

Translator's notes:

Be sure to read through the instructions and understand them before beginning a project.

I, nor anyone else in providing these instructions is in anyway liable for damages caused, directly or indirectly by performing any modifications (or not performing modifications).

These instructions are originally provided in French at <http://users.skynet.be/fa835376/pas%20a%20pas.pdf>.

I do not speak French. I do not understand French. I just spent some time with Google Translate and worked out the grammar issues and figured out which words it was struggling with (along with the help of some forum posters at <https://forums.macrumors.com/threads/using-imac-g5-as-external-monitor-it-can-be-done.1110159/>).

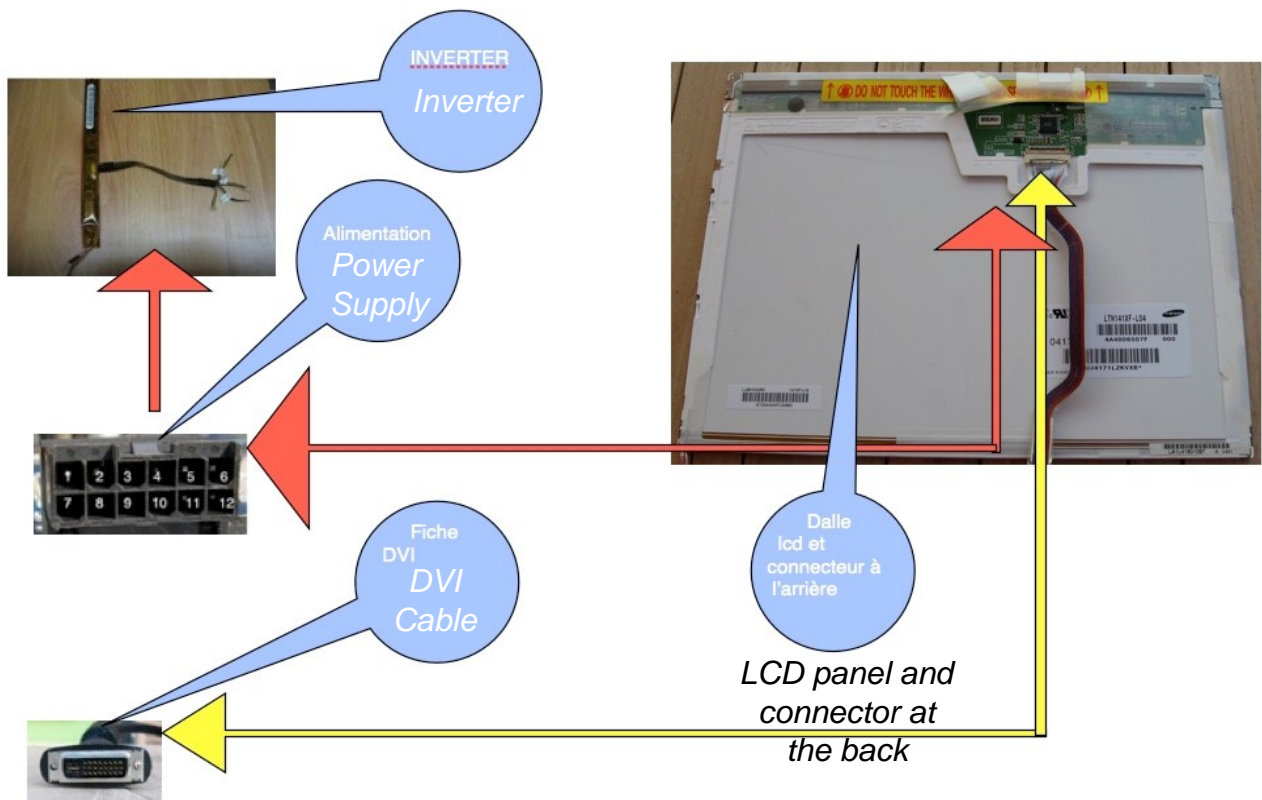
Any additional notes in [brackets] are mine.

