

## **Ultra-wide band microwave filter utilizing quarter-wavelength short-circuited stubs.**

### **ABSTRACT**

Five poles quarter-wave short-circuited stubs is designed and developed to support the ultra-wide band (UWB) applications. The filter, with a total size of 41 mm × 12 mm operates within 2.7–9.83 GHz, produces a fractional bandwidth of greater than 100%. The filter is fabricated on RT/Duroid 5880 board with thickness of 0.508 mm. Measured results indicate that the filter, consisting of five short-circuited stubs, and a stepped impedance transmission line can cover up to 114% bandwidth within UWB frequency range with insertion loss (S<sub>21</sub>) better than 1.27 dB.

**Keyword:** Microstrip; Microwave filter; Quarter wavelength; Short-circuited stubs; UWB.