

High-capacity storage for handheld digital products  
at an affordable price

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## Hitachi Microdrive 3K4 digital media

### Highlights

- ▶ **High-capacity, removable storage of up to 4GB in a one-inch hard drive**
- ▶ **Industry standard CF+\*\* Type II format and compatible with PC Card Type II using an adapter**
- ▶ **Reliable storage for data, photos, music, and videos from digital cameras, PDAs, handheld PCs, MP3 digital audio players, laptops and other portable handheld devices**
- ▶ **Incorporates leading-edge Hitachi technologies such as giant magnetoresistive (GMR) head technology, Femto sliders, load/unload features, Enhanced Adaptive Battery Live Extender\*, and True Track\* servo for maximum capacity, performance and reliability**



### Size matters

It's a fact: in the world of storage capacity, bigger is better. But when it comes to portability, small and light is the way to go. Hitachi's new Microdrive 3K4 digital media marries its go-anywhere size to 4 GB's of record-it-all storage. No bigger than a matchbook and just as light, the Microdrive will fit 75 hours of high-quality music into the change pocket of your jeans. Or swap out all those songs for a DVD movie. At 4GB, it's four times bigger than its predecessor and much more economical than standard flash memory. More capacity means more photos, more music, more data, more possibilities.

### Miniaturization leadership

Offered in 2GB and 4GB capacities on a single one-inch disk, Hitachi's new Microdrive 3K4 provides cost-effective personal storage. Weighing just over half an ounce (16 grams) and about the size of a matchbook, Hitachi's Microdrive continues to reign as the world's smallest hard disk drive. This new drive uses ultra-miniaturized components, including Hitachi's femto slider technology which enables higher capacities and better power efficiency.

### Performance, portability and value

With a maximum sustained data rate of over 7MB/sec, Hitachi's 4GB Microdrive is the fastest product of its kind. No other product on the market offers a better combination of storage capacity, portability, compact size, performance and affordability.

The arrival of a 4GB capacity also enables and delivers a cost-effective solution for running complex operating systems in embedded applications, or portable digital devices like PDAs and handheld PCs.

## Hitachi Family of Microdrives specifications

|                     |  |
|---------------------|--|
| <b>Product name</b> | <b>Microdrive 3K4-4</b><br><b>Microdrive 3K4-2</b> |
| <b>Model names</b>  | HMS360404D5CF00<br>HMS360402D5CF00                 |

### Configuration

|   |                                 |
|---|---------------------------------|
| Interface                                     | CF+ (ATA and PCMCIA compatible) |
| Capacity (GB) <sup>1</sup>                    | 4 / 2                           |
| Sector size (bytes)                           | 512                             |
| Disks   | 1                               |
| Areal density (max. Gbits/inch <sup>2</sup> ) | 56.5                            |
| Recording density (max. KBPI)                 | 628                             |
| Track density (KTPI)                          | 90                              |
| Factory format (default)                      | FAT32 / FAT16                   |

### Performance

|  |             |
|--|-------------|
| Data buffer (KB)                                   | 128         |
| Rotational speed (rpm)                             | 3600        |
| Latency average (ms)                               | 8.33        |
| Media transfer rate (max. Mbits/sec)               | 57.1 - 97.9 |
| Interface transfer rate (max. MB/sec) <sup>2</sup> | 33          |
| Sustained data rate (MB/sec)                       | 4.3 - 7.2   |
| Seek time (read, typical)                          |             |
| Average (ms)                                       | 12          |
| Track to track (ms)                                | 1           |
| Full track (ms)                                    | 22          |

### Reliability

|                              |                                   |
|------------------------------|-----------------------------------|
| Error rate (non-recoverable) | < 1 per 1.0 E 13 bits transferred |
| Start/stops (at 40° C)       | 300K                              |

| <b>Power</b>                 | <b>+3.3V power supply</b> |    | <b>+5V power supply</b>  |
|------------------------------|---------------------------|----|--------------------------|
| Requirement                  | +3.3VDC, ±5%              | or | +5VDC, ±5%               |
| Current (write)              | 305 mA                    |    | 314mA                    |
| Current (standby)            | 16 mA                     |    | 18 mA                    |
| Power consumption efficiency | 0.055 (watts/GB at idle)  |    | 0.090 (watts/GB at idle) |

### Dimensions

|                 |              |
|-----------------|--------------|
| Height (mm)     | 5 +0 / -0.10 |
| Width (mm)      | 42.80±0.10   |
| Depth (mm)      | 36.40±0.15   |
| Weight (avg. g) | 16           |

### Environmental characteristics

| Operating                          |   |
|------------------------------------|---|
| Ambient temperature                | 0° to 70° C (70 deg. C top cover temperature) |
| Relative humidity (non-condensing) | 8% to 90%                                     |
| Max. wet bulb (non-condensing)     | 29.4° C                                       |
| Shock (half sine wave)             | 200 G/2ms                                     |
| Random Vibration (RMS)             | 0.67 G (5 - 500Hz)                            |
| Vibration (swept sine)             | 1.0 G 0 - Peak                                |
| Non-operating                      |   |
| Ambient temperature                | -40° to 70° C                                 |
| Relative humidity (non-condensing) | 5% to 95%                                     |
| Max. wet bulb (non-condensing)     | 40° C   |
| Shock (half sine wave)             | 2000 G/1ms                                    |
| Random Vibration (RMS)             | 3.01 G (5 - 500Hz)                            |
| Vibration (swept sine)             | 5.0 G 0-Peak                                  |

<sup>1</sup> GB equals one billion bytes when referring to hard drive capacity; accessible capacity may be less.

<sup>2</sup> Ultra DMA mode 2 in IDE mode

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### For more information

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