



J2 Virtual Customer Display Software

Software Manual



May 2013

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Change history

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Software Manual J2 Virtual Customer Display
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Overview

The J2 Virtual Customer Display (VCD) program was written for customers that want to use their current POS software that only supports character customer displays but still wish use a large secondary screen for advertising as well a large format customer display. This software provides this function.

The software emulates a standard serial port 2x20 line VFD/LCM customer display. Customer display data is written to a serial port just as it would be when using a normal VFD or LCD customer display. The display information is then written to a display box on the LCD customer display. The data may be written directly to the VCD virtual serial port or the standard J2 OPOS driver can be used.

The display can be used in a pop up mode or always on display mode. In the always on display mode the software displays a box on the customer display with the rest of the display available for advertising or upselling content. In the pop up mode if the customer display data is blank (no displayable characters) the display windows will disappear making the whole display available for advertising or upselling content. Once any information is sent to the customer display the display windows will pop up displaying the customer display information from the software application.

The advertising or upselling content can be as simple as a Windows picture slide show file, PowerPoint created slide show, video file or third party advertising software. The key is the advertising software runs in the background to POS application so the two are totally independent of each other.

This is a way to add advertising content without any modification to existing POS applications as long as it supports a standard 2X20 display. Other display sizes can be supported as well such as 4x20 or most any other size. Contact J2 if other options are needed.

Of course the best way to support advertising or upselling content is to have it integrated into the POS application software but the J2 Virtual Customer Display software can provide an alternative method at no additional cost to J2 customers.

Software Design

The J2 Virtual Customer Display (VCD) software is broken up into three modules. The first module is the J2 Virtual Serial Port program that installs the virtual serial port driver VCD will use. The second is the J2 Virtual Customer Display Configuration program that allows for setting of the options for the VCD and installs the VCD driver. The third is the J2 VCD driver itself.

Installation

To install the J2 VCD please download the J2 Virtual Port Setup the J2 Virtual Customer Setup software from the J2 Support web site.

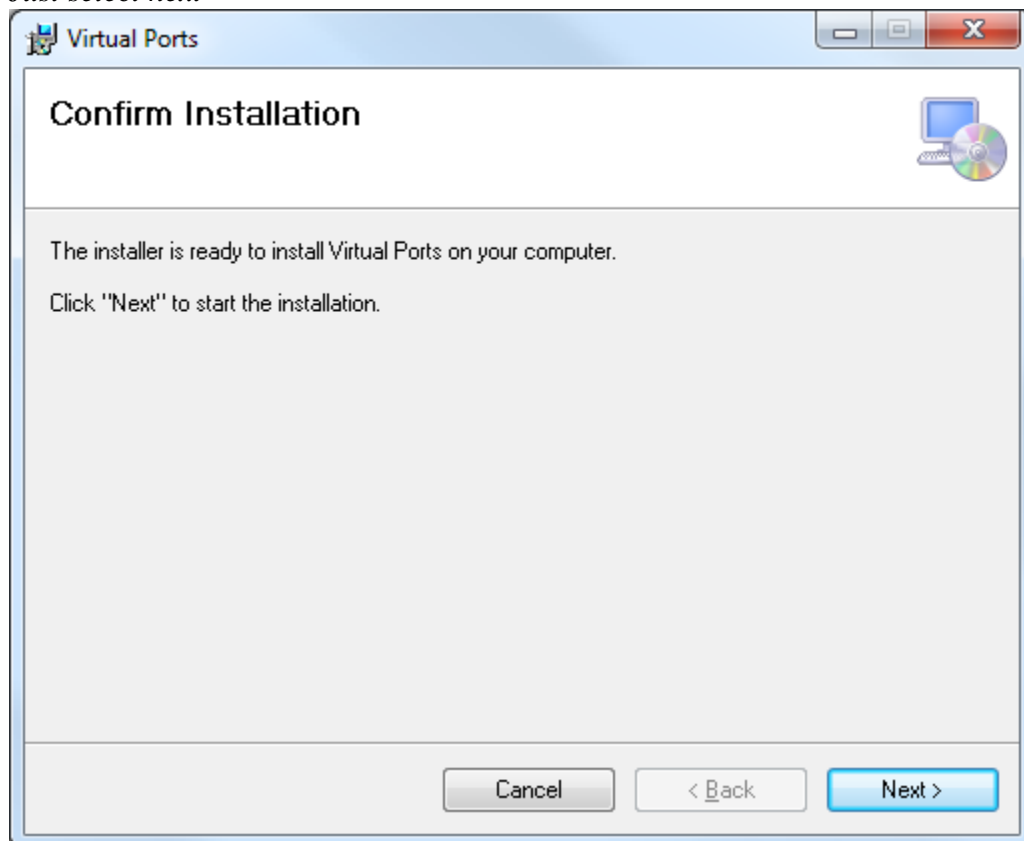
The web sites address is: <http://support.j2rs.com/>

Once the software is downloaded run J2 Virtual Port Setup then J2 Virtual Customer Setup to install the software as described in the next sections.

