PhidgetKit_0_16_16

Input Formats: *text, quantity*
Output Formats: *text*
Duplex Formats: in: *nulltype,* out: *transparent*
Location in gadget tree: *HWControllers*

Overview

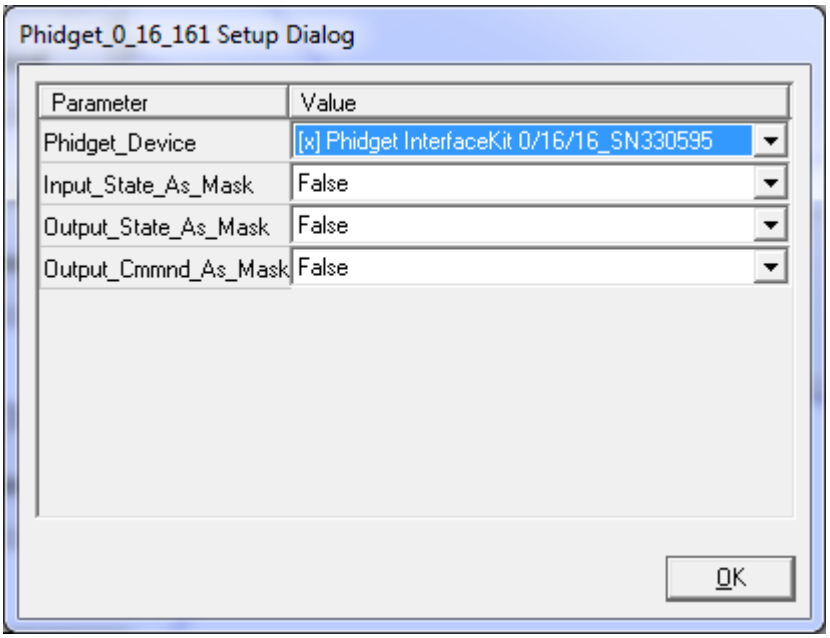
PhidgetKit_0_16_16 allows control the I/O board module with USB interface.

The Digital Output acts as a switch to ground then gadget can operate in several modes. They are:

- On – switches on one or more digital outputs;
- Off – switches off one or more digital outputs;
- Toggle – alternates switch state of one or more digital outputs.

Also, the gadget represents a current state of each Digital Input and Digital Output in the collection or all inputs or outputs as mask.

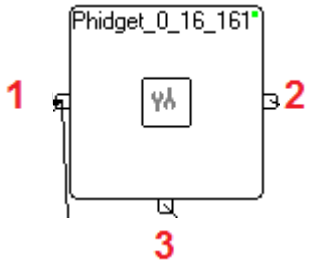
Gadget Setup Dialog



Phidget_Device – sets the I/O board module which should be controlled. Possible values are serial numbers of all I/O board modules connected to the local machine that automatically loaded within the drop-down menu.
Input_State_As_Mask – sets the Digital Inputs states representation at the OutputPin. Possible values: TRUE to spit out the states as mask, otherwise as collection.
Output_State_As_Mask – sets the Digital Outputs states representation at the OutputPin. Possible values: TRUE to spit out the states as mask, otherwise as collection.

Output_Cmmnd_As_Mask – sets interpretation of commands at the InputPin. Possible values: TRUE to read the command as mask, otherwise as specific channel(s) id.

