



## Cino FuzzyScan Bar Code Scanner User Guide

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# cino

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## Cino FuzzyScan Bar Code Scanner User Guide

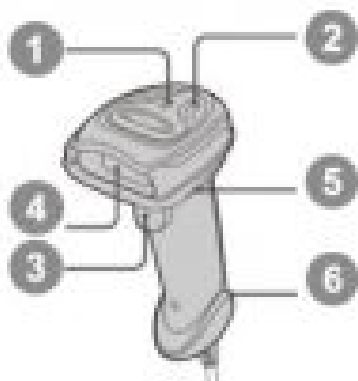


### Getting Familiar with Your FuzzyScan

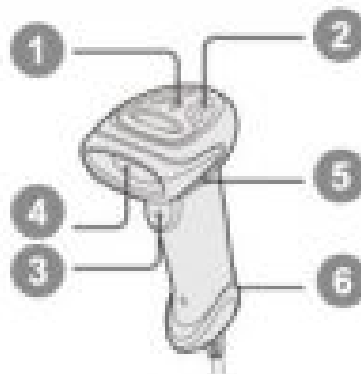
Thank you for choosing Cino FuzzyScan Bar Code Scanner. All FuzzyScan scanners deliver world-class performance for a broad range of applications to unleash your productivity with ease.

The FuzzyScan scanners family includes **A** series area imager, **F** series linear imager and **L** series laser imager. The **Antimicrobial** models are available for A780, L780 and F780 series scanners which are equipped with both Disinfectant-ready Housing and Vibrator. The option of Vibrator is available for all other series upon request.

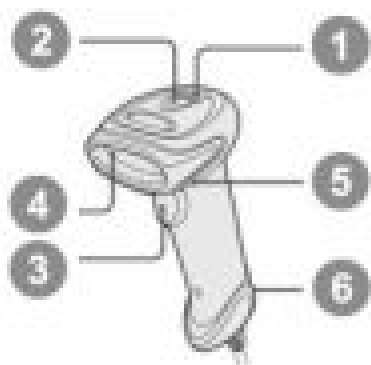
## A780 Series



## A680 Series

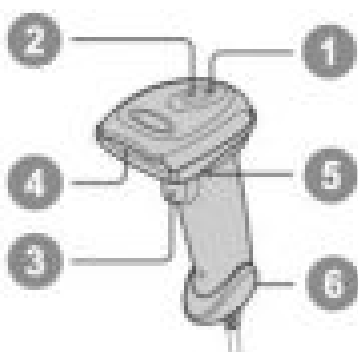


## A670/F680/L680 Series

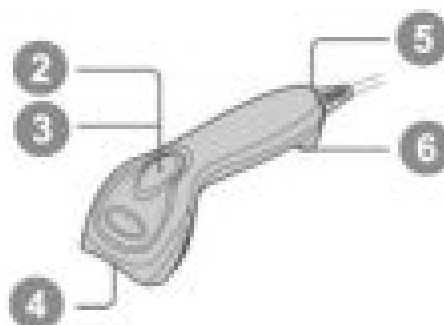


- 1 Power Indicator
- 2 Status Indicator
- 3 Trigger Switch
- 4 Scan Window
- 5 Beeper
- 6 Cable Release Hole

