Samsung SRP-350 Thermal Receipt Printer

Integrator's Manual

Contents

CRS, Inc.

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# Driver Installation Information

Overview

If your POS software requires a generic printer driver, you must make the appropriate driver settings for auto cut and cash drawer opening.

If you are using one of the SRP-350 drivers the generic driver settings shown here do not apply. The appropriate SRP-350 drivers operate the cutter and cash drawer automatically.

Windows 98 SRP-350 Driver Installation

You can download the compressed SRP-350 driver, 350_130_2K.zip, from the dealer area of the CRS site, www.crs-usa.com. Unzip (extract) the file SRP350.drv.

1. Select **Start**, then **Settings**, and then **Printers**.

2. From the printers dialog, right click the **Add Printer** icon.

3. From the Add Printer wizard window, click **Next**.

4. Choose **Local Printer**, click **Next**.

5. Click the **Have Disk** command button. From the Install From Disk dialog box, click the **Browse** button to locate the driver file SRP350.drv. Click **OK**. The wizard displays the list of available drivers for the SRP-350.
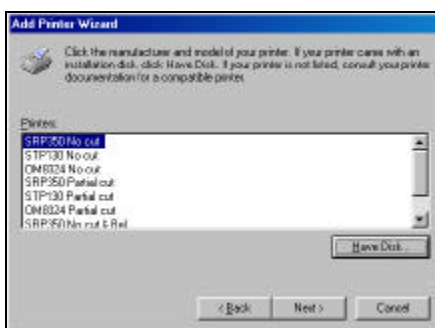
6. Select a driver from the table that follows and click **Next**.

Driver	Description
SRP350 No cut	Use with SRP350 – no paper cut
STP130 No cut	Do not use
OM8324 No cut	Do not use
SRP350 Partial cut	Use with SRP350 – partial paper cut
STP130 Partial cut	Do not use
OM8324 Partial cut	Do not use
SRP350 No cut & Bel	Use with SRP350 – no paper cut and sounds auto paper beep when data is sent to printer – requires version 1.19B EPROM installed in SRP350.
SRP350 Partial cut & Bel	Use with SRP350 – partial paper cut and sounds auto paper beep when data is sent to printer – requires version 1.19B EPROM installed in SRP350.

7. Select the port to which the printer will be connected and click **Next**.

8. Enter a printer name and select whether you want your windows based program to use this printer as the default printer. Click **Next**.

9. Select whether you wish to print a test page and click **Finish**. The printer driver installation is complete.

Windows 98 Generic / Text Driver Settings

1. Select **Start**, then **Settings**, and then **Printers**.

2. From the printers dialog, right click the **Generic / Text Only** driver and choose **Properties**.

3. From the Generic / Text Only dialog box, click the **Device Options** tab:

Cash Drawer Command
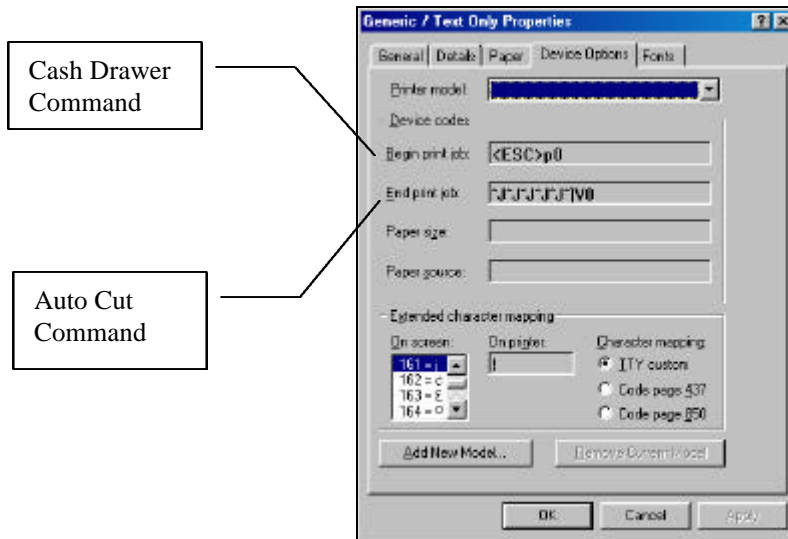
Auto Cut Command

4. For the cash drawer command, in the **Begin Print** Job field:
   Type: ESC (<ESC> will display)
   Type: p (lower case)
   Type: 0 (drawer 1) *or* 1 (drawer 2)
   Type: 25 (on time)
   Type: 125 (off time)

