Certificate of BERTL Rating

BERTL

Sharp AR-M550
— FOUR STAR —
Highly Recommended

BERTL publishes product evaluation reviews on several hundred copiers, printers, fax, multifunctional, color and production devices every year. Out of these hundreds of devices, only a small number qualify for the highly prestigious 4-Star, Highly Recommended rating. This rating is strictly reserved for those devices that deliver a range of business-critical features/ functions that are above average and provide potential buyers with a good return on investment (ROI).

Carmel Rowley, CEO
www.BERTL.com

BERTL
Highly Recommended
★★★★

PROS

- ⇗ Low entry-level price.
- ⇗ Single pass duplex scanning .
- ⇗ Well-designed touchscreen.
- ⇗ User-friendly scan to HDD.
- ⇗ Extensive security options.
- ⇗ Extensive document production options.
- ⇗ Fax and LAN fax option.
- ⇗ Standard tandem copy and print in AR-M620N version.
- ⇗ Flexible, secure scan to email utility.
- ⇗ Versatile desktop document management utility (Sharpdesk).

CONS

- ⇗ Standard and maximum paper supplies could be higher.
- ⇗ Touchscreen panel smaller than some competing units.
- ⇗ Stapling restricted to 50 sheets of less.
- ⇗ No physical mailbin option.

Sharp AR-M550

55ppm Copy - Print - Scan - Fax

Product Overview

The Sharp AR-M550 comes in two configurations: the copier-only "U" model and the network-print enabled "N' model. Both models can be upgraded to include network scanning and fax capabilities.

The Sharp AR-M550 has a 2,000 sheet(letter/A4 capable) tandem paper deck, two 500-sheet universal paper drawers and a 100-sheet bypass tray, giving the device a 3,100-sheet capacity. An optional 3,500-sheet (letter/A4) large capacity unit can be added, taking maximum paper capacity to 6,100 sheets. A 150-sheet single-pass duplex document feeder is also included as standard, which Sharp advertises as being capable of scanning in duplex at up to 75 images per minute.

Finishing options include a choice of two finishers, with one offering saddle-stitch booklet-making up to 15 sheets (60-page booklets). A post-process inserter unit is also available, allowing pre-printed sheets to be included after the fusing process.

Product Dynamics

The Sharp AR-M550 is one of three new departmental digital MFP products introduced by Sharp.

The new range of products (which span 55-70ppm) are the fastest digital MFPs ever introduced with Sharp's own technology as the design platform.

The Sharp AR-M550 is available in two configurations: the AR-M550U, which is a copier-only out of the box, and the AR-M550N, which shares the same specifications as the AR-M550U but includes network printing as standard.

The Sharp AR-M550 offers a number of innovative design features spanning paper handling, security, network scanning and printing.

Some of the most noteworthy features are:

- Single-pass duplex scanning (which Sharp calls Scan² technology);
- Advanced security options;
- Fax and PC-fax upgrade options;
- Direct TIFF and PDF printing;
- 110 lb. duplex printing from three different paper supplies;
- Standard tandem copy and print capability on 550N version;
- Carbon-copy printing utility;
- Standard document filing using 16GB partitioned area of 40GB hard drive;
- LDAP support standard with network scanning kit.
- User authentication

The pricing of the Sharp AR-M550 is aggressive, with the copier-only AR-M550U having a suggested retail price below that of several of the major 60ppm competitors.

The cost benefits of the Sharp AR-M550 are still evident when printing and scanning upgrade options are included within the cost equation.
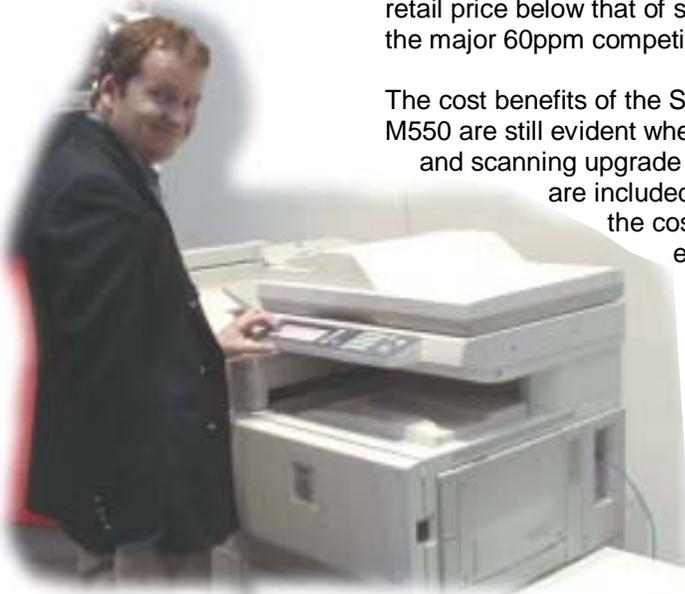
BERTL analyst with Sharp AR-M550

BERTL SURVEY

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

- 85% rated reliability "good."
- 85% said the devices were 'easy to use.'
- 82% said they that their productivity was good.
- 89% said that the service support was good.
- 89% said they would recommend Sharp devices to a third party.

Product Dynamics

Network Printing:

Network printing comes as standard on the Sharp AR-550N, and is an optional upgrade purchase for the AR-M550U copier-only entry-level model.

Network printing is powered by a 525MHz processor. PCL6 is included as standard, with PostScript 3 being an additional upgrade item. Direct printing of TIFF and PDF files is a standard feature for the print-enabled Sharp AR-M550.

Printing utilizes the same RAM (128MB standard) and hard drive (40GB) as used by the copier function.

Ethernet, USB 2.0 and parallel connectivity are included as standard within the print function.

Network Scanning:

Network scanning is an optional purchase for both versions of the Sharp AR-M550. To upgrade the Sharp AR-M550U (copier-only version), the printer upgrade kit must first be purchased.

The standard network scanning kit includes the ability to scan documents to a range of locations: email addresses, FTP locations, network folder locations and local copier hard drive folders. With the optional fax unit installed, users also have the ability to scan to fax numbers and internet fax addresses.

Up to 999 scanning destinations can be stored in the local device address book. The device also supports LDAP which means that users can search a central corporate contact list dynamically through the control panel of the Sharp AR-M550.

The device includes user authentication which restricts access to the scanning functionality to authorized users only.

Security Measures:

Sharp has been at the forefront of MFP security for some time, and was the first to achieve Common Criteria certification for its hard drive overwriting system on its Imager series.

Standard security measures include:

- **Confidential print**, where jobs are held on the local device until the security PIN code is entered at the control panel.
- **User authentication**, which verifies user access on the network before any scan operation is performed. This protects the network from unauthorized scanning and email communications.
- **IP/MAC address filtering,** where the network interface card can be programmed to restrict access to the device to specific PCs within a network.
- **500 user codes,** which force users to enter their code before any access to the device can be achieved. This also provides greater monitoring ability, allowing administrators to keep tabs on who is doing what around the network.

Sharp also offers a selection of additional security options, including:

- **Data Security Kit,** which protects data residing on the hard drive using 128-bit encryption, and can be set to overwrite the encrypted data up to seven times.
- **AirZIP FileSECURE**, provides persistent security to sensitive documents, every time they are accessed.

Maintenance/Maximum Duty Cycles:

The Sharp AR-M550 has an advertised maximum monthly duty cycle of 250,000 pages, which puts it on a par with most competing units. The main consumable items, namely the drum, fuser unit and developer unit, are all advertised as lasting up to 250,000 pages, meaning that at full monthly volume, that an extensive service visit will be required every month.
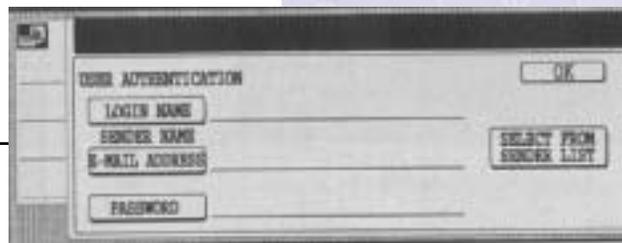
Sharp AR-M550

Product Dynamics

Paper Handling:

The Sharp AR-M550 comes standard with four paper sources and a capacity of 3,100 sheets. Included standard are:

- 2,000-sheet tandem drawer, which can hold two separate 1,000-sheet letter/A4 paper stocks. Unlike some manufacturer tandem drawer designs, the two drawers of the Sharp unit can not be opened and refilled independently.
- Two 500-sheet universal drawers which can hold paper up to 11" x 17"/A3.
- 100-sheet bypass unit for handling heavier paper stocks up to 110lb. Index / 220gsm.

Paper supplies can be expanded via two optional purchases:

- 3,500-sheet letter/A4 capable large capacity unit, taking maximum paper capacity to 6,600 sheets.
- 100-sheet Post-Process Inserter Unit, which allows pre-printed sheets (which would be damaged by the high temperature of the fuser unit) to be added after the printing process.

Sharp advises that 110 lb. paper stock can be duplex printed from the bypass and the two universal drawers.

While the standard and maximum paper supplies of the Sharp AR-M550 may not be the highest in its sector, they should prove more than adequate for most office uses.

Finishing Options:

The Sharp AR-M550 comes with a choice of two finishers:

1. A two tray finisher (maximum capacity 4,000 sheets) with multi-position stapling up to 50-sheet documents.

2. A saddle-stitch finisher (maximum capacity 4,000 sheets) with multi-position stapling up to 50-sheet documents, plus the ability to saddle-stitch booklets up to 15 sheets in size (creating 60-page booklets).

A 2 and 3 hole punch unit can be added to either finisher unit, as can the post process inserter unit.

Document Feeder:

Sharp includes a duplexing single-pass document feeder within the entry-level price of the AR-M550. While this is not unusual, the design of the document feeder does separate it from most competing units. The document feeder scans both sides of an original at the same time using a dual scanner head design, which Sharp calls Scan² technology.

Sharp promotes this technology as delivering multiple benefits to users:

1. Faster duplex scanning capability versus traditional reversing document feeders, which have to 'flip' the originals over and re-feed the page over the scanner head to read the second side.
2. Wider range of originals supported through the automatic document feeder due to the straight paper path through the scanner unit.
3. Greater reliability of scanner, due to its less strenuous paper path.
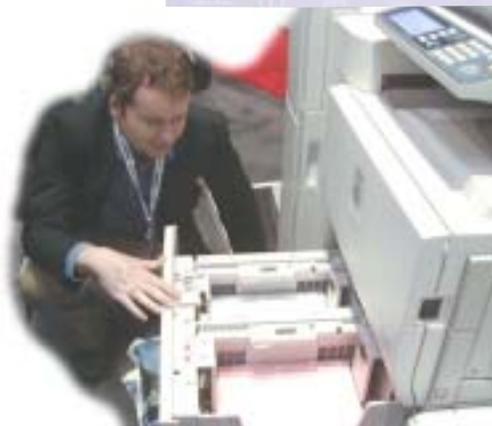
BERTL analyst inspecting Sharp AR-M550's 2,000-sheet tandem drawer paper supply

Saddle-stitch finisher option for the Sharp AR-M550

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Sharp AR-M550

Print on Demand

The Sharp AR-M550 comes standard with the ability to store documents on its 40GB hard drive.

The amount of space allocated to document storage is actually 16GB (which Sharp says can store up to 20,000 pages). The reason for this is that the hard drive is partitioned to provide the dedicated document storage facility while maintaining a large storage medium for fonts, forms, overlays, print spooling, electronic collation and other memory requirements.

The document storage utility on the Sharp AR-M550 is well laid out, with a main directory and custom directories.

The main directory is a central resource area that everyone can access, while the custom directory allows users to set up individual folders within the storage area. These folders and documents can be password-protected to provide greater document security.

By providing a sub-folder system, documents can be better organized to make finding specific files easier than on some competing units which just offer a general file storage facility that forces users to search through every file to find the document they require.

Documents can be stored in a folder from either the copy control panel (hard copy) or from the desktop (electronic file). Files can be given a specific name and have a user name/number attached to them for easier retrieval.

There is no ability to merge multiple stored jobs, a feature available on some competing units.

There is the ability to reprint documents from the desktop, using the resident web server. Documents can also be pulled back to the desktop as TIFF or PDF files for archiving/back-up purposes.
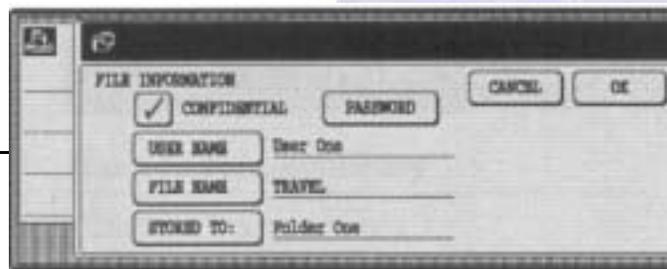
Top - **File storage from the touchscreen control panel**
Middle - **File storage from the desktop printer driver**
Bottom - **File retrieval from the resident web server**

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Print

The Sharp AR-M550's network printing (which comes as standard on the 550N and as an option on the 550U models) is powered by a 64-bit 525MHz processor. The processor shares the standard 128MB RAM and 40GB hard drive with the copier function.

Ethernet, USB 2.0 and parallel connectivity are included as standard.

For greater security, the network interface card can be programmed to only provide access to the device from specified IP/MAC address PCs on the network.

Within the standard printing package users get PCL5e and 6 printing. PostScript 3 printing is an optional extra upgrade item which, in addition to opening up access to the device to Macintosh users, also adds the ability to submit TIFF and PDF files directly to the controller through a drag and drop function.

The layout of the PCL6 and PostScript 3 drivers are identical, with the addition of a few PostScript-specific features within the Advanced tab including the added ability to set screen frequency and angle, mirror image and job compression levels.

The similar operation of the drivers means that users who switch between the two drivers should have no difficulty during the transition.

Both drivers are well laid out with a graphical job summary on the left side of each tab.

Useful features include carbon copy, which allows the user to create up to three additional sets of any document from different paper sources. This is a novel feature not provided on rival devices, companies, for example, who send out documentation to clients to create three discernable copies of any paperwork. One is kept for the company's own records, while the other two are sent to the customer; one to be
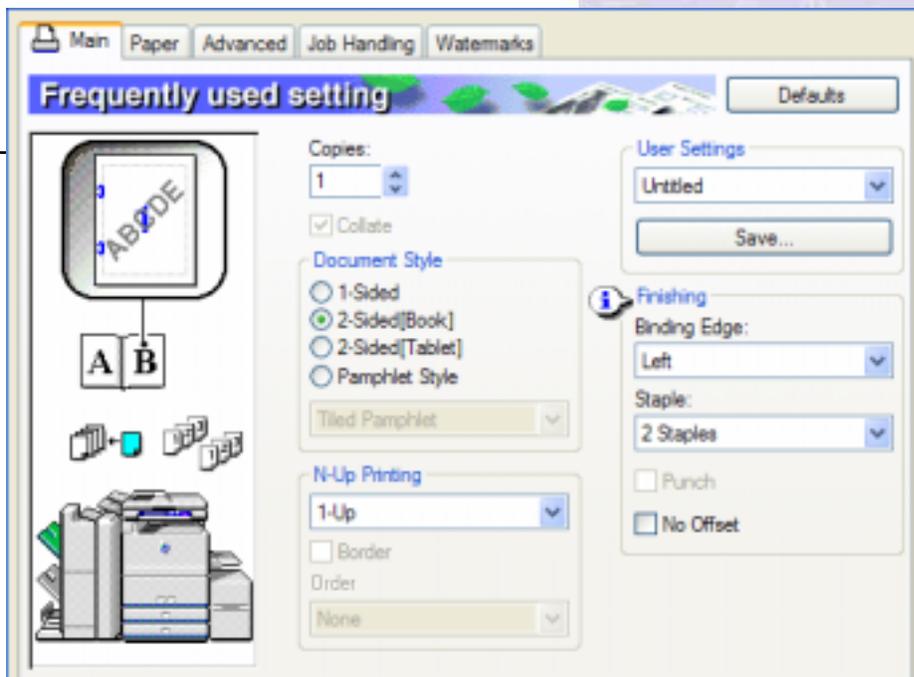
Main and paper tab screens from Sharp AR-M550 PCL6 driver
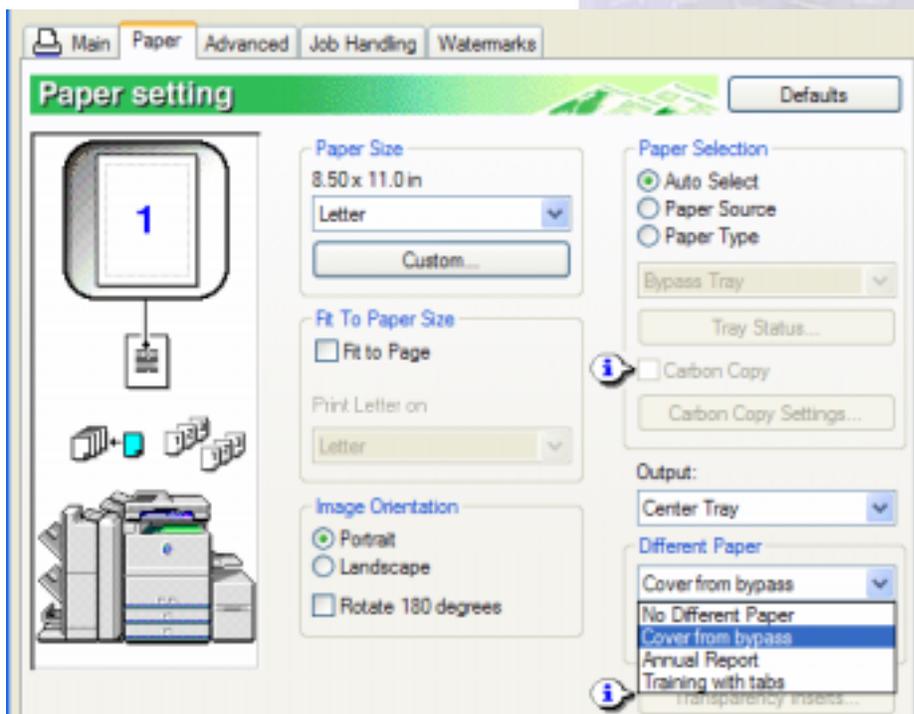
signed and returned, and the other for the customer records.

Page Number 5

Print

Paper Selection Options:

Document production options are good on the Sharp AR-M550, with users able to specify a paper source or type for each page within a document. In addition to being able to specify the paper source, users can also choose whether to print on one side, both sides, or leave the sheet blank. The settings can be stored for later retrieval.

While there is the ability to specify tabs within a job, there is no method of specifying tab text on the fly (a useful feature available on some competing devices). This means that tabs must be created and stacked in a paper drawer before the print run. Sharp advised us that a software utility is being developed for later release with the product will include extensive 'on the fly' tab-publishing capabilities.

Overlay Options:

Within the advanced tab is the option to use overlays. Overlays are similar to watermarks, but allow the user to save a background image rather than just a line of text that is placed behind the printed text.

The overlay function can be used as a basic form/variable data utility, allowing users to save a common background theme, such as a mailing design or standard form, as an overlay.

To create the overlay, a user simply prints the background/form and selects the Create Overlay function within the driver. The user is able to give the overlay a name. The overlay creation process itself was not well explained, but still did not take long to master.

The overlay file is stored on the device hard drive. To merge a print job with the overlay file, the user simply selects the overlay file from the list in the driver, as illustrated in the image at bottom right.
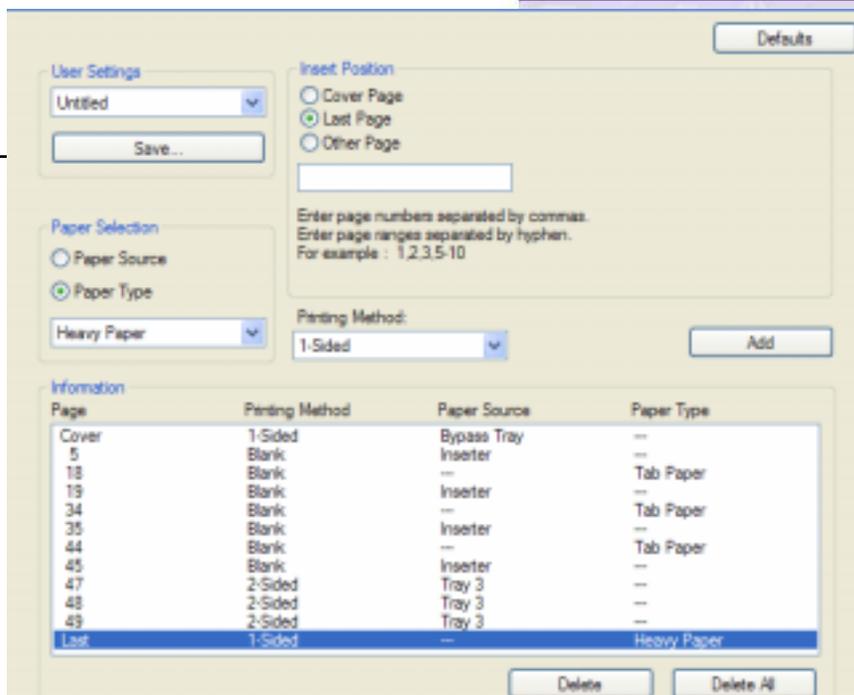
More features on the Sharp AR-M550 PCL6 printer driver
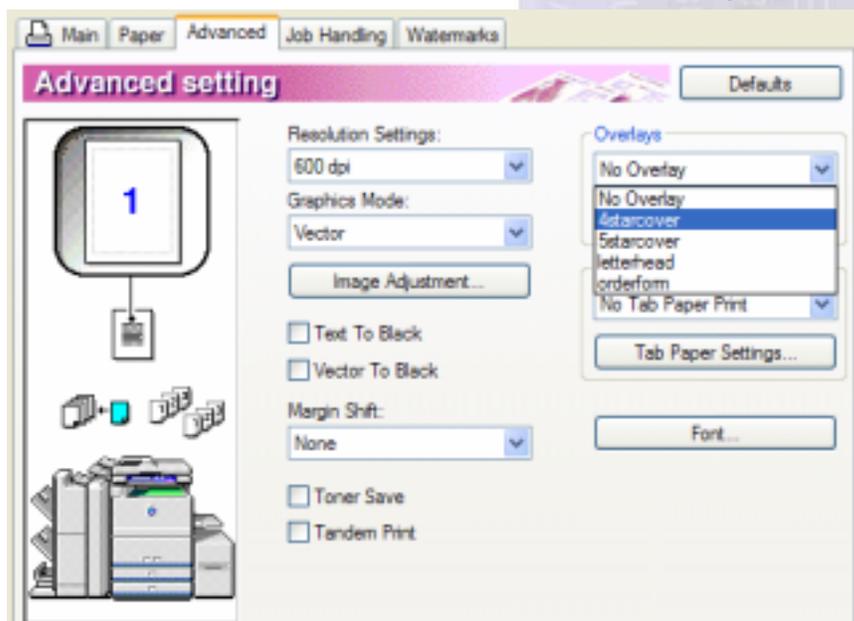
Tandem Print:

Sharp includes tandem printing within its standard print function (obviously requiring two print-enabled devices). The job is sent to the master tandem device, which splits the job and sends the data file to the slave tandem device with instruction on how many sets to reproduce.

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Print

Bandwidth:

Network bandwidth on the Sharp AR-M550's PCL6 driver was among the most efficient we have seen to date.

Documents created using standard word processing applications such as Word and Word Perfect were ripped down into small files, and multi-set jobs were collated correctly, maintaining the small single set file size even when using the application's collation function.

Graphic files were also handled efficiently, with Acrobat files and PowerPoint presentation documents both producing low file sizes.

Direct TIFF/PDF Printing:

Within the upgrade price of the PostScript 3 driver, users also get the added benefit of direct PDF and TIFF printing, which is achieved by opening the resident web server for the device, selecting the direct printing utility and browsing to the PDF/TIFF file in question.

This means that instead of having to submit TIFF and PDF files to one of other of the printer drivers (where the file is converted into a PostScript or PCL print file and sent to the device), users can submit PDF and TIFF files directly to the controller as raw data.

This has historically offered both productivity and bandwidth advantages due to processing time and increase in file size involved in converting these graphic file formats into print files.

However, as PCs become more powerful, the processing time is being cut dramatically, with the time involved in opening the resident web browser, browsing to the file and sending the PDF/TIFF file directly to the print controller

Bandwidth Used	
Print Job Type	**PCL6 Driver**
Adobe Acrobat (10 pages)	1.46 MB
Microsoft Office (35 pages)	409 KB
Word Perfect (6 pages)	232 KB
Microsoft PowerPoint (15 pages)	4.15 MB

often taking as long as simply opening the file and sending the job to print by traditional methods. Furthermore, PCL print drivers in Windows XP are also much more efficient at handling these graphic files with virtually no increase seen between the original PDF files and the PCL print file equivalent.

There is still an bandwidth advantage to sending files as direct PDF files versus PostScript 3 files. The 10-page Acrobat PDF file used in the above bandwidth test was ripped into a 3.46MB PostScript 3 file, versus its original 1.47MB file size as a raw PDF file.

This may result in some productivity advantages due to the smaller file size that has to be sent across the network, and then processed by the print controller.

Sharp AR-M550

Scan

With the optional network scanning upgrade, the Sharp AR-M550 becomes an efficient document distribution solution, giving users the ability to convert hard copy documents into electronic files (TIFF or PDF) and send them to a variety of locations.

Locations types are:

- Scan to email - individual or groups;
- Scan to Folder - routes files to a specific file location on the network - restricted to SMTP Windows-based network locations;
- Scan to FTP - routes files to FTP locations, expanding the range of network locations to include Macintosh and Unix;
- Scan to HDD - sends documents to local device hard drive location.

With the optional fax module, the range of scanning options increases to include scan to internet fax and scan to fax.

Users can select multiple destinations within a single scan job, called group sending. Groups can comprise of a mix of email addresses, internet fax and fax numbers, or FTP and SMTP folder locations, but not a mix of folder/FTP and email/fax addresses.

For added security, Sharp has included the ability to restrict access to the scanning function to only those users who can provide an authenticated network ID and password.

With the printer administrator utility, administrators can also keep a track of all scanning carried out throughout the company, satisfying one of the data security measures within the Sarbanes-Oxley, HIPAA and other data protection acts.

LDAP Support:

To facilitate efficient and accurate address entry, the Sharp AR-M550 includes support for LDAP (Lightweight Directory Access Protocol) servers. With LDAP support, users do not have to maintain individual address books on each Sharp AR-M550 around the network, and can instead rely upon the central company address book, which should be easier to keep up to date than lots of individual fax and scan to email devices scattered around the building.

To access the LDAP address list, users simply enters the first few characters of an address using the QWERTY keypad on the touchscreen control panel, and the device searches the LDAP address list for matches which appear on the touchscreen (see below).

Personalizing Email Messages:

To ensure that the recipient knows an email has come from a trusted source, the Sharp AR-M550 allows users to select their own email address from the sender list, rather than having the email arrive from a digital MFP. In addition, they can also add a message and subject line, plus name the file attachment.

Scanning windows on the Sharp AR-M550

Page Number 8
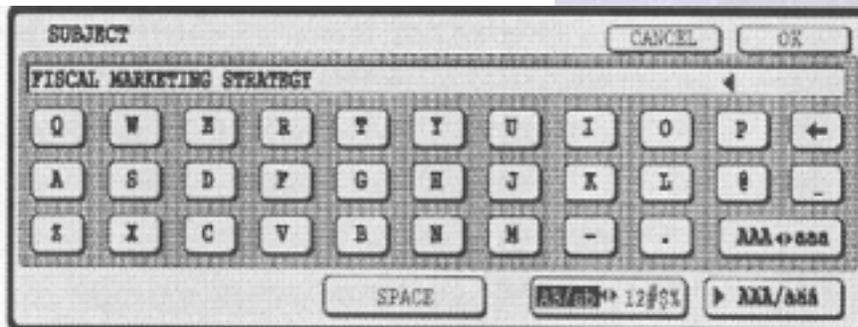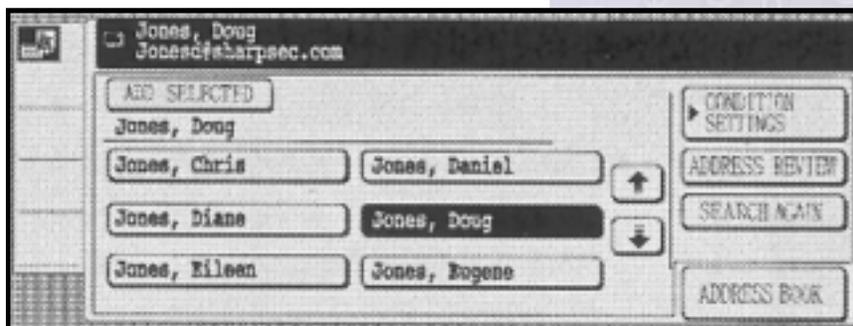
Scan

AirZIP FileSECURE:

To expand its document security portfolio, Sharp has teamed up with AirZIP to provide a more secure method of sending/sharing scanned documents.

With AirZIP FileSECURE, security is persistently applied to electronic content—wherever the content may go and every time the content is accessed.

Access restriction is achieved by wrapping a security tag around the file when distributing the document using FileSECURE Author.

To send files with AirZIP security from a Sharp MFP, a security profile for the document is first created using the FileSECURE Manager and associated with the Sharp MFP, or group of MFPs. When the user selects the ImageSEND button on the MFP control panel, they will be see the AirZIP profile button.

To open the file, recipients must have the free FileSECURE Reader application (available at www.AirZIP.com) loaded on their system. This in itself may cause issues for some companies which restrict users downloading applications.

To open a secured file, the recipient must be online, which again can cause issues for mobile users. The reason for this is that the FileSECURE Reader application communicates with the sender's internet-based FileSECURE server. The user enters their username and password (see top screenshot). The FileSECURE server then checks the security access that has been associated for the user.

User names and profiles are set up using the FileSECURE Manager utility.
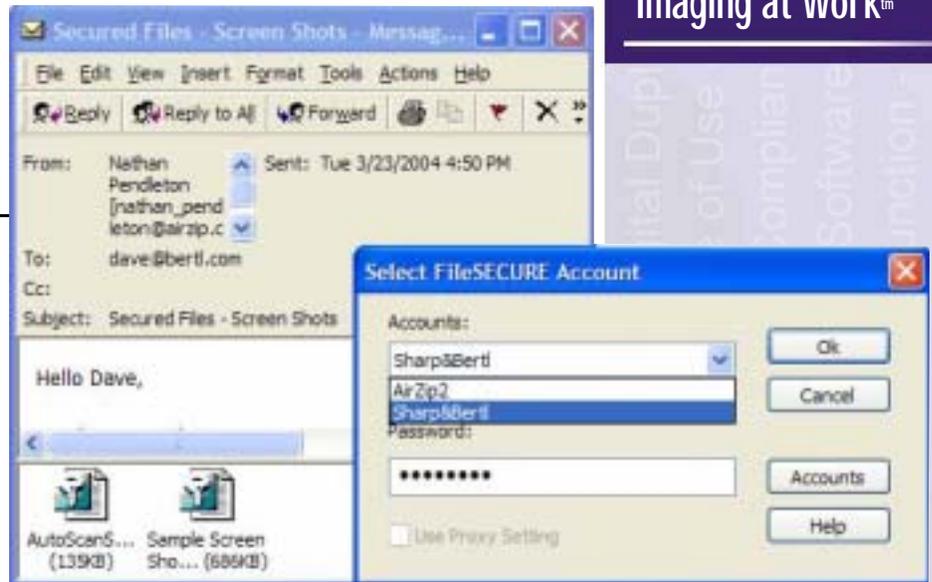
The security options include limiting:

- Viewing access to specific personnel;
- Start and expiration dates during which the file can be accessed;
- Printing, screen capture, file save and other means of reproducing the file.

Due to the verification process, every time a document is accessed, a complete log of the document activity can be produced using the FileSECURE Server software. The screenshot below shows the file tracking history for one report and includes the number of times the file was viewed, printed and copied by each user.

FileSECURE Server report for a secured document listing each user and their activity

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Sharp AR-M550

Copy

Though smaller than some competing units, the touchscreen control panel of the Sharp AR-M550 is very crisp, with the high resolution display making text and images easy to read.

The touchscreen control panel cannot be tilted, which means that it may be harder for wheelchair users to access the device compared to some rivals with a tilting panel design.

The menu system is easy to navigate. Due to the smaller screen, there are more menu levels than found on some rival units.

Sharp advertises a first page out time of 3.9 seconds with a warm-up time of only 120 seconds, which for a device over 60ppm, puts the Sharp AR-M550 among the fastest devices out of the gate.

Productivity is further enhanced by the single pass, duplex scanning document feeder which is able to scan double-sided images at up to 76ipm. This could give Sharp AR-M550 users considerable productivity advantages versus devices with the more traditional reversing document feeders when double-sided original are copied. The reason for this is that the job will be scanned into memory faster on the single-pass scanning Sharp AR-M550 than the slower reversing document feeder alternatives, which have to flip over each page and re-feed the second side back over the single scanner unit.

This scanning speed advantage allows Sharp AR-M550 users to return to their desks with the originals and carry on with productive work.

Also, in addition to being slower, reversing document feeders are also more prone to misfeeds than the straight paper path design of the Sharp AR-M550.

Control panel of the Sharp AR-M550

The Sharp AR-M550 is able to queue as many copy jobs as its memory can handle. This gives the device a copier concurrency advantage in busy copy environments over several competing units, which have a finite number of copy memories.

The range of copy jobs that can be carried out on the Sharp AR-M550 is extensive, with a wide range of finishing options including multi-position stapling, hole punching and saddle-stitch booklet making.

There is also an optional post process insertion unit which allows users to incorporate pre-printed material, such as color covers, that would otherwise be damaged by the high temperature of the fuser unit.

Tandem Copy:

The Sharp AR-M550N (print enabled) includes tandem copy capability as a standard feature. This is achieved through connection of two Sharp AR-M550 devices via the Ethernet port. The tandem copy process operates with one of the two copiers becoming the slave, and one the master. The tandem copy link is set up using the resident web server application.

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Software Utilities

Sharpdesk:

Sharpdesk is a desktop document management utility that comes standard with the Sharp AR-550N model (and with the printer upgrade kit for the AR-M550U). 10 seat licenses are included within the basic printing package. Additional seats are available for a nominal fee.

Sharpdesk allows users to integrate scanned documents into everyday workflow.

Sharpdesk includes tools that allow users to organize, edit, annotate, combine files, OCR and send documents to print, email and fax.

Sharpdesk includes a search and indexing feature to make locating documents a simple process.

