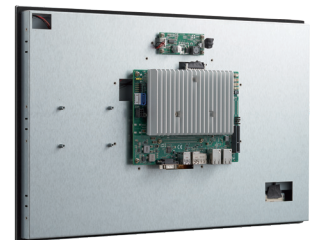
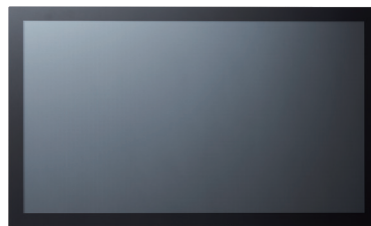


# SP2-AL Series

Intel Atom® Processor-based  
Fanless Panel Computer

Preliminary



## Features

- High power efficiency with Intel Atom® processor E3900 series
- Extensive I/O and function expansion through wire-to-board connectors and custom function module
- Extensive expansion and customization options for fast and easy integration with all form factor, kiosk and all-in-one panel PC application
- Enhanced data integrity and protection in case of sudden power outage with support for back-up battery (Optional)
- Low-risk cost-effective choice with pre-compliance EMC testing and high ESD tolerance
- High applicability and reliability in case of power fluctuation with a 9-36V voltage range

## Software Support

- Windows® 10 IoT Enterprise, Linux Ubuntu 20.04

## Optional Accessories

- Memory  
Up to 8GB DDR3L memory
- Storage  
M.2 SSD, 2.5" HDD/SSD
- Adapter  
12V 60W power adapter

## Ordering Information

Model	CPU
SP2-07WP-AL	7" open frame panel PC
SP2-10WP-AL	10.1" open frame panel PC
SP2-15WP-AL	15.6" open frame panel PC
SP2-21WP-AL	21.5" open frame panel PC

- I/O Cables  
Power/Reset, keypad, I2C, DI/O, speaker, MIC in/Line out, LED, and USB cables
- Wireless Kit  
Wi-Fi/BT/4G LTE wireless kit
- Function Module with External I/Os  

SP-FM	Titan FM	USB FM	Railway FM
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• SP-FM



