MICRbase
SETUP PROGRAM FOR MICR READERS
SOFTWARE INSTALLATION AND OPERATION

Manual Part Number 99875102 Rev 8

OCTOBER 2008

MAGTEK®

REGISTERED TO ISO 9001:2000

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REVISIONS

Rev Number	Date	Notes
1	20 May 98	Initial Release
2	24 Aug 01	Updated Software to Version 5.9. Added MICRImage throughout.
3	25 Apr 02	Sec 5: To screen capture "Configure" under "MICR Type Image RS232" and "More Options" added IP addresses, File Directory, Modem Options, Doc Size Limits, and Snippets.
4	19 Dec 02	Sec 5: Updated the following screen captures: Fig 5-2, 5-3, 5-4; Added Switch F, Read Flexible Format String, Short Account (to error table), Extended Status – MICRImage only, MICR Threshold, deleted error/status codes table. Sec 6: Updated screen capture 6-2, deleted error/status codes table.
5	03 Mar 03	Sec 5: Replaced Figures 5-1, 5-2, 5-3, 5-4, 5-6, 5-7, 5-8; Sec 6: Replaced Figures 6-1 and 6-2; Sec 7: Replaced Figures 7-2 and 7-3.
6	13 May 03	Front Matter: added ISO line to logo, changed Tech Support phone number, replaced warranty with License Agreement.
7	21 Aug 03	Sec 5: Replaced screen capture 5-4. Added MICR Scanning description.
8	19 Jul 04	Sec 1, Requirements: Deleted "MICRbase Program, Version 5.9 or above, P/N 22000021" and added "MICRbase Install Package (CD), P/N 30037855". Sec 2: Corrected Program Setup to reflect latest Engineering Changes. Added Windows 2000, NT, and XP, and USB instructions.

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SECTION 1. OVERVIEW

The MICRbase setup program allows the user to control all the programmable options available for the RS232 and Wedge interfaces of the MICR Check Reader.

The program provides a graphical, user-friendly interface that hides the complexities involved in manually entering MICR commands. The user is no longer required to know the specific MICR commands or the detailed data associated with each command. However, the program still allows manual entry of commands for advanced users.

In a typical application, the program can be used to query the MICR Reader about its current setup. The setup options are presented in an easy-to-read screen, where the user can review them. Then, with a few clicks, the options can be modified and immediately downloaded to the MICR Reader. The user can also use the program to verify the MICR Reader operation by reading checks or cards and observing the data received on the screen.

FEATURES

- Supports the RS232 interface for Maxi MICR, Mini MICR, MICR Plus, and MICRImage
- Supports Wedge interface for Maxi MICR and Mini MICR
- Access to all programmable options available for the MICR Check Reader
- All options can be saved to files for later reference and download
- Uploads current configuration from a MICR Reader
- Designs, edits and downloads Flexible Formats
- Displays check or card data received from MICR Reader
- Manual entry of MICR commands
- Autodetect function for the RS232 interface

REQUIREMENTS

The following are required for operating the program:

- PC with Windows OS
- Any one of the following MagTek MICR Readers:
  - RS232 Maxi MICR
  - RS232 Mini MICR
  - RS232 MICR Plus
  - Wedge Maxi MICR
  - Wedge Mini MICR
  - USB Mini MICR
  - MICRImage
- MICRbase Install Package (CD), P/N 30037855

REFERENCE DOCUMENTS

The following documents are relevant to this program:

- MINI MICR, RS232, With Optional 3-Track MSR, Technical Reference Manual, P/N 99875057
- MAXI MICR, RS232, With Optional 2-Track MSR, Technical Reference Manual, P/N 99875073
- MINI MICR WEDGE, With Optional 3-Track MSR, Technical Reference Manual, P/N 99875074
- MICR PLUS, RS232, With Optional 3-Track MSR, Technical Reference Manual, P/N 99875081
- MICRImage Check Reader, Technical Reference Manual, P/N 99875173
- MICRImage Check Reader, Command Reference Manual, P/N 99875175

SECTION 2. INSTALLATION

Program Installation consists of installing the MICRbase Program, setting up port communications, and setting up MICR communications.

PROGRAM SETUP

The MICRbase Install Package is distributed on a CD, which contains the following files:
MICRbase.exe (file)
Readme.txt (file)
Mfc42.dll (file)
Msvcrt.dll (file)
Magepnt (folder)
Magepnt.ini (file)
Magepnt.sys (file)
Regini.exe (file)
Regupdt.txt (file)

To install the MICRbase Program, proceed as follows:

1. Create a new folder with the name "MICRBASE" (or a custom name).

2. Copy all the files from the CD to this folder.

3. For wedge-based products or Windows NT operating system only, follow the additional instructions in the file \MICRbase\MagEpNt\Regupdt.txt.

4. For wedge-based products on windows 2K and XP operating systems only, follow the additional instructions in the file \MICRbase\MTKBHOOK\Install.htm.

5. For USB Driver Installation:

   When using the USB version of the IntelliPIN or Mini MICR, you must install the appropriate USB driver files onto your computer. The USB devices will only operate on computers with Windows 98/ME or Windows 2000/XP operating systems.

   The USB driver files are available in two forms:
   - On a CD (p/n 30035077)
   - From the MagTek web site (www.magtek.com) (p/n 99510038). (The files on the web site are provided in a self-extracting zip file. Run the application and unzip the files to a temporary folder on your local disk drive.)

   After you have extracted all the files from the ZIP file or if you have the CD, proceed with installation steps below. These steps will only have to be performed the first time you attach the device.

1) After the USB cable and the power adapter have been connected to the device and to the PC, Windows will indicate that it found new hardware and will show the IntelliPIN or Mini MICR device has been attached.
2) You will then be prompted to use the USB Wizard to install the device driver and other appropriate files.
3) When prompted, ask the Wizard to search for a suitable device driver.
4) If you have the MagTek USB drivers on a CD, specify the CD drive and appropriate path (USB-98-ME or USB-2K-XP) as the location of the driver. If you used the web installation, you many use the Browse button to specify the location to where the files were extracted.
5) After you locate the requested INF file, click Open.
6) After all of the files have been installed, click Finish.

After the files have been installed, any application program can communicate with the IntelliPIN or Mini MICR just as if it is attached to a regular RS-232 COM port. If your application can automatically detect the available COM ports, the newly installed USB device will be shown as one of the available COM ports (e.g., COM5).

If your application does not support COM port selection, you can determine the COM port number by using the device manager. This can be done by right-clicking on the My Computer icon on the desktop; then select Properties. In Windows 98/ME, click the Device Manager tab; in Windows 2000/XP, click the Hardware tab, then Device Properties. When the Device Manager window opens, click on the plus sign next to Ports (COM & LPT). The new device will be shown in the list with its COM port identified.

6. Run the MICRbase.exe.

7. To create a shortcut using Windows Explorer:

- Open the MICRBASE folder
- Select, drag and drop (press and hold left button on mouse) the Micrbase.exe file to the Windows Desktop
- When prompted, right click on **Create shortcut(s) here**
- To run the Program, close Windows Explorer, then click twice on the icon.

SECTION 3. MAIN SCREEN

The Main Screen is the first screen displayed when the user runs the program. This screen contains menus, buttons, and status descriptions similar to those of Windows 98.

The drop-down menus are **File**, **View**, **Communicate**, **Configure**, and **Help**. The Toolbar buttons are described below and are represented in text as: **New**, **Open**, **Save**, **Cut**, **Copy**, **Paste**, **Print**, **Help**. The Status Bar describes each button on the toolbar when the cursor points to the button.

MENUS

The Menus are as follows:

File

The selections available in this menu are as follows:

SELECTION	DESCRIPTION
New	Allows start of a new configuration from default settings or from the current configuration of an attached MICR Reader
Open	Opens previously saved MICR configuration files (with ".mic" extension)
Save	Saves the current configuration under the current file
Save As	Saves the configuration under the file name specified by the user
Print	Prints the current configuration
Print Preview	Displays the current configuration in Print Preview form
Print Setup	Displays printer settings
Exit	Exits the MICRbase program

View

The selections available in this menu are as follows:

SELECTION	DESCRIPTION
Toolbar	Removes or displays the Toolbar
Status Bar	Removes or displays the Status Bar

Communicate

The selections available in this menu are as follows:

SELECTION	DESCRIPTION
Communication Setup	Contains options needed to establish communication between the PC and the MICR reader. This dialog box is described and illustrated in Section 4, Operation.
Communicate With MICR	Contains dialog boxes to send and receive data from the MICR Reader. These dialog boxes is described and illustrated in Section 4, Operation.

Configure

Contains options needed to design, upload, and download configurations for the MICR Reader. These options are described in Section 5 for the RS232 interface and Section 6 for the Wedge interface.

Help

The selections available in this menu are as follows:

SELECTION	DESCRIPTION
About MICRbase	Lists the Program Version, Part Number, and Part Number Revision of the MICRbase program
ASCII Table	Displays a complete list of ASCII characters and their decimal values

TOOLBAR

The toolbar buttons are as follows:

New

Allows start of a new configuration from default settings or the current configuration of an attached MICR Reader.

Open

Opens previously saved MICR configuration files (.mic extension).

Save As

Saves the current configuration to the current file.

Cut, Copy, or Paste

Standard Windows 95 buttons for cutting, copying, and pasting.

Print

When clicked, Prints the current configuration.

Help

Lists the Program Version, Part Number, and Part Number Revision. This menu also includes a table of ASCII characters and decimal equivalents.

STATUS BAR

When the cursor points to a Toolbar button, the Status Bar describes the function.

SECTION 4. OPERATION

This section contains operating selections for communication and configuration of a MICR Reader.

MICR READER COMMUNICATION

Before configuration, the MICRbase program must establish communication between the PC and the MICR Reader. The **Communicate** menu contains dialog boxes that allow the user to establish and verify communication with the MICR Reader. These dialog boxes are described below.

Communication Setup

This dialog box is shown in Figure 4-1. The buttons, menus, and check boxes are described below.