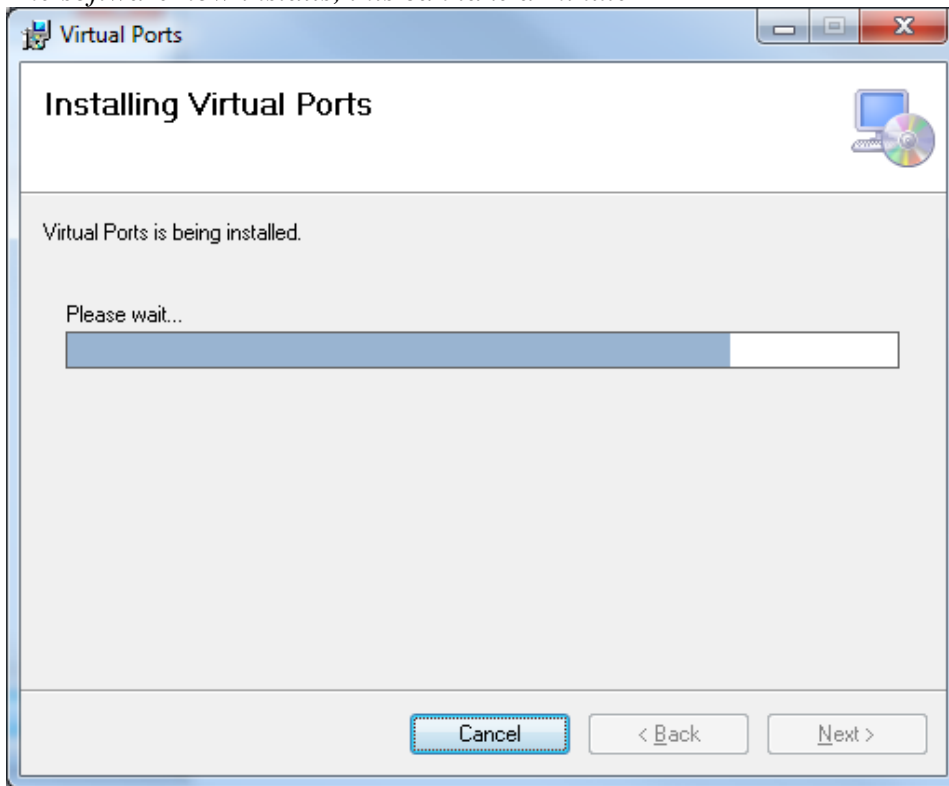
J2 Virtual Port Setup

After downloading the setup file run it on the system you wish to install the software on. The setup can be run from the zip file without extracting.

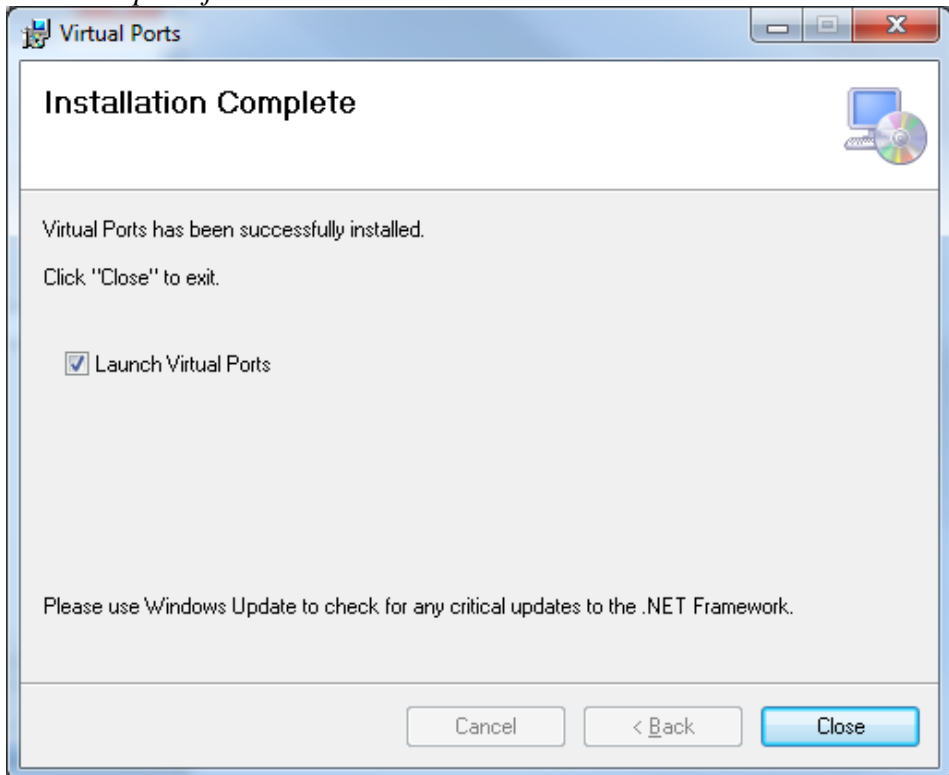
Just select next



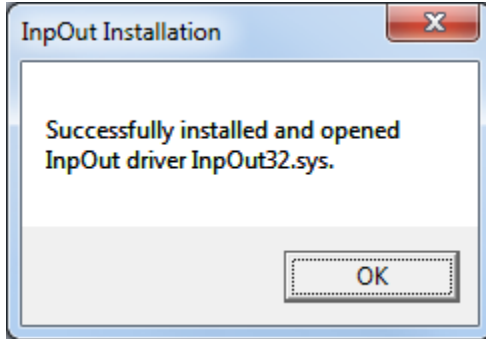
The software now installs, this can take a minute



