



COMPANION II TIME VENDOR



TECHNICAL INSTALLERS MANUAL

REV. 10 - 2006

PRODUCTS COVERED IN THIS DOCUMENT

This manual covers firmware for timers V. 142E.hex.

This manual covers models containing a paper currency acceptor, and refers to the optional credit card reader and its separate manuals.

It includes everything an installer needs to install and service a Companion II Time Vendor for vending. For more detailed information, check our website: www.vendapin.com.

1. CHECK YOUR SYSTEM - SAFETY NOTICE

- **Be sure there is a grounded AC outlet to power the equipment.**
- **Be sure the green/yellow ground wire is connected to center screw on the AC outlet.**
- **The Companion II power supply is designed to operate from international standard power sources at 50 – 60 Hz, 100 – 240 V AC ONLY. Do not connect your system to any other types. The standard power plug is supplied for USA wall sockets.**
- **IMPORTANT: Companion II is a controller, not a power adapter. Be sure your display will operate from the AC mains at your installation. Check your monitor for correct operation BEFORE connecting it to the II. Open the Companion II enclosure with the provided key, route the AC plug from the controlled video display through the opening in the bottom, and plug it into the outlet inside the Companion II box. The grommet can be removed temporarily from the hole to provide more clearance.**
- **You may skip the above step and connect your video to the secondary relay. Both relays activate at the same time. This method interrupts the video signal to the monitor. We have provided a 2-position terminal strip on the back wall, left hand side, about half way down the enclosure. Tap into the secondary relay using the terminal strip.**

2. POWER UP THE SYSTEM

- Attach the Pedestal Stand using the included instructions, if you have one.
- Plug the Companion II Time Vendor in to the AC power outlet.
- The lights on the bill acceptor should indicate it is ready to accept currency. Insert some currency. The video display should power up, and play can begin. The Companion II Time Vendor will cease operation of the display when it times out.
- Cash (or credit, if available) can be added at any time. For instance, a player with five \$1.00 bills gets the same play time as one inserting a single \$5.00 bill.
- The green LED on the front of the unit comes on steady at the beginning of play.
- The green LED begins flashing when only 30 seconds remain, allowing time to insert more cash to continue play instead of just ending play.
- You can also check the optional e-Port® credit card system by using the furnished PASS CARD. Press the yellow button to select a value, then swipe the card. This should operate the video display in the same way as normal cash vending. To use a real credit card, you must first establish an account with USA Technologies. To operate the e-Port®, you MUST connect the antenna and mount it in a spot where

it can contact its cellular radio link to the credit service provider. See the separate e-Port® manuals for complete information on setting up your account.

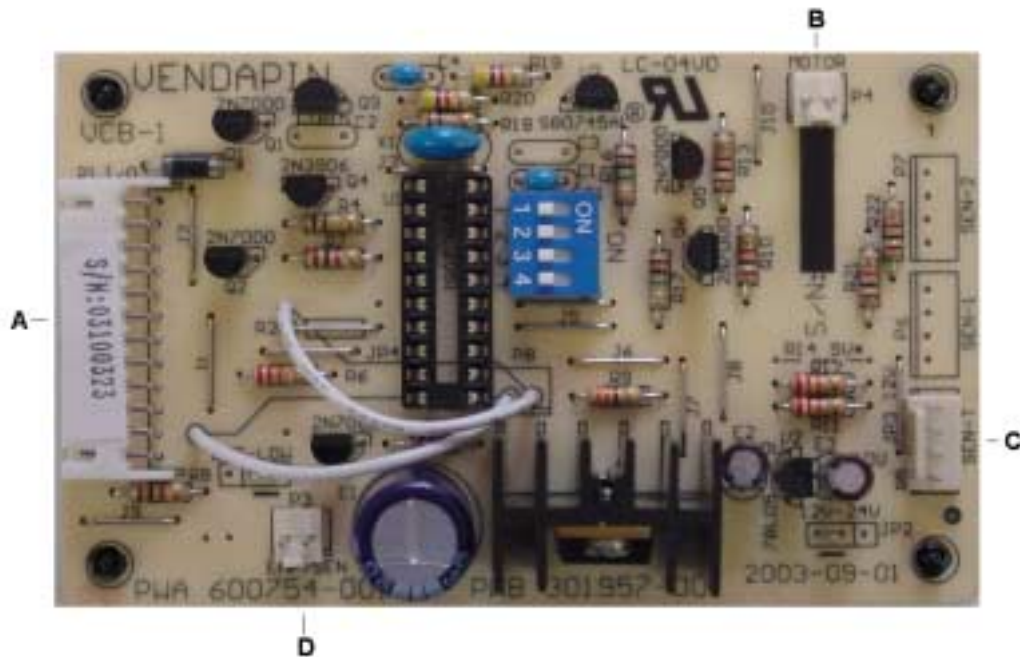
3. COLLECTING MONEY FROM THE COMPANION II

