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SECURITY FROM THE INSIDE

# ImageSafe / Excella STX

## Programmer's Reference For Android Devices

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# Table of Contents

# 1 Introduction

This document provides instructions for software developers who want to create software solutions that include MagTek ImageSafe device connected to an Android device via USB OTG (On-The-Go) adapter.

# 2 How to Set Up the MTMICR Library for Projects

To add the MTMICR library to a custom software project in the Eclipse development environment, follow these steps:

1) Create or open your custom software project in Eclipse.
2) Copy the following JAR file to the **`libs`** subfolder of your software project:
   `mtmicr.jar`
3) Ensure your project settings are set up correctly.
4) Clean, build, and run your custom software project to make sure the library imported correctly.
5) In your custom software, create an instance of `MTMICR`. For examples, see the source code included with the MagTek MICR Demo project and/or the Code Examples section in this document.
6) The project should include the uses-features, uses-permissions and services as specified in the table below in its AndroidManifest.xml file. For examples, see the AndroidManifest.xml included with the MagTek MICR Demo project

**AndroidManifest**

```
<uses-feature android:name="android.hardware.usb.host" />

<service android:name="com.magtek.mobile.android.mtlib.MTUSBService"
android:enabled="true"/>
```

# 3 MTMICR Class Methods

After creating an instance of the MTMICR class in your custom software project, use the methods described in this section to communicate with the device.

## 3.1 openDevice

This method opens connection to the device.

```
public void openDevice()
```

Parameters: None

Return Value: None

## 3.2 closeDevice

This method closes the connection to the device.

```
public void closeDevice()
```

Parameters: None

Return Value: None

## 3.3 isDeviceConnected

This method returns whether the device is connected or not.

```
public bool isDeviceConnected()
```

Parameters: None

Return Value:
Return true if the device is connected. Otherwise, return false.

## 3.4 getSectionCount

Get the number of sections present in the data.

```
public int getSectionCount(String data)
```

Parameters:

| Parameter | Description |
|---|---|
| data | String containing a set of key/value pairs. |

Return Value:
Return the number of sections present in the data.

## 3.5 getSectionName

Get the name of the section corresponding to the given section index.

```
public String getSectionName(String data, int sectionIndex)
```

Parameters:

| Parameter | Description |
|---|---|
| data | String containing a set of key/value pairs. |
| sectionIndex | The index of the section. |

Return Value:
Return the name of the section corresponding to the given section index.

## 3.6 getKeyCount

Get the number of keys belong to the givn section.

```
public int getKeyCount(String data, String section)
```

Parameters:

| Parameter | Description |
|---|---|
| data | String containing a set of key/value pairs. |
| section | The name of the section. |

Return Value:
Return the number of keys belong to the given section.

## 3.7 getKeyName

Get the name of the key corresponding to the given section and key index.

```
public String getKeyName(String data, String section, int keyIndex)
```

Parameters:

| Parameter | Description |
|---|---|
| data | String containing a set of key/value pairs. |
| section | The name of the section. |
| keyIndex | The index of the key. |

Return Value:
Return the name of the key corresponding to the given section and key index.

## 3.8 setValue

Set the value of the key within the given section.

```
public String setValue(String data, String section, String key, String value)
```

Parameters:

| Parameter | Description |
|---|---|
| data | String containing a set of key/value pairs. |
| section | The name of the section. |
| key | The name of the key. |
| value | The string containing the key value. |

Return Value:
Return string containing the set of key/values pairs from the given data string and an updated key value for the given section and key.

## 3.9 getValue

Get the value of the key within the given section.

```
public String getValue(String data, String section, String key)
```

Parameters:

| Parameter | Description |
|---|---|
| data | String containing a set of key/value pairs. |
| section | The name of the section. |
| key | The name of the key. |

Return Value:
Return the key value for the given section and key.

## 3.10 setIndexValue

Set the value of the key within the given section.

```
public String setIndexValue(String data, String section, String key, int
index, String value)
```

Parameters:

| Parameter | Description |
|---|---|
| data | String containing a set of key/value pairs. |
| section | The name of the section. |

| Parameter | Description |
|---|---|
| key | The name of the key. |
| index | The index to be appended to the key. |
| value | The string containing the key value. |

Return Value:
Return string containing the set of key/values pairs from the given data string and an updated key value for the given section, key and index.

## 3.11 getIndexValue

Get the value of the key within the given section.

```
public String getIndexValue(String data, String section, String key, int index)
```

Parameters:

| Parameter | Description |
|---|---|
| data | String containing a set of key/value pairs. |
| section | The name of the section. |
| key | The name of the key. |
| index | The index to be appended to the key. |

Return Value:
Return the key value for the given section, key and index.

## 3.12 queryInfo

Send a request to query information from the device.

```
public void queryInfo(String options)
```

Parameters:

| Parameter | Description |
|---|---|
| options | String value indicating the type of query:<br>`DeviceCapabilities`<br>`DeviceUsage`<br>`DeviceStatus` |

Return Value: None

## 3.13 sendCommand

Send a command to the device.

```
public void sendCommand (String command)
```

Parameters:

| Parameter | Description |
|---|---|
| command | String containing the command to be sent to the device. |

Return Value: None

## 3.14 processCheck

Send a request to process checks and/or magnetic stripe cards.

```
public void processCheck(String options)
```

Parameters:

| Parameter | Description |
|---|---|
| options | String value containing the options for the processing of checks/cards. |

Return Value: None

## 3.15 getImage

Send a request to retrieve data for one image.

```
public void getImage(MTMICRImage image)
```

Parameters:

| Parameter | Description |
|---|---|
| image | MTMICRImage object containing index and URL for requested image. |

Return Value: None

## 3.16 getImages

Send a request to retrieve data for a set of images.

```
public void getImages(ArrayList<MTMICRImage> imageList)
```

Parameters:

| Parameter | Description |
|---|---|
| images | Collection of MTMICRImage objects containing index and URL for requested images. |

Return Value: None

# 4 MTMICR Callback Messages

## 4.1 OnDeviceConnectionStateChanged

This message occurs when the connection state to the device has changed.

| Parameter | Description |
|---|---|
| obj | MTConnectionState value indicating the state of the device:<br>`Disconnected`<br>`Connected`<br>`Error,`<br>`Connecting`<br>`Disconneting` |

## 4.2 OnDeviceResponse

This message occurs when a response is received from the device.

| Parameter | Description |
|---|---|
| obj | String containing the response data received from the device. |

## 4.3 OnGetImage

This message occurs when the data retrieval for an image has completed.

| Parameter | Description |
|---|---|
| obj | MTMICRImage object containing the image data received. |

# 5 Keys Sent To The Device

This section describes all the Sections (and their corresponding Key-Value pairs) that can be sent by the application to the device for document processing. The application can send information to the device using the following sections: *Application, ProcessOptions, Endorser, and ImageOptions.*

## 5.1 *Application* Section

The *Application* section includes keys to configure some required characteristics of the unit.

The following keys are included in the *Application* section:

- Transfer
- DocUnits

### 5.1.1 Transfer

This key determines the file transfer method.

| Values | Value Description |
|---|---|
| HTTP | Default: Transfer files using HTTP protocol |
| FTP | Transfer files to FTP server |

### 5.1.2 DocUnits

This key determines the unit of measurement.

| Values | Value Description |
|---|---|
| ENGLISH | Default: Dimensions in thousandths of an inch |
| METRIC | Dimensions in millimeters |

## 5.2 *ProcessOptions* Section

The *ProcessOptions* section includes keys that control various operational options during the transaction.

The following keys are included in the *ProcessOptions* section:

- ReadMICR
- Endorse
- RespondEarly
- DocFeed
- DocFeedTimeout
- KVErrStop
- MICRFmtCode

### 5.2.1 ReadMICR

This key selects the MICR font to be read on the check.

| Values | Value Description |
|---|---|
| E13B | Decode only E13B character set |
| CMC7 | Decode only CMC7 character set |
| ALL | Auto-detect and decode both E13B and CMC7 |
| NO | Suppress MICR reading |

### 5.2.2 Endorse

This key determines what type of printing is required on the check.

| Values | Value Description |
|---|---|
| NO | No printing required |
| BACK | Request printing on the back (endorsing) |
| FRONT | Request printing on the front (franking). |
| BOTH | Request printing on the back and the front (endorsing and franking). |

### 5.2.3 RespondEarly

This key determines if an early response is required from the device.

| Values | Value Description |
|---|---|
| YES | Request device to respond as early as possible. Images may not be ready. |
| NO | Device responds only when all images are completely processed |

### 5.2.4 DocFeed

This key determines the input tray to be used for document processing.

| Values | Value Description |
|---|---|
| ALL | Auto-detect & process both check and Magstripe card |
| MANUAL | Process checks from the check entry |
| ID | Process ID card from card input tray. |
| MSR | Process Magstripe card from MSR. |

### 5.2.5 DocFeedTimeout

This key specifies the waiting period for a document to be fed.

| Values | Value Description |
|---|---|
| *numeric value* | Specify a time period in seconds |

### 5.2.6 KVErrStop

This key determines the type of key/value errors that can halt transaction operation.

| Values | Value Description |
|---|---|
| NONE | No restriction |
| VALS | Invalid values halt the transaction |
| KEYS | Invalid keys halt the transaction |
| KEYVALS | Invalid keys and values halt the transaction |

### 5.2.7 MICRFmtCode

This key specifies the pre-defined output format to be use for MICR data.

| Values | Value Description |
|---|---|
| *numeric string* | Specifies the format code number (refer to Appendix A) |

## 5.3 *Endorser* Section

The *Endorser* section includes keys that control various options for printing on the check.