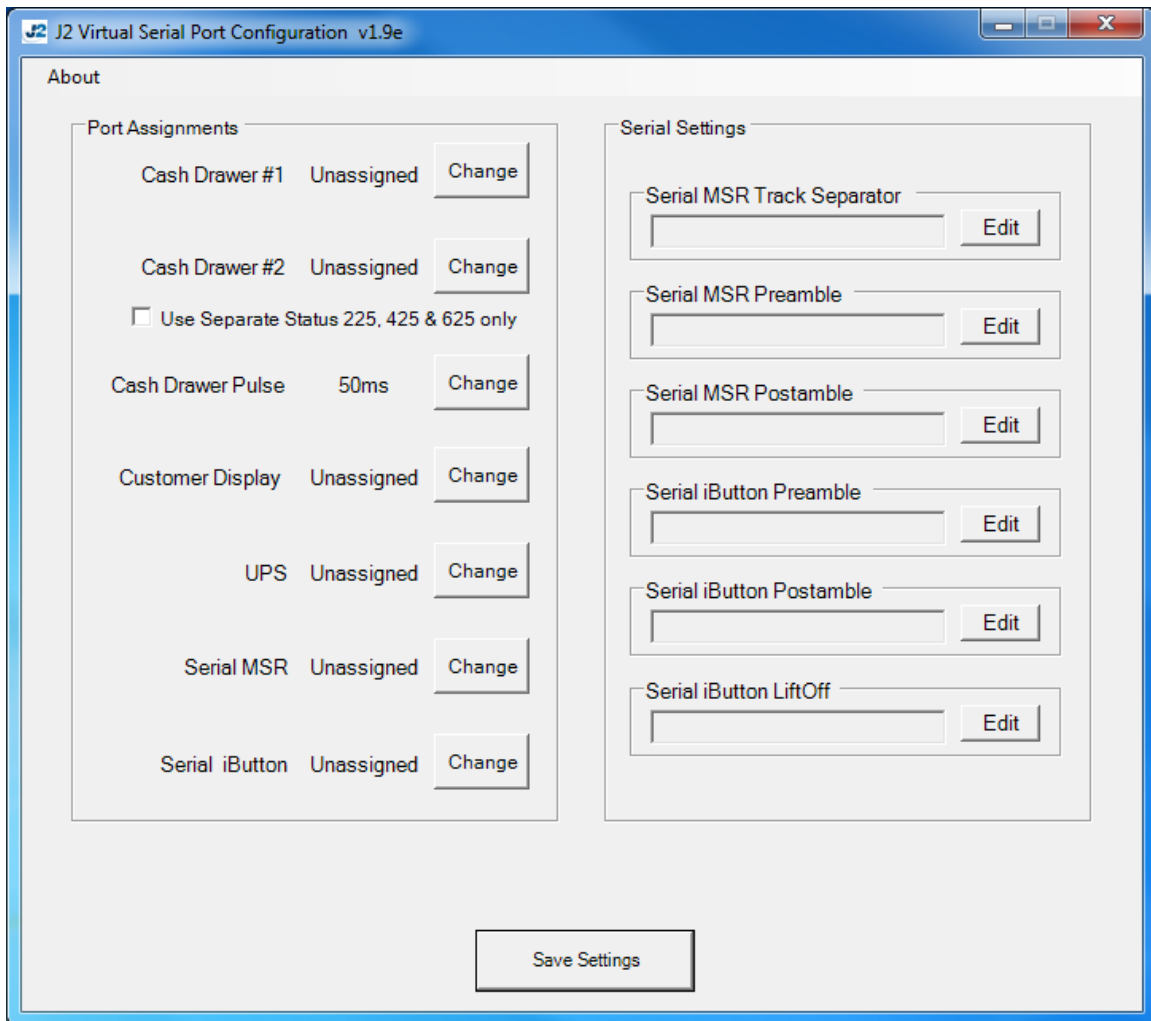
Once complete just select close



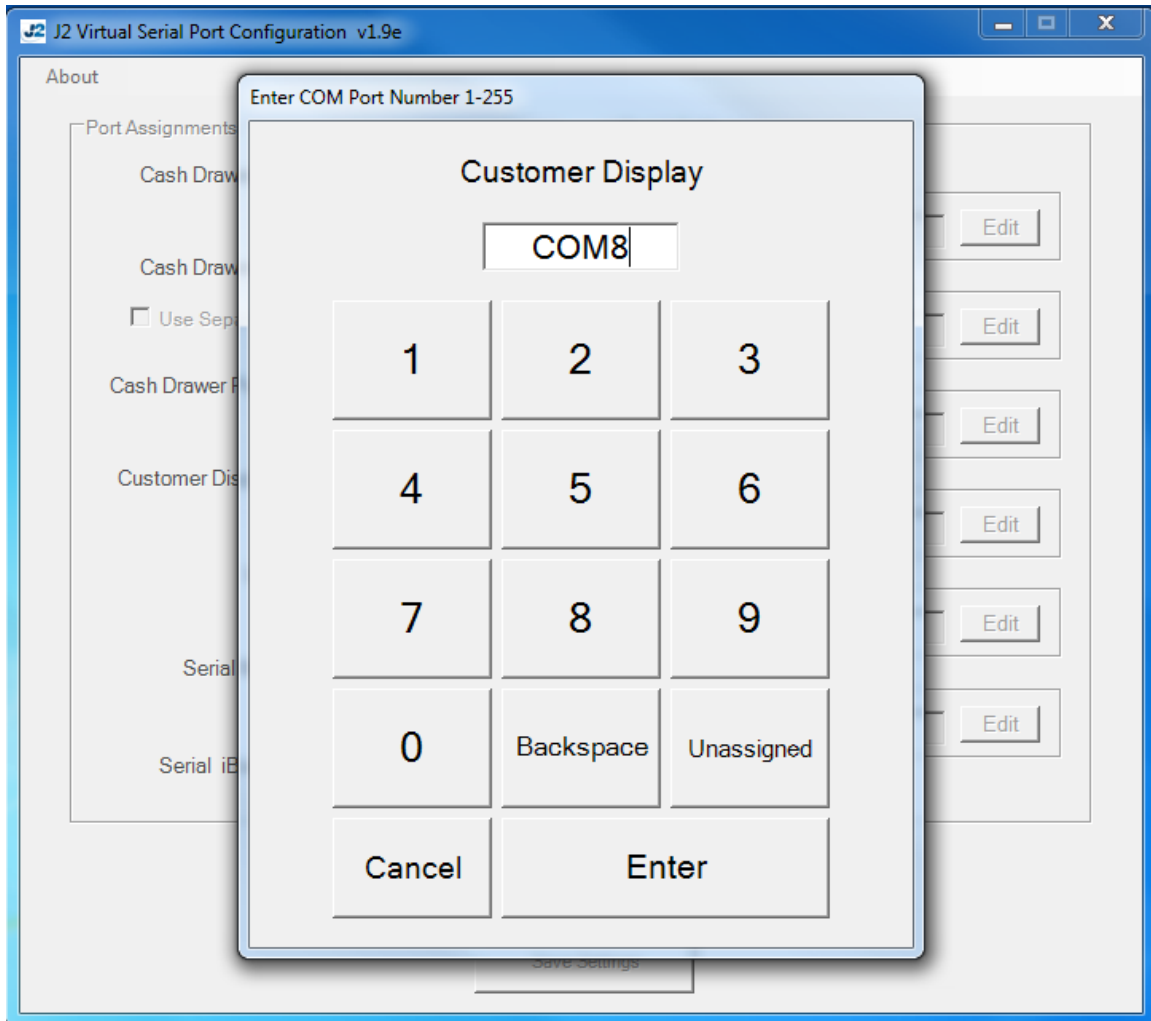
This screen may pop up after closing the setup screen. Just select OK to close it.