Thanks to the members of the above forum for finding this document and starting on the translation. I hope this helps a few more hobbyists get more use out of their old iMacs.

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- Diagram of the screen.



Step by Step Instructions to Convert an iMac g5 17"/20" into a Monitor

Introduction:

These step by step instructions realization the conversion of a defective iMac into a DVI screen, giving new life to your poor iMac. This DVI connector is not compatible with VGA. I am not responsible for damage incurred following these step by step instructions.



Materials needed:

- 1 defective 17" iMac 17.
- 1 DVI cable, 2mm / 4mm insulating sheath, ribbon, solder and soldering iron, wires, various connectors, reversing switch[?], various screws, magnifying glass

What we are going to do: recover the screen, connect it to a DVI cable, recover the power supply, recover the iMac chassis.

Opening the iMac

- Start by opening the iMac. Go to this site, it explains the process <http://macboostfr.free.fr/?p=196> [dead link]. Remove all the components except the power supply and the screen.



Power Supply

Adapting the power supply

- We will use the iMac power supply to power the screen and the inverter.

The power supply has 12V, 5V, 3.3V permanent (All) voltages used to boot the iMac and 12V, 5V, 3.3V (Run) power available once the power supply is started. I will explain how to start the power supply.

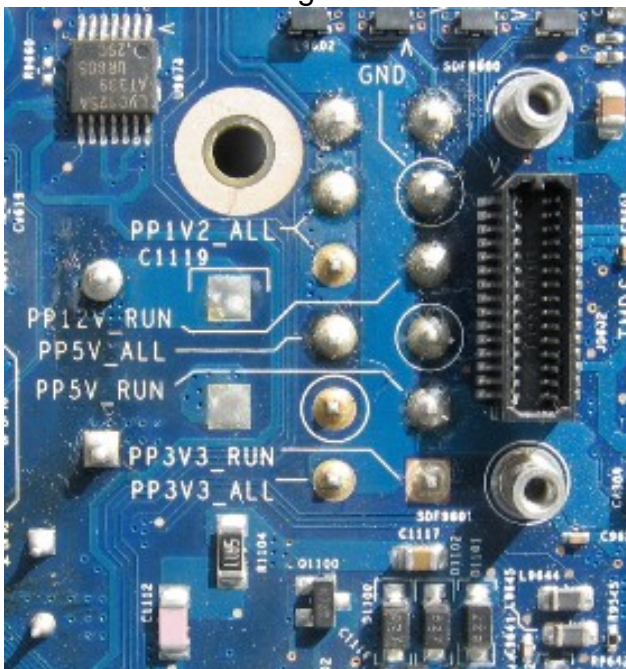
- Table of voltages on the connector

1	Start connect to ground[?]	7	Start connect to 3,3v all[?]
2	12V all	8	GRD
3	12V all	9	12V run
4	5V all	10	GRD
5	GRD	11	5V run
6	3,3V all	12	3,3V run

