

Logitech G-series Lua API V3.02

Overview and Reference

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Overview



The G-series Lua API is a set of functions using the Lua programming language and provides advanced scripting functionality for the G-series line of gaming keyboards.

This document assumes a working knowledge of the Lua programming language. Further information can be obtained from www.lua.org.

Every G-series Profile has a default Lua script bound to it which can be edited and customized. The script is invoked using an event handler, OnEvent. Users may examine the various events exposed in this handler to perform their desired actions.

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OnEvent

The **OnEvent()** function serves as the event handler for the script. You will need to implement this function.

```
function OnEvent(event, arg [, family])  
  
end
```

Parameters

event

String containing the event identifier.

arg

Argument correlating to the appropriate identifier.

family

Family of device creating the hardware event. Empty if event is not hardware specific. Use this if you need to distinguish input from multiple devices.

Family	Devices
"kbd"	Keyboard devices (G15, G11, G19, etc)
"lhc"	Left handed controllers (G13, etc)

Return Values

None

Remarks

The following is the list of identifiers and their arguments:

Event	arg	Description
"PROFILE_ACTIVATED"	None	Profile has been activated. This is the first event seen.
"PROFILE_DEACTIVATED"	None	Profile has been deactivated. This is the last event seen.
"G_PRESSED"	1=G1 18=G18 n = G _n	G Key pressed
"G_RELEASED"	1=G1 18=G18 n = G _n	G Key released
"M_PRESSED"	1=M1 2=M2 3=M3	M Key pressed
"M_RELEASED"	1=M1 2=M2	M Key released

Example

```
-- This is the primary event handler
-- You must implement this function

function OnEvent(event, arg)
    if (event == "PROFILE_ACTIVATED") then
        -- profile has been activated
    end

    if (event == "PROFILE_DEACTIVATED") then
        -- profile has been deactivated
    end

    if (event == "G_PRESSED" and arg == 1) then
        -- G1 has been pressed
    end

    if (event == "G_RELEASED" and arg == 1) then
        -- G1 has been released
    end

    if (event == "M_PRESSED" and arg == 1) then
        -- M1 has been pressed
    end

    if (event == "M_RELEASED" and arg == 1) then
        -- M1 has been released
    end
end
```

GetMKeyState

GetMKeyState() returns the current state of the M keys.

```
mkey GetMKeyState([family]);
```

Parameters

family

Optional family name of device if you want to distinguish between multiple attached devices. Default is "kbd".

Family	Devices
"kbd"	Keyboard devices (G15, G11, G19, etc)
"lhc"	Left handed controllers (G13, etc)

Return Values

mkey

1 = M1, 2 = M2, 3 = M3

Remarks

Example

```
-- Get the current M Key state  
current_mkey = GetMKeyState()
```

SetMKeyState

SetMKeyState() sets the current state of the M keys.

```
mkey SetMKeyState (mkey, [family]);
```

Parameters

mkey

1 = M1, 2 = M2, 3 = M3

family

Optional family name of device if you want to distinguish between multiple attached devices. Default is "kbd".

Family	Devices
"kbd"	Keyboard devices (G15, G11, G19, etc)
"lhc"	Left handed controllers (G13, etc)

Return Values

None

Remarks

Example

```
-- Set the current M Key state to M1 when G1 is pressed  
  
function OnEvent(event, arg)  
    if (event == "G_PRESSED" and arg == 1) then  
        SetMkeyState(1);  
    end  
end
```


Sleep

Sleep() will cause the script to pause for the desired amount of time.

```
Sleep( timeout );
```

Parameters

timeout

Total time to sleep in milliseconds.

Return Values

nil

Remarks

Scripting runs on separate thread than the main Profiler, so pausing the script will not affect it.

You can use this function to simulate delays.

Deactivation of the profiler will wait 1 second for the script to finish, after which the script will be forcefully aborted. Take precaution if using a long timeout.

Example

```
-- Sleeping for 20 milliseconds  
Sleep(20)
```

OutputLogMessage

OutputLogMessage() will send log messages into the script editor.

```
OutputLogMessage ( ... );
```

Parameters

message

Printf style, formatted string containing the message.

Return Values

nil

Remarks

Mirror of string.format().

You must manually insert a carriage return "\n" to denote end of line.