5. For the auto cut command, in the **End print Job** field:
   Press ALT and type: 0010 (line feed) :
   Press ALT and type: 0010 (line feed) :
   Press ALT and type: 0010 (line feed) :
   Press ALT and type: 0010 (line feed) :
   Press ALT and type: 0010 (line feed)
   Press ALT and type: 0029 (GS) :
   Press ALT and type: 0086 (V) :
   Press ALT and type: 0001 (ASCII 01)

   > **NOTE:**
   > To enter these commands, it may be necessary to activate the Num Lock and use the 10-key pad on your keyboard.

6. Click **OK** to save the new settings.

Windows 2000 Generic / Text Driver Settings

1. Click the **Start button**, and then choose **Settings**, and then choose **Printers**.

2. From the printers dialog, right click the **Generic / Text Only** driver and choose **Properties**.

3. From the Generic / Text Only dialog box, click the **Printer Commands** tab:

Cash Drawer Command

Auto Cut Command

Generic / Text Only Properties	? X

General | Sharing | Ports | Advanced | Security
Device Settings | Printer Commands | Font Selection

Begin Print Job `<1B>p<00>`

End Print Job `<1B>m`

Paper Size Select

Paper Feed Selection

Unprintable Margins

Left `0`   Top `0`

Right `0`   Bottom `0`

Units
- ○ 0.01 inches
- ● 0.1 millimeters

OK | Cancel | Apply

4. For the cash drawer command, in the **Begin Print Job** field:
   Type: "<1B>p<00>"

5. For the auto cut command, in the **End print Job** field:
   Type: "<1B>m"

6. Click **OK** to save the new settings.

> **NOTE:**
> To enter these commands, it may be necessary to activate the Num Lock and use the 10-key pad on your keyboard.

Windows XP Generic / Text Driver Settings

1. Click the **Start button**, and then choose **Printers and Faxes**.

2. From the printers dialog, right click the **Generic / Text Only** driver and choose **Properties**.

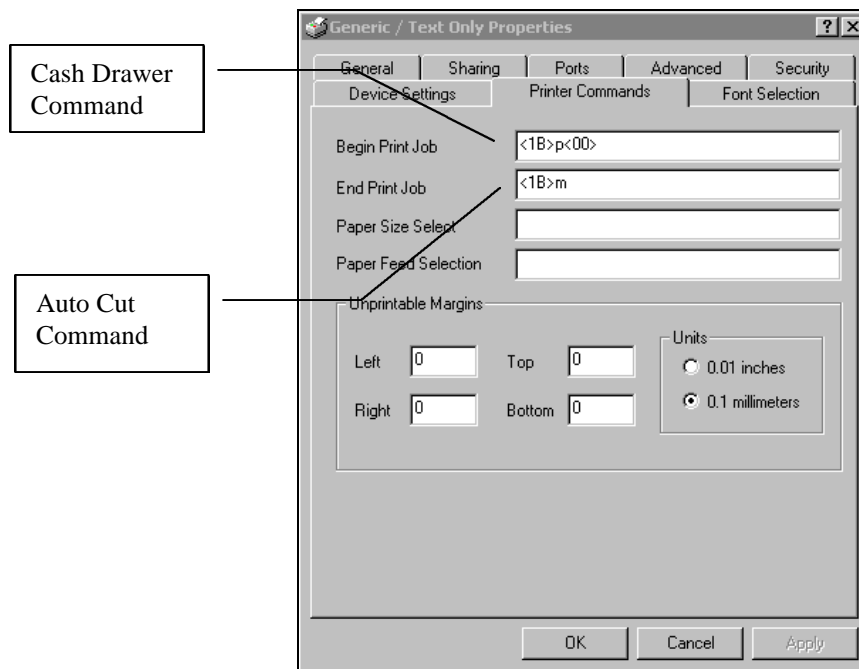3. From the Generic / Text Only dialog box, click the **Printer Commands** tab:

Cash Drawer Command
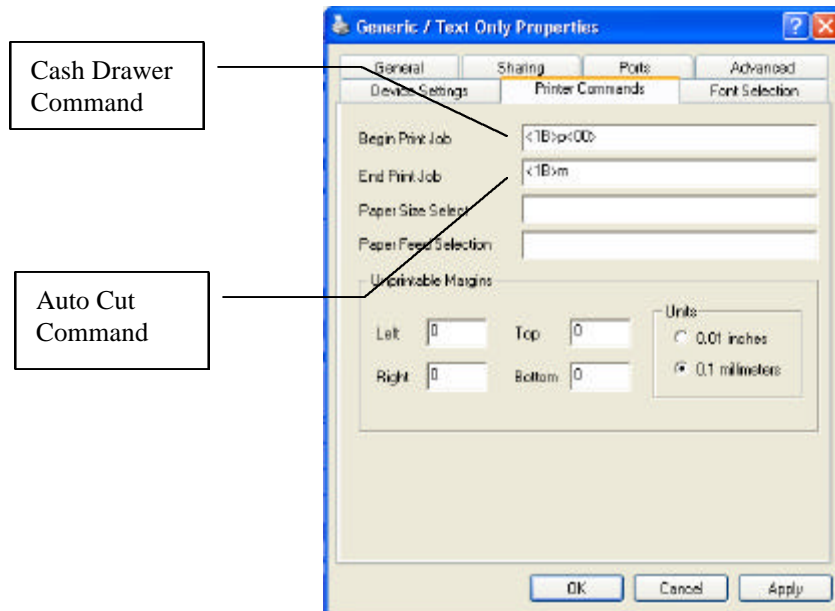
Auto Cut Command

4. For the cash drawer command, in the **Begin Print Job** field:
   Type: "<1B>p<00>"

5. For the auto cut command, in the **End print Job** field:
   Type: "<1B>m"

6. Click **OK** to save the new settings.

NOTE:
To enter these commands, it may be necessary to activate the Num Lock and use the 10-key pad on your keyboard.

Logo Setup

Design & Save Bitmap in Microsoft Paint

Maximum horizontal pixels = 512.

1. Set Bit Map size:
   - Select IMAGE
   - Select ATTRIBUTES
   - Set Units = PELS
   - Set Colors = Black and White
   - Enter the width and height of the bit map. Values must be in multiples of 8 (per above Bit Map file specifications).
2. Design the Bit Map Image.
3. Prior to saving the Bit Map Image:
   - Select IMAGE
   - Select INVERT COLORS

   Then:
   - Select IMAGE
   - Select FLIP/ROTATE
   - Select ROTATE BY ANGLE
   - Select 90 DEGREES repeat two more times to obtain a rotation of 270 degrees in total.
4. Save the Bit Map Image.

Example: Image To Print (Created In Paint Brush)

Image As Saved

Download Bitmap to SRP-350 from a PC

The Windows application program BmpLogo.exe is used to send a bitmap to the flash ROM of the SRP-350 POS printer.

The application is available from the dealer area of the CRS web site, www.crs-usa.com.

This program will work with Windows 95\98, and Windows 2000 (only with file system FAT32). In Parallel mode, the program will only work in bi-directional\EPP mode. The program will not work in ECP mode. This mode can be changed in CMOS.

1. Start the BmpLogo application. (Click **Start**, and then **Run**. Type the path and program name into the Open field; click **OK**. Alternatively you can launch the application by double-clicking on the file in Windows Explorer.) The application displays with the **Setup** tab in the forefront.
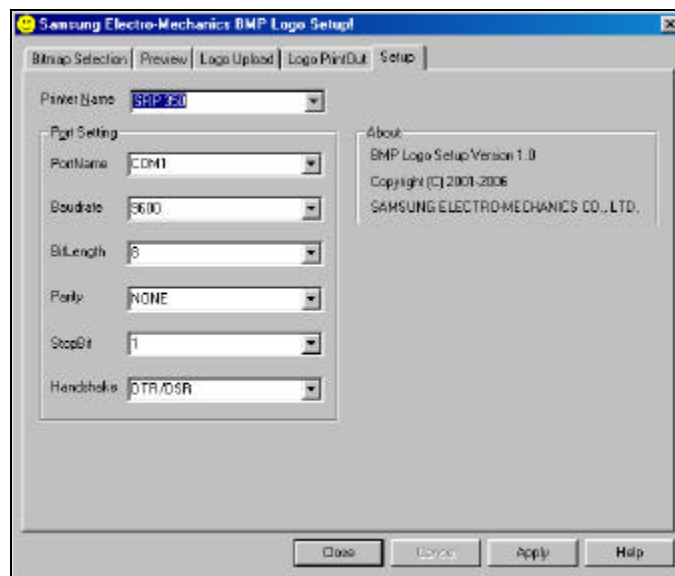
2. Select the port to which the SRP350 is connected, and then fill the remaining fields to match the settings on the SRP350. Use the table below as a guide:

Option	BmpLogo Program Setting	SRP350 Dip Switch Setting
Baud rate	9600	SW1 #7=ON; #8=OFF
Bit length	8	SW1 #4=OFF
Parity	NONE	SW1 #5=OFF
Stop Bit	1	SW1 #6=OFF
Handshake	DTR/DSR	SW1 #3=OFF

3. Click the **Bitmap Selection** tab.
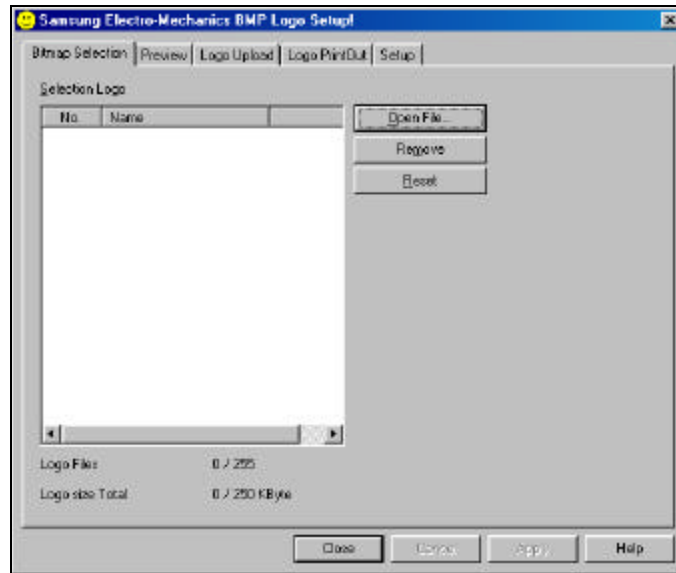
4. Click the **Open File** command button. Select the path and document name of the bitmap file you wish to upload to the SRP350 printer.

5. Click the **Logo Upload** tab.
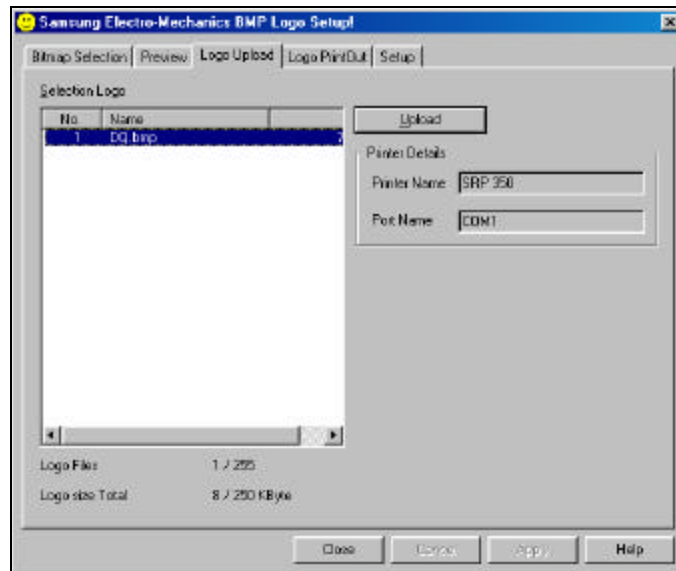
6. Select the bitmap file you wish to upload and click the **Upload** command button.

7. Click **Close** to exit the program.

Upgrade Instructions

Downloading Procedure for SRP-350 Printer Software

1. Turn off the printer.

2. Set the SW2 DIP switch 2-3 to **ON** position.

3. Connect the printer to PC with a standard Parallel cable. If using a serial connection, use the cable described below.

4. Open the printer cover.

5. Press the paper feed key and turn on the printer while holding down the feed key.

6. Execute the 350loade.exe. You must input the number for type of interface, **3** for parallel (lpt1) downloading.

7. Enter the binary file name you want to download. Example: 350v120.bin.

8. You should see download status scroll on your PC screen.

9. Download complete.

10. Turn off printer and set SW2 DIP switch 2-3 to **OFF** position.

11. Turn on printer and check version and operation.

PC DB-9F			Printer DB-25M
DCD	1	1	NC
RXD	2	2	TXD
TXD	3	3	RXD
DTR	4	4	RTS
GND	5	5	CTS
DSR	6	6	DSR
RTS	7	7	GND
CTS	8	8	CD
VCC	9	20	DTR
		22	

Serial Printer Cable

PC-POS   SRP-350

CRS Part No. 250030

Hexadecimal Dumping

Overview

This feature allows experienced users to see exactly what data is coming to the printer. This can be useful in finding software problems. When you turn on the hexadecimal dump function, the printer prints all commands and data in hexadecimal format along with a guide section to help you find specific commands.

