



Emily Chien <emily.chien@canonical.com>

Fwd: [External] Questions on testing Common module ports on PDK X6 MED PDK

Rick Wu <rick.wu@canonical.com>

Thu, Mar 31, 2022 at 12:39 PM

To: Emily Chien <emily.chien@canonical.com>, Hugh Chao <hugh.chao@canonical.com>, Hui Wang <hui.wang@canonical.com>, Jesse Sung <jesse.sung@canonical.com>

Hi All,
FYI

All the best,

Rick Wu

----- Forwarded message -----

From: **Li, Barry** <Bin.Li3@honeywell.com>

Date: Thu, Dec 9, 2021 at 4:29 PM

Subject: RE: [External] Questions on testing Common module ports on PDK X6 MED PDK

To: shrirang.bagul@canonical.com <shrirang.bagul@canonical.com>, Yin, Darren <Darren.Yin@honeywell.com>Cc: Gu, Minmin <Minmin.Gu@honeywell.com>, Yongmei.Hua <yongmei.hua@canonical.com>, Betty Lin <betty.lin@canonical.com>, Rick Wu <rick.wu@canonical.com>

Hi, Shriang

I discuss with Darren for your questions in last meeting.

1. For HW, only the last page of test jig SCH is useful, the items including SD card or MUX in Page 3 are not placed. You can see there is another small board connected on the test jig which has a microchip, unfortunately its design file is lost. It connect the test jig with J3J4J5J6, and use SPI and UART to connect to IMX6.
2. For FW, a good news is I find the "sc16is7xx_demo" source code, I just begin to look at it, you can take it as a reference meanwhile.

Regards

Barry

From: Li, Barry**Sent:** Thursday, October 21, 2021 14:50**To:** 'shrirang.bagul@canonical.com' <shrirang.bagul@canonical.com>; Yin, Darren <Darren.Yin@Honeywell.com>

Cc: Gu, Minmin <Minmin.Gu@Honeywell.com>; Yongmei.Hua <yongmei.hua@canonical.com>; Betty Lin <betty.lin@canonical.com>

Subject: RE: [External] Questions on testing Common module ports on PDK X6 MED PDK

Hi,

We always use this script to test common module and it really works. Skip the exe's name, we also don't know why the former guys naming it like this. If you put the test jig like Darren's pic, then you can run ./test.sh 1 successfully like my log in theory. Your log show there is no /dev/spidev0.0. Please check it.

Regards

Barry

From: Shrirang Bagul <shrirang.bagul@canonical.com>

Sent: 2021年10月21日 14:20

To: Li, Barry <Bin.Li3@Honeywell.com>; Yin, Darren <Darren.Yin@Honeywell.com>

Cc: Gu, Minmin <Minmin.Gu@Honeywell.com>; Yongmei.Hua <yongmei.hua@canonical.com>; Betty Lin <betty.lin@canonical.com>

Subject: Re: [External] Questions on testing Common module ports on PDK X6 MED PDK

Hi Barry,

I don't think this is a software (OS specific - Ubuntu/Yocto) issue.

I'm looking at x6med35-base board schematics [1] and there is no SPI gpio/uart expansion chip SC16IS7XX in hardware.

The UARTs 5/4 (from iMX6SX SoC) are connected to the common module ports 1/2 respectively .

The test.sh script uses '**sc16is7xx_demo**' (closed source prebuilt-binary) to test the SPI-UART feature on the common module port.

Does this mean that the sc16is7xx chip is on the "SENTIENCE GATEWAY TEST MODULE" [2] ? The problem is, the only chip on the schematic is U1 [74HC4051D-T (8-channel analog multiplexer/demultiplexer)].

So either we have the wrong hardware **OR** wrong testing script **OR** some piece of documentation/schematic is still missing.

Can you also shed light on the '**sc16is7xx_demo**' utility. What does it do? How does it test the SPI & UART interfaces on the common module ports?

