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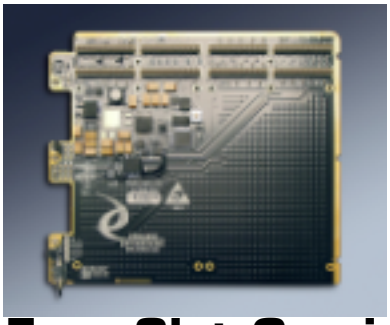
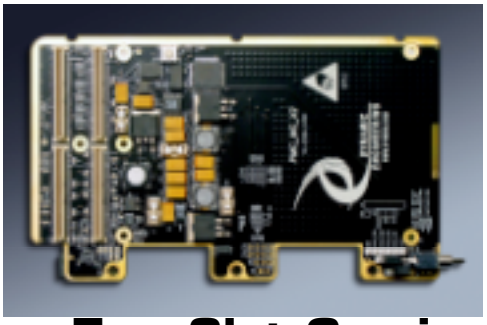
User Manual



Four Slot Carrier



Two Slot Carrier

PMC-MC-X2-Chassis
PMC-MC-X4-Chassis

Customized Chassis for PMC Mini Carriers

Revision A1

PMC-MC-X2-Chassis
PMC-MC-X4-Chassis
PMC Mini Carrier 2/4 Slots Chassis

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Manual Revision A. Revised Nov 15, 2007

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Product Description and Usage

The PMC-MC-X2 and PMC-MC-X4 adapter / carrier converter cards provide the ability to install up to 2 or 4 PMC cards into a small enclosure. The PMC-MC-X2 has one PMC card slot mounted front and rear to create a compact arrangement with 2 PMC slots. The PMC-MC-X4 has two PMC slots on the front, and two on the rear.

A complete solution utilizing the Mini Carriers can be provided utilizing the PMC MC X2 or PMC MC X4 chassis.

An external 12V power supply [wall mount transformer or other] provides the reference voltage for the internal switching power supplies. +5, +3.3, +12, and minus 12 are created with high efficiency industrial temp rated switching power supplies. The power rails are filtered and fused to provide quiet protected power to the PMC slots.

An option to use 14-34V “28V” power is provided on the X4 model. The +12V is generated by an added switching power supply. The 28V option allows the use of higher voltage batteries or aircraft power.

The X4 chassis can be ordered to support the 12V or the 28V option. The High voltage version comes with a 24V 5A power supply. The 12V version comes with a 12V 5A supply.

The X2 and X4 Chassis have a common base design. The X4 is wider to accommodate the dual PMC positions top and bottom.

The Chassis comes with two 5V fans drawing from the 5V supply on the Mini Carrier. The MC can have active or manual control over the Fans. Please see the MC manual for more details on this point. The fans are rated at 3.8 CFM each. Looking at the front of the chassis the fans are oriented to blow across the PMC’s from left to right. Exhaust holes are provided on the right hand side. The hole pattern is the same on both sides. In the unlikely event that additional cooling is required the right hand holes can be fitted with external fans. Finger guards are supplied for all 4 positions. The rear fan blows directly over the power supply components on the MC.

The MC is mounted within the chassis using stand-off’s. One side uses male-female and the other female-female to accommodate the screw hardware on the lid and bottom plus securing the MC to the chassis. The chassis will come pre-assembled.

The top slots are accessible by removing the top cover only. To secure the PMC’s on the top surface or to install into the rear slots; remove the top cover and undo the upper stand-offs.

Try not to loosen the lower stand-offs. By keeping the lower stand-off's secured the alignment of the MC to the chassis can be preserved. There is a little "slop" [the technical term] to allow the MC to be moved forward and back to change the relative position of the PMC front bezel to the chassis.

Re-install the MC on top of the lower stand-offs. You will likely need to reconnect the FANs if they were disconnected to remove the MC. Install the upper stand-offs and snug down. Do not over tighten as you are tightening against the MC. Install the Lid and secure.

If you happen to remove the lower stand-offs or loosen them; the following additional steps are suggested for optimal appearance. The chassis will work fine even without alignment.

Install the lower stand-offs [female down, male up by screwing 5/16" bolts through the rubber feet. Two 3/16" screws are used for the center stand-offs without rubber feet. Leave slightly loose to allow adjustment. Insert MC onto lower stand-offs. Snug down upper stand-offs onto lower. Install Lid and check alignment. Remove lid if necessary and slide MC assembly forward or back to align bezel as desired. Tighten lower screws and add upper screws [3/16"] when alignment is achieved. Additional 5/16" screws are for the front of the chassis.

