

MBS Real Studio USB Plugin Documentation

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May 15, 2012

0.1 Introduction

This is the PDF version of the documentation for the Real Studio Plug-in from Monkeybread Software Germany. Plugin part: MBS Real Studio USB Plugin

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Chapter 2

IO Warrior

2.1 class IOWarriorCarbonDeviceMBS

class IOWarriorCarbonDeviceMBS

Plugin Version: 7.1 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** A class to describe

2.1.1 Properties

InterfaceHandle as Integer

Plugin Version: 7.1 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The handle of this interface.

Notes:

This value is needed for WriteToInterface and ReadFromInterface calls.
(Read and Write property)

InterfaceOpen as Integer

Plugin Version: 7.1 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Whether this Interface is open or not.

Notes: (Read and Write property)

InterfaceType as Integer

Plugin Version: 7.1 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Type of interface.

Notes:

One of the values in the kIOWarrior*Interface* constants.

(Read and Write property)

SerialNumber as String

Plugin Version: 7.1 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The serial number of this device.

Notes:

Not available on very old devices.

(Read and Write property)

2.2 class IOWarriorCarbonMBS

class IOWarriorCarbonMBS

Plugin Version: 3.3 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** A class to control the IOWarrior Device on Mac OS X.

Notes:

This is the software for the IOWarrior USB Device from codemerics.com. The SDK from May 2003 is used.

<http://www.codemerics.com>

2.2.1 Methods

CountInterfaces as integer

Plugin Version: 6.0 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Counts the number of interfaces.

Notes: Please email support if you need more functions to handle more than one device.

FirstInterfaceOfType(InterfaceType as integer) as integer

Plugin Version: 7.1 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Searches the first device of the given type.

Notes:

Returns 0 on any error.

This value is needed for WriteToInterface and ReadFromInterface calls.

Init as integer

Plugin Version: 3.3 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Inits the device functions.

Notes: Return 0 if successfull.

InterfaceAtIndex(index as integer) as IOWarriorCarbonDeviceMBS

Plugin Version: 7.1 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The interface with the given index.

Notes:

Returns nil on any error.

Index is zero based and goes till CountInterfaces-1.

IsPresent as integer

Plugin Version: 3.3 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Counts the devices found.

ReadFromInterface(InterfaceHandle as integer, reportID as integer, size as integer, data as memoryblock) as integer

Plugin Version: 7.1 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Writes bytes from the interface.

Notes: Size must match the device's report size.

ReadInterface0(byref int32 as integer) as integer

Plugin Version: 3.3 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Reads a 32bit value from interface 0.

ReadInterface1(reportid as integer, m as memoryblock) as integer

Plugin Version: 3.3 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Reads from interface 0.

WriteInterface0(value as integer) as integer

Plugin Version: 3.3 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Writes to interface 0.

WriteInterface1(reportid as integer, m as memoryblock) as integer

Plugin Version: 3.3 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Writes to interface 1.

WriteToInterface(InterfaceHandle as integer, size as integer, data as memoryblock) as integer

Plugin Version: 7.1 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Writes bytes to the interface.

Notes: Size must match the device's report size.

2.2.2 Properties

USB24DeviceID as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The USB Device ID used for a IOWarrior 24 device.

Notes: (Read and Write property)

USB24PVDeviceID as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The USB Device ID used for a IOWarrior 24 PV device.

Notes: (Read and Write property)

USB40DeviceID as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The USB Device ID used for a IOWarrior 40 device.

Notes: (Read and Write property)

USB56DeviceID as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The USB Device ID used for a IOWarrior 56 device.

Notes: (Read and Write property)

USBVendorID as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The USB vendor ID of this device.

Notes: (Read and Write property)

2.2.3 Constants

kIOWarrior24Interface0 = 2

Plugin Version: 7.1 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** One of the interface type constants.

kIOWarrior24Interface1 = 3

Plugin Version: 7.1 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** One of the interface type constants.

kIOWarrior24PVInterface0 = 6

Plugin Version: 7.1 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** One of the interface type constants.

kIOWarrior24PVInterface1 = 7

Plugin Version: 7.1 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** One of the interface type constants.

kIOWarrior40Interface0 = 0

Plugin Version: 7.1 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** One of the interface type constants.

kIOWarrior40Interface1 = 1

Plugin Version: 7.1 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** One of the interface type constants.

kIOWarrior56Interface0 = 4

Plugin Version: 7.1 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** One of the interface type constants.

kIOWarrior56Interface1 = 5

Plugin Version: 7.1 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** One of the interface type constants.

2.3 class IOWarriorWindowsMBS

class IOWarriorWindowsMBS

Plugin Version: 3.3 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** A class to control the IOWarrior Device on Windows.

Notes:

This is the software for the IOWarrior USB Device from codemerics.com. The SDK 1.5 vom 21. September 2006 is used.

<http://www.codemerics.com/>

To work the stuff needs as a minimum the SetupAPI DLL on Windows which is part of Windows 98 or newer.

The plugin can be changed to simply do nothing on Window 95 or NT4 if someone needs this. (A RB application using this plugin can't launch on Windows 95 or NT4 because of the missing DLL.)

2.3.1 Methods

CancelIO(Pipe as integer) as boolean

Plugin Version: 7.0 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Cancels current IO processing.

Notes:

Returns true for success.

Cancel a read or write operation under way on one of the pipes.

This function is seldom used, because you need several threads in your program to be able to call it at all. Read() blocks the thread so you need another thread for cancelling. Setting the timeouts is an easier way for handling read or write problems.

The function cancels pending read and write operations simultaneously.

close

Plugin Version: 3.3 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Closes the connection to the hardware.

Notes:

Close all IO-Warriors.

You must call this function when you are done using IO-Warriors in your program.

If multiple IO-Warriors are present all will be closed by this function.

DeviceCount as integer

Plugin Version: 7.0 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Returns the number of IO-Warrior devices present.

Notes:

The function has to be called after `Open()` to return meaningful results. Plugging or unplugging IO-Warriors after calling `IowKitOpenDevice()` is not handled. The number `DeviceCount()` returns stays the same.

GetProductID as integer

Plugin Version: 7.0 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** The product ID of the USB device used.

Notes:

You can compare this with the values from `USB40DeviceID`, `USB56DeviceID` and `USB24DeviceID`.

Return the Product ID of the IO-Warrior device identified by `iowHandle`. The Product ID is a 16-bit Word identifying the specific kind of IO-Warrior. The value is cached in the dynamic library because access to the device needs some msecs.

GetRevision as integer

Plugin Version: 7.0 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Return the revision of the firmware of the current IO-Warrior device.

Notes: 0 on any error.

Open as boolean

Plugin Version: 3.3 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Opens a connection to the hardware.

Read(pipe as integer, buffer as memoryblock, bufferSize as integer) as integer

Plugin Version: 3.3 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Reads bytes from the device into the buffer.

Notes:

Read data from IO-Warrior.

This function reads length bytes from IO-Warrior and returns the number of bytes read if successful. Note that you must specify the number of the pipe (see IO-Warrior specs) to read from. numPipe ranges from 0 to IOWKIT_MAX_PIPES-1.

Since the IO-Warriors are HID devices, you can only read the data in chunks called reports. Each report is preceded by a ReportID byte. The "IOWarriorDatasheet.pdf" elaborates about that.

The function returns the number of bytes read, so you should always check if it reads the correct number of bytes, you can use GetLastError() to get error details. Keep in mind that data is always returned in report chunks, so reading 5 bytes from the IO-pins of an IO-Warrior 24 would only return 3 bytes of data because the IO-Warrior 24 has a 3 byte report whereas an IO-Warrior 40 has a 5 byte report.

The Special Mode pipe has a report size of 8 bytes for all IO-Warriors.

Linux does not have a ReportID byte of 0 for pipe 0 (I/O pins). To be completely compatible with Windows libiowkit.so adds that ReportID to the data.

As of dynamic library version 1.4 the function correctly reads several reports at once.

ATTENTION!

This function blocks the current thread until something changes on IO-Warrior (i.e. until user presses a button connected to an input pin, or until IIC data arrives), so if you do not want your program to be blocked you should use a separate thread for reading from IO-Warrior. If you do not want a blocking read use ReadImmediate(). Alternatively you can set the read timeout with SetTimeout() to force Read() to fail when the timeout elapsed.

ReadImmediate(byref int32 as integer) as integer

Plugin Version: 3.3 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Returns the last value readed in the parameter.

Notes:

Return last value read from IO-Warrior pipe 0 (I/O pins).

The function returns TRUE (1) if a new value has arrived otherwise it returns FALSE and places the last value read into value.

The function can only read the I/O pins via pipe 0 so it does not need a numPipe parameter. It also abstracts from the number of I/O pins the device has.

Until the first report has been read the function returns -1 because the I/O pins are initially high.

Internally 8 reports are buffered to allow using a timer to call ReadImmediate() without losing fast bursts of reports. Read() also uses the buffered reports so do not mix calls to Read() and ReadImmediate() without careful consideration.

This is not true for the Linux version yet.

There is no non-blocking read for pipe 1 (Special Mode Functions) because pipe 1 has a command interface where you write a command and then read the answer.

ReadNonBlocking(pipe as integer, buffer as memoryblock, bufferSize as integer) as integer

Plugin Version: 7.0 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Reads bytes from the device into the buffer in non blocking mode.

SerialNumber as string

Plugin Version: 7.0 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** The serialnumber of this IOWarrior device.

Notes:

Returns an empty string if there is no serial number available.
The serialnumber is an eight byte long string.

SetTimeout(timeout as integer) as boolean

Plugin Version: 7.0 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Sets the timeout.

Example:

```
dim w as IOWarriorWindowsMBS // your instance

if w.SetTimeout(1000) then
  MsgBox "OK. Set one second timeout"
else
  MsgBox "Failed."
end if
```

Notes:

Default is infinity.

Set read I/O timeout in milliseconds.

It is possible to lose reports with HID devices. Since reading a HID device is a blocking call it is possible to block your application in that case.

SetTimeout() makes Read() fail if it does not read a report in the allotted time.

If Read() times out, you have to restart any pending transaction (for example, IIC write or read transaction) from the beginning.

It is recommended to use 1 second (1000) or bigger timeout values.

Returns true on success.

SetWriteTimeout(timeout as integer) as boolean

Plugin Version: 7.0 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Sets the write timeout.

Notes:

Default is infinity.

Set write I/O timeout in milliseconds.

SetWriteTimeout() makes Write() fail if it does not write a report in the allotted time.

If Write() times out, you have to restart any pending transaction (for example, IIC write transaction) from the beginning.

Failure of Write() is uncommon. Check your hardware if you encounter write errors.

The Linux library does not implement SetWriteTimeout() yet.

It is recommended to use 1 second (1000) or bigger timeout values.

Version as string

Plugin Version: 7.0 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** The version of the IOWarrior library used for this class.

Notes: returns e.g. "IO-Warrior Kit V1.4".

Write(pipe as integer, buffer as memoryblock, bufferSize as integer) as integer

Plugin Version: 3.3 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** Writes bytes from the buffer to the device.

Notes:

Write length bytes of data to pipe numPipe of IO-Warrior. The return value is the number of bytes written.

Writing something else than a single report of the correct size and a valid report ID for the pipe fails for Windows. The function allows writing to the I/O pins through pipe 0 and Special Mode functions through pipe 1. To be completely compatible with the Windows version libiowkit.so expects a ReportID 0 for pipe 0 (I/O pins) even if Linux does not have a ReportID on pipe 0. The ReportID is stripped from the data sent to the device.

Sample write to pipe 0 of an IO-Warrior 40:

Integer value consists of 32 bits, which correspond to the 32 IO-Warrior 40 I/O pins. Each bit has the following meaning:

When a 1 is written to a pin the output driver of that pin is off and the pin is pulled high by an internal resistor. The pin can now be used as an input or an output with high state.

When a 0 is written to a pin the output driver is switched on pulling the pin to ground. The pin is now a output driving low.

For example, writing 0 (all 32 bits are zero) to IO-Warrior sets all pins as outputs driving low (so if you have LEDs connected to them they will be on).

Reading the status of the pins does always return the logic level on the pins, not the value written to the pin drivers.

Writing -1 (value in hex, all 32 bits set) sets all pins as inputs.

Note that if you want to use a pin as an input, you must first set it up as input, in other words, you must write 1 to it. For connected LEDs this means they go off.

2.3.2 Properties

DeviceIndex as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The index of the current used IOWarrior device.

Notes:

Index is one based.

You can switch between the IO-Warrior devices by setting this parameter.

(Read and Write property)

Handle as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The handle of the current IOWarrior device.

Notes: (Read and Write property)

USB24DeviceID as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The USB Device ID used for a IOWarrior 24 device.

Notes: (Read and Write property)

USB40DeviceID as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The USB Device ID used for a IOWarrior 40 device.

Notes: (Read and Write property)

USB56DeviceID as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The USB Device ID used for a IOWarrior 56 device.

Notes: (Read and Write property)

USBVendorID as Integer

Plugin Version: 7.0 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The USB vendor ID of this device.

Notes: (Read and Write property)

Chapter 3

Phidgets

3.1 class PhidgetMotorControlMBS

`class PhidgetMotorControlMBS`

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for the phidget motor control device.

Notes:

The PhidgetMotorControl is a component that provides a high-level programmer interface to control a PhidgetMotorControl device connected through a USB port.

With this component, the programmer can:
Control direction, and start and stop DC motors.
Control the velocity and acceleration of each DC motor.
Read the limit switch.
Subclass of the PhidgetMBS class.

3.1.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes:

On success the handle value is not zero.

Lasterror is set.

getAcceleration(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current acceleration.

Notes:

Note that this value defaults to 10 upon initialisation.

The Lasterror property is set.

getAccelerationMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum acceleration supported by a motor.

Notes: The Lasterror property is set.

getAccelerationMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum acceleration supported by a motor.

Notes: The Lasterror property is set.

getBackEMF(index as integer) as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the Back EMF voltage for a motor.

Notes: Lasterror is set.

getBackEMFSensingState(index as integer) as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the Back EMF sensing state for a motor.

Notes: Lasterror is set.

getBraking(index as integer) as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the Braking value for a motor.

Notes:

Lasterror is set.

Returns the braking value, in percent.

getCurrent(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:**

get the current motor current consumption.

Notes: The Lasterror property is set.

getEncoderCount as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of encoder inputs supported by this board.

Notes: Lasterror is set.

getEncoderPosition(index as integer) as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the position of an encoder. This position starts at 0 every time the phidget is opened.

Notes: Lasterror is set.

getInputCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of digital inputs supported by this board.

Notes: The Lasterror property is set.

getInputState(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the state of a digital input.

Notes: The Lasterror property is set.

getMotorCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of motors supported by this controller.

Notes: The Lasterror property is set.

getRatiometric as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the ratiometric state.

Notes: Lasterror is set.

getSensorCount as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of sensor inputs supported by this board.

Notes: Lasterror is set.

getSensorRawValue(index as integer) as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the raw value of a sensor (12-bit).

Notes: Lasterror is set.

getSensorValue(index as integer) as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the value of a sensor.

Notes: Lasterror is set.

getSupplyVoltage as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the Supply voltage for the motors.

Notes:

This could be higher than the actual supply voltage.

Returns the supply voltage, in volts.

Lasterror is set.

getVelocity(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current velocity of a motor.

Notes: The Lasterror property is set.

setAcceleration(index as integer, value as double)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the Motors Maximum accesleration.

Notes:

Valid values are 0-100.

The Lasterror property is set.

setBackEMFSensingState(index as integer, EMFState as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the Back EMF sensing state for a motor.

Notes: Lasterror is set.

setBraking(index as integer, value as double)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the Braking value for a motor.

Notes:

This is applied when velocity is 0. Default is 0% .

value: The braking value, in percent.

Lasterror is set.

setEncoderPosition(index as integer, position as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the encoder position.

Notes:

This can be used to set the position to a known value, and should only be called when the encoder is not moving.

Lasterror is set.

setRatiometric(value as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the ratiometric state.

Notes:

This control the voltage reference used for sampling the analog sensors.
Lasterror is set.

setVelocity(index as integer, value as double)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the velocity of a motor.

Notes: The Lasterror property is set.

3.1.2 Events

BackEMFUpdated(index as integer, voltage as double)

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called at a constant rate; every 16ms, when back EMF sensing is enabled for that motor.

CurrentChanged(index as integer, value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The current motor current consumption changed.

Notes:

Index: Index of the Motor firing the Event

Value: Value of the Motor Current

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

CurrentUpdated(index as integer, current as double)

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The current update event.

Notes: This is called at a constant rate; every 8ms.

EncoderPositionChanged(index as integer, time as integer, positionChange as integer)

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The encoder position change event.

Notes: This is called when the encoder position changes.

EncoderPositionUpdated(index as integer, positionChange as integer)

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The encoder position update event.

Notes: This is called at a constant rate; every 8ms, whether the encoder position has changed or not.

InputChanged(index as integer, value as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The input value changed.

Notes:

Index: Index of the Input firing the Event

State: State of the Input

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

SensorUpdated(index as integer, sensorValue as integer)

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The sensor update event.

Notes: This is called at a constant rate; every 8ms.

VelocityChanged(index as integer, value as double)

Plugin Version: 8.4 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when the velocity changes.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.2 class PhidgetMissingFunctionExceptionMBS

class PhidgetMissingFunctionExceptionMBS

Plugin Version: 9.2 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class used to report that a given phidget function was not loaded from the library.

Notes:

Check the message property.

Subclass of the RuntimeException class.

3.3 class PhidgetNMEADataMBS

class PhidgetNMEADataMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** NMEA Data Structure. Contains a set of supported NMEA sentences.

3.3.1 Properties

GGA as PhidgetGPGGAMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** GPS Fix and position data.

Notes: (Read and Write property)

GSA as PhidgetGPGSAMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** GPS DOP and active satellites.

Notes: (Read and Write property)

GSV as PhidgetGPGSVMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Detailed satellite information.

Notes: (Read and Write property)

RMC as PhidgetGPRMCMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Recommended minimum data.

Notes: (Read and Write property)

VTG as PhidgetGPVTGMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Heading and Speed over the Ground.

Notes: (Read and Write property)

3.4 class PhidgetPHSensorMBS

class PhidgetPHSensorMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a phidget PH sensor device.

Notes:

The PhidgetPHSensor is a component that provides a high-level programmer interface to control a PhidgetPHSensor device connected through a USB port.

With this component, the programmer can:
Read the pH of a liquid with a pH sensor.
Subclass of the PhidgetMBS class.

3.4.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.
Notes:

On success the handle value is not zero.
The Lasterror property is set.

getPH as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the current pH.
Notes:

The Lasterror property is set.

Valid range is -10 to 10.

Note that this value defaults to -20. Applications not wishing to encounter this value should use Change Handlers instead of polling the device for data.

getPHChangeTrigger as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the amount of change that should exist between the last reported value and the current value before a PHChange event is fired.

Notes: The Lasterror property is set.

getPHMax as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum PH that the sensor could report.

Notes: The Lasterror property is set.

getPHMin as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum PH that the sensor could report.

Notes: The Lasterror property is set.

getPotential as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the current potential in volts.

Notes:

The Lasterror property is set.

Range is 0-5v.

2.5v corresponds to a pH of 7.0.

getPotentialMax as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum potential that can be sensed.

Notes: The Lasterror property is set.

getPotentialMin as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum potential that can be sensed.

Notes: The Lasterror property is set.

setPHChangeTrigger(value as double)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Specifies the amount of change that should exist between the last reported value and the current value before an OnPHChange event is fired.

Notes: The Lasterror property is set.

setTemperature(value as double)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the ambient temperature of the PH sensor for increased accuracy.

