Koolmesh Emergency Lighting Control Introduction

Revision History

Date	Version	Description
March 2025	V1	First release

1. Overview

Emergency lighting control is a crucial component within lighting solutions. Emergency lighting is designed to activate rapidly and automatically, providing illumination for an appropriate duration when the main power supply is interrupted and normal electrical lighting fails. In scenarios such as building fires, power outages, or other emergency situations, all types of facilities rely on emergency lighting to ensure that occupants can evacuate the building promptly and safely. Therefore, it is essential to maintain users' emergency lights in proper working order, ensuring they are always ready for immediate use in case of an emergency.

The Koolmesh emergency system is compatible with mainstream market emergency inverter,Bluetooth emergency drivers and standard DALI emergency drivers. However, when using DALI emergency drivers, the traditional method requires the configuration of a wired DALI master. With Koolmesh-enabled converter module , there is no need to configure a wired DALI master, and Bluetooth signals can be easily converted to DALI signals,so that users can use the Koolmesh app to control their standard DALI emergency lights and perform basic configuration.

In terms of compliance, Koolmesh emergency lighting systems fully comply with the requirements of BS 5266-1-2016,BS EN 50172 /BS 5266-8 2004 and BS EN 62034 2012.

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2. Test Type

Koolmesh emergency lighting system supports the following test types:

2.1 Function test

Short test. Regularly check the integrity of the lamp circuit, and the basic functions of the backup battery to ensure the normal operation of the device.

The Koolmesh system supports Bluetooth emergency modules and DALI emergency converter modules. For manual function tests on Bluetooth emergency devices, the start time and test period can be selected, while for manual function tests on DALI emergency converters, the test starts immediately and the duration is usually between a few seconds and 1 minute.

More details about Function test please refer to the Koolmesh Emergency Manual.

2.2 Duration test

Long test. Verify that the backup battery can provide continuous power to meet emergency lighting needs for at least 60 minutes.
The test time can be set according to the battery capacity, up to 45 hours and 30 minutes, and 1-3 hours is generally recommended.

More details about Duration test please refer to the Koolmesh Emergency Manual.

3. Core Functions

Koolmesh emergency lighting system has the following core functions:

3.1 Automatic/manual test

Automatic test: The system supports automatic test scheduling. Users can set the time for automatic function test and duration test in the Koolmesh app or Koolmesh IoT platform.

Note: Users can set the automatic test time for a single device or emergency group in the Koolmesh app, but on the existing Koolmesh IoT platform, we can only set the Self-test scheduling by binding the configuration file when editing the zone, and then opening the corresponding settings according to the type of emergency device. See figure below.

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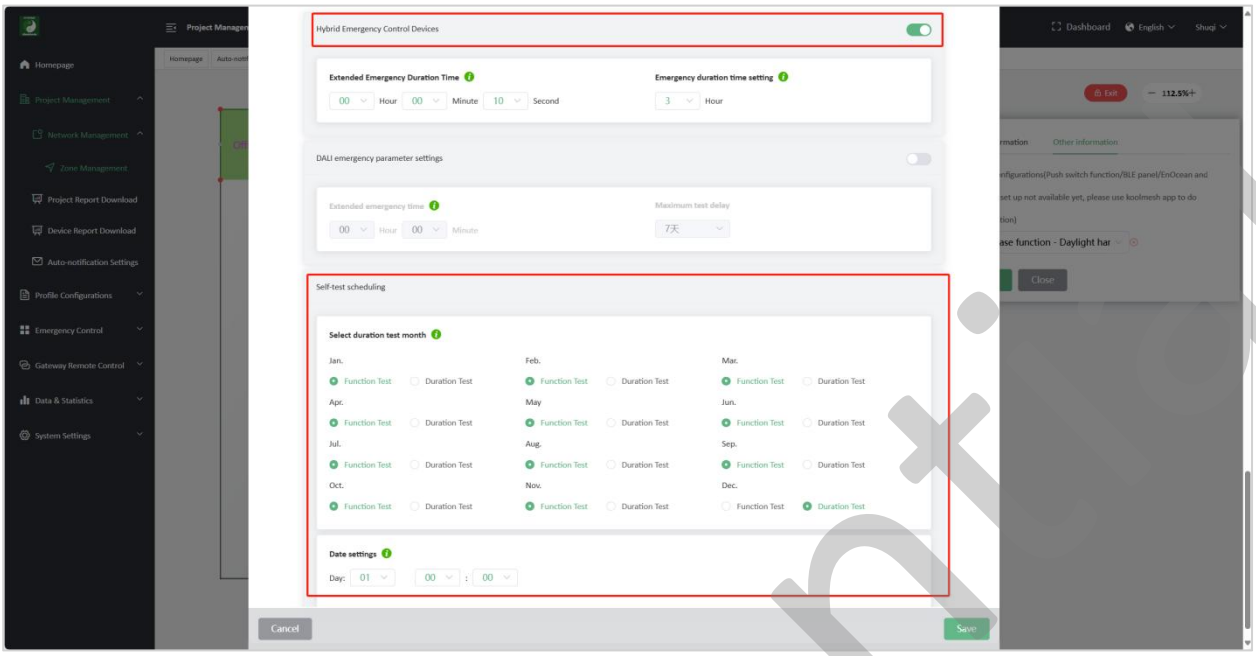
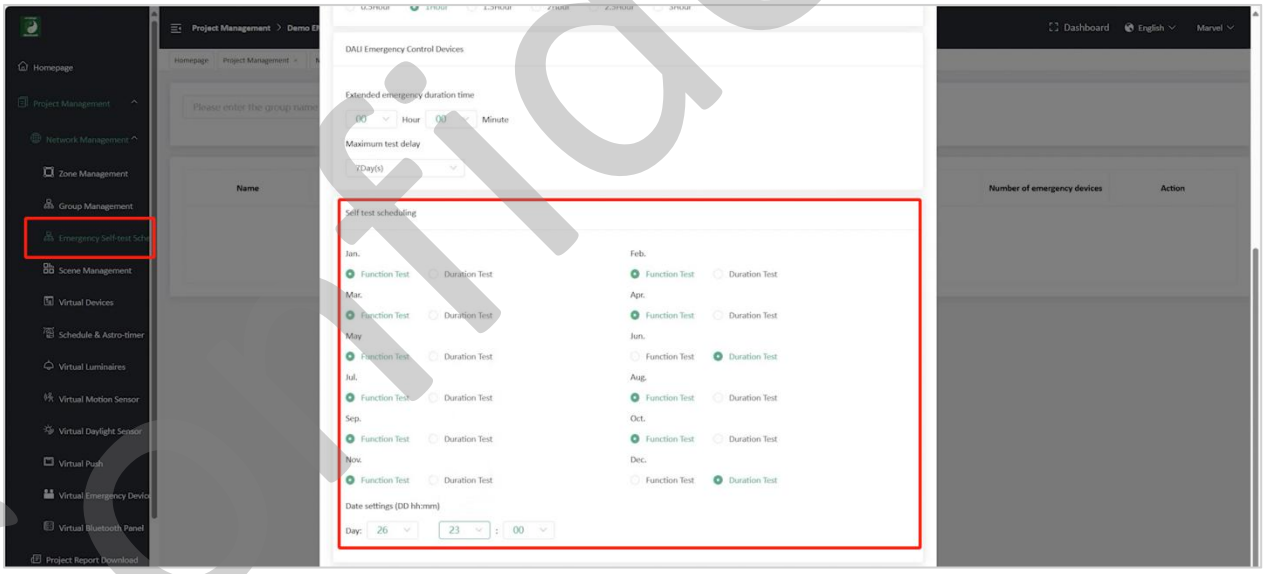


