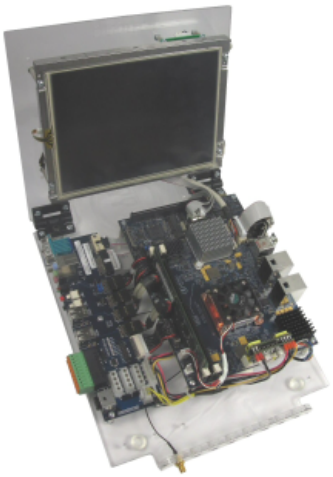
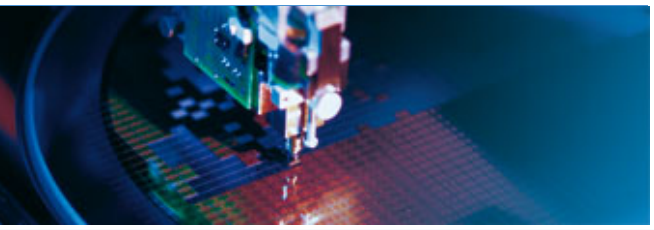
USER MANUAL





ANTARES Development Kit

5.25" Single Board Computer

Issue A – July 2010 – ETH_ANTARES_DEVKIT_USM

DIGITAL TECHNOLOGIES FOR A BETTER WORLD

www.eurotech.com

EUROTECH

WARRANTY

For warranty terms and conditions users should contact their local Eurotech Sales Office.

TRADEMARKS

All trademarks both marked and not marked appearing in this document are the property of their respective owners.

REVISION HISTORY

Issue no.	*PCB*	*Date*	*Comments*
Issue A		12th July 2010	First full release of manual.

See Eurotech Worldwide Presence (on the back cover) for full contact details.

Contents

Important user information

In order to lower the risk of personal injury, electric shock, fire or equipment damage, users must observe the following precautions as well as use good technical judgment, whenever this product is installed or used.

All reasonable efforts have been made to ensure the accuracy of this document; however, Eurotech assumes no liability resulting from any error/omission in this document, or from the use of the information contained herein.

Eurotech reserves the right to revise this document and to change its contents at any time without obligation to notify any person of such revision or changes.

Safety notices and warnings

The following general safety precautions must be observed during all phases of operation, service, and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the equipment. Eurotech assumes no liability for the customer's failure to comply with these requirements.

The safety precautions listed below represent warnings of certain dangers of which Eurotech is aware of. You, as the user of the product, should follow these warnings and all other safety precautions necessary for the safe operation of the equipment in your operating environment.

Installation in cupboards and safes

In the event that the product is placed within a cupboard or safe, together with other heat generating equipment, ensure proper ventilation.

Do not operate in an explosive atmosphere

Do not operate the equipment in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

Alerts that can be found throughout this manual

The following alerts are used within this manual and indicate potentially dangerous situations:

Danger, electrical shock hazard:
Information regarding potential electrical shock hazards:

- Personal injury or death could occur. Also damage to the system, connected peripheral devices, or software could occur if the warnings are not carefully followed.
- Appropriate safety precautions should always be used, these should meet the requirements set out for the environment that the equipment will be deployed in.

Warning:
Information regarding potential hazards:

- Personal injury or death could occur. Also damage to the system, connected peripheral devices, or software could occur if the warnings are not carefully followed.
- Appropriate safety precautions should always be used, these should meet the requirements set out for the environment that the equipment will be deployed in.

Information and/or notes:
These will highlight important features or instructions that should be observed.

Use an appropriate power supply

Only start the product with a power supply that conforms to the voltage requirements as displayed on the voltage label attached to the system. In case of uncertainty about the required power supply, please contact your local Eurotech Technical Support Team (see page 6) or the electricity authority.

Use power supplies that are compliant with SELV regulation.

Use certified power cables. The power cable must fit the product, the voltage and the required current.

Position cable with care. Avoid positioning cables in places where they may be trampled on or compressed by objects placed on it. Take particular care of the plug, power-point and outlet of power cable.

Avoid overcharging power-points.

Antistatic precautions

To avoid damage caused by ESD (Electro Static Discharge), always use appropriate antistatic precautions when handing any electronic equipment.

Life support policy

Eurotech products are not authorized for use as critical components in life support devices or systems without the express written approval of Eurotech.

CE notice

The product described in this manual is marked with the CE label in accordance with the 1999/5/EC regulation.

Eurotech shall not be liable for use of its products with equipment (i.e. power supplies, personal computers, etc.) that are not CE marked.

WEEE

The information below is issued in compliance with the regulations as set out in the 2002/96/EC directive, subsequently superseded by 2003/108/EC. It refers electrical and electronic equipment and the waste management of such products.

