MICRO CLIENT

M@C64

User Manual

Rel. 07.2005 Ver.02

0-0096-3093

	The German version of this manual is not available. Die deutsche Version ist nicht verfügbar.

Manual History

Date	Version	Changes
July 2004	01	First edition
July 2005	02	New layout, Logo

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TRADEMARKS

All trademarks mentioned in this manual are registered properly of the respective owners.

CE-CONFORMITY

The following requirements, standards, specifications constitute part of the declaration:

EN	55022	EN	55024
EN	60950	EN	61000-6-2
FCC	Sub. Part. 15 Class A		

The validation of this declaration depends on the properly use of the product.

FCC Class A Radio Frequency

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to 1/47 CFR Part 15.109 Class A of FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference and
2. This device must accept any interference received, including interference that may cause undesired operation.

FC Test to Comply
With FCC Standards
For industrial use

The limits of FCC Part15 class A are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interfer-

ence to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by more of one or more of the following measures:

1. Reorient or relocate the receiving antenna
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
4. Consult the dealer or an experienced radio/television technican for help.

Notice 1: The changes or modifications not expressly approved by the party responsible for compliance could void the user`s authority to operate the equipment.
Notice 2: Shielded interface cables, if any, must be used in order to comply with emission limits.

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1. INTRODUCTION

1.1. APPROPRIATE USE

The main purpose of the M@C64 is the use and operation with 24VDC-power-sources.

The surrounding area of the M@C64 are closed and dry rooms.

The M@C64 is intended for industrial applications in machine and plant control engineering.

The user is not entitled to change the system or open the body without consultation to Kontron.

1.2 ITEM CHECKLIST

Your M@C64 comes securely packaged in a solid shipping carton. Upon receiving your M@C64, open the carton and remove the contents carefully.

The shipping carton should contain the following items:

- M@C64 Micro Client
- This User Manual
- Support CD
- Cables to connect external devices (optional)
- Software CD and licence (if implemented)

Carefully inspect each component to ensure that nothing is missing and/or damaged. If any of these items is missing or damaged, please contact Kontron immediately. Preserve of the packing material for future transportation.

1.3 IMPORTANT SAFETY INSTRUCTIONS

This section gives you detailed information about how to maintain a safe working environment while using the M@C64. You can maintain its condition and performance by following these guidelines. Please read it carefully to ensure maximum safety.

The installation of the M@C64 must be done by a professional or qualified person to ensure the maximum of save handling, installation and function.

While unplugging any cable from the M@C64, disconnect it by the plug head, not by its wire.

Pay attention to the power supply input voltage. The M@C64 has specific power requirements.

Please prevent the M@C64 from humidity.

Never pour any liquid on M@C64, this may cause fire or electrical shock.

Place the M@C64 on a reliable surface when installing. A drop or fall may cause damage.

Do not leave the M@C64 in an unconditional environment. Storage temperature above 70°C may damage the M@C64.

If the M@C64 is not in use for a long time, disconnect it from mains to avoid possible damage by transient overvoltage.

If you have to change the M@C64 in service cases , all single parts of the plant must first be switched off, after which the M@C64 can be uncoupled from the plant. Protect each part to switch on again during service.

Following service activities on the M@C64 small could cause failures.

- Metal objects such as screws or tools fall in the M@C64.
- Cables are removed or inserted during operation.

The system has to be shut down and checked immediately by service staff, if one of the following situation occurs:

- Liquid has penetrated into the M@C64.
- The M@C64 has been exposed to moisture.
- The M@C64 shows obvious sign of breakage.
- The M@C64 did not work well or you can not get working according to users manual.

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2. OVERVIEW

Kontrons Micro Client achieves a superior price/performance ratio through a combination of reduced hardware costs, reduced maintenance and support costs, reduced down time, improved performance and enhanced security. High availability and the lack of local harddisc related problems, makes the user spend more time on his actual tasks. With high shock, vibration and temperature resistance, as well as resistance with regard to more stringent EMC requirements, this Micro Client is particularly suitable for use as an IPC based control system.

