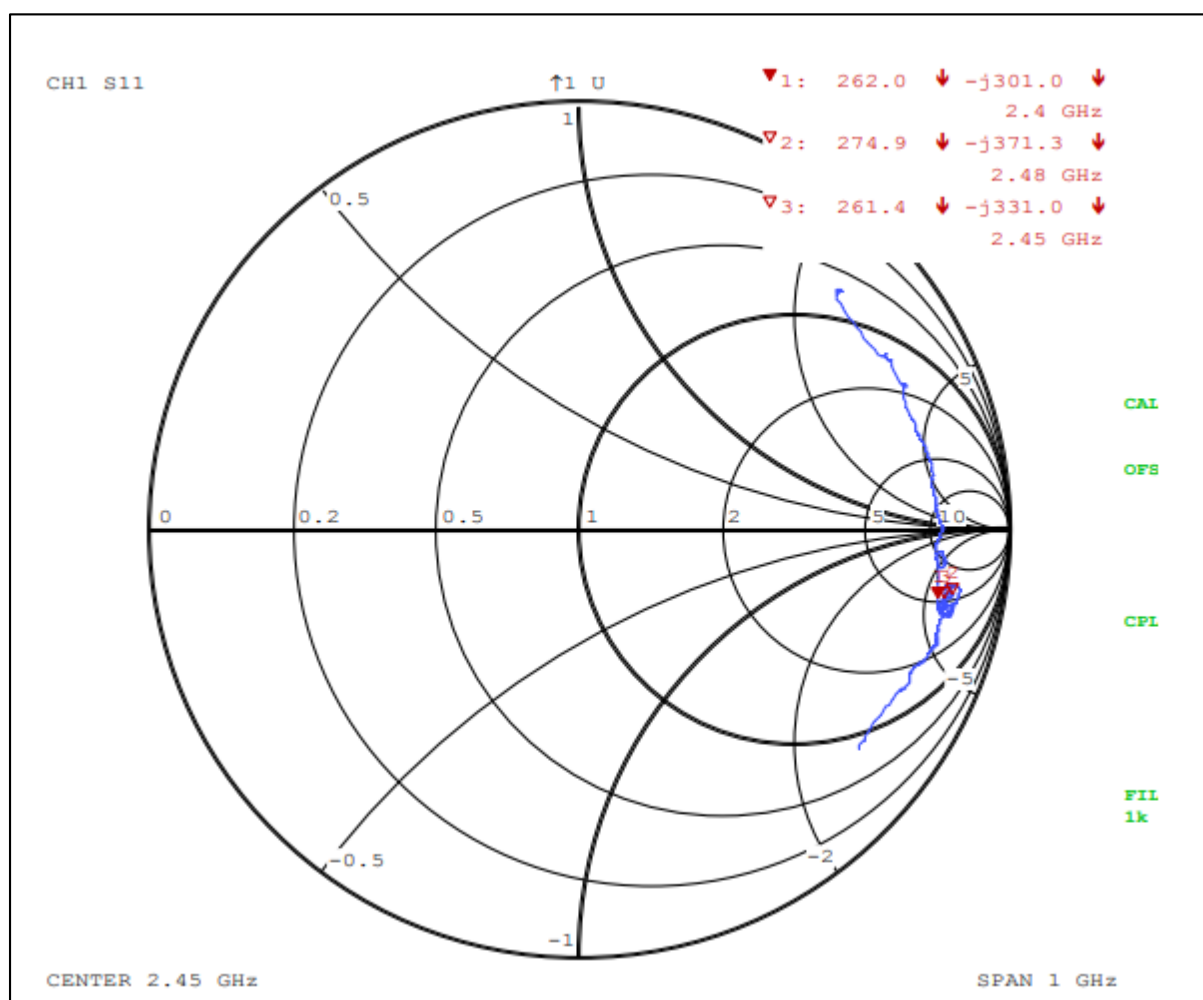


Operating Frequency Range	2405MHz to 2480MHz
Antenna Model	B
Antenna Gain	1.5 dBi
Antenna Type	PCB antenna
Matching Network	Pi-network



If it is not possible to get the impedance exactly 50 ohm by adjusting the length of the antenna, a component must be used to pull the impedance to the 50 ohm point. It is preferable to use a shunt capacitor since a capacitor is cheaper than an inductor and because a shunt component can be removed without any impact.



