



Opencockpits



Manual PCB Pedestal B737.

Index:

MANUAL PCB PEDESTAL B737.....	1
INDEX:.....	2
INTRODUCTION:.....	3
IOCARDS WIRING:.....	3
WIRING BASE LAYER:.....	3
WIRING MASTER-DISPLAYS:.....	4
WIRING THE DISPLAYS:.....	5
Displays 1 & 2:.....	6
Display 3:.....	9
WIRING DISPLAYS AND PCB PEDESTAL:.....	11
WIRING MASTER-PCB PEDESTAL:.....	13
CONNECTING IDC PANELS:.....	14
WIRING PANEL COMM:.....	14
Description of connectors COMM captain:.....	15
Description of connectors COMM first officer:.....	15
WIRING NAV:	16
Description of connectors NAV captain:.....	17
Description of connectors NAV first officer:.....	18
WIRING ADF:	19
Description of connectors ADF captain:.....	19
Description of connectors ADF first officer:.....	20
WIRING AUDIO:	21
Description of connectors Audio captain:.....	21
WIRING FIRE CARGO:.....	23
Description of connectors Fire cargo:.....	24
WIRING FIRE ENGINES:	25
Description of connectors Fire Engines:.....	26
WIRING RUDDER TRIM:	28
Description of connectors Rudder Trim:.....	28
WIRING ATC:	29
Description of connectors ATC:.....	30
WIRING RADAR:.....	31
Description of connectors RADAR:	32
WIRING STAB TRIM:	33
Description of connectors STAB TRIM:.....	33
WIRING USB DIMMCONTROL:	34
Description of connectors DimmControl:.....	35
Operation of the card:.....	35
LISTADO IOCARDS Y CABLES IDC PEDESTAL B737 / B737'S PEDESTAL IOCARDS & IDC CABLES	
LIST:	37
IOCARDS:	37
DATA CABLES:	37
IDC CABLES:	37
LINKS OF INTEREST:	47

Introduction:

The B737 PCB Pedestal card is a plate designed to mount around the pedestal of the B737 without complex cable assemblies and welds can connect Opencockpits IDC panels. The Pedestal card serves as wiring to connect an USB Expansion and Master cards with IDC modules using IDC ribbon cables that Opencockpits offers.

In addition it is designed for the user who does not have knowledge of welding or unwilling to make the cables can assemble a complete pedestal by simply inserting cables with IDC type connectors.

In this manual we will try to explain the electronic wiring and assembly of IDC panels plus additional cards like USB DimmControl.

IOCards wiring:

The pedestal mount is advisable to do layers. The layers of the pedestal can be set as four and three of them have active electronics, will see the wiring of each type of card at the end of mounting only have to connect the IDC terminals our panels without making a single weld.

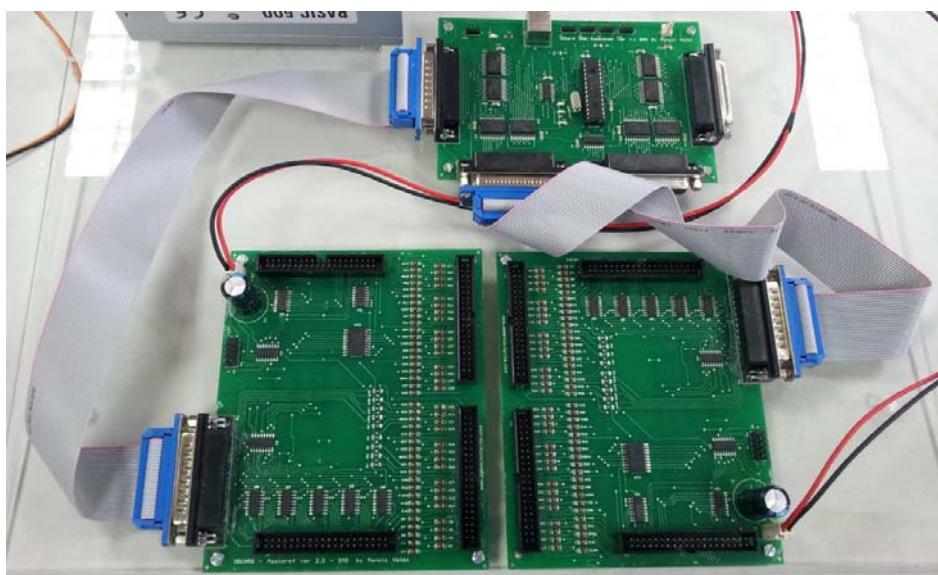
Wiring Base Layer:

This layer contains the power supply, USB Expansion Card and two Master that connect via IDC ribbon cables to the cards of the intermediate layer.

The power supply has three outputs: 3.3 V (orange-black), 5V (red-black) and 12V (yellow-black).

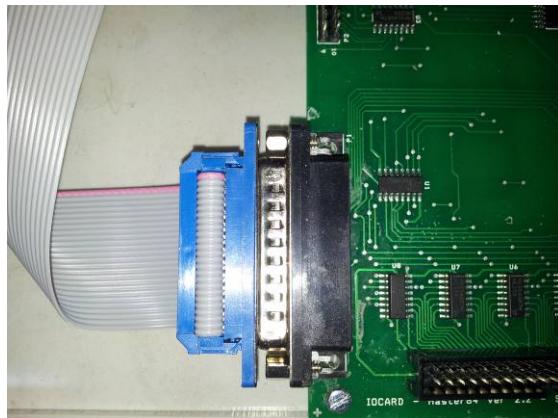
- The 12V output is optional in case a user wants to connect any additional lighting or electronics.
- The 3.3 V are to power the backlight panels via USB DimmControl (see your manual).
- The 5V feed both Masters and controlling USB Servo Rudder servo panel.

The Expansion USB connects to the Masters using the 25-pin cable:



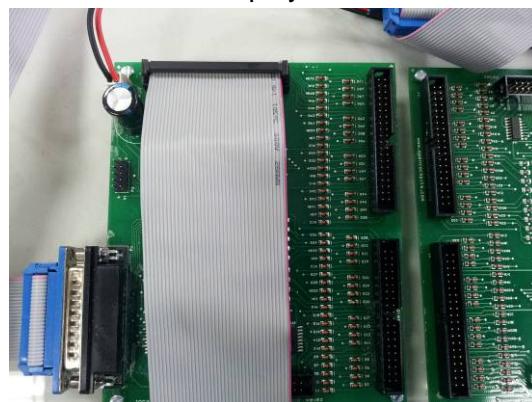
To not get confused with too many wires we will work only with one side of the pedestal, we will use the left side of the captain or is what we see to the left of the image above. To the side of the first officer is just as.

Let's see in detail connections to the Master Expansion:



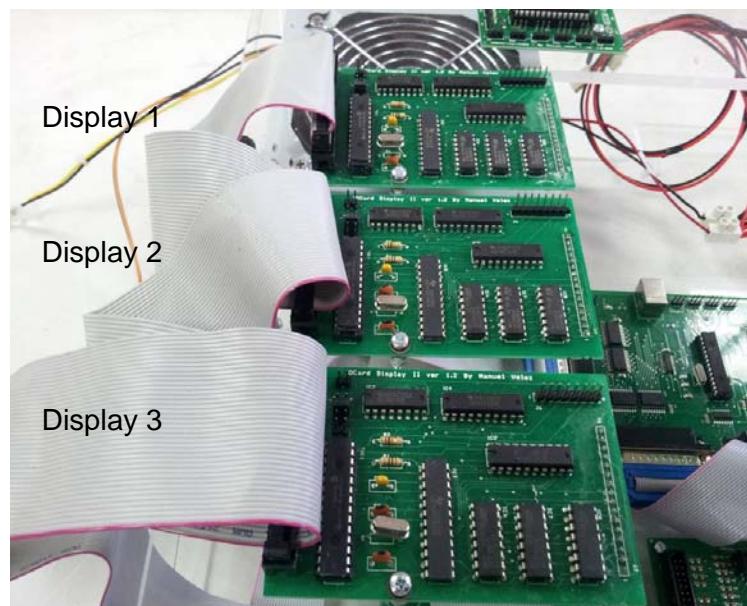
Wiring Master-Displays:

The wiring of the displays of captains side (Side 1) begins by connecting the cable with 4 connectors 40-pin IDC to the Master 1 and displays Side 1:

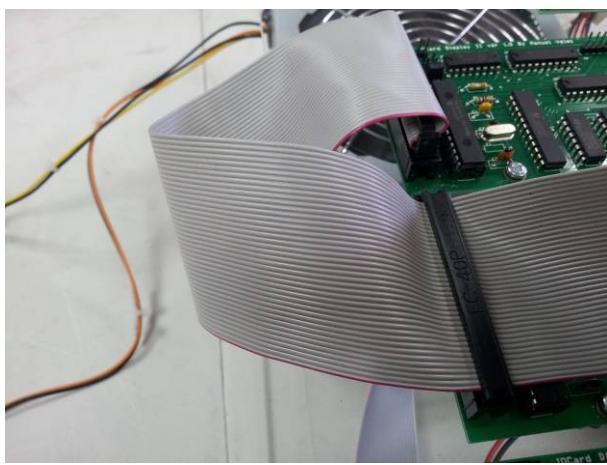
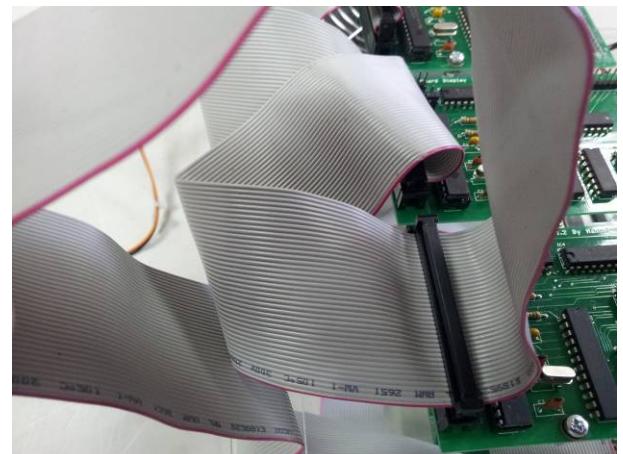
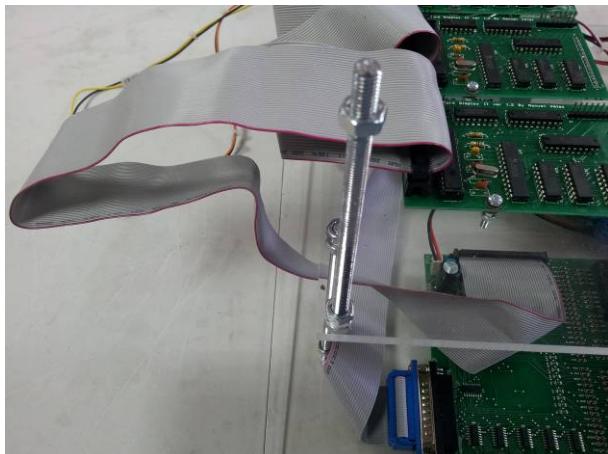


Displays cable up to the intermediate layer and is fixed at three displays 1, 2 & 3.

The order of the displays is 1 toward the front (top of the power supply), 2 and 3 back to behind (above the master):



Connection sequence: Master-Display 3-Display 2-Display 1, details:



The connection for side 2 is the same but in this order:
Master-Display 1-Display 2-Display 3.

Wiring the Displays:

The wiring between the displays cards need a little more attention because we use three of them connected to the same Master. In addition two of them are connected to the PCB Pedestal by a single cable and the third with a separate connector of the other two.

The connection between the displays 1 and 2 is made with 2 wires of 3 connector, one cable is 16 wires and the other cable 34 wires.

The card displays using multiplexing technology to be identified up to four of them with the same cable, so you will use this feature to connect.

For those who do not know the structure of the IDC connectors put an example to become familiar with it:

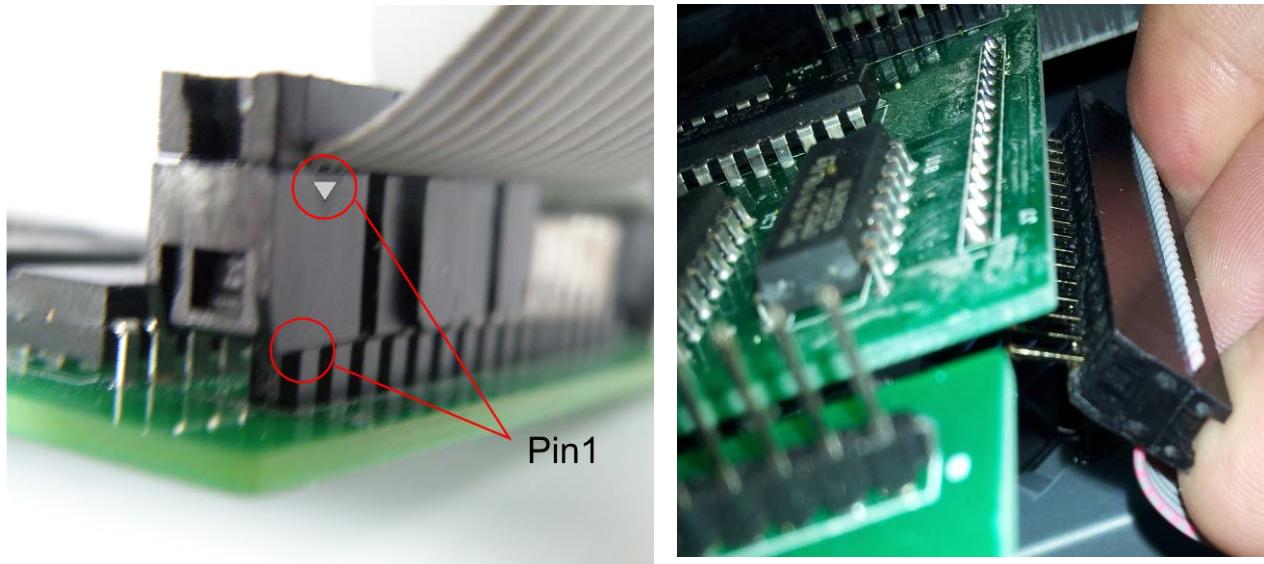


Displays 1 & 2:

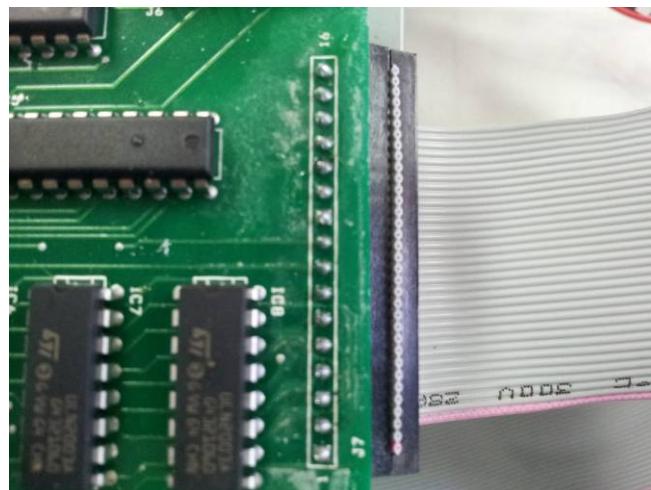
Cable 34 contacts with three connectors.

The 34 pin connector farthest from the other remains free to connect with pedestal card, the connector on the other end of the cable connects to the display 1 as follows:

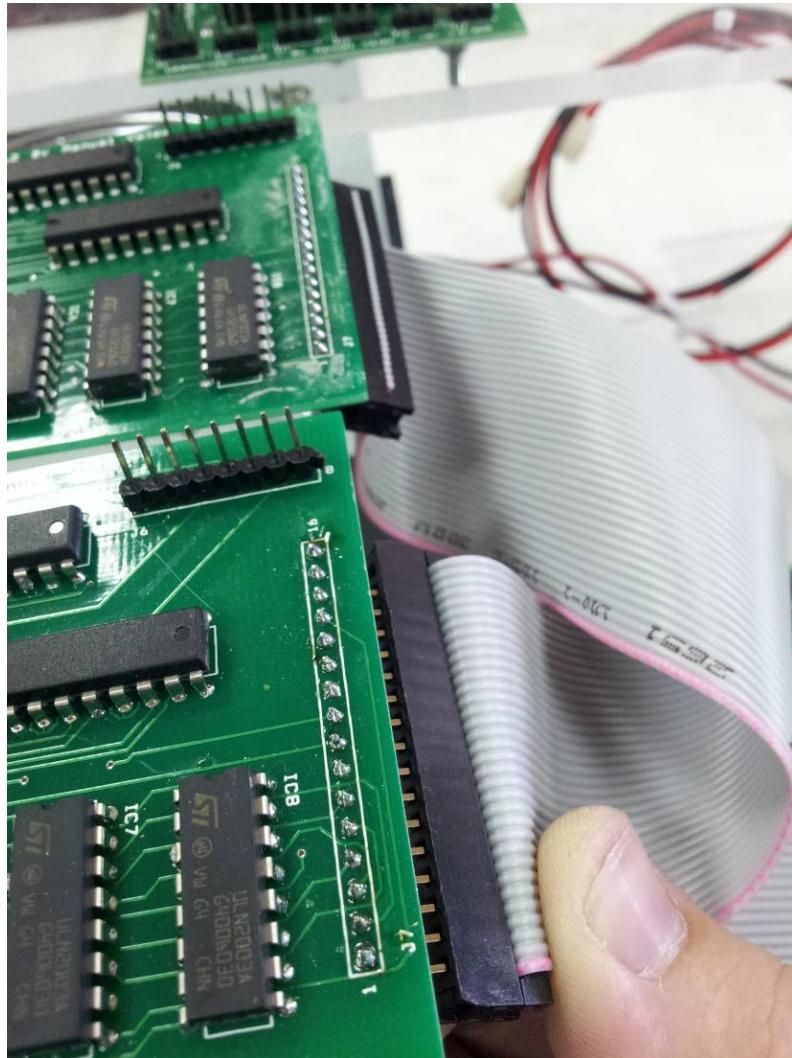
Row of pins on the display 1 card with the odd row of holes on the cable connector, matching the Pin 1 of each connector (pin 1 of the display with red wire). Are free the pair holes and hole 33 connector cable:



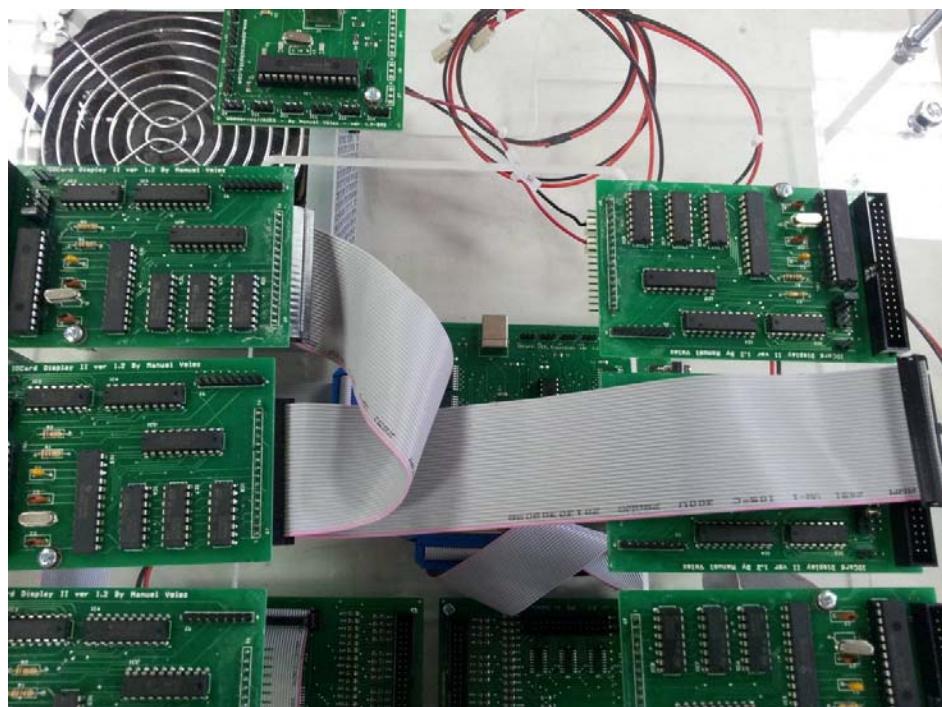
As you can see in the picture (display card adapted for the manual) pins 1 match and holes 33 and all pair holes of the connector are free.



