

# APPC-10SLBe LED Ring on Android11 platform Porting Guide

V1.0c

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## 1. INTRODUCTION

APPC-10SLBe LED Bar contains 52 LED frame. It is an USB to UART interface module and it support display Red/Green/ Blue full color light.

## 2. INTERFACE DEFINITION

**Broadcasts** is the common component can be used to communicate between processes, the Android app will work as the client send the messages, and the vendor's firmware works as the server receives messages to control LED with their build-in API.

### Broadcast Intent

The Intent action:

`"action.CHANGE_LED_COLOR"`

Extras:

`"color"` — int, presents the LED's color and brightness, see below.

`"colordemo"` — int, presents the LED's 5 demo color.

### --color ints:

The color int always defines a color in the color space using 4 components packed in a single 31-bit integer value:

Component	Size	Range
Brightness	7 bits	[0...127]
Red	8 bits	[0...255]
Green	8 bits	[0...255]
Blue	8 bits	[0...255]

The components in this table are listed in encoding order (see below).

### Color Encoding

The four components of a color int are encoded in the following way:

## Color Encoding

```
int color = (Brightness & 0xff) << 24 | (Red & 0xff) << 16 | (Green & 0xff) << 8 | (Blue & 0xff);
```

Because of this encoding, color ints can easily be described as an int constant in source. For instance, blue is 0xff0000ff and green is 0xff00ff00.

## Color Decoding

The four components can be individually extracted from a color int using the following expressions:

## Color Decoding

```
int Brightness = (color >> 24) & 0xff; // or color >>> 24
int Red        = (color >> 16) & 0xff;
int Green      = (color >>  8) & 0xff;
int Blue       = (color          ) & 0xff;
```

## Close LED

The color int **0** means turning off the LED.

## Example:

Send change LED broadcast java code:

```
private static final String ACTION_CHANGE_LED_COLOR = "action.CHANGE_LED_COLOR";

private void sendLedColorBroadcast(int colordemo, init color) {
    Log.i(TAG, "sendLedColorBroadcast");
    Intent intent = new Intent(ACTION_CHANGE_LED_COLOR);
    if(colordemo != 0 && colordemo != -1){
        intent.putExtra("colordemo", colordemo);
    }else {
        if(colordemo == 0){
```

```

        intent.putExtra("color", color);
    }
    this.sendBroadcast(intent);
}

```

### Hexadecimal and decimal conversion tables.

Brightness: 0x7F; Color: 0x01 light color, 0xFF deep color(hexadecimal)

Color	Hexadecimal	Decimal
Dark red	7FFF0000	2147418112
Dark green	7F00FF00	2130771712
Dark blue	7F0000FF	2130706687
Light red	7F010000	2130771968
Light green	7F000100	2130706688
Light blue	7F000001	2130706433
Yellow	7FFFFFF0	2147483392
Purple	7FFF00FF	2147418367
White	7FFFFFFF	2147483647
Close the lamp	0	0

--colordemo ints:

The colordemo int is defines a 5 demo colors:

Component	value
LED Demo1	1
LED Demo2	2
LED Demo3	3
LED Demo4	4
LED Demo5	5