YOUR SYSTEM HAS BEEN PRE-STAGED

This TS Primo DR System (DR panel, PC workstation, acquisition software, WAP) whereas here on referred as Primo S has been pre-staged and tested to validate operation. Once you've installed your x-ray room's equipment and calibrated your generator, a DR panel calibration is required. Details on performing a DR panel calibration are included in this document.

Please read through this entire document as it will help address common questions relating to the equipment's setup, installation, calibration, use, and troubleshooting.

TECHNICAL SUPPORT

Should you have any questions about the equipment's installation, setup, or connections, please contact Summit Industries technical support at 773-353-4000 or email TSCALLS@summitindustries.net.

TEAMVIEWER

Should remote access be necessary Summit Industries will use TeamViewer, which has already been installed on the acquisition workstation.

PRIMO S – USER/TECHNICAL MANUALS

Copies of the Primo S software manuals can be accessed digitally by logging into the acquisition workstation and then logging into the Primo S software. Once logged into the Primo S software left click on the AMRAD logo in the top left corner of the screen and then click on the button 'Operator Manual'. The technical(service) manual is only accessible when logged into the Primo S software using an 'advanced' or 'Administrator' account.

PRIMO S – "5 FAILED" LOGIN ATTEMPTS

Five failed login attempts for any of the Primo S software's user credentials will result in that credential being locked from use and its password must be changed. An 'advanced' or 'Administrator' account can reset others accounts credentials. If the 'Administrator' account gets locked from use you will need to contact Summit Industries to remotely access the workstation to reset its credentials.

AEC CALIBRATION

The Primo S software will not allow you to use AEC within its software until the calibration steps outlined in Sedecal document "SN-1267R0" have been completed.

WAP (WIRELESS ACCESS POINT)

The wireless access point included with your system has already been configured for use and paired with the DR panel included with your system. When powered on, the WAP should broadcast an SSID of "PRIMO_S_AP". The only consideration necessary should relate to its physical placement within the x-ray room. Do not press the WAP's reset button with a paperclip as this will cause the AP to lose its preconfigured settings.

CREDENTIALS

WINDOWS LOGINS

- Administrator / TSsummit
- Operator / operator

PRIMO S SOFTWARE (credentials are case sensitive)

- Administrator / TSsummit
- Advanced / advanced1
- Operator / 12345678

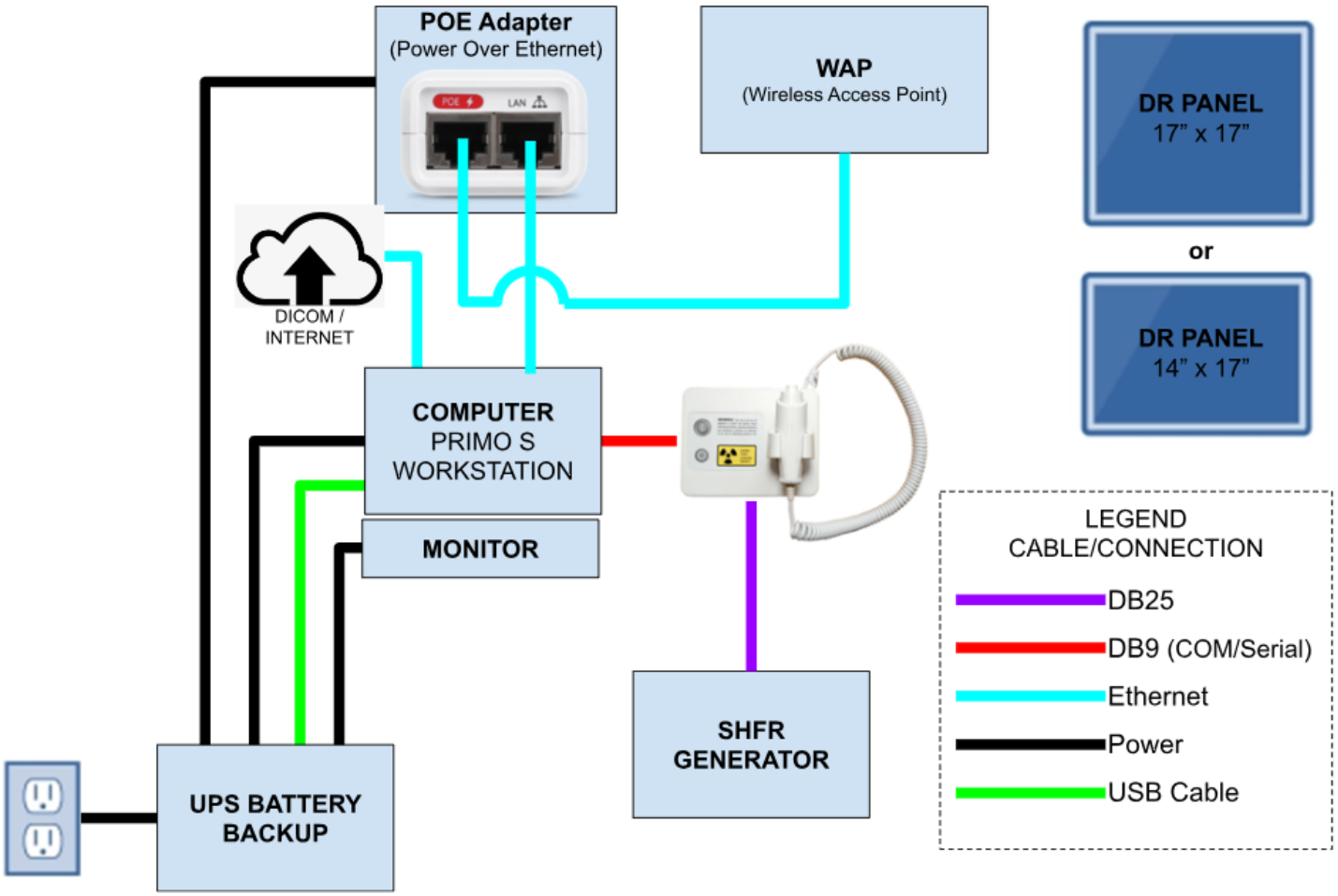
WAP (Wireless Access Point)