Notes:

This value defaults to 20 degrees celcius which is applicable for most applications.

The Lasterror property is set.

3.4.2 Events

PHChanged(value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called if the pH changes by more than the PH trigger.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.5 class PhidgetNotInitializedExceptionMBS

class PhidgetNotInitializedExceptionMBS

Plugin Version: 9.2 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class used to report that a given phidget object was not initialized properly.

Notes:

Check the message property.

Subclass of the RuntimeException class.

3.6 class PhidgetTextLCDMBS

class PhidgetTextLCDMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for the phidget text LCD.

Notes:

The PhidgetTextLCD is a component that provides a high-level programmer interface to control a Phidget-TextLCD device connected through a USB port.

With this component, the programmer can:

Display text on a PhidgetTextLCD module.

Subclass of the PhidgetMBS class.

3.6.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes:

On success the handle value is not zero.

Lasterror is set.

getBacklight as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the state of the backlight.

Notes: The Lasterror property is set.

getBrightness as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the brightness of the backlight. Not supported on all TextLCDs

Notes:

The backlight brightness has a range of 0 to 255.

The Lasterror property is set.

getColumnCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of columns per supported by this display.

Notes: The Lasterror property is set.

getContrast as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the contrast value from 0-255.

Notes:

Note that this defaults to 0.
The Lasterror property is set.

getCursorBlink as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Determines if the cursor's blinking is on or off.

Notes:

Note that this defaults to False.
The Lasterror property is set.

getCursorOn as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Determines if the cursor is on or off.

Notes:

Note that this defaults to False.
The Lasterror property is set.

getRowCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of rows supported by this display.

Notes: The Lasterror property is set.

getScreen as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the active screen.

Notes: Lasterror is set.

getScreenCount as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of Display supported by this TextLCD.

Notes: Lasterror is set.

getScreenSize as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the screen size.

Notes:

See PHIDGET_ TEXTLCD_ SCREEN_ * constants.
Lasterror is set.

initialize

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Initializes the active screen.

Notes:

Only supported on the TextLCD adapter.

This should be called if a screen is attached after power up, or to clear the screen after setting the size.
Lasterror is set.

setBacklight(backlightState as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the state of the backlight.

Notes: The Lasterror property is set.

setBrightness(Brightness as integer)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the brightness of the backlight. Not supported on all TextLCDs

Notes:

The backlight brightness has a range of 0 to 255.
The Lasterror property is set.

setContrast(Contrast as integer)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the contrast from 0-255.

Notes: The Lasterror property is set.

setCursorBlink(CursorBlink as integer)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the cursor's blinking on or off.

Notes: The Lasterror property is set.

setCursorOn(CursorOn as integer)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the cursor on or off.

Notes:

This cursor is displayed at the last location that was changed.

The Lasterror property is set.

setCustomCharacter(index as integer, val1 as integer, val2 as integer)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets a custom character.

Notes:

With existing hardware, there is space for 8 custom characters : Index can range from 8 to 15. Each character is described by a set of integers.
For more information, have a look at the TextLCD example in the examples.zip for Phidget21.

The Lasterror property is set.

setDisplayCharacter(index as integer, column as integer, character as integer)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets a single character on the display.

Notes:

index: The row index.
column: The column index.
character: The character to display.

The Lasterror property is set.

setDisplayString(row as integer, displayString as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the text to display on a particular row of the display.

Notes:

Row: Row to set on display
DisplayString: String to set on display. The text will be clipped at the right edge of the display.
The Lasterror property is set.

setScreen(screenIndex as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the active screen.

Notes:

This is the screen that all subsequent API calls will apply to.
Lasterror is set.

setScreenSize(screenSize as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the active screen size. Only supported on the TextLCD Adapter.

Notes: Lasterror is set.**3.6.2 Constants****PHIDGET_ TEXTLCD_ SCREEN_ 1x16 = 4**

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 1 row, 16 column screen**PHIDGET_ TEXTLCD_ SCREEN_ 1x40 = 10**

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 1 row, 40 column screen**PHIDGET_ TEXTLCD_ SCREEN_ 1x8 = 2**

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 1 row, 8 column screen

PHIDGET_ TEXTLCD_ SCREEN_ 2x16 = 5

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 2 row, 16 column screen

PHIDGET_ TEXTLCD_ SCREEN_ 2x20 = 7

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 2 row, 20 column screen

PHIDGET_ TEXTLCD_ SCREEN_ 2x24 = 9

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 2 row, 24 column screen

PHIDGET_ TEXTLCD_ SCREEN_ 2x40 = 11

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 2 row, 40 column screen

PHIDGET_ TEXTLCD_ SCREEN_ 2x8 = 3

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 2 row, 8 column screen

PHIDGET_TEXTLCD_SCREEN_4x16 = 6

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 4 row, 16 column screen

PHIDGET_TEXTLCD_SCREEN_4x20 = 8

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 4 row, 20 column screen

PHIDGET_TEXTLCD_SCREEN_4x40 = 12

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: 4 row, 40 column screen (special case, requires both screen connections)

PHIDGET_TEXTLCD_SCREEN_NONE = 1

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: no screen attached

PHIDGET_TEXTLCD_SCREEN_UNKNOWN = 13

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the screen size constants for the Phidget TextLCD Adapter.

Notes: Unknown

3.7 class PhidgetTemperatureSensorMBS

class PhidgetTemperatureSensorMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a phidget temperature sensor.

Notes:

The PhidgetTemperatureSensor is a component that provides a high-level programmer interface to control a PhidgetTemperatureSensor device connected through a USB port.

With this component, the programmer can:
Read the temperature of Thermocouple device.
Read cold junction temperature.
Get notification of temperature change.
Subclass of the PhidgetMBS class.

3.7.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes: On success the handle value is not zero.

getAmbientTemperature as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the ambient (board) temperature.

Notes: The Lasterror property is set.

getAmbientTemperatureMax as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum temperature that the ambient onboard temperature sensor can measure.

Notes: The Lasterror property is set.

getAmbientTemperatureMin as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum temperature that the ambient onboard temperature sensor can measure.

Notes: The Lasterror property is set.

getPotential(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the potential value for the temperature sender with the given index.

Notes: The Lasterror property is set.

getPotentialMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum potential that a thermocouple input can measure.

Notes: The Lasterror property is set.

getPotentialMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum potential that a thermocouple input can measure.

Notes: The Lasterror property is set.

getTemperature(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the current temperature in Celsius or Fahrenheit (depending on UseImperial property).

Notes:

Index = 0 returns the temperature of the cold junction.

Index = 1 returns the temperature of the thermocouple.

Note that this value defaults to -500. Applications that do not wish to see this value should use Change Handlers instead of polling the device for data.

The Lasterror property is set.

getTemperatureChangeTrigger(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the amount of change that should exist between the last reported value and the current value before an TemperatureChange event is fired.

Notes: The Lasterror property is set.

getTemperatureInputCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of thermocouple inputs supported by this board.

Notes: The Lasterror property is set.

getTemperatureMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum temperature that can be measured by a thermocouple input. This depends on the type of thermocouple attached.

Notes: The Lasterror property is set.

getTemperatureMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum temperature that can be measured by a thermocouple input.

Notes:

This depends on the type of thermocouple attached.
The Lasterror property is set.

getThermocoupleType(index as integer) as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the type of thermocouple set to be at a thermocouple input. By default this is K-Type.

Notes:

The Lasterror property is set.
type: The thermocouple type.

setTemperatureChangeTrigger(index as integer, value as double)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Specifies the amount of change that should exist between the last reported value and the current value before an TemperatureChange event is fired.

Notes: The Lasterror property is set.

setThermocoupleType(index as integer, value as integer)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the type of thermocouple plugged into a thermocouple input. By default this is K-Type.

Example:

```
dim t as PhidgetTemperatureSensorMBS
```

```
const PHIDGET_TEMPERATURE_SENSOR_K_TYPE = 1 // K-Type thermocouple
const PHIDGET_TEMPERATURE_SENSOR_J_TYPE = 2 // J-Type thermocouple
const PHIDGET_TEMPERATURE_SENSOR_E_TYPE = 3 // E-Type thermocouple
const PHIDGET_TEMPERATURE_SENSOR_T_TYPE = 4 // T-Type thermocouple
```

```
t.setThermocoupleType 0, PHIDGET_TEMPERATURE_SENSOR_T_TYPE
```

Notes: The Lasterror property is set.

3.7.2 Events

TemperatureChanged(index as integer, value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The temperature changed.

Notes:

Index: Index of the Temperature Sensor firing the Event

Value: Value of the Temperature Sensor

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.7.3 Constants

PHIDGET_TEMPERATURE_SENSOR_E_TYPE = 3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the sensor type constants.

Notes: E-Type thermocouple

PHIDGET_TEMPERATURE_SENSOR_J_TYPE = 2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the sensor type constants.

Notes: J-Type thermocouple

PHIDGET_TEMPERATURE_SENSOR_K_TYPE = 1

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the sensor type constants.

Notes: K-Type thermocouple

PHIDGET_ TEMPERATURE_ SENSOR_ T_ TYPE = 4

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the sensor type constants.

Notes: T-Type thermocouple

3.8 class PhidgetTextLEDMBS

class PhidgetTextLEDMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a phidget text LED.

Notes:

On the time the plugin was written the phidget documentation did not include this class so the documentation here is limited.

Subclass of the PhidgetMBS class.

3.8.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes: On success the handle value is not zero.

getBrightness as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the current brightness.

Notes: The Lasterror property is set.

getColumnCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of columns per supported by this display.

Notes: The Lasterror property is set.

getRowCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of rows supported by this display.

Notes: The Lasterror property is set.

setBrightness(Brightness as integer)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the brightness.

Notes: The Lasterror property is set.

setDisplayString(row as integer, displayString as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the display string for the given row.

Notes: The Lasterror property is set.

3.9 class PhidgetWeightSensorMBS

class PhidgetWeightSensorMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a phidget weight sensor.

Notes:

On the time the plugin was written the phidget documentation did not include this class so the documentation here is limited.

Subclass of the PhidgetMBS class.

3.9.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes:

On success the handle value is not zero.

The Lasterror property is set.

getWeight as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the current weight.

Notes: The Lasterror property is set.

getWeightChangeTrigger as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the amount of change that should exist between the last reported value and the current value before an WeightChange event is fired.

Notes: The Lasterror property is set.

setWeightChangeTrigger(value as double)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the amount of change that should exist between the last reported value and the current value before an WeightChange event is fired.

Notes: The Lasterror property is set.

3.9.2 Events

WeightChanged(value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The weight changed.
Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.10 Globals

LoadPhidgetFrameworkMBS(framework as folderitem) as boolean

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Loads the phidget framework.

Notes:

Returns true on success and false on failure.

Path a folderitem for the phidget.framework in /library/frameworks.

Deprecated in plugin version 10.4.

LoadPhidgetLibraryMBS(file as folderitem) as boolean

Plugin Version: 10.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Loads the Phidgets shared library.

Notes:

Returns true on success and false on failure.

Loads a Windows DLL, a Linux shared library, a Mac OS X shared library or a Mac OS X framework from the given path.

See also:

- 3.10 LoadPhidgetLibraryMBS(path as string) as boolean

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LoadPhidgetLibraryMBS(path as string) as boolean

Plugin Version: 10.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Loads the Phidgets shared library.

Notes:

Returns true on success and false on failure.
Path can be an absolute, a relative or just a file name.

Loads a Windows DLL, a Linux shared library, a Mac OS X shared library or a Mac OS X framework from the given path.

See also:

- 3.10 LoadPhidgetLibraryMBS(file as folderitem) as boolean

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LoadPhidgetLinuxLibraryMBS(path as string) as boolean

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Loads the phidget library.

Notes:

Returns true on success and false on failure.
Pass in the path to a .so file.
Deprecated in plugin version 10.4.

LoadPhidgetWindowsDLLMBS(dllpath as string) as boolean

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Loads the windows dll.

Notes:

Returns true on success and false on failure.
Path can be an absolute, a relative or just a file name.
Deprecated in plugin version 10.4.

3.11 class PhidgetServoMBS

class PhidgetServoMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a phidget servo device.

Notes:

The PhidgetServo is a component that provides a high-level programmer interface to control a PhidgetServo device connected through a USB port.

With this component, the programmer can:

Set the desired position for a servo motor, ranging from 0 to 180 degrees.

Subclass of the PhidgetMBS class.

3.11.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes:

On success the handle value is not zero.

The Lasterror property is set.

getEngaged(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the engaged state of a motor. This is whether the motor is powered or not.

Notes:

The Lasterror property is set.

index: The motor index.

getMotorCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of motors supported by this controller

Notes: The Lasterror property is set.

getPosition(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current position of a motor.

Notes:

index: The motor index.

The Lasterror property is set.

getPositionMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum position that a motor can be set to.

Notes:

index: The motor index.

The Lasterror property is set.

getPositionMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum position that a motor can be set to.

Notes:

index: The motor index.

The Lasterror property is set.

getServoType(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the servo type of a motor.

Notes:

The Lasterror property is set.

For the value, check the PHIDGET_ SERVO_ * constants.

setEngaged(index as integer, value as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the engaged state of a motor. This is whether the motor is powered or not.

Notes:

index: The motor index.

The Lasterror property is set.

setPosition(index as integer, value as double)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the current position of a motor.

Notes:

The Lasterror property is set.

index: The motor index.

position: The motor position.

setServoParameters(index as integer, min_ us as double, max_ us as double, degrees as double)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the servo parameters of a motor.

Notes:

The Lasterror property is set.

index	The motor index.
min_ us	The minimum supported PCM in microseconds.
max_ us	The maximum supported PCM in microseconds.
degrees	The degrees of rotation defined by the given PCM range.

setServoType(index as integer, value as integer)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the servo type of a motor.

Notes:

The Lasterror property is set.

For the value, check the PHIDGET_ SERVO_ * constants.

3.11.2 Events

MotorPositionChanged(index as integer, value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called if the motor position is changed.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.12 class PhidgetSpatialEventDataMBS

class PhidgetSpatialEventDataMBS

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for event data on a spatial device.

Notes: Timestamped position data returned by the PhidgetSpatialMBS.SpatialData event.

3.12.1 Methods

acceleration(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Acceleration data for up to 3 axes.

Notes:

Index from 0 to 2.

(Read and Write computed property)

angularRate(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Angular rate data (Gyroscope) for up to 3 axes.

Notes:

Index from 0 to 2.

(Read and Write computed property)

magneticField(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Magnetic field data (Compass) for up to 3 axes.

Notes:

Index from 0 to 2.

(Read and Write computed property)

3.12.2 Properties

TimestampMicroseconds as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The microseconds part of the Hardware timestamp.

Notes: (Read and Write property)

TimestampSeconds as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The seconds part of the Hardware timestamp.

Notes: (Read and Write property)

3.13 class PhidgetRFIDMBS

class PhidgetRFIDMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a phidget RFID device.

Notes:

The PhidgetRFID is a component that provides a high-level programmer interface to control a PhidgetRFID device connected through a USB port.

With this component, the programmer can:

* Read Radio Frequency Identification tags.

Radio Frequency Identification or RFID, is a non-contact identification technology which uses a reader to read data stored on low cost tags.

The particular instance of the technology we use stores a 40-bit number on the tag. Every tag that is purchased from Phidgets Inc. is guaranteed unique.

When a RFID tag is read, the component returns the unique number contained in the RFID tag.
Subclass of the PhidgetMBS class.

3.13.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.
Notes:

On success the handle value is not zero.
The Lasterror property is set.

getAntennaOn as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the state of the antenna.
Notes: The Lasterror property is set.

getLastTag(m as memoryblock) as memoryblock

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Stores the last tag in a memoryblock.
Notes:

You need to pass in a memoryblock of the correct size for your tags.
For convenience the memoryblock is returned.

The Lasterror property is set.

getLEDOn as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the state of the onboard LED.

Notes: The Lasterror property is set.

getOutputCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of outputs supported by this board.

Notes: The Lasterror property is set.

getOutputState(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the state of an output.

Notes: The Lasterror property is set.

getTagStatus as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the tag present status.

Notes:

This is whether or not a tag is being read by the reader.

The Lasterror property is set.

setAntennaOn(value as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the state of the antenna.

Notes:

Note that the antenna must be enabled before tags will be read.

The Lasterror property is set.

setLEDOn(value as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the state of the onboard LED.

Notes: The Lasterror property is set.

setOutputState(index as integer, value as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the state of an output.

Notes: The Lasterror property is set.

3.13.2 Events

OutputChanged(index as integer, value as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called if an output changes.

Notes:

Index: Index of the Output firing the Event

Value: State of the Output.

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

Tag(tag as memoryblock)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** An RFID Tag is read.

Notes:

Current plugins expect a maximum tag size of 20 bytes. Not all 20 bytes may be used for the given tag.

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

TagLost(tag as memoryblock)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** A RFID Tag is removed from the field.

Notes:

Current plugins expect a maximum tag size of 20 bytes. Not all 20 bytes may be used for the given tag.

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.14 class PhidgetStepperMBS

class PhidgetStepperMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** A class for a phidget stepper device.

Notes:

On the time the plugin was written the phidget documentation did not include this class so the documentation here is limited.

Subclass of the PhidgetMBS class.

3.14.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes: On success the handle value is not zero.

getAcceleration(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the acceleration value.

Notes: The Lasterror property is set.

getAccelerationMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum acceleration supported by a motor.

Notes:

index: The motor index.

The Lasterror property is set.

getAccelerationMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum acceleration supported by a motor.

Notes:

index: The motor index.

The Lasterror property is set.

getCurrent(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the current value.

Notes: The Lasterror property is set.

getCurrentLimit(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum position that a motor can go to.

Notes:

index: The motor index.

The Lasterror property is set.

getCurrentMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum current limit.

Notes:

index: The motor index.

The Lasterror property is set.

getCurrentMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum current limit.

Notes:

index: The motor index.

The Lasterror property is set.

getCurrentPosition(index as integer) as int64

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current position of a motor.

Notes: The Lasterror property is set.

getEngaged(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the engaged state of a motor. This is whether the motor is powered or not.

Notes:

index: The motor index.

The Lasterror property is set.

getInputCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of digital inputs supported by this board.

Notes: The Lasterror property is set.

getInputState(index as integer) as boolean

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the state of a digital input.

Notes: The Lasterror property is set.

getMotorCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of motors supported by this controller.

Notes: The Lasterror property is set.

getPositionMax(index as integer) as int64

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum velocity that can be set for a motor.

Notes: The Lasterror property is set.

getPositionMin(index as integer) as int64

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum position that a motor can go to.

Notes: The Lasterror property is set.

getStopped(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the stopped state of a motor. This is true when the motor is not moving and there are no outstanding commands.

Notes:

index: The motor index.

The Lasterror property is set.

getTargetPosition(index as integer) as int64

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the last set target position of a motor.

Notes:

index: The motor index.

The Lasterror property is set.

getVelocity(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current velocity of a motor.

Notes:

index: The motor index.

The Lasterror property is set.

getVelocityLimit(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the last set velocity limit for a motor.

Notes:

index: The motor index.

The Lasterror property is set.

getVelocityMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum velocity that can be set for a motor.

Notes:

index: The motor index.

The Lasterror property is set.

getVelocityMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum velocity that can be set for a motor.

Notes: The Lasterror property is set.

setAcceleration(index as integer, value as double)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the acceleration.

Notes: The Lasterror property is set.

setCurrentLimit(index as integer, value as double)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current limit for a motor.

Notes:

index: The motor index.

The Lasterror property is set.

setCurrentPosition(index as integer, value as int64)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the current position of a motor.

