SSD Buying Guide
October 21, 2019

Controllers with DRAM*: SMI SM22xx/SM22xxEN Phison S10/E12/E16 Marvell 88SS1074

Drives: SMI SM22xxXT Phison S11 (88T – HMB)

HMB is DRAM-less using system memory

*DRAM is ideal for OS/ mixed-use

660p (1-2TB) P1 (1TB) EX950/110S SX6000 Lite/Pro WD SN500 Phison EB Drives* SM2263/XT Drives*

SUS50/SUS65: Micron 1100 SU800 Inland/Burst/C500 ASS/SSS BX500/Source 860 EVO (QLC) M530 (M.2) SU630/SUS63 (QLC) WD Blue Non-3D SM2258/XT & 32L* SM2258KT & 64L* Phison S11 & 64L* ADATA SU750

**START HERE**

3D: More layers is generally better (more read/write)

NAND Type: MLC -> TLC -> QLC

OEM/client drives: aka Samsung PM/SM – not “buyable” – are omitted (bill of materials): drives with variable hardware e.g. SanDisk SSD Plus – avoid or put under worst category

Mobile/SFF/Budget (SATA Replacement)

SU810/540g is not defined

**Too many to list here**

High Performance (NVMe)

Micron 1100 Team LS LITE 3D SU800/S700 Pro/RGB SX850/SX950M UD Pro/Barracuda Kingston UV500 HP M700 WD Blue 2D Hynix Gold 511 Phison S10 Drives* ADATA SU750

**Market Segment**

Performance SATA

860 EVO IMX500 WD Blue 3D SanDisk Ultra 3D Intel $455 Kingston KC600 Lexar NS200 Team UNIX SSD

**Specialization**

Workstation (Laptop or Desktop)

Desktop/Performance

SX8200 (S11) Pro/NP EX920/EX950 Pilot/Pilot-E KC2000 (96L)

760p (1-sided <=1TB) Phison E12 drives* SM2262/EN Drives*

**Budget SATA**

OSS (OS for secondary machine)

8200 (2018) WD SN750 SanDisk Extreme Pro

These drives have very consistent performance with small, static SLC caches.

Kingston A400 Inland/Burst/C500 SU650/SU635/S700

Hyundai Sapphire SP A5S5S Gigabyte NP BX500/Source Team MS30 WD Blue Non-3D Phison S11 Drives*

**Endurance (TBW)**

Prosumer

Prosumer & Consumer

970 Pro Phison E12 Drives* Phison E16 Drives* (TBW = warranted end.)

970 EVO/EVO PLUS SX8200 Pro/S11 Pro S40G EX950/Pilot-E2205 KC2000 (96L) Phison E12 Drives* Phison E16 Drives*

970 Pro is the only MLC-based drive in this guide; with no reliance on SLC, it has high sustained writes.

Note: the SATA 860 Pro is also MLC-based and would technically fall under this category.

The M700 is DRAM-less but has Samsung MLC, WD Blue 2D has planar TLC but DRAM.

**Uncommon Drives**

BX300 (3D MLC) – budget OS SanDisk Ultra II – budget OS B50 EVO – top SATA

Various Toshiba, OZ, Plextor

Opton – outside of scope

**“Obsolete” Drives**

Inland Basic NVMe/E8T (outclassed)

SX6000 Non-Pro (unreliable)

960 EVO (overpriced)

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