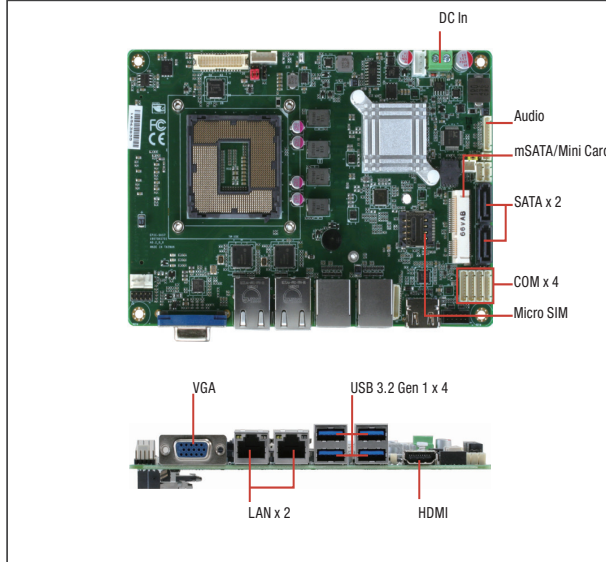


# EPIC-KBS7

EPIC Board with 6th/7th Generation Intel® Core™ Processors (Socket Type)



## Features

- 6th/7th Generation Intel® Core™ Processors (Socket Type)
- DDR4 2133 SODIMM x 1 (Non-ECC, up to 16GB)
- VGA x 1, HDMI x 1, LVDS x 1 (Optional)
- SATA 6Gb/s x 2
- RJ-45 GbE x 2
- USB 3.2 Gen 1 x 4, USB 2.0 x 2
- mSATA/Mini Card x 1
- COM Port x 4, GPIO 8-bit
- Support +9V to +24Vin (Wide Voltage Input)

## Specifications

| System            |                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Form Factor       | 4" EPIC Board                                                                                                                                                                                                                                                                                                                                          |
| CPU               | 6th/7th Generation Intel Core™ Processor (up to 35W/54W):<br>Intel® Core™ i7-7700T (4C/8T, 2.9 GHz, 35W)<br>Intel® Core™ i5-7500T (4C/4T, 2.7 GHz, 35W)<br>Intel® Core™ i3-7100T (2C/4T, 3.4 GHz, 35W)<br>Intel® Core™ i7-6700TE (4C/8T, 2.4 GHz, 35W)<br>Intel® Core™ i5-6500TE (4C/4T, 2.3 GHz, 35W)<br>Intel® Core™ i3-6100TE (2C/4T, 2.7 GHz, 35W) |
| Chipset           | Intel® 100 Series Mobile Chipset (H110/Q170)                                                                                                                                                                                                                                                                                                           |
| Memory Type       | DDR4 2133, Single channel SODIMM x 1, Up to 16GB (Non-ECC Support)                                                                                                                                                                                                                                                                                     |
| BIOS              | UEFI                                                                                                                                                                                                                                                                                                                                                   |
| Wake On Lan       | Yes                                                                                                                                                                                                                                                                                                                                                    |
| Watchdog Timer    | 255 Levels                                                                                                                                                                                                                                                                                                                                             |
| Security          | —                                                                                                                                                                                                                                                                                                                                                      |
| RTC Battery       | Lithium Battery 3V/240mAh                                                                                                                                                                                                                                                                                                                              |
| Dimension         | 4.53" x 6.50" (115mm x 165mm)                                                                                                                                                                                                                                                                                                                          |
| OS Support        | Windows 10 (64bit)<br>Ubuntu 21.04/Kernel 5.11.0-13-generic                                                                                                                                                                                                                                                                                            |
| Power             |                                                                                                                                                                                                                                                                                                                                                        |
| Power Requirement | +9V to +24V (Optional: +12V)                                                                                                                                                                                                                                                                                                                           |
| Power Supply Type | AT/ATX                                                                                                                                                                                                                                                                                                                                                 |
| Connector         | Phoenix 2-Pin Connector                                                                                                                                                                                                                                                                                                                                |
| Power Consumption | Intel® Core™ i7-6700TE, DDR4 16GB, 3.50A @12V, 49.8W                                                                                                                                                                                                                                                                                                   |
| Display           |                                                                                                                                                                                                                                                                                                                                                        |
| Controller        | Intel® HD Graphics 630<br>Intel® HD Graphics 530 (by CPU sku)                                                                                                                                                                                                                                                                                          |
| LVDS/eDP          | LVDS x 1, Dual Channel 24/48bit, up to 1920 x 1080 (Q170 sku support only)                                                                                                                                                                                                                                                                             |
| Display Interface | VGA x 1, up to 1920 x 1080<br>HDMI x 1, up to 3840 x 2160 @60Hz                                                                                                                                                                                                                                                                                        |
| Multiple Display  | Up to 3 Simultaneous Displays                                                                                                                                                                                                                                                                                                                          |
| Audio             |                                                                                                                                                                                                                                                                                                                                                        |
| CODEC             | Realtek ALC897                                                                                                                                                                                                                                                                                                                                         |
| Audio Interface   | Line-In/Line-Out/Mic                                                                                                                                                                                                                                                                                                                                   |
| Speaker           | —                                                                                                                                                                                                                                                                                                                                                      |
| External I/O      |                                                                                                                                                                                                                                                                                                                                                        |
| Ethernet          | Intel® I210-AT, 1GbE RJ-45 x 2                                                                                                                                                                                                                                                                                                                         |
| USB               | USB 3.2 Gen 1 x 4                                                                                                                                                                                                                                                                                                                                      |
| Serial Port       | —                                                                                                                                                                                                                                                                                                                                                      |
| Video             | VGA x 1, up to 1920 x 1080<br>HDMI x 1, up to 3840 x 2160 @60Hz                                                                                                                                                                                                                                                                                        |