Features:

- **Geode GX1 Processor 300 MHz**
- **Up to 256 MB Main Memory SDRAM**
- **Up to 1GB Compact Flash**
- **6.4” TFT Display with 640x480 , at 300cd/m²**
- **Analog resistive Touch screen**
- **Standard interfaces 1x RS232, RS422/RS485 optional, 1xLAN 10/100 1xUSB**
- **CAN Bus on board**
- **Compact flash drive bay**
- **Input power 24VDC**
- **Front side protection IP65**
- **Dimension Panelmount 184 x 273 x 60mm (HxWxD)**
- **All Connector build for industrial use**
- **Operating temperature 5 to 50°C. All Connector build for industrial use**
- **Shock and vibration tested**
- **Fanless cooling concept**
- **Meets toughest industrial requirements**
- **Windows XP Embedded, CE.net, Embedded Linux**

3. INSTALLATION

Attention!

The weight of the Panel is about 2kg
Carry it on with both hands!

The Panel PC of this type is developed to work in a control cabinet. Thereby it must be pointed that all the environmental conditions will be considered.

When installing the M@C64 take care that there is enough area for ventilations on rear side. For details go to item housing dimensions.

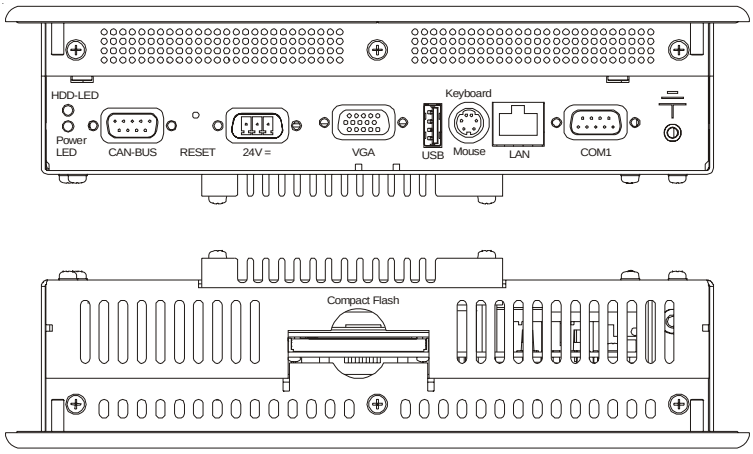
If your M@C64 was delivered without software install a keyboard and mouse.

If operating system and software is installed, the touch is working and calibrated.

Look up for further settings e.g. BIOS on the single board manuals at the “Support CD”.

3.1 CONNECT EXTERNAL DEVICES

To get detailed information about pinout of each connector please look to chapter “technical details”.



App. 3-1

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3.1.1 Fieldbus CAN-BUS

External connector of internal fieldbus controller. Interface to connect CAN-BUS devices.

3.1.2 RESET Switch

Use this Switch to reset the panel.

3.1.3 Main Power IN

Use this connector to connect the power supply of 24VDC. Please note the Power requirements (See chapter technical details).

3.1.4 CRT Monitor

Connector and interface to VGA/CRT monitor .

3.1.5 USB port

This connector provides one external USB 1.1 interfaces

3.1.6 PS/2 Keyboard and Mouse

Use this connector to connect PS/2 mouse and keyboard. To use both at the same time a adaptor is necessary.

3.1.7 LAN Port

This connector provides a external interfaces 10/100 BaseT on RJ45 to connect your Panel to other devices in a network.

