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CONNECT TECHNOLOGY
WITH CONFIDENCE

HIGH RELIABILITY WITH SUPREME PERFORMANCE

INNOVATIVE DESIGNS FOR EASY ASSEMBLY

DEPENDABLE CONNECTIVITY ACROSS THE BOARD

HRi RANGE

EZi RANGE

BBi RANGE

MARKETS & APPLICATIONS

NEW SPACE

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NEW SPACE

THRUST & PROPULSION

- BATTERY MONITORING & CONTROL
- PHOTOVOLTAICS
- THRUSTERS

PAYLOADS & SENSORS

- CAMERA
- SCIENTIFIC EXPERIMENTS
- TRANSPONDERS

GUIDANCE & NAVIGATION

- ON-BOARD COMPUTER
- GLOBAL POSITIONING
- TRANSCEIVER
- ATTITUDE SENSORS

LAUNCH SYSTEMS

- CUBESAT DEPLOYMENT
- CREW CAPSULES
- RE-USABLE ROCKET
- DE-ORBITERS

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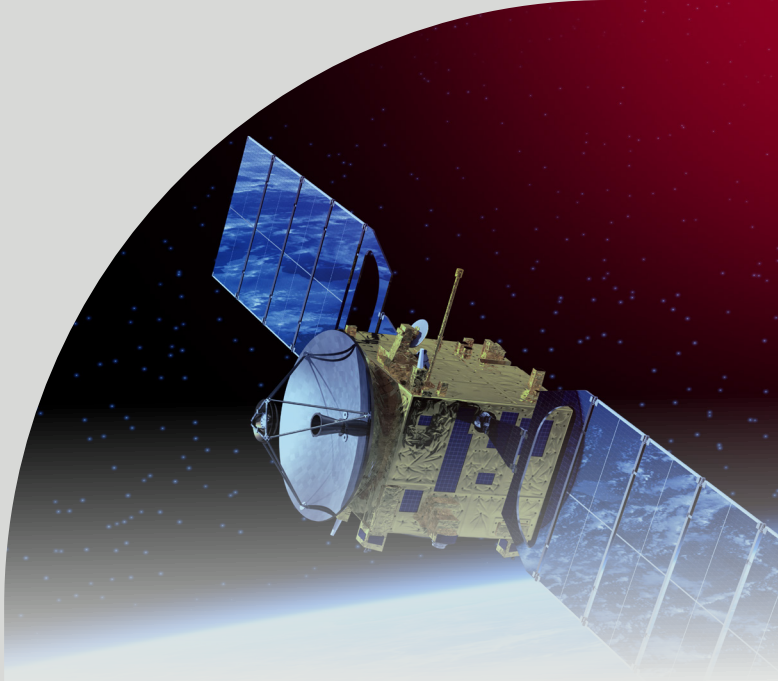

Harwin makes superior products of the highest quality for demanding applications.

This is no idle boast. Our UK headquarters carries EN 9100 / AS9100D certification. We focus on quality, safety and technology. We continually improve our quality systems and invest in advanced manufacturing & automation.

Helping you solve your connection challenges is our passion. We back this up with amazing global support and agile response to your needs.

We bring you innovative, dependable connector technologies; and we deliver them reliably, quickly and cost-effectively.

- World-leading specialist in reliable and high-performance interconnects, EMC shielding and PCB hardware.
- Helping you to realize competitive advantage by solving demanding connectivity challenges.
- Proven supplier of mission-critical and long-term dependable connectivity solutions.

Resources

Expert advice, training videos, test reports, instructions, datasheets, 3D CAD models...

Our website holds a wide array of design and training resources to guide you to the connector or PCB hardware product you need.

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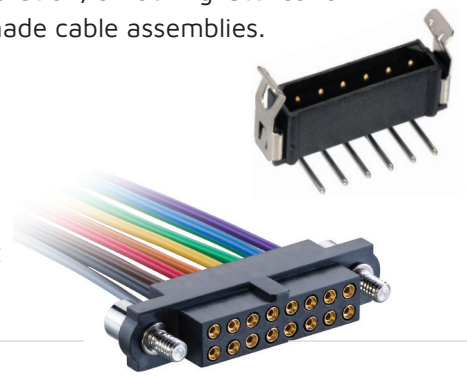
NEW SPACE - SELECTION GUIDE

Datamate J-Tek, Datamate L-Tek

High-Reliability, 2mm pitch connectors for PCB and cable.

