

# M u l t i p o r t <sup>TM</sup>

Software Concentrator

Data Technologies, Inc.



*Multiport*

Thank you for purchasing Multiport™, the state-of-the-art software concentrator. Multiport allows you to use up to nine R/F scanners with each controller, segregating all the data collected so that you can easily transfer the data into the application of your choice. Each scanner can carry on an independent customizable transaction with a different application; thus you can have up to nine readers carrying on nine distinctly different interactions with various different programs.

This manual assumes you have a basic understanding of Windows and bar code technology.

## **Registration**

When Multiport installs, it installs as a non-registered version. It will run for 30 days, or 40 executions, whichever comes first. During this time, you are invited to test Multiport to see if it meets your needs.

To register Multiport, you will need to enter an activation code. Choose "Register or Modify License..." from the Registration menu. A dialog will pop up with a code shown that is to be passed to Datatech (this code is sometimes called a registration code.) If you have already purchased Multiport, you may have a floppy disk containing a valid license from Datatech. If you do, you may press the "Import from drive A:" button to read the license from the disk.

If not, you must call, FAX, or e-mail Datatech with payment information (Multiport lists for \$695) and the registration code. Datatech will give you an activation code for Multiport (if you FAX the order to Datatech, be sure to include an e-mail address for the activation code to be sent to.) This activation code is keyed to the particular PC on which you have installed Multiport and will not work on other PCs. If you are getting the

activation code via e-mail, you may cancel out of this dialog, and continue to use Multiport until the license arrives.

### **Copyright Notice**

This program is copyrighted by Data Technologies, Inc. This copyright is protected by United States Copyright Law and International Treaty provisions. Therefore you must treat this software just like a book, with the single exception that you may make a back-up copy for the sole purpose of protecting your investment from loss.

However, for each copy of Multiport you purchase, you may install up to 9 copies of Keylink™, provided each copy of Keylink is configured to work with the PC on which the associated copy of Multiport is currently installed.

## **What Multiport Does**

Multiport is designed to work with two popular Intermec systems: the 9735 and the 9745. Both stations require an RS-232 cable.

With a 9735 base station, Multiport can have up to five Intermec 1802 scanners operational simultaneously.

With a 9745 base station, you can use up to nine Intermec 1552 scanners at a time.

In either case, Multiport tracks each of the readers and their designated transactions independently, and keeps the data they send sorted, uploading it to the location of your choice.

## **Installing the Software**

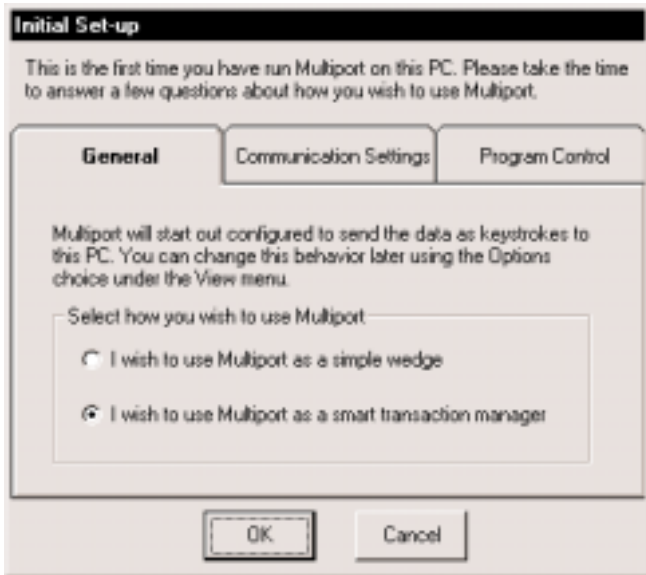
Place the Multiport CD into your CD drive. Press the **Start** button (in the lower-left corner of your Windows screen) and choose **Run/Run...** You will be asked for the command line of the program you wish to run. Type the letter of the drive into which you placed the Multiport CD, followed by a colon, followed by the word 'setup'. For example, if the Multiport CD is in your E: drive, type `e:setup`. Then press the **OK** button.