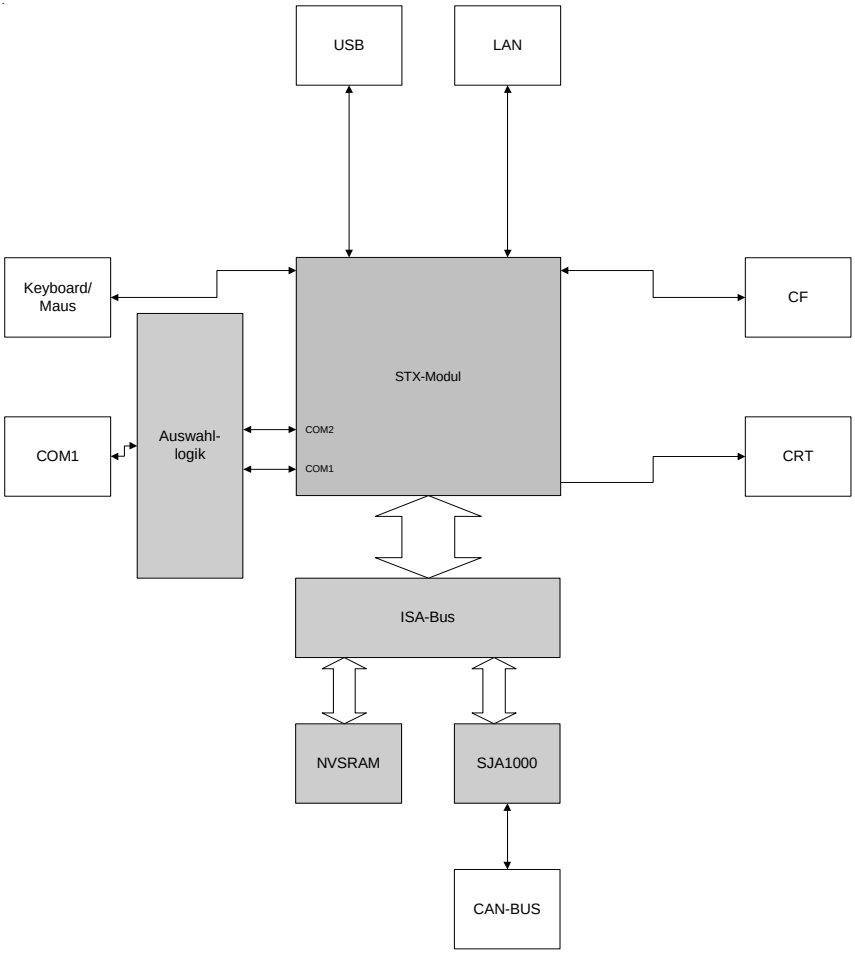
3.1.8 Serial Interface COM1

This serial interfaces enables you to connect a external device with 9 pin DSUB connector such as mouse or modem.

3.1.9 Compact Flash memory

Use this interface to connect a compact flash which could be used to store data.

3.2 BLOCK DIAGRAM



App. 3-2 Block diagram

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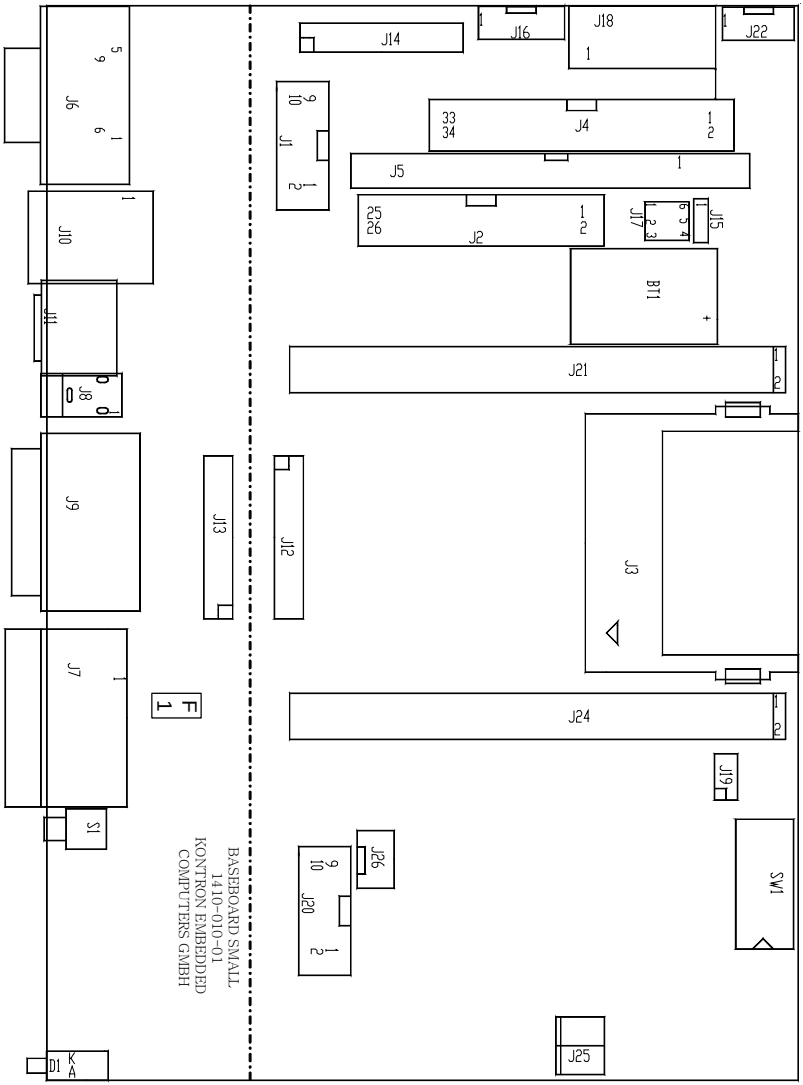
3.2.1 INTERNAL BASEBOARD LAYOUT



