M A
L I G H T I N G

Service MA *nual*

**Exchanging the Main Board
grandMA** *full size* up to s/n 903

Exchanging the Main Board

The following work must be performed of trained and qualified personal only! Disobeying the instructions and/or the prescribed work flow can severely damage the device. This manual is intended as supportive means for trained and qualified personnel.

Depending on how the console is equipped, further work may be necessary.

The DFI-Main board is a substitute for mainboards of consoles with S/N up to 903. Don´t use the DFI Main board for consoles with S/N higher than 903.
All consoles must be equipped with the 100Mbit UpgradeKit. You can recognize this version by the network RJ45 plug on the back side

If this ethernet connection is not in place:
First, you have to install the 100Mbit upgrade and remove the network adapter. Then, you can exchange the main board. Please contact your distributor or - if the technical prerequisites are given - install the UpgradeKit yourself. A special instruction is added to the kit.
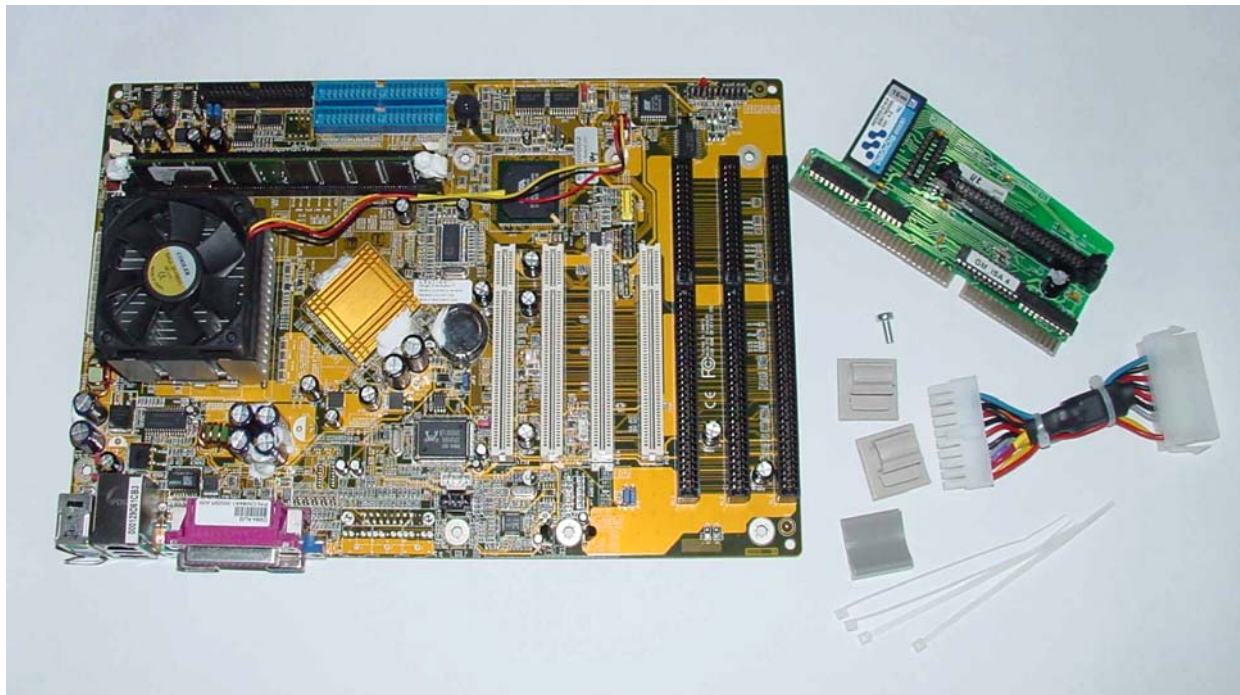
For consoles with s/n from 0 up to 91 (with ASUS - Motherboard) please note special hints in the rear of this manual.

