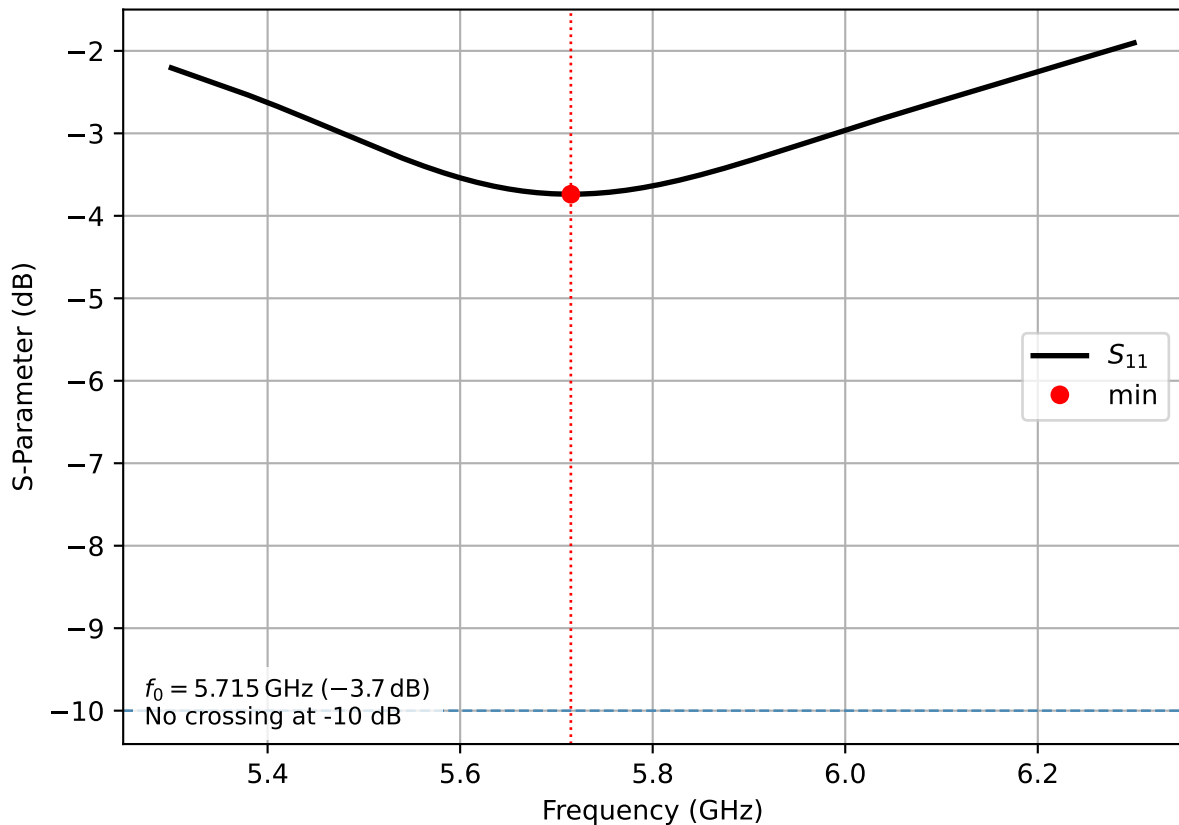


# Reflection Coefficient $S_{11}$

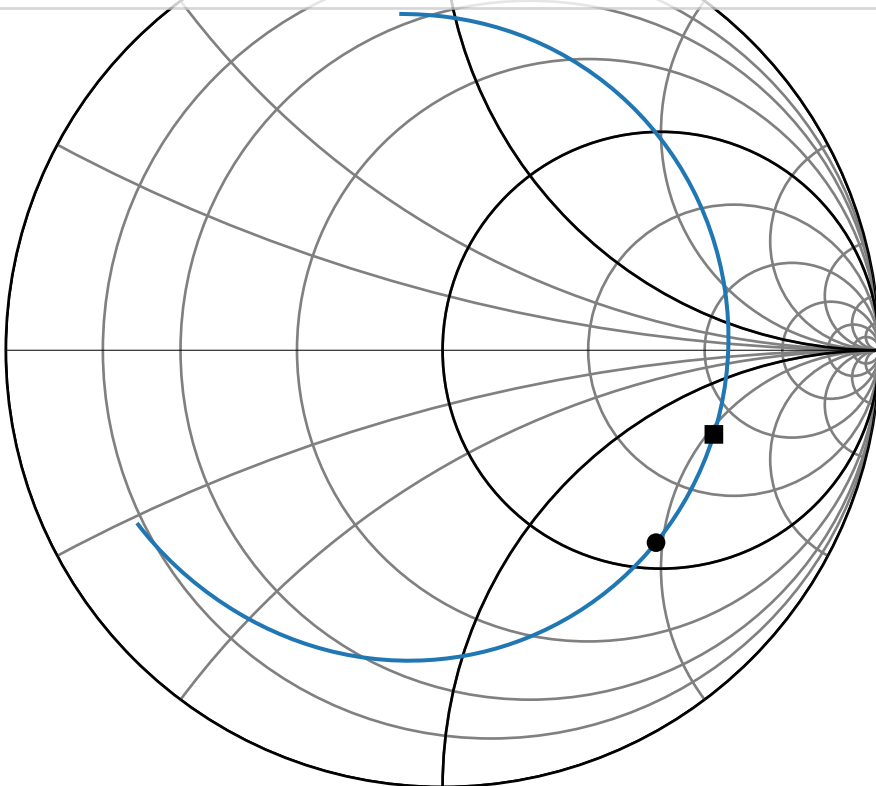


