teknim®

TWM-3885
Conventional Wireless Coordinator
Installation & User Manual
Release Date: 15/09/2021 Rev:01

Contents

1   General Definitions

TWM-3885 Conventional Wireless Coordinator module is a cabled-wireless access control unit that allows any conventional fire alarm panel of *TLPWAN*[1] wireless system to be integrated into the zone line.

Basically, it allows the *TLPWAN* based wireless fire detection devices to be connected to the conventional fire alarm system just like the conventional fire detection devices, and also to be monitored and controlled against fault and fire situations.

TWM-3885 Conventional Wireless Coordinator module is fed through an external power source and allows all fire and fault situations on the wireless system to be monitored through it. At the same time, it performs the sounding and muting functions of the wireless sirens by monitoring the siren outlet of the conventional fire alarm panel.

(1) *TLPWAN* (Teknim Low Power Wide Area Network) is a wireless communication protocol developed by Teknim which allows low power consumption devices on a wider area in a stable and safe manner by using two-way communication.

2   Technical Specifications

Supply Voltage	18Vdc – 35Vdc
Average Current Consumption	15mA (@24Vdc)
Operating Frequency	868 MHz
Output Power	14 dBm (25 mW)
Communication Distance	500 m (open area)
Number of Channels	10
Total Number of Connectible Devices	31 (Routers and other devices)
Number of Routers That Can be Connected Consecutively	5
Number of Routers That Can be Connected to a Coordinator Side-by-Side	5
Humidity	95% RH
Operating Temperature	-10 – +55 degrees
Size (mm)	150 mm x 110 mm x 42 mm + 70 mm Antenna
Housing Material	White Color, ABS Plastic
Cross-section of the Cable Used	0.4mm ² ~ 1.5mm ²
Weight	185 gr
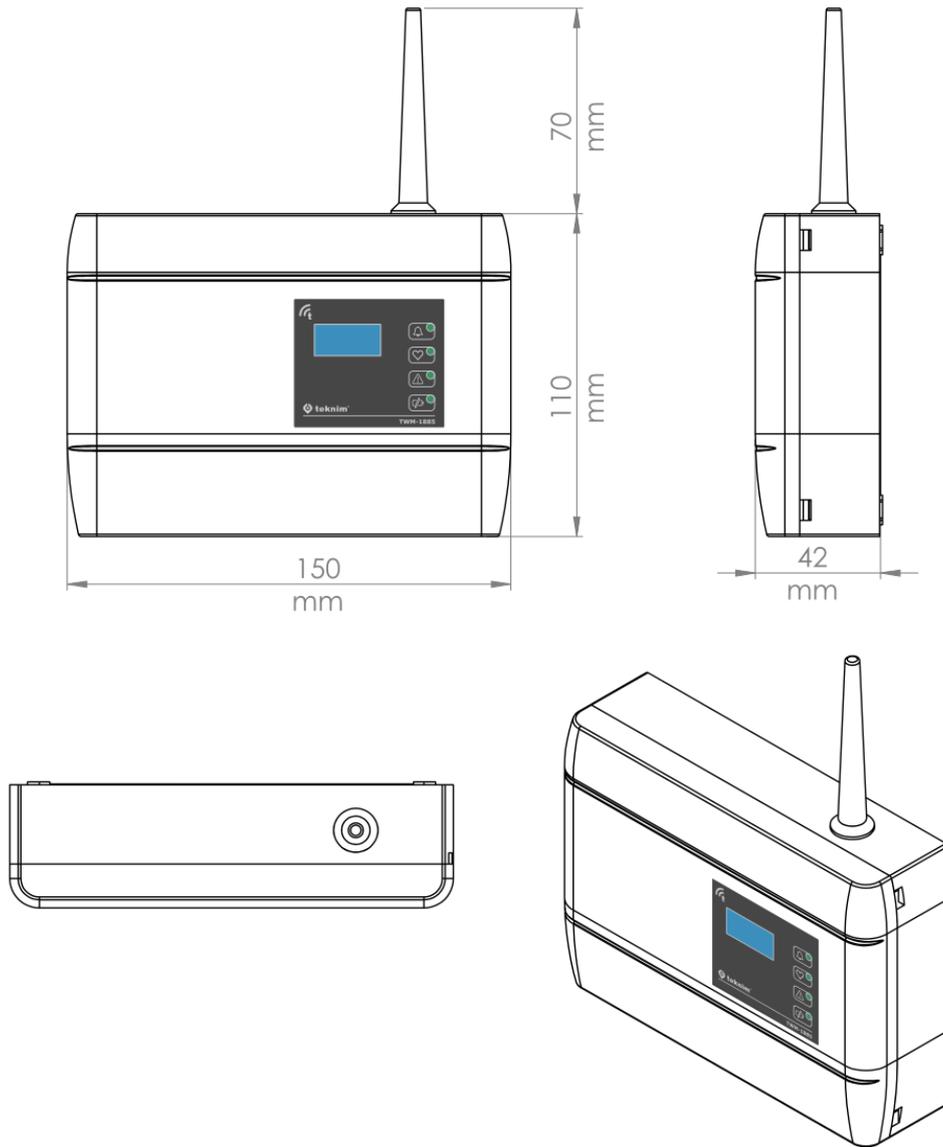
3   Installation

Under this topic, the installation of TWM-3885 Conventional Wireless Coordinator module will be explained step by step in details. Please read all steps carefully.

3.1   Mounting

The following articles must be followed carefully in order to provide a good communication with the devices connected to the coordinator:

- Choosing a proper communication channel will make the communication between the devices more stable. Channel selection can be made automatically or manually. If manual selection is to be made, initially all transmissions in the environment must be detected with the RF-analyzer and according to this, relatively the most available channel must be preferred. See programming section for manual channel selection.
- The environmental factors such as high current lines, big metal objects, computers, network lines, other cable lines, etc. that may interrupt the connection with the devices on the wireless network must be avoided.

- There must be at least 2 meters of distance from other wireless devices.
- If possible, it must be mounted at least 2 meters high from and parallelly to the ground. The antenna must remain at an angle of 90 degrees to the ground.
- It must be operated under the proper ambient conditions indicated in technical specifications. Otherwise, the operating performance will be affected.
- A suitable location must be preferred by considering the communication distance when all devices to be communicated are taken into consideration. Communication distance can be seen in technical specifications.

The mounting holes of the module are located under the module cover. In order to access those, the cover must be opened by gently pushing through the holes on the right side of the module by using a flathead screwdriver.

3.1.1 Cable Holes

The holes through which the cables necessary for module connection will pass must be prepared before wall mounting. For this purpose, holes must be broken open on the round points marked on the product housing. Before breaking open the holes, the cards inside of the module must be removed. The tabs holding the cards must be pulled gently in order to remove the cards.

Once the cards are removed, a gentle pressure must be applied behind the point to be broken open in a manner to leave a space underneath by using a thick screwdriver in order to break open the holes. The cards can be reinstalled and fixed after this procedure.

