

BERTL®

Highly Recommended



LabCheck®

PROS

- Easy to use control panel.
- Well designed printer drivers
- Good document production options in printer drivers.
- Tilting control panel providing easy access by wheelchair users.
- Lower entry level price than some competitors.
- Easy to use network scanning system.
- Template system for fast access to scan and copy functions on a per user basis.
- Saddle stitch booklet maker

CONS

- Upgrade path looks pricey.
- Restrictions apply when reprinting documents stored in e-FILING document storage.
- Maximum paper supplies could be higher.
- Print upgrade kit must be bought before network scanning can be added.

Toshiba e-STUDIO450



45ppm Copier - Printer - Scanner - Fax

Product Overview

The Toshiba e-STUDIO450 is a 45ppm monochrome digital office device, coming out of the box as a digital copier and TWAIN scanner, with a wide range of multifunctional upgrade options including network print, network scanning and fax, which all share the 266MHz central processor, 128MB RAM and 40GB hard disk.

The Toshiba e-STUDIO450 comes with two 550-sheet paper drawers and a 100-sheet bypass tray, there is the option of adding either up to two additional 550-sheet drawers or a high capacity 2,500-sheet unit to take maximum paper input capacity to 3,700 sheets.

A 100-sheet duplexing document feeder is an optional extra, as is a second fax line and a choice of finishers offers stapling, hole punch and saddle-stitch booklet production.

Document management capabilities are facilitated by Toshiba's electronic e-FILING utility.

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BERTL Ratings & Awards on Copiers, Printers, Fax, MFPs and Color Devices are based on rigorous analysis and feedback from buyers, users and service providers.

Product Dynamics

The design of the e-STUDIO450 has moved away from Toshiba's traditional philosophy of offering multiple upgrade routes to extend multifunctionality for its digital copier range. In the past, Toshiba offered a 'home-grown' print/skan controller option, plus an alternative controller manufactured by Electronics For Imaging (EFI), for users who prefer/require Fiery printing solutions.

This dual controller approach made the upgrade path from copier to multifunctional product expensive and confusing. Toshiba no longer uses a separate controller board per function, and now uses an integrated board. This offers cost savings due to the sharing of common components such as processor power, RAM and hard drive storage.

Toshiba markets this new design philosophy under the brand name e-BRIDGE. While the device ships with copy capability and upgrades to network print and scanning a matter of buying a plug-in upgrade which switches on another aspect of the central controller board.

Fax still requires a separate upgrade kit which includes a 33.6kbps modem.

Toshiba's centralized e-BRIDGE controller board is powered by a 266MHz, 64-bit chip with 128MB RAM and 40GB hard drive as standard.

Alongside the introduction of this shared resource design is the introduction of Toshiba's e-FILING document storage utility.

In essence, Toshiba's e-FILING system allows users to store documents on the shared 40GB hard disk of the device. Once stored, documents can be edited, combined with other stored documents and reprinted by users from both the walkup touchscreen or from the desktop using Toshiba's web-based utility. For more information on Toshiba's e-FILING utility see page 4.

BERTL SURVEY

In BERTL's February reader survey the following views were expressed about Toshiba's monochrome product range.

- 86% said that they were reliable
- 80% said they received good training
- 80% said that they received good service
- 79% said that productivity met or exceeded their expectations
- 68% said that the supplier met their needs in relation to IT-expertise and ability to customize solutions.

**BERTL analyst with
Toshiba's e-STUDIO450**



Page Number 1

Product Dynamics

Paper Handling:

The entry-level Toshiba e-STUDIO450 includes two 550-sheet universal paper drawers which can handle paper sizes up to ledger/A3 with weights up to 28lb./105gsm. A 100-sheet bypass unit is also provided, allowing thicker paper stocks up to 110lb./209gsm to be used.

Paper input can be upgraded via one or two additional 550-sheet universal paper drawers, or a 2,500 sheet letter/A4 capable large capacity unit.

We like the fact that duplex printing is included as standard. The duplex unit is right side-mounted which means that the unit can not be placed flush to a wall, in case the duplex unit needs to be opened.

There is no feed roller provided within the fuser unit for the removal of paper, meaning that users must get their hands close to the hot fuser rollers. This design could do with improvement but is not critical.

Document Feeder:

A duplexing document feeder is an optional extra; at 100-sheet it is twice the capacity offered by some competitors.

Unlike some devices which offer single pass duplex scanning (using two scan heads) Toshiba have kept costs down by retaining a single scan head and two pass scanning (i.e scans front and flips to scan back).



