

INSIGMA INC

# Imbera CMD Phone App User Manual

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V1.6

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Understand Operation and basic functionality of Imbera Communication Device

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### 1 Purpose

To understand Operation and basic functionality of Imbera Communication Device.

### 2 Scope

Useful for tester and final user.

### 3 Definition(s) and Abbreviation(s)

Name	Abbreviation
CMD	Communication Device
BLE	Bluetooth Low Energy
ICD	Imbera Communication Device
DFU	Direct Firmware Upgrade

### 4 Reference(s)

Document No	Title

## 5 Document History

Version	Date completed	Written by	Reviewed by	Approved by
1.0	9 <sup>th</sup> August, 2016	Bipin Patel		
	➤ Initial Version			
1.1	24 <sup>th</sup> November, 2016	Bipin Patel		
	➤ Made change in Login process for application ➤ Made changes in GUI of application.			
1.2	28 <sup>th</sup> November, 2016	Bipin Patel		
	➤ Corrected Wrong message in DFU in document. Point 12 -> (2)			
1.3	14 <sup>th</sup> February, 2017	Bipin Patel		
	➤ Updated latest screen shot and text as per Imbera phone app V1.21			
1.4	13 <sup>th</sup> April, 2017	Bipin Patel		
	➤ Updated latest screen shot and text as per Imbera phone app V1.45			
1.5	25 <sup>th</sup> May, 2017	Bipin Patel		
	➤ Updated latest screen shot and text as per Imbera phone app V1.50			
1.6	10 <sup>th</sup> June, 2017	Bipin Patel		
	➤ Updated latest screen shot and text as per Imbera phone app V1.55			

## 6 Introduction

- 1) Imbera Communication Device is BLE enabled and used with EMD module. By using it user can configure EMD module over BLE.
- 2) User can also check diagnostic mode of EMD module.

## 7 Installation of Imbera CMD

- 1) CMD has four wire connector to interface with EMD module. Signal name of four wires is associated with its color for user convenience.

WIRE COLOUR	SIGNAL
White	VCC
Black	GND
Brown	Rx
Blue	Tx

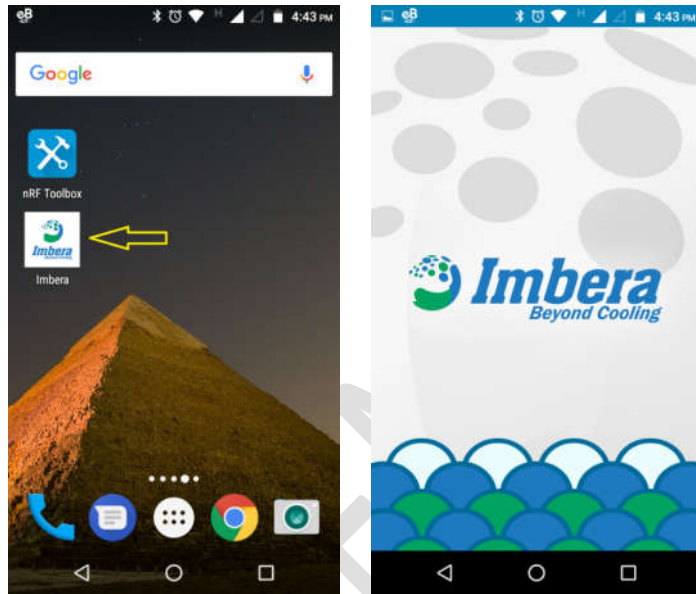
- 2) Connect these four wire connector to EMD module as per shown in figure.



## 8 Installation of Imbera Phone App

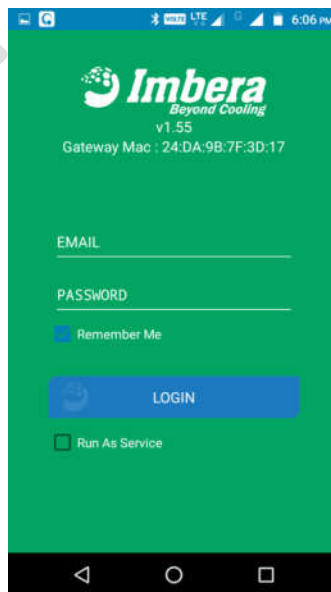
- 1) Install APK received from email in android phone
- 2) Click on “Imbera” application icon. It will launch application.