3.1.2 Wall Mounting

Mark the wall according to the 4 screw holes seen below and bore 4 holes on the wall by using a drill according to the diameters of the wall plugs included in the pack. Insert the wall plugs into the bored holes and fix the module on the wall by screwing it onto the wall.
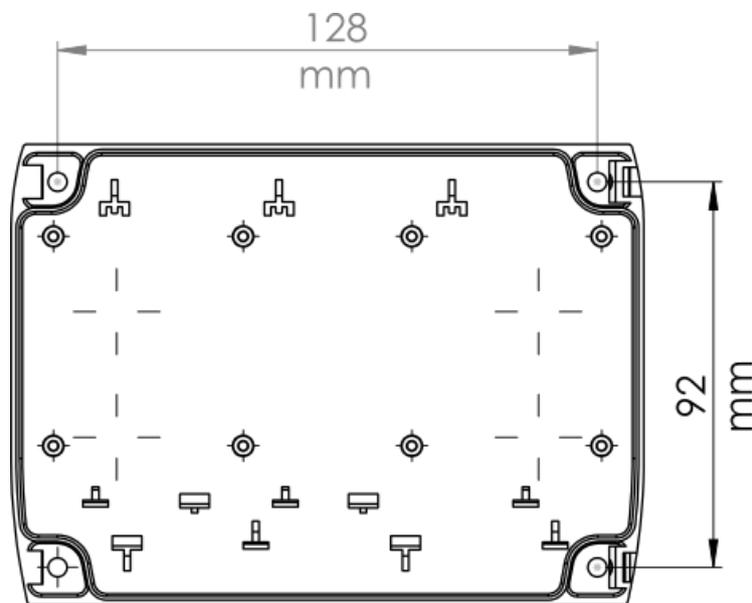

Figure 1 – Mounting Hole Sizes

3.2 Antenna Installation

TWM-3885 Conventional Wireless Coordinator module is placed in the box with the antenna wire and antenna housing disassembled. Ensure a good installation of the antenna in order to provide a good

communication between devices. Otherwise, there may be distance problems and communication performance losses.

There are two superposed cards connected to each other in the module: The upper one of those is TLPWAN-RF card, while the other serves as the Flashlink interface and control card. The antenna terminal is located on the TLPWAN-RF positioned as the lower card. Pass the wire antenna through the antenna input of the box and fix it on the terminal to the right as shown in the figure. Make sure that the terminal screw is firmly tightened. An antenna that is not fixed properly may cause performance loss.
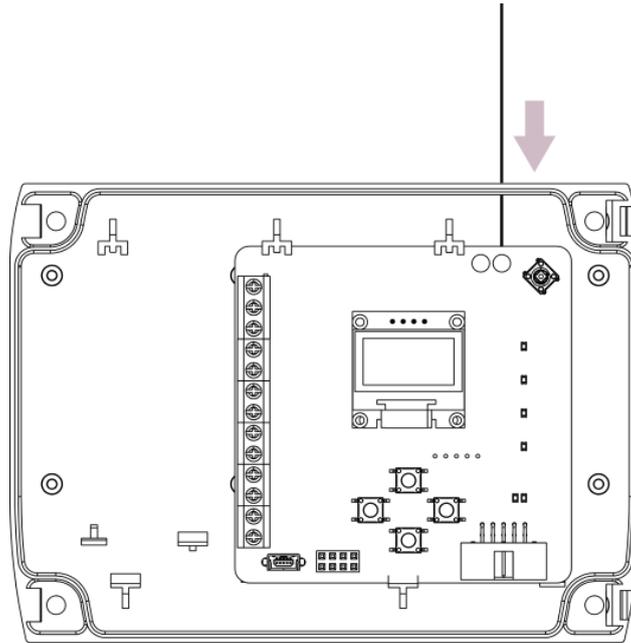

Figure 2 - Antenna Wire Installation

Once the wire antenna is fixed into its place, push the antenna housing into the antenna input tightly to fix it into its place.
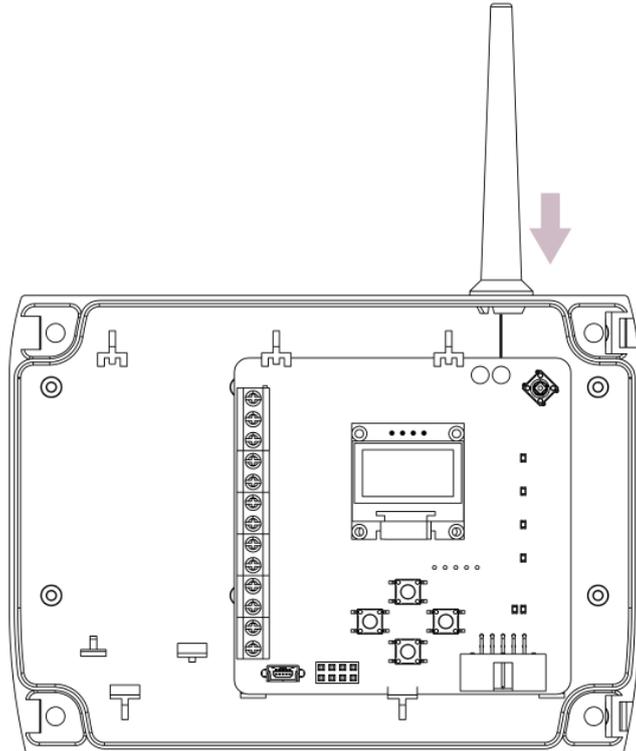
Şekil 3 - Anten Muhafazası Montajı

3.3 Supply Connection

Pass the cables from cable holes and strip their ends at a proper length, then make the supply connections as shown in the following connection diagram. Make sure that the terminal screws are tightened firmly.

Figure 4 – Supply Connection Diagram

3.4 Zone Alarm Resistor Connection

Zone alarm resistor must always be kept connected to the "Alarm Resistor" terminal. In case of any alarm situation in the wireless system, the zone alarm resistor gets connected parallelly to the zone

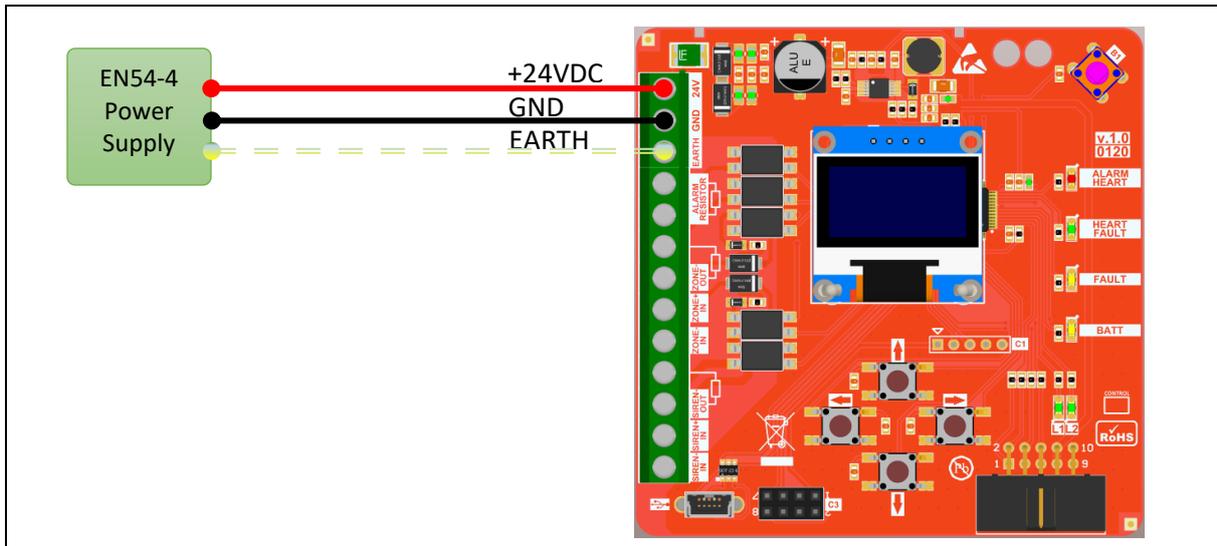line, and thus the alarm is created on the fire alarm panel. The value of alarm resistor must have been indicated in the user manual of your fire alarm panel. Teknim conventional fire alarm panels use "470R" resistors as alarm resistors.