On our new web platform (under development), we'll offer more advanced features which will enable self - test scheduling at the levels of individual devices, groups, and zones, see figure below.



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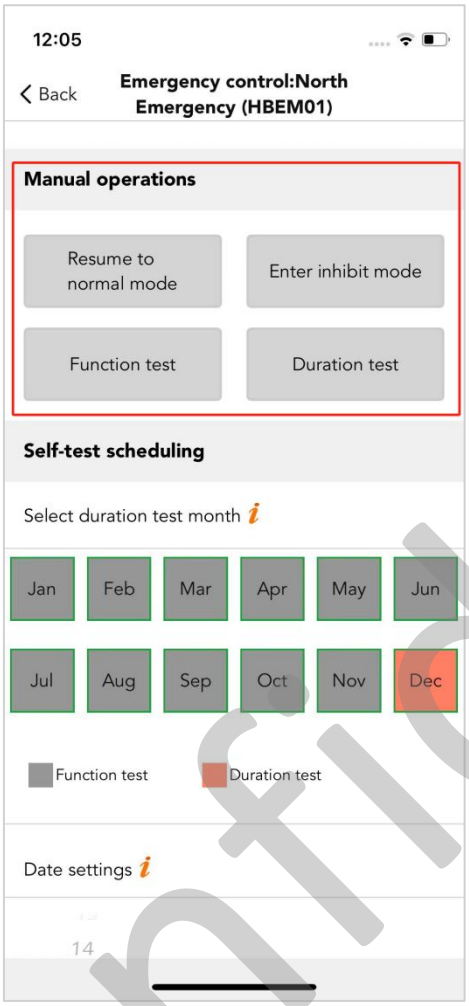
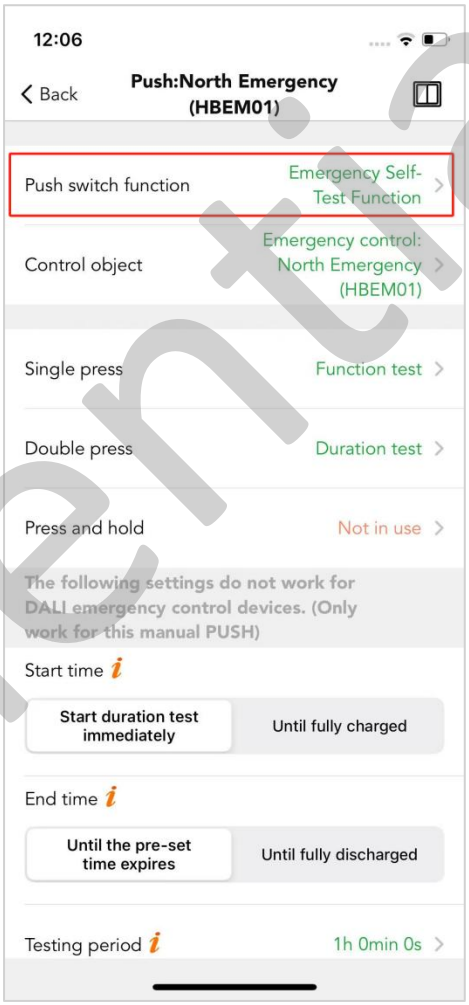
Manual test: Users can manually trigger the function test and duration test through the Koolmesh app or push switch,see figure below. In order to prevent accidental triggering using ordinary push switches, we generally recommend using fishtail switches for manual emergency test in actual applications.