Double or single row fitted with either stainless steel jackscrews for durable strain relief against vibration, or locking latches for minimal board footprint. Ready-made cable assemblies.

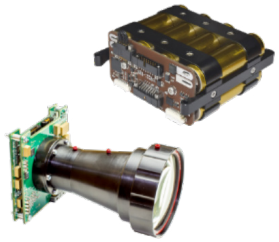


FEATURES

- CURRENT: 3A
- VIBRATION: 10G
- SHOCK: 100G
- TEMPERATURE: -55°C TO +125°C
- OPERATIONS: 500

APPLICATIONS

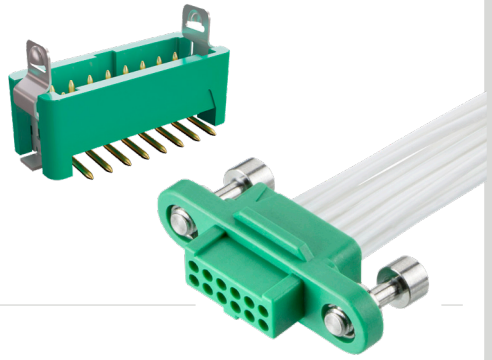
- ELECTRIC PROPULSION THRUSTER MODULE
- MULTISPECTRAL IMAGING CAMERA
- INTEGRATED ATTITUDE CONTROL SYSTEM
- SATELLITE TELEMETRY/TRACKING COMMAND RADIO
- S-BAND, C-BAND, CCSDS TRANSCEIVERS
- BATTERY PACK CONTROLLER
- ON-BOARD COMPUTER



Gecko-SL, Gecko Latch

High-Reliability 1.25mm pitch double row, compact & lightweight.

Stainless steel mate-before-lock screw fixings or miniature latching for full vibration resistance. Board and cable variations, ideal for PCB stacks.



FEATURES

- CURRENT: 2A
- VIBRATION: 20G
- SHOCK: 100G
- TEMPERATURE: -65°C TO +150°C
- OPERATIONS: 1000

APPLICATIONS

- ELECTRO-THERMAL PROPULSION MODULE
- ADCS MODULE
- ON-BOARD COMPUTER
- AUTOMATIC IDENTIFICATION SYSTEM (AIS) RECEIVER
- S-BAND TRANSMITTER
- MULTI-CHANNEL GNSS RECEIVER

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NEW SPACE - SELECTION GUIDE

Datamate Mix-Tek

Hi-Rel 4mm pitch, power or coax, with additional signal options.

20A & 40A power contacts, 50Ω coax contacts. Ultimate flexibility, proven track record.

FEATURES

- CURRENT: 40A (MAX)
- VIBRATION: 10G
- SHOCK: 100G
- TEMPERATURE: -55°C TO +125°C
- OPERATIONS: 500

Kona

High-Reliability at 8.5mm pitch power with 3,000V voltage rating.

Ultimate power in a compact, individually shrouded housing with thumbscrews.

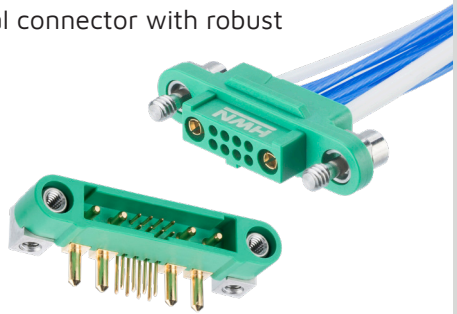
FEATURES

- CURRENT: 60A
- VIBRATION: 20G
- SHOCK: 100G
- TEMPERATURE: -65°C TO +150°C
- OPERATIONS: 250

Gecko-MT

Hi-Rel 1.25mm pitch signal + 3mm pitch mixed technology.

The smallest, lightest, power and signal connector with robust screw-locks. Board and cable options.