- Open the Companion II box using the furnished key.
- **KEEP THE SPARE KEY IN A SAFE PLACE.** Your key is unique to your system. If you lose the operator's key and you do not save the spare, you will have to replace the entire key mechanism. If you have an optional e-Port®, keep your PASS CARD in the same safe location.
- Your machine contains a pulse Bill Acceptor. Locate the button on the top of the bill acceptor. Press it back toward you. Lift the bill cassette straight up and then pull back. Lift the top and remove the bills. Reverse the operation to reinstall the bill cassette. Make sure it clicks when you press it down.
- You may wish to record the number on the counter at this time to track sales.
- Close the box when you are done to prevent theft or electric shock hazard.
- Credit cards are billed separately under contract from the e-Port® manufacturer.

4. SETTING VEND TIME USING COMPANION II SWITCHES AND JUMPERS

The Companion II system uses a timer system, which allows a certain amount of time per pulse. One pulse input from the dollar bill acceptor signifies \$1.00. Five pulses indicate a \$5.00 vend. You can set the vending "ON" time per dollar using these switches. Refer to the photo below, and note the four switches near the upper center numbered 1 – 4. You may set one or more switches ON, to get 30 seconds to 8 minutes, as shown in the following table. **BE SURE POWER IS OFF DURING ANY WORK.**

VCB – 1 Control Board Switches and Connectors



CONNECTORS: A. Controller I/O (P1), B. Outlet Power (P4), C. Aux Time Jumper Setting (P5), D. Not Used (P3).

STANDARD SETTINGS (NO JUMPERS on P5)

SWITCH SETTING	Minutes:Seconds
S1 – S4 OFF	00:30 Minimum
S1	1:00
S2	1:30
S2 + S1	2:00
S3	2:30
S3 + S1	3:00
S3 + S2	3:30
S3 + S2 + S1	4:00
S4	4:30
S4 + S1	5:00
S4 + S2	5:30
S4 + S2 + S1	6:00
S4 + S3	6:30
S4 + S3 + S1	7:00
S4 + S3 + S2	7:30
S4 + S3 + S2 + S1	8:00 Maximum

EXTENDED TIME SETTINGS USING JUMPER PLUGS ON P5

If 8 minutes maximum is not enough, you can extend the time for up to 32 minutes per dollar, by using the jumper plug. You can select a range of 8:30 to 16 minutes using pin 2 jumper. You can get a range of 16:30 to 24 minutes by using pin 3 jumper. You can get a range of 24:30 to 32 minutes using BOTH pin 2 & 3. In effect, there are two extra switches, which can be considered switches 5 & 6 on a binary counter. This jumper plug is shipped captive in the unit by virtue of another harness, inside the Companion II unit, to prevent loss.

