

Smart Panel

interconnected. intelligent.



Smart Panel interconnected. intelligent.

> Various Applications



Transportation

- Passenger infotainment
- Information display
- Fleet management
- Mobile ticket POS



Automation

- Machine work station
- Embedded panel PC
- HMI work station
- Console display



Service

- Room management
- Reservation system
- Quick order system
- Quick check-in



Healthcare

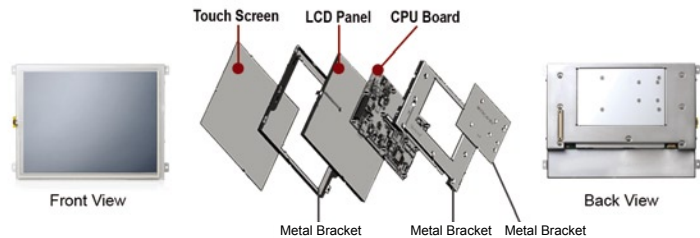
- Patient bedside infotainment
- Patient monitoring
- Medical imaging
- Nursing care

> What is a Smart Panel?

Smart Panel= independent computing power + internet access

Smart panel is a system on display providing internet access through wired or wireless connectivity with computing power on a display unit. Like a system on chip (SOC), the Smart Panel's many benefits increase the speed of electronic device development. ADLINK's Smart Panel is the first display module combining independent computer power and internet access. Its highly integrated design makes it easy to implement in fully customized systems.

Smart Panel=LCD panel, CPU board, and touch-screen combined in a single compact unit.



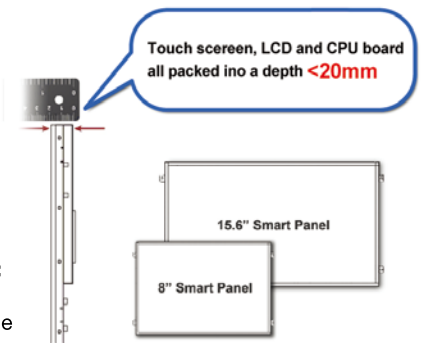
The Smart Panel is the foundation of a high quality design with minimal resources for devices such as medical instruments, POS systems, test instruments, automation devices, tabletop ordering systems, and banking systems, etc.

The Smart Panel is a building block design for fast implementation of embedded internet, making it easy for engineers to implement a user interface into either stationary or mobile applications. ADLINK provides a reference design kit for system integrators, so solution providers can build solutions with shorter design cycle and fewer design risks.

> Smart Panel v.s. conventional Panel PC

Conventional solutions, such as panel PCs, suffer from a range of limitations.

- **Off the shelf build:** compromises features, dimensions, I/O
- **Purchase custom build:** minimum 6 month design and testing, high NRE, high risk
- **In-house build with key parts:** heavy resource investment, too many BOM items to manage



The Smart Panel avoids all of these limitations.

> Smart Panel Features

Maximum Integration



Highly integrated design makes Smart hardware design easy to adapt, for optimal design integration

Slim Profile



Slender dimensions ensure your end product will meet the most stringent thin-profile requirements.

Flexibility



Fully customizable appearance, I/O connectors, & I/O function, low NRE fee for complete customization, optional battery pack for mobile applications.

> Optional Features

Broad operating temperature range



Optional expanded operating temperature ranges are offered, supporting temperatures from -20°C to +70°C.

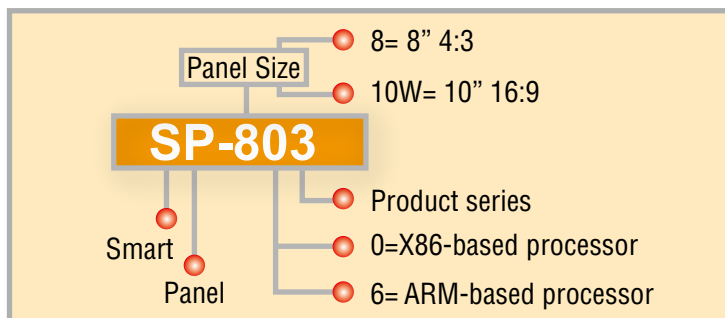
High brightness & optical bonding



Optional support for high brightness & contrast ratios, for improved performance in direct sunlight; optical bonding can be applied to reduce reflection & improve mechanical strength.

Items	Panel PC	Open frame	Smart Panel
Thickness	Thick	Thick	Slim
I/O connectors	Fixed	Fixed or require cable assembly	Easy to customize
I/O functions	Limited to expansion slot	Limited to expansion slot	Easy to customize
Appearance	Fixed	Can be customized	Can be customized
NRE fee for full customization	Extremely high	Lower than panel PC	Low(only needed for ID, ME, System Certificate and tooling)
Design Risks	High	Relatively low	Almost no risk
Costs for Changes	High	Relatively low	Relatively low
Mobile applications	Typically stationary use	Typically stationary use	Optional battery pack

> Smart Panel Naming Rules

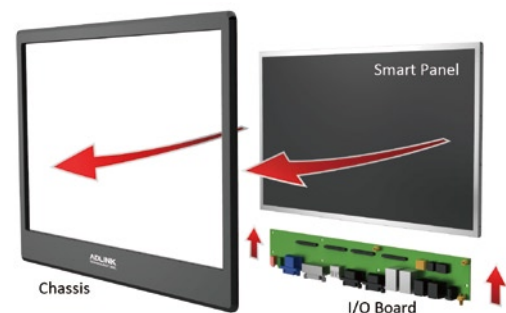
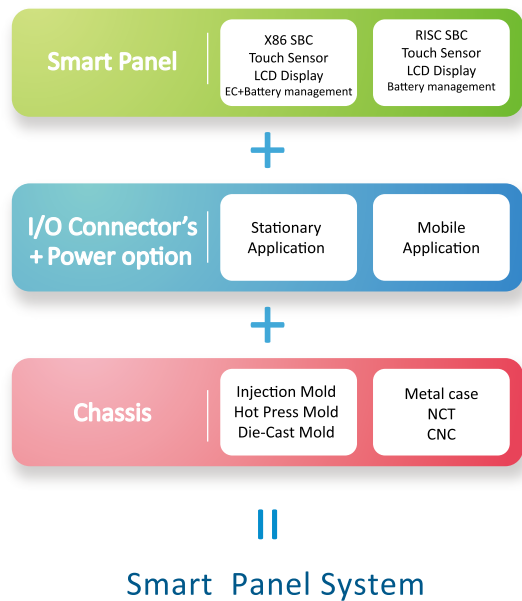


> Smart Panel Key Benefits

Companies with products for vertical markets are always seeking to improve their product portfolio, in order to serve their market and oppose competitors. New technologies create new market windows requiring a quick response.

Smart Panels are a valuable solution for product management and product ownership, as they are already integrated with a computing platform display module and cables for interconnection. You only need to design your chassis and I/O board to fit your system application design, reducing the number of design tasks and shortening the development cycle.

- **Reduced design burden:**
faster response to new market opportunities
- **Flexible feature expansion:**
more design-win opportunities
- **Shorter time to market:**
faster/higher ROI
- **Minimized design risks:**
reduce impact of failed projects
- **Fewer BOM items:**
less operational complexity, reduced burden and cost



Case Study

Business Access Control System

> ADLINK's Smart Panel The Smart Choice; Your Reliable Partner



Limitations of traditional access control systems

Traditional access control systems have long been highly segregated; components such as door access, attendance system, security office, and scheduled patrols, are typically independent of each other. The entire security control system cannot operate within a single integrated structure, wasting money and resources.

Benefits of integrated products

Integrated products offer significant cost reductions, while effectively enhancing security control capabilities. Employees, classes, and departments can be directly added through a web browser, and used in conjunction with punch card records and attendance reports. The system can be integrated with HR salary management for comprehensive reports, and access control systems can be combined with surveillance systems or linked via triggers to record real-time images of security events, and email notification to security personnel.

ADLINK's Smart Panel solution

ADLINK's newly released Smart Panel uses a high speed Intel CPU as the core of its integrated platform, combined with a single display module with a touch screen panel, providing users with an embedded HMI breaking away from traditional "open gate", "close gate" control equipment.

Use of the Smart Panel in an access control system transforms the time clock into the system's front-end information collection device, using the back-end database as an archive.

Total entrance management

System behavior for employees punching in or out is governed by individual entry/permission settings. All management services are provided through a single entrance point,

allowing high level policies to be monitored at all times. Anomaly alerts for focused management simplify group processes across organizations and systems.

A new generation of access control

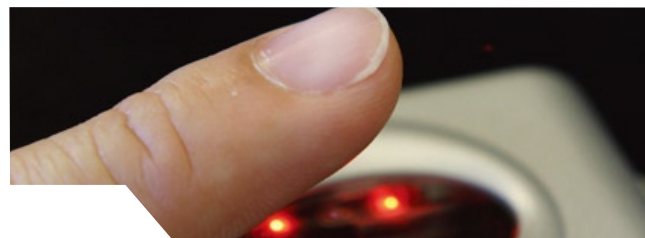
Traditional access control structures were typically based on an ATM with an embedded system; an on-screen display only showed basic functionality, and the system's back-end still required a computer motherboard and additional equipment. Smart Panel products include high integration with an ultra-slim design and high scalability, reducing product time-to-market, development costs, and risks, while minimizing materials management complexity. The Smart Panel product series is designed specifically for simpler integration of customized high performance systems, using fewer resources.



Case study: access control system

A customized access control system was required for the government; with a strict deadline of only 60 days, the highly integrated Smart Panel was the ideal solution. Many of the required complex electronic components were already built into the Smart Panel, so engineering work only needed to focus on I/O expansion and external design requirements.

Use of the Smart Panel reduced design cycles significantly, enabling project completion ahead of schedule, with all customer milestones and requirements met.



Flexible high-tech system foundation

Access control systems designed with a Smart Panel as the foundation of the core technology, integrate the latest technical trends to deliver a high quality, value added product. This new form of access control system is combined with a surveillance system and identification card sensor, fingerprint recognition, and a punch card system. A digital signage feature can be used to promote activities and inform on benefit policies while providing a complete management cycle on the creation, collection, organization, sharing, and reuse of information.



Unique feature set

ADLINK's series of Smart Panels present a unique blend of features. The full-featured modular design is less than 2 cm thin, supporting such new forms of attendance systems with half the thickness and width of traditional products.

