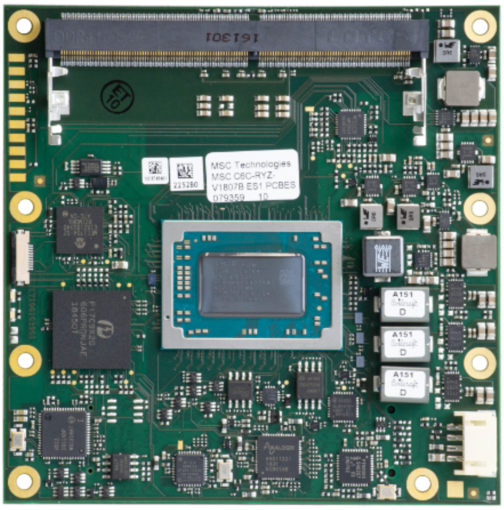
COM Express Type 6

TRIA C6C-RYZ

AMD Ryzen™ Embedded Series



95 x 95

28 / 64 W

-40 +85

Highlights

- AMD Ryzen^{TM} Embedded V1807B, quad-core Processor (3.35/3.8GHz, 11 GPU CU, 35-54W TDP)
- AMD Ryzen^{TM} Embedded V1756B, quad-core Processor (3.25/3.6GHz, 8 GPU CU, 35-54W TDP)
- AMD Ryzen^{TM} Embedded V1605B, quad-core Processor (2.0/3.6GHz, 8 GPU CU, 12-25W TDP)
- AMD RyzenTM Embedded V1404I, quad-core Processor (2.0/3.6GHz, 8 GPU CU, 12-25W TDP), industrial temperature range
- AMD Ryzen^{TM} Embedded V1202B, dual-core Processor (2.3/3.2GHz, 3 GPU CU, 12-25W TDP)
- AMD Ryzen^{TM} Embedded R1606G, dual-core Processor (2.6/3.5GHz, 3 GPU CU, 12-25W TDP)
- AMD Ryzen^{TM} Embedded R1505G, dual-core Processor (2.4/3.3GHz, 3 GPU CU, 12-25W TDP)
- Up to 32 GB DDR4-3200 SDRAM, dual-channel, optional ECC
- Two SATA 6Gb/s mass storage interfaces
- Three DisplayPort/HDMI/DVI interfaces
- Embedded DisplayPort / LVDS (24 Bit, dual channel) interface
- Up to four independent displays supported
- DirectX 12, OpenGL 4.6, OpenCL 2.1
- Resolution up to 4096 x 2160
- Up to four USB 3.1/2.0 and four USB 2.0 interfaces
- Up to eight PCI Express™ x1 lanes
- PEG configurable up to 1×8 or 2×4
- Trusted Platform Module TPM 2.0
- UEFI Firmware

COM Express Type 6

Technical Data

Technology	x86
Formfactor	COM Express Compact
CPU	AMD RyzenTM Embedded V1807B, quad-core Processor, 3.35/3.8GHz, 2MB L2 / 4MB L3, 11 GPU CU, 45W (35-54W) TDP, max. DDR4-3200; AMD RyzenTM Embedded V1756B, quad-core Processor, 3.25/3.6GHz, 2MB L2 / 4MB L3, 8 GPU CU, 45W (35-54W) TDP, max. DDR4-3200; AMD RyzenTM Embedded V1605B, quad-core Processor, 2.0/3.6GHz, 2MB L2 / 4MB L3, 8 GPU CU, 15W (12-25W) TDP, max. DDR4-2400; AMD RyzenTM Embedded V1404I, quad-core Processor, 2.0/3.6GHz, 2MB L2 / 4MB L3, 8 GPU CU, 15W (12-25W) TDP, max. DDR4-2400, industrial temperature range; AMD RyzenTM Embedded V1202B, dual-core Processor, 2.3/3.2GHz, 1MB L2 / 4MB L3, 3 GPU CU, 15W (12-25W) TDP, max. DDR4-2400; AMD RyzenTM Embedded R1606G, dual-core Processor, 2.6/3.5GHz, 1MB L2 / 4MB L3, 3 GPU CU, 15W (12-25W) TDP, max. DDR4-2400; AMD RyzenTM Embedded R1505G, dual-core Processor, 2.4/3.3GHz, 1MB L2 / 4MB L3, 3 GPU CU, 15W (12-25W) TDP, max. DDR4-2400;
Chipset	Integrated in System-on-Chip
RAM	2x 260-pin SO-DIMM socket for up to 2x 16 GB DDR4 SDRAM (DDR4-3200 max); ECC option; dual channel operation
Storage Interfaces	2x SATA 6Gb/s
USB	Up to 4x USB 3.1/2.0, 4x USB 2.0
Serial Interfaces	2x serial ports
Bus Interfaces	PEG port max x8 (depending on processor variant) Up to four PCI Express x1 Gen3, up to four x1 Gen 2 (depending on processor and assembly variant) LPC bus (Low Pin Count bus)
Display Controller	GPU Vega core, up to 11 CUs Up to four independent displays supported (depending on processor variant)
Display Interfaces	Display Port and HDMI/DVI: Up to 3x Digital Display Interface, usable as DisplayPort 1.4 (up to 3840 x 2160 @ 120Hz, HBR3)[1], also usable as HDMI 2.0b (4096 x 2160 @ 60Hz)[2] or DVI (up to 1920 x 1200 @ 60Hz) [1] Re-timer required for HBR3 support [2] Re-timer required for operation above 3Gb/s 1x Embedded DisplayPort 1.3 (on variants without LVDS only); 3840 x 2160 @ 60Hz LCD: LVDS 24bit, dual-channel (not on all variants); 1920 x 1200 @ 60Hz
Network Interface	10/100/1000Base-TX (Intel i210)
Audio Interface	High Definition Audio
Security Device	TPM 2.0 (optional)
Miscellaneous	Watchdog Timer: Initiates system reset, programmable Fan Supply: 4-pin header for CPU fan, PWM speed controlled and PWM speed control for system fan supported RTC battery: external System Monitoring: voltage, temperature, CPU fan, system fan
Feature Highlights	Type 6 pin-out

