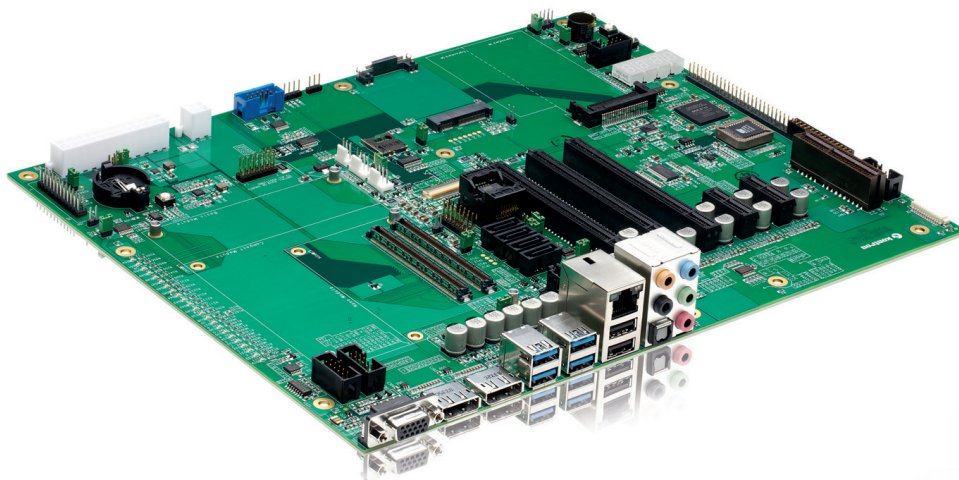


# » Starterkits and Evaluation Boards «



**COM**   
**Express**®

Evaluation boards for  
Type 6 + 10  
available, too !



## Starterkits and Evaluation Boards for COM Express®

- » For COM Express® modules
- » For quick evaluation purposes
- » Starterkits include all required hard- and software for immediate start

## Starterkits

Starterkits are complete care-free kits packaged in a single case. They give you a head start: Starterkits include an Evaluation Board which provides an easy plug-in of COM Express® modules and line-up many connectors and jacks. Those complete packages include everything needed for an immediate and efficient start and evaluation: PSU, Mass Storage and Documentation.

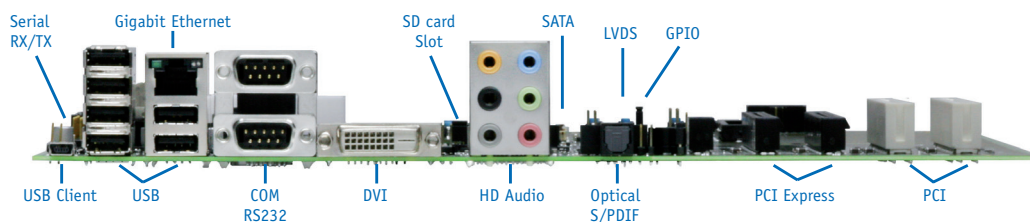
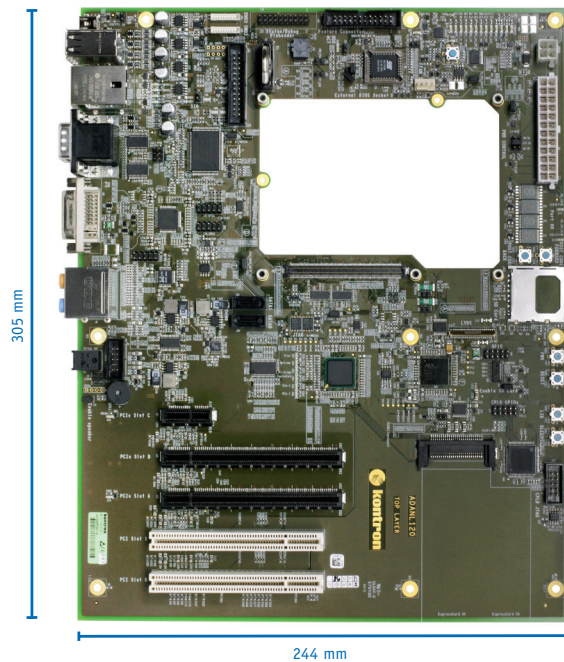
## Evaluation Boards

These Evaluation Boards can be populated with Kontron COM Express® compatible modules. They bring out a complete array of connectors. Evaluation Boards minimize installation requirements and reduce dramatically design time. They help to control and cut-back pre-market costs. Evaluation boards are recommended for testing in every design-in. Evaluation boards do not include any power supply, module, cooling solution, memory or display.