## F790/F780/L780 Series



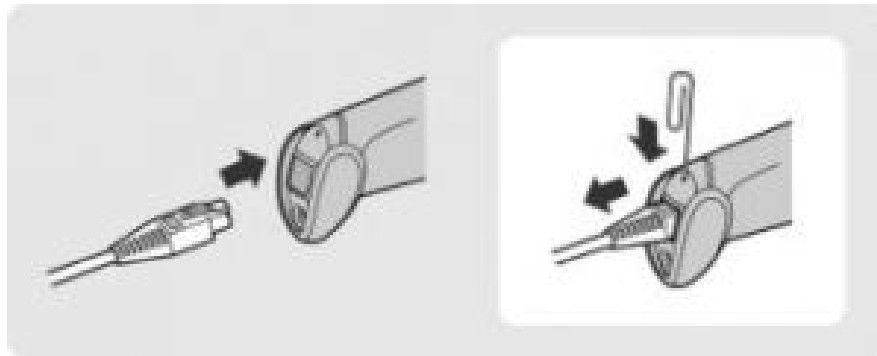
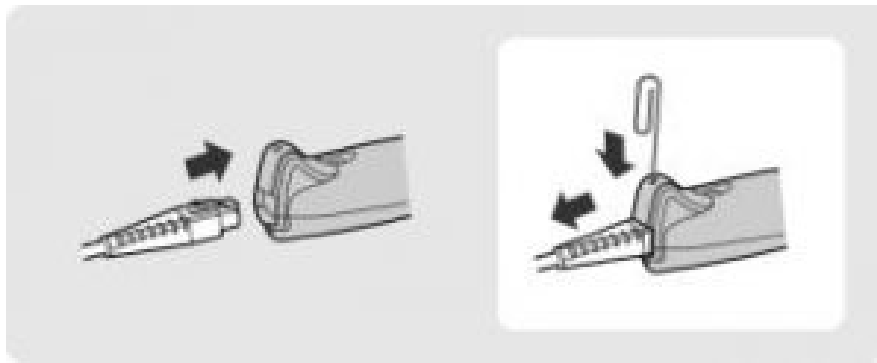
## F560 Series



## Connecting to Your Host

The FuzzyScan scanners support USB and RS-232 Serial interfaces. Please choose your desired interface cable, plug it into the scanner's interface port and connect it to the desired port of your host. If you want to remove the

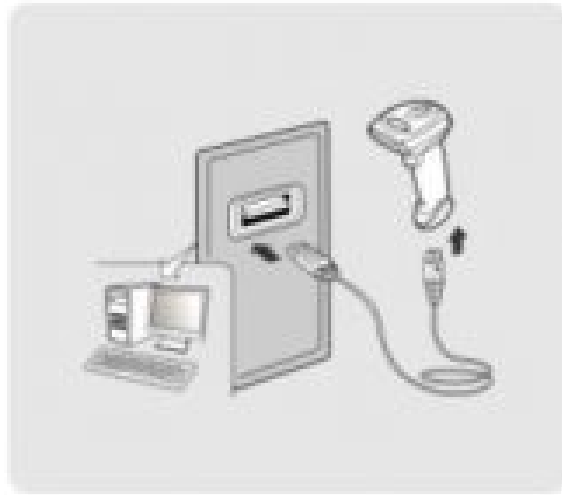
cable, simply straighten one end of a paper clip, and insert it into the cable release hole to pull out the cable.



## RS232 Serial



## USB HID & USB COM



- **USB HID (Human Interface Device)**

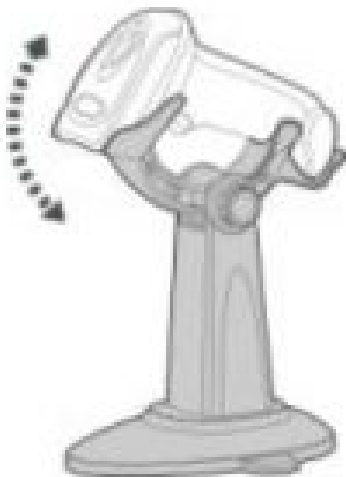
The scanner works as a generic USB keyboard.

- **USB COM Port Emulation**

The scanner works as a legacy RS232 serial device. Please note that you have to install the USB Virtual COM software driver before connecting the scanner.

