Data Sheet
FUJITSU Mainboard D3313-S Mini-ITX
Industrial Series

AMD Embedded G-Series SoC Platform for DDR3 1600 SDRAM Memory (SO-DIMM)
and AMD FT3 ("eKabini") / FT3B ("SteppeEagle") SoC Processor

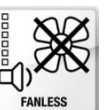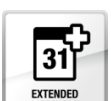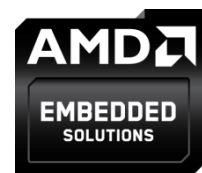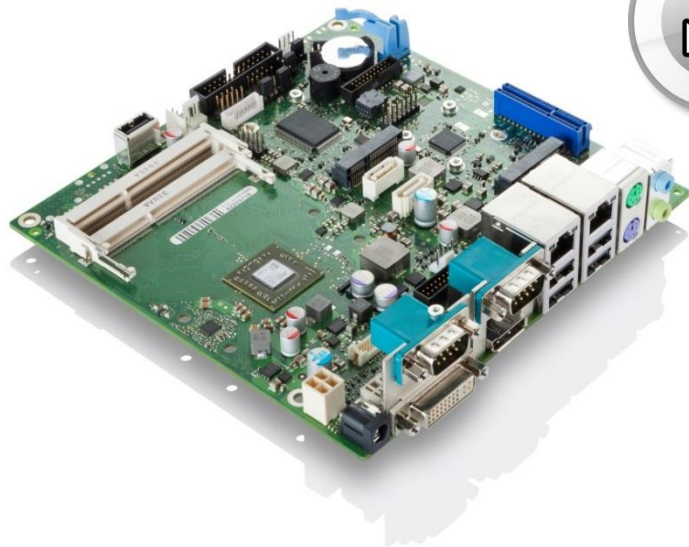Enhanced operating temperature range from 0°C to 60°C

Processors (SoC):
AMD Embedded **GX-210HA**   SOC with integrated AMD Radeon™ HD 8210E Graphics (1.0G Hz / 9W) DC
AMD Embedded **GX-217GA**   SOC with integrated AMD Radeon™ HD 8280E Graphics (1.65 GHz / 15W) DC
AMD Embedded **GX-420CA**   SOC with integrated AMD Radeon™ HD 8400E Graphics (2.00 GHz / 25W) QC
AMD Embedded **GX-222GC**   SOC with integrated AMD Radeon™ R5E Graphics (2.2-2.4 GHz / 10-15W) DC
AMD Embedded **GX-412HC**   SOC with integrated AMD Radeon™ R3E Graphics (1.2-1.6 GHz / 5-7W) QC
AMD Embedded **GX-424CC**   SOC with integrated AMD Radeon™ R5E Graphics (2.4 GHz / 25W) QC *New!*

Memory:
DDR3 1333/1600 SDRAM (SO-DIMM)

Product Features:
AMD Radeon integrated graphics on board:
    DVI-I, DP V1.2 and Dual Channel LVDS support
PCIe x4 connector and Mini-PCI Express onboard
HD Audio onboard
Dual GbE LAN onboard
DASH option
Serial ATA III onboard
mSATA (SATA III) socket support
USB 2.0 and USB3.0 onboard
8 Bit GPIO onboard
3 x serial port and 1 x parallel port onboard
Infineon TPM V1.2 (optional module)
Designed for fanless operation
BIOS-Boot & OS – HW Watchdog onboard
Dual-Range DC Power Supply 12V / 19-24V

