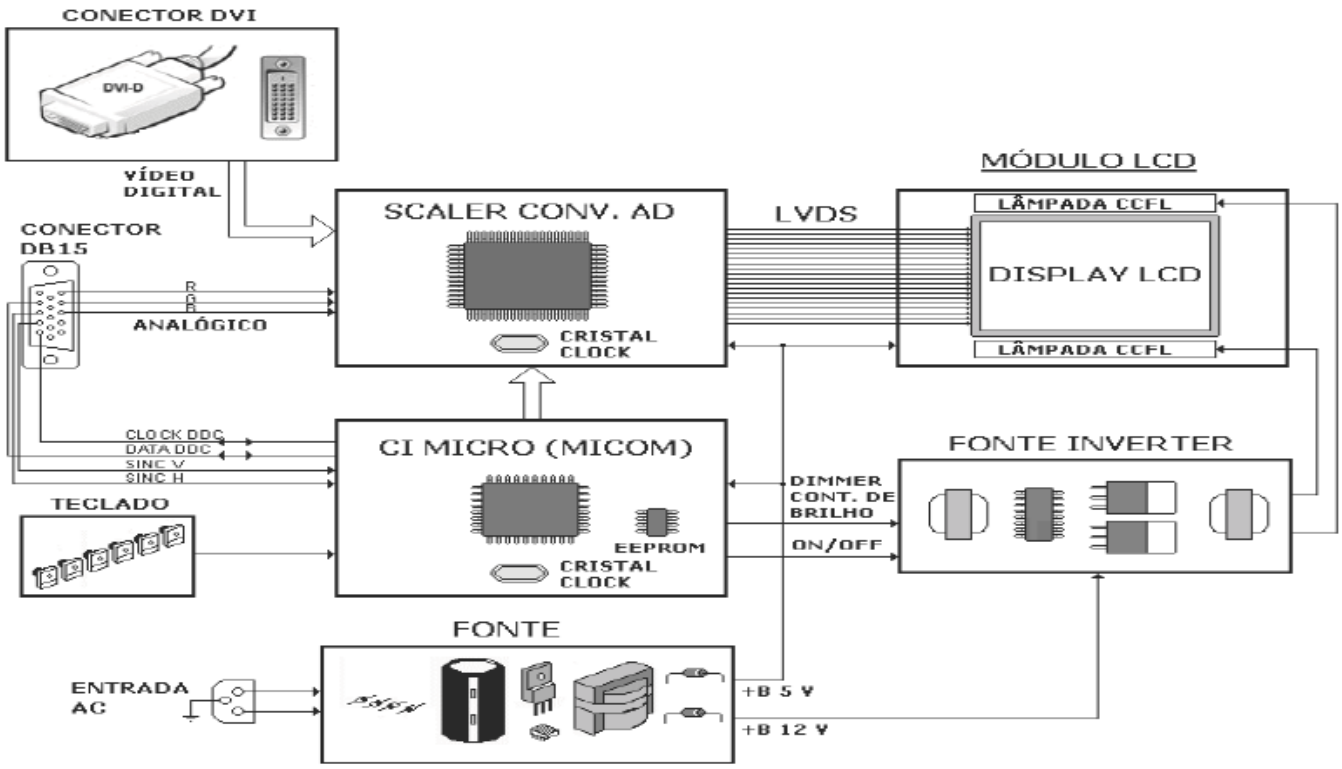
LCD REPARING COURSE



DB15 Connector - This is the same as the conventional monitor. Take the RGB and sync signals to the monitor. The pins 1,2 and 3 receive the analog RGB signals from the computer's video card and send the CI scale. The pins 13 and 14 receive the signals of sync and send the microwave communication with the DDC (display data from channel) coming from pins 12 and 15. The function of the DDC is to recognize the computer model of the monitor and install a drive for better performance of it.

DVI connector - This is optional and carries the video signal already digitized by the computer monitor. Recalling that the LCD monitor is digital, unlike that of conventional analog. Thus the image will have played more quality than that applied by DB15 connector. The

disadvantage is that the DB15 video card the computer must convert the digital signal to analog and the monitor switch from analog to digital again. In this process there are losses in the video signal, which does not happen when the USA DVI connection between the computer and LCD monitor.

CI Scale - It is the largest and leading SMD IC of the LCD monitor. He receives the RGB signals from the DB15 connector or digital video of DVI connector and converted into digital signals suitable for the production of images in the LCD display. The scale provides signals corresponding to 60 to 75 complete frames per second for the LCD display. The signals are transferred to the display via an LVDS connector. Within the scale there is SDRAM memory that will store the images processed by the full CI. Hence the IC reads each image and released the data rapidly to LCD display. This IC also converts the analog RGB signals on the DB15 connector and is the digital control of contrast and other necessary corrections in the image before sending them to the display. The CI scale is controlled by the micro. Scale leaves a flaw in the monitor with the screen lit but no picture.

. LVDS - "Low voltage differential signalizing" or traffic in low-voltage differential signals - is a connector with channels of 0 or 1.2 V that transfers the digital signals of the scale to display at high speed and with minimal noise

CI micro (or MICOM) - Go on the keyboard and controls the functions of the monitor such as brightness, contrast, etc.. It is an IC and SMD is connected to control the scale and the contrast transfer rate of images per second for the display (resolution). The microwave source is also connected in reverse to connect, disconnect and control the brightness of

the display lamps. Some monitors are at the micro scale with a single IC. The EEPROM stores data for controlling the monitor.

Clock - This is a clock signal produced from a quartz crystal. It is necessary to synchronize the transfer

of data between digital ICs. Without the clock digital ICs not work.

LCD display - Converts the signals from the scale in images. As to the display receives an image

each time the full scale. Are 60 to 75 images per second depending on the rate chosen in the

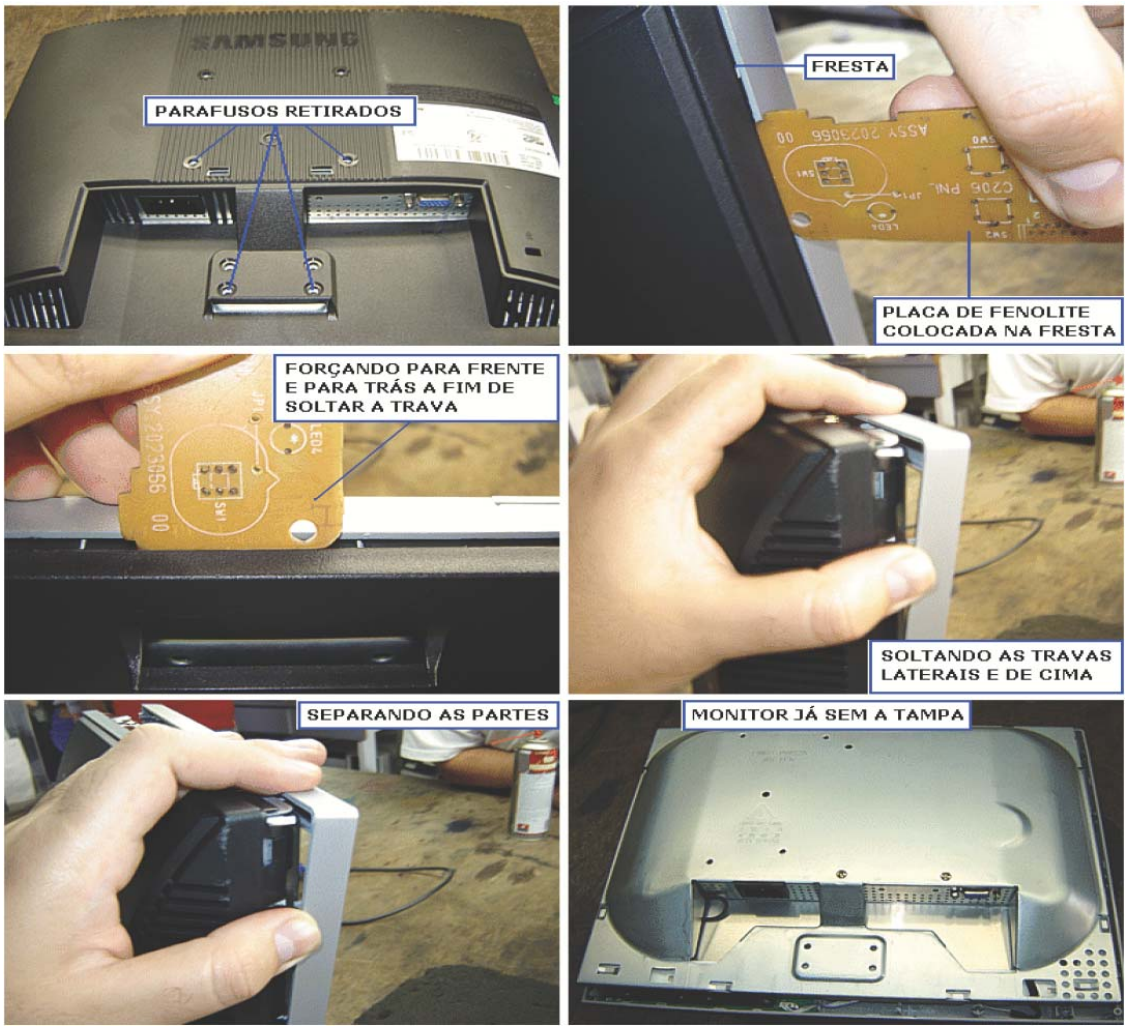
windows. In the display module is the IC of control ICs and ILD that trigger transistors TFT.

Source reverse - Transforms the B + between 12 and 19 V in voltage alternating between 300 and 1300 V for the light CCFL lamps of the display. It is controlled by the micro.

Power supply - Transforms the alternating voltage network (110 or 220 V) in the continuing tensions necessary to operation of the monitor. Usually provides a B +, 5 V for the LCD display and the motherboard which then will be covered in 3.3 and / or 1.7 V for the food and micro scale, and another B + between 12 and 19 V power to the card reverse.

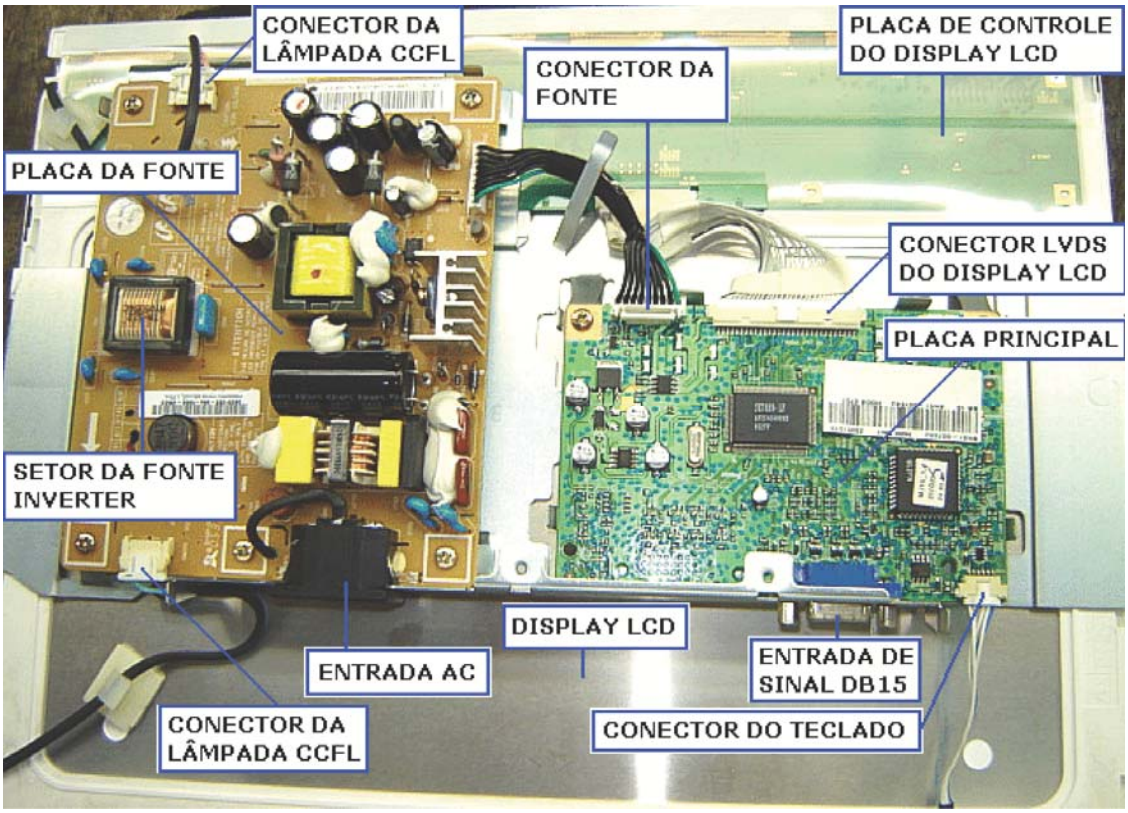
HOW TO OPEN THE MONITOR LCD

Most LCD monitors have locks on the cover of which should be released to open the unit. We must be extremely careful not to break these locks and / or kneading the body of the monitor to try to unlock using screwdriver or other metal objects. After removing the screws the lid open a crack between the lid and the front of the monitor. Enter this hole a piece of card or wood clinkstone. Drag the wood or clinkstone by gently forcing the crack are the regions where they go releasing locks up. After just withdraw cover. Below is a sequence of disassembly of an LCD monitor of the "Samsung":