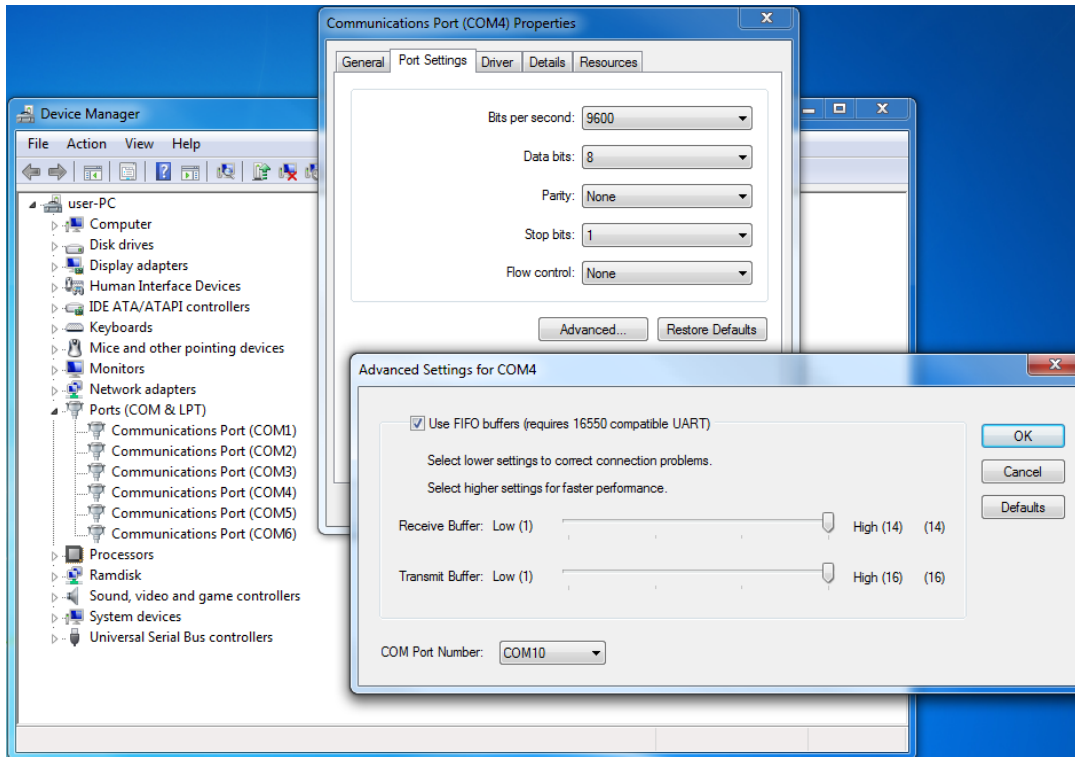
If the launch Virtual Port check box was left check the configuration program will not run. When un-configured it will look like this.



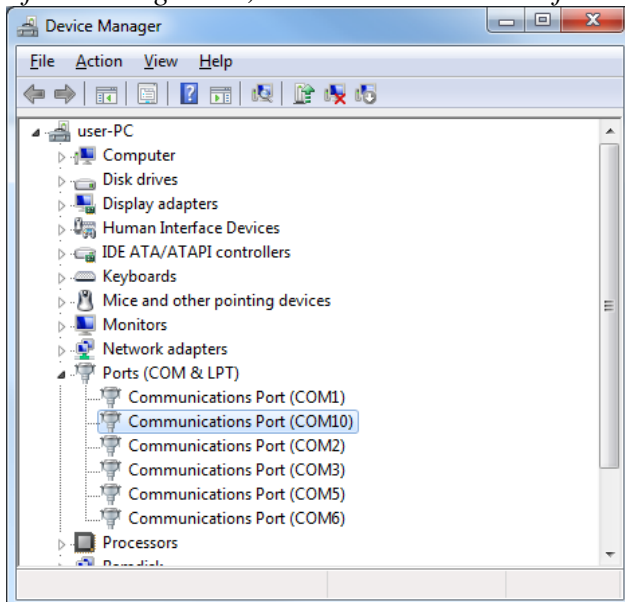
You can now select the COM port to use for the Virtual Customer Display by selecting the Change button. A key pad will pop up then just enter the COM port you wish to use. Be sure the COM port you select is not currently used. Most J2 POS computers use COM 1-6 so 7 or 8 is normally a good choice.



Some POS software is limited to what COM ports it can select for peripherals, some limit the user to COM1-4 and some COM 1-8. There is a way around this problem. In device manager you can move an unused lower COM port assignment to a higher number then assign the VCD virtual port to that number. As an example reassign COM4 to COM10 and then assign the VCD virtual port to COM4.



