

Matlab Microstrip

```
format long
% er=2.2;
% f=10e9;
% h=0.1588*10;
er=input('Enter the di-electric constant:');
h=input('Enter the substrate thickness (in mil)');
f=input('Enter the frequency (GHz):');
% er=3.5;
f=f*1e9;
h=h*0.0254; % in mm

wid=(3e8/(sqrt((er+1)/2)*2*f))*1000; %in mm
e_eff=((er+1)/2)+(((er-1)/2)*(1+((12*h)/wid))^0.5);

l_eff=(3e8/(2*f*sqrt(e_eff)))*1000;

del_l1=(((e_eff+0.3)*((wid/h)+0.264))/((e_eff-0.258)*((wid/h)+0.8)))*(0.412*h); %in mm

L=l_eff-(2*del_l1);

inset=(L/pi)*(acos(sqrt(50/r_in))); %in mm
```