The high-resolution color interface makes it easy for the user to collect data, display images, and show reports and overviews. The 800 cd/m² high-brightness LCD panel delivers clear and easy viewing both indoors and under direct sunlight – a vast improvement over the poor brightness issues of the past.

The trend-setting integrated touch-screen function eliminates system integrator concerns with stringent cleanliness requirements when binding a touch control screen to a LCD during the manufacturing process.

Technical specifications

ADLINK's current Smart Panel series includes x86 and ARM-based CPU options in screen sizes of 7 to 21.5", meeting virtually any requirement during the system development stage. High resolutions are supported (1920 x 1080), in two display ratios (4:3 and 16:9).



On-board Wi-Fi enables remote monitoring to assess the progress of the production line quickly and accurately, simplify materials management, and address issues. The introduction of the HMI in the MES and ERP systems enhances data collection features, enabling more direct archiving in all forms of documents, providing users with the benefits of remote monitoring.

ADLINK's industrial Smart Panel series is a genuine innovation in embedded cloud terminal product application; a smart choice and a totally reliable partner.





Features

- ◆ All-in-one design with TI-AM3715 Sitara Cortex - A8 Processor
- ◆ 7" 16:9 LCD display with projected capacitive touch
- ◆ Built-in WIFI module
- ◆ OS: WinCE 6.0 / Android 4.0
- ◆ Drop/rain/dust protection

System Specifications

Processor	TI-Sitara AM3715 Coretex - A8 processor 1GHz
Main Memory	512MB LPDDR and 4GB NAND Flash on-board
LCD	Single Channel 18-bit LVDS LCD, 1024 x 600 resolution
LCD Size	7", 16:9 Panel
Backlight	LED backlight
Display Contrast Ratio	500:1 Typical
Display Brightnes	250 cd/m ² (without Touch)
Storage	Micro SD
Wi-Fi	IEEE 802.11b/g/n

Environmental

Operating temperature	0°C ~ 60°C (fanless)
Storage temperature	-20°C to 70°C
Certification & compliance	CE and FCC class A/B compliance

I/O Interface

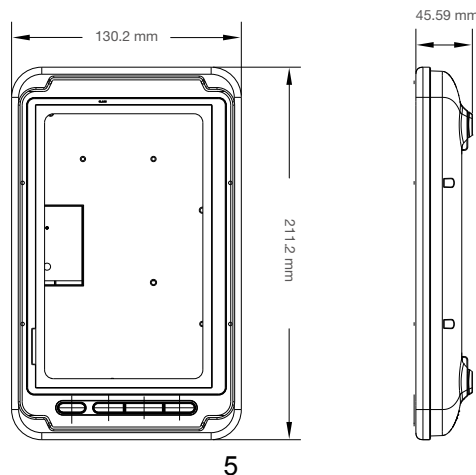
I/O Port	Audio Jack: 1 x ear phone USB port: 1 x USB SD card slot
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Power Supply

I/O Port	DC input: 12VDC Battery Pack: Lithium Ion Polymer, 2S1P Power Consumption: 8W (TDP)
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Dimensions / Weight

Dimensions: 103.2 mm x 211.2 mm x 45.59 mm
Weight: 730 g

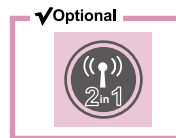


* The latest ordering information will be released on ADLINK website

BFS-15W02

15" Smart Panel with Intel® Atom™ Processor D2550
(1M Cache, 1.8 GHz) with Intel® NM10 Express Chipset

All-in-one Ultra Slim Panel PC by using Smart Panel



Features

- ◆ Intel new generation CPU - Cedar View solution D2550
- ◆ 15.6" Color Active Matrix TFT flat panel display with LED backlight
- ◆ 5-wire resistive touch panel
- ◆ VGA output for 2nd monitor
- ◆ Fanless
- ◆ Low power consumption
- ◆ True flat surface

System Specifications

Processor	Intel® Atom™ Processor D2550 (1M Cache, 1.8 GHz) with Intel® NM10 Express Chipset
Main Memory	1x SODIMM DDR3 RAM (4GB max)
Graphics	Integrated Power-VR SGX 3D graphics accelerator
LCD	Single-channel 18-bit LVDS interface Size: 15.6" 16:9 aspect ratio Resolution: 1366 x768 Backlight: LED Contrast ratio: 400:1 typical Standard brightness: 200 Cd/m ² typical (without touch)
Storage	2.5 " SATA 3 Gbps HDD

I/O Interface

I/O Port	1x Gigabit Ethernet port 2x USB 2.0 ports 4x RS-232 for customer display, thermal printer, MSR, RFID reader & barcode scanner 1x VGA output for 2nd monitor 1x 24V DIO on RJ-11 for cash drawer 1x power button 1x 4-pin mini-DIN for DC-in 1x power button / 1x front panel brightness up/down button
Wi-Fi, Bluetooth	IEEE 802.11b/g/n & BT 2.1 + EDR (optional)
Speaker	2x 2W stereo speakers (integrated)

Electrical

Input voltage	24VDC
Power consumption	18W
Operating systems	Supports Windows 7, Windows Embedded POSReady 2009; Windows 8 planned

Environmental

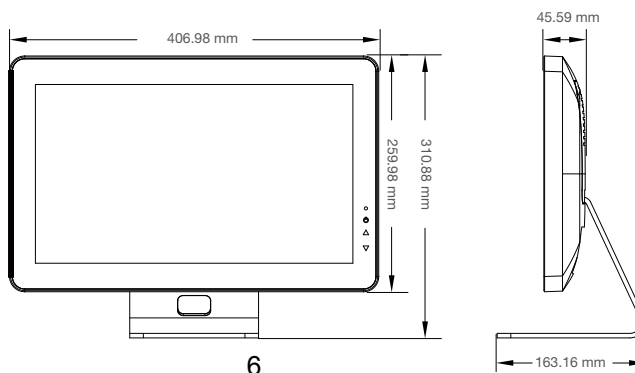
Operating temperature	0°C ~ 50°C (fanless)
Storage temperature	-20°C to 60°C
Humidity	0 - 90% @ 40°C (non-condensing)
Operating vibration	1G random, 5Hz to 500Hz
Operating shock	10G peak acceleration, 11ms duration
Enclosure Rating	IP54 for front and top
Certification & compliance	CE, FCC Class A/B, BSMI, & RoHS



* The 19" 4:3 model (BFH-1902) is also available upon request. Please contact ADLINK sales for more information.

Dimensions / Weight

Dimensions: 406 mm x 310 mm x 45.5 mm
Weight: 6 kg



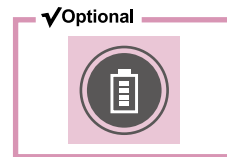
* The latest ordering information will be released on ADLINK website





> Features

- All-in-one design with TI AM3715 Sitara Cortex - A8 Processor
- 7" 16:9 1024x600 LCD display with Touch Screen support
- RS-232/RS-422/RS-485 (COM2) selectable via DIP switch
- Built-in WIFI+BT SIP module
- Optional on-board GPS module
- Optional on-board G-sensor
- Stackable expansion capability
- OS: Linux 2.6.37, Windows Compact 7, Android 2.3.4



> System Spec

Processor	TI-Sitara AM3715 Coretex - A8 processor 1GHz NEON SIMD Coprocessor
Main Memory	512 MB LPDDR SD RAM and 4 Gb NAND Flash on-board
Graphics	Integrated POWERVR SGX™ Graphics Accelerator
LCD	Supports Single Channel 18-bit LVDS LCD, 1024x600 resolution Size: 7", 16:9 Panel Resolution: 1024 x 3 (RGB) x 600 Back Light: LED Contrast Ratio: 500 Typical Standard Brightness: 250 Cd/m ² Typical (without touch)
Storage	One MicroSD card slot on board
Wi-Fi / Bluetooth	IEEE 802.11b/g/n and BT 2.1 + EDR

> Environmental

Operating Temperature	0°C to 60°C
Storage Temperature (Non-Operation)	-20°C + 70°C
Humidity	5 - 90% RH operating at +40°C, (non-condensing)
Certifications	CE and FCC CLASS A/B Compliance

> I/O Interface

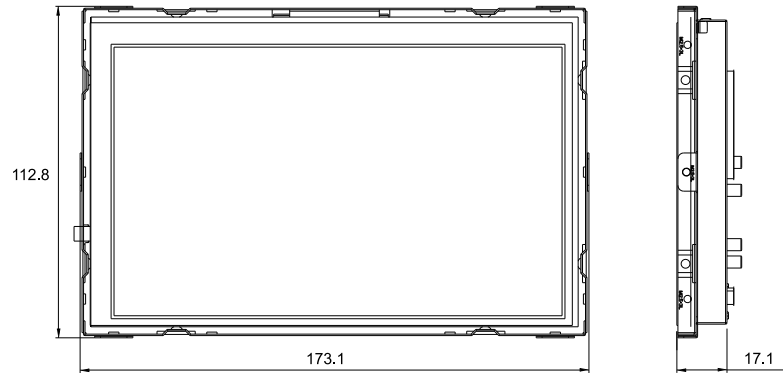
LAN Port	1 x 10/100 Mbps MAC+PHY
Serial Ports	COM1: 1 RS-232 COM2: 1 RS-232/422/485 (DIP switch selectable)
USB Ports	3x USB 2.0 + 1x USB OTG/Host
Audio Ports	Stereo Speaker Out (1.5W)
I/O Interface	Keypad: 4x4 keypad interface