When disposing of a device, including all of its components, subassemblies and materials that are an integral part of the product, you should consider the WEEE directive.

The symbol to the right has been attached to the equipment or, if this has not been possible, on the packaging, instruction literature and/or the guarantee sheet. By using this symbol, it states that the device has been marketed after August 13th 2005, and implies that you must separate all of its components when possible, and dispose of them in accordance with local waste disposal legislations.

Because of the substances present in the equipment, improper use or disposal of the refuse can cause damage to human health and to the environment.

With reference to WEEE, it is compulsory not to dispose of the equipment with normal urban refuse. Arrangements should be instigated for separate collection and disposal.

Contact your local waste collection body for more detailed recycling information.

In case of illicit disposal, sanctions will be levied on transgressors.

RoHS

This device, including all it components, subassemblies and the consumable materials that are an integral part of the product, has been manufactured in compliance with the European directive 2002/95/EC known as the RoHS directive (Restrictions on the use of certain Hazardous Substances). This directive targets the reduction of certain hazardous substances previously used in electrical and electronic equipment (EEE).

Technical assistance

For any technical questions, or if you cannot isolate a problem with your device, or for any enquiry about repair and returns policies, feel free to contact your local Eurotech Technical Support Team.

See Eurotech WorldWide Presence (the back cover) for full contact details.

Transportation

When transporting any module or system, for any reason, it should be packed using anti-static material and placed in a sturdy box with enough packing material to adequately cushion it.

Any product returned to Eurotech that is damaged due to inappropriate packaging will not be covered by the warranty!

Device labelling

The ANTARES serial label is affixed to the end panel of the enclosure. This contains the Eurotech part number which in turn contains information on the version and issue of this product. The label also contains a serial number which is unique to each individual ANTARES.

The labels will also display product conformity marking.

Introduction

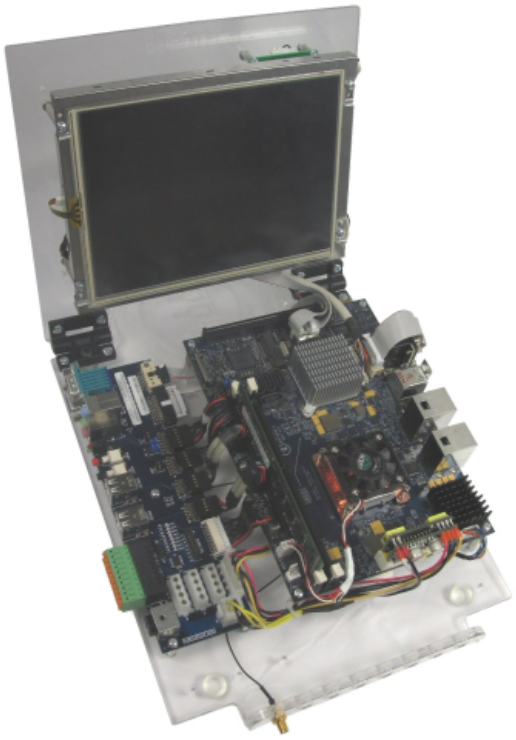
The ANTARES development kit offers a ready-to-run, rapid development environment which saves valuable engineering time.

The ANTARES Development Kit is available in the following variants:

- ANTARES Standard DevKit, assembled with an 8.4" Flat Panel Display and touchscreen.
- ANTARES NO-LCD DevKit, assembled with the perspex base only (no display set).

The ANTARES development kit supports the following features:

- Four PCI Express slots.
- Two gigabit Ethernet ports.
- Eight USB 2.0 ports.
- Two PCI Express Mini Card slots with SIM support.
- 4 Serial ATA interfaces.
- LVDS display.
- Analogue VGA interface.
- 2 HDMI interfaces.
- Audio headphones OUT / Line OUT, Microphone IN and Line IN
- 16 General Purpose Input / Output interfaces.
- Secure Digital card.
- One RS232/422/485 port and two RS232 serial ports on DB-9 connector.
- Touchscreen controller.



ANTARES development kit

ANTARES Development Kit features

ANTARES

Chipset

- Mobile Intel® QM57 Express chipset.

  The chipset is comprised of a 32nm processor and a 45nm graphics and memory controller, integrated in a multi-chip package used with an Intel QM57 platform controller hub.

Processor/North Bridge

- Intel i5 or i7 processor technology, graphics/memory controller and processor in one multi chip package.

  Currently supported processors:

  Standard

  - Intel® Celeron® processor P4505 (2M Cache, 1.86GHz).
  - Intel® Core™ i7-610E processor (4M Cache, 2.53GHz).
  - Intel® Core™ i7-620UE processor (4M Cache, 1.06GHz).