The installation program will suggest a drive and directory to which to install Multiport. You may specify a new location by pressing the **Change** button in the installation dialog box.

Then simply follow the directions given by the installation program to completely install Multiport. (See also Registration on page 1.)

### The First Time You Run Multiport

When you load Multiport for the very first time, it will open to the following dialog box:



Here you can set Multiport's various communication and program settings, but you can also decide which demo configuration Multiport starts with.

*I Wish to Use Multiport as a Simple Wedge*

If this is all you need Multiport for, that's fine. It will run as a software wedge for you. Later, if you would like to use the full capabilities of Multiport, simply reconfigure Multiport as you desire.

*I Wish to Use Multiport as a Smart Transaction Manager*

Selecting this option will configure Multiport to run in transaction mode. In addition, two sample transactions are configured to demonstrate the power of the transaction mode. To try out these transactions, see page 7.

# I m p o r t a n t

*A configuration sheet for the 9745 is included on the Multiport directory in PDF format..*

## Configuring a 9735

With the Intermec 9735 system, each reader must be assigned a unique preamble, being a letter from A-E. In addition, each reader must have a CR as a postamble. Each copy of Multiport includes an Easyset configuration file (*EasySet 9735.cfg*) in the Multiport directory.

## Configuring a 9745

With the Intermec 9745 system, each reader is assigned to (and gets its characteristics from) a group. To use Multiport, each reader must be assigned to its own group. Multiport allows up to nine readers, because the 9745 allows nine different groups to be configured.

Then, you must configure the 9745 to give each group its own prefix and a carriage return as a suffix. Multiport will use the prefix to identify the individual reader.

Assign the group's prefixes and suffixes as shown below. Remember, only assign one reader per group, or else data from the two readers will be mixed.

<u>Group</u>	<u>Prefix</u>	<u>Suffix</u>
0	A	[CR]
1	B	[CR]
2	C	[CR]
3	D	[CR]
4	E	[CR]
5	F	[CR]
6	G	[CR]
7	H	[CR]
8	I	[CR]

Finally, you must set your 9745 to Host ACK mode.

# T r a n s a c t i o n   D e m o

*Multiport*

## **What Is This?**

When configured as a transaction manager, Multiport contains sample transactions to demonstrate its power quickly and easily.

*See page 4.*

One transaction operates with WordPad and expects to gather a order number followed by a part number and a quantity. The other transaction is supposed to go into Notepad, and is set to gather one field containing any data.

If you follow through this demo script, you'll get a better idea of how to use Multiport to its fullest capabilities.

When using Multiport, you will have to select and configure the appropriate controller (9735 or 9745) before running this demo.

*See page 11.*

## **Selecting a Custom Transaction**

To begin, start Notepad, WordPad and Multiport on your computer. Press Multiport's Start button.

Scan this:



T2

*This is the Transaction Code: page 15.*

to activate the Notepad transaction.

You should hear Multiport say "Notepad - untitled" (letting you know that it is ready to handle the appropriate transaction) followed by "scan next barcode" (letting you know what you are expected to scan.)

*These are the Transaction Prompt and the field's Audio Prompt; see page 17.*

*Page 7*

### Switching Transactions

Scan this:



T1

to switch immediately from the NotePad transaction to the Wordpad transaction. That's how fast and easy it is to change transaction types.

You should hear Multiport say "WordPad transaction" followed by "Please enter order number."

### Scanning and Error-Checking Fields

Scan this purchase order number:



PO3434

Multiport responds with, "please enter Part number."

If you scan the purchase order number again, Multiport will not accept it. Instead, it will warn you by saying, "Invalid part number."