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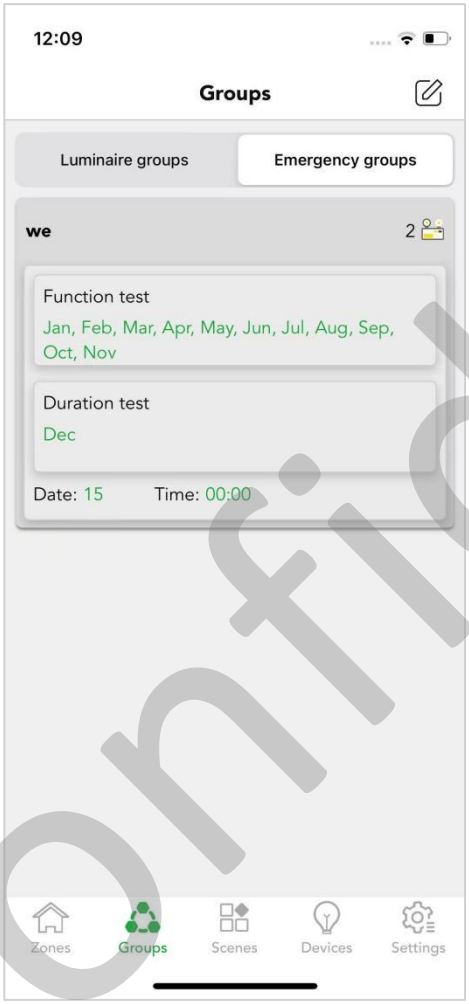
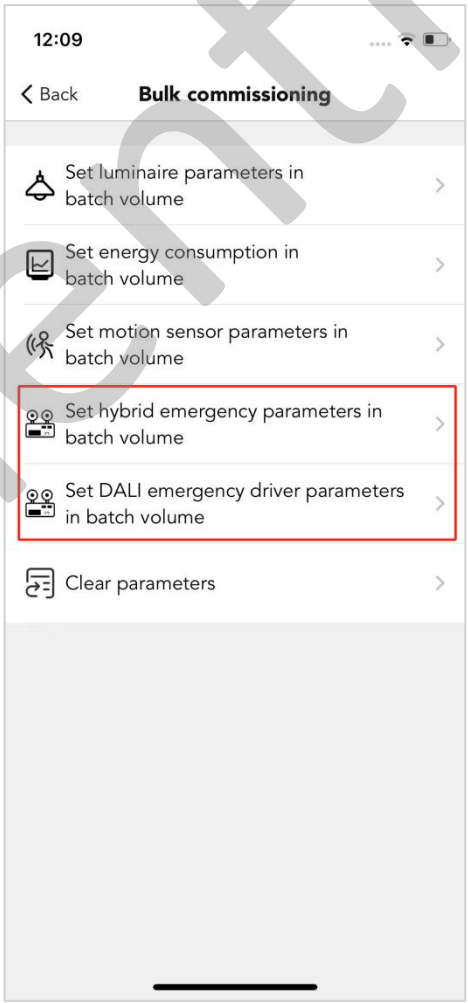
3.2 Group test

Users can create different emergency test groups and set different test times by groups to avoid the situation where emergency lighting cannot be provided when an emergency occurs during the test.See figure below.

3.3 System default configuration file

Users can use the system default configuration files to quickly set up emergency lighting device， users can also copy parameters from an existing emergency device or add a new profile according to their needs.See figure below.





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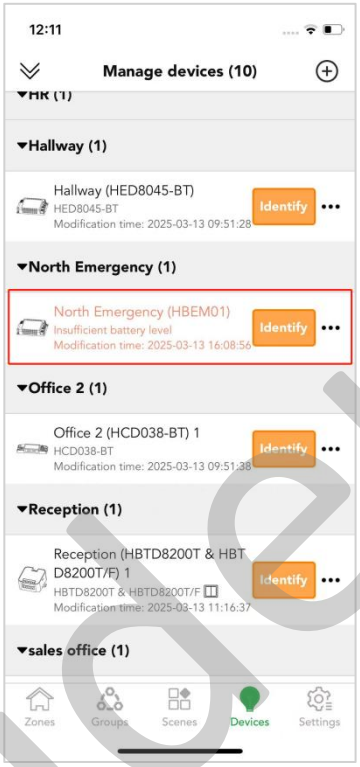
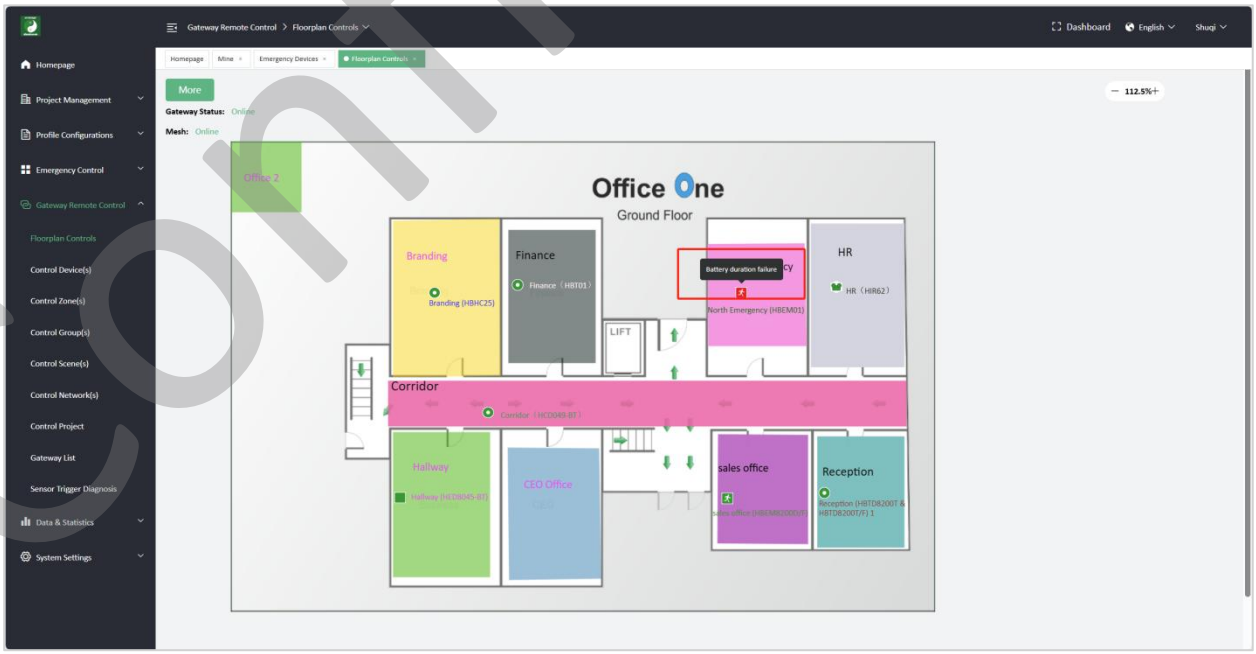
3.4 Real-time monitoring

