

**Agilent Technologies**  
**Medalist 5DX Automated**  
**X-ray Inspection System**

**Operator Instructions**



**Agilent Technologies**



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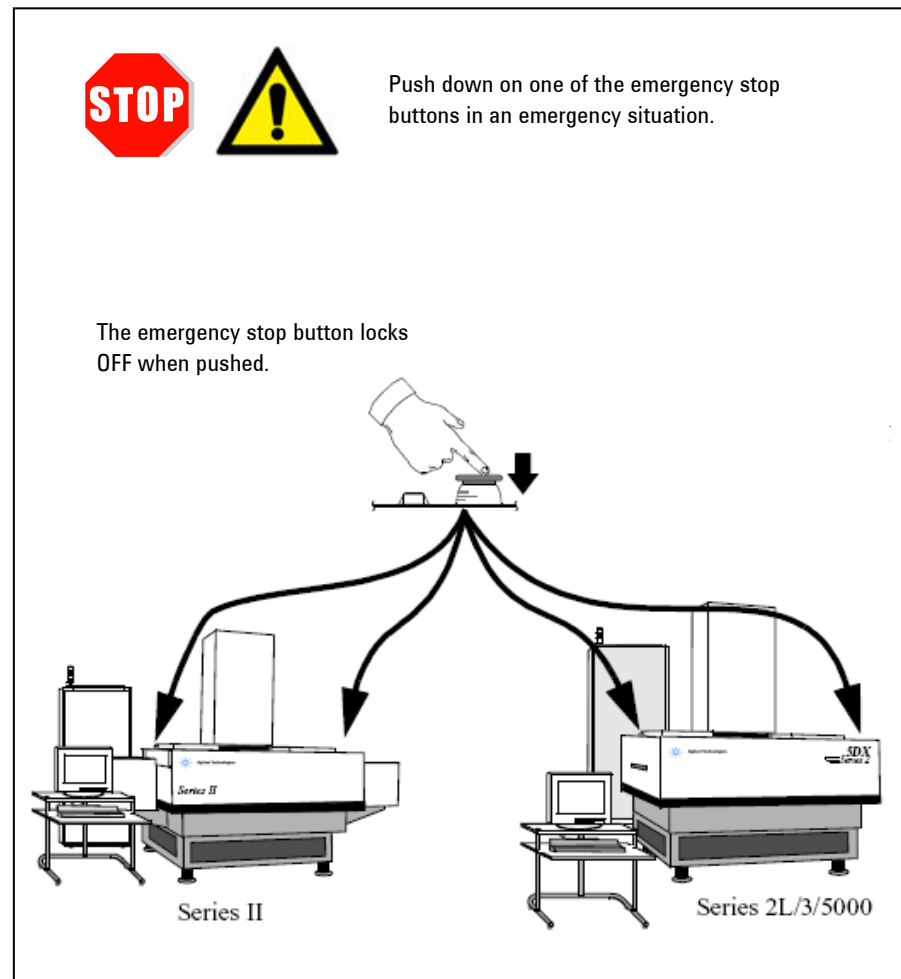
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## 1 Emergency Stop

### CAUTION

The emergency stop buttons are intended for use in emergency situations only and should not be used for normal system shut down. Repeated misuse of the emergency stop buttons will eventually cause damage to certain components or the loss of data or both.

