



Smart AC Controller

UC701

Payload Protocol (HEX)

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# Chapter 1. Preface

## Readers

This guide introduces the raw HEX payload protocol used to communicate with the device. It is intended for developers or users who integrate the device without Milesight gateways or codecs.

This document does not describe physical installation and configuration steps in detail. Please use it together with the related documents.

## Related Document

| Document                      | Description                                                                                                        |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------|
| UC701 User Guide              | Provides introductions, compatibility check, installation and configuration steps.                                 |
| UC701 BACnet Object List      | Lists the BACnet objects exposed through a Milesight gateway with the BACnet feature enabled.                      |
| UC701 Payload Protocol (JSON) | Provides the decoded JSON format for uplink data and downlink commands when using the codec provided by Milesight. |

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## Revision History

| Release Date   | Version | Revision Content |
|----------------|---------|------------------|
| Sept. 30, 2026 | V1.0    | Initial version. |

## Chapter 2. Overview

All messages follow the following format (HEX), the Parameter/Data field must follow **little-endian** byte order:

| Command ID | Parameter/Data | ... |
|------------|----------------|-----|
| N Bytes    | 0-N Byte       | ... |

For decoder and encoder examples, please find files on <https://github.com/Milesight-IoT/SensorDecoders>. For details of uplink reports and downlink commands please refer to the sections below.

## Chapter 3. Uplink Data

This chapter describes the uplink packets reported by the device.

### Basic Information Packet

After joining the network, the device reports a packet containing the basic device information, totaling four reports.

Packet description:

| Item           | Byte | Com<br>mand | Description                                              |
|----------------|------|-------------|----------------------------------------------------------|
| Device Status  | 1+1  | c8          | 00: Off, 01: On                                          |
| TSL Version    | 1+2  | df          | Example: 01 02 = V1.2                                    |
| Device Request | 1    | ee          | Send after reset                                         |
| Device Version | 1+8  | da          | Hardware version (2B) + Software version (2B) + 00000000 |
| OEM ID         | 1+2  | d9          | 4 digits                                                 |
| Device Type    | 2+1  | cf00        | 00: Class A, 01: Class B, 02: Class C, 03: Class C to B  |
| Serial Number  | 1+8  | db          | 16 digits                                                |

Example:

| df0100 ee db6556071d88020003 da0102010100000000 d90000 c801 cf0002 |                                                                 |
|--------------------------------------------------------------------|-----------------------------------------------------------------|
| Command                                                            | Value                                                           |
| df                                                                 | TSL Version: 01 00 => V1.0                                      |
| ee                                                                 | Reset                                                           |
| db                                                                 | SN: 6556071d88020003                                            |
| da                                                                 | Hardware Version: 0102 => V1.2<br>Software Version: 0101=> V1.1 |
| d9                                                                 | OEM ID: 0000                                                    |
| c8                                                                 | 01: Device is on                                                |

| df0100 ee db6556071d88020003 da0102010100000000 d90000 c801 cf0002 |             |
|--------------------------------------------------------------------|-------------|
| Command                                                            | Value       |
| cf00                                                               | 02: Class C |

## Periodic Data Packet

The device reports a data packet at a configured reporting interval.

Packet description:

| Item                | Byte       | Com<br>mand | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------|------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IR Command Status   | 1+4        | 04          | <p><b>Byte 1:</b> IR Command Content,</p> <ul style="list-style-type: none"> <li>• Bit 0: 0=AC Off, 1=AC On</li> <li>• Bit 3-1: Temperature Control Mode, 000=Heat, 010=Cool, 011=Auto, 100=Dehumidification, 101=Ventilation</li> <li>• Bit 6-4: Fan Speed, 000=Auto, 011=Low, 100=Medium, 101=High</li> <li>• Bit 7: 0=Command Trigger, 1=Local Trigger</li> </ul> <p><b>Byte 2:</b> IR Command Validity,</p> <ul style="list-style-type: none"> <li>• Bit 0: 0=Never Send Command, 1=Ever Send Command</li> <li>• Bit 1: 0=IR Command Invalid, 1=IR Command Valid</li> </ul> <p><b>Byte 3-4:</b> Target temperature, INT16/100, Unit: °C</p> <div>  <b>Note:</b><br/>           If IR code is not configured, this will send all 0.         </div> |
| AC Operating Status | 1+2 or 1+5 | 05          | <p><b>Byte 1:</b> 00=IR command, 01=CT</p> <p>When not connecting CT,</p> <p><b>Byte 2:</b> 00=AC Off, 01=AC On</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Item                      | Byte | Com<br>mand | Description                                                                                                                                       |
|---------------------------|------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |      |             | When connecting CT,<br><br><b>Byte 2-5:</b> UINT32/1000, Unit: A, 0xffffffff = abnormal                                                           |
| Temperature<br>(Built-in) | 1+2  | 06          | INT16/100, Unit: °C                                                                                                                               |
| Temperature<br>(External) | 1+2  | 07          | INT16/100, Unit: °C                                                                                                                               |
| Humidity                  | 1+2  | 08          | INT16/10, Unit: %RH                                                                                                                               |
| Sensor Alarm              | 1+1  | 03          | <b>Bit 7-4:</b> 0=Built-in Temperature, 1=External Temperature, 2=Humidity<br><br><b>Bit 3-0:</b> 0=Collection Error, 1=Under-range, 2=Over-range |