NEW

### COM Express® Eval Type 10

The evaluation board for nanoETXexpress is designed to allow embedded application developers to get up and running quickly on the nanoETXexpress modular platform, giving them a head start on the total system design. Simply select an Type 1 or Type 10 nanoETXexpress CPU module, then Plug & Go.



#### Technical Information

<b>I/O Features</b>	2 SATA standard connector PCI Express » 1 PCIexpress x1 Slot » 2 PCIexpress x16 Slot, electricly x1 » 1 Express Card (PCIe plus USB port 5) PCIe to PCI bridge PEX8112 - 2 PCI 32 Bit slots SD card slot shared with GPIO pin header Onboard RTC Battery Power / Reset Button LID Jumper/Sleep button SPI/LPC Firmware Hub socket for external BIOS 4 digit Port 80/81 POST code display Winbond 83627 LPC-I/O » 2 serial Ports on DSUB9 » LPT pin header / PWM fan / Hardware monitor 2 serial port (TX/RX) connector (KAB-DSUB9-3) Feature connector (I <sup>2</sup> C, SMB, Power control)
<b>Ethernet</b>	10/100/1000 MBit LAN RJ45 connector
<b>USB</b>	6x USB 2.0 rear connectors (USB port 0, 1, 2, 3, 4, 6) 1 USB client (USB port 7)
<b>Video Interfaces</b>	DVI-D, SIL1364 SDVO to DVI LVDS FFC40 connector
<b>Sound</b>	Onboard HD Audio Codec Realtek ALC888/ALC886 Analog 7.1 Audio, optical S/PDIF out and digital S/PDIF in & out
<b>Power Supply</b>	ATX power supply 24 + 4 pin Status Led
<b>Form Factor</b>	ATX Baseboard size: 12" x 9,6", 305 x 244 mm
<b>Supported Computer-on-Modules</b>	COM Express® Rev. 2.0 Pin-out Type 1 + Type 10 ultra size specification compatible COMs (nanoETXexpress) COM must be ordered separately

#### Ordering Information

Article	Part-No.	Description
COMe Eval Type 10	34101-0000-00-1	COM Express® Evaluation board for COM Express® Rev. 2.0 modules with Pin-out Type 1 + 10

**NEW** COM Express® Starterkit Type 6

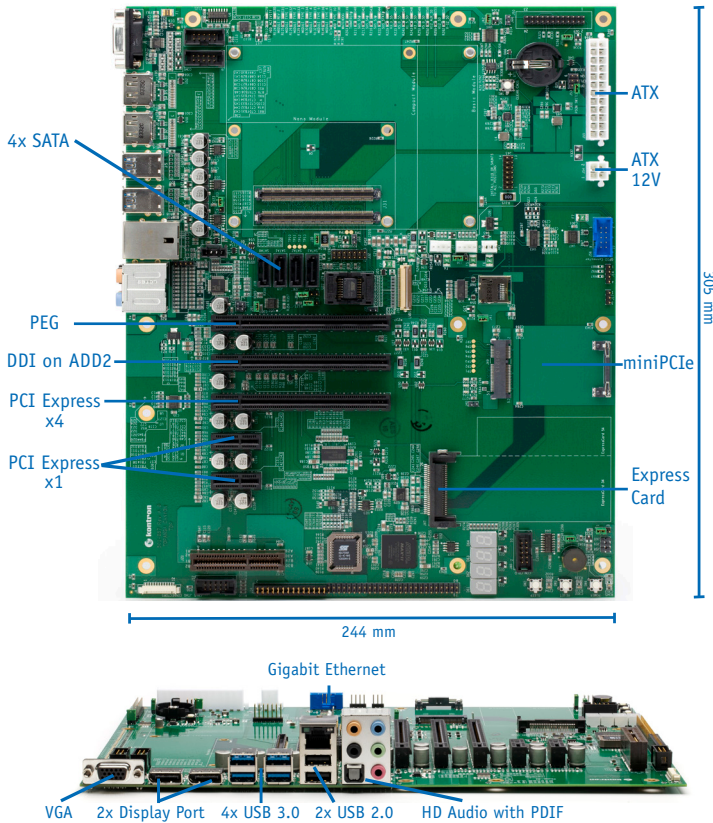
A universal starterkit for the new Pin-out Type 6, which offers more support for graphics requirements and super-fast USB 3.0.