> Power Supply

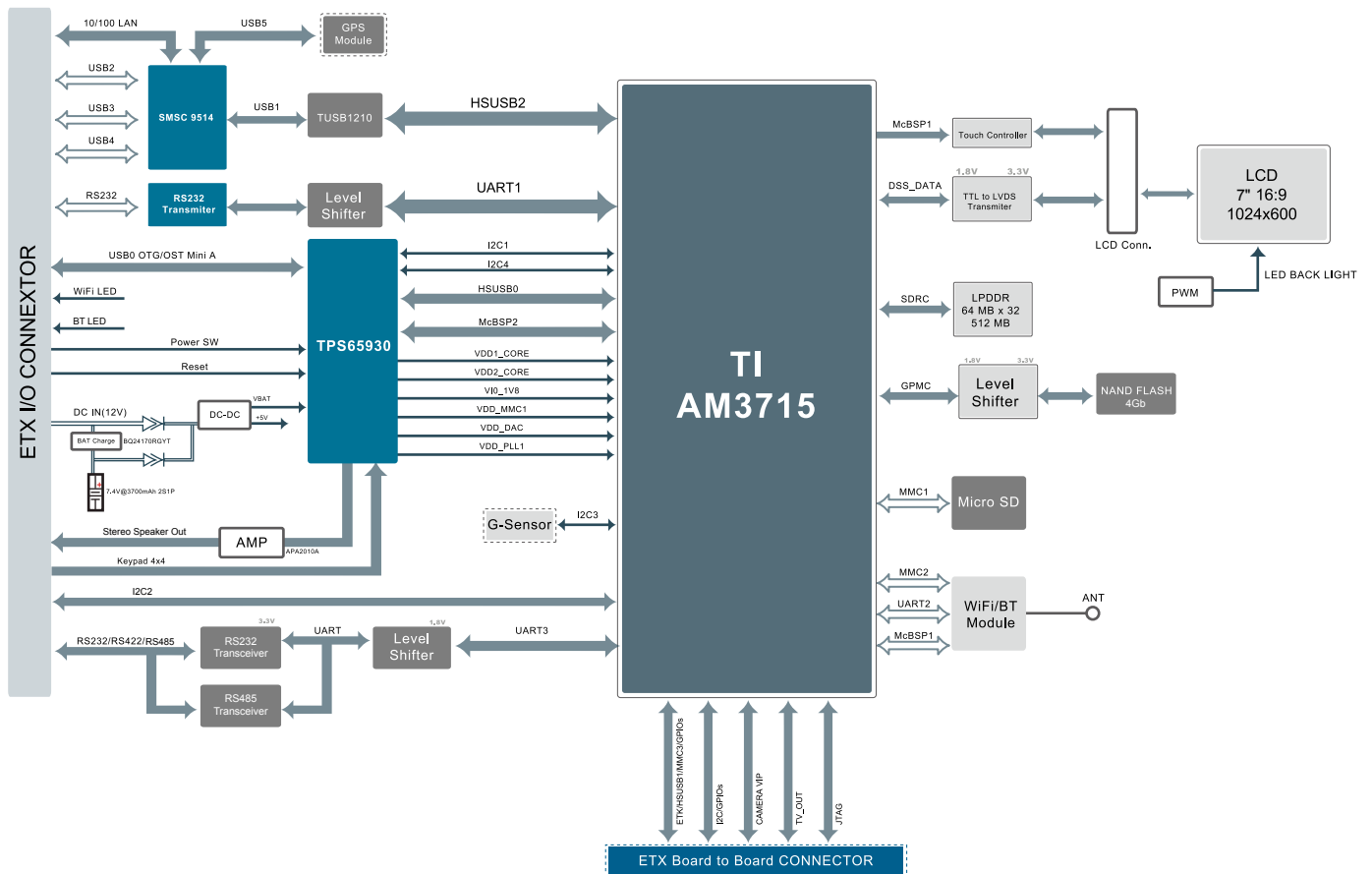
DC Input	12VDC ± 5% (DC power must be supplied from an ADLINK IO board or external DC board)
Battery Pack (optional)	2S1P Li-Polymer Battery Pack for AC Power Loss Backup Output: 7.4V / 3000mAh
Power Consumption	5.9 W (fully loaded)

Dimensions

Units: mm 173 mm x 112.8 mm



CPU Block Diagram



Ordering Information

Smart Panel

Model Number	Description/Configuration
SP-7W61-5124AR	7-inch 16:9 Smart panel with resistive touch sensor; OS Linux

Starter Kit

Model Number	Description/Configuration
SP-7W61-5124AR-EWP	Starter kit of SP-7W61-5124AR with I/O board (SP-7W61-IO1), keypad board (SP-7W61-KB1), cable kits, stand, and power adaptor

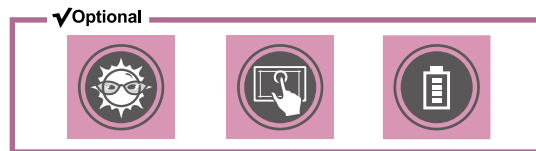
Accessories (optional)

Model Number	Description/Configuration
SP-7W61-IO1	SP-7W61 I/O board1 of DC 12V in, 2xCOM (1xRS232; 1xRS-232/422/485 adj.), 3xUSB1.1/2.0, 1xUSB OTG/Host (wire connector), 1xLAN RJ45, 1xMIC/Stereo speaker out, 2x keypad I/F (wire connector for 2x3 or 4x4 keypad), pwr and reset buttons
SP-7W61-KB1	SP-7W61 keypad board of 2x3 keypad and 1x USB OTG (mini AB)
SP-7W61-KB2	SP-7W61 keypad board of 4x4 keypad and 1x USB OTG (mini AB)
AC-DC Adaptor 40W	Input: 120~240V,40W; Output: 12V/3.33A; Frequency 47~63Hz; Efficiency: 85.3% No power cord



> Features

- Intel® Atom™ Processor N455 (512 KB Cache, 1.66 GHz)
- 1x DDR3 667MT/S SO-DIMM module up to 2 GB
- Stackable expansion capability
- OS: Windows 7 / Windows XP
- Supports 2 LAN ports
- 1x mini PCIe and 1x SIM card slots for function expansion (such as a WiFi/BT or 3G module)
- High brightness, sunlight readable LCD display options
- Optional four-wire resistive touch sensor
- Optional battery pack for AC power loss backup



> System Spec

Processor	Intel® Atom™ Processor N455 (512 KB Cache, 1.66 GHz)
South Bridge	Intel ICH8-M
Super I/O	ITE IT8781F
Main Memory	1x DDR3 667MT/S SO-DIMM module up to 2 GB
Graphics	Integrated GMA 3150 Graphic Controller Supports VGA Analog display up to 1400 x1050@60hz
LCD	Supports 24-bit TTL LVDS LCD at a resolution of 800x600 Size: 8.0 inch, 4:3 panel Resolution: 800 x 3 (RGB) x 600 Back light: LED Contrast Ratio: 500 typical Standard brightness: 250 Cd/m ² typical (without touch) Optional brightness enhancement: 800 Cd/m ² typical (without touch)
Storage	Supports 3 SATA II (2x SATA II on the motherboard)
Mini PCI-e Expansion	1x mini PCI-e card slot for expansion module
SIM Card Slot	Onboard slot supporting SIM cards
VGA I/F	1x flex cable connector for VGA signal
Touch Sensor	Optional four-wire resistive touch sensor

> Power Supply

DC Input	DC input at 19 V DC +/- 10% (DC power must be supplied from an ADLINK IO board or external DC board)
Battery Pack (optional)	11.1 V , 3S1P Li-Polymer battery pack for AC power loss backup (battery pack must be connected with an ADLINK IO board or external DC board)
Power Consumption	Fully loaded: 29.1 W

> Environmental

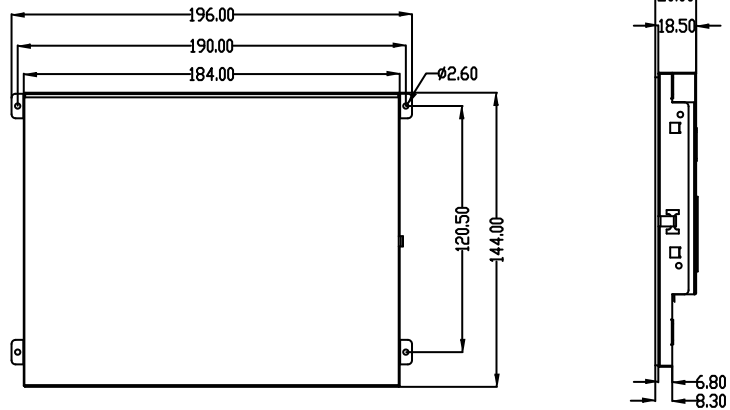
Operating Temperature	Standard: 0°C to 60°C
Storage Temperature (Non-Operation)	-30°C to 80°C
Humidity	0 - 90% @ 40°C (non-condensing)
Certification	CE and FCC CLASS A/B Compliance

> I/O Interface

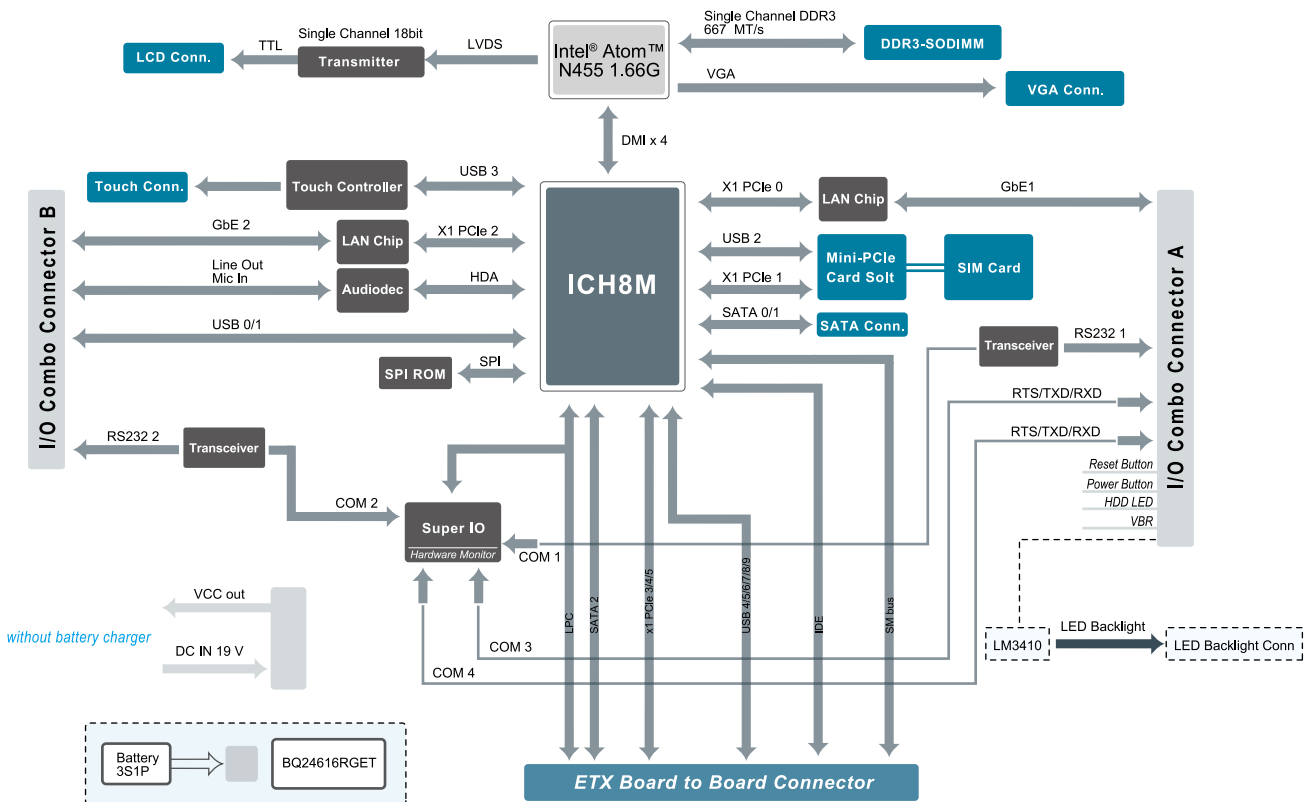
Ethernet	2x GbE ports
Serial Ports	2x COM ports (RS-232) 2x COM ports, TTL level (RTS/TXD/RXD)
USB Signals	8x USB 2.0 ports (6 on BTB connector, and 2 on IO Connector B)
Audio Signals	1x mic-in, 1x line out
Extension BTB I/O	
1. LPC bus	4. 6x USB port
2. 1x SATA II	5. IDE bus
3. 3x PCIe x1	6. SM bus

