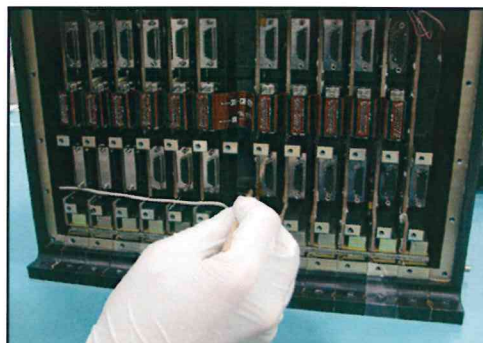


MAGELLAN POWER CONTROL UNIT

The Magellan Power Control Unit (PCU) interfaces between the Solar Array, Battery and Spacecraft power bus.



SCALABLE • RELIABLE • SINGLE OR DUAL STRING



OVERVIEW

The Magellan Power Control Unit (PCU) plays a key role in the spacecraft bus as the interface between the Solar Array, the Battery and the Spacecraft power bus. During sunlit periods, the PCU directs solar power into the batteries using either Direct Energy Transfer (DET) or Maximum Peak Power Tracking (MPPT). In parallel, the PCU transfers power from the batteries to the spacecraft bus while providing continuous telemetry on the health of the power bus.

Magellan designed the PCU to be scalable, meeting power needs of 100 W to 10,000 W spacecraft. Depending on the card configuration, the PCU can be configured as either single or dual string.

CARD COMPLEMENT

Controller Card:

Command / telemetry interface

Solar Array Card:

Solar array current control (DET or MPPT)

Battery Card:

Battery power conditioning / monitoring

Switch Cards:

Distributes unregulated power through High-side, Low-side and H-bridge switches

Pyro / Propulsion Cards:

Arm/Enable/Fire switch architecture

CONSTRUCTION

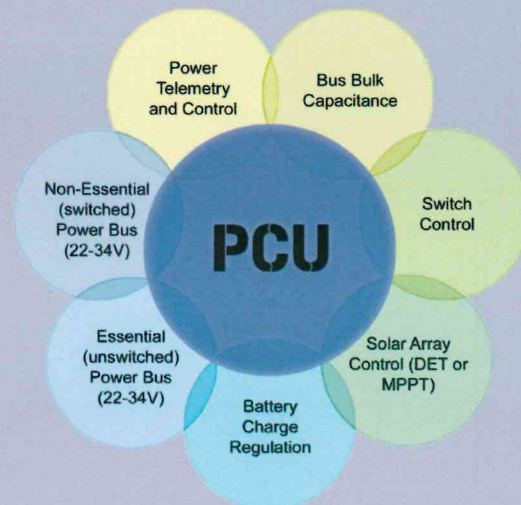
The modularity of the PCU design is its prime differentiator. The size and mass of the Magellan PCU scale with its functionality. A simple mission requiring less than 100W in a single string can be supported with only four cards (controller, battery, solar array and switch cards). Additional functionality merely requires additional cards for increased power throughput, redundancy or switch control capability.

HERITAGE

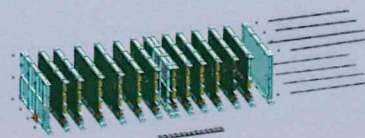
Three units for the RADARSAT Constellation Mission (RCM)

TYPICAL PROPERTIES

Parameter	Small Satellite	RCM
Power Handling	500W	2000W
Mass	15kg	35kg
Dimensions	406 x 203 x 229 mm	406 x 356 x 229 mm



PCU Functionality Overview



PCU Modularity

ABOUT MAGELLAN AEROSPACE

Magellan Aerospace is a global enterprise providing integrated products and services to the aerospace industry worldwide. Magellan designs, engineers, and manufactures aeroengine and aerostructure assemblies and components for aerospace markets, advanced products for military and space markets, and complementary specialty products. Magellan Aerospace is a public company whose shares trade on the Toronto Stock Exchange (TSX: MAL), with operating units throughout Canada, the United States, the United Kingdom, Poland, and India.

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