The next step is to connect the display 1 with display 2 using the free connector. Use this connector pairs row holes, being free odd holes and 34:



Lagging follows the cable ready to climb the next layer PCB and connect with PCB Pedestal.



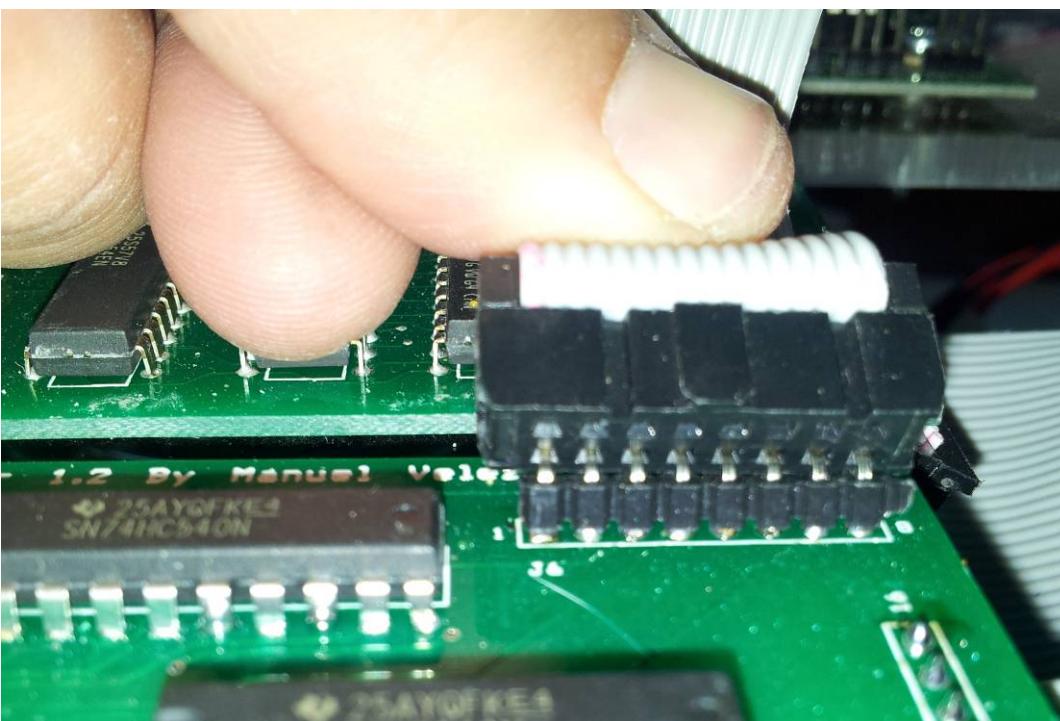
Cable of 16 contact with three connectors.

The connector further from other connectors remains free to connect with pcb pedestal card, the connector on the other end of the cable connects to the display 1 as follows:

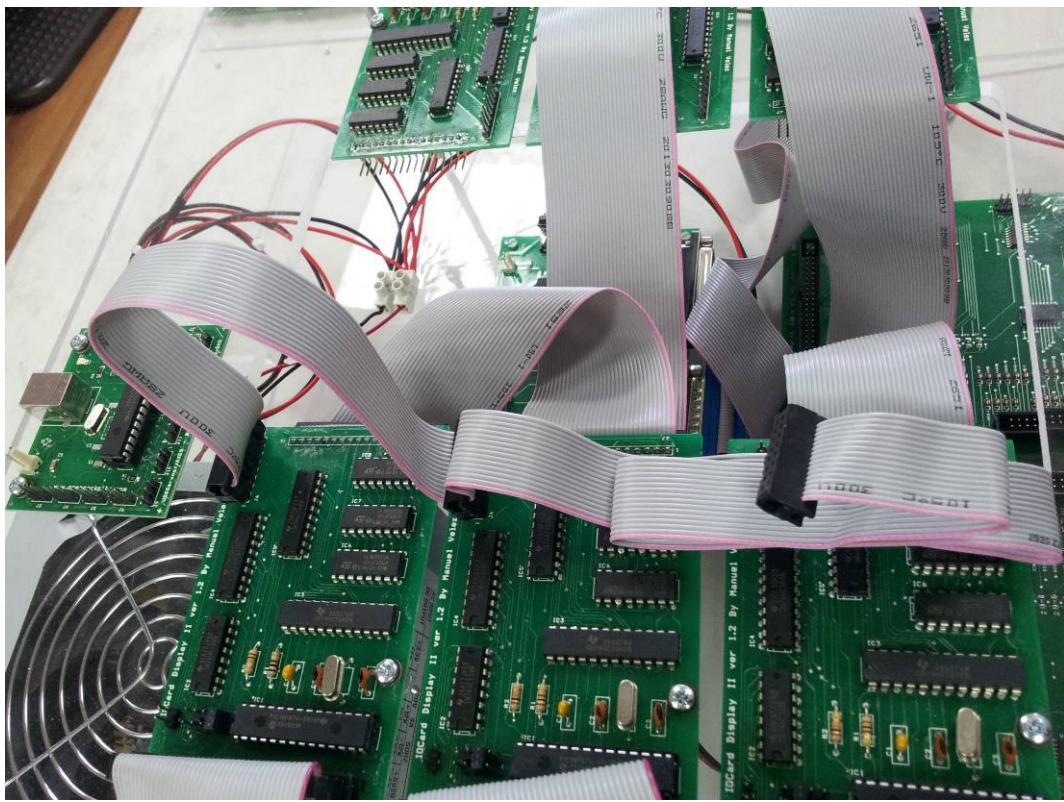
8 pin row of the display 1 (J6 connector) with the odd row of holes on the cable connector, card matching the Pin 1 of each connector (pin 1 of the display with red wire of the cable):



The central connector cable connects to the connector J6 of display 2 using the row of pairs holes in the connector:



Being all the displays 1 and 2 with a free end for connecting the PCB Pedestal:



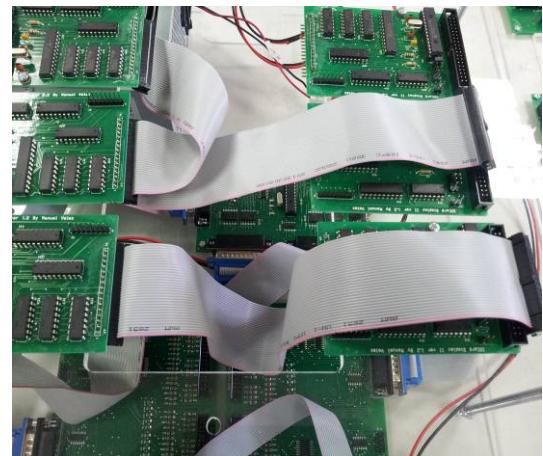
Display 3:

Cable of 34 contacts with 2 connectors.

Now we will make the 34 wires cable connection with Display 3. This cable has only two connectors, one for PCB Pedestal and one for the display, the latter used the row of odd contacts, matching pin 1 of both connectors and being free pair contacts and 33:



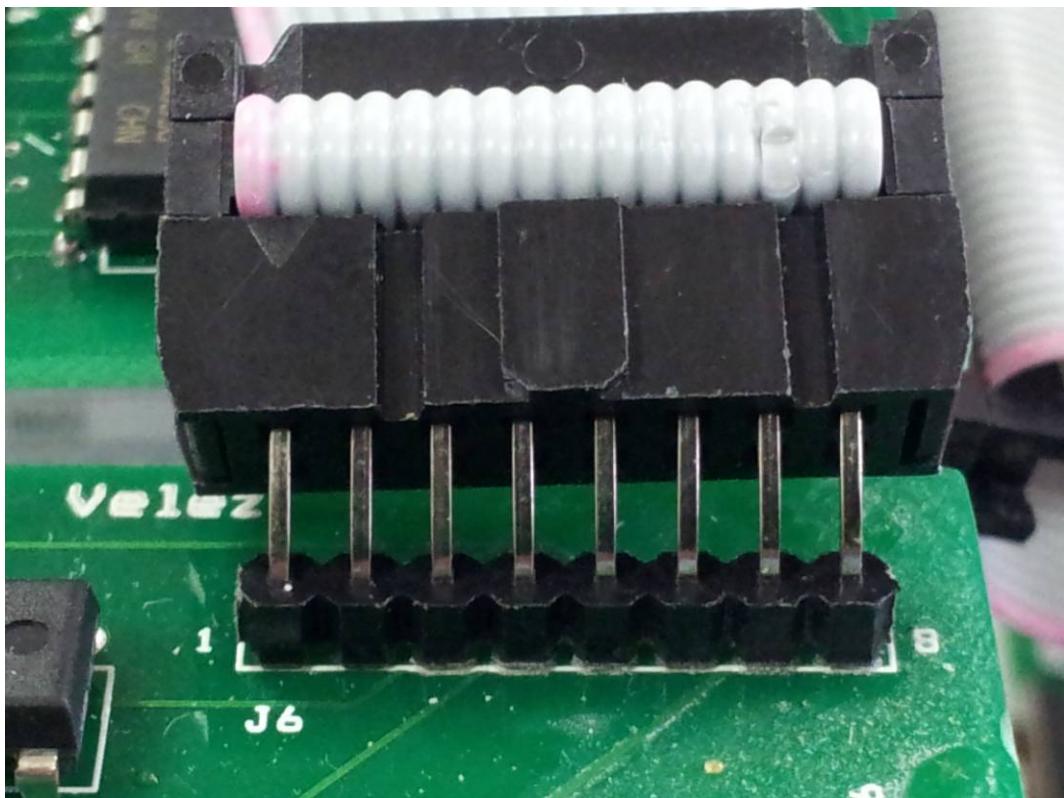
Being like:



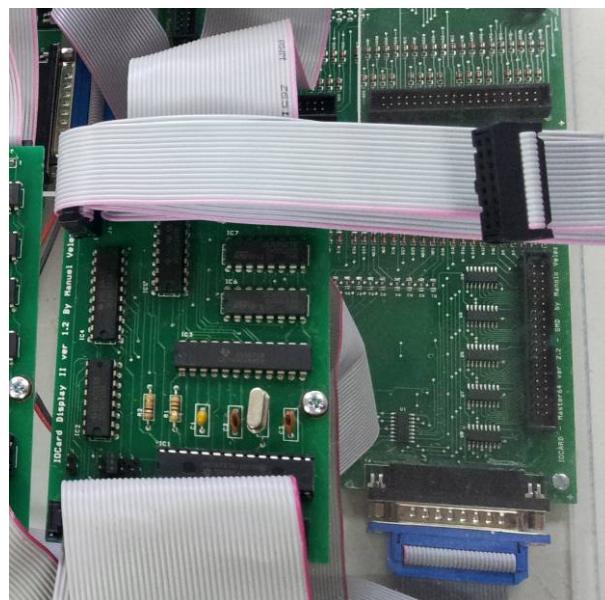
Cable of 16 contacts with two connectors.

The cable connector is connected to the display 3 as follows:

8 pins row of the display 3 board (J6 connector) with odd row cable connector holes, matching the Pin 1 of each connector (pin 1 of the display with red wire the cable), just like the card display 1:



Being wiring Display 3 as well:



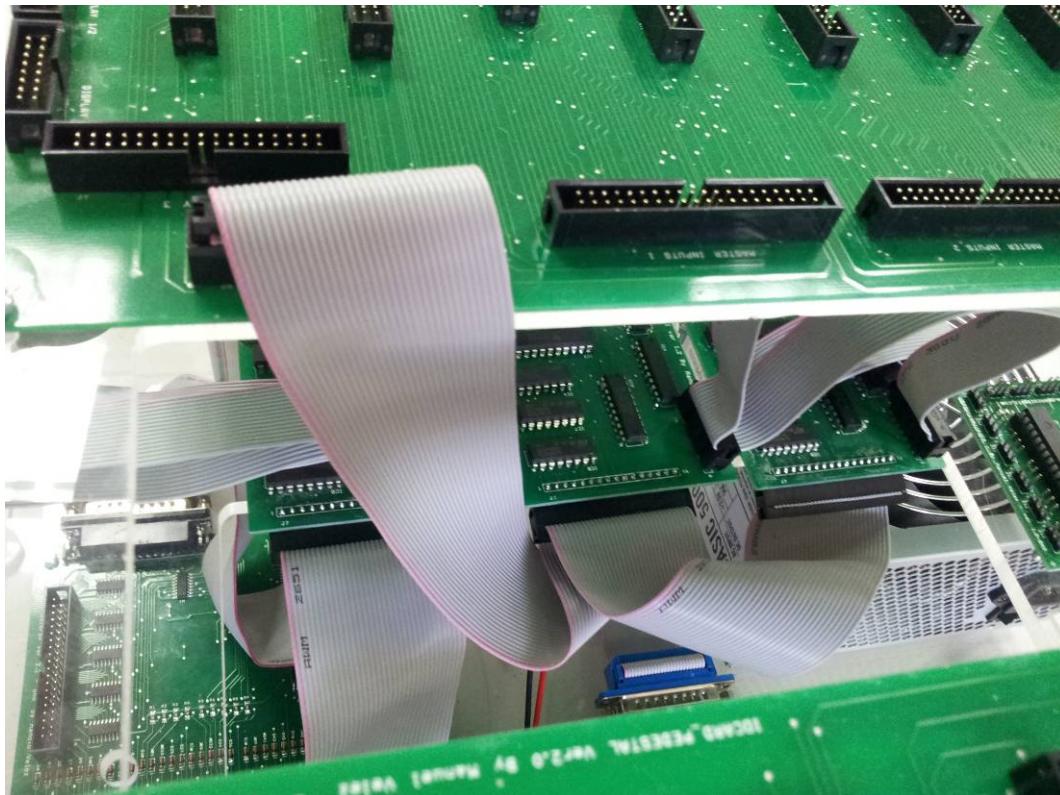
Now is connect free terminals to the card PCB Pedestal.

Wiring Displays and PCB Pedestal:

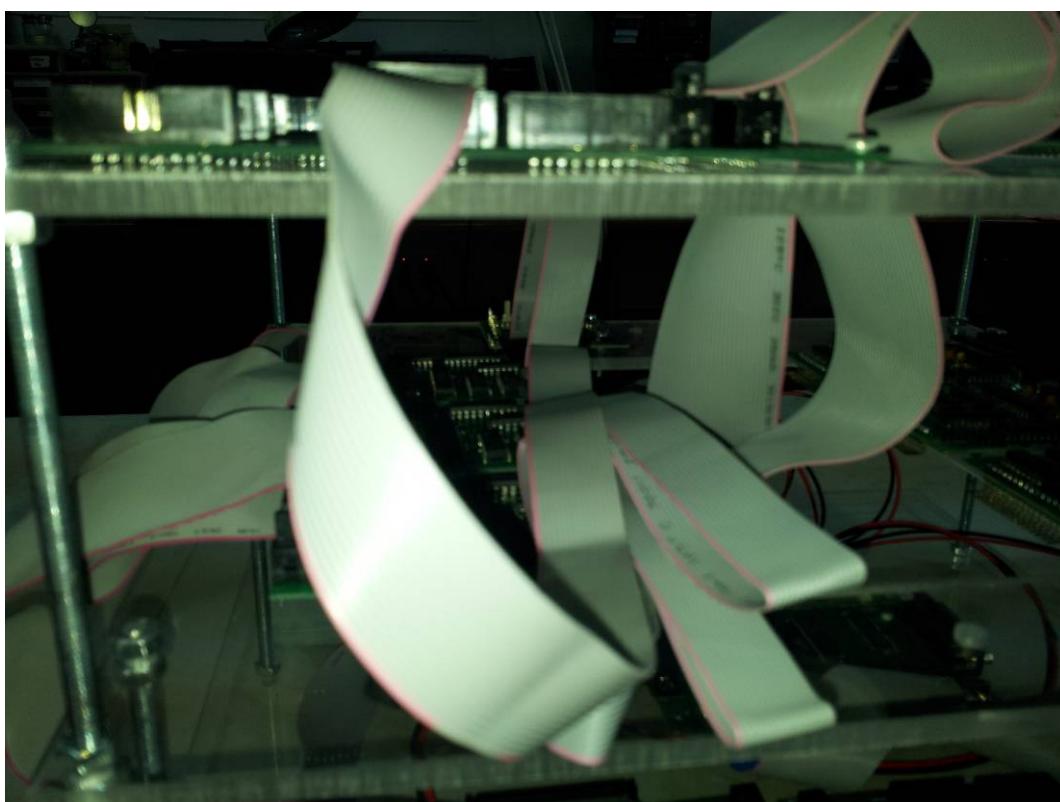
Displays 1 & 2:

The wires of displays 1 and 2 are connected to pedestal card 1 to their respective ports:

34 contacts wire connector - Connector 34 pins PCB DISPLAY 1/2.



