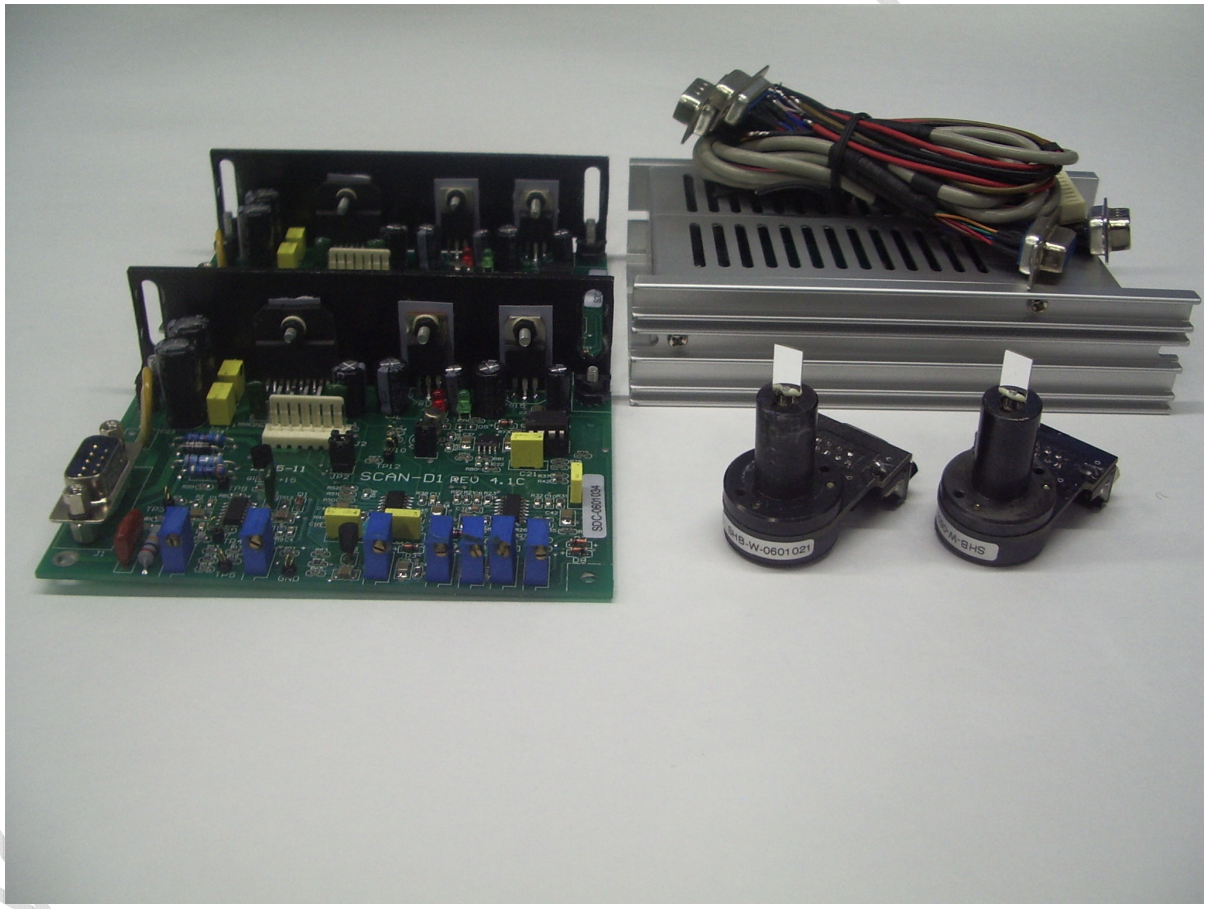
Scan30K001

30kpps, x-y laser scanner kit

User's Manual

Rev 1.2



Kit contents:

Please verify your scanner kit contains as per picture above:

- 2 scanners
- 1 scanner mounting block
- 2 scanner driver PCB's
- 1 power supply PCB
- 2 scanner cables
- 2 power cables
- 2 scan amp input cables

If anything listed above is missing, please contact the place of purchase to have the missing items replaced.

Assembly

Assembly is very straightforward. Plug the scanners into the scanner driver board using the db9 cables. Please pay attention to the serial no's on each of the scanners and driver boards, matching driver board serial to scanner serial.

Fix the cables into the scanners and scam amp with locking screws – This step is very important. The DB connectors need to be firmly secured.

Mount the scanner mounting block to the base plate of your projector. Better results may be obtained if the scanner block is lifted up with a 10x40x40mm aluminum block.

Note: for best results orientate the mounting block so laser enters from the left if looking at the mounting block from the front.

Insert the scanners, taking care not to damage the mirrors during insertion, and loosely tighten the set screws. Perform final positioning when everything is mounted, a laser source is in place, and the scanners are powered up without a drive signal

Mount the scanner driver boards to a suitable heat sink, and mount the power supply board, paying attention to safety. Please make sure any mains powered components, such as the power supply included with this scan set are properly earthed in accordance with local laws and regulations in your country. Safety first!