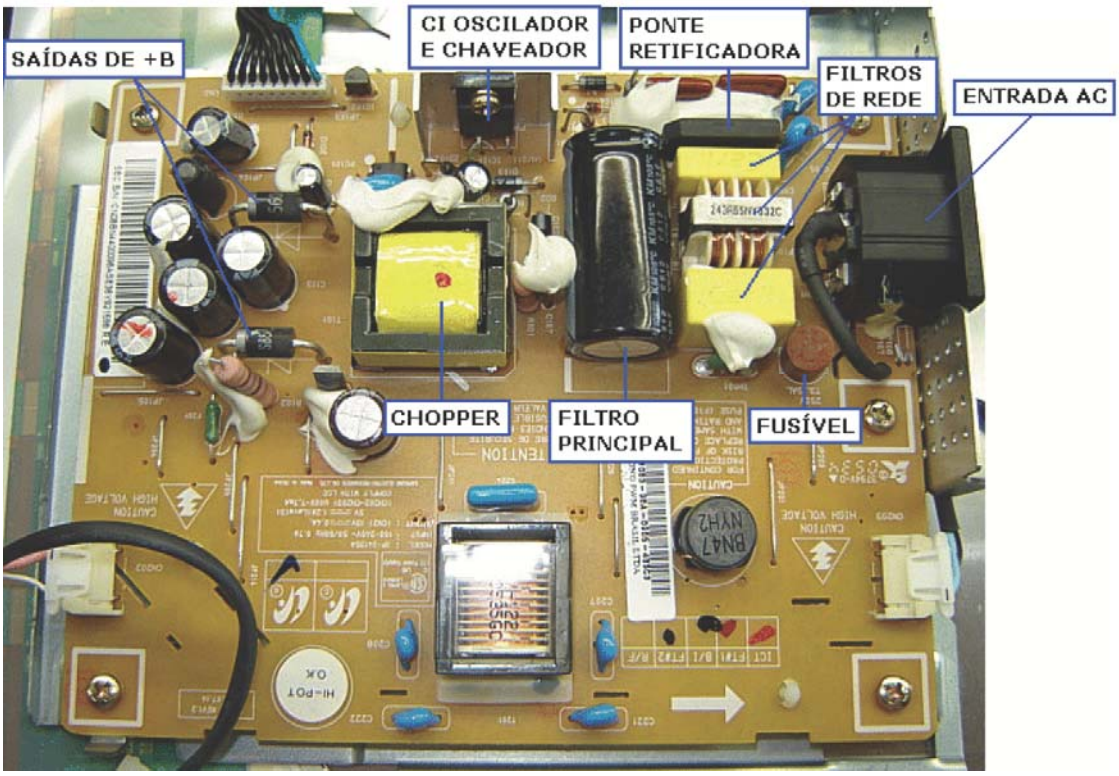
CIRCUITS OF LCD MONITOR

To open a display of this find a plate on the LCD display. This is the motherboard. Too find a label on the display of lights. This is the reverse of the source plate. There are cases where the source is the reverse of the card's overall power supply monitor. We will have the card connected to the keyboard main through a connector. In some monitors will find a plate where the cable enters AC. This is the source plate. Here is an LCD monitor Unmounting showing their cards in focus



IDENTIFICATION OF THE MAIN COMPONENTS OF THE PLATE SOURCE

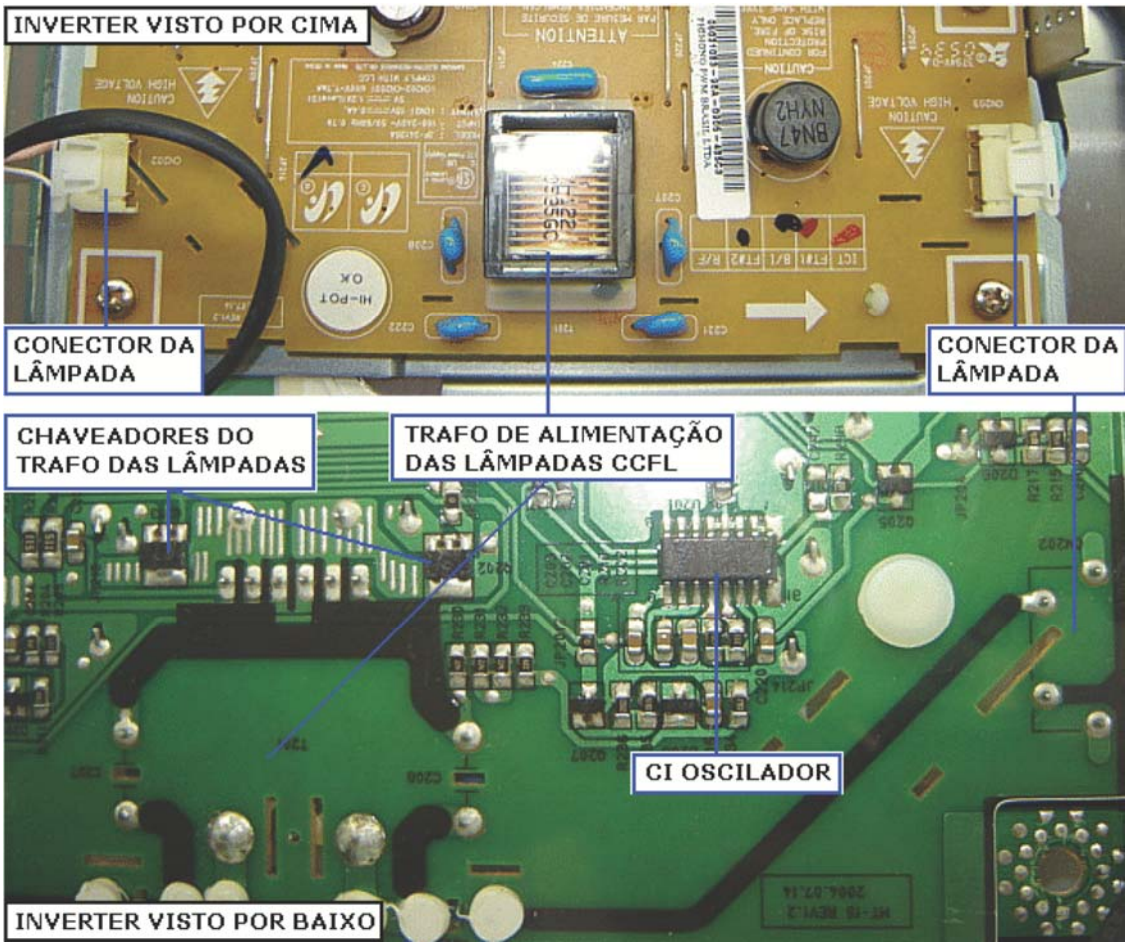
Below is a picture of the plate of the source of a Samsung monitor with its main components identified:



After the entry of power cable is a coil and some large capacitors. The filters are leaving the network voltage network in and leave the frequency of the source switched out to not interfere with other devices. A following is the fuse, the rectifier bridge and the main electrolytic filter. After that we switched the source formed by IC oscillator and chaveador the chopper transformer, diode rectifiers and electrolytic filter lines of B + that will feed the circuits of the monitor.

IDENTIFICATION OF THE MAIN COMPONENTS OF SOURCE INVERTER

In the photo below we reverse the circuit of a Samsung monitor for the top and bottom of printed circuit:



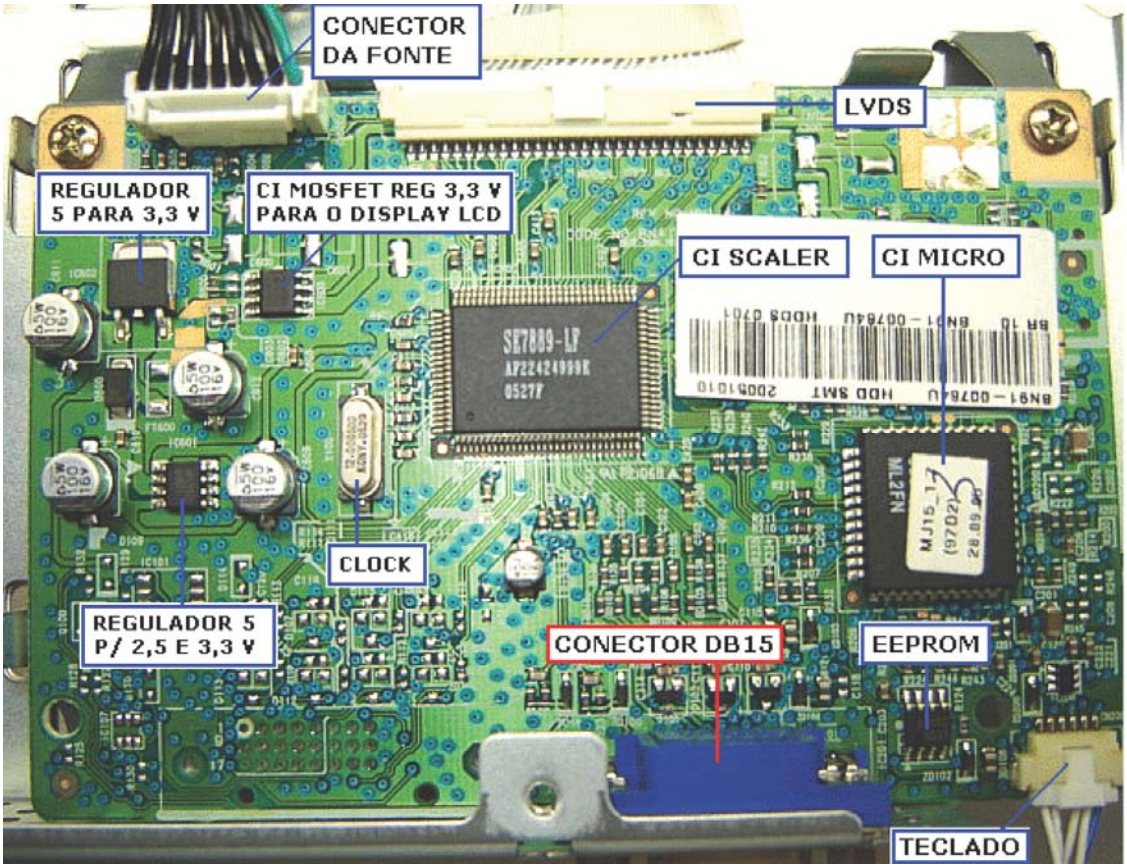
Find a large transformer in the middle of the plate. It provides the alternating voltage for feeding the lamps of the display. We can see that the connector of the two lamps are connected in Trafo said. Sometimes Trafo two, one for each lamp (for display use two lamps). The primary is connected Trafo two transistors (typically MOSFETs) to turn on and off the winding in the frequency from 40 to 80 kHz. So Trafo the transfer a large alternating voltage to the secondary (which has more turns as the primary). This voltage will turn the lamp. The MOSFETs are controlled by an IC oscillator. The power of the circuit is

reversed controlled by the micro motherboard, as well as the frequency of oscillation to adjust the brightness of the lamp.

Take care n touch the solder to the plate when it is energized energized. The shock on the high you . fatal, but d i a lot.

IDENTIFICATION OF THE MAIN COMPONENTS IN motherboard

In the photo below we have the motherboard on a Samsung monitor highlighting its main parts:



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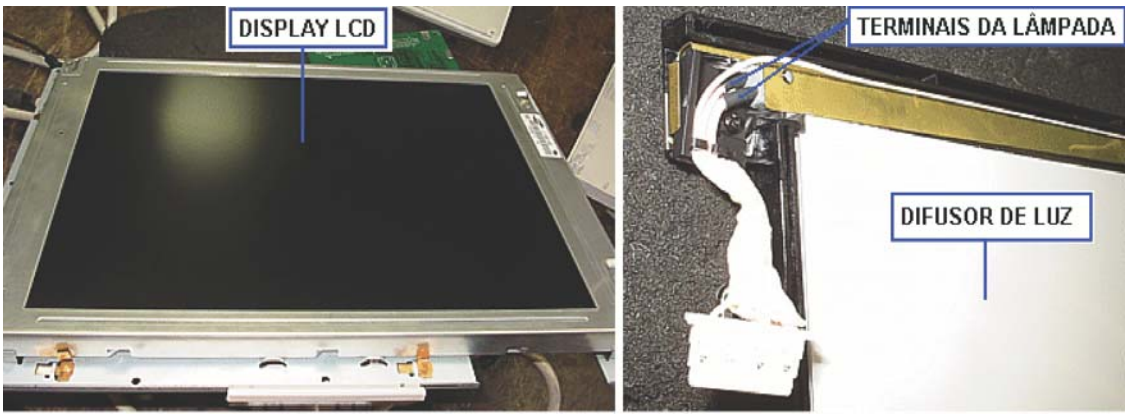
Take care n ptouch the solder to the plate when it is energized energized. The shock on the high you is fatal, but d i a lot.

