ADP107: CEC Module

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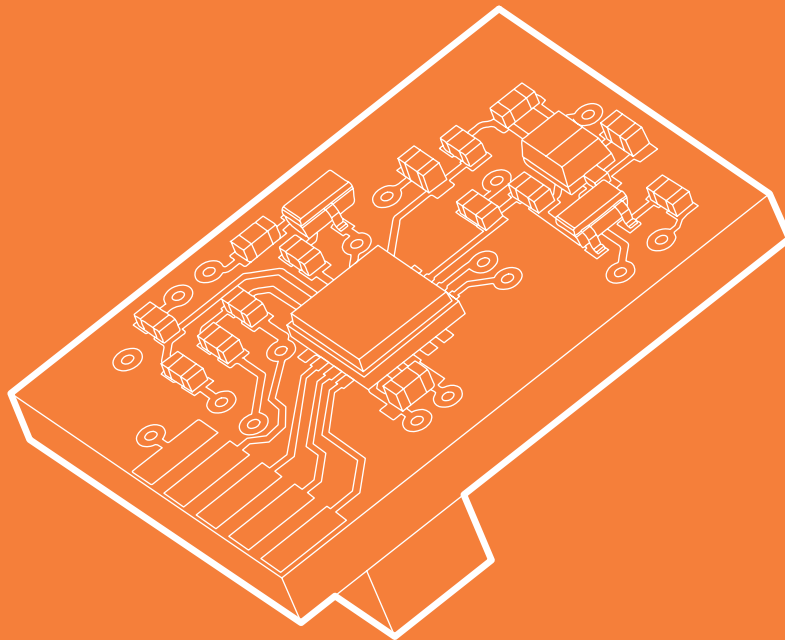
Description

The ADP107 is a module that is installed in-line with the DisplayPort outputs on configured OnLogic systems. Its purpose is to enable Consumer Electronics Control (CEC) functionality which manages the connection between the system and any connected displays according to a set of preconfigured rules. This allows command signals to be passed to the displays when the computer starts, stops, wakes, and sleeps, in a user-configurable order after a configurable time delay.

Default Behavior

The device's default configuration is to power up displays when the system starts/wakes and power them off when the system stops/sleeps. It is also configured by default to start the computer when the connected display powers on, and to power the computer off when the displays are powered off. The default startup delay timer is set to 5 seconds.

Driver Installation

Windows 10

Download the ADP107 driver archive from your system's product page at www.onlogic.com and extract it.
In the Windows 10 folder, there are two applications required for full functionality, the kernel driver that allows communication with the CEC module, and the user driver that keeps the module up-to-date with the system's HDMI port addresses.

To install the kernel driver, right-click on ADP107.inf and select install. Accept any prompts that follow, then restart the system.

Linux

Download the ADP107 driver archive from your system's product page at www.onlogic.com and extract it.
Install the necessary prerequisites using
sudo apt-get install build-essential linux-headers-`uname -r` make i2c-tools
In the Linux folder, you will find a kernel module that can be compiled from the command line.
From the driver package's Linux folder, run make
Then sudo make install
Finally, restart the system. Upon reboot, you should find that a character device is loaded at /dev/adp107 that can be used to communicate with the device using the application codes included in the next section.

Application Interface

The ADP107 module is connected to the host system's SMBus. In Windows, it may be accessed through an SMBus control device populated by the OnLogic-provided driver. In Linux, access is provided by the character device at /dev/adp107.

Command	Code	Data Byte 1	Data Byte 2	Data Byte 3
Set Display Start Delay Set the time (in ms) between when the system power button is pressed and when the a display is activated	0x41	PORT	Time_H	Time_L
Get Display Start Delay Request the start delay time. A subsequent 4-byte read returns this information.	0x42	PORT		
Set Physical Id Set the port's HDMI physical address, required in the CEC specification. Generally handled by the device driver.	0x43	PORT	ID_H	ID_L
Get Physical Id Request the HDMI physical address. A subsequent 4-byte read returns this information.	0x44	PORT		
Set Display On Event Set the action to take when a display indicates through CEC that it is active.	0x45	PORT	EVENT Accepts "None", "PC On"	
Set Display Off Event Set the action to take when a display indicates through CEC that it is inactive.	0x46	PORT	EVENT Accepts "None", "PC Off"	
Set PC On Event Set the action taken when the PC indicates (through the device driver) that it has started.	0x47	PORT	EVENT Accepts "None", "Display On"	
Set PC Off Event Set the action taken when the PC indicates (through the device driver) that it is shutting down.	0x48	PORT	EVENT Accepts "None", "Display Off"	
Set PC Suspend Event Set the action taken when the PC indicates that it is going to sleep.	0x49	PORT	EVENT Accepts "None", "Display Off"	
Set PC Resume Event Set the action taken when the PC indicates that is has woken up.	0x4A	PORT	EVENT Accepts "None", "Display On"	

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Application Interface (cont.)

Command	Code	Data Byte 1	Data Byte 2	Data Byte 3
Set Device Name Set the device name displayed by some TV menus. All 16 bytes must be provided. If a name is shorter than 16 bytes, set unused trailing bytes to zero.	0x4B	PORT	NAME (16 characters, zero-filled)	
Set Host Power State Set the CEC controller state machine power state. Takes no action as a result of the state change.	0x4C	PORT	STATE	
Update Host Power State Change the CEC controller state machine power state. Take the preconfigured action resulting from this state change.	0x4D	PORT	STATE	
Power On Display Send a "display on" message to a connected display.	0x4F	PORT		
Power Off Display Send a "display off" message to a connected display.	0x50	PORT		
Save Active Configs Save all current event and delay settings so they are available next boot.	0xE0			
Restore Factory Defaults Restore event and delay settings to factory defaults.	0xF0			
Port The number of the interface desired 0 or 1	States Power Off: 0 Power On: 1 Sleep: 3		Events None: 0 Display On: 2 Display Off: 3 PC On: 4 PC Off: 5 PC Suspend: 6 PC Resume: 7	