

HOLOGRAPHY 002

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

HAYSTACK OBSERVATORY

WESTFORD, MASSACHUSETTS 01886

November 19, 2012

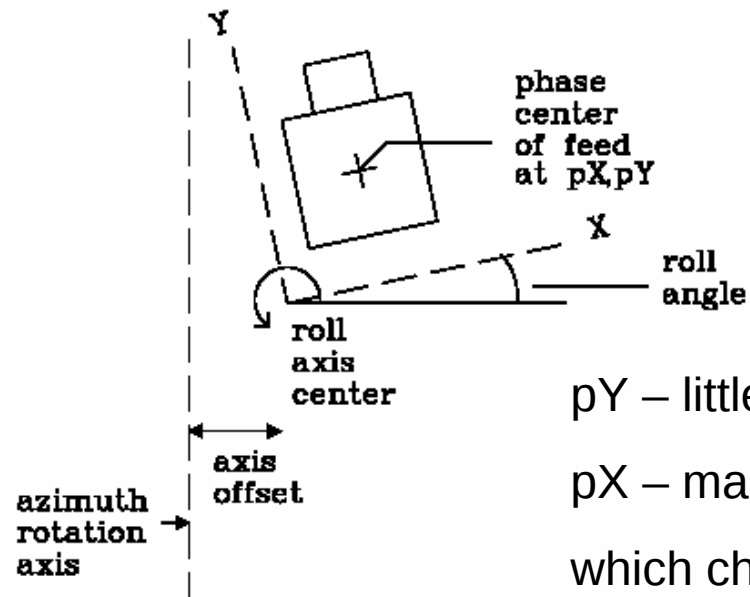
Telephone: 781-981-5409

Fax: 781-981-0590