Toshiba e-STUDIO450 with saddle-stitch booklet maker, dual 550-sheet universal drawers and 2,500-sheet large capacity unit.

Output/Finishing Options:

Toshiba offers a choice of two finisher options for the e-STUDIO450:

1. Floor-standing multi-position 50-sheet stapler with two bins capable of stacking up to 2,000 sheets. An optional hole-punch kit can be added*.
2. Floor-standing saddle-stitch finisher, offering 50-sheet multi-position stapling, bookletmaking up to 15 pages (60 page booklet). A hole punch unit can be added at additional cost*.

*Toshiba offers a hole punch kit providing 2, 3 or 4 hole punching (depending upon worldwide location).

Product Dynamics

Network Printing Upgrade Kit:

To convert the Toshiba e-STUDIO450 into a 45ppm network printer requires the purchase of the Printer Kit upgrade. Ethernet connectivity is already included on the central motherboard, as are USB 1.1 and parallel connections. USB 2.0 connection can be made but will be carried out at the slower USB1.1 data speed.

Within the printer upgrade kit users get both PCL6 and PostScript 3 printing capabilities. This is a bonus because some manufacturers charge extra for PostScript printing. (Required for Macintosh users.)

Network Scanning Upgrade Kit:

Network scanning can be purchased separately to network printing, or bought at the same time via the Printer/Scanner upgrade kit. Network scanning functionality includes scan to email, scan to file, scan to i-Fax and Scan to FTP.

Both the network print and network scanning kits come in the form of a small plug and play 'key', which is inserted into one of the two USB ports on the device. A key can be removed from one device and placed into another device in a matter of seconds switching the added functionality.

While this sounds like a good design feature, it raises concerns about the keys becoming lost, stolen or damaged. The keys simply stick out of the side of the device and can easily be removed. Toshiba advised BERTL, when questioned about this, that a casing could be installed over the keys preventing easy access.

Fax Upgrade Kit:

Walk-up fax capability can be added via the optional fax upgrade kit. The kit includes a 33.6kbps modem, with JBIG, MMR, MR and

MH compressions all coming as standard. A second fax line can be added if required, allowing the device to send and receive faxes at the same time in busy fax-centric environments.

With the network printer kit installed, desktop users can also make use of the fax function from the desktop.

Added Security:

For those concerned about security, an optional scrambler board can be installed between the device hard drive and controller unit. This encrypts data before it is stored on the hard drive, preventing the retrieval of security-sensitive data if the hard drive is stolen.

Maintenance and Duty Cycles:

The Toshiba e-STUDIO450 is advertised as having a maximum monthly volume of 150,000 pages.

The device uses dual component toner (separate toner and developer). Toner bottles are advertised at 21,000 page life, while the other major consumable items (photoconductor drum, fuser unit and developer unit) are 150,000 pages. This means that at maximum monthly capacity an engineer visit may be required once a month to replace these major items.

BERTL analyst replacing toner supplies



Document Storage

E-FILING System:

A major new feature of the Toshiba e-STUDIO 450 is its e-FILING system. In essence, e-FILING stores documents on the device's 40GB hard disk.

For buyers worried about storing sensitive information on the hard drive, Toshiba offers an optional scrambler. The scrambler sits between the e-BRIDGE controller and the HDD for everyday use. Data stored on the hard drive is encrypted and worthless should the hard drive be stolen out of the device.

Users are able to store copy, print, fax and scan documents to the hard drive, retrieving them from either the touchscreen display of the copier, or from Toshiba's web-based desktop utility, TopAccess.

Documents are stored within the e-FILING system through a series of 'boxes'. There is one public e-FILING box which can be accessed by all members of the office. This is set up by the system administrator.

In addition to this shared box, up to 200 private e-FILING boxes can also be set up by individuals. These boxes can be password protected, adding a level of security for sensitive information. Each box can be further divided into a maximum of 100 folders, with storage for up to 400 documents per folder, up to a maximum of 200 pages per document.

Copy to Box:

Copy jobs are stored in a box with or without creating a copy. Jobs are stored in the proprietary RIP file format used by the Toshiba print engine. The document name can be entered using a QWERTY keypad on the copier. Some document copy setting features cannot be added to a copy job stored in a box. These include more than 200% enlargement/

non-sort mode/magazine sort/magazine sort and saddle-stitch/image shift/Nin1/cover sheet/ sheet insertion/date stamp/page numbering/ non-standard size setting.

Print to Box:

From the printer driver, users can select the box into which they want to store the document. Documents are stored with the name of the application and document name. Documents are stored in the proprietary ripped file format used by the Toshiba.

Received Fax to Box:

If you have the fax option, received faxes can also be stored into a box without printing. Faxes with sub-addresses can be auto-routed directly into a specific user box. The system administrator can also set up a standard box for generic faxes with no sub-address information. This allows users to view and retrieve faxes from their PC desktop. Faxes are stored as MMR compressed TIFF files.

Scan to Box:

This operates the same way as copy to box, with the difference being that 2-bit monochrome files are stored as TIFF files, which 8-bit greyscale files are stored as TIFF or PDF files.

Toshiba scrambler board for e-STUDIO450



Print

What Can I Do With the Stored Files?

Documents can be reprinted from either the copier control panel or from a PC desktop, using a browser. From the web-based browser, users can merge multiple documents, including different functions (print/fax and scan) into a single document for printing. Copy jobs stored cannot be merged with fax, scan and print files due to their different compression formats. Users looking to merge hard copy documents with fax/print documents must scan pages to an e-FILING box.

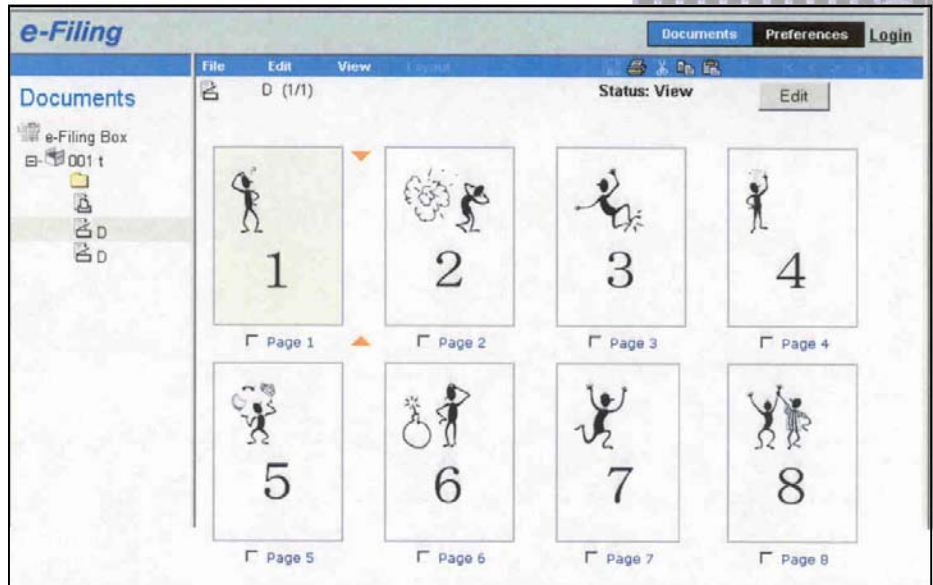
When printing documents from a box, some features are restricted. These include Nin1/ magazine sort/cover sheet/sheet insertion/ image rotation/paper size. Since one of the proposed uses for this technology is in the sharing and compilation of large reports from multiple users, the inability to print Nin1 for thumbnail viewing of the project to date, plus the inability to add cover or chapter/sheet inserts could be a limitation.

While the e-FILING utility was reasonably flexible, we did not find it to be as user-friendly as some competing document storage solutions, with document editing and merging being more time consuming.

TWAIN Driver and File Downloader:

For users wanting to pull files stored on the copier hard drive, Toshiba includes a TWAIN driver and file downloading utility within the standard bundle.

These allow desktop users to browse to their box on the hard drive, select the file they wish to retrieve and the file format into which they want the file to be stored (TIFF or PDF) on their desktop. The TWAIN utility via electronic mailbox may have an advantage over traditional direct TWAIN scanning utilities which require the user to leave documents on the scanner (with the TWAIN application triggering the scan process.)



Browser-based e-FILING utility



e-FILING from the walkup touchscreen

Copy

The Toshiba e-STUDIO450 is a 45ppm monochrome device scanning and printing at 600 x 600dpi.

Toshiba advertises a warm up time of only 20 seconds, and a first page out time of 3.9 seconds. This puts the device out front in terms of fast short run copy output on 45ppm devices.

The control panel on the Toshiba e-STUDIO 450 is well laid out with a large touchscreen display. Graphically illustrated menus take users through the copy functions, with a useful settings tab providing a summary of all the features currently selected. (see images to right)

The control panel can be tilted from 5 degrees to 45 degrees, which is a valuable feature providing easier access to wheelchair users (section 508 compliance) and lets users adjust the angle of the control panel to remove/reduce the glare from overhead office lighting. (See images top right.)

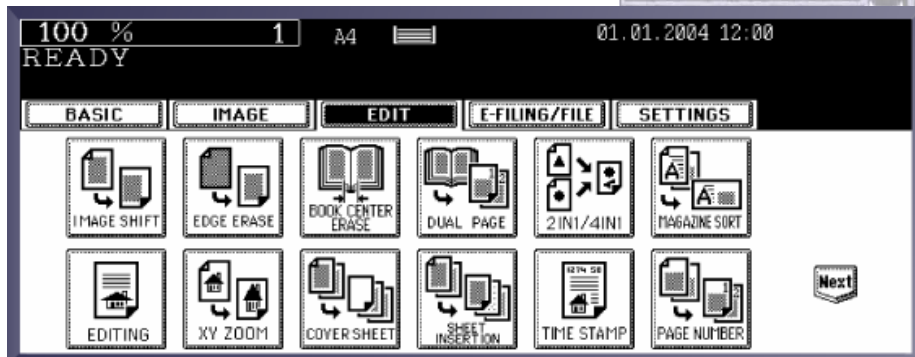
Another useful function on the Toshiba e-STUDIO450 is the ability to store commonly used functions (copy jobs/scan jobs) as templates, which are stored as one-touch buttons. Up to 60 templates can be stored per user box. This means that with the public box (shared access area), and 200 private boxes (which can be PIN protected for individual use) that a maximum of 12,060 templates can be stored.

To access the template list, you press a button above the touch screen panel and select the box you require. 12 templates are displayed at a time for quick access to commonly used activities on the device.

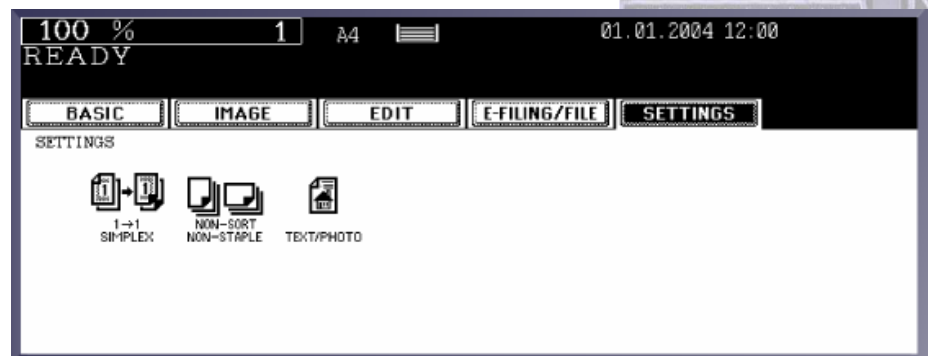
The templates can be set up either at the copier or from the desktop using Toshiba's web-based TopAccess utility.



Control panel tilted up and down



Main editing functions



Summary tab showing all settings currently selected

The maximum copy job length for the Toshiba e-STUDIO450 is 999 sets.

There are a wide range of document production options available including cover and sheet/chapter insertion, imposition for booklet making, Nin1 (for archiving), center erase for bound book copying and more.

Print

The Toshiba e-STUDIO450 network print upgrade is powered by the integrated e-Bridge 266MHz 64-bit RISC controller, with 128MB main RAM, 32MB page memory and a 40GB hard drive. The device comes 10/100 BaseT ready with parallel and USB 1.1 ports for local connections. USB 2.0 connections can be made, but will run at the slower USB1.1 data rate.

The Toshiba e-STUDIO450 includes PCL6 and PostScript 3 as standard. This is good because PostScript is often an optional purchasable item on rival devices.

The PCL6 Driver:

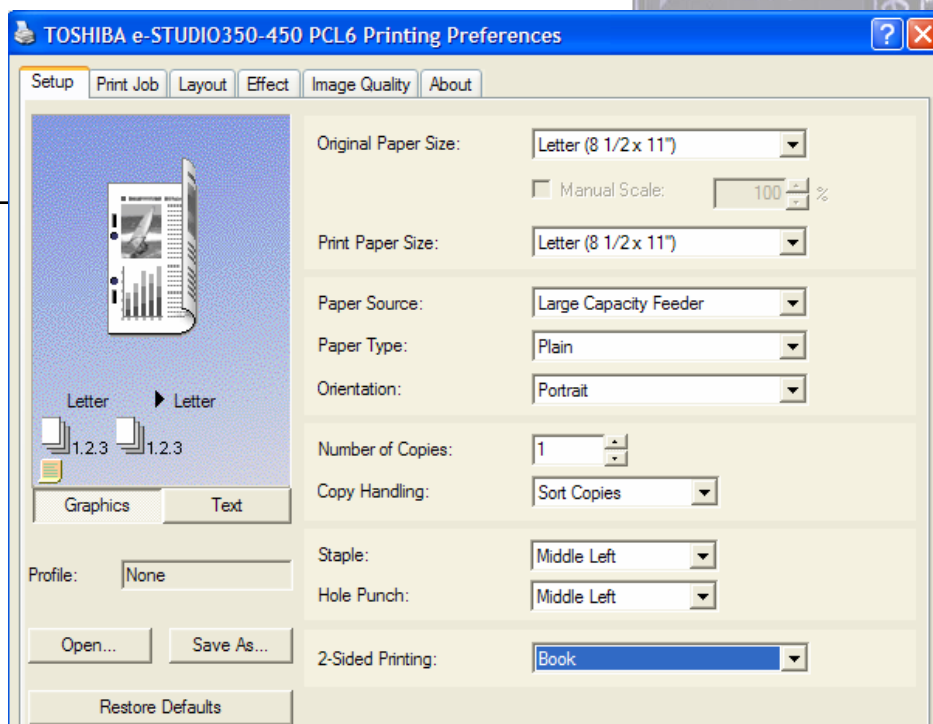
PCL6 is likely to be the most commonly installed driver, it is well laid out, guiding the user through the document production process. It is split into five main tabs.

Setup:

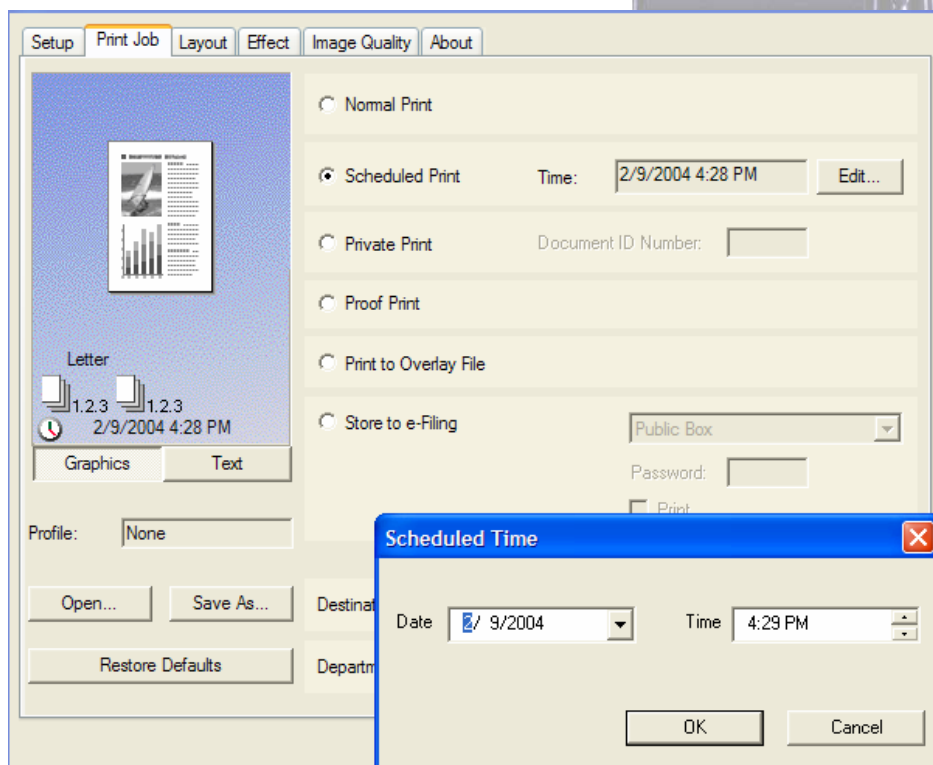
We were pleased to see that all the major document settings are found on a single tab. Settings include document size, paper selection, number of copies, collation, finishing and duplex. Many users will never need to go beyond this first tab.

Print Job:

Print jobs can be set to print at a designated time (**Scheduled Print**), allowing large jobs to be printed out of busy office hours. For users printing sensitive/security critical documents, jobs can be sent with a password which must be entered at the printer before the job is released (**Private Print**). For users wishing to make a long print run of a complex document, the driver lets you print the first set, with the remainder of the print run being held in memory. This allows the user to check that the first set is correct before releasing the remaining sets (**Proof Print**). Documents can also be stored on the hard drive of the device for later use (**Store to e-FILING**).



Screenshots from PCL6 printer driver



Print

Layout:

This menu handles the more complex document settings, including the ability to specify different paper sources for front cover, back cover, chapter sheet inserts and the main pages of the document.

The driver allows users to create a wider range of documents than some of the competition. Users can also choose to rearrange pages ready for booklet production.

We were impressed with the way in which the booklet process was laid out, with an easy to follow guide to paper sizes and other layout options. On some other units this has been confusing, resulting in several failed attempts before the desired document was produced.

The Toshiba e-STUDIO450 also allows users to specify a separate paper source for the booklet's cover pages.

Effect:

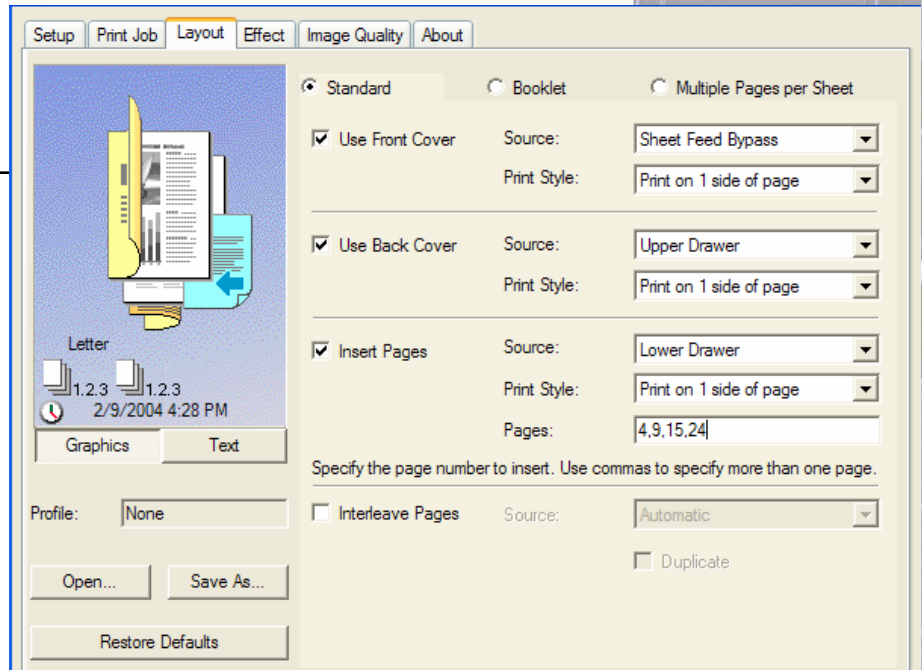
This allows users to add a watermark and/or overlay data to a document.

Bandwidth:

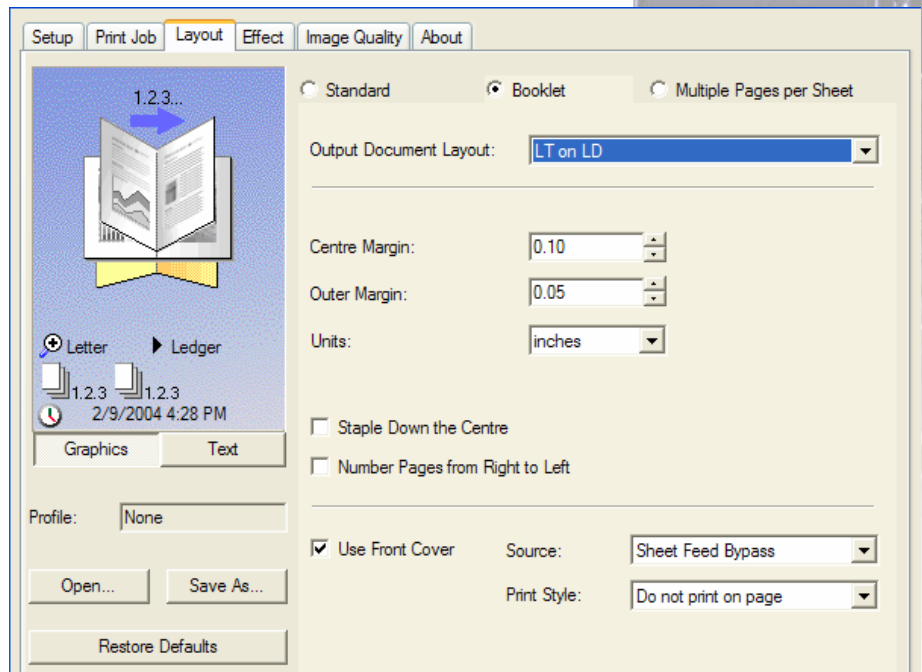
Network bandwidth across a wide range of print jobs was good, with no areas of concern for an IT/network manager. Multi-set jobs were sent in Rip Once Print Many format with no increase in file size, even when relying upon the collation command within the application, a factor that can confuse some drivers resulting in high bandwidth and other printing problems. Graphically based Acrobat PDF files were handled well, as were word processing documents in both Word and Word Perfect.

Commonality Across the Brand:

Toshiba has maintained the same layout for its monochrome 35/45ppm devices as it has for



More screenshots from the PCL6 driver



its new convenience color devices. This means that organizations that standardize on Toshiba products should have little problem switching from device to device. The same is true for the copy control panel.

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Scan

The Toshiba e-STUDIO450 includes a range of network scanning utilities within its scanning upgrade kit. Toshiba advertises scanning speed as being up to 50opm (400dpi) in black and white and 45opm (600dpi) in greyscale. Scanning resolution ranges from 150dpi to 600dpi in TIFF and PDF file formats.

Scanning options are good, they include:

- Scan to email
- Scan to file
- Scan to e-FILING
- Scan to FTP
- Scan to internet fax
- Scan to network fax

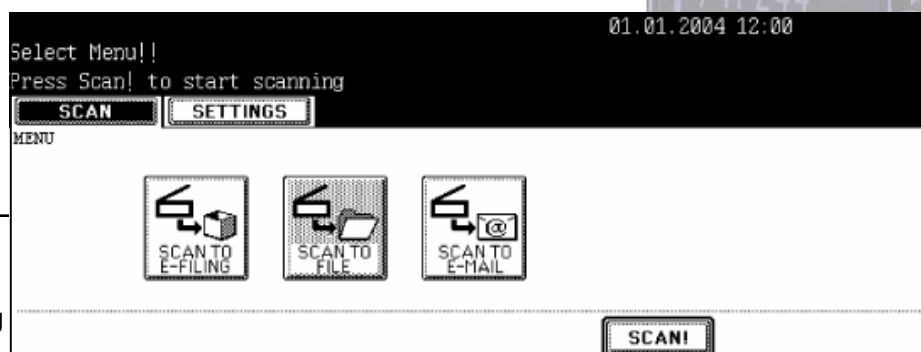
All of the scanning functions can be carried out (1) 'on the fly' using the QWERTY keypad and number pad, (2) with a pre programmed email entry via the address book, or (3) by creating a predefined template using the TopAccess browser-based management utility.

Templates are stored under two filing systems. A public folder is a shared template resource that is available to all users, and is created and maintained by the administrator.

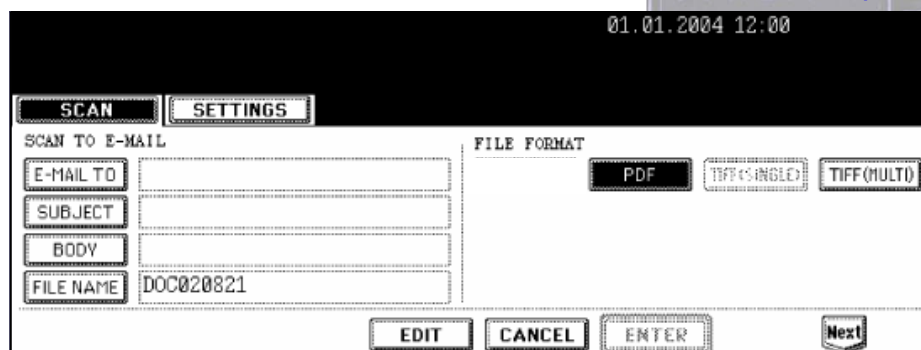
Up to 200 private template folders can be created. These can be password-protected, and allow each office user to store up to 60 of their own scanning filing templates.