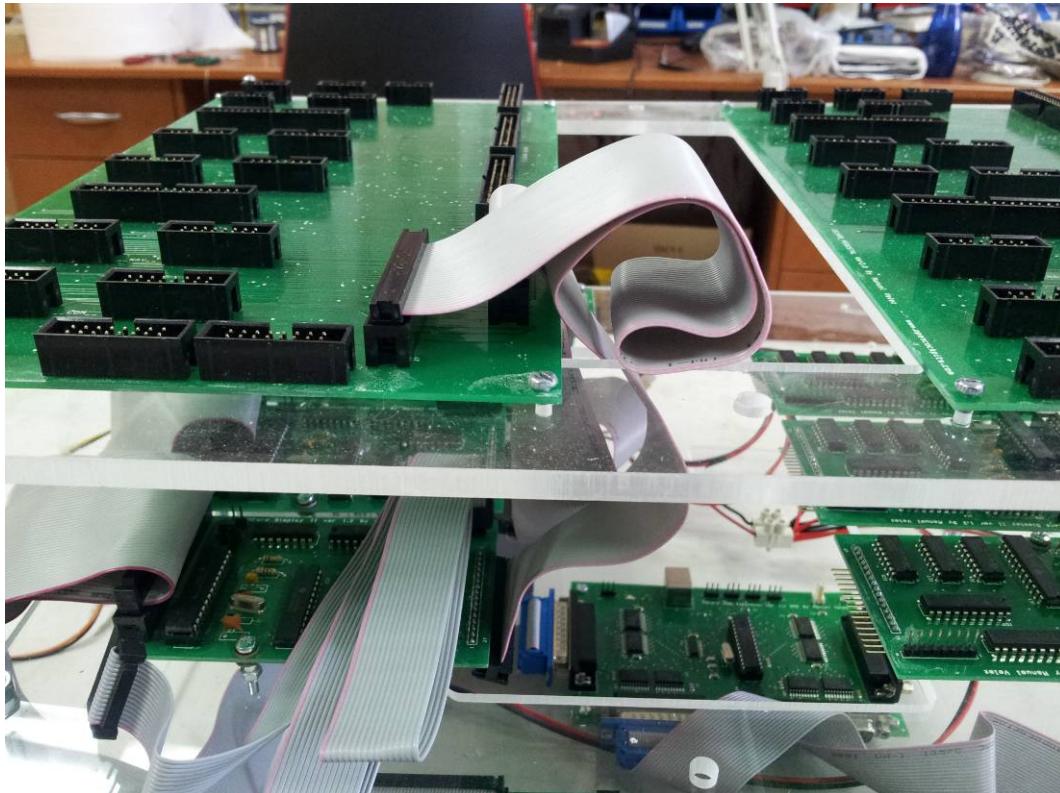
16 contacts connector wire - Connector 16 pins PCB DISPLAY 1/2.



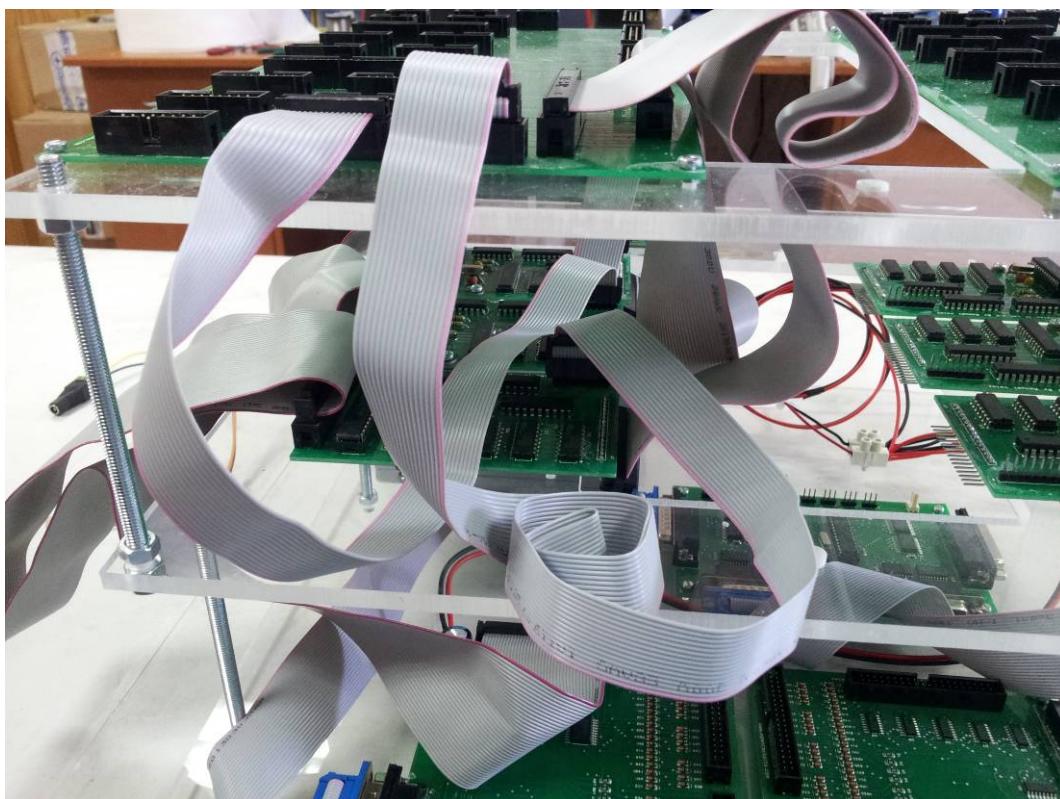
Display 3:

The display 3 cable is connected to the pedestal card 1 in their respective ports:

34 contacts connector cable - Connector 34 pins PCB DISPLAY 3.



16 contacts connector cable - Connector 16 pins PCB DISPLAY 3.

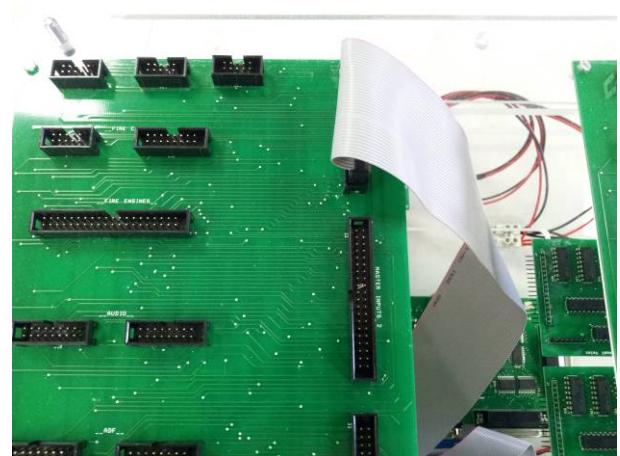
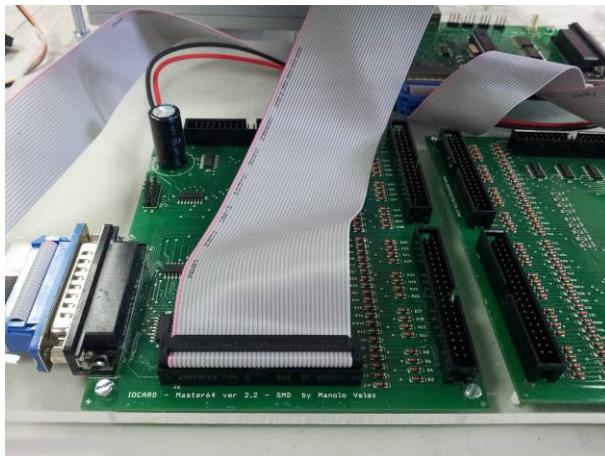


Now we will see how to connect the inputs and outputs of the card PCB Master Pedestal.

Wiring Master-PCB Pedestal:

Outputs Master 1:

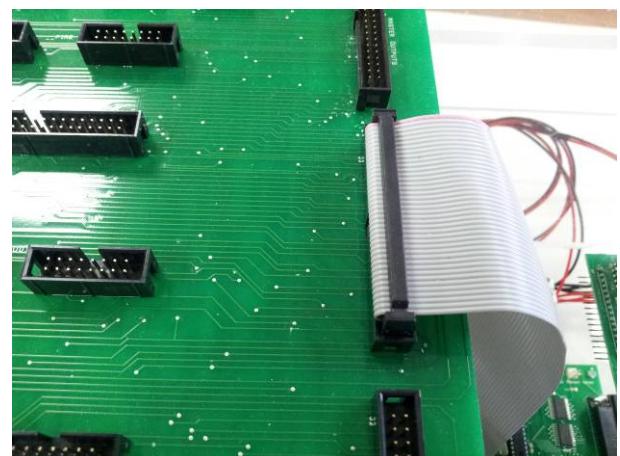
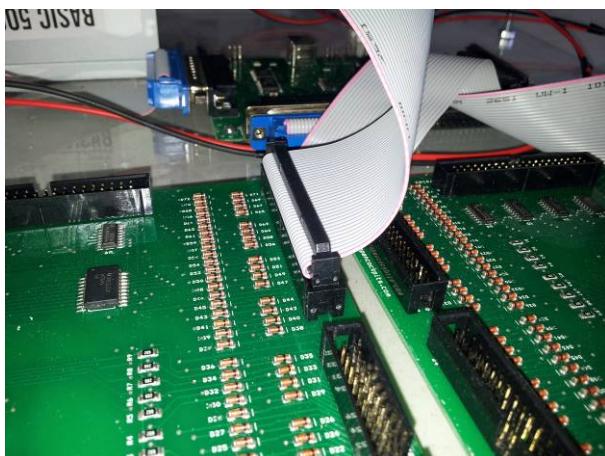
The output wiring is much simpler than the displays. Simply connect the output of the Master (J2) with MASTER OUTPUTS connector on PCB Pedestal:



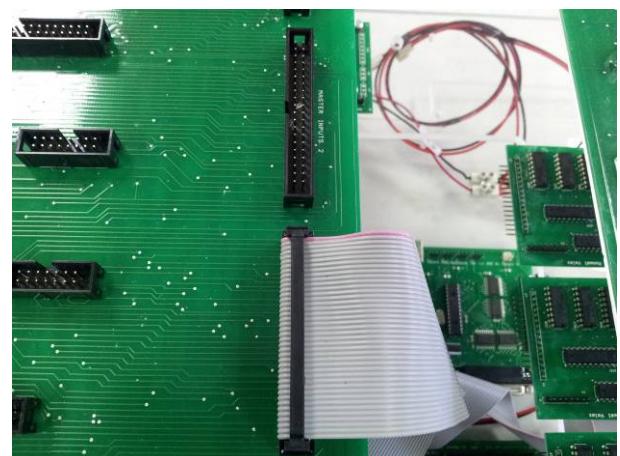
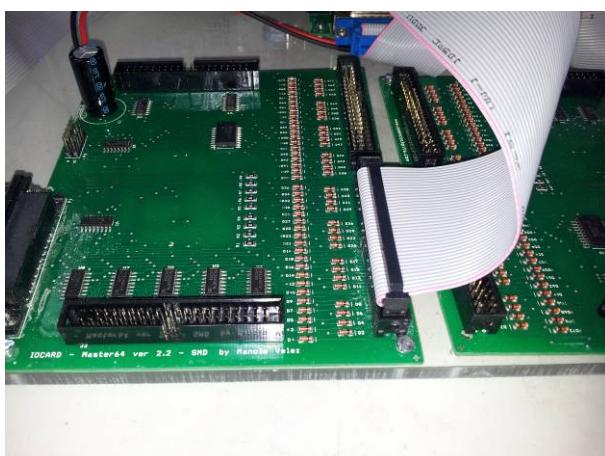
Inputs Master 1:

The input wiring is the same as the outputs. Just connect the inputs of the Master (J3 and J4) to the MASTER INPUTS 1 & 2 of PCB Pedestal.

Inputs 2:



Inputs 1:



It only remains to connect the IDC modules to the PCB Pedestal card, each of them has in its own connector.

Connecting IDC panels:

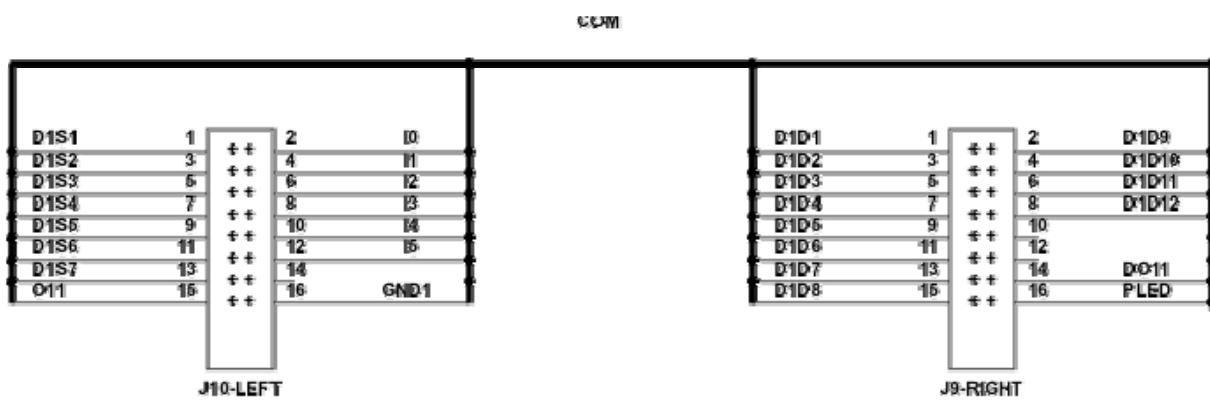
Each IDC panel has its own connector on the PCB Pedestal board, with the following specifications:

SIDE 1 CAPTAIN	SIDE 2 FIRST OFFICER
COMM	COMM
NAV	NAV
ADF	ADF
AUDIO	AUDIO
FIRE ENGINES	FIRE CARGO
RUDDER TRIM	ATC
RADAR	STAB TRIM

This is because the fire cargo and the fire engine panels can not be connected to the same card.

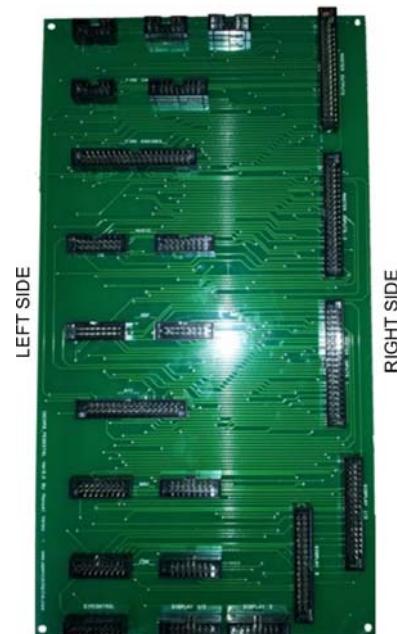
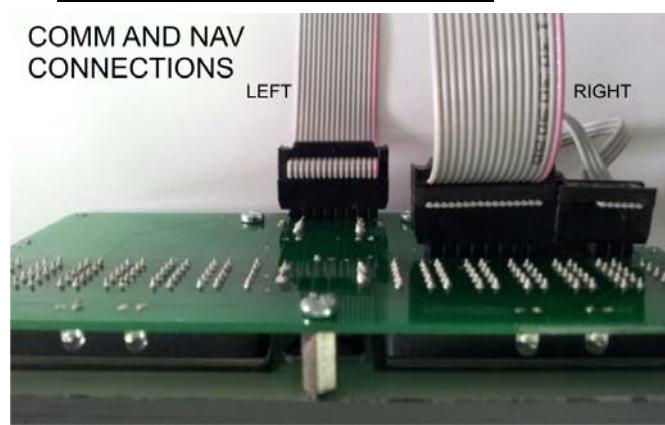
Wiring panel COMM:

COMM B737 IDC connectors can be plugged to any I/O card and to Pedestal PCB using 16 contacts IDC connectors:



The names of the connectors on the PCB panel and the pedestal are the following:

PANEL IDC	PCB PEDESTAL
J3	J10
J2	J9



Description of connectors COMM captain:

Captain's side COMM is plugged to PCB Pedestal 1 (Master 1).

J10 CONNECTOR LEFT	J9 CONNECTOR RIGHT
<p>Inputs 0-1 = Encoder decimals. Input 2-3 = Encoder integers. Input 4 = Test button. Input 5 = TFR button (swap). Output 11 = Decimal dot. D1S1 = output 0, Digit 1 frequency active. D1S2 = output 1, Digit 2 frequency active. D1S3 = output 2, Digit 3 frequency active. D1S4 = output 3, Digit 4 frequency active. D1S5 = output 4, Digit 5 frequency active. D1S6 = output 5, Digit 6 frequency active. D1S7 = output 6, Digit 1 frequency standby. GND1 = COMMON or GND.</p>	<p>D1D1 = output 7, Digit 2 frequency standby. D1D2 = output 8, Digit 3 frequency standby. D1D3 = output 9, Digit 4 frequency standby. D1D4 = output 10, Digit 5 frequency standby. D1D5 = output 11, Digit 6 frequency standby. D1D6 = No active. D1D7 = No active. D1D8 = No active. D1D9 = No active. D1D10 = No active. D1D11 = No active. D1D12 = No active. DO11 = Negative backlight. PLED = Positive backlight. Are needed 2.5 volts to 2.9 volts. ActiveWarning: may burn more voltage backlight!</p>

Description of connectors COMM first officer:

First officer COMM is connected to PCB Pedestal 2 (Master n°2).