To: Holography Group

From: Alan E.E. Rogers

Subject: Holography feed patterns

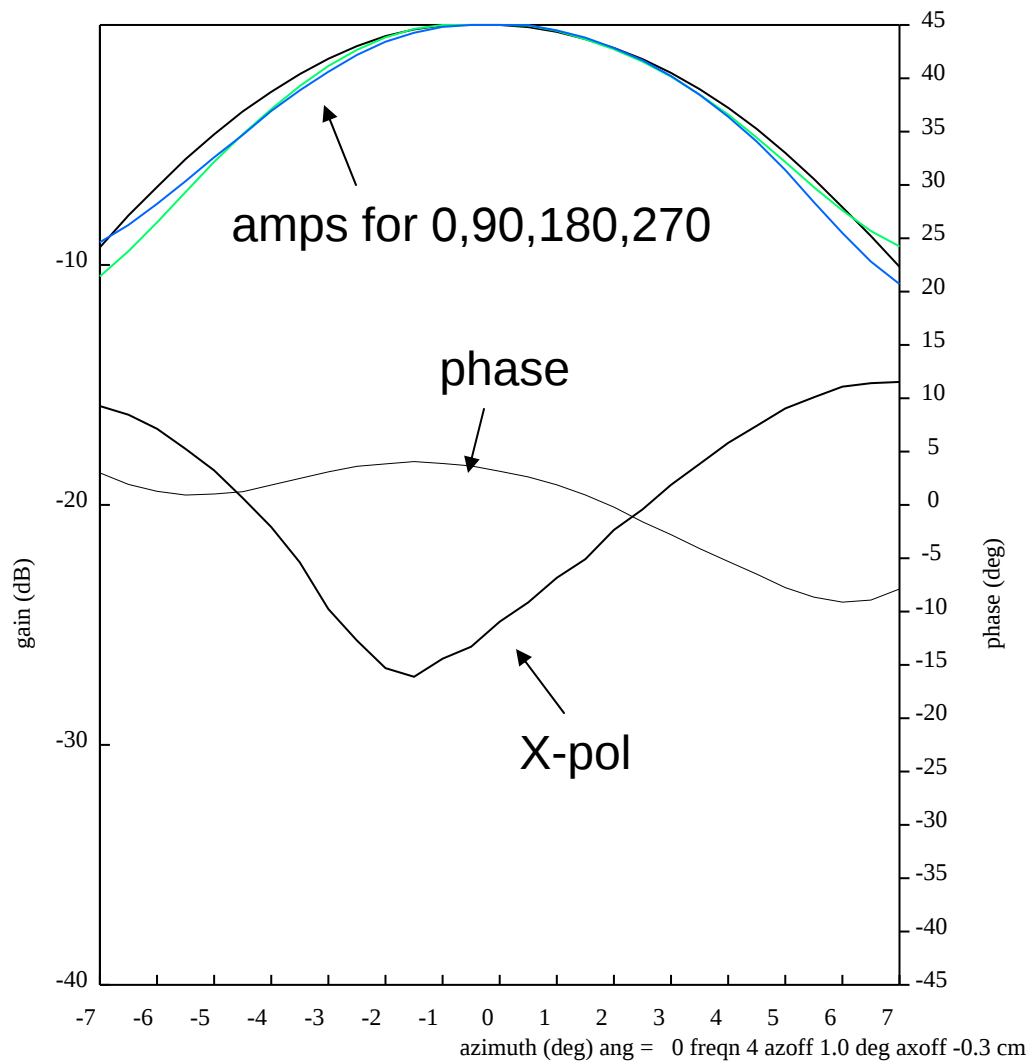


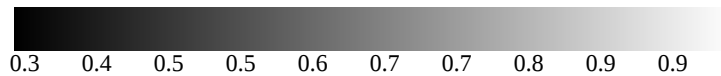
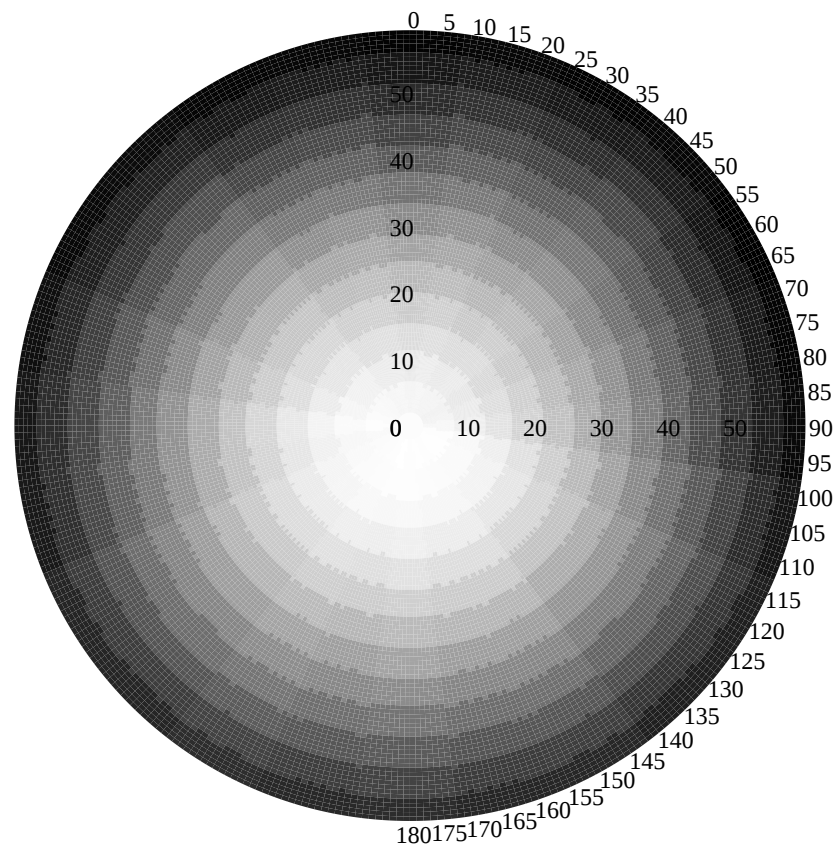
pY – little effect