**Example:**

| 040503f00a 050001 06d60a 08ff01 |                                                                                                                                                                                                                       |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Command                         | Value                                                                                                                                                                                                                 |
| 04                              | IR Command Content: 05=> 0000 0101<br>= AC On, Cool, Auto, Command Trigger<br><br>IR Command Validity: 03=>11 = 1=Ever<br>Send Command, 1=IR Command Valid<br><br>Target temperature: f0 0a => 0a f0 = 2800/100=28 °C |
| 05                              | 00=IR Command, 01=AC On                                                                                                                                                                                               |
| 06                              | Temperature (Built-in): d6 0a=>0a d6 =2774/100=27.74°C                                                                                                                                                                |
| 08                              | Humidity: ff 01 => 01 ff = 511/10=51.1%RH                                                                                                                                                                             |

**Alarm Packet**

The device reports the following types of alarm packets.

| Item                       | Byte | Command | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low Battery Alarm          | 1+1  | 01      | UINT8, Unit: %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Temperature Alarm          | 1+4  | 02      | <p><b>Byte 1:</b> Alarm type, 00=Open Window Alarm Release, 01= Open Window Alarm, 20=Above Threshold, 21= Above Threshold Release, 22=Below Threshold, 23=Below Threshold Release, 24= Within Threshold, 25= Within Threshold Release, 26= Above or Below Threshold, 27= Above or Below Threshold Release, 30=Persistent Low Temperature Alarm Release, 31=Persistent Low Temperature Alarm, 40=Persistent High Temperature Alarm Release, 41=Persistent High Temperature Alarm</p> <p><b>Byte 2-3:</b> Temperature, INT16/100, Unit: °C</p> <p><b>Byte 4:</b> Temperature data source, 00=Internal, 02=External</p> |
| Filter Cleaning Alarm      | 1+4  | 09      | Filter Used Time, UINT32, Unit: min                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Temp Limit Alarm - Command | 1+8  | 0a      | <p><b>Byte 1:</b> 00=Below Threshold, 01=Above Threshold</p> <p><b>Byte 2-3:</b> Below Threshold Temperature, INT16/100, Unit: °C</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Temp Limit Alarm- Local    | 1+7  | 0b      | <p><b>Byte 4-5:</b> Above Threshold Temperature, INT16/100, Unit: °C</p> <p><b>Byte 6-7:</b> Temperature, INT16/100, Unit: °C</p> <p><b>Byte 8:</b> Temperature data source, 00=Internal, 02=External</p>                                                                                                                                                                                                                                                                                                                                                                                                             |

**Example:**

| 0220df0700 |                                                                                                    |
|------------|----------------------------------------------------------------------------------------------------|
| Command    | Value                                                                                              |
| 02         | <p>20=Above Threshold</p> <p>df 07 =&gt; 07 df=2015/100=20.15°C</p> <p>00=Internal data source</p> |

**Status Change Packet**

The device reports a packet when a parameter or status is changed.

## 1. Configuration Change Report

A configuration change report is sent when air conditioner on/off status, target temperature, temperature control mode or fan mode changes. The change report format is the same as the periodic data report and not includes the temperature and humidity data.

## 2. Battery Level Report.

A battery level report is sent when the controller is connected to the battery compartment and the battery level changes.

| Byte | Command | Description    |
|------|---------|----------------|
| 1+1  | 00      | UINT8, Unit: % |

**Example:**

| 0032    |         |
|---------|---------|
| Command | Value   |
| 00      | 32=>50% |

## 3. Bluetooth Status Packet.

A Bluetooth status packet will be reported once after the device joins the network or when Bluetooth pairing status changes.

| Byte | Command | Description                                                                                                          |
|------|---------|----------------------------------------------------------------------------------------------------------------------|
| 1+10 | ba      | <b>Byte 1:</b> 00<br><b>Byte 2:</b> 00=Not paired, 01=Paired, 02=Disconnected<br><b>Byte 3-10:</b> Paired device EUI |

**Example:**

| ba000224e124826068b876 |                                                        |
|------------------------|--------------------------------------------------------|
| Command                | Value                                                  |
| ba                     | 02=Disconnected<br>Paired device EUI: 24e124826068b876 |

## Thermostat Data Packet

When UC701 controller is paired with or connected to the wireless thermostat (WT401) and the communication mode of the thermostat does not include LoRa, the thermostat status will be reported via UC701 controller. The UC701 can forward the following information from the WT401 thermostat:

- Battery Level: transfer when the thermostat turns on or the battery level changes;
- Battery Alarm: transfer when a low battery alarm is triggered or cleared;
- Button Event Report: transfer when the corresponding button is pressed;
- Device Status: transfer when the thermostat turns off.

| Byte | Command | Description                                                                                                                                                                                                                                                                                                                                                                                        |
|------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1+3  | 30      | <b>Byte 1:</b> 00<br><b>Byte 2:</b> Data type, 00=Battery Level, 0f=Battery Alarm, 0d=Button Event Report, c8=Device Status<br><b>Byte 3:</b> <ul style="list-style-type: none"> <li>• Battery Level: UINT8, Unit: %</li> <li>• Battery Alarm: 00=Normal, 01=Low battery voltage</li> <li>• Button Event Report: 00=Button 1, 01=Button 2, 02=Button 3</li> <li>• Device Status: 00=Off</li> </ul> |

**Example:**

| 30000062 |                           |
|----------|---------------------------|
| Command  | Value                     |
| 30       | 00=Battery Level, 62=>98% |

## Historical Data Report

When data retransmission is triggered, the device will report a historical report at data retransmission interval.

