**Embrava SDK for MAC Reference Manual v1.0.4**

Version History

|  |  |  |
| --- | --- | --- |
| **SNO** | **Version** | **Changes** |
| 1 | 1.0.0 | Initial version |
| 2 | 1.0.2 | Support to Nameplate added |
| 3. | 1.0.4 | Blynclight SKU191 added |

Contents

[Introduction 4](#_Toc492465388)

[Device Types 4](#_Toc492465389)

[Functions exported by the static library 4](#_Toc492465390)

[FindDevices 4](#_Toc492465391)

[ReleaseDevices 5](#_Toc492465392)

[TurnOffLight 5](#_Toc492465393)

[TurnOnRedLight 5](#_Toc492465394)

[TurnOnGreenLight 6](#_Toc492465395)

[TurnOnBlueLight 6](#_Toc492465396)

[TurnOnCyanLight 6](#_Toc492465397)

[TurnOnMagentaLight 7](#_Toc492465398)

[TurnOnYellowLight 7](#_Toc492465399)

[TurnOnWhiteLight 7](#_Toc492465400)

[TurnOnOrangeLight 8](#_Toc492465401)

[TurnOnRGBLights 8](#_Toc492465402)

[SetLightDim 8](#_Toc492465403)

[ClearLightDim 9](#_Toc492465404)

[SelectLightFlashSpeed 9](#_Toc492465405)

[StartLightFlash 10](#_Toc492465406)

[StopLightFlash 10](#_Toc492465407)

[SelectMusicToPlay 10](#_Toc492465408)

[StartMusicPlay 11](#_Toc492465409)

[StopMusicPlay 11](#_Toc492465410)

[SetMusicRepeat 12](#_Toc492465411)

[ClearMusicRepeat 12](#_Toc492465412)

[SetMusicVolume 12](#_Toc492465413)

[SetVolumeMute 13](#_Toc492465414)

[ClearVolumeMute 13](#_Toc492465415)

[GetDeviceUniqueId 14](#_Toc492465416)

# Introduction

This document explains the application programming interface between the Static C library (libblynclightcontrol.a API library) and the front end MAC application written in Objective-C. This API can be used to access the Blync USB devices from the application linking this Library. This SDK provides a demo test application which links this static library and the application has been built with Xcode 7.2 with OSX 10.9 SDK and target set to OSX 10.9. This test application can be built using latest OSX SDK say 10.11 or 10.12 also. The static library has been built with OSX 10.9 SDK.

# Device Types

There are 9 types of Blync USB Devices available.

1. BLYNCUSB10 - has multicolor light functions (Older device versions prior to BLYNCUSB30)
2. BLYNCUSB17/20 - has multicolor light functions (Older device versions prior to BLYNCUSB30)
3. BLYNCUSB30/40 - has multicolor light functions named as Blynclight Standard
4. BLYNCUSB30S/40S - has multicolor light and music functions named as Blynclight Plus
5. BLYNC-MINI - has multicolor light and music functions named as Blynclight Mini
6. BLYNC-WIRELESS - has multicolor light and music with wireless functionality named as Blynclight Wireless
7. BLYNC-USB-HEADETS - headset with multicolor light functions named as Lumena 110 and Lumena 120
8. BLYNC-BLUETOOTH-HEADETS - headset with multicolor light functions named as Lumena 210 and Lumena 220
9. Embrava Embedded Device – Wireless device with multicolor light functions
10. Embrava Nameplate Device (BLNMPLT40) – Nameplate device with status light support

The device type can be identified by a byte variable “byDeviceType” which is member of DeviceInfo class.

# Functions exported by the static library

The API comprises 3 files. 1. Libblynclightcontrol.lib, blynclightcontrol.h and constants.h files. The functions exported by the static library are declared in the blynclightcontrol.h header file.

## FindDevices

Method: unsigned char FindDevices (int \*pnNumberOfBlyncDevices);

Description: This function searches for the Embrava devices connected to the System’s USB ports. This function call can be used for all types of devices and reserves resources for device access.

Arguments: pointer to int variable which represents the number of Blynclight devices connected to the system.

Return Value: unsigned char value 1 means function call succeeds 0 means a hardware error.

## ReleaseDevices

Method: void ReleaseDevices ()

Description: This function releases the resources reserved for the devices up on calling the FindDevices function.

Arguments: None

Return Value: None

## TurnOffLight

Method: int TurnOffLight (Byte byDeviceIndex)

Description: This function resets the light to OFF on Blync device specified by byDeviceIndex.

This function call can be used for all types of devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

value of byDeviceIndex.

