


ST1.3 Series

One-inch hard drives for mobile devices



High capacity and robustness in a smaller footprint for embedded handheld systems and mobile phones

12GB capacity—available with IDE ZIF connector

Key Advantages

- Leading **12GB capacity** for handheld systems—delivers maximum storage for high-fidelity music, high-resolution video, and digital photos in portable music and video devices, including mobile phones
- New small footprint—**40x30x5 mm** size delivers large capacity in a tiny space, enabling smaller HDD-based systems
- Optional **drop sensor technology** improves shock tolerance to 2000 Gs by sensing and protecting against day-to-day drops and dings when properly installed in mobile devices
- **Uses 30% less power** than its predecessors
- **RunOn Technology** improves HDD performance while in a high-vibration environment such as jogging, helps prevent media skipping
- **One-second time-to-ready** helps handheld devices start up faster
- **RoHS-compliant** in line with international environmental regulations
- **Fluid dynamic bearing motors** deliver near-silent performance
- **Perpendicular recording technology** promises rapid capacity growth for years to come
- Supports **low-power modes** for increased battery life in appropriately equipped host systems

Best Fit Applications

- Portable music and video players
- Handheld GPS systems
- Mobile phones
- USB storage devices
- PDAs
- Digital still and video cameras
- Personal photo printers





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Key Technology Features

- Seagate SoftSonic acoustic dampening technologies make ST1.3 drives virtually silent to the human ear.
- Choose between using the optional ST1.3 Series model with drop-sensing technology, or implement drop-sensing technology on the host device using the standard ST1.3 Series model.
- G-Force Protection uses a variety of materials and advanced robustness architecture to deliver the HDD industry's highest protection against accidental bumps and drops.
- RunOn Technology combines hardware and software features to deliver skip-free music and video with no special configuration needed on the host device.

Seagate Design Service Centers

- Technical consultation in helping handheld device developers and manufacturers expertly integrate and overcome technical issues
- Speeds your time-to-market performance by solving design and integration issues quickly and efficiently
- Improves your product's reliability and performance
- Provides field engineering and business support teams in person and worldwide
- Available advanced application design advice through our design centers in the USA and Singapore

www.seagate.com
1-800-732-4283
(1-800-SEAGATE)

Specifications	12GB ¹	12GB ¹	Benefits
Model Number	ST612712DEG	ST612712DE	New form factor enables smaller, lighter HDD-based media devices
Interface	IDE	IDE	
Physical Dimensions (mm)	40x30x5	40x30x5	
Weight (g)	14	14	
Mechanical Interface	35-way ZIF	35-way ZIF	
Reliability/Data Integrity			
Nonoperating Shock (Gs, 1 msec)	2000	2000	Drop-sensing technology, part of Seagate G-Force Protection, automatically protects the drive in a suitably configured system. When detecting that the device is in free-fall, G-Force Protection powers down the drive and parks the heads off the platter surface.
Operating Shock (Gs, 1 msec)	2000 ²	300	
Controlled Start/Stops	300,000	300,000	
Drop Sensor	Yes	No	
RunOn Technology	Included	Included	
Performance			
Effective Transfer Rate (max, Mbytes/sec)	10.2	10.2	With more than enough performance for writing and streaming audio and video streams, ST1.3 Series drives outperform most flash memory in write speeds-crucial for larger video files and high-fidelity music.
Average Read Access Time (msec)	20.0	20.0	
Average Write Access Time (msec)	22.0	22.0	
Power Management			
Power-On to Ready (sec, typical)	1.0	1.0	ST1.3 Series drives consume 30% less power than its predecessor, helping extend battery life for portable devices and improving power requirements for system designers. Typically ready to operate in 1 second, ST1.3 Series drives support the consumer need for "instant-on" devices.
Voltage (V, auto-detect)	3.3	3.3	
Max Current Draw (mA)	270	270	
Spinup (mA)	180	180	
Write Average Current (mA)	240	240	
Read Average Current (mA)	230	230	
Low Power Idle Average (mA)	77	77	
Average Audio Current @64kbps(eAAC+), 32MB host buffer, 0.11% duty cycle (mA)	0.6 ³	0.6 ³	
Average Video Current @384kbps(CIF, 15fps), 32MB host buffer, 0.7% duty cycle (mA)	3.5 ³	3.5 ³	
Standby/Sleep (mA)	13	13	
Environmental			
Idle Sound Power (bels, typical/max)	1.6/1.9	1.6/1.9	ST1.3 Series drives are virtually inaudible to the human ear.
Operating Sound Power (bels, typical/max)	1.7/2.0	1.7/2.0	
Operating Temperature (°C)	0 to 70 ^{3,4}	0 to 70 ^{3,4}	Designed for the harsh environmental conditions of mobile use, ST1.3 Series drives extend operating temperature parameters to industry-leading levels.
Nonoperating Temperature (°C)	-40 to 70 ^{3,4}	-40 to 70 ^{3,4}	
Operating Humidity (%)	5 to 90	5 to 90	
Nonoperating Humidity (%)	5 to 95	5 to 95	
Operating Altitude (m)	-60 to 3000	-60 to 3000	
Nonoperating Altitude (m)	-60 to 12000	-60 to 12000	

¹ One gigabyte, or GB, equals one billion bytes when referring to hard drive capacity.

² Maximum shock with 95 percent probability of survival

³ For detailed explanation of usage modes, consult the product manual or your Seagate representative.

⁴ Indicates internal system temperature