Based on Mesh technology, Koolmesh system can monitor the status of emergency lighting device in real time, both on Koolmesh app and Koolmesh IoT platform, detect and deal with potential problems in a timely manner. See figure below.





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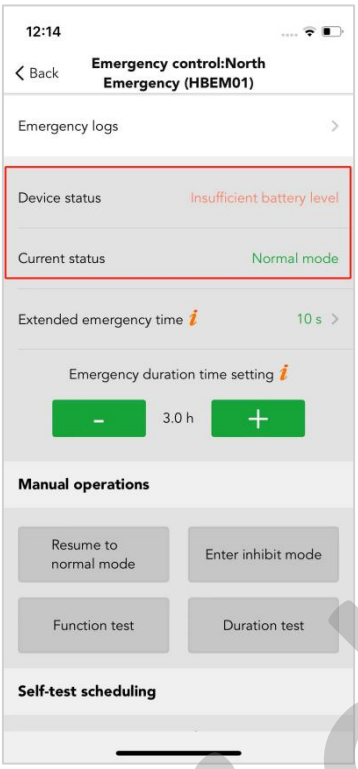
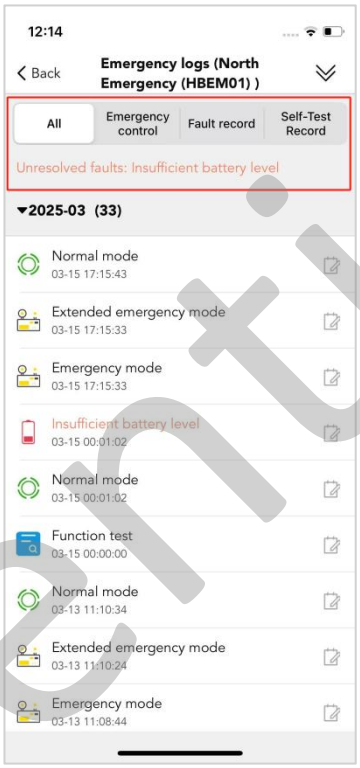
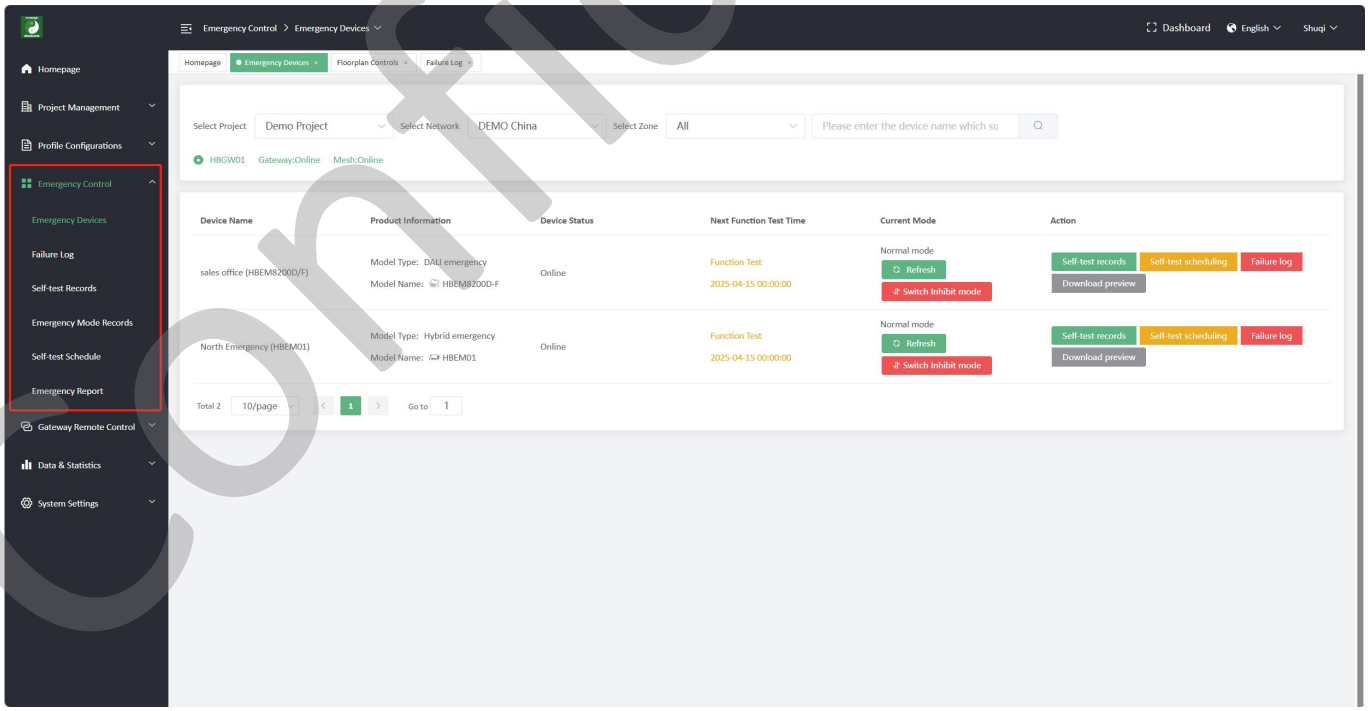
Users can view the current status, logs and fault records of the device at any time through the Koolmesh app or Koolmesh IoT platform, see figure below.







