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Programming Guide

Advanced 2D Image Scanner

This Programming Guide is intended for:

- **2D Image Handheld Scanner: Z-3502**

Revision History

Changes to the original manual are listed below:

Version	Date	Description of Version
1.0	2025/05/20	Initial release

Important Notice

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General Handling Precautions

Do not dispose the scanner in fire.
Do not put the scanner directly in the sun or by any heat source.
Do not use or store the scanner in a very humid place.
Do not drop the scanner or allow it to collide violently with other objects.
Do not take the scanner apart without authorization

Guidance for Printing

This manual is in A5 size. Please double check your printer setting before printing it out. When the barcodes are to be printed out for programming, the use of a high-resolution laser printer is strongly suggested for the best scan result.

Firmware Notice
To use all functions in this guide please update to the latest firmware.

Table of Contents

Settings and Programming

Scan the selected barcodes in this manual to configure and program your handheld imaging barcode scanner.
You can customize decoding options and interface protocols to suit your specific application.

All setup parameters are stored in the scanner's non-volatile memory, ensuring they are retained even when the device is powered off. These settings will remain unchanged unless you manually reset them. When scanning, you may need to cover nearby barcodes with your hand to avoid interference.

Program Set Up Flow
Scan "Set" to set up   -->   Scan selected barcode   -->   Scan "End" to confirm the setup.

System Settings

Restore Default Settings

Restores all scanner settings to factory defaults.

Set

Restore Default Settings

End

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Customized Settings

Save Custom Settings: Save frequently used scanner settings for future use.
Load Custom Settings: Apply previously saved custom settings.

Set

Save Custom Settings

Load Custom Settings

End

Decoding Area

Full Area Decoding: Uses the entire image area for barcode decoding.
Scanning Area Decoding: The barcode must be within the designated scanning area to be successfully read.

Set

Full Area Decoding (default)

Scanning Area Decoding

End

Auxiliary Light Options

Set

Light Source Cycles Automatically(default)

White Light

Red Light

Blue Light

End

Aiming Light Options

Set

Always On

On During Scanning (default)

Off

End

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Beep Frequency for Decoding Prompt

Set

Minimum - 800 Hz

Low - 1600 Hz

Medium - 2730 Hz (default)

High - 4200 Hz

End

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Output Options

USB keyboard port

Set

USB Keyboard Output (default)

End

USB Virtual COM Port Output

Set

USB VCOM

End

Serial Port

Set

Serial Port Output

End

Serial Port Baud Rate

Set

9600 (default)   19200

38400   57600

115200   30400

End

Serial Data Bits Transmission

.

Set

7 Data Bits

8 Data Bits (default)

End

Serial Port Parity Bit

Set

No verification (default)   Odd parity

Even parity

End

Serial Port Stop Bit

Set

One stop bit (default)

Two stop bits

End

CB2312 Character Encoding

Set

Simplified Chinese (GB2312) – Unicode / Excel ; Notepad (default)

Simplified Chinese (GB2312) – Code Page / Word

End

Symbology Settings

Supported Symbologies

UPC A	Enabled by default
UPC E	Enabled by default
EAN 8	Enabled by default
EAN 13	Enabled by default
Code 128 / GS1-128	Enabled by default
Code 39	Enabled by default
Code 93	Disabled by default
Codabar	Disabled by default
Plessey	Disabled by default
MSI Plessey	Disabled by default
Interleaved 2 of 5	Enabled by default
Pharmacode	Disabled by default
Data Matrix	Enabled by default
QR	Enabled by default
Micro QR	Disabled by default

Enable All Symbologies

Set

Enable All Symbologies

End

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Enable Only 1D Barcodes

. Set

Enable Only 1D Barcodes

End

Advanced 2D Image Scanner

Enable Only 1D Barcodes

Set

Enable Only 2D Barcodes

End

Disable All Symbologies

. Set

Disable All Symbologies

End

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Disable Only 1D Barcodes

Set

Disable Only 1D Barcodes

End

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Disable Only 2D Barcodes

Set

Disable Only 2D Barcodes

End

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UPC-A

.

