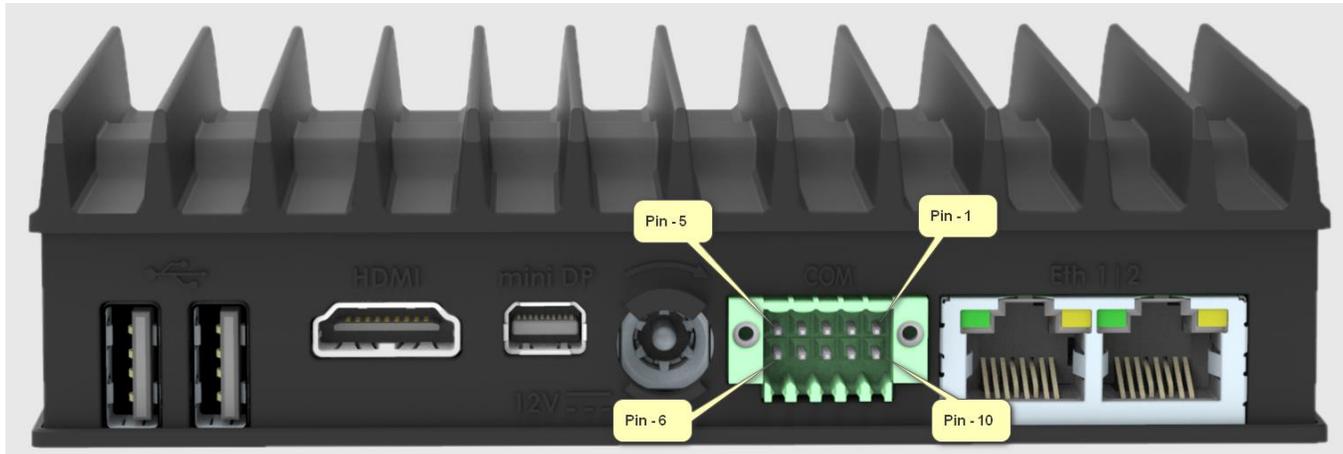


21-Nov-2024

Application note - How to configure the default on-board GPIO ports in the fitlet3 device with [S] option enabled.

Introduction:

When the fitlet3 device is ordered with [S] option enabled, it comes with special connector assembled, see below



Below you can see the global pinout of this connector:

General COM + GPIO connector pinout

Note! GPIO is not supported by Microsoft Windows

Pin Number	RS232+GPIO	RS485 Half duplex +GPIO	RS485 Full Duplex +GPIO
1	Power In	Power In	Power In
2	GPO (output)	GPO (output)	GPO (output)
3	GPO (output)	GPO (output)	GPO (output)
4	GPI (Input)	GPI (Input)	GPI (Input)
5	GPI (Input)	GPI (Input)	GPI (Input)
6	TXD	Data-	TX-
7	RXD		RX+
8	CTS		RX-
9	RTS	Data+	TX+
10	GND	GND	GND

Here the GPIO pinout only:

	I/O Expander	Back Panel connector
GPI1	I/O 1.1	Pin 5
GPI0	I/O 1.7	Pin 4
GPO1	I/O 1.6	Pin 3
GPO0	I/O 1.5	Pin 2

Pin Number	GPIO
1	VCC
2	GPO 0
3	GPO 1
4	GPI 0
5	GPI 1
10	GND

NOTE: The GPIO requires an external VCC for functioning (up to 24V)

In the GPIN\VIN the MAX VOLTAGE is 24V only! Input of more than 24V can damage the PHOTOCAPLER!

GPOUT max current 60mA with 24V!

Using the GPIO port (examples in Linux, Windows does not support GPIO)

LINUX

pin 1: +vcc (3.3V up to 24V)

pin 10 : GND

1. install instruments for the test:

```
sudo apt install i2c-tools
sudo apt install gpiod
```

2. Detect where (the number of bus) smbus?

```
i2cdetect -l
```

3. Add a new device for GPIO: (add number of bus that you did find in a chapter #2)

```
echo pca9555 0x20 > /sys/bus/i2c/devices/i2c-<number of bus >/new_device
```

4. Verify that you find gpiochip with parameters [7-0020] (16 lines):

```
gpiodetect
```

5. Verify that you find directory with 7-0020:

```
ls -al /sys/bus/i2c/devices/7-0020/
```

6. Turn (ON) the 2 outputs: (add gpiochip that you did find in a chapter #4)

```
gpioset <number of gpiochip> 13=1 14=1
```

Pins in connector:GPOUT0=pin2 GPOUT1=pin3

Verify with DVM V-OUTPUT

7. Read 2 inputs (verify "1")

```
gpioget <number of gpiochip> 15
```

```
gpioget <number of gpiochip> 9
```

pins in connector:GPIN0=pin4 GPIN1=pin5

Verify from GPOUT, input to GPIN that it works as expected.

Verify with power-supply 3.3v up to 24v that it works as expected.

8. Turn (OFF) the 2 outputs: (add gpiochip that you did find in the chapter #4)

```
gpioset <number of gpiochip> 13=0 14=0
```

Verify that the GPOUT = 0V

9. Read 2 inputs (verify "0")

```
gpioget <number of gpiochip> 15
```

```
gpioget <number of gpiochip> 9
```

Further information

<https://fit-iot.com/web/>

www.fit-pc.com/wiki

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