*This error was caught by the field mask; see page 19.*

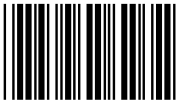
**Completing the Transaction**

Scan this part number:



PNABCDE

And scan this quantity:



100

The transaction will be immediately posted to the Wordpad window and should look like this:

Purchase Order: 3434 Part#: ABCDE Qty: 100

**If the Window Is Not Available**

Close the WordPad Window, and scan this purchase order number:



PO3500

Now scan this part number:



PNVWXYZ

And scan this quantity:



50

*This is the  
Not Available  
Prompt; see  
page 18.*

Since the WordPad window is closed, Multiport gives you an audio warning. The data is not lost, however. Every time you complete a new transaction, Multiport will check to see if the window is available, and if so, post all the old data.

### **How'd We Do That?**

You can define all these elements of each transaction. See page 14 for full details.

# The Main Window

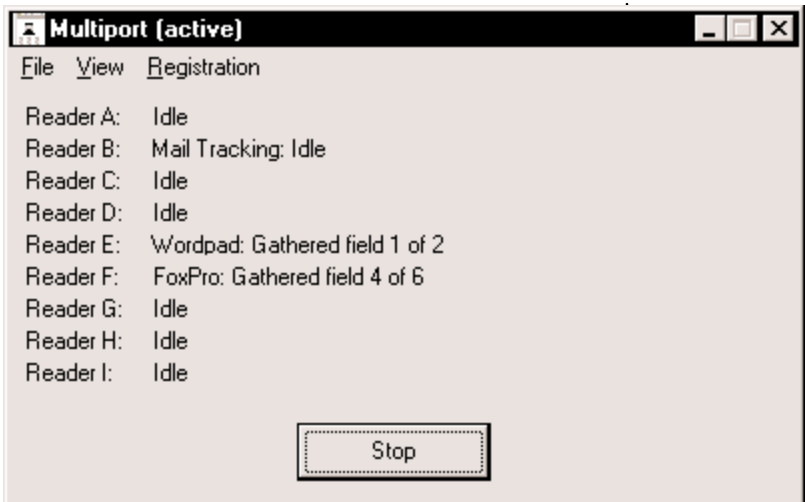
*Multiport*

Multiport tracks each of the scanners on the main screen, so that you can see which scanners are in the process of gathering a complete set of scans. When a full set of data has been scanned and the data is transferred, the reader registers as idle (regardless of the physical activity of the person holding the reader).

When Multiport is activated, it starts processing scans from your readers. You can start Multiport by pushing the **Start** button. When Multiport is working, its title bar changes to “Multiport (Active)” and the label on the button toggles to “Stop”. Pressing **Stop** (see below) deactivates the program’s processing.

*See page 19 to set data format requirements.*

*You can set Multiport to activate as soon as the program runs; see page 15.*



*In the screen shown, the readers are scanning records for three separate applications. Readers E and F are in the middle of a transaction, while reader B has completed the current transaction.*

# T h e F i l e M e n u

*Confirmation  
Needed to Quit  
is on page 15.*

## **Exit**

This selection quits Multiport. Depending on which preferences that you have set, a dialog box may appear asking you to confirm that you wish to quit.

## **About...**

This selection provides information about Multiport.

## Options...

This window lets you choose the settings that control the way that Multiport operates. There are three tabs that you can select to change the Communication Settings, the Output preferences, or General options.

Pressing **OK** will save your settings and exit the Options... dialog. Pressing **Cancel** exits the this dialog box without saving the settings that you changed.

### Communication Settings

In the Communication Settings tab, you can control how Multiport receives data. Aside from the Port and Controller, you should never need to change these settings.