When the length of the antenna is adjusted, it is important to completely remove the piece of track that is cut off since any remaining metal affects the antenna.

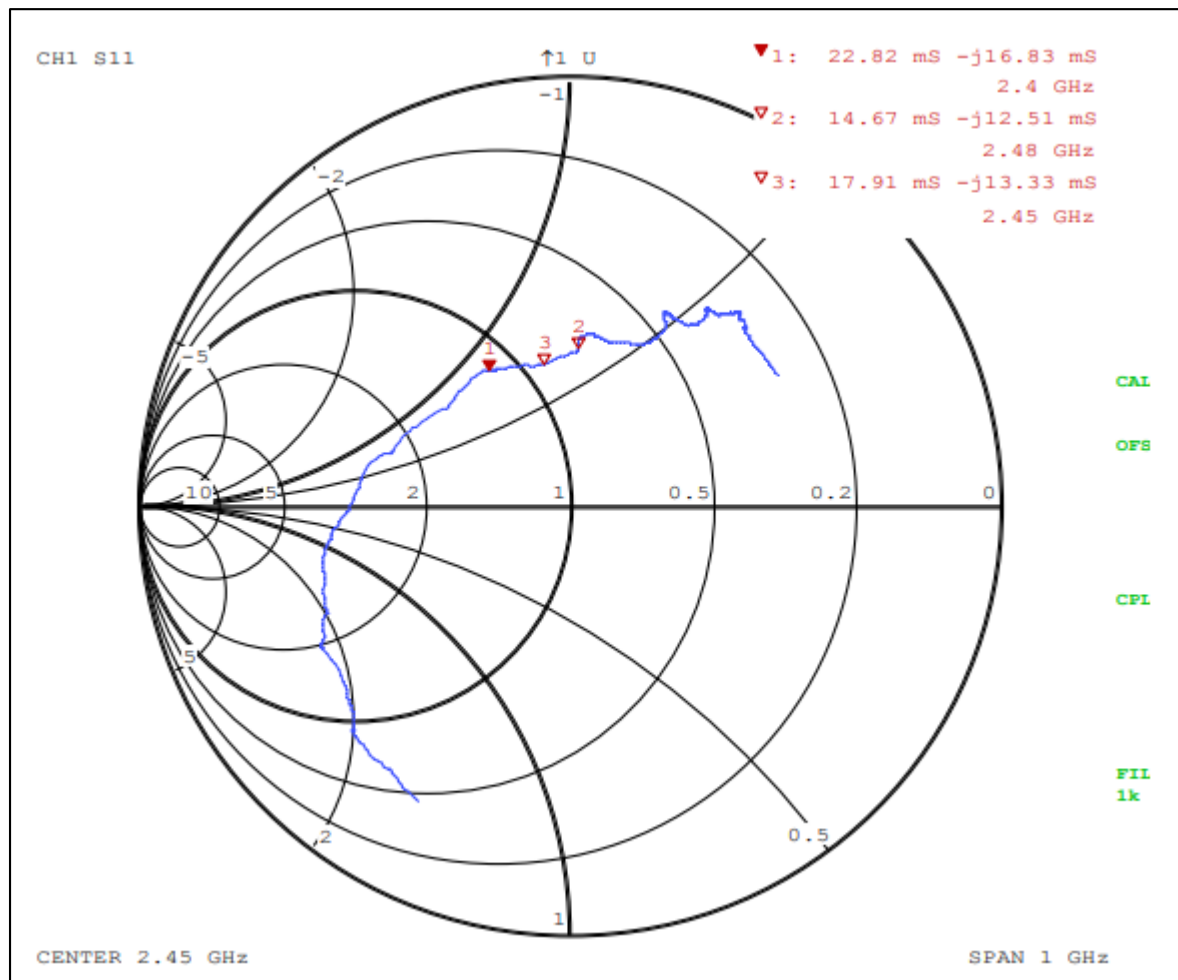


Figure 4: Impedance after length adjustment.

After the length is adjusted, and the impedance is getting close to the conductance circle that passes through the centre of the Smith chart, see Figure 4, a suitable capacitor is used to bring the impedance to the 50 ohm point, see Figure 5. In this case, a 1.0 pF capacitor gives the best results. The exact value can be calculated, or it can be found by trial and error.



