

swissbit®

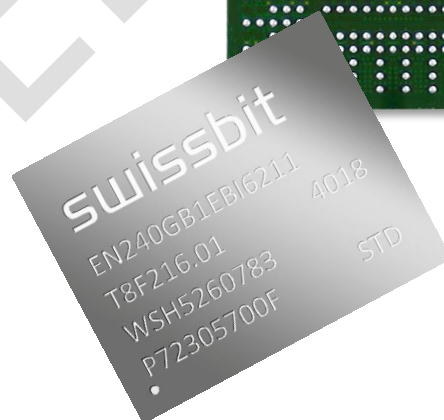
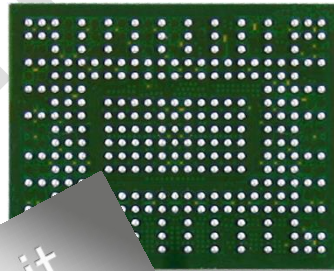
Preliminary Fact Sheet

PCIe NVMe M.2 1620 BGA

EN-2x Series

PCIe Gen 3.1, 16x20mm BGA

PRELIMINARY



PCIe NVMe M.2 1620 BGA

EN-2X SERIES, PCIe GEN 3.1, 16X20MM BGA, 15GB TO 240GB

Main Features

- Fully compliant with PCIe 3.1 and NVMe 1.3 standard
- M.2 1620 package, according to PCI-SIG PCI Express M.2 Specification Rev. 1.1
16x20mm BGA, 0.8mm pitch, RoHS compliant
- Advanced 3D NAND Flash technology with 3K P/E cycles
- LDPC error correction engine and page RAID for maximum endurance and retention
- DRAM support and increased overprovisioning for maximum performance
- High performance PCIe Gen 3.1 specification
 - Read Performance: Sequential Read up to 1'600 MBytes/s, Random Read IOPS up to 120'000
 - Write Performance: Sequential Write up to 650 MBytes/s, Random Write IOPS up to 150'000
- Power Supply: (CMOS technology)
 - 3.3, 1.8 and 0.9V supply voltages
- **Optimized FW algorithms**
 - Power-fail data loss protection
 - Advanced Wear Leveling technology
Equal wear leveling of static and dynamic data.
The wear leveling assures that dynamic data as well as static data is balanced evenly across the memory. This guarantees the maximum write endurance of the device
 - Read Disturb Management technology
Read activity is monitored and the page content is refreshed before critical levels occur
 - Auto Refresh for data retention enhancement
 - SMART monitoring, self-monitoring
 - Page Based Flash Management: by using a page related flash management the write amplification for random write operations is minimized, allowing for an extended life time and high write performance.
 - Near Miss ECC technology
Minimize the risk of uncorrectable bit failure over the product life time. Each read command analyzes ECC margin levels and refreshes data if necessary
 - In-Field Firmware update
 - AES-128/256 Encryption
- **High reliability**
 - Designed for Industrial and Automotive market
 - Ideal for applications like infotainment, Advanced Driver Assistance Systems (ADAS), embedded computing, gaming, automation, IIoT and NetCom
 - The product is optimized for long life cycle that requires superior data retention as well as power fail safety.
 - Operational Temperature Range -40°C ... 85°C
 - Data Retention 10 years @ life begin; 1 year @ life end
 - Controlled BOM & PCN process



Order Information for EN-20

Density	Part Number	Temp. Range	Flash Technology
15GB	SFEN015GB1EB1T0-I-5E-211-STD	-40°C to 85°C	3D NAND Flash
30GB	SFEN030GB1EB2T0-I-5E-211-STD		
60GB	SFEN060GB1EB2T0-I-5E-211-STD		
120GB	SFEN120GB1EB4T0-I-5E-211-STD		
240GB	SFEN240GB1EB4T0-I-6F-211-STD		

System Performance

System Performance	typ	Max*	Unit
Sustained Sequential Read	tbd	1'600	MB/s
Sustained Sequential Write	tbd	650	
Random Read	tbd	120'000	IOPS 4k
Random Write	tbd	150'000	

*) estimated target 240GB

Physical Dimensions

Physical Dimensions	Value	Unit
Length	20±0.1	mm
Width	16±0.1	
Thickness	Max. 1.8mm	

Recommended Temperature Conditions

Parameter	min	typ	max	Unit
Operating Temperature	-40	25	85*	°C
Storage Temperature	-40	25	85*	°C

*) high temperature storage without operation reduces the data retention, during operation the data will be refreshed if data degradation is detected.

For more information on PCIe interface, please visit PCI-SIG homepage (<https://pcisig.com>)

Why Swissbit?

Swissbit is focused on the design, development, manufacture, and support of leading edge memory and storage solutions for the worldwide OEM/ODM marketplace. As a global supplier, Swissbit recognizes and addresses the higher level of application requirements of today's industrial, Netcom, and automotive customers by providing best-in-class products and services, with uncompromised attention to driving overall value and quality.