Packet description:

| Com<br>mand | Report<br>Mode | Timestamp       | Historical Data                                                                           |
|-------------|----------------|-----------------|-------------------------------------------------------------------------------------------|
| ed          | 01             | UINT32, Unit: s | Command + Data, see <a href="#">Periodic Data Packet</a> and <a href="#">Alarm Packet</a> |

**Example:**

| ed018138a16a040503f00a05000106d60a08ff01 |                |                                                   |         |                                                                                                                                                                                                                          |
|------------------------------------------|----------------|---------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Command                                  | Report<br>Mode | Timestamp                                         | Command | Value                                                                                                                                                                                                                    |
| ed                                       | 01             | 81 38 a1 6a<br>=> 6a a1 38<br>81 =17889<br>46561s | 04      | IR Command Content: 05=> 0000 0101<br>= AC On, Cool, Auto, Command Trigger<br><br>IR Command Validity: 03=>11 = 1=Ever<br>Send Command, 1=IR Command Valid<br><br>Target temperature: f0<br>0a => 0a f0 = 2800/100=28 °C |
|                                          |                |                                                   | 05      | 00=IR Command, 01=AC On                                                                                                                                                                                                  |
|                                          |                |                                                   | 06      | Temperature (Built-in): d6<br>0a=>0a d6 =2774/100=27.74°C                                                                                                                                                                |
|                                          |                |                                                   | 08      | Humidity: ff 01 => 01 ff = 511/10=51.1%RH                                                                                                                                                                                |

## Chapter 4. Downlink Commands

Downlink commands can be used for remote control of device through a network server. The downlink port (application port) is 85 by default and can be configured through ToolBox.

If you need to query the configurations first, please send a query command in the following format:

| Command (1B) | Command ID Length (1B)           | Command ID (1-N Byte) |
|--------------|----------------------------------|-----------------------|
| ef           | Query command ID length in bytes | Query command ID      |

If the device receives a downlink command requiring confirmation, it will send a reply packet in the following format:

| Command (1B) | Result & Length (1B)                                                                                                           | Command ID (1-N Byte)    | ... |
|--------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----|
| ef           | Bit 7-4: result code, 0=success,<br>5=parameter error, 7=execute<br>error, 10=association error<br><br>Bit 3-0: command length | Same as downlink command | ... |

For details of downlink commands please refer to the sections below.

## Downlink Commands for Network Parameters

This section describes the downlink commands for network settings.

### Configure Communication Parameters

Command description:

| Item                     | Byte | Com<br>mand | Value                                                                                                    | Example                                                |
|--------------------------|------|-------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Reporting Interval       | 1+4  | 66          | <b>Byte 1-2:</b> 0001<br><br><b>Byte 3-4:</b> Interval time, range:<br>1-1440, unit: minute, default: 10 | Reporting interval is 15<br>minutes: <b>6600010f00</b> |
| Reset Blue<br>tooth Name | 2    | b400        | -                                                                                                        | -                                                      |

| Item                           | Byte | Com<br>mand | Value                                     | Example                                    |
|--------------------------------|------|-------------|-------------------------------------------|--------------------------------------------|
| Keep Bluetooth Advertising     | 2+1  | 9000        | 00=Disable, 01=Enable (default)           | Disable: <b>900000</b>                     |
| Bluetooth Advertising Duration | 2+1  | 9001        | UINT8, Range: 1-10, Default: 1, Unit: min | The duration is 10 mins: <b>90010a</b>     |
| Cancel Bluetooth Pairing       | 2    | b401        | -                                         | -                                          |
| Bluetooth Name (First 8B)      | 2+8  | cd05        | ASCII to Hex strings (8B)                 | Name is Room1: <b>cd05526f6f6d31000000</b> |
| Bluetooth Name (Last 5B)       | 2+5  | cd06        | ASCII to Hex strings (5B)                 |                                            |

## Rejoin the Network

Command description:

| Item               | Byte | Command | Value |
|--------------------|------|---------|-------|
| Rejoin the Network | 1    | b6      | -     |

## Configure D2D Parameters

Command description:

| Item           | Byte | Command         | Value                                                                                                                                                                                                 | Example                                                                                                |
|----------------|------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| D2D Agent      | 1+1  | 97              | 00=Disable (default), 01=Enable                                                                                                                                                                       | Enable: <b>9701</b>                                                                                    |
| D2D Agent Rule | 2+4  | 98 + ID (00-07) | <b>Byte 1:</b> 00=Disable (default), 01=Enable<br><b>Byte 2-3:</b> Control Command<br><b>Byte 4:</b> 00=Insert Schedule 1, ..., Insert Schedule 16=0f, 10=System Off, 11=System On, 12=System Inverse | Enable rule 1, control command is 0011, control action is inserting schedule 1:<br><b>980001110000</b> |

## Downlink Commands for Air Conditioner Control Parameters

This section describes the downlink commands for air conditioner control related parameters.

