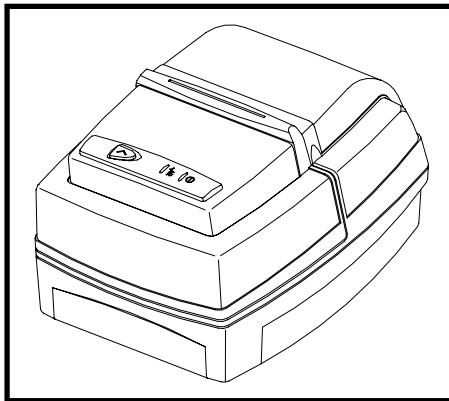


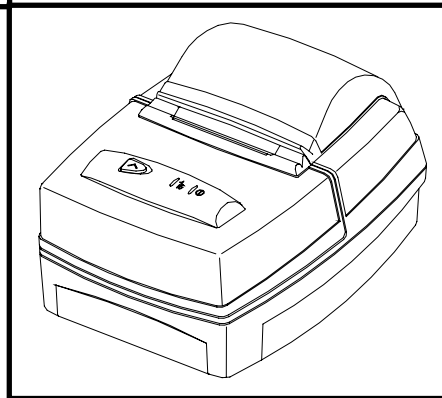
XR-200

MINI DOT IMPACT PRINTER



POSX

POSX



PRODUCT SPECIFICATION

DATE : MAY 3, 2004
MANUAL REVISION 2.0

Features

Dip Switch Configuration

Emulation mode, communications mode, baud rate, serial/parallel handshake, and head printing characteristics are all configured through dip switch settings.

Data Buffer

The XR-200 printer has a built-in 48 Kilobyte I/O buffer allowing the host computer to free itself after sending the print data.

Reliable communications

Centronics parallel or RS-232C compatible communications is built-in.

The XR-200 supports multiple baud rates, protocols, and handshaking on its parallel & serial interfaces.

User controls

A power switch, a paper feed switch, power LED and Paper Low/Out error LED provide ease of use.

Self Test Mode

A comprehensive self-test mode is available which describes the printer configuration and dip switch setting information along with the version number of firmware installed.

Print orientation

The printer is capable of printing normal and upside down, the print orientation is selected by software commands.

Selectable international characters

The XR-200 supports international characters selectable by software control.

Multiple Fonts/Sizes

Two different resident fonts are available for printing diversity. Each of these fonts can be printed in normal, double wide, double height, and quadruple sizes. Both fonts and sizes are software selected.

Bit image graphic

Two formats for bit mapped graphics are provided.

Error detection

The XR-200 can detect paper-out and paper-jam as well as paper near-end, controller malfunction, and cover open status.

Peripheral Drive

Two cash drawer drivers are provided.

Printer Specification

MODEL		XR-200
PRINT METHOD		9-pin serial impact dot matrix
PRINT DIRECTION		Bi-directional (with logical seeking)
NO. OF COLUMNS		Epson Mode : 42/35, 40/33
		Other Modes : 40/32
FONT SIZE		7 x 9, 9 x 9 dots
LINE SPACING		n/144 inch
PRINTING WIDTH		63.5mm (2.5")
PRINT SPEED		4.0 lines/sec (at 40CPL)
INK RIBBON		EPSON, ERC-23 ERC-38 compatible
		Black or Purple, Black/Red
PAPER	Media	Roll Paper
	Width	76.2mm (3.0")
	Diameter	76mm (3.0") max.
	Copies	3-ply max. (0.2mm or 0.008" thick)
DATA BUFFER		48K bytes
CASH DRAWER DRIVER		2 circuits (24V, 1A max)
INTERFACE		RS-232C Serial (25Pin) RS-232C Serial (9Pin) Parallel (25Pin) or Centronics Parallel (36Pin)
EMULATION		Epson TM-U200, Citizen iDP-3540 Star SP200, Verifone P900
POWER SUPPLY	Type	External Adaptor
	Input	120VAC, 230VAC
	Output	24VDC X 2.5A
OPERATING CONDITION		5°C to 40°C, 10% to 80% RH
STORAGE CONDITION		-20°C to 60°C, 5% to 95% RH
RELIABILITY	MCBF	5 million lines
	Printhead	150 million characters
DIMENSIONS	Cutter	174.8(W) X 218.5(D) X 132.2(H)mm
	Non cutter	174.8(W) X 218.5(D) X 132.2(H)mm
WEIGHT	Cutter	4.8 lbs
	Non cutter	3.7 lbs
CERTIFICATIONS		FCC, UL/cUL, CE

