

Teledyne e2v HiRel Announces 13.9 GHz Plug & Play Frequency Synthesizer Module for LEO Space Applications

New product provides the Space RF engineering and design community with an off-the-shelf, connectorized Frac-N synthesizer for challenging high-reliability space applications.

MILPITAS, CA – June 21st, 2022 – [Teledyne e2v HiRel](#) announces the availability of a low phase noise 13.9 GHz, delta-sigma modulated fractional-N connectorized frequency synthesizer module for low earth orbit (LEO) space and other demanding applications. The TDFFS014 is a ready-to-use package equipped with SMA connectors, allowing engineers to quickly prototype designs without the need for evaluation boards.

The TDFFS014 is a fractional-N frequency synthesizer module with 12.5-13.9 GHz and 6.25-6.95 GHz outputs. The module is optimized for commercial space and high reliability applications and has superior phase noise performance of -102 dBc/Hz (13 GHz at 100 kHz offset, typical). It features a radiation tolerant Teledyne PE97640 Frac-N PLL, active 5th order loop filter, GaAs InGaP HBT MMIC VCO with integrated divide-by-4 and divide-by-2 pre-scalers, and voltage regulators for low phase noise operation. Reference oscillator input and RF outputs are SMA connectors. Power supply inputs, 3-wire serial interface, and ground are made through a female, 15-pin Micro-D connector. It is available with seam welded or bolt-on housing lid.

“As well as low phase noise, the new TDFFS014 offers 10 mW output power simultaneously on its main RF output and RF/2 output” said Mont Taylor, Vice President and Business Development Manager at Teledyne e2v HiRel. “This often means that designers can drive common types of mixer without resorting to an intermediate low noise amplifier (LNA), further simplifying system design.”

For more information on all of Teledyne e2v HiRel’s space offerings, review our portfolio of semiconductors, converters and processors, and related services [here](#) on the Teledyne Defense Electronics website.

Samples are available for ordering, from Teledyne e2v HiRel or an [authorized distributor](#). They are shipped from our DoD Trusted Facility in Milpitas, California.

For a demonstration of the Frequency Synthesizer module, visit Teledyne Booth 3068 at the IMS Show in Denver.

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Teledyne HiRel’s innovations lead developments in space, transportation, defense, and industrial markets. HiRel’s unique approach involves listening to the market and application challenges of customers and partnering with them to provide innovative standard, semi-custom or fully custom solutions, bringing increased value to their systems. For more information, visit <http://www.tdehirel.com>

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