App. 3-3 Baseboard layout

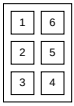
3.3 JUMPER AND DIP SETTING

3.3.1 Power requirement for backlight (J15)

Setting	Backlight type
1-2	12V Power
2-3	5V Power

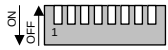
3.3.2 Power requirement for LCD Display (J17)

Setting	Display type
1-6	3V Power
2-5	5V Power
3-4	12V Power



3.3.3 Set Interrupt to CAN controller SJA1000

Setting SW1			IRQ
DIP6	DIP7	DIP8	
OFF	OFF	OFF	IRQ10
OFF	OFF	ON	IRQ3
OFF	ON	OFF	IRQ4
OFF	ON	ON	IRQ5
ON	OFF	OFF	IRQ7
ON	OFF	ON	IRQ11
ON	ON	OFF	Kein Interrupt
ON	ON	ON	Kein Interrupt

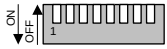


3.3.4 Set IO Adress to CAN controller SJA1000

Setting SW1			IO-Adress
DIP3	DIP4	DIP5	
OFF	OFF	OFF	300_H
OFF	OFF	ON	100_H
OFF	ON	OFF	120_H
OFF	ON	ON	140_H
ON	OFF	OFF	200_H
ON	OFF	ON	220_H
ON	ON	OFF	320_H
ON	ON	ON	340_H

3.3.5 Select touch controller base

Setting SW1 DIP2	Function
OFF (default)	Touch is linked to COM2 connector
ON	Touch is linked to COM1 connector



3.3.6 Set compact flash configuration

Setting SW1 DIP1	Function Compact Flash
OFF	Slave
ON	Master

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3.4 LED STATUS INDICATORS

LED	Function	Color and Indication
D1 Bottom LED	POWER	**Color Green** ON = 5V OK OFF = No power
D1 Top	HDD activity	**Color RED** Blinking = Data stored or loaded form HDD OFF = no activity on HDD

3.5 SOFTWARE INSTALLATION

3.5.1 APPLICATION SOFTWARE AND OPERATING SYSTEM

The panel is designed to work with different operating systems. To install operating System and application software follow the instructions of the software.

3.5.2 Hardware drivers

To get full function of M@C64 on different operating systems it is necessary to install drivers for the implemented hardware. All the drivers are stored on the provided Support CD. Drivers also available at the online support at **http://www.kontron.com**.

Your Panel will be normally delivered with preinstalled operating system. By this no driver installation is necessary. All drivers for the implemented hardware are included.

If you need additional help please contact the Kontron customer service.

3.6 INSTALL CAN BUS

3.6.1 HARDWAREINSTALLATION

The CAN-Bus interface implemented in the M@C64 is build by a Philips SJA1000 microcontroller. No additional hardware must be installed.

3.6.2 SOFTWARE AND DRIVER INSTALLATION.

To get an operating CAN-Bus it is necessary to install a special CAN-BUS-DRIVER to the operating system.

The driver is under the rules of a licence agreement, and could be ordered at Kontron.

3.6.2.1 DOS

The program CANVIEW is the DOS CAN-bus viewer, which supports SJA1000 hardware. With CANVIEW you can easy and fast check existing and build new CAN networks.
Start the program CANVIEW, choose basic IO address, interrupt and baudrate. After pressing F10 the controller will be configured and integrated in the CAN-network. If you got an error please check basic configuration. If you need

additional help press STRG-F1 key .

