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
Product Highlights

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.

- 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 3.2 (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)
- Dual GbE LAN onboard incl. Teaming Support
- AMD integrated TPM V2.0 onboard
- Auto Dual Range internal/external DC Input (12 V or 19-28 V)
- HW Watchdog onboard
- RS-232/485/422 support onboard

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.

Technical Information

<table>
<thead>
<tr>
<th>SYSTEM</th>
<th>PROCESSOR</th>
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<tbody>
<tr>
<td></td>
<td>AMD Ryzen™ Embedded V1000 / R1000 Series</td>
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<tr>
<td></td>
<td>V2: AMD Embedded V1005B SoC</td>
</tr>
<tr>
<td></td>
<td>R1: AMD Embedded R1002G SoC</td>
</tr>
<tr>
<td></td>
<td>R2: AMD Embedded R1305G SoC</td>
</tr>
<tr>
<td></td>
<td>DDR4 2400 SDRAM, Dual Channel**</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>MEMORY</th>
<th>AUDIO CODEC</th>
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<tr>
<td></td>
<td>Realtek ALC256</td>
</tr>
<tr>
<td></td>
<td>High Definition Stereo Audio Codec</td>
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</table>

<table>
<thead>
<tr>
<th>VIDEO</th>
<th>AUDIO INTERFACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAPHICS</td>
<td>Intel® i210 &amp; Realtek RTL8111H with 10/100/1000 MBit/s, Wake-on-LAN (Wol) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display, Teaming Support</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AUDIO</th>
<th>NETWORK CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERFACE</td>
<td>USB</td>
</tr>
<tr>
<td></td>
<td>SERIAL PORT OTHER I/Os</td>
</tr>
<tr>
<td></td>
<td>STORAGE &amp; EXPANSION</td>
</tr>
<tr>
<td></td>
<td>SATA PCIe/PCI SLOTS</td>
</tr>
</tbody>
</table>

* Power Button/LED prepared for SMARTCASE™ S511 chassis kit
** D3714-R1: One memory socket only (single channel, max. 16 GByte)
### Technical Information

**D3714-V/R mSTX**

#### POWER

**CONNECTOR**
- External/Internal DC-In (DC Jack/4-Pin Micro-Fit)

**INPUT VOLTAGE**
- DC Input 12 V or 19–28 V, max. 5 A/65 W (external DC-In), max. 10 A/100 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 M2 SSD (NVME), Watchdog Support, No legacy OS support, no MB installation (UEFI only)

**WATCHDOG**
- 3 level HW Watchdog (BIOS POST/BIOS Boot/OS) Integrated
- AMD integrated TPM V2.0

**REAL TIME CLOCK**
- Integrated
- AMD integrated TPM V2.0

**TPM**
- 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**
- 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

**FAN SUPPORT**
- Integrated

#### COOLING

**FAN SUPPORT**
- Integrated

#### SOFTWARE

**OS SUPPORT**
- MS Windows 10 / MS Windows 11*
- Linux-64

**NPC SOFTWARE**
- 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

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**Processor (APU)**

<table>
<thead>
<tr>
<th>Model</th>
<th>CPU Variant</th>
<th>Base Frequency</th>
<th>Boost Frequency</th>
<th>TDP Limit</th>
<th>GPU Characteristics</th>
<th>MAX. Memory Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>V2</td>
<td>V1605B</td>
<td>2.0/3.6 GHz</td>
<td>2.3/4.0 GHz</td>
<td>15 W/12 W</td>
<td>up to 4 displays</td>
<td>DDR4-2400 Two sockets (ECC supported)</td>
</tr>
<tr>
<td></td>
<td>Dual-Core</td>
<td></td>
<td></td>
<td></td>
<td>(eDP, LVDS, HDMI, DPP1, DPP2, DPP3)</td>
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</tr>
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<td>2.0/3.6 GHz</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>R1305G</td>
<td>1.5/2.8 GHz</td>
<td>1.7/3.6 GHz</td>
<td>8 W/6 W</td>
<td>up to 3 displays</td>
<td>DDR4-2400 Two sockets (ECC supported)</td>
</tr>
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<td></td>
<td>Dual-Core</td>
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<td></td>
<td></td>
<td>(eDP, LVDS, HDMI, DPP1, DPP3)</td>
<td></td>
</tr>
<tr>
<td>R1</td>
<td>R1102G</td>
<td>1.2/2.6 GHz</td>
<td>1.4/3.2 GHz</td>
<td>6 W</td>
<td>up to 2 displays</td>
<td>DDR4-2400 One socket (ECC supported)</td>
</tr>
<tr>
<td></td>
<td>Dual-Core</td>
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<td></td>
<td></td>
<td>(eDP, LVDS, HDMI, DPP1)</td>
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</tr>
</tbody>
</table>

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**Power Supply Requirements**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>VOLTAGE RANGE</th>
<th>MIN. PS LOAD</th>
<th>MAX. VOLTAGE TOLERANCE</th>
<th>TYP. MOTHERBOARD INPUT POWER*</th>
<th>MAX. MOTHERBOARD INPUT POWER**</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC-IN</td>
<td>12 V/19-28 V</td>
<td>0 A</td>
<td>&lt;10 W / &lt;40 W</td>
<td>100 W (external or internal DC-In)</td>
<td></td>
</tr>
</tbody>
</table>