Figure 5 - Regional Alarm Resistor Connection

3.5 Zone Line Connection

Conventional wireless coordinator connects to the zone line and thus provides the fire alarm panel to go into fault and alarm situation. Besides, it checks whether the reset button on the fire alarm panel is pushed or not by monitoring the voltage on the zone line. There are two types of connection methods for connecting the conventional wireless coordinator to the conventional zone line.

In case where the coordinator is connected to the middle of the zone line, the line end resistance connects to another device at the end of the line. The coordinator provides the zone line to be completed by connecting "Z-IN" and "Z-OUT" ends to each other and also provides the line end resistance to be connected parallelly to the line. The coordinator, in case of a fault occurrence on the wireless system, separates the "Z-IN" and "Z-OUT" ends and provides the zone line to become an open circuit and thus provides the fire alarm panel to go into zone open circuit fault. In such case, since all conventional devices that remain on the rest of the line will become de-energized, they will become inoperable.
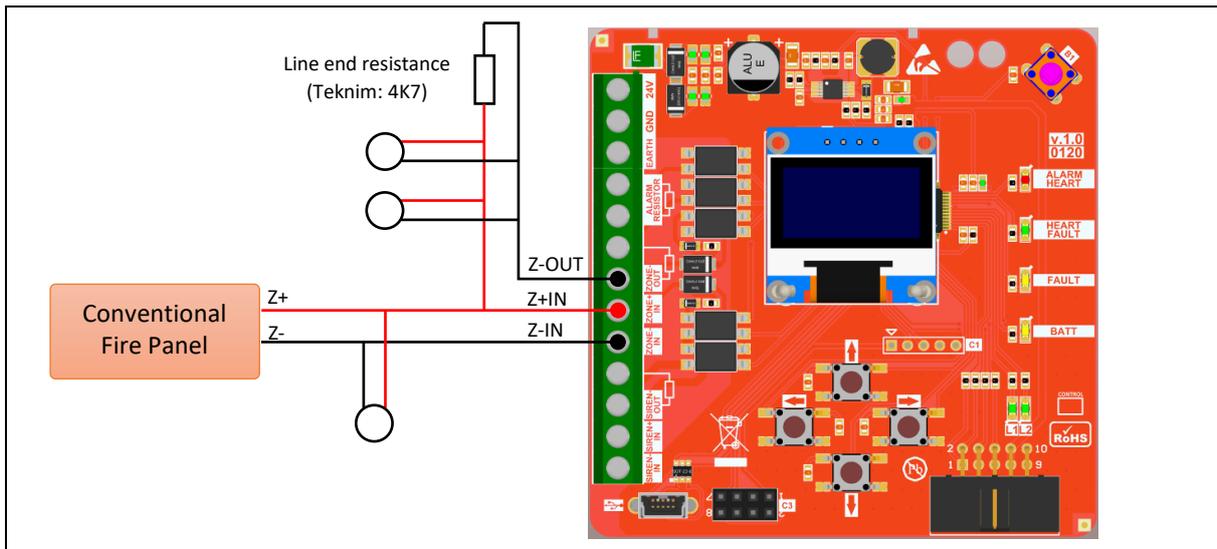
Figure 6 - Coordinator Zone Connection Diagram 1

In cases where the coordinator is connected to the end of the zone line, the line end resistance gets directly connected to the necessary terminals as shown in the following connection diagram. The coordinator, in case of a fault occurrence in the wireless system, separates the "Z-IN" and "Z-OUT" ends and makes the line end resistance become an open circuit and thus provides the fire alarm panel to cause an open circuit fault. In such case, since no other devices will remain on the rest of the line, all devices on the other side of the line will keep on operating.
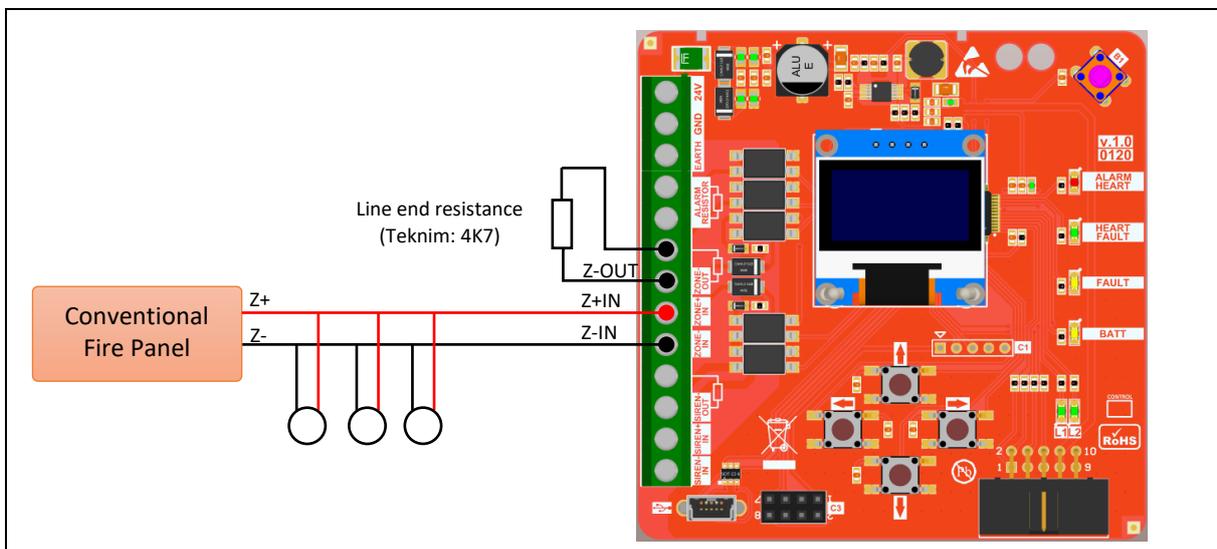

Figure 7 – Coordinator Zone Connection Diagram 2

3.6   Siren Line Connection

Conventional sirens operate according to the voltage applied by the fire alarm panel to the siren line. Conventional wireless coordinator, follows the siren line and decides whether the wireless siren will set off or not. At the same time, just like in the zone line, it can check the siren line end resistance and inform the fire alarm panel about any fault situation regarding the wireless sirens. There are two

connection methods for connecting the conventional wireless coordinator to the conventional siren line.

In case where the coordinator is connected to the middle of the siren line, the line end resistance connects to another siren at the end of the line. The coordinator provides the siren line to be completed by connecting "SIREN-IN" and "SIREN-OUT" ends to each other and also provides the line end resistance to be connected parallelly to the siren line. The coordinator, in case of a fault occurrence on the wireless sirens, separates the "SIREN-IN" and "SIREN-OUT" ends and provides the siren line to become an open circuit and thus provides the fire alarm panel to go into siren open circuit fault. In such case, since all sirens that remain on the rest of the line will become de-energized, they will become inoperable.
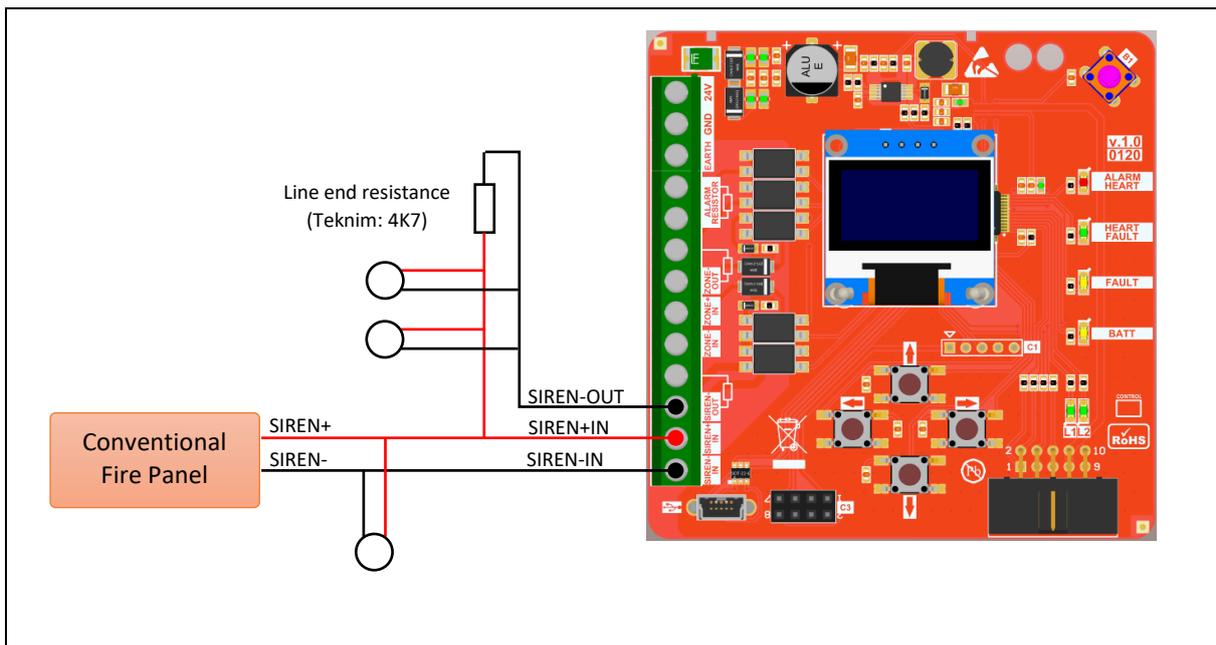

Figure 8 – Coordinator Siren Connection Diagram 1

In cases where the coordinator is connected to the end of the siren line, the line end resistance gets directly connected to the necessary terminals as shown in the following connection diagram. The coordinator, in case of a fault occurrence in the wireless sirens, separates the "SIREN-IN" and "SIREN-OUT" ends and makes the line end resistance become an open circuit and thus provides the fire alarm panel to cause a siren open circuit fault. In such case, since no other sirens will remain on the rest of the line, all sirens on the other side of the line will keep on operating.
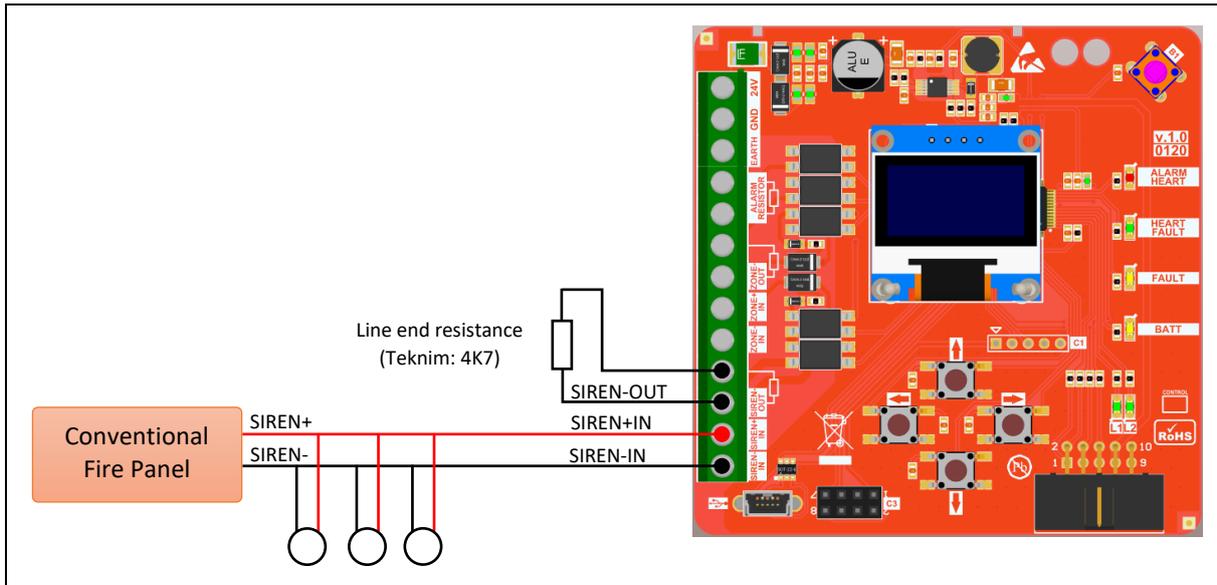
Figure 9 - Coordinator Siren Connection Diagram 2
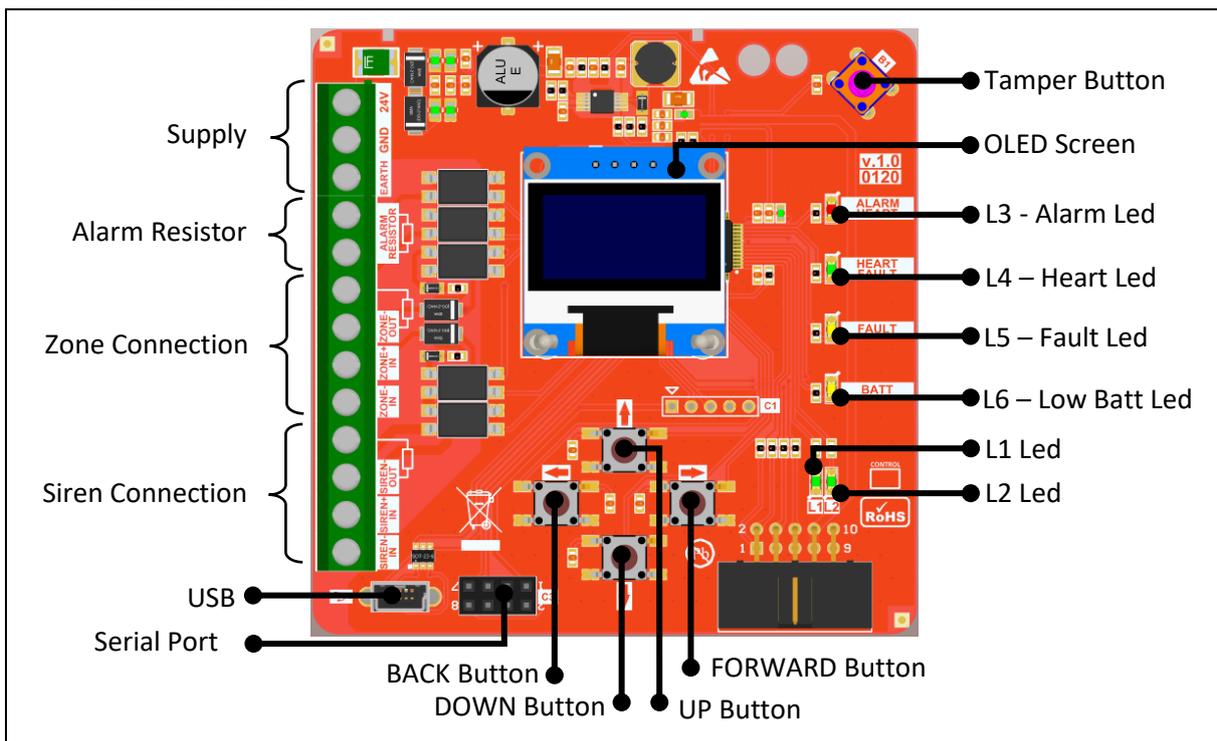
3.7   Module Interface

Figure 10 – Module Card Detailed Interface

- Supply Connection: Conventional wireless coordinator needs an external supply. +24VDC supply voltage is provided through these terminals.
- Alarm Resistor: Any alarm on the wireless system is informed to the fire alarm panel by means of connecting the alarm resistor of the coordinator to the zone line.
- Zone Connection: Coordinator makes the fire alarm panel give an open circuit fault by connecting or disconnecting the line end resistance to the line through the zone connection.

Besides, it checks whether the reset button on the panel is pushed or not by monitoring the voltage on the zone line.

- Siren Connection: The coordinator makes the fire alarm panel give a siren open circuit fault by connecting or disconnecting the line end resistance to the line through the siren connection. Besides, it checks whether the conventional sirens on the panel work or not by monitoring the voltage on the siren line.
- Serial Port: It is used for software update.
- USB: It is used for monitoring and analysis programs.
- Tamper Button: It is used for detecting that the cover is opened. When the cover is opened, this will be shown as a fault on the analogue addressed fire alarm panel.
- OLED Screen: The screen does not work in any quiescent situation. Any alarm activates in case of a fault or when the cover is opened. Programming menu can be accessed through this screen.
- Alarm Led: It shows any alarm state on the wireless system.
- Heart Led: It shows that the module is operating and the wireless network is set.
- Fault Led: It shows any fault state on the wireless system.
- Low Battery Led: It lights when the battery of any wireless devices is low.
- L1 Led: It lights when connection to wireless network is activated.
- L2 Led: It lights when there is an ongoing process.
- BACK Button: It is used for going back on the menu or for cancelling.
- DOWN Button: It is used for proceeding on the menu or for decreasing a value on the menu.
- UP Button: It is used for going back on the menu or for increasing a value on the menu.
- FORWARD Button: It is used for going to a menu that is selected on the menu or for approval purposes.

3.8   Programming Menu

Addressed Wireless Coordinator module menu will be explained under this topic.

If there are no events on the system when the menu is opened or the upmost menu is selected by using the BACK button, the following main screen will be displayed initially:
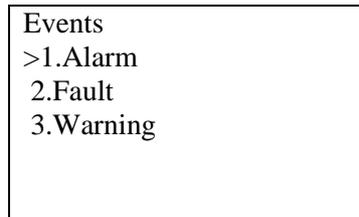

FORWARD for the Menu
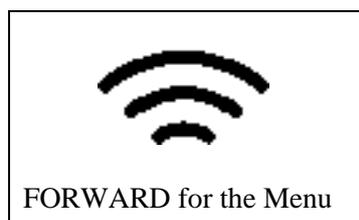
3.8.1   Events

This is the section under which the instant events that occur within the wireless system are listed. The events are listed under three categories being "Alarm", "Fault" and "Warning".

```
        Events
```
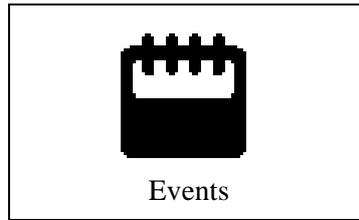
To enter the menu: "Main Screen" > FORWARD > "Events" > FORWARD

```
Events
>1.Alarm
 2.Fault
 3.Warning
```

Any category can be selected from the "Events" screen shown above, and the devices under the selected category are listed. Example: "Fault" category is selected in the following figure and the devices in fault state are listed.

```
Fault (2)

>1.Coordinator
ID:18850601200001
 2.Detector
ID:18502001200015
```
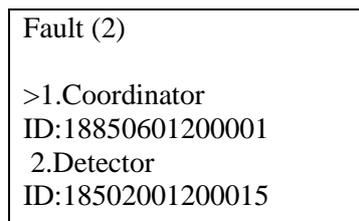
To navigate through the device list, use the DOWN and UP buttons on the menu. Go to sub-menu by pressing the FORWARD button in order to read the details of faults. Example: Coordinator is selected and its fault detail is displayed. On the address line, the number in brackets is the address in the addressed system and then the address in the wireless system. On the following lines, the fault states of the respectively selected devices are listed. If there are more than one fault states, they will be listed one under the other.
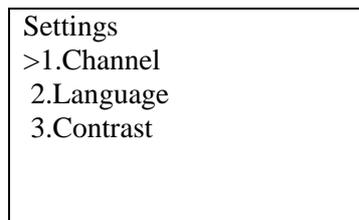
```
18850601200001
>1.Address: (1)0
 2.Tamper Active
```
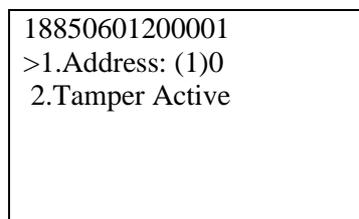
3.8.2 Settings
This is the menu which device address, number of devices, channel, language and screen contrast settings can be adjusted.
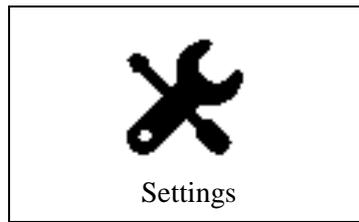
Settings

To enter the menu: "Main screen" > FORWARD > DOWN > "Settings" > FORWARD

```
Settings
>1.Channel
 2.Language
 3.Contrast
```

3.8.2.1 Channel

Each small frequency range obtained by dividing the frequency range reserved for TLPWAN into 10 segments, corresponds to one channel. Each wireless system having its own independent channel allows the wireless systems to communicate in the same environment without any data interference.

On the channel screen, the channel that a new wireless system (PAN) to be established will communicate through can be selected. As indicated in technical specifications section, TLPWAN wireless systems can communicate through "10" channels. To enter the Channel screen, navigate through the settings menu by using UP and DOWN buttons and select "Channel" menu.

To change the channel value increase or decrease the value by using UP and DOWN buttons. Press FORWARD button to approve and see the "Successful" inscription on the screen. Press BACK button to exit from the menu or to cancel the changed value. Address value can be selected as 10 the most. "0" value allows the most available channel from the RF direction to be determined and automatically selected.

```
Channel

Channel  0    ◆

0: Automatic
1-10: Fixed
```
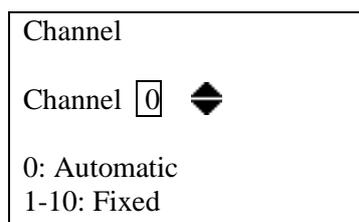
Example: The channel value selected as "0" above, provides all channels to be scanned during the wireless system setup and allows the most available channel to be selected automatically.

3.8.2.2 Language

The language of the Addressed Wireless Coordinator module can be changed with this setting. To enter the Language screen, navigate through the settings menu by using UP and DOWN buttons and select "Language" menu.

To change the language, navigate through the language options by using UP and DOWN buttons. Press FORWARD button to approve and see the "Successful" inscription on the screen. Press BACK button to exit from the menu or to cancel the changed value.

```
Language

Language  English  ⬍
```
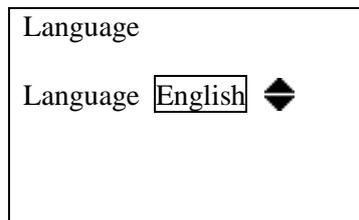
3.8.2.3   Contrast

The screen contrast value can be changed with this menu. To enter the Contrast screen, navigate through the settings menu by using UP and DOWN buttons and select "Contrast" menu.

To change the contrast value, increase or decrease the value by using UP and DOWN buttons. Press FORWARD button to approve and see the "Successful" inscription on the screen. Press BACK button to exit from the menu or to cancel the changed value. The contrast value can be selected within the range of 0-255. Decreasing the contrast value will reduce the OLED screen's current consumption.

```
Contrast

Contrast 100       ⬍
```
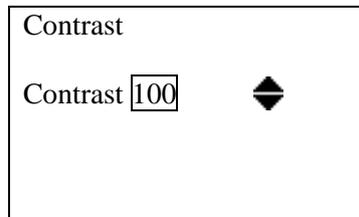
3.8.3   Functions

Functions menu allows the settings such as wireless system setup, reset, connection permission to be made.

Functions

To enter the menu: "Main screen" > FORWARD > DOWN > "Functions" > FORWARD

```
Functions
>1. Setup PAN
 2. Delete PAN!!
 3. Connection Permission
 4. Reset PER
```
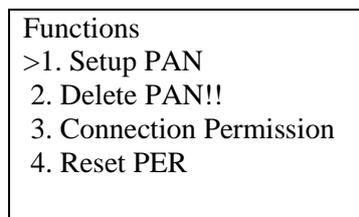
3.8.3.1   Setup PAN

Setting up a new wireless system can be made from this menu. PAN is an abbreviation used in the network terminology and it stands for Personal Area Network.

A wireless system (PAN) is initially needed for the wireless devices to be connected to a network. If there is a network set, the "Heart Led" blinks. If no network is set, the "Heart Led" is off. Thus, the "Heart Led" can be used as the indicator of a set network.

To enter the Setup PAN screen, navigate through the functions menu by using UP and DOWN buttons and select "Setup PAN" menu.

To setup PAN, select "Yes" or "No" by using UP or DOWN buttons and press FORWARD button to complete the operation. This operation may take some time, therefore the warning "Waiting.." will be shown on the screen. Once the PAN Setup operation is completed, the warning "Successful" will be displayed on the screen and this warning will disappear after 2 seconds. The result of the PAN setup operation can be verified by checking the "Heart Led". The screenshots of this operation can be seen below.

Setup PAN	Setup PAN	Setup PAN
Setup PAN Yes	Setup PAN Y Waiting..	Setup PAN Y Successful
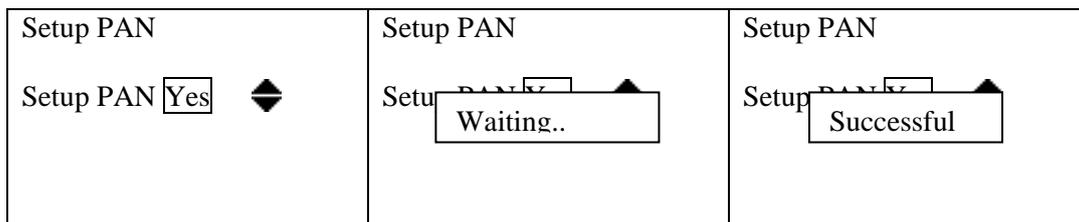
Once the PAN setup operation is completed, the wireless devices can now be connected to the newly established wireless network. The PAN connection permission must be activated for the devices to be connected to the newly established PAN.

3.8.3.2   Delete PAN!!

A previously established PAN (Wireless Network) can be deleted from this menu. PAN deletion operation does not affect other wireless networks, but only deletes the devices connected to it and the settings and gets prepared for a new PAN to be set.

To enter the PAN deletion screen, navigate through the functions menu by using UP and DOWN buttons and select "Delete PAN!!" menu.

To delete PAN, select "Yes" or "No" by using UP or DOWN buttons and press FORWARD button to complete the operation. This operation may take some time, therefore the warning "Waiting.." will be shown on the screen. Once the Delete PAN operation is completed, the warning "Successful" will be displayed on the screen and this warning will disappear after 2 seconds. The result of the Delete PAN operation can be verified by checking the "Heart Led". The screenshots of this operation can be seen below.

Delete PAN	Delete PAN	Delete PAN
Delete PAN Yes	Dele PAN Y Waiting..	Delete PAN Y Successful
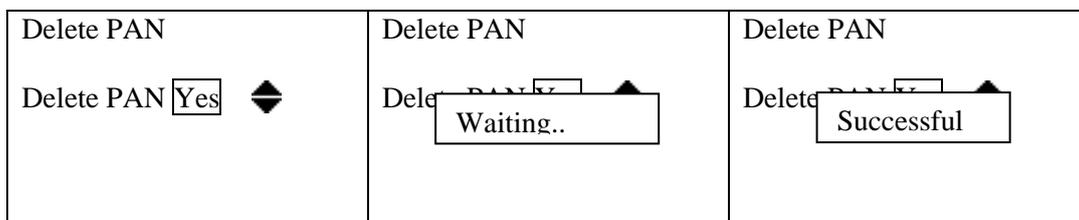
3.8.3.3   Connection Permission

The connection permission must be activated on the wireless network initially for a wireless device to connect to the wireless network. This permission operation can be carried out from "Connection

Permission" menu. To enter the connection permission screen, navigate through the functions menu by using UP and DOWN buttons and select "Connection Permission" menu.

Increase or decrease the value by using UP and DOWN buttons for changing the connection permission. Press FORWARD button to approve and see the "Successful" inscription on the screen. Press BACK button to exit from the menu or to cancel the changed value.
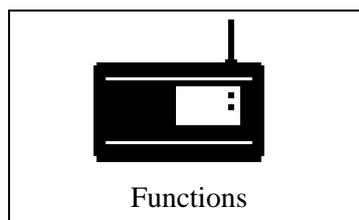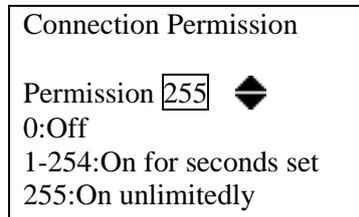
```
Connection Permission

Permission 255   ◆
0:Off
1-254:On for seconds set
255:On unlimitedly
```

Connection permission can be adjusted with or without time limit. The value within "1-254" range will determine for how many seconds the connection permission will be on. This period restarts after each new connection operation and allows device connection without the need for the user to activate connection permission over and over again. However, the value "255" provides the connection permission to be on for an indefinite period of time. The value "0" must be chosen to turn off the connection permission again. Activating the connection permission with a time limit can be considered as a measure taken against the connection permission to be left on without time limit.

"L1" led lights continuously as long as the connection permission is on.

3.8.3.4 Reset PER

PER is an abbreviation being used in the communication technology. It stands for Packet Error Ratio. It indicates the ratio of the number of erroneous packets sent by the device from the beginning to the total number of packets sent.

PER values play a role as an important indicator in order to understand the healthy operation of the wireless system. PER values of devices may increase at the system setup phase due to reasons such as attaching, detaching, energy, etc. Therefore, in some cases, PER values may need to be reset. To enter Reset PER screen, navigate through the functions menu by using UP and DOWN buttons and select "Reset PER" menu.

