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

COM Express® EVAL CARRIER TYPE 10

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

I/O FEATURES
- 2x SerialATA standard connector
- 1x PCI Express x1 Slot
- 2x PCI Express x16 Slot, electrically x1
- 1x Express Card (PCIe plus USB port 5)
- PCIe to PCI bridge PEX812 - 2 PCI 32 Bit slots
- SD card slot shared with GPIO pin header
- Onboard RTC Battery
- UID Jumper/Sleep button
- SPI/LPC Firmware Hub socket for external BIOS
- 4-digit Port 80/81 POST code display
- Winbond 83627 LPC-I/O
- 2x serial Ports on DSUB9
- 1x LPT pin header/PWM fan/Hardware monitor
- 2x serial port (TX/RX) connector (KAB-DSUB9-3)
- Feature connector (I²C, SMB, Power control)

ETHERNET
- 10/100/1000 MBit LAN, RJ45 connector

USB
- 6x USB 2.0 (USB port 0, 1, 2, 3, 4, 6)
- 1x USB client (USB port 7)

VIDEO INTERFACES
- 1x LVDS FFC40 connector
- 1x DVI-D, SIL1364 SDVO to DVI

SOUND
- Realtek ALC886 HD-Audio optical S/PDIF IN/OUT 7.1 audio jacks

POWER SUPPLY
- ATX power supply 24 + 4 pin

FORM FACTOR
- ATX form factor; 12” x 9.6”, 305 x 244 mm

SUPPORTED COMPUTER-ON-MODULES
- COM Express® mini COM.0 pin out Type 1 & Type 10 compatible COM

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>ARTICLE</th>
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<tbody>
<tr>
<td>COMe EVAL CARRIER T10</td>
<td>34101-0000-00-1</td>
<td>COM Express® Eval Carrier Type 10 board for COM Express® mini COM with Pin-out Type 1 + 10</td>
</tr>
</tbody>
</table>

www.kontron.com
The COM Express® Starterkit with Reference Carrier-i Type 10 is equipped for express evaluation purposes. The fully assembled Starterkit is shipped incl. a COM Express® Reference Carrier-i Type 10, a 7” Display (WVGA) with touch, 12V power supply, cables, accessories.

This COM Express® Reference Carrier board is specially designed for environmental tests with extended temperature range (E2) -40 °C to +85 °C, in particular for applications based on nanoETX-express TT-i Computer-on-Modules. The Reference Carrier board also offers three different display interfaces for high graphic scalability: LVDS, Display Port and DVI.

### TECHNICAL INFORMATION

**EVALUATION BASEBOARD**
- COM Express® Reference Carrier-i Type 10
- Small form factor 120 x 120 mm

**DISPLAY**
- 1x 7” Display PM070W4, 800x480, incl. assembled backlight cable

**POWER SUPPLY**
- 1x 12V, 5A Dehner STD 1250P, with power cord

**CABLES**
- 1x KAB-DSUB9-3
- 1x KAB-CAN1
- 1x KAB Adapter LVDS
- 1x KAB ILIXO TSLD01
- 1x KAB-SATA-1

**OTHER FEATURES**
- 1x Touch Controller ETP-4500UG-B
- 1x Touch USB cable ETP04USBR
- 1x COM Express® Mounting Kit 5/8 mm 1set
- 1x USB Stick with manual and drivers

**SUPPORTED MODULES**
- COM Express® pin-out type 10

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<tr>
<td>COMe STARTERKIT REF. T10</td>
<td>34104-0000-00-S</td>
<td>COM Express® Starterkit w/ Reference Carrier Type 10, 7” display, touch controller, mounting kit, power supply for industrial temp. grade</td>
</tr>
<tr>
<td>COM EXPRESS® REFERENCE CARRIER-i TYPE 10</td>
<td>34103-0000-00-0</td>
<td>COM Express® Reference Carrier Board-i, Type 10 for industrial temp. -60 °C to +85 °C, for COM Express® mini form factor</td>
</tr>
</tbody>
</table>
This compact starterkit offers all new interfaces like DisplayPort and USB 3 in addition to a SIM Card Slot. It is perfect for multimedia or mobile application evaluation.