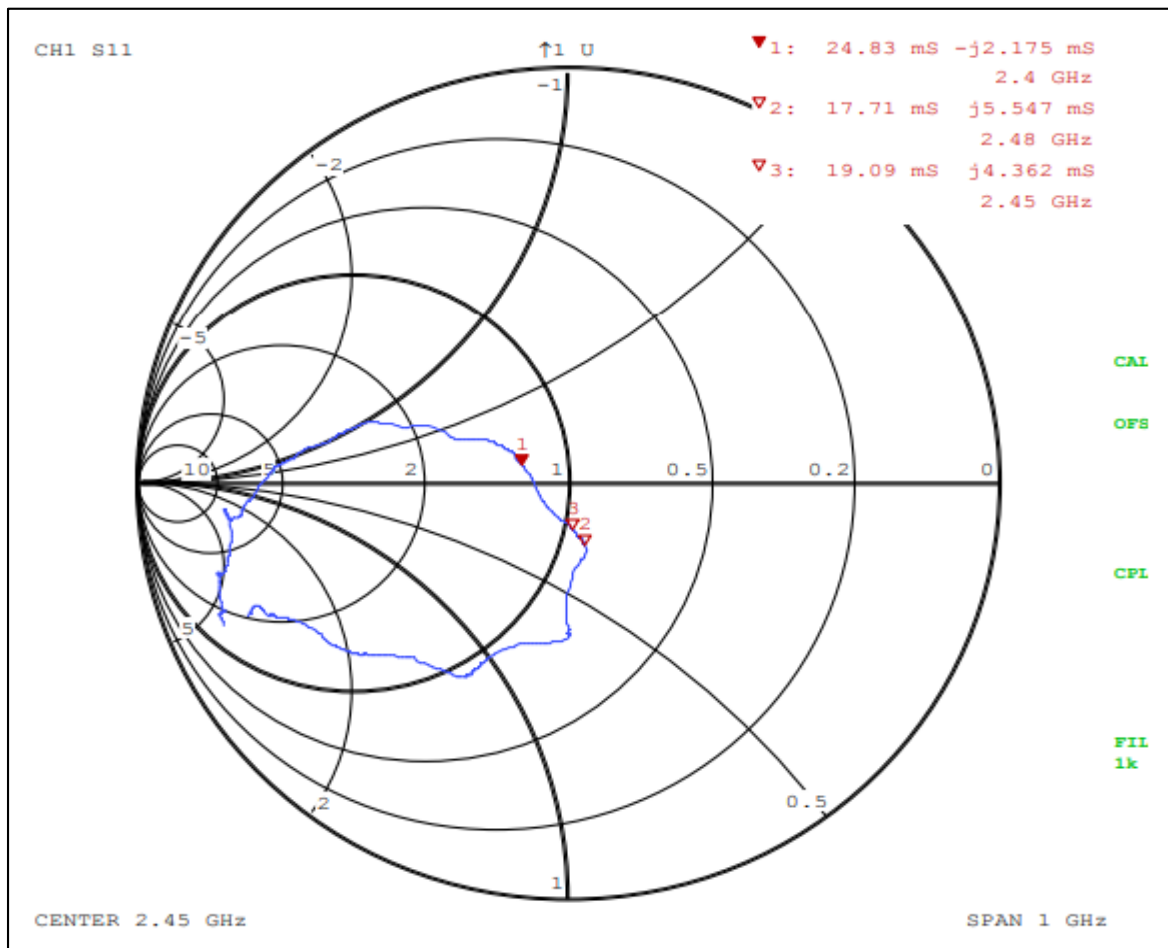
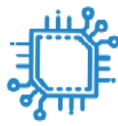


Figure:5 Impedance after length adjustment and adding a shunt capacitor.