Select "Yes" or "No" by using by using UP and DOWN buttons for resetting the PER values of all devices and the operation is carried out by pressing FORWARD button. The screenshots of this operation can be seen below.

```
Reset PER              Reset PER              Reset PER

Reset  Yes      ◆      Rese            ▲      Rese            ▲
                           Waiting..               Successful
```
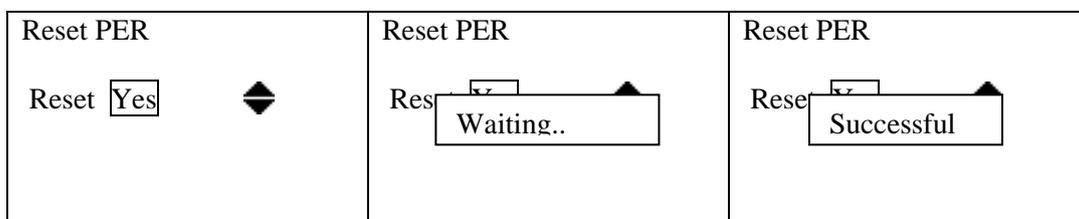
3.8.4 Device List

The list of the devices connected to the wireless network can be accessed from this menu. Address values, RSSI value, battery status, number of successful and unsuccessful data transmissions and device deletion operations are carried out on the "Device Detail" screen under "Device List".

Device List

To enter the menu: "Main screen" > FORWARD > DOWN > "Device List" > FORWARD

Device List

 1.Coordinator*
ID:18850601200001
>2.GC Module
ID:18871702200013

To navigate through the device list, use the DOWN and UP buttons. Press FORWARD button and move towards the sub-menu in order to view device details.

18871702200013	18871702200013
>1.Address:(2)24966	5.HW: 1.0.0
2.RSSI: -23dB	6.SW: 1.0.0
3.Battery: 98%	7.Ping: 20s
4.PER: <2%	8. Reset PER
5.HW: 1.0.0	>9. Delete

Example: GC Module is selected and the device detail is viewed.

Device Details Screen:

1. The device's address in the addressed system and in the wireless system
2. RSSI value. RSSI, is an abbreviation being used in RF terminology. It stands for Received Signal Strength Indicator. It is a measurement value of the current power of the radio signal received by the device. This value is directly related to the distance between the receiver and the transmitter as well as to other environmental factors. Refer to the "Signal Strength" table for RSSI value ranges.
3. Battery status is scaled between 0 and 100. "Battery Low" warning will be generated for the devices having a battery status less than 25%.
4. PER is an abbreviation being used in the communication terminology. It stands for Packet Error Ratio. It indicates the ratio of the number of erroneous packets sent by the device from the beginning to the total number of packets sent. Distance and environmental factors are the mains reasons of data transmission failures. Initially the RSSI values are checked on the devices having high PER values. In case the RSSI values are within normal limits the device is removed from its place and taken to a point that is close to the coordinator and the change in PER value

is observed. Device battery is taken out and installed back again after a while for resetting the PER value or it can be reset by using the "Reset PER" option from the device menu. If the PER value still continues to increase the RF intensity in the environment must be checked. In such case, the PAN might have been setup on a wrong channel or other PANs may be taking too much space on this channel.

5. HW indicates the hardware version.

6. SW indicates the software version.

7. Ping time, indicates the frequency that the devices will communicate with the connected coordinator/router. A shorter ping time means that the coordinator will communicate with the device faster and that reduces battery life. In order to adjust ping time, press FORWARD on the menu selected to proceed to the ping time adjustment page. More detailed information about ping time can be found under "Ping Time" topic.

8. Reset PER is used for resetting the PER value of the device selected. Menu usage is explained under the "Reset PER" topic under the functions. When this menu is accessed from the device selected, the PER value of only the selected device will be reset.

9. "Delete" is selected for deleting this device from the wireless network and the operation is approved by pressing the FORWARD button. The inscription "Successful" will be displayed on the screen if the operation is successful while "Unsuccessful" will be displayed otherwise. The place of the deleted device will be shown blank on the list. The deleted device cannot send data to the coordinator anymore. It needs to be connected back again.

3.8.5 Information

Module software and hardware versions, PAN details are viewed under this screen.
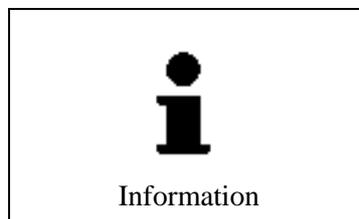
Information

To enter the menu: "Main screen" > FORWARD > DOWN > "Information" > FORWARD

Information	Information
>1.16 Device	4.SW: 1.0.0
2.4 Router	5.PAN Set
3.HW: 1.0.0	6.Channel: 4
4.SW: 1.0.0	7.PAN ID: 10
5.PAN Set	>8.TX Power: 14dBm

Information Detail Screen:

1. Number of battery-operated devices in the wireless system.
2. Total number of coordinator and routers.
3. Hardware version of the module card.
4. Software version of the module card.
5. If PAN is set, the inscription is "PAN Set"; if PAN is not set the inscription is "No PAN".

6. Indicated the channel on which the PAN is set.
7. Each PAN has its own PAN ID. This value is selected randomly during the PAN setup operation between "1-65535" as a unique number. If more than one PAN is required to be set on the same channel, the PAN ID provides the data traffic between the PANs run uninterruptedly. In other words, PAN ID is an identity number that indicates the PAN which should receive the data transmitted within a wireless system.
8. Tx Power is the power value of the radio signals transmitted from the RF circuit in "dBm".

4   Ping Time

Ping time, indicates the frequency that the devices will communicate with the connected coordinator or router. A shorter ping time means that the coordinator will communicate with the device faster and that reduces battery life.

Example: A wireless siren having a ping time of 30 seconds will receive and operate the sound command in 30 seconds.

Ping times of devices:

Device Type	Adjustable Ping Time	Default Ping Time
Multi-detector	120s	120s
Fire Button	120s	120s
Input/Output Module	10-120s	20s
Siren/Flasher	10-120s	10s

Ping times and battery life relations of devices:

Device Type	Ping Time / Battery Life			
	10s	20s	60s	120s
Multi-detector	-	-	-	8 years
Fire Button	-	-	-	10 years
Input/Output Module	3 years	5 years	8 years	10 years
Siren/Flasher	3 years	5 years	8 years	10 years

Maximum 10 sirens/flashers or input/output modules can be connected to one PAN!

In order to adjust the ping time, initially select a device from the device list and select "Ping:xxs" from the device menu and press FORWARD button to proceed to the ping adjustment page.

```
18871702200013        Ping
 5.HW: 1.0.0
 6.SW: 1.0.0           Ping  20      ⬍
>7.Ping: 20s
 8. Reset PER
 9. Delete             10-120 seconds
```

Increase or decrease the value by using UP and DOWN buttons for changing the ping time. Press FORWARD button to approve and see the "Successful" inscription on the screen. Press BACK button to exit from the menu or to cancel the changed value.