After reassignment, COM 4 now available for the VCD

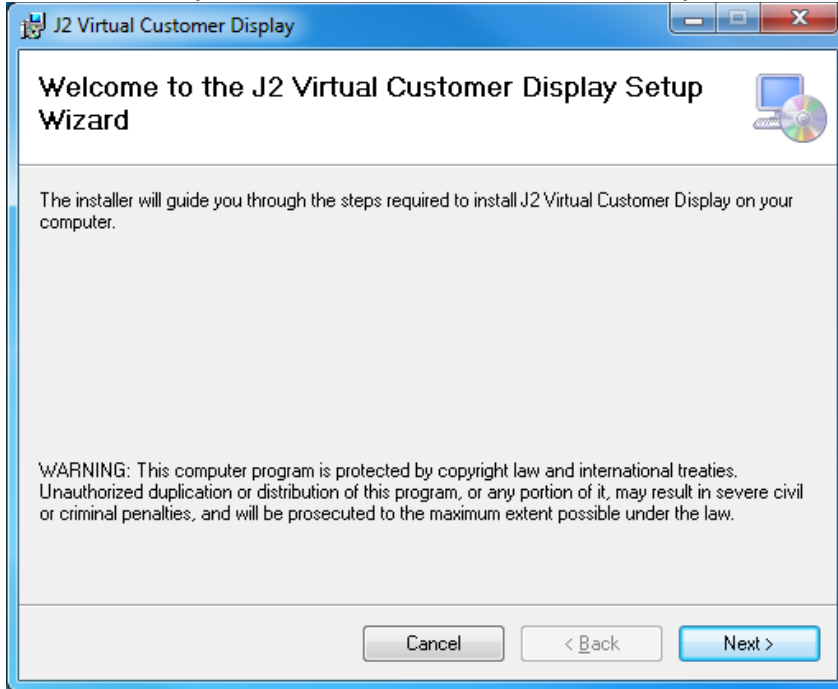


Note: J2 Virtual ports do not show in device manager, they will show in applications.

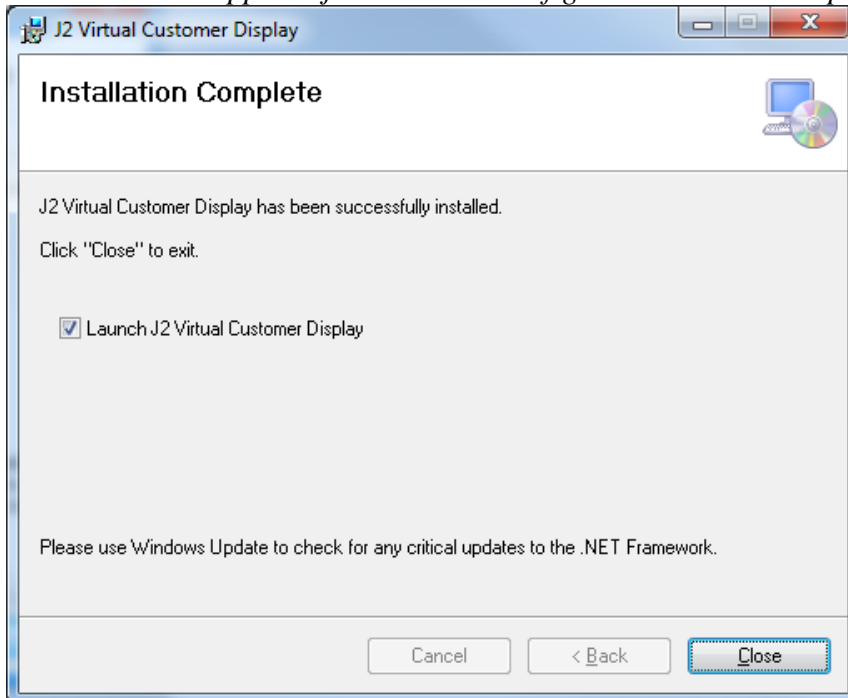
J2 Virtual Customer Setup

After downloading the setup file run it on the system you wish to install the software on. The setup can be run from the zip file without extracting.

Just click Next for this screen and the next and the software will install



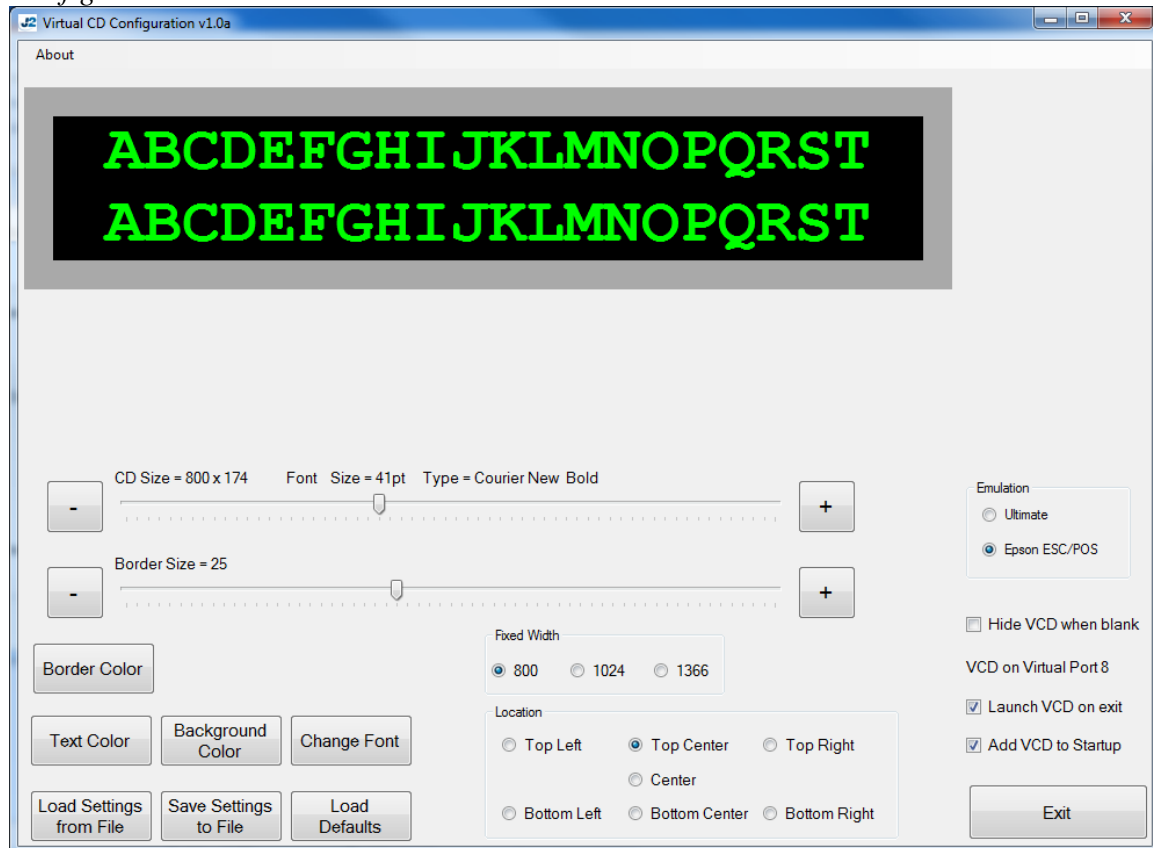
One this screen appears just close the configuration screen will pop up.



