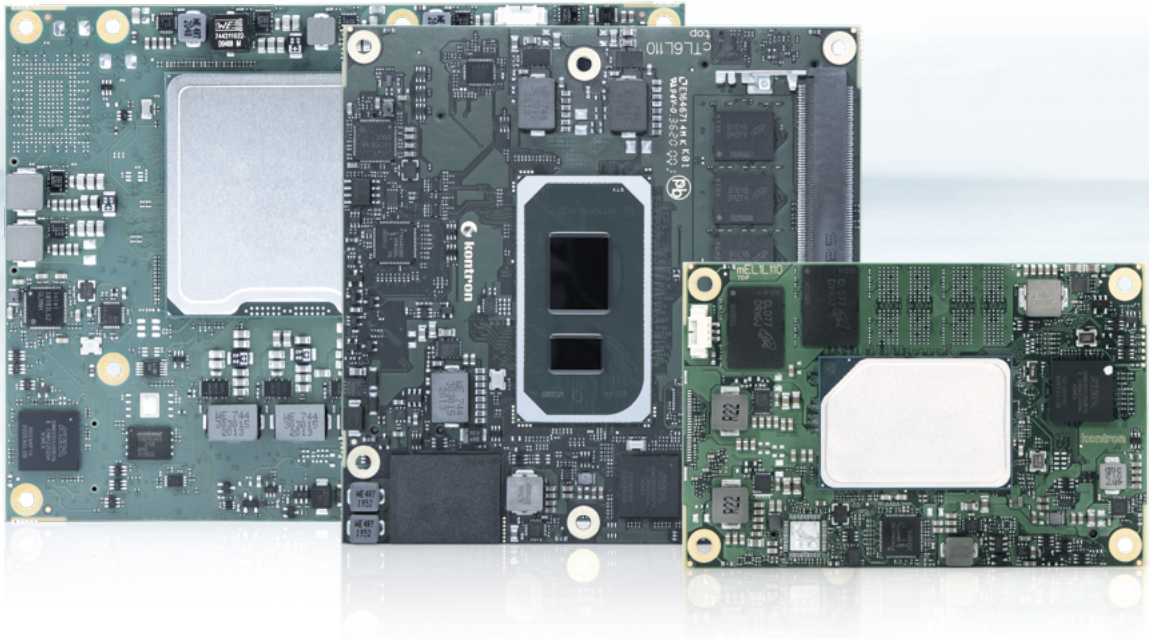
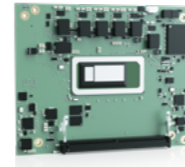


COM Express® Type 6/7/10 STANDARD COMPUTER-ON-MODULES



- ▶ COM HPC
- ▶ COM EXPRESS® BASIC
- ▶ COM EXPRESS® COMPACT
- ▶ COM EXPRESS® MINI
- ▶ COM EXPRESS® CARRIER

COMPUTER-ON-MODULE for High Performance Computing



COMh-sdID

COMh-caAP

COMh-ccAS

COMPLIANCE	COM-HPC® Server, Size D
DIMENSIONS	160 x 160 mm
CPU (SoC)	Intel Xeon® D-2700 Processor Series
CHIPSET	-
MAIN MEMORY	4x DDR4 DIMM sockets for up to 256 GByte RDIMM (512 GByte planned)
GRAPHICS CONTROLLER	-
ETHERNET CONTROLLER	Intel® I226-LM/IT Intel® 2x Quad 25GbE LAN integrated in SoC
ETHERNET	1x 1/2.5 Gb Ethernet with TSN & WOL support 8x Ethernet ports supporting versatile configurations: 100GbE/2x 50GbE/4x 25GbE/2x 25GbE + 4x 10GbE/8x 10GbE
STORAGE	2x SATA 6Gb/s
FLASH ONBOARD	Up to 1 TByte NVMe SSD (on request)
PCI EXPRESS®	32x PCIe Gen4 (2 x16, 4 x8, 8 x4) 16x PCIe Gen3 (2 x8, 4 x4, 8 x2)
DISPLAY	-
USB	4x USB 3.0 / USB 2.0
SERIAL	2x serial interface
AUDIO	-
OTHER FEATURES	SPI, eSPI, Fast I ² C, SMB, Staged Watchdog, RTC
SPECIAL FEATURES	TPM 2.0, Fail-Safe via 2nd SPI Flash
FEATURES ON REQUEST	NVMe SSD
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	12V DC
BIOS	AMI UEFI
OPERATING SYSTEM	Linux, Windows 10 IoT Enterprise, Windows Server 2022
TEMPERATURE	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +80 °C non-operating Industrial temperature: -40 °C to +80 °C operating, -40 °C to +80 °C non-operating
HUMIDITY	93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)

COMPLIANCE	COM HPC® Client, Size A
DIMENSIONS	95 x 120 mm
CPU (SoC)	Intel® Core™ processors (formerly Alder Lake P)
CHIPSET	Intel® 600 Series Chipset Family - On-Package Platform Controller Hub
MAIN MEMORY	2x DDR5 SODIMM dual channel up to 64 GByte ECC or non ECC
GRAPHICS CONTROLLER	Intel® Iris XeGraphics architecture with up to 96 EUs, 4 Independent Displays (up to 8K)
ETHERNET CONTROLLER	Up to 2x Intel® i226
ETHERNET	Up to 2x 2.5 Gb Ethernet with TSN & WOL support (depending on SKU)
STORAGE	2x SATA 6Gb/s
FLASH ONBOARD	Up to 1 TByte NVMe SSD (on request)
PCI EXPRESS®	1x 8 PCIe Gen 4.0 (Alder Lake H-Series, 35-45 W) 2x 4 PCIe Gen 4.0 -> 1x4 shared with onboard NVMe 6+2x PCIe Gen 3.0 via HSIO (shared with SATA) Optional 1x PCIe for BMC
DISPLAY	DDI1: DP++, DDI2: DP++, DDI3: DP++, eDP (DSI, BIOS option), MIPI DSI
USB	2x USB 4.0/ Thunderbolt™; 2x USB 3.2; 8x USB 2.0
SERIAL	2x serial interface
AUDIO	4x Soundwire, I ² S (HW option: Option HD Audio instead of 2x Soundwire)
OTHER FEATURES	SPI, eSPI, Fast I ² C, SMB, Staged Watchdog, RTC
SPECIAL FEATURES	TPM 2.0, Fail-Safe via 2nd SPI Flash
FEATURES ON REQUEST	vPRO (AMT/TXT/AES Support), up to 3x PCIe x1 additional w/o Ethernet & SATA, NVMe SSD
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	8.5 V – 20 V Wide Range, Single Supply Power
BIOS	AMI UEFI
OPERATING SYSTEM	Windows®10, Linux, VxWorks (on request)
TEMPERATURE	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating Optional E1: -25 °C to +75 °C operating, -40 °C to +85 °C non-operating Optional E2 (with Screening): -40 °C to +78 °C operating, -40 °C to +85 °C non-operating
HUMIDITY	93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)