The following keys are included in the *Endorser* section:

- PrintData
- PrintFrontData
- PrintFont
- PrintFrontfont
- PrintStyle
- PrintFrontStyle
- PrintRate

### 5.3.1 PrintData

This key specifies the text to be printed on the back of the check (i.e., endorsement message).

| Values | Value Description |
|---|---|
| *string* | Specifies text for the endorsement message |

### 5.3.2 PrintFrontData

This key specifies the text to be printed on the front of the check (i.e., franking message).

| Values | Value Description |
|---|---|
| *string* | Specifies text for the franking message |

### 5.3.3 PrintFont

This key determines the internal font to be used for the endorsement message.

| Values | Value Description |
|---|---|
| INTFONT1 | Selects internal Font 1 (5x7 bitmap) |
| INTFONT2 | Selects internal Font 2 (7x10 bitmap) |

### 5.3.4 PrintFrontFont

This key determines the internal font to be used for the franking message.

| Values | Value Description |
|---|---|
| INTFONT1 | Selects internal Font 1 (5x7 bitmap) |
| INTFONT2 | Selects internal Font 2 (7x10 bitmap) |

### 5.3.5 PrintStyle

This key determines the style of the selected font for the endorsement message.

| Values | Value Description |
|---|---|
| BOLD | Print Bold style |
| NORMAL | Print normal |
| WIDE | Print Wide style |

### 5.3.6 PrintFrontStyle

This key determines the style of the selected font for the franking message.

| Values | Value Description |
|---|---|
| BOLD | Print Bold style |
| NORMAL | Print normal |
| WIDE | Print Wide style |

### 5.3.7 PrintRate

This key determines the printing rate. This key can be used to control squeezing/condensing of printed characters. Default print rate is 100%. If the value of this key is larger than the default value, the number of characters per inch is increased. The Valid range is 50-250.

| Values | Value Description |
|---|---|
| *numeric string* | Printing rate |

## 5.4 *ImageOptions* Section

The *ImageOptions* section includes keys that control various options to process the check images. Some of the keys below include the symbol '#' to indicate a variable for the image number. The image number can be 1, 2, 3, or 4 (as specified in the *Number* key). Each image requires its own set of options controlled by the keys *ImageColor#, Resolution#, Compression#, FileType#, and ImageSide#*. For example, for image 2, the key names would be ImageColor2, Resolution2, Compression2, FileType2, and ImageSide2. If image number equals zero, scanning will not take place. All keys in the *ImageOptions* section are ignored.

The following keys are included in the *ImageOptions* section:

- Number
- ImageColor#
- Resolution#
- Compression#
- FileType#
- ImageSide#
- FilterB
- FilterG
- JPECQC
- JPECQG
- CalculateSHA1

### 5.4.1 Number

This key determines how many images will be captured for each check that is processed.

| Values | Value Description |
|---|---|
| *numeric value* | Specifies number of images to be captured: 1, 2, 3, or 4. |
| *0* | If this number equals zero, no image is captured |

### 5.4.2 ImageColor#

This key determines the image rendition for the specified image number.

| Values | Value Description |
|---|---|
| BW | Black and white (i.e., bitonal) |
| GRAY8 | 8-bit grayscale |
| COL24 | 24-bit color |

### 5.4.3 Resolution#

This key determines the image resolution for the specified image number.

| Values | Value Description |
|---|---|
| 100X100 | 100x100 DPI (dots per inch) |
| 200X200 | 200x200 DPI (dots per inch) |

### 5.4.4 Compression#

This key determines the algorithm used to compress the captured images.

| Values | Value Description |
|---|---|
| GROUP4 | Image will be compressed using Group4 compression type |
| JPEG | Image will be compressed using JPEG compression type |
| NONE | No compression |

### 5.4.5 FileType#

This key determines the file type for the specified image number.

| Values | Value Description |
|---|---|
| TIF | Image format type is tiff |
| JPG | Image format type is jpg |
| BMP | Image format type is bmp |

### 5.4.6 ImageSide#

This key determines which side of the check will be associated with specified image number.

| Values | Value Description |
|---|---|
| FRONT | Scan the front of image of the check |
| BACK | Scan the back image of the check |

### 5.4.7 FilterB

This key can be used to change the sharpness and the file size of a black and white (B/W) image. The Default value of this key is 4. For a sharper image, set the value of this key to a smaller number. For a softer image, set the value of this key to a higher number. Too much sharpening can lead to a noisy image and a large file size. The valid range for this key is 1-6.

| Values | Value Description |
|---|---|
| *numeric string* | Filtering B/W images |

### 5.4.8 FilterG

This key can be used to change the sharpness and file size of a gray scale image. The default value of this key is 2. For a sharper image, set the value of this key to a smaller number. For a softer image, set the value of this key to a higher number. The valid range for this key is 1-6.

| Values | Value Description |
|---|---|
| *numeric string* | Filtering gray scale images |

### 5.4.9 JPEGQC

This key can be used to set the JPEG compression quality number for color images. The default value for this key is 50. Changing the default value of this key affects the image quality and size of a JPEG file. For higher quality

images, set the value of this key to a higher number. The file size also increases when the quality number increases. The valid range for this key is 1-100.

| Values | Value Description |
|---|---|
| *numeric string* | Quality number for color image |

### 5.4.10 JPEGQG

This key can be used to set the JPEG compression quality number for grayscale images. The default value for this key is 50. Changing the default value of this key affects the image quality and size of a JPEG file. For higher quality images, set the value of this key to a higher number. The file size also increases when the quality number increases. The valid range for this key is 1-100.

| Values | Value Description |
|---|---|
| *numeric string* | Quality number for grayscale images |

### 5.4.11 CalculateSHA1

This key determines if SHA1 calculation is required for captured images.

| Values | Value Description |
|---|---|
| YES | SHA1 calculation is required |
| NO | SHA1 calculation is NOT required |

## 5.5 *MICROptions* Section

The MICR*Options* section includes keys that control various options to get MICR character.

The following keys are included in the *MICROptions* section:

- Threshold
- Quality

### 5.5.1 Threshold

This value is the minimum signal value used to detect the start of a MICR symbol.

| Values | Value Description |
|---|---|
| *numeric value* | The minimum signal value to detect the start of a MICR symbol. The default value is 15 |

### 5.5.2 Quality

This value is used to determine what quality is required for a character to be valid.
The best range is 85-92.

| Values | Value Description |
|---|---|
| *numeric value* | Specify what quality is required for a character to be valid. The default value is 90 |

# 6 Keys Received From The Device

This section describes all the Sections (and their corresponding Key-Value pairs) automatically reported by the device to the application after the requested document has been processed. The device reports information using the following sections: *CommandStatus*, *DocInfo*, *ImageInfo*, and *MSRInfo*.

***Note:*** *All Sections and Key-Value pairs described in this Section are also available from the device upon query by the application.*

## 6.1 *CommandStatus* Section

The *CommandStatus* section includes keys that report various error conditions after a document has been processed.

The following keys are included in the *CommandStatus* section:

- CheckDS
- ReturnCode
- ReturnMsg
- KVErrCnt
- KVErrCode#
- KVErrVal#
- ResponseType

### 6.1.1 CheckDS

This key is a general flag for critical device status, and it can be used to prompt applications to check the device status.

| Values | Value Description |
|---|---|
| T | True: a change in the device status has been detected |
| F | False: everything is OK |

### 6.1.2 ReturnCode

This key specifies the return error code reported by the device after each document transaction.

| Values | Value Description |
|---|---|
| *numeric value* | For specific return code information refer to tables 6-1 through 6-8 |

### 6.1.3 ReturnMsg

This key specifies the return error message associated with the *ReturnCode* key.

| Values | Value Description |
|---|---|
| *String* | For specific return message information refer to tables 6-1 through 6-8 |

### 6.1.4 KVErrCnt

This key specifies the number of key/value errors (i.e., syntax errors) reported by the device.

| Values | Value Description |
|---|---|
| *numeric value* | Count of key/value errors detected (0-9) |

### 6.1.5 KVErrCode#

This key specifies the key/value error code number reported by the device (up to 9 errors can be reported).

| Values | Value Description |
|---|---|
| *numeric value* | For specific error code numbers refer to table 6-3 |

### 6.1.6 KVErrVal#

This key specifies the invalid key name or value that generated the error (up to 9 errors can be reported).

| Values | Value Description |
|---|---|
| *String* | Name of the key or value that generated the error |

### 6.1.7 ResponseType

This key is a general flag for data response type. It can be used to prompt the application to send next command.

| Values | Value Description |
|---|---|
| CHECK | The response data include MICR and Image info |
| MSR | The response data include MSR data or MagneSafe Reader reply info |
| ID | The response data include ID info |
| NONE | Only command response |

### 6.1.8 RETURN CODES AND MESSAGES FROM IMAGESAFE

The following tables (Tables 6-1 through 6-8.) list the codes and messages returned by the device using the *ReturnCode* and *ReturnMsg* keys in the *CommandStatus* section.