- The power supply connector

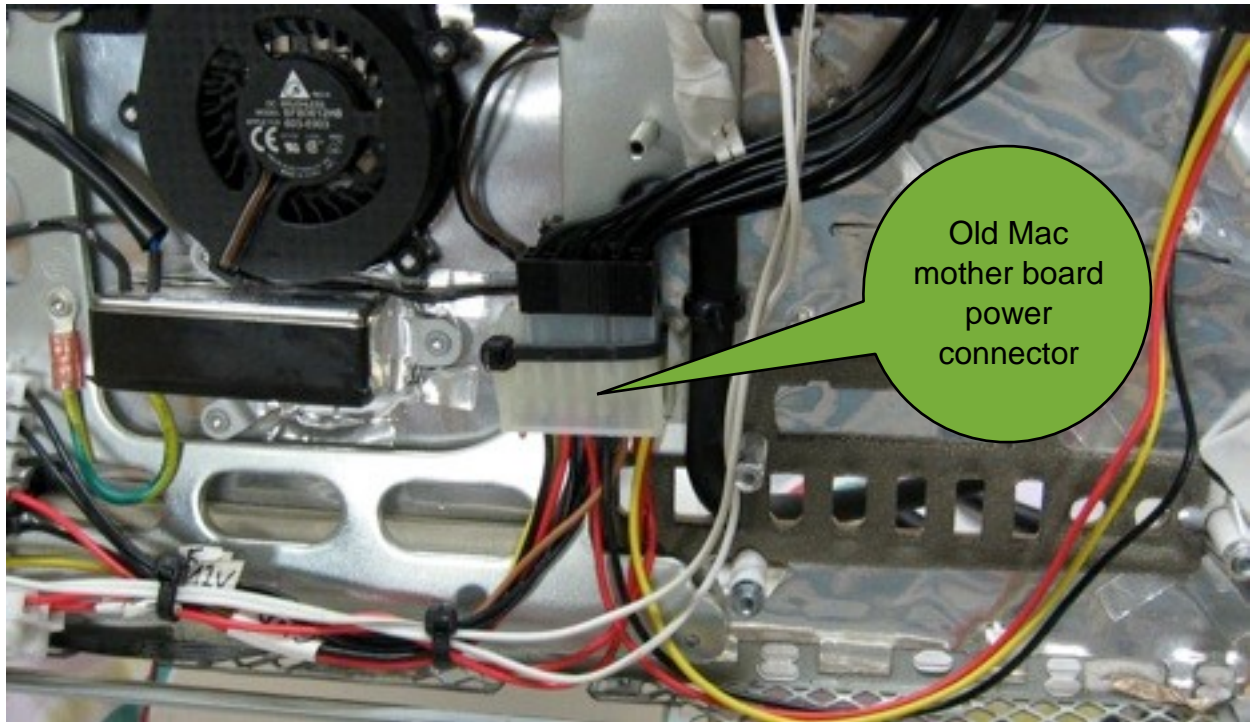


- The available voltages are visible on the back of the logic board



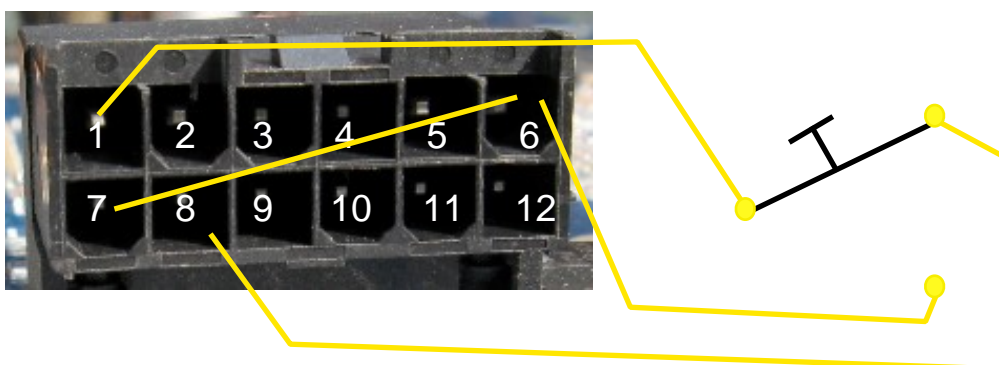
Device for turning on the screen:

- Powering the screen requires a connector that will clip on to the power supply. We can salvage the connector from the iMac's internals by clipping the wires with enough left to reconnect them.



- To turn on the power supply, you need to connect the 3.3V All to the #7 pin and the GRD to the #1 pin. To turn off the power supply, connect the #1 pin to the 3.3V All – and to the remaining #7 pin.

I use an inverter, but you can connect the a button on a bistable relay.[?]

