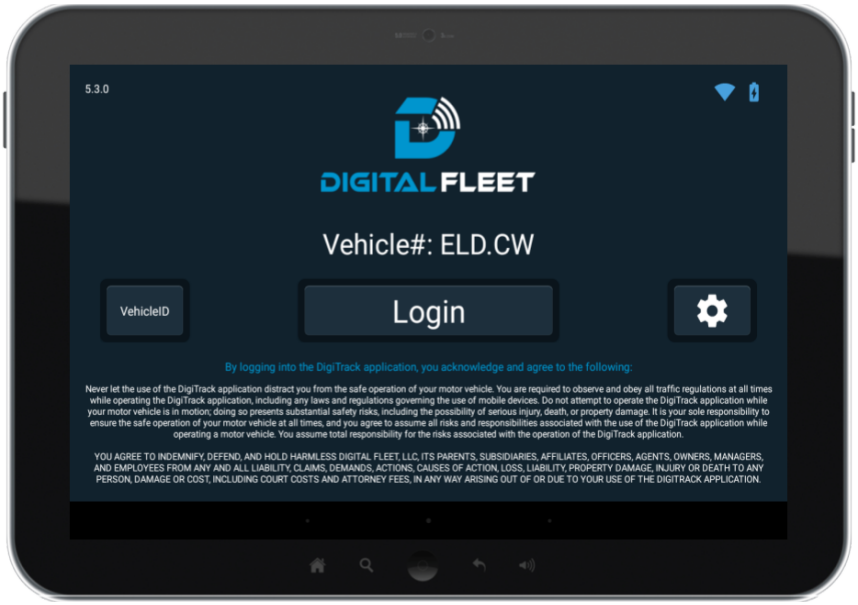
12/12/2017
REVISION A

Electronic Logging Device

Motor Carrier Malfunction Response Manual



Contents

Introduction

In accordance with the Federal Motor Carrier Safety Administration (FMCSA) **FMCSA ELECTRONIC CODE OF FEDERAL REGULATIONS PART 395 SUBPART B**, a motor carrier must repair, replace, or service malfunctioning Electronic Logging Device (ELD) upon written notification from a driver or upon discovery by the motor carrier..

This document outlines the recording keeping responsibilities by the driver, the motor carrier responsibilities, and the general troubleshooting steps for each defined ELD malfunction event. The driver responsibilities are also outlined in the **Digital Fleet - ELD Driver Malfunction Sheet** and **Digital Fleet - Electronic Logging Device Feature User Manual** with required actions by the driver.

Driver Recordkeeping Requirement During ELD Malfunction

As defined in **FMCSA ELECTRONIC CODE OF FEDERAL REGULATIONS PART 395.34**,

1. Recordkeeping during ELD malfunctions. In case of an ELD malfunction, a driver must do the following:
    a. (**§395.34(a)(1)**) Note the malfunction of the ELD and provide written notice of the malfunction to the motor carrier within 24 hours.
    b. (**§395.34(a)(2)**) Reconstruct the record of duty status for the current 24-hour period and the previous 7 consecutive days, and record the records of duty status on graph-grid paper logs that comply with §395.8, unless the driver already possesses the records or the records are retrievable from the ELD.
    c. (**§395.34(a)(3)**) Continue to manually prepare a record of duty status in accordance with §395.8 until the ELD is serviced and brought back into compliance with this subpart.
2. Inspections during malfunctions.
    a. (**§395.34(b)**) When a driver is inspected for hours of service compliance during an ELD malfunction, the driver must provide the authorized safety official the driver's records of duty status manually kept as specified under paragraphs (a)(2) and (3) of this section.
3. Driver requirements during ELD data diagnostic events.
    a. (**§395.34(c)**) If an ELD indicates that there is a data inconsistency that generates a data diagnostic event, the driver must follow the motor carrier's and ELD provider's recommendations in resolving the data inconsistency.

Motor Carrier ELD Malfunction Event Responsibility

As defined in **FMCSA ELECTRONIC CODE OF FEDERAL REGULATIONS PART 395.34(d)**, the motor carrier's requirements for repair, replacement, or service are the following:

1. (**§395.34(d)(1)**) If a motor carrier receives or discovers information concerning the malfunction of an ELD, the motor carrier must take actions to correct the malfunction of the ELD within 8 days of discovery of the condition or a driver's notification to the motor carrier, whichever occurs first.
2. (**§395.34(d)(2)**) A motor carrier seeking to extend the period of time permitted for repair, replacement, or service of one or more ELDs shall notify the FMCSA Division Administrator for the State of the motor carrier's principal place of business within 5 days after a driver notifies the motor carrier under paragraph (a)(1) of this section. Each request for an extension under this section must be signed by the motor carrier and must contain:
    a. The name, address, and telephone number of the motor carrier representative who files the request.
    b. The make, model, and serial number of each ELD.
    c. The date and location of each ELD malfunction as reported by the driver to the carrier.

