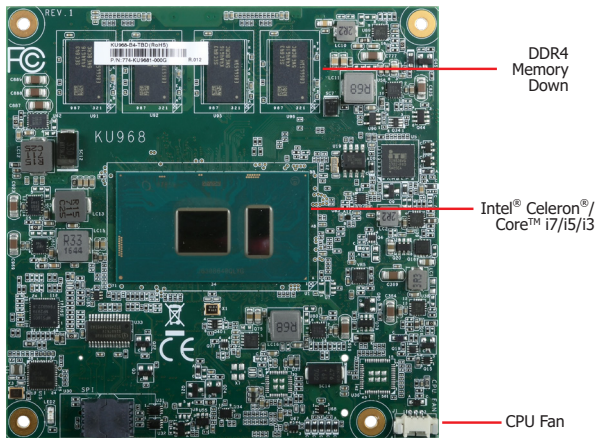


# KU968

ULT



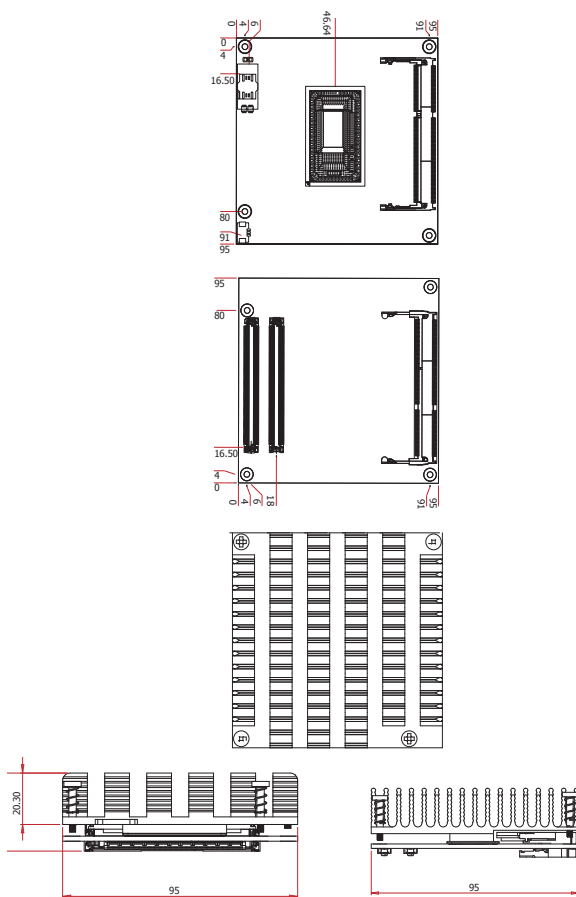
## Features

- Dual channel DDR4 2133MHz memory down up to 16GB
- Three independent displays: VGA\*/DDI + LVDS\*/eDP + DDI
- DP++ supports 4K x 2K resolution
- Multiple expansion: 8 PCIe x1, 1 LPC, 1 I<sup>2</sup>C, 1 SMBus
- Rich I/O: 1 Intel GbE, 4 USB 3.0, 8 USB 2.0

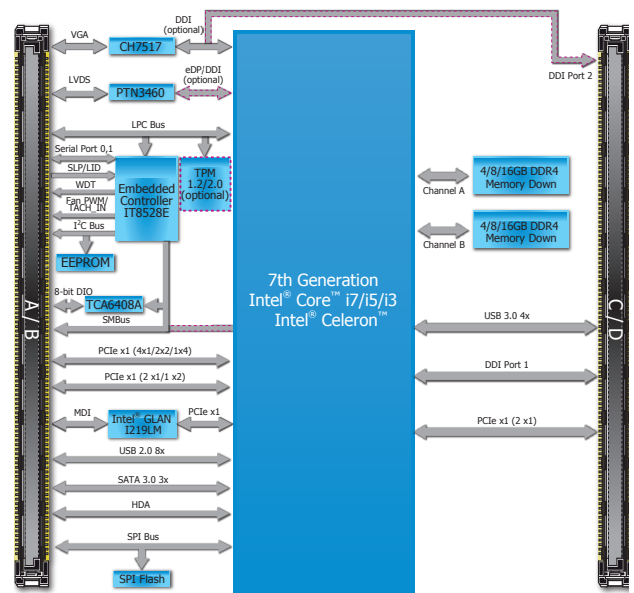
\* Populated by default



## Mechanical Drawing



## Block Diagram



PCIe L0~3		PCIe L4~5		PCIe L6~7	
x4		-		-	
x2		x2		-	
x1	x1	x1	x1	x1	x1

\* 5 PCIe x1 or 4 PCIe x1 + 1 PCIe x4 or 3 PCIe x1 + 2 PCIe x2 (support up to 5 devices and 8 lanes)