**Note:** Before launch of App, Please ensure Bluetooth & Internet connection (via Mobile Wi-Fi or Mobile Data) must be enabled in Phone.

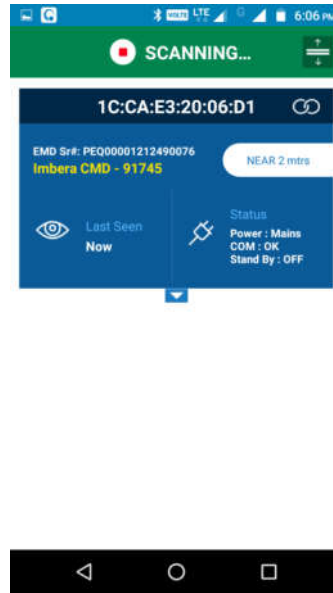


- 3) If user is login first time then it will ask for Email (User id) and Password. Use Email and password received in email for login.

**Note:** Internet connectivity must be required during login otherwise login will be fail.



4) After successful login, application will direct to BLE scanning screen as shown below.



- 5) Scanning screen will show available CMD list. You can identify CMD by its MAC address and short Serial Number.



**P1:** CMD MAC Address

**P2:** To make connection with device

**P3:** Connected EMD Serial #

**P4:** Device Type with CMD Serial#

**P5:** Last Seen: When phone app seen device at last

**P6:** Status of CMD device which include following

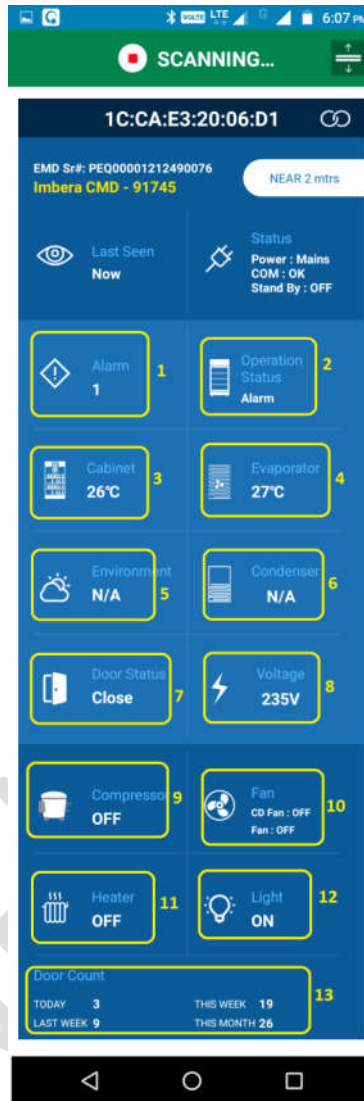
- Power Status: Mains/Battery
- UART Communication: OK/Not OK (If it is OK then it means device communicate with EMD properly)
- Standby Mode: ON/OFF (When it is ON, device is not communicating with EMD)

**P7:** To expand parameters screen. Parameter screen will not expand if device is in following state.

(Battery mode)/ (communication is not OK)/ (Standby is ON).

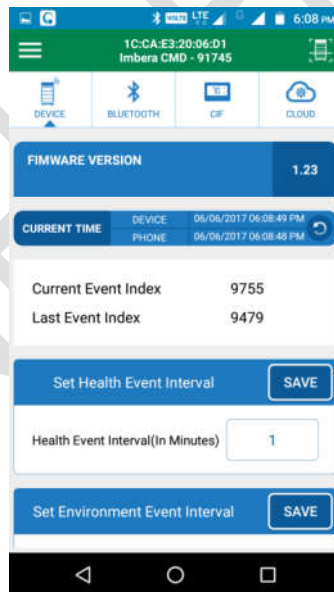


6) User can verify temperatures, voltage, alarms and door status from scanning screen.



- P1: Number of Alarm reported by EMD currently
- P2: Operation Status
- P3: Cabinet Temperature
- P4: Evaporator Temperature
- P5: Environment Temperature
- P6: Condenser Temperature
- P7: Door Status
- P8: EMD Voltage
- P9: Compressor Status
- P10: Fan Status
- P11: Heater Status
- P12: Light Status
- P13: Door Counts for Today, This Week, Last Week and This month

7) After connection with CMD, following screen appears which shows configuration parameters of CMD.



