COM EXPRESS® TYPE 6 / 7 / 10
STANDARD COMPUTER-ON-MODULES

- COM EXPRESS® BASIC
- COM EXPRESS® COMPACT
- COM EXPRESS® MINI
- COM EXPRESS® CARRIER
COM EXPRESS® basic
Tech Specs At-a-Glance

**COMPLIANCE**
- Intel® HD Graphics
- SPI, LPC, SMB, Fast I²C, Staged Watchdog, RTC

**CPU**
- Intel® based

**DIMENSIONS (H x W)**
- 120 x 55 mm

**GRAPHICS CONTROLLER**
- Intel® based

**MASS MEMORY**
- Up to 4x 2048-2048 SD-DIMM up to 16 GByte (non-ECC/EDD) (not in the 60 W SKU)

**ETHERNET CONTROLLER**
- Intel® I210IT (uses one lane of PCIe 2.0)

**ETHERNET**
- 10/100/1000 MBit Ethernet

**FLASH MEMORY**
- 4x SATA 6Gb/s

**POWER MANAGEMENT**
- ACPI 6.0

**PROCESSOR**
- Intel® Mobile C236 / Intel® Mobile C3175
- Intel® Pro Graphics P530 (2x + 4x)

**CHIPSET**
- Intel® C672ML

**BIOS**
- AMI Aptio V

**COM EXPRESS® At-a-Glance**

**TECH SPECS**

**COM EXPRESS® COMe-BCL6/-BCL6R E2S**
- COMe-BCL6/-BCL6R E2S variants)
- Chip, 4k Resolutions, Flexible PEG lane configuration by Setup Option, Rapid Shutdown (R E2S variants)
- Windows® 10, Linux, VxWorks

**COM EXPRESS® COMe-bkl6/-bkl6R E2S**
- COMe-bkl6/-bkl6R E2S variants)
- Chip, 4k Resolutions, Flexible PEG lane configuration by Setup Option, Rapid Shutdown (R E2S variants)
- Windows® 10, Linux, VxWorks

**COM EXPRESS® COMe-bBD7/-bBD7R E2**
- COMe-bBD7/-bBD7R E2 variants)
- Chip, 4k Resolutions, Flexible PEG lane configuration by Setup Option, Rapid Shutdown (R E2S variants)
- Windows® 10, Linux, VxWorks

**COM EXPRESS® COMe-bdv7/-bdv7R E2**
- COMe-bdv7/-bdv7R E2 variants)
- Chip, 4k Resolutions, Flexible PEG lane configuration by Setup Option, Rapid Shutdown (R E2S variants)
- Windows® 10, Linux, VxWorks
### COM EXPRESS® compact

**低功率移动**

**COM Express® compact Pin-out Type 6**

<table>
<thead>
<tr>
<th>DIMENSIONS (H x W)</th>
<th>95 x 95 mm</th>
</tr>
</thead>
</table>

**CPU**

- **AMD V1807B**: 4x 3.35 GHz (3.75 GHz), 35-54W
- **AMD V1756B**: 4x 3.25 GHz (3.6 GHz), 35-54W
- **AMD V1605B**: 4x 2.0 GHz (3.6 GHz), 12-25W
- **AMD V1404I**: 4x x.x GHz (x.x GHz), 15W

- **Intel® Core™ i7-7600U**: 2x 2.8 GHz (3.9 GHz), 15W
- **Intel® Core™ i5-7300U**: 2x 2.6 GHz (3.5 GHz), 15W
- **Intel® Core™ i3-7100U**: 2x 2.4 GHz, 15W
- **Intel® Celeron® 3965U**: 2x 2.2 GHz, 15W

**CHIPSET**

- **Integrated SoC**

**MAIN MEMORY**

- **1x DDR4 SO-DIMM up to 16 GByte**, 2nd channel DDR4 memoria down up to 8 GByte (non-ECC/ECC)