FEATURES

- CURRENT: 10A (MAX)
- VIBRATION: 20G
- SHOCK: 100G
- TEMPERATURE: -65°C TO +150°C
- OPERATIONS: 1000

M300

Hi-Rel 3mm pitch system capable of 10A per contact.

Compact power, durability and maximum resilience. Increased temperature resistance.

FEATURES

- CURRENT: 10A
- VIBRATION: 20G
- SHOCK: 100G
- TEMPERATURE: -65°C TO +175°C
- OPERATIONS: 1000

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NEW SPACE - CASE STUDY

GAUSS Srl offers orbit launch services,and a leaner platform construction would provide space for greater payloads and more onboard experiments.

The company's UNISAT range of deployment platforms provide "ridesharing" for academia and small businesses to release their pico/nano-satellites into orbit. Every ounce costs to launch, so high-grade lightweight materials and hardware are selected.

To accelerate development time, their engineers use COTS (Commercial Off-The-Shelf) components when possible.

With a 3 to 5 year operating window, ongoing reliability and resilience to vibration/shock at launch are also vital.

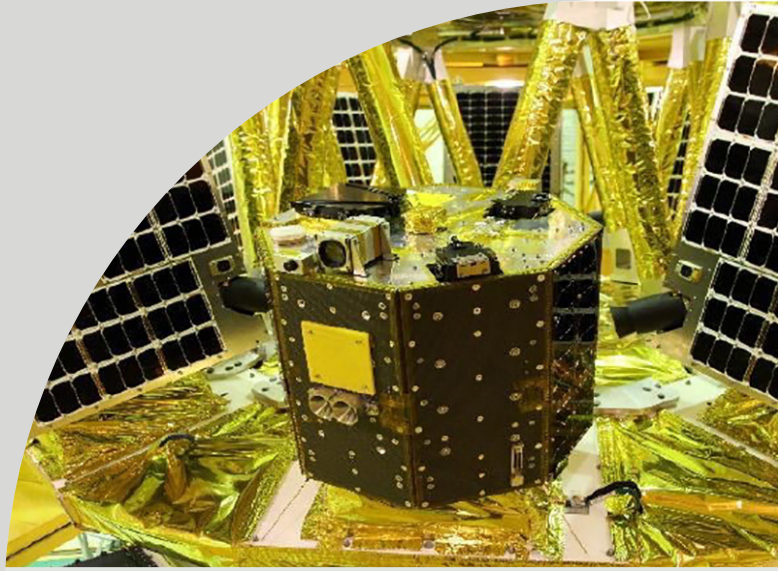
THE PROBLEM...

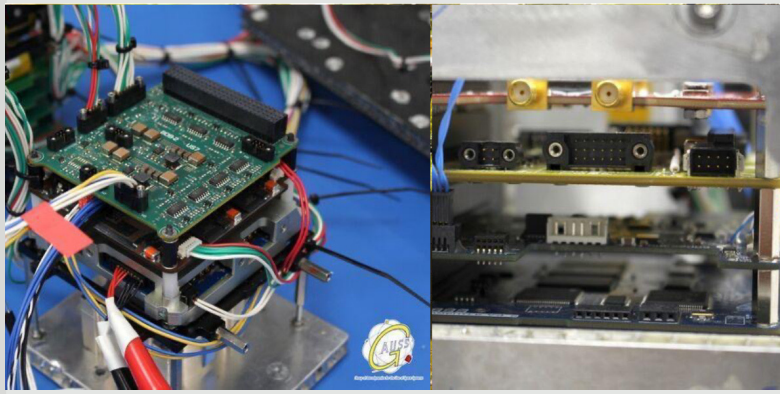
- Compact cable-to-board connections, resilient under vibration and shock, operational at space temperatures and reliable long-term
- Lightweight with low outgassing and options for signal & power transmission, availability with short or no lead-times

THE SOLUTION...

DATAMATE J-TEK & DATAMATE MIX-TEK

- Signal: 2mm pitch / 3A. Power: 4mm pitch / up to 40A
- 20G vibration, 100G shock resistant, -55°C to +125°C temperatures
- Low outgassing at levels acceptable to NASA & ESA
- Many connection options available from stock





UNISAT-7 engineering model & flight electronics using Datamate connectors

"After considering many different possibilities, it was apparent to us that specifying Harwin Datamate connectors solved a lot of our problems.