Kontron’s Reference Carrier Board in mini-ITX form factor for future-oriented COMs with Pin-out Type 6. A small reference design for small and portable solutions with SIM card support for mobile communication, USB 3.0 and DisplayPort.

**TECHNICAL INFORMATION**

**EVALUATION BASEBOARD**

- COM Express® Reference Carrier Type 6, miniITX form factor: 170 x 170 mm

**POWER SUPPLY**

- Switchable ATX PSU 115 V/230 V ~

**MASS STORAGE**

- Superfast USB 3.0 stick

**GRAPHICS ADAPTER**

- 1x Adapter cable DisplayPort-to-DVI
- 1x Adapter cable DisplayPort-to-HDMI

**DOCUMENTATION**

- Manuals and Datasheets on USB Stick

**MOUNTING KIT**

- COM Express® mounting kit (screws and spacers)

**SUPPORTED MODULES**

- COM Express® pin-out Type 6
- Computer-on-Modules: especially Kontron’s COMe-bSC6, COMe-cDH6, COMe-bIIP6, COMe-cTH6, COMe-bHL6
- Please order COM separately.

**HARD DISK**

- 3x SerialATA, 1x eSATA

**ETHERNET**

- 1x 10/100/1000 MBit LAN, RJ45 connector

**USB**

- 2x USB 2.0, 2x USB 3.0, 1x USB in Express Card connector, 1x USB in miniPCI Express

**PCI Express®**

- 1x PCI Express® x4 slot
- 1x miniPCIe (with USB and SIM card support)
- 1x Express Card connector (with USB)

**DISPLAY INTERFACES**

- 1x LVDS/JILI FFC 40 connector
- 3x DDI (1x DVI-I, 1x HDMI, 1x DP)

**SOUND**

- Realtek ALC886 HD-Audio, S/PDIF in/out, 5.1 audio jacks

**OTHERS**

- 1x Fan control (4-pin-header)
- 1x GPIO (10-pin-header)

**FORM FACTOR**

- miniITX: 170 x 170 mm

**SUPPORTED MODULES**

- COM Express® Pin-out Type 6 compatible COM

**POWER CONNECTOR**

- ATX Power Supply 20 + 4 pins

**TEMPERATURE**

- Operation: 0 °C to 60 °C
- Storage: -30 °C to +85 °C

**HUMIDITY**

- Operation: 10 % to 90 %
- Storage: 5 % to 95 % (non-condensing)

**ORDERING INFORMATION**

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<th>ARTICLE</th>
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<tr>
<td>COMe REF CARRIER T6</td>
<td>38114-0000-00-0</td>
<td>COM Express® Reference Carrier for COM with Pin-out Type 6</td>
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<tr>
<td>COMe STARTERKIT REF. T6</td>
<td>38114-0000-00-5</td>
<td>COM Express® Starterkit w/ Reference Carrier Type 6 w/o COM, cooling solution and memory</td>
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</table>
COM Express® STARTERKIT W/ EVAL CARRIER 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.

COM Express® EVAL CARRIER TYPE 6

COM Express® STARTERKIT W/ EVAL CARRIER TYPE 6

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<tr>
<td>COMe STARTERKIT T6</td>
<td>38106-0000-00-S</td>
<td>COM Express® Starterkit w/ Eval Carrier Type 6 w/o COM, cooling solution and memory</td>
</tr>
<tr>
<td>COMe EVAL CARRIER T6</td>
<td>38106-0000-00-0</td>
<td>COM Express® Eval Carrier Type 6</td>
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TECHNICAL INFORMATION

EVALUATION BASEBOARD
COM Express® Eval Carrier Type 6 ATX form factor; 12" x 9.6": 305 x 244 mm

POWER SUPPLY
Switchable ATX PSU 115 V/230 V ~

MASS STORAGE
Superfast USB 3.0 stick

GRAPHICS ADAPTER
1x Adapter cable DisplayPort-to-DVI
1x Adapter cable DisplayPort-to-HDMI

DOCUMENTATION
Manuals

MOUNT KIT
COM Express® mounting kit (screws and spacers)

SUPPORTED MODULES
COM Express® pin-out Type 6 Computer-on-Modules; especially Kontron’s
COMe-bSC6, COMe-cOH6, COMe-bIP6, COMe-cTH6, COMe-bHL6
Please order COM separately.