Example

```
-- Send out "Hello World"  
OutputLogMessage("Hello World %d\n", 2007)
```

GetRunningTime

GetRunningTime() returns the total number of milliseconds elapsed since the script has been running.

```
elapsed GetRunningTime();
```

Parameters

None

Return Values

elapsed

Integer value containing the elapsed time in milliseconds.

Remarks

You can use this to calculate timing in your script.

Example

```
-- Display the script running time  
OutputLogMessage("This script has been running for: %d ms",  
GetRunningTime())
```

GetDate

Use **GetDate()** to retrieve the formatted date

```
date GetDate ([format [, time]])
```

Parameters

format

Optional date format string.

time

Optional time table.

Return Values

date

A string or a table containing the user's machine's current date and time (or the time represented by time), formatted according to the given string format. If one wishes to supply your own format string, then it uses the same rules as strftime(). The special string *t tells the date() function to return a table.

Remarks

Mirror of os.date().

Example

```
-- Display the current date/time
OutputLogMessage("Today's date/time is: %s\n", GetDate())
```

ClearLog

The **ClearLog()** function clears the output window of the script editor.

```
ClearLog()
```

Parameters

None.

Return Values

nil

Remarks

None.

Example

```
-- Clear the script editor log  
  
OutputLogMessage("This message will self destruct in 2 seconds\n")  
Sleep(2000)  
ClearLog()
```

PressKey

The **PressKey()** function is used to simulate a keyboard key press.

```
PressKey( scancode [,scancode] );
```

```
PressKey( keyname [,keyname] );
```

Parameters

scancode

Specifies the numerical scancode of the key to be pressed.

keyname

Specifies the predefined keyname of the key to be pressed.

Return Values

nil

Remarks

If multiple keys are provided as arguments, all keys will be simulated with a press.

For scancode and keyname values, refer to Appendix A.

Example

```
-- Simulate "a" pressed using the scancode  
PressKey(30)
```

```
-- Simulate "a" pressed using the keyname  
PressKey("a")
```

```
-- Simulate "a" and "b" being pressed  
PressKey("a", "b")
```

ReleaseKey

The **ReleaseKey()** function is used to simulate a keyboard key release.

```
ReleaseKey( scancode [,scancode] );
```

```
ReleaseKey( keyname [,keyname] );
```

Parameters

scancode

Specifies the numerical scancode of the key to be pressed.

keyname

Specifies the predefined keyname of the key to be pressed.

Return Values

nil

Remarks

If multiple keys are provided as arguments, all keys will be simulated with a release.

For scancode and keyname values, refer to Appendix A.

Example

```
-- Simulate "a" released using the scancode
ReleaseKey(30)

-- Simulate "a" released using the keyname
ReleaseKey("a")

-- Simulate "a" and "b" being released
ReleaseKey("a", "b")
```

PressAndReleaseKey

The **PressAndReleaseKey()** function is used to simulate a keyboard key press followed by a release.

```
ReleaseKey( scancode [,scancode] );  
ReleaseKey( keyname [,keyname] );
```

Parameters

scancode

Specifies the numerical scancode of the key to be pressed.

keyname

Specifies the predefined keyname of the key to be pressed.

Return Values

nil

Remarks

If multiple keys are provided as arguments, all keys will be simulated with a press and a release.

For scancode and keyname values, refer to Appendix A.

Example

```
-- Simulate "a" pressed and released using the scancode  
PressAndReleaseKey(30)  
  
-- Simulate "a" pressed and released using the keyname  
PressAndReleaseKey("a")  
  
-- Simulate "a" and "b" being pressed and released  
PressAndReleaseKey("a", "b")
```


IsModifierPressed

The **IsModifierPressed()** function is used to determine if a particular modifier key is currently in a pressed state.

```
boolean IsModifierPressed ( keyname );
```

Parameters

keyname

Specifies the predefined keyname of the modifier key to be pressed. The name must be one of the following:

Modifier	Description
"alt", "ralt", "alt"	Left, right, or either Alt key
"lshift", "rshift", "shift"	Left, right, or either Shift key
"lctrl", "rctrl", "ctrl"	Left, right, or either Ctrl key

Return Values

True if the modifier key is currently pressed, false otherwise.

Remarks

None.