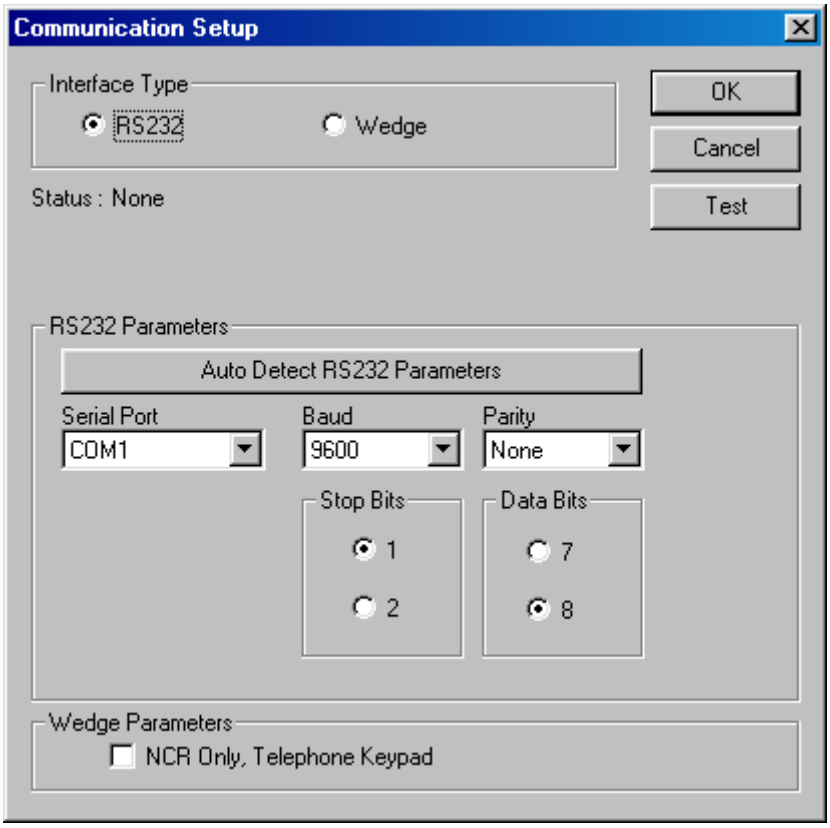

Figure 4-1. Communication Setup

Interface Type – The interface is either RS232 or Wedge. Select one.

Test – This is used to verify the communication between the PC and the MICR. When this button is clicked, the **Status** line will respond.

Status – The response to the **Test** button is: **Testing communication. Please wait…** and if the PC and MICR are properly connected, the message will be: **Communication test passed**. If communication has not been established, the message will be: **Communication test failed.**

RS232 Parameters – This box displays the current settings for the selected PC Com Port.

Auto Detect RS232 Parameters – When this button is clicked, the program automatically searches for a MICR Reader connected to any of the available Com Ports. A status line and progress bar will provide information about the search. If a MICR Reader is detected, the program will synchronize the communication parameters of the PC and the MICR Reader, and the parameters of the PC Com Port will be displayed here.

Serial Port – must match the serial port the MICR is connected to.

Baud Rate – The baud rate is one of several speeds at which the MICR Reader can communicate with the PC. The speeds are: 300, 600, 1200, 4800, 9600, 19200 38400, 57600, and 115200.

Parity – Type of character parity used.

Stop Bits – Normally, one stop bit is used for most applications. Two stop bits are used to allow extra time for slower Host equipment.

Data Bits – The number of data bits per character.

Wedge Parameters – The checkbox is for Wedge NCR only. If this box is checked, scan codes for the keypad are used in a telephone configuration. If the box is not checked, the program uses a calculator configuration. (See Section 6 for an illustration of these configurations.)

Communicate with MICR

This dialog box shown in Figure 4-2 sends commands to the MICR Reader and receives information from the MICR Reader.

MICR Command – This box is used to send commands typed by the user to the MICR Reader. For example, to send the command for Switch A, type **swa** in the **MICR Command** box. Then click **Send** or press <Enter> and the following will appear in the **Communication Dialog** box:

To MICR:
swa<13>
From MICR:
SWA=00100110<13>

The <13> is the ASCII decimal value for carriage return.

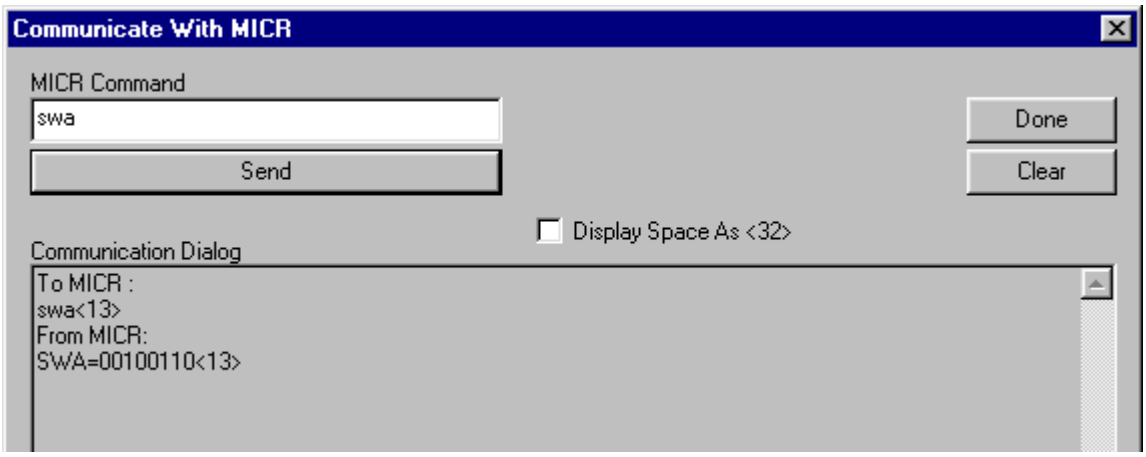

Figure 4-2. Communicate With MICR

Display Space as <32> – When the checkbox is not checked, a string of numbers received from the MICR may be:

110 101 110 01

When the box is checked, the same numbers will read:

110<32>101<32>110<32><32>01

Clear – clears the screen

Done – returns to the Main Screen.

Communication Dialog – All data sent and received from the MICR Reader will be displayed in this box. The line "To MICR" will precede all data sent to the MICR Reader. The line "From MICR" will precede all data received from the MICR Reader. The decimal values for nonprintable ASCII characters will be displayed in angle brackets <>. When this box fills up, the data will scroll up. The scroll bar on the right side may be used to display data not visible on the screen.

MICR READER CONFIGURATION

The most important aspects of configuring a MICR Reader are described below.

New Configuration

To configure a MICR Reader, it is important to understand the different sets of default options offered by the MICRbase program. The first step in creating a new configuration is to select a set of default options from the **MICR Type (Options)** menu in the **Configure** dialog box, shown in Figure 4-3. In the illustration, **None** means a set of options has not been selected and no options are displayed on the screen. Select one of the sets described below. The proper set must be selected to ensure that the desired options are available in MICR Reader to be configured. There are six sets available and they are as follows:

- **RS232 (Subset) –** must be used for older revision RS232 MICR readers that do not support the Flexible Format feature and 3-Track MSR.

- **RS232 (Fullset) –** must be used for newer revision RS232 MICR readers that support the Flexible Format feature or 3-Track MSR.

- **Plus RS232 –** must be used for RS232 MICR Plus units only

- **Wedge (Subset) –** must be used for older revision Wedge MICR readers that do not support the Flexible Format feature and 3-Track MSR.

- **Wedge (Fullset) –** must be used for newer revision Wedge MICR readers that support the Flexible Format feature or 3-Track MSR.

- **Image RS232** – must be used for MICRImage units only

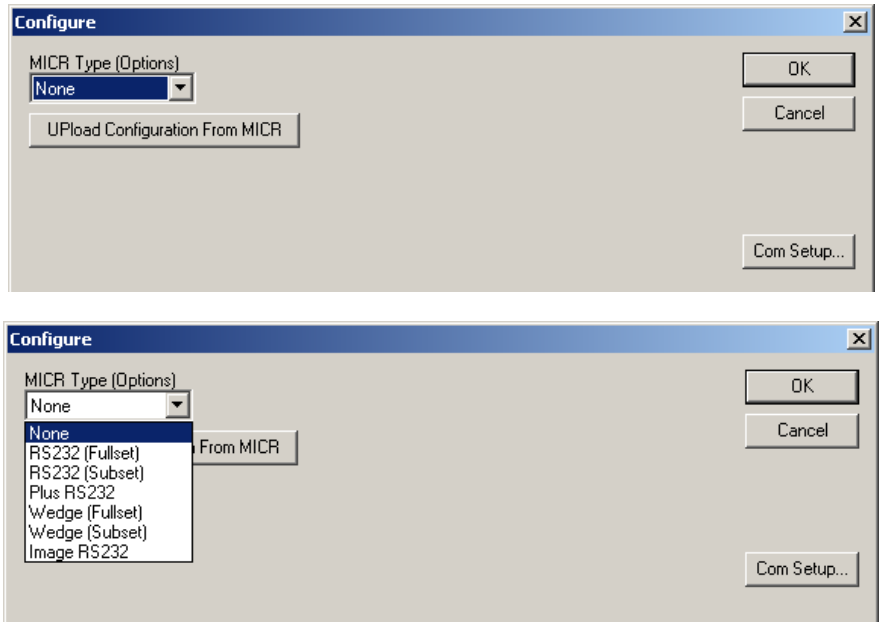

Figure 4-3. MICR Type Selection

Existing Configuration

In addition to creating a new configuration, the user may use an existing configuration retrieved from a file or uploaded from a MICR reader:

- To retrieve a configuration from a file, use the **Open** selection in the **File** menu to choose the desired file. The program will automatically retrieve and display the options. When this is done, the **Last Configuration Source** box will read **File**.
- To upload a configuration from a MICR reader, click the **Upload Configuration From MICR** button. A progress bar will appear, and when the upload is complete, the program will display the options. When this is done, the **Last Configuration Source** box will read **Upload**.

Download Configuration

When the appropriate options have been selected, the user can click the **DOWNload Configuration To MICR** to download the current configuration to the MICR Reader. Additionally, the **Download Option** menu gives the user the choice to download a complete configuration (the **All** option) or just the Format information (the **Only Format/Flex** option).

