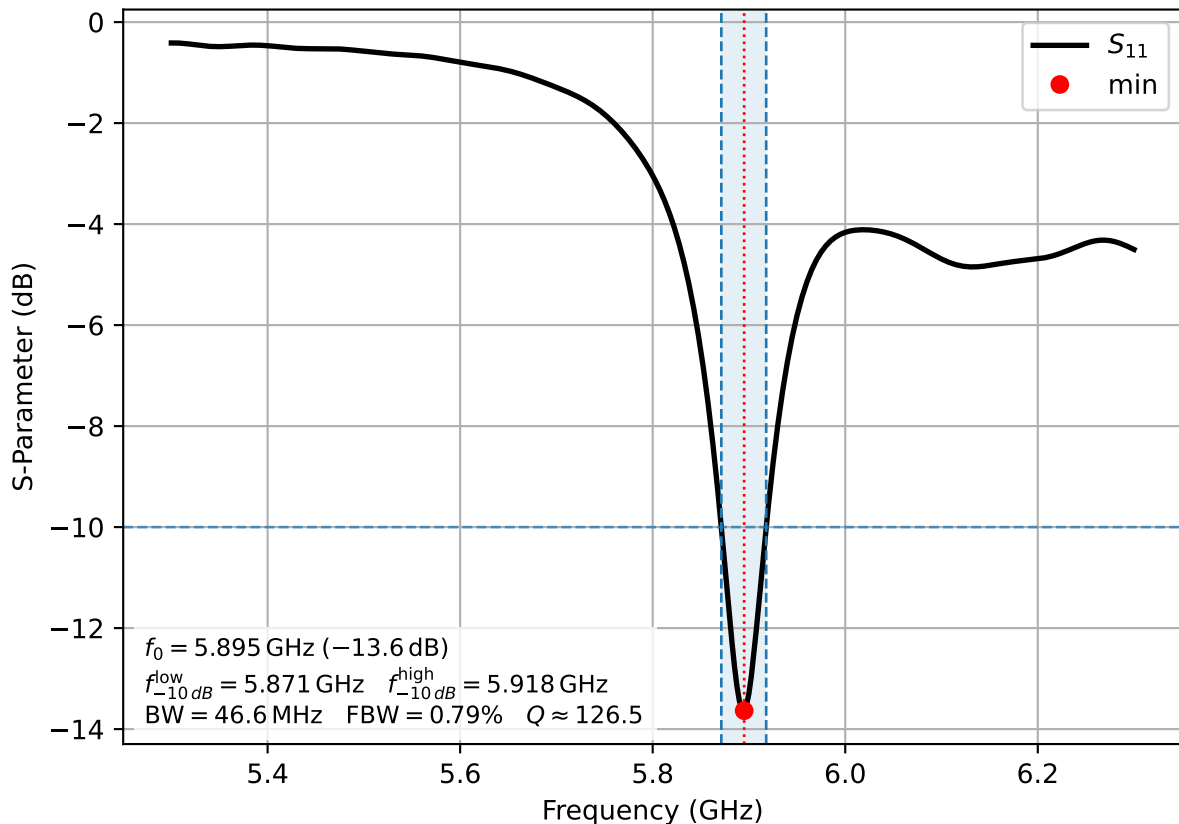


# Reflection Coefficient $S_{11}$

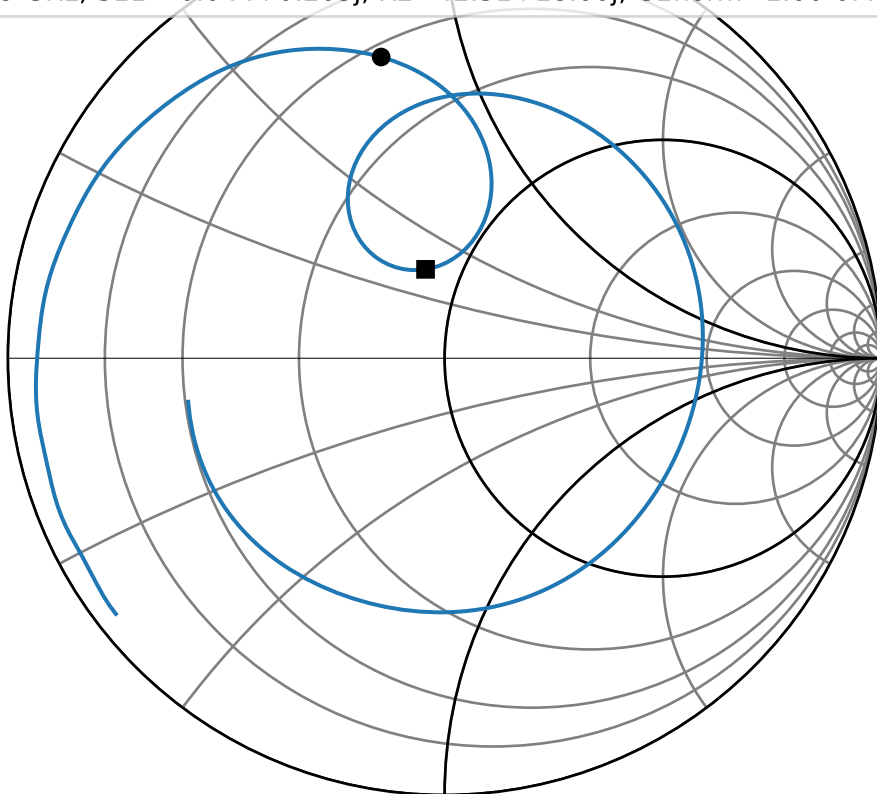


# Smith Chart

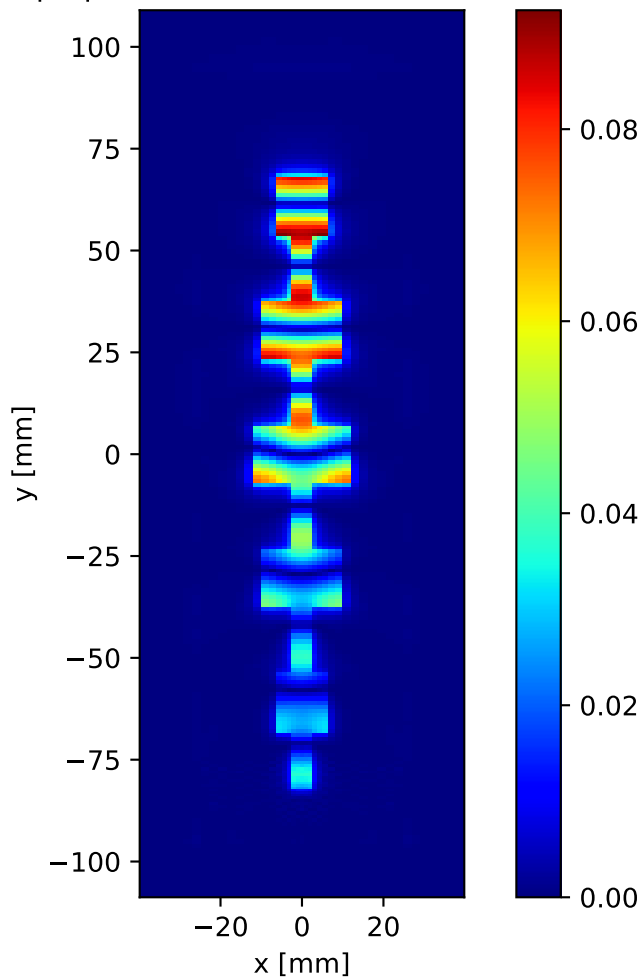
— S11 (Patch W=22.00 mm, L=13.10 mm)

● 5.80 GHz,  $S_{11} = -0.145 + 0.690j$ ,  $R = 14.08 + 38.59j$ ,  $G_{\text{norm}} = 0.42 - 1.14j$

