Universal Network Management AloT Application Server with LCD

NMS-AloT

Quick Installation Guide

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1. Package Contents

Thank you for purchasing PLANET Universal Network Management AIoT Application Server. PLANET NMS-AIoT is described below:

NMS-AIoT Universal Network Management AIoT Application Server with LCD

Open the box of the **NMS-AIOT** and carefully unpack it. The box should contain the following items:

- NMS-AIoT Controller x 1
- Quick Installation Guide x 1
- Power Cord x 1
- Console Cable x 1
- Installation Kit x 1

If any item is found missing or damaged, contact your local reseller for replacement.

2. Hardware Description

- 2.1 Overview
- 2.2 Mechanical Drawing





2.2 Mechanical Drawing



2.3 Hardware Specifications

| | NMS-AIoT |
|---------------------------|--|
| Product | Universal Network Management AIoT Application Server with LCD & 6 10/100/1000T LAN Ports |
| Physical Specifications | |
| | 6 10/100/1000BASE-T Gigabit Ethernet RJ45 ports |
| | 2 USB 3.0 ports (They cannot be used at the same time.) |
| I/O Interface | 1 Factory default button (GPIO) |
| | 1 RJ45 console port |
| | 2 DB-9 COM1,COM2 (reserved) |
| Storage | 2.5″ 64G SATA HDD |
| LED | 2 LED (Power/HDD) |
| LCM Size (Active Area) | 49.45 (W) x 9.58 mm (H) |
| LCM Button | 4 touch buttons for enter, exit, up and down |
| Dimensions (W x D x H) | 438 (W) x 180 (D) x 44 mm (H) 17.24" (W) x 7.09" (D) x 1.73" (H) |
| Weight | 3 kg (6.62 lbs) |
| Form Factor | 1U 19-inch rack-mount |
| Enclosure | Metal |
| Power Requirements | 3-pin AC power input socket AC 100~240V, 65W |
| Environment & Certificati | on |
| Temperature | Operating: 0 ~ 50 degrees C Storage: -20 ~ 70 degrees C |
| Humidity | $5 \sim 90\%$ relative humidity (non-condensing) |
| MTBF (Hours) | 100,000 |

3. Product Features

| Network Management | | | | | | | |
|----------------------|----------|---|--|--|--|--|--|
| Dashboard | | Providing the at-a-glance view of center system, events summary, monitored record of each sensor and real-time alarm status | | | | | |
| Device List | | Manages all sensors and devices in the NMS-AIoT | | | | | |
| Detailed Inform | nation | Displays monitoring and history records, the latest 10 event list, and current information for sensors. | | | | | |
| User Managem | ient | Privilege Level Configuration | | | | | |
| Event Reports | | The alarm event of each sensor can be reported based on customized rules or system updates/changes. | | | | | |
| Alarm System | | Email alerts for the administrator via the SMTP server | | | | | |
| Automatic Rules | | Create one or more customized automatic rules for each sensor | | | | | |
| Maximum Scal | ability | 3,000 nodes | | | | | |
| Network Servio | ces | | | | | | |
| | Backup | System backup and restore to local or USB HDD | | | | | |
| Maintenance | Reboot | Provides system reboot manually or automatically per power schedule | | | | | |
| Standards Con | formance | | | | | | |
| Regulatory Cor | mpliance | CE, FCC | | | | | |
| Standards Compliance | | IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab Gigabit 1000BASE-T | | | | | |

4. Network Configuration

Set up the NMS-AIoT Controller with Ethernet connection for the first-time configuration by following the steps below.



Default IP Address: 192.168.1.100 Default Management Port: 8888 Default Username: admin Default Password: admin

Launch the Web browser (Google Chrome is recommended.) and enter the default IP address "https://192.168.1.100:88888". Then, enter the default username and password shown above to log on to the system.

The secure login with SSL (HTTPs) prefix is required.



After logging on, connect the NMS-AIoT Controller to the network to centrally control PLANET managed devices.

5. Bound IoT Devices Monitored via NMS-AloT Controller

The NMS-AIoT can monitor all bound wired and wireless IoT devices, including managed gateways (LCG series), LoRaWAN sensors (LS-100/LS-200 series), and LoRa node controllers, all compliant with the LoRaWAN protocol.

Please regularly check PLANET website for the latest compatibility list of managed devices.

Follow the steps below to set up the NMS-AIoT server and LoRaWAN devices.

