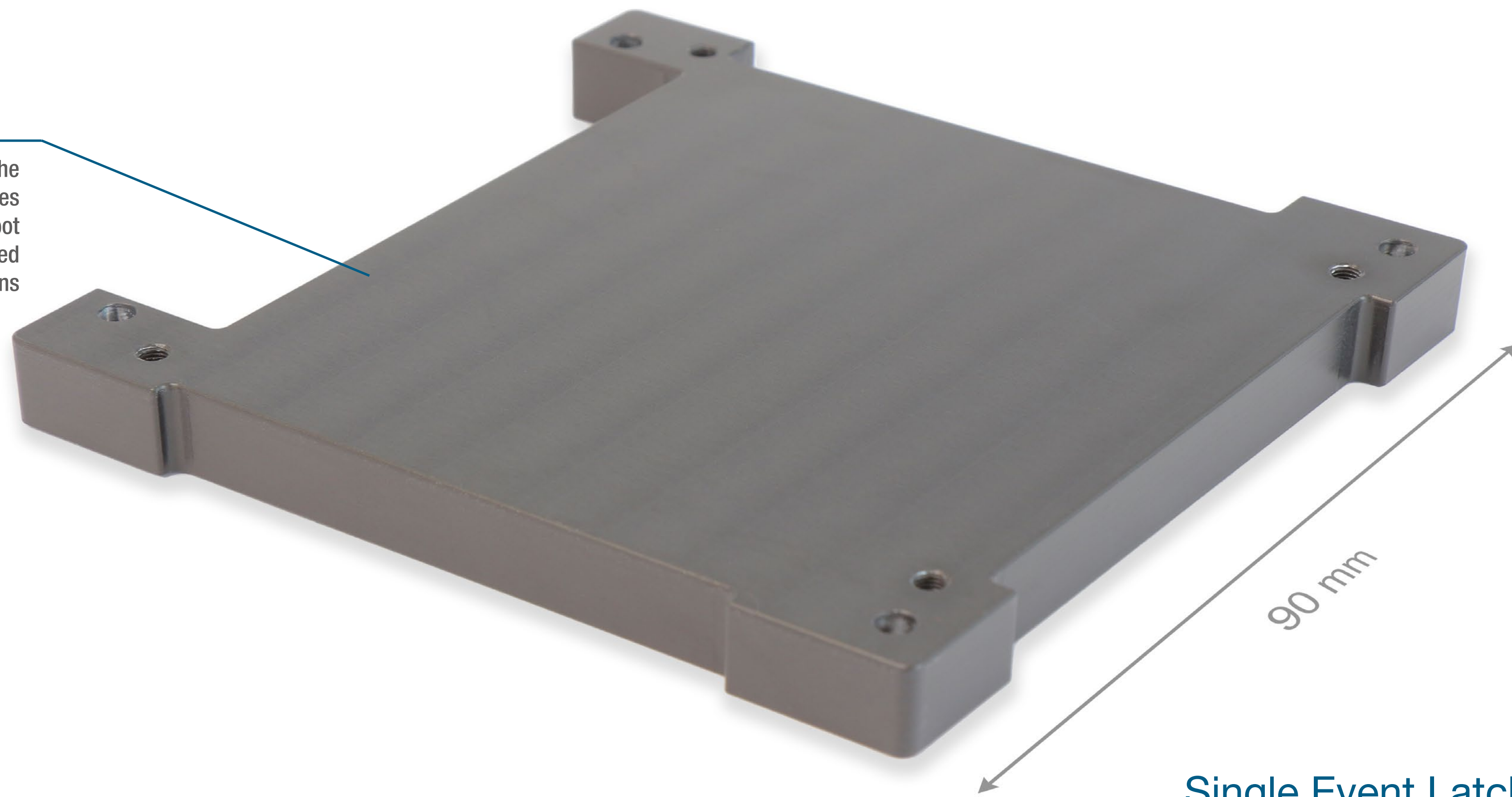


Housing & Spot Shielding

A robust 1mm thick aluminium housing protects the dosimeter payload during handling and provides EMC shielding during operation. Additional tungsten spot shielding on the PCB provides shielded and unshielded radiation sensors to discriminate the effects of electrons and protons to the total dose.

