



KONICA MINOLTA

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	KV070XXXXXXXX
iRay 14x17 Wireless Panel GOS	G 1417CK Panel	KV38XXXXXXXX
iRay 14x17 Wireless Panel CSI	C 1417CK Panel	KV300XXXXXXXX

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.

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

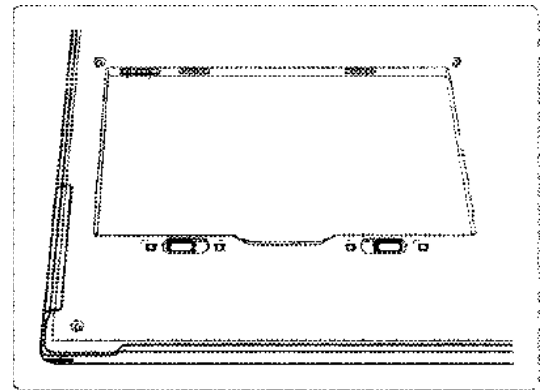


Figure 1: Panel Positioning for Inserting Battery

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

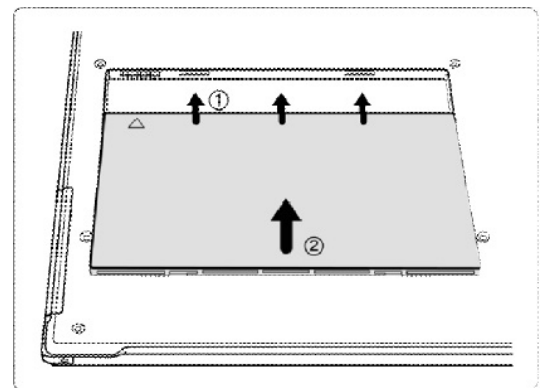


Figure 2: Panel and Battery Alignment

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

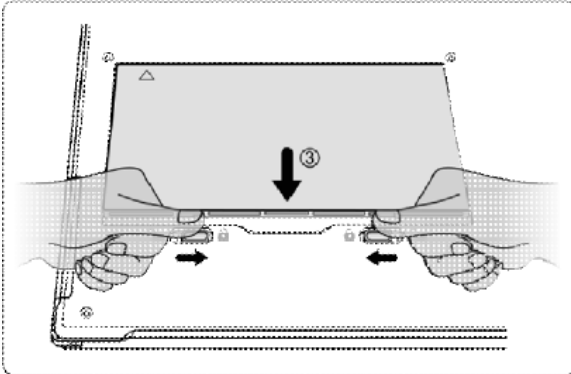


Figure 3: Battery Lock Levers

- 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.

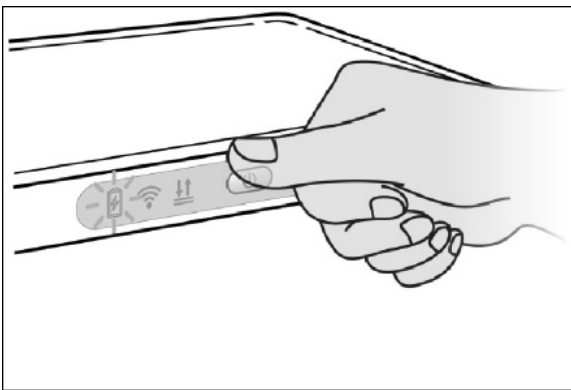


Figure 4: Power Button

1.3 Stopping the Maven Process

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

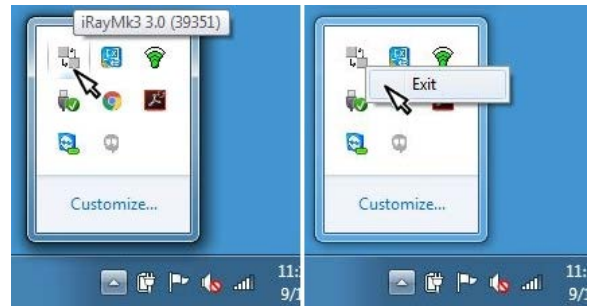


Figure 5: Stopping Maven

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

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

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

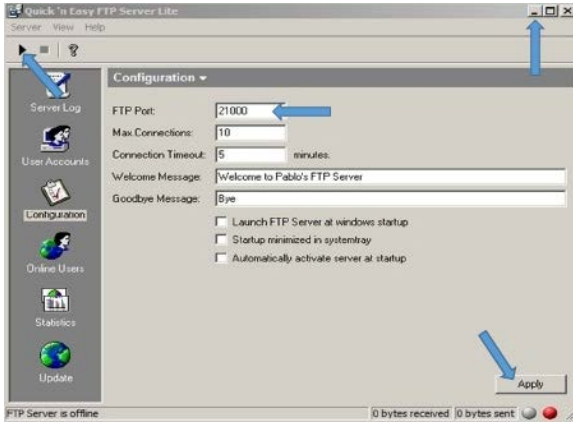


Figure 7: FTP Utility

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**.

