

## iRay Wireless 1417CK Configuration and Calibration Guide

## A. Connecting the panel for the first time

- 1. Turn panel over Figure 1
- 2. Insert a fully charged battery into the panel Figure 2
- 3. Slide battery into position
- 4. Slide the two battery lock latches into lock position Figure 3
- Connect the Backup cable from the panel to the acquire PC's network port Figure 4
- Power on the detector, by pressing the green power button on the side of the panel and holding it for 6 seconds and releasing Figure 5
- Use IP address 192.168.8.188, to configure the network adapter that was used in Step b, to connect the panel to the acquire station. Figure 6



Figure 1



Figure 3



Figure 2



Figure 4



Figure 5



Networking Sharing I	nternet Protocol Version 4 (TCP/IF	Pv4) Properties
Connect using: Broadcom NetXtree This connection uses the Client for Microson Client for	General You can get IP settings assigned a this capability. Otherwise, you nee for the appropriate IP settings. Obtain an IP address automa Obtain an IP address automa Use the following IP address IP address: Subnet mask: Default gateway:	automatically if your network supports ed to ask your network administrator atically : 192 . 168 . 8 . 188 255 . 255 . 255 . 0
Install Description Transmission Control P wide area network prot across diverse intercon	<ul> <li>Obtain DNS server address a</li> <li>Use the following DNS server Preferred DNS server: Alternate DNS server:</li> <li>Validate settings upon exit</li> </ul>	automatically r addresses:  Advanced

Figure 6

#### B. Launch IDemo

- This is located within c:\Opal\Bin\Idemo or C:\Idemo\. If not found in those locations please a. consult with a Viztek DR technician to download the software Idemo 3.0.0.10.
- Select Start Figure 8 b.
- Left click Connect Figure 7 c.
- d. Familiarize yourself with the status messages. Figure 9
- 1. The right side control panel, near the bottom, displays software status.
- 2. The bottom middle displays panel hardware status.
  - e. Click config button on the right hand side, to view and change settings for the panel. Figure 9



Figure 7



Figure 8



# C. Recommended Basic Configuration for all sites Figure 10

- a. Trigger mode: Select Inner
- b. Acquire Delay: Set to 0 (zero)
- c. Exposure (Exp) Window: Set to 30000
- d. Left Click *Write (Rom)* button on the right hand side, to permanently store these configurations into the panel.
- e. Please take note of the panel serial number in field "SN:"





Confia							×
Basic Configuration	1					ControlBox Configuration	
Main Version:	1.0.1.11 - 2.5.1.11	Version	Trigger:	Inner 💌		Version:	Constan
Read Version:	2.5.0.10	Detail	SN:	KV07019094045		Product type:	Method Sel
Product type:	32	Living Time	Temperature:	0.00	°C R	SN:	
VT:	1.68	v	Humidity:	0.00	% R	HVG Prep On Level	
PGA:	6		Tube Ready Time:	0		Low Valid C High Valid	
	-			-	113	HVG XRay Enable In Level	
Time Span:	5000	ms	Exp Window:	30390	ms	C Low Valid C High Valid	
Acquire Delay:	0	ms	Set Delay:	1000	ms	HVG XRay On Level	Reset ROM
Integrate:	100	μs	Inner Delay:	0	ms	C Low Valid C High Valid	
Clear Time:	1000	ms	Syncbox			HVG XRay Sync Out Level	
RAD Enable Signal	<u></u>		Tube Ready Time:	0	ms R W	C Low Valid C High Valid	Write(ROM)
C Low Va	alid 🥤 High Valid		Wreless			HVG XRay Sync In Level	
-			Pre Mode:		WIFI Setting	C Low Valid C High Valid	Read(ROM)
Row Pre Delay:	0	μs	Offset Mode: No	Ima Channe	t TCP V		
Row Post Delay:	0	μs				Dynamic Configuration	Write
Detector Auto Clear:			Low Power Thresh	old: 10	76	Pluro Sync: Free Run	white
Detector Auto Clear Period:	5000	ms	Power Saving Thresh	old: 5	%	AFE Config: 0	
			Ghost RM:			AFE Mode: 0	Read
						Sync EXP Delay Time: 0 ms	
FPD			PC			Svnc EXP Time:	Reset
IP: 192 .	. 168 . 8 . 8 .	Port: 27888	IP: 192 . 168	. 8 . 188 Port	t: 28000	TET Internate Dalaus	
Mammo						In Integrate Delay:	1
Exposure Mode:	Normal		AEC Main Time:	0	ms	Frame Number: 0	Exit
Duna Offret Mode			Duna Offrat Time:			Binning Mode: D(1	
Dyna Onset Mode:			Dyna Onset nine:	10	ms	Zoom Mode: no zoom	
Correct Folder:	0 <b>•</b>					Dynamic: 🗂 Binning: 🗂	
Sensor						Update Firmware	
David Crid Str						Update Type:	
Kedu dhu su	Keau Shock D	ug Clear Shock	Shock Threshold:	10	R W	Select Update Reload	
					1.1		