COMPLIANCE	COM HPC® Client, Size C
DIMENSIONS	160 x 120 mm
CPU (SoC)	Intel® Core™ S processors (formerly Alder Lake S)
CHIPSET	Intel® 600 Series Chipset Family
MAIN MEMORY	2x DDR5 SODIMM for up to 64 GByte ECC / non ECC on request: 4x DDR5 SODIMM for up to 128 GByte ECC / non ECC
GRAPHICS CONTROLLER	Intel® UHD Graphics 770 driven by Xe _h -architecture, with up to 32 EUs, 4 Independent Displays (up to 8K)
ETHERNET CONTROLLER	2x Intel® I226 or 1x Intel® I226, 1x integrated MAC with GPHY215
ETHERNET	2x 2.5 Gb Ethernet with TSN & WOL support
STORAGE	2x SATA 6Gb/s
FLASH ONBOARD	-
PCI EXPRESS®	16x PCIe Gen 5.0 lanes (for high performance CPUs) + 8x PCIe Gen 4.0 lanes + 6x PCIe Gen 3.0 lanes
DISPLAY	DDI1: DP++, DDI2: DP++, DDI3: DP++, eDP
USB	4x (2x) USB 3.2
SERIAL	2x serial interface
AUDIO	Soundwire
OTHER FEATURES	SPI, eSPI, Fast I ² C, SMB, Staged Watchdog, RTC
SPECIAL FEATURES	TPM 2.0, Fail-Safe via 2nd SPI Flash
FEATURES ON REQUEST	additional 3rd and 4th SODIMM socket, vPRO (AMT/TXT/AES Support), up to 2x PCIe x1 additional w/o Ethernet
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	12 V ATX and/or Single Supply Power
BIOS	AMI UEFI
OPERATING SYSTEM	Windows®10, Linux, VxWorks (on request)
TEMPERATURE	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating Optional E1: -25 °C to +75 °C operating, -40 °C to +85 °C non-operating Optional E2 (with Screening): -40 °C to +78 °C operating, -40 °C to +85 °C non-operating
HUMIDITY	93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)

COM EXPRESS® basic

Tech Specs At-a-Glance



COM EXPRESS® basic

COMe-bTL6 (E2)

COMe-bV26

COMe-bCL6/-bCL6R E2S

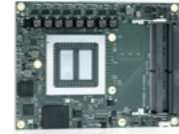
COMPLIANCE	COM Express® basic, Pin-out Type 6
DIMENSIONS (H x W)	125 x 95 mm
CPU	Intel® 11th Generation Xeon®/Core™/Celeron® family: Intel® Xeon® W-11865MRE, 8x 2.6/4.2 GHz, 45/35 W Intel® Xeon® W-11555MRE, 6x 2.6/4.1 GHz, 45/35 W Intel® Xeon® W-11155MRE, 4x 2.4/4.0 GHz, 45/35 W Intel® Xeon® W-11865MLE, 8x 1.5/4.0 GHz, 25 W Intel® Xeon® W-11555MLE, 6x 1.9/4.0 GHz, 25 W Intel® Xeon® W-11155MLE, 4x1.8/2.9 GHz, 25 W Intel® Core™ i7-11850HE, 8x 2.6/4.2 GHz, 45/35 W Intel® Core™ i5-11500HE, 6x 2.6/4.1 GHz, 45/35 W Intel® Core™ i3-11100HE, 4x 2.4/4.0 GHz, 45/35 W Intel® Celeron® 6600HE, 2x 2.6 GHz, 35 W
CHIPSET	Intel® Mobile RM590E/Intel® Mobile QM580E/ Intel® Mobile HM570E
MAIN MEMORY	2x DDR4 SO-DIMM with up to 32 GByte per channel (non-ECC/ECC) (3rd socket on request)
GRAPHICS CONTROLLER	Intel® UHD Graphics
ETHERNET CONTROLLER	Intel® I225LM/I225IT
ETHERNET	Up to 2.5 Gb Ethernet with TSN support (depending on SKU)
HARD DISK	4x SATA 6Gb/s
FLASH ONBOARD	Up to 1 TByte NVMe SSD (on request)
PCI EXPRESS® / PCI SUPPORT	8x PCIe x1, 1x PEG x16
PANEL SIGNAL	DDI1: DP++, DDI2: DP++, DDI3: DP++, VGA: -, LVDS: Dual Channel 18/24bit
USB	4x USB 3.1; 8x USB 2.0
SERIAL	2x serial interface (RX/TX only)
AUDIO	Intel® High Definition Audio
COMMON FEATURES	(G)SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC
BIOS	AMI Aptio V
ON REQUEST	vPRO (AMT/TXT/AES Support), eDP instead of LVDS, VGA, 3rd DDR4 SO-DIMM socket, NVMe SSD, Fail Safe via 2nd SPI Flash
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	8.5 V - 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	POSCAP capacitors, Trusted Platform Module TPM 2.0
TEMPERATURE	Commercial temperature: 0 °C to +60 °C Extended temperature: -25 °C to +75 °C Industrial temperature: -40 °C to +85 °C
OPERATING SYSTEM	Windows® 10, Linux, VxWorks

COMPLIANCE	COM Express® basic pin-out type 6
DIMENSIONS (H x W)	125 x 95 mm
CPU	AMD Embedded V-Series V2000 SoCs: AMD V2748, 8x 2.9 GHz, 35-54 W AMD V2718, 8x 1.7 GHz, 12-25 W AMD V2546, 6x 3.0 GHz, 35-54 W AMD V2516, 6x2.1 GHz, 12-25 W
CHIPSET	Integrated in SoC
MAIN MEMORY	2x DDR4 SO-DIMM with up to 32 GByte per channel (non-ECC/ECC)
GRAPHICS CONTROLLER	AMD "Vega7" Core GPU with up to 7 Compute Units
ETHERNET CONTROLLER	Intel® I225LM
ETHERNET	Up to 2.5 Gb Ethernet with WOL support
HARD DISK	2x SATA 6Gb/s
FLASH ONBOARD	Up to 1 TByte NVMe SSD (on request)
PCI EXPRESS® / PCI SUPPORT	4x PCIe 3.0 (up to 8 GT/s) 4x PCIe 2.0 (up to 5 GT/s) via PCIe switch 1x PEG x8
PANEL SIGNAL	DDI1: DP++, DDI2: DP++, DDI3: DP++, VGA: -, eDP
USB	4x USB 3.1 + 8x USB 2.0
SERIAL	2x serial interface (RX/TX only)
AUDIO	High Definition Audio interface
COMMON FEATURES	SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC
BIOS	AMI Aptio V
ON REQUEST	LVDS (Dual Channel 18/24bit) instead of eDP, VGA, NVMe SSD, Fail Safe via 2nd SPI Flash, industrial grade -40 °C to +85 °C
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	8.5 V - 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	POSCAP capacitors, Trusted Platform Module TPM 2.0
TEMPERATURE	Commercial temperature: 0 °C to +60 °C Extended temperature: -25 °C to +75 °C
OPERATING SYSTEM	Windows®10, Linux