pX – makes phase slope which changes with roll

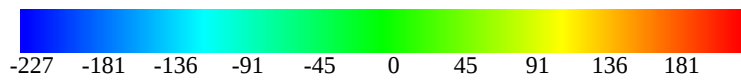
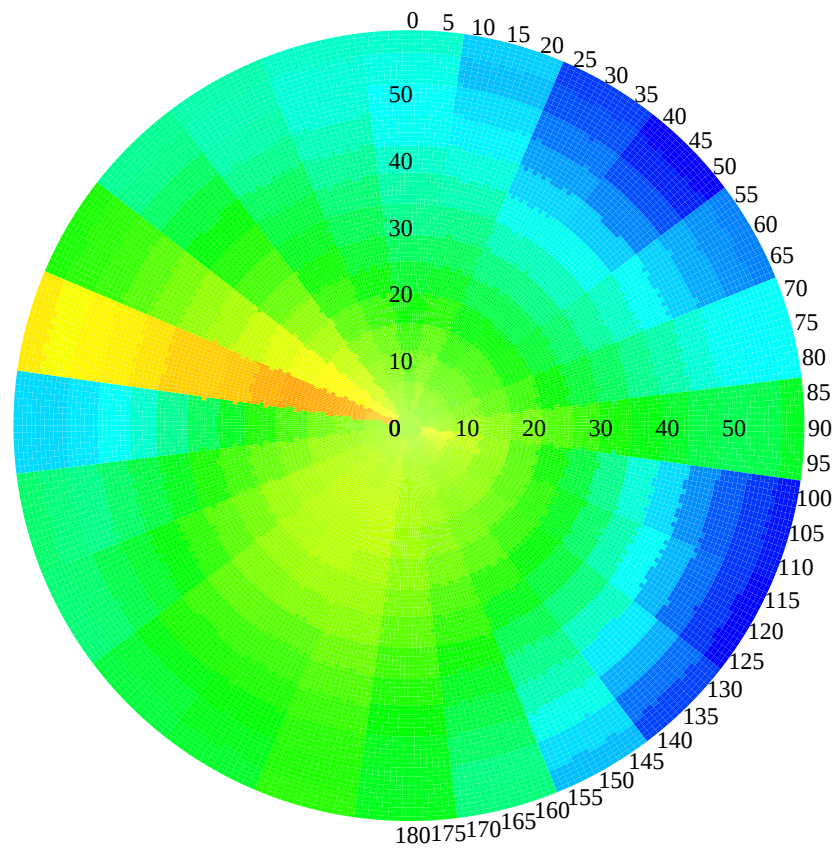
Axis offset makes phase slope independent of roll

Feed patterns were measured in chamber with small offset between azimuth and roll axis and position of feed relative to the antenna phase center