Figure 10



## D. Communication Configuration and Options

#### 1. Backup Modes

- a. The backup cable connects from the acquire PC's ethernet port to the 1417CK detector directly.
- b. The backup cable connects from the 1417CK detector to the access point. The acquire PC is then connected to that same access point via a wired Ethernet cable or Wi-Fi.

#### Software configuration in backup mode

- 1. Verify the wired network adapter connecting to the external access point via an Ethernet cable has the statically assigned ip address of 192.168.8.188.
- 2. Launch Opal or IDemo to use the 1417CK.

#### 2. Wired modes

- a. In the Full wired mode, the backup cable connects from the 1417CK detector to the access point. The Acquire PC is then connected to the same access point via an Ethernet cable.
  - Software configuration in full wired mode
  - 1. Verify the wired network adapter connecting to the external access point via an Ethernet cable has the statically assigned ip address of 192.168.8.188.
  - 2. Launch Opal or IDemo to use the 1417CK.
- b. In the Half wired / Half wireless mode 1 the backup cable connects from the 1417CK detector to the access point. The Acquire PC is then connected to the same access point using a Wi-Fi adapter.

#### Software configuration in Half wired/ Half wireless mode 1

- 1. Verify the wireless network adapter connecting to the external access point via Wi-Fi has the statically assigned ip address of 192.168.8.188
- 2. Use the windows wireless utility to view and connect to the external access point.
- 3. Launch Opal or IDemo to use the 1417CK.
- c. In the Half wired / Half wireless mode 2 the acquire PC connects to the external access point using an Ethernet cable, and the 1417CK detector panel connects to the same external access point via Wi-Fi.

#### Software configuration in Half wired/ Half wireless mode 2

- 1. Verify the wired network adapter connecting to the external access point has a statically assigned ip address of 192.168.8.188.
- 2. Connect the 1417CK to the access point via the backup cable
- 3. Launch IDemo
- 4. Select start
- 5. Select Connect



- 6. Select config
- 7. Click Wi-Fi settings
- 8. Within the *Client Mode* section Figure 11
- 9. Select the "access point<default>" from the list on the left, if there is not one click "Add"
- 10. In the "SSID:" field right above the list type the name of the external access point (it is common practice for the external AP to be named "ViZionDREXAP" )
- 11. Fill in the "Key:" field with the password of the wireless network you intend to connect to (it is common practice for the password of the external access point to be "12345678")
- 12. Select the "update" button
- 13. Select the "Write to Config" Button
- 14. Close all open windows within IDemo
- 15. Select "End" button and close IDemo
- 16. Disconnect the backup cable from the panel and the access point
- 17. Connect to the panel via IDemo or OpalUAI (if unable to connect to the 1417CK repeat steps and review settings)

SSID:	TP-LINK_AP_2.4G	Scan from	SSID:	DR_Labs_iRay	
Kevr	12345678		Key:	12345678	
NCY.			Security:	WPA2-PSK	•
Update	TP-LINK_AP_2.4G <default></default>		Frequency:	2.4GHz	
Add			Country:	US	-
Del			Band:	HT20	•
?			Channel:	1	•
?			DHCP Server:	Г	
Default					
/iFi Status Ir	nfo		Available Wire	eless Network	
Current Lin Frequenc Signal Leve Link Quality Tx Power	k: y: 2412 l: 0 :: 0 r: 15	*			
		*			

Figure 11



#### 3. Wireless Modes

a. In the Internal Access point wireless mode the Acquire PC connects to the 1417CK via Wi-Fi using the 1417CK's internal access point and a wireless network adapter in the acquire PC.

