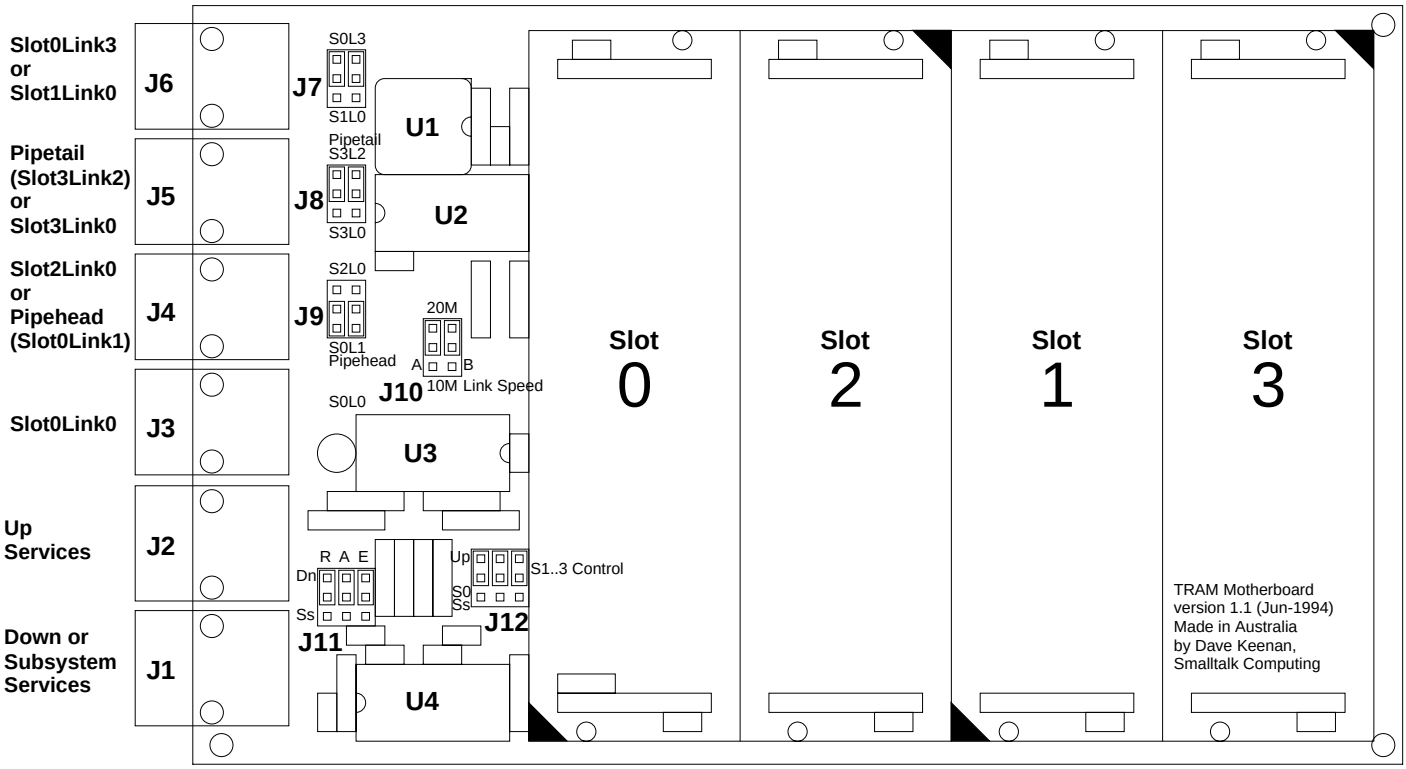
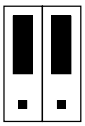
Transputer Module Motherboard User Guide

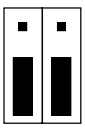
Smalltalk Computing, 116 Bowman Parade, Bardon QLD 4065, Australia.
Tel: +61 7 3366 2660, Fax: +61 7 3366 2660, Email: davek@thehub.com.au



J6 Link Jumper (J7)



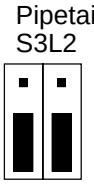
Socket J6 carries Link 3 of Slot 0



Socket J6 carries Link 0 of Slot 1

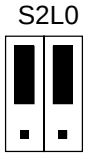
J5 Link Jumper (J8)

Socket J5 carries Pipetail which is normally Link 2 of Slot 3 but with appropriate pipe-jumpers installed, will be Link 2 of the highest numbered occupied slot.

