

Crypto M.2 2280 PCIe NVMe SSD

2020 Model

**Full Disk Encryption
AES 256-bit**



**nvm
EXPRESS®**

Epoxy Resin



128
GB

256
GB

512
GB

1
TB

2
TB

INTRODUCTION

The world's fastest and most secure M.2 NVMe PCIe Gen 3x4 encrypted SSD available.

If an ultrabook or laptop with an Integral Crypto M.2 SSD installed is lost or stolen, sensitive data is secure and cannot be accessed without the high-strength password. When the system is shut down, 256-bit full disk encryption is instigated.

Crypto M.2 SSD is the no-fuss and highly-secure solid state encryption solution for many industries including; finance, legal, health, education and government.

M.2 PCIe NVMe SSD storage solutions are designed for Notebooks, Desktops, Ultrabooks and tablets. They address the need for more low powered compact storage without compromising performance and reliability of solid state drives.

FEATURES

- **Military level security with AES 256-bit hardware encryption** - More secure than a software-only solution
- **FIPS 140-2 Level 3 Validated** - Certificate No. 3970
- Crypto M.2 2280 PCIe NVMe SSDs are up to four times faster in performance when compared to SATA SSDs and are compatible with most computing hardware and software that support the NVMe standard
- Break through the 6Gbps SATA limitation for your extreme performance needs. Specifically engineered to compliment high-specification machines that are ultra-responsive
- Performance: Faster boot than HDD, Faster access to applications, enhanced productivity and increased efficiency
- Fully compatible with devices and OS that support the NVMe standard
- **Multi-lingual interface** - 14 languages - Arabic, Chinese, Dutch, English, French, German, Hindi, Italian, Norwegian, Polish, Portuguese, Russian, Spanish and Swedish

Security Features

- **Total Drive Encryption** - All data stored on the Crypto M.2 SSD is encrypted (including the Operating System)
- **Dual Password** - As an option an Administrator can setup a user password and a master override password. If the user forgets their password, the Crypto M.2 SSD can be unlocked by the Administrator and the user password reset.
- **Secure Entry** - Encrypted data cannot be accessed without the correct high-strength 8-16 character alphanumeric password. An optional password hint can be set-up which cannot be the same as the password. Before use a high-strength password must be set.
- **Brute-Force Password Attack Protection** - Encrypted data is automatically erased after the default 6 failed password attempts (password attempts configurable to a maximum of 20). The data and encryption key are securely destroyed and the Crypto M.2 SSD is reset and can then be reused.
- **Anti-Clone** - Crypto M.2 SSD cannot be cloned once encryption is set
- **Tamper-Proof Design** - The electronics are sealed in tamper-proof epoxy resin
- **High-speed Read/Write** - The Crypto M.2 NVMe PCIe SSD is a highly secure solution with added benefit of a super-fast performance, with speeds up to 3400MB/s Read and 3100MB/s Write. It boasts random read/write IOPS of up to 700K/690K
- **Quick Boot** - Using a Crypto M.2 SSD in place of a traditional HDD can cut your ultrabook or laptop's boot time in half
- **No moving parts** - greater resistance to shock and vibration
- **Noise free** - no spin or seek time
- **Endpoint security software compatible** - The Integral Crypto M.2 SSD operates comfortably with endpoint security solutions by using the configurable unique ID feature, which is part of the setup program
- **Warranty** - 3 Years

Technical Features

- PCIe Gen3x4
- Compliant with PCI Express Base Specification Rev 3.1
- Compliant with NVMe 1.3
- Compatible with Windows 10 and Linux upon request

FORM FACTOR & INTERFACE	
Form Factor	M.2 22 X 80
Interface	NVMe PCIe Gen 3x 4
Compliance	PCI Express Base 3.1 - NVMe 1.3
NAND	TLC
Controller	Integral Proprietary

PERFORMANCE					
Capacity	Sequential Speed*		Random Speed*		TBW
	Read	Write	Read	Write	
128GB	1800	600	105K	150K	130
256GB	3200	1300	215K	320K	320
512GB	3400	2400	420K	635K	720
1TB	3400	3100	700K	690K	1620
2TB	3400	3000	700K	680K	3140

SEQUENTIAL SPEED (UP TO) MBS *RANDOM SPEED (UP TO)* 4K IOPS

POWER CONSUMPTION					
Capacity	Power Management (Volt)	Read (mW)	Write (mW)	Idle (mW)	
128GB	3.3	3300	2300	TBA	
256GB	3.3	5000	3100	TBA	
512GB	3.3	5100	4500	TBA	
1TB	3.3	5300	4900	TBA	
2TB	3.3	5300	4900	TBA	

ENVIRONMENTAL	
Operating Temperature	0° to +70°C
Non-operating Temperature	-40° to +85°C
Humidity	RH 90% under 40°C (operational)

FEATURES	
Supports SMART Software	YES
Supports TRIM	Yes (OS support required)
ECC Scheme	LDPC
MTBF	>1.8 Million Hours
Compliance	CE, FCC, RoHS, UL

UNPACKAGED DIMENSION	
Length mm	80
Width mm	22
Height mm	3.9 double sided
Weight (g)	10

PACKAGED DIMENSION	
Length mm	195
Width mm	125
Height mm	16
Weight (g)	70

CAPACITY	PART CODE	BARCODE (EAN)
128GB	INSSD128GM280NC140	5055288445116
256GB	INSSD256GM280NC140	5055288445123
512GB	INSSD512GM280NC140	5055288445130
1TB	INSSD1TM280NC140	5055288445147
2TB	INSSD2TM280NC140	5055288445154

WARRANTY
3 years or TBW

Notes:

Actual performance may vary and depends on use conditions, host and environment. Based on internal testing.

