**Embrava SDK Reference Manual v1.0.2**

Version History

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| --- | --- | --- |
| **SNO** | **Version** | **Changes** |
| 1 | 1.0.0 | Initial version |
| 2 | 1.0.1 | BLYNUSB40/40S support added. |
| 3 | 1.0.2 | Plantronics Status Indicator, SKU 191 Plus, Std, Mini devices support added |

Contents

[Introduction 4](#_Toc499906207)

[Device Types 4](#_Toc499906208)

[Methods defined in the Embrava API 5](#_Toc499906209)

[InitBlyncDevices 5](#_Toc499906210)

[CloseDevices 5](#_Toc499906211)

[ResetLight 5](#_Toc499906212)

[TurnOnRedLight 6](#_Toc499906213)

[TurnOnGreenLight 6](#_Toc499906214)

[TurnOnBlueLight 6](#_Toc499906215)

[TurnOnCyanLight 7](#_Toc499906216)

[TurnOnMagentaLight 7](#_Toc499906217)

[TurnOnYellowLight 7](#_Toc499906218)

[TurnOnWhiteLight 8](#_Toc499906219)

[TurnOnOrangeLight 8](#_Toc499906220)

[TurnOnRGBLights 8](#_Toc499906221)

[SetLightDim 9](#_Toc499906222)

[ClearLightDim 9](#_Toc499906223)

[SelectLightFlashSpeed 10](#_Toc499906224)

[StartLightFlash 10](#_Toc499906225)

[StopLightFlash 10](#_Toc499906226)

[SelectMusicToPlay 11](#_Toc499906227)

[StartMusicPlay 11](#_Toc499906228)

[StopMusicPlay 12](#_Toc499906229)

[SetMusicRepeat 12](#_Toc499906230)

[ClearMusicRepeat 12](#_Toc499906231)

[SetMusicVolume 13](#_Toc499906232)

[SetVolumeMute 13](#_Toc499906233)

[ClearVolumeMute 14](#_Toc499906234)

[GetDeviceUniqueId 14](#_Toc499906235)

# Introduction

This document explains the application programming interface to access Embrava Devices so that developers can use this SDK to develop their own application using this API. Embrava API is defined as pure C API and written in embravaapi.c of the SDK. The declarations of these API functions are written in embravaapi.h Please refer Readme.txt file supplied with the SDK for more information such as API and Test Application.

# Device Types

There are 13 types of Embrava (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 - has multicolor light functions named as Blynclight Standard
4. BLYNCUSB30S - has multicolor light and music functions named as Blynclight Plus
5. BLMINI30 - has multicolor light and music functions named as Blynclight Mini
6. BLWRLS30 - 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. BLYNCUSB40 – same as BLYNUSB30 with unique ID feature
11. BLYNCUSB40S – same as BLYNUSB30S with unique ID feature and Plantronics Status Indicator Device also has this id BLYNCUSB40S
12. BLMINI40 – Same as BLMIN30 with unique ID feature
13. BLWRLS40 – same as BLWRLS30 with unique ID feature and unique pairing feature

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

# Methods defined in the Embrava API

## InitBlyncDevices

Method: void InitBlyncDevices(int \*PnNumberOfBlyncDevices, SDeviceInfo aosDeviceInfo[]);

Description: This function searches for the Blync devices connected to the System’s USB ports and opens the device handle for further write access. This function call can be used for all types of devices.

Arguments: int \*PnNumberOfBlyncDevices – pointer to integer that represents the number of Blync devices detected in the System.

SDeviceInfo aosDeviceInfo[] – array of structure of type SDeviceInfo, on return from this function this array of structure holds the device information for each detected Blync device. The array size is hard coded as maximum number of Blync devices connected simultaneously on the system. This maximum number of devices is set as 10.

Return Value: None

## CloseDevices

Method: void CloseDevices (int nNumberOfDevices)

Description: This function closes the handles of all the devices opened already. This function call can be used for all types of devices.

Arguments: int nNumberOfDevices - Number of devices detected and have open handles for write access.