Features and benefits

Mainboard Versions

	Processor	Graphics	Memory	Display Options
D3313-S1 eKabini	GX-210HA 1.0 GHz Dual Core 9W TDP	Radeon™ HD 8210E 300MHz	DDR3 / 1333 **iii)**	
D3313-S2 eKabini	GX-217GA 1.65 GHz Dual Core 15W TDP	Radeon™ HD 8280E 450MHz	DDR3 / 1600	for all versions:
D3313-S3 eKabini	GX-420CA 2.0 GHz Quad Core 25W TDP	Radeon™ HD 8400E 600MHz	DDR3 / 1600	1 x DVI-I max . 1920 x 1200
D3313-S4 SteppeEagle	GX-222GC 2.2 - 2.4 GHz **i)** Dual Core 10/15W TDP **ii)**	Radeon™ R5E 655/800MHz	DDR3 / 1600	1 x DP V1.2 max. 3840 x 2160
D3313-S5 SteppeEagle	GX-412HC 1.2 – 1.6 GHz **i)** Quad Core 5/7W TDP **ii)**	Radeon™ R3E 267/350MHz	DDR3 / 1333 **iii)**	1 x LVDS 24Bit Dual Channel max. 1920 x 1200 max. 2 independent displays (DVI-I & DP or DVI-I & LVDS) Supports DirectX11 / DirectX11.1
D3313-S6 SteppeEagle	GX-424CC 2.4 GHz Quad Core 25W TDP	Radeon™ R5E 655/800MHz	DDR3 / 1600 DDR3 / 1866	

i) Nominal / Boost Mode   ii) Configurable max. TDP (BIOS Option)   iii) DDR3-1600 modules useable

Memory
2 x SO DIMM Socket (1.5V / 1.35V), max. 16GB, Single Channel
DDR3-1333 (CL9) / DDR3-1600 (CL11) / DDR3-1866 (D3313-S6 only) SDRAM
Unbuffered, no ECC. Effective memory speed depends on installed SoC.

Power Specification
12V / 19-24V (max. 5A via external DC connector / max. 10A via internal DC connector)
3.3V Auxiliary Supply Voltage on PCIe Slot (Wake-Up Support)
Onboard CPU Core Voltage Regulator

Power Supply Requirements

Source	Voltage / Tolerance (max)	Mainboard Current (max)
DC-In (auto range)	12V +/- 10 % or 19-24 V +10% / -15%	5A (external connector) 8A (internal connector) **A)**

   A)   See TechNotes document for power supply details

BIOS
AMI Aptio 4.x UEFI BIOS
modified and adapted by Fujitsu Technology Solutions; Recovery BIOS, SM-BIOS (DMI), BIOS Update, Quick Boot, Logo Boot, Quiet Boot, Plug & Play, Automatic DRAM and PCI Configuration, BIOS Support for S.M.A.R.T., Advanced Power Management, ACPI S3/S4, Wake on time from S5, configurable LVDS support, integrated HW diagnostic tool, EraseDisk Feature

Security Features
Recovery BIOS, System and BIOS Password, Boot Sequence Control for each drive, Serial Port Access Protection, TPM 1.2 (Infineon, optional), Boot Sector Virus Warning, Write Protection for Flash BIOS, Harddisk Password incl. "Silent Password" option (no keyboard entry required).

Special Features
Silent Fan	Independent temperature related processor fan and system fan supervision and control
System Guard	View and adjust Silent Fan features
Silent Drives	Noise reduction for optical and hard disk drive
Recovery BIOS	Restores a corrupted BIOS
Desk Update	Simple driver update with Driver&Utilities DVD
Multi Boot	Comfortable boot from any boot device

Supported / Released Operating Systems

OS	"Runnable"	"Tested/Released by Fujitsu"
MS Windows XP32	X (S1/S2/S3)	--
MS Windows 7-32/64	X	X
MS Windows 8.1-64	X	X
MS Windows 10-64	X	X
Linux-32/64	X	--

Designed for Industrial Applications
Longlife components for 24 / 7 use (0°C - 60°C)**1)** in industrial applications
Revision control & Extended Lifecycle (up to 5 years)
Approvals: CE; CSA/UL 60950-1(Second Edition), CB (Nemko), FCC-B