Self Test

While pressing the paper feed switch for more than 10 seconds after the printer is turned on, the self test mode is initiated. The printer self test includes a listing of the current default settings, read and write test of internal RAM, checksum test of internal program memory, loop back detection statement, a staggered dot line, a few lines of rotating character set, and a diagnostic report. The printer then enters into the On-Line mode.

Configuration Setup

When the paper FEED switch is pressed and released instantly as the power is applied to the printer, the printer will print the current printer configuration settings along with the DIP switch information. If the printer setup needs to be changed, turn the Power Off before changing the setting.

The printer will be setup at the factory as follows;

Printer is setup as follows:

Model:	XR-200
Firmware:	Ver X.XX
Loopback:	Not Detected(DSR)
Interface:	Serial
Emulation:	Epson TM-U200
CR Character:	CR=CR only
Flow Control:	DTR/DSR
Data Bits:	8 Bits
Parity:	None
Baud Rate:	9600
CPL:	40/33 Char/Line
Two Color:	Installed
Auto Cutter:	Installed
Paper :	Roll Type

User Switches

Panel Switches

Paper Feed button : Pressing the PF button momentarily will advance the paper one character line and pressing it continuously will cause a fast feed at 15 lines per second.

Power Switch

A Power switch located on the lower left side of the printer is used to turn the printer on/off.

Indicators

This section explains the different patterns signaled by the two LED indicators located on the top cover of the XR-200.

STATUS	LED1		LED2	REMARKS
	RED	GREEN	GREEN	
Power Off	OFF	OFF	OFF	Normal power is not supplied to the printer
Power On	Flash	OFF	ON	Normal power is supplied to the printer
On line	OFF	OFF	ON	Normal error-free mode
Paper low	OFF	ON	ON	Insert new paper roll
Cover open	Flash	OFF	ON	Close cover
Paper empty	Flash	OFF	ON	Insert new paper roll
Paper jam	ON	OFF	OFF	Impossible to recover
Test mode	ON	OFF	ON	Ignored Paper Low

Command List

EMULATION EPSON TM-U200

Command	Hex Code	Description
HT	<09>H	Horizontal tab
LF	<0A>H	Print and line feed
CR	<0D>H	Carriage Return
DLE EOT	<10>H<04>H<n>	Real-time status transmission
DLE ENQ	<10>H<05>H<n>	Real-time request to printer
ESC SP	<1B>H<20>H<n>	Set right-side character spacing
ESC !	<1B>H<21>H<n>	Set print mode
ESC %	<1B>H<25>H<n>S	Select/cancel user-defined character set
ESC &	<1B>H<26>H	Define user-defined characters
ESC *	<1B>H<2A>H	Select bit-image mode
ESC -	<1B>H<2D><n>	Turn on/off underline mode
ESC 2	<1B>H<32>H	Select 1/6 inch line spacing
ESC 3	<1B>H<33>H<n>	Set line spacing
ESC <	<1B>H<3C>H	Return home
ESC =	<1B>H<3D>H<n>	Select peripheral device
ESC ?	<1B>H<3F>H<n>	Cancel user-defined characters
ESC @	<1B>H<40>H	Initialize printer
ESC D	<1B>H<44>H<n>	Set horizontal tab positions
ESC E	<1B>H<45>H<n>	Turn on/off emphasized mode
ESC G	<1B>H<47>H<n>	Turn on/off double-strike mode
ESC J	<1B>H<4A>H<n>	Print and feed paper
ESC R	<1B>H<52>H<n>	Select an international character set
ESC U	<1B>H<55>H<n>	Turns on/off unidirectional printing mode
ESC a	<1B>H<61>H<n>	Select justification
ESC c 4	<1B>H<63>H<34>H<n>	Select paper sensor to stop printing
ESC c 5	<1B>H<63>H<35>H<n>	Enable/disable panel button
ESC d	<1B>H<64>H<n>	Print and feed n lines
ESC p	<1B>H<70>H	Generate pulse
ESC t	<1B>H<74>H<n>	Select character code table
ESC {	<1B>H<7B>H<n>	Turn on/off upside-down printing mode
GS I	<1D>H<49>H<n>	Transmit printer ID
GS a	<1D>H<61>H<n>	Enable/disable Automatic Status Back
GS r	<1D>H<72>H<n>	Transmit status

