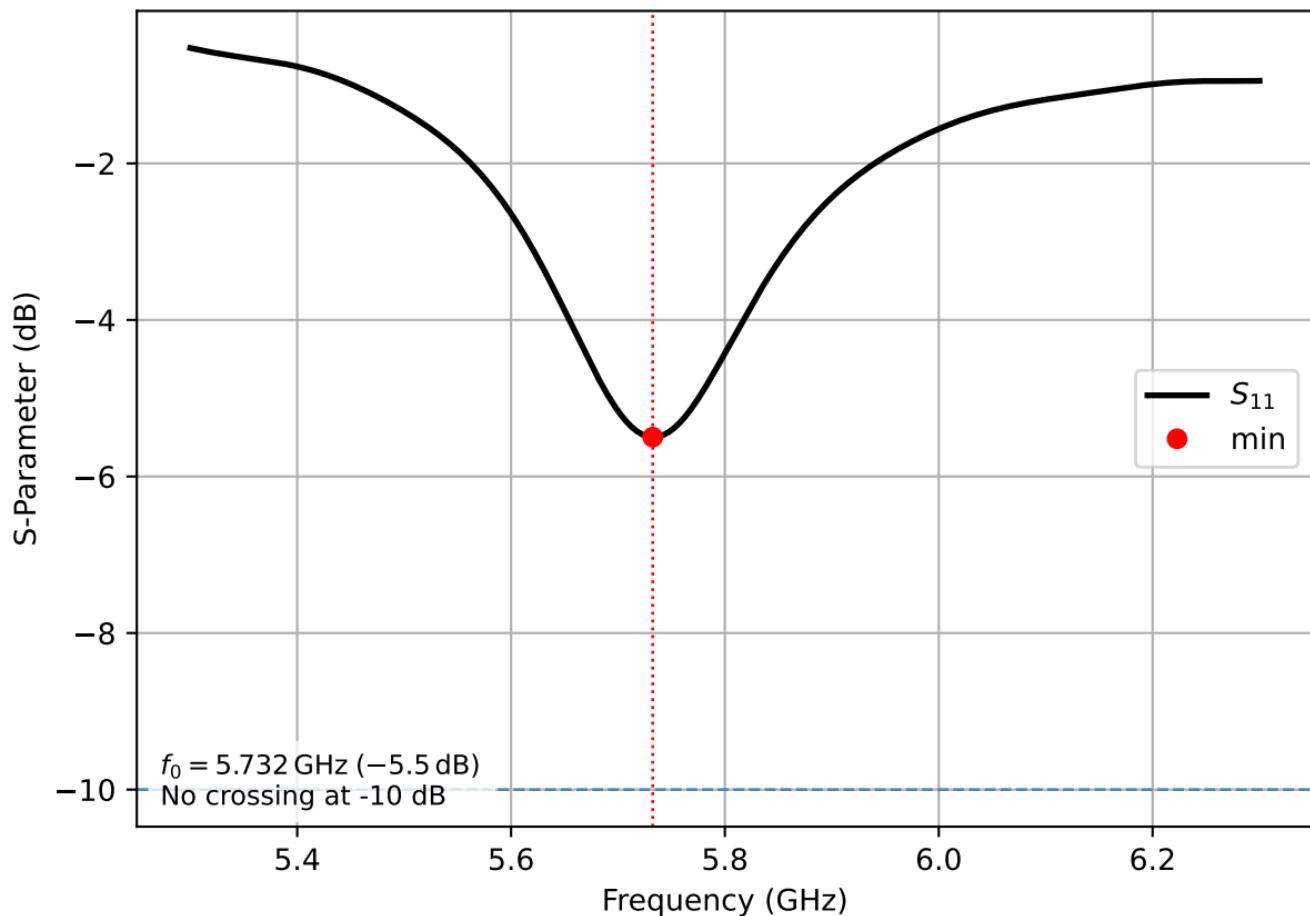
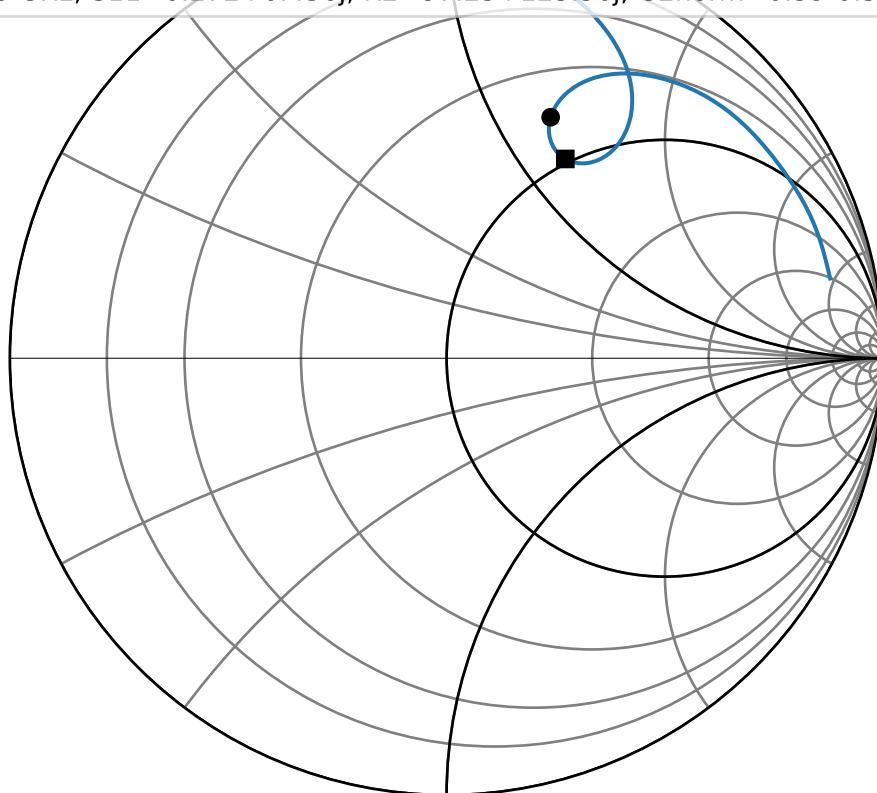


# Reflection Coefficient $S_{11}$

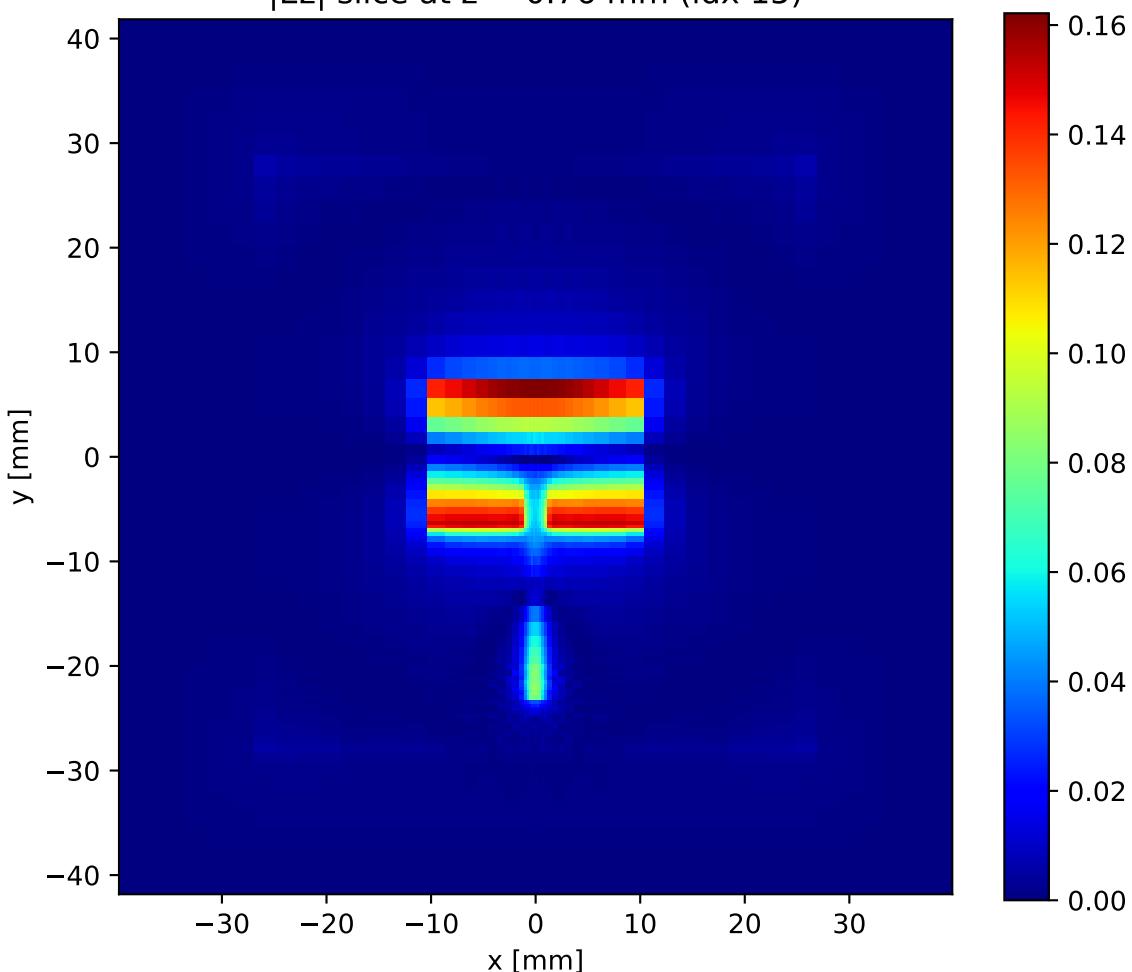


