Instructions for upgrade of DL850/ EML224/GDS102 to CPU PCA-6742 from CPU PCA 6135/6753.

Upgrade kit Part no	Product:
SA-C124	GDS102
SA-C125	DL850N
SA-C126	DL850N27
SA-C135	EML224
SA-C132	GDS102S
SA-C133	DL850D
SA-C134	DL850D27

TABLE OF CONTENTS

LIST OF PARTS

This document describes how to upgrade a faulty CPU unit PCA 6135 or PCA 6753 to the newer generation PCA 6742. The document is split into 4 Parts.

1. The first part describes how do demount your existing unit. You will need to find your current version of setup and follow this.
2. The second part then describes how to rebuild the unit with the new components.
3. Appendix 1. Unit interconnections <u>before</u> upgrade.
4. Appendix 2. Unit interconnections <u>after</u> upgrade.

This kit contains:

Part no	Description	Number of
Module SA-C131	CPU upgrd => 6742 w CPU plate, etc No setup CF	1
Containing:		
PC-C053	PCB CPU 6742VEF Setup ready. No Flash card.	1
PI-C052	PCB Combo I/O with EPC1(for CPU 6742)	1
PM-C001	PCB Motherboard Combo	1*
ZZK-01063	Cable clip plastic TCFF-40-01	3*
ZZK-01064	Cable clip aluminium 51,0mm 40 way	2*
ZZK-01074	Power cable 5/12V	1
ZZK-01075	Power plug 5/12V retrofit (to be used with ZZK-01074)	1
ZZK-01076	Cable Screen PCA 6742	1
ZZK-01077	Cable Com 3/4 splitter for PCA 6742	1
ZZZ-030023	Flash card reader MESA	1*
ZZZ-030024	Flash card Sandisk X GB	1*
ZZZ-030025	Flat cable for flash card reader (IDE)	1*
ZAA-01032	Computer plate	1
DI-C001	Manual for CPU 6742 Combo platform upgrade kit	1

In addition you will have <u>one</u> of the following, depending on the existing setup.

Part no	Description	Number of
MB-G002	Bootable SW module for GDS102	1**
MB-G002S	Bootable SW module for GDS102S	1**
MB-D004N	Bootable SW module for DL850N 540 kHz Non docking	1**
MB-D004D	Bootable SW module for DL850D 540 kHz Docking	1**
MB-D005N	Bootable SW module for DL850N27 270 kHz Non docking	1**
MB-D005D	Bootable SW module for DL850D27 270 kHz Docking	1**
MB-E001	Bootable SW module for EML224	1**

* Pre-mounted on Computer plate. ** Pre-mounted on CPU.

The newer CPU's software are much simpler to upgrade. This is performed using the Compact flash disk on the new plate.

Tools needed for this upgrade are :
• Philips X screwdriver (PH1x80)
• 5,5 mm pipe spanner

ADDITIONAL PARTS IN SA-C135 UPGRADE KIT FOR EML224 GRAPHIC UNIT

Part no	Revision	Description	Number of
ZZK-01031		Cable RS232 for DL850/EML224 CPU/Terminal PCB	1
ZZK-01032		Communication cable for DL850/EML224 RS422 Terminal/Terminal PCB	1
ZZZ-03001EML	A14	PCB RS 422 Terminal for EML224 Cabinet	1

In the EML224 there are 2 additional changes that requires new parts.

The NMEA RS422 to RS232 conversion is performed on the terminal PCB before going to CPU PCB.
The two NMEA cables ZZK-01031 and ZZK-01032 are supplied

A bug in the older version of ZZZ-030011EML prevented 2 way communication with the sensor. Signal was received from sensor but no commands would be sent down from cabinet to sensor.
With the new version A14 of the PCB the 2 way communication is enabled.

Please note:
2 way communication requires 2 pairs (Rx and Tx) cables run from cabinet via electronic unit to sensor.
In Software versions <1.27.23 No commands are sent to sensor.
In software version from 1.27.23 sensor format command is sent to the sensor (EML224 format).
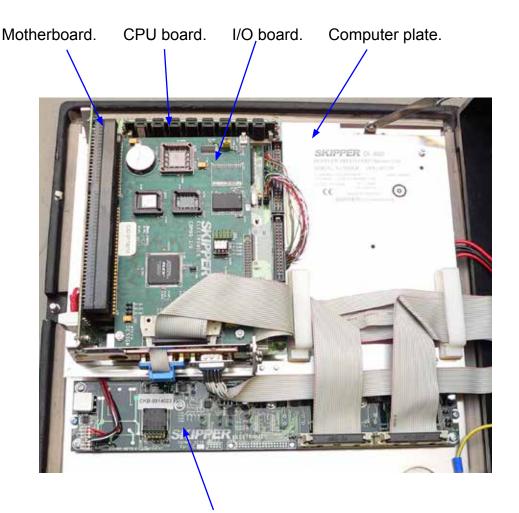
PART 1A: REMOVING THE OLD CPU ASSEMBLY CPU 6135 (EML224, DL850* PRE 2007)

STEP 1A. LOCATE THE DIFFERENT PARTS

- Open the cabinet and take a overview of the electronics.
- In the door, the CPU board is positioned at the top, behind the I/O board. Both are attached via an ISA bus to the motherboard on the left.
- The aluminium computer plate, CPU board, mother board and the I/O board need to be replaced in this upgrade.
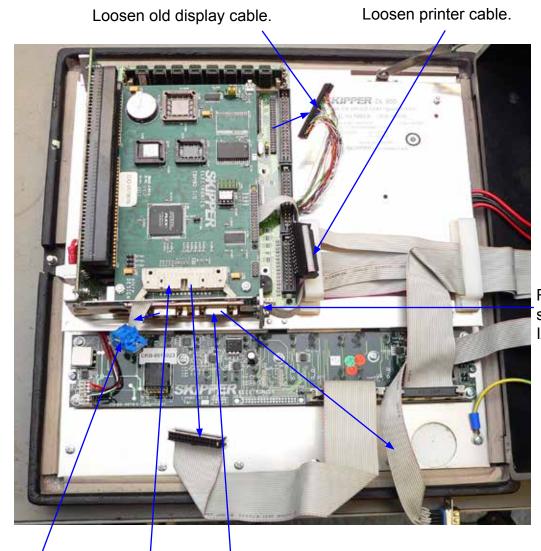
*Not all versions.

