



Micro Client

M@C84 / 104 / 121 / 150

User manual

Rel. 06.2008 Ver.01

0-0096-3677



The German version of this manual is not available.

Die deutsche Version ist nicht verfügbar.

Manual History

Date	Version	Changes
May.2008	01	First edition

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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:

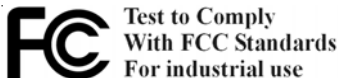
EN 55022 class A	EN 55024	EN 60950-1
EN 61000-3-2	EN 61000-3-3	EN 61000-6-2

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.



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 technician for help.

Notice1: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice2: Shielded interface cables, if any, must be used in order to comply with emission limits.

This device is GHOST certified

(see point 9 appendix)



CAUTION !

**RISK OF EXPLOSION IF BATTERY IS REPLACED
BY AN INCORRECT TYPE**

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

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1. INTRODUCTION

1.1. APPROPRIATE USE

The main purpose of the Micro Client is the use and operation with 24VDC-power-sources.

The surrounding area are dry rooms.

The Panel is intended for industrial applications in machine and plant control engineering.

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

1.2 ITEM CHECKLIST

Your Micro Client comes securely packaged in solid shipping carton(s). Upon receiving your system, open the carton(s) and remove the contents carefully.

The shipping carton should contain the following items:

- Micro client M@C85 / 104 / 121 /150
- CPU Support CD (optional)
- 24V DC Power cord (optional)
- This user manual (optional)
- Software installation CD 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 of the packing material for future transportation.

1.3 IMPORTANT SAFETY INSTRUCTIONS

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

Be careful about the power supply input voltage. The Panel has specific power requirements.

Please prevent the Panel from humidity.

Never pour any liquid on the Panel, this may cause fire or electrical shock. Place the Panel on a reliable surface when installing. A drop or fall may cause damage.

Do not leave the Panel in an unconditional environment. Storage temperature above 60°C may damage the system.

The opening on the enclosure are for air convection, protect the system from overheating.

DO NOT COVER THE OPENINGS

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

If you had to open the housing of the Micro Client in service cases, all single parts of the plant must first be switched off, after which the Micro Client can be disconnected from the plant. Secure each part against accidentally switched on during service.

Following service activities on the system could cause failures.

- **Metal objects such as screws or tools fall on or in.**
- **Cables are removed or inserted during operation.**

All cautions and warnings on the micro client should be noted.

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

- **The power cord or plug is damaged.**
- **Liquid has penetrated the system.**
- **The system is exposed to moisture.**
- **Obvious sign of breakage are visible.**
- **System did not work properly or you can not get it work according to the application requirements.**

2. OVERVIEW

Kontron's MicroClients (Thin Clients) used as web-based display and operator panels with all the application programs running on a central web server are very low-maintenance and also highly flexible. The advantages of this thin client architecture include centralized administration and software maintenance, maximum data security through centralized data storage and backup, and high reliability and availability (high MTBF values) through the elimination of rotating mass storage devices and fans, which reduces the total cost of ownership to the minimum.

Designed to meet the performance requirements of visualization and communications over ethernet, the new MicroClients M@C84, M@C104, M@C121 and M@C150 have high-performance ETX-based x86 CPU modules that can be scaled inexpensively to meet changing performance needs. The innovative fanless cooling concept allows for a compact, space-saving system .

Shock and vibration resistance, thermal stability and compliance with the strictest EMC standards are standard features for all MicroClients.

Features:

- scalable display sizes: 8.4" / 10.4" / 12.1" /15"
- resistive analog touch screen
- X86 processor
- small depth of <50 mm
- Compact Flash
- CAN bus on board
- up to 256 MB SDRAM
- Optional: 1x RS 232, 1x LAN, 2x USB
- IP 65 front (NEMA 250 type 12 and 13)
- power supply: 24 VDC and fanless cooling concept
- meets toughest industrial requirements
- Windows CE.net, Windows XP embedded, Embedded Linux
- All connectors build for industrial standards
- Shock and vibration tested
- Embedded architecture long-life electronic components

3. HARDWARE INSTALLATION

Attention!

The weight of the Panel is about 7kg

Carry it on with both hands!

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

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

If your Panel 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 CPU board manuals.

3.1 Mount Panel PC

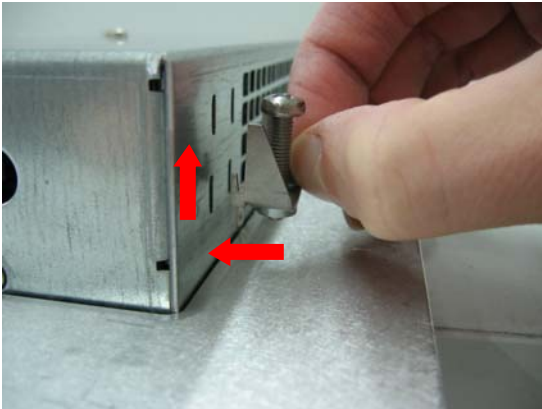
The Micro client is designed to meet a specific on the protection class. In order to fulfill the requirements of this class it is important to install the panel pc in the right way. Outline drawing could be downloaded from: <http://kontron.com>

Please always ensure the following items.

- place the panel planar on the to be mounted surface.
- control o-ring placement on the backside of the front bezel.

3.1 Installation / Mounting

3.1.1 Mount micro client 84



Insert holder in the prepared holes



Fasten the holder and the Micro client to the front plate



Do this installation for all fastening points

3.1.2 Mount Micro client 104/121/150

Installation of this type of display sizes is more easier. Please use the M4 Stunts that you find on the backside of the Bezel. To fasten this stunt please use M4 nut. All outline drawings for all display sizes are avialable on the web.

3.2 Connect external devices

To get detailed information about pinout of each connector please look to chapter "technical data

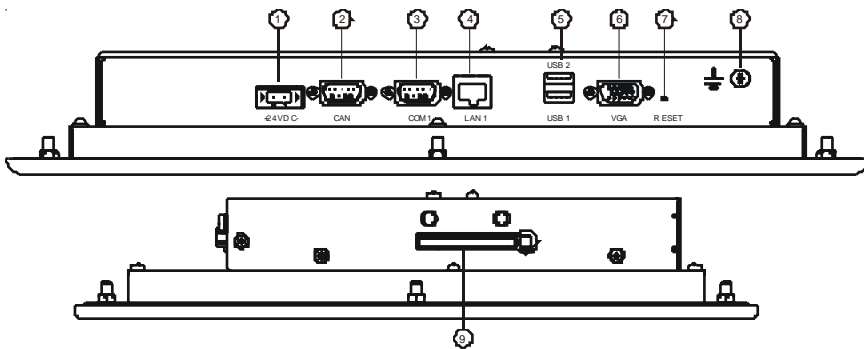


Fig. 3-1

1 Main power IN

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

2 Fieldbus interface CAN

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

3 Serial Interface COM1

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

4 LAN 1 interface

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

5 LAN 2 interface

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

6 USB port 1/2

This connector provides two external USB 2.0 interfaces

7 CRT Monitor interface

Connector and interface to VGA/CRT monitor .

8 Reset

Reset Switch reset the hole unit.

9 Compact flash slot

This Slot is used to save the compact flash for storing operating system

4 SOFTWARE INSTALLATION

4.1 Application software and operating system

The panel is designed to work with different operating systems. To install operating system or application software follow the installation instructions of the software. In most cases the Micro client will be delivered with a preinstalled operating system. This could be WindowsXP embedded, Windows CE or Kontron embedded Linux. All this operating systems are created to fulfill the requirements of most automation applications. But they are also reduced to the needs of this.

If you want to install your own application software be carfull during installation routine.

We advice you to save the image of the system into a independent storage system. please test your backup image one time if the backup is complete an functional.

If you got problems during backup or restore please contact our customer service.

Images for systems are not avialabe on the WEB.

4.2 Hardware drivers

On preinstalled systems no drivers had to be installed by a technician or user. If no operating system was installed, you had to install drivers for the implemented hardware to get full function of the panel. All the drivers are stored on the online support at <http://www.kontron.com>.

Drivers for implemented EXT PM Module:

Home>>Products>>Computer-On-Modules>>ETX®>>ETX®-PM
<http://de.kontron.com/products/computeronmodules/etx/etxpm.html>

Drivers for implemented EXT Core duo (CD) Module:

Home>>Products>>Computer-On-Modules>>ETX®>>ETX®-CD
<http://de.kontron.com/products/computeronmodules/etx/etxcd.html>

Drivers for other implemented features of Micro Client:

Home>>Products>>HMIs & Displays>>Panel PC>>Micro Client>>
<http://de.kontron.com/products/hmis+and+displays/panel+pc++micro+client/micro+client/>
If you need additional help please contact Kontron customer service.

4.2.1 Install Touch driver

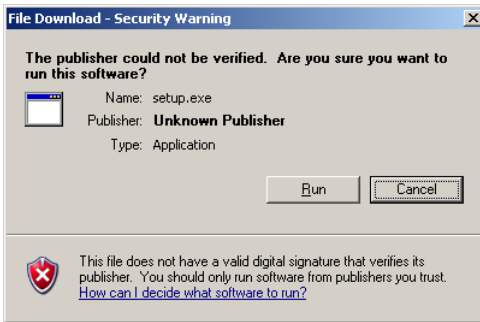
Preparations of system

Before installing the driver please check the following items.

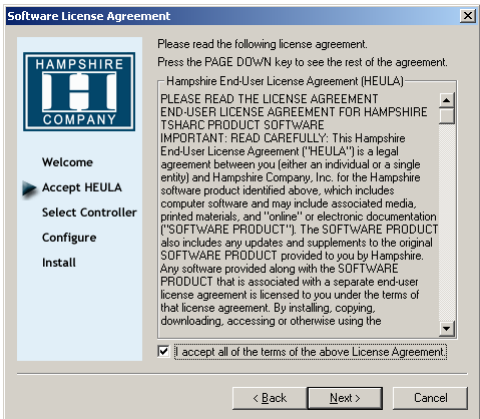
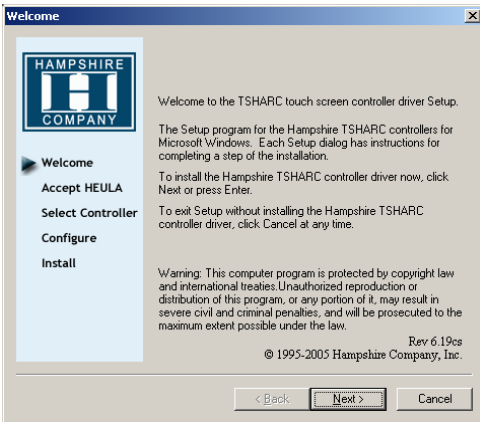
- Serial port in BIOS enabled
- Serial port driver for operating system installed.
- Boot or install device are not write protected (EWFMgr)
- Device for loading the drivers is installed
- Optional: download driver from WEB

Windows installation procedure

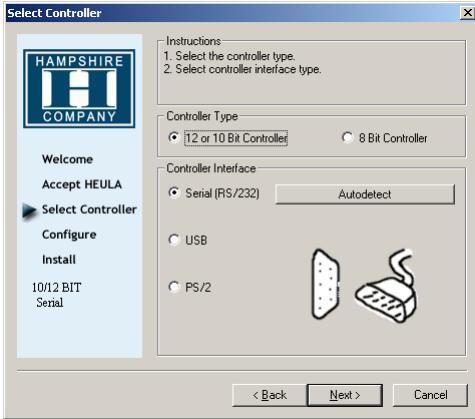
To start driver installation please go to the folder where all the driver files are stored. Start driver installation by double click on file “***.ZIP” in the respective folder. Confirm each opened window with “NEXT” when choice is done. Please observe that during installation no error occurs.



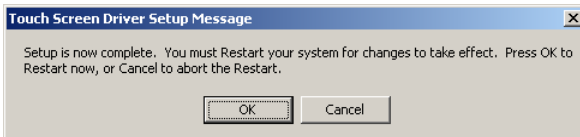
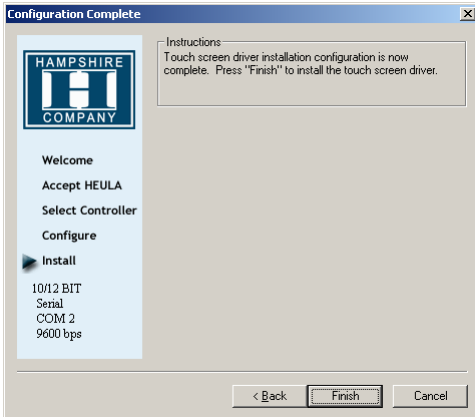
>>>Press „RUN” Button to start Installation



>>> Confirm lizence agreement



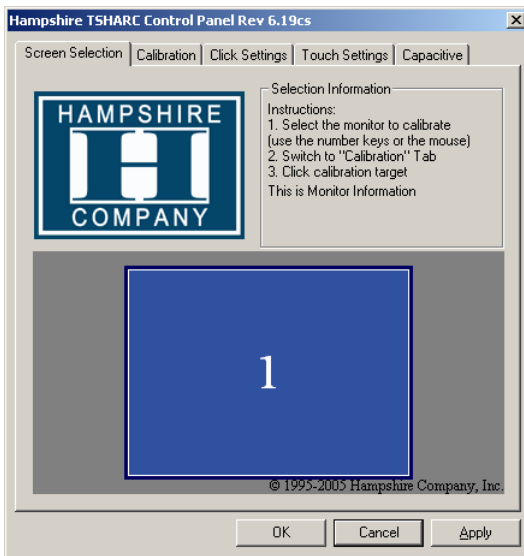
>>>Choose: Controller Type: 12 or 10/ Interface: „SERIAL”



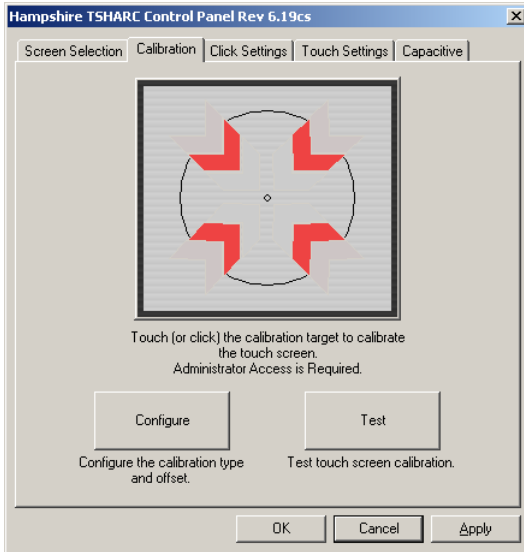
4.2.2 Windows touch calibration procedure

To get full and well working touch you had to calibrate the touch driver to the mounted touch foil and his positions. If you did not the procedure the cursor on the screen did not follow the exact point of touch.

Please start touch calibration tool for your system with >>>Program>>>”Hampshire TSHARC Control Panel”



>>> Choose register CALIBRATION



>>> Start calibration with double click on window with red arrows

4.2.3 LINUX touch calibration procedure

The Micro Client could be ordered with an Kontron embedded linux therefore a installation of drivers is not needed.

During operation it is sometimes needed to recalibrate the touch.

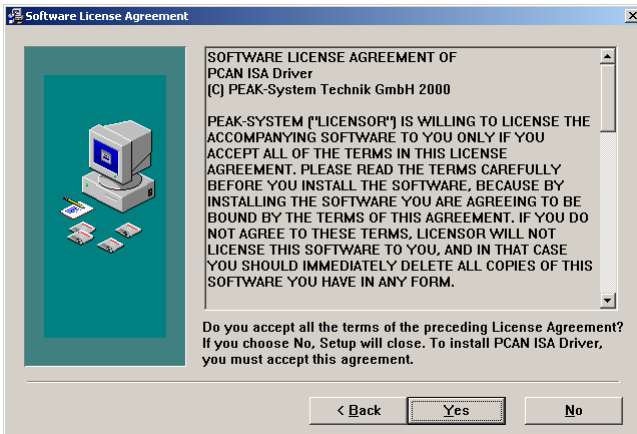
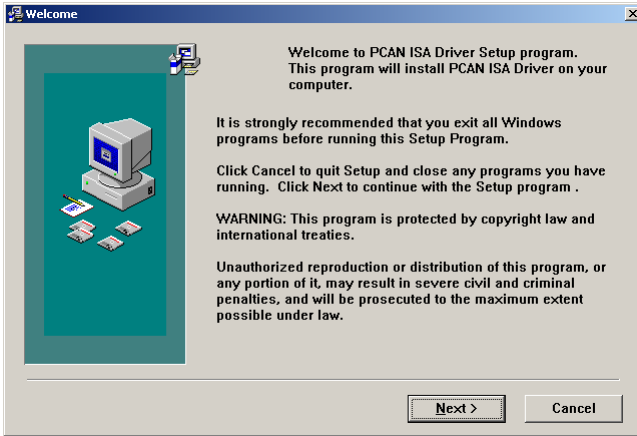
Press **<Ctrl><Esc>** on the keyboard to get a drop down menu with all important menus.

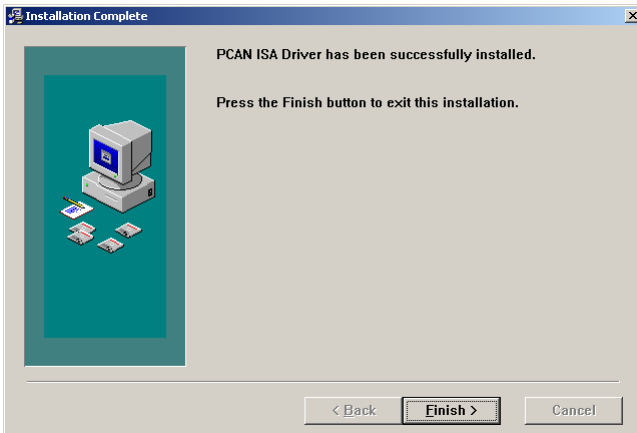
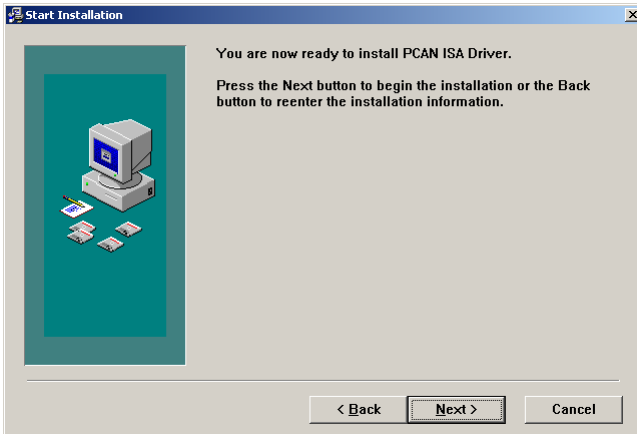
Choose **“TouchCalib”** from the drop down menu or press **<Alt><Ctrl><c>** on the keyboard.

4.2.4 Fieldbus driver installation

One of the option of the Micro Client is the CAN fieldbus option. This option enabels the user to create an CAN fieldbus network with other devices.

Please download installation file from Web before install drivers and software.





5. TECHNICAL DETAILS

5.1 MECHANICAL

Features	Micro Client				
Model	M@C84	M@C104	M@C121	M@C150	
Display size	8.4"	10.4"	12.1"	15"	
Dimension panelmount H x W x D	188 x 257 x 47mm	252 x 325 x 47mm	300 x 380 x 49mm	362 x 452 x 57mm	
Front Bezel	ALU				
Weight	2.3kg	3.3kg	4.6 kg	6.2kg	
Protection class	IP65 Front (NEMA 250 type 12 and 13)				

5.2 ELECTRONICAL

Features	Micro Client				
Model	M@C84	M@C104	M@C121	M@C150	
Max resolution	800 x 600	800 x 600	800 x 600	800 x 600	
Brightness	300cd/m ²	300cd/m ²	300cd/m ²	300cd/m ²	
Front Bezel	ALU or stainless steel optional				
Touch screen	Resistive analog				
Processor	Up to Celeron M 600MHz				
Main memory	Up to 1024 Mbyte				
External interfaces	1x CAN BUS interface, 1x Serial RS 232 interface, 1x LAN 10/100, 2x USB, 1x VGA				
Field Buses	CAN				
Internal Drives	CompactFlash up to 2 GByte				
Verified OS	Windows XP, Windows XP embedded, Linux				
Power Supply	24 VDC +/- 20% with protection against reverse polarity.				
Power consumption	32W max				
I max	1.8A max				
Battery	External Lithium 3.5V 750mAh				
MTBF	> 40000h*				

5.3 ENVIRONMENT

Features	V Panel all models
Temperature	Operating: 0° to +50°C Storage: -25° to +60°C
Humidity	Operation: 5 to 95% non condensing Storage: 5 to 95% non condensing
Cooling	Fan less cooling concept
Shock acc. DIN EN 60068-2-27	Operating: 15G, 11ms duration Storage: 30G, 11ms duration (half-sinus)
Vibration acc. DIN EN 60068-2-27	Operating: 10-500 Hz: 1G / 3 axis Storage: 10-500 Hz: 2G / 3 axis
Altitude	Operating: 10000 ft (3,048m) Storage: 15000 ft (4,622m)

5.4 CE DIRECTIVES AND STANDARDS

Features	V Panel all models
EMC	US: FCC47 CFR PART 15, Class A level CE: EN61000-6-2; EN55022/A (CISPR22)
Approvals	CE, FCC, cULus
RoHS Compliant	Yes

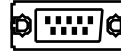
5.5 CONNECTOR PINOUT

1 Power Connector



PIN	Signal Name	PIN	Signal Name
1	+24V	2	GND

2 Fieldbus CAN interface



PIN	Signal Name
1	NC
2	CANL
3	ISOLATED GND
4	NC
5	NC
6	NC
7	CANH
8	NC
9	NC

3 RS232 Connector COM1



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)

4 Network LAN 1 interface



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

5 USB interface



PIN	Signal Name	PIN	Signal Name
A1	VCC	B1	VCC
A2	Data-	B2	Data-
A3	Data+	B3	Data+
A4	Gnd	B4	Gnd

6 VGA interface

PIN	Signal Name	PIN	Signal Name
1	RED	2	Green
3	Blue	4	NC
5	CRTGN D	6	CRT GND
7	CRTGN D	8	CRT GND
9	VCC	10	CRT GND
11	NC	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDCCLK		

7 Reset switch**8 Grounding point**

5.6 BLOCK DIAGRAM

The diagram displayed below shows the main internal function blocks of the Micro ClientPanel.