What function does the 74HC4051D-T analog mux/demux play in the testing process?

Thanks,

Shrirang

[1] 800_25061_B_X6MED35_base board_EMMC_boot_sch.pdf [DRAWING NO. 800-25061; REV B]

[2] 200-01921A_SCH.pdf [DRAWING NO. 800-21831; REV B] - Shared by Yin, Darren

On Thu, 2021-10-21 at 05:15 +0000, Li, Barry wrote:

Hi, Shrirang

This script is running in X6-med35som-pdk's HLD. You want to run it in Ubuntu? Maybe you need to modify the device name to which you used.

Regards

Barry

From: Shrirang Bagul <shrirang.bagul@canonical.com>

Sent: 2021年10月21日 11:33

To: Li, Barry <Bin.Li3@Honeywell.com>; Yin, Darren <Darren.Yin@Honeywell.com>

Cc: Gu, Minmin <Minmin.Gu@Honeywell.com>; Yongmei.Hua <yongmei.hua@canonical.com>; Betty Lin <betty.lin@canonical.com>

Subject: Re: [External] Questions on testing Common module ports on PDK X6 MED PDK

Hi Barry,

Thank you for sharing the test scripts for verifying the common module ports.

But, it looks like the test was written for x8High35-PDK. For now we want to verify on x6MED-PDK.

Can you provide a test which will work on the x6MED-PDK or give pointers on how we can modify the existing test scripts you've shared?

This is the output I get if the test you've shared are run on x6MED-PDK -

>>>

```
root@x8med35-pdk:/home/ubuntu/35som_test/common_module# dmesg | egrep "Machine|Linux version"
```

```
[ 0.000000] Linux version 5.4.0-1011-imx (shrirang@snb-precision) (gcc version 9.3.0 (Ubuntu 9.3.0-17ubuntu1~20.04)) #11 SMP PREEMPT Fri Oct 15 11:20:37 CST 2021 (Ubuntu 5.4.0-1011.11-imx 5.4.114)
```

```
[ 0.000000] OF: fdt: Machine model: Honeywell i.MX6SX X6Med35 PDK
```

```
root@x8med35-pdk:/home/ubuntu/35som_test/common_module# ./test.sh 1
```

```
/dev/spidev0.0: No such file or directory
```

```
test success
```

<<<

So, to summarise we are not able to test UART and SPI bus on x6MED-PDK with the tests provided.

/Shrirang

On Mon, 2021-10-18 at 05:11 +0000, Li, Barry wrote:

Hi

```
3. root@imx6sx-35som-debug:/35som_test/common_module# ./test.sh 1
```

```
Init: reg 3 = 3 (0x03)
```

```
Init: reg 2 = 7 (0x07)
```

```
Init: reg 7 = 66 (0x42)
```

```
Init: reg 10 = 1 (0x01)
```

```
Init: reg 11 = 12 (0x0c)
```

```
Reg 0 -> 0 (0x00)
```

```
Reg 1 -> 0 (0x00)
```

```
Reg 2 -> 193 (0xc1)
```

```
Reg 3 -> 3 (0x03)
```

```
Reg 4 -> 0 (0x00)
```

```
Reg 5 -> 96 (0x60)
```

```
Reg 6 -> 0 (0x00)
```

```
Reg 7 -> 66 (0x42)
```

```
Reg 8 -> 64 (0x40)
```

```
Reg 9 -> 0 (0x00)
```

```
Reg 10 -> 1 (0x01)
```

```
Reg 11 -> 254 (0xfe)
```

```
Reg 12 -> 0 (0x00)
```

```
Reg 13 -> 0 (0x00)
```

```
Reg 14 -> 0 (0x00)
```

```
Reg 15 -> 0 (0x00)
```

```
-----write reg done-----
```

```
Baudrate is 115200...
```

Setting divisor to 0x60 (baud=9600, osc=14745600)Setting divisor to 0x8 (baud=115200, osc=14745600)set done!
thread run...
test success
test success

