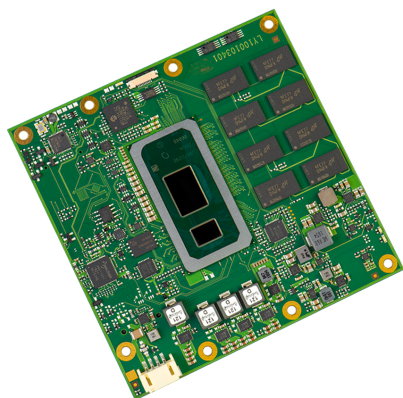


MSC C6C-WLU

Intel® Core™ 8th Generation



95 x 95



17 / 19W



0 +60



IoT Solutions
Alliance

COM Express

Description

The MSC C6C-WLU module is based on Intel's 8th generation Core processor family. The Intel multi-chip-package in 14 nm technology includes processor, graphics and chipset on one carrier. It allows for ultra compact high-performance solutions in applications, where real-estate and cooling is constrained. The MSC C6C-WLU introduces 4 processor core capability based on the Intel Core U processor family. Customers can choose from a variety of quad and dual-core processors to scale performance and capabilities with application requirements.

The board provides triple independent display support with up to 4k x 2k resolution, highest level graphics acceleration and hardware based video en-/decoding. Fast DDR4 memory and multiple USB 3.1/2.0 interfaces complete the compact and power saving module.

Besides an extensive set of interfaces and features, the MSC C6C-WLU optionally offers hardware based security compliant to the requirements of TCG (Trusted Computing Group).

The Type 6 pin-out allows direct access to the latest digital display interfaces like DisplayPort, HDMI 1.4b and DVI as well as up to four USB 3.1 interfaces supporting the fastest peripherals currently available. For wireless applications such as Industrial IoT, the module can be provided with optionally available Wi-Fi module supporting up to 2x2 IEEE 802.11ac wireless networks, and Bluetooth® 5.

Highlights

- Intel® Core™ i7-8665UE quad-core 1.7/4.4 GHz, 8MB L2, 15W TDP
- Intel® Core™ i5-8365UE quad-core 1.6/4.1 GHz, 6MB L2, 15W TDP
- Intel® Core™ i3-8145UE dual-core 2.2/3.9 GHz, 4MB L2, 15W TDP
- Intel® Celeron® 4305UE dual-core 2.0 GHz, 2MB L2, 15W TDP
- Integrated Intel® UHD Graphics 610, 620
- Up to 16 GB DDR4-2400 SDRAM, dual-channel, memory down
- Two SATA 6Gb/s mass storage interfaces
- Two DisplayPort/HDMI/DVI interfaces
- Embedded DisplayPort / LVDS (24 Bit, dual channel) interface
- Three independent displays supported
- DirectX 12, OpenGL 4.5, OpenCL™
- Resolution up to 4096 x 2304
- Four USB 3.1/2.0 and four USB 2.0 interfaces
- Eight PCI Express™ x1 lanes
- Wi-Fi module with IEEE 802.11ac and Bluetooth® 5
- Trusted Platform Module 2.0
- UEFI Firmware

Technical Data - MSC C6C-WLU

Technology	x86
Formfactor	COM Express Compact
CPU	Intel® Core™ i7-8665UE quad-core 1.7/4.4 GHz, 8MB L2, 15W TDP Intel® Core™ i5-8365UE quad-core 1.6/4.1 GHz, 6MB L2, 15W TDP Intel® Core™ i3-8145UE dual-core 2.2/3.9 GHz, 4MB L2, 15W TDP Intel® Celeron® 4305UE dual-core 2.0 GHz, 2MB L2, 15W TDP
Chipset	Integrated in Multi-Chip-Package
RAM	Up to 2x 8 GB DDR4 SDRAM (DDR4-2400); dual channel operation; memory down
Storage Interfaces	2x SATA 6Gb/s
USB	4x USB 3.1/2.0, 4x USB 2.0
Serial Interfaces	2x high-speed serial ports from PCH
Bus Interfaces	9x PCI Express x1 Gen3, LPC bus (Low Pin Count bus; no DMA support)
Display Controller	Integrated Intel HD graphics Gen. 9 3D Acceleration: DirectX® 11/12, OpenGL 4.5, OpenGL ES 2.0, OpenCL™; Video Decode: H.264 @ Level 5.2, H.265/HEVC 10-bit, MPEG2, VC1/WMV, JPEG, VP8, VP9 10-bit; Video Encode: H.264, H.265, VP8, VP9, AVC M/JPEG. Triple independent display support
Display Interfaces	Display Port and HDMI/DVI: 2x Digital Display Interface, usable as DisplayPort 1.2 (up to 4096 x 2304 @ 60Hz), also usable as HDMI 1.4 or DVI (up to 4096 x 2160 @ 30Hz) 1x Embedded DisplayPort 1.4 (on variants without LVDS only); 4096 x 2304 @ 60Hz LCD: LVDS 24bit, dual-channel (not on all variants); 1920 x 1200 @ 60Hz
Network Interface	10/100/1000Base-TX (Intel i219) Wi-Fi Module (optional), Intel® Wireless-AC 9560, IEEE 802.11ac, Bluetooth® 5
Audio Interface	High Definition Audio
Security Device	TPM 2.0