## 9 Communication Device Configuration Parameters

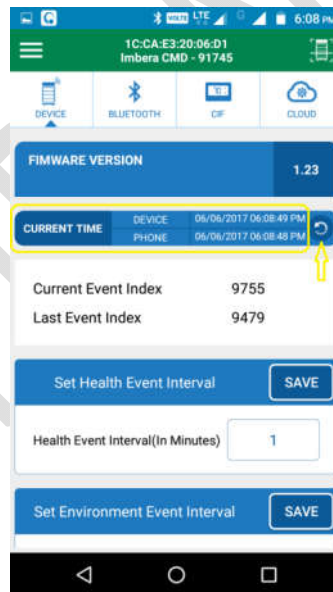


After connection, under **DEVICE** Tab, user can set following parameters for CMD.

- 1) Set Date Time
- 2) Set Health Event Interval
- 3) Set Environment Event Interval
- 4) Set Advertisement Interval
- 5) Standby Mode ON/OFF
- 6) Restart Device
- 7) Factory Reset Device
- 8) Put CMD in Deep Sleep

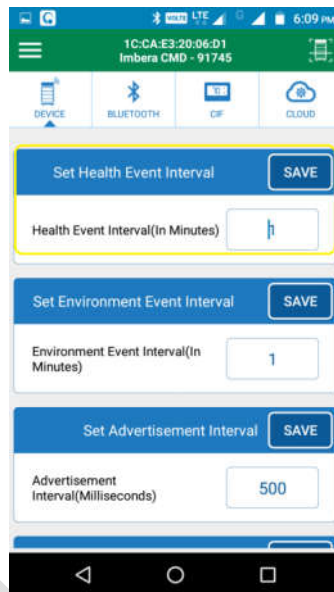
### 9.1 Set Date Time

- 1) Click on symbol shown in figure by yellow arrow to set current date time in CMD.



## 9.2 Set Health event Interval

- 1) User can set Health event Interval in minutes in range of 1 to 240 minutes.
- 2) Health event contains Cooler temperature, Evaporator temperature and Condenser temperature of EMD.
- 3) After changing value, click on save button to save it in CMD.



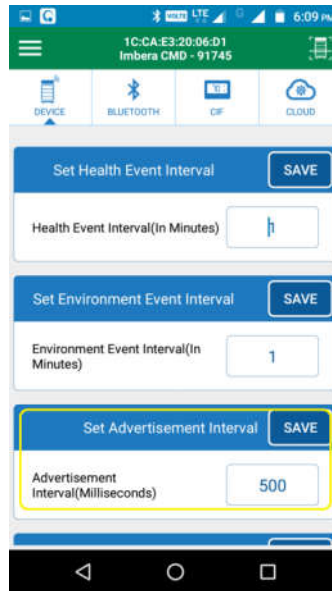
## 9.3 Set Environment event Interval

- 1) User can set Environment event Interval in minutes in range of 1 to 240 minutes.
- 2) Environment event contains Environment temperature and EMD Voltage.
- 3) After changing value, click on save button to save it in CMD.



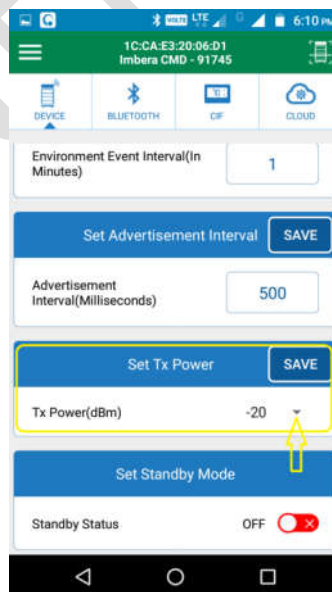
### 9.4 Set Advertisement Interval

- 1) User can set BLE Advertisement Interval in millisecond in range of 20 to 10000 msec.
- 2) After changing value, click on save button to save it in CMD.



### 9.5 Set Tx Power

- 1) User can select BLE Tx power for Normal advertisement with option of -20, -16, -12, -8, -4, 0 and 4 dBm.
- 2) After changing value, click on save button to save it in CMD.