LibertyNet:

LibertyNet is described as "an integrated enterprise-wide flexible and feature-rich platform designed to meet a wide variety of information management needs. In a single platform, LibertyNET provides capabilities for electronic document and records management, process automation, workflow, digital asset management, COLD/ERM, e-forms, email management and collaboration, and more.

Doc2NET:

Also developed by Liberty, Doc2NET provides a sophisticated, workgroup document management utility with advanced document filing and archiving features with structured indexing, full text search. Using a Sharp MFP, documents can be sent directly to a specific cabinet within the Docu2NET archiving system as either a PDF or as a TIFF file with a user-defined file name.
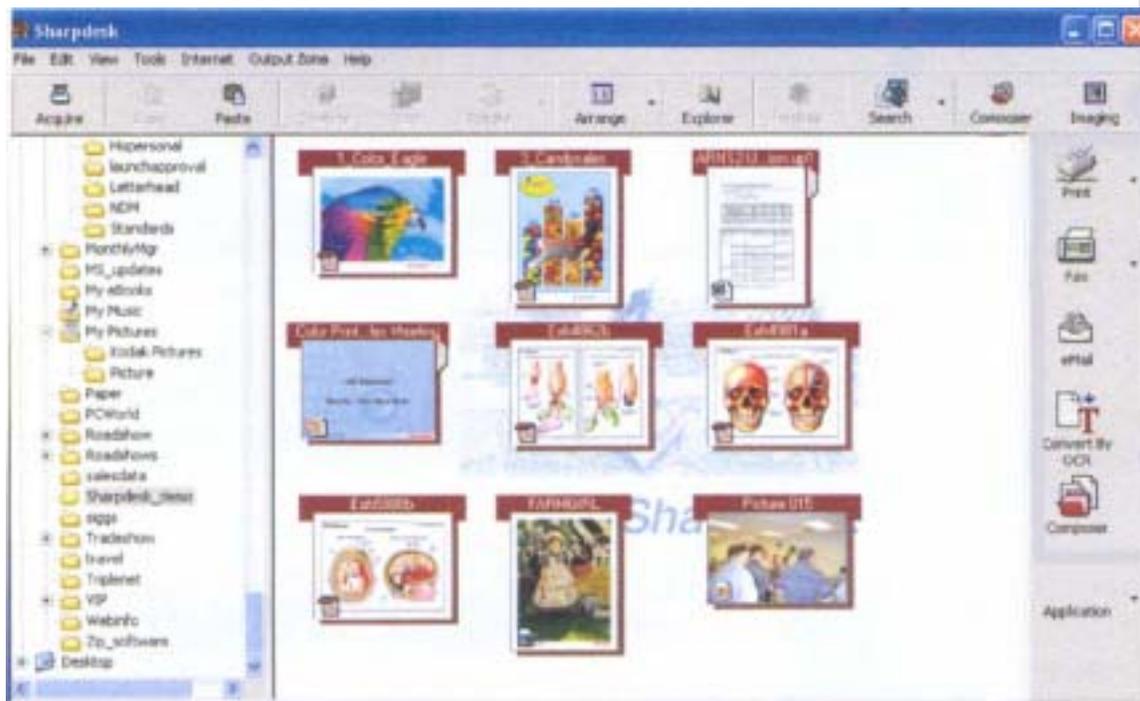
Sharpdesk document management utility

Network Utilities / Fax

Sharp Administrative Utility Suite:

Sharp includes a suite of utilities for the management of the Sharp AR-M550. The suite includes:

Printer Status Monitor, which allows network users to view printer conditions, checking paper levels, toner and more before they send their jobs;

Printer Administrator Utility, which helps IT managers speed up installation and configuration of printers on the network — as well as monitor any third-party networked SNMP-compliant devices;

Remote Email Diagnostics allows IT managers, key operators and authorized Sharp dealers to automatically receive emails regarding the AR-M550;

Imager Home Page is a resident web-server-based application which provides both user and administrator-level access to the AR-M550.

Users can create and manage their own scanning templates and profiles.

Administrators can access device configuration, network settings, IP filtering and protocol control — right from the desktop.

Fax:

The Sharp AR-M550 can be upgraded to include a fax function. The upgrade includes a 33.6kbps modem and 2MB of dedicated fax memory (expandable to 10MB). JBIG, MMR, MR and MH compressions are all included as standard.

With the printer upgrade included, desktop users also have the ability to use the fax function on the Sharp AR-M550 from their desktops, using the Sharp LAN fax software utility.

With the printer and scanner kit installed users also get the added ability to send scanned documents to internet fax numbers, using the T.37 internet fax protocol.

The Sharp AR-M550 is one of the few 55ppm+ MFP devices on the market to offer a walk-up fax capability.

Summing Up:

The Sharp AR-M550 has a lot to offer, with well designed user interfaces for both walk-up and desktop users, a wide range of upgrade options, good paper handling and document production options and one of the most diverse range of document communications options, all achieved while maintaining a low entry-level price.

One of the key strengths of the Sharp AR-M550 is its range of security options, including both standard and optional security measures designed to make the device an attractive proposition to companies needing to comply with data security regulations.