    d. A concise statement describing actions taken by the motor carrier to make a good faith effort to repair, replace, or service the ELD units, including why the carrier needs additional time beyond the 8 days provided by this section.
3. (**§395.34(d)(3)**) If FMCSA determines that the motor carrier is continuing to make a good faith effort to ensure repair, replacement, or service to address the malfunction of each ELD, FMCSA may allow an additional period.
4. (**§395.34(d)(4)**) FMCSA will provide written notice to the motor carrier of its determination. The determination may include any conditions that FMCSA considers necessary to ensure hours-of-service compliance. The determination shall constitute a final agency action.
5. (**§395.34(d)(5)**) A motor carrier providing a request for extension that meets the requirements of paragraph (d)(2) of this section is deemed in compliance with §395.8(a)(1)(i) and (a)(2) until FMCSA makes an extension determination under this section, provided the motor carrier and driver continue to comply with the other requirements of this section.

Power Compliance Malfunction

1. Proceed to the ***GNX-5P Hardware Troubleshooting*** section to identify potential hardware issues and the steps to troubleshoot.
2. If the GNX-5P is properly displaying only the flashing green LED light, review the JBox hardware and ensure it's green LED light is flashing.
    a. If there is no green LED light on the JBox, ensure the cable connection between the JBox and GNX-5P hardware is secure.
    b. If the connection is secure and there is still no green LED light, the JBox hardware has most likely malfunctioned and will need replaced.
3. If the troubleshooting outlined in the ***GNX-5P Hardware Troubleshooting*** section or replacing the JBox doesn't correct the issue, notify DIgital Fleet for further troubleshooting.
4. If hardware was replaced with a spare, notify Digital Fleet for troubleshooting of the malfunctioning hardware.

Engine Synchronization Compliance Malfunction

1. Ensure the ECM cable connection from the JBox hardware to the CMV ECM port is secure.
    a. Illustrations of the hardware are available in the ***Hardware*** section.
2. Ensure the cable connection between the JBox and GNX-5P hardware is secure.
    a. Illustrations of the hardware are available in the ***Hardware*** section.
3. Proceed to the ***GNX-5P Hardware Troubleshooting*** section to identify potential hardware issues and the steps to troubleshoot.
4. If the GNX-5P modem hardware only has a flashing green LED light, review the JBox hardware for a flashing green LED light.
    a. If this is not present when the GNX-5P modem is powered on and the connections are secure, the JBox hardware may have malfunctioned.
    b. Replace the JBox hardware with a spare unit.

5. If the troubleshooting outlined in the ***GNX-5P Hardware Troubleshooting*** section or replacing the JBox doesn't correct the issue, notify DIgital Fleet for further troubleshooting.
6. If hardware was replaced with a spare, notify Digital Fleet for troubleshooting of the malfunctioning hardware.

Timing Compliance Malfunction

1. Proceed to the ***GNX-5P Hardware Troubleshooting*** section to identify potential hardware issues and the steps to troubleshoot.
2. If the troubleshooting outlined in the ***GNX-5P Hardware Troubleshooting*** section doesn't correct the issue, notify DIgital Fleet for further troubleshooting.
3. If hardware was replaced with a spare, notify Digital Fleet for troubleshooting of the malfunctioning hardware.

Position Compliance Malfunction

1. Proceed to the ***GNX-5P Hardware Troubleshooting*** section to identify potential hardware issues and the steps to troubleshoot.
2. If the troubleshooting outlined in the ***GNX-5P Hardware Troubleshooting*** section doesn't correct the issue, notify DIgital Fleet for further troubleshooting.
3. If hardware was replaced with a spare, notify Digital Fleet for troubleshooting of the malfunctioning hardware.

Data Recording Compliance Malfunction

1. Notify Digital Fleet for troubleshooting.

Data Transfer Compliance Malfunction

1. For a data enabled tablet, verify the tablet has a good cellular network connection.
2. If the tablet is wifi only or is a data enabled tablet with a good network connection, notify Digital Fleet for further troubleshooting.