**Table 6-1. Operation Completed**

| Operation Completed (0-99) | |
|---|---|
| **ReturnCode** | **ReturnMsg** |
| 0 | "OK" |

**Table 6-2. Operation**

| Operation (100-149) | |
|---|---|
| **ReturnCode** | **ReturnMsg** |
| 101 | "Internal Device Failure" |
| 102 | "Unrecognized Operation" |
| 103 | "Command Format Error" |
| 104 | "Requested Operation Failed" |
| 105 | "Undetermined Path Error" |

**Table 6-3. Data Input**

| Data Input (150-199) | |
|---|---|
| **ReturnCode** | **ReturnMsg** |
| 150 | "Data Format Error" |
| 151 | "Illegal Value" |
| 152 | "Value Out of Range" |
| 153 | "String Too Long" |
| 154 | "Unrecognized Key" |
| 155 | "Unrecognized Section" |

| | |
|---|---|
| 156 | “Problem parsing XML” |

**Table 6-4. Path**

| Path (200-299) | |
|---|---|
| **ReturnCode** | **ReturnMsg** |
| 201 | “Access Guide Unlatched” |
| 202 | “No Doc Present” |
| 203 | “Path Not Clear” |
| 204 | “Document Jammed” |
| 205 | “Multiple doc feed detected” |
| 206 | “Manual detect during Autofeed” |
| 207 | “Illegal Doc Feed Option” |
| 208 | "Cannot find doc at location for this sequence move" |
| 209 | "Check Sequence Aborted by Operator" |
| 210 | "Doc Feed Path Error" |
| 250 | “Timed out waiting for document” |

**Table 6-5. Printer**

| Printer (300-349) | |
|---|---|
| **ReturnCode** | **ReturnMsg** |
| 301 | “Print Failed. Internal Error” |
| 302 | “Unable to Print Back. No Cartridge” |
| 303 | “Unable to Print Front. No Cartridge” |
| 305 | “Print Font Not Supported” |
| 306 | “Selected Print is Invalid For Selected Sequence ” |
| 307 | “Endorsing Failed. Internal Error” |
| 308 | “Franking Failed. Internal Error” |

**Table 6-6. MICR**

| MICR (350-399) | |
|---|---|
| **ReturnCode** | **ReturnMsg** |
| 351 | “MICR Failed. Internal Error” |
| 352 | “MICR Not Supported” |

**Table 6-7. Scan/Image**

| Scan/Image (400-499) | |
|---|---|
| **ReturnCode** | **ReturnMessage** |
| 401 | “Scan Failed. Internal Error” |
| 402 | “Bad Image” |
| 403 | “No Room to Store Image” |
| 404 | “Image Store Failed” |
| 405 | "Scan Side is Invalid For Selected Sequence" |
| 421 | “Scan Calib Black White Delta out of range” |
| 422 | “Scan Calib PGA Code out of range” |
| 423 | “Scan Calib DAC Code out of range” |
| 424 | “Scan Calib Consume and Park Check Failed” |
| 425 | “Scan Calib Save Data Failed” |
| 426 | “Scan Calib Shade Gain out of range” |
| 427 | “Scan Calib VPMAX out of range” |
| 428 | “Scan Calib VPAVG out of range” |
| 429 | “Scan Calib Get Data Failed, Factory Setting used” |
| 430 | “Scan Calib Get Calib Data Failed” |
| 431 | “Scan Calib LED Calib failed" |
| 432 | "Scan Calib check not found" |
| 433 | "Scan Calib Move Check to SB1 failed" |
| 434 | “Scan Calib Move Check to SB2 failed" |
| 440 | "Sensor Calib failed" |

**Table 6-8. Miscellaneous**

| Miscellaneous (500-599) | |
|---|---|
| **Return Code** | **Return Message** |
| 501 | "No RTC Support" |
| 502 | "RTC Battery Low" |

## 6.2 *DocInfo* Section

The *DocInfo* section includes keys that report on various attributes of the check document and information on the MICR data read from the check.

The following keys are included in the *DocInfo* section:

- DocUnits
- DocWidth
- DocHeight
- MICRFont
- MICRRaw
- MICRAcct
- MICRAmt
- MICRAux
- MICRBankNum
- MICRChkType
- MICRCountry
- MICRDecode
- MICREPC
- MICROnUs
- MICROut
- MICRSerNum
- MICRTPC
- MICRTransit
- MICRParseSts0
- MICRParseSts1

### 6.2.1 DocUnits

This key specifies the units of measurement used to report on check document dimensions (see the *DocWidth* and *DocHeight* keys below).

| Values | Value Description |
|---|---|
| ENGLISH | Dimensions in thousands of an inch |
| METRIC | Dimensions in millimeters |

### 6.2.2 DocWidth

This key specifies the width of the check document based on the scanned image.

| Values | Value Description |
|---|---|
| *numeric value* | Width dimension of scanned document |

### 6.2.3 DocHeight

This key specifies the height of the check document based on the scanned image.

| Values | Value Description |
|---|---|
| *numeric value* | Height dimension of scanned document |

### 6.2.4 MICRFont

This key specifies the MICR font detected and read from the check.

| Values | Value Description |
|---|---|
| E13B | E13B font was detected on the check read |
| CMC7 | CMC7 font was detected on the check read |

***Note***

*The parsed MICR fields below only apply to U.S. checks with E13B font. CMC7 Checks are not parsed, and only the raw MICR line is reported.*

### 6.2.5 MICRRaw

This key specifies the unformatted (as-is) MICR data read from the check.

| Values | Value Description |
|---|---|
| *string* | Unformatted MICR data |

### 6.2.6 MICRAcct

This key specifies the account number MICR field read from the check.

| Values | Value Description |
|---|---|
| *string* | Account number MICR field |

### 6.2.7 MICRAmt

This key specifies the amount MICR field read from the check.

| Values | Value Description |
|---|---|
| *string* | Amount MICR field |

### 6.2.8 MICRAux

This key specifies the Auxiliary On-Us MICR field read from the check.

| Values | Value Description |
|---|---|
| *string* | Auxiliary On-Us MICR field |

### 6.2.9 MICRBankNum

This key specifies the 4-digit ABA Identifier MICR field read from the check.

| Values | Value Description |
|---|---|
| *string* | ABA Institution Identifier (bank number) MICR field |

### 6.2.10 MICRChkType

This key specifies the check type based on the presence on the Auxiliary On-Us MICR field.

| Values | Value Description |
|---|---|
| PERSONAL | Auxiliary On-Us MICR field NOT present |
| BUSINESS | Auxiliary On-Us MICR field present |

### 6.2.11 MICRCountry

This key specifies the country of origin based on known MICR line formats.

| Values | Value Description |
|---|---|
| USA | Check drawn in USA |
| CANADIAN | Check drawn in Canada |
| MEXICAN | Check drawn in Mexico |

### 6.2.12 MICRDecode

This key indicates whether a MICR decode/read error was detected.

| Values | Value Description |
|---|---|
| NONE | No MICR data detected |
| OK | MICR decode/read was successful |
| ERROR | Error detected in MICR decode/read operation |

### 6.2.13 MICREPC

This key specifies the EPC MICR field read from the check.

| Values | Value Description |
|---|---|
| *string* | EPC MICR field |

### 6.2.14 MICROnUs

This key specifies the On-Us MICR field read from the check.

| Values | Value Description |
|---|---|
| *string* | On-Us MICR field |

### 6.2.15 MICROut

This key specifies the formatted MICR output data read from the check as defined by the *MICRFmtCode* key in Section=*ProcessOptions*.

| Values | Value Description |
|---|---|
| *string* | Formatted MICR output data |

### 6.2.16 MICRSerNum

This key specifies the sequence number MICR field read from the check.

| Values | Value Description |
|---|---|
| *string* | Sequence number (or check number) MICR field |

### 6.2.17 MICRTPC

This key specifies the TPC MICR field read from the check.

| Values | Value Description |
|---|---|
| *string* | TPC MICR field |

### 6.2.18 MICRTransit

This key specifies the 9-digit Transit MICR field read from the check.

| Values | Value Description |
|---|---|
| *string* | Transit MICR field |

### 6.2.19 MICRParseSts0

This key specifies a 4-digit status/error code reported by the device after parsing the MICR fields read from the check.

| Values | Value Description |
|---|---|
| *numeric value* | For specific status/error code information refer to table 6-9 |

**Table 6-9. MICRPARSESTS0**

| Digit | |
|---|---|
| 1st Digit | 0 – OK MICR |
| | 1 – Low MICR |
| | 2 – No MICR |
| 2nd Digit | 0 – Standard Check |
| | 1 – Business Check |
| | 2 – Mexican Check |
| | 3 – Canadian Check |
| 3rd Digit | 0 – No Status |
| | 1 – Amount Present |
| | 2 – Short Account |
| | 3 – Short Account + Amount Present |
| | 4 – No Check# |
| | 5 – No Check# + Amount Present |
| | 6 – No Check# + Short Account |
| | 7 – No Check# + Short Account + Amount Present |
| 4th Digit | 0 – No Errors |
| | 1 – Chk# |
| | 2 – Account |
| | 3 – Account + Chk# |
| | 4 – Transit |
| | 5 – Transit + Chk# |
| | 6 – Transit + Account |
| | 7 – Transit + Account + Chk# |

### 6.2.20 MICRParseSts1

This key specifies a 2-digit status/error code reported by the device after parsing the MICR fields read from the check.

| Values | Value Description |
|---|---|
| *numeric value* | For specific status/error code information refer to table 6-10 |

**Table 6-10. MICRPARSESTS1**

| PRIORITY | MICRParseSts1 | TYPE | DESCRIPTION |
|---|---|---|---|
| 10 | 01 | Error | No MICR data: no transit and no account found |
| 9 | 09 | Status | Mexican check |
| 8 | 08 | Status | Canadian check |
| 7 | 05 | Error | No transit, bad character, bad length, bad check digit |
| 6 | 07 | Error | No account, bad character |
| 5 | 04 | Error | Bad character in check number |
| 5 | 04 | Status | No check number |
| 4 | 12 | Status | Short Account (maybe caused by mis-parsed check#) |
| 3 | 03 | Status | Low MICR signal, good read |
| 2 | 10 | Status | Business check |
| 1 | 11 | Status | Amount field present |
| 0 | 00 | Status | No error, check OK |

Notes:

- The LED indicator will turn red on all error conditions.
- The absence of a check number is not considered an error.
- If a multiple error occurs, the error or status code with the highest priority is reported.
- All unreadable MICR characters are transmitted as an "?" ASCII character (hex 3F), except for Format 00xx.

