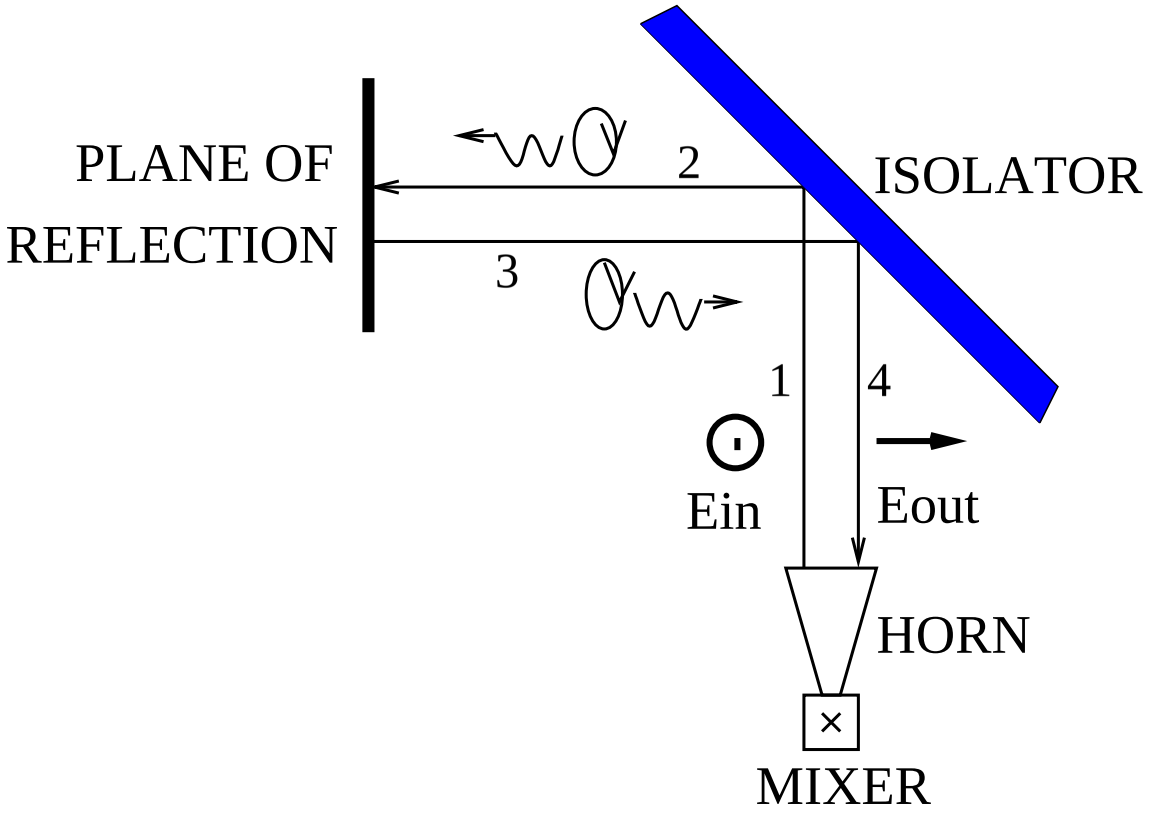
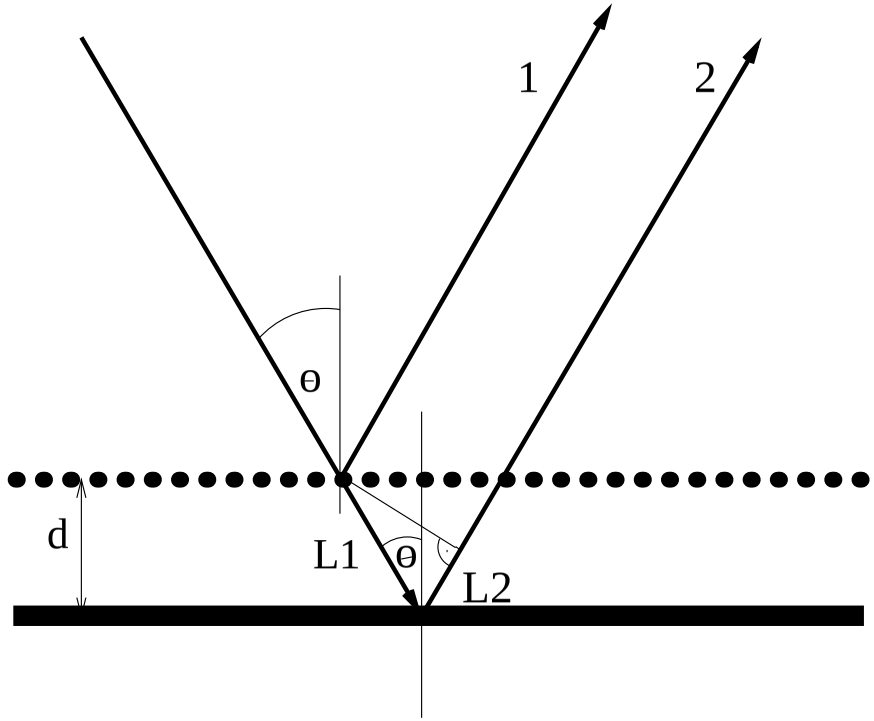
Principle



