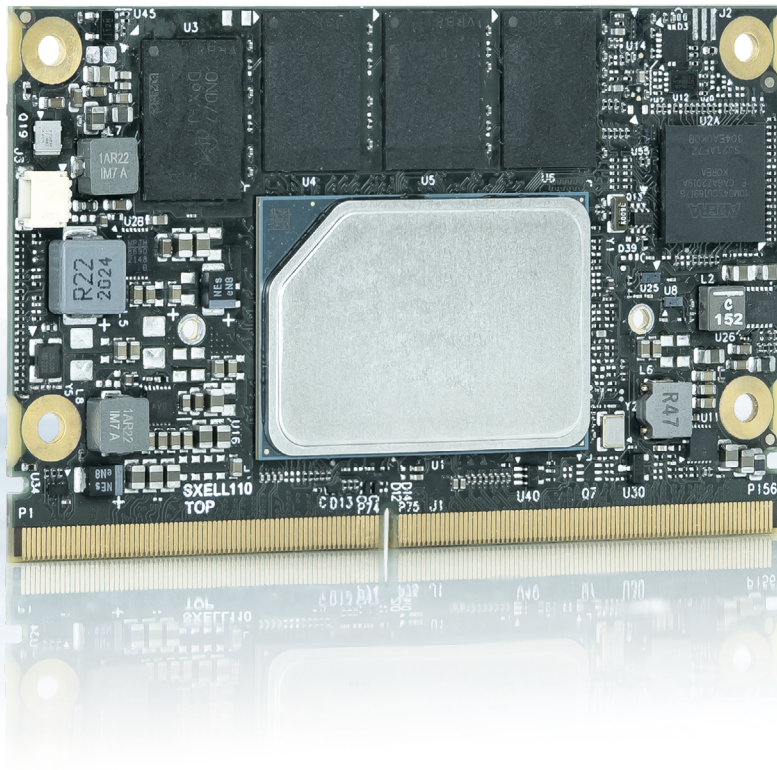


SMARC-sXEL (E2)



Latest Generation Intel Atom[®], Pentium[®] and Celeron[®] Processor Series

- ▶ Up to 16 GByte LPDDR4 memory down with inband ECC support
- ▶ 2x USB 3.0, 4x USB 2.0, 1x SATA, eMMC onboard, up to 2x LAN onmodule + 1 optional via SERDES
- ▶ TSN support
- ▶ Industrial grade temperature

▶ TECHNICAL INFORMATION

| | |
|------------------------|---|
| COMPLIANCE | SMARC module 2.1 |
| DIMENSIONS (H X W X D) | 82 x 50 mm |
| CPU | Intel Atom®/ Pentium®/ Celeron® series For details see table (CPU Variants) given below |
| CHIPSET | - |
| MAIN MEMORY | Up to 16 GByte LPDDR4 memory down with inband ECC support |
| GRAPHICS CONTROLLER | Intel® UHD Gfx Gen11 |
| ETHERNET | Up to 3x 1 Gbit LAN (2x GBE0/1 and 1x optional SGMII via SERDES) |
| STORAGE | 1x SATA 6 Gb/s |
| FLASH ONBOARD | up to 128 GByte eMMC (MLC) |
| PCI EXPRESS® | up to 4x PCIe x1 |
| PANEL SIGNAL | 1x HDMI (on request DP), 1x DP++, 1x LVDS dual channel (on request eDP) |
| USB | 2x USB 3.0 (incl. USB 2.0) + 4x USB 2.0, alternatively USB #3 as OTG |
| SERIAL | 3x serial interfaces (2x RX/TX only) |
| OTHERS FEATURES | HD Audio and I ² S, 5x I ² C, 2x SPI, 14x GPIOs |
| SPECIAL FEATURES | Trusted Platform Module TPM 2.0 Industrial Temperature Grade versions |
| FEATURES ON REQUEST | 4x PCI vs 3x PCIe 1x SERDES eMMC: up to 64 GByte pSLC RAM: from 2 GByte to 16 GByte LPDDR4 |
| BIOS | AMI Aptio V |
| OPERATING SYSTEM | Windows® 10, Enterprise, Windows® 10 IoT, Linux |
| POWER SUPPLY | 3.3 – 5.25 V widerange input |
| TEMPERATURE | SMARC-sXEL: Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating SMARC-sXEL E2: Industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating |
| HUMIDITY | 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 | 1.8 GHz | 3.0 GHz | 32 EU | no | Intel® PSE | no | PC Client |
| Intel® Celeron® Processor | N6211 | 6 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 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 | 1.2 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 | 1.8 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