## IR Code Learning

Command description:

| Item                      | Byte  | Com<br>mand | Value                                                                                                                                                | Example                    |
|---------------------------|-------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Activate IR Learning Mode | 1     | 55          | -                                                                                                                                                    | -                          |
| Preset Mode               | 2+1   | 8603        | 01=M96b (TCL/XIAOMI), 02=M100b (ELECTROLUX/SAMSUNG/SHINCO),<br>03=T102b (AIRWELL/BOSCH/WHIRLPOOL),<br>04=M128b (FUJITSU/MCQUAY/),<br>05=M56b (TRUMA) | Set M96b:<br><b>860301</b> |
| IR Code                   | 1+2+N | 8e          | <b>Byte 1:</b> Offset<br><b>Byte 2:</b> Code length, range: 1-186<br><b>Byte 3-N:</b> IR Code                                                        | see below                  |
| Clear IR Code             | 1     | 59          | -                                                                                                                                                    | -                          |

One IR Code can be configured by one of the following methods.

### Example 1: Offset is 0

[illegible]

### Example 2: Offset is not 0

```
8E0008000090004DB2FF00
8E080803FC4DB2FF0003FC
8E10084DB2FF0003FCAB28
.....
```

## Configure Air Conditioner System Parameters

Command description:

| Item                                  | Byte | Com<br>mand | Value                                                                                                                                                                                                                                              | Example                                                     |
|---------------------------------------|------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| System Status                         | 1+1  | 6f          | 00=Off (Default), 01=On                                                                                                                                                                                                                            | Turn AC on: <b>6f01</b>                                     |
| Temperature<br>Control<br>Mode Enable | 1+1  | 75          | For every bit: 0=Disable, 1=Enable<br>(default) <ul style="list-style-type: none"> <li>• Bit 0: Heat</li> <li>• Bit 1: 0</li> <li>• Bit 2: Cool</li> <li>• Bit 3: Auto</li> <li>• Bit 4: Dehumidification</li> <li>• Bit 5: Ventilation</li> </ul> | Enable Auto and<br>Heat mode: <b>7509</b>                   |
| Temperature<br>Control Mode           | 2+1  | 6000        | 00=Heat, 02=Cool, 03=Auto,<br>04=Dehumidification, 05=Ventilation                                                                                                                                                                                  | Temperature control<br>mode is Cool: <b>600002</b>          |
| Target Tem<br>perature                | 1+3  | 61          | <b>Byte 1:</b> 00=Heat, 02=Cool, 03=Auto<br><b>Byte 2-3:</b> Target Temperature,<br>INT16/100, Unit: °C, Range: 16~30                                                                                                                              | Target temperature<br>is 20 °C: <b>6102d007</b>             |
| Target Temperat<br>ure Tolerance      | 1+3  | 62          | <b>Byte 1:</b> 00<br><b>Byte 2-3:</b> INT16/100, Unit: °C, Range:<br>0.1~5, Default: 1                                                                                                                                                             | Target temperature<br>tolerance is<br>5 °C: <b>6200f401</b> |
| Fan Mode                              | 2+1  | 7000        | 00=Auto (Default), 03=Low,<br>04=Medium, 05=High                                                                                                                                                                                                   | Fan mode is Au<br>to: <b>700000</b>                         |

### Configure Open Window Detection

Command description:

| Item                     | Byte | Command | Value                                               | Example                                      |
|--------------------------|------|---------|-----------------------------------------------------|----------------------------------------------|
| Open Window<br>Detection | 2+1  | 6800    | 00=Disable (Default), 01=Enable                     | Enable: <b>680001</b>                        |
| Temperature Change       | 2+2  | 6802    | INT16/100, Unit: °C/min, Range:<br>1-10, Default: 3 | Temp. change is<br>10°C/min: <b>6802e803</b> |

| Item                  | Byte | Command | Value                                         | Example                                   |
|-----------------------|------|---------|-----------------------------------------------|-------------------------------------------|
| Stop temperature time | 2+2  | 6803    | UINT16, Unit: min, Range: 1-1440, Default: 30 | Stop time is 360 mins:<br><b>68036801</b> |
| Open Window Alarm     | 1+1  | 5a      | 00=Release, 01=Alarm                          | Trigger alarm: <b>5a01</b>                |

### Configure Filter Cleaning Alarm

Command description:

| Item                         | Byte | Command | Value                                        | Example                         |
|------------------------------|------|---------|----------------------------------------------|---------------------------------|
| Filter Cleaning Alarm Enable | 2+1  | 8b00    | 00=Disable (Default), 01=Enable              | Enable: <b>8b0001</b>           |
| Reminder Interval            | 2+2  | 8b01    | UINT16, Unit: day, Range: 1-730, Default: 90 | Reminder 1 day: <b>8b010100</b> |
| Filter Cleaning Alarm        | 1+1  | 5b      | 00=Release, 01=Alarm                         | Trigger alarm: <b>5b01</b>      |

### Configure Schedule Parameters



**Tip:**

To delete a schedule plan, just leave the value of the command as all 0.

