



# Test Report

MULTIFUNCTIONAL PRODUCTS  
**Sharp AR-M160 IMAGER**  
16 PPM / SEGMENT 1  
Copier/Printer/Scanner



**Test period duration:**  
Three months, including  
a 30,000-impression durability test



**Manufacturer:**

Sharp Electronics Corporation  
Mahwah, NJ  
Made in Japan



**Serial number:** 35105266

**Suggested retail price:** \$2,295; \$2,690 as tested with the Function Upgrade Kit (\$395).

**Type:** Console, CCD digital scanner, laser imaging, bond sheet paper, dry toner, dual-component developing system, heat and pressure fusing multifunctional device with standard copy and PC-based printing and color scanning.

**Manufacturer's recommended monthly volume:** Up to 20,000 impressions.

**BLI's recommended monthly volume for optimum performance:** Up to 5,000 impressions.

## GENERAL APPRAISAL

Offering flawless reliability and good overall output quality at a price that is significantly lower than the average for products in this speed range, the Sharp AR-M160 IMAGER is a 16-ppm simplex-only Segment 1 multifunctional device offering standard copying and PC-based printing and color scanning. This unit, which outputs on up to ledger-size paper, completed BLI's three-month, 30,000-impression durability test with no malfunctions and not even a single misfeed. Also contributing to the high uptime for this unit, which is geared to small offices, is its photoconductor yield, which is higher than the average for units in this speed range.

As mentioned above, the unit offers good overall 600-dpi output quality, receiving BLI's high-

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## General Appraisal *continued*

est image quality rating for all categories evaluated in print and copy mode (text, line art, halftones and solids). Furthermore, when compared with other Segment 1 units tested to date, the AR-M160's copier efficiency and first-copy time from the document feeder (11.3 seconds) are competitive, while its first-copy time from the platen (7 seconds) is slightly faster than the average. Also receiving good marks are the unit's documentation and procedures for removing misfeeds, loading paper and removing and replacing the toner cartridge. Moreover, the AR-M160's toner yield is among the highest for Segment 1 units tested to date. In fact, only one other unit in this category has a higher yield.

The unit offers a 16-MB standard memory capacity that can be increased to 288 MB, a maximum memory capacity that is among the highest for units in this speed range.

### Connectivity

The Sharp AR-M160, which was tested connected to a dedicated PC via the optional USB 2.0 interface (parallel and USB 1.1 interfaces are standard; a network interface is optional), includes a GDI print driver that was well designed and easy to use on the platform tested (Windows 2000). The driver, which also supports Windows 95, 98, NT 4.0 and XP, offers very basic features such as collation, N-up printing and quantity selections.

The unit, which comes bundled with Sharpdesk, a desktop management software program that allows users to scan documents directly to a

connected PC, performed well as a scanner. Scanned documents can be viewed, printed, copied, stored, renamed, sorted according to name, date, size or type, and dragged and dropped to any of the application icons on the Sharpdesk user interface. Sharpdesk also allows users to open documents in a viewer that provides editing features such as zoom, remove dots, auto straighten, auto trim, rotate and print, as well as more advanced editing features such as drawing tools, touch-up filters and the ability to combine files of different types into a single document. In testing OCR capability, BLI technicians found not text or formatting errors.

The tested optional function upgrade kit, which includes the USB 2.0 interface, also provides an additional 16 MB of memory, a JBIG speed-enhanced printing system upgrade that increases the print speed from 10 ppm to 16 ppm and adds RIP-once-print-many capability, and 100-page electronic sorting, with offsetting, rotation copy, two-in-one/four-in-one copy, edge erase, center erase and margin shift.

### Shortcomings

The following shortcomings were noted in testing: 1) Several ease of use shortcomings were noted. Overall ease of use is rated "Fair" because the control panel, which lacks a touchscreen, provides only a three-digit LED display. And ease of adjusting paper drawers was rated "Fair" because users must change the paper size via the control panel. 2) The unit's first-page time in print mode, at 29.09 seconds, is among the slowest for Segment 1

*continued*

**General Appraisal** *continued*

units tested to date. 3) In addition to not allowing users to program a copy job while another copy job is in progress, which is typical of Segment 1 units, this unit does not allow programming of a copy job while a print job is in progress. 4) The unit's standard and maximum paper capacities are lower than the average for models in this speed range.

**Price Analysis and Summary**

BLI's pricing analysis shows that Sharp AR-M160 IMAGER is priced significantly below the average for devices in this speed range (11 ppm to 21 ppm). Furthermore, the unit's supplies cost per page is slightly lower than the average for units tested to date.

Because of its excellent reliability and aggressive pricing, BLI recommends the Sharp AR-M160 IMAGER for offices in need of a multifunctional product for monthly volumes of up to 5,000 impressions.

**Copy Quality:**

Text: ..... Good

Line art: ..... Good

Halftones: ..... Good

Solids: ..... Good

**Print Quality:**

Text: ..... Good

Line art: ..... Good

Halftones: ..... Good

Solids: ..... Good

Ease of use: ..... Fair

Ease of 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: ..... 18,904 impressions  
(at 6% coverage)**TEST RESULTS AND OBSERVATIONS**

*Test equipment:* 2.0-GHz Pentium 4 PC with 256 MB of RAM and the Windows 2000 Professional operating system.

**TEST RESULTS AND OBSERVATIONS** *continued***Reliability**

PMs/Malfunctions	Service Required	Meter Count (Impressions)	Impressions Between Service
Meter count (beginning of test)		0	
End of test period		30,000	
Total Misfeeds/Misfeed Rate	0 / Not applicable		
Service Calls	0		
PMs	0		
Total Service Calls (including PMs)	0		
M.I.B.F. <sup>1</sup>	Not applicable		
M.I.B.S. <sup>2</sup>	Not applicable		
<sup>1</sup> Mean Impressions Between Failures (To obtain this number, BLI divides the total number of impressions produced during the test period by the number of service calls required. In actuality, it reflects the average number of impressions produced without a malfunction.)			
<sup>2</sup> Mean Impressions Between Service (To obtain this number, BLI divides the total number of impressions produced during the test period by the number of service calls, including preventive maintenance calls, required. In actuality, it reflects the average number of impressions produced without a service call.)			

**Maintenance**

The organic drum, developer drum cleaning blade and ozone filter are expected to last for 50,000 impressions, which is the interval at which PMs are performed by Sharp service. The upper and lower fuser rollers are each expected to last for at least 150,000 and 300,000 impressions, respectively. Unless otherwise noted, all of the above consumables that would normally be replaced during the course of this the test met or exceeded the life expectancy specified by the vendor.

**User-Replaceable Consumables**

**Toner cartridge:** Estimated retail price, \$99. Manufacturer's rated yield, 16,000 pages at 6% page coverage.

**Ease of replacing toner cartridge:** Good. Toner replacement was a simple and clean procedure.

**TONER YIELD / COST PER PAGE**

Toner Yield (Impressions)	Impressions Per Gram
18,904	42.0
Toner Cost Per Page	Supplies Cost Per Page*
0.608¢	0.675¢

Toner cartridge net weight: 450.0 grams

\* Based on estimated retail pricing, tested toner yield using BLI's 6% original and the manufacturer's rated yield for the developer.

**Guarantee/Warranty:** The Sharp AR-M160 IMAGER is backed by a 90-day warranty.

**Service pricing:** Pricing is set by dealers. Contact your local Sharp dealer.

## TEST RESULTS AND OBSERVATIONS *continued*

### *Ease of Operation*

**Documentation:** Good. Configured as tested, the Sharp AR-M160 IMAGER included a printed manual for copier operation and a key operator's guide. A separate manual for installing the print server is included on the print server installation CD-ROM. Additionally, a printer operation manual can be printed in PDF format from the printer utilities CD-ROM. Most of the manuals include indexes.

**Ease of use:** Fair. Hard keys, which are located below the 7/8" x 1/2" three-digit LED display. The display is used for copy count and various error and status codes. The control panel consists of hard keys, which are clearly labeled for various functions, and LED indicators. Installation of the device and setup of the drivers are highly automated and the drivers are very easy to use.

**Control panel status messages/Job access:** None.

**Feedback to PC workstations:** Not applicable. The unit was not tested with the optional network interface.

**Ease of removing misfeeds:** Good. Non-clamshell design; 8 misfeed locations, including one for the document feeder.

**Ease of loading paper:** Good.

**Ease of adjusting paper drawers:** Fair. After adjusting the paper drawer for a different paper size, the user must select

the "Special Function" menu at the control panel, then select the "Paper Size Set" menu, and then select the drawer(s) and the corresponding paper size loaded in the drawer. See "Operator error."

**Operator error:** If the user changes the paper size but does not change the paper size via the control panel, a misfeed will occur.

### *Throughput Capabilities/Materials*

**Paper output:** Tested with optional finisher. All output is face down in correct page order. Copied and printed sets are output collated.

**Output tray capacity sensor:** None. When the tray exceeds capacity, a paper jam occurs.

**Ability to process self-adhesive address labels:** Avery #5351 labels performed satisfactorily in the tests. Sharp recommends that users feed labels through the bypass tray only.

**Ability to process transparencies:** 3M-PP2500 clear transparencies performed satisfactorily in the tests. Sharp recommends that users feed transparencies through the bypass tray only.

**Ability to process envelopes:** No. 10 envelopes performed satisfactorily in the tests. Sharp recommends that users feed the envelopes through the bypass tray only.



**Sharp AR-M160 IMAGER Control Panel**

## TEST RESULTS AND OBSERVATIONS *continued*

### SHARP AR-M160 IMAGER MULTITASKING EVALUATION

Secondary Function Primary Function	PRINT	SCAN	COPY
PRINT	Yes <sup>1</sup>	No <sup>2</sup>	No <sup>2</sup>
SCAN	Yes <sup>1</sup>	No <sup>2</sup>	No <sup>2</sup>
COPY	No <sup>2</sup>	No <sup>2</sup>	No <sup>2</sup>

<sup>1</sup> Secondary function is completed after primary function (2).

<sup>2</sup> Function not available (7).

**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.

### Multitasking

#### (More Than Two Functions/Jobs)

*Note:* In addition to a single-user multitasking test, which evaluates a unit's ability to initiate or perform one function while another function is already in progress (see chart above), BLI also tests a multifunctional product's ability to handle multiple jobs that would be likely to stack up in a multi-user networked environment. Depending on the number of different functions, three to six different job matrixes are run on each multifunctional device. The job streams within each matrix are designed to test not only for concurrent operation of various functions, but also to uncover peculiarities pertaining to multitasking as it relates to various software programs (Adobe Acrobat, Adobe PageMaker, Microsoft Word 2000, Microsoft Excel and PowerPoint), paper sizes, copy/print job sizes and copy/print modes (e.g., simplex, duplex, finishing).

**Mode priority:** Copy mode is the default mode. Copy jobs automatically interrupt print jobs. Print jobs remain on the user's PC until completion of the current copy job.

**Interrupt:** A copy or print job can be interrupted with the "Interrupt" key to perform a copy job only allowing the user to select the quantity; other features are not available in interrupt mode. When a print job is interrupted to perform a copy job, one minute and 30 seconds after the copy job is completed, the original print job is resumed. When a

copy job is interrupted to perform another copy job and that copy job is completed, the user must press the interrupt key again and then press the start key to resume the original copy job.

**Memory allocation:** Copier and printer memory is shared.

**Program ahead (reserve copy job) while copying:** No. The Sharp AR-M160 does not have a job reserve or program ahead feature for print or copy jobs.

**Program ahead (reserve copy job) while printing:** Yes. One copy job can be programmed and initiated while a print job is in progress; the copy job automatically interrupts the print job.

**Device/feature contention issues:** None.

### 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, 1.71 to 1.77 (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, 1.38 to 1.41 (on a scale of 0 to 2.5, with 2.5 being as dark as would be possible under most circumstances).

**Density range for copiers tested to date:** 1.02 to 1.77.

**Copy quality:**

**Text:** Good

**Line art:** Good

**Halftones:** Good

**Solids:** Good

#### Copier Productivity

**Copying speed (8-1/2" x 11" copies):**

**First-copy time from the platen:** 7.0 seconds (times were the same regardless of the automatic modes selected).

**First-copy time from the document feeder:** 11.3 seconds (times were the same regardless of the automatic modes selected).

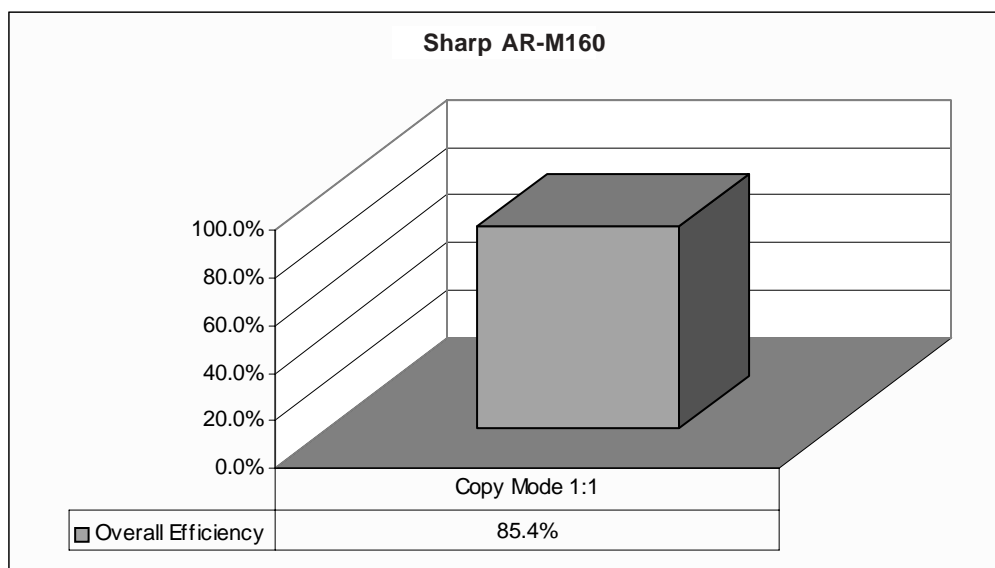
**Number of copies per minute excluding first copy:** 17

**Number of copies per minute including first copy:** 15

**TEST RESULTS AND OBSERVATIONS** *continued***COPY EFFICIENCY FOR 1, 5, 10 AND 20 SETS**

Copy					
Sets	Min.	Sec.	PPM	Efficiency	Overall Efficiency
1	0	46.5	12.9	80.6%	80.6%
5	3	57.4	12.6	79.0%	79.8%
10	7	4.9	14.1	88.3%	82.6%
20	13	19.6	15.0	93.8%	<b>85.4%</b>

Speed/efficiency tests are conducted using a 10-page document.

**OVERALL COPY EFFICIENCY COMPARISON**

BLI obtains the overall efficiency for each copy mode by averaging the efficiency ratings (derived by dividing the tested speed of the device by the rated speed, and then multiplying by 100) for each run length (1, 5, 10 and 20 sets).

***Performance of Printer Functions***

*General:* The Sharp AR-M160 was tested connected to a dedicated PC via the optional USB 2.0 interface.

***Print Quality***

*Density of solid black printed image (based on four readings corresponding to four different locations on the original):* Range, 1.32 to 1.34 on a scale of 0 to 2.5, with 2.5 being the as dark as would be possible under most circumstances.

**TEST RESULTS AND OBSERVATIONS** *continued*

*Density range for laser/LED printers tested to date:* 1.00 to 1.74.

**Print quality:**

*Text:* Good

*Line art:* Good

*Halftones:* Good

*Solids:* Good

*Comments:* The AR-M160 produced good character quality, density and line art. Grayscale fill ranged from 1% to 100% with distinct transitions evident between levels.

*Applications compatibility (units are tested on the Windows 2000 Professional platform for compatibility with*

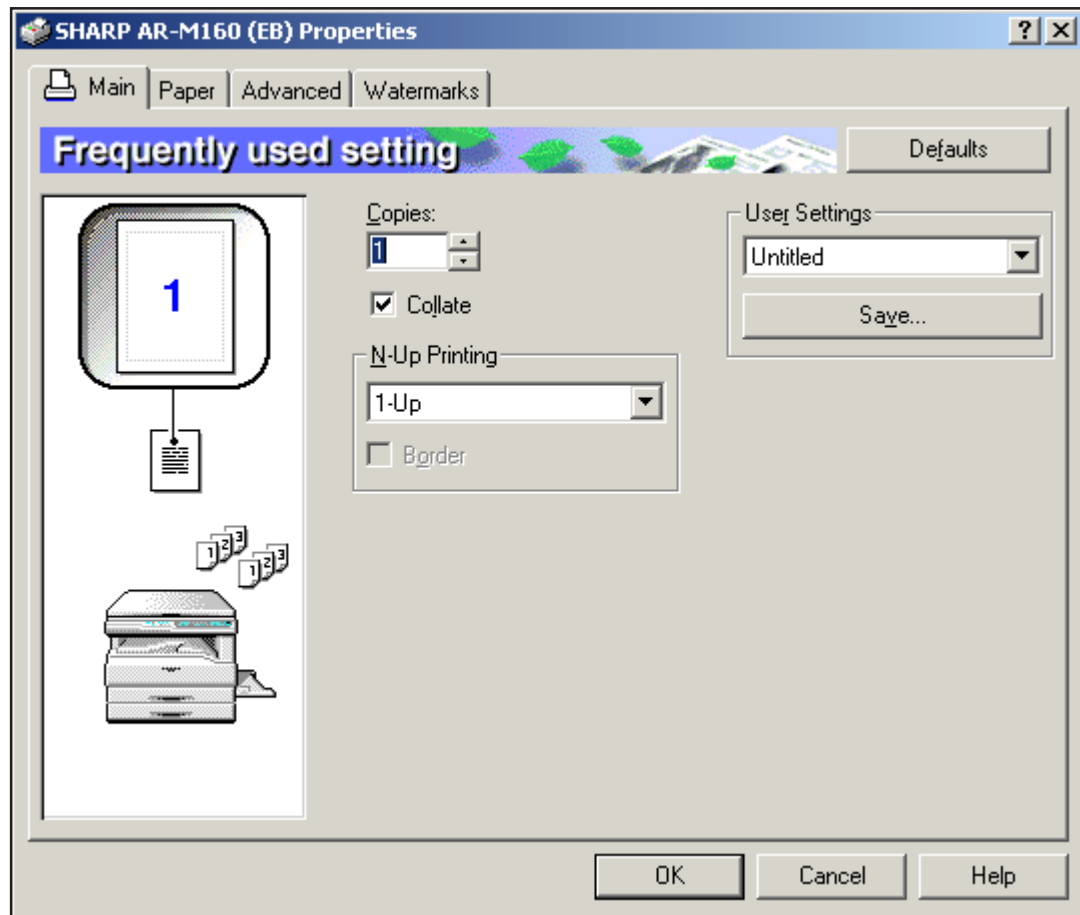
*Microsoft Word 2000, Microsoft PowerPoint 2000, Adobe PageMaker 7.0, Adobe Photoshop 6.0 and Adobe Acrobat 5.0 using 24 application test files, which contain text, graphics, halftone images, tables, etc., enabling BLI technicians to evaluate memory usage, file processing, font-rendering and grayscale capability):* Good.

*Print drivers:* Configured as tested, the Sharp AR-M160 IMAGER included a standard GDI print driver for Windows 95/98, 2000, NT 4.0 and XP. The Sharp AR-M160 print driver was well designed and easy to use on the platform tested (Windows 2000).

**SHARP AR-M160 IMAGER PRINT DRIVER FEATURES**

Features	Windows 2000 GDI Print Driver
<b>Auto Feature/Device Detection</b>	No
<b>Booklet Printing</b>	No
<b>Collate Sets</b>	Sets are automatically collated
<b>Max paper sources per job</b>	1
<b>Mirror Image</b>	No
<b>Negative Image</b>	No
<b>N-up Printing</b>	2 to 4
<b>Overlay</b>	No
<b>Paper Gauge</b>	No
<b>Print and Hold</b>	No
<b>Proof Print</b>	No
<b>Quantity Selection</b>	Up to 999
<b>Reduction/Enlargement</b>	No
<b>Resolution Modes</b>	300 x 300 dpi/600 x 600 dpi
<b>Save Settings</b>	Yes
<b>Secure Printing</b>	No
<b>Watermarks/Custom Watermarks</b>	Yes/Yes

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**TEST RESULTS AND OBSERVATIONS** *continued***Windows 2000 GDI Print Driver**

# TEST RESULTS AND OBSERVATIONS *continued*

## Print Productivity

### BLI'S TESTED RASTER/ PRINT SPEEDS

#### Microsoft Word Text File

First-page time:	29.09 seconds
Speed excluding first-page time:	15.67 ppm
Speed including first-page time:	12.99 ppm

All files are printed in a quantity equal to twice the manufacturer's rated speed for the device. The Sharp AR-M160's print speeds were tested at 600 x 600 dpi using Sharp's GDI print driver.

First-page time indicates the time it took to RIP an image and deliver the first page of the test document set to the output tray.

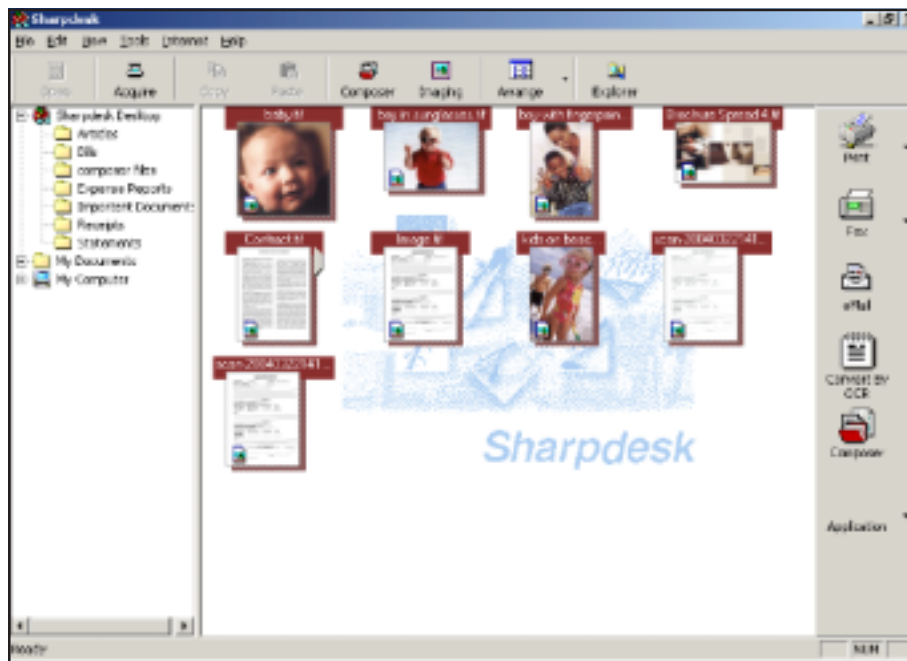
Speed excluding first-page time indicates the time for printing the entire set of test originals, excluding first-page RIP and print times.

Speed including first-page time indicates the time for printing the entire set of test originals, including first-page RIP and print times.

*Networking and connectivity:* The Sharp AR-M160 was tested connected directly to a PC via the optional USB interface.

*Send once/print many:* Yes. Printed sets are automatically collated; if collate is selected from within an application, there is no effect on the file size.

*Simultaneous RIP and print:* Not applicable. A network interface is not offered for this unit.



Sharpdesk Scanning Utility

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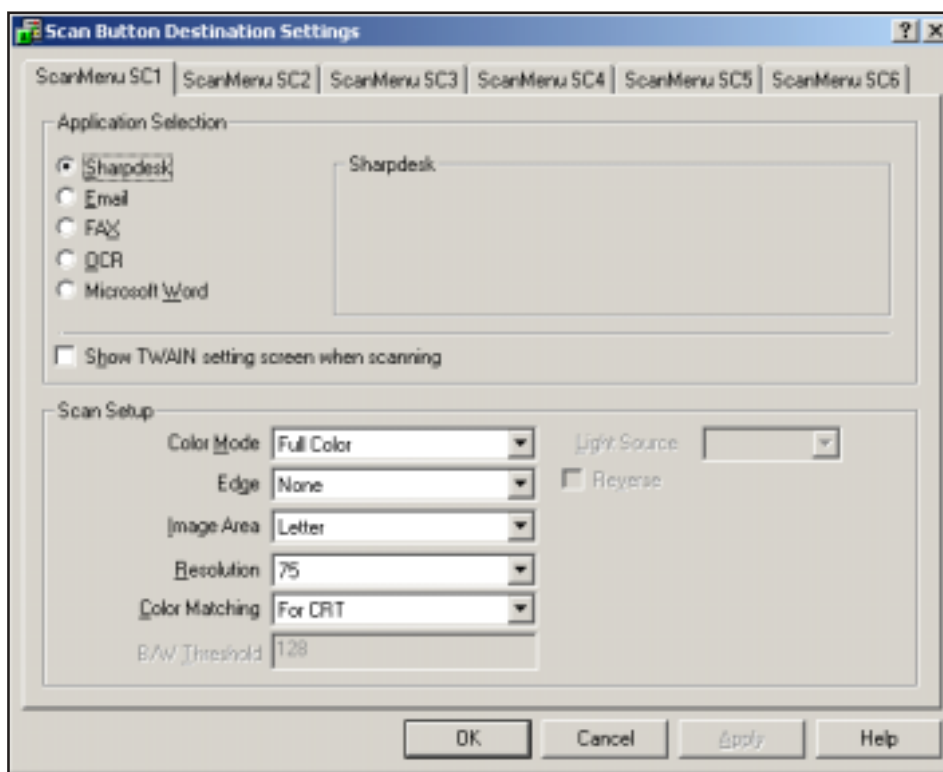
## TEST RESULTS AND OBSERVATIONS *continued*

### *Performance of Scanner Functions*

The Sharp AR-M160 comes bundled with Sharpdesk, Sharpdesk Viewer and Composer, all of which are contained on one CD-ROM. Sharpdesk allows the user to scan documents directly to the connected PC by pressing one of the scan keys on the device's control panel that are programmed for scan to Sharpdesk, e-mail, fax, OCR or Microsoft Word (these keys can be reprogrammed by the user); there is also one user-programmable key. Destination attributes that are user-definable include resolution, color or black and white and image area.

After the document is scanned, the user can view, print, copy, store, rename and delete images. Scanned files can also be sorted according to name, date, size or type. In addition, scanned files can be dragged and dropped to any

of the icons (from applications) located on the right of Sharpdesk, including print, e-mail, convert to OCR and choice of common office application (such as Imaging for Windows). Sharpdesk allows documents to be opened in a viewer that provides editing features such as zoom, remove dots, auto straighten, auto trim, auto sharpness, rotate and print (which allows for printing single or multiple copies), and more advanced editing features such as drawing tools, touch-up filters and the addition of stamps and the ability to combine files of different types into a single document. One criticism noted was that the procedure for registering for use of the scanning software was found to be cumbersome, requiring entering the serial number of the device as well as a code on a label on the machine into a registration screen at a Web site, and then waiting to receive licensing codes needed for the installation of the software.



**Sharpdesk Programmable Scan Buttons**

## TEST RESULTS AND OBSERVATIONS *continued*

*OCR (Optical Character Recognition):* Documents are scanned and OCRed using Sharpdesk software, which incorporates OCR. Documents are automatically opened into

the default application (Microsoft Word). A scan of the ITU-T Test Document #1 (also called "Slerexe letter") produced no text or formatting errors.

## PERFORMANCE OF TESTED SPECIAL FEATURES

### *Reversing Automatic Document Feeder*

The optional reversing automatic document feeder (RADF) holds up to 30 sheets ranging in size from 5-1/2" x 8-1/2" to 11" x 17". Acceptable paper weights, 15 to 21 lbs. The Sharp AR-M160 cannot process mixed-size originals.

*Document feeding speeds:* (copy mode, 8-1/2" x 11" originals; speeds were the same regardless of the automatic modes selected):

1:1 copy mode: 16.5 originals per minute.

### *Stack-Feed Bypass*

The standard "non-intelligent" 100-sheet stack-feed bypass has double-gear, adjustable side guides that move in sync to accommodate sheets ranging in size from 5-1/2" x 8-1/2" to 11" x 17" and in weight from 14 to 54 lbs. Sharp recommends that transparencies, labels and envelopes be fed one sheet at a time. The display counts down as copies/prints are produced.

## ENVIRONMENTAL SPECIFICATIONS

*Electrical system:* 120 V, 60 Hz, AC, 10.0 amps. The unit tested had a three-wire cord (grounded), 7' in length, and carried UL approval for the United States and Canada.

*Paper fault:* None. (Georgia-Pacific Spectrum Xerographic Bond and Georgia-Pacific GeoCycle recycled paper containing 30% post-consumer fiber were used in this test unit.)

## PHYSICAL SPECIFICATIONS

### DIMENSIONS AND WEIGHTS

Unit/Accessories:	Height	Width	Depth	Weight
Unit	18-33/64"	23-15/64"	20-29/32"	69.1 lbs.

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**BACKGROUND INFO**

Dataquest Segment 1  
 SRP (USA; Canada): \$2,295; \$2,895  
 Manufacturing Status: New  
 Domestic Intro Date: July 2003  
 OEM: Sharp (Japan)  
 Also Sold As: None

Distribution: Dealers and distributors  
 Mfr's Rec Mo Vol: Up to 20,000 copies



**TYPE**

Monochrome copier, MF  
 Configuration/Scanner: Desktop, digital  
 Toner: Dry, dual component

**COPIER FEATURES**

Automatic Features: AES,AMS, APS, ATS  
 Book Copy: Std Job Time: No  
 Booklet Mode: No Language: No  
 Color: No Margin Shift: Opt  
 Copy Control: 20 Neg/Pos: No  
 Covers: No OHP Interleaving: No  
 Editing: No Photo Mode: Yes  
 Energy-Save: Yes Poster Mode: No  
 Erase: Opt Preset R/E: 4R,5E  
 Image Insert: No Program Ahead: No  
 Image Overlay: No Sheet Insertion: No  
 Image Repeat: No Stamping: No  
 Image Rotate: Opt Timer: No  
 Interrupt: Yes 2-in-1: Opt  
 Job Build: No XY Zoom: No  
 Job Programs: No Zoom Range: 25 to 400 (1%)\*  
 Other Features:  
 \*25% to 400% from the platen glass—50% to 200% through the SDF

**GENERAL SPECIFICATIONS/PAPER HANDLING**

First-Copy Time: 7.2 sec  
 Multicopy (Ltr/Lgl/Ldgr): 16/10/9 cpm  
 Warm-Up Time: 45 sec  
 Std Paper Source(s): Single drawer  
 Std Paper Capacity: 250 sheets  
 Paper Weights: 15 to 24 lbs  
 Bypass/Paper Weights: 100-sheet/15 to 54 lbs  
 Max Paper Sources/Capacity: 4/850 sheets  
 Max Original Size: 11 x 17  
 Min/Max Output Size: 5-1/2 x 8-1/2/11 x 17  
 Scan/Copy Resolution: 600 x 600 dpi/600 x 600 dpi  
 Std/Max Copier Memory: 16 MB/288 MB  
 Duplex: Manual  
 Capacity/Paper Sizes: Not applicable  
 Document Feeder: Opt SDF  
 Speed/Capacity: 16 opm/40 orig  
 Paper Weights: 15 to 24 lbs  
 Sorter (Bins/Capacity): None  
 Stapler Sorter: None  
 Bins/Stapling Capacity: Not applicable  
 Stapling Positions: Not applicable  
 Finisher: None  
 Tray/Stapling/Position(s): Not applicable  
 Other: Optional paper-feed options (one or two 250-sheet drawers); scan once, print many

**ADDITIONAL INFORMATION**

Dimensions (H x W x D): 18-33/64" x 23-15/64" x 21-15/32"  
 Weight: 70 lbs  
 Power Requirements: 120 V, 12 A  
 Dedicated Outlet: Not required  
 Energy Star-Compliant: Yes  
 Operating Noise Level: 40 dB

**CONTROL PANEL**

Keypad  
 Quantity Selector: 1 to 99 (0 to 9 keypad)  
 Message Display: No  
 Help Key: No

**COMMENTS**

Function upgrade kit adds electronic sorting, 2-in-1/4-in-1 modes, margin shift and edge and center erase copying features

**OPTIONS**

SDF: \$495  
 250-sheet PF unit: \$450  
 500-sheet PF unit: \$800  
 256 DIMM memory upgrade: Priced by dealer  
 High cabinet w/door: \$137  
 Low cabinet (no door): \$128  
 High cabinet (no door): \$113

**MAINTENANCE**

Fuser Rollers: Two  
 Yield: 150,000/150,000  
 Cleaning Blades: Info not avail  
 Yield: Info not avail  
 Other: Info not avail  
 Yield: Info not avail  
 Fuser Oil: Not required  
 PM Schedule: 50,000

**SUPPLIES**

Photoconductor: Organic drum  
 Yield: 50,000  
 Price: Priced by dealer  
 Toner: Ctrdg weight not avail  
 Yield: 16,000  
 % Coverage: 6%  
 Price: Priced by dealer  
 Developer: Weight not avail  
 Yield: 50,000  
 Price: Priced by dealer

Info not avail = Info not provided by MFR. Specs were obtained from manufacturer/distributor and not confirmed by BLI testing. (FAD IMAGE #12720)

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**MULTIFUNCTION MODES**

<i>Copier:</i>	Std	<i>Fax:</i>	No
<i>Internet Fax:</i>	No	<i>Network Fax:</i>	No
<i>Network Printer:</i>	Opt	<i>PC Fax:</i>	No
<i>Printer:</i>	Std	<i>Scanner:</i>	Std

**CONNECTIVITY SPECIFICATIONS**

<i>Operating System Support:</i>	Win 9.x, NT 4.0, 2000, Me, XP
<i>Parallel Interface:</i>	Std
<i>PC Fax/Print/Scan:</i>	No/Yes/Yes
<i>Serial Interface:</i>	None
<i>PC Fax/Print/Scan:</i>	Not applicable
<i>USB Interface:</i>	Std
<i>PC Fax/Print/Scan:</i>	No/Yes/Yes
<i>Network Interface:</i>	Opt Ethernet
<i>Interface Type:</i>	10/100BaseT
<i>LAN Fax/Print/Scan:</i>	No/Yes/Yes
<i>Networks Supported:</i>	
<i>NetWare:</i>	No
<i>Windows NT:</i>	No
<i>AppleTalk:</i>	No
<i>UNIX:</i>	No
<i>AS/400:</i>	No
<i>Other:</i>	None