**Port:** Multiport can read COM1 through COM16.

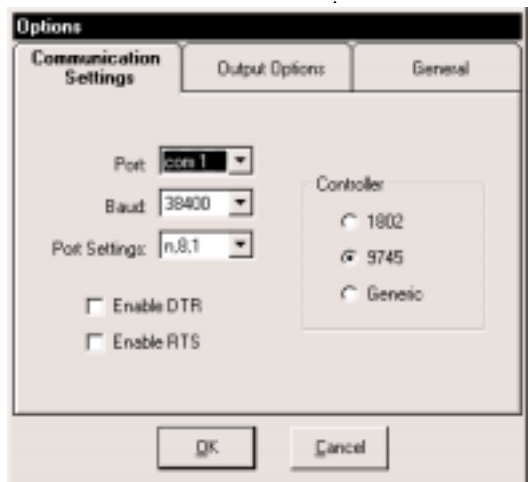
**Baud:** Multiport can use 2400, 4800, 9600, 19200, or 38400 Baud.

**Port Settings:** Multiport can use e,7,1; e,7,2; or n,8,1 port settings.

**Controller:** In this box, you select the type of controller administering your scanners.

**Enable DTR:** This check box enables DTR (Data Terminal Ready) on the base station.

**Enable RTS:** This enabled RTS (Request to Send) protocol.



### Output Options

There are three methods by which you can have Multiport output the data you collect. Each of these is covered in its own section later in the book.

See page 21.

#### *Send to Database*

This sends the data to the Multiport database (*multiport.mdb*) where it can be retrieved for later use.

See page 23.

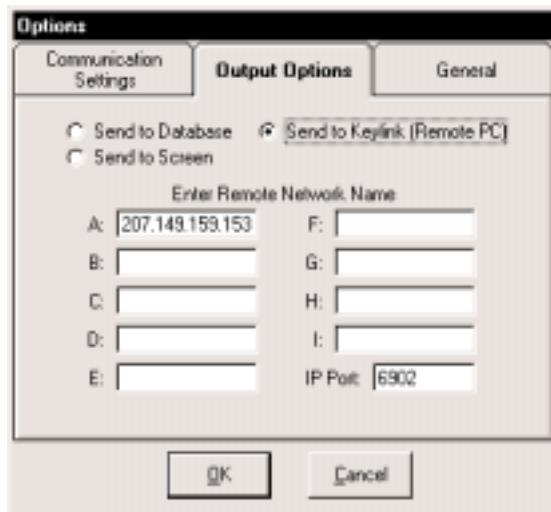
#### *Send to Screen*

This sends the data as keystrokes to a designated application window on your computer.

See page 22.

#### *Send to Keylink (Remote PC)*

This sends data as keystrokes to another PC on the network. This PC needs to be running Keylink.



## General

Here you can change the basic way Multiport operates.

### *Active on Start-Up*

When you check the Active at Start-up check box, Multiport immediately becomes active when it is run. This is useful if you want to automatically load and start Multiport when the computer boots.

### *Pop-up Dialog for Errors*

When this is checked, a pop-up dialog box also appears, ensuring that errors receive the attention of the user (assuming, of course, the user is monitoring activity on this PC). This is recommended for debugging only.

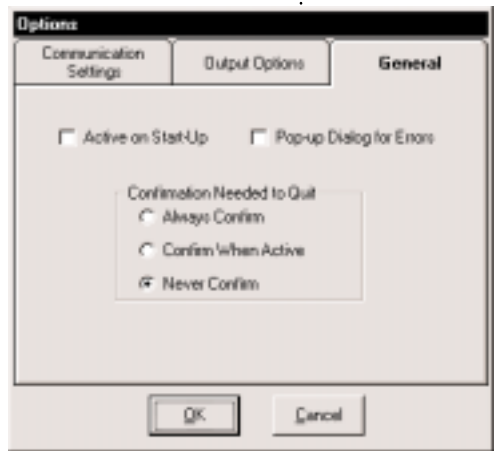
### *Confirmation Needed to Quit*

This selection provides a measure of confirmation that ensures you don't quit Multiport accidentally. You can specify three different levels of safety.