The $\lambda/4$ quasioptical isolator



$$\Delta L = L1 + L2 = 2dcos\theta$$

$$\Phi = k\Delta L = \frac{4\pi d}{\lambda}cos\theta$$

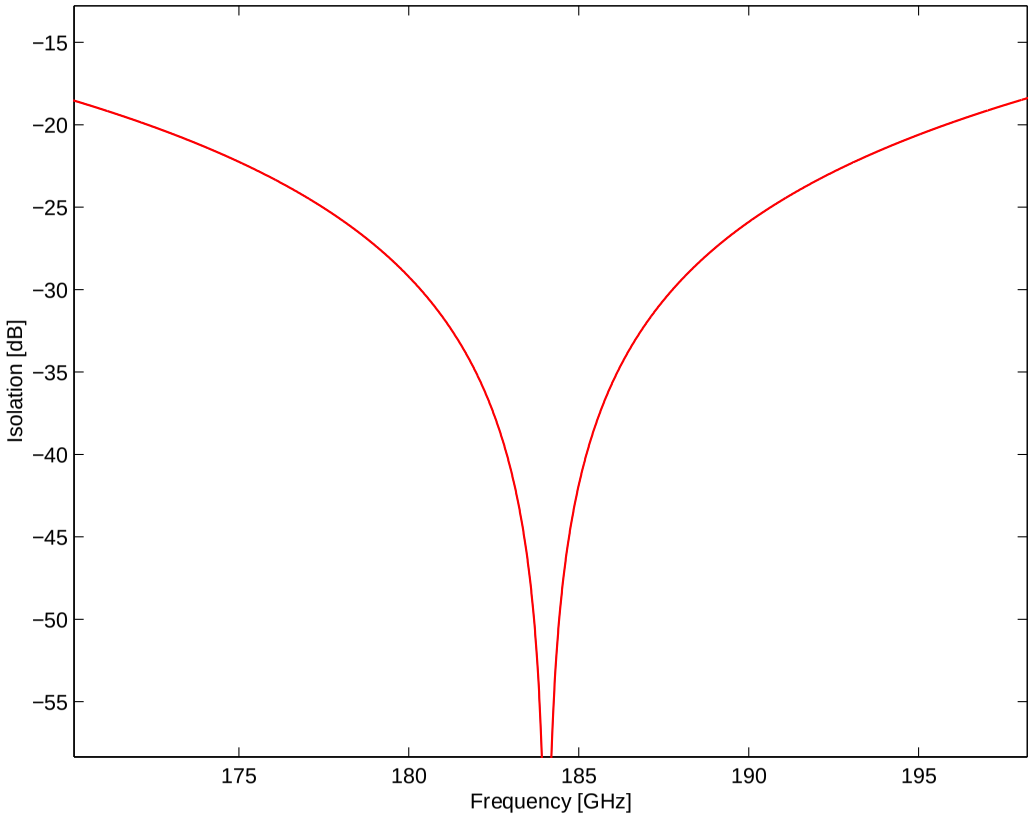
To have $\Phi = \frac{\pi}{2}$ (to have a circular polarized output) Δl has to be:

$$\Delta L = \frac{\lambda}{4}$$

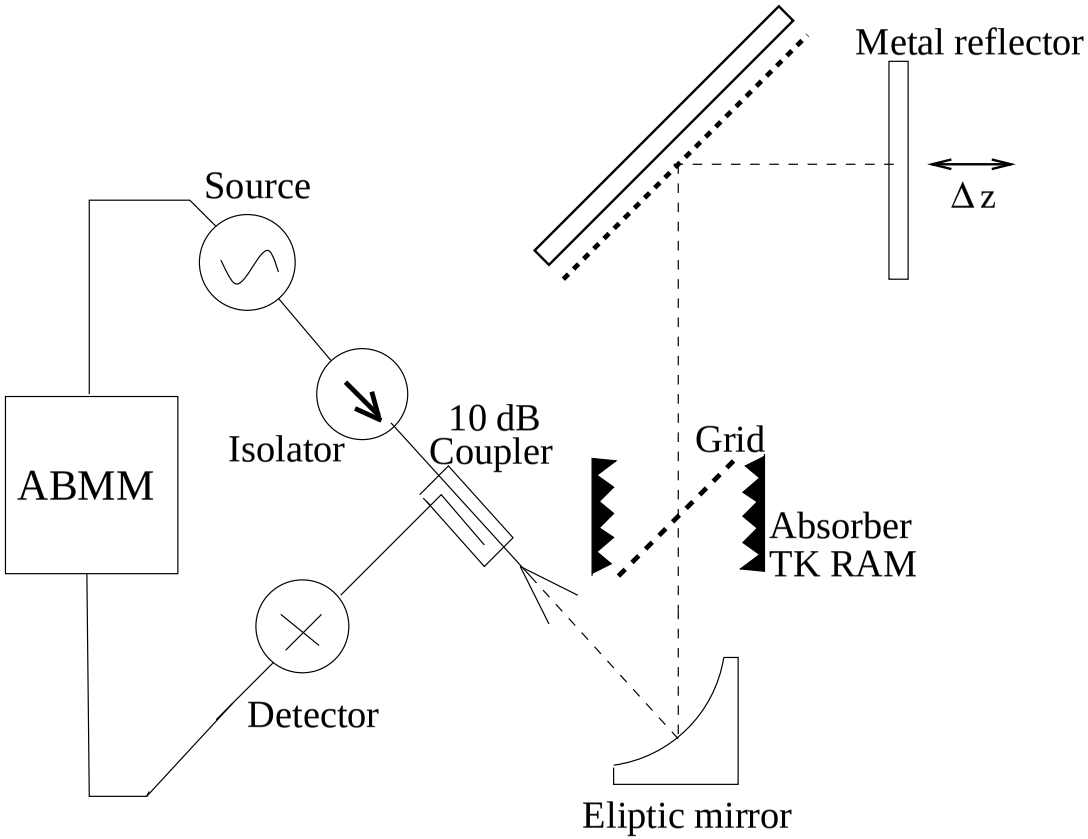
Therefore: 'λ/4 isolator'