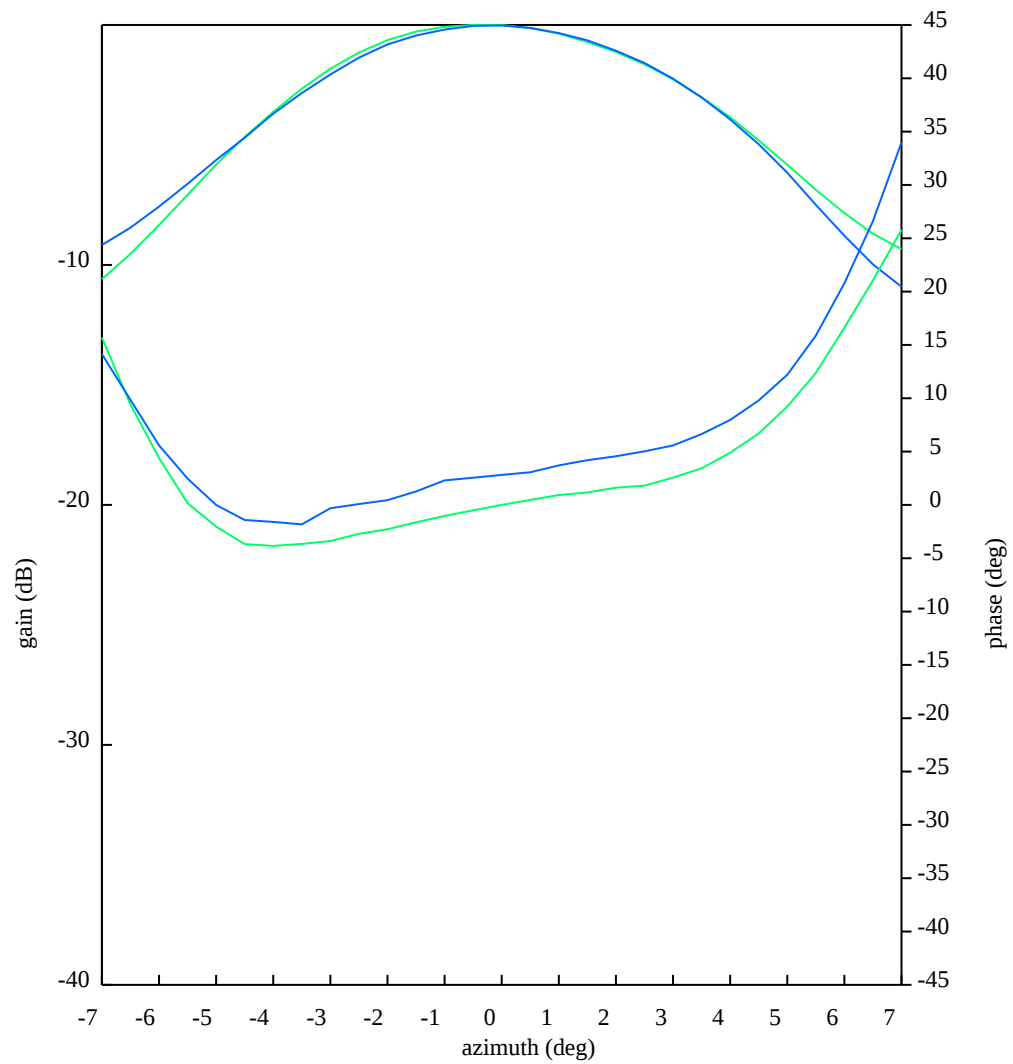




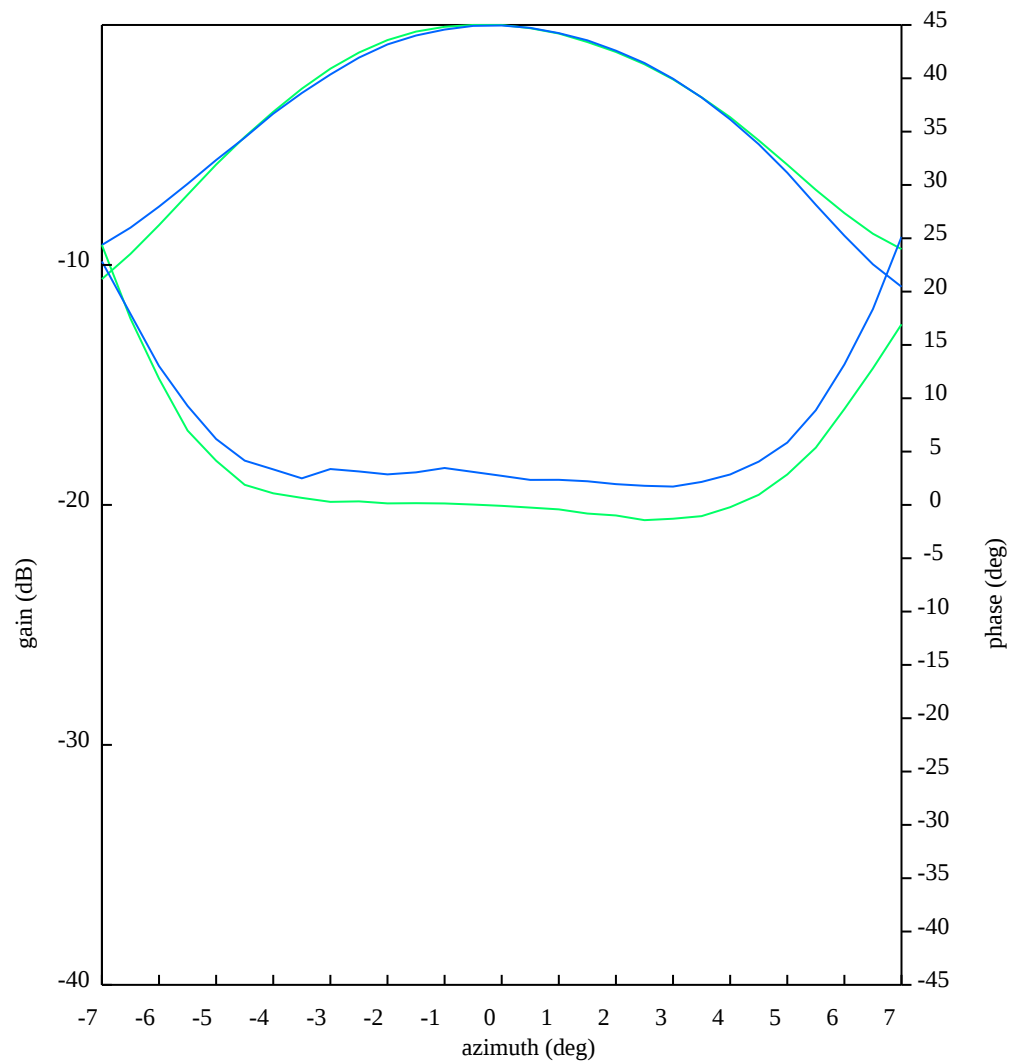
amplitude
freq 20.000 stt 6.994 ang = 0 freqn 4 azoff 1.0 deg axoff -0.3 pxoff 0.0 pyoff 0.0 cm



