

ViZion DR+ 1417CK

Calibration Guide

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Calibrating ViZion DR+ (1417CK)

This guide provides detailed instructions on how to run a full gain and defect calibration for your ViZion DR+ 14x17CK wireless panel once the installation process has been tested and verified.

Panel models can be determined by the first 4-5 digits of the serial number as follows:

Model	Panel AKA	Serial Number Format
iRay 14x17 Wireless Panel GOS	G 1417CK Panel	KV070XXXXXXX
iRay 14x17 Wireless Panel GOS	G 1417CK Panel	KV38XXXXXXXX
iRay 14x17 Wireless Panel CSI	C 1417CK Panel	KV300XXXXXXX

1 Preparing for Calibration

1.1 Recommended Panel Configurations

Prior to starting panel calibration it, is recommended that basic device configuration is setup properly in the ViZion DR+ acquire software.

Refer to the appendix in the technician folder for specific configuration details.

1.2 Powering on the Panel

Before you power on the panel, allow the panel to acclimate to room temperature if the panel is brought in from the cold or heat or if room environmental controls have been changed.

 Turn panel over and position it so that battery connector pins, located in the top left of the battery compartment, are pointed toward you.



Figure 1: Panel Positioning for Inserting Battery

2. Slide a fully charged battery into the battery compartment, aligning the arrow on the battery with the connector pins.



Figure 2: Panel and Battery Alignment



3. Slide the two battery lock levers until it clicks into place.



Figure 3: Battery Lock Levers

 Once battery has been inserted, panel detector automatically activates the Power On Sequence and should be available for use within 90 seconds.

If panel does not power on automatically, press power button on the side of the panel, holding it in for 5 seconds and releasing.



Figure 4: Power Button

1.3 Stopping the Maven Process

- 1. Exit the ViZion DR+ acquisition software.
- 2. Stop the Maven process if it is running.
 - a. Verify if Maven is running. An iRayMk3 icon is displayed in the notification area on the right side of Windows desktop taskbar.
 - b. If Maven is running, right-click the Maven icon and click **Exit** to stop the service.



Figure 5: Stopping Maven

2 iDemo

2.1 Connecting to iDemo

The iDemo utility software is located under the C:\ drive. If it is not in that location, consult with a Konica Minolta DR technician to download the appropriate iDemo software.



Figure 6: iDemo File Location

- 1. Launch the FTP utility.
 - a. Navigate to: c:\IDemo_3.0.0.14
 - b. Double-click the file, *FTPServer.exe*.



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- 2. Click Configuration and change FTP port to 21000 and click Apply.
- 3. Click Start and minimize the FTP Server window (Do not close).



Figure 7: FTP Utility

- 4. Launch the iDemo calibration utility.
 - a. Navigate to: c:\IDemo_3.0.0.14
 - b. Double-click the file, IDemo_interface.exe.
- 5. Click Start.



Figure 8: iDemo Connect Detector

6. In the Connect Detector box, click Connect (Figure 8).



2.2 Configuring iDemo

1. In the Correction section, configure the following settings.

Offset = NO

Gain = NO



-
-
•
1

Figure 9: Correction Settings

2. Click Config to display configuration settings.



Figure 10: iDemo Settings

3. Click **General Settings** on the left menu, set the following general configuration settings.

Trigger = Inner Trigger

Exp Window = 30000

	Statues			General Settings			
Contract Settings	Detector Info Product type: Serial Number:	33 8907087145333		sion Detail JB Version: 3.0.0.14 Gene Version: 1.3.3.24 Gene Version: 2.5.3.0 field Version: 2.5.3.0 Field Version: 2.5.3.2 CLI Version: 2.5.3.2	 neor details Temperature: 0.0010.00 Humstity: 0.00	~ <u>k</u>	Reco
Contradion	General Settings Troppers Time Spans Acquire Delays Sritegrater	triver	111	Exp Window: 20000 Delay time: 1000 Irvar Delay: 0	 Preedync Window: 15 Auto Sleep Thiseout: 0	=.	Res
Mil Correction					2	Query Live Time	Res
ermare Update							

Figure 11: iDemo General Settings

- 4. Click **Write RAM** to save changes.
- 5. Click **HW Correction** settings on the left menu and set the following setting.