**GRAPHICS CONTROLLER**

- **Integrated AMD Vega Graphics (SPX)**

**ETHERNET CONTROLLER**

- **Intel® I210/I211**
- **Intel® I219LM**

**HARD DISK**

- **2x SATA 6Gb/s**
- **2x SATA 6Gb/s, 50ID Interface (shared with GPIO)**

**FLASH ONBOARD**

- **up to 32 GByte SLC eMMC**

**PCI EXPRESS® / PCI SUPPORT**

- **5x PCIe 3.0 (On request: 6x without Ethernet)**
- **4x PCIe 3.0 on PCIe lane 0-4 (3.0 only i5/i7 SKUs) 5 controllers, 1x4 or 1x2 or 1x1, (Intel® RST)**

**PANEL SIGNAL**

- **DDI1: DP++, DDI2: DP++, DDI3: -, VGA: -**, LVDS: Dual Channel 18/24 bit

**USB**

- **3x USB 3.x (incl. USB 2.0)**
- **4x USB 3.0 (incl. USB 2.0)**

**SERIAL**

- **2x serial interface (RS-232/485 only)**

**AUDIO**

- **Intel® High Definition Audio**

**COMMON FEATURES**

- **SPI, LPC, SMB, Fast I²C, Staged Watchdog, RTC**

**BIOS**

- **AMI Aptio V**

**ON REQUEST**

- **eDP instead of LVDS, VGA, 1x PCIe x1 additional w/o onboard LAN, PCIe Switch, Security Chip**
- **vPRO (AMT/TXT/AES Support), 1x PCIe x1 additional w/o onboard LAN, max. 32 GByte SLC eMMC, Industrial grade: -40 °C to +85 °C**

**POWER MANAGEMENT**

- **ACPI 6.0**
- **ACPI 6.0 ECO**

**POWER SUPPLY**

- **8.5V – 20V Wide Range, Single Supply Power**
- **8.5V – 20V Wide Range ATX, Single Supply Power**

**SPECIAL FEATURES**

- **PDSCAP capacitors, Trusted Platform Module TPM 2.0, Security Chip**

**OPERATING SYSTEM**

- **Windows® 10, Linux**

---

**COM EXPRESS® compact Pin-out Type 6**

- **95 x 95 mm**

**CPU**

- **Intel® Core™ i5-8265U**: 2x 2.60 GHz, 15W
- **Intel® Core™ i3-8145U**: 2x 2.10 GHz, 15W

**CHIPSET**

- **Integrated SoC**

**MAIN MEMORY**

- **1x DDR4 SO-DIMM up to 16 GByte**

**GRAPHICS CONTROLLER**

- **Intel® HD Graphics 620**
- **Intel® HD Graphics 520**

**ETHERNET**

- **Intel® I219LM**

**HARD DISK**

- **2x SATA 6Gb/s**

**FLASH ONBOARD**

- **up to 32 GByte SLC eMMC**

**PCI EXPRESS® / PCI SUPPORT**

- **5x PCIe 3.0 (On request: 6x without Ethernet)**
- **5x PCIE3.0 on PCIe lane 0-4 (3.0 only i5/i7 SKUs) 5 controllers, 1x4 or 1x2 or 1x1, (Intel® RST)**

**PANEL SIGNAL**

- **DDI1: DP++, DDI2: DP++, DDI3: -, VGA: -**, LVDS: Dual Channel 18/24 bit

**USB**

- **4x USB 3.0 (incl. USB 2.0)**

**SERIAL**

- **2x serial interface (RS-232/485 only)**

**AUDIO**

- **Intel® High Definition Audio**

**COMMON FEATURES**

- **SPI, LPC, SMB, Fast I²C, Staged Watchdog, RTC, support of Intel® Optane™ memory technology via PCIe**

**BIOS**

- **AMI Aptio V**

**ON REQUEST**

- **eDP instead of LVDS, VGA, 1x PCIe x1 additional w/o onboard LAN, PCIe Switch, Security Chip**
- **vPRO (AMT/TXT/AES Support), 1x PCIe x1 additional w/o onboard LAN, max. 32 GByte SLC eMMC, Industrial grade: -40 °C to +85 °C**

