ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Emerson / Motorola / Force Computers SYS68K/MSM-235MB* at our website: ***Click HERE***

PPC/PowerCore-SMEM Rev. 1.1

Installation Guide

P/N 213829 Revision AD
November 2001

Copyright

The information in this publication is subject to change without notice. Force Computers, GmbH reserves the right to make changes without notice to this, or any of its products, to improve reliability, performance, or design.

Force Computers, GmbH shall not be liable for technical or editorial errors or omissions contained herein, nor for indirect, special, incidental, or consequential damages resulting from the furnishing, performance, or use of this material. This information is provided "as is" and Force Computers, GmbH expressly disclaims any and all warranties, express, implied, statutory, or otherwise, including without limitation, any express, statutory, or implied warranty of merchantability, fitness for a particular purpose, or non-infringement.

This publication contains information protected by copyright. This publication shall not be reproduced, transmitted, or stored in a retrieval system, nor its contents used for any purpose, without the prior written consent of Force Computers, GmbH.

Force Computers, GmbH assumes no responsibility for the use of any circuitry other than circuitry that is part of a product of Force Computers, GmbH. Force Computers, GmbH does not convey to the purchaser of the product described herein any license under the patent rights of Force Computers, GmbH nor the rights of others.

Copyright© 2001 by Force Computers, GmbH. All rights reserved.

The Force logo is a trademark of Force Computers, GmbH.

IEEE is a registered trademark of the Institute for Electrical and Electronics Engineers, Inc.
PICMG, CompactPCI, and the CompactPCI logo are registered trademarks and the PICMG logo is a trademark of the PCI Industrial Computer Manufacturer's Group.
MS-DOS, Windows95, Windows98, Windows2000 and Windows NT are registered trademarks and the logos are a trademark of the Microsoft Corporation.
Intel and Pentium are registered trademarks and the Intel logo is a trademark of the Intel Corporation.

Other product names mentioned herein may be trademarks and/or registered trademarks of their respective companies.



1 Safety Notes

This section provides safety precautions to follow when installing, operating, and maintaining the PPC/PowerCore-SMEM Rev. 1.1. For your protection, follow all warnings and instructions found in the following text.

General

This *Installation Guide* provides the neccssary information to install and handle the PPC/PowerCore-SMEM Rev. 1.1. As the product is complex and its usage manifold, we do not guarantee that the information given is complete. In case you need additional information, ask your Force Computers representative.

The PPC/PowerCore-SMEM Rev. 1.1 has been designed to meet the standard industrial safety requirements. It must not be used except in its specific area of office telecommunication industry and industrial control.

Only personnel trained by Force Computers or persons qualified in electronics or electrical engineering are authorized to install, uninstall or maintain the PPC/PowerCore-SMEM Rev. 1.1. The information given in this manual is meant to complete the knowledge of a specialist and must not be taken as replacement for qualified personnel.

EMC

The board has been tested in a Standard Force Computers system and found to comply with the limits for a Class A digital device in this system, pursuant to part 15 of the FCC Rules respectively EN 55022 Class A.

These limits are designed to provide reasonable protection against harmful interference when the system is operated in a commercial environment.

The board generates, uses, and can radiate radio frequency energy and, if not installed properly and used in accordance with this Installation Guide, may cause harmful interference to radio communications. Operating the system in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

If boards are integrated into open systems, always cover empty slots.



To ensure proper EMC shielding, always operate the CPU board with blind panels or with PMC modules installed.

Installation

Electrostatic discharge and incorrect board or module installation and uninstallation can damage circuits or shorten their life. Therefore:

- Before installing or uninstalling a memory module, read this Installation Guide.
- Before installing or uninstalling a board, read the board's Installation Guide and ensure that all safety notes given by that guide are applied.
- Before touching integrated circuits, ensure that you are working in an ESD safe environment.
- Do not install PPC/PowerCore-SMEM Rev. 1.1 modules on top of a different memory module type. Otherwise system malfunction and damage to the modules may occur.

Operation

While operating the board ensure that the environmental and power requirements are met.

When operating the board in areas of strong electromagnetic radiation, ensure that the board is bolted on the CompactPCI rack and shielded by enclosure.

Make sure that contacts and cables of the board cannot be touched while the board is operating.

Expansion

Only replace components or system parts witb those recommended by Force Computers. In case you use components other than those recommended by Force Computers, you are fully responsible for the impact on EMI and thc possibly changed functionality of the product.

Environment

Always dispose of old boards and modules according to your country's legislation.