## Smith Chart

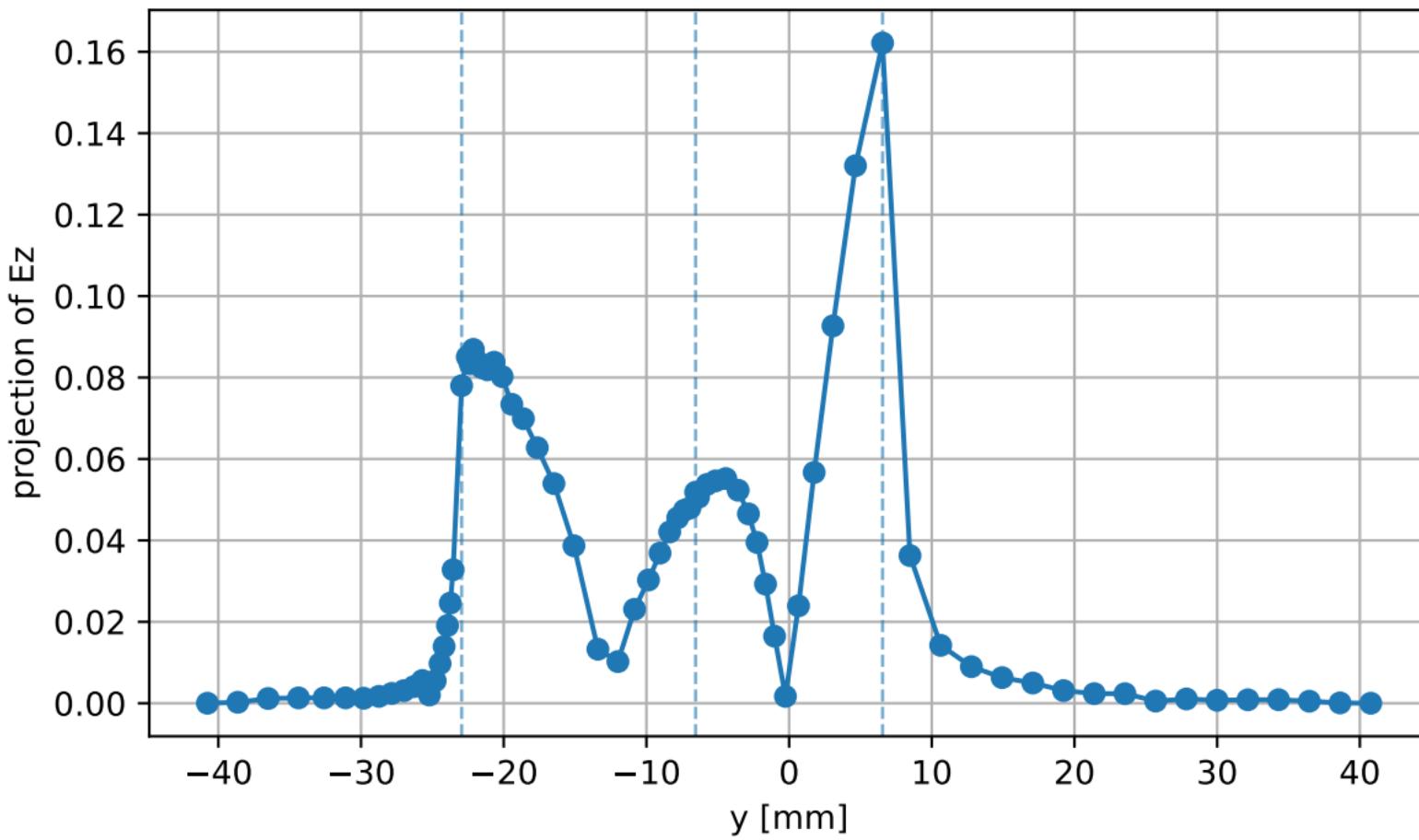
- S11 (Patch W=19.00 mm, L=13.10 mm)
- 5.80 GHz,  $S_{11}=0.238+0.552j$ ,  $R=72.20+124.72j$ ,  $G_{norm}=0.35-0.60j$
