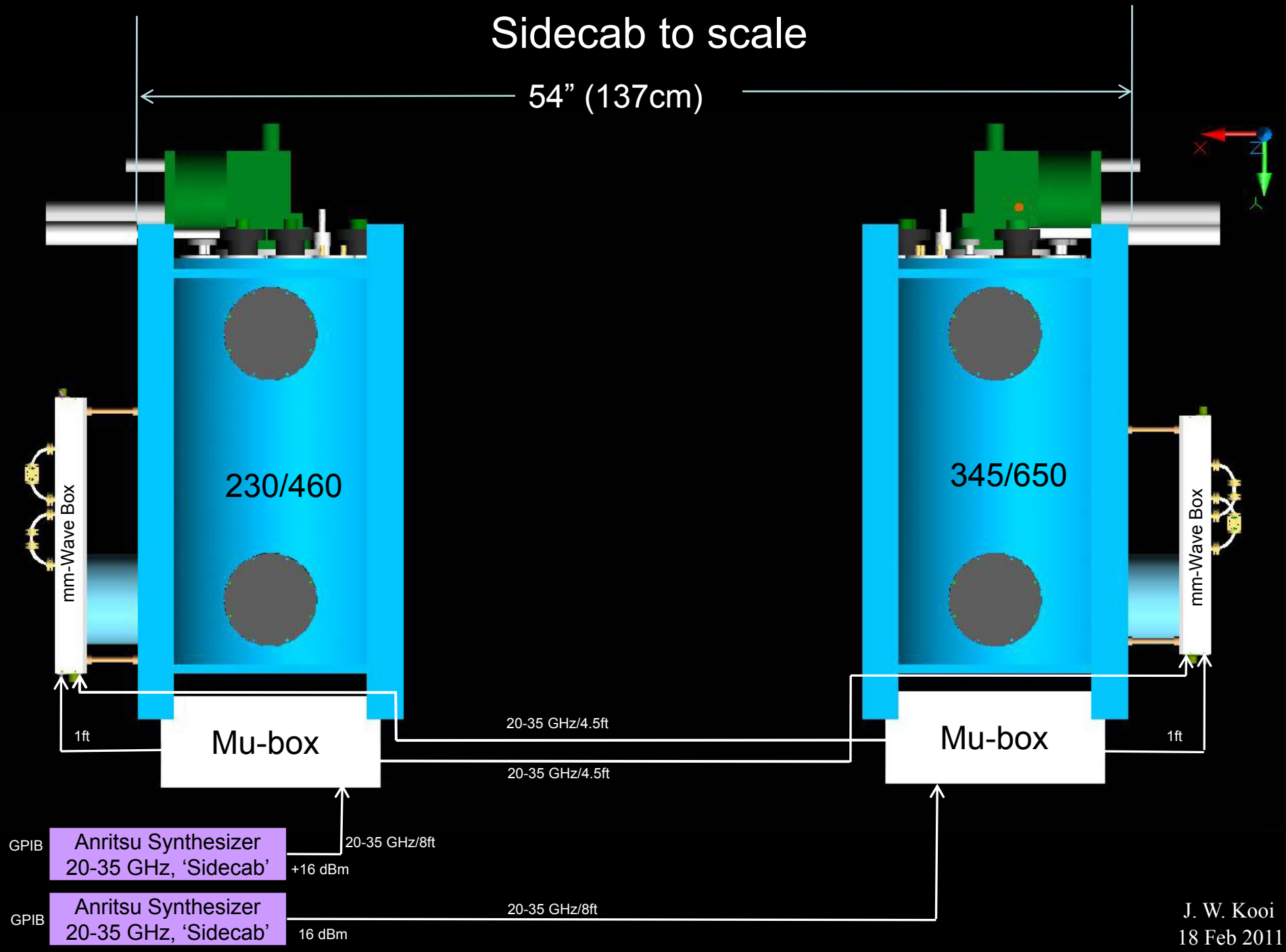


Sidecab to scale

54" (137cm)



Mu-Box

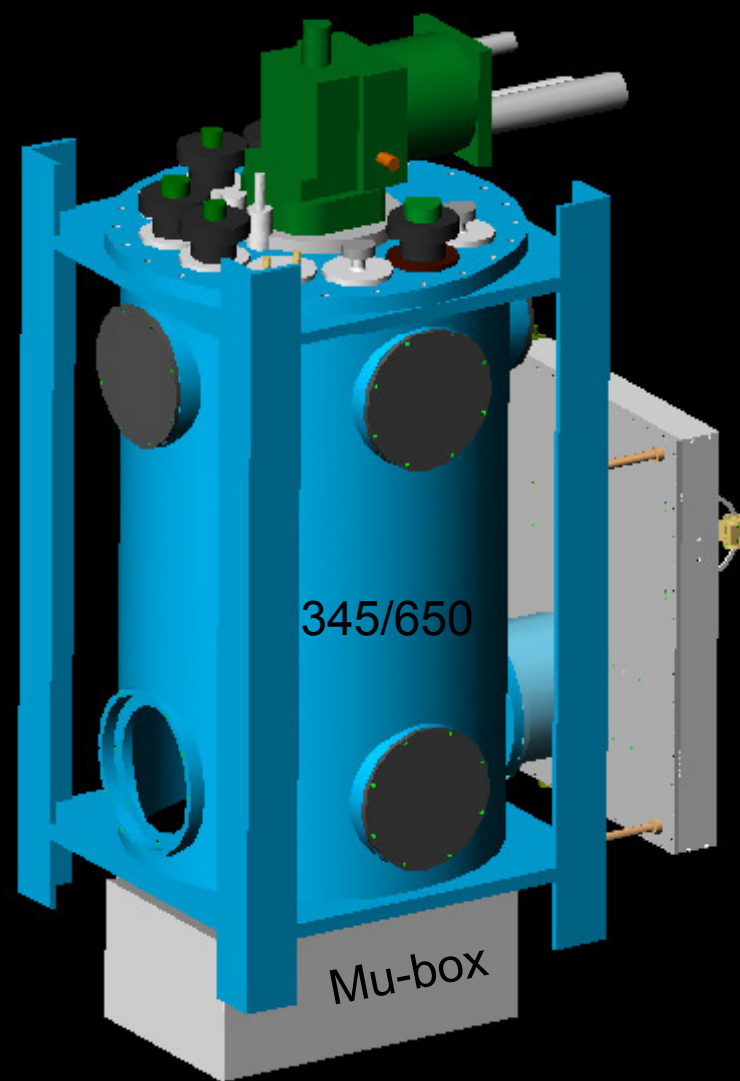
YIG,
80 C

20-35 GHz

USB interface

Optical beam
(from M4)

Mm-wave box, thermally weakly
coupled to Cryostat



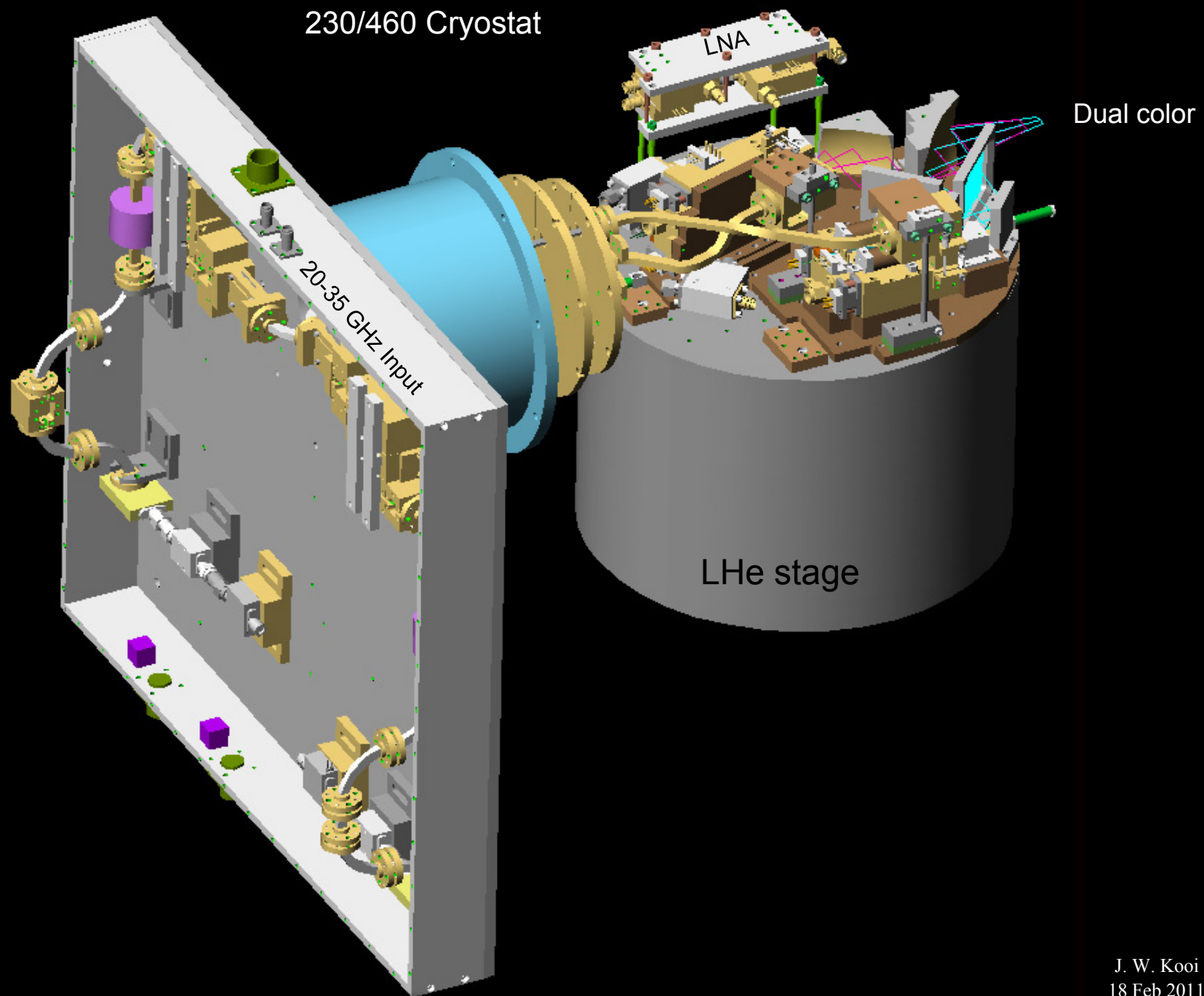
M5

Bal JPL PA
(next slide)