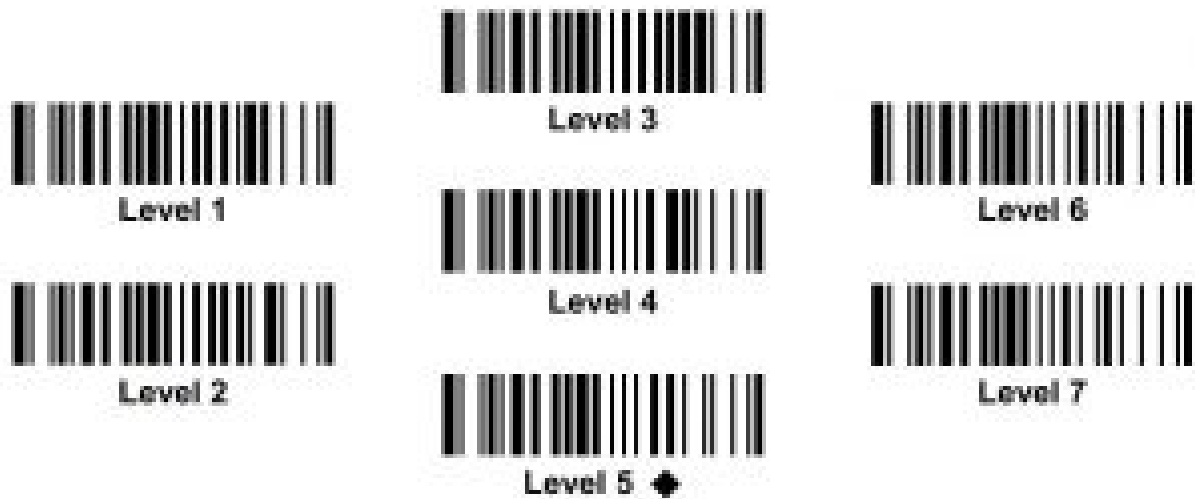
## Using SmartStand

The optional SmartStand is specifically designed for hand-free applications to maximize user's comfort and productivity. You can adjust the scanner holder to desired position for optimized scanning.



Thanks to the advanced Auto-sense design, the scanner is capable of switching between presentation scanning and hand-held scanning automatically while working with the optional SmartStand. (Note: Not available for F560 series scanners).

In presentation mode, the bar code may not be detected by the scanner in an environment with very dim ambient lighting. You may have to select higher sensitivity level through the setting of Presentation Sensitivity to increase scanner's detecting sensitivity.



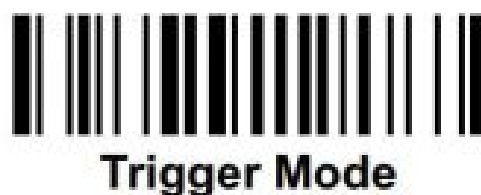
For **A series** area imager used in presentation mode, you can enable or disable the scanner's presentation background lighting according to the ambient light condition. When the ambient light is dim or dark, you can enable this function to turn on the scanner's LED illumination. This is helpful for scanner to detect the motion of scene.



## Operation Modes

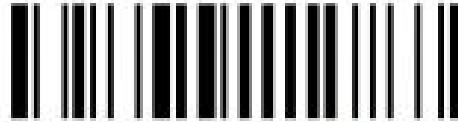
### A area imager

FuzzyScan family **A series** area imager supports various operation modes, including trigger, presentation, alternative, level, force, toggle, diagnostic, low power and multiple read modes. The details of each operation mode are listed below for reference.



When trigger mode is selected, the scanner goes into standby state after scanning the bar code. You must press the trigger switch to turn on the scanner's light source before scanning the bar code.

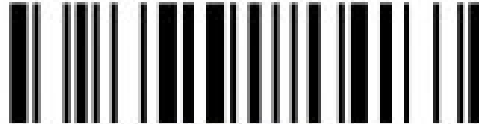
**A**



### **Presentation Mode**

When presentation mode is selected, the scanner is preset to turn on the background lighting to detect the bar codes. Once the scanner detects an image similar to a bar code, it will try to decode the bar code immediately.

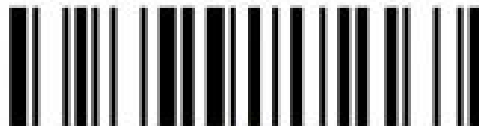
**A**



### **Alternative Mode**

When alternative mode is selected, the scanner keeps the light source on till the preset “light source on time” is up. After turning off the light source, you must press the trigger switch to turn on the light source again. After each good read, the timer counter of light source on time is reset. You do not have to press the trigger switch frequently. This is very useful for multiple scanning.

