BSC
Associates, LLC

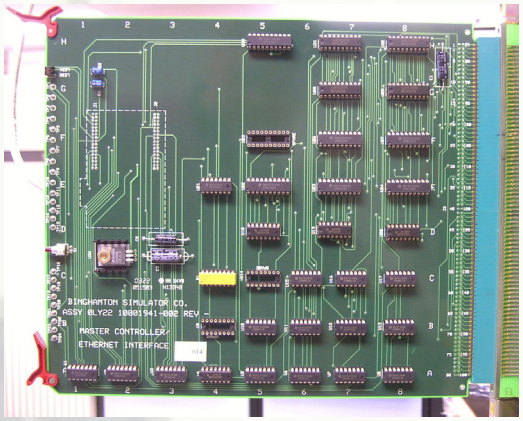
Ethernet Interface Replacement For Link AST Master Controller DMA Interface Cards

Hundreds of flight simulators were built by Singer-Link Flight Simulation Division between 1975 and 1990 that utilize Advanced Simulation Technology (AST). This technology utilizes one or more Master Controllers and many Sub-controllers providing Input/Output (I/O) data between the simulator and the host computer, and to control the motion and control loading subsystems. Many of these simulators are nearing a time when the host computers will become difficult to maintain and upgrade. Typically, interfacing modern computing equipment to the AST I/O requires the use of expensive cards in the new host computer that utilize obsolete communications technology.

To meet the needs of Link AST operators, BSC Associates, LLC (BSC) has developed a single Ethernet interface circuit card that replaces the DMA1 and DMA2 cards in the Master Controller chassis without modification to the rest of the master controller. This AST Ethernet interface card provides the capability to control Link AST I/O, and motion and control loading equipment through inexpensive, modern communications equipment in the host computer. This card provides a 10/100 Base-T Ethernet interface between the Host computer and the Master Controller.

REQUIREMENTS

- A fully functional Link AST Master Controller / Sub Controller system.
- A host computer with one dedicated 10/100 Base-T Ethernet Interface.
- A host computer software development environment capable of modifying real-time software, removing existing host-to-Master Controller interface software, and adding new source code for Ethernet communication to the Master Controller.



The primary functions performed by the AST Ethernet Interface card are:

- Output Word Transfers
- Input Word Transfers
- Process Phase Sync.
- Special Message Data Transfers
- Special Message Control Transfers
- Supports Master Controller Test Panel Functions
- Allows MC To Run In Standalone Mode To Support Board Testing

The Host computer Master Controller communications software must support the following modes:

- Floating-Point format to Fixed-Point quantity
- Fixed-Point quantity to Floating-Point format
- Output Byte to Bit Transfers
- Input Bit to Byte Transfers

COMPONENTS PROVIDED

- One BSC AST Ethernet circuit card Part Number 10001941-002
- One 14 ft. crossover Ethernet cable
- Sample Ethernet C source code for the host computer

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