

Datasheet

ASUS IoT

X641ES-IM-AA

**3.5" SBC, Elkhart Lake platform, Processor, DDR4 SO DIMM,
DP, HDMI, LVDS, Dual LAN, Multiple COM, 9-36V DC input**

Version 1.0

dd.mm.yyyy

FORTEC
UNITED STATES



FORTEC
INTEGRATED



FORTEC
UNITED KINGDOM



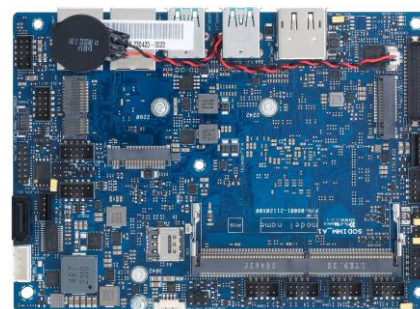
The information contained in this document has been carefully researched and is, to the best of our knowledge, accurate. However, we assume no liability for any product failures or damages, immediate or consequential, resulting from the use of the information provided herein. Our products are not intended for use in systems in which failures of product could result in personal injury. All trademarks mentioned herein are property of their respective owners. All specifications are subject to change without notice.

X641ES-IM-AA

3.5" SBC, Intel Atom® Processor, DDR4 SO-DIMM, DP, HDMI, LVDS, Dual-LAN, Multiple COM, 9-36V DC-in put

Features

- Up to 6 COM ports, includes 2 x RS-232/422/485, 4 x RS232
- Supports 3 display configuration by multiple interface: DP/HDMI/LVDS
- Supports I2C, SMBus and GPIO
- Wide temperature range endurance: -40~85 °C



