AMD Embedded G-Series SoC Platform for AMD FT3/FT3B SoC Processor

- DVI-I, DP V1.2 and Dual Channel LVDS support
- mSATA and Mini-PCI Express® onboard
- HW Watchdog
- Dual GbE LAN, 3x COM, GPIO
- 12 V & 19-24 V power supply option
D3313-S mITX
Industrial Series

The Kontron D3313-S mITX Motherboard is equipped with AMD Embedded G-series processors. Combined with the comprehensive feature set it’s the perfect fit for KIOSK, casino gambling, POS, thin clients, industrial PCs and other applications with high power consumption efficiency and enhanced operating temperature (0 °C - 60 °C) needs.

PRODUCT HIGHLIGHTS

- DDR3 1333/1600 SDRAM (SO-DIMM)
- AMD Radeon integrated graphics on board:
  - DVI-I, DP V1.2 and Dual Channel LVDS support
- PCIe x4 connector and Mini-PCI Express®
- HD Audio
- Dual GbE LAN
- Serial ATA III onboard
- mSATA (SATA III) socket support
- USB 2.0 and USB 3.1 Gen1 onboard
- 8 Bit GPIO onboard
- 3 x serial port and 1 x parallel port onboard
- Designed for fanless operation
- BIOS-Boot & OS – HW Watchdog onboard
- Dual-Range DC Power Supply 12 V / 19-24 V

TECHNICAL INFORMATION

<table>
<thead>
<tr>
<th>SYSTEM</th>
<th>PROCESSOR MEMORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3313-S1</td>
<td>AMD Embedded GX-210HA SOC 2x SO DIMM Socket (1.5 V / 1.35 V), max. 16 GByte, Single Channel DDR3-1333 (CL9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VIDEO</th>
<th>GRAPhICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3313-S1</td>
<td>AMD Radeon HD8210E</td>
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</table>

<table>
<thead>
<tr>
<th>AUDIO</th>
<th>AUDIO CODEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realtek ALC 671</td>
<td>5.1-channel, High Definition Audio</td>
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<table>
<thead>
<tr>
<th>NETWORK CONNECTION</th>
<th>ETHERNET</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x Realtek RTL 8111G, 10/100/1000, PXE- &amp; WoL Support, Teaming Support</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PERIPHERAL CONNECTION</th>
<th>USB</th>
<th>SERIAL PORT</th>
<th>OTHER I/Os</th>
</tr>
</thead>
<tbody>
<tr>
<td>4x USB 2.0 (Typ A rear)</td>
<td>2x USB 3.1 Gen1 (by header)</td>
<td>1x RS232 (by header)</td>
<td></td>
</tr>
<tr>
<td>2x USB 2.0 (by header)</td>
<td>1x USB 2.0 (internal Typ A plug)</td>
<td>1x LPT (by header)</td>
<td></td>
</tr>
<tr>
<td>2x RS232 (DB9 rear)</td>
<td>1x 8-bit GPIO (by header)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>STORAGE &amp; EXPANSION</th>
<th>SATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x PCIe x4 (Gen2); “mechanical open slot” for usage of x16 cards</td>
<td></td>
</tr>
<tr>
<td>1x Mini-PCIe (Gen2) incl. USB2.0; support for halfsize &amp; fullsize cards</td>
<td></td>
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<tr>
<td>1x mSATA (SATA-III); support for fullsize modules</td>
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<thead>
<tr>
<th>POWER</th>
<th>CONNECTOR</th>
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</thead>
<tbody>
<tr>
<td>12 V / 19-24 V (max. 5 A via external DC connector / max. 8 A via internal DC connector)</td>
<td></td>
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</table>

| INPUT VOLTAGE | Onboard CPU Core Voltage Regulator |

<table>
<thead>
<tr>
<th>FIRMWARE</th>
<th>BIOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI Aptio 4x UEFI BIOS modified and adapted by Fujitsu Technology Solutions; Recovery BIOS, SM-BIOS (DMI), BIOS Update, Quick Boot, Logo Boot, Quiet Boot, Plug &amp; Play, Automatic DRAM and PCI Configuration, BIOS Support for S.M.A.R.T., Advanced Power Management, configurable LVDS support, integrated HW diagnostic tool, EraseDisk Feature 2-Level WD (BIOS Boot WD / OS WD) Integrated</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>WATCHDOG</th>
<th>REAL TIME CLOCK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-Level WD (BIOS Boot WD / OS WD) Integrated</td>
</tr>
</tbody>
</table>
MOTHERBOARD VERSIONS

