

# BERTL®

Highly Recommended



## LabCheck®

### Panasonic WORKiO DP-3010



#### PROS

- Standard Windows/GDI printing via USB 1.1 or 10/100BaseT Ethernet connection.
- Low cost upgrade for scan to email.
- Optional LDAP integration.
- Standard duplex.
- Well designed printer driver.
- User friendly copier control panel.
- 12 scan-ahead next job copy memories (if optional hard drive is installed).
- Feature rich document management utility with standard package.

#### CONS

- Finishing options limited only to single-position, 30-sheet stapler finisher.
- High entry level price.
- Some photographs printed with a washed-out look in print mode (this did not happen in copy mode).
- Slow duplex copying.
- No scan ahead copy memory without the purchase of the optional hard drive.

**Copy - Print - Scan - Fax - Internet Fax**

#### Product Overview

The Panasonic WORKiO DP-3010 starts as a copier/network (Windows GDI) printer which comes standard with 32MB of dedicated copier memory. The device prints at up to 30ppm, with resolution up to 600 x 600dpi using GDI printing. Duplexing is standard.

Upgrade options allow users to add PCL/PostScript 3 printing, fax, internet fax and scan to email functions. Network scanning is supported via two optional upgrade bundles; the first is a scan to file bundle which allows user to scan files directly to PC/ network locations. The second provides scan to I-Fax and scan to email capability, with standard LDAP integration. Both scanning options can be added to the device to provide extensive network scanning capability.

The device comes with a 50-page automatic document feeder and can handle documents up to ledger/A3 size.

[www.BERTL.com](http://www.BERTL.com)

tel. 732-761-2311  
fax. 732-761-2312  
info@BERTL.com

Copyright © 2003 Business Equipment Research and Test Laboratory Ltd. 27-Jun-03  
All Rights Reserved. The license under which this document is made available and applicable law prohibit any reproduction or further transmission of any portion of this document. This document may only be viewed electronically through the BERTL.com website and may not be stored in electronic or hard copy format. Any reproduction of trademarks is strictly prohibited. BERTL accepts no responsibility for any inaccuracies or omissions contained in this document.

## Product Dynamics

Unlike a number of competitors in its market niche, the Panasonic WORKiO DP-3010 offers a lot of standard functionality, even before upgrades are added.

Out of the box, the Panasonic WORKiO DP-3010 offers 30ppm network printing (using a Windows GDI printing system), a 50-page inverting automatic document feeder as well as a glass copy platen (so users can scan bound or odd-sized documents), standard 10/100BaseT network and USB 1.1 connectivity, standard duplexing, included Panasonic Document Management System software, an easy to use graphical user interface (GUI), ledger/A3 capability and a generous standard paper supply of 1,150 sheets.

The device's capabilities can be upgraded to include PCL/PostScript 3 printing, network scanning, fax, I-Fax and scan to email.

Panasonic advertises warmup time of under 35 seconds and first-copy speed under 4.5 seconds.

Users content with the included GDI Windows Printing System will find the Panasonic WORKiO DP-3010 an especially good value for the money, considering that Ethernet connectivity (as well as USB 1.1 connection) is also included within the entry-level price.

Panasonic's Document Management System (DMS) ships as standard with the Panasonic WORKiO DP-3010. This is a useful tool which includes a legally shareable Acrobat PDF writer that everyone on the network can



use to produce Acrobat PDF documents from their PC desktops.

This is a valuable feature because, while Acrobat Reader is free to all users, the Acrobat program with Adobe PDFWriter and Distiller usually costs additional money per user. This means that the Panasonic WORKiO DP-3010 could provide a cost saving to businesses that want to produce Acrobat documents.



BERTL analyst  
testing Panasonic  
WORKiO DP-3010

Standard 50-sheet  
document feeder and  
glass copy platen give  
users maximum  
flexibility in the types  
of documents which  
can be copied or  
scanned.

## Product Dynamics



### The Control Panel:

The control panel is well laid-out, with dedicated buttons enabling Copy, Fax, Scan and Print functions via the device's large, easy to read graphical user interface (GUI) display. It is reasonably easy to learn and use overall, though inconsistent in that it is possible to cancel or delete a print job only if you have User Administrator access, but you can delete or cancel a copy job without Administrator access. We would have liked to see the ability to delete and cancel jobs consistent across both copy and print (ie, you either need a certain level of access to do this in both cases, or you do not).

### Maintenance:

Toner is contained in a cylindrical cartridge which slots into the front of the machine (see illustration at right). To change toner, users must first remove the waste toner storage bottle to be able to access the toner. This is inconvenient because first, users then have to figure out where to put the waste toner bottle during the toner change and second, it is possible to forget to replace the waste toner bottle after changing the cartridge.

The Panasonic WORKiO DP-3010 will not operate if the toner cartridge and waste bottle are not installed properly, but we still found this configuration to be more complex than we would have liked.

Toner cartridge yields are advertised at 15,000 pages (based on 6% coverage) and image drum life is advertised at 60,000 pages. Recommended maximum monthly volume is quoted by the manufacturer as 120,000 sheets. Panasonic's remote maintenance system includes a Check & Call feature, which can automatically report toner status and some mechanical problems to a remote technical diagnostic center, which can often diagnose problems and offer solutions by telephone.



Toner cartridge

Waste toner storage

Page Number 2

## Product Dynamics

### Paper Handling:

#### Input:

The Panasonic WORKiO DP-3010 comes standard with two adjustable universal-size paper drawers which each hold up to 550 sheets. With the 50-sheet bypass tray, total standard paper capacity is 1,150 sheets.

The drawers each have an adjustable marker which can be changed to display the kind of paper used inside. It is simple to change the paper guides in each tray; users pull out the paper guides and then press them back into a slot at the desired position. In contrast, some competing devices' universal drawers have sliding paper guides, which in our opinion better accommodates odd-sized or custom sizes of paper. This will not be a limitation in offices which routinely use standard sizes of pre-cut paper.

The Panasonic WORKiO DP-3010 can accommodate a maximum of four paper drawers, giving the machine a maximum paper input capacity of 2,250 sheets. This is relatively low compared to competing devices



Exposed image drum.

in this market niche. Paper up to ledger/A3 size can be used.

The device opens at the right side, giving users easy access to clear the paper path if necessary.

The image drum is exposed to light when the right side is opened up. This could affect its drum life because image drums are photosensitive and can lose potency if subjected to light for prolonged periods. Also, because of the image drum placement, it is possible that users could scratch the drum while clearing a paper jam. We would have liked to see the image drum positioned so it would not be exposed when the paper path is opened up.

### Output:

Paper is output into a bin in the center of the device. An optional internal job divider tray can sort output into two different stacks. The device's "Sort In Memory" function outputs fully collated documents into the bin.

### Connectivity:

Standard connection is via USB 1.1 or 10/100BaseT Ethernet.



## Product Dynamics

### If You Need More:

A 40GB hard drive is available as an optional upgrade. This requires an additional 16MB of upgraded sort memory to install, and is necessary to enable functions including:

1. **Next Job Copy Memories:** Adding the hard drive allows 12 copy memories.
2. **Tandem Copying:** Link two Panasonic WORKiO DP-3010s across the network to create a 70cpm dual engine system.
3. **Remote Copying:** Scan jobs on one unit and have them printed remotely on another copier across the network.
4. **Secure printing:** Send a job to print with a PIN code.
5. **Mailbox printing:** Save to a virtual mailbox on the hard drive.
6. **Printer spooling:** Store print jobs as they come off the network, and hold them until processed.

If any of these functions are necessary for your office, so is the hard drive upgrade.

A 30-page single-position stapler finisher is also offered as an optional upgrade. It features an extending flap which expands to accommodate oversized paper.

This is a fairly basic stapler finisher which does not offer center stapling, double stapling or a large capacity, and some competing products offer a wider range of finishing options. However, a plus is that users are not required to use the finisher (if it is installed) unless their documents require stapling.

This finisher can affect productivity speeds because the paper path is extended a bit when it is used (the paper path has to continue up and through the finisher, past the usual output area). This finisher's total paper capacity is 500 sheets.

Faxing from the Panasonic WORKiO DP-3010 can be enabled by adding the Super G3 Fax communication board, which offers JBIG data compression (the most efficient method of sending text mixed with graphics). Flash memory specifically for fax capability can also be added in either 4MB or 8MB memory cards and a telephone handset kit is available.

Two upgrade options enhance the device's scanning capabilities. The Internet Fax/Email Module adds the ability to scan to email via T.37 protocol, while the Network Scanner Module offers "push" network scanning ("push" sends the scanned documents directly to a specified destination, unlike "pull" which requires users to go to their PCs to manually pull the file over) and allows users to scan to desktop, FTP, Client or Server.

The PCL Printing Module adds PCL5e/6 printing to the GDI print that comes standard with the device, and a PCL and PostScript 3 module delivers both printer languages in one package.

Paper supplies can be increased by adding up to two additional paper trays, and sort memory can be added (for increased page sorting capacity) in increments of 16MB, 64MB and 128MB. Two optional exit trays (one inner and one outer) can also be added for sorting/storage of output. Three types of stands are also offered for flexible storage configurations. One of these is specifically designed to accommodate wheelchair users, making compliance with the Section 508 Disabled Person's Act easier.

Other upgrade options include accounting software (requires the hard disk and a minimum of 16MB upgraded memory), DD Server Software (for document management through a network server using Panasonic's Hyper Document DD code) and an Expansion F-ROM Board, which is needed if you add the PCL or PCL/PostScript print modules.

## Copy

The Panasonic WORKiO DP-3010 comes standard with a 50-page inverting automatic document feeder as well as a glass copy platen. This gives users the capability to copy virtually any type of document; you can feed cut sheet documents through the document feeder, and can copy odd-sized or bound documents using the glass platen.

The touch screen copy control panel on the Panasonic WORKiO DP-3010 is well laid out, with clear, easy to operate menus and options. Panasonic has redesigned the control panel, making operation easier and less confusing than it was on some previous WORKiO models.

A particularly useful feature found on the main screen is Proof Set mode. This allowed us to create a complex copy job, then print a proof copy prior to releasing the whole print run. The ability to print a single proof set can avoid costly errors when large, complex copy runs are programmed. It is also more time efficient than setting up the job to print once, then having to re-scan the whole job again when the job was checked.

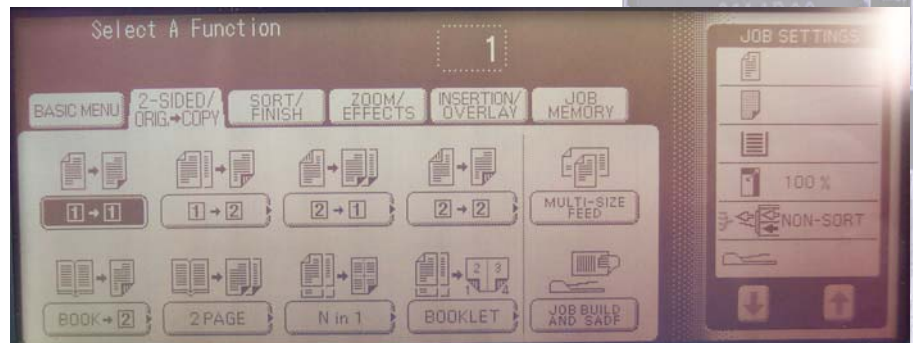
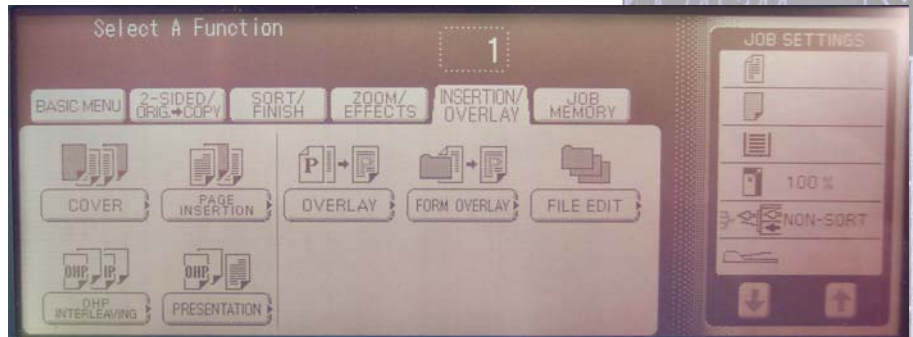
Jobs can be created from mixed originals and a multi-size feed control allows different sizes of papers to be mixed in a single document.

### Copier Productivity:

A series of office-style copy jobs were run through the device. BERTL's procedures are based upon "most likely usage" of the copier functionality. By this we mean that BERTL does not de-feature automatic functions, nor does it pre-set paper sources in order to optimize the speeds (i.e.: show the fastest speed achievable). We ran tests using both the finisher and the internal output tray and found a noticeable slowdown in productivity using the finisher (because of the longer paper path). Because most copies will probably be

routed to the output tray, those are the speeds we have shown here.

Panasonic WORKiO DP-3010 control panel



Copy Speeds - shown as copies per minute (cpm)	
Advertised Engine Speed	30 cpm
1 set of 5 single sided to single sided	20.13 cpm
5 sets of 5 single sided to single sided	29.29 cpm
1 set of 10 single sided to 5 double sided	16.40 cpm
1 set of 5 double sided to 10 single sided	16.90 cpm
1 set of 5 double sided to 5 double sided	15.22 cpm
5 sets of 5 double sided to 5 double sided	15.23 cpm
1 set of 20 double sided to 20 double sided	10.06 cpm
Average Copy Speed	17.60 cpm

## Scan

Panasonic includes a choice of two network scanning upgrades. One enables Scan to File (scan to PC and scan to FTP) and the other allows I-Fax (scan to internet fax, scan to email). These can be purchased separately from each other and run simultaneously. Panasonic also includes its Document Management Software (DMS) utility with the Scan to File bundle.

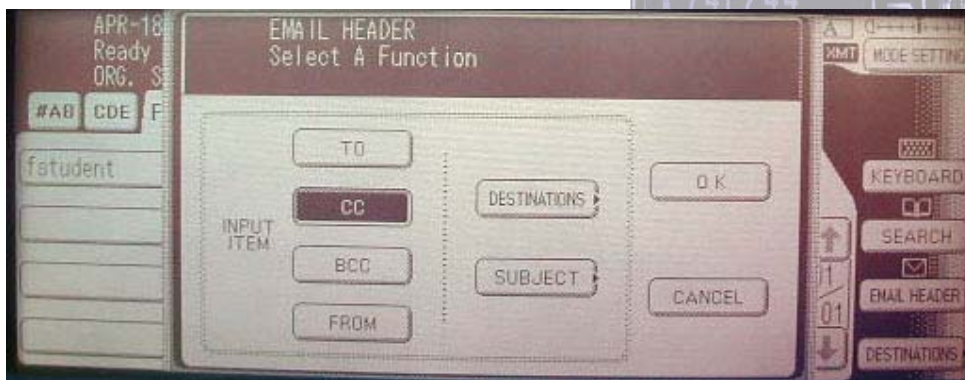
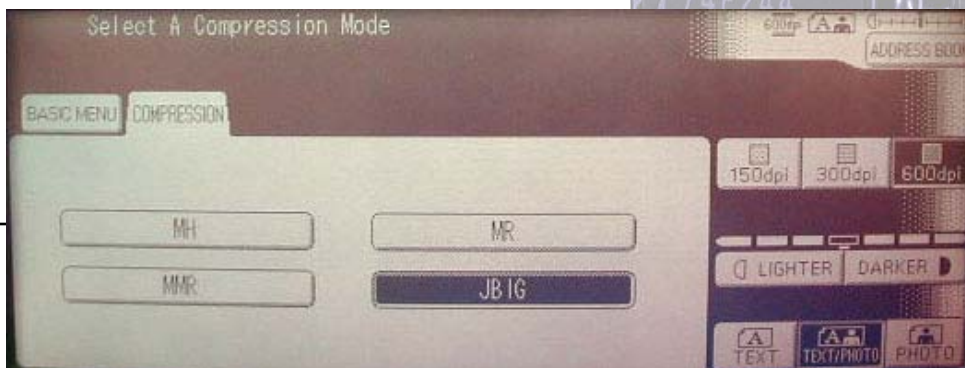
**I-fax / Scan to email:** Panasonic's scan to email function is one of the best we have tested to date. Some of the reasons we were impressed include:

**LDAP address book integration as standard.** LDAP (Lightweight Directory Access Protocol) enables the user to dynamically browse central electronic mail address lists, rather than having to rely upon addresses stored in the device.

**High level of email personalization.** The Panasonic WORKiO DP-3010 has a better system for identifying emails than many of its competitors. By combining input from the address book and/or keypad you can include To, CC, BC and give the email a personal subject line.

By typing your own email address where it says 'From,' you show the email's recipient who the email was from, and also provide the reply address to automatically respond to. This means that emails sent from the Panasonic WORKiO DP-3010 are less likely to be mistaken for virus or spam mail.

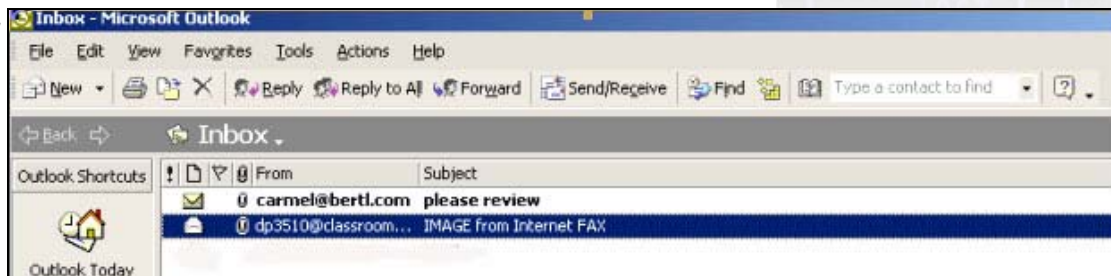
*Both the emails opposite were sent from the Panasonic WORKiO DP-3010. The highlighted file used the default message settings, while the top email included a sender address and a personalized subject line.*



Scan to email touch screen displays

Previous models in this product line could not scan as PDFs (they could scan files only as multipage TIFFs). However, this limitation has been fixed and the Panasonic WORKiO DP-3010 has the ability to scan documents directly to PDF files, which is the most widely-used file viewing protocol.

Panasonic's scan to email system uses industry standard T.37 protocol. Panasonic sells the benefit of this approach by stating that *"by using the T.37 fax protocol, Panasonic can actually send a document from one I-fax to another I-fax via the Internet, and/or send the same image via the PSTN using Super G3, and/or attach the image to any email address in the world. All of this is done seamlessly."*



## Scan

To set up the network scan to file utility we had to first set up the scanning destination (i.e. where we wanted the Panasonic WORKiO DP-3010 to send scanned files). We did this using Panasonic's Communications Utility. Having set up all the parameters, our scan template was sent to every scanner-enabled Panasonic WORKiO device on the network.

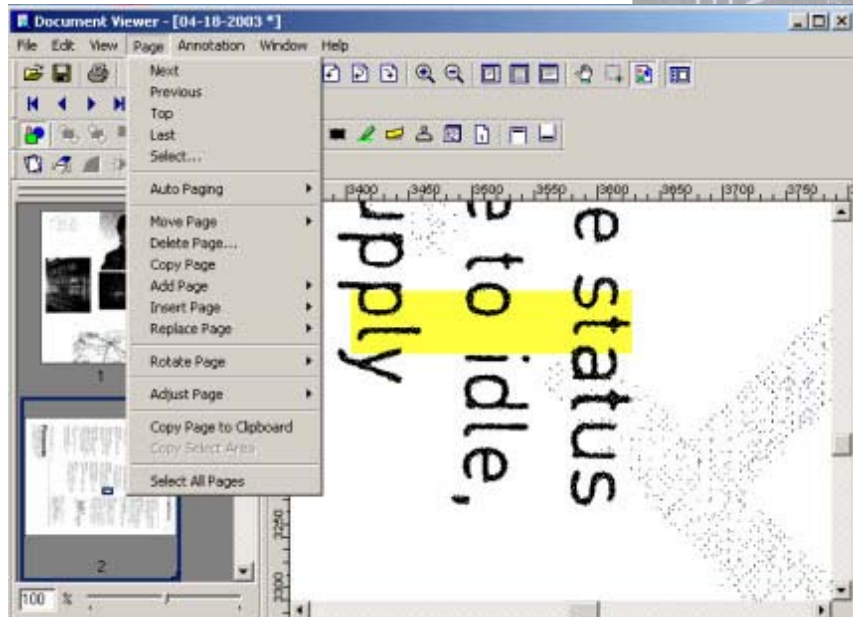
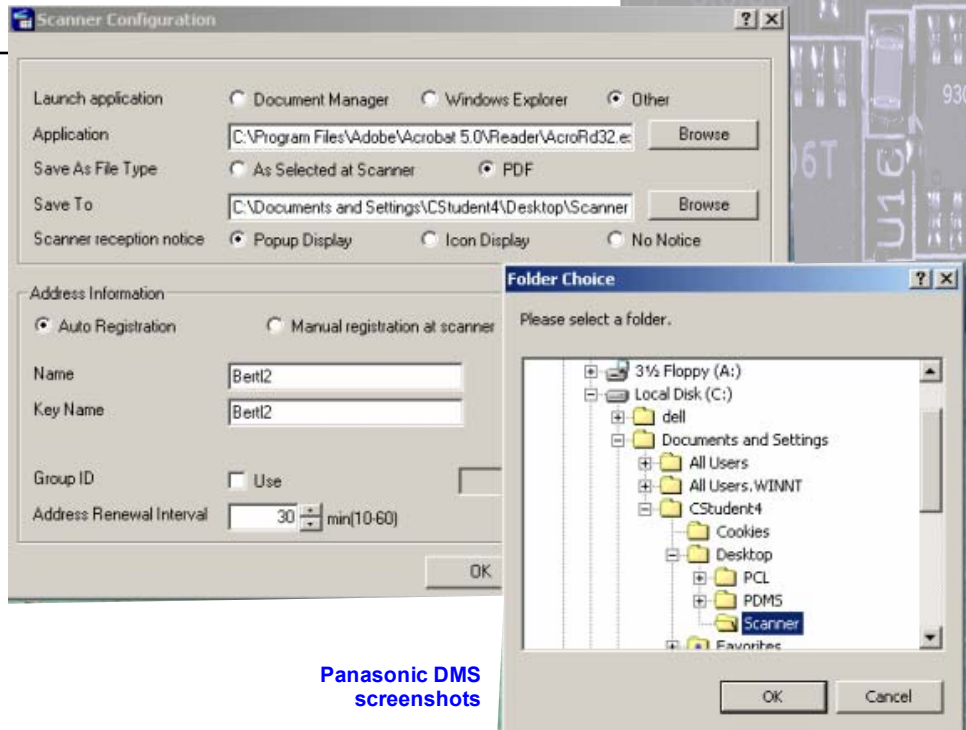
In default mode, the scan address is only accessible while the PC is switched on and the communication utility is running. As soon as we switched off our PC our scanning address disappeared from the Panasonic WORKiO DP-3010. However, the system can be manually set so that the address remains visible.

With this in mind, if an office is looking to use this as a centralized means of transferring documents, they might need to incorporate a central file server, allocating everyone a specific file storage facility. This means that PCs/ laptops can be switched off/removed from the office without removing the capability for sending files to the user's scanning depository.

Panasonic Document Management System (DMS), which comes as standard, provides a simple and functional method of managing scanned files, and other files on the desktop.

DMS allows users to manage multiple documents simultaneously, merge files, edit pages, add annotations and other useful functions. One of the most valuable features on Panasonic's DMS is the capability to create PDF files as one of the file save options.

We could send our document directly to different applications by dragging the document icon over an application icon. For example, having merged a PC-based Word document with a scanned file from the Panasonic WORKiO DP-3010 into a single document, we could then drag the file over the Outlook icon. This opened Outlook with our file set up as an attachment.



## Fax

The fax upgrade kit includes 33,600bps transmission, and comes with a standard 2MB of memory (which is advertised as being able to hold approximately 120 pages). The manufacturer quotes a transmission speed of about 3 seconds per page (letter size).

Additional memory (either 4MB or 8MB of Flash memory) can be added as an upgrade option.

The Panasonic WORKiO DP-3010 can dial your fax transmission number as soon as the first page has been scanned into memory.

### Resolution:

Five fax resolutions are available. **Standard** is approximately 200 x 100dpi; **Fine** is 200 x 200dpi; **Super Fine** transmits at either 200 x 400dpi or 400 x 400dpi, depending on the setting; and **600 dpi** transmits at just that: 600 x 600dpi.

### Image Size:

Faxes sized as high as ledger/A3 can be transmitted.

### Dual Line Capability:

There is no upgrade path to add a two-line fax option, which would allow the device to send and receive at the same time. This is a feature found on several competing devices.

### Fax and I-Fax Integration

A useful feature on the Panasonic WORKiO DP-3010 (when the device is fax and I-Fax enabled) is the ability to send hard copy documents to both traditional fax numbers and I-fax/email addresses in the same process.

This is a feature not available on most competing devices, forcing users of those devices to make a separate scan for fax destinations and email addresses. In contrast, the Panasonic WORKiO DP-3010 does both in one step.

### Paperless Faxing:

When configured with the I-Fax upgrade, the Panasonic WORKiO DP-3010 is also capable of 'paperless faxing,' or sending email attachments by routing received faxes directly into the designated recipient's email inbox. Similarly, documents can be sent from a PC via the LAN for transmission to a G3 fax machine.

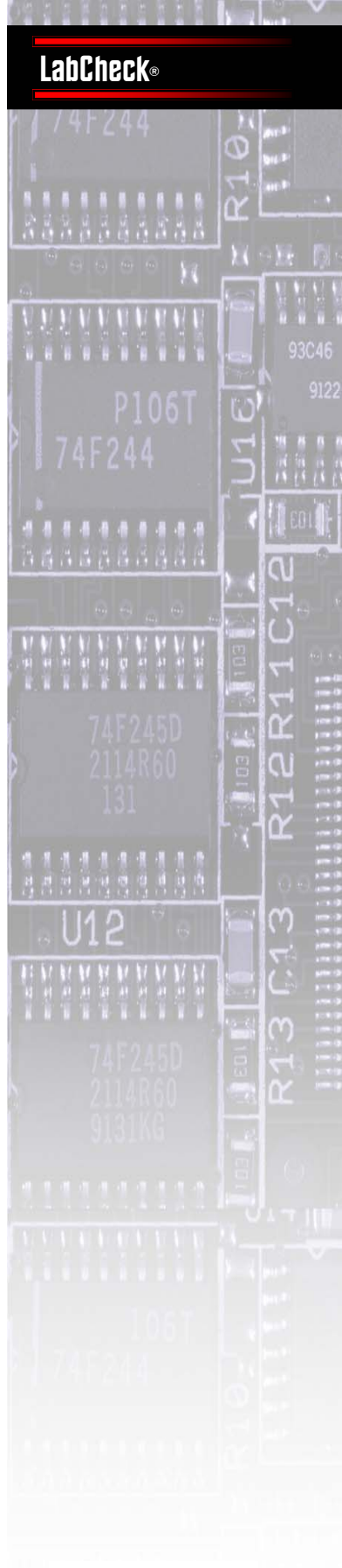
### Battery Back Up:

Faxes are saved to Flash memory. This type of memory is non-volatile, meaning it is independent of electrical power, so no additional battery backup is required.

This is an advantage over a number of competing fax systems, which need battery backup to hold data in memory and therefore could lose data if a power outage lasts longer than their backup battery life.

### Compression standards:

The Panasonic WORKiO DP-3010 uses JBIG data compression. JBIG is the most efficient way to transmit graphics, or text mixed with graphics and sends graphic data approximately 30% faster than in other formats.



## Print

The Panasonic WORKiO DP-3010 comes standard with Windows/GDI printing, which runs via USB 1.1 cable or standard 10/100BaseT network connection. This can be upgraded to full PCL5e/6, and genuine Adobe PostScript 3 printing, via separate upgrade options.

PCL printing is powered by a 200MHz IBM PowerPC405p customized RISC based processor. While 200MHz may appear low in comparison to other processor specifications, Panasonic spokesmen told us that the IBM PowerPC405p chip was specially designed for Panasonic to handle multifunctional devices, and delivers more image processing power than the generalist PC chip architecture used on some competing units despite their having higher MHz statistics.

Standard RAM is a relatively low 20MB RAM, expandable to 148MB. Panasonic also offers a 40GB hard drive for spooling jobs coming off the network.

BERTL analysts connected to the Panasonic WORKiO DP-3010 via a direct 100BaseT TCP/IP connection in Windows XP. The Panasonic WORKiO DP-3010 tested was installed with the PCL upgrade kit. We used the PCL driver, which is the most likely print driver to be used by corporate offices.

We tested print productivity using two different output areas: the stapler finisher, and the internal output tray. Productivity was noticeably higher when we printed to the output tray, because using the finisher increased the path the paper had to travel and therefore slowed down productivity times (see table bottom right).

Depending on the type of jobs sent, finishing times differed. Sending 5 sets of the same documents added about 6 seconds on top of times to the internal tray. However, when sending a series of separate jobs in a

PCL6 Printer Productivity				
Print Job / Test	Duplex or Simplex	Time taken to complete job(s) in seconds	PPM	Bandwidth
35 page Word document	Simplex	80.0 seconds	24.41 ppm	443 KB
35 page Word document	Duplex	123.0 seconds	16.27 ppm	443 KB
5 sets of 6 page Word	Duplex	81.9 seconds	20.47 ppm	296 KB

continuous stream, the additional time was added to each job (see network load test, which is 9 separate documents). Ultimately, as a mid-value office printer, this was not considered a problem because it was still faster to offset the documents in the external finisher than to separate them manually from the central tray.

As the table (top right) illustrates, the Panasonic WORKiO DP-3010 performed reasonably well as a network printer, printing the simplex 35 page Word document at about 75% of its rated engine speed.