Example

```
-- Press a specific modifier
PressKey("lshift")

if IsModifierPressed("shift") then
    OutputLogMessage("shift is pressed.\n");
end

-- Release the key so it is no longer pressed
ReleaseKey("lshift")

if not IsModifierPressed("shift") then
    OutputLogMessage("shift is not pressed.\n");
end
```

PressMouseButton

The **PressMouseButton()** function is used to simulate a mouse button press.

```
PressMouseButton( button )
```

Parameters

button

Button identifier. Use the following table:

Button value	Location
1	Left Mouse Button
2	Middle Mouse Button
3	Right Mouse Button
4	X1 Mouse Button
5	X2 Mouse Button

Return Values

nil

Remarks

None

Example

```
-- Simulate left mouse button press  
PressMouseButton(1)  
  
-- Simulate right mouse button press  
PressMouseButton(3)
```

ReleaseMouseButton

The **PressMouseButton()** function is used to simulate a mouse button release.

```
ReleaseMouseButton( button )
```

Parameters

button

Button identifier. Use the following table:

Button value	Location
1	Left Mouse Button
2	Middle Mouse Button
3	Right Mouse Button
4	X1 Mouse Button
5	X2 Mouse Button

Return Values

nil

Remarks

None

Example

```
-- Simulate a left mouse button click (press and release)  
  
PressMouseButton(1)  
ReleaseMouseButton(1)
```

PressAndReleaseMouseButton

The **PressAndReleaseMouseButton()** function is used to simulate a mouse button press followed by a release.

```
PressAndReleaseMouseButton( button )
```

Parameters

button

Button identifier. Use the following table:

Button value	Location
1	Left Mouse Button
2	Middle Mouse Button
3	Right Mouse Button
4	X1 Mouse Button
5	X2 Mouse Button

Return Values

nil

Remarks

None

Example

```
-- Simulate a left mouse button click (press and release)  
PressAndReleaseMouseButton(1)
```

IsMouseButtonPressed

The **IsMouseButtonPressed()** function is used to determine if a particular mouse button is currently in a pressed state.

```
boolean IsMouseButtonPressed( button )
```

Parameters

button

Button identifier. Use the following table:

Button value	Location
1	Left Mouse Button
2	Middle Mouse Button
3	Right Mouse Button
4	X1 Mouse Button
5	X2 Mouse Button

Return Values

True if the button is currently pressed, false otherwise.

Remarks

None

Example

```
-- Press a mouse button
PressMouseButton(1)

if IsMouseButtonPressed(1) then
    OutputLogMessage("Left mouse button is pressed.\n");
end

-- Release the button so it is no longer pressed
ReleaseMouseButton(1)

if not IsMouseButtonPressed(1) then
    OutputLogMessage("Left mouse button is not pressed.\n");
```

MoveMouseTo

The **MoveMouseTo()** function is used to move the mouse cursor to an absolute position on the screen.

```
MoveMouseTo ( x, y, )
```

Parameters

X

Normalized X coordinate between 0 (farthest left) and 65535 (farthest right)

Y

Normalized y coordinate between 0 (farthest top) and 65535 (farthest bottom)

Return Values

nil

Remarks

If multiple monitors are present, use MoveMouseToVirtual.

Example

```
-- Move mouse to upper, left corner
MoveMouseTo(0, 0)

-- Move mouse to center of screen
MoveMouseTo(32767, 32767)

-- Move mouse to lower, right corner
MoveMouseTo(65535, 65535)
```

MoveMouseWheel

The **MoveMouseWheel()** function is used to simulate mouse wheel movement.

```
MoveMouseWheel ( click )
```

Parameters

click

Number of mouse wheel clicks.

Return Values

nil

Remarks

Positive values denote wheel movement upwards (away from user).

Negative values denote wheel movement downwards (towards user).

Example

```
-- Simulate mouse wheel 3 clicks up  
MoveMouseWheel(3)  
  
-- Simulate mouse wheel 1 click down  
MoveMouseWheel(-1)
```

MoveMouseRelative

The **MoveMouseRelative()** function is used to simulate relative mouse movement.

```
MoveMouseTo ( x, y, )
```

Parameters

X

Movement along the x-axis

Y

Movement along the y-axis

Return Values

nil

Remarks

Positive x values simulate movement to right.

Negative x values simulate movement to left.

Positive y values simulate movement downwards.

Negative y values simulate movement upwards.