Blank PMC filler plates should be installed at the unused locations to keep the air-flow from the fans moving in the proper path.

Attach the power cable from the supplied wall mounted transformer at the rear of the chassis. The location is marked 12V. If customer supplied cables are used. The connector is a standard 2.5 MM barrel mate and has the center tap "hot" and the outer ring ground. The power connector should be in the off position when power is connected.

For chassis with the "28V" option the cable is connected at the 12V location. Please make sure that you have a 28V capable X4 before attaching the higher voltage cable.

If the FANs are set for manual control, power is connected, and the switch in the on position - the FANs should operate. If the FANs are set for PMC control; the PMC temperature sensor will need to enable the FANs for airflow to be activated.

The chassis is tied to the MC ground planes via the stand-offs. An additional ground strap from any of the mounting screws to ground may be warranted in some installations. Future versions may have an additional ground location at the rear of the chassis to aide the user that chooses this option.

Interfacing

Some general interfacing guidelines are presented below. Do not hesitate to contact the factory if you need more assistance.

ESD

Proper ESD handling procedures must be followed when handling the PMC-MC-X2/X4. The card is shipped in an anti-static, shielded bag. The card should remain in the bag until ready for use. When installing the card the installer must be properly grounded and the hardware should be on an anti-static work-station.

Watch the system grounds. All electrically connected equipment should have a fail-safe common ground that is large enough to handle all current loads without affecting noise immunity. Power supplies and power consuming loads should all have their own ground wires back to a common point.

Within the PMC-MC-X2/X4 the power switch, and single source [12V/24V] power accomplish common timing and ground. External connections to the PMC's may damage the PMC's if the installed hardware is not rated for hot insertion. Please consult the PMC manufacturers documentation for the specifics on your system.

Construction and Reliability

PMC Modules were conceived and engineered for rugged industrial environments. The PMC-MC-X2/X4 is constructed out of 0.090 inch thick high temp FR4 material. The thickness will help with vibration and when installing PMC's.

The PMC-MC-X2/X4-Chassis is made of Black Anodized Aluminum, and provided with Stainless Steel Hardware.

Thermal Considerations

The PMC-MC-X2/X4 design consists of CMOS circuits for the on-board features of bus arbitration, clock distribution etc.. The power supplies are efficient, and yet when sufficient power is consumed will generate a thermal load to be dissipated. The power supplies are well connected to the ground planes and to the chassis via the standoffs. The combination of conduction and convection cooling will keep the power supplies within their operating tolerances. Industrial temperature parts are utilized within the power supplies to help with potential thermal issues.

It is possible, with modern high-powered PrPMC's to create higher power dissipation requirements. If your PMC has a large thermal requirement, temperature measurements are recommended. The fans can be retrofitted with always on 12V versions or secondary fans to keep the electronics safe.

In a lot of cases the standard set-up will be more than adequate.

Warranty and Repair

Please refer to the warranty page on our website for the current warranty offered and options.
http://www.dyneng.com/warranty.html

Service Policy

Before returning a product for repair, verify as well as possible that the suspected unit is at fault. Then call the Customer Service Department for a RETURN MATERIAL AUTHORIZATION (RMA) number. Carefully package the unit, in the original shipping carton if this is available, and ship prepaid and insured with the RMA number clearly written on the outside of the package. Include a return address and the telephone number of a technical contact. For out-of-warranty repairs, a purchase order for repair charges must accompany the return. Dynamic Engineering will not be responsible for damages due to improper packaging of returned items. For service on Dynamic Engineering Products not purchased directly from Dynamic Engineering contact your reseller. Products returned to Dynamic Engineering for repair by other than the original customer will be treated as out-of-warranty.

Out of Warranty Repairs

Out of warranty repairs will be billed on a material and labor basis. The current minimum repair charge is $100. Customer approval will be obtained before repairing any item if the repair charges will exceed one half of the quantity one list price for that unit. Return transportation and insurance will be billed as part of the repair and is in addition to the minimum charge.

For Service Contact:

Customer Service Department
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Order Information

PMC-MC-X2-Chassis	http://www.dyneng.com/pmc_mc_x2x4_chassis.html Standard version with two PMC positions and 12V 5A wall mount transformer
PMC-MC-X4-Chassis	http://www.dyneng.com/pmc_mc_x2x4_chassis.html Standard version with four PMC positions and 12V 5A wall mount transformer
PMC-MC-X4-Chassis-28	http://www.dyneng.com/pmc_mc_x2x4_chassis.html Standard version with four PMC positions with 24V 5A wall mount transformer.

Wall Mount Transformer notes: CE, UL rated, 100-240 50/60 Hz. US style plug.