Regards

Barry

From: Yin, Darren <Darren.Yin@Honeywell.com>

Sent: 2021年10月18日 12:41

To: shrirang.bagul@canonical.com; Li, Barry <Bin.Li3@Honeywell.com>

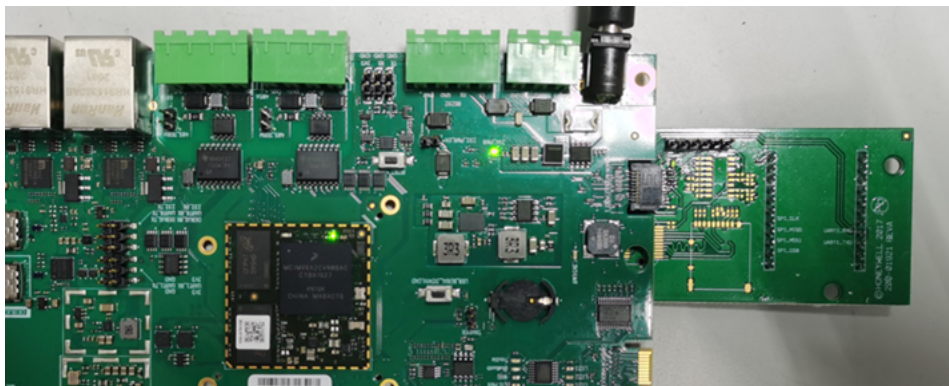
Cc: Gu, Minmin <Minmin.Gu@Honeywell.com>; Yongmei.Hua <yongmei.hua@canonical.com>; Betty Lin <betty.lin@canonical.com>

Subject: RE: [External] Questions on testing Common module ports on PDK X6 MED PDK

+ Barry

Hi,

1. X6 PDK



2. I attached the sch

4. yes, you can use it to verify the X8 PDK

Thanks,

Darren Yin

From: Shrirang Bagul <shrirang.bagul@canonical.com>

Sent: Monday, October 18, 2021 12:10 PM

To: Gu, Minmin <Minmin.Gu@honeywell.com>; Yin, Darren <Darren.Yin@honeywell.com>

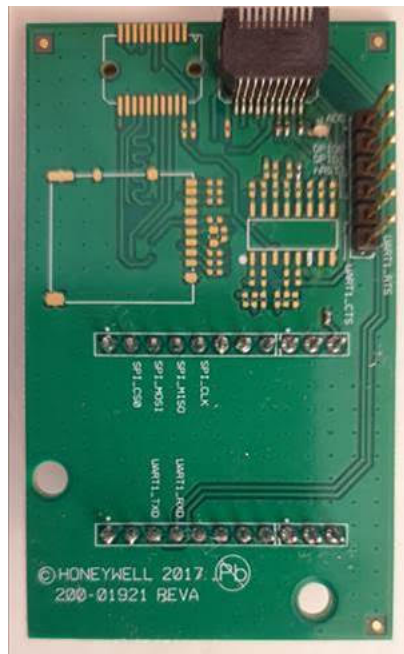
Cc: Yongmei.Hua <yongmei.hua@canonical.com>; Betty Lin <betty.lin@canonical.com>

Subject: [External] Questions on testing Common module ports on PDK X6 MED PDK

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Hi Minmin, Darren,

I'm trying to test the Common Module Port 1/2 with Ubuntu on the x6med-pdk using the following Common Module Test jig.



However, we have no documents for on how to mount this test jig on the x6med-pdk, nor any schematics to write our own tests for verifying the functionality.

Please share the details of -

1. How to mount the above test jig on the x6med-pdk ?
2. Schematics for the test jig
3. Linux shell scripts (if any) that Honeywell is using for verification.

4. Also, is it possible to used the same test jig to verify common module ports on x8High35-pdk ?

Thanks,

Shrirang

 **plugin_module_test_unit.7z**
7K