Part Number	Description
B1	16-Channel Digital Optomux Protocol Brain Board
B2	16-Channel Analog Optomux Protocol Brain Board

Description

Opto 22 **B1** (digital) and **B2** (analog) Optomux® brain boards are intelligent digital processors that operate as slave devices to a host computer. Each brain board contains a microprocessor that provides the necessary intelligence to communicate with a host computer and also perform control functions at each channel of I/O.

The B1 and B2 brain boards are designed to mount on most Opto 22 I/O mounting racks that have header connectors. I/O mounting racks that accept single-channel standard and G4 I/O modules, Quad Pak™ I/O modules, or SNAP I/O™ modules—and racks that have built-in integrated I/O circuitry—are all available.

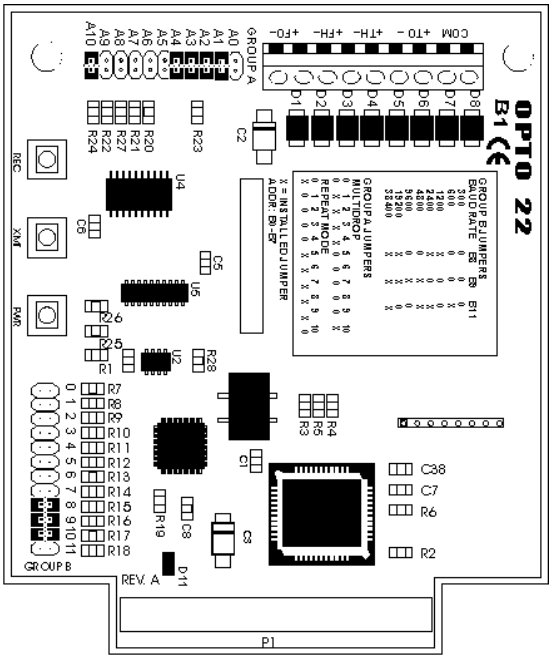
Networking

B1s and B2s communicate with a host computer via an RS-422/485 serial link using twisted-pair cable that connects to each Optomux unit (brain board plus rack). The serial data link operates at selectable baud rates from 300 baud to 38.4 Kbaud.

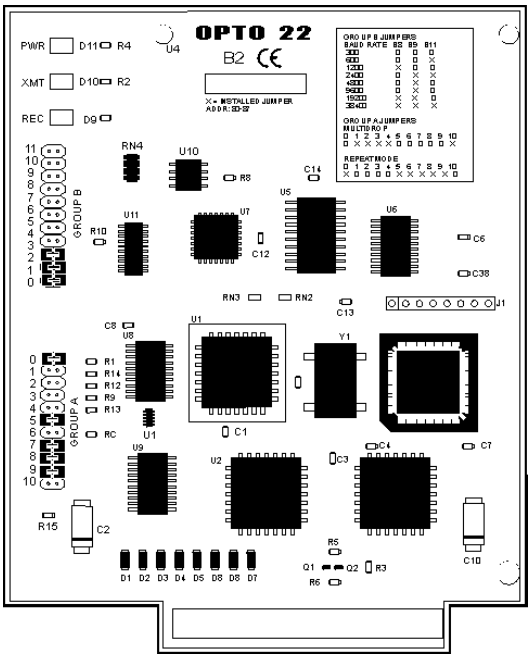
Optomux units can be configured for either multidrop or repeat mode operation. In multidrop mode, up to 32 Optomux units can be networked over a total line length of up to 5,000 feet. Additional units can be added by using a repeater. In repeat mode operation, up to 256 Optomux units can be networked with up to 5,000 feet between units.

To use Optomux I/O on an Ethernet network, use Opto 22's E1 or E2 brain boards. These boards can use both serial and Ethernet networks simultaneously, and are drop-in replacements for B1s and B2s. See the E1 and E2 data sheet (Opto 22 form 1546) for information.