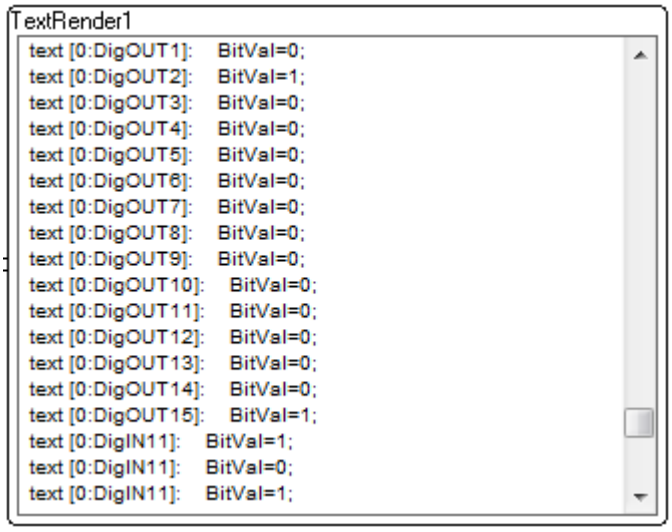
Gadget Pins



Pin #1 – input pin that receives Text or Quantity type packet to operate digital outputs of selected I/O board module. The packet should have:

a. command flag in the packet label as follow:
   I. on – turns on the digital outputs defined in the packet's data,
   II. off – turns off the digital outputs defined in the packet's data,
   III. toggle – alternates state of the digital outputs defined in the packet's data.
b. output channels ids, when it may be:
   I. single specific digital output id as Text or Quantity type packet,
   II. collection of specific digital outputs ids delimited by semicolon (;) as Text type packet,
   III. collection of specific digital outputs ids in mask representation as integer in Quantity type packet or as hex (with 0x prefix) in Text type packet.
   NOTE: Before specifying digital outputs ids in mask representation set TRUE in the **Output_Cmmnd_As_Mask** property, otherwise set FALSE.

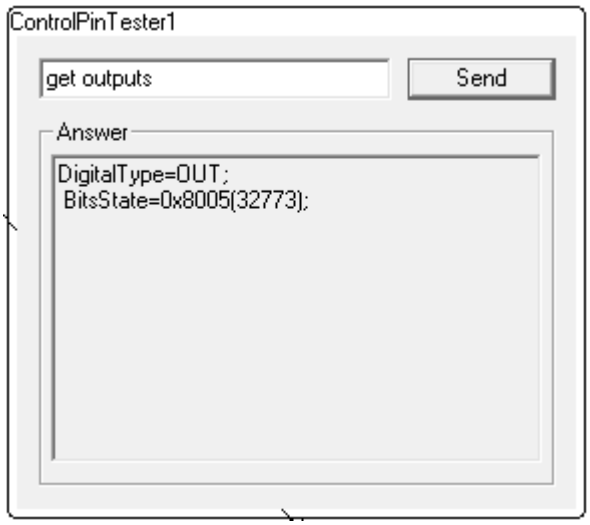
Pin #2 – output pin that returns status of the selected I/O board module as Text type packet, when packet's label contains digital type (input/output) with id and data part is a status.



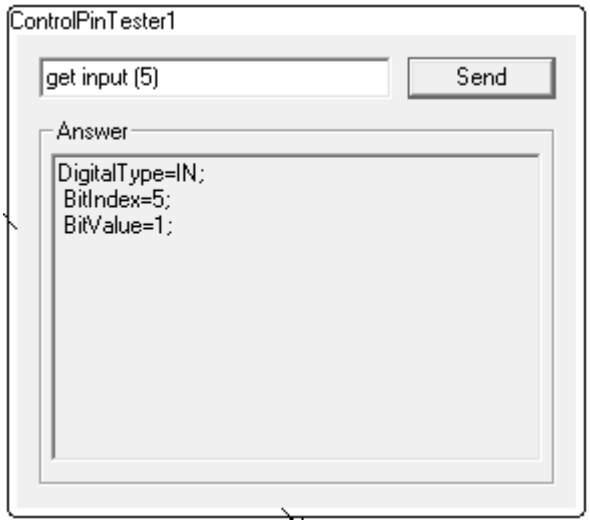
Pin #3 – control pin that requests status of the selected I/O board module. A complete description of current setup dialog parameters is printed to a text data packet and sent to control pin as a response to text data packet containing the command 'list' received in control pin.
The value of a specific setup dialog parameter is printed to a text data packet and sent to control pin (Pin #3) as a response to text data packet containing the command 'get' and the parameter's name (with/without parameter