Motherboard.   CPU board.   I/O board.   Computer plate.

Keyboard (not to be replaced).

STEP 2A. LOOSEN CABLES AND UNSCREW I/O BOARD

- Loosen all cables and screw (1) from the I/O board.
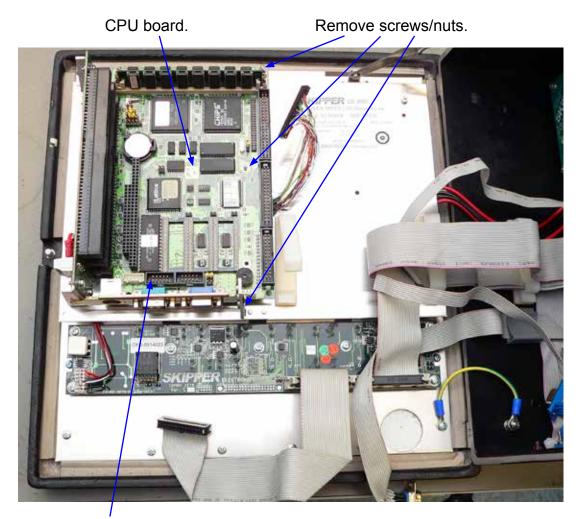- Loosen COM cable from the old CPU board

Loosen old display cable.   Loosen printer cable.

Remove screw from I/O board.

Loosen COM cable.   Loosen flat cable.   Loosen VGA cable.

STEP 3A. REMOVE THE OLD I/O BOARD

- Remove the old I/O board and loosen the rest of the cables on the CPU board.
- Remove the 3 screws/nuts from the CPU board.

CPU board.   Remove screws/nuts.
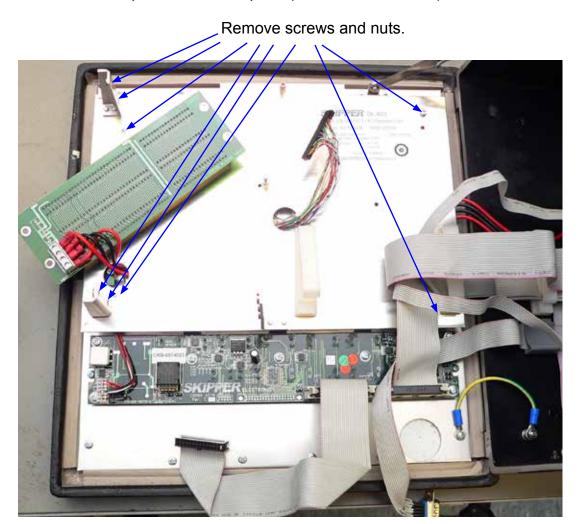

Remove flat cable.

STEP 4A. REMOVE THE OLD CPU BOARD
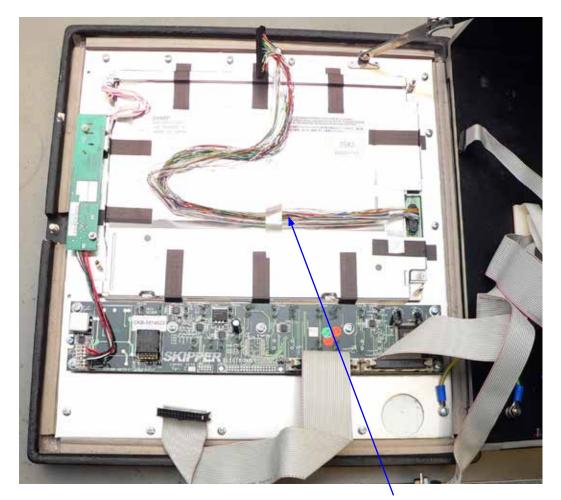
• Remove the old CPU board.

STEP 5A. REMOVE THE OLD MOTHERBOARD

- Loosen the motherboard (4 screws) and disconnect the cables from it.
- Loosen the computer aluminium plate (2 screws and 2 nuts).

Remove screws and nuts.

STEP 6A. REMOVE THE OLD COMPUTER PLATE AND DISPLAY CABLE

- Remove the aluminium computer plate from the cabinet.
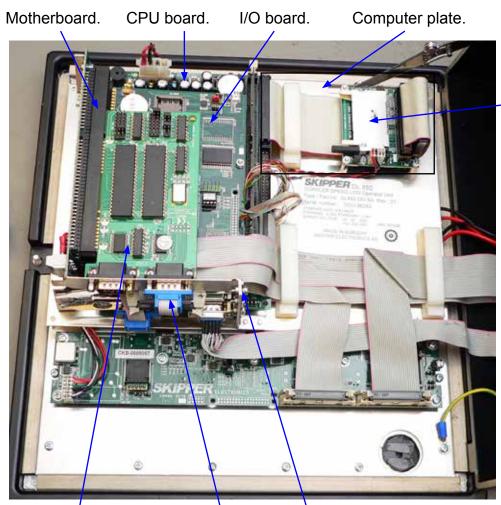- Remove the old display cable.

Remove old display cable.

PART 1B: REMOVING THE OLD CPU ASSEMBLY CPU 6753 (GDS102, DL850 AFTER 2007)

STEP 1B. LOCATE THE DIFFERENT PARTS, REMOVE COM PORT CARD

- Open the cabinet. In the door there is a stack of three cards. The CPU board is at the bottom, behind the I/O board and in front is the COM port card. The motherboard is to the left, holding the stack together.
- The aluminium computer plate, motherboard, CPU board and the I/O board need to be replaced in this upgrade.
- Remove screw and COM cable from the COM port card on top.
- Remove COM port card (only on DL850).