  Non standard (minimum order quantity 100 pieces)

  - Intel® Core™ i5-520E processor (3M Cache, 2.40GHz).
  - Intel® Core™ i3-330E processor (3M Cache, 2.13GHz).
  - Intel® Core™ i7-620LE processor (4M Cache, 2.00GHz).

  Processors are available in BGA packages only.

Memory

- Two DDR3 DIMM sockets.
- Dual channel DDR3 400/533MHz.
- Maximum memory: 8GB.
- Non-ECC and ECC memory support.

Ethernet

- Dual gigabit Ethernet:
  - Intel 82577 provides PXE boot and Intel AMT support.
  - Intel 82574L supports PXE boot.

USB

- Four USB type A front panel connectors.
- Four USB on pin headers.
- Four USB to PCI Express Mini Card sockets.

Bus expansion

- One PCI Express x4 edge connector allows for PCI riser usage, x1, x2 and x4 support.
- Two PCI Express Mini Card socket with SIM support:
  - Bottom and top side mounting.
  - One remote mountable SIM card socket and one onboard SIM card socket.

Serial ATA

- 3GB/s transfer speed.
- Four 7-pin SATA connectors for direct cable connect.

Graphics

- One LVDS Hirose DF13 pin header.
- One CRT 2.54mm 16-way header.
- Two HDMI 1.3 type A connectors.
- AVC/VC-1/MPEG-2 hardware acceleration.
- IEGD driver supports up to four simultaneous displays, mobile driver supports up to two simultaneous displays.

TPM

- Atmel AT97SC3204 TPM 1.2 factory fit option.

Watchdog

- Watchdog timer support.

Audio

- HD Audio CODEC with Line In, Line Out and Mic In.

BIOS

- Phoenix TrustedCore BIOS.

SuperIO

- SMSC SCH3114:
  - Supports four serial ports.
  - Hardware monitor.
  - GPIO support.
  - Platform logic.

Flash memory

- SD/MMC card socket.
  - BIOS boot capability.
  - SDHC support for cards up to 32GB.

Serial ports

- Three RS232:
  - One DB9.
  - Two 2.54mm 10-way header.

- One RS232/RS-485/RS-422:
  - One DB9.
  - Software selectable interface.
  - Auto-RTS flow control.

Power supply

- ATX power supply input.

GPIO

- Sixteen GPIO:
  - 5V signalling level.
  - Eight inputs, eight outputs.
  - SMBus interface.

Hardware monitoring

- SuperIO based hardware monitoring of temperatures and voltages.

Thermal solution

- The i7-620UE may provide a fanless option; all other processor SKUs require a fan when operating at TDP levels. A custom heatsink/heatspreader can be used.

Operating temperature

- -20ºC to +60ºC (-4°F to 140°F).

Mechanical

- 5.25" format (146mm x 203mm).
- Vertical height optimized to allow use in 1U enclosures.

ANTARES-Breakout board

Power supply

- +12V operation (power brick supply input).
- 3x connector extension.

System Control

- On/Off button.
- Reset button.
- Power LED / HDD activity LED.

Serial port

- One RS232 port (COM3 or COM4).

USB

- Four user accessible USB 2.0 ports on USB type A connectors.

Audio

- Microphone IN, Line IN, Headphones Out on standard 3.5mm jacks.

Graphics

- Analogue VGA interface.

GPIOs

- 16 general purpose input/output interfaces.

Display set (LCD variant only)

Flat Panel Display

- 8.4" LVDS FPD display.

Inverter

- +12V operation backlight inverter.

Touchscreen

- 8.4" four wire resistive touchscreen.

Touchscreen controller

- Eurotech TSC1 RS232 touchscreen controller.

Software specification

Operating system support

The ANTARES is supplied with one of the following operating systems:

- Microsoft Windows 7, Windows XP and XP Embedded.
- Fedora 13.

Drivers

All system components have drivers available for Windows XP and Linux.

Refer to the relevant software manual for more information.

BIOS

The BIOS provides the standard functions as well as the following features:

- Intel AMT.
- Boot support for SATA, SD Flash and USB.

Hardware specification

What's in the Kit

- Perspex base with the ANTARES and breakout board mounted on it.
- Perspex panel with the 8.4" Flat Panel Display, inverter and TSC1 mounted on it (LCD variant only).
- All interconnecting cables.
- 12V output power brick supply.
- US, UK or European power cord.
- Eurotech touchscreen stylus.
- Eurotech ANTARES Development Kit DVD.
- 4GB USB memory stick.
- 8GB SD card
- 2 metre crossover RJ45 UTP cable.
- 2 metre Null-Modem DB9F to DB9F cable.
- Eurotech cleaning cloth.

What else do I need?

- A USB keyboard.
- A USB mouse.
- A VGA monitor (if not using the flat panel kit or for dual display support).
- A development system with DVD-ROM drive.