Example

```
-- Simulate relative mouse movement upwards in 1 pixel increments
for i = 0, 50 do
  MoveMouseRelative(0, -1)
  Sleep(8)
end
```


MoveMouseToVirtual

The **MoveMouseToVirtual()** function is used to move the mouse cursor to an absolute position on a multi-monitor screen layout.

```
MoveMouseToVirtual( x, y, )
```

Parameters

X

Normalized X coordinate between 0 (farthest left) and 65535 (farthest right)

Y

Normalized y coordinate between 0 (farthest top) and 65535 (farthest bottom)

Return Values

nil

Remarks

If multiple monitors are present, use MoveMouseToVirtual.

Example

```
-- Move mouse to upper, left corner of virtual desktop
MoveMouseTo(0, 0)

-- Move mouse to center of virtual desktop
MoveMouseTo(32767, 32767)

-- Move mouse to lower, right corner of virtual desktop
MoveMouseTo(65535, 65535)
```

GetMousePosition

The **GetMousePosition()** function returns the normalized coordinates of the current mouse cursor location.

```
x, y GetMousePosition( )
```

Parameters

None

Return Values

X

Normalized X coordinate between 0 (farthest left) and 65535 (farthest right)

Y

Normalized y coordinate between 0 (farthest top) and 65535 (farthest bottom)

Remarks

Example

```
-- Get the current mouse cursor position  
x, y = GetMousePosition();  
  
OutputLogMessage("Mouse is at %d, %d\n", x, y);
```

OutputLCDMessage

The **OutputLCDMessage()** function is used to add a line of text on to the LCD.

```
OutputLCDMessage( text [,timeout] )
```

Parameters

text

String to display

timeout

Timeout in milliseconds, after which the message will disappear

Return Values

nil

Remarks

Up to 4 lines of text can be displayed at once. The default timeout is 1 second.

Example

```
-- Display some text with default timeout
OutputLCDMessage("Hello world")

-- Display some text for 2 seconds
OutputLCDMessage("Hello world", 2000)
```

ClearLCD

The **ClearLCD()** function clears the script display on the LCD.

```
ClearLCD ( )
```

Parameters

none

Return Values

nil

Remarks

Example

```
-- Clear the LCD and then display 2 lines of text
ClearLCD ( )
OutputLCDMessage("Hello world1")
OutputLCDMessage("Hello world2")
```

PlayMacro

The **PlayMacro** () function is used to play an existing macro.

```
PlayMacro( macroname )
```

Parameters

macroname

Name of existing macro belonging to the current profile.

Return Values

nil

Remarks

If the function is called while another script macro is playing, no action is taken. In other words, only one script macro may be playing at any given time.

If the function is called while the same script macro is playing, the macro is queued.

Example

```
-- Play an existing macro  
PlayMacro("my macro");
```

AbortMacro

The **AbortMacro()** function is used to abort any macro started from a script.

```
AbortMacro ( )
```

Parameters

None

Return Values

nil

Remarks

Any keys still pressed after a call to PlayMacro will be released. Macros playing outside the script will continue to play.

Example

```
-- Start a macro  
PlayMacro("my macro")  
  
-- Wait for 100ms and then abort any playing macro  
AbortMacro()
```

IsKeyLockOn

The **IsKeyLockOn()** function used to determine if a particular lock button is currently in an enabled state .

```
IsKeyLockOn ( key )
```

Parameters

key

key name. Use the following table:

Key name	Location
"scrolllock"	Scroll Lock
"capslock"	Caps Lock
"numlock"	Number Lock

Return Values

True if the lock is currently enabled, false otherwise.

Remarks

None.

Example

```
-- Check if the numlock is on and turn it off if it is
if ( IsKeyLockOn("numlock" ) then
    PressAndReleaseKey("numlock");
end
```

SetBacklightColor

The **SetBacklightColor()** function is used to set the custom backlight color of the device (if the device supports custom backlighting).

```
SetBacklightColor(red, green, blue, [family])
```

Parameters

red

Red intensity (0 – 255)

green

Green intensity (0 – 255)

blue

Blue intensity (0 – 255)

family

Optional family name of device if you want to distinguish between multiple attached devices. Default is "kbd".

Family	Devices
"kbd"	Keyboard devices (G15, G11, G19, etc)
"lhc"	Left handed controllers (G13, etc)

Return Values

nil

Remarks

None.

