



## **JCM Products Quick Reference Guide**

### **iVIZION® Units**



*NOTE: Due to advancements in related industry technologies and future product development, the information in this guide is subject to change without notice.*

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## iVIZION® Units

### QUICK REFERENCE TROUBLESHOOTING GUIDE

The operating condition of the iVIZION® Unit is indicated by its Front Panel multi-color Status LED indicators. Refer to Table 1 iVIZION LED Error Codes (shown below) for the iVIZION Error Status being indicated.

**Table 1** iVIZION LED Error Codes

Symptom	Power LED	Status LED	Cause and Solution
Normal Condition	ON	OFF	The iVIZION is Operating Correctly
Initializing	ON	Blue Flashes	The iVIZION is Initializing
Downloading	ON	Lit Red	The iVIZION is Downloading
		Lit Green	
Near Full Detection	ON	Lit Yellow	A Nearly Full Cash Box condition
Test Mode	ON	Lit Blue	The iVIZION is in "Performance Test" Mode
Error Condition	ON	Red Flashes	Indicates an Error condition (see Table 5)
Banknote Jam	ON	Yellow Flashes	Indicates a Jammed Banknote (see Table 6)
Reject Condition	ON	Green Flashes	Indicates a Banknote Reject condition (see Table 7)
ICB Error	ON	Blue Flashes	Indicates a ICB Error condition (see Table 9)
iVIZION is not working	OFF	OFF	Power is not being supplied

## iVIZION® Units

### JCM TOOL SUITE

Access to programming applications supporting the iVIZION Unit is accomplished via the JCM Tool Suite Program. The JCM Tool Suite is a Windows® based PC application.



*NOTE: Refer to the "JCM Tool Suite Software Installation Guide" (JCM P/N 960-100923R) for further information.*

**Table 2** JCM Tool Suite Application Functions

iVIZION Mode	Application	Purpose
Operational Mode	Download	Updating Software
	Statistics	Historical Information Bill Acceptance Fault Details Banknote/Ticket Acceptance
	Utility	Image View Enables ICB Setup (with PC)
Diagnostic Mode	Sensor Adjustment	Use to Calibrate the Sensors
	Performance Test	Functional Tests of the Motors, Stacker, Sensors & Switches. Enables ICB Setup (with Tickets).

The JCM Tool Suite is used when the iVIZION Unit is connected to a PC using a Male A to mini-Male B USB Cable.

On the iVIZION Unit, the mini-USB Connector is located above the **GREEN** Power LED.

### OPERATIONAL MODE FUNCTIONS

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#### DOWNLOADING SOFTWARE

To update the iVIZION's Software, proceed as follows:

1. Open the JCM Tool Suite Application.
2. Connect the iVIZION Unit to the PC using a USB Cable.
3. Use the "Service Mode" drop-down Menu Arrow to select "Download" from the list.
4. On the "JCM Downloader" Screen, use "Browse" to locate and select the appropriate download File for the iVIZION Unit.
5. Click on "Download" to start the Download.  
Download progress is shown by a progress barograph and a percentage complete indication located above the Graph.
6. Verify that the download indicates "Download Success." The Download is now complete.
7. Disconnect all Cables, and reset the iVIZION Unit to an normal operating status.

#### STATISTICS FUNCTION

Select the "Statistics" Tab to view the iVIZION Unit's performance, Banknote and Ticket acceptance history. To view current Statistics, perform the following steps:

1. Open the JCM Tool Suite Application.
2. Connect the iVIZION Unit to the PC using a USB Cable.
3. Use the "Service Mode" drop-down Menu Arrow to select "Statistics" from the list.
4. Click on the "Read" Screen Button to read the information from the iVIZION Unit's Memory.
5. To access detailed information:
  - a. Select the Current Data Tab located at the top of the Screen, then click on the drop-down Menu Arrow to display Performance Selections.
  - b. Click on the desired Information Title.

## iVIZION® Units

### UTILITY FUNCTION

Select the “Utility Function” tab to:

- View an image of the last Banknote or Ticket accepted by the iVIZION Unit
- Activate/Deactivate ICB or Change ICB Settings

### VIEW LAST BANKNOTE OR TICKET ACCEPTED

To view an image of the last Banknote or Ticket accepted by the iVIZION Unit, perform the following steps:

1. Open the JCM Tool Suite Application.
2. Connect the iVIZION Unit to the PC using a USB Cable.
3. Click the “Service Mode” drop-down Menu Arrow to select “Utility” from the list.
4. Click the “1) CIS IMAGE” selection.
5. Click the “Read” Screen Button.