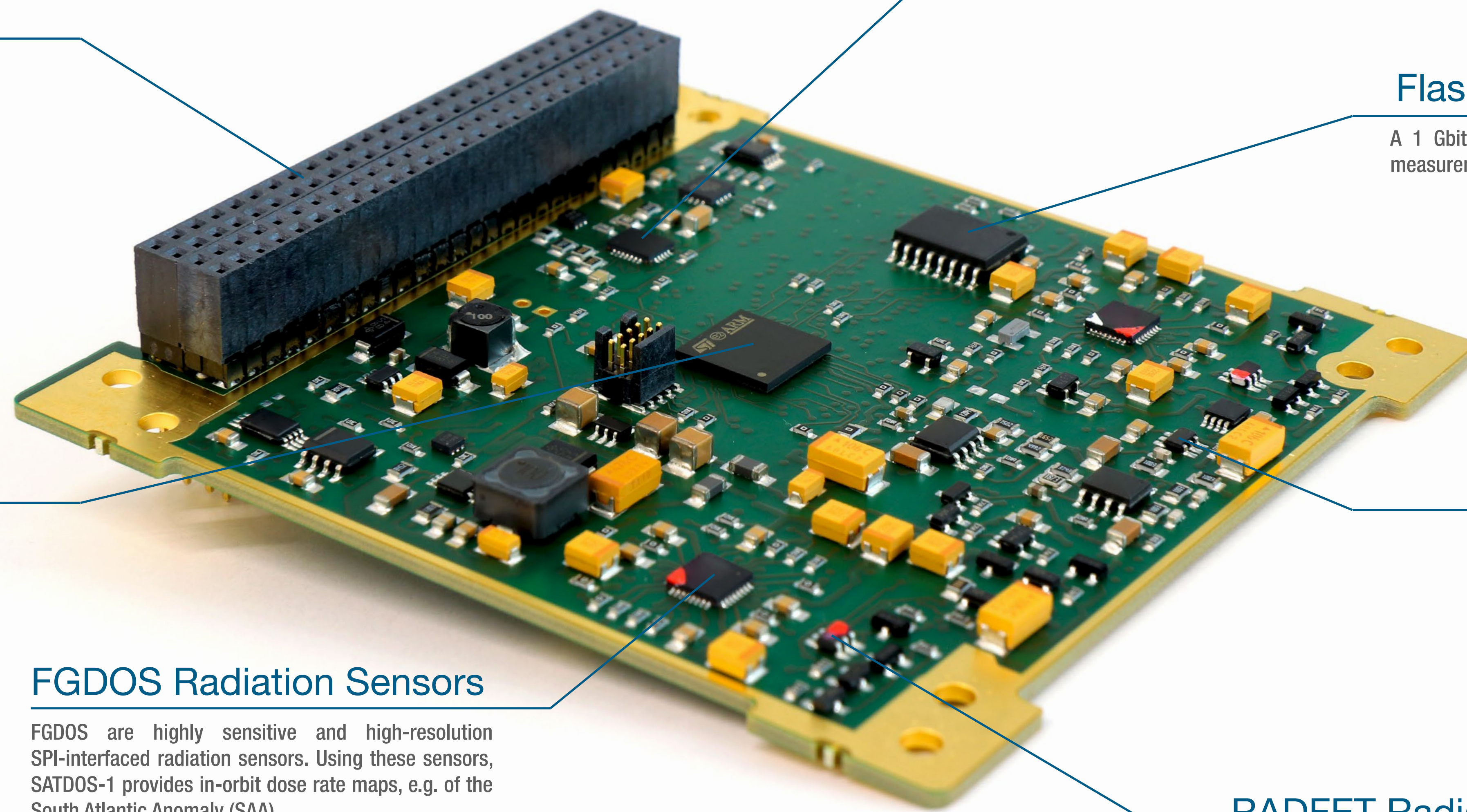


Single Event Latch-Up Protection

Single Event Latch-Ups are destructive short circuit events and a significant threat to all satellites in orbit. SATDOS-1 features a power bus switch to protect against these harmful events.

PC/104 Connector

A CubeSat standard hardware interface provides a versatile payload and allows easy integration in modern satellite platforms.



Flash Memory Data Storage

A 1 Gbit (128 MB) SPI flash memory allows to store measurement data of up to several weeks before the data is downlinked to ground.

Microcontroller

A 72 MHz ARM Cortex M3 microcontroller offers full control over the SATDOS-1 dosimeter payload. The SATDOS-1 payload runs completely autonomous.