Set

Enable UPC-A (default)

End

Transmit Leading Digit

Set

Transmit Leading Digit (default)

Do Not Transmit Leading Digit

End

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Check Digit

Set

Enable Check Digit (default)

Disable Check Digit

End

Convert to EAN-13

Set

Enable EAN-13 Conversion

Disable EAN-13 Conversion (default)

End

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Enable/Disable UPC-A 2/5-Digit Add-On

Set

Enable UPC-A 2⁄5-Digit Add-On

Disable UPC-A 2⁄5-Digit Add-On (default)

End

Restrict Reading to UPC-A 2/5-Digit Add-On Only

Set

Read UPC-A 2/5-Digit Add-On Only

Read UPC-A and UPC-A with 2/5-Digit Add-On (default)

End

UPC-E

Set

Enable UPC-E (default)

Disable UPC-E

End

Transmit Leading Digit

Set

Transmit Leading Digit (default)

Do Not Transmit Leading Digit

End

Check Digit

Set

Enable Check Digit (default)

Disable Check Digit

End

Convert to UPC-A

Set

Enable UPC-A Conversion (default)

Disable UPC-A Conversion

End

Enable/Disable UPC-E 2/5-Digit Add-On

Set

Enable UPC-E 2/5-Digit Add-On

Disable UPC-E 2/5-Digit Add-On (default)

End

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Restrict Reading to UPC-E 2/5-Digit Add-On Only

Set

Read UPC-E 2/5-Digit Add-On Only

Read UPC-E and UPC-A with 2/5-Digit Add-On (default)

End

EAN-8

Set

Enable EAN-8 (default)

Disable EAN-8

End

Transmit Check Digit

Set

Transmit Check Digit (default)

Do Not Transmit Check Digit

End

Convert to EAN-13

Set

Enable EAN-13 Conversion (default)

Disable EAN-13 Conversion

End

Enable/Disable EAN-8 2/5-Digit Add-On

Set

Enable EAN-8 2/5-Digit Add-On

Disable EAN-8 2/5-Digit Add-On (default)

End

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Restrict Reading to EAN-8 2/5-Digit Add-On Only

Set

Read EAN-8 2/5-Digit Add-On Only

Read UPC-E and EAN-8 with 2/5-Digit Add-On (default)

End

EAN-13

Set

Enable EAN-13 (default)

Disable EAN-13

End

Transmit Check Digit

Set

Transmit Check Digit (default)

Do Not Transmit Check Digit

End

ISBN Conversion

Set

Enable ISBN Conversion

Disable ISBN Conversion (default)

End

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ISSN Conversion

Set

Enable ISSN Conversion

Disable ISSN Conversion (default)

End

Enable/Disable EAN-13 2/5-Digit Add-On

Set

Enable EAN-13 2/5-Digit Add-On

Disable EAN-13 2/5-Digit Add-On (default)

End

Restrict Reading to EAN-13 2/5-Digit Add-On Only

Set

Read EAN-13 2/5-Digit Add-On Only

Read UPC-E and EAN-13 with 2/5-Digit Add-On (default)

End

Code 128 / GS1 -128

Set

Enable Code 128 / GS1-128

Disable Code 128 / GS1-128

End

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Code 128 Decoding Length Settings

Set

Restrict to Single Length

Restrict to Two Different Lengths

Restrict Length Range

No Length Restriction (default)

End

Example:

Restrict Code 128 barcode length to between 5 and 18 characters.

Scan Set

Scan the Restrict Length Range code:

- Scan ASCII code for digit **0**
- Scan ASCII code for digit **5**
- Scan ASCII code for digit **1**
- Scan ASCII code for digit **8**

Scan End

No Length Restriction

Scan Set

Scan the No Length Restriction code.

Scan End

Code 39

Set

Enable Code 39

Disable Code 39

End

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Full ASCII

Set

Enable Code 39 Full ASCII Function

Disable Code 39 Full ASCII Function (default)

End

Start/Stop Characters

Set

Transmit Start/Stop Characters

Do Not Transmit Start/Stop Characters (default)

End

Check Digit

Set

No verification (default)

Validate and Transmit

Validate but Do Not Transmit

End

Code 39 Decoding Length Settings

Set

Restrict to Single Length

Restrict to Two Different Lengths

Restrict Length Range

No Length Restriction (default)

End

Example:

Restrict Code 39 barcode length to between 5 and 18 characters.