J2 Virtual Customer Display Configuration

The configuration program can be run at any time to change the VCD settings. As can be seen below it allows for a number of settings to be changed. The changes are all stored in the systems registry. You can use the Load Default button to reset these settings at any time.

Configuration screen



The most common setting to change would be the VCD display *Fixed Width* setting to match the screen size, 1024 for the J2 10.1 display and 1366 for the 14 inch display are the most commonly used. The slide bars can also be used for custom width and border size. Clicking the 800/1024/1366 setting after adjusting the border size will adjust the display box to that size. Setting for text color, background color and text font are available. The position of the VCD display box can be located in different position on the screens as well. These settings can be saved and loaded from a file for easy field updates.

The *Hide VCD when blank* check box is used to cause the VCD display box to disappear when the VCD is cleared either with a clear command or have all space in the text message. This is a way when no customer display data is need the whole customer side display can be used for advertising content.

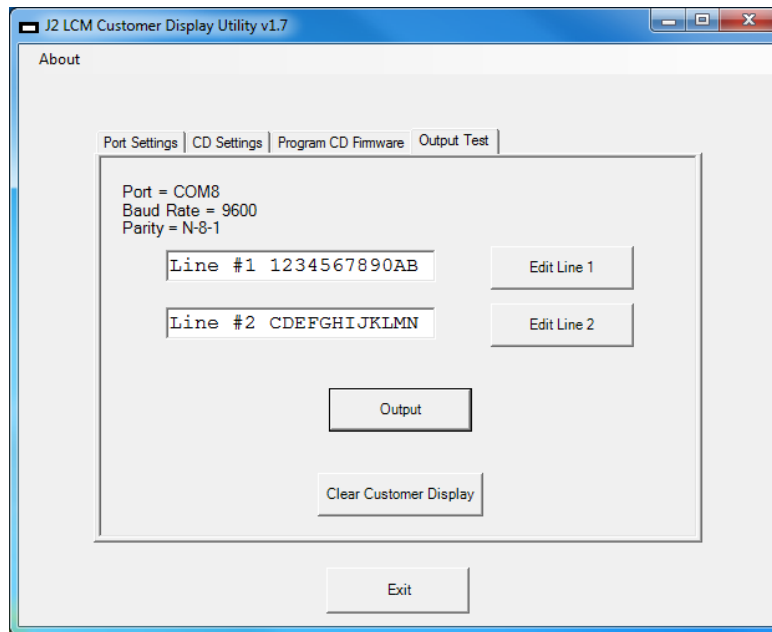
The VCD support to types of emulation EPSON ESC/POS and Ultimate modes. The EPSON ESC/POS mode is required for the J2 OPOS driver to be used.

VCD Testing

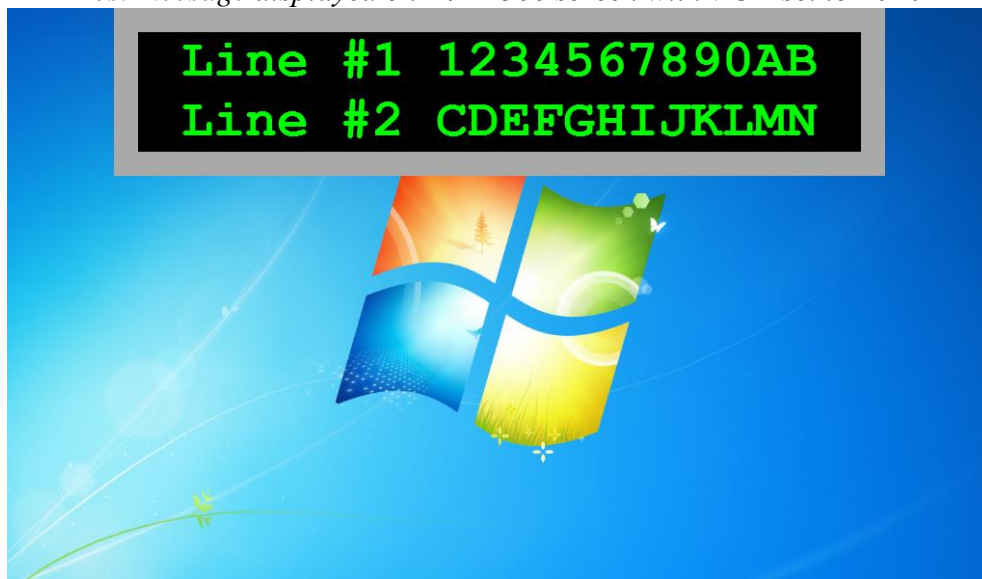
The VCD can be tested using the J2 LCM Customer Display Utility. This utility is normally used to configure and test the J2 LCM customer display but can also be used to test the J2 VCD. Also a program that can output to a serial port can be used. The baud rate setting does not matter with the virtual serial port.

You can download from here: http://support.j2rs.com/225_625/Customer_Display/

Just run the program, set the COM to match the VCD, select the Output Test tab and output button to test. The Clear Customer Display will do just that.



Test message displayed on 14" 1366 screen with VCD set to 1024



OPOS Driver

The J2 VCD can use the normal J2 OPOS driver. Just install as normal and select the COM port used by the VCD. The OPOS Test LD will work as normal. If the VCD is set to hide when blank the display will hid once the *Test LCD* button is touch then will display again once the *Continue* button is touched.