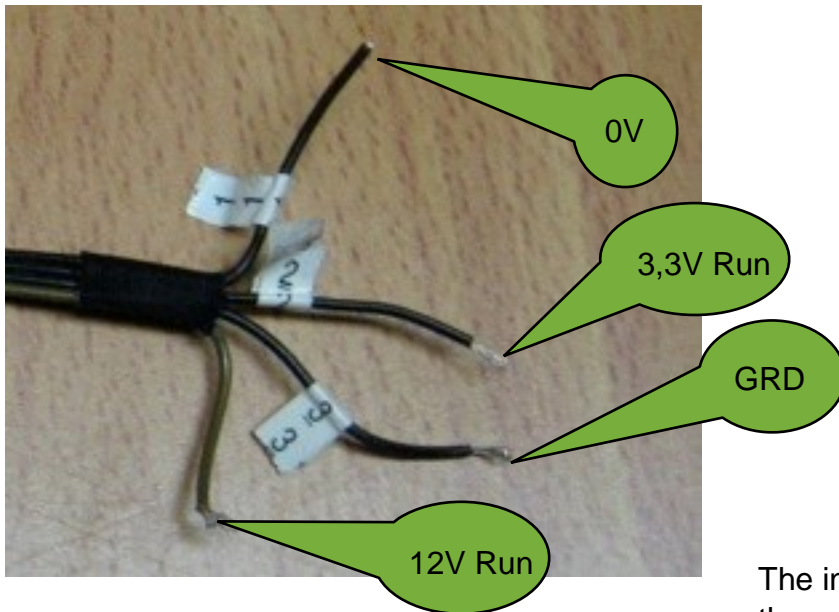


Powering the inverter (which illuminates the screen)

