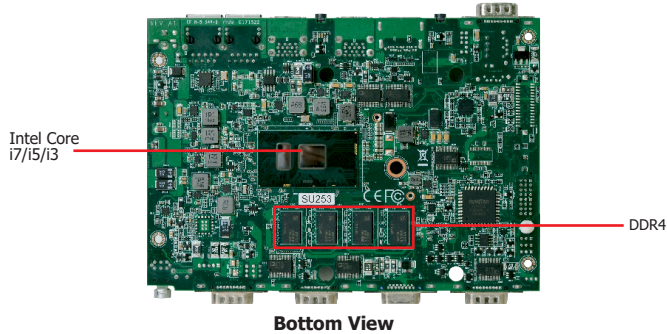
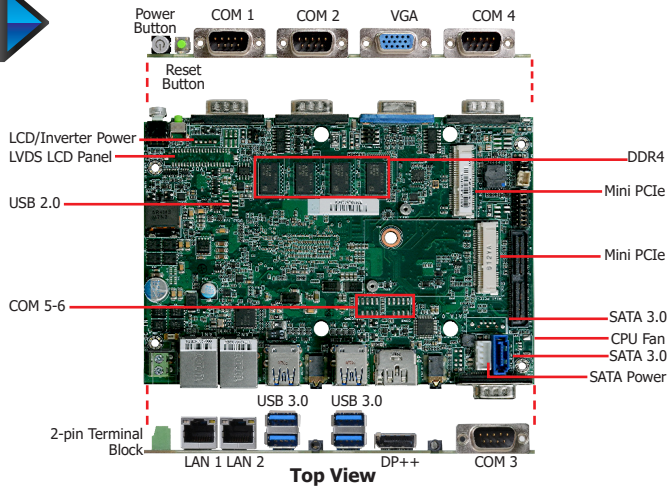


# SU251/SU253

ULT



\* The photos above refer to SU253.

## Features

- Dual channel DDR4 2133MHz memory down up to 8GB
- Three independent displays: VGA + DP++\*/HDMI + LVDS\*/eDP
- DP++ resolution up to 4096x2304 @ 60Hz
- Rich I/O: 2 Intel GbE, 6 COM, 4 USB 3.0, 2 USB 2.0