Dimensions / Weight

Units: mm / g 196 mm x 144 mm / 572.5 g



CPU Block Diagram



Ordering Information

Smart Panel

Model Number	Description/Configuration
SP-803-NNSR	SP-803-NNSR(EA) Optical-enhanced LCD display with 4-wire resistive touch sensor
SP-803-NNAR	SP-803-NNAR(EA) Standard LCD display with 4-wire resistive touch sensor

Starter Kit

Model Number	Description/Configuration
SP-803-NNSR-EWP	SP-803-NNSR-EWP(EA) Starter kit of SP-803-NNSR with I/O board 1 (SP-803-IO1), fan heat spreader, 2Gb DDR3 module, 2.5" HDD, cable kits, stand, and power adaptor
SP-803-NNAR-EWP	SP-803-NNAR-EWP(EA) Starter kit of SP-803-NNAR with I/O board 1 (SP-803-IO1), fan heat spreader, 2Gb DDR3 module, 2.5" HDD, cable kits, stand, and power adaptor

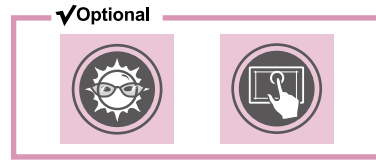
Accessories (optional)

Model Number	Description/Configuration
SP-803-IO1	Right-angle connectors I/O board of DC 19V IN, DC 5V OUT (for 2.5" HDD), 2x RS-232, 4x USB, 2x LAN RJ45, Mic In, Line Out, and internal IO connectors
SP-803-IO2	Vertical connectors I/O board of DC 19V IN, DC 5V OUT (for 2.5" HDD), 2x RS-232, 1x RS-422/485 (JUMPER SELECT), 1x VGA, 4x USB, 2x LAN RJ45, Mic In, Line Out, and internal IO connectors
SP-803 I/O Cable Kit	SP-803 I/O Cable Kit
AC-DC Adaptor 90W	Input: 90~264V, 90W; Output: 19VDC/4.74A; Frequency: 47 - 63Hz Efficiency: 86% No power cord



> Features

- All-in-one design with TI - Sitara AM3517 Cortex A8 Processor
- Built in Wi-Fi+BT SIP module
- Stackable expansion capability
- OS: Linux 2.6.32; WinCE 6.0; Android 2.3.4
- Supports 2 LAN ports
- High brightness, sunlight readable LCD display options
- Optional four-wire resistive touch sensor



> System Spec

Processor	TI-Sitara AM3517 Coretex-A8 processor 600 MHz NEON SIMD coprocessor and Vector FP coprocessor
Main Memory	256 MB DDR2 DRAM system memory, 2 Gb NAND flash memory
Graphics	Integrated Power-VR SGX 3D graphics accelerator
LCD	Supports 24-bit TTL LCD in resolution of 800x600 Size: 8.0 inch, 4:3 panel Resolution: 800 x 3 (RGB) x 600 Back light: LED Contrast ratio: 500 typical Standard brightness: 250 Cd/m ² typical (without touch) Optional brightness enhancement: 800 Cd/m ² typical (without touch)
Storage	MicroSD slot x1

> Power Supply

DC Input	DC input at 5V DC +/- 5% (DC power must be supplied from an ADLink IO board or external DC board)
Power Consumption	Fully loaded: 13 W

> Environmental

Operating Temperature	0°C to 60°C
Storage Temperature (Non-Operation)	-30°C to 80°C
Humidity	0 - 90% @ 40°C (non-condensing)
Certification	CE and FCC CLASS A/B Compliance

> I/O Interface

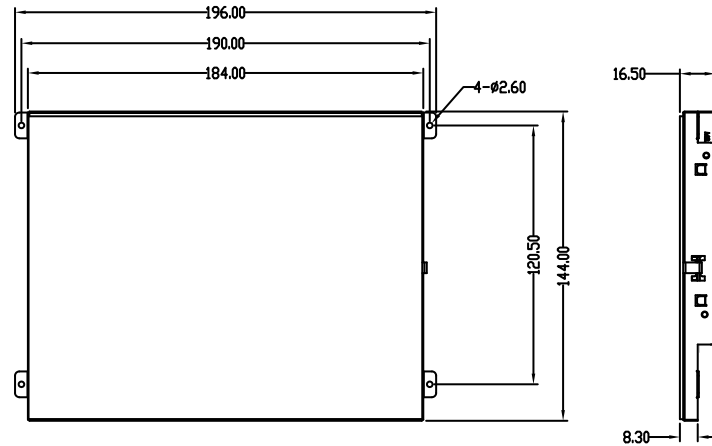
Ethernet	2x 10/100 Mbps LAN
Serial Port	1x COM at RS-232 level
Wi-Fi / Bluetooth	IEEE 802.11b/g/n & BT 2.1 + EDR
CAN BUS	High-End CAN 2.0b Controller
USB Port	3x USB 2.0 ports
Audio Port	1x Line in / 1x Line out

> Expansions (Optional)

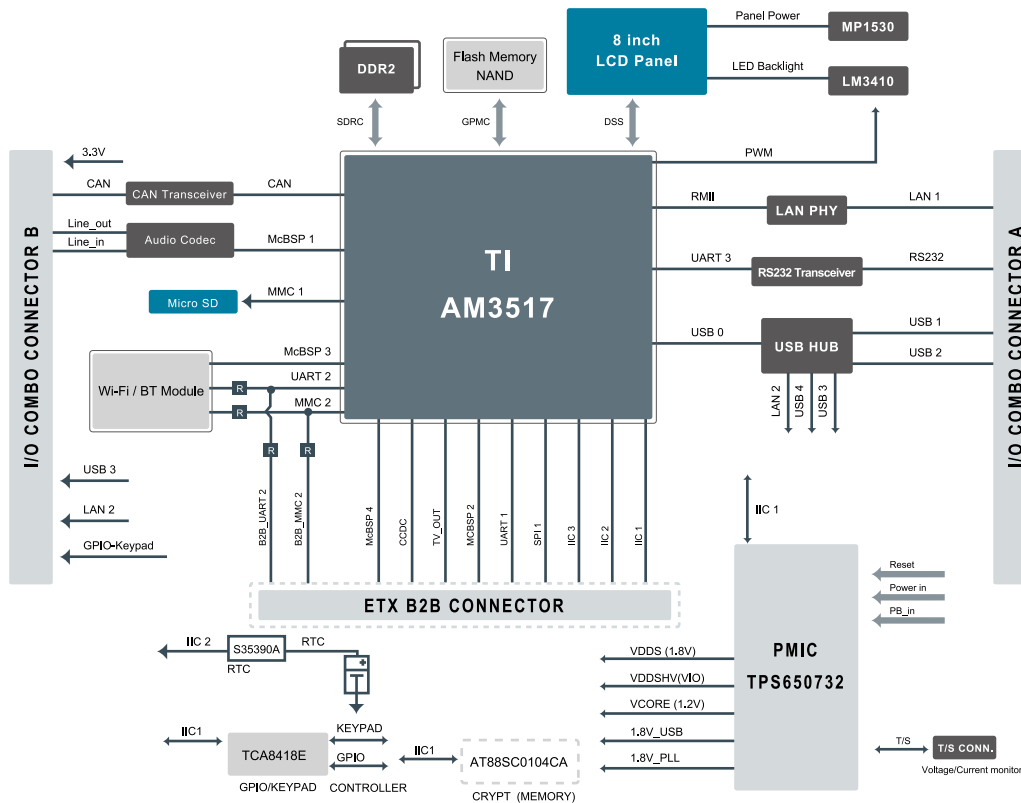
CCDC Bus	Video input bus
Video Out	Integrated TV-out supports S-Video signal
MMC/SD/SDIO	Supports MMC/SD/SDIO interface (if on board WLAN/BT module not used)
UART	Supports two UARTs (one UART if on-board WLAN/BT module is in use)
I ² C	I ² C1, I ² C ² , and I ² C3 interface on B2B connector
McSPI	Supports Multi-channel Serial Port Interface (McSPI), up to two peripherals
McBSP	Supports Multi-channel Buffered Serial Port, provides a full-duplex direct serial interface between the device and other devices in a system

Dimensions / Weight

Units: mm / g 196 mm x 144 mm / 516.6 g



CPU Block Diagram



Ordering Information

Smart Panel

Model Number	Description/Configuration
SP-860-2562SR	SP-860-2562SR(EA) Optical-enhanced LCD display with 4-wire resistive touch sensor; OS Linux
SP-860-2562AR	SP-860-2562AR(EA) Standard LCD display with 4-wire resistive touch sensor; OS Linux

Starter Kit

Model Number	Description/Configuration
SP-860-2562SR-EWP	SP-860-2562SR-EWP(EA) Starter kit of SP-860-2562SR with I/O board 1 (SP-860-IO1), I/O board 2 (SP-860-IO2), cable kits, stand, and power adaptor
SP-860-2562AR-EWP	SP-860-2562AR-EWP(EA) Starter kit of SP-860-2562AR with I/O board 1 (SP-860-IO1), I/O board 2 (SP-860-IO2), cable kits, stand, and power adaptor