Connect the power cables to the power supply. **With these cables plugged into the power supply, but not the scan amp, verify that the correct voltages are present on the appropriate pins of the 8 pin scan amp connector(refer to figure 2)** If these voltages are correct, power down, and insert the plugs. There would be nothing worse than blowing anything up because the wiring was incorrect.

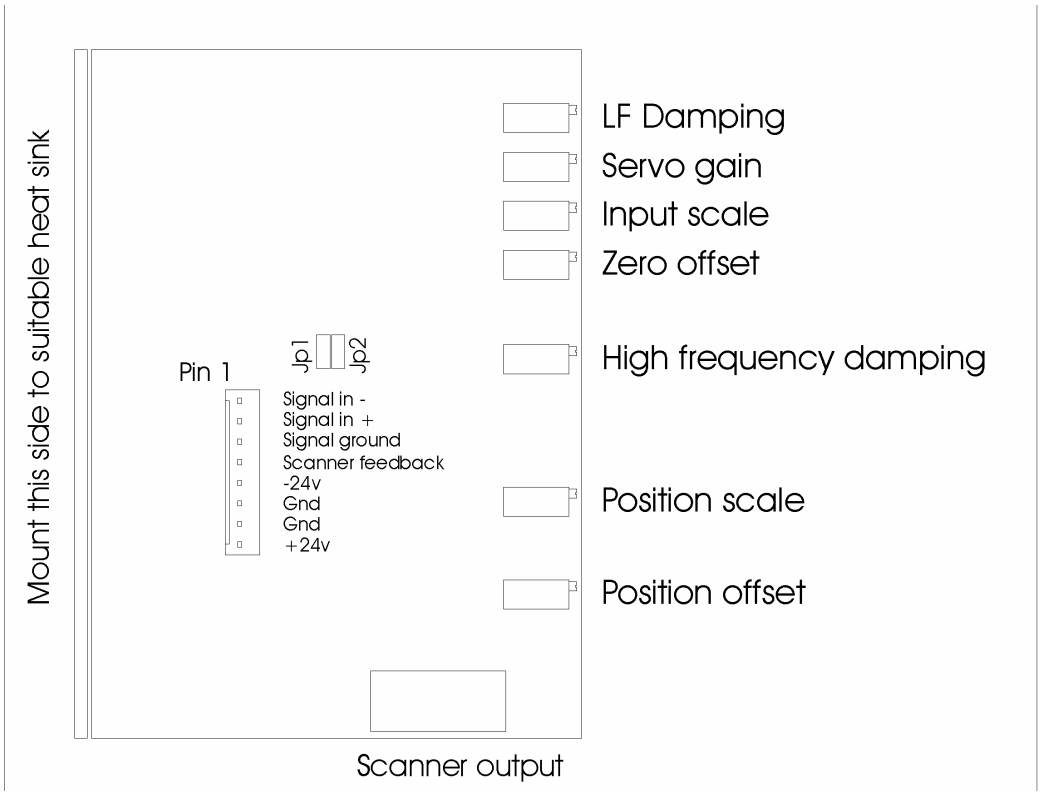

Mount this side to suitable heat sink
LF Damping
Servo gain
Input scale
Zero offset
Jp1
Jp2
Pin 1
High frequency damping
Signal in -
Signal in +
Signal ground
Scanner feedback
-24v
Gnd
Gnd
+24v
Position scale
Position offset
Scanner output

Figure 2

Differential inputs:

These scanner amps have differential, balanced input stages, similar to pro audio equipment. Differential inputs play a big part in helping eliminate the problems associated with earth loop induced noise. Earth loop induced noise will appear as insatiability in the scanned image, causing the image to jump around, rather than remaining still.

We suggest the user should follow a 'star' grounding scheme inside the projector. It is suggested that the signal ground remains unattached, and the spare ground pin on the scan amp input connector (see fig2, pin7) is attached to ILDA ground(pin 25). This has been tested with a pangolin system with no problems. Grounding may vary between laser show software and output devices. Some experimentation may be necessary to achieve best results with different controller packages.

If it is necessary to attach these scanners to a single ended, non differential input, run signal into the "signal in+" input, and connect the "signal in –"input to ground. Please see figure2 over page for pinout details. The input scale trimmer will most likely have to be adjusted to compensate for a lower input level if using this single ended arrangement. Another option would be to use a analogue devises ssm2142p balanced line driver chip to convert the single ended signal to differential signal without loss of amplitude.

Board jumpers:

In figure 2 above, observe jp1 and jp2. These are used to invert the scanners. As shown, with the jumpers mounted vertically the scanners will be non inverted. Removing both jumpers and turning them 90 degrees, will invert the associated scanner.

Tuning the scanner drivers:

There are 7 trimmers along the right hand side of this board. **Zero offset, position scale, and position offset should NOT be touched with a screw driver! These are factory adjusted trimmers**

These scanners come pre-tuned to either 30 or 40k depending on the model. Should retuning be required, please refer to the following link for a very good tutorial on tuning to 30k:

http://www.laserfx.com/Backstage.LaserFX.com/Systems/Scanning3.html

Please send any comments or questions to dave@luminavp.com , feedback is appreciated!