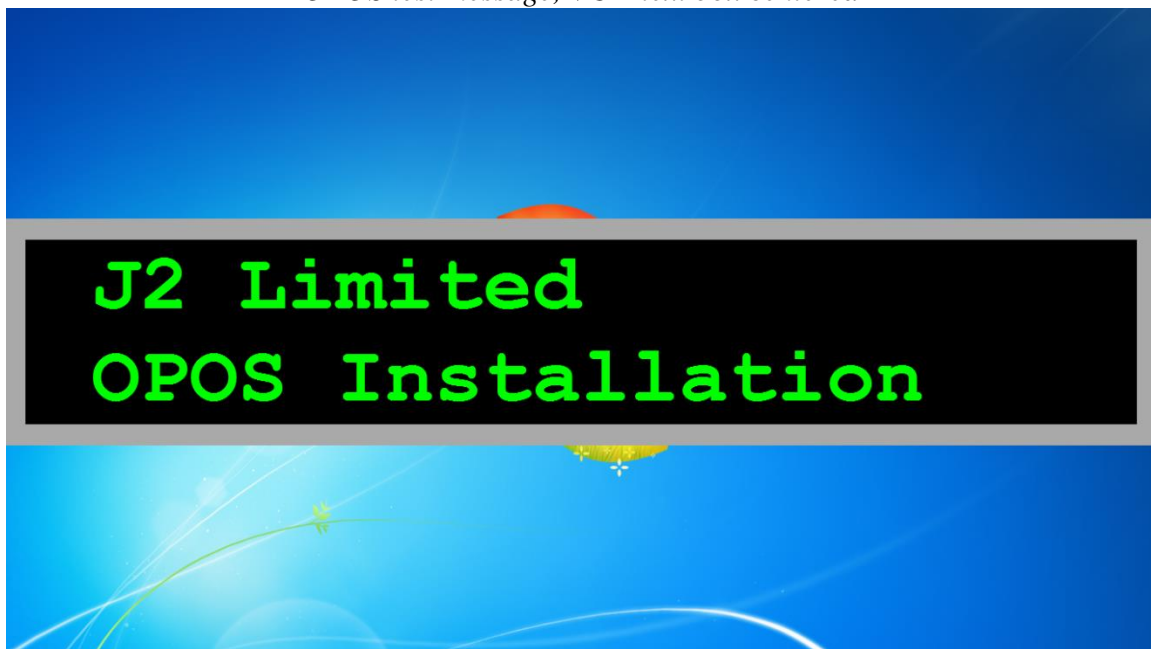
J2 OPOS Setup screen

The screenshot shows the 'J2 OposSetup 225/625' window. It is divided into four main sections for configuring different hardware components:

- Cash Drawer 1:** Includes fields for 'Device Name' (J2Cash1), 'Custom Device Name', 'Add', and 'Remove' buttons. It also has a checkbox for 'Set Cash Drawer Status Reporting CD1: Yes/No' and a 'Test Results Cash Drawer 1' section with a 'Test CD 1' button.
- Cash Drawer 2:** Similar to Cash Drawer 1, with 'Device Name' (J2Cash2), 'Custom Device Name', 'Add', 'Remove' buttons, a checkbox for 'Set Cash Drawer Status Reporting CD2: Yes/No', and a 'Test Results Cash Drawer 2' section with a 'Test CD2' button.
- Line Display:** Includes fields for 'Device Name' (J2Display), 'Custom Device Name', 'Add', and 'Remove' buttons. It has a 'Select Serial Port' dropdown menu (set to COM8) and a 'Test Results Line Display' section with a 'Test LD' button.
- Mag Stripe Reader:** Includes fields for 'Device Name' (Not Selected), 'Custom Device Name', 'Add', and 'Remove' buttons. It has a 'Select Serial Port' dropdown menu and a checkbox for 'Include LRC Yes/No'. The 'Test Results MSR' section includes a 'Test MSR' button.

An 'Exit' button is located at the bottom right of the window.

OPOS test message, VCD text box centered



VCD Operation

The software emulates a standard serial port 2x20 line VFD/LCM customer display. Customer display data is written to a serial port just as it would be when using a normal VFD or LCD customer display. The display information is then written to a display box on the LCD customer display. The data may be written directly to the VCD virtual serial port or the standard J2 OPOS driver can be used.

The display can be used in a pop up mode or always on display mode.

In the always on display mode the software displays a box on the customer display with the rest of the display available for advertising or upselling content.

In the pop up mode if the customer display data is blank (no displayable characters) the display windows will disappear making the whole display available for advertising or upselling content. Once any information is sent to the customer display the display windows will pop up displaying the customer display information from the software application.

The VCD responds to serial port commands the same as a hardware VFD/LCD 2x20 character display would. Normally the EPSON mode is used but if the POS software does not support EPSON mode try CD5220 or CD7200 setting with the VCD set to EPSON. If that does not work try the Ultimate (UTC) mode if your software supports that. If your software supports OPOS then use the J2 OPOS driver with the VCD set to the EPSON mode.

For displaying the advertising or upselling content there are a number of different methods that can be used. Some examples:

- 1: Web sites
- 2: Video player
- 3: Slide show player
- 4: Flash viewer
- 5: PDF files
- 6: Third party software

J2 does not supply any of the above but most are free of charge. J2 can help with utilities or small programs to launch programs on start-up if not supported directly. One issue that comes up is most programs like to start on the main screen and not the extended desktop. J2 can help with these issues once the software to be used is decided.

Software Commands

EPSON mode

ASCII	Hex	Function
HT	0x09	move cursor right
BS	0x08	move cursor left
LF	0x0A	move cursor down one line
CR	0x0D	move cursor left most position
VT	0x0B	move cursor to home position
CLR	0x0C	clear display, home cursor
CAN	0x18	clear current line, cursor to position one
US LF	0x1F 0x0A	move cursor up one line
US CR	0x1F 0x0D	move cursor right most position
US B	0x1F 0x42	move cursor to bottom position
US \$ x y	0x1F 0x24 0x01~20 0x01~02	move cursor to specified position x = 1-20 in hex ,y = 1 or 2 in hex
ESC R n	0x1B 0x52 0x00~0f	set ASCII character set (see table)
US SOH	0x1F 0x01	set overwrite mode (default)
US STX	0x1F 0x02	set vertical mode

UTC STD mode

ASCII	Hex	Function
HT	0x09	move cursor right
BS	0x08	move cursor left
LF	0x0A	move cursor down one line
CR	0x0D	move cursor left most position
VT	0x0B	move cursor to home position
RS	0x1E	clear display, home cursor
EM	0x19	clear to end of display
US	0x1F	reset display, display configuration info
TAB x	0x10 0x00~0x27	move cursor to specified position x = 0~39
DC1	0x11	set overwrite mode (default)
DC2	0x12	set vertical mode

Note: Commands shaded in green are common to EPSON and CD7220 Mode.