- 5.73 GHz,  $S_{11}=0.272+0.456j$ ,  $R=97.23+123.56j$ ,  $G_{2norm}=0.39-0.50j$



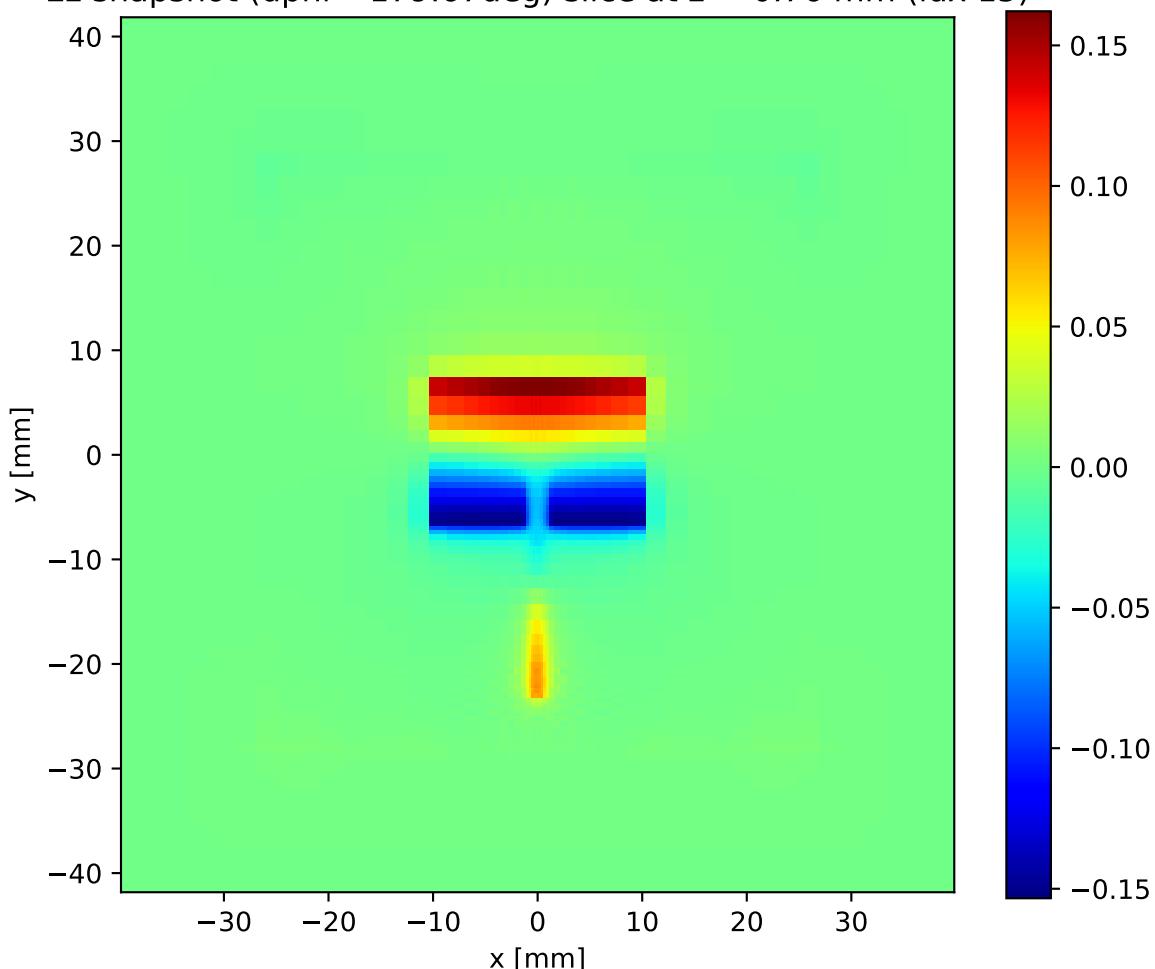
