SINGLE-BOARD COMPUTER

SBC-1461

The SBC-1461 is a single-board computer with integrated communications and security features designed to operate in Low Earth Orbit (LEO) environments. The credit-card-sized module features a quad-core processor, error-correcting code memory, mass storage, selective redundancy, and multiple data interfaces in a compact form factor.

The Cesium SBC-1461 includes a software development kit for a Linux-based operating system (OS), providing a fast solution out of the box.

Use as a stand-alone computer or combine with other Cesium modules for a powerful, secure, and tightly integrated communications platform.

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1. PRODUCT OVERVIEW

1.1. Key Features

- Compact 50mm x 84mm x 13mm packaged form factor
- Hardware features:
    - 1.8 GHz ARM® 64-bit quad-core Cortex® processor
        - Traffic routing and encryption without loading the cores
            - Encryption options include AES-256-GCM
        - Integrated security engine
    - 2GB SDRAM with ECC
    - 64GB non-volatile eMMC storage
    - 2Mb high-endurance FRAM memory
    - Redundant 32MB boot flash with automatic failover
    - Single 12V power input
    - On-board telemetry: power, temperature, rail voltages, real-time clock
- Software features:
    - Linux support: Ubuntu-based OS with GNU toolchain
        - Option for VxWorks®
        - U-boot with Secure Boot
- Mechanical features:
    - Thermal pillars bring heat to flat surface
    - Rugged, MIL-spec Nano-D connectors
- Suitable for military and commercial use on LEO satellites and airborne platforms

