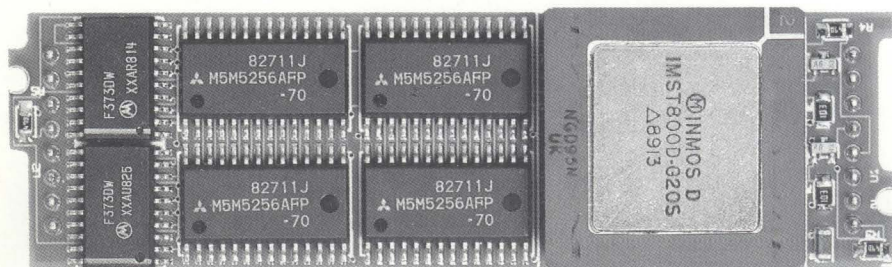# Transtech TRAMs
TTM1 and TTM2

Features

- ◆ **IMST800, IMST425 or IMST414 transputer options**

- ◆ **32 or 128 KBytes of static RAM**

- ◆ **Zero wait state memory**

- ◆ **Four serial transputer links**

- ◆ **Only 16 active pins**

- ◆ **Industry standard size 1 TRAM**

- ◆ **Compatible with Transtech range of TRAM motherboards**

- ◆ **Full Sub-system control**

Introduction The Transtech TTM1 and TTM2 TRAMs (TRAnsputer Modules) are small industry standard daughterboards for the Transtech range of TRAM motherboards. They have 32 or 128 KBytes of static RAM respectively and are capable of supporting the IMST800, IMST425 and IMST414 transputers.

TRAM Standard Measuring only 1.05" by 3.66" (2.67mm by 9.30mm) the TTM1 and TTM2 conform to the published TRAM standard, allowing them to be plugged easily onto a wide range of motherboards for many different host machines. Up to 10 TRAMs can be accommodated on a Transtech TMB08 board for IBM PC XT or AT's and compatibles, 4 on the Transtech TMB04 and TMB05, 16 on a TMB12 double extended eurocard and 32 on the MCP1000 Multi Computing Platform for Sun workstations, allowing rapid prototyping of transputer systems. Transtech TRAMs are also compatible with motherboards from other manufacturers. Further details on the TRAM standard and TRAM Module Motherboard Architecture are published by Prentice Hall in 'Transputer Technical Notes' ISBN 0-130929126-1.

Functional Description

TRAMs use 16 pins for communication with the motherboard and for obtaining power. However, TRAMs that are larger than size 1 have more than 16 pins, with the extra pins providing more power and ground connections. The extra pins also propagate the signals from the motherboard below to allow stacking of modules. The link speed of the TRAMs is selected by two pins. When both are held low the links operate at 10 Mbits/sec and when high at 20 Mbits/sec. This is implemented by jumpers or switches on the motherboards. The allocation of the pins are shown in the following diagram.
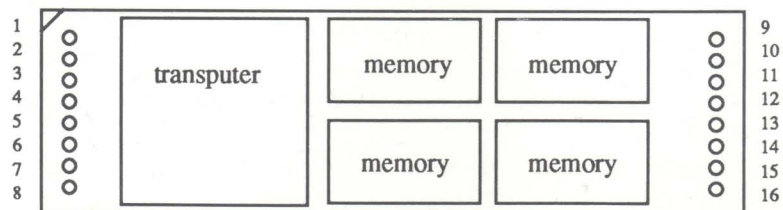
1 Link2Out	9 Link3In
2 Link2In	10 Link3Out
3 VCC	11 GND
4 Link1Out	12 Link0In
5 Link1In	13 Link0Out
6 LinkSpeedA	14 notError
7 LinkSpeedB	15 Reset
8 ClockIn(5MHz)	16 Analyse

Ordering Information

Part Number	Processor Type	Processor Cycle Time (ns)	Memory (KBytes)	Memory CycleTime (ns)
TTM1-4	IMST414-20	50	32	150
TTM1-42	IMST425-20	50	32	150
TTM1-8	IMST800-20	50	32	150
TTM2-4	IMST414-20	50	128	150
TTM2-42	IMST425-20	50	128	150
TTM2-8	IMST800-20	50	128	150