Firmware	UEFI Firmware: AMI Aptio® V Security: TPM 2.0 support, TCG compliant Power Management: ACPI Active fan control USB: USB legacy support (keyboard, mouse, storage) Monitoring: System Monitoring Health Monitoring Tria Adv. Boot Device Selection: Boot device priority setting based on physical interfaces
OS Support	Windows 10 IOT Enterprise (64-bit) Windows 10 Linux, Yocto
Power Requirement	Voltage: +12V primary power supply input, +5V Stby optional Power Consumption: 28 W to 64 W (typ., variant dependent)
Environment	Ambient Temperature; 0° ... 60°C (operating), -25° ... 85°C (storage) Extended temp. variants: -40 ... +85°C (operating) Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)
Dimensions	95mm x 95mm
Cooling	Passive heat sink Active heat sink with fan Heat spreader with threaded or non-threaded standoffs
Carrier	Evaluation/carrier board options

Technical Data for TRIA C6C-RYZ

Order Reference

Order No.	Description	Reference	Status*
83345	COM Express Type 6 Compact module (95mm x 95mm); CPU: AMD Ryzen V1756B, four-core, 3.25/3.6GHz, 35-54W TDP, 8 CU ; 3x DP/HDMI/DVI, LVDS (24 Bit, dual channel); 1x 1GbE; 2x SATA; 3x USB3, 8x USB2; 4x PCIe x1 Gen 3, 4x PCIe Gen 2, PEG x8 Gen 3; TPM 2.0; 2x socket for DDR4 or DDR4ECC SO-DIMM; DDR4-3200; 0° ... 60°C	MSC C6C-RYZ-V1756B-NN221C PCBFTX	OR
83347	COM Express Type 6 Compact module (95mm x 95mm); CPU: AMD Ryzen V1605B, four-core, 2.0/3.6GHz, 12-25W TDP, 8 CU ; 3x DP/HDMI/DVI, LVDS (24 Bit, dual channel); 1x 1GbE; 2x SATA; 3x USB3, 8x USB2; 4x PCIe x1 Gen 3, 4x PCIe Gen 2, PEG x8 Gen 3; TPM 2.0; 2x socket for DDR4 or DDR4ECC SO-DIMM; DDR4-2400; 0° ... 60°C	MSC C6C-RYZ-V1605B-NN221C PCBFTX	PV
83351	COM Express Type 6 Compact module (95mm x 95mm); CPU: AMD Ryzen V1404I, four-core, 2.0/3.6GHz, 12-25W TDP, 8 CU ; 3x DP/HDMI/DVI, LVDS (24 Bit, dual channel); 1x 1GbE; 2x SATA; 3x USB3, 8x USB2; 4x PCIe x1 Gen 3, 4x PCIe Gen 2, PEG x8 Gen 3; TPM 2.0; 2x socket for DDR4 or DDR4ECC SO-DIMM; DDR4-2400; -40° ... 85°C	MSC C6C-RYZ-V1404I-NN221I PCBFTX	PV
83349	COM Express Type 6 Compact module (95mm x 95mm); CPU: AMD Ryzen V1202B, two-core, 2.3/3.2GHz, 12-25W TDP, 3 CU ; 3x DP/HDMI/DVI, Embedded DisplayPort (eDP); 1x 1GbE; 2x SATA; 3x USB3, 8x USB2; 4x PCIe x1 Gen 3, 4x PCIe Gen 2, PEG x8 Gen 3; TPM 2.0; 2x socket for DDR4 or DDR4ECC SO-DIMM; DDR4-2400; 0° ... 60°C	MSC C6C-RYZ-V1202B-NN120C PCBFTX	OR
83353	COM Express Type 6 Compact module (95mm x 95mm); CPU: AMD Ryzen R1606G, two-core, 2.6/3.5GHz, 12-25W TDP, 3 CU ; 2x DP/HDMI/DVI, LVDS (24 Bit, dual channel); 1x 1GbE; 2x SATA; 3x USB3, 8x USB2; 2x PCIe x1 Gen 3, 4x PCIe Gen 2, PEG x4 Gen 3; TPM 2.0; 2x socket for DDR4 or DDR4ECC SO-DIMM; DDR4-2400; 0° ... 60°C	MSC C6C-RYZ-R1606G-NN221C PCBFTX	PV
