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# Canon



# ImageFORMULA DR-X10C

## KOFAX CGA BOARD Supplemental Release Letter



**Canon Publication Number:**  
**Revisions:**

**08-DR-X10C CGA Version 1.0**  
**0.0**

08-DR-X10C CGA Version 1.0

July 2008

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**Please utilize this document as your main source of information regarding the Canon DR-X10C Kofax CGA Board and related accessories. Further information on Canon DR-X10C and the Kofax CGA Board option may be obtained by contacting your Canon sales representative.**

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## ABOUT CANON

Canon U.S.A., Inc. is an industry leader in professional and consumer imaging solutions and, through its parent company, Canon Inc. (NYSE:CAJ), is a top patent-holder of imaging technologies. The company's comprehensive product line includes networked multifunction devices; digital and analog copiers (color and black and white); printers, scanners, image filing systems, and facsimile machines; camcorders, cameras and lenses; and semiconductor, broadcast and medical equipment. Canon employs 12,000 people at more than 30 facilities throughout North, Central and South America and the Caribbean.

**SUGGESTED RETAIL PRICE LIST**

The Kofax CGA board option enables the imageFORMULA DR-X10C to scan at the highest possible speed for Kofax Virtual Rescan (VRS), performing the image processing at the hardware instead of the software level. Kofax VRS provides the ability to analyze documents automatically to determine the best method for image processing. Features include the VRS Interactive Viewer, Advanced Clarity, and Background Color Smoothing.



Item No.	Description	MSRP
2418B006AA	Kofax CGA Board & Kofax VRS	\$2,550

## OVERVIEW

### **Preface**

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Canon is pleased to introduce the Kofax CGA board option which enables the imageFORMULA DR-X10C to scan at the highest possible speed for Kofax Virtual Rescan (VRS), performing the image processing at the hardware instead of the software level. Kofax VRS provides the ability to analyze documents automatically to determine the best method for image processing. Features include the VRS Interactive Viewer, Advanced Clarity, and Background Color Smoothing.

## MAIN FEATURES

### DR-X10C with Kofax CGA Board

With the Kofax CGA Board option, the imageFORMULA DR-X10C can realize higher scanning speeds when used with Kofax Hardware VRS (HVRS), than compared to Software VRS (SVRS) only.

Features when scanning with Kofax VRS and the Kofax CGA board are as follows:

1. Automatic Mode:
  - Kofax VRS monitors the scanned images while scanning and applies the most suitable image processing automatically.
    - Automatic adjustment for Brightness, Contrast, and Gamma.
  - Kofax VRS realizes the high quality scanning with the default setting.
    - Do not need to select the specific mode, such as text enhanced mode, according to the documents to be scanned.
2. Manual Mode:
  - Kofax VRS also can display the scanned image for manual adjustment to the optimal images, when the image quality is out of the predefined quality level.
    - Features to use both VRS Interactive Viewer and QC mode.

DR-X10C is set to achieve the following specifications when using Kofax CGA Board with Kofax VRS:

Maximum Scanning Speeds		Simplex	Duplex
	(Letter-size, landscape, 200 dpi)	128 ppm	256 ipm
	(Letter-size, portrait, 200 dpi)	100ppm	200 ipm
Scanning Resolution	100, 150, 200, 240, 300, 400 dpi		
	(600 dpi will become available upon Kofax's next "Maintenance Release")		
Background Color For Scanning	Black Background		
Dedicated Sensor For Page Size Detection and Skew Correction	Not Applicable		
	(Kofax VRS applies image processing from image sensor data)		
Other	Long Document Mode supported		
	(only if application supports "ImageControls" function)		
	Folio Mode not supported		
	DR-X10C Scan-To-Job Buttons not supported		

*DR-X10C with Kofax CGA Board Specifications*

## KOFAX VRS FUNCTIONS

Image processing capabilities supported with Kofax CGA Board and VRS are as follows:

1. Image processing performed by Kofax CGA Board alone:
  - Deskew
  - Automatic Cropping
  - JPEG Compression
2. Image processing performed by Kofax VRS in combination with CGA Board:
  - Text Orientation Recognition
  - Automatic Color Detection
  - Background Color Smoothing
  - Automatic Threshold Adjustment