Scan Set

Scan the Restrict Length Range code:

- Scan ASCII code for digit **0**

- Scan ASCII code for digit **5**

- Scan ASCII code for digit **1**

- Scan ASCII code for digit **8**

Scan End

No Length Restriction

Scan Set

Scan the No Length Restriction code.

Scan End

Code 93

Set

Enable Code 93

Disable Code 93

End

Code 93 Decoding Length Settings

Set

Restrict to Single Length

Restrict to Two Different Lengths

Restrict Length Range

No Length Restriction (default)

End

Example:

Restrict Code 93 barcode length to between 5 and 18 characters.

Scan Set

Scan the Restrict Length Range code:

- Scan ASCII code for digit **0**
- Scan ASCII code for digit **5**
- Scan ASCII code for digit **1**
- Scan ASCII code for digit **8**

Scan End

No Length Restriction

Scan Set

Scan the No Length Restriction code.

Scan End

Codabar

Set

Enable Codabar

Disable Codabar (default)

End

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Check Digit

Set

No Verification (default)

Validate and Transmit

Validate but Do Not Transmit

End

Start/Stop Characters

Set

Transmit Start/Stop Characters

Do Not Transmit Start/Stop Characters (default)

End

Codabar Decoding Length Settings

Set

Restrict to Single Length

Restrict to Two Different Lengths

Restrict Length Range

No Length Restriction (default)

End

Example:

Restrict Codabar barcode length to between 5 and 18 characters.

Scan Set

Scan the Restrict Length Range code:

- Scan ASCII code for digit **0**

- Scan ASCII code for digit **5**

- Scan ASCII code for digit **1**

- Scan ASCII code for digit **8**

Scan End

No Length Restriction

Scan Set

Scan the No Length Restriction code.

Scan End

Plessey

Set

Enable Plessey

Disable Plessey (default)

End

Plessey Decoding Length Settings

Set

Restrict to Single Length

Restrict to Two Different Lengths

Restrict Length Range

No Length Restriction (default)

End

Example:

Restrict Plessey barcode length to between 5 and 18 characters.

Scan Set

Scan the Restrict Length Range code:

- Scan ASCII code for digit **0**
- Scan ASCII code for digit **5**
- Scan ASCII code for digit **1**
- Scan ASCII code for digit **8**

Scan End

No Length Restriction

Scan Set

Scan the No Length Restriction code.

Scan End

MSI Plessey

Set

Enable MSI Plessey

Disable MSI Plessey (default)

End

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Check Digit

Set

No Verification

Mod 10 Check Digit (Default)

Mod 10/10 Check Digit

Mod 11/10 Check Digit

End

Transmit Check Digit

Set

Transmit Check Digit (default)

Do Not Transmit Check Digit

End

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MSI Plessey Decoding Length Settings

Set

Restrict to Single Length

Restrict to Two Different Lengths

Restrict Length Range

No Length Restriction (default)

End

Example:

Restrict MSI Plessey barcode length to between 5 and 18 characters.

Scan Set

Scan the Restrict Length Range code:

- Scan ASCII code for digit **0**
- Scan ASCII code for digit **5**
- Scan ASCII code for digit **1**
- Scan ASCII code for digit **8**

Scan End

No Length Restriction

Scan Set

Scan the No Length Restriction code.

Scan End

Interleaved 2 of 5

Set

Enable Interleaved 2 of 5 (default)

Disable Interleaved 2 of 5

End

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Check Digit

Set

No Verification (default)

Validate and Transmit

End

Interleaved 2 of 5 Decoding Length Settings

Set

Restrict to Single Length

Restrict to Two Different Lengths

Restrict Length Range

No Length Restriction (default)

End

Example:

Restrict Interleaved 2 of 5 barcode length to between 5 and 18 characters.

Scan Set

Scan the Restrict Length Range code:

- Scan ASCII code for digit **0**
- Scan ASCII code for digit **5**
- Scan ASCII code for digit **1**
- Scan ASCII code for digit **8**

Scan End

No Length Restriction

Scan Set

Scan the No Length Restriction code.

