

UST500-517-FL NEW

Fanless Embedded System with 7th/6th Gen Intel® Core™, Pentium® and Celeron® Processor for Railway and Vehicle PC

Features

- CE, FCC certified; EN 50155, ISO 7637-2 compliant
- 7th/6th gen Intel® Core™ & Pentium® processors (LGA1151 up to 65W) with Intel® Q170
- Fanless and Wide operating temperatures from -40°C to +70°C
- Flexible LAN selection, up to 16 RJ-45 GbE PoE LAN ports
- 24 VDC power input
- Intelligent solution of vehicle power management (ACC ignition)
- Convenient and Accessible Storage, two/four 2.5" SATA drive, 1 mSATA



▲ Front view



▲ Rear View



Specifications

Standard Color	Silver		
Construction	Aluminum extrusion and heavy-duty steel, IP30		
CPU (LGA1151 socket type)	7th gen Intel® Kaby Lake processor, TDP: 35 - 65W 6th gen Intel® Skylake processor, TDP: 35 - 65W		
Chipset	Intel® Q170		
System Memory	2 x DDR4-1866/2133/2400 SO-DIMM, up to 32GB		
BIOS	AMI		
TPM	TPM 2.0 (optional)		
System I/O Outlet	Serial	2 x DB9 serial console or RS-232/422/485	
	Display	1 x VGA (supports up to 1920 x 1200 @60Hz)	
		1 x DVI-D (supports up to 4K/2K @60Hz)	
		1 x HDMI (supports up to 4K/2K @60Hz)	
	Audio	1 x Mic-in, 1 x Line-out	
	Ethernet	Flexible LAN selection:	
		• 8 x RJ-45 GbE LAN with 2 SATA (Intel® i211-AT)	
		• 8 x M12 A-coded GbE LAN with 4 SATA (Intel® i211-AT)	
		• 8 x RJ-45, 8 x M12 A-coded GbE LAN with 4 SATA (Intel® i211-AT) • 16 x RJ-45 GbE LAN with 4 SATA or 2 SATA (Intel® i211-AT)	
	USB	4 x USB 3.0	
DIO	1 x Terminal block isolated 6-in/2-out DIO (isolation voltage: 5 kV)		
Others	1 x Reset button		
	5 x Antenna opening		
	2 x External accessible SIM card socket		
Expansion Interface	2 x Full-size Rev.1.2 PCI Express Mini Card slot:		
	• 2 x USB/PCIe with external SIM socket		
	2 x Half-size Rev.1.2 PCI Express Mini Card slot:		
	• 1 x mSATA/USB/PCIe • 1 x USB		
Storage	SATA Drive	• 2 x 2.5" 15 mm internal SATA drive with 2 SATA, Intel® RAID 0/1 supported • 2 x 2.5" 15 mm swappable SATA drive with 2 SATA, Intel® RAID 0/1 supported • 4 x 2.5" 15 mm swappable SATA drive with 4 SATA, Intel® RAID 0/1/5/10 supported	
	mSATA	1 x Half-sized mSATA (occupied 1 x PCI Express Mini Card slot)	
Watchdog Timer	255 levels, 1 to 255 sec.		

Power in	Power Supply	1 x Terminal block, 24 VDC with ACC ignition
	Power consumption	24V,10A
PoE (PSE, Power Sourcing Equipment)	PoE Performance	Up to 16 x RJ-45/8 x RJ-45 & 8 x M12 PoE output max. 200W supports PoE & PoE+ • PoE (802.3af 15.4W/port) • PoE+ (802.3at 30W/port)
	System Indicator	1 x LED indicator for SATA drive activity 1 x LED indicator for power 2 x Programmable
Operating Temperature	-40°C to +70°C (-40°F to +158°F) with W.T. peripheral*	
Humidity	0% to 95%, non-condensing	
Dimensions	2 internal SATA SKU: 280 mm (11.02") (W) x 210.5 mm (8.27") (D) x 70 mm (2.76") (H)*	
	2 swappable SATA SKU: 280 mm (11.02") (W) x 210.5 mm (8.27") (D) x 83.7 mm (3.30") (H)*	
	4 swappable SATA SKU: 280 mm (11.02") (W) x 210.5 mm (8.27") (D) x 99.2 mm (3.91") (H)*	
	*Without wall mount	
Mounting	Wall mount	
Weight (net/gross)	2 internal SATA SKU: 3.95 kg (8.71 lb)/4.97 kg (10.96 lb)	
	2 swappable SATA SKU: 4.92 kg (10.85 lb)/5.75 kg (12.68 lb)	
	4 swappable SATA SKU: 4.92 kg (10.85 lb)/5.74 kg (12.65 lb)	
Certifications	CE (Class A), FCC (Class A) certified; EN 50155, ISO 7637-2 compliant	
EMC	CE/FCC	EN 55032 (Class A), EN 55024, FCC part 15 B (Class A)
	EN 50155	EN 50121-3-2, IEC 62236-3-2 compliant
Vibration Endurance	3 Grms w/ SSD (5 to 500Hz, X/Y/Z direction; random, operating)	
	MIL-STD-810G, Method 514.6C-VL Category 4 compliant	
Shock	EN 50155	EN (IEC) 61373 category 1 class B compliant
	EN 50155	EN (IEC) 61373 category 1 class B, Half-sine pulse, 5g, 30ms (longitudinal direction), 3g, 30ms (vertical/transverse direction) compliant
EOS Support	Windows® 10 64-bit, Windows® 7 64/32-bit (for 6th gen Intel CPU), Linux	
Software Support	AMS.AXView 2.0	