- admin / TSsummit
- SSID: PRIMO_S_AP
- WIFI Password: SUMMITPRIMOS

SHFR SERVICE CONSOLE UTILITY

- 2434

PRIMO S – CONNECTION DIAGRAM



PRIMO S WORKSTATION PC

The PC/workstation has already had the Primo S acquisition software installed and configured to communicate with your systems specific DR panel as well as the SHFR generator.

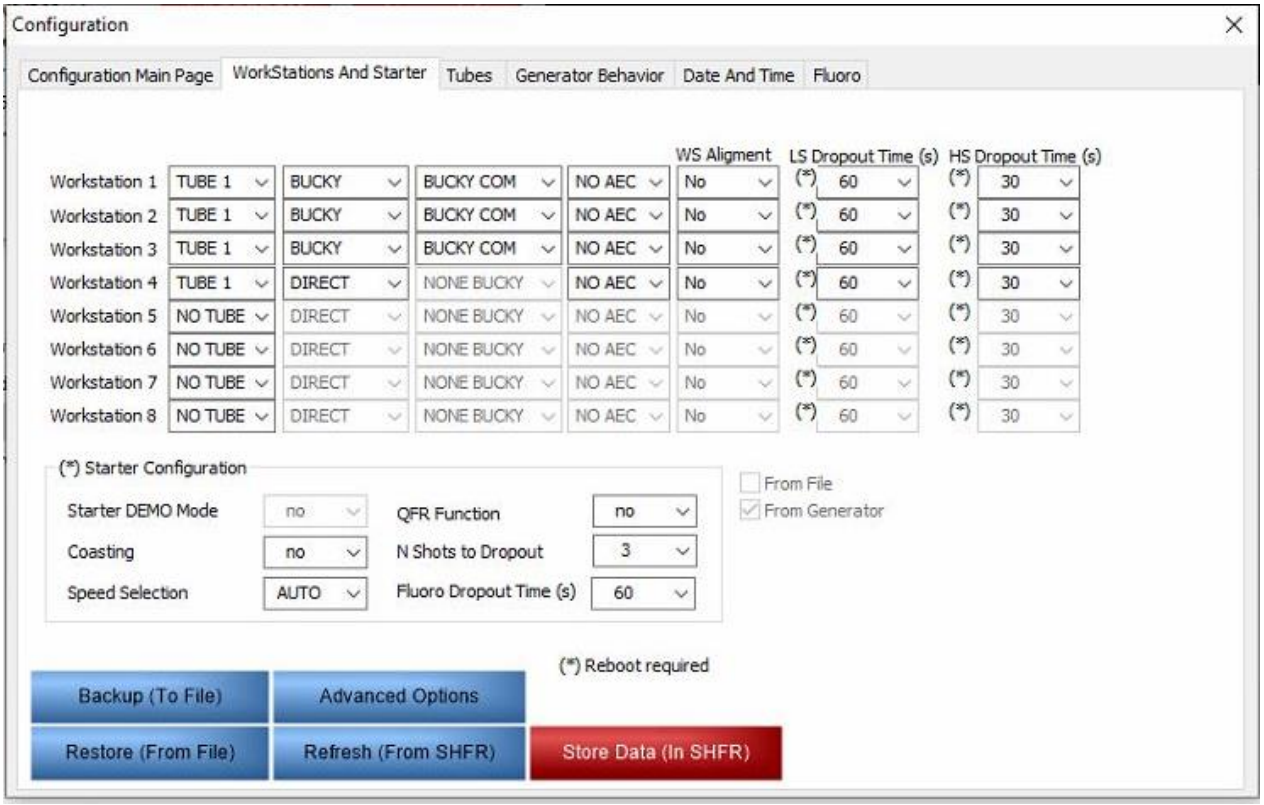
2 ETHERNET PORTS ON THE WORKSTATION PC:

Pay close attention when making your ethernet connections to the PC to make sure you are connecting the correct device to the correct ethernet port on the back of the PC.

1. **DR PANEL/DETECTOR**: This port should connect to an ethernet cable which connects to the UNIFI WAP's POE adapters 'LAN' port. The POE adapters remaining port, 'POE', should then be connected to the WAP. This network port is configured within Windows with a static IP address (192.168.8.X) that should not be modified.
2. **DICOM**: This port is configured for DHCP and is intended to be used for network access for DICOM sending as well as internet/remote access. This adapter should be configured with a static IP address provided by the site, this will ensure images can be sent without interruptions or errors.

SHFR – SERVICE CONSOLE – WORKSTATIONS

The SHFR generator has its own quick install guide (07732) that can be referenced for its installation and calibration. Workstations 1, 2, & 3 should be set for 'BUCKY, BUCK-COM. Workstation 4 should be set as 'Direct'.



Even though the DR panel is triggering via AED (Automatic Exposure Detection) the Primo S software and generator are integrated to prevent exposure if the DR panel is not communicating with the Primo S software. Workstation 4 will allow exposure without DR panel communication.

DETECTOR

Files unique for your detector have already been copied into the PC and loaded into the Primo S software. No further configuration or modification of its settings are necessary.

Button	Function	Description
Power	Power On	Press 2s when in power off status
	Power Off	Press >4s when in power on status
	Hardware Reset the Power Management	Press 7s **(Contact Support prior to performing this task.)**
Mode	AP/Client Switch	Switch the AP or Client mode

The detector should operate in 'Client' mode where the status indicator icon is 'blue'. If the status indicator is 'green' that means the detector may be in 'AP' mode, and will broadcast an SSID using the detectors serial number instead of connecting to the Primo S's WAP.

- Power On

  When detector is in power off status, user can power on the detector by pressing the power button >2 seconds, and can release it when the power LED start to blink. If the button is pressed >7 seconds, it will result in a power management reset.

- Power Off

  When detector is in power on status, user can power off the detector by pressing the power button >4 seconds, and can release it when the power LED start to blink. If the button is pressed over than 7 seconds, it will result in a power management reset.

- Power Management Reset **[AVOID DOING THIS BY ACCIDENT, AS ALL DETECTOR SETTINGS WILL BES LOST!]**

  If the power button function does not work, user can try to press the power button >7 seconds which will start a hardware reset, and user can release the button when the power LED begins to blink.

- AP/Client Switch

User also can switch the WIFI AP/Client mode by the mode button.

A. Press the mode button about 7 seconds until the status LED indicator begins to blink, and then release it.
B. The mode LED indicator blinks blue means the detector is in Client mode, and green means it is in the AP mode.
C. Short press on the mode button, the mode LED indicator will blink from blue to green (or from green to blue), which means the WIFI mode is switched from Client to AP (or AP to Client).

The setting will be valid if there is no more operations on the button for >7 seconds.

Mode indicator:

Mode Indicator	Lighting Status	Description
Blue ON		Client connection is built
Blue Blinking		WIFI mode is set to Client @ detector is in wifi mode switch state
Green ON		AP mode is enabled
Green Blinking		WIFI mode is set to AP @ detector is in wifi mode switch state
OFF		Detector is off Client connection is not built

DETECTOR SERVICE CABLE (02040219)

Should the detector's settings need to be adjusted the DR panel includes a service cable that is "USB-C" on one end and "Ethernet/RJ45" on the other. This is the only cable that should be used to connect the DR panel to a PC via the PC's ethernet port for 'Detector'.