| Internal I/O                |                                                                                                                                             |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| USB                         | USB 2.0 x 2                                                                                                                                 |
| Serial Port                 | COM 2 (RS-232/422/485, supports 5V/12V/RI)<br>COM 1, COM 3, COM 4 (RS-232 only, supports RI only)                                           |
| Video                       | LVDS x 1 (Q170 sku support only)<br>LVDS Inverter 5V/12V @2A                                                                                |
| SATA                        | SATA 6Gb/s x 2<br>+5V SATA Power Connector x 1 (Total up to 5V@2A)<br>(Up to 5V@1A, shared with 2 x 2.5" SSD as limitation with 170X000592) |
| Audio                       | Audio Header x 1                                                                                                                            |
| DIO/GPIO                    | GPIO 8-bit                                                                                                                                  |
| SMBus/I2C                   | SMBus/I2C (Default: SMBus)                                                                                                                  |
| Touch                       | —                                                                                                                                           |
| Fan                         | 4 Pin Smart Fan                                                                                                                             |
| SIM                         | Micro SIM x 1 (Optional)                                                                                                                    |
| Front Panel                 | Power Button, Reset Button, Power LED, SATA LED, Buzzer                                                                                     |
| Others                      | —                                                                                                                                           |
| Expansion                   |                                                                                                                                             |
| Mini PCI-E/mSATA            | Full Size mSATA/mPCIe (Default: mSATA)<br>(H110 SKU mPCIe by BOM Optional, Q170 SKU mPCIe selected by BIOS)                                 |
| M.2                         | —                                                                                                                                           |
| Others                      | —                                                                                                                                           |
| Environment & Certification |                                                                                                                                             |
| Operating Temperature       | 32°F ~ 140°F (0°C ~ 60°C)                                                                                                                   |
| Storage Temperature         | -40°F ~ 185°F (-40°C ~ 85°C)                                                                                                                |
| Operating Humidity          | 0% ~ 90% relative humidity, non-condensing                                                                                                  |
| MTBF (Hours)                | 393,440                                                                                                                                     |
| EMC                         | CE/FCC Class A                                                                                                                              |

## Packing List

- EPIC-KBS7 x 1
- CPU Cover x 1
- SATA Cable x 2
- SATA Power Cable x 1
- Screw kit x 1

