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Best-in-Class Rad-Hard Devices from STMicroelectronics Boast Qualification for Use in US Projects

*New JANSR+ 100krad low-dose-rate transistors offer superior performance
for space and other radiative environments*

Geneva, July 21, 2014 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, today announced that it has added to its available JANS / JANSR¹ products a range of DLA (Defense Logistics Agency)-qualified JANSR bipolar transistors with additional up-screening at the recent Nuclear and Space Radiation Effects Conference (NSREC) in Paris. Best-in-class radiation hardness makes ST's new transistors ideal for aerospace and Hi-Rel systems, including satellites, as well as nuclear physics and medical applications.

ST has supported European aerospace applications since 1977, having been qualified by the European Space Agency since the Agency's inception. It continues to lead the performance enhancement of rad-hard products, as demonstrated with the current launch.

Today, ST is bringing into the JANS system the innovation released last year within the ESCC (European Space Components Coordination) program. Called JANSR+, the innovation consists of a series of 100krad JANSR high-dose-rate bipolar transistors with an additional 100krad low-dose-rate (100 mrad/s) test performed on each wafer. Furthermore, ST has announced it will complete its JANSR+ offer with data from very-low-dose-rate (10 mrad/s) tests, demonstrating the outstanding robustness to radiation effect of its technology.

As a result, ST's JANSR+ series gives access to products with superior performance in radiative environments, with complete test data to support the claim. These products can be used without any up-screen cost and lead time, thus dramatically raising the bar in the industry.

"ST has been providing rad-hard bipolar transistors to the European aerospace industry for over 35 years and our products have accumulated hundreds of millions of flying hours," said Mario Aleo, Group VP and General Manager, Power Transistor Division, STMicroelectronics. "With the DLA qualification, we are bringing to our US customers the

¹ JANSx (Joint Army Navy Space) are quality-level specifications defined by DLA

unrivalled performances through the best-in-class radiation hardness achieved with our specifically adjusted aerospace technology and design.”

All parts are housed in advanced hermetic UB packages and are available in sample and volume quantities.

For more information please go to www.st.com/radhard-bipoltransistors-pr

Technical Notes:

- (1) *The effect of radiation on semiconductor devices depends on many factors. For bipolar transistors, the Total Dose (the higher the total dose, the higher the impact) and the dose rate (at a given Total Dose, the lower the dose rate the higher the impact) are the key factors. Low-dose-rate behavior is critical for satellites, because dose rate in space is very low (in the range of 10 mrad/s). However, the standard JANSR qualifications only deal with high dose rate, which is neither the worst case nor the condition the components typically have to endure in space.*

Radiation-hardened or “rad hard” devices are tested in radiative environments as per Space Agency specification, so designers know the products can successfully sustain radiation, and they also know the performance they can expect after the devices have been irradiated. This achievement requires that the device be designed and fabricated with the specific goal of enduring the harshest space radiation environments. Absorbed radiation dose is measured in rads. ST delivers products with superior behavior in actual space conditions together with the data to support its claims.

- (2) *A documented whole-body dose of 10 krad is acknowledged as lethal. The JANSR specification guarantees the performance up to 100 krad.*
- (3) *The JANSR+ low-dose-rate guarantee is supported by a test performed on 10-piece sets (5 biased and 5 unbiased) for each wafer. The Radiation Verification Test (RVT) report that comes with each JANSR+ product shipment provides the drift of the key parameters at 5 different radiation levels.*
- (4) *ST’s new rad-hard bi-polar transistors are available with maximum collector-emitter voltages up to 160V, maximum collector currents up to 5A, and forward current gains (hFE) up to 450.*

About STMicroelectronics

ST is a global leader in the semiconductor market serving customers across the spectrum of sense and power and automotive products and embedded processing solutions. From energy management and savings to trust and data security, from healthcare and wellness to smart consumer devices, in the home, car and office, at work and at play, ST is found everywhere microelectronics make a positive and innovative contribution to people's life. By getting more from technology to get more from life, ST stands for life.augmented.

In 2013, the Company's net revenues were \$8.08 billion. Further information on ST can be found at www.st.com.

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