

# Central Power Supply Unit - CPSU

The CPSU is a fully redundant high reliable power supply and distribution unit for multiple RF units such as converters, receivers or LNAs with secondary supply voltages, i.e. low voltages that can be used directly without conversion. The supplies are individually protected and switchable



**CPSU** A supply channel, intended for supplying one RF unit, includes two rails, one positive and one negative, plus a common return. The output voltages are switchable for each channel individually and each output voltage is also protected by a latching current limiter. The current limit can be configured for each unit by selecting resistors during manufacturing.

RUAG Space units are designed for space use and are flight proven with extensive heritage and excellent reliability.

## KEY FEATURES

- Fully redundant unit with cross-coupling between nominal and redundant main supply
- Controllable via a CAN data bus that is user strap pable to 0.125, 0.25, 0.5 or 1 Mbps
- Soft adjustable positive output voltage
- Soft adjustable current limiter trip-off time
- Measures output voltage and output current of each output voltage
- Measures temperature of the power distribution chip
- Up to four outputs can be connected in parallel to increase the output power to a specific load or to reduce the CPSU internal voltage drop

## BUDGETS

- Unit Size 159 x 389 x 216 mm (W x D x H)
- Mass 7 kg
- Power Dissipation < 60 W at maximum load
- Reliability 0.99
- In-Orbit Life Time up to 20 years

## INTERFACES

- Primary power supply: 28V, 50V, 70V or 100V
- 2 x ON/Off 28V Pulse Command/On/off TM
- 2 x Thermistor telemetry outputs
- 2 x Control Area Network (CAN) buses
- Up to 160 output channels (320 output supplies) with floating secondary return
- Positive supplies:
  - 4,2V to 7V
  - Max 1 A per output
  - Total capability 200W/45A
- Negative supplies:
  - -8V
  - Max 0,1 A per output
  - Total capability 16W/2A

## VARIANTS

Two versions of the CPSU are planned:

- A simplified version for smaller LEO missions with fuses instead of active current limiters. The mass is 2 kg for 128 output channels.
- A version with 1,1 kW output, supplying switchable outputs to 32 Solid State Power Amplifiers. The mass is 11 kg.