**Note:**

- *Scanning speeds substantially decrease when using Kofax VRS with the DR-X10C, without using Kofax CGA Board, since all VRS functions are processed on the PC. Therefore the DR-X10C must be used in combination with the Kofax CGA board to support Kofax VRS.*
- *The DR-X10C Standard I/F connection has priority over the Kofax CGA Board I/F in the case that the DR-X10C is connected via both I/Fs.*
- *Automatic Power On/Off synchronization is not supported when using Kofax CGA Board.*

### Kofax VRS Functions

#### 1. Automatic Adjustment for Brightness, Contrast, and Gamma

Kofax VRS automatically adjusts the brightness, contrast, and gamma values and applies these to every scanned image to provide best reproduction quality. Due to this function, Kofax VRS is able to realize both high quality and high speed scanning for any kind of document with just default settings.

#### 2. Line Filter

The Line Filter function allows Kofax VRS to thicken the lines of elements in scanned images. This is especially effective when enhancing characters on scanned documents.

#### 3. Advanced Clarity

The Advanced Clarity settings make it possible to eliminate deep colored or complicated backgrounds from scanned images to generate more readable texts on the scanned images.

**Note:**

- *If Advanced Clarity setting is active for all documents in a batch, the scanning speed will decrease dramatically. It is recommended to use this function only when adjusting image quality manually with the VRS Interactive Viewer.*



#### 4. Manual Skew Correction

In addition to the Automatic Deskew and Cropping function, Kofax VRS also offers a manual Deskew option. This can be useful for fine adjustments to skewed images or images with skewed contents.

#### 5. Background Color Smoothing

Kofax VRS is capable of smoothing out background colors on scanned images. This function converts and smoothes the background region to black, white, or to a color that represents an “average” of the detected background colors. This enhances readability of the scanned image as well as reduces the file size.

#### 6. Interactive Image Adjustment

The VRS Interactive Viewer allows operators to view and adjust image quality at specific “timings” during the scan process. This feature enables operators to proof and make manual adjustments to the scanned image quality.

- QC Mode (“Timing”)  
Moments during which manual adjustments can be made when using the VRS Interactive Viewer can be selected from the following options:
  1. First Page: opens the VRS Interactive Viewer after the first page is scanned
  2. Every Page: opens the VRS Interactive Viewer after each page is scanned
  3. On Errors: opens the VRS Interactive Viewer only when “Exceptional Conditions” occur (“Exceptional Conditions are user configurable)
  4. Disabled: VRS Interactive Viewer is disabled
  5. QC Later: opens the VRS Interactive Viewer with Kofax Ascent Capture.
- Adjustable Parameters  
The following adjustments are possible using VRS Interactive Viewer:
  1. Clarity (such as Brightness, Contrast, Gamma)
  2. Noise (such as Noise Removal)
  3. Skew (such as Deskew, Auto Cropping, Black Border Removal)
  4. Color (such as Auto Color Detection)
  5. Background (such as Background Color Smoothing)
  6. Blank Page (such as Skip Blank Page)
- VRS Administration Utility  
“exceptional Conditions” can be configured in the VRS Administration Utility. The exceptional conditions related to scanned images are:
  1. Brightness values are outside of the acceptable range
  2. Contrast values are outside of the acceptable range
  3. Color Confidence value (Kofax VRS calculates Color Confidence as a percentage when evaluating color or black and white of scanned images) of the scanned document is outside of the acceptable range
  4. Auto Cropping has failed (detecting the edge of a scanned document has failed)
  5. Deskew has failed

**Note:**

- *When in QC mode, an error will occur when the VRS Interactive Viewer is “cancelled”. If this occurs, please stop the scanning operation via application or scanner, confirm scanned images, and then resume scanning. This issue will be fixed in the upcoming Kofax “Maintenance Release”.*

## 7. Supported Barcodes

Barcode recognition through Kofax VRS will only function when employing an application which supports ISIS driver or ImageControls Function. Kofax VRS Professional supports the following barcodes:

Aztec	DataMatrix	Maxi Code
CODABAR	EAN	PDF147
CODE128	Interleaved 2 of 5	QR
CODE39 (3 of 9)	Linear 2 of 5	UPC-A
CODE 93	Postnet	UPC-E

*Kofax VRS Pro Supported Barcodes*

**Note:**

- *Postnet Barcodes cannot be recognized with other barcodes at the same time*
- *The number of barcodes, which can be recognized per page, is depended on the application used*

## Other DR-X10C Functions Supported by Kofax VRS

### 1. Imprinter / Addon (Electronic Annotation)

The DR-X10C Pre-Imprinter and Post-Imprinter function can be configured in the Kofax VRS scanner settings dialog.

