ON/OFF signal in display units

Submitted by Per Görling on Thu, 2018-04-19 15:08

In the document "CCpilot - Technical manual.pdf" for all the display units, there is a general description of the ON/OFF signal and how to handle these signals. The document states that functionality of the ON/OFF signal and On/Off button are configurable. In other Words, the signals can be changed by software, using the CCAux API.

Note, there are some differences between different display units, depending on the OS (Windows or Linux).
For exact details, read the apropriate Technical Manual.

The following explanations shows how the ON/OFF functionality can be altered by the user, using the CCAux API:

Startup procedure:

How long must the ON/OFF signal be 'high' for the start-up procedure to start?

- When the ON/OFF signal goes high for start-up, there is no delay. It is triggered immediately and there is no settable delay here.
- The option is to configure it to not start from the ON/OFF signal, by using the CCAux function Config_setStartupTriggerConfig().
- Another option is to set the ON/OFF signal to be level triggered (instead of the default edge triggered mode).
  This can be done by using the function Config_setOnOffTriggerMode().
  - This means that the device is ON when the signal is high and OFF when it is low. The difference is in the behaviour when the signal changes state during startup and shutdown.

Shut-down procedure:

How long must the ON/OFF be 'low' before the unit starts the shut-down procedure?

- By default the ON/OFF signal must be low for 4 seconds before the XL4 starts the shutdown-procedure.
- This time can be set between 0 4294967295 (seconds), by using the CCAux function "Config_setExtOnOffSigTrigTime()".
- The action can also be set to suspend or do nothing, by using the CCAux function Config_setOnOffSigAction().

Special handling:

What happens if the system is doing something when ON/OFF goes 'low'?
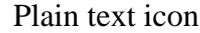**Will the OS allow the task to end or is it "hard stopped"?**

- If a process/task is doing something when ON/OFF goes 'low', a shutdown signal is sent to OS. And if it has not shut down after around 2 minutes, the system will be shut down hard at that time.
- There is an API that can be found in PowerMgr.h in CCAux (attached below) where a customer application can delay a shutdown, if some critical action needs to be finished before shutting down.

Configuring Edge vs Level trigger:

As mentioned above, users are able to configure edge vs level startup triggering using the CCAux function 'Config_setStartupTriggerConfig()' using C++ or Qt. With the latest version of the OS, users are able to configure the startup trigger with 'ccsettingsconsole' on most displays. While 'ccsettingsconsole' or CCAux in C++ is the preferred method, in cases where a user is utilizing CODESYS and an older version of the OS, we have included a short Qt application that will set the startup trigger to be either Edge or Level triggered. The Qt executable is included in the 'Ignition_Trigger.zip' file attached to this article. To use this application, extract the binary 'Ignition_Trigger' from the zip file and copy over to the '/opt' directory of the display. Make sure it is executable with 'chmod +x /opt/Ignition_Trigger'. You can then find instructions for use by executing it '/opt/Ignition_Trigger --help'.

Note: The application in the ZIP-file below, was compiled for the VC/VA displays.

Note, the CCAux API differs between the display units, so look in the CCAux API Manual to see which functions that are available for a certain display unit.

Attachment	Size
Plain text icon	
Image not found or type unknown [powermgr.h.txt](1) [1]	6.36 KB
Package icon	
Image not found or type unknown [ignition_trigger.zip](2) [2]	100.21 KB

Environment and Versions:
Both Linux (ARM and Windows (x86)
Category:
[ARM-Platform](3) [3]
[Linux](4) [4]
Applies to version:
XL4, XM, XM2, XA, XS, VC, VA, VS, VI2

Source URL: https://support.crosscontrol.com/kb/onoff-signal-display-units

Links
[1] https://support.crosscontrol.com/sites/default/files/kb/powermgr.h.txt
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