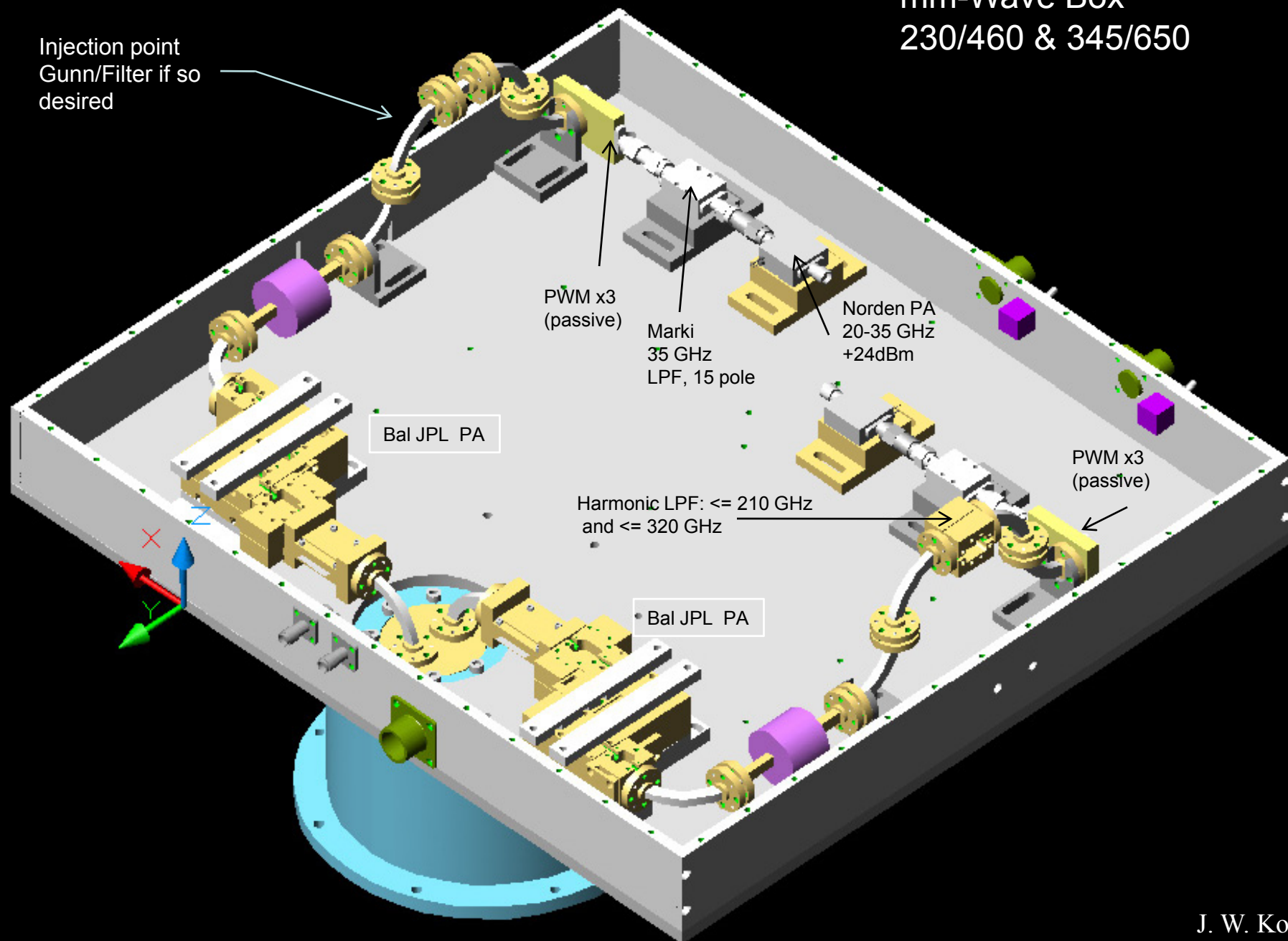
230/460

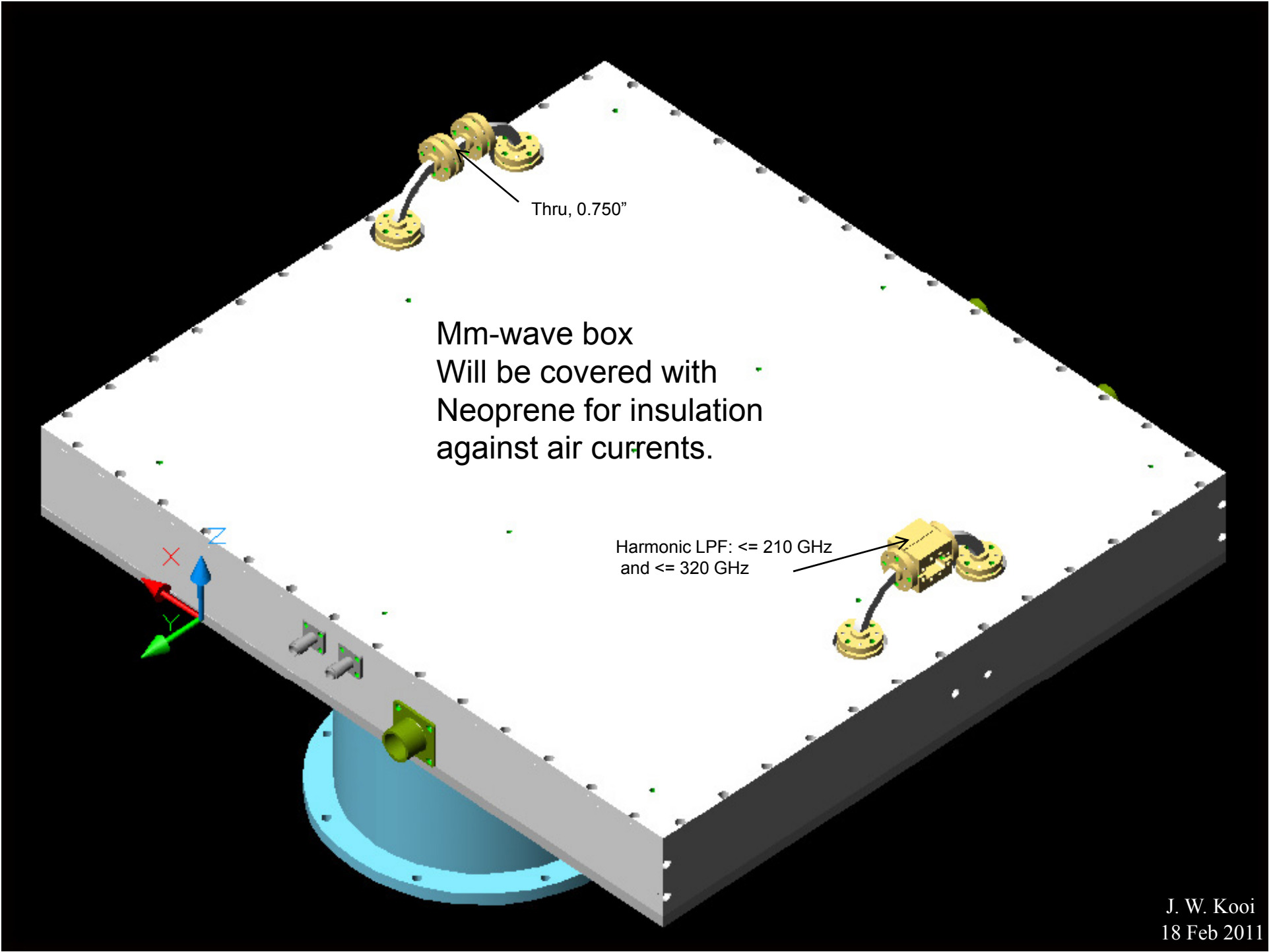
Mu-box

This 3D CAD model shows a blue cylindrical cryostat assembly, similar to the one on the right but with a different top structure. The top section is labeled '230/460' and the base is labeled 'Mu-box'. A white arrow points from the 'Mm-wave box, thermally weakly coupled to Cryostat' label to the top of the assembly. Another white arrow points from the 'Bal JPL PA (next slide)' label to a component on the side of the assembly.