The reflected signal attenuated by $\cos^2 \Phi$

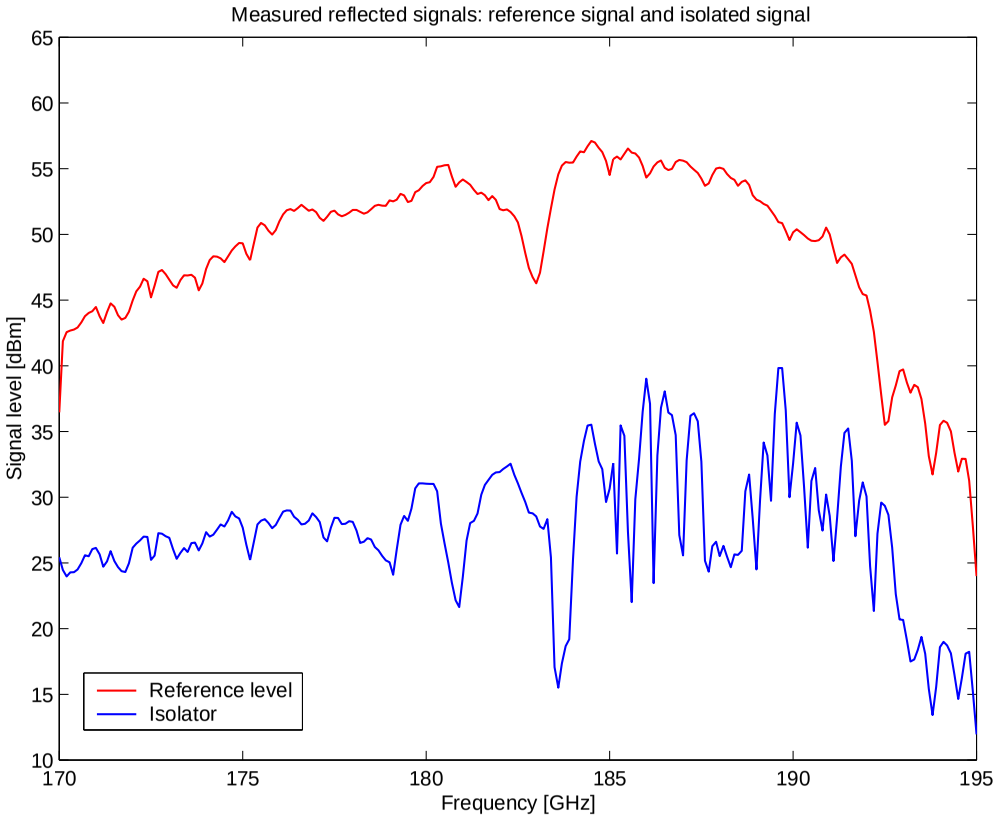
Ideal characteristic



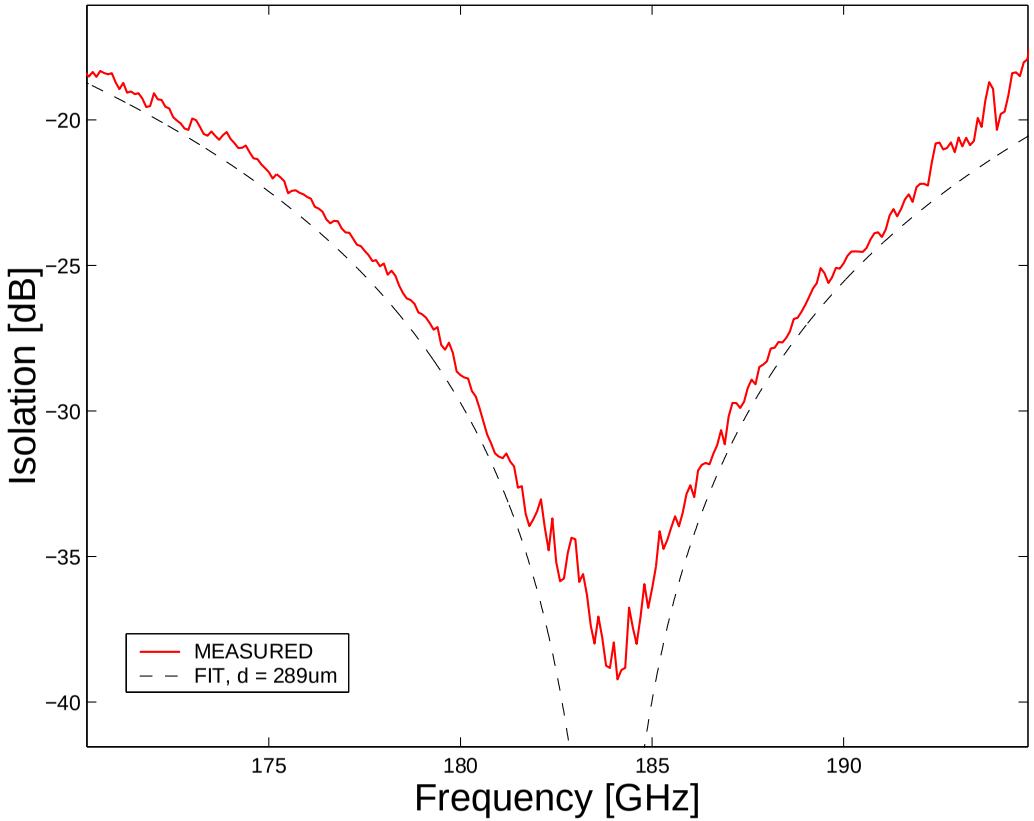