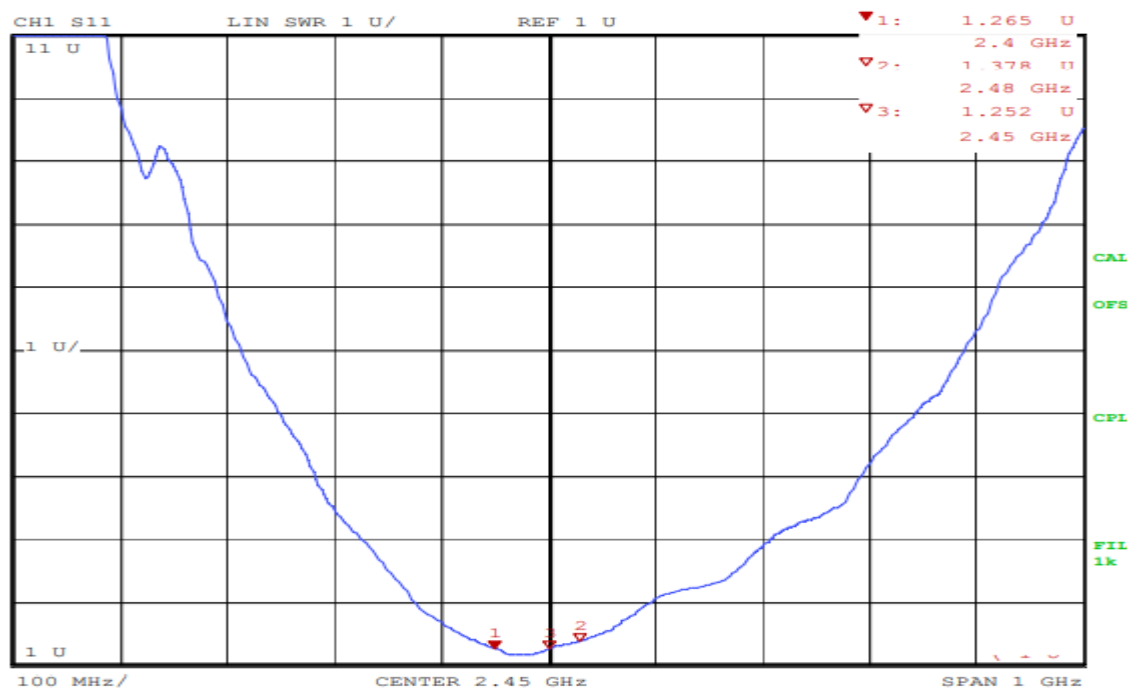
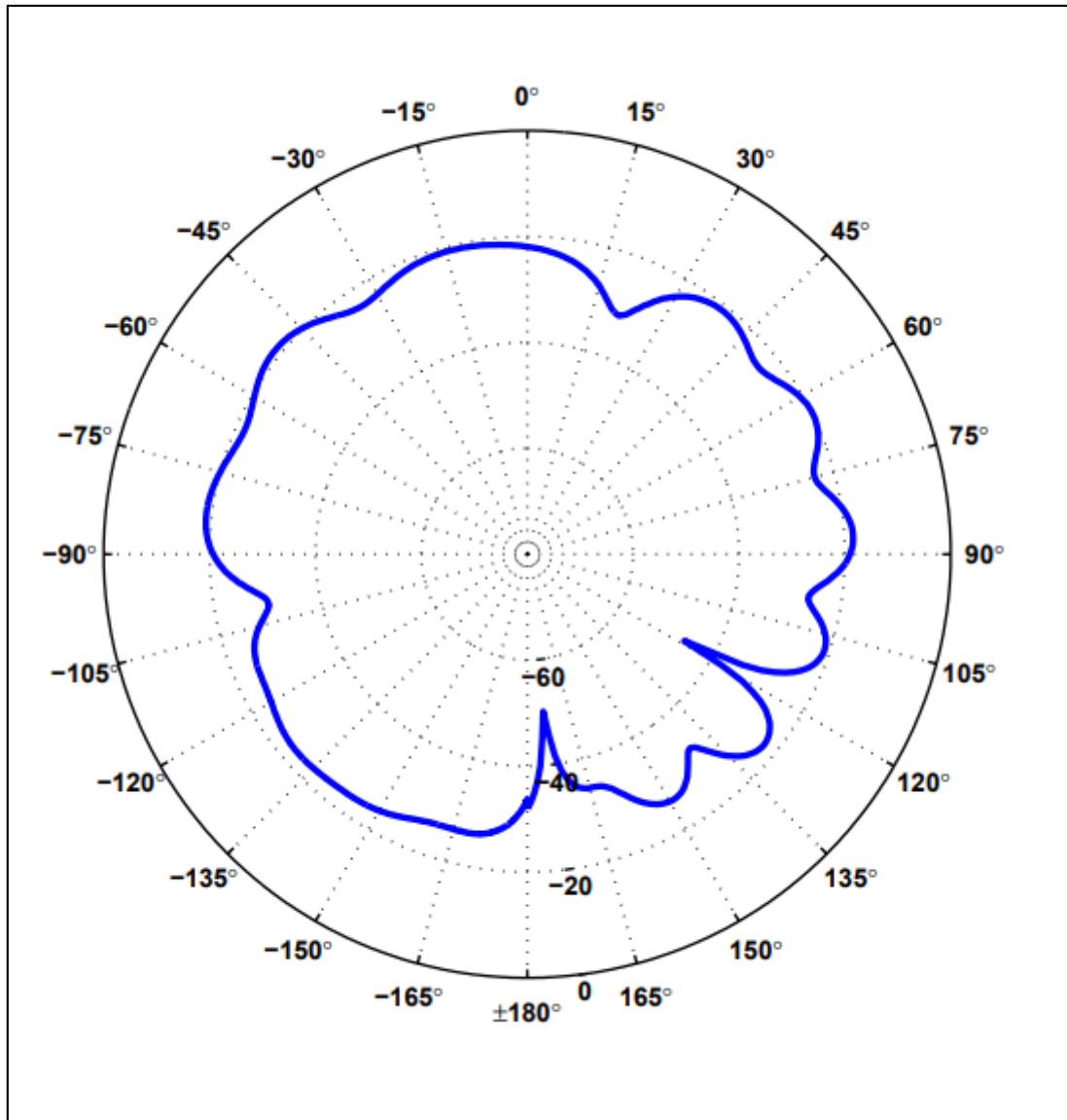


