Test report for Quatech SX40E75 USB Server (same as Silex SX-2000WG)

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All tests used WInXP SP3 on a native PC notebook with a wired LAN operating at 100 Mb/s using a Belkin router. Imaging equipment included an SBIG STL-6303E camera, AP1200GTO mount and RCOS TCC telescope controller. A Startech Quad RS232 to USB adapter (PL-2303) provided RS232 ports for the mount and TCC.

Overall, unlike most USB Servers available today, this unit can be used by imagers. It works with the SBIG camera drivers which is a new advance for these devices. Other than the COM port enumeration (#4) and the SBIG camera reconnection (#5) the unit works very well provided that autoguiding exposures of 0.5 seconds or longer are used (#6, #7). At faster guiding rates, it guides normally but timing issues arise that may be problematic for some automation programs (CCDAutoPilot, Astronomers Control Panel, CCD Commander).

Specific results are as follows:

1. This unit is very compact and can use either wired or wireless connections through a LAN to reach a computer where software is installed. USB devices connected at the server are recognized by the software and made to appear as USB devices at the computer. Data is passed between the units using normal LAN IP protocol in a transparent fashion.

2. The unit only has a single USB port so a USB hub must be used if more than a single device is to be used. For most users, a USB hub will be essential.

3. Installation: The software provided with the system installed without problem however initial attempts to connect to the USB server failed because its IP address was not within the range of the LAN. The device is coded with an IP address of 192.168.0.110 and the LAN was set for 192.168.2.x so it was necessary to change the LAN root address to 192.168.0.1 before the device could be located by the software. This is not a difficult task but those not familiar with router administration may have problems. This requires logging into your router using a web browser, changing the base IP address and then rebooting all computers on the network.

4. RS232 ports do not enumerate cleanly, a different COM port number is assigned each time the device gets connected. It is possible that this has something to do with the particular RS232 adapter (a Startech Quad RS232 to USB) but this does not occur with the adapter plugged directly into the PC. This was also tested with a Startech Dual RS232 to USB adapter with similar results.

5. The SBIG Camera drivers connect and operate fine but it's a bit of a nusance to connect to them each time.This is partly because the SBIG driver comes in two parts, the first is the loader which you must connect to and then the actual SBIG Camera driver loads. The user must then do a second connect at the USB Server software to enable the camera. Powering off the camera causes the USB Server to drop both connection so each time you must perform this two step connection to the camera.

6. Imaging tests were run using CCDSoft. Autoguiding with AO-L at 0.1 sec exposures provided a 6.8 Hz guiding update rate which is normal. The autoguider image was updated in real-time and operation appeared entirely normal.

7. A homespun software application which normally works fine with CCDSoft did not get correct guiding information with short guiding exposures. The software starts the guider and then monitors the guider corrections to see when it has converged. Then it starts the main camera

imaging. Other automation programs, such as CCDAutoPilot4, use a similar method. This function failed at guide exposures shorter than 0.1 seconds, worked occasionally at a guide exposure of 0.2 secs, and worked perfectly at guide exposures of 0.5 seconds or longer. There must be some timing anomaly associated with the reporting of guiding corrections via the USB server which accounts for this. Users guiding with relay control of mounts at guide exposures of 1 second or more should not experience any problems.

8. Other functions tested included complete control of an RCOS TCC (focuser, fans, temperature sensors, rotator) which all worked normally. This involved running an automated session with the home spun control software.

9. The test imaging session using the homespun software lasted about 3 hours (until clouds rolled in). During this time, the system worked normally with no errors and no abnormal operation was noticed (using a guide exposure of 1 second).