Spectrum Astro’s Uplink/Downlink (ULDL) is a single communications board that combines exceptional capability and streamlined engineering in a lightweight, low-cost open architecture 6U VME assembly for spaceborne applications. The double-sided printed wiring assembly weighs only 0.5 kg and supports two uplink data channels, two downlink data channels, two customer-specific RS-422 receiver serial interfaces and two customer-specific RS-422 transmitter serial interfaces. The ULDL packetized data is compatible with NASA DSN and CCSDS standards, providing high flexibility in mission operations testing and on-orbit operations.

Our ULDL technology has been selected for a wide range of missions, including the New Millennium Deep Space 1, Stardust™, Mars Surveyor ’98, Mars Odyssey, HESSI, Coriolis, Swift, and C/NOFS.

Spectrum Astro is an industry leader in the design, manufacture, integration and test of lower cost, high performance satellites; space-based systems; and space electronics for science, defense and commercial applications.
ULDL Specifications

- Dimensions: 16.0 x 23.3 cm (6.3 x 9.2 in)
- Mass: 0.5 kg (1.1 lb)
- Power: Consumes only 1.5 Watts @ 5 volts
- 2 receive channels up to 750 Kbps with RS-422 I/O
- Autonomous caching of uplink data
- 32K words of uplink buffer space
- 1 channel of BCH (63, 56) CCSDS command decoding
- 1 transmit channel up to 500 Kbps with RS-422 I/O
- 1 transmit channel w/Reed-Solomon encoding up to 249 Kbps
- Dedicated ground support equipment interfaces maximize testability

Spectrum Astro’s ULDL has been selected for a wide variety of space missions, including Stardust™, Deep Space 1 and others