Figure:6 SWR after length adjustment and adding a shunt capacitor.



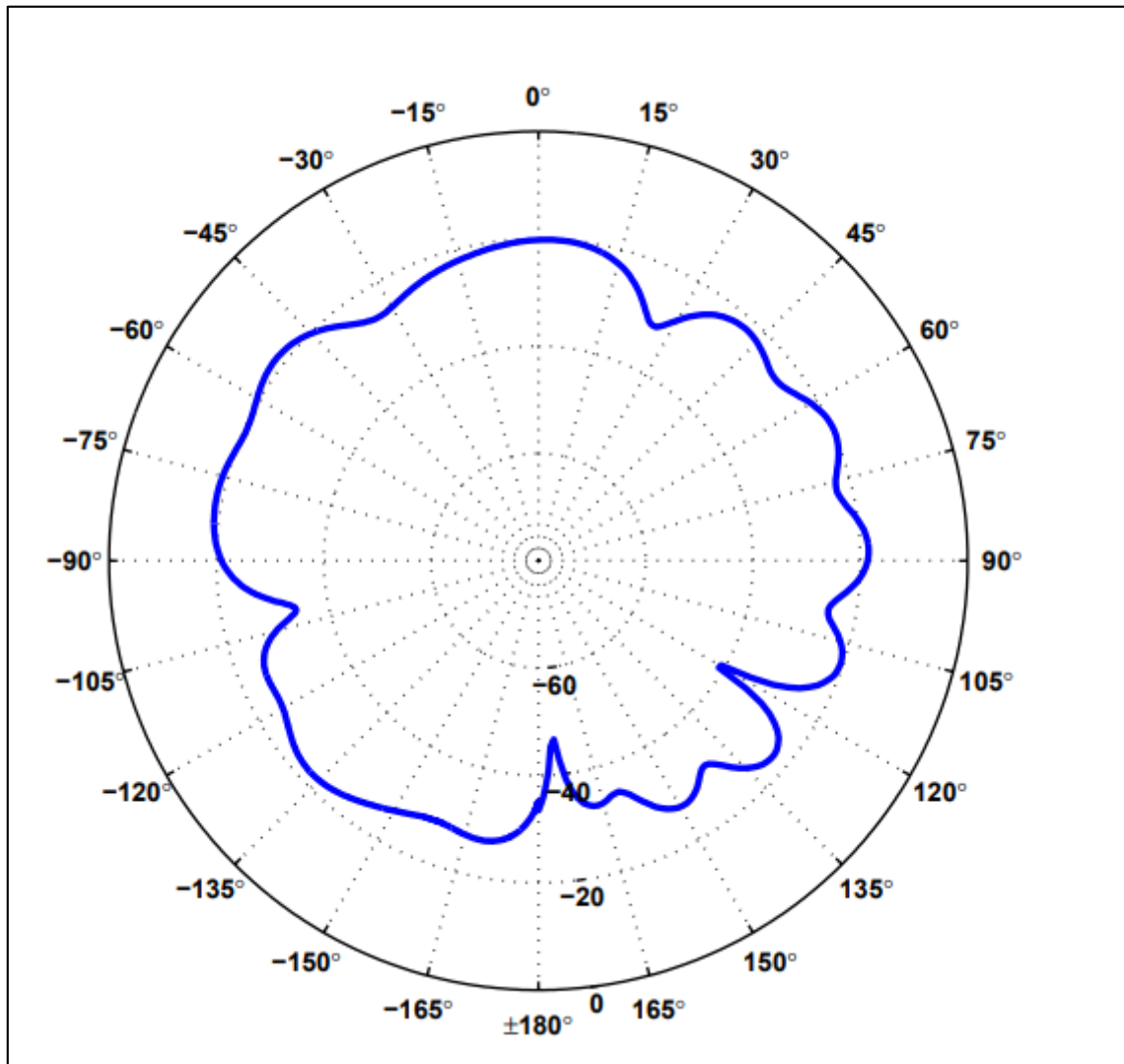


Horizontal polarisation PCB Antenna