**POWER MANAGEMENT**

- **ACPI 6.0**
- **ACPI 6.0 ECO**

**POWER SUPPLY**

- **8.5V – 20V Wide Range, Single Supply Power**
- **8.5V – 20V Wide Range ATX, Single Supply Power**

**SPECIAL FEATURES**

- **PDSCAP capacitors, Trusted Platform Module TPM 2.0, Security Chip**

**OPERATING SYSTEM**

- **Windows® 10, Linux, VxWorks**

---

**Find out more about our offering:**

COM EXPRESS® compact

COMe-CAL6 (E2)

- 2x serial interface (RX/TX only)
- Integrated SoC
- DDI 1/2: DP++, LVDS: Dual Channel up to 48-bit (or eDP on 2x DDR3L-1333 ECC memory)
- 2x DDR3L-1333 ECC memory up to 2x 4 GByte
- Intel® I210IT / I211AT
- POSCAP capacitors, GPIO/SDIO Switch, LVDS/DP Multiplexer, 2x SATA 3Gb/s
- ACPI, S5 Eco
- Kontron Rapid Shutdown
- Integrated SoC
- 2x PCIe Gen 2 memory down to up to 4 GByte or 2x DDR3L-1333 memory down to 8 GByte
- Intel® HD Graphics (Gen7)
- USB SMD KANTE 1000:
  - PCIe Intel® I210IT optional.
  - 1x SATA 36a/s
- 2 - 64 GByte eMMC, 1x microSD Socket
- Up to 32 GByte SLC eMMC (option)
- 4x PCIe Gen 2.0
  - 3x PCIe x1 additional w/o onboard LAN, memory down (4 controllers, 4 x1, 1 x4)
- 3 independent Displays
- DDI DP++, DDI DP (shared w/USB), DDI 3: -
  - VGA, Yes, USB 3.0, Dual Channel 18/24bit

COMe-CBTc6 / cBTi6

- 2x SODIMM for DDR3L-1600/1867 (non ECC)
- ACPI 4.0, S5 Eco
- 2x serial interface (RX/TX only)
- 2x SATA 6Gb/s
- Intel® I211AT
- 2x SATA 36a/s
- 10/100/1000 MBit Ethernet
- 2x 32 GByte eMMC SLC (option)
- Intel® HD Gfx Gen9: 1x LVDS/eDP
- 32 GByte eMMC SLC
- 1x USB 3.0 (incl. USB 2.0), 3x USB 2.0 from CPU, 1x USB OTG
- 2x serial interface (RX/TX only)
- Intel® High Definition Audio
- 1x PCIe x1 additional w/o onboard LAN, onboard SSD 50 GByte (32 GByte eMMC), 40chip instead of USB3, VGA instead DDR

COMe-cBT6R

- Internal memory 32 GByte on-board, USB OTG
- 4x PCIe 2.0 on PCIe lane 0-2 (3 controllers, 3)
- Option: 4 Lanes if no LAN (3 controllers, 4, x1,1, x4)
- 3 independent Displays
- DDI DP++, DDI DP (shared w/USB), DDI 3: -
  - VGA, Yes, USB 3.0, Dual Channel 18/24bit

COMe-cBt6

- 2x SODIMM for DDR3L-1600/1867 (non ECC)
- ACPI 5.0, S5 Eco
- 2x serial interface (RX/TX only)
- 2x SATA 36a/s
- 10/100/1000 MBit Ethernet
- 2x 32 GByte eMMC SLC (option)
- 4x PCIe Gen 2.0
  - Up to 128 GByte eMMC MLC
- 4k Resolutions, GPIO/SDIO Switch, Security Chip (Support of Kontron Approtect), MIPI-CSI on PEG interface, memory down, Kontron Rapid Shutdown
- eMMC), eDP instead of LVDS, VGA  instead DDI2
- USB 3.0 (incl. USB 2.0), 2x USB 2.0 from CPU, 1x USB OTG
- 2x serial interface (RX/TX only)
- Intel® High Definition Audio
- 1x PCIe x1 additional w/o onboard LAN, onboard SSD 50 GByte (32 GByte eMMC), 40chip instead of USB3, VGA instead DDR

