Tuning Filters:

1) Design a Chebyshev Bandpass filter on a microstrip with:

**Filter Design Parameters:**

Ap=0.1 dB

Fo =12 GHz Zo = 50 Ω

Δf (bandwidth) =1300 MHz

Stop bandwidth of 30dB (As=30 dB) from 9 (Fs1) to 15 (Fs2) GHz

**Microstrip Parameters:**

Copper σ = 5.88 x 107S/m

Tan δ = 0.005

εr = 3.78