### Bandwidth:

The device created small files on standard word processing document and graphic-based work. Unlike some competing copier-printers, the Panasonic WORKiO DP-3010 operated as a true document printer. By this we mean that 100 copies of a 25-page print job generated a single print file containing one copy of the document and a command to print 10 times.

Finisher Vs. Internal Output Tray Productivity				
Print Job / Test	Output to Finisher	PPM (Finisher)	Output to Internal Tray	PPM (Internal Tray)
5 sets of 6 page Word Perfect	87.9 seconds	20.47 PPM	81.19 seconds	22.17 PPM
Netload Load Test *	190.03 seconds	10.10 PPM	139.0 seconds	13.81 PPM

**\*Net Load Test consists of 9 separate print jobs sent in rapid sequence to simulate network traffic.**

## Print

### Resolution:

Three different print resolutions can be selected: 300dpi draft mode, 600dpi standard mode, and 1200 interpolated dpi.

### Image Quality:

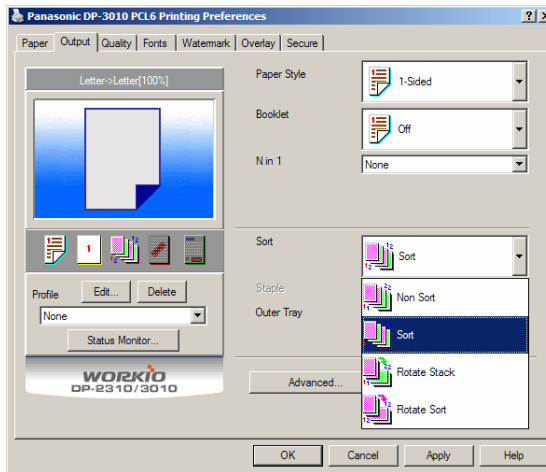
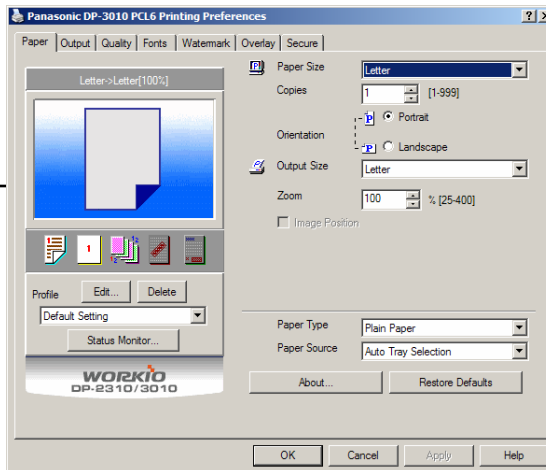
Overall image quality in our tests was reasonable. Using PCL6 as our print driver, we found that the Panasonic WORKiO DP-3010 reproduced text, bars and solid lines well, but some printed images appeared lighter than we would have liked, and photographs/graphics sometimes had a washed out look, and some banding showed up in solid areas of gray. We did not see these output problems when conducting our copy tests.

### The Printer Driver:

The GDI printer driver looks and feels nearly identical to the PCL driver, though it has a few less features (such as Overlay) than the two upgrade drivers. We particularly like the similarity across the company's printer drivers, because it decreases the learning curve among users who move from one driver or device to another. Because the drivers are so similar we can refer to all of them when we refer to the printer driver.

Overall the printer driver is well laid-out and easy to use. BERTL analysts were able to see all document production / finishing options easily. Two of the main printer driver screens are provided at right.

One of the printer driver's most impressive features is the built-in Status Monitor, which (when connected over the network) allows users to check that the device is ready, has paper, and can receive the print job before committing to print. This differs from most competing devices, which use a separate application or force users to browse over the network via a web browser.



With the optional hard drive installed extra printing functions became available, such as a mailbox, which allows users to view jobs stored in their own virtual electronic mailbox and release jobs into the print queue while at the copier; and a Secure Mailbox function that lets you send jobs to the optional copier hard drive, where they are held until you walk up, and enter a PIN and password at the copier control panel to print the job. This is useful for offices which print sensitive information.

### Summing Up:

The Panasonic WORKiO DP-3010 is a good all-purpose print/copy/scan solution. It offers good functionality, including network Windows GDI printing, out of the box. Additionally, its upgrade options offer buyers a reasonable multifunctional upgrade path including a good scan to I-fax solution.

Panasonic WORKiO DP-3010 printer driver screenshots