First are the two largest SMD ICs. The biggest is the scale and the lowest is the micro. Even this last're near the keyboard connector and has the eeprom CI, 8 to the terminal side. Next we have to scale the crystal clock. On one side of the scale we have the DB15 connector that carries the signals to the monitor and the other side we have the output of LVDS for LCD display. Next the connector of the source we got the regulators of ICs and their makers eletrol your filter. The regulators provide + B of 3.3 and 2.5 V for feeds of your scale, micro and LCD display. IC MOSFET - MOSFET is a regulatory chaveador or mounted within a CI containing v rivers will drain and source terminals and a gate terminal to control. Thus it is a good option to dissipate heat in the small spaces. This type of component is common in LCD monitors and televisions. TYPE OF TFT LCD SCREENS USED IN TV AND MONITOR

TFT LCD SCREENS, TYPE USED IN TV AND MONITOR

The LCD screen is the equivalent to the picture tube of traditional monitors. It is composed of several layers and below we have all of the diffuser of light, which is a white plastic plate that distributes the light of two or more lamps of cold cathode fluorescent (CCFL) uniformly behind the screen. Also within the module's LCD display find the driver ICs of the pixels that form

the images in this display. In figure below we have a picture of a removed from a display screen showing in detail the terminal of a CCFL lamps



Important: The display of LCD is a module only, so any defect it will show, such as spots, dead pixel, broken glass, CI lamp or burnt, he should be replaced whole, as happened with the conventional tube monitors when they weakened, the filament burned or hinder in short

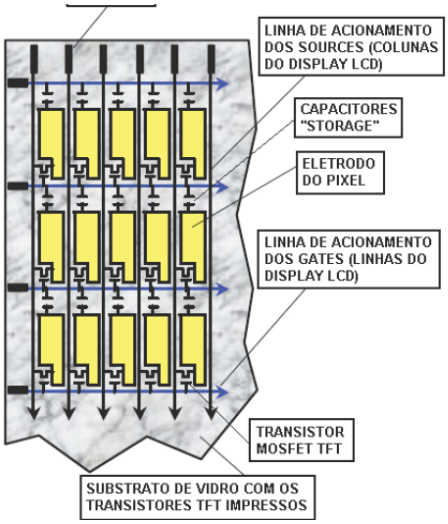
A DIVISION OF THE LCD DISPLAY AND TFTs

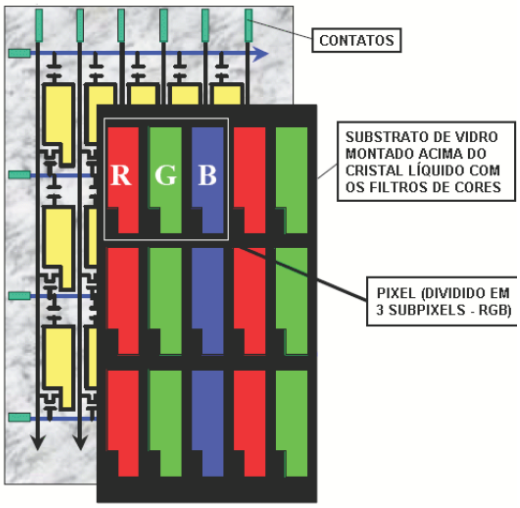
Pixel - is the smallest part that forms the image. Each pixel is formed by 3 subpixels, one red (R), one green (G) and one blue (B). The LCD screen is divided into pixels and subpixels. For example, a screen is SVGA resolution of 800 columns x 600 lines. Hence it is composed of 480,000 pixels. Since each pixel has 3 colors, then gives a total of 1,440,000 rooms in this screen. XVGA is already a screen resolution of 1024 x 768 has 786,432 pixels, and 2359296 divisions. The higher the screen resolution, the more rooms it should have. Each division (subpixel) of the screen is controlled by a tiny transistor MOSFET mounted on a glass block located behind the liquid crystal. Each this transistor is called TFT.

TFT - "Thin Film Transistor" - or the thin film transistor is a transistor mounted on a glass substrate. As explained, the LCD monitor has millions of transistors MOSFETs in a TFT glass located between the polarizer 1 and liquid crystal

block. An LCD screen resolution of 800 x 600 has 1,440,000 transistors mounted on the glass.

Each transistor is responsible for doing its subpixel let the light (on) or block (erased). See below the basic structure:





Each transistor is driven by the TFT gate line and the line of source pulses through digital level "0" or level "1." When the gate and source are level 1 (tension), the driving TFT and lets the light pass through the subpixel, this appearing green, red or blue and clear in front of the screen. When the gate or the source receive level 0 (no voltage), the driving TFT and subpixel is not deleted. For each image formed on the LCD panel, TFT receives each eight bits "0" and "1" each time. If all bits are 1, one subpixel displays the maximum brightness. If all bits 0 are that subpixel is erased. If some bits are 0 and are 1, the subpixel is off lights and eight times and so fast that our eyes see a glow weaker.

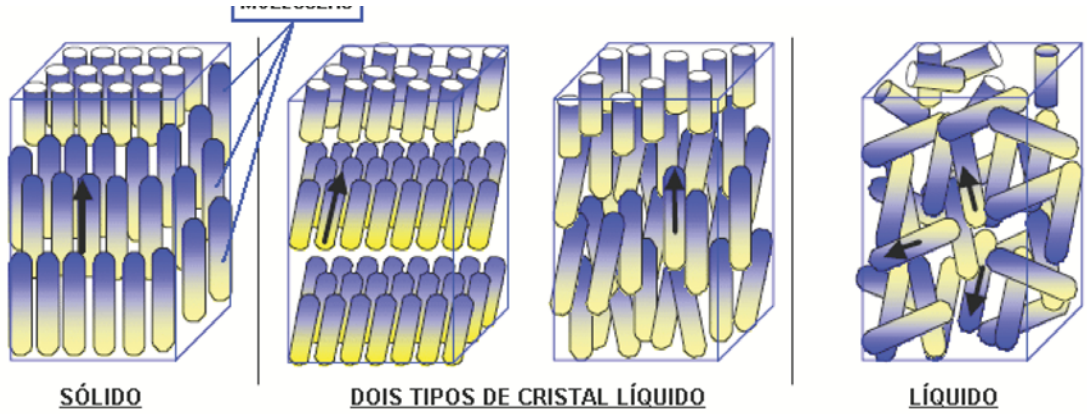
Since each subpixel (color) receives 8 bits at a time, he can make 256 levels of brightness. Since each pixel has three colors, multiplying the 256 levels of brightness for each one, that this pixel can play 256 (R) x 256 (G) x 256 (B) = 16,777,216 colors, or more than 16 million colors.

The capacitors "storage" to store information for a few moments of brightness that subpixel.

The TFT LCD screens using transistors are called active matrix and provide greater vibrancy to the image, being used by all computer monitors and LCD televisions of today.

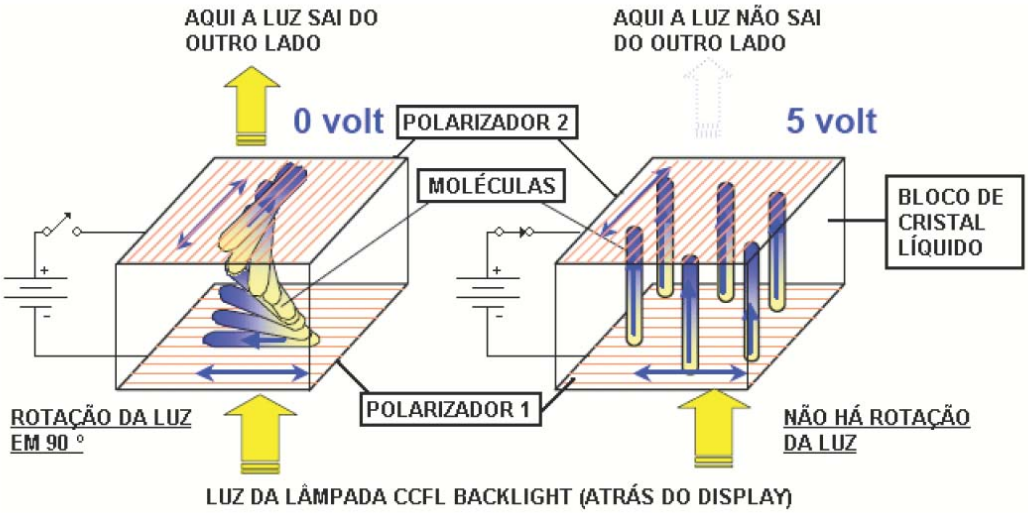
How the liquid crystal controlling light

Liquid crystal - is a substance with characteristics between those of solids and liquids. In solids the molecules are close and well organized in structures. In the liquid the molecules are much more separate and move on different directions. In the liquid crystal molecules are arranged in structures, but not so close as in solids. See below:



When a light beam passes through the molecules of liquid crystal, its direction is changed. Then just put the card liquid crystal between two polarized, apply tension between them and make the light pass through a polarizer, through the liquid crystal to reach the other polarizer.

Polarizer - Filter glass formed by grooves that only leaves the light switch in direction. The polarizer is placed at the ends of the liquid crystal with the grooves 90 of the one in the other. Among them is a source voltage that can be turned on or off. See the structure in the figure below:

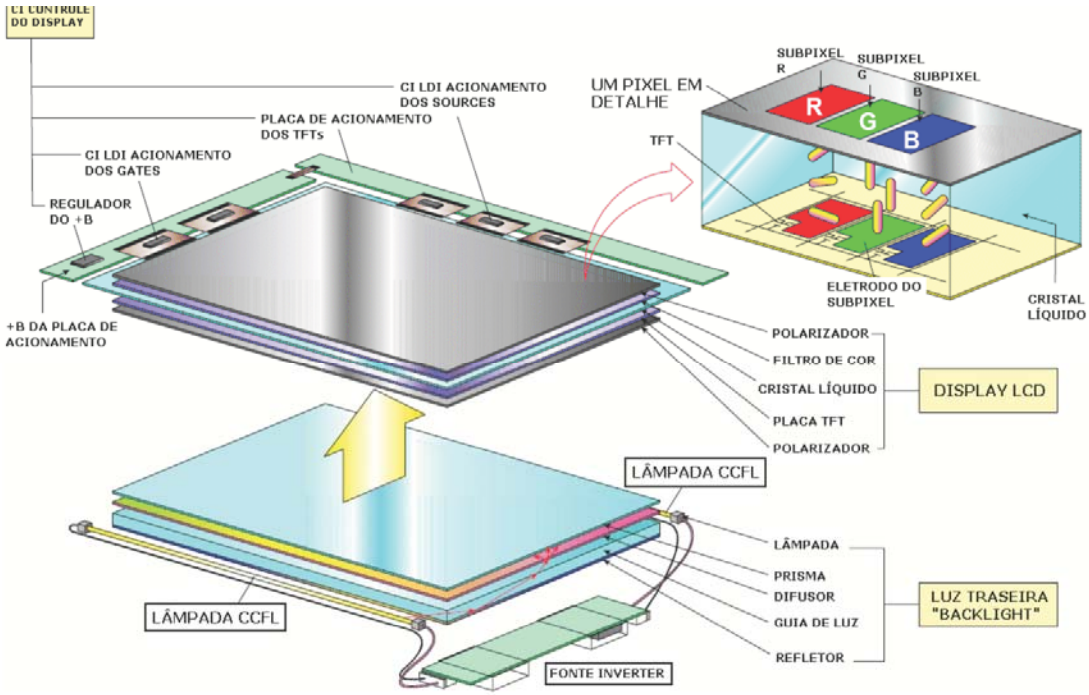


When no voltage applied between the polarizer, the light passes through the first and the molecules of the crystal liquid rooting in the light 90 so that she can cross the second and becomes visible in front of the display.

Once the display is clear. When voltage is applied between the polarized, the molecules are oriented differently not to change the direction of light from the polarizer 1. Thus the light can not leave the polarizer 2 and not can be seen in front of the display. Thus the display is dark. Controlling the level of voltage applied between the polarized and can vary the level of light that pass through the display

THE STRUCTURE AND DISPLAY LCD backlight (BACKLIGHT)

As explained, the LCD display is a sandwich of plates and glass substrates, and the structure of backlight (backlight). See below:



LCD screen - is formed by the following components:

Polarizer - Just leave the light switch in a direction;

TFT plate - glass substrate where the transistors are MOSFETs that control the brightness for each individual subpixel;

Color Filter - Substrate glass giving the colors to RGB subpixels controlled by MOSFETs;

Liquid crystal - Modifies or not the path of light passing through it depending on the voltage applied between the polarized by the board TFT MOSFETs.

Backlight - is formed by:

Lamps CCFL - cold cathode fluorescent lamps used to illuminate the display. The monitor can have two or more of these;

Source Inversora - Or turn provides between 300 and 1300 VAC to feed the bulbs. Controlling the voltage to lamp, adjust the brightness of the display;

Guide to light - directs the light to the LCD display;

Reflector - reflection of light to the guide;

Diffuser - Spread evenly the light of the backlight unit;

Prisma - Download the light from the backlight unit for LCD display.

Printed circuit board of the LCD display - Contains the IC and the display controller ICs to provide the LDI

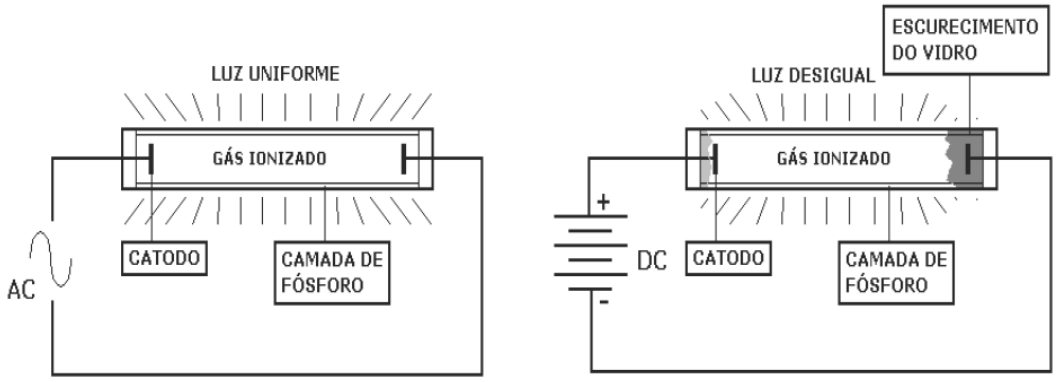
bits for the TFT drive. The screen LCD, the backlight unit and printed circuit board form a

all alone and as already explained, if it in any default, the whole thing should be replaced.