3.6.2.2 WINDOWS

Start program PCAN_ISA.exe to install driver and software. After reboot start program PCAN-View from the according folder. At first start enter choose type of CAN hardware, I/O address, interrupt and baudrate. If you need additional help press F1 key or select help bottom.

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4. MAINTENANCE

The M@C64 is designed and produced according to DIN EN ISO 9000 :2000. One of the main development intentions was to reduce the terms of service. As a result, with exception changing CMOS-Ram battery no great service is to do.

In case off any error kindly note the remarks below.

To analyze the error please check first all connections and configuration of the software. Don't try to repair the hardware.

No warranty after unqualified engagement

4.1 CUSTOMER SERVICE

To get more technical information and help concerning errors on the M@C64 please contact Kontron customer service.

Phone: **+49 (0)94 61 950-104 or -102**
FAX: **+49 (0)94 61 950- 200**
Email: **service @ kontron.com**

4.2 CLEANING

To clean the surface of the Panel use a soft lintfree cloth. It should be slightly moist with a mild detergent solution or any computer cleaning kit.

Never use alcohol, petroleum-based solvents or aggressive agents to clean the Panel. Also never poor any liquids directly in the Panel.

To clean the liquid-crystal display (LCD) screen use soft clean lintfree cloth, moist with a mild glass cleaner, and gently wipe the surface. Never apply liquids directly on the screen surface. Do not use paper towels to clean the display screen. Paper can scratch the display touch film.

4.3 RETURN AND REPAIR

Kontron Embedded Computers GmbH has started a service management system according DIN EN ISO 9001:2000 to reduce the terms of repair. This provides a fast, high quality and effective repair.

4.3.1 Return Material Authorization Numbers (RMA)

Before send back the defective device please follow the hints below then request a RMA number from Kontron customer service.

- Return only Kontron product specified on the RMA request.
- Request a separate new RMA number for each Kontron product.
- If we receive a shipment containing not authorized products, we may send it back.
- Please check before requesting an RMA number if there is a real defect on the system. If not we could charge the costs for handling.

To request a RMA number fill out the form „Fault report“ and send to Kontron customer support. For additional questions please contact the customer service by fax or Email.

Fill out all the menu items on the form and send it to Kontron by FAX or online.

Describe the error as detailed as possible. A detailed report is a base for a fast and effective analyze of errors and repair.

After getting back the “Fault report” send the defective device, including the fault report and your delivery note, to the following address:

Kontron Embedded Computers GmbH
Warenannahme Service
Werner-von-Siemens-Str. 1
D-93426 Roding

4.3.2 Packaging

To return a system use the original Kontron or equivalent packaging. Parts or components of the system must be returned in anti-static-bags.

Always enclose a copy of the original delivery note and the fault report.

Kontron is not responsible for damage during shipment. We recommend you to insure the shipment.

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Fault Report

RMA Nr.