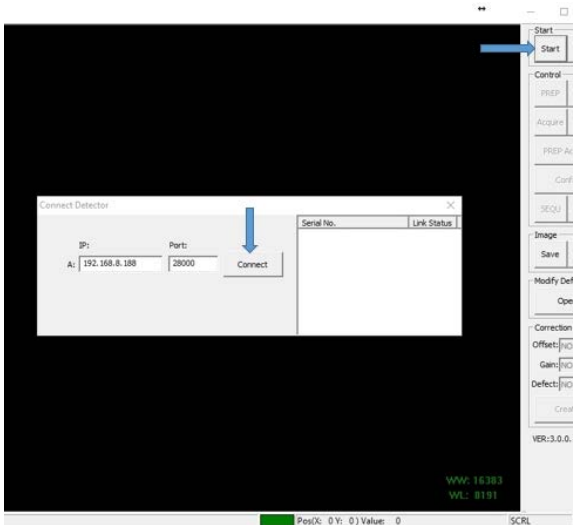


Figure 8: iDemo Connect Detector

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

Defect: NO

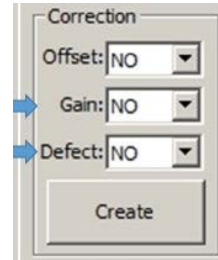


Figure 9: Correction Settings

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

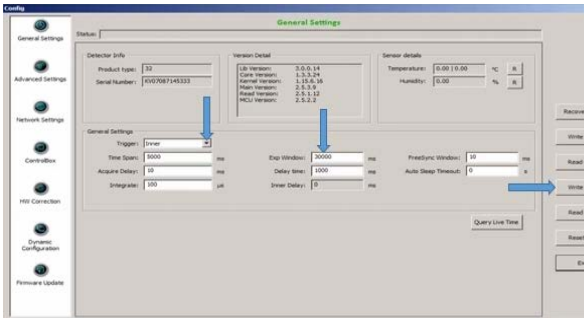


Figure 11: iDemo General Settings

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

Offset Mode = No

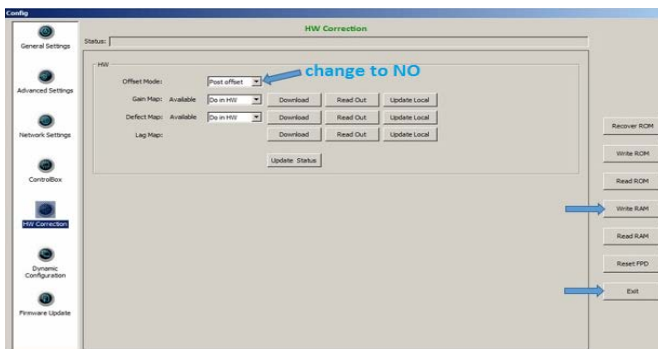


Figure 12: HW Correction Settings

6. 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”**.
3. 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

2. Click **Create**.
3. Select the Gain tab.

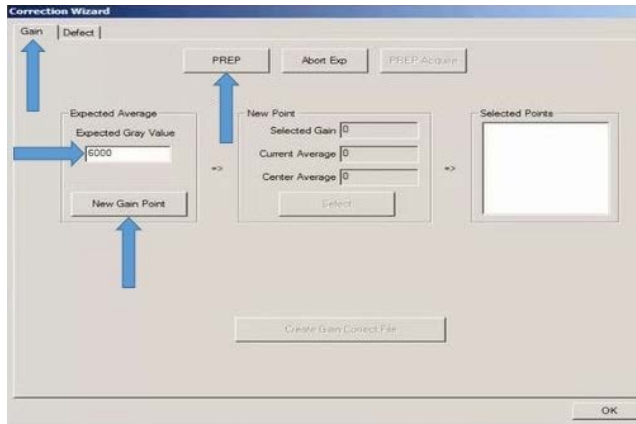


Figure 14: Gain Settings

4. Set the **Expected Gray Value** field to 6000 (Figure 14).
5. Click **New Gain Point** (Figure 14).
6. 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)”.

