Confidential

Project Name	Document No.		
SC200			
	Issue Date	Revision	
	10th July 2017	Issue 1.0	

Smart Charger
SC200 User Manual

Created By:
Jimmy

WDL

Table of Contents

Revision History

Date	Release	Author	Description
07/11/2017	1.0	Jimmy	First draft

Reviewer

Department	Name/Title
Software Department I	
Hardware Department I	
Mechanical Department I	
System Quality Assurance	

1. General Information

Following information gives an overview about the main software components of **SC200** Board.

Table 1 Components of SC200 BSP

Component Type	Version	Comment
Realtek BSP	SDK-v3.4.11B	RTL8197F
WDL SDK SVN	R.755	Subversion Reversion Number
U-Boot	0.4	WDL bootloader version
Realtek WLAN	V1.7	Realtek driver version
TI BLE SoC	Simplelink_2_13_00_06	TI CC2640

1.   Supporting Features

This chapter has the complete list of available features for SDK package and distinguishes features into different tables in the following. The type of components can be either Open Source or Commercial.
Open Source type will be shorted as "**O**" and Commercial type will be shorted as "**C**" in the tables.

Table 2 Driver features

Features	Support	Component Type Open Source (O) Commercial (C)	Comment
Kernel			
Linux Kernel 3.10.90	Y	O	
Drivers			
UART Driver	Y	O	
USB Host Driver	Y	O	
Flash Memory	Y	O	
SPI Driver	Y	O	
I2C Driver	Y	O	

Table3 lists Proprietary applications supported in current SDK.

Table 3 Applications features

Features	Support	Component Type OpenSource (O) Commercial (C)	Comment
Busybox	Y	O	V-1.23.2

Openssl	Y	O	V-1.0.2g
Libxml2	Y	O	V-2.7.8
Libimobiledevice	Y	O	V-1.2.1
Ideviceinstaller	Y	O	V-1.1.1
Libplist	Y	O	V-1.13
Libusb	Y	O	V-1.0.20
Libusbmuxd	Y	O	V-1.1.0
Usbmuxd	Y	O	V-1.1.1
Zlib	Y	O	V-1.2.3
Libzip	Y	O	V-1.1.3
Dbus	Y	O	V-1.6.8
Expat	Y	O	V-2.0.1
ADB-Tools	Y	O	V-1.0.32
Web/GUI	Y	C	WondaLink Proprietary https
Firmware Upgrade	Y	C	Firmware Upgrade for Smart Charger
TR69	Y	C	
CAPI Library	Y	C	WDL common library
Middleware Applications			
SystemController	Y	C	
ConfController	Y	C	
Lock Controller	Y	C	
Common Controller	Y	C	
Time Controller	Y	C	
TimerController	Y	C	
Firmware Controller	Y	C	
BLE Controller	Y	C	
IOS Controller	Y	C	
USBMUX Controller	Y	C	
LED Controller	Y	C	
ADB Controller	Y	C	
Battery Controller	Y	C	
Memory Controller	Y	C	
Wlan Controller	Y	C	

Web Controller	Y	C	
System Health Controller	Y	C	
Tr69 Controller	Y	C	
XMPP Controller	Y	C	
Controller CLI	Y	C	ctrl_lock_file ctrl_debug ctrl_log_print ctrl_notify_service_up ctrl_send_sig ctrl_set_time ctrl_unlock_file ctrl_wait_for_service_up

Table 4 Data communication features (iOS Phone)

FeaturES	Support Interface
Smart charger sends the installed Application to iOS APP	USB
Smart charger sends the iDevice information to iOS APP	USB
Smart charger sends the ANCS notification to iOS APP	BLE
iOS APP request ANCS notification attribute to Smart Charger	BLE
Smart charger sends ANCS response attribute data to iOS APP	BLE
iOS APP send Light state setting to Smart charger	BLE
Smart charger receives battery level from iOS Phone	BLE
iOS APP send the "Nightlight setting" values to Smart charger	BLE
Smart charger sends available nearby Root AP list to iOS APP	BLE
iOS APP send the user selected Root AP information to Smart Charger	BLE
Smart Charger send their firmware information to iOS APP	BLE

Table 5 Data communication features (Android Phone)

FeaturES	Support Interface
Smart charger receives battery status & info from Android Phone	ADB-USB
Smart charger receives memory info from Android Phone	ADB-USB