Motherboard.   CPU board.   I/O board.   Computer plate.

Note: MESA board and flat cable not on GDS102. Disk On Module instead.

COM port card.   COM   Screw.
Note: Not on GDS102.   cable.
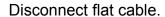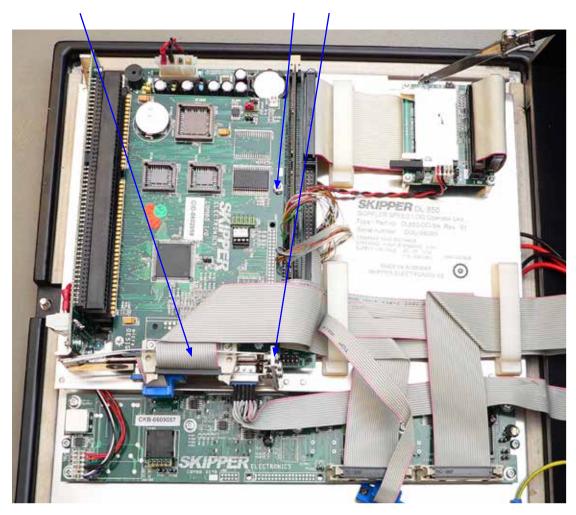Only on DL850.

STEP 2B. DISCONNECT FLAT CABLE FROM I/O BOARD

- Disconnect the flat cable from the I/O board.
- Unscrew the IO board (1 screw and 1 nut).

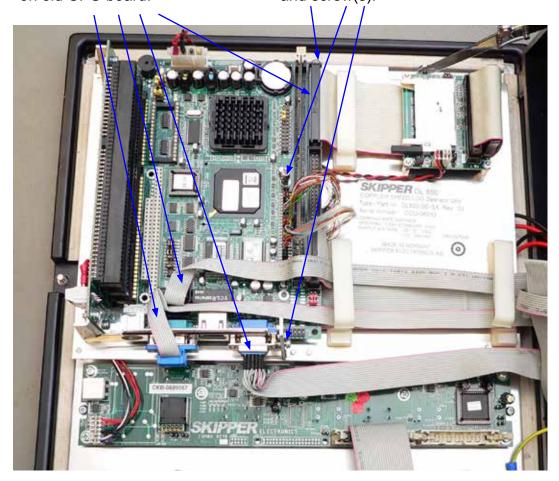Disconnect flat cable.   Remove screw and nut.

STEP 3B. REMOVE THE OLD I/O BOARD

- Take out the I/O board and loosen the rest of the cables on the CPU board.
- Remove the stand-off and screw(s) from the CPU board.
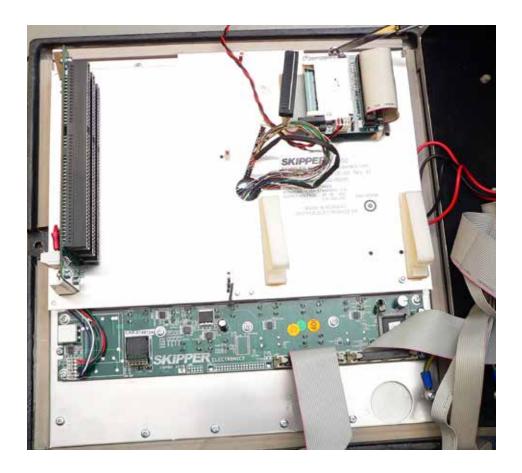
Remove remaining cables on old CPU board.

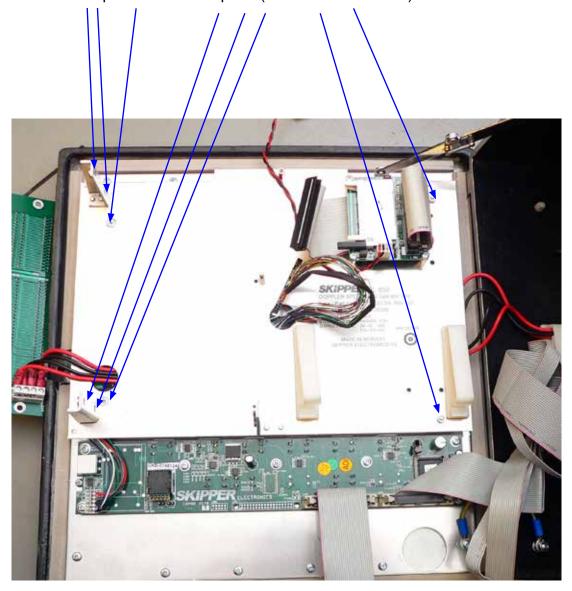Remove stand-off and screw(s).

STEP 4B. REMOVE THE OLD CPU BOARD

- Remove the CPU board.

STEP 5B. LOOSEN THE OLD MOTHERBOARD AND COMPUTER PLATE

- Loosen the motherboard with 4 screws and disconnect the cables from it.
- Loosen the computer aluminium plate (2 screws and 2 nuts).

STEP 6B. REMOVE THE OLD COMPUTER PLATE AND DISPLAY CABLE

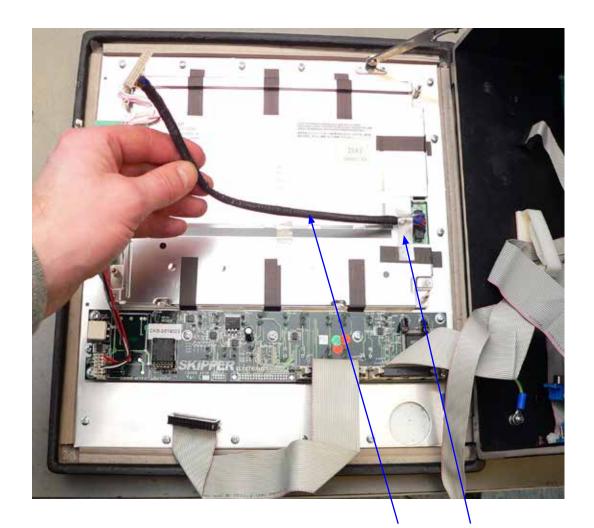- Remove the aluminium computer plate from the cabinet, and remove the old display cable.