These components provided us with assured connectivity, & would be able to cope with the uncompromising conditions involved. As a result, they feature in nearly all of the UNISAT-7 subsystems."

Riccardo Di Roberto, Engineering Lead, GAUSS

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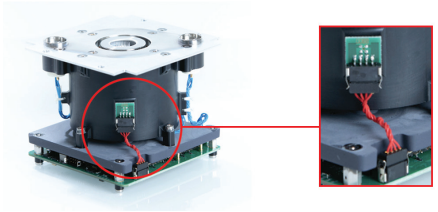
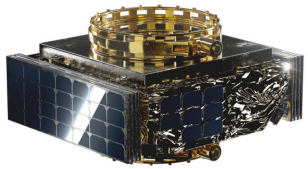
APPLICATIONS LIST - SPACE SYSTEMS AND COMPONENTS

Thruster Modules



Featuring: Datamate L-Tek

- Field Emission Electric Propulsion (FEEP) thruster module, suitable for small satellites
- Controlled through electrode voltages for precise handling over the full throttle range, with low noise



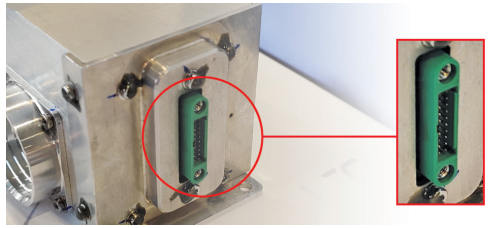
Featuring: Gecko, Gecko-MT

- Water-based electrothermal propulsion system, with integrated avionics
- In-space rockets for last mile logistics

Payload Camera

Featuring: Datamate J-Tek, Datamate Mix-Tek

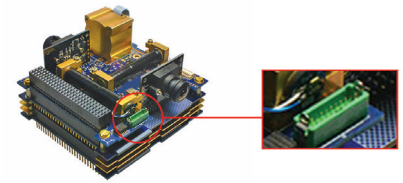
- Multispectral imager with visible to infra-red capabilities and onboard motion sensing
- Forest and agriculture tracking, mining and transport infrastructure progress



Featuring: Gecko-SL

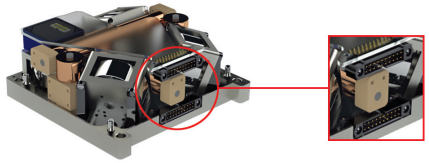
- Attitude Determination and Control System (ADCS) multi-sensor module unit with built-in camera
- Compact single unit precisely calibrated for satellite constellation consistency

Attitude Control



Featuring: Gecko Latch

- Radiation-tolerant collection of sensors and actuators for a full ACDS that can also function as an OBC (Onboard Computer)
- For nanosatellites that require attitude control and volume-limited satellite designs



Featuring: Datamate J-Tek

- Integrated attitude control solution for 2-6 kg satellites, including momentum wheels, gyro and accelerometer
- Designed to operate with external attitude sensors

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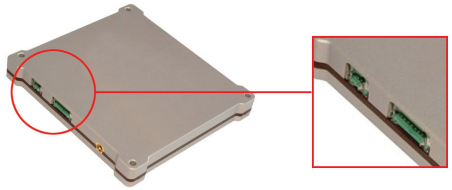
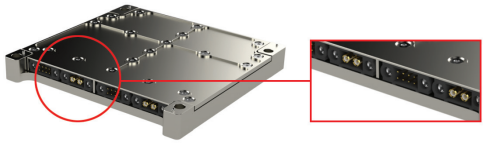
APPLICATIONS LIST – SPACE SYSTEMS AND COMPONENTS

Transmitters, Receivers & Transceivers



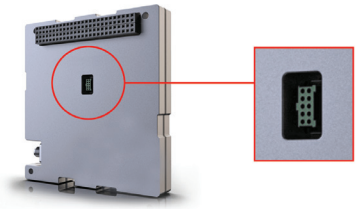
Featuring: Gecko Latch

- Stand-alone 4-channel Automatic Identification System (AIS) receiver for maritime VHF
- Integrated temperature & power monitoring, CubeSat compatible and ESD protected