**Technical Information**

<b>Evaluation Board</b>	COM Express® Eval Type 6, for COM Express® Pin-out Type 6 compatible modules.
<b>Power Supply</b>	Switchable ATX PSU 115V/230V ~
<b>Mass Storage</b>	Superfast USB 3.0 stick with manuals and datasheets
<b>Graphics Adapter</b>	1x Adapter DisplayPort-to-DVI, 1x Adapter Display Port-to-HDMI
<b>Documentation</b>	Manuals and datasheets are included
<b>Mounting Kit</b>	Screws and washers to mount heatspreader and module onto the evaluation board
<b>Supported Modules</b>	Any Kontron COM Express® Type 6 compatible module is supported, i.e. ETXexpress®-AI T6, ETXexpress®-SC T6, microETXexpress®-OH. Module must be ordered separately
<b>Availability</b>	Q2/2011

**NEW** COM Express® Eval Type 6



**Technical Information**

<b>Hard Disk</b>	4x SerialATA
<b>Ethernet</b>	1x 10/100/1000 MBit Ethernet magnetic connector
<b>Legacy Interfaces</b>	2x Serial RX/TX connector (pin-header)
<b>USB</b>	6x USB 1x USB in Express Card Connector 1x USB in miniPCIe
<b>PCI Express</b>	1x PEG x16 slot 1x PCI Express x4 slots 2x PCI Express 1x Express Card connector (with USB) 1x miniPCIe (with USB)
<b>Video Interfaces</b>	1x VGA 1x FFC40 LVDS 2x DisplayPort DDI on ADD2 slot
<b>Sound</b>	HD Audio Codec Realtek AL888, 6 in 1 with SPDIF
<b>Others</b>	1x GPIO (10-pin-header) 1x Fan control (4-pin-header)
<b>Form Factor</b>	ATX (305 mm x 244 mm) COM Express® Pin-out Type 6
<b>Supported Modules</b>	Any Kontron COM Express® Type 6 compatible module is supported, i.e. ETXexpress®-AI T6, ETXexpress®-SC T6, microETXexpress®-OH. Module must be ordered separately.
<b>Power Connector</b>	ATX, 24 pins + ATX 12V, 4 pins
<b>Temperature</b>	Operation: -5° to 70°C Storage: -30° to 85°C
<b>Humidity</b>	Operation: 10% to 90% Storage: 5% to 95% (non condensing)

**Ordering Information**

Article	Part-No.	Description
COMe Starterkit Type 6	38106-0000-00-S	COM Express® Starterkit for Pin-out Type 6 w/o module, cooling solution and memory; available Q2/2011
COMe Eval Type 6	38106-0000-00-0	COM Express® Evaluation board for modules with Pin-out Type 6; available Q2/2011

## COM Express® Starterkit Type 2

A universal starterkit offering all common interfaces and accessories.

