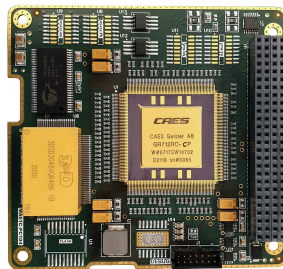# MA61C

Multipurpose
Adapter
Generic
Interface
Connector

SPIN
Simplify Space Manufacturing

CubeSat

MA61C SmallSat is an intelligent, plug-and-play Command and Data Handling (C&DH) system engineered to seamlessly integrate multiple satellite subsystems with onboard computers.

MA61C CubeSat interfaces with essential subsystems such as AOCS sensors and actuators, communication, power, payload, and more.

The system **scans connections, detects incoming data, routes and converts** it between interfaces, and monitors bus data, sending information to connected units.

MA61C is designed for ease of use, offering a database of pre-installed drivers that enable **plug-and-play functionalities. This simplifies hardware integration with:**

- **device recognition**
- **self configuration**
- **automatic driver installation**

By integrating with MA61C, users streamline the entire SmallSat lifecycle—from design and supply chain management to system integration—accelerating time to space.

Key Features

Powered by the GR712RC LEON3-FT SPARC V8 processor
Supports multiple I/O interfaces at the same time
64Mbit of SRAM, 64Mbit of FLASH and 3Gbit memory for software and data storage.
Built-in timer driven by an onboard oscillator, ensuring precision in its operations.
API and a Windows-based GUI for easy subsystem monitoring and control

Key Benefits

Increase efficiency modular design
Reduces design and integration time by 50%
Lowers development costs up to 30%
Simplifies supply chain management

SPiN
Simplify Space
Manufacturing

Processor

GR712RC dual-core 32-bit LEON3 fault-tolerant SPARC V8 processor 50 MHz clock frequencies

Power Supply

5V and 3.3V

Onboard memory

- SRAM - 2 x 16Mbit
- SDRAM - 1 x 3Gbit
- FLASH - 64Mbit

Interfaces on the board

- 2 x SpaceWire
- 2 x CAN-bus
- 1 x RS232
- 1 x RS422
- 2 x RS485
- 1 x I2C Master
- 1 x SPI
- 10 x GPIO
- 6X PWM
- 1x UART (3.3v TTL level)

Physical Properties

- Operating Temperature: -40 deg C to +85 deg C
- Quality: IPC-3 standard
- Size: 95.89 mm x 90.17 mm
- Weight: 150 grams

Port speed

- SpaceWire - Up to 200 Mbit/s, nominal 10 Mbit/s
- CAN-bus - 1Mbit/s
- I2C interface - up to 0.4Mbit/s
- SPI interface - up to 20 Mbit/s
- RS232 - up to 250 Kbit/s
- RS422/RS485 interfaces - up to 10 Mbit/s
- Debug port - 1 Mbit/s

Onboard software

- Plug and play
- Embedded driver database
- Routing and converting
- Data Buffering

What does the MA61C package include?

1 x MA61C (board)
1 x Debug cable
1 x USB with windows API and GUI Manuals

Space Products and Innovation spins technology into the space industry to simplify manufacturing. SPiN enables rapid, flexible, and cost-effective satellite designs through modularity, enabled by the combination of MA61C, its plug-and-play intelligent data node, with system engineering. SPiN democratizes access to space, empowering manufacturers to unlock new ventures.