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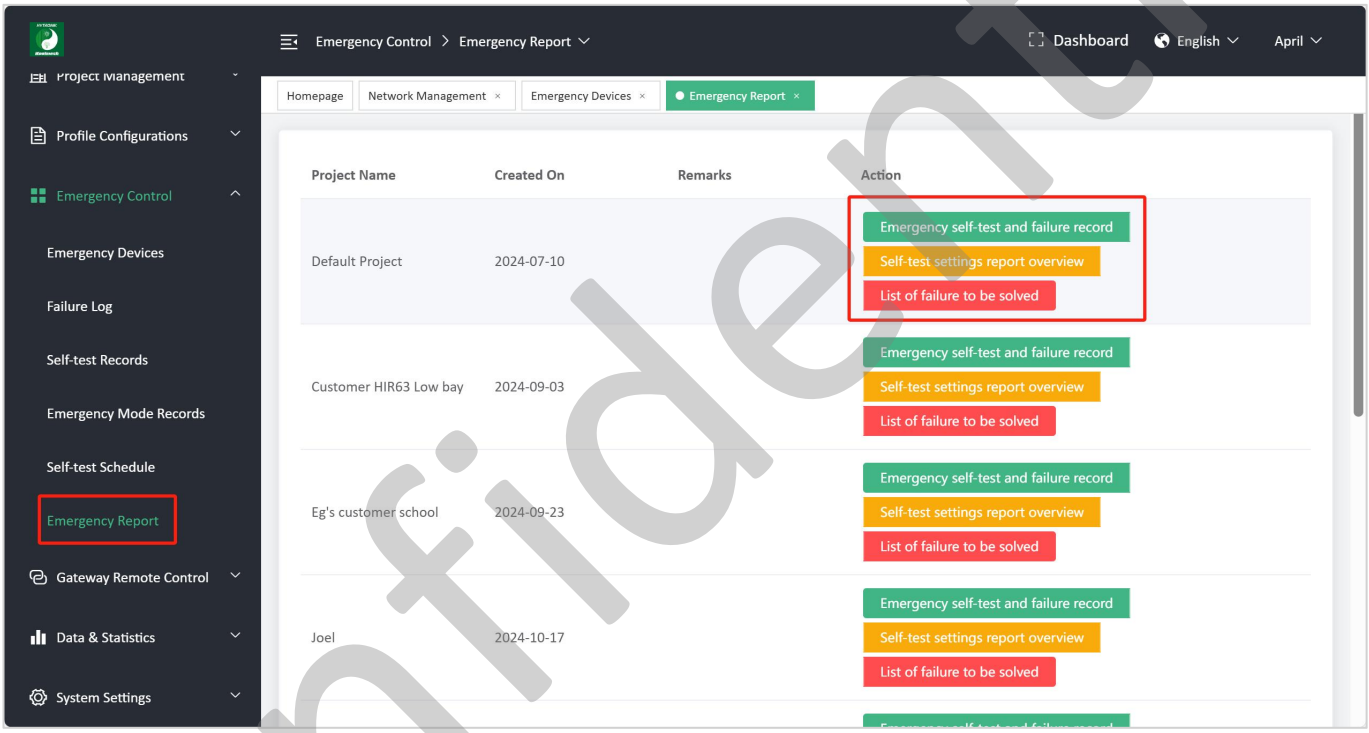
3.5 Data Collection and Reporting

Test results can be collected through Koolmesh app or gateways(for a a more convenient user experience, we strongly recommend using a gateway)and detailed reports can be generated on the web for users to view and manage.

The report includes basic information of the device, test records, fault records, etc., and can be exported to PDF format.

In the Koolmesh web platform, click on the emergency report, and there are three types of reports that can be viewed and downloaded,which are Emergency self-test and failure record, Self-test settings report,and List of failure to be solved, see figure below.



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(1)Emergency self-test and failure record

In this report, we can check the self-test result and the failure record during the period we selected, see figure below.

