

# **ECLIPSE 500**

## **MODULAR POWER SUPPLY**

### Modular, field-ready power for lunar and beyond

L3Harris' ECLIPSE 500 delivers 500 W per 3U module and is capable of surviving the harsh environment of the lunar surface. Each module can be paralleled to provide kilowatts of output power and offers interchangeability and field replaceability.

The L3Harris ECLIPSE 500 modular power supply is designed to meet the economic and time-sensitive demands of the "new space" commercial sector while ensuring durability and performance for extended deep space ventures and human-rated missions. Each module delivers 500 W in a vacuum, adhering to component derating standards. Multiple modules can be combined to provide kilowatts of power, making them versatile for a range of applications. The system's scalability allows users to parallel an unlimited number of modules, as it does not require a Share Bus.

The modular format and field replaceability of the ECLIPSE 500 enhance its practicality. Packaged in a 3U VPX form factor, these plug-in modules are interchangeable and can be field-replaced, particularly benefiting applications like space stations and crewed missions by eliminating the need for whole PCDU replacements, thus saving costs and reducing mass.

Compatible with the increasingly popular 120 V bus, the ECLIPSE 500 offers reduced input current and cable harness mass. These modules achieve over 90% efficiency using GaN FETs and synchronous rectification, making them both powerful and efficient. They comply with MIL-STD-461G standards for EMI/EMC and

offer various part grades to meet different radiation and screening needs, from high assurance NASA standards to cost-effective automotive-grade components.

#### **PART GRADE SELECTABILITY**

- > **NASA Grade/Level 1:** Highest assurance class with no changes to board or mechanical package
- > **NASA Grade/Level 2:** Standard configuration using rad/SEE-hard parts (100 krad, 75 MeV)
- > **Level 2 ICs with Automotive Parts:** Minimizes cost and lead time while maintaining form/fit/function of Level 1 and Level 2 designs
- > **Automotive Qualified Parts Only:** Lowest cost and fastest lead time, form/fit/function compatible with Level 1 and Level 2 designs

#### **RADIATION & SINGLE EVENT EFFECTS (SEE) HARDNESS SELECTABILITY**

- > **Rad/SEE-hard:** 100 krad, 75 MeV. Standard configuration
- > **Rad/SEE-tolerant:** 30 krad, 43 MeV. Reduced cost and lead time
- > **No radiation requirement:** Lowest cost, fastest lead time option



#### **FEATURES**

- > Module parallelizability to create unlimited kilowatts of output power
- > >90% efficiency
- > 3U VPX form factor modules for interchangeability
- > Standard input voltage of 120 V, with configurability from 12 V up to 400 V
- > Standard output voltage of 28 V, with configurability from 2 V to over 1 kV
- > Individual field replaceability
- > MIL-STD-461 EMI/EMC compliance
- > Shock and vibration tolerance

#### **APPLICATIONS**

- > Lunar bases, space stations and Mars bases
- > Bus voltage conversion
- > Isolation of power buses
- > Power conditioning and distribution units
- > Battery chargers
- > Deep space missions requiring maximum reliability and radiation hardness
- > Launch vehicle power systems requiring high reliability, but reduced radiation hardness
- > Satellite power systems
- > The ECLIPSE 500 is designed to tolerate the radiation and numerous thermal cycles required by some satellite orbits

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**L3Harris Technologies, Inc.**

1025 W. NASA Boulevard  
Melbourne, FL 32919

**L3Harris.com**