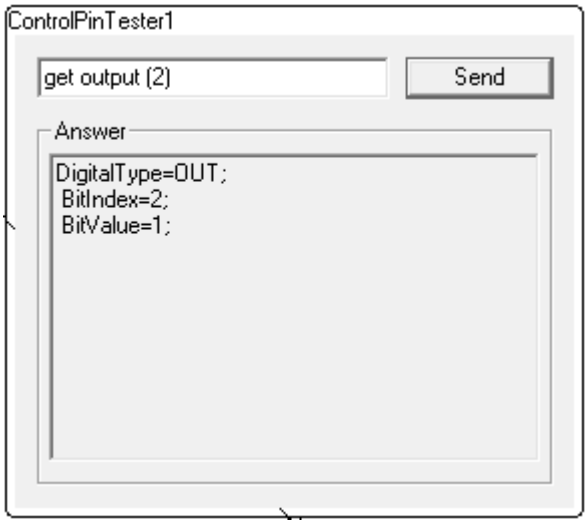
value) received in control pin or sent to output pin (Pin #2) as a response to text data packet containing the command 'getOut' and the parameter's name (with/without parameter value) received in control pin:

- get Inputs / get Outputs - invokes the sending of all inputs/outputs status value as mask to the control pin.

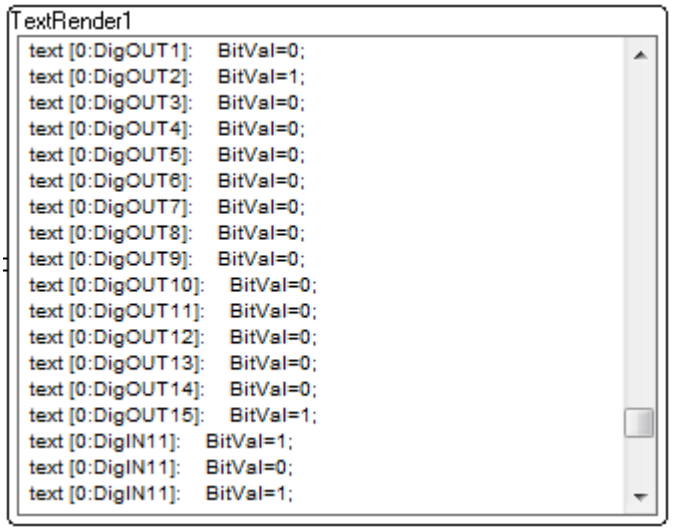


- get Input (<bitIndex>) / get Output (<bitIndex>) – invokes the status value sending to the control pin for specified digital input/output.