Save Configuration

When the appropriate options have been selected, the user can click the **OK** button to keep the current options, and then use the **Save** or **Save As** options (from the **File** menu) to save the current options to a configuration file.

SECTION 5. OPTIONS FOR RS232 INTERFACE

This section describes the aggregate options in the **Configure** dialog box for all four RS232 **MICR Type (Options)**: RS232 (Subset), RS232 (Fullset), Plus RS232, MICRImage RS232. When all options are used, the text is All RS232.

Figure 5-1 is the dialog box for the RS232 (Subset), Figure 5-2 is for the RS232 (Fullset), Figure 5-3 is for the Plus RS232, Figure 5-4 is for the MICRImage, and Figure 5-5 is for More MICRImage Options, from which are derived Figure 5-6 Ethernet/Modem Options, and Figure 5-7 Document Size Limit. The shaded areas in the dialog boxes are for showing status or are buttons for functions. The unshaded areas are either check boxes, data boxes or drop down menus.

OPTIONS

The menus, buttons, and boxes are described below. The applicable RS232 **MICR Type (Options)** are specified in the title of the description.

MICR Type (Options)

The six MICR Types are listed in this drop-down menu. Select the one that matches the MICR Reader connected to the PC. When a new MICR Type is selected, the current options will be replaced with the appropriate default options. As a reminder to save the current configuration, the dialog box shown in Figure 5-8 will appear. There are four options available for the RS232 interface:

- **RS232 (Subset) –** must be used for older revision RS232 MICR readers that do not support the Flexible Format feature and 3-Track MSR.
- **RS232 (Fullset) –** must be used for newer revision RS232 MICR readers that support the Flexible Format feature or 3-Track MSR.
- **Plus RS232 –** must be used for RS232 MICR Plus units only
- **MICRImage** – must be used for MICRImage units only

Last Configuration Source – All RS232 Models

This box indicates where the current settings came from. There are three sources: Upload, File, and Default. The Default Settings are shown here.

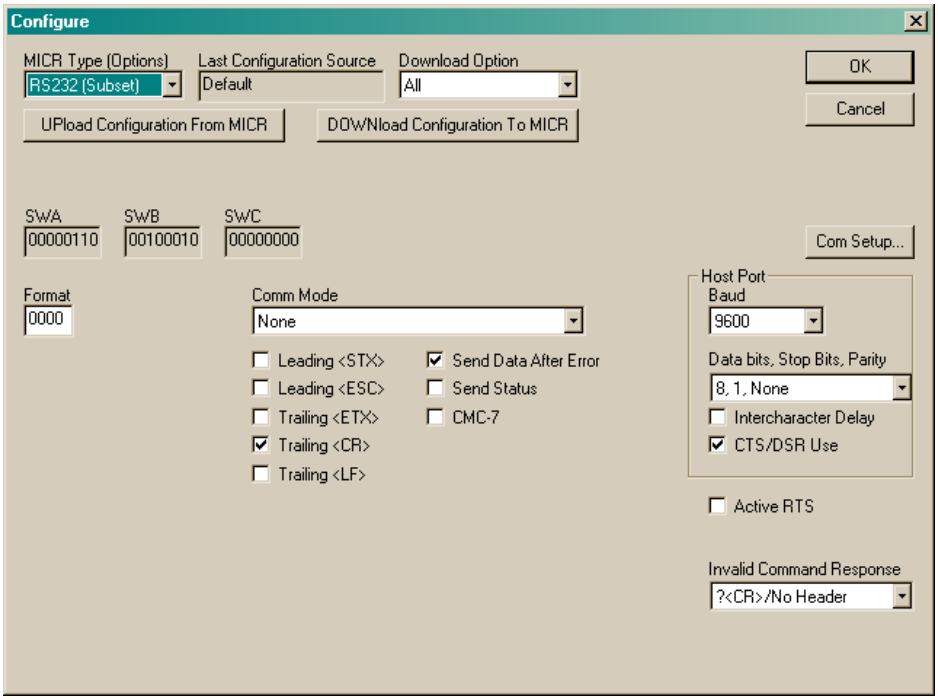

Figure 5-1. Configure, MICR RS232 (Subset)

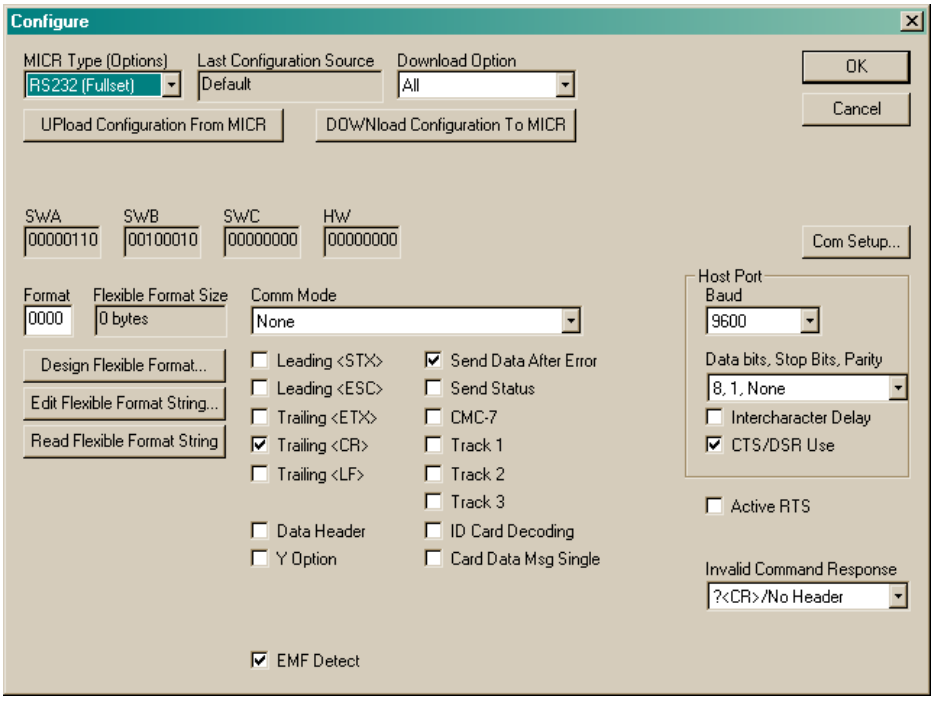

Figure 5-2. Configure, MICR RS232 (Fullset)