Accessories (optional)

Model Number	Description/Configuration
SP-860-IO1	Vertical connectors I/O board 1 of DC 5V in, 1x COM (at RS-232 level), 2x USB, 1x LAN RJ45, power button, reset button and power LED
SP-860-IO2	Vertical connectors I/O board 2 of 1x LAN RJ45, Audio Line in, Audio Line out, 1x CAN bus, and 1x USB
SP-860 I/O Cable Kit	SP-860 I/O Cable Kit
AC-DC Adaptor 15W	Input: 90~264V, 15W; Output: 5VDC/3A; Frequency: 47 - 63Hz Efficiency: 74% No power cord



> Features

- All-in-one design with TI AM3715 Sitara Cortex A8 Processor
- 10.4" 4:3 800x600 LCD display with Touch Screen support
- RS-232/RS-422/RS-485 (COM2) selectable via DIP switch
- Built-in WIFI+BT SIP module
- Optional on-board GPS module
- Optional on-board G-Sensor
- Stackable expansion capability
- OS: Linux 2.6.37, Windows Compact 7, Android 2.3.4



> System Spec

Processor	TIAM3715 Sitara Cortex A8 Processor 1 GHz NEON SIMD Coprocessor
Main Memory	512 MB LPDDR System Memory; 4 Gb NAND Flash Memory
Graphics	Integrated Power-VR SGX 3D Graphics Accelerator
LCD	Supports Single Channel 24-bit TTL LCD, 800x600 resolution Size: 10.4", 4:3 panel Resolution: 800 (RGB) x 600 Back Light: LED Contrast Ratio: 500 Typical Standard Brightness: 300 Cd/m ² Typical (without touch)
Storage	MicroSD Slot x1

> Environmental

Operating Temperature	Standard: 0°C to 60°C
Storage Temperature (Non-Operation)	-20°C to 70°C
Humidity	0~90% @ 40°C
Certifications	CE and FCC CLASS A/B Compliance

> I/O Interface

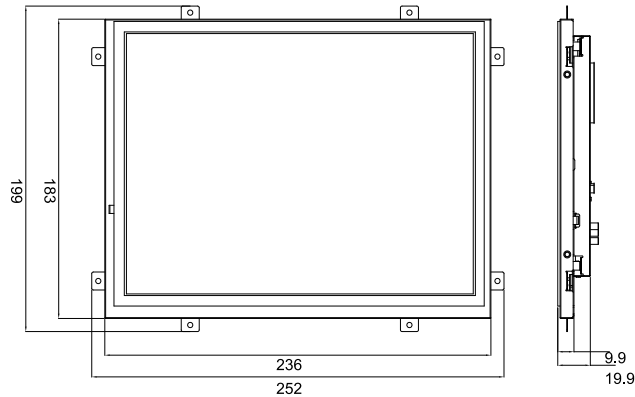
LAN Port	1 x 10/100 Mbps MAC+PHY
Serial Ports	COM 1: 1 RS-232 COM 2: 1 RS-232/422/485 (DIP switch selectable)
Wi-Fi / Bluetooth	IEEE 802.11b/g/n & BT 2.1 + EDR
USB Ports	1 x USB 2.0 OTG Port, 3 x USB 2.0 Host Ports
Audio Ports	Stereo Speaker Out (1.5 W)

> Power Supply

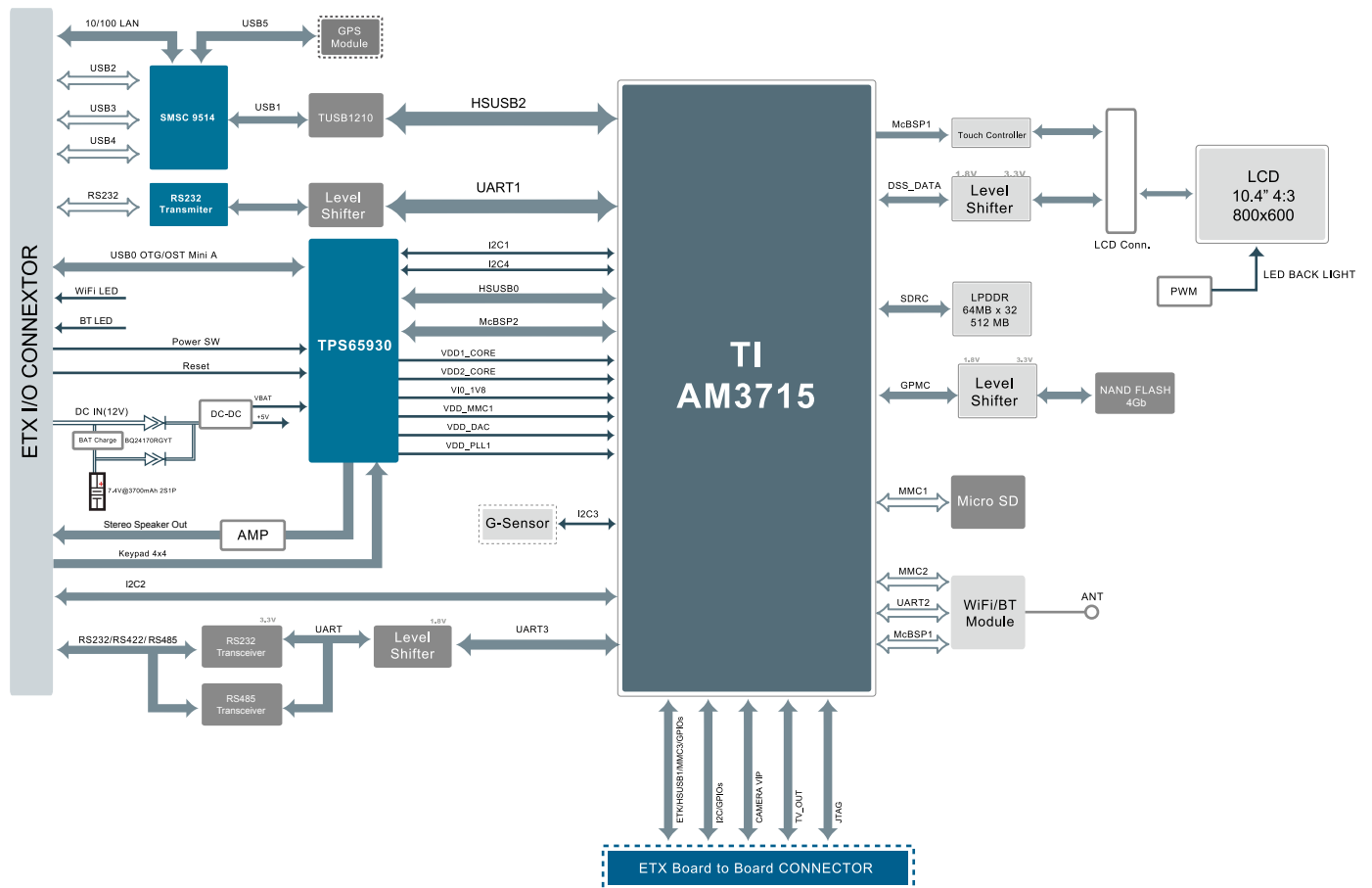
DC Input	DC input at 12 DC +/- 5% (DC power must be supplied from an ADLINK IO board or external DC board)
Battery Pack (optional)	2S1P Li-Polymer Battery Pack for AC Power Loss Backup Output: 7.4V / 3000mAh
Power Consumption	7.7 W (fully loaded)

> Dimensions

Units: mm 199 mm x 252 mm



> CPU Block Diagram



> Ordering Information

Smart Panel

Model Number	Description/Configuration
SP-1061-5124AR	10.4-inch 4:3 Smart panel with resistive touch sensor; OS Linux

Starter Kit

Model Number	Description/Configuration
SP-1061-5124AR-EWP	Starter kit of SP-1061-5124AR with I/O board (SP-10W61-IO1), keypad board (SP-7W61-KB1), cable kits, stand, and power adaptor

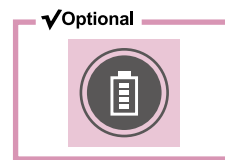
Accessories (optional)

Model Number	Description/Configuration
SP-10W61-IO1	SP-10W61 I/O board 1 of DC 12V in, 2x COM (1x RS-232; 1x RS-232/422/485 adj.), 3x USB 1.1/2.0, 1x USB OTG/Host (wire connector), 1x LAN RJ-45, 1x MIC/Stereo speaker out, 1x keypad I/F (wire connector for 2x3 keypad), pwr and reset button
SP-10W61-IO2	SP-10W61 I/O board 2 of DC 12V in, 2x COM (1x RS-232; 1x RS-232/422/485 adj.), 3x USB 1.1/2.0, 1x USB OTG/Host (wire connector), 1x LAN RJ-45, 1x MIC/Stereo speaker out, 1x keypad I/F (wire connector for 4x4 keypad), pwr and reset button
SP-7W61-KB1	SP-7W61 keypad board of 2x3 keypad and 1x USB OTG (mini AB)
SP-7W61-KB2	SP-7W61 keypad board of 4x4 keypad and 1x USB OTG (mini AB)
AC-DC Adaptor 40W	Input: 120~240V, 40W; Output: 12V/3.33A; Frequency: 47~63Hz; Efficiency: 85.3%; No power cord



> Features

- All-in-one design with TI AM3715 Sitara Cortex A8 Processor
- 10.1" 16:9 1024x600 LCD display with Touch Screen support
- RS-232/RS-422/RS-485 (COM2) selectable via DIP switch
- Built-in WIFI+BT SIP module
- Optional on-board GPS module
- Optional on-board G-Sensor
- Stackable expansion capability
- OS: Linux 2.6.37, Windows Compact 7, Android 2.3.4



> System Spec

Processor	TI AM3715 Sitara Cortex A8 Processor 1 GHz NEON SIMD Coprocessor
Main Memory	512 MB LPDDR System Memory; 4 Gb NAND Flash Memory
Graphics	Integrated Power-VR SGX 3D Graphics Accelerator
LCD	Supports Single Channel 18-bit LVDS LCD, 1024x600 resolution Size: 10.1", 16:9 Panel Resolution: 1024 x 3 (RGB) x 600 Back Light: LED Contrast Ratio: 500 Typical Standard Brightness: 200 Cd/m ² Typical (without touch)
Storage	MicroSD Slot x1