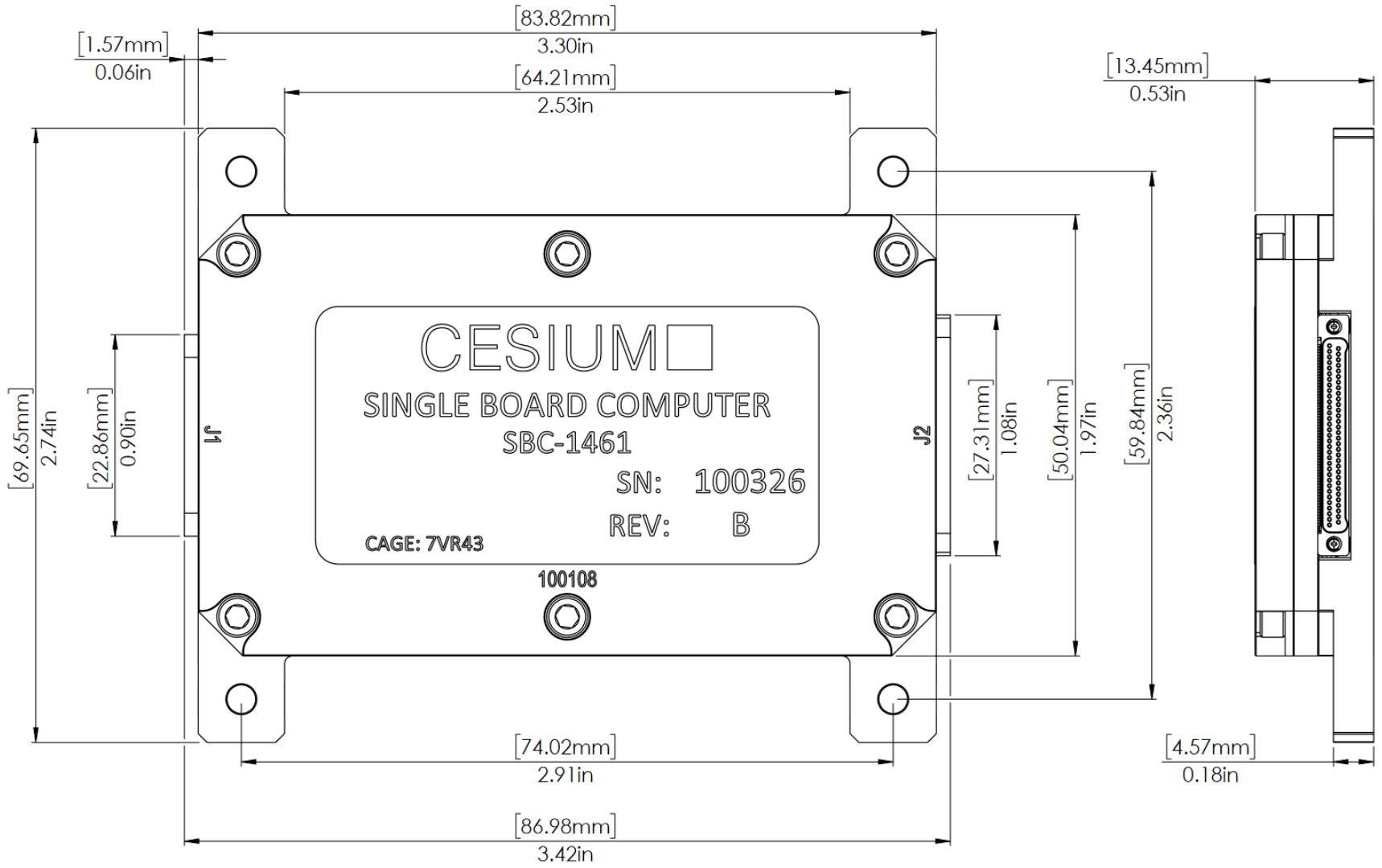
1.2. Data Interfaces

- Ethernet
    - 2x 1000BASE-T (capacitively-coupled)
    - 2x 10GBASE-KR (configurable as SGMII)
    - 1x SGMII
- Serial, configurable as:
    - 3x RS-485 (half-duplex) + 1x RS-422 (full-duplex), OR
    - 2x RS-485 + 2x RS-422, OR
    - 3x RS-422
- Programming (lab use)
    - 1x JTAG

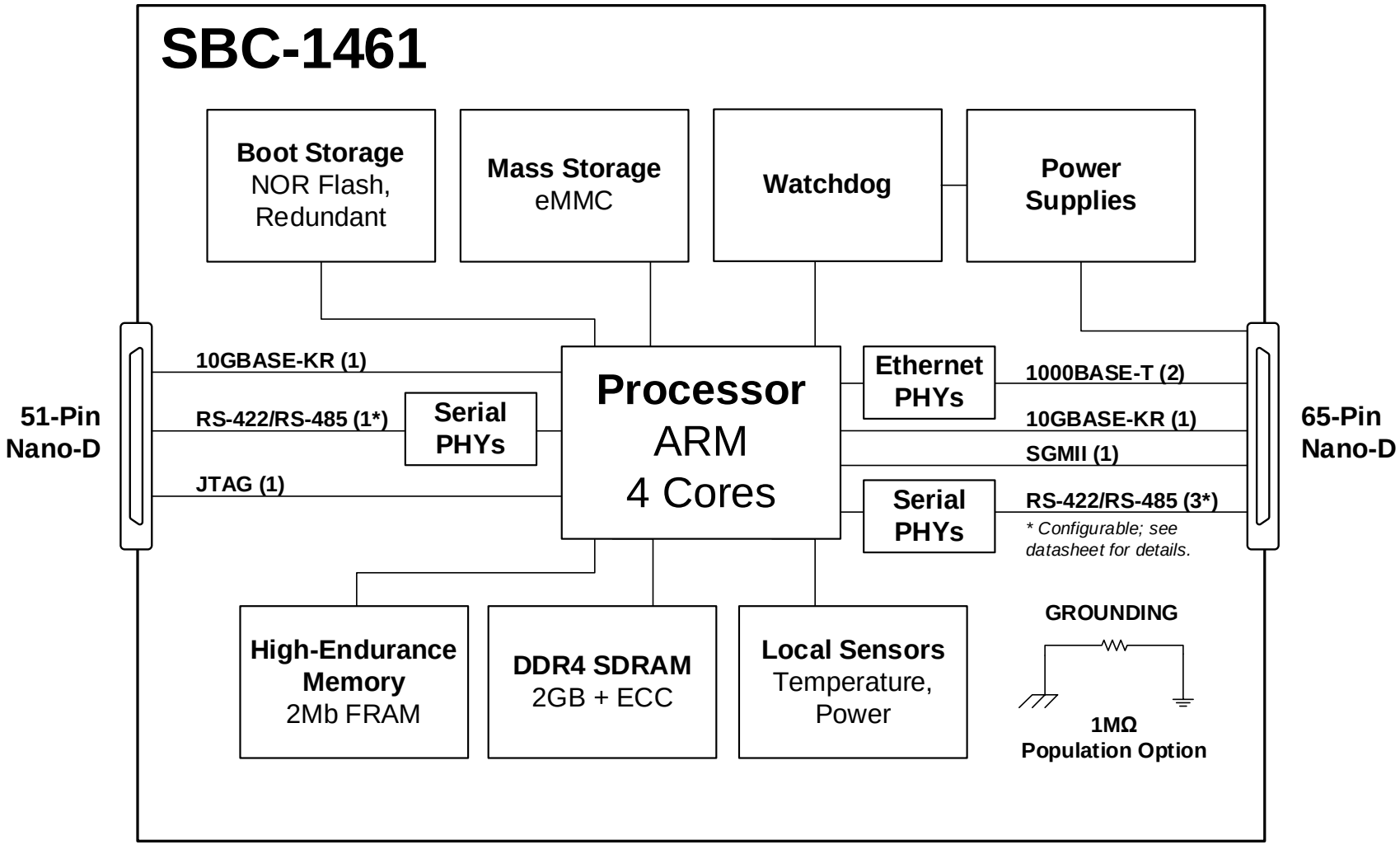
1.3. Highlighted Specifications

DC Input Voltage:	12 V
Baseplate Operating Temperature:	-24 to +61 °C
Mass:	116 g

3. MECHANICAL DRAWING



4. SYSTEM BLOCK DIAGRAM



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