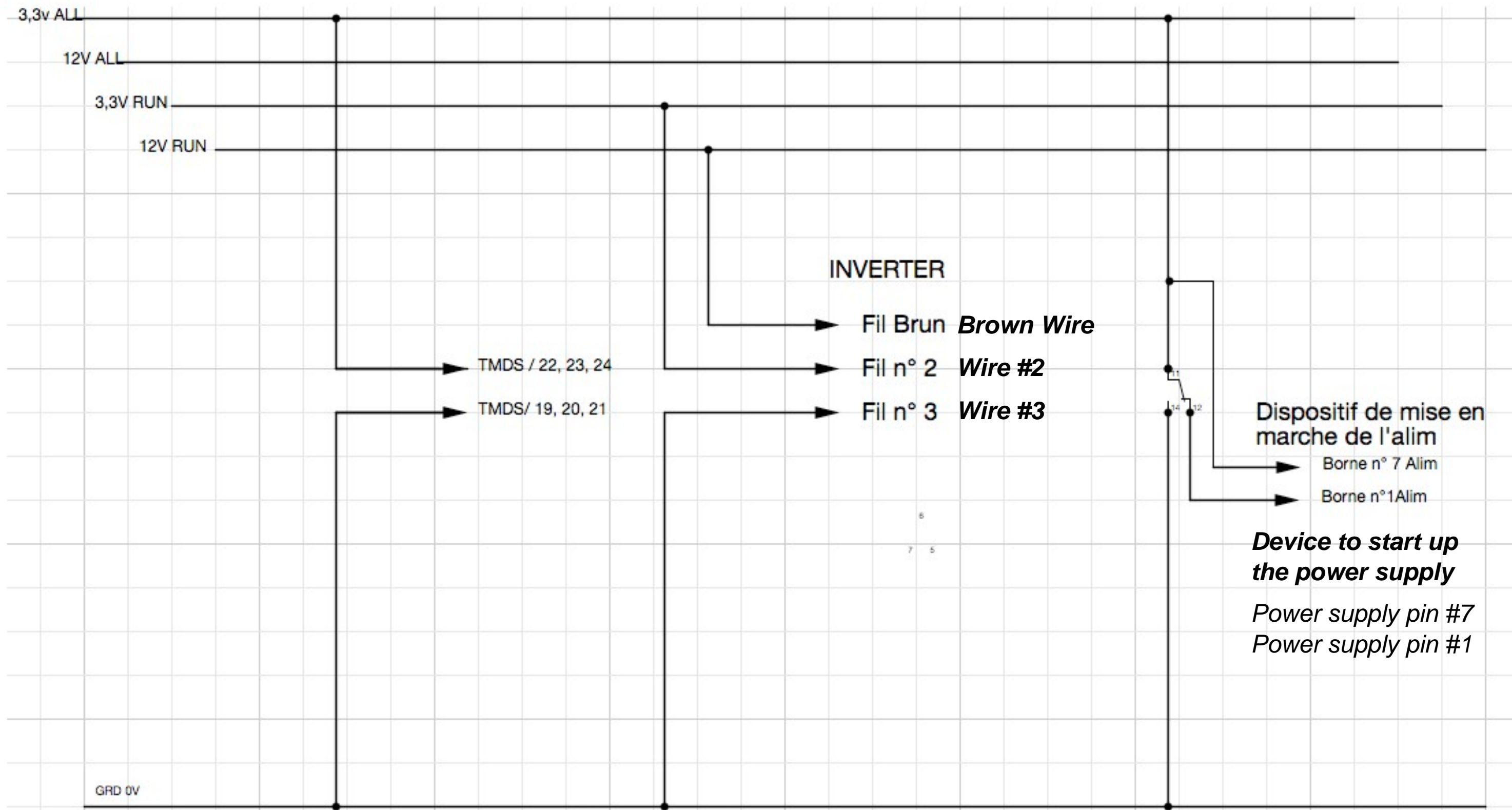


The inverter is on the right side of the slab, do not remove it

• To power the inverter 3.3V Run is required on wire #2. Brown connects to 12V Run and wire #3 connects to GRD. Wire #1 (not connected) adjusts brightness and is at 0V.



The inverter will only power on when the power supply is also turned on.

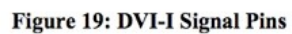


***Device to start up
the power supply***

Power supply pin #7

Power supply pin #1

- For this we need the DVI output datasheet



Pin	Signal	Pin	Signal	Pin	Signal
1	Data 2-	9	Data 1-	17	Data 0-
2	Data 2+	10	Data 1+	18	Data 0+
3	Shield (2 & 4)	11	Shield (1 & 3)	19	Shield (0 & 5)
4	Data 4-	12	Data 3-	20	Data 5-
5	Data 4+	13	Data 3+	21	Data 5+
6	Clock DDC	14	Power +5V	22	Shield Clock
7	Data DDC	15	Ground	23	Clock +
8	Analog Vertical Sync	16	Hot Plug	24	Clock -
G1	Analog Red				
G2	Analog Green				
G3	Analog Blue				
G4	Analog Horizontal Sync				
G5	Analog Ground				

And the datasheet for the 17" Phillips screen

Connections between the two cables

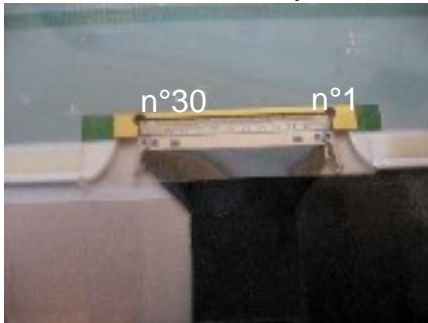
Pin No	Symbol	Description
1	GND	Ground
2	GND	Ground
3	RX2+	TMDS Low Voltage Differential Signal Input Data 2(+)
4	RX2-	TMDS Low Voltage Differential Signal Input Data 2(-)
5	GND	Ground
6	RX1+	TMDS Low Voltage Differential Signal Input Data 1(+)
7	RX1-	TMDS Low Voltage Differential Signal Input Data 1(-)
8	GND	Ground
9	RX0+	TMDS Low Voltage Differential Signal Input Data 0(+)
10	RX0-	TMDS Low Voltage Differential Signal Input Data 0(-)
11	GND	Ground
12	RXC+	TMDS Low Voltage Differential Signal Input Data C(+)
13	RXC-	TMDS Low Voltage Differential Signal Input Data C(-)
14	GND	Ground
15	VEDID	DDC Power Supply 3.3V
16	NC	NC
17	CLK-EDID	DDC Clock
18	DATA-EDID	DDC Data
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	VCC	Power Supply 3.3V
23	VCC	Power Supply 3.3V
24	VCC	Power Supply 3.3V