**Note:**

- *When either the Pre-Imprinter or the Post-Imprinter are installed, the installed unit will function*
- *If both the Pre-imprinter or the Post-Imprinter are installed, only the Pre-Imprinter will function*

### 2. Double Feed Detection

With Kofax VRS both the Double Feed Detection by Length or by 3-Ultrasonic Double Feed Sensors can be used to detect double feeds.

### 3. Other Functions

- Selection between High Speed or High Image Quality priority mode
- Verify Count
- Moire Removal
- Staple Detection
- Reduce Bleed-Through
- Error Recovery

**Note:**

- *Kofax VRS may generate coarse images for some documents due to a possible conflict between the DR-X10C Reduce Bleed-Through and the Kofax Automatic Image Quality Adjustment.*

**Speed Reference with Kofax VRS Image Processing Functions**

Scanning speeds may vary when using certain Kofax VRS image processing functions, as for example Auto Orientation (Text Orientation Recognition), Blank Page Detection (Skip Blank Page), and Advanced Clarity settings.

<b>Auto Orientation</b>		Duplex
Black and White	(Letter-size, landscape, 200 dpi)	180 ipm
Color	(Letter-size, portrait, 200 dpi)	146 ipm
<b>Blank Page Detection</b>		Duplex
Black and White	(Letter-size, landscape, 200 dpi)	256 ipm
Color	(Letter-size, portrait, 200 dpi)	100 ipm

*Kofax VRS Speed References*

**FUNCTIONAL COMPARISON**

**DR-X10C with Kofax CGA Board**

On the next page is a functional comparison between the imageFORMULA DR-X10C and the DR-X10C with Kofax CGA Board and VRS. Please note that the functions highlighted in orange are realized only when using the DR-X10C's standard I/F connection and the ISIS/TWAIN driver. The functions highlighted in yellow are only available when using the DR-X10C in conjunction with the Kofax CGA Board and VRS.