J10 CONNECTOR LEFT	J9 CONNECTOR RIGHT
<p>Inputs 72-73 = Encoder decimals. Input 74-75 = Encoder integers. Input 76 = Test button. Input 77 = TFR button (swap). Output 75 = decimal dot. D1S1 = output 64, Digit 1 frequency active. D1S2 = output 65, Digit 2 frequency active. D1S3 = output 66, Digit 3 frequency active. D1S4 = output 67, Digit 4 frequency active. D1S5 = output 68, Digit 5 frequency active. D1S6 = output 69, Digit 6 frequency active. D1S7 = output 70, Digit 1 frequency standby. GND1 = COMMON or GND.</p>	<p>D1D1 = output 71, Digit 2 frequency standby. D1D2 = output 72, Digit 3 frequency standby. D1D3 = output 73, Digit 4 frequency standby. D1D4 = output 74, Digit 5 frequency standby. D1D5 = output 75, Digit 6 frequency standby. D1D6 = No active. D1D7 = No active. D1D8 = No active. D1D9 = No active. D1D10 = No active. D1D11 = No active. D1D12 = No active. DO11 = Negative for backlight. PLED = Positive for backlight. It takes 2.5 volts to 2.9 volts. ActiveWarning: may burn more voltage backlight!</p>

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs Panel COMM IDC:

To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

// DIGITS COMM

```
Var 100, name CM1ACT, Link IOCARD_DISPLAY, DEVICE X, Digit 0, Numbers 6
Var 102, name CM1STBY, Link IOCARD_DISPLAY, DEVICE X, Digit 6, Numbers 6
Var 104, name CM2ACT, Link IOCARD_DISPLAY, DEVICE X, Digit 64, Numbers 6
Var 106, name CM2STBY, Link IOCARD_DISPLAY, DEVICE X, Digit 70, Numbers 6
```

// OUTPUTS COMM

```
Var 200, name COM1DOT, Link IOCARD_OUT, DEVICE X, Output 11 // COMM 1 DECIMAL
Var 202, name COM2DOT, Link IOCARD_OUT, DEVICE X, Output 75 // COMM 2 DECIMAL
```

// ROTARY ENCODERS COMM

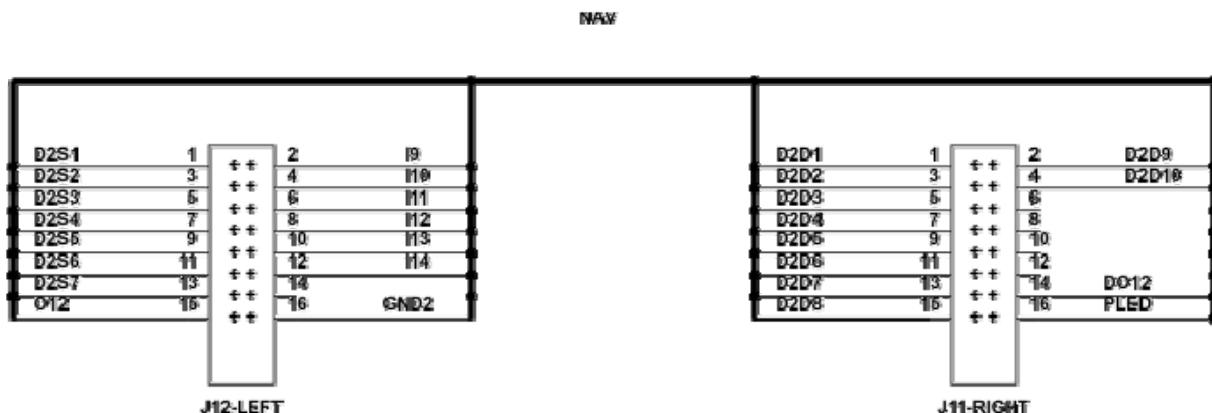
```
Var 350, name E_CM1DEC, Link IOCARD_ENCODER, DEVICE X, Input 0, Aceleration 1, Type 2 // COMM 1 ENCODER DECIMAL
Var 352, name E_CM1ENT, Link IOCARD_ENCODER, DEVICE X, Input 2, Aceleration 1, Type 2 // COMM 1 ENCODER ENTEROS/INTEGER
Var 354, name E_CM2DEC, Link IOCARD_ENCODER, DEVICE X, Input 72, Aceleration 1, Type 2 // COMM 2 ENCODER DECIMAL
Var 356, name E_CM2ENT, Link IOCARD_ENCODER, DEVICE X, Input 74, Aceleration 1, Type 2 // COMM 2 ENCODER ENTEROS/INTEGER
```

// SWITCHES COMM

```
Var 400, name S_CM1TST, Link IOCARD_SW, DEVICE X, Input 4
Var 402, name S_CM2TST, Link IOCARD_SW, DEVICE X, Input 76
Var 404, name S_CM1SWP, Link IOCARD_SW, DEVICE X, Input 5
Var 406, name S_CM2SWP, Link IOCARD_SW, DEVICE X, Input 77
```

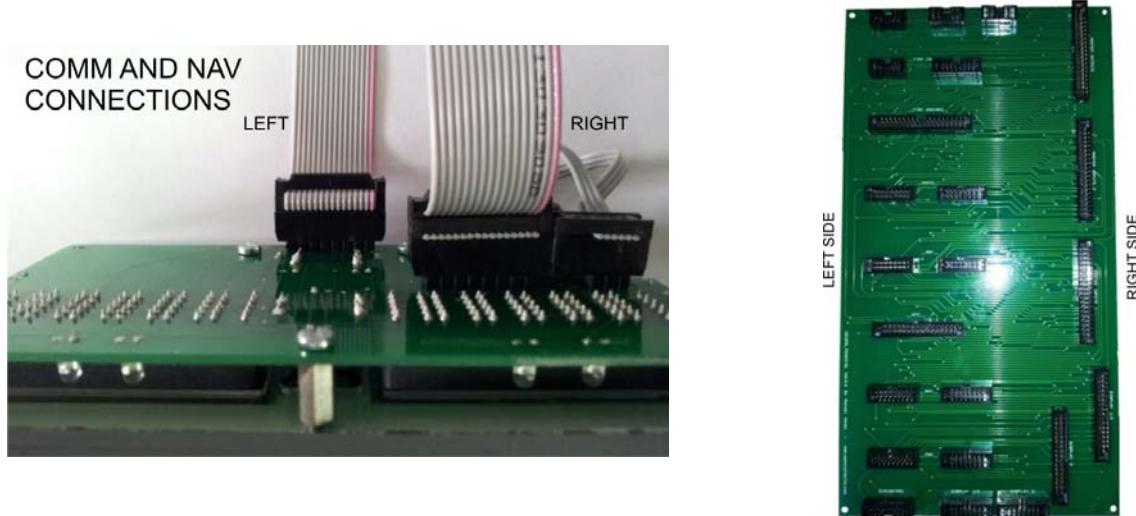
Wiring NAV:

NAV B737 IDC connectors can be plugged to any I/O card and to Pedestal PCB using 16 contacts IDC connectors:



The names of the connectors on the PCB panel and the pedestal are the following:

PANEL IDC	PCB PEDESTAL
J3	J12
J2	J11



Description of connectors NAV captain:

Captain's side NAV is connected to PCB Pedestal 1 (Master n°1).

J12 CONNECTOR LEFT	J11 CONNECTOR RIGHT
<p>Inputs 9-10 = Encoder decimals. Input 11-12 = Encoder integers. Input 13 = Test button. Input 14 = TFR button (swap). Output 12 = Decimal dot. D2S1 = output 16, Digit 1 frequency active. D2S2 = output 17, Digit 2 frequency active. D2S3 = output 18, Digit 3 frequency active. D2S4 = output 19, Digit 4 frequency active. D2S5 = output 20, Digit 5 frequency active. D2S6 = output 21, Digit 1 frequency standby. D2S7 = output 22, Digit 2 frequency standby. GND2 = COMMON or GND.</p>	<p>D2D1 = output 23, Digit 3 frequency standby. D2D2 = output 24, Digit 4 frequency standby. D2D3 = output 25, Digit 5 frequency standby. D2D4 = No active. D2D5 = No active. D2D6 = No active. D2D7 = No active. D2D8 = No active. D2D9 = No active. D2D10 = No active. DO12 = Negative for backlight. PLED = Positive for backlight. It takes 2.5 volts to 2.9 volts. ¡ActiveWarning: may burn more voltage backlight!</p>

Description of connectors NAV first officer:

First officer NAVis connected to PCB Pedestal 2 (Master nº2).

J12 CONNECTOR LEFT	J11 CONNECTOR RIGHT
Inputs 81-82 = Encoder decimals. Input 83-84 = Encoder integers. Input 85 = Test button. Input 86 = TFR button (swap). Output 76 = Decimal dot. D2S1 = output 80, Digit 1 frequency active. D2S2 = output 81, Digit 2 frequency active. D2S3 = output 82, Digit 3 frequency active. D2S4 = output 83, Digit 4 frequency active. D2S5 = output 84, Digit 5 frequency active. D2S6 = output 85, Digit 1 frequency standby. D2S7 = output 86, Digit 2 frequency standby. GND2 = COMMON or GND.	D2D1 = output 87, Digit 3 frequency standby. D2D2 = output 88, Digit 4 frequency standby. D2D3 = output 89, Digit 5 frequency standby. D2D4 = No active. D2D5 = No active. D2D6 = No active. D2D7 = No active. D2D8 = No active. D2D9 = No active. D2D10 = No active. DO12 = Negative for backlight. PLED = Positive for backlight. It takes 2.5 volts to 2.9 volts. ¡ActiveWarning: may burn more voltage backlight!

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs panel NAV IDC:

To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

// DIGITS NAV

```
Var 108, name NV1ACT, Link IOCARD_DISPLAY, DEVICE X, Digit 16, Numbers 5
Var 110, name NV1STBY, Link IOCARD_DISPLAY, DEVICE X, Digit 21, Numbers 5
Var 112, name NV2ACT, Link IOCARD_DISPLAY, DEVICE X, Digit 80, Numbers 5
Var 114, name NV2STBY, Link IOCARD_DISPLAY, DEVICE X, Digit 85, Numbers 5
```

// OUTPUTS NAV

```
Var 204, name NAV1DOT, Link IOCARD_OUT, DEVICE X, Output 12 // NAV 1 DECIMAL DOT
Var 206, name NAV2DOT, Link IOCARD_OUT, DEVICE X, Output 76 // NAV 2 DECIMAL DOT
```

// ROTARY ENCODERS NAV

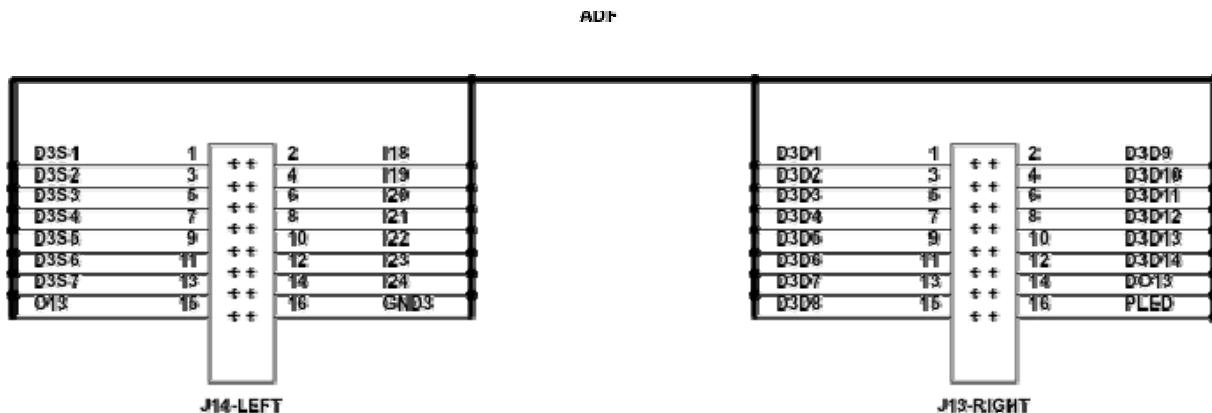
```
Var 358, name E_NAV1DEC, Link IOCARD_ENCODER, DEVICE X, Input 9, Aceleration 1,
Type 2 // NAV 1 ENCODER DECIMAL
Var 360, name E_NAV1ENT, Link IOCARD_ENCODER, DEVICE X, Input 11, Aceleration 1,
Type 2 // NAV 1 ENCODER ENTEROS/INTEGER
Var 362, name E_NAV2DEC, Link IOCARD_ENCODER, DEVICE X, Input 81, Aceleration 1,
Type 2 // NAV 2 ENCODER DECIMAL
Var 364, name E_NAV2ENT, Link IOCARD_ENCODER, DEVICE X, Input 83, Aceleration 1,
Type 2 // NAV 2 ENCODER ENTEROS/INTEGER
```

// SWITCHES NAV

```
Var 408, name S_NAV1TST, Link IOCARD_SW, DEVICE X, Input 13
Var 410, name S_NAV2TST, Link IOCARD_SW, DEVICE X, Input 85
Var 412, name S_NAV1SWP, Link IOCARD_SW, DEVICE X, Input 14
Var 414, name S_NAV2SWP, Link IOCARD_SW, DEVICE X, Input 86
```

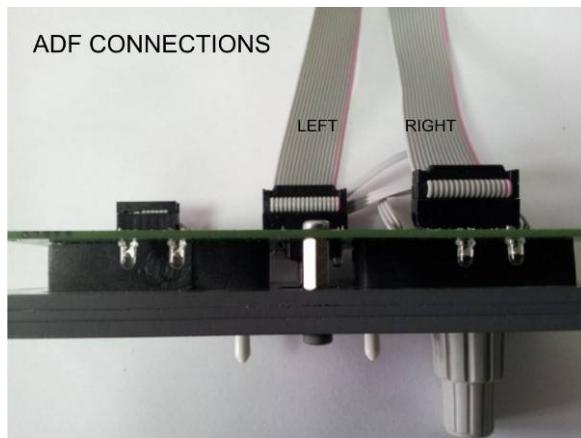
Wiring ADF:

ADF B737 IDC connectors can be plugged to any I/O card and to Pedestal PCB using 16 contacts IDC connectors:



The names of the connectors on the PCB panel and the pedestal are the following:

PANEL IDC	PCB PEDESTAL
J3	J14
J2	J13



Description of connectors ADF captain:

Captain's ADF is connected to PCB Pedestal 1 (Master n°1).

J14 CONNECTOR LEFT	J13 CONNECTOR RIGHT
Inputs 18-19 = Encoder decimals. Input 20-21 = Encoder integers. Input 22 = Button ADF/ANT. Input 23 = TFR button (swap). Input 24 = Button TONE. Output 13 = Decimal dot. D3S1 = output 32, Digit 1 frequency active. D3S2 = output 33, Digit 2 frequency active. D3S3 = output 34, Digit 3 frequency active. D3S4 = output 35, Digit 4 frequency active. D3S5 = output 36, Digit 5 frequency active. D3S6 = output 37, Digit 1 frequency standby.	D3D1 = output 39, Digit 3 frequency standby. D3D2 = output 40, Digit 4 frequency standby. D3D3 = output 41, Digit 5 frequency standby. D3D11 = output 42, indicator ADF freq. active. D3D12 = output 43, indicator ANT freq. active. D3D13 = output 44, indicator ANT freq. standby. D3D14 = output 45, indicator ADF freq. standby. D3D11...D14 are On when take value 0 and are off when take value 1. D3D4...D10 = No actives.

D3S7 = output 38, Digit 2 frequency standby. GND3 = COMMON or GND for inputs.	DO13 = Negative for backlight. PLED = Positive for backlight. It takes 2.5 volts to 2.9 volts. <i>[ActiveWarning: may burn more voltage backlight!]</i>
--	---

Description of connectors ADF first officer:

First officer ADF is connected to PCB Pedestal 2 (Master n°2).

J14 CONNECTOR LEFT	J13 CONNECTOR RIGHT
Inputs 90-91 = Encoder decimals. Input 92-93 = Encoder integers. Input 94 = Button ADF/ANT. Input 95 = TFR button (swap). Input 96 = Button TONE. Output 77 = Decimal dot. D3S1 = output 96, Digit 1 frequency active. D3S2 = output 97, Digit 2 frequency active. D3S3 = output 98, Digit 3 frequency active. D3S4 = output 99, Digit 4 frequency active. D3S5 = output 100, Digit 5 frequency active. D3S6 = output 101, Digit 1 frequency standby. D3S7 = output 102, Digit 2 frequency standby. GND3 = COMMON or GND.	D3D1 = output 103, Digit 3 frequency standby. D3D2 = output 104, Digit 4 frequency standby. D3D3 = output 105, Digit 5 frequency standby. D3D11 = output 106, indicator ADF freq. active. D3D12 = output 107, indicator ANT freq. active. D3D13 = output 108, indicator ANT freq. standby. D3D14 = output 109, indicator ADF freq. standby. D3D11...D14 are on when take value 0 and off when take value 1. D3D4...D10 = No actives. DO13 = Negative for backlight. PLED = Positive for backlight. It takes 2.5 volts to 2.9 volts. <i>[ActiveWarning: may burn more voltage backlight!]</i>

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs panel ADF IDC:

To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

```
// DIGITS ADF
Var 116, name ADF1ACT, Link IOCARD_DISPLAY, DEVICE X, Digit 32, Numbers 5
Var 118, name ADF1STBY, Link IOCARD_DISPLAY, DEVICE X, Digit 37, Numbers 5
Var 120, name ANT1ACT, Link IOCARD_DISPLAY, DEVICE X, Digit 43, Numbers 1
Var 122, name ANT1STBY, Link IOCARD_DISPLAY, DEVICE X, Digit 44, Numbers 1
Var 124, name ADF1A, Link IOCARD_DISPLAY, DEVICE X, Digit 42, Numbers 1
Var 126, name ADF1S, Link IOCARD_DISPLAY, DEVICE X, Digit 45, Numbers 1
Var 128, name ADF2ACT, Link IOCARD_DISPLAY, DEVICE X, Digit 96, Numbers 5
Var 130, name ADF2STBY, Link IOCARD_DISPLAY, DEVICE X, Digit 101, Numbers 5
Var 132, name ANT2ACT, Link IOCARD_DISPLAY, DEVICE X, Digit 107, Numbers 1
Var 134, name ANT2STBY, Link IOCARD_DISPLAY, DEVICE X, Digit 108, Numbers 1
Var 136, name ADF2A, Link IOCARD_DISPLAY, DEVICE X, Digit 106, Numbers 1
Var 138, name ADF2S, Link IOCARD_DISPLAY, DEVICE X, Digit 109, Numbers 1
```