## 6.3 *ImageInfo* Section

The *ImageInfo* section includes keys that report on various attributes of the scanned images. Some of the keys below include the symbol '#' to indicate a variable for the image number. The image number can be 1, 2, 3, or 4 (up to 4 images as specified in the *Number* key below). The device reports image information using the keys *ImageSize#*, *ImageURL#*, and *ImageSHA1#*. For example, for image 2, the key names would be ImageSize2, ImageURL2, and ImageSHA1Key2.

The following tags are included in every image file (TIFF tags for black and white images; EXIF tags for JPEG files):

| Tag # | Tag Name | Content |
|---|---|---|
| 270 | IMAGE DESCRIPTION | Contains raw MICR line |
| 271 | MAKE | "MagTek, Inc." |
| 272 | MODEL | "ImageSafe (unit's serial number)" |
| 305 | SOFTWARE | [firmware version] |
| 315 | AUTHOR | Magtek,FB=#,FG=#,QC=#,QG=#. The # symbol refers to the settings for FilterB, FilterG, JPEGQC, JPEGQG (see the *ImageOptions* section in Section 5). |

The following keys are included in the *ImageInfo* section:

- ImageSize#
- ImageURL#
- ImageSHA1Key#

- Number

### 6.3.1 ImageSize#

This key specifies the size (in bytes) for the specified Image number. The number of scanned images and their availability is determined by the *Number* key in Section=*ImageOptions*.

| Values | Value Description |
|---|---|
| *numeric value* | Number of bytes |

### 6.3.2 ImageURL#

This key specifies the URL string needed to request the specified Image number using the **MTMICRGetImage** API function.

| Values | Value Description |
|---|---|
| *string* | URL string to indicate internal file path for the Image |

### 6.3.3 ImageSHA1Key#

This key contains the SHA1 key calculation for the specified Image number (if requested and available).

| Values | Value Description |
|---|---|
| *String* | SHA1 Key string for the image |

### 6.3.4 Number

This key specifies the number of scanned images ready and available from the device.

| Values | Value Description |
|---|---|
| *numeric value* | Number of scanned images |

## 6.4 *MSRInfo* Section

The *MSRInfo* section includes keys that report on the information captured from the magnetic stripe card.

The following keys are included in the *MSRInfo* section:

- CardType
- MPData
- MPStatus
- TrackData1
- TrackData2
- TrackData3
- TrackStatus1
- TrackStatus2
- TrackStatus3
- EncryptedTrackData1
- EncryptedTrackData2
- EncryptedTrackData3
- DeviceSerialNumber
- EncryptedSessionID
- DUKPTserialnumber

### 6.4.1 CardType

This key specifies the standard encoding format detected on the magnetic stripe card.

| Values | Value Description |
|---|---|
| NONE | Unknown Card Type |
| ISO | ISO format |
| CADL | Old California Drive License format |
| AAMVA | American Association Motor Vehicle Administrators format |

### 6.4.2 MPData

This key specifies the MagnePrint data read from the magnetic stripe card.

| Values | Value Description |
|---|---|
| *string* | Please contact MagTek for the use of MagnePrint data |

### 6.4.3 MPStatus

This key specifies the MagnePrint status reported by the device.

| Values | Value Description |
|---|---|
| *string* | Please contact MagTek for the use of MagnePrint data |

### 6.4.4 TrackData1

This key specifies the Track 1 data read from the magnetic stripe card.

| Values | Value Description |
|---|---|
| *String* | Track 1 data on magnetic stripe card |

### 6.4.5 TrackData2

This key specifies the Track 2 data read from the magnetic stripe card.

| Values | Value Description |
|---|---|
| *string* | Track 2 data on magnetic stripe card |

### 6.4.6 TrackData3

This key specifies the Track 3 data read from the magnetic stripe card.

| Values | Value Description |
|---|---|
| *string* | Track 3 data on magnetic stripe card |

### 6.4.7 TrackStatus1

This key indicates whether a decode/read error was detected while reading Track 1.

| Values | Value Description |
|---|---|
| *NONE* | No status |
| *OK* | No read error detected |
| *ERROR* | Read error detected |

### 6.4.8 TrackStatus2

This key indicates whether a decode/read error was detected while reading Track 2.

| Values | Value Description |
|---|---|
| *NONE* | No status |
| *OK* | No read error detected |
| *ERROR* | Read error detected |

### 6.4.9 TrackStatus3

This key indicates whether a decode/read error was detected while reading Track 3.

| Values | Value Description |
|---|---|
| *NONE* | No status |
| *OK* | No read error detected |
| *ERROR* | Read error detected |

### 6.4.10 EncryptedTrackData1

This key specifies the Encrypted Track 1 data read from the magnetic stripe card. The Encrypted Track data is only in MagneSafe Reader Security Level 3.

| Values | Value Description |
|---|---|
| *string* | Encrypted Track 1 data on magnetic stripe card |

### 6.4.11 EncryptedTrackData2

This key specifies the Encrypted Track 2 data read from the magnetic stripe card. The Encrypted Track data is only in MagneSafe Reader Security Level 3.

| Values | Value Description |
|---|---|
| *string* | Encrypted Track 2 data on magnetic stripe card |

### 6.4.12 EncryptedTrackData3

This key specifies the Encrypted Track 3 data read from the magnetic stripe card. The Encrypted Track data is only in MagneSafe Reader Security Level 3.

| Values | Value Description |
|---|---|
| *string* | Encrypted Track 3 data on magnetic stripe card |

### 6.4.13 DeviceSerialNumber

This key specifies the Device Serial Number from MagneSafe Reader.

| Values | Value Description |
|---|---|
| *String* | Track 1 data on magnetic stripe card |

### 6.4.14 EncryptedSessionID

This key specifies the Track Encrypted Session ID from MagneSafe Reader.

| Values | Value Description |
|---|---|
| *String* | Track 2 data on magnetic stripe card |

### 6.4.15 DUKPTserialnumber

This key specifies the DUKPT serial number from MagneSafe Reader.

| Values | Value Description |
|---|---|
| *String* | Track 3 data on magnetic stripe card |

# 7 Other Keys Available From The Device

This section describes other Sections (and their corresponding key-value pairs) available from the device upon query by the application. The device can report these additional sections: *DeviceUsage, DeviceCapabilities* and *DeviceStatus.*

## 7.1 *DeviceCapabilities* Section

The *DeviceCapabilities* section includes keys that report on the general capabilities of the device. processed.

The following keys are included in the *DeviceCapabilities* section:

- AutoFeed
- IDScan
- MagStripe
- MagnePrint
- Endorse
- Firmware
- Image
- MICR
- UnitSerialNumber
- Stamp
- MachineType
- USBDriver
- ExpressCapable

### 7.1.1 AutoFeed

This key indicates whether an auto-feed input tray is available on the device.

| Values | Value Description |
|---|---|
| T | True: auto-feed input tray is available |
| F | False: auto-feed input tray is NOT available |

### 7.1.2 IDScan

This key indicates whether the device is capable ID scanning ID cards.

| Values | Value Description |
|---|---|
| T | True: ID card scanning is available |
| F | False: ID card scanning is NOT available |

### 7.1.3 MagStripe

This key indicates whether an integrated MSR (Magnetic Stripe Reader) is available on the device.

| Values | Value Description |
|---|---|
| T | True: MSR is available |

| | |
|---|---|
| F | False:  MSR is NOT available |

### 7.1.4 MagnePrint

This key indicates whether an integrated MagnePrint reader is available on the device.

| Values | Value Description |
|---|---|
| T | True: MagnePrint is available |
| F | False: MagnePrint is NOT available |

### 7.1.5 Endorse

This key indicates what print capabilities are available on the device.

| Values | Value Description |
|---|---|
| BOTH | Device can print on the front and the back of the document |
| FRONT | Device can only print on the front of the document |
| BACK | Device can only print on the back of the document |
| NONE | Device does not have printing capabilities |

### 7.1.6 Firmware

This key specifies the version of the firmware installed in the device.

