

EclaireXL - Feature #7

Implement I2C vga/hdmi support

04/04/2017 09:07 PM - admin

Status:	New	Start date:	04/04/2017
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0:00 hour
Target version:			
Description Try the I2C support on the new board. Initially for presence detection Latest for checking modes Its via a mux chip so we can independently address both ports			
Related issues: Related to Bug #19: PAL VGA Synch issues (screen is not centered) Closed 05/30/2017			

History

#1 - 05/11/2017 08:26 PM - foft

- File PCA9540B.pdf added

Attached mux/level converter chip data sheet

#2 - 05/11/2017 08:28 PM - foft

- File 24c04.pdf added

EDID is apparently one of these I can access at address 0x50

#3 - 05/11/2017 08:30 PM - foft

- File ddcciv1r1.pdf added

DDC looks a little funkier

#4 - 05/11/2017 08:34 PM - foft

Used this controller for the ADC on v1: <https://eewiki.net/pages/viewpage.action?pageId=10125324>

So I guess I just need to wire this to the ZPU, then I can experiment with this in firmware.

I guess a write FIFO that captures 16 bits (7 bit address, R/W and data). Then a fifo for the reply. + A way of telling when its all stopped.

#5 - 05/31/2017 07:04 PM - foft

- Related to Bug #19: PAL VGA Synch issues (screen is not centered added

#6 - 02/04/2018 09:25 PM - admin

- Priority changed from Normal to Urgent

Going to at least check this chip is wired properly before the new boards are ordered

#7 - 02/06/2018 09:28 PM - foft

Writing some code to say:

```
select channel1
read selected channel
write to random slave on channel1
```

```
select channel0
```

read selected channel
write to random slave on channel0

Might be working, but need to work out how to check... I guess I can stick the scope in i2c decode mode on the vga or hdmi port (fiddly...) and see if I see anything.

#8 - 02/06/2018 09:36 PM - foft

Picoscope has i2c debugging and linux drivers:-) Installed them and will connect that up and take a look tomorrow.

#9 - 02/06/2018 09:38 PM - foft

Looking on signaltap looks like slave reads of the control register are not working. Hmmmm.

#10 - 02/07/2018 08:00 PM - foft

I had the pin assignments backwards. I can now write 4/5 to the control register and read it back. This should be channel select.

Next up... checking that what I write makes it to the VGA and HDMI port. I guess I could try speaking to them. Annoying thing here is I only have one monitor so would need to disconnect it to check!

#11 - 02/07/2018 08:23 PM - foft

VGA is working... receiving "00 FF FF FF FF FF FF 00 10 AC ..."
Now for HDMI

#12 - 02/07/2018 08:25 PM - foft

HDMI is working too... "00 FF FF FF FF FF FF 00 10 AC ..."

#13 - 02/07/2018 08:25 PM - foft

- Priority changed from Urgent to Normal

Setting back to normal since the hardware side is working fine.

#14 - 02/07/2018 08:51 PM - foft

Added to the video settings 'VGA connected' and 'HDMI connected' which look for the start of the DDC sequence '00FF'

Files			
PCA9540B.pdf	290 KB	05/11/2017	foft
24c04.pdf	163 KB	05/11/2017	foft
ddcciv1r1.pdf	127 KB	05/11/2017	foft