Company Presentation

egsespace s.r.o.

Basic Facts

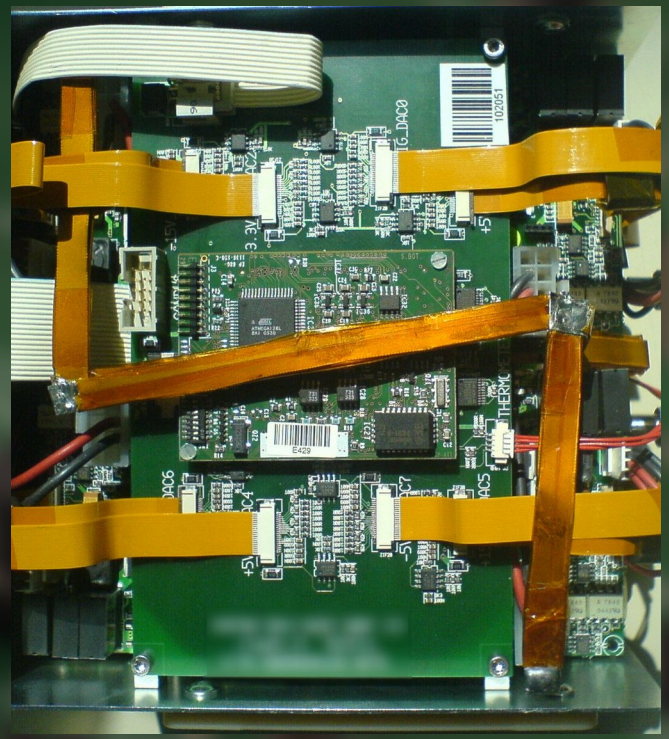
- Founded in September 2021
- Offices in Prague, Zelený pruh 1560/99
- SME, 4 employees + 3 external stuff
- ESA entity code 1000038338
- ESA business code 8000044320
- **Focused on Electronics for Space, Science and Industry**

Competences & Capabilities

- Electronic / Electrical Design
- Firmware / Software Development
- Development of EGSE/SCOE
- Radiation Tests of Blocks & Components – SEE, TID
- EMC Design & EMI Problems Mitigation
- Mechanical Design
- Custom Made Harness

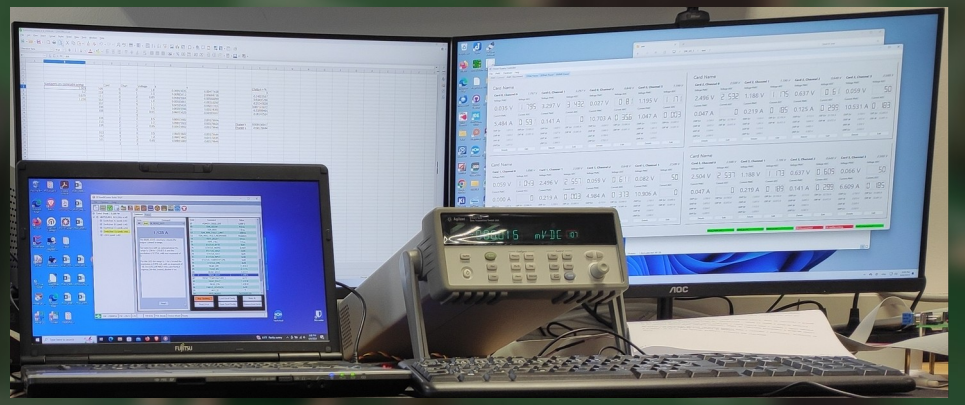
Electronic / Electrical Design

- Advanced Analog & Digital circuit design
- Precision Electronics
- Microcontroller applications
- PCB design
- FPGA design
- Wi-Fi / ETHERNET based devices
- High speed circuit/PCB design
- High voltage design
- IoT devices



Firmware / Software Development

- Firmware for Microcontroller Units (MCU)
  - STM32, Microchip, ATMEL, etc.
- Software for Instrument control
  - Win/Linux
  - Python, C++,C, QT, etc.
- WiFi / ETHERNET communication
- FPGA
  - ALTERA, XILINX
- IoT Firmware