EMULATION CITIZEN iDP-3540

Command	Hex Code	Description
BEL	<07>H	Drive pulse setting command for 1st drawer
CAN	<18>H	Clear data in buffer
LF	<0A>H	Paper feed
FF	<0C>H<n>	Paper feed n lines
CR	<0D>H	Print command
SO	<0E>H	Select expanded character mode
SI	<0F>H	Select normal character mode
DC1	<11>H	Initial set command
DC2	<12>H	Inverted print mode
DC3	<13>H	Red color print command
ESC BEL	<1B>H<07>H<n>	1st drawer driver command
SUB	<1A>H	2nd drawer driver command
ESC -	<1B>H<2D>H<n>	Select underline mode
ESC *	<1B>H<2A>H<n>	Graphic command
ESC 1	<1B>H<31>H	Set 1/9 inch line feed
ESC 2	<1B>H<32>H<n>	Set 2/9 inch line feed
ESC C	<1B>H<43>H<n>	Set page length
ESC N	<1B>H<4E>H<n>	n line skip perforation command
ESC O	<1B>H<4F>H	Cancel skip perforation command
ESC P	<1B>H<50>H<n>	Select full-cut / partial-cut
ESC f	<1B>H<66>H	Form feed
FS	<1C>H	1st drawer drive command

EMULATION VERIFONE 900

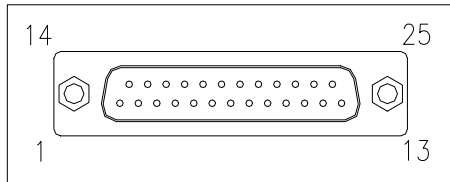
Command	Hex Code	Description
NUL	<00>H	Pad character
CAN	<18>H	Empty print buffer and cancel character attributes
LF	<0A>H	Print and feed one line
FF	<0C>H	Print data in buffer and eject paper to 1.2
CR	<0D>H	Line feed
DC2	<12>H	Change ribbon color
RS	<1E>H	Set double width mode or
SO	<0E>H	Select high page mode
US	<1F>H	Set normal width mode or
SI	<0F>H	Select ASCII character set
ESC a	<1B>H<61>H<n>	Set line height to n dots
ESC b	<1B>H<62>H<n>	Eject paper n lines
ESC c	<1B>H<63>H	Reset printer to power-up state
ESC d	<1B>H<64>H	Request printer status
ESC e	<1B>H<65>H<n>	Set right margin
ESC f	<1B>H<66>H<n>	Select line attributes
ESC g	<1B>H<67>H	Activate graphic mode
ESC h	<1B>H<68>H	Select character set
ESC I	<1B>H<69>H	Printer identification
ESC x	<1B>H<78>H	Enter P900R emulation mode
FS	<1C>H	Enter P250 emulation mode
GS	<1D>H	Enter P200 emulation mode