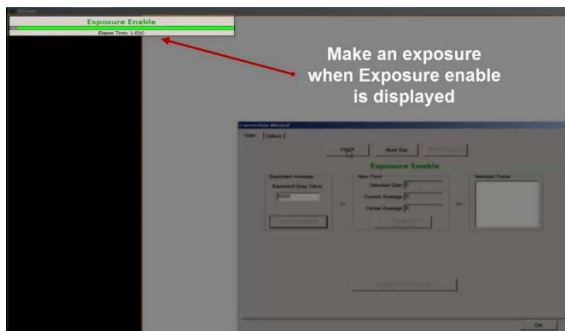


Figure 15: Image Transfer Status

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

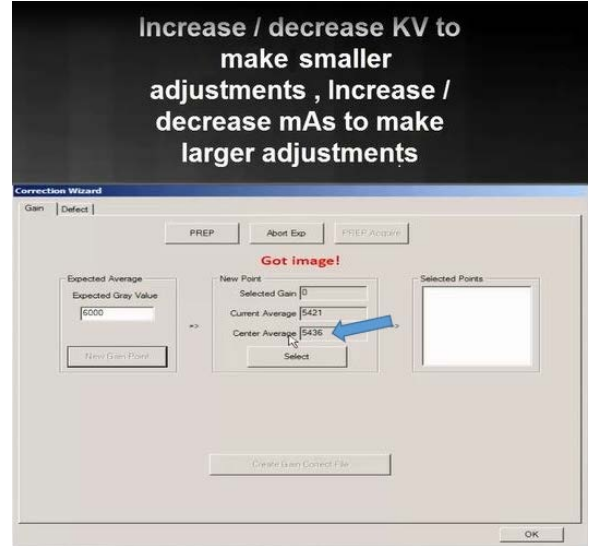


Figure 16: Verifying Center Average

- If the value is below 5900, increase the dose.
 - If the value is above 6100, decrease the dose.
8. 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).

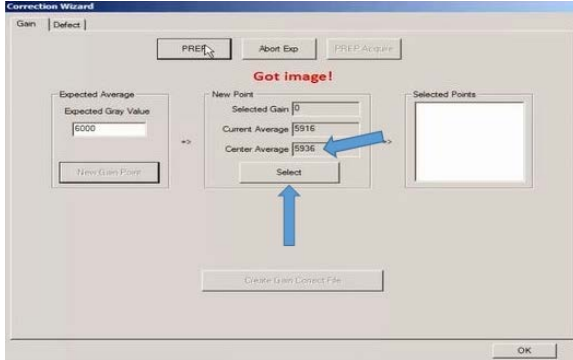


Figure 17: Center Average Value

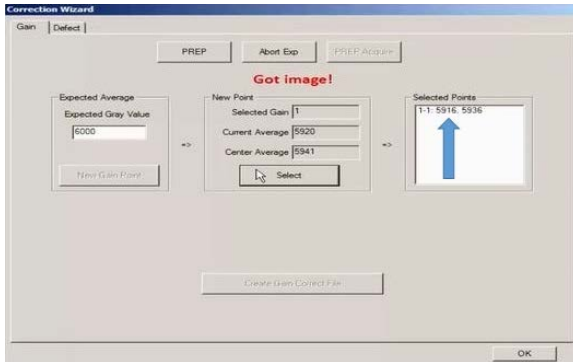


Figure 18: Selected Points List

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

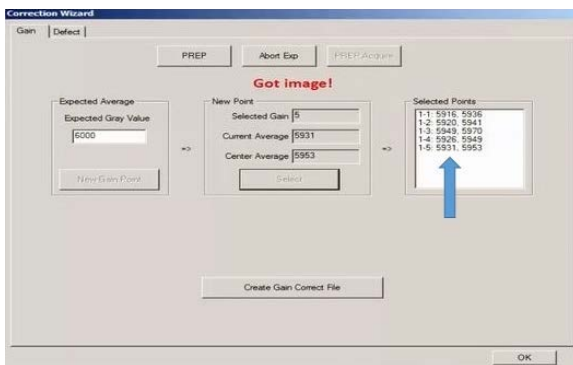


Figure 19: Five Successful Gain Frames

- Click **Create Gain Correct File**.

