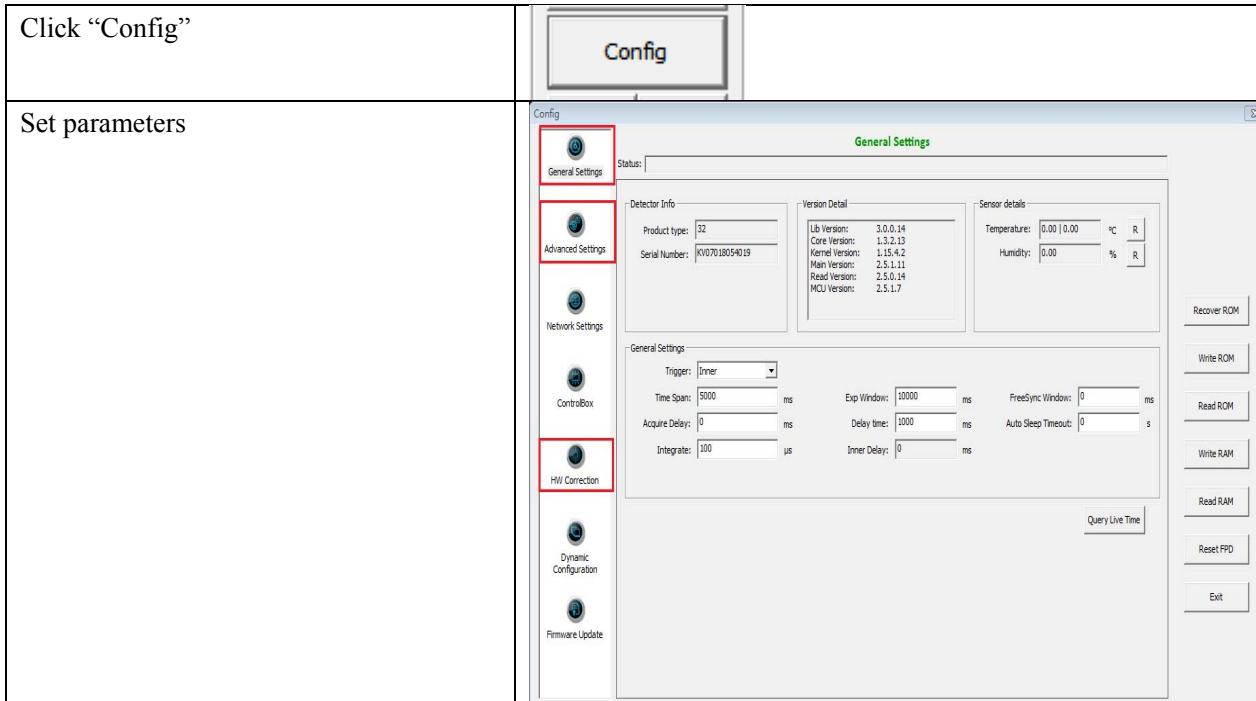


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3. The rule of Multi-Share control is based on IP address. The second terminal with different IP address is not allowed to operate panel after the first one connected. If there is no command transmission between panel and Workstation over 5 minutes, panel releases access authority.

## 4.3 Panel Configuration



Note: 1. If panel works in Isync Plus mode, it is not allowed to change any parameters and write into ROM or RAM. User is required to switch to software mode, change parameters and then switch to Isync Plus mode. On the other hand, we do not recommend user to switch working mode too often.

## 4.4 Correction and Calibration Template Generation

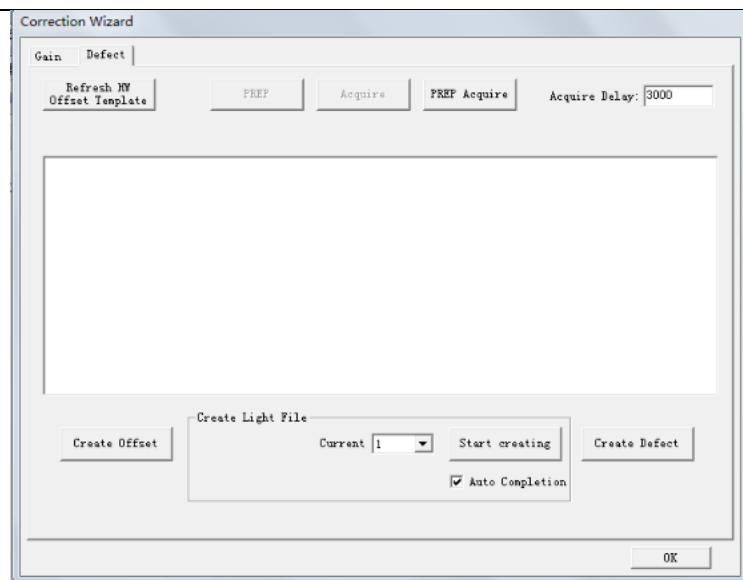
Iray recommends performing correction and calibration after installation or any major change on the system settings and hardware configuration. On the other hand, it is also recommended to do the correction and calibration in each 6 months.

### 4.4.1 Pre-offset Template Generation

If panel is configured to do Pre-offset correction, Pre-offset Template is necessary. See below



Click “Create”, Choose “Defect”



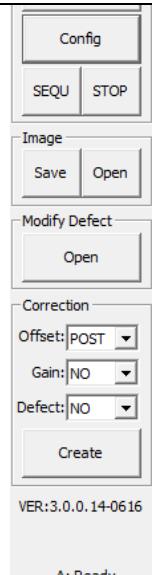
Click “Create Offset”, wait until image acquisition ends

/

#### 4.4.2 Gain Calibration Template Generation

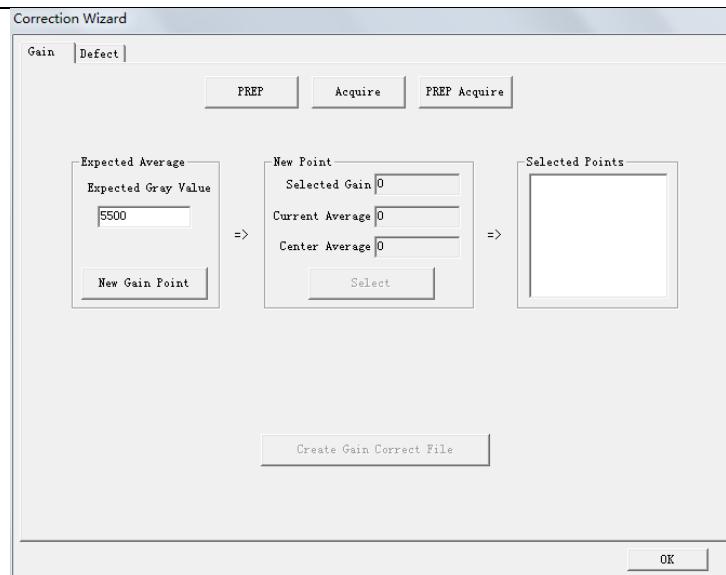
Before Gain template generating, make sure SID1.2m, no copper is required,

Choose “Post” offset mode<sup>1</sup>

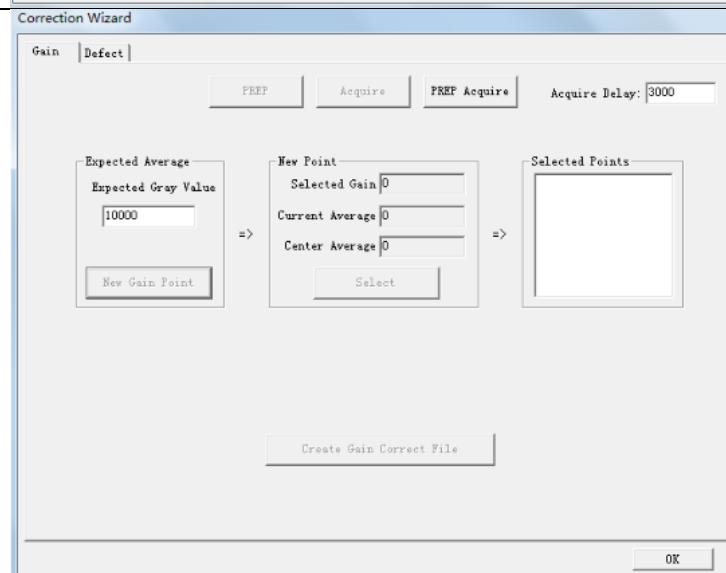




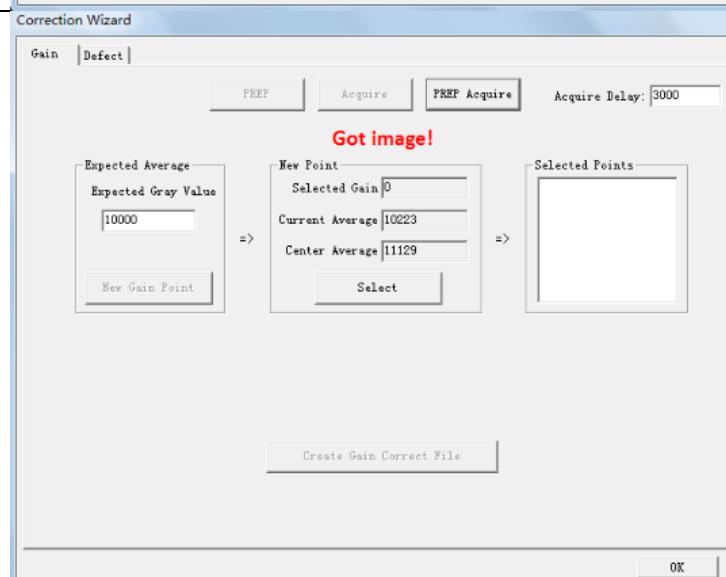
Click “Create”, Choose “Gain”



Set “Expected Gray Value” 10000;  
Click “New Gain Point”;  
Set “Acquire Delay” 3000;  
If panel is in software mode, click  
“Prep”, shoot X-ray, click  
“Acquire”;  
If panel is in Inner mode, click  
“Prep”, shoot X-ray;  
If panel is in Isync Plus mode,  
click “Prep Acquire”, wait for  
ready, shoot X-ray. Time window  
can be set by “Acquire Delay”;

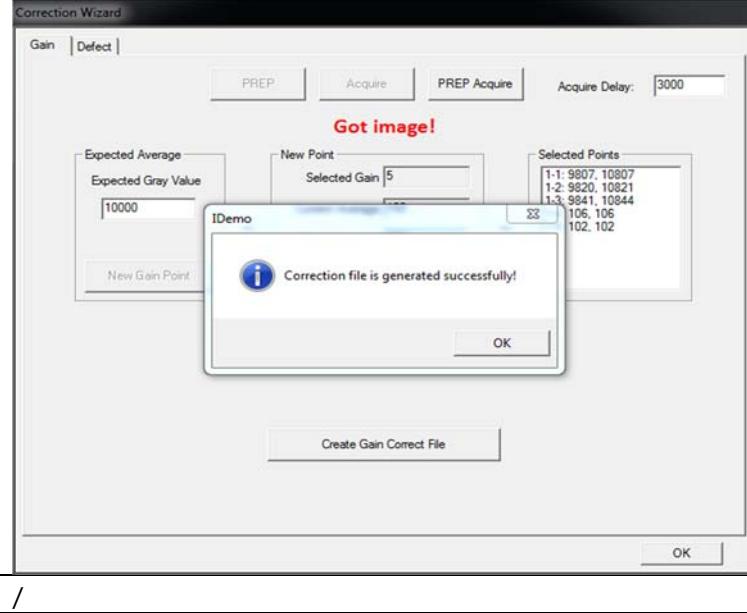


Wait for Post-offset image  
uploaded, there will be value  
shown in “current average” box,  
change X-ray dose to make sure  
“current average” in the range of  
 $10000 \pm 100$ , If yes, Click “Select”





Repeat the same operation for 4 times, “Create Gain Correct file” button can be available, Click “Create Gain Correct file”

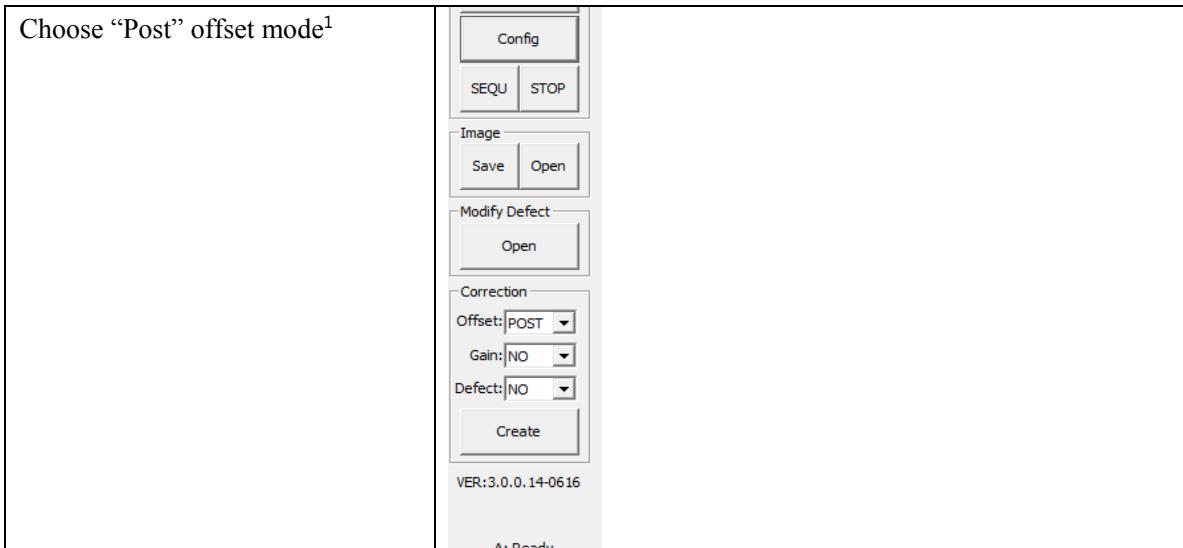


Click “OK” /

Note:1 please use software post offset correction.

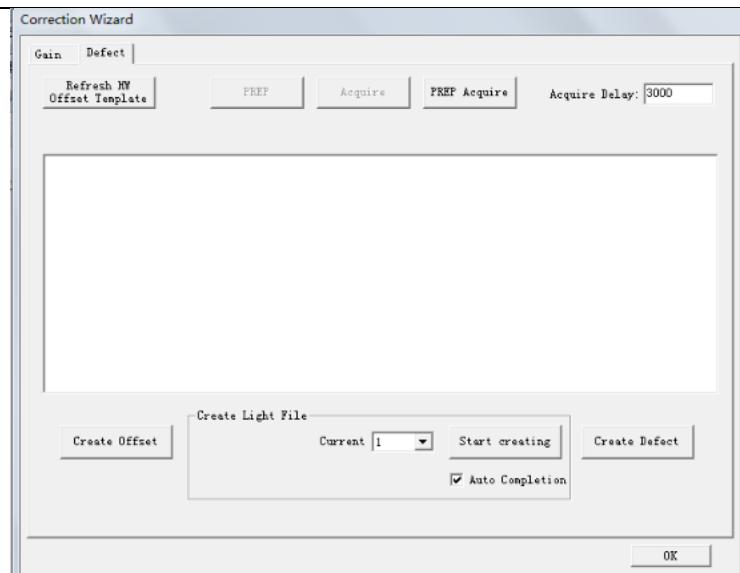
#### 4.4.3 Defect Correction Template Generation

Before Defect template generating, make sure SID1.2m, no copper is required,





Click “Create”, Choose “Defect”

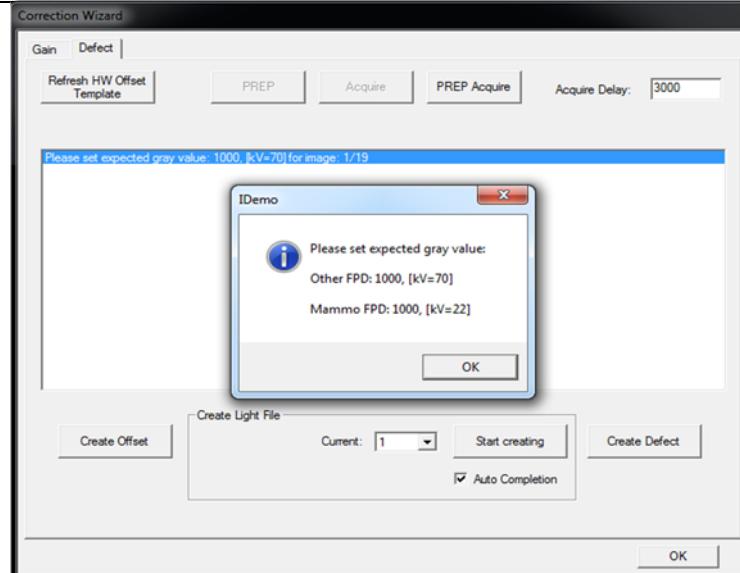


Click “start creating”, message box will show you the first image value for defect correction<sup>2</sup>;

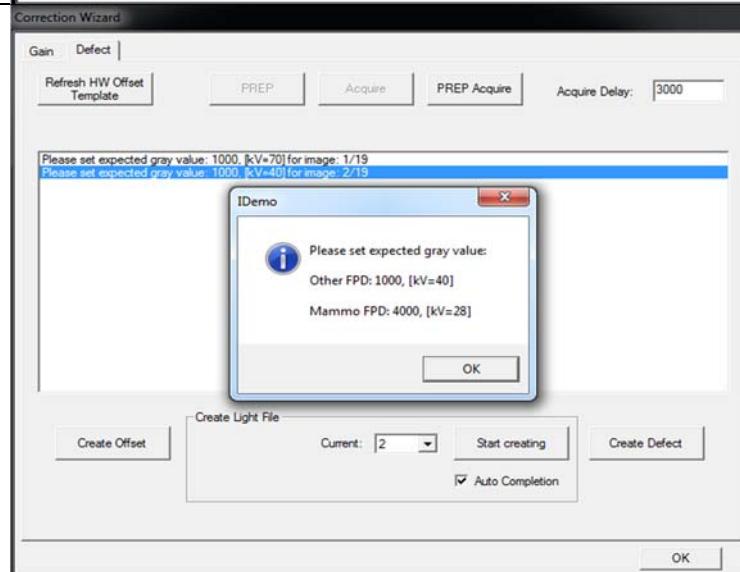
If panel is in software mode, click “Prep”, shoot X-ray, click “Acquire”;

If panel is in Inner mode, click “Prep”, shoot X-ray;

If panel is in Isync Plus mode, click “Prep Aquire”, wait for ready, shoot X-ray. Time window can be set by “Acquire Delay”;

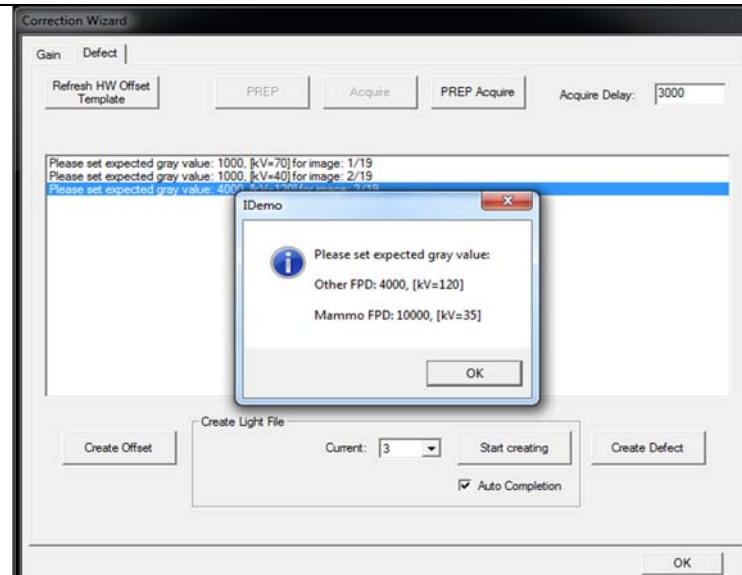


Click “start creating” to start the second X-ray shoot

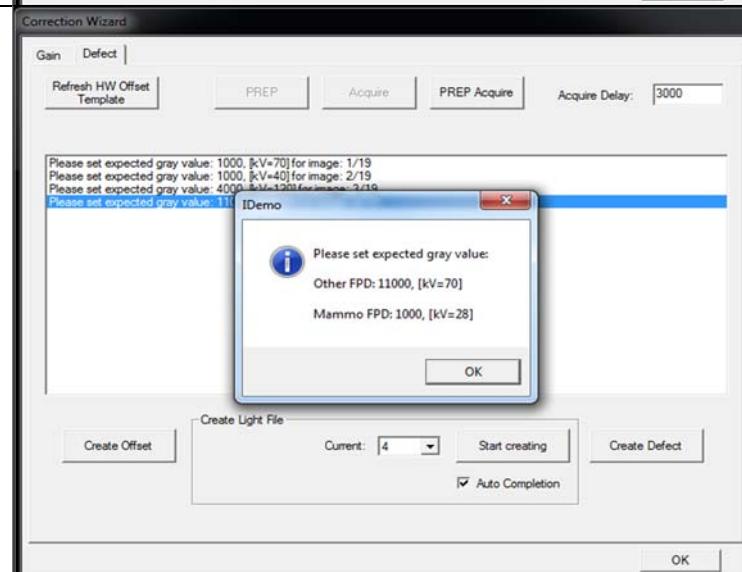




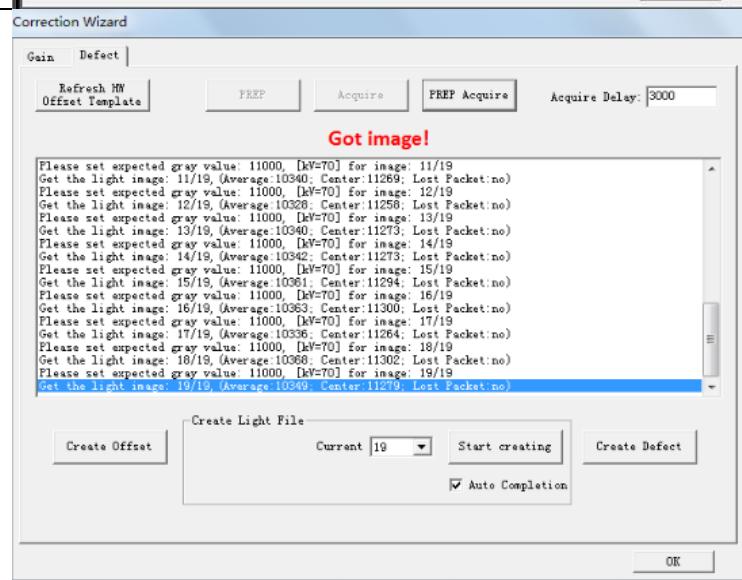
Click “start creating” to start the third X-ray shoot



Click “start creating” to start the fourth X-ray shoot

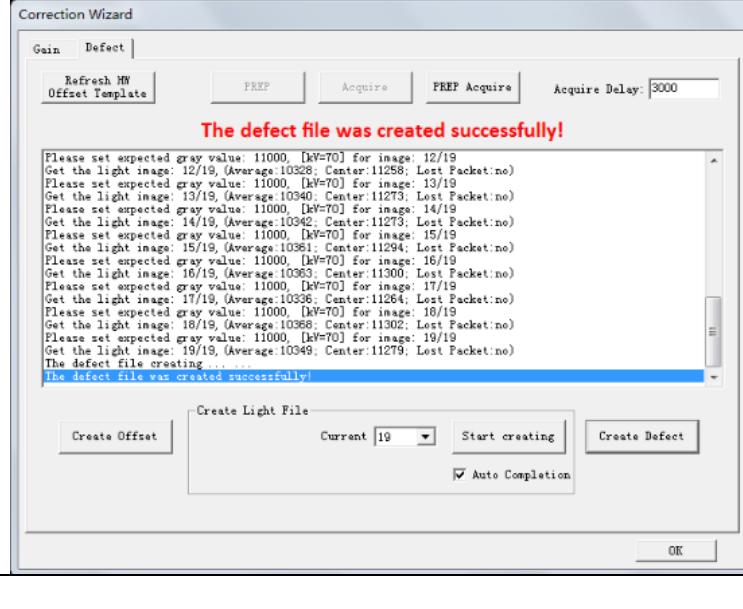


After the fourth X-ray shoot, you do not need to change the X-ray dose, just repeat operation of “start creating” and image acquisition until it comes to the 19th images.





Click “Create Defect”, wait until it ends



Note: 1. please use software post offset mode.

2. Make sure your X-ray dose is right, if your dose is out of the range, idemo will remind you to adjust the dose. Then you can click “start creating” and try again.

#### 4.4.4 Lag Template Generation

Lag template is only used in Isync plus mode, if panel works in other mode, user does not have to complete lag template. Before Lag template generating, make sure SID 1.2m, no copper is required.