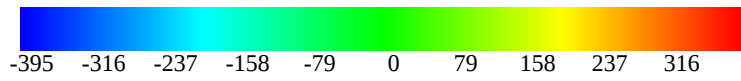
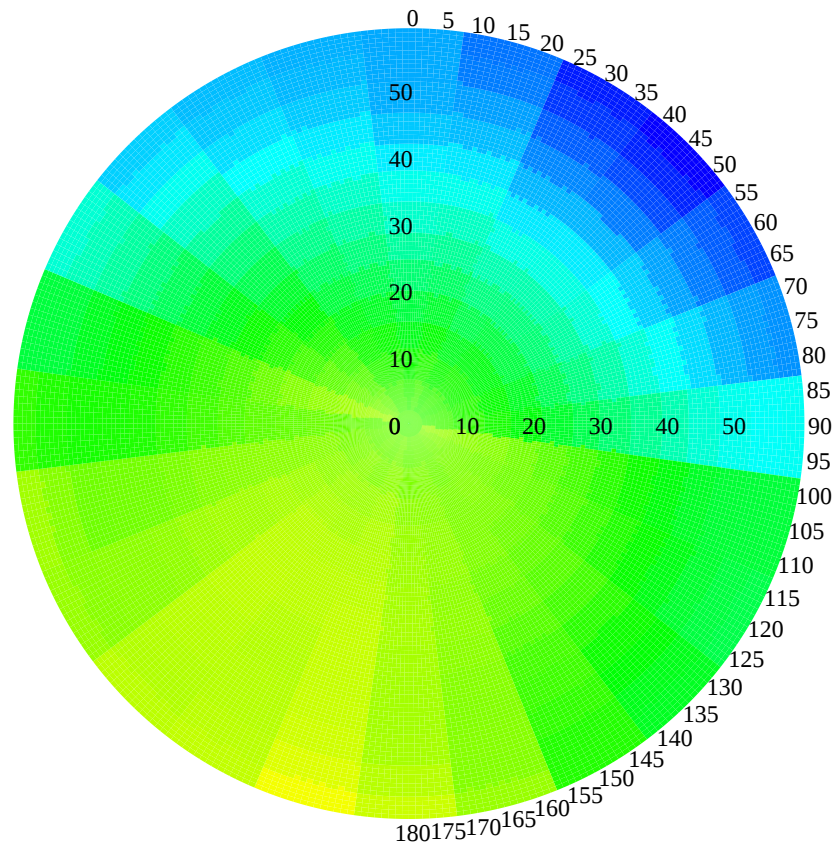
deviation microns (rms = 76 freq = 20 GHz)
freq 20.000 stt 6.994 ang = 0 freqn 4 azoff 1.0 deg axoff 0.0 pxoff 0.0 pyoff 0.0 cm



