Setup & Installation

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1. Introduction

The following file contains information about setting up and running the serial to Wi-Fi dobona board called DoboS. The DoboS is a small board designed for panel builders and manufacturers wishing to add their panel/machine to the cloud and hence be able to communicate both ways with it in real-time through its mobile app. DoboS can also send emails to its panel/machine designer about its alarms/faults and other troubleshooting conditions, and at the same time other emails about its daily production, stoppage, downtime etc.. To make things clearer, the DoboS is an interface between a controller such as Programmable logic controller (PLC) and a remote human person connected together over the cloud. The DoboS by itself is not a programmable device; it simply conveys information between the PLC and the cloud. It is up to the PLC programmer to decide what and when to send data between the PLC and himself or other persons involved with the panel/machine that is controlled and managed by the PLC. Example of use could be for the PLC to send a daily email to the production manager summarizing the number of pallets produced, the total running hours, the average speed of the machine, the highest temperature of the furnace, the number times the emergency button was pressed, at what time work resumed on the machine after lunch break… Also an email can be dispatched to the machine manufacturer alerting him that the maximum allowable temperature was exceeded by a certain margin and by how long, and providing him with critical data that could compromise the machine safety/warranty etc…

The DoboS features one serial connection (RS232) to the PLC, and a Wi-Fi one to an internet-enabled router. It should be powered by a regulated 12VDC or 24VDC/500mA supply (not provided). The exact terminal connections are drawn on the DoboS enclosure fascia.

2. Prerequisites

To install DoboS, the user must:

- Have basic information about installing electrical components, otherwise call an electrician to do the necessary wiring
- Own a DoboS board connected to a PC or PLC via a serial port
- Have an internet connection
- Download the "dobona" application from the Play Store (Android) or the Apple Store (iOS)

3. How to setup the board?

1. User installs DoboS in an electrical enclosure and ensures a suitable power supply is also connected. A certified electrician must be called in to do the electrical branching.
2. User downloads dobona app to his android or apple phone/tablet.
3. User makes sure that the jumper on his board is plugged in before powering up the DoboS for the first time. user should make sure he has a constant internet connection during all of the setup session.
4. User launches dobona app. the first screen that appears is the live_log screen with scrollable fifty lines, each for setting up a separate board. The red font with the downward thumb shows that no board has been setup so far (Fig.1).

Fig 1.

5. Since no board has been setup yet, the user should press on the setup button on the bottom of the screen to move to the setup page, which looks similar the live log page but with beige background (Fig.2).
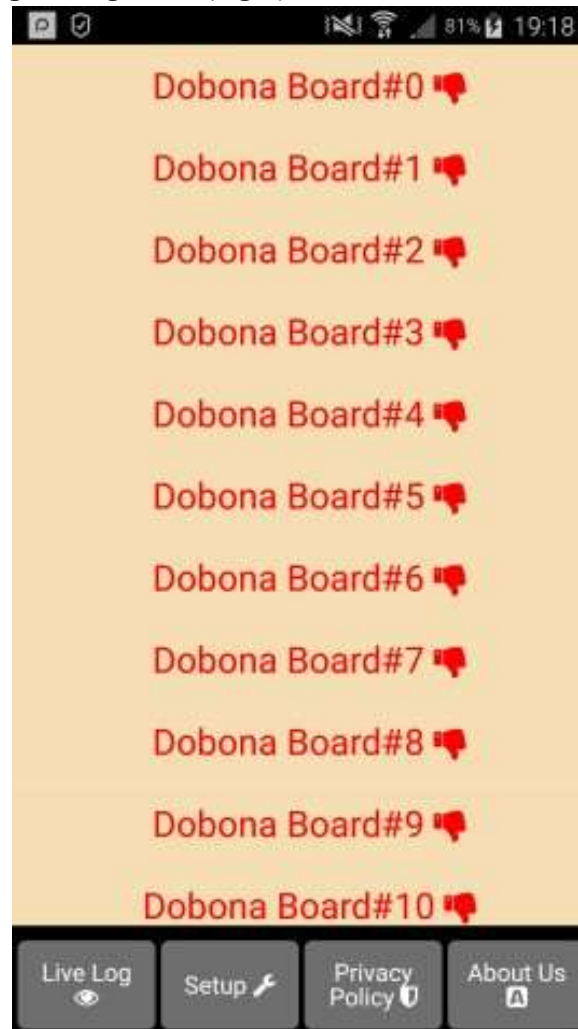

Fig 2.

6. In order to setup a board, the user should press any of the red lines. Supposing he presses on the first line (Dobona Board#0), after which he is presented with a popup screen to choose the board type (Fig.3). Since we are interested in DoboS board only, the user should press the DoboS (serial).
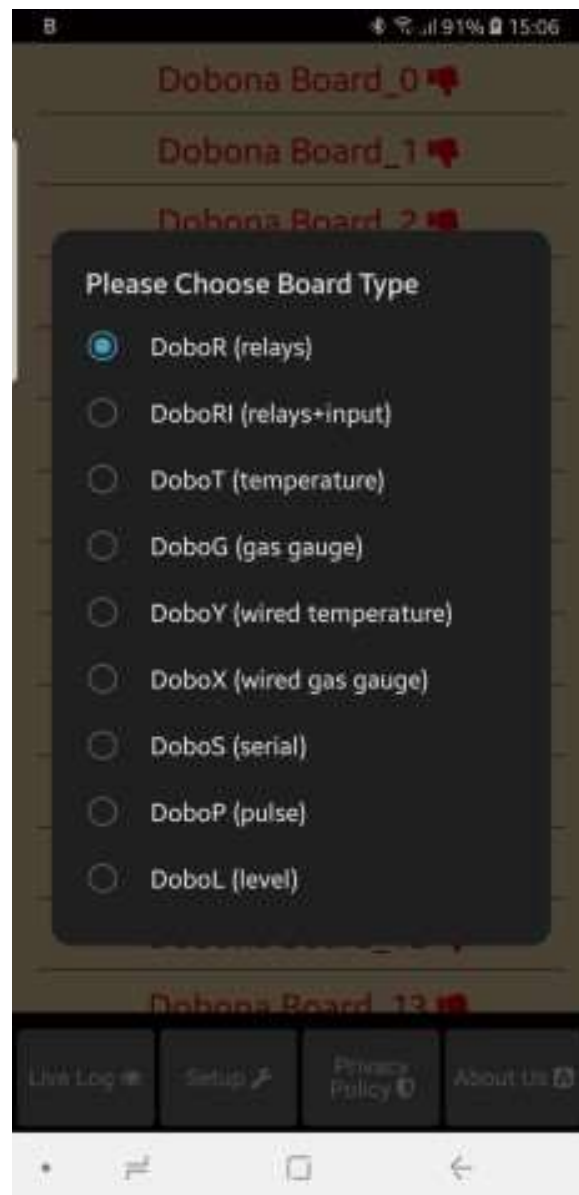
Fig 3.

7. User is then presented with the next screen where he is prompted to enter a name for the dobona board he chose (Fig.4). Supposing he writes "MAIN_PLC" as name and makes sure the phone/tablet has an internet connection, and presses on the next button, he is taken to a new screen to register the board on the server (Fig.5).
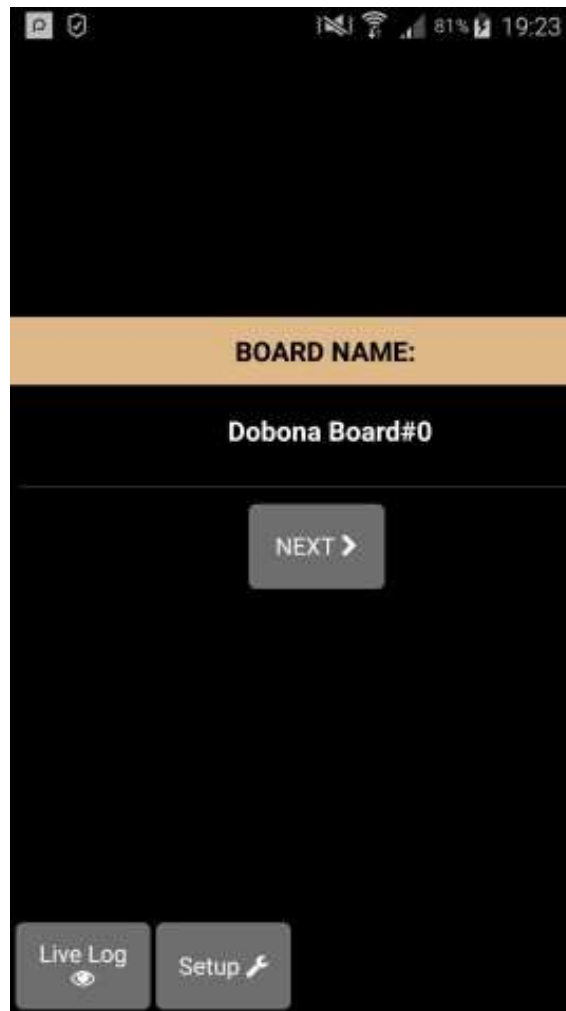
Fig 4.

8. User must enter the ssid and password of the internet enabled Wi-Fi network where the DoboS will be installed. The reg.key is automatically generated by the server. If the user wishes to receive email notifications whenever the alarm level is exceeded he should tick the "register phone for email notification". A field to enter the email will appear on the screen where the user can enter his email. If the DoboS board has already been setup from a previous phone/tablet and the user wants to enable his phone to control it, he should press on the pen thumbnail to enter the previously setup DoboS reg.key before pressing on the save and register on server button. If the reg.key, ssid and password are correct, then he will be directed to the live_log screen (in this case go directly to step 10).
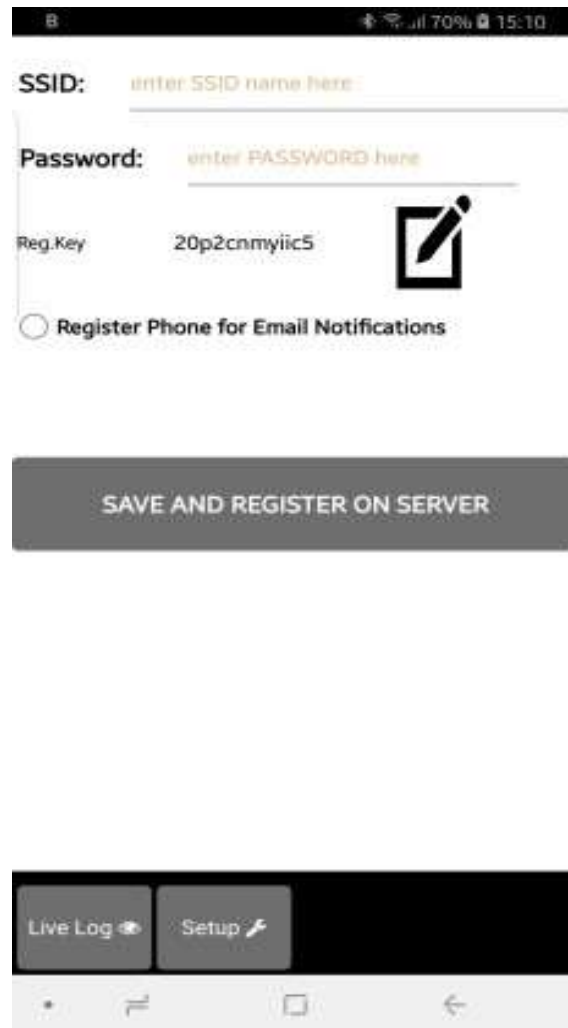
Fig 5.

9. On the next page (Fig.6) the user has to switch the phone/tablet Wi-Fi connection to the "Dobona_xxxx" network that should appear on the list of available Wi-Fi networks. That network requires no password. After connection to that network, the user should press the "Then Press Me!" button. If successful connection between DoboS and mobile is established the user is taken to the live log screen (Fig.7). The user will notice that the Dobona Board#0 is now replaced with MAIN_PLC, with a green font and thumbs up to indicate that the board has been setup.

Fig 6.

Fig 7.

10. Now pressing on the MAIN_PLC line will display the live log screen related to the DoboS board that has been setup (Fig.8). The upper part of the screen is where the app. user can enter the data he wishes to send to the remote DoboS. By pressing the "Send to Dobos" button, the user-entered data will be send to the cloud and then to the remote DoboS board. The lower part is the last message sent by the DoboS to the user(s). The last time the DoboS board checked with the server is displayed on the bottom of the screen. This information is important for the user to know if the DoboS and its internet connection are working properly within a certain time period. If for instance the screen displays an unusually long time, it could be an indication that the DoboS or its internet connection or router are facing issues. The "Relay Is:" field is reserved for now.

Fig 8.

4. How to run the board?

After successful setup, the user must:

- Power down the DoboS by removing its supply
- Remove the jumper on the DoboS board
- House the DoboS back in its enclosure
- Place the enclosure in its final panel destination
- Power up the DoboS. The DoboS will now seek the user-entered router SSID and password to connect to the internet and send updates to the remote server. It should be noted that poor internet service or weak local router Wi-Fi coverage will impact DoboS performance.

5. How to delete the board setup?

In order to delete an already setup DoboS from the user phone/tablet, he must:

- Launch the dobona app
- Press on the Setup button on the bottom of the screen
- The user must make sure his phone/tablet is connected to the internet
- Press on the green line of the board name (MAIN_PLC in our case)
- The below screen is displayed (Fig.10)

Fig 10.

- Enter the board SSID in the input field and then press on the OK button. The app. will send info to the server to delete the "MAIN_PLC" board information and will also delete it from the phone if the server acknowledges that the entered SSID was correct.

6. Contact information

For more information or comments, please do not hesitate to contact the Dobona technical team by email at: info@iotsprint.com
We are available from 8:00AM (GMT+3) to 6:00PM (GMT+3).