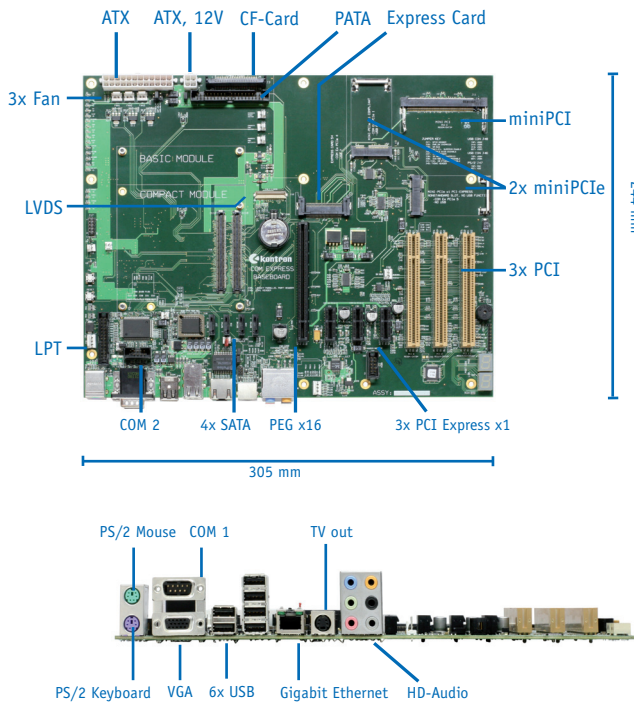


### Technical Information

<b>Evaluation Board</b>	COM Express® Eval Type 2, for COM Express® Pin-out Type 2 compatible modules
<b>Power Supply</b>	Switchable ATX PSU 115V/230V ~
<b>Mass Storage</b>	USB stick with manuals and datasheets
<b>Documentation</b>	Manuals and datasheets are included
<b>Mounting Kit</b>	Screws and washers to mount heatspreader and module onto the evaluation board
<b>Supported Modules</b>	Any Kontron COM Express® Type 2 compatible board is supported, i.e. ETXexpress® and microETXexpress® modules. Module must be ordered separately

## COM Express® Eval Type 2

Universal evaluation board with a huge variety of slots and interfaces. This board is included in the COM Express® Starterkit Type 2.



### Technical Information

<b>Hard Disk</b>	4x SerialATA 1x PATA (40 pins for 3.5" Hard Disks) 1x CF-Card
<b>Ethernet</b>	1x 10/100/1000 MBit Ethernet magnetic connector
<b>Legacy Interfaces</b>	2x COM connector (1x pin-header) 1x LPT connector (pin header)
<b>Video Interfaces</b>	1x VGA 1x FFC Connector for JILI/LVDS panels 1x TVout
<b>USB</b>	6x USB 2.0 ports (rear panel)
<b>PCI</b>	3x PCI Slot, 1x Slot for miniPCI
<b>PCI Express</b>	PCI Express Graphics 1x16 lanes 3x PCI Express x1 lanes 2x Slots for miniPCIe
<b>Sound</b>	HD-Audio with 6 jacks
<b>Form Factor</b>	ATX form factor, 305 x 244 mm
<b>Supported Modules</b>	Any Kontron COM Express® Type 2 compatible board is supported, i.e. ETXexpress® and microETXexpress® modules. Module must be ordered separately
<b>Power Connector</b>	ATX, 24 pins + ATX 12V, 4 pins
<b>Temperature</b>	Operation: -5° to 70°C Storage: -30° to 85°C
<b>Humidity</b>	Operation: 10% to 90% Storage: 5% to 95% (non condensing)

### Ordering Information

Article	Part-No.	Description
COMe Starterkit Type 2	38100-0000-00-5	COM Express® Starterkit for modules with Pin-out Type 2 w/o module, cooling solution and memory
COMe Eval Type 2	38104-0000-00-0	COM Express® Evaluation board for basic and compact modules with Pin-out Type 2

## COM Express® miniStarterkit Type 2

The reduced size makes it fitting perfectly in environments with strict space limitations. Although the carrier board does support ETXexpress® (COM Express® basic, 125x95mm), its size makes it the first choice for microETXexpress® modules (COM Express® compact, 95x95mm).

