



NETLIST

## 4GB to 128GB mSATA Slim SSD

Smallest form factor SSD for increased memory density in current and next generation embedded and portable systems.



### mSATA Slim form factor provides the highest storage density solutions

Netlist's mSATA Slim form factor solution delivers all the advantages of Solid State Drive technology based on SLC and MLC Flash technology in the industry's standard JEDEC form factor solution. The mSATA Slim form factor with a PCIe style PCB edge connector provides a more cost effective solution than MO-297A form factor SSD's while provide all the compatibility with SATA signaling.

Ideal for embedded applications as well as data centric server and storage applications, the new module supports the Serial ATA I/II interface and is SATA Revision 2.6 and 1.5Gbps/3.0Gbps serial interface data rates compatible.

Designed to operate at a maximum operating frequency of 150MHz with an external 30MHz crystal,

it supports capacities of 4GB to 128GB with typical Read and Write data rates of 245MBps and 180MBps respectively (MLC FLASH and on board 64MB DDR1 cache enabled with 16 CE's). In addition to volumetric space savings, the module provides significantly lower power consumption than existing legacy form factor solutions.

### Applications

- Virtualization boot loaders
- Boot and operating system loaders
- Industrial embedded storage
- Medical diagnostics equipment
- Inventory management systems
- Barcode readers
- Multimedia storage/playback
- Mobile Computing: Laptops, netbooks, tablets
- Industrial Computers

Key Feature	Benefit
<b>Integrated hardware ECC circuit</b> <ul style="list-style-type: none"> <li>• Corrects up to 48bits in 2kB (BCH)</li> </ul>	<b>Robust Operation and Reliable Data Retention</b> <ul style="list-style-type: none"> <li>• Supports reliable operation if multiple data stream errors occur</li> </ul>
<b>Serial ATA Interface</b> <ul style="list-style-type: none"> <li>• Revision 2.6 compliant, NCQ support</li> <li>• Supports SATA I/II data rates of 1.5Gbps / 3.0Gbps</li> <li>• Expanded register support for SATA 48bits addressing mode</li> </ul>	<b>Ease of Implementation</b> <ul style="list-style-type: none"> <li>• Supports legacy 1.5Gbps as well as current 3.0Gbps applications</li> </ul>
<b>On board 64MB DDR1 Cache</b> <ul style="list-style-type: none"> <li>• 16bit data bus width with 300Mbps data rate</li> </ul>	<b>Enhanced Read and Write Performance</b> <ul style="list-style-type: none"> <li>• Read/Write speeds up to 245MBps / 180MBps respectively</li> <li>• Reduced Wear Amplification</li> </ul>
<b>Flexible NAND Flash Technology Support</b> <ul style="list-style-type: none"> <li>• SLC and MLC Large Block 8kB/page NAND Flash</li> <li>• 1.8V / 3.3V and 3.3V conventional asynchronous FLASH I/O support</li> <li>• 1.8V ONFI 2.0 Flash interface support</li> <li>• 4 channels max</li> <li>• 8/16 bit bus width</li> </ul>	<b>Flexibility and Customization</b> <ul style="list-style-type: none"> <li>• Supports Industrial and Commercial temperature range applications</li> <li>• Performance vs. cost trade-offs</li> <li>• Customizable for different customer requirements</li> </ul>
<b>mSATA Slim Form Factor SSD</b> <ul style="list-style-type: none"> <li>• JEDEC standard MO-300B</li> </ul>	<b>Optimal storage density</b> <ul style="list-style-type: none"> <li>• Up to 4x reduced volumetric requirements</li> <li>• Increased battery life in mobile / portable applications</li> </ul>

# 4GB to 128GB mSATA Slim SSD



## Additional Features

- 4GB to 128GB capacity
- 3.3V operating voltage
- Dynamic and static wear leveling
- Bad block and spare block management
- 28/32/48 bit/2KB ECC
  - » BCH
- Power management
- Industrial temperature range
  - » -40°C to +85°C
- Commercial temperature range
  - » 0°C to +70°C
- 32bit microcontroller w/UART, GPIO
- Shock 1500G / 0.5ms
- Vibration 80 – 2000Hz/20G
- RoHS, WHQL, CE/FCC certification
- Acoustic = 0dB
- Windows OS boot feature
- 29.85mm x 50.80mm (W x L)

## Embedded Applications

- Boot & operating system loaders
- Industrial embedded systems
- Medical diagnostics equipment
- Barcode readers



## Mobile and System Applications

- Multimedia storage/playback
- Mobile computing



Netlist P/N	Density	Temperature Grade
NLSS04GUAI-6	4GB	Industrial
NLSS08GUAI-6	8GB	Industrial
NLSS16GUAI-6	16GB	Industrial
NLSS32GUAI-6	32GB	Industrial
NLSS04GUAC-6	4GB	Commercial
NLSS08GUAC-6	8GB	Commercial
NLSS16GUAC-6	16GB	Commercial
NLSS32GUAC-6	32GB	Commercial
NLSS64GUAC-6	64GB	Commercial
NLSS128UAC-6	128GB	Commercial

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