To lengthen the time of the vend cycle beyond the previous table, a supplied jumper plug must be installed onto P-5 on the VCB-1 board. This connector is identified as “C, Aux Time Setting” in the previous board photo. The jumper has three wires on it and represents switch 5 and 6. The wires are all in a row and the pin numbers are sequenced. The empty position is pin 1, next is pin 2, next is pin 3, then pin 4.

In order to remove a wire for a different timing table, remove the wire as follows:

1. Locate the side of the plug that has four little holes in it
2. Locate the wire you wish to remove. (See tables for jumper positions)
3. Insert the tip of jeweler’s screwdriver, pick, or Exacto knife into the small opening.
4. Gently push in and pull on the wire at the same time. The wire will pull out of the housing. Be sure to tape any unused wires to prevent shorting.
5. Install into P-5 on the VCB-1T board. It will only go on in one direction.
6. Refer to the following tables for the timer ranges available in conjunction with the standard dip switches.

**P5 Plug Pin 3 Removed, Pin 2 Jumped to pin 4
(Jumper Switch 5)**

SWITCH SETTING	Minutes:Seconds
5 Jumper ONLY, S1 – 4 OFF	8:30 Minimum
5J + S1	9:00
5J + S2	9:30
5J + S2 + S1	10:00
5J + S3	10:30
5J + S3 + S1	11:00
5J + S3 + S2	11:30
5J + S3 + S2 + S1	12:00
5J + S4	12:30
5J + S4 + S1	13:00
5J + S4 + S2	13:30
5J + S4 + S2 + S1	14:00
5J + S4 + S3	14:30
5J + S4 + S3 + S1	15:00
5J + S4 + S3 + S2	15:30
5J + S4 + S3 + S2 + S1	16:00 Maximum

**P5 Plug Pin 2 Removed, Pin 3 Jumped to pin 4
(Jumper Switch 6 ON)**

SWITCH SETTING	Minutes:Seconds
6J + S1 – S4 OFF	16:30 Minimum
6J + S1	17:00
6J + S2	17:30
6J + S2 + S1	18:00
6J + S3	18:30
6J + S3 + S1	19:00
6J + S3 + S2	19:30
6J + S3 + S2 + S1	20:00
6J + S4	20:30
6J + S4 + S1	21:00
6J + S4 + S2	21:30
6J + S4 + S2 + S1	22:00
6J + S4 + S3	22:30
6J + S4 + S3 + S1	23:00
6J + S4 + S3 + S2	23:30
6J + S4 + S3 + S2 + S1	24:00 Maximum

**P5 Plug Pin 2 AND Pin 3 Jumped to Pin 4
(Jumper Switch 5 + 6)**

SWITCH SETTING	Minutes:Seconds
6J + 5J + S1 – S4 OFF	24:30 Minimum
6J + 5J + S1	25:00
6J + 5J + S2	25:30
6J + 5J + S2 + S1	26:00
6J + 5J + S3	26:30
6J + 5J + S3 + S1	27:00
6J + 5J + S3 + S2	27:30
6J + 5J + S3 + S2 + S1	28:00
6J + 5J + S4	28:30
6J + 5J + S4 + S1	29:00
6J + 5J + S4 + S2	29:30
6J + 5J + S4 + S2 + S1	30:00
6J + 5J + S4 + S3	30:30
6J + 5J + S4 + S3 + S1	31:00
6J + 5J + S4 + S3 + S2	31:30
6J + 5J + S4 + S3 + S2 + S1	32:00 Maximum

Note: the Companion II reads the switches at power up. Do not change the switches or jumpers with power on, for safety reasons. You have to power down and up to read the current setting in to the machine settings anyway.