**FACSIMILE SPECIFICATIONS**

<i>Scanner Technology:</i>	Not applicable		
<i>Compression Method:</i>	Not applicable		
<i>Modem Speed:</i>	Not applicable		
<i>Max TX Resolution:</i>	Not applicable		
<i>Gray Scale/Halftones:</i>	Not applicable		
<i>Std/Max Fax Memory:</i>	Not applicable		
<i>Min/Max Orig Size (W x L):</i>	Not applicable		
<i>Max Paper/Print Width:</i>	Not applicable		
<i>Effective Scanning Width:</i>	Not applicable		
<i>Correct-Order Output:</i>	Not applicable		
<i>Batch Files:</i>	NA	<i>Polling:</i>	NA
<i>Battery Backup:</i>	NA	<i>Relay Request:</i>	NA
<i>Confid TX/RX:</i>	NA	<i>Smoothing:</i>	NA
<i>Dual Lines:</i>	NA	<i>Timers:</i>	NA
<i>Multi Access:</i>	NA	<i>Transfer Hub:</i>	NA

**Dialing Capabilities**

<i>Broadcasting (Groups/Dest):</i>	Not applicable		
<i>Redial (Attempts/Intervals):</i>	Not applicable		
<i>One Touch:</i>	Not applicable	<i>Speed Dial:</i>	Not applicable
<i>Other:</i>			

**CONNECTIVITY/MF OPTIONS**

*Function upgrade kit:* \$395  
*AR-NB2N network expansion kit:* \$750  
*PostScript 3 kit for AR-NB2N:* \$395  
*AR-PS3100 external print server:* \$199

**INTERNET FAX SPECIFICATIONS**

<i>TX/RX:</i>	Not applicable
<i>Fax-To-E-Mail:</i>	Not applicable

**PC/NETWORK FAX SPECIFICATIONS**

<i>Connection Type:</i>	Not applicable
<i>Type:</i>	Not applicable
<i>TX/RX:</i>	Not applicable

**PRINTER SPECIFICATIONS**

<i>Engine Mfr/Model:</i>	Sharp/AR-M160
<i>Compatibility:</i>	IBM PC
<i>Speed:</i>	10 ppm**
<i>Max Print Area:</i>	11 x 17
<i>Enhanced Resolution:</i>	Not applicable
<i>Unenhanced Resolution:</i>	600 x 600 dpi
<i>Std/Max Printer Memory:</i>	Shared
<i>Controller Mfr/Model:</i>	Sharp/AR-NB2N***
<i>Processor/Bits/MHz:</i>	TX4927 RISC/Info not avail/200
<i>PDL/PCL:</i>	PCL 5e/6, opt PostScript 3
<i>Controller Mfr/Model:</i>	Not applicable
<i>Processor/Bits/MHz:</i>	Not applicable
<i>PDL/PCL:</i>	Not applicable
<i>Controller Mfr/Model:</i>	Not applicable
<i>Processor/Bits/MHz:</i>	Not applicable
<i>PDL/PCL:</i>	Not applicable
<i>Other:</i>	**Function upgrade kit adds 16-MB memory, plus a USB 2.0 port, JBIG enhanced printing that increases print speed to 16 ppm, rip once print many, 2-in-1/4-in-1, fit to page & centering; ***AR-NB2N std/max memory, 64 MB/320 MB

**SCANNER AND IMAGE MANAGEMENT SPECIFICATIONS**

<i>Connection Type:</i>	USB
<i>Technology/Speed:</i>	CCD/3.7 spp
<i>Max Resolution:</i>	600 x 1200 dpi
<i>TWAIN/ISIS Compatible:</i>	Yes****
<i>Scan/Image Software:</i>	Std Sharpdesk
<i>OCR Software:</i>	Std Sharpdesk
<i>File Mgmt Software:</i>	Std Document Mgmt software
<i>Scan-To-E-Mail:</i>	No
<i>Other:</i>	Full-color ledger-size scanning; ****WIA scanning compliant when using Windows XP

**COMMENTS**

Windows GDI printer with network capability; network expansion kit provides PCL 6 network printing and network scanning; opt external print server

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 (FAD IMAGE #12720)

# CERTIFICATE OF RELIABILITY

AWARDED TO  
**SHARP ELECTRONICS CORPORATION**

For the performance of the  
**Sharp AR-M160 IMAGER**  
throughout BLI's in-house durability test.

This is to certify that when subjected to a 30,000-impression  
Buyers Lab durability test,  
the Sharp AR-M160 IMAGER proved to be a highly reliable product.

  
ANTHONY F. POLIFRONE  
MANAGING DIRECTOR



*April 2004*

DATE

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