# Smith Chart

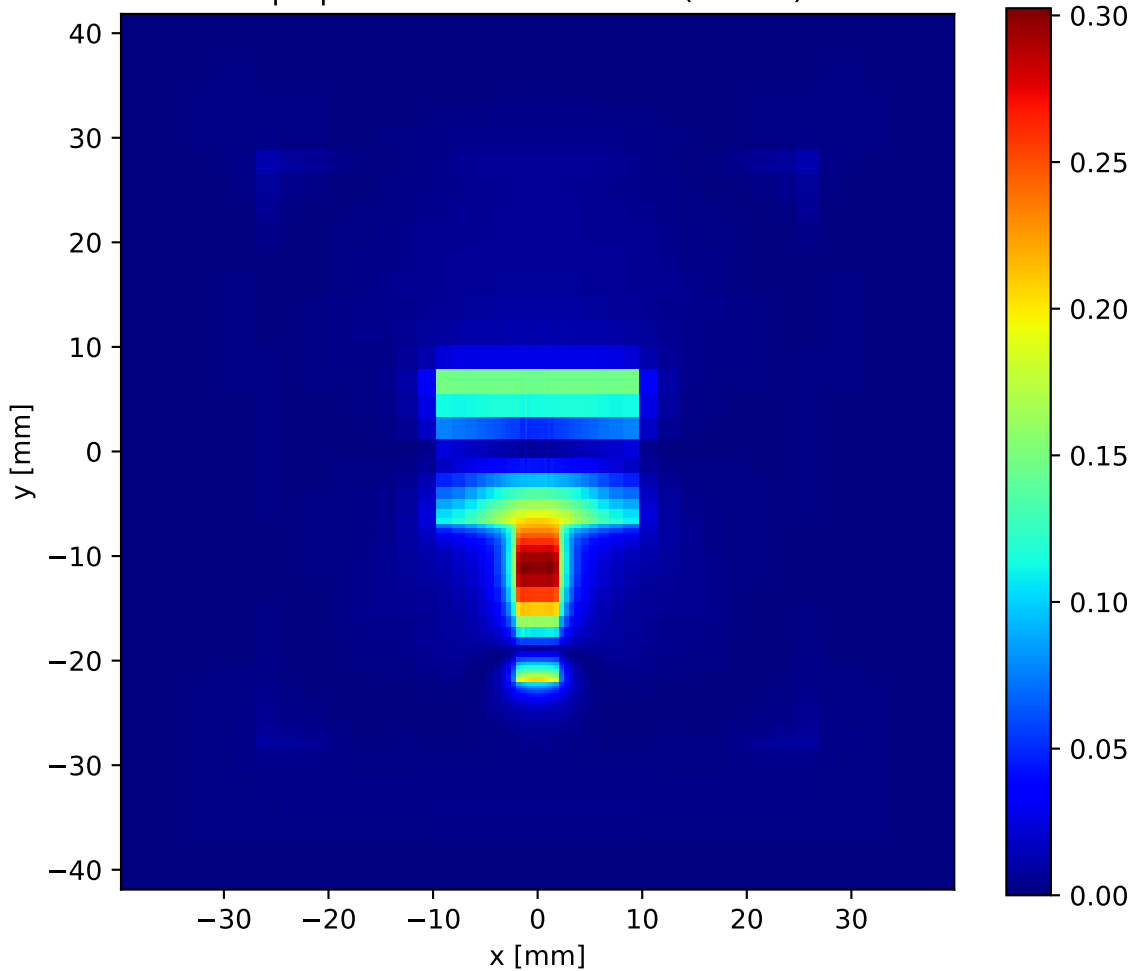
— S11 (Patch W=17.80 mm, L=13.40 mm)