Exchanging the Main Board

Included in the delivery are:
> Main board
> Adapter cable
> ISA FLASH card
> Mounting material (cable ties and adhesive pads)
> screw M4 x 10

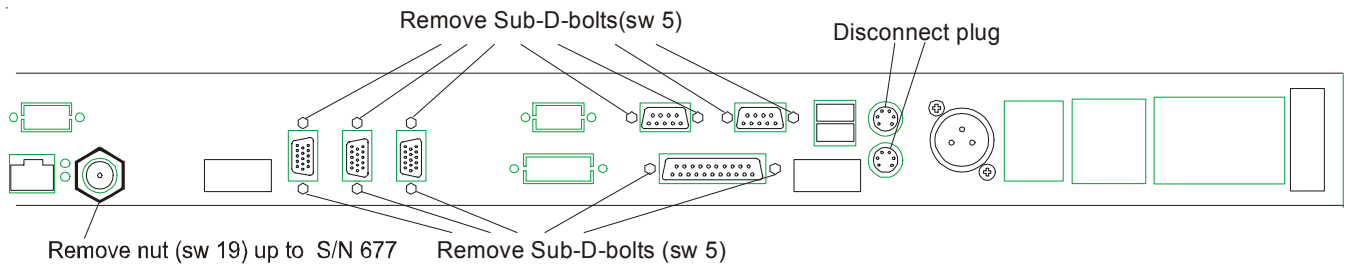Please make sure that all parts are intact and show no exterior signs of damage.

Removing the old Main Board:

● Disconnect the console from the mains supply.
● Remove the connecting srews between lid and bottom section, bottom to top and around the whole device.
● Carefully tilt the lid upwards and lock it using the red rod.
  Important: Do not tilt further than 90°! This could damage the sockets on the rear side of the device.
● Remove the ribbon cable between the main board and the floppy and hard drives, respectively.
● Pull off the supply plug from the main board.
● Disconnect all connecting cables. You should not disconnect the cables from the 3 display adapters - this is only mandatory for ASUS main boards. Leave the display adapters inserted in their PCB slots.

Important: The display adapters may only be inserted into or pulled out from a removed main board.

● Remove the network adapter nut and pull out the adapter including the connecting board (existing up to s/n 677).
● Remove the screw bolt (sub D bolts).

Remove Sub-D-bolts(sw 5)   Disconnect plug

Remove nut (sw 19) up to S/N 677   Remove Sub-D-bolts (sw 5)

● For boards with s/n 490 up to 903, you furthermore have to remove these two screws and cover the orifice using the supplied metal sheet.

● Remove the board mounting screws.
● Now, you can remove the board from its location.
● Pull out the 3 display adapters - as they have different settings, they must not be exchanged between each other (ensure the right sequence/positions). Do not disconnect the cable connection to the adapters!

● Cut through the cable ties (for the mouse and keyboard cables) on the spacer block on the rear side of the console.
● Remove the two screws (sw 8) of the spacer block and remove it - it will not be re-inserted again.