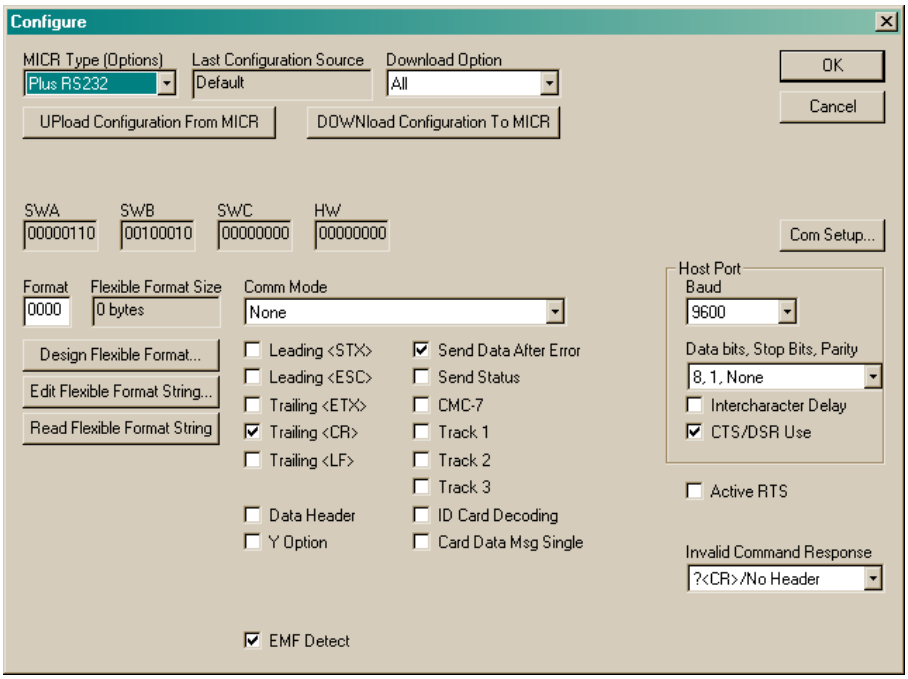

Figure 5-3. Configure, MICR RS232 PLUS

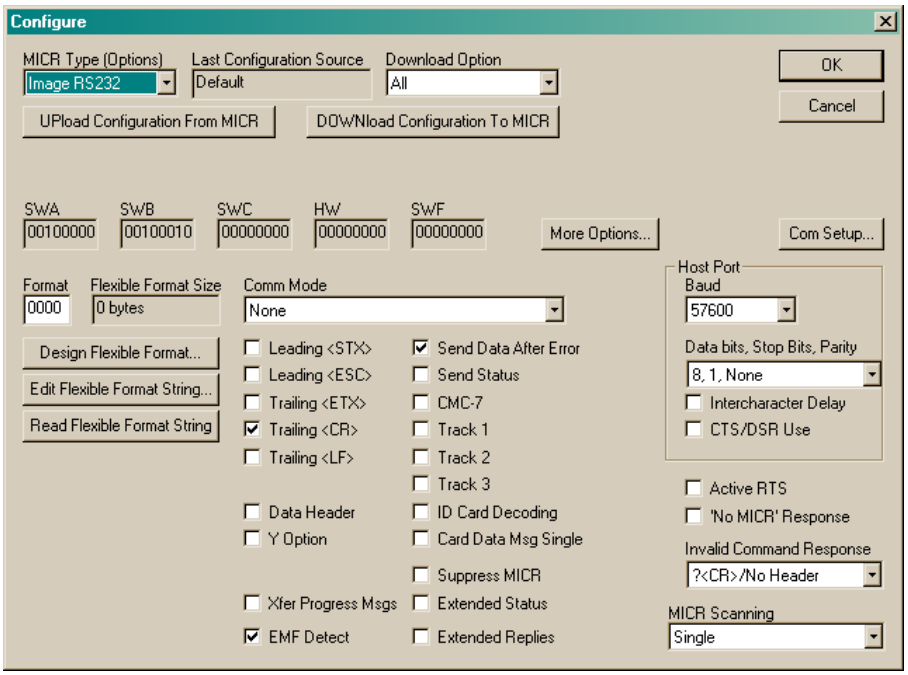

Figure 5-4. Configure, MICRImage

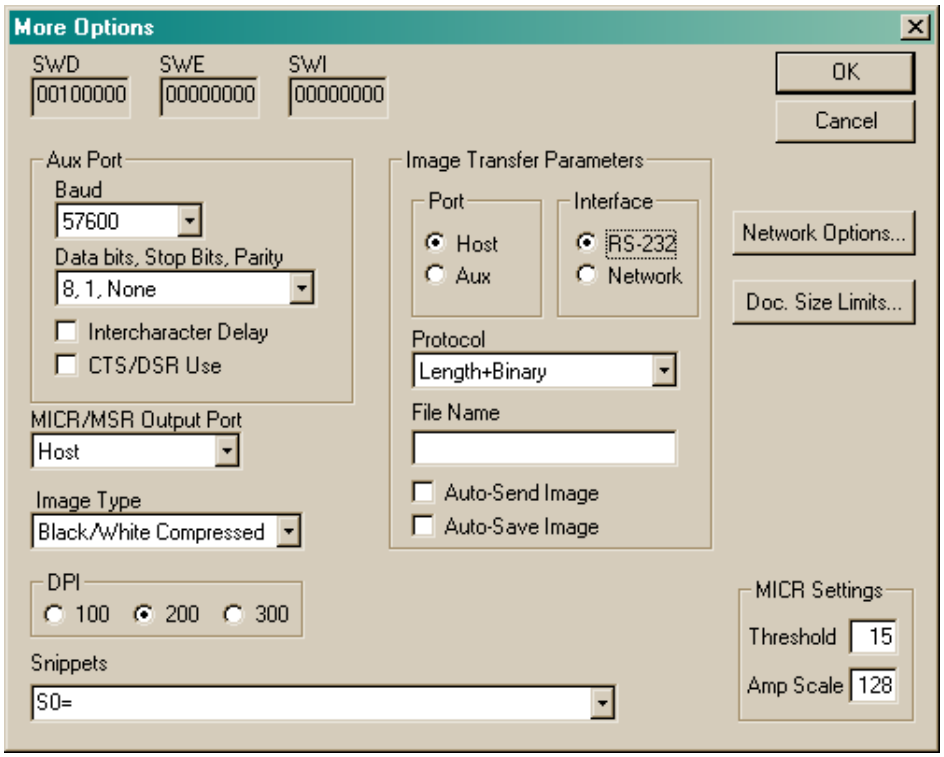

Figure 5-5. More MICRImage Options

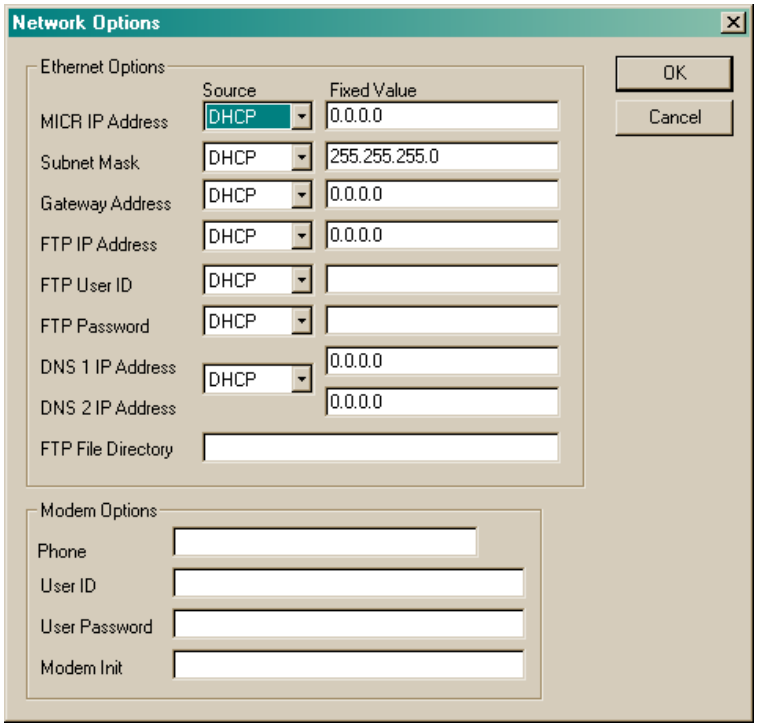

Figure 5-6. Ethernet/Modem Options

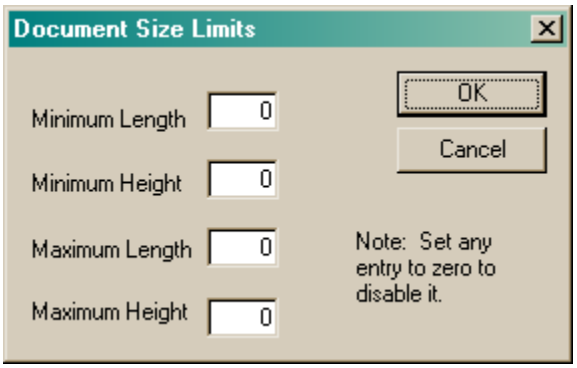

Figure 5-7. Document Size Limit

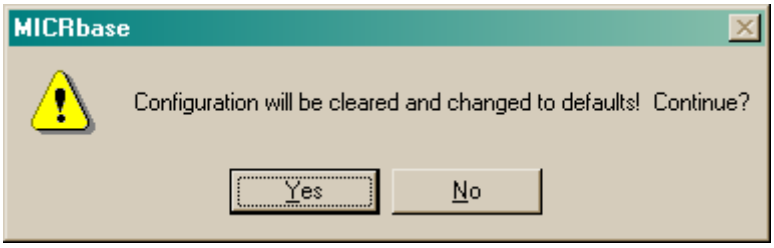

Figure 5-8. Clear and Reset to Default

Download Option – All RS232 Models

This drop-down menu selects what is to be downloaded to the MICR; either everything specified in the dialog box (**All**) or just the format information (**Only Format/Flex**).

Upload Configuration From MICR – All RS232 Models

This button retrieves the current configuration from the MICR Reader to the dialog box. This function may be used to verify or modify the current configuration of a MICR Reader.

Download Configuration To MICR – Subset, Fullset

This button downloads the portion of the settings in the **Download Option** selected.

Switches (SWA, SWB, SWC) – All RS232 Models

These boxes are for status only. As each option in the dialog box is checked or changed, the switch setting in the appropriate box will change.

Switch HW – Fullset, Plus, MICRImage

This box is for status only. As each option in the dialog box is checked or changed, the switch setting will change.

Switch F - MICRImage only

This box is for status only. As each option in the dialog box is changed, the switch setting will change.

Format – All RS232 Models

For check reading, MagTek MICRs provide the flexibility to format MICR fields and build a specific output string that will be transmitted to the Host. These output strings are referred to as formats. Each MICR has a built-in list of formats from which the user may select one to become the active format every time a check is read. Each Format is assigned a 4-digit number. These built-in formats are listed in each MICR Technical Reference Manual under Format List. To select a format, use the delete key to clear the Format box, and type in the Format Number from the Format List in the Manuals. If the required format does not exist, the user can design a custom format with the Flexible Format feature. For a complete description of this feature, see Section 7, Flexible Format.

Flexible Format Size – Fullset, Plus, MICRImage

Displays the size in bytes of the current Flexible Format. For a complete description of this feature, see Section 7, Flexible Format.

Design Flexible Format – Fullset, Plus, MICRImage

Click this button to create a custom format using the Flexible Format feature. For a complete description of this feature, see Section 7, Flexible Format.

Edit Flexible Format String – Fullset, Plus, MICRImage

When a Flexible Format is designed, the MICRbase program creates an equivalent numeric string that is downloaded to the MICR Readers. This button gives access to the string and allows experienced users to modify the string manually. For a complete description of this feature, see Design Flexible Format in Section 7.

Read Flexible Format String - Fullset, Plus, MICRImage

Click this button to read the file QUICKINT.DAT containing the flexible format data.

Com Setup – All RS232 Models

This button provides access to the **Communication Setup** dialog box, which is described in Section 4, Operation.

Baud – All RS232 Models

This drop-down menu permits the selection or change of the MICR Reader baud rate.

Data Bits, Stop Bits, Parity – All RS232 Models

This drop-down menu permits the selection or change of the possible combinations of these three selections for the MICR Reader.

Intercharacter Delay – All RS232 Models

This box is used to increase the time between characters transmitted from the MICR Reader. The time is increased to 13 milliseconds. This parameter affects character rate but not baud rate; that is, each character takes the same time to transmit but the time between characters is increased.

CTS/DSR Use – All RS232 Models

When this box is unchecked, the MICR Reader sends data to the Host without waiting for the CTS (Clear to Send) and DSR (Data Set Ready) signals to be active. When this box is checked, the MICR Reader waits for the CTS and DSR signals to be active before sending data.

RTS – All RS232 Models

When this box is checked, the MICR Reader will raise RTS (Request to Send) and wait 5 seconds for CTS to become active before sending any data. If the 5 seconds expire and CTS is not active, the data message will be discarded and nothing will be sent. If the box is not checked, RTS is inactive.

Invalid Command Response – All RS232 Models

The selections in this menu control the action the MICR Reader takes upon receipt of a command it does not recognize. It can also be used to stop the MICR Reader from receiving any more commands.

The first option, **?<CR>/No Header**, is the default. If the MICR Reader receives an unrecognized command, it will return a question mark and carriage return to the Host. The MICR Reader will then return to an idle state and wait for further commands or check/credit card reads.

For the second option, **No Reply/Header Reqd**, the MICR Reader will only execute commands preceded by a GS ASCII character (hex 1D). All other commands will be ignored. Also, the MICR Reader will not reply to invalid commands.

For the third option, **No Reply/No Header**, the MICR Reader will execute all valid commands, but it will not reply to invalid commands.