EPSON ESC/POS Mode Commands

Cursor Right, <HT>, 0x09 (EPSON, UTC STD)

(Overwrite Display Mode)

The cursor position is shifted to the right one position. When the cursor is in the last position of the first row; the cursor moves to the first position of the second row. When the cursor is in the last position of the second row, the cursor moves to the first position of the first row.

(Vertical Scroll Mode)

When the cursor is in the last position of the second row, the characters displayed in the second row are shifted up to the first row and the cursor moves to the first position of the second row. This action clears the second row.

Cursor Left, <BS>, 0x08 (EPSON, UTC STD)

When the backspace command is executed, the cursor position is shifted to the left one position, erasing the character, if any, in that position. When the cursor position is in the first (read from left to right) position of the first row, the cursor moves to the last position of the second row. When the cursor is in the first position of the second row, the cursor moves to the last position of the first row.

Line Feed, <LF>, 0x0A (EPSON, UTC STD)

(Overwrite Display Mode)

The cursor moves up or down to another row, staying in the same horizontal position.

(Vertical Scroll Mode)

When the cursor is in the second row, the characters displayed there are shifted up to the first row, leaving the cursor at its present position. This action clears the second row. When the cursor is in the first row; the cursor moves down to the second row in the same vertical position.

Home and Clear Display, <CLR>, 0x0C

This command will clear the display and move the cursor position to the first position of the first row.

Clear Line, <CAN>, 0x18

This command will clear the line the cursor is on and place the cursor in position one of that line.

Reset, <ESC @>, 0x1B 0x40

All characters displayed are erased, and the cursor position (cursor position) is set in the first position of the first row. The display mode returns to the overwrite mode.

Cursor UP, <US LF>, 0x1F 0x0A

(Overwrite mode)

Move the cursor up one line to the same column as on the lower line.

(Vertical Scroll Mode)

The characters displayed on the upper line are scrolled to the lower line and the upper line is cleared. The cursor will remain in the same position.

End of Line, <US CR>, 0x1F 0x0D

Move the cursor to the end of the current line. No characters are overwritten.

End of Display, <US B>, 0x1F 0x42

Move the cursor to the last position of the second row of the display. No characters are overwritten.

Cursor Positioning, <US \$ x y, 0x1F 0x24 0x01~20 0x01~02

Move the cursor to the display position indicated by the x and y values. The x value is a binary value 1~20 representing the position on the line. The y value, either 1 or 2, specifies line one or two. The character written to the display will display at this position.

Overwrite Display Mode, <US SOH>, 0x1F 0x01 (Default mode)

After writing a character, the cursor is shifted automatically to the right one position.

When the cursor is in the last position of the first row; the cursor moves to the first position of the second row. When the cursor is in the last position of the second row; the cursor moves to the first position of the first row.

Vertical Scroll Mode, <US STX>, 0x1F 0x02

After writing the characters up to the last position of the second row, all characters displayed in the second row are shifted to the upper row (first row), clearing the second row.

UTC STD Mode Commands

Cursor Right, <HT>, 0x09 (EPSON, UTC STD)

(Overwrite Display Mode)

The cursor position is shifted to the right one position. When the cursor is in the last position of the first row; the cursor moves to the first position of the second row. When the cursor is in the last position of the second row, the cursor moves to the first position of the first row.

(Vertical Scroll Mode)

When the cursor is in the last position of the second row, the characters displayed in the second row are shifted up to the first row and the cursor moves to the first position of the second row. This action clears the second row.

Cursor Left, <BS>, 0x08 (EPSON, UTC STD)

When the backspace command is executed, the cursor position is shifted to the left one position, erasing the character, if any, in that position. When the cursor position is in the first (read from left to right) position of the first row, the cursor moves to the last position of the second row. When the cursor is in the first position of the second row, the cursor moves to the last position of the first row.

Line Feed, <LF>, 0x0A (EPSON, UTC STD)

(Overwrite Display Mode)

The cursor moves up or down to another row, staying in the same horizontal position.

(Vertical Scroll Mode)

When the cursor is in the second row, the characters displayed there are shifted up to the first row, leaving the cursor at its present position. This action clears the second row. When the cursor is in the first row; the cursor moves down to the second row in the same vertical position.

Display Position, <DLE n>, 0x10 0x00~27

After writing the <DLE> character to the display, write a position byte. Valid values are 0-39 DEC with zero being the first row left most position and 39 DEC being the second row most right position.

Overwrite Display Mode, <DC1>, 0x11

After writing a character, the cursor is shifted automatically to the right one position. When the cursor is in the last position of the first row; the cursor moves to the first position of the second row. When the cursor is in the last position of the second row; the cursor moves to the first position of the first row.

Vertical Scroll Mode, <DC2>, 0x12

After writing the characters up to the last position of the second row, all characters displayed in the second row are shifted to the upper row (first row), clearing the second row.

Reset <US>, 0x1F

All characters displayed are erased, and the cursor position (cursor position) is set in the first position of the first row. The display mode returns to the power-on default set-up, overwrite mode.

Clear to End of Line, <CAN>, 0x18

This command will clear out the display from the current cursor position to the end of the current line. The current cursor position will not change.

Clear to End of Display, , 0x19

This command will clear out the display from the current cursor position to the end of the second line. The current cursor position will not change.

Home and Clear Display, <RS>, 0x1E

This command will clear the display and move the cursor position to the first position of the first row.

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