● Insert 2 cable ties (for the mouse and keyboard cables) through the two bore holes of the spacer block and tighten the two cables.
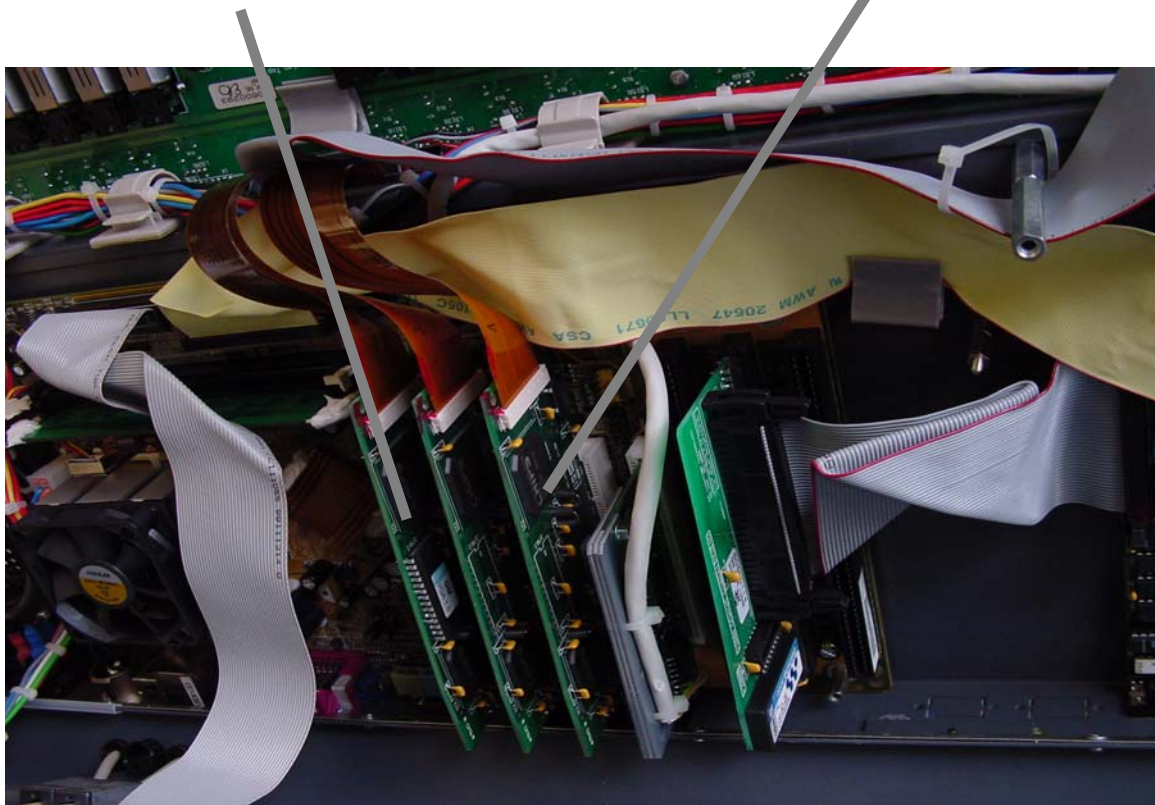
Preparing the new Main Board:

Note: Degrease all plug-in contacts using a cleaning spray and after that apply a short burst of DeoxIT GOLD. Both, cleaner and conditioner, are available from your distibutor.

●   Exchange the existing ISA FLASH card for the supplied ISA FLASH card. Re-use the old cables.

Installing the new Main Board:

● Insert the 3 display adapters - mind the correct placement of the adapters. The adapter with the EPROM (right display) is placed left, the adapter for the left display is placed right.
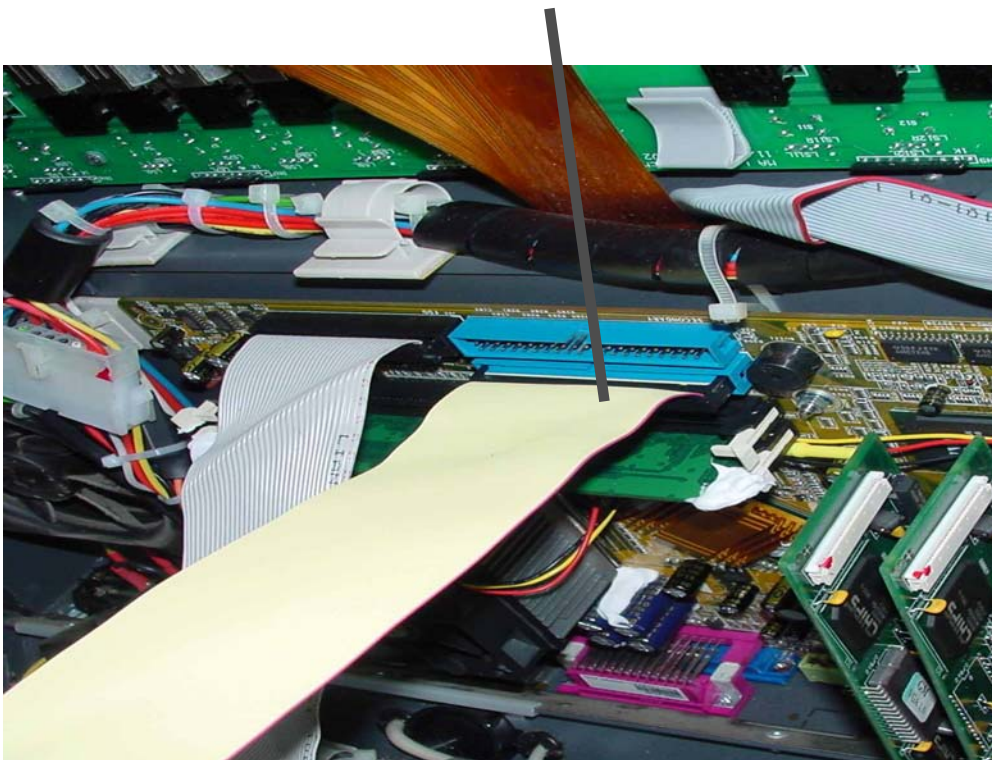