83355	COM Express Type 6 Compact module (95mm x 95mm); CPU: AMD Ryzen R1505G, two-core, 2.4/3.3GHz, 12-25W TDP, 3 CU ; 2x DP/HDMI/DVI, Embedded DisplayPort (eDP); 1x 1GbE; 2x SATA; 3x USB3, 8x USB2; 2x PCIe x1 Gen 3, PEG x4 Gen 3; TPM 2.0; 2x socket for DDR4 or DDR4ECC SO-DIMM; DDR4-2400; 0° ... 60°C	MSC C6C-RYZ-R1505G-NN100C PCBFTX	OR

Order No.	Description	Reference	Status*
76062	COM Express Type 6 Compact module (95mm x 95mm); CPU: AMD Ryzen R1505G, two-core, 2.4/3.3GHz, 12-25W TDP, 3 CU ; 2x DP/HDMI/DVI, LVDS (24 Bit, dual channel); 1x 1GbE; 2x SATA; 3x USB3, 8x USB2; 2x PCIe x1 Gen 3, 4x PCIe Gen 2, PEG x4 Gen 3; TPM 2.0; 2x socket for DDR4 or DDR4ECC SO-DIMM; DDR4-2400; 0° ... 60°C	MSC C6C-RYZ-R1505G-NN221C PCBFTX	OR

Ordering Information for TRIA C6C-RYZ

*PV = Preferred variant; OR = on Request (in OEM quantities only)

Accessories

Cooling Solutions

Order No.	Description	Reference
84613	Heatsink for C6C-RYZ, C6C-RYZ2. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-RYZ-01 HSI-001
79792	Heatsink / heat pipe for C6C-RYZ, C6C-RYZ2. Single-piece aluminum profile with embedded heat pipe, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-RYZ-01 HSI-HP-001
83859	Heatspreader for C6C-RYZ, C6C-RYZ2. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-RYZ-01 HSP-001
79793	Heatspreader / heat pipe for C6C-RYZ, C6C-RYZ2. Single-piece aluminum profile with embedded heat pipe, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-RYZ-01 HSP-HP-001
83881	Heatspreader for C6C-RYZ, C6C-RYZ2. Single-piece aluminum profile, threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC.	MSC C6C-RYZ-02 HSP-001
83860	Heatspreader / heat pipe for C6C-RYZ, C6C-RYZ2. Single-piece aluminum profile with embedded heat pipe, threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC.	MSC C6C-RYZ-02 HSP-HP-001

Cooling Devices for TRIA C6C-RYZ2/RYZ

Order No.	Description	Reference
79809	Fan kit for Heatsink MSC HCA-ALP/RLP/MLH-0x HSI-xxx, MSC C6B-ALP/RLP/MLH-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/ASL-0x HSI-xxx, MSC C6C-EL-0x HSI-xxx, MSC C6C-RYZx-0x HSI-xxx, PWM fan 80x80x15mm.	MSC C6C-FANKIT-01-HSF-001

Fan Kit for COM Express Heatsinks

Memory Options

Please contact your Tria Technologies representative for information on supported memory options.

Tria Technologies GmbH
Industriestr. 16
76297 Stutensee
info@tria-technologies.com
tria-technologies.com