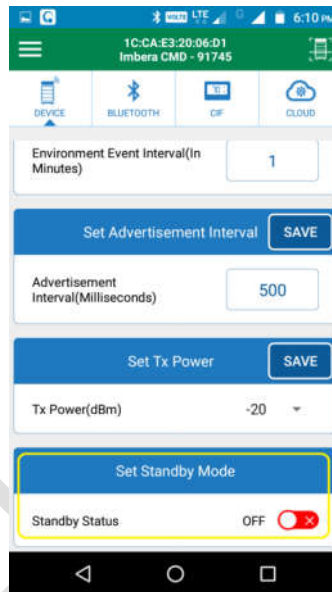


## 9.6 Control Standby mode

CMD can be operated into **standby mode** or **normal mode**.

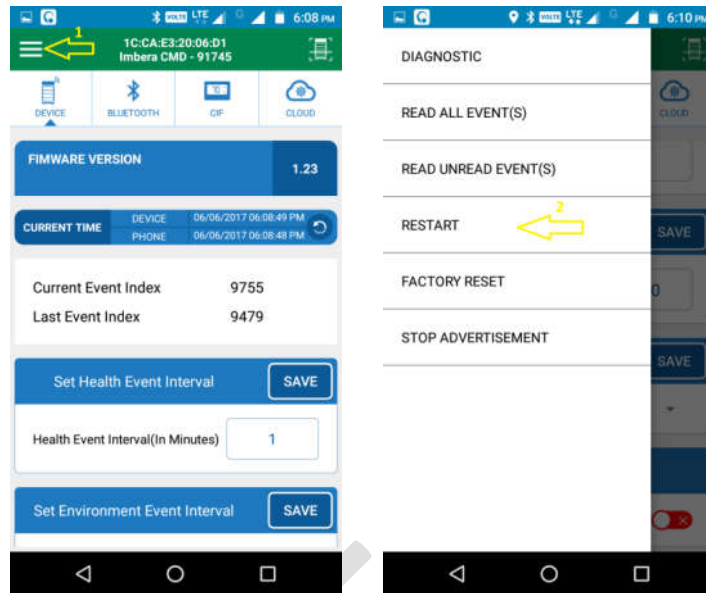
### To Enable/Disable Standby mode

- 1) User can ON/OFF standby mode.
- 2) If standby mode is ON then it will stop event logging in memory and also don't communicate with EMD module.
- 3) If standby mode is OFF then it will start event logging and communicate with EMD again. This is called Normal mode.



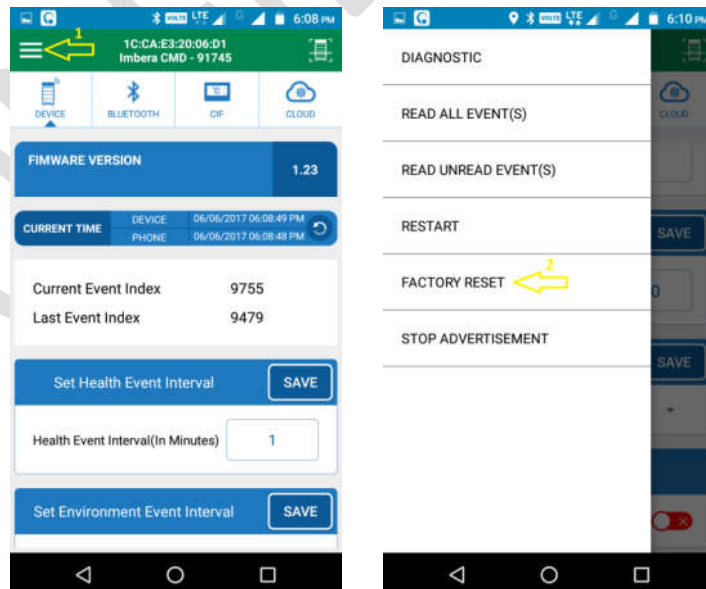
### 9.7 Restart CMD

1) User can restart (power cycle) CMD module by clicking on following sequence.