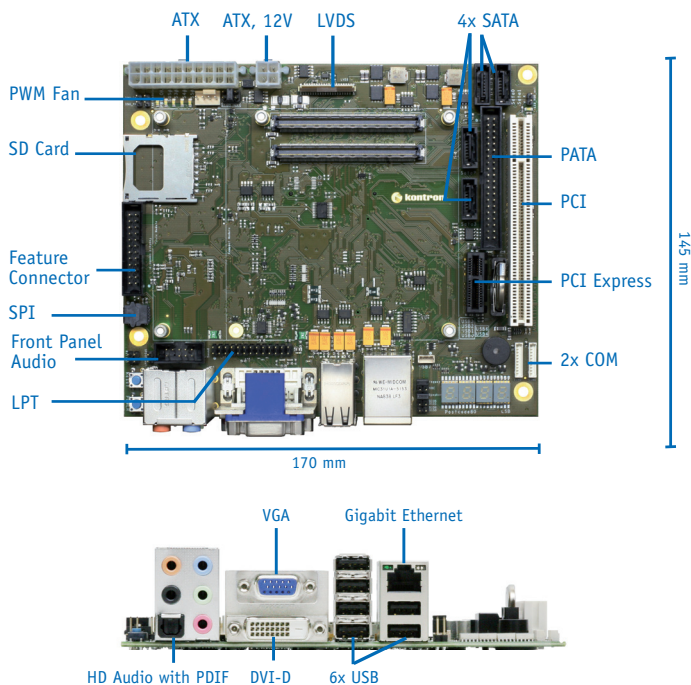


### Technical Information

<b>Evaluation Board</b>	COM Express® miniBaseboard Type 2, for COM Express® Pin-out Type 2 compatible modules
<b>Power Supply</b>	PicoATX 120W and 12 V PSU for running the ETXexpress® miniBaseboard
<b>Mass Storage</b>	USB stick with manuals and datasheets
<b>Documentation</b>	Quickstart Manual, datasheets and How-tos
<b>Mounting Kit</b>	Screws and washers to mount heatspreader and module onto the evaluation board
<b>Supported Modules</b>	Any Kontron COM Express® Type 2 compatible board is supported, i.e. ETXexpress® and microETXexpress® modules. Module must be ordered separately

## COM Express® miniBaseboard Type 2

COM Express® miniBaseboard significantly differs in size: 170 x 145mm allows evaluation in small and size-critical situations.



### Technical Information

<b>Hard Disk</b>	4x SerialATA 1x PATA (40 pins for 3.5" Hard Disks) 1x SD Card
<b>Ethernet</b>	1x 10/100/1000 MBit Ethernet magnetic connector
<b>Legacy Interfaces</b>	2x COM connectors (pin header) 1x LPT connector (pin header)
<b>USB</b>	6x USB
<b>PCI</b>	1x Slot
<b>PCI Express</b>	1x PCI Express x1 lane 1x Express Card connector on backside
<b>Video Interfaces</b>	1x DVI-D 1x VGA 1x FFC Connector for JILI/LVDS panels
<b>Sound</b>	HD Audio with 6 jacks on rear panel, 2 jacks on pin-header
<b>Form Factor</b>	170 x 145 mm
<b>Supported Modules</b>	Any Kontron COM Express® Type 2 compatible board is supported, i.e. ETXexpress® and microETXexpress® modules. Module must be ordered separately
<b>Power Connector</b>	ATX, 20 pins + ATX 12V, 4 pins
<b>Temperature</b>	Operating: 0 to +60°C Storage: -30 to +85°C
<b>Humidity</b>	Operating: 10% to 90% (non condensing) Non operating: 5% to 95% (non condensing)

### Ordering Information

Article	Part-No.	Description
COMe miniStarterkit Type 2	36100-0000-00-5	COM Express® miniStarterkit for modules with Pin-out Type 2 w/o module, cooling solution and memory
COMe miniBaseboard Type 2	38102-0000-00-1	Application carrier board for COM Express® basic and compact modules with Pin-out Type 2

## COM Express® HMI Starterkit Type 1

The COM Express® HMI Starterkit Type 1 is equipped for express evaluation purposes. The fully equipped Starterkit is shipped incl. a COM Express® HMI Baseboard Type 1, a 7" WVGA Panel with touch, 12V power supply, cables and accessories and a USB stick with a demo image of Win CE 6.0, incl. a QNX® Neutrino® fastboot demo video.