EMULATION STAR SP200

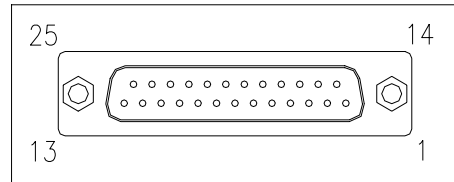
Command	Hex Code	Description
BEL	<07>H	Differed drive command “ A” for peripheral unit (Default setting)
CAN	<18>H	Cancel print data in buffer
LF	<0A>H	Line feed
CR	<0D>H	Line feed (same as LF)
SO	<0E>H	Select expanded character mode
SI	<0F>H	Cancel expanded character mode
FS	<1C>H	Immediate drive command “ B” for peripheral unit 1
DC4	<14>H	Cancel expanded character mode
ESC BEL n1 n2	<1B>H<07>H<n1> <n2>	Adjust drive pulse width for peripheral unit (Default setting)
ESC @	<1B>H<40>H	Initialize printer
ESC M	<1B>H<4D>H	Select 7 x 7 (Half dots) character size (Default setting)
ESC R n	<1B>H<52>H<n>	Select international character set
ESC P	<1B>H<50>H	Select 9 x 7 (Half dots) character size
ESC W 1	<1B>H<57>H<31> H<1B>H<57>H<1>	Select expanded character mode
ESC W 0	<1B>H<57>H<37> H<1B>H<57>H<0>	Cancel expanded character mode
ESC a n	<1B>H<61>H<n>	Feed paper n lines

Interface

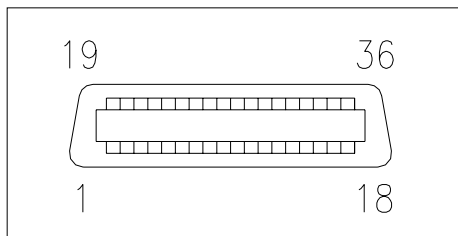
The tables below describe the type of socket and the function of each pin.



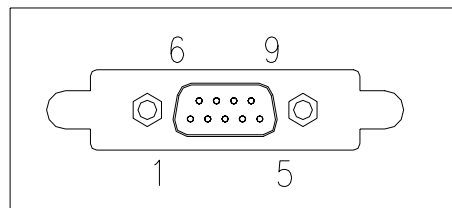
<D-SUB 25 Female Serial Port>



<D-SUB 25 Male Parallel Port>



<D-SUB Centronics Parallel Port>



<D-SUB 9 Female Serial>

1. Serial interface

1.1 D-SUB 25Pin Serial Port

PIN	SIGNAL	I/O	DESCRIPTION
2	TXD	Output	Printer transmit data line RS-232C level
3	RXD	Input	Printer receive data line RS-232C level
4, 20	DTR	Output	Printer handshake to host line RS-232C level
6	DSR	Input	Data Send Ready
1, 7	GND	-	System Ground

1.2 D-SUB 9Pin Serial Port

PIN	SIGNAL	I/O	DESCRIPTION
2	RXD	Input	Printer receive data line RS-232C level
3	TXD	Output	Printer transmit data line RS-232C level
4, 7	DTR	Output	Printer handshake to host line RS-232C level
5	GND	-	System Ground
6	DSR	Input	Data Send Ready
1,8,9	NC	-	

2.Parallel interface

2.1 D-SUB 25Pin Parallel Port

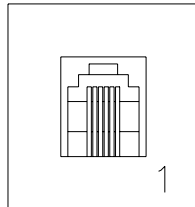
PIN	SIGNAL	I/O	DESCRIPTION
1	STROBE-	Input	Synchronize signal Data received
2-9	DATA0-7	Input	Data bit Transmitted 0 - 7
10	ACK-	Output	Data receiving competed
11	BUSY	Output	Impossible to printer data receiving
12	PE	Output	Paper empty
13	SELECT	Output	Printer' s status for ON/OFF line
14	AUTO FD-	Input	No connection
15	ERROR-	Output	Printer error
16	INIT-	Input	Initialize
17	SELECT IN-	Input	No connection
18-25	GROUND	-	System Ground