### 9.8 Factory Reset CMD

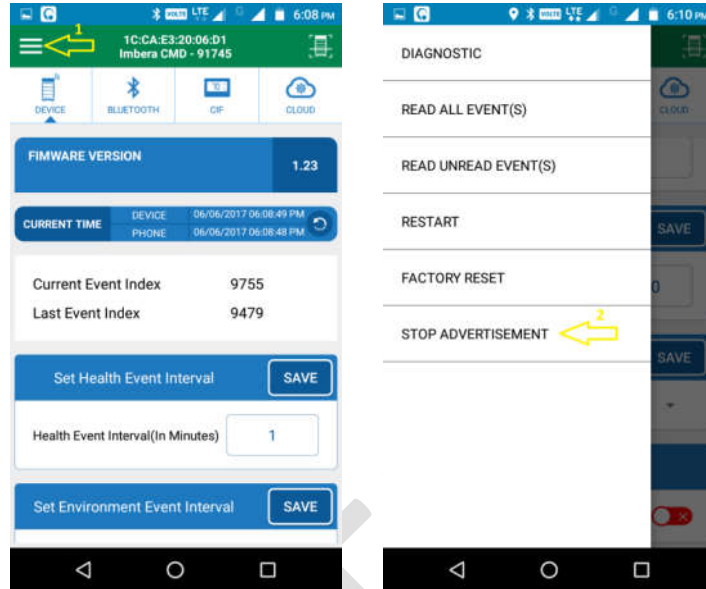
- 1) User can restore all settings to factory default by clicking on following sequence.
- 2) By factory reset, all logged event data will be erased and device will start event logging from Initial.





### 9.9 Stop Advertisement

- 1) User can stop advertisement of CMD by clicking on following sequence.
- 2) Advertisement can be started again automatically when Mains supply given to CMD again.



## 10 Imbera Communication Device Logged Event Types

- CMD can store up to 13568 events in memory. After that it will over write on old event space.
- CMD logs following events.

### 10.1 Health Event

- Health event contains Cooler temperature, Evaporator temperature and Condenser temperature of EMD at predefined interval.

### 10.2 Environment Event

- Environment event contains Environment temperature and EMD Voltage at predefined interval.

### 10.3 Power Event

- Power event logged when switching occur from EMD Mains power to battery and vice versa with data time.

### 10.4 Door Event

- Door Event logged by CMD when door open and close sense.
- Door Event also contains Door timeout event.