mm-Wave Box 230/460 & 345/650



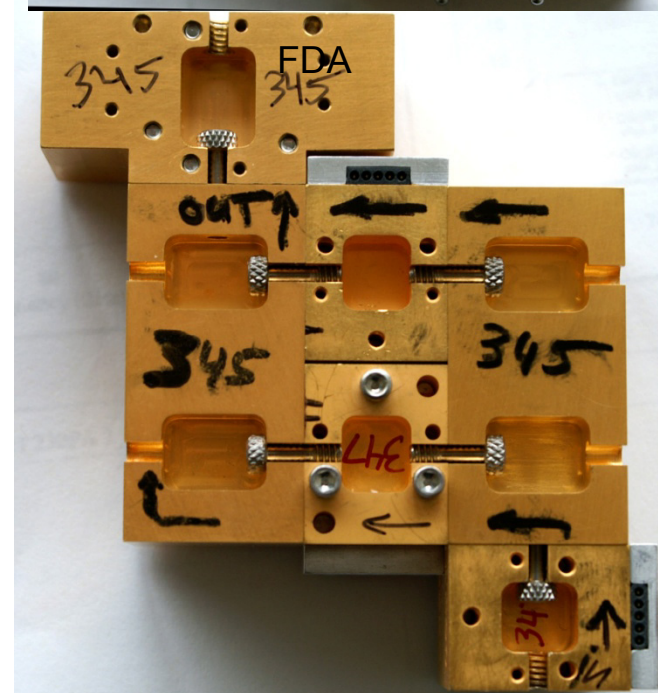
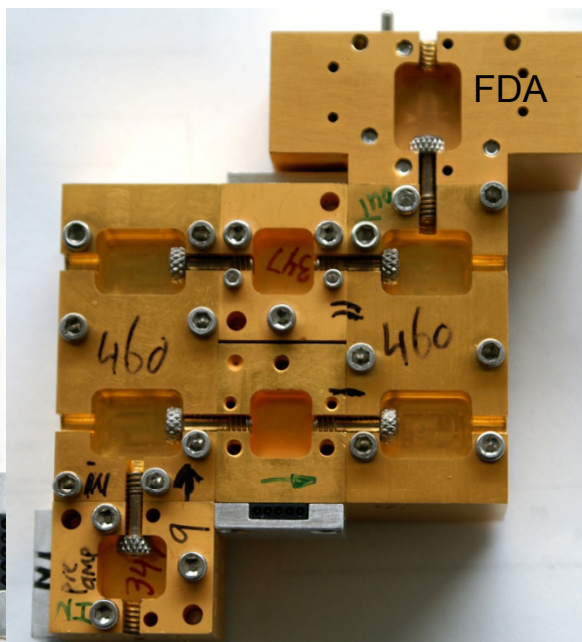
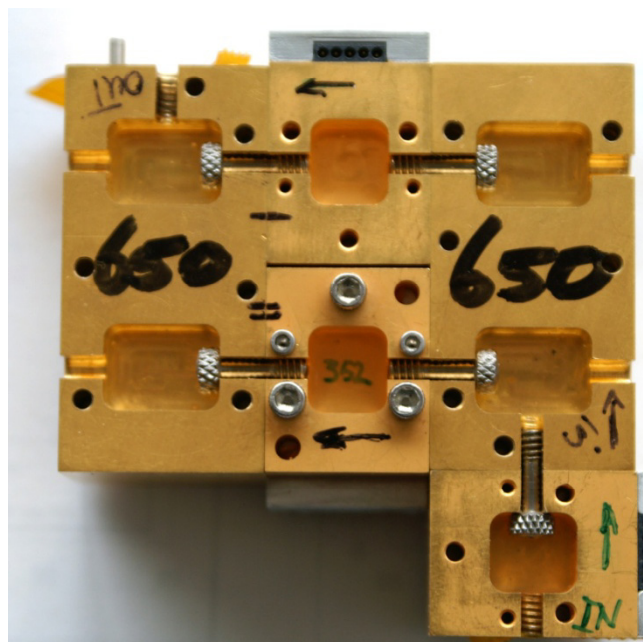
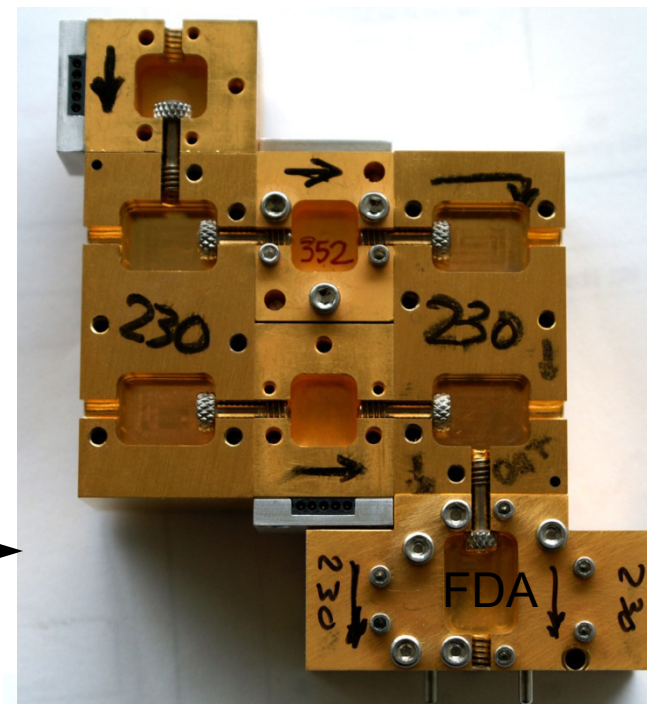
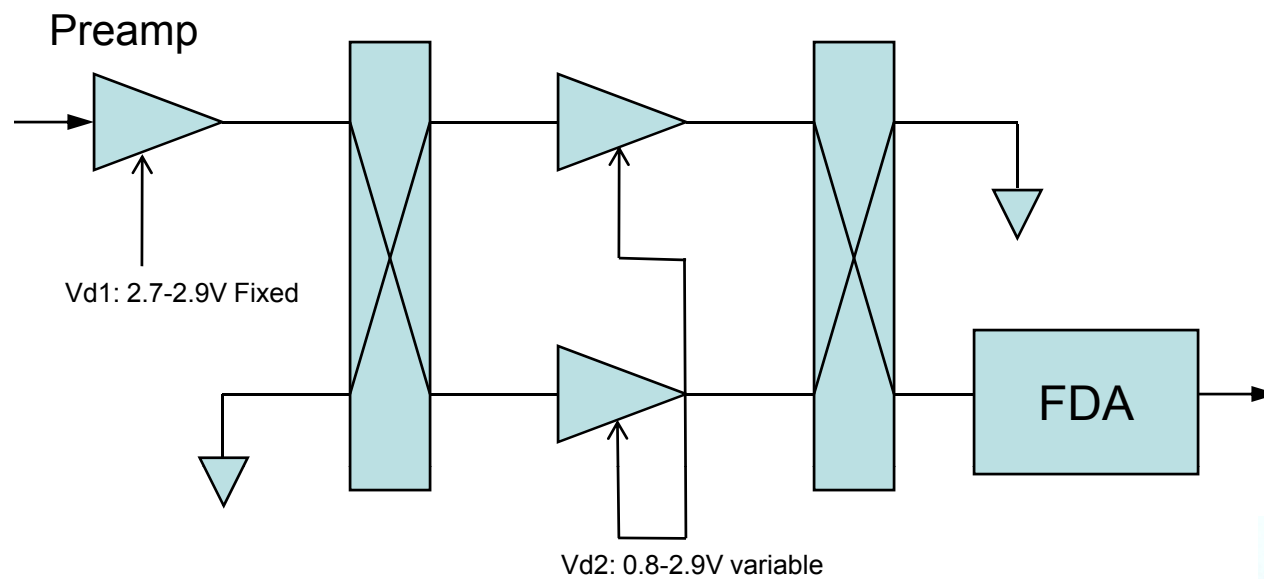


Thru, 0.750"

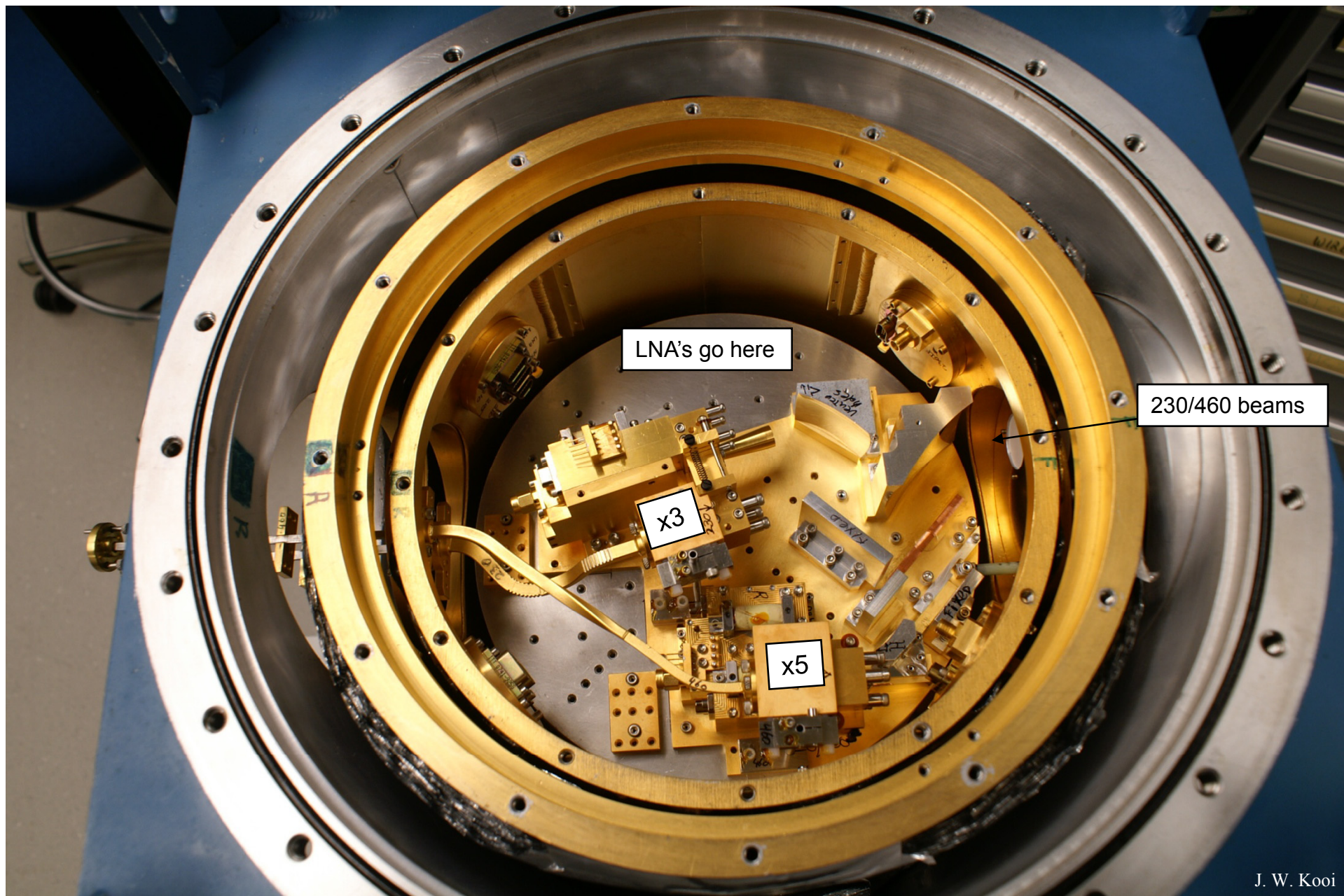
Mm-wave box
Will be covered with
Neoprene for insulation
against air currents.