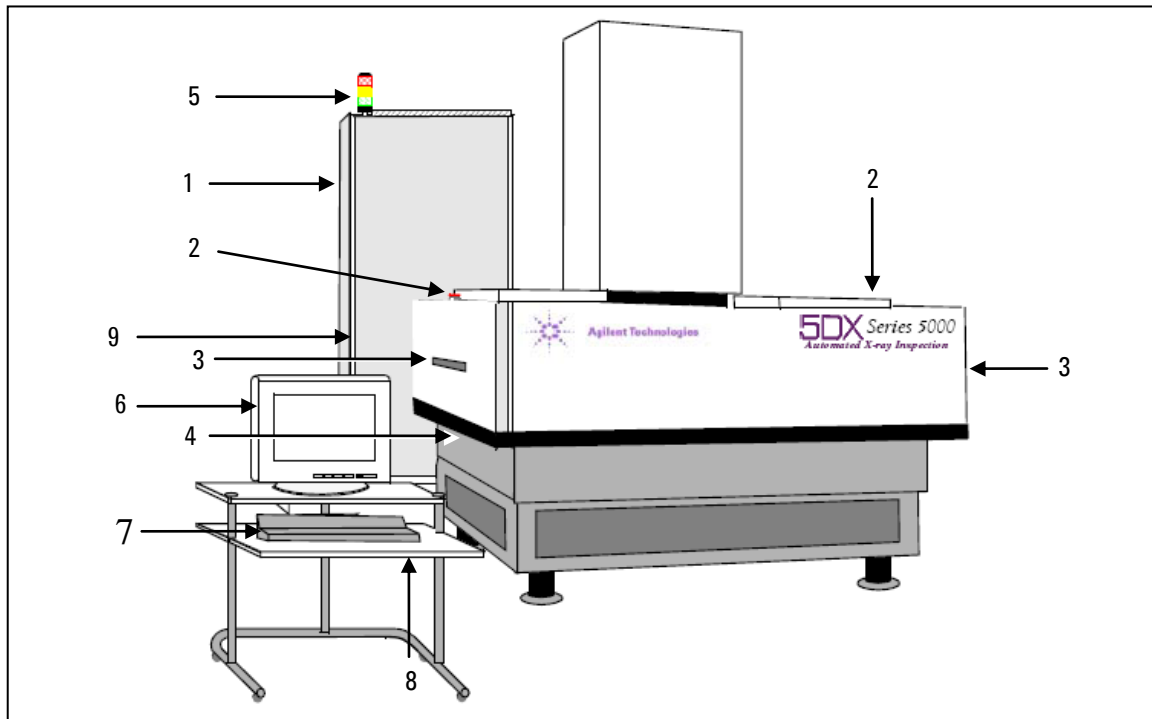


An emergency stop button is used to quickly shut down power to the Medalist 5DX. The Medalist 5DX is equipped with two emergency stop buttons located on either side of the Medalist 5DX main cabinet, centered above the outer barrier panels. Whenever one of the emergency stop buttons is pressed, all power is immediately removed from the Medalist 5DX subsystems, with the exception of the system controller and the monitor. Call a service technician to restart the system after an emergency button has been pressed.

## 2 Hardware Overview

### Medalist 5DX Diagram

The Medalist 5DX Automated X-ray Inspection System provides a comprehensive test and inspection process to discover solder defects on a circuit board.

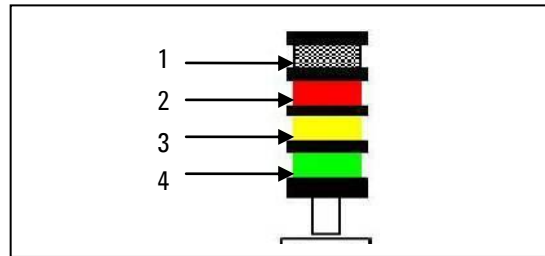


**Figure 1** Medalist 5DX system

- 1 System controller
- 2 Emergency stop (EMO) button
- 3 Panel handler access door
- 4 Connector for anti-static wrist strap
- 5 System light tower
- 6 Monitor
- 7 Operator control panel
- 8 Keyboard and mouse tray
- 9 Power distribution unit

## System Light Tower

The system light tower is permanently attached to the electronics cabinet. The system light tower is used to visually indicate the operating condition of the Medalist 5DX.