Expansion buses

PCI Express bus interface

One x16 PCI Express slot is available on the ANATRES. The slot can be configured as x1, x2 (default) or x4 PCI Express interface.

PCI Express Mini Card sockets

Two PCI Express Mini Card sockets are available for wireless connectivity. Two of the QM57 PCI Express ports and USB 2.0 ports are connected directly to the PCIe Mini Card sockets on the ANTARES.

SD card slot

A Secure Digital (SD) slot is provided on the ANTARES.

Graphics support

The ANTARES Development Kit supports running up to two simultaneous displays on four outputs:

- LVDS.
- VGA.
- HDMI1
- HDMI2

Two display outputs can be configured in a number of display modes, to allow for independent display timings and extended desktop/multi-monitor operating modes.

Audio support

The ANTARES Development Kit supports stereo headphone output, stereo line in and stereo microphone input on standard 3.5mm stereo jacks on the ANTARES breakout board.

USB support

There are eight user USB 2.0 high-speed root ports accessible on USB A connectors. Four USB connectors are located on the ANTARES board and four on the breakout board.

Ethernet

Two 10/100/1000 Ethernet RJ45 sockets are available on the ANTARES board. The Intel 82577 Gigabit Ethernet controller supports AMT and wake up feature, enabling auto-correction of incorrect cabling with respect to cross-over versus straight-through cables.

Link and Activity LEDs are built in the RJ45 socket and indicate the link state and transfer activity of the ANTARES over the network.

SATA support

Four SATA interfaces are directly accessible on the ANTARES board. Power for these is provided by additional power cables. This gives the user the possibility to connect external hard drives or CD drives to the ANTARES board.

An LED is present on the ANTARES-Breakout and signals access to SATA bus.

Serial ports

Serial ports 1 and 2 are full RS-232 interface ports accessible on standard SUBD9 male connectors on the ANTARES board. Serial port 2 also supports RS485/RS422 interface configurable in BIOS.

Serial port 3 is a full RS-232 interface port and is connected to the Eurotech TSC1 by default. (This is only fitted for the LCD variant only.)

Serial port 4 is a full RS-232 interface ports accessible on standard SUBD9 male connectors on the ANTARES breakout board.

Touchscreen controller

The ANTARES Development Kit supports the Eurotech's TSC1. The TSC1 is an analogue resistive touchscreen controller that interfaces with the processor board via an RS232 serial port.

For more information about the TSC1, please contact the Eurotech sales team. For contact details, see Eurotech Worldwide Presence (back cover).

GPIO

Sixteen digital inputs and outputs are provided with +5V and GND on a 2 x 10-way connector with push-in spring-cage connections on the ANTARES breakout board.

Levels of eight outputs are indicated by 8 LEDs on the ANTARES breakout board. The LEDs are ON with a low logic level and OFF with a high logic level.

The digital inputs logic level can be set without external wiring by fitting the corresponding jumper to the digital input selection header. If these inputs are controlled by external hardware the jumper must not be fitted to the header. Fitting a jumper sets the logic level low (LED on).

Power requirements

The ANTARES Development Kit system operates from a single +12V (+/-5%) power input.

A suitable +12V power supply is provided in the kit (auto-ranging 90-264VAC input, 12VDC 12.5A output switching power supply).

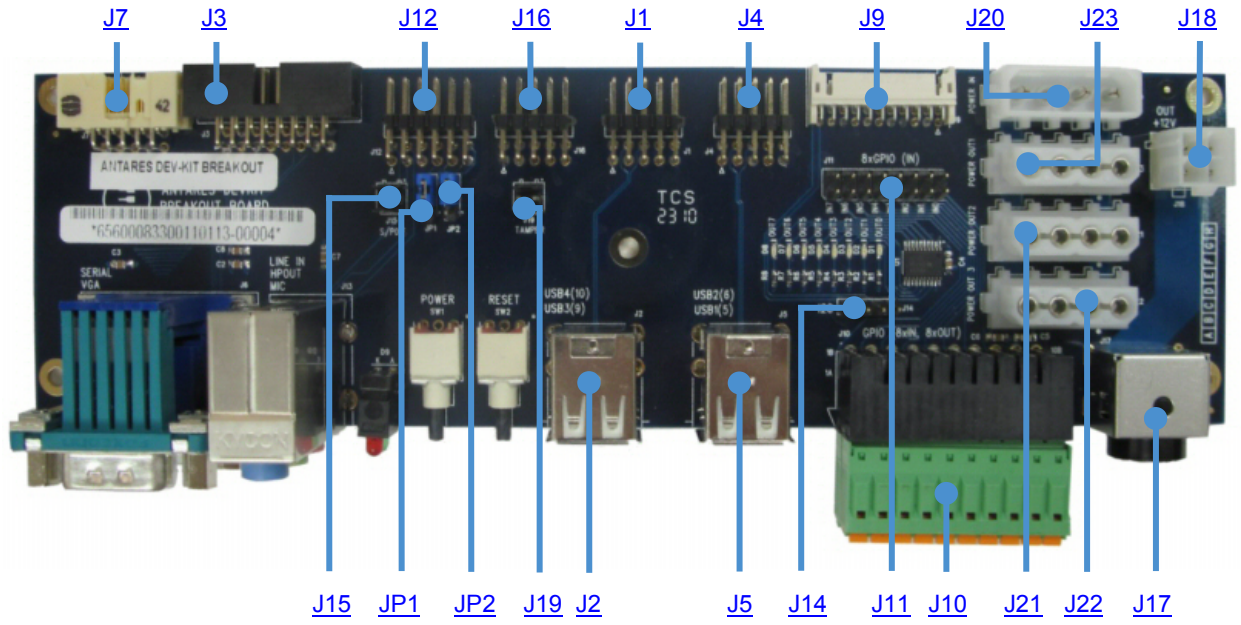
A removable CR2032 coin cell battery is provided for RTC backup on the ANTARES board.