Comm Mode – All RS232 Models

The selection of a Communication Mode is a quick way of selecting multiple Control Characters. For instance, to send a carriage return/line feed pair after the data, specify Comm Mode 3. Comm Mode 7, also known as Packet Mode, calculates an LRC (Longitudinal Redundancy

Check), and appends it to the data message. Also, if a <NAK> (hex 15) character is received in this mode, the MICR Reader will resend the last message.

Control Characters and MICR Data

The Control Characters and hex values are as follows:

OPTION	CONTROL CHARACTER	HEX VALUE
Leading <STX>	<STX>	02
Leading <ESC>	<ESC>	1B
Trailing <ETX>	<ETX>	03
Trailing <CR>	<CR>	0D
Trailing <LF>	<LF>	0A

Control Characters may be added to the MICR data message. The characters are always in the following locations:

<STX> <ESC> data <ETX> <CR> <LF>

For example, if the <STX> and <CR> boxes are checked, the message from the MICR Reader will look like this:

MICR Data: <STX>data<CR>

Note

*When **Com Mode** is used, the individual control characters are not available.*

Send Data After Error – All RS232 Models

This box specifies whether the MICR Reader will return data to the host after a read error. If the box is checked and the unit reads a check with an error, the MICR Reader will send the data back to the host. If the box is not checked and the MICR Reader finds an error, it will discard the data and nothing will be sent. The error conditions are in the table below.

Send Status – All RS232 Models

This box makes the MICR Reader append a two-digit error/status code to the end of the MICR data. For most formats the error/status code will always be preceded by a forward slash (/).

For example, if a Canadian check (code 08) is read and had no errors, and the MICR data is "1234567890", then the message from the MICR Plus will look like this:

MICR Data: 1234567890/08

The status code is always at the end of the data, not the end of the message. For example, using the above conditions, with the message format set to send <STX> and <ETX>, the message from the MICR Plus will look like this:

MICR Data: <STX>1234567890/08<ETX>

CMC-7 Character Set – All RS232 Options

If this box is checked, the MICR Reader will read CMC-7 characters.

Y Option – Fullset, Plus, MICRImage

Check this box when using a Y-cable to connect an additional device on the RS-232 Host Port. This option allows the MICR Reader and the additional device to receive/transmit data from the Host. If there is no additional device, leave the box unchecked.

One important consideration is to determine how the MICR Reader should respond to all data received from the Host. This response is controlled by the **Invalid Command Response**.

Track 1, Track 2, Track 3 – Fullset, Plus, MICRImage

If a Track box is checked, the appropriate Track will be enabled on the MSR (Magnetic Stripe Reader). Each Track can be enabled or disabled individually. The tracks are always transmitted in ascending order: TK1, TK2, TK3. For example, if TK1 and TK3 are enabled and TK2 is disabled, the reader will transmit TK1, TK3.

Note

The MSR is an optional device, and it may not be available on all MICR Readers.

ID Card Decoding – Fullset, Plus, MICRImage

The MSR has two modes of operation. When the box is not checked, ID Card decoding disabled, the MSR will only read ISO encoded cards. When the box is checked, ID Card decoding enabled, the MSR will read and autodiscriminate ISO, AAMVA, and CDL encoded cards. When a card is swiped, the LED indicator will turn red to indicate an error if any of the enabled tracks read is incompatible with the selected mode of operation. Track 2 is a standard track for all types of cards.

Data Header – Plus, MICRImage

If the box is checked, a single character header precedes the data. For MICR data, the message is transmitted as follows:

MICR data: ‘C’[data]

Card data: the header position on the message is controlled by the Card Data Message parameter (see below). Therefore, the message may be transmitted as follows:

If Multiple Message: ‘M’[TK1]‘M’[TK2]’M’[TK3]

Bar Code data: ‘B” Data

If Single Message: ‘M’[TK1] [TK2] [TK3]

It is important to note that the Data Header precedes the data and not the message. For example, if <STX>, <ETX> and Data Header boxes are checked, a MICR data message will be transmitted as follows:

MICR data: <STX>‘C’[data]<ETX>

Card Data Msg Single – Plus, MICRImage

This box determines the structure of the output message for the individual tracks when a credit card is read. If the box is not checked, Multiple Message is selected, and the Control Characters and Data Header (see Data Header, above) are added to each track individually. On the other hand, if the box is checked, Single Message is selected, and all available tracks are lumped together into a single message. For example, if <STX>, <ETX> and Data Header are checked, the output message may be transmitted as follows:

If Multiple Message: <STX>‘M’[TK1]<ETX><STX>‘M’[TK2]<ETX><STX>‘M’[TK3]<ETX>

If Single Message: <STX>‘M’[TK1] [TK2] [TK3]<ETX>

Extended Status - MICRImage only

Check this box if the status is to be sent as four digits as follows:

1st digit
- 0- ok micr
- 1- low micr
- 2- no micr

2nd digit
- 0- std 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#

Extended Replies - MICRImage only

Check this box to receive errors as "?ddd" where ddd is a three-digit error code.

Xfer Progress Msgs - MICRImage only

Check this box to monitor the progress of network communications.

'No MICR' Response - MICRImage only

Check this box to receive "NO MICR" if there is no valid MICR line.

MICR Scanning (Enhanced Reading - ER)

This option is only available on MICRImage models manufactured after 9/01/2003.

If multi-scan is selected, the document is scanned three times: forward, reverse, and forward. The MICR lines produced are compared character by character and mismatches replaced by '?'. The resulting MICR line is the one that will be parsed, formatted, and transmitted.

Single
Single pass MICR read only.
Multi-scan, Match First Two
The first forward scan is compared to the reverse scan and the result is transmitted.
Multi-scan, Match Any Two
The three lines are compared in pairs and the first pair found that matches is transmitted.
Multi-scan, Match All
All three MICR lines are compared and the result transmitted.

OK – All RS232 Models

Keeps the current options and returns to the Main Screen. To save configuration changes to a file, use the **Save** or **Save As** options from the **File** menu.

Cancel – All RS232 Models

Returns to the Main Screen. Does not retain configuration changes to the dialog box.

MORE OPTIONS – MICRIMAGE ONLY

On Figure 5-4, Configure MICRImage, the button "More Options" displays Figure 5-5, More MICRImage Options, and lists the following:

Switches (SWD, SWE, SWI)

These boxes are for status only. As each option in the dialog box is checked or changed, the switch setting in the appropriate box will change.

Baud

This drop-down menu permits the selection or change of the MICR Reader baud rate.

Data Bits, Stop Bits, Parity

This drop-down menu permits the selection or change of the possible combinations of these three selections for the MICR Reader.

Intercharacter Delay

This box is used to increase the time between characters transmitted from the MICR Reader. The time is increased to 13 milliseconds. This parameter affects character rate but not baud rate; that is, each character takes the same time to transmit but the time between characters is increased.

CTS/DSR Use

When this box is unchecked, the MICR Reader sends data out to the auxiliary port without waiting for the CTS (Clear to Send) and DSR (Data Set Ready) signals to be active. When this box is checked, the MICR Reader waits for the CTS and DSR signals to be active before sending data. Image Output Port

MICR/MSR Output Port

This parameter determines which port is used to send MICR and MSR data. If the Telnet option is chosen, but no connection has been established, data will be sent out the Host Port.

Image Type

This option selects the number of bits used for each pixel, or in other words, the number of shades of gray. The bitonal image is compressed using CCITT-G4, a lossless compression (no loss of image quality), resulting in file sizes approximately 10K. Grayscale images are not

compressed and will be significantly larger (e.g., a personal check using 8-bit Grayscale will create a file size of approximately 640K).

Image Transfer Port

This parameter determines which port is used to transfer image files. The options are the RS232 host port, or the RS232 Auxiliary port, or Ethernet.

File Transfer Protocol

This parameter determines which file protocol is used to transfer image files via the RS232 Ports. A description of the available options follows:

LENGTH + BINARY

In this protocol, the image file is transmitted as binary data. The length precedes the binary data in the form of a word count (1 word = 2 bytes). If the first byte received is null, the count is included in the next 3 bytes. If the first byte received is not null, the first and second bytes are the count. The byte order of the length is always MSB…LSB.

XMODEM

In this protocol, the image file is transmitted in blocks of 128 bytes. The protocol includes error detection information (CRC or checksum). All blocks must be acknowledged by the host, and if an error is detected, the host will request the block again.

XMODEM-1K

In this protocol, the image file is transmitted in blocks of 1K bytes. The protocol includes error detection information (CRC or checksum). All blocks must be acknowledged by the host, and if an error is detected, the host will request the block again.

YMODEM/YMODEM-G

This is a double mode protocol and is used to send multiple files in batch mode. The host instructs MICRImage whether to use YMODEM or YMODEM-G. In the YMODEM protocol, the image file is sent in blocks of 1K bytes, and all blocks must be acknowledged by the host. In the YMODEM-G protocol, the image files are also sent in blocks of 1K bytes, but the blocks are not acknowledged by the host.

BINARY

In this protocol, the image file is transmitted as binary data but no length is provided. The IS (Image Size) command can be used to query for the size of the image file.

File Name

This is a template for creating file names in the MICRImage. The following characters may be embedded in the file name:

*	replace with MICR Line
?	replace with formatted MICR Line
>	replace with file count
<	replace with file creation time
:	replace with serial #

Auto-Send Image

Checking this box will cause the image to be sent to the image port automatically.

Auto-Save Image

Checking this box will cause the image to be saved in memory automatically.

Snippets

A snippet is a rectangular area in an image. It is specified by enclosing the top, bottom, left, and right borders of the area in parentheses as follows: (Tn Bn Ln Rn) where n is in pixels measured from the bottom and right edges of the image if positive, or the top and left edges if negative. If n contains a decimal point, it means inches. If n contains a comma in place of a decimal point, it means centimeters. One or two snippets may be specified on each line.

MICR Threshold

Sets the noise threshold for the MICR line. Range: 0-255. Default is 15.

MICR Amp Scale

Sets the amplitude scale factor for the detection of low MICR. Range: 0-255. Default is 128.

OK

Keeps the current options and returns to the first options page, Figure 5-4, “Configure, MICRImage”.

Cancel

Returns to the first options page, Figure 5-4, “Configure, MICRImage”. Does not retain configuration changes made to the dialog box.