PART 2: INSERTING THE NEW CPU PCA 6742 ASSEMBLY

STEP 7. MOUNT THE NEW DISPLAY CABLE

- Demounting complete.
- Next re-assemble by first mounting the new display cable.
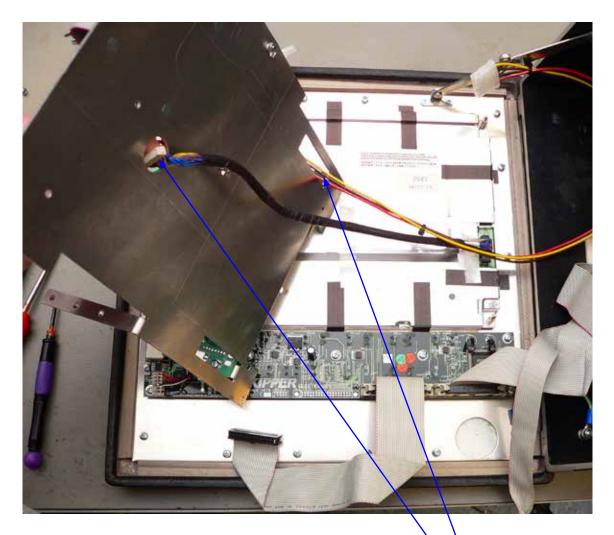- Secure its connector with tape (own supply).

Insert the new cable and secure with tape.

STEP 8. THREAD THE DISPLAY AND POWER CABLE

- Thread the display cable through the hole in the new aluminium computer plate as shown. Ensure you also have thread power cable shown in the picture.
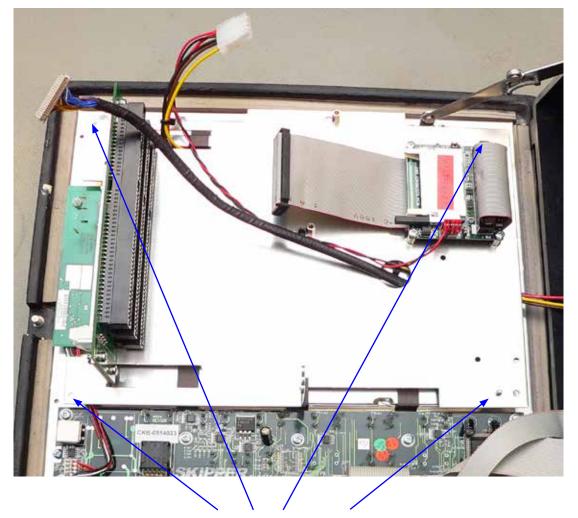

Thread the new power and display cable through the new computer plate.

STEP 9. ATTACH AND SECURE THE NEW COMPUTER PLATE

- Attach the aluminium computer plate to the cabinet door and secure it with 2 nuts and 2 screws. Lay the cables out as shown.
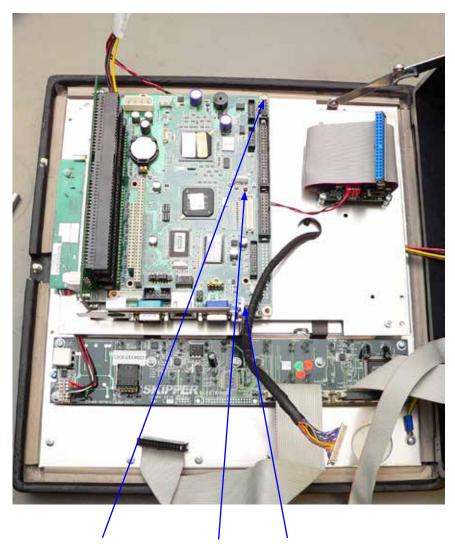

Secure the computer plate.

STEP 10. PLACE AND SECURE THE NEW CPU BOARD
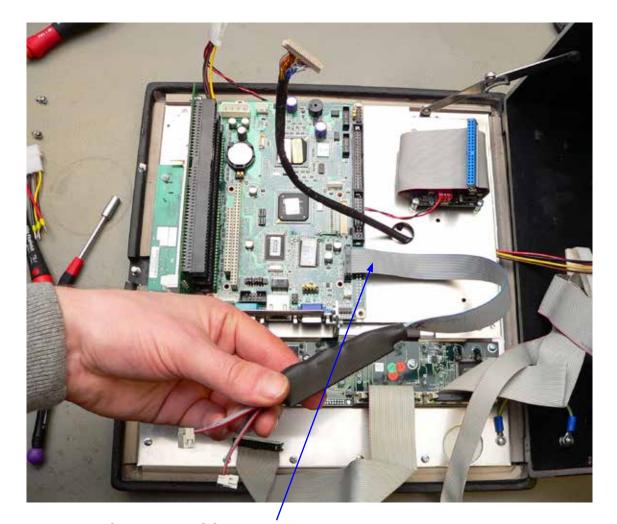
• Mount the new CPU board and secure it with 3 screws.

Mount and secure the new CPU board.
(**Note**: Software in Compact flash on the rear side).