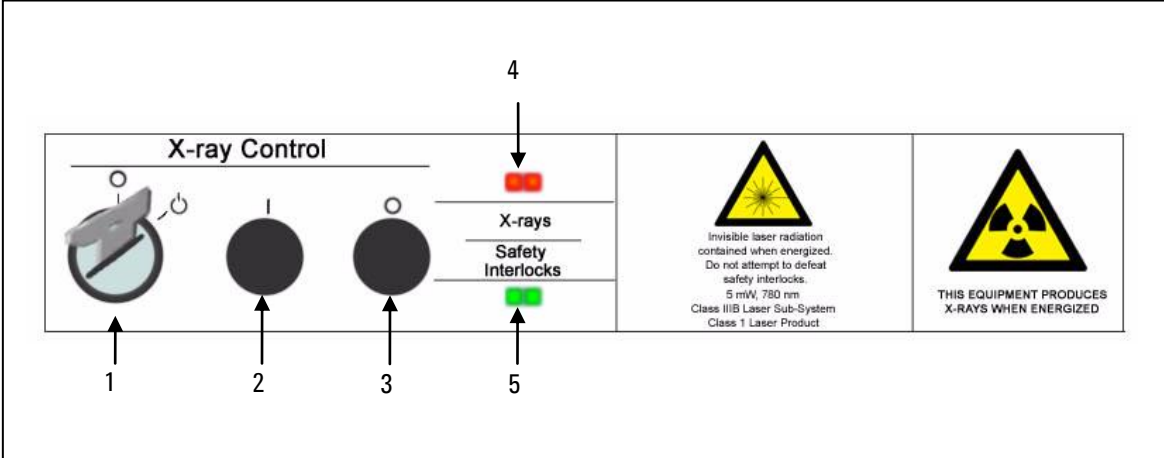


**Figure 2** System light tower

- 1 Buzzer** – If enabled, sounds when there is a hardware failure.
- 2 Red Lamp** – System has a hardware failure and requires attention.
- 3 Yellow Lamp** – System is waiting for user input.
- 4 Green Lamp** – System is operating.

# Operator Control Panel

The operator control panel provides an X-ray Control key and X-ray control buttons as well as status LEDs (see [Figure 3](#)). It is attached to the keyboard tray.



**Figure 3** Operator control panel

- 1 X-ray Control key (Enable (1)/ Disable (0))
- 2 X-ray Control enable button
- 3 X-ray Control disable button
- 4 X-rays LED
- 5 Safety Interlocks LED



## 3 Operator Instructions

### Startup the System

The Medalist 5DX is operated through the use of a user interface running on the system controller. Before starting the system software, verify that the X-ray has been enabled.

#### Verify the Safety Interlocks are Closed

On the operator control panel (see [Figure 3](#)) verify that the Safety Interlocks green LED is lit. If it is not, call a service technician to resolve the problem.

#### Verify the X-Ray Has Been Enabled

On the operator control panel (see [Figure 3](#)) verify that the X-ray Control key is in the enabled position (1) and press the X-ray Control enable button (1). Verify that the X-rays red LED is lit.

#### Log on to Microsoft Windows XP

Log on to Microsoft Windows using the Windows user name and password provided by your administrator. When you log on, the Medalist 5DX software starts automatically.

#### Log on to the Medalist 5DX User Interface

Log on to the Medalist 5DX user interface using the user name provided by your administrator. Press the 'Enter' key to **Login**.