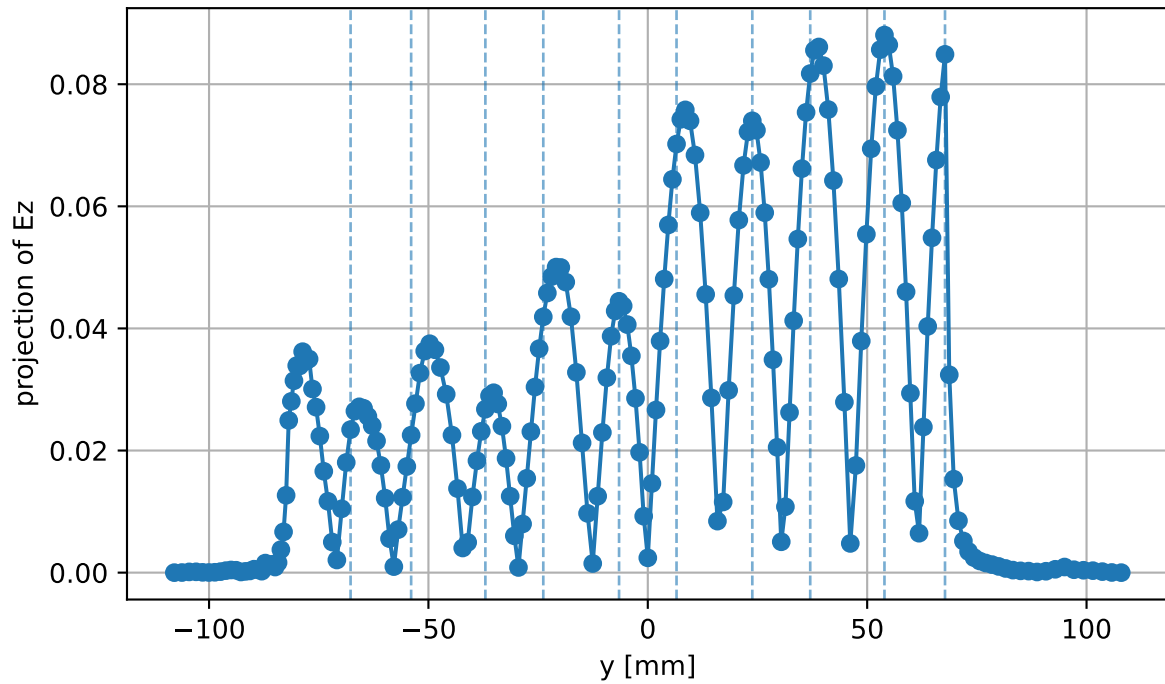
■ 5.89 GHz,  $S_{11} = -0.044 + 0.203j$ ,  $R_2 = 42.31 + 18.00j$ ,  $G_2_{\text{norm}} = 1.00 - 0.43j$



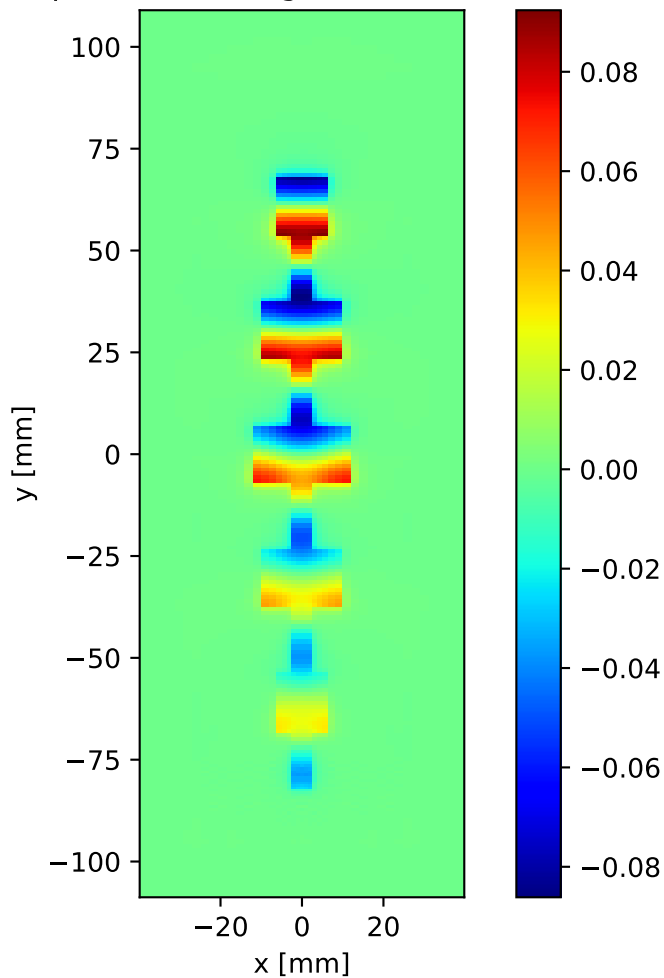
$|E_z|$  slice at  $z = 0.76$  mm (idx 26)