| Values | Value Description |
|---|---|
| *string* | Firmware version |

### 7.1.7 Image

This key indicates what check scanning capabilities are available on the device.

| Values | Value Description |
|---|---|
| BOTH | The device scans the front and back images of the check |
| FRONT | The device can only scan the front image of the check |
| BACK | The device can only scan the back image of the check |
| NONE | The device cannot scan any images |

### 7.1.8 MICR

This key indicates whether the device is capable if reading MICR data.

| Values | Value Description |
|---|---|
| T | True: device can read MICR data |
| F | False: device can NOT read MICR data |

### 7.1.9 UnitSerialNumber

This key specifies the serial number of the device.

| Values | Value Description |
|---|---|
| *string* | Device serial number |

### 7.1.10 Stamp

This key indicates whether the device has stamping capability.

| Values | Value Description |
|---|---|
| BOTH | The device has stamping capability on the front and the back printers |
| FRONT | The device has stamping capability on the front printer only |
| BACK | The device stamping capability on the back printer only |
| NONE | The device does not have stamping capability |

### 7.1.11 MachineType

This key indicates the type of ImageSafe device connected.

| Values | Value Description |
|---|---|
| IMAGESAFE | The device connected is ImageSafe |

### 7.1.12 USBDriver

This key indicates the USB driver configuration for the ImageSafe device.

| Values | Value Description |
|---|---|
| MAGUSB | ImageSafe is configured for MagTek USB drivers |
| RNDIS | ImageSafe is configured for RNDIS USB drivers |

### 7.1.13 ExpressCapable

This key specifies if ImageSafe can run “express mode”.

| Values | Value Description |
|---|---|

| | |
|---|---|
| TRUE | The USB speed is USB2.0 - the device can run “express mode” |
| FALSE | The USB speed is USB1.1 - the device can NOT run “express mode” |

## 7.2 *DeviceStatus* Section

The *DeviceStatus* section includes keys that report general operational status of the device.

The following keys are included in the *DeviceStatus* section:

- State
- Path
- Printer
- ScanCalibStatus
- SnsrCalibStatus
- ExpressEnabled
- USBSpeed
- StartTimeout
- RawSensors

### 7.2.1 State

This key specifies the general status of the device.

| Values | Value Description |
|---|---|
| ONLINE | Device is connected and online; device is ready to process check |
| ERROR | Device is not ready to process check |

### 7.2.2 Path

This key specifies status of the check path.

| Values | Value Description |
|---|---|
| OK | Check path is clear |
| ERROR | Check path is not clear |

### 7.2.3 ScanCalibStatus

This key specifies the status of the most recent scanner calibration performed on the device. It is highly recommended to keep the factory calibration. Any calibration performed by the user will take precedence over the factory calibration. If the user calibration is invalid, the device uses factory calibration.

| Values | Value Description |
|---|---|
| NONE | The device is not calibrated |
| FACTORY | The device is using factory calibration |
| USER | The device is using the user calibration |
| ERROR | Neither the factory nor user calibration is valid |

### 7.2.4 SnsrCalibStatus

This key specifies the status of the most recent sensor calibration performed on the device.

| Values | Value Description |
|---|---|
| NONE | The sensor is not calibrated |
| FACTORY | The sensor is using factory calibration data |
| ERROR | The calibration data is invalid |

### 7.2.5 ExpressEnabled

This key specifies if ImageSafe is set as “express mode”.

| Values | Value Description |
|---|---|
| TRUE | The device is set as express mode |
| FALSE | The device is set as normal mode* |

*If the USB speed is USB1.1, the device is ALWAYS set as normal mode. This value is ALWAYS set as “FALSE”.

### 7.2.6 USBSpeed

This key specifies the protocol of USB connection.

| Values | Value Description |
|---|---|
| HI | The current USB connection is USB2.0 |
| LOW | The current USB connection is USB1.1 |

### 7.2.7 StartTimeout

This key specifies the firmware Timeout on check entry.

| Values | Value Description |
|---|---|
| *numeric value* | Time, in milliseconds |

### 7.2.8 RawSensors

This key contains a decimal number that can be masked to determine the status of a particular sensor or the status of a print cartridge or the status of the cover switch. When the value of a masked bit equals zero, this typically indicates a normal or default operational state. For example, depending on the masked bit, the zero value may indicate that the cover is detected, the ink cartridge is installed, or the sensor is unblocked.

| Masked Values | Value Description for Excella STX |
|---|---|
| 0x00001 | 0 = sensor at check entry 1 unblocked |
| 0x00002 | 0 = sensor at check entry 2 unblocked |
| 0x00004 | 0 = sensor at entry pinch unblocked |
| 0x00008 | 0 = sensor at MICR head unblocked |
| 0x00010 | 0 = sensor just past back printer unblocked |
| 0x00020 | 0 = sensor just before front printer unblocked |
| 0x00040 | 0 = sensor at exit pinch unblocked |
| 0x00080 | 0 = sensor at exit 2 unblocked |
| 0x00100 | 0 = sensor at exit 1 unblocked |
| 0x00400 | 0 = back ink cartridge installed |
| 0x00800 | 0 = front ink cartridge installed |
| 0x10000 | 0 = cover detected |

| Masked Values | Value Description for Excella |
|---|---|
| 0x0001 | 0 = sensor at manual feeder unblocked |
| 0x0002 | 0 = sensor at MICR head unblocked |
| 0x0004 | 0 = sensor just past back printer unblocked |
| 0x0008 | 0 = sensor at exit pinch unblocked |
| 0x0020 | 0 = sensor at auto feeder unblocked |
| 0x0040 | 0 = access guide latched |

| | |
|---|---|
| 0x0080 | 0 = sensor at operator button unblocked |
| 0x0100 | 0 = back ink cartridge installed |

# 8 Examples of Key-Value Pairs

This section contains examples of key-value pairs send to the ImageSafe device and the key-value pairs returned from ImageSafe device when requesting four images without endorsement. The corresponding key-value pairs for these examples are also provided in XML format. The examples include key-value pairs for querying the ImageSafe device. These are key-value pairs in the *DeviceStatus*, *DeviceCapabilities*, and *DeviceUsage*.

## 8.1 EXAMPLE 1: REQUESTING TWO IMAGES WITH ENDORSEMENT AND FRANKING

### 8.1.1 Key-Value Pairs Sent by Host Application to Excella Device

Section: **Application**

| **Key** | **Value** |
|---|---|
| Transfer | HTTP |
| DocUnits | ENGLISH |

Section: **ProcessOptions**

| **Key** | **Value** |
|---|---|
| ReadMICR | E13B |
| Endorse | BOTH |
| DocFeed | MANUAL |
| RespondEarly | YES |

Section **ImageOptions**

| **Key** | **Value** |
|---|---|
| Number | 2 |
| ImageColor1 | COL24 |
| Resolution1 | 100x100 |
| Compression1 | JPEG |
| FileType1 | JPG |
| ImageSide1 | FRONT |
| ImageColor2 | COL24 |
| Resolution2 | 100x100 |
| Compression2 | JPEG |
| FileType2 | JPG |
| ImageSide2 | BACK |

Section: **Endorser**

| **Key** | **Value** |
|---|---|
| PrintFont | INTFONT2 |
| PrintData | VOID-VOID-VOID |
| PrintStyle | NORMAL |
| PrintFrontFont | INTFONT2 |
| PrintFrontStyle | NORMAL |
| PrintFontData | VOID-VOID-VOID |

### 8.1.2 Key-Value Pairs Sent by STXDemo Application to Excella Device in XML Format

<DeviceSettings>

```
        <ImageOptions>
                <Number>2</Number>
                <ImageSide1>FRONT</ImageSide1>
                <ImageSide2>BACK</ImageSide2>
                <ImageColor1>COL24</ImageColor1>
                <Resolution1>100x100</Resolution1>
                <Compression1>JPEG</Compression1>
                <FileType1>JPG</FileType1>
                <ImageColor2>COL24</ImageColor2>
                <Resolution2>100x100</Resolution2>
                <Compression2>JPEG</Compression2>
                <FileType2>JPG</FileType2>
        </ImageOptions>
        <Application>
                <Transfer>HTTP</Transfer>
                <DocUnits>ENGLISH</DocUnits>
        </Application>
−       <Endorser>
                <PrintStyle>NORMAL</PrintStyle>
                <PrintFrontStyle>NORMAL</PrintFrontStyle>
                <PrintFont>INTFONT2</PrintFont>
                <PrintFrontFont>INTFONT2</PrintFrontFont>
                <PrintData>VOID-VOID-VOID</PrintData>
                <PrintFrontData> VOID-VOID-VOID </PrintFrontData>
        </Endorser>
−       <ProcessOptions>
                <ReadMICR>E13B</ReadMICR>
                <Endorse>BOTH</Endorse>
                <DocFeed>MANUAL</DocFeed>
                <RespondEarly>YES</RespondEarly>
        </ProcessOptions>
</DeviceSettings>
```

### 8.1.3 Key-Value Pairs Returning from Excella Device

Section **CommandStatus**

| Key | Value |
|---|---|
| BadData | NONE |
| CheckDS | F |
| ReturnCode | 0 |
| ReturnMsg | OK |