COM e-cAL6 E2 - industrial temperature:

- 0 °C to +60 °C operating, -30 °C to +85 °C non-operating
- 4x USB 3.0/2.0, + 4x USB 2.0
- 3 independent Displays
- DDI DP++, DDI DP (shared w/USB), DDI 3: -
  - VGA, Yes, USB 3.0, Dual Channel 18/24bit
- 4x USB 3.0/2.0, + 4x USB 2.0
- 2x serial interface (RX/TX only)
- Intel® High Definition Audio
- 1x PCIe x1 additional w/o onboard LAN, onboard SSD 50 GByte (32 GByte eMMC), 40chip instead of USB3, VGA instead DDR

Find out more about our offering:

https://www.kontron.com/support-and-services/services/kontron-training-academy
### COM EXPRESS® mini

**Tech Specs At-a-Glance**

#### COMe-mAl10 (E2)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPLIANCE</strong></td>
<td>COM Express® mini, Pin-out Type 10</td>
</tr>
<tr>
<td><strong>DIMENSIONS (W X D)</strong></td>
<td>84 x 55 mm</td>
</tr>
<tr>
<td><strong>CPU</strong></td>
<td></td>
</tr>
<tr>
<td>COMe-mAl10</td>
<td>Intel® Pentium® N4200, 4C, 1.1 / 2.5 GHz, 6 W TDP</td>
</tr>
<tr>
<td></td>
<td>Intel® Celeron® N3350, 2C, 1.3 / 2.4 GHz, 6 W TDP</td>
</tr>
<tr>
<td>COMe-mAl10 E2</td>
<td>Intel® Atom™ x7-E3950, 4C, 1.6 / 2.0 GHz, 12 W TDP</td>
</tr>
<tr>
<td></td>
<td>Intel® Atom™ x5-E3840, 2C, 1.3 / 1.6 GHz, 6.5 W TDP</td>
</tr>
<tr>
<td><strong>MAINTENANCE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>DIMENSIONS (W X D)</strong></td>
<td>84 x 55 mm</td>
</tr>
<tr>
<td><strong>CPU</strong></td>
<td>Intel® Pentium® N4200, 4C, 1.1 / 2.5 GHz, 6 W TDP</td>
</tr>
<tr>
<td></td>
<td>Intel® Celeron® N3350, 2C, 1.3 / 2.4 GHz, 6 W TDP</td>
</tr>
<tr>
<td>COMe-mAl10</td>
<td>Intel® Atom™ x7-E3950, 4C, 1.6 / 2.0 GHz, 12 W TDP</td>
</tr>
<tr>
<td><strong>GRAPHICS CONTROLLER</strong></td>
<td>Intel® HD Graphics (Gen7)</td>
</tr>
<tr>
<td>COMe-mAl10 E2</td>
<td>Intel® HD Graphics (Gen7)</td>
</tr>
<tr>
<td><strong>ETHERNET CONTROLLER</strong></td>
<td>Intel® I211AT</td>
</tr>
<tr>
<td><strong>ETHERNET</strong></td>
<td>10/100/1000 Mb/s Ethernet</td>
</tr>
<tr>
<td><strong>HARD DISK</strong></td>
<td>2x SATA 6 Gb/s</td>
</tr>
<tr>
<td><strong>USB</strong></td>
<td>Up to 64 Gbyte eMMC SLC build option</td>
</tr>
<tr>
<td><strong>PANEL SIGNAL</strong></td>
<td>4x PCIe e, 1x PCIe e</td>
</tr>
<tr>
<td><strong>SERIAL</strong></td>
<td>2 serial interface (RX/ TX only)</td>
</tr>
<tr>
<td><strong>AUDIO</strong></td>
<td>Intel® High Definition Audio</td>
</tr>
<tr>
<td><strong>COMMON FEATURES</strong></td>
<td>S/PDIF, HDMI, Fast-PIC, Staged Watchdog, RTC, MARS</td>
</tr>
<tr>
<td><strong>BIOS</strong></td>
<td>ARN Aptio V</td>
</tr>
<tr>
<td><strong>ON REQUEST</strong></td>
<td>eMMC Flash onboard (up to 64 Gbyte SLC, up to 128 Gbyte MLC), eDP instead of LVDS, General Purpose SPI instead of Boot SPI, AES-NI, USB client</td>
</tr>
<tr>
<td><strong>POWER MANAGEMENT</strong></td>
<td>ACPI 6.0</td>
</tr>
<tr>
<td><strong>POWER SUPPLY</strong></td>
<td>4.75 V – 20 V Wide Range, Single Supply Power</td>
</tr>
<tr>
<td><strong>SPECIAL FEATURES</strong></td>
<td>POSCAP capacitors, Trusted Platform Module TPM 2.0, Security Chip (Support of Kontron Approynce), 4k Resolutions, GPIO / SDD Switch, General Purpose SPI optional, Industrial Temperature Grade versions</td>
</tr>
<tr>
<td><strong>OPERATING SYSTEM</strong></td>
<td>Windows® 10 Enterprise, Windows 10 IoT, Linux, VxWorks</td>
</tr>
<tr>
<td><strong>TEMPERATURE</strong></td>
<td>COMe-mAl10: Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating</td>
</tr>
<tr>
<td></td>
<td>COMe-mAl10 E2: Industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating</td>
</tr>
</tbody>
</table>