SRP-350 Hexadecimal Dump

To use the hexadecimal dump function, follow these steps:

1. After you make sure that the printer is off, open the cover.

2. Turn on the printer while holding down the feed button.

3. Close the cover. The printer is in the hexadecimal dump mode.

4. Run any software program that sends data to the printer. The printer will print all the codes it receives in a two-column format. The first column contains the hexadecimal codes and the second column gives the ASCII characters that correspond to the codes.

5. When the printing finishes, turn off the printer.

6. Turn on the printer. Hexadecimal mode is OFF.

Epson TM-T88 Hexadecimal Dump

It may be useful to compare hexadecimal dumps with a known printer, such as the Epson TM-T88. To print a hexadecimal dump on the TM-T88:

1. Make sure the printer is off and open the cover.

2. Hold down the FEED button while you turn on the printer.

3. Close the cover.

4. Run any program the sends data to the printer – the hexadecimal dump will print.

5. Open the cover to set the printer off line so that it will print the last line.

6. Close the cover and turn off the printer or reset it to turn off the hex dump mode.

Hexadecimal Dump Sample Printout

The sample "No Sale" transaction below is also shown in the two-column hexadecimal dump format on the right.

The first column contains the hexadecimal codes.

The second column gist the ASCII characters that correspond to the codes.

- A period is printed for each code that has no ASCII equivalent.

- During the hex dump, all commands except **DLE EOT** and **DLE ENG** are disabled.

```
      2087 NORTH SNELLING AVENUE

          NO SALE          0.00


0160 STA#  1    DRIVE OT      MAY.29,2002
     #050       CRS              13:45

          THANK YOU !
          COME AGAIN.
```

```
HEXADECIMAL DUMP
If You Want To Exit Hexadecimal Dump
Press FEED Button Three Times


1B 21 00 20 20 20 20 20 20 20      .!.
20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 20 20
20 20 20 0D 0A 1B 21 00 20 20       ...!.
20 20 20 20 20 32 30 38 37 20         2087
4E 4F 52 54 48 20 53 4E 45 4C   NORTH SNEL
4C 49 4E 47 20 41 56 45 4E 55   LING AVENU
45 20 20 20 20 20 20 20 0D 0A   E         ..
1B 21 00 20 0D 0A 1B 21 00 20   .!. ...!.
20 20 20 20 20 20 20 20 20 20
4E 4F 20 53 41 4C 45 20 20 20   NO SALE
20 20 20 20 20 20 20 30 2E 30          0.0
30 0D 0A 1B 21 00 20 0D 0A 1B   0...!. ...
21 00 20 0D 0A 1B 21 00 30 31   !. ...!.01
36 31 20 53 54 41 23 20 20 31   61 STA#  1
20 20 20 44 52 49 56 45 20 4F     DRIVE O
54 20 20 20 20 20 20 4D 41 59   T      MAY
2E 32 39 2C 32 30 30 32 0D 0A   .29,2002..
1B 21 00 20 20 20 20 20 23 30   .!.    #0
35 30 20 20 20 20 20 20 43 52   50       CR
53 20 20 20 20 20 20 20 20 20   S
20 20 31 33 3A 34 36 0D 0A 1B      13:46...
21 00 20 0D 0A 1B 21 00 20 20   !. ...!.
20 20 20 20 20 20 20 20 20 54            T
48 41 4E 4B 20 59 4F 55 20 21   HANK YOU !
20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 0D 0A          ..
1B 21 00 20 20 20 20 20 20 20   .!.
20 20 20 20 43 4F 4D 45 20 41       COME A
47 41 49 4E 2E 20 20 20 20 20   GAIN.
20 20 20 20 20 20 20 20 20 20
20 20 20 0D 0A 0A 0A 0A 0A 0A       .......
0A 0A 0A 0A 0A 1B 69 1B 63 34   ......i.c4


01 0D 05                        .  ...
```

Troubleshooting

If you are connecting an SRP-350 to a specific software application for the first time, you may encounter printing differences from a printer model you are currently supporting. You can isolate the commands causing the print difference by comparing hex dumps from a working printer the printer with a problem print format. For example, receipts and the corresponding hex dumps from two printers, the Samsung SRP-350 and the Epson TM-T88 are shown below:

SRP-350 Receipt & Hex Dump

```
          2087 NORTH SNELLING AVENUE

              NO SALE           0.00


    0160 STA#   1    DRIVE OT      MAY.29,2002
         #050         CRS          13:45

              THANK YOU !
              COME AGAIN.
```

TM-T88 Receipt & Hex Dump

```
          2087 NORTH SNELLING AVENUE

              NO SALE           0.00


    0160 STA#   1    DRIVE OT      MAY.29,2002
         #050         CRS          13:45

              THANK YOU !
              COME AGAIN.
```

```
1B 21 00 20 20 20 20 20 20 20    .!.
20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 20 20
20 20 20 0D 0A 1B 21 00 20 20       ...!.
20 20 20 20 20 32 30 38 37 20         2087
4E 4F 52 54 48 20 53 4E 45 4C    NORTH SNEL
4C 49 4E 47 20 41 56 45 4E 55    LING AVENU
45 20 20 20 20 20 20 20 0D 0A    E         ..
1B 21 00 20 0D 0A 1B 21 00 20    .!. ...!.
20 20 20 20 20 20 20 20 20 20
4E 4F 20 53 41 4C 45 20 20 20    NO SALE
20 20 20 20 20 20 20 30 2E 30             0.0
30 0D 0A 1B 21 00 20 0D 0A 1B    0...!. ...
21 00 20 0D 0A 1B 21 00 30 31    !. ...!.01
36 31 20 53 54 41 23 20 20 31    61 STA#   1
20 20 20 44 52 49 56 45 20 4F       DRIVE O
54 20 20 20 20 20 20 4D 41 59    T       MAY
2E 32 39 2C 32 30 30 32 0D 0A    .29,2002..
1B 21 00 20 20 20 20 20 23 30    .!.      #0
35 30 20 20 20 20 20 43 52 52    50       CR
53 20 20 20 20 20 20 20 20 20    S
20 20 31 33 3A 34 36 0D 0A 1B       13:46...
21 00 20 0D 0A 1B 21 00 20 20    !. ...!.
20 20 20 20 20 20 20 20 20 54             T
48 41 4E 4B 20 59 4F 55 20 21    HANK YOU !
20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 0D 0A             ..
1B 21 00 20 20 20 20 20 20 20    .!.
20 20 20 20 43 4F 4D 45 20 41        COME A
47 41 49 4E 2E 20 20 20 20 20    GAIN.
20 20 20 20 20 20 20 20 20 20
20 20 20 0D 0A 0A 0A 0A 0A 0A       .......
0A 0A 0A 0A 0A 1B 69 1B 63 34    ......i.c4
```

```
1B 21 00 20 20 20 20 20 20 20    .!.
20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 20 20
20 20 20 0D 0A 1B 21 00 20 20       ...!.
20 20 20 20 20 32 30 38 37 20         2087
4E 4F 52 54 48 20 53 4E 45 4C    NORTH SNEL
4C 49 4E 47 20 41 56 45 4E 55    LING AVENU
45 20 20 20 20 20 20 20 0D 0A    E         ..
1B 21 00 20 0D 0A 1B 21 00 20    .!. ...!.
20 20 20 20 20 20 20 20 20 20
4E 4F 20 53 41 4C 45 20 20 20    NO SALE
20 20 20 20 20 20 20 30 2E 30             0.0
30 0D 0A 1B 21 00 20 0D 0A 1B    0...!. ...
21 00 20 0D 0A 1B 21 00 30 31    !. ...!.01
36 31 20 53 54 41 23 20 20 31    61 STA#   1
20 20 20 44 52 49 56 45 20 4F       DRIVE O
54 20 20 20 20 20 20 4D 41 59    T       MAY
2E 32 39 2C 32 30 30 32 0D 0A    .29,2002..
1B 21 00 20 20 20 20 20 23 30    .!.      #0
35 30 20 20 20 20 20 43 52 52    50       CR
53 20 20 20 20 20 20 20 20 20    S
20 20 31 33 3A 34 36 0D 0A 1B       13:46...
21 00 20 0D 0A 1B 21 00 20 20    !. ...!.
20 20 20 20 20 20 20 20 20 54             T
48 41 4E 4B 20 59 4F 55 20 21    HANK YOU !
20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 0D 0A             ..
1B 21 00 20 20 20 20 20 20 20    .!.
20 20 20 20 43 4F 4D 45 20 41        COME A
47 41 49 4E 2E 20 20 20 20 20    GAIN.
20 20 20 20 20 20 20 20 20 20
20 20 20 0D 0A 0A 0A 0A 0A 0A       .......
0A 0A 0A 0A 0A 1B 69 1B 63 34    ......i.c4
```