The front and back sides of the Banknote or Ticket will appear.

### ACTIVATE OR DEACTIVATE ICB/CHANGE ICB SETTINGS

To Activate/Deactivate ICB or Change ICB Settings, perform the following steps:

1. Open the JCM Tool Suite Application.
2. Connect the iVIZION Unit to the PC using a USB Cable.
3. Use the “Service Mode” drop-down Menu Arrow to select “Utility” from the list.
4. Click the “2) ICB SETTING” selection.
  - a. Click the Enable/Disable Screen Buttons to activate or deactivate ICB capabilities.
  - b. Enter a Machine or Asset Number in the “Set M/C” text field to assign an ICB Machine/Asset Number to the iVIZION Unit.
  - c. Click the “Get M/C” Screen Button to read the current Asset/Machine Number from the iVIZION Unit.
5. To inhibit ICB Information from being sent to the Cash Box, click the “Inhibit” Screen Button.

## iVIZION® Units

### ENTERING DIAGNOSTIC MODE

To enter Diagnostic Mode:

1. Turn Switch #8 on DIP Switch Block #1 **ON**.
2. Apply Power to the iVIZION Unit.

The Status LED will appear as a solid **BLUE** color, indicating that the iVIZION Unit is in Diagnostic Mode.

### SENSOR ADJUSTMENT

Sensors will need to be calibrated if the Sensors or Processors (CPUs) have been replaced. JCM strongly recommends the iVIZION be calibrated after an annual Preventive Maintenance procedure has been completed.



*NOTES: To calibrate the iVIZION, Calibration Reference Paper KS-89 (P/N 211266) is required.*

*Refer to Section 6 of the “iVIZION® Series Operation and Maintenance Manual” (JCM Part No. 960-100929R) for complete Calibration instructions.*

To calibrate:

1. From the Service Mode drop-down menu, click on Sensor Adjustment.
2. Click Start, then follow the screen prompts to complete calibration.

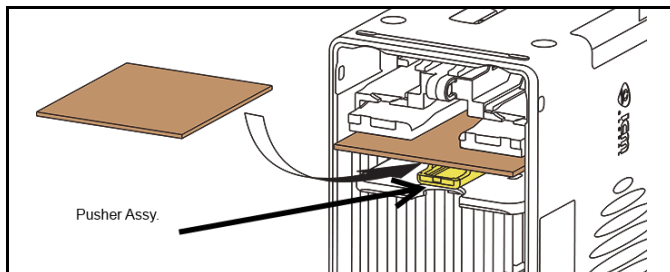


*NOTE: A message box prompt to “Slide a Cardboard in between the Frame Outer LR and the Pusher Plate” will be displayed. Refer to Figure 1 on the following page for correct placement of the Cardboard insert above the Pusher Assy.*

3. When Calibration is complete, Power **OFF** the iVIZION Unit.
4. Reset Switch #8 on DIP Switch Block #1 **OFF** to return the iVIZION Unit to Operational Mode.

## iVIZION® Units

**Figure 1** Inserting Cardboard In Stacker



### PERFORMANCE TESTING

The iVIZION Unit is tested by using the Performance Test Functions included in the JCM Tool Suite Application.



*NOTE: Refer to the “JCM Tool Suite Software Installation Guide” (JCM P/N 960-100923R) for detailed information concerning the Performance Tests listed in Table 3 (see below and on the following page).*



*NOTE: Refer to Table 4 to view the Sensor Test Indications. For Banknote Acceptor Test Error Codes, refer to Tables 5, 6 or 7. For iVIZION Ticket Reject Error Codes, refer to Table 8.*

**Table 3** Performance Tests

Test No.	Test Item	Test Purpose	Status LED Color	
			Good	Error
1	Motor Forward Rotation	Tests the Transport Motor's Banknote insertion direction	Yellow Flash	Yellow LED ON
2	Motor Reverse Rotation	Test of Transport Motor's Banknote return direction	Yellow Flash	Yellow LED ON
3	Stacker Motor	Tests the Stacking Mechanism Function	Yellow Flash	Yellow LED ON

