6th Gen Intel® Core™ Processor Thin Mini-ITX

IoT Solutions Alliance

SU171/SU173

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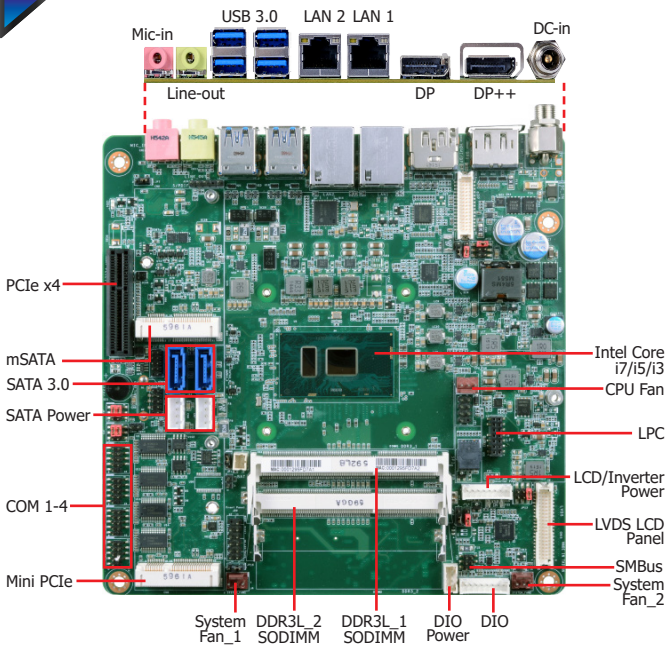
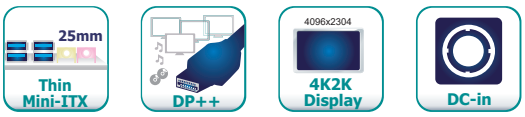


* The photos above refer to SU173.

Features

- 2 DDR3L 1600MHz SODIMM up to 16GB
- Three independent displays: LVDS*/eDP + DP + DP++
- DP++ resolution supports up to 4096x2304 @ 60Hz
- Multiple expansion: 1 PCIe x4, 1 Mini PCIe, 1 LPC
- Storage: 2 SATA 3.0, 1 mSATA/Mini PCIe
- Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.0, 4 USB 2.0
- LPC EXT-RS232/485 module supports 4 COM ports