Android APP send Light state setting to Smart charger	BLE
Smart charger receives battery level from Android APP	BLE
Android APP send the "Nightlight setting" values to Smart charger	BLE
Android APP send the user selected Root AP information to Smart Charger	BLE
Smart Charger send their firmware information to Android APP	BLE

Table 6 Light Color state features(Both iOS& Android Phone)

system state	LED State
Smart charger boot up time	GREEN
BLE disconnected between Smart charger and iOS Phone	DARK
iOS/Android Phone Battery level less than 30%	ORANGE
iOS/Android Phone Battery level between 30% and 60%	YELLOW
iOS/Android Phone Battery level greater than 60%	GREEN
Smart charger firmware upgrading process time	GREEN with Flashing effort
Smart charger upgrading TI BLE module firmware time	BLUE with Flashing effort
iOS/Android APP received any notification	User set Color with HEARTBEAT effort

2. BLE Connection Setup

Currently, Smart Charger F/W version is V2.02.14, which support both iOS and Android device. The corresponding iOS/Android Charger App version is v2.02.18.

Charger App need setup BLE connection with Charger before it can works. Note that Charger can only support one BLE connection at the same time.

2.1 BLE Connection with iOS device

1. Install iOS App SmartCharger V2.02.18 from iOS App Store.
2. Power on Smart Charger. This system boot-up time will take approximately 30 seconds, during this time LED in GREEN Solid effort.
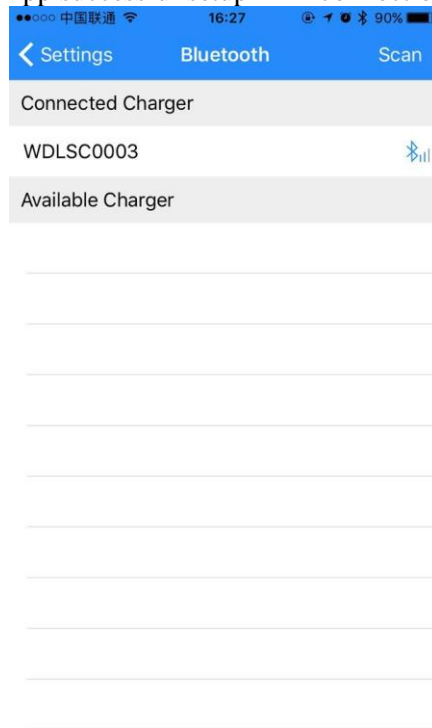
3. Once System boot-up sequence completed, Charger LED will turn off.
4. Get into iOS device Bluetooth "Settings" screen and enable the Bluetooth for iOS device.
5. Launch installed SmartCharger App, Warning message "No Bluetooth connection" show on home page.
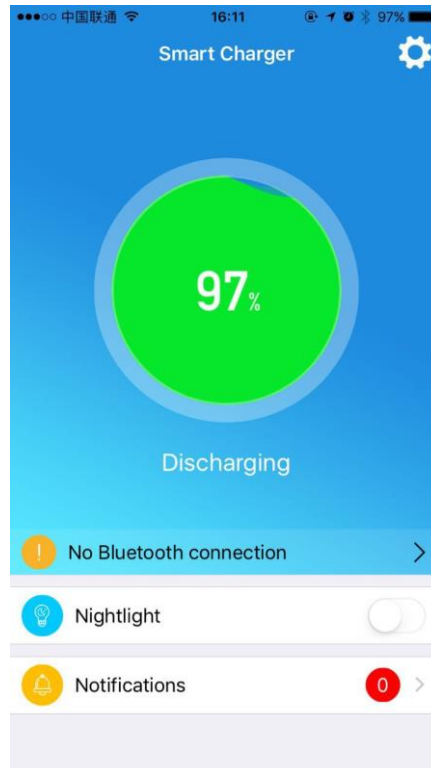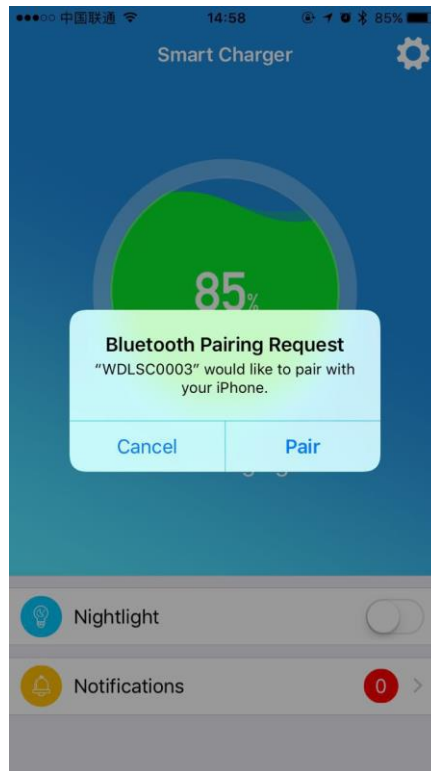