Measurement setup



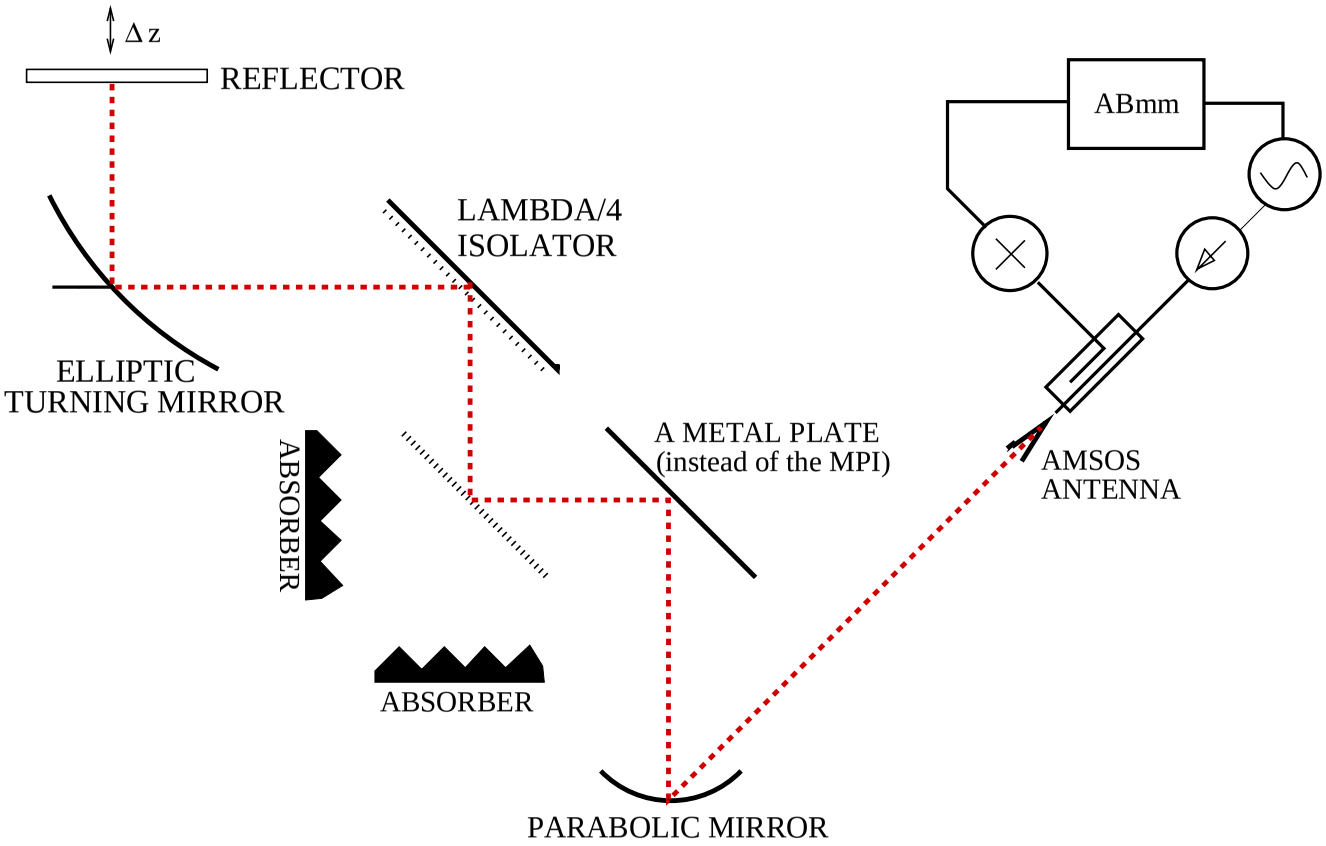
Measurements - signal



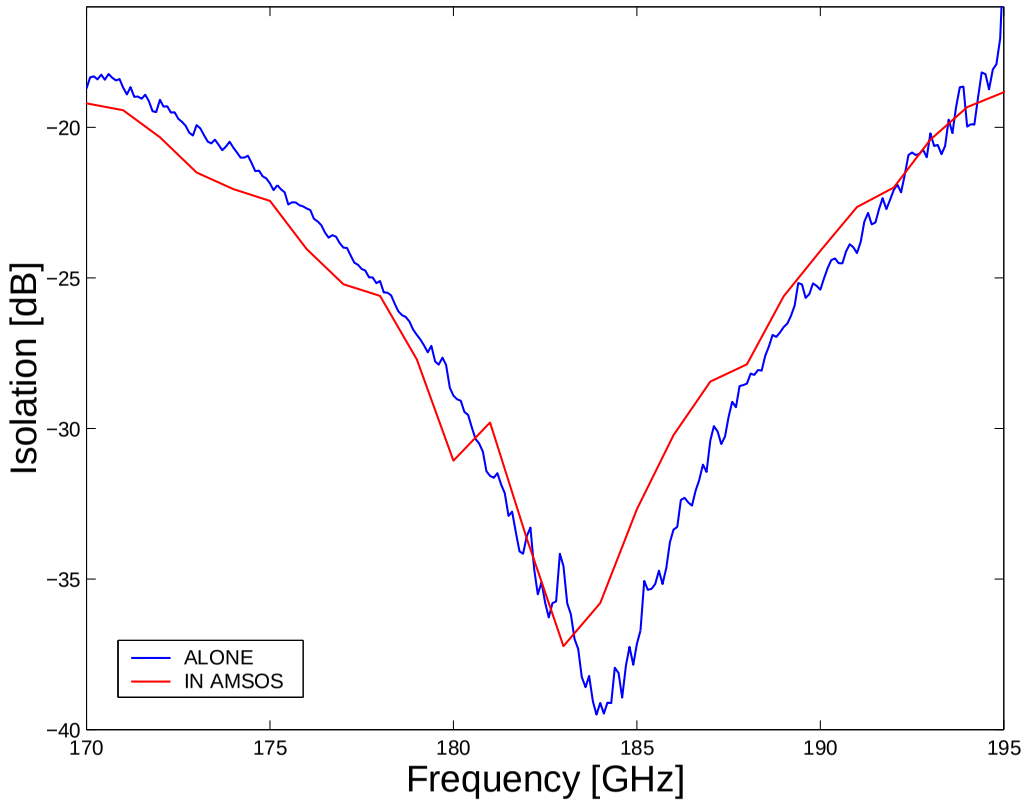
Results


Isolation [dB]
−20
−25
−30
−35
−40
175
180
185
190
Frequency [GHz]
MEASURED
FIT, d = 289um

Measurement setup - isolator in AMSOS



Results - isolator in AMSOS



Results - TK isolator