STEP 11. CONNECT THE NEW COM PORT SPLIT CABLE

- Connect the COM port split cable device first to the new CPU and mount the other ends to the connectors on the Combo Terminal board of the cabinet (J400 and J401).
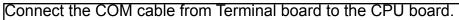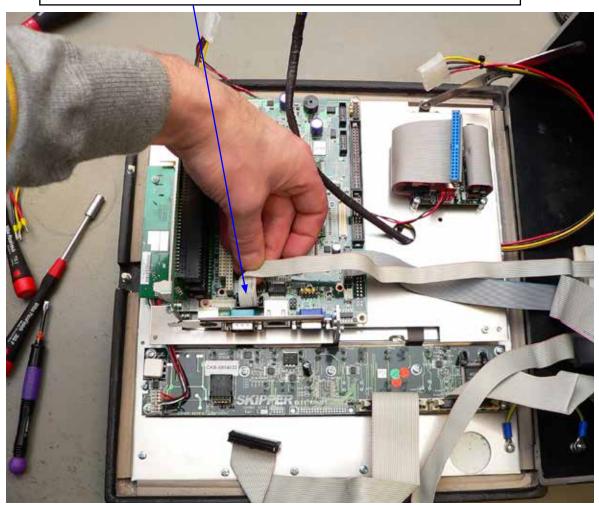 **Note**: This cable may look slightly different to the photo.

Connect the COM port split cable
between the CPU COM 34 and J400/
J401 on Combo Terminal board.

STEP 12. CONNECT COM CABLE TO THE NEW CPU BOARD

- Connect the COM cable between J300 on Combo Terminal and the COM2 connector on to the CPU board. (For details, see drawings in Appendix).
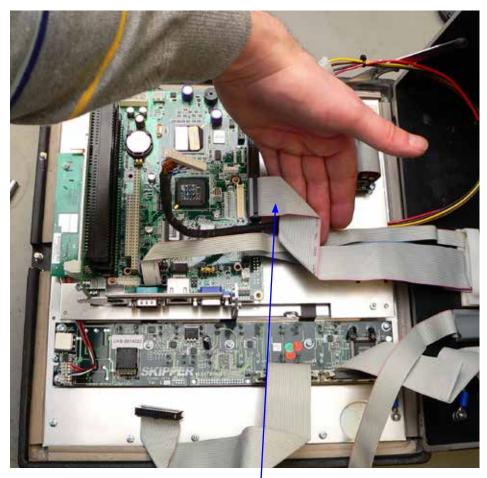
Connect the COM cable from Terminal board to the CPU board.

STEP 13. CONNECT THE PRINTER CABLE TO THE NEW CPU BOARD

- Connect the LPT (Printer) cable to the CPU board, bending it as shown.

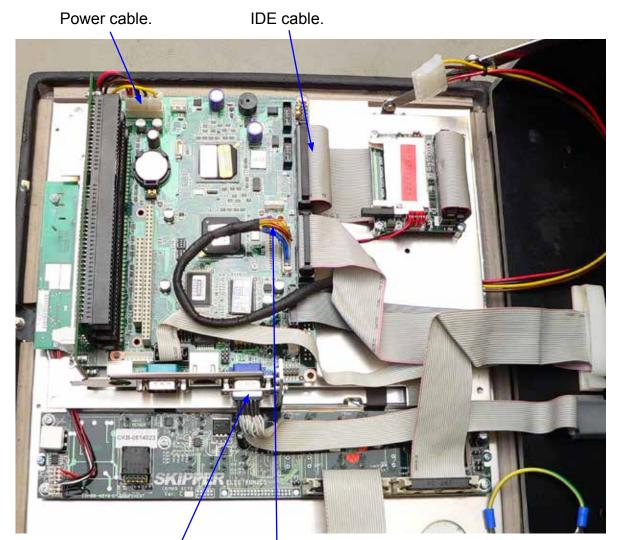Connect the printer cable to the CPU board

STEP 14. CONNECT REMAING CABLES TO THE NEW CPU BOARD

- Connect the new display cable, the external screen (VGA) cable and the IDE cable from the CF- MESA cardreader and the power cable to the new CPU board.
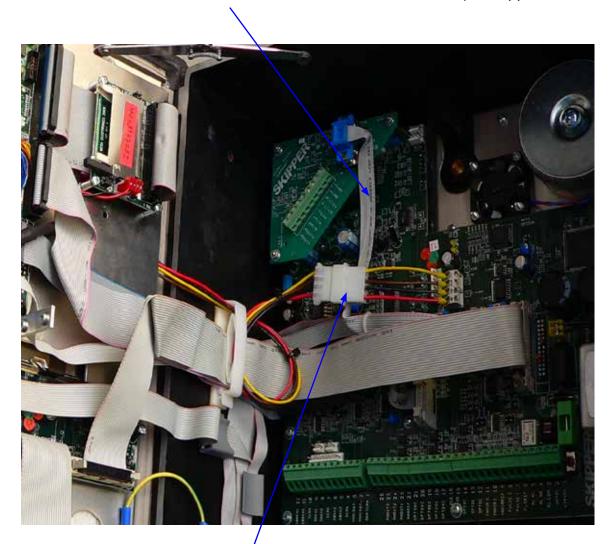
Power cable.   IDE cable.

VGA cable.   Display cable.

STEP 15A. CONNECT POWER CABLE AND ADAPTER TO COMBO TERMINAL BOARD

• Mount the power cable adaptor as shown, and line up the power cable like in this picture. Clamp the cable inside the cable clamp to hold it. The adapter has numbers on the connector 1, 2, 3, 4, matching the connector on the PCB. (Number 1 is the yellow cable)