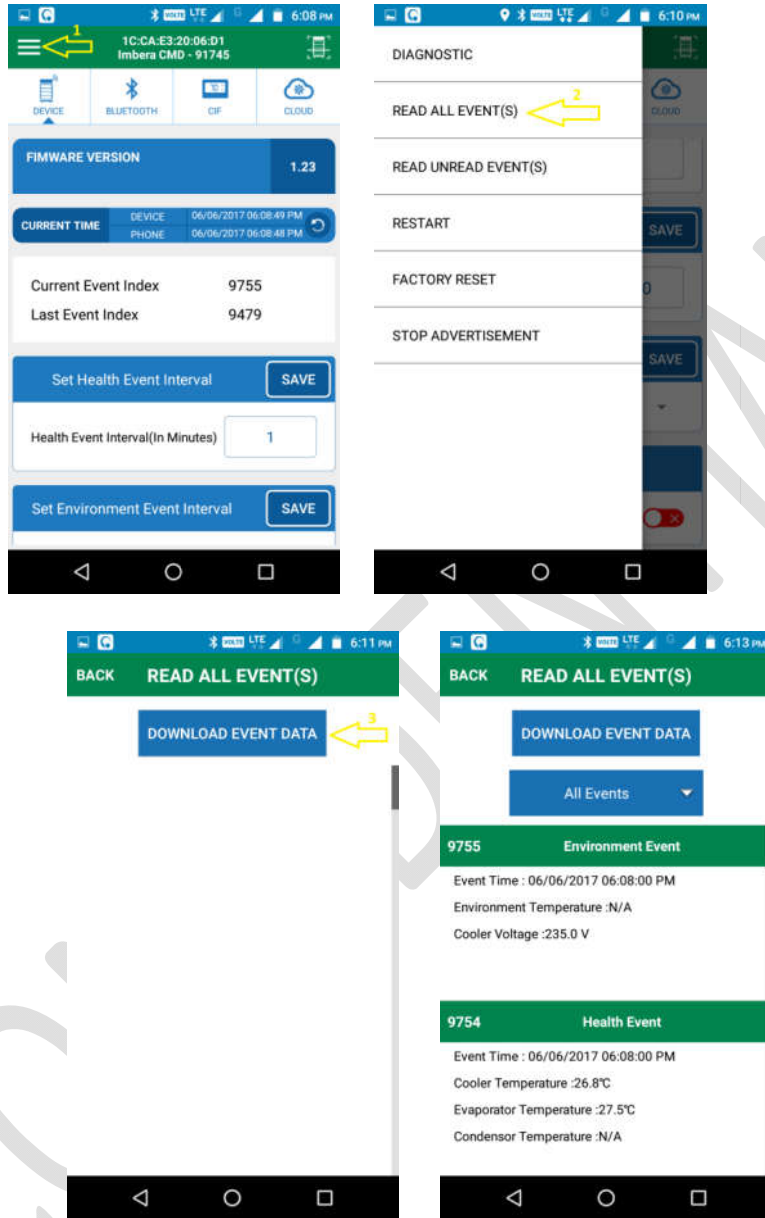
### 10.5 Event/Alarm log Event

- This event logged when any change in event bits or Alarm bits occur from EMD.

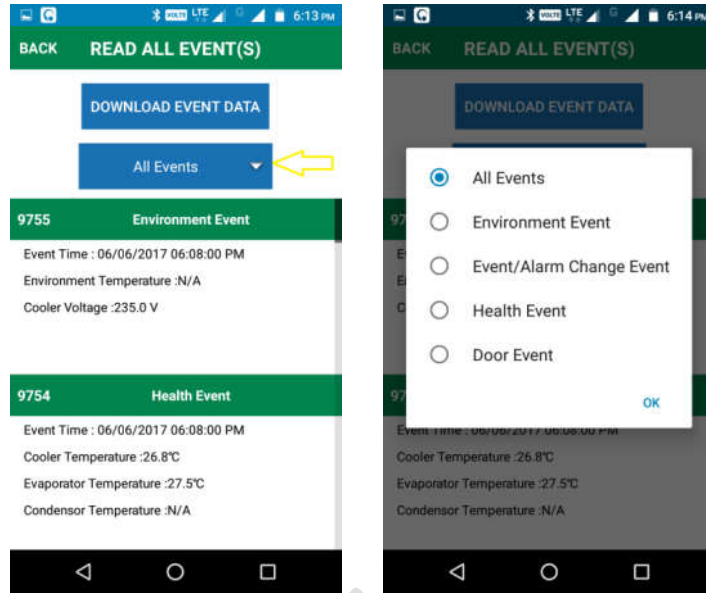
### 10.6 Error log Event

- This event logged when UART communication failure occur between EMD and CMD.

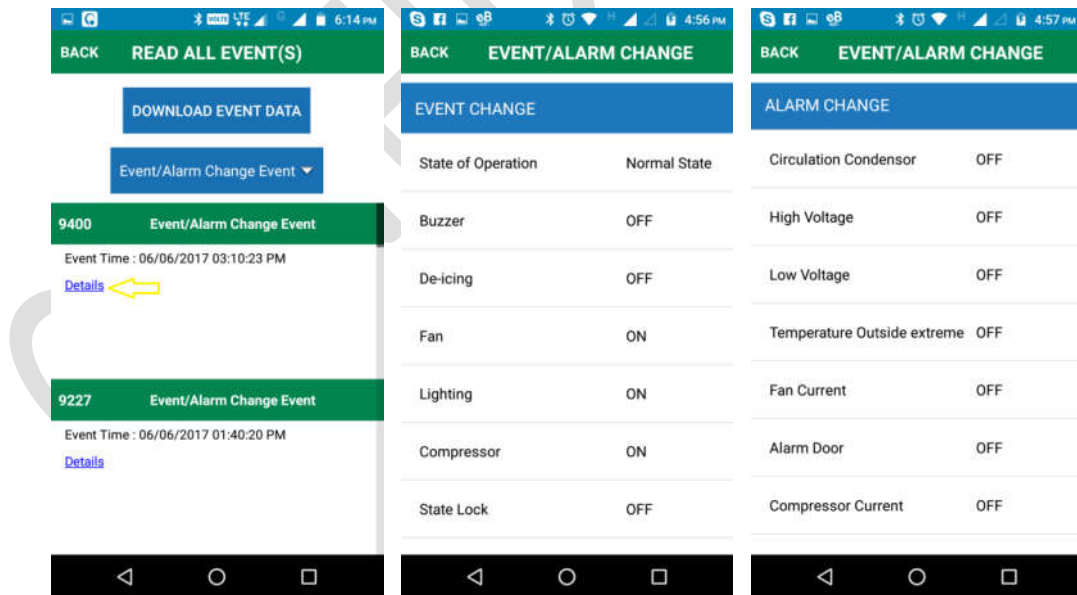
- User can view logged events by clicking on following screen sequence.




