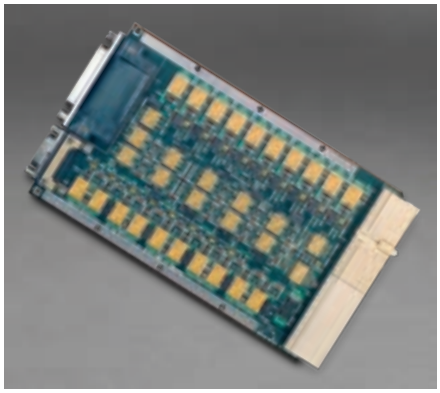
# SOLAR ARRAY AND CHARGE CONTROL INTERFACE (SACI) PAYLOAD AND POWER INTERFACE (PAPI) McLASI™



The SACI, PAPI, and McLASI boards provide a complete spacecraft power distribution system solution. The SACI Board provides a solar array and battery interface complete with battery charge control and telemetry feedback capability. The PAPI and McLASI boards are general purpose switching cards which are controlled via the SACI. Multiple PAPI/McLASI boards may be combined to increase the system capabilities.

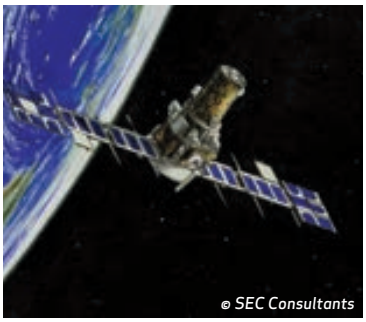
The SACI, McLASI, and PAPI are designed to be compatible with a 3U form factor and provide interfaces for a 3U cPCI backplane. In such a setup, the SACI and PAPI may be used as part of an Integrated Avionics Unit—combining C&DH and EPS functions in one compact assembly.

## TYPICAL 3U SACI FEATURES

- Charge Control & Solar Array Interface Card
- 10 Solar Array String Inputs with Shunt Option
- 20 Switched 28V Outputs @ 2A (derated)
- Software Battery Charging with HW Backup
- Autonomous Charging of Dead Battery
- Switch Command & Telemetry Interface
- Discrete commanding for up to 74 switches in the system
- Solar Array / Battery / Load Current Telemetry
- Battery Voltage Telemetry
- 12 A Total Throughput Current

## DIMENSIONS AND MASS

- Dimensions: 3U Form Factor
- Mass: <0.25 kg



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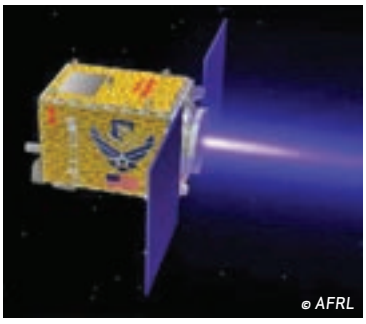

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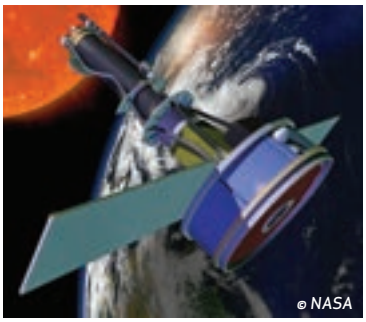

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# SACI/PAPI/McLASI BOARDS

## **SACI** TYPICAL FEATURES

- Charge Control & Solar Array Interface Card
- 14 Solar Array String Inputs @ 6.9 A (derated)
- 12/14 Array Strings Switched
- Software Battery Charging with HW Backup
- Autonomous Charging of Dead Battery
- Switch Command & Telemetry Interface
- Controls up to 3 LASI Cards
- Solar Array / Battery / Load Current Telemetry
- Battery Voltage Telemetry
- 8 PRT Sensor Interfaces
- 3 Low Voltage Switched Outputs @ 5 V, +/-15 V
- 20 A Total Throughput Current
- RS-422 Interface

### DIMENSIONS AND MASS

- Dimensions: 112 mm x 218 mm x 36 mm
- Mass: <0.32 kg

SACI, McLASI, and PAPI are intended to be used in an integrated avionics unit. In such a system, a SACI is used together with a custom backplane that also acts as a cPCI backplane. Multiple switching boards may be used to provide the required switched outputs. A typical system may include 60 or more switched outputs. Any cPCI boards such as a CPU and MOAB may be added in the same system to provide a complete spacecraft C&DH and EPS avionics unit. The SACI board is available as a secondary backplane or as 3U version for systems with slightly lower current requirements and no more than 74 switched channels.

## **PAPI** TYPICAL PAPI FEATURES

- 5 Arm/On/Off Outputs @ 6.9 A each (derated)
- 10 On/Off Outputs @ 6.9 A each (derated)
- 2 Arm/On/Off Outputs @ 1.2 A each (derated)
- 6 On/Off Outputs @ 1.2 A each (derated)
- 15 A Throughput Current
- Bus Voltage Telemetry
- Total Card Current Telemetry
- Switch Status Telemetry

### DIMENSIONS AND MASS

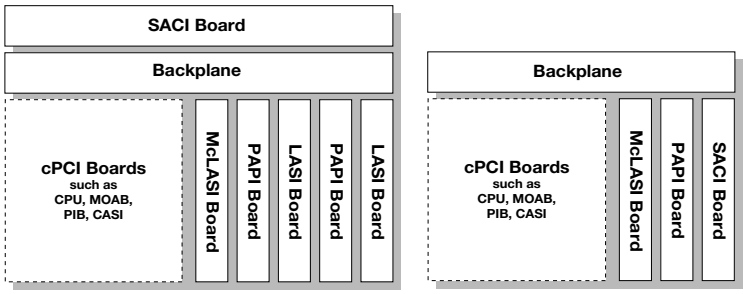
- Dimensions: 3U Form Factor
- Mass: <0.22 kg

## **McLASI** TYPICAL FEATURES

- 4 On/Off Outputs @ 15 A each (derated)
- 3 Torque Rod Power Outputs (H-Bridge)
- Valve and/or Motor Driver Circuitry
- 20 A Throughput Current
- Bus Voltage Telemetry
- Total Card Current Telemetry
- Switch Status Telemetry

### DIMENSIONS AND MASS

- Dimensions: 3U Form Factor
- Mass: <0.20 kg

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