$|E_z|$  slice at  $z = 0.76$  mm (idx 15)



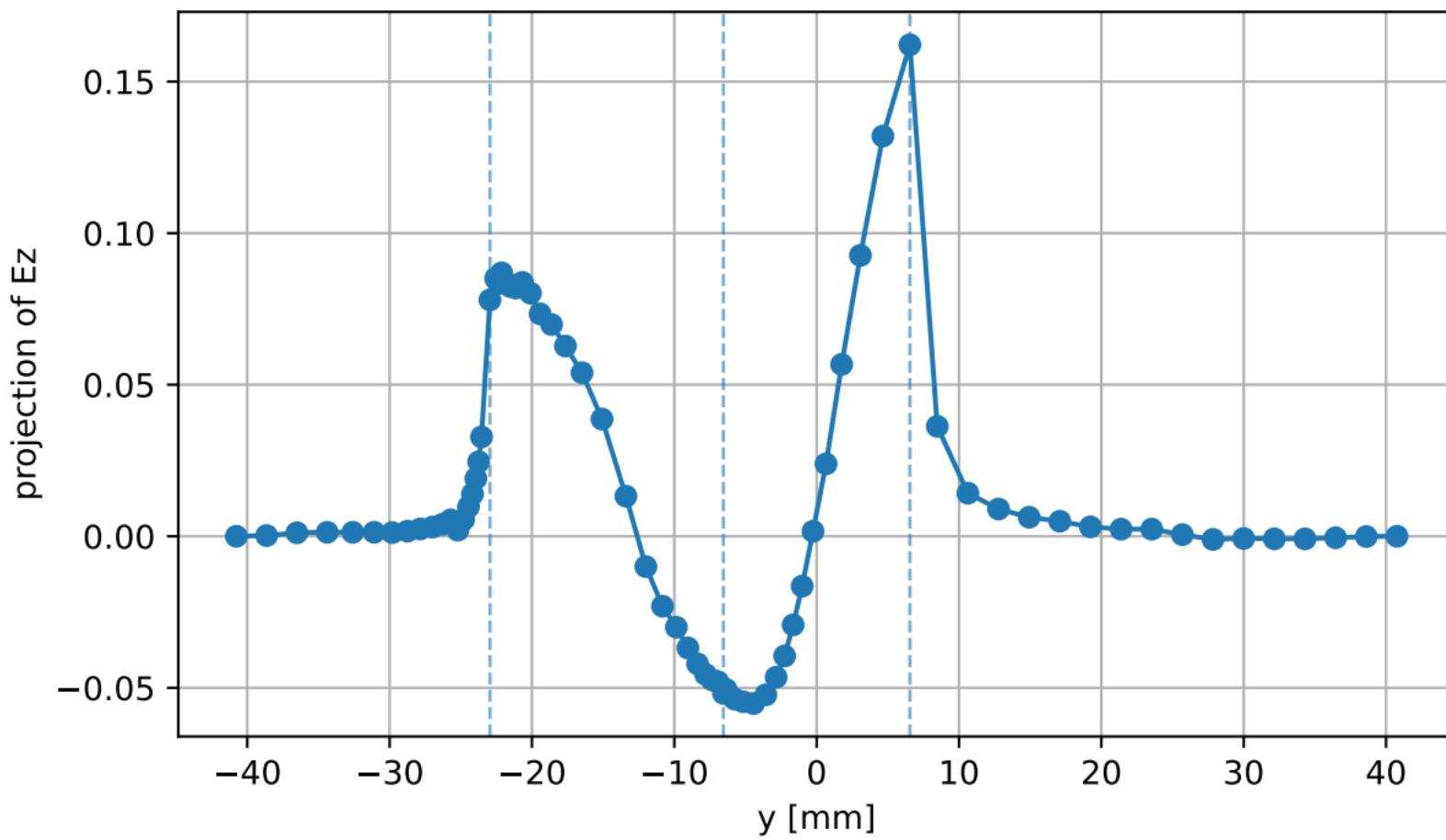
$|E_z|$  line cut along Y at  $x=0.10$  mm,  $z=0.76$  mm  
(idx  $x=28$ ,  $z=15$ )