Choose “Post” offset mode	/
Choose “curr” gain mode	
Choose “curr” defect mode	
Click “Create”	
Choose “Lag” correction	
Click “Start creating”	

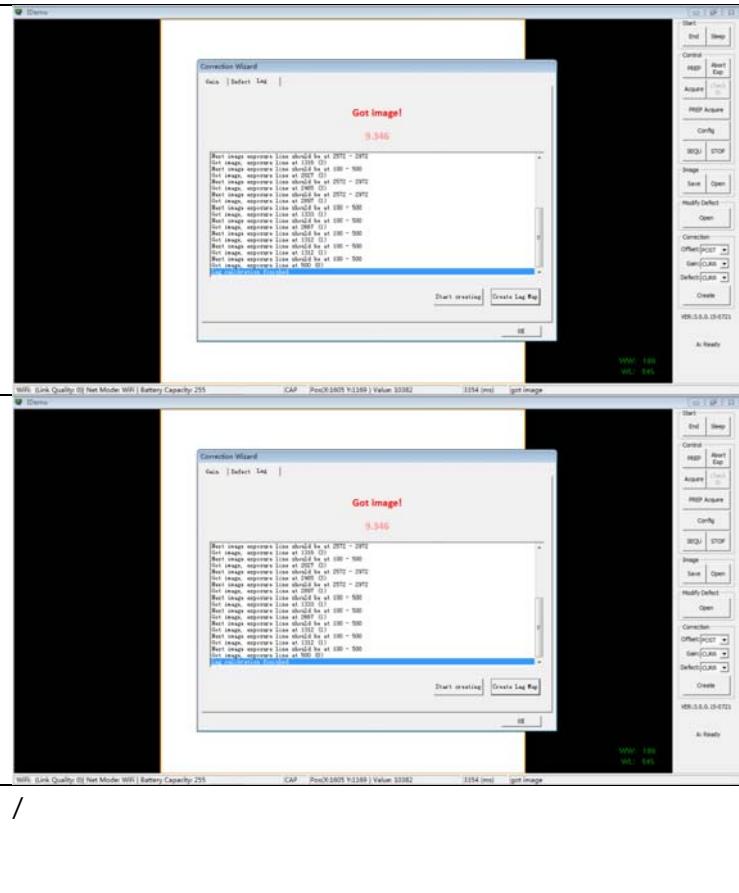


Change X-ray dose to make sure average gray value in the range of  $10000 \pm 100$ , Shoot X-ray, Post-offset image is shown on screen, make sure exposure line between 100 and 500;

Shoot X-ray, another Post-offset image is shown on screen, make sure exposure line between 2572 and 2972;

Image acquisition finished;  
Click "Create Lag Map";

Display "Lag calibration finished",  
correction finished, close  
correction window



## 4.5 Image Acquisition Continually

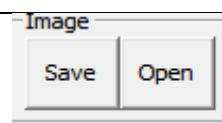
Image Acquisition continually can be used only in software mode and inner mode, it is not supported in Isync Plus mode. The operation is designed for panel testing, not for customer using.

"SEQU" is the command to start image acquisition and "STOP" is the opposite. If user wants to change frequency of image acquisition, change parameters in "Config-General Setting-Time Span".

## 4.6 Image save

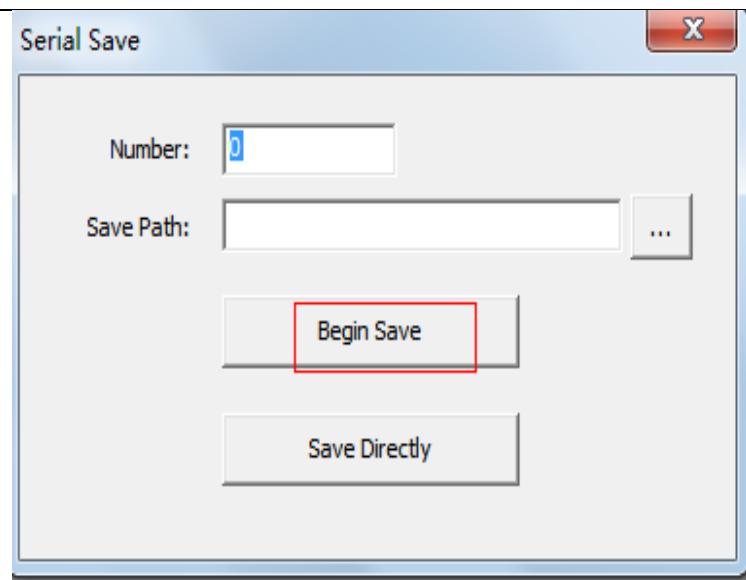
"SAVE" provides two features of image saving for user. The first is saving multiple images, the second is saving single image.

### 4.6.1 Multiple images

Click "Save"	
--------------	---



Set the number of images in blank;  
Choose the saving path;  
Click “Begin Save”;

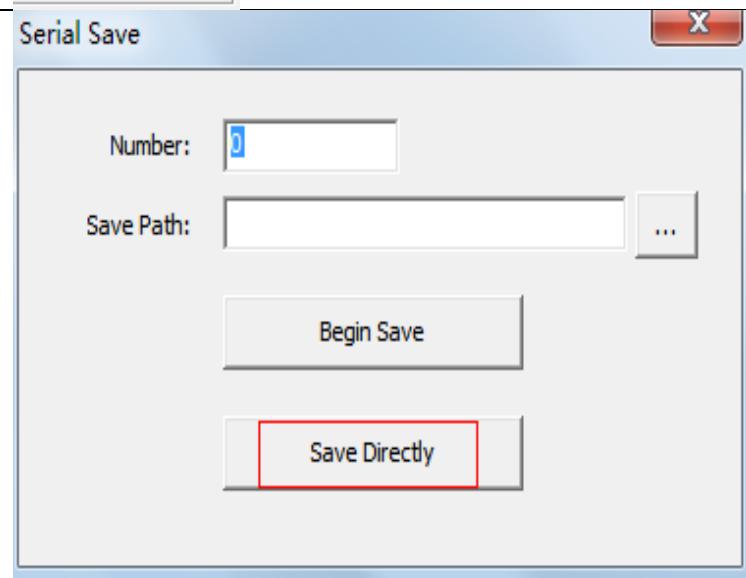


#### 4.6.2 Single image

Click “Save”

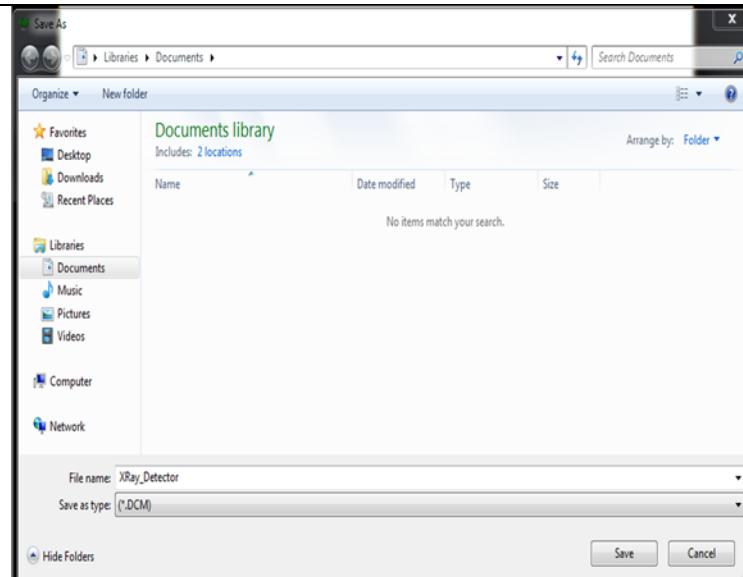


Click “Save Directly”



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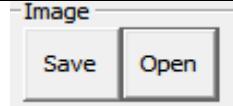
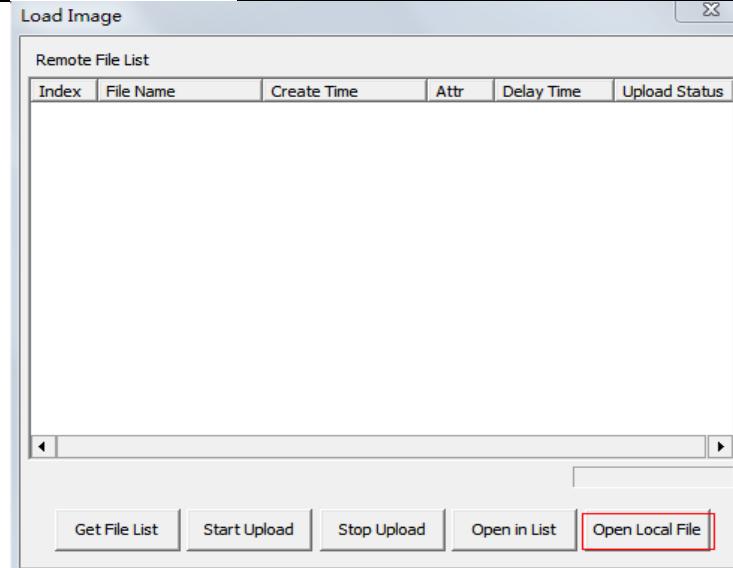
Choose the saving path;  
Click “save”;



## 4.7 Image Check and upload

“OPEN” provides three feature for image check and uploading. Local Image Check, Panel Image Upload and Panel Image Check. Local Image Check defines function to check image saved in Workstation. Panel Image Upload defines function to upload images stored in panel. Panel Image Check defines function to check images stored in panel.

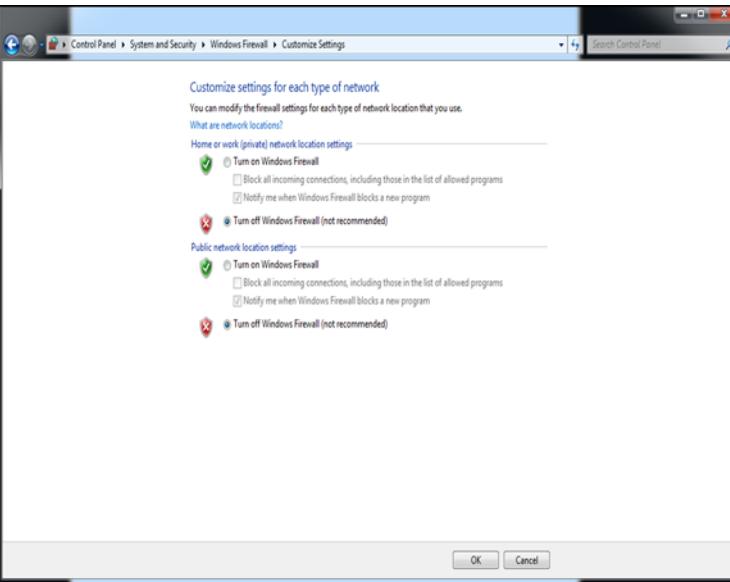
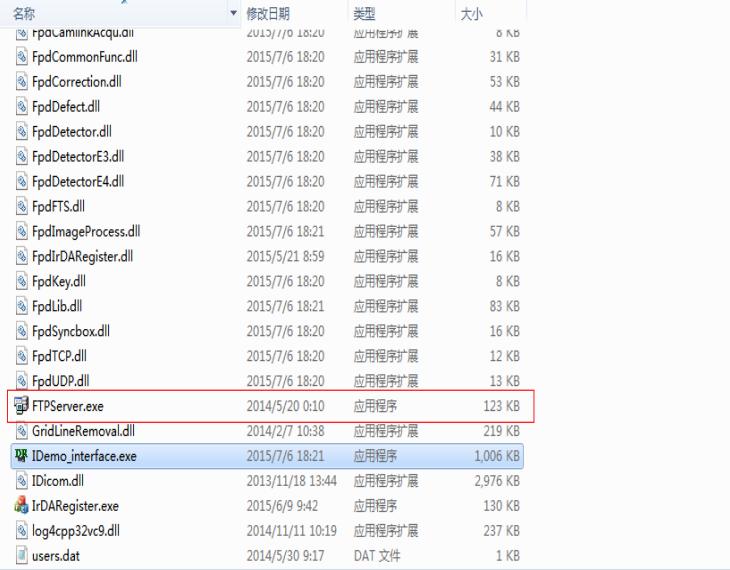
### 4.7.1 Local Image Check

Click “Open”	
Click “Open Local File”	
Choose images stored in Workstation, images would be shown on screen	/

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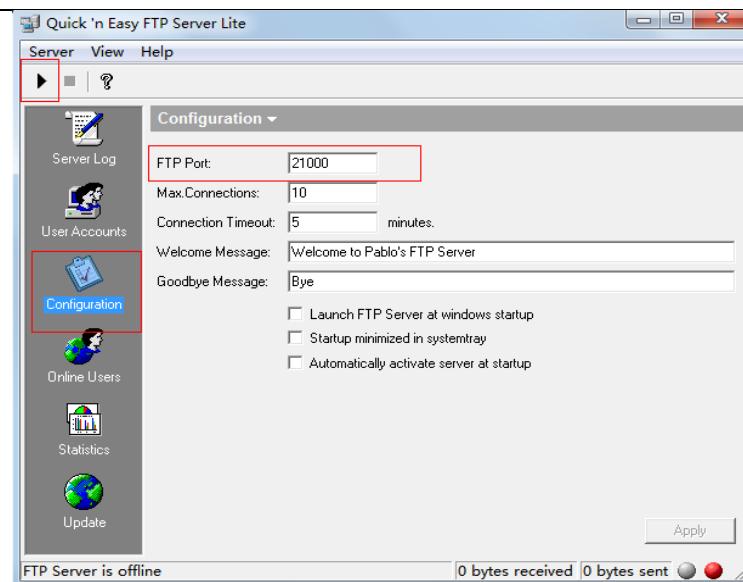
#### 4.7.2 Panel Image Upload

Before panel image uploading, FTP server is necessary.

Make sure firewall is closed																																																																																									
Start “FTPServer.exe”	 <table border="1" data-bbox="717 1006 1246 1563"> <thead> <tr> <th>名称</th> <th>修改日期</th> <th>类型</th> <th>大小</th> </tr> </thead> <tbody> <tr> <td>FpdCommonFunc.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>31 KB</td> </tr> <tr> <td>FpdCorrection.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>53 KB</td> </tr> <tr> <td>FpdDefector.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>44 KB</td> </tr> <tr> <td>FpdDefector.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>10 KB</td> </tr> <tr> <td>FpdDefectorE3.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>38 KB</td> </tr> <tr> <td>FpdDefectorE4.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>71 KB</td> </tr> <tr> <td>FpdFTS.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>8 KB</td> </tr> <tr> <td>FpdImageProcess.dll</td> <td>2015/7/6 18:21</td> <td>应用程序扩展</td> <td>57 KB</td> </tr> <tr> <td>FpdIRRegister.dll</td> <td>2015/5/21 8:59</td> <td>应用程序扩展</td> <td>16 KB</td> </tr> <tr> <td>FpdKey.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>8 KB</td> </tr> <tr> <td>FpdLib.dll</td> <td>2015/7/6 18:21</td> <td>应用程序扩展</td> <td>83 KB</td> </tr> <tr> <td>FpdSyncbox.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>16 KB</td> </tr> <tr> <td>FpdTCP.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>12 KB</td> </tr> <tr> <td>FpdUDP.dll</td> <td>2015/7/6 18:20</td> <td>应用程序扩展</td> <td>13 KB</td> </tr> <tr> <td>FTPServer.exe</td> <td>2014/5/20 0:10</td> <td>应用程序</td> <td>123 KB</td> </tr> <tr> <td>GridLineRemoval.dll</td> <td>2014/2/7 10:38</td> <td>应用程序扩展</td> <td>219 KB</td> </tr> <tr> <td>IDemo_interface.exe</td> <td>2015/7/6 18:21</td> <td>应用程序</td> <td>1,006 KB</td> </tr> <tr> <td>IDicom.dll</td> <td>2013/11/18 13:44</td> <td>应用程序扩展</td> <td>2,976 KB</td> </tr> <tr> <td>IrDAResister.exe</td> <td>2015/6/9 9:42</td> <td>应用程序</td> <td>130 KB</td> </tr> <tr> <td>log4cpp32vc9.dll</td> <td>2014/11/11 10:19</td> <td>应用程序扩展</td> <td>237 KB</td> </tr> <tr> <td>users.dat</td> <td>2014/5/30 9:17</td> <td>DAT 文件</td> <td>1 KB</td> </tr> </tbody> </table>	名称	修改日期	类型	大小	FpdCommonFunc.dll	2015/7/6 18:20	应用程序扩展	31 KB	FpdCorrection.dll	2015/7/6 18:20	应用程序扩展	53 KB	FpdDefector.dll	2015/7/6 18:20	应用程序扩展	44 KB	FpdDefector.dll	2015/7/6 18:20	应用程序扩展	10 KB	FpdDefectorE3.dll	2015/7/6 18:20	应用程序扩展	38 KB	FpdDefectorE4.dll	2015/7/6 18:20	应用程序扩展	71 KB	FpdFTS.dll	2015/7/6 18:20	应用程序扩展	8 KB	FpdImageProcess.dll	2015/7/6 18:21	应用程序扩展	57 KB	FpdIRRegister.dll	2015/5/21 8:59	应用程序扩展	16 KB	FpdKey.dll	2015/7/6 18:20	应用程序扩展	8 KB	FpdLib.dll	2015/7/6 18:21	应用程序扩展	83 KB	FpdSyncbox.dll	2015/7/6 18:20	应用程序扩展	16 KB	FpdTCP.dll	2015/7/6 18:20	应用程序扩展	12 KB	FpdUDP.dll	2015/7/6 18:20	应用程序扩展	13 KB	FTPServer.exe	2014/5/20 0:10	应用程序	123 KB	GridLineRemoval.dll	2014/2/7 10:38	应用程序扩展	219 KB	IDemo_interface.exe	2015/7/6 18:21	应用程序	1,006 KB	IDicom.dll	2013/11/18 13:44	应用程序扩展	2,976 KB	IrDAResister.exe	2015/6/9 9:42	应用程序	130 KB	log4cpp32vc9.dll	2014/11/11 10:19	应用程序扩展	237 KB	users.dat	2014/5/30 9:17	DAT 文件	1 KB
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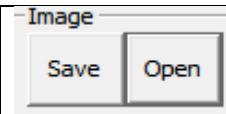


Choose “Configuration”;  
Set FTP Port “21000”;  
Click “Start” button;

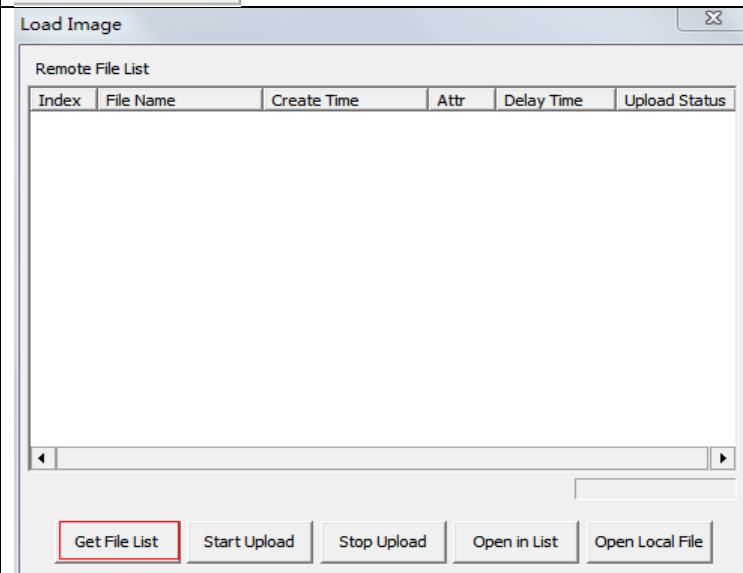


Panel Image is uploaded as following.

Click “Open”



Click “Get File List”





Images stored in panel would be shown in the list. From the list, user could check basic information of images

Load Image

Remote File List

Index	File Name	Create Time	Attr	Delay Time	Upload Stat
1	1436880199	2015-7-14 13:23:19	0x00	0	
2	1436880200	2015-7-14 13:23:20	0x00	0	
3	1436880214	2015-7-14 13:23:34	0x00	0	
4	1436880215	2015-7-14 13:23:35	0x00	0	
5	1436880216	2015-7-14 13:23:36	0x00	0	
6	1436958211	2015-7-15 11:03:31	0x00	0	
7	1436958213	2015-7-15 11:03:33	0x00	0	
8	1436958214	2015-7-15 11:03:34	0x00	0	
9	1436958237	2015-7-15 11:03:57	0x00	0	
10	1436958238	2015-7-15 11:03:58	0x00	0	
11	1436958239	2015-7-15 11:03:59	0x00	0	
12	1436958253	2015-7-15 11:04:13	0x00	0	
13	1436958254	2015-7-15 11:04:14	0x00	0	
14	1436958255	2015-7-15 11:04:15	0x00	0	
15	1436958364	2015-7-15 11:06:04	0x00	0	
16	1436958365	2015-7-15 11:06:05	0x00	0	
17	1436958366	2015-7-15 11:06:06	0x00	0	

Get Outline Image List

Get File List Start Upload Stop Upload Open in List Open Local File

Select images user wants;  
Click “Start Upload”;  
Images would be uploaded to  
\*/idemo/upload

Load Image

Remote File List

Index	File Name	Create Time	Attr	Delay Time	Upload Stat
1	1436880199	2015-7-14 13:23:19	0x00	0	
2	1436880200	2015-7-14 13:23:20	0x00	0	
3	1436880214	2015-7-14 13:23:34	0x00	0	
4	1436880215	2015-7-14 13:23:35	0x00	0	
5	1436880216	2015-7-14 13:23:36	0x00	0	
6	1436958211	2015-7-15 11:03:31	0x00	0	
7	1436958213	2015-7-15 11:03:33	0x00	0	
8	1436958214	2015-7-15 11:03:34	0x00	0	
9	1436958237	2015-7-15 11:03:57	0x00	0	
10	1436958238	2015-7-15 11:03:58	0x00	0	
11	1436958239	2015-7-15 11:03:59	0x00	0	
12	1436958253	2015-7-15 11:04:13	0x00	0	
13	1436958254	2015-7-15 11:04:14	0x00	0	
14	1436958255	2015-7-15 11:04:15	0x00	0	
15	1436958364	2015-7-15 11:06:04	0x00	0	
16	1436958365	2015-7-15 11:06:05	0x00	0	
17	1436958366	2015-7-15 11:06:06	0x00	0	

Get Outline Image List

Get File List Start Upload Stop Upload Open in List Open Local File

If user want to upload multiple images, select multiple images, click “start upload”, during uploading, user could click “stop upload” to stop uploading

Load Image

Remote File List

Index	File Name	Create Time	Attr	Delay Time	Upload Stat
1	1436880199	2015-7-14 13:23:19	0x00	0	
2	1436880200	2015-7-14 13:23:20	0x00	0	
3	1436880214	2015-7-14 13:23:34	0x00	0	
4	1436880215	2015-7-14 13:23:35	0x00	0	
5	1436880216	2015-7-14 13:23:36	0x00	0	
6	1436958211	2015-7-15 11:03:31	0x00	0	
7	1436958213	2015-7-15 11:03:33	0x00	0	
8	1436958214	2015-7-15 11:03:34	0x00	0	
9	1436958237	2015-7-15 11:03:57	0x00	0	
10	1436958238	2015-7-15 11:03:58	0x00	0	
11	1436958239	2015-7-15 11:03:59	0x00	0	
12	1436958253	2015-7-15 11:04:13	0x00	0	
13	1436958254	2015-7-15 11:04:14	0x00	0	
14	1436958255	2015-7-15 11:04:15	0x00	0	
15	1436958364	2015-7-15 11:06:04	0x00	0	
16	1436958365	2015-7-15 11:06:05	0x00	0	
17	1436958366	2015-7-15 11:06:06	0x00	0	

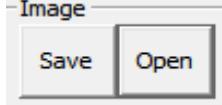
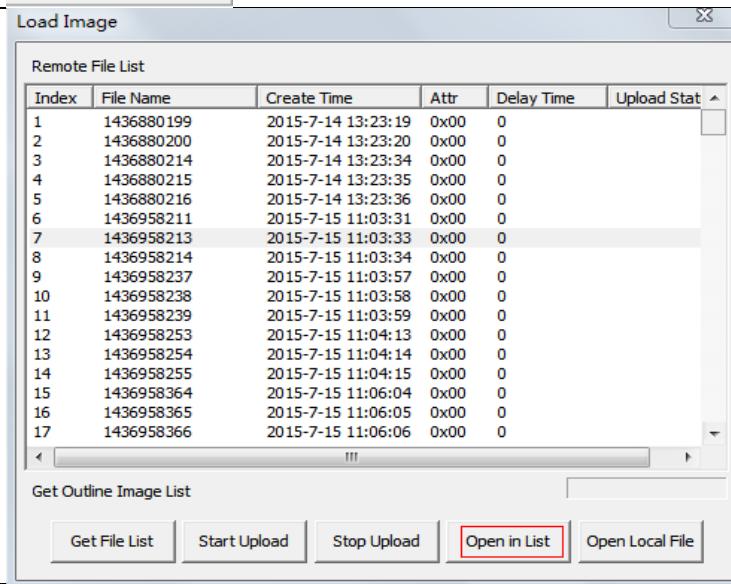
Get Outline Image List

Get File List Start Upload Stop Upload Open in List Open Local File

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#### 4.7.3 Panel Image Check

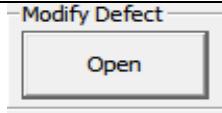
If user wants to check images stored in panel immediately, see below

