



Smart Thermostat

Featuring LoRaWAN[®]

WT201

Communication Protocol



Revision History

Date	Doc Version	Description
Nov. 13, 2023	V 1.0	Initial version

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1. Overview

WT201 uses the standard Milesight IoT payload format based on IPSO. All data are based on following format:

Channel1	Type1	Data1	Channel2	Type2	Data2	Channel 3	...
1 Byte	1 Byte	N Bytes	1 Byte	1 Byte	M Bytes	1 Byte	...

Note:

- 1) All explanations and examples in this document are based on HEX format.
- 2) For all Milesight IoT decoder examples please find files on <https://github.com/Milesight-IoT/SensorDecoders>

2. Uplink Payload

Uplink payloads of WT201 are made up of device basic information and device data.

2.1 Basic Information

WT201 reports basic device information of device everytime joining the network.

Channel	Type	Byte	Description
ff	01(Protocol Version)	1	01=>V1
	09 (Hardware Version)	2	02 10=>V2.1
	0a(Software Version)	2	01 01=>V1.1
	0b (Power On)	1	Device is on
	0f(Device Type)	1	00 = Class A, 01 = Class B, 02 = Class C
	16 (Device SN)	8	16 digits

Example:

ff0bff ff0101 ff166791d19604050005 ff090100 ff0a0101 ff0f02					
Channel	Type	Value	Channel	Type	Value
ff	0b (Power On)	ff (Reserved)	ff	01 (Protocol Version)	01 (V1)
Channel	Type	Value	Channel	Type	Value
ff	16 (Device SN)	6791d19604050 005	ff	09 (Hardware Version)	0100 (V1.0)
Channel	Type	Value	Channel	Type	Value
ff	0a (Software Version)	0101 (V1.1)	ff	0f (Device Type)	02 (Class C)

2.2 Device Data

Item	Channel	Type	Byte	Description
Current Temperature	03	67	2	INT16, Unit: °C, Resolution: 0.1 °C
Target Temperature	04	67	2	INT16, Unit: °C, Resolution: 0.1 °C
Temperature Control Mode and Status	05	e7	1	Bit 7-4: Current control status, 0000=Standby, 0001=1-stage heat, 0010=2-stage heat, 0011=3-stage heat, 0100=4-stage heat, 0101=emergency heat, 0110=1-stage cool, 0111=2-stage cool Bit 3-2: 00 Bit 1-0: Current control mode,

				00=Heat, 01=EM Heat, 10=Cool, 11=Auto
Fan Mode and Status	06	e8	1	Bit7-4: 0000 Bit 3-2: Current fan status, 00=Off, 01=High (Speed), 10=Low(Speed), 11=On Bit1-0: Current fan mode, 00=Auto, 01=On, 10=Circulate
Plan Event	07	bc	1	00=Not executed, 01=Wake, 02=Away, 03=Home, 04=Sleep
Temperature Control System Status	08	8e	1	00=System Off, 01=System On

Examples:

1. Periodic packet when system is on: report as reporting interval (10 minutes by default) or when the target temperature, temperature control mode, or fan mode changed.

03671101 0467fa00 05e772 06e806 07bc00					
Channel	Type	Value	Channel	Type	Value
03	67	Current Temp: 11 01=>01 11 =273/10=27.3°C	04	67	Target Temp: fa 00=>00 fa=250 /10 =25°C
Channel	Type	Value	Channel	Type	Value
05	e7 (Temperature Control Mode and Status)	72=>0111 0010 Bit 7-4: 0111=2-stage cool Bit 1-0: 10=Cool	06	e8 (Fan Mode and Status)	06=> 0000 0110 Bit 3-2: 01=High Bit 1-0: 10=Circulate
Channel	Type	Value			
07	bc (Plan Event)	00=Not executed			

2. Periodic packet when system is off: report as reporting interval (10 minutes by default).

03671401		
Channel	Type	Value
03	67	Temp: 14 01=>01 14=276/10=27.6°C

3. Temperature control system status packet: report immediately when system is on or off.

088e00		
Channel	Type	Value
08	8e	00=System off

2.3 Alarm

WT201 supports various types of alarms according to different settings:

Temperature threshold alarm: when current temperature is over or below the threshold value, the device will report the threshold alarm packet instantly. Only when the threshold is released and re-triggered, will the device report the alarm again.