Scan End

Data Matrix

Set

Enable Data Matrix (default)

Disable Data Matrix

End

Rectangular Data Matrix

Set

Enable Rectangular Data Matrix (default)

Disable Rectangular Data Matrix

End

Mirror Decoding

Set

Enable Mirror Decoding (default)

Disable Mirror Decoding

End

QR Code

Set

Enable QR Code (default)

Disable QR Code

End

Mirror Decoding

Set

Enable Mirror Decoding (default)

Disable Mirror Decoding

End

Micro QR

Set

Enable Micro QR (default)

Disable Micro QR

End

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Data Editing

Output Format

The following is the output format for barcode data:

Barcode Type (4 bytes)	Prefix (4 bytes)	AIM ID	Barcode Data	Suffix (4 bytes)	Terminator (1 byte)

Barcode Output Notes:

1. Barcode type will not be output if not enabled.
2. When combining output formats, prefix and suffix are output before and after barcode data respectively.
3. Only valid under USB keyboard mode.

Format Definition:

Start Code (1 byte)	Barcode Type Length (1 byte)	Barcode Length (2 bytes)
0x03	Hexadecimal Format	0x0001 – 0xFFFF

Barcode Types:

Code	2D Barcode Type	Code	1D Barcode Type	Code	1D Barcode Type
0x41	PDF417	0x61	UPC-A	0x71	Pharmacode
0x42	Micro PDF417	0x62	UPC-E	0x73	GS1 DataBar-14
0x43	Data Matrix	0x63	EAN-8	0x74	GS1 DataBar Expanded
0x44	QR Code	0x64	EAN-13	0x75	GS1 DataBar Limited
0x45	Micro QR	0x65	Code 128	0x76	Composite Code-A
0x46	Aztec	0x66	Code 39	0x77	Composite Code-B
0x47	MaxiCode	0x67	Code 93	0x78	Composite Code-C
		0x68	Codabar		
		0x69	Plessey		
		0x6A	MSI Plessey		
		0x6B	Interleaved 2 of 5		
		0x6C	IATA 2 of 5		
		0x6D	Matrix 2 of 5		
		0x6F	Straight 2 of 5		

Barcode Data

Set

Off (default)

On

End

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Barcode Symbology ID

Set

Disable Barcode Symbology ID (default)

Enable AIM ID

End

Barcode Symbology List	
Symbology	**AIM**
UPC-A	E
UPC-E	E
EAN-8	E
EAN-13	E
Code 128	C
Code 39	A
Code 93	G
Code 32	A
Code 11	H
Codabar	F
Plessey	P
MSI / Plessey	M
Interleaved 2 of 5	I
IATA 2 of 5	R
Matrix 2 of 5	X
Straight 2 of 5	S
Pharmacode	X
GS1 DataBar 14	e
GS1 DataBar Expanded	e
GS1 DataBar Limited	e
Composite CC-A	e
Composite CC-B	e
Composite CC-C	e
PDF417	L
Micro PDF417	L
Data Matrix	d
QR	Q
Micro QR	Q
Aztec	Z
MaxiCode	U

Prefix Settings

Add up to 4 characters before barcode data output.

Set

Clear Global Prefix (default)

Set Global Prefix

Set Barcode Prefix

Clear Barcode Prefix

End

Example: Add an 'a' character before all barcode data
1. Scan "Set"
2. Scan "Set Global Prefix"
3. Scan ASCII Code Table (Appendix 3) — scan the 'a' barcode
4. Scan "End"

Remove Global Prefix
1. Scan "Set"
2. Scan "Clear Global Prefix"
3. Scan "End"

Example: Add "&1" before EAN-13 barcode data only
1. Scan "Set"
2. Scan "Set Barcode Prefix"
3. Scan Barcode Type Code from Appendix 2 — scan "EAN-13"
4. Scan ASCII Code Table (Appendix 3) — scan the '&' barcode
5. Scan ASCII Code Table (Appendix 3) — scan the '1' barcode
6. Scan "End"

Example: Remove EAN-13 Prefix
1. Scan "Set"
2. Scan "Set Barcode Prefix"
3. Scan Barcode Type Code from Appendix 2 — scan "EAN-13"
4. Scan "End"

Suffix Settings

Add up to 4 characters after barcode data output.