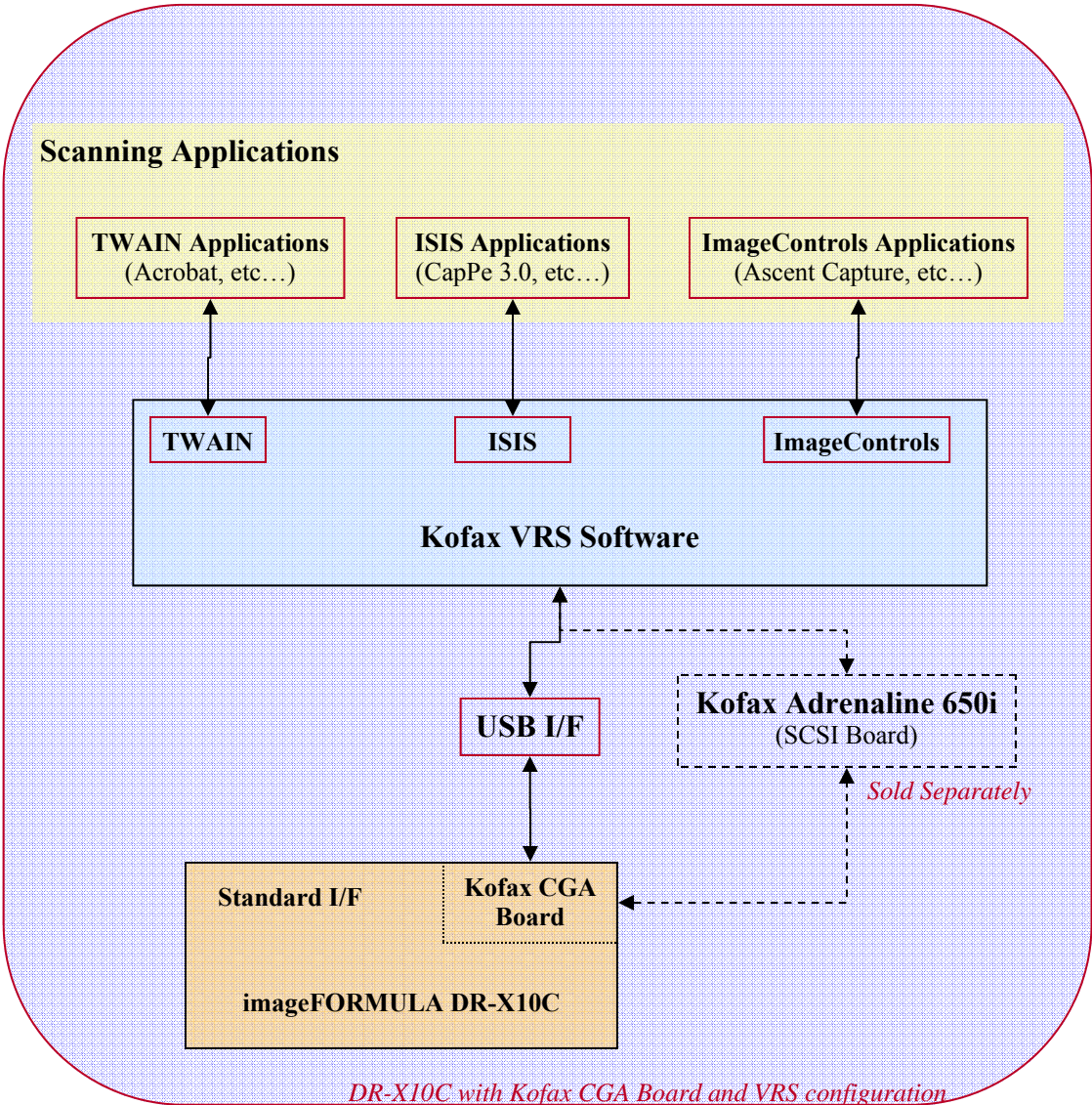
## Functional Comparison

	DR-X10C Native Functions	DR-X10C with Kofax CGA/VRS
Add Margin Area to Images	√	X
Addon	√	√
Auto Adjustment for Brightness and Contrast	√	√
Auto adjustment for Gamma	X	√
Auto Color Detection	√	√
Auto Size Detection (Auto Cropping)	√	√
Background Color Smoothing	X	√
Barcode Recognition	√	√ <sup>i</sup>
Black Border Removal	√	√
Clarity (Sharpness)	X	√
Color Enhancement	√	X
Custom Color Dropout	√	X
Deskew	√ <sup>ii</sup>	√ <sup>iii</sup>
Double Feed Detection / Staple Detection Setting	√	√
Edge Emphasis	√	√
Erase Dot (Speckle Removal Filter)	√	√
Error Recovery	√	√
Folio Mode	√	X
Image Rotation	√	√ <sup>iv</sup>
Imprinter	√	√ <sup>v</sup>
Interactive Image Adjustment while scanning	X	√
JPEG Transfer	√	√ <sup>vi</sup>
Line Filter	X	√
Long Document Mode	√	√ <sup>vii</sup>
Manual Deskew (fine rotate image manually)	X	√
Moire Reduction	√	√
PatchCode Recognition	√	√
Plain Color Dropout	√	√
Prevent Bleed Through / Remove Background	√	√
Punch Hole Removal	√	√
Scan Area Setting	√	√
Skip Blank Page	√	√
Text Enhancement	√	√ <sup>viii</sup>
Text Orientation Recognition	√	√
User Preference	√	√
Verify Count	√	√

(i) Can recognize various kinds of barcodes  
(ii) Using the dedicated sensor for image size detection and skew correction  
(iii) Using the image data which are read from the image sensor  
(iv) Can set the rotation angle for the front side and back side separately  
(v) Only Pre-Imprinter works when installing both Pre- and Post-Imprinter  
(vi) Can set ratio of JPEG compression  
(vii) Only supported by applications that support ImageControls function  
(viii) Apply optimal image processing automatically

### System Configuration when using DR-X10C with Kofax CGA Board

The system configuration of the imageFORMULA DR-X10C with the Kofax CGA Board and VRS is as follows:



## APPENDIX

Please find information to the following topics attached in this appendix:

- Device Upgrade
- Installation of the Kofax CGA Board
- USA Support Model

## DEVICE UPGRADE

### Device Upgrade

All imageFORMULA DR-X10C color production scanners can be equipped with the Kofax CGA Board. Please note that certain DR-X10C scanners require a Driver and Firmware update (device update). Please refer to separate published information containing the Serial Number sequences which will need the device update.

