



Test Report

MULTIFUNCTIONAL PRODUCTS

Toshiba DP85F

(8 PPM Copier/Printer/Fax/Scanner)



Test period duration:
Three months

Manufacturer:

Toshiba America Business Solutions, Inc./TEC
Irvine, CA
Made in Malaysia

Serial number: 00040404

Suggested retail price: \$1,699 for the base machine;
\$2,074 as tested with the optional handset (\$76) and
500-sheet paper drawer (\$299).

Type: Desktop, stationary CIS digital scanner, laser-
printing, heat and pressure fusing multifunctional de-
vice with standard standalone facsimile and conven-
ience copying, as well as PC-based print and scan
(with e-mail) capabilities.

Manufacturer's recommended monthly volume:

Toshiba does not provide a recommended monthly
volume.

*BLI's recommended monthly volume for optimum
performance:* BLI recommends the Toshiba DP85F
for users in need of a high-volume fax unit with low-
volume printing, scanning and copying capabilities.



GENERAL APPRAISAL

The Toshiba DP85F performed well in test-
ing, experiencing no malfunctions and re-
quiring no service calls while demonstrat-
ing strengths that include good memory
management and capable multitasking. This
four-in-one, Energy Star-compliant unit
provides faxing, copying, printing and scan-
ning functions, and, in addition, enables us-
ers to scan documents to e-mail as attach-
ments.

Ease of use is another strength of the DP85F,
with the unit receiving BLI's highest rating
for removing misfeeds, loading paper, re-
placing the toner cartridge and documenta-
tion, while the ease of adjusting the paper
drawer was rated only "Fair." Feedback to
the PC workstation from the DP85F's

continued

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General Appraisal *continued*

Toshiba Viewer software was especially good, offering features and functionality that are equaled only by the unit's sibling, the previously tested DP125F (see "Feedback to PC workstations"). A well-organized control panel and the ability to program settings via the Toshiba Viewer software and then download those settings to the DP85F also contributed to the unit's ease of use.

Standard paper-handling features of the DP85F are comparable to those of other units tested in this class and include a user-adjustable, 250-sheet drawer and a single-sheet bypass tray capable of handling heavier stock, transparencies, envelopes, etc., as well as a 30-sheet automatic document feeder. The unit was tested with an optional 500-sheet cassette, which increased its capacity to the maximum 750 sheets. It should be noted that the optional cassette is not user-adjustable, but must be ordered as either a letter- or A4-size cassette.

Offering strong *fax* capabilities, the DP85F is equipped with a 33.6-Kbps modem, JBIG compression, a 3.5-MB dedicated memory, multi-access, broadcasting to up to 50 groups, as well as manual broadcasting, and confidential transmission and reception. The unit dials and begins transmitting documents while pages are still being scanned to memory, which, along with its multi-access capabilities, helps to expedite communication; in contrast, some devices do not begin transmission until all pages of a document have been scanned to memory. The DP85F received good ratings for both its ability to transmit from memory after a failed communication and when the size of the document exceeded memory capacity. For example, the destination number is

automatically redialed should a transmission be terminated, and when the size of the document exceeded the DP85F's memory capacity, pages stored in memory were transmitted and remaining pages were scanned to memory as memory became available. In contrast, some multifunctional products tested require the document to be sent in multiple calls, or, in order to be sent in a single phone call, to be sent directly (bypassing memory). Pages are scanned to memory at a rate of 3.56 seconds per page.

Though not as robust as those of platen-based multifunctional units, the convenience *copying* capabilities of the DP85F are comparable to those of other multifunctional products tested to date in this class. While there are no zoom reduction or enlargement capabilities, users can select from three preset reduction ratios (86%, 75% and 50%), as well as an "Auto" selection that reduces non-8-1/2"-x-11" images to fit on letter-size paper. Capable of making up to 99 copies, the DP85F output copies at a BLI-tested speed of 9 ppm (excluding a first-copy-out time of 27.4 seconds) and received BLI's highest rating for all types of copy output (text, line art and solids) except halftones, for which the unit received a "Fair" rating.

Connectivity/Multitasking Analysis

As a 600-dpi, Windows GDI *printer*, the DP85F utilizes its parallel interface with PCs running Windows 95, 98 and NT 4.0 operating systems to produce output at a BLI-tested speed of 6.38 ppm (excluding a first-page-out time of 38.9 seconds), which is about average for laser/LED multifunctional units tested to date in this class. Output produced

continued

General Appraisal *continued*

by the unit's printer driver was deemed "Good" by BLI technicians for text and solids, but only "Fair" for halftones and line art. The DP85F also comes standard with 5.3 MB of dedicated printer memory, in addition to its 3.5 MB of fax memory.

With the bundled Toshiba Viewer software, the DP85F supports TWAIN-compliant *scanning* and offers the ability to scan documents to be used as e-mail attachments, an application that worked well in testing. The software scans the document and converts it to the TIF-F format, and then opens it into the user's e-mail package, where it can be attached to a message that is sent as usual. The software does not include OCR capabilities and therefore documents can only be saved as graphics files and not exported into word processing applications. Unlike most other units tested (again, with the exception of its sibling, the Toshiba DP125F), multiple-page documents are scanned into memory as individual pages, although they can be simply combined into a single document, albeit following an additional step not required by most units (see "Performance of Scanner Functions").

Multitasking capabilities for the Toshiba DP85F were comparable to those of most multifunctional units tested to date in this class and were rated "Good" overall (see "Multitasking Summary").

Shortcomings

Shortcomings of the Toshiba DP85F in relation to previously tested multifunctional products include: (1) Print quality that is not as good as that of some other laser/LED multi-

functional products tested, with halftones and line art receiving only "Fair" ratings. (2) There is no ability to collate multiple sets or output pages in correct order from the printer driver, so the user will have to re-order printed pages manually to put them in the correct order.

Pricing Analysis And Summary

Of the fax-based laser multifunctional units available in this price range (\$1,500-to-\$1,900), the DP85F is among a handful that offer standard print capabilities. The majority of these units, however, offer only a 14.4-Kbps modem, compared to the DP85F's 33.6-Kbps modem, and most offer less standard memory than the DP85F's 3.5 MB. In addition, the DP85F offers a faster rated print speed than most of its competitors in this range, with some of those units offering only 300-dpi print resolution. Moreover, the DP85F's per-page supply cost, at 3.88¢ (3.45¢ for the toner cartridge and 0.43¢ for the drum), is below the average cost for laser/LED units tested to date (4.11¢).

Because of its efficient memory management, good ease of use and competitive per-page supply cost, BLI recommends the Toshiba DP85F for users in need of a high-volume fax unit with low-volume printing, scanning and copying capabilities.

Guarantee/Warranty: The Toshiba DP85F is backed by a 90-day warranty for parts and service.

Copy Quality:

Text: Good
Line Art: Good
Halftones: Fair

continued

General Appraisal *continued***Solids:** **Good****Print Quality:****Text:** **Good****Line Art:** **Fair****Halftones:** **Fair****Solids:** **Good****Ease of use:** **Good****Ease of user maintenance:** .. **Good****Estimated Waste:** **Low****Estimated Downtime:** **Low****Misfeeds:** **0****Misfeed rate:** **Not applicable****Total service calls
(including PMs):** **0****MIBF:** **Not applicable****MIBS:** **Not applicable****Toner yield
(at 6% coverage):** **4,112 impressions****Cost per page:** **See "Cost Analysis"****FEATURES**

Automatic selection features: Auto reduction; auto redial.

Book copy/fax: No.

Bypass: Standard "non-intelligent" single-sheet bypass. See "Performance Of Tested Special Features."

Control codes: The device can be set for 50 five-digit department access codes for tracking and restricting copy and walk-up fax usage.

Document feeder: Standard 30-sheet automatic document feeder (ADF). See "Performance Of Tested Special Features."

Duplexing: No.

Energy-save mode: Yes. Reduces power consumption after a specified period of non-use (user-settable for from one to 60 minutes, or "off"; default setting is three minutes).

Exposure control: "Contrast" key is used to manually adjust exposure over a range of three settings (normal, lighter and darker).

Facsimile features: Standard. 33.6-Kbps modem; MH/MR/MMR/JBIG compression; error-correction mode; confidential transmission and reception (50 mailboxes); priority transmission; 100 timers; batch files; relay request; T.30 subaddressing; 188 autodial destinations; broadcasting to up to 50 groups (groups can have up to

188 destinations each) and manual broadcasting to a total of 100 destinations at the time of transmission. See "Transmitting documents."

Image manipulation features: None.

Insertion features: Separator page (when this setting is enabled, a blank page will be output into the exit tray, separating print, copy and fax output).

Interface: Standard parallel interface.

Job management features: None.

Languages: English, Spanish or French (selectable from the menu system).

Memory: Tested with the standard 3.5-MB memory for faxing (holds 311 pages based on ITU-T Test Document #1 using JBIG compression, according to Toshiba). There is an additional 5.3-MB memory standard for printing.

Operating system support: Microsoft Windows 95, 98, NT 4.0.

Output device: Exit tray holds up to 100 sheets.

Printer features: Standard host-based 8-ppm, Windows GDI printing at 600 x 600 dpi.

Reduction/enlargement features: Preset reduction settings of 50%, 75% and 86%, and an "Auto" selection that will

FEATURES *continued*

automatically reduce 8-1/2"-x-14" images to fit on an 8-1/2"-x-11" sheet.

Resolution (maximum): 406-x-391-dpi scanning, with 400-x-400-dpi output in copy mode; up to 600-x-600-dpi printing; up to 406-x-391-lpi (superfine) faxing.

User programs: Default settings are user-programmable via the control panel and bundled Toshiba Viewer software.

Other features/Software: The Toshiba DP85F is bundled with one CD-ROM, which contains the printer driver; Toshiba Viewer, which is powered by Wordcraft's Unimessage Pro; and TWAIN scanner driver with archive and e-mail capabilities.

Control Panel

Type: Hard keys and a 3-1/16" x 11/16" two-line, 20-character LCD text display.

Help key: No. However, there is a "Menu List" selection, which prints a table of the programmable functions and their locations in the menu system.

Indicators/prompts: LEDs illuminate if a problem occurs and also indicate communication. Text messages are shown on the LCD display when a misfeed or problem occurs, when programming, when transmitting or receiving, or when service is required.

Quantity display/selector: Makes 1 to 99 copies/prints. The LCD displays the total number of copies completed and the number remaining.

Toshiba DP85F Accessories

Additional 500-Sheet Drawer: Suggested retail price, \$299. See "Performance Of Tested Special Features."

Handset: Suggested retail price, \$76. See "Performance Of Tested Special Features."



Toshiba DP85F Control Panel

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TEST RESULTS AND OBSERVATIONS

Test equipment: Pentium II 433 MHz, 64 MB RAM, Windows 95.

Reliability

Malfunctions encountered during tests: None.

Misfeeds encountered during tests: None.

Maintenance

When the “Toner Empty” message appeared and the “Toner Empty” indicator flashed, the toner was empty, and the engine completely stopped. At this time the toner cartridge had to be replaced. The 505.4g toner cartridge yielded 4,112 impressions when tested in print mode at 600-dpi resolution using the Buyers Laboratory Test Original (6% page coverage). (Toshiba claims a yield of 6,000 impressions when an original with 4% page coverage is used.)

TONER YIELD (BASED ON 6% PAGE COVERAGE)

Toner Cartridge Weight			Toner Yield (Impressions)	Impressions Per Gram
Full	Empty	Net Weight		
505.4 grams	389.8 grams	115.6 grams	4,112	36

Ease of replacing toner: Good. When “Toner Empty” appears on the display, the toner cartridge (referred to by Toshiba as a TK18 Toner Kit) needs to be changed. The user opens the top of the unit by pressing a button located at the right side of the device. Once the cover is open, the user simply removes the old cartridge and inserts the new cartridge into the slots, aligning the arrows in the device with the arrows on the cartridge, and closes the cover. There is no seal to remove and technicians found toner replacement to be a clean process.

Guarantee/Warranty: The Toshiba DP85F is backed by a 90-day warranty for parts and service.

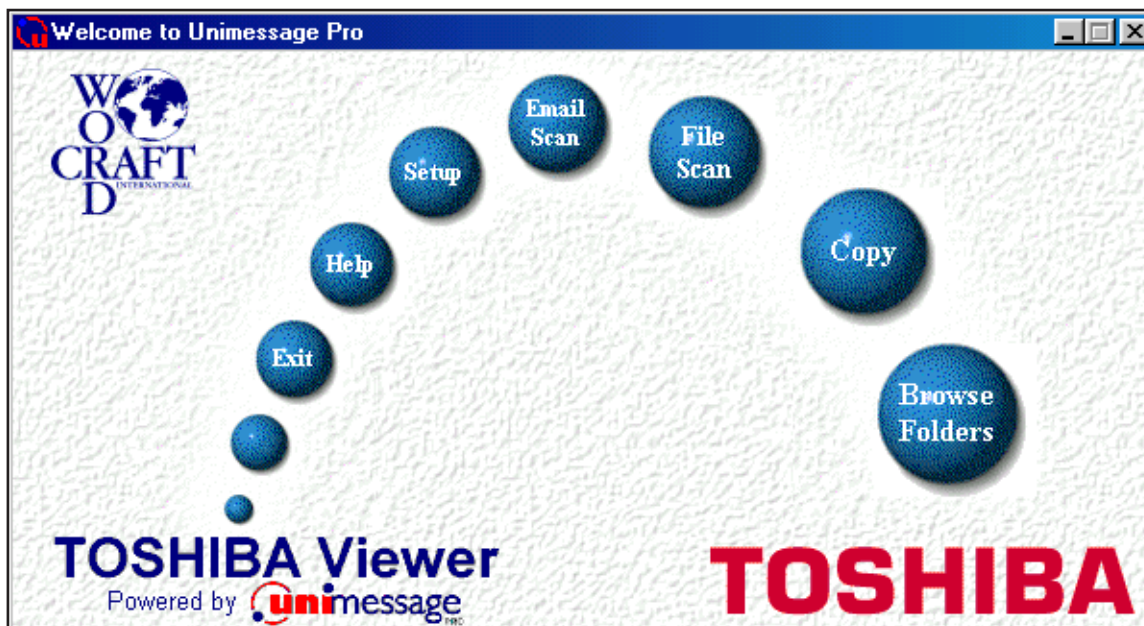
Ease of Operation

Documentation: Good. The Operator’s Manual provided with the Toshiba DP85F contains an index and table of contents to simplify searches for specific topics or features. The manual also offers screen shots from the control panel with step-by-step instructions for programming settings and a troubleshooting section that provides

information regarding misfeed removal, error codes and information on how to maintain the DP85F. It also contains information on software installation, although there is no information on the use of the software. Users requiring help with the software can use the software’s on-line help. Unlike many multifunctional units tested to date, the DP85F does not include an on-line manual.

Ease of use: Good. The control panel is uncluttered and well-organized. The operator presses the “Menu” key and can either scroll through the available selections with the up, down, left and right arrow keys to select the desired setting, or enter the code number corresponding to the desired selection. Once selected, the user presses the “Enter” key to lock in the setting. The control panel also has a “Menu Map” soft key found within the menu system that, when pressed, prints out a list of the user-settable functions and their corresponding control panel numbers. The LCD display provides the necessary status and error messages. A “Job Status” key offers feedback regarding fax progress.

TEST RESULTS AND OBSERVATIONS *continued*



The user can also program default settings via the Toshiba Viewer and then download them to the device. BLI technicians prefer this method, which was easy and required only a few mouse clicks, to programming the settings via the control panel. Users can also change various default settings via the software, such as volume level, date and time, and set up account codes as well as the language from the PC. The user can also print the current settings to the DP85F.

Feedback to PC workstations: Good. The device provides information regarding print and scan jobs, as well as the status of the device. Real-time text messages indicate a wide range of error and status conditions such as open cover, jam, replace toner cartridge, replace imaging drum, paper drawer open, document present in scanner, fuser unit overheated, memory overflow, and out of paper for each drawer (when optional drawers are configured). In fact, as with its sibling, the DP125F, the feedback offered by the DP85F is among the best for multifunctional units in this class tested to date. In addition, the user can enable or disable any of the pop-up messages from the PC with a few simple mouse clicks, a feature only seen with the previously tested DP125F (see page 2647-TR).



Ease of removing misfeeds: Good. Non-clamshell design; two misfeed locations, including one for the ADF. When a misfeed occurs, the display indicates a misfeed has occurred, the “Alarm” LED illuminates, and an alarm sounds.

Ease of loading paper: Good. Loading paper into the cassettes was easy due to the lack of descent keys, spring-loaded ramps, corner separators and drawer latches. The standard 250-sheet upper cassette does not have to be removed from the device to load paper, but the cassette cover must be lifted at this time for accessibility. When the upper cassette runs empty, a non-spring-loaded ramp automatically lowers for users to install paper. Loading paper into the optional cassette requires that the user remove the cassette, as well as the cassette cover, from the device. Upon removal, the user presses down on the

TEST RESULTS AND OBSERVATIONS *continued*

spring-loaded ramp locking it in place and loads paper onto the ramp under the corner separators.

Ease of adjusting paper drawers: Fair. The standard paper cassette is user-adjustable by sliding a length guide to the desired position and adjusting the side guides, which move in sync. The user must then select the proper paper size via the control panel. The optional 500-sheet cassette, available in either a letter- or A4-size cassette, is not adjustable.

Operator error: If the user neglects to manually change the paper size setting via the control panel after changing the paper size in the cassette, a copy or print job may be output on the wrong size paper.

Throughput Capabilities/Materials

Standard paper supply: One user-adjustable 250-sheet drawer for sheets ranging in size from 8-1/2" x 11" to 8-1/2" x 14", and in weight from 16 to 24 lbs.

Maximum number of available on-line paper sources with options (including bypass): Two.

Maximum on-line paper capacity with options (including bypass): 750 sheets.

Maximum image size: 8-1/8" x 13-5/16". Makes copies from 8-1/2" x 11" to 8-1/2" x 14".

Paper output: The output tray (face-up output) holds up to 100 sheets. Copy jobs are output in correct page order and collated, when collate is selected (by default,

collate is disabled). Print jobs are output in reverse order and are not collated (e.g., two page ones, followed by two page twos, etc.). Fax receptions are output face up in reverse page order when sent from a typical fax machine, i.e., one without a reverse-order send feature enabled.

Void area: There is a void area of 3/16" along the lead and bottom edges, 1/16" along the trail edge and 1/8" along the top edge of the copies.

Ability to process self-adhesive address labels: Avery #5351 labels performed satisfactorily in the tests.

Ability to process transparencies: 3M-PP2500 clear transparencies performed satisfactorily in the tests.

Performance of Copier Functions ***Copy Quality***

Density of solid black copied image (based on eight readings corresponding to eight different locations on the original):

Density of original: Range, 1.64 to 1.71 (on a scale of 0 to 2.5, with 2.5 being as dark as would be possible under most circumstances).

Density of copy: Range, 1.44 to 1.50 (on a scale of 0 to 2.5, with 2.5 being as dark as would be possible under most circumstances).

Density range for products in this class tested to date: 0.89 to 1.52.

TEST RESULTS AND OBSERVATIONS *continued*

HALFTONE FIDELITY READINGS			
Halftone Level	Coverage Of Original	Coverage Of Copy	% Difference
1	100%	100%	0%
2	95	97	2
3	91	89	-2
4	84	75	-11
5	78	63	-19
6	54	31	-43
7	30	11	-63
8	15	3	-80
<p><i>Halftone fidelity—average of two readings for each of eight levels of halftones, with the first level being a solid black and the eighth level being the lightest; negative values indicate a loss of coverage. Ideally, the copy of a halftone would have a coverage reading that is equal to that of the original halftone; thus, 0% difference is optimal.</i></p>			

Average difference between copy of halftone and original halftone (root mean square value): 40%; range for products in this class tested to date, 6% to 72%.

Copy quality:*Text: Good**Line art: Good**Halftones: Fair**Solids: Good***Copier Productivity***Warm-up: About 27.12 seconds from a cold start.**First-copy time from the document feeder: 27.4 seconds***First-copy time from the platen: Not applicable. The unit does not have a platen.**Number of copies per minute (excluding first copy): 9**Number of copies per minute (including first copy): 5***Based on BLI's Test Original (6% page coverage) using normal contrast and standard resolution.***Performance of Printer Functions**

General: Printing is accomplished via a parallel port connection to the computer. The software offers selections for paper size, source and orientation, resolution (600 or 300 dpi) and intensity (contrast). The driver does not include "collate" or "correct order" printing settings; thus, all printed output is face-up in reverse page sequence, and stacked. Also, the driver does not offer a selection for printing via the bypass.

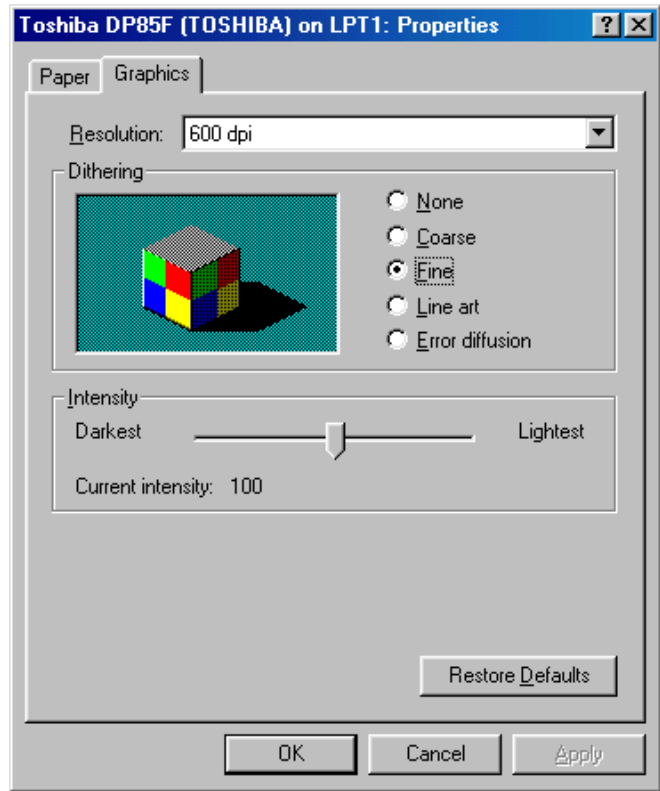
TEST RESULTS AND OBSERVATIONS *continued*

Compatibility: Good. The Toshiba DP85F was tested for compatibility with Microsoft Word 97, Microsoft PowerPoint 97, Adobe PageMaker 6.5, Adobe PhotoShop 5.0 and Adobe Acrobat 3.0. During testing, 70 individual application test files, which contain text, graphics, halftone images, tables and charts, etc., are printed. The output produced enables BLI technicians to evaluate memory usage, file processing, font-rendering and grayscale capability. In addition, the test files also test for compatibility with each of the five applications listed above. The Toshiba DP85F was found to be fully compatible with all of the five MS Windows programs used in testing, with no problems encountered.

Print Quality

- Text:* Good
- Line art:* Fair
- Halftones:* Fair
- Solids:* Good

Comments: Output produced by the Toshiba DP85F's printer driver at its highest resolution (600 dpi) was generally not as good as that of other multifunctional products in its class. While solids were dark and consistent and text was sharp, line art was jagged, with vertical lines and stairstepping visible on diagonal lines. Halftones produced were grainy, with poor transition between levels. The lightest tones printed blank, while the darkest tones printed black.



The lightest tones printed blank, while the darkest tones printed black.

**TOSHIBA DP85F
COPY AND PRINT QUALITY INDEX**

Buyers Laboratory Inc.

Magnified view of black text.
Unit set to "Print mode-600-dpi + Fine."
Printed on plain-paper stock.

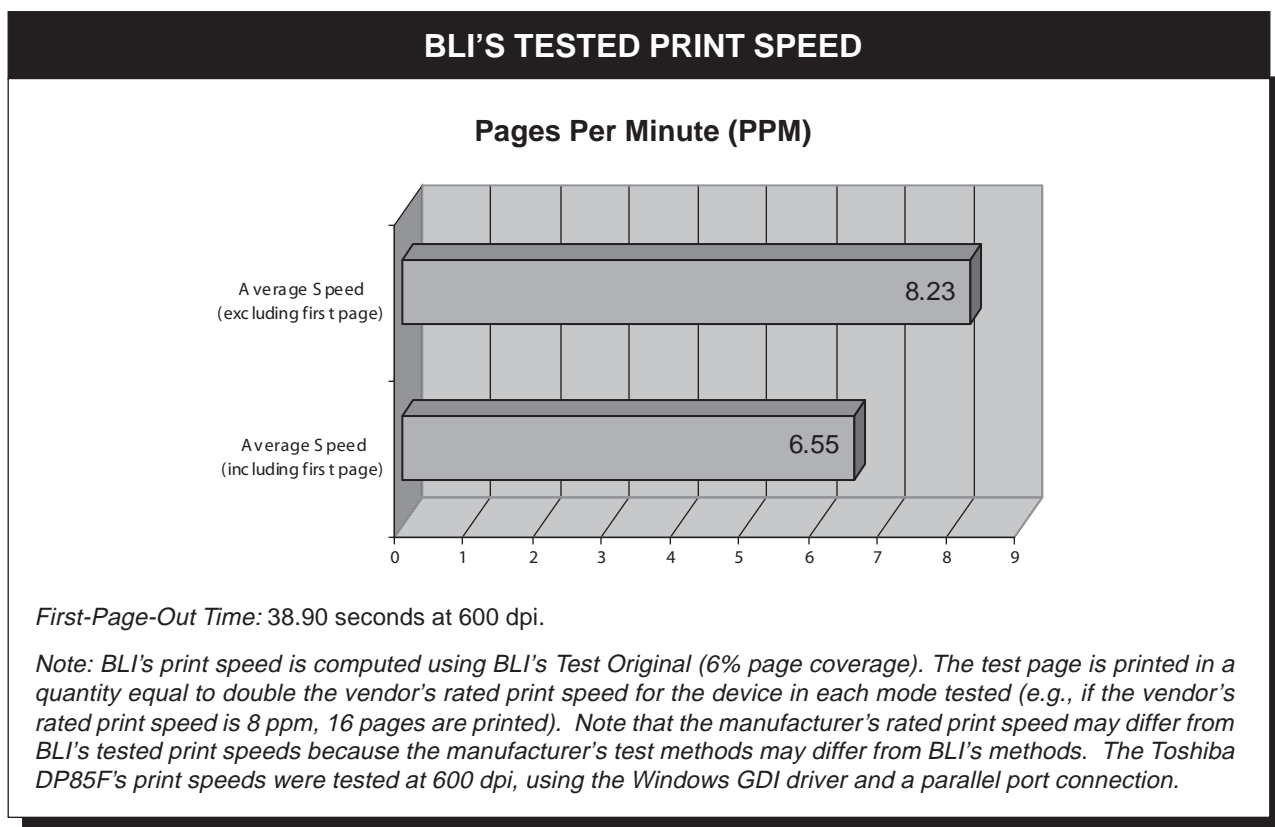
Buyers Laboratory Inc.

Magnified view of black text.
Unit set to "Copy - Fine."
Printed on plain-paper stock.

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TEST RESULTS AND OBSERVATIONS *continued*

Print Productivity



Performance of Standalone Fax Functions

Fax scanning speed: The average scanning speed, obtained from scanning into memory three originals using standard resolution and normal contrast settings; timing begins when the "Start" button is pressed and continues until the last page exits onto the exit tray.

Fax scanning speed with 4% page coverage original: 3.56 seconds per page; range for units tested to date in this class, 1.77 to 18.44 seconds.

Fax scanning speed with 12% page coverage original: 3.56 seconds per page; range for units tested to date in this class, 1.77 to 34.33 seconds.

Transmitting documents: Good. The unit supports multi-(dual) access and, thus, is programmed to transmit documents from memory. Multi-access allows a document to be scanned into memory while another document is be-

ing transmitted from memory. It also allows the user to retrieve an original and resume other activities while the fax is being transmitted, thus improving productivity. The unit dials and begins transmitting documents while pages are still being scanned to memory, which, along with its multi-access capabilities, helps to expedite communication (in contrast, some devices do not begin transmission until all pages of a document have been scanned to memory). When transmitting documents, the user can select from up to 188 autodial destinations (38 one-touch keys and 150 speed-dial codes). The destination(s) can be dialed before inserting the document(s) into the feeder (which would allow, for example, the user to refer to a fax number on the cover page). Broadcasting to up to 50 groups (within a one-touch key), each of which can contain up to 188 fax numbers, is supported, as is manual broadcasting (i.e., to

TEST RESULTS AND OBSERVATIONS *continued*

numbers that are not preprogrammed into a group) to up to 100 manually dialed destinations.

Memory capacity: In testing, the Toshiba DP85F's standard 3.5-MB memory held 123 pages of a 12% original in standard mode (while BLI uses a 12% original in determining memory capacity, note that Toshiba uses ITU-T Test Document #1 to determine memory capacity and claims a capacity of 311 pages).

Transmitting from memory after a failed communication: Good. When the Toshiba DP85F was subjected to excessive line noise during the tests, it was found that the destination was automatically redialed after the communication was terminated (it will automatically be redialed up to five times at one-minute intervals; user-settable for up to 14 redials at up to 15-minute intervals), and when a connection was made after redialing, the affected page and the remaining pages were transmitted. By default, an error report was not automatically printed at the time of an error, but the device can be set up to automatically print one. When the error report was manually printed, it correctly indicated the number of pages successfully transmitted.

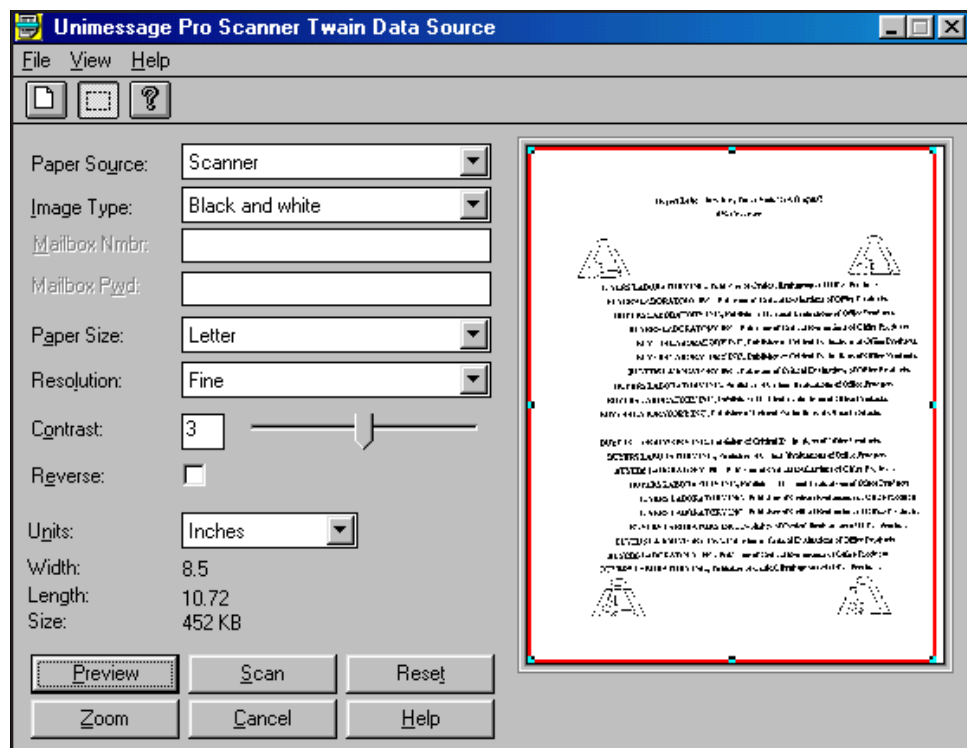
Transmitting from memory when the size of the file exceeds memory capacity: Good. When the size of the file exceeds memory capacity, the pages stored in memory were transmitted; additional pages were then scanned into memory as memory became available and transmitted in the same call. In contrast, some other models tested may require the document to be sent in multiple calls or, in order to be sent in a single phone call, to be sent directly from the document feeder (bypassing memory).

Legal-to-letter reduction: During testing, a legal-size

(8-1/2" x 14") document that was transmitted to the Toshiba DP85F with letter-size (8-1/2" x 11") paper loaded was automatically reduced. The reduction took place both vertically (X axis) and horizontally (Y axis).

Performance of Scanner Functions

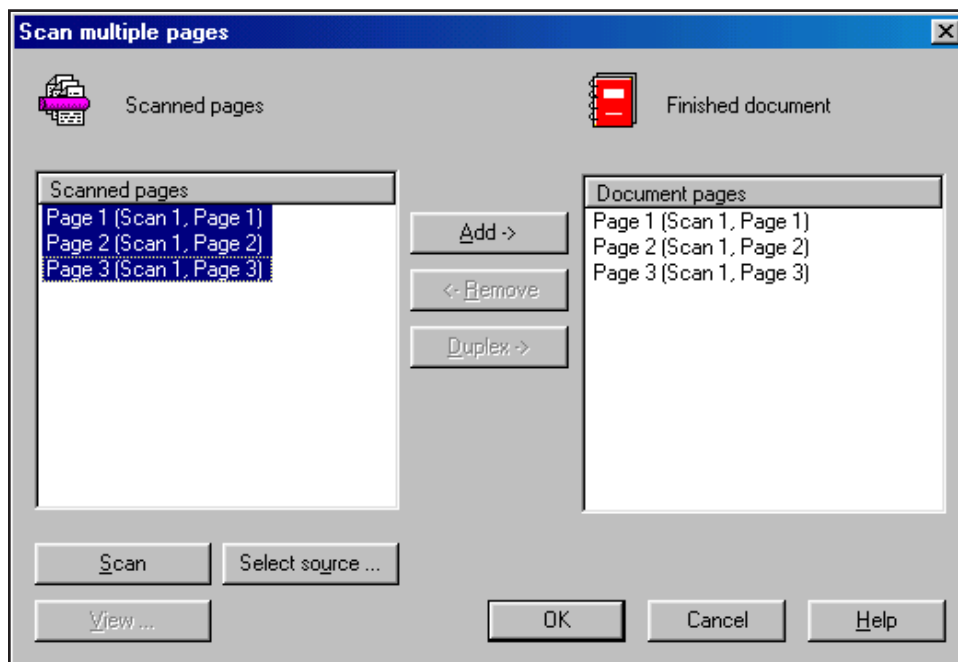
Good. PC scanning is accomplished via the bundled Toshiba Viewer software. The user places a document on the Toshiba DP85F's automatic document feeder and clicks the "File Scan" icon, at which time a window is displayed allowing the user to make selections such as paper size, contrast, resolution, negative image, preview, zoom, etc. Once the scan has been set up and the selections have been made, the user clicks the "Scan" button. The document is then scanned to the Toshiba Viewer's desktop. Unlike with most other devices tested, when scanning a multiple-page document, each page is initially scanned to the "Scanned pages" folder as an individual file. The user can then view the pages as individual files or highlight all of them and drag and drop them into the "Finished document" folder, where the pages will auto-



TEST RESULTS AND OBSERVATIONS *continued*

matically be combined into a single document. Other software packages scan all pages into one file, without the need to perform this additional step. The scanned images/documents can be saved in standard graphic formats, such as JPG, PCX, BMP and TIF, but not as DOC or TXT files. Toshiba Viewer does not offer OCR capabilities, nor does it offer a method for users to export a scanned document to an application, such as Microsoft Word.

OCR (Optical Character Recognition): Not applicable. An OCR application is not bundled with the DP85F.



Performance of E-mail Functions

E-mail: General. The Toshiba Viewer package includes software that enables users to scan documents for use as attachments to e-mail messages. This is a software-controlled method that simply converts the scanned image to the TIF-F format for attachment to an e-mail message sent by the user's e-mail program, as opposed to other solutions that include their own e-mail program and use the hardware of the unit, rather than the PC, to actually connect to the Internet. To initiate an e-mail setup, the user places documents into the ADF and selects the

"E-mail Scan" icon from the Toshiba Viewer software. This loads the TWAIN driver, from which the scan selection can be made (for more information on the TWAIN scanner driver, see "*Performance of Scanner Functions*"). The documents are then scanned and converted to the TIF-F format and opened into the user's default e-mail package (such as Netscape) and attached to a new e-mail message. Once the e-mail message and attachment(s) are complete, users send the message (with attachment) as usual, via their ISP (Internet service provider).

PERFORMANCE OF TESTED SPECIAL FEATURES

Automatic Document Feeder (ADF)

Satisfactory. The device will automatically feed up to 30 20-lb. sheets, ranging in size from 5-13/16" x 3-29/32" to 8-1/2" x 39-5/16".

Controls/indicators on unit: None.

