Windows 10 Works

Synopsis:

Microsoft regularly brings out major revisions to their operating systems. The past indicates that half the time they are duds, and every other time they are good. Vista and Win8 were duds, XP and Win7 were successful. At MeltLab we have refused to support the duds, but have adapted our software to the successful ones. It now appears that Win10 is going to be a successful one.

Summary

If you want to run MeltLab on Win10, go ahead – it works. Only ask that you make sure the operating system has been recently updated.

Testing

At the beginning of November 2015, we purchased an all-in-one computer (CPU is incorporated into the monitor) with touch screen. It came with Win8 but offered a free upgrade to Win10. We set it aside on a new desk in the corner of our office and began the laborious process of upgrading to the new system. It took almost a day to download and fully upgrade the system using a DLS connection with a 3 megabit download speed.

We started with some simple tests of just running the program unconnected. There were no problems. Even the touch screen features worked. (Since fingers are thicker than a mouse pointer, it could be better.) But overall, there were no surprises.

Next, since the computer hand no serial port, we plugged in our standard Gigaware USB (2) to serial port adapter. The computer coughed a bit, complained, and downloaded something. Then it wanted to be rebooted. It appears that it downloaded a new software patch that will come standard with the December upgrade. After reboot, it quickly located the Gigaware driver and installed it as Comm 3. Researching the issue, it appears that upgrades after the December patch will not have this problem and driver recognition will be automatic. We had a similar problem when we tried to play a DVD movie – patch download and then everything worked fine.

Timeouts

Then we went into MeltLab and configured the serial port to Comm 3, saved the settings and restarted MeltLab to activate the serial port. And it worked! We let it run the better part of a day and after 30 million reads we had only 19 timeouts where the operating system delayed the reading enough to be noticed. It should be noted that 'timeouts' are when the Operating system or the virus checker is doing something intensive and doesn't allow the MeltLab access to the serial data for a short time. A properly balanced system won't do this very often. It should also be noted that we are running Avast anti-virus software, a product that has consistently been in the top 3 for the last 5 years. So the ratio is 6.7 timeout interruptions out of one million readings. This is 100 times better than we were getting on Win7.

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Readings per Second

Since the move from DOS to Windows, the operating system - not the program - controls the serial port. With no middleman, DOS was able to query the temperature 240 per second. The convertor box modules are only capable of a new reading 9 times per second. So we could support up to 26 modules under DOS. XP and Win7 moved that down to 100 to 130 readings per second due to the operating system overhead. That limited us to a maximum of 14 modules while keeping up maximum speed – still far more than needed. Win10 moves that down to 60 readings or 6 stations. That is still enough for most MeltLab installations, but too slow for some of our larger ones.

One Problem found

We tried to program some modules for a customer and discovered that we could only program one module before a glitch somewhere required restarting the system to program a second module. This is probably a timing issue, but unlikely to affect any customer, since we send replacement modules out preprogrammed.

Revising MeltLab for Win10

We will not need to do much to revise the MeltLab but here are the items we have identified:

- We will increase the font size of the drop down menus to make them easier to use with a touch screen. (Very easily done)
- We will add support for a second and possibly a third serial port for a MeltLab convertor box so that we can take temperature readings through two ports doubling or tripling the bit rate to support 6x2 or 6x3 modules in a single system. This may take some time.
- We will look at timing issues in module programming, though this is not anything an end user will need.

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