Harmonic LPF: ≤ 210 GHz
and ≤ 320 GHz

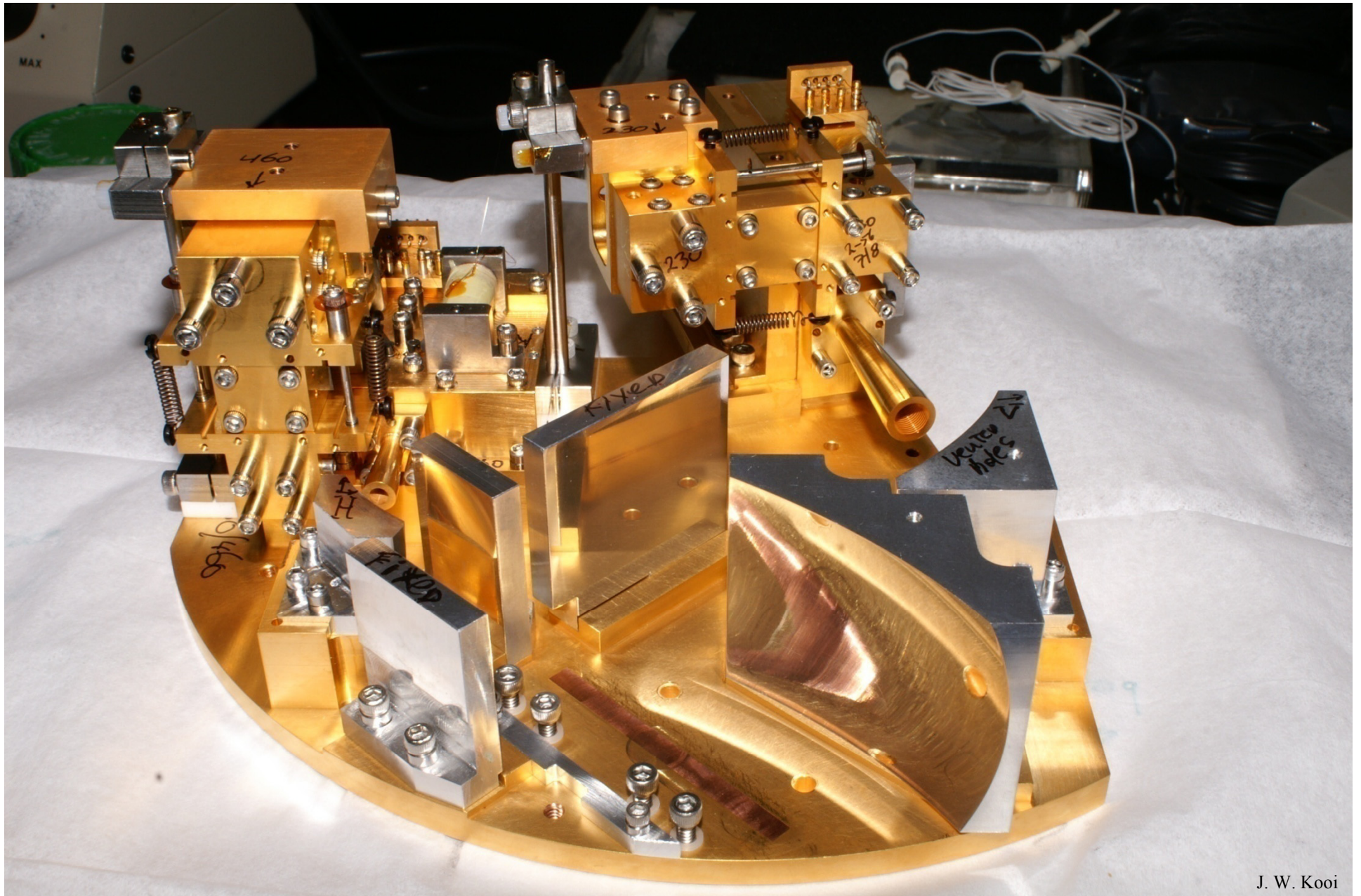
Balanced (JPL) PA's



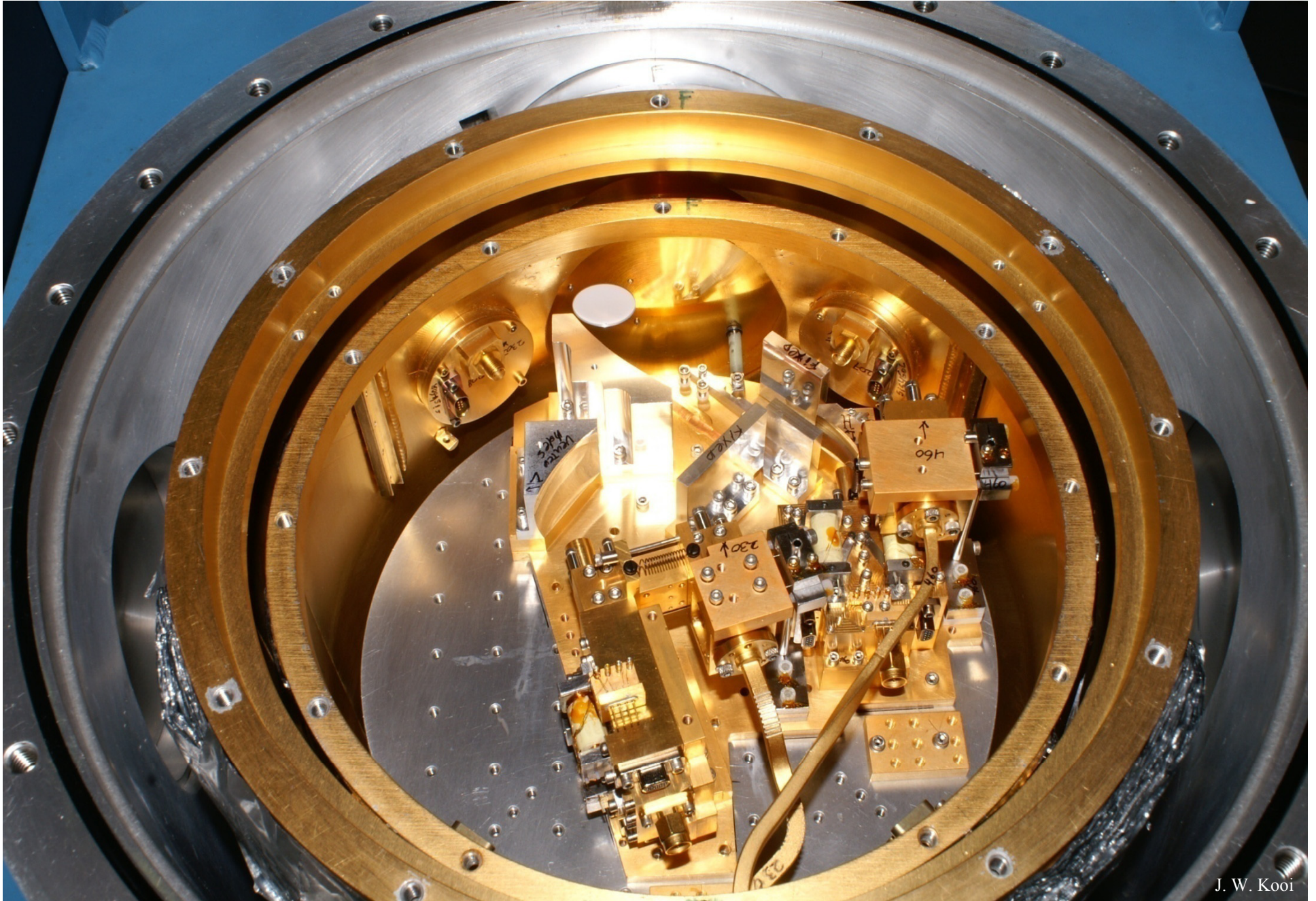
230/460 Balanced mixers in Cryostat #2



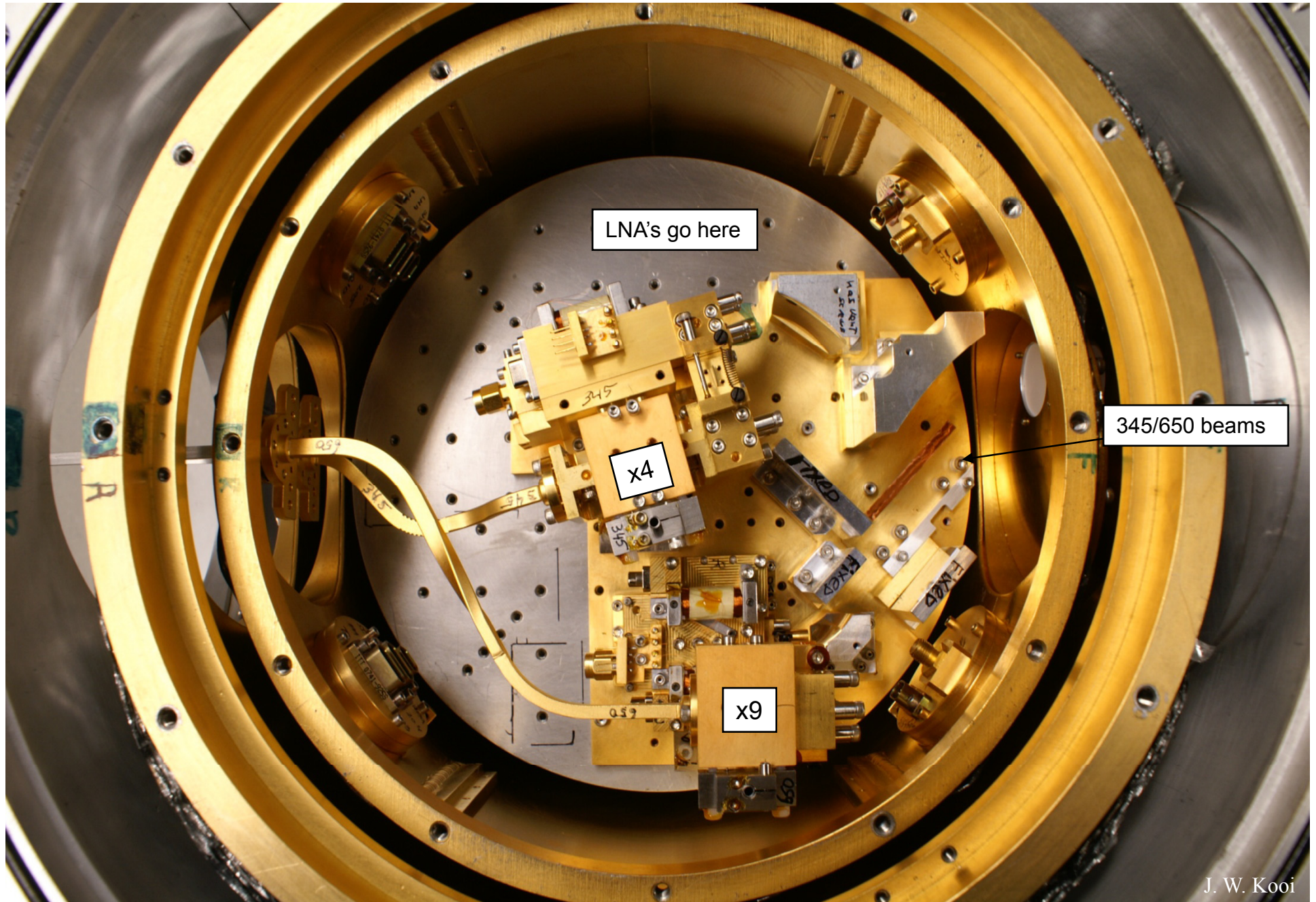
230/460 Balanced FPU