Section **ImageInfo**

| Key | Value |
|---|---|
| ImageSize1 | 40481 |
| ImageSize2 | 21587 |
| ImageURL1 | /chkimg/FRONTCOL24Image1_0023.JPG |
| ImageURL2 | /chkimg/BACKCOL24Image2_0023.JPG |
| Number | 2 |

Section **DocInfo**

| Key | Value |
|---|---|
| DocHeight | 2990 |
| DocUnits | ENGLISH |
| DocWidth | 8000 |
| MICRAcct | 123456789 |
| MICRAmt | |
| MICRAux | 007751 |
| MICRBankNum | 0021 |
| MICRChkType | BUSINESS |
| MICRCountry | USA |
| MICRDecode | OK |
| MICREPC | |
| MICRFont | E13B |
| MICROnUs | 123456789U 11 |
| MICROut | C/122000218/123456789/007751/0100 |
| MICRParseSts0 | 0100 |
| MICRParseSts1 | 11 |
| MICRRaw | U007751U T122000218T123456789U 11 |
| MICRSerNum | 007751 |
| MICRTPC | 11 |
| MICRTransit | 122000218 |

Section **DeviceStatus**

| Key | Value |
|---|---|
| AccessGuide | LATCHED |
| AutoFeeder | NOTSUP |
| ExpressEnabled | TRUE |
| FrontInk | OK |
| FrontPrinter | PRESENT |
| IDFeeder | EMPTY |
| Ink | OK |
| Lamp1 | OK |
| Lamp2 | OK |
| ManualFeeder | EMPTY |
| Path | OK |
| Printer | PRESENT |
| RTC Battery | OK |
| RawSensors | 384 |
| ScanCalibStatus | FACTORY |
| SnsrCalibStatus | FACTORY |
| StartTimeout | 4000 |
| State | ONLINE |
| USBSpeed | HI |

### 8.1.4 Key-Value Pairs Returning From Excella Device In XML Format

```
<DeviceInformation>
        <CommandStatus>
                <BadData>OK</BadData>
                <CheckDS>F</CheckDS>
                <ReturnCode>0</ReturnCode>
                <ReturnMsg>OK</ReturnMsg>
        </CommandStatus>
        <DeviceStatus>
                <AccessGuide>LATCHED</AccessGuide>
```

```
            <AutoFeeder>NOTSUP</AutoFeeder>
            <ExpressEnabled>TRUE</ExpressEnabled>
            <FrontInk>OK</FrontInk>
            <FrontPrinter>PRESENT</FrontPrinter>
            <IDFeeder>EMPTY</IDFeeder>
            <Ink>OK</Ink>
            <Lamp1>OK</Lamp1>
            <Lamp2>OK</Lamp2>
            <ManualFeeder>EMPTY</ManualFeeder>
            <Path>OK</Path>
            <Printer>PRESENT</Printer>
            <RTCBattery>OK</RTCBattery>
            <RawSensors>384</RawSensors>
            <ScanCalibStatus>FACTORY</ScanCalibStatus>
            <SnsrCalibStatus>FACTORY</SnsrCalibStatus>
            <StartTimeout>4000</StartTimeout>
            <State>ONLINE</State>
            <USBSpeed>HI</USBSpeed>
        </DeviceStatus>
        <DocInfo>
            <DocHeight>2990</DocHeight>
            <DocUnits>ENGLISH</DocUnits>
            <DocWidth>8000</DocWidth>
            <MICRAcct>123456789</MICRAcct>
            <MICRAmt></MICRAmt>
            <MICRAux>007751</MICRAux>
            <MICRBankNum>0021</MICRBankNum>
            <MICRChkType>BUSINESS</MICRChkType>
            <MICRCountry>USA</MICRCountry>
            <MICRDecode>OK</MICRDecode>
            <MICREPC></MICREPC>
            <MICRFont>E13B</MICRFont>
            <MICROnUs>123456789U 11</MICROnUs>
            <MICROut>C/122000218/123456789/007751/0100</MICROut>
            <MICRParseSts0>0100</MICRParseSts0>
            <MICRParseSts1>11</MICRParseSts1>
            <MICRRaw>U007751U T122000218T123456789U 11</MICRRaw>
            <MICRSerNum>007751</MICRSerNum>
            <MICRTPC>11</MICRTPC>
            <MICRTransit>122000218</MICRTransit>
        </DocInfo>
        <ImageInfo>
            <ImageSize1>40481</ImageSize1>
            <ImageSize2>21587</ImageSize2>
            <ImageURL1>/chkimg/FRONTCOL24Image1_0023.JPG</ImageURL1>
            <ImageURL2>/chkimg/BACKCOL24Image2_0023.JPG</ImageURL2>
            <Number>2</Number>
        </ImageInfo>
</DeviceInformation>
```

## 8.2 EXAMPLE 2: DEVICE STATUS REPORTED BY IMAGESAFE DEVICE

Section = **DeviceStatus**

| Key | Value |
|---|---|
| AccessGuide | LATCHED |
| AutoFeeder | NOTSUP |
| ExpressEnabled | TRUE |
| FrontInk | OK |
| FrontPrinter | PRESENT |
| IDFeeder | EMPTY |
| Ink | OK |
| Lamp1 | OK |
| Lamp2 | OK |
| ManualFeeder | EMPTY |
| Path | OK |
| Printer | PRESENT |
| RTCBattery | OK |
| RawSensors | 384 |
| ScanCalibStatus | FACTORY |
| SnsrCalibStatus | FACTORY |
| StartTimeout | 4000 |
| State | ONLINE |
| USBSpeed | HI |

### DEVICE STATUS REPORTED BY EXCELLA DEVICE IN XML FORMAT

```
<DeviceInformation>
        - <DeviceStatus>
                <AccessGuide>LATCHED</AccessGuide>
                <AutoFeeder>NOTSUP</AutoFeeder>
                <ExpressEnabled>TRUE</ ExpressEnabled >
                <FrontInk>OK</FrontInk>
                <FrontPrinter>PRESENT</FrontPrinter>
                <IDFeeder>EMPTY</IDFeeder>
                <Ink>OK</Ink>
                <Lamp1>OK</Lamp1>
                <Lamp2>OK</Lamp2>
                <ManualFeeder>EMPTY</ManualFeeder>
                <Path>OK</Path>
                <Printer> PRESENT </Printer>
                <RTCBattery>OK</RTCBattery>
                <RawSensors>384</RawSensors>
                <ScanCalibStatus>FACTORY</ScanCalibStatus>
                <SnsrCalibStatus>FACTORY</SnsrCalibStatus>
                <StartTimeout>4000</StartTimeout>
                <State>ONLINE</State>
                <USBSpeed>HI</USBSpeed>
          </DeviceStatus>
</DeviceInformation>
```

## 8.3 EXAMPLE 3: DEVICE CAPABILITIES REPORTED BY EXCELLA DEVICE

Section=**DeviceCapabilities**

| Key | Value |
|---|---|
| AutoFeed | F |
| Color | BOTH |

| | |
|---|---|
| Endorse | BOTH |
| ExpressCapable | TRUE |
| Firmware | MS1.01.25K |
| IDScan | T |
| Image | BOTH |
| MICR | T |
| MachineType | ExcellaSTX |
| MagStripe | T |
| MagnePrint | T |
| Stamp | NONE |
| USBDriver | RNDIS |
| UnitSerialNumber | NONE |

### DEVICE CAPABILITIES REPORTED BY EXCELLA DEVICE IN XML FORMAT

```
- <DeviceInformation>
        - <DeviceCapabilities>
                <AutoFeed>F</AutoFeed>
                <Color>BOTH</Color>
                <Endorse>BOTH</Endorse>
                <ExpressCapable>TRUE</ ExpressCapable>
                <Firmware>MS1.01.25K</Firmware>
                <IDScan>T</IDScan>
                <Image>BOTH</Image>
                <MICR>T</MICR>
                <MachineType>ExcellaSTX</MachineType >
                <MagStripe>T</MagStripe>
                <MagnePrint>T</MagnePrint>
                <Stamp>NONE</Stamp>
                <USBDriver>RNDIS</USBDriver>
                <UnitSerialNumber>NONE</UnitSerialNumber>
          </DeviceCapabilities>
</DeviceInformation>
```

## 8.4 EXAMPLE 4: DEVICE USAGE REPORTED BY EXCELLA DEVICE

Section=**DeviceUsage**

| **Key** | **Value** |
|---|---|
| CardsRead | 15 |
| CardsScanned | 4 |
| ChecksRead | 39 |
| DocsRead | 47 |
| HoursOn | 162 |
| HoursOp | 2382 |
| InkUsed | 12301 |
| FrontInkUsed | 10894 |

### DEVICE USAGE REPORTED BY EXCELLA DEVICE IN XML FORMAT

```
- <DeviceInformation>
-         <DeviceUsage>
                <CardsRead>15</CardsRead>
                <CardsScanned>4</CardsScanned>
                <ChecksRead>39</ChecksRead>
                <DocsRead>47</DocsRead>
                <FrontInkUsed>10894</FrontInkUsed>
```

```
            <HoursOn>162</HoursOn>
            <HoursOp>2382</HoursOp>
            <InkUsed>12301</InkUsed>
        </DeviceUsage>
</DeviceInformation>
```

# Appendix A Format List

For check reading, the ImageSafe device provides the flexibility to format the MICR fields and build a specific output string that will be transmitted to the Host. These output strings are referred to as Formats. The ImageSafe device has a built-in list of Formats (described below) from which the user may select one to become the active Format every time a check is read. The Formats may be selected using the Key- Pair Values described in Section 8.