GNX-5P Hardware Troubleshooting

1. Illustrations of the hardware are available in the ***Hardware*** section.
2. Review the GNX-5P modem hardware for error codes with the CMV ignition on.
    a. When the ignition is first turned on, the green LED will show solid for approximately 30 seconds before starting to flash at a rate of 25 times every second.
        i. For normal operation, no red LED lights will be flashing. If the red LED light is flashing proceed to step 1b.

ii. If no lights come on when ignition is turned on, the power source or ignition may not be properly connected
    1. Ensure the power harness connection is secure to the back of the GNX-5P modem.
    2. Ensure the connection to the ignition and power source are secure.
        a. Re-wiring of the connections can fix power supply related issues.

iii. If the green LED light remains solid for an extended time, the power source may not be properly connected.
    1. Ensure the power connection is secure on the back of the GNX-5P modem.
    2. Additionally, ensure the power harness is securely connected to the CMVs power source.
        a. Re-wiring of the connection can fix power supply related issues.

iv. If all connections are secure and the GNX-5P still has no green LED light, no flashing red LED light, or the green LED light remains solid for an extended period, the GNX-5P hardware has most likely malfunctioned and will need replaced.

b. If a red LED light is flashing after the green LED light begins to flash normally, an error is occurring within the hardware.

i. The red LED light flashes a two-digit code. The flashing sequence corresponds to the error code below. Follow the troubleshooting steps to try to resolve the issue:

    1. Error Code **1-1**: Expired license
        a. Notify Digital Fleet with the modem serial number, IMEI, and error code for troubleshooting.

    2. Error Code **1-2**: low supply voltage
        a. This could be caused by a true low voltage condition (<8v) or a high impedance supply that dips in voltage when the current draw spikes due to modem transmit.
        b. Ensure the power connection is secure on the back of the GNX-5P modem.
        c. Additionally, ensure the power harness is securely connected to the CMV power source.
            i. Re-wiring of the connection can fix low supply voltage issues.
        d. If the error code persists, the GNX-5P hardware has most likely malfunctioned and will need replaced.

    3. Error Code **1-3**: Allocated data usage exhausted

a. Notify Digital Fleet with the modem serial number, IMEI, and error code for troubleshooting.

4. Error Code **2-1**: modem module failure
    a. GNX-5P hardware has malfunctioned and will need replaced.

5. Error Code **2-2**: No SIM inserted
    a. Verify the SIM drawer contains a SIM card and is correctly seated in the socket.
    b. If the SIM card is properly seated, the GNX-5P hardware has most likely malfunctioned and will need replaced.

6. Error Code **2-3**: No signal
    a. Check the cellular antenna is securely connected.
    b. If the antenna is securely connected, swap the antenna with a spare.
    c. If the error code persists, the GNX-5P hardware has most likely malfunctioned and will need replaced.

7. Error Code **2-4**: Network not found.
    a. Notify Digital Fleet to verify the cellular account is active.
    b. If the account is active, the GNX-5P hardware has most likely malfunctioned and will need replaced.

8. Error Code **2-5**: Last data session failed.
    a. Notify Digital Fleet to verify the cellular account is active.
    b. If the account is active, the GNX-5P hardware has most likely malfunctioned and will need replaced.

9. Error Code **2-6**: GPRS is not attached, or CDMA 1xRTT data is not available
    a. Notify Digital Fleet to verify the cellular account is active.
    b. If the account is active, the GNX-5P hardware has most likely malfunctioned and will need replaced.

10. Error Code **3-1**: GPS module fault
    a. GNX-5P hardware has malfunctioned and will need replaced.

11. Error Code **3-2**: GPS antenna fault
    a. Check the GPS antenna is securely connected
    b. If the antenna is securely connected, swap the antenna with a spare.

c. If the error code persists (wait 2 minutes for the LED to update), the GNX-5P hardware has most likely malfunctioned and will need replaced.

12. Error Code **3-3**: GPS not tracking any satellites
    a. Check the GPS antenna is securely connected.
    b. If the antenna is securely connected, check that the GPS antenna has a clear, unobstructed view of the sky and has been operating for at least five minutes.
    c. If the antenna has a clear, unobstructed view of the sky, verify the antenna is facing the correct direction.
    d. If the error code persists, the GNX-5P hardware has most likely malfunctioned and will need replaced.

13. Error Code **3-4**: GPS no fix (<3 satellites)
    a. Check that the GPS antenna has a clear, unobstructed view of the sky and has been operating for at least five minutes.
    b. If the antenna has a clear, unobstructed view of the sky, verify the antenna is facing the correct direction.
    c. Lastly, try repositioning the GPS antenna for a clearer view of the sky.
    d. If the error code persists, swap the antenna with a spare.
    e. If the error code is still active after two minutes, the GNX-5P hardware has most likely malfunctioned and will need replaced.

14. Error Code **3-5**: GPS has no time
    a. Check the GPS antenna is securely connected.
    b. If the antenna is securely connected, check that the GPS antenna has a clear, unobstructed view of the sky and has been operating for at least five minutes.
    c. If the antenna has a clear, unobstructed view of the sky, verify the antenna is facing the correct direction.
    d. If the error code persists, the GNX-5P hardware has most likely malfunctioned and will need replaced.