## TurnOnRedLight

Method: int TurnOnRedLight (Byte byDeviceIndex)

Description: This function lights the Blync device specified by byDeviceIndex in red color.

This function call can be used for all types of devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## TurnOnGreenLight

Method: int TurnOnGreenLight (Byte byDeviceIndex)

Description: This function lights the Blync device specified by byDeviceIndex in green color.

This function call can be used for all types of devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## TurnOnBlueLight

Method: TurnOnBlueLight (Byte byDeviceIndex)

Description: This function lights the Blync device specified by byDeviceIndex in blue color.

This function call can be used for all types of devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## TurnOnCyanLight

Method: int TurnOnCyanLight (Byte byDeviceIndex)

Description: This function lights the Blync device specified by byDeviceIndex in cyan color.

This function call can be used for all types of devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## TurnOnMagentaLight

Method: int TurnOnMagentaLight (Byte byDeviceIndex)

Description: This function lights the Blync device specified by byDeviceIndex in magenta (purple) color. This function call can be used for all types of devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## TurnOnYellowLight

Method: int TurnOnYellowLight (Byte byDeviceIndex)

Description: This function lights the Blync device specified by byDeviceIndex in yellow color. This function call can be used for all types of devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## TurnOnWhiteLight

Method: int TurnOnWhiteLight (Byte byDeviceIndex)

Description: This function lights the Blync device specified by byDeviceIndex in white color. This function call can be used for all types of devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## TurnOnOrangeLight

Method: int TurnOnOrangeLight (Byte byDeviceIndex)

Description: This function lights the Blync device specified by byDeviceIndex in orange color. This function call can be used only for the following types of devices namely Blynclight Standard, Blynclight Plus, Blynclight Mini, Blynclight Wireless, Lumena Headset devices an Embrava Embedded Devices

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## TurnOnRGBLights

Method: int TurnOnRGBLights (Byte byDeviceIndex, byte byRedLevel, byte byGreenLevel, byte byBlueLevel)

Description: This function lights the Blync device specified by byDeviceIndex in the color which represents the combination of the red, green and blue color. The brightness levels of each color can be adjusted by the corresponding red, green, and blue level levels. This function call can be used only for the following types of devices namely BlyncUSB30 (Blynclight Standard), BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset (110 and 120) devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

byte byRedLevel – red color brightness level which ranges from 0 to 255

byte byGreenLevel – green color brightness level which ranges from 0 to 255

byte byBlueLevel – blue color brightness level which ranges from 0 to 255

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## SetLightDim

Method: int SetLightDim (Byte byDeviceIndex)

Description: This function makes the current light brightness to dim by 50% of the full brightness. This function call can be used only for the following types of devices namely BlyncUSB30 (Blynclight Standard), BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset (110 and 120) devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## ClearLightDim

Method: int ClearLightDim (Byte byDeviceIndex)

Description: This function resets the light dimness and bring the light brightness to full level. This function call can be used only for the following types of devices namely BlyncUSB30 (Blynclight Standard), BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset (110 and 120) devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## SelectLightFlashSpeed

Method: int SelectLightFlashSpeed (Byte byDeviceIndex, byte bySelectedFlashSpeed)

Description: This function selects the speed at which the light will blink. This function call can be used only for the following types of devices namely BlyncUSB30 (Blynclight Standard), BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset (110 and 120) devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

byte bySelectedFlashSpeed – blinking speed, which takes three values

for low speed, bySelectedFlashSpeed = 0x01

for medium speed, bySelectedFlashSpeed = 0x02

for high speed, bySelectedFlashSpeed = 0x03

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## StartLightFlash

Method: int StartLightFlash (Byte byDeviceIndex)

Description: This function starts the light to blink at the specified blinking speed. This function call can be used only for the following types of devices namely BlyncUSB30 (Blynclight Standard), BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset (110 and 120) devices. The blinking speed would be specified by SelectLightFlashSpeed function call.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## StopLightFlash

Method: int StopLightFlash (Byte byDeviceIndex)

Description: This function stops blinking the light. This function call can be used only for the following types of devices namely BlyncUSB30 (Blynclight Standard), BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset (110 and 120) devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## SelectMusicToPlay

Method: int SelectMusicToPlay (Byte byDeviceIndex, byte bySelectedMusic)

Description: This function selects the music to be played on the Blync light. This function call can be used only for the following types of devices namely BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices. The BlynUSB30S can play 10 sounds, Blynclight Mini and Wireless devices can play 14 sounds.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

byte bySelectedMusic - The BlynUSB30S can play 10 sounds, for which the value of bySelectedMusic ranges from 1 to 10. The Blynclight Mini and Wireless devices can play 14 sounds, for which the value of bySelectedMusic ranges from 1 to 14.