COMPLIANCE	COM Express® basic, Pin-out Type 6
DIMENSIONS (H x W)	125 x 95 mm
CPU	Intel® Xeon® 8th Gen E-2176M, 6x 2.7/4.4 GHz, GT2, 45/35 W 9th Gen E-2276ME, 6x 2.8/4.5 GHz, GT2, 45/35 W 9th Gen E-2276ML, 6x 2.0/4.2 GHz, GT2, 25W 9th Gen E-2254ME, 4x 2.6/3.8 GHz, GT2, 45/35 W 9th Gen E-2254ML, 4x 1.7/3.5 GHz, GT2, 25 W Intel® Core™ 8th Gen i7-8850H, 6x 2.6/4.3 GHz, GT2, 45/35 W 8th Gen i5-8400H, 4x 2.5/4.2 GHz, GT2, 45/35 W 8th Gen i3-8100H, 4x 3.0/- GHz, GT2, 45/35 W 9th Gen i7-9850HE, 6x 2.7/4.4 GHz, GT2, 45/35 W 9th Gen i7-9850HL, 6x 1.9/4.1 GHz, GT2, 25 W 9th Gen i3-9100HL, 4x 1.6/2.9 GHz, GT2, 25 W Intel® Celeron® 9th Gen G4930E, 2x2.4/- GHz, GT2, 35 W 9th Gen G4932E, 2x1.9/- GHz, GT2, 25 W
CHIPSET	Intel® Mobile CM246 (Xeon®)/ Intel® Mobile QM370 (Core™)
MAIN MEMORY	Up to 4x DDR4-2666 SO-DIMM with up to 128 GByte (non-ECC/ECC) (3 rd /4 th socket on request)
GRAPHICS CONTROLLER	Intel® UHD Graphics P630 for Xeon® processor Intel® UHD Graphics 630 for Core™ processors Intel® UHD Graphics 610 for Pentium™/ Celeron® processors
ETHERNET CONTROLLER	Intel® I219LM
ETHERNET	10/100/1000 MBit Ethernet
HARD DISK	4x SATA 6Gb/s
FLASH ONBOARD	Up to 1 TByte NVMe SSD (on request)
PCI EXPRESS® / PCI SUPPORT	8x PCIe x1, 1x PEG x16
PANEL SIGNAL	DDI1: DP++, DDI2: DP++, DDI3: DP++, VGA: -, LVDS: Dual Channel 18/24bit
USB	4x USB 3.1 (incl. USB 2.0) + 4x USB 2.0
SERIAL	2x serial interface (RX/TX only)
AUDIO	Intel® High Definition Audio
COMMON FEATURES	SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC, support of Intel® Optane™ memory technology via PCIe
BIOS	AMI Aptio V
ON REQUEST	vPRO (AMT/TXT/AES Support), eDP instead of LVDS, VGA, Intel® Mobile HM370 Chipset, 3 rd /4 th DDR4 SO-DIMM socket, NVMe SSD, Security Chip
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	8.5 V - 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	POSCAP capacitors, Trusted Platform Module TPM 2.0, 4k Resolutions, Flexible PEG lane configuration by Setup Option, Rapid shutdown (R E2S variants)
TEMPERATURE	Commercial temperature: 0 °C to +60 °C Extended temperature: -25 °C to +75 °C Industrial temperature: -40 °C to +85 °C
OPERATING SYSTEM	Windows® 10, Linux, VxWorks

COM EXPRESS® basic

Tech Specs At-a-Glance



COM EXPRESS® basic

COMPLIANCE
DIMENSIONS (H x W)
CPU
CHIPSET
MAIN MEMORY
GRAPHICS CONTROLLER
ETHERNET CONTROLLER
ETHERNET
HARD DISK
FLASH ONBOARD
PCI EXPRESS® / PCI SUPPORT
PANEL SIGNAL
USB
SERIAL
AUDIO
COMMON FEATURES
BIOS
ON REQUEST
POWER MANAGEMENT
POWER SUPPLY
SPECIAL FEATURES
TEMPERATURE
OPERATING SYSTEM

COMe-bID7

COM Express® Basic, Pin-out Type 7
125 x 95 mm
Intel® Xeon® D-1749NT, 90 W, 10 core, 3.0 GHz Intel® Xeon® D-1735TR, 59 W, 8 core, 2.2 GHz Intel® Xeon® D-1718T, 46 W, 4 core, 2.6 GHz Intel® Xeon® D-1747NTE, 80 W, 10 core, 2.5 GHz, ind. temp. Intel® Xeon® D-1746TER, 67/56 W, 10 core, 2.0 GHz, ind. temp. Intel® Xeon® D-1732TE, 52 W, 8 core, 1.9 GHz, ind. temp. Intel® Xeon® D-1715TER, 50 W, 4 core, 2.4 GHz, ind. temp.
-
2x DDR4 SODIMM for up to 64 GByte ECC / non ECC on request: 4x DDR4 SODIMM for up to 128 GByte ECC / non ECC
-
Intel® I225LM/IT Intel® Quad 10GbE LAN integrated in SoC
1x 1/2.5 Gb (1/2.5 GBASE-T) 4x 10GbE (10 GBASE-KR)
2x SATA 6Gb/s
Up to 1 TByte NVMe SSD (on request)
16x PCIe Gen4 (1 x16, 2 x8, 4 x4) 16x PCIe Gen3 (2 x8, 4 x4, 8 x2)
-
4x USB 3.0 / USB 2.0
2x serial interface (RX/TX only)
-
SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC
AMI UEFI
NVMe SSD, additional 3 rd and 4 th SODIMM socket
ACPI 6.0
8.5 V – 20 V Wide Range, Single Supply Power
TPM 2.0
Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating Industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating
Linux, Windows 10 IoT Enterprise, Windows Server 2022

COMe-bEP7

COM Express® Basic, Pin-out Type 7
125 x 95 mm
Commercial Temperature: SP4r2: AMD E3101 4C/4T, 35 W TDP, 2.1 GHz (2.9 GHz) AMD E3151 4C/8T, 45 W TDP, 2.7 GHz (2.9 GHz) AMD E3201 8C/8T, 30 W TDP, 1.5 GHz (3.1 GHz) AMD E3251 8C/16T, 55 W TDP, 2.5 GHz (3.1 GHz) SP4: AMD E3351 12C/24T, 65-80 W TDP, 1.9 GHz (3.0 GHz) AMD E3451 16C/32T, 85-100 W TDP, 2.45 GHz (3.0 GHz) Industrial Temperature: SP4r2: AMD E3255 8C/16T, 30-55 W TDP, 2.0/2.5 GHz (3.1 GHz)
Integrated in SoC
2x DDR4 SODIMM for up to 64 GByte non-ECC/ECC memory SP4: 4x DDR4 SODIMM for up to 128 GByte on request
-
Internet i210 2x dual 10GbE LAN integrated in SoC
1x 10/100/1000 MBit Ethernet 4x 10GbE Interfaces (KR)
2x SATA
Up to 1 TByte NVMe SSD (on request)
SP4r2: 24x PCIe Gen 3.0 SP4: 32x PCIe Gen 3.0
-
4x USB 3.1, 4x USB 2.0
2x serial interface
-
SPI Flash, LPC, SMB, Dual Staged Watchdog, RTC
AMI UEFI
3 rd /4 th DDR4 SO-DIMM socket, NVMe SSD
OS ACPI PM support for Critical Shutdown
ATX, 8.5V- 20 V Wide Range Single Supply
TPM
Commercial temperature: 0 °C to 60 °C Industrial temperature: -40 °C to 85 °C
Linux x64 – Ubuntu, Windows Server x64 2016

