Watch Dog Functions

USBDII.dll 2.0.0.4 with Firmware 1007

New functions can let user set a watch dog timer to monitor the program status and avoid damage for the device. After the watch dog function is enabled, user's program needs to reset watch dog timer in the setting interval, for example, 5 seconds. If there is no reset signal for the watch dog timer in 5 sec, the device will reset itself and force all channel return its initial status. This can make sure each channel return its initial status under some unresponsive state, such as, the control program crash, USB link error and so on.

Green LED status:

Situation	Green LED status
Normal	On
Disconnect / Suspend	Off
Watchdog Enabled	Flash

Function Description:

1. hid_EnableWD(hUSB,enabled) : Enable/Disable Watch Dog. (Default: disable)
2. hid_SetWD(hUSB,mode) : Set time interval (1 / 5 / 10 / 30 / 60 seconds, default = 10s)
3. hid_ClearWD(hUSB) : Reload Watch Dog Timer.

User can find more detail in sample program.

Special Notice:

When selecting time interval for watch dog timer, user must make sure the selected interval is longer enough to let the program clear the watch dog timer. For example, if selecting 5 sec as interval, it would be better to make sure the program can clear the watch dog timer each 2.5 sec for security because sometimes bulks of I/O commands may cause some delay in USB communication. If the program can't clear the watch dog timer in time, the device will reset itself.

Flowchart for Watch Dog Timer

```
┌─────────────────────┐
│      hid_SetWD      │
└─────────────────────┘
          │
          ▼
Set Interval for WD or directly use default (10s)

┌─────────────────────┐
│     hid_EnableWD    │
└─────────────────────┘
          │
          ▼
Enable Watch Dog Timer

┌─────────────────────┐
│     hid_ClearWD     │    Repeat clear Watch Dog Timer in time interval
└─────────────────────┘

          ┊
          ┊
          ┊    Can't clear Watch Dog Timer in time interval, which
          ┊    may cause by program crash or USB disconnecting
          ┊
          ▼
Device reset itself. Each channel returns its initial status.
```