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IBM Infoprint 1532 Express 35 ppm Monochrome Network Printer



Key Buyer Benefits

Versatile workflow capabilities, powerful 35 ppm printing, and document management, all in a compact footprint.

Walk-up PDF printing capability directly from device front console interface using USB flash pocket drives.

Quick and easy installation of both hardware and software components.

Simple right-click direct PDF utility, saving users from having to open separate utilities or browsers.

Automated URL/file printing schedule utility allows commonly accessed web pages to be printed without user intervention.

Common interface design between PCL and PostScript drivers makes navigating between the two PDLs seamless.

User-friendly icon-driven walk through when user intervention/maintenance is required.

BERTL 5-Star Award Winner

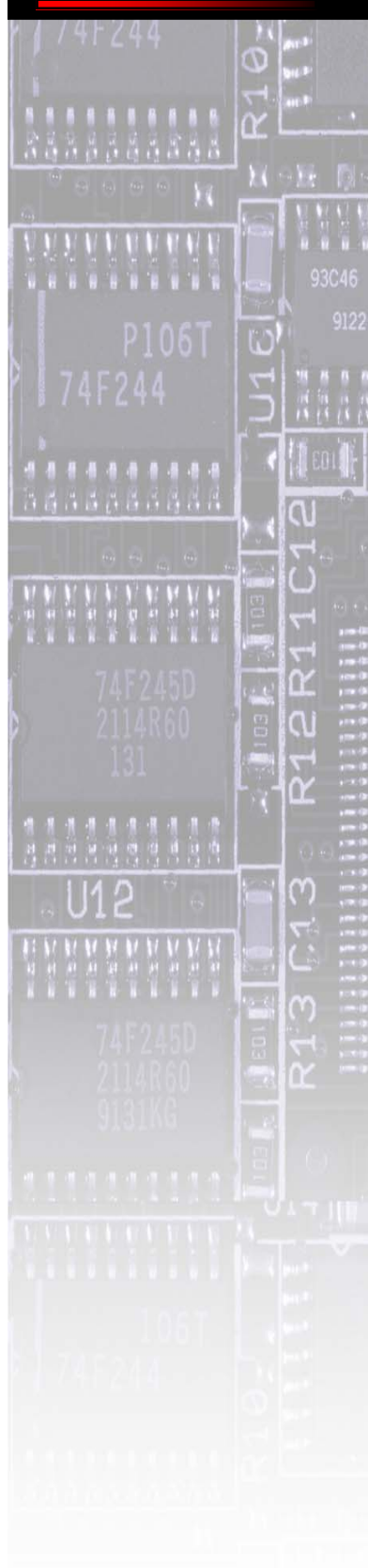
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Product Dynamics

Overview:

The user was clearly placed in the bull's eye when IBM sat down to redesign its popular Infoprint-series monochrome printer family.

A host of new innovative features have been added, and features already present have been modified to make them easier to use. The result is a device that delivers a very user-friendly walk-up experience, a selection of productivity enhancing tools, and greater automated capabilities for routine office tasks, further enhancing productivity and reducing opportunities for human error. For these reasons the IBM Infoprint 1532 Express has been elevated to the prestigious level of 5-star status by BERTL, an award only given to devices that set the bar higher than the competition, creating a new benchmark that others will aspire to match.

At 35 ppm, the IBM Infoprint 1532 Express is the entry-level product in the recently reworked Infoprint-series which goes up to 50ppm. The Infoprint-series are workgroup level printers that are an important part of IBM "print-less strategy."

Highpoints of the feature set are:

- 400 MHz processor, 64 MB RAM (expandable to 576 MB), and an optional hard drive.
- Graphic LCD provides walk-through of user maintenance tasks.
- 10-digit number pad makes secure printing easier than ever before
- Direct USB port interface at device for walk-up PDF (and other supported file format) printing from flash USB drives.
- ImageQuick comes as standard, providing pull printing from file and web/URL destinations.

- 3,850-sheet maximum input capacity
- Extensive networking, wireless, and fiber-optic security options.
- An optional 25-sheet stapler unit that can hold up to 40 stapled sets (500 sheets maximum).

Target Market:

The IBM Infoprint 1532 Express is a powerful workgroup printer specifically targeted to financial services, retail, healthcare, and government verticals, and will also be a good fit in most general office environments.

The simple GUI interface, along with its graphic help screens, gives this printer a low-learning curve — increasing worker productivity. Features like ImageQuick for direct printing of files from desktops and the slick USB interface for direct printing of PDF files at the console turns this printer into a high-throughput appliance.

The Infoprint 1532 comes in a base model and the "n" model which supports Ethernet networking.



Product Dynamics

Hardware Installation:

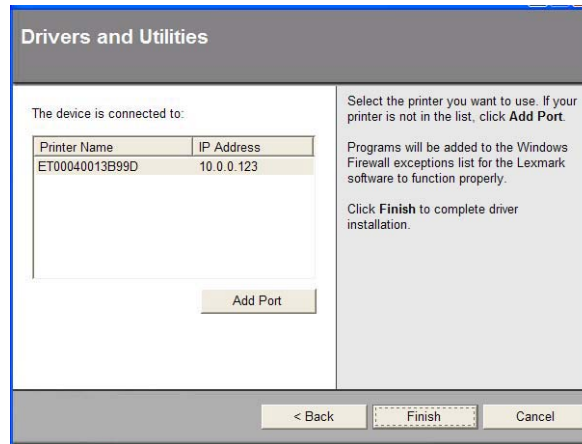
We found this departmental device easy to install and set-up. The entire hardware installation was completed in less than one hour. No special tools were required — allowing the procedure to be performed by non-technical support personnel.

Device Driver Installation:

The installation of the device driver onto a PC was equally simple and quick. The IBM installation CD wizard asks users or the administrator to follow simple instructions which guide them through the process.

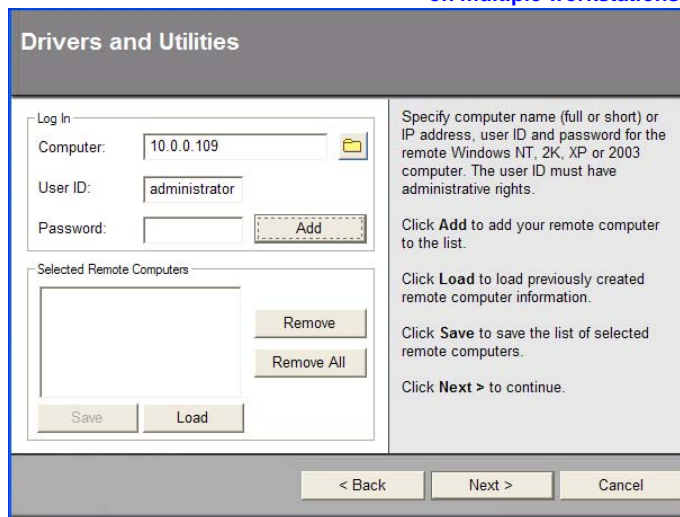
Administrators will like the ability to install the driver onto one or multiple remote PC desktop locations within a single installation process. To achieve this the administrator chooses remote installation and then either enters the specific network location, browses across the network to a location, or specifies a pre-defined list of PCs. For example, an administrator could set up a list of all the PCs in the second floor sales department. He/she could give that group access to the IBM Infoprint 1532 Express — a process that, with IBM's installation wizard, can be achieved in a matter of seconds.

The installation of the driver software added only a few minutes to our total set-up time.



The driver installation software for the IBM Infoprint series

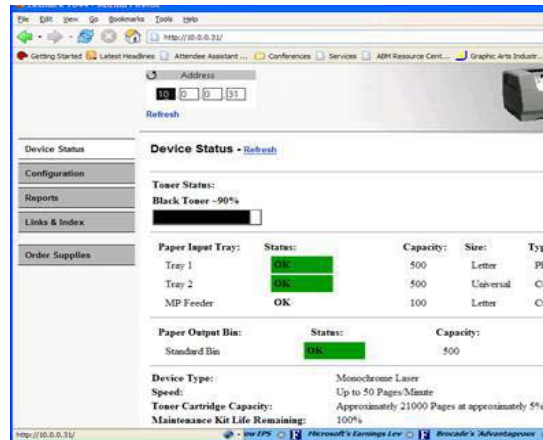
The IBM Infoprint series allows driver installation on multiple workstations.



Device Management

Remote management of the IBM Infoprint 1532 Express can be accomplished through the device's embedded Web Server. From their browsers, administrators can monitor resource levels (toner, paper, fuser), configure network and security settings, check print statistics, and establish email alert conditions.

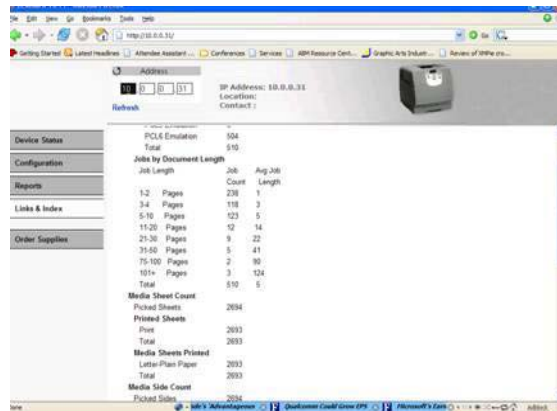
Two features that we would have like to have seen in its Web implementation are direct printing of files — the same formats available through the DragNPrint — and access to stored jobs on the hard drive. However, these minor deficiencies are more than made up by IBM's free comprehensive remote management software, called MarkVision Professional.



The home page for the IBM InfoPrint series displays the device's current status along with paper levels and toner status.

MarkVision Professional:

The IBM Infoprint 1532 Express comes with a powerful Windows-based management utility called MarkVision Professional. BERTL has always been impressed with the level of functionality, integration and desk-based management capabilities available to the end user (and the IT Manager) through MarkVision Professional.



Job length statistics can be viewed from the IBM

printers, mono printers within the sales department, etc.

Acting like a sophisticated NMS — e.g., Tivoli and HP OpenVue — MarkVision Professional lets administrators organize printers and MFP devices into logical categories based on MarkVision's internal SNMP-based fields. Using a folder metaphor, administrators can then quickly navigate to areas of interest. For each folder, they can choose filter criteria from a set of static fields (location, paper size, etc.) or dynamic ones tied to status or resource levels. Since sub-folders inherit the parent folder's filter settings, administrators can create a hierarchy of device groupings — e.g., printers, mono

Device Management

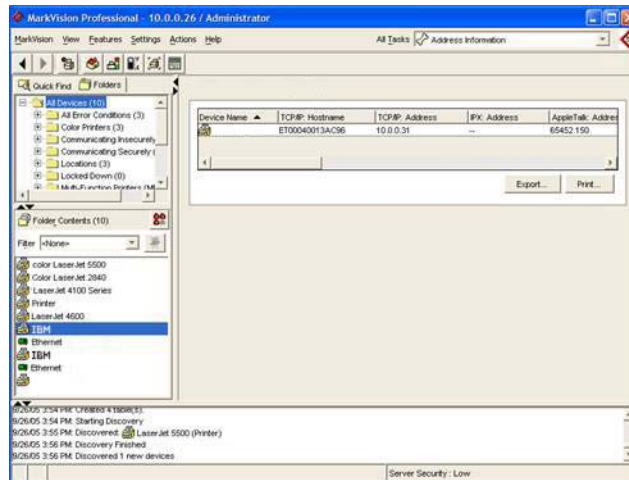
Overall, the software's features, settings, and action menus provide administrators with many ways to arrange and display device data. They can also create custom "views" to display built-in graphics and tables. And they can create new tables by selecting from MarkVision's list of device fields.

MarkVision Messenger:

MarkVision is designed as server-based software and supports a Web interface in addition to the Windows one. Roving administrators can therefore manage printers remotely.

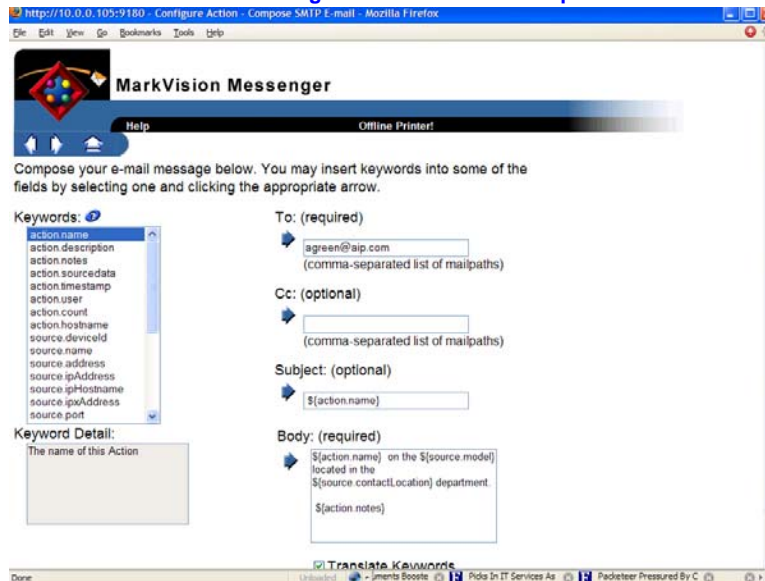
The Web interface includes MarkVision Messenger. This application allows administrators to build email alerts based on a large set of conditions — e.g., finisher, low supplies, and life waning. Messages can include macro fields allowing device specific information to be inserted into the message text.

For convenience, MarkVision Professional lets administrators tie alerts to individual folders containing a filtered set of devices. With a single click, alert conditions can be targeted to group devices, rather than forcing manual entry of IP address or host names.



With MarkVision, users can access preset views of the device's SNMP database.

Email messages can contain device specific information.



Paper Handling

Input:

The IBM Infoprint 1532 Express comes with a 250-sheet universal and a 100-sheet multipurpose tray. Additional paper drawers stack below the standard drawer. The paper input options break out to a 250-sheet duplex paper drawer and choices of either 500-sheet or 250-sheet universal drawers in the next three slots. At the base a 2,000-sheet high-capacity feeder brings the IBM Infoprint 1532 Express to its full complement of 3,850 sheets. The printer supports up to A4/legal. An optional envelope feeder holds 85 envelopes maximum.

The paper feeding mechanism on the IBM Infoprint 1532 Express is different to those offered in rival units. There are no corner gripper units that can catch sheets and result in paper jams, and the tray does not have a spring-loaded base. Instead a paper grip roller is lowered to the paper which is then pulled up into the paper path via the sloped front exit.

This sloped front exit also acts to prevent overfilling of paper trays. When a user

overfills a paper tray, any paper over the limit of the tray will be pushed out, reducing the chances of paper jams and downtime.



IBM Infoprint series with two 500-sheet trays.

Excess paper being pushed out after overfilling



Paper tray with sloped front and no paper gripping corners



Paper Handling

Output:

On the output side, the IBM Infoprint 1532 Express supports a high capacity output stacker (1,850-sheets), five-bin mailbox (120-sheets per bin), and an output expander (650-sheets). These additional paper handling options can all be added to the IBM Infoprint 1532 Express without increasing the device footprint, thus offering valuable additional benefits with no increase in space requirements.

Finisher:

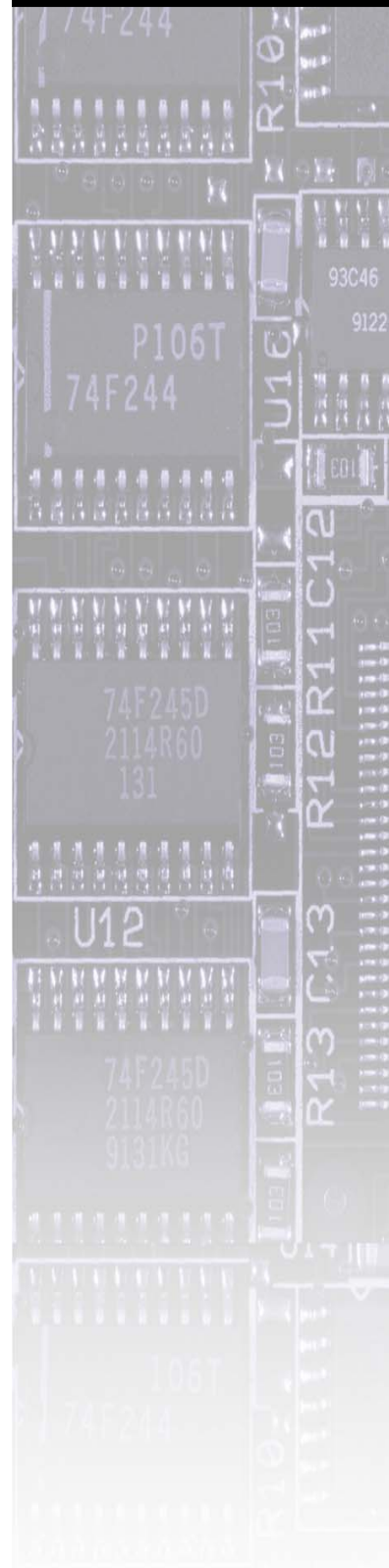
The optional StapleSmart Finisher offers stapling, offsetting, and an additional output bin. With the same "floating" tray system as the High Capacity Output Stacker. The StapleSmart Finisher can staple up to 25-sheets per set and can hold up to 40 stapled sets. However, the capacity is limited to a maximum of 750-sheets.

Duplexer:

The optional duplexer for the IBM is found on the rear of the model. We found this to be an inconvenient location, since the duplexer is a common site for paper jams. The duplex also sits outside the main housing, and increases the depth to 28.2" (716 mm).



The duplexer unit for the Infoprint series is positioned behind the device.



Maintenance

All the consumable components on the IBM Infoprint 1532 Express can be user-replaced without the need for sophisticated tools or a high level of technical ability.

To aid users with user intervention tasks such as paper jams and other events the new IBM interface now includes a larger LCD panel that supports icons.

This allows the device to prompt users on how to resolve issues with a series of walk-through screens actually showing the user images of the steps that need to be taken.

This is a great step up in terms of user-friendliness compared to the text driven prompts of the past.

In the images to the right the device is taking us through how to correct a paper jam.

End user routine maintenance is limited, like previous Infoprint-series products, essentially to the all-in-one cartridge which is loaded at the front of the device and can be carried out by non-technical personnel.

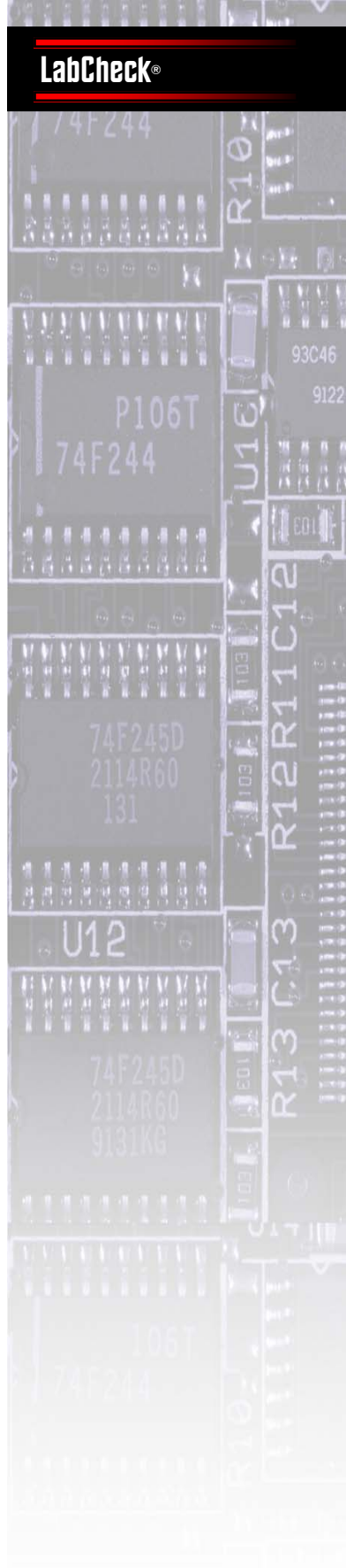


IBM's Infoprint series "show me" screen walks users through all paper jam errors.

High-res monochrome illustrations (below) pinpoint the problem.



Print cartridge — 6,000 page standard — is accessible from the front of the IBM Infoprint series.



Security

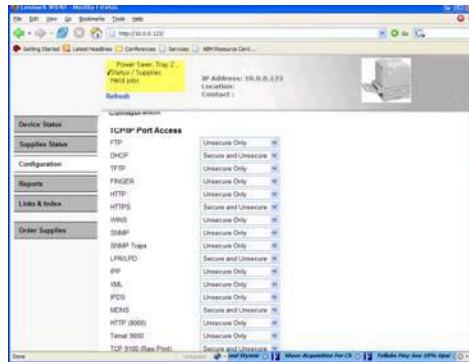
IPsec:

The networking options on the IBM Infoprint 1532 Express are extensive: fast Ethernet, Gigabit Ethernet, and 802.11G wireless. LAN and WAN security is accomplished through standard IPsec. IPsec is a framework for a set of protocols for security at the network layer of the TCP/IP protocol stack. IPsec supports both authentication and encryption. A major advantage of IPsec is that security arrangements can be implemented without requiring changes to existing user software. For example, with Windows XP and 2000, IPsec can be enabled through the Microsoft Management Console (MMC). Networking protocols like Telnet, FTP, HTTP, LPR, Discovery and others can then be secured transparently.

To enable security for the IBM Infoprint 1532 Express, administrators, using the Web interface, must first configure how the initial authentication of devices is performed. They can choose from pre-shared keys, digital certificates, or Kerberos authentication. In many LAN environments, the pre-shared key may be sufficient and is simpler to implement.

Administrators enter the same secret shared key on both the IBM Infoprint 1532 Express and on Windows by setting up an MMC policy.

After the devices authenticate each other they can then, depending on the policy configured, encrypt the data or print stream. The IBM Infoprint 1532 Express supports DES, 3DES, and AES. These standards must be included in

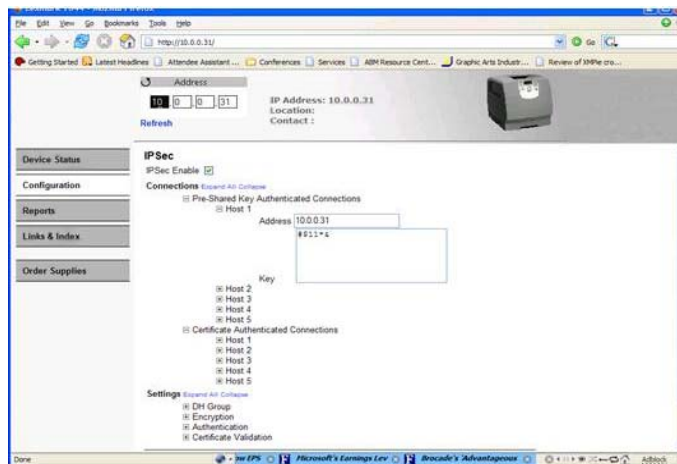


With IBM printers, IPsec can be enabled on a port basis.

the Windows encryption policy for a security negotiation to complete successfully.

With authentication and encryption configured, administrators then use the "TCP/IP Port Access" Web page, selecting which ports to enable security on. If desired, ports can be configured to accept both secure and non-secure communication.

The IBM supports certificates, pre-shared keys, and Kerberos authentication.



Security

IBM also offers a host of other security features to accommodate the need for keeping information safe.

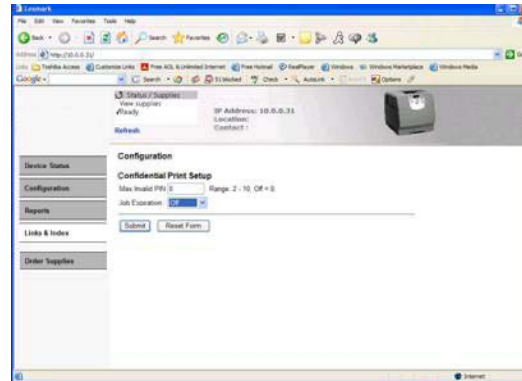
PIN Codes:

To safeguard the production and storage of documents, the new ten-digit button interface now allows users to enter four-digit PIN with values from 0-9, when on previous models it was limited to only digits 1-6 in combination. We were also pleased to find that the entry of the PIN is also now displayed as an asterisk upon entry. On previous drivers the PIN had been displayed as a number thus giving a potential thief the opportunity to watch from afar and observe the PIN displayed on the PC screen.

Document Lockout:

To further protect against forced code breaking attempts, the IBM Infoprint 1532 Express can be set up to lockout access to documents where incorrect PINs have been entered. Confidential jobs can also be set to delete after a period of time. This means that a user sending a confidential document and forgetting to release the job at a later stage will not have left confidential information on the device's hard drive permanently.

With Confidential Print, users can assign PINs to print jobs.

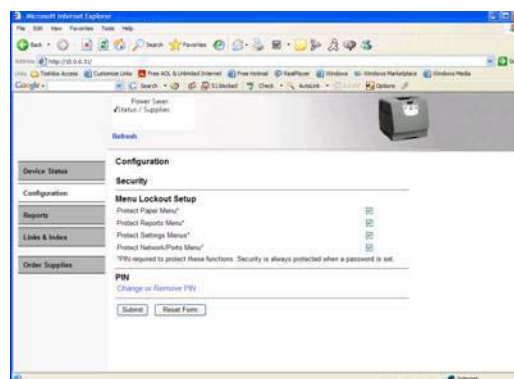


Administrators can set the maximum retry attempts for PIN entry.

Encrypted Data:

Data can also be stored in an encrypted format on the optional hard drive, rendering it useless if stolen. To secure transmission IBM, utilizes its own Decryption feature. To safeguard passwords as they are sent across the network the device utilizes IPsec protocol.

An additional level of security is available through a printer lockout PIN. Administrators can selectively prevent unauthorized users from printing network, system settings, reports, and paper menus (see below).



Direct Print

ImageQuick Drag'N'Print:

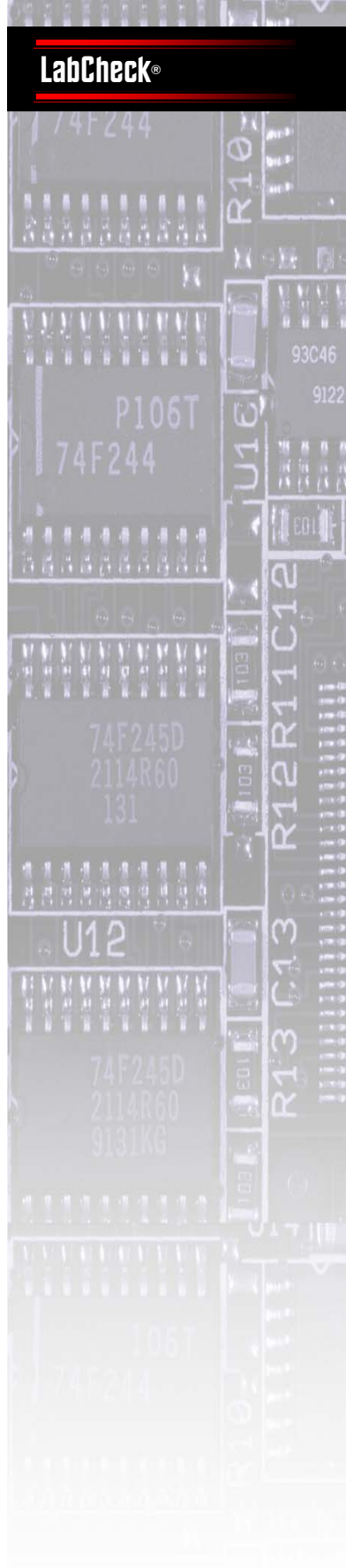
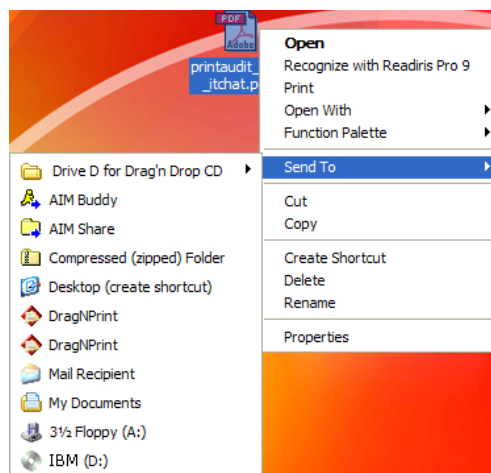
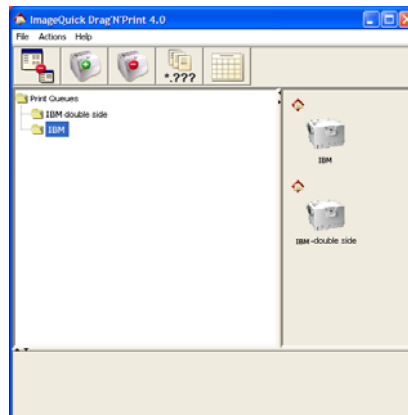
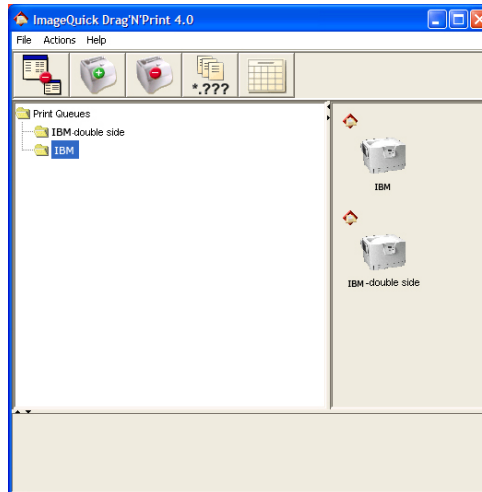
Drag'N'Print is a direct print utility that is provided with the driver CD as a standard feature for the IBM Infoprint 1532 Express.

IBM's direct printing will be a popular resource among users looking for fast reproduction of high bandwidth graphic files. The reason being that IBM's direct printing allows users to send PNG, PCX, DCX, PDF, JPEG, HTML, TIFF, GIF, BMP, and PS files directly to the print engine without launching an application or ripping the file into a PCL or PostScript file. The time alone required to open an application such as Photoshop can be longer than the time it takes to print the file.

Users are able to set up as many direct PDF queues as they require. This is a valuable feature allowing users to set up a direct print queue with the required document production features necessary for a specific job type. For example, a user could set up one job queue defaulted to duplex output on paper from tray one, while another queue could be set to incorporate an overlay of the company letterhead and print from the bypass tray.

We also liked the ability to be able to use the direct print facility without having to first open a browser or windows application. This step, which is found on many rival devices can swallow up much of the time advantage that the process is supposed to deliver.

Users of the IBM Infoprint 1532 Express have multiple ways in which they can route a job into a direct print queue. They can either drag a file on the desktop onto the ImageQuick icon or they can simply right click on the file and select the direct print queue from the 'Send To' options (as shown to the right.)



Direct Print

Automatic Print Scheduled Events:

Another valuable and unique feature on the IBM's ImageQuick utility is the ability to set up automatic print scheduled events.

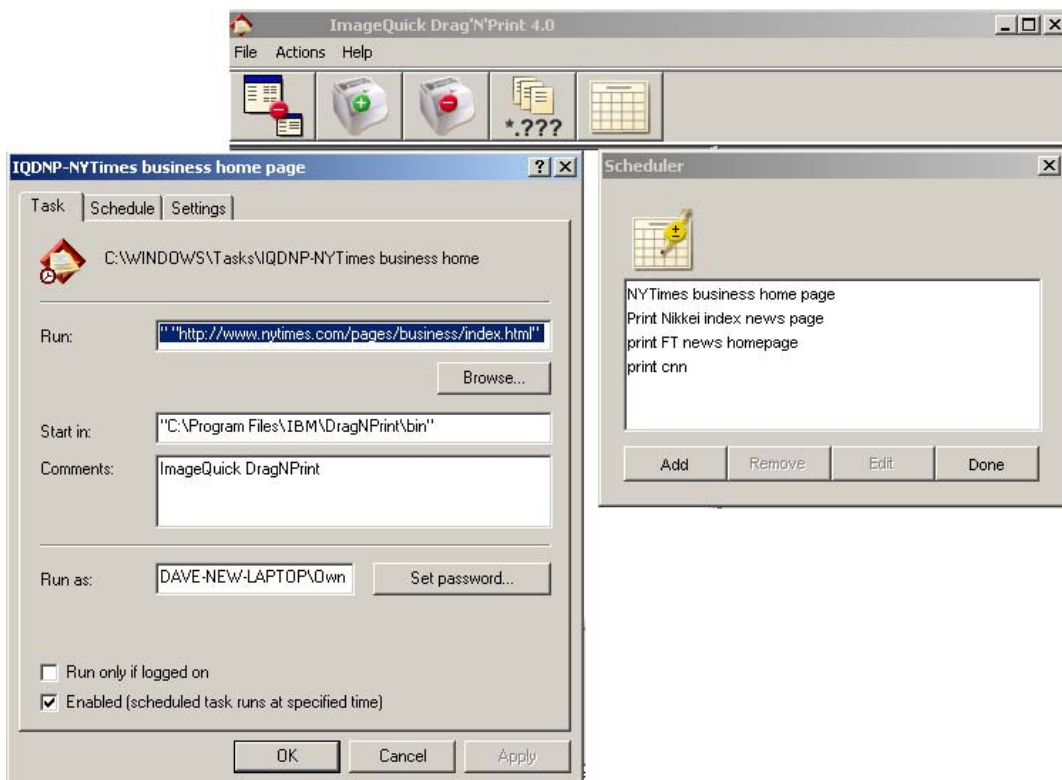
These can be files stored on a local device, networked device or even URLs pulled directly from the world wide web.

Scheduled events can be set up to go out on a one off basis or at regular intervals, to be set by the user.

The user simply sets up the location of the file, be it a network folder location or the URL address (if a web site address), the print parameters and saves the job as a scheduled task.

This function has a broad range of real-life applications. In the example below a stock broker in New York has set up a series of scheduled print events to ensure that when the brokers arrive in the morning that they have the main news page of the NY Times, CNN, Financial Times, and the Nikkei Index — all ready to scan before the days events get underway. In a business where time is money this can be invaluable.

In another example a retail head office could set up a specific URL with the flyer design for the day's promotions. Separate regional store can then set up a scheduled print, so that each morning the point of sale material and daily flyers are ready to be displayed and handed out immediately.



Direct Print

USB Flash Drive Support:

There is another way in which files can be submitted directly to the IBM Infoprint 1532 Express without the need for a printer driver, or indeed without the need of a desktop PC.

We were very pleased to see that, after years of asking, a manufacturer has finally included a USB flash drive reader on the device console. For years manufacturers have been boasting about their ability to handle raw PDF data. However, it is only now that a user is finally able to walk up to a device with a USB flash drive (an IT gadget that has moved away from being a geek must-have to being a standard piece of equipment for the IT literate) and print a PDF directly from the device.

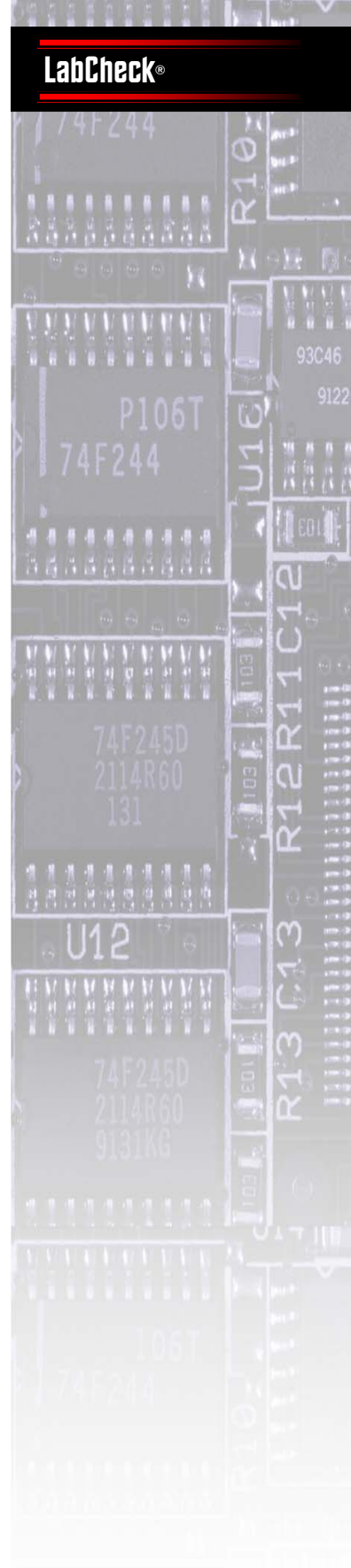
This function has a great number of potential real-world benefits. The most obvious being in the service print industry, namely business centers in hotels, airports, conference centers, internet cafes and high street print for pay businesses. In these instances traveling business people will frequently have laptops and USB pocket flash drives. If they receive a contract or order form via email and need to get the file printed they have only to transfer the file to the USB card, pack away the laptop and walk down to the hotel business center or airport lounge and print the file.

To use this novel feature we simply had to insert the USB flash drive into the socket on the front console panel. We were then able to browse through the folder tree of the drive until we reached the PDF file we wanted to print.



Console users can direct print PDF files from their USB flash drives.

At this point users can only select the number of sets they require. We would have liked to have the ability to choose features such as duplex or finishing options (if available) allowing for even greater document flexibility.



Print on Demand

Both drivers include a range of job delivery options. In addition to sending a job to print, we could also choose between:

Verify Print:

Prints the first copy of a multiple-copy print job, then holds remaining copies until you either continue printing the job or delete the job using the printer's operator panel.

Reserve Print:

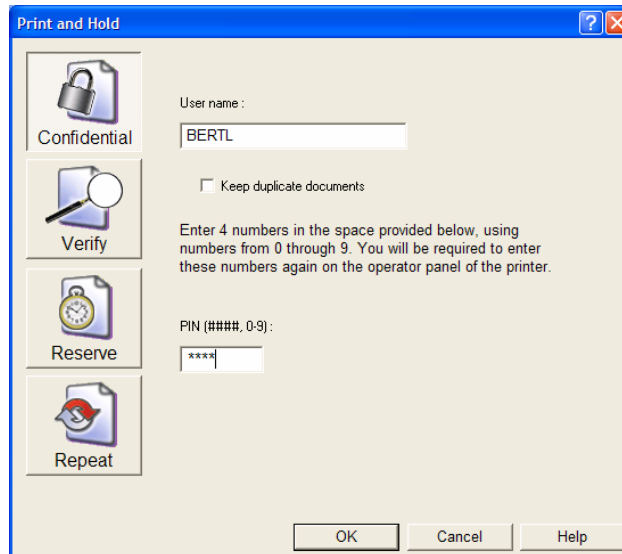
Stores a print job on the printer for printing at a later time, i.e. Print on Demand functionality. To find stored jobs, we had to scroll through the job menu to our username, then scroll to the job we wanted to reprint.

Repeat Print:

Does the same as reserve print but produces a printed set of the job at the same time.

Confidential Print:

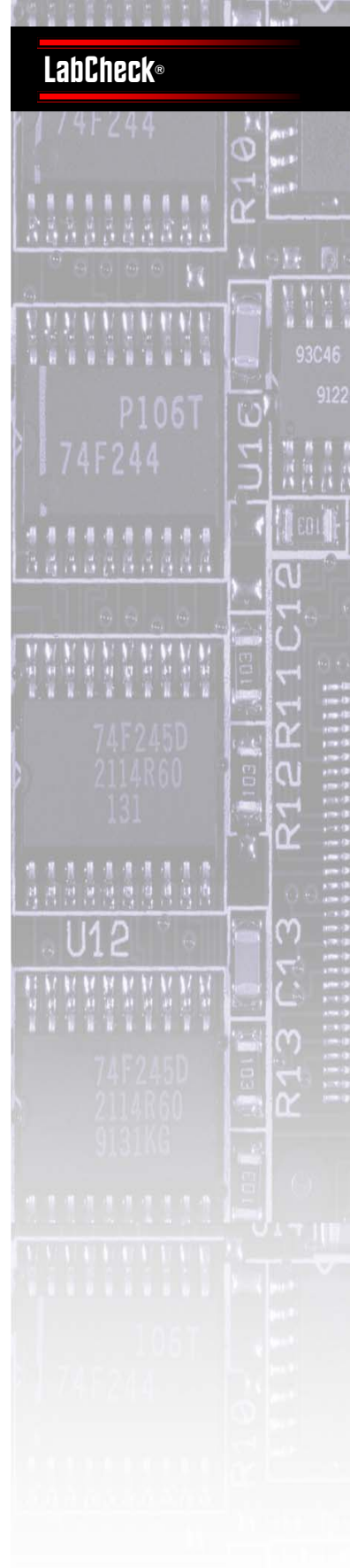
Sends print jobs to the device with a secure PIN. Users must first scroll to their username, then enter the PIN number using the keys on the printer operator panel. We were pleased to see that the PIN is now displayed as asterisks when entered by the user. In the past, the PIN had been displayed as the actual numbers on screen allowing a potential thief to oversee the data entry code. The 10-digit number panel is a great new feature on the device, providing users with a fast method of entering PIN details. Before, IBM users were restricted to 6 digit codes.



Users assign a PIN to their confidential jobs within the driver.



To release a confidential job saved on the IBM Infoprint series, users enter the 4-digit PIN assigned at the driver.



Print

Printer Driver Functionality:

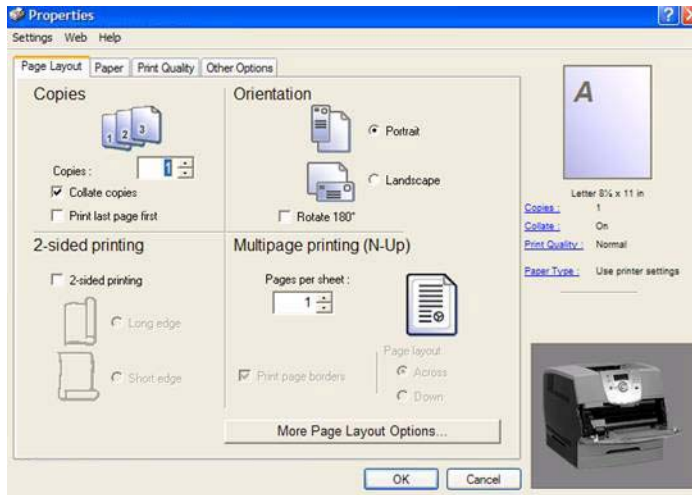
IBM Infoprint 1532 Express shares the same PCL driver interface as the new color Infoprint Color 1567, the wide-format Infoprint 1585, and the rest of the Infoprint-series. So enterprise users will feel right at home when they first open up and print to this workgroup device.

As with these other IBM devices, the drivers are split out into four tabs: Page Layout, Paper, Print Quality and Other Options. The tabs clearly define which printing features they cover, so no time is wasted browsing from tab to tab.

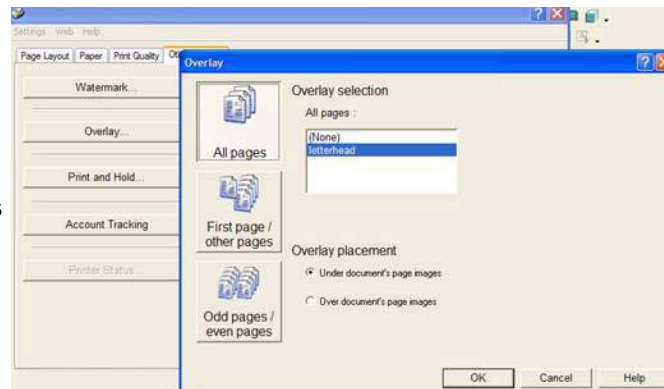
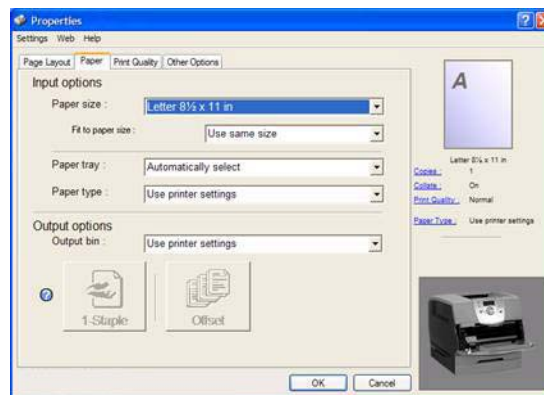
Within paper mode there is the option to specify the paper source for the document. However, there is no ability to select a different paper source for the front or back cover, a feature we would like to have seen in this departmental printer — for example, using pre-printed header stock or heavy card stock for cover pages in manuals, brochures, presentations, etc. (right).

Stapling, and offset are also selected from here (if installed.) Users can select the staple position when they click on the “More Finishing Options” button.

The driver also supports overlays and watermark backgrounds (right).



The IBM Infoprint series's driver interface is the same as the rest of the Infoprint series.



Print

Image Quality:

The image quality achieved from the IBM Infoprint series was to an acceptable level across a wide range of typical business applications.

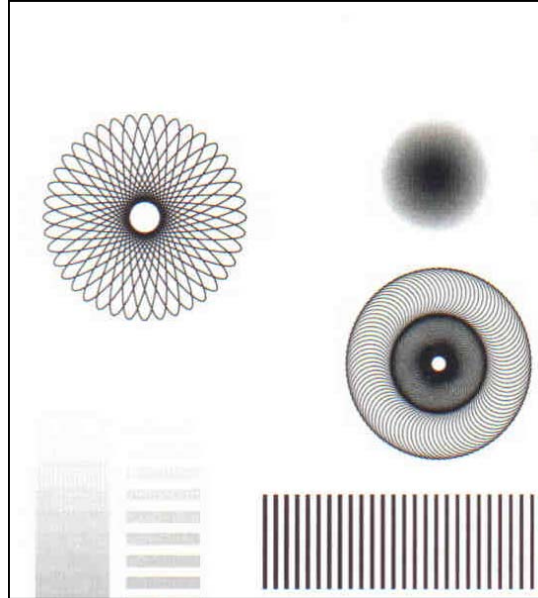
Fonts were legible down to 4 points and fine lines were accurately reproduced.