Click “Open”																																																																																																													
Select image user need; Click “open in list”	 <p>The Load Image dialog box displays a "Remote File List" table with 17 rows of data. The 7th row, which corresponds to the selected image, has a red box around it. Below the table are buttons for "Get Outline Image List", "Get File List", "Start Upload", "Stop Upload", "Open in List" (which is highlighted with a red box), and "Open Local File".</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Index</th> <th style="text-align: left;">File Name</th> <th style="text-align: left;">Create Time</th> <th style="text-align: left;">Attr</th> <th style="text-align: left;">Delay Time</th> <th style="text-align: left;">Upload Stat</th> </tr> </thead> <tbody> <tr><td>1</td><td>1436880199</td><td>2015-7-14 13:23:19</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>2</td><td>1436880200</td><td>2015-7-14 13:23:20</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>3</td><td>1436880214</td><td>2015-7-14 13:23:34</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>4</td><td>1436880215</td><td>2015-7-14 13:23:35</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>5</td><td>1436880216</td><td>2015-7-14 13:23:36</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>6</td><td>1436958211</td><td>2015-7-15 11:03:31</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>7</td><td>1436958213</td><td>2015-7-15 11:03:33</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>8</td><td>1436958214</td><td>2015-7-15 11:03:34</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>9</td><td>1436958237</td><td>2015-7-15 11:03:57</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>10</td><td>1436958238</td><td>2015-7-15 11:03:58</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>11</td><td>1436958239</td><td>2015-7-15 11:03:59</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>12</td><td>1436958253</td><td>2015-7-15 11:04:13</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>13</td><td>1436958254</td><td>2015-7-15 11:04:14</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>14</td><td>1436958255</td><td>2015-7-15 11:04:15</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>15</td><td>1436958364</td><td>2015-7-15 11:06:04</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>16</td><td>1436958365</td><td>2015-7-15 11:06:05</td><td>0x00</td><td>0</td><td></td></tr> <tr><td>17</td><td>1436958366</td><td>2015-7-15 11:06:06</td><td>0x00</td><td>0</td><td></td></tr> </tbody> </table>	Index	File Name	Create Time	Attr	Delay Time	Upload Stat	1	1436880199	2015-7-14 13:23:19	0x00	0		2	1436880200	2015-7-14 13:23:20	0x00	0		3	1436880214	2015-7-14 13:23:34	0x00	0		4	1436880215	2015-7-14 13:23:35	0x00	0		5	1436880216	2015-7-14 13:23:36	0x00	0		6	1436958211	2015-7-15 11:03:31	0x00	0		7	1436958213	2015-7-15 11:03:33	0x00	0		8	1436958214	2015-7-15 11:03:34	0x00	0		9	1436958237	2015-7-15 11:03:57	0x00	0		10	1436958238	2015-7-15 11:03:58	0x00	0		11	1436958239	2015-7-15 11:03:59	0x00	0		12	1436958253	2015-7-15 11:04:13	0x00	0		13	1436958254	2015-7-15 11:04:14	0x00	0		14	1436958255	2015-7-15 11:04:15	0x00	0		15	1436958364	2015-7-15 11:06:04	0x00	0		16	1436958365	2015-7-15 11:06:05	0x00	0		17	1436958366	2015-7-15 11:06:06	0x00	0	
Index	File Name	Create Time	Attr	Delay Time	Upload Stat																																																																																																								
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5	1436880216	2015-7-14 13:23:36	0x00	0																																																																																																									
6	1436958211	2015-7-15 11:03:31	0x00	0																																																																																																									
7	1436958213	2015-7-15 11:03:33	0x00	0																																																																																																									
8	1436958214	2015-7-15 11:03:34	0x00	0																																																																																																									
9	1436958237	2015-7-15 11:03:57	0x00	0																																																																																																									
10	1436958238	2015-7-15 11:03:58	0x00	0																																																																																																									
11	1436958239	2015-7-15 11:03:59	0x00	0																																																																																																									
12	1436958253	2015-7-15 11:04:13	0x00	0																																																																																																									
13	1436958254	2015-7-15 11:04:14	0x00	0																																																																																																									
14	1436958255	2015-7-15 11:04:15	0x00	0																																																																																																									
15	1436958364	2015-7-15 11:06:04	0x00	0																																																																																																									
16	1436958365	2015-7-15 11:06:05	0x00	0																																																																																																									
17	1436958366	2015-7-15 11:06:06	0x00	0																																																																																																									

#### 4.8 Defect Template Check and Modification

Idemo provides function to check defect template. If defect template has updates, user could add and delete defect pixel or defect lines by modifying defect template opened.

##### 4.8.1 Defect Template Check

Click “Open”	
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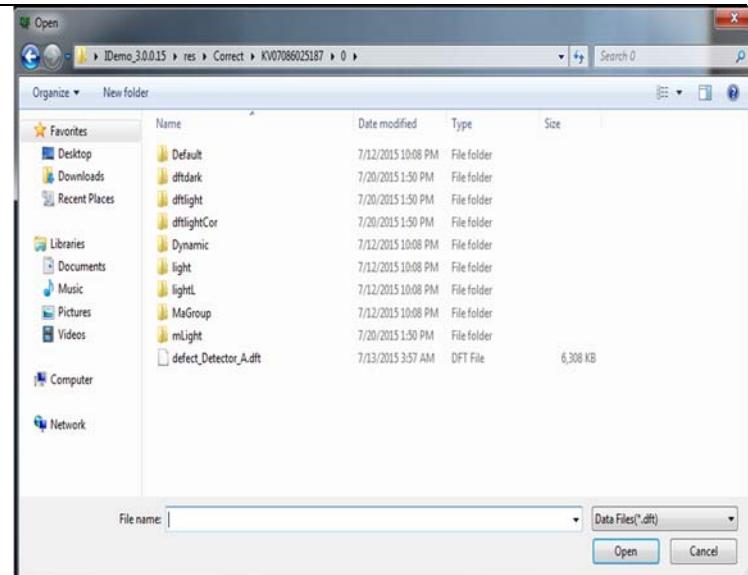
Date

2015.11.06

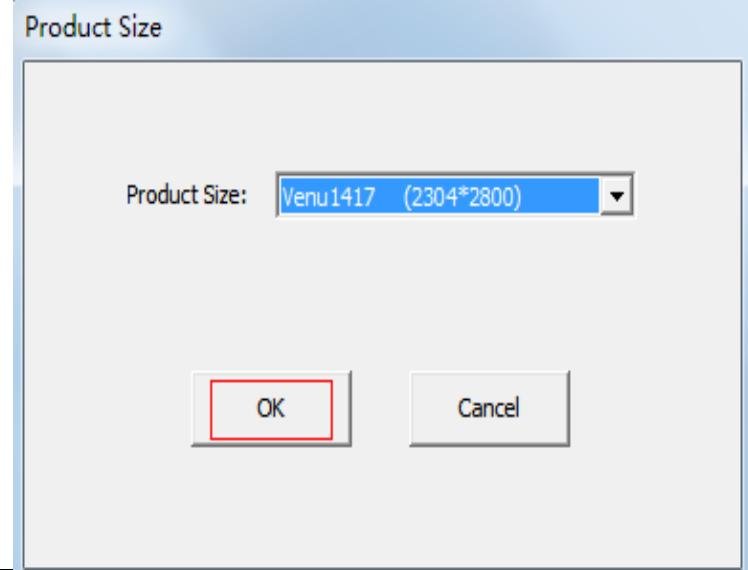
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Select defect template;  
Click "open";



Select Product Size "Venu1417  
(2304\*2800);  
Click "OK", Defect template is shown on screen;

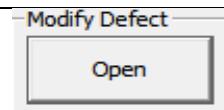


Click "Close" to close Defect template



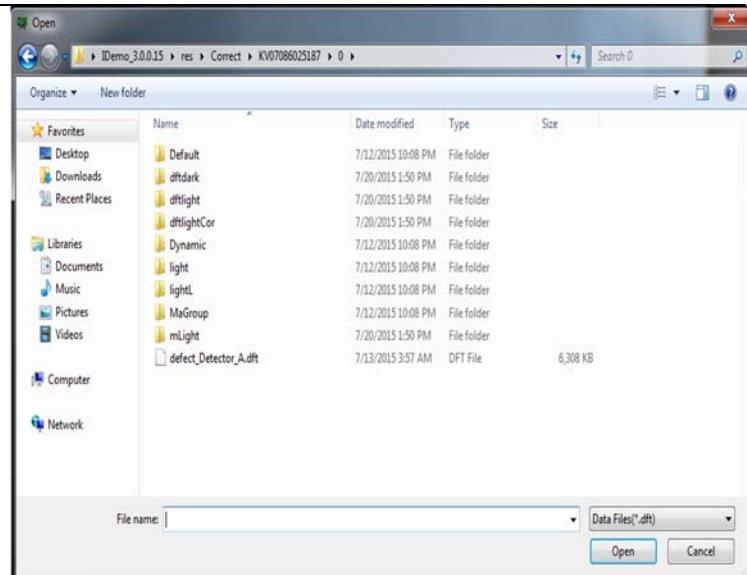
#### 4.8.2 Defect Template Modification

Click "Open"

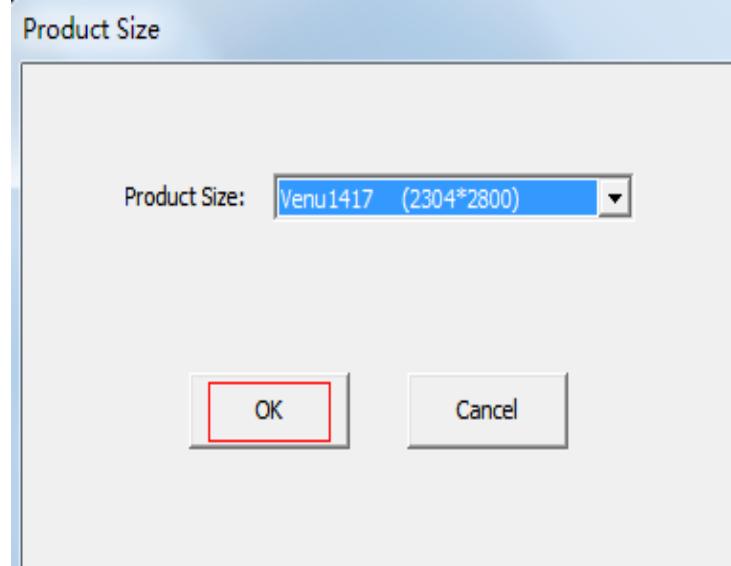




Select Defect Template;  
Click "Open";



Set product size "Venu1417 (2304\*2800);  
Click "OK"



If there is new defect pixel, input coordinate, click "Add";  
If pixel is labeled as defect by mistake, input coordinate, click "Delete"

### Modify Defect Point/Line

#### Point

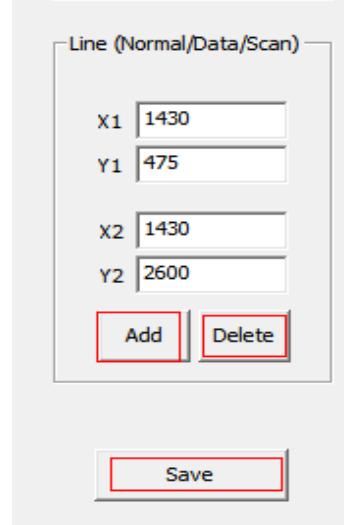
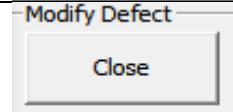
X 1500

Y 1135

Add

Delete

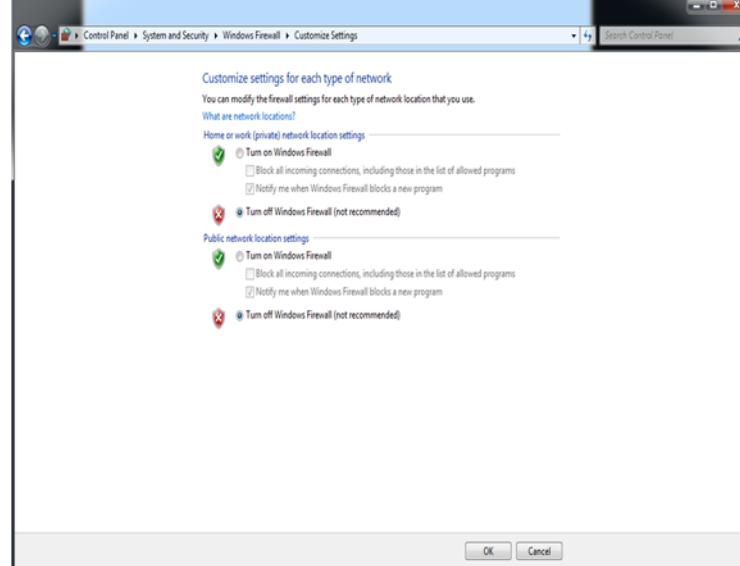
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If there is new defect line, input coordinate, click “Add”; If line is labeled as defect by mistake, input coordinate, click “Delete”	
Click “Close”	

## 4.9 Correction and Calibration Management

### 4.9.1 Correction and Calibration template synchronization

Panel supports correction and calibration template storage. So template in panel could be uploaded to Workstation, and template in Workstation could also be downloaded to panel. Before synchronization, FTP server is necessary.

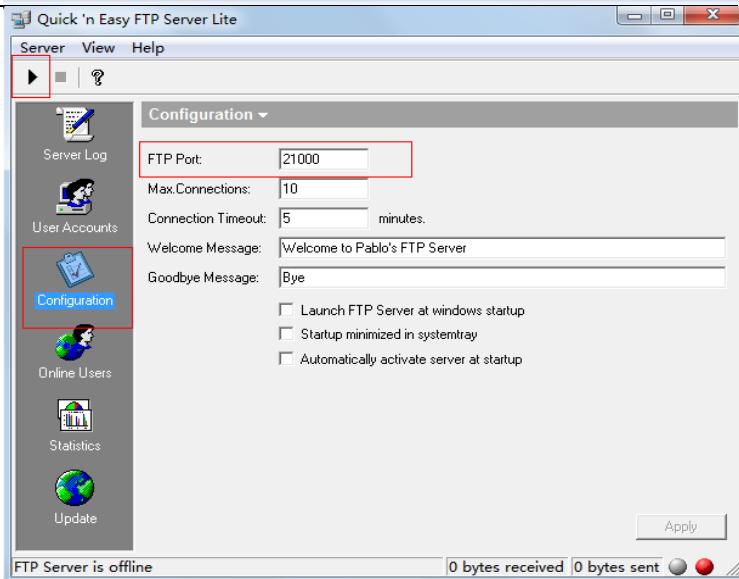
Make sure firewall is closed	
------------------------------	--



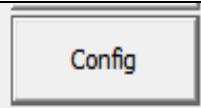
Start “FTPServer.exe”

名称	修改日期	类型	大小
fpdCommonFunc.dll	2015/7/6 18:20	应用程序扩展	31 KB
FpdCorrection.dll	2015/7/6 18:20	应用程序扩展	53 KB
FpdDefect.dll	2015/7/6 18:20	应用程序扩展	44 KB
FpdDetector.dll	2015/7/6 18:20	应用程序扩展	10 KB
FpdDetectorE3.dll	2015/7/6 18:20	应用程序扩展	38 KB
FpdDetectorE4.dll	2015/7/6 18:20	应用程序扩展	71 KB
FpdFTS.dll	2015/7/6 18:20	应用程序扩展	8 KB
FpdImageProcess.dll	2015/7/6 18:21	应用程序扩展	57 KB
FpdDirDARegister.dll	2015/5/21 8:59	应用程序扩展	16 KB
FpdKey.dll	2015/7/6 18:20	应用程序扩展	8 KB
FpdLib.dll	2015/7/6 18:21	应用程序扩展	83 KB
FpdSyncbox.dll	2015/7/6 18:20	应用程序扩展	16 KB
FpdTCP.dll	2015/7/6 18:20	应用程序扩展	12 KB
FpdUDP.dll	2015/7/6 18:20	应用程序扩展	13 KB
FTPServer.exe	2014/5/20 0:10	应用程序	123 KB
GridLineRemoval.dll	2014/2/7 10:38	应用程序扩展	219 KB
IDemo_interface.exe	2015/7/6 18:21	应用程序	1,006 KB
IDicom.dll	2013/11/18 13:44	应用程序扩展	2,976 KB
IrDARegister.exe	2015/6/9 9:42	应用程序	130 KB
log4cpp32vc9.dll	2014/11/11 10:19	应用程序扩展	237 KB
users.dat	2014/5/30 9:17	DAT 文件	1 KB

Choose “Configuration”;  
Set FTP Port “21000”;  
Click “Start” button;

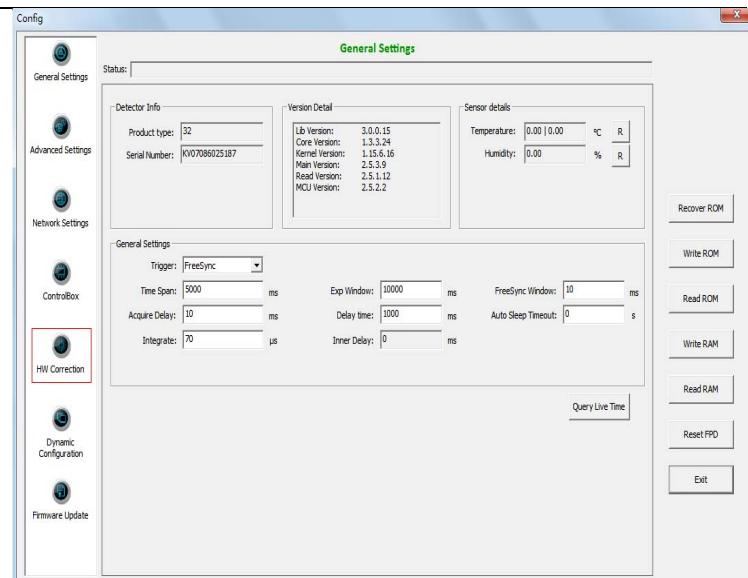


Click “Config”

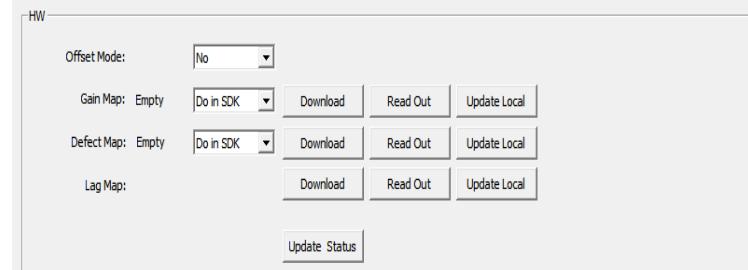




Select "HW Correction"



If user wants to download correction and calibration template to panel. Click "Download" from top to bottom;  
If user wants to upload correction and calibration template from panel. Click "Read out" and "Update Local" from top to bottom;



#### 4.9.2 Correction and Calibration management

Panel supports two ways to do correction and calibration. Software Correction and Calibration defines the scenario that Workstation completes all correction and calibration. If panel complete all correction and calibration by itself, it is named as Hardware Correction and Calibration.

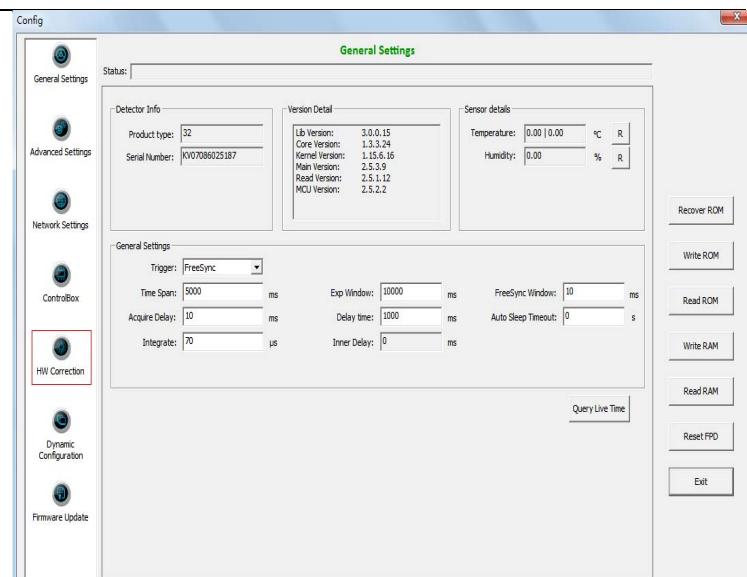
##### 4.9.2.1 Software Correction and Calibration

Click "Config"

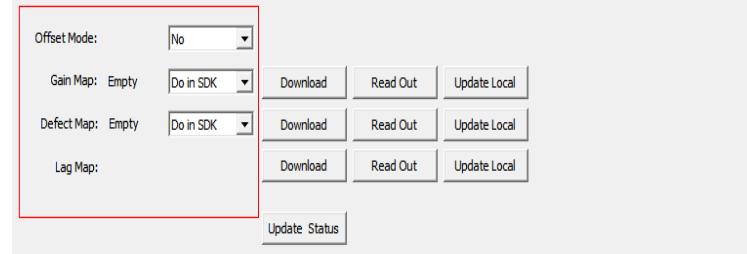




Select "HW Correction";



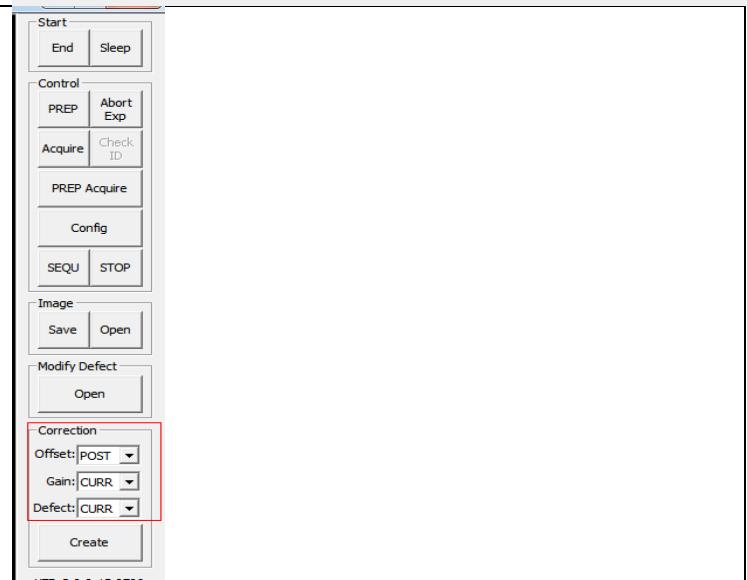
Set Offset Mode "NO";



Set Offset "POST";

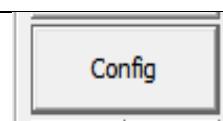
Set Gain "CURR";

Set Defect "CURR";



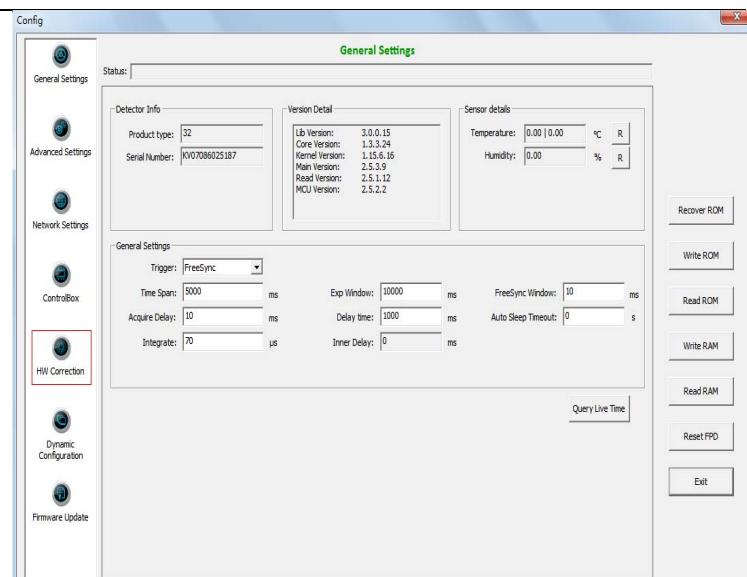
#### 4.9.2.2 Hardware Correction and Calibration Management

Click "Config"

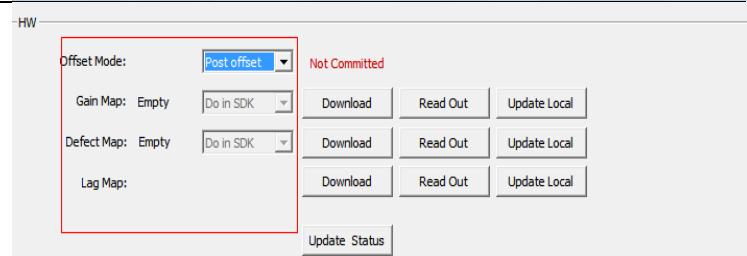




Select “HW Correction”;

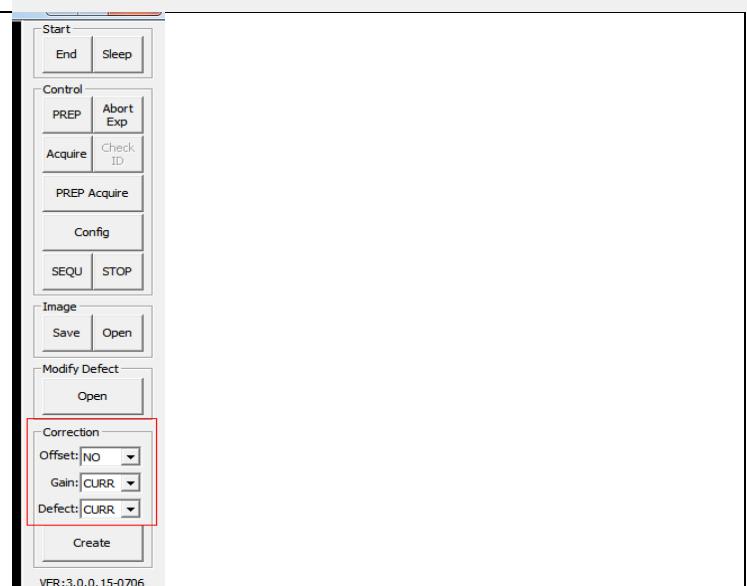


Set Offset Mode “Post offset”;