Each Format is assigned a 4-digit number. The first two digits indicate the Format number, and the last two digits are specific parameters used for various functions by each Format. For example, in Format "0415", the "04" refers to Format number 4 and the 15 refers the maximum number of characters allowed for the account field.

***Note***

*The formats listed in this section apply only to U.S. and Canadian checks. The MICR line on checks from other countries will not be broken or parsed as described in these formats.*

A complete description for each Format follows.

**Fmt 00xx:** Raw Data Format - sends the entire MICR line - where:

```
xx          - specify what symbol set to use.  Choose from the table
Add xx + 16 - change multiple spaces to one space
Add xx + 32 - Remove all spaces

Examples:

   MICR LINE:  T122000218T  1234 5678 9U   1321
      FC0001 - t122000218t  1234 5678 9o   1321
(+16) FC0017 - t122000218t 1234 5678 9o 1321
(+32) FC0033 - t122000218t1234567890o1321.
```

| xx | Transit | On-Us | Amount | Dash | Error |
|---|---|---|---|---|---|
| 00 | T | U | $ | - | ? |
| 01 | t | o | a | d | ? |
| 02 | T | O | A | D | ? |
| 03 | T | U | $ | - | * |
| 04 | T | U | $ | 0 | ? |
| 05 | T | U | $ | 0 | * |
| 06 | t | o | a | 0 | ? |
| 07 | T | U | $ | none | ? |

**Fmt 01xx:** Parsed Text Format

```
FC0100      - Parsed text with dashes
FC0101      - Parsed text, replace dashes with "d"
Field Labels - TR-transit, AC-account #, CK-check #, AM-amount, TP-tpc,
               EP-epc
Example:    - PTTR444455556;AC 999-222-3;CK11045
```

**Fmt 02xx:** Parsed Text Format with Error Labels

```
FC0200      - Parsed text with dashes
FC0201      - Parsed text, replace dashes with "d"
Error Labels - PE-parsed error, NE-no error, TR-transit error,
```

CK-chk # error, TC-transit check digit error,
AM-amount error, OU-on us/account# error, TP-tpc error

Examples: - PTTR444455556;AC999-222-3;CK11045/PENE
- PTTR111?11111;AC123456/PETR (“?” = unreadable character)

**Fmt 03xx: [acct #]**

• **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
- keep spaces and dashes

**Fmt 04xx: [acct #]**

• **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
- remove spaces and dashes

**Fmt 05xx: [acct #]**

• **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
- replace spaces and dashes with zeros

**Fmt 06xx: [acct #]**

• **[acct #]**: - always xx characters, zero filled;
when xx=00 all characters are sent
- replace spaces and dashes with zeros

**Fmt 07xx: [acct #]**

• **[acct #]**: - always xx characters, zero filled;
when xx=00 all characters are sent
- remove spaces and dashes

**Fmt 08xx: [transit] [acct #]**

• **[transit]**: - all characters in the field
- keep dashes
• **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
- remove spaces and dashes

**Fmt 09xx:** **[transit] [acct #]**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - replace spaces and dashes with zeros

**Fmt 10xx:** **[transit] [acct #]**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - always xx characters, zero filled;
  when xx=00 all characters are sent
  - replace spaces and dashes with zeros

**Fmt 11xx:** **[transit] 'T' [acct #] 'A' [check #]**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - all characters in the field

**Fmt 12xx:** **[transit] 'T' [acct #] 'A' [check #]**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - always 6 characters, zero filled

**Fmt 13xx:** **[transit] 'T' [acct #] 'A' [check #] '000'**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - always 6 characters, zero filled

**Fmt 14xx:** **[transit] [acct #] [check #]**

- **[transit]**: - all characters in the field
  - keep dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - always 6 characters, zero filled

**Fmt 15xx:** **[bank #] [acct #]**

- **[bank #]**: - all characters in the field
  - keep spaces and dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

**Fmt 16xx:** **[bank #] [chk dgt] [acct #]**

- **[bank #]**: - all characters in the field
  - keep spaces and dashes
- **[chk dgt]**: - all characters (one character long)
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

**Fmt 17xx:** **[transit] [acct #]**

- **[transit]**: - all characters in the field
  - keep dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - keep spaces and dashes

**Fmt 18xx:** **[acct #] "/" [check #]**

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - keep spaces and dashes
- **[check #]**: - all characters in the field

**Fmt 19xx:** **[transit] [acct #] [check #]**

- **[transit]**: - all characters in the field
  - keep dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - replace spaces and dashes with zeros
- **[check #]**: - all characters in the field

**Fmt 20xx:** **[transit] [acct #] <CR> [check #]**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - replace spaces and dashes with zeros

- **[check #]**: - all characters in the field

**Fmt 21xx:** **[transit] [acct #] [check #]**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - always xx characters, zero filled;
  when xx=00 all characters are sent
  - replace spaces and dashes with zeros

- **[check #]**: - all characters in the field

**Fmt 22xx:** **[bank #] [acct #] [check #]**

- **[bank #]**: - all characters in the field
  - keep dashes

- **[acct #]**: - always xx characters, zero filled;
  when xx=00 all characters are sent
  - replace spaces and dashes with zeros

- **[check #]**: - all characters in the field

**Fmt 23xx:** **[error #] [transit] [acct #] [check #] 'S'**

- **[error #]**: - one digit, always present
  - '0' read OK
  - '1' read error: bad char, empty field, invalid length, validation

- **[transit]**: - always 9 characters, zero filled
  - keep dashes

- **[acct #]**: - always xx characters, trailing spaces;
  when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - always 6 characters, zero filled
  - remove spaces and dashes

**Fmt 24xx:** **[transit] 'T' [acct #] 'A' [check #] 'C' [amount] '$'**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - always 6 characters, zero filled

- **[amount]**: - all characters in the field

**Fmt 25xx:** **'M' 'C' [transit] 'D' [acct #] 'E' [check #]**

- **[transit]**: - all characters in the field
  - remove dashes and keep spaces (contig spcs = 1 spc)
  - if the field is empty, remove 'C'

- **[acct #]**: - include leading characters
  - maximum of xx characters; when xx=00 all characters are sent
  - remove dashes and keep all spaces
  - if the field is empty, remove 'D'

- **[check #]**: - all characters in the field
  - if the field is empty, remove 'E'

**Fmt 26xx:** **[acct #]**

- **[acct #]**: - work with characters in acct and transit fields
  - a window of xx characters; xx must be greater than 00
  - remove spaces and dashes

**Fmt 27xx:** **[acct #]**

- **[acct #]**: - work with characters in the acct field only
  - a window of xx characters; xx must be greater than 00
  - remove spaces and dashes

**Fmt 28xx:** **[acct #]**

- **[acct #]**: - work with characters in the acct field only
  - a window of xx characters; xx must be greater than 00
  - minimum of 6 digits, fill with zeros if necessary
  - remove spaces and dashes

**Fmt 29xx:** **'C' '/' [transit] '/' [acct #] '/' [check #] '/' [status]**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - maximum of 6 digits

- **[status]**: - this is a programmable option that must be enabled (See Table 2-4).

**Fmt 30xx:** **[zero fill] [transit] [acct #]**

- **[zero fill]**: - if length of (transit+account) is less than xx;
  xx must be greater than 00
- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - all characters in the field
  - remove spaces and dashes

**Fmt 31xx:** **[transit] '/' [acct #] '/' [check #]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - maximum of 10 digits
  - remove spaces and dashes
  - if no check number, remove preceding slash ('/')

**Fmt 3200:** **'^' [transit] '^' [acct #] '^' [check #] '^' [status]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - all characters in the field
  - remove spaces and dashes

- **[check #]**: - all characters in the field
  - remove spaces and dashes

- **[status]** : - this is a programmable option that must be enabled (See Table 2-4).

**Fmt 3300:** **'=' [transit] '=' [acct #] '=' [check #] '=' [status]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]** : - maximum of 14 digits
  - remove spaces and dashes

- **[check #]**: - maximum of 8 digits
  - remove spaces and dashes

- **[status]**: - this is a programmable option that must be enabled (See Table 2-4).

**Fmt 34xx:** **[transit] [acct #] [zero fill]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - all characters in the field
  - remove spaces and dashes

- **[zero fill]**: - zero filled up to xx; xx must be greater than 00

**Fmt 3500:** **MA [aux] B [epc] C [tran] D [acct] E [chk] F [tpc] G [amt]**

This format is defined specifically for Target Test Checks. A description of the Target Test Check must be loaded in the exception table.