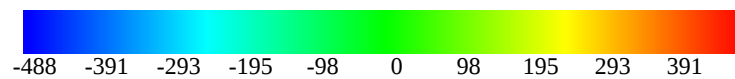
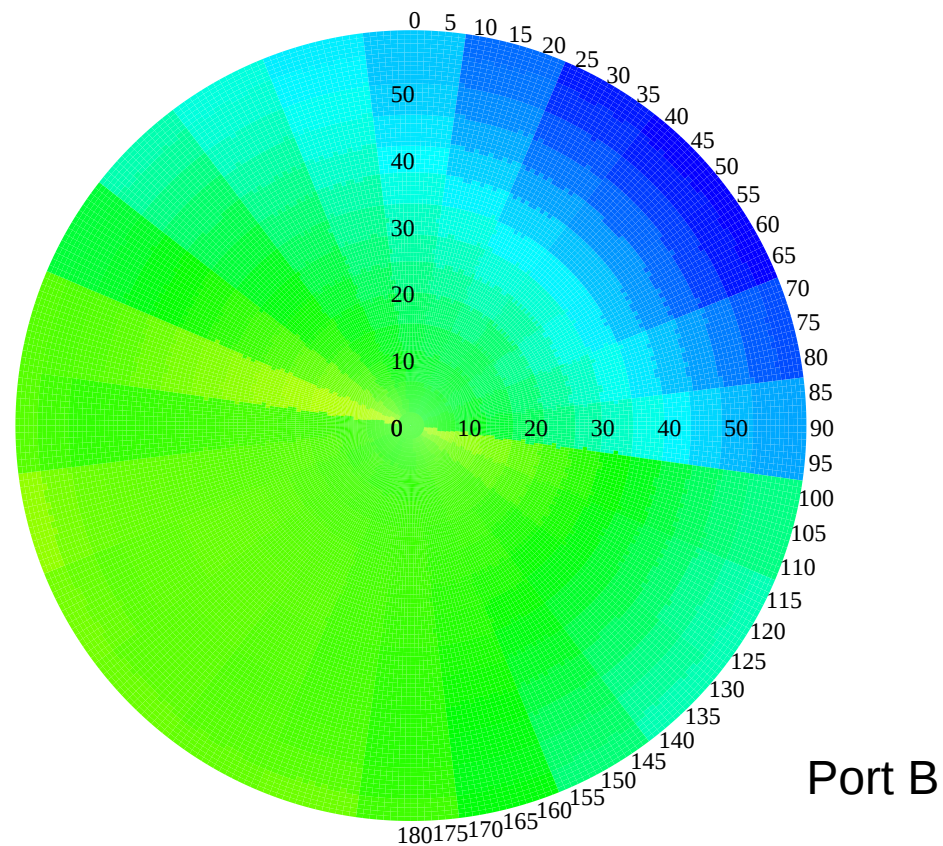
File: HornPortA_TxH_Rcv0to180_5cmBack.txt ang = 0 freqn 4 azoff 1.0 deg axoff 0.0 pxoff 0.0 pyoff 0.0 cm