Connectors

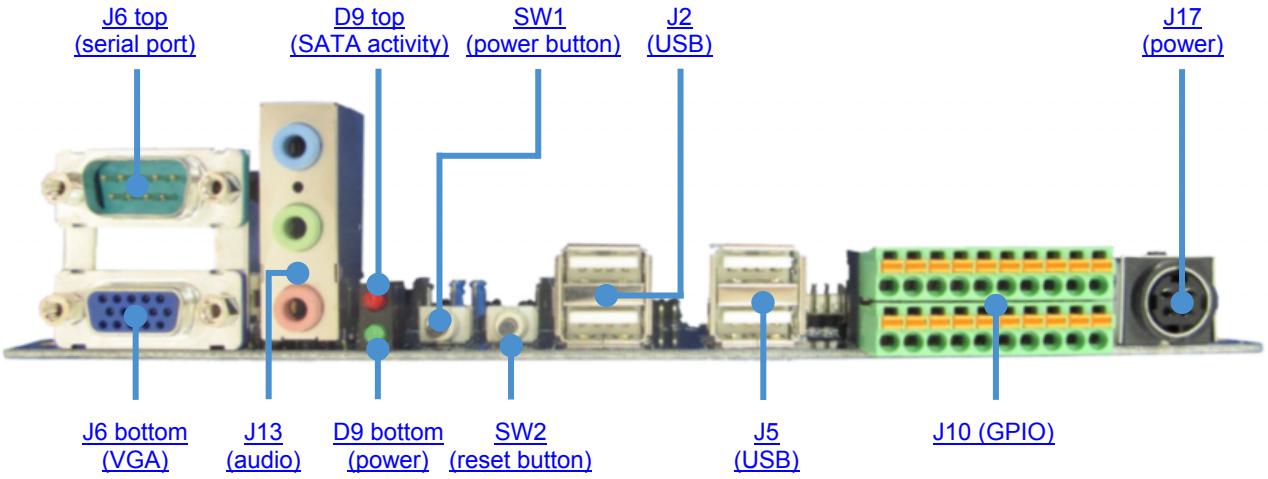
ANTARES-Breakout board

The following diagrams show the location of the connectors and jumpers on the ANTARES-Breakout.

Top view



Front view



Summary of connectors and jumpers

The following table lists the connectors on the ANTARES-Breakout:

Connector	Function	Connector details in section
J1	2 x USB header	2 x USB header, page 19.
J2	Dual USB Type A connector	Dual USB connector, page 19.
J3	VGA header	VGA header, page 19.
J4	2 x USB header	2x USB header, page 20.
J5	Dual USB Type A connector	Dual USB connector, page 20.
J6 bottom	VGA connector	RS232 & VGA connector, page 20.
J6 top	Serial port connector	RS232 & VGA connector, page 20.
J7	Serial port header	Serial port header (NEEDS TO BE UPDATED), page 21.
J9	GPIO header	GPIO header, page 21.
J10	GPIO push-in spring-cage connector	GPIO connector, page 21.
J11	GP input link header	GP input link header, page 22.
J12	Audio header	Audio header, page 22.
J13	Audio jack connector	Audio jack connector, page 23.
J14	I2C header	I2C header, page 24.
J15	SPDIF header	S/PDIF header, page 24.
J16	System header	SYSTEM header (needs to be updated), page 24.
J17	Power IN connector +12V/12.5A	Power input connector, page 24.
J18	Power OUT for picoATX	POWER output to picoATX, page 25.
J19	TAMP header	TAMP header, page 25.
J20	POWER IN connector	POWER IN connector, page 25.
J21	POWER OUT connector	POWER OUT connector, page 25.
J22	POWER OUT connector	POWER OUT connector, page 26.
J23	POWER OUT connector	POWER OUT connector, page 26.
JP1	Right Line OUT / Headphones OUT selector	LINE OUT Right / Headphones OUT Right selector, page 27.
JP2	Left Line OUT / Headphones OUT selector	LINE OUT Left / Headphones OUT Left selector, page 27.