When physically connected between the PC and detector the DR panel will operate in 'wired' mode, as opposed to 'wireless'.

⚠ warranty void if a different USB-C cable is connected other than the one provided ⚠

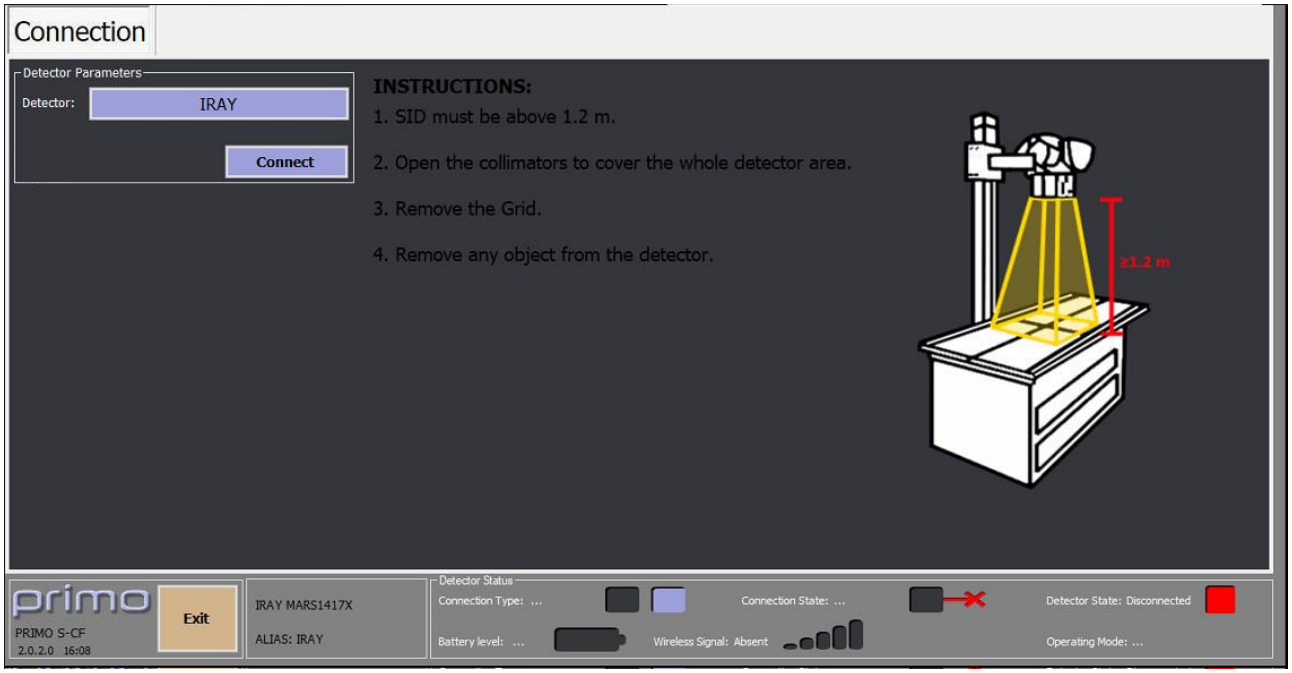
DETECTOR / DR PANEL CALIBRATION

Detector calibration should be performed at the time of install then annually moving forward. Detector calibration requires you identify techniques that result in a specific range of digital values. The entire process should take less than 1 hour to complete. It is recommended you call Summit Industries technical support line (773-353-4000) with any questions to assist you with this process.