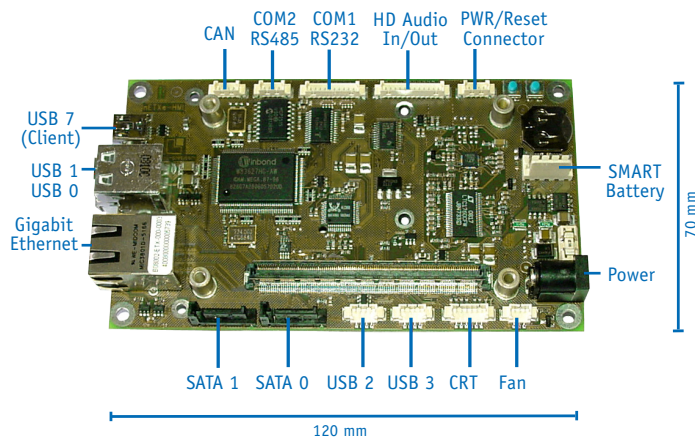


### Technical Information

<b>Evaluation Baseboard</b>	COM Express® HMI Baseboard Type 1 Small form factor 120 x 70 mm; Max component height below 18mm
<b>Display</b>	1x Display PM070WL4, 7" WVGA 800x480, with assembled backlight cable
<b>Power Supply</b>	12V PowerSupply PAA060F, with power cable
<b>Cables</b>	2x USB socket, KAB-USB-1 2x CAN socket, KAB-CAN-1 (one for COM2/one for CAN) 1x RS232 socket (COM1), KAB-DSUB9-3 1x RS485 socket (COM2) 1x JILI cable, KAB-JILI30-TSLD01 1x USB cable for touch controller, ETP-CB-SXU00
<b>Other Features</b>	1x USB touch controller, ETP-MB-4000UACG 1x Audioboard, B08700-KAB-XX-XX01, with cable
<b>Software</b>	BSP for WIN CE 6.0, WIN XP; WIN CE 6.0 demo image, QNX® Neutrino® fastboot demo video
<b>Supported Modules</b>	COM Express® pin-out type 1 modules, specially nanoETXexpress-SP. Module must be ordered separately.

## COM Express® HMI Baseboard Type 1

The COM Express® Human Machine Interface (HMI) Baseboard is suited for daily use and is designed to allow embedded application developers to get up and run quickly with the Ultra sized nanoETXexpress module platform.



### Technical Information

<b>Power</b>	SmartBattery, 2 cells Li-Ion; Single power supply +12V
<b>Hard Disk</b>	2 x SATA
<b>Ethernet</b>	10/100/1000 LAN magnetic connector
<b>Interface</b>	COM1 RS232 COM2 RS485 CAN
<b>PCI Express</b>	Expansion PCI Express Card 34/54 slot
<b>Flash Extension</b>	microSD Slot (depending on nETXe-module)
<b>USB</b>	2x USB 2.0 front connectors (USB 1,3) 2x USB internal on pin header (USB 0,2) 1x USB client port (USB port 7)
<b>Display connectivity</b>	JILI, LVDS Panel connector CRT internal (depending on nETXe-module)
<b>Sound</b>	HD Audio Codec ALC888 S/PDIF In/Out; Line In In/Out
<b>Form Factor</b>	120 x 70 mm
<b>Supported Modules</b>	COM Express® Pin-out Type 1 modules in ultra small size only, e.g. nanoETXexpress-SP. Module must be ordered separately.
<b>Temperature</b>	0 - 60 °C operating temp.

