

TPC-1251T

TPC-1551T

TPC-1751T

Thin-Client Terminal with Intel® Atom™ Processor



Introduction

The TPC-xx51T thin-client terminal is the next-generation model of Advantech's TPC-xx51T industrial panel PC. Equipped with a TFT LCD, low-power Intel® Atom™ E3845, 1.91GHz, quad-core processor, and 4 GB of DDR3L SDRAM, TPC-xx51T delivers high-performance computing in a compact, fanless system. For enhanced durability to satisfy diverse industrial automation applications, TPC-xx51T supports a wide operating temperature range (-20 ~ 60 °C/-4 ~ 140 °F) and features a true-flat 5-wire resistive touchscreen with IP66-rated front panel, die-cast aluminum alloy front bezel, and 100 x 100 VESA mount kit. Moreover, with the provision of two full-size mini PCIe slots, which support mSATA interface for storage and USB/PCIe interface for Advantech's iDoor technology separately, TPC-xx51T can be easily expanded to provide additional I/O ports, isolated digital I/O, fieldbus protocols, MRAM, and 3G/GPS/GPRS/Wi-Fi communication capabilities.

Specifications

General

- **BIOS** AMI UEFI
- **Certification** BSMI, CCC, CE, FCC Class A, UL
- **Cooling System** Fanless design
- **Dimensions (W x H x D)**
 - 12.1": 311.8 x 238 x 55.4 mm (12.28 x 9.37 x 2.18 in)
 - 15": 383.2 x 307.3 x 55.9 mm (15.09 x 12.10 x 2.2 in)
 - 17": 410.4 x 343.4 x 56.9 mm (16.16 x 13.52 x 2.24 in)
- **Enclosure** Front bezel: Die-cast aluminum alloy
Back housing: SECC
- **Mount Options** VESA mount, Desktop/wall/panel
- **OS Support** Windows 10 Enterprise LTSB, Android, Advantech Linux
- **Power Consumption**
 - 12.1": 25W Typical, 43.8W Max
 - 15": 25W Typical, 50W Max
 - 17": 29W Typical, 58W Max
- **Power Input** 24 V_{DC} +/- 20%
- **Watchdog Timer** 1 ~ 255 sec (system)
- **Weight (Net)**
 - 12.1": 3.12 kg (6.88 lb)
 - 15": 4.4 kg (9.7 lb)
 - 17": 5.1 kg (11.24 lb)

System Hardware

- **CPU** Intel® Atom™ E3845 1.91GHz Quad-core processor
- **Memory** 1 x SO-DIMM with 4 GB DDR3L SDRAM (up to 8 GB)
- **LAN** 2 x 10/100/1000 BASE-T
- **Expansion Slots** 1 x Full-size mini PCIe (PCIe / USB)
- **Storage** 1 x 2.5" SATA SSD, 1 x mSATA
- **I/O**
 - 1 x RS-232
 - 1 x RS-232/422/485
 - 1 x USB 3.0
 - 3 x USB 2.0
 - 1 x iDoor slot

Touchscreen

- **Lifespan** 36 million touches at a single point
- **Light Transmission** Above 75%
- **Resolution** Linearity
- **Type** 5-wire analog resistive

Features

- Intel® Atom™ E3845 1.91 GHz quad-core processor with 4 GB DDR3L SDRAM
- True-flat touchscreen with 5-wire resistive touch control and IP66-rated front panel
- Wide operating temperature range (-20 ~ 60 °C/-4 ~ 140 °F)
- Front-facing LED indicators to show operating status
- Advantech iDoor technology and SSD/HDD bay
- Compact, fanless system with aluminum alloy front bezel and chassis grounding protection
- Supports VESA mount (100 x 100 mm)
- Supports Advantech's SNMP Subagent software
- Supports Advantech's WISE-PaaS/RMM remote management software

LCD

	TPC-1251T	TPC-1551T	TPC-1751T
Display Type	XGA TFT LED LCD	XGA TFT LED LCD	SXGA TFT LED LCD
Display Size	12.1"	15"	17"
Max. Resolution	1024 x 768	1024 x 768	1280 x 1024
Max. Colors	16.2M	16.2M	16.7M
Luminance	600 cd/m ²	300 cd/m ²	350 cd/m ²
Viewing Angle (H/V°)	178/178	176/176	160/140
Backlight Life	50,000 hr	70,000 hr	50,000 hr
Contrast Ratio	1000:1	2000:1	800:1