**Always Confirm:** Multiport always asks you to confirm that you want to quit.

**Confirm When Active:** Multiport only asks you for confirmation if Multiport is active (receiving and segregating data).

**Never Confirm:** Multiport can shut down without confirmation.



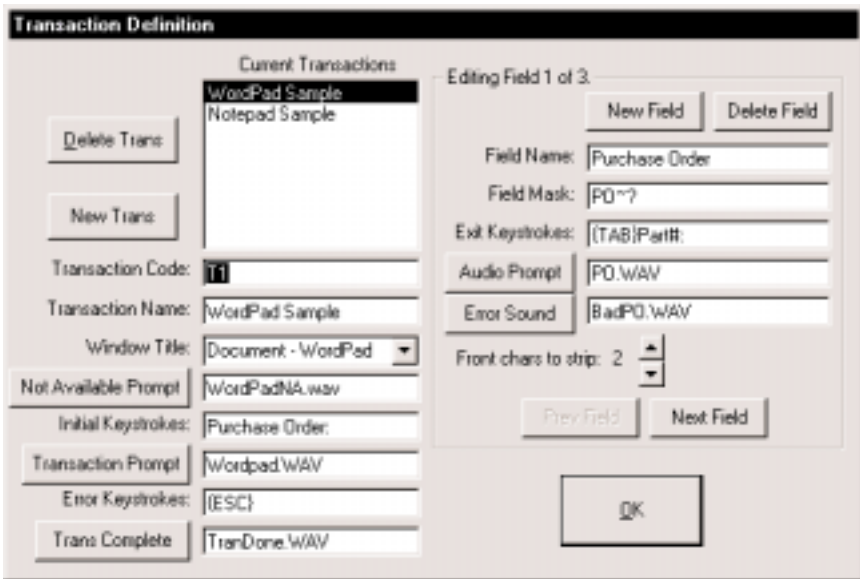
The illustration below shows transactions used in the demo script on page 7.

### Transaction...

Here you configure the method of data collection for your readers. Among other benefits, this can help you catch scanning errors in real time.

Each reader may separately select which transaction to use. Each transaction can be up to 20 fields in length. The readers scan fields one at a time.

The transaction format is fully customizable. Pressing **OK** saves the changes you have made to that specific transaction format and closes the window.



There are two areas in this window; the Transaction Controls, which let you define certain parameters for the whole transaction; and the Field Controls, which let you adjust the order and style of bar codes scanned for each field in the selected transaction.

### Transaction Controls

Multiport allows you to create up to ten completely independent transactions, allowing each of your readers to interact with up to ten applications.

In the upper left-hand corner of the window is a list box showing the transactions you have available. Pressing **New Trans** will create a new one for you to work on, while pressing **Delete Trans** erases the transaction currently selected.

You can define these parameters for each transaction:

#### *Transaction Code*

If a reader scans this code, it will automatically begin collecting fields for the associated transaction. This way your readers can switch from one application to another very easily.

*After scanning a transaction code, data gathering begins with field one.*

#### *Transaction Name*

This is the name you wish to give the transaction as a means of identifying it.

*Scanning the transaction code for the current transaction can be used to reset the transaction.*

#### *Window Title*

This holds the name of the transaction's application window. You may either select it from the drop-down list (containing all the windows that Multiport can currently find on your PC), or enter it by hand. If you enter by hand, masks will work (i.e., entering Doc~? will find the first window that starts with "Doc".)

### *Not Available Prompt*

This audio cue will play if the transaction window is unavailable at the time the transaction completes. Multiport stores the scans until the window is running again.

### *Initial Keystrokes*

If you have any keystrokes you want performed before beginning each transaction (for example, tabbing to the appropriate field), you may enter them here. These keystrokes will be executed before the first field is entered in each transaction.

### *Transaction Prompt*

You may select a sound (stored as a WAV file) to play at the start of the transaction. For example, you may want to record a prompt that says, "Inventory control, ready for data."