● Set the main board onto the fastening bolts and lightly screw in the 6 screws, **do not tighen them, as otherwise the main board could warp when tightening the Sub D bolts**.

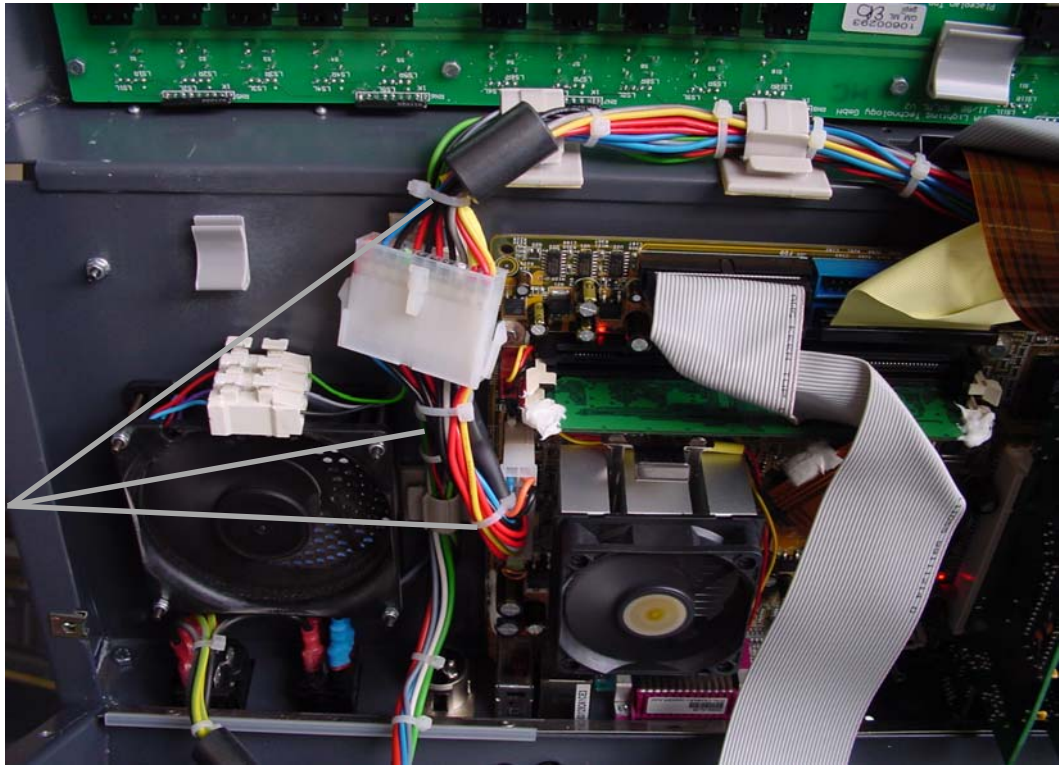● Fasten the screw bolts (sub D bolts) of the socket ports. (see sketch page 4)

● After this, tighten the 6 screws of the main board.

● Insert the adapter between the old plug and the main board and fasten it on the harness using cable ties.