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*) Power Button LED prepared for SMARTCASE™ S511 chassis kit
***) Supported by D3714-R1/-R2 (any HW revision) and D3714-V2 (HW revision ≥ 0107xxxxxx)

***) MS Windows 11: No official driver support by AMD, no MS WHQL certification
****) CPU Base Frequency / Boost Frequency
****) 3x CU = Compute Units

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*) 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 Details

**D3714-V/R mSTX**

**Features**
- **Chipset / SoC (APU):** AMD Ryzen™ Embedded
- **DP & HDMI / LVDS / eDP:**
- **Buzzer / int. Speaker Support (stereo)* / 5.1 Multichannel Audio:**
- **GbE LAN / Dual GbE LAN / 2.5GbE LAN / M.2 2230 WLAN-BT:**
- **WOL / PXE / LAN Teaming / TSN:**
- **SATA / SATA RAID / M.2 (SATA) / M.2 (PCIe/NVME):**
- **Mini-PCIe / USB 2.0 / USB 3.2 (Gen1) / USB 3.2 (Gen2):**
- **FAN monitored & controlled CPU / AUX1 / AUX2:**
- **TEMP monitored CPU / onboard sensors / external sensor:**

**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 3.2 Gen1 pin header (provides 2 USB channels):**
- **LVDS / LVDS Backlight / Embedded DisplayPort @ 4 lanes**
- **CPU (PWM) / AUX1 (PWM)***
- **Intrusion (Case Open) / GPIO (B Bit) / SMBus (Case Temp.)**
- **Stereo Speaker header / Digital Mic header**
- **Serial COM1 header / serial COM2 header**
- **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 (RJ-45) / PS/2**
- **USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2**
- **USB 3.2 Gen1 Type-A / USB 3.2 Gen1-Type C [Front Connectors]:**
- **DC-In connector (external input) 12 V/19-28 V @ 5 A max.**
- **Operating Mode:**

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**Notes:**
1) For SMARTCASE S511 chassis
2) System fan available for D3714-Vx only

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**Connector/Socket Diagram**

![Diagram of D3714-V/R mSTX connector locations](image-url)

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**) Forced cooling required for high operating temperature range.

****) Reset switch not supported!

*) Stereo speaker support; 2 W @4Ω

**) D3714-Rx: CPU fan only

*****) See T echNotes document for details
# Ordering Information

## Accessories

<table>
<thead>
<tr>
<th>Article</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLIM ACTIVE HEATSINK + BACKPLATE</td>
<td>S26361-F5000-C021</td>
<td>max. 35 W TDP</td>
</tr>
<tr>
<td>FANLESS HEATSINK + BACKPLATE</td>
<td>F5000-C022</td>
<td>max. 10 W TDP, designed for SMARTCASE™ S511</td>
</tr>
<tr>
<td>EXTRA LOW ACTIVE HEATSINK + BACKPLATE</td>
<td>F5000-C023</td>
<td>max. 25W TDP, designed for SMARTCASE™ S511</td>
</tr>
<tr>
<td>SMARTCASE™ S511*</td>
<td>F5000-J011</td>
<td>Chassis kit for D3714-Rx/-Vx and D3724-Rx, active or passive cooling</td>
</tr>
<tr>
<td>SERIAL PORT CABLE</td>
<td>S26361-F5000-K010</td>
<td>400 mm, fullsize slot bracket</td>
</tr>
<tr>
<td>AC-ADAPTER 19V/65W</td>
<td>S26361-F5000-P006</td>
<td>Short cable (120 mm), w/o slot bracket</td>
</tr>
<tr>
<td>POWER CABLE</td>
<td>S26361-F5000-K007</td>
<td>For applications up to 25 W TDP (SoC)</td>
</tr>
<tr>
<td>WLAN ANTENNA KIT</td>
<td>S26361-F5000-W005</td>
<td>400 mm, power connector for 1x SATA and 1x slimline DVD</td>
</tr>
<tr>
<td>VESA MOUNT KIT</td>
<td>S26361-F5000-X002</td>
<td>WLAN antenna kit; left (grey)/right (black) antennas incl. cable for SMARTCASE™ S500/S511/S520. M.2 WLAN module not included!</td>
</tr>
<tr>
<td>WALL MOUNT BRACKETS</td>
<td>S26361-F5000-X001</td>
<td>Suitable for SMARTCASE™ S500/S511/S520, 2x Brackets per chassis incl. screws</td>
</tr>
<tr>
<td>DC-IN CONNECTOR LOCK</td>
<td>S26361-F5000-X003</td>
<td>Suitable for SMARTCASE™ S500/S511/S520, fits to AC-Adapter F5000-P006</td>
</tr>
</tbody>
</table>

* See SMARTCASE S511 datasheet regarding detailed requirements/limitations when using D3714-Rx/-Vx motherboard series