2 Sicherheitshinweise

Dieser Abschnitt enthält Sicherheitshinweise, die bei Einbau, Betrieb und Wartung des PPC/PowerCore-SMEM Rev. 1.1 zu beachten sind.

Wir sind darauf bedacht, alle notwendigen Informationen zum Einbau und zum Umgang mit dem PPC/PowerCore-SMEM Rev. 1.1 in diesem Handbuch bereit zu stellen. Da es sich jedoch bei dem PPC/PowerCore-SMEM Rev. 1.1 um ein komplexes Produkt mit vielfältigen Einsatzmöglichkeiten handelt, können wir die Vollständigkeit der im Handbuch enthaltenen Informationen nicht garantieren. Falls Ihnen Informationen fehlen sollten, wenden Sie sich bitte an Ihren Vertreter von Force Computers.

Das PPC/PowerCore-SMEM Rev. 1.1 erfüllt die für die Industrie geforderten Sicherheitsvorschriften und darf ausschliesslich für Anwendungen in der Telekommunikationsindustrie und im Zusammenhang mit Industriesteuerungen verwendet werden.

Einbau, Wartung und Betrieb dürfen nur von durch Force Computers ausgebildetem oder im Bereich Elektronik oder Elektrotechnik qualifiziertem Personal durchgeführt werden. Die in diesem Handbuch enthaltenen Informationen dienen ausschliesslich dazu, das Wissen von Fachpersonal zu ergänzen, können dieses jedoch nicht ersetzen.

EMV

Das Board wurde in einem Force Computers Standardsystem getestet. Es erfüllt die für digitale Geräte der Klasse A gültigen Grenzwerte in einem solchen System gemäß den FCC-Richtlinien Abschnitt 15 bzw. EN 55022 Klasse A. Diese Grenzewerte sollen einen angemessenen Schutz vor Störstrahlung beim Betrieb des Boards in Geschäfts-, Gewerbe- sowie Industriebereichen gewährleisten.

Das Board arbeitet im Hochfrequenzbereich und erzeugt Störstrahlung. Bei unsachgemäßem Einbau und anderem als in diesem Handbuch beschriebenen Betrieb können Störungen im Hochfrequenzbereich auftreten. Warnung! Dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen. In diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen.

Wenn Sie das Board ohne ein PMC Modul verwenden, schirmen Sie freie Steckplätze mit einer Blende ab, um einen ausreichenden EMV Schutz zu gewährleisten. Wenn Sie Boards in Systeme einbauen, schirmen Sie freie Steckplätze mit einer Blende ab.



Um eine ausreichende Abschirmung zu gewährleisten, darf das Board nur mit einer Blindblende oder mit einer installierten PCM-CIA-Karte betrieben werden.

Installation

Elektrostatische Entladung und unsachgemäße Installation und Ausbau des Boards kann Schaltkreise beschädigen oder ihre Lebensdauer verkürzen. Deswegen sind folgende Punkte vor der Installation zu überprüfen:

- Lesen Sie vor Einbau oder Ausbau des Speichermoduls dieses Benutzerhandbuch.
- Lesen Sie vor Einbau oder Ausbau des CPU Boards dessen Benutzerhandbuch, und vergewissern Sie sich, dass alle darin erwähnten Sicherheitshinweise befolgt werden.
- Bevor Sie integrierte Schaltkreise berühren, vergewissern Sie sich, dass Sie in einem ESD-geschützten Bereich arbeiten.
- Installieren Sie das PPC/PowerCore-SMEM Rev. 1.1 nicht auf einem anderen Speichermodultyp. Andernfalls kann es zu Systemfehlfunktionen kommen, oder die Module können beschädigt werden.

Betrieb

Achten Sie darauf, dass die Umgebungs- und die Leistungsanforderungen während des Betriebs eingehalten werden.

Wenn Sie das Board in Gebieten mit elektromagnetischer Strahlung betreiben, stellen Sie sicher, dass das Board mit dem CompactPCI System verschraubt ist und das System durch ein Gehäuse abgeschirmt wird.

Stellen Sie sicher, dass Anschlüsse und Kabel des Boards während des Betriebs nicht berührt werden können.

Austausch/ Erweiterung

Verwenden Sie bei Austausch oder Erweiterung nur von Force Computers empfohlene Komponenten und Systemteile. Andernfalls sind Sie für mögliche Auswirkungen auf EMV und geänderte Funktionalität des Produktes voll verantwortlich.