#### COMe-mBt10

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPLIANCE</strong></td>
<td>COM Express® mini, Pin-out Type 10</td>
</tr>
<tr>
<td><strong>DIMENSIONS (W X D)</strong></td>
<td>84 x 55 mm</td>
</tr>
<tr>
<td><strong>CPU</strong></td>
<td></td>
</tr>
<tr>
<td>COMe-mBt10</td>
<td>Intel® Atom™ E3845, 4C, 1.91 GHz, 10 W TDP</td>
</tr>
<tr>
<td></td>
<td>Intel® Atom™ E3827, 2C, 1.75 GHz, 8 W TDP</td>
</tr>
<tr>
<td>COMe-mBt10 E2</td>
<td>Intel® Atom™ E3825, 2C, 1.46 GHz, 7 W TDP</td>
</tr>
<tr>
<td><strong>GRAPHICS CONTROLLER</strong></td>
<td>Intel® HD Graphics (Gen7)</td>
</tr>
<tr>
<td>COMe-mBt10 E2</td>
<td>Intel® HD Graphics (Gen7)</td>
</tr>
<tr>
<td><strong>ETHERNET CONTROLLER</strong></td>
<td>Intel® I210IT</td>
</tr>
<tr>
<td><strong>ETHERNET</strong></td>
<td>10/100/1000 Mb/s Ethernet</td>
</tr>
<tr>
<td><strong>HARD DISK</strong></td>
<td>2x SATA 6 Gb/s</td>
</tr>
<tr>
<td><strong>USB</strong></td>
<td>Up to 64 Gbyte eMMC SLC build option</td>
</tr>
<tr>
<td><strong>PANEL SIGNAL</strong></td>
<td>4x PCIe e, 1x PCIe e</td>
</tr>
<tr>
<td><strong>SERIAL</strong></td>
<td>2 serial interface (RX/ TX only)</td>
</tr>
<tr>
<td><strong>AUDIO</strong></td>
<td>Intel® High Definition Audio</td>
</tr>
<tr>
<td><strong>COMMON FEATURES</strong></td>
<td>S/PDIF, HDMI, Fast-PIC, Staged Watchdog, RTC, MARS</td>
</tr>
<tr>
<td><strong>BIOS</strong></td>
<td>ARN Aptio V</td>
</tr>
<tr>
<td><strong>ON REQUEST</strong></td>
<td>eMMC Flash onboard (up to 64 Gbyte SLC, up to 128 Gbyte MLC), eDP instead of LVDS, General Purpose SPI instead of Boot SPI, AES-NI, USB client</td>
</tr>
<tr>
<td><strong>POWER MANAGEMENT</strong></td>
<td>ACPI 6.0</td>
</tr>
<tr>
<td><strong>POWER SUPPLY</strong></td>
<td>4.75 V – 20 V Wide Range, Single Supply Power</td>
</tr>
<tr>
<td><strong>SPECIAL FEATURES</strong></td>
<td>POSCAP capacitors, Trusted Platform Module TPM 2.0, Security Chip (Support of Kontron Approynce), 4k Resolutions, GPIO / SDD Switch, General Purpose SPI optional, Industrial Temperature Grade versions</td>
</tr>
<tr>
<td><strong>OPERATING SYSTEM</strong></td>
<td>Windows® 7, Windows® 8, Windows® 10, Linux, VxWorks</td>
</tr>
<tr>
<td><strong>TEMPERATURE</strong></td>
<td>COMe-mBt10: Commercial temperature: 0 °C to +60 °C operating</td>
</tr>
<tr>
<td></td>
<td>COMe-mBt10 E2: Industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating</td>
</tr>
</tbody>
</table>