While not glaringly obvious, the image quality on graphics was not as good as the output we have seen on some rival devices in this sector. Grayscales and halftones had a slightly granular appearance, similar to the coarse screening seen on newspaper print. There was some banding on some graphic output and on the grayscale sliding test, but not the step down at certain intervals as we have seen on some competing devices.

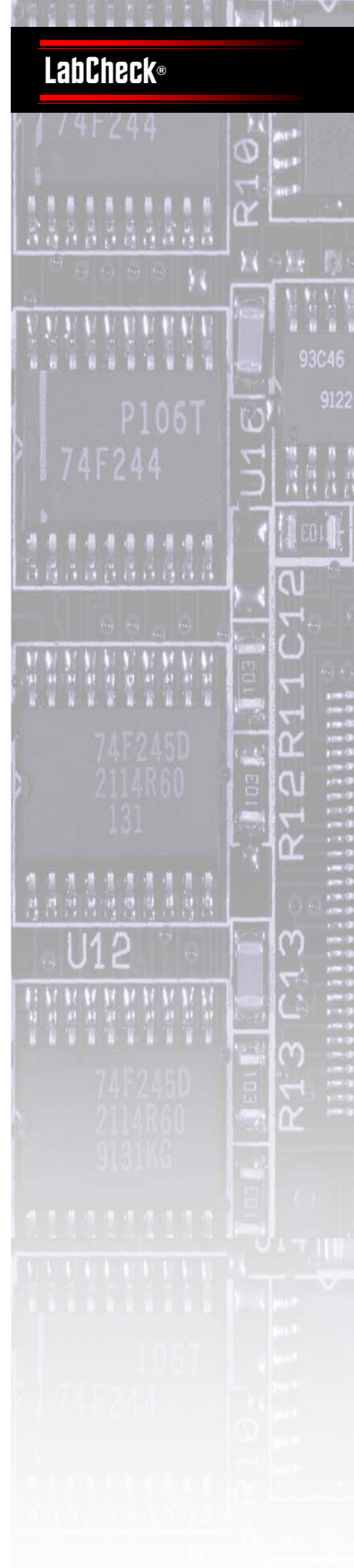
All being said, for typical office applications users will be more than satisfied with the output from the IBM Infoprint series, with only users carrying out more heavily graphically intensive work (who have yet to make the transition to color) having the potential for complaint.



High resolution digital camera image output on the IBM Infoprint series, scanned at 600dpi and reproduced at 100%



Test pattern reproduced on the IBM Infoprint series showing the slight banding on grayscale output.



Summing Up

The IBM Infoprint 1532 Express brings some new life to the workgroup printer monochrome market with an enviable number of unique features that put the device on its own in terms of user-friendliness and productivity in various real-world settings.

Productivity is much more than a simple case of click-to-clunk:

While some other devices may match the IBM Infoprint 1532 Express in theoretical print speed productivity when you take the simplistic equation of comparing click print to final output page, the overall productivity equation is another matter.

It is this overall user productivity equation that separates the IBM Infoprint 1532 Express from the pack, offering up a host of user productivity enhancements and workflow automation process that reduce the time a user has to spend getting to the point where the Print button can be clicked. After all, who waits by a printer as their pages come out — only the foolish or those fully intent on wasting time discussing last night's latest reality TV elimination drama.

While one device may be faster at printing a web page, the user must first open a browser, select the page and then hit print. Using ImageQuick this entire process can be set up with NO user time at all.

The installation and maintenance procedures are up to IBM's usual high standards, with MarkVision Professional. A wealth of security networking measures are also included as standard including IPv6, Kerberos and LDAP authentication plus IP/MAC filtering providing a professional means of managing one or multiple devices around the enterprise.

The direct print facility via ImageQuick and the USB interface on the device front panel provide a wealth of walk-up and automated printing abilities that are designed to make the job of printing business-critical tasks as streamlined as possible.

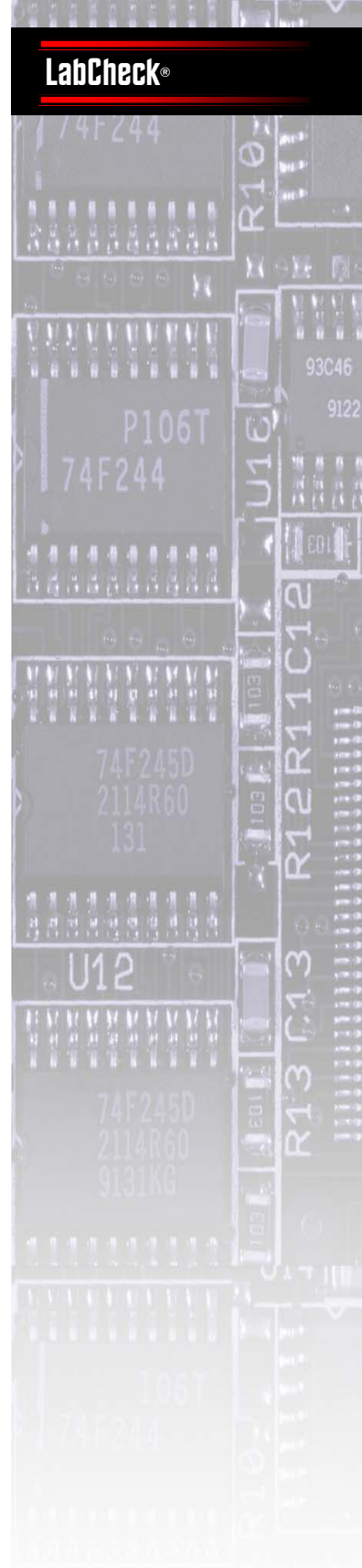
Image quality will satisfy most business users, but is an area we would like to see improved in the next generation as business documents continue to become more and more graphical in nature.

What We'd Like To See:

There are other areas we would like to see improved on the next generation product, including a more flexible user ID cost control system, allowing users to be allocated a set limit per month rather than the yes or no option currently available.

We would also like to see the USB direct print facility expanded to include the ability to choose finishing/document production options in addition to the quantity choice option — this would make the unique feature even more impressive.

As some manufacturers look to keep pushing the price of network printers down and down, IBM seems to be placing more emphasis on overall value for money taking the user time into account. When you consider the rising cost of salaries and the ever greater burden of responsibility placed on achieving greater workflow efficiency, we think IBM has taken the right approach. We look forward to seeing what innovation gets implemented on the next series.



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