Set Gain “CURR”;

Set Defect “CURR”;



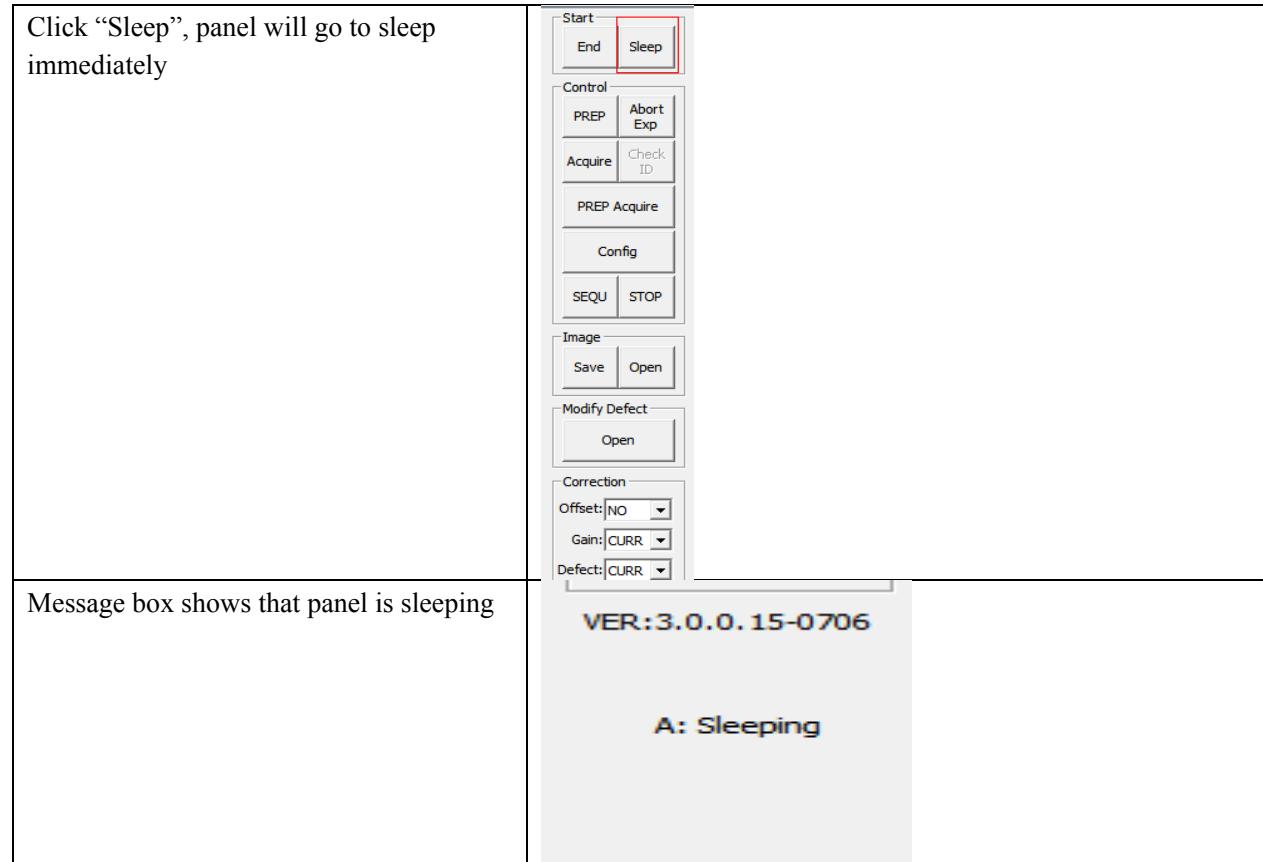
## 4.10 Sleep and Wake Up

Panel supports sleep and wake up operation. User can trigger sleep manually or automatically, but there is only one way to wake up panel.

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## 4.10.1 Sleep

### 4.10.1.1 Manual Sleep



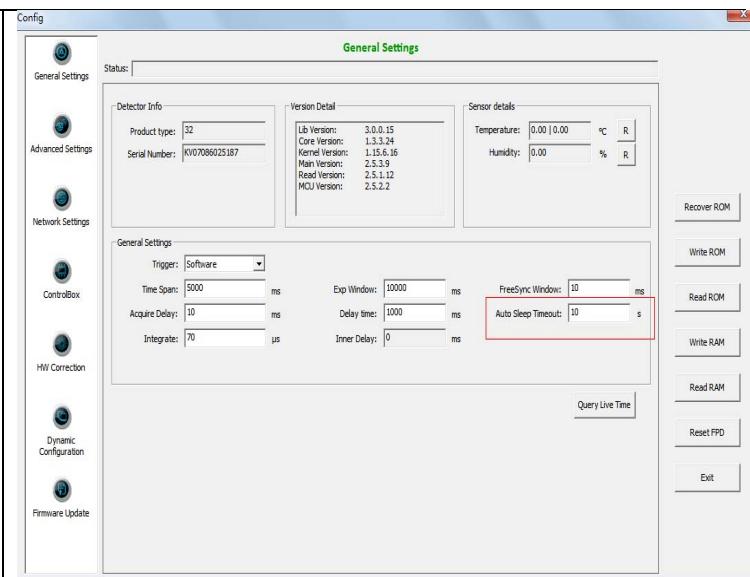
### 4.10.1.2 Automatic Sleep

To go to sleep automatically, user should set the time flag first. If panel detects that there is no operation in time flag, panel would go to sleep. If time flag is set zero, panel would not go to sleep automatically.

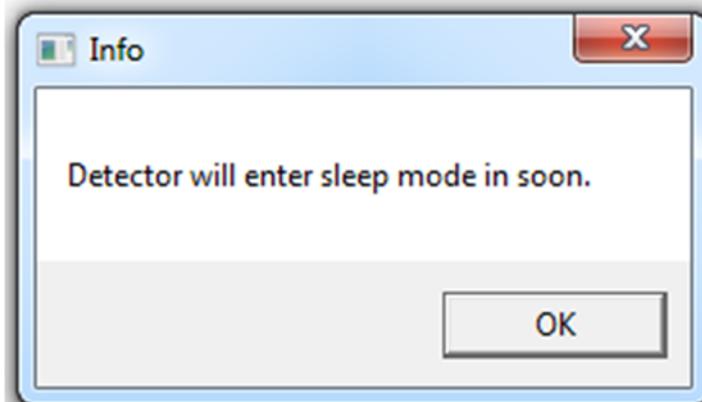




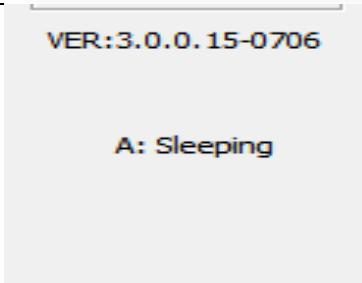
Set “auto sleep timeout” value user need



If there is no operation in time flag user sets, panel would go to sleep

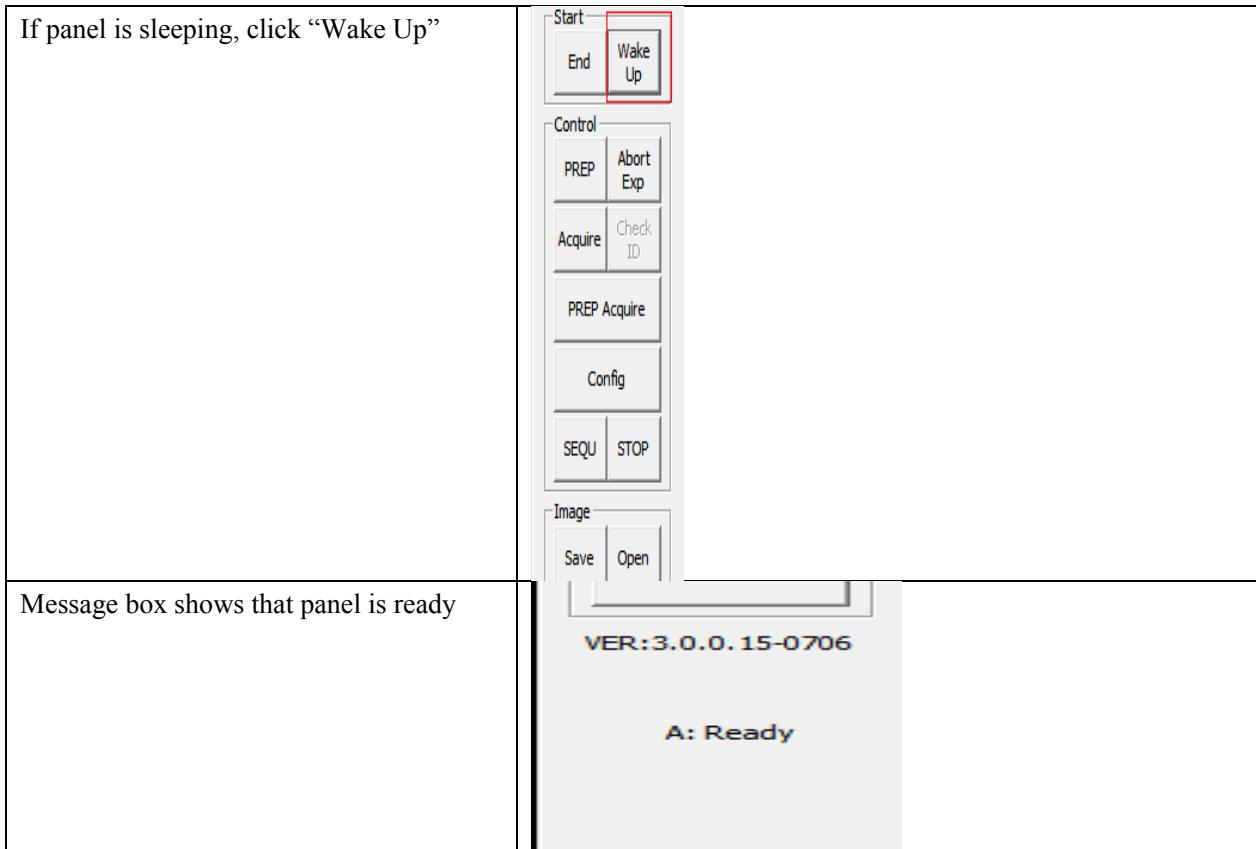


Message box shows that panel is sleeping



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## 4.10.2 Wake Up



## 4.11 Firmware Update

Panel supports updating firmware. If user wants to update new firmware, see below

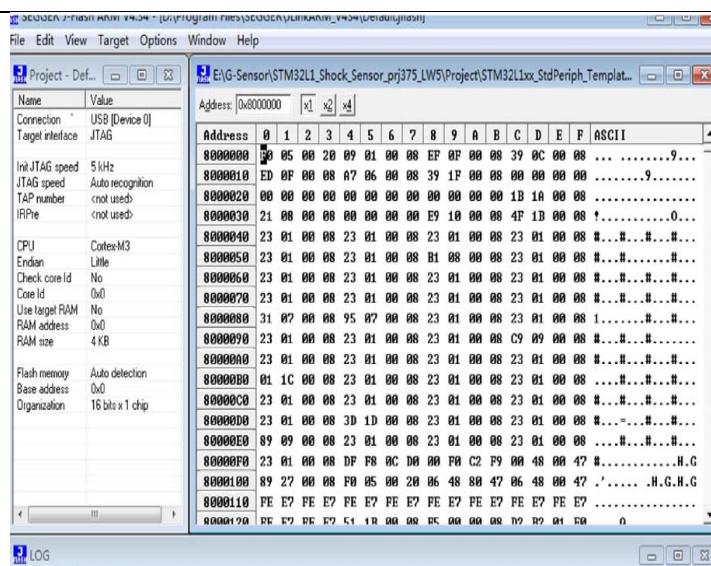
### 4.11.1 MCU Update

If current MCU version is 2.5.1.\*, we should follow instruction below.

Open "mini Cover"	/
Remove original Ethernet cable, insert J-link download cable	/
Start J-flash ARM	/



Click “file->open data file”



Click “option->project setting”,  
Set “connection to J-link” USB mode

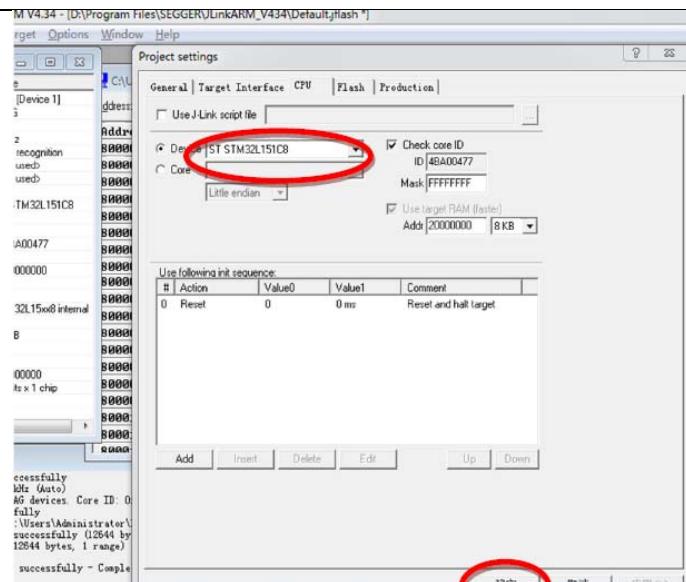


Click “Target Interface”, Choose “SWD”





Click “CPU”;  
Select “ST STM32L151C8”;



Click “Target->Connect”  
Click “Target->Erase”  
Click “Target->Program”  
Click “Target->Start Application”

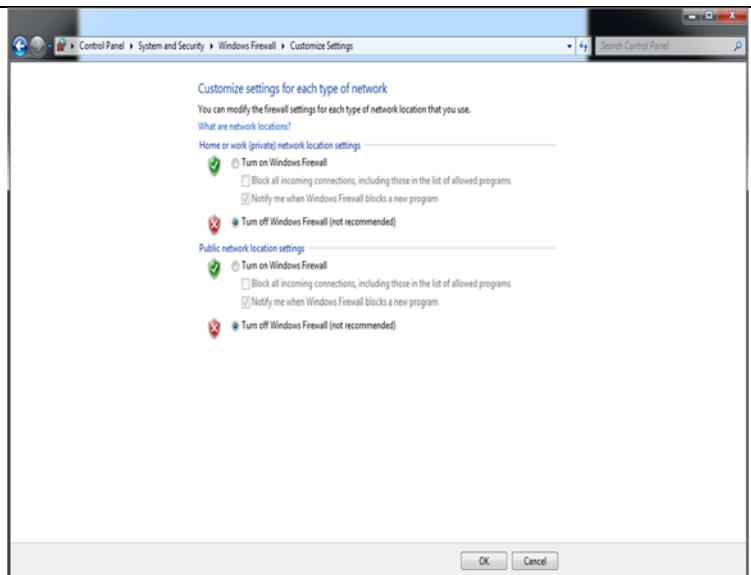
/
/
/
/

Note:1. Make sure panel is powered up.

If current MCU version is 2.5.2.\* , Please refer to 4.10.2 and 4.10.3 for upgrading.

#### 4.11.2 FTP Server

Make sure firewall is closed

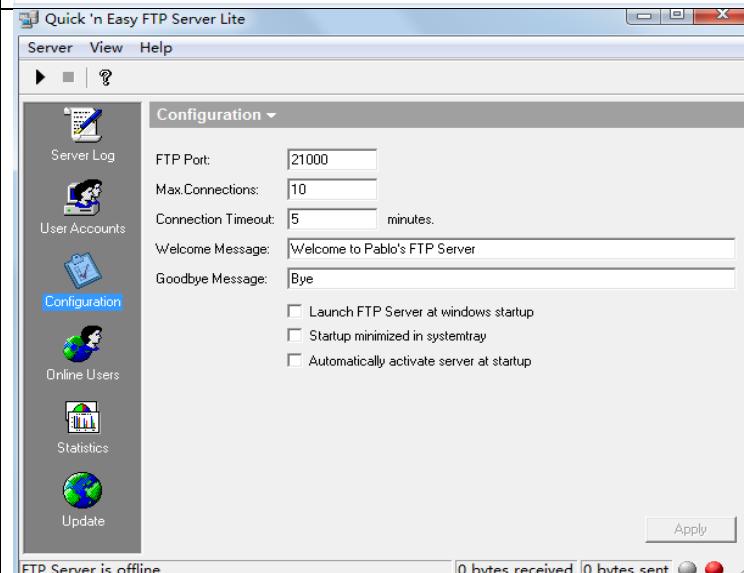




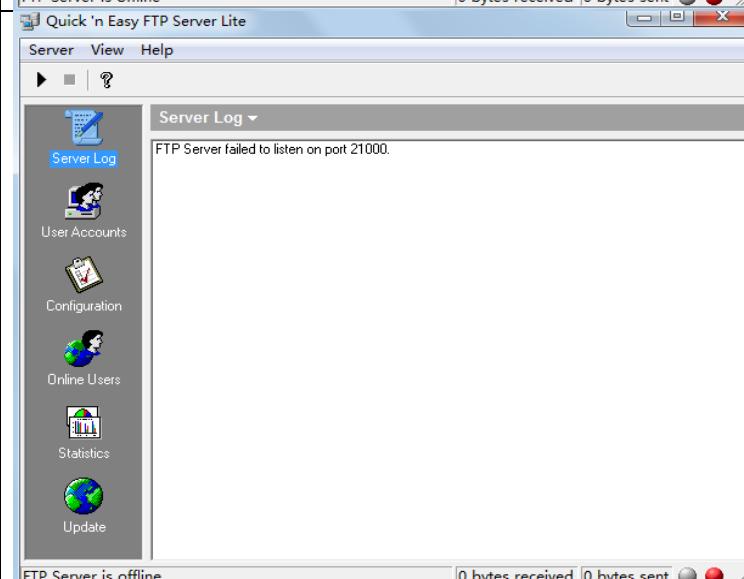
Click On “FTPServer.exe”

名称	修改日期	类型	大小
FpdCommonFunc.dll	2015/6/16 10:49	应用程序扩展	30 KB
FpdCorrection.dll	2015/6/16 10:50	应用程序扩展	53 KB
FpdDefect.dll	2015/6/16 10:49	应用程序扩展	44 KB
FpdDetector.dll	2015/6/16 10:49	应用程序扩展	10 KB
FpdDetectorE3.dll	2015/6/16 10:50	应用程序扩展	39 KB
FpdDetectorE4.dll	2015/6/16 10:50	应用程序扩展	71 KB
FpdFTS.dll	2015/6/16 10:50	应用程序扩展	8 KB
FpdImageProcess.dll	2015/6/16 10:50	应用程序扩展	58 KB
FpdIrDARegister.dll	2015/5/21 8:59	应用程序扩展	16 KB
FpdKey.dll	2015/6/16 10:50	应用程序扩展	8 KB
FpdLib.dll	2015/6/16 10:50	应用程序扩展	82 KB
FpdSyncbox.dll	2015/6/16 10:50	应用程序扩展	16 KB
FpdTCP.dll	2015/6/16 10:49	应用程序扩展	13 KB
FpdUDP.dll	2015/6/16 10:49	应用程序扩展	13 KB
FTPServer.exe	2014/5/20 0:10	应用程序	123 KB
GridLineRemoval.dll	2014/2/7 10:38	应用程序扩展	219 KB
IDemo_interface.exe	2015/6/16 10:52	应用程序	1,000 KB
IDicom.dll	2013/11/18 13:44	应用程序扩展	2,976 KB
IrDAResister.exe	2015/6/9 9:42	应用程序	130 KB
log4cpp32vc9.dll	2014/11/11 10:19	应用程序扩展	237 KB
users.dat	2014/5/30 9:17	DAT文件	1 KB

Choose “Configuration”, set “FTP Port” 21000, others as default



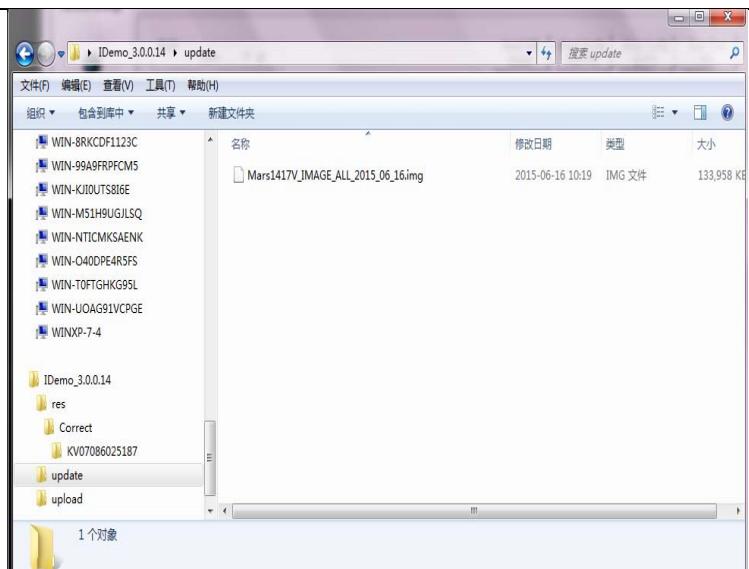
Start FTP Server



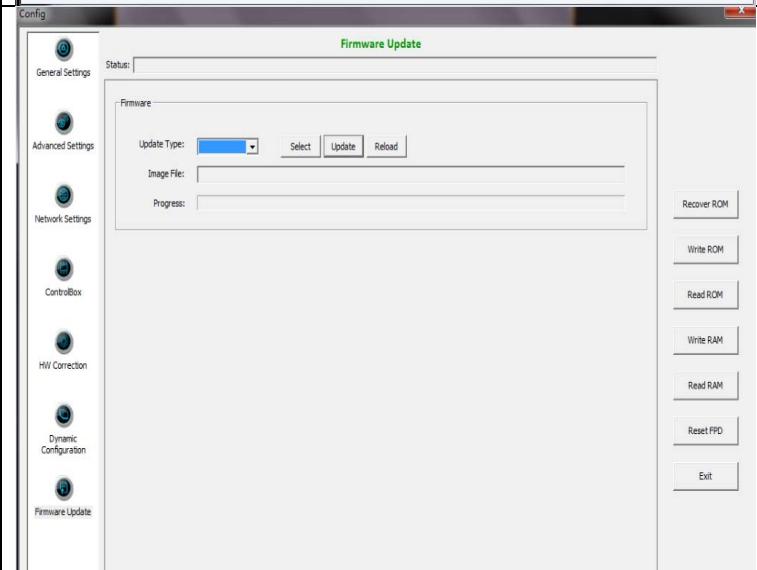


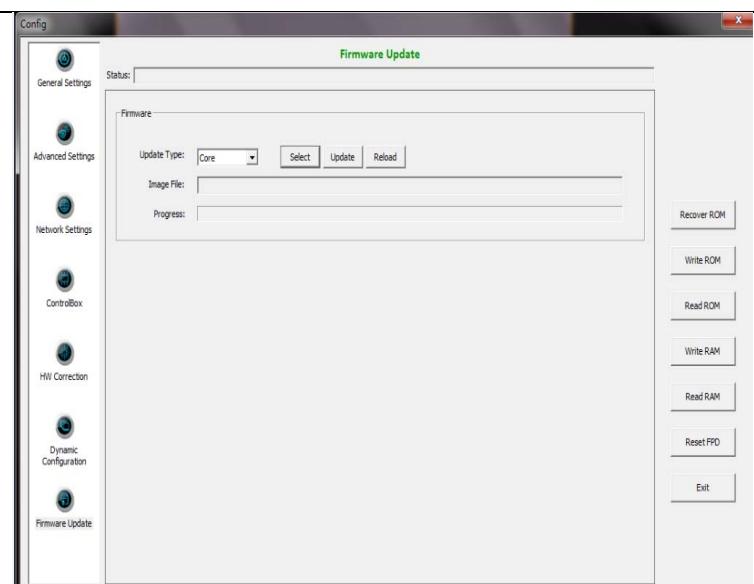
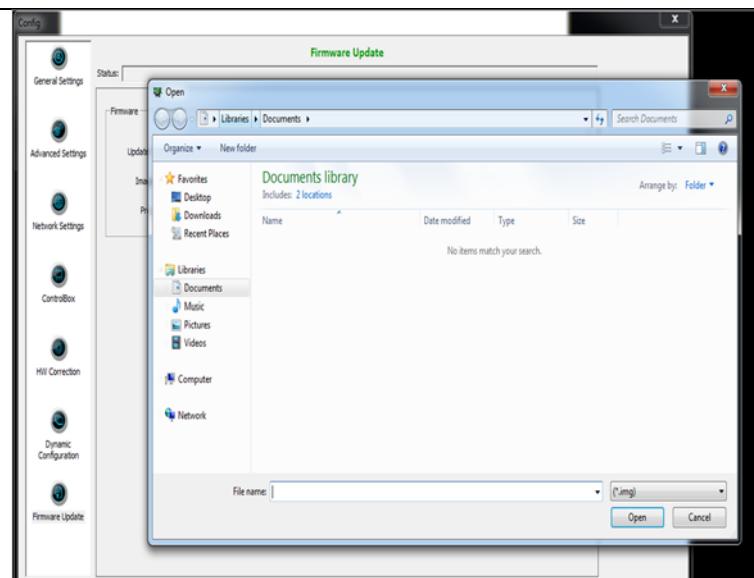
#### 4.11.3 Firmware Update

Put update file in the directory of  
“\*\\idemo\\update”



Click “Config”, Choose Firmware  
Update



Choose Update Type “core<sup>1</sup>”Click “Select”, choose right update file<sup>2</sup>Click “update”, waiting for message box<sup>3</sup>Click message box, waiting for end of rebooting<sup>4</sup>;Panel finishes rebooting, Click “OK”<sup>5</sup>

/

Note:

1. It is not limited to “Core”, actually, other choice is also ok.
2. If it is MCU update, choose MCU image file. Otherwise, choose ALL-Image file, Please make sure update file is selected, if not, panel will be not in use after updating.
3. There is a progress bar for indication. Make sure battery is inserted and battery capacity is over 25%
4. This rebooting function is controlled by panel itself. It has the same function with “Reset FPD”
5. Please make sure Idemo show “Ready”. It can also be checked by click “Config” button, there is firmware version.