CALIBRATION USING PRIMO S-CF

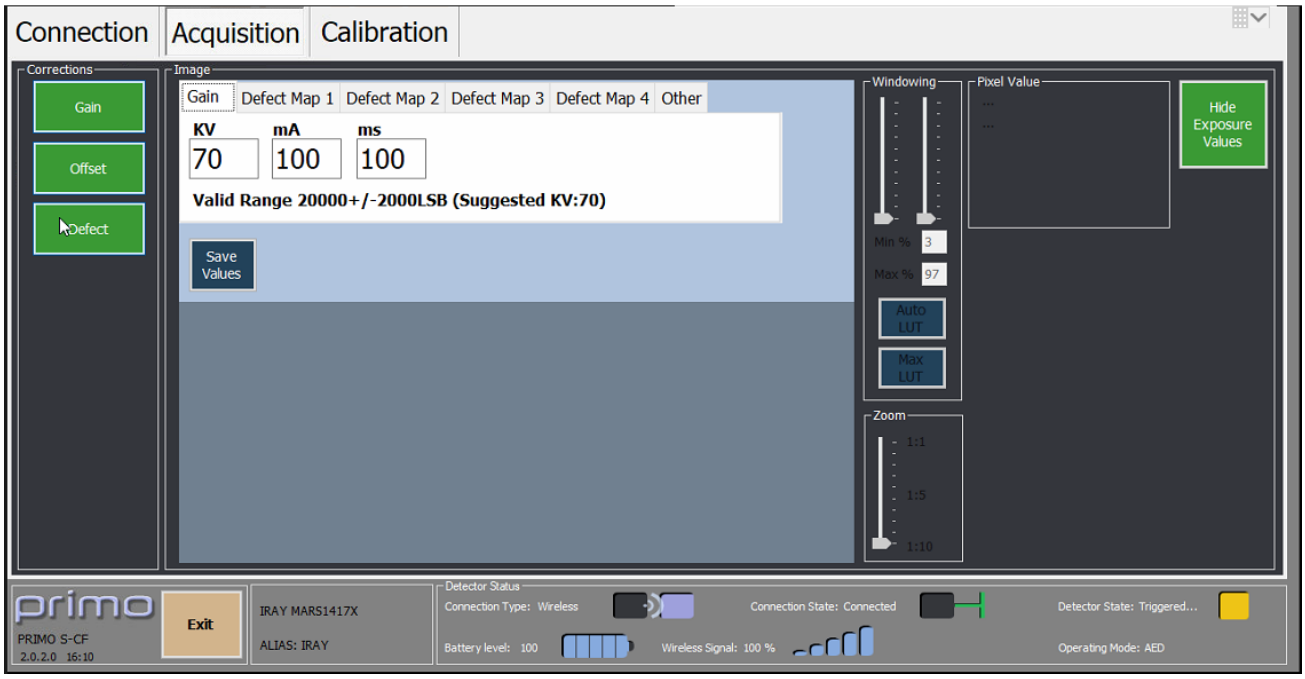
The Primo S software requires the detectors calibration be performed using the PRIMO S-CF software. Detector calibration will require a series of exposures using different techniques that result in different digital values

1. Login to the Primo S acquisition workstation using the Windows 'Administrator' account.
2. Ensure the detector is powered on and its battery charged.
3. On the desktop should be a shortcut 'PRIMO S-CF', double click this shortcut to launch the program.



4. Adjust the system as instructed, making sure the SID is at least 1.2m (47").
5. Select the 'Connect' button to have the software establish communication with the DR panel in order to proceed. The status screen should change to orange and show 'Connection in progress…' as the software connects with the DR panel. Once the connection is successful two additional tabs (Acquisition, Calibration) will appear at the top of the window.
6. Select the 'Acquisition' tab. This is a section of the software where exposures can be made and images captured to validate operation and identify digital values within the image.
7. **VERIFY CALIBRATION TECHNIQUES:** Click on the top right corner button 'Show Exposure Values' this will show tabs for the various images to be acquired and the techniques currently set for them. You should go through each tab and make an exposure at the designated technique and verify the resulting digital value is valid. If the resulting digital values are too high/low you should modify your x-ray technique factors until a viable digital value is achieved. Update the technique factors within each tab and select 'Save Values' as you progress.

Description	Target Value	# of exp	Factors without filter
Gain	20,000 ±2,000	5	70kV, 100mA, 20ms
Defect 1	4,000 ±400	1	70kV, 25mA, 16ms
Defect 2	4,000 ±400	1	40kV, 80mA, 40ms
Defect 3	16,000 ±1,600	1	120kV, 12.5mA, 32ms
Defect 4	20,000 ±2,000	5	70kV, 100mA, 20ms



8. Once the techniques for each calibration step have been validated, updated if necessary and saved, select the ‘calibration’ tab.
9. Select the button ‘Xray Calibration’ in the top left corner. An orange pop-up will appear as the system prepares for calibration.
10. Then a new orange window will appear with exposure factors. Make the exposures as specified. As images are acquired the ‘progress’ in the top left will increase.
11. If a resulting image’s digital values are too high/low the software will reject it and prompt you to modify your technique and try again to proceed.
12. Once all the necessary images have been acquired the software will take a few moments to process them showing you an orange window stating ‘Finalizing calibration’.
13. After a few moments that window will disappear, then after a brief delay a green window should appear stating ‘Calibration completed successfully!’.
14. Select ‘OK’ to close the window.
15. Select the ‘Exit’ button located in the bottom left corner to close the calibration program.

You should now go into the Primo S software to capture an image to validate the systems operation.