> Environmental

Operating Temperature	0°C to 50°C
Storage Temperature (Non-Operation)	-20°C to 60°C
Humidity	0~90% @ 40°C
Certifications	CE and FCC CLASS A/B Compliance

> I/O Interface

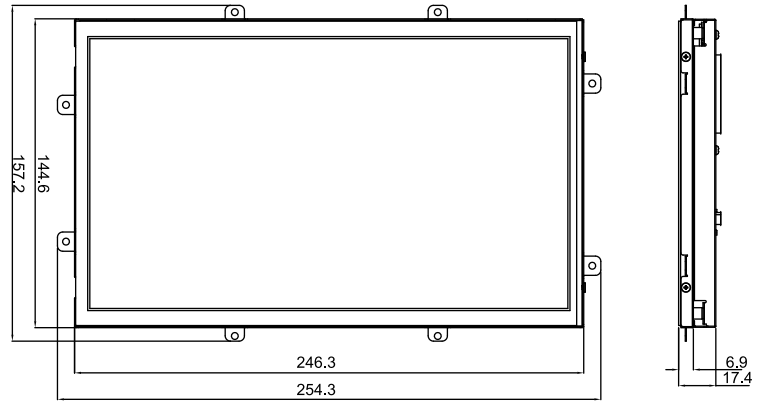
LAN Port	1 x 10/100 Mbps MAC+PHY
Serial Ports	COM 1: 1 RS-232 COM 2: 1 RS-232/422/485 (DIP switch selectable)
Wi-Fi / Bluetooth	IEEE 802.11b/g/n & BT 2.1 + EDR
USB Ports	1 x USB 2.0 OTG Port, 3 x USB 2.0 Host Ports
Audio Ports	Stereo Speaker Out (1.5 W)

> Power Supply

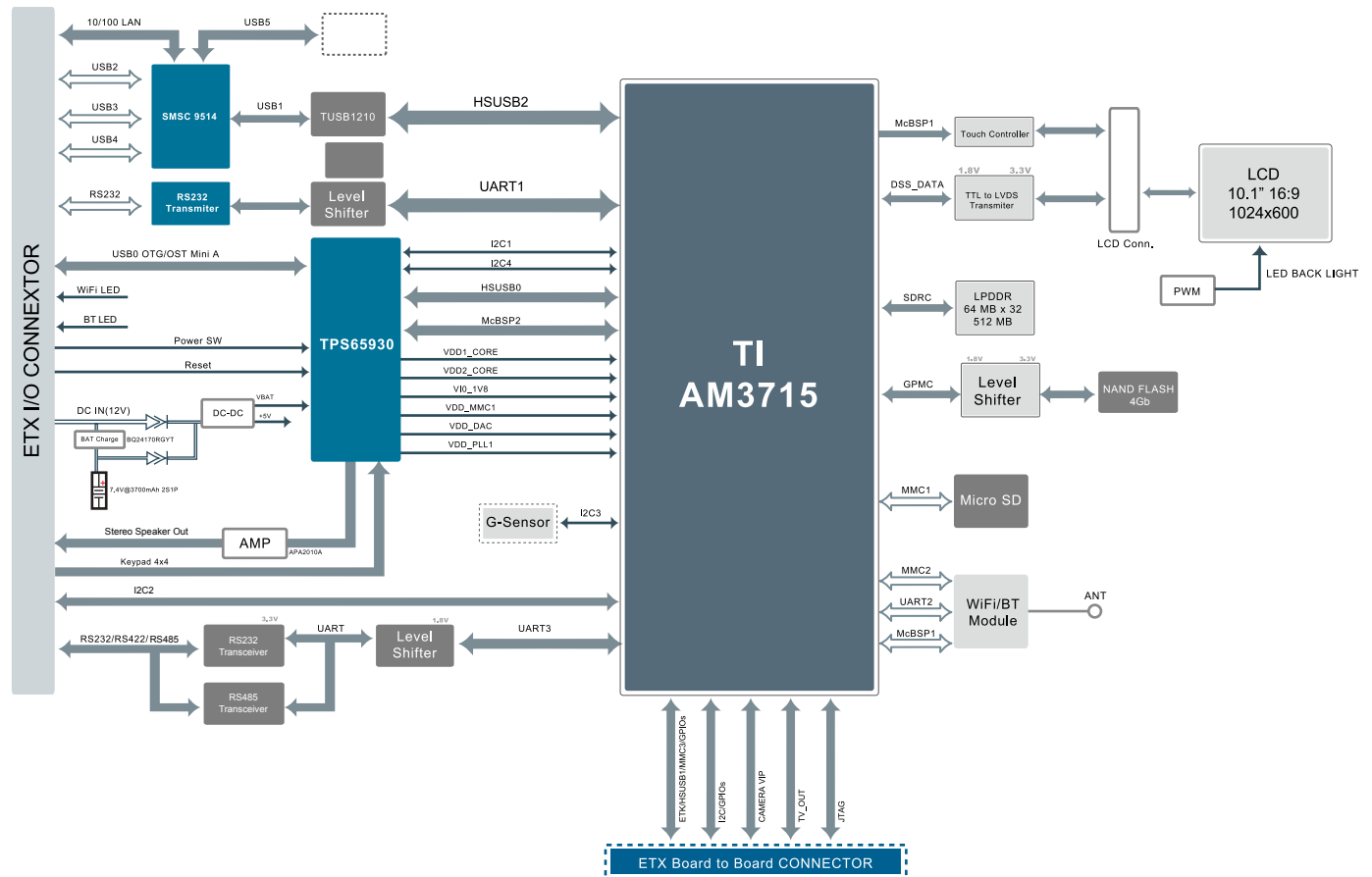
DC Input	DC input at 12 DC +/- 5% (DC power must be supplied from an ADLINK IO board or external DC board)
Battery Pack (optional)	2S1P Li-Polymer Battery Pack for AC Power Loss Backup Output: 7.4V / 3000mAh
Power Consumption	5.9 W (fully loaded)

Dimensions

Units: mm 157.2 mm x 254,3 mm



CPU Block Diagram



Ordering Information

Smart Panel

Model Number	Description/Configuration
SP-10W61-5124AR	10.1-inch 16:9 Smart panel with resistive touch sensor; OS Linux

Starter Kit

Model Number	Description/Configuration
SP-10W61-5124AR-EWP	Starter kit of SP-10W61-5124AR with I/O board (SP-10W61-IO1), keypad board (SP-7W61-KB1), cable kits, stand, and power adaptor

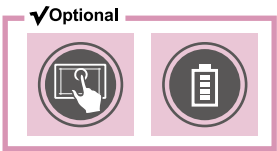
Accessories (optional)

Model Number	Description/Configuration
SP-10W61-IO1	SP-10W61 I/O board 1 of DC 12V in, 2x COM (1x RS-232; 1x RS-232/422/485 adj.), 3x USB1.1/2.0, 1x USB OTG/Host (wire connector), 1x LAN RJ-45, 1x MIC/Stereo speaker out, 1x keypad I/F (wire connector for 2x3 keypad), pwr and reset button.
SP-10W61-IO2	SP-10W61 I/O board 2 of DC 12V in, 2x COM (1x RS-232; 1x RS-232/422/485 adj.), 3x USB1.1/2.0, 1x USB OTG/Host (wire connector), 1x LAN RJ-45, 1x MIC/Stereo speaker out, 1x keypad I/F (wire connector for 4x4 keypad), pwr and reset button.
SP-7W61-KB1	SP-7W61 keypad board of 2x3 keypad and 1x USB OTG (mini AB)
SP-7W61-KB2	SP-7W61 keypad board of 4x4 keypad and 1x USB OTG (mini AB)
AC-DC Adaptor 40W	Input: 120~240V, 40W; Output: 12V/3.33A; Frequency: 47~63Hz; Efficiency: 85.3%; No power cord



> Features

- Intel® Atom™ Processor D525 (512 KB x2 L2 Cache, 1.8 GHz)
- NVIDIA ION 2 GT218 GPU
- High resolution 1920 x 1080 15.6" LCD display
- 1x 1.8" SATA socket for HDD or SSD storage
- 2x mini PCIe and 1x SIM card slots for function expansion (such as WiFi/BT or 3G module)
- Optional five-wire resistive touch sensor
- Optional battery pack for AC power loss backup
- 2x GbE supported
- 1x DDR3 SO-DIMM socket supports up to 2 GB



> System Spec

Processor	Intel® Atom™ Processor D525 (512 KB x 2 L2 Cache, 1.8 GHz)
South Bridge	Intel® ICH8-M
Super I/O	ITE IT8781F
Main Memory	DDR3 SO-DIMM socket supports up to 2 GB @ 800MT/s 512 MB gDDR3 GPU RAM
Graphic	NVIDIA ION 2 GT218 graphics chipset Supports CRT/DVI/DisplayPort Supports dual 24 bit LVDS up to 1920 x 1280 resolution
LCD	Size: 15.6-inch, 16:9 panel Resolution: 1920 x 1080, RGB, Transmissive Backlight: LED Contrast Ratio: 400:1 typical Luminance: 300 Cd/m ² typical (without touch sensor attached)
Storage	7+9 pin onboard SATA connector for 1.8" HDD/SSD SATA signals on I/O connector for external HDD storage
Touch Sensor	Optional five-wire resistive touch sensor
Audio Ports	Mic-in / line-out / stereo speaker out
LAN	2x 10/100/1000 Mbps ports
USB Ports	2x USB 2.0 for mini PCIe card slots / 6x USB 2.0 available on I/O connectors
PCI Express Mini Card Slot	1 full length mini PCIe card add-on slot with USB 2.0/ PCI Express signals and with SIM socket 1 full length mini PCIe card add-on slot with USB 2.0 and PCI Express signals

> Power Supply

DC Input	DC input at 19V DC +/- 10% (DC power must be supplied from an ADLINK IO board or external DC board)
Battery Pack (optional)	Single Lithium-Ion Battery, 3S2P Output: 11.1V, 5200 mAh Backup power for AC power loss (Battery pack must be connected with an ADLINK IO board or external DC board)
Power Consumption	Fully loaded: 47 W

