

Constant progress in personal information equipment has led to progressively higher performance and ever-smaller sizes. In the field of multimedia equipment, high-grade technology has led to the development of very thin, lightweight and portable slim notebook PCs. The move to smaller form factors in notebook PCs is being supported by high-speed, thin DVD-ROM drives, small, large-capacity HDDs and environmentally gentler multi-layer printed circuit boards. The visual equipment sector is seeing aggressive development of flat screen color TVs that deliver high quality image and sound, and STB (Set Top Box) as the UK begins the world's first digital broadcasting. In the field of consumer products, inverter control technology is being applied in refrigerators, washing machines and small consumer products, thus providing improved energy conservation and environmental responsibility.

**PORTÉGÉ 7020CT Slim Personal Computer**

The PORTÉGÉ 7020CT combines the Intel® 366 MHz Pentium® II processor, 6.4 Gbyte hard drive, 64 Mbytes of SDRAM and a large 13.3-inch active matrix display for power, portability and style. It weighs only about 2kg and measures a thin 23.5mm at the front edge. The PORTÉGÉ 7020CT makes an impressive statement for power hungry mobile professionals who require cutting-edge performance. In addition, DVD/CD drive and network connection capability are available via the DVD/CD Network Dock (accessory option).



PORTÉGÉ 7020CT Slim personal computer

**Satellite 2540CDS All-In-One Notebook PC**

The Satellite 2540CDS provides exceptional value without compromising performance or reliability. Superb storage, plenty of expansion options and a dynamic sound system make the Toshiba Satellite 2540CDS portable computer perfect for today's business and individual users. It is equipped with a 333 MHz AMD K6®-2 processor with 3D Now!™ technology, 32 Mbytes of EDO DRAM, All-in-one Design (4.3 Gbyte HDD, 24x CD-ROM & FDD) and a 13.0" DSTN Display.



Satellite 2540CDS all-in-one notebook PC

**Satellite 4080XCDT All-In-One Notebook PC**

The Satellite 4080XCDT offers a 366 MHz Pentium® II processor, 6.4 Gbyte hard drive and a brilliant 14.1-inch active matrix display. The Satellite 4080XCDT is equipped with FDD and a maximum 24x CD-ROM drive. It offers small to medium-size businesses high-performance solutions that can handle the most intensive computing requirements. This product complements the Satellite 2500 series, which provides individual customers such as students and home office users a sub-\$1,500 notebook designed to support mainstream applications.



Satellite 4080XCDT all-in-one notebook PC

**Environment Friendly PWB for Notebook PC**

The conventional multi-layer printed-wiring board (PWB) generally includes epoxy resin bromine, which may release dioxins in some incineration methods. Toshiba has developed an environment friendly PWB, and is applying it in a notebook PC (Satellite 2520CDT), the first in the world not to release dioxins during incineration. It uses flame retardants such as nitrogen/phosphorus chemicals. By the year 2000, Toshiba is planning to use this environment friendly PWB in all notebook PCs.



Conventional PWB



Environment friendly PWB



Satellite 2520CDT

## SD-9000 DVD Video Player



SD-9000 DVD video player

Toshiba has introduced a high-end DVD video player SD-9000 into the market for genuine Home-theater use. SD-9000 provides the highest performance with advanced video/audio technology.

- Superior video performance : A new Super Sub-Alias Filter (6.25MHz/-3dB) provides 540 lines of horizontal resolution. The DA-converters (96KHz/10bit) and component outputs also contribute to purer and sharper pictures. Furthermore, the 3-Dimensional Digital Filter significantly reduces noise, such as scratches in the original film.
- Excellent Audio quality : The Advanced Multi-Bit Delta-Sigma 96KHz/24bit DA-converters and an Adaptive Multi-port Parallel DAC system deliver pure sound at THD 0.001% and a dynamic range of over 112dB. Vibration-resistant cabinet design (anti-vibration base, solid cast-aluminum alloy legs, shock-damped cover, aluminum panel) and audiophile components (capacitors, e.g.) provide the highest quality sound.
- Many useful functions, such as DTS®-compatible digital output, Backlit Universal Remote Control with Jog/Shuttle dial, are equipped.