NETWORK/MODEM OPTIONS

The "Ethernet/Modem Options" box is shown in Figure 5-6 and described below. Each of the options below has a Source and Fixed value box associated with them. Selecting 'Fixed' means the MICRImage will use the value shown in the Fixed Value box. Selecting 'DHCP' means the MICRImage will take advantage of the dynamic configuration offered by your DHCP server and obtain the parameter from there. The MICR IP Address must be set to DHCP if any of the other configuration parameters are going to use DHCP.

DNS 1 IP Address and DNS2 IP Address

These set the IP address for the DNS1 and DNS2 servers.

FTP File Directory

This sets the file directory

MICR IP Address

This sets the IP address for the MICR unit. For example: `192.11.12.127`

Subnet Mask

This sets the subnet mask used by the MICR unit. For example: `255.255.255.0`

Gateway Address

This sets the IP address for the gateway/router.

FTP IP Address

This sets the IP address for the FTP server. To use DHCP, configure your server to use option 181 for this parameter.

FTP User ID

This sets the user ID used to log onto the FTP server. The maximum number of characters allowed is 16. To use DHCP, configure your server to use option 179 for this parameter.

FTP Password

This sets the password used to log onto the FTP server. The maximum number of characters allowed is 16. To use DHCP, configure your server to use option 180 for this parameter.

MODEM OPTIONS

The modem options, shown in Figure 5-6, are used when the MICRImage is configured for modem use.

Phone

This sets the user phone number.

User ID

This sets the user ID.

User Password

This sets the user password. This is a hidden field (see below).

Modem Init

This can be used to initialize the modem.

DOC. SIZE LIMITS

This option, shown in Figure 5-7, is used to set minimum and maximum size limits for scanned documents. An improper scan can result in a short or skewed image. It is usually not desirable to transmit or save such an image. If size limits are set and the image falls outside those limits, the auto-send, auto-save, and append image operations will not be performed. The limits are specified in pixels. A value of zero disables the limit.

HIDDEN FIELDS

Hidden fields prevent unauthorized viewing of options. When a hidden field is uploaded, it is shown as a string of asterisks of equal length. A field of asterisks is not downloaded to the unit or saved in the file.

SECTION 6. OPTIONS FOR WEDGE INTERFACE

This section describes the aggregate options in the **Configure dialog** box for two **MICR Type (Options)** Wedge (Subset), and Wedge (Fullset).

Figure 6-1 is the dialog box for the Wedge (Subset), and Figure 6-2 is for the Wedge (Fullset). The shaded areas in the dialog boxes are for showing status or are buttons for functions. The unshaded areas are either check boxes, data boxes or drop down menus.

The menus, buttons, and boxes are described below. The applicable Wedge **MICR Type (Options)** are specified in the title of the description.

MICR Type (Options) – Subset, Fullset

The five MICR Types are listed in this drop-down menu. Select the one that matches the MICR Reader connected to the PC. When a new MICR Type is selected, the current options will be replaced with the appropriate default options. As a reminder to save the current configuration, the dialog box shown in Figure 6-3 will appear. There are two sets available for the Wedge interface:

- **Wedge (Subset) –** must be used for older revision Wedge MICR readers that do not support the Flexible Format feature and 3-Track MSR.

- **Wedge (Fullset) –** must be used for newer revision Wedge MICR readers that support the Flexible Format feature or 3-Track MSR.

Last Configuration Source – Subset, Fullset

This box indicates where the current settings came from. There are three sources from the drop-down menu: Upload, File, and Default. The Default Settings are shown here.

Download Option – Subset, Fullset

This drop-down menu selects what is to be downloaded to the MICR; either everything specified in the dialog box (**All**) or just the format information (**Only Format/Flex**).

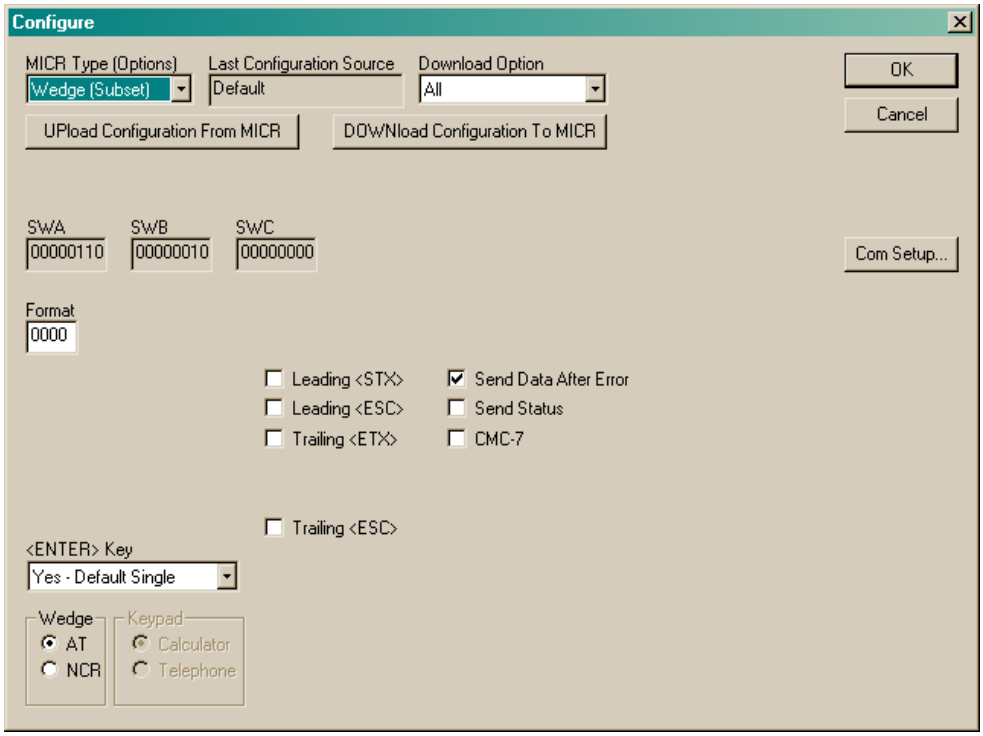

Figure 6-1. Configure MICR Wedge (Subset)

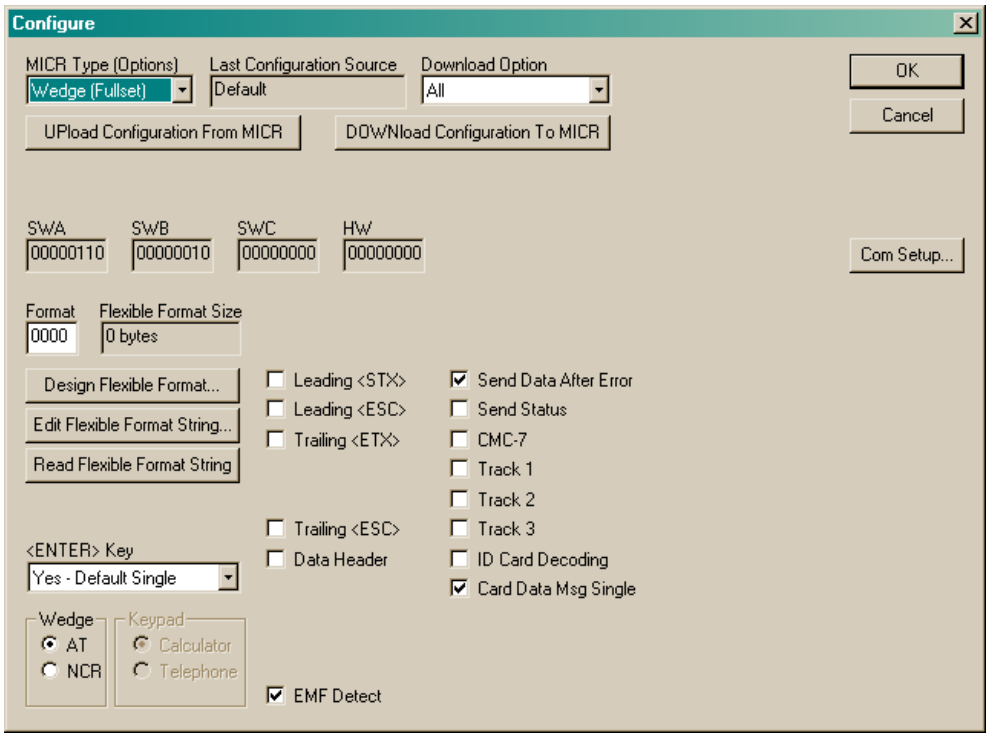

Figure 6-2. Configure MICR Wedge (Fullset)

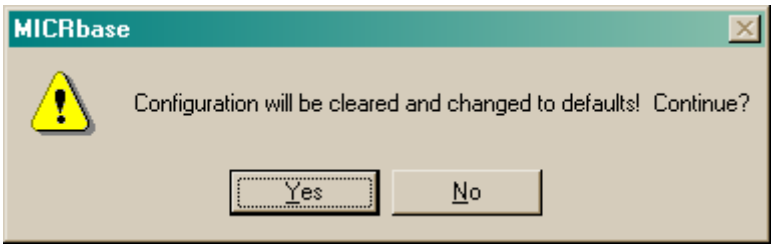

Figure 6-3. Clear and Reset to Default

Upload Configuration From MICR – Subset, Fullset

This button retrieves the current configuration from the MICR Reader to the dialog box. This function may be used to verify or modify the current configuration of a MICR Reader.

Download Configuration To MICR – Subset, Fullset

This button downloads the portion of the settings in the **Download Option** selected.

Switches (SWA, SWB, SWC) – Subset, Fullset

These boxes are for status only. As each option in the dialog box is checked or changed, the switch setting in the appropriate box will change.

Switch HW – Fullset

This box is for status only. As each option in the dialog box is checked or changed, the switch setting will change.

Format – Subset, Fullset

For check reading, MagTek MICRs provide the flexibility to format MICR fields and build a specific output string that will be transmitted to the Host. These output strings are referred to as formats. Each MICR has a built-in list of formats from which the user may select one to become the active format every time a check is read. Each Format is assigned a 4-digit number. These built-in formats are listed in each MICR Technical Reference Manual under Format List. To select a format, use the delete key to clear the Format box, and type in the Format Number from the Format List in the Manuals. If the required format does not exist, the user can design a custom format with the Flexible Format feature. For a complete description of this feature, see Section 7, Flexible Format.

