D3714-V/R mSTX
Industrial Series

AMD Embedded V1000/R1000 Series SoC Platform for AMD FP5 SoC Processor

- AMD Radeon™ Vega Graphics (within SoC)
- Up to 3x DisplayPort V1.4 plus HDMI V2.0b
- Dual Channel LVDS (24 Bit) and eDP V1.3 (4 k) onboard
- Designed for Fanless Operation
- M.2 Key-M (SSD) and Key-E (WLAN/BT) supported
D3714-V/R mSTX
Industrial Series

The industrial motherboard D3714-V/R mSTX supports the AMD Ryzen™ Embedded V1000 and R1000 series processors with integrated AMD Radeon™ Vega Graphics and can be used in applications with high graphical requirements like casino gaming, medical displays, thin clients and ultra small industrial PCs.

It is equipped with up to three DisplayPorts, one HDMI Port, one embedded DisplayPort and one Dual-Channel LVDS (24bit) and powers up to four independent displays in 4K resolution. Depending on the requirements for (graphical) performance, there are 3 motherboard versions available.

PRODUCT HIGHLIGHTS

- AMD Radeon™ Vega Graphics (within SoC)
- Up to 3x DisplayPort V1.4 plus HDMI V2.0b
- Dual Channel LVDS (24Bit) and eDP V1.3 (4k) onboard
- 8 Bit GPIO & HD Audio onboard
- USB 2.0 and USB 3.1 (Gen1/Gen2) onboard
- 1x SATA III onboard
- Onboard support for 1x M.2 SSD (Key-M: 2230/2242/2280)
- Onboard support for 1x M.2 WLAN/Bluetooth (Key-E: 2230)
- AMD integrated TPM V2.0 onboard
- Dual GbE LAN onboard incl. Teaming Support
- Auto Dual Range internal/external DC Input (12 V or 19-28 V)
- HW watchdog onboard
- RS-232/485/422 support onboard

TECHNICAL INFORMATION

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<td>VIDEO</td>
<td>R2: AMD Embedded R1305G SoC</td>
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<td>DDR4 2400 SDRAM, Dual Channel</td>
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<td></td>
<td>2x SO DIMM sockets, up to 32 GByte memory, ECC/non-ECC (*)</td>
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<td>AUDIO</td>
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</table>

*) D3714-R1: One memory socket only (single channel, max. 16 GByte)
TECHNICAL INFORMATION

POWER CONNECTOR

INPUT VOLTAGE

External/Internal DC-In (DC Jack/4-Pin Micro-Fit)
DC Input 12 V or 19-28 V, max. 5 A/65 W (external DC-In),
max. 10 A/150 W (internal DC-In)

FIRMWARE

BIOS
AMI Aptio 5.x (UEFI) BIOS
modified and adapted by Kontron; Recovery BIOS, SM-BIOS (DMI),
BIOS Update, Quick Boot, Logo Boot, Quiet Boot, Plug & Play,
Automatic DRAM Configuration, BIOS Support for S.M.A.R.T., Advanced Power
Management, ACPI S3/S4, Wake on time from S5. Boot support for M.2 SSD
(NVMe), Watchdog Support

WATCHDOG
No legacy OS support, no MBR installation (UEFI only)

REAL TIME CLOCK
3 level HW Watchdog (BIOS POST/BIOS Boot/OS)

TPM
Integrated

AMD integrated TPM V2.0

SYSTEM CONTROL

FP HEADER
1x Header 2.0 mm pitch; for HDD LED, Power LED, and power button
("Reset" feature not supported)

SECURITY
Onboard power button & power LED
(for SMARTCASE™ S511 chassis, D3714-Rx only)
Recovery BIOS, System and BIOS Password, Boot Sequence Control,
Serial-/USB-Port Access Protection, Write Protection for Flash BIOS,
EraseDisk (BIOS Feature), AMD integrated TPM V2.0

COOLING

FAN SUPPORT
D3714-V2: 2x PWM fan (CPU/System)
D3714-Rx: 1x PWM fan (CPU)