STEP 15B. CONNECT COMMUNICATION CABLE TO COMBO TERMINAL BOARD

• Connect the communication cable between D-SUB connector J100 on RS422 Terminal board and D-SUB connector J301 on Combo Terminal board. (See Appendix for details)..
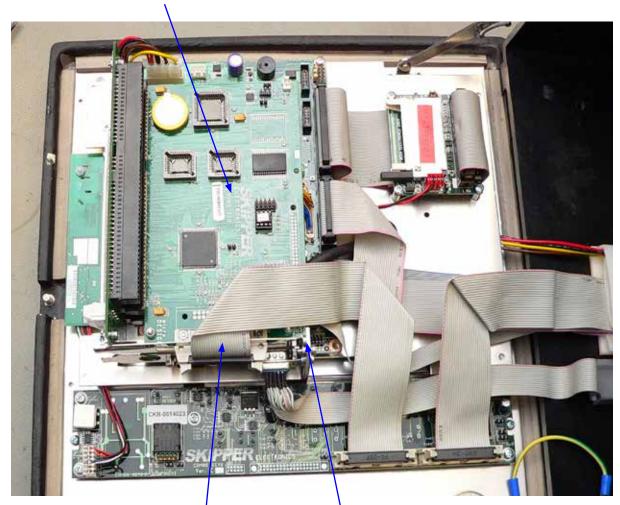
Power cable adaptor

STEP 16. CONNECT AND SECURE THE NEW I/O BOARD

- Mount the new I/O board back in its slot, and secure it with 1 screw.
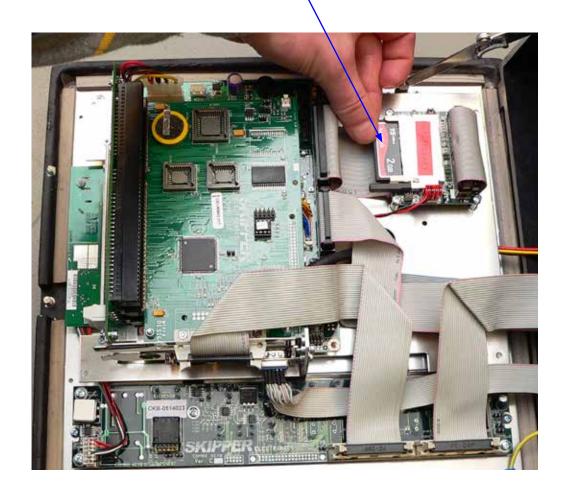- Connect the flat ribbon cable as shown.

New I/O board.

Flat ribbon cable.   Screw.

STEP 17. INSERT COMPACT FLASH IN MESA BOARD

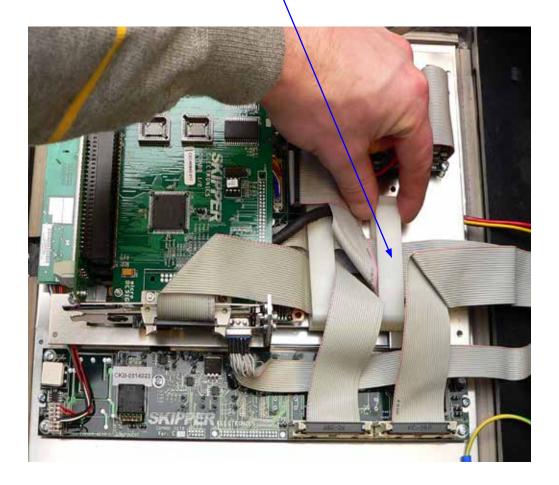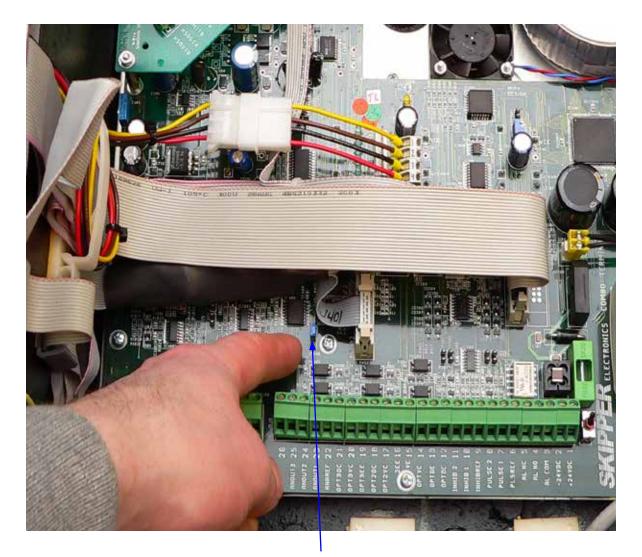- Insert the Compact flash in the CF card reader, if not already inserted.

STEP 18. SECURE RIBBON CABLES

- Secure the ribbon cables in its cable clips.