HARD DISK
4x SerialATA

ETHERNET
1x 10/100/1000 MBit LAN; RJ45 connector

SERIAL IO
2x COM connector (pin-header)

USB
2x USB 2.0; 4x USB 3.0
1x USB in Express Card Connector
1x USB in miniPCI Express®

PCI Express®
1x PEG x16 slot
1x PCI Express® x4 slots
2x PCI Express®
1x Express Card connector (with USB)
1x miniPCIe (with USB)

VIDEO INTERFACES
1x LVDS/JILI FFC 4D connector
3x DDI (2x Display Port, 1x SDVO/DP/HDMI on ADD2)
1x PEG x16
1x VGA

SOUND
Realtek ALC888 HD-Audio S/PDIF IN/OUT 7.1 audio jacks

OTHERS
1x GPIO (10-pin-header)
1x Fan control (4-pin-header)

FORM FACTOR
ATX form factor; 12" x 9.6": 305 x 244 mm

SUPPORTED MODULES
COM Express® COM.0 pin out Type 6 compatible COM

POWER CONNECTOR
ATX power supply 20 + 4 pin

TEMPERATURE
Operation: 0 °C to 60 °C
Storage: -30 °C to 85 °C

HUMIDITY
Operation: 10 % to 90 %
Storage: 5 % to 95 % (non condensing)
COM Express® STARTERKIT W/ REFERENCE CARRIER TYPE 2

The reduced size makes it fitting perfectly in environments with strict space limitations. Although the Reference Carrier board does support COM Express® basic, 125 x 95 mm, its size makes it the first choice for COM Express® compact, 95 x 95 mm sized COMs.

TECHNICAL INFORMATION

<table>
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<tr>
<th>EVALUATION BASEBOARD</th>
<th>COM Express® Reference Carrier Type 2, 170 x 145 mm allows evaluation in small and size-critical situations</th>
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<tbody>
<tr>
<td>POWER SUPPLY</td>
<td>PicoATX 120W and 12 V PSU for running the COM Express® Reference Carrier board</td>
</tr>
<tr>
<td>DOCUMENTATION</td>
<td>USB stick with manuals</td>
</tr>
<tr>
<td>MOUNTING KIT</td>
<td>COM Express® mounting kit (screws and spacers)</td>
</tr>
<tr>
<td>SUPPORTED MODULES</td>
<td>COM Express® pin out Type 2 Computer-on-Modules specially COM Express® basic and COM Express® compact COM's COM please order separately</td>
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COM Express® REFERENCE CARRIER TYPE 2

![COM Express® Reference Carrier Type 2 diagram](image)

