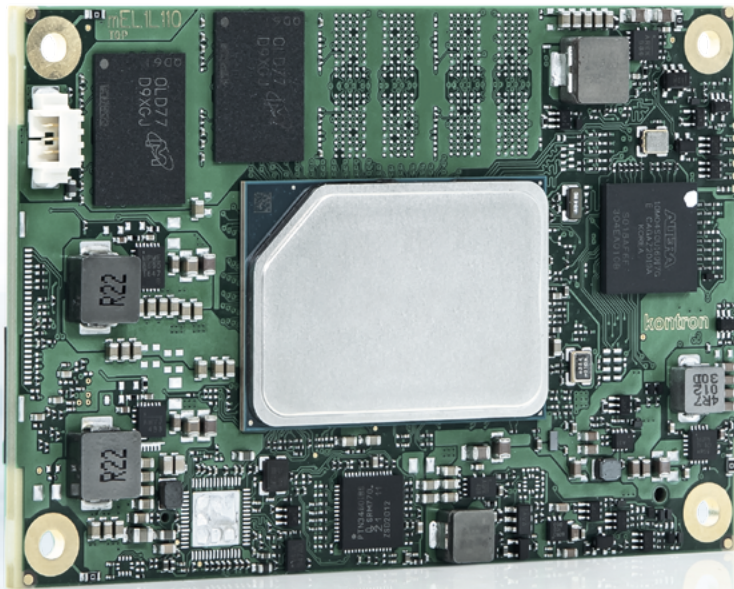


# COMe-mEL10 (E2)

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## COM Express® mini Type 10 with Intel Atom® x6000E, Pentium® and Celeron® Series

- ▶ Low-Power – Performance/Watt optimized form factor solution
- ▶ Up to 16 GByte LPDDR4 memory down (In-Band ECC)
- ▶ 2x USB 3.1/2.0, 6x USB 2.0, USB client optional, 2x SATA, eMMC Flash
- ▶ 1 GbE (optional 2.5 GbE) with TSN support
- ▶ Industrial grade temperature

POSSIBILITIES START HERE

## ► TECHNICAL INFORMATION

|                            |  |
|----------------------------|--|
| <b>COMPLIANCE</b>          | COM Express® mini, Pin-out Type 10   |
| <b>DIMENSIONS (H x W)</b>  | 84 x 55 mm   |
| <b>CPU</b>                 | Intel Atom® x6000E Series, Pentium® and Celeron® Processors<br>For details see table (CPU variants) given below  |
| <b>CHIPSET</b>             | -  |
| <b>MAIN MEMORY</b>         | Up to 16 GByte LPDDR4-4267 memory down (In-Band ECC)   |
| <b>GRAPHICS CONTROLLER</b> | SOC: Intel® HD Gfx Gen11: LVDS/eDP, 1x DP++, up to 4K  |
| <b>ETHERNET CONTROLLER</b> | SOC + LAN PHY GPY115 (GPY215 on request) + 2x optional as SGMII instead of SATA  |
| <b>ETHERNET</b>            | 1 GBit Ethernet (2.5 GBit on request with GPY215) + 2x optional 2.5 GBit   |
| <b>STORAGE</b>             | 2x SATA 6Gb/s, SDIO Interface (shared with GPIO)   |
| <b>FLASH ONBOARD</b>       | eMMC option – up to 128 GByte eMMC MLC   |
| <b>PCI EXPRESS®</b>        | PCIe Gen 3.0 - PCIe lane configurations: 4 x1, 2 x1 + 1 x2, 2 x2   |
| <b>DISPLAY</b>             | DDI: DP++, LVDS: Single Channel 18/24 bit or eDP 1.3   |
| <b>USB</b>                 | 2x USB 3.1 (incl. USB 2.0) + 6x USB 2.0, Port 7 is dual role (Client/Host)   |
| <b>SERIAL</b>              | 2x serial interface (RX/TX only), optional CAN   |
| <b>AUDIO</b>               | Intel® High Definition Audio   |
| <b>OTHER FEATURES</b>      | SPI, LPC, SMB, Fast I <sup>2</sup> C, Staged Watchdog, RTC   |
| <b>SPECIAL FEATURES</b>    | Industrial grade temperature   |
| <b>FEATURES ON REQUEST</b> | eMMC Flash configuration (up to 64 GByte pSLC, up to 128 GByte MLC)<br>eDP instead of LVDS<br>General Purpose SPI instead of Boot SPI<br>USB client, Trusted Platform Module TPM 2.0, de-populated LAN PHY |
| <b>POWER MANAGEMENT</b>    | ACPI 6.0   |
| <b>POWER SUPPLY</b>        | 4.75 V – 20 V Wide Range, Single Supply Power  |
| <b>BIOS</b>                | AMI Aptio V  |
| <b>OPERATING SYSTEM</b>    | Windows® 10, Linux, VxWorks  |
| <b>TEMPERATURE</b>         | COMe-mEL10- commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating<br>COMe-mEL10 E2 - industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating         |
| <b>HUMIDITY</b>            | 93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)  |