LCD (Sunlight Readable)

	TPC1251TE3CU2201-T	TPC1551TE3CU2201-T
Display Size	12.1"	15"
Max. Resolution	800 x 600	1024 x 768
Max. Colors	16.2M	16.7M
Luminance	1200 cd/m ²	1200 cd/m ²
Viewing Angle (H/V°)	160/140	176/176
Backlight Life	50,000 hr	70,000 hr
Contrast Ratio	700:1	2500:1

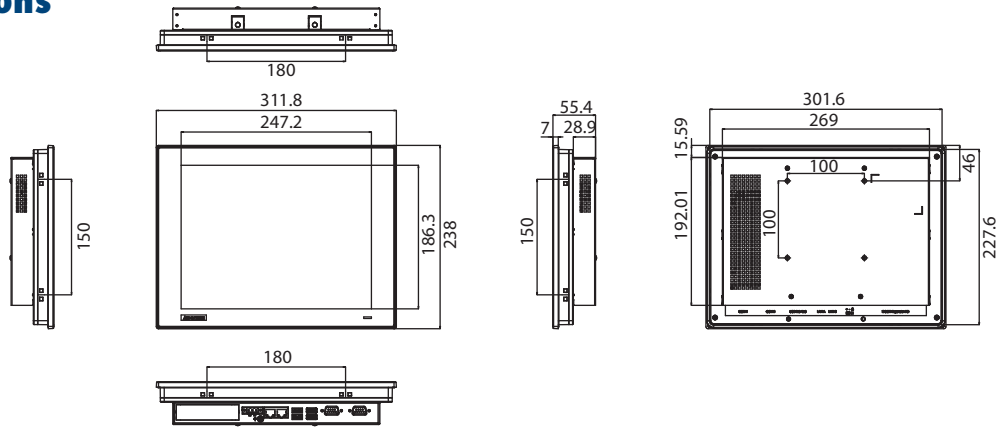
Environment

- **Relative Humidity** Operating, 95% RH @ 40° C, Non-Condensing
Non-Operating, 95% RH @ 60° C, Non-Condensing
- **Ingress Protection** IP66-rated front panel
- **Operating Temperature** -20 ~ 60 °C (-4 ~ 140 °F)
- **Storage Temperature** -30 ~ 70 °C (-22 ~ 158 °F)
- **Vibration Protection** With SSD: 1 Grms (5 ~ 500 Hz) (operating, random vibration)