Notes:

This will not move the motor, just update the position value.

index: The motor index.

value: The position.

The Lasterror property is set.

setEngaged(index as integer, value as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the engaged state of a motor. This is whether the motor is powered or not.

Notes:

index: The motor index.

value: The engaged state. Possible values are true and false.

The Lasterror property is set.

setTargetPosition(index as integer, value as int64)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the target position of a motor.

Notes:

index: The motor index.

The Lasterror property is set.

setVelocityLimit(index as integer, value as double)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the velocity limit for a motor.

Notes:

index: The motor index.

The Lasterror property is set.

3.14.2 Events

CurrentChanged(index as integer, value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The current value changed.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

InputChanged(index as integer, value as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The input value changed.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

ServoChanged(index as integer, value as int64)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The servo value changed.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

VelocityChanged(index as integer, value as double)

Plugin Version: 8.4 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when the velocity changes.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.15 class PhidgetSpatialMBS

class PhidgetSpatialMBS

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class to control the spatial phidget device.

Notes:

Calls specific to the Phidget Spatial. See the product manual for more specific API details, supported functionality, units, etc.

Subclass of the PhidgetMBS class.

3.15.1 Methods

Constructor

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes:

On success the handle value is not zero.

Lasterror is set.

getAcceleration(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current acceleration of an axis.

Notes:

index: The acceleration index.
Returns the acceleration in gs.
LastError is set.

getAccelerationAxisCount as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of acceleration axes supplied by this board.

getAccelerationMax(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum acceleration supported by an axis.

Notes:

index: The acceleration index.
LastError is set.

getAccelerationMin(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum acceleration supported by an axis.

Notes: index: The acceleration index.

getAngularRate(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current angular rate of an axis.

Notes:

Returns the angular rate in degrees/second.
index: The angular rate index.
Lasterror is set.

getAngularRateMax(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum angular rate supported by an axis.
Notes:

index: The angular rate index.
Lasterror is set.

getAngularRateMin(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum angular rate supported by an axis.
Notes:

index: The angular rate index.
Lasterror is set.

getCompassAxisCount as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of compass axes supplied by this board.
Notes: Lasterror is set.

getDataRate as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Queries the data rate in milliseconds.
Notes: Lasterror is set.

getDataRateMax as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum supported data rate in milliseconds.

Notes: Lasterror is set.

getDataRateMin as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum supported data rate in milliseconds.

Notes: Lasterror is set.

getGyroAxisCount as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of gyroscope axes supplied by this board.

Notes: Lasterror is set.

getMagneticField(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current magnetic field strength of an axis.

Notes:

index: The magnetic field index.

Returns the magnetic field strength in Gauss.

Lasterror is set.

getMagneticFieldMax(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum magnetic field strength supported by an axis.

Notes:

index: The magnetic field index.
LastError is set.

getMagneticFieldMin(index as integer) as double

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum magnetic field strength supported by an axis.

Notes:

index: The magnetic field index.
LastError is set.

resetCompassCorrectionParameters

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Resets the compass correction factors.

Notes:

Magnetic field data will be presented directly as reported by the sensor.
LastError is set.

setCompassCorrectionParameters(magField as double, offset0 as double, offset1 as double, offset2 as double, gain0 as double, gain1 as double, gain2 as double, T0 as double, T1 as double, T2 as double, T3 as double, T4 as double, T5 as double)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the compass correction factors. This can be used to correcting any sensor errors, including hard and soft iron offsets and sensor error factors.

Notes:

LastError is set.

magField: Local magnetic field strength.
offset0: Axis 0 offset correction.
offset1: Axis 1 offset correction.
offset2: Axis 2 offset correction.
gain0: Axis 0 gain correction.

gain1: Axis 1 gain correction.
 gain2: Axis 2 gain correction.
 T0: Non-orthogonality correction factor 0.
 T1: Non-orthogonality correction factor 1.
 T2: Non-orthogonality correction factor 2.
 T3: Non-orthogonality correction factor 3.
 T4: Non-orthogonality correction factor 4.
 T5: Non-orthogonality correction factor 5.

setDataRate(milliseconds as integer)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the data rate in milliseconds.

Notes:

Lasterror is set.

Note that data at rates faster than 8ms will be delivered to events as an array of data.

zeroGyro

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Zeroes the gyroscope.

Notes:

This takes about two seconds and the gyro axes will report 0 during the process.

This should only be called when the board is not moving.

Lasterror is set.

3.15.2 Events

SpatialData(data() as PhidgetSpatialEventDataMBS, dataCount as integer)

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when new data has been received.

Notes:

This is called at `getDataRate`, up to 8ms, for faster than 8ms data, multiple sets of data are supplied in a single event.

`Lasterror` is set.

3.16 class PhidgetFrequencyCounterMBS

class PhidgetFrequencyCounterMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Class specific to the Phidget Frequency Counter.

Notes:

See the product manual for more specific API details, supported functionality, units, etc.
Subclass of the PhidgetMBS class.

3.16.1 Methods

Constructor

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Creates a new instance.

Notes: `Lasterror` is set.

`getEnabled(index as integer) as Boolean`

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the enabled state for an input.

Notes: `Lasterror` is set.

`getFilter(index as integer) as integer`

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the filter type for an input.

Notes: Lasterror is set.

getFrequency(index as integer) as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the measured frequency of an input, in Hz.

Notes: Lasterror is set.

getFrequencyInputCount as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of inputs supported by this phidget frequency counter.

Notes: Lasterror is set.

getTimeout(index as integer) as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the timeout value for an input, in microseconds. This controls the lowest measurable frequency.

Notes: Lasterror is set.

getTotalCount(index as integer) as Int64

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the total number of ticks that have happened since the last reset on this input.

Notes: Lasterror is set.

getTotalTime(index as integer) as Int64

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the total time that has passed since the last reset on this input, in microseconds.

Notes: Lasterror is set.

reset(index as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Resets total count and total time for an input.

Notes: Lasterror is set.

setEnabled(index as integer, value as Boolean)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the enabled state for an input.

Notes: Lasterror is set.

setFilter(index as integer, filter as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the filter type for an input.

Notes: Lasterror is set.

setTimeout(index as integer, filter as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the timeout value for an input, in microseconds.

Notes: Lasterror is set.

3.16.2 Events

Counted(index as integer, time as integer, counts as integer)

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when ticks have been counted on an input, or when the timeout has passed.

3.16.3 Constants

PHIDGET_ FREQUENCYCOUNTER_ FILTERTYPE_ LOGIC_ LEVEL = 2

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the Filter Type Constants.

Notes: Logic level signal filter.

PHIDGET_ FREQUENCYCOUNTER_ FILTERTYPE_ UNKNOWN = 3

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the Filter Type Constants.

Notes: Filter type unknown.

PHIDGET_ FREQUENCYCOUNTER_ FILTERTYPE_ ZERO_ CROSSING = 1

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the Filter Type Constants.

Notes: Zero crossing signal filter.

3.17 class PhidgetGPGAMBS

class PhidgetGPGAMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a NMEA GGA Sentence.

3.17.1 Properties

altitude as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The altitude value.
Notes: (Read only property)

fixQuality as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The fix Quality.
Notes: (Read and Write property)

heightOfGeoid as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The height of GEO ID.
Notes: (Read only property)

horizontalDilution as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The horizontal dilution.
Notes: (Read only property)

latitude as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The latitude value.
Notes: (Read only property)

longitude as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The longitude value.

Notes: (Read only property)

numSatellites as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The number of satellites.

Notes: (Read and Write property)

time as PhidgetGPSTimeMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The time value.

Notes: (Read and Write property)

3.18 class PhidgetEncoderMBS

class PhidgetEncoderMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for the phidget encoder device.

Notes:

The PhidgetEncoder is a component that provides a high-level programmer interface to control a PhidgetEncoder device connected through a USB port.

With this component, the programmer can:

* Detect changes in position of incremental and absolute encoders.

Easily track the changes with respect to time.

Subclass of the PhidgetMBS class.

3.18.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.
Notes:

On success the handle value is not zero.
The Lasterror property is set.

getEnabled(index as integer) as boolean

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the enabled state of an encoder. This is whether the encoder is powered or not.
Notes: The Lasterror property is set.

getEncoderCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of encoder inputs supported by this board.
Notes: The Lasterror property is set.

getIndexPosition(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Queries index position.
Notes:

Gets the position of the last index pulse, as referenced to getPosition.
This will return EPHIDGET_ UNKNOWN if there hasn't been an index event, or if the encoder doesn't support index.

The Lasterror property is set.

getInputCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of digital inputs supported by this board.

Notes: The Lasterror property is set.

getInputState(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the state of a digital input.

Notes: The Lasterror property is set.

getPosition(index as integer) as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current position of an encoder.

Notes: The Lasterror property is set.

setEnabled(index as integer, value as boolean)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the enabled state of an encoder. This is whether the encoder is powered or not.

Notes: The Lasterror property is set.

setPosition(index as integer, value as integer)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the current position of an encoder.

Notes: The Lasterror property is set.

3.18.2 Events

InputChanged(index as integer, value as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The event for a change in the input.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

PositionChanged(index as integer, position as integer, time as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The event called for every position change.

Notes:

Index: Index of the Encoder firing the Event

Position: Position of the Encoder

Time: Time of change

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.19 class PhidgetGPSDateMBS

class PhidgetGPSDateMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** GPS Date in UTC.

3.19.1 Properties

Day as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Day of the month (1-31).

Notes: (Read and Write property)

Month as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Month (1-12).

Notes: (Read and Write property)

Year as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Year.

Notes: (Read and Write property)

3.20 class PhidgetGPSMBS

class PhidgetGPSMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Class specific to the Phidget GPS.

Notes:

See the product manual for more specific API details, supported functionality, units, etc.
Subclass of the PhidgetMBS class.

3.20.1 Methods

Constructor

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Creates an GPS instance.

Notes: Lasterror is set.

getAltitude as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current altitude, in meters.

Notes: Lasterror is set.

getDate as PhidgetGPSDateMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current GPS date, in UTC

Notes: Lasterror is set.

getHeading as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current heading, in degrees.

Notes: Lasterror is set.

getLatitude as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current latitude.

Notes: Lasterror is set.

getLongitude as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current longitude.

Notes: Lasterror is set.

getNMEADData as PhidgetNMEADDataMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets Raw NMEA Data.

Notes: Lasterror is set.

getPositionFixStatus as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the position fix status.

Notes: Lasterror is set.

getTime as PhidgetGPSTimeMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current GPS time, in UTC.

Notes: Lasterror is set.

getVelocity as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current velocity, in km/h.

Notes: Lasterror is set.

3.20.2 Events

PositionChanged(latitude as double, longitude as double, altitude as double)

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The position change event.

Notes: Called when any of latitude, longitude, or altitude change.

PositionFixStatusChanged(status as integer)

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The position fix status change event.

Notes: Called when a position fix is aquired or lost.

3.21 class PhidgetGPGSAMBS

class PhidgetGPGSAMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The NMEA GSA Sentence class.

3.21.1 Methods

satUsed(index as integer) as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** IDs of used sats in no real order, 0 means nothing.

3.21.2 Properties

fixType as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The fix type.

Notes: (Read and Write property)

horizDilution as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Horizontal dilution.

Notes: (Read only property)

mode as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The mode.

Notes: (Read and Write property)

posnDilution as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Position dilution.

Notes: (Read only property)

vertDilution as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Vertical dilution.

Notes: (Read only property)

3.21.3 Constants

kFixType2D = 2

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the Fix Type values.

Notes: 2D

kFixType3D = 3

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the Fix Type values.

Notes: 3D

kFixTypeNo = 1

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the Fix Type values.

Notes: no fix.

kModeAuto = 65

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the mode constants.

Notes: Auto

kModeForced = 77

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the mode constants.

Notes: Forced

3.22 class PhidgetGPRMCMBS

class PhidgetGPRMCMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for NMEA RMC Sentence

3.22.1 Properties

date as PhidgetGPSDateMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The date value.
Notes: (Read and Write property)

heading as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The heading value.
Notes: (Read only property)

latitude as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The latitude value.
Notes: (Read only property)

longitude as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The longitude value.
Notes: (Read only property)

magneticVariation as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The magnetic variation.

Notes: (Read only property)

mode as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The mode value.

Notes: (Read and Write property)

speedKnots as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The speed in knots.

Notes: (Read only property)

status as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The status value.

Notes: (Read and Write property)

time as PhidgetGPSTimeMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The time value.

Notes: (Read and Write property)

3.23 class PhidgetGPGSVMBS

class PhidgetGPGSVMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The NMEA GSV Sentence class.

3.23.1 Methods

satInfo(index as integer) as PhidgetGPSSatInfoMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Query the satellite information with the given index.

Notes: Index from 0 to 11.

3.23.2 Properties

satsInView as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Number of satellites in view.

Notes: (Read and Write property)

3.24 class PhidgetAdvancedServoMBS

class PhidgetAdvancedServoMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** A class for a phidget advanced servo device.

Notes:

On the time the plugin was written the phidget documentation did not include this class so the documentation here is limited.

Subclass of the PhidgetMBS class.

3.24.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.
Notes: On success the handle value is not zero.

getAcceleration(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the acceleration for the given index.
Notes: The Lasterror property is set.

getAccelerationMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum acceleration supported by a motor.
Notes: The Lasterror property is set.

getAccelerationMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum acceleration supported by a motor.
Notes: The Lasterror property is set.

getCurrent(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the current value.

Notes: The Lasterror property is set.

getEngaged(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the engaged state of a motor.

Notes:

This is whether the motor is powered or not.
The Lasterror property is set.

getMotorCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of motors supported by this controller.

Notes: The Lasterror property is set.

getPosition(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current position of an encoder.

Notes: The Lasterror property is set.

getPositionMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum position that a motor can go to.

Notes: The Lasterror property is set.

getPositionMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum position that a motor can go to.

Notes: The Lasterror property is set.

getServoType(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the servo type of a motor.

Notes:

The Lasterror property is set.

For the value, check the PHIDGET_ SERVO_ * constants.

getSpeedRampingOn(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the speed ramping state for a motor.

Notes:

This is whether or not velocity and acceleration are used.

The Lasterror property is set.

getStopped(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the stopped state of a motor.

Notes:

This is true when the motor is not moving and there are no outstanding commands.

The Lasterror property is set.

getVelocity(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the current velocity.

Notes: The Lasterror property is set.

getVelocityLimit(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the last set velocity limit for a motor.

Notes: The Lasterror property is set.

getVelocityMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum velocity that can be set for a motor.

Notes: The Lasterror property is set.

getVelocityMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum velocity that can be set for a motor.

Notes: The Lasterror property is set.

setAcceleration(index as integer, value as double)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the acceleration.

Notes: The Lasterror property is set.

setEngaged(index as integer, value as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the engaged state of a motor. This is whether the motor is powered or not.

Notes: The Lasterror property is set.

setPosition(index as integer, value as double)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the current position of a motor.

Notes: The Lasterror property is set.

setPositionMax(index as integer, value as double)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the maximum position that a motor can go to.

Notes: The Lasterror property is set.

setPositionMin(index as integer, value as double)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the minimum position that a motor can go to.

Notes: The Lasterror property is set.

setServoParameters(index as integer, min_us as double, max_us as double, degrees as double, velocity_max as double)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the servo parameters of a motor.

Notes:

The Lasterror property is set.

index	The motor index.
min_ us	The minimum supported PCM in microseconds.
max_ us	The maximum supported PCM in microseconds.
degrees	The degrees of rotation defined by the given PCM range.
velocity_ max	The maximum velocity in degrees/second.

setServoType(index as integer, value as integer)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the servo type of a motor.

Notes:

The Lasterror property is set.
For the value, check the PHIDGET_ SERVO_ * constants.

setSpeedRampingOn(index as integer, value as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the speed ramping state for a motor.

Notes:

This is whether or not velocity and acceleration are used.
The Lasterror property is set.

setVelocityLimit(index as integer, value as double)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the velocity limit for a motor.

Notes: The Lasterror property is set.

3.24.2 Events

CurrentChanged(index as integer, value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The current value changed.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

PositionChanged(index as integer, value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The position changed.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

VelocityChanged(index as integer, value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The velocity changed.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.24.3 Constants

PHIDGET_SERVO_DEFAULT = 1

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_FIRGELLI_L12_100_100_06_R = 17

Plugin Version: 12.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_FIRGELLI_L12_100_50_06_R = 16

Plugin Version: 12.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_FIRGELLI_L12_30_50_06_R = 13

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_FIRGELLI_L12_50_100_06_R = 14

Plugin Version: 12.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_FIRGELLI_L12_50_210_06_R = 15

Plugin Version: 12.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_HITEC_805BB = 5

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_HITEC_815BB = 12

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_HITEC_HS322HD = 3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_HITEC_HS422 = 6

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_HITEC_HS485HB = 10

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_HITEC_HS5245MG = 4

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_HITEC_HS645MG = 11

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_HITEC_HS785HB = 9

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_HITEC_HSR1425CR = 8

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_RAW_us_MODE = 2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_SPRINGRC_SM_S2313M = 18

Plugin Version: 12.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

PHIDGET_SERVO_TOWERPRO_MG90 = 7

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the servo type constants.

3.25 class PhidgetAccelerometerMBS

class PhidgetAccelerometerMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for the phidget accelerometer.

Notes:

The PhidgetAccelerometer is a component that provides a high-level programmer interface to control a PhidgetAccelerometer device connected through a USB port. The product is available as a dual axis or a 3-axis module. With this component, the programmer can:

* Measure up to 5 Gravity (9.8 m/s²) change per axis, depending on unit purchased.

Measures both dynamic acceleration (e.g., vibration) and static acceleration (e.g., gravity or tilt) on 2 or 3 axis.

Subclass of the PhidgetMBS class.

3.25.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes: On success the handle value is not zero.

getAcceleration(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the last acceleration value received from the PhidgetAccelerometer for a particular axis.

Notes: Lasterror is set.

getAccelerationChangeTrigger(index as integer) as double

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the amount of change that should exist between the last reported value and the current value before an OnAccelerationChange event is fired.

Notes: Lasterror is set.

getAccelerationMax(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum acceleration supported by an axis.

Notes: The Lasterror property is set.

getAccelerationMin(index as integer) as double

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum acceleration supported by an axis.

Notes: The Lasterror property is set.

getAxisCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of acceleration axes supported by this accelerometer.

Notes: The Lasterror property is set.

setAccelerationChangeTrigger(index as integer, value as double)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Specifies the amount of change that should exist between the last reported value and the current value before an AccelerationChange event is fired.

Notes:

If the AccelerationChangeTrigger is set to 0, an event will be triggered for every measurement of acceleration taken.

Lasterror is set.

3.25.2 Events

AccelerationChanged(index as integer, value as double)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The event called for each change on the Acceleration.

Notes:

Index: Index of the Accelerometer posting event

Value: Value of the Accelerometer

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.26 class PhidgetDictionaryMBS

class PhidgetDictionaryMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The Phidget Dictionary is a service provided by the Phidget Webservice.

Notes:

The Webservice maintains a centralized dictionary of key-value pairs that can be accessed and changed from any number of clients through the CPhidgetDictionary interface available in phidget21.

Note that the Webservice uses this dictionary to control access to Phidgets through the openRemote and openRemoteIP interfaces, and as such, you should never add or modify a key that starts with /PSK/ or /PCK/, unless you want to explicitly modify Phidget specific data and this is highly discouraged, as its very easy to break things. Listening to these keys is fine if so desired.

The intended use for the dictionary is as a central repository for communication and persistent storage of

data between several client applications. As an example - a higher level interface exposed by one application which controls the Phidgets, for others to access rather than every client talking directly to the Phidgets themselves.

