Burroughs
Payment Systems

SmartSource® Series Capabilities Overview

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Contents

Section 1
Introducing SmartSource

From the company that defined the benchmark for distributed capture, Burroughs Payment Systems now offers the most advanced series of remote capture devices in the industry: Burroughs SmartSource® Series. Its unique network connectivity and choice of features meet a wide range of business needs. SmartSource devices are the ideal solution for front- and back-counter processing as well as retail, commercial, remittance, and remote deposit capture environments.

Professional, Professional UV, Expert, and Adaptive

Based on the latest technology for distributed capture devices and over five decades of company experience, SmartSource devices have a compact and ergonomic design with full-featured document processing and "state-of-the art" image processing and security capabilities. A SmartSource Open Professional device is shown in Figure 1–1.

Figure 1–1. SmartSource Open Professional (Single-Pocket Model)

The SmartSource Series offers a choice of four devices to meet your unique document and image processing requirements:

- **SmartSource Professional** —offers document and image processing capabilities in a PC-based application environment. SmartSource Professional devices include a document auto-feeder and can process items at throughput rates from 30 to 120 dpm. Available options include a document auto-feeder, OCR-A and OCR-B optical character recognition, front franker stamp, high-resolution ink jet endorser with text or graphics printing, one- or two-pocket document disposition, and color image capture.
- **SmartSource Professional UV** – offers additional front image capture capabilities on the SmartSource Professional unit allowing the front camera to image ultraviolet (UV) and infrared (IR) security features. Imaging options available to the application software include: an overlay of the UV and visible light image, as well as an inverted (negative) UV image mode.
- **SmartSource Expert** —offers document and image processing in a networked "thin client" application environment. SmartSource Expert devices have onboard intelligence for embedded computing to internally perform in real-time: Magnetic Ink Character Recognition (MICR), image processing, image compression, Optical Character Recognition (OCR) read, franking, and endorsement. Image quality decisions and image security, through application of a digital signature to images, are made at time of capture within the device, thus reducing network traffic and eliminating image security risks.

  SmartSource Expert devices include a document auto-feeder and can process items at throughput rates from 30 to 120 documents per minute (dpm). Available options include a front franker stamp, OCR-A and OCR-B optical character recognition, high-resolution ink jet endorser with text or graphics printing, one- or two-pocket document disposition, and color image capture.
- **SmartSource Adaptive** —offers all the document and image processing capabilities of the SmartSource Professional. With the added capability of processing full-page documents, SmartSource Adaptive devices can process an intermixed collection of document sizes (checks and full page items). SmartSource Adaptive devices can process checks at a throughput rate of 70 dpm and full page items at a throughput rate of 30 dpm. SmartSource Adaptive devices' standard hardware configuration includes an auto-feeder, MICR reader, front and rear image capture, a high-resolution ink jet endorser, and a single pocket. Available options include OCR-A and OCR-B optical character recognition, and a front franker stamp.

The new SmartSource Open Professional and SmartSource Open Expert platforms now include an auto-retracting feeder flag to improve document loading ergonomics, improved ink cartridge insertion/extraction, as well as a reduction in operator maintenance and consumables.

Innovative Image Capture

The SmartSource Series offers innovative, early capture of front images to enable pocketing decisions based on OCR read or an image quality defect. Rear images are captured after endorsement—all in a single pass—to maximize processing efficiency. Front and rear image capture at 300 dots per inch (dpi) provides outstanding image quality. All SmartSource devices support capture of black and white or grayscale image renditions to satisfy requirements of any processing environment. In addition, the SmartSource Professional and Expert devices support capture of color image renditions. SmartSource Professional UV devices provide support for capturing UV and IR image renditions of the front of the document, as well as the standard front and rear visible light image renditions available on the SmartSource Professional.

Distributed Processing

The SmartSource Series offers convenient, full-featured, desk-top devices which are ideally suited for distributed, image-based processing in a variety of operational environments. Associated benefits are as follows:

- In a branch truncation environment, necessary document information is captured as early as possible, for example, in a branch office, for electronic forwarding.
- In a remote deposit capture environment, deposit transaction images are captured and forwarded to a financial institution for image-based clearing with these advantages:
  - Final processing is completed much sooner in a business day, or a bank can accept items later during the day while still accomplishing same-day clearing.
  - Image-based clearing reduces transportation expenses.
  - Images are available to create an automatic deposit archive for subsequent research.

Flexible Application Environments

Burroughs middleware for the SmartSource Series provides the machine-to-application interface for machine control and data processing. The ever-popular Burroughs Common API (CAPI) system software is available for all SmartSource devices. Modified Burroughs DLL implementations provide for SmartSource Expert devices to operate in existing Source NDP environments.

Burroughs now offers these applications and drivers:

- The Common API System Software for Linux operating systems for the SmartSource Professional and Adaptive remote capture devices.
- The Ranger® System Software for the SmartSource Professional and Adaptive remote capture devices. Ranger System Software is a common check scanner interface that enables you to use a variety of document processors without changing your application.

- A TWAIN driver for the SmartSource Professional and Adaptive remote capture devices. TWAIN is a standard software protocol and applications programming interface (API) that regulates communication between software applications and remote capture devices. This driver enables TWAIN-based applications to control SmartSource Professional and Adaptive scanners using the Silver Bullet Ranger System Software.

Burroughs SOA Vision provides an application interface for device control through Burroughs Device Suite, which is a web services interface for operation with any computing and operating system environment. In an SOA Vision environment, devices can be networked to run under a centralized application with centralized device management.

Support for SmartSource devices in existing environments is provided by

- Burroughs DLLs to run SmartSource Expert or Source NDP units with various applications
- Burroughs Middleware API emulation to run SmartSource Professional with specific third-party applications

For more information about SOA Vision, refer to the *SOA Vision Device Suite and Perfect Image Capabilities Overview* (4326 8861).

Product Ordering

SmartSource products are orderable through a Burroughs Payment Systems sales representative, a variety of Burroughs partners, or online at the Burroughs Store (www.burroughsstore.com). SmartSource devices can be upgraded after purchase through software entitlement. Refer to “Upgrades” in Section 4.

Section 2
Standard Features and Options

SmartSource Professional, Professional UV, Expert, and Adaptive devices share many of the standard features and options that are described in this section. Refer to Section 3 for a description of additional features for SmartSource Expert devices. Section 4 describes upgrade options. Also, refer to Section 4 for a description of operating environments and platforms. Appendix D describes features of SOA Vision Device Suite for applying a digital signature for image security and detecting quality defects during item processing.

Overview

SmartSource **Professional, Professional UV** and **Expert** devices offer feature-rich document processing at throughput speeds of 30, 55, 80, or 120 dpm (based on six-inch documents) depending on style and can be upgraded to any offered throughput. With a hopper and pocket capacity of as many as 100 documents and a two-pocket option (standard for SmartSource Expert), these devices are ideal for teller or back counter item capture, remittance processing, and reject out-sorting. Processing features and options are as follows:

- Auto-retractable document feeder flag, for improved document loading in a teller front-counter operating environment. Available on the SmartSource Open Professional, Open Professional UV and Open Expert devices.
- Automatic feeding of single documents in batches or unlimited feeding as the operator refills the hopper during processing
- Feeder double document detection to identify overlapping items
- Auto-sensing feeder or “Smart-clear” button to control flow of items along with an automatic track clearing function initiated from Smart-clear button
- MICR read with auto-detect of E13B and CMC7, MICR/OCR combined read for improved MICR performance, and optional inline optical character recognition of OCR-A and OCR-B — all supporting run-time pocketing decisions
- Front and rear image capture at 300 dpi for improved image quality with early capture of front images to support pocketing decisions based on image data (for example, image quality suspect items) without interrupting item flow
- Multiple image renditions per item. For the SmartSource Professional and Expert devices there is a 300-dpi color option. For the Professional UV device, UV, IR and visible light image renditions are available separately, as well as a 300-dpi pseudo-color combination.
- Optional one- to four-line, height-adjustable rear endorsement. Endorsement is programmatically controlled based on MICR and/or OCR read, and there is support for graphical endorsement, True Type fonts, and various foreign fonts
- Extended life “ink pad”, used during rear endorsement printing operations. The extended life ink pad significantly reduces the need for operator maintenance and lowers ongoing consumables cost.

- Optional front franker stamp to show the item has been electronically processed
- One- or two-pocket document disposition configuration available

SmartSource devices have an open track design for access to items in the track. Covers are removable for easy, operator access to consumables.

The SmartSource **Adaptive** has many of the same common platform features as other SmartSource series devices and offers these features:

- Processing throughput as high as 70 dpm for six-inch documents
- Processing throughput as high as 30 dpm for full-page documents
- Automatic feeding of single documents in batches of as many as 30 documents; feeder has double document detection to identify overlapping items
- Auto-sensing feeder or Smart-clear button to control the flow of items, along with an automatic track clearing function initiated from the Smart-clear button
- MICR, MICR/OCR combined read, and optional OCR-A and OCR-B read
- Front and rear image capture with multiple image renditions
- Optional one- to four-line rear endorsement along with support for graphical endorsement, True Type fonts, and various foreign fonts
- Single pocket with up to 30-document capacity
- Optional front franker stamp to show the item has been electronically processed
- Ergonomic design with automatic restart, an open track, and removable covers

Figure 2–1 shows a SmartSource Adaptive device.

Figure 2–1. SmartSource Adaptive

Platform Features

The hardware platform for the SmartSource Professional, Professional UV, Expert, and Adaptive is based on a common set of features and options packaged in a stylish unit with a small footprint and U-shaped track. Based on the style ordered, devices are entitled for certain configurable options (for example, throughput), and come with or without "add-on" hardware options (for example, a franking stamp). Unique design features of SmartSource series devices ensure efficient processing. Factors affecting throughput are described later in this section.

All SmartSource series devices are designed for installation by a client without field service assistance. Refer to Appendix B for hardware specifications.

Operator Interface

Three LED indicators for status are standard across all series. Devices are equipped with a power switch and a combination manual feeder/Smart-clear button.

Feeder and Hopper

SmartSource Professional, Professional UV and Expert devices have a hopper that holds as many as 100 documents (24 lb. paper). These devices offer three options for document feeding. Documents can be hand-fed one at a time, in batches, or in unlimited number as the operator refills the hopper during processing for continuous feeding.

The feeder supports three modes of operation:

- Manual start/stop - A Smart-clear button controls document feeding when operating in the manual start/stop mode.
- Application start/stop - When operating in the application start/stop mode, the document processing application is responsible for starting and stopping document feeding.
- Auto-sense - When operating in auto-sense mode, the feeder automatically starts after documents are placed into the document hopper.

On the SmartSource Open Professional, Open Professional UV and Open Expert devices, an auto-retracting document feeder flag is designed to enable single-handed operation when loading documents into the hopper. After documents are inserted into the hopper, the device automatically closes the feeder flag and initiates document feeding. After the last document in the batch is processed, the feeder automatically stops and the feeder flag opens so that the hopper is ready to accept the next batch of documents.

Advanced **double-document detection** using optical sensors controlled by system software is standard for SmartSource Expert, Professional, Professional UV and Adaptive devices. The track is stopped when a double-document is detected, and a yellow indicator is illuminated under application control to alert the operator. With devices in all series, the feeder self-adjusts to paper thickness, minimizes skew effects to better handle poorly prepared work, and supports feeding of ATM envelopes with somewhat reduced performance.

SmartSource Adaptive devices have a hopper that holds as many as 30 full-page documents (24 lb. paper). A document feeder flag is part of the hopper and includes a latching mechanism to enable single-handed operation when loading documents in the hopper. A feeder flag release button re-engages the feeder flag. The flag also facilitates reloading the hopper while documents are feeding. An empty hopper detector stops the feeder when no documents are available.

SmartSource devices process documents with damage from normal handling. Limited work preparation by the operator is necessary for optimal processing performance and includes aligning bottom and leading document edges and also removing staples, paper clips, rubber bands, loose correction strips or labels, adding machine tapes, and scrap paper. Crumpled or folded documents must be straightened or placed in a carrier envelope.

MICR Reader

The Magnetic Ink Character Recognition (MICR) reader senses the magnetic content in the character code line and delivers the information to the system software for recognition processing. The reader automatically detects if the MICR format on a document is E13B or CMC7 so that no operator or application intervention is required. Both of these formats are read using the same MICR reader. Recognizing a mix of E13B and CMC7 characters in a single MICR code line is not supported. MICR reader options include “fewest mis-reads” or “fewest can’t reads” modes. A combined MICR/OCR read function for all SmartSource series devices provides exceptional read rates with a slightly lower maximum throughput.

Optical Character Recognition (OCR)

E13B recognition from an image is a standard implementation across all SmartSource series devices. Optical recognition of the following fonts is optional:

- OCR-A numeric and alphanumeric
- OCR-B numeric and alphanumeric

Two scan bands, each 1.27 cm (0.50 inch) in height, are supported with a maximum of 96 characters per band. The position of the bands is configurable and controlled by the application. With combined MICR/OCR read, only one additional scan band is available.

The SmartSource Professional UV can enhance OCR performance by using IR illumination to drop out dye based inks.

Standard Imaging

A front, 300-dpi image scanner based on contact image sensor (CIS) technology captures front images of documents after passing the MICR reader. The early capture of front images allows for pocketing decisions based on image data without interrupting item flow. A rear, 300-dpi image scanner is positioned after the endorser to capture a "complete data" rendition of the rear of documents. SmartSource devices offer these strategic imaging features:

- High-resolution (300-dpi spatial resolution) front and rear document image capture
- Grayscale image capture mode with 256 gray levels
- Image pre-processing
  - Image normalization, framing, and transposition
  - Image down-scaling (240, 200, 120, and 100 dpi)
  - Adaptive black and white image thresholding
  - Image "spot noise" removal for black and white images
  - Gray-level image contrast enhancement
  - JPEG image quality level selection
- Six available image renditions
  - 200- or 240-dpi black and white, CCITT compressed
  - 200 or 240-dpi grayscale, JPEG compressed
  - 100- or 120-dpi grayscale, JPEG compressed
- As many as two black and white and four grayscale images per document combined to produce a maximum of three front and two rear images
- Image processing
  - Electronic image de-skewing with CAPI, Device Suite, or Ranger
  - Image quality flags (IQFs) following X9.37 or X9.100-180 standards and image security using a digitally encrypted signature with Device Pro
  - IQFs for SmartSource Expert running Burroughs Common API
  - IQFs for SmartSource Professional and Adaptive running Burroughs Common API or Middleware API emulation can be achieved utilizing additional Image Quality libraries.

SmartSource Professional and Expert devices offer these strategic imaging features:

- 10.67 cm (4.20 in.) vertical field of view (maximum document height imaged)
- 300-dpi color image rendition available, 24 bits per pixel (RGB), uncompressed
- As many as two color images (one front and one rear) per document

SmartSource Adaptive devices offer these strategic imaging features:

- 21.59 cm (8.50 in.) vertical field of view (maximum document height imaged) capture
- 300-dpi page rendition available
- 300-dpi black and white, CCITT compressed (page only)
- 300-dpi grayscale (front only), JPEG compressed (page only)
- 150-dpi grayscale, JPEG compressed (page only)

Image renditions are passed to the subscribing application by means of a Tagged Image File Format (TIFF) 6.0 or a bitmap (BMP) image file format. CCITT and JPEG compressed images use the TIFF 6.0 format, while color image capture is provided using the BMP format. For additional information about imaging capabilities, refer to *Payment Systems Imaging, Image Quality, and Image Security Implementation and Administration Guide* (4326 8291).

Enhanced Imaging

The SmartSource Professional UV is designed with a special front image camera to capture UV, IR, and visible features on a check.

There are three (3) modes of operation available on the SmartSource Professional UV

1. **Overlay Mode** – provides an image of visible features with UV features overlaid.
2. **Enhanced Mode –** provides separate images of UV, IR and visible features to be captured.
3. **Color Mode** – creates a 24-bit pseudo-color bitmap of the document where the colors are: IR, Green, and UV, for the front image, and Red, Green, Blue (RGB) for the rear image.

Image renditions are passed to the subscribing application by means of a Tagged Image File Format (TIFF) 6.0 or a bitmap (BMP) image file format. CCITT and JPEG compressed images use the TIFF 6.0 format, while color image capture is provided using the BMP format. For additional information about imaging capabilities, refer to Payment Systems Imaging, Image Quality, and Image Security Implementation and Administration Guide (4326 8291).

Overlay Mode

Front illumination is with green and UV LEDs – this creates an image containing both the UV and visible features of the item.

Processing throughput is up to 120 dpm.

Front and rear "full-resolution" image capture modes are:

- 200 dpi front and rear
  or
- 240 dpi front and rear

Three (3) front image renditions are available. Up to three may be selected, with no more than one each of:

  - Full-resolution JPEG image
  - Full-resolution CCITT image
  - One-half resolution JPEG image

Rear illumination is with green LEDs.

Three (3) rear image renditions are available. Up to two (2) may be selected, with no more than one each of:

  - Full-resolution JPEG image
  - Full-resolution CCITT image
  - One-half resolution JPEG image

Enhanced Mode

Front image illumination is with UV, green, and IR LEDs. Rear image illumination is with green LEDs.

Track speed is 17 ips. Throughput depends on the image renditions that are selected.

Front and rear "full-resolution" image capture modes are:

- 200 dpi front and rear
  or
- 240 dpi front and rear

Nine (9) front image renditions are available. Up to three (3) of the renditions below may be selected with limits as stated:

- One (1) full-resolution UV, UV Inverted, green, or IR, JPEG image
- Up to two (2):
  - Full-resolution UV, UV Inverted, green, or IR, CCITT image
  - Half-resolution UV, UV Inverted, green, or IR, JPEG image

Three (3) rear image renditions are available. Up to two (2) may be selected, with no more than one (1) each of:

- Full–resolution JPEG image
- Full-resolution CCITT image
- Half-resolution JPEG image

"Color" Mode

Front illumination is with IR, green, and UV LEDs. Rear illumination is with red, green and blue LEDs.

Processing throughput is approximately 43 dpm.

Front and rear image capture resolution is 300 dpi.

One (1) front image rendition is available:

- Front 24-bit color bitmap with "color" components of: IR, green, and UV

One (1) rear image rendition is available:

- Rear 24-bit color bitmap with color components of: red, green, and blue (RGB)

Rear Endorsement

An optional, non-impact, 600-dpi ink-jet rear endorser prints as many as four lines of text or graphical information under application control and can be based on a document code line. Information from a MICR code line can be repeated in the endorsement of the same item.

The endorser is located in the track before the rear image scanner. An operator positions the print head in one of two vertical positions for height control. The application controls horizontal positioning. A programmatically controlled cleaning cycle sprays small amounts of ink from the nozzles to maintain proper print head function. The ink-drop count is tracked (and reset when the ink cartridge is changed) to deliver a low-ink warning message that can be displayed by an application.

Characteristics of the endorser are as follows:

- Endorsing in real-time based on MICR code line with reduced throughput rates for some configurations

- Ink-jet endorser printing at 10 characters per inch
- Two manually selectable height positions, each with as many as four lines of printing at programmable positions
- Variable horizontal print location of as many as 56 characters for a six-inch document, controlled by the application
- Three levels of print quality (economy, standard, or premium)
- Support for one or two resident fonts
- Support for graphical content, True Type fonts, and various foreign fonts

Franker Stamp

Some workflow applications require placing a "frank" (or static message) on the front of a document to indicate it has been processed. The frank mark helps prevent reprocessing fraud by providing a visual queue to indicate the document has already been processed. After completing front image capture, an ink roller applies the fixed frank as a document passes. If a processing exception occurs, the frank is not applied. Franking actuation is controlled programmatically and can also be based on MICR code line results.

Pockets

Single-pocket devices receive and stack as many as 100 documents in the order of processing. Two-pocket devices have a selector gate for programmatically disposing a document to one of two pockets, each of which has capacity for 100 documents. Pockets have wire pocket extenders that are adjustable to the expected size of documents. One- and two-pocket configurations are offered for SmartSource Professional or Expert devices. Adaptive devices have a single pocket.

SmartSource Expert and Professional devices enable run-time pocketing decisions at throughputs as high as 120 dpm for six-inch documents based on MICR code line read results. Added capability with combined MICR/OCR enables pocket decisions at throughput rates as high as 120 dpm for SmartSource Expert devices and slightly lower throughput rates for SmartSource Professional devices. Pocketing decisions can also be based on image quality flags or, when running Perfect Image, on image usability results.

Throughput

SmartSource Professional and Expert devices process six-inch documents at a throughput rate of 30, 55, 80, or 120 dpm depending on device style. **SmartSource Adaptive** devices process six-inch documents at a throughput rate as high as 70 dpm. At throughput rates of 30, 55, and 80 dpm, all the following platform functions are supported for normal, real-time processing without any reduction in processing throughput:

- MICR read
- Capture of three images
  - Front, black and white, CCITT compressed image
  - Front, grayscale, JPEG compressed image
  - Rear, black and white, CCITT compressed image
- Franker stamp
- Rear endorsement (single line)
- Pocket selection

SmartSource Professional devices configured for 120-dpm operation and SmartSource Adaptive devices support all of the previously described platform functions at the rated speed. However, the following factors may result in lower processing throughput:

- Host PC configuration (processor speed and memory)
- In-line, real-time processing operations
  - OCR read
  - MICR/OCR combined read
- Color image capture at 300-dpi, 24-bit-per-pixel for uncompressed images (processing throughputs are reduced by lower track speeds, image file size, and data transfer limitations associated with the USB 2.0 interface; additionally, OCR functionality is not available during color capture)
- When in-line OCR or MICR/OCR combine read is enabled, document processing throughput is highly dependent on the host PC CPU speed. Using a 2.4-GHz, Core 2 Duo processor with 1 GB of memory, document processing throughput with in-line OCR enabled is slightly over 100 dpm

SmartSource Professional UV devices, when operating in Overlay Mode, process documents at rates similar to the SmartSource Professional. When operating in Enhanced Mode, throughput depends on the image renditions enabled. Throughput in Enhanced Mode can range from approximately 80 dpm with one (1) image rendition enabled to approximately 40 dpm with five (5) image renditions enabled.

SmartSource Expert devices configured for 120 dpm operation can perform all platform functions at the rated throughput. The standard network interface is 10/100 Base-T with the option of using a USB 2.0 device interface connection to a PC.

Removable Covers

Two covers are easily removable for access to track components for consumables replacement, operator maintenance, and accessing documents involved in some exception conditions. For most exception conditions, however, the open track design provides easy access to items in the track without removing the covers.

Section 3

SmartSource Expert Features and Options

The SmartSource Expert is the only self-contained network device for document processing and image capture in the industry. No other device in its class benefits from the engineering experience and manufacturing quality of a major manufacturer of document processing and distributed capture systems such as Burroughs Payment Systems.

Distinguishing Features

SmartSource Expert devices are distinguished by these unique features:

- Embedded computing that provides the following on-board functionality and "intelligence" independent of an external host PC or server:
  - Burroughs Device Suite service
  - Embedded operating system (Windows CE)
  - Track control with document processing rules
  - Image capture, preprocessing, and compression
  - Image quality flags (IQFs)
  - Image security
  - Image and data caching with on-board storage
- Ethernet 10/100 Base-T network connectivity suitable for thin-client environments (eliminates the need for a dedicated PC)
- A USB 2.0 high-speed device port to control the SmartSource Expert from a PC
- Enhanced operator interface using a multi-line backlit LCD display (two-lines, eight characters per line)
- Auto-retracting feeder flag, on the SmartSource Open Expert device
- Two-pocket or one-pocket configuration available

Figure 3–1 shows a SmartSource Open Expert device.

Figure 3–1. SmartSource Open Expert (Two-Pocket Model)

Embedded computing for nearly all platform functions differentiates the SmartSource Expert from the SmartSource Professional and Adaptive. The embedded computing architecture transforms a SmartSource Expert device into an “intelligent” device. The addition of a network interface enables the SmartSource Expert device to perform as a network appliance that can operate in a true thin-client environment. As a network appliance, a SmartSource Expert device offers an additional user interface (backlit LCD display) to communicate operational status and/or exception conditions directly to the operator.

The addition of a USB 2.0 host port interface supports future operability enhancements by providing a direct connection for qualified USB peripherals. A peripheral, such as a magnetic stripe reader, can be accessed by the connected SmartSource Expert device and/or by an application through Device Suite.

Operator Interface

In addition to the three (3) LED status indicators and a feeder start/stop button – supporting the one-touch "Smart-clear" function, the SmartSource Expert device also provides a multi-line back-lit LCD display (see Figure 3–2) that is programmatically controlled to display operator and application messages.

Figure 3–2. SmartSource Open Expert Operator Interface

Onboard Intelligence

A SmartSource Expert device operates as a network appliance by means of an Ethernet connection or the USB 2.0 device connection. Embedded computing provides "onboard intelligence" that supports image processing operations in real-time at throughput rates of 30, 55, 80 or 120 dpm.

Onboard intelligence is realized on SmartSource Expert devices by adding specialized Digital Signal Processor (DSP) and Advanced RISC Machine (ARM) processors to the platform electronics. DSP processors are used to perform MICR and OCR recognition processing as well as image preprocessing, image compression, image quality defect detection, and security computations. All recognition and image processing is performed in real-time with results available internally to support run-time document processing rules. An ARM processor provides an integrated application programming interface (the Device Suite service), internal control and storage of data (for example, image data), and the communication protocols for the external Ethernet and USB 2.0 interfaces.

Flash memory capacity is increased for SmartSource Expert devices to provide internal storage and caching of MICR, OCR, and image files. The added flash memory makes it possible for document processing operations to continue during periods when the network is interrupted or data transfer rates are reduced due to increased network traffic.

The embedded computing and storage resident in a SmartSource Expert device, coupled with the network connectivity capabilities, provides the following strategic and operational benefits:

- Reduced network transmission and remote server processing by providing internal processing for MICR, OCR, image processing, image compression, image quality, and image security
- Internal document processing rules to reduce or eliminate the dependency on a remote server
- 48 MB internal memory for storage of up to 1000 document images (48 KB per document)
- In-built MICR/OCR combine read available in real time to ensure exceptional read rates and accuracy
- In-built image quality analysis to identify defects at the time of capture
- Image security performed internally to provide a higher level of protection against image alternation
- Improved device availability by supporting internal storage of images and MICR/OCR results, thereby supporting continued document processing even when the network is not available or interrupted
- Reduced total cost of ownership by eliminating the need for a dedicated PC for every SmartSource Expert device

Refer to the *SOA Vision Device Suite and Perfect Image Capabilities Overview* (4326 8861) for a description of track control, image quality, and image security for the Device Suite service, which is embedded in SmartSource Expert devices.

Options

Hardware options for SmartSource Expert devices are as follows:

- Processing throughput (55, 80, or 120 dpm)
- OCR-A and OCR-B
- 200- or 240-dpi color JPEG image capture
- Front franker stamp
- Rear ink jet endorser with text and graphics printing
- One- or two-pocket document disposition configurations

Section 4
SmartSource Series Deployment

Burroughs Payment Systems SmartSource® devices offer flexible deployment options while operating under various common platforms for image-enabled, transaction-based check clearing with options for sophisticated image security as well as image quality and usability assessment. At the device level, "intelligent" processing decisions based on code lines or early-capture of front images add efficiency to document processing.

Flexible Deployment Options

With four models to choose from, Professional, Professional UV, Expert, and Adaptive, the SmartSource Series offers throughput, standard and optional features, and connection choices to provide flexible adaptation to the full range of distributed capture environments. There is a SmartSource model to fit banking and business needs for check or full page item processing and image capture whether front counter (teller) or back counter, retail merchant or commercial service vendor, or large, mid-sized, or small distributed capture operation. The wide range of speed choices enables clients to choose the most cost-effective device to meet their processing requirements from very low daily volumes to volumes of several thousand items per day.

Because time is money, banks are increasingly seeking to streamline the check processing workflow. The SmartSource Series is the perfect solution for capturing document images at the branch and passing images for proof operations at regional centers. By driving document data and image capture back to the point of initial deposit, courier runs are reduced or eliminated, thereby saving time while increasing the availability of funds. In a transaction-based processing environment, images are transmitted to a host system for clearing within minutes as a Check 21 item or as an ACH/BOC transaction.

For merchants, the device footprint and early front-image capture design make the SmartSource Series the perfect device to convert items to images for subsequent financial institution processing with a significant reduction in problem items compared to other scanners. In remittance environments such as utility payment offices, insurance agent offices, or Secretary of State Branch offices, SmartSource devices offers optional read of OCR scan-lines.

Common Platform Choices

SmartSource devices run under control of an application with a middleware interface. The application and middleware software require an underlying operating system, all of which constitute the platform. SmartSource devices are designed for flexible implementation within a range of platform choices.

Middleware Options

Burroughs middleware options provide a range of options for new implementations as well as support for introducing SmartSource devices into existing environments with other Burroughs distributed capture devices:

- SOA Vision web service products to support running SmartSource devices in a Service Oriented Architecture (SOA) environment
- Burroughs Common API (CAPI) to run SmartSource devices
- Burroughs DLLs to run SmartSource Expert or Source NDP devices with various applications
- Burroughs Middleware API emulation to run SmartSource Professional with specific third-party applications
- Burroughs Ranger® System Software for the SmartSource to run the SmartSource Professional and Adaptive
- Burroughs TWAIN Software to run the SmartSource Professional and Adaptive using the Ranger System Software

Operating System

Burroughs middleware software supports the following operating system environments:

For **SmartSource Professional, Professional UV, and Adaptive devices**, the following operating system environments are supported:

- Windows 7 Professional (32- and 64-bit)
- Windows Vista Business (32- and 64-bit), and Windows Vista Business with SP1 (32- and 64-bit)
- Windows XP Professional with SP2 and SP3 (32-bit)
- Linux – Common API System Software only

For **SmartSource Expert devices**, running the CAPI or DLL APIs and **using the USB 2.0 device interface**:

- Windows 7 Professional (32-bit)
- Windows Vista Business (32-bit), and Windows Vista Business with SP1 (32-bit)
- Windows XP Professional with SP2 and SP3 (32-bit)

For **SmartSource Expert devices**, running the CAPI or DLL APIs and **using the Ethernet interface**:

- Windows 7 Professional (32- or 64-bit)
- Windows Vista Business (32- or 64-bit), and Windows Vista Business with SP1 (32- or 64-bit)
- Windows XP Professional with SP2 and SP3 (32-bit)

For **SmartSource Expert devices,** running with the embedded Device Suite API, **and using the Ethernet interface**, the unit will function as a network appliance with any operating system.

Burroughs Device Suite runs with Windows.NET 3.0 framework using Windows Communication Foundation (WCF) for the web services infrastructure.

SmartSource Expert has Device Suite embedded in the device, and runs with an embedded Windows operating system.

PC Configuration

The recommended minimum host PC configuration for normal processing at 30, 55, or 80 dpm using the SmartSource Professional device and the Microsoft Windows XP Professional operating system, is as follows:

- 2.0-GHz Pentium 4 processor
- 512 MB of memory (1 GB, recommended with MS/Windows 7 Professional)
- USB 2.0 high-speed host connection for SmartSource Professional or Adaptive devices

For a SmartSource Professional device:

- When capturing three CCITT or JPEG compressed images per document, a 3.2-GHz Pentium 4 processor with 1 GB of memory supports the maximum processing throughput rate of 120 dpm.
- A 2.4-GHz, Core 2 Duo processor with 1 GB of memory supports capture of four or five CCITT or JPEG compressed images per document at the maximum processing throughput rate of 120 dpm.

For a SmartSource Professional UV device:

- When capturing UV and/or IR images in the “Enhanced Mode”, a 3.2-GHz Pentium 4 processor with 1 GB of memory supports a throughput rate of 80 dpm with one (1) image rendition enabled to approximately 40 dpm with five (5) image renditions enabled..

For SmartSource Expert devices, a host PC is only required when operating the SmartSource Expert device using the alternative USB 2.0 device interface.

For the SmartSource Adaptive device, a 3.2-GHz, Core 2 Duo processor with 1 GB of memory supports normal processing throughput rates of 70 dpm for six-inch items and 30 dpm for full-page items.

SOA Vision

SOA Vision provides a Burroughs common, web-services platform for standardized application development to control SmartSource devices while offering other essential document processing functions such as character recognition and image quality and usability assessment. Remote capture and distributed document processing is supported by remote management of SmartSource devices with dashboard monitoring, reporting, and troubleshooting. Central administration of downloadable device upgrades is an added benefit of networked implementations. SOA Vision can provide sophisticated management capabilities to streamline operations and improve efficiency while providing a foundation for introducing or expanding remote deposit capture with multiple devices of various configurations.

The following web services platforms that include feature-rich web services along with a tool set are available as part of the SOA Vision product family:

- Device Suite provides basic track control for document processing, as well as functions for: image processing, image quality flags, image security, automated track control, and enhanced code line read while returning MICR and OCR results for programming applications.

  Device Suite service functions are embedded for SmartSource Expert devices. A tool set supports configuration, testing, operation, and administrative functions.

  For example, an exception handler application displays exception information from devices for incorrectly processed items. Appendix D describes item processing features afforded by Device Suite.

- Perfect Image offers a single-call service to access character recognition (CAR/LAR/ICR/ MICR), image quality and usability assessment functions, and image security on a post-image capture basis to ensure image suitability for electronic exchange. A tool set for configuration, testing, and administration is provided and includes a Parameter service for central storing of parameters for retrieval across an enterprise.

Figure 4-1 illustrates an example network.

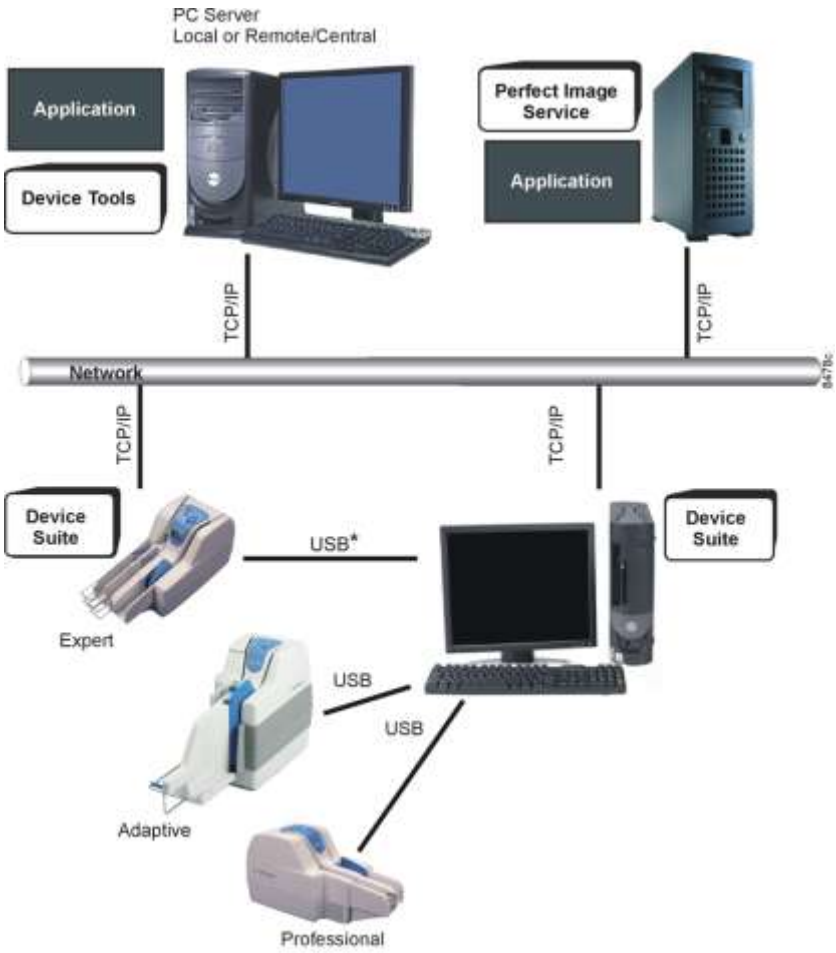

Figure 4-1. Network Implementation with SOA Vision

* A SmartSource Expert USB 2.0 device interface connection to a PC is shown in Figure 4-1.

An application that controls a device through Burroughs Device Suite can operate in any hardware platform or operating system environment because a web service interface can be called by any programming language, executing within any operating system. For example, a Java application running in a Linux environment can drive a SmartSource device. For more information, refer to the *SOA Vision Device Suite and Perfect Image Capabilities Overview*
(4326 8861).

Networking Advantages

Device Suite operating in a networked system of distributed capture devices potentially reduces costs by hosting processing power from a central server while centralizing administration tasks to further reduce costs, speed implementation, and mitigate risks. Device Suite addresses the challenges of managing a large network in the following ways:

- Central monitoring of performance to identify bottlenecks
- Real-time diagnostic information provided to the application
- Real-time image quality and security
- Remote support capabilities to improve operational efficiency
- Reduced support costs by simplifying the integration of new releases or updates
- Programming applications once for all devices to eliminate redundant investment
- Downloading of embedded application code to enable real-time decision making
- Centralized software integration for software consistency and streamlined support

High Volume Scalability

Deploying SmartSource devices along with Device Suite provides the opportunity to scale processing capability to meet evolving customer needs and growth. For example, a client application can control multiple devices and capacity is added by simply connecting a SmartSource Expert device to the network. There is no need to add an additional PC to host the device. Just adding the device to the Discovery registry makes the device available to the application.

In addition to the inherent scalability of SmartSource devices, the devices connect to a network that can support additional PCs for throughput scalability and load balancing for distributed capture. With the Burroughs Perfect Image service, scalability and high-throughput is afforded for character recognition and image usability through applications that create simultaneous connections to a balancing server by means of the Load Balancer service. The service forwards image processing requests to networked image analysis servers and returns results to the application.

Device Connectivity

SmartSource devices connect to either a PC or an Ethernet local area network. By offsetting the network and infrastructure costs associated with “thick-client” solutions, SmartSource Expert devices offer the potential to extend transaction-based processing into merchant environments.

SmartSource Expert devices are designed to be connected by 10/100 Base-T Ethernet as true network devices (with no PC required) to communicate remotely with host applications running on a central server. DHCP or manual TCP/IP addresses are employed to support a direct network connection. SmartSource Expert devices also have the option to communicate with the host PC applications through a USB 2.0 high-speed device port.

SmartSource Professional, Professional UV and Adaptive devices are physically connected to a PC by means of a USB 2.0, high-speed connection.

Upgrades

After initial purchase, SmartSource Professional, Professional UV or Expert device features can be upgraded by means of entitlement for the following additional purchased options:

- OCR-A, OCR-B
- Color image capture
- Rear ink jet endorser
- Processing throughput 55, 80, or 120 dpm

Section 5

Service and Support

Over 2,200 clients worldwide recognize the outstanding quality of Burroughs Payment Systems products and the superior, international service and support backing every product delivered.

Consumable Items

SmartSource devices are designed for easy replacement of consumable items by an operator. Consumables include the following items:

- Two feed tires and one separator tire for feeder
- Ink cartridge
- Franker roller

Maintenance

Preventive maintenance tasks are designed to be performed by an operator. A cleaning supply kit is available from Burroughs. Other regular servicing, for example, by a Burroughs field service representative, is not required.

Parts and Supplies

Consumable items and cleaning supplies for SmartSource devices are available from Burroughs products and services for world-wide delivery.

Repair

Repairs are based on a contracted maintenance agreement after the one-year warranty period has expired. A maintenance agreement authorizes either Depot Repair (mail-in service) or Advanced Exchange Service. With the exchange service, an exchange unit is sent to the client to replace the failed unit. All calls related to unit returns or warranty repair claims are handled through the Burroughs Payment Systems Call Reception Center (CRC). Depot repair is facilitated by a world-wide network of service providers.

Product Information

Go to www.burroughs.com for general product information. Or, contact Burroughs products and services or a Burroughs representative at 1-800-Burroughs (1-800-287-7684).

Training

A set of videos describing SmartSource series setup, operation, maintenance, and troubleshooting is available in DVD format or in streaming format on www.burroughs.com. Selected video clips can also be viewed at http://www.youtube.com/user/BurroughsVids.

Upgrades

Devices have embedded "flash memory" to provide storage for firmware. Software patch or new release upgrades can be delivered by means of a remote, networked server. Selected hardware options can be entitled through digital delivery of software after initial purchase.

Support Contacts

Burroughs approved supplies and replacement items are available:

- In the United States, call 1-800-Burroughs (1-800-287-7684).
- In Canada, call 1-800-387-6127.
- In other countries, refer to www.burroughsstore.com.

Support is available from Burroughs Payment Systems for all Burroughs products. Refer to the information about support at www.burroughs.com. Clients with support contracts have access to the Customer Call Center.

Appendix A
SmartSource Series Comparison

Table A–1 compares features for the SmartSource Professional, Professional UV, Expert, and Adaptive devices.

Table A–1. SmartSource Series Comparison Chart

	Professional	Expert	Adaptive
Distinguishing Features	√ Scalable speed √ Auto-feeding √ One or two pockets	√ Network device √ No PC required √ Embedded computing	√ A4 pages √ Auto-feeding
Operator Interface			
Feeder start/stop button	√	√	√
Three LED status lights	√	√	√
Backlit, two-line LCD display		√	
Document Processing Throughput[1]			
30 dpm	√	√	
55, 80, or 120 dpm	Optional	Optional	
70 dpm (check), 30 dpm (page)			√
Document Feeding			
Feeding of single documents	√	√	√
Auto-retracting feeder flag (Available on SmartSource Open platforms)	√	√	
Automatic feeding of batches of up to 30 documents			√
Hopper Capacity			
Up to 100-item capacity	√	√	
Up to 30-item capacity (A4 pages)			√

Table A–1. SmartSource Series Comparison Chart

	Professional	Expert	Adaptive
Magnetic Ink Character Recognition			
E13B and CMC7 read, with auto detection	√	√	√
Optical Character Recognition (OCR) [2]			
Combined MICR/OCR (E13B) read	√	√	√
OCR-A And OCR-B	Optional	Optional	Optional
Image Capture			
Front and rear image capture of a combination of as many as five (5) black/white or 256 gray level images	√	√	√
Front and rear image capture of two (2) 24-bit color images	Optional	Optional	
Front and rear image capture of a combination of as many as five (5) black/white or 256 gray level images including UV and IR image capture	Professional UV		
Image Renditions			
200- or 240-dpi black/white, CCITT Group 4 compressed	√	√	√
300-dpi black/white, CCITT Group 4 compressed for larger (page) documents			√
100-, 120-, 200-, or 240-dpi, JPEG compressed with 256 gray levels	√	√	√
150-dpi, JPEG compressed with 256 gray levels for larger (page) documents			√
100- or 200-dpi color JPEG compressed	Optional[3]	Optional	
200- or 240-dpi color JPEG compressed	Optional[3]	Optional	
300 dpi, 24-bit RGB uncompressed color bit map (.BMP file)	Optional		
Front 200- or 240-dpi black/white, UV/Inverted UV CCITT Group 4 compressed	Professional UV		
Front 100-, 120-, 200-, or 240-dpi, UV/Inverted UV JPEG compressed with 256 gray levels	Professional UV		

Table A–1. SmartSource Series Comparison Chart

	Professional	Expert	Adaptive
Front 100-, 120-, 200-, or 240-dpi, Overlaid UV JPEG compressed with 256 gray levels	Professional UV		
Front 200- or 240-dpi black/white, IR CCITT Group 4 compressed	Professional UV		
Front 100-, 120-, 200-, or 240-dpi, IR JPEG compressed with 256 gray levels	Professional UV		
Endorsement			
Rear Endorsement	Optional	Optional	√
One- to four-line endorsement of 10 characters per inch (cpi)	√	√	√
Two (2) vertical endorsement locations, manually selectable by the operator	√	√	√
Three (3) print quality options	√	√	√
Rear endorsement graphics	Included with Option	Included with Option	√
Front franker stamp	Optional	Optional	Optional
Output Pockets			
Capacity per pocket	Up to 100	Up to 100	Up to 30 (A4 pages)
Single pocket	√	Optional	√
Dual pocket	Optional	√	
Device Connectivity			
USB 2.0 high-speed device	√	√	√
Ethernet 10/100 Base-T		√	
USB host port for attaching a USB-based peripheral[4]		Optional	
Options Upgradeable through Entitlement	√	√	

[1] Throughput is based on six-inch documents under optimal processing conditions and for "normal" features. These rates apply to the Professional UV only when it is operating in Overlay Mode.

[2] Refer to Section 2 of this document for factors affecting throughput.

[3] Available when using the Device Suite application programming interface.

[4] The USB 2.0 host port interface supports future operability enhancements by providing a direct connection for qualified USB peripherals.

Appendix B
Physical Specifications and Connectivity

Table B-1 gives specification information for the SmartSource Professional, Professional UV Expert, and Adaptive devices.

Table B–1. SmartSource Series Physical Specifications and Connectivity

Specification/Connectivity	Professional / Expert	Adaptive
Unit Dimensions Base Length	26.7 cm (10.5 inches)	51.3 cm (20.2 inches)[1]
Base Width	15.2 cm (6.0 inches)	16.2 cm (6.4 inches)[1]
Height	17.8 cm (7.0 inches)	28.8 cm (11.3 inches)
Weight Device Weight	3.0 kg (6.5 lbs)	4.4 kg (9.7 lbs)
External Power Supply Weight	0.34 kg (0.75 lbs)	0.34 kg (0.75 lbs)
Environment Operating Temperature	0 to 35 °C (32 to 95 °F)	
Storage Temperature	-20 to 60 °C (-4 to 140 °F)	
Shipping Temperature	-40 to 65 °C (-40 to 149 °F)	
Operating Humidity	10 to 85 percent (non-condensing)	
Storage Humidity	5 to 95 percent (non-condensing)	
Power (External Power Supply) Input Voltage	120.240 VAC, 50/60 Hz Note: The SmartSource should be plugged into an electrical outlet on a different branch of the power distribution system where large electrical equipment is not connected to nearby outlets.	
Output Voltage	24 VDC	
DC Power Usage	48 W (maximum) for SmartSource Professional / Adaptive 60 W (maximum) for SmartSource Expert	
Surge Current	1.2 A (maximum)	

Table B–1. SmartSource Series Physical Specifications and Connectivity

Specification/Connectivity	Professional / Expert	Adaptive
Power Connector	Secure power cable attachment to the device with manual release	
Certifications and Compliance	Verified by TUV as CB-scheme compliant Certified by TUV for EN60950-1 Europe; UL60950-1 1st Ed. (US); CAN/CSA-C22.2 No. 60950-1-03 1st Ed. (Canada) Complies with CE, FCC, VCCI, BSMI Canada Class A	
UV Platform Characteristics	UV Illumination – LED at 360nm wavelength Green Illumination – LED at 520nm wavelength IR illumination – LED at 940nm wavelength	
Noise Idle, noise level (not feeding documents) Operating, noise level	 < 50 dBA, as defined by the ISO 7779 noise standard, using the standing operator position < 65 dBA, as defined by the ISO 7779 noise standard, using the standing operator position	
Internal Diagnostics	Self-diagnosis at power-up or platform reset	
Host and Device Interfaces	USB 2.0 (high-speed) device interface, for attaching the SmartSource Professional, Professional UV, Expert, and Adaptive units to a computer Ethernet 10/100 Base-T (auto detect or configurable) interface, for attaching a SmartSource Expert to a network – using the TCP/IP protocol USB 2.0 (high-speed) host interface, to support attached peripherals (available as an option - only on the SmartSource Expert device)	
Interface Operating Environment	SmartSource units can inter-operate with a wide variety of operating systems and environments, e.g., Microsoft Windows XP Professional, Windows Vista Business, Windows 7 Professional, Linux, and physical interfaces, i.e., USB 2.0 and Ethernet. Specific operating system/-environments supported are dependent upon the SmartSource device style, i.e., Professional, Professional UV, Expert or Adaptive, the API selected to control the unit, and the physical interface being used with the device. For a comprehensive description of operating systems supported by the SmartSource platforms, please refer to Section 4, "SmartSource Series Deployment – Operating System", of this manual.	

[1] Length and width measurements include the hopper and pocket extender, necessary to support full page and A4 document loading and stacking.

Appendix C
Document Specifications

SmartSource devices are designed to handle standard documents according to the document specifications given in **Table C–1**.

Table C–1. Document Specifications

	Professional/Expert		Adaptive	
	Minimum	**Maximum**	**Minimum**	**Maximum**
Length	7.4 cm (2.9 in.)	23.5 cm (9.25 in.)	7.4 cm (2.9 in.)	29.7 cm (11.7 in.)
Height	5.1 cm (2.0 in.)	10.8 cm (4.25 in.)[1]	5.1 cm (2.0 in.)	21.6 cm (8.5 in.)
Length to height ratio	1.5 : 1	--	1.5 : 1	
Thickness	0.1 mm	0.15 mm	0.1 mm	0.15 mm
Paper weight (nominal)	75 g/m^2 (20 lb. long grain)	90 g/m^2 (24 lb. short or long grain)	75 g/m^2 (20 lb. long grain)	90 g/m^2 (24 lb. short or long grain)
Card stock (produces degraded stop rate)	--	131 g/m^2 (35 lb.)	--	131 g/m^2 (35 lb.)
Automated Teller Machine (ATM) envelope[2] height (produces degraded stop rate)	--	10.8 cm (4.25 in.)		10.8 cm (4.25 in.)
ATM envelope length	--	23.5 cm (9.25 in.)	--	23.5 cm (9.25 in.)
MICR correction label or strip	Single correction label thickness with strip not to exceed maximum document height			
Carrier envelope	Not to exceed maximum height and length with document inserted			
UV Security Features	Nominal UV illumination wavelength is 360nm. The image camera is most sensitive to ink emission wavelengths longer than 480nm.			
IR Security Features	Nominal IR illumination wavelength is 940nm.			

[1] The maximum viewable image height (field of view) is 10.67 cm (4.20 in.) measured from the bottom of an item.

[2] ATM envelope specifications apply to 75 g/m^2 (20 lb.) or 90 g/m^2 (24 lb.) stock.

Contact Burroughs Payment Systems with questions about processing documents that are outside of the specification ranges listed above.

Refer to *Payment Systems Document Design Guidelines* (4326 6808) to design or evaluate documents for processing with Burroughs transports and desktop devices.

Appendix D
SOA Vision Device Suite Features

SmartSource Professional devices access the Device Suite service through a local PC. SmartSource Expert devices have the Device Suite service embedded for direct connection to a network application. The **Device Suite service** offers advanced track control through document processing rules with these additional features:

- Image security—enables the creation of a digital signature at point of capture for as many as five renditions of each captured image. Image security detects whether an image has been altered or replaced.
- Image quality analysis—detects image quality defects (ANS X9.100-180 or X9.37) in real time and reports Image Quality Flags (IQFs) based on set thresholds. The following IQFs are supported under ANS X9.100-180 and can be applied globally or individually to document fronts and rears:
  - Undersize or oversize image
  - Folded or torn document edges or corners
  - Document framing error
  - Excessive document skew
  - Piggyback document
  - Image too light or too dark
  - Horizontal streaks or excessive spot noise
  - Below minimum or above maximum compressed image size
  - Front-rear image dimension mismatch
  - Image out of focus
- Document processing rules—enable real-time decisions based on the document code line for endorsing, imaging, pocketing, or other device functions. Applications use the local rules in custom routines to perform functions. Document processing rules can implement a sort pattern capability to enable the selection of image quality and usability parameters based on the MICR code line, thus providing for parameter customization on a document-by-document basis.
- Combined MICR/OCR read—combines a second, OCR read of an E13B code line with the MICR read for a near-perfect E13B code line read rate to further reduce costly data corrections and incorrect posting of items. OCR A and OCR B fonts are supported.
- Endorsement—supports Burroughs default alphanumeric endorsement text, graphical content, True Type fonts, and various foreign fonts for endorsing as many as four lines on the rear of documents.