► Specifications

<b>SYSTEM</b>	<b>Processor</b>	7th Generation Intel® Core™ Processors, BGA 1356 Intel® Core™ i7-7600U Processor, Dual Core, 4M Cache, 2.8GHz (3.9GHz), 15W Intel® Core™ i5-7300U Processor, Dual Core, 3M Cache, 2.6GHz (3.5GHz), 15W Intel® Core™ i3-7100U Processor, Dual Core, 3M Cache, 2.4GHz, 15W Intel® Celeron® Processor 3965, Dual Core, 2M Cache, 2.2GHz, 15W	
	<b>Memory</b>	4GB/8GB/16GB DDR4 Memory Down	Dual Channel DDR4 2133MHz
	<b>BIOS</b>	Insyde SPI 128Mbit	
<b>GRAPHICS</b>	<b>Controller</b>	Intel® HD Graphics	
	<b>Feature</b>	OpenGL 5.0, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9	
	<b>Display</b>	1 x VGA/DDI (DDI available upon request) 1 x LVDS/eDP (eDP available upon request) 1 x DDI	VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel 24-bit, resolution up to 1920x1200 @ 60Hz eDP: resolution up to 4096x2304 @ 60Hz HDMI: resolution up to 4096x2160 @ 30Hz DP++: resolution up to 4096x2304 @ 60Hz
	<b>Triple Displays</b>	VGA + LVDS + DDI	DDI + eDP + DDI
<b>EXPANSION</b>	<b>Interface</b>	5 PCIe x1 or 4 PCIe x1 + 1 PCIe x4 or 3 PCIe x1 + 2 PCIe x2 (support up to 5 devices and 8 lanes) 1 x LPC 1 x I <sup>2</sup> C 1 x SMBus 2 x UART (TX/RX)	
<b>AUDIO</b>	<b>Interface</b>	HD Audio	
<b>ETHERNET</b>	<b>Controller</b>	1 x Intel® I219LM with iAMT11.0 PCIe (10/100/1000Mbps)	
<b>I/O</b>	<b>USB</b>	4 x USB 3.0 8 x USB 2.0	
	<b>SATA</b>	3 x SATA 3.0 (up to 6Gb/s)	RAID 0/1/5
	<b>DIO</b>	1 x 8-bit DIO	
	<b>WATCHDOG TIMER</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 Seconds
<b>SECURITY</b>	<b>TPM</b>	Available Upon Request	
<b>POWER</b>	<b>Type</b>	12V, 5VSB, VCC_RTC (ATX mode)	12V, VCC_RTC (AT mode)
	<b>Consumption</b>	Typical: 3965U: 12V @ 0.2134A (2.5608W) Max.: 3965U: 12V @ 1.3592A (16.3104W)	
<b>OS SUPPORT</b>		Windows: Windows 10 IoT Enterprise 64-bit	LINUX: Yocto Project v2.2
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: 0 to 60°C -40 to 85°C (with cooler)	Storage: -40 to 85°C
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	<b>MTBF</b>	866,065 hrs @ 25°C; 422,194 hrs @ 45°C; 238,613 hrs @ 60°C Calculation Model: Telcordia Issue 2 Environment: GB, GC – Ground Benign, Controlled	
<b>MECHANICAL</b>	<b>Dimensions</b>	COM Express® Compact	95mm (3.74") x 95mm (3.74")
	<b>Compliance</b>	PICMG COM Express® R2.1, Type 6	
<b>STANDARDS AND CERTIFICATIONS</b>	<b>Certification</b>	CE, FCC, RoHS, UKCA	

► Ordering Information

Model Name	P/N	Processor	Memory	VGA/DVI	LVDS/eDP	GbE	USB 3.0	USB 2.0	Power	Temp.
<b>KU968-T8-7600U</b>	770-KU9681-100G	i7-7600U	8G	VGA	LVDS	1	4	8	ATX/AT	-40 to 85°C
<b>KU968-T1-7600U</b>	770-KU9681-200G	i7-7600U	16G	VGA	LVDS	1	4	8	ATX/AT	-40 to 85°C
<b>KU968-B8-7300U</b>	770-KU9681-300G	i5-7300U	8G	VGA	LVDS	1	4	8	ATX/AT	0 to 60°C
<b>KU968-B4-7100U</b>	770-KU9681-400G	i3-7100U	4G	VGA	LVDS	1	4	8	ATX/AT	0 to 60°C
<b>KU968-B4-3965U</b>	770-KU9681-500G	3965U	4G	VGA	LVDS	1	4	8	ATX/AT	0 to 60°C
<b>KU968-B4-7300U</b>	770-KU9681-600G	i5-7300U	4G	VGA	LVDS	1	4	8	ATX/AT	0 to 60°C

► Packing List

• 1 KU968 board	
• 1 Cooler/Heat sink (Height: 23.8mm) or 1 Cooler/Heat sink (Height: 24.3mm)	Standard: A71-011060-000G Wide-Temp: A71-111027-000G

► Optional Items

• COM332-B carrier board kit	770-CM3321-000G
• Heat spreader (Height: 11mm)	A71-011070-000G