Connectors

There are 22 connectors on the ANTARES-Breakout; the use of each one is explained below.

J1 – 2 USB headers

Connector: OUPIIN, 2011-2x5-G-R W/ROHS

Pin	Signal name	Pin	Signal name
1	+5V	2	+5V
3	USB1-	4	USB2-
5	USB1+	6	USB2+
7	GND	8	GND
9	KEY	10	GND

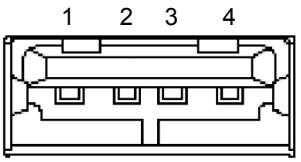
J2 – Dual USB connector

Connector: NELTRON, 5075AR-08B-WH-F1

Mating plug: USB type A plug.

Pin (top)	Signal name
1	+5V
2	USB1-
3	USB1+
4	GND

Pin (bottom)	Signal name
1	+5V
2	USB2-
3	USB2+
4	GND



J3 – VGA header

Connector: OUPIIN, 3012-16GRB W/ROHS.

Pin	Signal name	Pin	Signal name
1	RED	2	GND
3	GREEN	4	N.C
5	BLUE	6	GND
7	+5V	8	N.C
9	GND	10	GND
11	GND	12	HSYNC
13	SDA	14	VSYNC
15	SCL	16	N.C

J4 – 2 USB headers

Connector: OUPIIN, 2011-2x5-G-R W/ROHS

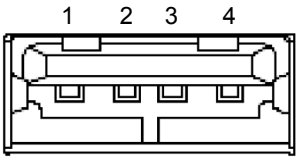
Pin	Signal name	Pin	Signal name
1	+5V	2	+5V
3	USB3-	4	USB4-
5	USB3+	6	USB4+
7	GND	8	GND
9	KEY	10	GND

J5 – Dual USB connector

Connector: NELTRON, 5075AR-08B-WH-F1

Mating plug: USB type A plug.

Pin (top)	Signal name	Pin (bottom)	Signal name
1	+5V	1	+5V
2	USB3-	2	USB4-
3	USB3+	3	USB4+
4	GND	4	GND



J6 – RS232 & VGA connector

Connector: Tyco, 1734842-2

Pin (top)	Signal name	Pin (bottom)	Signal name
1	DCD1	1	RED
2	RX1	2	GREEN
3	TX1	3	BLUE
4	DTR1	4	N.C
5	GND	5	GND
6	DSR1	6	GND
7	RTS1	7	GND
8	CTS1	8	GND
9	RI1	9	+5V
		10	GND
		11	N.C
		12	SDA
		13	HSYNC
		14	VSYNC
		15	SCL

J7 – Serial port header

Connector: OUPIIN, 3012-10-G-R-B W/ROHS

Pin	Signal name	Pin	Signal name
1	DCD	2	DSR
3	RX	4	RTS
5	TX	6	CTS
7	DTR	8	RI
9	GND	10	GND

J9 – GPIO header

Connector: Neltron, 2417RJ-22-PHD

Pin	Signal name	Pin	Signal name
1	+5V	2	+5V
3	IN0	4	IN1
5	IN2	6	IN3
7	IN4	8	IN5
9	IN6	10	IN7
11	GND	12	GND
13	OUT0	14	OUT1
15	OUT2	16	OUT3
17	OUT4	18	OUT5
19	OUT6	20	OUT7
21	SMB DATA	22	SMB CLK

J10 – GPIO connector

Connector: Phoenix, MCDN 1,5/10-G1-3,5 P26THR

Pin	Signal name	Pin	Signal name
1A	IN7	1B	OUT7
2A	IN6	2B	OUT6
3A	IN5	3B	OUT5
4A	IN4	4B	OUT4
5A	IN3	5B	OUT3
6A	IN2	6B	OUT2
7A	IN1	7B	OUT1
8A	IN0	8B	OUT0
9A	+5V	9B	+5V
10A	GND	10B	GND

J11 – GP input link header

Connector: OUPIIN, 2011-2x8-G-S W/ROHS

Pin	Signal name	Pin	Signal name
1	IN7	2	GND
3	IN6	4	GND
5	IN5	6	GND
7	IN4	8	GND
9	IN3	10	GND
11	IN2	12	GND
13	IN1	14	GND
15	IN0	16	GND

