



MULTIPURPOSE ADAPTER GENERIC INTERFACE CONNECTOR (MA61C)

EGSE version

Description

The Multipurpose Adapter Generic Interface Connector (MA61C) EGSE is a USB to Space Wire, CAN-bus, I2C, GPIO, UART and MILBUS interface device. It holds Electronic Data Sheets (EDS), enabling it to perform plug-and-play functionalities such as device recognition, self-configuration and driver installation without user intervention. MA61C is an intelligent system that detects incoming data, scan connections, route and convert data between interfaces. It is bundled with an Application Programming Interface (API) and a Graphical User Interface (GUI), allowing easier commanding and monitoring of MA61C and the connected subsystem from a computer via the USB

The core of MA61C is the GR712RC LEON3-FT SPARC V8 dual-core processor, which supports multiple interfaces. The processor also comes with a built-in timer based on an onboard oscillator. The MA61C is equipped with an internal memory of 80 Mbit of SRAM and 64Mbit of FLASH for EDS storage and incoming data buffer. A reset button is included to restore the MA61C to its original configuration. The 3 LEDs on the board indicate the board's power, reset and error status. This electronic board is engulfed in a resin casing which protects the internal components.

In addition to selling different versions of MA61C, the intelligent data node to serve the design needs of our customers, SPiN provides a service to design satellites in a flexible concept using model-based system engineering methodology. Don't hesitate to get in touch with ma61c@spintech.com for more information.

In 2022, SPiN launched its first CubeSat to demonstrate its technology in orbit and opened three more subsidiaries in Italy, the United Kingdom and Luxembourg.

SPiN is a leading provider of modularity solutions for the space sector. It offers satellite integration solutions to transform satellites into modular systems, empowering satellite manufacturers to spend high-value time and money where it counts: pursuing new ventures.

Founded in 2015, SPiN is a Techstars portfolio company. It was selected for Top 70 Innovative Companies for Pioneers in 2016 and as one of the Top 500 Companies for Hello Tomorrow 2019. In addition, the adapter technology was awarded the best business solution at the Startup Weekend Space in 2015, the INNOSpace Masters in 2016 and NewSpace Europe in 2019.



What does MA61C EGSE do?

MA61C provides the commanding ability for all the hardware interfaces through the data packet format defined in the EDS. Additionally, the capabilities of data monitoring, such as telemetry, are possible in two ways:

The first is predefined telemetry of the connected equipment, such as data rate, memory level, and CPU usage.

The second free telemetry is stored and displayed in textual form. Finally, a timer adds a date stamp to the incoming data and is stored by the API.

MA61C EGSE Key Features

Physical properties:

- ✓ Quality: ISO standard
- ✓ Size: 130 x 130 x 32.5 mm
- ✓ Weight: 315 grams (approx.)

Processor:

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

Onboard software:

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

Power supply:

Operation with +5V supply DC input LED: Power, reset, clock

Interfaces on the board:

- ✓ Mini-USB JTAG-based interface
 - ✓ 2 x SpaceWire interface, connectors: micro-d 9 pins(female)
 - ✓ 2 x CAN bus interfaces, connectors: dsub9 (male and female)
 - ✓ 1 x UART (RS232), connector: dsub9 male
 - ✓ 1 x UART (RS422), connector: dsub9 female
- I2C master interface connectors:

- ✓ x 1' header pin (3.3V)
- ✓ MIL-STD-1553B RT/BC/MT, connector: dsub9 female
- ✓ 40 GPIO, connectors: 40 x 1' header pin
- ✓ Additional power supply 5V, connector: 1' header pint
- ✓ Reset switch

Onboard Memory:

- ✓ SRAM - 5 x 16 Mbit
- ✓ FLASH - 64 Mbit

Port Speed:

- ✓ Spacewire - up to 200Mbit/ss, nominal 10Mbit/ss.
- ✓ Canbus - up to 1 Mbit/s
- ✓ MIL-1553B - up to 1Mbit/ss
- ✓ I2C interface - up to 400Kbit/s
- ✓ UART interfaces - up to 6 Mbit/s
- ✓ JTAG (mini usb) - up to 30 Mbit/s (nominal 1Mbit/s)

What is included in the MA61C package?

- ✓ 1 x MA61C EGSE
- ✓ 1 x USB cable
- ✓ 1 x Power adapter
- ✓ 1 x USB stick with EGSE S/W
 - ✓ API (executable and dll format) can also be used in direct C/C++ connection
 - ✓ GUI
- ✓ Getting Started MA61C EGSE Manual

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