

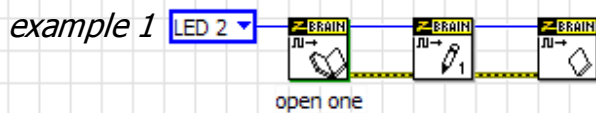
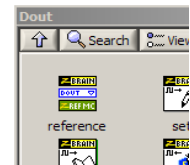
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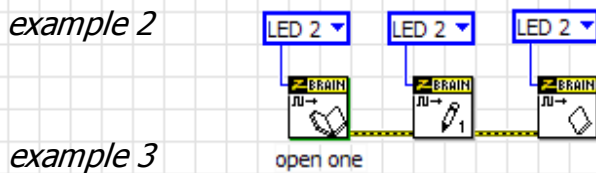
1 References

To identify a specific Hardware resource the Zsystem VIs use references. Constant values for these references can be found in the target specific palettes. References are unique for target (e.g. ZMobile), functional group (e.g. Dout) and channel (e.g. LED 1).

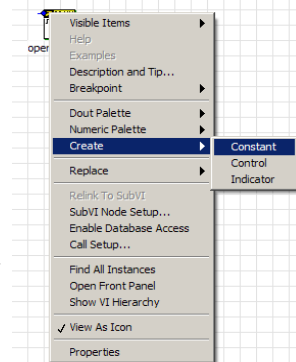
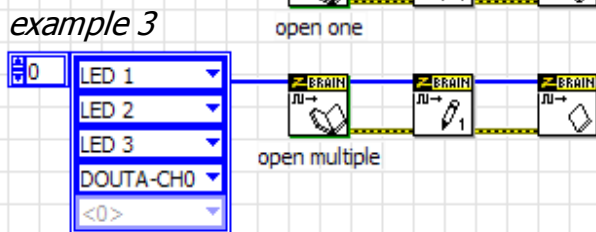
The reference number (refnum) can be fed through all subsequent VIs (example 1) or placed as constant at each VI separately (example 2). Some VIs accept arrays of references (example 3).



With target specific VIs (green shadow, see 2.3.5 Additional) reference numbers can be created by right clicking on the connector -> create -> constant.



With the generic VIs (gray shadow) this will always generate a zero constant, leading to a runtime error. Use the reference constant from the palette with generic VIs.




2 Zigns (VI symbols)

All Zsystem VIs have a similar look.



















2.1. Module

The 10 uppermost pixel rows form the logo banner. The color of the banner shows the module.

-  System
-  Storage
-  Digital
-  Analog
-  User Interface
-  Communication
-  Timing
-  Zaddons

2.2. Functional Group

The area underneath the logo banner forms the functional description of the VI. In the upper left corner of the VI is the sign of the functional group

System	Storage	Digital	Analog	UI	Comm	Timing	Zaddons
Error	 Files	 DIN ¹	 ADC ¹	 LCD	 UART	 Timer	 TC
 Events	 PARAM	 DOUT ¹	 DAC ¹	 TOUCH	 TWI	 RTC	 TaskSpy
 Power		Encoder		Keys	CAN		PID
Watchdog					TCPIP		
					B.tooth		
					USB		

Functional Groups written in gray are not yet implemented.

¹ accepts array of reverences

2.3. Function

2.3.1 Resource control

Open

Opens one or more channels. This functions allocate resources for the referenced channels and set them to a initial state if possible.

Close

Close one or more channels. This functions free the resources allocated to the reverenced channels.

2.3.2 Operation

Read

Reads values form a inbound buffer or polls a single value.

Write

Writes data(s) to the device.

Some character within the functional area describe what can be read or written by the VI.

S	String	f	Frequency
n	Multiple datas	t	Width
N	Counter	%	Duty Cycle
U8 U16 U32 SGL DBL	Data of specific types	$\frac{1}{f}$	Periode

2.3.3 Buffers

Resize

Gives a inbound buffer to a channel.

Measure

This function is used to check how many datas in inbound buffers are ready.

Flush

Clears the buffers associated to the reverenced channels. On bidirectional devices you can choose from Inbound \rightarrow], Outbound \leftarrow] and Both \rightleftharpoons].

2.3.4 Events

Register Event

Use this VIs to gain control over interrupt sources.

You can

- perform an action with a **hook action** vi of any Zsystem module (eg ZB.dout.actonhook.vi).
- count events with ZB.events.counter.vi.
- unregister a registered event with ZB.events.remove.vi.


Hook Action on Event

The action will be performed every time the given event will occur. Define an event refnum from an event register vi in any module (eg ZB.timer.eventregister.vi).


2.3.5 Additional

Some signs in the icon give hints, how to use the VI.

Chip bound

VIs with this sign in the upper right corner of the functional area (e.g. ) affect all channels of a chip. For example: The ADC VI set sampling frequency sets the sampling frequency of all channels within the same analog to digital converter IC, even if only one of the channels is reverenced.

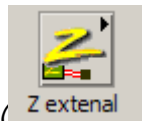
Target Specific

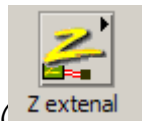
VIs with a green shadow (e.g. ) are designed to work with a specific target. The target name is part of the VIs name. Right click on a refnum connector to create target specific channel constants.

Vis with gray shadow are target independent. They are equal for all Schmid Engineering Z-targets.

External Components

3 External Components



VIs from the external components palette () are used to control devices that are on customer hardware connected to the Z-target via standard bus (TWI, RS232 etc). In most cases, the only VI in the external palette is the open vi. This is used to generate the reference number. The functions of the component can be controlled by standard Z-VIs.