Audio
Realtek ALC 671, 5.1-channel, High Definition Audio

LAN
Realtek RTL 8111G, 10/100/1000, PXE- & WoL Support, Teaming Support

Expansion Sockets
1 x PCIe x4 (Gen2); "mechanical open slot" for usage of x16 cards
1 x Mini-PCIe (Gen2) incl. USB2.0; support for halfsize & fullsize cards
1 x mSATA (SATA-III); support for fullsize modules

Features	D3313-S
Board Size: Mini-ITX: 6.7" x 6.7" (170 x 170 mm)	✓
VGA **2)** / DVI / DisplayPort / LVDS / HDMI **2)**	✓ / ✓ / ✓ / ✓ / ✓
Stereo Audio / Multich. Audio / Buzzer / int. Speaker Support	✓ / - / ✓ / -
Dual LAN Gbit / 100 Mbit / 10 Mbit	✓ / ✓ / ✓
LAN ASF / AoL / WoL / Boot / DASH Support **5)**	- / - / ✓ / ✓ / (✓)
SATA / ATA / RAID / mSATA	✓ / - / - / ✓
FireWire™ / USB 2.0 / USB 3.0	- / ✓ / ✓
FAN monitored & controlled CPU / AUX1 / AUX2	✓ / ✓ / -
TEMP monitored CPU / onboard Sensors / external Sensors	✓ / ✓ / -
Special Features	
Silent Fan / Silent Fan LT / System Guard / Silent Drives	✓ / - / ✓ / ✓
Recovery BIOS / Desk Update / Multi Boot	✓ / ✓ / ✓
HDD Password / HW Diagnostic Tool / EraseDisk / TPM (opt.)	✓ / ✓ / ✓ / ✓
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)	✓ / -
Mainboard operating temperature range (chassis inside)	0°C – 60°C
Internal Connectors	
DIMM Sockets (DDR3 1333/1600/1866, SO-DIMM)	2
PCI Express x4 Slot (Gen2) / PCI Slot (32Bit, 33MHz)	1 / -
Mini PCI Express Slot (incl.USB 2.0) / Socket for TPM 1.2	1 / 1
SATA (600) / ATA / Floppy / CF Card / mSATA (600)	2 / - / - / - / 1
Frontpanel HD Audio (9-Pin "Azalia") **3)** / SPDIF OUT	1 / 1
USB 2.0 channels / USB 3.0 channels	2 / 2
Specific socket for internal USB stick (USB 2.0)	1
Serial Port (COM3) / Parallel Port (LPT)	1 / 1
FAN **4)** CPU / System (AUX1) / System (AUX2)	1 / 1 / -
SMBus (Case Temperature) / Intrusion (Case Open)	- / 1
LVDS Dual Channel / Backlight Inverter	1 / 1
Feature Connector (8 Bit General Purpose I/O)	1
Frontpanel (Power Switch, LEDs, Intel 10 pin header)	1
Onboard Power Output (+5V/2A, +12V/2A) for drives	1
Onboard (internal input) DC-In 12V / 19-24V @ 8A max.	1
External Connectors	
VGA Sub D **2)** / DVI-I / HDMI **2)** / DisplayPort	- / 1 / - / 1
Audio In / Line out (or driver configuration)	1 / 1
LAN (RJ-45)	2
PS/2 Mouse / Keyboard	1 / 1
USB 2.0 / USB 3.0	4 / -
Serial (RS232, FIFO, 16550 compatible)	2
DC-IN (external input) 12V / 19-24V @ 5A max.	1