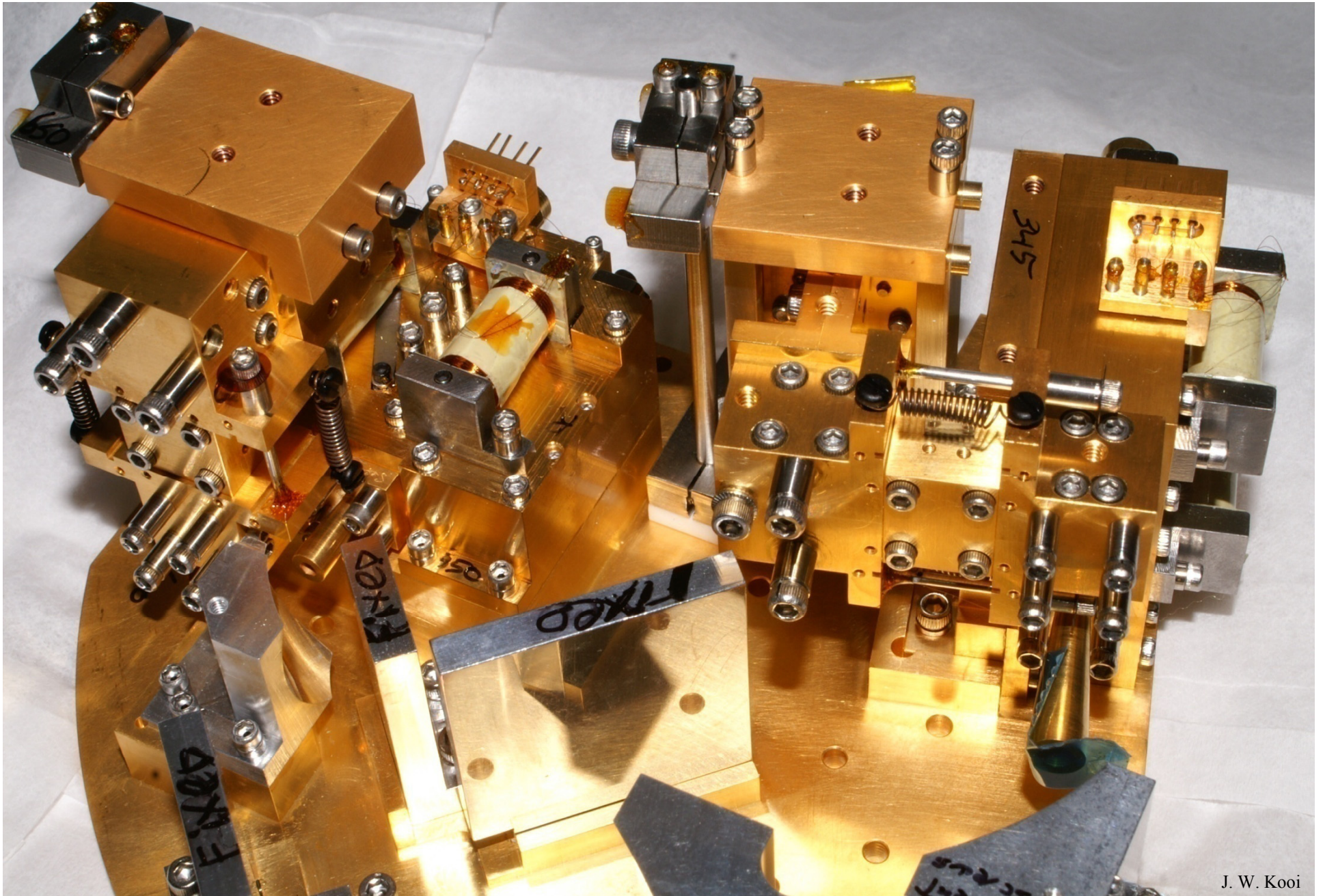
230/460 Balanced mixers in Cryostat #2



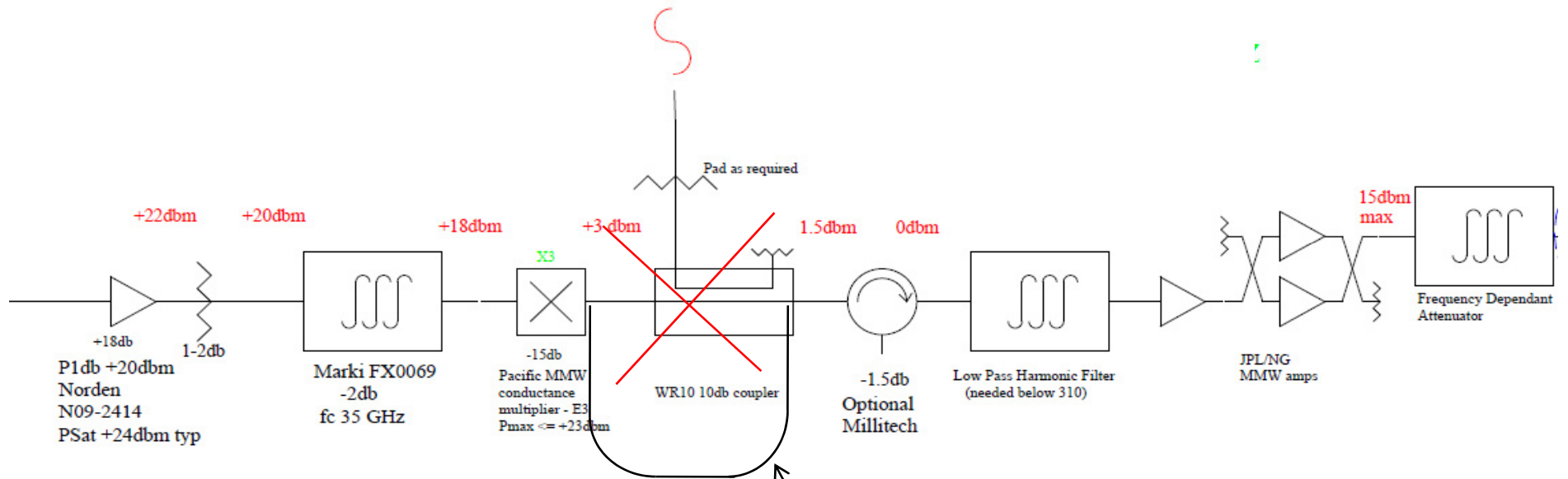
345/650 Balanced mixers in Cryostat #2



345/650 Balanced FPU

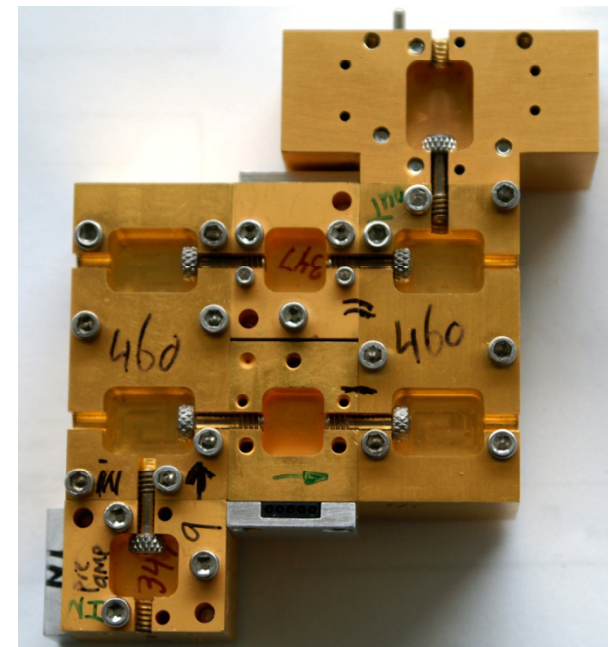
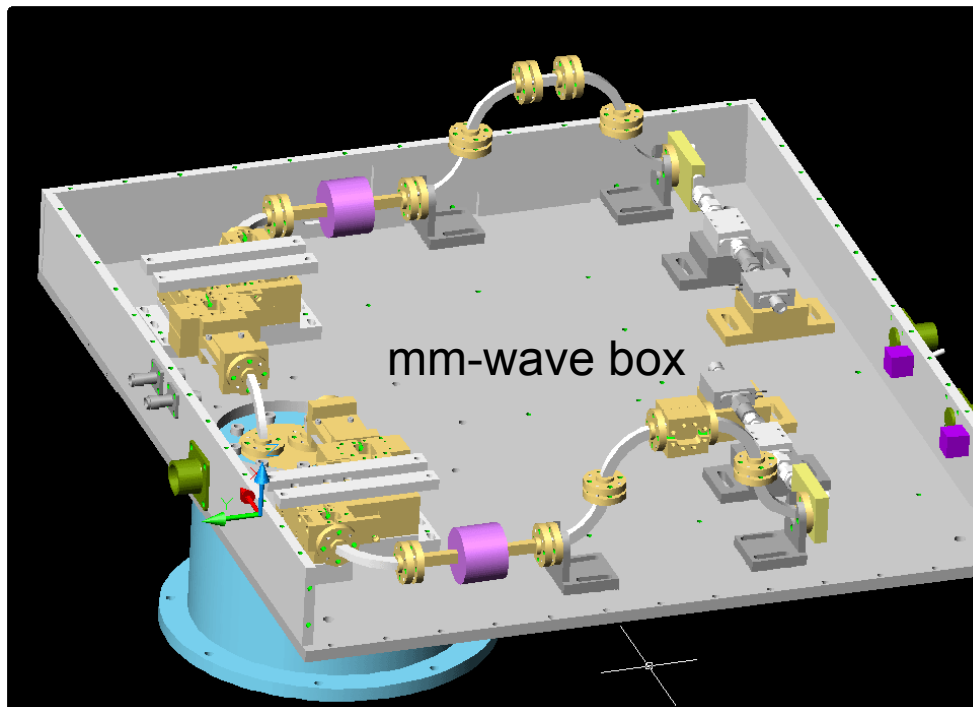