Company: _____ Date: _____

Contact : _____ Email: _____

Address: _____

Phone: _____ Fax: _____

Hint: _____

Device description

Designation: _____

ROI-Article-No. : _____

Serial number: _____

Operating System: _____

Delivery Items

Delivery note number: _____

Delivery note date _____

Version: _____

For return single system components please note system serial number: _____

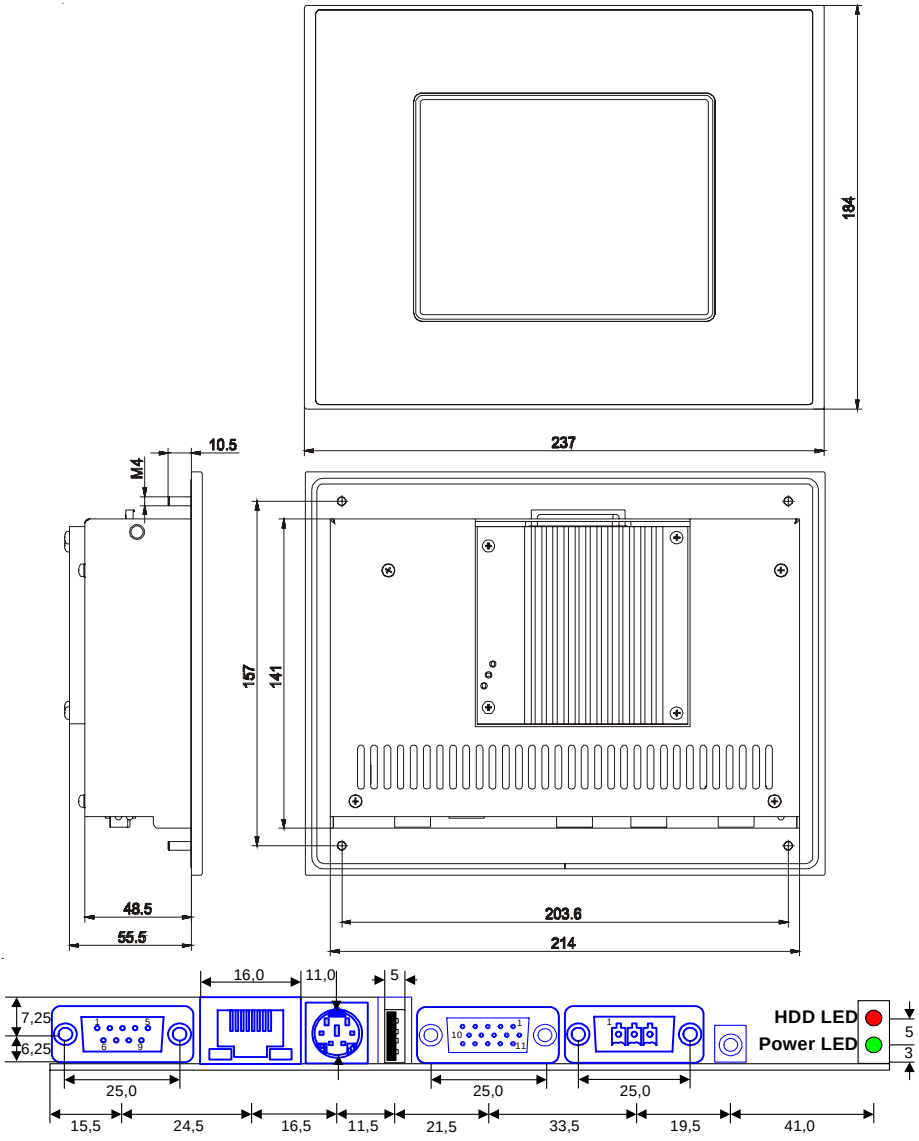
Detailed error description (please fill out in type characters)

Error detected: ☐ always ☐ sporadically ☐ in constellation with: _____

Delivery to: Kontron Embedded Computers GmbH, Werner-von-Siemens Strasse1, D-93426 RODING, Wareneingang Service

5. TECHNICAL DETAILS

5.1 DIMENSIONS



App. 5-1 M@C64 dimension

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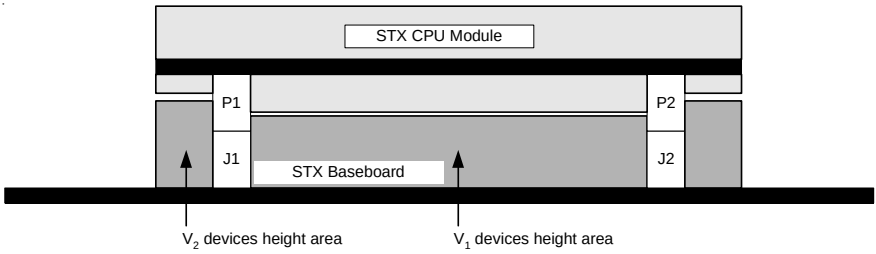
5.1.1 Stacking heights

To install a new STX central processing unit on your M@C64 you had to observe the stacking height of different modules.



Stacking Height	STX Module	STX Module P1 and P2 Plugs type	STX Baseboard J21- J24 Receptacles Type	Device Height areas	
				V1 max.	V2 Max
B=5 mm	Type I.	AMP 1-177984-0	AMP 1-177983-0	—	2 mm
B=7 mm	Type II.	AMP 1-179030-0	AMP 1-177983-0	2 mm	4 mm
B=13 mm	Type I.	AMP 1-177984-0	AMP 6-179010-0	8 mm	10 mm
B=15 mm	Type II.	AMP 1-179030-0	AMP 6-179010-0	10 mm	12 mm

App. 5-2 Stacking heights

5.2 POWER

5.2.1 Main Power input

V (In) 24V +/- 20%

5.2.2 External battery

External battery voltage depending used STX -Module.

