PiBox - Feature #385
Build power on/off support HW for Media Player

11 Sep 2014 10:12 - Hammel

Status:	Closed		**Start date:**	11 Sep 2014
Priority:	Immediate		**Due date:**	
Assignee:	Hammel		**% Done:**	100%
Category:	06 - Hardware		**Estimated time:**	0.00 hour
Target version:	0.11.0			
Severity:	04 - Low			

Description

The design has been diagramed and there are off the shelf parts for this so now I need to order them, prototype the design and integrate with the custom media player case that is under development.

Here is the design as it stands now.
PiBoxMediaPlayerCase.png

Related issues:

Related to PiBox - Action Item # 371: Media Server and Media Player case models	**In Progress**	**07 Aug 2014**

Associated revisions

Revision d7b63a27 - 06 Dec 2014 11:54 - Hammel

RM #385: Added XCF images used to create icons.

History

#1 - 11 Sep 2014 14:47 - Hammel

- File PiBoxMediaPlayerCase.png added

- Status changed from New to In Progress

- % Done changed from 0 to 10

Updated the diagram to show sizes in mm (easier to work with in Blender) for everything except the SPST switch, which I haven't chosen yet. I also need to create a repo to hold the diagram too.

#2 - 29 Dec 2014 12:33 - Hammel

- Target version changed from 0.10.0 to 0.11.0

#3 - 14 Jan 2015 14:22 - Hammel

- Severity changed from 03 - Medium to 04 - Low

#4 - 26 May 2015 09:36 - Hammel

- % Done changed from 10 to 70

The prototype cases were built out of wood boxes I purchased from Michael's (pictures coming). The power on/off support is handled with a SPDT switch that is tied directly to the power input on two different devices for both the Media Server and Media Player.

In the Media Server the UUGear 7-port hub was unable to power the RPi, so I tied the SPDT directly to the power input on both boards (the UUGear is jumpered to be self-powered only). Ground is common to both devices and the input power (a 5V/4A barrel connected wall-wart).

In the Media Player the SPDT power is tied to the power input on the RPi. The power input comes from a micro USB 5V/2A wall wart that is tied directly to the pico projector. In this way, whenever power is plugged into this box it will try to charge the projector, but will only power the RPi when the SPDT is switched on.

In both cases it's important to have enough amps in the wall-wart/power source or the circuit fails to boot the RPi.

It's a really simple circuit in both cases, using off-the-shelf breakout boards from Sparkfun.

Note that the LiPo power in these prototype cases is just an externally connected Jackery Giant battery pack. But a wall-wart works as well.

#5 - 11 Jun 2015 22:22 - Hammel

- Status changed from In Progress to Closed

- % Done changed from 70 to 100

I added a power switch to the prototype cases that works fine. The design will be integrated into the 3D models. This issue can be closed.

Files

PiBoxMediaPlayerCase.dia	3.99 KB	11 Sep 2014	Hammel
PiBoxMediaPlayerCase.png	27.9 KB	11 Sep 2014	Hammel
PiBoxMediaPlayerCase.png	35.9 KB	11 Sep 2014	Hammel