

Instructions to Identify and Clear “Service Required” voice prompt on 9300 G3 AED’s

1 INTRODUCTION

Following is the procedure for clearing 5 minor errors so the 9300 series G3 AED remains fully operational, allowing the use of the NVI (Non-Volatile Indicator or “Rescue Ready” light) as an indicator of device readiness.

The 9300 model AED does a number of self-tests. A failure of many of these self-tests are categorized as “Service Required” errors. These are indicated by the change of the AED’s non-volatile indicator from green to red and upon opening the lid, the voice prompt “service required” will be heard. In addition, there is a “Service” LED illuminated when the device is powered on. A “Service Required” error is a generic error and is displayed in virtually all instances of device failure. Associated with a “Service Required” error will be one of many error codes which define the affected subsystem. Error codes are classified as either minor or major errors. A minor error will change the AED non-volatile indicator (NVI) from green to red, though will not prevent the AED from being able to perform a rescue. In the case of a major error, the AED will not be able to perform a rescue.

This procedure will provide instruction on how to identify the five minor errors that result in the “Service Required” voice prompt and the steps to clear these 5 minor errors to return the G3 AED into the Rescue Ready Mode. Other than these 5, the errors should not be cleared and the device must be sent in for service.

The five minor errors are:

1. 0xE1
2. 0xE2
3. 0x93
4. 0x90 with an MSP failure of 0x24
5. 0x66

2 Description of the 5 minor clearable errors.

1. **0xE1** – User stored device outside operating range 32F-122F for 1 day. The reason for this is the pads will freeze and will not stick to the patient or function properly. The AED is functional once cleared. Error source module is the battery chip. If no environmental issues are present (too hot, too cold) this could be a defective battery chip. Try swapping batteries.

2. **0xE2** – User stored device outside operating range 32F-122F for 5 or more days. The reason for this is the pads will freeze and will not stick to the patient or function properly. The AED is functional once cleared. Error source module is the battery chip. If no environmental issues are present (too hot, too cold) this could be a defective battery chip. Try swapping batteries.

3. **0x93** – Watchdog timer error (0x93) occurs due to improper sequencing of the processors during power-on. During power up several microprocessors must sequence in a specific order. If the lid is opened too rapidly after a battery insertion, there is a small chance of the processors sequencing improperly. When installing or replacing a battery, you should wait for a minimum of 5 seconds prior to powering on the AED.

4. **0x90 with a MSP failure of 0x24**– There are different 0x90 errors but the only clearable error is 0x90 with an MSP failure of 0x24. To determine what MSP failure coincides with the 0x90 error they must download the self-test history via RescueLink to view the MSP flag. Produced by battery insertion and withdrawal creating a timing condition where communication with MSP 430 chip did not occur (brown-out initialization situation). AED is stable and fully operational after clearing this flag.

5. **0x66 with extended values 0x9001 and 0x7FFF**—High voltage test during self test. The 0x9001 and 0x7FFF are “extended values” of the 0x66 error the customer witnesses. When talking through the troubleshooting steps with the customer, these are the values as displayed on the LCD, and applies to 9300x-xxx series Aeds only. Tech support has customer put unit in diagnostic mode to display

error on LCD, which is shown on the top line of the display. On the bottom row of the display, there are usually a set of values listed for almost every serviceable error. In this case, 0x66 will show on top line, and the value set 9001 7FFF 0000 0000 will be displayed on the bottom. This is the most common of 0x66 errors and any other 0x66 errors w/ extended values should not be cleared.

3 Identify error that prompted “Service Required”.

There are two methods to identify the errors on the 9300 series G3 AED.

1. Put the G3 AED into *diagnostic mode* to read the error on the display screen.
 1. The rescue ready indicator is red.
 2. Open the lid of the G3 AED to verify the voice prompt.
 3. The voice prompt will be “service required, tear open electrode package and remove electrode”. Close the lid.
 4. Explain next step beforehand.
 5. Have customer open the lid.
 6. While lights of battery gauge are cycling back and forth, but before the device can speak, have the customer press down and release “heart shock” button.
 7. The prompt heard will be “diagnostic mode.”
 8. Read the display.
 9. The error code is located in upper center of the display. The engineering code is the sixteen bit hexadecimal number in the lower right. Note these in the Syteline incident

-or-

2. Download the self-test history from the 9300 series G3AED into RescueLink to view the error codes. Note: With the 9300C series (consumer version), RescueLink is the only method to determine the cause of the “service required” error.

4 Clearing “Service Required” using Diagnostic Mode.

Follow this procedure to clear the error and reset the device to a “rescue ready” condition *only* if it is determined the error is one of the 5 above mentioned “clearable error codes”. (in the case of error 0x90 with an MSP failure of 0x24- the AED self-test history will need to be downloaded via RescueLink to determine the MSP code.)

1. To clear the error, press and hold the “heart shock” button until the lights go out. Close the lid.
2. Verify that the status indicator turns to green.
3. Lift the lid and verify that the prompt is “tear open package and remove pads”.
4. Close the lid.

5 Clearing “Service Required” using RescueLink.

Follow this procedure to clear the error and reset the device to a “rescue ready” condition *only* if it is determined the error is one of the 5 above mentioned “clearable error codes”.

1. Download the self-test history from the AED to identify the error.
2. If the error can be cleared, press and hold the <ctrl> key on the keyboard while pressing the function key <F8> on the keyboard.
3. Disconnect the communication cable from the AED
4. Close the lid.
5. Verify the status indicator turns to green.
6. Lift the lid and verify that the prompt is “tear open package and remove pads”.
7. Close the lid.