*"DTS" is a registered trademark of Digital Theater System Company.*

## SD-C2102 Slim Type DVD-ROM Drive



SD-C2102 super-slim max. 2.4 x DVD- ROM drive

This Drive realizes the fastest speed and lightest weight in half-inch (12.7 mm) height DVD-ROM Drives for Notebook-PCs.

- Features:
- Maximum sustained data transfer speed of 2.4 x for DVD and 20 x for CD
  - Fast random access characteristics of 160 ms for DVD and 110 ms for CD
  - Low power consumption by adopting PWM (Pulse Width Modulation) for the disc motor controller
  - Supports readability of CD-R, CD-RW and DVD-R.

## SD-M1212 Half-height Standard Size DVD-ROM Drive

The industry's fastest half height DVD-ROM drive is designed to meet the requirements of the PC industry to install DVD-ROM drives at their factory as a component of the standard configuration.

- Features:
- Maximum sustained data transfer speed of 6 x for DVD and 32 x for CD
  - Supports Ultra-DMA for fast data transfer.
  - Fast random access characteristics of 110 ms for DVD and 85 ms for CD
  - Supports readability of CD-R, CD-RW and DVD-R.



SD-M1212 half-height max. 6 x DVD-ROM drive

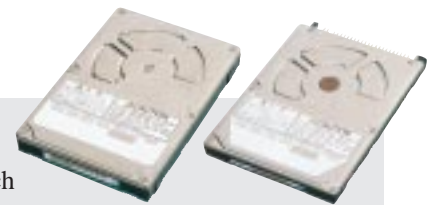
## 10.05-Gbyte Magnetic Disk Drive

Toshiba has developed a 2.5 inch 12.7mm height magnetic disk drive with capacity of 10.05 Gbyte for

high-end notebook PCs. For sub-notebook PCs, drive with 6.4 Gbyte measuring only 8.45 mm has also been released. These new drives employ a head load/unload mechanism.

The load/unload mechanism enables per-platter capacity of 3.35 Gbyte together with high-performance read/write channel and improved giant magnetoresistive (GMR) head.

In addition to the load/unload mechanism, a newly developed mechanical latch mechanism has enhanced non-operating shock resistance by 20 to 40%.



10.05 Gbyte hard disk drive

6.4 Gbyte hard disk drive

10.05 Gbyte series 2.5-inch hard disk drive



Internal view of 10.05 Gbyte hard disk drive

## FACE™32Z1P Flat Wide Television

This flat wide television, when compared to traditional televisions, offers superb quality close to the high quality picture of the high definition television as well as high quality sound.

Features:

- Based on Toshiba's original Micro Filter™ picture tube technology and the newly developed Flat Super Brightron™ picture tube, Toshiba was able to minimize the reflection of fluorescent light, etc. and produce an easy-to-watch screen.
- With the Digital Progress method (progressive scanning), Toshiba doubled the number of scanning lines for regular TV broadcasting, which made the scanning lines much less apparent. Thanks to the technology, flickering of the screen has diminished, while a high quality detailed picture was realized.
- The "3D Bazooka" system enables high quality sound. Moreover, with such features as teletext (written information broadcasting), two-way television compatible IT Vision™, component video input terminals along with Double Window™, multiscreen display and other functions, the television meets the requirements of the digital high quality picture age.



FACE™32Z1P flat wide television

## DTB2000 Digital Television Receiver



DTB2000 digital television receiver

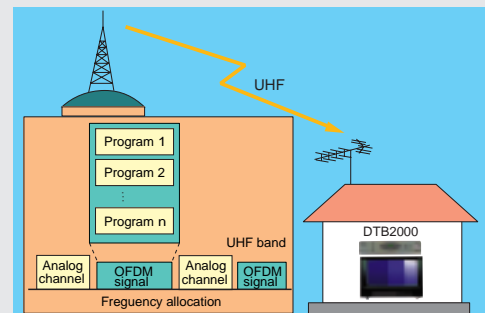
Terrestrial digital broadcasting and current UHF analog broadcasting are broadcast simultaneously. Each allocated digital channel has the capability to transmit 5 to 6 programs at the same time.

It is not necessary for the subscribers to install new antennas or new cables at their home; they can receive the programs efficiently.

Analog broadcasting systems are changing to digital broadcasting systems around the world. England especially is making progress and going ahead of other countries. England has already started terrestrial digital broadcasting.