D3313-S1 eKabini

PROCESSOR
GX-210HA
1.0 GHz Dual Core

GRAPHICS
Radeon™ HD 8210E
300 MHz

MEMORY
DDR3 / 1333 i

DISPLAY OPTIONS
1x DVI-I
max. 1920 x 1200

1x DP V1.2
max. 3840 x 2160

1x LVDS 24Bit Dual Channel
max. 1920 x 1200

max. 2 independent displays
(DVI-I & DP or DVI-I & LVDS)

Supports DirectX11 / DirectX11.1

i) DDR3-1600 modules useable

TECHNICAL INFORMATION

SYSTEM CONTROL & MONITORING
FP HEADER SECURITY
1x Header for Reset button, HDD LED, Power button, Power LED
Recovery BIOS, System and BIOS Password, Boot Sequence Control for each
drive. Serial Port Access Protection. Boot Sector Virus Warning,
Write Protection for Flash BIOS, Harddisk
Password incl. "Silent Password" option (no keyboard entry required)

COOLING
FAN
2x PWM Fan (CPU/System)
1x Fanless Heatsink, up to 10 W TDP (optional)
1x Fanless Heatpipe Cooler, up to 15 W TDP (optional)

SOFTWARE
OS SUPPORT
MS Windows XP32, 7-32, 7-64, 10-64
Linux-32, 64

MECHANICAL
DIMENSIONS (L x W)
Mini-ITX 6.7” x 6.7” (170 x 170 mm)

CERTIFICATION
EMC & SAFETY
CE, cTÜVus acc. IEC62368-1 (CSA/UL compliance), CB (TUEV-NCB),
FCC-B verified

POWER SUPPLY REQUIREMENTS

SOURCE
DC-In (auto range)

VOLTAGE
12V +/-10 % or
19-24 V +10 % / -15 %

MIN. PS LOAD
5 A (external connector)
8 A (internal connector) ^

A) See TechNotes document for power supply details
**CONNECTOR / SOCKET DIAGRAM**

- Intrusion Connector
- Drive Power Connector
- USB 2.0 Connector (2 ports)
- m-SATA Socket (fullsize)
- Processor (SoC)
- Mini-PCIe (incl. USB) halfsize/fullsize
- Processor Fan (PWM)
- 24Bit Dual Channel LVDS
- DC-IN (12 V or 19-24 V)
- USB 3.0 Connector (2 ports)
- Buzzer
- SP-DIF
- Frontpanel Audio
- Feature Connector / GPIO
- TPM Socket
- SATA 1 (Gen3) Shared with mSATA
- SATA 0 (Gen3)
- PCIe x4 Gen2
- USB 2.0 Stick Connector
- Frontpanel Connector
- COM3 Connector
- Parallel Port
- Chassis Fan (3pin & PWM)
- Intrusion (Case Open)
- SMBus (Case Temperature)
- LVDS Dual Channel / Backlight Inverter
- Feature Connector (8 Bit General Purpose I/O)
- Frontpanel (Power Switch, LEDs, Intel 10 pin header)
- Onboard Power Output (+5 V/2 A, +12 V/2 A) for drives
- Onboard (internal input) DC-In 12 V / 19-24 V @ B A max.