// OUTPUTS ADF

```
Var 208, name ADF1DOT, Link IOCARD_OUT, DEVICE X, Output 13 // ADF 1 DECIMAL DOT
Var 210, name ADF2DOT, Link IOCARD_OUT, DEVICE X, Output 77 // ADF 2 DECIMAL DOT
```

// ROTARY ENCODERS ADF

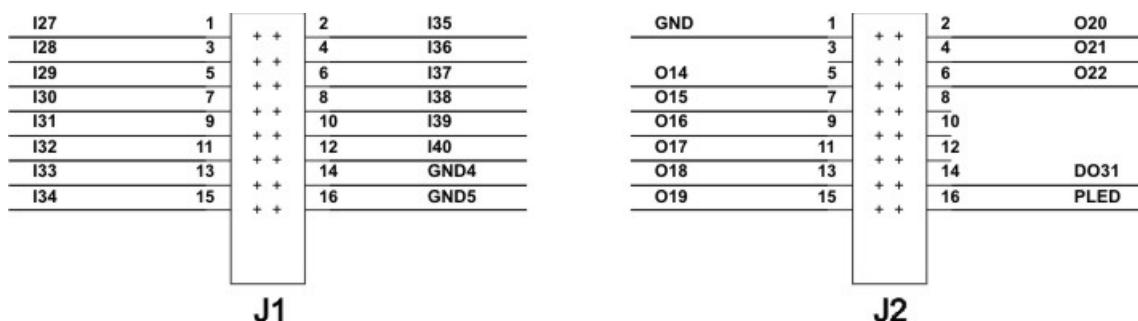
Var 366, name E_ADF1DEC, Link IOCARD_ENCODER, DEVICE X, Input 18, Aceleration 1, Type 2 // ADF 1 ENCODER DECIMAL
 Var 368, name E_ADF1ENT, Link IOCARD_ENCODER, DEVICE X, Input 20, Aceleration 1, Type 2 // ADF 1 ENCODER ENTEROS/INTEGER
 Var 370, name E_ADF2DEC, Link IOCARD_ENCODER, DEVICE X, Input 90, Aceleration 1, Type 2 // ADF 1 ENCODER DECIMAL
 Var 372, name E_ADF2ENT, Link IOCARD_ENCODER, DEVICE X, Input 92, Aceleration 1, Type 2 // ADF 1 ENCODER ENTEROS/INTEGER

// SWITCHES ADF

Var 416, name S_ADF1SWP, Link IOCARD_SW, DEVICE X, Input 23
 Var 418, name S_ADF2SWP, Link IOCARD_SW, DEVICE X, Input 95
 Var 420, name S_ADF1ANT, Link IOCARD_SW, DEVICE X, Input 22
 Var 422, name S_ADF2ANT, Link IOCARD_SW, DEVICE X, Input 94
 Var 424, name S_ADF1TONE, Link IOCARD_SW, DEVICE X, Input 24
 Var 426, name S_ADF2TONE, Link IOCARD_SW, DEVICE X, Input 96

Wiring Audio:

Audio B737 IDC connectors can be plugged to any I/O card, to the Audio P&P module and to Pedestal PCB using 16 contacts IDC connectors.



Connections to other modules or PCB Pedestal:

PANEL	MODULE AUDIO P&P	PCB PEDESTAL
Connector J1:	J5 audio module connector	J15 pcb pedestal connector
Connector J2:	J6 audio module connector	J16 pcb pedestal connector

Description of connectors Audio captain:

J15 CONNECTOR	J16 CONNECTOR
I27 = AUDIO1 VHF1 MIC SWITCH	GND = Negative for outputs. (for outputs it takes +5 volts).
I28 = AUDIO1 VHF2 MIC SWITCH	O14 = AUDIO1 VHF1 MIC LED
I29 = AUDIO1 VHF1 VOL SWITCH	O15 = AUDIO1 VHF2 MIC LED
I30 = AUDIO1 VHF2 VOL SWITCH	O16 = AUDIO1 VHF1 VOL LED
I31 = AUDIO1 NAV1 VOL SWITCH	O17 = AUDIO1 VHF2 VOL LED
I32 = AUDIO1 NAV2 VOL SWITCH	O18 = AUDIO1 NAV1 VOL LED
I33 = AUDIO1 ADF1 VOL SWITCH	O19 = AUDIO1 NAV2 VOL LED
I34 = AUDIO1 ADF2 VOL SWITCH	O20 = AUDIO1 ADF1 VOL LED
I35 = AUDIO1 MARKER VOL SWITCH	O21 = AUDIO1 ADF2 VOL LED
I36 = AUDIO1 FILTER R ROTARY SWITCH	O22 = AUDIO1 MARKER VOL LED
I37 = AUDIO1 FILTER V ROTARY SWITCH	DO31 = Negative for backlight.
I38 = AUDIO1 R-T SWITCH	PLED = Positive for backlight. It takes 2.5 volts to 2.9 volts.
I39 = AUDIO1 I-C SWITCH	
I40 = AUDIO1 ALT-NORM SWITCH	

<p>GND4 = COMMON for inputs: 27, 28, 29, 30, 31, 32, 33, 34 and 35.</p> <p>GND5 = COMMON for inputs: 36, 37, 38, 39 and 40.</p> <p>(For Cards without common inputs, you should join GND4 and GND5)</p>	<p>!ActiveWarning: may burn more voltage backlight!</p>
---	--

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs:

To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

Outputs Audio CAP:

```
Var 212, name AU1VH1MI, Link IOCARD_OUT, DEVICE X, Output 14 // AUDIO1 VHF1 MIC LED
Var 214, name AU1VH2MI, Link IOCARD_OUT, DEVICE X, Output 15 // AUDIO1 VHF2 MIC LED
Var 216, name AU1VH1VO, Link IOCARD_OUT, DEVICE X, Output 16 // AUDIO1 VHF1 VOL LED
Var 218, name AU1VH2VO, Link IOCARD_OUT, DEVICE X, Output 17 // AUDIO1 VHF2 VOL LED
Var 220, name AU1NA1VO, Link IOCARD_OUT, DEVICE X, Output 18 // AUDIO1 NAV1 VOL LED
Var 222, name AU1NA2VO, Link IOCARD_OUT, DEVICE X, Output 19 // AUDIO1 NAV2 VOL LED
Var 224, name AU1AD1VO, Link IOCARD_OUT, DEVICE X, Output 20 // AUDIO1 ADF1 VOL LED
Var 226, name AU1AD2VO, Link IOCARD_OUT, DEVICE X, Output 21 // AUDIO1 ADF2 VOL LED
Var 228, name AU1MKRVO, Link IOCARD_OUT, DEVICE X, Output 22 // AUDIO1 MARKER VOL LED
```

Outputs Audio FO:

```
Var 230, name AU2VH1MI, Link IOCARD_OUT, DEVICE X, Output 78 // AUDIO2 VHF1 MIC LED
Var 232, name AU2VH2MI, Link IOCARD_OUT, DEVICE X, Output 79 // AUDIO2 VHF2 MIC LED
Var 234, name AU2VH1VO, Link IOCARD_OUT, DEVICE X, Output 80 // AUDIO2 VHF1 VOL LED
Var 236, name AU2VH2VO, Link IOCARD_OUT, DEVICE X, Output 81 // AUDIO2 VHF2 VOL LED
Var 238, name AU2NA1VO, Link IOCARD_OUT, DEVICE X, Output 82 // AUDIO2 NAV1 VOL LED
Var 240, name AU2NA2VO, Link IOCARD_OUT, DEVICE X, Output 83 // AUDIO2 NAV2 VOL LED
Var 242, name AU2AD1VO, Link IOCARD_OUT, DEVICE X, Output 84 // AUDIO2 ADF1 VOL LED
Var 244, name AU2AD2VO, Link IOCARD_OUT, DEVICE X, Output 85 // AUDIO2 ADF2 VOL LED
Var 246, name AU2MKRVO, Link IOCARD_OUT, DEVICE X, Output 86 // AUDIO2 MARKER VOL LED
```

Inputs Audio CAP:

```
Var 444, name S_AU1VH1MI, Link IOCARD_SW, DEVICE X, Input 27 // AUDIO1 VHF1 MIC SWITCH
Var 446, name S_AU1VH2MI, Link IOCARD_SW, DEVICE X, Input 28 // AUDIO1 VHF2 MIC SWITCH
Var 448, name S_AU1VH1VO, Link IOCARD_SW, DEVICE X, Input 29 // AUDIO1 VHF1 VOL SWITCH
Var 450, name S_AU1VH2VO, Link IOCARD_SW, DEVICE X, Input 30 // AUDIO1 VHF2 VOL SWITCH
Var 452, name S_AU1NA1VO, Link IOCARD_SW, DEVICE X, Input 31 // AUDIO1 NAV1 VOL SWITCH
Var 454, name S_AU1NA2VO, Link IOCARD_SW, DEVICE X, Input 32 // AUDIO1 NAV2 VOL SWITCH
Var 456, name S_AU1AD1VO, Link IOCARD_SW, DEVICE X, Input 33 // AUDIO1 ADF1 VOL SWITCH
Var 458, name S_AU1AD2VO, Link IOCARD_SW, DEVICE X, Input 34 // AUDIO1 ADF2 VOL SWITCH
Var 460, name S_AU1MKRVO, Link IOCARD_SW, DEVICE X, Input 35 // AUDIO1 MARKER VOL SWITCH
Var 462, name S_AU1RT, Link IOCARD_SW, DEVICE X, Input 38 // AUDIO1 R-T SWITCH
Var 464, name S_AU1IC, Link IOCARD_SW, DEVICE X, Input 39 // AUDIO1 I-C SWITCH
Var 466, name R_AU1FILTV, Link IOCARD_SW, DEVICE X, Input 37 // AUDIO1 FILTER V ROTARY SWITCH
Var 468, name R_AU1FILTR, Link IOCARD_SW, DEVICE X, Input 36 // AUDIO1 FILTER R ROTARY SWITCH
Var 470, name S_AU1ALT, Link IOCARD_SW, DEVICE X, Input 40 // AUDIO1 ALT-NORM SWITCH
```

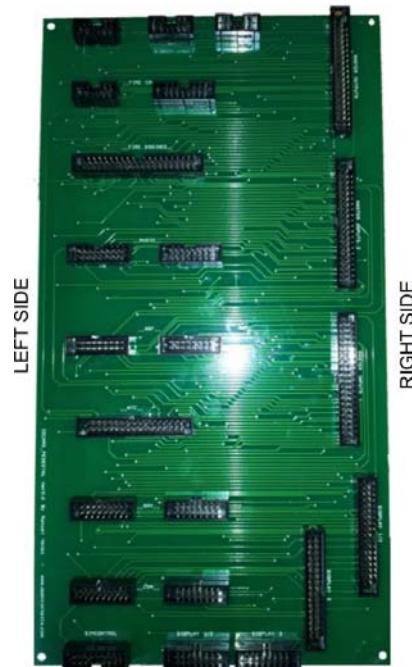
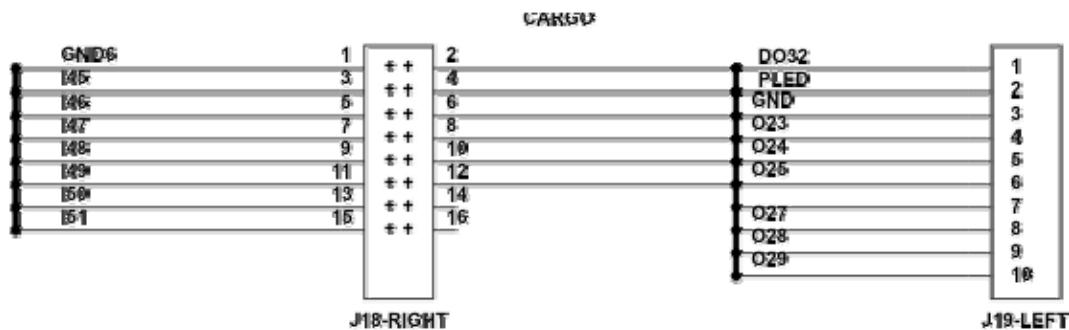
Inputs Audio FO:

```
Var 472, name S_AU2VH1MI, Link IOCARD_SW, DEVICE X, Input 99 // AUDIO2 VHF1 MIC SWITCH
Var 474, name S_AU2VH2MI, Link IOCARD_SW, DEVICE X, Input 100 // AUDIO2 VHF2 MIC SWITCH
Var 476, name S_AU2VH1VO, Link IOCARD_SW, DEVICE X, Input 101 // AUDIO2 VHF1 VOL SWITCH
Var 478, name S_AU2VH2VO, Link IOCARD_SW, DEVICE X, Input 102 // AUDIO2 VHF2 VOL SWITCH
Var 480, name S_AU2NA1VO, Link IOCARD_SW, DEVICE X, Input 103 // AUDIO2 NAV1 VOL SWITCH
```

Var 482, name S_AU2NA2VO, Link IOCARD_SW, DEVICE X, Input 104 // AUDIO2 NAV2 VOL SWITCH
 Var 484, name S_AU2AD1VO, Link IOCARD_SW, DEVICE X, Input 105 // AUDIO2 ADF1 VOL SWITCH
 Var 486, name S_AU2AD2VO, Link IOCARD_SW, DEVICE X, Input 106 // AUDIO2 ADF2 VOL SWITCH
 Var 488, name S_AU2MKRVO, Link IOCARD_SW, DEVICE X, Input 107 // AUDIO2 MARKER VOL SWITCH
 Var 490, name S_AU2RT, Link IOCARD_SW, DEVICE X, Input 110 // AUDIO2 R-T SWITCH
 Var 492, name S_AU2IC, Link IOCARD_SW, DEVICE X, Input 111 // AUDIO2 I-C SWITCH
 Var 494, name R_AU2FILTV, Link IOCARD_SW, DEVICE X, Input 109 // AUDIO2 FILTER V ROTARY SWITCH
 Var 496, name R_AU2FILTR, Link IOCARD_SW, DEVICE X, Input 108 // AUDIO2 FILTER R ROTARY SWITCH
 Var 498, name S_AU2ALT, Link IOCARD_SW, DEVICE XX, Input 112 // AUDIO2 ALT-NORM SWITCH

Wiring Fire Cargo:

FIRE CARGO B737 IDC connectors can be plugged to any I/O card and to Pedestal PCB using 16 contacts IDC connectors:



Description of connectors Fire cargo:

Fire Cargo panel is connected to PCB Pedestal 2 (Master nº2) when a FIRE ENGINES panel is present on PCB Pedestal 1 because they have common inputs and are incompatible in the same PCB or Master.

J18 CONNECTOR RIGHT			J19 CONNECTOR LEFT		
I/O	PIN	FUNCTION	I/O	PIN	FUNCTION
GND6	1	GND INPUTS I45-I51	DO32	1	Negative for backlight.
I45	3	TEST BUTTON	PLED	2	Positive for backlight
I46	5	DET SELECT B AFT	GND	3	GND common outputs.
I47	7	DET SELECT NORM AFT	O23	4	"DISCH" KORRY AMBER LED
I48	9	DET SELECT A AFT	O24	5	"BAR" KORRY WHITE LED
I49	11	DET SELECT B FWD	O25	6	"AFT" KORRY RED LED
I50	13	DET SELECT NORM FWD	O26	7	"ARMED" AFT WHITE LED
I51	15	DET SELECT A FWD	O27	8	"FWD" KORRY RED LED
GND7	2	GND INPUTS I54-I56	O28	9	"ARMED" FWD WHITE LED
I54	4	DISCH KORRY SWITCH	O29	10	"DETECTOR FAULT" INDICATOR
I55	6	ARM AFT KORRY SWITCH	It takes 2.5 volts to 2.9 volts. ¡ActiveWarning: may burn more voltage backlight!		
I56	8	ARM FWD KORRY SWITCH			
O30	10	"EXT FWD" GREEN LED			
O31	12	"EXT AFT" GREEN LED			

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs panel Fire Cargo:

To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

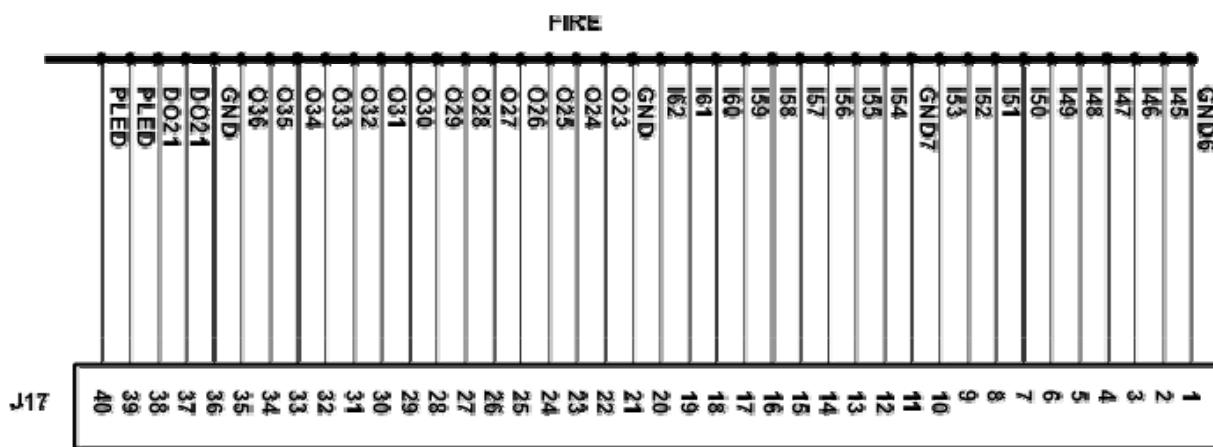
```
// OUTPUTS FIRE CARGO
Var 276, name FCDISCL, Link IOCARD_OUT, DEVICE XX, Output 87 // FIRE CARGO
DISCHARGE KORRY
Var 278, name FCDISCBARL, Link IOCARD_OUT, DEVICE XX, Output 88 // FIRE CARGO
DISCHARGE BAR KORRY
Var 280, name FCAFTL, Link IOCARD_OUT, DEVICE XX, Output 89 // FIRE CARGO AFT
KORRY
Var 282, name FCAFTARML, Link IOCARD_OUT, DEVICE XX, Output 90 // FIRE CARGO AFT
ARMED KORRY
Var 284, name FCFWDL, Link IOCARD_OUT, DEVICE XX, Output 91 // FIRE CARGO FWD
KORRY
Var 286, name FCFWDARML, Link IOCARD_OUT, DEVICE XX, Output 92 // FIRE CARGO
FWD ARMED KORRY
Var 288, name FCDETFAULT, Link IOCARD_OUT, DEVICE XX, Output 93 // FIRE CARGO
DETECTOR FAULT KORRY
Var 290, name FCEXTFWDL, Link IOCARD_OUT, DEVICE XX, Output 94 // FIRE CARGO
EXT FWD KORRY
Var 292, name FCEXTAFTL, Link IOCARD_OUT, DEVICE XX, Output 95 // FIRE CARGO EXT
AFT KORRY

// INPUTS FIRE CARGO
Var 536, name R_FDETFA, Link IOCARD_SW, DEVICE XX, Input 123 // FIRE CARGO DET
SELECT FWD A ROTARY SWITCH
```