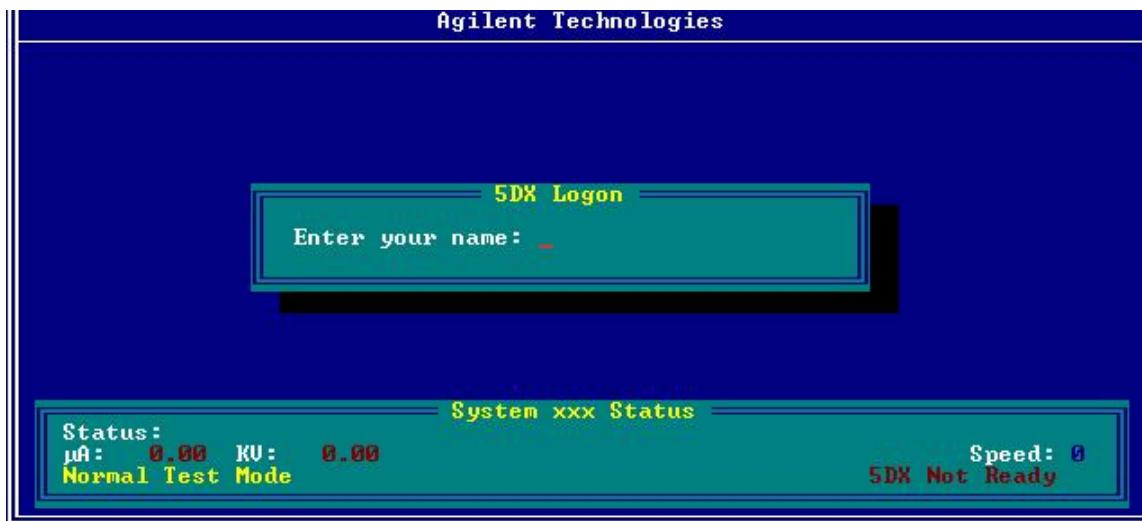


Figure 4 Login

The system will perform a system startup. This may take a few minutes (see [Figure 5](#)).

```
=====
      Performing Automatic Startup Procedure
=====

Reseting GALIL_1 controller
Reseting GALIL_2 controller
Initializing PHS Subsystem
LOADINIT
Updating DMCLoad controller...
;HIL=153898.7959;UI1;
Initializing PPS Subsystem
AXISINIT
```

**Figure 5** Startup progress

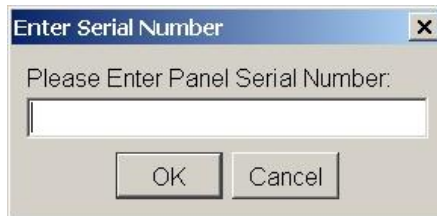
## Run Testing

- 1 Depending on how the software has been set up, you may be asked to choose the project to load. If prompted, select the appropriate project and click **OK** (see [Figure 6](#)). If not, continue with Step 2.



**Figure 6** Enter project pop-up

- 2 Depending on how the software has been set up, you may be asked to enter the panel serial number. If prompted, enter the panel serial number and click **OK** (see [Figure 7](#)). If not, continue with step 3.