The dictionary makes use of extended regular expressions for key matching. See the end of this document for the rules of regular expressions.

See the Phidget manuals for help on regular expressions.

3.26.1 Methods

addKey(key as string, value as string, persistent as integer)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Adds a new key to the Dictionary, or modifies the value of an existing key.

Notes:

The key can only contain numbers, letters, /, ., -, _ , and must begin with a letter, _ or /.

The value can contain any value.

The persistent value controls whether a key will stay in the dictionary after the client that created it disconnects. If persistent == 0, the key is removed when the connection closes. Otherwise the key remains in the dictionary until it is explicitly removed.

Lasterror is set.

Close

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Closes the file handles for this device.

Notes:

You should always call this when finished with a Dictionary.

Lasterror is set.

Constructor

Plugin Version: 8.2 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** A dummy constructor doing nothing.

See also:

- 3.26.1 Constructor(pattern as string) 131

Constructor(pattern as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes:

The Lasterror property is set.

Pattern is a regular expression that matches the keys you want to listen for in the keychange event.

See also:

- 3.26.1 Constructor 131

GetDeviceStatus as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns an integer indicating the status of the device.

Notes:

Returns:

PHIDGET_ ATTACHED 0x1

PHIDGET_ NOTATTACHED 0x0

Lasterror is set.

getServerAddress(byref port as integer) as string

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the address and port.

Notes: The Lasterror property is set.

getServerID as string

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the server ID.
Notes: The Lasterror property is set.

GetServerStatus as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns an integer indicating the connection status of a Webservice.

Notes:

Returns one of the following values:

1 CONNECTED
0 NOTCONNECTED

Lasterror is set.

openRemote(serverID as string, password as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This method is not yet implemented and will return EPHIDGET_ UNSUPPORTED.

Notes: The Lasterror property is set.

openRemoteIP(addr as string, port as integer, password as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens a connection to a remote Phidget Dictionary.

Notes:

OpenRemoteIP will block until it connects to the server, which means that when it returns with EPHIDGET_OK, this means that the connection is active. If the server is unavailable, this will return an error code.

If the connection to a webservice is disrupted while in use, an error event will be thrown, and it is recommended that an error event listener be registered for this reason.

Lasterror is set.

removeKey(pattern as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Removes a key, or set of keys, from the Dictionary.

Notes:

The key name is a regular expressions pattern, and so care must be taken to only have it match the specific keys you want to remove.

Lasterror is set.

3.26.2 Properties

Handle as Integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The internal used CPhidgetDictionaryHandle.

Notes: (Read and Write property)

Lasterror as Integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The last error code.

Notes: (Read and Write property)

3.26.3 Events

Error(errorCode as integer, errorDescription as string)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This error event is used for reporting asynchronous errors mostly related to opening remote Phidgets.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

KeyChanged(key as string, value as string, reason as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** These event will be called on key add, remove, and change.

Notes:

The Lasterror property is set.

It will also fire once to give an initial key value as soon as it is registered, if the key already exists.

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

Reason values:

```
PHIDGET_DICIONARY_VALUE_CHANGED  1
PHIDGET_DICIONARY_ENTRY_ADDED    2
PHIDGET_DICIONARY_ENTRY_REMOVING 3
PHIDGET_DICIONARY_CURRENT_VALUE  4
```

ServerConnect

Plugin Version: 8.4 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when a connection to the sever has been made.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

ServerDisconnect

Plugin Version: 8.4 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when a connection to the server has been lost.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.27 class PhidgetAnalogMBS

class PhidgetAnalogMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Class specific to the Phidget Analog.

Notes:

See the product manual for more specific API details, supported functionality, units, etc.
Subclass of the PhidgetMBS class.

3.27.1 Methods

Constructor

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Creates a new analog device instance.

Notes: Lasterror is set.

getEnabled(index as integer) as boolean

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the enabled state for an output.

Notes: Lasterror is set.

getOutputCount as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of outputs supported by this phidget analog.

Notes: Lasterror is set.

getVoltage(index as integer) as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the currently set voltage for an output, in V.

Notes: Lasterror is set.

getVoltageMax(index as integer) as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum settable output voltage, in V.

Notes: Lasterror is set.

getVoltageMin(index as integer) as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum settable output voltage, in V.

Notes: Lasterror is set.

setEnabled(index as integer, value as boolean)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the enabled state for an output.

Notes: Lasterror is set.

setVoltage(index as integer, value as double)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the voltage of an output, in V.

Notes: Lasterror is set.

3.28 class PhidgetBridgeMBS

class PhidgetBridgeMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class specific to the Phidget Bridge.

Notes:

See the product manual for more specific API details, supported functionality, units, etc.
Subclass of the PhidgetMBS class.

3.28.1 Methods

Constructor

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Creates a new instance.

Notes: Lasterror is set.

getBridgeMax(index as integer) as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum value supported by a bridge input, in mV/V. This is affected by Gain.

Notes: Lasterror is set.

getBridgeMin(index as integer) as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum value supported by a bridge input, in mV/V. This is affected by Gain.

Notes: Lasterror is set.

getBridgeValue(index as integer) as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current value of a bridge input, in mV/V.

Notes: Lasterror is set.

getDataRate as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the the data rate for the Phidget Bridge, in milliseconds.

Notes: Lasterror is set.

getDataRateMax as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the the maximum data rate for the Phidget Bridge, in milliseconds.

Notes: Lasterror is set.

getDataRateMin as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the the minimum data rate for the Phidget Bridge, in milliseconds.

Notes: Lasterror is set.

getEnabled(index as integer) as Boolean

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the enabled state for an input.

Notes: Lasterror is set.

getGain(index as integer) as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the the Gain for an input.

Notes: Lasterror is set.

getInputCount as integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of inputs supported by this phidget bridge.

Notes: Lasterror is set.

setDataRate(milliseconds as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the the data rate for the Phidget Bridge, in milliseconds.

Notes: Lasterror is set.

setEnabled(index as integer, value as Boolean)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the enabled state for an input.

Notes: Lasterror is set.

setGain(index as integer, value as integer)

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the the Gain for an input.

Notes: Lasterror is set.

3.28.2 Events

BridgeDataReceived(index as integer, value as double)

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The bridge data event handler.

Notes: This is called at a set rate as defined by data rate.

3.28.3 Constants

PHIDGET_BRIDGE_GAIN_1 = 1

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the gain constants.

Notes: Gain of 1.

PHIDGET_BRIDGE_GAIN_128 = 6

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the gain constants.

Notes: Gain of 128.

PHIDGET_BRIDGE_GAIN_16 = 3

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the gain constants.

Notes: Gain of 16.

PHIDGET_BRIDGE_GAIN_32 = 4

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the gain constants.

Notes: Gain of 32.

PHIDGET_BRIDGE_GAIN_64 = 5

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the gain constants.

Notes: Gain of 64.

PHIDGET_BRIDGE_GAIN_8 = 2

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the gain constants.

Notes: Gain of 8.

PHIDGET_BRIDGE_GAIN_UNKNOWN = 7

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the gain constants.

Notes: Unknown Gain.

3.29 class PhidgetMBS

class PhidgetMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The base class of all Phidget device classes.

Notes:

Check [phidgets.com](http://www.phidgets.com) for information on this devices.
<http://www.phidgets.com/>

3.29.1 Methods

Close

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Closes the file handles for this device.

Notes:

You can call this while reads and writes are still outstanding; they will fail quickly.
LastError is set.
The destructor does a close if you forget it.

disableLogging

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Disables logging on the library.

Notes: The Lasterror property is set.

enableLogging(level as integer, outputFile as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Enables logging on the library.

Notes:

The Lasterror property is set.

Data is written to the file specified with the output file path.

Not sure how the path must be specified. This is depending on the library used.

The levels:

```
PHIDGET_LOG_CRITICAL  1
PHIDGET_LOG_ERROR     2
PHIDGET_LOG_WARNING   3
PHIDGET_LOG_DEBUG     4
PHIDGET_LOG_INFO      5
PHIDGET_LOG_VERBOSE   6
```

GetDeviceClass as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the class of a Phidget.

Notes: See the PHIDCLASS_ * constants.

GetDeviceID as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the device ID of a Phidget.

Notes: See the PHIDID_ * constants.

GetDeviceLabel as string

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the Label for the Phidget.

Notes:

The Label is a user programmable serial number stored on the Phidget - it can be used to implement a serial numbering scheme, or describe the functionality of the Phidget in a specific application.

Lasterror is set.

GetDeviceName as string

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns string describing the name of the Phidget.

Notes:

For example, Phidget InterfaceKit 8/8/8, Phidget InterfaceKit 0/0/4, etc.
The Lasterror property is set.

GetDeviceStatus as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns an integer indicating the status of the device.

Notes:

Returns:

PHIDGET_ ATTACHED 0x1

PHIDGET_ NOTATTACHED 0x0

Lasterror is set.

GetDeviceType as string

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns a string describing the type of the Phidget.

Notes:

All PhidgetInterfaceKits will return "PhidgetInterfaceKit", PhidgetRFID returns "PhidgetRFID" and so on.

Lasterror is set.

GetDeviceVersion as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns a string describing the Device Version of the Phidget.

Notes: Lasterror is set.

GetErrorDescription(errorcode as integer) as string

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns a string describing the ErrorCode passed.

Notes:

Lasterror is set.

The list of the error codes:

```
0 EPHIDGET_ OK
1 EPHIDGET_ NOTFOUND
2 EPHIDGET_ NOMEMORY
3 EPHIDGET_ UNEXPECTED
4 EPHIDGET_ INVALIDARG
5 EPHIDGET_ NOTATTACHED
6 EPHIDGET_ INTERRUPTED
7 EPHIDGET_ INVALID
8 EPHIDGET_ NETWORK
9 EPHIDGET_ UNKNOWNVAL
10 EPHIDGET_ BADPASSWORD
11 EPHIDGET_ UNSUPPORTED
12 EPHIDGET_ DUPLICATE
13 EPHIDGET_ TIMEOUT
14 EPHIDGET_ OUTFBOUNDS
15 EPHIDGET_ EVENT
16 EPHIDGET_ NETWORK_ NOTCONNECTED
17 EPHIDGET_ WRONGDEVICE
```

GetLibraryVersion as string

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** returns a string providing the version number of the API library.

Notes: Lasterror is set.

GetSerialNumber as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the unique serial number of this Phidget.

Notes:

Lasterror is set.

This number is set during manufacturing, and is unique across all Phidgets.

GetServerAddress(byref port as integer) as string

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the IP Address and Port of a remote Phidget device.

Notes:

This should only be called on Phidgets that were opened with openRemote or openRemoteIP.

Lasterror is set.

GetServerID as string

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the Server ID for a remote Phidget device.

Notes:

This method is not yet implemented and will return EPHIDGET_UNSUPPORTED.

This should only be called on Phidgets that were opened with openRemote or openRemoteIP.

The Lasterror property is set.

GetServerStatus as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns an integer indicating the connection status of a Webservice.

Notes:

Returns one of the following values:

```
1 CONNECTED
0 NOTCONNECTED
```

Lasterror is set.

Open(serialNumber as integer = -1)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Creates a connection between an PhidgetMBS object and a physical Phidget.

Example:

```
dim p as new PhidgetInterfaceKitMBS

p.open -1
p.waitForAttachment 0
// use the phidget
```

Notes:

Open is pervasive. What this means is that you can call open on a device before it is plugged in, and keep the device opened across device dis- and re-connections.

Open is Asynchronous. What this means is that open will return immediately - before the device being opened is actually available.

What this means is that you need to either poll getDeviceStatus for an attached status, or handle the attach event, in order to wait for the device to become available before trying to use it.

SerialNumber specifies the desired serial number, allowing the call to open a specific Phidget. Specifying -1 for the serial number will cause it to open the first available device.

Lasterror is set.

OpenLabel(label as string = "")

Plugin Version: 12.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens a Phidget by label.

Notes:

Available with phidget library from December 2011.

Labels can be up to 10 characters (UTF-8 encoding). Specify "" to open any.
Lasterror is set.

openLabelRemote(label as string, serverID as string, password as string = "")

Plugin Version: 12.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens a Phidget remotely by ServerID. Note that this requires Bonjour (mDNS) to be running on both the host and the server.

Notes:

Available with phidget library from December 2011.

label: The label string. Labels can be up to 10 characters (UTF-8 encoding). Specify "" to open any.

serverID: Server ID. Specify "" to open any.

password: The Password. Can be "" if the server is running unsecured.

Lasterror is set.

openLabelRemoteIP(label as string, addr as string, port as integer, password as string = "")

Plugin Version: 12.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens a Phidget remotely by address and port, with optional label.

Notes:

Available with phidget library from December 2011.

Lasterror is set.

label: Label string. Labels can be up to 10 characters (UTF-8 encoding). Specify "" to open any.

address: The Address. This can be a hostname or IP address.

port: The Port number. Default is 5001.

password: The Password. Can be NULL if the server is running unsecured.

openRemote(serial as integer, serverID as string, password as string = "")

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This method is not yet implemented and will return EPHIDGET_UNSUPPORTED.

Notes: Lasterror is set.

openRemoteIP(serial as integer, addr as string, port as integer, password as string = "")

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Attempts to open a connection to a Phidget Webservice, and waits for a phidget on that connection.

Notes:

OpenRemoteIP will block until it connects to the server, which means that when it returns with EPHIDGET_OK, this means that the connection is active. If the server is unavailable, this will return an error code. If the connection to a webservice is disrupted while in use, an error event will be thrown, and it is recommended that an error event listener be registered for this reason.

As with the regular open, openRemoteIP is pervasive and asynchronous so long as the connection to the Webservice remains active.

SerialNumber specifies the desired serial number, allowing the call to open a specific Phidget. Specifying -1 for the serial number will cause it to open the first available device.

Address is the address of the computer running the Phidget Webservice. This can be either an IP address or a hostname.

Port specifies the port of the Webservice on the remote computer.

Password specifies the password, which is required if authentication is active on the Webservice. If authentication is not active, this can be set to "".

Lasterror is set.

PUNK_DBL as double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The value used for unknown values (Double).

PUNK_FLT as single

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The value used for unknown values (Float).

SetDeviceLabel(label as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Writes a Label a string up to 10 characters long to the Phidget associated with this handle.

Notes:

SetDeviceLabel may not be available on all operating systems.

Currently it is available on MacOS X, Linux, and Windows CE.
 Calling this on Windows will return EPHIDGET_UNSUPPORTED
 Lasterror is set.

waitForAttachment(millisecond as integer)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Waits the given time till a device has been attached.

Example:

```
dim p as new PhidgetInterfaceKitMBS
```

```
p.open -1
p.waitForAttachment 0
// use the phidget
```

Notes:

Lasterror is set to EPHIDGET_OK when the device is available, or to EPHIDGET_TIMEOUT if the device is not attached before the timeout expires.

Timeouts below about 300ms cannot be trusted because of initialization time, and sometimes an even larger timeout is required ie. the first time a device is plugged into a windows machine.

A timeout of 0 is infinite.

This function can be used in conjunction with (or instead of) an attach event handler.

The Lasterror property is set.

3.29.2 Properties

Handle as Integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The internal used CPhidgetHandle.

Notes: (Read and Write property)

Lasterror as Integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The last error code.
Notes:

EPHIDGET_NOTFOUND	1	"A Phidget matching the type and or serial number could not be found." This indicates that a Phidget being searched for (ie. via Open) could not be located.
EPHIDGET_NOMEMORY	2	"Memory could not be allocated." This indicates that there is not enough memory for the Phidgets library to create the object requested.
EPHIDGET_UNEXPECTED	3	"Unexpected Error. Contact Phidgets Inc. for support." Indicates that a serious error has occurred, or a severe bug exists within the library.
EPHIDGET_INVALIDARG	4	"Invalid argument passed to function." An argument is not valid to the requirements of the function. In many cases this refers to an invalid Phidget Handle.
EPHIDGET_NOTATTACHED	5	"Phidget not physically attached." Indicates the function requires an attached Phidget to operate.
EPHIDGET_INTERRUPTED	6	"Read/Write operation was interrupted" An error occurred while attempting to communicate with the Phidget over USB.
EPHIDGET_INVALID	7	"The Error Code is not defined." Indicates that a serious error has occurred, or a severe bug exists within the library.
EPHIDGET_NETWORK	8	"Network Error." Attempting to communicate with the Phidget via the Network has failed.
EPHIDGET_UNKNOWNVAL	9	"Value is Unknown (State not yet received from device)." A query to a value on the Phidget device has failed as the Phidget has not returned data yet.
EPHIDGET_BADPASSWORD	10	"Authorization Failed." The remote access method has failed its authorization.
EPHIDGET_UNSUPPORTED	11	"Not Supported" This is a bad or unsupported function call.
EPHIDGET_DUPLICATE	12	"Duplicated request" A previous request to the device has already performed this function, and it is not valid to perform twice.
EPHIDGET_TIMEOUT	13	"Given timeout has been exceeded" A synchronous request has failed its time limits. Usually this is returned when attempting WaitForConnect.
EPHIDGET_OUTOFBOUNDS	14	"Index out of Bounds" An index into the function is above or below the recognized bounds of the device. ie. when accessing a single sensor on a multisensor device.
EPHIDGET_EVENT	15	"A non-null error code was returned from an event handler" An error code was passed to a function handler. Note that correct decoding of the actual error would have to be done within the event handler itself.
EPHIDGET_NETWORK_NOTCONNECTED	16	"A connection to the server does not exist." An attempt to connect to a remotely connected device or service failed due to network connectivity problems.
EPHIDGET_WRONGDEVICE	17	"Function is not applicable for this device." The wrong type of device handle was passed as an argument to a function. (ie. calling CPhidgetWeightSensor_getWeight with an Accelerometer handle)

(Read and Write property)

3.29.3 Events**Attach**

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The event called when a device is attached.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

Detach

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The event called when a device is detached.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

Error(errorCode as integer, errorDescription as string)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:**

This event is used for reporting asynchronous errors - mostly related to opening remote Phidgets.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

ServerConnect

Plugin Version: 8.4 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is used for opening Phidgets remotely, and is called when a connection to the sever has been made.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems

described in the ThreadMBS class documentation.

ServerDisconnect

Plugin Version: 8.4 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is used for opening Phidgets remotely, and is called when a connection to the server has been lost.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

Wakeup

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when the device wakes up.

WillSleep

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when the device will go to sleep.

3.29.4 Constants

EPHIDGET_BADPASSWORD=10

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Authorization exception. "No longer used. Replaced by EEPHIDGET_BADPASSWORD"

EPHIDGET_BADVERSION=19

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Version Mismatch. "No longer used. Replaced by EEPHIDGET_BADVERSION"

EPHIDGET_CLOSED=18

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Phidget Closed. "Phidget handle was closed."

EPHIDGET_DUPLICATE=12

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Duplicate request. "Duplicated request."

EPHIDGET_EVENT=15

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Event. "A non-null error code was returned from an event handler." This code is not currently used.

EPHIDGET_INTERRUPTED=6

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Interrupted. "Read/Write operation was interrupted." This code is not currently used.

EPHIDGET_INVALID=7

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Invalid error code. "The Error Code is not defined."

EPHIDGET_INVALIDARG=4

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Invalid argument. "Invalid argument passed to function."

EPHIDGET_NETWORK=8

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Network. "Network Error."

EPHIDGET_NETWORK_NOTCONNECTED=16

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Network not connected. "A connection to the server does not exist."

EPHIDGET_NOMEMORY=2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: No memory. "Memory could not be allocated."

