

How to avoid the system crash while using USB interface for PSW.

Background

The USB CDC/ACM is the USB class which we applied for our instrument for a long time. There have a lot of customer report that the Windows will be crashed after a long time ATE testing. In general, it will happen around 2~4 hours while querying the voltage or current result time-by-time. For oscilloscopes, it will happen around 1 hour while fetching the screen shoot time-by-time.

The Windows included: Windows XP, XPSP2, XPSP3, 7, 8, 8.1.

On crashing, the system will show below blue screen operating system dump(BSOD).

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A problem has been detected and windows has been shut down to prevent damage
to your computer.

The problem seems to be caused by the following file: usbser.sys

DRIVER_IRQL_NOT_LESS_OR_EQUAL

If this is the first time you've seen this stop error screen,
restart your computer. If this screen appears again, follow
these steps:

Check to make sure any new hardware or software is properly installed.
If this is a new installation, ask your hardware or software manufacturer
for any windows updates you might need.

If problems continue, disable or remove any newly installed hardware
or software. Disable BIOS memory options such as caching or shadowing.
If you need to use safe mode to remove or disable components, restart
your computer, press F8 to select advanced startup options, and then
select safe mode.

Technical information:

*** STOP: 0x100000d1 (0x00000060, 0x00000002, 0x00000000, 0xf788255d)
*** usbser.sys - Address 0xf788255d base at 0xf787f000 DateStamp 0x480254d0
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Before the workaround:

	NI-VISA 3.4	NI-VISA 4.2	NI-VISA 4.3	NI-VISA 5.5
Windows XP	OK	OK	Failed,BSOD	Failed,BSOD
Windows XP SP2	OK	OK	Failed,BSOD	Failed,BSOD
Windows XP SP3	OK	OK	Failed,BSOD	Failed,BSOD
Windows 7	OK	OK	Failed,BSOD	Failed,BSOD
Windows 8	OK	OK	Failed,BSOD	Failed,BSOD
Windows 8.1	OK	OK	Failed,BSOD	Failed,BSOD

Add the workaround:

	NI-VISA 3.4	NI-VISA 4.2	NI-VISA 4.3	NI-VISA 5.5
Windows XP	OK	OK	OK	OK
Windows XP SP2	OK	OK	OK	OK
Windows XP SP3	OK	OK	OK	OK
Windows 7	OK	OK	OK	OK
Windows 8	OK	OK	OK	OK
Windows 8.1	OK	OK	OK	OK

NI-VISA 3.4 from LabVIEW 8.0

NI-VISA 4.2 from LabVIEW 8.5

NI-VISA 4.3 from LabVIEW 8.5.1

NI-VISA 5.5 from LabVIEW 2013

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1. Change the NI-VISA to 3.4 or 4.2.
or
 2. Using the LabVIEW Driver without NI-VISA “XXX-win32api”
or
 3. Using the LabVIEW Driver with workaround “XXX.zip”