SOFTWARE

OS SUPPORT
MS Windows 10 / MS Windows 11 *)
Linux-64
No legacy OS support, no MBR installation (UEFI only)

MECHANICAL

DIMENSIONS (L x W)
Mini-STX: 5.5" x 5.8" (140 x 148 mm)

CERTIFICATION

EMC & SAFETY
CE Class-B, UKCA, FCC-B verified
ctUVus acc. IEC62368-1

*) MS Windows 11: No official driver support by AMD, no MS WHQL certification

MOTHERBOARD VERSIONS

PROCESSOR (APU) *)

GRAPHICS

RADEON™ VEGA

MAX. MEMORY SPEED

MAX. MEMORY SPEED

MAX. MEMORY SPEED

-DV2
V1605B
Quad-Core
2.0/3.6 GHz **

Supported TDP Limits: 25 W ***/15 W/12 W

GPU @ 1.1 Ghz
8x CU ****
up to 4 displays
(eDP, LVDS, HDMI, DPP1, DPP2, DPP3)

-DDR4-2400
Two sockets
(ECC supported)

-R2
R1305G
Dual-Core
1.5/2.8 GHz **

Supported TDP Limits: 10 W ***/8 W

GPU @ 1.0 Ghz
3x CU ****
up to 3 displays
(eDP, LVDS, HDMI, DPP1, DPP3)

-DDR4-2400
Two sockets
(ECC supported)

-R1
R1102G
Dual-Core
1.2/2.6 GHz **

Supported TDP Limit: 6 W

GPU @ 1.0 Ghz
3x CU ****
up to 2 displays
(eDP, LVDS, HDMI, DPP1)

-DDR4-2400
One socket
(ECC supported)

*) APU = Accelerated Processing Unit
**) CPU Base Frequency / Boost Frequency
***) Default TDP
****) CU = Compute Units

POWER SUPPLY REQUIREMENTS

SOURCE

VOLTAGE RANGE

MIN. PS LOAD

MAX. VOLTAGE TOLERANCE

TYP. MOTHERBOARD INPUT POWER*

MAX MOTHERBOARD INPUT POWER**

DC-IN
(auto dual range)
12 V/19–28 V
0 A
12 V: +/- 10 %;
19–28 V: +/-15 %
<10 W / <40 W
100 W (external or internal DC-In)

*) Motherboard incl. Memory and M.2 NVMe SSD (approximations for MS Windows 10 Idle Mode / Full Processor Load @ 25 W TDP)
**) Motherboard incl. Memory, M.2 USB Devices, LVDS / eDP devices, SATA devices
See TechNotes document for detailed power requirements
TECHNICAL INFORMATION

FEATURES

- Chipset / SoC (APU)
- 1st DPP / 2nd DPP / 3rd DPP / HDMI / LVDS / eDP
- Buzzer / int. Speaker Support (stereo) / 5.1 Multichannel Audio
- LAN Gbit / 100 Mbit / 10 Mbit / WOL / PXE / M.2 2230 WLAN-BT
- 2nd LAN Gbit / 100 Mbit / 10 Mbit / WOL / PXE
- LAN Teaming / LAN DASH Support
- SATA / SATA RAID / M.2 (SATA) / M.2 (PCIe/NVMe)
- Mini-Pcie / USB 2.0 / USB 3.1 (Gen1) / USB 3.1 (Gen2)
- FAN monitored & controlled CPU / AUX1 / AUX2
- TEMP monitored CPU / onboard sensors / external sensor
- AMD Ryzen™ Embedded

SPECIAL FEATURES

- COM interface support for RS-232 / RS-485 / RS-422
- Silent Fan / System Guard
- Recovery BIOS / Multi Boot
- HDD Password / EraseDisk / TPM V2.0 onboard / optional TPM module
- BIOS POST / BIOS Boot / OS - HW Watchdog
- Operating Mode 24/7 - 8-5 (hrs per day - days per week)
- Motherboard operating temperature range (chassis inside)**