* Populated by default

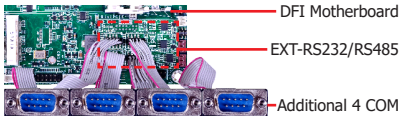


2 Extension Modules for Additional 4 COM Ports (via the LPC connector)

DFI's Proprietary Technology

EXT-RS232
- 4 RS232

EXT-RS485
- 4 RS485

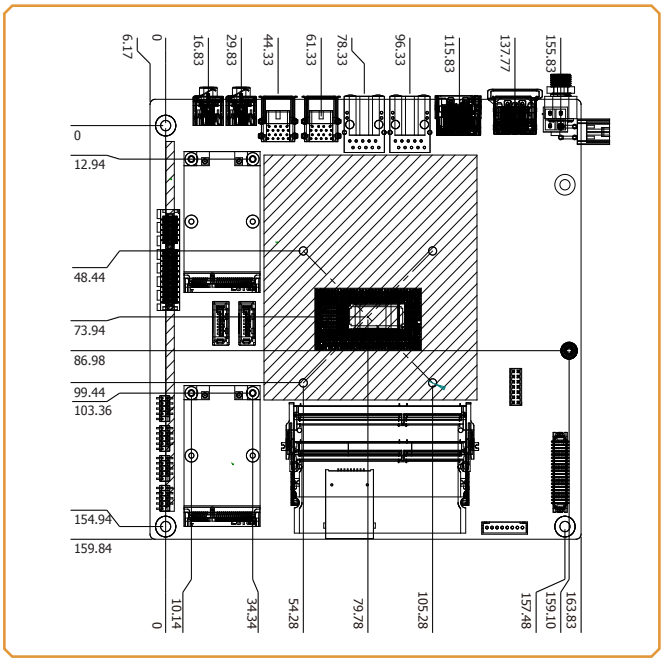


Ordering Information

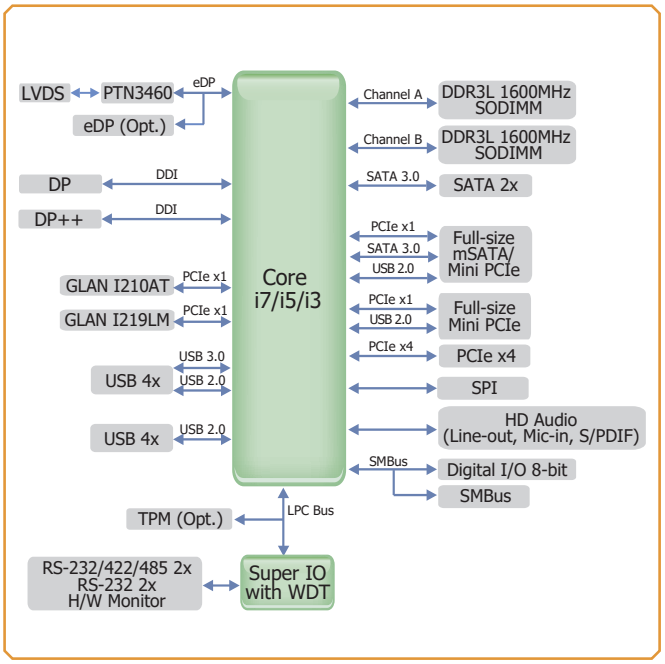
Model Name	P/N	Processor	Memory	LVDS/eDP	DP	GbE	RS-232/422/485	RS-232	USB 3.0	USB 2.0	Power	Thermal	Temp.
SU171-NB-6300U	770-SU1711-200G	i5-6300U	2 SODIMM	LVDS	2	2	2	2	4	4	12V DC	Fanless	0 to 60°C
SU171-NB-3955U	770-SU1711-000G	3955U	2 SODIMM	LVDS	2	2	2	2	4	4	12V DC	Fanless	0 to 60°C
SU171-NB-6600U	770-SU1711-300G	i7-6600U	2 SODIMM	LVDS	2	2	2	2	4	4	12V DC	Fanless	0 to 60°C
SU171-NE-6600U	770-SU1711-400G	i7-6600U	2 SODIMM	LVDS	2	2	2	2	4	4	12V DC	Fanless	-20 to 70°C
SU173-NB-6300U	770-SU1731-200G	i5-6300U	2 SODIMM	LVDS	2	2	2	2	4	4	19V DC	Fanless	0 to 60°C
SU173-NB-3955U	770-SU1731-000G	3955U	2 SODIMM	LVDS	2	2	2	2	4	4	19V DC	Fanless	0 to 60°C
SU173-NB-6600U	770-SU1731-300G	i7-6600U	2 SODIMM	LVDS	2	2	2	2	4	4	19V DC	Fanless	0 to 60°C
SU173-NE-6600U	770-SU1731-400G	i7-6600U	2 SODIMM	LVDS	2	2	2	2	4	4	19V DC	Fanless	-20 to 70°C