#### Software configuration for internal access point wireless mode

- 1. Connect the 1417CK to the acquire PC's network port via the backup cable
- 2. Verify the wired network adapter connecting to the 1417CK has a statically assigned ip address of 192.168.8.188.
- 3. Launch IDemo > Select start > select Connect
- 4. Select config
- 5. Click Wi-Fi settings
- 6. Place a check box in the "AP mode" Figure 12
- 7. Fill in the SSID field on the right with a unique network name (it is common practice to use the "serial number" in this field)
- 8. Fill in the key field on the right with a password (it is common practice to use "12345678"
- 9. Select the Security drop down and select WPA2-PSK
- 10. Select the frequency drop down and select 5Ghz
- 11. Select the "Write Config to FPD" button
- 12. Close all open windows within IDemo
- 13. Select "End" button and close IDemo
- 14. Disconnect the backup cable from the 1417CK and the acquire PC
- 15. Remove the IP address previously assigned to the wired network adapter
- 16. Assign the ip address 192.168.8.188 to the wireless network adapter
- 17. Use the windows wireless utility to view and connect to the SSID of the panel
- 18. Connect to the panel via Opal or IDemo (if unable to see the ssid of the panel or unable to connect to the panel repeat steps and review settings)



Client Mode -				AP Mode	e	
Detail for Se	elected		Scan fro	ssiD:	DR_Labs_Ray	
SSID:	TP-LINK_AP	2.4G	FPD FPD		12245579	
Key:	12345678			Key:	12545076	
				Security:	WPA2-PSK	-
Update	TP-LINK_AP	2.4G <default></default>		Frequency	2.4GHz	•
Add				Country	US	•
Del				Band	HT20	•
?				Channel	1	•
?				DHCP Server	: <b>Г</b>	
Default						
NiFi Status Ir	nfo				1	
Current Lin Frequenc Signal Leve Link Quality Tx Powe	k: y: 2412 l: 0 r: 0 r: 15			*		*
				•		÷
1					10200	7787



b. In the External Access point wireless mode the Acquire PC connects to external access point via Wi-Fi using a wireless network adapter, the 1417CK connects to the same external access point via Wi-Fi.

#### Software configuration for External access point wireless mode

- 1. Verify the wireless network adapter connecting to the external access point has a statically assigned ip address of 192.168.8.188
- 2. Use the windows wireless utility to connect to the external access point (it is common practice for the external access point to be name "ViZionDREXAP")
- 3. Connect the 1417CK to the access point via the backup cable
- 4. Launch IDemo > Select start > select Connect
- 5. Select config > Click Wi-Fi settings Figure 12
- 6. Select the "access point<default>" from the list on the left , if there is not one click "Add"
- 7. In the "SSID:" field right above the list type the name of the external access point (it is common practice for the external AP to be named "ViZionDREXAP")
- 8. Fill in the "Key:" field with the password of the wireless network you intend to connect to (it is common practice for the password of the external access point to be "12345678")
- 9. Select the "update" button
- 10. Select the "Write Config to panel" Button
- 11. Close all open windows within IDemo
- 12. Select "End" button and close IDemo



- 13. Disconnect the backup cable from the panel and the access point
- 14. Connect to the panel via IDemo or OpalUAI (if unable to connect to the 1417CK repeat steps and review settings)

#### E. Directory structure

- a. When narrowing down any issues review the Log files if the error happens in IDemo, the location for the log files are \*\IDemo\res\correct\panel\_sn\log\log\_date.txt - if the error happens in Opal the location for the log files are c:\Opal\data\default\correct\panel\_sn\log\log\_date.txt
- b. When reviewing or backing up calibration files If in IDemo the Calibration location is
   \*\IDemo\res\correct\panel\_sn\0\ if within Opal the calibration location is
  - c:\Opal\data\default\correct\panel\_sn\0\