Command description:

| Item                     | Byte | Command                     | Value                               | Example                                                                 |
|--------------------------|------|-----------------------------|-------------------------------------|-------------------------------------------------------------------------|
| Schedule Plan            | 3+1  | 67+Schedule ID (00-07) + 00 | 00=Disable (Default), 01=Enable     | Enable/Add plan 4: <b>67030001</b>                                      |
| Schedule Name (First 6B) | 3+6  | 67+Schedule ID (00-07) + 01 | ASCII to Hex strings (6B)           | Schedule name is Schedule 1:<br><b>6700017363686564756700026c652031</b> |
| Schedule Name (Last 4B)  | 3+4  | 67+Schedule ID (00-07) + 02 | ASCII to Hex strings (4B)           |                                                                         |
| Fan Mode                 | 3+1  | 67+Schedule ID (00-07) + 03 | 00=Auto, 03=Low, 04=Medium, 05=High | Schedule 1 Fan Mode is Auto: <b>67000300</b>                            |

| Item                       | Byte | Command                                       | Value                                                                                                                                                                                                                                                                                                                                                                 | Example                                                                                       |
|----------------------------|------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Target Temperature         | 3+2  | 67+Schedule ID (00-07) + 04                   | INT16/100, Unit: °C, Range: 16~30                                                                                                                                                                                                                                                                                                                                     | Schedule 1 target temperature is 16 °C: <b>6700044006</b>                                     |
| AC System Status           | 3+1  | 67+Schedule ID (00-07) + 05                   | 00=Off, 01=On                                                                                                                                                                                                                                                                                                                                                         | Schedule 1 AC on: <b>67000501</b>                                                             |
| Temperature Control Mode   | 3+1  | 67+Schedule ID (00-07) + 06                   | 00=Heat, 02=Cool, 03=Auto, 04=Dehumidification, 05=Ventilation                                                                                                                                                                                                                                                                                                        | Schedule 1 Cool mode: <b>67000602</b>                                                         |
| Schedule Time              | 4+4  | 67+Schedule ID (00-07) + 07 + Time ID (00-0f) | <p><b>Byte 1:</b> 00=Disable (Default), 01=Enable</p> <p><b>Byte 2-3:</b> Time, Range: 0-1439, Unit: min</p> <p><b>Byte 4:</b> Repeat day, for per bit<br/>0=Disable, 1=Enable</p> <ul style="list-style-type: none"> <li>• Bit 0: Sunday</li> <li>• Bit 1: Monday</li> <li>• Bit 2: Tuesday</li> <li>• ...</li> <li>• Bit 6: Saturday</li> <li>• Bit 7: 1</li> </ul> | Enable schedule time 1, time is 8:00, repeat day is Mon., Wed., Fri.: <b>6700070001e001aa</b> |
| Execute Schedule Plan      | 1+1  | 5c                                            | Schedule ID, Range: 0-7, ff=Stop executing                                                                                                                                                                                                                                                                                                                            | Execute plan 1: <b>5c00</b>                                                                   |
| Delete/Reset Schedule Plan | 1+1  | 5f                                            | Schedule ID, Range: 0-7, ff=Reset all                                                                                                                                                                                                                                                                                                                                 | Delete plan 2: <b>5f01</b>                                                                    |

## Configure Energy Saving Parameters



### Tip:

To delete a task, just leave the value of the command as all 0.

Command description:

| Item                               | Byte | Command | Value                                                                                                                                                                                                                     | Example                                               |
|------------------------------------|------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| <b>Temp Limit Mode</b>             |      |         |                                                                                                                                                                                                                           |                                                       |
| Temp Limit Task                    | 3+1  | 830000  | 00=Disable (default),<br>01=Enable                                                                                                                                                                                        | Enable temp limit task: <b>83000001</b>               |
| Valid Date                         | 3+4  | 830001  | <b>Byte 1:</b> Start month, Range: 1-12<br><b>Byte 2:</b> Start Day, Range: 1-31<br><b>Byte 3:</b> End month, Range: 1-12<br><b>Byte 4:</b> End Day, Range: 1-31                                                          | Valid date is 1.1 to 12.31:<br><b>83000101010c1f</b>  |
| Active Period                      | 3+4  | 830002  | <b>Byte 1-2:</b> Start time, Range: 0-1439, Unit: min<br><b>Byte 3-4:</b> End time, Range: 0-1439, Unit: min                                                                                                              | Active period is 8:00 to 18:00: <b>830002e0013804</b> |
| Repeat Cycle                       | 3+1  | 830003  | For per bit 0=Disable, 1=Enable<br><br><ul style="list-style-type: none"> <li>• Bit 0: Sunday</li> <li>• Bit 1: Monday</li> <li>• Bit 2: Tuesday</li> <li>• ...</li> <li>• Bit 6: Saturday</li> <li>• Bit 7: 1</li> </ul> | Repeat cycle is Mon., Wed., Fri.: <b>830003aa</b>     |
| Temperature Range - Low Threshold  | 3+2  | 830004  | INT16/100, Unit: °C, Range: 16~30                                                                                                                                                                                         | Low threshold is 16 °C: <b>8300044006</b>             |
| Temperature Range - High Threshold | 3+2  | 830005  | INT16/100, Unit: °C, Range: 16~30                                                                                                                                                                                         | High threshold is 30 °C: <b>830005b80b</b>            |
| Delete Temp Limit Task             | 1+1  | 58      | 00                                                                                                                                                                                                                        | Delete Temp Limit Task: <b>5800</b>                   |
| <b>Holiday and Seasonal Mode</b>   |      |         |                                                                                                                                                                                                                           |                                                       |