● Insert the hard disk ribbon cable **into the lower slot**.(see photo above)
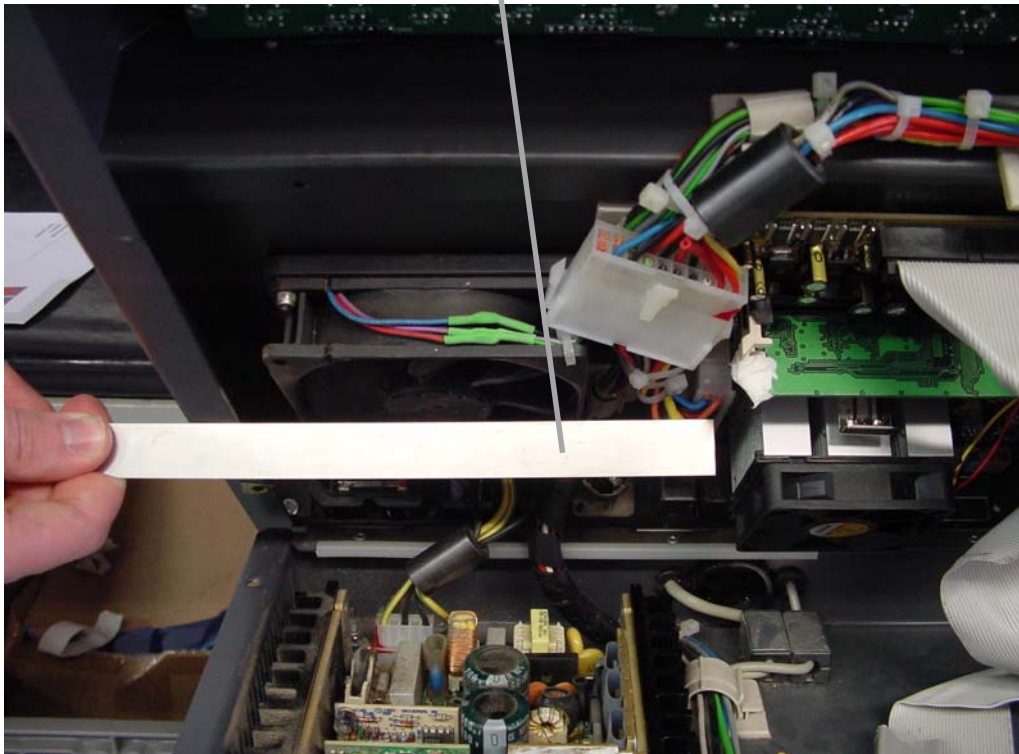

● Connect the floppy drive ribbon cable.
● If the display ribbon cables had been disconnected, reconnect the 3 cables with the display adapters.

● Fasten all cables with cable ties. Take care to fasten the adapter on the harness using 3 cable ties. Otherwise, you risk shorted circuits.

Use cable ties

Pay attention, that the adapter is not below this line!!

Please note: The adapter cable and plug must have close contact to the harness. Under no circumstance may a cable contact the power supply or the cooling fins after closing the cover lid! See to that when closing the cover lid!

● Insert the support bar and close the cover lid. Don´t bruise the cables when closing the cover. See to that when closing the cover lid! Tighten the screws.

NOTE: When switching the device on, you can hear a 'click' of the DFI main board - this is normal, no panic.

If an ASUS main board was installed, please keep the following in mind:

● Mark the 3 ribbon cables and remove them from the display adapters (mark 1 = left display; 2 = center display; 3 = right display). Don´t remove the display adapters from the board!

● Remove the main board from the console

● Now remove the display adapters from a removed main board

● Set the display adapter jumpers according to the new board using the service manual

● The display adapters must be installed on the same locations on the new board:

   left adapter (having the EPROM) for the right display (set the jumpers correctly)

   center adapter for the center display (set the jumpers correctly)

   right adapter for the left display (set the jumpers correctly)

● As the 3 display ribbon cables cannot be crossed over, it would be best to pull out the cables from the guiding shaft (from the rear side of th econsole after removing the cover plate) and insert them in reverse order, to facilitate connecting the cables to the display adapters.

● You have to re-locate the 3 threaded pins for the main board - 3 bores on the DFI main board are on different locations compared to the ASUS board.