OMNI™
Combined Bar Code
and
Magnetic Stripe Reader

Keyboard Wedge Interface
Quickstart Manual

IDTECH®
Value through Innovation

ID TECH
10721 Walker Street
Cypress, California 90630
(714) 761-6368
www.idtechproducts.com

80028507-001 Rev. A R06/06

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DATA EDITING

The Omni has a data editing feature incorporated into its firmware. This feature allows the data read from the magnetic stripe or the bar code to be sent to the host in the exact format expected by the host software, eliminating the need for modifications to the application software.

Full data editing instructions are contained in the ID TECH Omni Keyboard Wedge User's Manual (P/N: 80028503-001). The manual is available without cost on the ID TECH website (www.idtechproducts.com), or by returning the coupon below:

ID TECH
10721 Walker Street
Cypress, CA 90630

Please send a copy of the following ID TECH manual:

Omni Keyboard Wedge User's Manual (P/N: 80028503-001)

Name: _____

Company: _____

Address: _____

City: _____

State: _____

Zip: _____

There is no charge for a single copy. There will be a charge of $10.00 for each additional copy.

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MAGNETIC STRIPE DEFAULT SETTINGS TABLE

The Omni reader is shipped from the factory with the following magnetic stripe default settings already programmed:

Magnetic Track Basic Data Format
Track 1: <SS1><T_1 Data><ES><TS>
Track 2: <SS2><T_2 Data><ES><TS>
Track 3: <SS3><T_3 Data><ES><Terminator>

where: SS1(start sentinel track 1) = %
SS2(start sentinel track 2) = ;
SS3(start sentinel track 3) = ; for ISO, ! for CDL, % for AAMVA
ES(end sentinel all tracks) = ?

Keyboard Wedge Communication Default Settings
Terminal type: IBM PC/AT
Intercharacter delay: 5 ms
Language: US English

Start or End Sentinel: Characters in encoding format which come before the first data character (start) and after the last data character (end), indicating the beginning and end, respectively, of data.

Track Separator: A designated character which separates data tracks.

Terminator: A designated character which comes at the end of the last track of data in order to separate card reads.

LRC: Check character, following end sentinel.

CDL: Old California Drivers License format.

AGENCY APPROVED

Specifications for subpart B of part 15 of FCC rule for a Class A computing device.

LIMITED WARRANTY

ID TECH warrants this product to be in good working order for a period of one year from the date of purchase. If this product is not in good working order as warranted above, or should this product fail to be in good working order at any time during the warranty period, repair or replacement shall be provided by ID TECH.

This warranty does not cover incidental or consequential damages incurred by consumer misuse, or modification of said product. For limited warranty service during the warranty period, please contact ID TECH to obtain an RMA number and instructions for returning the product.

MAGNETIC STRIPE DEFAULT SETTINGS TABLE

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SPECIFICATIONS

Power Requirements, Bar Code:	Power +5 VDC +/-10% (35mA maximum). Ground 0 VDC (GND).
Power Requirements, Magnetic:	Power +5 VDC +/-10% (50mV ripple maximum). Ground 0 VDC (GND). Chassis Ground connected to GND and magnetic head case.
Operating Current:	About 65mA for combination magnetic stripe (three tracks) and bar code. About 35mA for magnetic stripe (three tracks) only. About 60mA for bar code only.
Operating Temperature:	32° F to 131° F (0° C to 55° C).
Weatherproof Option:	-31° F to 140° F (-35° C to 60° C) without ice build-up on optic or magnetic head.
Storage Temperature:	-31° F to 158° F (-35° C to 70° C).
Relative Humidity:	Maximum 95% non-condensing.
Magnetic Head Life:	1,000,000 passes minimum.
Rail and Cover Life:	1,000,000 passes minimum.
Magnetic Read Rate:	Less than one error in 100,000 bits on cards conforming to ISO 7811 1-5 (not induced by operator error).
Bar Code Source Light:	Visible red 660 nm or Infrared 930 nm.
Minimum Bar Code PCS:	60%.
Bar Code Centerline:	.49 inches (12.50mm) from bottom of slot to center of reading window.
Bar Code Resolution:	.006 (6 mil) minimum.

