



Revised 3/25/91

ORDELA MODEL AIM-310 TWO-DIMENSIONAL IMAGE MASTER MODULE

DESCRIPTION

The ORDELA Model AIM-310 Image Master Module is designed specifically for acquisition and temporary storage of data from one- or two-dimensional position-sensitive proportional counters. It interfaces directly to either one or two ORDELA Model AIM-208 Time Interval Digitizers for one- or two-dimensional imaging. The AIM-310 is packaged in a double-width nuclear instrument module (NIM) that contains an on-board micro-controller (INTEL 80C31) and 128 k-bytes of 120 ns DRAM. The memory is factory-configured to customer specifications and is sufficient to store a single 256 x 256 channel data array with an individual channel capacity of 65535 counts. Factory-set configurations include but are not limited to the following combinations of NX, NY and NT:

256 x 256 x 1	128 x 128 x 4
64 x 64 x 16	4096 x 1 x 16
256 x 1 x 256	

Spatial coordinate data is supplied to the Model AIM-310 Image Master Module through two, rear-panel, 25-pin "D" connectors. The data interface is accomplished entirely with bipolar, TTL-compatible circuitry for maximum immunity to electrostatic damage. The Model AIM-310 is designed to interface to a host processor via a standard IEEE-488 (GPIB) parallel interface using a commercially available GPIB interface card appropriate for the particular host processor. The connection is made through a rear-panel standard 24-pin GPIB connector (similar to a parallel printer port connector).

The AIM-310 Image Master Module is an intelligent module designed to be slaved to a host-processor from which it accepts instructions and to which it supplies data in the form of one-, two-, or three-dimensional histograms. Once a data acquisition cycle is initiated, no further intervention from the host-processor is necessary. However, the host can determine the status of the Model AIM-310 via several polling procedures, or alternatively, the host can enable an interrupt which the Model AIM-310 sets at completion of the data acquisition cycle or at the occurrence of some other preset condition. Included in the data acquisition routine is a mode which waits for trigger pulses from the host-processor to start and stop individual acquisition intervals, thus allowing for synchronization with other processes.

SPECIFICATIONS

INPUTS:	X-COORDINATE and Y-COORDINATE - Two rear-panel 25-pin female D-connectors, 12-bit X-data word, 1-bit X-digitizer BUSY (true=low), 1-bit X-data READY (true=low), 1-bit ACQUIRE (true=low), 1-bit DATA ACKNOWLEDGE (true=low - 400 ns pulse). Except for a shorter, 8-bit data word, the Y-coordinate connector signals are identical.
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CONTROL INTERFACE:	GPIB - Rear-panel standard 24-pin GPIB connector (Amphenol 57-92240-12 or equivalent), communications between the host-processor and the Model AIM-310 is accomplished by sending ASCII strings across the GPIB interface. Software protocols between the host-processor and the Model AIM-310 are fully defined in ANSI/IEEE Std 488-1978 or its international counterpart, IEC Publication 625-1. GPIB interface is implemented with an INTEL 8291A GPIB Talker/Listener and a pair of INTEL 8293 GPIB Transceivers. Five bits of an 8-bit DIP switch set the GPIB Listen/Talk address; the remaining 3 bits select the data line for parallel poll responses.
INDICATORS:	IDLE, LACS, TACS, ERR, BYTE, ACQ, WAIT, EVNT, PTY, and PWR - Ten front panel LEDs (RED, GREEN, and AMBER) provide visual acquisition and interface status.
MEMORY:	128 k-bytes of 120 ns SRAM.
ACQUISITION TIME:	The real- and live-time clocks range from 16 μ s to 16777215.999984 s and have 16 μ s resolution
ACQUISITION RATE:	100,000 events/s
FIRMWARE:	The Model AIM-310 firmware provides a complete set of diagnostic messages and command interpreter that includes: Data Acquisition, Clear Memory, Set or Clear Control Flags, Integrate Rectangular Histogram Area, Integrate Circular Histogram Area, Set Numerical Format, Read Acquisition Time, Fast Block Upload, Fast Block Download.
SOFTWARE:	ORDELA Dataview software for IBM PC, XT and AT compatible personal computers is available from ORDELA, Inc. It is specifically designed to transfer, store, display, analyze and print dual-parameter data from the Model AIM-310. For further details see ORDELA Model OP-312 Dataview Specifications Sheet.
POWER:	+6 V at 800 mA
SHIPPING WEIGHT:	2.5 kg
DIMENSIONS:	6.8 cm wide, 22.1 cm high, and 24.6 cm long.

WARRANTY

ORDELA, Inc. warrants its products to be free from defects in materials and workmanship for twelve month after shipment. No other warranty is included. Specifically, no warranty of merchantability or fitness or a particular purpose is implied. ORDELA's liability under this warranty is limited to repairing or replacing the instrument at ORDELA's option. This warranty is void if the instrument is operated improperly, disassembled, or modified other than in the ORDELA laboratory.

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