

Levco's TransLink™

High-Speed Parallel Processing for the Macintosh II and Macintosh SE

Levco's TransLink is an expandable, Transputer™ based accelerator package that delivers the power of parallel processing and Reduced Instruction Set (RISC) technology to the Macintosh II and Macintosh SE.

TransLink is a modular parallel processing system consisting of TransLink Cards for the Macintosh II and Macintosh SE, a variety of Transputer Modules which plug onto the TransLink Cards, and a complete set of software development tools.

Innovative Transputer Technology

The heart of the TransLink is the Inmos Transputer, a high-speed parallel processor. The 32-bit Transputer contains 4 inter-processor links which provide ultra high-speed communication and synchronization, the key to effective parallel processing. With a throughput of 10 million instructions per second (MIPS), a single Transputer delivers the performance of a VAX™ 8600 mainframe computer! In Levco's TransLink system, individual Transputers are mounted upon credit-card sized modules which also carry high-speed RAM.

TransLink Cards Provide Unlimited Expandability

Transputer Modules plug into TransLink cards and act as modular building blocks, allowing the construction of large parallel processing systems.

Levco's TransLink II Card for the Macintosh II is a single-slot NuBus card that holds up to 4 Transputer Modules. The TransLink SE Card for the Macintosh SE plugs into the Macintosh SE Bus, and holds up to 2 Transputer Modules. Starting with a TransLink Card configured with a single Transputer Module, a system can be expanded by plugging in more Transputer Modules, adding extra TransLink Cards, or even by linking multiple Macintoshes together. Parallel processing systems comprised of thousands of Transputer Modules are possible.

Transputer Processors

Transputer Modules are available with either the Inmos T-414 integer processor or the T-800 floating-point processor with full 64-bit IEEE floating-point support on-chip. The 20-MHz T-800 processor performs floating-point operations at an impressive 4 million Whetstones/second. This processing power makes the TransLink invaluable for applications such as scientific computing, signal processing, image processing, artificial intelligence, high-resolution graphics and large data-bases. Transputer Modules with different processor speeds can be mixed on a single TransLink Card.

Transputer Memory Options

Memory options for individual Transputer Modules include a low-cost 256K/120 nanosecond configuration, as well as one or four megabyte configurations for larger applications. One and four megabyte configurations feature 100ns RAM to take advantage of the Transputer's 25 megabytes/second memory interface. Transputer Modules with different memory sizes can be mixed on a TransLink Card.

Programmable Link Switch

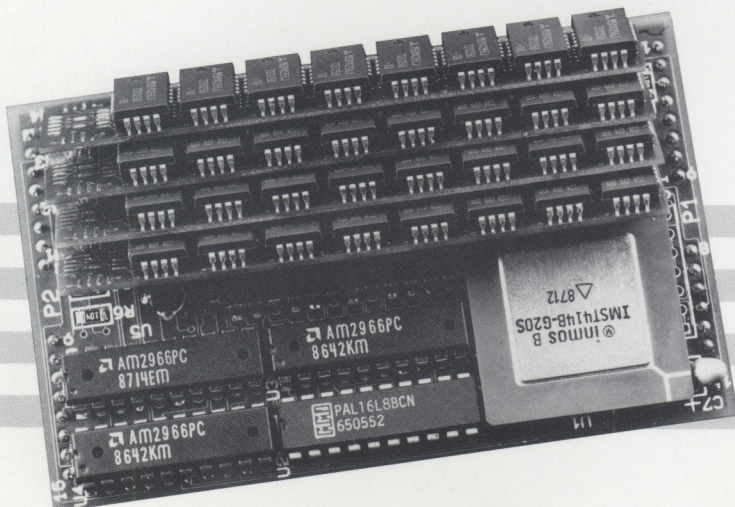
A programmable link switch on the TransLink II Card makes configuring the inter-Transputer links simple and straightforward. The link switch functions like a switchboard, allowing up to 32 Transputer links to be interconnected in any desired arrangement. Inter-Transputer links on the TransLink SE Card are configurable as well. All links have full DMA transfer capability at 20 megabits/second.

Complete Software Development Tools

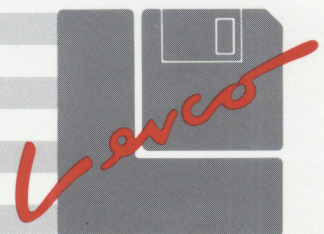
Levco offers a full complement of software development tools designed to run under the Macintosh Programmer's Workshop (MPW). The complete development system includes a C Compiler, Transputer Assembler, Linker and Loader. A software simulator is presently under development. The full Inmos *occam*™ development system is also available through Levco.