It is also possible to verify the Driver and Firmware version to determine whether a device update is required. Please find below the driver and firmware versions that need updating, as well as the version numbers which support the Kofax CGA Board.

	Current version (needs update)	Version which supports Kofax CGA Board
ISIS/TWAIN Driver	Version 1.0	Version 1.1
Firmware	Version 1.13	Version 2.10

*imageFORMULA DR-X10C Device Update*

The files for the device update are available download on the CUSA website.

**Note:**

- Please note that the Kofax CGA Board will not function without the correct ISIS/TWAIN Driver and Firmware.

## INSTALLATION

**WARNING:**  
**Before installing the Kofax CGA Board, please read previous page, to verify whether a imageFORMULA DR-X10C Device Upgrade is necessary.**

### Installation Notes

This installation guide is intended to support the use of Kofax VRS 4.1 SP2 with Canon imageFORMULA DR-X10C scanners with Kofax CGA Board. After installation of the VRS software, ensure that the VRS CGA board is correctly installed in the DR-X10C scanner. If the board has been successfully installed, the CGA firmware version will be listed in the About Panel in the Advanced Properties window.

### CGA Board Installation

The procedure in this section is intended to assist in the installation of the VRS CGA board in the Canon imageFORMULA DR-X10C scanners. Please read carefully before commencing the installation process.

#### Equipment

The following items are required to complete the procedure outlined in this document::

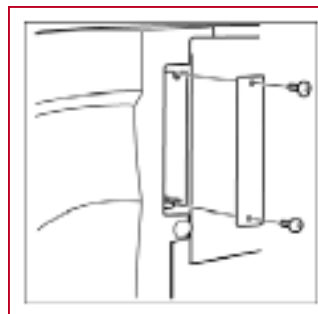
- VRS CGA Board
- USB cable
- Phillips screwdriver

**WARNING:** *Make sure to turn off the scanner power **at least 5 minutes** before you attempt to install or uninstall the VRS CGA board.*

#### Installation

This section explains the procedure for installation the VRS CGA board :

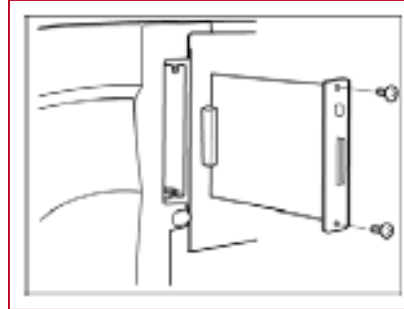
1. Remove the shipping restraint from the bottom of the scanner.
2. Install the VRS CGA board as follows:
  - a. Remove the third-party slot cover (Figure 1). Keep the mounting screws.



*Third-party slot cover removal*



- b. Slide the VRS CGA board along the rails of the third-party slot until it is inserted into the connector (Figure 2). Make sure that the VRS CGA board is connected securely.



*Kofax CGA Board installation*

- c. Mount the VRS CGA bracket to the third-party slot. Use the screws provided to secure the bracket.