Set

Clear Global Suffix (default)

Set Global Suffix

Set Barcode Suffix

Clear Barcode Suffix

End

Example: Add an 'S' character after all barcode data
1.   Scan "Set"
2.   Scan "Set Global Suffix"
3.   Scan ASCII Code Table (Appendix 3) — scan the 'S' barcode
4.   Scan "End"

Remove Global Suffix
1.   Scan "Set"
2.   Scan "Clear Global Suffix"
3.   Scan "End"

Example: Add "+2" after Code 128 barcode data only
1.   Scan "Set"
2.   Scan "Set Barcode Suffix"
3.   Scan Barcode Type Code from Appendix 2 — scan "Code 128"
4.   Scan ASCII Code Table (Appendix 3) — scan the '+' barcode
5.   Scan ASCII Code Table (Appendix 3) — scan the '2' barcode
6.   Scan "End"

Example: Remove Code 128 Suffix
1.   Scan "Set"
2.   Scan "Set Barcode Suffix"
3.   Scan Barcode Type Code from Appendix 2 — scan "Code 128"
4.   Scan "End"

Remove Leading Characters

Removes characters from the beginning of barcode data. Up to 20 characters can be removed.

Set

Remove Global Leading Characters

Remove Leading Characters from Barcode

End

Example: Remove the first 3 characters from all barcodes
1. Scan "Set"
2. Scan "Remove Global Leading Characters"
3. Scan Decimal Table (Appendix 1) — scan the '3' barcode
4. Scan "End"

Example: Keep all leading characters from all barcodes
1. Scan "Set"
2. Scan "Remove Global Leading Characters"
3. Scan Decimal Table (Appendix 1) — scan the '0' barcode
4. Scan "End"

Example: Remove the first 2 characters from QR barcode data only
1. Scan "Set"
2. Scan "Remove Leading Characters by Barcode"
3. Scan Barcode Type Code from Appendix 2 — scan "QR"
4. Scan Decimal Table (Appendix 1) — scan the '2' barcode
5. Scan "End"

Example: Remove QR Leading Character Removal
1. Scan "Set"
2. Scan "Remove Leading Characters by Barcode"
3. Scan Barcode Type Code from Appendix 2 — scan "QR"
4. Scan Decimal Table (Appendix 1) — scan the '0' barcode
5. Scan "End"

Remove Terminal Characters

Removes characters from the end of barcode data. Up to 20 characters can be removed.

Set

Remove Global Terminal Characters

Remove Terminal Characters from Barcode

End

Example: Remove the last 5 terminal characters from all barcodes
1. Scan "Set"
2. Scan "Remove Global Terminal Characters"
3. From the Decimal Table (Appendix 1), scan the barcode for '5'
4. Scan "End"

Example: Keep all terminal characters for all barcodes
1. Scan "Set"
2. Scan "Remove Global Terminal Characters"
3. From the Decimal Table (Appendix 1), scan the barcode for '0'
4. Scan "End"

Example: Remove the last 2 terminal characters from Code 39 barcodes only
1. Scan "Set"
2. Scan "Remove Terminal Characters by Barcode"
3. From the Barcode Type Table (Appendix 2), scan "Code 39"
4. From the Decimal Table (Appendix 1), scan the barcode for '2'
5. Scan "End"

Example: Disable terminal character removal for Code 39
1. Scan "Set"
2. Scan "Remove Terminal Characters by Barcode"
3. From the Barcode Type Table (Appendix 2), scan "Code 39"
4. From the Decimal Table (Appendix 1), scan the barcode for '0'
5. Scan "End"

Terminator Character

Set

None   Carriage Return / CR (Default)

CR / LF   TAB

End

Caps Lock

Set

Disable Caps Lock (default)

Enable Caps Lock

End

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GS Character Conversion

Convert the GS character to other ASCII codes in keyboard mode.

