There will be several steps to this process:

1. Download software from LOFA web site
2. Remove panel from machine or at a minimum disconnect the 21 pin connector from back of panel to connect tool.
3. Update Firmware in CPIO Circuit Board
4. Update Firmware in CP750 Display
5. Load Configuration into panel. (Configuration will be loaded onto the Display and CPIO in one operation.) You would need to open an existing Config, make a New Config with tool, or, use a Config sent to you by LOFA or OEM. Config files are located on your computer in a folder which the tool automatically saves to and points to:
   C:\Users\Public\Documents\LOFA Industries\Configuration
   It is best to save configurations sent to you in this folder location.
6. Reinstall panel
7. If used on a Mechanically Governed engine the tachometer will need to be recalibrated.

IMPORTANT NOTES:

1. It is important to note that only one application at a time can be running which utilizes the CANplus® adapter. !!
2. If there are any other devices connected to the CANbus they must be disconnected from the panel during programming, I.E. Telemetry devices, Skim modules, Etc.

You will need the following items to upgrade the software:

Issue Date: **6/6/2017**	Approved By: **GRL**	Rev number INITIAL ISSUE	LOFA Industries, LLC 250 Hembree Park Dr., Suite 122 Roswell, GA 30076 770-569-9828	Document Control No: **463-3000-34**

1. A laptop or desktop Computer ideally with an Internet Connection – Note: If you are going to go into the field for an update, and will not have internet available, you should go through the update process with a panel and be certain all processes function and are up to date before going to job site.
2. Software – CANplus® Adaptor Driver Version 4.0 & CANplus® Suite Version 3.15, (or latest Versions)
3. LOFA CANplus® Configuration Kit
4. A USB to Serial adapter cable. (Obtain locally and install driver for cable.)
5. If the panel is to be installed on a mechanically governed engine then a hand-held tachometer will be required to enable recalibration of the RPM measurement.

Upgrade Process – Download Software from LOFA web site

1. Go to the LOFA web site http://www.lofa.net
2. Click "Product Support"
3. Click "Software Downloads"
4. Click "CANplus Suite Version 3.15", (or latest version), Driver Version 4.0" will automatically be loaded with this.
5. These will be downloaded onto your computer. The system will choose a location to download the programs on your computer, if you want the software saved in a different directory you will need to tell the installation program where you would like the files to be saved to. Shortcut Icons will also be placed on your desktop.
6. There is also a short video available under Product Support/Videos which shows the necessary cables and their proper connection locations. You must be able to view YouTube videos to watch these videos.

Issue Date: **6/6/2017**	Approved By: **GRL**	Rev number INITIAL ISSUE	**LOFA Industries, LLC** 250 Hembree Park Dr., Suite 122 Roswell, GA 30076 770-569-9828	Document Control No: **463-3000-34**

Firmware Update - CPIO

1. Panel should have been removed from the machine or at least the 21 Pin main panel connector removed.
2. Remove screws from face plate.
3. Connect LOFA 21 pin connector harness 825-1000-00, 010-3500-01 power supply and 632-1939-02 CANplus adapter
4. Connect the Lofa Programmer (the square box with ribbon cable) to the IO board in the panel and your computer. BE CERTAIN THAT THE LED ON THE CIRCUIT BOARD ATTACHED TO RIBBON CABLE IS TO THE LEFT, (OUTBOARD SIDE). IF CIRCUIT BOARD IS INSTALLED BACKWARDS THE PANEL WILL NOT POWER UP.
5. Turn the key on the panel to the "RUN" position. Verify that the LED on circuit board connected to the CPIO Board at end of ribbon cable is ON at this time. Verify that the LEDs for Power and Run/Stop on the LOFA Programmer are OFF at this time. NOTE: If, at this point, the LEDs on box are illuminated the Firmware will not be downloaded.
6. Click on the CANplus® Update 3.15 application, (or latest version) Icon on your computer. Verify that the CANplus® Adapter Serial number appears in the lower left corner of window and it is connected to panel adapter.
7. Select "Product" and scroll to 004-00709/can plus IO board (CPIO) V3.15, (or latest version) and click to select.
8. CPIO firmware cable should be marked on the screen Under "2: Select Update Method." Click "Update" button under item 3. The Power and Run/Stop LED's should illuminate when the Update button is clicked. NOTE: You may receive a message that the adapter needs updating. If this appears, click on "Yes" to update. The adapter will be updated and the process will

Issue Date: **6/6/2017**	Approved By: **GRL**	Rev number INITIAL ISSUE	**LOFA Industries, LLC** 250 Hembree Park Dr., Suite 122 Roswell, GA 30076 770-569-9828	Document Control No: **463-3000-34**

3

continue to update the CPIO board. Please note that you do not get a progress bar.

9. Once the application states that the update is complete, turn the key on the panel to the "OFF" position.

10. Disconnect the ribbon cable from the CPIO circuit board and set it aside.If you do not have any more panels to update you can now disconnect the LOFA Programmer from the computer.

This Completes the Firmware Update for CPIO board.