Pattern 2402MHz Polar plot:



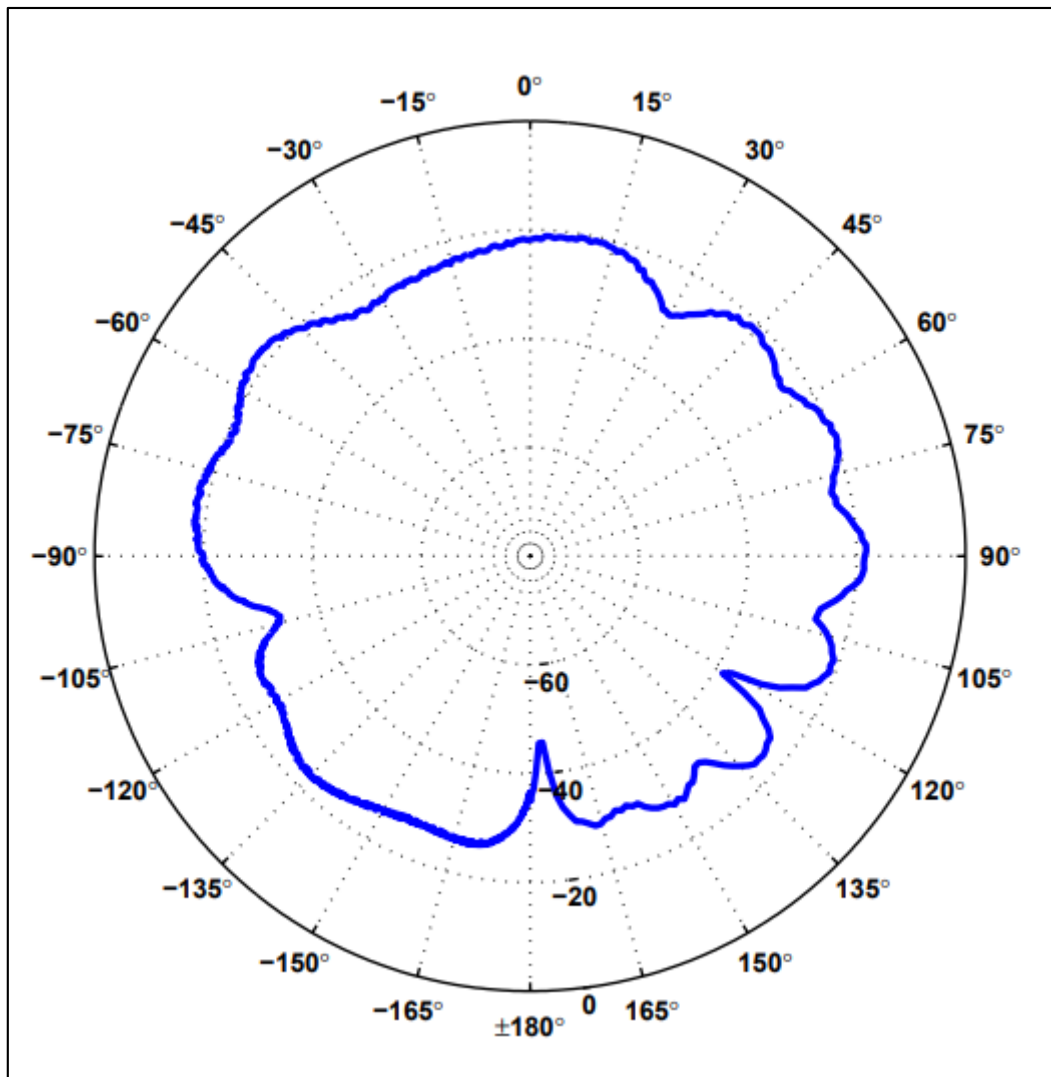


Horizontal polarisation PCB Antenna Pattern 2440MHz Polar plot:





Horizontal polarisation PCB Antenna Pattern 2480MHz Polar plot:

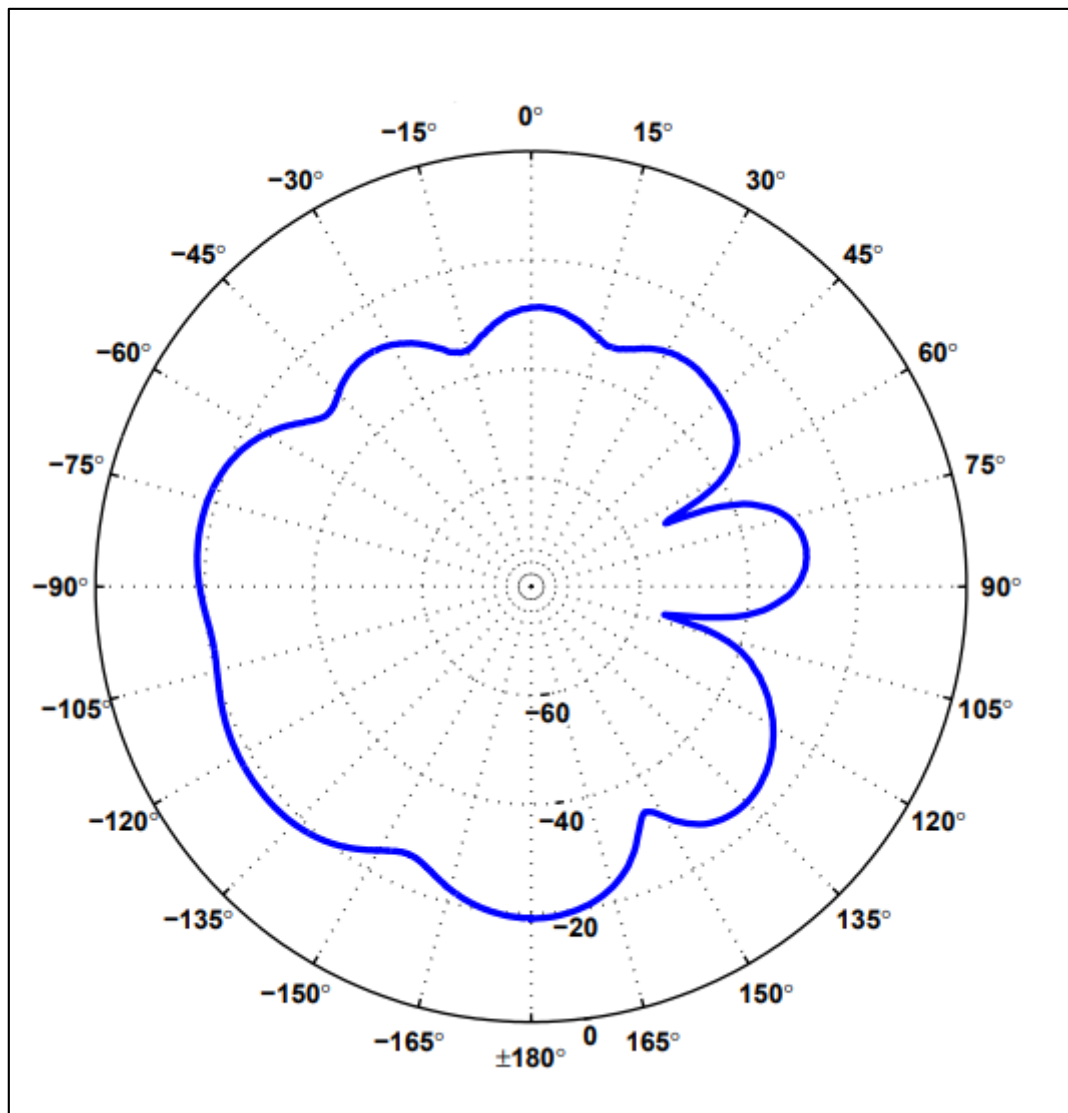




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Vertical polarization PCB Antenna Pattern 2402MHz Polar plot:



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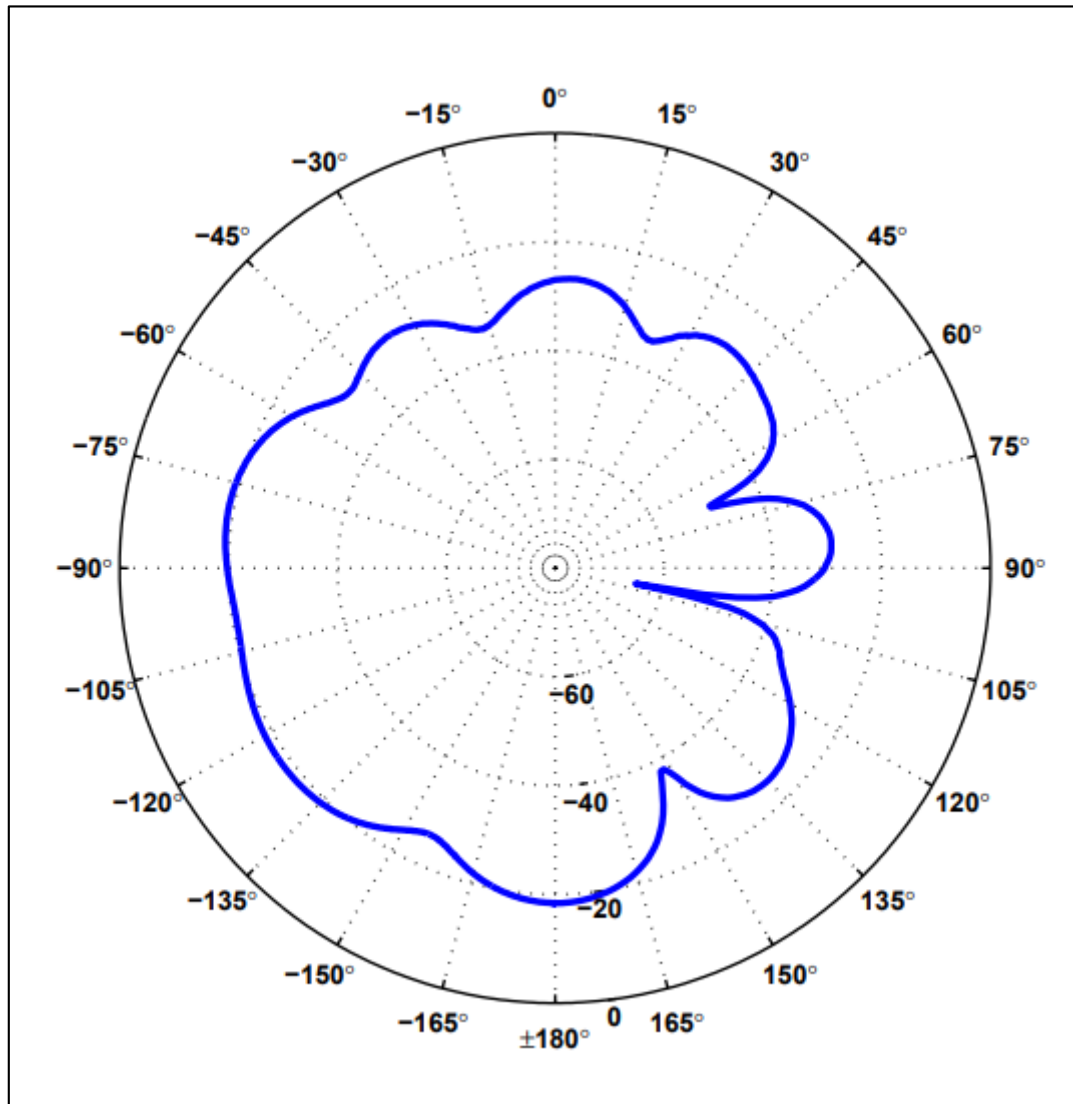


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Vertical polarization PCB Antenna Pattern 2440MHz Polar plot:





Vertical polarization PCB Antenna Pattern 2480MHz Polar plot:

