The World of MOPS PC/104, 3.5" JRex and PISA® Single Board Computers 2004/2005





kontron
... always a Jump ahead!

➤ We create digital brains for a more intelligent world!

➤ The Kontron group is one of the world's largest suppliers of embedded computer technology to a diversified customer base in the communications, industrial automation, medical, transportation, point of information/sale, gaming, mobile, network security, defence and public safety markets. And with its corporate headquarter located in Munich, Kontron shows a strong presence in Europe. When it comes to embedded computing, you can focus on your core capabilities – and rely on Kontron as your global OEM partner for a successful long-term business relationship.

➤ Based on internationally accepted industry standards for hardware, software and connectivity, we can provide you with an extended portfolio of products and services. It ranges from off-the-shelf and custom-engineered embedded computer modules, boards and blades to modular computer systems up to application ready platforms, each designed to meet your current and future needs.

➤ More than 1700 employees worldwide are working in the Kontron group to provide you with one of the largest range of products based on cutting-edge embedded computer technology. With engineering, manufacturing, integration, project management, technical services and sales teams in Europe, North America and the Asia-Pacific regions we are close to you, wherever you are. With our superior services and excellent technical support you significantly reduce your time-to-application and gain a clear competitive edge.

➤ More than 590 highly qualified engineers in R&D, technical support and project management work together with our experienced sales teams and sales partners to work out a solution that is optimized to your individual application demands, based on standard products, custom-tailored or full custom-engineered solutions. We help you to evolve your embedded application from proprietary to solutions based on standard platforms and orientated to future requirements.

➤ Together with our major industry partners such as Intel®, Motorola, IBM, Microsoft and WindRiver we help you to get your applications to market quickly. Kontron has been an Intel® ACPP platform solutions provider since the program's inception in 1999 and is now a member of the Intel® Communications Alliance (ICA), which replaced the ACPP program.

➤ The Kontron organisation is ISO 9001 certified to ensure consistency and the highest level of quality in products and services on a global basis.

➤ Kontron products are the preferred choice for any application that requires longevity and highly reliable products that are typically integrated, high-performance and dedicated, and installed in a wide range of demanding and mission-critical environments.

➤ Kontron has been awarded in 2003 by VDC as a "Platinum" vendor for SBCs based on a global customer survey.

➤ You are invited to visit our website at **www.kontron.com**.

VDC 2003 PLATINIUM VENDOR: SBCs

Intel® Communications Alliance Associate Member SILVER

VDC 2003 GOLD VENDOR: PC/104

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➤ Overview

➤ **Single Board Computers**

Single board computers are standard off-the-shelf computer modules, that arrive in different form factors and serve with different expansion concepts – like through passiv backplane or straight stackthrough.
The most common SBC are PC/104, 3.5" and PISA® Slot cards.

➤ **Boards versus Modules**

Boards serve right out-of-the-box with instant availability and almost zero time to market. All interfaces and most functionalities are onboard and built-in. Standard accessories are likewise off-the-shelf and contribute to the ultimate fast system set-up. Modules in contrary need in any case a full custom backplane that require deep R&D knowledge and development time – even if simply to connect to a mouse or harddrive. That way its time to market takes longer and R&D cost is higher – compared to a SBC.

➤ **The Board Families**

MOPS serve as PC/104-Plus computer boards, that are fully PC/104 Consortium Specification compliant.
JRex serve as 3.5" embedded SBC.
JFLEX are the cost cutting I/O expansion for JRex.
coolMONSTER serve as PISA® half-size Slot SBC.

➤ **The Family feature**

All Kontron MOPS, coolMONSTER and JRex feature within their form factor unified mechanical and electrical interfaces. That allows 100% accessory re-use and even 100% chassis re-use. That family feature delivers easiest product up-/downgrade at
- minimum change risc and
- minimum change cost as the
- accessories and chassis stay unchanged and
- even how they are attached remains unchanged.

PC/104

SBC Modules incl. I/O

MOPS
- from 386 to Intel® Pentium® M
- 100% accessory re-use
- Full featured

Horizon 104

JRex 3.5"

SBC incl. I/O

- from AMD Geode™ to Intel® Pentium® M
- 100% accessory re-use
- 100% chassis re-use
- Full featured

JRex-CAGE

PISA® Technology

PISA®

coolMONSTER

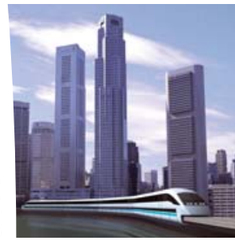
- from VIA Eden™ up to Intel® Pentium® M
- 100% accessory re-use
- 100% chassis re-use
- Full featured

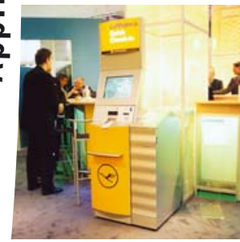
Slot SBC incl. I/O

Monster Cage

MONSTER-CAGE

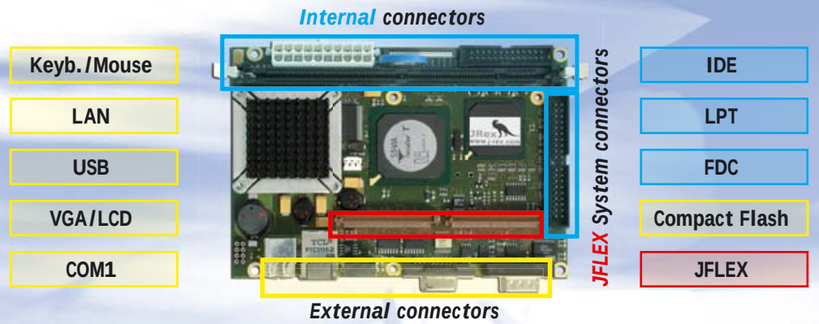
Application





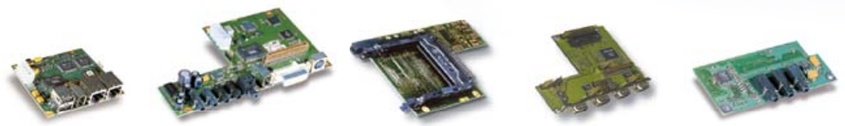
➤ JRex, 3.5"

The JRex family feature The following interfaces stay the same - throughout the whole JRex embedded line FAMILY!



Reduce System Cost!

➤ JRex Embedded Line Expansions: JFLEX™



JFLEX-Communication1	JFLEX-Multimedia1	JFLEX-PCMCIA1	JFLEX-SERIALGPIO1	JFLEX-Sound1
2x LAN, 2x USB, Firewire	DVI or TV OUT, sound (AC97, SPDIF), Firewire	PCMCIA drive for WLAN and hot swap mass storage	4x COM, 4x8 Bit GPIO, LPT2, CAN-Bus-option, USB-option	line-in, line-out, mic-in (jackplugs), AC97-sound

JFLEX-3COMGPIOPCcard-USB	JFLEX-4COMGPIOPCcard
3x COM, 2x USB, 4x8 Bit GPIO, 32 Bit PCMCIA drive bay	4x COM, 4x8 Bit GPIO, 32 Bit PCMCIA drive bay

➤ JRex Value Line

JRex-GX1LCD	JRex-786LCD
AMD Geode™ GX1 300 MHz PC/104 und PC/104-Plus LAN, USB, CRT/LCD	Socket 370 Pentium® III/Celeron™ PC/104-Plus only LAN, USB, CRT/LCD

3.5" embedded line

new

powered by Intel® Pentium® M

➤ JRex SBC 3.5"

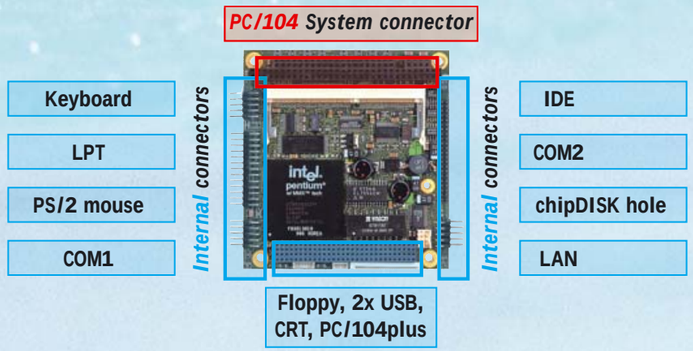
Features	JRex-GX1	JRex-C3/P3	JRex-VE/VC	JRex-CE	JRex-PM
Line	Embedded Line	Embedded Line	Embedded Line	Embedded Line	Embedded Line
Processor	AMD Geode™ GX1	ULP Intel® Celeron™ , LP Intel® Pentium® III	VIA EDEN™, VIA C3™	Intel® ULV Celeron™	Intel® Pentium® M
CPU clock speed	300 MHz	300 MHz/700 MHz	300/600/1000 MHz	400/733/1000 MHz	1.1/1.6 GHz
FSB	66 MHz	100 MHz	133 MHz	100/133 MHz	400 MHz
Chipset	CS5530A	VIA® Twister™T	VIA Twister™T	Intel® 815 / ICH4	Intel® 855 GM
BIOS	Phoenix™	Phoenix™	Phoenix™	Phoenix™	Phoenix™
Power management	APM 1.2	APM 1.2 / ACPI 1.0	APM 1.2 / ACPI 1.0	APM 1.2 / ACPI 2.0	APM 1.2 / ACPI 2.0
Cooling	Passive	300 MHz Passive/ 700 MHz Active	300/600 MHz Passive/ 1000 MHz Active	400 MHz Passive, 733/1000 Active	Active
SDRAM (max.)	256 MByte	512 MByte	512 MByte	512 MByte SDRAM	2 GByte DDR
DRAM socket type	SDRAM-DIMM	SDRAM-DIMM	SDRAM-DIMM	SDRAM-DIMM	DDR-RAM-DIMM ECC
Cache	L1: 16 kByte	L2: 256 kByte	L2: 64 kByte	L2: 512 KByte	L2: 1 MByte
HDD	EIDE (UDMA-66)	EIDE (UDMA-66)	EIDE (UMDA-100)	EIDE (UMDA-100)	EIDE (UMDA-100)
Compact flash disk socket	✓	✓	✓	✓	✓
FDD	2x 1.44/2.88	2x 1.44/2.88	2x 1.44/2.88	2x 1.44/2.88	2x 1.44/2.88
Graphic controller	on-chip	on-chip S3 Savage 4	on-chip S3 Savage 4	Intel® Graphics on-chip	Intel® Extreme Graphics 2
Video RAM UMA	up to 4 MByte	up to 32 MByte	up to 32 MByte	4 MByte VRAM, 32 MByte AGP	up to 32 MByte
VGA	CRT/LCD, JILI-interface	CRT/LCD, JILI-interface	CRT/LCD, JILI-interface	CRT/LCD, JILI-interface	CRT/LCD, JILI-interface
USB	2x	2x	2x	2x USB 2.0	2x USB 2.0
Ethernet 10/100 MBit	1	1	1	1	1
Serial ports	1x, expandable via JFLEX™	1x, expandable via JFLEX™	1x, expandable via JFLEX™	1x, expandable via JFLEX™	1x, expandable via JFLEX™
IEEE 1394 Firewire	via JFLEX™	via JFLEX™	via JFLEX™	via JFLEX™	via JFLEX™
Watchdog timer	✓	✓	✓	✓	✓
System monitoring	✓	✓	✓	✓	✓
Sound	AC97	AC97	AC97	AC97	AC97
Operating temperature	0 - 60° C	0 - 60° C	0 - 60° C	0 - 60° C	0 - 60° C
Dimensions	102 x 147 mm	102 x 147 mm	102 x 147 mm	102 x 147 mm	102 x 147 mm
I/O expansion type	JFLEX™	JFLEX™	JFLEX™	JFLEX™	JFLEX™
Optional extension modules	JFLEX™	JFLEX™	JFLEX™	JFLEX™	JFLEX™

➤ MOPS, PC/104 & PC/104-Plus

Features	MOPS/386A	MOPS/520	MOPSIcdSE / MOPS/SE	MOPSIcdVE	MOPSIcdGX1	MOPSIcd6 / MOPS/686+	MOPSIcd7	MOPSIcdTM	speedMOPSIcdCE
CPUs supported	Ali® 386SX	AMD® ELAN™ SC520	STPC™ ELITE	VIA® Eden	AMD Geode™ GX1	Intel® Pentium® MMX™	Intel® Celeron™ or Pentium® III	Transmeta Crusoe™	Intel® ULV Celeron™
CPU max. speed	40 MHz	133 MHz	100 MHz, 100 MHz FSB	300/600/1000 MHz	300 MHz	166/266 MHz	300/500/700 MHz	800/1000 MHz	400/733/1000 MHz
Chipset	singlechip	singlechip	on-chip	Twister™T	CS5530A	Ali® M1531 / M1543C	VIA® Twister™T	on-chip	Intel® 815, ICH4
DRAM max. (type)	2 MByte (EDO)	16/32/64 MByte (SDRAM)	32 MByte SDRAM	512 MByte (SDRAM)	256 MByte (SDRAM)	256 MByte (SDRAM)	512 MByte (SDRAM)	1 GByte DDR-RAM	512 MByte SDRAM
DRAM socket	Soldered on	Soldered on	soldered SDRAM	SO-DIMM	1x SO-DIMM, 144 pin	1x SO-DIMM, 144 pin	1x SO-DIMM, 144 pin	DDR-SO-DIMM	SO-DIMM
IDE interface	4 MByte flash onboard, 1x IDE	1x IDE	1x EIDE (UDMA-33)	1x EIDE (UDMA-33)	1x EIDE (UDMA-33)	1x EIDE (UDMA-33)	1x EIDE (UDMA-33)	1x EIDE (UDMA-33)	1x EIDE (UDMA-33)
Graphic controller	-	-	SMI Lynx / -	S3 Savage 4 engine	on-chip	- / PCI C+T 69000	on-chip	SMI LynxEM+	on-chip
Graphics memory	-	-	2 MByte / -	32 MByte VRAM UMA	up to 4 MByte (UMA)	- / 2 MByte	up to 32 MByte (UMA)	4 MByte VRAM	4 MByte VRAM UMA
Flat panel interface	-	-	JIPA / -	JILI	JILI	- / JIPA	JILI	JIPA	JILI
Ethernet	10Base-T	10/100Base-T	10/100Base-T	10/100	DUAL 10/100Base-T	10/100Base-T	10/100Base-T	10/100Base-T	10/100Base-T
Ethernet controller	Crystal CS8900	Davicom DM9102A	Davicom 10/100 MBit	Davicom DM9102A	Davicom DM9102A	Intel® 82559ER	Davicom DM9102A	Davicom DM9102A	Intel® 562EZ
USB	-	2	2	2	2	1	2	2	2x 2.0
Mouse	-	✓	✓	✓	✓	-	-	✓	✓
Expansion	PC/104	PC/104-Plus (optional)	PC/104	PC/104	PC/104	- / PC/104-Plus (optional)	PC/104-Plus	PC/104-Plus	PC/104-Plus
MOPS family features	2x RS232, Lan Boot, Watchdog, JIDA-Support, JRC-Support, RTC, Dark Boot, Floppy Interface, Enhanced Printer Port, 32-512 MByte chipDISK				2x RS232, Lan Boot, Watchdog, JIDA-Support, JRC-Support, RTC, Dark Boot, Floppy Interface, Enhanced Printer Port, 32-512 MByte chipDISK				full cable re-use to MOPS and MOPS family feature compliant
Special features	8x 10 Touch Matrix, LED character display interface	3x RS-232, 1x TTL, CAN-Bus (Intel® 82527)	fastest full syncronous CPU and SDRAM, fanless, no moving parts	VIA® Eden 1.0 GHz	Dual LAN, CompactFlash socket Type I	fanless Intel® Pentium® MMX 166 MHz	up to 512 MByte SDRAM, 32 MByte VRAM (UMA) passive cooling for Celeron™	DDR-RAM, real low power	low cost, low power
Power consumption (typical)	2.5 W	3.75 W	7 W	tbd.	5 W	7 W / 8 W	11 W	3W @ 800 MHz	tbd.

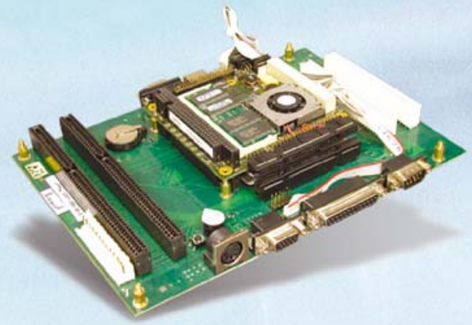
➤ The MOPS family feature

The following interfaces stay the same - throughout the whole MOPS FAMILY!



VDC 2003 GOLD VENDOR: PC/104

Starterkit for PC/104+ systems



Includes: PC/104-ISAPCI-1 adapterboard, power supply, floppy-drive, all cables, without CPU, without I/O graphic board!

➤ Accessory

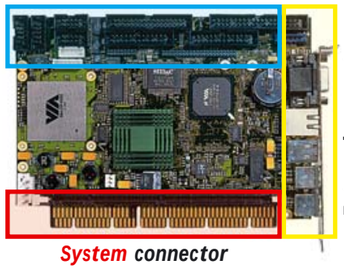
PC/104-PCMCIA-1	chipDISK-IDE	Compact flash adapter	PC/104-VGALCD-6
PCMCIA Adapter, 2x Type II or 1x Type III	IDE compatible flash disk 32-512 MByte direct mountable and lockable	2.5" Format CompactFlash Type I, II and Microdrive	for CRT and LCD with JIPA interface

Analog I/O	Digital I/O48	Digital I/O8	Multi Serial
differential or single-ended inputs, 4 analog outputs, 24 digital lines (50 pin IDC)	48 channels of digital I/O, Standard external relay/input conditioning pin out, 2x 50 pin IDC connectors	8 electro-mechanical relays, 8 optically isolated AC/DC inputs, 8 TTL digital inputs	RS422 and RS485 serial HighSpeed, DLC + HDLC support Dual channel sync/async ports
104-AOB4/12	104-DIO48	104-DIO8	FASTCOMESCC-104

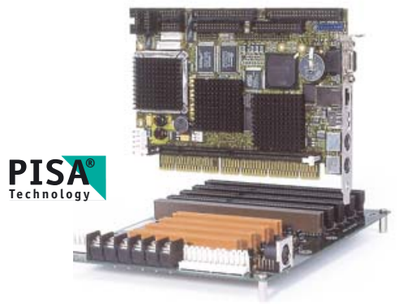
➤ PISA®, Slot SBC

The coolMONSTER family feature (The following interfaces stay the same - throughout the whole coolMONSTER FAMILY!)

COM 1-4
2x IDE
LPT
FDC
Sound



LAN
USB
VGA/LCD
Keyb./Mouse
IrDA
PISA® Slot = Standard PCI + ISA



➤ Slot-CPU PISA®

Features	coolMONSTER/S	coolMONSTER/C3	coolMONSTER/P3	coolMONSTER/VE	coolMONSTER/VC
CPUs supported	Fanless Low Power, Intel® Pentium® MMX™	Fanless ULP Intel® Celeron®	Low Power Intel® Pentium® III	VIA® Eden	VIA® C3™
CPU max. speed	266 MHz	300 MHz	400/700/850 MHz	300/600 MHz	1.0 GHz
Chipset	ALi® M1541/M1543C	Intel® 440BX	Intel® 440BX/GX	VIA® Twister™T	VIA® Twister™T
DRAM max. (type)	256 MByte (SDRAM)	256 MByte (SDRAM)	256/512 MByte (SDRAM)	512 MByte (SDRAM)	512 MByte (SDRAM)
DRAM socket	1x DIMM, 168 pin	1x DIMM, 168 pin	1x DIMM, 168 pin	1x DIMM, 168 pin	1x DIMM, 168 pin
L2 cache	512 kByte on chip	128 kByte on chip	256 kByte on chip	64 kByte on chip	64 kByte on chip
Graphics controller	AGP CT 69000	AGP ATI® Rage Mobility	AGP ATI® Rage Mobility	S3 Savage4™	S3 Savage4™
Graphics memory	2 MByte on chip	4 MByte on chip	4/8 MByte on chip	32 MByte UMA	32 MByte UMA
Flat panel interface	JIPA	JILI-LVDS	JILI-LVDS	JILI-LVDS	JILI-LVDS
Ethernet controller	Intel® GD82559ER	Intel® GD82559ER	Intel® GD82559ER	Davicom DM9012	Davicom DM9012
Power (typical)	10.5 W @ 5 V	10 W @ 5 V	5 to 32 W @ 5 V	estim. 11-14 W @ 5 V	estim. 20 W @ 5 V
Expansion	PISA® slot				
Common features	4x RS-232 (one switchable to RS-485), 1x EPP/ECP, 10/100Base-T Ethernet, LAN Boot, Dark Boot, 16 Bit PCI Sound, 1x USB, Keyboard, Mouse, dual Floppy Interface, 2x EIDE (UDMA-33) Watchdog, RTC, 32-512 MByte chipDISK				

➤ PISA® Backplanes

Features	PISA-2	PISA-2P3I	PISA-3P4I	PISA-B441A	PISA-B111B
PISA	1x	2x (1x shared)	4x (1x shared)	1x	1x
ISA	1x	1x	-	4x	2x (1x shared)
PCI	-	2x (1x shared)	3x (1x shared)	4x	1x (1x shared)
Power connector	AT	AT	AT	AT	5 V
Keyboard socket	-	-	✓	✓	-
Size	170 x 51 mm (6.7 x 2.0")	170 x 101 mm (6.7 x 4.0")	170 x 146 mm (6.7 x 5.8")	220 x 170 mm (8.7 x 6.7")	170 x 60 mm (6.7 x 2.4")

	Product	Article Number	Description
MOPS PC/104	MOPS/386A	01015-0202-33-0	386SX, 40 MHz, 2 MByte DRAM, 2 MByte Flash-Harddisk, 2x RS232C, LPT, FDC, IDE. Attention: Extended Leadtime and Minimum Lot sizes can apply.
	MOPS/SE	01031-1600-13-1	Low Power STPC ELITE 100 MHz, 100 MHz FSB = featest full Sync Mode, soldered SDRAM 16 MByte, 2x RS232C, 2x USB, LPT, FDC, IDE and with 10/100 MBit Ethernet.
	MOPS/520	01025-3200-13-1	Low Power AMD™ SC520 133 MHz, onboard 32 MByte SDRAM, 3x RS232C, 1x TTL, 2x USB, LPT, FDC, IDE, with Ethernet (10/100 MBit).
		01025-6400-13-3	The same but with onboard 64 MByte SDRAM, CAN-Bus (1 MBit) and PC/104+Bus.
	MOPS/686+	01023-0000-17-4	FANLESS LP Intel® Pentium® 166 MHz, one SODIMM-socket for SDRAM, 2x RS232C, USB, LPT, FDC, IDE, with Intel® 551ER Ethernet (10/100 MBit).
		01023-0000-27-4	The same but with LP Intel® Pentium® 266 MHz, fan.
	MOPSlcdSE	01031-3200-13-1	Low Power STPC ELITE 100 MHz, 100 MHz FSB = featest full Sync Mode, SMI Lynx 2 MByte VRAM, soldered 32 MByte SDRAM, 2x RS232C, 2x USB, LPT, FDC, IDE, JIPA panel interface and with 10/100 MBit Ethernet
	MOPSlcdVE	01032-0000-30-1	FANLESS VIA Eden™ processor with 300 MHz, VIA Twister™T chipset, VGA/LCD on-chip with up to 32 MByte VRAM UMA, JILI (LVDS) Interface, SODIMM-SDRAM-socket for up to 512 MByte, 2x RS232C, LPT, FDC, EIDE, Kb/mouse, 2x USB and 10/100 Base-T Ethernet.
		01032-0000-60-1	The same with VIA Eden™ processor with 600 MHz, fan.
		01032-0000-10-1	The same with VIA Eden™ processor with 1.0 GHz, fan.
	MOPSlcdGX1	01028-0000-30-2	Geode GX1, 300 MHz, one SODIMM-SDRAM-socket for up to 256 MByte, 2x RS232C, LPT, FDC, IDE, PS/2 mouse, 2x USB, JILI (LVDS) Interface and DUAL 10/100 Base-T Ethernet.
	MOPSlcd6	01023-0000-17-2	Low Power Intel® Pentium® 166 MHz, one SODIMM-socket for SDRAM, High Speed Video (PCI) for CRT and LCD-Panels, 2x RS232C, USB, LPT, FDC, IDE with Intel® 551ER Ethernet (10/100 MBit) - fanless-.
		01023-0000-17-3	The same but with PC/104+Bus.
		01023-0000-27-2	Low Power Intel® Pentium® 266 MHz, one SODIMM-socket for SDRAM, High Speed Video (PCI) for CRT and LCD-Panels, 2x RS232C, USB, LPT, FDC, IDE, fan and with Intel® 551ER Ethernet (10/100 MBit).
		01023-0000-27-3	The same but with PC/104+Bus.
	MOPSlcd7	01029-0000-30-1	Intel® ULP Celeron™, 300 MHz, one SODIMM-SDRAM-socket for up to 512 MByte, 2x RS232C, LPT, FDC, IDE (UDMA-33), Kb/mouse, 2x USB, JILI (LVDS) Interface, PC/104+ and 10/100 Base-T Ethernet.
		01029-0000-50-1	The same but with Intel® LP Pentium® III, 500 MHz, fan.
		01029-0000-70-1	The same but with Intel® LP Pentium® III, 700 MHz, fan.
	MOPSlcdTM	01033-0000-80-1	Transmeta Crusoe 800 MHz, one SODIMM-socket for DDR-RAM, 2 MByte VRAM LynxEM+ graphics for CRT and LCD-Panels, 2x RS232C, 2x USB, LPT, FDC, IDE, fan, with Ethernet (10/100 MBit) and PC/104+Bus.
		01033-0000-10-1	Transmeta Crusoe 1000 MHz, one SODIMM-socket for DDR-RAM, 2 MByte VRAM LynxEM+ graphics for CRT and LCD-Panels, 2x RS232C, 2x USB, LPT, FDC, IDE, fan, with Ethernet (10/100 MBit) and PC/104+Bus.
	speedMOPSlcdCE	01040-0000-40-1	FANLESS Ultra Low Voltage Intel® Celeron® 400 MHz/815/ICH4, one SODIMM-socket for SDRAM, High Speed Video on-chip for CRT and LCD-Panels, 2x RS232C, 2x USB 2.0, LPT, FDC, IDE, Sound, fan, with 10/100Ethernet (10/100 MBit) and PC/104+Bus.
		01040-0000-70-1	The same but with Ultra Low Voltage Intel® Celeron® 733 MHz, fan.
		01040-0000-10-1	The same but with Ultra Low Voltage Intel® Celeron® 1.0 GHz, fan.
JRex embedded line	JRex-GX1	02001-0000-30-1	Geode™ GX1 Processor 300 MHz, VGA/LCD (18-Bit TFT), JILI Interface, 10/100Base-T, 1x COM, 2x USB, LPT, IDE. JFLEX extension. Full ATX compatible power socket, SDRAM-DIMM-socket. Compact-Flash™ socket.
		02001-0005-30-1	The same but with 5 V power supply.
	JRex-VE	02003-0000-30-1	VIA Eden™ processor with 300 MHz, VIA Twister™T chipset, VGA/LCD on-chip, JILI Interface, 10/100Base-T, 1x COM, 2x USB, LPT, IDE. JFLEX extension. Full ATX compatible power socket, SDRAM-DIMM-socket. Compact-Flash™ socket.
		02003-0005-30-1	The same but with 5 V power supply.
		02003-0000-66-1	VIA Eden™ processor with 600 MHz, VIA Twister™T chipset, VGA/LCD on-chip, JILI Interface, 10/100Base-T, 1x COM, 2x USB, LPT, IDE. JFLEX extension. Full ATX compatible power socket, SDRAM-DIMM-socket. Compact-Flash™ socket.
		02003-0005-66-1	The same but with 5 V power supply.
	JRex-VC	02003-0000-10-2	VIA C3™ processor with 1.0 GHz, VIA Twister™T chipset, VGA/LCD on-chip, JILI Interface, 10/100Base-T, 1x COM, 2x USB, LPT, IDE. JFLEX extension. Full ATX compatible power socket, SDRAM-DIMM-socket. Compact-Flash™ socket.
		02003-0005-10-2	The same but with 5 V power supply.
	JRex-CE	02005-0005-40-1	ULV Intel® Celeron® processor with 400 MHz, Intel 815 chipset, JILI Interface, VGA/LCD on-chip, 10/100Base-T, 1x COM, 2x USB 2.0, LPT, IDE. JFLEX extension. 5 V compatible power socket, SDRAM-DIMM-socket. Compact-Flash™ socket. Fan.
		02005-0005-73-1	The same but with ULV Intel® Celeron® processor with 733 MHz, fan.
		02005-0005-10-1	The same but with ULV Intel® Celeron® processor with 1.0 GHz, fan.
	JRex-C3	02002-0000-30-1	ULP fanless Intel® Celeron® processor with 300 MHz, VIA Twister™T chipset, JILI Interface, VGA/LCD on-chip, 10/100Base-T, 1x COM, 2x USB, LPT, IDE. JFLEX extension. ATX compatible power socket, SDRAM-DIMM-socket. Compact-Flash" socket.
		02002-0005-30-1	The same but with 5 V power supply.
	JRex-P3	02002-0000-70-1	Low Power Intel® Pentium® III processor with 700 MHz, VIA Twister™T chipset, VGA/LCD on-chip, JILI Interface, 10/100Base-T, 1x COM, 2x USB, LPT, IDE. JFLEX extension. ATX compatible power socket, SDRAM-DIMM-socket. Compact-Flash™ socket.
		02002-0005-70-1	The same but with 5 V power supply.
	JRex-PM	02004-0000-11-1	Intel® Pentium® M processor with 1.1 GHz, Intel® 855 chipset, JILI Interface, VGA/LCD on-chip, 10/100Base-T, 1x COM, 2x USB, LPT, IDE. JFLEX extension. Full ATX compatible power socket, DDR-SDRAM-DIMM-socket. Compact-Flash™ socket.
		02004-0005-11-1	The same but with 5 V power supply.
		02004-0000-16-1	Intel® Pentium® M processor with 1.6 GHz, Intel® 855 chipset, JILI Interface, VGA/LCD on-chip, 10/100Base-T, 1x COM, 2x USB, LPT, IDE. JFLEX extension. Full ATX compatible power socket, DDR-SDRAM-DIMM-socket. Compact-Flash™ socket.
		02004-0005-16-1	The same but with 5 V power supply.
JFLEX™	JFLEX-Communication1	02050-0001-22-0	I/O extension for JRex boards with: 2x LAN (10/100BaseT), 2x USB, 1x Firewire.
	JFLEX-Multimedia1	02051-1001-11-0	I/O extension for JRex boards with VIA TwisterT chipset: TV Out/DVI, Sound (AC97, SPDIF) incl. amplifier, Firewire.
	JFLEX-Multimedia2	02051-1001-11-1	I/O extension for JRex boards with Geode chipset: TV Out/DVI, Sound (AC97) incl. amplifier, Firewire.
	JFLEX-Visualisation1	02052-0000-11-0	I/O extention for JRex boards with: Graphic C&T 69000 for CRT, JIPA interface for DUAL Screen, 1x COM for GEODE based boards.
	JFLEX-Sound1	02053-0000-01-0	I/O extension for JRex boards with: Sound AC97 (Line-In., MIC-In and Line-Out).
	JFLEX-PCMCIA1	02054-0000-01-0	I/O extension for JRex boards with: PCMCIA drive, 32 Bit PC Card compatible, Dual Slot, without software.
	JFLEX-SERIALGPIO1	02055-1111-32-0	I/O extension for JRex boards with: 3x COM as 3x RS232 or as 3x TTL and 1x COM as 1x RS422/485, LPT2 and 4x8 Bit GPIO.
	JFLEX-SERIALGPIO1-CAN	02055-1111-32-1	I/O extension for JRex boards with: 3x COM as 3x RS232 or as 3x TTL and 1x COM as 1x RS422/485, 4x8 Bit GPIO and CAN controller.
	JFLEX-3COMGPIOPCcard-USB	02057-1112-32-0	I/O extension for JRex boards with: 3x COM as 3x RS232 or as 3x TTL, 4x8 Bit GPIO, USB (2 ports) and 32 Bit PCMCIA drive bay
	JFLEX-4COMGPIOPCcard	02057-1111-32-0	I/O extension for JRex boards with: 3x COM as 3x RS232 or as 3x TTL, 4x8 Bit GPIO, 1x COM as 1x RS422/485 and with 32 Bit PCMCIA drive bay
JRex value line	JRex-GX1LCD Standard	710270-1745	200 MHz GX1 Processor, VGA/LCD, 10/100Base-T, 2x RS232C, ISA, PC/104, USB, LPT, IDE, CompactFlash, no PC/104+, no Audio, no on-board speaker and no monitoring function. AVAILABLE FOR HIGH VOLUME ONLY!
	JRex-GX1LCD Plus	710280-1746	300 MHz GX1 Processor, VGA/LCD, 10/100Base-T, 1x RS485/422/232, 1x RS232C, ISA, PC/104+, USB, LPT, IDE, CompactFlash, Compact Flash, Audio, Monitoring function. AVAILABLE FOR HIGH VOLUME ONLY!
	JRex-786LCD	710170-1747	Socket 370, 128-Bit 2D/3D VGA/LCD, 10/100Base-T, 2x COM, PC/104+, Sound, USB, LPT, IDE, CompactFlash, with cooler & fan.
		710170-1750	The same but with 733/66 MHz Celeron, with cooler & fan. AVAILABLE FOR HIGH VOLUME ONLY!
		710170-1752	The same but with 700/100 MHz Pentium III, with cooler & fan. AVAILABLE FOR HIGH VOLUME ONLY!
		710170-1794	The same but with 1 GHz/133 Pentium III, with cooler & fan. AVAILABLE FOR HIGH VOLUME ONLY!
		721040	PS/2 Mouse Bracket
		726400	USB (2 channels) Bracket
		50300021	COM2 Port cable for JRex 786 & GX1
		50300026	LPT1 Port cable 2mm for JRex 786 & GX1
		30850048	Floppy disk cable JRex 786 & GX1
coolMONSTER PISA®	coolMONSTER/VE-300	07028-0000-30-1	FANLESS VIA Eden™ with 300 MHz, VIA Twister™T chipset, 1x DIMM socket for up to 1 GByte SDRAM, 4x RS232C, LPT, FDC, IDE, USB, S3 Savage 4 engine 32 MByte VRAM (UMA) for CRT and LCD, JILI-LCD-interface, Sound, 10/100 MBit Ethernet.
	coolMONSTER/VE-600	07028-0000-60-1	The same but with FANLESS VIA Eden™ with 600 MHz.
	coolMONSTER/VC-1000	07028-0000-10-1	The same but with VIA C3™ with 1.0 GHz, PadLock™ Data Encryption Engine, fan.
	coolMONSTER/S266L-E4	07024-0000-26-4	FANLESS LP Intel® Pentium® MMX™ 266 MHz, 1 DIMM socket for SDRAM, VGA/LCD controller, 4x RS232C, LPT, FDC, IDE, USB, PISA®-Bus, Half Size. With Ethernet (10/100 MBit) and Sound.
	coolMONSTER/C3-300	07025-0000-30-1	FANLESS Intel® ULP Celeron™ 300 MHz, 440BX chipset, 1x DIMM socket for up to 256 MB SDRAM, 4x RS232C, LPT, FDC, IDE, USB, 4 MByte VRAM AGP for CRT/LCD, Sound, 10/100 MBit Ethernet.
	coolMONSTER/P3-400	07025-0000-40-1	The same but with LP Intel® Pentium® III 400 MHz, fan.
	coolMONSTER/P3-700	07025-0000-70-1	The same but with LP Intel® Pentium® III 700 MHz and 8 MByte VRAM, fan.
	coolMONSTER/P3-850	07025-0000-85-1	LP Intel® Pentium® III 850 MHz, 440GX chipset, 1x DIMM socket for up to 512 MByte SDRAM, 4x RS232C, LPT, FDC, IDE, USB, 8 MByte AGP for CRT and LCD, Sound, 10/100 MBit Ethernet, fan.
backplanes	PISA-2	07006-0100-01-0	PISA-Backplane with 1 ISA-Slot and 1 PISA® Slot, 170x51 mm
	PISA-B111B	07006-0101-01-0	PISA-Backplane with 1 ISA-Slot, 1 PCI or ISA-Slot and 1 PISA® Slot, 175x60 mm
	PISA-2P3I	07006-0102-02-0	PISA-Backplane with 1 ISA-Slots, 2 PCI-Slots and 2 PISA® Slots, 170x102 mm
	PISA-3P4I	07006-0003-04-0	PISA-Backplane with 3 PCI and 4 PISA® Slots, 175x142 mm
	PISA-B441A	07006-0404-01-0	PISA-Backplane with 4 ISA-Slots, 4 PCI-Slots and 1 PISA® Slot, 220x170 mm

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