## iVIZION® Units

**Table 3** Performance Tests (Continued)

Test No.	Test Item	Test Purpose	Status LED Color	
			Good	Error
4	Cycle Test	Performs a Full Transport and Stacker Test	Yellow Flash	Stops, Returns to Diagnostic Mode (Blue LED ON)
5	Status LED Test (Display Check)	Tests the Status LED	Red Flash Green Flash Blue Flash (sequential)	Not Applicable (No Error LED)
6	Sensor ON/OFF Test	Tests all Validator and Transport Sensors	OFF → ON	No Change
7	DIP Switch Test	Tests the DIP Switch Block Switches	OFF → ON	No Change
8	Banknote Acceptance Test (Accept Mode)	Tests the Transport, Validation, Stacking and Reject performance	Yellow Flash	Red Flash
				Yellow Flash Banknote Jam Error
				Green Flash Reject Error
9	ICB Control Ticket Read Mode	Setup of the ICB System using Tickets	Green Flashes 3 Times	Green Flash Reject Error



## iVIZION® Units SENSOR TESTING

Table 4 lists the iVIZION Unit's Sensor Test Indications.

**Table 4** Sensor Test Conditions

Action	Sensor	LED Indication
Open the Validator Cover	ENTRANCE	OFF → ON
	CIS L2	
	CIS L1	
	CIS R1	
	CIS R2	
	EXIT	
Open the Transport Cover	Feed-In	OFF → ON
	Feed-Out	
Remove Cash Box	Cash Box Seated & Size Check	OFF → ON
Move Cash Box Pusher Plate	Nearly Full	OFF → ON
Move Pusher Assembly	Pusher Home Sensor	OFF → ON

## iVIZION® Units

### OPERATIONAL ERRORS

iVIZION Operational Errors are indicated by the number of **RED** LED flashes. Count the flashes that exist in between the longer pause periods to determine the correct Error Code number (Table 5).



*NOTE: Refer to the “iVIZION® Series Operation and Maintenance Manual” (JCM Part No. 960-100929R) for a full description of errors and corrective actions.*

**Table 5** Operational Error Codes

RED Flashes	Error Type	Cause and Solution
1	Stacker Full	Detected a Cash Box Full condition
2	CPU Comm Error (Processors)	Communications Error between Processor (CPU) Boards
3	Sensor Adjustment Error	Abnormal Sensor Adjustment condition encountered
4	Speed Error	Transport Motor Speed is incorrect
5	EEPROM Error	No Initial Sensor Adjustment
6	Transport Error	Transport or Stacker jam condition
7	Reject Error	Jam condition during a Banknote Reject operation
8	Stacker Pusher Movement Error	Jam in the Stacker Assembly
9	Pusher Position Error	Pusher Plate Sensor Error
10	No Cash Box	Cash Box not detected
11	No Acceptor Head	Acceptor Head Cover is not closed
12	Anti-String Error	Sensors detected irregular movement
13	Reserved	N/A
14	Damaged Processor (CPU) Board	Processor (CPU) component failure
15	Memory Error	ROM/RAM Failure – CPU Board

## iVIZION® Units

### BANKNOTE JAM ERRORS

Banknote Jam Errors are indicated by the number of **YELLOW** LED flashes. Count the flashes that exist in between the longer pause periods to determine the correct Error Code number (Table 6).



*NOTE: Refer to the “iVIZION® Series Operation and Maintenance Manual” (JCM Part No. 960-100929R) for a full description of errors and corrective actions.*

**Table 6** Banknote Jam Error Codes

YELLOW Flashes	Error Type	Cause and Solution
1	Reserved	N/A
2	Entrance Sensor Jam	Check/Clean the Entrance Sensor
3	CIS Sensor Jam	Check/Clean the CIS Sensor
4	Exit Sensor Jam	Check/Clean the Exit Sensor
5	Feed-In Sensor Jam	Check/Clean the Feed-In Sensor
6	Feed-Out Sensor Jam	Check/Clean the Feed-Out Sensor
7	Cash Box Jam	Check for Jammed Note in Cash Box
8	Reserved	N/A
9	Reserved	N/A
10	Reserved	N/A
11	Reserved	N/A
12	Reserved	N/A
13	Reserved	N/A
14	Reserved	N/A
15	Reserved	N/A

## iVIZION® Units

### BANKNOTE REJECT ERRORS

Banknote Reject Errors are indicated by the number of **GREEN** LED flashes. Count the flashes that exist in between the longer pause periods to determine the correct Error Code number (Table 7).