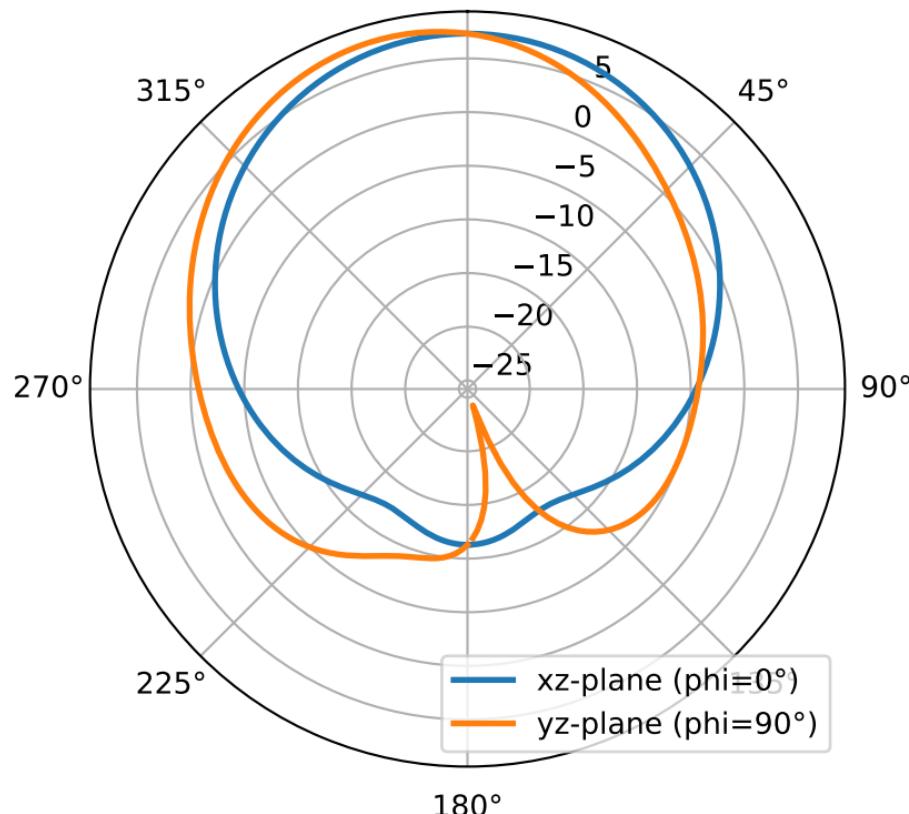
Ez snapshot ( $d\phi = -179.67\text{deg}$ ) slice at  $z = 0.76 \text{ mm}$  (idx 15)