TECHNICAL INFORMATION

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<tr>
<th>HARD DISK</th>
<th>4x SerialATA, 1x PATA (40 pins for 3.5” HDD), 1x SD Card</th>
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<tbody>
<tr>
<td>ETHERNET</td>
<td>1x 10/100/1000 MBit LAN; RJ45 connector</td>
</tr>
<tr>
<td>SERIAL I/O</td>
<td>2x COM connectors (pin header), 1x LPT connector (pin header)</td>
</tr>
<tr>
<td>USB</td>
<td>6x USB 2.0</td>
</tr>
<tr>
<td>PCI</td>
<td>1x PCI slot</td>
</tr>
<tr>
<td>PCI Express®</td>
<td>1x PCI Express® slot, 1x Express Card connector on backside</td>
</tr>
<tr>
<td>VIDEO INTERFACES</td>
<td>1x LVDS/JIILI FFC 40 connector, 1x DVI-D, 1x VGA</td>
</tr>
<tr>
<td>SOUND</td>
<td>Realtek ALC888 HD-Audio, optical S/PDIF OUT, 5.1 audio jacks</td>
</tr>
<tr>
<td>FORM FACTOR</td>
<td>6.7” x 5.7”; 170 x 145 mm</td>
</tr>
<tr>
<td>SUPPORTED MODULES</td>
<td>COM Express® COM.0 pin out Type 2 compatible COM</td>
</tr>
<tr>
<td>POWER CONNECTOR</td>
<td>ATX power supply 20 + 4 pin</td>
</tr>
<tr>
<td>TEMPERATURE</td>
<td>Operating: 0 °C to +60 °C, Storage: -30 °C to +85 °C</td>
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<tr>
<td>HUMIDITY</td>
<td>Operating: 10 % to 90 %, Non operating: 5 % to 95 % (non-condensing)</td>
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<tr>
<td>COMe STARTERKIT REF. T2</td>
<td>36100-0000-00-5</td>
<td>COM Express® Starterkit w/ Reference Carrier Type 2 w/o COM, cooling solution and memory</td>
</tr>
<tr>
<td>COMe REF. CARRIER T2</td>
<td>38102-0000-00-1</td>
<td>COM Express® Reference Carrier Type 2 for COM Express® basic and compact COM</td>
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</table>
COM Express® STARTERKIT W/ EVAL CARRIER TYPE 2

A universal starterkit offering all common interfaces and accessoires.

COM Express® EVAL CARRIER 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

<table>
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<tr>
<th>EVALUATION BASEBOARD</th>
<th>COM Express® Eval Carrier Type 2 ATX form factor; 12&quot; x 9.6&quot;: 305 x 244 mm</th>
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<tr>
<td>POWER SUPPLY</td>
<td>Switchable ATX PSU 115 V/230 V ~</td>
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<td>DOCUMENTATION</td>
<td>USB stick with manual</td>
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<td>MOUNTING KIT</td>
<td>COM Express® mounting kit (screws and spacers)</td>
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<tr>
<td>SUPPORTED MODULES</td>
<td>COM Express® pin-out Type 2 Computer-on-Modules specially Kontrons COM Express® basic and COM Express® compact COM's Please order COM separately</td>
</tr>
</tbody>
</table>

HARD DISK

4x SerialATA
1x PATA (40 pins for 3.5" Hard Disks)
1x CF-Card

ETHERNET

1x 10/100/1000 MBit LAN; RJ45 connector

LEGACY INTERFACES

2x COM connector (1x pin-header)
1x LPT connector (pin-header)

VIDEO INTERFACES

1x LVDS/JLIL FFC 40 connector
1x VGA
1x TVout

USB

6x USB 2.0

PCI

3x PCI slots; 1x slot for miniPCI

PCI Express®

1x PCI Express Graphics x16 lanes
3x PCI Express x1 lanes
2x Slots for miniPCI Express

SOUND

Realtek ALC888 HD-Audio S/PDIF IN/OUT 7.1 audio jacks

FORM FACTOR

ATX form factor, 305 x 244 mm

SUPPORTED MODULES

COM Express® COM.0 pin out Type 2 compatible COM

POWER CONNECTOR

ATX power supply 24 + 4 pin

TEMPERATURE

Operation: 0 °C to 60 °C
Storage: -30 °C to 85 °C

HUMIDITY

Operation: 10 % to 90 %
Storage: 5 % to 95 % (non condensing)

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<tr>
<td>COMe EVAL CARRIER T2</td>
<td>38104-0000-00-1</td>
<td>COM Express® Eval Carrier Type 2</td>
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</table>
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.

FPGA STARTERKITS

Ready to use Starterkit with COM Express® Reference Carrier FPGA incl. Altera® Cyclone IV GX FPGA, 2 HSMC cards for automation, communication and video features, 12 V power supply and accessories. Please order the Starterkit using the article no. 38111-0000-00-5. Find more details on a dedicated Datasheet “COM Express® Reference FPGA Designs”

WIND RIVER STARTERKITS

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

1. Select either a Starterkit or an Evaluation Board:
2. Select a COM Express® 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
5. You’ll receive an offer

HOW TO CUSTOMIZE YOUR KIT?

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