Return Value: None

## ResetLight

Method: bool ResetLight (int nDeviceIndex)

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

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

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## TurnOnRedLight

Method: bool TurnOnRedLight (int nDeviceIndex)

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

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

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## TurnOnGreenLight

Method: bool TurnOnGreenLight (int nDeviceIndex)

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

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

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## TurnOnBlueLight

Method: bool TurnOnBlueLight (int nDeviceIndex)

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

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

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## TurnOnCyanLight

Method: bool TurnOnCyanLight (int nDeviceIndex)

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

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

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## TurnOnMagentaLight

Method: bool TurnOnMagentaLight (int nDeviceIndex)

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

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## TurnOnYellowLight

Method: bool TurnOnYellowLight (int nDeviceIndex)

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

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## TurnOnWhiteLight

Method: bool TurnOnWhiteLight (int nDeviceIndex)

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

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## TurnOnOrangeLight

Method: bool TurnOnOrangeLight (int nDeviceIndex)

Description: This function lights the Blync device specified by nDeviceIndex in orange color. This function call can be used only for the following types of devices namely BlyncUSB30/40 (Blynclight Standard), BlyncUSB30S/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset devices and Embrava Embedded devices

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## TurnOnRGBLights

Method: bool TurnOnRGBLights (int nDeviceIndex, byte byRedLevel, byte byGreenLevel, byte byBlueLevel)

Description: This function lights the Blync device specified by nDeviceIndex 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 BlyncUSB30/40 (Blynclight Standard), BlyncUSB30S/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset devices and Embrava Embedded devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

If there are n number of devices, to access the nth device, nDeviceIndex = (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: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## SetLightDim

Method: bool SetLightDim (int nDeviceIndex)

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 BlyncUSB30/40 (Blynclight Standard), BlyncUSB30S/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset devices and Embrava Embedded devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## ClearLightDim

Method: bool ClearLightDim (int nDeviceIndex)

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 BlyncUSB30/40 (Blynclight Standard), BlyncUSB30S/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset devices and Embrava Embedded devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## SelectLightFlashSpeed

Method: bool SelectLightFlashSpeed (int nDeviceIndex, 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 BlyncUSB30/40 (Blynclight Standard), BlyncUSB30S/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset devices and Embrava Embedded devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

If there are n number of devices, to access the nth device, nDeviceIndex = (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

for pulsating mode, bySelectedFlashSpeed = 0x04

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## StartLightFlash

Method: bool StartLightFlash (int nDeviceIndex)

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 BlyncUSB30/40 (Blynclight Standard), BlyncUSB30S/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset devices and Embrava Embedded devices. The blinking speed would be specified by SelectLightFlashSpeed function call.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## StopLightFlash

Method: bool StopLightFlash (int nDeviceIndex)

Description: This function stops blinking the light. This function call can be used only for the following types of devices namely BlyncUSB30/40 (Blynclight Standard), BlyncUSB30S/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless, Lumena Headset devices and Embrava Embedded devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## SelectMusicToPlay

Method: bool SelectMusicToPlay (int nDeviceIndex, 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/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices. The BlynUSB30S/40S can play 10 sounds, Blynclight Mini and Wireless devices can play 14 sounds.

Arguments: int nDeviceIndex - index of the device in the device object list

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

If there are n number of devices, to access the nth device, nDeviceIndex = (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: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## StartMusicPlay

Method: bool StartMusicPlay (int nDeviceIndex)

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/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## StopMusicPlay

Method: bool StopMusicPlay (int nDeviceIndex)

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/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## SetMusicRepeat

Method: bool SetMusicRepeat (int nDeviceIndex)

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/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## ClearMusicRepeat

Method: bool ClearMusicRepeat (int nDeviceIndex)

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/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## SetMusicVolume

Method: bool SetMusicVolume (int nDeviceIndex, 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/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

If there are n number of devices, to access the nth device, nDeviceIndex = (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: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## SetVolumeMute

Method: bool SetVolumeMute (int nDeviceIndex)

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/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## ClearVolumeMute

Method: bool ClearVolumeMute (int nDeviceIndex)

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/40S (Blynclight Plus), Blynclight Mini, Blynclight Wireless devices.

Arguments: int nDeviceIndex - index of the device in the device object list

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

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

Return Value: boolean value - true once the function call succeeds else false

Return value will be false if there is a hardware error or passing an invalid value of nDeviceIndex.

## GetDeviceUniqueId

Method: uint GetDeviceUniqueId(int nDeviceIndex);

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: int nDeviceIndex - index of the device in the device object list

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

If there are n number of devices, to access the nth device, nDeviceIndex = (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.