Miscellaneous	<p>Watchdog Timer: Initiates system reset, programmable</p> <p>Fan Supply: 4-pin header for CPU fan, PWM speed controlled and PWM speed control for system fan supported</p> <p>RTC battery: external</p> <p>System Monitoring: voltage, temperature, CPU fan, system fan</p>
Feature Highlights	Type 6 pin-out
Firmware	<p>UEFI Firmware: AMI Aptio® V</p> <p>Security: TPM 2.0 support, TCG compliant</p> <p>Power Management: ACPI Active fan control</p> <p>USB: USB legacy support (keyboard, mouse, storage)</p> <p>Monitoring: System Monitoring Health Monitoring</p> <p>MSC Adv. Boot Device Selection: Boot device priority setting based on physical interfaces</p>
OS Support	Windows 10 (embedded) BSP for Linux (Yocto) EAPI (HW Programming Interface)
Power Requirement	12V +-5%, 5V Stby optional, 17 W to 19 W (typ.)
Environment	<p>Ambient Temperature: 0° ... 60°C (operating), -25° ... 85°C (storage)</p> <p>Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)</p>
Dimensions	95mm x 95mm
Certificates	UL / CE

Order Reference - MSC C6C-WLU

Order Number	Description	Reference	Cat*
80782	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core i7-8665UE, four-core, 1.7/4.4GHz, 15W TDP; 16GB DDR4 SDRAM; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 2x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 9x PCIe x1 Gen 3; TPM.	MSC C6C-WLU-8665UE-4N201C PCBFTX	PV
80784	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core i7-8665UE, four-core, 1.7/4.4GHz, 15W TDP; 16GB DDR4 SDRAM; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 2x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 9x PCIe x1 Gen 3; Wi-Fi module; TPM.	MSC C6C-WLU-8665UE-4N211C PCBFTX	OR
80778	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core i5-8365UE, four-core, 1.6/4.1GHz, 15W TDP; 8GB DDR4 SDRAM; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 2x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 9x PCIe x1 Gen 3; TPM.	MSC C6C-WLU-8365UE-3N201C PCBFTX	PV
80780	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core i5-8365UE, four-core, 1.6/4.1GHz, 15W TDP; 16GB DDR4 SDRAM; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 2x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 9x PCIe x1 Gen 3; Wi-Fi module; TPM.	MSC C6C-WLU-8365UE-4N211C PCBFTX	PV
80774	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core i3-8145UE, dual-core, 2.2/3.9GHz, 15W TDP; 4GB DDR4 SDRAM; Graphics: integrated Intel HD Gen 9 (GT2); eDP; 2x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 9x PCIe x1 Gen 3; TPM.	MSC C6C-WLU-8145UE-2N101C PCBFTX	OR
80776	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core i3-8145UE, dual-core, 2.2/3.9GHz, 15W TDP; 8GB DDR4 SDRAM; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 2x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 9x PCIe x1 Gen 3; TPM.	MSC C6C-WLU-8145UE-3N201C PCBFTX	PV
80750	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron 4305UE, dual-core, 2.0GHz, 15W TDP; 4GB DDR4 SDRAM; Graphics: integrated Intel HD Gen 9 (GT2); eDP; 2x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 9x PCIe x1 Gen 3; TPM.	MSC C6C-WLU-4305UE-2N101C PCBFTX	PV
80772	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron 4305UE, dual-core, 2.0GHz, 15W TDP; 4GB DDR4 SDRAM; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 2x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 9x PCIe x1 Gen 3; TPM.	MSC C6C-WLU-4305UE-2N201C PCBFTX	OR

*COM products are divided in two categories, „PV“ (preferred variant) and „OR“ (on request).

Order Reference - MSC C6C-WLU

Order Number	Description	Reference	Cat*
81210	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron 4305UE, dual-core, 2.0GHz, 15W TDP; 8GB DDR4 SDRAM; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 2x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 9x PCIe x1 Gen 3; TPM.	MSC C6C-WLU-4305UE-3N201C PCBFTX	PV

*COM products are divided in two categories, „PV“ (preferred variant) and „OR“ (on request).

Accessories

Order Number	Description	Reference
Carrier Options		
67295	COM Express Type 6 Evaluation Carrier Board with PCI Express x4/x16 slot, USB 3.0/2.0, GbE, SATA, DisplayPort, eDP/LVDS, VGA and HD audio interfaces; Mini PCI Express socket, SD card slot, ATX power connector and single 12V power jack. Dimensions: 170mm x 170mm (Mini-ITX form factor)	MSC C6-MB-EV-001 PCBFTX
41857	COM Express Type 6 Evaluation Carrier Board with various PCI Express x1, x4 and x16 slots, USB 3.0/2.0, GbE, SATA, DisplayPort, HDMI, LVDS, eDP, VGA, HD audio interfaces; mSATA and Mini PCI Express sockets, POST code display, ATX power connector. Dimensions: 305 x 244 mm (ATX form factor)	MSC C6-MB-EVA PCBFTX
Cooling Options		
79809	Fan kit for Heatsink MSC HCA-ALP/RLP-0x HSI-xxx, MSC C6B-ALP/RLP-0x HSI-xxx, MSC C6B-TLH-0x HSI-xxx, MSC C6C-ALP/RLP-0x HSI-xxx, MSC C6C-TLU-0x HSI-xxx, MSC C6C-WLU-0x HSI-xxx, MSC C6C-ALN-0x HSI-xxx, MSC C6C-EL-0x HSI-xxx, MSC C6C-RYZx-0x HSI-xxx, PWM fan 80x80x15mm.	MSC C6C-FANKIT-01-HSF-001
80060	Passive Heatsink for C6C-WLU, consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermal interface material for the thermal contact to SOC.	MSC C6C-WLU-01 HSI-001
80072	Heatspreader for C6C-WLU. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-WLU-01 HSP-001
80074	Heatspreader for C6C-WLU. Single-piece aluminum profile, threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC.	MSC C6C-WLU-02 HSP-001

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