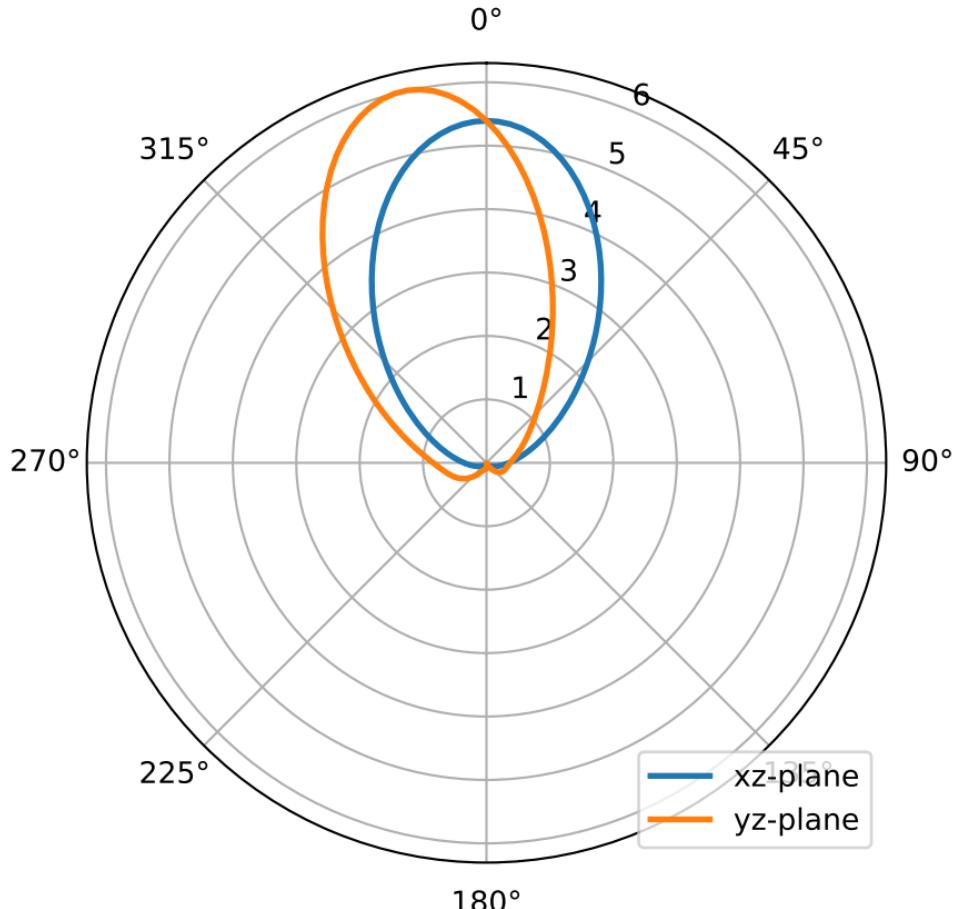
Ez snapshot (dphi=-179.67deg) line cut along Y at x=0.10 mm, z=0.76 mm  
(idx x=28, z=15)



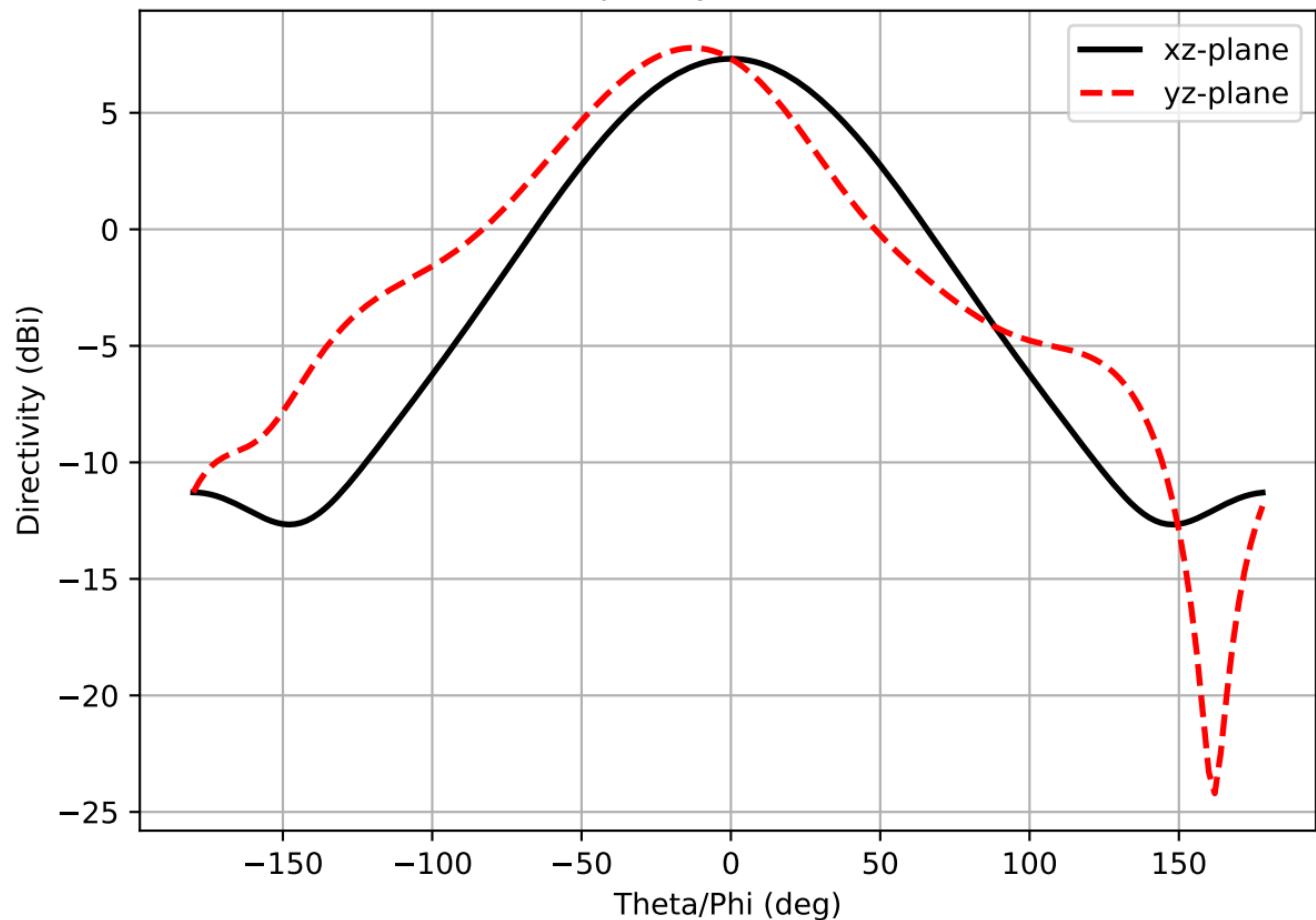
$f = 5.732 \text{ GHz}$  — Directivity (dB)  
 $D_{\max} (\text{integrated}) \approx 7.78 \text{ dB}$ , nf2ff  $D_{\max} = 7.78 \text{ dB}$



Frequency: 5.732 GHz — Directivity (linear). Dmax: 6.003



Frequency: 5.732 GHz



3D Directivity Pattern  
 $f = 5.732 \text{ GHz}$ ,  $D_{\max} = 7.77 \text{ dBi}$