Set

Disable GS Character Conversion (default)

Convert GS Character

End

To set the GS character to output as '#':
1. Scan "Set"
2. Scan "Convert GS Character"
3. Scan the ASCII code for '#' from the ASCII Code Table
4. Scan "End"

To set the GS character to output as Carriage Return (Enter):
1. Scan "Set"
2. Scan "Convert GS Character"
3. Scan the ASCII code for Carriage Return (CR) from the ASCII Code Table
4. Scan "End"

To restore the GS character to its default value:
1. Scan "Set"
2. Scan "Disable GS Character Conversion"
3. Scan "End"

Function Key Mapping

Set

Off

On (default)

Ctrl Char Mode (default)

Alt + Unicode Mode

End

Appendix 1 Decimal Numbers

0

5

1

6

2

7

3

8

4

9

Appendix 2 Barcode Types

UPC A

UPC E

EAN 8

EAN 13

Code 128

Code 39

Code 93

Code 32

Code 11

Codabar

Plessey

MSI Plessey

Interleaved 2 of 5

IATA 2 of 5

Matrix 2 of 5

Straight 2 of 5

Pharmacode

GS1 DataBar 14

GS1 DataBar Expanded

GS1 DataBar Limited

GS1 DataBar 14 Stacked

GS1 DataBar Expanded Stacked

Composite Code-A

Composite Code-B

Composite Code-C

PDF417

Micro PDF417

Data Matrix

QR

Micro QR

Aztec

MaxiCode

Appendix 3 ASCII Code Table

HEX	Decimal	ASCII	Function Key Mapping		
			Disable	Control-Key	**Alt+Unicode**
00 (NUL)	0	NUL	Null	Ctrl+@	Alt + 000
01 (SOH)	1	SOH	Home	Ctrl+A	Alt + 001
02 (STX)	2	STX	Alt	Ctrl+B	Alt + 002

HEX	Decimal	ASCII	Function Key Mapping		
			Disable	Control-Key	**Alt+Unicode**
03 (ETX)	3	ETX	Up Arrow	Ctrl+C	Alt + 003
04 (EOT)	4	EOT	Null	Ctrl+D	Alt + 004
05 (ENQ)	5	ENQ	Ctrl	Ctrl+E	Alt + 005

HEX	Decimal	ASCII	Function Key Mapping		
			Disable	Control-Key	**Alt+Unicode**
06 (ACK)	6	ACK	Right Arrow	Ctrl+F	Alt + 006
07 (BEL)	7	BEL	Null	Ctrl+G	Alt + 007
	8	BS	Left Arrow	Ctrl+H	Alt + 008

HEX	Decimal	ASCII	Function Key Mapping		
			Disable	Control-Key	**Alt+Unicode**
09	9	TAB	TAB	Ctrl+I	Alt + 009
0A (LF)	10	LF	Down Arrow	Ctrl+J	Alt + 010
0B (VT)	11	VT	Null	Ctrl+K	Alt + 011

HEX	Decimal	ASCII	Function Key Mapping		
			Disable	**Control-Key**	**Alt+Unicode**
0C (FF)	12	 FF	Null	Ctrl+L	Alt + 012
0D (CR)	13	 **CR**	**Enter**	**Enter**	**Enter**
0E (SO)	14	 SO	Page Up	Ctrl+N	Alt + 014

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HEX	Decimal	ASCII	Function Key Mapping		
			Disable	Control-Key	**Alt+Unicode**
0F (SI)	15	SI	Page Down	Ctrl+O	Alt + 015
10 (DLE)	16	DLE	F11	Ctrl+P	Alt + 016
11 (DC1)	17	DC1	Null	Ctrl+Q	Alt + 017

HEX	Decimal	ASCII	Function Key Mapping		
			Disable	Control-Key	**Alt+Unicode**
12 (DC2)	18	DC2	Null	Ctrl+R	Alt + 018
13 (DC3)	19	DC3	Null	Ctrl+S	Alt + 019
14 (DC4)	20	DC4	Null	Ctrl+T	Alt + 020

HEX	Decimal	ASCII	Function Key Mapping		
			Disable	Control-Key	Alt+Unicode
15 (NAK)	21	NAK	F12	Ctrl+U	Alt + 021
16 (SYN)	22	SYN	F1	Ctrl+V	Alt + 022
17 (ETB)	23	ETB	F2	Ctrl+W	Alt + 023

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HEX	Decimal	ASCII	Function Key Mapping		
			Disable	**Control-Key**	**Alt+Unicode**
18 (CAN)	24	CAN	F3	Ctrl+X	Alt + 024
19 (CAN)	25	EM	F4	Ctrl+Y	Alt + 025
1A (SUB)	26	SUB	F5	Ctrl+Z	Alt + 026

