

**NABI - DART : G4-VDL-01 Data Logger**



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**This work instructions provided by IO Controls**

**Property and Top Bus Number:** DART:  
40' Transit: 39001 - 39156, 41001 - 41151, 42001 - 42089  
31' Transit: 38001 - 38030, 40001 - 40033

## NABI - DART : G4-VDL-01 Data Logger



### **Issue:**

- 1- RTC battery service life is 1 year.
- 2- Some modules failed and are "always resetting", failed modules never initialize.
- 3- Some modules exhibit "data receive failure".
- 4- Some modules exhibit "partial download" when VDL data is downloaded to a USB drive.

### **Solution:**

- 1- RTC circuit will be changed to a rechargeable battery circuit with upgraded firmware.

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- 2- A noise filtering capacitor will be added to the main VDL PCB to filter out noise that causes this failure mode.
- 3- The program that resides in the VDL has been modified to automatically recover from this failure mode.
- 4- The program that resides in the VDL has been modified in the way that the VDL transfers data to a USB drive.

**Number of affected buses:** 459

**Estimate repair hours/bus:** 25 minutes

**Necessary parts:**

Factory upgraded IOC P/N G4-VDL-01 1/bus,

**Necessary tools and rework procedure:**

See attached rework document "DART 2015 Retrofit Plan".

### **DART 2015 Retrofit Plan Retrofit Process**

Day	Field	Office	Remark
Day 1	Replace 15 VDL modules (Set # 1)		
Day 2	Send Set #1 back to office (By UPS Next Day Air Early AM) Replace another 15 VDL modules (Set #2) Verify the 15 VDL installed on day 1		
Day 3	Send Set #2 back to office (By UPS Next Day Air Early AM) Replace another 15 VDL modules (Set #3) Verify the 15 VDL installed on day 2	Receive Set #1. Rework Set #1 Send Set#1 to Dallas by UPS Next Day Air	
Day 4	Send Set #3 back to office (By UPS Next Day Air Early AM) Receive reworked Set#1 Replace another 15 VDL modules (Set #4) Verify the 15 VDL installed on day 3	Receive Set #2. Rework Set #2 Send Set#2 to Dallas by UPS Next Day Air	
Day 5	Send Set #4 back to office (By UPS Next Day Air Early AM) Receive reworked Set#2 Replace another 15 VDL modules (Set #5) Verify the 15 VDL installed on day 4	Receive Set #3. Rework Set #3 Send Set#3 to Dallas by UPS Next Day Air	
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*Estimate Time*

- Replace VDL Module: 15 minutes/bus
- Verify VDL Module: 10 minute/bus
- Total work for 15 modules: 6 hours/day
- 35-40 working day to retrofit 500 buses (500/15 = 33.3)

*Material Required*

- 45 VDL modules
- 20 downloading USB drives, labeled 1-20
- PC
- Cabinet key
- Skew driver

## Field Check List

*Replace VDL Module*

- Write down old VDL SN# and Bus#
- Replace with reworked VDL module
- Write down reworked VDL SN#
- Plug connectors
  - CON-A (Grey)
  - CON-B (Black)
  - GPS (Gold)
- Turn on master switch
- Check VDL status
  - LED#1: Stay ON
  - LED#2: Stay OFF
  - LED#3: Stay OFF
  - LED#4: Stay OFF
  - LED#5: Flashing
- Come back after 5 minutes or more and check if LED#5 is stay ON.
- Turn off master switch

*Verify VDL Module*

- Turn on master switch
- Check LED
  - LED#1: stay ON
  - LED#5: Flashing
- Plug Downloading USB drive
- Write down the USB# and Bus# and time

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- Check if LED#4 is flashing

Come back after 10 minutes and check if LED#4 stay OFF

**SAFETY PRECAUTIONS MUST BE FOLLOWED ACCORDING TO ACCEPTED INDUSTRY STANDARDS AND LOCAL/PROPERTY REQUIREMENTS.**