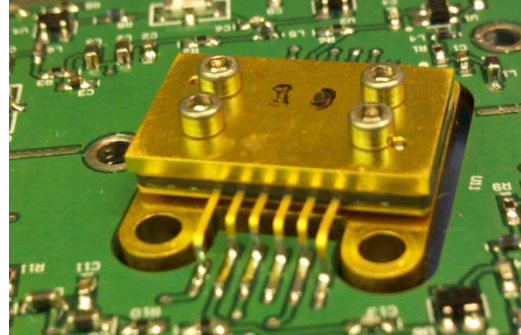
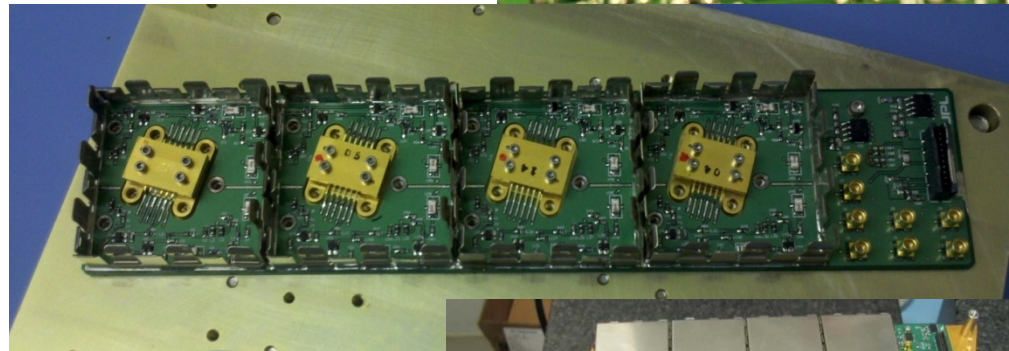


Scalability of HEMT Arrays

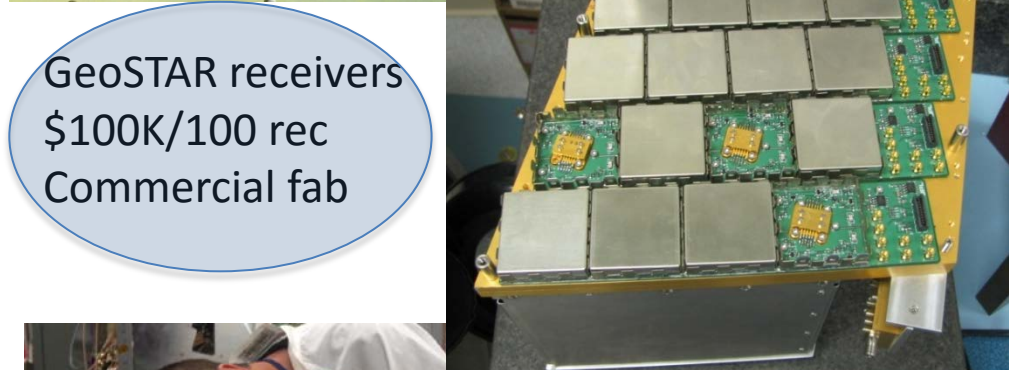


Multiple approaches towards large scale arrays in the 30-100 GHz range are possible:

Conventional Approach: QUIET integration: multichip modules manufactured with automated techniques. Cost per module: Several \$1000



RF submodule scalability: GeoSTAR approach
Cost per module: ~\$1000



GeoSTAR receivers
\$100K/100 rec
Commercial fab

Advanced technology approaches: Wafer level packaging: Cost per module: unknown but potentially: \$100- but microfabrication costs are high for long λ antenna integration with apertures of 3λ