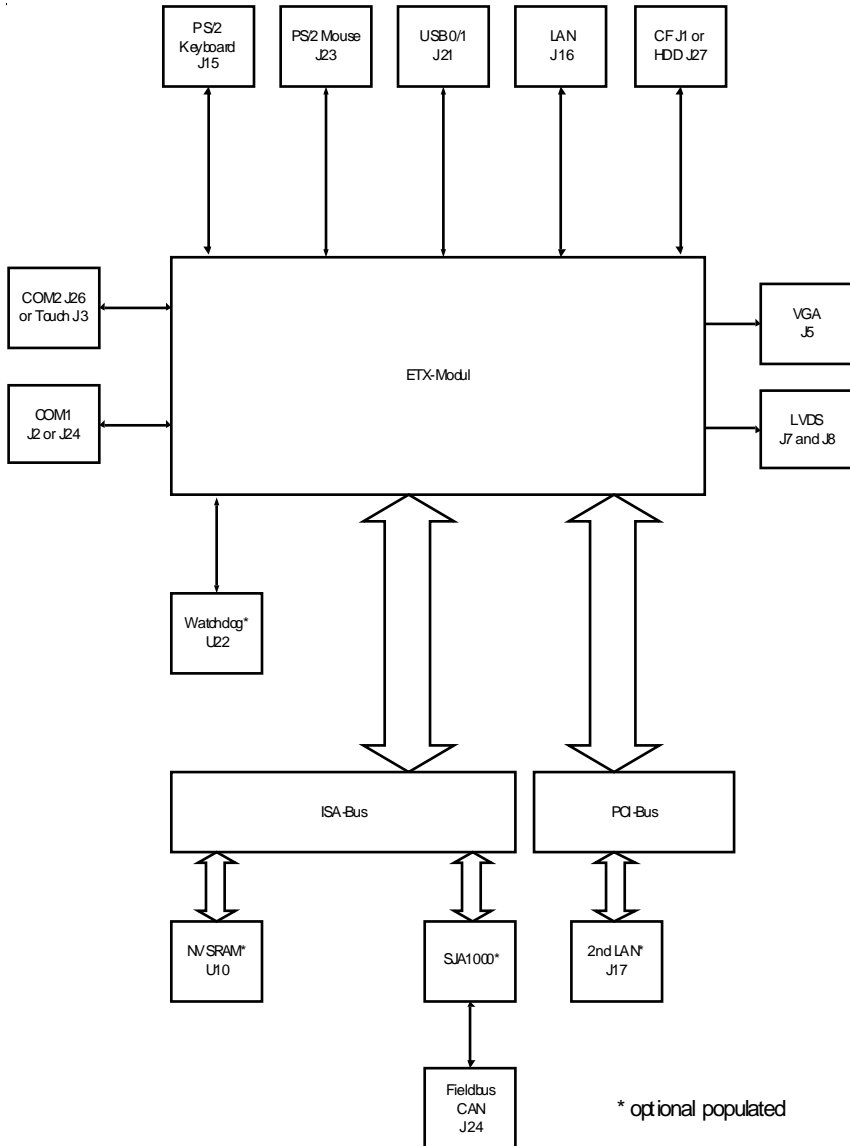


fig. 5-1

6. MAINTENANCE

The Micro Client is designed and produced according to DIN EN ISO 9000:2000. One of the main development intentions was to minimize service requirements. As a result, with exception changing CMOS-Ram battery and cleaning, 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 inside.

No warranty if improper operated

6.1 Customer service

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

Tel: +49 (0)9461 950 104
Fax: +49 (0)9461 950 200
E-Mail: support@kontron.com
Internet: <http://www.kontron.com>

6.2 CLEANING

To clean the surface of the Panel use a soft lint-free 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 pour any liquids directly in the Panel PC Box.

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.

6.3 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.

6.3.1 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 him to Kontron customer support. You can get the form as a download on <http://www.kontron.com>. 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**

6.4 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 that you insure the shipment.

7. TROUBLESHOOTING

7.1 FAQ

Please look to the online support at www.kontron.com

8. DISPOSAL

In order to dispose your Panel, it must be removed from the plant and fully dismantled. Electronic part such as disc drives and circuit boards must be disposed of in accordance with national electronic scrap regulations.

For details ask your local waste disposal department.

9. APPENDIX

Illustration contents

Fig. 3-1	Connect external devices
Fig. 3-2	Connect internal devices
Fig. 5-1	Block diagram

СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р
ГОССТАНДАРТ РОССИИ



СЕРТИФИКАТ СООТВЕТСТВИЯ

№ РОСС DE.AN.ВВ.254

Срок действия с 12.02.2007

до 07.02.2009

7251123

ОРГАН ПО СЕРТИФИКАЦИИ

гос. № РОСС DE.AN.ВВ.11.ВАНКО

ПРОДУКЦИИ "ИВАНОВО-СЕРТИФИКАТ"

16002, г. Иваново, ул. Строителей №1, тел. (4932) 22-97-05, факс (4932) 22-97-48

ПРОДУКЦИЯ

Мобильные (переносные) выключатели, выдан соответств.

сертификат (Серия № 1261149).

Средний выключ.

код ОКДДС (ОКП):

40 1250

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ НОРМАТИВНЫХ ДОКУМЕНТОВ

ГОСТ Р ИЭК 4000-2002, ГОСТ 2630-04 (Пл. 1.2, 1.3),
ГОСТ Р 9948-2001 (И.в. 5.1-5.4, 5.6-5.8, 6.1-6.2), ГОСТ Р 51215.23-99,
ГОСТ Р 51215.24-99, ГОСТ Р 51217.23-99, ГОСТ Р 51217.24-99.

код ТН ВЭД России:

8471 30 000 0

ИЗГОТОВИТЕЛЬ

Фирма "Контра Эмбеддед Сервисес ГмбХ"

Ойла-во-Миле-Стр.1, 16046 Калкинг, Германия

Завод (фирма) изготовитель выключателя (Серия № 1261149).

СЕРТИФИКАТ ВЫДАН

Фирма "Контра Эмбеддед Сервисес ГмбХ"

Ойла-во-Миле-Стр.1, 16046 Калкинг, Германия

НА ОСНОВАНИИ

Протокол испытаний № 0702007/01 от 01.02.2007 г. - ИЛ "Ивановский Центр

сертификации" (Акт. исп. № РОСС DE.AN.ВВ.21.АВ024), 16002, г. Иваново, пр. Строителей, п. 4.

Протокол испытаний № 200700-07 от 21.01.2007 г. - "Ивановское лаборатория метрологической продукции

"ИМС" (Акт. исп. № РОСС DE.AN.ВВ.12.ВС248), 16002, Ивановское обл., г. Иваново, ул. Ломоносова, д. 29.

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Тверская обл., г. Калинин-З.

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ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ

Место выполнения работ соответствует на рисунке № 1 в

технической документации.

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