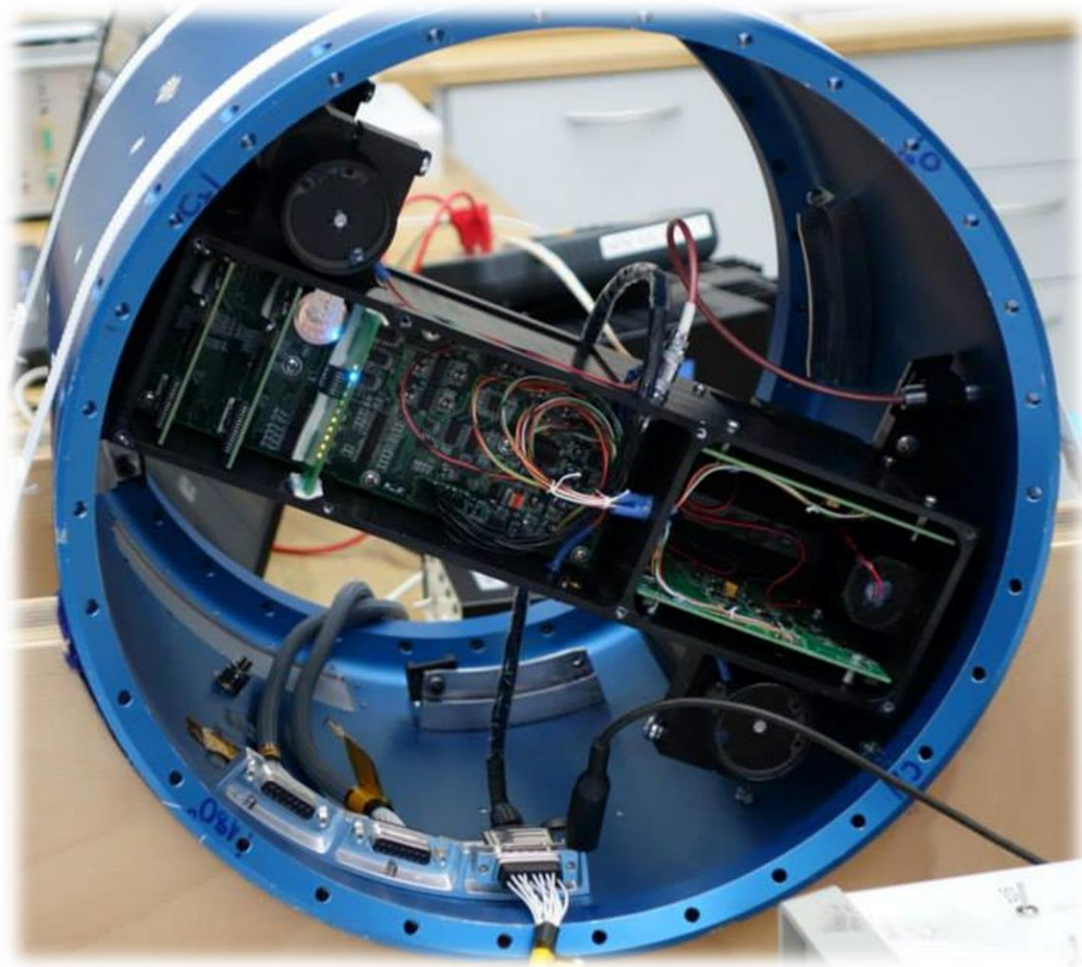


# SPACE-GM

## Geiger-Müller Counter Systems for Space Applications



### Application

#### Cosmic Ray Research

- ✓ Proven cosmic ray research equipment for stratospheric missions (ballons, sounding rockets)
- ✓ To determine the cosmic ray flux profiles
- ✓ To study shielding effects of the surrounding environment
- ✓ To generate cosmic ray event alerts
- ✓ Operated several times on-board stratospheric balloons and sounding rockets

#### Nuclear Environment Monitoring

- ✓ To map contaminated areas
- ✓ To localise radiation sources
- ✓ To protect humans from radiation
- ✓ Operated on-board drones for radiation mapping

### Key Features

- ✓ GM-counter based cosmic ray instrument for harsh environments
- ✓ GM counters can be used in stratospheric balloon flights or on-board sounding rocket missions
- ✓ 2-dimensional sensitive measurement system
- ✓ Configurable system
  - ✓ Different type of GM-counters
  - ✓ Up to a maximum number of 4 GM-counters
- ✓ Fully autonomous operation
- ✓ Controlled via graphical user interface or TM/TC
- ✓ Available detector interfaces: CAN, RS-422

## General Specification

Power	1.9 W
Mass	3.5 kg
Dimensions	349 mm; 180 mm; 249 mm
Input voltage range	24.0 V...36.0 V
Operational temperature range	-40°C...+70°C
Non-operational temperature range	-40°C...+85°C
Operational pressure range	10 <sup>5</sup> Pa...10 <sup>-4</sup> Pa
Outgassing rate	<1% TML <0.1% CVCM
Data rate	1 kbit/s
Handling environment humidity	40...65% relH

## Environmental Specification

Temperature environment	-40°C...+85°C
Low frequency longitudinal and lateral vibration environment	10...700 Hz, 4.0 g
High frequency random environment for 3-axis	5...2000 Hz, 6.0 g <sub>RMS</sub>
Shock pulse	±20 g, 2.0 ms
Depressurisation rate	5.0 kPa/s

## Measurement Capabilities

GM types	Centronic ZP1210, ZP1200
Particle types	photons, charged particles
Dose rate range	1 µGy...100 mGy
Counting rate at 10 <sup>-2</sup> mGy/h	28 cps (for ZP1200) 110 cps (for ZP1210)
Dead time	90 µs (for ZP1200) 200 µs (for ZP1210)
Noise level	<0.2 cps (for ZP1200) <1.2 cps (for ZP1210)



## Flight Heritage

Mission name	Hosting platform	Orbit details	Duration	Remarks
BEXUS-14	TECHDOSE experiment	29 km floating altitude (N68°)	4 hours	With 2 GM tubes
REXUS-17	REM-RED experiment	88 km maximum altitude (N68°)	10 minutes	With 6 GM tubes

## Contact us

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