### *Error Keystrokes*

Before every field is sent, as well as after the last field is sent, Multiport checks to ensure that the proper window is still active. If it is not, Multiport sends the error keystrokes to attempt to clear the error condition.

### *Trans Complete*

This prompt will play when a complete set of fields has been successfully input.

## Field Controls

Everything in this area of the window edits the individual fields scanned for a transaction. The top left corner of this area shows you which field of the transaction you are working on.

### *Field Name*

This is simply a label to remind you what the data represent in the field you are editing.

### *Field Mask*

With the field mask, you can have Multiport check incoming data to ensure that the proper bar codes are being scanned. Multiport checks the data being sent (before exit keystrokes are added), and compares those data against this mask. The data must fit the mask completely. The mask uses characters with special meanings:

- @ This character matches upper- and lower-case a-z only.
- # This character equals the numeric digits from 0-9.
- ? This character will accept any printable character.
- ~ This is a prefix that indicates that any number of the following character is acceptable (even zero).

All other characters in the mask are treated literally. So, for example, let's assume you want to make sure that the user scans a part number for a given field and all your part numbers begin with "PA" and follow with one or more digits. If you set your field mask to "PA", only scans that are *exactly* "PA" will be accepted. If you set your field mask to "PA~?", any scan that starts with PA will be accepted.

However, you might want to ensure that the user scans a barcode with at least one digit following the "PA". Use "PA#~#", and Multiport will ensure that at least one digit follows the PA. It may seem that you could use the mask "PA~##", but this will not work.

Multiport scans the field mask from left to right. Multiport will compare the P and A, then use all the remaining digits to fill the ~# part of the mask. That leaves nothing left over for the final # character in the mask.

#### *Exit Keystrokes*

These keystrokes are added after the scan has been cleared through the mask and transmitted as keystrokes. You may wish to use these to navigate the window before entering the next scan.

#### *Audio Prompt*

This is the sound that will play when Multiport is ready for this field to be scanned.

#### *Error Sound*

This sound plays when the scanned data do not match the Field Mask criteria.

#### *Front chars to strip*

Here you can set how many characters to strip from the front of the scanned data. These characters are stripped after the scan is compared to the mask.

#### *The Buttons*

The **Previous** and **Next** buttons navigate you through the various fields available for this transaction.

The **New** button creates a new field at the end of the set of fields, while the **Delete** button deletes the field you are currently editing.

## **Sending to a Database**

When this option is chosen, the scanned data are sorted by reader, and whenever a full set of scans is completed, the data are stored in the *Data* table of the *Multiport.mdb*, found in the Multiport folder.

The user can then retrieve the data from the database and process it in whatever fashion may be desired.

### *Data Flow*

Individual scanners' scanned fields are stored by Multiport until a transaction is complete. When a reader completes a transaction, the full transaction is written to the *Multiport.mdb*.

Each scan is stored as a separate record in the table *Data* in *Multiport.mdb*. The scanner ID ("A" for group 0, etc.) is stored in the field *Scanner*. The fields *Date* and *Time* store the time that the scan was entered into the table, *Field0* stores the first scan, *Field1* stores the second scan, and so on. The last two fields (*Read* and *Sent2Screen*) are for Multiport's internal use.

*See page 14.*

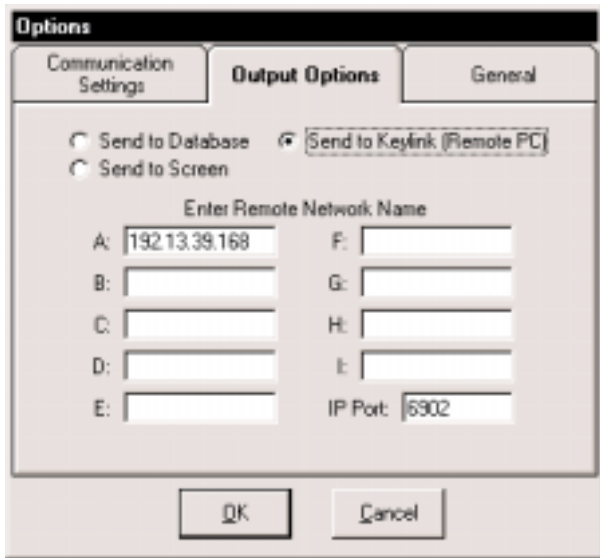
*Text in the On Exit Field are ignored in this option; see page 17.*

See page 23.