There is a good degree of personalization within the scan to email function, which means that users will feel at ease receiving emails with attachments. Settings include: From address; return email address; subject line; body text; and message fragmentation (which splits up large attachments into multiple attachments so they can be get through email systems with bandwidth limitations).

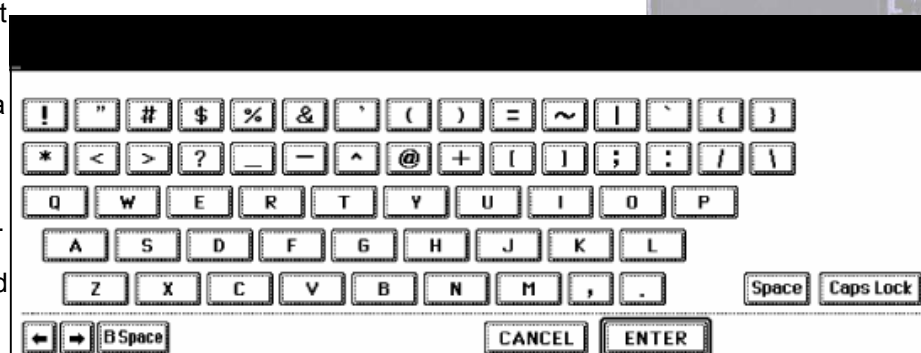
The email address book of the Toshiba e-STUDIO450 is well laid out with good



Network scanner options



Scan to email settings menu



QWERTY keypads for data entry

search facilities and integration between fax and email addresses.

The Toshiba e-STUDIO450 is also LDAP (Lightweight Directory Access Protocol) compliant. This means that in addition to being able to store addressees locally on the device, users can also access addresses stored on the central company contact database.

This gives the device an advantage over some competitors which does not include LDAP compliance as standard.

Network Management

Toshiba includes a browser-based network utility called TopAccess. Users access TopAccess by entering the IP address of the device into their standard web browser.

There are 6 main tabs in the TopAccess utility, plus a hyperlink directly to the e-FILING function (jobs stored on the local HDD).

Device:

This displays the current status of the device, including paper levels, installed options and some other device information. Email notifications can be sent to up to three individuals when a device's status changes; for example, when toner or paper runs out or when the device needs servicing.

Jobs:

This provides a list of jobs in the queue. Information includes; the type of job, the size of the job, when it was submitted and its current status. There is the ability to delete jobs but no method of promoting or pausing jobs in the queue.

Logs:

Here, users find a list of jobs that have been completed.

Registration:

From here, users can set up templates for network scanning. The system is well laid out, guiding users through the process.

Counters (for service clicks):

Printed pages are recorded in one set of counters. There is also a separate counting/charging mechanism for 'scans'. Both of the above counters break out totals and sub-totals for by page size (small or large). The scan counter lists copies, network and fax scans.

TopAccess e-Filing

Device | Jobs | Logs | Registration | Counter | Administration

Device



Device Information

Status	ready
Name	estudio450
Location	Chertsey Showroom
Copier Model	TOSHIBA e-STUDIO450
Hard Disk Space Available	8994 MB
Contact Information	Jamie
Phone Number	5183
Message	
Alerts	•

Options

Finisher	Saddle Stitch Finisher
Hole Punch Unit	None
Fax	Not Installed
Optional Function kit	Printer/Scanner kit

Paper

Drawer	Size	Type	Capacity	Status
Upper Drawer	A4R	Plain	600	Paper Available
Lower Drawer	A3	Plain	600	Paper Available
Large Capacity Feeder	A4	Plain	3000	Paper Available

TopAccess status monitor

TopAccess e-Filing

Device | Jobs | Logs | Registration | Counter | Administration

Template | Address Book

Public Template [Template Groups](#)

Group Information

No.	Name	User Name
Public	Public Template Groups	

Panel View | [List View](#)

Please login as an administrator to edit public templates

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Templates 1-6

1	SCAN TO E-FILING	2	SCAN TO PC (TIF)
3	copy TO E-FILING	4	Undefined
5	Undefined	6	Undefined
	Undefined		Undefined

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Administration:

This includes a range of extra utilities that are restricted to administrator password use only.

In Summary:

The Toshiba e-STUDIO450 offers impressive functionality and a wide feature set for a workgroup MFP. Its ease of use from both the walkup and desktop user standpoint deserves praise, as will the design commonality between the device and other Toshiba digital office products.

While the Toshiba e-STUDIO450 may not be the cheapest device in its sector, it is competitively priced and with no glaring weaknesses it should be a force to be reckoned with in its toughly fought sector.