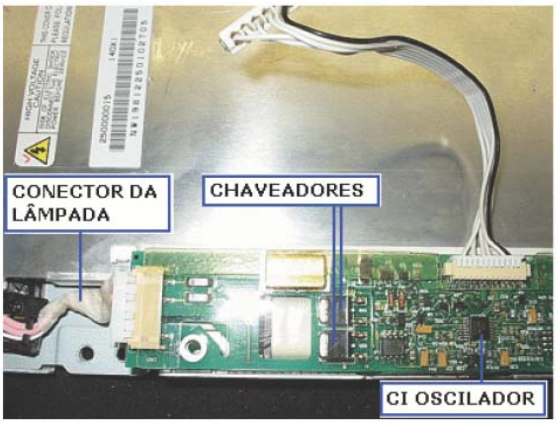
THE LIGHT OF LAMPS FOR LCD DISPLAY

As explained the lighting is made of cold cathode fluorescent lamps (CCFL). These lamps have a glass tube with inert gas inside (neon, argon and mercury), two domestic terminals known cathodes and a layer of phosphorus in the internal walls of glass. Applying a high voltage between the cathode, the gas is internal ionizes and emits ultraviolet light (UV). The UV excites the phosphor on the inside then that produces visible light in the lamp tube.

For greater durability of the lamp it should work with alternating voltage. If she also continuing tension lights, but with time the gases accumulate in the corners of the lamp, the dark-and producing a light unequal in these regions in relation to the remainder. See the schedule of these CCFL lamps fed with voltage alternating and continuous:



The CCFL lamps are fed with alternating voltage from 300 to 1300 V. This is achieved by a voltage source reverse. This source is composed of transformers, transistors and IC oscillator chaveadores working in high frequency (between 40 and 80 kHz). The reverse turns then a continuous low voltage between 12 and 19 V in a high alternating voltage to light the lamps. The reverse is an easy source to find the monitor. Simply follow the the lamp cables (two cables for each). The plate where they are embedded source is the reverse. Below the location of the source of a reverse LCD monitor:



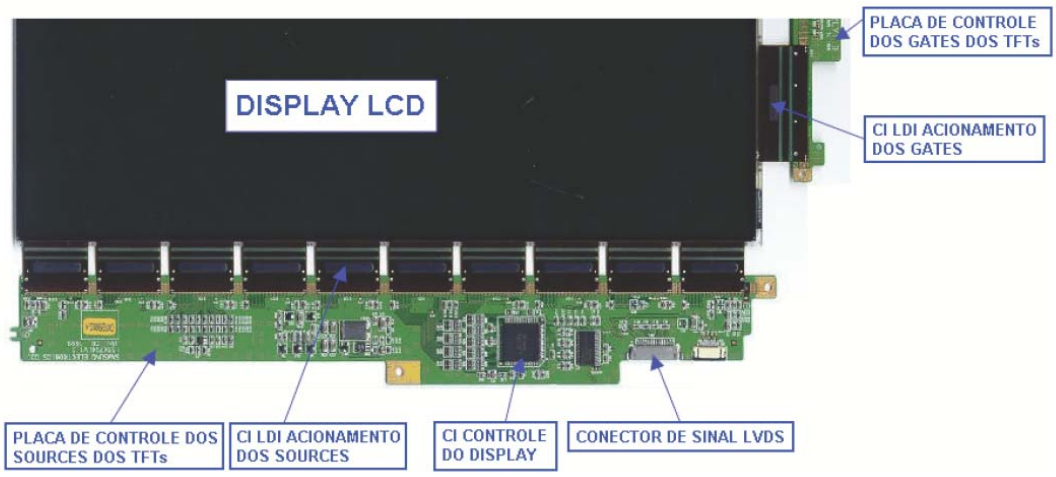
Source in reverse also enter a control signal from the plate of the monitor to control the voltage supplied to bulbs and thus adjust the brightness of the screen. Also enter a control signal to turn off the lamp in case of any failure in the system such as the burning of a lamp of the display.

CONTROL OF THE Transistor TFT LCD DISPLAY

The connection between the LCD display board and the monitor is made by a connector called LVDS (differential signaling low voltage). Thus the digital data are applied to the display by lines of 0 or 1.2 V providing greater speed transfer of data and no noise.

By going through the LVDS connector, the data goes to a driver IC for the display and the various ICs that LDI provide the bit to drive the TFT transistors. The controller IC of the display is located on a plate the glass substrate where the TFTs.

ICs are already ILD between the plate and glass substrate. But these components are not replaced when burn. The solution is to change the entire display. See the figure below the location of the drive ICs transistors of the TFT display:



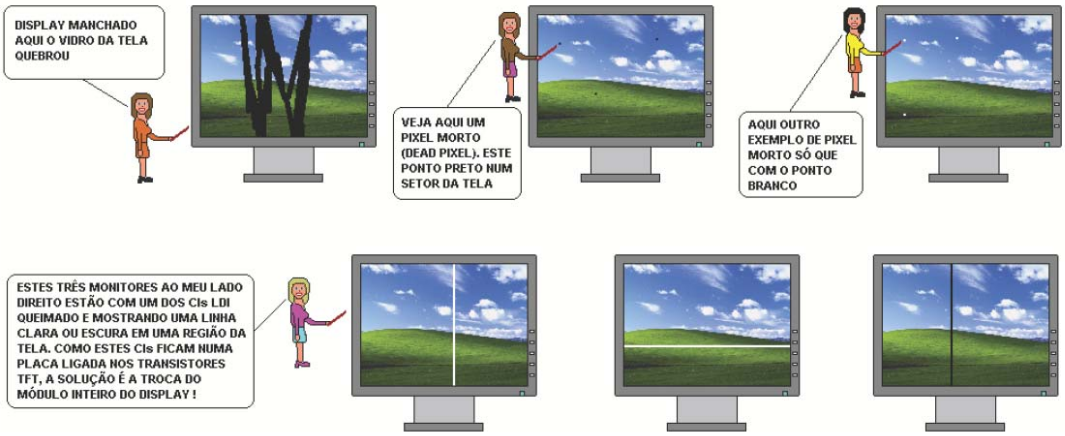
On board display also enter a B + at 3.3 or 5 V to power the ICs in control and ILD.

ITINERARIES FOR REPAIR OF LCD MONITOR

This is the part that everyone was waiting. The procedures to repair these types of monitors. Before we classify the defects into two groups: the defects related to display and other related circuits, in some cases may also be on display.

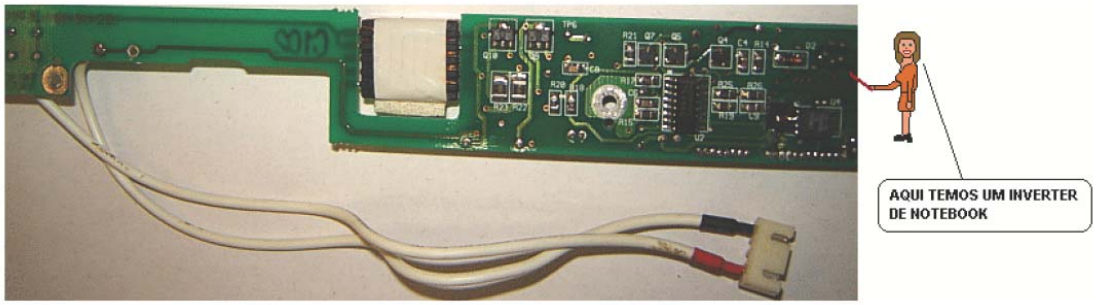
DEFECTS IN THE LCD DISPLAY

Failures that typically require the full exchange of the display. Are caused by: one or more transistors TFT burned, burnt bulb or IC card in the display or the breaking of glass or spots on the display. See the figure below some defects related to the display:



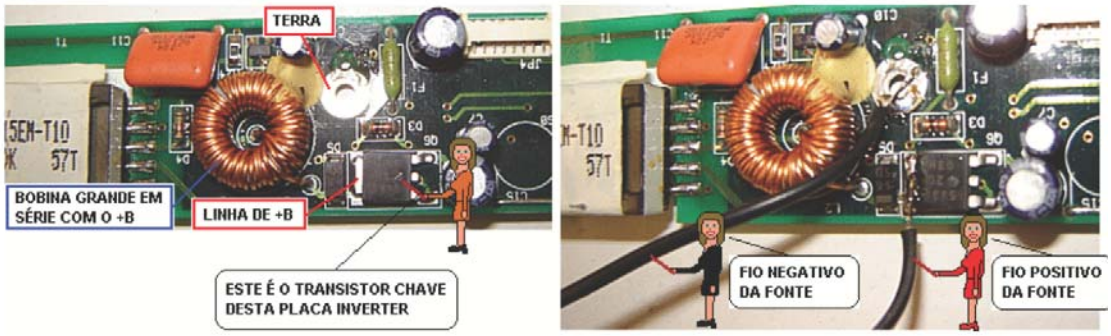
HOW THE TEST ON DISPLAY LAMPS

1 - Get a reverse source - can be convicted of LCD monitor, display of old notebook or even a old scanner. This material can be purchased in a box of scrap computers. Below is the source to be used as an example for our test:



2 - Find a source of 12 V - may be disposed of in a battery, a source of computer or any other source. Below is the source to be used in the test:

3 - Connect the source of the plate in reverse - Solder the negative wire from the source in the earth's plate that is usually the reverse

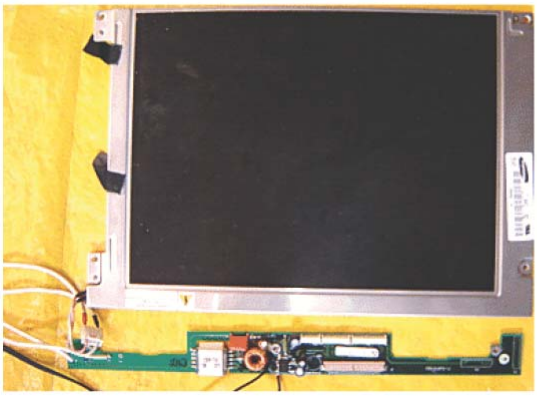


trail around a large hole in the plate or the wider tracks. The positive wire of the source is in the largest sink transistor that is on the board. He usually be on the same track of a large coil. Below the points of link:

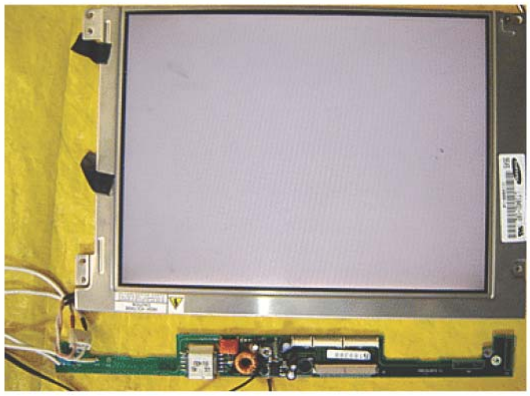
4 - Connect the output voltage of the inverting terminal of the lamp in the display - if the display has more than one lamp, test one at a time. Connect the source to outlet. In each pair of terminals that we reverse the binding, the display should light up indicating that light is good. If the test on a pair of terminals, the display does not indicates that light bulb is burned. In this case the

solution is to change the display. See below as is the test:

DISPLAY NÃO ACENDEU - LÂMPADA QUEIMADA

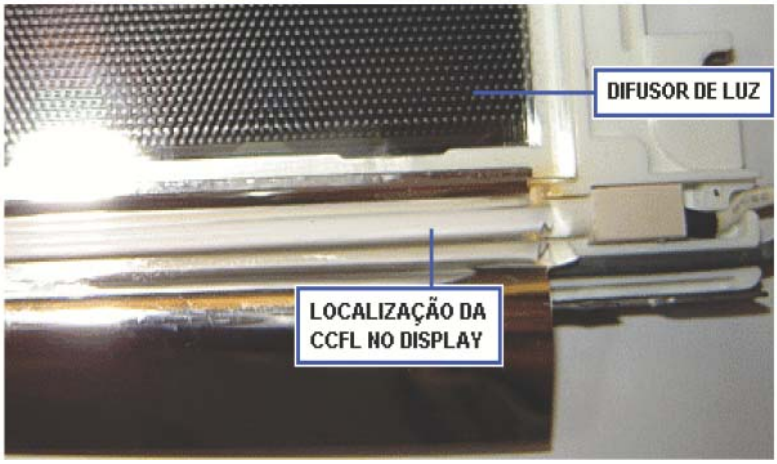


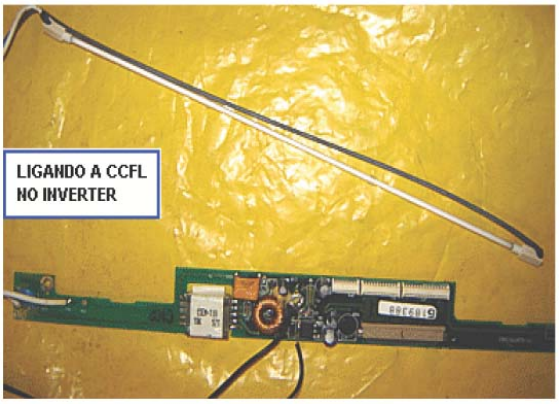
DISPLAY ACENDEU - LÂMPADA BOA



TESTING THE DISPLAY OF THE LAMP

If you can disassemble an LCD display without break it or damage it (not recommended) notice that CCFL bulbs are located in the extreme and back of the diffuser of light (if the display has more than two lamps). To test the reverse simply connect the two wires of the lamp is energized it. The lamp must emit a light white. If the lamp does not light, it is burned. See how this test is performed and the location of these lamps below:

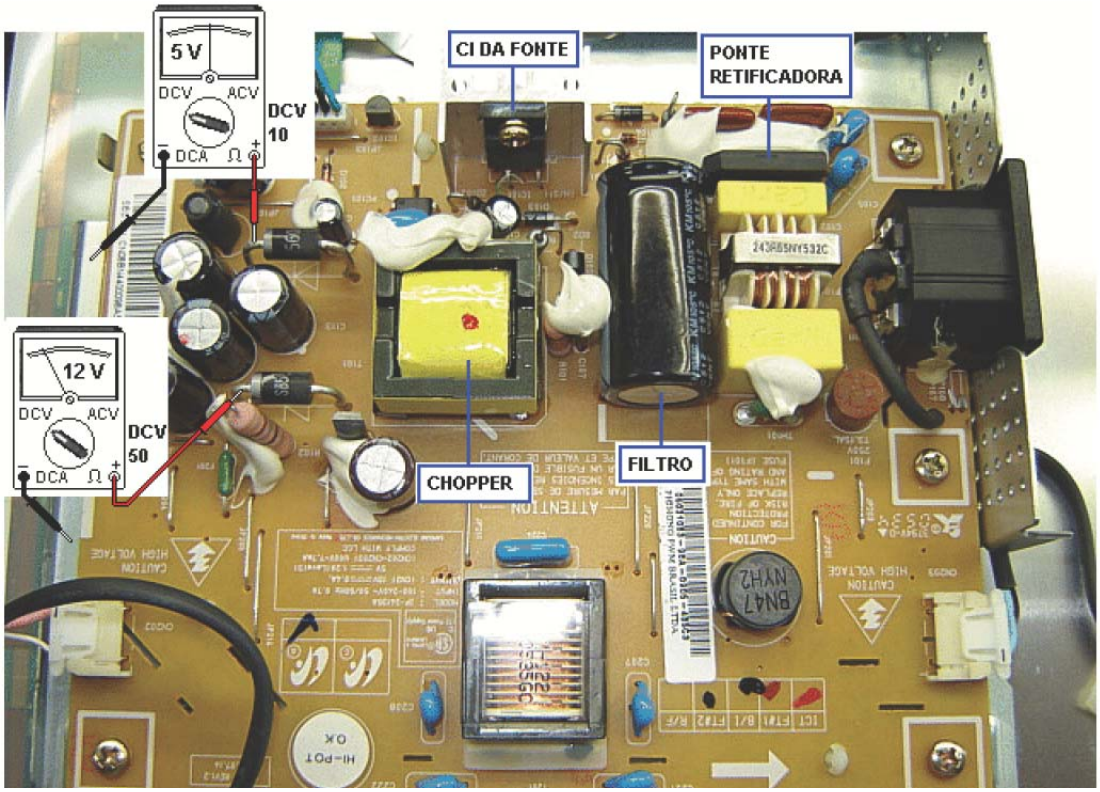




The LIGA NO MONITOR PANEL AND LED does not light

This defect can be caused by internal power source (or as external monitors for some), a regulator of the CI or the CI motherboard micro.

1 - Measure the B + that comes in each diode connected in the source Trafo chopper - to leave them a 5 V and the other in around 12 V. See the picture below:



SCREEN LIT BUT NO IMAGE

1 - Measure the B + feed to the IC Scale - Normally this pin is part of B + at 3.3 V and the other lower voltage can be 2.5 V or 1.7 V. See the figure below the items in the scale of the monitor IC from Samsung:

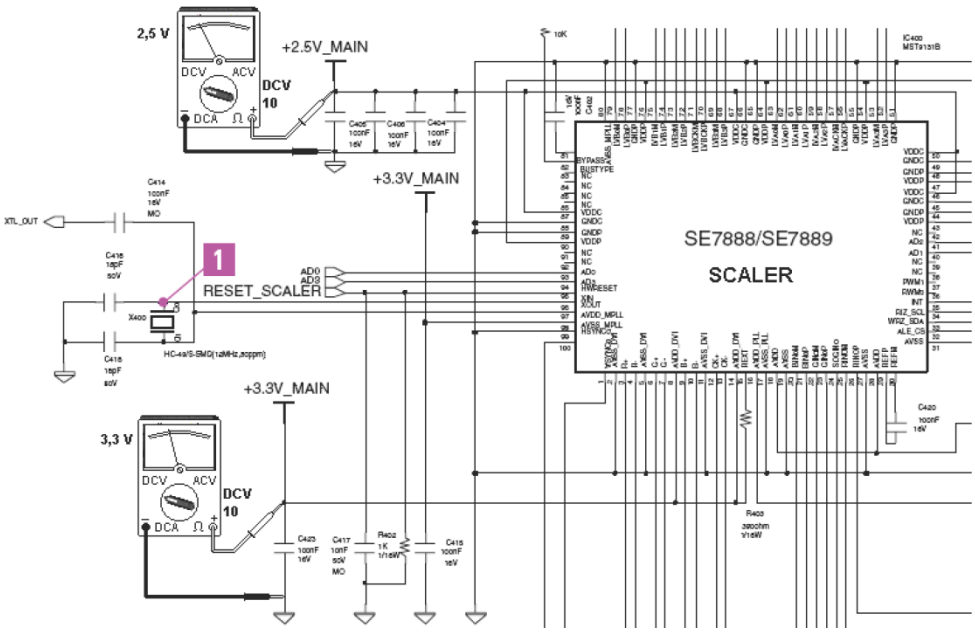
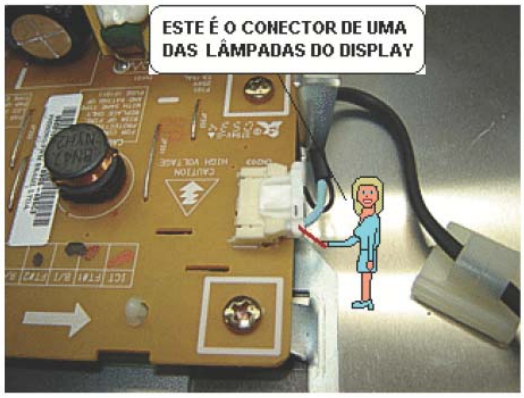


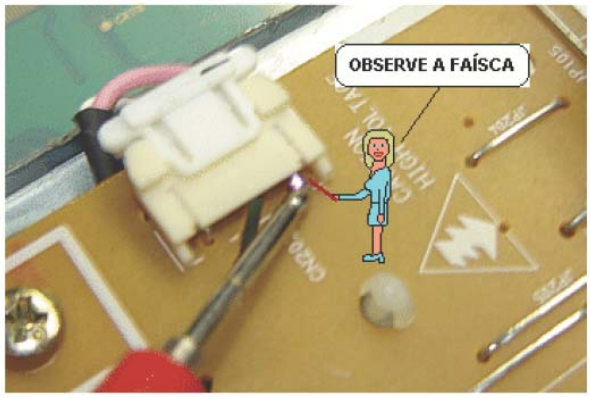
Image too dark

This defect occurs when the lights of the display are erased. It can be caused by burning lamp, source reverse fault with or without + B. Let the procedure:

Measure the A-B + source that feeds the reverse - B + This varies from 12 to 19 V depending on the model of the monitor. See below this voltage is measured as it leaves reminding one of the side of the chopper of the source words:

B - B + It has 12 to 19 V source in reverse - See if the monitor has to connect high-voltage bulbs as follows way: Put the multimeter in LCA 1000, black tip on earth (some shielding of the monitor) and the red close to the terminals of the lamp, one at a time. If you see a small blue spark in any of terminals of the lamp, followed by movement of the pointer to the end or close, is a sign that has high voltage. In this If the source is good and the reverse fault lamp is burned and the solution is to change the display. See the procedure below:



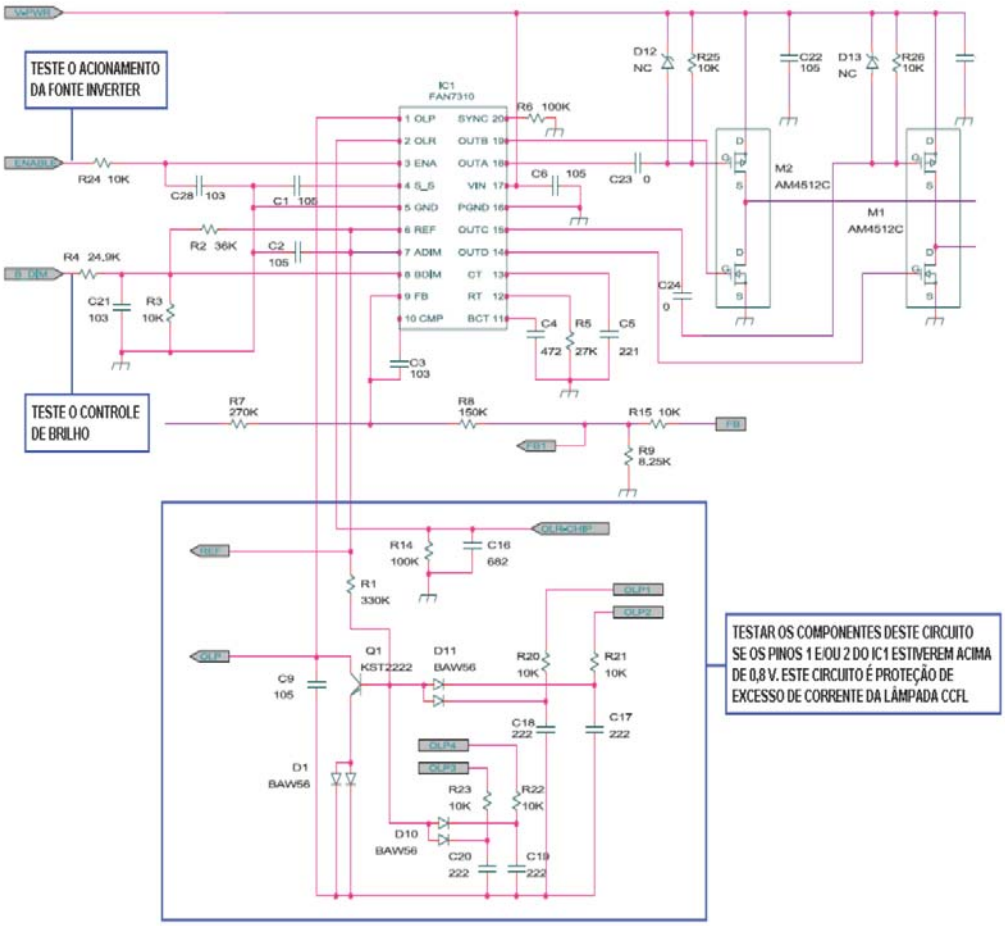


C - Is the high voltage connector of the lamp - in this case the fault lamp is burning and we must change the display whole.

Image and dim Then

This defect is usually caused by one of CCFL lamps burning. When the burning of a the electronic circuit lights off then turn the source for the difference in illumination does not leave marks on the LCD display.

If the bulbs are good, the defect may be in the circuit that monitors the flow of them in the drive to reverse (including micro CI). See below



Make sure the time that the lamp erases the tension and varies in points ENABLE DIM. If you do not vary, the defect is even reverse the plaque could be the circuit of over-current protection of the lamps. If the voltage varies ENABLE point and / or DIM, the defect is in the CI micro that is off the lights without reason.

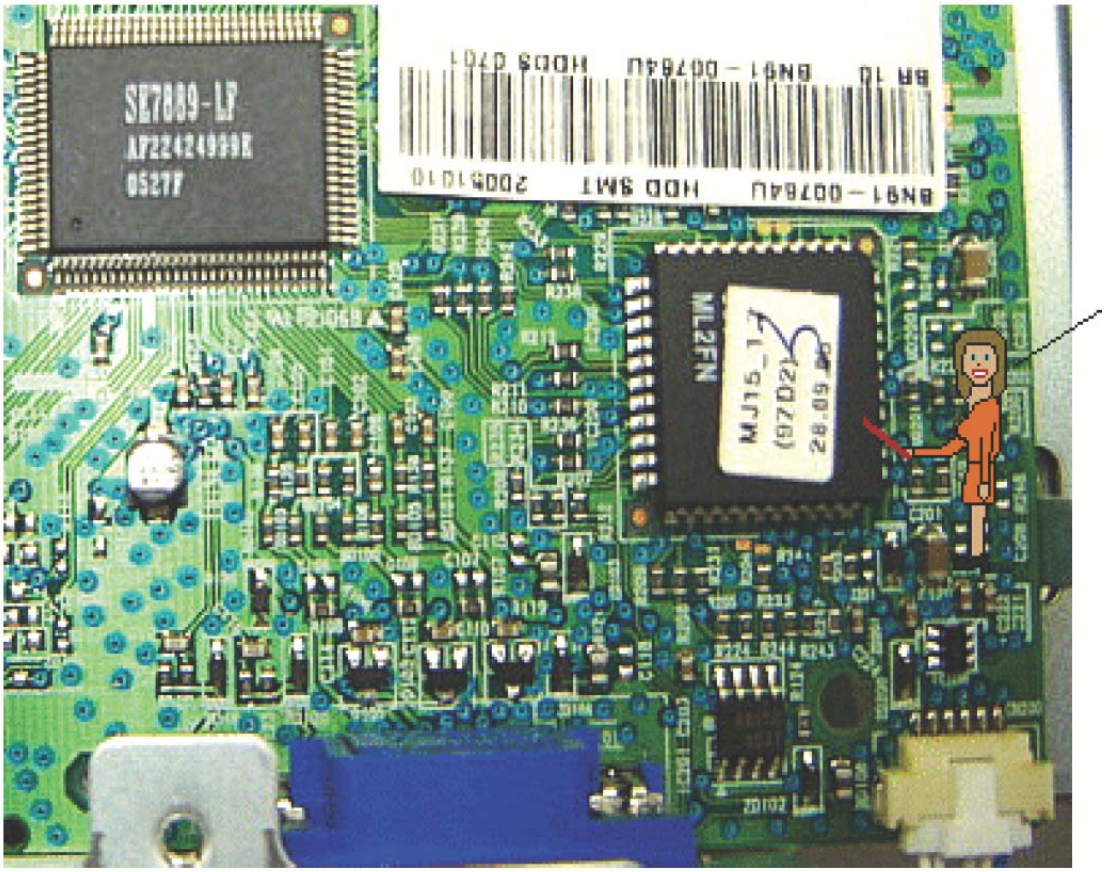
Lights LED PANEL, BUT THE SCREEN IS TOTALLY DELETE

The first thing to do is check the voltage supplied by all the regulators ICs motherboard has already explained in other defects.

