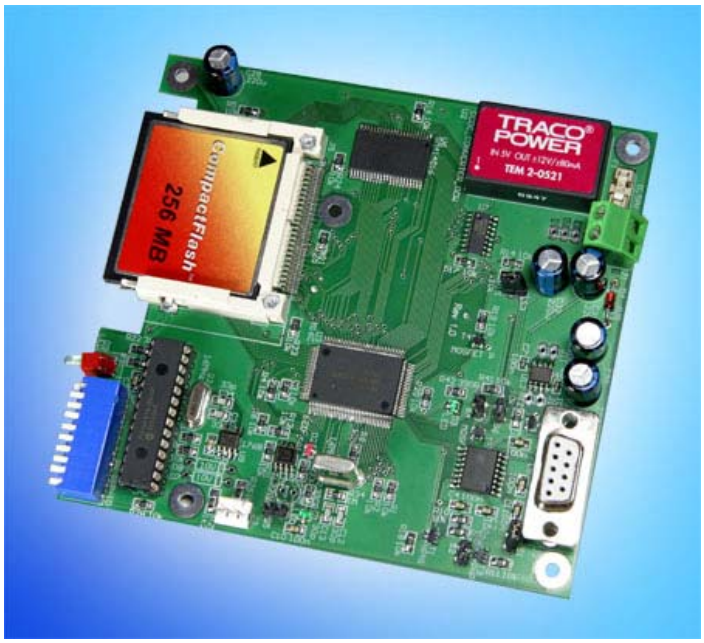
HotBoard II

Lasershow Playback Board



The HotBoard II is a compact and powerful playback processor board for all kinds of show applications. It supports full color, XY, blanking and DMX input. All 512 DMX channels are accessable. Update for firmware via serial port. All shows and animations are stored on a compact flash memory card. HotBoard II can also handle real time text programming via DMX line without removing the memory card. Memory space can be up to 1 GB for hours of show. Dimensions are just 12x11 cm. HotBoard II is supplied with a single 5V input. The very high output speed of 50,000 pps is reached by using a fast industrial processor, running at 20 MHz with 14 MIPS processing power. This processor also decompresses the data on the memory card, which increases number of frames by 3-5 times, compared to other playback cards.

Technical data:

Processing power:	14 MIPS
Internal memory	404kB
External memory CF-card:	16MB to 512MB
Resolution XY-channels:	2x 12 bit
Resolution color channels:	3x 8 bit
Output speed:	4000 - 50000 pps ILDA
Control input:	DMX512
Number of animations:	64
Number of texts:	64
Number chasers:	64
Power reqd.:	5VDC @ 500mA
Output voltage:	+/-5VDC for XY +/-2,5VDC for RGB
Output connector:	DSub 25 female
Pinning:	ILDA Standard
Format import:	ILDA, Mamba, Laserpainter

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Programming

The HotBoard II is programmed and loaded via a Xtra Speed Compact Flash memory card. We recommend to buy these cards from MediaLas for guaranteed compatibility and maximum speed. To file your animations and frames, a free software tool is available for download from our website. This tool can also be found on the provided CD-ROM. Please check the Avatar manual for information about user interface software. The CF card can only be programmed with this tool! Do not write files on the card from Windows explorer.

- **All cards are preformatted and already preprogrammed with animations and files. Do NOT format the card in your computer!**

- **The CF card cannot be read with Windows Explorer, due to the copyright safety codes on the card. If you open the file system of this CF card in your Explorer, you will not see anything. This is normal!**

Selecting DMX Address

For selecting the DMX starting address, the DIP switch panel is used. Programming follows binary rules, where DIP switches are numerated in 1-2-4-8-16-32-64-128-256. Switch 10 is for special purpose and/or demo mode. Due to its auto-scan mode, the HotBoard II can be switched to any DMX address between 1 and 511 at any time, even if the unit is switched On. Setting is done via 9 DIP switches on the board, counted binary. The selected address sets the first control channel, the next address is the second control channel. If you want to chose DMX channel 150 as starting channel, you have to set switch 8,5,3 and 2 to ON. (Binary 8= 128, binary 5= 16, binary 3= 4, binary 2= 2, 128+16+4+2=150)

Running HotBoard II in Auto Mode

Since the last software update, HotBoard II contains an AutoMode feature, which allows to run a preselected animation after powering up the 5V input. DIP switch 10 selects this feature, while switch 8 and 9 chose the projection mode.

DIP 10:	OFF = DMX mode, ON = Auto mode
DIP 8 + 9:	All OFF = OFF. 8 ON / 9 OFF = animations, 8 OFF / 9 ON = text, 8 ON / 9 ON = chaser
DIP 7:	No use
DIP 1 to 6:	Pre-selection of the 64 available animations, texts or chasers for automatic start in binary count, where all switches OFF means "Animation 1".

Power source

The HotBoard II has an integrated switching converter on board for single voltage supply of 5VDC. The low current of less than 500mA makes it suitable for plug type power supply, available from MediaLas or other common suppliers. The supply should be stabilized and in a voltage range of +10% / -5%.

Firmware update

As usual in the Avatar performance family, the HotBoard II firmware can be updated by the user via a serial port. Please check our webserver for available updates and "how-to" documentations.