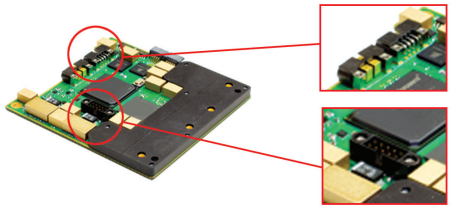
Featuring: Datamate J-Tek, Datamate Coax

- Dual hot-redundancy satellite telemetry, tracking and command radio, for an antenna diversity scheme to achieve an omnidirectional gain pattern
- Very low noise, optional encryption



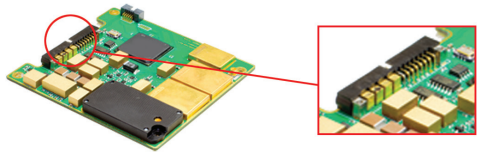
Featuring: Gecko Latch

- S-band transmitter with data interfaces and modulation schemes, fully compliant with the CubeSat standard
- Featured in NASA's 'State of the Art' report



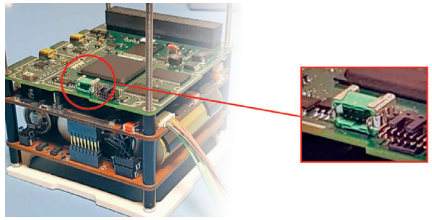
Featuring: Datamate J-Tek, Datamate Mix-Tek

- Receives and transmits high data rates over large distances, with hot redundant transceivers operating in S-band and C-Band
- Very power efficient, light weight and low noise, amplifier extension module optional



Featuring: Datamate Mix-Tek

- CCSDS compliant full-duplex communication subsystem with UHF downlink and VHF uplink
- Fault tolerant design with error mitigation techniques including redundancy on all critical signal paths



Featuring: Gecko Latch

- Miniaturized GNSS (Global Navigation Satellite System) receiver with 24+ channels for tracking GPS L1 signals (optional GLONASS and Galileo)
- Radiation tolerant for dual antennas to the CubeSat standard

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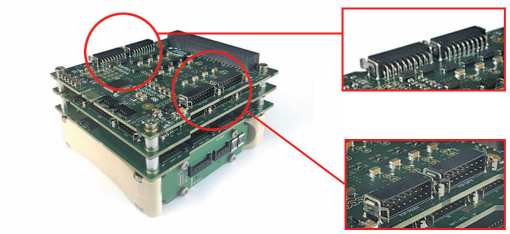
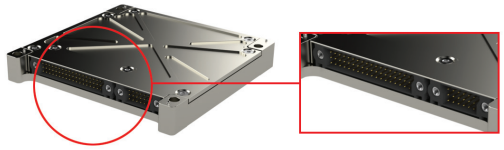
APPLICATIONS LIST - SPACE SYSTEMS AND COMPONENTS

Battery and Power Control



Featuring: Datamate L-Tek

- Modular electrical power system (EPS) with hardware over-current protection, max power point tracking, soft start and solar panel interfaces
- Stackable to CubeSat requirements, very low idle consumption, housekeeping telemetry

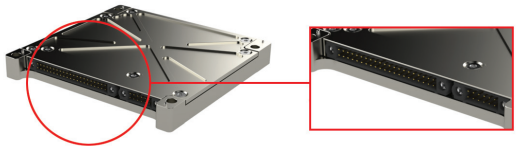


Featuring: Datamate J-Tek 3-Row

- 12 channel power conditioning and distribution unit with 6 independent step-down converters & a boost converter
- Rugged & compact, all output channels & CAN bus in one connection

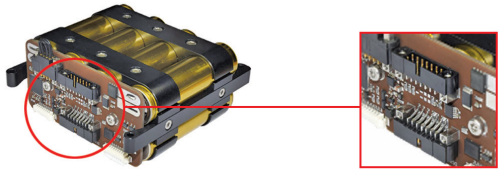
Featuring: Datamate J-Tek

- 6-8 cell Lithium-Ion battery system with auto balancing and heater, short circuit & under/over voltage detection
- Inhibit connectors for insert-before-flight and separation



