\_30-1000MHz\_Peak



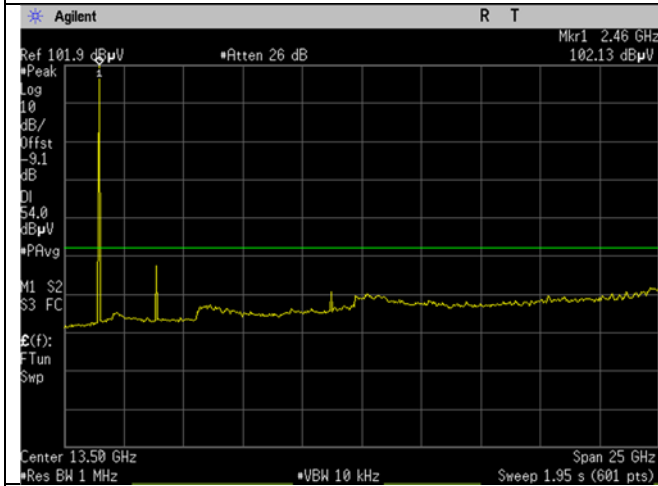
BLE\_Mid Ch\_2440MHz\_2MBit\_-20dBc\_10-26GHz



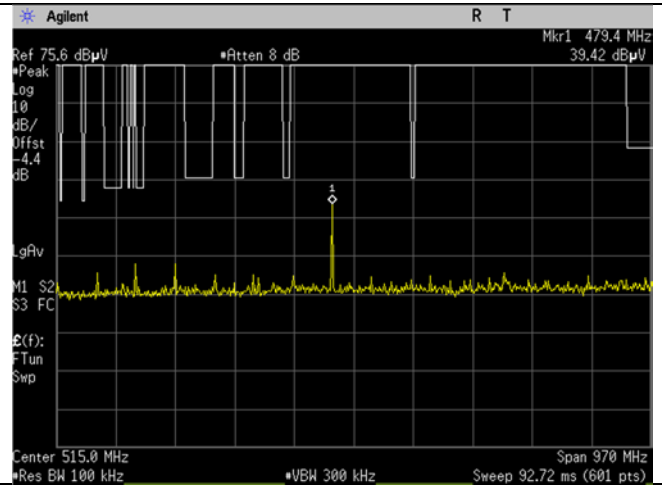
BLE\_Mid Ch\_2440MHz\_2MBit\_-20dBc\_30MHz-  
10GHz



BLE\_Mid Ch\_2440MHz\_2MBit\_15.209\_1-26GHz  
\_Peak



BLE\_Mid Ch\_2440MHz\_2MBit\_15.209\_1-26GHz avg



BLE\_Mid Ch\_2440MHz\_2MBit\_15.209\_30-  
1000MHz\_Peak