



a Fujitsu company

Embedded Computing

# Plug-N-Run L2

## Intel® Atom™ Processor

### 1.6/1.1GHz



Low Power Consumption,

Low Thermal Output,

Best Performance per Watt

### Description:

The Plug-N-Run™ L2 module combines the latest Intel® Atom™ processor and Intel® System Controller Hub (single chip I/O and memory controller) in a standard embedded form factor. PFU Systems' Plug-N-Run L2 is the next generation Computer-On-Module offering the latest combination of Intel® technologies using the PICMG COM Express standard's Basic form factor with type 2 pinout.

The Plug-N-Run L2 fills out the PFU Plug-N-Run System-On-Module product line at the important low-power end of the spectrum. The Plug-N-Run L2 offers the best possible performance per watt for applications that require significant performance under very stringent thermal output requirements. The L2 can be equipped with a flexible thermal solution coupled to internal or external / passive or active heat dissipation. Fan-less operation is possible with this module!

This superior combination of features and ultra-low power is packaged in a standard 125mm x 95mm (4.9in x 3.75in) COM Express Basic Type 2 form factor. PFU Systems is one of the originators of the PICMG COM Express standard.

### Excellent Performance/Watt and Superior Thermal Output

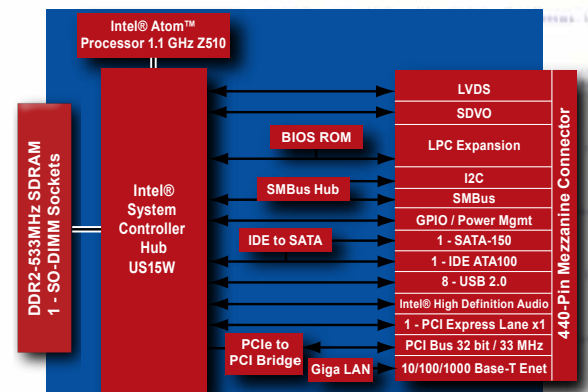
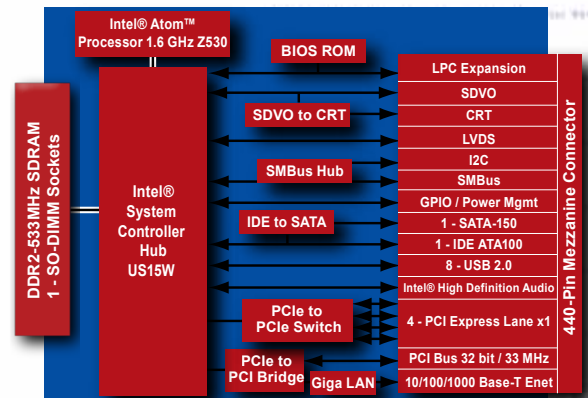
- The latest Intel® Atom™ processor and System Controller Hub single chip SCH
- Intel® Atom™ processor Z530/Z510
  - » 45nm process technology
  - » 512KB L2 Cache
  - » Optimized for small ultra-low power applications
  - » CMOS FSB 533/400MHz
- Intel® System Controller Hub US15W chipset
  - » Integrated GMCH + ICH
  - » Up to 1GB of DDR2 memory (2GB support planned)
  - » Ultra low power integrated graphics with 2D and 3D HW accelerator
  - » Integrated High Definition Video Decoder
  - » USB 2.0 and PCI Express

### Extensive Connectivity for a Variety of Applications

- Eight USB 2.0 ports
- LVDS LCD, SDVO
  - » Two simultaneous independent displays using the LVDS (1376x768) and SDVO (1280x1024) channels
- Intel® High Definition Audio
- Legacy interfaces like IDE and PCI
- PCI Express, SATA, I2C, GPIO
- Gigabit Ethernet

### COM Express Standard

- Uses PICMG COM Express Basic Type 2 Standard connectors and pinout
- Shortens development time
- Decreases development cost
- Enhances product quality



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# Inside Your Best Ideas

**Specifications Summary**

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Feature	Specifications	
<b>CPU AND CHIPSET</b>	<b>CPU</b>	Intel® Atom™ Processor Z510 (1.1GHz)   Intel® Atom™ Processor Z530 (1.6GHz)
	L2 Cache	512KB
	Chipset	Intel® System Controller Hub US15W
	FSB	400MHz   533MHz
	Hyper Threading Technology	Not Supported   Supported
<b>MEMORY</b>	DDR2 Unbuffered SO-DIMM x 1 (max: 1GB) Non-ECC Note : Max. 2GB support planned	
<b>DISPLAY</b>	Graphics Controller	Chipset Integrated Graphics Controller (Main memory used for VRAM) (Intel® Graphics Media Accelerator 500)
	LCD Max Resolution / Colors	Single Channel WXGA (1366 x 768) : 16M Colors
	SDVO Max Resolution / Colors	SXGA (1280 x 1024) : 16M Colors
<b>EXTENDED INTERFACE</b>	PCI-Express	1 - x1 Lanes   4 - x1 Lanes
	PCI	32bit / 33MHz, 3.3V PCI Rev. 2.3
	LPC	1 (Super I/O Connection) Note : DMA is not supported
<b>I/O INTERFACE</b>	CRT (VGA)	Possible with circuit on the Carrier Board   Available exclusive of SVDO use
	LCD (LVDS)	1 (LVDS LCD I/F, Single Channel)
	SDVO	1   Available exclusive of CRT use
	LAN	1 (10/100/1000Base-T)
	USB	8 (USB1.1/2.0) Note : Port 6 and 7 are used only for USB 2.0.
	IDE	1 (ATA/100) Note : 2 devices / 1 device when Serial ATA is utilized.
	Serial ATA	1 (Serial ATA/150)
	Audio	Yes (Intel® High Definition Audio, External Audio-CODEC required)
	Buzzer	1
	SMBus	1
	I2C	1
GPIO	GPI:4 , GPO:4	
<b>BIOS</b>	Phoenix TrustedCore BIOS	
<b>RAS</b>	CPU Temperature Monitoring, HDD Monitoring (S.M.A.R.T.)	
<b>THERMAL SOLUTIONS</b>	Heat Spreader (optional)	
<b>POWER SUPPLY</b>	12V, 5V(Stand-by) and 3.3V (Back-up) DC	
<b>TYPICAL POWER CONSUMPTION</b>	5.1W (Windows XP at idle)   7.2W (Windows XP at idle)	
<b>AMBIENT TEMPERATURE</b>	0-60°C	
<b>OS</b>	Windows® XP Professional / Embedded, Red Hat Enterprise Linux V5 (Contact PSI for additional OS support)	
<b>WEIGHT</b>	230g	
<b>DIMENSIONS</b>	125mm x 95mm (COM Express Basic)	
<b>RoHS</b>	RoHS Compliant	

**Ordering Information**

Item	Part Number
<b>MODULES</b>	
1.10GHZ Plug-N-Run L2 Basic Module	PSL2PR110B2
1.60GHZ Plug-N-Run L2 Basic Module	PSL2PR160B2
<b>MEMORY</b>	
512MB PC2-5300 DDR2 200-PIN SODIMM	PSDA512G667R
1GB PC2-5300 DDR2 200-PIN SODIMM	PSDA001G667R
<b>ACCESSORIES</b>	
Heat Spreader	PSHSAL2
Passive Heat Sink (Requires Heat Spreader PSHSAL2)	PSHSPL2

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