STEP 19. MOVE JUMPER J400 TO CORRECT POSITION

- Move jumper (JP400) one step up from pin 2, 3 to pin 1, 2.
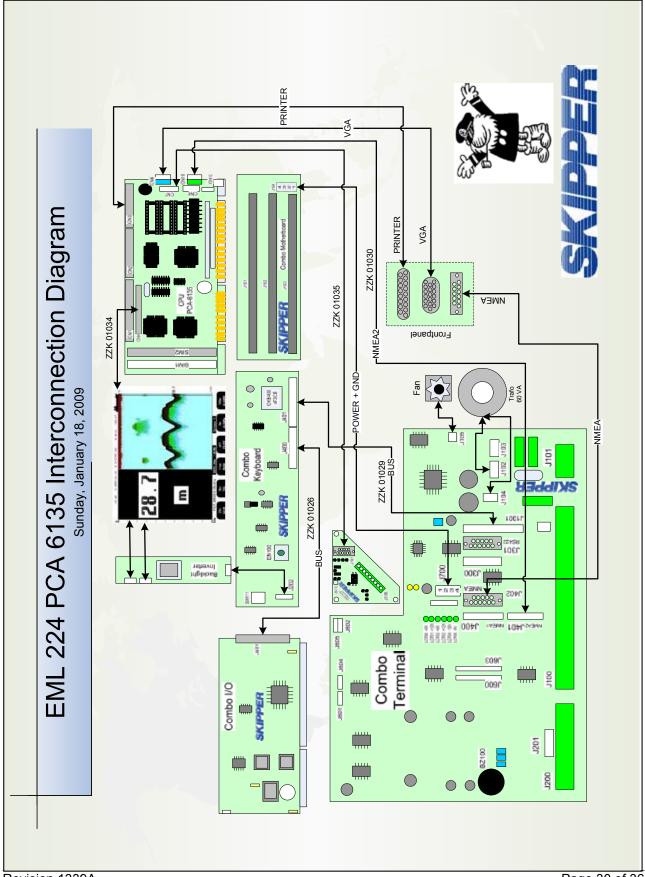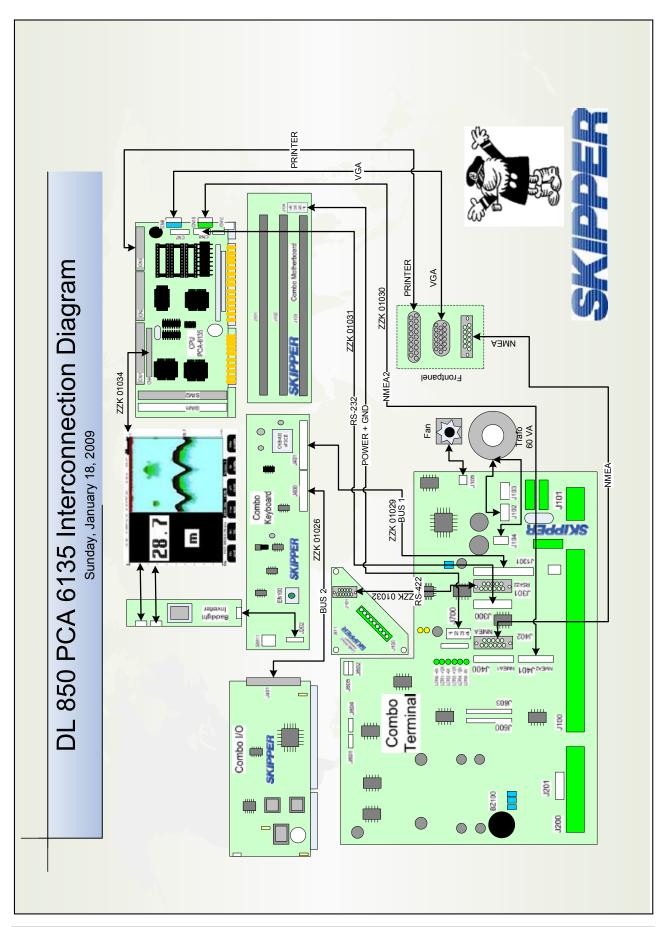- You can now power up the unit.