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## StartMusicPlay

Method: int StartMusicPlay (Byte byDeviceIndex)

Description: This function starts playing the selected music on the Blync light. This function call can be used only for the following types of devices namely BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## StopMusicPlay

Method: int StopMusicPlay (Byte byDeviceIndex)

Description: This function stops playing the music that is being played on the Blync light. This function call can be used only for the following types of devices namely BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## SetMusicRepeat

Method: int SetMusicRepeat (Byte byDeviceIndex)

Description: This function enables the repeated playing of the music that is being played on the Blync light, till the repeat flag gets cleared. This function call can be used only for the following types of devices namely BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## ClearMusicRepeat

Method: int ClearMusicRepeat (Byte byDeviceIndex)

Description: This function clears repeated playing of the music that is being played on the Blync light, so that any music to be played will be played once. This function call can be used only for the following types of devices namely BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## SetMusicVolume

Method: int SetMusicVolume (Byte byDeviceIndex, byte byVolumeLevel)

Description: This function sets the volume level of the music that is being played on the Blync light. This function call can be used only for the following types of devices namely BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

byte byVolumeLevel – this represents the volume level to be set. There are 10 volume levels supported by the device from 10% to 100% in steps of 10%. Value of byVolumeLevel ranges from 1 to 10. If byVolumeLevel = 1, the volume level will be set to 10%. If byVolumeLevel = 2, the volume level will be 20%, if byVolumeLevel = 10, the volume level will be set as 100 %.

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## SetVolumeMute

Method: int SetVolumeMute (Byte byDeviceIndex)

Description: This function mutes the volume level of the music that is being played on the Blync light, so that if any music is being played it will not be audible. But this doesn’t stop playing the music. This function call can be used only for the following types of devices namely BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example, if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## ClearVolumeMute

Method: int ClearVolumeMute (Byte byDeviceIndex)

Description: This function clears the volume mute on Blync light. So that if any music is being played it will be audible. This function call can be used only for the following types of devices namely BlyncUSB30S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## GetDeviceUniqueId

Method: public uint GetDeviceUniqueId(Byte byDeviceIndex);

Description: This function gets the devices unique serial number which is the hard coded value with the device as device unique id. The devices supporting this unique id feature are version 40 of Blynclight Plus, Standard, Mini, Wireless and Embrava Embedded devices.

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: uint value – non zero value represents device unique id.

If the unique id is returned as 0 then it means that device is not supporting the unique id feature.

## ClearTextOnNameDisplay

Method: int ClearTextOnNameDisplay (Byte byDeviceIndex)

Description: This function clears the text displayed on the Embrava Name Plate

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## DisplayTextOnNameDisplay

Method: int DisplayTextOnNameDisplay(Byte byDeviceIndex, NSString \*nameString)

Description: This function displays the text using default font and size

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

NSString \*nameString – a null terminated string

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## DisplayTextOnNameDisplayUsingPixelControlNameAdjust

Method: int DisplayTextOnNameDisplayUsingPixelControlNameAdjust(Byte byDeviceIndex, NSString \*nameString, int nFontType);

Description: This function displays the text using custom font and size

Arguments: Byte byDeviceIndex - index of the device in the device object list

For example if there is only one device, byDeviceIndex = 0

If there are n number of devices, to access the nth device, byDeviceIndex = (n - 1)

NSString \*nameString – a null terminated string

int nFontType – an integer value that’s obtained from calling the function GetFontTypeFromFontDetails

Return Value: int value – 0 means no error, any non-zero value indicates an error.

## GetFontTypeFromFontDetails

Method: Byte GetFontTypeFromFontDetails(NSString \*fontType, NSString \*fontSize);

Description: This function gets the font type value that has to be used in the DisplayTextOnNameDisplayUsingPixelControlNameAdjust

Arguments: NSString \*fontTye - String that represents font name

This argument is mentioned as pointer and the applicable values are

FONT\_CALIBRI, FONT\_TIMES\_NEW\_ROMAN, FONT\_CENTURY\_GOTHIC;

NSString \*fontSize – String that represents font size.

This argument is mentioned as pointer and the applicable values are

FONT\_SIZE\_18PT, FONT\_SIZE\_20PT

Return Value: a byte value that represents fonttype this has to be used in the DisplayTextOnNameDisplayUsingPixelControlNameAdjust function call.