Step 1: Connect the devices, NMS-AIoT Controller, LoRaWAN gateway and your computer to the same network.



- **Step 2:** Add a new LoRaWAN gateway to the NMS-AIoT system, such as the LCG-300, LCG-300W, or LCG-300-NR.
- 1. In NMS-AIoT, press the **"Menu"** icon **.** Then click **"Devices Management"** and **"Devices List"** to go to devices list page.

2. Press the "**plus**" icon **+** to open table to add new device.

3. Add a new LoRaWAN gateway on the NMS-AIoT

Enter the relevant data for the LoRaWAN gateway.

| | 00 Total On-li | ine Off-line | | A | 5 | G 🗎 | 2 | ≡ |
|---------------------|-------------------|--|---|---|---|----------|---------|---------|
| Device L Add Dev | rices | | | | | × | Q | |
| Statu | | Apply | | | | A | ction | 1 |
| | Category | LoRaWAN Device | • | | | - 10 | - | |
| | Device Type @ | ■ LoRaWAN Gateway | | | | | | |
| _ | Location | Default Location | • | | | | | |
| | Model Number | LCG-300 | • | | | | | |
| | Frequency Plan | EU 863-870 MHz (SF9 for RX2 -recommended) | • | | | | | |
| | Gateway EUI | A8:F7:E0:8C:10:9C:00:01 | | | | | | |
| | | For example: AA:BB:CC:DD:EE:FF:11:22 | | | | | | |
| | Gateway name | LCG-300 | | | | | | |
| | Gateway ID | eui-A8F7E08C109C0001 | | | | | | |
| | | | _ | | | | | |
| | | | | | | | | |
| | Copyright © P | LANET Technology Corporation. All rights reserved. | | | | 2024-08- | 12 上午11 | 1:36:49 |

4. Set up the LoRaWAN gateway on the LCG-300 device.

Select **PLANET NMS-AIOT** as the application server. Then, enter the IP address of NMS-AIoT and apply the settings.

| LCG-300 | 🔯 System 🔘 N | letwork 🥫 LoRa 🕂 Security | 🔎 VPN 🖋 Maintenance |
|--------------------|---------------------|---------------------------|---------------------|
| LoRa Wizard | | | |
| LoRa Radio | | | |
| LoRaWAN Config | LoRaWAN Server Mode | LoRaWAN UDP 🗸 | |
| LoRaWAN Device | Email | test@planet.com.tw | |
| Application Server | Gateway ID | A8F7E08C109C0001 | (Device EUI) |
| LoRa Log | Server Provider | PLANET NMS-AloT | |
| | Server Address | 192.168.1.100 | |
| | | | |
| | | Apply Setti | ngs Cancel Changes |

After adding sensor(s), it will be show in device list in WEB UI of NMS-AIoT.

Step 3: Add new LoRaWAN sensors to the NMS-AIoT system.

Add a new LoRaWAN sensor

Enter the relevant information for the LoRaWAN sensor so that NMS-AIoT can parse the sensor data. If you're unsure of the sensor information, please check the label on the sensor or its packaging, or contact the provider.

Activation Mode: ABP (Authentication By Personalisation)

| | · 0 (|) 0 | | ≣ ହ ≡ |
|------------------------------|--|---|---|-------|
| Device List | Add Devices | | ^ | |
| | | Apply | | Q |
| - Status (| Category | LoRaWAN Device - | | |
| Status c | Device Type | ○ LoRaWAN Gateway LoRaWAN Sensor | | pn |
| | Location | Default Location - | | 0 |
| | Group | admin 🔹 | | |
| | Model Number | LS100-CO - | | |
| | Frequency Plan | EU 863-870 MHz (SF12 for RX2) + |] | |
| | Activation Mode | ● ABP ○ OTAA | | |
| | Additional LoRaWAN Class Capabilities | CLASS A 🗸 |] | |
| | DevEUI | For example: AA:BB:CC:DD:EE:FF:11:22 | | |
| | NwkSKey | For example: AA:BB.CC:DD:EE:FF:11:22:AA:BB.CC:DD:EE:FF:11:22 |) | |
| | Device Address | For example: AA-BB.CC.DD |) | |
| | AppSKey | For example: AA: BB: CC: DD: EE: FF: 11:22: AA: BB: CC: DD: EE: FF: 11:22 | | |
| | End Device ID | eui- | | |
| | | | | |

