

# V2 Gateway

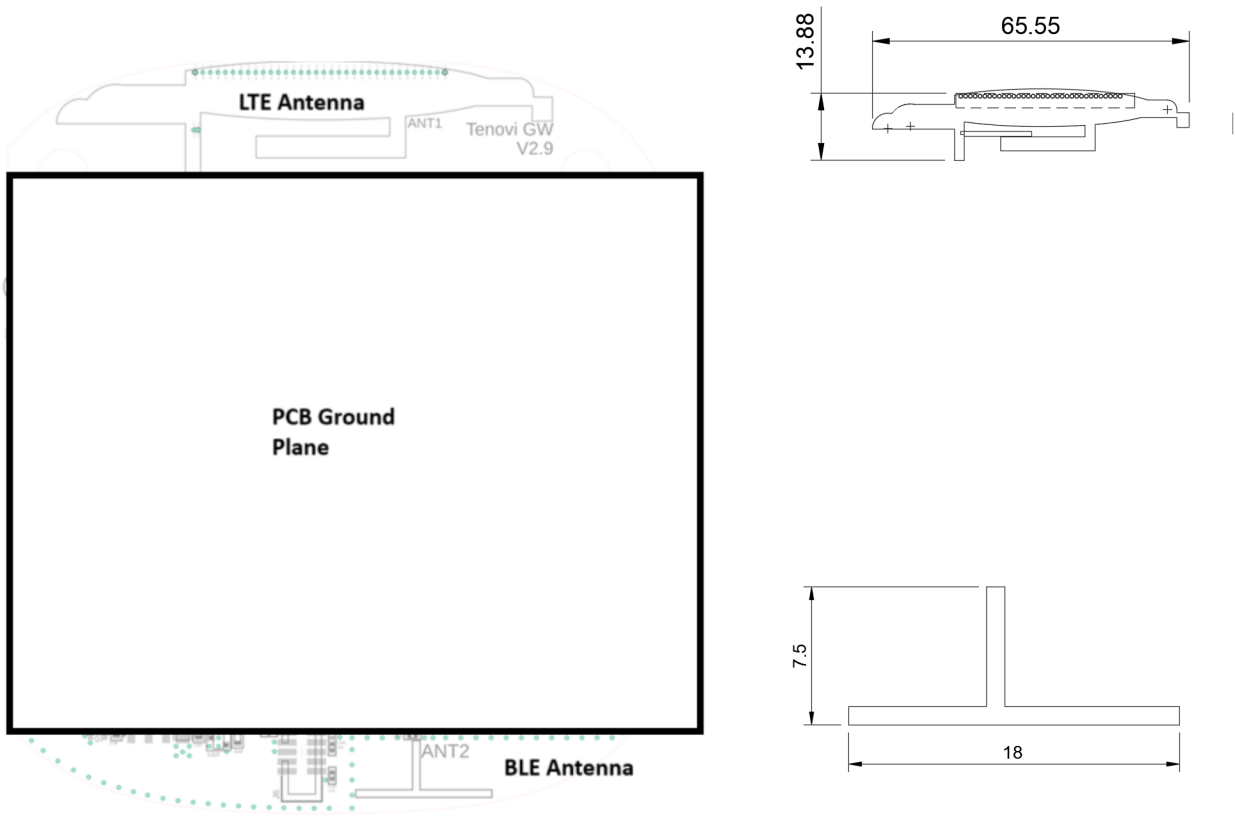
## BLE and LTE Antenna Datasheet

### Antenna Parameters

| Antenna | Type      | Size (mm)   | Frequency Range                                    | Impedance | Peak Gain                     | Average Efficiency |
|---------|-----------|-------------|----------------------------------------------------|-----------|-------------------------------|--------------------|
| BLE     | PCB Trace | 18 x 7.5    | 2480-2483MHz                                       | 50Ω       | +2.2dBi                       | 60%                |
| LTE     | PCB Trace | 65.5 x 13.8 | 699-787MHz (NA)<br>699-960MHz (EU)<br>1710-2200MHz | 50Ω       | +0.1dBi<br>+0.1dBi<br>+4.3dBi | 40%<br>30%<br>60%  |

\*NA – North America matching network, EU – Europe matching network. SIM7080G is power class 3 (+20dBm).

### Antenna Image



PCB size is 91mm wide and 99mm long.