• Titan FM



• USB FM



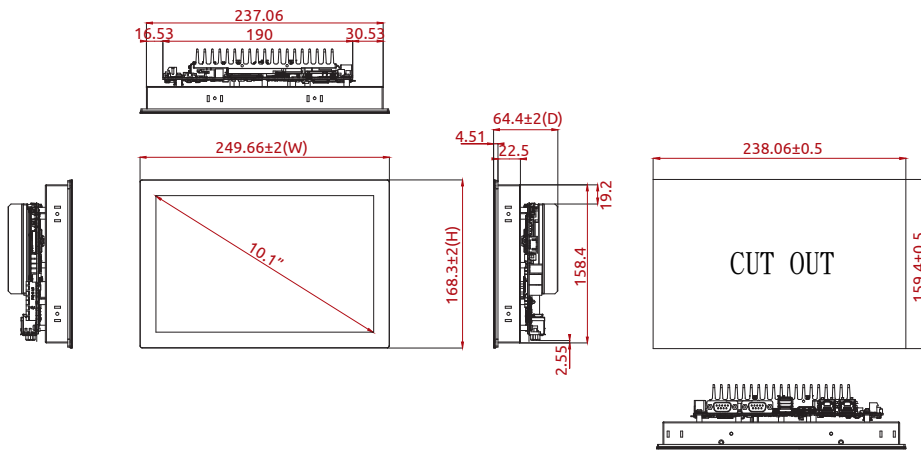
• Railway FM

## Specifications

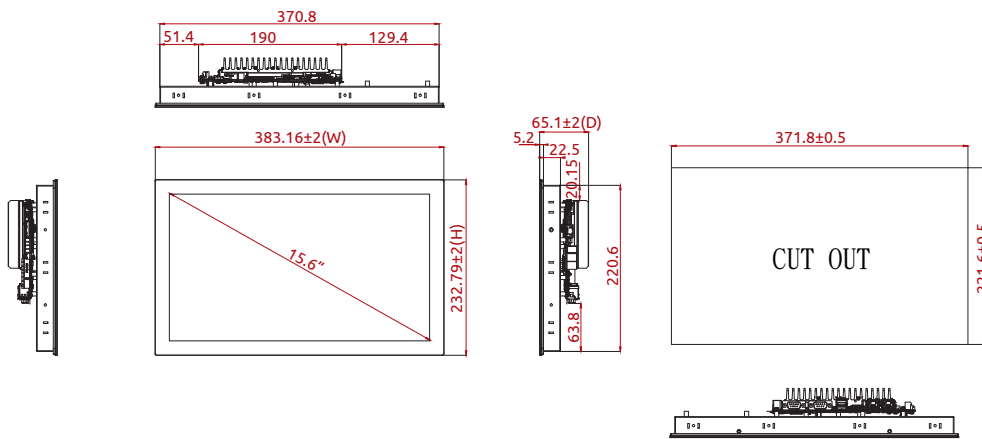
Model	SP2-07WP-AL	SP2-10WP-AL	SP2-15WP-AL	SP2-21WP-AL
<b>System</b>				
Processor	Intel Atom® x7-E3950 1.6/2.0GHz (Turbo), 12W (4C/1866) Intel Atom® x5-E3930 1.3/1.8GHz (Turbo), 6W (2C/1866)			
Memory	1x SODIMM socket, DDR3L 1600MHz (Up to 8GB)			
Storage	1x M.2 SATA 6 Gbps port, M key 2280 and 1x 2.5" SSD/HDD SATA 6 Gbps port (Optional)			
<b>Display and Touch</b>				
Size	7"	10.1"	15.6"	21.5"
Resolution	1024x600	1280 x 800	1920 x 1080	1920 x 1080
Contrast Ratio	600:1	800:1	1000:1	1000:1
Brightness (Nits)	600 cd/m2 (typ)	400 cd/m2 (typ)	420 cd/m2 (typ)	400 cd/m2 (typ)
Backlight Life (Hrs)	50,000			
Viewing Angle (U/D/R/L)	85/85/85/85		89/89/89/89	
Touch Point	5 points		10 points	
Touch Structure	Glass/Glass			
Surface Hardness	7H			
Surface Treatment	AS coating			
<b>External I/O</b>				
Ethernet	2x GbE (Intel® I225), RJ-45, WOL, 1 Gb/s			
Serial Port	2x RS-232/422/485 programmable, auto flow			
USB Port	1x USB 2.0, Type A, OCP, 1000mA 1x USB 3.0, Type A, OCP, 1600mA			
DisplayPort	1x DP, DP++, supports resolutions up to 4096x2160@60Hz			
<b>Internal I/O with Wire to Board Connectors</b>				
USB Port	1x USB 2.0 client			
I <sup>2</sup> C	2x for I <sup>2</sup> C client			
Audio	1x for 2x stereo speaker (2 watt) 1x Mic-in and Line-out			
Keys	1x for 32 physical keys (BOM optional), 1x supports LCD backlight up/down and volume up/down (BOM optional)			
GPIO	1x supports 8-pin GPI/O			
mPCIe	1x mPCIe slot (Wi-Fi/BT/4G)			
SIM	1x SIM slot for 4G/5G communication			
<b>Power with Wire to Board Connectors</b>				
Power Input	AT/ATX (default: AT mode) 12V ±5% / 9-36V, both with OVP/UVI protection			
Power Connector	1x 4-pin power connector			
Power/Fail Reset	1x wafer, support system reset & power button and power LED			
Backup Battery	1x wafer for UPS kit to backup data when AC shuts down (Optional)			
<b>Environmental</b>				
Operating Temperature	-20°C to 60°C	-20°C to 60°C		0°C to 60°C
Storage Temperature	-20°C to 70°C			-20°C to 60°C
Humidity	10% to 95%			
Vibration	OP 1 Grms, 5-500Hz w/ SSD, (IEC60068-2-64), X, Y, Z axes, 60 min/axis			
Shock	OP 20G peak acceleration, 11 ms (IEC60068-2-64), ±X, ±Y, ±Z, 3 shocks/asix			
IP Rating	IP65 for front			
ESD	Air: ±15kV, Contact: ±8kV			
EMC/Safety Compliance	EMI: IEC/EN 61000-3-2, IEC/EN 61000-3-3, EN 61000-6-4, EN 55032 EMS: EN 55035, EN 61000-6-2, EMC: CE, FCC Class B, IEC 60601-1-2:2014/EN60601-1-2:2015, UNECE R10, EN 50121-3-2 Safety: Compliant with 60601-1/61010-1/62368-1 *SP2-AL has passed pre-compliance testing of EMI, EMS, EMC, and Safety.			
<b>Software</b>				
SEMA	SEMA 4.0			
WDT	Watch Dog Timer supported			
Operating System	Windows® 10 IoT Enterprise x64 bit Linux Ubuntu 20.04 LTS			
<b>Mechanical</b>				
Construction	SGCC			
Dimension (W x L x D)	249.66 x 168.3 x 64.4 ± 2mm	383.15 x 232.79 x 65.1 ± 2mm	517.46 x 309.19 x 67.6 ± 2mm	
Weight	2.06 ± 0.2kg	3.02 ± 0.2kg	4.85 ± 0.2kg	
Mounting Kit (optional accessories)	1) Panel mounting 2) VESA mounting, support by a rear cover			

## Mechanical Overview

SP2-10WP-AL



SP2-15WP-AL



SP2-21WP-AL