- User can filter different event by clicking on following option.

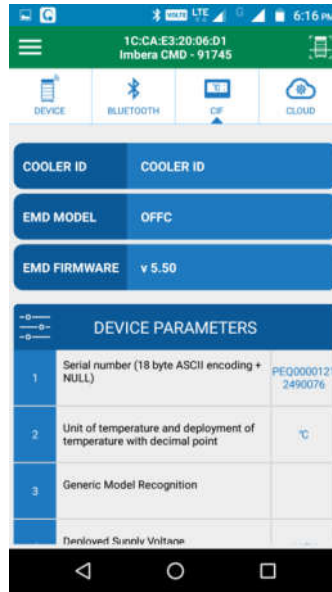


- In Event/Alarm change, there is Detail link where user can see status of Event and Alarm bits as shown in below figures.



## 11 EMD(CIF) Configuration Parameters

- 1) After connection, under  Tab, user can set EMD configuration parameters.
- 2) When user switch to EMD tab, Phone app first reads all configuration parameter from EMD and display to user first.

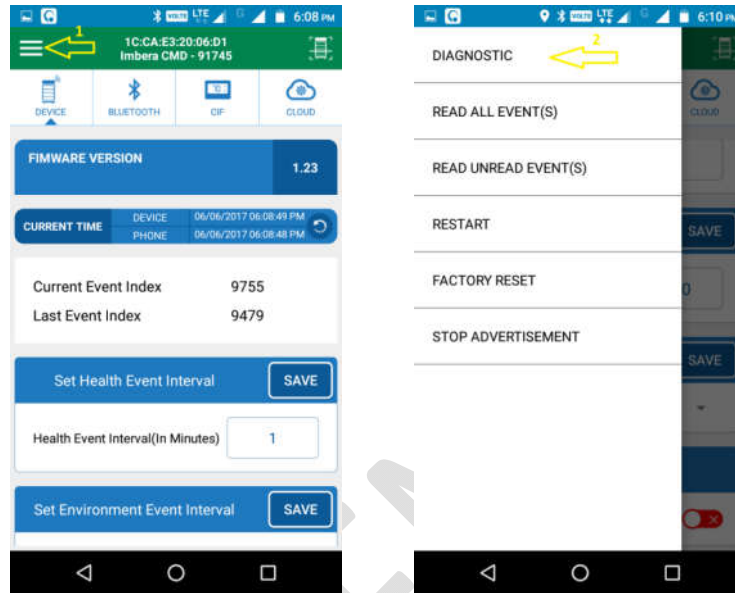


- 3) User can change any parameter by clicking on that parameter. After changing desire value, click on set tab.



## 12 EMD Diagnostic mode

- 1) User can enter into diagnostic mode by sequential clicking on symbol shown in below figures.



- 2) User can enable/disable Diagnostic mode by clicking on ON/OFF button



- 3) User can operate Compressor, Evaporator Fan, Resistance, Light and Display by clicking ON/OFF.



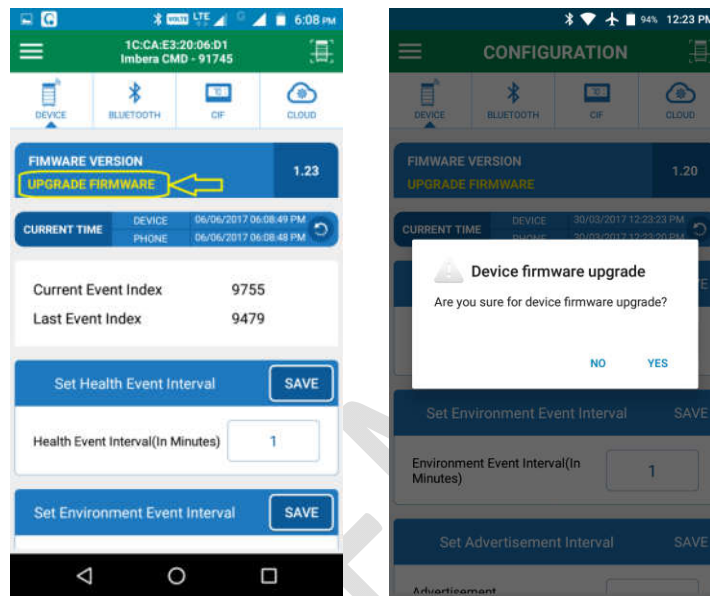
- 4) User can get current Door status by clicking on **Door Status**.



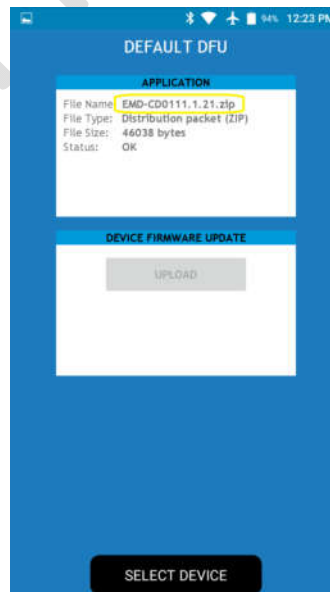
**Note:** After completion of Testing of Diagnostic mode, User has to disable diagnostic mode. Otherwise EMD will leave in diagnostic mode until next power cycle.

### 13 Firmware Upgrade Over the air (DFU)

- 1) Whenever user connects to any CMD, Phone app will check CMD firmware version with latest firmware. If new firmware is available then app will suggest user to upgrade firmware with latest one as per below figure. User needs to tap the text to start DFU.

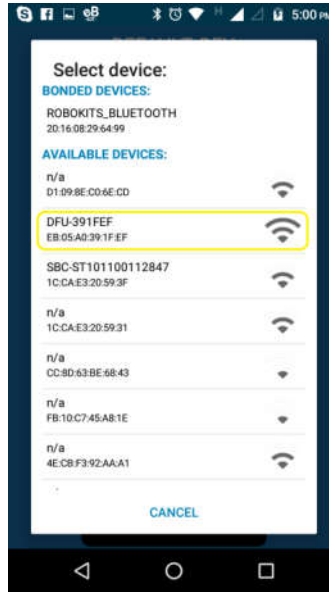


- 2) After allowing for DFU, user will see following screen in which phone app load latest firmware directly from cloud. User just needs to select CMD from “SELECT DEVICE” button.

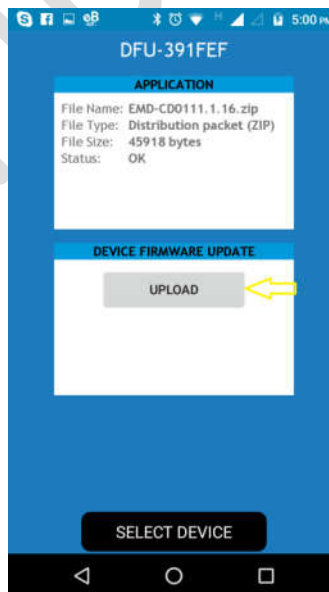




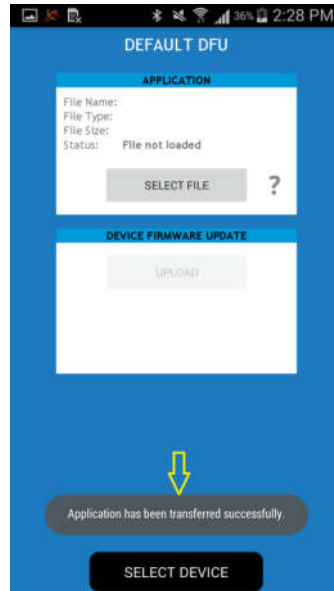
- 3) User have to select device from AVAILABLE DEVICES as per below figure. Device which starts from DFU-XXXXXX where XXXXXX is a unique Last 3 bytes of BLE stack MAC address.



- 4) Now Click on **UPLOAD** button to start firmware upgrade.



5) After successfully upgrade, following screen will appear.



6) User can verify latest firmware upgrade by making connection to CMD again and checking for firmware version.