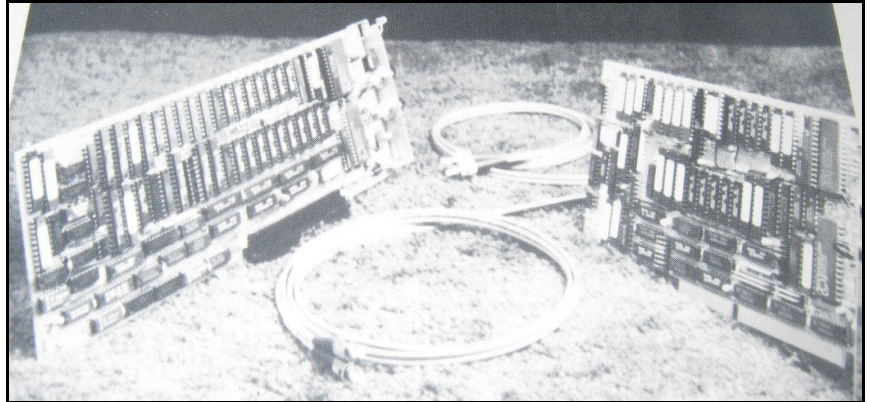


FEATURES

- High speed bus to bus link
- Fiber Optic or Coax Cable
- Up to 2Km system separation
- Programmable address windows
- Symmetrical Master/Slave operation
- Both busses run independently
- Remote Reset Function
- 24 Bit ISA addresses, 8/16 bit data transfer
- Programmable byte swapping
- Remote interrupt generation



SUMMARY

LL5100 is an ISA (PC/AT bus) to NuBus link that allows the physical address space of an ISA bus based computer to be mapped into that of a NuBus based computer, such as the Macintosh II. Bus masters on either bus can have direct, random access to the other bus. Remote memory and IO devices appear to be within the local machine, even though they may be physically located up to 2Km away.

Up to 4096 NuBus address segments, or 'windows', can be mapped into the ISA bus address space. A single window of ISA bus address space can be mapped into the NuBus. The size and base address of the ISA bus window is programmable. In addition, the addresses can be translated as they pass across the link.

The LL5100 does not tie up both systems when one is in use. Both systems may run independently.

The LL5100 links the systems over a pair of high speed fiber optic or coax cables. Fiber may span up to 2Km. The fiber cable provides the benefits of long distance, ease of installation, and high noise immunity.

APPLICATIONS

LL5100 and other Lextel Bus Links are being used to solve these kinds of problems:

- | | |
|------------------|--|
| BUS EXTENSION: | When equipment needs to be connected up to 2Km apart without loss of throughput. |
| BUS CONVERSION: | When one bus architecture needs to be used with another. |
| BUS EXPANSION: | When more bus slots are needed |
| NOISE IMMUNITY: | Fiber optics are immune to EMI, RFI and crosstalk. |
| HIGH SPEED DATA: | When a standard LAN isn't fast enough. |

Example Application areas are Test and Measurement, Control Systems, Factory Floor, and Image Transmission.



DESCRIPTION

Fiber Cable

Data is transmitted at 125Mhz on 62.5/125 um fiber cable. The fiber link may span up to 2Km, providing noise immunity, security, light weight and ease of installation.

Coax Cable

A lower cost alternative over distances up to 200ft. is Coax cable, which uses Dual conductor cable and Dual-BNC type connectors

NuBus Address Translation Map

Up to 4096 individual NuBus address windows can be mapped into the ISA bus. The address can be translated prior to transmission to the remote bus.

PC/AT Address Window

From 4KByte to 1MByte of ISA bus address space can be mapped to the NuBus, through a single Window with a programmable base address and size. ISA addresses are translated and extended prior to transmission to the NuBus.

Byte Swapping

To accomodate different byte-ordering conventions between the ISA bus and NuBus devices, programmable byte swapping allows various placements of bytes and words within longwords.

Symmetrical Link

All operations are allowed from both ends of the link. This includes acquiring bus mastership, asserting interrupts, resetting the remote bus, and setting up programmable IO registers on the link boards.

Interrupts

An ISA bus master may assert the NuBus interrupt line by writing a bit in a register on the NuBus board. A NuBus bus master may assert an ISA bus interrupt line by writing a bit in a register on the ISA bus board.

The ISA bus interrupt level is selected by a jumper.

Data Throughput

Maximum data throughput is 2MBytes/sec. Typical throughput will depend on the system and application software.

Block Data Transfer and Write Queing

These two performance enhancement features help speed data across the link, especially usefull on long cable runs, where cable delay becomes a factor.

SPECIFICATIONS

NuBus

Power	2.0A @+5VDC
Form Factor	PC Style (for MAC-II)
System Control	25.6uS timeout
Addressing	Standard 32 bit addressing
Data	8/16 bit data (limited by ISA Bus)
Slave Registers	2 registers, 8KBytes Map/Comm Ram

ISA (PC/AT) BUS

Power	2.0A @+5VDC
Form Factor	PC/AT, 16 Bit slot
Addressing	24 Bits to Remote NuBus, I/O Registers jumper selectable
Data Size	8 and 16 bit
Slave Registers	16 bytes reserved
Other	Interrupt/DMA level jumperable

FIBER CABLE

Connector	ST Bayonet
Cable	62.5/125um
Length	2Km max

COAX CABLE

Connector	Dual BNC
Cable	RG-108A/U
Length	200ft. max

ENVIRONMENT

Temperature	5 to 50 degrees C
Humidity	20% to 80% Noncondensing

ORDERING INFORMATION

BUS LINKS

LL100x	NuBus-NuBus
LL200x	VMEbus-VMEbus
LL300x	NuBus-VMEbus
LL500x	ISA-ISA
LL510x	ISA-NuBus
LL520x	ISA-VMEbus

x =	1:Coax, 200ft max
	3:Fiber, 2Km max
	4:Fiber, 1000ft max

All Links include 2 circuit boards, user manuals, and sample software. Cable is ordered separately.

CABLE ASSEMBLIES

LC0xxx	Duplex Coax Cable Assembly, xxx = ft.
LFxxxx	Duplex Fiber Cable Assembly, xxxx = ft.

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