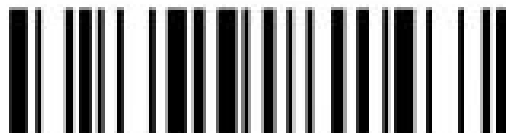
**A**



### **Level Mode**

When level mode is selected, the scanner continues to keep the light source on till a bar code is decoded, or the preset “light source on time” is up. When a bar code is decoded successfully, the scanner turns off the light source immediately. After the scanner turns off the light source, you have to press the trigger switch to turn on the light source again. If there is no scanning operation performed during the preset “light source on time”, the scanner will turn off the light source after the preset “light source on time” is up.

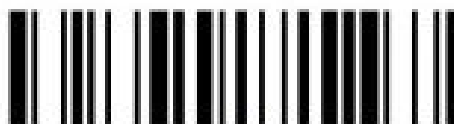
**A**



### **Force Mode**

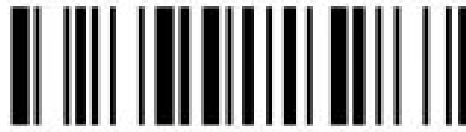
When force mode is selected, the light source of the scanner is forced on for a continuing operation without having to press the trigger switch. This mode is convenient for high speed scanning.

**A**



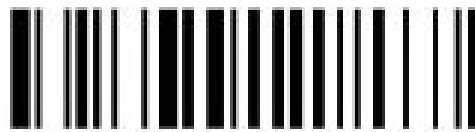
### **Toggle Mode**

When toggle mode is selected, you must press the trigger switch to turn on the scanner's light source to start scanning. The scanner keeps the light source on until you press the trigger switch again. This mode is very similar to alternative mode but without the preset light source on time concern.



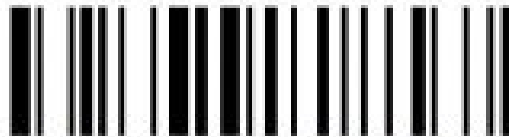
**Diagnostic Mode**

When diagnostic mode is selected, the scanner's light source is forced on without regard for other programmable parameters, such as reread delay, redundancy, and so on.



**Low Power Mode**

When low power mode is selected, the scanner goes into idle state after having scanned the bar code. You must press the trigger switch to wake up the scanner for further operation.



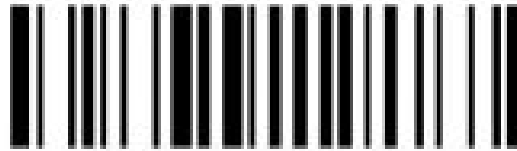
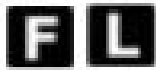
**Multiple Read Mode**

When multiple read mode is selected, the scanner is allowed to decode multiple bar codes with a single pull of the trigger. When you press and hold the trigger to aim at a series of bar codes, the scanner will decode each bar code and beep for each good read. For more precise bar code decoding, you are recommended to enable **Center Alignment** function while multiple read mode is selected. You can enable **Unique Bar Code Reporting** function to report for unique bar code when the scanner trigger is pressed. For the setting of Center Alignment and Unique Bar Code Reporting, please refer to the Programming Manual for details.

## Operation Modes **FL** linear & laser imager

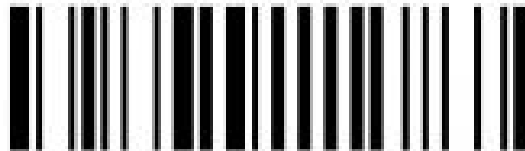
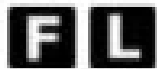
Both **F series** linear imager and **L series** laser imager of FuzzyScan family support various operation modes, including trigger, presentation, alternative, level, flash, force, toggle, diagnostic and low power modes. But please note that the **laser aiming line** of L series is not performed under force, flash, toggle or diagnostic mode to ensure the longer working life of laser imager.