> Environmental

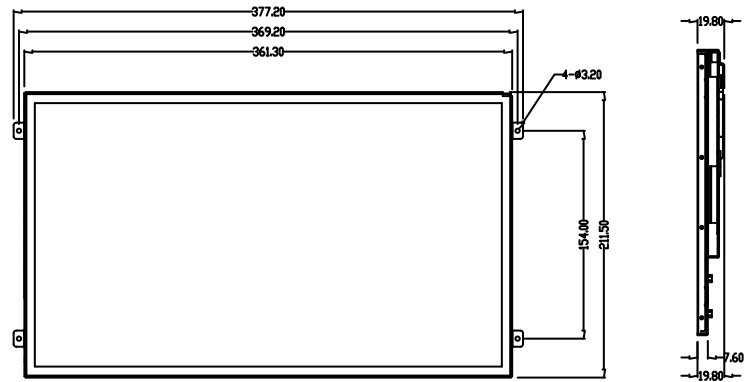
Operating Temperature	0°C to 60°C
Storage Temperature (Non-Operation)	-20°C to 70°C
Humidity	0 - 90% @ 40°C (non-condensing)
Certification	CE and FCC CLASS A/B Compliance

> I/O Interface

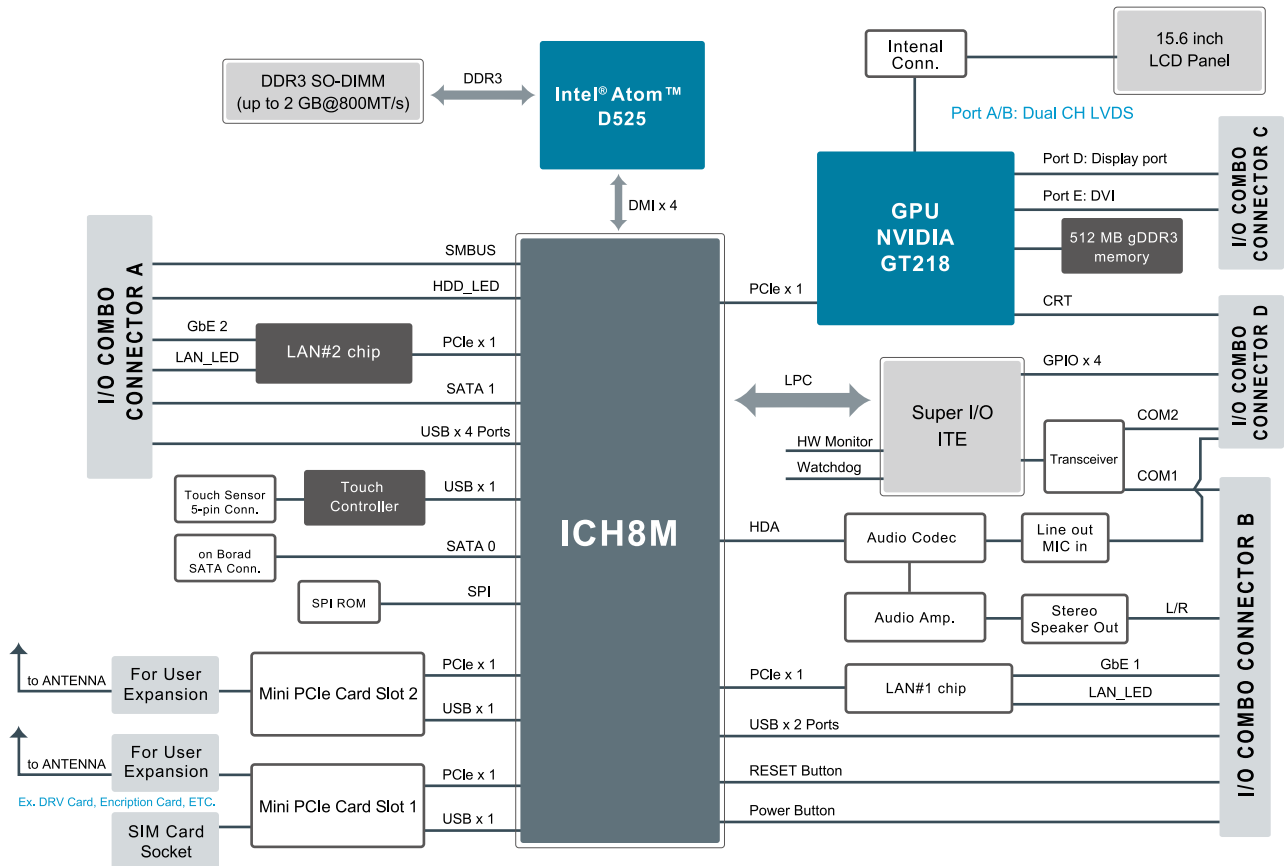
Ethernet	2 GbE signals
Serial Ports	2 COM ports at RS-232 level
USB Ports	6 USB 2.0 ports
Display Output	CRT / DVI / DisplayPort
Misc. Signals	Power Button / Reset / HDD LED / LAN ACT/ LINK LED / GPIO

> Dimensions / Weight

Units: mm / g 377.2 mm x 211.5 mm / 2084.2 g



> CPU Block Diagram



> Ordering Information

Smart Panel

Model Number	Description/Configuration
SP-15W03-NNAR	SP-15W03-NNAR(EA)Smart panel with 5-wire resistive touch sensor

Starter Kit

Model Number	Description/Configuration
SP-15W03-NNAR-EWP	SP-15W03-NNAR-EWP(EA)Starter kit of SP-15W03-NNAR with I/O board 1 (SP-15W03-IO1), fan and heat-pipe dissipator, 2Gb DDR3 module, 1.8" 32Gb SSD, cable kits, stand, and power adaptor

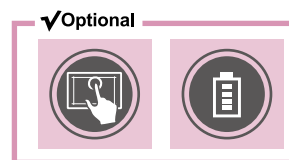
Accessories (optional)

Model Number	Description/Configuration
SP-15W03-IO1	Right-angle connectors I/O board of 19V DC IN, Power button, 4x USB, 2x LAN RJ-45, Display port, VGA, DVI, and 2x COM port (RS232), 7+15P SATA connector
SP-15W03 I/O Cable Kit	SP-15W03 I/O Cable Kit
AC-DC Adaptor 90W	Input: 90~264V, 90W; Output: 19VDC/4.74A; Frequency: 47 - 63Hz; Efficiency: 86%; No power cord



> Features

- Intel® Atom™ Processor D525 (512KB x2 L2 Cache, 1.8 GHz)
- 15.6" LCD display with 1366 x 768 resolution
- 1x 1.8" SATA socket for HDD or SSD storage
- 2x mini PCIe and 1x SIM card slots for function expansion (such as WiFi/BT or 3G module)
- Optional five-wire resistive touch sensor
- Optional battery pack for AC power loss backup
- 2x GbE supported
- 1x DDR3 SO-DIMM socket supports up to 2 GB



> System Spec

Processor	Intel® Atom™ Processor D525 (512 KB x 2 L2 Cache, 1.8 GHz)
South Bridge	Intel® ICH8-M
Super I/O	ITE IT8781F
Main Memory	1x DDR3 SO-DIMM socket supports up to 2 GB @ 800 MT/s
Graphic	Intel® integrated graphic chipset Supports CRT/LCD dual view CRT resolution up to 2048 x 1536
LCD	Size: 15.6-inch, 16:9 panel Resolution: 1366 x 768, RGB, Transmissive Backlight: LED Contrast Ratio: 400:1 typical Luminance: 200 Cd/m2 typical (without touch sensor attached)
Storage	7+9 pin onboard SATA connector for 1.8" HDD/SSD SATA signals on I/O connector for external HDD storage
Touch Sensor	Optional five-wire resistive touch sensor
Audio Ports	Mic-in / line-out / stereo speaker out
LAN	2x 10/100/1000 Mbps ports
USB Ports	2x USB 2.0 for mini PCIe card slots / 6x USB 2.0 available on I/O connectors
PCI Express Mini Card Slot	1 full length mini PCIe card add-on slot with USB 2.0/ PCI Express signals and with SIM socket 1 full length mini PCIe card add-on slot with USB 2.0 and PCI Express signals

> Power Supply

DC Input	DC input at 19V DC +/- 10% (DC power must be supplied from an ADLINK IO board or external DC board)
Battery Pack (optional)	Single Lithium-Ion Battery, 3S2P Output: 11.1V, 5200 mAh Backup power for AC power loss (Battery pack must be connected with an ADLINK IO board or external DC board)
Power Consumption	Fully loaded: 31.7 W

> Environmental

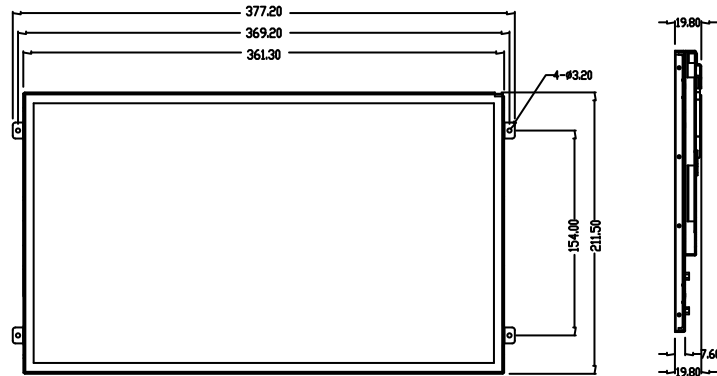
Operating Temperature	0°C to 60°C
Storage Temperature (Non-Operation)	-20°C to 70°C
Humidity	0 - 90% @ 40°C (non-condensing)
Certification	CE and FCC CLASS A/B Compliance

