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Procedure

Troubleshooting WLP burst errors

Background

This applies to Lotem® Quantum, Trendsetter® NEWS, and all other devices using a Thermal 2 head (TH2).

Refer to this procedure if you see one of the following errors:

- `[02327] Laser Diode: Possible safety fault (WLP fault)`
- `[02330] The WLP burst data is not available`

These errors occur due to:

1. A valid safety fault.
2. Failure of the 48-V power supply (for the write laser).
3. Failure of any 48-V (write laser) circuitry, such as the relay controlling the AC voltage to this power supply, the cable from the power supply to the head, and so on. See TH2 voltages and safety circuits diagram, available from the Drawings/Photos page of the Thermal 2 TechPlanet site.
4. Failure of the TH2 due to an internal 3.3-V DC/DC converter problem. For more details, see *Details about the TH2 failure due to 3.3V DC/DC converter*.

The following heads may be affected by these errors:

- All heads with serial number T00815 or earlier may have this problem, *except for* RMA heads dated February 17, 2003 or later. If you suspect that the head you're working on has this problem, follow the procedure below.
- Heads with hardware problems such as a broken cable to the laser diode can experience this problem.

Procedure

1. Identify the possible causes of the WLP burst errors. Use the following table as a guide:

Possible cause	Symptoms	Actions
A valid safety error	• WLP error is constant • There are other indicators of safety faults (errors in the GUI or MPE, MCE safety errors)	1. Check that all doors are closed. 2. Check the interlock switches. 3. Follow the procedure: Troubleshooting safety loop errors See also TH2 voltages and safety circuits diagram
Failure of the 48-V power supply (write laser)	• WLP error is constant	To test the 48-V (write laser) at the power supply, you must:

	• No 48 V current (write laser)	• Use long voltmeter leads. • Close the door.
Failure of the 48-V power cable to the head (write laser power cable)	• WLP error is constant • The power cable to the head is broken	It is not possible to test the cable for 48-V (write laser) due to safety reasons. Instead, do the following: 1. Turn off the machine. 2. Disconnect the power cable to the head from both sides. 3. Check the cable with an Ohmmeter for an open circuit (this indicates a broken cable). See Measuring Voltages in a TH2 head.
Failure of the TH2 head due to internal 3.3-V DC/DC converter problem For **1.01f head firmware** the errors could be: • `[02327] Laser Diode: Possible safety fault (WLP fault)` and/or • `[02330] The WLP burst data is not available` For **1.01h head firmware** the error is: `[02330] The WLP burst data is not available`	• Normally these WLP errors are intermittent • WLP errors can occur anywhere from several times a day to once a week • This may happen when the laser is on or off • No other safety errors appear (GUI or Host)	1. Confirm this is not a valid safety error. 2. Request information from the customer regarding the occurrences of these WLP errors. 3. Contact your PSS before you replace the head. See TH2 failure due to 3.3 V DC/DC converter.

TH2 failure due to 3.3 V DC/DC converter

The engineering team has identified a problem with the electronic board of some TH2 heads, where the Astec 3.3-V converter unexpectedly shuts itself down. This causes the write laser to shut down. This generates a fault that may appear as a safety fault but is actually caused by the TH2 head.

This is a manufacturing defect in the Astec 3.3-V power supply (used in the laser supply) that causes a temperature sensor to break loose from a control board within the part. If the part is then subjected to thermal shock (that is, the laser is turned on, then off), the loose solder joint creates noise. The part then interprets this as an over-temperature condition, causing it to shut down.

- If the head is running firmware version 1.01f or earlier the fault reported will be:

`[02327] Laser Diode: Possible safety fault (WLP fault)`

And/or

`[02330] The WLP burst data is not available`

- If the head is running firmware version 1.01h or later the fault reported will be:

`[02327] Laser Diode: Possible safety fault (WLP fault)`

These errors are very intermittent and are hard to reproduce. The best strategy is to request information from the customer regarding the occurrences of these WLP errors. Do not hesitate to contact your PSS to confirm your diagnosis.

For more details, see TH2 Head Power: Voltage Requirements and WLP Burst Errors, available from the Reference page of the Thermal 2 TechPlanet site.

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