Offset Mode = No



Figure 12: HW Correction Settings

- Click Write RAM to save changes. Gain and Defect Map settings changes to "Do in SW" (Figure 12).
- 7. Click **Exit** to exit the Config settings window (Figure 12).

3 Calibrating ViZion DR+

3.1 Environment Setup

- 1. Align the panel with the X-ray tube.
- 2. Set tube head Source to Image-receptor Distance (SID) to **60**".
- Open the collimator to allow full coverage of the surface of the panel. The collimator light should extend an inch beyond the edges of the panel.
- 4. Remove any anti-static grid or grid-cap. Make sure panel is out of bucky and no objects are between the panel and tube head.
- 5. Configure **70 kV 5.4 mAs** on the X-ray control console.

3.2 Performing Panel Gain Calibration

If using an integrated generator, it must be configured to make exposures in Direct Mode to run calibration. Use the manufacturer software parallel to iDemo to control the generator settings, or adjust kV and mAs from the generator console.

1. In the Correction section, configure the following setting.

Offset = POST



Figure 13: Correction Settings



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2. Click Create.

3. Select the Gain tab.



Figure 14: Gain Settings

- 4. Set the **Expected Gray Value** field to 6000 (Figure 14).
- 5. Click **New Gain Point** (Figure 14).
- Click PREP and make an exposure during the "Exposure Enable" status (the current status displays at the bottom of the screen). While the image is transferring, the status changes from "Image Getting" showing the panel has triggered an image, to "Exposure prohibit (post offset)", to "Exposure enable (post offset)".



Figure 15: Image Transfer Status

 After image transfer completes and the status "Got Image" is displayed, verify that the Center Average value is between 5900-6100.

in a c	crease / decrease KV to make smaller djustments , Increase / lecrease mAs to make larger adjustments
Control Witand Gain Defect Expected Average Expected Average Expected Gray Value F000	PREP Abort Evo PPIEP Accessive Got image! New Port Selected Gam 0 Current Average [562]
New Gam Port	Center Average [535 Select
	Creare Gran Contect File

Figure 16: Verifying Center Average

- If the value is below 5900, increase the dose.
- If the value is above 6100, decrease the dose.
- After dose adjustments are made, repeat Steps 5 - 7 until the center average value is between 5900-6100.



When center average value is within the expected range of 5900-6100, click
 Select (Figure 17) to add that value to the Selected Points list (Figure 18).

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Expected Average Expected Gray Value 5000	*3 *3 *3 *3 *3 *3 *3 *3 *3 *3 *3 *3 *3 *	Selected Pores
	Créate Gain Conect Fée]

Figure 17: Center Average Value

Expected Average Expected Gray Value 6000 May Gala Roat	-> N	Got image ew Point Selected Gain 1 Currer Average 5920 Certer Average 5941	• 	Selected Points
		Create Gen Collect	F da	

Figure 18: Selected Points List

10. Repeat Steps 5-6 until you have a total of 5 gain frame values in the **Selected Points** list.

Defect	PREP	Abort Exp	PREP.Ac	2007	
		Got ima	ge!		
Expected Average Expected Gray Value 5000	••	New Point Selected Gan 5 Current Average 593 Center Average 595 Select	3	2	Selected Points 11: 5916;5936 13: 5920;5931 14: 5926;5949 15: 5931;5953
	ļ	Create Gain Cor	rect File		

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Figure 19: Five Successful Gain Frames

11. Click Create Gain Correct File.

Territori I	100 B	
_	PREP Abort Exp PREP	Acquire
	Got image!	
Expected Average	New Point	Selected Points
Expected Gray Value	Selected Gain 5	1-1: 5916, 5936
6000	Current Average 5931	1-3: 5949, 5970
	нелью	1-5: 5931, 5953
Timy Lion Cont	Correction file is generated successfi	uliyi
	c	* (
	Create Gain Correct File	

Figure 20: Creating Gain Correct File

- 12. Click **OK** when the "Correction file is generated successfully" message displays.
- 13. Click **OK** to exit the Gain Correction wizard.