If all voltages are correct and changed the eeprom micro (normally a 24XX series of IC), but these two ICs must already

be recorded, if not to find the solution will be changing the motherboard.

On some monitors the eeprom is inside the microwave. See below:



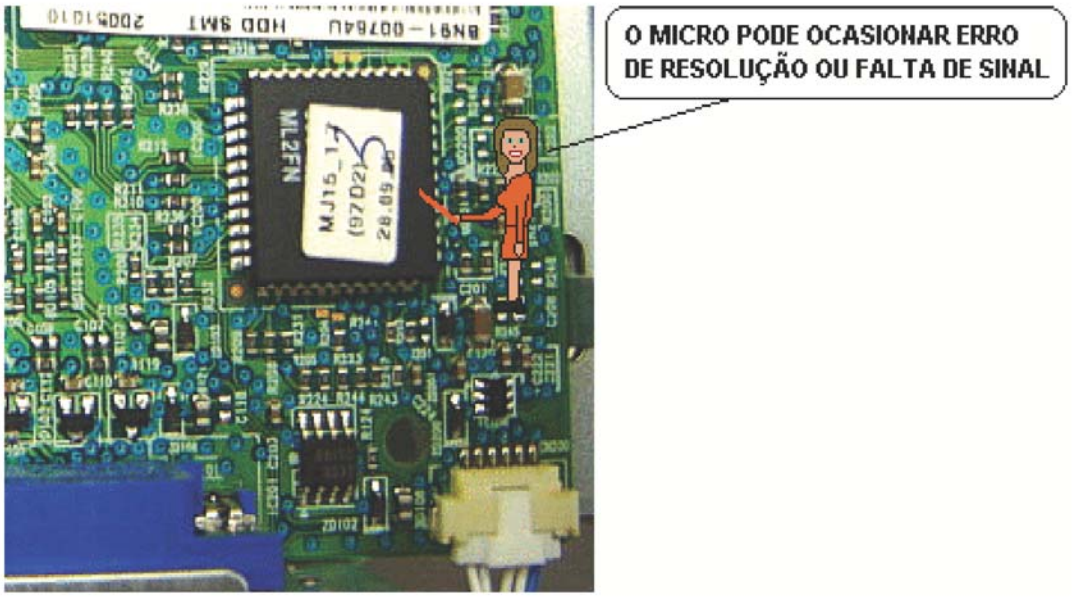
INDICATES LACK OF SIGNAL

Even with the signal cable connected to the computer. You can also get a window showing error resolution or resolution is not supported.

This defect occurs in much of the Samsung monitors because of a flaw in the program of micro CI.

The most viable solution is the exchange of micro or failing that in exchange for the complete motherboard.

There are shops specializing in sales of components for LCD monitors such as the federal components www.federalcomp.com.br in which you find such a replacement for CI. See below



NOT HAVE THE POWER IN Transistor CHAVEADORES SOURCE INVERTER

In several televisions and LCD monitors have a power transistor in reverse source that is in series with the B + that vai chaveadores of the transistors Trafo.

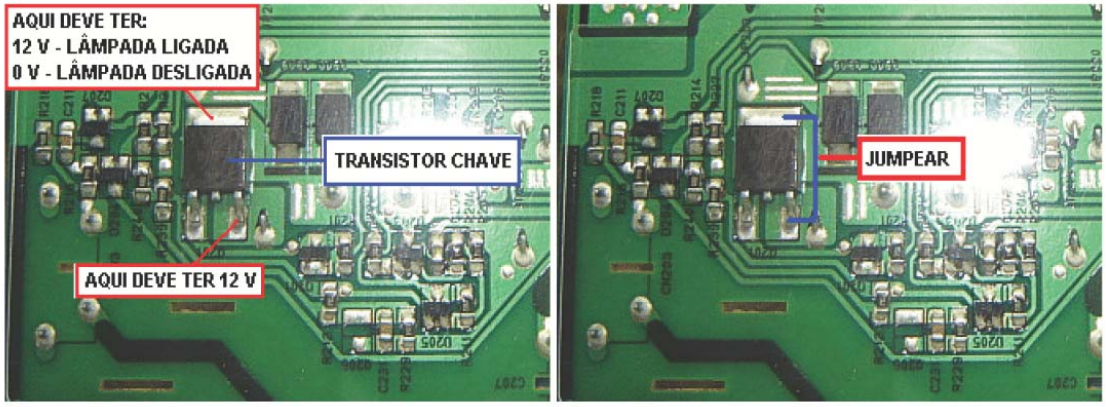
This power transistor receives the name of key and is controlled by micro CI.

May be a PNP, where the B + enters and exits the emitter collector or a P-channel MOSFET where the source enters the B + and leaving the drain.

After locating the transistor, to be sure if he is, measure the voltage pins in the ends, must give 12 V or more and the central terminal (sink) to provide 0 V to disconnect the 12 V lamp and to connect it.

We can do a quick test on it: putting it into the terminal where short enter 12 V with the heatsink. If the lamp display of lights, the defect may be in this transistor, the components associated with it or not micro CI is providing command to connect the lights.

If the display does not turn on, the defect is in the same source reverse. See below

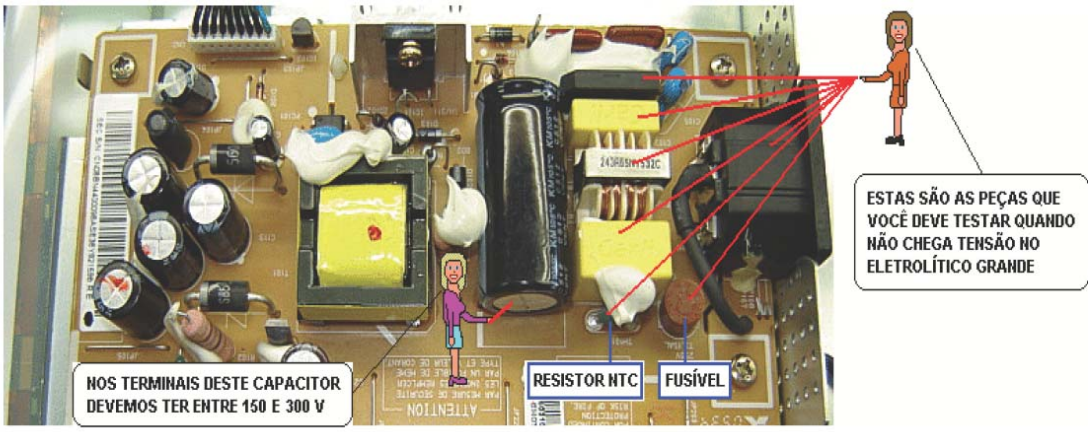


B + SAI NOT IN CONNECTION WITH CHOPPER Diodes

First of all disconnect the adapter from the source of the motherboard. Measure again in the B + diodes connected in chopper.

If the + B now appears the defect is in the motherboard (some CI in short). If still no tensions showing the defect is in the source.

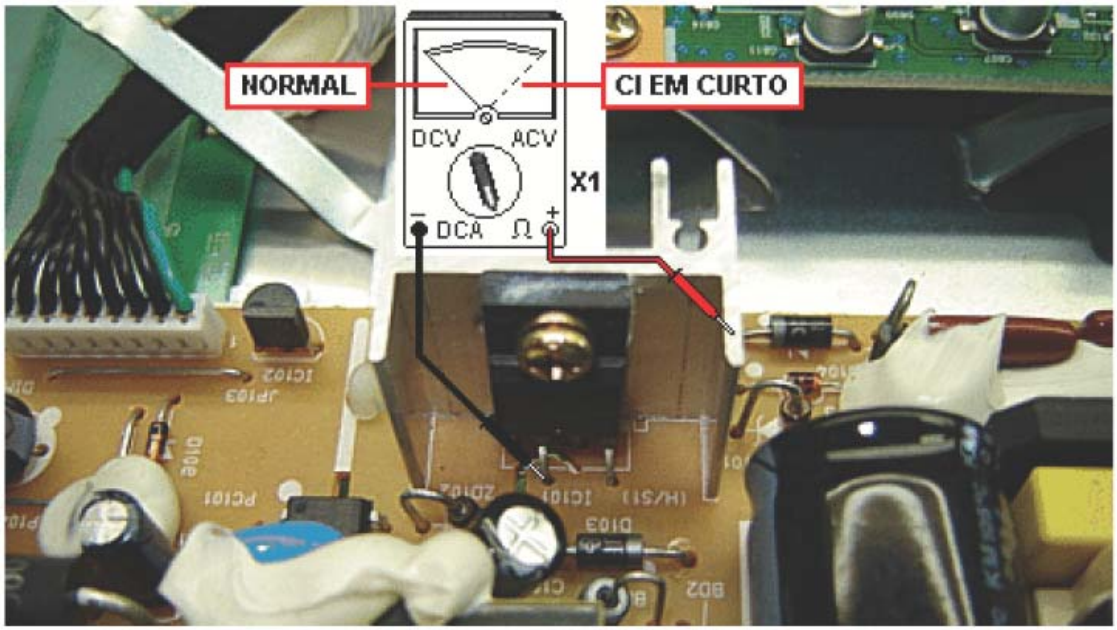
A - Measure the voltage at the terminals of the capacitor filter (the higher electrolyte) of the source - there should be about 150 V (if the network is 110 V) or 300 V (if the network is 220 V). If you do not have voltage at the terminals of the capacitor, the defect is before him and there should test: Fuse, coil filter network, the bridge rectifiers, resistors and electrolytic capacitor connected to the tracks. Below:



B - Fuse burned - Before the exchange test the bridge rectifier.

If the bridge is good to see if the CI source is not switched in short as follows:

Using the scale of the X1 multimeter, place the black tip on pin 1 or 2 in the IC and red earth (the heatsink CI). The pointer does not move. If you move, the CI is short. Below is how:

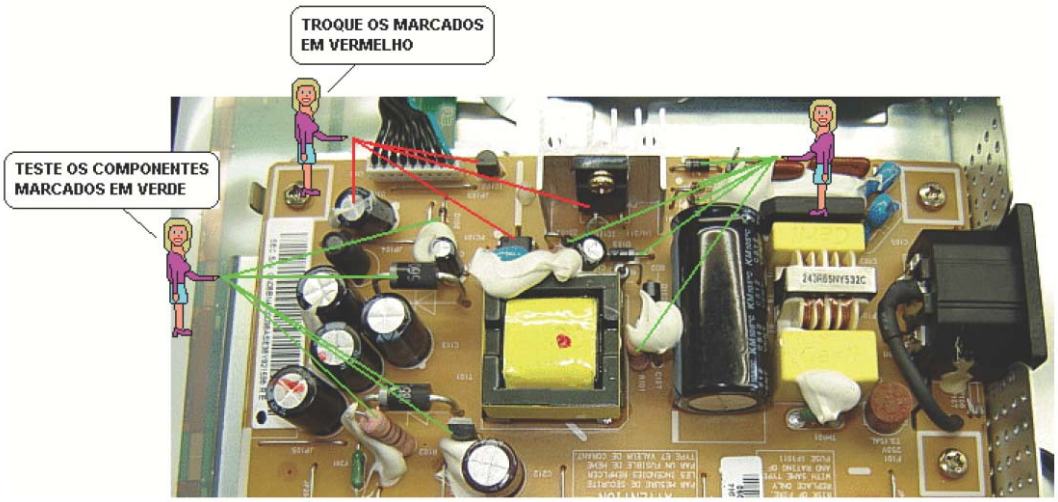


C - Is the voltage of filter capacitor, but the source key does not work - Download the capacitor filter using a resistor between 1 K and 2K2 x 10 W.

Then test the cold: the diode both connected in the secondary side of the chopper when the primary, resistors, transistors and coils of the source.