#### COMe-mBTc10

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPLIANCE</strong></td>
<td>COM Express® mini, Pin-out Type 10</td>
</tr>
<tr>
<td><strong>DIMENSIONS (W X D)</strong></td>
<td>84 x 55 mm</td>
</tr>
<tr>
<td><strong>CPU</strong></td>
<td></td>
</tr>
<tr>
<td>COMe-mBTc10</td>
<td>Intel® Atom™ E3845, 4C, 1.91 GHz, 10 W TDP</td>
</tr>
<tr>
<td></td>
<td>Intel® Atom™ E3827, 2C, 1.75 GHz, 8 W TDP</td>
</tr>
<tr>
<td>COMe-mBTc10 E2</td>
<td>Intel® Atom™ E3825, 2C, 1.46 GHz, 7 W TDP</td>
</tr>
<tr>
<td><strong>GRAPHICS CONTROLLER</strong></td>
<td>Intel® HD Graphics (Gen7)</td>
</tr>
<tr>
<td>COMe-mBTc10 E2</td>
<td>Intel® HD Graphics (Gen7)</td>
</tr>
<tr>
<td><strong>ETHERNET CONTROLLER</strong></td>
<td>Intel® I210IT</td>
</tr>
<tr>
<td><strong>ETHERNET</strong></td>
<td>10/100/1000 Mb/s Ethernet</td>
</tr>
<tr>
<td><strong>HARD DISK</strong></td>
<td>2x SATA 6 Gb/s</td>
</tr>
<tr>
<td><strong>USB</strong></td>
<td>Up to 64 Gbyte eMMC SLC build option</td>
</tr>
<tr>
<td><strong>PANEL SIGNAL</strong></td>
<td>4x PCIe e, 1x PCIe e</td>
</tr>
<tr>
<td><strong>SERIAL</strong></td>
<td>2 serial interface (RX/ TX only)</td>
</tr>
<tr>
<td><strong>AUDIO</strong></td>
<td>Intel® High Definition Audio</td>
</tr>
<tr>
<td><strong>COMMON FEATURES</strong></td>
<td>S/PDIF, HDMI, Fast-PIC, Staged Watchdog, RTC, MARS</td>
</tr>
<tr>
<td><strong>BIOS</strong></td>
<td>ARN Aptio V</td>
</tr>
<tr>
<td><strong>ON REQUEST</strong></td>
<td>eMMC Flash onboard (up to 64 Gbyte SLC, up to 128 Gbyte MLC), eDP instead of LVDS, General Purpose SPI instead of Boot SPI, AES-NI, USB client</td>
</tr>
<tr>
<td><strong>POWER MANAGEMENT</strong></td>
<td>ACPI 6.0</td>
</tr>
<tr>
<td><strong>POWER SUPPLY</strong></td>
<td>4.75 V – 20 V Wide Range, Single Supply Power</td>
</tr>
<tr>
<td><strong>SPECIAL FEATURES</strong></td>
<td>POSCAP capacitors, Trusted Platform Module TPM 2.0, Security Chip (Support of Kontron Approynce), 4k Resolutions, GPIO / SDD Switch, General Purpose SPI optional, Industrial Temperature Grade versions</td>
</tr>
<tr>
<td><strong>OPERATING SYSTEM</strong></td>
<td>Windows® 7, Windows® 8, Windows® 10, Linux, VxWorks</td>
</tr>
<tr>
<td><strong>TEMPERATURE</strong></td>
<td>COMe-mBTc10: Commercial temperature: 0 °C to +60 °C operating</td>
</tr>
<tr>
<td></td>
<td>COMe-mBTc10 E2: Industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating</td>
</tr>
</tbody>
</table>