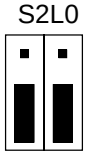


Socket J5 carries Link 0 of Slot 3

J4 Link Jumper (J9)

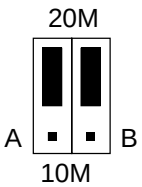


Socket J4 carries Link 0 of Slot 2

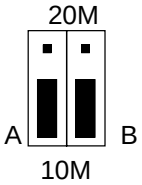


Socket J4 carries Pipehead which is Link 1 of Slot 0

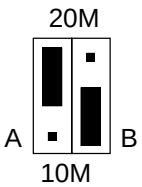
Link Speed Jumper (J10)

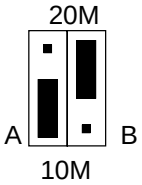


All Links of all Slots operate at 20Mbit/s



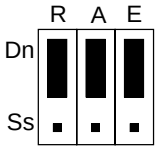
All Links of all Slots operate at 10Mbit/s



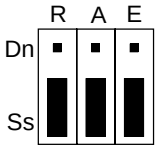


These two configurations are not standard but they may provide other link speed options on some TRAMs. For example, 5Mbit/s link speed, or to make Link0 a different speed to the other links. See the individual user guides for your TRAMs. Note that all TRAMs receive the same configuration.

J1 Services Jumper (J11)



Socket J1 carries Down Services (Controlled by Up Services and errors are ORed with any error indication from this card)



Socket J1 carries Subsystem Services, controlled by the Subsystem port of the TRAM in Slot 0 (if it has one and it is jumpered under the TRAM, see below).

Slots 1..3 Control Jumper (J12)

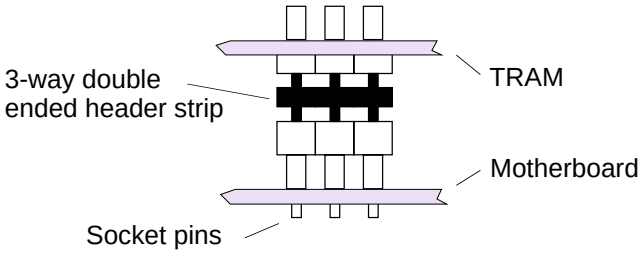
Slots 1 thru 3 are controlled by Up Services, the same as Slot 0

Slot 0 is always controlled from Up Services

Slots 1 thru 3 are controlled by the Subsystem port of the TRAM in Slot 0 (if it has one and it is jumpered under the TRAM, see below).

Slot 0 Subsystem Header Strip

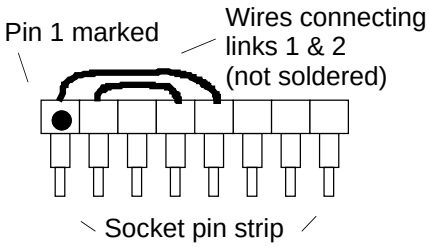
If the TRAM in Slot 0 has a subsystem port and you want it to control other transputers, as well as setting J11 and J12 appropriately you will need to insert a 3-way double-ended header strip into the extra row of three socket pins which appear near pins 1, 2 and 3 of slot 0 (near J12).



Pipe Jumpers

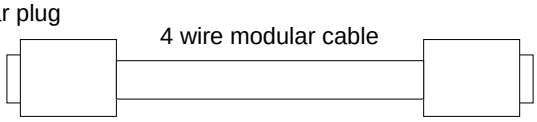
Link 2 of each slot is connected to Link 1 of the next in numerical order. Link 1 of Slot 0 is available externally as Pipehead. Link 2 of Slot 3 is available externally as Pipetail.

When some slots are not filled, pipe-jumpers (shown at right) should be used to connect links 1 and 2 of the unused slots to maintain the pipeline. Three pipe jumpers are supplied with the motherboard.