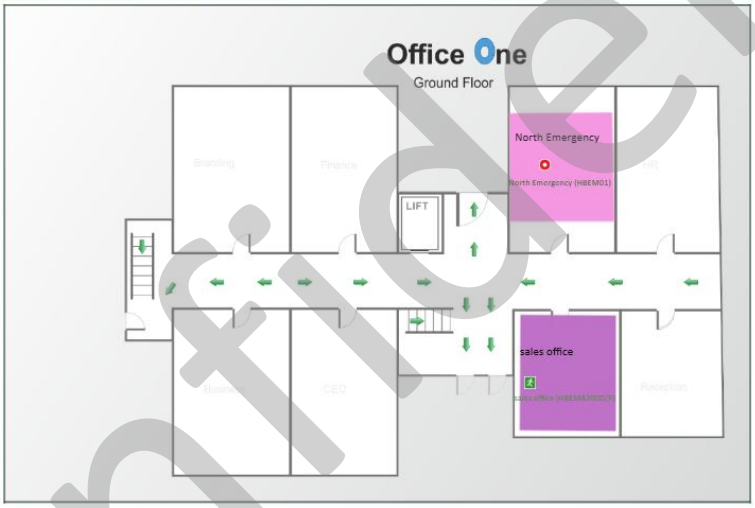
Demo Project - Emergency self-test and failure record

Report time range：2025-03-14-----2025-03-17
Report generated on 2025-03-17 by Shuqi@koolmesh.com

Number of Emergency Device	Number of self-tested devices
2	2
The number of devices without self-testing	**Number of devices that have experienced malfunctions**
0	1

Here are the detailed data:

Network name: DEMO China



The self-test and failure of the device at the selected time:

Serial Nu...	Device Name	Zone	Test Type	Test date	Self-test Result	Failure Type	Signature
1	North Emergency (HBEM01) (Hybrid emergency)	North Emergency	Function Test(Auto Function test)	Start Time 2025-03-15 00:00:28 End Time 2025-03-15 00:01:30	Fail	Battery duration failure	To be confirmed
2	sales office (HBEM8200D/F) (DALI emergency)	sales office	Function Test(Function test)	Start Time N/A End Time 2025-03-15 00:00:57	Success		To be confirmed

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(2)Self-test settings report

In this report, we can check the information about the self-test settings like test time of each emergency device in the whole project, see figure below.

Demo Project - Self-test settings report overview

Report generated on 2025-03-17 by Shuqi@koolmesh.com

Number of Emergency Device: 2

Network name: DEMO China

Zone name: North Emergency

Emergency device name: North Emergency (HBEM01)

Function Test:

01-15 00:00	02-15 00:00	03-15 00:00	04-15 00:00
05-15 00:00	06-15 00:00	07-15 00:00	08-15 00:00
09-15 00:00	10-15 00:00	11-15 00:00	

Duration Test:

12-15 00:00			

Zone name: sales office

Emergency device name: sales office (HBEM8200D/F)

Function Test:

01-15 00:00	02-15 00:00	03-15 00:00	04-15 00:00
05-15 00:00	06-15 00:00	07-15 00:00	08-15 00:00
09-15 00:00	10-15 00:00	11-15 00:00	

Duration Test:

12-15 00:00			

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(3)List of failure to be solved

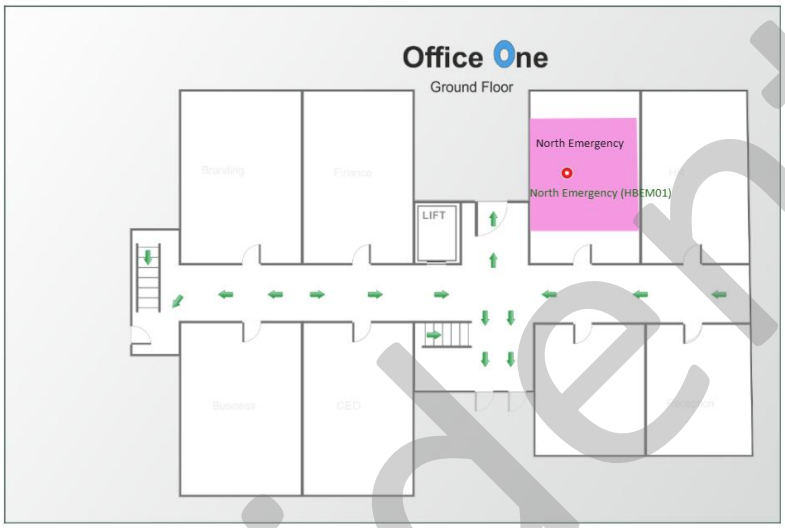
In this report, we can identify the devices that have malfunctioned but remain unfixed.

Demo Project - List of failure to be solved

Report generated on 2025-03-17 by Shuqi@koolmesh.com

The number of faulty devices: 1

Network name: DEMO China



Zone name: North Emergency

Emergency device name (Hybrid emergency): North Emergency (HBEM01)

Emergency type	Failure Type	Failure description	Failure advices	Failure Detected Time
Hybrid emergency	Battery duration failure	Battery duration failure	. Check the battery connection. If the battery is damaged, replace it. And operate the duration test to eliminate the failure	2025-03-15 00:01:02

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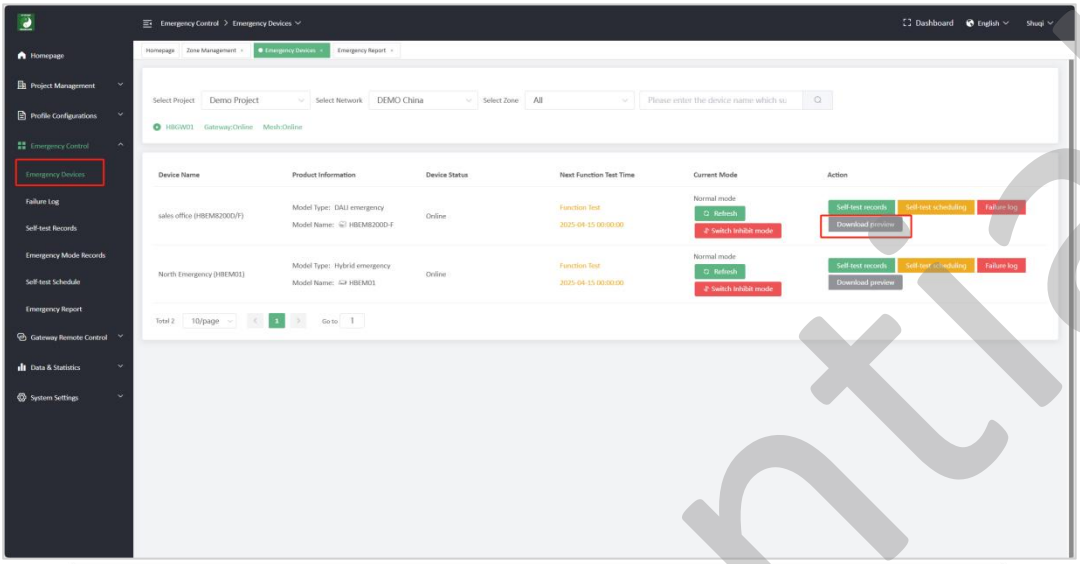
On the Koolmesh web platform, we can also click on a specific emergency device to view the system report belonging to this device, and this kind of report can be exported to Excel format, see figure below.