LTE Matching Network

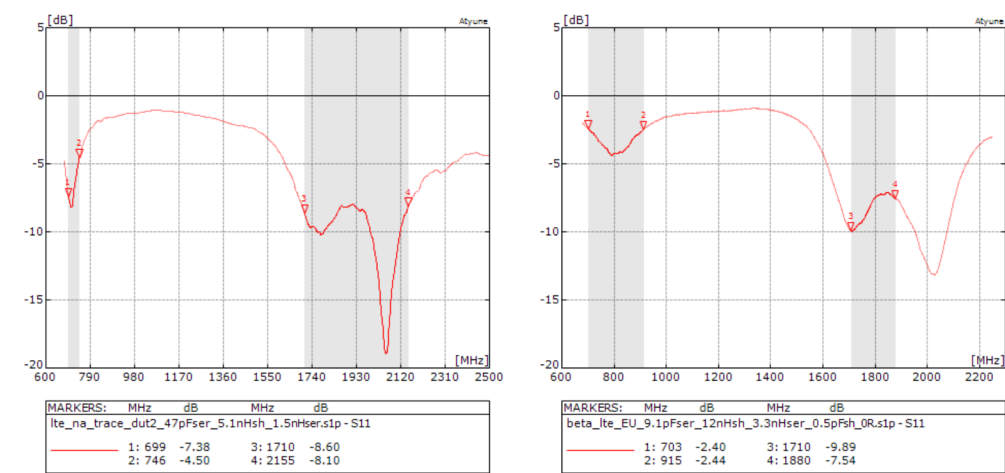
| Variant | C46 | C58 | C59   | L2    | C20 | L3    | C19   | R19 |
|---------|-----|-----|-------|-------|-----|-------|-------|-----|
| NA      | DNP | DNP | 22pF  | 5.1nH | DNP | 1.5nH | DNP   | 0R  |
| EU      | DNP | DNP | 9.1pF | 12nH  | DNP | 3.3nH | 0.5pF | 0R  |

BLE Matching Network

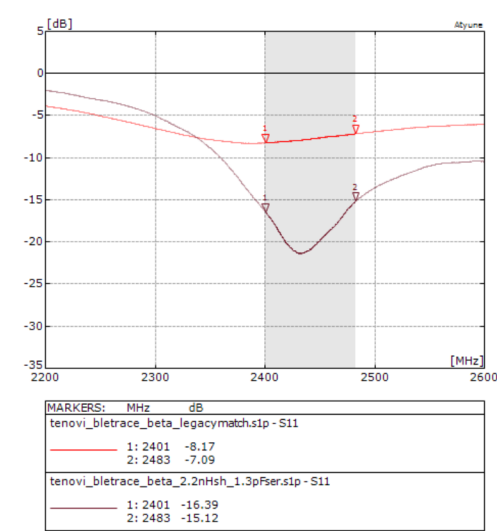
| L7    | C42   | C3  |
|-------|-------|-----|
| 2.2nH | 1.3pF | DNP |

S11 Plots

LTE North America (left) and Europe (right)



BLE



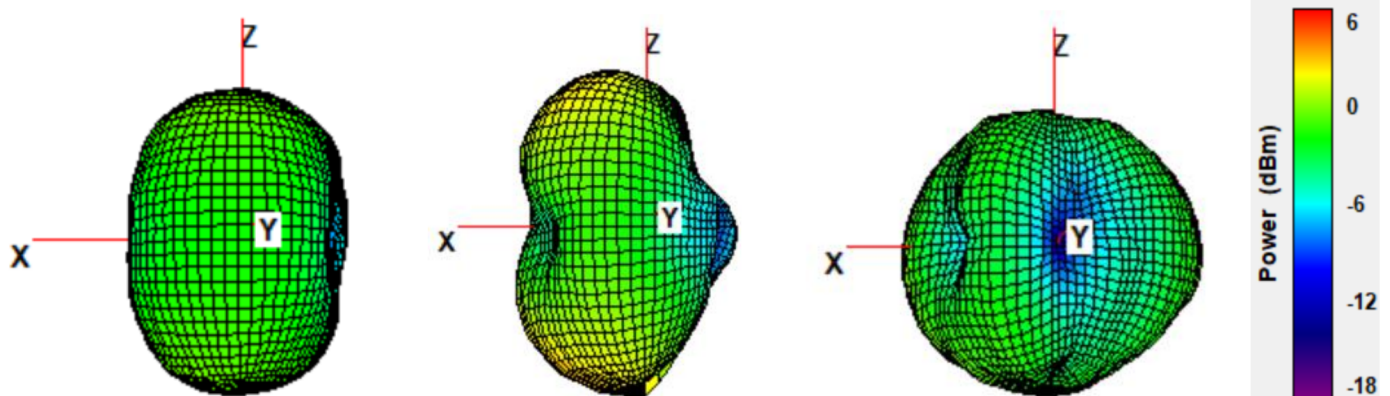
The purple trace is with the updated matching network mentioned above (C42 = 1.3pF vs the legacy 1.8pF).

## Radiation Patterns

Far-field data was measured in an OTA system at Element in Brooklyn Park, MN. The test setup photo is shown below. Input power is +0dBm for the radiation pattern tests.



*LTE Radiation Pattern (710MHz – left, 1710MHz – middle, 2200MHz – right)*



*BLE Radiation Pattern (2440MHz)*