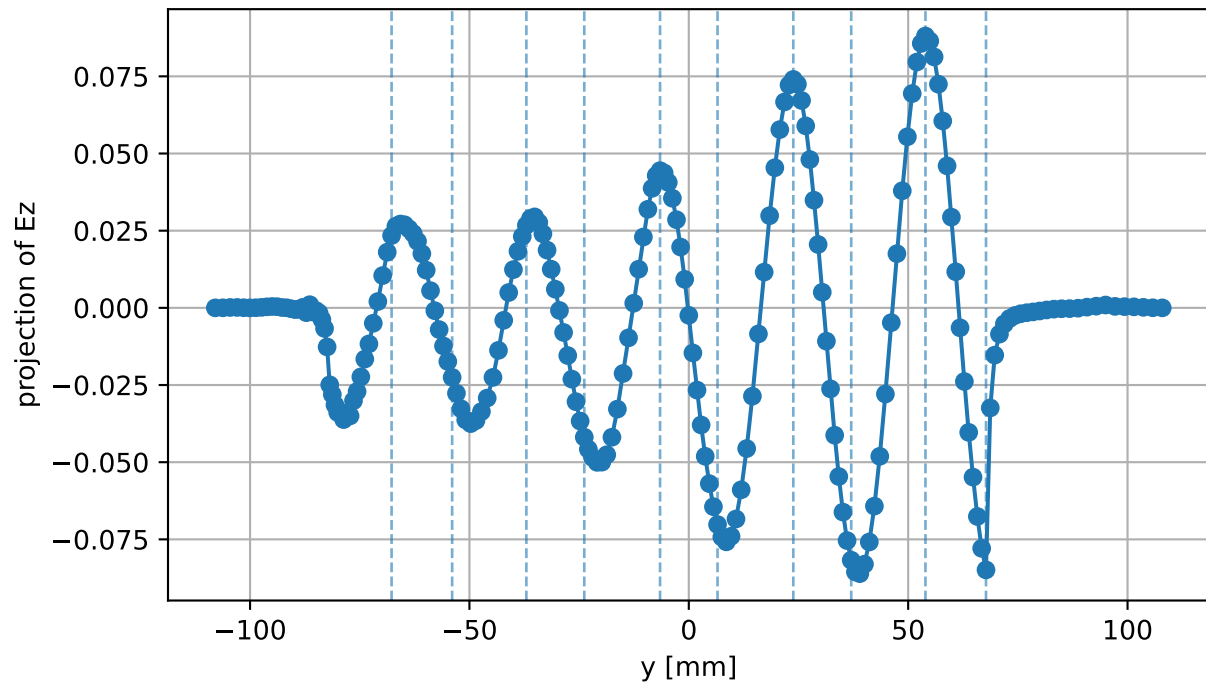
(idx x=21, z=26)