Überprüfen Sie die gesamte aufgenommene Leistung aller eingebauten Komponenten (siehe die technischen Daten der entsprechenden Komponente). Stellen Sie sicher, dass die Ausgangsströme jedes Verbrauchers innerhalb der zulässigen Grenzwerte liegen (siehe die technischen Daten des entsprechenden Verbrauchers).



Umwelt-schutz

Alte Batterien und/oder Boards oder Systeme müssen stets gemäß der in Ihrem Land gültigen Gesetzgebung entsorgt werden.



3 Introduction

This document describes how to install the PPC/PowerCore-SMEM Rev. 1.1 lower and upper memory module.

The PPC/PowerCore-SMEM Rev. 1.1 lower/upper memory module provides additional memory e.g. to the PPC/PowerCoreCPCI-6750, PPC/PowerCore-6750 or the PPC/PowerCore/CPCI-680. For further information, refer to the board's *Installation Guide*.

Features

The PPC/PowerCore-SMEM Rev. 1.1 lower SDRAM memory module can be installed directly on one of the above described boards. The PPC/PowerCore-SMEM Rev. 1.1 upper SDRAM memory module can only be installed on top of a lower SDRAM memory module. The RAM configuration is recognized on the board by means of a serial EPROM.

Table 1 **Usage of Memory Modules**

Memory Module	Board
PowerCore-SMEM/64L	PPC/PowerCore-6750 PPC/PowerCoreCPCI-6750
PowerCore-SMEM/128L	PPC/PowerCore-6750 PPC/PowerCoreCPCI-6750
PowerCore-SMEM/256L-100	PPC/PowerCoreCPCI-680
PowerCore-SMEM/128U	PPC/PowerCoreCPCI-3750 PPC/PowerCore-6750 PPC/PowerCoreCPCI-6750
PowerCore-SMEM/512U-100	PPC/PowerCoreCPCI-680

The memory modules have 64 data bits. For further information, refer to the board's *Installation Guide*.

Installation

1. Read "Safety Notes" on page I
2. Proceed as described in section 4 "Installation" on page 9

Table 2 History of Manual Publication

Order No.	Edition/ Revision	Date	Description
212100	1.0	December 1999	First Print
213829	AA	October 2000	Correction upper memory module information (see section "Upper Memory Module" on page 10)
213829	AB	August 2001	Added chapter Sicherheitshinweise
213829	AC	September 2001	Corrected chapter Sicherheitshinweise
213829	AD	November 2001	Updated address page, added copyright page, editorial changes

4 Installation

Lower Memory Module

To install a 64-, 128-, 256-MByte lower memory module, take the following steps.

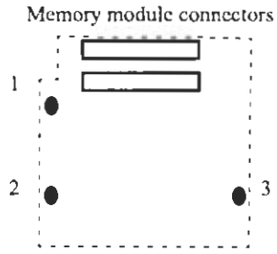
Note: **The memory module includes six screws and three standoffs. Three screws and the standoffs are already assembled on the memory module.**



Standoff Screw

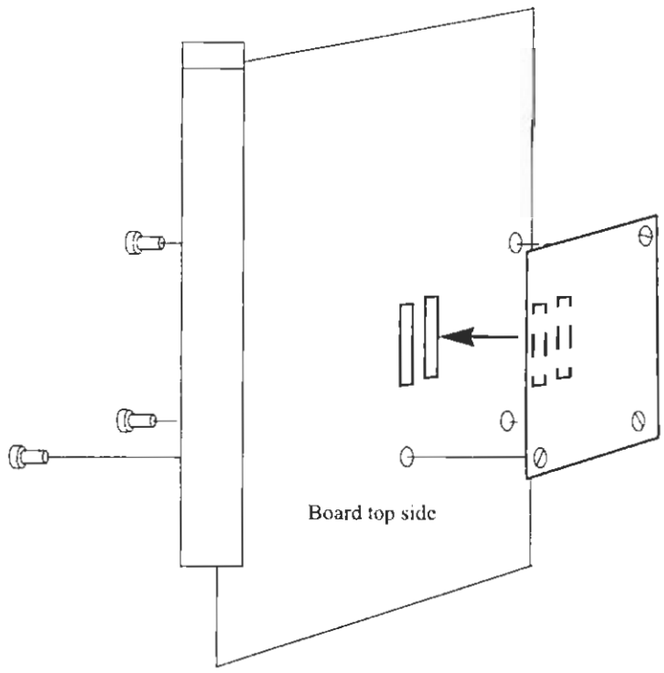
1. If CPU board is already installed, uninstall it following CPU board's *Installation Guide*
2. Locate board's memory module connectors (see location diagram of the CPU board's Installation Guide)
3. Note three standoff holes on CPU board around memory module connectors shown (marked 1, 2, 3) in following figure

Figure 1 **Location of the Standoff Holes on the CPU Board**



4. Plug PPC/PowerCore-SMEM Rev. 1.1 into memory module connectors on CPU board
5. Insert screws into holes from bottom side of board as shown in following figure

Figure 2 **Connection of the PPC/PowerCore-SMEM with the CPU Board**



In case of an upper memory module installation, continue with the steps described in the section *Upper Memory Module*.