\* Populated by default

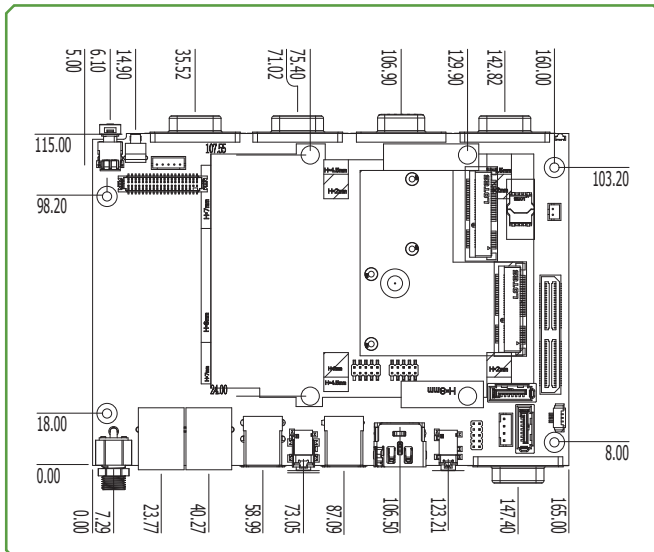


## Ordering Information

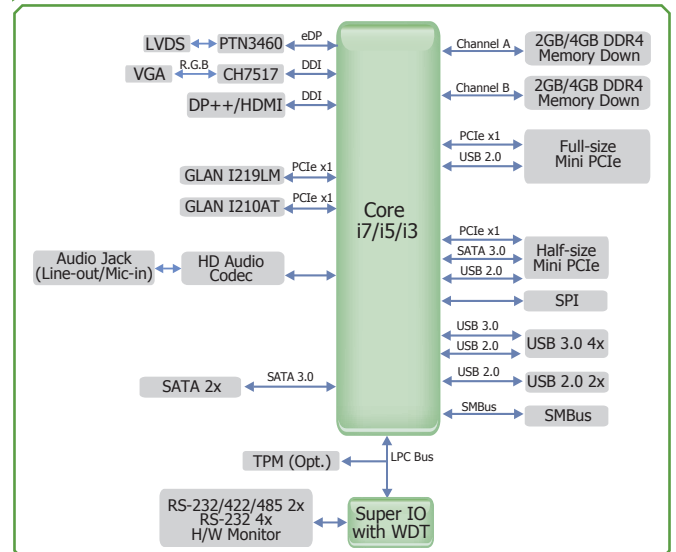
Model Name	P/N	Processor	Memory Down	DVI-D	LVDS/eDP	GbE	RS-232/422/485	USB 3.0	USB 2.0	Power	Thermal	Temp.
SU251-CB4-6600U	770-SU2511-000G	i7-6600U	4GB	None	LVDS	2	6	4	2	12V DC	Fanless	0 to 60°C
SU251-CB4-3955U	770-SU2511-100G	3955U	4GB	None	LVDS	2	6	4	2	12V DC	Fanless	0 to 60°C
SU253-CB4-6600U	770-SU2531-000G	i7-6600U	4GB	None	LVDS	2	6	4	2	15~36V DC	Fanless	0 to 60°C
SU253-CB4-3955U	770-SU2531-100G	3955U	4GB	None	LVDS	2	6	4	2	15~36V DC	Fanless	0 to 60°C

Note: i5-6300U and i3-6100U are supported upon request with MOQ requirement.