3.3 Performing Panel Defect Calibration

NOTE: **This step is optional.** After performing a Gain Calibration, continue by performing a Defect Calibration (only necessary if dead pixels and/or dead pixel lines are present in acquired images). A new defect map applies these corrections to mask out dead pixels when possible.

1. In the Correction section, configure the following setting.

Offset = NO

2. Click Create.



Figure 21: Correction Settings

 Select the **Defect** tab. The Current Frame # defaults to "1". A total of 19 frames must be acquired to complete a full defect mapping.



Figure 22: Defect Calibration

 Configure the dose as close to the requested kV as possible, trying to adjust mAs to get within ± 100 of the expected gray value (some deviation of kV may be required).

The suggested mAs values to use for each frame are in parenthesis below. Adjust mAs up or down as needed.

<u>Frame 1</u>: 70kV / expected gray value = 1000 (0.6 mAs)

<u>Frame 2</u>: 40kV / expected gray value = 1000 (5.1 mAs)

<u>Frame 3</u>: 100kV / expected gray value = 4000 (1.2 mAs)

<u>Frames 4-19</u>: 70kV / expected gray value = 11000 (10.5 mAs**)**

5. Click **Start Creating.** A message displays providing the amount of kV to use for that frame #. The message also provides the expected gray value for that frame #.



Figure 23: Expected Grey Value Message



- Click OK after you have read the expected dose information message. A message in red letters "Waiting for PREP ..." displays.
- 7. Set your kV and mAs accordingly.
- 8. Click **PREP** and make an exposure during the "Exposure Enable" status.

Template	PREP	Abort Exp	PREP Acquire	
	Wa	aiting for F	REP	
ease set expected gray va	lue: 1000, [kV=70] for ima	ge: 1/19		
1	Create Light File			1
Create Offset	Create Light File	Current: 1	Start creating	Create Defect
Create Offset	Create Light File	Current: 1	Start creating Auto Completion	Create Defect



While waiting on the image to transfer, the status changes from "Image Getting", indicating that the panel has triggered an image, to "Exposure prohibit (post offset)", to "Exposure enable (post offset)".

 After image transfer completes and the status "Got Image" is displayed, review the last line and look for the Center value, verifying that the value is within ±100 of the expected gray value for that frame #.

If the value is more than 100 below or more than 100 above the expected gray value, adjust your mAs up or down.

NOTE: If the Center value returned is too low or too high, the counter may still

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advance to the next number and a popup for the next frame may display.

Be sure to click **OK** and select the dropdown next to "Current" and reset the Current frame # back to the previous # that needs to be reacquired.

<u>Example</u>: In the following example (Figure 25), the returned center value for "Current 1" is 700, which is too low because it is not within ± 100 of the expected center value 1000.

Also notice that the counter increased to the next frame #. Therefore, before acquiring the next frame, go back to frame 1, and re-acquire frame 1, after increasing mAs.

- Click OK and select dropdown next to Current and select "1".
- Then repeat steps 5-9 until the returned value is within ± 100 of the expected gray value.







10. Once you successfully complete a defect frame, the next "Current" # should increase to the next # in the sequence automatically (increase it manually by clicking on the dropdown arrow next to **Current** and increase the number to the next number in the sequence).