1. Fasten screws on three standoffs
2. Install CPU board following CPU board's *Installation Guide*

Upper Memory Module

In order to install an upper memory module, take the following steps:

Note: **Each upper memory module includes three standoffs.**


Standoff

1. If CPU board is already installed, uninstall it following CPU board's *Installation Guide*
2. Ensure that module already installed is a 64-, 128-, 256-MByte PPC/ PowerCore-SMEM memory module

Caution



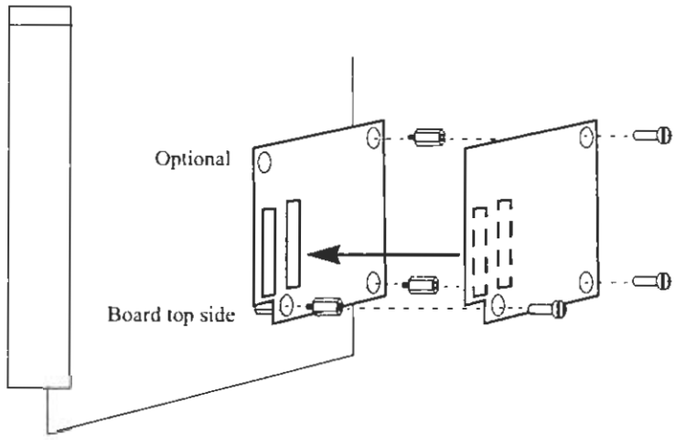
Do not apply other types of combinations than those provided in the table below. Otherwise system malfunction and damage to the modules may occur.

Table 3 **Combination of Different Memory Modules**

	PowerCore-SMEM/128U	PowerCore-SMEM/512U-100
PowerCore-SMEM/64L	YES	NO
PowerCore-SMEM/128L	YES	NO
PowerCore-SMEM/256L-100	NO	YES

3. Remove three screws on top of installed memory module (if already installed)
4. Fasten three standoffs as shown in following figure:

Figure 3 **Connection of an Upper Memory Module with the CPU Board**



5. Plug upper PPC/PowerCore-SMEM Rev. 1.1 into connectors on the lower memory module as shown
6. Fasten three screws
7. Install CPU board following CPU board's *Installation Guide*

Product Error Report

Product:	Serial No.:
Date Of Purchase:	Originator:
Company:	Point Of Contact:
Tel.:	Ext.:

Address:

_____

_____

_____

Present Date:

Affected Product:	Affected Documentation:
❑ Hardware ❑ Software ❑ Systems	❑ Hardware ❑ Software ❑ Systems

Error Description:

_____

_____

_____

_____

_____

_____

_____

_____

This Area to Be Completed by Force Computers:

Date:

PR#:

Responsible Dept.: ❑ Marketing ❑ Production

Engineering ➡ ❑ Board ❑ Systems

☞ Send this report to the nearest Force Computers headquarter listed on the address page.



World Wide Web: www.forcecomputers.com
24-hour access to on-line manuals, driver updates, and application notes is provided via SMART, our SolutionsPLUS customer support program that provides current technical and services information.

Headquarters

The Americas

Force Computers Inc.
5799 Fontanoso Way
San Jose, CA 95138-1015
U.S.A.

Tel.: +1 (408) 369-6000
Fax: +1 (408) 371-3382
Email: support@fci.com

Europe

Force Computers GmbH
Prof.-Messerschmitt-Str. 1
D-85579 Neubiberg/München
Germany

Tel.: +49 (89) 608 14-0
Fax: +49 (89) 609 77 93
Email: support@force.de

Asia

Force Computers Japan KK
Shiba Daimon MF Building 4F
2-1-16 Shiba Daimon
Minato-ku, Tokyo 105-0012 Japan

Tel.: +81 (03) 3437 3948
Fax: +81 (03) 3437 3968
Email: smiyagawa@fci.com

213829 420 000 AD

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP