

Digital Check Corp. API

TellerScan™ 200, TellerScan™ 210,
TellerScan™ 220, TellerScan™ 300,
TellerScan™ 350, TellerScan™ 400,
And Other Supported Scanners

Version 8.00 (32-bit)

Summary Reference Guide

November, 2004

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The Digital Check Corporation Application Programming Interface ("DCCAPI") was developed by Digital Check Corporation ("DCC") and UniSoft Imaging ("UNISOFT") to make development of applications using the BUIC 1000, BUIC 1500, TellerScan™ 200, TellerScan™ 210, TellerScan™ 220, TellerScan™ 300, TellerScan™ 350 and TellerScan™ 400 check scanners easier. This software is intended for exclusive use by DCC customers or DCC resellers with scanners originally purchased from Digital Check Corporation. Use of any features in this interface is illegal with scanners not provided by Digital Check Corporation. The DCCAPI is copyrighted by Digital Check Corporation and UniSoft Imaging.

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1.0 Overview

The Application Programmers Interface (API) was designed to allow quick and easy integration of the TellerScan™ and BUIC lines of scanners from Digital Check Corporation, DCC, into any Windows development environment. The API supports scanning and compressing images to file, or scanning and writing images to memory. Black and white images may be compressed to single or multi-page TIFF files. The compressed file is a standard TIFF file with group 4 compression. Grayscale images may be compressed to JPEG or windows bitmap files (BMP). Also available is the magnetic code (MICR) of the check, which is returned as an ASCII string when scanning. An option for TIFF files is the storage of the MICR characters as a TIFF tag. Some DCC's scanners can also save color images which can be stored in JPEG format.

Several functions are supported for scanner initialization, setting scanner parameters, and scanning. Default values for scanning settings can be used, but it is recommend using values that result in the best performance for the checks being scanned.

Current supported scanners:

- DCC TellerScan™ 200 (TS/200) (32-bit only)
- DCC TellerScan™ 205 (TS/205) (32-bit only)
- DCC TellerScan™ 210 (TS/200) (32-bit only)
- DCC TellerScan™ 220 (TS/220) (32-bit only)
- DCC TellerScan™ 300 (TS/300) (32-bit only)
- DCC TellerScan™ 300EBS (TS/300EBS) (32-bit only)
- DCC TellerScan™ 350 (TS/350) (32-bit only)
- DCC TellerScan™ 350EBS (TS/350EBS) (32-bit only)
- DCC TellerScan™ 400 (TS/400)
- DCC TellerScan™ 400E (TS/400E)
- DCC TellerScan™ 400ES (TS/400ES) (32-bit only)
- BUIC 1000 (B/1000)
- BUIC 1500 (B/1500)

2.0 Hardware and Software Requirements for SCSI Scanners

SCSI scanners

- DCC TellerScan™ 300 (TS/300) (32-bit only)
- DCC TellerScan™ 300EBS (TS/300EBS) (32-bit only)
- DCC TellerScan™ 350 (TS/350) (32-bit only)
- DCC TellerScan™ 350EBS (TS/350EBS) (32-bit only)
- DCC TellerScan™ 400 (TS/400)
- DCC TellerScan™ 400E (TS/400E)
- DCC TellerScan™ 400ES (TS/400ES) (32-bit only)

2.1 Hardware Requirements

1. 800 MHz PC Computer with 64 Megabytes RAM, Fast video card preferred.
2. Adaptec SCSI Board (AHA-2930 or AHA-2940 recommended)
3. DCC Supported Check Scanner.

NOTE: *Scanner throughput is directly related to the speed of the PC.*

2.2 Software Requirements

1. SCSI-2 driver (ASPI) for SCSI devices.
2. BUICAP32.dll (32-bit version).
3. Windows NT 4.0, Windows 2000, or Windows XP.

2.3 Setup

Before running the scanner the following steps must be completed:

NOTE: *A SCSI-2 board and driver may already be installed in your system.*

- Install the SCSI-2 board in your PC.
- Connect the scanner to the PC.
- Install the SCSI board drivers.
- Install the DCC API software.

IMPORTANT: *Any SCSI cards (including the Adaptec 2940 PCI SCSI-2 board) should be installed by a qualified technician.*

WARNING: *Before you connect the scanner to a power outlet, be sure that the unit is set for the voltage requirements of your location. See if the scanner has a switch to select either 115V or 230V, not all models of the scanners have switches.*

2.4 Installation of the SCSI-2 Board

If your computer does not have a SCSI-2 board (such as the Adaptec AHA-2940 PCI SCSI-2 board) have a qualified technician install the SCSI-2 board and SCSI-2 driver software.

Digital Check offers a complete SCSI-2 Interface Kit including the recommended SCSI-2 card, SCSI-2 driver software, and the appropriate SCSI-2 cable for the scanners. For additional information about the scanners, visit www.digitalcheck.com.

2.5 Connect the scanner to the PC

1. Place the scanner near the PC.
2. Make sure the scanner is turned off (check lights on scanner).
3. Connect the SCSI cable to the scanner.
4. Connect the SCSI cable to the PC.
5. Turn on the scanner.
6. Turn on the PC.

IMPORTANT NOTE: *SCSI devices must be powered on when the computer is booted.*

2.6 Install the SCSI Device Driver

The installation of the device driver is different for each operating system and should be installed by a qualified technician.

The SCSI card manufacturers frequently change the product codes on the SCSI cards. As a result, please consult a qualified technician, your reseller, or check our web site at www.digitalcheck.com for more information about the proper SCSI device driver software for Windows 3.11, Windows 95, Windows 98, Windows ME, Windows NT, or Windows 2000.

2.7 Installing the Digital Check Scanner API Software

Run DCCAPI.EXE and follow the prompts. The default installation directory is C:\DCC. In order for your applications to use the API you must copy the appropriate library, BUICAPI.DLL (16-bit) or BUICAP32.DLL (32-bit), to your Windows\System folder or WinNT\System32 folder on Windows NT/2000/XP. When using the TellerScan only API, TS2DLL.DLL and TS4DLL.DLL should also be copied into the appropriate System folder.

3.0 Hardware and Software Requirements for USB Scanners

USB scanners

- DCC TellerScan™ 200 (TS/220) (32-bit only)
- DCC TellerScan™ 205 (TS/220) (32-bit only)
- DCC TellerScan™ 210 (TS/205) (32-bit only)
- DCC TellerScan™ 220 (TS/200) (32-bit only)

3.1 Hardware Requirements

1. 800 MHz PC Computer with 64 Megabytes RAM, Fast video card preferred.
2. USB1.1 for TS200 or TS205, and USB2.0 (backward compatible with USB1.1) for TS210 and TS220.
3. DCC Supported USB Check Scanner.

NOTE: *Scanner throughput is directly related to the speed of the PC and whether using a USB1.1 or USB2.0.*

3.2 Software Requirements

4. BUICAP32.dll (32-bit version).
5. Windows 98 (TS200 and TS205 Only), Windows 2000, or Windows XP.
6. TS2DLL.dll

3.3 Setup

Before running the scanner the following steps must be completed:

NOTE: *A USB board and driver may already be installed in your system.*

- Place setup disk in your PC or download installation from web www.digitalcheck.com.
- Connect the scanner to the PC via USB.
- Turn scanner on. Windows will automatically ask for *.inf file which is driver's directory..

TS210 / TS220 (Windows 2000 & Windows XP Only)

Installing the Driver Files (The TS210 and TS220 use the identical firmware and drivers

- 1) Download the TS210-220 Driver file from the web site into a directory.
http://www.digitalcheck.com/l2_ss_downloads.html
 - 2) Unzip the file and run the driver auto install program. This will automatically install or update all of the TS210 or TS220 driver files on your PC.
 - 3) Turn ON the unit. Windows detects a new hardware device. Select the request for the installation of the best driver. It should find the TS220NC.inf file. Select it and continue until finished.
 - 4) Under XP, the USB device will install and then the TS220 will install.
 - 5) Both LEDs on the control panel should now be lit.
-

WARNING: Before you connect the scanner to a power outlet, be sure that the unit is set for the voltage requirements of your location. See if the scanner has a switch to select either 115V or 230V, not all models of the scanners have switches.

3.4 Connect the scanner to the PC

1. Place the scanner near the PC.
2. Make sure the scanner is turned off (check lights on scanner).
3. Connect the USB cable to the scanner.
4. Connect the USB cable to the PC.
5. Turn on the scanner.
6. Turn on the PC.

3.5 Introducing TS200, TS205, TS210, and TS220

NOTE: The job type parameter in *BUICScan()*, *BUICScanMemory()*, *BUICScanGray()*, and *BUICScanGrayMemory()* is no longer operational on a TS200 series scanner. Since the TS200 series scanner is event driven, the document may be scanned previously to calling *BUICScan()*. Therefore use *BUICSetParam()* before dropping a document in the scanner or use *BUICScan.ini* before entering the application. Also, the MICR must be enabled/disabled by *BUICSetParam()* or in the *BUICScan.ini* file instead of in the job type parameter in *BUICScan()*.

The TS200 and TS205 and TS210 are single check scanners based on events and are single check at a time scanners. The Digital Check Corporation API initializes the TS200 or TS205 or TS210 in the enabled state thus when a document is dropped (put in input feeder) the document is scanned. Added features for the TS200 and TS205 and TS210 and TS220 are the ability to set call back functions to notify the application a document is being scanned, MICR is ready, Front Image is ready, Back Image is ready, or a combination of these events. The document is then retrieved using *BUICScan*, *BUICScanMemory*, *BUICScanGray*, or *BUICScanGrayMemory*.

Although call back functions are new for the USB scanners operation, they are not necessary. Calling *BUICScan*, etc., when the user inserts a document is still valid. The application may be button driven or use *BUICStatus* to detect a document (Note *BUICStatus* works on SCSI scanners so controlling both would be easier using this function.)

Added features to the *BUICSCAN.ini* feature include under the header *[SCANNER]*, the user may add *Type=200* to optimize initialization. If *[SCANNER]*, *Type=200* is present, the USB bus is scanned first. If it is not present, the SCSI bus is scanned for TS400's or TS300's and then the USB bus is scanned which delays initialization of the TS200. Another *BUICSCAN.ini* feature is *TS200 Image Wait*. This parameter gives the number of milliseconds to wait after a *BUICScan* function is called before returning a "NO CHECKS PRESENT" error message. If the document has already been scanned, the return is immediate; otherwise the DLL waits 10000 ms or 10 seconds (default or user set delay) for a document to be scanned. The last new feature in the *BUICSCAN.ini* for the TS200 is *TS200 Crop Threshold*. Since the DLL crops the top black area when image cropping is enabled, this is a threshold value to use. The current default is 80. Enable scanner re-enables the scanner for drop feeding after the first document. If the scanner is not re-enabled, issuing a *BUICScan* enables the scanner. *TS200Delay* is used to slow down the scanner commands for some Windows 98 systems. Defaults are listed below except for scanner which defaults to TS400.

[ACQ. SETUP]

Image Wait=10000
Crop Threshold=80
Enable Scan=0
TS200Delay=0

[SCANNER}
Type=200

New functions introduced for the TS200 include the following:

- funcSetUpCallBack – Set up call back routines for application notification of scanner events.
- funcTS200Update - Set scanner for enable when document is present or disabled.

Many new error messages were introduced with TS200. See error message section for a complete list.

The TS220 is a multiple check scanner and has recently entered production. It has a footprint similar to the TS200 and TS205, but can scan multiple checks per scan.

3.6 Release History

Version 8.00

Updated version of Image Quality Analysis including grayscale image support. New functions include IQAStatusGrayStart and IQAStatusGray.

Version 7.26

Updated version of TS2DLL.DLL (3.12) for user configurable output sensor settings. Improved MICR OCR and verification.

Version 7.25

Updated version of TS2DLL.DLL (3.11) and TS220Firmware.bin for the TS210/TS220 scanner that will eliminate any erroneous jams indications due to the exit sensor within the scanner. The new code utilizes compensated, normalized data rather than raw data from which to derive the exit sensor functionality.

Version 7.24

Support Hong Kong E13B OCR Verification Rules. Note: not recommended for North American users.

Released version of ItemByItem Image Quality Analysis.

Version 7.23

Allow for no ini file by using "NOINI" as the BUIC INI Filename.

Version 7.22

Added tests to make sure short line search on skew checks did not GPF.

Version 7.21

Added tests in DIBCrop to not overcrop an image even with a bad Threshold setting.

Version 7.20

Added Intensity12 parameter of the ini for setting print intensity for TS350EBS.

Version 7.19

Remove unnecessary debug calls and default debug off.

Version 7.18

Release updated Versions of TS4DLL.DLL and BUICAP32.DLL, which allow for faster printing of BMPs on SCSI Document Scanners.

Version 7.17

Fixed problem with specifying scanning both sides with BUICSetParam and then specify front only during scan.

BUICExit stats file exit problem was corrected.

Version 7.16

Release some functions in IQA (Speckle count, Corner detect, standard document size). Documentation should be located in buicapi.h.

Version 7.15

Improved Edge Detection for 4 bit grayscale images

Buicap32.dll can capture scanner statistics and these features will be released in a future version of the DCCAPI

Buicap32.dll had some Image Quality Analysis features added but more functions are needed

So this feature will be released in a future version of the DCCAPI

Images from all USB Scanners are cropped on all edges. This results in clear images.

Added ability to BUICSetParamString for paths for firmware, font, configuration, etc.

Added font file to ini file used by USB Scanners

Added a delay loop to handle disconnect/reconnects of power off scanners

Firmware was modified for faster restarts.

Added support for the TS210

Callback support for TS210 and TS220

Version 7.14

Improved Edge Detection for Security Symbols

Improved "7" MICR OCR processing

Improved the BUICStatus to clear Errors

Version 7.13

Check if spaces should be removed from TS2DLL.DLL BMP

Added Firmware File Flag to ini File

Updated Firmware in the release directory

Version 7.12

Fixed a bug setting double feed on TS300/TS400ES.

Version 7.11

Corrected a bug true type endorsements when debugging was turned on.

Version 7.10

Added support for DOUBLE FEED Delay in Buicscan.ini, Parameter
CFG_MISC_DOUBLEFEEDDELAY

Version 7.09

If the feeder sensor is active, automatically wait longer for scanning if necessary.

Version 7.08

Clip extra left and right edge in funcConvEdgeDetectBW (Option 256).

Version 7.07

Updated TS220 firmware to help reduce false jams on the TS220.
New software to clear power on flag in BUICInit. New software to leave blinking light on jams/misfeeds/double feed docs and to clear blinking light on next GetImage, BUICStatus, or Eject Document. Changed order of checking for ImageWait overrun to allow more time for back image to come in. Added a MICR Format 3 in MICR Verify which will add spaces in the amount area if necessary.

Version 7.06

Make blinking lights on jams/misfeeds/double documents and clear blinking lights on eject on The TS220.

Version 7.05

Fixed an initialization problem in TS200Init when no TS200, TS205, or TS220 was present

Version 7.04

Fixed a 4 bit grayscale issue in Edge Detection

Version 7.03

Reset scanner on mis-feed. Faster jam error detection. Updated documentation.

Version 7.02

Copies font file to window directory when necessary. Both jam error and double feed error were reported as -217. Now jam error is reported as -220 and double feed error is reported as -217. Version 7.01
Internal testing release.

Version 7.00

Added support for the TS220.

Version 6.13

Fixed an external sort problem that returned the wrong error code.
MICR OCR recognition enhanced for elongated digits.

Version 6.11

Fixed BUICCompressImageGray() problem that created stepped images.

Version 6.10

Fixed an issue when BUICInit() is called more than once by an application.
Added function for density detection.

Version 6.08

Removed debug messages from BUICWriteConfig() function.

Version 6.06

Improved handling of scanner cover removal.

Version 6.01

Added support for the TS300/350/400ES common firmware.

Version 6.00

Added support for the TS400ES.
Introduction of OCR MICR recognition for improved MICR accuracy.

Version 5.00

The JPEG quality may be set in the BUICScan.ini file with JPEG Quality=75 or it may be set by calling BUICSetParam(CFG_MISC_JPEG_QUALITY, 75) during application run.

NOTE: *Setting JPEG Quality creates smaller JPEG images with lower quality, while higher qualities create larger images with better quality. If using a TS/200, see previous section on Introducing TS/200.*

4.0 API Functions

4.1 BUICInit()

BUICInit initializes the DLL and checks the status of the SCSI/USB connection. BUICInit assumes BUICScan.ini is located in the Windows folder or Application path. BUICInit returns a 0 or positive integer (0, 1, ...) if the DLL is initialized properly. A General Error Code (negative integer) is returned if a problem is encountered while querying the SCSI device driver/adaptor or getting the status of the scanner. (All error codes and their meanings are listed in section Error Codes).

BUICInitPath performs the same action as BUICInit, but allows you to specify the paths to the DLL, INI, and Configuration files. **It is recommended that user use BUICSetParamString instead of BUICInitPath.**

4.2 BUICExit()

BUICExit frees resources and memory used by the DLL. BUICExit should be called before exiting an application or before calling BUICInit a second time to free all resources and memory. BUICExit returns a 0 or positive integer if successful or a General Error Code otherwise.

4.3 BUICDebug()

BUICDebug allows a dialog box to be enabled for debugging purposes. If enabled, the DLL will display an information dialog box when a procedure is called with the calling variables. It will also display an information dialog box when a procedure is returned to the caller. Other information can be displayed when the procedure is running. This function returns 0 or a positive integer if successful or a General Error Code otherwise.

NOTE: *This function is supplied for backward compatibility and is no longer supported.*

4.4 BUICDisplayAbout()

BUICDisplayAbout displays a dialog box regarding the DLL. The dialog box displays information regarding the maker of the DLL and version number. BUICDisplayAbout returns 0 or a positive integer if successful or an Init Error Code otherwise.

NOTE: *This function is supplied for backward compatibility and may not be available in future releases. DCCAPIVersion() and DCCAPISupportedScanners() provide more functionality and should be used instead of BUICDisplayAbout().*

4.5 BUICDisplayStatus()

BUICDisplayStatus will display the status of the scanner and SCSI connection. BUICDisplayStatus returns 0 or a positive integer if successful or a General Error Code otherwise.

NOTE: *This function is supplied for backward compatibility and may not be available in future releases. BUICGetScannerInfo() and BUICGetScannerSerialNumber() provide more functionality and should be used instead of BUICDisplayStatus().*

4.6 BUICSetParam()

BUICSetParam will set the configuration parameter to the specified value. BUICSetParam returns a 0 or positive integer if successful or a General Error Code otherwise. See the BUIC Parameters section for a list of valid parameters.

4.7 BUICGetParam()

BUICGetParam will return the configuration parameter of the specified value. See the BUIC Parameters section for a list of valid parameters.

4.8 BUICReadConfig()

BUICReadConfig will read the configuration file and set the values in the file as the current parameters. The configuration file is a standard Windows INI file. BUICReadConfig returns 0 or a positive integer if successful or a General Error Code otherwise. If BUICReadConfig is not called by the application, BUICInit will search for file BUICScan.INI as the default configuration file. If BUICInit cannot find BUICScan.INI, default values will be used for initialization. It is highly recommended to have a configuration file for optimizing scanner operation. If complete paths are not used, the files should be placed in the default Windows directory.

4.9 BUICWriteConfig()

BUICWriteConfig will write the current parameters to a file. The file is a standard Windows INI file. If no values are set with the BUICSetParam() function the default values in the API will be written. This function returns a 0 or positive integer if successful or a General Error Code otherwise. If complete paths are not used, the files should be placed in the default Windows directory.

4.10 BUICScan()

BUICScan invokes the scanning session with the scanner. One item will be scanned with this call. The output files will be written to the names specified. Full drive, path, name, and extensions are required. This function returns 0 or a positive integer if successful. If an error occurs, the error can either be a General Error Code or a Scanning Error Code. See the Error Code section for more information should an error occur.

NOTE: *B1500 and TS400 support only BUIC_SCAN_FRONT, BUIC_SCAN_BOTH, BUIC_SCAN_FRONT_CODE, and BUIC_SCAN_BOTH_CODE. The other values of iJobType will result in an error.*

4.11 BUICScanGray()

BUICScanGray invokes a gray scale scanning session with the scanner. One item will be scanned with this call. The output files will be written to the names specified. Full drive, path, name, and extensions are required. This function returns 0 or a positive integer if successful. If an error occurs, the error can either be a General Error Code or a Scanning Error Code. See the Error Code section for more information, should an error occur.

NOTE: *B1500 and TS400 support only BUIC_SCAN_FRONT, BUIC_SCAN_BOTH, BUIC_SCAN_FRONT_CODE, and BUIC_SCAN_BOTH_CODE. The other values of iJobType will result in an error.*

4.12 BUICScanMemory()

BUICScanMemory invokes a scanning session with the scanner. One item will be scanned with this call. BUICScanMemory returns 0 or a positive integer if successful. If an error occurs, the error can either be a General Error Code or a Scanning Error Code. See the Error Code section for more information should an error occur.

NOTE: *B1500 and TS400 support only BUIC_SCAN_FRONT, BUIC_SCAN_BOTH, BUIC_SCAN_FRONT_CODE, and BUIC_SCAN_BOTH_CODE. The other values of iJobType will result in an error.*

Enough memory must be allocated for each side of the image. A safe value for each side would be 256KB for 200 DPI images and 128KB for 100 DPI images. Unless cropping is chosen, the image length is always 416 lines at 100 DPI and 832 lines at 200 DPI for the B1000 and the image length is always 432 lines (100 DPI) and 864 lines (200 DPI) for the B1500 and TS400. The image width will vary depending on the check size. A personal size check will generally have the dimensions 1160 pixels across by 832 (or 864 for BUIC1500 and TS400) lines down at 200 DPI. This amounts to 120640 bytes of memory needed ((1160/8) * 832). A longer check will require about 140KB of memory, therefore allocating 256KB of memory is generous and safe. The image returned in memory consists of an image description block and raw packed data (1-bit per pixel).

The format of the returned image is an eight byte image description block followed by the raw packed image. The eight byte image description block describes the image data format and is as follows:

<u>Position</u>	<u>Type</u>	<u>Description</u>
1,2	Integer	Image Width ; 416 or 832 (432 or 864 for BUIC1500 ; or TS400) or less if cropped
3,4	Integer	Image Length
5,6	Integer	Bits Per Pixel ; 1 - Black/White, 8 - Gray Scale
7,8	Integer	DPI ; 100 DPI or 200 DPI

4.13 BUICScanMemoryGray()

BUICScanMemoryGray invokes a gray scale scanning session with the scanner. One item will be scanned with this call. This function returns 0 or positive integer if successful. If an error occurs the error can either be a General Error Code or a Scanning Error Code. See the Error Code section for more information should an error occur.

NOTE: *B1500 and TS400 support only BUIC_SCAN_FRONT, BUIC_SCAN_BOTH, BUIC_SCAN_FRONT_CODE, and BUIC_SCAN_BOTH_CODE. The other values of iJobType will result in an error.*

Enough memory must be allocated for each side of the image. A safe value for each side would be 2.08 MB for 200 DPI images and 1.04 MB for 100 DPI images, slightly more for B1500 and TS400. The image length is always 416 lines at 100 DPI and 832 lines at 200 DPI for the B1000. The image length is always 432 lines at 100 DPI and 864 lines at 200 DPI for the B1500 and TS400. The image width will vary depending on the check size. A personal size check will generally have the dimensions 1160 pixels across by 832 (864) lines down at 200 DPI. This amounts to 965,129 bytes of memory needed (1160 * 832) or (1160 * 864). A longer check will require about 1.12 MB of memory, therefore allocation 2.08 MB of memory is generous and safe. The image returned in memory consists of an image description block and raw data (8-bits per pixel). Future gray scale scanning will support 8-bits per pixel, so the decision was made to convert 4-bits per pixel gray scale to 8-bits per pixel to be compatible with future products.

The format of the returned image is an eight byte image description block followed by the raw image. The eight byte image description block describes the image data format and is as follows:

<u>Position</u>	<u>Type</u>	<u>Description</u>
1,2	Integer	Image Width ; 416 or 832 without cropping B1000 ; 432 or 864 without cropping B1500 ; or TS400
3,4	Integer	Image Length
5,6	Integer	Bits Per Pixel ; 1 - Black/White, 8 - Gray Scale
7,8	Integer	DPI ; 100 DPI or 200 DPI

4.14 BUICCompressImage()

BUICCompressImage compresses a black and white (bi-tonal) image stored in memory to the specified file name (creating a TIFF Group 4 file). pchugelImage must contain an 8-byte header specifying the width, length, and number of bits per byte. This function returns a zero or a positive value if successful. If an error occurs, the error will be a General Error Code.

4.15 BUICCompressImageGray()

BUICCompressImageGray compresses a gray scale image held in memory to the specified file name. pchugelImage must contain an 8-byte header specifying the width, length, and number of bits per byte. The output image will be a BMP or JPEG compressed gray scale image. This function returns zero or a positive value if successful. If an error occurs, the error will be a General Error Code.

4.16 BUICStartImageWindow()

BUICStartImageWindow starts the simple image child window for displaying a scanned image. Return is a 0 for successful creation of the child window, otherwise a Window Error code or General Error code is returned.

NOTE: *If a scanner is not connected and working properly this function will fail.*

4.17 BUICCloseImageWindow()

BUICCloseImageWindow closes a child window. Return is a 0.

4.18 BUICSizeImageWindow()

BUICSizeImageWindow resizes a child window to fit within the main parent window. This function should be called when the parent window is resized. Return is 0 or greater for successful completion. A Window Error Code or a General Error Code is returned if an error occurs.

4.19 BUICSetImageMultiPage()

BUICSetImageMultiPage displays a Black and White (bi-tonal) or Gray Scale image file to the child window specified. Return is 0 or greater for successful completion. A Window Error Code or a General Error Code is returned if an error occurs.

4.20 BUICCopyFile()

BUICCopyFile copies a file to another file. Return is 0 or greater for successful completion. A Window Error Code or a General Error Code is returned when an error occurs.

NOTE: *InputFile and OutputFile must be different.*

4.21 BUICCombineTIFFS()

BUICCombineTIFFS appends a TIFF image to a previously created TIFF image file to store multiple images in one file. Return is 0 or greater for successful completion. A Window Error Code or a General Error Code is returned when an error occurs.

4.22 BUICCropFile()

This function crops a TIFF image by removing white border around the image and then stores the newly created image in a new file. Return is 0 or greater for successful completion. A Window Error Code or a General Error Code is returned when an error occurs.

Note: *This function is unnecessary for TellerScan™ users.*

4.23 BUICGetTiffPages()

BUICGetTiffPages gets the number of TIFF images in a TIFF image file. BUICGetTiffPages could be used to find the number of TIFF images in a multi-page TIFF image file or to determine if a TIFF file is a multi-page TIFF image file. The returned value is the number of TIFF images in the file.

4.24 BUICGetMicrLine()

BUICGetMicrLine checks a TIFF image file to see if the magnetic code information was stored as a TIFF tag. Returns the magnetic code and size in the parameters listed if present. Return is 0 if the Magnetic Code is present or BUIC_ERROR_GET_MICR if magnetic code tag is not found.

4.25 BUICSetMicrLine()

BUICSetMicrLine copies a TIFF image file adding magnetic code information in a TIFF tag. Returns a 0 or greater for successful completion and a General Error code if an error occurs.

4.26 BUICUpdateMicrLine()

BUICUpdateMicrLine updates a TIFF image file replacing magnetic code information in a TIFF tag. This function is used on files previously created with BUICScan. Returns a 0 or greater for successful completion and a General Error code if an error occurs.

4.27 BUICStatus()

This function queries the scanner to see whether or not a check is in the feeder. Returns 0 if no check is found, 1 if a check is found, or B1000_START_ACQ if a communication error occurs.

4.28 BUICGetScannerInfo()

This function issues a SCSI inquiry to the adapter ID and target ID address, and returns the vendor, product, and release information. If a scanner is not found at this address, BUICGetScannerInfo starts searching all valid SCSI addresses for a scanner.

4.29 funcTS400SetPrint()

This function sets the BMP file name to be printed or sets the print string to be printed. Returns a 0 or positive number with a successful completion, while a negative error code indicates the error.

4.30 funcTS400ClearPrint()

This function clears the requested ink jet printer area for the string or BMP file to print.

4.31 funcTS400SetSorter()

This function sets the algorithm for sorting and the comparison strings. Returns a 0 or positive number for completion without error or a negative error code for completion with error.

4.32 funcTS400SetLoadFont()

This function sets the requested FONT file name which will be used for print string operations on the TS400 if print and print string are selected. Returns 0 or positive number if no error is detected, or a negative error code if an error is detected.

4.33 funcTS400LoadPrinterFont()

This function loads the requested FONT file to TS400 memory and this font will be used for Ink Jet Printer strings for rapid endorsing. Ink jet print string operations require enabling TS400 print and an Ink Jet print string being selected using funcTS400SetPrint with iParameter == TPARAM_PRINT_IJSTRING. Returns 0 or positive number if no error is detected, or a negative error code if an error is detected.

4.34 TS400SetPocket()

This function is used ONLY if in Hold and View mode on a TS400. If sorter is ON and sorter input is set to EXTERNAL. The BUICScan functions will return with the image sizes and MICR line, and the application must then call TS400SetPocket to select a pocket. TS400SetPocket must be called within 10 seconds of the completion of the scan. Returns a 1 if no error is detected, or a negative error code if an error is detected. Error SCAN_TIME_OUT is returned if the application does not call TS400SetPocket within 10 seconds of the end of the scan.

4.35 BUICEjectDocument()

This function ejects a halted document from the TS400 or B1500. It returns either 0 or EJECT_ERR.

4.36 funcTS400GetScannerRunInfo()

This function returns the approximate number of checks read and the estimated number of minutes working.

NOTE: *This function is supplied for backward compatibility and may not be available in future releases. BUICGetScannerSerialNumber() provides more functionality and should be used instead of BUICDisplayStatus().*

4.37 funcSetUpCallBack()

This function sets up the Call Back routines for notification when an event has occurred on the TS200. TS200 and TS205 and TS210 and TS220 USE ONLY.

NOTE: *Events may be OR'ed for a combined event notification. TS200_CB_EVENT_SCAN should not be OR'ed with others since the scanner may complete scanning before the image has totally been captured (downloaded) from the scanner.*

NOTE: *Call back function may call BUICScan, but the event should be the lowest one listed above that is applicable or a combined event to insure scanning has completed. I.e. use TS200_CB_EVENT_BACK if both the back and MICR are requested or OR them together. Do not use TS200_CB_EVENT_MICR.*

4.38 funcTS200Update()

This function updates the TS/200 by writing configuration to the scanner or enabling the scanner. TS/200 USE ONLY.

4.39 CheckEndorsementStart()

This function allocates memory to handle the Bitmap being created.

NOTE: *TS300/350/400ES units running firmware version 1.21 and higher will return a value indicating a TS300 (300). This is expected operation and is designed for backward compatibility.*

4.40 CheckEndorsementEnd()

This function writes endorsement buffer to a BMP file and releases memory allocated in CheckEndorsementStart.

4.41 CheckEndorsementText()

This function converts text to Bitmap using True Type Fonts.

4.42 GetScannerType()

This function returns the type of the currently detected scanner.

4.43 DCCAPIVersion()

DCCAPIVersion returns the version number of the API DLL being called by the application. The version is returned as a whole number. Example: Version 5.20 would be returned as 520.

4.44 DCCAPISupportedScanners()

DCCAPISupportedScanners returns a long integer containing the devices supported by the API DLL being called. A bit-wise comparison may be used to determine which scanners are supported.

NOTE: *Values returned from DCCAPISupportedScanners() do not equate to the values used for GetScannerType.*

4.45 funcConvGrayImageEdgeDetectBW()

This function takes a Gray Scale image returned from BUICScanMemoryGray and converts it to a bitonal (black/white) image using some advanced methods for conversion to improve gray scale to bitonal conversion.

4.46 BUICGetScannerSerialNumber()

BUICGetScannerSerialNumber can be used to obtain the Serial Number, Document Count, and Running Time of an attached TellerScan scanner (does not support BUIC scanners).

NOTE: *SCANNER UPDATES NUMBER of DOCUMENTS and TIME in MINUTES at random intervals. It may be every minute, but possibly even a longer or shorter interval. Therefore, number of documents and minutes is only an approximation since it is updated randomly and is only to the nearest 10.*

4.47 FindE13BMicr()

FindE13BMicr uses OCR techniques on a TIFF check image in a TIFF file to determine the MICR. Both szOCRMicr and szOCRConfidence should be allocated buffers at least 128 bytes long.

4.48 FindE13BMicrMem()

FindE13BMicrMem uses OCR techniques on a TIFF check image in memory to determine the MICR. Both szOCRMicr and szOCRConfidence should be allocated buffers at least 128 bytes long.

4.49 VerifyMicr()

VerifyMicr takes the szMagneticMicr returned by the scanner and compares it to the szOCRMicr and if any differences are detected it uses the szOCRConfidence to correct any MICR problems detected with the szMagneticMicr if the szOCRMicr has a high szOCRConfidence level, otherwise the szMagneticMicr character is used. The verified and/or updated MICR is returned in szResults..

4.50 LastCheckMicrStatus()

LastCheckMicrStatus gives a confidence level on the validity of the last check's MICR.

4.51 funcConvImageToFile()

funcConvImageToFile converts a gray scale image to either another gray scale or black/white (bitonal) image changing the number of bits or scaling down the image by a factor of 2.

4.52 BUICAPICheckDensity()

BUICAPICheckDensity returns the number of pixels on or black pixels within the area of a check. This density is a good indication of whether the image is too light or too dark and requires a re-scan.

4.53 ConvertRGBToGray()

funcConvertRGBToGray converts color data into grayscale data.

4.54 BUICSetParamString()

BUICSetParamString sets parameters that are strings such as Font path and file name, firmware path and file for TS200, configuration path (to place generated files), DLL path, and location of *.ini file.

NOTE: CFG_INIPATH, CFG_CFGPATH, CFG_DLLPATH, and CFG_FONTPATH must be specified before calling BUICInit. CFG_FONTPATH can be specified before or after BUICInit. CFG_INIPATH and CFG_FIRMWAREPATH must specify both path and file name. CFG_CFGPATH and CFG_DLLPATH specify only the path. CFG_CFGPATH must be a path with write capability.

4.55 ReadStatistics()

ReadStatistics takes a scanners statistical file with the specified offset into the file and writes out the data in a more user friendly manner (human readable) in a cLogFile.

NOTE: cFileName and cLogFile must be complete path and file name. cLogFile must be a path and file name with write capability.

4.56 BUICGraySaturate ()

BUICGraySaturate takes an scanned uncompressed image and allows the user to saturate the grayscale causing the image to be lighter or darker. If the iHistogram is turned on (1), then each image is analysis to see what part of the grayscale spectrum is not used.

4.57 SetStandardCheckSizes () and SetStandardCheckSizeIndex ()

Either of these functions allow the user to specify standard check sizes that can be verified in the IQAStatus function. SetStandardCheckSizeIndex was added since VB programmers can not pass integer arrays sometimes.

4.58 IQAVerifySizeDocument ()

This function is used to verify that the front and back image are the same size after cropping. The function should be called with valid file names or valid DCC Image Buffers.

4.59 IQAStatus() and IQAStatusGray()

These functions are used to test an image for varies image qualities.

Return (Status Bits where) :

0 - okay

D0(1)-Image Needs Cropping

D1(2)-Too many Speckles present

D5(32)-Not a standard Check Size

D6(64)-Skewed Item

D7(128)-Bent Corner

D8(256)-Struck Bit Present

D9(512)-MICR Quality too low

D10(1024)-Missing Endorsement

4.60 IQAStatusStart() and IQAStatusGrayStart and GetIQAStatus

These VB helper functions are provided since VB does not always handle integer arrays correctly. Please see IQAStatus for more information about parameters.

5.0 Error Codes

5.1 Init Error Codes

- BUIC_ERROR** -1
Error while initializing ASPI, unable to find a scanner (DCC Supported Scanner) when scanning SCSI bus.
1. Is ASPI installed correctly? If not, install ASPI. Check SCSI interrogator under WIN95 or check to see if scanner found on SCSI bus when booting.
 2. Is the scanner on now and was it on when booting? Try steps listed in 1.
 3. Is the scanner properly cabled? Check cables.
- BUIC_ERROR_NODEVICE** -2
No scanner was found while querying the SCSI bus.
1. Try steps under BUIC_ERROR.
- BUIC_ERROR_OLDMANAGER** -3
Old version of ASPI installed. Install latest version of ASPI before continuing or ASPI was installed properly in the operating system configuration.
- BUIC_ERROR_ILLEGALMODE** -4
Illegal mode for ASPI.
1. Verify ASPI is installed correctly.
 2. Verify ASPI has not been corrupted.
 3. Verify a recent version of ASPI has been installed.
- BUIC_ERROR_NOMANAGER** -5
No ASPI manager found.
1. Verify ASPI is installed correctly.
 2. Verify ASPI has not been corrupted.
 3. Verify a recent version of ASPI has been installed.
 4. Verify ASPI has been properly configured for operating system.

5.2 General Error Codes

- BUIC_ERROR_NOINIT** -100
ASPI SCSI inquiry command was issued before ASPI SCSI was initialized.
1. Call BUICInit before calling other functions.
 2. ASPI SCSI inquiry command failed while inquiring scanner.
- BUIC_ERROR_BADJOB** -101
Job type not in range 0 to 7 for a BUICScan call.
1. Verify job type in a BUICScan, BUICScanMemory, BUICScanGray, or BUICScanGrayMemory.
- BUIC_ERROR_BADPARAM** -102
Parameter passed in a function call is bad.
1. For BUICSetParam and BUICGetParam verify it is a valid parameter.
 2. For BUICSetParam and BUICGetParam verify it is a valid value for the parameter.
 3. For Scans, verify memory pointers or file names are valid.
 4. For the function called, verify the parameters passed are valid.
 5. Verify *.INI values are correct for the situation. Passed parameter and an *.INI file value may conflict.
- BUIC_ERROR_BADFILENAME** -103
Filename passed is invalid.
1. Verify file exists if reading a file.
 2. Verify file attributes are acceptable for action desired.
 3. Verify path exists.
 4. Verify path and file are properly terminated with a '\0'.
- BUIC_ERROR_IMAGE_TYPE** -104
Mismatch between scanning and compression. Separate routines for bitonal and gray scale.
1. Verify parameters passed.
 2. Verify parameters passed do not conflict with values in *.INI file.
- BUIC_ERROR_FILE_OPEN** -105
Unable to open file for compression.
1. Verify file exists if reading a file.
 2. Verify file attributes are acceptable for action desired.
 3. Verify path exists.
 4. Verify path and file are properly terminated with a '\0'.
- BUIC_ERROR_MEMORY_ALLOC** -106
Unable to allocate memory.
1. Shut down other windows and programs running to free memory.
 2. Reboot system to see if some memory has been lost.
 3. Get more memory for system.
 4. Use a dedicated system for the scanner.

BUIC_ERROR_FILE_IO	-107
Error while reading/writing file	
<ol style="list-style-type: none"> 1. Verify file attributes are acceptable for action desired. 2. Verify disk is not full. 3. Verify device is available and on line. 	
BUIC_INV_WINDOW	-108
Invalid window specification (1 or 2 ONLY).	
<ol style="list-style-type: none"> 1. BUIC API supports only two windows. 2. Was the window opened prior to this call? 3. Does the window exist? Has it been closed or error while opening? 	
BUIC_OPEN_WINDOW	-109
Error opening window.	
BUIC_CREATE_WINDOW	-110
Error creating window.	
BUIC_CLOSE_WINDOW	-111
Error closing window.	
<ol style="list-style-type: none"> 1. Was window previously opened? 2. Was window previously closed? 3. Was the correct window selected for closing? 	
BUIC_DISPLAY_IMAGE	-112
Error displaying image.	
<ol style="list-style-type: none"> 1. Does the image exist? 2. Is the image corrupted? 3. Are the scan document sizes correct to allow an image to be scanned? 4. Is the file read protected? 	
BUIC_ERROR_MEMORY_DEALLOC	-113
Unable to de-allocate memory.	
<ol style="list-style-type: none"> 1. Was the memory allocated? 2. Was the memory previously de-allocated? 	
E_OPEN_BMP_FILE	-120
Error while trying to open a BMP file.	
<ol style="list-style-type: none"> 1. Verify file exists if reading a file. 2. Verify file attributes are acceptable for action desired. 3. Verify path exists. 4. Verify path and file are properly terminated with a '\0'. 	
E_STRING_TOO_LONG	-122
No longer used.	
E_TS400_NO_INIT	-123
TS400 was not initialized before calling a scan.	
<ol style="list-style-type: none"> 1. Call BUICInit before attempting to scan. 	
BUIC_NOT_INIT	-124
Scanner not initialized.	
<ol style="list-style-type: none"> 1. Call BUICInit before checking status. 2. Cover was lifted and scanner lost initialization. Re-initialize and/or verify correct settings for scanner. 	

E_NO_SCANNER

-125

While scanning the SCSI bus with an inquiry command, no DCC Supported Scanner was found.

1. Verify scanner was on when system was booted.
2. Verify scanner is now on.
3. Verify scanner is cabled properly.
4. Check lights on scanner for error condition.

E_NO_DCC_SCANNER

-126

Serial number or identification does not match DCC scanners.

5.3 Scanning Error Codes

- B1000_START_ACQ** -202
Error during SCSI communication. This problem seems to be more prevalent when running 16-bit applications. It appears to be a communication problem between ASPI and the operating system on fast machines with low power.
1. Try 32-bit API and application.
 2. Try running on a slower system.
 3. Try running with a different SCSI card.
 4. Try running on a non portable system.
- B1000_CLR_ERR** -203
Error while calling scanner to clear errors. Clear errors is called after a scanner error and to clear the scanner before issuing certain commands to the scanner.
- B1000_BADGE** -204
Badge reader support has not been added at the current time.
- B1000_GET_DOC** -205
Error when calling get document. This function starts the scan by requesting the scanner to input a document. An error here is a SCSI communication error and not a scanner malfunction.
- B1000_SCSCI_ACQ** -206
Error while retrieving the scanned data.
1. System is too slow to retrieve data from scanner.
 2. Check jammed (unlikely).
 3. System too busy to respond to scanner. Close down other applications.
 4. Priority of application is too high and does not let ASPI have any time slices.
- B1000_TIME_OUT** -207
Time out during a SCSI command.
1. Verify cable is good and has a good connection.
 2. Verify SCSI time out parameter in *.INI is set high enough for SCSI read to complete and SCSI inquiries to complete.
 3. Verify time out in ASPI is sufficient.
- B1000_DMA_TRANSFER** -208
Time out or error during DMA transfer
1. Verify no other application is attempting to use DMA, conflict.
 2. Verify no other applications are running and stealing CPU time.
 3. Verify application has a high enough priority.
- B1000_MAGN_READER** -209
Error from Magnetic reader while reading magnetic code (MICR).
1. Verify MICR exists.
 2. Verify MICR is not damaged.

B1000_END_OF_JOB	-210
No longer used.	
B1000_SEND_CONFIG	-211
Error while sending configuration or *.INI parameters to scanner.	
1. Verify *.INI file has been read or defaults initialized.	
2. Verify configuration parameters are valid and do not conflict.	
B1000_NO_CHEQUES	-212
1. No checks in the feeder.	
2. Cover has been lifted, or is listed, and system is not acknowledging existence of checks.	
B1000_GEN_ERR	-213
Error code no longer used.	
B1000_NO_CFG	-214
Error code no longer used.	
B1000_NO_LOOP	-215
Loop not terminated. Document did not completely clear end sensor. Remove document from scan path.	
B1000_NO_FEED	-216
No feeding. Unable to load document.	
1. Verify document is not damaged, bent, or for some other reason unable to feed.	
2. Remove document and reinsert into input tray.	
3. Remove any folds or crinkles in document.	
B1000_DOUBLE_FEED	-217
Two or more documents in the check path. Double feed problem.	
1. Remove checks from document path.	
2. Remove any folds or crinkles in the checks.	
3. Fan the checks to separate them.	
4. Replace them in the input feeder.	
5. If double feed thresh holding is set too low, the scanner may be detecting the document as two checks and a double-feed.	
B1000_TMPFILE_ERR	-218
Error creating temp file.	
B1000_DANGEROUS	-219
The cover is up on the scanner.	
1. Close the scanner cover.	
2. See if the scanner cover is properly closed.	
3. Check cover switch.	
B1000_PAPER_JAM	-220
Document is jammed in track.	
1. Remove check from document path.	
2. Remove any folds or crinkles in the check.	
3. Fan checks to separate them.	
4. Replace check in the input feeder.	
B1000_DISK_READ	-222
Disk read/write error.	
1. Check attributes on file.	
2. Verify removable media is present.	
3. Verify operation of media.	

B1000_MEM_ALLOC	-223
Unable to allocate memory.	
<ol style="list-style-type: none"> 1. Shut down other windows and programs running to free memory. 2. Reboot system to see if some memory has been lost. 3. Get more memory for system. 4. Use a dedicated system for the scanner. 	
B1000_MEM_NOT_AVAILABLE	-224
Unable to allocate memory or memory was not allocated previously as expected.	
<ol style="list-style-type: none"> 1. Shut down other windows and programs running to free memory. 2. Reboot system to see if some memory has been lost. 3. Get more memory for system. 4. Use a dedicated system for the scanner. 5. Call initialization routine that initializes memory. 	
B1000_GRAYFILE	-230
Scan to file with gray not supported	
B1000_ROTATE	-231
Problem with rotation of file	
B1000_USI_COMPRESS	-232
Problem with UniSoft Imaging compression	
B1000_DISK_WRITE	-233
Error while writing to file.	
<ol style="list-style-type: none"> 1. Check attributes on file. 2. Verify removable media is present. 3. Verify operation of media. 	
B1000_USI_ROTATE	-234
Problem with UniSoft Imaging rotation	

5.4 Reading/Writing MICR to TIFF file Error Codes

BUIC_ERROR_GET_MICR	-315
TIFF magnetic code TAG not found.	
BUIC_ERROR_IMAGETYPE	-316
Not a TIFF file.	
1. Verify path and file name.	
BUIC_ERROR_SETTING_MICR_TAG	-317
Error setting magnetic code TAG.	
1. Verify path and file name.	
2. Verify file is a TIFF image (bitonal) and not a gray scale image (BMP or JPEG).	
BUIC_ERROR_SAME_FILENAME	-318
Cannot copy file to itself.	
1. Check file names. Input and output file are the same.	
BUIC_ERROR_SET_MICR	-319
Error setting TIFF magnetic code TAG.	
1. Verify path and file name.	
2. Verify file is a TIFF image (bitonal) and not a gray scale image (BMP or JPEG).	
SCAN_GET_DOC	-510
Problem with low level SCSI command Get Document to scanner.	
FAIL_PMEC	-516
Failure of SCSI command to set mechanical configuration parameters. Scanner was busy or parameters were invalid.	
SCSICMD_ERR	-517
Failure of SCSI command.	
ERR_LIGHTCAL	-518
Error with light calibration.	
1. Check parameters dealing with light calibration in *.INI file.	
ERR_BLACKLEVCAL	-519
Error with black level calibration.	
1. Check parameters dealing with black level calibration in *.INI file.	
ERR_WHITELEVCAL	-520
Error with white level calibration.	
1. Check parameters dealing with white level calibration in *.INI file.	
EXTRD_ERR or MICRRD_ERR	-521
Problem reading magnetic code on a TS400 or BUIC1500.	
1. Check parameters dealing with reading magnetic code in *.INI file.	
BADINSERT_ERR	-522
Multiple documents fed at same time.	
1. Fan documents before inserting in input pocket.	
NO_PRTHEAD	-523
Error no longer used.	
SCAN_ERRFLASH	-524
Scanner cover is open or not correctly latched.	
BAD_MICR	-525
Magnetic code had an unreadable character or was not found.	
CLEARPRT_ERR	-526
Error while clearing printer of previous BMP file.	
LOADPRT_ERR	-527

	Error while loading printer with BMP file or print string.	
EEREAD_ERR		-528
	Error reading EEPROM's.	
EEUPDATE_ERR		-529
	Error updating EEPROM's on scanner.	
GETDOC_ERR		-530
	Error getting a document. Error with Get document SCSI command.	
ENDDOC_ERR		-540
	Error with end document SCSI command.	
SETDOCPOS_ERR		-541
	Error with set document position.	
EJECT_ERR		-542
	Error while ejecting a document.	
	1. Verify document is not stuck in document path.	
	2. Verify document is not bent or crinkled.	
	3. Verify output feeder is not full.	
FAIL_TMPCFG		-543
	Failure of temporary configuration command.	
TMPCFG_REJECTED		-544
	Temporary configuration rejected.	
FAIL_ACQPAR		-545
	Configuration failed.	
	1. Verify configuration parameters.	
	2. Verify configuration parameters match scanner being configured.	
ACQPAR_REJECT		-546
	Configuration rejected.	
	1. Verify configuration parameters.	
	2. Verify configuration parameters match scanner being configured.	
PMEC_REJECTED		-547
	Mechanical configuration rejected.	
	1. Verify parameters.	
GETSTATUS_ERR		-548
	Error getting status.	
CLRERR_ERR		-549
	Error clearing errors.	
ACQTIME_OUT		-550
	Acquisition time out error.	
	1. Make acquisition time out longer.	
MICRTIME_OUT		-551
	MICR has timed out.	
BAD_PARAM_ERR		-552
	Invalid parameter or parameter setting.	
E_NO_PRINT_HEAD		-553
	No printer cartridge detected. Verify printer cartridge is present and properly seated OR turn off printer option (in configuration or *.INI file).	

E_NO_DPI100_BW	-554
100 DPI Black/white images not currently supported.	
E_BITS_PER_PIXEL	-555
Request bits per pixel is invalid.	
E_EXCEEDS_MAX	-556
Maximum of 3600 lines is exceeded.	
1. Probable cause is check jam in front of optical heads.	
E_INIFILEPATH	-557
Invalid Configuration File	
E_CFGFILEPATH	-558
Usually unable to create configuration file used to communicate to low level DLL's	
E_OPEN_FONT_FILE	-600
Error opening the font file for print string.	
1. Verify font file path and filename.	
2. Verify font file is a valid font file.	
3. Verify font file meets format specified for a font file.	
FONTFILE_ERR	-601
Error reading the font file for print string.	
1. Verify font file is a valid font file.	
2. Verify font file meets format specified for a font file.	
ERR_DESTSELECT	-602
Maxtime waiting for host sorting was exceeded. During a Hold and View session, TS400SetPocket was not called within 10 seconds of the completion of a scan.	
1. Hold and View is selected when Sorter is ON and Sorter Input is selected as external.	
2. After scan, is the application calling set pocket within 10 seconds.	
E_ERR_FLASH	-603
Error downloading to flash memory. Application should not be downloading to flash memory. Please notify technical support if this error is seen.	
E_HOSTSORT_TIMEOUT	-604
Application did not notify scanner of pocket selection before timeout. Application should send pocket information more quickly.	
NOT_SUPPORTED	-605
Function or option no longer supported by this DLL. See if more recent function is available or if option no longer supported by scanner.	
ERR_CFGCREATION	-606
Error creating configuration. Is disk write protected or does the BUICScan.ini file have invalid parameters.	
IMAGE_TOO_LONG	-607
Image was too long.	
1. Document too long.	
2. Two documents fed at once and looked like a very long document.	
TS2_CALLBACK_FULL	-608
User has been setting too many call back functions and overloaded call back storage area.	
1. User fewer calls to funcSetUpCallBack or use same events each time called.	

FORMAT_ERR	-609
Format error. TIFF images are bitonal (black/white) while JPEG and BMP are gray scale images.	
1. Black/White images must be saved as TIFF.	
2. Gray scale images must be saved as JPEG or BMP.	
NO_DATA_AVAIL	-610
Scanner did not save any data when document was scanned. Is at least one of these options set: front, back, or MICR.	
1. Set front to ON with BUICSetParam or BUICScan.ini.	
2. Set Back to ON with BUICSetParam or BUICScan.ini.	
3. Set MICR to ON with BUICSetParam or BUICScan.ini.	
UNKNOWN_CAL	-611
Not used.	
ABORTED_CAL	-612
Not used.	
ERR_FEEDSTAMP	-613
Not used.	
E_POST	-614
Unable to post a message. Windows error.	
TS2_ERR_GENERIC	-615
Generic error on TS200.	
TS2_ERR_DEVID_NOTVALID	-616
Was TS200 connected and initialized.	
1. Are more than two scanners on system?	
2. Was TS200 properly connected?	
TS2_ERR_NOPORTAVAILABLE	-617
No USB port available.	
TS2_ERR_OPENDEVICE	-618
Open port Error.	
TS2_ERR_NOCONNECTION	-619
Device not connected.	
TS2_ERR_INVALID_FUNCTION	-620
Incorrect function. Windows error.	
TS2_ERR_FILE_NOT_FOUND	-621
The system cannot find the file specified. Windows error.	
TS2_ERR_ACCESS_DENIED	-622
The access is denied. Windows error.	
TS2_ERR_INVALID_HANDLE	-623
The handle is invalid. Windows error.	
TS2_NOT_ENOUGH_MEMORY	-624
Not enough storage is available to process this command. Windows error.	
TS2_ERR_INVALID_ACCESS	-625
The access code is invalid. Windows error.	
TS2_ERR_INVALID_DATA	-626
The data is invalid. Windows error.	

TS2_ERR_BAD_UNIT	-627	The system cannot find the device specified. Windows error.
TS2_ERR_NOT_READY	-628	The device is not ready. Windows error.
TS2_ERR_BAD_COMMAND	-629	The device does not recognize the command. Windows error.
TS2_ERR_BAD_LENGTH	- 630	The program issued a command but the command length is incorrect.
TS2_ERR_WRITE_FAULT	-631	The system cannot write to the specified device. Windows error.
TS2_ERR_READ_FAULT	-632	The system cannot read from the specified device. Windows error.
TS2_ERR_GEN_FAILURE	-633	A device attached to the system is not functioning. Windows error.
TS2_ERR_INVALID_PARAMETER	-634	The parameter is incorrect.
TS2_ERR_IO_DEVICE	-636	The request could not be performed because of an I/O device error. Windows error.
TS2_ERR_INVALID_DLL	-637	One of the library files needed to run this application is damaged.
TS2_ERR_DLL_NOT_FOUND	-638	One of the library files needed to run this application cannot be found. Windows error.
TS2_ERR_DEVICE_REINITIALIZATION_NEEDED	-639	The indicated device requires re-initialization due to hardware errors.
TS2_ERR_DEVICE_NOT_CONNECTED	-640	The device is not connected. Windows error.
TS2_ERR_DEVICE_REINITIALIZATION_NEEDED	-641	An attempt was made to perform initialization when initialization was already completed.
TS2_ERR_NO_MORE_DEVICES	-642	No more local devices. Windows error.
TS4_UNABLE_TO_LOAD_TS4DLL	-643	Unable to load TS4 DLL.

5.5 Check or document endorsing Error Codes, Statistics

CHECKENDORSEMENT_PARAM_ERROR	-701	Bad parameter passed to check endorsement functions.
CHECKENDORSEMENT_MEMORY_ERROR	-702	Unable to allocate enough memory for check endorsement functions.
CHECKENDORSEMENT_ROTATE_ERROR	-703	Error rotating in check endorsement functions.
CHECKENDORSEMENT_BMP_FILE_ERROR	-704	BMP File writing error in check endorsement functions.
CHECKENDORSEMENT_MIRROR_ERROR	-705	Error while mirroring BMP in check endorsement functions.
CHECKENDORSEMENT_TEXT_CONVERT_ERROR	-706	Error while converting text to a BitMap image in check endorsement functions.
E_OPEN_STAT_FILE	-707	Could not open a statistics file for the given scanner in system directory.
E_READ_STAT_FILE	-708	Could not read statistics from statistics file for given scanner in system directory.
E_WRITE_STAT_FILE	-709	Could not write statistics from statistics file for given scanner in system directory.

6.0 Check Scanner Parameters

These mnemonics will be used with BUICTSetParam() and BUICTGetParam() functions. The information will be displayed in the following manner: the mnemonic, its numeric equivalent, and the scanners that support this parameter, a list of valid values, a brief explanation, and the default value. For more information, see the configuration file section.

BPARAM_MAGNREADER	1	(DCC SUPPORTED SCANNER)
BUICT_DEV_OFF	0	(Disable or turn off Magnetic Reader)
BUICT_DEV_ON	1	(Enable or turn on Magnetic Reader)

This parameter enables or disables the magnetic code or MICR reader. Default value is BUICT_DEV_OFF or MICR reader disabled.

NOTE: *This parameter is overridden by the Image Scan Format in the Scan functions.*

BPARAM_MAGNTYPE	2	(DCC SUPPORTED SCANNER)
BUICT_CMC7	0	(CMC7 MICR font)
BUICT_E13B	1	(E13B MICR font)
BUICT_OCRA	2	(Future - TellerScan™ 400 Only)
BUICT_OCRB	3	(Future - TellerScan™ 400 Only)

This parameter defines the type or font of magnetic code (MICR) line to read. Default value is BUICT_E13B.

BPARAM_BADGE	3	(DCC SUPPORTED SCANNER)
BUICT_DEV_OFF	0	(Disable or turn off Badge Reader)
BUICT_DEV_ON	1	(Enable or turn on Badge Reader)

The badge reader is an optional magnetic strip badge reader and must be ordered at time of purchase of the scanner. Default value is BUICT_DEV_OFF or Badge Reader disabled.

BPARAM_ENDORSER	4	(DCC SUPPORTED SCANNER)
BUICT_DEV_OFF	0	(Disable or turn off Endorser)
BUICT_DEV_ON	1	(Enable or turn on Endorser)

The endorser is an optional roller stamp for the front of documents and must be ordered at time of purchase of the scanner. Default value is BUICT_DEV_OFF or endorser disabled.

BPARAM_CCDMODE	5	(DCC SUPPORTED SCANNER)
BUIC_ACQ_CCD_1MHZ	0	(Standard speed of 1 MHz)
BUIC_ACQ_CCD_2MHZ	1	(High speed of 2 MHz)

Standard speed often gives better contrast while high speed scans at a faster speed. Default value is BUIC_ACQ_CCD_2MHz or high speed.

BPARAM_DPI	6	(DCC SUPPORTED SCANNER)
BUIC_DPI100	0	(100 X 100 DPI)
BUIC_DPI200	1	(200 X 200 DPI)
BUIC_DPI200X100FAST	2	(200 X 100 DPI scaled up to 200 X 200 using row averaging)
BUIC_DPI200X100	3	(200 X 100 DPI scaled up to 200 X 200 by using row repeating)

This parameter defines the DPI of the scan. Default value is BUIC_DPI200. BUIC_DPI200X100FAST and BUIC_DPI200X100 are B1500 and TS400 only. BUIC_DPI100 (black/white) is not currently supported by TS400.

BPARAM_PHOTOCELL	7	(DCC SUPPORTED SCANNER)
BUIC_DEV_OFF	0	Double feed detect off or disabled
BUIC_DEV_ON	1	Double feed detect on or enabled (B1000 ONLY)
Values of 1-255		Threshold for double feed detect (B1500 and TS400)

Double feed detection enabled or disabled. In the case of the B1500 and TS400, the threshold value of the double feed detection is requested.

BPARAM_PHOTO	8	(B1000)
Values are 0 and 1		

Default value is 1

BPARAM_FRONTACQSTART	9	(B1000)
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Valid range is 0 to 400

This parameter defines, for the front of the check, the distance the check moves from the feeder before the image capture is started. Default value is 150.

BPARAM_REARACQSTART	10	(B1000)
Valid range is 0 to 400		

BPARAM_STOPMOTOR 16 (B1000)
Valid range is 1 to 5000

Default value is 3500

BPARAM_SCANNERID 17 (B1000)
Valid range to 1 to 8

Default value is 1

BPARAM_DOCHEIGHT 18 (B1000)
Valid range is 1 to 1200

Default value is 640

BPARAM_WINDOWX1 19 (B1000, B1500, TS400)
BPARAM_IMGRIGHT 19
Valid range is 0 to 2000 (B1000)
Valid range is 0 to 1000 (B1500, TS400)

Default value is 0.

Note: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Consequently, Image Right must be less than Image Left, and Image Bottom must be less than Image Top.*

BPARAM_WINDOWX2 21 (B1000, B1500, TS400)
BPARAM_IMGLEFT 21
Valid range is 0 to 2000 (B1000)
Valid range is 0 to 1000 (B1500, TS400)

Default value is 800. (B1000)
Default value is 1000. (B1500 and TS400)

Note: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Consequently, Image Right must be less than Image Left, and Image Bottom must be less than Image Top.*

BPARAM_WINDOWY1	20	(B1000, B1500, TS400)
BPARAM_IMGBOTTOM	20	
Valid range is 0 to 1200		(B1000)
Valid range is 0 to 863		(B1500, TS400)

Default value is 0.

Note: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Consequently, Image Right must be less than Image Left, and Image Bottom must be less than Image Top.*

BPARAM_WINDOWY2	22	(B1000, B1500, TS400)
BPARAM_IMGTOP	22	
Valid range is 0 to 1200		(B1000)
Valid range is 0 to 863		(B1500, TS400)

Default value is 832.	(B1000)
Default value is 863.	(B1500, TS400)

Note: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Consequently, Image Right must be less than Image Left, and Image Bottom must be less than Image Top.*

BPARAM_GRAY	23	(B1000, B1500, TS400)
BUIC_MONO	0	Black/White, Bitonal, 1-bit/pixel
BUIC_GRAY	1	Gray scale

Select whether to scan images black/white (bitonal) or gray scale. This parameter is overridden by the Scan routine parameter.

TBPARAM_ACQ_256GRAY	45	(B1500, TS400)
BUIC_GRAY4	0	4-bits per pixel, 16 shades of gray
BUIC_GRAY8	1	8-bits per pixel, 256 shades of gray

If gray scale is selected, this parameter selects between shades 16 and 256 shades of gray. Default is 256 shades of gray.

BPARAM_PHOTODELAY 24 (B1000)

Valid values are 0 and 1

TBPARAM_IMG_CROP 36 (TS400)

0 Crop using Window X1, X2, Y1, Y2

1 Crop using Window X1, X2, Y1, Y2
and then remove any black border at top of image.

Select whether to crop black border at top of documents.

Default is 0.

TBPARAM_IMG_ROTATE 37 (B1500, TS400)

0 No rotation, image of document on side

1 Rotation, image is horizontal

If no rotation is selected, document scanned from right edge will be rotated 90 degrees. If rotation is selected, document image will be rotated 90 to look as expected.

Default is 1.

TBPARAM_EXTREADER_TYPE 47 (B1500, TS400)

0 OCR

1 MICR

If OCR is selected, OCR is used to read MICR. If MICR is selected, on board magnetic MICR reader is used to detect and interpret MICR.

Default is 1.

TBPARAM_MICR_FONT 48 (B1500, TS400)

BUIC_CMC7 0 (CMC7 MICR font)

BUIC_E13B 1 (E13B MICR font)

This parameter defines the type or font of magnetic code (MICR) line to read.

Default value is BUIC_E13B.

TBPARAM_SORTER_INPUT	49	(TS400)
BUIIC_INT	0	(Internal – scanner does sorting)
BUIIC_EXT	1	(External – application does sorting)

This parameter defines the input for the sorting routine. If BUIIC_INT is selected and sorter is turned on, the scanner sorts according to the selected algorithm. If external is selected, the application must call TS400SetPocket to specify the output pocket. Default value is BUIIC_INT.

TBPARAM_MICR_ENABLE	56	(BUIIC1500, TS400)
BUIIC_DEV_OFF	0	(MICR OFF)
BUIIC_DEV_ON	1	(MICR_ON)

This parameter turns on or off the internal magnetic reader. Default value is BUIIC_DEV_ON.

TBPARAM_MICR_FORMAT	57	(BUIIC1500, TS400)
MICR_FORMAT_NOSPACE	0	(MICR with removed spaces)
MICR_FORMAT_ALL_SPACES	2	(MICR with spaces)
	3	(MICR with spaces padded into Amount Field)

This parameter selects the internal magnetic reader format. Default value is BUIIC_DEV_ON.

TBPARAM_OVERSCAN	59	(BUIIC1500, TS400)
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This parameter adjusts for over scanning on the right edge of the document. Default value is 80.

TBPARAM_PRELOADBMP	60	(BUIIC1500, TS400)
BUIIC_DEV_OFF	0	(LOAD BMP Between Scans)
BUIIC_DEV_ON	1	(LOAD BMP Before First Scan)

This parameter turns on or off the BMP pre-load feature. If the user is endorsing the same string or BMP on every check, then turning this option on will make scanning significantly faster. Default value is BUIIC_DEV_OFF.

CFG_IMAGECROPPING_THRESH 108 (TS200)

This parameter selects the crop threshold for removing the top black area (overscan area) for documents. Pure black is 0 while pure white is 255. Shades of gray vary between pure black and pure white.

Default value is 80.

CFG_MISC_IMAGEWAIT 109 (TS200, TS205, TS210, TS220)

This parameter selects the number of milliseconds to wait after a BUICScan before returning – 212 for no checks present. The TS200 is a drop feed and BUICScan may be issued before the document is dropped; therefore, the system will wait before returning an error of no documents present.

Default value is 10000 or 10 seconds

TPARAM_JPEG_QUALITY 110 (BUIC1500, TS400, TS200)

This parameter selects the quality of JPEG image. As the JPEG quality is increased, the size of the stored image increases. Therefore, the user can decide the appropriate amount of quality versus size of image. Values such as 25 are of lower quality but are often adequate for many applications and result in smaller size images in storage.

Default value is 75.

CFG_MISC_ENABLESCAN	111	(TS200)
BUIC_DEV_OFF	0	(Scanner is not enabled until a BUICScan is issued)
BUIC_DEV_ON	1	(Scanner is re-enabled after each document is read, thus is ready to scan the next document even before BUICScan is issued)

This parameter re-enables the scanner after each document is scanned.

Default value is 1, re-enable scan.

CFG_MISC_MICR_VERIFY 116 (TS400, TS200)

This parameter selects whether is use OCR verification techniques on the MICR to improve the accuracy of the MICR read by the scanner. If 0 is selected, OCR verification of the MICR is not attempted. Otherwise, the value is the number of @'s in the scanner MICR before aborting OCR MICR verification.

Default value is 4.

CFG_MISC_MICR_VERIFY_LOG 117 (TS400, TS200)

This parameter should be set to 0 unless instructed by a Technical Support person. If the value is set to 1, a log file of OCR verification is created which can get quite large after frequent scanning.

Default value is 0.

CFG_MISC_MICR_GRAY_THRESHOLD 118 (TS400, TS200)

This parameter is a multiple of 16 from 32 to 160. This specifies the threshold to use for converting grayscale images to black/white for enhanced MICR processing. The default is 96 and a value of 64 would be used on darker images and a value of 128 would be used on lighter images or document without background in the MICR area of a check.

Default value is 64.

CFG_IMAGE_FRONTCOLOR 119 (TS205 and TS220)
BUIC_DEV_OFF 0 Scan in Grayscale (Default)
BUIC_DEV_ON 1 Scan in Color

CFG_IMAGE_BACKCOLOR 126 (TS205 and TS220)
BUIC_DEV_OFF 0 Scan in Grayscale (Default)
BUIC_DEV_ON 1 Scan in Color

CFG_MISC_DOUBLEFEEDDELAY 133
BUIC_DEV_OFF 0 Double Feed Off
BUIC_DEV_ON 1 Double Feed On

CFG_MISC_MICR_HONGKONG_RULES 142
BUIC_DEV_OFF 0 Normal E13B Micr Verification Rules
BUIC_DEV_ON 1 Verify E13B Micr assuming good MICR OCR

CFG_MISC_PH_WHITE_THRESH 143
Value use to detect the end of a document on a TS210/TS220. The default value is 40, but 30 will work for most scanners also. Set too low and the user will see extra jam errors.

CFG_MISC_PH_WHITE_TOLER 144
How much tolerance to allow in the white threshold setting. Default is 15.

CFG_MISC_PH_ENABLE 145
BUIC_DEV_OFF 0 Disable normal Endo of Document Detection
BUIC_DEV_ON 1 Normal End of Document Detection using White Threshold out Setting See 143.

7.0 Configuration Files

To fully configure and initialize the scanner, a configuration file is highly recommended. Separate configuration files for each scanner can be supported with the application program calling the correct configuration file (see BUICReadConfig), but a single combined configuration file for all three scanners is recommended. The default configuration file name for the three scanners is BUICSCAN.INI, which should be located in the operating system directory (usually C:\Windows or C:\WinNT). BUICInit will search for BUICSCAN.INI and read the configuration file and download it to the scanner upon initialization.

Although BUIC and TellerScan™ devices are similar in many ways, separate sections in the configuration file were created to better serve the new scanners. The BUIC 1000 configuration parameters are located under header [Setup] while BUIC 1500 and TellerScan™ configuration parameters are located under header [ACQ. SETUP]. The BUIC 1500 and TellerScan™ configuration section is interchangeable. The TellerScan™ devices require more configuration parameters to fully set their additional features, but the BUIC 1500 will ignore these additional parameters. The TellerScan™ 400 also supports an additional section [DOUBLE LIGHT SOURCE] to set additional parameters.

During BUICInit, an inquiry command is issued to the scanner to identify the scanner. BUICInit then calls the proper function to read the configuration parameters for the scanner. If a BUIC 1500 or TellerScan™ device is present, the API will first look for configuration parameters under the header [ACQ. SETUP]. If the configuration parameter is not present under [ACQ. SETUP], the API will look for the configuration parameter under [Setup]. If the configuration parameter is not found under either heading or the configuration file is not found, default values are selected.

If a BUIC 1000 is the scanner, the API looks for the configuration file and then the configuration parameters under heading [Setup]. If the configuration file or parameter is not found, default values are selected.

The discussion of the configuration section begins with an explanation of the BUIC 1500 and TellerScan™ configuration section. An explanation of the parameter is given, a range or set of acceptable values is given, the default value, and then the BUIC 1000 equivalent if it exists.

Sample configuration files are included with the DCCAPI. If you are upgrading from a BUIC1000, use this documentation and explanation along with your BUIC1000 configuration file to upgrade the scanner's configuration file.

7.1 BUIC 1500 and TellerScan™ Parameters

The following turns will be used interchangeably.

Disabled = OFF
Enabled = ON

7.1.1 Devices

Devices may be enabled and disabled. For most devices the default value is disabled, therefore to use a device it must be enabled in the configuration file or by calling BUICSetParam.

Devices: Internal MICR= Reserved at this time and set to 0.

Values:

Config File Value	Meaning	Description
0	Disabled	Reserved

Default: Disabled

BUIC 1000 equivalent: None.

Devices: External Reader= The external magnetic reader device enables the magnetic code (MICR) reader or OCR on serial port 0. Currently, the only supported external reader is the magnetic reader (MICR), though future capability has been designed into the parameter. Therefore, the external magnetic reader is enabled or disabled.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable External Magnetic Reader or OCR.
1	Enabled	Enable External Magnetic Reader or OCR.

Default: Disabled

BUIC 1000 equivalent: MagnReader=

Devices: Badge Reader= The badge reader is an optional feature that must be ordered at time of purchase. The badge reader is a magnetic strip reader.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable Badge reader (OFF)
1	Enabled	Enable Badge reader (ON)

Default: Disabled

BUIC 1000 equivalent: Badge=

Devices: Endorser= The endorser is an optional roller ink stamp for printing on the front of the document. This optional feature must be ordered at time of purchase. The endorser roller stamp is non-varying and the stamp's output cannot be changed by software.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable Endorser reader (OFF)
1	Enabled	Enable Endorser reader (ON)

Default: Disabled

BUIC 1000 equivalent: Endorser=

Devices: Ink-jet Printer= The ink-jet printer prints a BMP file or ASCII string onto the back of the document. Please see note below before enabling ink-jet printer.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable ink-jet printer (OFF)
1	Enabled	Enable ink-jet printer (ON)

Default: Disabled

BUIC 1000 equivalent: None

NOTE: *Before enabling the ink-jet printer, read about the configuration parameters listed below. When the ink-jet printer is enabled, it will use some of the following configuration parameters and there are no defaults for these values. The values should be set in the configuration file or by function BUICSetParam before scanning, otherwise errors will occur.*

Print file:=

Print string:=

Print filename:=

Font filename:=

Devices: Sorter= The sorter is a two pocket output sorter and is available ONLY on the TellerScan™ 400. Please see note below about setting the other sorter configuration parameters before enabling sorter.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable Sorter (OFF)
1	Enabled	Enable Sorter (ON)

Default: Disabled

BUIC 1000 equivalent: None

Note: *Before enabling the sorter, some of the following parameters may need to be set for proper operation of the sorter.*

- Sorter: Input=
- Sorter: Algorithm=
- Sorter: Init.string pos.=
- Sorter: End string pos.=
- Sorter: STR1=
- Sorter: STR2=

7.1.2 Ext.Reader

External reader parameters further define the operation of the external magnetic code or MICR reader.

Ext.Reader: Type= Reserved and must be set to 1.

Values:

Config File Value	Meaning	Description
1	MICR	Magnetic Code

Default: MICR

BUIC 1000 equivalent: None.

Ext.Reader: Font= Defines the magnetic code (MICR) code line font.

Values:

<u>Config File Value</u>	<u>Meaning</u>	<u>Description</u>
0	CMC7	MICR is CMC7
1	E13B	MICR is E13B
2	OCR A	Optical Character Reader (OCR) A (TS400 Only)
3	OCR B	Optical Character Reader (OCR) B (TS400 Only)

Default: E13B

BUIC 1000 equivalent: MagnType=

Ext.Reader: Initial Pos.= Distance (in motor steps) from the right edge of the document to the initial position of the MICR or code line reading.

Values:

<u>Config File Value</u>	<u>Meaning</u>	<u>Description</u>
0-1000	Motor Steps	Distance from the right edge.

Default: 0

BUIC 1000 equivalent: None.

Ext.Reader: End Pos.= Distance (in motor steps) from the right edge of the document to the ending position of the MICR or code line reading. If the document is shorter than the value, the reading stops at the left edge of the document.

Values:

<u>Config File Value</u>	<u>Meaning</u>	<u>Description</u>
0-1000	Motor Steps	Distance from the right edge.

Default: 1000

BUIC 1000 equivalent: None.

Ext.Reader: Baud-Rate= (RESERVED) Baud rate for communication between the scanner and the external magnetic code reader.

Values:

Config File Value	Meaning	Description
0	Reserved	Baud Rate 1200
1		Baud Rate 2400
2		Baud Rate 4800
3		Baud Rate 9600
4		Baud Rate 19200
5		Baud Rate 38400

Default: 3

BUIC 1000 equivalent: None.

Ext.Reader: Parity= (RESERVED) Parity for communication between the scanner and the external magnetic code reader.

Values:

Config File Value	Meaning	Description
0	Reserved	Parity None
1		Parity Odd
2		Parity Even

Default: 0

BUIC 1000 equivalent: None.

Ext.Reader: Char Length= (RESERVED) Character length for communication between the scanner and the external magnetic code reader.

Values:

Config File Value	Meaning	Description
0		7 Bits
1	Reserved	8 Bits

Default: 1

BUIC 1000 equivalent: None.

Ext.Reader: Stop-Bit= (RESERVED) Number of stop bits for communication between the scanner and the external magnetic code reader.

Values:

Config File Value	Meaning	Description
0	Reserved	1 Stop bit
1		2 Stop bits

Default: 0

BUIC 1000 equivalent: None.

7.1.3 Sorter

Sorter parameters further define the operation of the two-pocket sorter for the TellerScan™ 400.

Sorter: Input= Hold and view sorting allows the user to scan an image and then determine which pocket to place the document based on the MICR or the image contents. TS400SetPocket must be called within 10 seconds of scan completion.

Values:

Config File Value	Meaning	Description
0		Internal MICR sorting
1	Hold and View	Host controlled sorting

Default: 0

BUIC 1000 equivalent: None.

Sorter: Algorithm= Selection of the algorithm for sorter to use. The MICR or magnetic code used for comparison must be located between Initial and End string position and the strings used for comparison are defined in STR1 and STR2. These configuration parameters are more fully explained later.

NOTE: Always set both STR1 and STR2.

Values:

Config File Value	Meaning	Description
0	None	Disabled - No sorting done
1	MICR Read Error	Some unreadable characters in MICR or no MICR detected.
2	Equal STR1	MICR same as STR1
3	Not Equal STR1	MICR different from STR1
4	>= STR1	MICR greater than or equal STR1
5	<= STR1	MICR less than or equal STR1
6	STR1 <= && <= STR2	MICR greater than or equal STR1 AND MICR less than or equal STR2 (include in STR1 ... STR2 interval)
7	< STR1 > STR2	MICR less than STR1 OR MICR greater than STR2 (outside of STR1 ... STR2 interval)
8	== STR1 == STR2	MICR equals or same as STR1 OR STR2
9	!= STR1 && != STR2	MICR different from STR1 and STR2

Default: 0

BUIC 1000 equivalent: None.

Sorter: Init.String Pos.= Defines initial position of the MICR for comparison in the sorting algorithm.

Values:

Config File Value	Meaning	Description
0-99		

Default: 0

BUIC 1000 equivalent: None.

Sorter: End.String Pos.= Defines ending position of the MICR for comparison in the sorting algorithm.

Values:

Config File Value	Meaning	Description
0-99		

Default: 0

BUIC 1000 equivalent: None.

Sorter: STR1= ASCII string to be used in comparisons for selecting output pocket for document during sorting.

NOTE: *Always set both STR1 and STR2.*

NOTE: *Maximum length of 10 characters.*

NOTE: *If either STR1 or STR2 is NULL, sorting will be disabled.*

Values:

Config File Value	Meaning	Description
	NULL	No value defaults to null string

Default: NULL

BUIC 1000 equivalent: None.

Sorter: STR2= ASCII string to be used in comparisons for selecting output pocket for document during sorting.

NOTE: *Always set both STR1 and STR2.*

NOTE: *Maximum length of 10 characters.*

NOTE: *If either STR1 or STR2 is NULL, sorting will be disabled.*

Values:

Config File Value	Meaning	Description
	NULL	No value defaults to null string

Default: NULL

BUIC 1000 equivalent: None.

7.1.4 Printer

Printer parameters further define the operation of the ink-jet printer.

Printer: Initial Pos.= Reserved and must be set to 0.

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0

BUIC 1000 equivalent: None.

Printer: Double Density= Reserved and must be set to 0.

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0

BUIC 1000 equivalent: None.

Printer: Intensity= Intensity or level of darkness for printing.

Values:

Config File Value	Meaning	Description
0-31		Higher the number the darker the print

Default: 8

BUIC 1000 equivalent: None.

Printer: BMP Load Once=0 or 1

Values:

Config File Value	Meaning	Description
0		Load BMP or String Between Every Check
1		Pre-load BMP or String before first check or after each call to funcTS400SetPrint

Default: 0 BUIC 1000 equivalent: None.

7.1.5 Print

Print parameters further define the data to be printed with the ink-jet printer.

PrintFile= Source of the data to be printed with the ink-jet printer, either BMP file or print string.

NOTE: *If selecting BMP file, see Print file configuration parameter. If selecting ASCII string, see print string and font file name configuration parameters.*

Values:

Config File Value	Meaning	Description
0		BMP File
1		ASCII String

Default: 0

BUIC 1000 equivalent: None.

Print Filename:= Print BMP file. BMP file must be rotated 90 degrees from horizontal and be 24 pixels wide. Maximum height must be less than or equal to 2600.

Values:

Config File Value	Meaning	Description
NULL		No file specified
Path/Filename		Complete path and filename.

Default: NULL

BUIC 1000 equivalent: None.

Print String:= ASCII string to be printed with the ink-jet printer.

NOTE: *Font filename must be specified.*

Values:

<u>Config File Value</u>	<u>Meaning</u>	<u>Description</u>
NULL		No text specified.
ASCII String		Printable ASCII string.

Default: NULL

BUIC 1000 equivalent: None.

Font Filename:= A font file for print string. The font file must follow the format specified below.

Values:

<u>Config File Value</u>	<u>Meaning</u>	<u>Description</u>
NULL		No file specified.
Path/Filename		Complete path and filename of the font file.

Default: NULL

BUIC 1000 equivalent: None.

FONT FILE SPECIFICATIONS:

The following header must be located at the front of the Font file with the fonts starting at file offset shHeaderSize.

```
struct HEADER_FONT_FILE
{
    unsigned short shHeaderSize; /* File offset where fonts begin */
    unsigned short shFontYDim; /* Y dimension of the font (fixed = 24) */
    unsigned short shFontXDim; /* X dimension of the font (fixed = 24) */
    unsigned long ulTotalFonts; /* Number of the fonts in the file */
    long lSpare[4];
};
```

7.1.6 Acquisition

Acquisition parameters further define the imaging of the scanned document.

IMG Format= Select the image compression format for gray scale images only at the current time. Currently not used since this parameter is passed (and therefore overridden) in the scan function.

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0

BUIC 1000 equivalent: None.

Image: Rotate= Rotation of the image. If no rotation is selected, the image is scanned and no rotation is done to compensate for the reading of image at 90 degrees. Rotation set to 1 rotates a document or check to the horizontal orientation expected.

Values:

Config File Value	Meaning	Description
0	Disabled	No rotation to compensate for vertical reading.
1	Enabled	Rotate to horizontal.

Default: Enabled

BUIC 1000 equivalent: None.

Image: Crop= TS400 ONLY. If crop is set to 0 or 1, cropping will crop the image within the specifications of Img. Top and Img. Bottom. To remove black image data at the top of a document scanned on the TS400, set crop to 1.

Values:

Config File Value	Meaning	Description
0	Disabled	No cropping of black at top of image
1	Enabled	Cropping of black at top of image

Default: Enabled

BUIC 1000 equivalent: None.

Acq: Front + Rear= Selects the part of the document to scan. Choices are front or front/back. Back only is not an option for the B1500 or TS400.

Note: *If Acq: Front Only is in the INI file it may conflict with this setting.*

Values:

Config File Value	Meaning	Description
0		Scan front of document only.
1		Scan front and back of document.

Default: 1

BUIC 1000 equivalent: None.

Acq: Gray= Selects whether to scan the image black/white (bitonal) or gray scale.

Values:

Config File Value	Meaning	Description
0	Black & White	Image is bitonal
1	Gray Scale	Image is 4-bit or 8-bit gray scale, 16 or 256 shades.

Default: 1

BUIC 1000 equivalent: Gray=

Acq: Gray 256 lev.= If gray scale was selected, this configuration parameter selects between 16 shades of gray (4-bits/pixel) or 256 shades of gray (8-bits/pixel).

Values:

Config File Value	Meaning	Description
0	16 shades of gray	4-bits per pixel

1

256 shades gray

8-bits per pixel

Default: 1

BUIIC 1000 equivalent: None.

Acq: CCD speed= Selects standard speed or high speed. Standard speed often gives better contrast while high speed scans at a faster speed.

Values:

Config File Value	Meaning	Description
0	Standard Speed	1 MHz
1	High speed	2 MHz

Default: 1

BUIIC 1000 equivalent: CCD_Mode=

Acq: Doc.thickness= Enables the thickness photocell. Double feed detection.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable thickness photocell
1	Enabled	Enable thickness photocell

Default: 0

BUIIC 1000 equivalent: None.

Acq: Resolution= Resolution or dots per inch (DPI) of the scanned image.

NOTE: 200 by 100 scans the image at 200 by 100. The image is then scaled to 200 by 200 by repeating every row. This does not produce a true 200 by 200 image, but a very good approximation with higher throughput speeds than 200 by 200 DPI since less data is transferred from the scanner.

NOTE: 200 by 100 Fast scans the image at 200 by 100. The image is then scaled to 200 by 200 by inserting a row that is the average of the previous and succeeding row.

Values:

Config File Value	Meaning	Description
0	100 by 100	100 by 100 DPI
1	200 by 200	200 by 200 DPI
2	200 by 100 Fast	200 by 100 DPI scaled up to 200 by 200 DPI
3	200 by 100	200 by 100 DPI scaled up to 200 by 200 DPI

Default: 1

BUIC 1000 equivalent: Resolution=

Acq: Front B/W threshold= Threshold for front image when scanning black/white.

Values:

Config File Value	Meaning	Description
0-15		Higher values make image lighter, lower values make image darker. Suggested value of 7-10.

Default: 8

BUIC 1000 equivalent: FrontThreshold=

Acq: Back B/W Threshold= Threshold for back image when scanning black/white.

Values:

Config File Value	Meaning	Description
0-15		Higher values make image lighter, lower values make image darker. Suggested value of 7-10.

Default: 8

BUIC 1000 equivalent: BackThreshold=

Acq: Img Right= Distance in motor steps from the right edge of the document to the beginning of the image acquisition. In other words, the number of motor steps to wait before starting capture of the image.

NOTE: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Therefore, Img. Right should be less than Img. Left. Img. Bottom should be less than Img. Top.*

Values:

Config File Value	Meaning	Description
0-1000	Motor steps from right edge.	IMG RIGHT must be less than IMG LEFT

Default: 0

BUIC 1000 equivalent: WindowX1=

Acq: Img Left= Distance in motor steps from the right edge of the document to the end of the image acquisition. In other words, the number of motor steps to wait before ending capture of the image. When the document is shorter than Img. Left, acquisition will end with the edge of the document.

NOTE: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Therefore, Img. Right should be less than Img. Left. Img. Bottom should be less than Img. Top.*

Values:

Config File Value	Meaning	Description
0-1000	Motor steps from right edge.	IMG RIGHT must be less than IMG LEFT

Default: 1000

BUIC 1000 equivalent: WindowX2=

Acq: Img Bottom= Position of the bottom edge of the acquisition area. Value stated in pixels.

NOTE: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Therefore, Img. Right should be less than Img. Left. Img. Bottom should be less than and Img. Top.*

Values:

Config File Value	Meaning	Description
0-863	Pixels from bottom edge.	IMG Bottom must be less than IMG Top

Default: 0

BUIC 1000 equivalent: WindowY1=

Acq: Img Top= Position of the top margin of the acquisition area. Value stated in pixels.

Note: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Therefore, Img. Right should be less than Img. Left. Img. Bottom should be less than Img. Top.*

Values:

Config File Value	Meaning	Description
0-863	Pixels from bottom edge.	IMG Bottom must be less than IMG Top

Default: 0

BUIC 1000 equivalent: WindowY2=

Acq: Overscan= If document images appear to have extra data at the right side of the image that is being overscanned past the end of the image, this value can be set to clip the image. Each scanner could have a different value for this parameter and it can be determined by visual checking of the image. If the value is set to high, the image will be clipped on the right. This value differs from Img Left since it clips the specified number of pixels from the left edge no matter how many pixels wide the image is.

NOTE: *The value must be a multiple of 8.*

Values:

Config File Value	Meaning	Description
0-200	Pixels	Clips right edge of image.
1		

Default: 80

BUIC 1000 equivalent: None.

7.1.7 Double Feed Detection

Double feed parameters further define the detection of double feeding.

Double Feed: Length= Selects the minimal length in motor steps of detection before declaring a double feed. In other words, a double feed must be detected for a minimal length before signaling a double feed error signal.

Values:

Config File Value	Meaning	Description
0	Motor steps	

Default: 0

BUIC 1000 equivalent: None.

Double Feed: Threshold= Double-feed sensor sensitivity.

Values:

Config File Value	Meaning	Description
0-255		Intensity threshold

Default: 0

BUIC 1000 equivalent: None.

7.1.8 RS232

RS232 communication parameters further define the RS232 communication and are reserved.

RS232: Baud-rate= Reserved. Baud rate for RS232 communication.

Values:

Config File Value	Meaning	Description
0		Baud Rate 1200
1		Baud Rate 2400
2		Baud Rate 4800
3	Reserved	Baud Rate 9600
4		Baud Rate 19200
5		Baud Rate 38400

Default: 3

BUIC 1000 equivalent: None.

RS232: Char length= (RESERVED). Character length for RS232 communication.

Values:

Config File Value	Meaning	Description
0		7 Bits
1	Reserved	8 Bits

Default: 1

BUIC 1000 equivalent: None.

RS232: Parity= (RESERVED) Parity for RS232 communication.

Values:

Config File Value	Meaning	Description
0	Reserved	Parity None
1		Parity Odd
2		Parity Even

Default: 0

BUIC 1000 equivalent: None.

RS232: Stop bit= Reserved. Number of stop bits for RS232 communication.

Values:

Config File Value	Meaning	Description
0	Reserved	1 Stop bit
1		2 Stop bits

7.1.9 MICR

Internal MICR parameters further define the internal MICR and are reserved.

MICR: Font= Reserved and set to 1.

Values:

Config File Value	Meaning	Description
0		CMC7
1	Reserved	E13B

Default: 1

BUIC 1000 equivalent: None.

MICR: Format=

Values:

Config File Value	Meaning	Description
0		Original MICR format
1		MICR without leading C or E
2		MICR with spaces
3		Pad Amount Area with spaces – must be using MICR OCR

Default: 1

BUIC 1000 equivalent: None.

MICR: Initial Pos.= Reserved and set to 0.

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0

BUIC 1000 equivalent: None.

MICR: End Pos.= Reserved and set to 1000.

Values:

Config File Value	Meaning	Description
1000	Reserved	

Default: 1000

BUIC 1000 equivalent: None.

7.1.10 Other

Other configuration parameters for setting up the BUIC 1500 or TellerScan™ 400 scanners.

Endorser: Position= Position to place endorsement on the front of the document.

Values:

Config File Value	Meaning	Description
1-1000	Motor Steps	

Default: 100

BUIC 1000 equivalent: None.

Image Memory Dimension= Dimension of the image RAM installed on the scanner.

Values:

Config File Value	Meaning	Description
0	1 Mword	
1	4 Mword	

Default: 0

BUIC 1000 equivalent: None.

Acquisition Time out= Maximum time scanning a document before issuing a time out error. Value is in seconds.

Values:

Config File Value	Meaning	Description
1-10	Seconds	

Default: 8

BUIC 1000 equivalent: None.

Firmware File= For the TS200 series of scanners, the location of the firmware may be specified. It is recommended the firmware be placed in a drivers directory under the system directory and not value be entered here. But for users with specific needs, this functionality has been added.

Values:

Config File Value	Meaning	Description
Path/file	Path and file name of firmware for TS200 series of scanners	

Default: c:\windows\system32\drivers

Statistics= If ON (Value of 1), a statistics file will be kept of errors, images read, and times that can be used by Digital Check Corporation to analyze the need for adjustments or maintenance. This file will also be used to evaluate scanner operation.

Values:

Config File Value	Meaning	Description
0/1	OFF/ON	If 1, a statistics file will be kept in the system directory that can be used for determining need for adjustments or maintenance.

Default: 0

BUIC 1000 equivalent: None.

Reconnect Delay= For TS200 series of scanners, or more specifically USB, if the USB bus is disconnected, it provides for a few milliseconds delay while waiting for the USB to reconnect. The value is in milliseconds so 1000 is a second. If USB does not reconnect, and error message is returned and proper error handling should be practiced.

Values:

Config File Value	Meaning	Description
0->>>	Milliseconds	Default is wait 8000 milliseconds or 8 seconds after USB disconnects, before assuming it will not automatically reconnect.

Default: 8000

BUIC 1000 equivalent: None.

DLL Verbose= Enable/Disable debugging messages

Values:

Config File Value	Meaning	Description
0	Disabled	
1	Enabled	

Default: 0

BUIC 1000 equivalent: None.

Rewind delay= (RESERVED)

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0
BUIC 1000 equivalent: None.

Manual Feed= (RESERVED)

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0
BUIC 1000 equivalent: None.

Forth&back= (RESERVED)

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0
BUIC 1000 equivalent: None.

FileNamesTerminated= Defines whether filenames are terminated with the 'C' language convention of '\0' or not. If set to 0, a '\0' will be set to replace the first white space character. Set to 0 if using Visual Basic without '\0' termination of file names. Set to 1 to handle Windows 95 convention of allowing spaces in file names.

Values:

Config File Value	Meaning	Description
0		Files names not terminated with '\0'
1		Files names terminated with '\0'

Default: 1

BUIC 1000 equivalent: None.

Printer BMP Load Once= Defines whether the BMP file should be uploaded every document scanned or only for the first document scanned or if file name changed. Use 1 only if BMP file is not changing between documents.

Note: TS400 only with version 3.22 TS400 firmware or later.

Values:

Config File Value	Meaning	Description
0		BMP file uploaded for each document.
1		BMP file uploaded for first document or if BMP file name changes with funcTS400SetPrint.

Default: 0

BUIC 1000/BUIC 1500 equivalent: None.

JPEG Quality= Defines the quality for the JPEG image. A quality of 75% is the default. Qualities lower than 75% decrease quality and lower file size. Qualities greater than 75% increase quality and increase file size.

Values:

Config File Value	Meaning	Description
5-95	JPEG Quality	Quality of JPEG image.

Default: 75, range 5 to 95

OCR MICR Verify= Defines whether to use OCR MICR recognition to improve and verify the MICR returned by the MICR reader on the scanner. A value of 0 turns off OCR MICR verify and any positive number defines the number of @'s to allow before canceling an attempt to OCR the MICR and correct it.

Values:

Config File Value	Meaning	Description
0	OCR MICR Verify	No OCR Verification
+	OCR MICR Verify	Number of @'s to allow before canceling attempt to OCR the MICR.

Default: 4

OCR MICR Verify Log= Used only when software designers ask you to turn it on for debugging any problems. This will create a large log file for support and debugging purposes. Default is 0 which is OFF. Use a 1 only when asked to by Technical Support.

Values:

Config File Value	Meaning	Description
0	OCR MICR Verify Log	OFF
1	OCR MICR Verify Log	ON

Default: 0

MICR Gray Threshold= Used to set the grayscale thresholding with enhanced MICR. Default is 96 and the valid range would be 32 to 160 in steps of 16.

Values:

Config File Value	Meaning	Description
32 to 160	Grayscale Threshold Value	

Default: 96

7.1.11 Other (TellerScan™ 200 Only)

Crop Threshold= (TS200 ONLY) Select the crop threshold for cropping the black area at the top of the document (overscan area). Black is zero and white is 255, and shades of gray vary between 0 and 256.

Values:

Config File Value	Meaning	Description
0-255	Crop Threshold	(TS200 ONLY) Overscan area removal selection key.

Default: 80

NOTE: TS200 ONLY

Image Wait= Select the time to wait after a BUICScan is issued and a document is scanned before returning with a -212 for no document present. Value is in milliseconds

Values:

Config File Value	Meaning	Description
?	Image Wait	Time in milliseconds after a BUICScan is issued before returning if no document is dropped.

Default: 10000 (10 seconds, 10000 milliseconds)

NOTE: TS200 ONLY

Enable Scan= Select whether to re-enable the TS200 scanner after each document or to wait for a BUICScan to re-enable the scanner or a TSUpdate command to re-enable the scanner.

Values:

Config File Value	Meaning	Description
0	No re-enable	Do no re-enable the scanner after each document is retrieved.
1	Re-enable	Re-enable scanner after each document. If a document is the dropped, the scanner automatically scans the document and waits for a BUICScan to retrieve the image and MICR.

Default: 1

NOTE: TS200 ONLY

[SCANNER]

Type= If type is set to TS200, initialization routines will scan the USB bus searching for a TS200. If a TS200 is not found, the SCSI bus will be scanned. If type is not set, the SCSI bus will be scanned first, then the USB bus for a scanner, which takes longer during initialization.

Necessary only if TS200 is present on USB bus, otherwise SCSI bus scanned first.

Values:

Config File Value	Meaning	Description
200		TS200 Available
400		TS400 Available

Default: 400

7.1.12 Light

Configuration parameters for setting up the TellerScan™ 400 scanners double light source.

Front: 2 Light= (RESERVED)

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0

BUIC 1000 equivalent: None.

Front: RIDO en.= (RESERVED)

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0

BUIC 1000 equivalent: None.

Front: Intensity Share= (RESERVED)

Values:

Config File Value	Meaning	Description
50	Reserved	

Default: 50

BUIC 1000 equivalent: None.

Front: Clip Threshold= (RESERVED)

Values:

Config File Value	Meaning	Description
60	Reserved	

Default: 60

BUIC 1000 equivalent: None.

Front: Out Format= (RESERVED)

Values:

Config File Value	Meaning	Description
1	Reserved	

Default: 1

BUIC 1000 equivalent: None.

Front: B/W Threshold= (RESERVED)

Values:

Config File Value	Meaning	Description
8	Reserved	

Default: 8

BUIC 1000 equivalent: None.

Back: 2 Light= (RESERVED)

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0

BUIC 1000 equivalent: None.

Back: RIDO en.= (RESERVED)

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0

BUIC 1000 equivalent: None.

Back: Intensity Share= (RESERVED)

Values:

Config File Value	Meaning	Description
50	Reserved	

Default: 50

BUIC 1000 equivalent: None.

Back: Clip Threshold= (RESERVED)

Values:

Config File Value	Meaning	Description
60	Reserved	

Default: 60

BUIC 1000 equivalent: None.

Back: Out Format=

Values:

Config File Value	Meaning	Description
1	Reserved	

Default: 1

BUIC 1000 equivalent: None.

Back: B/W Threshold= (RESERVED)

Values:

Config File Value	Meaning	Description
8	Reserved	

Default: 8

BUIC 1000 equivalent: None.

7.2 BUIC 1000 Parameters

Devices may be enabled and disabled. The default value is disabled, therefore to use a device it must be enabled in the configuration file or by BUICSetParam.

The following turns will be used interchangeably.

Disabled = OFF
Enabled = ON

MagnReader= The magnetic reader device enables the magnetic code or MICR reader.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable Magnetic Reader
1	Enabled	Enable Magnetic Reader

Default: Disable

MagnType= The type of magnetic code supported.

Values:

Config File Value	Meaning	Description
0	CMC7	MICR is in CMC7 format.
1	E13B	MICR is in E13B format.

Default: E13B

Badge= The badge reader is an optional feature that must be ordered at time of purchase. The badge reader is a magnetic strip reader.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable Badge reader (OFF)
1	Enabled	Enable Badge reader (ON)

Default: Disabled

Endorser= The endorser is an optional roller ink stamp for printing on the front of the document. This optional feature must be ordered at time of purchase. The endorser roller stamp is non-varying and the stamp's output cannot be changed by software.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable Endorser reader (OFF)
1	Enabled	Enable Endorser reader (ON)

Default: Disabled

Gray= Selects the whether to scan the image black/white (bitonal) or gray scale.

Values:

Config File Value	Meaning	Description
0	Black & White	Image is bitonal
1	Gray Scale	Image is 4-bit gray scale, 16 shades of gray

Default: 0

Front= Selects whether to scan the front of the document.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable Scan of front of document
1	Enabled	Enable Scan of front of document.

Default: Enabled

Back= Selects whether to scan the back of the document.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable Scan of back of document.
1	Enabled	Enable Scan of back of document.

Default: 1 (Scan Back)

CCD Mode= Selects standard speed or high speed. Standard speed often gives better contrast while high speed scans at a faster speed.

Values:

Config File Value	Meaning	Description
0	Standard Speed	1 MHz
1	High Speed	2 MHz

Default: 1

Resolution= Resolution or dots per inch (DPI) of the scanned image.

Values:

Config File Value	Meaning	Description
0	100 by 100	100 by 100 DPI
1	200 by 200	200 by 200 DPI

Default: 0

Photo= (RESERVED)

Values:

Config File Value	Meaning	Description
0	Reserved	

Default: 0

Photocell= Enables or disables double feed detection.

Values:

Config File Value	Meaning	Description
0	Disabled	Disable double feed detection.
1	Enabled	Enable double feed detection.

Default: Disabled

FrontAcqStart= (RESERVED)

Values:

Config File Value	Meaning	Description
125	Reserved	

Default: 125

RearAcqStart= (RESERVED)

Values:

Config File Value	Meaning	Description
85	Reserved	

Default: 85

FrontThreshold= Threshold for front image when scanning black/white.

Values:

Config File Value	Meaning	Description
0-14		Higher values make image darker, lower values make image lighter. Suggested value of 7-10.

Default: 10

BackThreshold= Threshold for back image when scanning black/white.

Values:

Config File Value	Meaning	Description
0-14		Higher values make image darker, lower values make image lighter. Suggested value of 7-10.

Default: 10

StartAcqMag= (RESERVED)

Values:

Config File Value	Meaning	Description
1350	Reserved	

Default: 1350

StartEndorser= Sets the start position of the front stamp endorser.

Values:

Config File Value	Meaning	Description
725	Motor Steps	

Default: 725

StopMotor= (RESERVED)

Values:

Config File Value	Meaning	Description
2700	Reserved	

Default: 2700

Photo Delay= Selects the minimal length in motor steps of detection before declaring a double feed. In other words, a double feed must be detected for a minimal length before signaling a double feed error signal.

Values:

Config File Value	Meaning	Description
0	Motor Steps	

Default: 0

IMG Format= Select the image compression format for gray scale images only at the current time. Currently not used since this parameter is passed (and therefore overridden) in the scan function.

Values:

Config File Value	Meaning	Description
2	Reserved	

Default: 2

WindowX1= Distance in motor steps from the right edge of the document to the beginning of the image acquisition. In other words, the number of motor steps to wait before starting capture of the image.

NOTE: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Therefore, WindowX1 should be less than WindowX2. WindowY1 should be less than WindowY2.*

Values:

Config File Value	Meaning	Description
0-2000	Motor steps from right edge	WindowX1 must be less than WindowX2

Default: 0

WindowX2= Distance in motor steps from the right edge of the document to the end of the image acquisition. In other words, the number of motor steps to wait before ending capture of the image. When the document is shorter than WindowX2, acquisition will end with the edge of the document.

NOTE: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Therefore, WindowX1 should be less than WindowX2. WindowY1 should be less than WindowY2.*

Values:

Config File Value	Meaning	Description
0-2000	Motor steps from right edge	WindowX1 must be less than WindowX2

Default: 800

WindowY1= Position of the bottom edge of the acquisition area. Value stated in pixels.

NOTE: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Therefore, WindowX1 should be less than WindowX2. WindowY1 should be less than WindowY2.*

Values:

Config File Value	Meaning	Description
0-831	Pixels from bottom edge	WindowY1 must be less than WindowY2

Default: 831

WindowY2= Position of the top margin of the acquisition area. Value stated in pixels.

NOTE: *The image is scanned from right to left assuming a 90 degree rotation. Therefore, the point 0,0 on the image is the bottom right corner NOT the top left corner. Therefore, WindowX1 should be less than WindowX2. WindowY1 should be less than WindowY2.*

Values:

Config File Value	Meaning	Description
0-831	Pixels from bottom edge	WindowY1 must be less than WindowY2

Default: 831

7.3 Digital Check Scanner Parameters

BUICSetParam		Configuration File Parameters		Valid Values	
B1000	B1500, TS400	B1000	B1500, TS400	B1000	B1500, TS400
BPARAM_MAGNREADER	BPARAM_MAGNREADER	MagnReader	Devices: external reader	0 - Disable 1 - Enable	0 - Disable 1 - Enable
BPARAM_BADGE	BPARAM_BADGE	Badge	Devices: Badge Reader	0 - Disable 1 - Enable	0 - Disable 1 - Enable
BPARAM_ENDORSER	BPARAM_ENDORSER	Endorser	Devices: Endorser	0 - Disable 1 - Enable	0 - Disable 1 - Enable
	BPARAM_PRINTER		Devices: Ink-Jet printer		0 - Disable 1 - Enable
	BPARAM_SORTER		Devices: Sorter		0 - Disable 1 - Enable
BPARAM_MAGNTYPE	BPARAM_MAGNTYPE	MagnType	Ext.reader: font	0 - CMC7 1 - E13B	0 - CMC7 1 - E13B 2 - OCRA (future) 3 - OCRB (future)
BPARAM_GRAY	BPARAM_GRAY	Gray	Acq: Gray	0 - Black/White 1 - Gray	0 - Black/White 1 - Gray
	TBPARAM_ACQ_256GRAY		Acq: Gray 256 Level		0 - 16 levels 1 - 256 levels
BPARAM_CCDMODE	BPARAM_CCDMODE	CCD_Mode	Acq: CCD Speed	0 - 1 MHz 1 - 2 MHz	0 - 1 MHz 1 - 2 MHz
BPARAM_PHOTOCELL	BPARAM_PHOTOCELL	Photocell=	Acq: Doc. Thickness	0 - Disable 1 - Enable	0 - Disable 1-255 Threshold
BPARAM_PHOTODELAY	BPARAM_PHOTODELAY	Photo_Delay	Double feed: length		
BPARAM_DPI	BPARAM_DPI	Resolution	Acq: Resolution	0 - 100 by 100 1 - 200 by 200	0 - 100 by 100 1 - 200 by 200 2 - 200 by 100 Fast 3 - 200 by 100
BPARAM_WINDOWX1	BPARAM_WINDOWX1 or BPARAM_IMGRIGHT	WindowX1	Acq: Img Right	0 - 2000	0 - 1000
BPARAM_WINDOWX2	BPARAM_WINDOWX2 or BPARAM_IMGLEFT	WindowX2	Acq: Img Left	0 - 2000	0 - 1000
BPARAM_WINDOWY1	BPARAM_WINDOWY1 or BPARAM_IMGBOTTOM	WindowY1	Acq: Img Bottom	0 - 831	0 - 863
BPARAM_WINDOWY2	BPARAM_WINDOWY2 or BPARAM_IMGTOP	WindowY2	Acq: Img Top	0 - 831	0 - 863
	TBPARAM_IMG CROP		Image: Crop		0 - Crop 1 - Crop & crop black top
	TBPARAM_IMGROTATE		Image: Rotate		0 - No Rotate 1 - Rotate

BUICTSetParam B1000	B1500, TS400	Configuration File Parameters B1000 B1500, TS400	Valid Values B1000 B1500, TS400
--------------------------------------	---------------------	---	--