5. IN CASE OF TROUBLE:

- If your Companion II unit does not accept paper money, check the bill acceptor for jammed bills or dirt. Clean only with water and a soft cloth to prevent damage to the infrared sensors in the head. Remove the bill cassette as you would to collect money. Pinch the two tabs together at the bottom of the bill acceptor and pull straight back. The sensors and head are exposed, and you can clear any jams.
- No field repair is possible on the bill acceptor. VENDAPIN can update them for newer currency as it is released by the government for circulation. The manufacturer can repair or update your bill acceptor unit. The Companion II unit can be operated without the bill acceptor, if you have an e-Port® unit. Plug the hole to prevent electric shock.
- If the LED and bill acceptor displays are dead, check that you have power at your AC outlet, and the power supply is plugged in.
- No field repair other than board replacement is possible. Updates to firmware can be performed if warranted, since that Integrated Circuit is socketed.
- The e-Port® Credit unit cannot be repaired in the field. Verify carefully that the e-Port® unit is the source of the problems, and contact them for return authorization. The Companion II can be operated without the e-Port®, using only the bill acceptor. Plug the cabinet hole to eliminate shock hazard. **Adjustments to the e-Port® debit values and setup parameters can be made by calling USA Technologies.**

- Contact your local installer/contract service person for help first.
- If you need further help, contact VENDAPIN.

6. HOW TO CHANGE A FAILED COMPONENT

- **RELAY REPLACEMENT**

Relays are electromechanical devices that can develop excessive contact resistance due to pitting from switching heavy loads. Do not do resistance checks with power connected! If you test the contact resistance and observe it to be more than a couple ohms, or the video display is shrunk due to low voltage, your relay may be bad. Verify that the monitor is OK by plugging it into an AC outlet direct, before changing the relay. Listen for the relay clicking closed when a vend is in process. If the relay does not click, check its coil resistance of approximately 90 Ohms. If the coil is OK, the control board may not be driving the coil. Check for 12 VDC across the coil.

To replace the relay, remove AC power and unplug the wired connector. Remove the screw on the mounting tab. Install the new relay and verify proper operation.

- **POWER SUPPLY REPLACEMENT**

A power supply may fail due to an AC power line surge from lightning. No lights will operate on the front panel or bill acceptor if the power supply is dead. Find the two pin white plastic connector on the output of the black power adapter inside the case. Using a voltmeter, verify that the power adapter is providing 12 VDC. Check your AC power before assuming the power adapter is bad.

To replace the power supply, disconnect AC power and the white two pin output connector. Remove any cable ties and mounting attachments. Plug in the two pin output connector. It is polarized by a key, so it can not be installed backwards. Route the AC cord through the hole in the bottom of the Companion II enclosure and plug it into the AC source. Test the Companion II operation. Once operation is restored, disconnect power again and replace cable ties and mounting attachments.

- **CONTROL BOARD REPLACEMENT**

If the bill acceptor lights are on and it accepts currency, but the Companion II fails to operate, the controller board may be bad. Check the 12 VDC as described above. Check the relay before replacing the controller board. Use antistatic precautions for the following steps. If the board is bad, remove AC power and disconnect the cables to the board. Then release the board's plastic mounting pins by gently squeezing the retainer tabs inward with a small pair of pliers, one pin at a time. Walk the board off the pins. Unwrap the new board from its antistatic material and mount it in the Companion II. Set the switches and jumpers identical to your old board. Plug in all the connectors as they were before. Apply AC power and test for normal operation.

VENDAPIN is always improving its products. Be sure that you obtain the correct version of board and firmware when ordering the replacement board. If you are replacing ONLY the Microprocessor Integrated Circuit as part of an upgrade, use

antistatic procedures and be sure you insert the chip with the indentation in the correct orientation.

- **BILL ACCEPTOR REPLACEMENT**

If your Companion II unit does not accept paper money, but the bill acceptor green front panel lights are flashing as usual, it should operate. Check the bill acceptor for jammed bills or dirt. Clean only with water and a soft cloth to prevent damage to the infrared sensors in the head. Remove the bill cassette as you would to collect money. Pinch the two tabs together at the bottom of the bill acceptor and pull straight back. The sensors and head are exposed, and you can clear any jams.