*NOTE: Refer to the “iVIZION® Series Operation and Maintenance Manual” (JCM Part No. 960-100929R) for a full description of errors and corrective actions.*

**Table 7** Banknote Reject Error Codes

GREEN Flashes	Error Type	Cause and Solution
1	Banknote Insertion Error	Skewed Insertion
2	UV Sensor Error	Check/Clean the UV Sensors
3	Banknote Detected in Acceptor	Check/Clean Banknote Path
4	Adjustment Error	Check/Clean the CIS/Transmissive Sensors
5	Transport Timing Error	Check Motor Speed
6	Denomination Error	Banknote not validated, Check/Clean all Sensors
7	Photo Pattern Error	Banknote Pattern not recognized, Clean Path
8	Photo Level Error	Check/Clean the Banknote Path
9	INHIBIT Error	Banknote rejected due to DIP Switch setting condition
10	Reject Command	Host commanded Banknote reject
11	Ticket Error	Ticket inserted Upside Down
12	Transport/Stacker Error	Sensors blocked in Stacker
13	Banknote Length Error	Banknote length longer than specified, Check Banknote Type
14	Photo Pattern Error	Banknote pattern not recognized, Clean Path
15	Banknote Identity Error	Unidentified Banknote, Check Sensors, Clean Path

## iVIZION® Units

### iVIZION TICKET REJECT ERRORS

Ticket Reject Errors are indicated by the number of **GREEN** LED flashes. Count the flashes that exist in between the longer pause periods to determine the correct Error Code number (Table 8).

**Table 8** iVIZION Ticket Reject Error Codes

GREEN Flashes	Error Type	Cause and Solution
1	Unconfigured Barcode	Barcode could not be read; check damaged/dirty Ticket
2	Format Error	Barcode Format error; check Barcode printing
3	Reserved	N/A
4	Start/Stop Bit Error	Start or Stop Bit cannot be detected; check Ticket printing
5	Character Detection Error	Barcode characters are not detected; check Ticket printing
6	Reserved	N/A
7	Reserved	N/A
8	Double Insertion	Two or more Barcoded Tickets; insert a single Ticket
9	Reserved	N/A
10	Reserved	N/A
11	Upside Down Insertion	Barcode Ticket inserted Upside Down; Insert Ticket with the Barcode up
12	Reserved	N/A
13	Reserved	N/A
14	ICB Setting Error	ICB Setup Tickets are the incorrect format
15	Reserved	N/A

## iVIZION® Units

### INTELLIGENT CASH BOX (ICB) ERRORS

ICB® Errors are indicated by the number of **BLUE** LED flashes. Count the flashes that exist in between the longer pause periods to determine the correct Error Code number (Table 9).



*NOTE: Refer to the “iVIZION® Series Operation and Maintenance Manual” (JCM Part No. 960-100929R) for a full description of errors and corrective actions.*

**Table 9** ICB Error Codes

BLUE Flashes	Error Type	Cause and Solution
1	Reserved	N/A
2	ICB Function Error	ICB Settings / Initialization is not correct.
3	ICB Read/Write Error	ICB Communications Failure
4	ICB Data Error	Data is incorrect / Hardware Failure
5	ICB Number Error	Mismatch of Asset Number between Cash Box and iVIZION Unit
6	ICB Initialization Error	Replace Cash Box with a cleared Box
7	Reserved	N/A
8	Reserved	N/A
9	Reserved	N/A
10	Reserved	N/A
11	Reserved	N/A
12	Reserved	N/A
13	Reserved	N/A
14	Reserved	N/A
15	Reserved	N/A

## iVIZION® Units

### CALIBRATION ERROR CODES

Calibration Errors are displayed in Error Message screens. Refer to Table 10 for Calibration Error Message details.

