

PBDS-700/PBDS-700M

Overview

The purpose of the PBDS-700/PBDS-700M module is to act as a buffer and provide voltage level shifting between the target debug/ITP port and the ECM-50. The PBDS-700 supports the Intel® Pentium® 4 and Xeon™ families of processors, while the PBDS-700M supports the Intel® Pentium® M and certain mobile processors, all of which use the ITP700 Debug Port specified by Intel.

The PBDS-700 is composed of two modules connected by ribbon cable:

PBD-700: A personality module that resides between the ECM and the PBDI-700. It provides power and signal conversion for the PBDI-700.

PBDI-700: An interface module that connects the PBD-700 to the target system's debug/ITP port and buffers the signals going back to the PBD-700.

The PBDS-700M is much the same - two modules connected by ribbon cable:

PBD-700M: A personality module that resides between the ECM and the PBDI-700M. It provides power and signal conversion for the PBDI-700M.

PBDI-700M: An interface module that connects the PBD-700M to the target system's debug/ITP port and buffers the signals going back to the PBD-700M.

Note: The PBDS-700 and PBDS-700M are designed specifically for use with the ECM-50. It is extremely important that the jumpers are in the correct position PRIOR to installation. Jumpers set in the wrong position may cause damage to the target system, processor, or base unit.

I/O Voltage Jumper Settings

The first table shows the JTAG I/O voltage produced by these modules based on the PBD-700/PBD-700M module jumper settings. The default positions are denoted by bold-faced text. These settings should be satisfactory for the processors listed above.

Certain processors may require tracking of the GTL bus termination voltage (VTT) to define the JTAG I/O voltage. The default positions listed in the second table in the next column should satisfy current and future processor requirements. (For additional information, see Intel processor documentation.)

Threshold and Filter Jumper Settings

Below are shown jumper settings for threshold and filters integrated into the PBD and PBDI of each personality module. The default settings are satisfactory for most targets and should not be modified. Please contact American Arium for additional information regarding filter design.

The settings for the PBD-700 and PBD-700M are the same.

PBD E2 JUMPER POSITION	PBD E1 JUMPER POSITION	I/O VOLTAGE
FIXED	1.25V	1.25V
FIXED	1.40V	1.40V
FIXED	1.70V	1.70V
FIXED	1.58V	2.58V
TRACKING VTT	1.25V	VTT + 0.015 VOLTS
TRACKING VTT	1.40V	VTT + 0.165 VOLTS
TRACKING VTT	1.70V	VTT + 0.465 VOLTS
TRACKING VTT	1.58V	VTT + 0.345 VOLTS

I/O voltage jumper settings for Pentium 4 and Xeon family processors (Information in bold indicates default settings.)

PBDI E1 JUMPER POSITION	TDO RECEIVE THRESHOLD
1-2	2/3 OF TARGET POWER-ON VOLTAGE FROM PIN 22 OF DEBUG PORT
2-3	1/2 OF LOGIC HI LEVEL SET THROUGH E1/E2 OF PBDS-700

TDO threshold jumper settings on PBDI E1. (Information in bold indicates default settings.)

PBDS-700/PBDS-700M

P3 provides the equivalent of a reset switch closure for use in targets where the debug port DBR# signal is not sufficient to cause an entire system reset. The pins are a floating FET closure and may connect to any voltage from 0V to 5V. Current through the switch must not exceed 120 mA. On resistance is less than 7 Ohms.

If you have any problems or questions, contact Technical Support at 877-508-3970 toll free or 714-731-1661 outside the US or e-mail support@arium.com for assistance.

Dark brackets = default jumper settings

PBDI - E2 and E3 configure an RLCR filter on TMS

Dark brackets = default jumper settings

PBDI - E4 and E5 configure an RLCR filter on TCK