Jumper JP400

APPENDIX 1. UNITS BEFORE UPGRADE

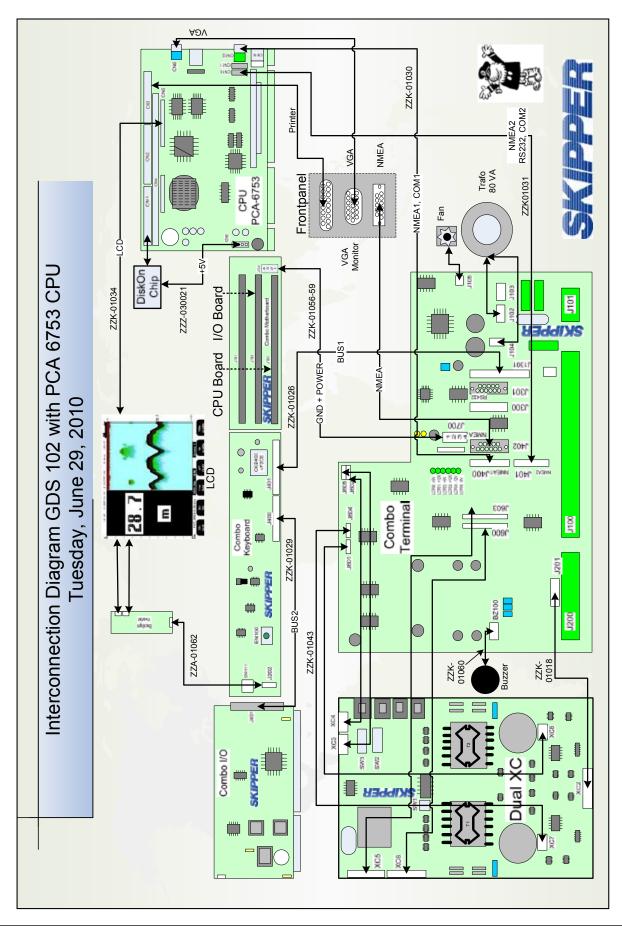## INTERCONNECTIONS BEFORE UPGRADE, EML224 WITH PCA 6135 CPU BOARD

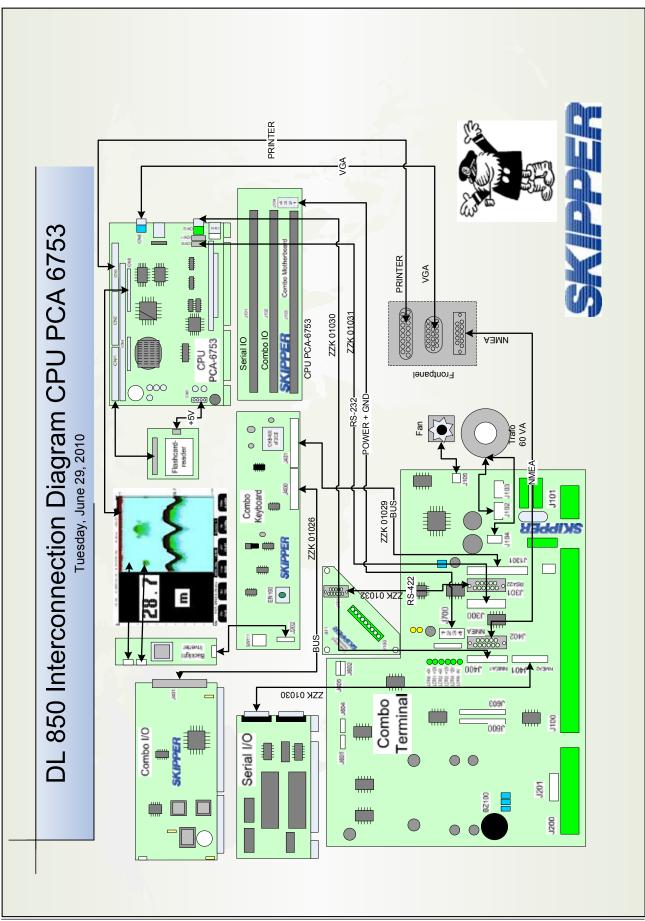## INTERCONNECTIONS, BEFORE UPGRADE, DL850 WITH PCA 6135 CPU BOARD

INTERCONNECTIONS BEFORE UPGRADE, GDS102 WITH PCA 6753 CPU BOARD

Interconnection Diagram GDS 102 with PCA 6753 CPU
Tuesday, June 29, 2010

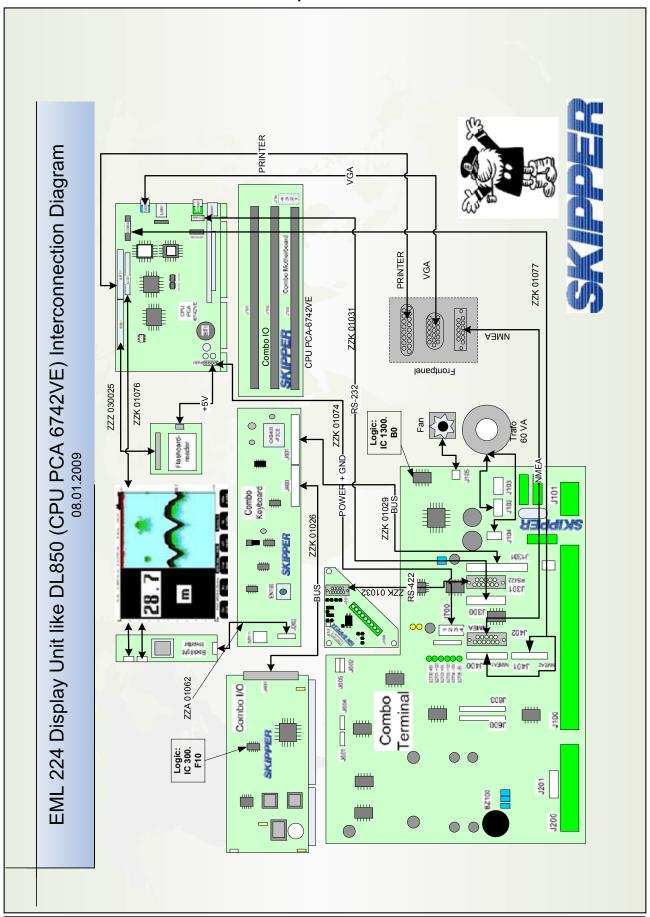# INTERCONNECTIONS BEFORE UPGRADE DL850 WITH PCA 6753 CPU BOARD

APPENDIX 2. UNITS AFTER UPGRADE

INTERCONNECTIONS AFTER UPGRADE, EML224 WITH PCA 6742 CPU BOARD

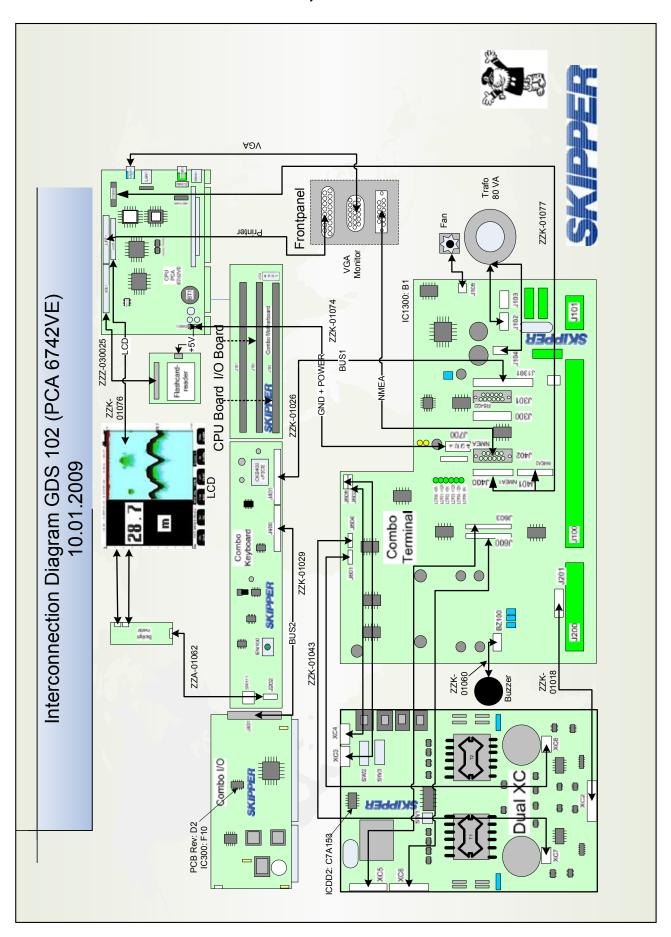EML 224 Display Unit like DL850 (CPU PCA 6742VE) Interconnection Diagram
08.01.2009

INTERCONNECTIONS AFTER UPGRADE, DL850 WITH PCA 6742 CPU BOARD

DL 850 Display Unit (CPU PCA 6742VE) Interconnection Diagram

08.10.2010

INTERCONNECTIONS AFTER UPGRADE, GDS102 WITH PCA 6742 CPU BOARD

Interconnection Diagram GDS 102 (PCA 6742VE)
10.01.2009