

## Using SATA NANDrive™ to Replace Industrial Grade CFast Cards

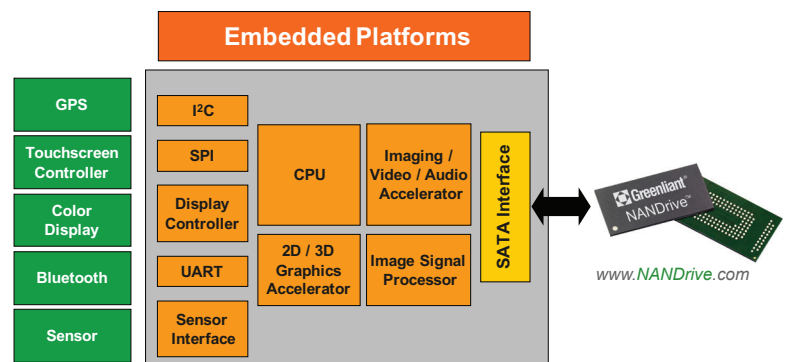
### Why Do Systems Use CFast?

CFast is an extension of the Compact Flash standard and is effectively a Serial ATA (SATA) equivalent of the Parallel ATA based (PATA) CompactFlash (CF) cards. CFast cards support a higher transfer rate than CF cards, but are not electrically or mechanically compatible. Industrial grade (SLC NAND-based) CFast cards are typically used in embedded applications requiring high endurance and long life. While the removable aspect of CFast cards may be useful for some applications, they are not suitable for storing sensitive user data and embedded systems used in high vibration and shock environments.

### NANDrive™ Advantage Over CFast Cards

As the size of embedded systems continues to shrink, there is a need for more power efficient and smaller form factor storage than offered by CFast cards. At about the size of a postage stamp, industrial grade (SLC NAND-based) NANDrive solid state drives (SSDs) are an ideal replacement. No extra connectors are needed because NANDrive is soldered directly onto the PCB, making it resistant to shock and vibration. In addition, no host software changes are required if SATA NANDrive is used in place of a CFast card.

For embedded applications that require high security, NANDrive offers advanced features that are not often found in today's CFast cards, such as user-selectable protection zones and military-grade erase / purge commands. NANDrive's built-in power interrupt data protection ensures data integrity and reliability by detecting and subsequently recovering from power failures. NANDrive also incorporates a debug port to help reduce the design cycle and provides user-configurable zones to optimize product performance in the field.



Typical Design Using SATA NANDrive

Industrial Grade SATA NANDrive Compared to Industrial CFast Cards			
Category	Characteristic	SATA NANDrive	CFast Cards
Feature	Capacity	2 GB to 32 GB	1 GB to 64 GB
	Host Interface	SATA 2.0 Compatible	CFast 1.0 / 2.0
	Power Consumption (Sleep Mode)	70 mW (typical)	360 mW (typical)
	Power Management	Zero wake-up latency without host intervention	SATA host support
	Separate Debug Interface	Yes	No
	User-Configurable Function Zones	Yes	No
Form Factor	NAND Type	SLC	SLC
	Operating Temperature	-40°C to +85°C (Industrial)	-40°C to +85°C (Industrial)
	Package	Total area: 336 sq. mm (same ball-print for all capacities)	Total area: 1,558 sq. mm (Type I without connectors)

### Applications

- Tablet PC / Smartbook / Netbook
- Set-top box / Net-top box
- Internet-enabled TV
- Industrial PC
- Single-board computer
- Industrial automation & control
- Test & measurement instrumentation
- Blade server
- Gateway / Switch
- Network firewall
- Video surveillance
- Black box data recorder
- Video conferencing
- GPS and telematics
- In-vehicle infotainment
- Multi-function printer

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