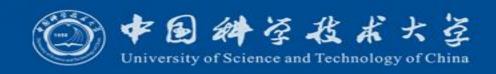
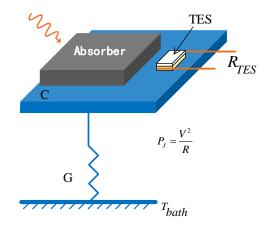
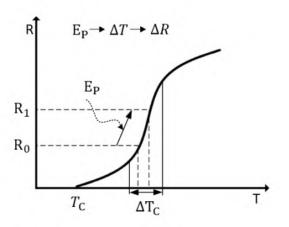
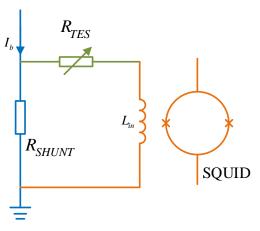
## Principle



- ➤ Transition-Edge Sensor (TES)
  - ultra-high temperature sensitivity
  - •stably maintained in the transition state through an AC or DC bias circuit
  - The branch current is amplified by superconducting quantum interference devices (SQUID)







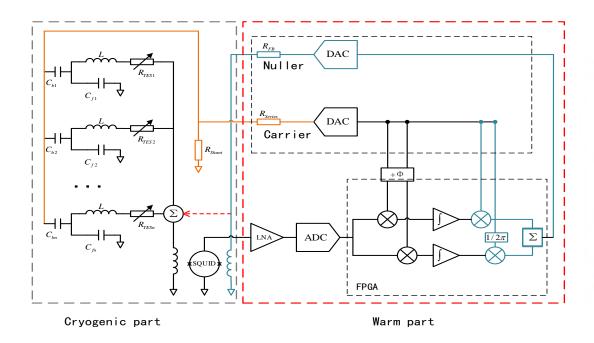
- > Frequency Division Multiplexing (FDM)
  - the number of thermal loads that connect the cryogenic calorimeter to the roomtemperature electronics must be strictly limited

## Warm electronics



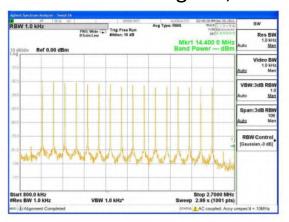
- ➤ Design of electronics
  - Carrier
  - Nuller
  - Sample and process

>Test of electronics

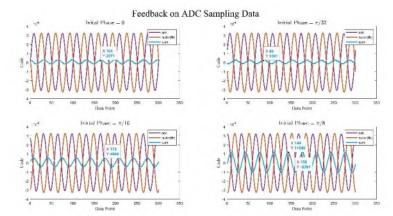




16 channels of bias signals, THD=80dBc



## Adjust amplitude and phase



## Demodulate square waves and sinusoidal signals