6. Click the warning, jump to Bluetooth setting page. Can see Smart Charger BLE display name called "WDLSCXXXX" in Available Charger list.
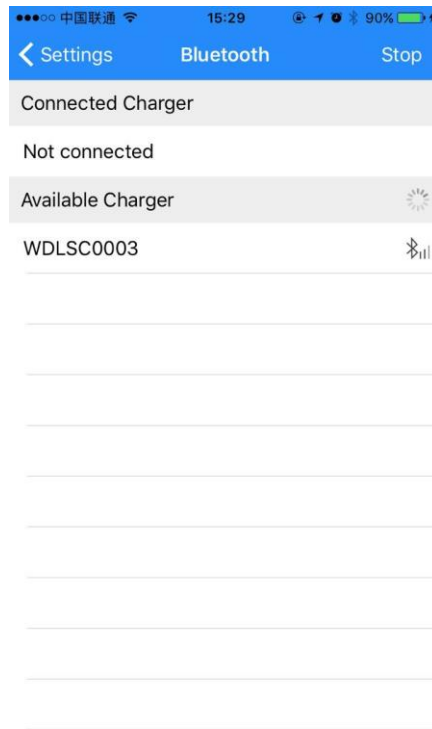
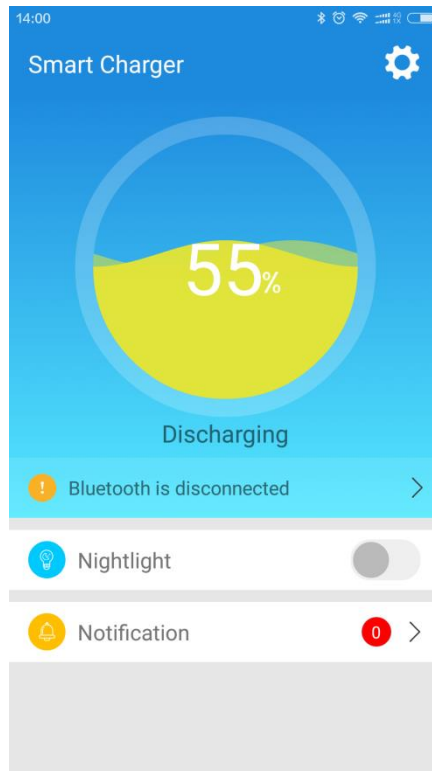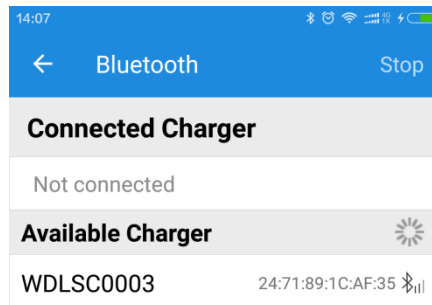7. Click "WDLSCXXXX", App successful setup BLE connection with Charger.

8. Within few seconds Bluetooth paring screen popup. Please accept the "pair" option from the pop up window.

2.2 BLE Connection with Android device

1. Install Android App SmartCharger V2.02.18 from Google Play.
2. Power on Smart Charger. This system boot-up time will take approximately 30 seconds, during this time LED in GREEN Solid effort.
3. Once System boot-up sequence completed, Charger LED will turn off.
4. Get into Android device Bluetooth "Settings" screen and enable the Bluetooth for Android device.
5. Launch installed SmartCharger App, Warning message "Bluetooth is disconnected" show on home page.

6. Click the warning, jump to Bluetooth setting page. Can see Smart Charger BLE display name called "WDLSCXXXX" in Available Charger list.