DVI cable

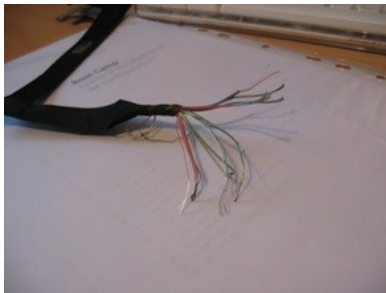
→

Data 2+
Data 2-
-
Data 1+
Data 1-
-
Data 0+
Data 0-
-
Clock +
Clock -
-
3,3 all
-
Clock ddc
Data ddc
Grd
Grd
Grd
→
3,3v all
3,3 all
3,3 all

- This connector is located behind the screen, it [the connector or the screen?] must be removed to identify the wires



- Strip off the end of the wires. Be careful, these are very fine wires. Try stripping the wires with your fingernails for example so as not to tear off the copper wires.



- Use 2mm thermal sheath, ribbon for the wires and a soldering iron.

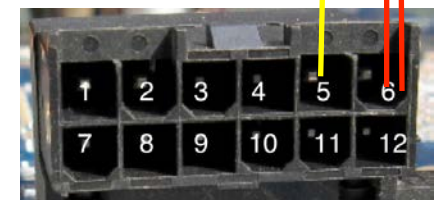
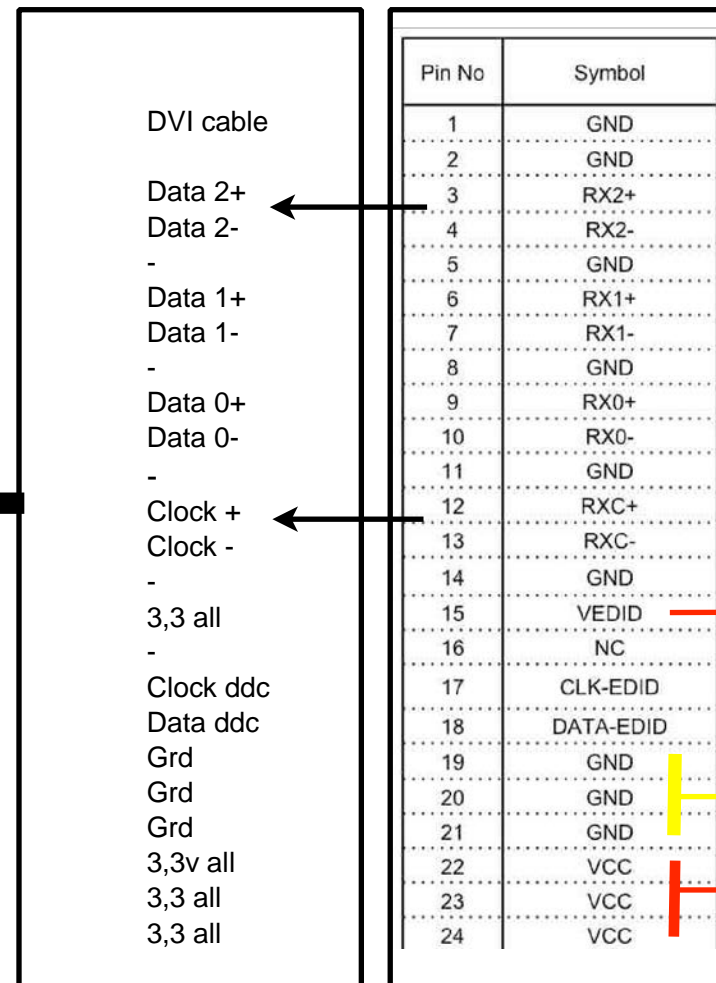
You need a 1.5M DVI cable

Strip one end, be careful there are very fine wires as well as shielded wires.

- This step is the most delicate. Connect the dvi cable to the cable that is connected to the screen by matching the dataset of each connector.