Temperature Sensor

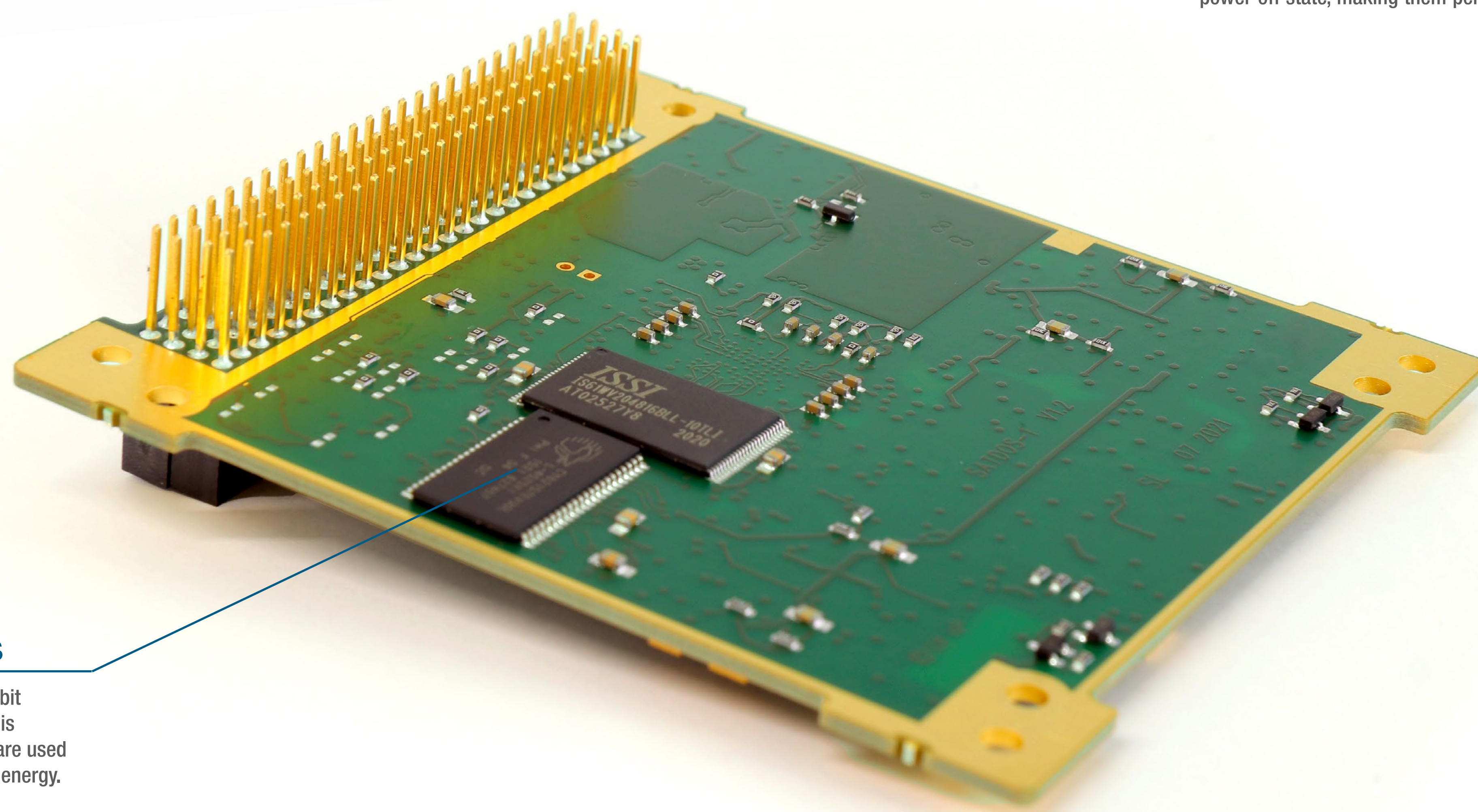
An I2C temperature sensor provides accurate temperature readings of the SATDOS-1 dosimeter payload in orbit.

FGDOS Radiation Sensors

FGDOS are highly sensitive and high-resolution SPI-interfaced radiation sensors. Using these sensors, SATDOS-1 provides in-orbit dose rate maps, e.g. of the South Atlantic Anomaly (SAA).

RADFET Radiation Sensors

RADFETs are highly durable and robust radiation sensors that allow to accurately accumulate dose while they are in their power-off state, making them perfectly suited to determine the entire mission dose.



SRAM Radiation Sensors

SATDOS-1 uses commercial SRAMs to assess in-orbit single event upset (SEU) rates. The SRAM flight-lot is characterized by CERN. Two different components are used to distinguish between particles of different LET or energy.

SATDOS-1

Seibersdorf Laboratories developed SATDOS, a nanosatellite dosimeter payload for assessing the radiation environment in space. Its first flight model, SATDOS-1, is installed onboard the Austrian CubeSat PRETTY.

SEIBERSDORF
LABORATORIES



FREQUENTLY ASKED SOLUTIONS