## CPU VARIANTS

| BRAND                     | PROCESSOR NUMBER | TDP   | CORES | THREADS | CACHE     | BASE FREQ | MAX TURBO FREQ | GRAPHICS GEN 11 | ECC          | PREMIUM IO             | FUNCTIONAL SAFETY CERTIFIED | USE CONDITION |
|---------------------------|------------------|-------|-------|---------|-----------|-----------|----------------|-----------------|--------------|------------------------|-----------------------------|---------------|
| Intel® Celeron® Processor | J6413            | 10 W  | 4     | 4       | 1.5 MByte | 1.8 GHz   | 3.0 GHz        | 16 EU           | no           | Intel® PSE             | no                          | PC Client     |
| Intel® Pentium® Processor | J6426            | 10 W  | 4     | 4       | 1.5 MByte | 2.0 GHz   | 3.0 GHz        | 32 EU           | no           | Intel® PSE             | no                          | PC Client     |
| Intel® Celeron® Processor | N6211            | 6.5 W | 2     | 2       | 1.5 MByte | 1.2 GHz   | 3.0 GHz        | 16 EU           | no           | Intel® PSE             | no                          | PC Client     |
| Intel® Pentium® Processor | N6415            | 6.5 W | 4     | 4       | 1.5 MByte | 1.2 GHz   | 3.0 GHz        | 16 EU           | no           | Intel® PSE             | no                          | PC Client     |
| Intel Atom® processor     | x6211E           | 6 W   | 2     | 2       | 1.5 MByte | 1.3 GHz   | 3.0 GHz        | 16 EU           | Yes– In Band | Intel® PSE             | no                          | Embedded      |
| Intel Atom® processor     | x6413E           | 9 W   | 4     | 4       | 1.5 MByte | 1.5 GHz   | 3.0 GHz        | 16 EU           | Yes– In Band | Intel® PSE             | no                          | Embedded      |
| Intel Atom® processor     | x6425E           | 12 W  | 4     | 4       | 1.5 MByte | 2.0 GHz   | 3.0 GHz        | 32 EU           | Yes– In Band | Intel® PSE             | no                          | Embedded      |
| Intel Atom® processor     | x6212RE          | 6 W   | 2     | 2       | 1.5 MByte | 1.2 GHz   | n/a            | 16 EU           | Yes– In Band | Intel® PSE, Intel® TCC | no                          | Industrial    |
| Intel Atom® processor     | x6414RE          | 9 W   | 4     | 4       | 1.5 MByte | 1.5 GHz   | n/a            | 16 EU           | Yes– In Band | Intel® PSE, Intel® TCC | no                          | Industrial    |
| Intel Atom® processor     | x6425RE          | 12 W  | 4     | 4       | 1.5 MByte | 1.9 GHz   | n/a            | 32 EU           | Yes– In Band | Intel® PSE, Intel® TCC | no                          | Industrial    |

## BLOCK DIAGRAM