● 5.80 GHz,  $S_{11}=0.489-0.440j$ ,  $R=62.26-96.70j$ ,  $G_{\text{norm}}=0.24+0.37j$

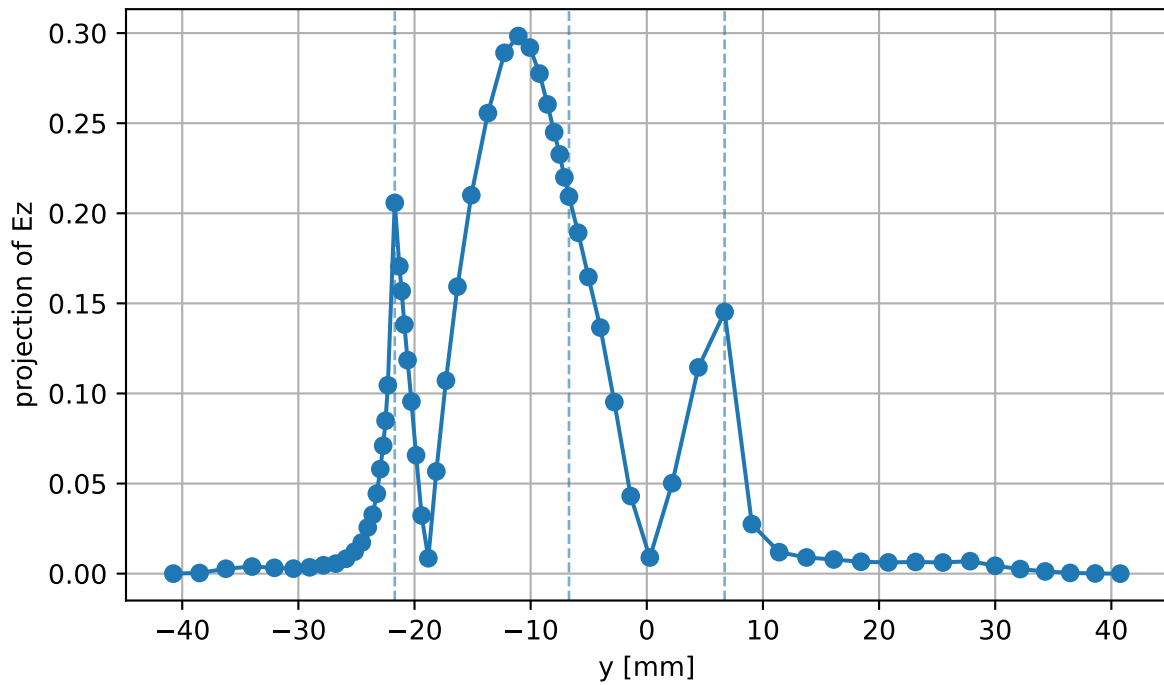
■ 5.71 GHz,  $S_{11}=0.621-0.193j$ ,  $R_2=159.68-106.62j$ ,  $G_{2\text{norm}}=0.22+0.14j$



