

Background, main applications and specifications

Background

The amount of data traveling over telecommunications networks has been rapidly growing, spurred by faster transmission speeds, the expansion of big data analysis and ICT, and the spread of the Internet of Things (IoT). The primary requirements for communications infrastructure equipment that support these networks are stability and compactness.

Atomic oscillators, which generate accurate frequencies using the characteristic frequency of a particular atom or molecule, can typically provide accuracy that is two or more orders of magnitude greater than that of crystal oscillators. For this reason, atomic oscillators are used primarily in high-speed communications equipment and high-accuracy test and measurement equipment. Future demand for atomic oscillators is expected to grow as frequency sources for achieving stable communications and measurements. However, it is difficult to reduce the size of atomic oscillators, and, in the past, their size has constrained their use in applications such as base stations, where installation space is limited.

Main applications

Reference signal generators for the following:

- (1) Telecommunications infrastructure equipment
- (2) Broadcast equipment
- (3) Industrial solutions
- (4) Test and measurement equipment

Product specifications

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| Product number | AO6860LAN |
| Short-term frequency stability | 0.05 ppb ($\tau=1$ sec) |
| Temperature-frequency stability | ± 0.2 ppb (0 to 50°C) |
| Long-term frequency stability | ± 0.05 ppb/month |
| Power consumption | 3 W |
| Size | 68 x 60 x 18 mm (75 cc or less) |