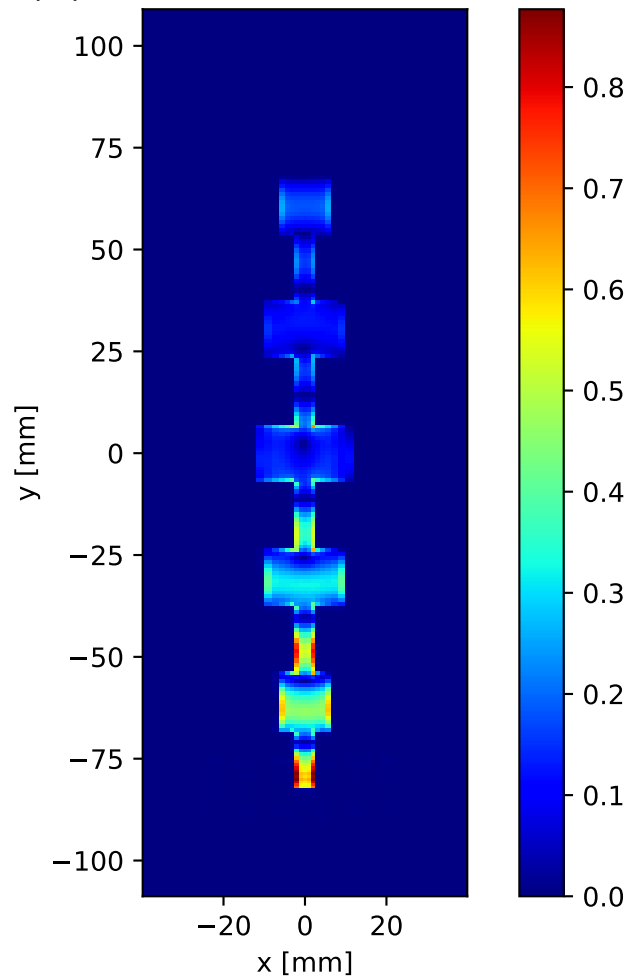
Ez snapshot (dphi=179.90deg) slice at  $z = 0.76$  mm (idx 26)



Ez snapshot (dphi=179.90deg) line cut along Y at x=0.00 mm, z=0.76 mm  
(idx x=21, z=26)

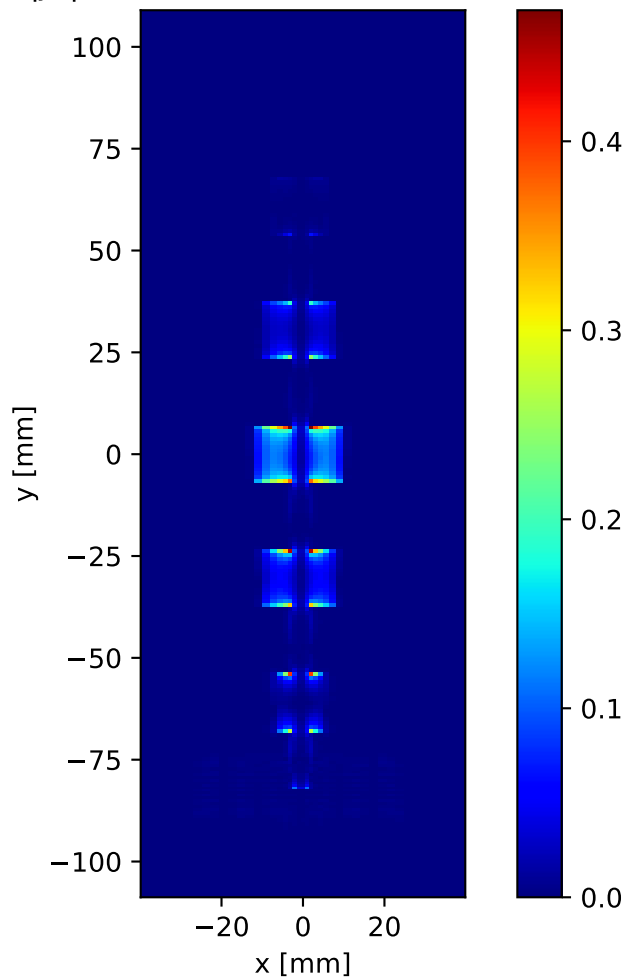


$|J_s|$  slice at  $z = 1.524$  mm (idx 28)