No field repair is possible on the bill acceptor. VENDAPIN can update them for newer currency as it is released by the government for circulation. The manufacturer can repair or update your bill acceptor unit. The Companion II unit can be operated without the bill acceptor, if you have an e-Port® unit. Use the provided cover plate for safety.

IMPORTANT: Do NOT adjust the programming switches on the side of the bill acceptor unit without specific direction from VENDAPIN Tech Support. It is possible to set the bill acceptor to reject certain bills using these switches. Factory default is to accept all US \$1 – 5 – 10 – 20. VENDAPIN can update it for new currency releases.

If you send in the bill acceptor for service, plug the hole to prevent electric shock, if you wish to run on “credit card only” mode. A metal plate plug is provided ONLY on e-Port® units.

Further diagnosis of the bill acceptor failure modes is possible using its blink codes found on the back of the acceptor.

VENDAPIN can give you information on where to send your failed unit for service.

To remove the bill acceptor, disconnect the AC power and open the front door. Unplug the black two row connector from the side of the bill acceptor. It is keyed so that you can reassemble it correctly when you replace the unit. Remove the mounting hardware and keep it in a bag inside the failed unit, so that you do not lose them. Reinstall the bill acceptor and test the Companion II unit for normal operation.

Do not discard the safety cover plate. Reinstall it where you found it inside the Companion II unit for future use.

- **E-PORT® REPLACEMENT**

The e-Port® credit card system is a sophisticated device. VENDAPIN strongly recommends that you seek assistance when diagnosing e-Port® problems.

The most common initial installation problems encountered are:

- The antenna must be connected, and mounted in a place where it can make radio contact with its cellular credit service provider. Make sure the wire is not crushed or damaged. The mount is magnetic.
- An account **MUST** be set up first to use the e-Port® on real credit cards.
- Your charge amount selections will also be agreed upon at that time. To operate the e-Port®, you must first push the yellow button on the front of the e-Port® to scroll between the charge amount choices. Follow the instructions on the e-Port® screen. Then insert the PASS CARD or a real credit card to accept the amount. You may have to press the yellow button again to accept the charge. Then the Companion II will activate its time count and the control relay.

Contact VENDAPIN Tech Support. You may be directed to send in the display/head unit and/or the metal enclosed e-Port® board. These components will be sent to USA Technologies for service. Use static safe packing material and pack carefully to avoid damage.

To replace the display/head unit, remove AC power. Use antistatic procedures to handle all components. Disconnect all cables from the e-Port® head. Remove the mounting hardware and save it inside the Companion II box in a bag for reinstallation. Install the provided safety cover plate while the e-Port® is out for service. To reinstall, mount the head. Plug in the cables. They are keyed for correct polarity. Save the cover plate where you found it inside the Companion II.

To replace the e-Port®'s metal housing and circuit board, remove AC power. Use antistatic procedures to handle all components. Disconnect all cables from the e-Port® board. Remove mounting hardware and save it inside the enclosure in a bag for reinstallation. It is **NOT** necessary to remove the credit card head unit from the Companion II if you are only servicing the e-Port® metal housing and control board. It cannot charge a customer anything if the controller is disconnected for service. Reinstall the metal housing and e-Port® board using the original hardware and cables. The antenna connector is fragile; exercise care to avoid bending the inner pin. Power up the unit and test it. USA Technologies sends your unit back "plug and play". You do not have to set up your account or adjust your vend amount choices. Test it with your PASS CARD first. Then try a real credit card. You may have to allow a brief period for the e-Port® to re-establish radio contact with its credit provider before it allows charges. Contact USA Technologies if you cannot establish communication.

You **CAN** operate the Companion II without the e-Port® unit, using only the bill acceptor. We provide a safety cover plate for that case. Be sure to return the plate to its storage position inside the Companion II for future use.

Contact



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