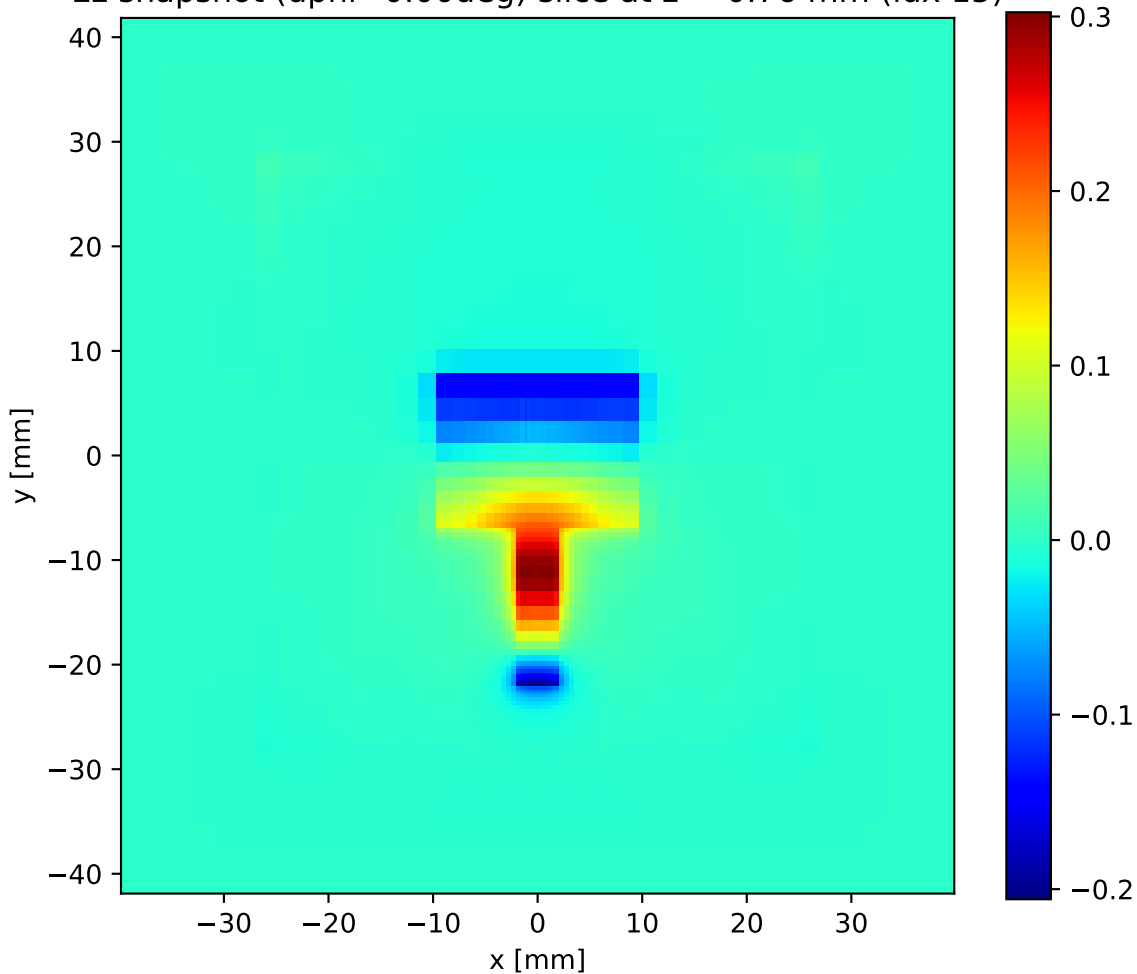
$|E_z|$  slice at  $z = 0.76$  mm (idx 15)