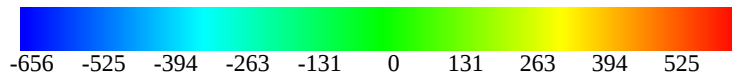
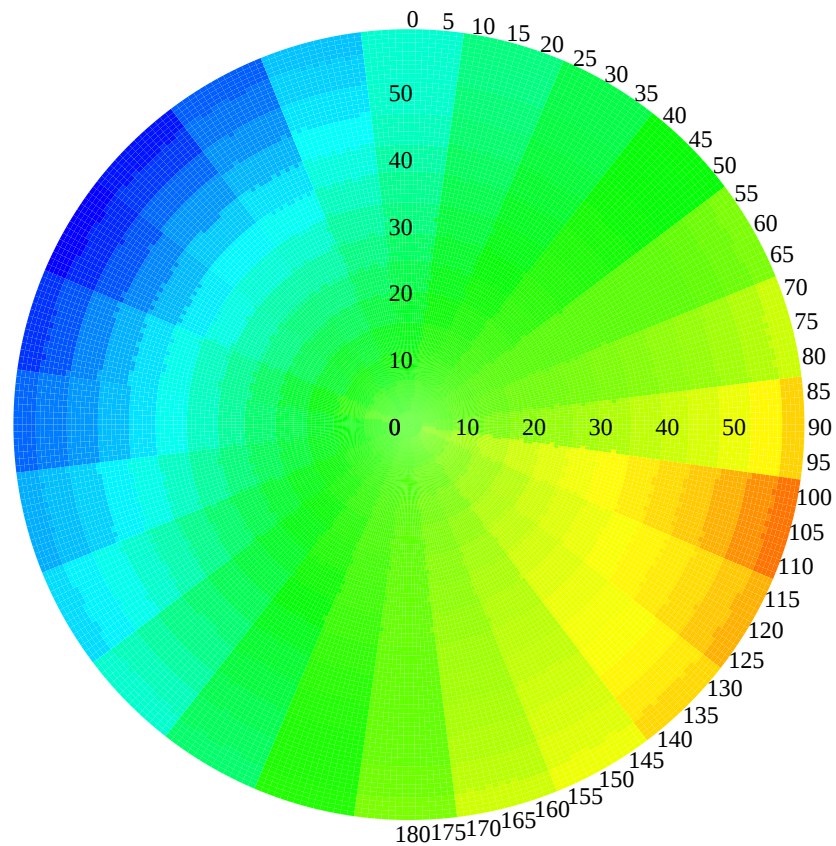
File: HornPortA_TxH_Rcv0to180_5cmBack.txt ang = 0 freqn 4 azoff 1.0 deg axoff -0.3 pxoff 0.0 pyoff 0.0 cm



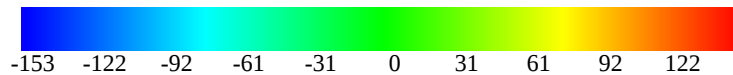
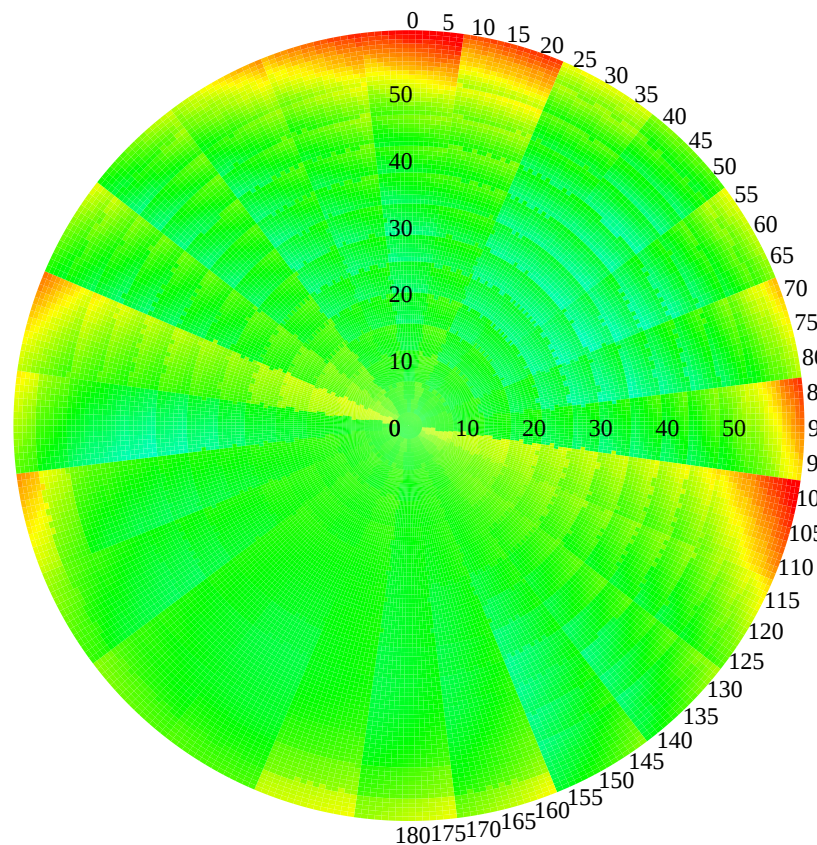
deviation microns (rms = 134 freq = 20 GHz)
freq 20.000 stt 6.994 ang = 0 freqn 4 azoff 1.0 deg axoff -0.3 pxoff 0.0 pyoff 0.0 cm