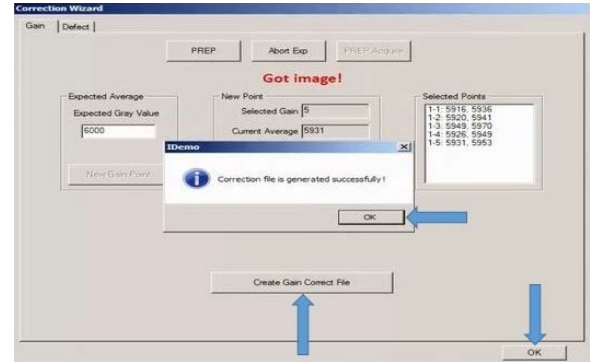


Figure 20: Creating Gain Correct File

- Click **OK** when the “Correction file is generated successfully” message displays.
- 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

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

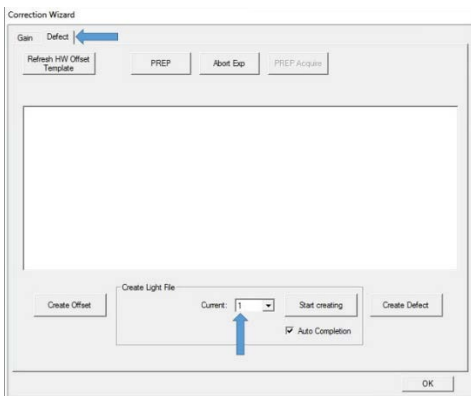


Figure 22: Defect Calibration

4. 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.

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

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

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

Frames 4-19: 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 #.

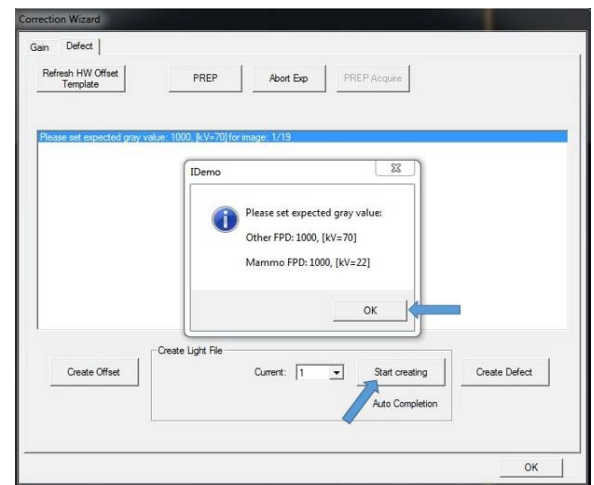


Figure 23: Expected Grey Value Message

6. 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.

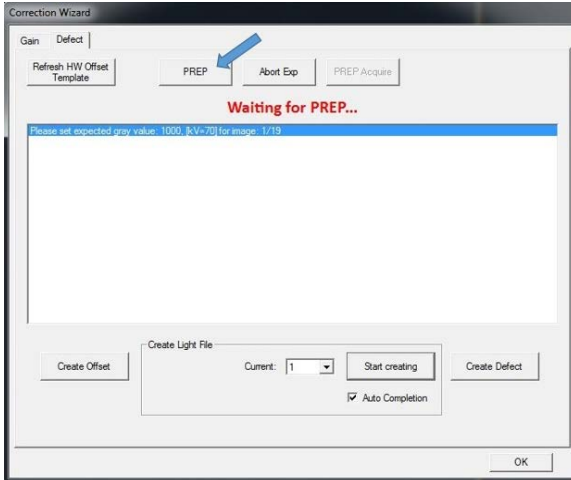


Figure 24: Calibration Status

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)”.

9. 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

advance to the next number and a pop-up 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.

Example: 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.

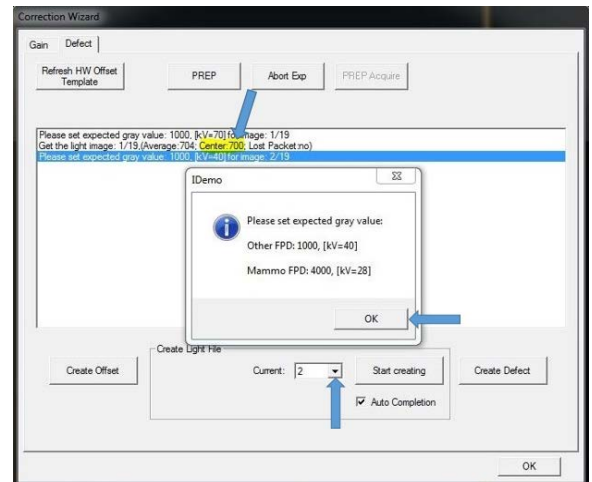


Figure 25: Returned Expected Grey Value

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).

