



Common Data Link Interface Box

Receives, Synchronizes, Routes, and Simulates CDL Data



The common data link (CDL) interface box (CIB) receives, synchronizes, routes, and simulates CDL data. The CIB can receive data from CDL systems such as common high bandwidth data link (CHBDL), CDL-S, or sensor data simulator (SDS).

The CIB's simulation capabilities make it an invaluable training tool for ground station operators by allowing them to simulate real sensor flights. The CIB's diagnostic capabilities facilitate maintenance and troubleshooting of CDL ground stations.

Its features and capabilities combine to improve the reliability, maintainability, and productivity of all ground stations that use it.

CIB Functions

The CIB functions in one of three modes: Idle/Configuration, CDL Input (from CHBDL, CDL-S, or SDS), or Simulation mode. Many CDL-related operations use the CIB without need for user interaction. Data simulations require the CIB to be configured using the CIB's simulator or analyzer/router (SOAR) software. SOAR software will run under Windows or Solaris and can be adapted to work with most any CDL sensor screener.

CIB Interfaces

- 10/100/1000 Ethernet
- PMC slot - 66 MHz, 32-bit, 3.3V compatible
- CDL interface (one CDL input, one CDL output) via 55-pin MIL circular connectors on the rear panel
- Eleven simultaneous data channels
 - 6 high-rate ECL
 - 5 low-rate TTL
 - Supports multiple clock rates allowing individual phase adjustment
- RS-232 serial port (for testing with support computer)

Benefits

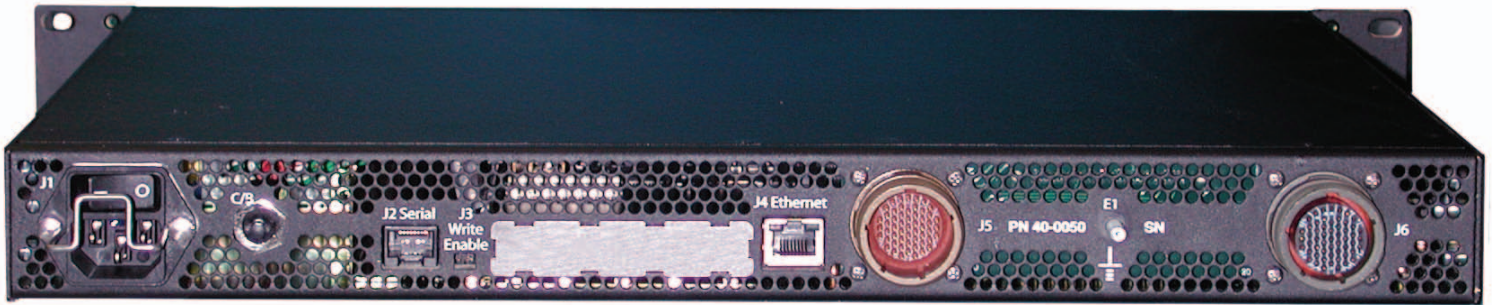
- Fulfills fundamental training needs by simulating many sensor types
 - Currently supports SHARP, ATARS, APG-73, Global Hawk, ASARS-2, SYERS
 - Can be customized for other sensors
- Eliminates hassle of shipping classified hardware (CIB hardware is not classified)
 - Security procedure to remove from a classified environment and update the firmware inside the CIB has been approved by Defense Security Service (DSS)
- Features ability to adapt to new sensors as they become available (via firmware upgrade)
- Eliminates need to change cables between simulated and live data feeds
- Features ability to receive CDL serial input and output either CDL serial or gigabit Ethernet
- Integrates into any standard nineteen-inch rack
- Functions under Windows or Solaris operating systems
- Supports 11 simultaneous data channels
- Features extensive front panel LED set that provides immediate feedback on channel status and CIB mode
- Features reset/initialize function via software or hardware front panel push button.

Simulation Capabilities

- Offers continuous or finite simulation mode
- Can generate pseudo-random bit sequence (PRBS) data
- Provides individual clock signal for each channel, allowing operators to adjust the phase of each clock (assuming all channels are running at the same data rate), providing realistic CHBDL simulation (i.e., I and Q channels 90 degrees out of phase)
- Features ability to simulate using a variety of different file types (e.g., CDL files, SHARP raw format, and SHARP EDAC-encoded files)

Diagnostic Capabilities

- Debugging/Testing Tools:
 - Can inject known data/bit errors into the data stream, allowing systems to test their robustness and error detection capabilities
 - Offers unique statistic-gathering feature (provides exact number of frames sent by simulator)
 - Can detect or pass through PRBS data
- Testing Cable Integrity: can send a unique binary pattern on each CDL channel (also facilitates integration with other systems)
- Packet Verification: identifies the number of packets processed by the CIB to verify that all packets have been received
- Loopback Test: features extensive self-diagnostic loopback test and ability to monitor for speed and temperature of CIB circuit board for easy maintenance and troubleshooting



Physical Specifications		Environmental Specifications	
Power	120V, 0.5 Amps, 60Hz AC power supply	Temperature	Can operate and maintain performance in an environment with a temperature range of 10°C to 40°C at sea level
Weight	16 pounds	Noise	Does not exceed a maximum noise level of 60dBA, as measured from three feet in front of the unit
Dimensions	1U, 1.72" x 16.1" in x 15" in (H x W x D)	Vibration	Conforms to MIL-STD-167-1, Type 1 for vibration
		EMI/EMC	Meets the EMI/EMC requirements for FCC Class A equipment