COMe-bBD7/-bBD7R E2

COM Express® Basic, Pin-out Type 7
125 x 95 mm
Intel® Xeon® Processor D-1577, 16 C, 1.3 GHz, 24 MByte, 45 W, Intel® Xeon® Processor D-1548, 8 C, 2.0 GHz, 12 MByte, 45 W, Intel® Xeon® Processor D-1537, 8 C, 1.7 GHz, 12 MByte, 35 W, Intel® Xeon® Processor D-1528, 6 C, 1.9 GHz, 9 MByte, 35 W, Intel® Xeon® Processor D-1527, 4 C, 2.2 GHz, 6 MByte, 35 W, Intel® Xeon® Processor D-1517, 4 C, 1.6 GHz, 6 MByte, 25 W, Intel® Pentium® Processor D1508, 2 C, 2.2 GHz, 3 MByte, 25 W, Intel® Xeon® Processor D-1559, 12 C, 1.5 GHz, 18 MByte, 45 W, ind. Temp Intel® Xeon® Processor D-1539, 8 C, 1.6 GHz, 12 MByte, 35 W, ind. Temp Intel® Pentium® Processor D1519, 4 C, 1.5 GHz, 6 MByte, 25 W, ind. Temp
-
2x DDR4 SODIMM dual channel up to 2 x 32 GByte ECC or non ECC
-
Intel® I210IT (uses one lane of PCIe 2.0) Intel® Dual 10GbE LAN integrated in SoC
1x 10/100/1000 MBit Ethernet Dual 10GbE Interface (KR) and NC-SI
2x SATA3, 6Gb/s
-
24x PCIe 3.0 (6 controllers, x16, x8, x4, x1 operation) 8x PCIe 2.0 (8 controllers, x8, x4, x1 configuration), one lane used by onboard 1 GbE LAN controller
-
4x USB 3.0/2.0
2x serial interface (RX/TX only)
-
SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC
AMI UEFI
-
ACPI 5.0
ATX, 8.5 V – 20 V Wide Range, Single Supply Power
Trusted Platform Module TPM 2.0
COMe-bBD7 - Commercial temperature: 0 °C to +60 °C COMe-bBD7R E2 - Industrial temperature: -40 °C to +85 °C
Linux, Windows® Server 2012/2012 R2/2016

COMe-bDV7/-bDV7R E2

COM Express® Basic, Pin-out Type 7
125 x 95 mm
Commercial temperature: Intel Atom® Processor C3958, 16C, 2.0GHz, 31W TDP Intel Atom® Processor C3858, 12C, 2.0GHz, 25W TDP Intel Atom® Processor C3758, 8C, 2.2GHz, 25W TDP Intel Atom® Processor C3558, 4C, 2.2GHz, 16W TDP Industrial temperature: Intel Atom® Processor C3808, 12C, 2.0 GHz, 25 W TDP Intel Atom® Processor C3708, 8C, 1.7 GHz, 17 W TDP Intel Atom® Processor C3508, 4C, 1.5 GHz, 11 W TDP Intel Atom® Processor C3308, 2C, 1.6 GHz, 9 W TDP
-
2x DDR4 SODIMM for up to 2x 32 GByte ECC/non ECC on request: 4x DDR4 SODIMM for up to 4x 32 GByte ECC/non ECC
-
Intel® I210IT (uses one lane of PCIe 3.0) Intel® Quad 10GbE LAN integrated in SoC
1x 10/100/1000 MBit Ethernet Up to 4x 10GbE Interfaces (KR) – depending on C3000 SKU NC-SI support
Up to 2x SATA3, 6Gb/s
eMMC 5.1 up to 64 GByte pSLC or 128 GByte MLC (build option)
Up to 14x PCIe 3.0 lanes - depending on C3000 SKU
-
Up to 3x USB 3.0/4x USB 2.0
2x serial interface (RX/TX only)
-
SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC
AMI UEFI
eMMC size, additional 2 SODIMM sockets for overall 4 SODIMM sockets
ACPI 6.0
ATX, 8.5 V – 20 V Wide Range, Single Supply Power
Trusted Platform Module TPM 2.0
Commercial temperature 0 °C - 60 °C, Industrial temperature -40 °C to +85 °C
Linux, Windows® Server 2012/2012 R2/2016

COM EXPRESS® compact

low power mobile



COM EXPRESS® compact

COMe-cAP6

COMPLIANCE	COM Express® Compact Pin-out Type 6
DIMENSIONS (H x W)	95 x 95 mm
CPU	Intel® 12th Generation Core™/ Celeron® family Intel® Core™ i7-12800HE, 8x1.8/3.5 GHz, 6x2.4/4.6 GHz 45/35 W Intel® Core™ i5-12600HE, 8x1.8/3.3 GHz, 4x2.5/4.5 GHz, 45/35 W Intel® Core™ i3-12300HE, 4x1.5/3.3 GHz, 4x1.9/4.3 GHz, 45/35 W Intel® Core™ i7-1270PE, 8x1.2/3.3 GHz, 6x1.8/4.3 GHz, 28/20 W Intel® Core™ i5-1250PE, 8x1.2/3.3 GHz, 4x1.7/4.4 GHz, 28/20 W Intel® Core™ i3-1220PE, 4x1.2/3.2 GHz, 4x1.5/4.2 GHz, 28/20 W Intel® Core™ i7-1265UE, 8x1.2/3.5 GHz, 2x1.7/4.7, 28/15/12 W Intel® Core™ i5-1245UE, 8x1.1/3.3 GHz, 2x1.5/4.4 GHz, 28/15/12 W Intel® Core™ i3-1215UE, 6x0.9/3.3 GHz, 2x1.2/4.4 GHz, 28/15/12 W Intel® Celeron® 7305E, 4x0.9 GHz, 1x1.0 GHz, 15/12 W
CHIPSET	-
MAIN MEMORY	2x LPDDR5 up to 64 GByte non ECC with up to 4 RAM chips
GRAPHICS CONTROLLER	Intel® XE Graphics architecture
ETHERNET CONTROLLER	Intel® i226
ETHERNET	Up to 2.5Gb Ethernet with TSN & WOL support
HARD DISK	Up to 2x SATA 6Gb/s (on request)
FLASH ONBOARD	Up to 1 TByte NVMe SSD (on request)
PCI EXPRESS® / PCI SUPPORT	6x PCIe Gen 3.0 (8GT/s); (7x without SATA, 8x without Ethernet & SATA) PEG #0-7: 1x 4; optional NVMe on PEG Port #4-7 1x 4 PEG #8-15: 1x 8 (only for selected CPUs)
PANEL SIGNAL	DDI1: DP++, DDI2: DP++, DDI3: DP++, LVDS: Dual Channel 18/24bit, optional eDP; optional up to 2x Thunderbolt
USB	4x USB 3.2; 8x USB 2.0; optional up to 2x USB 4.0
SERIAL	2x serial interface (RX/TX only)
AUDIO	High Definition Audio interface; option for soundwire (on request)
COMMON FEATURES	SPI (according to COMe 3.1), LPC, SMB, Fast I ² C, Dual Staged Watchdog, optional RTC, support of Intel® Optane™ memory technology via PCIe
BIOS	AMI UEFI
ON REQUEST	vPRO (AMT/TXT/AES Support), eDP instead of LVDS, up to 2x PCIe x1 additional w/o Ethernet & SATA, NVMe SSD, Fail Save via 2nd SPI Flash
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	8.5 V – 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	Trusted Platform Module TPM 2.0
TEMPERATURE	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating Extended temperature (planned): -25 °C to +75 °C operating, -30 °C to +85 °C non-operating (by screening; on request)
OPERATING SYSTEM	Windows®10, Linux