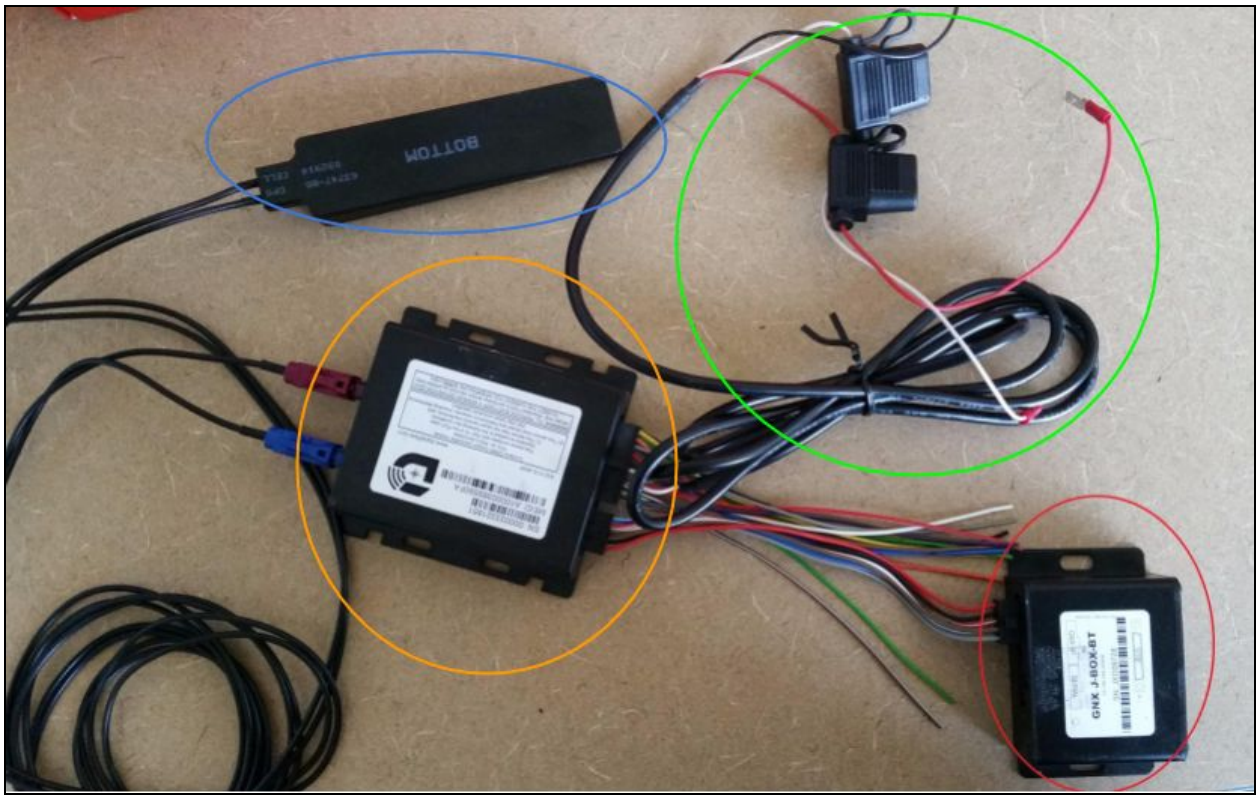
15. Error Code **4-2**: Data transfer failed
    a. This error can occur when a mobile data communication is unavailable. Verify the condition is still present after 15 minutes.
    b. If the condition persists for an extended, notify Digital Fleet with the modem serial number, IMEI, and error code for troubleshooting.

3. If all connections are secure and the GNX-5P still has no green LED light or the green LED light remains solid for an extended period (multiple minutes), the GNX-5P hardware has most likely malfunctioned and will need replaced.
4. Notify Digital Fleet if any hardware was replaced or if additional hardware is needed.

Hardware

ECM Cables

GNX-5P, JBox, Antenna, and Power Harness



- Antenna
  - The antenna connects to the GNX-5P device at the blue and maroon connectors.
  - The antenna is attached to the inside of the windshield by sticking it to an area of the windshield with the most “sky view”.
    - For Front discharge trucks, the antenna should be on the bottom left corner of the windshield.
    - For Rear discharge trucks, the antenna should stick to the bottom middle of the windshield.
- GNX-5P Modem
  - When troubleshooting record the serial number and IMEI off the modem label.
- Jbox
  - The serial port connects to the ECM cable for engine data.
  - The 7-wire cable connects to the GNX-5P for power and data transfer.
- Power Harness
  - Connects to GNX-5P with the 20 pin molex connector and to the CMV power supply with the wires with fuses.
    - Black wire is ground.
    - Red wire is constant 12 volt power.
    - White wire is ignition.