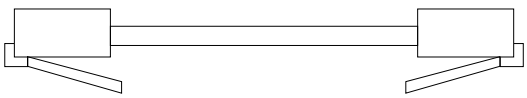
Link Cables

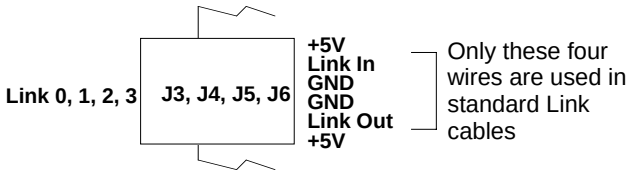
6 wide 4 conductor modular plug



Maximum length 3m@20Mb/s
6m@10Mb/s, 12m@5Mb/s

Note the plug orientations



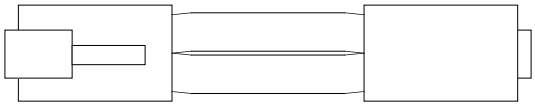


Additional hardware is available for transmitting links over larger distances. Contact Smalltalk Computing.

Services Cables

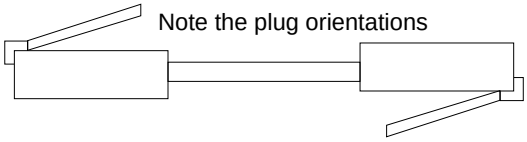
8 wide 8 conductor modular plug

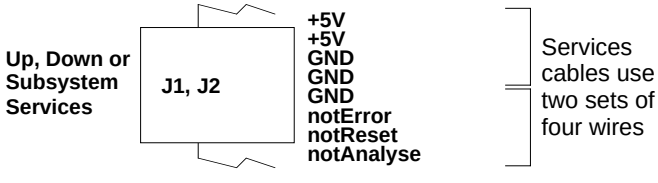
Two lengths of 4 wire modular cable



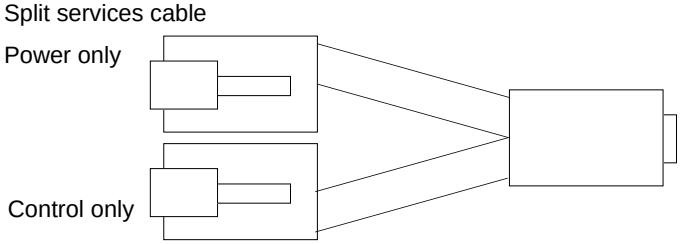
Maximum length for power 300mm
Maximum length for other signals 12m

Note the plug orientations





Split services cable



Availability of Links

As mentioned under "Pipe Jumpers" above, Links 1 and 2 of each slot are connected in a pipeline with the head being Slot0Link1 and tail Slot3Link2. That leaves potentially 10 links that we may need to access off the card (Pipehead, pipetail and Links 0 and 3 of each slot). However, there are only four modular (RJ11) sockets available.

Since slots must be filled in numerical order, Link 0 of Slot 0 is permanently available at socket J3. The other three sockets have associated jumpers (J7,8,9) which give a choice between accessing another link of Slot 0 (or Pipetail) or Link 0 of some other Slot.

Link 2 of Slot 0 is only accessible (as Pipetail) if nothing but pipe-jumpers are installed in the other three slots.

Link 3 is not accessible on Slots 1 thru 3, except by using wires with bared ends in the module sockets in a manner similar to pipe-jumpers. See the circuit schematic or contact Smalltalk Computing for more information.

Availability of Services

If Slot 0 Subsystem is used as described above, it is conceivable that we may want to access 3 services ports off the card (Up, Down and Subsystem). However there are only 2 modular (RJ45) sockets available.

Up Services is always required and is permanently available at socket J2. Socket J1 has an associated jumper (J12) to choose between Down or Subsystem Services.

If both Down and Subsystem are required, a special cable can be connected to the three remaining header pins of J12 to access whichever of Down or Subsystem is not jumpered to socket J1. (Contact Smalltalk Computing).