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## 4.12 Short cut

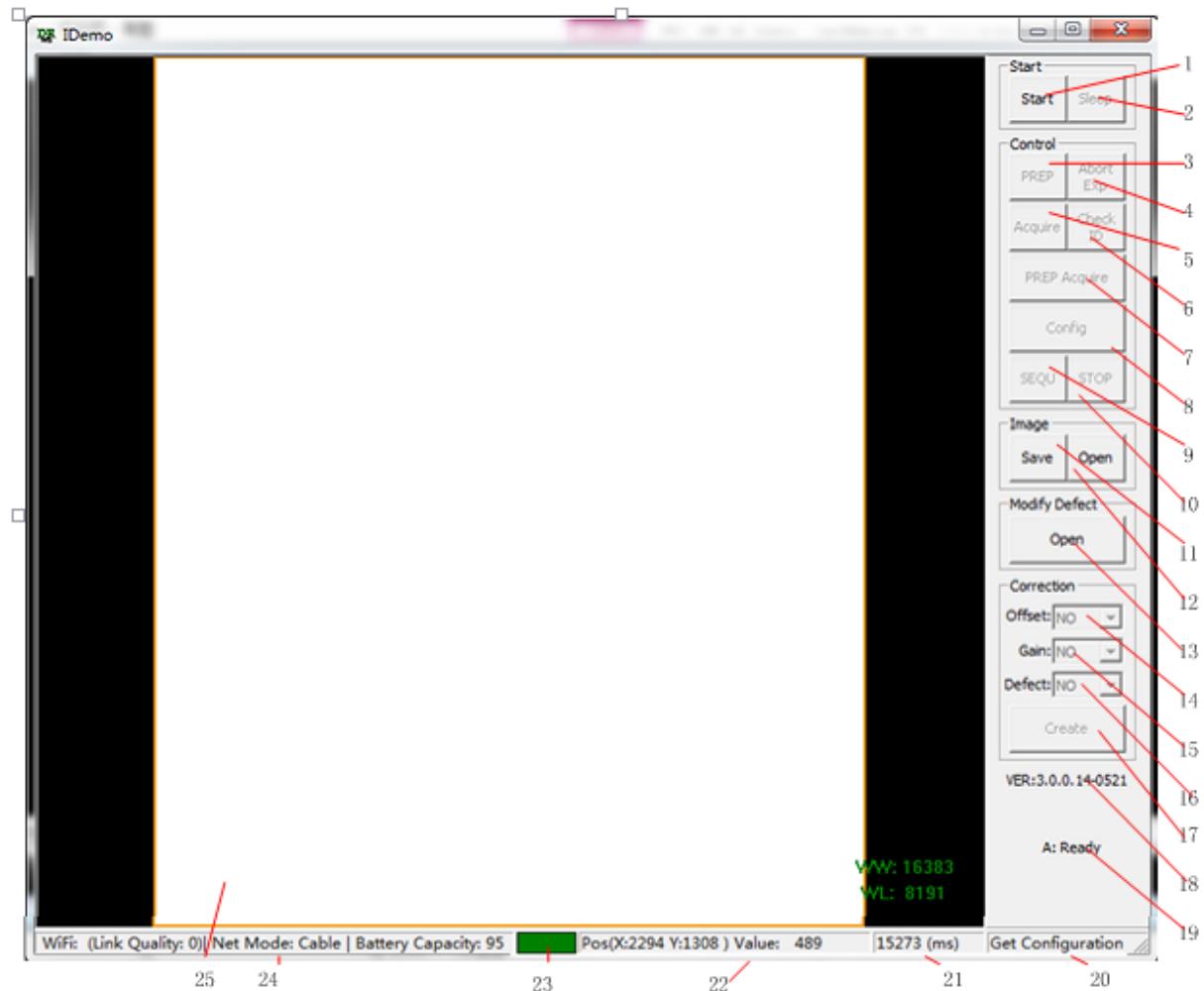
iDemo supports some shortcuts as follows:

- Double-click the left mouse button, the image displayed in center and with maximum size.
- Double-click the right mouse button, the window level and width adjusted to WL:8191/WW:16383.
- Drag the left mouse button, drag the image displayed.
- Lateral-drag the right mouse button to adjust the window width, and vertical-drag the right mouse button to adjust the window level.
- F3 Key: Quickly adjust the image window width and window level.



## 4.13 Software

### 4.13.1 Main GUI



iRay provides test tools, such as iDemo for testing the basic performance of detector. It can connect the detector, acquire image, image correct and calibrate.

Function description of regions and buttons within the main window as follows:

1	Start/End	Load or unload NIC device driver	13	Open/Close	Open or close defect map
2	Sleep/Wake	Sleep or wake up panel	14	Offset	Open or close software post offset
3	Prep	Clear lags of the panel	15	Gain	Open or close gain calibration
4	Abort Exp	Close exposure Window	16	Defect	Open or close defect correction
5	Acquire	Acquire an image without clearance	17	Create	Generate gain template and defect template

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6	Check ID	Check panel SN	18	Version of the idemo
7	Prep Acquire	Clear lags and acquire an image	19	Status of the idemo
8	Config	Configure the panel	20	Panel feedback message
9	Sequ	Start acquiring images continually	21	Acquisition interval between two images
10	Stop	Stop acquiring images continually	22	Pixel X/Y coordinate and gray scale value of Pixel(14 bit)
11	Save	Save images continually or save an image	23	Image acquisition instruction box
12	Open	Open local images(.DCM) or open images in the panel	24	WiFi signal and battery capacity indication
			25	Region of image display

## 4.13.2 Message Box

### 4.13.2.1 Status Box

Status box defines the current status of panel.

Value	Description
Offline	Idemo loose connection with panel, it does not receive heart beat
Ready	Idemo builds connection with panel, panel is ready for receiving new operation
Busy	Idemo builds connection with panel, panel is busying on the last operation, it can not be interrupted
Sleeping	Idemo builds connection with panel, panel has gone in sleep
Waking	Idemo builds connection with panel, panel is being wake up
Timeout	Command executes overtime

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#### 4.13.2.2 Feedback Box

Feedback box shows feedback message from panel.

#### 4.13.2.3 Acquisition Interval Box

Acquisition Interval Box shows the time between two image acquired currently.

#### 4.13.2.4 Coordinate and Gray Scale Box

Coordinate and Cray Scale Box show the coordinate and gray scale of mouse.

#### 4.13.2.5 Image Acquisition Box

Image Acquisition Box shows whether image is uploading

Color	Description
Red	Image is uploading from panel
Green	others

#### 4.13.2.6 Battery and Connection Box

Battery and Connection Box shows battery capacity, wireless signal level and wire connection.

#### 4.13.2.7 Progress Bar

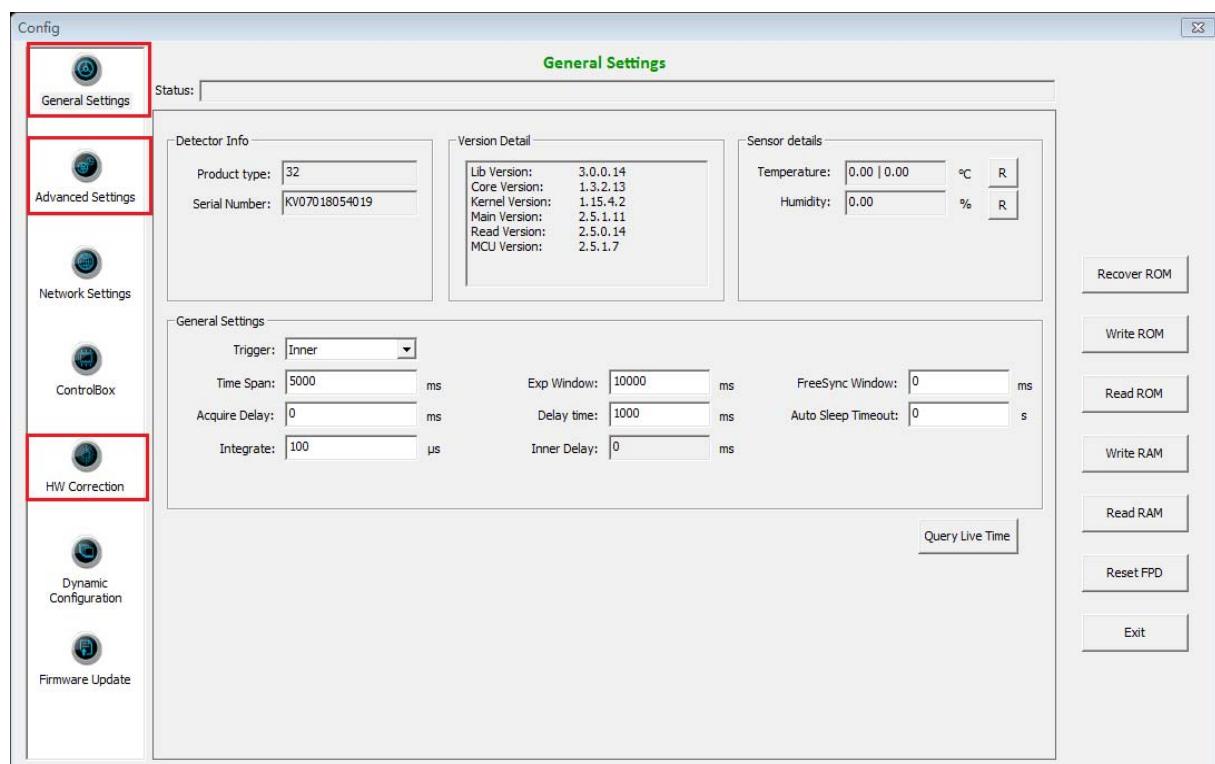
Progress Bar defines as following.



If progress bar is Green when shooting X-ray, image quality is acceptable, otherwise image quality would degrade.

### 4.13.3 Configuration GUI

#### 4.13.3.1 General Settings



	Item	Description	Modify
Detector Info	Product type	Type of panel product	NO
	Serial Number	Serial number of the panel	NO
Version Detail	Lib Version	Version number of idemo	NO
	Core Version	Version number of ARM application	NO
	Kernel Version	Version number of ARM OS Kernel	NO
	Main Version	Version number of Core FPGA	NO

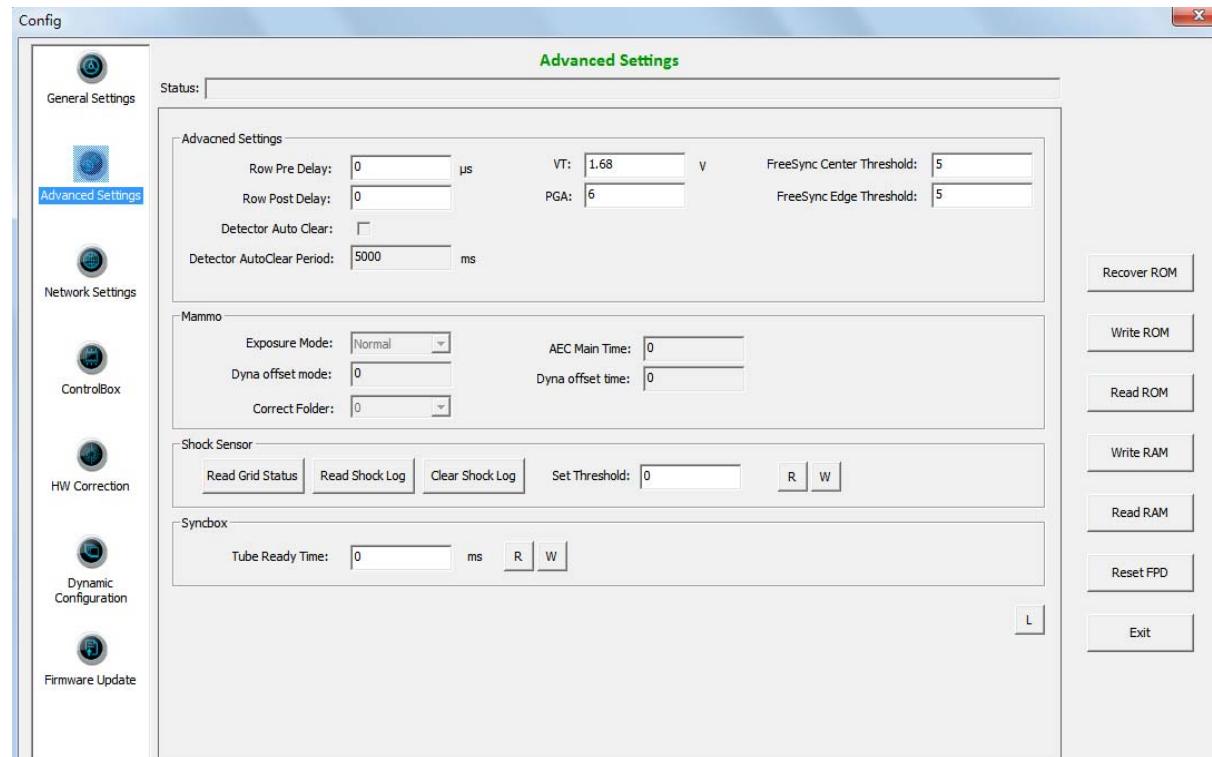


	Read Version	Version number of Read FPGA	NO
	MCU Version	Version number of MCU	NO
Sensor details	Temperature	Panel inner temperature(Read Board and Core Board)	NO
	Humidity	Panel inner Humidity	NO
General Settings	Trigger	Detector trigger mode: 1. Outer 2. Inner 3. Software 4. PREP 5. Service 6. FreeSync (Default)	YES
	Time Span	This parameter is used only in continual acquisition. The time span is the time interval between two nearby acquisition process	YES
	Exp Window	Exposure window is used in Inner mode, it defines the time for X-ray shooting.	YES
	FreeSync Window	Not Used	YES
	Acquire Delay	Delay time before image acquisition.	YES
	Delay time	Exposure Window in Isync Plus mode/Delay time between clearance and acquisition in other mode.	YES
	Auto Sleep Timeout	Time span of idle before going to sleep	YES
	Integrate	The integration time for the photo diode	NO
	Inner Delay	The real delay time between clearance and acquisition most recently.	NO
	Recover ROM	Recover configuration to factory setting	/
Button	Write ROM	Write configuration data into nonvolatile memory	/
	Read ROM	Read configuration data from nonvolatile memory	/
	Write RAM	Write configuration data into volatile memory	/
	Read RAM	Read configuration data into volatile memory	/
	Reset FPD	Reboot the panel	/



	Exit	Exit configuration GUI	/
	Query Live Time	Check the active time of panel	/

#### 4.13.3.2 Advanced Settings



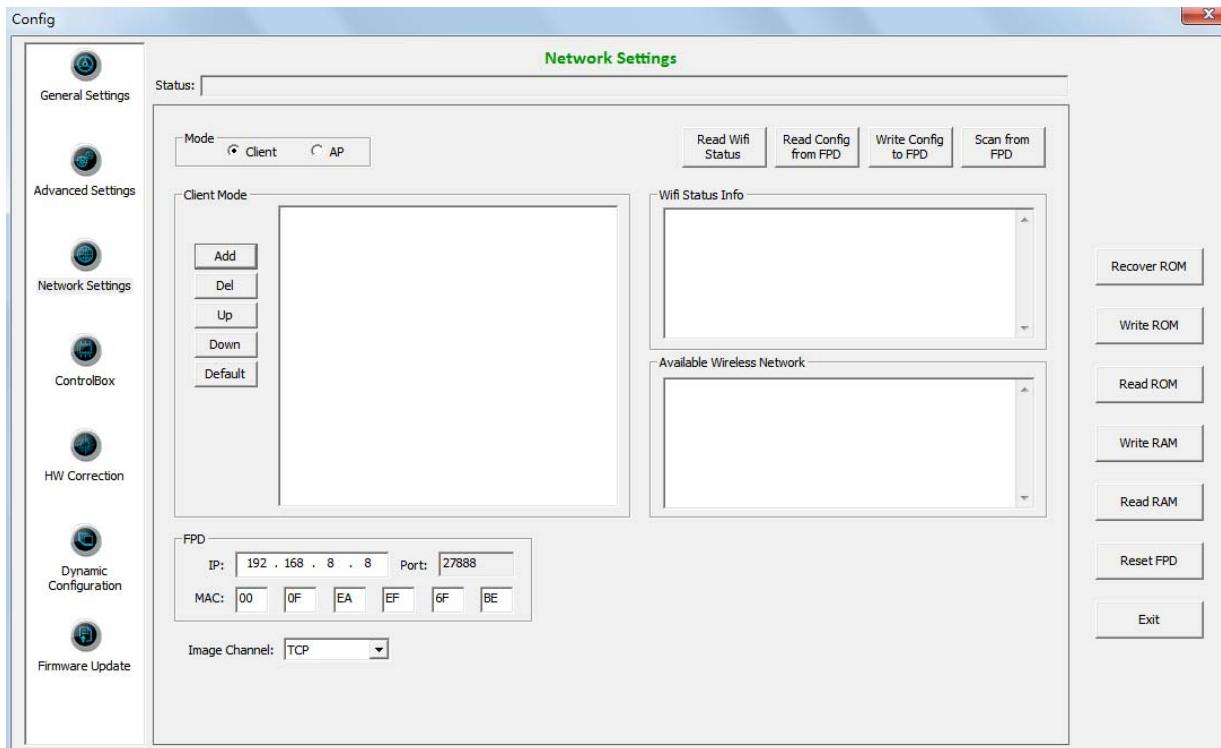
	Item	Description	Modify
Advanced Settings	Row Pre Delay	Delay time before acquiring row data	YES
	VT	Voltage corresponding to the charge compensation	YES
	Freesync Center Threshold	Not used	YES
	Row Post Delay	Delay time after acquiring row data	YES
	PGA	Integrator capacitor range.	YES
	Freesync Edge Threshold	Not used	YES
	Detector Auto Clear	Set the detector in auto clear mode	NO
	Detector Auto Clear Period	Auto clear period for panel	NO
Mammo	Exposure Mode	Not used	NO
	AEC Main Time	Not used	NO

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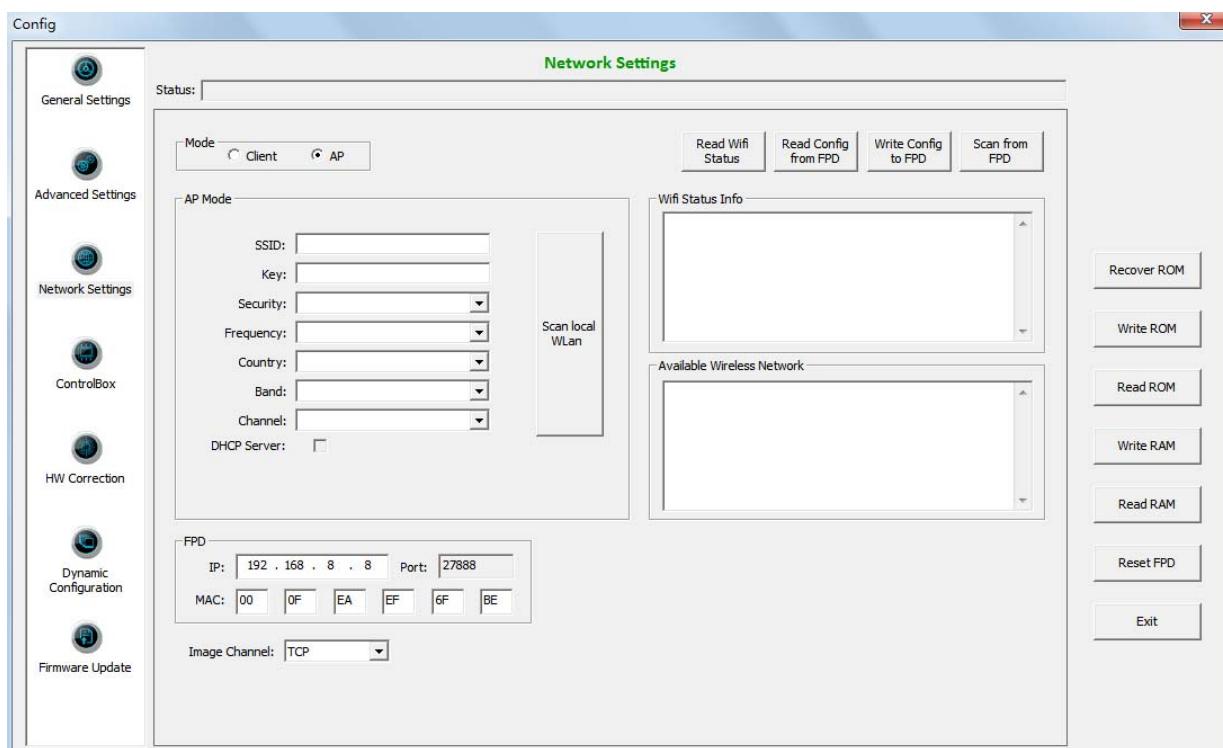
	Dyna Offset Mode	Not used	NO
	Dyna Offset Time	Not used	NO
	Correct Folder	Not used	NO
Shock Sensor	Read Grid Status	Not used	NO
	Read Shock log	Read shock sensor log	NO
	Clear Shock Log	Clear shock sensor log	NO
	Set Threshold	Shock sensor threshold	YES
	R	Read Shock sensor threshold from panel	NO
	W	Write Shock sensor threshold to panel	NO
Syncbox	Tube Ready Time	Not used	NO
	R	Not used	NO
	W	Not used	NO
Button	L	Read Log from panel	NO

#### 4.13.3.3 Network Settings

Client Mode:



AP Mode:

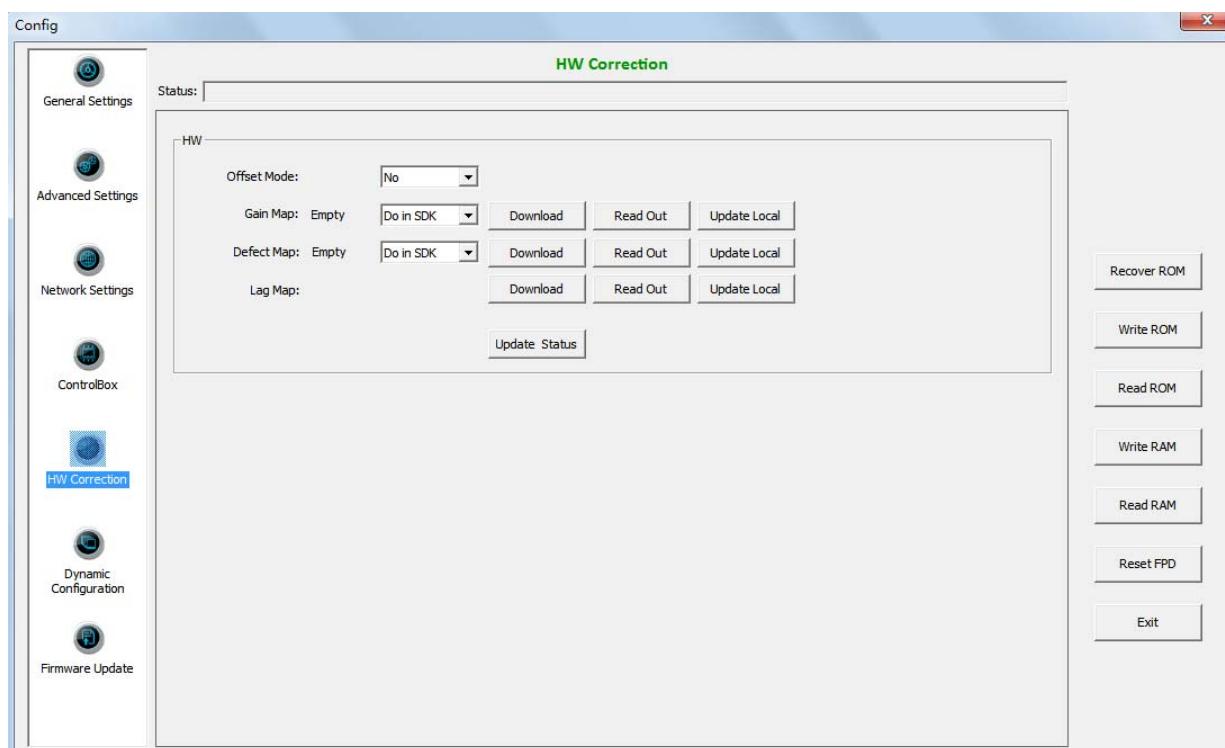


Item		Description	Modify
Mode	Client	Set panel in client mode	NO
	AP	Set panel in AP mode	NO
Client Mode	Add	Add available wireless AP account	NO
	Del	Delete Exist wireless AP account	NO
	Up	Wireless AP account move up	NO
	Down	Wireless AP account move down	NO
	Default	Set AP account as default connection	NO
AP Mode	SSID	Wireless AP SSID when panel in AP mode	YES
	Key	Wireless AP Key when panel in AP mode	YES
	Security	Wireless AP Security method when panel in AP mode	YES
	Frequency	Wireless AP frequency(2.4GHz and 5GHz) when panel in AP mode	YES
	Country	Wireless AP Country when panel in AP mode	YES
	Band	Wireless AP Band(HT20 and HT40) when panel in AP mode	YES
	Channel	Wireless AP Channel when panel in AP mode	YES