Mm-wave box schematic



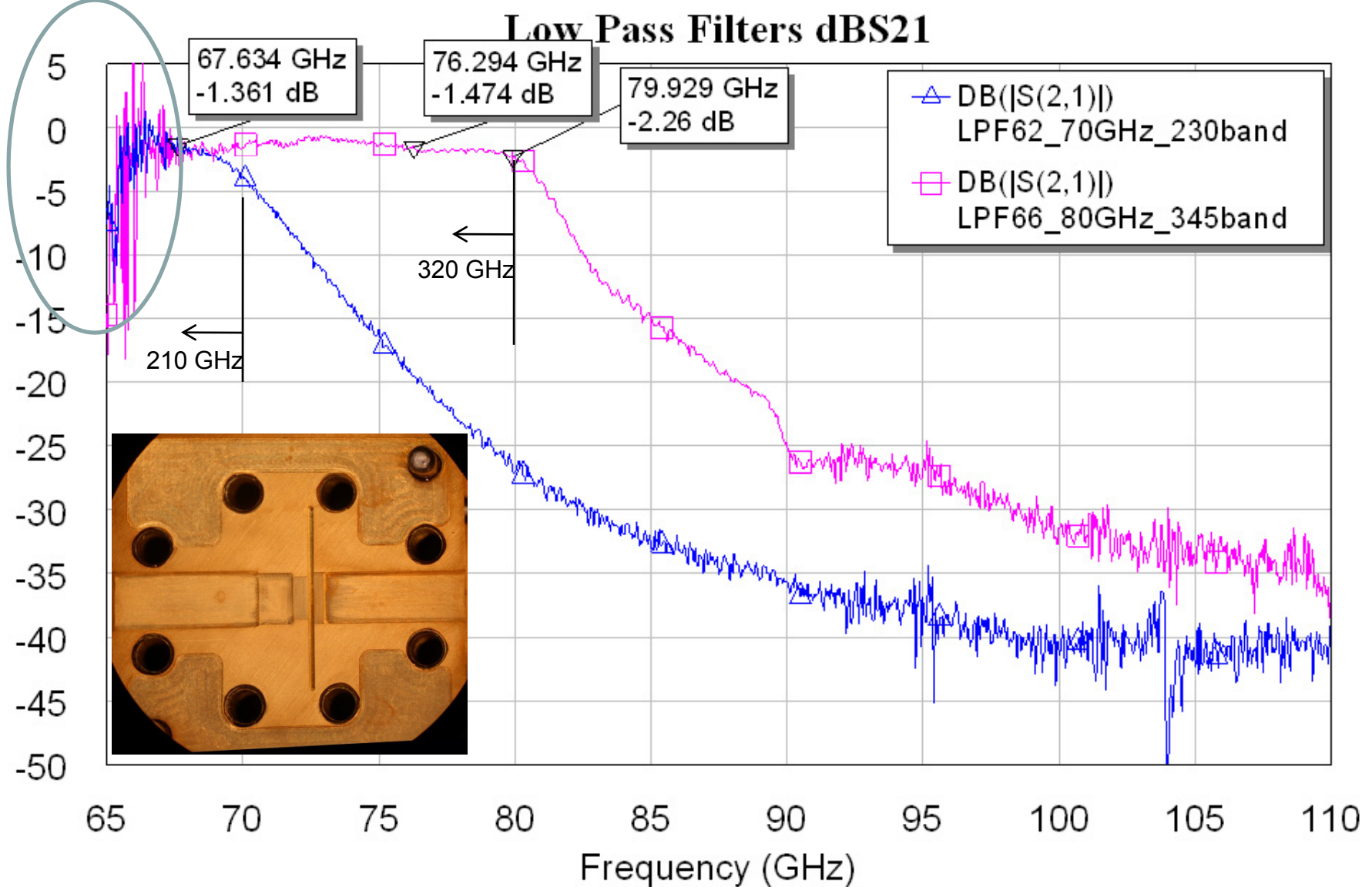
H-bends x 4 + 0.75" straight

B.L. Force/J. W. Kooi
18 Feb 2011

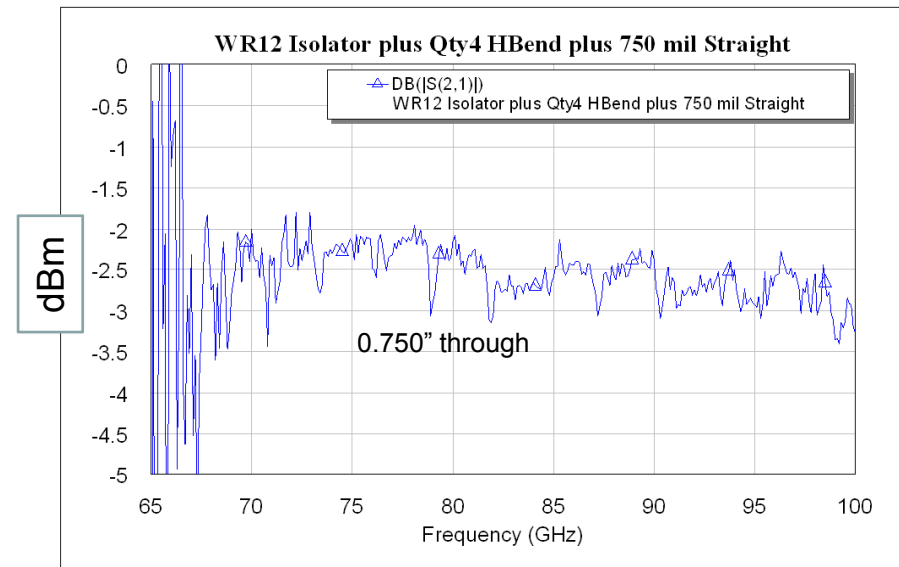
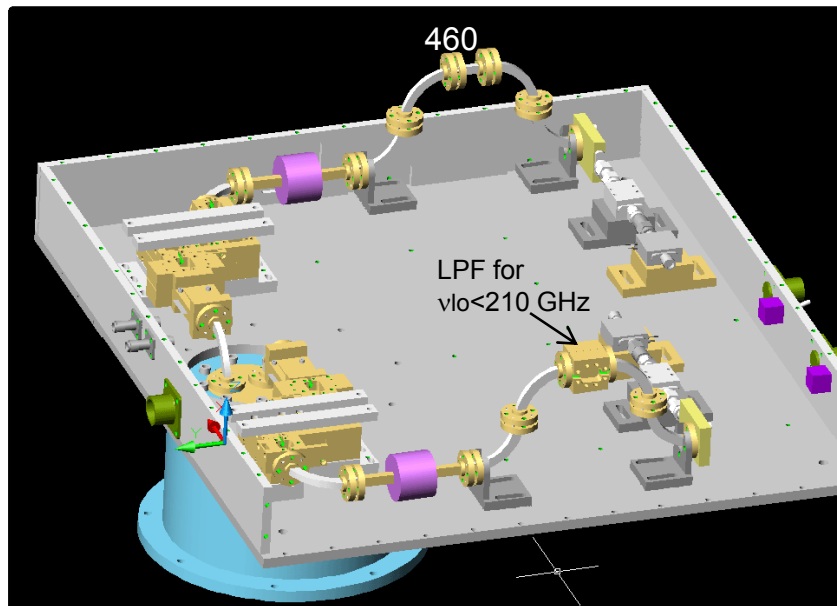
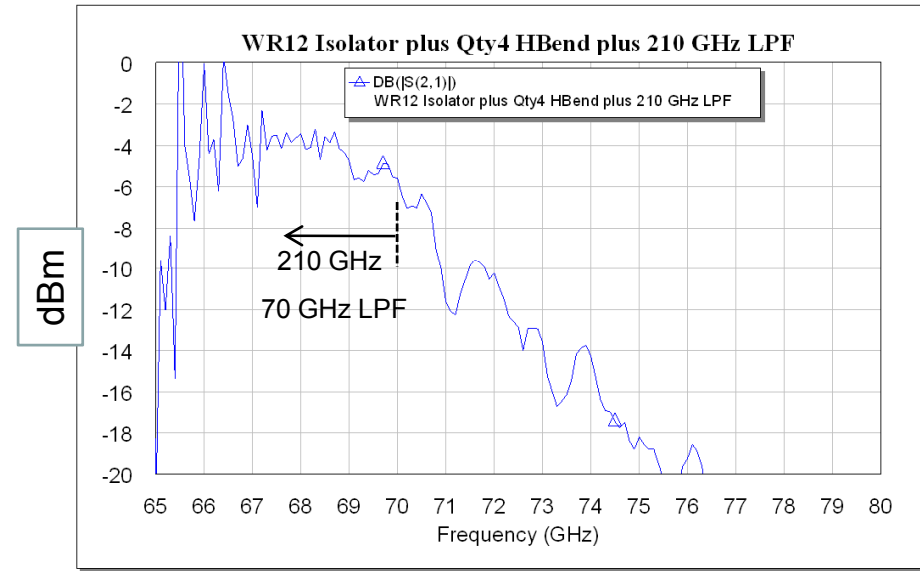
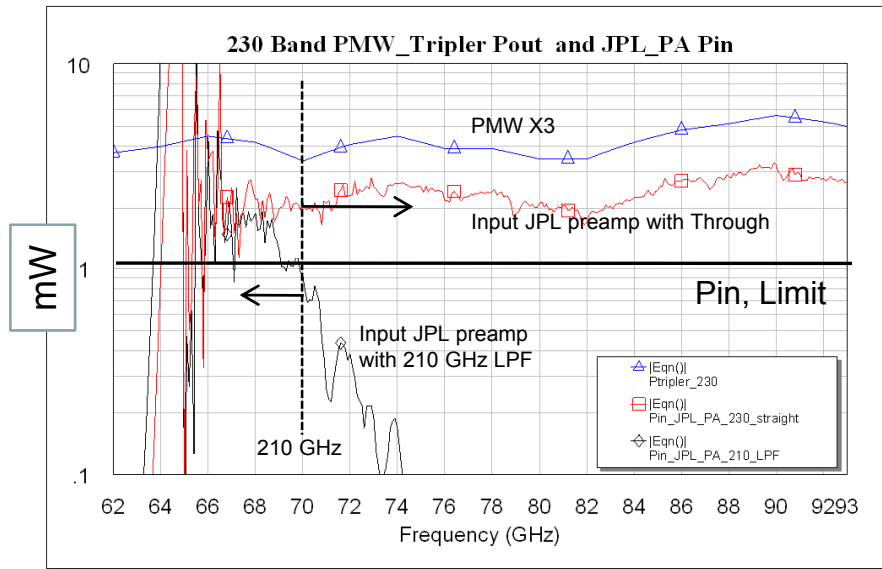


Low Pass Filters needed to cut off in band harmonics below 210 GHz and 310 GHz.

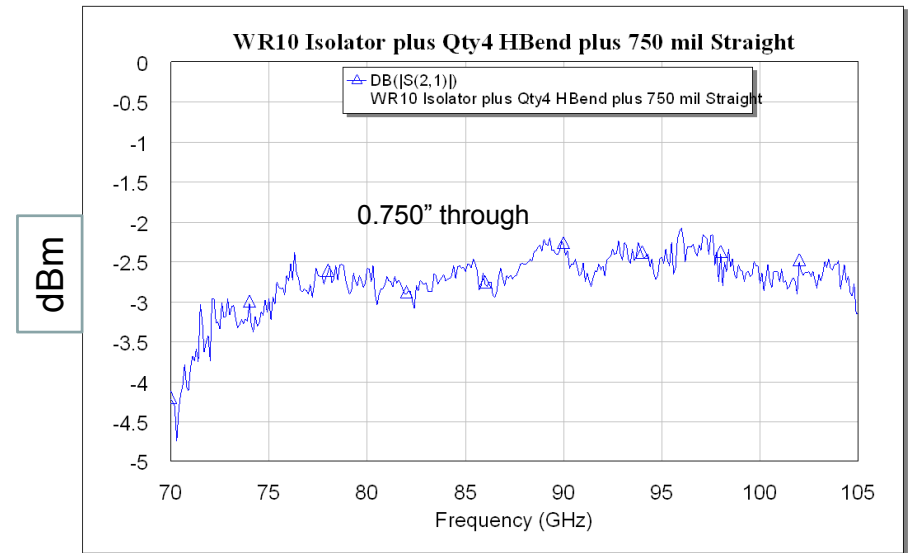
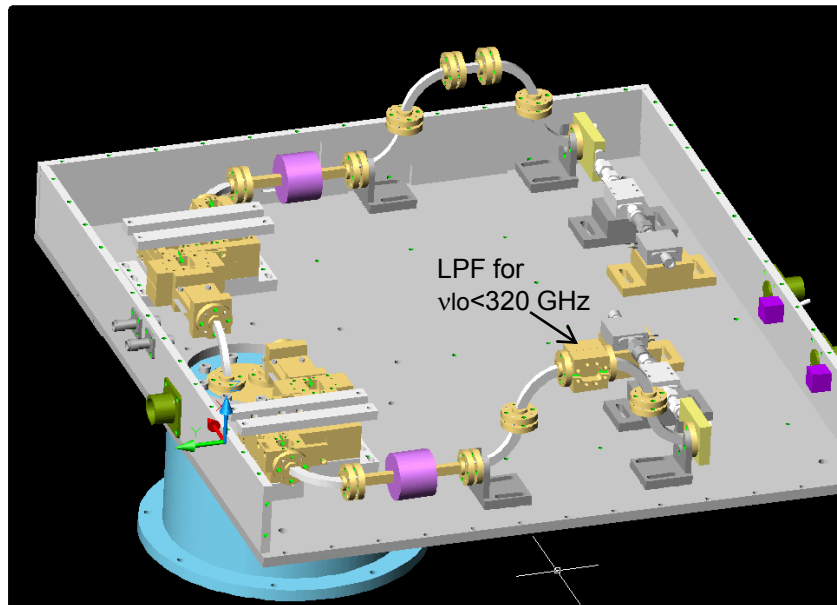
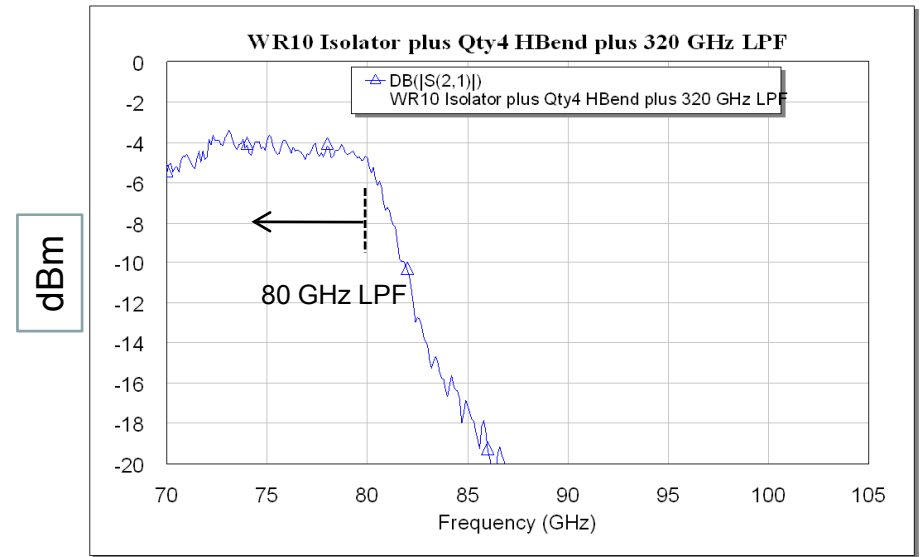
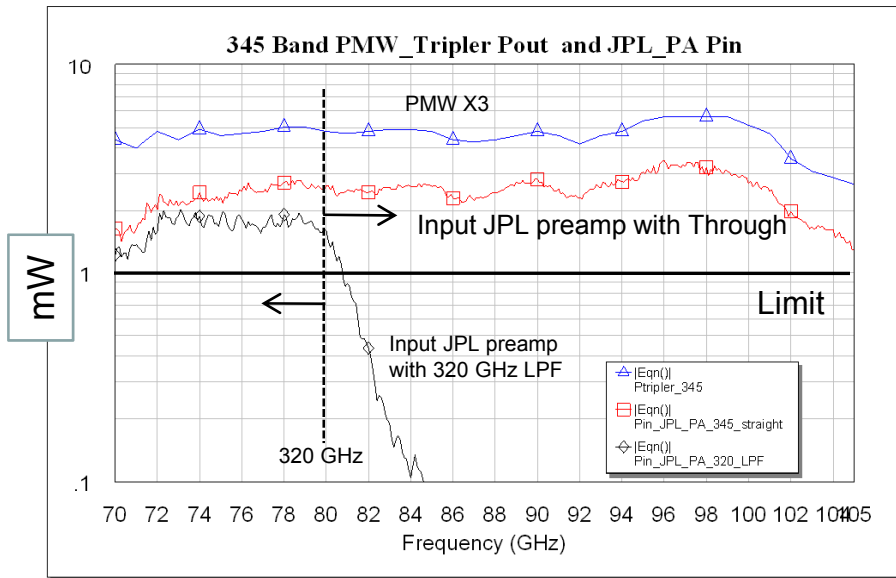
VNA does not work below ! 67 GHz.