## Optional Accessories

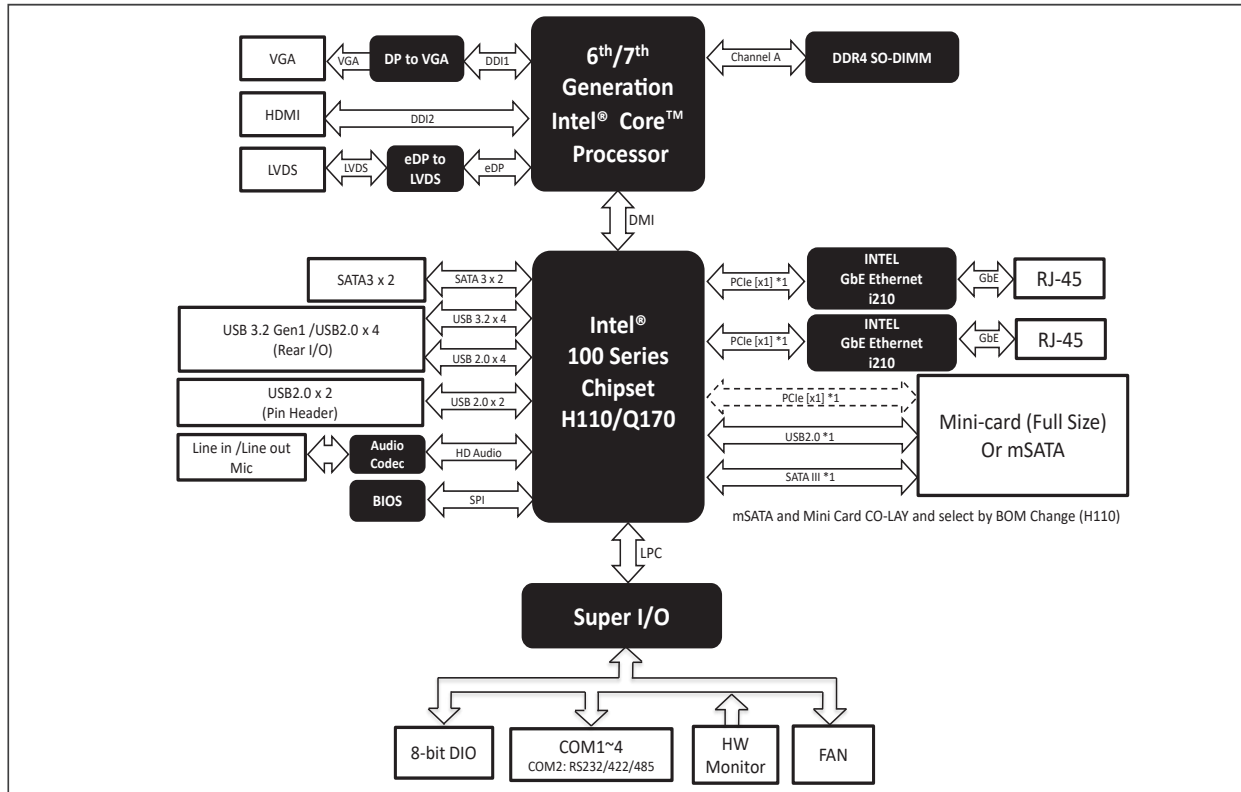
| Part Number     | Description                                                                    | QTY |
|-----------------|--------------------------------------------------------------------------------|-----|
| 1702002010      | Power Cable (2pin), Length 10cm                                                | 1   |
| 1709100254      | Audio Cable (3pin), Length 25cm                                                | 1   |
| 1700050207      | USB Cable (5pin), Length 20cm                                                  | 2   |
| 1701090150      | COM Cable (9pin), Length 15cm                                                  | 4   |
| 170X000592      | Dual SATA Power Cable, Length 20cm                                             | 1   |
| EPIC-KBS7-FAN01 | 79*79*61mm. Silver. Recommended for operating temperature 0°C ~ 60°C (54W/35W) | 1   |
| EPIC-KBS7-FAN02 | 60*60*30mm. Silver. Recommended for operating temperature 0°C ~ 55°C (35W)     | 1   |

# EPIC-KBS7

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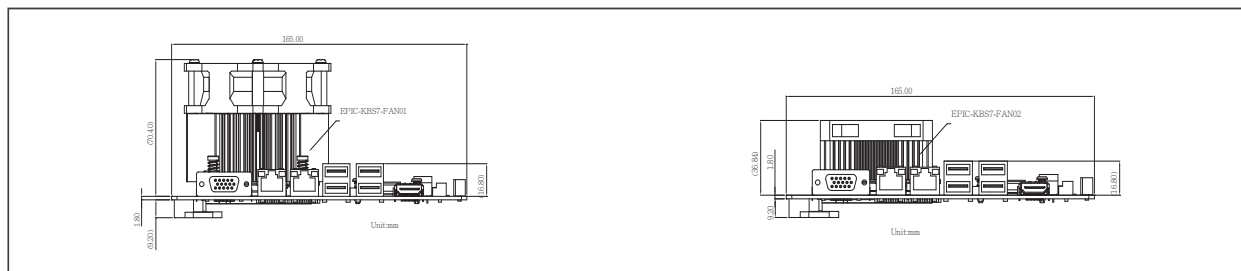
EPIC Boards

## Block Diagram



## Dimension

Unit: mm



## Ordering Information

| Part Number        | CPU                              | Memory          | Display                     | Storage        | LAN     | USB                         | COM Port                     | Expansion                              | TPM | Power                                 | Operating Temperature | Others                     |
|--------------------|----------------------------------|-----------------|-----------------------------|----------------|---------|-----------------------------|------------------------------|----------------------------------------|-----|---------------------------------------|-----------------------|----------------------------|
| EPIC-KBS7-A11-00A1 | LGA1151 Socket Type (with H110E) | DDR4 SODIMM x 1 | VGA x 1, HDMI x 1           | SATA 6Gb/s x 2 | GbE x 2 | USB3.2 Gen1 x 2, USB2.0 x 4 | RS232/422/485 x 1, RS232 x 3 | mSATA x 1 (Mini-PCIe by BOM Change)    | —   | +9V to +24V (2 Pin Phoenix Connector) | 0°C ~ 60°C            | GPIO 8 bits                |
| EPIC-KBS7-A11-00A2 | LGA1151 Socket Type (with Q170E) | DDR4 SODIMM x 1 | LVDS x 1, VGA x 1, HDMI x 1 | SATA 6Gb/s x 2 | GbE x 2 | USB3.2 Gen1 x 2, USB2.0 x 4 | RS232/422/485 x 1, RS232 x 3 | mSATA x 1 (Mini-PCIe selected by BIOS) | —   | +9V to +24V (2 Pin Phoenix Connector) | 0°C ~ 60°C            | GPIO 8 bits, Micro SIM x 1 |

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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