*Wide operating temperature peripheral

Ordering Information

System

UST500-517-FL-16RJ/8RJ8M12/8M12-4SATA-TDC (P/N: E274500100) for 16 x RJ-45 LAN (P/N: E274500101) for 8 x RJ-45 8 x M12 LAN (P/N: E274500102) for 8 x M12 LAN	Fanless embedded system with 6/7th gen Intel® desktop processor (LGA1151), Q170, VGA, DVI-D, HDMI, 6-in/2-out DIO, 2 COM, 4 USB 3.0, 16 RJ-45/8 RJ-45, 8 M12/8 M12 PoE GbE LAN, 4 SATA drive and ACC ignition <i>4 Swappable SATA Drive SKUs</i>
UST500-517-FL-8RJ-2SATA-TDC (P/N: E274500103) for 8 x RJ45 LAN	Fanless embedded system with 6/7th gen Intel® desktop processor (LGA1151), Q170, VGA, DVI-D, HDMI, 6-in/2-out DIO, 2 COM, 4 USB 3.0, 8 RJ-45/16 RJ-45 PoE GbE LAN, 2 SATA drive and ACC ignition <i>2 Swappable/Internal SATA Drive SKUs</i>
UST500-517-FL-16RJ/8RJ-2SATA-TRAY-TDC (P/N: E274500104) for 16 x RJ-45 LAN (P/N: E274500105) for 8 x RJ-45 LAN	

*TDC: terminal block DC-in connector, DC voltage input

Optional

Communication Modules	8816N3239A0E	3G UC20GKit for tBOX/UST (3G ANT) (E)
	8816N3235A0E	3G/GPS UC20GKit for tBOX (3G/GPS ANT)
	8816K6603A0E	AMPAK AP12356 Wi-Fi kit (E)
	8816N5003A0E	AP12356 w/WT Wi-Fi kit for tBOX/UST SFP (E)
	881745001A0E	GPS Kit M8N w/o adapter for tBOX/UST SFP (E)
	8816N5002A0E	LTE MC7455 (US) kit for tBOX/UST SFP (E)
	8816N5001A0E	LTE MC7455 (US) w/ GPS kit for UST SFP (E)
	88160620BA0E	LTE SIMCOM SIM7100 (EU) for tBOX/UST SFP (E)
	881745000A0E	LTE+GPS SIM7100EU kit for tBOX/UST SFP (E)
	8816N5000A0E	LTE SIM7100JC kit for tBOX500, JPN SFP (E)
8816N5006A0E	LTE+GPS SIM7100 (JPE) kit tBOX (30) SFP (E)	
8816N5004A0E	LTE+GPS SIM7100C (TW) kit tBOX (30) SFP (E)	
AC to DC Adapter	50906D24000E	Adapter 24V/120W, wire only, FSP120-AAAN3

*Specifications and certifications may vary based on different requirements.

Power Protection

- OCP (over current protection)
- OVP (over voltage protection)
- UVP (under voltage protection)
- RPP (reverse polarity protection)
- ISO 7637-2 pulse 1, 2a, 2b, 3a, 3b, 4 (vehicle version)
- Setting for in-vehicle battery protection: system will be automatically turned down at low voltage level
- Setting for ignition control: system will activate a counter while in-vehicle battery at low voltage, ACC-ON delay and shut down delay

Dimensions