See page 14.

### Sending to a Remote PC

Multiport can send the reader data as keystrokes to another PC on the network. In this mode, each reader must be configured to send its data to its own, unique PC, which must be accessible over the network. This PC must run Keylink (even if it is the one running Multiport.)



#### IP Port

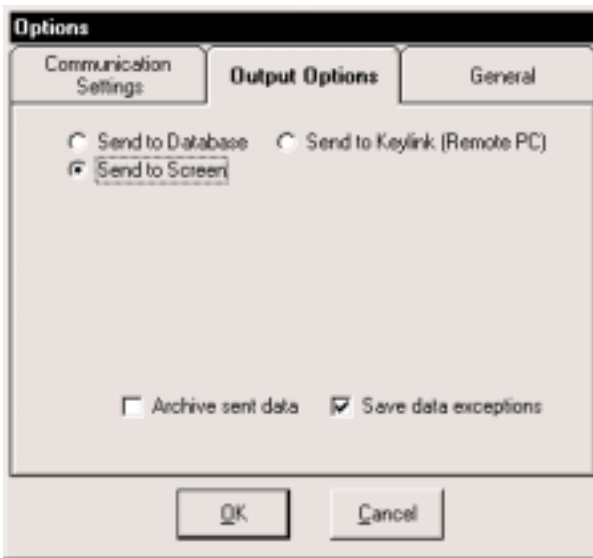
This is the IP port address Multiport uses to communicate with Keylink. It should not need to be changed.

#### Enter Remote Network Name

These are the Network Names or IP addresses of the PCs. Again, each reader must connect to a unique PC.

## Sending to the Screen

When choosing this style of output, the data are sent as keystrokes to the local PC (the one running Multiport). The data is sorted by reader, and when a transactions is complete, the data is posted.



### Archive Sent Data

If you check this box, Multiport will save all error-free scanned data records, as well as post them to the local PC. These records are stored in the *Archive* table in the *Multiport.mdb*.

### Save Data Exceptions

While this box is checked, if an error occurs, Multiport will save data records that caused such errors. These are stored in the *Exceptions* table in the *Multiport.mdb*.

See page 14.

*If you choose either of these options, steps must be taken to ensure data is eventually deleted from Archive or Exceptions, or else your database will grow without end.*

See page 21.

### Data Flow

To ensure against loss of data, the scanned records are first stored in the table *Data* in *Multiport.mdb*. Once a new record is written, Multiport sends transactions to the screen, one at a time. If Multiport cannot bring the correct window to the front, then it stops trying to send to the screen, and the records build up in the *Data* table. Every time a new record is added to the table, Multiport attempts to write to the screen again, starting with the first transaction that failed to be posted to the screen.

See *Save Data Exceptions*.

If sending the data to the screen results in an error, the record is deleted from the *Data* table (and added to the table *Exceptions* if that option is chosen.)

See *Archive Sent Data*.

If sending the data is successful, the record is deleted from the *Data* table (and added to the table *Archive* if that option is chosen.)

### Troubleshooting...

If you are having trouble configuring your scanner, you can see what the PC is receiving on this screen. We will also give you an analysis, and allow you to try to beep the reader (9745 only.)

# The Registration Menu

*Multiport*

## **Register or Modify License...**

See page 1 for an explanation of how to register Multiport.