- **[aux], [epc], [tran], [chk], [tpc], [amt]**:
  - all characters in the field
  - keep spaces and dashes

- **[acct]**: - all characters in the field
  - keep spaces and remove dashes

**Fmt 36xx:** Read OK : **[transit] [acct #] [check #] '/'**
Read error: **'0' '/'**

- **[transit]**: - all characters in the field
  - remove spaces and dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - always 6 characters, zero filled
  - remove spaces and dashes

**Fmt 37xx:** **[ABA] [chk dgt] [acct #]**

- **[ABA], [chk dgt]**:
  - all characters in the field
  - keep spaces and dashes

- **[acct #]**:
  - work with characters in the acct field only
  - window of xx characters; xx must be greater than 00
  - remove spaces and dashes

**Fmt 38xx:** **'T' [transit] 'A' [acct #] 'C' [check #]**

- **[transit]**:
  - all characters in the field
  - keep dashes

- **[acct #]**:
  - maximum of xx characters; when xx=00 all characters are sent
  - include leading characters
  - keep spaces and dashes

- **[check #]**:
  -all characters in the field

**Fmt 39xx:** **[transit] <CR> [acct #]**

- **[transit]**:
  all characters in the field
  - remove dashes

- **[acct #]**:
  - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and keep dashes

**Fmt 40xx:** **[country code] [transit] [acct #]**

- **[country code]**:
  - '1' for US checks
  - '2' for Canadian checks

- **[transit]**:
  - all characters in the field
  - remove dashes

- **[acct #]**:
  - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

**Fmt 4100:** **'S' 'T' [transit] 'A' [acct #] 'C' [check #]**

- **[transit]**:
  - all characters in the field
  - remove dashes

- **[acct #]**:
  - all characters in the field
  - place a slash ('/') after 10th character
  - if 10 characters or less, precede with a slash ('/')
  - remove spaces and dashes
- **[check #]**:
  - always 6 characters, zero filled
    remove spaces and dashes

**Fmt 42xx:** US check : **[transit] [acct #]**

Can check: **'9' [transit] [acct #]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - always xx characters; zero filled;
  when xx=00 all characters are sent.
  - remove spaces and dashes

**Fmt 43xx:** **[check #] <CR> <CR> [transit] <CR> [acct #]**

- **[check #]**: - maximum of 6 digits
  - remove spaces and dashes

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

**Fmt 44xx:** **[transit] [acct #]**

- **[transit]**: - all characters in the field
  - if Canadian check, replace dash with a space

- **[acct #]**: - always xx characters, trailing spaces,
  when xx=00 all characters are sent
  - remove spaces and dashes

**Fmt 45xx:** **[transit] <CR> [acct #] <CR> [check #]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces, dashes and leading zeros

- **[check #]**: - all characters in the field

**Fmt 46xx:** **[transit] [acct #] [check #]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - always xx characters, zero filled;
  when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - always 6 characters, zero filled
  - remove spaces and dashes

**Fmt 47xx:** **[transit] 'T' [acct #] 'A' [check #]**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - all characters in the field

**Fmt 48xx:** **[transit] 'T' [acct #] 'A'**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

**Fmt 49xx:** **[transit] '/' [acct #] '/' [check #] '/' [check type]**

- **[transit]**: - always 9 characters, zero filled
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - maximum of 9 digits
- **[check type]**:- personal checks ('1'); commercial checks ('2')

**Fmt 50xx:** **'T' [transit] 'T' 'O' [acct #] 'O' [check #]**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - all characters in the field

**Fmt 51xx:** **'=' [transit] '=' [acct #] '='**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

**Fmt 52xx:** **'T' [transit] 'T' [acct #] 'A' [check #]**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - all characters in the field
  - remove dashes and spaces

**Fmt 53xx:** **'/' [transit] '/' [acct #] '/' [check #] '/' [tpc] '/' [status] '/'**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - all characters in the field
- **[tpc]**: - all characters in the field
- **[status]**: - this is a programmable option that must be enabled (See Table 2-4)

**Fmt 54xx:** **[transit] [acct #] [check #] [status]**

- **[transit]**: - always 12 characters, zero filled
  - remove dashes
- **[acct #]**: - always xx characters, zero filled;
  when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - always 12 characters, zero filled
  - remove dashes and spaces
- **[status]**: - this is a programmable option that must be enabled (See Table 2-4)

**Fmt 55xx:** **'C' '/' [acct #] '/' [transit] '/' [check #] '/' 0000000000**

- **[acct #]**: - always xx characters, zero filled;
  when xx=00 all characters are sent
  - remove spaces and dashes
- **[transit]**: - all characters in the field
  - remove dashes
- **[check #]**: - always 6 characters, zero filled
  - remove dashes and spaces

**Fmt 56xx:** **[transit] <CR> [acct #] <CR> [check #] <CR> [amount]**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - all characters in the field
  - remove dashes and spaces
- **[amount]**: - all characters in the field
  - remove dashes and spaces

**Fmt 57xx:** **[acct #] <CR> [amount]**

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[amount]**: - all characters in the field
  - remove dashes and spaces

**Fmt 58xx:** **[short transit] [acct #] ':'**

- **[transit]**: - 3 rightmost characters
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

**Fmt 59xx:** **[transit] [acct #] <TAB> [check #] [amount]**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - always 9 characters, zero filled
  - remove dashes and spaces
- **[amount]**: - all characters in the field
  - remove dashes and spaces
  - insert decimal point ('.') before 2nd rightmost digit

**Fmt 60xx:** **[transit] '/' [acct #] '/' [check #] '/' [check type]**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - maximum of 10 characters
  - remove spaces and dashes
  - if no check #, remove preceding slash ('/')
- **[check type]**:- personal checks ('1'); commercial checks ('2')

**Fmt 61xx:** **[transit] <TAB> [acct #] <TAB> [check #] <TAB>**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces, dashes and leading zeros
- **[check #]**: - all characters in the field

**Fmt 62xx:** **'T' [transit] 'T' [acct #] 'A' [check #] 'S' [status]**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - all characters in the field
  - remove dashes and spaces
- **[status]**: - this is a programmable option that must be enabled (See Table 2-4).

**Fmt 63xx:** **[transit] [acct #] [check #]**

- **[transit]**: - all characters in the field
  - remove dashes
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes
- **[check #]**: - always 4 characters, zero filled
  - remove spaces and dashes

**Fmt 64xx:** **[transit] [acct #] [check #] [amount]**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - always xx characters, trailing spaces;
  when xx=00 all characters are sent
  - keep spaces and dashes

- **[check #]**: - always 6 characters (N is on quick-init check), trailing spaces
  - remove spaces and dashes

- **[amount]**: - all characters in the field
  - remove spaces and dashes
  - insert decimal point ('.') before 2nd rightmost digit

**Fmt 65xx:** **'!' [transit] '/' [acct #] '/' [check #] '/' [amount]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - all characters in the field
  - remove dashes and spaces

- **[amount]**: - all characters in the field
  - remove dashes and spaces

**Fmt 66xx:** **[transit] [acct #] <CR> '7' '1' <CR>**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

**Fmt 67xx:** **<CR> <CR> [check #]**

- **[check #]** : - maximum of xx characters; when x=00 all characters are sent
  - remove spaces and dashes

**Fmt 68xx:** **[transit] <TAB> [acct #] <TAB> [check #] <TAB> [amount] <TAB>**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - all characters in the field
  - remove dashes and spaces

- **[amount]**: - all characters in the field
  - remove dashes, spaces and leading zeros
  - insert decimal point ('.') before 2nd rightmost digit

**Fmt 69xx:** Read OK : **[transit] [acct #] [check #]**

Read error: **'0' '/'**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - always xx characters, trailing spaces;
  when xx=00 all characters are sent
  - remove spaces and dashes

- **[check #]**: - always 6 characters, zero filled
  - remove dashes and spaces

**Fmt 70:** **[transit] ',' [acct #] ',' [check #] ',' [amount]**

- **[transit]**: - all characters in the field
  - keep dashes

- **[acct #]**: - always N characters (N is on quick-init check), space filled
  - remove spaces and dashes from the account

- **[check #]**: - always 8 characters, zero filled
  - remove dashes and spaces

- **[amount]**: - all characters in the field
  - remove dashes and spaces
  - if amount is not present, remove last ','

**Fmt 71:** **[acct #] '?' [check #]**

- **[acct #]**: - work with a window of N characters in the acct field
  - always N characters (N is on quick-init check), zero filled
  - remove spaces and dashes

- **[check #]**: - maximum of 4 characters
  - remove spaces and dashes

**Fmt 72:** **[transit] <TAB> [acct #]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - maximum of N characters (N is on quick-init check)
  - remove spaces and dashes

**Fmt 73:** **[transit] <CR> [acct #] <CR> [check #]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - maximum of N characters (N is on quick-init check)
  - remove spaces and dashes

- **[check #]**: - all characters in the field
  - remove dashes and spaces

**Fmt 74:** **[transit] [acct #] [check #]**

- **[transit]**: - all characters in the field
  - remove dashes

- **[acct #]**: - always N characters (N is on quick-init check), zero filled
  - remove spaces and dashes

- **[check #]**: - always 8 characters, zero filled
  - remove spaces and dashes

**Fmt 75xx:** **[transit] <CR> [acct #] <CR> [check #] <CR> [status]**

- **[transit]**: - always 9 characters, zero filled
  - keep dashes; remove spaces

- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove dashes and spaces

- **[check #]**: - maximum of 12 characters
  - remove dashes and spaces

**Fmt 76xx:** **'T' [transit] 'A' [acct #] 'C' [check #] 'M' [raw data]**

- **[transit]**: - all characters in the field
  - remove dashes and spaces
- **[acct #]**: - maximum of xx characters; when xx=00 all characters are sent
  - remove dashes and spaces
- **[check #]**: - all characters in the field- remove dashes and spaces
- **[raw data]**: - translate MICR symbols to t,o,a,d