Note: i3-6100U is supported upon request with MOQ requirement

Mechanical Drawing



Block Diagram



Specifications

Model Name		SU171	SU173
SYSTEM	Processor	6th Generation Intel® Core™ Processors, BGA 1356 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	
	Memory	Two 204-pin SODIMM up to 16GB Dual Channel DDR3L 1600MHz	Two 204-pin SODIMM up to 16GB Dual Channel DDR3L 1600MHz
	BIOS	Insyde SPI 128Mbit	Insyde SPI 128Mbit
GRAPHICS	Controller	Intel® HD Graphics 520	Intel® HD Graphics 520
	Feature	OpenGL 4.4, 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	OpenGL 4.4, 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
	Display	1 x LVDS/eDP (eDP available upon request) 1 x DP 1 x DP++ **LVDS:** dual channel 48-bit, resolution up to 1920x1200 @ 60Hz **DP:** resolution up to 4096x2304 @ 60Hz	1 x LVDS/eDP (eDP available upon request) 1 x DP 1 x DP++ **LVDS:** dual channel 48-bit, resolution up to 1920x1200 @ 60Hz **DP:** resolution up to 4096x2304 @ 60Hz
	Triple Displays	LVDS + DP + DP++ eDP + DP + DP ++	LVDS + DP + DP++ eDP + DP + DP ++
EXPANSION	Interface	1 x PCIe x4 (Gen 3) 1 x Full-size Mini PCIe (PCIe/USB/SATA) 1 x Full-size Mini PCIe (PCIe/USB)	1 x PCIe x4 (Gen 3) 1 x Full-size Mini PCIe (PCIe/USB/SATA) 1 x Full-size Mini PCIe (PCIe/USB)
AUDIO	Audio Codec	Realtek ALC888S-VD2-GR	Realtek ALC888S-VD2-GR
ETHERNET	Controller	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)	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)
REAR I/O	Ethernet	2 x GbE (RJ-45)	2 x GbE (RJ-45)
	USB	4 x USB 3.0	4 x USB 3.0
	Display	1 x DP 1 x DP++	1 x DP 1 x DP++
	Audio	1 x Line-out 1 x Mic-in	1 x Line-out 1 x Mic-in
INTERNAL I/O	Serial	2 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch) 2 x RS-232 (2.0mm pitch)	2 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch) 2 x RS-232 (2.0mm pitch)
	USB	4 x USB 2.0 (2.0mm pitch) or 2 x USB 2.0 (2.0mm pitch) + 1 x Vertical USB 2.0 (type A) (available upon request)	4 x USB 2.0 (2.0mm pitch) or 2 x USB 2.0 (2.0mm pitch) + 1 x Vertical USB 2.0 (type A) (available upon request)
	Display	1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power 1 x eDP LCD Panel Connector (available upon request)	1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power 1 x eDP LCD Panel Connector (available upon request)
	Audio	1 x S/PDIF	1 x S/PDIF
	SATA	2 x SATA 3.0 (up to 6Gb/s) 2 x SATA Power RAID 0/1/5	2 x SATA 3.0 (up to 6Gb/s) 2 x SATA Power RAID 0/1/5
	DIO	1 x 8-bit DIO	1 x 8-bit DIO
	LPC	1 x LPC (supports LPC EXT-RS232/RS485 module)	1 x LPC (supports LPC EXT-RS232/RS485 module)
	SMBus	1 x SMBus	1 x SMBus
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	dTPM 2.0 (available upon Request)	dTPM 2.0 (available upon Request)
POWER	Type	Single 12V +/-10% DC	Wide Range 15~36V
	Connector	DC-in Jack Right Angle Connector (4-pin) (available upon request) Vertical Type Connector (4-pin) (available upon request)	DC-in Jack Right Angle Connector (4-pin) (available upon request) Vertical Type Connector (4-pin) (available upon request)
	Consumption	**Typical:** 6600U:12V @ 0.98A (11.76Watt); 6300U:12V @ 0.95A (11.40Watt) **Max:** 6600U:12V @ 1.62A (19.44Watt); 6300U:12V @ 1.58A (18.96Watt)	**Typical:** 6600U:19V @ 0.48A (9.12Watt); 6300U:19V @ 0.43A (8.170Watt) **Max:** 6600U:19V @ 1.05A (19.95Watt); 6300U:19V @ 0.90A (17.10Watt)
	RTC Battery	Lithium 3V (210mAH)	Lithium 3V (210mAH)
OS SUPPORT	OS SUPPORT	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	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
ENVIRONMENT	Temperature	**Operating:** 0 to 60°C / -20 to 70°C **Storage:** -40 to 85°C	**Operating:** 0 to 60°C / -20 to 70°C **Storage:** -40 to 85°C
	Humidity	**Operating:** 5 to 90% RH **Storage:** 5 to 90% RH	**Operating:** 5 to 90% RH **Storage:** 5 to 90% RH
	MTBF	357,691 hrs @ 25°C; 206,450 hrs @ 45°C; 130,229 hrs @ 60°C **Calculation model:** Telcordia Issue 2, Method I Case 3 **Environment:** GB, GC – Ground Benign, Controlled	347,511 hrs @ 25°C; 200,230 hrs @ 45°C; 126,434 hrs @ 60°C **Calculation model:** Telcordia Issue 2, Method I Case 3 **Environment:** GB, GC – Ground Benign, Controlled

Specifications

Model Name		SU171	SU173
MECHANICAL	Dimensions	Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7")	Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7")
	Height	**PCB:** 1.6mm **Top Side:** 16.5mm, **Bottom Side:** 3.5mm	**PCB:** 1.6mm **Top Side:** 16.5mm, **Bottom Side:** 3.5mm
CERTIFICATIONS	Certifications	CE, FCC Class B, RoHS	CE, FCC Class B, RoHS

Packing List

• 1 SU171/SU173 motherboard	
• 1 COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
• 1 Serial ATA data with power cable (Length: 300mm)	A81-002013-000G
• 1 Heat sink (Height: 25mm)	A71-010033-000G

Optional Items

• USB port cable (Length: 200mm)	A81-001032-016G
• COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
• Serial ATA data with power cable (Length: 300mm)	A81-002013-000G
• Power adapter (100W, 12V, Level 6)	671-110006-100G
• Power adapter (120W, 19V)	671-112009-100G
• LPC EXT-RS232 module (4 x RS232 ports)	770-EXTRS1-000G
• LPC EXT-RS485 module (4 x RS485 ports)	770-EXTRS1-100G
• I/O shield	A49-SU1710-000G
• Half height I/O shield	A49-SU1710-010G
• DT122 Chassis	761-DT1220-200G

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