## **Transfer License...**

If you wish to move a registered copy of Multiport to another PC, this option will write the license information out to a floppy disk. You may then load Multiport onto the new PC, and read the license from this floppy as discussed on page 1.

Make sure you have a formatted floppy disk in drive A: before selecting this menu choice.

# Keylink

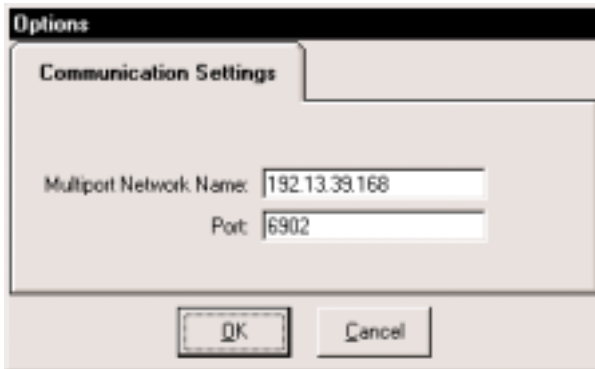
*The Keylink set-up program is on the Multiport CD.*

*You may install KeyLink on all PCs that will be used in conjunction with this copy of Multiport; see page 1.*

In order to allow Multiport to communicate with another PC on the network, that PC must be running *Keylink*, a connection utility program.



Once configured, whenever you start Keylink, it will automatically try to connect with the PC running Multiport. If Multiport is not currently active, this connection attempt will fail. Likewise, if Multiport is shut down or made inactive by pressing the stop button (i.e., to change its configuration), the connection with Keylink is severed.



The Communication settings are configured under the View menu. You must specify the Network Name or IP address of the computer running Multiport. You can also specify the IP port, but you probably won't ever need to change this from the default.

**Important Note**

When forwarding data to a remote PC, Multiport assumes that the PC is dedicated to one and only one reader, so each field is sent as soon as it is scanned.

In contrast, as discussed earlier, when transmitting to a database or to the screen of the local PC, Multiport waits until complete records have been scanned before posting data. This ensures that data from different readers do not get mixed.

*If you change the IP Port that KeyLink looks for, you must also change the IP Port on Multiport to match, see page 20.*

# A p p e n d i x

## Sending Keystrokes that Are Not Displayable

Most characters can be represented by entering the characters themselves. For example: To have Multiport insert the string “Hi, there”, place the cursor in the appropriate text box and type, “Hi, there”.

However, some keystrokes operate the program (i.e., the Tab key and the Enter key). These keystrokes must have a translation available, which we provide here.

Similarly, the Control key, the Alt key, and the Shift key don't enter keystrokes *per se*, but modify the keys that are pressed. Their keystrokes modified by these keys are represented by a two character sequence. The first character indicates which modifier key is pressed (+=shift, ^=control, and %=alt), and the second is the keystroke modified. Thus to specify a control-C, enter “^C”. For the plus, carat, and percent keys themselves, use {+}, {^}, and {%}.

Here's a list of special keys and how to enter them.

<u>Key</u>	<u>Translation</u>
+	{+}
^	{^}
%	{%}
~	{~}
{	{{}
}	{}}
[	{[}
]	{]}
↓	{DOWN}
←	{LEFT}
→	{RIGHT}
↑	{UP}
Backspace	{BS}

(continued on following page)

Break	{BREAK}
Carriage Return	{ENTER}
Del	{DEL}
End	{END}
Enter	{ENTER}
Esc	{ESC}
Help	{HELP}
Home	{HOME}
Insert	{INSERT}
Page Down	{PGDN}
Page Up	{PGUP}
Tab	{TAB}
F1	{F1}
F2	{F2}
F3	{F3}
F4	{F4}
F5	{F5}
F6	{F6}
F7	{F7}
F8	{F8}
F9	{F9}
F10	{F10}
F11	{F11}
F12	{F12}
F13	{F13}
F14	{F14}
F15	{F15}
F16	{F16}

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