Persistent low/high temperature threshold alarm: when current temperature is lower or higher than the target temperature for difference value and specific duration, the device will report the threshold alarm packet instantly. When the threshold is released, it will also report the alarm release packet.

Freeze protection alarm: when current temperature is lower than the protection temperature, the device will report this alarm packet instantly; when the temperature is higher than the protection temperature, it will also report the alarm release packet. This works when freeze protection option is enabled on Installation Settings.

Emergency heating timeout alarm: when the emergency heating time reaches this preset duration, report this alarm packet and switch back to Heat mode. This works when emergency heating duration option is enabled on Installation Settings.

Auxiliary heating timeout alarm: when current temperature does not reach the target temperature even heating for preset duration, the device will report this alarm packet and switch back to lower stage heating mode. This works when auxiliary heating duration option is enabled on Installation Settings.

Channel	Type	Byte	Description
83	67	3	<p>Byte 1-2: Temperature, INT16/10, Unit: °C</p> <p>Byte 3: Alarm Type</p> <p>01-Emergency Heating Timeout Alarm</p> <p>02-Auxiliary Heating Timeout Alarm</p> <p>03 -Persistent Low Temperature Alarm</p> <p>04 -Persistent Low Temperature Alarm Release</p> <p>05 -Persistent High Temperature Alarm</p> <p>06 -Persistent High Temperature Alarm Release</p> <p>07 -Freeze Protection Alarm</p> <p>08 -Freeze Protection Alarm Release</p> <p>09 -Temperature Threshold Alarm</p> <p>0a -Temperature Threshold Alarm Release</p>

Examples:

1. Temperature alarm or alarm release packet: report according to alarm settings.

8367140109		
Channel	Type	Value
83	67	Temperature: 14 01=>01 14=276/10=27.6°C Alarm type: temperature threshold alarm

3. Downlink Payload

WT201 supports downlink commands to configure the device. The application port is 85 by default and can be configured via ToolBox. If users need to check if the command takes effect, please enable confirmed mode on the device or network server. Then the device will reply the downlink command with format "FE+Type+Command content" if your commands are valid.

3.1 Basic Settings

Item	Channel	Type	Byte	Description													
Reboot	ff	10	1	ff													
Query Current Status		28	1	01, the device will return a periodic packet													
Reporting Interval		8e	3	Byte 1: 00 Byte 2-3: Interval time, unit: min													
System On/Off		c5	1	00=Off, 01=On													
Temperature Control Mode		b7	2	Byte 1: 00=Heat, 01=EM Heat, 02=Cool, 03= Auto Byte 2: Target temperature, INT8, unit: °C													
Temperature Tolerance		b8	2	Byte 1: Target temperature tolerance, UINT8/10, unit: °C Byte 2: Temperature control tolerance, UINT8/10, unit: °C													
Fan Mode		b6	1	00=Auto, 01=On, 02=Circulate													
Child Lock		25	2	Byte 1: ff Byte 2: for every bit 0=disable, 1=enable. <table border="1" data-bbox="890 1704 1385 2000"> <thead> <tr> <th>Bit</th> <th>Option</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>System on/off</td> </tr> <tr> <td>1</td> <td>Temperature +</td> </tr> <tr> <td>2</td> <td>Temperature -</td> </tr> <tr> <td>3</td> <td>Fan mode</td> </tr> <tr> <td>4</td> <td>Temperature control mode</td> </tr> <tr> <td>5</td> <td>Reset and reboot</td> </tr> </tbody> </table>	Bit	Option	0	System on/off	1	Temperature +	2	Temperature -	3	Fan mode	4	Temperature control mode	5
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2	Temperature -																
3	Fan mode																
4	Temperature control mode																
5	Reset and reboot																

