TM900 Transition Module

Aitech's TM900 is provided as a complement to the C900 G4+ PowerPC® 3U CPCI SBC.

The transition module provides standard direct connection to all the C900 I/O interfaces and is intended for use in commercial air-cooled chassis. The TM900 eliminates the need for any harnessing and complex cabling fixtures in order to connect to the C900.

The TM900 transition module fully complies with the IEEE 1101.11 specification and supports subracks capable of front and rear plug-in units as well as subracks capable of front plug-in units only. Two kits are available supporting rear plug-in and front plug-in attachment.

The same module with different assembly options is used as the rear I/O adapter connecting to the C900 rear I/O at the backplane as well as the transition module providing all I/O connectors at the front/rear panel.

I/O connectors include: two Gigabit Ethernet ports (one port only in the single slot version), two USB ports, two serial I/O ports (one port only in the single slot version) and 8 single-ended / 4 differential Discrete I/O channels.

In addition, the transition module provides a header for each of the PMC sites of the C900 allowing attachment of cables to the PMC I/O.

Two slot size options are available for the transition module – single slot and double slot. The double slot transition module provides all C900 I/O interfaces while the single slot transition module provides all C900 I/Os with the exception of one serial port and one Gigabit Ethernet port.

The transition module also provides jumpers to allow I/O routing for the C900 shared I/O pins as well as interface type customization for serial I/O interfaces.

The following figures illustrate the TM900 location in the system. These illustrations include both the rear plug-in and front-plug in configurations.
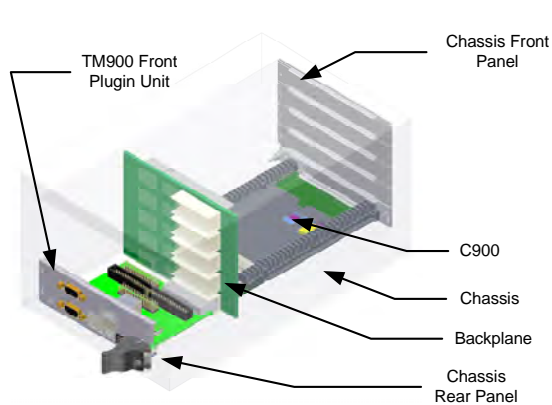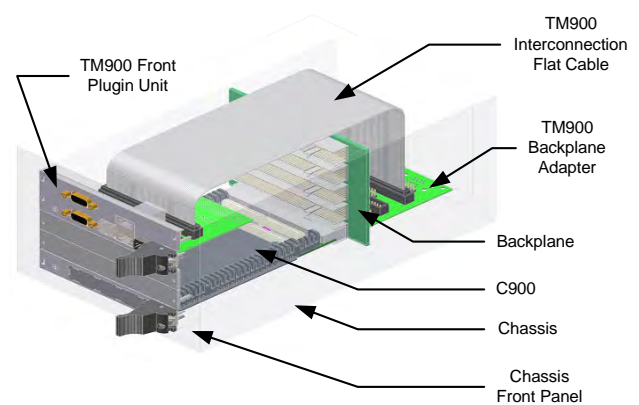

Figure 1. TM900 Rear Plug-in Configuration

Figure 2. TM900 Front Plug-in Configuration

Functional Description

System Support

The TM900 supports both front/rear plug-in units subracks as well as subracks capable of front plug-in units only.

When using subracks capable of rear plug-in units installation, a single transition module kit is needed. In such case, it performs both as the rear I/O adapter at the backplane and the I/O connectors panel. Additional standard expansion units may be used to connect the transition module to the rear of the backplane when subracks are deeper than 80mm.

When using subracks capable of front plug-in units a complete kit is mandatory. This kit includes two transition module units (in different assembly configuration) and high quality twisted pair flat cable.

The rear I/O adapter is assembled only with 3U CPCI rear I/O connectors and flat cable headers. The transition module itself is assembled with flat cable headers and front panel standard I/O connectors.

Two form factor transition modules are available, single slot and double slot. The single slot transition module provides connectors to all C900 I/O interfaces with the exception of one serial I/O port (only serial port 0 is available) and one Gigabit Ethernet port (only LAN 0 is available). The double slot transition module provides connectors for all C900 I/O interfaces.