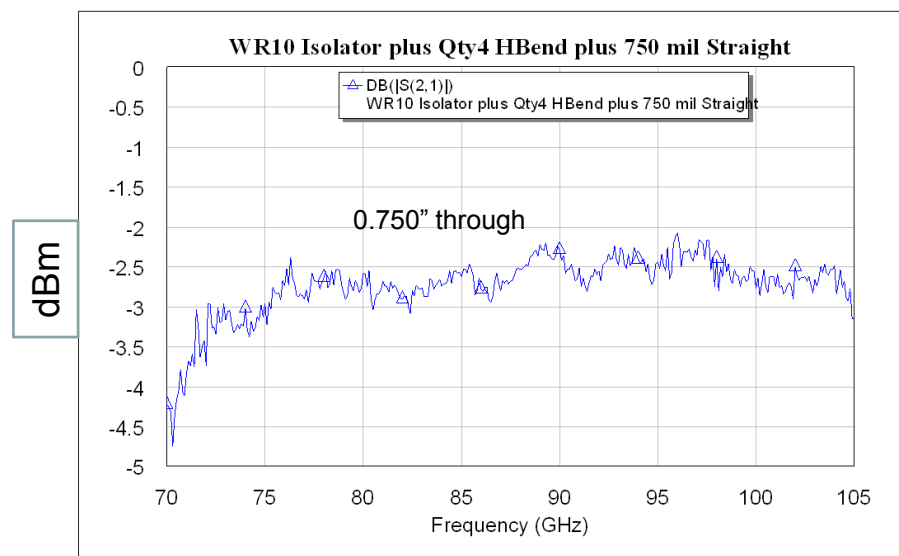
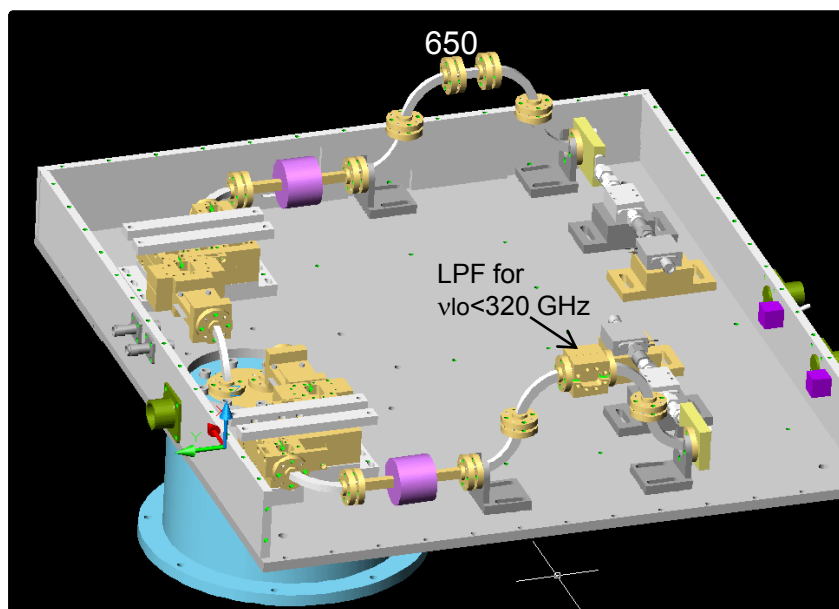
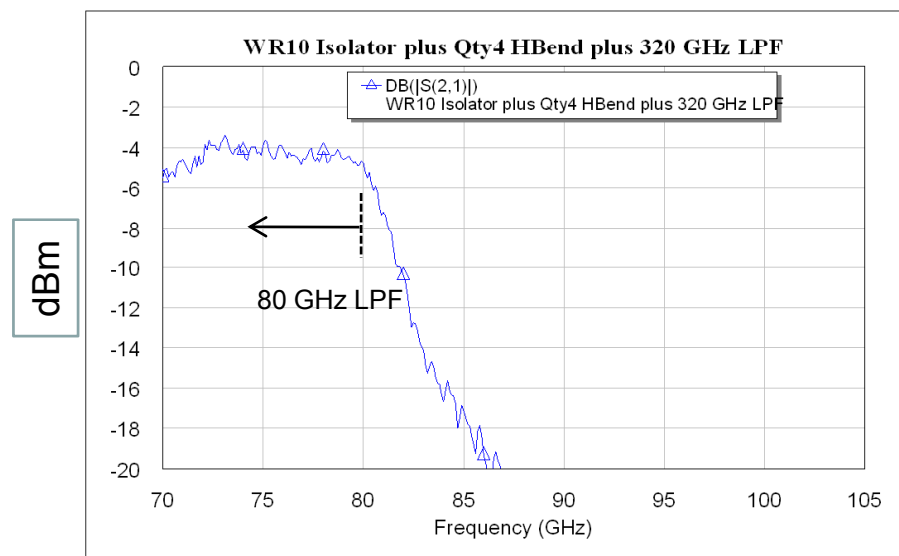
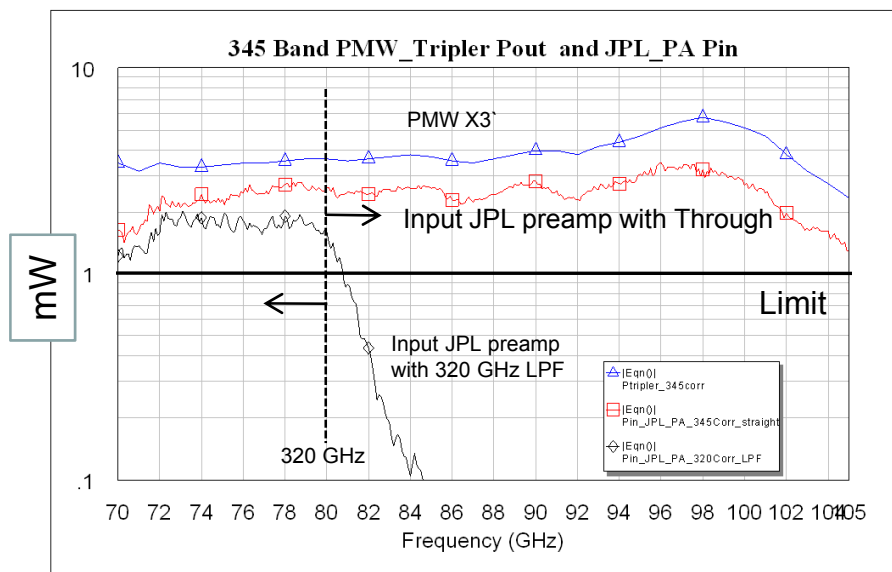
230 band mm-wave performance (62-93 GHz) x 3



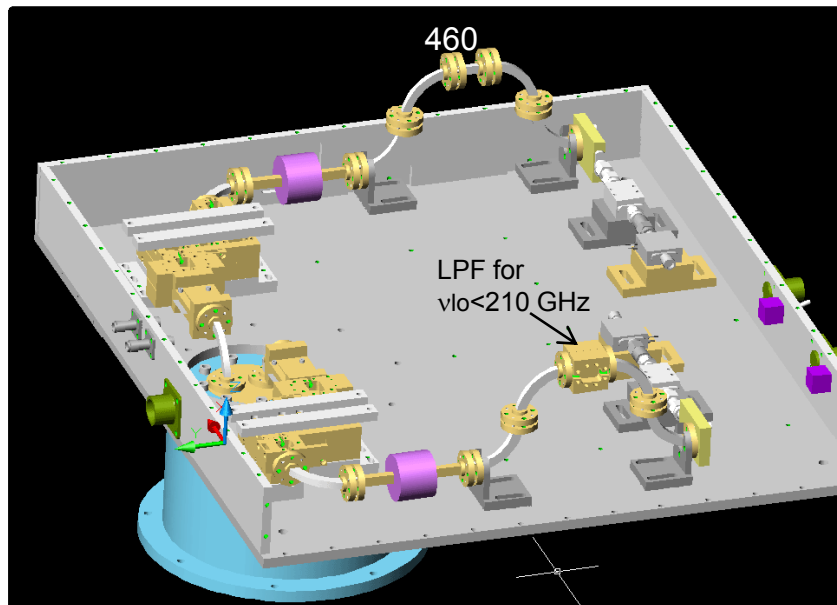
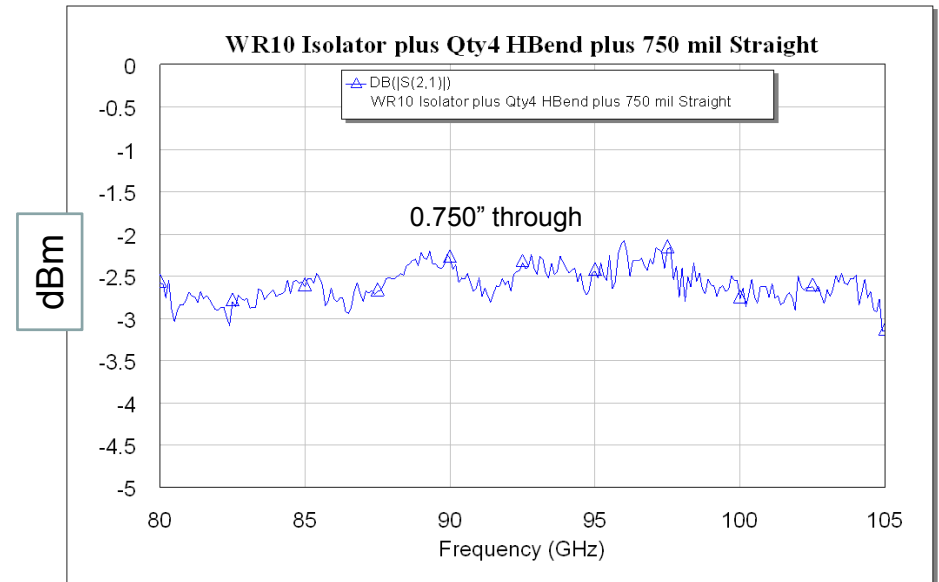
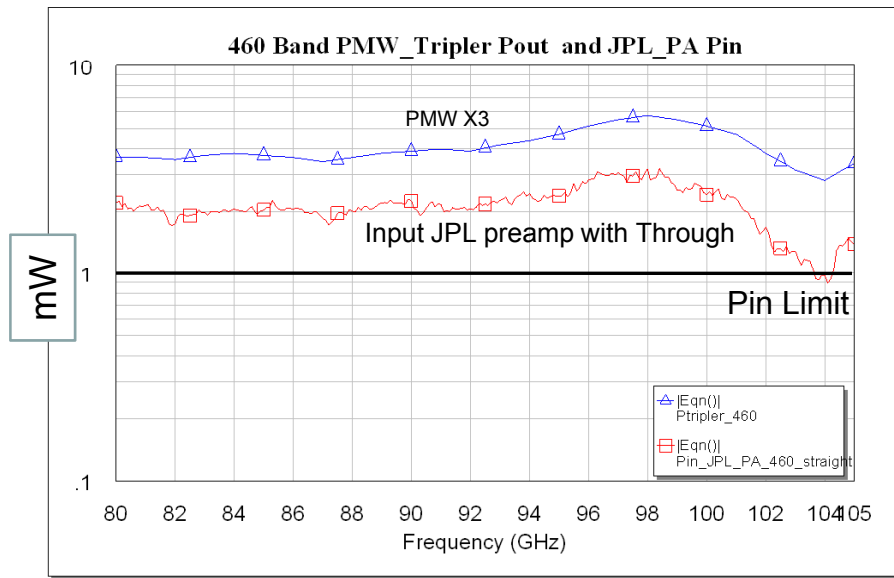
345 band mm-wave performance (70-105 GHz) x 4