To accelerate the change of present programs to digital, a broadcasting company "ONdigital" has started PAY-TV programs. Toshiba was selected as one of the six development companies of a digital broadcasting receiver, and has developed DTB2000 digital television receiver.

OFDM (Orthogonal Frequency Division Multiplex), which limits ghost interference and is the best for terrestrial digital broadcasting, was selected for the modulation system. DTB2000 uses the common interface, which is provided in DVB (Digital Video Broadcasting) regulation, and also has the ability to download software from the broadcasting signal. It has the flexibility needed for future use.



Outline of digital terrestrial broadcasting

## “Dai-sei-kai” Series, Air Conditioner Friendly to the Earth

Toshiba has commercialized the Dai-sei-kai, RAS-285LDR series of room air conditioners, which adopt R410A (Ozone depletion

coefficient

ZERO) as a refrigerant. Dai-sei-kai received a government award for energy-conserving air conditioners, the MITI (Ministry of International Trade and Industry) Minister’s Award in 1998.

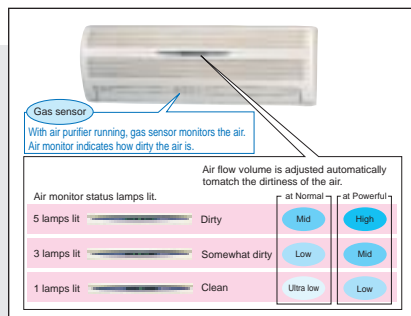
Toshiba introduces features and core technologies of Dai-sei-kai. (The following numbers are comparisons to last year’s model.)

Features:

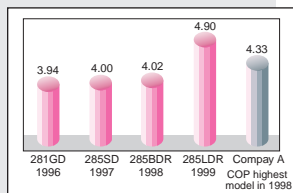
- Achieves the trade’s best COP (Coefficient Of Performance) 4.90 (22% over last year’s model). Achieves important energy conservation, allowing you to save 10% electric charges for a year. Standby power is only 0.8W (cut down 80% from last year’s model).
  - Improves best heating performance 5.4kW (at outside temperature of 2°C), 17% up from last year’s model.
- Provides comfortable warmth and high efficiency even in cold climates.
- Air conditioners equipped with genuine electric air purification function. Air monitor indicates how dirty the air is.

Core Technologies:

- High efficiency DC twin rotary compressors optimized for R410A
- Low noise propeller fan with proprietary ribs
- High efficiency heat exchanger with high grooved tubes for R410A
- "IPDU" — high power-factor converter device



Air conditioners with air cleaner using R410A



Trend of COP

## “MIHARIBANKO” Model GR-470K Twin-Cooling and Inverter Control Refrigerator

In response to increased awareness about food freshness by consumers, Toshiba has developed an energy-saving 5-door refrigerator having independent freezing and refrigeration coolers (twin coolers). In this refrigerator, operation is switched between these independent coolers using time-sharing control.

This refrigeration system successfully controls the three factors for maintaining food freshness in refrigerator compartments — low temperature (about 2°C), constant temperature ( $\pm 0.5^\circ\text{C}$ ), and high humidity (about 70%).

The basic function of refrigerators is food preservation (maintaining the moisture content of foods and preventing protein deterioration, fat oxidation, and reductions in vitamin C, sugars, and chlorophyll). The GR-470K refrigerator provides food preservation results at almost twice that of conventional refrigerators.

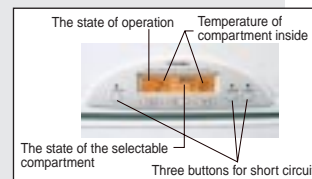
Low power consumption is also extremely important in terms of the global environment. The GR-470K refrigerator uses a compact compressor with inverter control and a cooling fan together with a high energy-efficiency twin-cooling system for a 32% reduction in power consumption compared to conventional models.

The GR-470K has a panel display on the front, called a MIHARI-panel, allowing you to view and control the temperature inside the refrigerator and its operating status for maintaining optimum food freshness.

This product gained its name MIHARIBANKO for its role in the helping watch over the deliciousness of foods. As a result of its superior energy-saving features, the MIHARIBANKO was awarded the Energy Conservation Prize (Commendation from the Chairman of the Energy-Conservation Center) in fiscal year 1998.



GR-470K twin-cooling and inverter control type refrigerator



MIHARI-panel