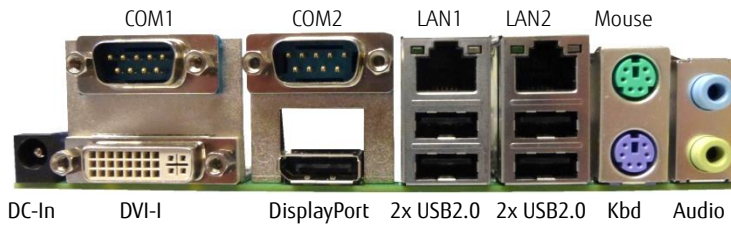1) Forced cooling required, see technical documentation for detailed requirements
2) Via optional DVI-I / VGA interface connector resp. DVI-I / HDMI interface connector
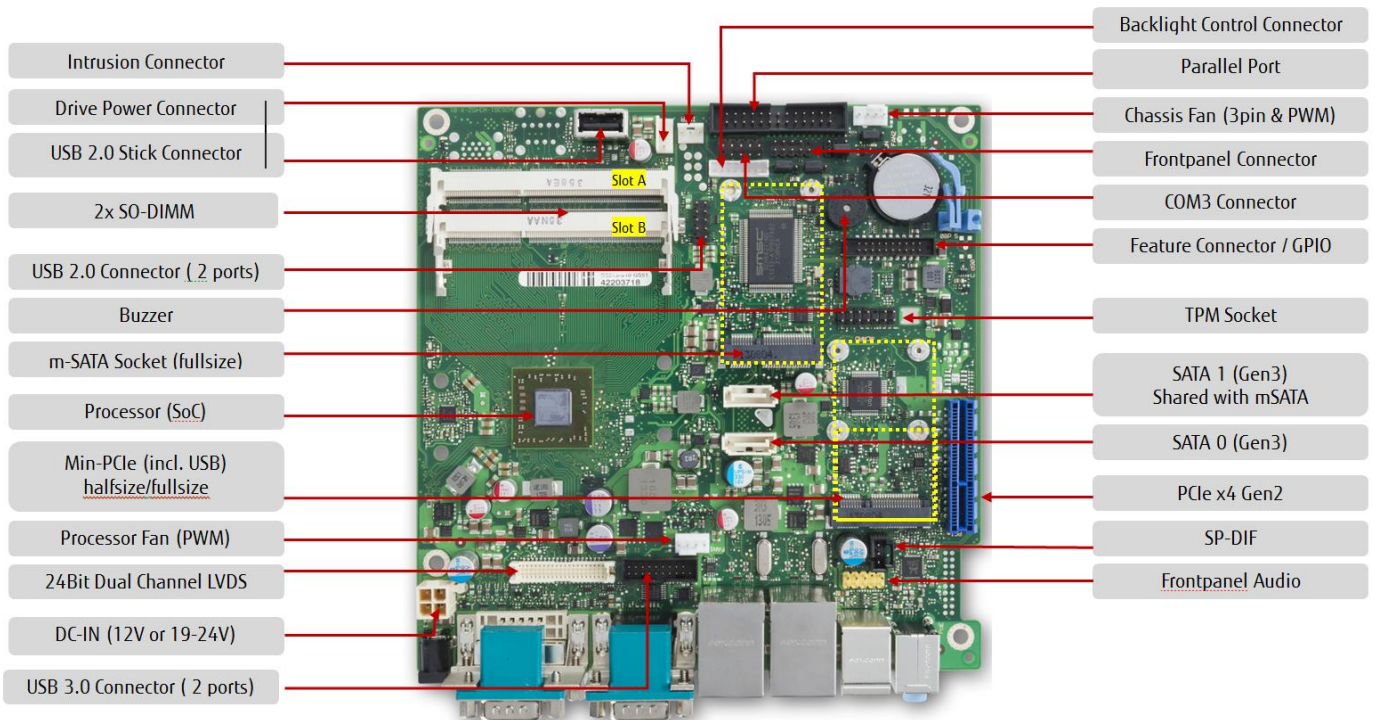3) Support for AC´97 audio frontpanel possible via BIOS Setup option
4) CPU fan = 4 pin PWM, system fan = 4 pin PWM or 3 pin (selectable via BIOS Setup)
5) DASH requires additional PCIe LAN controller D2907; not supported by D3313-S4/-S5!