Client Mode -				AP Mode		
Detail for Se SSID:	Hected	_2.4G	Scan fro	m SSID: Key:	DR_Labs_Ray	
Key:	12345678			Security:	WPA2-PSK	•
Update	TP-LINK_AP	_2.4G <default></default>		Frequency:	2.4GHz	•
Add				Country:	US	•
Del				Band:	НТ20	-
?				Channel:	1	-
?				DHCP Server:	Г	
Default						
ViFi Status II	nfo			Available Wire	eless Network	
Current Lin Frequenc Signal Leve Link Quality Tx Powe	k: y: 2412 l: 0 r: 0 r: 15			*		^
				*		
	Read Local	Write Local	Read WIEI	Read Config Wr	te Config	

Figure 13



9



Figure 17



- 1. **Type 6000** in the expected gray value field.
  - a. Click New Gain Point
  - b. Select the **PREP** button within the window
  - c. Once **Exposure enable** displays take an exposure
  - d. Check the **Center average** value it must to be +/- 100 of your expected value of 6000
    - i. If it is not within the range
      - 1. Adjust KV and mAs
      - 2. Select the **PREP** button again and wait for exposure enable
      - 3. Take an exposure
    - ii. If it does land within the range of +/- 100 of the 6000 gray value
      - 1. Click the select button
      - 2. This value will be added to the list on the right side as part of the calibration
      - 3. *Take a total of three exposures* of the 6000 gray value field.
      - 4. Estimated exposure levels: With an Open Field of View 6000GV Should be ~ 70kv 3 6 mAs ( with a tolerance of +/- 100GV)
- 2. Once all exposures have been completed and added to the calibration list
- 3. Select the Create Gain Correct file.
- 4. Exit the Gain calibration screen

### **G. Defect Calibration**

- 1. Select NO on Offset
- 2. Defect Map Creation:
  - a. If the manufacturer's cd is available copy defect\_Detector\_A.dft to the \*\idemo\res\corrections\Panel\_SN\0
  - b. If not then Click Create
    - i. Then Click the Defect Tab on the Correction Wizard screen
    - ii. Select current frame 1 and click start creating (configure the dose as close to the requested KV as possible and use mAs adjustments to land within the fields, some deviation of KV may be required)
    - iii. Click PREP
    - iv. When exposure enable is posted on the screen, Take an exposure within 30 seconds; wait for the image to transfer to the PC
    - v. After the exposure, review the center AVG value in the text box to verify it is +/- 100 of the intended gray value. (If the expected value is displayed, continue to step 8 if the expected value is not displayed, select the frame you just exposed, adjust your dose (up if you were to low, down if you were to high), and select start creating, make an exposure)
    - vi. Select the next highest number in the dropdown
    - vii. Select create
    - viii. Select PREP
    - ix. Take another exposure



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ain Defect			
	PREP Acq	uire PREP Acquire	1
Ine	defect file was c	reated succes	sstully!
Please set expected gray value Get the light image: 12/19,(Ave	:: 11000, [kV=70] for image: 12/19 rage:10641; Center:11067; Lost Pi	acket:no)	
Please set expected gray value Get the light image: 13/19,(Ave	:: 11000, [kV=70] for image: 13/19 rage:10637; Center:11062; Lost Pi	acket:no)	
Please set expected gray value	: 11000, [kV=70] for image: 14/19	ookotino)	
Please set expected gray value	rage: 10641; Center: 11068; Lost Pa :: 11000, [kV=70] for image: 15/19	scket.n0)	
Get the light image: 15/19,(Ave Please set expected gray value	rage:10641; Center:11067; Lost Pa 11000_lkV=701for image: 16/19	acket:no)	
Get the light image: 16/19,(Ave	rage:10632; Center:11057; Lost Pa	acket:no)	
Please set expected gray value Get the light image: 17/19,(Ave	:: 11000, [kV=70] for image: 17/19 rage:10637; Center:11064; Lost Pi	acket:no)	
Please set expected gray value	: 11000, [kV=70] for image: 18/19	, advatina)	1
Please set expected gray value	: 11000, [kV=70] for image: 19/19	sckel.no)	
Get the light image: 19/19,(Ave The defect file creating	rage:10645; Center:11071; Lost Pa	acket:no)	
The defect file was created suc	ccessfully!		
[	reate Light File		1
Create Offset	Current: 1	9   Start creating	ng Create Defect
		I✓ Auto Comple	etion Create Most Gain



Estimated exposure levels

1000GV ~ 70kv .3mas

1000GV ~ 40kv 2.5mas

4000GV ~ 100kv .6mas

~ 19. 11000GV ~ 70kv 5.2mas

- x. Once all 19 images are exposed
- xi. Click Create Defect wait up to 60 seconds for this process to complete.