COMe-cTL6 (E2)

COMPLIANCE	COM Express® Compact Pin-out Type 6
DIMENSIONS (H x W)	95 x 95 mm
CPU	Intel® 11th Generation Core™/ Celeron® family Intel® Core™ i7-1185G7E, 4x 1.8 GHz, 28/15/12 W Intel® Core™ i5-1145G7E, 4x 1.5 GHz, 28/15/12 W Intel® Core™ i3-1115G4E, 2x 2.2 GHz, 28/15/12 W Intel® Celeron® 6305E, 2x 1.8 GHz, 15 W Intel® Core™ i7-1185GRE, 4x 1.8 GHz, 28/15/12 W Intel® Core™ i5-1145GRE, 4x 1.5 GHz, 28/15/12 W Intel® Core™ i3-1115GRE, 2x 2.2 GHz, 28/15/12 W
CHIPSET	Integrated SoC
MAIN MEMORY	1x DDR4 SO-DIMM up to 32 GByte, 2nd channel DDR4 memory down up to 16 GByte
GRAPHICS CONTROLLER	Intel® Iris®Xe Graphics on i7/i5 processors Intel® UHD Graphics on i3/Celeron® processors
ETHERNET CONTROLLER	Intel® I225LM/I225IT
ETHERNET	Up to 2.5Gb Ethernet with TSN support (depending on SKU)
HARD DISK	2x SATA 6Gb/s
FLASH ONBOARD	Up to 1 TByte NVMe SSD (on request)
PCI EXPRESS® / PCI SUPPORT	5x PCIe 3.0 (On request: 6x without Ethernet, up to 8x without Ethernet & SATA) 1x4 PCIe 4.0 on PEG Lanes #0-3
PANEL SIGNAL	DDI1: DP++, DDI2: DP++, DDI3: DP++, VGA: -, LVDS: Dual Channel 18/24bit
USB	4x USB 3.1 (incl. USB 2.0) + 4x USB 2.0
SERIAL	2x serial interface (RX/TX only)
AUDIO	High Definition Audio interface
COMMON FEATURES	(G)SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC
BIOS	AMI Aptio V
ON REQUEST	vPRO (AMT/TXT/AES Support), eDP instead of LVDS, VGA, up to 3x PCIe x1 additional w/o Ethernet & SATA, NVMe SSD, Fail Safe via 2nd SPI Flash
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	8.5 V – 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	POSCAP capacitors, Trusted Platform Module TPM 2.0
TEMPERATURE	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating Extended temperature: -25 °C to +75 °C operating, -30 °C to +85 °C non-operating Industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating
OPERATING SYSTEM	Windows®10, Linux, VxWorks

COMe-cVR6 (E2)

COMPLIANCE	COM Express® compact Pin-out Type 6
DIMENSIONS (H x W)	95 x 95 mm
CPU	AMD V1807B, 4x 3.35 GHz (3.75 GHz), 35-54 W AMD V1756B, 4x 3.25 GHz (3.6 GHz), 35-54 W AMD V1605B, 4x 2.0 GHz (3.6 GHz), 12-25 W AMD V1202B, 2x 2.5 GHz (3.4 GHz), 12-25 W AMD V1404I, 4x 2.0 GHz (3.6 GHz), 12-25 W AMD R1606G, 2x 2.6 GHz (3.5 GHz), 12-25 W AMD R1505G, 2x 2.4 GHz (3.3 GHz), 12-25 W
CHIPSET	Integrated SoC
MAIN MEMORY	1x DDR4 SO-DIMM up to 32 GByte, 2nd channel DDR4 memory down up to 16 GByte (non-ECC/ECC)
GRAPHICS CONTROLLER	Integrated AMD Vega Graphics (GFX9)
ETHERNET CONTROLLER	Intel® I210/I211
ETHERNET	10/100/1000 MBit Ethernet
HARD DISK	2x SATA 6Gb/s
FLASH ONBOARD	-
PCI EXPRESS® / PCI SUPPORT	Up to 5x PCIe 3.0 (On request: 6x without Ethernet) On request: Up to 8x PCIe x1 with 4x PCIe 3.0 + 4x PCIe 2.0 Up to 1x PEG x8
PANEL SIGNAL	DDI1: DP++, DDI2: DP++, DDI3: DP (R-Series: DDI1 & DDI2 only), VGA: -, LVDS: Dual Channel 18/24 bit
USB	3x USB 3.x (incl. USB 2.0) + 5x USB 2.0
SERIAL	2x serial interface (RX/TX only)
AUDIO	High Definition Audio interface
COMMON FEATURES	SPI, LPC, SMB, Fast I ² C, 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
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	8.5 V – 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	POSCAP capacitors, Trusted Platform Module TPM 2.0
TEMPERATURE	COMe-cVR6 - commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating COMe-cVR6 E2 - industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating
OPERATING SYSTEM	Windows® 10, Linux

COM EXPRESS® compact

low power mobile



COM EXPRESS® compact

COMe-cWL6 (E2S)