Model Emergency Lighting Inspection And Test Record For Systems Designed To BS 5266-1 And BS EN 50172/BS 5266-8			
Warning Full duration tests involve discharging the batteries, so the emergency lighting system will not be fully functional until the batteries have had time to recharge. For this reason, always carry out testing at times of minimal risk, or only test alternate luminaires at any one time			
Report year	2025		
System manufacturer contact phone number	Jason 8717485576		
System installer contact phone number	Otto 8717486076		
Competent person responsible for verification and annual test	Alice 8354486076		
Site address	Pude Industrial Park,Dushi Village,Pingtan Town Huiyang District Huizhou City , Guangdong P.R.C.516259		
Project responsible person	Marvel 8719496076		
Project name	Default Project	**Network name**	DEMO China
Zone name	North Emergency	**Device name (Model)**	North Emergency (HBEM01)
Action to be taken on finding a failure			
1.The supplier of the system or a competent person should be contacted to rectify the fault 2. A risk assessment of the failure should be conducted; this should evaluate the people who will be at increased risk and the level of that risk. Based on this data and if necessary, advice from the Fire Authority, the appropriate action should be taken 3. Action may be: To warn occupants to be extra vigilant until the system id rectified To initiate extra safety patrols To issue torches as a temporary measure In a high risk situation, to limit use of all or part of the building Test programs for identifying early failures can reduce the chances of failure of two adjacent luminaires at the same time			

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The Koolmesh emergency report supports paperless signatures. Whether it's the on-site inspectors reporting a fault they've discovered or the signature confirmation after maintenance, it can all be completed through electronic signatures on the Koolmesh app or the Koolmesh IoT platform. For the specific operations regarding signatures, please refer to the Koolmesh Emergency Manual. The completed electronic signatures will also be shown on the emergency report, see figure below.

Emergency Lighting Inspection And Test Record					
Project responsible person	**Marvel**		**Phone number**	**8719496076**	
Competent person responsible for verification and annual	**Alice**		**Phone number**	**8354486076**	
Maintenance engineer	**Shane**		**Phone number**	**6619496076**	
Site responsible person	**April**		**Phone number**	**8719496076**	
Date of failure	**Failure Type**	**Action taken to safeguard the premises**	**Action taken to rectify the system**	**Signature**	**Date of repair**
2025-03-07 15:25:26	Battery duration failure	orange 2025-03-07 15:25:52 Power down the device	orange 2025-03-07 15:26:11 Change battery	orange 2025-03-07 15:26:23 Finished	2025-03-07 15:43:19

Emergency Lighting Inspection And Test Record				
Test type	**Manual (Function test)**	**Button (Function test)**	**Auto (Function test)**	
	Manual (Duration test)	**Button (Duration test)**	**Auto (Duration test)**	
Test date	**Test type**	**Result**	**Remark**	**Signature**
2025-03-07 15:43:47	Duration Test(Manual Duration test)	No failure detected	OK	April 2025-03-07 15:45:33
2025-03-07 15:25:54	Function Test(Manual Function test)	Battery duration failure	Pls check the battery	April 2025-03-07 15:38:10

In short, Koolmesh system provides comprehensive reports that users can preview or download on demand.

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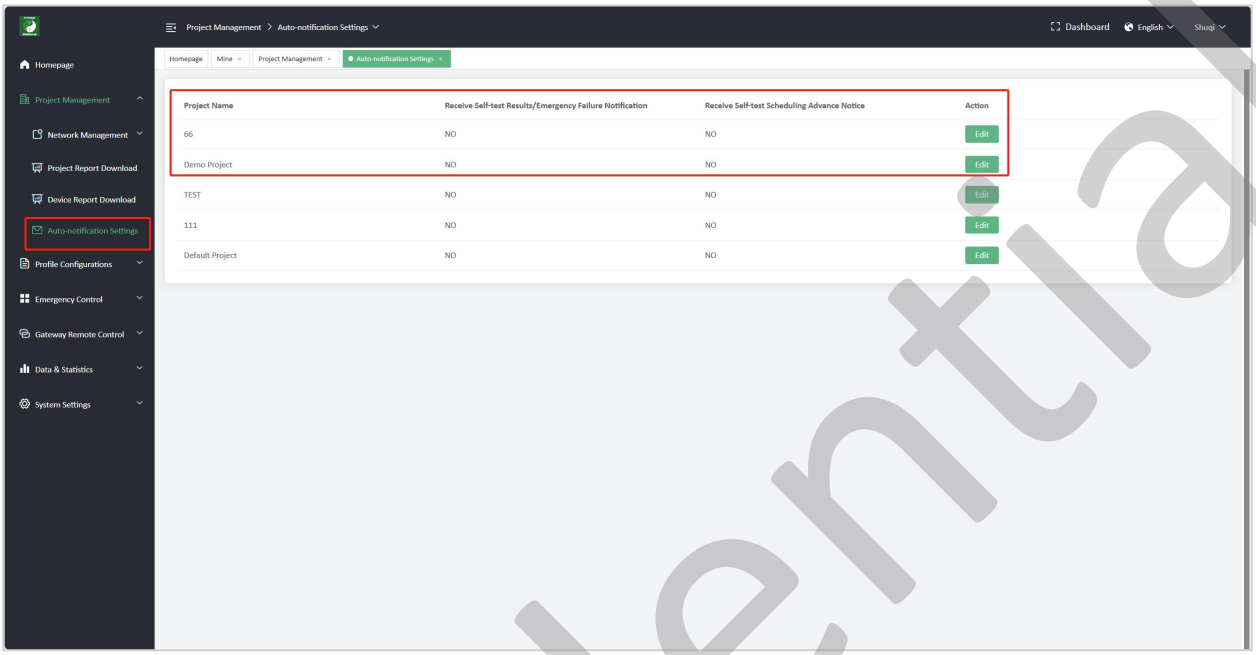
Koolmesh system also supports email notifications. Users need to finish the auto notification settings first,see figure below.



In Koolmesh system, notifications include Self-test results/Emergency failure notification and Self-test scheduling advance notice. For Self-test results/Emergency failure notification,users can choose whether to enable receiving notifications. After enabling the notification reception, they can set the sending cycle, with options such as real time, daily, weekly, monthly, quarterly, and annually. Among them, real time notifications will only be sent when a fault is detected. Finally, enter the email address of the recipient. Relevant email notifications will be sent to the specified email address according to the sending cycle selected by the user.

For Self-test scheduling advance notice,similarly, users can choose whether to enable receiving notifications. After enabling the notification reception, they can set the number of days for advance notification. After adding the email address, relevant notifications will be sent to the specified email according to the time chosen by the user.See figure below.

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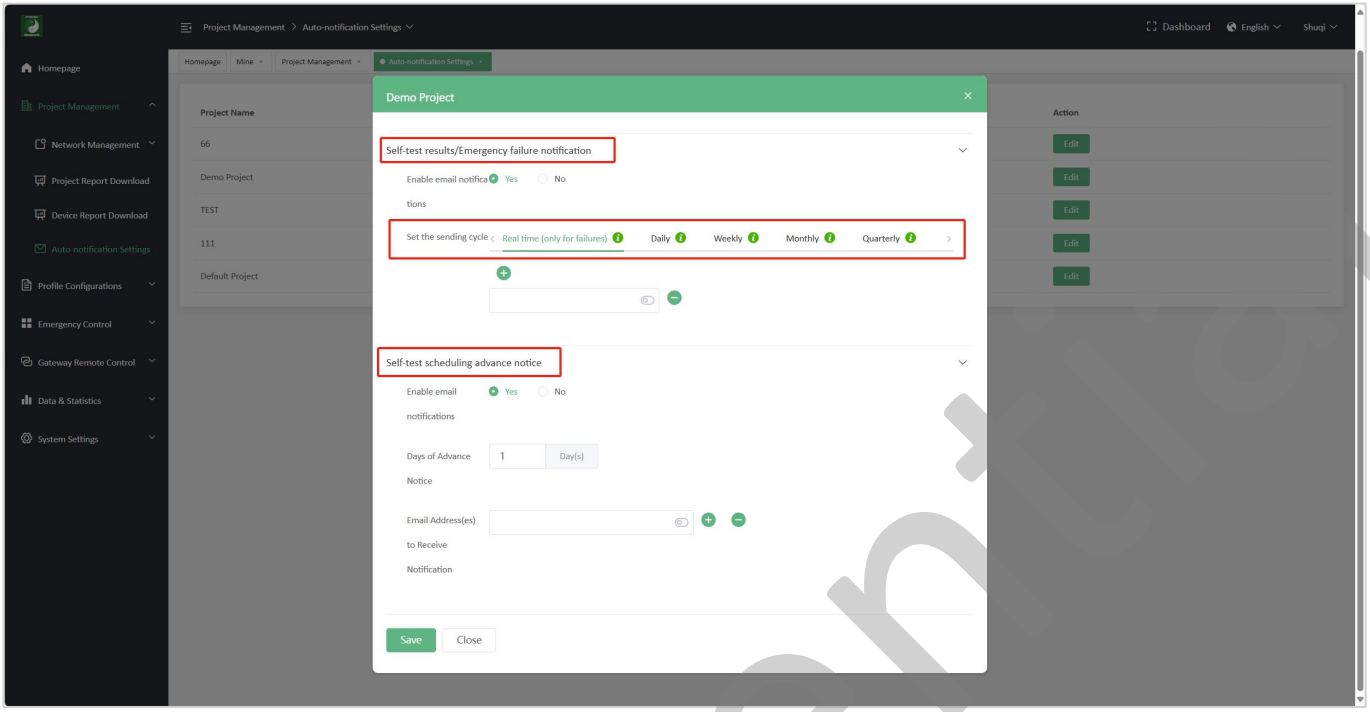

Hello,

Please check the emergency failure

Network	Zone name	Device name	Device type	Failure detected time	Failure	Trouble shooting
DEMO China	North Emergency	North Emergency (HBEM01)	HBEM01	2025-03-10 15:18:29	. Battery duration failure	. Check the battery connection. If the battery is damaged, replace it. And operate the duration test to eliminate the failure

Click here to see more

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