5.2.3 Base Address of NVSRAM

D0000-D7FFF.

5.3 CAN BUS INTERFACE

5.3.1 Technical data

Connector	10 pin connector
max. Baudrate	1MBaud
Input Buffer	64KB
BasicCAN mode	10 bytes long transmit/receiver Buffers 2 identifier bytes in standard mode up to 8 data bytes in extended mode
Communication	Master/Slave
I/O address	100,120,140,200,220,300,320,340
Interrupt	IRQ3,IRQ4,IRQ5,IRQ7,IRQ10,IRQ11

Softwaredriver	Layer2 Driver for LINUX,Windows XP,2K, NT, 9x, and DOS

5.4 OPERATING SYSTEMS

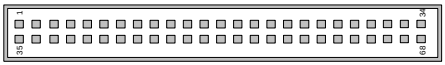
The operation with different operating systems is depending on the in stalled STX-CPU Module on your M@C64.

5.5 TEMPERATURES

Operation	5°C to +50°C non condensing
Storage	-25°C to +70°C non condensing

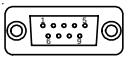
5.6 CONNECTOR PINOUT

5.6.1 Compact flash connector



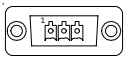
PIN	Signal Name	PIN	Signal Name	PIN	Signal Name	PIN	Signal Name
1	GND	13	VCC	29	Data 13	43	NC
2	Data 3	14	GND	30	Data 14	44	VCC
3	Data 4	15	GND	31	Data 15	45	Active#
4	Data 5	16	GND	32	CS1#	46	DIAG
5	Data 6	17	GND	33	NC	47	Data 8
6	Data 7	18	ADDR2	34	IOR#	48	Data 9
7	CS0#	19	ADDR1	35	IOW#	49	Data 10
8	GND	20	ADDR0	36	VCC	50	GND
9	GND	21	Data 0	37	IRQ		
10	GND	22	Data 1	38	VCC		
11	GND	23	Data 2	39	M#/S (Compact Flash)		
12	GND	24	NC	40	NC		
27	Data 11	25	NC	41	RESET#		
28	Data 12	26	NC	42	IORDY		

5.6.2 External serial port connector



COM	
PIN	**Signal Name**
1	DCD (Data Carrier Detect)
2	RXD (Receive Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)
5	GND
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI (Ring Indicator)

5.6.3 Power connector



PIN	Signal Name
1	GND
2	NC
3	24V IN

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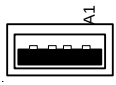
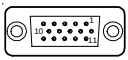
5.6.4 External USB



PIN	Signal Name
A1	VCC
A2	Data1-
A3	Data1+
A4	GND

5.6.5 CRT interface



PIN	Signal Name	PIN	Signal Name
1	RED	9	VCC
2	GREEN	10	CRTGND
3	BLUE	11	NC
4	NC	12	DDCDAT
5	CRTGND	13	HSYNC
6	CRTGND	14	VSYNC
7	CRTGND	15	DDCCLK
8	CRTGND		

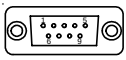
5.6.7 Ethernet interface LAN

PIN	Signal Name	PIN	Signal Name
1	TX+	5	NC
2	TX-	6	RX-
3	RX+	7	NC
4	NC	8	NC

5.6.8 PS/2 Mouse /Keyboard

PIN	Signal Name
1	KBDATA#
2	MSDATA#
3	GND
4	VCC
5	KBCLK#
6	MSCLK#

5.6.9 External CAN BUS interface



PIN	Signal Name	PIN	Signal Name
1	NC	2	CANL
3	ISOGND	4	NC
5	NC	6	NC
7	CANH	8	NC

5.6.10 Main power (24V) input fuse F1

Always replace a defect fuse with the same type and values. Factory value 2 Ampere delay fuse.

6. DISPOSAL

In order to dispose a M@C64, it must be removed from the plant and fully dismantled. Electronic part such as M@C64 must be disposed in accordance with national electronic scrap regulations.

For details ask your local waste disposal department.

7. APPENDIX

ILLUSTRATION CONTENTS