7. Click "WDLSCXXXX", App successful setup BLE connection with Charger.
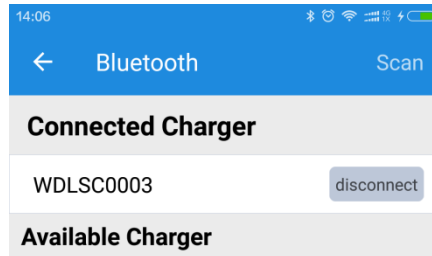
3. LED Color Status

Charger support Nightlight, Notification LED and Battery status LED, they share the same hardware LED. The priority is Nightlight > Notification LED > Battery status LED.

3.1 LED Color Status while System Boot-up Time

In system boot-up time, LED keep in Green SOLID Color for about 30 seconds, after system boot-up, the LED will turn off.

3.2 Nightlight

Charger support Nightlight, we can use Charger App to configure color, brightness and schedule.
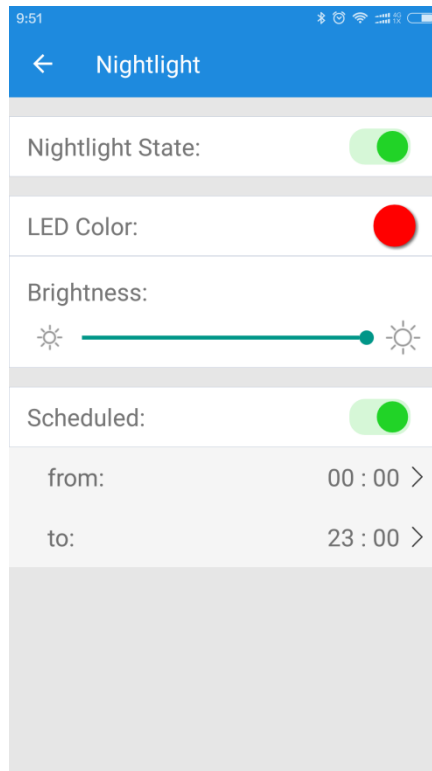
3.3   Notification LED

Charger App can monitor App's notification status in smart phone, user can configure Notification LED for the app which he is interested in. Each app can configure its own LED color, flash mode and brightness.
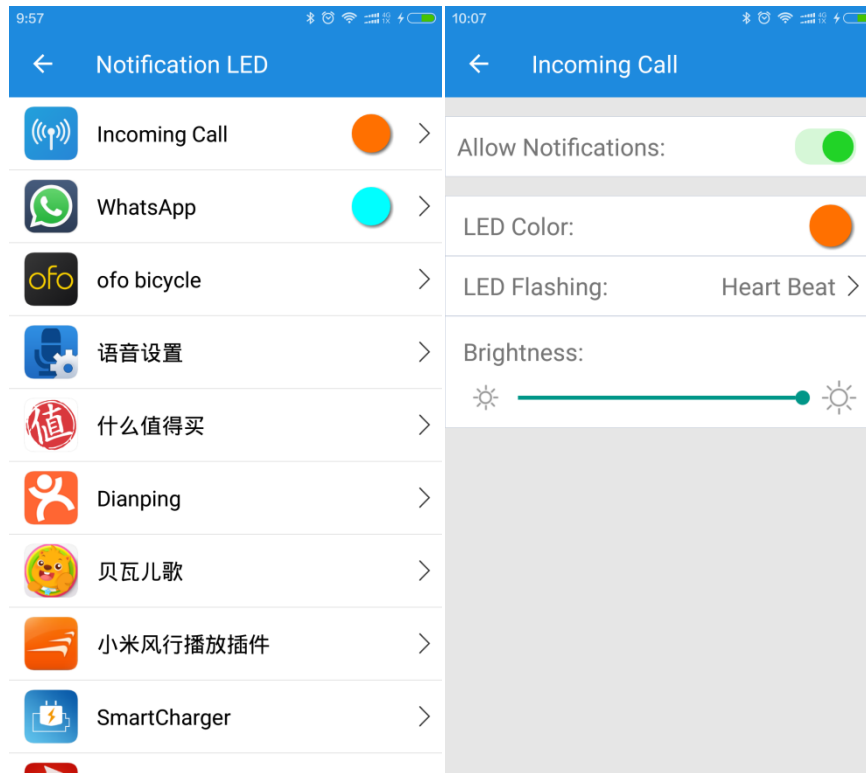
3.4   Battery status LED

If no Nightlight and Notification LED triggered, Charger LED by default will show Battery status as per below condition.