Dimensions

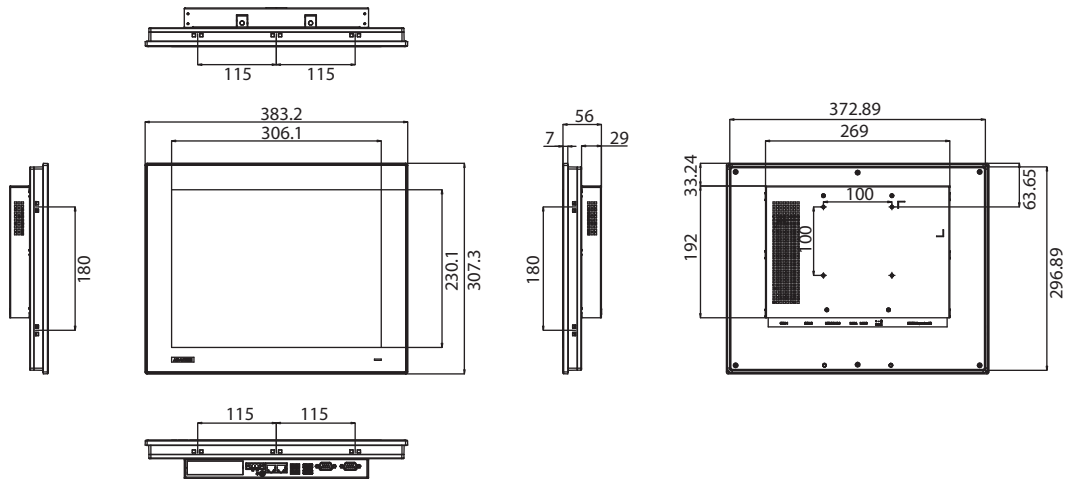
Unit: mm

TPC-1251T



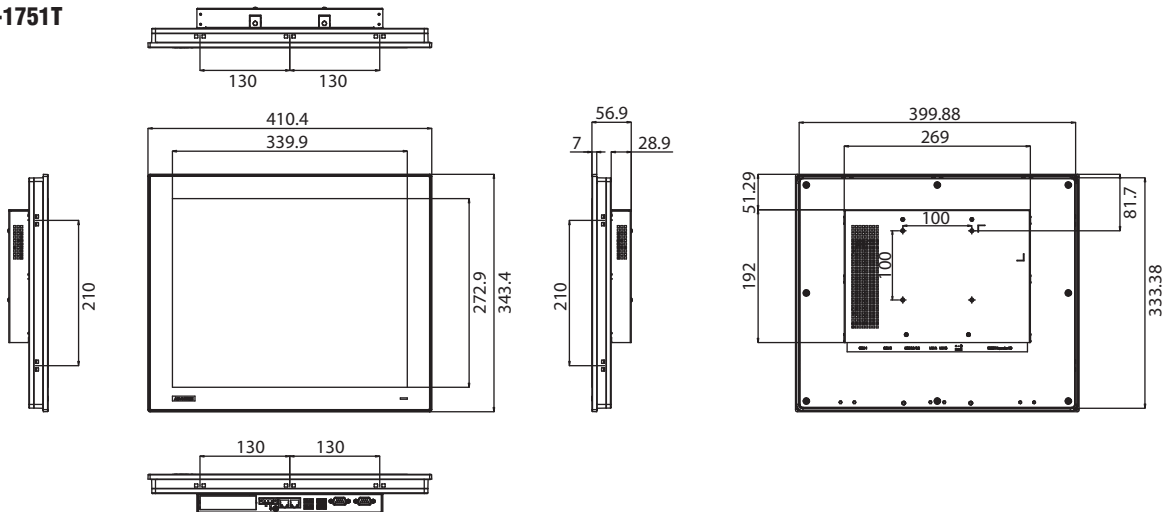
Panel Cutout Dimensions: 303 x 229 mm (11.93 x 9.02 in)

TPC-1551T



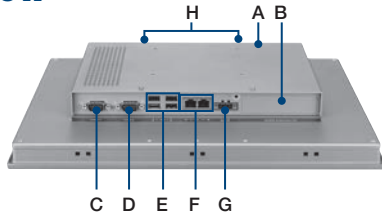
Panel Cutout Dimensions: 374.5 x 298.5 mm (14.74 x 11.75 in)

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Panel Cutout Dimensions: 401.3 x 334.8 mm (15.80 x 13.18 in)

Rear View



- A. HDD/SSD bay
- B. iDoor slot
- C. RS-232
- D. RS-232/422/485
- E. USB 2.0 and 3.0
- F. LAN (10/100/1000)
- G. Power input
- H. Antenna port

iDoor Modules

- **PCM-24D2R2-BE** Isolated RS-232, DB9 x 2, (USB type)
- **PCM-24D2R4-BE** Isolated RS-422/485, DB9 x 2, (USB type)
- **PCM-24D4R2-BE** Non-Isolated RS-232, DB37 x 1 (USB Type)
- **PCM-24D4R4-BE** Non-Isolated RS-422/485, DB37 x 1 (USB Type)
- **PCM-27D24DI-AE** Digital I/O, 16 DI / 8 DO, Isolation, DB37 x 1
- **PCM-24R2GL-AE** 2 Port Giga LAN Intel i350 PCIe mini card
- **PCM-24R2PE-AE** Intel i350, GbE, PoE IEEE 802.3af, PD, RJ45 x 2
- **PCM-24U2U3-BE** PCM-24U2U3, 2-Port USB 3.0, mPCIe
- **PCM-23C1CF-CE** 1 slot Cfast iDoor for CFast with PWR cable
- **PCM-23U1DG-CE** Internal locked USB Slot for USB Dongle, mPCIe
- **PCM-26D2CA-BE** SJA1000 CANBus, Lattice, CANOpen, DB9 x 2