Bypass

Satisfactory. The single-sheet, non-intelligent bypass has double-gear, adjustable side guides that move in-sync to accommodate sheets ranging in size from 8-5/16" x 11-11/16" to 8-1/2" x 14", and in weight from 16 to 24 lbs. The bypass tray is not automatically selected when sheets are placed in it, and must be manually selected via the control panel for copying or the print driver for printing. The bypass tray is integrated onto the upper cassette cover.

500-Sheet Paper Cassette

Satisfactory. The additional paper cassette can hold up to 500 sheets of 8-1/2"-x-11" 20-lb. bond and is not user-

adjustable. The user can purchase this cassette as either an A4- or letter-size paper cassette. Acceptable paper weights, 16 to 28 lbs.

Handset

The handset is easy to install and is located toward the rear of the machine. It is also hearing aid-compatible according to Toshiba.

Multitasking Summary

Good. The Toshiba DP85F's multitasking capabilities were comparable to those of most other multifunctionals in this class tested to date. The unit supports multi-access, which enables a user to scan an outgoing paper fax into memory while the unit is busy either sending or receiving a fax, thus improving productivity. In addition, the DP85F supports transmission of a paper fax while the system is busy printing a PC file, and can copy while sending a paper fax, functions not supported by some multifunctional products tested.

TOSHIBA DP85F MULTITASKING EVALUATION

Primary Function \ Secondary Function	SEND PAPER FAX	RECEIVE PAPER FAX	PC FAX SEND	PRINT	SCAN	COPY
SEND PAPER FAX	Yes ¹	No ⁵	N/A	Yes ²	Yes ²	Yes ²
RECEIVE PAPER FAX	Yes ¹	No ⁵	N/A	Yes ¹	Yes ²	No ⁴
PC FAX SEND	N/A	N/A	N/A	N/A	N/A	N/A
PRINT	Yes ²	Yes ¹	N/A	Yes ¹	Yes ¹	No ⁴
SCAN	No ³	Yes ²	N/A	Yes ¹	No ³	No ³
COPY	No ³	Yes ¹	N/A	Yes ¹	No ⁶	No ⁴

- 1 Secondary function is completed *after* primary function. (9)
- 2 Primary and secondary functions take place simultaneously. (6)
- 3 Document feeder/scanner is in use. (4)
- 4 Message is displayed at the control panel, "Not Allowed Now." (3)
- 5 The phone line is busy with the primary function. (2)
- 6 Message is displayed at the PC, "No Document To Scan." (1)

N/A – Not applicable. Toshiba did not supply PC-fax software with the test unit.

NOTE: (X) indicates number of occurrences. A "Yes" indicates that the user can initiate the secondary function while the primary function is taking place and that no further user intervention will be required for the secondary function to take place.

COST ANALYSIS

COST PER PAGE (AS TESTED)					
Monthly Volume	Depreciated Purchase Price ¹	Supplies and Consumables ²	Paper ³	Cost Per Page	Life-Cycle Cost ⁴
150	22.089¢	3.883¢	0.723¢	26.695¢	\$2,402
250	13.253	3.883	0.723	17.859	\$2,678
500	6.627	3.883	0.723	11.233	\$3,369
750	4.418	3.883	0.723	9.024	\$4,060
1,000	3.313	3.883	0.723	7.919	\$4,751
3,000	1.104	3.883	0.723	5.710	\$10,278

¹ The suggested retail price of \$2,074 as tested with the optional handset and 500-sheet paper drawer, minus the estimated street price of the drum unit (\$86) included with the system, was depreciated over a five-year period using a straight-line method. The toner cartridge included with the unit was a starter cartridge and was not subtracted from the cost.

² The cost of the full-yield toner cartridge was calculated based on BLI's tested toner yield of 4,112 pages when using the BLI Test Original (6% page coverage) and Toshiba's estimated street price of \$142 per cartridge. The cost of the drum unit was based on Toshiba's estimated street price of \$86 and Toshiba's claim that the drum unit should yield 20,000 pages. Thus, 3.883¢ represents the cost per page for both the toner cartridge and drum unit, 3.453¢ and 0.430¢, respectively.

³ The cost of paper was calculated using an estimated price of \$36.15 for a 5,000-sheet carton of 8-1/2"-x-11" 20-lb. bond: 1-4 cartons, \$36.15; 5-9 cartons, \$34.80 each.

⁴ Life-cycle cost for each monthly volume is calculated by multiplying the total cost per page by the monthly volume by 60 months (five years).

Note: The cost of supplies was based on quantities to be used during one year by one machine at particular monthly volumes.

ENVIRONMENTAL SPECIFICATIONS

Electrical system: 110/127 V, 50/60 Hz, AC, 4.7 amps. The unit tested had a three-wire cord (grounded), 6' in length, and carried UL, but not CSA, approval.

Energy Star compliance: Toshiba states that the DP85F meets Energy Star requirements.

Noise: Scale A, 59 db (single-point reading; running noise). Range for ADF-equipped units tested to date by BLI, 52 to 75 db.

Paper fault: None. (Georgia-Pacific Spectrum Xerographic Bond and Georgia-Pacific GeoCycle recycled paper containing 20% post-consumer fiber were used in this test unit.)

PHYSICAL SPECIFICATIONS

DIMENSIONS AND WEIGHTS				
Unit/Accessories	Height	Width	Depth	Weight
Unit	17"	14-3/4"	28"	39.7 lbs.
500-Sheet Paper Cassette	4-3/4"	14-3/4"	18-1/8"	20 lbs.
Unit with Accessories	21-1/4"	14-3/4"	28"	59.7 lbs.

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