EPHIDGET_NOTATTACHED=5

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Phidget not attached. "Phidget not physically attached."

EPHIDGET_NOTFOUND=1

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Phidget not found. "A Phidget matching the type and or serial number could not be found."

EPHIDGET_OK=0

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Function completed successfully.

EPHIDGET_OUTOFBOUNDS=14

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Out of bounds. "Index out of Bounds."

EPHIDGET_TIMEOUT=13

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Timeout. "Given timeout has been exceeded."

EPHIDGET_ UNEXPECTED=3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Unexpected. "Unexpected Error. Contact Phidgets Inc. for support."

EPHIDGET_ UNKNOWNVAL=9

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Value unknown. "Value is Unknown (State not yet received from device, or not yet set by user)."

EPHIDGET_ UNSUPPORTED=11

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Unsupported. "Not Supported."

EPHIDGET_ WRONGDEVICE=17

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the error constants.

Notes: Wrong device. "Function is not applicable for this device."

PHIDCLASS_ ACCELEROMETER = 2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ ADVANCEDSERVO = 3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ ANALOG = 22

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ BRIDGE = 23

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ ENCODER = 4

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ FREQUENCYCOUNTER = 21

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ GPS = 5

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_INTERFACEKIT = 7

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_IR = 19

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_LED = 8

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_MOTORCONTROL = 9

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_PHSENSOR = 10

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_RFID = 11

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ SERVO = 12

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ SPATIAL = 20

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ STEPPER = 13

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ TEMPERATURESENSOR = 14

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ TEXTLCD = 15

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ TEXTLED = 16

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDCLASS_ WEIGHTSENSOR = 17

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID class constants.

PHIDDEF_ ACCELEROMETER=& h11

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_ ADVANCEDSERVO=& h15

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_ ENCODER=& hE

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_ GPS=& h16

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_ GYROSCOPE=& h14

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_HUMIDITYSENSOR=5

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_INTERFACEKIT=3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_LED=& hD

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_MOTORCONTROL=& hB

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_PHSENSOR=& h13

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_RFID=7

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_SERVO=4

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_STEPPER=& hF

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_TEMPERATURESENSOR=& h10

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_TEXTLCD=& hA

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_TEXTLED=& h12

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDDEF_WEIGHTSENSOR=8

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID device definition constants.

PHIDGET_ ATTACHED=1

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the phidget constants.

Notes:

Phidget attached.
Returned by getStatus() functions.

PHIDGET_ LOG_ CRITICAL=1

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the phidget constants.

PHIDGET_ LOG_ DEBUG=4

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the phidget constants.

PHIDGET_ LOG_ ERROR=2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the phidget constants.

PHIDGET_ LOG_ INFO=5

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the phidget constants.

PHIDGET_LOG_VERBOSE=6

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the phidget constants.

PHIDGET_LOG_WARNING=3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the phidget constants.

PHIDGET_NOTATTACHED=0

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the phidget constants.

Notes:

Phidget not attached.
Returned by getStatus() functions.

PHIDID_ACCELEROMETER_2AXIS = & h071

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ACCELEROMETER_3AXIS = & h07E

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ ADVANCEDSERVO_ 1MOTOR = & h082

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ ADVANCEDSERVO_ 8MOTOR = & h03A

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ ANALOG_ 4OUTPUT = & h037

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ BIPOLAR_ STEPPER_ 1MOTOR = & h07B

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ BRIDGE_ 4INPUT = & h03B

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ ENCODER_ 1ENCODER_ 1INPUT = & h04B

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ENCODER_HS_1ENCODER = & h080

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ENCODER_HS_4ENCODER_4INPUT = & h04F

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_FREQUENCYCOUNTER_2INPUT = & h035

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_GPS = & h079

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_INTERFACEKIT_0_0_4 = & h040

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_INTERFACEKIT_0_0_8 = & h081

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_INTERFACEKIT_0_16_16 = & h044

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_INTERFACEKIT_0_8_8_w_LCD = & h053

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_INTERFACEKIT_2_2_2 = & h036

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_INTERFACEKIT_4_8_8 = 4

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_INTERFACEKIT_8_8_8 = & h045

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_INTERFACEKIT_8_8_8_w_LCD = & h07D

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_IR = & h04D

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_LED_64 = & h04A

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_LED_64_ADV = & h04C

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_LINEAR_TOUCH = & h076

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_MOTORCONTROL_1MOTOR = & h03E

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_MOTORCONTROL_HC_2MOTOR = & h059

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ MOTORCONTROL_ LV_ 2MOTOR_ 4INPUT = & h058

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ PHSENSOR = & h074

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ RFID = & h030

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ RFID_ 2OUTPUT = & h031

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ ROTARY_ TOUCH = & h077

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ SERVO_ 1MOTOR = & h039

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_SERVO_1MOTOR_OLD = 2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_SERVO_4MOTOR = & h038

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_SERVO_4MOTOR_OLD = 3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ SPATIAL_ ACCEL_ 3AXIS = & h07F

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ SPATIAL_ ACCEL_ GYRO_ COMPASS = & h033

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ TEMPERATURESENSOR = & h070

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ TEMPERATURESENSOR_ 4 = & h032

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ TEMPERATURESENSOR_ IR = & h03C

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ TEXTLCD_ 2x20 = & h052

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ TEXTLCD_ 2x20_ w_ 0_ 8_ 8 = & h153

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ TEXTLCD_ 2x20_ w_ 8_ 8_ 8 = & h17D

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ TEXTLCD_ ADAPTER = & h03D

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ TEXTLED_ 1x8 = & h049

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ TEXTLED_ 4x8 = & h048

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ UNIPOLAR_ STEPPER_ 4MOTOR = & h07A

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDID_ WEIGHTSENSOR = & h072

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID ID constants.

PHIDSPEC_ 888_ with_ lcd=& h25

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ ACCELEROMETER3=& h26

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ ACCELEROMETER=& h07

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ ACCELEROMETER_ with_ GYRO=& h27

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ ADVANCEDSERVO8=& h19

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_BIPOLAR_STEPPER=& h22

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ENCODER=& h11

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ENCODER_4=& h1E

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ENCODER_HS=& h20

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_GPS=& h1F

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_GYROSCOPE=& h18

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_GYRO_with_ACCELEROMETER=& h28

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_HUMIDITYSENSOR=& h16

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_INTERFACEKIT_0_0_4=& h03

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_INTERFACEKIT_0_0_8=& h2B

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_INTERFACEKIT_0_16_16=& h04

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_INTERFACEKIT_0_5_7=& h05

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_INTERFACEKIT_0_8_8=& h06

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_INTERFACEKIT_4_8_8=& h12

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_INTERFACEKIT_8_8_8=& h02

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_JOYSTICK=& h23

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_LED =& h0C

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_LINEAR_TOUCH=& h1C

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_MOTORCONTROL=& h0E

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_MOTORCONTROL_HC=& h2A

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_NOTHING=& h00

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_PHSENSOR=& h17

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_RFID=& h0B

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_RFIDB=& h1A

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ ROTARY_ TOUCH=& h1D

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ SERVO_ 1MOTOR=& h01

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ SERVO_ 1MOTOR_ OLD=& h14

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ SERVO_ 4MOTOR=& h29

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ SERVO_ 4MOTOR_ OLD=& h13

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ STEPPER=& h10

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_TEMPERATURESENSOR=& h0F

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_TEXTLCD_2_20=& h08

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_TEXTLCD_2_20_COMP1=& h0A

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_TEXTLCD_2_20_CUSTOM=& h09

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_TEXTLCD_with_888=& h24

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_TEXTLED2=& h1B

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ TEXTLED=& h0D

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ UNIPOLAR_ STEPPER=& h21

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PHIDSPEC_ WEIGHTSENSOR=& h15

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the HID spec constants.

PUNK_ BOOL = 2

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The value used for unknown values (Boolean).

PUNK_ INT = & H7FFFFFFF

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The value used for unknown values (Integer).

PUNK_ INT64 = & h7FFFFFFFFFFFFFFF

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The value used for unknown values (Int64).

PUNK_ SHRT = & h7FFF

Plugin Version: 11.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The value used for unknown values (Short).

3.30 class PhidgetIRCodeInfoMBS

class PhidgetIRCodeInfoMBS

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a code info for the IR receiver/sender.

Notes:

The PhidgetIR CodeInfo structure contains all information needed to transmit a code, apart from the actual code data.

Some values can be set to null to select defaults. See the product manual for more information.

3.30.1 Methods

header(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The header value.

Notes:

Header pulse and space - can be 0 for none

Index from 0 to 1.

(Read and Write computed property)

one(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The one array.

Notes:

Pulse and Space times to represent a '1' bit, in us

Index from 0 to 1.

(Read and Write computed property)

repeat(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** A series or pulse and space times to represent the repeat code.

Notes:

Start and end with pulses and null terminate. Set to 0 for none.

Index from 0 to 25.

(Read and Write computed property)

toggleMask(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Bit toggles, which are applied to the code after each transmit.

Notes: (Read and Write computed property)

zero(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the arrays.

Notes:

Index from 0 to 1.

Pulse and Space times to represent a '0' bit, in us.

(Read and Write computed property)

3.30.2 Properties

bitCount as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Number of bits in the code.

Notes: (Read and Write property)

carrierFrequency as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Carrier frequency in Hz - defaults to 38kHz.

Notes: (Read and Write property)

dutyCycle as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Duty Cycle in percent (10-50).

Notes:

Defaults to 33.

(Read and Write property)

encoding as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Encoding used to encode the data.

Notes:

See the PHIDGET_IR_ENCODING_* constants.

(Read and Write property)

gap as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gap time in us.

Notes: (Read and Write property)

length as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The length of the code.

Notes:

Constant or Variable length encoding.
See PHIDGET_IR_LENGTH_* constants.
(Read and Write property)

minRepeat as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Minimum number of times to repeat a code on transmit.

Notes: (Read and Write property)

trail as Integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Trail time in us - can be 0 for none.

Notes: (Read and Write property)

3.30.3 Constants**PHIDGET_IR_ENCODING_BIPHASE = 4**

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the encoding constants.

Notes: Bi-Phase, or Manchester encoding.

PHIDGET_IR_ENCODING_PULSE = 3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the encoding constants.

Notes: Pulse encoding, or Pulse Width Modulation.

PHIDGET_IR_ENCODING_RC5 = 5

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the encoding constants.

Notes: RC5 - a type of Bi-Phase encoding.

PHIDGET_IR_ENCODING_RC6 = 6

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the encoding constants.

Notes: RC6 - a type of Bi-Phase encoding.

PHIDGET_IR_ENCODING_SPACE = 2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the encoding constants.

Notes: Space encoding, or Pulse Distance Modulation.

PHIDGET_IR_ENCODING_UNKNOWN = 1

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the encoding constants.

Notes: Unknown - the default value.

PHIDGET_IR_LENGTH_CONSTANT = 2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the length constants.

Notes: Constant - the bitstream + gap length is constant.

PHIDGET_IR_LENGTH_UNKNOWN = 1

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the length constants.

Notes: Unknown - the default value.

PHIDGET_IR_LENGTH_VARIABLE = 3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the length constants.

Notes: Variable - the bitstream has a variable length with a constant gap.

3.31 class PhidgetGPVTGMBS

class PhidgetGPVTGMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** A class for a NMEA VTG Sentence.

3.31.1 Properties

magneticHeading as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The magnetic heading.

Notes: (Read only property)

mode as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The mode.

Notes: (Read and Write property)

speed as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The speed in km/hour.

Notes: (Read only property)

speedKnots as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The speed in knots.

Notes: (Read only property)

trueHeading as Double

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The true heading.

Notes: (Read only property)

3.32 class PhidgetGPSTimeMBS

class PhidgetGPSTimeMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** GPS Time in UTC.

3.32.1 Properties

Hour as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The hour value.

Notes: (Read and Write property)

Millisecond as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The Milliseconds value.

Notes: (Read and Write property)

Minute as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The minutes value.

Notes: (Read and Write property)

Second as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The seconds value.

Notes: (Read and Write property)

3.33 class PhidgetGPSSatInfoMBS

class PhidgetGPSSatInfoMBS

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** A class for Satellite info - used in GSV sentence.

3.33.1 Properties

Azimuth as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The azimuth value.

Notes: (Read and Write property)

Elevation as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The elevation value.

Notes: (Read and Write property)

ID as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The ID.

Notes: (Read and Write property)

SNR as Integer

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The serial number.

Notes: (Read and Write property)

3.34 class PhidgetInterfaceKitMBS**class PhidgetInterfaceKitMBS**

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a phidget interface kit.

Notes:

The PhidgetInterfaceKit is a component that provides a high-level programmer interface to control a PhidgetInterfaceKit device connected through a USB port.

With this component, the programmer can:

- * Turn particular outputs on and off.
- Get notified of changes of state of the inputs as events.
- Configure events to fire when the analog inputs change.

The PhidgetInterfaceKit devices provide a combination of:

Digital outputs.
Digital inputs.
Analog inputs.
Subclass of the PhidgetMBS class.

3.34.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.
Notes:

On success the handle value is not zero.
The Lasterror property is set.

getDataRate(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the Data Rate for an analog input in milliseconds.
Notes:

The Lasterror property is set.

This is the event rate. Since we're not going to run an extra thread, the accuracy of the data rate is limited by the interrupt endpoint data rate ($\geq 8\text{ms}$).

getDataRateMax(index as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the maximum supported data rate for an analog input in milliseconds.
Notes: The Lasterror property is set.

getDataRateMin(index as integer) as integer)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the minimum supported data rate for an analog input in milliseconds.

Notes: The Lasterror property is set.

getInputCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of digital inputs supported by this board.

Notes: The Lasterror property is set.

getInputState(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the state of a digital input.

Notes: The Lasterror property is set.

getOutputCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of digital outputs supported by this board.

Notes: The Lasterror property is set.

getOutputState(index as integer) as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the state of a digital output.

Notes: The Lasterror property is set.

getRatiometric as boolean

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the ratiometric state for this board.

Notes: The Lasterror property is set.

getSensorChangeTrigger(index as integer) as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the amount of change that should exist between the last reported value and the current value before an OnSensorChange event is fired.

Notes:

To receive all events, set the SensorChangeTrigger to zero.
The Lasterror property is set.

getSensorCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the number of sensor (analog) inputs supported by this board.

Notes: The Lasterror property is set.

getSensorRawValue(index as integer) as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the reported actual value of the sensor between 0 - 4095.

Notes:

This is directly proportional to the analog input, ranging from 0-5V (or 0-Vcc if Ratiometric is set to True). Note that this value defaults to 65535 for an initialised state. Applications that do not wish to encounter this value should use ChangeTrigger event handlers as opposed to polling the device for new data.

The Lasterror property is set.

getSensorValue(index as integer) as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the last reported sensor value for the given index as a value from 0-1000

Notes:

Note that this value defaults to 65535 for an uninitialised state. Applications that do not wish to encounter this value should use ChangeTrigger event handlers as opposed to polling the device for new data. The Lasterror property is set.

setDataRate(index as integer, milliseconds as integer)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the Data Rate for an analog input in milliseconds.

Notes: The Lasterror property is set.

setOutputState(index as integer, value as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the state of a digital output.

Notes: The Lasterror property is set.

setRatiometric(value as boolean)

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the ratiometric state for this board.

Notes: The Lasterror property is set.

setSensorChangeTrigger(index as integer, value as integer)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Specifies the amount of change that should exist between the last reported value and the current value before an OnSensorChange event is fired.

Notes: Lasterror is set.

3.34.2 Events

InputChanged(index as integer, value as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Called on any input change.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

OutputChanged(index as integer, value as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the number of digital outputs on this particular Phidget device.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

SensorChanged(index as integer, value as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Called on any sensor change.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available. Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

3.35 class PhidgetLEDMBS

class PhidgetLEDMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for a phidget LED device.

Notes:

The PhidgetLED is a component that provides a high-level programmer interface to control a PhidgetLED device connected through a USB port.

With this component, the programmer can:
Control each led individually, On/Off and Brightness.
Subclass of the PhidgetMBS class.

3.35.1 Methods

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.
Notes:

The Lasterror property is set.
On success the handle value is not zero.

getCurrentLimit as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the current limit.
Notes:

This is for all outputs.
Lasterror is set.
See the PHIDGET_LED_CURRENT_LIMIT_* constants.

getDiscreteLED(index as integer) as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the brightness of an individual LED.

Notes:

The Lasterror property is set.
Range of brightness is 0-100.

getLEDCount as integer

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns the number of LED positions available in this Phidget.

Notes:

The Lasterror property is set.
This property does not return the number of LEDs actually attached.

getVoltage as integer

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Queries the voltage.

Notes:

Lasterror is set.
See the PHIDGET_LED_VOLTAGE_* constants.

setCurrentLimit(currentLimit as integer)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the current limit.

Notes:

Lasterror is set.
See the PHIDGET_LED_CURRENT_LIMIT_* constants.

setDiscreteLED(index as integer, Brightness as integer)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the brightness of an individual LED.

Notes:

The Lasterror property is set.
Range of brightness is 0-100.

setVoltage(Voltage as integer)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the current voltage.

Notes:

Lasterror is set.
See the PHIDGET_LED_VOLTAGE_* constants.

3.35.2 Constants

PHIDGET_LED_CURRENT_LIMIT_20mA = 1

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the limit constants.

Notes: 20mA

PHIDGET_LED_CURRENT_LIMIT_40mA = 2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the limit constants.

Notes: 40mA

PHIDGET_LED_CURRENT_LIMIT_60mA = 3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the limit constants.

Notes: 60mA

PHIDGET_LED_CURRENT_LIMIT_80mA = 4

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the limit constants.

Notes: 80mA

PHIDGET_LED_VOLTAGE_1_7V = 1

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the voltage constants.

Notes: 1.7V

PHIDGET_LED_VOLTAGE_2_75V = 2

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the voltage constants.

Notes: 2.75V

PHIDGET_LED_VOLTAGE_3_9V = 3

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the voltage constants.

Notes: 3.9V

PHIDGET_LED_VOLTAGE_5_0V = 4

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the voltage constants.

Notes: 5.0V

3.36 class PhidgetIRMBS

class PhidgetIRMBS

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for an IR receiver/sender.

Notes:

Calls specific to the Phidget IR. See the product manual for more specific API details, supported functionality, units, etc.

Subclass of the PhidgetMBS class.

3.36.1 Methods**Constructor**

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.

Notes:

The Lasterror property is set.

On success the handle value is not zero.

getLastCode(byref bitCount as integer) as MemoryBlock

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the last code that was received.

Notes:

The Lasterror property is set.

bitCount: set to the bit count of the code.

getLastLearnedCode(byref codeInfo as PhidgetIRCodeInfoMBS) as MemoryBlock

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the last code that was learned.

Notes: The Lasterror property is set.

getRawData as MemoryBlock

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Read any available raw data.

Notes:

This should be polled continuously (every 20ms) to avoid missing data. Read data always starts with a space and ends with a pulse.

The Lasterror property is set.

Transmit(data as MemoryBlock, codeInfo as PhidgetIRCodeInfoMBS)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Transmits a code according to the settings in a CodeInfo object.

Notes:

The Lasterror property is set.

data: The code to send. Data is transmitted MSBit first. MSByte is in array index 0. LSBit is right justified, so MSBit may be in bit positions 0-7 in array index 0 depending on the bit count.

codeInfo: The CodeInfo structure specifying to to send the code. Anything left as null to select default is filled in for the user.

TransmitRaw(data as MemoryBlock, length as integer, carrierFrequency as integer, dutyCycle as integer, gap as integer)

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Transmits RAW data as a series of pulses and spaces.

