MultiFlex PCI Series Motion Controller
Hardware Accessories

For superior cost-effectiveness and flexibility, the MultiFlex PCI Motion Controller family uses widely available (and therefore low-cost) industry-standard SCSI cables and wiring terminal boards. Many customers prefer the convenience of ordering these accessories directly from PMC. However, some customers may prefer to purchase them in volume directly from the manufacturer or distributor for a slight cost savings. For these customers we provide the following information to help them find and specify the right parts.

| Wiring-terminal Interconnection board(s) | Shielded high-density SCSI cable(s) | 1-8 axis MultiFlex PCI Motion Controller |

Figure A. The MultiFlex PCI card and hardware interconnection accessories

The Cables

Signals for up to eight (8) closed-loop axes and up to sixty-eight (68) additional analog and digital I/O lines are available on the MultiFlex PCI Motion Controller. To connect these signals to the outside world, up to four shielded high-density SCSI cables can be connected to the MultiFlex card (typically one cable for each pair of axes.) The required cables are known as: 68-pin offset 0.8mm VHDCI ("SCSI-5") Male to 68-pin HD68 ("SCSI-3") Male cable assemblies.

These cables are readily available from most SCSI cable manufacturers and distributors. The next section includes detailed information for correctly specifying them. The last section includes a short list of vendors who sell the cables. These cables are generally available in lengths of 1.5ft, 3ft, 6ft, 10ft (or 0.5M, 1M, 2M, 3M) and longer. Check with your chosen vendor for the availability of alternative cable lengths.

Figure B. 68-conductor male VHDCI-to-male HD68 cable for the MultiFlex PCI Controller

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The Connectors

The cable connector that mates to the MultiFlex card is called an "Offset 0.8mm VHDCI Male" connector. It is also commonly called a "SCSI-5" or "SCSI-V", "Micro-Centronics" or "Ultra-Micro Centronics", and sometimes called a "VHD68" connector.


Figure D. Example of a Male 68-pin "offset" VHDCI (0.8 mm) connector and dimensions

The cable connector that mates to the Wiring Terminal Board is called an "HD68 Male SCSI" connector. It is also commonly called; "SCSI-II", "SCSI-3" or "micro DB68", and less frequently referred to as; "half-pitch 68", "HP68", "HP68D", "half-pitch DB68", "half-pitch 68 D-type", "68 pin Micro-D (High-Density or Honda)" or "Ultra SCSI-II/SCSI-III".

Figure E. Example of a Male 68-pin HD68 (SCSI-II or SCSI-3) and dimensions

Important Note: Due to the narrow width of a PCI expansion slot, very close stacking of connectors is required for plugging multiple cables into the MultiFlex PCI card. Therefore "offset" VHDCI cable connectors must be used. Below is an illustration of two closely stacked offset connectors, made possible by the "off-center" location of these connectors with respect to their backshells.
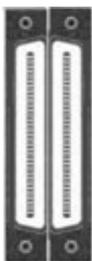
Most VHDCI SCSI cables sold today feature "offset" type connectors, since they satisfy all of the most popular SCSI applications, but we still recommend that you specify "offset" VHDCI connectors to be sure you get the right cables.

Figure F. Two "Offset" connectors, stacked closely back-to-back

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The Wiring Interconnection Board

There are a number of SCSI wiring terminal interconnection boards available on the market. The interconnection board which we recommend is the "ADAM-3968", made by Advantech. This part is available from PMC or from any of Advantech's distributors. See the following section for alternate supplier information.
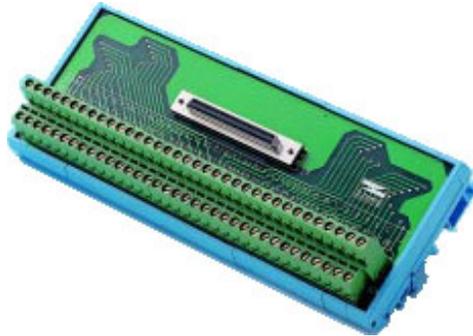
Figure G. 68-Pin SCSI-II Wiring Terminal Board for MultiFlex PCI Controller, DIN Rail Mountable
(PMC part #: ADAM-3968)

Cable Suppliers

There are many manufacturers and distributors of VHDCI-to-HD68 SCSI cables. Below is a short list of some possible alternate sources. You can easily find more suppliers by running a Google web query using the term "SCSI cables" or "VHDCI SCSI cables". Note: We provide this list only as a convenience to our customers. We have no control over the quality of the parts from any third-party vendor, so except for the parts which we stock and sell, we cannot offer any specific product recommendations or guarantees of compatibility.

Cables-to-go / CablesAmerica, Dayton, Ohio
www.cablestogo.com, or www.cablesamerica.com

> CablesAmerica is the internet sales division of Cables-to-go. CablesAmerica offers lower prices, but only web ordering and no live help. They sell Offset VHDCI .8mm to 68M/SCSI-3 Cables in lengths of 1.5, 3, 6, 12, 33, 50 and 75 ft. As an example; Here is the CablesAmerica web description for a 3ft. version of their cable: 3ft LVD/SE VHDCI .8mm 68M/SCSI-3 MD68M-TS CABLE Mfr Part # DZVHDCIM/LVD-3 | Double-shielded Ultra2/Ultra3 LVD/SE external VHDCI cable; .8mm connector. CablesAmerica Part # 20710

All-Best Electronics, Taiwan
www.all-best.com.tw/

> All-Best is a cable manufacturer who sells directly to OEM's and volume buyers. They require 50-100 piece minimum order quantities, and 5+ week lead-times will apply. The part number for their 6 ft. long VHDCI-HD68 cable is: CA-0682B16ZV-AC-1830. Contact the All-Best factory in Taiwan for other lengths, part numbers, prices and lead-times.

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Sources in Europe

Two possible European SCSI cable sources that we have located on the web are listed below. Please note, however, that we have had no previous experience with these companies.

Greatlink Electronics, Cheshire, UK
www.greatlink.european-rep.com/bhdci.htm

> Greatlink's description for these cables is: "H/P cent. 68 male (0.8mm) to H/P DB68 male"

StorCase Technology, Inc., A Kingston Technology Company
www.storcase.com, Europe, Middle East and Africa: Tel +44 (0)1932 738900
Or via Email at: info@storcase.com

> StorCase's description for these cables is: "68-pin VHDCI to HD68 cable"

Wiring Terminal Board Suppliers

Advantech, Industrial Automation Division, Cincinnati, Ohio
www.advantech.com, Tel. 513-742-8895

> Advantech is the manufacturer of the Wiring Terminal Board which we recommend and stock for our customers. The Advantech part number is: ADAM-3968.

B&B Electronics, Ottawa, Illinois
www.bb-elec.com, Tel. 815-433-5100

> B&B is a stocking distributor for Advantech's wiring terminal board, P/N ADAM-3968.