Keep the 21 pin configuration cable attached to the Panel and the computer since the Display requires a Firmware updated also.

Firmware Update – Display

1. Please note that if display is totally blank, or it is in the Bootloader mode, you will need to update display using the serial cable. This procedure is explained at the end of this document and the following steps can be ignored.

2. The following steps explain how to update using the CANplus® adapter

3. Turn the panel key to the "RUN" position. When panel is powered back up the LEDs on the faceplate of panel should be blinking alternately in pairs: the Green and Red and the 2 Amber in a fashion similar to a railroad crossing signal. There will also be a message on the display which reads "Program Memory Bad Device". This is correct and an indication that the firmware for the CPIO board has been loaded.

4. If not already open, please open the CANplus® Update application.

5. Select "Product" and scroll to 004-00738 / CANplus® Display (CP750) V3.15 – (or latest version) and select by clicking.
6. Your update method should be set to be the CANplus® adapter.
7. Once Confirmed click "Update." After several seconds you will see a progress bar on the window in application.
8. Once the program indicates that this is complete turn the key to the "Off" position and close the update application. Turn the key back to the "Run" position and confirm that the Firmware version shown in the lower right corner of display has changed to the version down loaded.
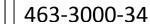
Now it is time to down load the Configuration to CPIO Board and Display:

Configuration Update – Display and CPIO Board

1. Be absolutely certain that the Update Application has been closed.
2. Turn the key to the "Run" position.
3. You will still have the Error message on display and the LEDs will still be blinking alternately.
4. Double click on the icon for the CANplus® Configuration program.
5. The Green and Amber LED should be illuminated on the CANplus® adapter and you should see the serial number for it in the lower left hand corner of window of the application.
6. Click on "Open" in the tool bar at top of CANplus® Configuration program. This will direct you to folder where you stored the supplied configuration file.
7. Click "Write" in the tool bar. The screen will change and there should be check marks for the CPIO and the CP750 on left side of screen.
8. Click "Write" again and the screen will change and advise that it is writing the configuration. You will see a progress bar during this process. The

screen on panel display will also go through some changes. Wait until the application indicates it has finished writing the configuration.

9. Turn the key to the "Off" position.
10. In the application click "Back" and then "Finished".
11. Turn the key to the "Run" position.
12. You should see that the Version number has changed in lower right hand corner of Display to the Version that was downloaded earlier.
13. When this is confirmed you can close CANplus® Configuration program.

Reinstall Panel on Engine

1. Install panel on machine.
2. Crank and run engine
3. If installed on a mechanically governed engine you must Calibrate RPM shown on panel to actual engine RPM. Instructions for this are in the Ops manual for the CP750 Panel, Page 22, available for down load at www.lofa.net
   You must also ensure that in the under the Configuration Menu, in Settings that the governor type is set to Mech.

Updating Display Serially – Must be in Bootloader Mode

1. You need to disconnect the 12 position Deutsch connector from back of display.
2. Connect 825-1000-04 "Harness Cfg CANplus DT12 Srl."
3. Connect the CANplus® adapter to the 3 position Deutsch connector.

| Issue Date:
6/6/2017 | Approved By:
GRL | Rev number
INITIAL ISSUE | **LOFA Industries, LLC**
250 Hembree Park Dr., Suite 122
Roswell, GA 30076
770-569-9828 | Document Control No:
463-3000-34 |

6

4. Connect the serial cable to serial port on computer. If there is not a serial port you must obtain a serial to USB adapter, (not included with Config Suite). You MUST install driver for this adapter before using. Follow the manufacturer's instructions.

5. If the display is totally blank (no opening splash screen, no gauges etc.) you must put the display in "Bootloader" mode.

6. To put display in "Bootloader" mode ensure power is applied and press and hold buttons 1 and 2 from the left on the display until the "Bootloader" screen is shown. Release buttons the two buttons. NOTE: The 2 position connector, with the Red and Black wires supplies power directly to display when connected.

7. If not already open, open the CANplus® Update Application.

8. Select "Product" and scroll to 004-00738 / CANplus® Display (CP750) V3.15 – (or latest version) and select by clicking.

9. Set Update Method to Serial Port.

10. Click "Update."

| Issue Date: 6/6/2017 | Approved By: GRL | Rev number INITIAL ISSUE | LOFA Industries, LLC 250 Hembree Park Dr., Suite 122 Roswell, GA 30076 770-569-9828 | Document Control No: 463-3000-34 |

7

11. The application should recognize the location of serial port. If using a USB to Serial adapter and it does not please try moving to a different USB port.

12. After several seconds you will see a progress bar on the display.

13. Once the program indicates that the update is complete, disconnect power and close the CANplus® Update Application. Re-aplly power and confirm that the Firmware version shown in the lower right corner of display has changed to the version downloaded.

14. Once complete go back to the Configuration Update steps, to complete process.

Issue Date: **6/6/2017**	Approved By: **GRL**	Rev number INITIAL ISSUE	**LOFA Industries, LLC** 250 Hembree Park Dr., Suite 122 Roswell, GA 30076 770-569-9828	Document Control No: **463-3000-34**