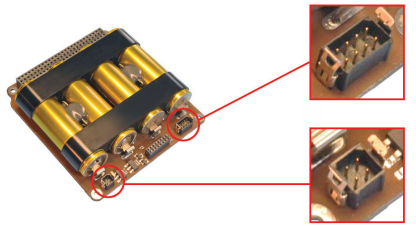
Featuring: Datamate J-Tek

- 7 channel maximum power point tracker and battery charger module with telemetry
- Connections for CAN bus and power/ communications to solar panel arrays



Featuring: Datamate J-Tek

- Self-contained Li-Ion battery pack with onboard microcontroller and heater control
- Extensive flight history, compatible with PC-104 embedded PC and optional ISS Acceptance testing



Featuring: Datamate L-Tek

- Stackable Li-Ion battery pack with temperature sensors and heater
- PCB design to the CubeSat standard, lightweight with 4 Li-Ion cells for high capacity

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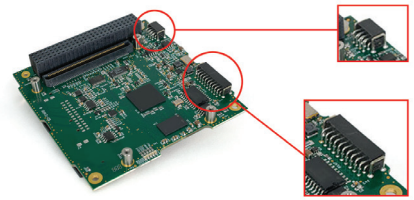
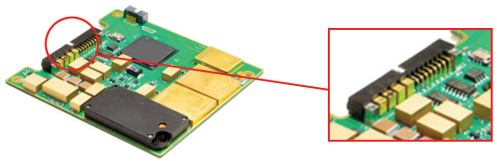
APPLICATIONS LIST – SPACE SYSTEMS AND COMPONENTS

On-Board Computer



Featuring: Datamate L-Tek

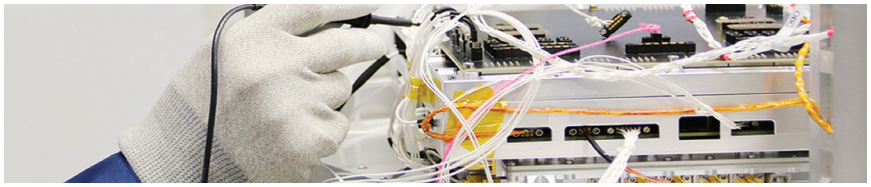
- On-board telemetry: voltages, power-controller, and real time clock; high reliability data storage and fail-safe filesystem
- Compliant to CubeSat standard, flight-proven with optional interface daughterboard



Featuring: Datamate J-Tek

- Instant boot-up, radiation hardened, fault tolerant with hot redundant mass storage and non-volatile memory for code storage
- Multiple clock sources and local telemetry (currents, temperatures, etc.)

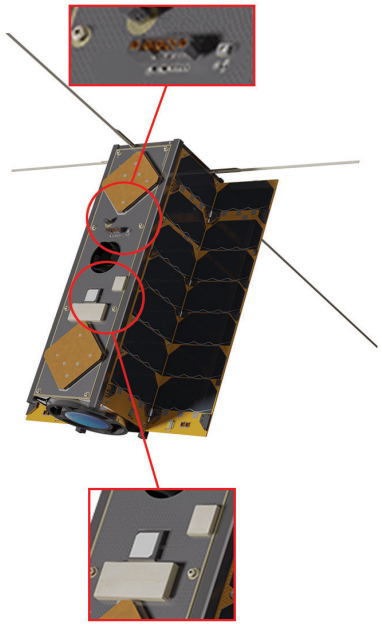
System Stack



Featuring: Datamate J-Tek, Datamate Mix-Tek

- PPS (Pulse Per Second) reference clock, XBAND radio for comms, and On-Board Computer system with multiple interconnects
- Board and cable connections for inter-operational signals and power requirements
- Commercial constellation of Synthetic-aperture radar (SAR) satellites, to image any Earth-based location, day or night
- Energy-efficient, designed for use in a small satellite platform

CubeSat Platform



Featuring: Datamate Mix-Tek, EMC Shield Cans

- Nanosatellite platform with redundancy on all critical functions, designed for robustness and high-reliability
- EPS (external power supply) module features external connection & shield cans

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FOR FURTHER INFORMATION PLEASE CONTACT:

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