Notes:

The Lasterror property is set.

data: The data to send. The array (Int32) must start and end with a pulse and each element is a positive time in us.

length: The length of the data array. Maximum length is 1024, but streams should be kept much shorter, ie. <100ms between gaps.

carrierFrequency: The Carrier Frequency in Hz. leave as 0 for default.

dutyCycle: The Duty Cycle (10-50). Leave as 0 for default.

gap: The gap time in us. This guarantees a gap time (no transmitting) after the data is sent, but can be set to 0.

TransmitRepeat

Plugin Version: 11.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Transmits a repeat of the last transmitted code.

Notes:

The Lasterror property is set.

Depending of the CodeInfo structure, this may be a retransmission of the code itself, or there may be a special repeat code.

3.36.2 Events

Code(data as memoryblock, bitcount as integer, repeat as integer)

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** A code was received.

Notes:

This is called when a code has been received that could be automatically decoded.

Data is return as an array with MSB in index 0. Bit count and a repeat flag are also returned. (Int32 values)

Repeats are detected as either the same code repeated in <100ms or as a special repeat code.

Learn(data as memoryblock, code as PhidgetIRCodeInfoMBS)

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The learn event.
Notes:

This is called when a code has been received for long enough to be learned.
The returned CodeInfo object can be used to retransmit the same code.

RawData(tag as memoryblock)

Plugin Version: 11.0 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This is called when raw data has been read from the device.
Notes:

Raw data always starts with a space and ends with a pulse.
tag contains 4 byte integer values.

3.37 class PhidgetManagerMBS

class PhidgetManagerMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The Phidget manager is an interface that allows for monitoring of all phidgets connected to a system, without opening them.

3.37.1 Methods

Close

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Closes the file handles for this device. You should always call this when finished with a Manager.

Notes: Lasterror is set.

Constructor

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The constructor.
Notes:

The Lasterror property is set.
On success the handle value is not zero.

Device(index as integer) as PhidgetMBS

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The array of the attached devices.
Notes:

The Lasterror property is set.
You need to call getAttachedDevices before this property is valid.

getAttachedDevices

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Copies the list of attached devices into the Device and Count properties.
Notes: Lasterror is set.

GetDeviceStatus as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns an integer indicating the status of the device.
Notes:

Returns:
PHIDGET_ ATTACHED 0x1
PHIDGET_ NOTATTACHED 0x0

Lasterror is set.

getServerAddress(byref port as integer) as string

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the address and port.

Notes: The Lasterror property is set.

getServerID as string

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Gets the server ID.

Notes: The Lasterror property is set.

GetServerStatus as integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns an integer indicating the connection status of a Webservice.

Notes:

Returns one of the following values:

1 CONNECTED

0 NOTCONNECTED

Lasterror is set.

Open

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens a connection to the local Phidget Manager.

Notes: Lasterror is set.

openRemote(serverID as string, password as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This method is not yet implemented and will return EPHIDGET_UNSUPPORTED.

Notes: Lasterror is set.

openRemoteIP(addr as string, port as integer, password as string)

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens a connection to a remote Phidget Manager.

Notes:

OpenRemoteIP will block until it connects to the server, which means that when it returns with EPHIDGET_OK, this means that the connection is active.

If the server is unavailable, this will return an error code. If the connection to a webservice is disrupted while in use, an error event will be thrown.

Lasterror is set.

Address is the address of the computer running the Phidget Webservice.

This can be either an IP address or a hostname.

Port specifies the port of the Webservice on the remote computer.

Password specifies the password, which is required if authentication is active on the Webservice.

If authentication is not active, this can be set to "".

3.37.2 Properties**Count as Integer**

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Number of devices.

Notes:

The Lasterror property is set.

You need to call getAttachedDevices before this property is valid.

(Read and Write property)

Handle as Integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The internal used CPhidgetManagerHandle.

Notes: (Read and Write property)

Lasterror as Integer

Plugin Version: 7.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The last error code reported.

Notes: (Read and Write property)

3.37.3 Events**Attach(devicehandle as integer)**

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The event called when a device is attached.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

Detach(devicehandle as integer)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The event called when a device is detached.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

Error(errorCode as integer, errorDescription as string)

Plugin Version: 7.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is used for reporting asynchronous errors mostly related to opening remote Phidgets.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

ServerConnect

Plugin Version: 8.4 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when a connection to the sever has been made.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

ServerDisconnect

Plugin Version: 8.4 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called when a connection to the server has been lost.

Notes:

With plugin version 8.5 and newer this event is executed on the main thread of your application to avoid crashes with REALbasic. Events are buffered until you the main thread has time available.

Older plugins execute the event on the thread where the event was created which may lead into problems described in the ThreadMBS class documentation.

Chapter 4

USB

4.1 class WinHIDMBS

class WinHIDMBS

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** A class to work with HID devices on Windows.

Example:

```
dim m as new WinHIDMBS
dim s as string

# if not TargetWin32
MsgBox "This example requires Windows."
# endif

if m.FindFirstDevice then

do
ListBox1.AddRow ""

ListBox1.Cell(ListBox1.LastIndex,0)=hex(m.ProductID)
ListBox1.Cell(ListBox1.LastIndex,1)=hex(m.VendorID)
ListBox1.cell(ListBox1.LastIndex,2)=m.Product
ListBox1.cell(ListBox1.LastIndex,3)=m.Manufacturer
ListBox1.cell(ListBox1.LastIndex,4)=m.SerialNumber
ListBox1.cell(ListBox1.LastIndex,5)=hex(m.VersionNumber)
```

```

if left(m.Product,3)="RF1" then // my test device

if m.Connect then
// write 9 bytes report
// first byte is report ID plus 8 byte data
s=chr(0)+"P"+chr(0)+chr(0)+chr(0)+chr(0)+chr(0)+chr(0)+chr(0)

MsgBox "Send bytes: "+str(m.SendMessage(s))

do
s=m.ReadMessage(17)
loop until lenb(s)>0 // until we got something
MsgBox midb(s,2) // shows result. First byte is ReportID again

m.Disconnect
end if
end if

loop until not m.FindNextDevice

end if

Title=str(ListBox1.ListCount)+" devices found."

```

Notes: Updated in version 10.4 of plugins to ignore devices which you don't have permissions to access them. So you will now see devices with VendorID=0 and ProductID=0.

4.1.1 Methods

Close

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Closes the active connection.

Connect as boolean

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Creates a connection to the current device.

Example:

```
Function OpenUSBDevice() As boolean
dim i as integer
dim h as WinHIDMBS

h=FindDevice // see FindFirst example

if h=nil then
MsgBox "No XYZ device found."
Return false
end if

call h.Connect

if h.Lasterror<>0 then
MsgBox "Failed to connect to USB Device."
Return false
end if

Return true

End Function
```

Notes:

Lasterror is set.
Returns true on success and false on failure.

The plugin tries to open a read and a write connection. If both fail, connect returns false. If one is okay, it returns true.

Some devices don't allow read or write because of missing permissions.

DevicePath as string

Plugin Version: 9.3 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The internal path used by Windows to identify the device.

Notes: Only for debugging.

Disconnect

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Disconnects current USB device.

Notes: Lasterror is set.

FindFirstDevice as boolean

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Finds the first device and loads the properties.

Example:

```
Function FindDevice() As MyWinHIDMBS
dim h as MyWinHIDMBS
dim p as string

h=new MyWinHIDMBS // your own subclass of MacHIDMBS so you can get events

if h.FindFirstDevice then

p=h.Product
if p="MyProduct" then
Return h
end if

while h.FindNextDevice

p=h.Product
if p="MyProduct" then
Return h
end if

wend

end if
End Function
```

Notes:

Returns true on success and false on failure.

On Windows finds only devices which can be opened for Read/Write.

FindNextDevice as boolean

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Finds next device.
Notes: Returns true on success and false on failure.

InstallListener(PollSize as integer) as boolean

Plugin Version: 7.8 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Installs a second thread which performs Read.

Example:

```
dim h as new WinHIDMBS  
call h.InstallListener 9 // 8 bytes + Report ID
```

Notes: Use PollString or PollMemory in a timer or a loop to get the data.

Manufacturer as string

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The manufacturer name.

Notes:

On any error an empty string is returned.
LastError is set.

PollMemory as memoryblock

Plugin Version: 7.8 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Reads a message from the device.

Notes:

A connection must be open and InstallListener must be used.
LastError is set.
You may want to try this function in a loop or a timer till you get data.

PollString as string

Plugin Version: 7.8 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Reads a message from the device.

Example:

```
dim m as WinHIDMBS // your WinHIDMBS object
dim s as string

do
s=m.PollString
loop until lenb(s)>0 // until we got something
MsgBox midb(s,2) // shows result. First byte is ReportID again
```

Notes:

A connection must be open and InstallListener must be used.
LastError is set.
You may want to try this function in a loop or a timer till you get data.

Product as string

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The product string of the selected device.

Notes: Lasterror is set.

ProductID as integer

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The product ID of the selected device.

Notes: Lasterror is set.

ReadMessage(length as integer) as string

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Reads a message from the device.

Example:

```
dim m as WinHIDMBS
dim s as string

do
s=m.ReadMessage(48)
loop until lenb(s)>0 // until we got something
MsgBox midb(s,2) // shows result. First byte is ReportID again
```

Notes:

Length is the length of the receive buffer you want to use.
The string returned is 0 to length bytes long.
A connection must be open.
LastError is set.
You may want to try this function in a loop till you get data.

Read blocks the application until data is found.
Use InstallListener and Poll to get data without waiting.

ReadMessageMemory(length as integer) as memoryblock

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Reads a message from the device.

Notes:

Length is the length of the receive buffer you want to use.
The memoryblock returned has a size of 0 to length bytes.
A connection must be open.
LastError is set.
You may want to try this function in a loop till you get data.

Read blocks the application until data is found.
Use InstallListener and Poll to get data without waiting.

SendMessage(data as string) as integer

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Sends a message to the USB device.

Example:

```
dim m as WinHIDMBS // your hid object
dim s as string
// write 9 bytes report
// first byte is report ID plus 8 byte data
s=chr(0)+"P"+chr(0)+chr(0)+chr(0)+chr(0)+chr(0)+chr(0)+chr(0)
MsgBox "Send bytes: "+str(m.SendMessage(s))
```

Notes:

A connection must be open.
Returns number of bytes sent.

The first byte must be the Report ID which seems to be zero for most devices.

SendMessageMemory(data as memoryblock, offset as integer, length as integer) as integer

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Sends a message to the USB device.

Notes:

A connection must be open.
LastError is set.
Returns number of bytes sent.

While writing a crossplatform application we saw the following thing: The data buffer for the SendMessageMemory call must be 8 bytes long on Mac for our device (with MachIDMBS) and 61 bytes long for Windows (with WinHIDMBS) for our HID device. We have 1 byte for the ReportID and 60 data bytes where the first 8 are set like on the Mac. So if the calls fail on Windows, try with a higher length and check the WinHIDMBS.OutputReportByteLength property.

The first byte must be the Report ID which seems to be zero for most devices.

SerialNumber as string

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The serial number of the current selected device.

Notes: Lasterror is set.

VendorID as integer

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The vendor ID of the selected device.

Notes: Lasterror is set.

VersionNumber as integer

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The device specific version number.

Notes:

Value can be anything.

On any error, 0 is returned.

Lasterror is set.

4.1.2 Properties

FeatureReportByteLength as Integer

Plugin Version: 9.4 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Maximum length, in bytes, of all the feature reports, including the report identifier, if report identifiers are used, which is added to the beginning of the report data.

Notes: (Read and Write property)

HidHandle as Integer

Plugin Version: 9.3 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The handle for the HID device.

Notes: (Read and Write property)

InputReportByteLength as Integer

Plugin Version: 9.4 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Maximum size, in bytes, of the input reports, including the report identifier, if report identifiers are used, which is added to the beginning of the report data.

Notes: (Read and Write property)

Lasterror as Integer

Plugin Version: 7.5 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Last error code.

Notes:

0 is success.

-1 means that the function is not available.

else Windows error codes like 5 for Access Denied.

(Read and Write property)

LasterrorString as String

Plugin Version: 9.4 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The last error code in a formatted and localized string.

Notes:

This does not work for plugin error codes.

Like -1 if the function is not available.

(Read only property)

OutputReportByteLength as Integer

Plugin Version: 9.4 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Maximum size, in bytes, of all the output reports, including the report identifier, if report identifiers are used, which is added to the beginning of the report data.

Notes: (Read and Write property)

PnPHandle as Integer

Plugin Version: 9.3 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The handle for Plug and Play.

Notes: (Read and Write property)

ReadHandle as Integer

Plugin Version: 9.3 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The handle of the stream for reading data from the USB device.

Notes: (Read and Write property)

ThreadHandle as Integer

Plugin Version: 9.3 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The handle for the thread which waits in the background for new data.

Notes: (Read and Write property)

WriteHandle as Integer

Plugin Version: 9.3 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The handle of the stream for writing data to the USB device.

Notes: (Read and Write property)

4.2 class WinUSBDeviceMBS

class WinUSBDeviceMBS

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The class to query USB devices.

Example:

```
dim devices(-1) as WinUSBDeviceMBS = WinUSBDeviceMBS.Devices

for each d as WinUSBDeviceMBS in devices
MsgBox d.Vendor+" - "+d.Product
next
```

4.2.1 Methods

Devices as WinUSBDeviceMBS()

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Queries a list of all USB Devices.

Example:

```
dim devices() as WinUSBDeviceMBS = WinUSBDeviceMBS.devices
for each d as WinUSBDeviceMBS in devices
msgbox d.vendor+" "+d.product+" "+d.serialnumber
next
```

Notes: Returns an empty array on errors.

4.2.2 Properties

cdUSB as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The device USB version.

Notes:

USB Specification Number which device complies too.

The cdUSB field reports the highest version of USB the device supports. The value is in binary coded decimal with a format of 0xJJMN where JJ is the major version number, M is the minor version number and N is the sub minor version number. e.g. USB 2.0 is reported as & h0200, USB 1.1 as 0x0110 and USB 1.0 as & h0100.

(Read and Write property)

DescriptorType as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The device descriptor type.

Notes:

Device Descriptor (0x01)

(Read and Write property)

DeviceClass as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The device class.

Notes:

See constants in MacUSBDeviceMBS class.

Assigned by USB Org

(Read and Write property)

DeviceID as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The device ID.

Notes: (Read and Write property)

DeviceProtocol as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The device protocol.
Notes:

Assigned by USB Org
(Read and Write property)

DeviceSubClass as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The device sub class.
Notes:

See constants in MacUSBDeviceMBS class.
Assigned by USB Org
(Read and Write property)

MaxEP0Size as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Maximum Packet Size for Zero Endpoint.
Notes:

Valid Sizes are 8, 16, 32, 64
(Read and Write property)

Product as String

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The product name.
Notes: (Read and Write property)

ProductID as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The product ID of the device.

Notes: (Read and Write property)

SerialNumber as String

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The serial number of the USB device.

Example:

```
dim devices(-1) as WinUSBDeviceMBS = WinUSBDeviceMBS.Devices
```

```
for each d as WinUSBDeviceMBS in devices  
MsgBox d.Vendor+" - "+d.Product+": "+d.SerialNumber  
next
```

Notes:

Not all vendors save the serial number in the device.
(Read and Write property)

Vendor as String

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The vendor name of the USB device.

Notes: (Read and Write property)

VendorID as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The vendor ID of the USB device.

Notes:

Assigned by USB Org.
(Read and Write property)

4.3 class MacUSBNotificationMBS

class MacUSBNotificationMBS

Plugin Version: 11.2 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The class for receiving notifications if an USB device has been attached or removed.

Notes:

Please make a subclass so you can put your own code in the events.

Use WinUSBNotificationMBS for Windows.

4.3.1 Methods

Constructor(vendor as integer = 0, product as integer = 0)

Plugin Version: 11.2 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Setup the notification system so you are informed about USB devices being attached or removed.

Notes:

You can use vendor and product IDs to limit the class to look only for devices with matching IDs.
LastError is set.

4.3.2 Properties

LastError as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The last error code.

Notes:

Zero is no error while other values are Mac OS error codes.
(Read and Write property)

4.3.3 Events

DeviceAdded(properties as dictionary, NewDevice as boolean)

Plugin Version: 11.2 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** This event is called when the device is added.

Notes:

You find properties like product and vendor in the dictionary.

This event can be called from the constructor for existing devices with NewDevice = false. Later events have NewDevice = true so you see that this is a new device.

DeviceRemoved(properties as dictionary, NewDevice as boolean)

Plugin Version: 11.2 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** This event is called when the device is removed.

Notes:

You find properties like product and vendor in the dictionary.

This event can be called from the constructor for existing devices with NewDevice = false. Later events have NewDevice = true so you see that this is a new device.

4.4 class WinUSBNotificationMBS

class WinUSBNotificationMBS

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The class for getting notifications about USB devices being connected or removed.

Notes: Use MacUSBNotificationMBS for Mac OS X.

4.4.1 Methods

Constructor

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The constructor initializes the notification engine.

Notes: On success WindowHandle and NotifyHandle is not zero.

4.4.2 Properties

NotifyHandle as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Internal handle to the notification system.

Notes: (Read and Write property)

WindowHandle as Integer

Plugin Version: 11.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Internal handle to the dummy window for receiving notification.

Notes: (Read and Write property)

4.4.3 Events

DeviceAdded(Name as string)

Plugin Version: 11.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** This event is called when a device has been attached.

Notes:

Name is typically for an USB device: `"\\?\USB# Vid_ 05ac& Pid_ 8403# 000000009833# { a5dcbf10-6530-11d2-901f-00c04fb951ed }"`.

That means you can get Vendor ID and Product ID from this string. Also the unique ID and finally the class GUID.

DeviceRemoved(Name as string)

Plugin Version: 11.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** This event is called when a device has been removed.

Notes:

Name is typically for an USB device: "\\?\USB# Vid_ 05ac& Pid_ 8403# 000000009833# { a5dcbf10-6530-11d2-901f-00c04fb951ed } ”.

That means you can get Vendor ID and Product ID from this string. Also the unique ID and finally the class GUID.

4.5 class WinUSBSetupPacketMBS

class WinUSBSetupPacketMBS

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The metadata needed to create an USB packet.

4.5.1 Properties

Index as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The meaning of this member varies according to the request.

Notes:

For an explanation of this member, see the Universal Serial Bus (USB) specification.
(Read and Write property)

Length as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The number of bytes to transfer.

Notes: (Read and Write property)

Request as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The device request.
Notes:

The values that are assigned to this member are defined in Table 9.3 of section 9.4 of the Universal Serial Bus (USB) specification.
(Read and Write property)

RequestType as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The request type.
Notes:

The values that are assigned to this member are defined in Table 9.2 of section 9.3 of the Universal Serial Bus (USB) specification (www.usb.org).
(Read and Write property)

Value as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The meaning of this member varies according to the request.
Notes:

For an explanation of this member, see the Universal Serial Bus (USB) specification.
(Read and Write property)

4.6 class WinUSBPipeInformationMBS

class WinUSBPipeInformationMBS

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The class for pipe details.

4.6.1 Properties

Interval as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The pipe interval.
Notes: (Read and Write property)

MaximumPacketSize as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The maximum size, in bytes, of the packets that are transmitted on the pipe.
Notes: (Read and Write property)

PipeId as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The pipe identifier (ID).
Notes: (Read and Write property)

PipeType as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The pipe type.
Notes: (Read and Write property)

4.6.2 Constants

UsbdPipeTypeBulk = 2

Plugin Version: 12.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** One of the pipe type constants.
Notes: Indicates that the pipe is a bulk transfer pipe.