1. LED Color in **GREEN**, If battery level > 60%
2. LED Color in **YELLOW**, If battery level 30% - 60%
3. LED Color in **RED**, If battery level < 30%

4.   Charger App

4.1   Home Page

- Battery level and charger status
- Shortcut for Nightlight
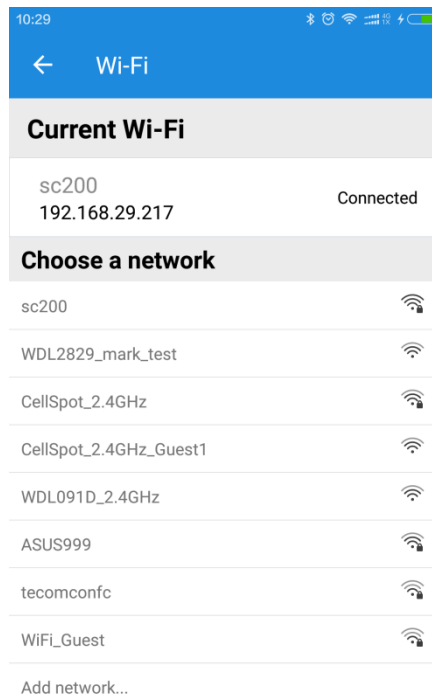- Shortcut to check current notifications
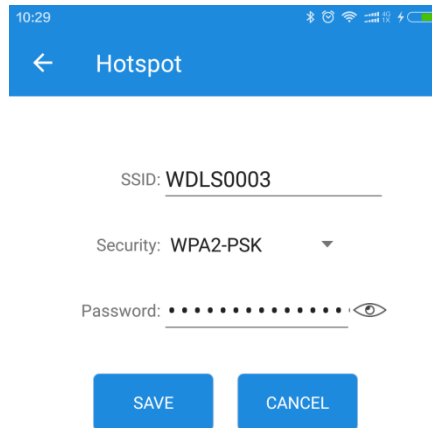- Entrance for Setting page
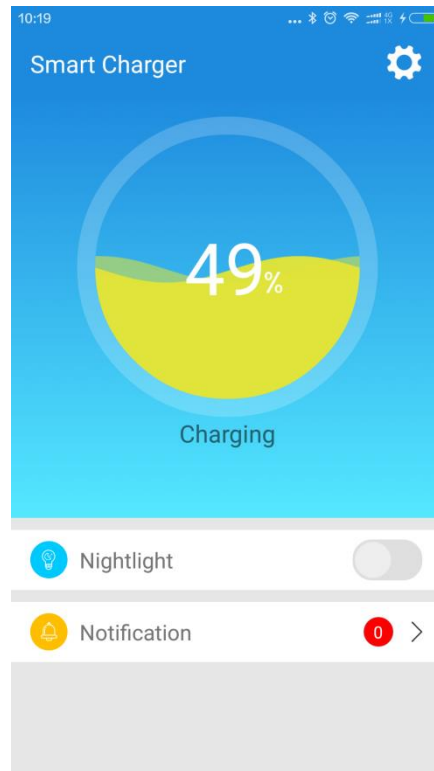
4.2   Setting Page

- Bluetooth setting
- Configure Nightlight
- Configure Notification LED
- Configure Charger Wi-Fi Setting
- Configure Charger Hotspot
- Get Charger infomation
- Get Charger Health Report
- Get Phone information
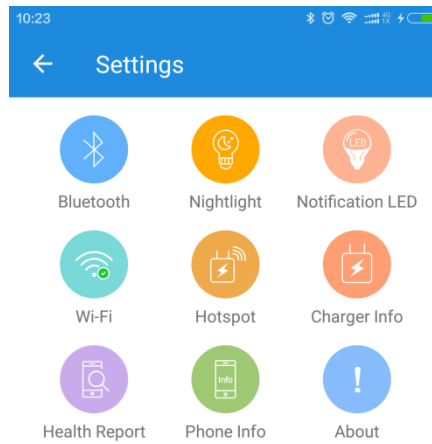
4.2.1 Wi-Fi Setting

4.2.2 Hotspot setting

4.2.3 Charger Info

Model Name:	SC200
Firmware Version:	2.02.14
Uboot Version:	0.4.0
Charger ID:	WDLSC0003
Bluetooth Version:	2.02.04
MAC Address:	081F3F070003
Firmware Update:	03/20/1997 02:28:00

4.2.4 Health Report

4.2.5 Phone Info