	DHCP Server	DHCP function when panel in AP mode	YES
	Scan Local Wlan	Scan local wifi signal when panel in AP mode	YES
FPD	IP	Network IP address of panel	YES
	Port	Network Port of panel	NO
	MAC	Network MAC address of panel	YES
	Image Channel	Network protocol of panel	YES
Button	Read Wifi Status	Read wireless module status from panel	NO
	Read Config from FPD	Read wireless module setting from panel	NO
	Write Config to FPD	Write wireless module setting to panel	NO
	Scan from FPD	Scan Wifi signal by panel	NO

#### 4.13.3.4 HW Correction



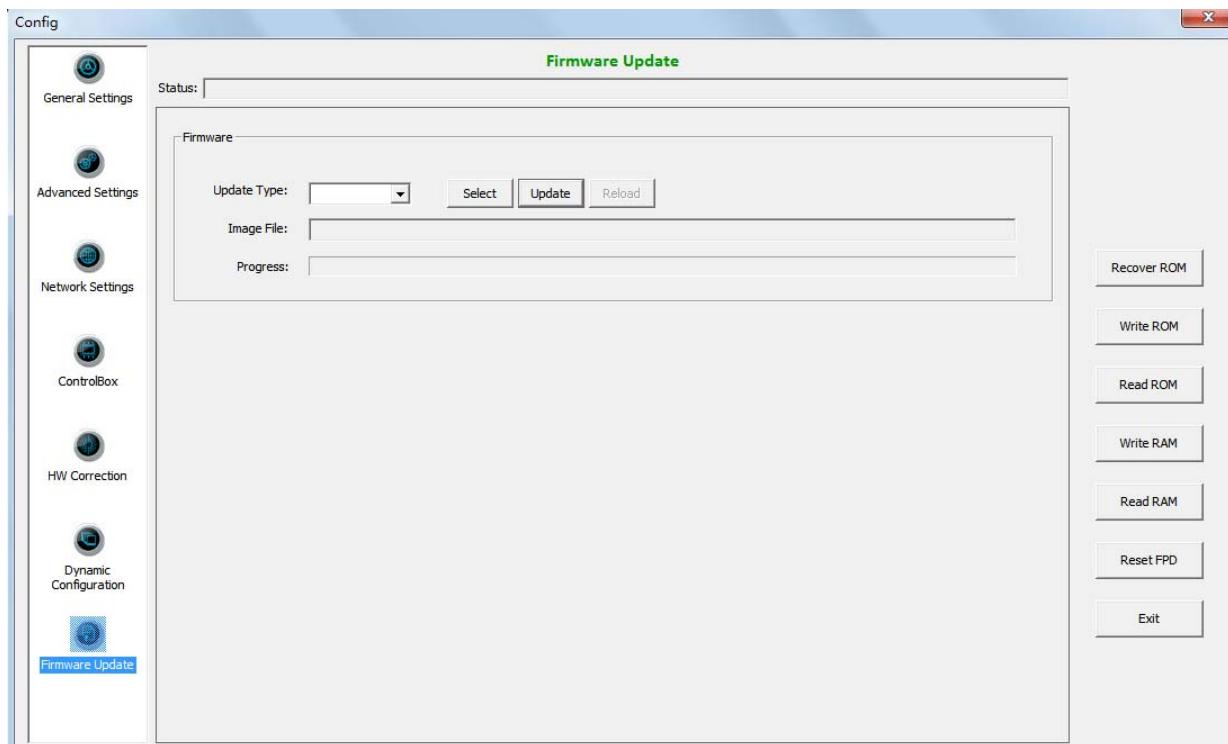
Item	Description		Modify
HW	Offset Mode	Hardware offset mode of panel NO: no hardware offset mode Pre: hardware pre-offset mode	YES



	Post: hardware post-offset mode	
Gain Map	Gain calibration mode of panel Do in SDK: software gain calibration Do in HW: hardware gain calibration	NO
Defect Map	Defect correction mode of panel Do in SDK: software defect correction Do in HW: hardware defect correction	NO
Lag Map	Lag correction of panel	NO
Download	Download correction and calibration template to panel	NO
Read out	Upload correction and calibration template from panel	NO
Update local	Replace local correction and calibration template with template uploaded currently	NO
Update status	Get correction and calibration configuration from panel	NO



#### 4.13.3.5 Firmware Update

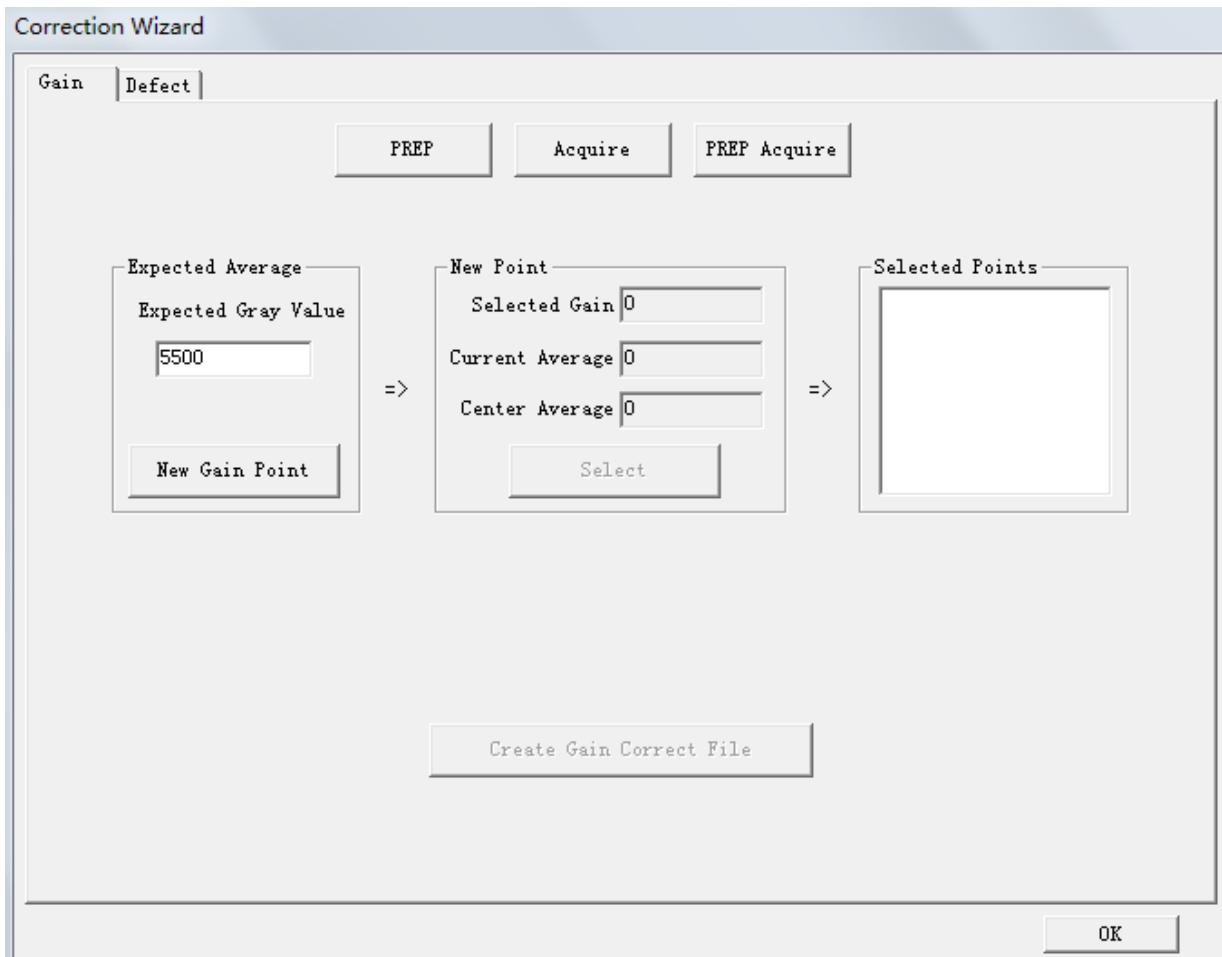


	Item	Description	Modify
Firmware	Update Type	Not used	YES
	Image File	Local address of update file	NO
	Progress	Progress bar of updating	NO
	Select	Select update file	NO
	Update	Start update	NO
	Reload	Reload firmware of panel	NO



## 4.13.4 Correction and Calibration

### 4.13.4.1 Gain Calibration

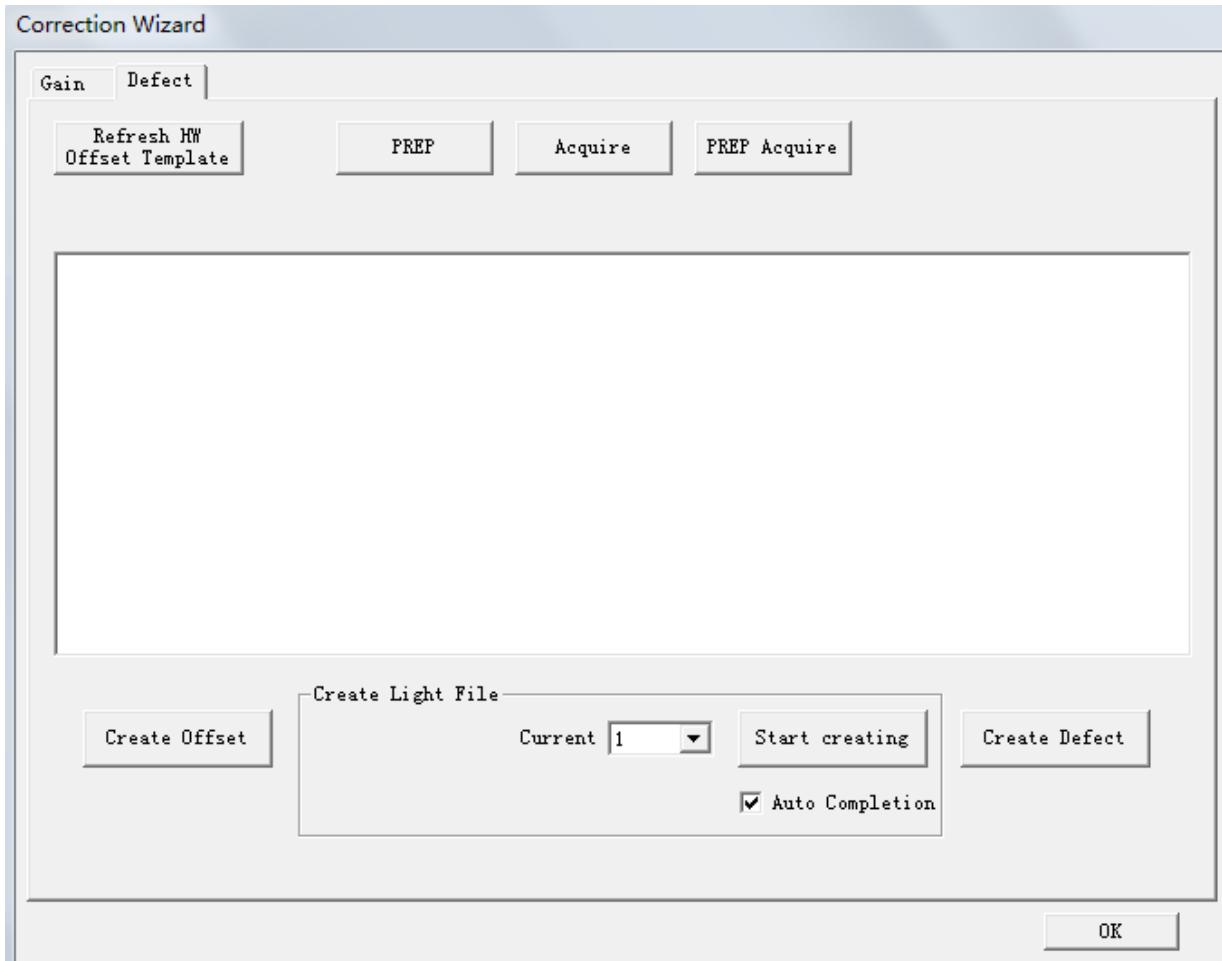


Item	Description	Modify
Expected Average	Expected Gray Value	YES
	New Gain Point	NO
New Point	Selected Gain	NO
	Current Average	NO
	Center Average	NO
	Select	NO
Button	Prep	NO
	Acquire	NO
	Prep Acquire	NO
	Create Gain Correct	NO

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	File		
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#### 4.13.4.2 Defect Correction

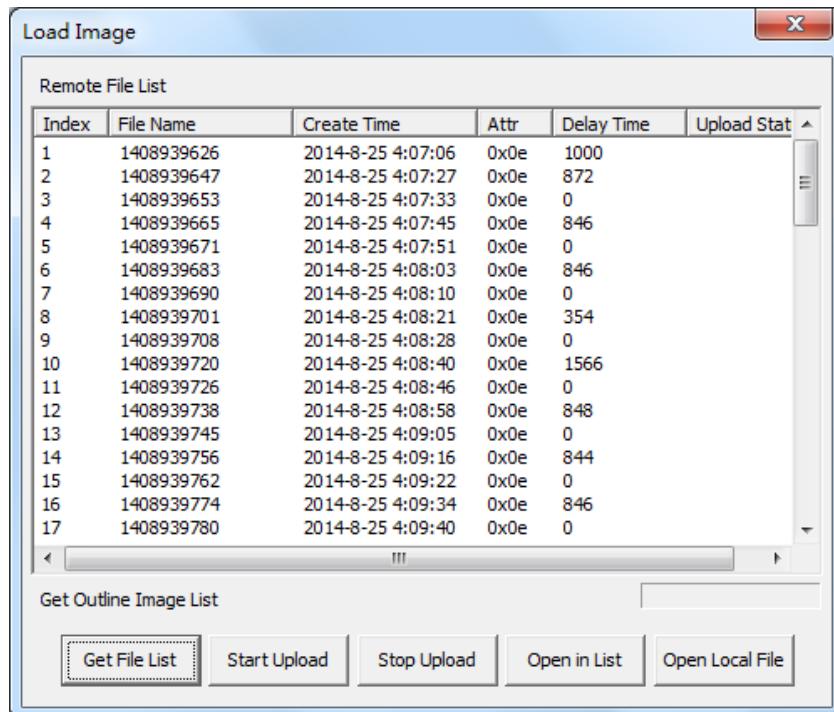


Item	Description	Modify
Create Light File	Current	NO
	Start creating	NO
	Auto completion	NO
Button	Refresh HW Offset Template	Updating pre-offset template in panel
	Prep	Send “Clear” command to panel
	Acquire	Send “Acquire” command to panel
	Prep Acquire	Send “Clear Acquire” command to panel
	Create Offset	Generate pre-offset template
		NO



	Create Defect	Generate Defect correction template	NO
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#### 4.13.5 Image Check and upload

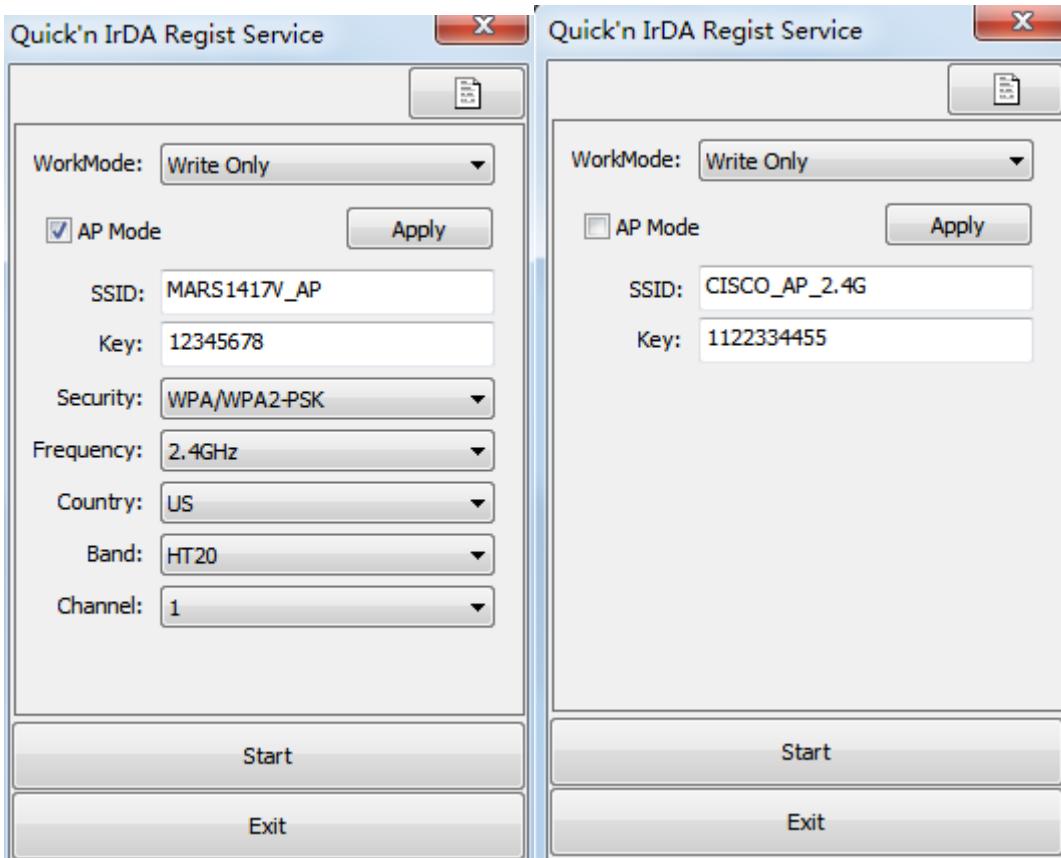


	Item	Description	Modify
Remote File List	Index	Sequence number of image	NO
	File name	Name of image in panel	NO
	Create Time	Acquisition time of image in panel	NO
	Attr	Image label 0x01—Do Offset 0x02—Do Gain 0x04—Do Most gain 0x08—Do Defect 0x10—Post Offset Raw Image	NO
	Delay Time	Time between clear and image acquisition	NO
	Button	Get file list from panel	NO
Button	Start Upload	Start uploading image selected	NO
	Stop Upload	Stop uploading process	NO



	Open in List	Open image selected	NO
	Open Local File	Open local images in Workstation	NO

#### 4.13.6 Infrared Registration



Item	Description	Modify
/	Work Mode  Work mode of infrared registration tools  Write Only: infrared registration tools is allowed to write to panel  Read Only: infrared registration tools is allowed to read from panel  Read & Write: infrared registration tools is allowed to read from panel and write to panel  Read & confirm by User: infrared registration tools is allowed to read from panel and write to panel only when confirmed by user	YES



AP Mode Configuration	AP Mode	Set panel in AP mode or Client mode	YES
	SSID	Wireless AP SSID when panel in AP mode	YES
	Key	Wireless AP Key when panel in AP mode	YES
	Security	Wireless AP Security way when panel in AP mode	YES
	Frequency	Wireless AP Frequency(2.4GHz and 5GHz) when panel in AP mode	YES
	Country	Wireless AP Country Code when panel in AP mode	YES
	Band	Wireless AP Band(HT20 and HT40) when panel in AP mode	YES
	Channel	Wireless AP Channel when panel in AP mode	YES
Client Mode Configuration	SSID	Wireless SSID when panel in Client mode	YES
	Key	Wireless Key when panel in Client mode	YES
Button	Apply	Save wireless parameter in infrared registration tools	NO
	Start	Start write wireless parameter in panel	NO
	Exit	Exit infrared registration tools	NO



## 5 Regulatory Information

### 5.1 Medical equipment safety standards

#### ◆ Medical equipment classification

Type of protection against electrical shock	Class I Equipment, using medical approved adaptor supply Internally powered Equipment, using battery power supply
Degree of protection against electrical shock	Without Applied Parts
Degree of protection against ingress of water	IPX0 (Mars1717V) IPX0 (Charger-KV)
Mode of operation	Continuous operation
Flammable anesthetics	Not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide Not suitable for use in the oxygen rich environment

Note: The product safety standards that apply to Mars1717V which includes the main units: detector and charger-kv .

#### ◆ References harmonized standards under Directive 93/42/EEC

MDD (93/42/EEC)	Medical Device Directive
EN ISO 13485:2012/EN ISO 13485:2012/AC:2012	Medical devices --- Quality management systems --- Requirements for regulatory purposes
EN ISO14971: 2012	Medical device – Application of risk management to medical devices
EN 60601-1:2014	Medical electrical equipment -- Part 1: General requirements for basic safety and essential performance
EN 60601-1-2:2007	Medical electrical equipment – Part 1-2: Collateral standard: Electromagnetic compatibility – Requirements and tests



EN 60601-2-54:2009	Medical electrical equipment -- Part 2-54: Particular requirements for the basic safety and essential performance of X-ray equipment for radiography and radioscopy
IEC 62133:2012	Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications
EN 62220-1:2004	Medical electrical equipment - Characteristics of digital X-ray imaging devices - Part 1: Determination of the detective quantum efficiency
EN 62304:2006/AC:2008	Medical device software - Software life-cycle processes
EN 62366:2008	Medical devices - Application of usability engineering to medical devices

## 5.2 Guidance and manufacture's declaration for EMC

### ◆ Electromagnetic emissions

Mars1717V is intended for use in the electromagnetic environment specified below. The customer or the user of Mars1717V should assure that it is used in such an environment.

Emission Test	Compliance	Electromagnetic Environment - Guidance
RF emissions CISPR 11	GROUP1	Mars1717V uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Class B	Mars1717V is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

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◆ Electromagnetic immunity

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Mars1717V is intended for use in the electromagnetic environment specified below. The customer or the user of Mars1717V should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/ burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/ output lines	±2 kV for power supply lines ±1 kV for input/ output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% UT (>95% dip in UT) for 0.5 cycle. 40% UT (60% dip in UT) for 5 cycle. 70% UT (30% dip in UT) for 25 cycle. <5% UT (>95% dip in UT) for 5 sec.	<5% UT (>95% dip in UT) for 0.5 cycle. 40% UT (60% dip in UT) for 5 cycle. 70% UT (30% dip in UT) for 25 cycle. <5% UT (>95% dip in UT) for 5 sec.	Mains power quality should be that of a typical commercial or hospital environment. If the user of that requires continued operation during power supply interruptions, it is recommended that be powered from an uninterruptible power supply.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

UT is the a.c. mains voltage prior to application of the test level.

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◆ Guidance and manufacturer's declaration----electromagnetic immunity



Mars1717V is intended for use in the electromagnetic environment specified below. The customer or the user of Mars1717V should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Conducted RF IEC 61000-4-6	3 Vrms 150kHz to 80MHz	3 Vrms	<p>Portable and mobile RF communications equipment, AC-DC adapter or electromagnet should be used not closer to any part of the Model Mars1717V, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1,2 \sqrt{P}$ $d = 1,2 \sqrt{P} \text{ 80 MHz to 800 MHz}$ $d = 2,3 \sqrt{P} \text{ 800 MHz to 2,5 GHz}$ <p>Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
Radiated RF IEC 61000-4-3	3 V/m 80MHz to 2.5GHz	3 V/m	

NOTE: UT is the a.c. mains voltage prior to application of the test level.

NOTE1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which



Mars1717V is used exceeds the applicable RF compliance level above, Mars1717V should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating Mars1717V.

b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [V1] V/m.

- ◆ Recommended separation distances between portable or mobile RF communications equipment and Mars1717V

Mars1717V is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of Mars1717V can help prevent electromagnetic interference by maintaining a minimum distance between portable or mobile RF communications equipment (transmitters) and Mars1717V as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter /W	Separation distance according to frequency of transmitter /m		
	150kHz~80 MHz $d = 1.2 \sqrt{P}$	80 MHz~800 MHz $d = 1.2 \sqrt{P}$	800 MHz~2.5GHz $d = 2.3 \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d (meters) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

- ◆ Cables information below is provided for EMC reference.

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Cable	Recommended cable length	Shielded or Unshielded	Number	Cable classification
Input Power Cable	3m	Unshielded	1 Set	AC Power
Ethernet Cable	3.5m	Shielded	1 pcs	Signal
DC Power Cable	3.5m	Unshielded	1 pcs	Signal
LAN Cable	3m	Shielded	1 pcs	Signal

◆ Important information regarding Electro Magnetic Compatibility (EMC)

Mars1717V require special precautions regarding EMC and needs to be installed only by iRay or authorized personnel and put into service according to EMC information provided in the user manual. Mars1717V in use may be susceptible to electromagnetic interference from portable and mobile RF communications such as mobile (cellular) telephones. Electromagnetic interference may result in incorrect operation of the system and create a potentially unsafe situation.

Mars1717V conforms to this EN60601-1-2:2007 standard for both immunity and emissions.

Nevertheless, special precautions need to be observed:

The use of accessories, transmitters and cables other than those specified by this User Manual, with the exception of accessories and cables sold by iRay of Mars1717V as replacement parts for internal components, may result in increased EMISSIONS or decreased IMMUNITY of Mars1717V.

Mars1717V should not be used adjacent to or stacked with other equipment.

### 5.3 Radio Frequency Compliance Information

Country	Item
U.S.A	FCC Part 15.107 Subpart (b) / 15.109(g) Subpart B FCC Part 15 Subpart E 15.407 FCC Part 15 Subpart C 15.247

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European Union	ETSI EN 301 489-1 V1.8.1 (EMC) ETSI EN 301 489-17 V2.1.1 (EMC) EN 300 328 V.1.7.1; EN 301 893 V1.6.1 (RF) EN 62311:2008 (RF Exposure) ETSI EN 300 328 V1.7.1; EN 301 893, V1.5.1 (Radio Spectrum)
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### 5.3.1 FCC Compliance

- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
- Operation is subject to the following tow conditions.

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

- This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measure.

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the distributor or an experienced radio/TV technician for help.

### 5.4 Battery Safety Standards

Standards	Description
UL1642	Component Recognition on the Secondary Li-ion cell

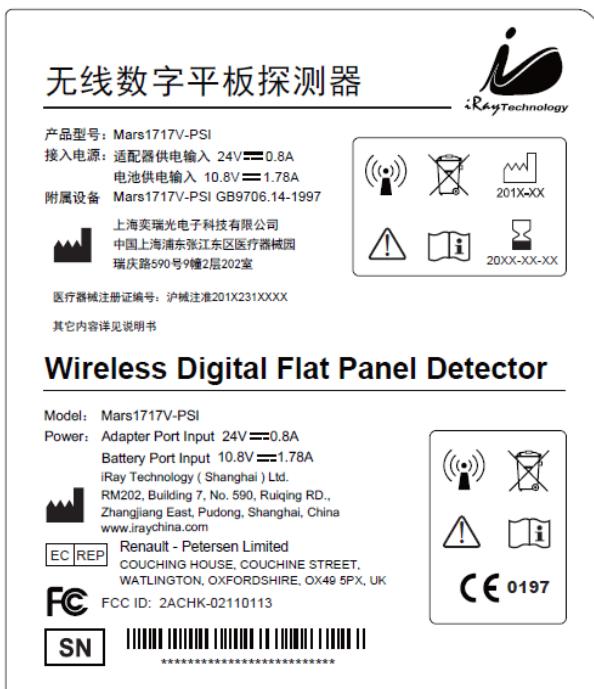
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UL 2054:2004 R9.11	Household and commercial Batteries
IEC 62133:2012	Secondary cells and batteries containing alkaline or other non-acid electrolytes
UN38.3	United Nations Recommendations on the Transport of dangerous goods Manual of tests and Criteria ST/SG/AC.10/11/Rev.5/Amend.1&Amend.2

## 5.5 Product Label

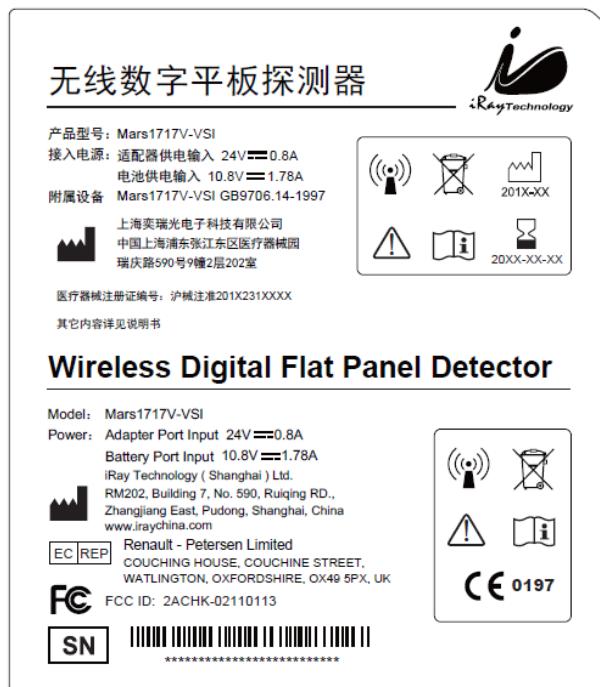
### 5.5.1 Detector

Mars1717V-PSI detector



Mars1717V-VSI detector

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Mars1717V User's Manual

Doc No.

037-201-02

Version

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## 5.5.2 Battery



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### 5.5.3 Battery Charger





## 6 Trouble Shooting

When user encounters problems or error messages, refer to this chapter. If the problem persists, turn off the panel and contact iRay service department ([service@iraychina.com](mailto:service@iraychina.com)). We would provide the best service.

### 6.1 Cable Inspection

#### 6.1.1 Ethernet cable

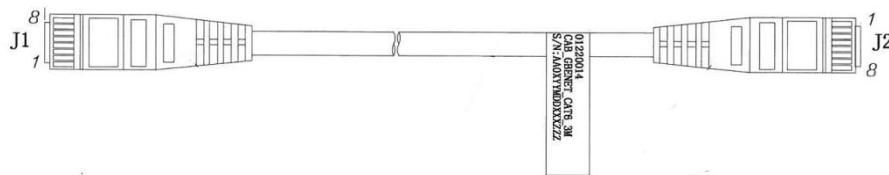
##### 6.1.1.1 Inspection method

Test the Ethernet cable detector by cable tester, and confirm whether all the cores of the cable are conductive. If the cable tester is not available, please check the definition of Ethernet cable and test the conductive between each pin of connector.



##### 6.1.1.2 Definition of Ethernet cable

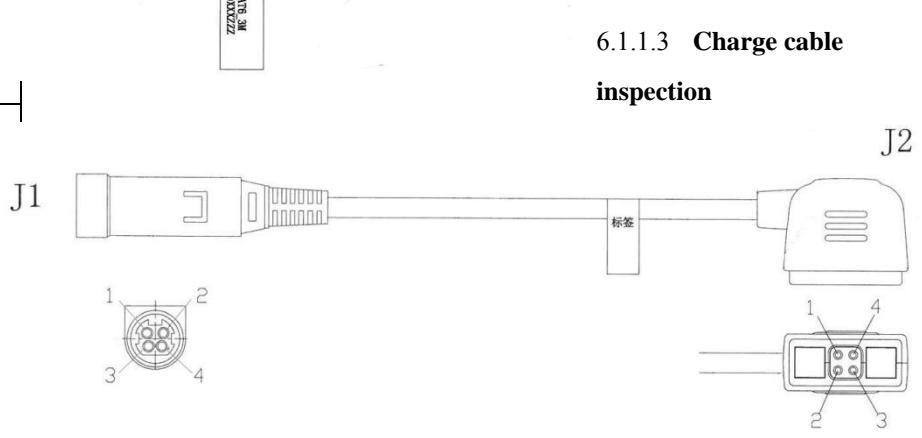
Colour	J1	J2
Orange\White	1	3



Colour	J1	J2
Brown\White	7	4
Brown	8	5

Grounding wire      Shell      Sh

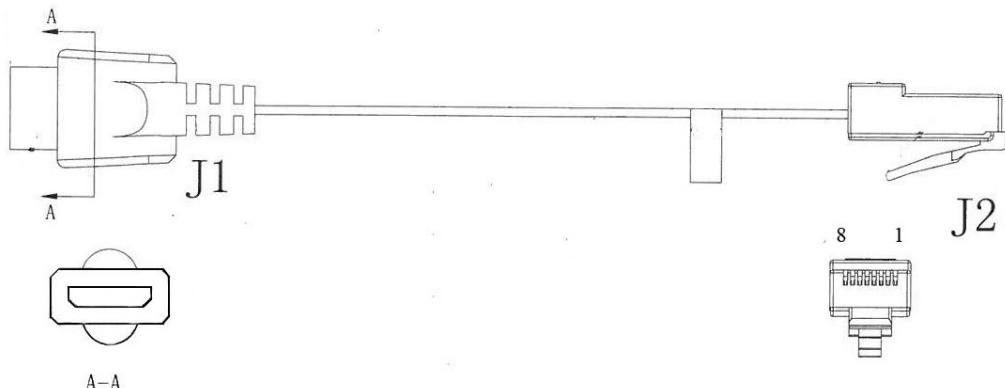
J1	J2
3	1
3	3
2	2
2	4



Measure the conductive between each pin of J1 and J2 by multimeter.



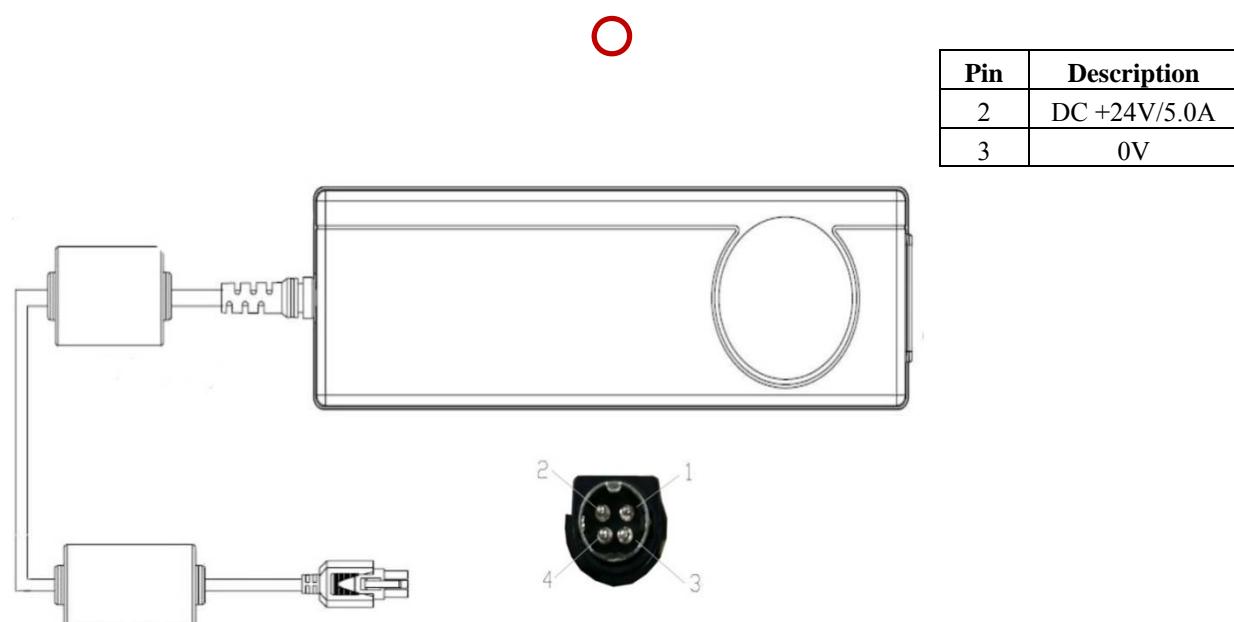
### 6.1.2 Date cable inspection



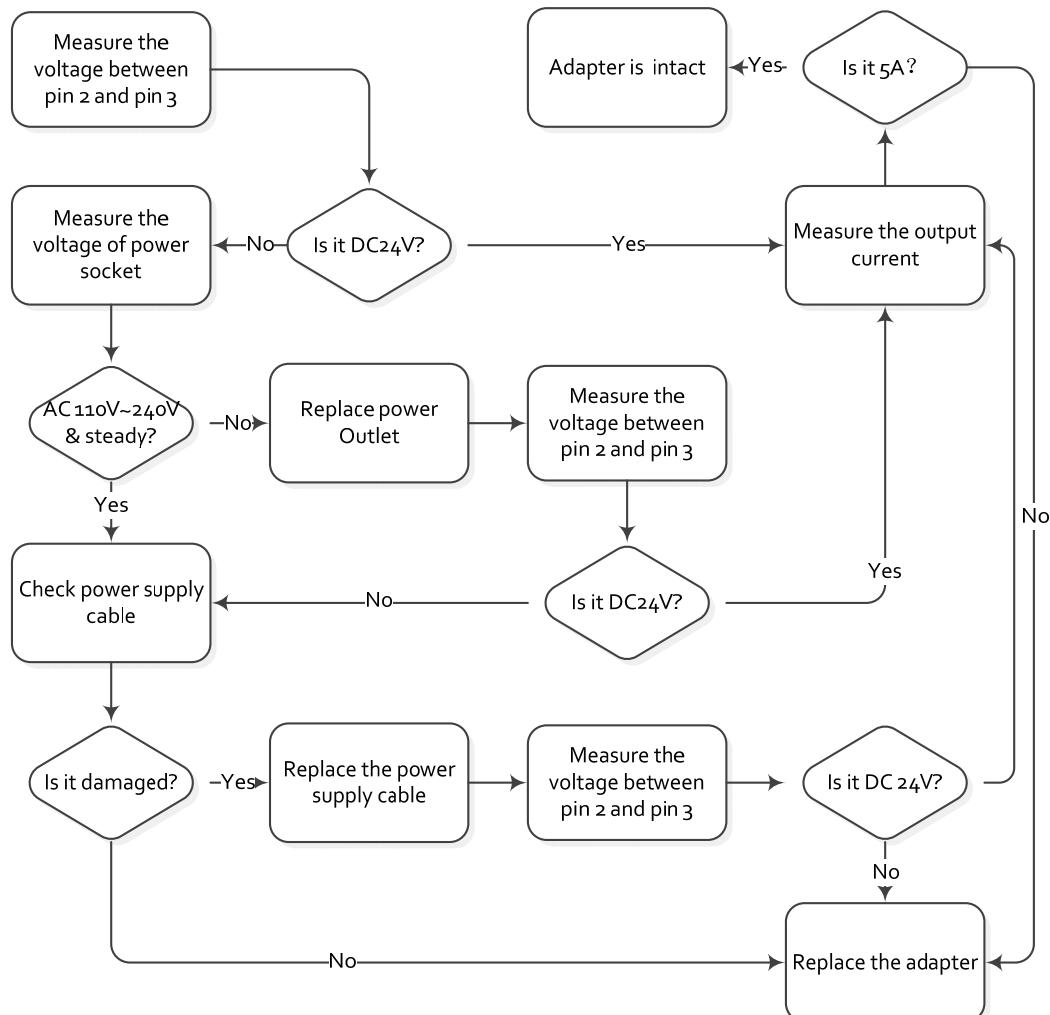
According to the definition of data cable to verify the conductive between each pin of J1 and J2 by multimeter if there is only one data cable in the field.

## 6.2 Adapter Inspection

### 6.2.1 Adapter connector definition



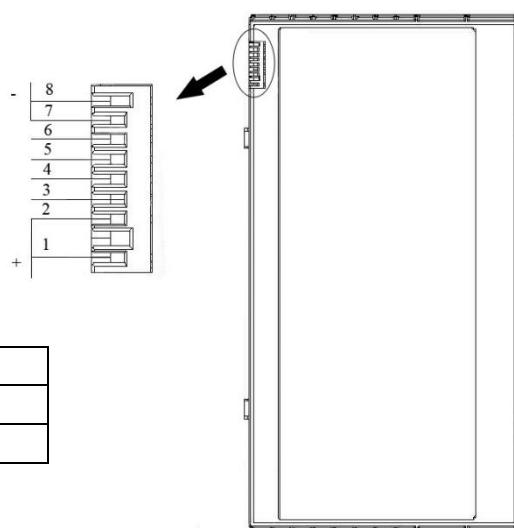
### **6.2.2 Inspection method**



Connect the adapter to the detector or charging dock to confirm whether the battery is in working order if verifying the output current is not practicable.

### **6.3 Battery Inspection**

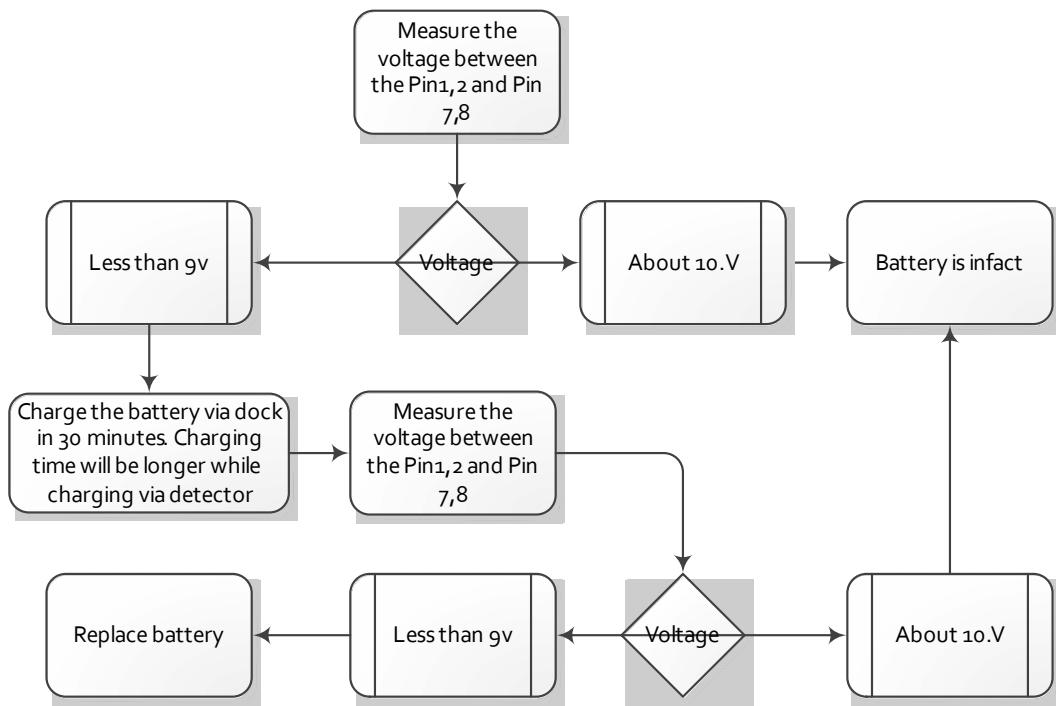
### 6.3.1 Battery pin definition



<b>Pin</b>	<b>Symbol</b>	<b>Description</b>
1,2	P+	Battery Discharge Positive Terminal
7,8	P-	Battery Discharge Negative Terminal



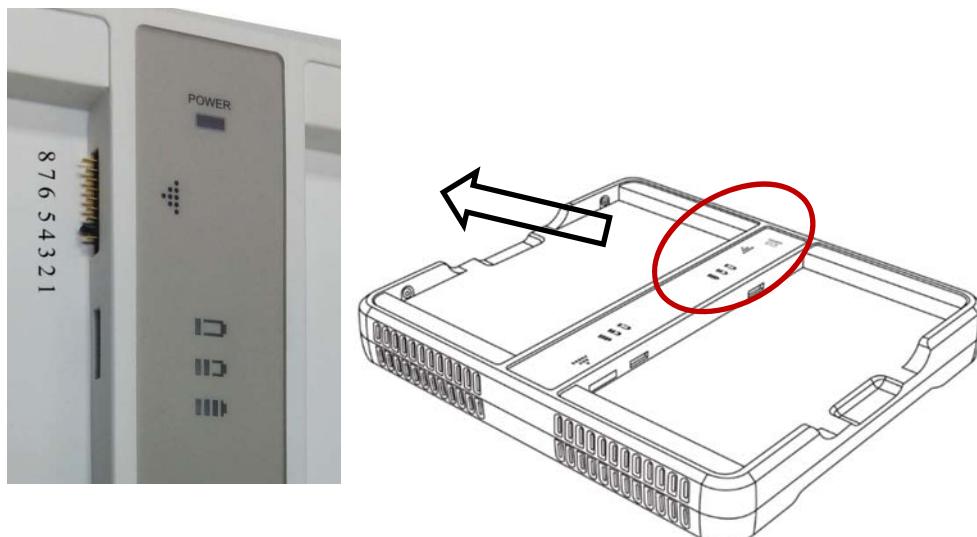
### 6.3.2 Inspect Method



The battery is expendable and its life is shortened through use. Recycle the battery if the fully charged battery only last not more than 1 hour. Wasted batteries suggested return to manufacturer or put at appointed public battery reclaim area, do not mix battery with other waste or dispose of battery ad libitum.

## 6.4 Dock Inspection

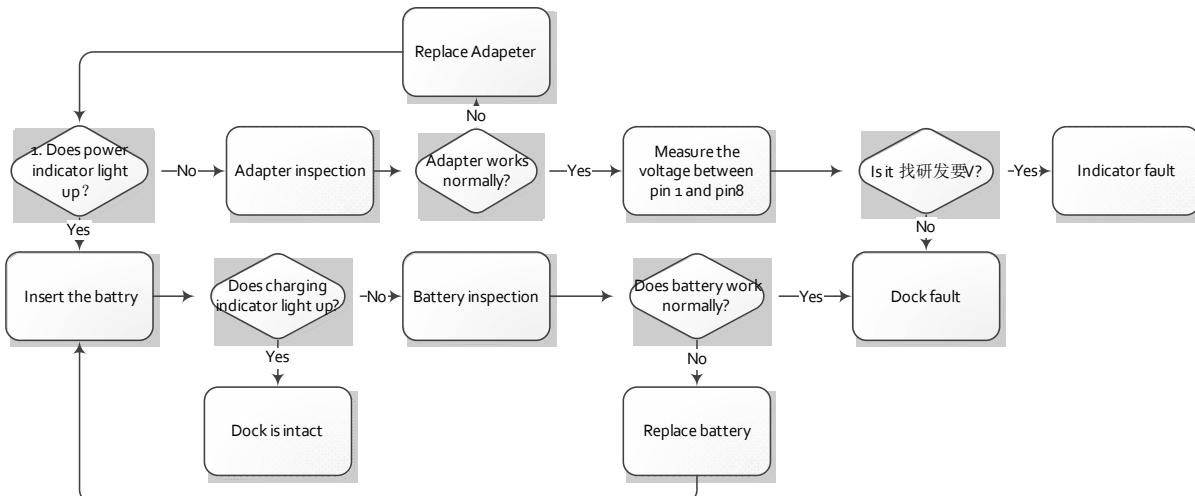
### 6.4.1 Dock pin definition





Pin	Voltage	Description
1,2	+	Battery Charge Positive Terminal
7,8	-	Battery Charge Negative Terminal

### 6.4.2 Inspection method



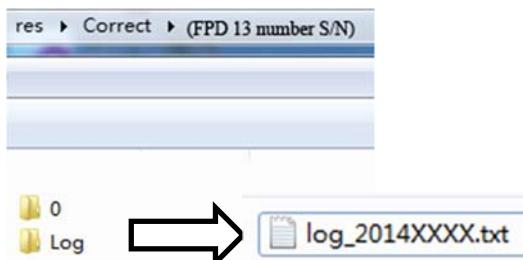
## 6.5 Detector Main Unit Inspection

Know how to obtain the log of SDK and detector is necessary before diagnose any problem of detector main unit, and the method is described in chapter 6.1.

### 6.5.1 Get SDK and detector log

#### 6.5.1.1 Fetch SDK log

Find the location of iDemo.exe, and there is a folder called “Correct” in the same directory. Find the folder named by the serial number of detector. The folder called “Log” is the storage path of SDK file, and the date is contained in name of each log file. Please compress the log file before send it.



The log function can be switched on in the config.ini. in the folder named “Res”, please check the configuration before start iDemo.