COMPLIANCE	COM Express® Compact Pin-out Type 6
DIMENSIONS (H x W)	95 x 95 mm
CPU	Intel® Core™ i7-8665UE, 4x 1.7 GHz, GT2, 15 W Intel® Core™ i5-8365UE, 4x 1.6 GHz, GT2, 15 W Intel® Core™ i3-8145UE, 2x 2.2 GHz, GT2, 15 W Intel® Celeron® 4305UE, 2x 2.0 GHz, GT1, 15 W
CHIPSET	Integrated SoC
MAIN MEMORY	1x DDR4 SO-DIMM up to 32 GByte, 2nd channel DDR4 memory down up to 16 GByte
GRAPHICS CONTROLLER	Intel® UHD Graphics 620 (Celeron® 4305UE: Intel® UHD Graphics 610)
ETHERNET CONTROLLER	Intel® I219LM
ETHERNET	10/100/1000 MBit Ethernet
HARD DISK	2x SATA 6Gb/s
FLASH ONBOARD	Up to 1 TByte NVMe SSD (on request)
PCI EXPRESS® / PCI SUPPORT	5x PCIe 3.0 (On request: 6x without Ethernet, up to 8x without Ethernet & SATA) 4x PCIe 3.0 on PEG Lanes #0-3
PANEL SIGNAL	DDI1: DP++, DDI2: DP++, DDI3: -, VGA: -, LVDS: Dual Channel 18/24 bit
USB	4x USB 3.1 (incl. USB 2.0) + 4x USB 2.0
SERIAL	2x serial interface (RX/TX only)
AUDIO	High Definition Audio interface
COMMON FEATURES	SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC, support of Intel® Optane™ memory technology via PCIe
BIOS	AMI Aptio V
ON REQUEST	vPRO (AMT/TXT/AES Support), eDP instead of LVDS, VGA, up to 3x PCIe x1 additional w/o onboard LAN & SATA, NVMe SSD, Security Chip
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	8.5 V – 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	POSCAP capacitors, Trusted Platform Module TPM 2.0
TEMPERATURE	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating Extended temperature: -25 °C to +75 °C operating, -30 °C to +85 °C non-operating Industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating
OPERATING SYSTEM	Windows® 10, Linux, VxWorks

COMe-cEL6 (E2)

COMPLIANCE	COM Express® compact Pin-out Type 6
DIMENSIONS (H x W)	95 x 95 mm
CPU	Intel Atom® x6000E Series, Pentium® and Celeron® Processors Intel® Celeron® J6413, 4C, 1.8/3.0 GHz, 10 W TDP Intel® Pentium® J6426, 4C, 2.0/3.0 GHz, 10 W TDP Intel® Celeron® N6211, 2C, 1.3/3.0 GHz, 6.5 W TDP Intel® Pentium® N6415, 4C, 1.2/3.0 GHz, 6.5 W TDP Intel Atom® x6211E, 2C, 1.3/3.0 GHz, 6 W TDP Intel Atom® x6413E, 4C, 1.5/3.0 GHz, 9 W TDP Intel Atom® x6425E, 4C, 2.0/3.0 GHz, 12 W TDP Intel Atom® x6212RE, 2C, 1.2/n.a. GHz, 6 W TDP Intel Atom® x6414RE, 4C, 1.5/n.a. GHz, 9 W TDP Intel Atom® x6425RE, 4C, 1.9/n.a. GHz, 12 W TDP
CHIPSET	-
MAIN MEMORY	Up to 32 GByte DDR4-3200 via 2x SODIMM sockets (In-Band ECC)
GRAPHICS CONTROLLER	SOC: Intel® HD Gfx Gen11: 1x LVDS/eDP (3840 x 2160 @ 60 Hz) 2x DP (++) on DDI1/DDI2 up to 4K
ETHERNET CONTROLLER	SOC + LAN PHY GPHY115 (GPHY215 on request)
ETHERNET	1 GBit Ethernet (2.5 GBit on request with GPHY215)
HARD DISK	2x SATA 6Gb/s, SDIO Interface (shared with GPIO)
FLASH ONBOARD	eMMC option – up to 128 GByte eMMC MLC
PCI EXPRESS® / PCI SUPPORT	6x PCIe Gen 3.0 lanes - PCIe lane configurations: 1 x4 / 2 x2 / 4 x1 + 1 x2 / 2 x1
PANEL SIGNAL	DDI 1/2: DP++, LVDS: Dual Channel up to 48-bit or eDP on request
USB	Default: 2x USB 3.1 (incl. USB 2.0) + 6x USB 2.0 Option: 4x USB 3.1 (incl. USB 2.0) + 4x USB 2.0 USB 2.0 port7 does support dual role (Client/Host)
SERIAL	2x serial interface (RX/TX only), optional CAN
AUDIO	Intel® High Definition Audio
COMMON FEATURES	SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC
BIOS	AMI Aptio V
ON REQUEST	eMMC Flash configuration (up to 64 GByte pSLC, up to 128 GByte MLC) eDP instead of LVDS General Purpose SPI instead of Boot SPI eSPI instead of LPC to the COMe connector 4x USB3.1 w/ add USB-Hub instead of 2x USB 3.1 USB client, Trusted Platform Module TPM 2.0, de-populated LAN PHY
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	8.5 V – 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	
TEMPERATURE	COMe-cEL6- commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating COMe-cEL6 E2 - industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating
OPERATING SYSTEM	Windows®10, Linux, VxWorks

COMe-cDV7(E2)

COMPLIANCE	COM Express compact Pin-out Type 6
DIMENSIONS (H x W)	95 x 95 mm
CPU	Intel® Core™ i7-6600U, 2x 2.60 GHz, GT3, 15 W Intel® Core™ i5-6300U, 2x 2.40 GHz, GT3, 15 W Intel® Core™ i3-6100U, 2x 2.30 GHz, GT2, 15 W Intel® Celeron® Processor 3955U, 2x 2.0 GHz, GT1, 15 W
CHIPSET	Integrated SoC
MAIN MEMORY	1x DDR4 SO-DIMM up to 16 GByte, 2nd channel DDR4- memory down up to 8 GByte
GRAPHICS CONTROLLER	Intel® HD Graphics 520 (Celeron® 3955U: Intel® HD Graphics 510)
ETHERNET CONTROLLER	Intel® I219LM
ETHERNET	10/100/1000 MBit Ethernet
HARD DISK	2x SATA 6Gb/s
FLASH ONBOARD	up to 32 GByte SLC eMMC (depending on SKU - standard feature or available on request)
PCI EXPRESS® / PCI SUPPORT	5x PCIe3.0 on PCIe lane 0-4 (3.0 only i5/ i7 SKUs) 5 controllers, 5 x1, 1 x4 + 1x 1 Option: 6 Lanes if no LAN 4x PCIe3.0 on PEG Lanes 0-3 (3.0 only i5/ i7 SKUs) 1 Controller, 1 x4 or 1 x2 or 1 x1, (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) + 4x USB 2.0
SERIAL	2x serial interface (RX/TX only)
AUDIO	Intel® High Definition Audio
COMMON FEATURES	SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC, MARS
BIOS	AMI Aptio V
ON REQUEST	vPRO (AMT/TXT/AES Support), eDP instead of LVDS, 1x PCIe x1 additional w/o onboard LAN, max. 32 GByte SLC eMMC, Security Chip, industrial grade -40 °C to +85 °C
POWER MANAGEMENT	ACPI 6.0, S5 Eco
POWER SUPPLY	8.5 V – 20 V Wide Range ATX, Single Supply Power
SPECIAL FEATURES	POSCAP capacitors, Trusted Platform Module TPM 2.0
TEMPERATURE	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating Extended temperature: -25 °C to +75 °C operating, -30 °C to +85 °C non-operating
OPERATING SYSTEM	Windows® 10, Windows® 8.1, Windows® 7, WES7, Linux, VxWorks