J12 – Audio header

Connector: OUPIIN, 2011-2x6-G-R W/ROHS

Pin	Signal name	Pin	Signal name
1	GND	2	S/PDIF
3	LINE IN Right	4	LINE IN Left
5	MIC IN Right	6	MIC IN Left
7	GND	8	GND
9	LINE OUT Right	10	LINE OUT Left
11	Headphone OUT Right	12	Headphone OUT Left

J13 – Audio jack connector

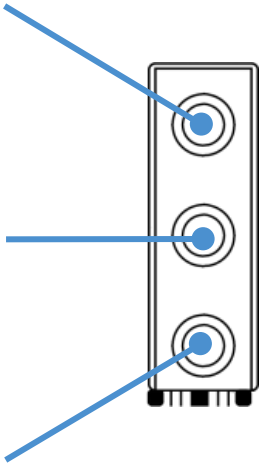
Connector: KYCON STX-4335-5BGP-S1, triple stacked 3.5mm stereo jack.

Mating plug: 3.5mm stereo plug.

Pin	Signal name (BLUE)
Tip	LINE IN Left
Ring	LINE IN Right
Sleeve	GND

Pin	Signal name (GREEN)
Tip	Headphones OUT Left or LINE OUT Left (check JP2 setting)
Ring	Headphones OUT Right or LINE OUT Right (check JP1 setting)
Sleeve	GND

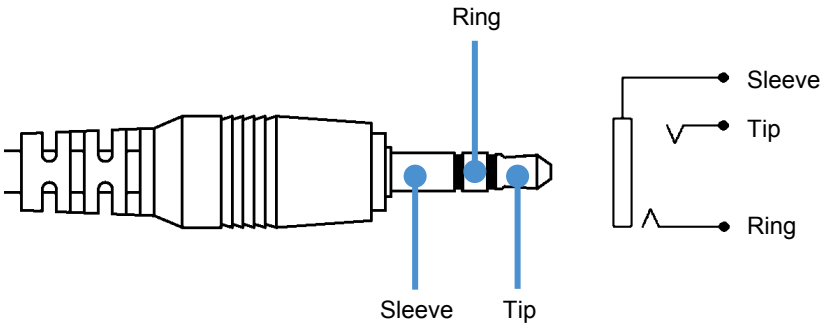
Pin	Signal name (PINK)
Tip	MIC IN Left
Ring	MIC IN Right
Sleeve	GND



LINE IN, MIC, LINE OUT – Audio connectors

3.5mm stereo audio jacks are used for audio connection.

The audio connectors are illustrated in the following diagram:



J14 – I2C header

Connector: OUPIIN, 2011-1x4-G-S W/ROH

Pin	Signal name
1	+5V
2	SMB DATA (3.3V level!)
3	SMB CLK (3.3V level!)
4	GND

Do not use +5V power for SMB DATA and SMB CLK signals. The voltage level used for these signals is +3.3V.

J15– S/PDIF header

Connector: FCI, 76384-402LF

Pin	Signal name
1	S/PDIF
2	GND

J16 – SYSTEM header

Connector: OUPIIN, 2011-2x5-G-R W/ROHS

Pin	Signal name	Pin	Signal name
1	HDD LED Cathode	2	HDD LED Anode
3	PWR LED Cathode	4	PWR LED Anode
5	GND	6	POWER# Button
7	GND	8	RESET# Button
9	GND	10	TAMP

J17– Power input connector

Connector: Kycon, KPJX-4S-S

Pin	Signal name
1	+12V DC
2	+12V DC
3	GND
4	GND
Shield	GND

J18– POWER output to picoATX

Connector: Molex, 39-28-1043

Pin	Signal name
1	GND
2	GND
3	+12V
4	+12V

J19– TAMP header

Connector: FCI, 76384-402LF

Pin	Signal name
1	TAMP
2	GND

J20– POWER IN connector

Power IN connector from picoATX
Connector: TYCO, 350211-1

Pin	Signal name
1	+12V INPUT
2	GND
3	GND
4	+5V INPUT

J21– POWER OUT connector

Power OUT connector for general use (DVDROM, HDD, …)
Connector: TYCO, 770997-1

Pin	Signal name
1	+12V OUTPUT
2	GND
3	GND
4	+5V OUTPUT

J22– POWER OUT connector

Power OUT connector for general use (DVDROM, HDD, …)
Connector: TYCO, 770997-1

Pin	Signal name
1	+12V OUTPUT
2	GND
3	GND
4	+5V OUTPUT

J23– POWER OUT connector

Power OUT connector for general use (DVDROM, HDD, …)
Connector: TYCO, 770997-1

Pin	Signal name
1	+12V OUTPUT
2	GND
3	GND
4	+5V OUTPUT

Jumpers

There are two jumpers on the ANTARES-Breakout; the use of each one is explained below.