### Testing

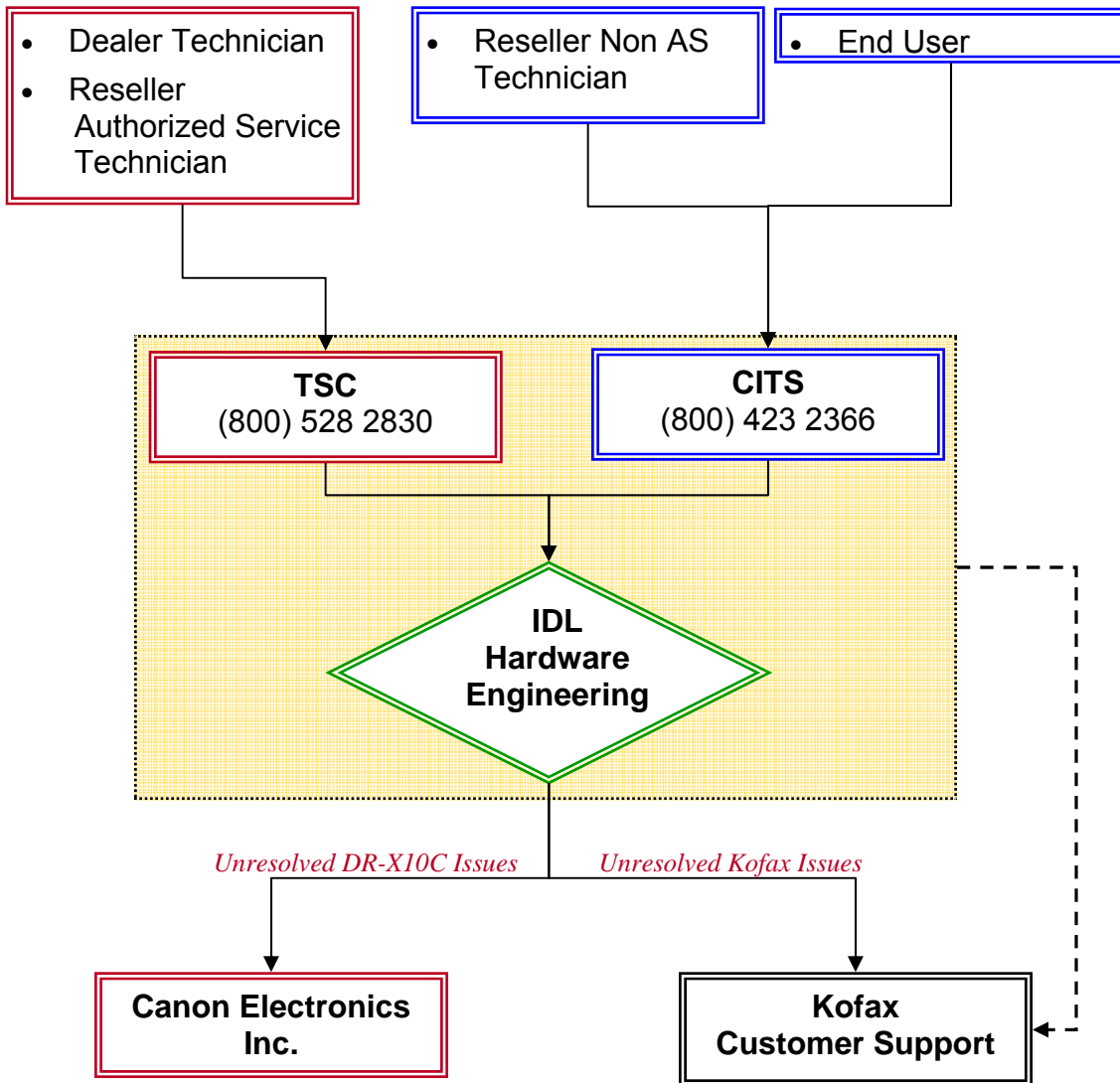
Once the VRS CGA board is installed, use the procedure in this section to test the board's functionality. These instructions assume that the VRS software is already installed on computer. If necessary, refer to the *Kofax VRS Installation Guide* or *VRS User's Guide*, as applicable.

1. Connect and power on the scanner
2. Launch VCDemo and select a VRS scan source.
3. Using the VirtualRescan Administration Utility, select the Errors tab to configure VRS to trap for the Out of Paper condition.
4. Verify that the scanner ADF is empty. Launch a multiple page scan.
5. After the message is displayed indicating that the ADF is empty, place a batch of 50 sheets (20lb bond) paper into the ADF. The product will pass the ADF Out Of Paper test if all pages are fed without errors and the ADF empty message is displayed after all the pages have been scanned.
6. Click Cancel in the Out Of Paper message window.
7. Double-click the VRS taskbar icon to display the VRS Interactive Viewer.
8. Select the Clarity panel from the VRS Interactive Viewer.
9. Manually change the Brightness and Contrast settings and note that the image will change. If the image density changes, then the VRS CGA board is working correctly.
10. Click Cancel to exit the VRS Interactive Viewer.

**USA SUPPORT MODEL**

**USA Support Model**

The following is an overview of the USA support model for troubleshooting the imageFORMULA DR-X10C with Kofax CGA Board and VRS.



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