

## LR101-B16M Intel® Atom™ N450 Mini-ITX Board

### PROCESSOR

- Intel® Atom™ N450 (Single-Core)
- On die 1 x 512KB, 8-way L2 cache
- C0/C1(E)/C2(E)/C4(E) C-states
- 1.6GHz core frequency, 1.10V voltage
- IA 32-bit and Intel® 64 architecture
- Micro-FCBGA8 packaging technologies

### SOUTHBRIDGE

- Intel® ICH8M I/O Controller Hub

### SYSTEM MEMORY

- Two 200-pin SODIMM sockets
- Supports DDR2 667MHz only
- Supports up to 2GB system memory
- Single channel memory interface
- Supports x16 devices

### EXPANSION SLOTS

- 1 PCI Express x1 slot
- 1 PCI slot
- 1 CompactFlash socket

### ONBOARD GRAPHICS FEATURES

- Intel® GMA 3150
  - Contains a refresh of the 3rd generation graphics core
  - 200MHz render clock frequency
- Display ports: LVDS and VGA
  - Integrated single LVDS channel supports resolution up to 1280x800 or 1366x768
  - Analog VGA display output up to resolution 1400x1050 @ 60Hz
- DirectX 9 compliant Pixel Shader 2.0

### S3 GRAPHICS FEATURES

- S3 Graphics Chrome® 435 ULP
- 500MHz core clock
- Four DDR2 512Mbit 32Mx16 memory
- Display ports: 2 DVI-I and 1 HDMI
  - Does not support multiple displays using HDMI and 2 DVI-I at the same time. For dual display, use the bottom DVI-I with either the top DVI-I or HDMI.
- DVI display resolution up to 2560x1600
- 64-bit memory bus width
- Dual rank 256MB maximum memory
- H.264/AVC - MPEG-4 Advanced Video Coding (AVC) hardware acceleration
- VC1 hardware acceleration based on SMPTE 421M and its derivative standards
- ChromotionHD 2.0 Programmable Video Engine
- DX10.1 Unified Shader Architecture - Shader Model 4.1
- Supports 32-bit OS (Windows 7/Vista/XP) only

### ONBOARD AUDIO FEATURES

- Realtek ALC262 2-channel High Definition Audio
- High performance DACs with 100dB SNR
- ADCs with 90dB SNR
- Two stereo DACs support 24-bit PCM format for stereo audio playback
- Three stereo ADCs support 20-bit PCM format for multiple input streaming
- S/PDIF audio interface

### ONBOARD LAN FEATURES

- Realtek RTL8111DL PCI Express Gigabit Ethernet controller
- Integrated 10/100/1000 transceiver
- Supports Full Duplex flow control (IEEE 802.3x)
- Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
- Supports power down / link down power saving

### SERIAL ATA INTERFACE

- 3 Serial ATA ports compliant with SATA 1.0 specification
- SATA speed up to 3Gb/s (SATA 2.0)

### REAR PANEL I/O PORTS

- 1 DC-in 12V jack
- 2 DVI-I ports (1 shared with HDMI port)
- 1 DB-15 VGA port
- 1 HDMI port
- 1 RJ45 LAN port
- 6 USB 2.0/1.1 ports
- Mic-in, line-in and line-out

### I/O CONNECTORS

- 1 connector for 2 external USB 2.0/1.1 ports
- 2 connectors for 2 external serial ports
  - COM2 supports RS232/422/485
  - Pins 1 and 9 of COM1 functions as RS232 signal or power (selectable via jumper)
- 1 connector for PS/2 keyboard/mouse ports
- 1 LVDS LCD panel connector
- 1 LCD/inverter power connector
- 1 8-bit DIO connector
- 1 DIO power connector
- 1 front audio connector for line-out and mic-in jacks
- 1 CD-in connector
- 1 S/PDIF connector
- 3 Serial ATA connectors
- 1 44-pin IDE connector
- 1 4-pin power connector
- 1 front panel connector
- 1 chassis intrusion connector
- 2 fan connectors

### MULTIPLE DISPLAYS

- Supports 4 displays
  - VGA + LVDS + Bottom DVI-I + Top DVI-I; or
  - VGA + LVDS + Bottom DVI-I + HDMI

### BIOS

- AMI BIOS
- SPI BIOS

### ENERGY EFFICIENT DESIGN

- ACPI v1.0a specification
- System Power Management
- Wake-On-Events include:
  - Wake-On-PS/2 Keyboard/Mouse
  - Wake-On-USB Keyboard/Mouse
  - Wake-On-LAN
  - RTC timer to power-on the system
- AC power failure recovery

### DAMAGE FREE INTELLIGENCE

- Monitors CPU/system temperature and overheat alarm
- Monitors CPU(V)/3.3V/5V/12V/VBAT(V) voltages and failure alarm
- Monitors system fan speed and failure alarm
- Read back capability that displays temperature, voltage and fan speed
- Watchdog timer function

### TEMPERATURE

- 0°C to 60°C

### HUMIDITY

- 10% to 90%

### PCB

- Mini-ITX form factor
- 170mm (6.7") x 170mm (6.7")