Cash Drawer

Generate Pulse Command

ESC p m t1 t2

[Name]	Generate Pulse
[Format]	ASCII ESC p m t1 t2
	Hex 1B 70 m t1 t2
	Decimal 27 112 m t1 t2
[Range]	m = 0, 1, 48, 49
	$0 \leq t1 \leq 255, 0 \leq t2 \leq 255$
[Description]	Outputs the pulse specified by t1 & t2 to connector pin m as follows:

m	Connector pin
0,48	Drawer kick-out connector pin 2
0,49	Drawer kick-out connector pin 5

Connection Information

SRP 350 to CRS Cash Drawer (Drawer #1)

SRP 350			CRS Cash Drawer	
Description	Pi		Pin	Description
Frame ground	1		1 (blue)	Frame ground
Drawer kick-out drive signal 1	2		2 (yellow)	Solenoid
Drawer open/close signal	3		3 (green)	Drawer open switch
+24V	4		4 (red)	Solenoid
Drawer kick-out drive signal 2	5		5 (black)	Not used
Signal ground	6		6 (white)	Drawer open switch

SRP 350 to CRS Cash Drawer (Drawer #2)

SRP 350			CRS Cash Drawer	
Description	Pi		Pin	Description
Frame ground	1		1 (blue)	Frame ground
Drawer kick-out drive signal 1	2		2 (yellow)	Solenoid
Drawer open/close signal	3		3 (green)	Drawer open switch
+24V	4		4 (red)	Solenoid
Drawer kick-out drive signal 2	5		5 (black)	Not used
Signal ground	6		6 (white)	Drawer open switch

Wall Mount Option

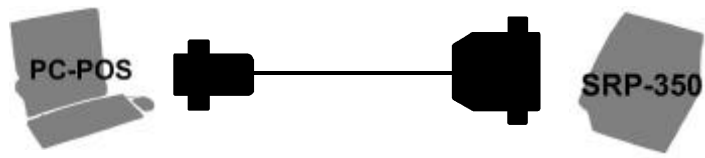## Downloading Procedure for SRP-350 Wall Mount Printer Software

This special software version is for use when wall-mounting the SRP-350 printer. The Paper near end sensor has been disabled in this special version.

Note: Part Number for Wall Mount Bracket is 101218.

1. Turn off the printer.
2. Set the SW2 DIP switch 2-3 to **ON** position.
3. Connect the printer to PC with a standard Parallel printer cable. If using a serial connection use the cable described below.
4. Open the printer cover.
5. Press the paper feed key and turn on the printer while holding down the feed key.
6. Execute the 350loade.exe. You must input the number for type of interface, **3** for parallel (lpt1) downloading.
7. Enter the binary file name you want to download. Example: 350_wall.bin.
8. You should see download status scroll on your PC screen.
9. Download complete.
10. Turn off printer and set SW2 DIP switch 2-3 to **OFF** position.
11. Turn on printer and check version and operation.

PC DB-9F			Printer DB-25M
DCD	1	1	NC
RXD	2	2	TXD
TXD	3	3	RXD
DTR	4	4	RTS
GND	5	5	CTS
DSR	6	6	DSR
RTS	7	7	GND
CTS	8	8	CD
VCC	9	20	DTR
		22	

Serial Printer Cable

PC-POS

SRP-350

CRS Part No. 250030

Special Application Firmware

Overview

Special application firmware can be downloaded from www.crs-usa.com.

SRP350 version 1.20 Wall

This version is to be used with the WALL MOUNT. Wall mount part number is 101218.

SRP350 version 1.20 Speed

This version is to be used when a faster serial printing is required when using a windows driver.

SRP350 version 1.20 Beep

This version will beep 3 times after each print job.

SRP350 version 1.20 CRLF

This version has an option to automatically add a LF after a CR.