Sequential R/W is measured using ATTO.

IOPS measured in Iometer.

Mean Time Between Failures is estimated based on JEDEC-218/219 standard methodology.

TBW is a measurement of SSDs expected lifespan, which represents the amount of data written to the device. This is only an estimate and can differ based on user usage behaviour, platform and estimates provided by the flash vendor.

Power Consumption may differ according to flash configuration and platform.

Humidity test was for 4 hours.

Unless otherwise agreed in writing, Integral does not recommend nor warrant products for use in life support, nuclear, medical, military, transportation, automotive, aviation, aerospace industry or other applications where in a failure or defect of the product may threaten life, injury, health, loss of a significant amount of money ("Critical Use"), and the customer and user hereby assumes all risk of any critical use of the product.

Mean Time Between Failures is estimated based on JEDEC-218/219 standard methodology.

For products with security software or hardware; the product cannot be guaranteed to be fully secure. No security system can be considered absolute. This device should not be used as your sole backup.

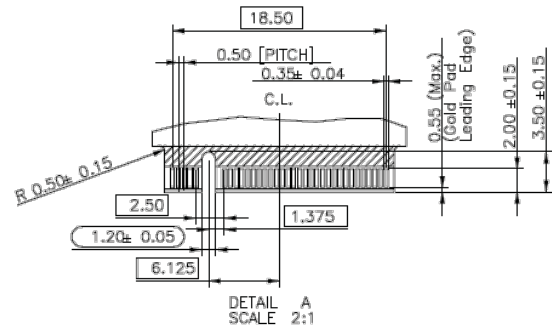
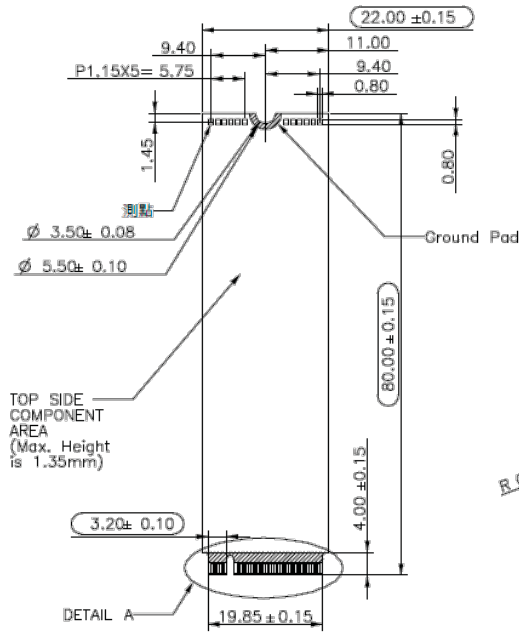
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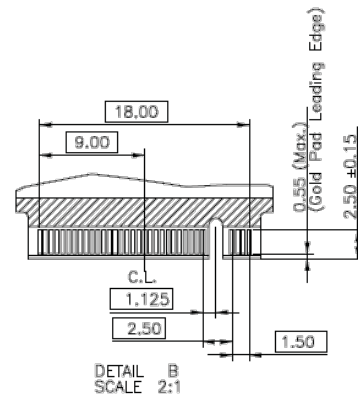
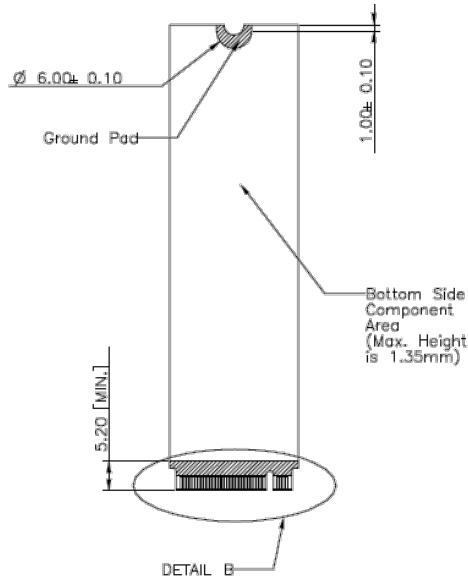
For warranty information please visit www.integralmemory.com/warranty

All Specifications are subject to change without notice 1GB = 1,000,000,000 Bytes, 1TB = 1,000,000,000,000 Bytes; 1 sector = 512 Bytes. The total usable capacity of the SSD may be less than the total physical capacity because a small portion of the capacity is used for NAND flash management and maintenance purposes.

Top View



Bottom View



Side View