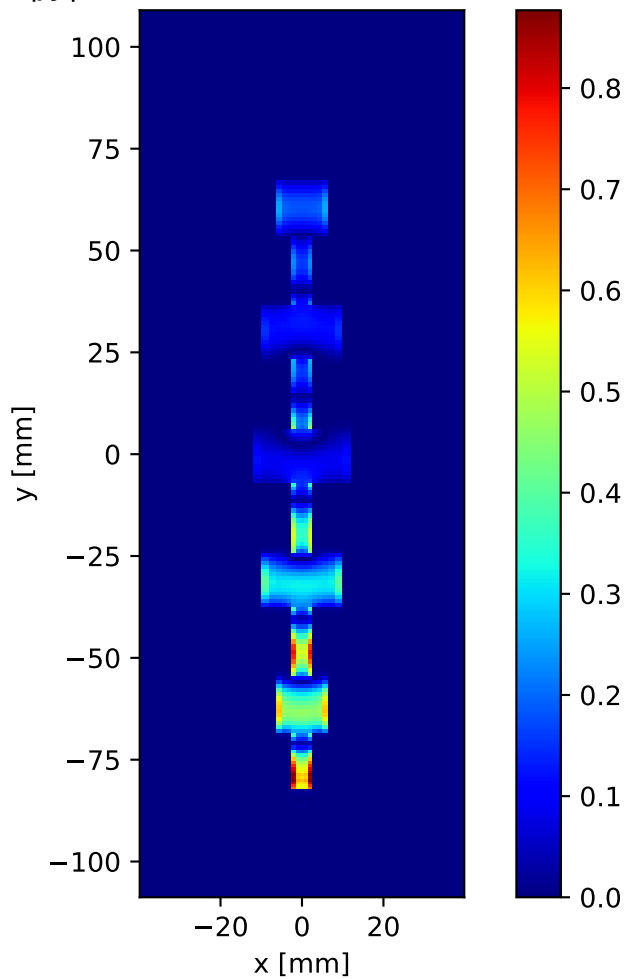




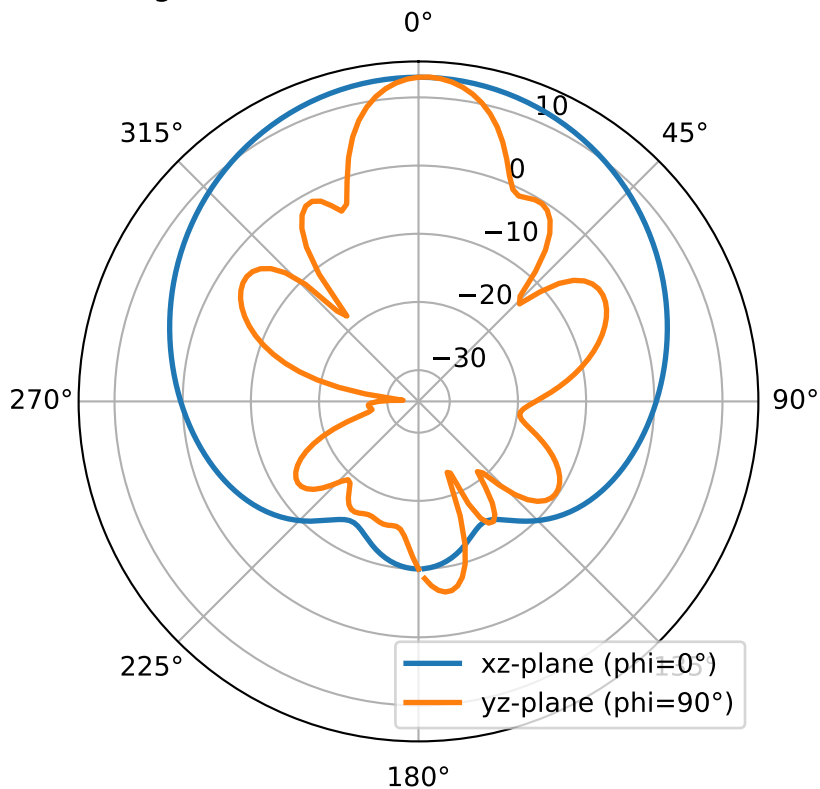
$|J_x|$  slice at  $z = 1.524$  mm (idx 28)