Activation Mode: OTAA (Over-The-Air-Activation)

| | D Total On | D O -line Off-line | ث أ | ଞ 2 ≡ |
|-------------|--|--|---------------------------|-----------------------|
| Device List | Add Devices | | | × |
| | | Apply | | |
| Status C | Category | LoRaWAN Device - | | ction |
| | Device Type | ○ LoRaWAN Gateway ⊛ LoRaWAN Sensor | | ð |
| | Location | Default Location + | | a |
| | Group | admin 👻 | | |
| | Model Number | LS100-CO * | | |
| | Frequency Plan | EU 863-870 MHz (SF12 for RX2) - | | |
| | Activation Mode | ○ ABP ● OTAA | | |
| | Additional LoRaWAN Class Capabilities | CLASS A + | | |
| | JoinEUI (AppEUI) | For example: AA:BB:CC:DD;EE:FF:11:22 | | |
| | DevEUI | For example: AA:BB:CC:DD:EE:FF:11:22 | | |
| | АррКеу | For example: AA-BB-CC.DD.EE.FF:11:22 AA-BB-CC.DD.EE.FF:11:22 | | |
| | End Device ID | eui- | | |
| | | | | |
| | Сор | right © PLANET Technology Corporation.All rights reserved. | | 2024-08-12 下午12:24:28 |

After adding sensor(s), it will be show in device list in WEB UI of NMS-AIoT.

| PLANE | otien | | | 32 Total On-line | 1 Off-line | | | A | 5 | S 🛙 | פ ו |
|-----------|-------|-----------------|--------------|---------------------|------------------|--|------------------|-------------|--------|------|------------|
| Device Li | st | | | | | | | | | | |
| | | | | | | | + 💼 | Filter by C | ontent | | ٩ |
| Status | Group | Device Type | Model Number | Alias Name | DevEUI | Device Description | Location | | Ac | tion | |
| | admin | LoRaWAN Sensor | LS100-PIR | LS100-PIR | 00137A1000042A85 | LoRaWAN Indoor Occupancy Sensor | Default Location | 6 | Ē | ţ. | 畲 |
| | admin | LoRaWAN Sensor | LS200-TH | LS200-TH | 00137A1000043900 | LoRaWAN Indoor Temperature and Humidity Sensor | Default Location | ß | ₿ | ţ. | 畲 |
| • | admin | LoRaWAN Sensor | LS200-CM3 | LS200-CM3 | 00137A1000042A81 | LoRaWAN 3-Phase Current Meter | Default Location | 6 | Ē | É0 | 畲 |
| | | LoRaWAN Gateway | LCG-300 | LCG-300 | A8F7E08C109C0001 | Industrial LoRaWAN Gateway | Default Location | E | | 9 î | ŝ |
| | | _ | | | | | | | | | |
| | | | | | | | | | | | |

| | 3 2 1 Total On-line Off-line | | North Contraction | f | ٣ | 5 | Ê, | ହ ≡ |
|--|---|--|-------------------|----------|---|---|-----------|-----|
| LS100-PIR Default Location Occupancy Detection | L S20-TH Default Location Temperature U 26.0 °C | LS200-CM3 Default Location Power Usage | | | | | | |
| | Copyright © PLANET Tec | hnology Corporation.All rights reserved. | | | | | 024-08-12 | |