JP1– LINE OUT Right / Headphones OUT Right selector

Connector: OUPIIN, 2011-1x3-G-S W/ROHS

Pin	Signal name
1	LINE OUT Right
2	Routed to J13 - GREEN Jack
3	Headphones OUT Right

JP2– LINE OUT Left / Headphones OUT Left selector

Connector: OUPIIN, 2011-1x3-G-S W/ROHS

Pin	Signal name
1	LINE OUT Left
2	Routed to J13 - GREEN Jack
3	Headphones OUT Left

Appendix A – Reference information

Product information

Product notices, updated drivers, support material:

www.eurotech.com

PCI special interest group

PCI Bus specification and list of manufacturers:

www.pcisig.org

USB information

Universal Serial Bus (USB) specification and product information:

www.usb.org

Intel

Information about Celeron and Core processors:

www.intel.com

Digital Display Working Group

Information about developing a digital connectivity specification for high-performance PCs and digital displays:

www.ddwg.com

IEEE Specifications

Information about wired and wireless communication:

www.ieee.org

Trusted Computing Group

Information about TCG open specifications:

www.trustedcomputinggroup.org

Trusted Computing Platform Alliance

Information about Trusted Platform:

www.trustedcomputing.org

Appendix B – RoHS compliance

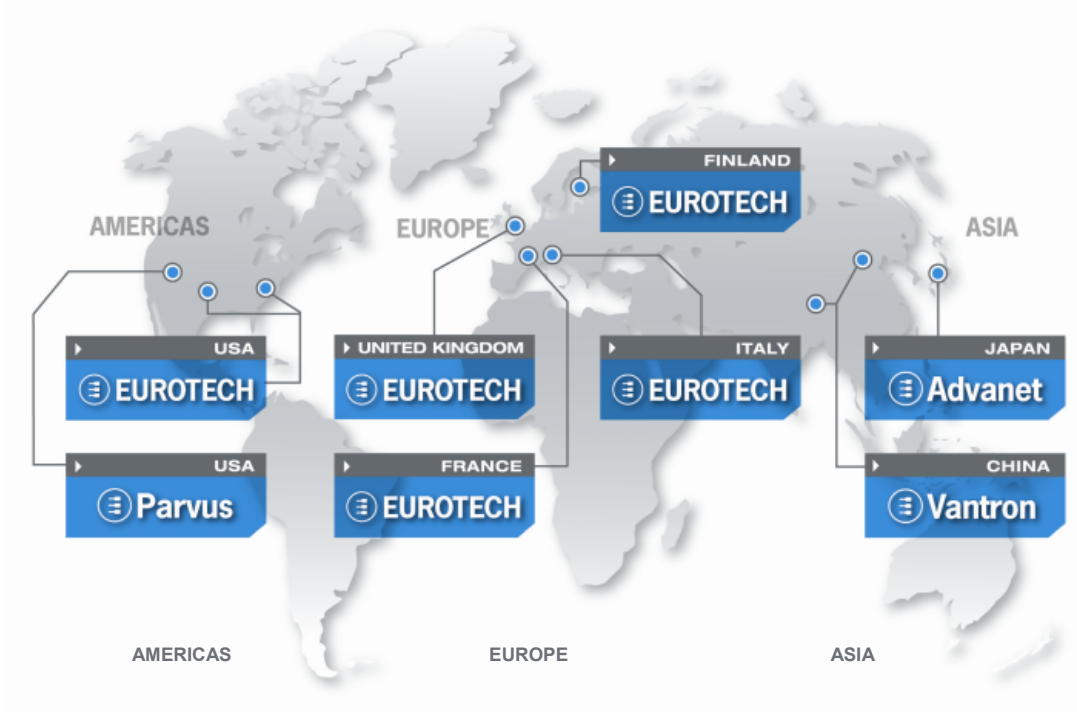
EUROTECH

The Restriction of the use of certain Hazardous Substances (RoHS) Directive came into force on 1st July 2006. The ANTARES board shall be designed using RoHS compliant components, and manufactured to comply with the RoHS Directive.

Eurotech has based its material content knowledge on a combination of information provided by third parties and auditing our suppliers and sub-contractor's operational activities and arrangements. This information is archived within the associated Technical Construction File. Eurotech has taken reasonable steps to provide representative and accurate information, though may not have conducted destructive testing or chemical analysis on incoming components and materials.

Additionally, packaging used by Eurotech for its products complies with the EU Directive 2004/12/EC in that the total concentration of the heavy metals cadmium, hexavalent chromium, lead and mercury do not exceed 100ppm.

Eurotech Worldwide Presence



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