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**TECHNICAL INFORMATION**

### FEATURES
- Board Size: Mini-ITX: 6.7” x 6.7” (170 x 170 mm)
- VGA* / DVI / DisplayPort / LVDS / HDMI*
- Stereo Audio / Multich. Audio / Buzzer / int. Speaker Support
- Dual LAN Gbit / 100 Mbit / 10 Mbit
- LAN ASF / Acl. / Wol. / Boot / DASH Support
- SATA / ATA / RAID / mSATA
- FireWire™ / USB 2.0 / USB 3.1 Gen1
- FAN monitored & controlled CPU / AUX1 / AUX2
- TEMP monitored CPU / onboard Sensors / external Sensors

**SPECIAL FEATURES**
- Silent Fan / System Guard / Silent Drives
- Recovery BIOS / Desk Update / Multi Boot
- HDD Password / HW Diagnostic Tool / EraseDisk / TPM
- Boot Logo Option
- HW Watchdog: BIOS POST WD / BIOS Boot WD / OS WD
- Operating Mode 24-7 / 8-5 (hrs per day - days per week)
- Motherboard operating temperature range (chassis inside)

**INTERNAL CONNECTORS**
- DIMM Sockets (DDR3 1333/1600/1866, SO-DIMM)
- PCI Express® x4 Slot (Gen2) / PCI Slot (32Bit, 33 MHz)
- Mini PCI Express® Slot (incl.USB 2.0) / Socket for TPM 1.2 module
- SATA (600) / ATA / Floppy / CF Card / mSATA (600)
- Frontpanel HD Audio (5-Pin “Azalia”)** / SPDIF OUT
- USB 2.0 channels / USB 3.1 Gen1 channels
- Specific socket for internal USB stick (USB 2.0)
- Serial Port (COM3) / Parallel Port (LPT)
- FAN*** / CPU / System (AUX1) / System (AUX2)
- SMBus (Case Temperature) / Intrusion (Case Open)
- LVDS Dual Channel / Backlight Inverter
- Feature Connector (8 Bit General Purpose I/O)
- Frontpanel (Power Switch, LEDs, Intel 10 pin header)
- Onboard Power Output (+5 V/2 A, +12 V/2 A) for drives
- Onboard (internal input) DC-In 12 V / 19-24 V @ B A max.

**EXTERNAL CONNECTORS**
- VGA Sub D* / DVI-I / HDMI* / DisplayPort
- Audio In / Line out (or driver configuration)
- LAN (RJ-45)
- PS/2 Mouse / Keyboard
- USB 2.0 / USB 3.1 Gen1
- Serial (RS232, FIFO, 16550 compatible)
- DC-IN (external input) 12 V/19-24 V @ 5 A max.

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1) Via optional DVI-I / VGA interface connector resp. DVI-I / HDMI interface connector
2) Support for AC`97 audio frontpanel possible via BIOS Setup option
3) CPU fan = 4 pin PWM, system fan = 4 pin PWM or 3 pin (selectable via BIOS Setup)
### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>ARTICLE</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3313-S1 mITX</td>
<td>F5120-V98</td>
<td>AMD embedded G-Series SOC, AMD Dual-Core GX-210HA (1.0 GHz/9 W)</td>
</tr>
<tr>
<td><strong>ACCESSORIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fanless heatsink (9 W)</td>
<td>F5000-C006</td>
<td>For D3313-S1</td>
</tr>
<tr>
<td>Riser card 1x PCIe x4</td>
<td>F5000-R006</td>
<td>D3318</td>
</tr>
<tr>
<td>Serial port cable</td>
<td>F5000-K005</td>
<td>400 mm, full size slot bracket</td>
</tr>
<tr>
<td>Mini PCIe to M.2 adapter</td>
<td>F5000-M003</td>
<td>D3436-S</td>
</tr>
<tr>
<td>AC adapter</td>
<td>F5000-P006</td>
<td>19 V/65 W</td>
</tr>
<tr>
<td>Drive power cable</td>
<td>F5000-K001</td>
<td>For SATA HDD/SATA slimline DVD</td>
</tr>
<tr>
<td>Smartcase™ S710</td>
<td>F5000-K002</td>
<td>Chassis Kit</td>
</tr>
<tr>
<td>Fanless heatpipe cooler (15 W)</td>
<td>F5000-C007</td>
<td>For D3313-S1</td>
</tr>
</tbody>
</table>

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### GLOBAL HEADQUARTERS

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