External Connectors

COM1　　COM2　　LAN1　LAN2　Mouse

DC-In　　DVI-I　　DisplayPort　2x USB2.0　2x USB2.0　Kbd　Audio

Connector / Socket Diagram

Intrusion Connector	Backlight Control Connector
Drive Power Connector	Parallel Port
USB 2.0 Stick Connector	Chassis Fan (3pin & PWM)
2x SO-DIMM	Frontpanel Connector
USB 2.0 Connector (2 ports)	COM3 Connector
Buzzer	Feature Connector / GPIO
m-SATA Socket (fullsize)	TPM Socket
Processor (SoC)	SATA 1 (Gen3) Shared with mSATA
Min-PCIe (incl. USB) halfsize/fullsize	SATA 0 (Gen3)
Processor Fan (PWM)	PCIe x4 Gen2
24Bit Dual Channel LVDS	SP-DIF
DC-IN (12V or 19-24V)	Frontpanel Audio
USB 3.0 Connector (2 ports)	

Further industrial products offered by Fujitsu

- Connectors
- KVM Switches
- Relays
- Touch Panels
- Thermal Printers
- Wireless Modules

24 Volt Kiosk Printers　　*Multi-Input Touch Panels*

Contact:

Fujitsu Components Europe, B.V.
Tel.: +31 (0)23 556 0910
Fax: +31 (0)23 556 0950
Website: emea.fujitsu.com/components
Address: Diamantlaan 25
　　　　 2132 WV Hoofddorp
　　　　 Netherlands

More information

Fujitsu products, solutions & services

Products
www.fujitsu.com/global/products/
In addition to the Fujitsu [Product name],
Fujitsu offers a full portfolio of other
computing products.

Computing products
- Storage systems: ETERNUS
- Server: PRIMERGY, PRIMEQUEST, Fujitsu SPARC M10, BS2000/OSD Mainframe
- Client Computing Devices: LIFEBOOK, STYLISTIC, ESPRIMO, FUTRO, CELSIUS
- Peripherals: Fujitsu Displays, Accessories
- Software
- Network

Product Support Services with different
service levels agreements are recommended
to safeguard each product and ensure smooth
IT operation.

Solutions
http://www.fujitsu.com/global/solutions
The Fujitsu solutions combine reliable Fujitsu
products with the best in services, know-how
and worldwide partnerships.
Fujitsu's Solutions include parts of one or
more activity groups (e.g., planning,
implementation, support, management, and
training services) and are designed to solve a
specific business need.
Infrastructure Solutions are customer offerings
created by bringing Fujitsu's best products,
services and technologies together with those
from partners to deliver benefit to our
customers' businesses.
Industry Solutions are tailored to meet the
needs of specific verticals.
Business and Technology Solutions provide a
variety of technologies developed to tackle
specific business issues such as security and
sustainability, across many verticals.

Services
www.fujitsu.com/global/services/
Several customizable Fujitsu Service
offerings ensure that IT makes a real
difference and delivers true business value.
We do this by leveraging our extensive
experience in managing large, complex,
transformational IT programs to help clients
in planning, delivering and operating IT
services in a challenging and changing
business environment.

Application Services support the
development, integration, testing,
deployment and on-going management of
both custom developed and packaged
applications. The services focus on
delivering business and productivity
improvements for organizations.
Business Services respond to the challenge
of planning, delivering and operating IT in a
complex and changing IT environment.
Managed Infrastructure Services enable
customers to deliver the optimal IT
environment to meet their needs –
achieving high levels of IT service quality
and performance for data center and end
user environments.

Fujitsu green policy innovation

www.fujitsu.com/global/about/environment/
Fujitsu Green Policy Innovation is our
worldwide project for reducing burdens on
the environment. Using our global
know-how, we aim to resolve issues of
environmental energy efficiency through
IT. Please find further information at:

More information

Learn more about Fujitsu, please contact
your Fujitsu sales representative, Fujitsu
business partner,
or visit our website.
www.fujitsu.com/fts/mainboards/

Copyright

Disclaimer

---

ts.fujitsu.com/mainboards