COM EXPRESS® mini

Tech Specs At-a-Glance



COM EXPRESS® mini

COMPLIANCE	COM Express® mini, Pin-out Type 10
DIMENSIONS (H x W)	84 x 55 mm
CPU	Intel Atom® x6000E Series, Pentium® and Celeron® Processors Intel® Celeron® J6413, 4C, 1.8/3.0 GHz, 10 W TDP Intel® Pentium® J6426, 4C, 2.0/3.0 GHz, 10 W TDP Intel® Celeron® N6211, 2C, 1.2/3.0 GHz, 6.5 W TDP Intel® Pentium® N6415, 4C, 1.2/3.0 GHz, 6.5 W TDP Intel Atom® x6211E, 2C, 1.3/3.0 GHz, 6 W TDP Intel Atom® x6413E, 4C, 1.5/3.0 GHz, 9 W TDP Intel Atom® x6425E, 4C, 2.0/3.0 GHz, 12 W TDP Intel Atom® x6212RE, 2C, 1.2/n.a. GHz, 6 W TDP Intel Atom® x6414RE, 4C, 1.5/n.a. GHz, 9 W TDP Intel Atom® x6425RE, 4C, 1.9/n.a. GHz, 12 W TDP
MAIN MEMORY	Up to 16 GByte LPDDR4-4267 memory down (In-Band ECC)
GRAPHICS CONTROLLER	SOC: Intel® HD Gfx Gen11: LVDS/eDP, 1x DP++, up to 4K
ETHERNET CONTROLLER	SOC + LAN PHY GPHY115 (GPY215 on request) + 2x optional as SGMII instead of SATA
ETHERNET	1 GBit Ethernet (2.5 GBit on request with GPY215) + 2x optional 2.5 GBit
HARD DISK	2x SATA 6Gb/s, SDIO Interface (shared with GPIO)
FLASH ONBOARD	eMMC option – up to 128 GByte eMMC MLC
PCI EXPRESS® / PCI SUPPORT	PCIe Gen 3.0 - PCIe lane configurations: 4 x1, 2 x1 + 1 x2, 2 x2
PANEL SIGNAL	DDI: DP++, LVDS: Single Channel 18/24 bit or eDP 1.3
USB	2x USB 3.1 (incl. USB 2.0) + 6x USB 2.0, Port 7 is dual role (Client/Host)
SERIAL	2x serial interface (RX/TX only), optional CAN
AUDIO	Intel® High Definition Audio
COMMON FEATURES	SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC
BIOS	AMI Aptio V
ON REQUEST	eMMC Flash configuration (up to 64 GByte pSLC, up to 128 GByte MLC) eDP instead of LVDS General Purpose SPI instead of Boot SPI USB client, Trusted Platform Module TPM 2.0, de-populated LAN PHY
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	4.75 V – 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	
OPERATING SYSTEM	Windows® 10, Linux, VxWorks
TEMPERATURE	COMe-mEL10- commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating COMe-mEL10 E2 - industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating

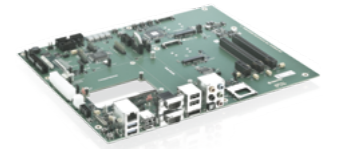
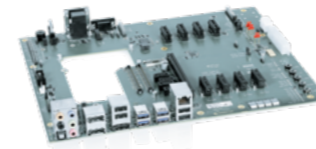
COMe-m4AL10

COMPLIANCE	COM Express® mini, Pin-out Type 10
DIMENSIONS (H x W)	84 x 55 mm
CPU	COMe-m4AL10: Intel® Pentium® N4200, 4C, 1.1/2.5 GHz, 6 W TDP Intel® Celeron® N3350, 2C, 1.1/2.4 GHz, 6 W TDP COMe-m4AL10 E2: Intel Atom® x7-E3950, 4C, 1.6/2.0 GHz, 12 W TDP Intel Atom® x5-E3940, 4C, 1.6/1.8 GHz, 9.5 W TDP Intel Atom® x5-E3930, 2C, 1.3/1.8 GHz, 6.5 W TDP
MAIN MEMORY	Up to 16 GByte LPDDR4-2400 memory down (non ECC)
GRAPHICS CONTROLLER	Intel® HD Gfx Gen9
ETHERNET CONTROLLER	COMe-m4AL10: Intel® I211AT COMe-m4AL10 E2: Intel® I210IT
ETHERNET	10/100/1000 MBit Ethernet
HARD DISK	2x SATA 6 Gb/s
FLASH ONBOARD	to 64 GByte pSLC or 128GByte MLC (build option)
PCI EXPRESS® / PCI SUPPORT	4x PCIe x1
PANEL SIGNAL	DDI: DP++, LVDS: Single Channel 18/24 bit or eDP
USB	2x USB 3.0 (incl. USB 2.0) 6x USB 2.0 Port 7 is dual role (Client/Host)
SERIAL	2x serial interface (RX/TX only)
AUDIO	Intel® High Definition Audio
COMMON FEATURES	SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC, MARS
BIOS	AMI Aptio V
ON REQUEST	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
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	4.75 V – 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	POSCAP capacitors, Trusted Platform Module TPM 2.0, Security Chip (Support of Kontron Appprotect), 4k Resolutions, GPIO / SDIO Switch, General Purpose SPI optional, Industrial Temperature Grade versions
OPERATING SYSTEM	Windows® 10 Enterprise, Windows 10 IoT, Linux, VxWorks
TEMPERATURE	COMe-m4AL10 Commercial temperature: 0 °C to +60 °C operating / -30 °C to +85 °C non-operating COMe-m4AL10 E2 Industrial temperature: -40 °C to +85 °C operating / -40 °C to +85 °C non-operating

COMe-mAL10 (E2)

COMPLIANCE	COM Express® mini, Pin-out Type 10
DIMENSIONS (H x W)	84 x 55 mm
CPU	COMe-mAL10: Intel® Pentium® N4200, 4C, 1.1/2.5 GHz, 6 W TDP Intel® Celeron® N3350, 2C, 1.1/2.4 GHz, 6 W TDP COMe-mAL10 E2: Intel Atom® x7-E3950, 4C, 1.6/2.0 GHz, 12 W TDP Intel Atom® x5-E3940, 4C, 1.6/1.8 GHz, 9.5 W TDP Intel Atom® x5-E3930, 2C, 1.3/1.8 GHz, 6.5 W TDP
MAIN MEMORY	Up to 8 GByte DDR3-1866 (-1600) memory down (ECC for E2-versions)
GRAPHICS CONTROLLER	Intel® HD Gfx Gen9
ETHERNET CONTROLLER	COMe-mAL10: Intel® I211AT COMe-mAL10 E2: Intel® I210IT
ETHERNET	10/100/1000 MBit Ethernet
HARD DISK	2x SATA 6 Gb/s
FLASH ONBOARD	to 64 GByte pSLC or 128GByte MLC (build option)
PCI EXPRESS® / PCI SUPPORT	4x PCIe x1
PANEL SIGNAL	DDI: DP++, LVDS: Single Channel 18/24 bit or eDP
USB	2x USB 3.0 (incl. USB 2.0) 6x USB 2.0 Port 7 is dual role (Client/Host)
SERIAL	2x serial interface (RX/TX only)
AUDIO	Intel® High Definition Audio
COMMON FEATURES	SPI, LPC, SMB, Fast I ² C, Staged Watchdog, RTC, MARS
BIOS	AMI Aptio V
ON REQUEST	eMMC Flash onboard (up to 64 GByte SLC, up to 128 GByte MLC), eDP instead of LVDS, General Purpose SPI instead of Boot SPI, USB client
POWER MANAGEMENT	ACPI 6.0
POWER SUPPLY	4.75 V – 20 V Wide Range, Single Supply Power
SPECIAL FEATURES	POSCAP capacitors, Trusted Platform Module TPM 2.0, Security Chip (Support of Kontron Appprotect), 4k Resolutions, GPIO / SDIO Switch, General Purpose SPI optional, Industrial Temperature Grade versions
OPERATING SYSTEM	Windows® 10 Enterprise, Windows 10 IoT, Linux, VxWorks
TEMPERATURE	COMe-mAL10 Commercial temperature: 0 °C to +60 °C operating / -30 °C to +85 °C non-operating COMe-mAL10 E2 Industrial temperature: -40 °C to +85 °C operating / -40 °C to +85 °C non-operating