Memory cards

Most memory cards will work for the HotBoard II. We recommend to use tested CF-cards from MediaLas, although most fast speed CF will work well. Minimum transfer rate should be 2.5MB/s.

Handling during installation

Semiconductor devices are very sensitive to static electricity. Please be careful during installation and handling, ground yourself and use grounded equipment.

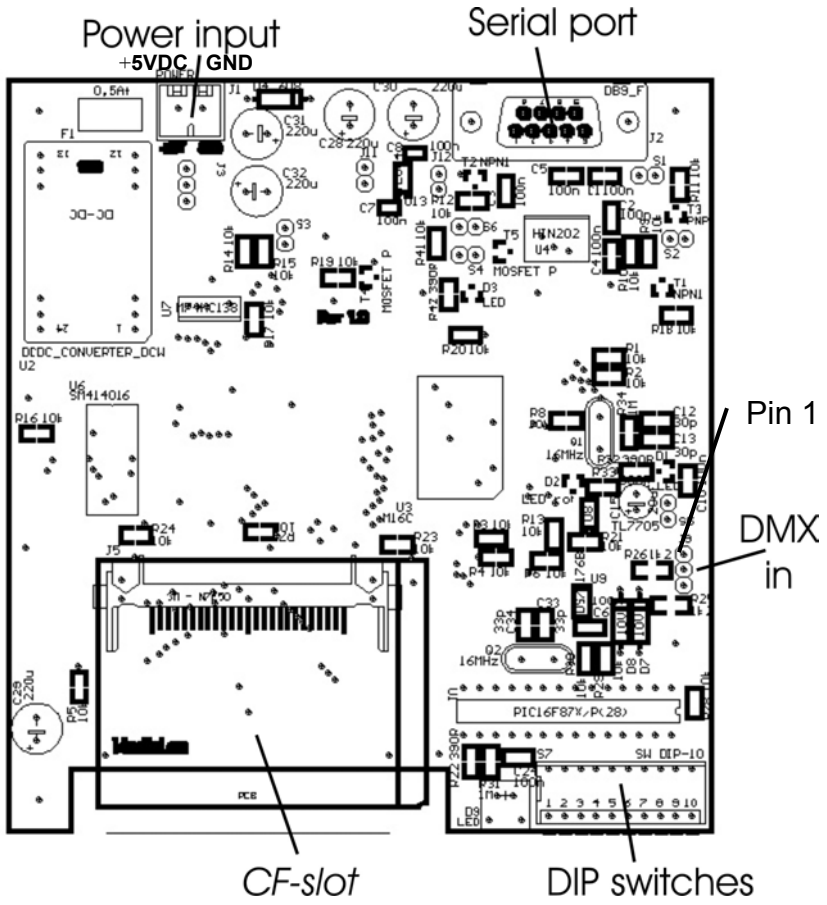
DMX channels and their usage

The device is controlled through 8 DMX channels. Each channel can have a DMX value from 0-255, which gets translated into the relevant codes in the internal processor of the HotBoard II. Channels are counted from 1 to 8, always starting with the DMX channel, that is selected by the DIP switches. If starting address is 100, the first channel is 100, second channel 101, third channel 102 and so on.

DMX channel:	Action	Value	Explanation
Channel 1:	Number of animation/text/chaser	0 – 63 (1 Step per 4 DMX values)	Each mode allows to store and select up to 64 elements, such as animations, texts or chasers. These 64 elements are allocated to 255 DMX values.
Channel 2:	Mode select (off/animation/text or chaser)	0-15: Output off 16-127: Animations 128-239: Texts 240-255: Chasers	
Channel 3:	Output speed	0 – 255 = 4,000 – 50,000 pps	Maximum value can be set on the CF card for safety reasons.
Channel 4:	Blankshift	Value/16	DMX value divided by 16 gets Blankshift value 0-15
Channel 5:	Size X	0 = -100% 127= 0% 255= 100%	Negativ value means mirrored image projection.
Channel 6:	Size Y	0 = -100% 127= 0% 255= 100%	Negativ value means mirrored image projection.
Channel 7:	Offset X	0 = -100% 127= 0% 255= 100%	Offset can only be set within 100% total values (Size + Offset = 100%). If size is 100%, offset cannot be changed. If size is 50%, offset can be 50% max.
Channel 8	Offset Y	0 = -100% 127= 0% 255= 100%	Offset can only be set within 100% total values (Size + Offset = 100%). If size is 100%, offset cannot be changed. If size is 50%, offset can be 50% max.

Connecting diagram:

This diagram shows the top surface of the HotBoard. You can see the CF-slot, the DIP switches for selecting the DMX channel, the DMX input connector, the power connector and the programming port.



Signal output connector

All analog laser signals are provided on the ILDA standard DB25 female output connector. Signals pins:

1:	X+
2:	Y+
3:	Blank+
5:	Red+
6:	Green+
7:	Blue+
14:	X-
15:	Y-
16:	Blank-
18:	Red-
19:	Green-
20:	Blue-
25:	GND

DMX input connector:

Pin 1: Ground/Shield
Pin 2: DMX –
Pin 3: DMX +