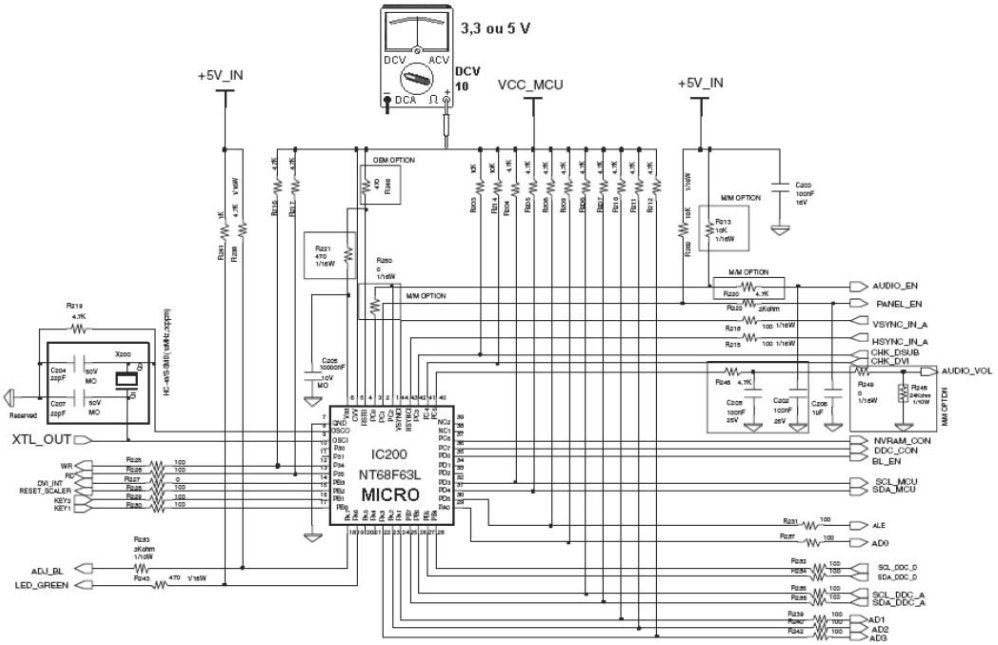
The following exchange: the CI source, fotoacoplador, the error amplifier IC KA431 and the electrolyte.

See also detail whether there is any broken track at the source. See the details below



MET + B IN NORMAL Diodes LEAVING THE CHOPPER, BUT NOT MONITOR THE LEAGUE

Make sure you get B + in micro CI (3.3 or 5 V), as indicated below:



A - B + It normal to micro:

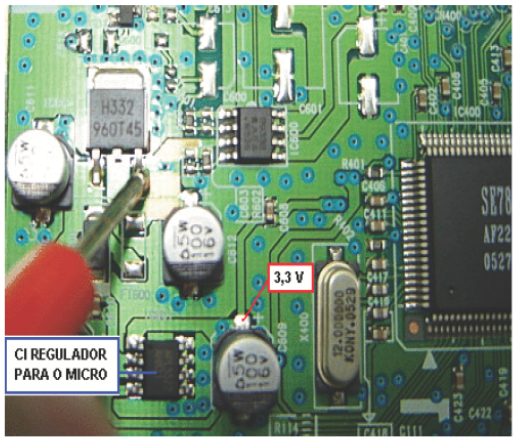
The defect may be in the micro, the eeprom or the crystal clock.

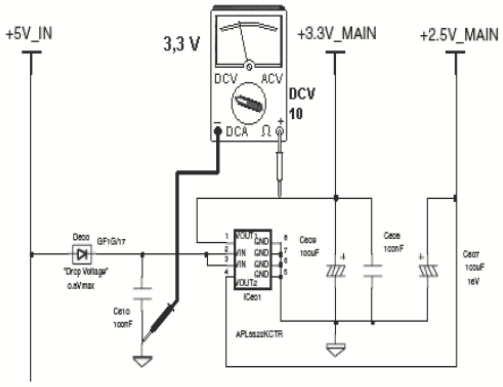
In this case we use a frequencymeter or an oscilloscope to see if the crystal is oscillating.

B - B + It is not enough in the microwave:

We tested the CI of 3.3 V regulator that feeds the microwave. As already explained this CI is in motherboard. See below:

abaixo:

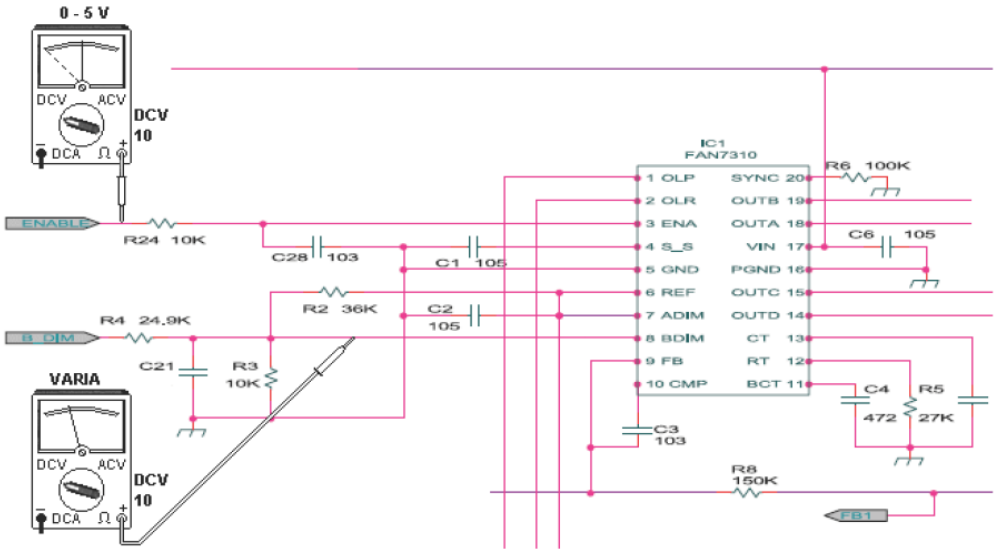




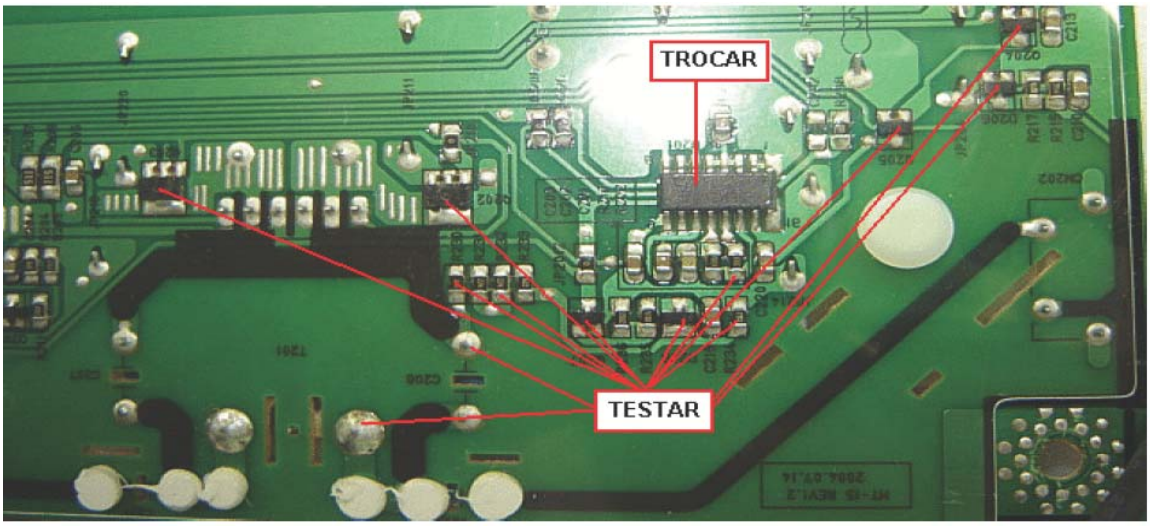
If you have voltage at the entrance, but is not in the output of the regulator IC, the defect may be in CI or in some other B + line down the tension, especially if the regulator is too hot.

VOLTAGE IS NORMAL IN THE transistors and IC INVERTER, BUT DOES NOT HAVE HIGH VOLTAGE

In this case we should test the command on / off and the DIM command (control of brightness) of the IC card to the micro the reverse. The on / off a voltage is 0 to 5 V and 3 V or 0 to enable the IC's oscillator source reverse. The DIM is a voltage that varies in the pins of the oscillator for him to control the brightness of the lamps dislay. See below:



If we do not have the controls on / off and DIM (brightness control), the defect is in the micro CI. Now if these commands normally, the defect is in the same source and must reverse test: transistors, diodes, resistors, reels, Trafo and replace the IC oscillator, as shown below:

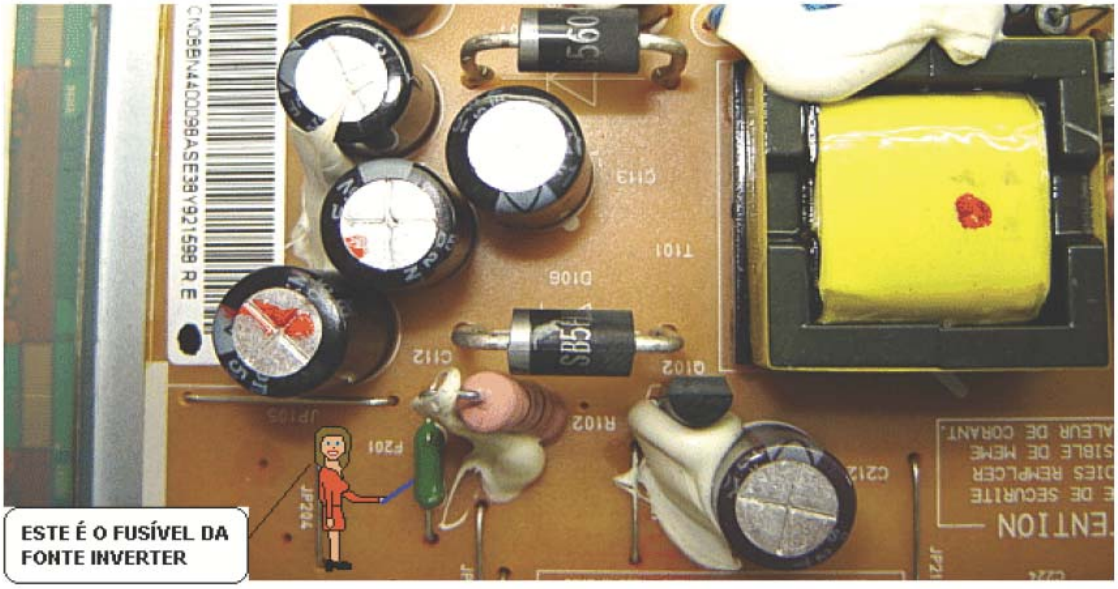


HIGH VOLTAGE IS NOT FOR DISPLAY OF LAMPS

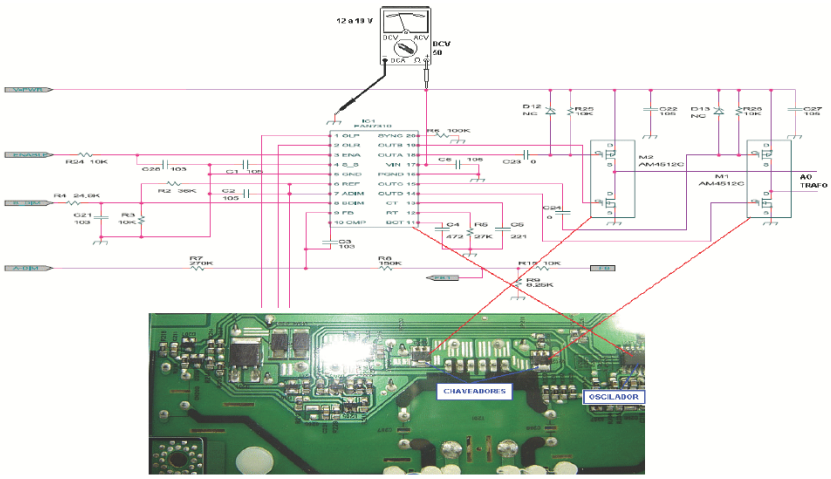
In this case the defect can be reversed at the source or the CI micro that is not providing the command to drive source of the reverse.

A - Test the fuse board to reverse that - He burning and the source does not provide very high voltage to the bulbs.