### Ordering Information

Article	Part-No.	Description
<b>COMe HMI Starterkit Type 1</b>	34100-0000-00-S	COM Express® HMI Starterkit Type 1, incl. 7" WVGA Panel with touch, 12 V PSU, cables and accessories
<b>COMe HMI Baseboard Type 1</b>	34100-0000-00-0	COM Express® Evaluation board for modules with Pin-out Type 1

## COM Express® FPGA Starterkit

Ready to use Starterkit with COM Express® FPGA Baseboard incl. Altera® Cyclone IV GX FPGA, 2 HSMC cards for automation, communication and video features, 12 V power supply and accessories.

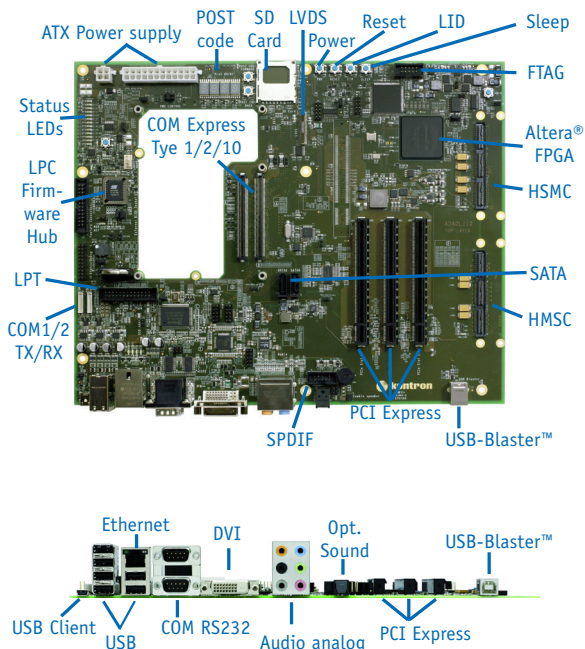


### Technical Information

<b>Evaluation Baseboard</b>	COM Express® FPGA Baseboard (305mm x 243mm)
<b>Accessories</b>	USB-Blaster™ cable, DSUB3 cable, mounting kit, ATX power supply, height adapter for Type 1/10 COM
<b>Software</b>	IP binary for Altera® HSMC cards on separate USB stick
<b>Supported Modules</b>	COM Express® pin-out Type 1/2 or Type 10 Computer-on-Modules like Kontrons ETXexpress®, microETXexpress®, nanoETXexpress COM's
<b>FPGA Altera® Cyclone IV GX</b>	
<b>HSMC Communication Board</b>	2x CAN; 2x RS232; 2x RS 485; DVI; SD Card socket Mini USB 2.0 ports Ethernet; GPIO x4
<b>HSMC Mass storage and Video Board</b>	2x SATA; ATA HD Power; General Purpose XCVR; Display Output for integrated National FPD2 Link (LVDS); General Display Output (LVDS); Camera Link Input; Camera Link Output; MOST Network Interface for SMSC OS881110 evaluation board; GPIO x 4

## COM Express® FPGA Baseboard

Jumper selectable flexible use for COM Express® Type 2/1 and Type 10 Computer-on-Modules. Pin out of COM Express® row A/B compliant to Type 10 and C/D (only necessary pins like SDVO, Power, Type ...) compliant to Type 2; It is pure reference for FPGA evaluation, so additional interfaces direct from COM Express™ are reduced to minimal need.