UsbdPipeTypeControl = 0

Plugin Version: 12.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** One of the pipe type constants.

Notes: Indicates that the pipe is a control pipe.

UsbdPipeTypeInterrupt = 3

Plugin Version: 12.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** One of the pipe type constants.

Notes: Indicates that the pipe is a interrupt pipe.

UsbdPipeTypeIsochronous = 1

Plugin Version: 12.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** One of the pipe type constants.

Notes: Indicates that the pipe is an isochronous transfer pipe.

4.7 class WinUSBInterfaceDescriptionMBS

class WinUSBInterfaceDescriptionMBS

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** This class is used by USB clients to retrieve a USB-defined interface descriptor.

4.7.1 Properties

AlternateSetting as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The index number of the alternate setting of the interface.

Notes: (Read and Write property)

DescriptorType as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The descriptor type.
Notes:

Descriptor must be set to USB_INTERFACE_DESCRIPTOR_TYPE.
(Read and Write property)

InterfaceClass as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The class code of the device that the USB specification group assigned.
Notes: (Read and Write property)

InterfaceIndex as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The index of a string descriptor that describes the interface.
Notes:

For information about this field, see section 9.6.5 in the "Universal Serial Bus Revision 2.0" specification at USB Technology.
(Read and Write property)

InterfaceNumber as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The index number of the interface.
Notes: (Read and Write property)

InterfaceProtocol as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The protocol code of the device that the USB specification group assigned.

Notes: (Read and Write property)

InterfaceSubClass as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The subclass code of the device that the USB specification group assigned.

Notes: (Read and Write property)

Length as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The length, in bytes, of the descriptor.

Notes: (Read and Write property)

NumEndpoints as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The number of endpoints that are used by the interface, excluding the default status endpoint.

Notes: (Read and Write property)

4.8 class WinUSBMBS

class WinUSBMBS

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Provides access to any USB device on Windows.

Notes:

This class provides functions exposed by Winusb.dll, which user-mode client drivers and applications can use

to communicate with USB devices.
WinUSB functions require Windows XP or later.

see also

[http://msdn.microsoft.com/en-us/library/windows/hardware/ff540174\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/hardware/ff540174(v=vs.85).aspx)

and

[http://msdn.microsoft.com/en-us/library/windows/hardware/ff540046\(v=vs.85\).aspx# winusb](http://msdn.microsoft.com/en-us/library/windows/hardware/ff540046(v=vs.85).aspx# winusb)

4.8.1 Methods

AbortPipe(PipeID as integer)

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Aborts all of the pending transfers for a pipe. This is a synchronous operation.

Notes:

To reset a pipe associated with an endpoint in the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

PipeID: The identifier (ID) of the control pipe. The PipeID parameter is an 8-bit value that consists in a 7-bit address and a direction bit. This parameter corresponds to the EndpointAddress field in the endpoint descriptor.

Lasterror is zero on success and false on failure.

Constructor(path as string)

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Creates a WinUSB object for the device specified by a device path.

Notes:

Use WindowsDeviceMBS class to find USB devices and their device paths.

Lasterror is set.

On success DeviceHandle and Handle properties are not nil.

When Constructor is called, the policy settings of the interface are reset to the default values.

The Constructor call queries the underlying USB stack for various descriptors and allocates enough memory to store the retrieved descriptor data.

Constructor first retrieves the device descriptor and then gets the associated configuration descriptor. From the configuration descriptor, the call derives the associated interface descriptors and stores them in an array. The interfaces in the array are identified by zero-based indexes. An index value of 0 indicates the first interface (the default interface), a value of 1 indicates the second associated interface, and so on. Constructor parses the default interface descriptor for the endpoint descriptors and caches information such as the associated pipes or state specific data. The handle received in the InterfaceHandle parameter is a pointer to the memory block allocated for the first interface in the array.

If an application wants to use another interface on the device, it must call GetAssociatedInterface, specify the index of the interface, and retrieve a handle to the memory block allocated for the specified interface.

ControlTransfer(SetupPacket as WinUSBSetupPacketMBS, Buffer as MemoryBlock) as integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Transmits control data over a default control endpoint.

Notes:

To send a control request to the entire device or the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

SetupPacket: The 8-byte setup packet of type WinUSBSetupPacketMBS.

Buffer: A buffer that contains the data to transfer. Can be empty.

Returns the actual number of transferred bytes.

Lasterror property is set.

See also:

- 4.8.1 ControlTransfer(SetupPacket as WinUSBSetupPacketMBS, Buffer as String) as integer 234

ControlTransfer(SetupPacket as WinUSBSetupPacketMBS, Buffer as String) as integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Transmits control data over a default control endpoint.

Notes:

To send a control request to the entire device or the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

SetupPacket: The 8-byte setup packet of type WinUSBSetupPacketMBS.

Buffer: A buffer that contains the data to transfer. Can be empty.

Returns the actual number of transferred bytes.

Lasterror property is set.

See also:

- 4.8.1 ControlTransfer(SetupPacket as WinUSBSetupPacketMBS, Buffer as MemoryBlock) as integer 234

CurrentAlternateSetting as integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The current alternate interface setting for an interface.

Notes:

To get the current alternate setting in the first (default) interface on the device, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

Lasterror is set. You can set and get the value.
(Read and Write computed property)

DeviceSpeed as integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Queries device speed.

Notes:

Lasterror is set.

Use constants LowSpeed, HighSpeed and FullSpeed.

FlushPipe(PipeID as integer)

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Discards any data that is cached in a pipe. This is a synchronous operation.

Notes:

To reset a pipe associated with an endpoint in the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

PipeID: The identifier (ID) of the control pipe. The PipeID parameter is an 8-bit value that consists in a 7-bit address and a direction bit. This parameter corresponds to the EndpointAddress field in the endpoint descriptor.

Lasterror is zero on success and false on failure.

GetAssociatedInterface(index as integer) as WinUSBMBS

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Retrieves a WinUSBMBS object for an associated interface.

Notes:

This is a synchronous operation.

AssociatedInterfaceIndex: An index that specifies the associated interface to retrieve. A value of 0 indicates the first associated interface, a value of 1 indicates the second associated interface, and so on.

Returns new WinUSBMBS object.

The first associated interface is the interface that immediately follows the interface whose handle the WinUsb_Initialize routine retrieves.

Callers of GetAssociatedInterface can retrieve only one handle for each interface. If a caller attempts to retrieve more than one handle for the same interface, the routine will fail with an error of ERROR_ALREADY_EXISTS.

PipePolicyAllowPartialReads(PipeID as Integer) as boolean

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Whether to allow partial reads.

Notes:

The default value is true. To disable set to false.

Disabling AllowPartialReads causes the read requests to fail whenever the device returns more data (on bulk and interrupt IN endpoints) than the caller requested.

Enabling AllowPartialReads causes WinUSB to save or discard the extra data when the device returns more data (on bulk and interrupt IN endpoints) than the caller requested. This behavior is defined by setting the auto flush value.

Lasterror is set.

(Read and Write computed property)

PipePolicyAutoClearStall(PipeID as Integer) as boolean

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Whether WinUSB resets the pipe in order to automatically clear the stall condition.

Notes:

Data continues to flow on the bulk and interrupt IN endpoints again as soon as a new or a queued transfer arrives on the endpoint. This policy parameter does not affect control pipes.

Disabling AutoClearStall causes all transfers (that arrive to the endpoint after the stalled transfer) to fail until the caller manually resets the endpoint's pipe by calling ResetPipe.

Lasterror is set.

(Read and Write computed property)

PipePolicyAutoFlush(PipeID as Integer) as boolean

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Whether to use auto flush.

Notes:

The default value is false (zero). To enable auto flush set to true.

auto flush must be used with AllowPartialReads enabled. If AllowPartialReads is TRUE, the value of auto flush determines the action taken by WinUSB when the device returns more data than the caller requested. Disabling AllowPartialReads causes WinUSB to ignore the auto flush value.

Disabling auto flush with AllowPartialReads enabled causes WinUSB to save the extra data, add the data to the beginning of the caller's next read request, and send it to the caller in the next read operation.

Enabling auto flush with AllowPartialReads enabled causes WinUSB to discard the extra data remaining from the read request.

Lasterror is set.

(Read and Write computed property)

PipePolicyIgnoreShortPackets(PipeID as Integer) as boolean

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Enabling IgnoreShortPackets causes the host controller to not complete a read operation after it receives a short packet.

Notes:

Instead, the host controller completes the operation only after the host has read the specified number of bytes.

Disabling IgnoreShortPackets causes the host controller to complete a read operation when either the host has read the specified number of bytes or the host has received a short packet.

The default value is false. To enable set to true.

Lasterror is set.

(Read and Write computed property)

PipePolicyMaximumTransferSize(PipeID as Integer) as boolean

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Gets the maximum size of a USB transfer supported by WinUSB.

Notes:

This is a read-only policy.

Lasterror is set.

(Read and Write computed property)

PipePolicyPipeTransferTimeout(PipeID as Integer) as UInt32

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Specifies the time-out interval.

Notes:

The default value is zero.

The PipeTransferTimeout value specifies the time-out interval, in milliseconds. The host controller cancels transfers that do not complete within the specified time-out interval.

A value of zero (default) indicates that transfers do not time out because the host controller never cancels the transfer.

Lasterror is set.

(Read and Write computed property)

PipePolicyRawIO(PipeID as Integer) as boolean

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Whether to use Raw IO.

Notes:

The default value is false.

Enabling raw IO causes WinUSB to send data directly to the USB driver stack, bypassing WinUSB's queuing and error handling mechanism.

The buffers that are passed to ReadPipe must be configured by the caller as follows:

The buffer length must be a multiple of the maximum endpoint packet size.

The length must be less than or equal to the value of PipePolicyMaximumTransferSize.

Disabling raw IO (false) does not impose any restriction on the buffers that are passed to ReadPipe.

Lasterror is set.

(Read and Write computed property)

PipePolicyResetPipeOnResume(PipeID as Integer) as boolean

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Whether to reset pipe on resume.

Notes:

True indicates that on resume from suspend, WinUSB resets the endpoint before it allows the caller to send new requests to the endpoint.

Lasterror is set.

(Read and Write computed property)

PipePolicyShortPacketTerminate(PipeID as Integer) as boolean

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Whether the driver sends a zero-length packet at the end of every write request to the host controller.

Notes:

Lasterror is set.
(Read and Write computed property)

QueryInterfaceSettings(index as integer) as WinUSBInterfaceDescriptionMBS

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Retrieves the interface descriptor for the specified alternate interface settings for a particular interface handle.

Notes:

To retrieve the settings of the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

AlternateSettingNumber: A value that indicates which alternate settings to return. A value of 0 indicates the first alternate setting, a value of 1 indicates the second alternate setting, and so on.

Returns WinUSBInterfaceDescriptionMBS object on success or nil on any error.

QueryPipe(AlternateInterfaceNumber as Integer, PipeIndex as integer) as WinUSBPipeInformationMBS

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Retrieves information about the specified endpoint and the associated pipe for an interface.

Notes:

To query a pipe associated with an endpoint in the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

AlternateInterfaceNumber: A value that specifies the alternate interface to return the information for.

PipeIndex: A value that specifies the pipe to return information about. This value is not the same as the bEndpointAddress field in the endpoint descriptor. A PipeIndex value of 0 signifies the first endpoint that is associated with the interface, a value of 1 signifies the second endpoint, and so on. PipeIndex must be less than the value in the NumEndpoints field of the interface descriptor.

Returns pipe information or nil on error. Also sets Lasterror property.

The QueryPipe function does not retrieve information about the control pipe.

Each interface on the USB device can have multiple endpoints. To communicate with each of these endpoints, the bus driver creates pipes for each endpoint on the interface. The pipe indices are zero-based. Therefore for n number of endpoints, the pipes' indices are set from n-1. WinUsb_QueryPipe parses the configuration descriptor to get the interface specified by the caller. It searches the interface descriptor for the endpoint descriptor associated with the caller-specified pipe. If the endpoint is found, the function populates a WinUSBPipeInformationMBS object with information from the endpoint descriptor.

ReadPipeMemory(PipeID as Integer, BufferLength as Integer) as Memoryblock

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Reads data from the specified pipe.

Notes:

To read a pipe associated with an endpoint in the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

PipeID: PipeID corresponds to the EndpointAddress field in the endpoint descriptor. For information about the layout of this field, see Table 9-13 in "Universal Serial Bus Specification Revision 2.0" at USB Technology. In the EndpointAddress field, Bit 7 indicates the direction of the endpoint: 0 for OUT; 1 for IN.

BufferLength: The maximum number of bytes to read.

Returns memoryblock with the data read. This may be shorter than BufferLength.
LastError is set.

LastError is 0 if the operation succeeds. Otherwise, lasterror has the Windows error code.

If the data returned by the device is greater than a maximum transfer length, WinUSB divides the request into smaller requests of maximum transfer length and submits them serially. If the transfer length is not a multiple of the endpoint's maximum packet size (retrievable through the WinUSBPipeInformationMBS class's MaximumPacketSize member), WinUSB increases the size of the transfer to the next multiple of MaximumPacketSize.

USB packet size does not factor into the transfer for a read request. If the device responds with a packet that is too large for the client buffer, the behavior of the read request corresponds to the type of policy set on the pipe. If policy type for the pipe is ALLOW_PARTIAL_READS, WinUSB adds the remaining data to the beginning of the next transfer. If ALLOW_PARTIAL_READS is not set, the read request fails. For more information about policy types, see WinUSB Functions for Pipe Policy Modification.

When no data is available in the endpoint (pipe is empty), ReadPipe does not return until there is data in the pipe. If an error condition occurs or the application-specified timeout expires, ReadPipe always returns false. To determine the actual reason for that return value, always check LastError. For example, in these cases the GetLastError error value indicates the actual reason:

If the application specified a timeout value in the pipe policy and that timeout expires, ReadPipe returns false and LastError is ERROR_SEM_TIMEOUT.

If an error condition occurs while reading data from the pipe, ReadPipe returns false and LastError is ERROR_GEN_FAILURE.

ReadPipeString(PipeID as Integer, BufferLength as Integer) as string

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Reads data from the specified pipe.

Notes:

To read a pipe associated with an endpoint in the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

PipeID: PipeID corresponds to the EndpointAddress field in the endpoint descriptor. For information about the layout of this field, see Table 9-13 in "Universal Serial Bus Specification Revision 2.0" at USB Technology. In the EndpointAddress field, Bit 7 indicates the direction of the endpoint: 0 for OUT; 1 for IN.

BufferLength: The maximum number of bytes to read.

Returns string with the data read. This may be shorter than BufferLength.
LastError is set.

Lasterror is 0 if the operation succeeds. Otherwise, lasterror has the Windows error code.

If the data returned by the device is greater than a maximum transfer length, WinUSB divides the request into smaller requests of maximum transfer length and submits them serially. If the transfer length is not a multiple of the endpoint's maximum packet size (retrievable through the WinUSBPipeInformationMBS class's MaximumPacketSize member), WinUSB increases the size of the transfer to the next multiple of MaximumPacketSize.

USB packet size does not factor into the transfer for a read request. If the device responds with a packet that is too large for the client buffer, the behavior of the read request corresponds to the type of policy set on the pipe. If policy type for the pipe is ALLOW_PARTIAL_READS, WinUSB adds the remaining data to the beginning of the next transfer. If ALLOW_PARTIAL_READS is not set, the read request fails. For

more information about policy types, see WinUSB Functions for Pipe Policy Modification.

When no data is available in the endpoint (pipe is empty), ReadPipe does not return until there is data in the pipe. If an error condition occurs or the application-specified timeout expires, ReadPipe always returns false. To determine the actual reason for that return value, always check LastError. For example, in these cases the GetLastError error value indicates the actual reason:

If the application specified a timeout value in the pipe policy and that timeout expires, ReadPipe returns false and LastError is ERROR_SEM_TIMEOUT.

If an error condition occurs while reading data from the pipe, ReadPipe returns false and LastError is ERROR_GEN_FAILURE.

ResetPipe(PipeID as integer)

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Resets the data toggle and clears the stall condition on a pipe.

Notes:

To reset a pipe associated with an endpoint in the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

PipeID: The identifier (ID) of the control pipe. The PipeID parameter is an 8-bit value that consists in a 7-bit address and a direction bit. This parameter corresponds to the EndpointAddress field in the endpoint descriptor.

Lasterror is zero on success and false on failure.

WritePipe(PipeID as Integer, Buffer as MemoryBlock) as integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Writes data to a pipe.

Notes:

To write to a pipe associated with an endpoint in the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

PipeID: PipeID corresponds to the EndpointAddress field in the endpoint descriptor. For information about the layout of this field, see Table 9-13 in "Universal Serial Bus Specification Revision 2.0" at USB Technology. In the bEndpointAddress field, Bit 7 indicates the direction of the endpoint: 0 for OUT; 1 for IN.

Buffer: A buffer that contains the data to write.

Returns the actual number of bytes that were written to the pipe.
LastError is set. Zero for success.

To create a write request, your the application must allocate a buffer, fill it with the data that you want to write to the device, and send the buffer to the host controller by calling WritePipe.

The following restrictions apply to the size of the buffer if RAW_IO is set:

The buffer length must be a multiple of the maximum endpoint packet size.

The length must be less than or equal to the value of MAXIMUM_TRANSFER_SIZE retrieved by GetPipePolicy.

There are no restrictions on the size of the buffer if RAW_IO is not set as the pipe's policy type. If the size of the buffer is greater than the maximum transfer length reported by MAXIMUM_TRANSFER_SIZE, WinUSB divides the request into smaller requests and submits them serially to the host controller.

A write request that contains zero-length data is forwarded down the USB stack.

See also:

- 4.8.1 WritePipe(PipeID as Integer, Buffer as String) as integer

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WritePipe(PipeID as Integer, Buffer as String) as integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Writes data to a pipe.

Notes:

To write to a pipe associated with an endpoint in the first interface, use the WinUSBMBS object created with constructor. For all other interfaces, use the WinUSBMBS objects to the target interface, retrieved by GetAssociatedInterface.

PipeID: PipeID corresponds to the EndpointAddress field in the endpoint descriptor. For information about the layout of this field, see Table 9-13 in "Universal Serial Bus Specification Revision 2.0" at USB Technology. In the bEndpointAddress field, Bit 7 indicates the direction of the endpoint: 0 for OUT; 1 for IN.

Buffer: A buffer that contains the data to write.

Returns the actual number of bytes that were written to the pipe.

Lasterror is set. Zero for success.

To create a write request, your the application must allocate a buffer, fill it with the data that you want to write to the device, and send the buffer to the host controller by calling WritePipe.

The following restrictions apply to the size of the buffer if RAW_IO is set:

The buffer length must be a multiple of the maximum endpoint packet size.

The length must be less than or equal to the value of MAXIMUM_TRANSFER_SIZE retrieved by GetPipePolicy.

There are no restrictions on the size of the buffer if RAW_IO is not set as the pipe's policy type. If the size of the buffer is greater than the maximum transfer length reported by MAXIMUM_TRANSFER_SIZE, WinUSB divides the request into smaller requests and submits them serially to the host controller.

A write request that contains zero-length data is forwarded down the USB stack.

See also:

- 4.8.1 WritePipe(PipeID as Integer, Buffer as MemoryBlock) as integer 243

4.8.2 Properties

DeviceHandle as Ptr

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The internal handle to the device.

Notes: (Read and Write property)

Lasterror as Integer

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The last error code.

Notes: (Read and Write property)

Parent as WinUSBMBS

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** Parent usb object.

Notes:

Objects created with `GetAssociatedInterface` have here the parent object, so you can go back to main interface.