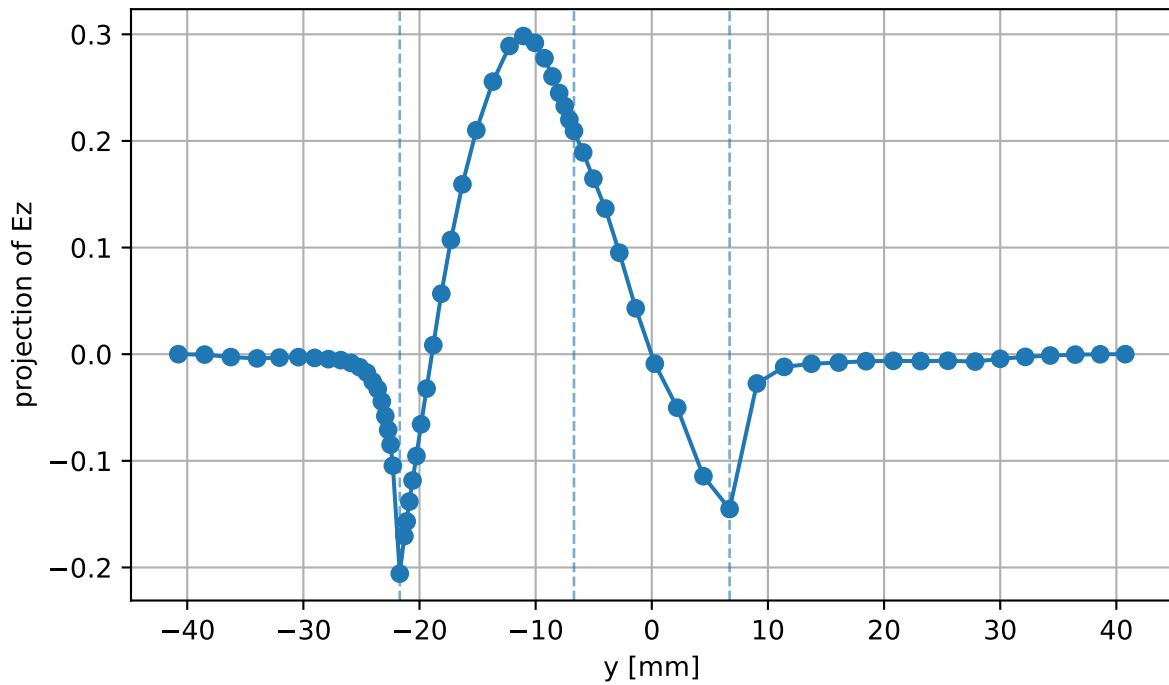
$|E_z|$  line cut along Y at  $x=0.00$  mm,  $z=0.76$  mm  
(idx  $x=29$ ,  $z=15$ )



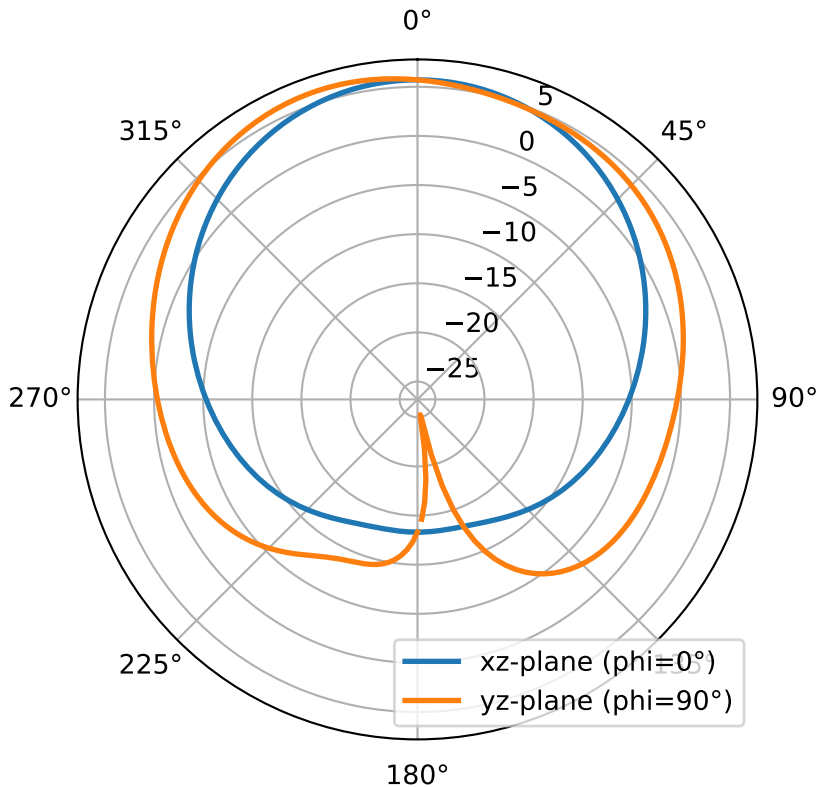
Ez snapshot (dphi=0.00deg) slice at  $z = 0.76$  mm (idx 15)