Step 4: Web User Interface

Dashboard View: Real-time alarms and individual sensor chart records

Overview of Sensors: Current monitoring of data for each sensor

Automatic Rule: Customize rule for each sensor

| PLANET | 39 Total | 23 16 Dri-line Off-line | | | f 5 | େ≊ି2≡ |
|--------------------|-------------------|---|----------|------------|------------|-----------------------|
| Automatic Rule | | | | 0 | verview | Devices Management |
| | | | | Automati | on Rule | Мар 👤 |
| Name | | Event | | Action | | System 🔅 |
| Rule Name | Device | Condition | Device | Action | | Network Services |
| rule of LS100-WL | LS100-WL | detected Water leak | ENM-AIOT | Send Email | 60 | Maintenance 🔑 |
| rule of LS100-PIR | 6FLAB_Entrance | detected temperature is > 28.00 °C detected Occupied | ENM-AIOT | Send Email | ۵ | Exit 🖒 |
| rule of LS100-DW | LS100_DW | detected door Open | ENM-AIOT | Send Email | | â |
| rule of LS200-TH | Office-T/H | detected temperature is > 28.00 °C detected humidity is > 65.00 % | ENM-AIOT | Send Email | ۵ | â |
| rule of LS200-PT | LS200-PT_B1-Temp. | detected temperature is > 79.00 °C | ENM-AIOT | Send Email | 60 | â |
| rule of LS200-TC | Chamber4-Temp. | detected temperature is > 79.00 °C | ENM-AIOT | Send Email | 60 | â |
| rule of LS200-LG | Office-ill. | detected illuminance is > 5000.00 Lux | ENM-AIOT | Send Email | 60 | â |
| rule of LS200-CM3 | Chamber213-CM3 | detected current 1 is > 11000.00 mA detected current 2 is > 11000.00 mA detected current 3 is > 11000.00 mA the grand total is > 4000 kWh this month | ENM-AIOT | Send Email | 6 | â |
| rule of LS200-VOC | 6FLAB-AirQ | detected TVOC is > 150.00 ppb detected temperature is > 28.00 °C detected humidity is > 65.00 % | ENM-AIOT | Send Email | 6 | ÷ |
| rule of LS200-PM25 | LS200-PM25 | detected PM25 is > 100.00 µg/m ³ detected temperature is > 28.00 °C detected humidity is > 60.00 % | ENM-AIOT | Send Email | 8 | â |

Event and Log: Event triggers or system event history records

| | NET | | 39 23 16 Total On-line Off-line | | ל ה י | ଓ 🖹 오 ≡ |
|-------|------------|----------|------------------------------------|---------|---------------------------------------|-----------------------|
| Event | | | | | | Devices Management |
| | 2024-07-30 | | | | | Map 🙎 |
| ID | Туре | Time | Source | Status | Information | System 🛟 |
| 1 | System | 19:18:16 | System (NMS-AloT) | Info | success to send mail | Network Services |
| 2 | Alarm | 19:18:15 | 00137A1000042A84 (6FLAB_Entrance) | NoAlarm | Ur Baston (Destan | |
| 3 | System | 19:14:59 | System (NMS-AIoT) | Info | SUCCES | Maintenance |
| 4 | Alarm | 19:14:58 | 00137A1000042A80 (Chamber213-CM3) | Alarm | Low Event and Log | Exit 😃 |
| 5 | System | 19:12:48 | System (NMS-AIoT) | Info | SUCCES Factory Default | |
| 6 | Alarm | 19:12:47 | 00137A1000042A84 (6FLAB_Entrance) | Alarm | System Information | |
| 7 | System | 19:12:13 | System (NMS-AloT) | Info | SUCCES System Upgrade | |
| 8 | Alarm | 19:12:11 | 00137A1000042A7D (Office-T/H) | NoAlarm | Temperature is 25.72 °C | |
| 9 | Device | 19:12:11 | 00137A1000042A7D (Office-T/H) | Edit | LS200-TH(Office-T/H) @6F_Office edite | d |
| 10 | System | 19:11:58 | System (NMS-AloT) | Info | success to send mail | |
| -11 | Alarm | 19:11:57 | 00137A1000042A7D (Office-T/H) | Alarm | Temperature is > 25 °C | |
| 12 | Device | 19:11:57 | 00137A1000042A7D (Office-T/H) | Edit | LS200-TH(Office-T/H) @6F_Office edite | d |
| 13 | System | 19:08:47 | System (NMS-AloT) | Info | success to send mail | |
| 14 | Alarm | 19:08:45 | 00137A10000438F4 (LS200-CM) | Alarm | LS200-CM(LS200-CM) @B1 disconnected | d |
| 15 | System | 19:06:54 | System (nmsaiot) | Info | nmsaiot successfully login | |
| | | | | | | |

6. Further Information:

The above steps introduce the simple installations and configurations of the NMS-AIoT Application Server. For further configurations of PLANET NMS-AIoT, please refer to the user manual, which can be downloaded from the website.

Thank you for purchasing PLANET products. You can browse our online FAQ resource and User's Manual on PLANET Web site first to check if it could solve your issue. If you need more support information, please contact PLANET support team

PLANET online FAQs: https://www.planet.com.tw/en/support/faq

Support team mail address: support@planet.com.tw

User's Manual: https://www.planet.com.tw/en/product/NMS-AIoT

(Please select the suitable user's manual from the list.)

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