SET\_LOG\_INFO=1//Open log function'

```
// *** log *** //
SET LOG INFO=1
```

SET\_LOG\_INFO=0//Close log function

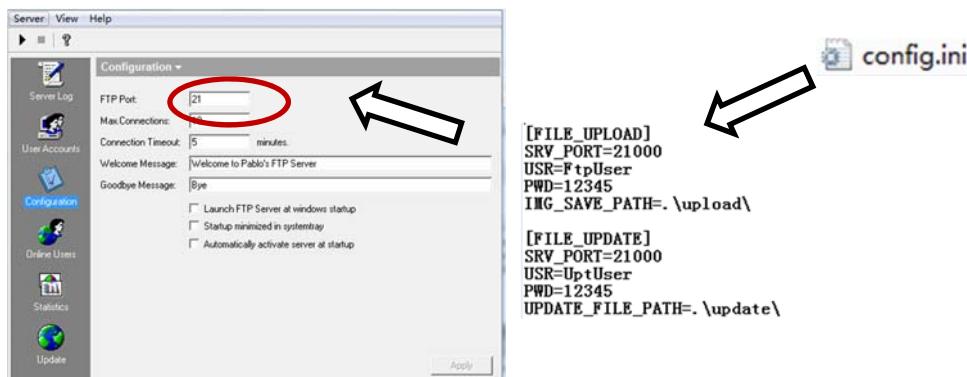


### 6.5.1.2 Detector log

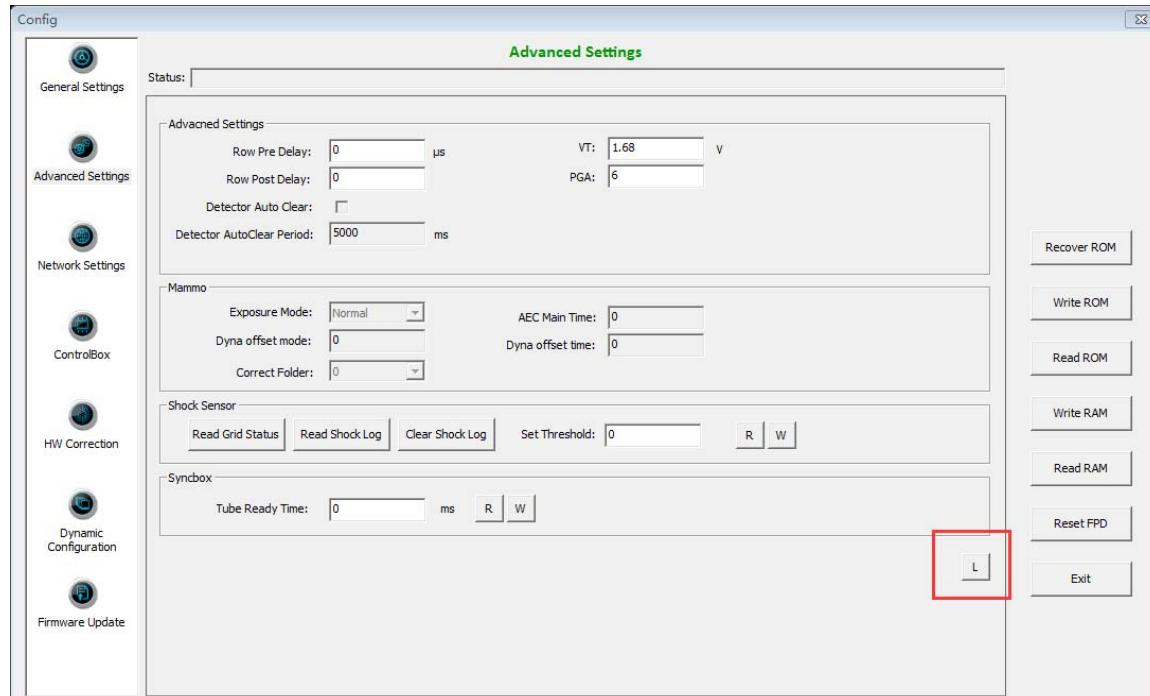
Find FTP Server.exe and open the FTP Server, attention that the FTP port number should



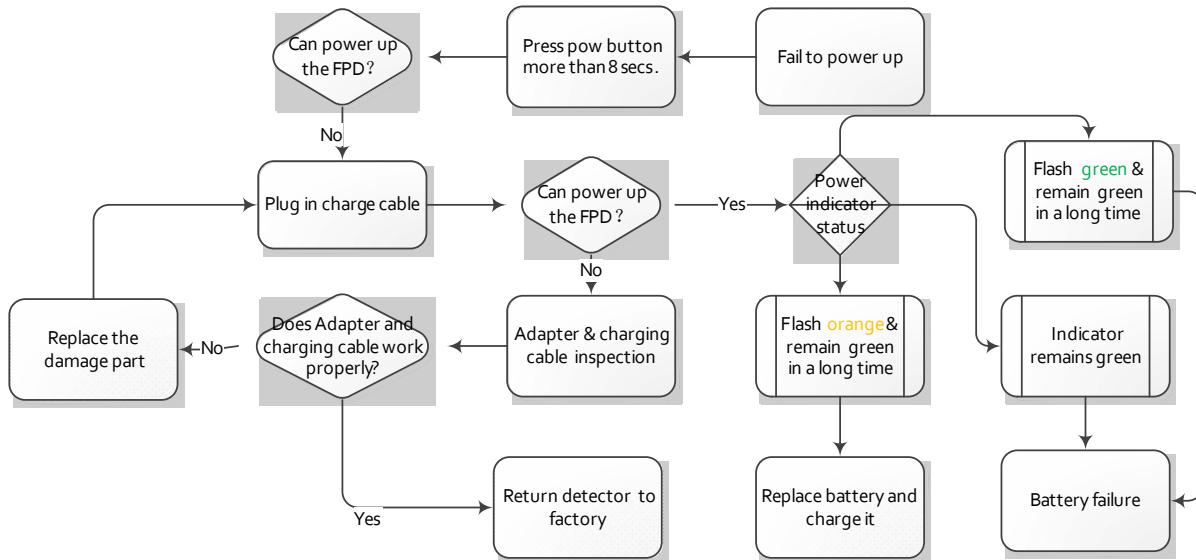
be set as same as the config.ini of iDemo. Click button to start FTP server after finish setting the FTP port number.



Find the “L” button in the following diagram in the configuration GUI of iDemo, click “L” button and the FTP will upload the “Log” in the storage path “upload\[FPD 13 number S/N]\logs” which is at the same location of iDemo.exe.



## 6.6 Power up failure inspection



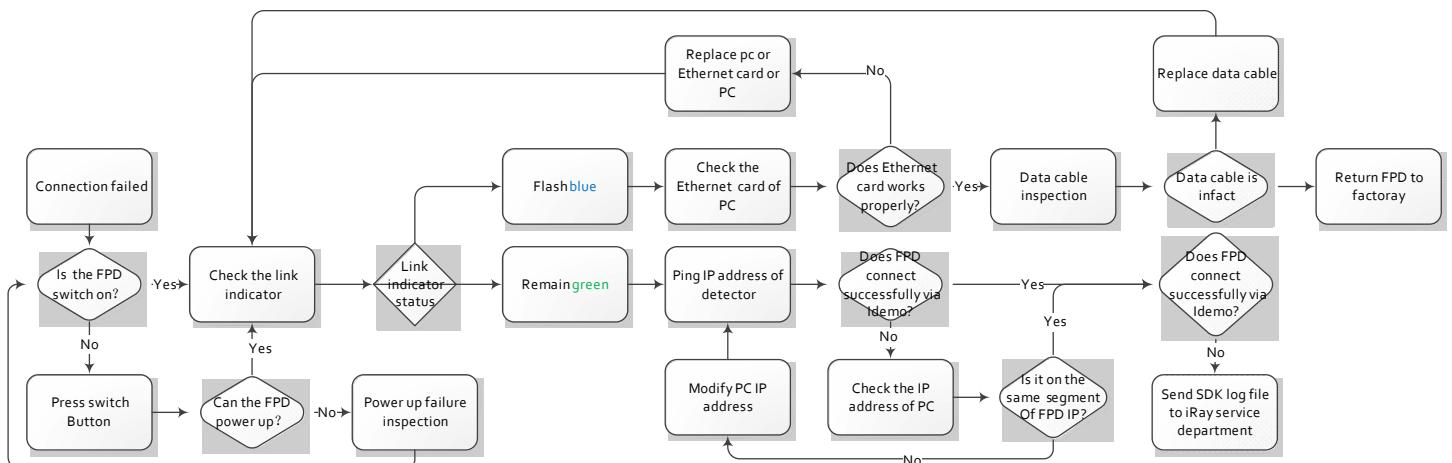
is the label of power indicator. Skip the step “Press reset button” if no reset button, because the previous version doesn't content press button, and it's no effect in normal use.

## 6.7 Connection inspection

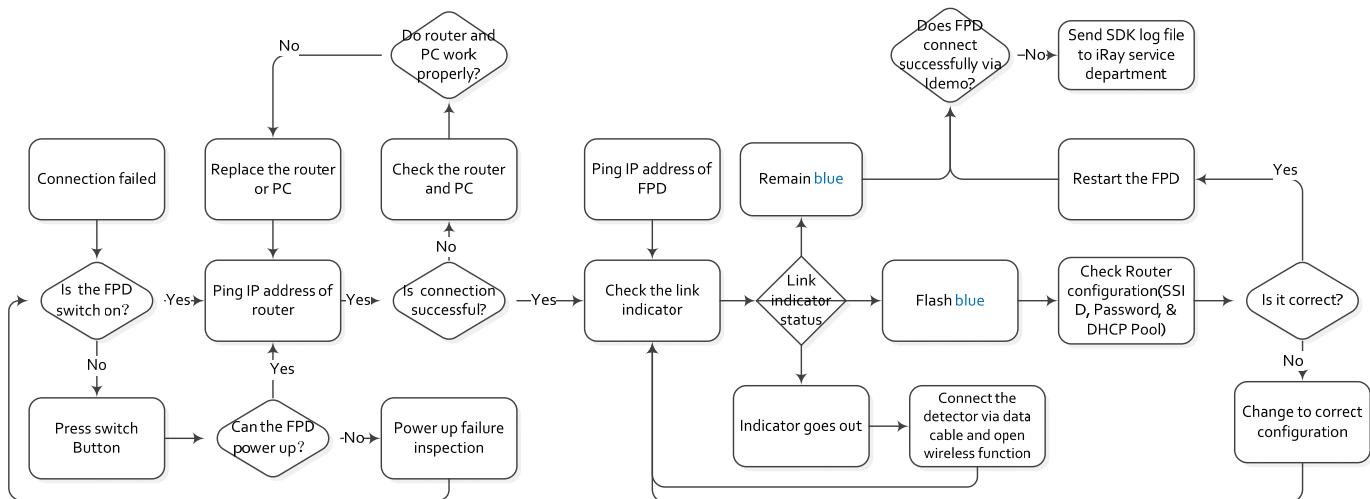


is label of link indicator. If there is connection error from iRayDR, please view the FAQ of iRay before checking the connection issue through iDemo

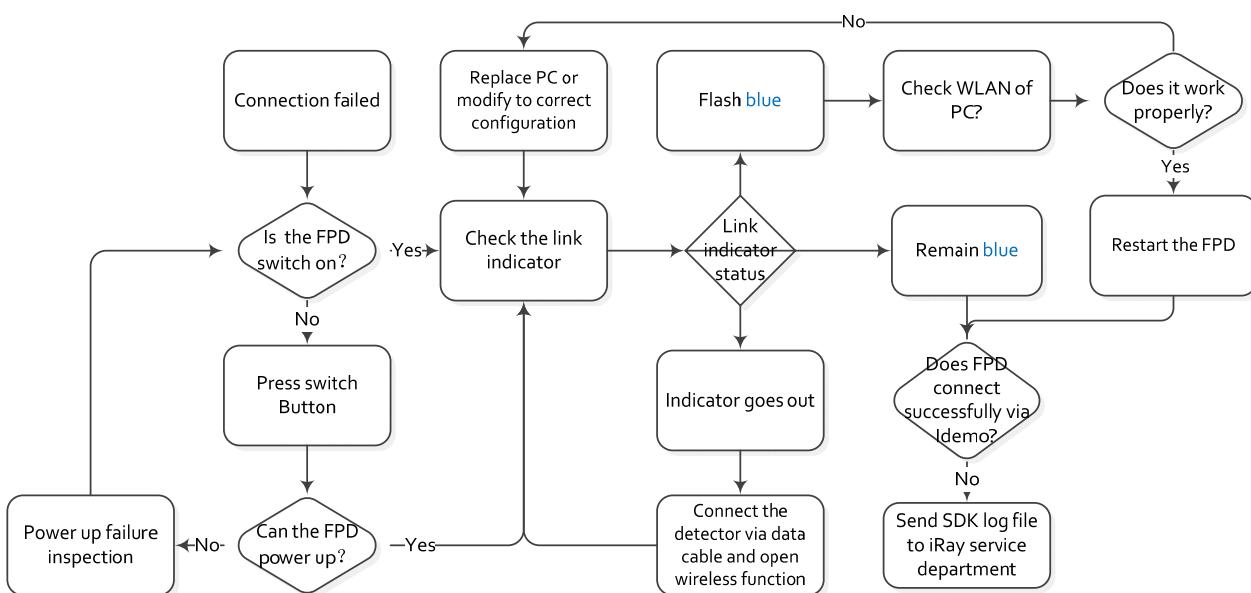
### 6.7.1 Connection failed in wired mode



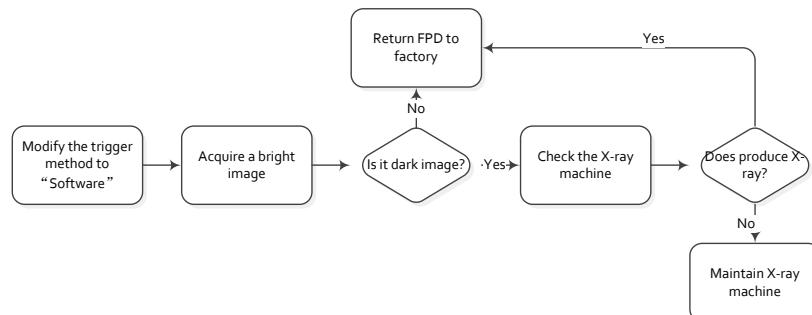
### 6.7.2 Connection Failed in Client Mode



### 6.7.3 Disconnect in AP Mode

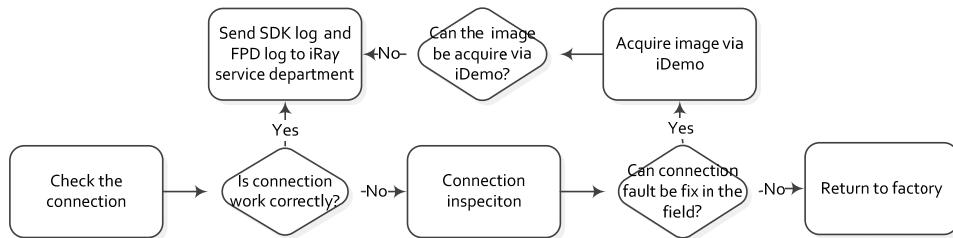


## 6.8 Dark Image Acquisition After Exposure in Inner Mode





## 6.9 No Image Acquire after Exposure



## 6.10 Image Inspection

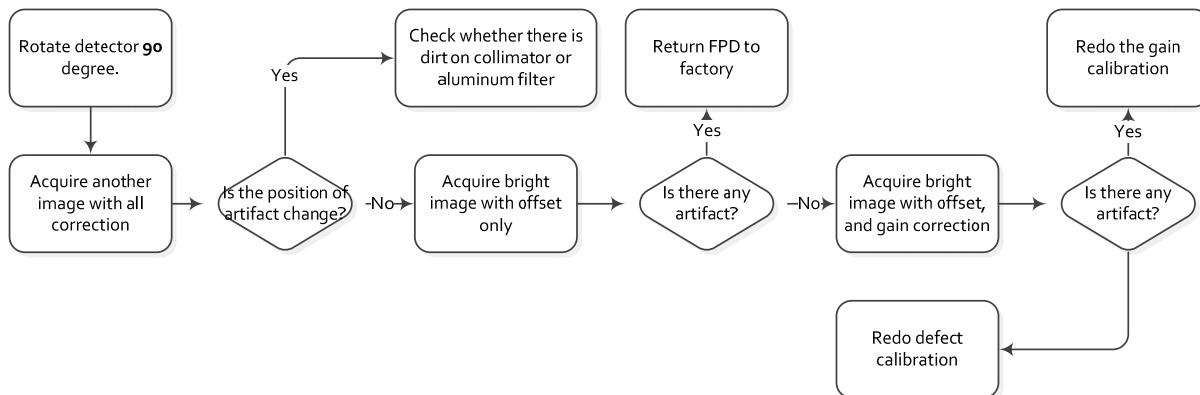
All the correction files are in the storage path “res\Correct\ [FPD series number]\0”

Calibration type	File format	Remark
Offset	*.off	iRay mostly use post offset, the offset is done during the image acquisition process. So the offset file is not effective in the correction file storage path.
Gain	*.gn	The gain file can be select or deselect through iDemo
Defect	*.dft	The gain file can be select or deselect through iDemo
Lag	*.lag	The Most gain is effective while it's in the correction file storage path. Rename it or move it to other directory can make it invalid.

The following is the image

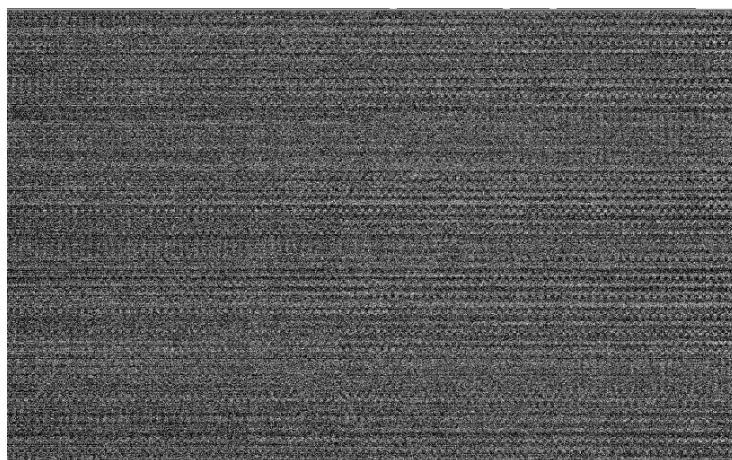
Image type	Description
Original dark image	Acquire by click “Prep Acquire” button without exposure and offset correction
Dark image	Acquire by click “Prep Acquire” button without exposure and the offset calibration should be added at least.
Original bright image	Acquire the image under exposure condition and without any correction.
Bright image with offset	Acquire the image under exposure condition and add offset correction only.

### 6.10.1 Artifact on bright image

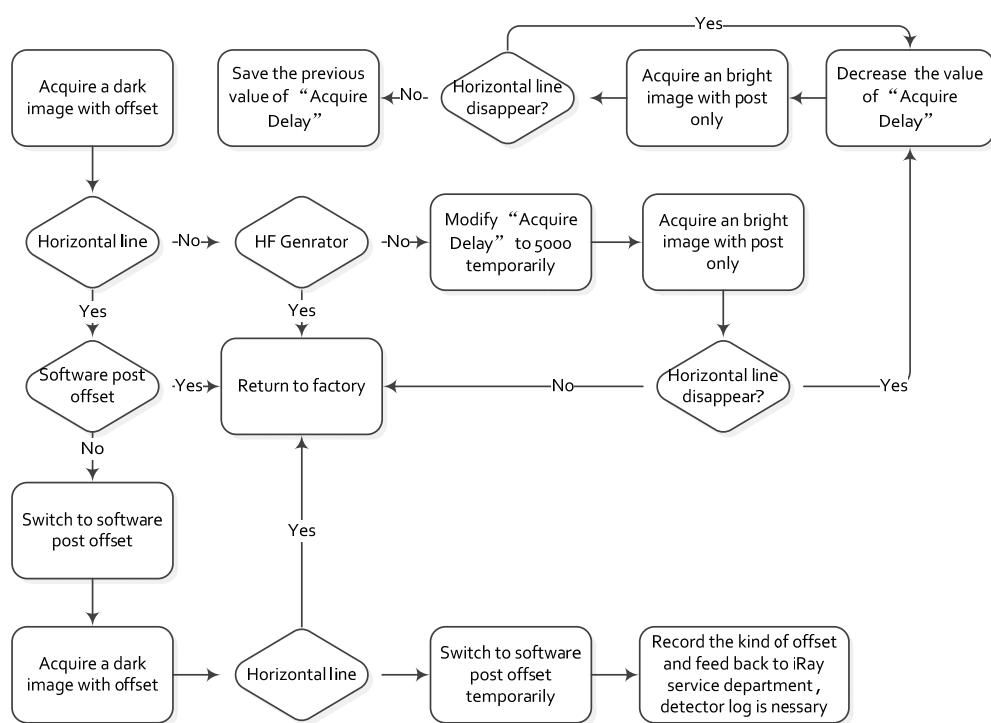


### 6.10.2 Horizontal Line on bright image

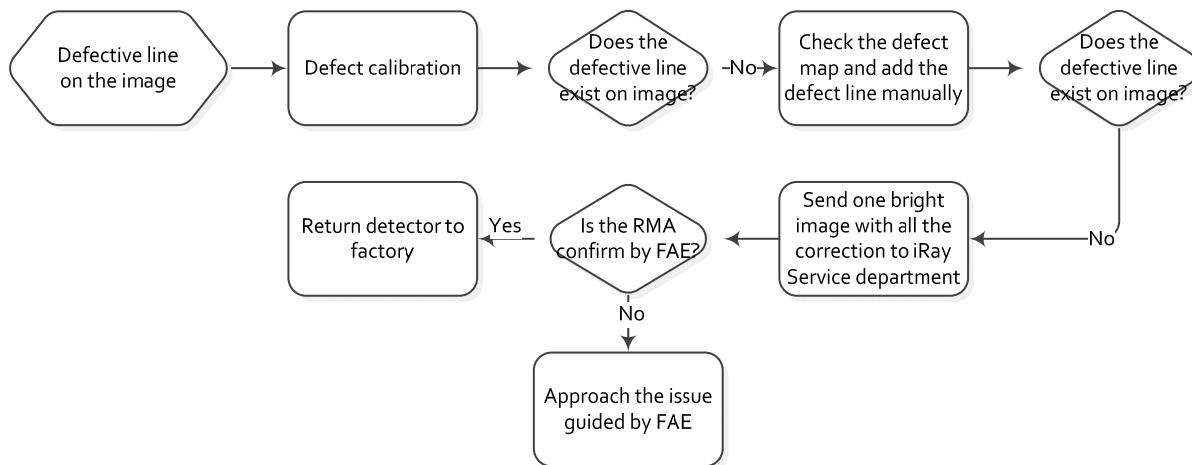
Adjust the WW to 30 and WL to 100 through iDemo for checking the horizontal line of dark image. Normally the dark image with horizontal line is shown as the figure 1.



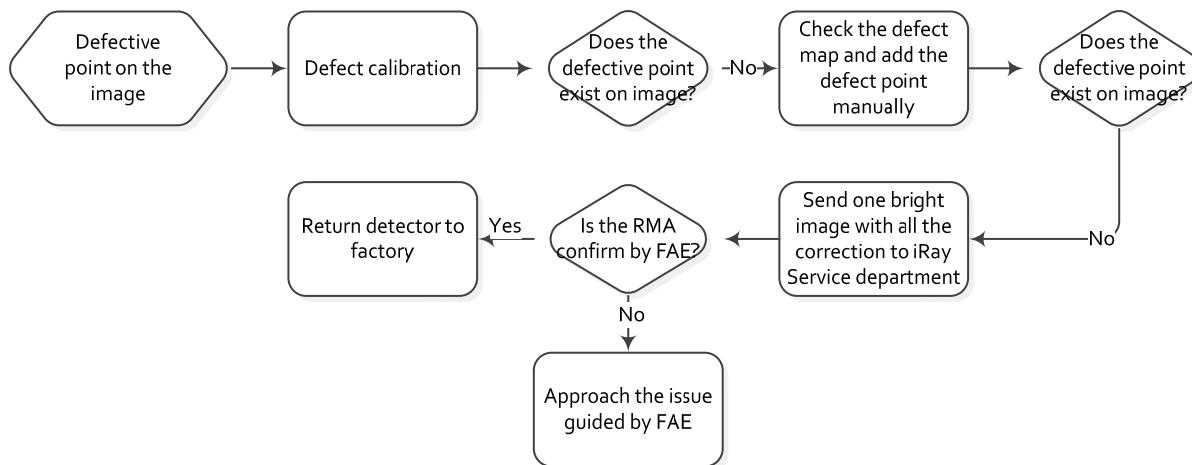
## Inspection method



### 6.10.3 Defective line

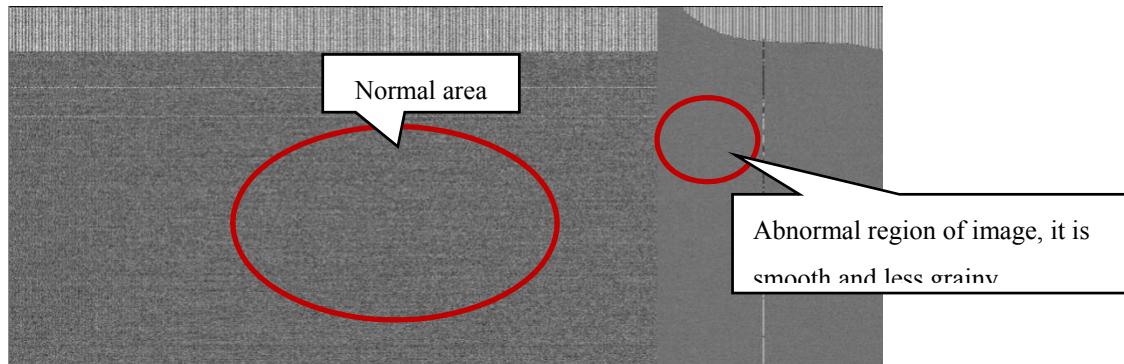


### 6.10.4 Defective point



### 6.10.5 TFT broken

Acquire a dark image, if one part of the image is much smoother than the normal dark image. The TFT must be broken by intense impact.



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## 7 Service Information

### 7.1 Product lifetime

The estimated product lifetime is up to 10 years under appropriate regular inspection and maintenance.

### 7.2 Regular inspection and Maintenance

In order to ensure the safety of patients, operating person and third parties, and to maintain the performance and reliability of the equipment, be sure to perform regular inspection at least once a year. If necessary, clean up the equipment, make adjustments, or replace consumables such as fuses, detector cable, etc. There may be cases where overhaul is recommended depending on conditions. Contact iRay service office or local iRay dealer for regular inspection or maintenance.

There is a Ni-MH battery in the FPD, its lifetime is 5 years, when arrived in the lifetime of the battery is need to be placed. And the placement need contact Shanghai Iray after-sales service departments or authorized product distributors.

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## 7.3 Repair

If a problem cannot be solved even taking the measures indicated in troubleshooting, contact your sales representative or local iRay dealer for repairs. Please refer to the name label and provide the following information:

Product Name:

Series Number:

Description of Problem: as clearly as possible.

## 7.4 Replacement parts support

Performance parts (parts required to maintain the function of the product) of this product will be stocked for 5 years after discontinuance of production, to allow for repair.