> I/O Interface

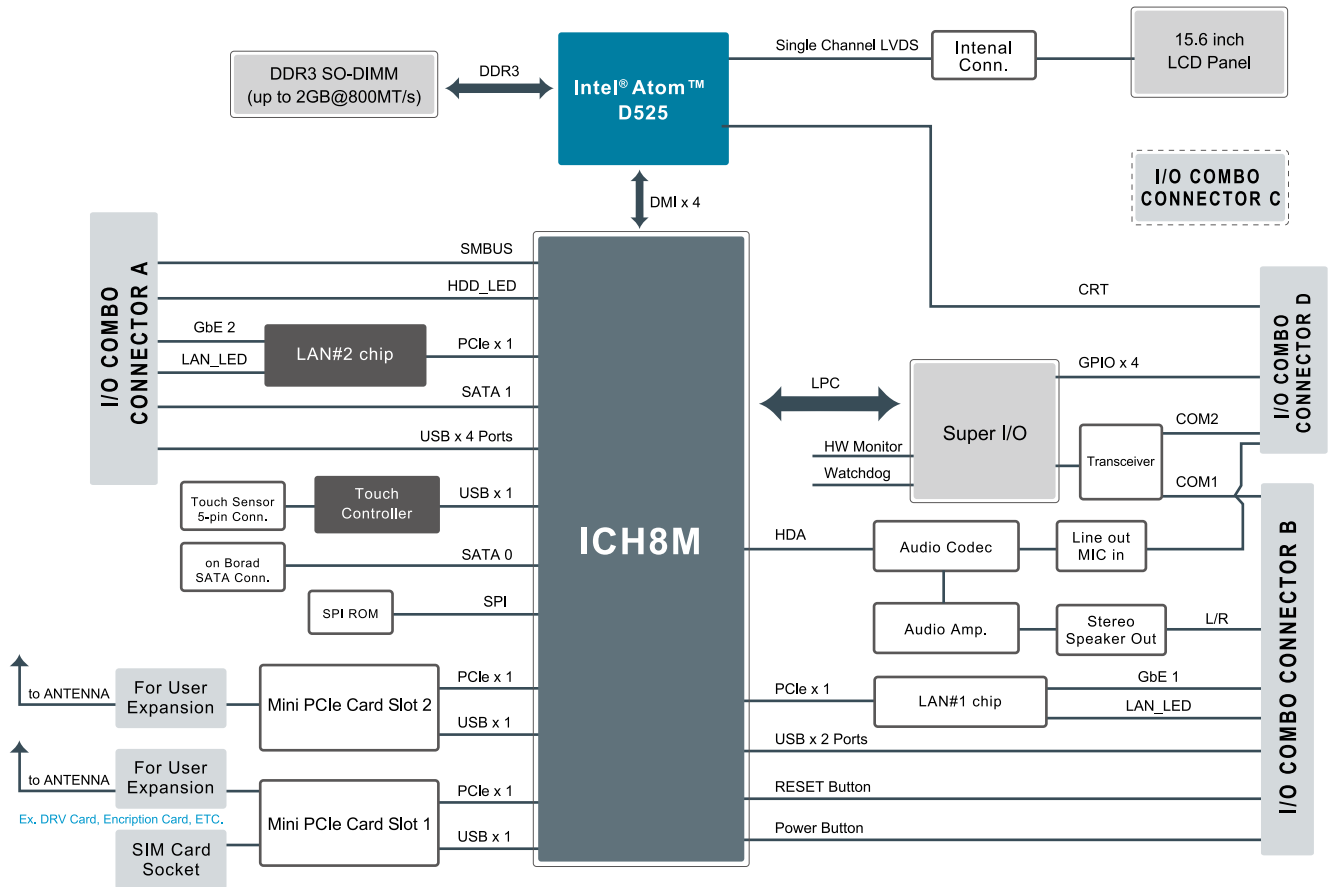
Ethernet	2 GbE signals
Serial Ports	2 COM ports at RS-232 level
USB Ports	6 USB 2.0 ports
Display Output	CRT Port
Misc. Signals	Power Button / Reset / HDD LED / LAN ACT/ LINK LED / GPIO

Dimensions / Weight

Units: mm / g 377.2 mm x 211.5 mm / 2084.2 g



CPU Block Diagram



Ordering Information

Smart Panel

Model Number	Description/Configuration
SP-15LW03-NNAR	SP-15LW03-NNAR(EA) Smart panel with 5-wire resistive touch sensor

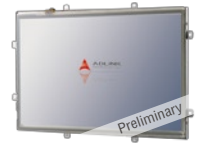
Starter Kit

Model Number	Description/Configuration
SP-15LW03-NNAR-EWP	SP-15LW03-NNAR-EWP(EA) Starter kit of SP-15LW03-NNAR with I/O board 1 (SP-15LW03-IO1), fan and heat-pipe dissipator, 2Gb DDR3 module, 1.8" 32Gb SSD, cable kits, stand, and power adaptor

Accessories (optional)

Model Number	Description/Configuration
SP-15LW03-IO1	Right-angle connectors I/O board of 19V DC IN, Power button, 4x USB, 2x LAN RJ-45, VGA, and 2x COM port (RS-232), 7+15P SATA connector
SP-15LW03-IO2	Vertical connectors I/O board of 19V DC IN, Power button, 4x USB, 2x LAN RJ-45, VGA, and 2x COM port (RS-232)
SP-15LW03 I/O Cable Kit	SP-15LW03 I/O Cable Kit
AC-DC Adapter 90W	Input: 90-264V, 90W; Output: 19VDC/4.74A Frequency: 47 - 63Hz; Efficiency: 86% No power cord

SPECIFICATION CATALOG



Model Name		SP-7W61	SP-860	SP-1061	SP-10W61
Processor	CPU	ARM Cortex A8	ARM Cortex A8	ARM Cortex A8	ARM Cortex A8
	Chipset	TI AM3715	TI AM3517	TI AM3715	TI AM3715
	GPU	Power VR SGX	Power VR SGX	Power VR SGX	Power VR SGX
Panel	Size	7.0" (16:9)	8.0" (4:3)	10.4" (4:3)	10.1" (16:9)
	Brightness (cd/m ²)	250	250 or 800	300	200
	Resolution	1024 x 600	800 x 600	800 x 600	1024 x 600
Touch Sensor	Resistive	Yes / 4-wire	Yes / 4-wire	Yes / 4-wire	Yes / 4-wire
Memory		512 MB LPDDR DRAM system memory 4 Gb NAND Flash Memory	256 MB DDR2 DRAM system memory 2 Gb NAND Flash Memory	512 MB LPDDR DRAM system memory 4 Gb NAND Flash Memory	512 MB LPDDR DRAM system memory 4 Gb NAND Flash Memory
Input Voltage		12V	5 V	12 V	12 V
Adapter	Voltage	12V / 2.5 A	5V / 3A	12V / 2.5 A	12V / 2.5 A
Battery	Configuration	2S1P	n/a	2S1P	2S1P
	Operation Mode	Backup	n/a	Backup	Backup
Operation Temperature		Standard: 0°C to 60°C	Standard: 0°C to 60°C	Standard: 0°C to 60°C	Standard: 0°C to 60°C
EMI	Class B	V	V	V	V
EMS	Class A	V	V	V	V
I/O Interface	LAN	1 x 10/100 Mbps	2 x 10/100 Mbps	1 x 10/100 Mbps	1 x 10/100 Mbps
	USB	1 x USB OTG/ HOST 3 x USB 2.0	3 x USB2.0	1 x USB OTG/ HOST 3 x USB 2.0	1 x USB OTG/ HOST 3 x USB 2.0
	UART	1x RS-232 1x RS-232/422/485	1x RS-232	1x RS-232 1x RS-232/422/485	1x RS-232 1x RS-232/422/485
	Wi-Fi/BT	Built-in	Built-in	Built-in	Built-in
	CAN BUS	n/a	1 x CAN bus	n/a	n/a
	Audio	Speaker out	Line in / Line out	Speaker out	Speaker out
	SATA	n/a	n/a	n/a	n/a
	DVI Port	n/a	n/a	n/a	n/a
	DisplayPort	n/a	n/a	n/a	n/a
	WAN Module	1 x mini PCI-e Slot (USB only)	n/a	1 x mini PCI-e Slot (USB only)	1 x mini PCI-e Slot (USB only)
	SIM Card Socket	1 x socket on I/O board	n/a	1 x socket on I/O board	1 x socket on I/O board
	Expansion Connector	V (default non-pop)	V (default non-pop)	V (default non-pop)	V (default non-pop)
	I/O Board Connection	Board to Board	Board to Wire	Board to Board	Board to Board



Model Name		SP-803	SP-15W03	SP-15LW03
Processor	CPU	Intel Atom N455	Intel Atom D525	Intel Atom D525
	Chipset	Intel/ICH8-M	Intel/ICH8-M	Intel/ICH8-M
	GPU	integrated GMA3150	nVidia GT218	integrated GMA3150
Panel	Size	8.0" (4:3)	15.6" (16:9)	15.6" (16:9)
	Brightness (cd/m ²)	250 or 800	300	200
	Resolution	800 x 600	1920 x 1080	1366 x 768
Touch Sensor	Resistive	Yes / 4-wire	Yes / 5-wire	Yes / 5-wire
Memory		Supports 1x DDR3 667MT/s SO-DIMM module up to 2 Gb (maximum)	Supports DDR3 SO-DIMM socket supports up to 2GB @ 800MT/s 512MB gDDR3 GPU RAM	Supports DDR3 SO-DIMM socket supports up to 2GB @ 800MT/s
Input Voltage		19 V	19 V	19 V
Adapter	Voltage	19V / 4.7 A	19V / 4.7A	19V / 4.7A
Battery	Model Name	3S1P	3S2P	3S2P
	Operation Mode	Backup	Backup	Backup
Operation Temperature		Standard: 0°C to 60°C	Standard: 0°C to 60°C	Standard: 0°C to 60°C
EMI	Class B	V	V	V
EMS	Class A	V	V	V
I/O Interface	LAN	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
	USB	8 x USB2.0 (6 for expansion)	6 x USB2.0	6 x USB2.0
	UART	2 x RS-232 2 x UART(Tx/Rx/RTS)	2 x RS-232	2 x RS-232
	Wi-Fi/BT	Optional module	Optional module	Optional module
	CAN BUS	n/a	n/a	n/a
	Audio	Line in / Line out	Stereo speaker out Line in / Line out	Stereo speaker out Line in / Line out
	SATA	3 x SATA 2 (1 for expansion)	2 x SATA 2 (1 for expansion)	2 x SATA 2 (1 for expansion)
	DVI Port	n/a	1 x DVI port	n/a
	DisplayPort	n/a	1 x DisplayPort	n/a
	WAN Module	1 x mini PCI-e Slot	2 x mini PCI-e Slot	2 x mini PCI-e Slot
	SIM Card Socket	1 x socket onboard	1 x socket onboard	1 x socket onboard
	Expansion Connector	V	n/a	n/a
I/O Board Connection	Board to Wire	Board to Wire	Board to Wire	

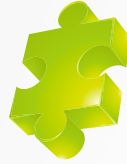
Fast & Easy Solution for Your Platform



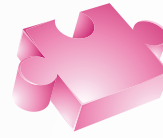
Faceplate
(customized)



Smart Panel
(web-enabled)



I/O Board
(customized)



Back Cover
(customized)

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