See the location of a fuse these below:



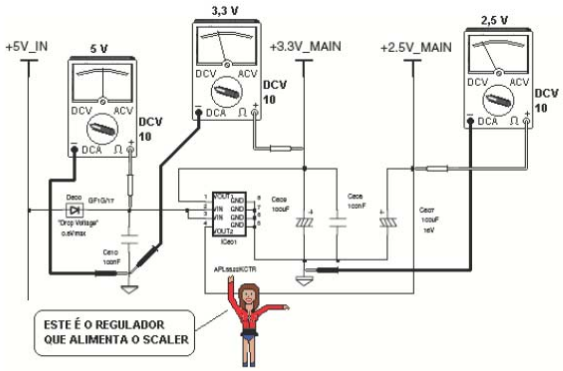
B - The fuse is normal - Make sure you get B + in the chaveadores Trafo MOSFETs transistors and IC's oscillator source reverse. See below:

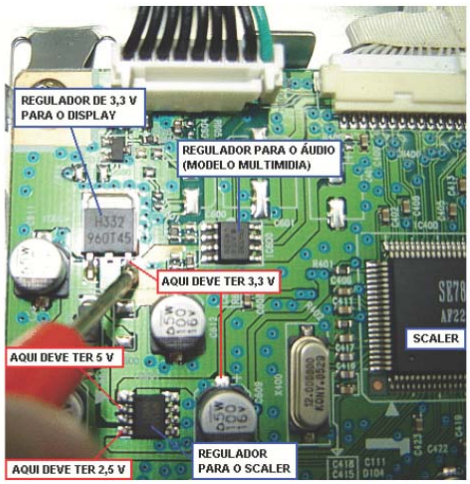


NO + B OF A SCALE OF POWER LINES

A - Measure the voltage at the input and output pins of voltage regulator ICs:

See the procedure below:





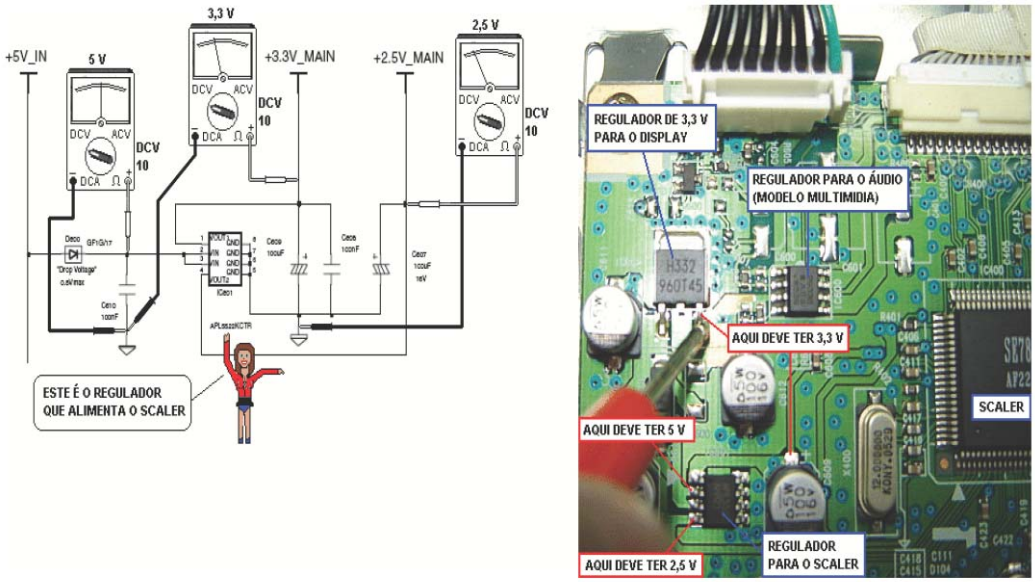
B - There is no B + in the output of one of the regulators:

If this CI is too hot is more likely to have a short in one of the B + pin of the scale and in this case may be the actual scale.

If the regulator IC is cold or warm and not loose + B will have to replace it.

A - Measure the voltage at the input and output pins of voltage regulator ICs:

See the procedure below:



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If this CI is too hot is more likely to have a short in one of the B + pin of the scale and in this case

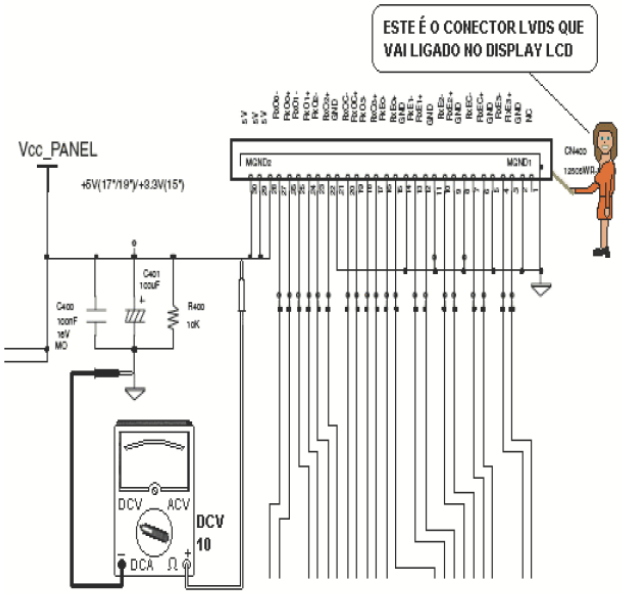
may be the actual scale.

If the regulator IC is cold or warm and not loose + B will have to replace it.

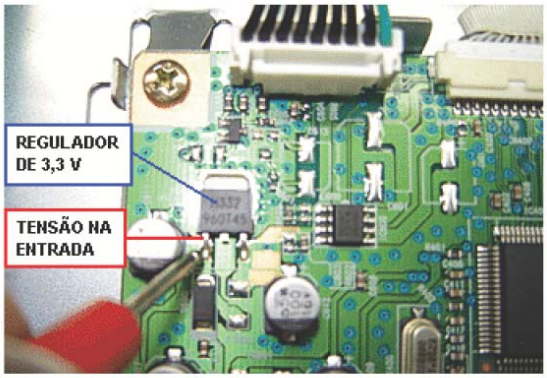
NORMAL POWER IS IN SCALE

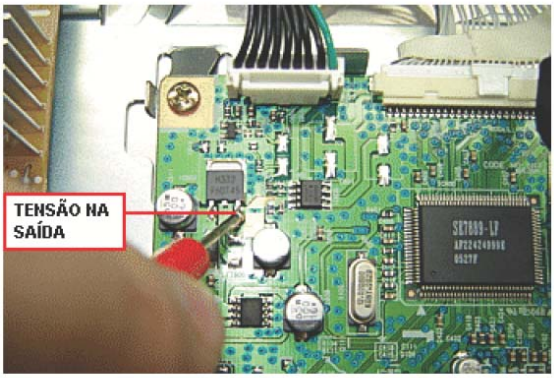
A - Measure the voltage at the pins from B + to feed the LCD display:

This voltage is measured at the connector that goes to the display, and 3.3 V for the display of 15 "and 5 V to-screen monitors greater. See below:



B - B + It is not enough in the display: **Measure the voltage on the input and output of the regulator that powers the display as shown below:**





C - No exit voltage regulator that feeds the display:

Disconnect the display again and measure the voltage at the output of the regulator.

Now appear normal stress, the defect is in the display to be changed. If it does not yet + B in the output of the regulator, the CI should be replaced.

D - B + It has the scale and the normal display:

Replace the IC scale and the complete absence of the plate where he is.

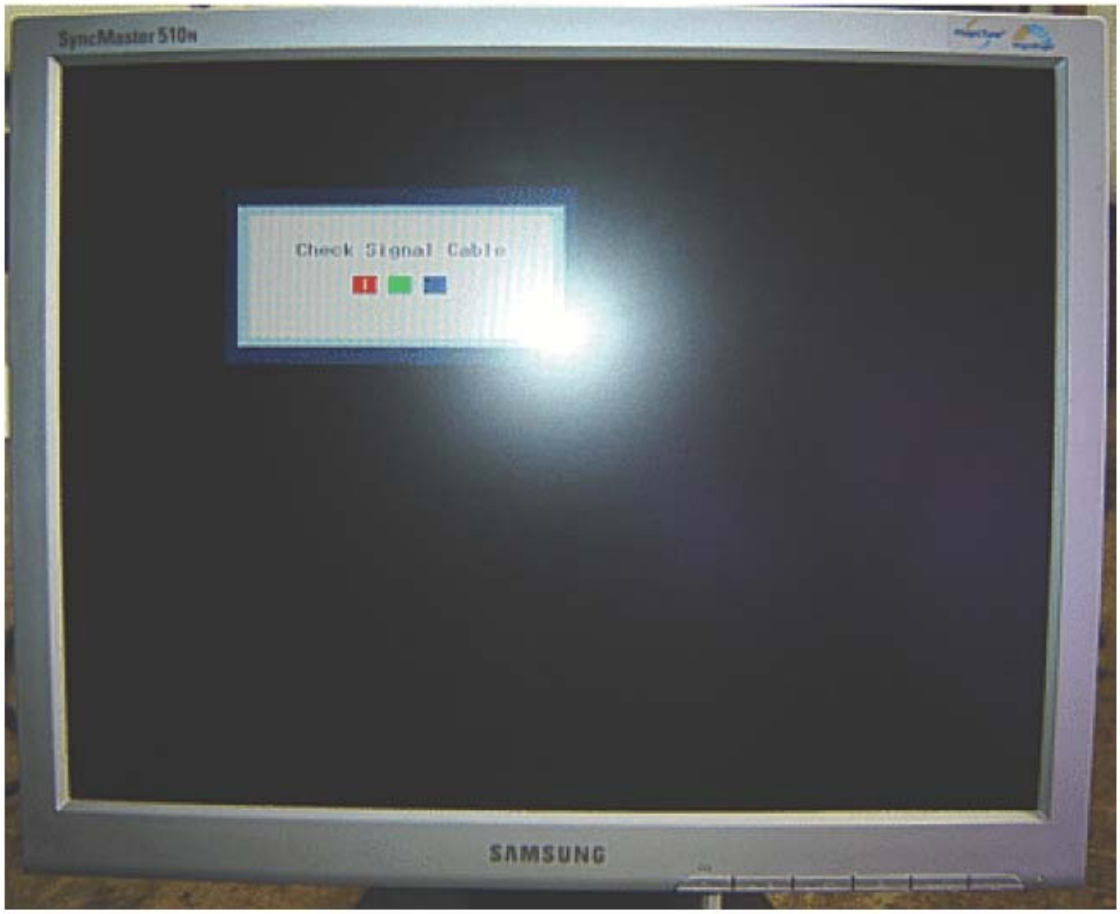
EXAMPLE OF EXCHANGE OF CI IN LCD MONITOR

Below is an example of a fairly common defect in the lines of monitors Samsung 510N, 540N, 710N and 740N.

Appears only one who is going through boxes screen indicating lack of signal on the cable (even in this connected computer) or error resolution.

This failure occurs because of an error in the program's internal micro CI.

In this case the solution is the exchange of the CI and how SMD take some care in this procedure.



EXCHANGE OF IC SMD

Need the following materials:

- Soldering iron of 30 or 40 W, fine art and well cleaned.

- Solder joint quality standard "Best" or "Cobix.

- Welding of low merger.

- Flow soldering (pitch + isopropyl alcohol).

- Piece of wire mesh or failing that a cabinho pickled.

- Isopropyl alcohol for cleaning the plate.

- Toothbrushes.

- Piece of cotton cloth (old t-shirt type fabric).

1 -- Purchase a new IC with exactly the same code from being exchanged, especially in the case of micros.

Parts for LCD monitors can be found at shops specializing in displays for example:

www.federalcomp.com.br.

2 -- Spread the low-melting solder to all pins of the IC that will be exchanged. Take care not to exaggerate the quantity.

Then using the tip of the soldering iron to solder heat evenly on all the IC pins.

Using a small screwdriver as a lever to lift the IC card so that it falls on the bench.

Then remove the surplus solder from the board with the tip of the iron.

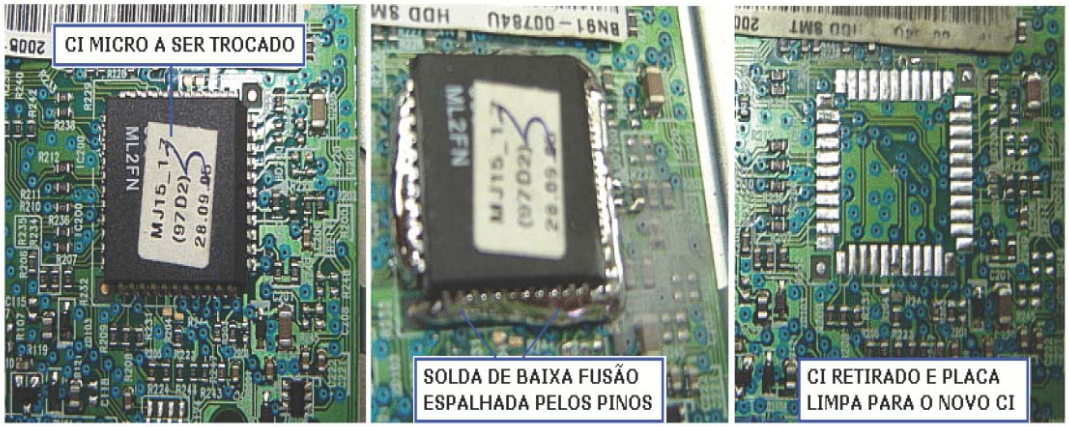
In the trails of the plate where the soldier was cleaning the CI can be made with the wire mesh:

Pass flow of solder at the tip of the loop, lean-to on the trails.

Pull the tip of the iron mesh that attract heat and the remains of soldiers who were on the trails.

Then wipe the rest of the plate with a toothbrush, isopropyl alcohol and cloth shirt.

Below the IC has withdrawn from the plate:



3 -- Correctly position the new tracks on the IC card and apply the solder joint in the extremes of the IC pins.

Do not worry about the pins that have been in short.

The purpose of this operation is set in the IC card.

4 -- Apply a little solder to flow on one side of the IC.

Make a large pellet of solder pins on this side of the point where the flow was applied.

Lift the plate and slide the tip of the soldering iron to solder pulling down.

The solder drop, welding the pins in the tracks and because the flow will not be between two pins.

If you happen to be two or more pins can be glued desgrudá them using the wire mesh embedded in the flow,

against it in pins glued, heat and so it attracts the solder undoing the short.

See the figure below the CI has the new card and the monitor back to work properly:

:


CI NOVO


LCD
NOVATEK
CI JÁ COLOCADO E
PLACA JÁ LIMPA


O MONITOR VOLTOU A FUNCIONAR NORMAL