Refresh HW Offset Template	PREP	Abort Exp	PREP Acquire	
		Got imag	el	
ease set expected gray vi et the light image: 1/19.(A	lue: 1000, [kV=70] for im verage:722; Center:718;	age: 1/19 Lost Packet.no)		
ease set expected gray vi ease set expected gray vi	ilue: 1000, [kV=40] for im ilue: 1000, [kV=70] for im	age: 2/19 age: 1/19		
at the agric mage. 17 19,04	cage tore, certar tor	2, LOR F BC(E(110)		
	-Create Light File		1	1
Create Offset	-Create Light File	Current: 2	Start creating	Create Defect
Create Offset	-Create Light File	Current: 2	Start creating Auto Completion	Create Defect

Figure 26: Successful Returned Expected Grey Value Within Range

11. Repeat steps 5-9 for the remaining frames (19 total frames).

NOTE: Use the same dose for frames 4-19 (Step 4). A message is not displayed for subsequent frames 5-19 when you click **Start Creating** after frame 4.

12. After obtaining 19/19 frames, click **Create Defect**.

Template	PREP	Abut Exp	PRSP Acquire	
Th	e defect file	was crea	ated success	sfully!
Lease as exploring (JJ) or det the tight increase (JJ) of det the tight increase (JJ) of Cet the tight increase (JJ) of Peace est expected array or Get the tight increase (JJ) of Peace est expected array or Get the tight increase (JJ) of Peace est expected array or Get the tight increase (JJ) of Peace est expected array or Get the tight increase (JJ) of Peace est expected array or Get the tight increase (JJ) of Peace est expected array or Get the tight increase (JJ) of Peace est expected array or Get the tight increase (JJ) of The effect til correcting and The eff	Aver 1010 (11 C U) 101 Aver 1010 (11 C U) 101 Aver 1010 (12 C U) 101 Aver 1		na) na) na) na) na) na) na)	
1	- Create Light File	Connection 10	- Start constinue	Counter Defend
Canada Official		curert. 19	• stan cleating	



- 13. Click **OK** when the "Correction file is generated successfully" message is displayed.
- 14. Click **OK** to exit the Defect Correction screen.

3.4 Storing New Calibration Files

Calibration files for the 1417CK wireless panel are stored inside the panel. Perform the following steps to download the new calibration files to the panel.

- 1. Click **Config** to display the Config settings.
- Turn the Gain and Defect calibrations back on by selecting dropdown next to Offset Mode, and change selection from "No" to "Post Offset".
- 3. Click HW Correction.
- 4. Under the HW settings, click **Download** in line with the "Gain Map" and wait for the status to change to "Download Hardware Correction File Success".



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atual Download hardware correction file success.	
HN .	
Gen Map: Available Con SDK Convertiged Read Out Update Local	
Defect Maps: Available Do in SDK Download Read Out Update Local	Bernuer D/M
Lag Map: Download Read Out Update Local	
Update Status	Write ROM
~	Read RCH
	Witte RAM
	Read RAM
	Reset FPD
	Exit
	No Offen Hone: Seen Hone: Sea State Understrage: Available: Sour State - Sourceman - Read Cole: Understate Land Understrage: Available: Source - Sourceman - Read Cole: Understate Land Understate: Source - Sourceman - Source - So

Figure 28: HW Correction

 If you also performed a new Defect Calibration, click **Download** in line with the "Defect Map" (Figure 28) and wait for the status to change to "Download Hardware Correction File Success". 6. Click Write RAM to save changes.

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ieneral Settings	Statue: Download hardware correction file success.	
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	Defect Map: Available Do in SDK Download Read Out Update Local	E STATE OF S
etwork Settings	Lag Mapi Download Read Out Update Local	Recover HOM
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e Correctori		Vitte RAM
100000000000000000000000000000000000000		Read RAM
		Reset FTD
Configuration		
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-		

Figure 29: HW Correction

- 7. Click Exit to exit the Config Screen.
- 8. On the Correction section
 - a. Select dropdown next to "Gain", and change selection from NO to CURR.
 - b. Select dropdown next to
 "Defect", and change selection from NO to CURR.

Correction	Correction
Offset: NO 💌	Offset: NO 💌
Gain: NO 💌	Gain: CURR 💌
Defect: NO 💌	Defect: CURR 💌
Create	Create

Figure 30: Correction Settings

- 9. Click **End** to disconnect from the panel.
- 10. Exit iDemo.

NOTE: It is recommended to perform semiannual calibration for continued accuracy of exposure.