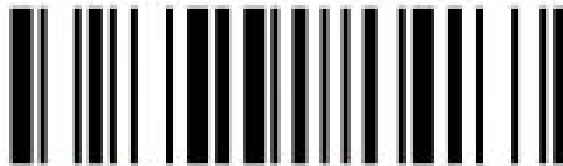
### Trigger Mode

When trigger mode is selected, the scanner goes into standby state after scanning the bar code. You must press the trigger switch to turn on the scanner's light source before scanning the bar code.



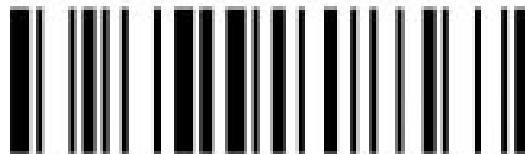
### Presentation Mode

When presentation mode is selected, the scanner will turn on the light source and start scanning automatically if it detects an image similar to a bar code. In case the scanner can't detect a bar code, it will turn off the light source after the preset light source on time is up.



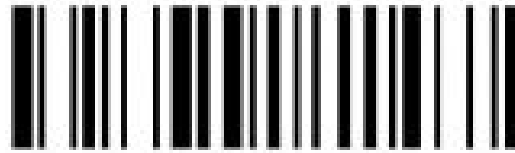
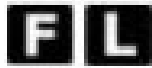
### Alternative Mode

When alternative mode is selected, the scanner keeps the light source on till the preset "**light source on time**" is up. After turning off the light source, you must press the trigger switch to turn on the light source again. After each good read, the timer counter of light source on time is reset. You do not have to press the trigger switch frequently. It is very useful for multiple scanning.



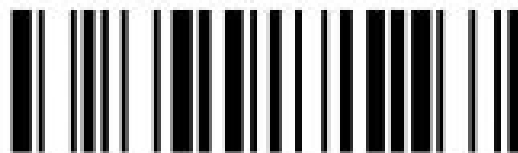
### Level Mode

When level mode is selected, the scanner continues to turn on the light source till a bar code is decoded or preset "light source on time" is up. When a bar code is decoded successfully, the scanner turns off the light source immediately. After the scanner turns off the light source, you must press the trigger switch to turn on the light source again. If there is no scanning operation performed during the preset "light source on time", the scanner will turn off the light source after the preset light source on time is up.



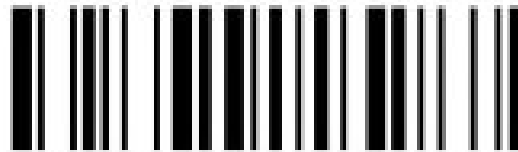
### Flash Mode

When flash mode is selected, the scanner flashes the light source without having to press the trigger switch. If the scanner detects an image which is similar to a bar code, it forces the light source on automatically and scans the bar code.



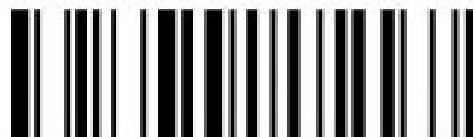
### Force Mode

When force mode is selected, the light source of the scanner is forced on for continued operation without having to press the trigger switch. This mode is convenient for high speed bar code scanning.



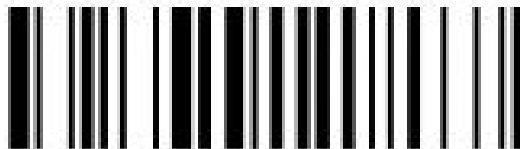
### Toggle Mode

When toggle mode is selected, you must press the trigger switch to turn on the light source of the scanner to start scanning operation. The scanner keeps the light source on until you press the trigger switch again. This mode is very similar to alternative mode but without the preset light source on time concern.



### Diagnostic Mode

When diagnostic mode is selected, the light source of the scanner is forced on without regard for other programmable parameters, such as reread delay, redundancy, and so on.

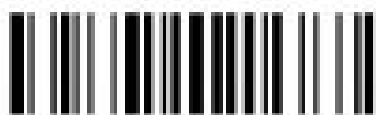


## Low Power Mode

When low power mode is selected, the scanner goes into idle state after scanning the bar code. You must press the trigger switch to wake up the scanner for further operation.

