Interfaces and peripherals

Interfaces, peripherals compatibility, upgrades, third party devices.

- Can I use DSI, CSI, I2C, etc. interfaces as easily as on the Raspberry Pi board?
- Can I use my RPi software and hardware - ESPECIALLY CAMERAS - with the URVE BOARD Pi?
- What development tools are available for URVE BOARD Pi?
- Is it possible to connect (via LVDS) cameras dedicated to Raspberry Pi, such as HD F Night Vision OV5647 5Mpx - IR camera?
- Is it possible to use 4 UART interfaces simultaneously?
- Are Raspberry's DSI screens supported?
- GPIO python examples

Can I use DSI, CSI, I2C, etc. interfaces as easily as on the Raspberry Pi board?

Yes, it should work just like on the RPI.

Can I use my RPi software and hardware - ESPECIALLY CAMERAS - with the URVE BOARD Pi?

Currently, cameras from Raspberry Pi do not work with Urve Pi. We are working on delivering a solution.

What development tools are available for URVE BOARD Pi?

We provide BSP (for Linux and kernel modifications) and SDK (all Linux compilations + QT Creator) in a very convenient virtual machine with Ubuntu. It allows easy porting of applications from any ARM/X86 board, not just RPi.

Is it possible to connect (via LVDS) cameras dedicated to Raspberry Pi, such as HD F Night Vision OV5647 5Mpx - IR camera?

There is certainly a possibility, but we don't know how much work is required for such a scenario. You may need to make a switchboard.

Is it possible to use 4 UART interfaces simultaneously?

As far as we know, yes. But we haven't tested.

Are Raspberry's DSI screens supported?

No, they aren't.

GPIO python examples

Project configuration

Give access to gpio

```
chmod 777 -R /sys/class/gpio
```

Install prerequisite packages

```
apt-get install python3-venv
```

Create new python environment

```
mkdir pin_blink
cd pin_blink
python3 -m venv
source bin/activate
```

Install required library called *gpio*

```
python3 -m pip install gpio
```

1. Blink led

```
import time
import gpio
GPIO_PINS = {
    "GPIO1_B1": 41,
    "GPIO4_C3": 147,
    "GPIO0_A0": 0,
    "GPIO0_B7": 15,
    "GPIO0_C4": 20,
    "GPIO0_C7": 23,
```

```
    "GPIO1_B2": 42
}
# GPIO pin number
pin = GPIO_PINS['GPIO1_B1']
blink_time = 0.5


# Set pin as output
pin_obj = gpio.GPIOPin(pin, gpio.OUT)


# Blink LED
while True:
    pin_obj.write(gpio.HIGH)
    time.sleep(blink_time)
    pin_obj.write(gpio.LOW)
    time.sleep(blink_time)
```

2. Read button state

```
import time
import gpio

GPIO_PINS = {
    "GPIO0_A6": 6,
    "GPIO1_B1": 41,
    "GPIO4_C3": 147,
    "GPIO0_A0": 0,
    "GPIO0_B7": 15,
    "GPIO0_C4": 20,
    "GPIO0_C7": 23,
    "GPIO1_B2": 42
}
# GPIO pin number
pin = GPIO_PINS['GPIO0_A6']
polling_time = 0.5


# Set pin as input
pin_obj = gpio.GPIOPin(pin, gpio.IN)
last_state = pin_obj.read()
```

```python
while True:
    current_state = pin_obj.read()
    if(current_state != last_state):
        last_state = current_state
        print("State changed to: " + str(current_state))
    time.sleep(polling_time)
```