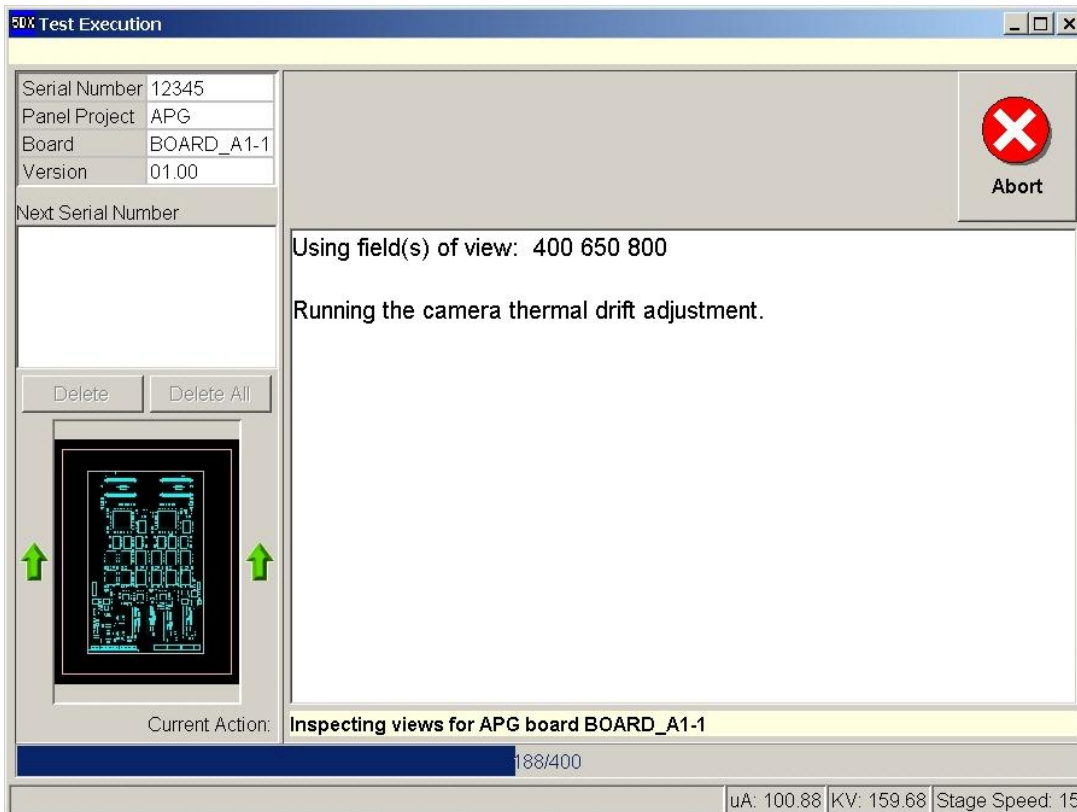
**Figure 7** Enter serial number pop-up

- 3 Load the panel into the machine as shown (see [Figure 8](#)).



**Figure 8** Load the panel into the machine

Once a panel is loaded, the inspection will begin.



**Figure 9** Inspection in progress

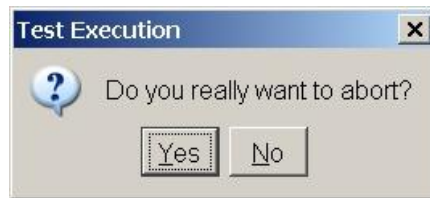
When the inspection is finished, the panel will automatically be unloaded and the system will wait for the panel to be removed from the machine.

- 4 After the panel is removed, continue repeating steps 2 and 3 until testing is complete.

## End Testing

To exit the Medalist 5DX user interface:

- 1 Press **Cancel** at the serial number prompt.
- 2 Press **Yes** when asked if you want to abort (see [Figure 10](#)).



**Figure 10** Stop testing pop-up

## Log Off Microsoft Windows

- 1 Click **Start > Log Off**.
- 2 Click **Log Off** when you are asked if you really want to log off.

## 4 What to do in Case of a Problem

### Panel Retrieval

Occasionally it is necessary to enter into the 5DX Cabinet to retrieve a dropped or jammed panel. The Medalist 5DX will display an error message if panel retrieval is necessary. [Figure 11](#) shows the error message that can occur when trying to load a panel:



**Figure 11** Error message when trying to load a panel

[Figure 12](#) shows the error message that can occur when trying to unload a panel:



**Figure 12** Error message when trying to unload a panel

To recover from these errors:

- 1 Click **OK** to dismiss the error message.
- 2 Turn the X-ray Control key to the disable (0) position on the operator control panel.
- 3 Unlock and open the top sliding access panels.

- 4 Reach in and remove the panel.
- 5 Close and lock all access panels.

**NOTE**

If you are unable to easily remove the panel, the panel clamps may be locked in the down position, or the panel in place sensor may be extended. Ask a service technician for assistance.

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- 6 Verify that the emergency stop buttons are in the up position. If one is in the down position, call a service technician to restart the system.
- 7 Verify that the Safety Interlocks green LED is lit on the operator control panel.
- 8 Turn the X-ray Control key to the enable (1) position on the operator control panel.
- 9 Press the X-ray Control on (1) button on the operator control panel.
- 10 Verify that the X-ray on light is now red on the operator control panel.
- 11 You are now ready to continue testing as before.

**Other Errors**

If an error occurs during testing, an appropriate message will be displayed describing the nature of the problem, and possible steps to take to fix it. (Figure 13 shows one of many possible error messages). Specific directions on the next steps to take are provided in the dialog box and must be followed by the appropriate level of user and not ignored.

**NOTE**

Do not dismiss error messages. Call a programmer or a service trained technician to assist you.

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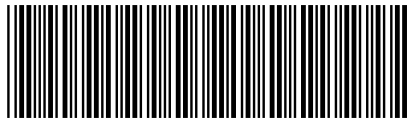


**Figure 13** Sample error message

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