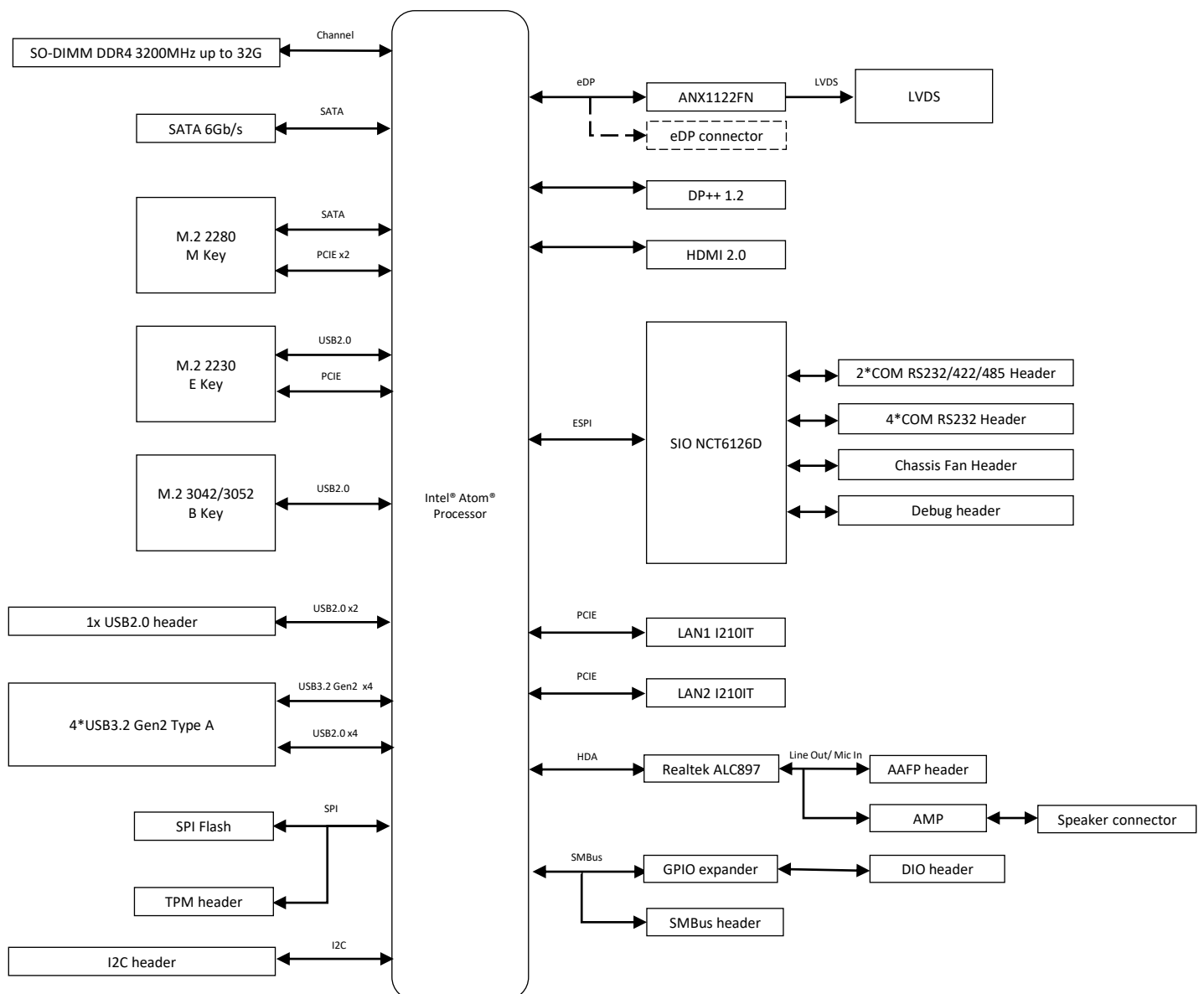
Specifications

| | | |
|---|---------------------------------|---|
| Processor System | CPU | Intel Atom® X6413E |
| | TDP | 9W |
| | # of Cores | 4 |
| | Base Freq. | 1.5 GHz |
| Memory | Max Turbo Freq. | 3.0 GHz |
| | Technology | DDR4 3200 MHz, In-Band ECC (IBECC) |
| | Max. | 32GB |
| | Socket | 1 x SO-DIMM |
| Display | HDMI | 1, Supports HDMI 2.0 up to 4K x 2K @ 60 Hz |
| | Display Port | 1, Supports DP++1.2 up to 4096 x 2160 @ 60 Hz |
| | Embedded Display Port | 1, Supports eDP1.2 (co-lay with LVDS) |
| | LVDS (default) | 1, Supports 1920 x 1080 @ 60 Hz (co-lay with eDP) |
| Expansion Slot | Multi Display | 3 Display Configuration: HDMI+DP+LVDS/eDP |
| | M.2 | 1 x M.2 2230 E key socket (USB2.0, PCIe) supports Wi-Fi/BT module |
| | | 1 x M.2 2280 M key socket (SATA, PCIe) supports M.2 SSD/PCIe mode |
| 1 x M.2 3042/3052 B key (USB 2.0) supports LTE connected to Nano-SIM socket | | |
| Ethernet | Speed | 10/100/1000Mbps |
| | Controller | 2 x Intel® i210-IT, supports WOL/PXE |
| | Connector | 2 x RJ-45 |
| Audio | Codec | Realtek ALC897 High Definition Audio |
| Storage | SATA port | 1 x SATA Gen 3.0, up to 6Gb/s |
| Rear I/O | HDMI | 1 |
| | Display Port | 1 |
| | USB 3.2 Gen2 | 4 (Type A) |
| | LED (Back) | Power status, HDD R/W |
| | Ethernet | 2 |
| Internal Connector & Jumper | Serial Port | 6 (2 x RS-232/422/485, 4 x RS-232) |
| | USB2.0 | 1 x Header support additional 2 x USB2.0 connectors |
| | Chassis Fan Header | 1 (PWM+DC Mode) |
| | Chassis Intrusion Header | 1 |
| | Front Panel Audio Header (AAFP) | 1 |
| | System Panel Header | 1 (10-1 Pin) |
| | Clear CMOS Jumper | 1 |
| | SATA Power Header | 1 |
| | COM Debug Header | 1 |
| | SMBus Header | 1 |
| | I ² C Header | 1 |
| | GPIO Header | 1 (8-bit) |
| | AT/ATX jumper | 1 |
| | AMP header | 1 |
| Power Connector | 1 x 4-pin ATX Power Connector | |

Specifications

| | | |
|-------------------------|---------------------------|------------------------------------|
| Watchdog Timer | S/W | YES |
| Security | TPM | 1 x SPI TPM header |
| Power | Power Type | DC power input |
| | Voltage | 9V-36V |
| Operating System | Microsoft Windows | Windows 10 IoT Enterprise |
| | Linux | Ubuntu |
| Environment | Operating Temperature | -40~85°C |
| | Non-Operating Temperature | -40~85°C |
| | Relative Humidity | 10 to 95% (non condensing) |
| Dimension | Form Factor | 3.5", 146 x 105 mm |
| Certification | EMC, Safety | CE, FCC, BSMI, VCCI, ISED, EN62368 |

Block Diagram



Order Information

| Model name | Part number | Description |
|--------------|-------------|---|
| X641ES-IM-AA | 90ME0780* | FCBGA1493, X6413E, HDMI, DP++, LVDS, MB |

* The part number might vary for different regulations and package. Please consult the TPM in your region for exact 90PN.

Packing List

| Part number | Description | Quantity |
|-------------|---------------|----------|
| 14013* | SATA 6G CABLE | 1 |

* The part number might vary due to part number revision.

Our company network supports you worldwide with offices in Germany, Austria, Switzerland, the UK and the USA. For more information please contact:

Headquarters

Germany



FORTEC
GROUP

FORTEC Elektronik AG
Augsburger Str. 2b
82110 Germering

Phone: +49 89 894450-0
E-Mail: info@fortecag.de
Internet: www.fortecag.de

Fortec Group Members

Austria



FORTEC
INTEGRATED

FORTEC Integrated GmbH Office Vienna
Nuschinggasse 12
1230 Wien

Phone: +43 1 8673492-0
E-Mail: info@fortec-integrated.de
Internet: www.fortec-integrated.de

Germany



FORTEC
INTEGRATED

FORTEC Integrated GmbH
Augsburger Str. 2b
82110 Germering

Phone: +49 89 894363-0
E-Mail: info@fortec-integrated.de
Internet: www.fortec-integrated.de

Switzerland



FORTEC
SWITZERLAND

FORTEC Switzerland AG
Bahnhofstraße 3
5436 Würenlos

Phone: +41 44 7446111
E-Mail: info@fortec.ch
Internet: www.fortec.ch

United Kingdom



FORTEC
UNITED KINGDOM

FORTEC Technology UK Ltd.
Osprey House, 1 Osprey Court
Hinchingbrooke Business Park
Huntingdon, Cambridgeshire, PE29 6FN

Phone: +44 1480 411600
E-Mail: info@fortec.uk
Internet: www.fortec.uk

USA



FORTEC
UNITED STATES

FORTEC US, Corp.
87 Raynor Avenue, Unit 1
Ronkonkoma, NY 11779

Phone: +1 631 5804360
E-Mail: info@fortec.us
Internet: www.fortec.us