Example

```
-- Set the backlight to red
SetBacklightColor(255, 0, 0);

-- Set the backlight color for all left handed controllers to blue
SetBacklightColor(0, 0, 255, "lhc");
```

OutputDebugMessage

OutputDebugMessage() will send log messages to the Windows debugger.

```
OutputDebugMessage ( . . . );
```

Parameters

message

Printf style, formatted string containing the message.

Return Values

nil

Remarks

Mirror of string.format().

You must manually insert a carriage return "\n" to denote end of line.

Use tools like Dbg View for viewing these messages.

Example

```
-- Send out "Hello World"  
OutputDebugMessage("Hello World %d\n", 2007)
```

Standard Lua 5.1 Libraries

The following standard library functions are supported:

- string.byte
 - string.char
 - string.dump
 - string.find
 - string.format
 - string.gmatch
 - string.gsub
 - string.len
 - string.lower
 - string.match
 - string.rep
 - string.reverse
 - string.sub
 - string.upper
 - table.concat
 - table.insert
 - table.maxn
 - table.remove
 - table.sort
 - math.abs
 - math.acos
 - math.asin
 - math.atan
 - math.atan2
 - math.ceil
 - math.cos
 - math.deg
 - math.exp
 - math.floor
 - math.fmod
 - math.frexp
 - math.huge
 - math.ldexp
 - math.log
 - math.log10
 - math.max
 - math.min
 - math.modf
 - math.pi
 - math.pow
 - math.rad
 - math.random
 - math.randomseed
 - math.sin
 - math.sinh
 - math.sqrt
 - math.tan
 - math.tanh
-

Appendix A

Table of scancodes and keynames used in **PressKey()**, **ReleaseKey()**, **IsModifierPressed()**.

Keyname	Scancode (hex)
"escape"	0x01
"f1"	0x3b
"f2"	0x3c
"f3"	0x3d
"f4"	0x3e
"f5"	0x3f
"f6"	0x40
"f7"	0x41
"f8"	0x42
"f9"	0x43
"f10"	0x44
"f11"	0x57
"f12"	0x58
"f13"	0x64
"f14"	0x65
"f15"	0x66
"f16"	0x67
"f17"	0x68
"f18"	0x69
"f19"	0x6a
"f20"	0x6b
"f21"	0x6c
"f22"	0x6d
"f23"	0x6e
"f24"	0x76
"printscreen"	0x137
"scrolllock"	0x46
"pause"	0x146
"tilde"	0x29
"1"	0x02
"2"	0x03
"3"	0x04
"4"	0x05
"5"	0x06
"6"	0x07
"7"	0x08
"8"	0x09
"9"	0x0a
"0"	0x0b
"minus"	0x0c
"equal"	0x0d
"backspace"	0x0e
"tab"	0x0f
"q"	0x10
"w"	0x11
"e"	0x12
"r"	0x13
"t"	0x14
"y"	0x15

"u"	0x16
"l"	0x17
"o"	0x18
"p"	0x19
"lbracket"	0x1a
"rbracket"	0x1b
"backslash"	0x2b
"capslock"	0x3a
"a"	0x1e
"s"	0x1f
"d"	0x20
"f"	0x21
"g"	0x22
"h"	0x23
"j"	0x24
"k"	0x25
"l"	0x26
"semicolon"	0x27
"quote"	0x28
"enter"	0x1c
"lshift"	0x2a
"non_us_slash"	0x56
"z"	0x2c
"x"	0x2d
"c"	0x2e
"v"	0x2f
"b"	0x30
"n"	0x31
"m"	0x32
"comma"	0x33
"period"	0x34
"slash"	0x35
"rshift"	0x36
"lctrl"	0x1d
"lgui"	0x15b
"lalt"	0x38
"spacebar"	0x39
"ralt"	0x138
"rgui"	0x15c
"appkey"	0x15d
"rctrl"	0x11d
"insert"	0x152
"home"	0x147
"pageup"	0x149
"delete"	0x153
"end"	0x14f
"pagedown"	0x151
"up"	0x148
"left"	0x14b
"down"	0x150
"right"	0x14d
"numlock"	0x45
"numslash"	0x135

"numstar"	0x37
"numminus"	0x4a
"num7"	0x47
"num8"	0x48
"num9"	0x49
"numplus"	0x4e
"num4"	0x4b
"num5"	0x4c
"num6"	0x4d
"num1"	0x4f
"num2"	0x50
"num3"	0x51
"numenter"	0x11c
"num0"	0x52
"numperiod"	0x53