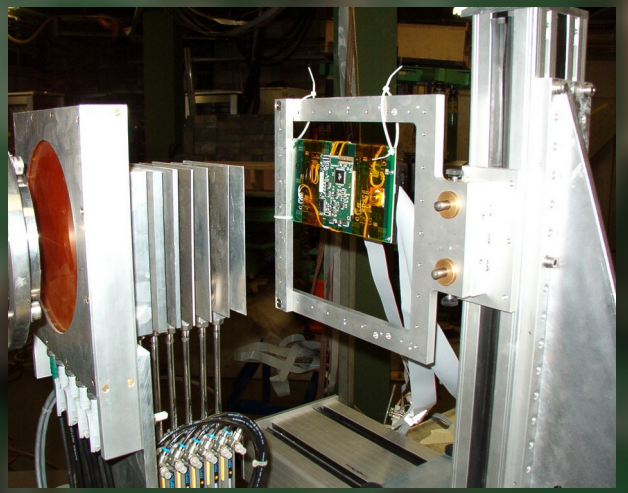
Development of EGSE/SCOE

- Power SCOE

  Our team supported designed of several power SCOE systems (EUCLID, SB_NEO, …)
  - Solar Array Simulator (SAS)
  - Umbilical (UMB)
  - Battery Simulator (BS)
  - Launch Power Supply (LPS)
  - Frangibolts, thermistors and heaters (FTH)
  - Battery Conditioning Equipment (BCE)
  - Battery protection (BP)
- Test Rigs & Simulators / Emulators of HW blocks
  - PCB level, Final setup level, Burn-in, …

Radiation Tests of Blocks & Components

- Radiation Test of High Speed Components
  - XILINX - Ultrascale, ZYNQ7000, DDR4/DDR3 memories, EHTERNET
  - Special SODIMM PCBs with redundant memory chips
  - Chip preparation – thinning – DDR4 cut above
- Design of auxiliary tools needed for radiation tests
  - Mechanical parts
  - Special power supplies & data acquisition for test
- Radiation test design, realization & data processing



Products

- **High Voltage Electronic Load**, suitable for
  - Space thruster development & tests,
  - HV power supply development,
  - Simulation of HV loads, etc.
- **Special Power Supply & Data Acquisition Unit**, suitable for
  - Development and Evaluation of Digital circuits with FPGA, memories, CPLD, microcontrollers, etc.
  - Radiation tests of Components and Blocks
- **Development Board for Xilinx Ultrascale FPGA**, suitable for
  - Development of IP cores for high reliability memory for space on-board applications
  - Radiation tests of DDR4 chips

High Voltage Electronic Load

- **Parameters**
  - 500V – 20kV DC
  - Variants Imax = 20mAmps up to 100mAmps
  - HV side isolated
  - Front panel control
  - Remote control – ETHERNET/SCPI
  - Single channel variants
  - Dual channel variant on demand
  - 19“ sub-rack , 6U high
  - Mains power 230/110VAC

- **Applications**
  - Space thruster development & tests
  - HV power supply development
  - Simulation of HV loads

16 Channel PSU with DAQ for FPGA development & tests

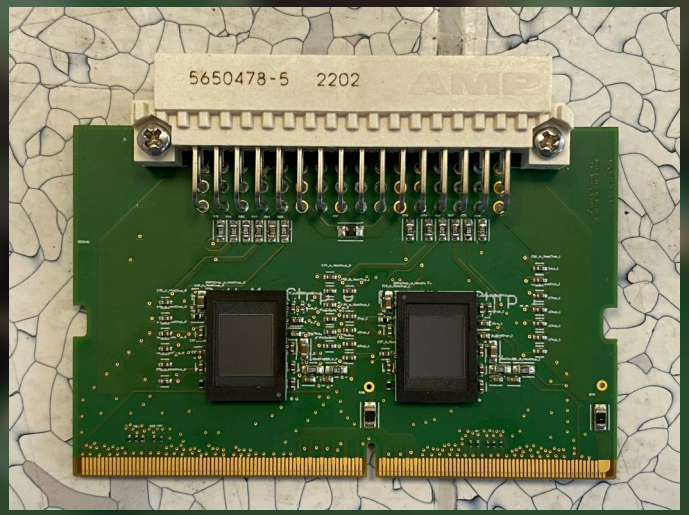
- Up to 16 voltage levels – programmable voltage (0.5 - 5VDC)
- Programmable channels sequencing, OVP, OCP, OTP
- Embedded fast DAQ for voltage/current measurement over Ethernet ~ 100ksps
- Companion GUI Program for Remote Control

XILINX Ultrascale development board

- PS/PL DDR4 SODIMM sockets
- 1Gb Ethernet, RS 422, JTAG, SD card
- Development of IP cores for high reliability memory for LEO applications
- Special design for irradiation tests – safe distance of peripheral chips
- Radiation tests of DDR4 chips

Dual DDR4 SODIMM for radiation test & redundancy

- Dual memory SODIMM for data redundancy
- Dedicated for SEE radiation tests
- Used also for extreme data reliability algorithm development
- Chip thinning



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Thank you

For your attention