| Item                           | Byte | Command              | Value                                                                                                                                                                                                                     | Example                                                      |
|--------------------------------|------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Holiday Mode Task              | 3+1  | 85 + ID (00-07) + 00 | 00=Disable (default),<br>01=Enable                                                                                                                                                                                        | Add/Enable task<br>1: <b>85000001</b>                        |
| Valid Date                     | 3+4  | 85 + ID (00-07) + 01 | <b>Byte 1:</b> Start month, Range: 1-12<br><b>Byte 2:</b> Start Day, Range: 1-31<br><b>Byte 3:</b> End month, Range: 1-12<br><b>Byte 4:</b> End Day, Range: 1-31                                                          | Task 1 Valid date is 1.1 to 12.31: <b>85000101010c1f</b>     |
| Active Period                  | 3+4  | 85 + ID (00-07) + 02 | <b>Byte 1-2:</b> Start time, Range: 0-1439, Unit: min<br><b>Byte 3-4:</b> End time, Range: 0-1439, Unit: min                                                                                                              | Task 1 Active period is 8:00 to 18:00: <b>850002e0013804</b> |
| Repeat Cycle                   | 3+1  | 85 + ID (00-07) + 03 | For per bit 0=Disable, 1=Enable<br><br><ul style="list-style-type: none"> <li>• Bit 0: Sunday</li> <li>• Bit 1: Monday</li> <li>• Bit 2: Tuesday</li> <li>• ...</li> <li>• Bit 6: Saturday</li> <li>• Bit 7: 1</li> </ul> | Task 1 Repeat cycle is Mon., Wed., Fri.: <b>8500032a</b>     |
| Fan Mode                       | 3+1  | 85 + ID (00-07) + 04 | 00=Auto, 03=Low, 04=Medium, 05=High                                                                                                                                                                                       | Task 1 Fan Mode is Auto: <b>85000400</b>                     |
| Target Temperature             | 3+2  | 85 + ID (00-07) + 05 | INT16/100, Unit: °C, Range: 16~30                                                                                                                                                                                         | Task 1 target temperature is 16 °C: <b>8500054006</b>        |
| Air Conditioner On/Off         | 3+1  | 85 + ID (00-07) + 06 | 00=Off, 01=On                                                                                                                                                                                                             | Task 1 AC on: <b>85000601</b>                                |
| Temperature Control Mode       | 3+1  | 85 + ID (00-07) + 07 | 00=Heat, 02=Cool, 03=Auto, 04=Dehumidification, 05=Ventilation                                                                                                                                                            | Task 1 Cool mode: <b>85000702</b>                            |
| Delete/Reset Holiday Mode Task | 1+1  | 56                   | Range: 00-07, ff=Reset                                                                                                                                                                                                    | Delete Holiday Mode Task 1: <b>5600</b>                      |

## Downlink Commands for Auxiliary Features

This section describes the downlink commands for the auxiliary features.

### Configure General Parameters

Command description:

| Item                          | Byte | Com<br>mand                     | Value                                                                                                                                                            | Example                                                                                     |
|-------------------------------|------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Reboot                        | 1    | be                              | -                                                                                                                                                                | -                                                                                           |
| Temperature Unit              | 1+1  | 64                              | 00=°C (default), 01=°F                                                                                                                                           | Set unit as °F: <b>6401</b>                                                                 |
| Temperature<br>Data Source    | 2+1  | 6a00                            | 00=External, 04=Built-in<br>(Default)                                                                                                                            | Data source is<br>External: <b>6a0000</b>                                                   |
| Enhanced IR Emission          | 1+1  | 81                              | 00=Disable (Default), 01=Enable                                                                                                                                  | Enable: <b>8101</b>                                                                         |
| Enable Battery<br>Compartment | 1+1  | 92                              | 00=Disable (Default), 01=Enable                                                                                                                                  | Enable: <b>9201</b>                                                                         |
| Sleep Duration Enable         | 3+1  | 93 + Time<br>(00 or<br>01) + 00 | 00=Disable (Default), 01=Enable                                                                                                                                  | Enable time 1:<br><b>93000001</b>                                                           |
| Sleep Duration Time           | 3+4  | 93 + Time<br>(00 or<br>01) + 01 | <b>Byte 1:</b> Start month, Range: 1-12<br><b>Byte 2:</b> Start Day, Range: 1-31<br><b>Byte 3:</b> End month, Range: 1-12<br><b>Byte 4:</b> End Day, Range: 1-31 | Duration time 1 is 1.1 to<br>12.31: <b>93000101010c1f</b>                                   |
| AC Cooling Power              | 2+2  | 8200                            | UINT16, Unit: W, Range:<br>0-60000, 0=blank                                                                                                                      | AC cooling power is<br>1000W: <b>8200e803</b>                                               |
| AC Heating Power              | 2+2  | 8201                            |                                                                                                                                                                  |                                                                                             |
| Indicator Auto-Off            | 2+1  | 8000                            | 00=Disable, 01=Enable (Default)                                                                                                                                  | Disable: <b>800000</b>                                                                      |
| Indicator<br>Auto-Off Time    | 2+2  | 8001                            | UINT16, Unit: s, Range:<br>600-3600, Default: 600                                                                                                                | When indicator<br>auto-off is enabled,<br>the LED will light 10<br>minutes: <b>80015802</b> |