Var 538, name R_FDETFNORM, Link IOCARD_SW, DEVICE XX, Input 122 // FIRE CARGO DET SELECT FWD NORM ROTARY SWITCH
 Var 540, name R_FDETFB, Link IOCARD_SW, DEVICE XX, Input 121 // FIRE CARGO DET SELECT FWD B ROTARY SWITCH
 Var 542, name R_FDETAAC, Link IOCARD_SW, DEVICE XX, Input 120 // FIRE CARGO DET SELECT AFT A ROTARY SWITCH
 Var 544, name R_FDETANORM, Link IOCARD_SW, DEVICE XX, Input 119 // FIRE CARGO DET SELECT AFT NORM ROTARY SWITCH
 Var 546, name R_FDETAB, Link IOCARD_SW, DEVICE XX, Input 118 // FIRE CARGO DET SELECT AFT B ROTARY SWITCH
 Var 548, name S_FARMF, Link IOCARD_SW, DEVICE XX, Input 128 // FIRE CARGO FWD ARMED KORRY SWITCH
 Var 550, name S_FARMA, Link IOCARD_SW, DEVICE XX, Input 127 // FIRE CARGO AFT ARMED KORRY SWITCH
 Var 552, name S_FTEST, Link IOCARD_SW, DEVICE XX, Input 117 // FIRE CARGO TEST SWITCH
 Var 554, name S_FDISCH, Link IOCARD_SW, DEVICE XX, Input 126 // FIRE CARGO DISCHARGE KORRY SWITCH

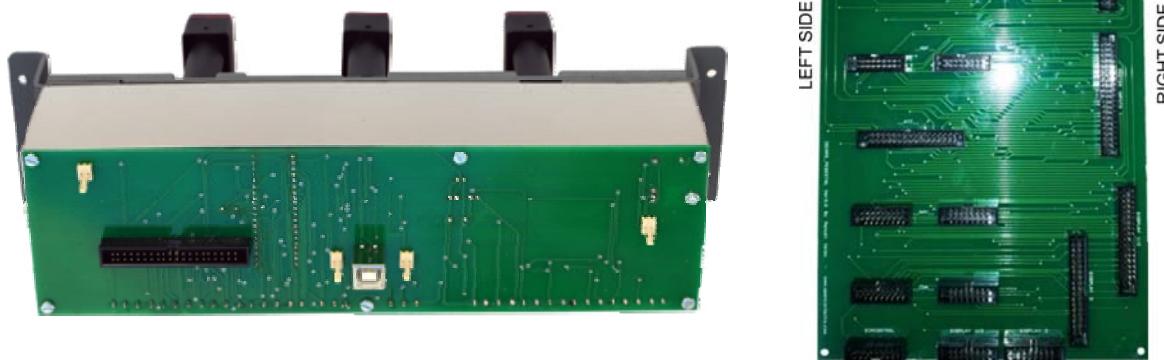
Wiring Fire Engines:

FIRE ENGINES B737 IDC connector can be plugged to any I/O card and to Pedestal PCB using 40 contacts IDC connector:



The names of the connectors on the PCB panel and the pedestal are the following:

PANEL IDC	PCB PEDESTAL
J1	J17



Description of connectors Fire Engines:

Fire Engines panel is connected to PCB Pedestal 1 (Master n°1, captain's side) when a Fire Cargo panel is present on PCB Pedestal 2 because they are incompatible in the same PCB or Master (they have common outputs).

J17 CONNECTOR		
I/O	PIN	FUNCTION
GND6	1	Common for Inputs I45...I53
I45	2	OVHT DET B LEFT (1)
I46	3	OVHT DET A LEFT (1)
I47	4	TEST OVH FIRE
I48	5	TEST FAULT INOP
I49	6	BELL CUT OUT
I50	7	OVHT DET B RIGHT (2)
I51	8	OVHT DET A RIGHT (2)
I52	9	ENGINE EXTINGUISHER TEST 2
I53	10	ENGINE EXTINGUISHER TEST 1
GND7	11	Common for Inputs I54...I62
I54	12	HANDLE 1 LEFT DISCH
I55	13	HANDLE 1 PULL (Switch off when pulled and on when pushed)
I56	14	HANDLE 1 RIGHT DISCH
I57	15	HANDLE APU LEFT DISCH
I58	16	HANDLE APU PULL (Switch off when pulled and on when pushed)
I59	17	HANDLE APU RIGHT DISCH
I60	18	HANDLE 2 LEFT DISCH
I61	19	HANDLE 2 PULL (Switch off when pulled and on when pushed)
I62	20	HANDLE 2 RIGHT DISCH
GND	21	Common for outputs O23...O36
O23	22	ENG 1 OVERHEAT
O24	23	APU BOTTLE DISCHARGE INDICATOR
O25	24	APU DET INOP INDICATOR
O26	25	FAULT INDICATOR
O27	26	WHEEL WELL INDICATOR
O28	27	ENG 2 OVERHEAT
O29	28	L BOTTLE DISCHARGE
O30	29	R BOTTLE DISCHARGE
O31	30	HANDLE 1 ACTIVATED (red led)
O32	31	HANDLE APU ACTIVATED (red led)
O33	32	HANDLE 2 ACTIVATED (red led)
O34	33	L GREEN LED
O35	34	APU GREEN LED
O36	35	R GREEN LED
GND	36	Common for outputs O23...O36
DO21	37	Negative for backlight
DO21	38	Negative for backlight
PLED	39	Positive for backlight
PLED	40	Positive for backlight
It takes 2.5 volts to 2.9 volts.		
¡ActiveWarning: may burn more voltage backlight!		

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs panel Fire Engines:

To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

```
// OUTPUTS FIRE ENGINES
Var 248, name ENG1_OVHL, Link IOCARD_OUT, DEVICE XX, Output 23 // ENGINE 1
OVERHEAT
Var 250, name APUBOTDISL, Link IOCARD_OUT, DEVICE XX, Output 24 // APU BOTTLE
DISCHARGE
Var 252, name APUDETINOPL, Link IOCARD_OUT, DEVICE XX, Output 25 // APU DET
INOPERATIVE
Var 254, name FIREFAULTL, Link IOCARD_OUT, DEVICE XX, Output 26 // FIRE ENGINES
FAULT
Var 256, name FIREWHELLL, Link IOCARD_OUT, DEVICE XX, Output 27 // FIRE WHELL
WELL
Var 258, name ENG2_OVHL, Link IOCARD_OUT, DEVICE XX, Output 28 // ENGINE 2
OVERHEAT
Var 260, name LBOTDISL, Link IOCARD_OUT, DEVICE XX, Output 29 // ENGINE 1 BOTTLE
DISCHARGE
Var 262, name RBOTDISL, Link IOCARD_OUT, DEVICE XX, Output 30 // ENGINE 2 BOTTLE
DISCHARGE
Var 264, name FIRE1L, Link IOCARD_OUT, DEVICE XX, Output 31 // ENGINE 1 FIRE
HANDLE LIGHT
Var 266, name FIREAL, Link IOCARD_OUT, DEVICE XX, Output 32 // APU FIRE HANDLE
LIGHT
Var 268, name FIRE2L, Link IOCARD_OUT, DEVICE XX, Output 33 // ENGINE 2 FIRE
HANDLE LIGHT
Var 270, name FIREG1L, Link IOCARD_OUT, DEVICE XX, Output 34 // FIRE ENGINE 1
GREEN LED
Var 272, name FIREGAL, Link IOCARD_OUT, DEVICE XX, Output 35 // FIRE APU GREEN
LED
Var 274, name FIREG2L, Link IOCARD_OUT, DEVICE XX, Output 36 // FIRE ENGINE 2
GREEN LED

// INPUTS FIRE ENGINES
Var 500, name S_OVHTDET1A, Link IOCARD_SW, DEVICE XX, Input 46 // FIRE ENGINE 1
OVERHEAT A DETECTOR SWITCH
Var 502, name S_OVHTDET1B, Link IOCARD_SW, DEVICE XX, Input 45 // FIRE ENGINE 1
OVERHEAT B DETECTOR SWITCH
Var 504, name S_FETSTOVH, Link IOCARD_SW, DEVICE XX, Input 47 // FIRE ENGINES
TEST OVH-FIRE SWITCH
Var 506, name S_FETSTFAULT, Link IOCARD_SW, DEVICE XX, Input 48 // FIRE ENGINES
TEST FAULT-INOP SWITCH
Var 508, name S_BELLCOUT, Link IOCARD_SW, DEVICE XX, Input 49 // FIRE ENGINES
BELL CUT OUT SWITCH
Var 510, name S_OVHTDET2A, Link IOCARD_SW, DEVICE XX, Input 51 // FIRE ENGINE 2
OVERHEAT A DETECTOR SWITCH
Var 512, name S_OVHTDET2B, Link IOCARD_SW, DEVICE XX, Input 50 // FIRE ENGINE 2
OVERHEAT B DETECTOR SWITCH
Var 514, name S_EXT1TEST, Link IOCARD_SW, DEVICE XX, Input 53 // FIRE ENGINE
EXTINGUISHER 1 TEST SWITCH
Var 516, name S_EXT2TEST, Link IOCARD_SW, DEVICE XX, Input 52 // FIRE ENGINE
EXTINGUISHER 2 TEST SWITCH
Var 518, name S_HND1DW, Link IOCARD_SW, DEVICE XX, Input 55 // FIRE ENGINE
HANDLE 1 DW SWITCH
Var 520, name S_HND1L, Link IOCARD_SW, DEVICE XX, Input 54 // FIRE ENGINE HANDLE
1 LEFT SWITCH
Var 522, name S_HND1R, Link IOCARD_SW, DEVICE XX, Input 56 // FIRE ENGINE HANDLE
1 RIGHT SWITCH
```

Var 524, name S_HNDADW, Link IOCARD_SW, DEVICE XX, Input 58 // FIRE ENGINE HANDLE APU DW SWITCH

Var 526, name S_HNDAL, Link IOCARD_SW, DEVICE XX, Input 57 // FIRE ENGINE HANDLE APU LEFT SWITCH

Var 528, name S_HNDAR, Link IOCARD_SW, DEVICE XX, Input 59 // FIRE ENGINE HANDLE APU RIGHT SWITCH

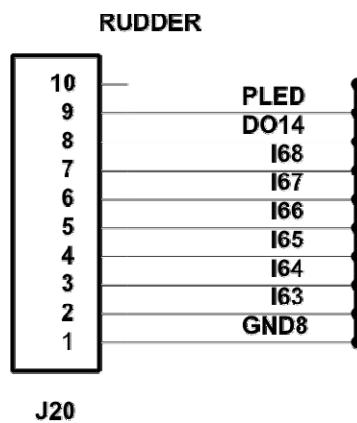
Var 530, name S_HND2DW, Link IOCARD_SW, DEVICE XX, Input 61 // FIRE ENGINE HANDLE 2 DW SWITCH

Var 532, name S_HND2L, Link IOCARD_SW, DEVICE XX, Input 60 // FIRE ENGINE HANDLE 2 LEFT SWITCH

Var 534, name S_HND2R, Link IOCARD_SW, DEVICE XX, Input 62 // FIRE ENGINE HANDLE 2 RIGHT SWITCH

Wiring Rudder Trim:

Rudder Trim B737 IDC connector can be plugged to any I/O card and to Pedestal PCB using 10 contacts IDC connector:



Description of connectors Rudder Trim:

Rudder Trim panel is connected to PCB Pedestal 1 (Master n°1) when a Stab Trim panel is present on pcb pedestal 2 because they are incompatible in the same card (they have common inputs).

J19 CONNECTOR LEFT		
I/O	PIN	FUNCTION
GND8	1	Negative comon for Inputs
I63	2	AILERON LEFT WING UP
I64	3	AILERON RIGHT WING UP
I65	4	AILERON LEFT WING DOWN
I66	5	AILERON RIGHT WING DOWN
I67	6	ENCODER INPUT 1
I68	7	ENCODER INPUT 2
DO14	8	Negative for backlight.
PLED	9	Positive for backlight. It takes 2.5 volts to 2.9 volts. ¡ActiveWarning: may burn more voltage backlight!
	10	NC

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs:

To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

```
// RUDDER TRIM
```

```
Var 378, name E_RUDDER, Link IOCARD_ENCODER, DEVICE XX, Input 67, Aceleration 1,  
Type 2 // RUDDER TRIM ENCODER
```

```
//RUDDER TRIM
```

```
Var 564, name S_RDAILUL, Link IOCARD_SW, DEVICE XX, Input 63 // RUDDER TRIM  
AILERON UP LEFT SWITCH
```

```
Var 566, name S_RDAILUR, Link IOCARD_SW, DEVICE XX, Input 64 // RUDDER TRIM  
AILERON UP RIGHT SWITCH
```

```
Var 568, name S_RDAILDL, Link IOCARD_SW, DEVICE XX, Input 65 // RUDDER TRIM  
AILERON DOWN LEFT SWITCH
```

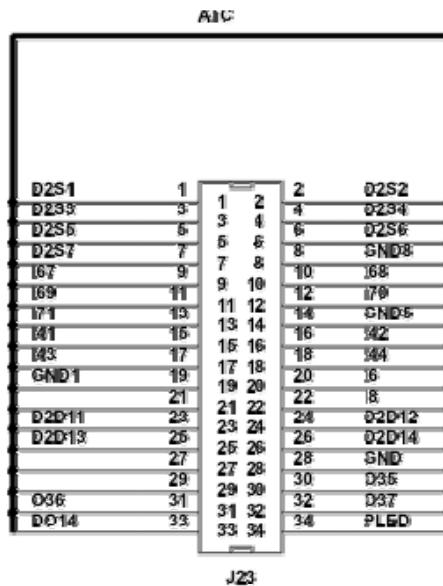
```
Var 570, name S_RDAILDR, Link IOCARD_SW, DEVICE XX, Input 66 // RUDDER TRIM  
AILERON DOWN RIGHT SWITCH
```

```
// SERVO
```

```
Var 582, name SERVO_RUDDER, Link USB_SERVOS, Device YY, Output 1, PosL 150, PosC  
512, PosR 1023, Type 1
```

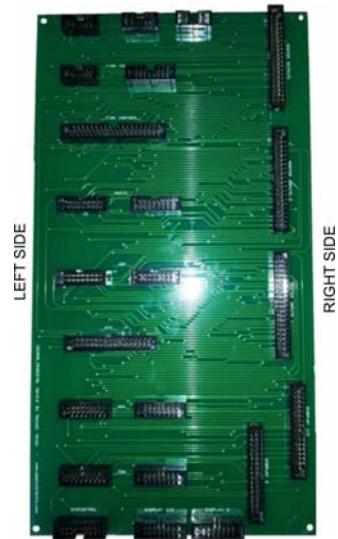
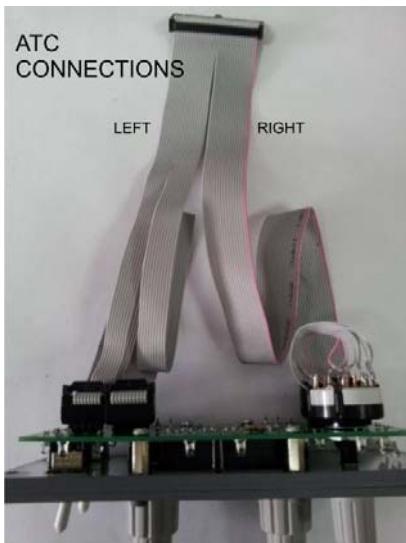
Wiring ATC:

ATC B737 IDC connectors can be plugged to any I/O card and to Pedestal PCB using 34 to 16+10+10 contacts IDC connectors:



The names of the connectors on the PCB panel and the pedestal are the following:

PANEL IDC	PCB PEDESTAL
J1-2-3	J23



Description of connectors ATC:

ATC panel is connected to PCB Pedestal 2 (Master n°2, FO side).

J23 CONNECTOR		
I/O	PIN	FUNCTION
D2S1	1	
D2S2	2	
D2S3	3	
D2S4	4	
D2S5	5	
D2S6	6	
D2S7	7	
GND8	8	GND common for Inputs I67...I71
I67	9	Input 139 Rotary switch STBY
I68	10	Input 140 Rotary switch ALT RPTG OFF
I69	11	Input 141 Rotary switch XPNDR
I70	12	Input 142 Rotary switch TA ONLY
I71	13	Input 143 Rotary switch TA/RA
GND5	14	GND common for Inputs I41...I44
I41	15	Input 113 Encoder digit jump
I42	16	Input 114 Encoder digit jump
I43	17	Input 115 Encoder increment-decrement of digit
I44	18	Input 116 Encoder increment-decrement of digit
GND1	19	GND common for Inputs I6...I8
I6	20	Input 78 IDENT push button
I7	21	Input 79 switch mode 2 XPNDR
I8	22	Input 80 switch mode 2 ALT SOURCE
D2D11	23	
D2D12	24	
D2D13	25	
D2D14	26	
D2D15	27	
GND	28	GND common for outputs
O34	29	Output 98 FAULT LED
O35	30	Output 99 ATC INDICATOR
O36	31	Output 100 ATC MODE 1 INDICATOR
O37	32	Output 101 ATC MODE 2 INDICATOR
DO14	33	Negative for backlight
PLED	34	Positive for backlight. It takes 2.5 volts to 2.9 volts. ¡ActiveWarning: may burn more voltage backlight!