**Table 10** Calibration Error Codes

Sensor	Code	Cause and Solution
Validator Head, Entrance Sensor	0x21xx	Validator Head, Entrance Sensor Clean and inspect the Entrance Sensor
Validator Head, Exit Sensor	0x22xx	Validator Head, Exit Sensor Clean and inspect the Exit Sensor
Upper UV Sensor	0x23xx	UV Sensor; Clean and inspect the Upper UV Sensor
Lower UV Sensor	0x24xx	UV Sensor; Clean and inspect the Lower UV Sensor
Stacker Home	0x31xx	Clean and inspect the Stacker Home Sensor, check connections
Feed-Out Sensor, Transport	0x32xx	Transport Feed-Out Sensor; Clean and inspect the Transport Feed-Out Sensor
Feed-In, Transport	0x33xx	Clean and inspect the Transport Feed-In Sensor, check connections
Nearly Full, Cash Box	0x34xx	Clean and inspect the Cash Box Near Full Sensor, Transport Cash Box Lens
Cash Box Sensor	0x35xx	Box Sensor Present Sensor; Clean and inspect the Cash Box Sensor Lens
EEPROM	0x40xx	E2PROM Write Error; inspect CPU Boards, connections
RFID	0x50xx	Inspect and check connections for RFID Module; verify RFID Tag in the Cash Box
CIS	0x10xx	Contact Image Sensor, Upper or Lower Clean and inspect the CIS Sensors, check connections

## iVIZION® Units

### GENERAL USAGE OF THE BLUEWAVE™DX TOOL



*NOTE: Refer to the “BlueWave™DX Tool Operator Guide” (JCM Part No. 960-000942R) for detailed instructions.*

1. Connect a USB Cable between the iVIZION Unit and the BlueWaveDX Tool USB Connector Type A.
2. Apply AC Power to the iVIZION Unit.
3. Slide the BlueWaveDX Tool Power Switch ON.
4. Press the UP and DOWN Arrow keys on the BlueWaveDX Tool to scroll to the desired function.
5. Press the OK button to select the desired function.
6. Press the CLR button on the BlueWaveDX Tool to return to a previous screen or to exit a function.

**Table 11** BlueWaveDX Tool Function Descriptions

Function	Description
FIRMWARE UPDATE	Allows the selection of a version of Firmware to be installed in the iVIZION Unit
STATISTICS	Displays Statistical information stored in the iVIZION Unit
ENABLE DENOMI	Displays a list of Banknote Series that the iVIZION will accept
ERROR MESSAGE	Displays a message as an 'Error' or 'No Error' condition
VERSION CHECK	Displays the Firmware version, protocol installed and iVIZION Serial Number
MAINTENANCE	Displays 'Required' or 'Not Required'
ACCEPTANCE LOG	Displays the acceptance rate of Banknotes and Tickets accepted; Banknotes are shown as a total and by individual denominations
DEVICE TEST	Allows Full Device and Sensor testing of the iVIZION Unit. (Note: iVIZION Unit must be in Diagnostic Mode.)
ICB Function	Allows the ICB System to be enabled or disabled and the Asset Number to be set



## iVIZION® Units

### PREVENTIVE MAINTENANCE

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*NOTE: Refer to the “iVIZION® Preventive Maintenance Instructions” (JCM Part No. 960-100932A) for full instructions on Preventive Maintenance procedures.*

To properly maintain the iVIZION Unit, the following conditions must be maintained through Periodic Maintenance:

- Keep the Bill Path/Ticket Path, Rollers and Belts clean.
- The Sensor Lenses are transparent, handle them with care. To clean them, use a clean, dry, Micro-fiber, lint-free cloth. If necessary, use a mild, non-abrasive detergent mixed with water to clean the Sensors. Wipe off any excess moisture from the iVIZION Unit’s surfaces.



**WARNING: Do not use Alcohol, paint thinner, solvents or citrus based solutions for cleaning any surfaces!**

## iVIZION® Units

### CASH BOX PREVENTIVE MAINTENANCE

The following Periodic Maintenance checks must be performed on a regular basis:

1. Use Compressed Air to blow out the Paper fibers and any other debris that may have built up in the Cash Box.
2. Clean the Stacker Feed Belts using a lint-free cloth with a mild soap/water solution.



*NOTE: The Stacking Assembly may need to be removed from the Cash Box and disassembled to properly clean.*

3. Check the Belts and all moving parts for wear and proper positioning. If this assembly does not operate properly, it will increase Banknote jams.

**iVIZION® Units**

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