| Item                          | Byte | Com<br>mand | Value                                                                                          | Example                            |
|-------------------------------|------|-------------|------------------------------------------------------------------------------------------------|------------------------------------|
| Data Storage & Retransmission | 1+2  | c5          | <b>Byte 1:</b> 00=Data storage, 01=Data retransmission<br><b>Byte 2:</b> 00=Disable, 01=Enable | Enable data storage: <b>c50001</b> |
| Data Retransmission Interval  | 1+3  | c5          | <b>Byte 1:</b> 02<br><b>Byte 2-3:</b> UINT16, Unit:s, Range: 30-1200 s, Default: 600           | Interval is 1200s: <b>c502b004</b> |
| Clear History Data            | 1    | bd          | -                                                                                              | -                                  |

## Configure Time Parameters

Command description:

| Item                 | Byte | Command | Value                                                                                                                                                                                                                                                                                  | Example                                                                                                                                 |
|----------------------|------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| UTC Time Zone        | 1+2  | c7      | INT16/60                                                                                                                                                                                                                                                                               | UTC-4: <b>c710ff</b>                                                                                                                    |
| Daylight Saving Time | 1+10 | c6      | <b>Byte 1:</b> 00=Disable (default), 01=Enable<br><br><b>Byte 2:</b> DST bias, unit: min, range: 1-120<br><br><b>Byte 3-6:</b> Start time, Month (1B)+Week&Day (1B) + Minute Time (2B)<br><br><b>Byte 7-10:</b> End time, Month (1B)+Week&Day (1B) + Minute Time (2B)<br><br>Week&Day: | Enable DST, start time is October 1st Sunday 2:00, end time is April 1st Sunday 2:00, bias is 60 minutes: <b>c6013c0a17780004177800</b> |

| Item                  | Byte | Command | Value                      |                        | Example |
|-----------------------|------|---------|----------------------------|------------------------|---------|
|                       |      |         | Bit7-4                     | Bit3-0                 |         |
|                       |      |         | Week number,<br>range: 1-5 | Weekday,<br>range: 1-7 |         |
| Sync time<br>from LNS | 1    | b8      | -                          |                        | -       |

## Configure Sensor Parameters

Command description:

| Item                                          | Byte | Com<br>mand | Value                                           | Example                                                   |
|-----------------------------------------------|------|-------------|-------------------------------------------------|-----------------------------------------------------------|
| Built-in Sensor Name                          | 2+6  | 8800        | First 6 bytes, ASCII to Hex strings             | The name is sensor:<br><b>88007365</b><br><b>6e736f72</b> |
|                                               |      | 8801        | Middle 6 bytes, ASCII to Hex strings            |                                                           |
|                                               |      | 8802        | Last 6 bytes, ASCII to Hex strings              |                                                           |
| Built-in Sensor<br>Temperature<br>Calibration | 2+2  | 8805        | INT16/100, Unit: °C, Range: -80 - 80            | Calibration value<br>is 1°C: <b>88056400</b>              |
| Built-in Sensor<br>Humidity Calibration       | 2+2  | 8807        | INT16/10, Unit: %RH, Range: -100 - 100          | Calibration value is<br>-0.3%RH: <b>8807fdff</b>          |
| External Sensor Name                          | 2+6  | 8900        | First 6 bytes, ASCII to Hex strings             | The name is sensor:<br><b>89007365</b><br><b>6e736f72</b> |
|                                               |      | 8901        | Middle 6 bytes, ASCII to Hex strings            |                                                           |
|                                               |      | 8902        | Last 6 bytes, ASCII to Hex strings              |                                                           |
| External Sensor<br>Temperature                | 2+1  | 8906        | 00=Disable, 01=Enable (default)                 | Enable: <b>890601</b>                                     |
| External Sensor<br>Temperature<br>Calibration | 2+2  | 8905        | INT16/100, Unit: °C, Range: -80 - 80            | Calibration value<br>is 1°C: <b>89056400</b>              |
| Temp & Humidity<br>Sampling Interval          | 2+2  | 8803        | UINT16, Unit: s, Range: 30-3600,<br>Default: 30 | Sampling<br>interval is 3600s:<br><b>8803100e</b>         |