Ordering Information

- **TPC-1251T-E3CE** 12.1" XGA Touch Panel PC, Atom E3845 1.91GHz, 4G
- **TPC-1251T-E3CU** 12.1" XGA Touch Panel PC, Atom E3845, 4G, for US
- **TPC-1551T-E3CE** 15" XGA Touch Panel PC, Atom E3845 1.91 GHz, 4G
- **TPC-1551T-E3CU** 15" XGA Touch Panel PC, Atom E3845, 4G, for US
- **TPC-1751T-E3CE** 17" SXGA Touch Panel PC, Atom E3845 1.91 GHz, 4G
- **TPC-1751T-E3CU** 17" SXGA Touch Panel PC, Atom E3845, 4G, for US
- **TPC1251TE3CU2201-T** 12.1" XGA Touch Panel PC, Atom E3845, 4G, Sunlight Readable
- **TPC1551TE3CU2201-T** 15" XGA Touch Panel PC, Atom E3845, 4G, Sunlight Readable

Note 1: Can be equipped with an Intel® Celeron® J1900 CPU upon request

Optional Accessories

- **PWR-247-DE** 60W 24 V_{DC} /2.5A power supply
- **1702002600** Power cable (US) 1.8 M
- **1702002605** Power cable (EU) 1.8 M
- **1702031801** Power cable (UK) 1.8 M
- **170000596-11** Power cable (China/Australia) 1.8 M
- **TPC-1000H-WMKE** TPC series wallmount kit from 10"-17"

Embedded OS

- **20704WX1ES0023** Img WIN10 LTSC V6.08 B050 TPC-xx51(T)(WP) Entry
- **20703AIONS0010** TPC-xx51T(B) Android v6.0
- **20701LUB1S0005** TPC-xx51T(B) Advantech Linux Ubuntu 20.04

Note : Compatible with both B and C versions

Packing List

Item	Part No.	Description	Qty
Grounding cable	1703011001-11	A Cable G-TEM 4.3 100CM C=GR/Y	1pcs
Plug-In Block	1656303100	HOUSING 5.08MM 3P 90D(M) 2ESDVM-03P	1pcs
Manual	2003T51B00	User manual SC for TPC-xx51 B 1st ed	1pcs
Warranty	2190000902	CARDBOARD-WARRANTY REV. A0	1pcs
VESA Screw	1930005204	Screw M4x10L R/S DH=6.8x2.50 + ST ZBK PL	4pcs
M-SATA&WIFI Screw	1930000198	Screw M2x4L F/S D=4.3 H=0.8 (1+) ST Ni NK	3pcs
HDD Screw	19330304A0	Screw M3*4L RF/S D=6.9 H=1.9 + ST Ni NK	4pcs
Idoor Screw	1930002161	Screw M3x4.0(10.0)L R/S D=5.3 H=2 2+ ST BZn	2pcs
HDD WASHER	1990032871S000	Transistor Washer_Safety 1T TW-39 for PPC-3100	4pcs
Clamp	1962055040	CLAMPER PPC-55 M1632611 A0	8pcs : TPC-1251T 10pcs : TPC-1551T/TPC1751T
Clamp Screw	1935042520	Screw M4x25L R/S D=8.3 H=2.5 (2+) ST BZn	8pcs
China RoHS	202KAKMCO0	China rohs for AKMC model name 1st ed	1pcs

Please note: If some optional modules are offered with the system, additional system certificates may be required in certain regions/countries. Please contact Advantech for certificate compliance.

Application Software

WebAccess/SCADA	Advantech WebAccess/SCADA is a 100% browser-based IIoT software platform aimed at supervisory control and data acquisition (SCADA) operations. WebAccess/SCADA provides open interfaces that allow our customers and partners to develop unique IoT applications for different vertical markets. In addition to supporting traditional SCADA functions, the platform features an HTML5-based user interface and intelligent dashboard to facilitate cross-platform, cross-browser data analysis. Moreover, WebAccess/SCADA not only offers built-in widgets, but is also equipped with an innovative Widget Builder that enables customers to build their own widgets.
WebAccess/HMI	Advantech WebAccess/HMI is human-machine interface (HMI) software based on Microsoft's Windows operating system. This software features excellent communication and monitoring capabilities, supports more than 350 PLC communication protocols, and offers a wide choice of screen design objects to satisfy diverse automation applications and HMI monitoring requirements.