

ELBOX SCANDOUBLER/FLICKERFIXER

INTRODUCTION

Thank you for purchasing our device: the Elbox ScanDoubler/FlickerFixer. It allows you to connect virtually any standard VGA monitor from the PC world to your Amiga. Before starting the ScanDoubler, please read these instructions.

CONTENTS

On receiving the ScanDoubler, please check the contents of the package. The package should contain:

- Elbox ScanDoubler /FlickerFixer
- User manual
- Warranty card

TECHNICAL DATA

- External ScanDoubler/FlickerFixer for all Amiga computer models
- Converts all 15 kHz modes to a standard VGA frequency of 31.5 kHz
- The device is of fully external construction; it does not require opening or modifying the Amiga computer
- Carries the full 24-bit colour palette (16 million colours) in all modes higher than 15 kHz
- A high-precision PLL circuit used to generate screen pixels (they are not generated externally, as is the case in the Amiga) ensures full compatibility with all Amiga types (STD, ECS, AGA) and video standards (PAL, NTSC)
- The use of a PLL circuit allows trouble-free cooperation with genlocks
- With the FlickerFixer installed, all 15 kHz interlaced modes are converted to non-flickering standard VGA 31.5 kHz modes
- An Elbox ScanDoubler/FF without a FlickerFixer installed can be turned into a full ScanDoubler/FlickerFixer device at any time by installing the frame memory chips.
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INSTALLING THE ELBOX SCANDOUBLER/FLICKER-FIXER DEVICE

1. Disconnect power from the computer.
2. Disconnect the monitor you previously used (e.g. 1084S) and any other devices connected to the VIDEO socket.
3. Plug the Elbox ScanDoubler/FlickerFixer device into the VIDEO socket.

NOTE: The Elbox ScanDoubler/FlickerFixer device must not be installed while the computer is switched on. Do not plug the device into any socket other than the VIDEO socket. Doing so may damage the computer or the ScanDoubler/FF.

4. Connect a VGA monitor to the Elbox ScanDoubler/FlickerFixer's port on the VGA connector side.
5. Switch on the VGA monitor, then switch on the computer.
6. The computer starts up just as usual.
7. The Elbox ScanDoubler/FlickerFixer device is factory-adjusted for use with most Amiga 1200 models. For the best possible picture quality, the video signal of the Elbox ScanDoubler/FlickerFixer device can be adjusted.
8. Before starting the video signal adjustment, the Amiga should run for at least 5 minutes so the Elbox ScanDoubler/FlickerFixer device warms up to its operating temperature.
9. Try to display as many vertical lines as possible on the screen, or load an image with alternating black and white lines,
10. Using a miniature screwdriver, turn the potentiometer marked Adjust counter-clockwise relative to the Elbox ScanDoubler device. This is a precision multi-turn potentiometer, so its full range covers about 20 complete turns. The greatest picture distortion occurs in the middle of the adjustment range. Making 3-4 turns counter-clockwise allows the best picture quality setting to be achieved.

NOTE: If you feel resistance while turning the screwdriver, this means you have reached the end of the adjustment range. Do not force the screwdriver against the resistance, as you may damage the potentiometer.

10. If you cannot find the right setting, fit a jumper on the pin header marked phase (no jumper by default) and repeat the procedure.

JUMPER AND LED FUNCTIONS

LED	LED lit	LED off
BYPASS	input horizontal frequency Hfreq > 15kHz (24kHz to 31kHz)	input horizontal frequency Hfreq = 15kHz
FF-mode	15kHz interlaced mode engaged without picture flicker (only with FlickerFixer)	other

JUMPER	jumper open	jumper closed
enable	adjustment off	adjustment on
phase	clocking: normal clock signal	clocking: inverted clock signal
FF-ena	FlickerFixer mode	ScanDoubler mode
222mod	518221 FRAM chips installed (FlickerFixer only)	518222 FRAM chips installed (FlickerFixer only)

Default configuration

- enable jumper closed
- phase jumper open
- FF-ena jumper (internal) open for FlickerFixer, closed for the ScanDoubler device alone
- 222mod jumper (internal) open for 518221 FRAMs, closed for 518222 FRAMs
- XCLKEN jumper (internal) factory use only, must be open
- CCK jumper (internal) factory use only, must be in the left-hand position

