



Small sized graphene based  
Cryocooler compressor with no  
moving parts for cooling of 5G base  
stations

## Cryocooler for low noise electronics and filtering applications

The “no-moving-parts” Graphene-based Cryocooler lower noise in receiving systems Low Noise Amplifiers, from 0.8-1.2 dB range down to 0.2-0.4 dB.

## Improved signal quality by graphene based cryocooling

APR Technologies has together with Siografen and SHT Smart-High-Tech developed prototypes of small size compressor without moving parts. Advantages for mobile industry and 5G solutions are lower noise, improved coverage, higher data throughput and better immunity against competing wireless systems.

## Graphene film based solution

The Cryocooler compressor is a delicate system built up by graphene based films together with Knudsen membranes and insulation membranes. It is driven by thermal energy and was invented by Swedish APR Technologies. A suitable Graphene based film with superior thermal conductance has been developed together with SHT and Chalmers.

