



NETLIST

## 4GB to 32GB mSATA Mini SSD

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



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

Netlist's mSATA Mini SSD solution delivers all the advantages of Solid State Drive technology based on SLC and MLC Flash technology in the industry's smallest form factor solution. Developed from the JEDEC standard mSATA slim form factor with a PCIe style PCB edge connector, the mSATA Mini is provided in a module that is almost 1/2 the length of the standard slim form factor.

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 compliant and compatible with SATA 1.5Gbps and 3.0Gbps serial interface data rates.

The mSATA Mini was designed to operate at a maximum operating frequency of 150MHz with an

external 30MHz crystal, it supports capacities of 4GB to 32GB with typical Read and Write data rates of 240MBps and 140MBps respectively (MLC FLASH and on board 64MB DDR cache enabled). 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 240MBps / 140MBps 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 mini Form Factor SSD</b> <ul style="list-style-type: none"> <li>• Half the length of the mSATA slim modules</li> <li>• JEDEC standard MO-300B</li> </ul>	<b>Optimal Storage Density</b> <ul style="list-style-type: none"> <li>• 2x to 2.5x reduced volumetric requirements</li> <li>• Improved battery life in mobile / portable applications</li> </ul>

# 4GB to 32GB mSATA Mini SSD



## Additional Features

- 4GB to 32GB capacity
- 3.3V operating voltage
- Dynamic and static wear leveling
- Bad Block and spare block management
- 28/32/48 bit/2KB data ECC
- Power management
- Industrial temperature range
  - » -40°C to +85°C
- Commercial temperature range
  - » 0°C to +70°C
- 32bit microcontroller
- Integrated UART, GPIO
- Shock 1500G / 0.5ms
- Vibration 80 – 2000Hz/20G
- RoHS, WHQL, CE/FCC certification
- Acoustic = 0dB
- Windows OS boot feature
- 29.85mm x 26.80mm (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
NLSF04GUAI-6	4GB	Industrial
NLSF08GUAI-6	8GB	Industrial
NLSF16GUAI-6	16GB	Industrial
NLSF04GUAC-6	4GB	Commercial
NLSF08GUAC-6	8GB	Commercial
NLSF16GUAC-6	16GB	Commercial
NLSF32GUAC-6	32GB	Commercial

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