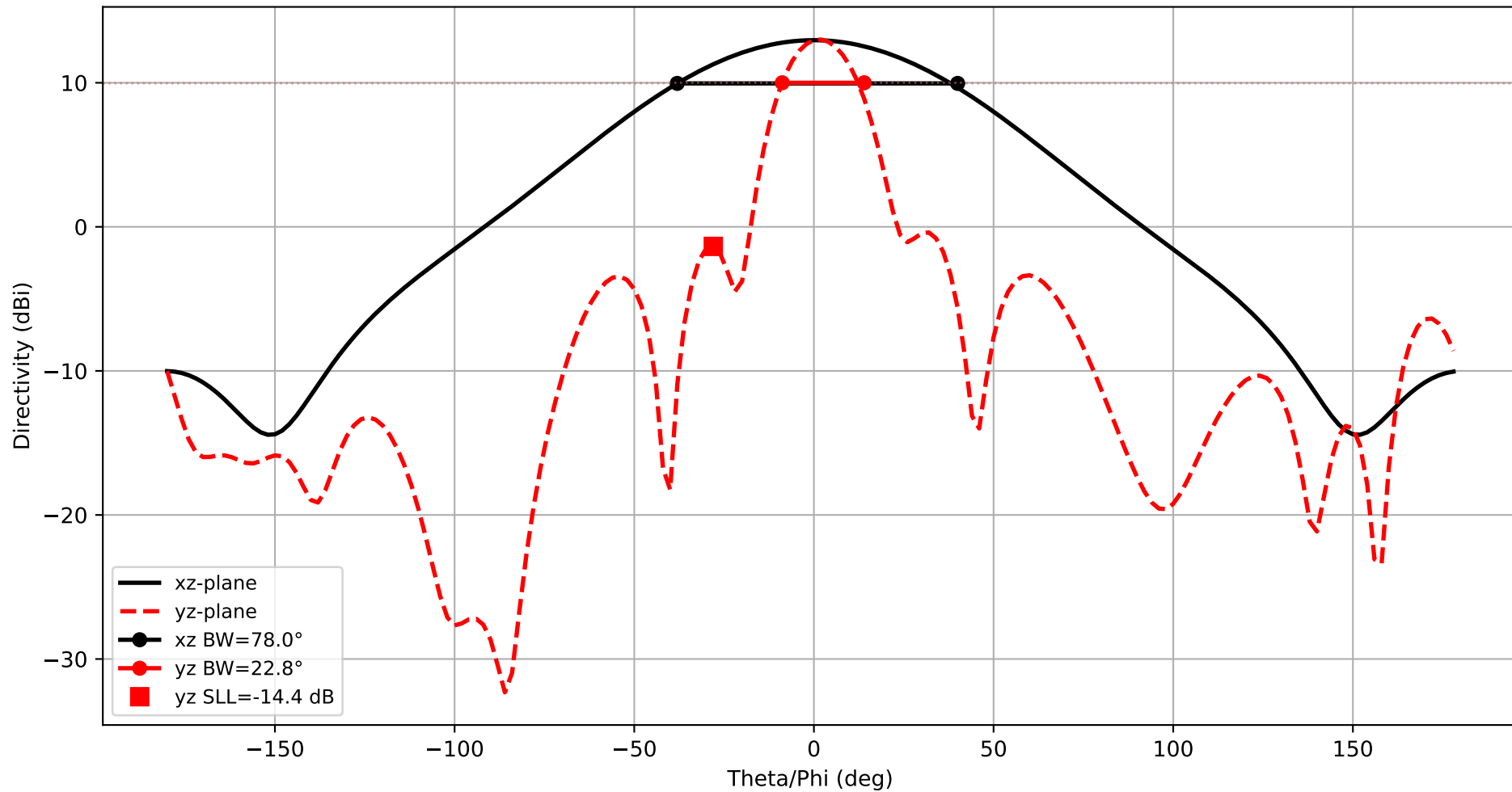
$|J_y|$  slice at  $z = 1.524$  mm (idx 28)



$f = 5.800 \text{ GHz}$  — Directivity (dB)  
 $D_{\text{max}} (\text{integrated}) \approx 13.00 \text{ dB}$ ,  $\text{nf2ff } D_{\text{max}} = 13.00 \text{ dB}$



Frequency: 5.800 GHz  
xz-plane: HPBW=78.0°  
yz-plane: HPBW=22.8°



3D Directivity Pattern  
 $f = 5.800$  GHz,  $D_{\max} = 12.96$  dBi

