

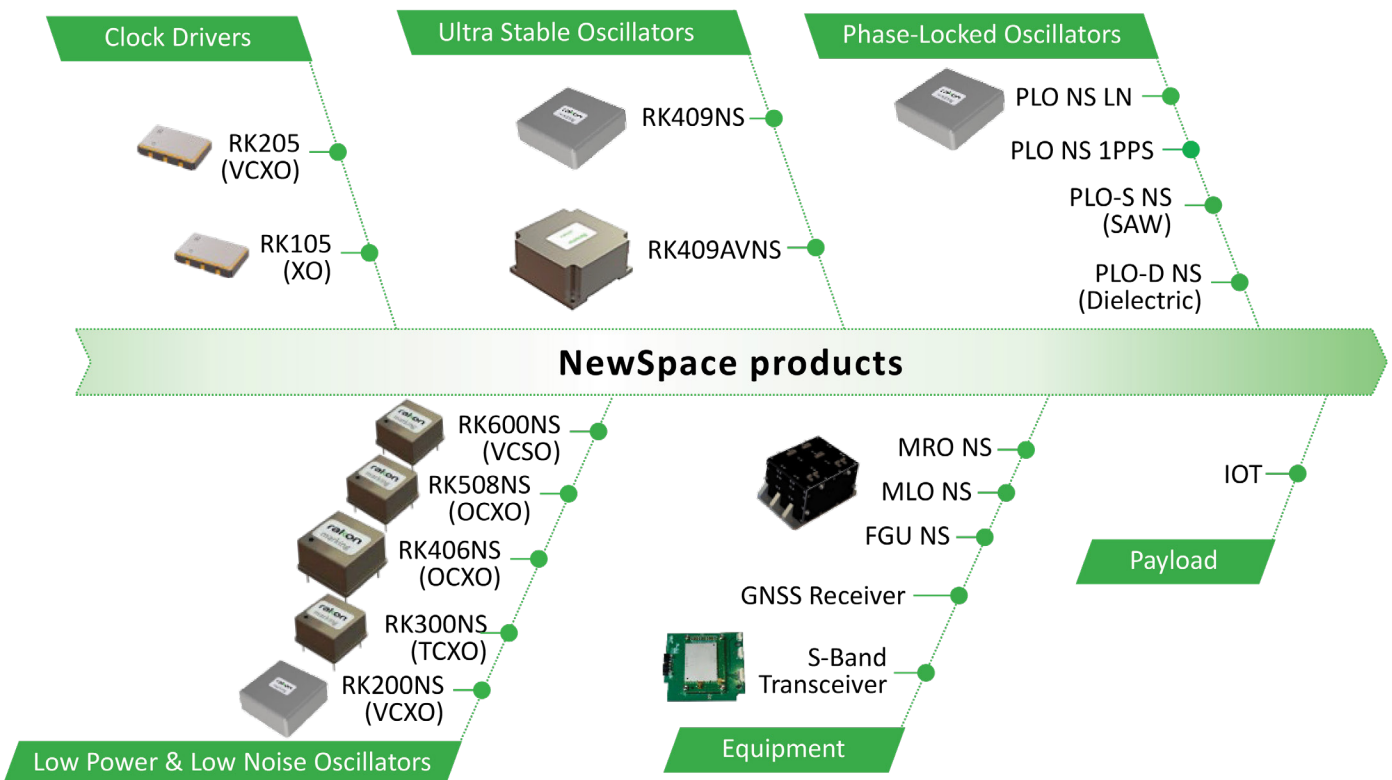
### Equipment & Oscillators for NewSpace

Rakon has a long history of providing high reliability frequency control products and timing solutions to the space industry, closely working with key customers for 30 years or more.

We are involved in most of the scientific programmes managed by the European Space Agency (ESA) and the CNES, and have been supplying ESA qualified products since the 1980s. Early 2021 Rakon was the first timing and synchronisation product manufacturer in the world to make it onto the European Space Components Coordination (ESCC) Qualified Parts List (QPL) for selected crystals and oscillators.

When it comes to NewSpace, Rakon comes with the best possible credentials, having strong expertise and products in both traditional space and other applications such as 5G telecommunications networks, defence and precision positioning.

Rakon's range of solutions for NewSpace includes equipment such as our GNSS receivers, S-Band Transceivers and Frequency Generation Units, including Master Reference Oscillators and Master Local Oscillators. In addition to our equipment we have a broad range of crystal oscillators and phase-locked oscillators suitable for NewSpace applications.





## Equipment & Oscillators for NewSpace

### GNSS Receivers

Easy to customise multi-constellation, multi-frequency receivers which are off-the-shelf compliant with the Galileo and GPS signals. They are upgradeable and tailored to customer requirements and has a position accuracy < 8 cm. Available for short and long missions.



NewSpace GNSS Receivers

### S-Band Transceivers

Low SWaP-C (Size, Weight, Power and Cost), full-duplex transceivers designed for TT&C and high data rate communication for ISLs and ground stations. They are in-flight configurable and available for short and long missions.



NewSpace S-Band Transceivers

### IoT Payload

Rakon's IoT payload consists of its transceivers combined with Ternwaves' unique connectivity technology. This solution considerably enhances the capacity & competitiveness of IoT networks and ensures outstanding robustness against signal jamming, resulting in maximum resilience.



IoT Payload

### Master Reference Oscillators (MROs) & Master Local Oscillators (MLOs)

These modulars are developed for telecommunications payloads which require a high reliable and low noise frequency. The MRO series support low frequency signal, and MLO series support high frequency disciplined to the external 10 or 100 MHz signal.



NewSpace MROs & MLOs

### Frequency Generation Units (FGUs)

Developed for telecommunications payloads which require a highly stable and high frequency signal, our FGUs include a master local oscillator phase-locked to a master reference oscillator. This equipment is suitable for mega-constellations or small GEO telecom satellites.



NewSpace FGUs

### Phase Locked Oscillators (PLOs)

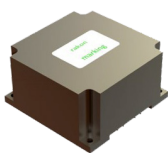
Our PLOs are based on high frequency dielectric resonator oscillators, SAW oscillators or low frequency and ultra-low noise oscillators. They can be phase-locked to a 1PPS signal or a stable reference oscillator. These modules are developed for LEO and small GEO satellites.



NewSpace PLOs

### Ultra Stable Oscillators (USOs)

A series of cost-effective ultra-stable OCXOs tailored to the NewSpace market, particularly for applications such as telecommunications, GNSS, S-BAS and earth observation satellites. Suitable for mini-satellites and constellations with a mission life of up to 12 years.



RK409NS, RK409AVNS

### Low Power, Low Noise Oscillators

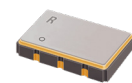
A range of low noise & low power oscillators that generate intermediate frequencies (VCXO, VCXO) and can be used as references for communication equipment and GNSS receivers.



RK200NS, RK300NS, RK406NS, RK508NS, RK600NS

### Clock Drivers

Small size, radiation-tolerant XO and VCXOs with unbeatable lead-times. Suitable for LEO and small GEO satellites and constellations with a lifetime of less than 10 years.



RK105, RK205