(Read and Write property)

Tag as Variant

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The attached value.

Notes:

You can use this property as you like.

(Read and Write property)

USBHandle as Ptr

Plugin Version: 12.2 Console & Web: Yes Mac: No, Win: Yes, Linux: No, . **Function:** The internal handle to the USB device.

Notes: (Read and Write property)

4.8.3 Constants

AutoSuspend = & h81

Plugin Version: 12.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** One of the power policy type constants.

FullSpeed = 2

Plugin Version: 12.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** One of the Device Speed Constants

Notes: Full Speed

HighSpeed = 3

Plugin Version: 12.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** One of the Device Speed Constants

Notes: High Speed

LowSpeed = 1

Plugin Version: 12.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** One of the Device Speed Constants

Notes: Low Speed

SuspendDelay = & h83

Plugin Version: 12.2 Console & Web: No Mac: No, Win: Yes, Linux: No, . **Function:** One of the power policy type constants.

4.9 class LinuxUSBBusMBS

class LinuxUSBBusMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The class for an USB Bus on Linux.

4.9.1 Methods

Buses as LinuxUSBBusMBS

Plugin Version: 11.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Returns the buses list.

Notes:

This function allows you to query the current buses and devices.
No device is opened and you just read through libusb data structures.

4.9.2 Properties

Devices as `LinuxUSBDeviceMBS`

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The devices attached to this bus.

Notes: (Read and Write property)

DirName as `String`

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The dir name.

Notes: (Read and Write property)

Location as `Integer`

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The location value.

Notes: (Read and Write property)

NextBus as `LinuxUSBBusMBS`

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The next bus.

Notes: (Read and Write property)

PrevBus as `LinuxUSBBusMBS`

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The previous bus.

Notes: (Read and Write property)

RootDevice as LinuxUSBDeviceMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The root device on this device.

Notes: (Read and Write property)

4.10 class LinuxUSBDeviceDescriptionMBS

class LinuxUSBDeviceDescriptionMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** A class for an USB device description.

Notes: Some linux installations require app to be run with sudo to allow reading USB device strings.

4.10.1 Properties

cdDevice as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The device version.

Notes:

Identifies the version of the device. This value is a binary-coded decimal number.
(Read and Write property)

cdUSB as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The USB version.

Notes:

Identifies the version of the USB specification that this descriptor structure complies with. This value is a binary-coded decimal number.
(Read and Write property)

DescriptorType as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The descriptor type.
Notes:

Specifies the descriptor type. Must be set to USB_DEVICE_DESCRIPTOR_TYPE.
(Read and Write property)

DeviceClass as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The device class.
Notes:

Specifies the class code of the device as assigned by the USB specification group.
See the kDeviceClass* constants.
(Read and Write property)

DeviceProtocol as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The device protocol.
Notes:

Specifies the protocol code of the device as assigned by the USB specification group.
(Read and Write property)

DeviceSubClass as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The device sub class.
Notes:

Specifies the subclass code of the device as assigned by the USB specification group.
(Read and Write property)

Manufacturer as String

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The manufacturer name string.

Notes:

A string containing the name of the manufacturer of this device.
Some linux installations require app to be run with sudo to allow reading USB device strings.
(Read and Write property)

MaxPacketSize0 as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The maximum packet size.

Notes:

Specifies the maximum packet size, in bytes, for endpoint zero of the device. The value must be set to 8, 16, 32, or 64.
(Read and Write property)

NumConfigurations as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The number of configurations.

Notes:

Specifies the total number of possible configurations for the device.
(Read and Write property)

Product as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The product ID for this device.

Notes:

Specifies the product identifier. This value is assigned by the manufacturer and is device-specific.
Only available when the device has been opened.

(Read and Write property)

ProductName as String

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The product name for this device.

Notes:

A string that contains a description of the device.

Some linux installations require app to be run with sudo to allow reading USB device strings.

(Read and Write property)

SerialNumber as String

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The serial number string for this device.

Notes:

A string that contains a manufacturer-determined serial number for the device.

Can be empty if the library does not know it.

Some linux installations require app to be run with sudo to allow reading USB device strings.

(Read and Write property)

Vendor as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The vendor code for this device.

Notes:

Specifies the vendor identifier for the device as assigned by the USB specification committee.

Only available when the device has been opened.

(Read and Write property)

4.10.2 Constants

kDeviceClassAudio = 1

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the device class constants.

Notes: Audio device.

kDeviceClassCOMM = 2

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the device class constants.

Notes: COMM device.

kDeviceClassDATA = 10

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the device class constants.

Notes: DATA device.

kDeviceClassHID = 3

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the device class constants.

Notes: HID device.

kDeviceClassHUB = 9

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the device class constants.

Notes: The device is an USB HUB.

kDeviceClassMassStorage = 8

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the device class constants.

Notes: A mass storage device.

kDeviceClassPerInterface = 0

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the device class constants.

kDeviceClassPrinter = 7

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the device class constants.

Notes: Printer device.

kDeviceClassVendorSpecific = 255

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the device class constants.

Notes: Some vendor specific device.

4.11 class LinuxHIDInterfaceMBS

class **LinuxHIDInterfaceMBS**

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The class for linux to connect to USB HID devices.

Notes:

The constructor does the initialisation of the HID Library and the destructor does the cleanup. This works with several instances, too.

The plugin tries to load one of libhid.so, libhid.so.0 or libhid.so.0.0.0 and one of libusb.so or libusb-0.1.so.4 from your /usr/lib folder (or where else the path environment variable points to).

4.11.1 Methods

Available as boolean

Plugin Version: 10.4 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Whether libhid is available.

Notes: Not all Linux distribution have libusb and libhid installed by default.

Close as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Closes the device.

Notes: Returns error code. See kError* constants.

DumpTreeToStderr as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Dumps the device tree to stderr.

Example:

```
dim h as LinuxHIDInterfaceMBS
// open device
call h.DumpTreeToStderr
```

Notes: Returns error code. See kError* constants.

DumpTreeToStdout as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Dumps the device tree to stdout.

Example:

```
dim h as LinuxHIDInterfaceMBS
// open device
call h.DumpTreeToStdout
```

Notes: Returns error code. See kError* constants.

ForceOpen(theInterface as integer, Vendor as integer, Product as integer, retries as integer) as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Opens the USB device with the given interface index, vendor and product codes.

Example:

```
dim h as new LinuxHIDInterfaceMBS

const vendor = & h7C0
const product = & h1500
const retries = 3

dim e as integer = h.ForceOpen(0, vendor, product, retries)
```

Notes:

Vendor or Product code can be kMatchAny (0) to match all devices.

You can use the MatchDevice event to learn which devices are there and return true there to select one.

Returns error code. See kError* constants.

GetInputReport(path() as integer, data as memoryblock, offset as integer, size as integer) as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Reads an input report.

Notes:

Path: The path to the endpoint.

Data: the memoryblock to store the data.

Offset: The offset where to start inside the memoryblock.

Size: the length of the data in the memoryblock.

Returns error code. See kError* constants.

InterruptRead(EndPoint as integer, mem as memoryblock, size as integer, timeout as integer) as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Reads data from an endpoint with timeout.

Notes:

EndPoint: The index of the endpoint.

mem: the memoryblock where to store the data.

size: the length of the data block to read.

timeout: the timeout in milliseconds.

Returns error code. See kError* constants.

InterruptWrite(EndPoint as integer, mem as memoryblock, size as integer, timeout as integer) as integer

Plugin Version: 11.0 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Writes data from an endpoint with timeout.

Notes:

EndPoint: The index of the endpoint.

mem: the memoryblock where to store the data.

size: the length of the data block to read.

timeout: the timeout in milliseconds.

Returns error code. See `kError*` constants.

IsInitialised as boolean

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Whether the HID library was initialised in the constructor.

Notes: Should always be true on linux.

IsOpen as boolean

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Whether the device is opened.

Notes: True if open, false if closed.

Open(theInterface as integer, Vendor as integer, Product as integer) as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Opens the USB device with the given interface index, vendor and product codes.

Example:

```
dim h as new LinuxHIDInterfaceMBS

const vendor = & h7C0
const product = & h1500

dim e as integer = h.Open(0, vendor, product)
```

Notes:

Vendor or Product code can be `kMatchAny (0)` to match all devices.

You can use the `MatchDevice` event to learn which devices are there and return true there to select one.

Returns error code. See `kError*` constants.

Reset

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Resets the device.
Notes: Returns error code. See kError* constants.

SetDebugLevel(level as integer)

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Sets the debug level.

Example:

```
dim h as new LinuxHIDInterfaceMBS
h.SetDebugLevel(h.kDebugWarnings)
```

SetDebugOutputToStderr

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Tells HID library to write debug output to stderr.

Example:

```
dim h as new LinuxHIDInterfaceMBS
h.SetDebugOutputToStderr
```

SetDebugOutputToStdout

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Tells HID library to write debug output to stdout.

Example:

```
dim h as new LinuxHIDInterfaceMBS
h.SetDebugOutputToStdout
```

SetOutputReport(path() as integer, data as memoryblock, offset as integer, size as integer) as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Writes data to the output.

Example:

```
dim h as LinuxHIDInterfaceMBS // your interface
dim n as integer // some value

const IOW_ PIPE_ IO_ PINS=0

dim m as MemoryBlock = NewMemoryBlock(4) // a device with 4 byte packets

m.Byte(3)=n
m.Byte(0)=IOW_ PIPE_ IO_ PINS

dim path(-1) as integer

path.Append & h00010000
path.Append 0

dim e as integer = h.SetOutputReport(path, m, 0, m.size)
```

Notes:

Path: The path to the endpoint.

Data: the data to write.

Offset: The offset where to start inside the memoryblock.

Size: the length of the data in the memoryblock.

Returns error code. See kError* constants.

See also:

- 4.11.1 SetOutputReport(path() as integer, data as string) as integer

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SetOutputReport(path() as integer, data as string) as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Writes data to the output.

Notes:

Path: The path to the endpoint.

Data: the data to write.

Returns error code. See kError* constants.

See also:

- 4.11.1 SetOutputReport(path() as integer, data as memoryblock, offset as integer, size as integer) as integer 260

WriteIdentificationToStderr as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Writes identification to stderr.

Notes: Returns error code. See kError* constants.

WriteIdentificationToStdout as integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Writes identification to stdout.

Notes: Returns error code. See kError* constants.

4.11.2 Properties

Handle as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The internal handle to the device connection.

Notes: (Read and Write property)

4.11.3 Events

MatchDevice(usbdev as LinuxUSBDeviceHandleMBS) as boolean

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** The event called to decide whether you want to connect to this device.

Example:

```
Function MatchDevice(usbdev as LinuxUSBDeviceHandleMBS) As boolean
MsgBox usbdev.Device.Descriptor.SerialNumber
End Function
```

Notes:

If several devices match the given vendor/product codes in Open/ForceOpen, you can decide here which one you accept.

Return true to accept a device.

4.11.4 Constants

kDebugAll = 31

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the debug level constants.

Notes: same as kDebugWarnings + kDebugTraces + kDebugNotices + kDebugErrors + kDebugAsserts

kDebugAsserts = 16

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the debug level constants.

kDebugErrors = 1

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the debug level constants.

kDebugNone = 0

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the debug level constants.

kDebugNotices = 4

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the debug level constants.

kDebugNoTraces = 23

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the debug level constants.

Notes: same as kDebugWarnings + kDebugNotices + kDebugErrors + kDebugAsserts

kDebugTraces = 8

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the debug level constants.

kDebugWarnings = 2

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the debug level constants.

kErrorAlreadyInitialised = 3

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Device already initialised.

kErrorDeviceAlreadyOpened = 9

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Device already opened.

kErrorDeviceNotFound = 7

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Device is not found.

kErrorDeviceNotOpened = 8

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Device is not opened.

kErrorFailAlloc = 17

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Failed to allocate.

kErrorFailClaimIFace = 11

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Failed to claim the interface.

kErrorFailCloseDevice = 10

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Failed to close device.

kErrorFailDetachDriver = 12

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Failed to detach driver.

kErrorFailFindBusses = 4

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Failed to find buses.

kErrorFailFindDevices = 5

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Failed to find devices.

kErrorFailGetReport = 20

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Get Report failed.

kErrorFailIntRead = 21

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

kErrorFailOpenDevice = 6

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Failed to open device.

kErrorFailSetReport = 19

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Set Report failed.

kErrorHIDDescShort = 14

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

kErrorInvalidParameter = 1

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Invalid Parameter.

kErrorNotFound = 22

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Device not found.

kErrorNotHIDDevice = 13

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Not a HID Device.

kErrorNotInitialised = 2

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Not initialised.

kErrorOutOfSpace = 18

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Out of space.

kErrorReportDescLong = 16

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

kErrorReportDescShort = 15

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

kErrorSuccess = 0

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** One of the error codes.

Notes: Success. No error.

kMatchAny = 0

Plugin Version: 10.3 Console & Web: No Mac: No, Win: No, Linux: Yes, . **Function:** The vendor/product ID to match any device.

4.12 class LinuxUSBDeviceHandleMBS

class LinuxUSBDeviceHandleMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The class for a device handle.

4.12.1 Properties

AltSetting as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Some alt setting value.

Notes: (Read and Write property)

Bus as LinuxUSBBusMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The bus for this device handle.

Notes: (Read and Write property)

Config as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** A config value.
Notes: (Read and Write property)

Device as LinuxUSBDeviceMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The device.
Notes: (Read and Write property)

InterfaceIndex as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The interface index.
Notes: (Read and Write property)

4.13 class LinuxUSBDeviceMBS

class LinuxUSBDeviceMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The class for an USB device information on Linux.

4.13.1 Methods

Children(index as integer) as LinuxUSBDeviceMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** Returns the child device with the given index.
Notes: Index is zero based and from 0 to ChildrenCount-1.

4.13.2 Properties

Bus as LinuxUSBBusMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The bus this device is attached to.

Notes: (Read and Write property)

ChildrenCount as Integer

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The number of child devices.

Notes: (Read and Write property)

Descriptor as LinuxUSBDeviceDescriptionMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The descriptor for this device.

Notes: (Read and Write property)

Filename as String

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The filename for this device.

Notes: (Read and Write property)

NextDevice as LinuxUSBDeviceMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The next device on the same level.

Notes: (Read and Write property)

PrevDevice as LinuxUSBDeviceMBS

Plugin Version: 10.3 Console & Web: Yes Mac: No, Win: No, Linux: Yes, . **Function:** The previous device on the same level.

Notes: (Read and Write property)

4.14 class MacHIDMBS**class MacHIDMBS**

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** A class to work with HID devices on Mac OS X.

4.14.1 Methods**Close**

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Closes the active connection.

Connect

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Creates a connection to the current device.

Example:

```
Function OpenUSBDevice() As boolean
dim i as integer
dim h as MacHIDMBS
```

```
h=FindDevice // see FindFirst example
```

```
if h=nil then
MsgBox "No XYZ device found."
Return false
```

```
end if

h.Connect

if h.Lasterror<>0 then
MsgBox "Failed to connect to USB Device."
Return false
end if

h.InstallCallback

Return true

End Function
```

Notes:

Lasterror is set.

Lasterror values for this function:

- 1 Not supported (Windows and Linux).
- 0 Everything okay.
- 1 Failed to get IOKit Plugin Interface for this IO object.
- 2 Failed to query interface
- 3 Failed to open interface
- 4 Failed to create async port
- 5 Failed to create async event source
- 6 no longer used
- 7 Failed to start queue

Disconnect

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Disconnects current USB device.

Notes: Lasterror is set.

FindFirstDevice as boolean

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Finds the first device and loads the properties.

Example:

```
Function FindDevice() As MyMacHIDMBS
dim h as MyMacHIDMBS
dim p as string
```

```
h=new MyMacHIDMBS // your own subclass of MacHIDMBS so you can get events
```

```
if h.FindFirstDevice then
```

```
  p=h.Product
  if p="MyProduct" then
  Return h
  end if
```

```
while h.FindNextDevice
```

```
  p=h.Product
  if p="MyProduct" then
  Return h
  end if
```

```
wend
```

```
end if
End Function
```

Notes: Returns true on success and false on failure.

FindNextDevice as boolean

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Finds next device.

Notes: Returns true on success and false on failure.

InstallCallback

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Installs the callback used for the event handler.

Notes:

Lasterror is set.
Please use after connect.

Manufacturer as string

Plugin Version: 7.5 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The manufacturer name.

Notes: On any error an empty string is returned.

Product as string

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The product string of the selected device.

Notes: Lasterror is set.

ProductID as integer

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The product ID of the selected device.

Notes: Lasterror is set.

SendMessage(data as string)

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Sends a message to the USB device.

Notes:

A connection must be open.

Lasterror is set. Lasterror -536854447 is an USB timeout.
See also:

- 4.14.1 SendMessage(ReportID as integer, data as string) 275

SendMessage(ReportID as integer, data as string)

Plugin Version: 8.6 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Sends a message to the USB device.

Notes:

A connection must be open.
Lasterror is set. Lasterror -536854447 is an USB timeout.
See also:

- 4.14.1 SendMessage(data as string) 274

SendMessageMemory(data as memoryblock, offset as integer, length as integer)

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Sends a message to the USB device.

Notes:

A connection must be open.
Lasterror is set. Lasterror -536854447 is an USB timeout.
Internally ReportID=0 is used.

While writing a crossplatform application we saw the following thing: The data buffer for the SendMessageMemory call must be 8 bytes long on Mac (with MacHIDMBS) and 61 bytes long for Windows (with WinHIDMBS) for our HID device. We have 1 byte for the ReportID and 60 data bytes where the first 8 are set like on the Mac. So if the calls fail on Windows, try with a higher length and check the WinHIDMBS.OutputReportByteLength property.

See also:

- 4.14.1 SendMessageMemory(ReportID as integer, data as memoryblock, offset as integer, length as integer) 276

SendMessageMemory(ReportID as integer, data as memoryblock, offset as integer, length as integer)

Plugin Version: 8.6 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Sends a message to the USB device.

Notes:

A connection must be open.

Lasterror is set. Lasterror -536854447 is an USB timeout.

See also:

- 4.14.1 SendMessageMemory(data as memoryblock, offset as integer, length as integer) 275

SerialNumber as string

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The serial number of the current selected device.

Notes: Lasterror is set.

VendorID as integer

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The vendor ID of the selected device.

Notes: Lasterror is set.

VersionNumber as integer

Plugin Version: 7.5 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** The device specific version number.

Notes:

Value can be anything.

On any error, 0 is returned.

4.14.2 Properties

Lasterror as Integer

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Last error code.
Notes:

0 is success.
 -1 means that the function is not available.
 else Mac OS USB error codes.
 error -536854447 is an USB timeout.
 (Read and Write property)

TimeOut as Integer

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: No, Linux: No, . **Function:** Timeout value to use for sending/reading USB data.
Notes: (Read and Write property)

4.14.3 Events

DeviceRemoved(result as integer)

Plugin Version: 8.7 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** The event called whenever the device is removed.
Notes: You need to call connect to install the callback which raises this event.

ReceivedData(data as string, size as integer)

Plugin Version: 6.4 Console & Web: No Mac: Yes, Win: No, Linux: No, . **Function:** Data was received and is available for processing.

Example:

```
Sub ReceivedData(data as string, size as integer)
dim m as MemoryBlock
dim s as string
```

```
dim n,i as integer

// Debug Output data received:

m=data

n=lenb(data)-1
for i=0 to n
s=s+str(m.Byte(i))+” ”
next

s=s+”= ”+data

System.DebugLog s

End Sub
```

Notes: Event is only called when InstallCallback was used and a connection is open.

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