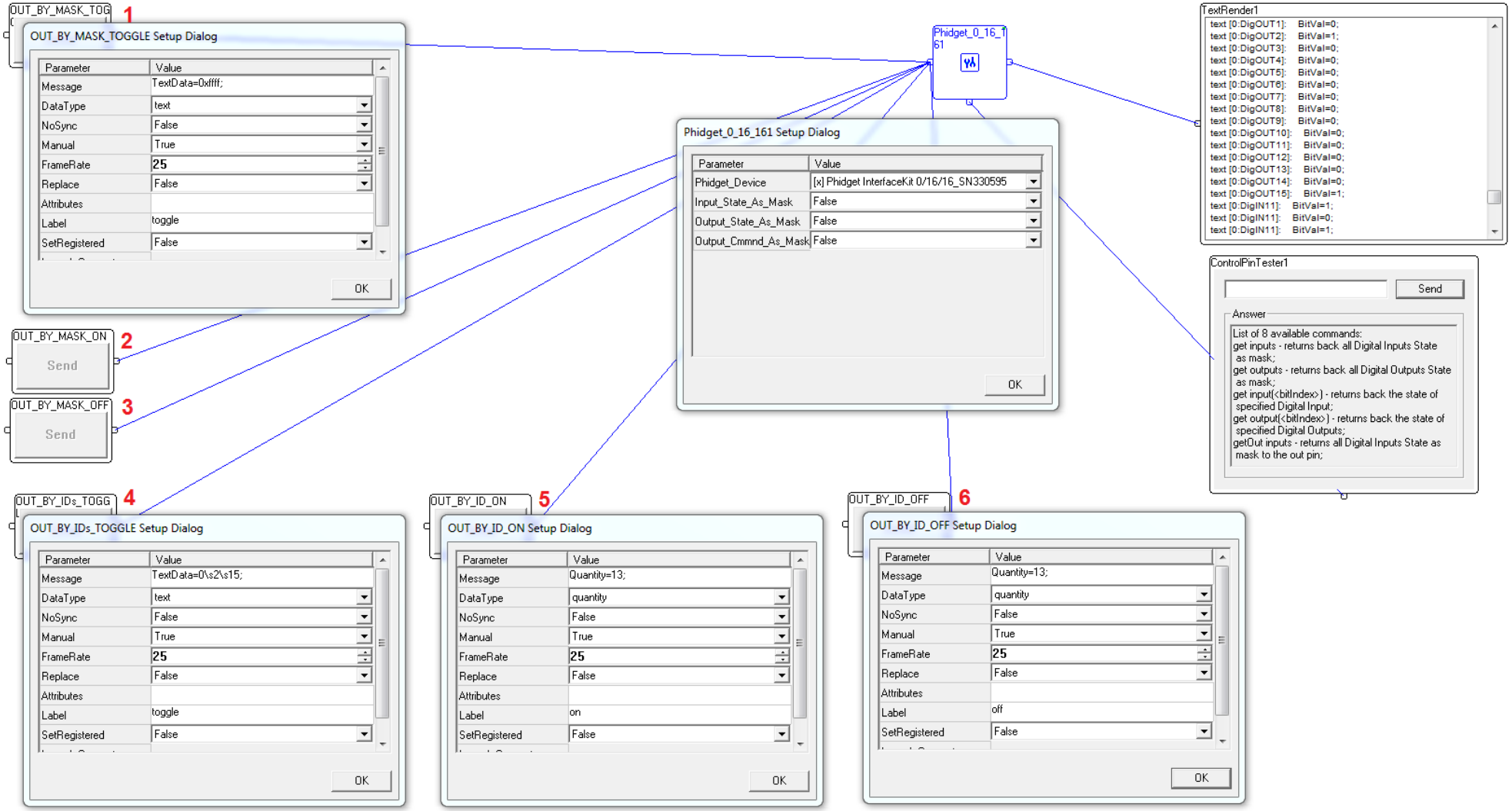


- getOut Input (<bitIndex>) / getOut Output (<bitIndex>) – invokes the status value sending to the output pin for specified digital input/output.



Basic Demo

Try basic demo graph with PhidgetKit_0_16_16 here.



1. Launch the demo graph from the link below.
2. Close all graphs that contain PhidgetKit_0_16_16.*
3. Connect USB Relay module with USB cable to the local machine.
4. Open **PhidgetKit_0_16_161** Setup Dialog.
5. Select relevant device in **Phidget_Device** drop-down menu.
    1. Select format of the command in **Output_Cmmnd_As_Mask**.

6. Start the Graph.
7. Operate relay module by clicking Send button one of six GenericGadgets as follow:
    1. Use gadgets 1, 2 or 3 when **Output_Cmmnd_As_Mask** parameter of **PhidgetKit_0_16_161** is True:
        1. Gadget 1 -- toggles digital outputs that indicated by 1 in the mask,
        2. Gadget 2 – turns on digital outputs that indicated by 1 in the mask,
        3. Gadget 3 – turns off digital outputs that indicated by 1 in the mask.
    2. Use gadgets 4, 5 or 6 when **Cmmnd_As_Mask** parameter of **PhidgetKit_0_16_161** is False:
        1. Gadget 4 – toggles selected digital output\s,
        2. Gadget 5 – turns on selected digital outputs,
        3. Gadget 6 – turns off selected digital outputs.

* An USB Relay driver may be used by only single graph that contain one or more **PhidgetKit_0_16_16's**.