Moving the calibration and configuring Opal

- 1. Copy calibration files from \*\IDemo\res\correct\\* to c:\Opal\data\default\correct\\*
- 2. Launch Opal
- 3. Select create new study > fill in required fields >select acquire
- 4. Hold ctrl + shift and click the options button > click **Developer tab** > change the use New Venu Drivers dropdown to True **Figure 21**



#### iRay Wireless 1417Ck Configuration and Calibration Guide v2.3

pplication Settings		Daemon		
2↓ 🖻		Install Service	Dump BAW From	Copy Body Parts to
General Settings			Archive File	
Burn Auto Shutter Marks	False			
CIE Filter Logging	False	Uninstall Service		-
Colorize Exposure Index N	False			
Colorize Oversaturation M	False		Convert I <sup>2</sup> C	>> Prepare Driver Packages <<
Demonstration Mode	False			
Disable TWAIN	False		Convert A/D	
Enable TWAIN Toolbox	False	Start		
Fake CR Modality	False		Dump RAW	This will clear LastSelected and Saved
IRAY Debug Log	False		From current	vinc nom an body parts.
NAOMI Debug Log	False	Stop	ScanJob	Reset Run-time Properties From Body P
Show Frames Per Second	False			
Show Pixel Value	False			
Track Performance	False			
Use New AGFA Connection	False			
Use New Venu Drivers	True			
Vad Link Logging	False			
Generator Settings				
Auto Clear Generator Erro	False	Eor Tuning		
Enable Sedecal Toolbox	False	For fulling		Show Log in WinTail
Leave ADC Idle	False			
				Show Log in Default



- 5. Select Apply > OK
- 6. Exit the study and logoff Opal > Launch Opal > select the previously created study > select add new image
- 7. To review options and configurations > select options > select Device Configuration Tab
- 8. X-Ray Synchronization: selecting this drop down posts a menu of 3 possible trigger solutions 1. Passive Mode it is used for non integrated x-ray sources typical exposure window is 30000 msec 2. Hand switch mode this feature is not unlocked yet, but will be used to integrate into the hand switch on generators without a bucky circuit 3. Bucky mode this is used to integrate into a bucky circuit typical exposure window is 1000 msec **Figure 22**
- Network interface settings are to match the network card settings used to connect to the 1417CK local IP : 192.168.8.188 local port: 28000 (this setting will become important in the future for use with dual 1417Ck detectors)



- 10. Selecting and enabling the wired adapter will allow Opal to have a persistent Opal managed connection to the panel via the backup cable
- 11. Selecting and enabling the Wi-Fi Adapter then adding SSID and Key info will allow Opal to have a persistent Opal managed connection to the Panel Via the selected Wi-Fi adapter
- 12. Once all options are selected and configured return to the Acquire screen and capture some test images.

## H. Battery charging station

- 1. Orient the battery with labels downwards. Figure 23
- 2. Slide battery into the charging station at a slight angle mating the charging connector with the battery connector. While sliding the battery check alignment of the charging connector with the battery connector.
- 3. Push battery down, there is a locking detent on both side of the charger that locks the battery into place.
- 4. The battery charger can charge 2 batteries at once; insert the second battery following the same process. **Figure 24**

There is 3 led's that state charge levels of the battery. The first bar flashing shows 0-33%, the second bar flashing shows 33-66%, the third bar flashing shows 66-100%.



WZion DR+
Ri Daraha Internetia
Global Orientation
Rotation: 0
Flip Horizontal
Calibration Path
c:\opal\data\DEFAULT\ Browse
X-Ray Synchronization
Mode: Bucky
Integration Unit
Port: COM2
Exposure Window (msec): 1000
Network Interface
Local IP: 192.168.8.188
Local Port: 28000
Connection: WiFi
Wired Adapter
-DISABLED-
🗹 Manage
WiFi Adapter
Intel(R) Dual Band Wirele
Manage
WiFi SSID: KV07019094045EX
WiFi Key: 12345678

Figure 21





Figure 22



Figure 23