Flexible Format Size – Fullset

Displays the size in bytes of the current Flexible Format. For a complete description of this feature, see Design Flexible Format in Section 7.

Design Flexible Format – Fullset

Click this button to create a custom format using the Flexible Format feature. For a complete description of this feature, see Design Flexible Format in Section 7.

Edit Flexible Format String – Fullset

When a Flexible Format is designed, the MICRbase program creates an equivalent numeric string that is downloaded to the MICR Readers. This button gives access to the string and allows experienced users to modify the string manually. For a complete description of this feature, see Design Flexible Format in Section 7.

Com Setup – Subset, Fullset

This button provides access to the **Communication Setup** box, which is described in Section 4, Operation.

<Enter> Key – Subset, Fullset

This option selects single or double <Enter> keys for operation. There are also default and custom positions of the keys. Consult MINI MICR Wedge manual, P/N 99875074, under Commands for a complete description with illustrations for details. The options are as follows:

- **No** – **Do not Send –** The MICR Reader will not send the <ENTER> key to the PC.
- **Yes** – **Default Single –** The MICR Reader will use the default scan code for a one-key<ENTER>. Use this option for all PC applications.
- **Yes** – **Default Double –** The MICR Reader will used two default scan codes for a two-key <ENTER>.
- **Yes** – **Custom Single –** The keyboard has a one-key <ENTER>, but it has been moved from its default position. The scan code must be programmed into the MICR Reader.
- **Yes** – **Custom Double –** The keyboard has a two-key <ENTER>, but it has been moved from its default position. The scan codes must be programmed into the MICR Reader.

Wedge – Subset, Fullset

Select **AT** for IBM PC compatibles or **NCR** for NCR 7052/7053 cash registers.

Keypad – Subset, Fullset

This option is available only when the selected Wedge type is **NCR.** For keypad layout choose Calculator or Telephone as shown in Figure 6-4.

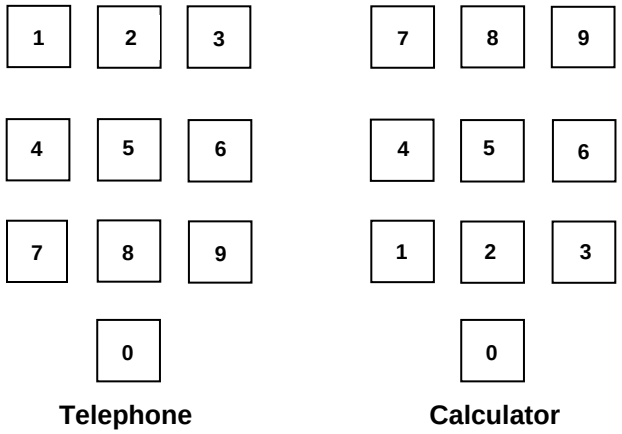

Figure 6-4. Telephone and Calculator Keypad Layouts

Control Characters and MICR Data – Subset, Fullset

Control Characters may be added to the MICR data message. The characters are always in the following locations:

<STX> <ESC> data <ETX> <ENTER> <ESC>

The control characters are as follows:

OPTION	CONTROL CHARACTER
Leading <STX>	<STX>
Leading <ESC>	<ESC>
Trailing <ETX>	<ETX>
Trailing <ESC>	<ESC>

For example, if <STX> and <ENTER> boxes are checked, the message from the MICR Reader will look like this:

MICR Data: <STX>data<ENTER>

Send Data After Error – Subset, Fullset

This box specifies whether the MICR Reader will return data to the host after a read error. If the box is checked and the unit reads a check with an error, the MICR Reader will send the data back to the host. If the box is not checked and the MICR Reader finds an error, it will discard the data and nothing will be sent. The error conditions are in the table below.

Send Status – Subset, Fullset

This box makes the MICR Plus append a two-digit error/status code to the end of the MICR data. For most formats the error/status code will always be preceded by a forward slash (/).

For example, if a Canadian check (code 08) is read and had no errors, and the MICR data is "1234567890", then the message from the MICR Plus will look like this:

```
MICR Data:  1234567890/08
```

The status code is always at the end of the data, not the end of the message. For example, using the above conditions, with the message format set to send <STX> and <ETX>, the message from the MICR Plus will look like this:

```
MICR Data:  <STX>1234567890/08<ETX>
```

CMC-7 Character Set – Subset, Fullset

If the box is checked, the MICR Reader will read CMC-7 characters.

Track 1, Track 2, Track 3 – Fullset

If a Track box is checked, the appropriate Track will be enabled on the MSR (Magnetic Stripe Reader). Each Track can be enabled or disabled individually. The tracks are always transmitted in ascending order: TK1, TK2, TK3. For example, if TK1 and TK3 are enabled and TK2 is disabled, the reader will transmit TK1, TK3.

Note

The MSR is an optional device, and it may not be available on all MICR Readers.

ID Card Decoding – Subset, Fullset

The MSR has two modes of operation. When the box is not checked, ID Card decoding disabled, the MSR will only read ISO encoded cards. When the box is checked, ID Card decoding enabled, the MSR will read and autodiscriminate ISO, AAMVA, and CDL encoded cards. When a card is swiped, the LED indicator will turn red to indicate an error if any of the enabled tracks read is incompatible with the selected mode of operation. Track 2 is a standard track for all types of cards.

OK – Subset, Fullset

Keeps the current options and returns to the Main Screen. To save configuration changes to a file, use the **Save** or **Save As** options from the file menu.

Cancel – Subset, Fullset

Returns to the Main Screen. Does not retain configuration changes.

SECTION 7. FLEXIBLE FORMAT

The Flexible Format feature allows the user to create a custom format for the MICR Reader. The MICRbase program provides a user-friendly interface to enter the necessary information to design and download the desired custom format (see **Design Flexible Format**). This information is downloaded to the MICR Reader in the form of numeric string of commands. The MICRbase program also allows experienced users to manually modify the numeric string before downloading to the MICR Reader (see **Edit Flexible Format String**).

FORMAT

To activate the Flexible Format the user must enter '7700' in the **Format** box on the **Configure** dialog box. If this format number is not entered in the **Format** box, the dialog box shown in Figure 7-1 will appear. Click **Yes** to automatically change the Format number to '7700'.

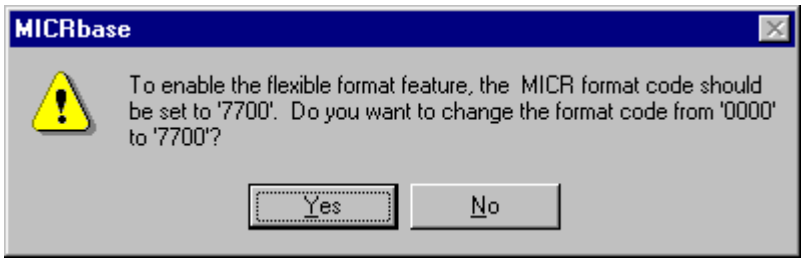

Figure 7-1. Flexible Format Code 7700

DESIGN FLEXIBLE FORMAT…

Click this button to design a new custom format. The dialog box shown in Figure 7-2 will appear. All the menus, buttons, and boxes in this dialog box are described below.

Field

The title of this box (for example, “Field 1”) indicates the sequence order of the MICR field in the output string of the MICR reader. The drop-down menu contains the following selections:

- ABA or Bank # (digits 5-8 of Transit field)
- Account
- Amount
- Check Digit (digit 9 of Transit field)
- Check number or Sequence number
- Routing (digits 1-4 of Transit field)
- Status Code (MagTek’s standard two-digit status code)
- Transit

For example, if the title reads “Field 1” and the Transit field is selected, the Transit field will be the first MICR field in the output of the MICR Reader.

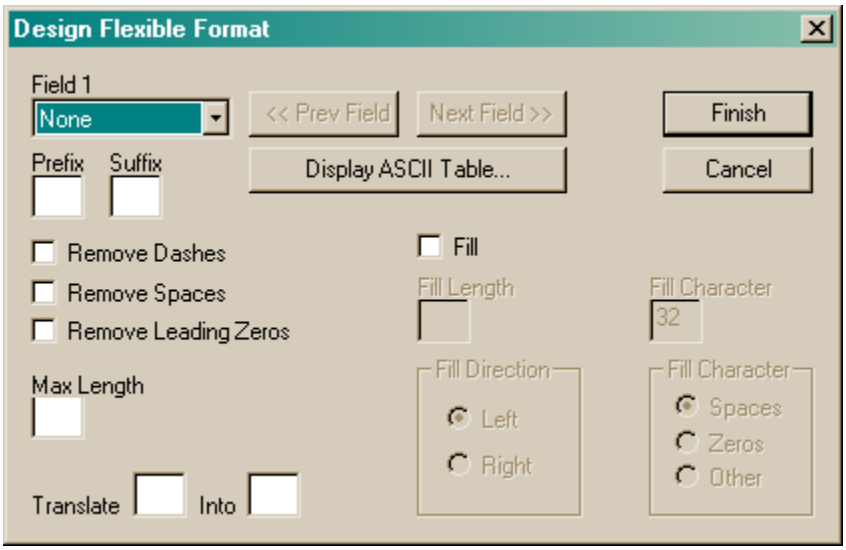

Figure 7-2. Design Flexible Format

Prefix

This box provides the option to include a single ASCII character before the selected MICR field. The input to this box is the decimal value of the desired ASCII character (see **Display ASCII Table…** below). If a prefix character is not needed, leave the box blank.

Suffix

This box provides the option to include a single ASCII character after the selected MICR field. The input to this box is the decimal value of the desired ASCII character (see **Display ASCII Table…** below). If a suffix character is not needed, leave the box blank.

Remove Dashes

Check this box to remove dashes from the selected field.

Remove Spaces

Check this box to remove spaces from the selected field.

Remove Leading Zeros

Check this box to remove leading zeros from the selected MICR field.

Max Length

This box allows setting the maximum length limit for the selected MICR field. This choice creates a variable length field, whose characters are truncated (to the left) only if the actual length exceeds the maximum length. If the actual length is less than the maximum length, the characters are not truncated. The input to this box is a decimal number. If the maximum length is not required, leave the box blank.