HEX	Decimal	**ASCII**	Function Key Mapping		
			Disable	Control-Key	**Alt+Unicode**
1B (ESC)	27	ESC	F6	Ctrl+[	Alt + 027
1C (FS)	28	FS	F7	Ctrl+\	Alt + 028
1D (GS)	29	GS	F8	Ctrl+]	Alt + 029

HEX	Decimal	ASCII	Function Key Mapping		
			Disable	Control-Key	**Alt+Unicode**
1E (US)	30	RS	F9	Ctrl+6	Alt + 030
1F (US)	31	US	F10	Ctrl+-	Alt + 031

HEX	Decimal	ASCII	
20	32	**SPACE**	
21	33	**!**	
22	34	**"**	
23	35	**#**	

HEX	Decimal	**ASCII**	
24	36	$	
25	37	%	
26	38	&	
27	39	'	

HEX	Decimal	ASCII	
28	40	(	
29	41	)	
2A	42	*	
2B	43	+	

HEX	Decimal	ASCII	
2C	44	,	
2D	45	-	
2E	46	.	
2F	47	/	

HEX	Decimal	ASCII	
30	48	**0**	
31	49	**1**	
32	50	**2**	
33	51	**3**	

Advanced 2D Image Scanner

HEX	Decimal	ASCII	
34	52	**4**	
35	53	**5**	
36	54	**6**	
37	55	**7**	

HEX	Decimal	ASCII	
38	56	**8**	
39	57	**9**	
3A	58	:	
3B	59	;	

HEX	Decimal	ASCII	
3C	60	<	
3D	61	=	
3E	62	>	
3F	63	?	

HEX	Decimal	ASCII	
40	64	@	
41	65	**A**	
42	66	**B**	
43	67	**C**	

HEX	Decimal	ASCII	
44	68	D	
45	69	**E**	
46	70	**F**	
47	71	**G**	

HEX	Decimal	ASCII	
48	72	H	
49	73	**I**	
4A	74	**J**	
4B	75	**K**	

HEX	Decimal	**ASCII**	
4C	76	L	
4D	77	M	
4E	78	N	
4F	79	**O**	

HEX	Decimal	ASCII	
50	80	**P**	
51	81	**Q**	
52	82	**R**	
53	83	**S**	

HEX	Decimal	ASCII	
54	84	**T**	
55	85	**U**	
56	86	**V**	
57	87	**W**	

HEX	Decimal	ASCII	
58	88	**X**	
59	89	**Y**	
5A	90	**Z**	
5B	91	[	

HEX	Decimal	**ASCII**	
5C	92	\	
5D	93	]	
5E	94	^	
5F	95	_	

HEX	Decimal	ASCII	
60	96	`	
62	97	**a**	
62	98	**b**	
63	99	**c**	

HEX	Decimal	**ASCII**	
64	100	**d**	
65	101	**e**	
66	102	**f**	
67	103	**g**	

HEX	Decimal	ASCII	
68	104	**h**	
69	105	**i**	
6A	106	**j**	
6B	107	**k**	

HEX	Decimal	ASCII	
6C	108	**l**	
6D	109	**m**	
6E	110	**n**	
6F	111	**o**	

HEX	Decimal	ASCII	
70	112	**p**	
71	113	**q**	
72	114	**r**	
73	115	**s**	

HEX	Decimal	ASCII	
74	116	**t**	
75	117	**u**	
76	118	**v**	
77	119	**w**	

HEX	Decimal	ASCII	
78	120	**x**	
79	121	**y**	
7A	122	**z**	
7B	123	{	

HEX	Decimal	**ASCII**	
7C	124	|	
7D	125	}	
7E	126	~	
7F	127	Delete	

Appendix 4 - Function Keys

Insert

Delete

Home

End

Up Arrow

Down Arrow

Left Arrow

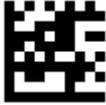Right Arrow

Shift

ESC

Ctrl

Alt

Page Up

Page Down

F1

F2

F3

F4

F5

F6

F7

F8

F9

F10

F11

F12