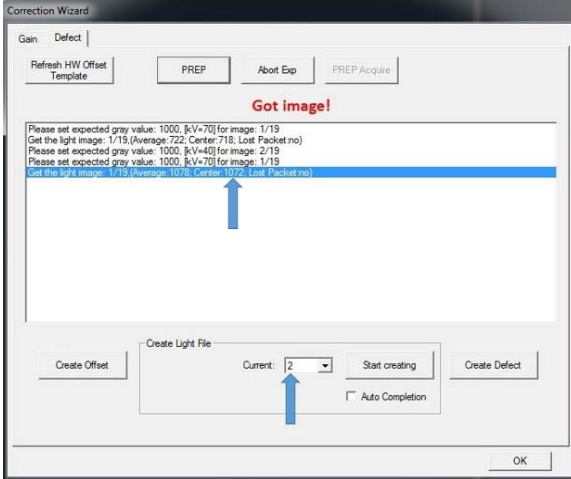


Figure 26: Successful Returned Expected Grey Value Within Range

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**.

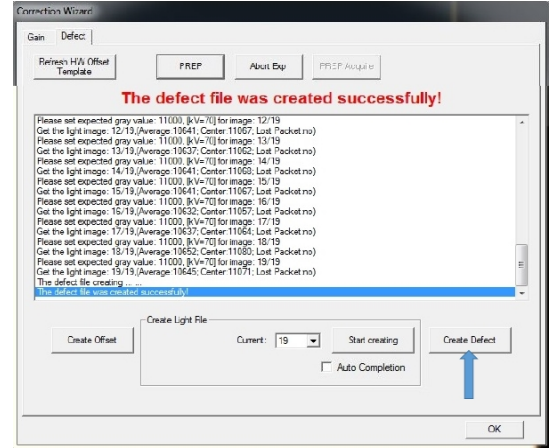


Figure 27: Creating Defect File

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.
2. 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”.

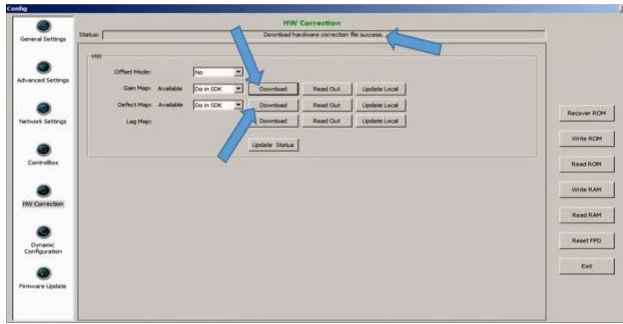


Figure 28: HW Correction

5. 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.

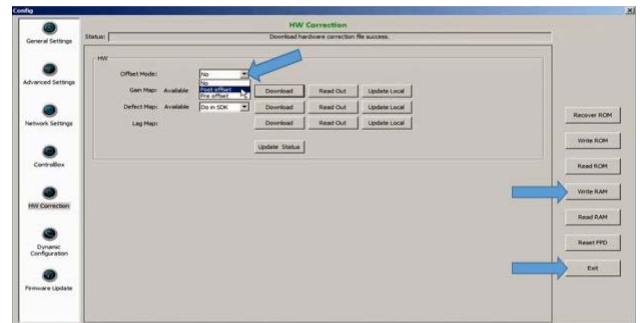


Figure 29: HW Correction

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**.

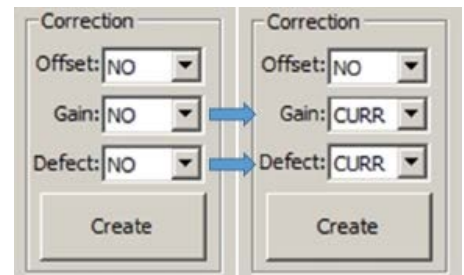


Figure 30: Correction Settings

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

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