COM EXPRESS® carrier and Evaluation Boards



COMh Eval Carrier Server

COMPLIANCE	COM-HPC Server Type Modules - Size D and E
DIMENSIONS (H x W)	305 mm x 330 mm (E-ATX)
SUPPORTED MODULES	
GRAPHICS CONTROLLER	
HARD DISK	
USB	4x USB 3.2 Gen 2x1
PCI EXPRESS® / PCI SUPPORT	1x PCIe Gen4 x16 slot (PCIe Lane Group 1) 4x PCIe Gen4 x8 to 4x PCIe card slots (PCIe Lane Group 2 and 3) 2x PCIe Gen4 x4 to 2x PCIe card slots (PCIe Lane Group 0 Low) 2x PCIe Gen3 x4 to 2x m.2 2242/2280 slots (PCIe Lane Group 0 High)
AUDIO	
ETHERNET	1x RJ45 – max. 10G-BASE-T 8x SFP28 cages via 2x Intel C827-IM
SERIAL	2x DSUB9 - COM ports (RX/TX)
OPTIONS	
POWER SUPPLY	ATX power supply 24 + 8 pin

COMh Eval Carrier Client

COMPLIANCE	COM-HPC Client Carrier - Size A, B and C
DIMENSIONS (H x W)	305 mm x 330 mm (E-ATX)
SUPPORTED MODULES	
GRAPHICS CONTROLLER	
HARD DISK	
USB	2x USB Gen 4 + 2x USB 3.2 Gen 2x1 4x USB 2.0
PCI EXPRESS® / PCI SUPPORT	1x PCIe Gen5 x16 slot (PCIe Lane Group 1) 2x PCIe Gen4 x8 to 4x PCIe card slots (PCIe Lane Group 2) 2x PCIe Gen4 x4 to 2x PCIe card slots (PCIe Lane Group 0 Low) 2x PCIe Gen3 x4 to 2x m.2 2242/2280 slots (PCIe Lane Group 0 High)
AUDIO	
ETHERNET	2x RJ45 – max. 10G-BASE-T 2x KR Extension for 100G LAN
SERIAL	2x DSUB9 - COM ports (RX/TX)
OPTIONS	
POWER SUPPLY	ATX power supply 24 + 8 pin

COMe Eval Carrier2 T6

COMPLIANCE	COM Express® Rev. 3.0, Pin-out Type 6
DIMENSIONS (H x W)	305 mm x 244 mm (ATX)
SUPPORTED MODULES	
GRAPHICS CONTROLLER	
HARD DISK	
USB	4x SATA
PCI EXPRESS® / PCI SUPPORT	4x USB 3.1 (incl. USB 2.0) + 4x USB 2.0
AUDIO	1x PEG x16 8x PCIe x1
ETHERNET	1x Audio Connector
SERIAL	1x GbE RJ45
OPTIONS	
POWER SUPPLY	2x COM ports (RX/TX only)
	ATX (24 + 8 pin Connector)

COMe Eval Carrier T7 Gen2

COMPLIANCE	COM Express® Rev. 3.0 or 3.1 Pin-out Type 7
DIMENSIONS (H x W)	305 mm x 244 mm (ATX)
SUPPORTED MODULES	
GRAPHICS CONTROLLER	
HARD DISK	
USB	4x USB 3.1 Gen2
PCI EXPRESS® / PCI SUPPORT	1x PCIe Gen4 x16 1x PCIe Gen3 x8 2x PCIe Gen3 x4
AUDIO	
ETHERNET	1x RJ45 – max 10G-BASE-T (depending on module support) 4x 10GBASE-KR Via expansion cards support of different physical interfaces - 4x DAC: 10GBASE-KR signals directly routed from COMe connector to SFP+ cages - 2x SFP+: 10GBASE-KR-to-SFI via Inphi PHY CS4227 - 4x SFP+: 10GBASE-KR-to-SFI via Inphi PHY CS4223 - 4x SFP+: 10GBASE-KR-to-SFI via Intel PHY C827-IM1, CEI-Interface - 4x RJ45: 10GBASE-KR-to-10GBASE-T via Intel PHY X557
SERIAL	2x DSUB9 - COM ports (RX/TX)
OPTIONS	
POWER SUPPLY	ATX power supply 24 + 8 pin

COMe Eval Carrier2 T10

COMPLIANCE	COM Express® Rev. 2.1 Pin-out Type 10
DIMENSIONS (H x W)	305 x 244 mm (ATX)
SUPPORTED MODULES	COM Express® mini with pin-out Type 10
GRAPHICS CONTROLLER	1x LVDS/JILI FFC40 connector 1x DisplayPort
HARD DISK	1x SATA 1x mSATA socket 1x SD-Card
USB	2x USB 3.0/2.0 5x USB 2.0
PCI EXPRESS® / PCI SUPPORT	2x PCIe x16 (electrically x1) 1x PCIe x1 1x miniPCIe (with USB)
AUDIO	Realtek ALC888 HD-Audio S/PDIF in/out
ETHERNET	1x 10/100/1000 MBit RJ 45 connector
SERIAL	2x UART on pin-header 2x RS232 from SIO
OPTIONS	Carrier EEPROM
POWER SUPPLY	ATX power supply 24+4 pin Wide Range Input support on 4pin Connector for Module Supply



About Kontron

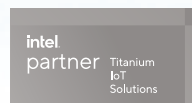
Kontron is a global leader in IoT/Embedded Computing Technology (ECT) and offers individual solutions in the areas of Internet of Things (IoT) and Industry 4.0 through a combined portfolio of hardware, software and services. With its standard and customized products based on highly reliable state-of-the-art technologies, Kontron provides secure and innovative applications for a wide variety of industries. As a result, customers benefit from accelerated time-to-market, lower total cost of ownership, extended product lifecycles and the best fully integrated applications.

For more information, please visit: www.kontron.com

About the Intel® Partner Alliance

From modular components to market-ready systems, Intel and the over 1,000 global member companies of the Intel® Partner 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.

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