deviation microns (rms = 157 freq = 20 GHz)
freq 20.000 stt 6.994 ang = 0 freqn 4 azoff 1.0 deg axoff -0.3 pxoff 0.0 pyoff 0.0 cm

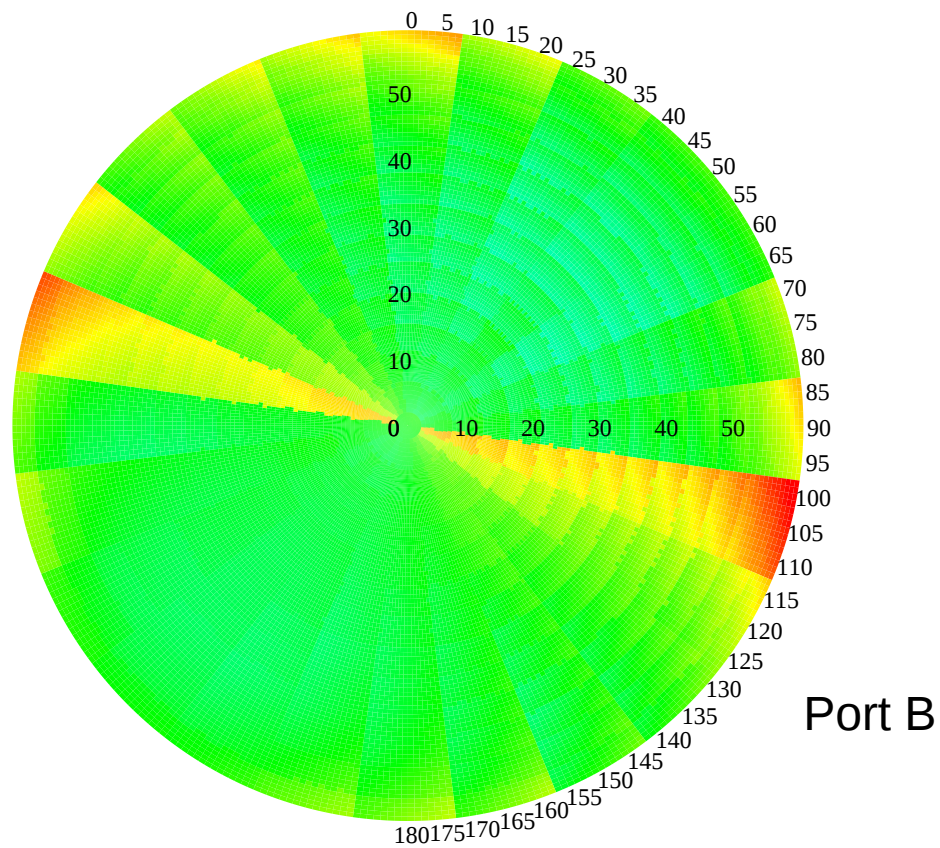


deviation microns (rms = 229 freq = 20 GHz)
freq 20.000 stt 6.994 ang = 0 freqn 4 azoff 1.0 deg axoff -0.3 pxoff 1.0 pyoff 0.0 cm



deviation microns (rms = 22 freq = 20 GHz)
 freq 20.000 stt 6.994 ang = 0 freqn 4 azoff 1.0 deg axoff -0.2 pxoff 0.0 pyoff 0.0 cm

After fit for pointing
 and focus



deviation microns (rms = 45 freq = 20 GHz)
 freq 20.000 stt 6.994 ang = 0 freqn 4 azoff 1.0 deg axoff -0.2 pxoff 0.0 pyoff 0.0 cm