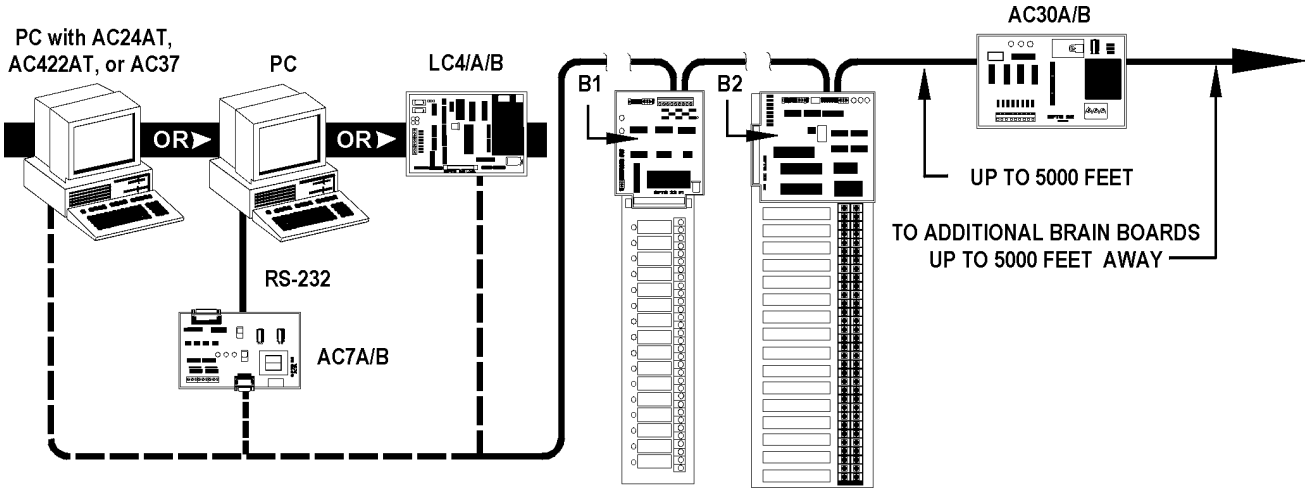
B1 Digital Brain Board



B2 Analog Brain Board



System Architecture



Functions

B1 (Digital) Functions

- Read Point
- Write Point
- Latch Point
- Count
- Pulse Duration
- Time Delay
- Pulse Generation

B2 (Analog) Functions

- Read Point
- Write Point
- Input Averaging
- Min/Max (peak and valley) Recording
- Gain and Offset Calculation
- Waveform Generation

For complete information on supported Optomux commands, see Opto 22 form #1572.

Specifications

B1 Power Requirements	5 VDC ± 0.1 V @ 0.5 amps (includes digital module requirements)
B2 Power Requirements	5 VDC ± 0.1 V @ 0.5 amps (excludes analog module requirements*)
Operating Temperature	0° C to 70° C 95% humidity, non-condensing
Interface	RS-422/485 communications 50-pin female header connector to I/O mounting rack
Data Rates	300, 600, 1200, 2400, 4800, 9600, 19200, and 38400 baud
Range: Multidrop Repeat Mode	 Up to 5,000 feet total length with up to 32 Optomux stations maximum. ** Up to 5,000 feet between stations with up to 256 Optomux stations maximum.
Communications	Full duplex, two twisted pairs, a signal common wire, and a shield
LEDs	Power, receive, and transmit
Jumper-selectable Options	Address (0 to 255) Baud rate Multidrop or repeat mode 2- or 4-pass protocol

** ±15 VDC ± 0.25 V required for the analog modules. Current depends on the number and type of modules installed. A 24 VDC power supply is required for analog modules that need a current loop source.
* Extend line length and/or number of OPTOMUX stations with the AC30A/B network adapter.

Compatible I/O Racks

	B1 (Digital)	B2 (Analog)
SNAP	SNAP-D4M, SNAP-D4MC, SNAP-D4MC-P	none
G4	G4PB8H, G4PB16H, G4PB16HC	none
Quad	PB16HQ	none
Standard	PB4H, PB8H, PB16H, PB16HC	PB4AH, PB8AH, PB16AH
Integral I/O Racks	PB16J/K/L, PB16J/K/L	none