Device Suite offers an optional small footprint installation. Refer to the *SOA Vision Device Suite and Perfect Image Capabilities Overview* (4326 8861) for more information about Burroughs web services offerings.

Glossary

A

ACH
See Automated Clearing House.

Application Program Interface (API)
An interface used by a document processing application to access devices or processing services.

API
See Application Programming Interface.

Automated Clearing House (ACH)
An electronic network in the U.S. for financial transactions.

B

Back Office Conversion (BOC)
A process for electronically converting checks to ACH debits in a back office environment. *See* Automated Clearing House.

BOC
See Back Office Conversion.

C

CCITT image
A black and white image compressed using the international standard for Group 4 Facsimile compression. High-resolution (i.e., 200 dpi or greater), CCITT images are well suited for data entry and statement print applications. *See also* JPEG image.

Character Recognition
Refers to the features associated with Burroughs Payment Systems Perfect Image for courtesy amount recognition (CAR), legal amount recognition (LAR), or intelligent character recognition (ICR) to automatically read the hand- or machine-printed information on personal checks, business checks, and internal forms and documents.

Check 21
The Check Clearing for the 21st Century Act is U.S. legislation that allows a "substitute check", created from an image, to be substituted as the legal equivalent of the original paper check. Check 21 has resulted in an increase in image interchange activities between financial institutions.

CIS
See contact image sensor.

CMC7
A standardized font style commonly used in Europe for printing MICR characters.

Contact Image sensor (CIS)
An image scanning technology that places a document in near-direct contact with the sensor/camera device (which is a linear array of detectors). Integrated into the CIS are red, green, and blue LEDs used to provide document illumination.

D

Device Service
Refers to a service that is part of Burroughs Device Suite. The Device Standard service provides track control, while the Device Pro service provides other functions for image quality, image security, and document processing rules.

Digital Signature
A set of digital data that is created from image data and a private key and is bundled with the image data file. The digital signature is used to verify that the image data bundled with the digital signature has not been altered or replaced by another image.

Distributed Capture
The electronic capture of data and images from checks or other payment-related documents from distributed or remote locations as compared to traditional, centralized processing and capture. Capture locations can include teller, back counter, remote branch, and customer (merchant) environments. *See* remote deposit capture.

DLL
Dynamic Link Library. A module with functions and data for use in a shared-library implementation with Windows-based applications.

dpi
Dots per inch. Typically used to define print or document scanning spatial resolution (i.e., pixel dimension).

dpm
Documents per minute. Typically used to define document processing throughput.

E

E13B
A standardized font style commonly used in the United States and the United Kingdom for printing MICR characters.

Ethernet
A widely adopted architecture for computer networks based on the IEEE 802.3 standard.

F

Franker Stamp
A static message or "frank" stamped on an item during first pass and which helps tellers detect the fraudulent re-deposit of an item.

I

Image Quality
Refers to identifying defects in a digital image arising from the original document or imposed during image capture and which might prohibit using the image as a substitute for the original paper document.

Image Quality Flag
An identifier indicating the presence of an image quality defect.

Image Security

Refers to producing a digital signature for every captured image using the image data and a private encryption key that is part of a public/private encryption key pair.

Image Usability
Refers to the automatic identification of defects that might prevent an image from being used as intended.

Infrared (IR)
A form of light which has a wavelength (or color) that is invisible to the human eye, but which can be used to optically eliminate preprinted "drop out" inks present on some document forms.

IR
See Infrared.

J

JPEG
Joint Photographic Experts Group. A standards group that established the JPEG image compression standard.

JPEG image
A grayscale or color image compressed using the international standard for baseline sequential JPEG compression, yielding a very high quality image. JPEG images are useful for image archiving and character recognition because the legibility of low contrast printing and endorsements, present on many checks, is typically retained. *See also* CCITT image.

L

LCD
See liquid crystal display (LCD).

LED
See light-emitting diode (LED).

Light-Emitting Diode (LED)
A lighting component used as a visual indicator in a machine-user interface, or for illumination.

Liquid Crystal Display (LCD)
A technology used for display screens.

M

Magnetic Ink Character Recognition (MICR)
Refers to the imprint on checks of magnetic ink characters in special type faces and dimensions or the reading of such characters. The E13B font is employed in the U.S. and some international markets. CMC7 is an internationally recognized font. *See also* Optical Character Recognition.

MICR
See Magnetic Ink Character Recognition.

Middleware
Software that serves to connect separate programs and, in the case of distributed capture platforms, used to describe software that connects an application with the hardware. Burroughs Common API system software and SOA Vision services are examples of middleware.

O

OCR
See Optical Character Recognition.

Optical Character Recognition (OCR)
Refers to the optical reading of preprinted characters on checks, credits, giros, and retail lockbox and remittance documents. Both alphabetic and numeric characters are printed in special type faces and dimensions, including variations of OCR-A and OCR-B as well as MICR E13B and CMC7 fonts. *See also* Magnetic Ink Character Recognition.

P

Perfect Image Service
Refers to a service that is part of Burroughs Perfect Image to provide character recognition, image quality and usability assessment, and image security.

R

RAM
See random access memory.

Random Access Memory (RAM)
Computer memory for storing data and information for fast access.

Read Rate
The number of read items interpreted to be correct, usually measured on a document basis in percent.

Remote Deposit Capture
The deposit of checks by a customer through the capture and electronic transmitting of a digital image of the check or ACH data to a financial institution for clearing. Also known as merchant capture. *See* distributed capture.

RGB
Red, green, blue. A system for representing colors in an image for computer storage and display.

S

Service Oriented Architecture (SOA)
A strategy that organizes the discrete functions contained in enterprise applications into interoperable services that can be combined and reused quickly to meet business needs.

SOA
See Service Oriented Architecture.

T

Tagged Image File Format (TIFF)
An industry-standard image (graphics) file format for storing high resolution, black/white, gray scale, or color images.

Thin Client
A low-cost PC with limited processing capabilities, which is managed in a network by a server.

TIFF
See Tagged Image File Format.

Throughput (Throughput Rate)
The number of checks or documents processed per some unit of time.

U

Ultraviolet (UV)
A form of light which has a wavelength (or color) that is invisible to the human eye, but which can be used to detected the presence of security features embedded in sensitive documents, e.g., checks and passports.

Universal Serial Bus (USB)
Refers to an industry standard electrical interface, typically used for connecting peripherals such as a keyboard, mouse, or printer to a computer.

USB
See Universal Serial Bus.

UV
See Ultraviolet.

W

Web Service
A specific component representing a discrete business function or process and that can be shared and reused by multiple applications in an open systems environment.

X

X9.37
Refers to image quality features implemented as defined by the *Draft Standard for Trial Use (DSTU)* X9.37-2003, *Specifications for Electronic Exchange of Check and Image Data*, published by the American National Standards Institute (ANSI). The standard provides "the financial industry with a format necessary to perform electronic check exchange (ECE), with or without images." *See also* X9.100-180.

X9.100-180
Refers to image quality features implemented based on the successor to the DSTU X9.37 specification, ANS X9.100-180. *See also* X9.37.