5   Quick Menu Access

General structure of the module menu is shown in the following diagram.
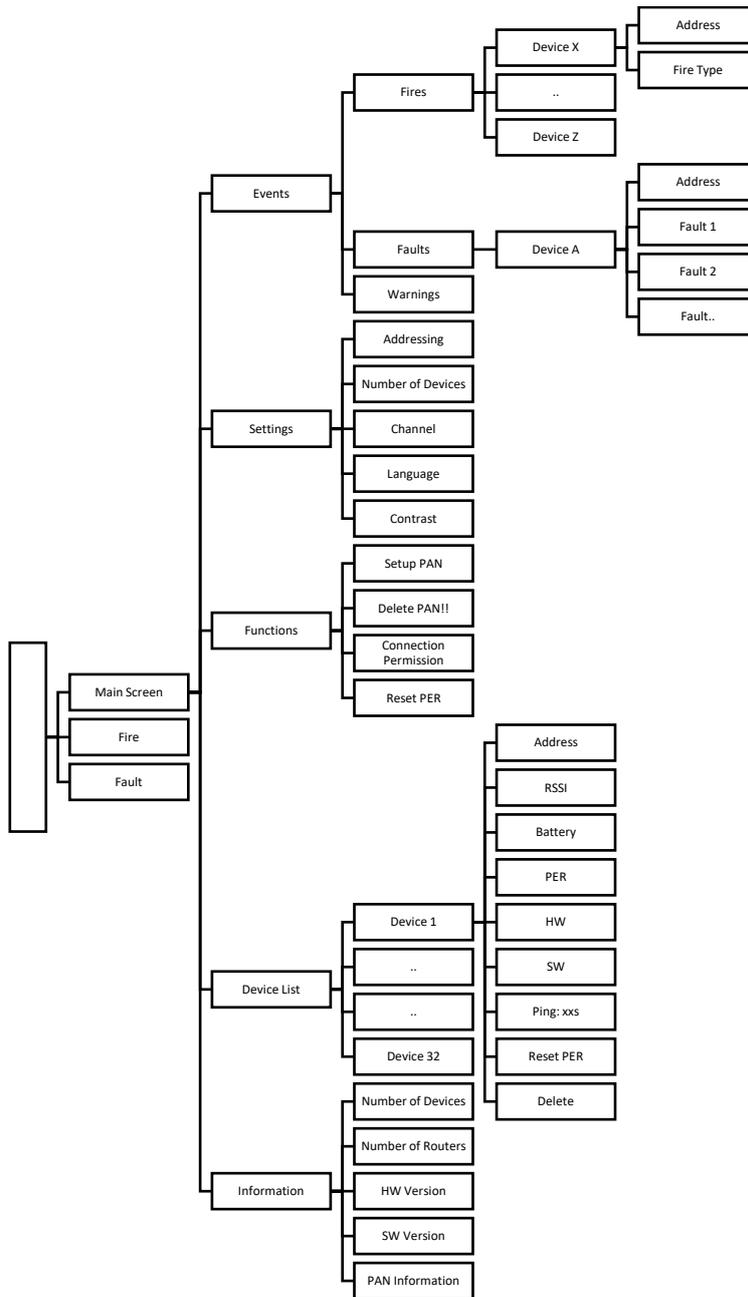

Figure 11 – Quick Access Menu

6   Events and Indicators

The events about all devices on the wireless system and the manner of displaying such events are shown in the following tables.

Wireless Detector	L3	L4	L5	L6	OLED
Smoke Alarm	Yes	-	-	-	Yes
Temperature Alarm	Yes	-	-	-	Yes
Pollution Alarm	-	-	Yes	-	Yes
Temperature Increase Alarm	Yes	-	-	-	Yes
Low Battery Alarm	-	-	Yes	Yes	Yes
Loss Fault	-	-	Yes	-	Yes
Tamper Fault	-	-	Yes	-	Yes

Wireless Fir Button	L3	L4	L5	L6	OLED
Button Alarm	Yes	-	-	-	Yes
Battery Low Error	-	-	Yes	Yes	Yes
Loss Fault	-	-	Yes	-	Yes
Tamper Fault	-	-	Yes	-	Yes

Wireless Input Output Module	L3	L4	L5	L6	OLED
Input Alarm	Yes	-	-	-	Yes
Input Open Circuit Fault	-	-	Yes	-	Yes
Input Short Circuit Fault	-	-	Yes	-	Yes
Output Active Warning	-	-	-	-	Yes
Battery Low Fault	-	-	Yes	Yes	Yes
Kayıp Hatası	-	-	Yes	-	Yes
Tamper Hatası	-	-	Yes	-	Yes

Wireless Siren	L3	L4	L5	L6	OLED
Low Battery Error	-	-	Yes	Yes	Yes
Loss Fault	-	-	Yes	-	Yes
Tamper Fault	-	-	Yes	-	Yes

Wireless Router	L3	L4	L5	L6	OLED
Loss Fault	-	-	Yes	-	Yes
Tamper Fault	-	-	Yes	-	Yes

Addressed Wireless Coordinator	L3	L4	L5	L6	OLED
PAN Set	-	Yes	-	-	-
RF Card Loss Fault	-	-	Yes	-	Yes
Tamper Fault	-	-	Yes	-	Yes

7   Signal Strength Table (RSSI Table)

RSSI is an abbreviation being used in RF terminology. It stands for Received Signal Strength Indicator. It is a measurement value of the current strength of the radio signals received by the device. This value is directly related to the distance between the receiver and the transmitter and also to the other environmental factors. It represents the signal strength that a device has while communicating with a coordinator or a router.

In this table, the meanings of the RSSI values shown in the device list are shown. It must be observed that the RSSI values remain within the limits shown in this table before a device is physically placed in a location. Low signal strength will lead to an unhealthy communication and a low battery life.

Signal Strength (RSSI Value)	Description
Below -90dBm	No Connection
Between -90 and -75 dBm	Poor Connection
Between -75 and -60 dBm	Normal Connection
Over -60 dBm	Good Connection

8   Quick Installation

In this section how to set up a wireless system quickly is explained step-by-step. Setup and programming topics must be read carefully in order to carry out these operations.

1. Fix the antenna and antenna housing.
2. Mount the module on an appropriate place.
3. Connect the network cable to the "Network Terminal" for supply and panel communication.
4. Set the starting address to be shown on the addressed panel from "Addressing" screen.
5. Set the number of devices to be available on the wireless system from "Number of Devices" screen.
6. Set PAN from "Set PAN" screen for setting up the wireless system.
7. Turn on the connection permission from the "Connection Permission" screen for adding devices to the wireless system (for connecting devices to PAN).
8. Make sure that the wireless devices are connected to PAN in the manner described in the installation & user manual of each device.

   Example: Install the batteries of the wireless detector and verify that the device has started by observing the red and green LEDs lighting respectively. Then, press the "A" Connection Button for "5" seconds and start the connection operation. This operation takes approximately between 20 and 60 seconds. See the "Device connected" inscription on the screen at the end of connection operation.

9. Once the device connection operations are completed, turn off the connection permission from the "Connection Permission" screen.

9 Software Update

You may download the software files of all wireless devices under the "Firmware & Software" section of www.teknim.com.tr web site and carry out the update operation by using "Teknim Updater" software.

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Bilgi Elektronik San. ve Tic. A.Ş.
Dudullu OSB 1. Cad. İsmet Tarman İş Merkezi
No:1 Kat:2 No:32 Ümraniye / İstanbul
21
1922-CPR-1599

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EN 54-18:2005, EN 54-18:2005/AC:2007
Fire Detection And Fire Alarm Systems (Input/Output Devices)
EN 54-25:2008, EN 54-25:2008/AC:2010, EN 54-25:2008/AC:2012
Components Using Radio Links
TWD-3885
Teknik veriler: İmalatçıda tutulan BİLGİ-TEC-170908 bakınız.

</td></tr>
</table>

10 Manufacturer Company and Service

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*In compliance with AEEE regulations. This product is manufactured from recyclable and reusable high quality parts and materials. Therefore, do not dispose of the product together with domestic or other wastes at the end of its service lifetime. Take it to a drop-off point for the recycling of electrical and electronic devices.

* Lifetime of this product specified and announced in the list attached to the After Sales Services Regulations published in the Official Gazette No 29029 dated 13/6/2014 is 5 years.

*The consumer may apply to the Consumer Arbitration Board or Consumer Court of the place of residence or of the consumer transactions in case of disputes arising from exercising the rights granted by the guarantee.