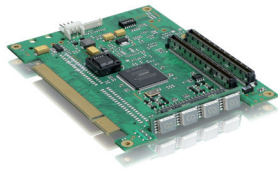
### Technical Information

<b>PCI Express</b>	1 PCIe x1 Lane 0 connected to FPGA 3 PCIe x16 electrical by 1 Lane 1,2,3; (strap option) Lane 1,2,3 on FPGA only
<b>Ethernet</b>	10/100/1000 MBit LAN magnetic; RJ45 connector on front panel
<b>Serial</b>	2 Serial RS232 ports on DSUB9; additional w. Type 10 COM only: 2 Serial ports (TX/RX) to 10 pol mini connector
<b>Parallel Port (LPT)</b>	1 x LPT
<b>SATA</b>	2 x SATA up to 600Mb/s
<b>USB/USB Client</b>	6 x USB 2.0 ports on USB type A connectors; 1 x USB client on mini USB connector
<b>Post Code</b>	4 digit POST code (LPC)
<b>Audio</b>	Intel® High Definition Audio / AC 97 codec; Onboard HD Audio Codec Realtek ALC888; Analog 7.1 Audio, optical Toslink out and digital S/PDIF in & out
<b>I²C / SM Bus external</b>	1 x I²C and 1 x SM on feature connector
<b>SPI</b>	External boot via SPI flash device
<b>SDIO/GPIO</b>	8 x GPIO on pin header, switch for selecting SD Card or GPIO
<b>SD Card</b>	1 x SD Card socket
<b>LVDS</b>	LVDS (only single channel A) connected to a JILI connector; strap option: connect LVDS channel A to FPGA only for graphic features
<b>SDVO</b>	1 x SDVO
<b>BIOS</b>	2 x BIOS socket (LPC/SPI) for external BIOS
<b>Form Factor</b>	ATX Baseboard size; 305 mm x 243 mm (12" x 9,6")
<b>Temperature</b>	0° to 60°C (operating), -30° to 85°C (non-operating)
<b>FPGA Altera® Cyclone IV GX</b>	
<b>Interface from COM</b>	1 x PCIe Lane by 1; strap option Lane 1,2,3 on FPGA; optional LVDS channel A to FPGA only; DDR2 SODIMM Slot; integrated USB Blaster for programming by USB Interface

### Ordering Information

Article	Part-No.	Description
<b>COM Express® FPGA Starterkit</b>	38111-0000-00-S	Starterkit incl. COM Express® FPGA Baseboard for Type 1/2 and Type 10 with onboard Altera FPGA and 2 HSMC I/O Cards, PSU, cables and mounting kit w/o module, cooling solution and memory.

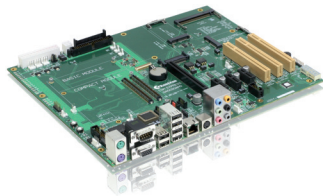
COM Express® Debug Card



For easy debugging of self-designed carrier boards, Kontron offers with the COM Express® Debug Card a helpful tool to customers, Sales Partners and Design Partners. The COM Express® Debug Card can either be plug into a free PCI slot or nested between the module or the carrier board. It reads out the POST code which is sent over PCI or LPC bus and displays it. Thus, developers easily can find out where customized configuration gets stuck. The COM Express® Debug Card can be ordered separately using the article no. 11112-0000-00-0.

HOW TO CUSTOMIZE YOUR KIT?

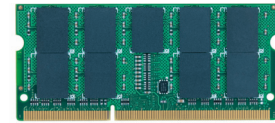
1. Select either a Starterkit or an Evaluation Board:



2. Select a COM Express® compatible module (plus corresponding Cooling Solution) of your choice:



3. Select memory modules:



4. Send your request to our Sales Representative or to [info@kontron.com](mailto:info@kontron.com)  
5. A customized offer will be sent to you.

Wind River Starterkits

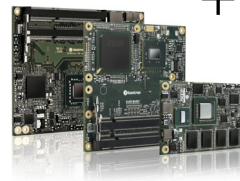
Preassembled Starterkits including Computer-on-Module and Wind River LiveUSB Evaluation

- » Get your application development started immediately
- » Fully assembled Starterkits for COM Express® Technology
- » Pre-assembled with COMs incl. Heatspreader and Memory
- » Equipment for Wind River LiveUSB Evaluation Environment

The COM Express® Starterkits VxWorks are equipped for express evaluation purposes. The VxWorks Starterkits are fully assembled with a COM incl. memory and Heatspreader.

The VxWorks LiveUSB consists of VxWorks 6.8 and Tilcon Graphics Evaluation 5.7 environment, packed on a self contained bootable Fedora 11 LiveUSB stick with the Wind River Workbench 3.2 Development Environment with a 30 day evaluation period.

Find more details on the separate Datasheet "Starterkits with VxWorks".



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