## Mechanical Drawing



## Block Diagram



## Specifications

<b>SYSTEM</b>	<b>Processor</b>	6th Generation Intel® Core™ Processors, BGA 1356 (Skylake-U*) Intel® Core™ i7-6600U Processor, Dual Core, 4M Cache, 2.6GHz (3.4GHz), 15W Intel® Core™ i5-6300U Processor, Dual Core, 3M Cache, 2.4GHz (3.0GHz), 15W Intel® Core™ i3-6100U Processor, Dual Core, 3M Cache, 2.3GHz, 15W Intel® Celeron® Processor 3955U, Dual Core, 2M Cache, 2.0GHz, 15W	
	<b>Memory</b>	4GB/8GB Memory Down Dual Channel DDR4 2133MHz	
	<b>BIOS</b>	Insyde SPI 128Mbit	
	<b>GRAPHICS</b>	<b>Controller</b>	Intel® HD Graphics GT Series
<b>GRAPHICS</b>	<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 1 x DP++/HDMI (HDMI available upon request) 1 x LVDS/eDP (eDP available upon request)	VGA: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2304 @ 60Hz HDMI: resolution up to 2560x1600 @ 60Hz or 4096x2160 @ 24Hz LVDS: dual channel 48-bit, resolution up to 1920x1200 @ 60Hz eDP: resolution up to 3840x2160 @ 60Hz
	<b>Triple Displays</b>	VGA + DP++/HDMI (HDMI available upon request) + LVDS/eDP (eDP available upon request)	
	<b>EXPANSION</b>	<b>Interface</b>	1 x Full-size Mini PCIe (PCIe/USB, PCIe by default) (only Core i7/i5 supports full-size Mini PCIe) 1 x Half-size Mini PCIe (USB + PCIe/SATA, PCIe/SATA select by jumper setting, SATA by default)
<b>AUDIO</b>	<b>Audio Codec</b>	Realtek ALC888S-VD2-GR	
<b>ETHERNET</b>	<b>Controller</b>	1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT11.0 (10/100/1000Mbps) (only Core i7/i5 supports iAMT)	
<b>FRONT I/O</b>	<b>Serial</b>	2 x RS-232/422/485; 1 x RS-232 (also supports an optional 8-bit DIO)	
	<b>Display</b>	1 x VGA	
	<b>Button</b>	1 x Power Button	1 x Reset Button
<b>REAR I/O</b>	<b>Ethernet</b>	2 x GbE (RJ-45)	
	<b>Serial</b>	1 x RS-232	
	<b>USB</b>	4 x USB 3.0	
	<b>Audio</b>	Mic-in; Line-out	
	<b>Display</b>	1 x DP++/HDMI	
<b>INTERNAL I/O</b>	<b>Serial</b>	2 x RS-232 (2.0mm pitch)	
	<b>USB</b>	2 x USB 2.0 (2.0mm pitch)	
	<b>Display</b>	1 x LVDS LCD Panel Connector	1 x LCD/Inverter Power (Supports optional eDP connector)
	<b>Audio</b>	1 x Audio (Line-out/Mic-in)	
	<b>SATA</b>	2 x SATA 3.0 (up to 6Gb/s)	1 x SATA Power
	<b>SMBus</b>	1 x SMBus	
	<b>Other I/O</b>	1 x Front Panel 1 x Chassis Intrusion	1 x Fan Connector
<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>	Single 12V +/-10% DC (SU251)	Wide Range 15~36V (SU253)
	<b>Connector</b>	2-pin Terminal Block (Default) DC Jack (available upon request) Vertical Type Connector (available upon request)	
	<b>Consumption</b>	SU251 Typical: 6600U:12V @ 0.45A (5.44Watt) Max: 6600U:12V @ 3.14A (37.67Watt)	SU253 Typical: 6600U:19V @ 0.46A (8.7Watt) Max: 6600U:19V @ 2.07A (39.29Watt)
	<b>RTC Battery</b>	CR2032 Coin Cell	
<b>OS SUPPORT</b>	<b>Microsoft/Linux</b>	Windows 7 (/WES7) (32/64-bit) Windows 8.1 (64-bit) Windows 10 IoT Enterprise (64-bit)	Debian 8 (with VESA graphic driver) CentOS 7 (with VESA graphic driver) Linux
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: 0 to 60°C	Storage: -40 to 85°C
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	<b>MTBF</b>	SU251 : 369,377 hrs @ 25°C; 205,103 hrs @ 45°C ; 123,607 hrs @ 60°C SU253 : 359,921 hrs @ 25°C; 199,960 hrs @ 45°C ; 120,832 hrs @ 60°C Calculation model: Telcordia Issue 2, Method I Case 3 Environment: GB, GC – Ground Benign, Controlled	
<b>MECHANICAL</b>	<b>Dimensions</b>	4" SBC Form Factor	165mm (6.49") x 115mm (4.53")
	<b>Height</b>	PCB: 1.6mm	Top Side: TBD, Bottom Side: TBD

## Packing List

• 1 SU251/SU253 board	
• 1 COM port cable (Length: 250mm, 1 x COM ports)	A81-017001-001G
• 1 Serial ATA data cable (Length: 500mm)	332-553001-005G
• 1 Serial ATA power cable (Length: 250mm)	A81-004041-016G
• 1 Audio cable (Length: 160mm)	332-953053-004G
• 1 Front panel cable (Length: 100mm)	A81-009097-001G
• 1 Heat sink for -20 to 70°C (Height: 31mm) for 0 to 60°C (Height: 21mm)	A71-011074-000G A71-011075-000G

## Optional Items

• USB port cable (Length: 200mm)	A81-001032-016G
• COM port cable (Length: 250mm, 1 x COM ports)	A81-017001-001G
• Serial ATA data cable (Length: 500mm)	332-553001-005G
• Serial ATA power cable (Length: 250mm)	A81-004041-016G
• Power adapter (SU251, 60W, 12V, DC Jack)	671-106012-000G
• Power adapter (SU253, 120W, 19V)	671-112009-100G
• Heat spreader (Height: 8.0mm)	A71-808302-000G