## Keyboard Interface Quick Set

### – Record Suffix –



None



TAB



ENTER

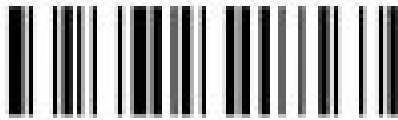


RETURN ♦

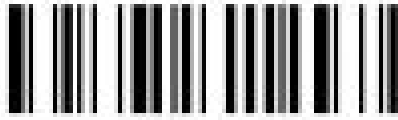


SPACE

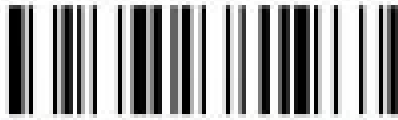
### – Keyboard Layout –



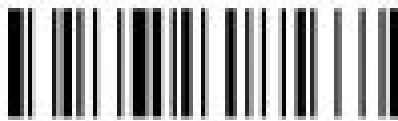
USA ♦



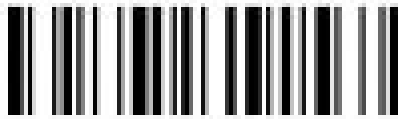
Germany



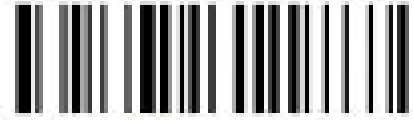
Canadian French



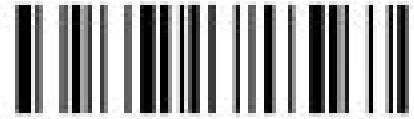
Spain (Latin America)



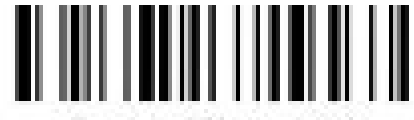
Japan



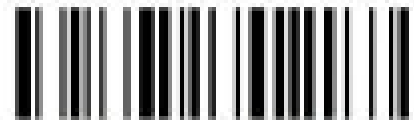
France



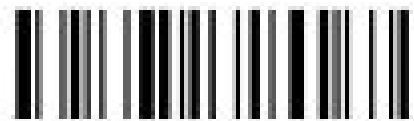
United Kingdom-UK



Spain (Spanish)