IMPORTANT NOTES

- In SuperHiRes mode, only every second pixel is displayed,
- All video modes with a horizontal frequency above 15 kHz are skipped (the BYPASS LED lights up), but since only some of these modes exceed the standard VGA frequency (above 31.5 kHz), your monitor may not display the picture correctly. These modes are:
 - Super 72 (horizontal frequency 24 kHz),*
 - DbINTSC (horizontal frequency 29.5 kHz),*
 - DbIPAL (horizontal frequency 29.5 kHz),*
 - Euro 72 and Multiscan without first running the VGAonly program.*
- Only 15 kHz interlaced modes are free of picture flicker; 24 kHz or 31 kHz resolution modes (e.g. Multiscan interlaced) will remain interlaced modes, since they operate in BYPASS mode.
- Make sure the VGAonly program (which is part of the monitor driver) is started before any monitor-driven programs; this allows full compatibility of the Multiscan and Euro 72 modes with VGA mode. You can check this by opening the Screenmode options window. If the Multiscan and Euro 72 modes show a horizontal frequency of 31.44 kHz, the VGAonly program is installed correctly. If the horizontal frequency is 29.3 kHz, the VGAonly program has not been installed correctly.

UPGRADING THE ELBOX ScanDoubler TO AN ELBOX ScanDoubler/FlickerFixer

To upgrade an ELBOX ScanDoubler device to the FlickerFixer version, you need two video memory chips of type OKI 518221Z-30 or OKI 518222Z-30 in a ZIP (zig-zag) package. These chips can be purchased as an upgrade kit from the same supplier you bought your ELBOX ScanDoubler from.

1. To insert the memory chips, undo the two screws holding the ELBOX ScanDoubler's casing and remove it.
2. Insert the Field RAM memory chips into the ZIP sockets located inside. Make sure the chips are oriented correctly: the printing must face the side of the 23-pin connector that plugs into the Amiga's video socket.
3. After fitting both RAM chips into their sockets, tilt them towards the 23-pin connector so the retaining clip closes.
4. Remove the jumper from the header marked FF-ena.
5. If you fitted two 518221 chips, the 222mod jumper should remain without a jumper; if you fitted two 518222 chips, fit a jumper on the 222mod header.

ADVANTAGES OF THE ELBOX ScanDoubler/FlickerFixer VERSION

- Displaying all 15 kHz modes at a frequency of 31 kHz without picture flicker,
- Displaying works in all programs running in 15 kHz interlaced modes, even ones that cannot be switched to other screen modes (e.g. games),
- A huge speed-up of AGA high-colour modes. If, for example, you want to obtain a picture of 640x512 pixels at 256 colours without flicker, you have to select the Multiscan option. In that situation the ChipRAM memory bandwidth drops to as low as 0.6 MB/s (measured with the Bustest 0.09 program), which causes intolerably slow screen refreshing. Installing the FlickerFixer option allows you to obtain the same resolution (640x512) in interlaced PAL mode (the flicker-fixer option), while the memory bandwidth will still be 3-4 MB/s.

POWER SUPPLY

Some Amiga 1200 computers, mainly those originating from Amiga Technologies, were sold with a power supply whose capacity is insufficient. An Amiga 1200's power supply should provide a current of 4.5 Amps at 5 Volts if any expansions are installed in the computer. Unfortunately, some Amiga 1200 units were sold with power supplies that provide only about 3 Amps at 5 Volts on their output. Since an Amiga 1200 in its basic configuration needs about 3 Amps, fitting any additional expansions may cause the system to hang.

Whenever unusual system hangs occur, you should check the maximum current rating of your power supply and the supply voltage in the computer. A voltage of 5 Volts is required for the computer to function normally.

It is recommended to use a higher-capacity external power supply, or to install the Amiga 1200 in a Tower case with an internal power supply.

Unfortunately, some Tower cases, due to an incorrectly designed power interface, do not provide 5 Volts in the computer, which, despite the use of a higher-capacity power supply, causes the system to hang. For this reason, we guarantee correct operation only in the Tower E/BOX case with its original internal power supply.