Note

*The **Max length** and **Fill** boxes are mutually exclusive.*
If one is selected, the other is not available.

Fill

This box allows setting a fixed or constant length for the selected MICR field. When the **Fill** box is checked, three other items become available: **Fill length**, **Fill direction**, and **Fill Character**. The information in these items is used to "fill" the selected field when the actual length is less than the fill length.

Fill length

This box is only available when the **Fill** box is checked (see above). This box contains the fixed or constant length (number of characters) for the selected field. The input to this box is a decimal number. A number must be entered in this box.

Fill character

This box is only available when the **Fill** box is checked (see above). This box allows entering an ASCII character to fill the selected MICR field when the actual length is less than the fill length. The space (decimal 32) and zero (decimal 48) characters are commonly used; to fill with either character, simply click the corresponding button and the **Fill character** box will automatically display the corresponding decimal ASCII value. For any other ASCII character, enter the decimal value in this box (see **Display ASCII Table**… below).

Fill direction

This box is only available when the **Fill** box is checked (see above). This box provides the option of filling the selected field to the left or to the right with the fill character. To select, simply click the **Left** or **Right** button.

Translate [ ] into [ ]

These two boxes can translate a character within a MICR field. For example, if all dashes are translated to the character 'd', enter the ASCII decimal value for a dash (45) in the **Translate** box. Then enter the ASCII decimal value for a 'd' (100) in the **Into** box. For a list of ASCII decimal values, click **Display ASCII Table**.

Next Field >>

Click on this button to select and work on the next MICR field.

<<Prev Field

Click on this button to go back and examine or modify the previous MICR field.

Display ASCII Table…

Click on this button to see a complete list of ASCII characters and their decimal values.

Finish

Click on this button after selecting and working on the last MICR field. The following conditions are true after clicking the **Finish** button and they apply to the Flexible Format just designed or modified:

- This format remains the active format in the **Design Flexible Format** dialog box.
- The format is not automatically downloaded to the MICR reader. This is a separate function that must be performed using the **Download To MICR** button.
- The format is not automatically saved to a file. The format must be saved to a file using the **Save** or **Save As** option in the **File** menu.

Cancel

Click this button to cancel any changes made and to close the **Design Flexible Format** window.

EDIT FLEXIBLE FORMAT STRING

Click this button to view and edit the string of numeric commands equivalent to all the options selected to design the Flexible Format. The dialog box, shown in Figure 7-3, will appear.

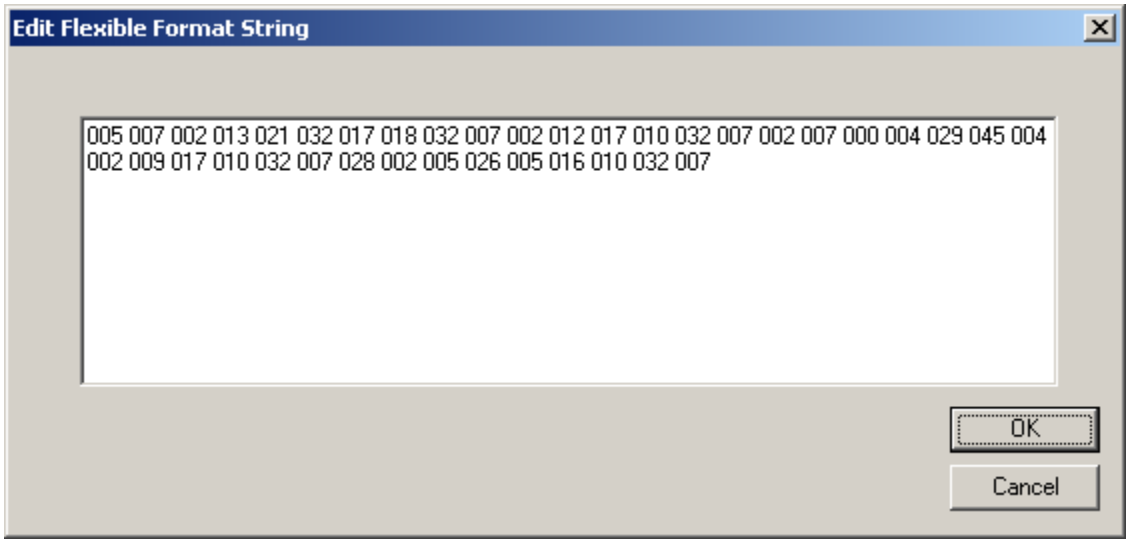

Figure 7-3. Edit Flexible Format String

The string is the actual data that will be downloaded to the MICR Reader to implement the Flexible Format. The numeric string is made up of a sequence of 3-digit commands separated by a space. Each 3-digit command occupies one byte of memory in the MICR Reader.

The numeric commands are part of the String Format Language (SFL) developed by MagTek for the MICR Readers (a full description of this language may be obtained from the Engineering Department at MagTek). Nonetheless, knowledge of this language is not required since most custom formats can be designed with the options available in the **Design Flexible Format** dialog box.

The MICRbase program allows the user to edit the numeric string and include any of the commands available in MagTek's SFL. The syntax of the new commands will be automatically checked by the program, and if any errors are found, the dialog box in Figure 7-4 will appear.

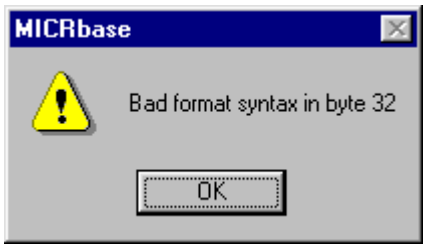

Figure 7-4. Syntax Error

However, editing a numeric string is only recommended for those users with basic programming skills and a comprehensive knowledge of MagTek's SFL. Furthermore, any numeric commands entered in this manner will not be reflected in the **Design Flexible Format** dialog box.

OK

Click this button to keep any changes made.

Cancel

Click this button to discard any changes made.

FLEXIBLE FORMAT SIZE

This box displays the number of memory bytes that the current Flexible Format will occupy in the memory of the MICR Reader. There is a maximum of 31 bytes available in the Mini MICR and 118 bytes in the MICR Plus. If the size of the Flexible Format exceeds the limits, the dialog boxes in Figures 7-5 and 7-6 will appear. Click **OK** on both and correct the problem.

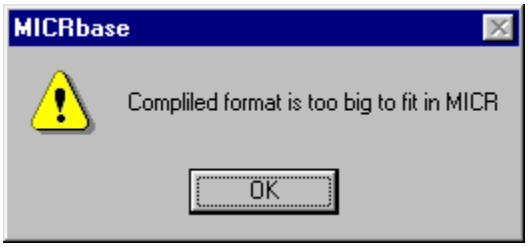

Figure 7-5. Format Too Large

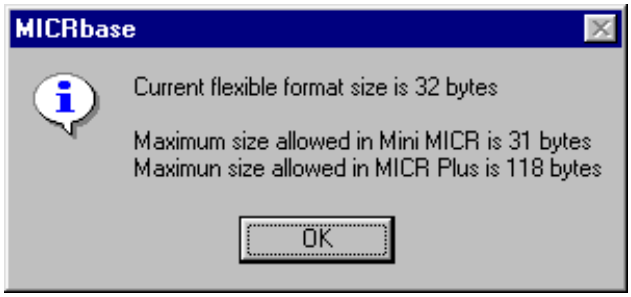

Figure 7-6. Maximum Sizes For MICR Readers

APPENDIX A. OPTIONS FOR RS232 AND WEDGE INTERFACES

OPTIONS FOR RS232 INTERFACE

Option/Box/Button	RS232 (Subset)	RS232 (Fullset)	Plus RS232	MICRImage RS232
MICR Type (options)	X	X	X	X
Last Configuration Source	X	X	X	X
Upload Configuration From MICR	X	X	X	X
DOWNload Configuration From MICR	X	X	X	X
Download option	X	X	X	X
OK	X	X	X	X
Cancel	X	X	X	X
Com Setup…	X	X	X	X
Format	X	X	X	X
Baud	X	X	X	X
Data bits, Stop Bits, Parity	X	X	X	X
Intercharacter Delay	X	X	X	X
CTS/DSR Use	X	X	X	X
RTS	X	X	X	X
Invalid Command Response	X	X	X	X
Comm Mode	X	X	X	X
Leading <STX>	X	X	X	X
Leading <ESC>	X	X	X	X
Trailing <ETX>	X	X	X	X
Trailing <CR>	X	X	X	X
Trailing <LF>	X	X	X	X
Send Data After Error	X	X	X	X
Send Status	X	X	X	X
CMC-7	X	X	X	X
SWA	X	X	X	X
SWB	X	X	X	X
SWC	X	X	X	X
HW		X	X	X
Track 1		X	X	X
Track 2		X	X	X
Track 3		X	X	X
ID Card Decoding		X	X	X
Flexible Format Size		X	X	X
Design Flexible Format…		X	X	X
Edit Flexible Format String…		X	X	X
Card Data Msg Single			X	X
Data Header			X	X
Y Option			X	X
MICR/MSR Output port				X
Image Output Port				X
File Transfer Protocol				X
Image Type				X
Auxiliary Port				X
Ethernet Options				X

OPTIONS FOR WEDGE INTERFACE

Option/Box/Button	Wedge (Subset)	Wedge (Fullset)
MICR Type (options)	X	X
Last Configuration Source	X	X
Upload Configuration From MICR	X	X
DOWNload Configuration From MICR	X	X
Download option	X	X
OK	X	X
Cancel	X	X
Com Setup…	X	X
Format	X	X
Leading <STX>	X	X
Leading <ESC>	X	X
Trailing <ETX>	X	X
Trailing <ESC>	X	X
Send Data After Error	X	X
Send Status	X	X
CMC-7	X	X
<ENTER> key	X	X
Wedge	X	X
Keypad	X	X
SWA	X	X
SWB	X	X
SWC	X	X
HW		X
Track 1		X
Track 2		X
Track 3		X
ID Card Decoding		X
Flexible Format Size		X
Design Flexible Format…		X
Edit Flexible Format String…		X

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