UPC-A, -E		Enabled, Enabled
	Send Number System Digit	Yes
	Send Check Digit	Yes
	Expand UPC-E	No
	Read 2, 5 Digit Addendum No,	No
	Addendum required	Yes
	Add Addendum Separator	Yes
	Send UPC-A as EAN-13	No
EAN-13, -8		Enabled, Enabled
	Send Induced Country Code Digit	Yes
	Send Check Digit	Yes
	Read 2, 5 Digit Addendum No,	No
	Addendum Required	Yes
	Add Addendum Separator	Yes
Code ID		
	UPC-A	a
	UPC-E	b
	EAN-8	c
	EAN-13	d
	Code 39	e
	Interleaved 2 of 5	f
	Industrial 2 of 5	g
	Code 128	h
	MSI/Plessey	i
	Codabar	j
	Track 1	k
	Track 2	l
	Track 3	m
	Telepen	n
Data Editing		
	Edit On/Off	Off
	Unmatched Input	Do Not Send

SPECIFICATIONS

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	Send Number System Digit	Yes
	Send Check Digit	Yes
	Expand UPC-E	No
	Read 2, 5 Digit Addendum No,	No
	Addendum required	Yes
	Add Addendum Separator	Yes
	Send UPC-A as EAN-13	No
EAN-13, -8		Enabled, Enabled
	Send Induced Country Code Digit	Yes
	Send Check Digit	Yes
	Read 2, 5 Digit Addendum No,	No
	Addendum Required	Yes
	Add Addendum Separator	Yes
Code ID		
	UPC-A	a
	UPC-E	b
	EAN-8	c
	EAN-13	d
	Code 39	e
	Interleaved 2 of 5	f
	Industrial 2 of 5	g
	Code 128	h
	MSI/Plessey	i
	Codabar	j
	Track 1	k
	Track 2	l
	Track 3	m
	Telepen	n
Data Editing		
	Edit On/Off	Off
	Unmatched Input	Do Not Send

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Industrial 2 of 5	Enabled
Fixed Length	Off
Check Digit	None
Minimum Length	1
Maximum Length	60
Code 128	Enabled
Minimum Length	1
Maximum Length	60
Codabar	Enabled
Send Start/Stop	No
Check Digit	None
Minimum Length	2
Maximum Length	60
MSI/Plessy	Enabled
Send Check Digit(s)	No
Check Digits	Modulo 10/Modulo 10
Minimum Length	1
Maximum Length	60
FEBRABAN	Convert
Telepen	Enabled
Numeric Mode	On
Minimum Length	1
Maximum Length	60

Magnetic Stripe Formats:	ISO 7811, AAMVA, and CA DMV.
Swipe Speed:	Bar Code: 5 to 65 inches per second, bi-directional. Magnetic Stripe: 3 to 60 inches per second, bi-directional.
Card Thickness:	Bar code media .005 to .050 inches. Magnetic stripe media .01 to .050 inches.
Slot Width:	.055 inches (1.37mm).
Dimensions:	Length: 5 inches (127mm). Width: 2.05 inches (52mm). Height: 1.38 inches (35mm).
Weight:	1 lb.

Industrial 2 of 5	Enabled
Fixed Length	Off
Check Digit	None
Minimum Length	1
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Codabar	Enabled
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DESCRIPTION

The Omni™ slot reader can scan and decode most popular bar codes, as well as read 1, 2, or 3 tracks of magnetic stripe information. It also has full data editing capabilities.

When connected to the host computer as a keyboard wedge, the Omni is completely compatible with the host's software. The decoded data appears to the host as if it were entered manually by the operator through the keyboard.

This unit is fully programmable through the keyboard. The data can be formatted with preamble/postamble and terminator characters to match the format expected by the host. Power, when the scanner is configured as a keyboard wedge, is obtained from the host.

DEFAULT SETTINGS TABLE

The Omni reader is shipped from the factory with the following bar code default settings already programmed:

Terminal Selection	
Type	IBM PC/AT Keyboard Wedge
General Selection	
Beep Volume	High
Intercharacter Delay	5 milliseconds
Interblock Delay	0 milliseconds
Language	United States
Code ID	Off
Scan Verification	Off
Function Code	Off
Message Formatting	
Terminator Character	<ENTER>
Preamble	None
Postamble	None
Magentic Stripe Selections	
Track Selection	Any Track
Start/Stop Sentinel	Send
Track 2 Send Account Number Only	Not Limited to Account No.
Track Separator	<ENTER>
Code 39	Enabled
Full ASCII	On
Check Digit	Off
Send Check Digit	No
Send Start/Stop	No
Minimum Length	1
Maximum Length	60
Interleaved 2 of 5	Enabled
Fixed Length	Off
Check Digit	None
Minimum Length	4
Maximum Length	60

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Terminator Character	<ENTER>
Preamble	None
Postamble	None
Magentic Stripe Selections	
Track Selection	Any Track
Start/Stop Sentinel	Send
Track 2 Send Account Number Only	Not Limited to Account No.
Track Separator	<ENTER>
Code 39	Enabled
Full ASCII	On
Check Digit	Off
Send Check Digit	No
Send Start/Stop	No
Minimum Length	1
Maximum Length	60
Interleaved 2 of 5	Enabled
Fixed Length	Off
Check Digit	None
Minimum Length	4
Maximum Length	60

KEYBOARD INTERFACE PROBLEMS

Installation of the reader is generally trouble free, but there are some things to watch for if you are experiencing problems.