2.2 Centronics Parallel Port

PIN	SIGNAL	I/O	DESCRIPTION
1	STROBE-	Input	Synchronize signal Data received
2-9	DATA0-7	Input	Data bit Transmitted 0 - 7
10	ACK-	Output	Data receiving competed
11	BUSY	Output	Impossible to printer data receiving
12	PE	Output	Paper empty
13	SELECT	Output	Printer' s status for ON/OFF line
14	AUTO FEED-	Input	ND
15	GROUND	-	System Ground
16	GROUND	-	System Ground
17	NC	-	
18	LOGIC-H	-	+5V
19-30	GROUND	-	System Ground
31	INIT-	Input	Initialize
32	ERROR-	Output	Printer Error
33	GROUND	-	System Ground
34	NC	-	
35	+5V	-	+5V
36	SELLECT IN-	Input	ND

Cash Drawer Connector

The XR-200 can operate two cash drawers with a 6 pin RJ-11 modular connector. The driver is capable of supplying a maximum current of 1.0A for 510 ms or less, when not printing.



<Cash Drawer Connector>

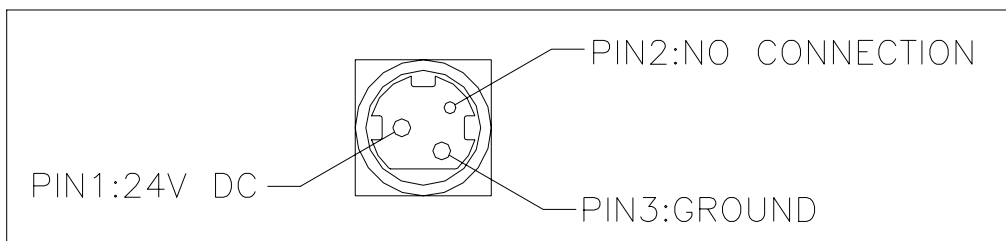
PIN	SIGNAL	DESCRIPTION
1	Signal GND	-
2	Drawer kick-out drive signal 1	Output
3	Drawer open/close signal	Input
4	+24V	-
5	Drawer kick-out drive signal 2	Output
6	Signal GND	-

Electrical Specifications

The XR-200 requires a power supply with the following parameters. A linear power Adapter is included in the XR-200 box.

Power Supply Voltage : 24VDC±10%

Power Supply Current : 2.5 A



<Power Supply Connector>

Dip Switch Settings

This table gives the definition for the DIP switch settings.

	Function	Setting	SW3										SW4	
			1	2	3	4	5	6	7	8	9	10	1	2
S E R I A L	Emulation	Epson TM-U200 Citizen iDP3540 Verifone P900 Star SP200	OFF ON OFF ON	OFF OFF ON ON										
	CR Character	CR=CR Only CR=CR + LF			OFF ON									
	CPL	40/33 Char/Line 42/35 Char/Line				OFF ON								
	Flow Control	Xon/Xoff DTR/DSR					ON OFF							
	Baud Rate	38400 19200 9600 4800 2400 1200 600 300						OFF ON OFF ON OFF ON OFF ON ON	OFF OFF ON OFF ON ON	OFF OFF OFF ON ON ON				
	Data Bits/Parity	8 Bits None 7 Bits Odd 7 Bits Even										- OFF ON	OFF ON ON	
	Cutter	Not Install Install												OFF ON
	2Color	Not Install Install												
P A R A L L E L	Emulation	Epson TM-U200 Citizen iDP3540	OFF ON	OFF OFF										
	CR Character	CR=CR Only CR=CR + LF			OFF ON									
	CPL	40/33 Char/Line 42/35 Char/Line				OFF ON								
	Cutter	Not Install Install							OFF ON					
	2 Color	Not Install Install								OFF ON				