Low-Cost Starter Kit Available

Low-cost starter kits for the Macintosh II and Macintosh SE are available, including a single Transputer Module (15-MHz Transputer processor and 256K of RAM), TransLink card and Software Toolset.



Transputer Module



Authorized Apple VAR

TransLink Cards

TransLink Cards for the Macintosh II and Macintosh SE provide the clock, communication and power connections between the on-card Transputer Modules and the Macintosh computer.

TransLink II Card for Macintosh II

- Carries 1 - 4 Transputer Modules per Card
- Includes programmable inter-Transputer link switch
- Plugs into NuBus slot in Macintosh II
- Plug in up to 5 TransLink Cards in a Macintosh II

TransLink SE Card for Macintosh SE

- Plugs into SE Bus slot in Macintosh SE
- Can carry one or two Transputer Modules

Software Development Toolsets

Levco offers two software development toolsets designed to run under the Macintosh Programmer's Workshop (MPW).

Transputer Assembler Toolset

- Assembler
 - Uses C-style macros/preprocessor
 - Assembles both T-414 and T-800 instructions
 - Uses standard Inmos mnemonics
 - Generates listing file
- Support Programs
 - Linker
 - Loader
 - Librarian
 - Driver

Transputer Toolset

- C Compiler
 - Generates Transputer assembly code
- Assembler
- Support Programs

Transputer Modules

Transputer Modules plug into TransLink Cards, and can be configured from a selection of Transputer processors and RAM sizes. Transputer Modules feature:

- 32-bit RISC Processor
- Up to 10 MIPS per Module
- Up to 4 megabytes of RAM per Module
- 4 high-speed inter-processor links
- Credit-card size
- Plug-in installation to TransLink Cards
- Configure at time of purchase or add later

Choice of Transputer Processor

Each Transputer Module comes configured with one of the following high-speed processors.

TYPE FEATURES

TM 4-15 Inmos T414 32-bit Integer Processor
15-MHz Clock Speed
7.5 MIPS

TM 4-20 Inmos T414 32-bit Integer Processor
20-MHz Clock Speed
10 MIPS

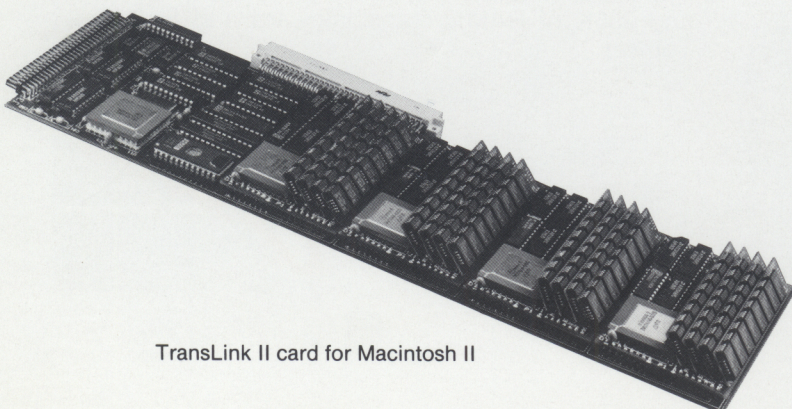
TM 8-20 Inmos T800 32-bit processor
64-bit IEEE floating point support
20-MHz Clock Speed
10 MIPS
4,000,000 Whetstones/second
1.5 MegaFlops

Choice of Transputer Memory

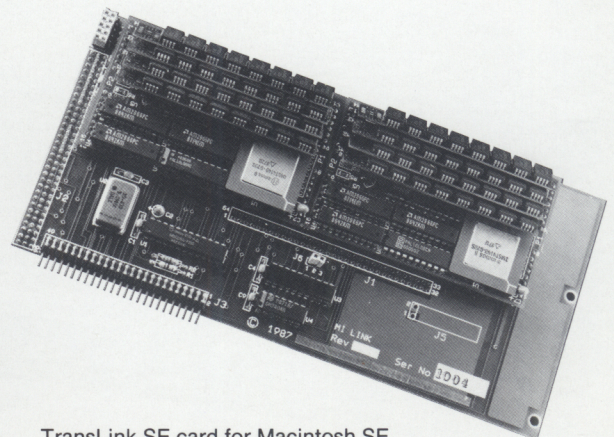
Transputer Modules have four Single In-Line Memory Module (SIMM) sockets that carry up to 4 megs of RAM with up to 100 ns speeds.

RAM SIZE	RAM SPEED
256K	120 nanosecond
1 Megabyte	100 nanosecond
4 Megabytes	100 nanosecond

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TransLink II card for Macintosh II



TransLink SE card for Macintosh SE