

## TEMU

### ***GRLIB GRGPIO Device Model Manual***

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Table 1. Record of Changes

| Rev | Date       | Author | Note             |
|-----|------------|--------|------------------|
| 1.0 | 2016-01-06 | MH     | Initial version. |

## 1. Introduction

The GRGPIO device is part of the GRLIB device library from Gaisler. The GrGPIO model simulates a 16 pin GPIO device by providing input and output via the Signallface.

## 2. Usage

The device can be connected to and from via the signal interface it implements. It implements 16 usable signals (signal 0 through 15). Signal 0 cannot raise interrupts.

You can connect the signal interface as follows:

Listing 1. Connecting via Command Line

```
# Connect GPIO device signal 0 to device model
connect a=gpio.outSignals[0] b=mydevice:SignalIface

# Connect a device signal interface ref to GPIO device
connect a=mydevice.signal b=gpio:SignalIface[1]
```

Listing 2. Connecting via API

```
// Connect GPIO device signal 0 to device model
temu_connect(gpio, "outSignals[0]", mydevice, "SignalIface");

// Connect a device signal interface ref to GPIO device
temu_connect(mydevice, "signal", gpio, "SignalIface[1]");
```

## 3. Attributes

### 3.1. Properties

| Name      | Type             | Description |
|-----------|------------------|-------------|
| data      | uint32_t         |             |
| direction | uint32_t         |             |
| edge      | uint32_t         |             |
| irqCtrl   | iref / <unknown> |             |

| Name              | Type                      | Description                                  |
|-------------------|---------------------------|--|
| mask              | uint32_t                  |  |
| object.timeSource | object                    | Time source object (a cpu or machine object) |
| outSignals        | [32 x iref / SignalIface] |  |
| output            | uint32_t                  |  |
| pnnp.bar          | uint32_t                  |  |
| pnnp.config       | uint32_t                  |  |
| polarity          | uint32_t                  |  |

## 3.2. Interfaces

| Name           | Type           | Description       |
|----------------|----------------|-------------------|
| ApbIface       | ApbIface       |                   |
| DeviceIface    | DeviceIface    |                   |
| MemAccessIface | MemAccessIface |                   |
| ResetIface     | ResetIface     |                   |
| SignalIface    | SignalIface    | Incomming signals |

## 3.3. Ports

| Prop | Iface | Description |
|------|-------|-------------|
| -    | -     | -           |

## 4. Limitations

- Only the UT700 based configuration is supported at the moment. That means that the bypass and capabilities registers are missing. Further the IRQ map registers are not available.