1. Following the datasheet, label each of the wires on the cable from the screen, from 1 to 24.
2. Following the data sheet, label each of the wires on the DVI Cable, from 1 to 24.
3. Twist the pairs of TMDS +/- wires to avoid interference.
4. Connect the jumper wires of the two cables together, except for GRD other than wires 19-20-21, which is the power supply. Mind the polarities RX +/-, do not connect the shield (mass) Do not connect 5V + and hotplug nor the wires goes (isolated) insulated welds with the thermal sheath
5. 3.3V will be connected to the power supply's 3.3V All and GRD to the power supply's 6 GRD. That's all the wires on the ribbon!

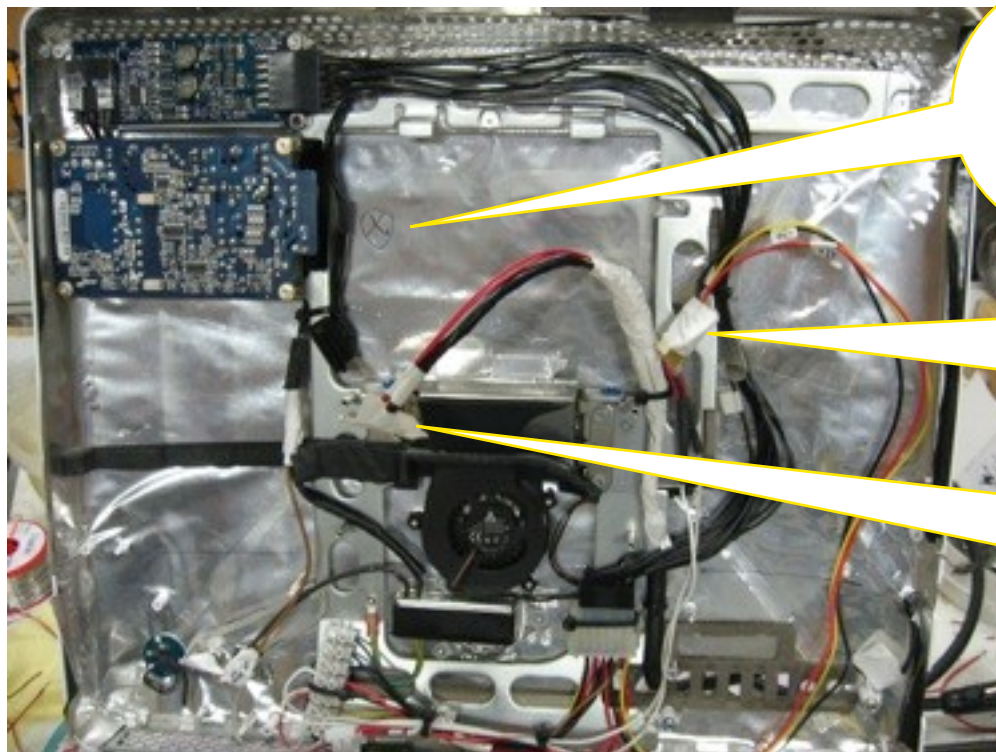
[Use the following diagram!]





Setting up the cables

- Tidy the cables and locate the screen connector when it is in place and mark it on the iMac. I ran the DVI cable through ethernet port hole in the case. You can drill a new hole if you want. ;-))



Screen
connector
position

Inverter
connection

Screen
connection

I tested the screen on a separate power supply, with the DVI cable connected to the slab and the power supply



essai de la dalle sur alim séparée



Test de la dalle avant montage

The screen's brightness is good and I'm ready to mount it in the iMac

Testing voltage and start-up

- Before connecting the screen and the inverter, it is now necessary to test the start of power supply and cut with the switch then test all voltages in order not to fry anything. Test twice.

Installing the screen

- All that's left is to connect the screen and the inverter connector and then carefully reinstall the screen.

Connect the cable dvi to your computer and power on the screen: turn on the power supply. Does it work with your computer? :-))))))))))))))))))))))))))))))

(Ps: the diffusers can of course be reused, I leave you the pleasure[?])

Thanks to

KIRYU de macbidouille

bonne chance

alanuser