I/O Connectors

The transition module provides standard connectors for all the C900 I/O interfaces. These connectors include the following:

- Two USB 2.0 type A connectors
- Two modular RJ45 jacks for the two Gigabit Ethernet ports
- Two 8-pin 90° headers for 8 discrete I/O channels (4 differential pairs)
- Two 9-pin D-type connectors for the two serial I/O ports

Configuration Jumpers

Since some of the C900 I/O signals share the same I/O pins at the P2 I/O connector, the TM900 transition module provides the option to route these signals accordingly.

These shared I/O signals may be routed to the C900 I/O flat cable headers as well as front panel connectors when the SBC is configured to route its local resources to the shared I/O pins (Ethernet, Serial I/O or Discrete I/O). When the SBC is configured to route these shared I/O pins to the PMC I/O, the transition module may be configured to route these signals to the PMC I/O flat cable headers.
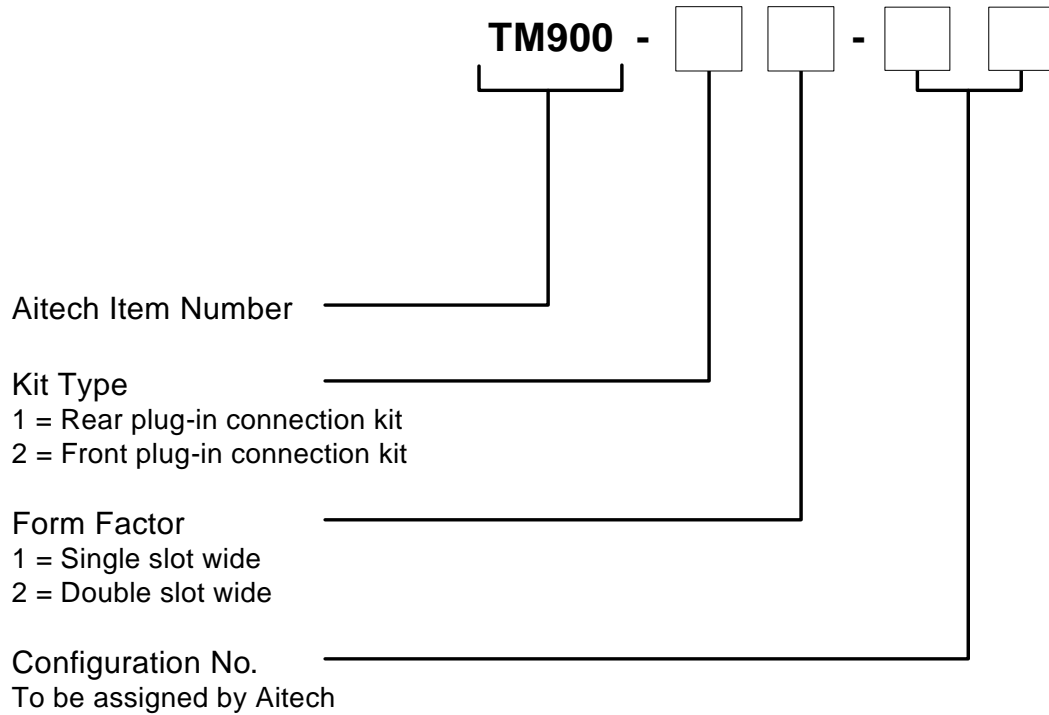
Mechanical Features

The TM900 fully complies with IEEE 1101.11.

Dimensions

- Backplane Adapter- per IEEE 1101.11 80mm depth type.
- Single Slot Transition Module – per IEEE 1101.1 Single slot front panel.
- Double Slot Transition Module – per IEEE 1101.1 Double slot front panel.

Ordering Information for the TM900

TM900 - ☐☐ - ☐☐

Aitech Item Number

Kit Type
1 = Rear plug-in connection kit
2 = Front plug-in connection kit

Form Factor
1 = Single slot wide
2 = Double slot wide

Configuration No.
To be assigned by Aitech

Example: TM900-11-00

For more information about the TM900 or any Aitech product, please contact Aitech Defense Systems sales department at (888) Aitech-8 (248-3248).

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