Ez snapshot (dphi=0.00deg) line cut along Y at x=0.00 mm, z=0.76 mm  
(idx x=29, z=15)

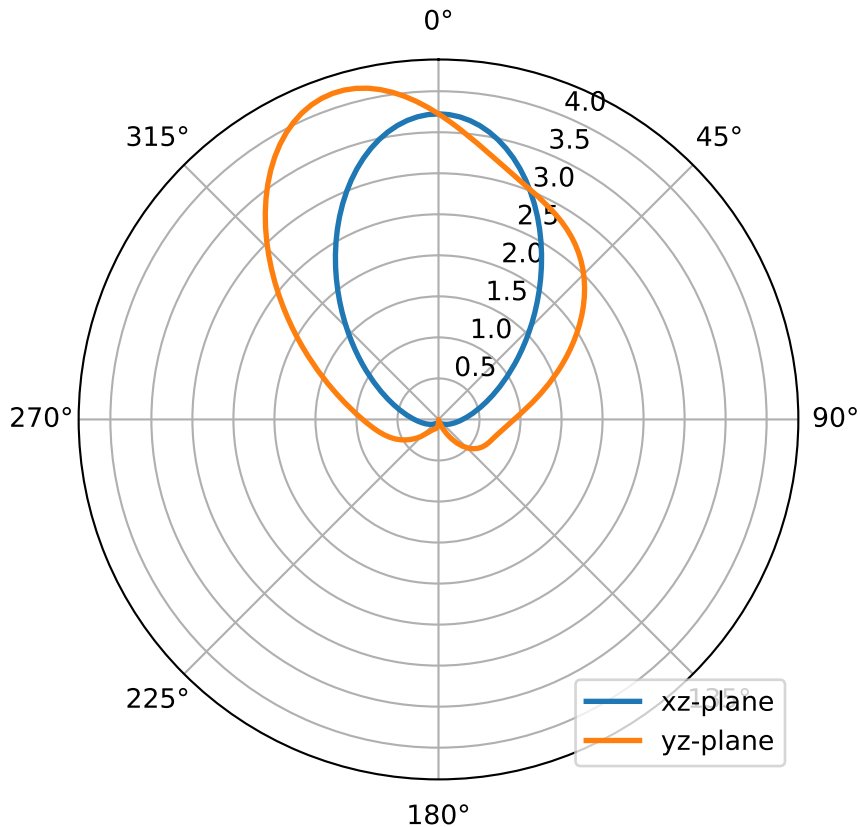


$f = 5.715 \text{ GHz}$  — Directivity (dB)  
 $D_{\text{max}} (\text{integrated}) \approx 6.21 \text{ dB}$ ,  $\text{nf2ff } D_{\text{max}} = 6.21 \text{ dB}$





Frequency: 5.715 GHz — Directivity (linear). Dmax: 4.178



Frequency: 5.715 GHz  
xz-plane: HPBW=82.1°  
yz-plane: HPBW=114.1°