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs:

To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

// DIGITS ATC

Var 140, name ATC, Link IOCARD_DISPLAY, DEVICE 20, Digit 90, Numbers 5

// INDICADORES ATC

Var 300, name ATCFAULTL, Link IOCARD_OUT, DEVICE 20, Output 98 // ATC XP-FAULT INDICATOR

Var 302, name ATCATCL, Link IOCARD_OUT, DEVICE 20, Output 99 // ATC DISPLAY "ATC" INDICATOR

Var 304, name ATCATH1L, Link IOCARD_OUT, DEVICE 20, Output 100 // ATC DISPLAY "1" INDICATOR

Var 306, name ATCATH2L, Link IOCARD_OUT, DEVICE 20, Output 101 // ATC DISPLAY "2" INDICATOR

// ENCODERS ATC

Var 374, name E_ATCLEFT, Link IOCARD_ENCODER, DEVICE 20, Input 113, Aceleration 1, Type 2 // DIGIT SELECTION ENCODER

Var 376, name E_ATCRIGHT, Link IOCARD_ENCODER, DEVICE 20, Input 115, Aceleration 1, Type 2 // DIGIT INCR/DECR ENCODER

// INPUTS ATC

Var 428, name S_ATCIDENT, Link IOCARD_SW, DEVICE 20, Input 78 // IDENT PUSHBUTTON

Var 430, name S_ATCXPN2, Link IOCARD_SW, DEVICE 20, Input 79 // XPNDR 2 MODE

Var 432, name S_ATCALTS2, Link IOCARD_SW, DEVICE 20, Input 80 // ALT SOURCE 2 MODE

Var 434, name R_ATCSTB, Link IOCARD_SW, DEVICE 20, Input 139 // ROTARY SWITCH

Var 436, name R_ATCALT, Link IOCARD_SW, DEVICE 20, Input 140 // ROTARY SWITCH

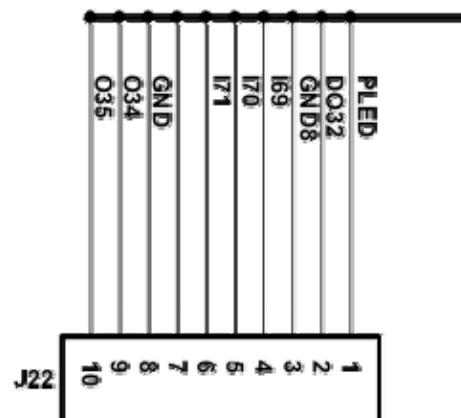
Var 438, name R_ATCXP, Link IOCARD_SW, DEVICE 20, Input 141 // ROTARY SWITCH

Var 440, name R_ATCTA, Link IOCARD_SW, DEVICE 20, Input 142 // ROTARY SWITCH

Var 442, name R_ATCTARA, Link IOCARD_SW, DEVICE 20, Input 143 // ROTARY SWITCH

Wiring RADAR:

RADAR B737 IDC connectors can be plugged to any I/O card and to Pedestal PCB using 10 contacts IDC connectors: **RADAR...**



The names of the connectors on the PCB panel and the pedestal are the following:

PANEL IDC	PCB PEDESTAL
NO TIENE	J22

Description of connectors RADAR:

Radar panel is connected to PCB Pedestal 1 (Master nº1, Captain's side).

J22 CONNECTOR		
I/O	PIN	FUNCTION
PLED	10	Positive for backlight. It takes 2.5 volts to 2.9 volts. ¡ActiveWarning: may burn more voltage backlight!
DO14	9	Negative for backlight
GND8	8	GND ROTARY SWITCH
I69	7	TEST
I70	6	WX
I71	5	WX/TURB
NC	4	No connected
GND	3	No connected
O34	2	No connected o
O35	1	No connected

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs:

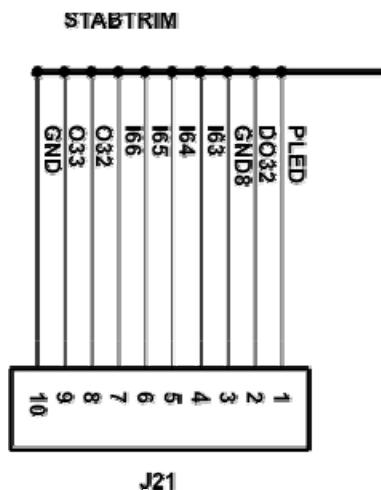
To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

```
// RADAR
Var 572, name R_RADTST, Link IOCARD_SW, DEVICE 20, Input 69 // RADAR WX-TEST
ROTARY SWITCH
Var 574, name R_RADMAP, Link IOCARD_SW, DEVICE 20, Input 70 // RADAR WX-TURB-
MAP ROTARY SWITCH

// ANALOG
Var 578, name A_RADGAIN, Link IOCARD_ANALOGIC, DEVICE 20, Input 2, PosL 0, PosC
127, PosR 255 // RADAR GAIN POTENTIOMETER
Var 580, name A_RADTILT, Link IOCARD_ANALOGIC, DEVICE 20, Input 3, PosL 0, PosC
127, PosR 255 // RADAR TILT POTENTIOMETER
```

Wiring Stab Trim:

STAB TRIM B737 IDC connectors can be plugged to any I/O card and to Pedestal PCB using 10 contacts IDC connectors:



The names of the connectors on the PCB panel and the pedestal are the following:

PANEL IDC	PCB PEDESTAL
J2	J21

Description of connectors STAB TRIM:

Stab Trim panel is connected to PCB Pedestal 2 (Master n°2, FO side).

J21 CONNECTOR		
I/O	PIN	FUNCTION
PLED	1	Positive for backlight. It takes 2.5 volts to 2.9 volts. ⚠️ActiveWarning: may burn more voltage backlight!
DO32	2	Negative for backlight
GND8	3	GND Inputs
I63	4	NORMAL (mode normal = OFF, mode ovrd = ON). Input 63 on master 1, Input 135 on master 2
I64	5	UNLKD. Input 64 on master 1, Input 136 on master 2
I65	6	AUTO. Input 65 on master 1, Input 137 on master 2
I66	7	DENY. Input 66 on master 1, Input 138 on master 2
O32	8	LOCK FAIL INDICATOR. Output 32 on master 1, output 96 on master 2
O33	9	AUTO UNLK. Output 33 on master 1, output 97 on master 2
GND	10	GND outputs

The USBDimcontrol card is recommended. It is also recommended to use 3 volt power for the backlight.

Declaration of inputs and outputs Stab Trim:

To declare variables of inputs and outputs must use the following format (the list belongs to the pedestal's definition file of Opencockpits pedestal).

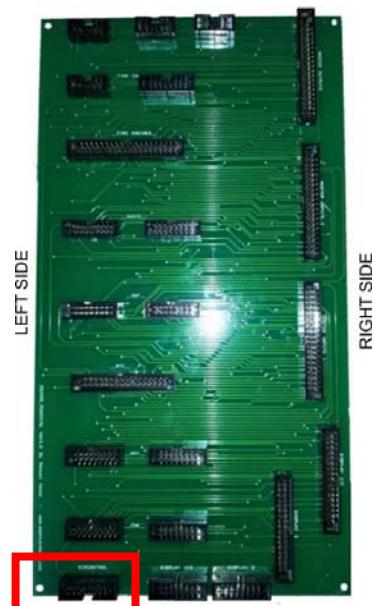
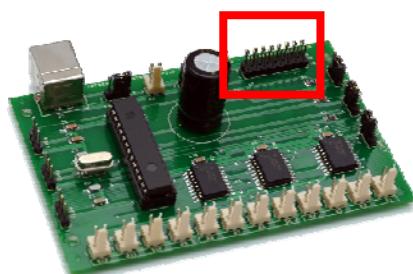
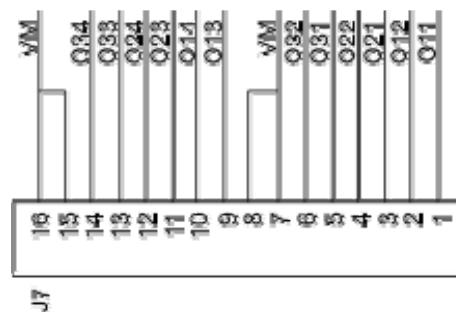
```
// OUTPUTS STAB TRIM
Var 294, name STBLCKL, STATIC, Link IOCARD_OUT, DEVICE XX, Output 96 // STAB TRIM
LOCK FAIL INDICATOR
Var 296, name STBAUTOL, STATIC, Link IOCARD_OUT, DEVICE XX, Output 97 // STAB
TRIM AUTO-UNLOCK INDICATOR

// INPUTS STAB TRIM
Var 556, name S_STBOVRD, STATIC, Link IOCARD_SW, DEVICE XX, Input 135 // STAB
TRIM OVERRIDE-NORM SWITCH
Var 558, name R_STBDUNLK, STATIC, Link IOCARD_SW, DEVICE XX, Input 136 // STAB
TRIM DOOR UNLOCK ROTARY SWITCH
Var 560, name R_STBDAUTO, STATIC, Link IOCARD_SW, DEVICE XX, Input 137 // STAB
TRIM DOOR AUTO ROTARY SWITCH
Var 562, name R_STBDDENY, STATIC, Link IOCARD_SW, DEVICE XX, Input 138 // STAB
TRIM DOOR DENY ROTARY SWITCH
```

Wiring USB DimmControl:

The Pedestal card is enabled to connect the USB DimmControl (USB-Dimmer) to control the backlight of the IDC panels or other devices using the three available channels.

The "S" connectors of the USB DimmControl card can be connected any output up to 50V and 1A (2'5A maximum for the entire card) and to the pedestal card connector J7 via 16 contacts IDC cable, in the case of a full pedestal, 3-connector cable is used, a connector for the Dimm card and two connectors for both cards PCB Pedestal:



The names of the connectors on the USB DimmControl and PCB Pedestal are the following:

USB DimmControl	PCB PEDESTAL
J7	J8

Description of connectors DimmControl:

- VM: Common positive or common another.
- O,1,1: Output, Channel 1 (A), output 1 (S1).
- O,1,2: Output, Channel 1 (A), output 2 (S2).
- O,1,3: Output, Channel 1 (A), output 3 (S3).
- O,1,4: Output, Channel 1 (A), output 4 (S4).
- O,2,1: Output, Channel 2 (B), output 1 (S5).
- O,2,2: Output, Channel 2 (B), output 2 (S6).
- O,2,3: Output, Channel 2 (B), output 3 (S7).
- O,2,4: Output, Channel 2 (B), output 4 (S8).
- O,3,1: Output, Channel 3 (C), output 1 (S9).
- O,3,2: Output, Channel 3 (C), output 2 (S10).
- O,3,3: Output, Channel 3 (C), output 3 (S11).
- O,3,4: Output, Channel 3 (C), output 4 (S12).

J7 connector can be used at the same time of "S" Connectors.

Operation of the card:

The board power (5V) can be done from the USB bus itself with SW1 at position 1 or external 5V supply connected to J2 with SW1 at position 3.

If the lighting power exceeds 5V, SW2 is left open and the outputs are fed on J6 with up to 50V. If lighting power is 5V and it is wanted to use the same external source of card's electronics, we close SW2 and do not connect anything to J6.

Importantly, the outputs will be different for each channel according to their limits, which will depend on the programming done in either USB modes available.

The card has three operating modes, see each of them.

USB mode for independent software.

The USB DimControl card independent USB mode is able to control all parameters of the card via USB connection to your computer with a specific downloadable program (iocard_dimcontrol.exe) via Web on Opencockpits aid page and from the same download page of the product, without using SIOC.

The jumpers settings for this mode are:

- NO USB: Position 3.
- NO POTS: Position 1.
- POTS LINK: Position 3.

When the card is plugged into the computer it is immediately recognized by the control software iocard_dimcontrol.exe which reads the default values stored in the EPROM.

USB mode with Sioc.

The dependent on SIOC USB mode is to control all parameters of the card using either IOCPConsole management or using a script. The version that recognizes the USB DimControl card is the up 4.7B1, downloadable from the Opencockpits aid web and from the same download page of the product.

The jumpers settings for this mode are:

NO USB: Position 3.

NO POTS: Position 1.

POTS LINK: Position 3.

When the card is connected to the computer it is immediately recognized by SIOC.

NO USB or standalone mode.

USB DimControl iocard NO USB mode is able to control all parameters of the card using potentiometers without being connected to a computer, except the limits of each channel that need to be set up by one of the above two methods.

The jumpers settings for this mode are:

NO USB: Position 1.

POTS NO: Position 3.

POTS LINK: position 1 or 3.

In this way we have two sub-modes, one with control values of each channel with its own potentiometer and another with a single potentiometer for all channels.

Potentiometer for each channel:

For each channel having its own output value management, POTS LINK selector must be in position 1 and a potentiometer connected to each channel connector (POT1, POT3 and POT2).

Master potentiometer for three channels:

This mode provides a change of output values with a single potentiometer for all channels. The POTS LINK selector must be in position 3 and the master potentiometer on the POT1 connector.

In this way the full range of the master potentiometer will adapt to the useful zone set on each channel.

With this we end this manual, we invite you to read the manuals for the other elements of Opencockpits and SIOC software and we thank you for trusting us.

Listado IOCards y cables IDC Pedestal B737 / B737's

Pedestal IOCards & IDC cables List:

IOCards:

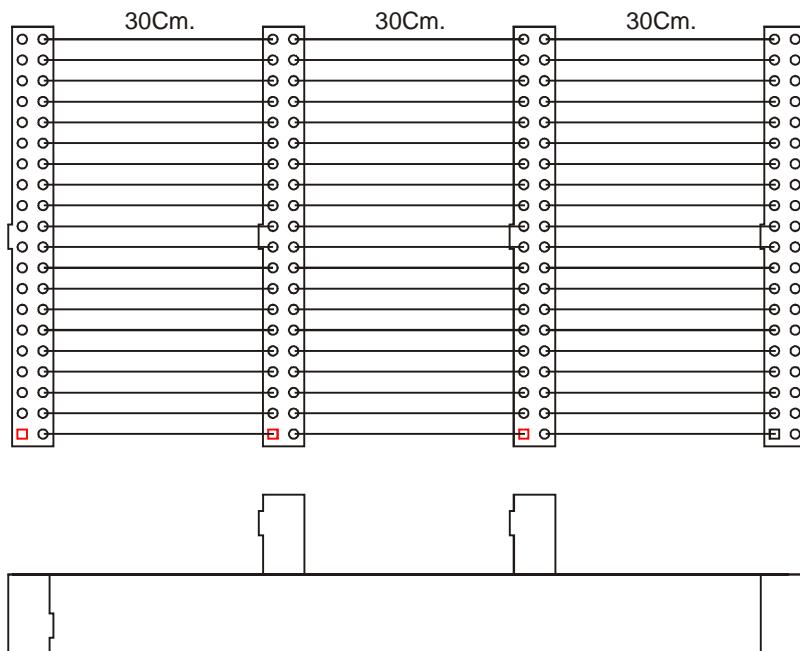
Cantidad / Quantity	Nombre / Name	Código / Code
1	USB Expansion	2T3
2	Master	2T1
1	USB Servos	2T11
1	USB DimControl	2T21
6	Displays II	2T2
2	PCB-Pedestal	PCB-PED

Data cables:

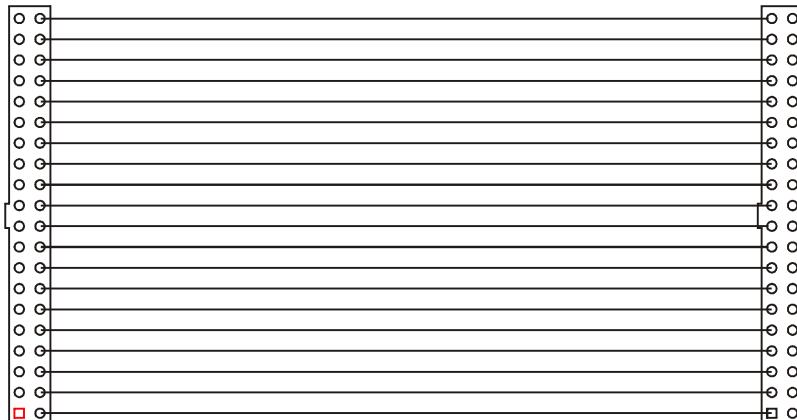
Cantidad / Quantity	Nombre / Name	Código / Code	Imagen / Picture	Longitud / Length
2	Master paralelo / parallel master	4TC2		40 Cm.

IDC cables:

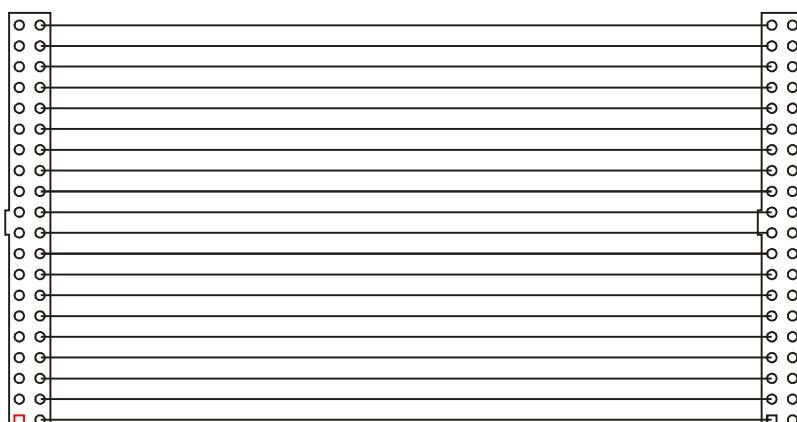
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
2	IDC40: Master a Displays / Master to Displays		90 Cm.



Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC40: Salidas Master 1 a PCB Pedestal 1 (J1 capitán) / Master 1 Outputs to PCB Pedestal 1 (J1 captain)		60 Cm.



Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
2	IDC40: Entradas Master 1 a PCB Pedestal 1 (J2 y J3 capitán) / Master 1 Inputs to PCB Pedestal 1 (J2 & J3 captain)		50 Cm.