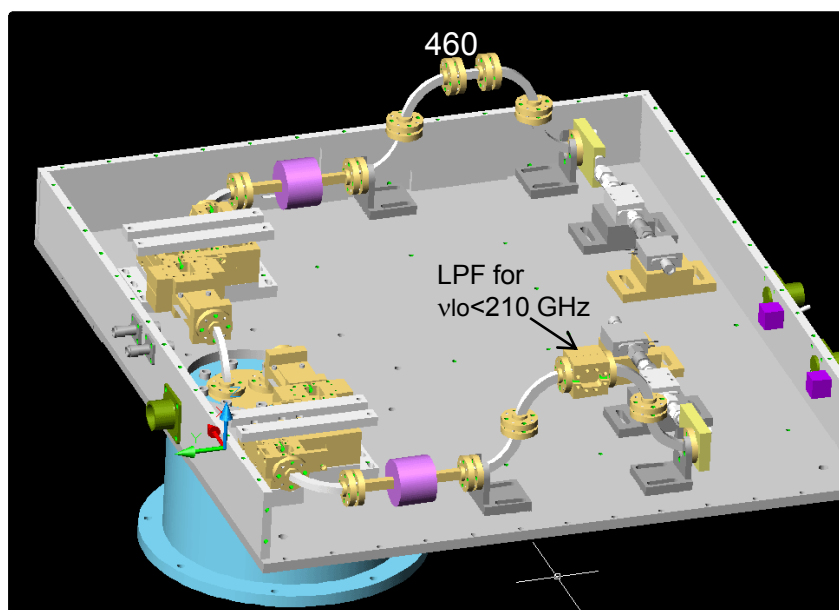
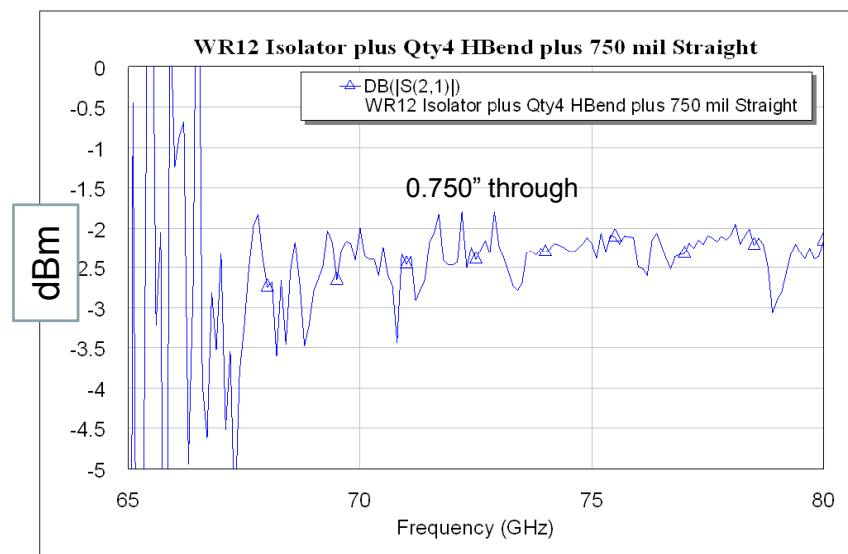
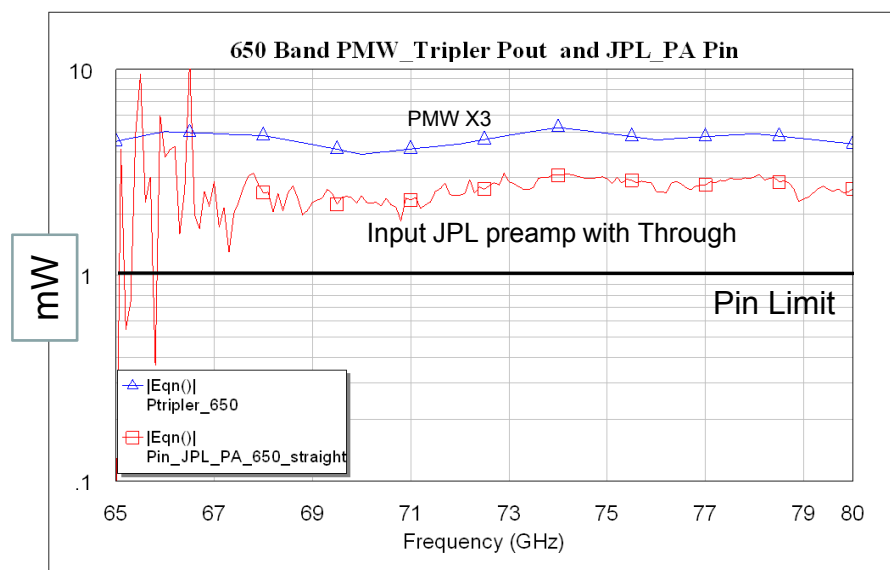
345 Correlation band mm-wave performance (70-105 GHz) x4



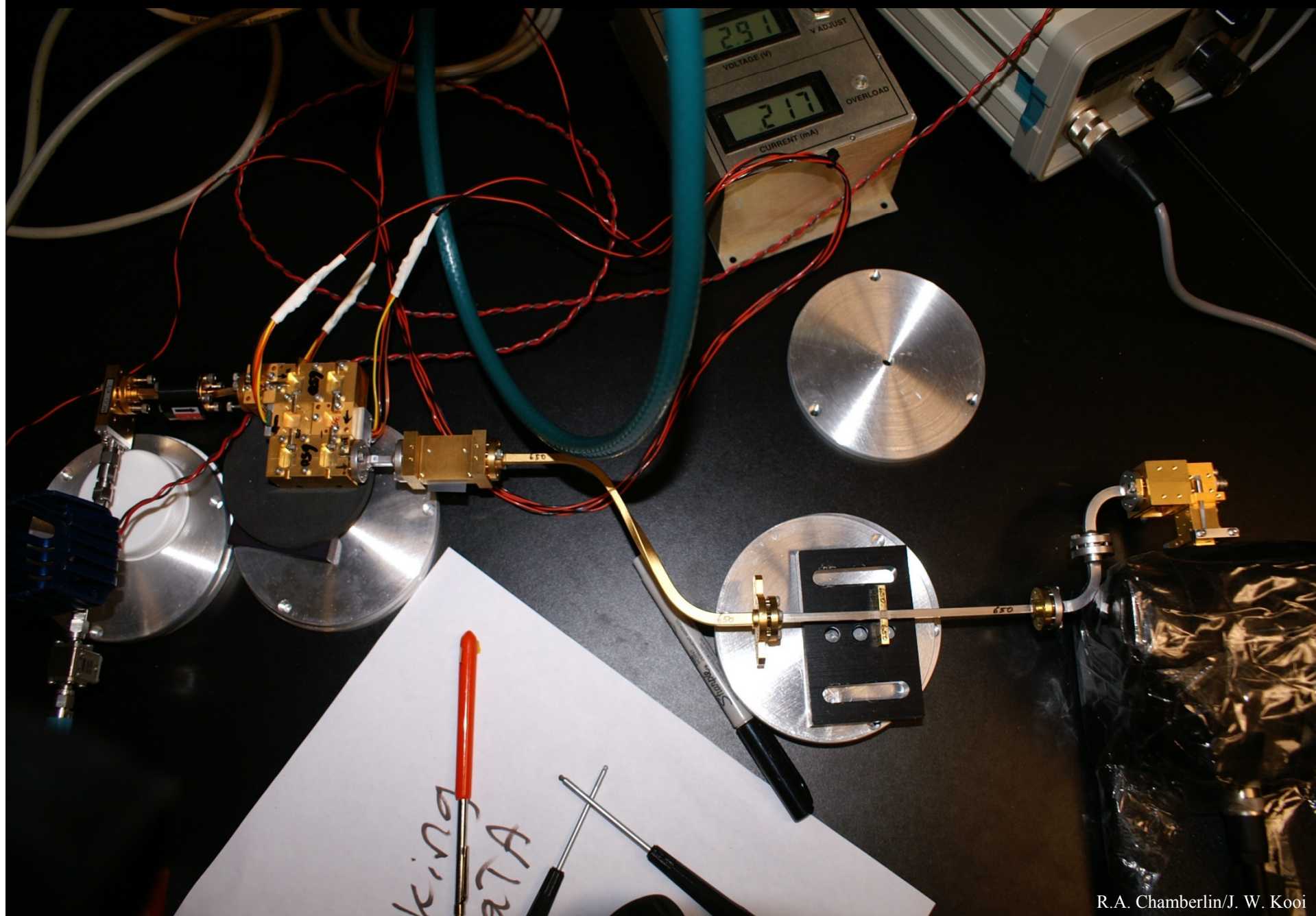
460 band mm-wave performance (80-104 GHz) x5



650 band mm-wave performance (65-80 GHz) x9



Characterization of the 600-720 GHz Lo power (next slide)



This is measured at 300K and is expected to increase ~ 20-40% upon cooling.

CSO Synthesized LO for Balanced Rx.