| Item                               | Byte | Com<br>mand | Value                                                                    | Example                                       |
|------------------------------------|------|-------------|--------------------------------------------------------------------------|-----------------------------------------------|
| External CT                        | 2+1  | 8a00        | 00=Disable (default), 01=Enable                                          | Enable: <b>8a0001</b>                         |
| External CT -<br>Sampling Interval | 2+2  | 8a01        | UINT16, Unit: s, Range: 1-128, Default:<br>5                             | Sampling interval<br>is 128s: <b>8a018000</b> |
| External CT -<br>Threshold         | 2+2  | 8a02        | UINT16, Unit: mA, Range: 30-1000                                         | Threshold is<br>30mA: <b>8a021e00</b>         |
| External CT - AC Type              | 2+1  | 8a03        | 00=Wall-mounted (default),<br>01=Standing Cabinet,<br>02=Ceiling-mounted | AC type is wall-mo<br>unted: <b>8a0300</b>    |

### Configure Threshold Parameters

Command description:

| Item                                                 | Byte | Command | Value                                           | Example                                  |
|------------------------------------------------------|------|---------|-------------------------------------------------|------------------------------------------|
| Persistent High<br>Temperature<br>Alarm - Enable     | 2+1  | 6c00    | 00=Disable (default), 01=Enable                 | Enable: <b>6c0001</b>                    |
| Persistent High<br>Temperature<br>Alarm - Difference | 2+2  | 6c01    | INT16/100, Unit: °C, Range: 1-10,<br>Default: 3 | Difference is<br>3.15°C: <b>6c013b01</b> |
| Persistent High<br>Temperature<br>Alarm - Duration   | 2+1  | 6c02    | UINT8, Unit: min, Range: 0-60, Default: 5       | Duration is 5<br>mins: <b>6c0205</b>     |
| Persistent Low<br>Temperature<br>Alarm - Enable      | 2+1  | 6d00    | 00=Disable (default), 01=Enable                 | Enable: <b>6d0001</b>                    |
| Persistent Low<br>Temperature<br>Alarm - Difference  | 2+2  | 6d01    | INT16/100, Unit: °C, Range: 1-10,<br>Default: 3 | Difference is<br>3.15°C: <b>6d013b01</b> |
| Persistent Low<br>Temperature<br>Alarm - Duration    | 2+1  | 6d02    | UINT8, Unit: min, Range: 0-60, Default: 5       | Duration is 5<br>mins: <b>6d0205</b>     |

| Item                                | Byte | Command | Value                                            | Example                                     |
|-------------------------------------|------|---------|--------------------------------------------------|---------------------------------------------|
| Temperature Threshold - Enable      | 2+1  | 6e00    | 00=Disable (default), 01=Enable                  | Enable: <b>6e0001</b>                       |
| Temperature Threshold - Condition   | 2+1  | 6e01    | 01=Below, 02=Above, 04=Below or Above            | Below threshold: <b>6e0101</b>              |
| Temperature Threshold - Below Value | 2+1  | 6e02    | INT16/100, Unit: °C, Range: -20-60, Default: -20 | Below threshold is -5.15°C: <b>6e02fdfd</b> |
| Temperature Threshold - Above Value | 2+1  | 6e03    | INT16/100, Unit: °C, Range: -20-60, Default: 60  | Above threshold is 25.15°C: <b>6e03d309</b> |

## Downlink Commands for Query

This section describes the downlink commands for querying the device data.

### Query Current Data

Command description:

| Item                    | Byte | Command | Value | Example |
|-------------------------|------|---------|-------|---------|
| Enquiry Periodic Report | 1    | b9      | -     | -       |

### Query Historical Data

**Prerequisites:** Data Storage was enabled and device time is synced.

Command description:

| Item                                  | Byte | Command | Value                                                                | Example                        |
|---------------------------------------|------|---------|----------------------------------------------------------------------|--------------------------------|
| Query data for a specified time point | 1+4  | ba      | Unix timestamp, UINT32, Unit: s                                      | /                              |
| Query data for a specified time range | 1+8  | bb      | Start Unix Timestamp (4B) + End Unix Timestamp (4B), UINT32, Unit: s | Query data from 1697445000s to |

| Item                   | Byte | Com<br>mand | Value                                                                               | Example                                      |
|------------------------|------|-------------|-------------------------------------------------------------------------------------|----------------------------------------------|
|                        |      |             |                                                                                     | 1697445600s:<br><b>bb88f42c65e0f62c65</b>    |
| Stop data query report | 1    | bc          | -                                                                                   | /                                            |
| Query report interval  | 1+3  | c5          | <b>Byte 1:</b> 03<br><b>Byte 2-3:</b> UINT16, Unit:s, Range: 30-1200 s, Default: 60 | Report interval is 1200s:<br><b>c503b004</b> |

Reply description: [Historical Data Packet](#)

## Chapter 5. Services

Milesight provides customers with timely and comprehensive technical support services. End-users can contact their local dealer to obtain technical support. Distributors and resellers can contact Milesight directly for technical support.

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