Netherlands



Sweden/Finland



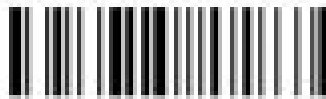
None



CR ◆



LF



CRLF



TAB

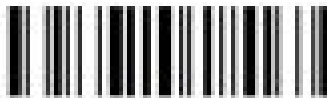


SPACE

– Baud Rate –



115.2K BPS



57.6K BPS



38.4 BPS



19.2K BPS



9600 BPS ◆



4800 BPS



2400 BPS



1200 BPS

– Data Frame –



8, None, 1 ♦



8, Odd, 1



8, Even, 1



8, Space, 1



8, Mark, 1



8, None, 2



7, Odd, 1



7, Even, 1



7, Space, 1



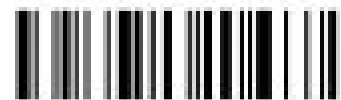
7, Mark, 1



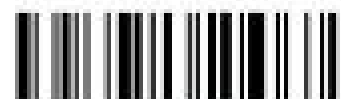
7, None, 2



7, Odd, 2



7, Even, 2



7, Space, 2



7, Mark, 2

## System Commands



System Information



PowerTool Host Link



Factory Default



Master Default

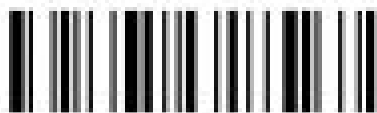


User Default



Save User Default

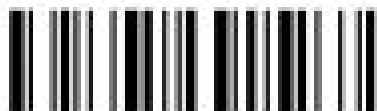
## Host Interface Quick Set



RS232 Serial



USB HID Turbo Mode

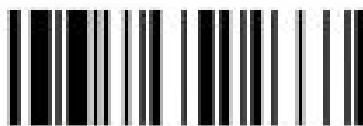


USB HID Standard Mode ◆



USB Com Port Emulation

## System Commands



**PROGRAM**  
(Enter Programming Mode)



**END**  
(Exit Programming Mode)

## Option Codes



0



1



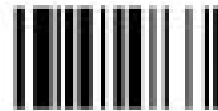
2



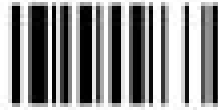
3



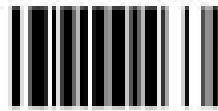
4



5



6



7



8



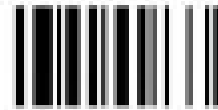
9



A



B



C



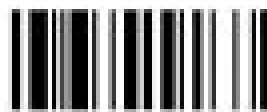
D



E



F











FIN (Finish)



Keyboard Interface Control







Command	Parameter Selection		Option Code	
<b>Keyboard Layout</b> 	USA ◆ France Germany United Kingdom-UK Canadian French Spain Sweden/Finland Portugal Norway	Latin America Italy Netherlands Denmark Belgium Switzerland-Germany Iceland Japan Czech	00 01 02 03 04 05 06 07 08	09 10 11 12 13 14 15 16 17
<b>Record Suffix</b> 	None RETURN ◆ TAB SPACE	ENTER User define character	0 1 2 3	4 5





<b>Preamble</b> 	None ◆ 1-15 characters	FIN [00-7F], [FN]
<b>Postamble</b> 	None ◆ 1-15 characters	FIN [00-7F], [FN]
<b>Intermessage Delay</b> 	None ◆ 1-99 (x5) msec.	FIN (2 digits)
<b>Intercharacter Delay</b> 	None ◆ 1-99 (x5) msec.	FIN (2 digits)





<b>Interfunction Delay</b> 	None ◆ 1-99 (x5) msec.	FIN (2 digits)
<b>Caps Lock Control</b> 	"Caps Lock Off" State ◆ "Caps Lock On" State Auto Detect	0 1 2
<b>Caps Lock Release Control</b> 	"Caps Lock On, Caps Off" ◆ "Caps Lock On, Shift Off"	0 1
<b>Function Key Emulation</b> 	Enable ASCII 00-31 as KB function code output: ◆ Enable ASCII 00-31 as Ctrl-xx output	0 1

<b>Key Pad Emulation</b> 	Disable key pad emulation ◆ Enable numeric output as key pad output	0 1
<b>Upper/Lower Case</b> 	Normal case ◆ Inverse case Upper case Lower case	0 1 2 3

## Serial Interface Control

Command	Parameter Selection		Option Code	
<b>STX/ETX Control</b> 	Disable STX/ETX transmission ◆ Enable STX/ETX transmission		0 1	
<b>Record Suffix</b> 	None CR ◆ LF CRLF	TAB SPACE User define character	0 1 2 3	4 5 6
<b>Preamble</b> 	None ◆ 1-15 characters		FIN [00-7F], [FIN]	
<b>Postamble</b> 	None ◆ 1-15 characters		FIN [00-7F], [FIN]	

<b>Handshaking Protocol</b> 	None ◆ RTS/CTS ACK/NAK Xon/Xoff	0 1 2 3
<b>Intermessage Delay</b> 	None ◆ 1-99 (x5) msec.	FIN (2 digits)
<b>Intercharacter Delay</b> 	None ◆ 1-99 (x5) msec.	FIN (2 digits)
<b>Interfunction Delay</b> 	None ◆ 1-99 (x5) msec.	FIN (2 digits)

<b>Serial Response Time-out</b> 	None 200 msec. 500 msec.  800 msec. 1 sec. 2 sec.	3 sec. 4 sec. 5 sec. 8 sec. 10 sec. 15 sec.	0 1 2 3 4 5	6 7 8 9 A B
<b>NAK Retry Count</b> 	3 times  0~255 times		FIN (3 digits)	

## Message String Breakdown

### Keyboard Interface output (PS/2, DOS/V, USB HID)

Preamble	Data Length	Prefix ID	Scanned Data	Suffix ID	Postamble	Record Suffix
1-15 char	2-4 digits	1 or 3 char	Variable	1 or 3 char	1-15 char	1 char