	BUICT_SORTER_ALGORITHM		Sorter: Algorithm		0 - None 1 - Readable 2 - Equal STR1 3 - != STR1 4 - >= STR1 5 - <= STR1 6 - STR1 <= && <= STR2 7 - < STR1 > STR2 8 - == STR1 == STR2 9 - != STR1 && != STR2
BPARAM_FRONTTHRESHOLD	BPARAM_FRONTTHRESHOLD	FrontThreshold	Acq: Front B/W threshold	0 - 14	1 - 15
BPARAM_BACKTHRESHOLD	BPARAM_BACKTHRESHOLD	BackThreshold	Acq: Back B/W threshold	0 - 14	1 - 15
	TBPARAM_IMGROTATE		Image: Rotate		0 - No Rotate 1 - Rotate
TPARAM_JPEG_QUALITY	TPARAM_JPEG_QUALITY	JPEG Quality	JPEG Quality	5-95	5-95
	CFG_MISC_MICR_VERIFY		OCR MICR Verify	0 - OFF 1-65	0, 1-65
	CFG_MISC_MICR_VERIFY_LOG		OCR MICR Verify Log	0- OFF 1-ON	

TS200 ONLY

BUICTSetParam TS200	Configuration File Parameters TS200	Valid Values TS200
--------------------------------------	--	-------------------------------------

CFG_IMAGECROPPING_THRESH	Crop Threshold	0-255
CFG_MISC_IMAGE_WAIT	Image Wait	? in Milliseconds
CFG_MISC_ENABLESCAN	Enable Scan	0 - No re-enable 1 - Re-enable

7.4 Example BUICScan.INI File

```
#
# Digital Check Sample Configuration File for Teller Scan Check Scanners
# Models TS200, TS220, TS300, TS350, TS350EBS, TS400, TS400ES
#
# All Setting in this file might be overriding by configuration calls in
# samples or final applications.
#
[ACQ. SETUP]
#0 - Stamp Endorser Off, 1 - Stamp Endorser On
Devices: Endorser=0
#0 - Sorter Disabled, 1 - Sorter Enabled
Devices: Sorter=0
#0 - Printer/Endorser off, 1 - Printer/Endorser On
Devices: Ink-Jet printer=0
#0 - Magnetic MICR Disabled, 1 - Magnetic MICR Enabled
MICR: Enable=1
#0 - CMC7, 1 - E13B
MICR: font=1
#0 - Leaving E and no spaces, 1 - no spaces, 2 - spaces,
#3 - spaces even in amount field if MICR is verified
MICR: Format=3
#Best Left at 0 to 1000
MICR: initial pos.=0
MICR: end pos.=1000
Ext.reader: type=1
Ext.reader: font=1
Ext.reader: initial pos.=0
Ext.reader: end pos.=1000
Ext.reader: baud-rate=3
Ext.reader: parity=0
Ext.reader: char length=1
Ext.reader: stop-bit=0
#0 - Using Scanner Internal Algorithms for sorting, 1 - External Sorting
Sorter: Input=1
#Internal Sorting Algorithms
Sorter: Algorithm=1
Sorter: Init.string pos.=20
Sorter: End string pos.=244
Sorter: STR1=:000067894: 123
Sorter: STR2=:000067894: 123
Printer: Initial pos.=0
Printer: Selection=0
Printer: Double density=0
Printer: Intensity=80
Printer: Intensity12=185
Printer: Xpixeld=6
```

Printer: 2 rows=0
Printer: Clean 44=1500
Printer: Clean 18=480
Printer: Clean 6=60
Printer: Clean 2=5
#The next two set whether front or Front and Rear images are captured,,
Acq: Front only=0
Acq: Front + Rear=1
#0 - black white mode, 1 grayscale mode
Acq: Gray=1
Acq: B/W=0
#0 - 4 bit grayscale, 1 - 8 bit grayscale
Acq: Gray 256 lev.=0
#Leave at 1
Acq: CCD speed=1
#0 - 100x100, 1 - 200x200, 2 - 200x100
Acq: Resolution=1
#Thresholds for Simple Thresholding 2 to 13
Acq: Front B/W threshold=10
Acq: Rear B/W threshold=10
Acq: Initial pos.=0
Acq: End pos.=1000
RS232: Mode=0
RS232: Baud-rate=3
RS232: Char length=1
RS232: Parity=0
RS232: Stop bit=0
#Default Endorser Print Position
Endorser: position=400
#Double Feed Offset - Depending on Scanner Adjust both
Double feed: length=40
Double feed: delay=70
#1 - Double Feed Enabled, 0 - Double Feed Disabled
Acq: Doc.thickness=1
Print file:=0
Print string:=
#Default location for scanner font files for TS300, TS350, and TS400 scanners
Print filename:=
#Font filename:=pc2424.fnt
#0 - Top Image Crop Disabled, 1 - Top Image Crop Enabled
Image: Crop=1
#0 - Don't rotate images (Not available on some models), 1 - Rotate 90 degrees
Image: Rotate=1
Acq: Img Right=0
Acq: Img Left=1500
Acq: Img Bottom=0
Acq: Img Top=864
Image memory dimension:=0
DLL Verbose=0
Rewind delay=0

Manual Feed=0
Forth&back=0
#0 - Assume filenames are not terminated, but spaces cannot be used in
paths or filenames, 1 - filenames are terminated and spaces allowed.
FileNamesTerminated=1
KIOSK mode=0
MICR: Direction=0
0 - Not TIFF Micr Tag, 1 - Add a TIFF Micr Tag
TIFF Micr Tag=1
#SCSI Scanner Speed options
Gray 256 Level: Lines Read=16
Gray 16 Level: Lines Read=32
Black/White Level: Lines Read=128
#0 - Reload the Endorsement BMP between scans, 1 - Reload the
Endorsement BMP only on command
Printer BMP Load Once=1
#Grayscale Cropping threshold (48 to 112 Usually)
Crop Threshold=64
#Millisecond delay for next check in feeder
Image Wait=500
#0 - Scan only on command, 1 - Prefeed checks
#If endorsement is changing on every check then prefeed must be turned off
Enable Scan=0
#JPEG Quality Factor (valid 25 to 75) where 25 is lowest quality and 75 is highest
JPEG Quality=75
#Either 2 or 3 when check MICR line in funcConvGrayImageEdgeDetectBW (0x20)
EdgeMicrSetting=3
#0 - No debug and no delay, 1 - delay for slow USB and send debug messages
which can be viewed using dbgview.exe
Delay TS200=0
#0 - Disable E13B MICR OCR, otherwise maximum number of "@" (bad characters)
before skipping MICR Verify between Magnetic and OCR MICR
OCR MICR Verify=3
#Threshold used on grayscale images for E13B MICR OCR
MICR Gray Threshold=96
#0 - no MICR LOG, 1 - MICR Stats, 2 - Create a pre-OCR MICR File
OCR MICR Verify Log=0
#Allow E13B OCR MICR To be Weighted More - Default off in US
MICR HongKong Rules=0
#Location of TS220Firmware.bin if not in \windows\system32\drivers (XP) or
\winnt\system32\drivers (Windows 2000)
#If file is not correct, then scanner will not identify the TS220
#Firmware File=c:\buicre\release\drivers\ts220firmware.bin

[DOUBLE LIGHT SOURCE]

Front: 2 light=0
Front: RIDO en.=0
Front: intensity share=50
Front: clip threshold=60
Front: out format=1

Front: B/W threshold=10
Rear: 2 light=0
Rear: RIDO en.=0
Rear: intensity share=50
Rear: clip threshold=60
Rear: out format=1
Rear: B/W threshold=8

[SCSI]
Adapters=6
Target ID=2
Adapter ID=1

[SCANNER]
#200 for USB Scanners, 400 for SCSI Scanners for quicker initialization
Type=200

#Front Red Drop Out on TS210 and TS220 Uncomment the following
#[TS200 CONFIG]
#FRONT_IMG RED Intensity=100
#FRONT_IMG GREEN Intensity=0
#FRONT_IMG BLU Intensity=0

8.0 Operator Maintenance

8.1 Cleaning the Feed Roller

In order to work well, you should clean the feed roller every week or after every 25,000 checks. To clean the roller:

1. Remove a Cleaning Card from its packet.
2. Place it into the automatic feeder.
3. Click on the “Scan” button.

8.2 Cleaning the TellerScan™ 400 Unit

Dust, lint, and small particles can get into the track area between the front and rear scan heads. Clean this area as follows:

1. Install the nozzle in a container of canned air.
2. Spray the area around Pusher Bar and Automatic Check Feeder (slide the Pressure Bar back and forth while spraying).

9.0 List of Sample Code

Included with the DCCAPI are sample 32-bit applications. To create a C application you will need to include BUICAP.H and link in BUICAP32.LIB. Also included with the API are sample applications for Visual Basic 6.0. To create an application you will need to open and compile VB6DEMO.VBP.

9.1 C Sample Source

Sample C applications included with the API are as follows:

SCANDEMO.C	32-bit Application compiled to SCANDEMO.EXE
SCANLITE.C	32-bit Application compiled to SCANLITE.EXE

9.2 Visual Basic Sample Source

Sample Visual Basic applications included with the API are as follows:

VB6DEMO.VBP	VB 6 project compiled to VB6DEMO.EXE
FRMDEMO.FRM	Main project window
FRMBACK.FRM	Back image display window
FRMFRONT.FRM	Front image display window
DCCAPI.BAS	Contains declare statements for the API

When talking with the engineers during technical support, they may ask you to run one of these demonstration programs to verify the operation of the scanner.

10.0 Visual Basic Development Information

When using the API in Visual Basic, some guidelines must be followed. First, when declaring functions in 16-bit versus 32-bit all integers become longs. This is due to the way C handles int declarations. A listing of all 32-bit API declares may be found in the DCCAPI.BAS included with the API. Second, when a string is returned from a function, as in BUICScan(), you must dimension or pad the string with enough NULLs or spaces to cover any return from the function. For example, if you call the BUICScan() function and pass sMICR for the MICR return you should either dimension sMICR as String * 255 or set sMICR = Space(255) before calling BUICScan(). Lastly, when passing filenames to the API there are two options. If the .INI file has FileNamesTerminated=1 (or you specify BUICSetParam(CFG_SETUP_FILENAMETERM, BUIC_DEV_ON) you may use filenames with spaces, but you must pass a NULL, or Chr\$(0), at the end of the filename. If FileNamesTerminated=0 you may not pass any spaces in the path or filename. Passing a filename with a space will cause the truncation of the name and produce undesired results. For example, passing a filename of "C:\Program Files\Image.Tif" to the BUICScan() function will produce an image named "C:\PROGRAM".

11.0 Check Image Quality Assurance Metrics

Financial Services Technology Consortium (FSTC) & Digital Check Corporation (DCC) Check Image Quality Assurance Metrics

There are 16 different image quality assurance tests that have been identified by the Financial Services Technology Consortium (FSTC) which Digital Check is a member of. The following provides a list of the FSTC identified metrics together with the called routines available in Digital Check's new version 8 API. Using this API version can guarantee that your software will satisfy the bank's image quality requirements. If you have any queries please contact our support department.

- **1. Undersized Image**
 - **Check Document Size** - Allow the user to specify up to 32 different document sizes based on standard document widths and heights in tenths of inches. For example, most checks in the United States are personal size (6.0 inches by 2.8 inches) or business (8.5 inches by 3.5 inches). This function will return the associated size (0 to 31) or -1 if the scanned document does not fit any of the specified sizes. This function can find undersize documents, oversized documents, mis-cropped images or framing error, torn edges, and some piggyback documents.

- **2. Folded or Torn Corners**
 - **Corner Test** - Returns the number of pixels that each corner is bent. This allows the user control over how much of a bent corner is a problem. This is a good test to detect folded or torn corners and edges.

- **3. Folded or Torn Document Edges**
 - **Corner Test and Check Document Size**

- **4. Document Framing Error**
 - **CheckEdgeCrop** – Checks the amount of pixels bordering the image after cropping.
 - **Check Document Size**

- **5. Excessive Document Skew**

- **CheckSkew** - Checks if one corner of the document is higher than the other. If this first test detects skew, then horizontal lines are checked on the image to verify the skew.
 - **MICRQualityTest** - Checks the results of Magnetic MICR against the OCR MICR. This will test magnetic MICR quality, bottom of the image quality, and whether the image has excessive skew. Note: most piggyback images have poor magnetic MICR results, since the MICR characters of both checks are analysis resulting in most overlapping characters being unreadable.
- **6. Oversize Image**
 - **Check Document Size**
- **7. Piggyback Document**
 - **Hardware Double Detect Sensor** – LED sensor calibrated to trigger an error on documents which are too thick and potentially a piggy back.
 - **Check Document Size**
 - **MICRQualityTest**
- **8. Image Too Light**
 - **Density Check** - Returns the percentage of black pixels in the entire image. A personal check usually has a valid density between 5 to 25 percent and business size checks are usually between 2 to 15 percent.
- **9. Image Too Dark**
 - **Density Check**
- **10. Horizontal Streaks**
 - **Streak Test** - Finds Streaks on the checks using multiple algorithms since streaks can appear in so many different forms.
- **11. Below Minimum Compressed Image Size**
 - **Get Compressed Image Size** - Returns the actual compressed image size in bytes.
- **12. Above Maximum Compressed Image Size**
 - **Get Compressed Image Size**
- **13. Excessive “Spot Noise” in the Image**
 - **Speckle Count** - This will count and remove the extra speckles on an image which will make other image quality tests more accurate and quicker. Security checks will be excessively speckled if thresholded at too low of a threshold or too low of a contrast step in EdgeDetection Thresholding.
- **14. Front-Rear Image Dimension Mismatch**

- **VerifyDocumentSize** - Checks that the front and rear images have the same width and height.
- **15. Carbon Strip Detected**
 - **Carbon Strip Test** - Checks if the document has a carbon Strip on it.
- **16. Image “Out of Focus”**
 - **Focus/Grayscale Contrast Test** - Will determine if the image contrast or focus is out of range. This test is valid for grayscale images only.

In addition, we include other value added test features in the DCC API that were NOT included by FSTC to help ensure that DCC TellerScans provide the best performance and value on the marketplace today:

- **Endorsement Test** – Checks if endorsement was printed on the check.
- **CAR Test** – Checks if the CAR area contains valid looking data.
- **LAR/Payee/Date/Signature/Memo Present Tests** – Attempts to find these areas on personal checks and see if valid looking data is present. These tests were added to be complete but not really recommended.
- **Blob Test** – Check if Binary Black Large Objects are present on the image.

12.0 Sources for Help

12.1 API Technical Support

No-charge support on the API is available for **1-year** from the date of purchase. Support after 1-year is on a pay-per incident basis, unless a support contract is purchased.

For help with API integration, email dccapi@digitalcheck.com or contact the following technical support personnel:

Precision Software Technologies, Inc.
11920 Race Track Road
Tampa, FL 33626

Phone: (813) 818-8755
Fax: (813) 818-8775
Email: support@pstinc.net
Web: www.pstinc.net

For imaging tools for additional features, visit UniSoft Imaging's web site at www.unisoftimaging.com.

12.2 Scanner Repair

For hardware cleaning questions or scanner repair, contact the following service personnel:

Image Capture Technologies
10231A Trademark Street
Rancho Cucamonga, CA 91730

Phone: (909) 945-5106
Fax: (909) 948-3788

12.3 Sales Information

For more information about purchasing BUIC or TellerScan™ document scanners, contact the following sales personnel:

Digital Check Corp.
466 Central Avenue, Suite 31
Northfield, IL 60093

Phone: (847) 446-2285
Fax: (847) 441-5507
Email: sales@digitalcheck.com
Web: www.digitalcheck.com