INTERNAL CONNECTORS

- SO DIMM Sockets (DDR4 2400)
- SATA-III / M.2 Key-M SSD / M.2 Key-B / M.2 2230 WLAN-BT / Mini-Pcie
- Front Panel Audio (9-Pin, HD Audio) / SP-DIF Out (Digital Audio)
- USB 2.0 pin header (provides 2 USB channel) / USB Stick socket
- USB 3.1 Gen1 pin header (provides 2 USB channels)
- Serial COM1 header / serial COM2 header
- LVDS / LVDS Backlight / Embedded DisplayPort @ 4 lanes
- CPU (P/W) / AUX1 (P/W)
- Intrusion (Case Open) / GPIO (8 Bit) / SMBus (Case Temp.)
- Stereo Speaker header / Digital Mic header
- Front Panel (Power Switch, LEDs, Intel 10 pin header, 2 mm pitch) ****
- SATA Drive Power Connector (5 V/12 V) / DC-In Connector 12 V/19-28 V (4 pin)

EXTERNAL CONNECTORS

- DisplayPort V1.4 / HDMI / DVI / VGA
- Audio Stereo Mic. In / Headphones (Headset) [Front Connectors]
- LAN (BI-4S) / PS/2
- USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2
- USB 3.1 Gen1 Type-A / USB 3.1 Gen1-Type C [Front Connectors]
- DC-In connector (external input) 12 V/19-28 V @ 5 A max.
- Serial COM interface

***) D3714-Rx: CPU fan only
****) Reset switch not supported!

CONNECTOR / SOCKET DIAGRAM

1) Stereo speaker support; 2 W @4Ω
2) System fan available for D3714-Vx only
3) For SMARTCASE S511 chassis (D3714-Rx only)
4) Forced cooling required for high operating temperature range.
*) Stereo speaker support; 2 W @4Ω
***) D3714-Rx: CPU fan only
****) Reset switch not supported!
See TechNotes document for details
## ORDERING INFORMATION

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<td>D3714-R1 mSTX</td>
<td>F5120-V181</td>
<td>AMD Embedded R1102G SoC</td>
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<td>D3714-R2 mSTX</td>
<td>F5120-V182</td>
<td>AMD Embedded R1305G SoC</td>
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### ACCESSORIES

| SLIM ACTIVE HEATSINK + BACKPLATE | F5000-C021 | max. 35 W TDP                      |
| FANLESS HEATSINK + BACKPLATE    | F5000-C022 | max. 10 W TDP, designed for SMARTCASE™ S511 |
| SMARTCASE™ S511                | F5000-J011 | Chassis kit for D3714-Rx, passive cooling, max. 10 W TDP |
| SERIAL PORT CABLE              | F5000-K010 | 400 mm, fullsize slot bracket     |
| SERIAL PORT CABLE              | F5000-K007 | Short cable (120 mm), w/o slot bracket |
| AC-ADAPTER 19V/65W             | F5000-P006 | For applications up to 25 W TDP (SoC) |
| DRIVE POWER CABLE              | F5000-K001 | 400 mm, power connector for 1x SATA and 1x slimline DVD |
| WLAN ANTENNA KIT              | F5000-W005 | WLAN antenna kit: left (grey)/right (black) antennas incl. cable for SMARTCASE™ S500/S511/S520, M.2 WLAN module not included! |
| VESA MOUNT KIT                | F5000-X002 | Suitable for SMARTCASE™ S500/S511/S520 |
| WALL MOUNT BRACKETS           | F5000-X001 | Suitable for SMARTCASE™ S500/S511/S520, 2x Brackets per chassis incl. screws |
| DC-IN CONNECTOR LOCK          | F5000-X003 | Suitable for SMARTCASE™ S500/S511/S520, fits to AC-Adapter F5000-P006 |

## GLOBAL HEADQUARTERS

Kontron Europe GmbH

Gutenbergstraße 2
85737 Ismaning, Germany
Tel.: + 49 821 4086-0
Fax: + 49 821 4086-111
info@kontron.com

www.kontron.com