Do you have the proper cable?

Most modern computers and terminals use a PC/XT/AT-compatible keyboard. However, the cable connecting it to the keyboard port may have variations in either the signal pins or the connector itself. Make sure that you have the proper cable for the computer/terminal with which you are interfacing.

Does the keyboard work?

Since the data from the keyboard must pass through the reader, the cabling connections are correct if the keyboard is operational.

Can the host computer accept the data fast enough?

Some computers and terminals are expecting the data rate from the keyboard port to come in at a keystroke rate, and might not be able to accept it as fast as the reader is transmitting. Try adjusting the intercharacter delay to simulate the effects of keystroke delays.

Does the keyboard port supply enough power?

Most computers supply enough power to the keyboard port to operate the reader. Occasionally you will find keyboard ports that supply only a very limited amount of power. See if the LED is lighting at full intensity; a lighter-than-usual green (or a red showing as orange) could indicate a “low power” condition.

HOST CONNECTIONS

The Omni reader is connected between the keyboard input port of the host computer and the keyboard itself using a “Y” cable. The “Y” cable has a 6-pin mini-DIN female on one end, and a 6-pin mini-DIN male on the other end.

To connect the reader to the host, turn the power off and disconnect the keyboard from the computer. Insert the male end of the “Y” cable into the keyboard port. Then connect the keyboard to the female end of the “Y” cable. This “wedges” the reader between the host and the keyboard.

Manually-entered data from the keyboard passes through the unit to the host, leaving the keyboard fully functional at all times.

Data from either of the input heads is transmitted to the host keyboard port, where it appears to the host as coming directly from the keyboard. This makes the reader, as a data source, completely transparent to the host’s application software. In other words, if it is expecting data from the keyboard, that same data can be entered via the Omni and make no difference to the host.

Since the host computer’s application software is expecting data to be input in a particular order and format, the reader’s output can be configured to simulate the keyboard-entered data stream by adding terminating characters and special preamble and/or postamble character strings to scanned data.

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CONFIGURATION

The Omni reader may be configured to your specific application. Configuration settings enable the reader to work with the host system. These settings are programmed into the reader through the keyboard. Once programmed, these configuration settings are stored in the reader's non-volatile memory (so they are not affected by the cycling of power).

DEFAULT SETTINGS

The Omni reader is shipped from the factory with the default settings already programmed. For a list of default settings, see the Default Settings Tables. In order to modify these settings, the host computer and keyboard must be IBM PC/AT compatible.

OPERATION

The Omni reader is easy to operate. Just follow these simple steps:

1. Make sure the reader is properly cabled and is receiving sufficient power. (See Troubleshooting if there is a cabling or power problem.)

2. To read a card, slide the card, in either direction, through the reader slot, with the bar code facing the optical head (LED side) or the magnetic stripe facing the magnetic head (opposite side).

3. Once the entire bar code or magnetic stripe has been read, the LED indicator will light up as amber to signal a "good read." If a good read is not obtained, the LED indicator will light up as red.

4. A beep will also sound to indicate a good read on the bar code or each magnetic track, as appropriate. If all three tracks have been read successfully, the reader will beep three times.

5. The decoded data will be transmitted to the host application.

TROUBLESHOOTING

The Omni reader is easy to install and use. Most problems encountered can be attributed to:

- Incorrect Interface Cabling
- Incorrect Configuration Setup
- Bad Magnetic Stripe Quality
- Poor Bar Code Quality

GENERAL PROCEDURES

The troubleshooting process can be simplified by following these simple diagnostic procedures.

1. The unit should emit two beeps when power is first applied and the LED should turn green. If this does not happen, the unit is not receiving power.

2. Once it has been confirmed that the unit is correctly powered, try swiping a credit card. If the decode is successful, the LED will turn amber and the data will be sent out, accompanied by a beep. The LED will turn green after the data has been transferred. If the decode fails, the LED will turn red for about 2 seconds to indicate a "bad read" with no beep.

3. Once the unit has indicated a "good read," then proceed to check the interface cabling connections.

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