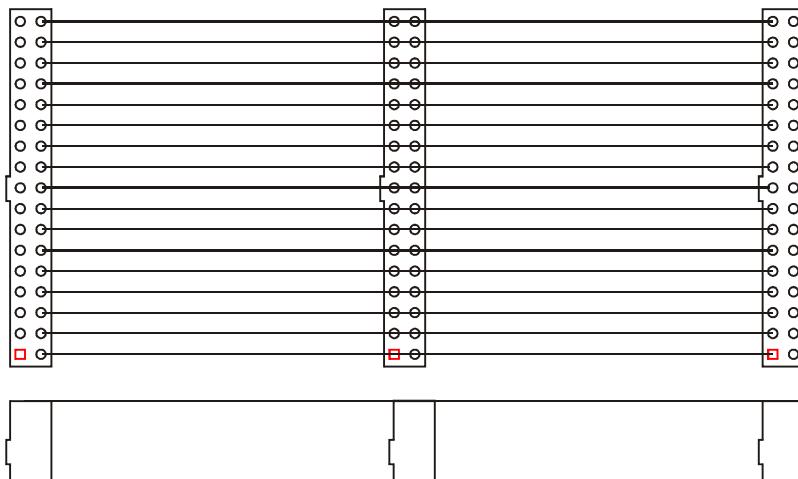
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC40: Salidas Master 2 a PCB Pedestal 2 (J1 oficial) / Master 2 Outputs to PCB Pedestal 2 (J1 officer)		60 Cm.



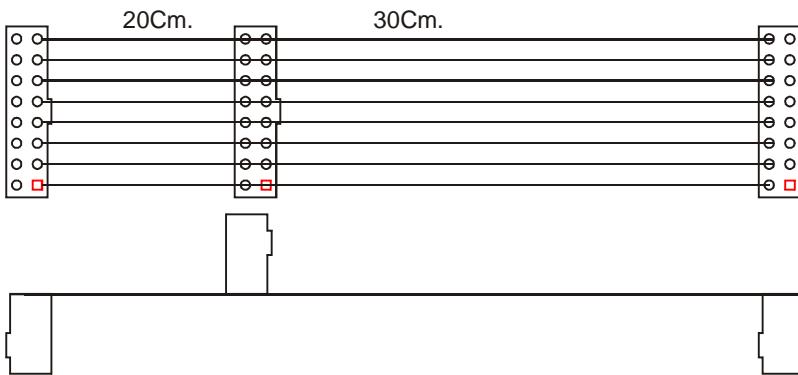
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
2	IDC40: Entradas Master 2 a PCB Pedestal 2 (J2 y J3 oficial) / Master 2 Inputs to PCB Pedestal 2 (J2 & J3 officer)		50 Cm.



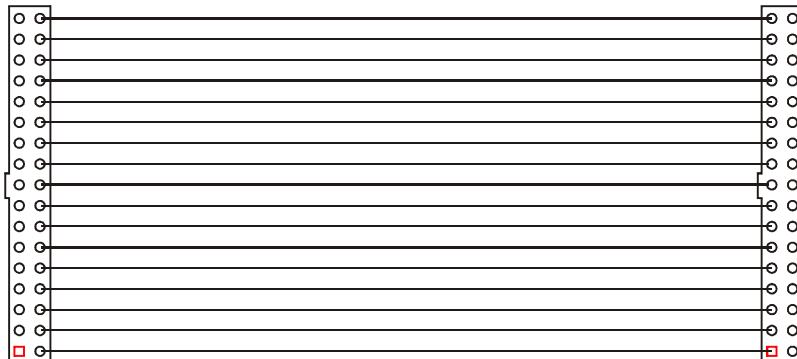
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC34: Displays 1 y 2 Capitán a J6 PCB Pedestal 1 (capitán) / Displays 1 & 2 Captain to J6 PCB Pedestal 1 (captain)		60 Cm.



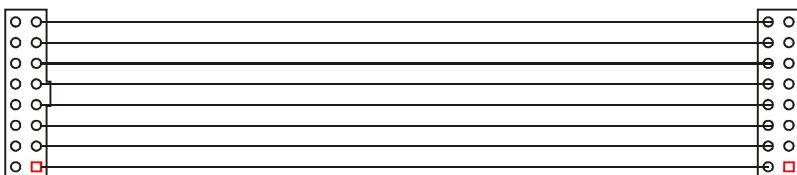
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC16: Displays 1 y 2 Capitán a J5 (1/2) PCB Pedestal 1 (capitán) / Displays 1 & 2 Captain to J5 (1/2) PCB Pedestal 1 (captain)		50 Cm.



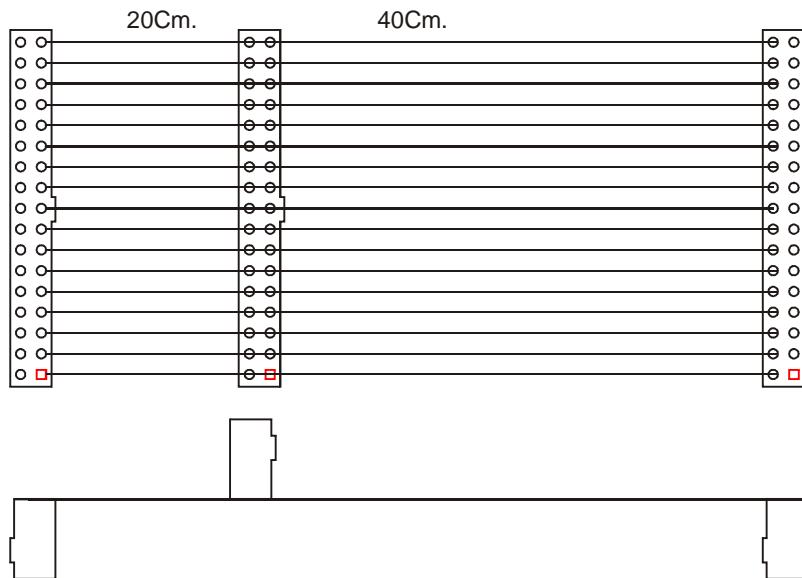
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC34: Display 3 Capitán a J7 PCB Pedestal 1 (capitán) / Display 3 Captain to J7 PCB Pedestal 1 (captain)		30 Cm.



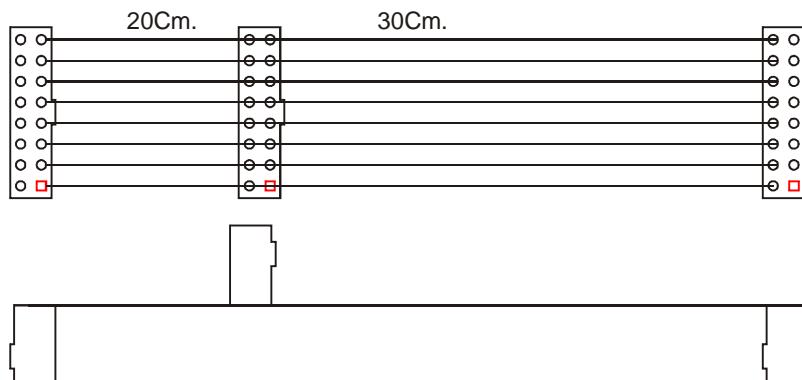
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC16: Display 3 Capitán a J5 (3) PCB Pedestal 1 (capitán) / Display 3 Captain to J5 (3) PCB Pedestal 1 (captain)		30 Cm.



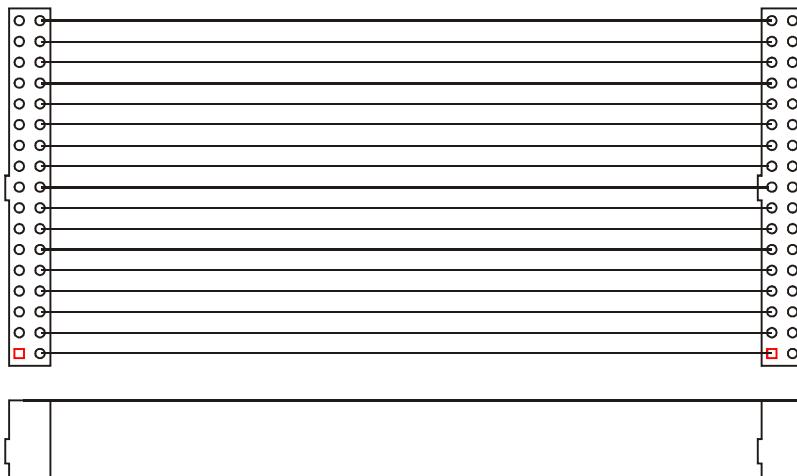
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC34: Displays 1 y 2 Oficial a J6 PCB Pedestal 2 (oficial) / Displays 1 & 2 Officer to J6 PCB Pedestal 2 (officer)		60 Cm.



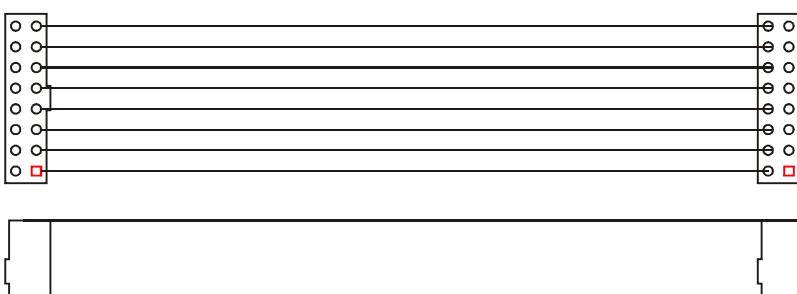
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC16: Displays 1 y 2 Oficial a J5 (1/2) PCB Pedestal 2 (oficial) / Displays 1 & 2 Officer to J5 (1/2) PCB Pedestal 2 (officer)		50 Cm.



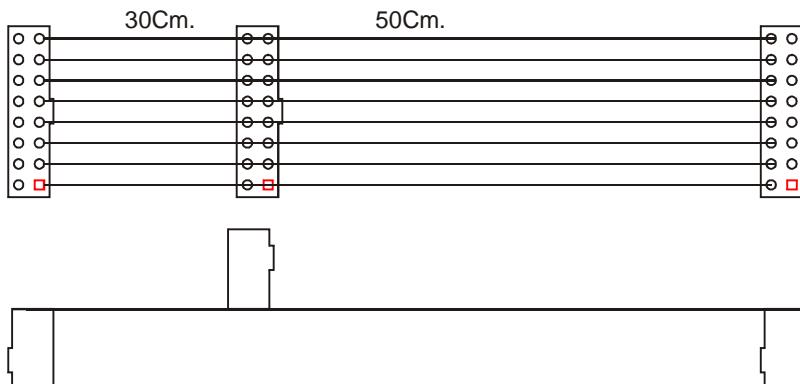
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC34: Display 3 Oficial a J7 PCB Pedestal 2 (oficial) / Display 3 Officer to J7 PCB Pedestal 2 (officer)		30 Cm.



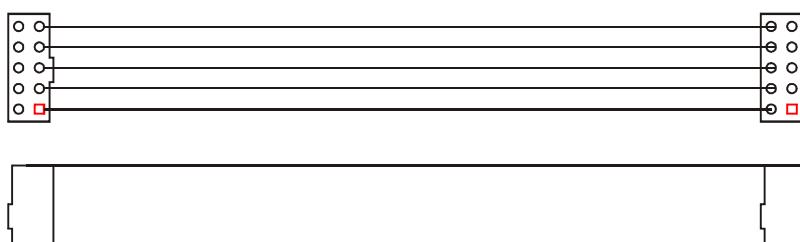
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC16: Display 3 Capitán a J5 (3) PCB Pedestal 1 (capitán) / Display 3 Captain to J5 (3) PCB Pedestal 1 (captain)		30 Cm.



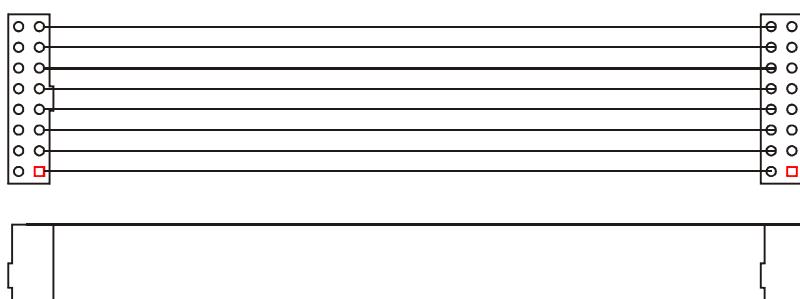
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC16: DimControl a J8 PCB Pedestal 1 y 2 (ambas) / DimControl to J8 PCB Pedestal 1 & 2 (both)		80 Cm.



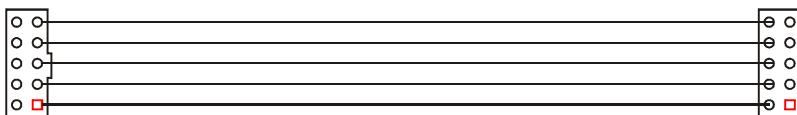
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC10: Rudder Trim a J20 PCB Pedestal 1 (capitán) / Rudder Trim to J20 PCB Pedestal 1 (captain)		60 Cm.



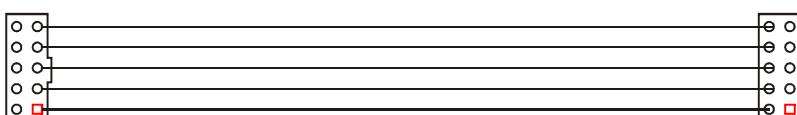
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC16: Fire Cargo a J18 PCB Pedestal 2 (oficial) / Fire Cargo to J18 PCB Pedestal 2 (officer)		30 Cm.



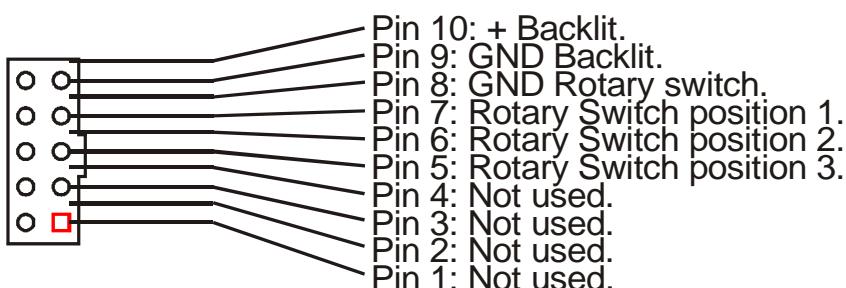
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC10: Fire Cargo a J19 PCB Pedestal 2 (oficial) / Fire Cargo to J19 PCB Pedestal 2 (officer)		30 Cm.



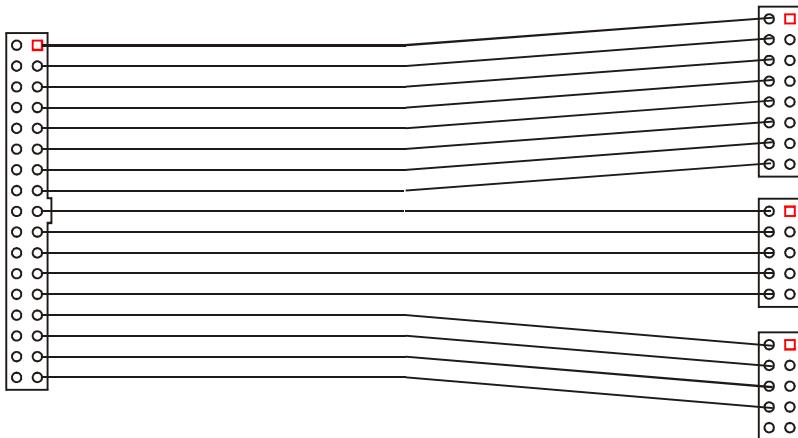
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC10: Stab Trim a J21 PCB Pedestal 2 (oficial) / Stab Trim to J21 PCB Pedestal 2 (officer)		50 Cm.



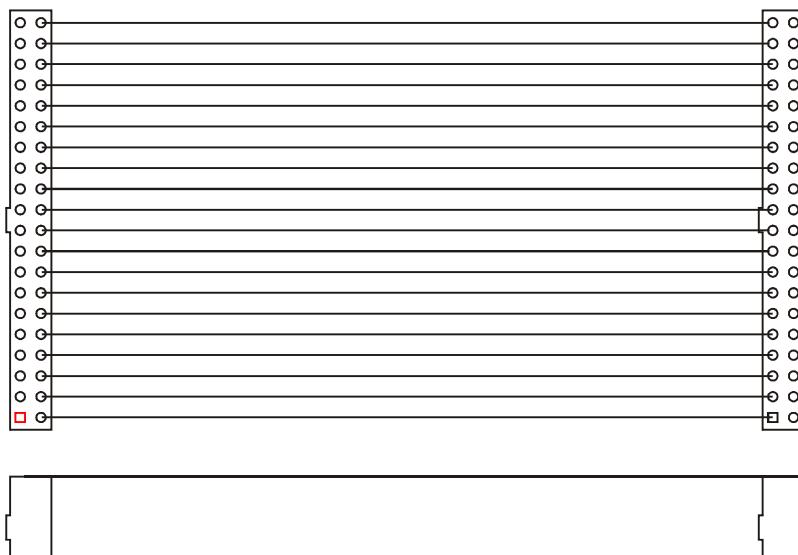
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC10: Radar a J22 PCB Pedestal 1 (capitán) / Radar to J22 PCB Pedestal 1 (captain)		30 Cm.



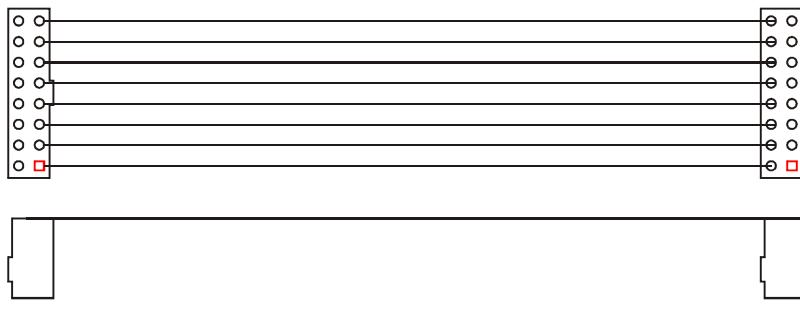
Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC34: ATC a J23 PCB Pedestal 2 (oficial) / ATC to J23 PCB Pedestal 2 (officer)	3T12	30 Cm.



Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
1	IDC40: Fuego motores a J17 PCB Pedestal 1 (capitán) / Fire Engines to J17 PCB Pedestal 1 (captain)		40 Cm.



Cantidad / Quantity	Nombre / Name	Código / Code	Longitud / Length
16	IDC16: Cables para/for: 2 COMM, 2 NAV, 2 ADF, 2 Audios		40 Cm.



Links of interest:

Customer Support Zone:

<http://www.opencockpits.com/catalog/info/>