---

Find out more about our offering:
https://www.kontron.com/support-and-services/services/kontron-training-academy
COM BASEBOARD DESIGN TRAINING
Kontron Academy Workshop

This training is highly recommended as the knowledge gained will assist with avoiding expensive corrective actions during the run of your project. Kontron experts with field experience will provide instruction to ensure you will understand how to avoid common mistakes.

Training Agenda:
IoT-ready Industrial Computer Platform

- Introduction COM concept with product highlights
- Documentation, specification, support
- COM Express® COM.0 Rev. 2: Types 6 and 10
- ETX® / COM Express® migration paths
- COM Express® Rev. 2, Type 6 and Type 10 Pin-outs
- General layout rules
- Design guide lines
- PCIe / PCIe Express design
- LCD solutions “JILI” cable concept
- Module mounting
- Thermal design & management
- Q&A session

COM EVALUATION BOARDS
minimize installation requirements and reduce dramatically design time. They help to control and cut-out pre-market costs. Evaluation boards are recommended for testing in every design-in.

COM Express® carrier and Evaluation Boards

COMe Ref.Carrier-i T10 TNI
COM Express® Reference Carrier
Type 10 for industrial temperature Specifications

- COM Express® Rev. 2.1, Pin-out Type 10
- nano-ITX Form Factor (120 mm x 120 mm)
- Comprehensive connectivity
- Industrial temperature grade

COM Me Ref.Carrier-i T6 TMI
COM Express® Reference Carrier
Type 6 for industrial temperature Specifications

- COM Express® Rev. 2.1, Pin-out Type 6
- mini-ITX Form Factor (170 mm x 170 mm)
- Comprehensive connectivity
- Industrial temperature grade

COM EvalCarrier T7
COM Express® Evaluation Carrier Type 7

- COM Express® Rev. 3.0, Pin-out Type 7
- ATX Form Factor (305 mm x 244 mm)
- 4x 10GBe support
- 32x PCIe lanes: 1x PCIe x16, 1x PCIe x8, 1x PCIe x4, 4x PCIe x1
- 4x USB 3.0, 2x SATA, 2x Pci32/32, GPHY
- BMC via adapter card

COM EVALUATION BOARDS

Find out more about our offering:
https://www.kontron.com/support-and-services/services/kontron-training-academy

www.kontron.com
About Kontron – An S&T Company

Kontron is a global leader in IoT/embedded computing technology (ECT). As a part of technology group S&T, Kontron offers a combined portfolio of secure hardware, middleware and services for Internet of Things (IoT) and Industry 4.0 applications. With its standard products and tailor-made solutions based on highly reliable state-of-the-art embedded technologies, Kontron provides secure and innovative applications for a variety of industries. As a result, customers benefit from accelerated time-to-market, reduced total cost of ownership, product longevity and the best fully integrated applications overall.

About the Intel® Internet of Things Solutions Alliance

From modular components to market-ready systems, Intel and the 400+ global member companies of the Intel® Internet of Things Solutions Alliance provide scalable, interoperable solutions that accelerate deployment of intelligent devices and end-to-end analytics. Close collaboration with Intel and each other enables Alliance members to innovate with the latest IoT technologies, helping developers deliver first-in-market solutions.