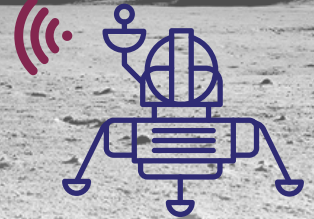**MISSION CONTROL**

LUNAR RADIOS

Connecting surface assets with line of sight

Mission Control's Lunar Radios are a pair of electronic interface modules that provide a bidirectional wireless communication channel between two communication nodes. It is designed to integrate on lunar landers and rovers and enable lunar surface operations.

Our lunar radios will be used for mission-critical operations in a 2022-23 commercial rover mission.

Core Features

Customize for your needs

Low power consumption

Qualified for lunar missions

Message acknowledgement

Reliable radio channel

Additional Features

- Wired communication with rover prior to deployment
- Rover battery charging and on/off control
- HDRM control, deployment detection, temperature monitor

- Customizable architecture to support multiple communication nodes
- Custom data processing, compression, and downlink prioritization routines, with AI algorithms

MISSION CONTROL
Software for Earth, Moon and Mars.

MISSION CONTROL
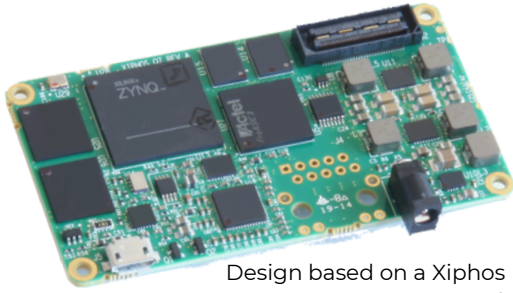
Design based on a Xiphos Q7S processor. Contact us for customization.

Space Qualified

- TVAC tested (10^{-5} torr)
  - Storage: -40 to +70°C
  - Operational: -35 to +65°C
- Vibration tested
- Radiation assessment completed for lunar surface

Specifications

- Data rate: up to 575 kbps
- Range: Within Line-of-Sight (tested to 500 m)
- Frequency: 2.472 GHz

	Rover Module	Lander Module
Power	< 2 W @ 5 VDC	< 3.2W @ 28 VDC
Mass	< 110 g	< 320 g
Size	94.5 x 88.1 x 16.4 mm	120 x 93.3 x 25.8 mm
Enclosure	None	Aluminum

Interfaces

- We support CAN, 2x RS422, more as needed
- Uses CubeSat Space Protocol, other options available

Interface	Type	Max Data Rate
Radio (GFSK)	Wireless	575 kbps
Radio (LoRa)	Wireless	145 kbps
CAN	Wired	1 Mbps
RS422	Wired	921600 bps

Leverage other Mission Control offerings with our Lunar Radios

SPACEFARER

Operate your rovers and payloads with our flexible web-based interfaces.

Designed for remote or on-prem mission operators.
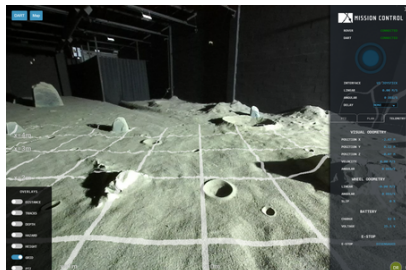
Example of our Spacefarer rover control interface integrated with user-friendly visualization and query tools

SPACEFARER AI

Deploy AI & vision algorithms to your flight CPU or FPGA using our AI Deployment Toolkit.

Or let us help you develop custom AI solutions for onboard autonomy.

- regolith
- crater - exterior
- crater - interior
- boulder
- pebble
- wall
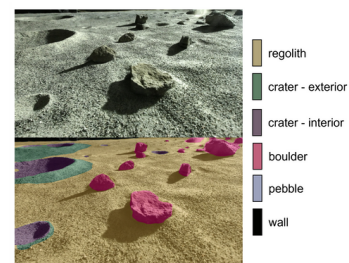
Example of our AI model, MoonNet, that will run on a flight processor and classify lunar surface features to support a rover mission in 2023

Contact us to add radios to your next mission!

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MISSION CONTROL
Software for Earth, Moon and Mars.