### Serial interface output (RS-232, USB COM Port Emulation)

STX	Preamble	Data Length	Prefix ID	Scanned Data	Suffix ID	Postamble	ETX	Record Suffix
1 char	1-15 char	2-4 digits	1 or 3 char	Variable	1 or 3 char	1-15 char	1 char	1 char

## Keyboard Function Code Table

No.	ANSI	ASCII	Key Function	Ctrl Output	No.	ANSI	ASCII	Key Function	Ctrl Output
00	NUL	00H	RESERVED	Ctrl + @	16	DLE	10H	F7	Ctrl + P
01	SOH	01H	CTRL (Left)	Ctrl + A	17	DC1	11H	F8	Ctrl + Q
02	STX	02H	ALT (Left)	Ctrl + B	18	DC2	12H	F9	Ctrl + R
03	ETX	03H	SHIFT	Ctrl + C	19	DC3	13H	F10	Ctrl + S
04	EOT	04H	CAPS LOCK	Ctrl + D	20	DC4	14H	F11	Ctrl + T
05	ENQ	05H	NUM LOCK	Ctrl + E	21	NAK	15H	F12	Ctrl + U
06	ACK	06H	ESC	Ctrl + F	22	SYN	16H	INS (Insert) (Edit)	Ctrl + V
07	BEL	07H	F1	Ctrl + G	23	ETB	17H	DEL (Delete) (Edit)	Ctrl + W
08	BS	08H	BACK SPACE	Ctrl + H	24	CAN	18H	HOME (Edit)	Ctrl + X
09	HT	09H	TAB	Ctrl + I	25	EM	19H	END (Edit)	Ctrl + Y
10	LF	0AH	F2	Ctrl + J	26	SUB	1AH	PAGE UP (Edit)	Ctrl + Z

11	VT	0BH	F3	Ctrl + K	27	ESC	1BH	PAGE DOWN (Edit)	Ctrl + ]
12	FF	0CH	F4	Ctrl + L	28	FS	1CH	UP (Edit)	Ctrl + ^
13	CR	0DH	ENTER (CR)	Ctrl + M	29	GS	1DH	DOWN (Edit)	Ctrl + _
14	SO	0EH	F5	Ctrl + N	30	RS	1EH	LEFT (Edit)	Ctrl + 6
15	SI	0FH	F6	Ctrl + O	31	US	1FH	RIGHT (Edit)	* see note

The last character in the Ctrl Output column is varied for different countries.

## HEX/ASCII Reference Table

L \ H	0	1	2	3	4	5	6	7
0	NUL	DLE	SPACE	@	@	P	^	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENO	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z

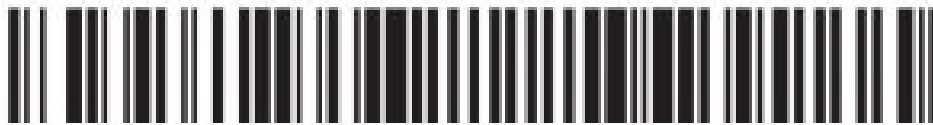
B	VT	ESC	+	;	K	[	^	{
C	FF	FS	,	<	L	\	_	
D	CR	GS	-	=	M	]	`	}
E	SO	RS	.	>	N	^	~	~
F	SI	US	/	?	O	_	o	DEL



**Example: ASCII "A" → HEX "41" ; ASCII "a" → "61"**

**□ : High Byte of HEX Value □ : Low Byte of HEX Value**

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## Regulatory



Part 15 Subpart B



CNS13438



EN55022, EN55024  
EN61000-3-2, EN61000-3-3, EN60950-1  
EN61000-6-3, EN61000-6-2



AS/NZS CISPR 22:2009 Class B



KN22, KN24 (KN61000-2,-3,-4,-5,-6,-8,-11)

LED Eye Safety

IEC62471 Exempt group

Laser Eye Safety

IEC60825-1 Class 1




Class B ITE



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## **References**

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