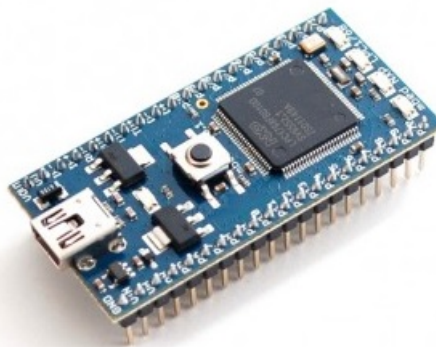


NETWORK EMBEDDED SYSTEMS

ALARM SYSTEM USER MANUAL



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Alarm System

This is a system that is capable of sensing its surroundings, retrieving data from humidity, temperature and luminosity sensors. It provides an interface that allows the redefinition of several system settings, and the checking of all the values being measured by the nodes. Not only is this an effective alarm system that guarantees the alert of the system's central unit upon violation of a given threshold, but it is also a flexible solution in the sense that allows the user to customize its configuration.

The following user manual helps the user navigate through all the functionalities made available to the everyday user of our application.

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1 How to use the System

1.1 Turning ON/OFF the alarm system

To turn ON the system follow these steps:

1. Make sure that the system is properly connected to the power supply (5 V needed);
2. Click on the round button (figure 1): the message “Welcome” appears. You may now insert the password with the help of the joystick located near the LCD screen of your application board.

NOTE: The application comes with a predefined password: "uldr". It stands for (u)p, (l)eft, (d)own, and (r)ight. You may change the password later (see 1.2).

To turn OFF the system follow these next steps:

1. Click the round button once again at any time. There will be a message showcasing “turning off...”. Wait 2 seconds: the system is turned OFF.



Figure 1: Round push button

1.2 Choosing an Operation Mode

After inserting the password, the user can change the operation mode by moving the joystick to the right or left. To confirm a certain mode, press the joystick in the center position.

There are 4 different modes to choose from:

1. Humidity Mode;
2. Temperature Mode;
3. Luminosity Mode;
4. Change Password.

The first three modes allow the user to interact with a given node (the one associated with the sensor chosen). The forth mode allows the user to redefine a password with any of the 4 characters available.

1.3 Operation Mode's options

After selecting a mode a message displaying “Press for more actions” will appear. Press again in the center position of the joystick to open more actions.

In each operation mode there are 4 different functionalities:

1. Return to the Mode Selection menu;
2. Change the threshold values of the selected mode;
3. Change the periodicity of the messages and sensor readings (these are limited to down to 2 seconds, up to 9.9 seconds between readings);
4. Toggle messages from the node associated with the selected mode.

To select one of these functionalities follow these next steps:

1. To return to the Mode Selection menu, move the joystick to the left;
2. To change the threshold value, move the joystick up;
3. To change the period value, move the joystick right;
4. To toggle the periodic readings, move the joystick down;

NOTE: Once an option is picked the redefinition of values is done by moving the joystick to the left (to decrease the variables' value) or to the right (to increase the variables' value).

NOTE #2: Once you have picked an option that isn't the 'toggle messages' option the messages will be toggled OFF.

2 Alarms

After inserting the password, each node will wake up and start to periodically retrieve data from the sensors. If the values violate the set thresholds, then an alarm message will be sent to the Main node and an alarm sound will ring on the alerting node. To turn the alarm OFF, click the rectangular button (figure 2).



Figure 2: Rectangular push button

3 Troubleshooting

If the system is not working as supposed to there are some steps that can help you:

1. Unplug the mbed from the power supply;
2. Check if the connections between every node are properly done;
3. Plug the system to the power supply again;
4. Reset the nodes.

If this doesn't work, report to the creators of the system.