				6-7	00				
UTC Time Zone		bd	2	INT16/60					
Daylight Saving Time		ba	10	Byte 1: 00-disable, 01-enable Byte 2: DST bias, unit: min Byte 3-6: Start time, Month (1B)+Week (1B) + Hours of a Day (2B) Week: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="background-color: #0056b3; color: white;">Bit7-4</th> <th style="background-color: #0056b3; color: white;">Bit3-0</th> </tr> </thead> <tbody> <tr> <td>1: 1st, 2: 2nd,...</td> <td>1: Monday, 2: Tuesday,...7: Sunday</td> </tr> </tbody> </table> Byte 7-10: End time		Bit7-4	Bit3-0	1: 1 st , 2: 2 nd ,...	1: Monday, 2: Tuesday,...7: Sunday
Bit7-4	Bit3-0								
1: 1 st , 2: 2 nd ,...	1: Monday, 2: Tuesday,...7: Sunday								
Data Storage		68	1	00: disable, 01: enable					
Data Retransmission		69	1	00: disable, 01: enable					
Data Retransmission Interval		6a	3	Byte 1: 00 Byte 2-3: Interval time, unit: s range: 30~1200s (600s by default)					
Multicast group		82	1	Bit 7-4: multicast group 4 to 1 change status, 0 = not allow control, 1 = allow control. Bit 3-0: multicast group 4 to 1 control status, 0 for disable, 1 for enable. Note: after disabling or enabling, the device will re-join the network.					

Examples:

1. Reboot the device.

ff10ff		
Channel	Type	Value
ff	10 (Reboot)	ff

2. Set reporting interval as 2 minutes.

ff8e 00 0200		
Channel	Type	Value
ff	8e (Reporting Interval)	02 00=>00 02=>2 mins

3. Set temperature control mode as Cool and target temperature as 27°C.

ffb7021b		
Channel	Type	Value
ff	b7 (Temperature Control Mode)	02=Cool, 1b=>27 °C

4. Lock the reset and reboot feature of button.

ff25ff20		
Channel	Type	Value
ff	bd	20=> 0010 0000 Bit5=1 => Reset and reboot lock

5. Set time zone.

ffbdc0fd		
Channel	Type	Value
ff	bd	c0 fd => fd c0 = -240/60=-4 the time zone is UTC-4

6. Set DST time: start time is October 1st Sunday 2:00, end time is April 1st Sunday 2:00, and bias is 1h (60 minutes).

ffba 01 3c 0a177800 04177800		
Channel	Type	Value
ff	ba	01=enable DST bias: 3c=>60 mins Start time: 0a=>10=October, 17=>1 st (1) Sunday(7), 78 00 =>00 78=120 hours=2:00 End time: 04=>April, 17=>1 st (1) Sunday(7), 78 00 =>00 78=120 hours=2:00

7. Set multicast group 1 as disable.

ff8210		
Channel	Type	Value
ff	82 (Multicast group)	10=>0001 0000 Bit4=1=>group1, bit 0=0=>disable

3.2 Installation Settings

Item	Channel	Type	Byte	Description
------	---------	------	------	-------------

Wiring Settings	ff	ca	3	<p>Byte 1:</p> <table border="1"> <thead> <tr> <th>Bit</th> <th>Wire</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1-0</td> <td>Y1</td> <td rowspan="4">00=disable, 01=enable</td> </tr> <tr> <td>3-2</td> <td>G/GH</td> </tr> <tr> <td>5-4</td> <td>OB</td> </tr> <tr> <td>7-6</td> <td>W1</td> </tr> </tbody> </table> <p>Byte 2:</p> <table border="1"> <thead> <tr> <th>Bit</th> <th>Wire</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1-0</td> <td>E</td> <td rowspan="3">00=disable, 01=enable</td> </tr> <tr> <td>3-2</td> <td>CL&CN</td> </tr> <tr> <td>5-4</td> <td>PEK</td> </tr> <tr> <td>7-6</td> <td>W2/AUX</td> <td>00=disable, 01=W2, 10=AUX</td> </tr> </tbody> </table> <p>Byte 3:</p> <table border="1"> <thead> <tr> <th>Bit</th> <th>Wire</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1-0</td> <td>Y2/GL</td> <td>00=disable, 01=Y2, 10=GL</td> </tr> <tr> <td>3-2</td> <td>OB</td> <td>00=O/B on cool, 01=O/B on heat</td> </tr> <tr> <td>7-4</td> <td>---</td> <td>0000</td> </tr> </tbody> </table>	Bit	Wire	Description	1-0	Y1	00=disable, 01=enable	3-2	G/GH	5-4	OB	7-6	W1	Bit	Wire	Description	1-0	E	00=disable, 01=enable	3-2	CL&CN	5-4	PEK	7-6	W2/AUX	00=disable, 01=W2, 10=AUX	Bit	Wire	Description	1-0	Y2/GL	00=disable, 01=Y2, 10=GL	3-2	OB	00=O/B on cool, 01=O/B on heat	7-4	---	0000
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7-4	---	0000																																							
Reversing Valve	b5	1	00=O/B on cool, 01=O/B on heat																																						
Freeze Protection	b0	3	<p>Byte 1: 00-disable, 01-enable</p> <p>Byte 2-3: Protection temperature, INT16/10, unit: °C</p>																																						
Room Card Setting	c1	4	<p>Byte 1: 00-disable, 01-enable</p> <p>Byte 2: 00=System on/off, 01=Insert an event</p> <p>Byte 3: for every bit: 0=disable, 1=enable</p> <p>Corresponding event of every bit:</p> <table border="1"> <thead> <tr> <th>Bit</th> <th>Event</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Insert card- Wake</td> </tr> <tr> <td>1</td> <td>Insert card- Away</td> </tr> <tr> <td>2</td> <td>Insert card- Home (Default)</td> </tr> <tr> <td>3</td> <td>Insert card- Sleep</td> </tr> <tr> <td>4</td> <td>Remove card- Wake</td> </tr> <tr> <td>5</td> <td>Remove card- Away(Default)</td> </tr> <tr> <td>6</td> <td>Remove card- Home</td> </tr> <tr> <td>7</td> <td>Remove card- Sleep</td> </tr> </tbody> </table> <p>Byte 4: 00</p>	Bit	Event	0	Insert card- Wake	1	Insert card- Away	2	Insert card- Home (Default)	3	Insert card- Sleep	4	Remove card- Wake	5	Remove card- Away(Default)	6	Remove card- Home	7	Remove card- Sleep																				
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Reply format:

The device will send a reply including wirings, supported mode and levels when it receives a wiring setting command.

Channel	Type	Description														
ff	cb	3 Bytes, for every bit: 0=disable, 1=enable Byte 1: Supported temperature control mode														
		<table border="1"> <thead> <tr> <th>Bit</th> <th>Event</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Heat</td> </tr> <tr> <td>1</td> <td>EM Heat</td> </tr> <tr> <td>2</td> <td>Cool</td> </tr> <tr> <td>3</td> <td>Auto</td> </tr> <tr> <td>7-4</td> <td>0000</td> </tr> </tbody> </table>	Bit	Event	0	Heat	1	EM Heat	2	Cool	3	Auto	7-4	0000		
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		Byte 2: Supported heat level, only works when using heat mode														
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		0	1-stage Heat													
1	2-stage Heat															
2	3-stage Heat															
3	4-stage Heat															
4	Auxiliary Heat															
7-5	000															
Byte 3: Supported cool level, only works when using cool mode																
<table border="1"> <thead> <tr> <th>Bit</th> <th>Event</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1-stage Cool</td> </tr> <tr> <td>1</td> <td>2-stage Cool</td> </tr> <tr> <td>7-2</td> <td>000000</td> </tr> </tbody> </table>	Bit	Event	0	1-stage Cool	1	2-stage Cool	7-2	000000								
Bit	Event															
0	1-stage Cool															
1	2-stage Cool															
7-2	000000															
ff	ca	The definition is the same as downlink command														

Examples:

1) Enable W1, Y1, Y2, G, O/B, O/B=on heat.

ffca 550005		
Channel	Type	Value
ff	ca (Wiring Settings)	Byte 1: 55=> 01 01 01 01=W1, O/B, G, Y1 enable Byte 3: 05=> 00 00 01 01= Y2 enable, O/B=on heat

Reply:

ffcb0d0703 ffca550005		
Channel	Type	Value
ff	cb	0d=>1101, Auto, Cool and Heat are supported 07=>00111, 1-stage, 2-stage and 3-stage Heat are supported

		03=>0011, 1-stage and 2-stage cool are supported
ff	ca	The same as downlink command content

2) Enable freeze protection and set as 5°C.

ffb0 01 3200		
Channel	Type	Value
ff	b0 (Freeze Protection)	01=Enable 32 00=>00 32=50*0.1=5 °C

3.3 Calibration and Threshold Settings

Item	Channel	Type	Byte	Description
Temperature Calibration		ab	3	Byte 1: 00-disable, 01-enable Byte 2-3: calibration value, INT16/10, unit: °C
Threshold Alarm	ff	06	9	Temperature threshold: CTRL(1B)+Min(2B)+Max(2B)+ 00000000(4B) CTRL: 00=disable, 01=below (minimum threshold), 02=over (maximum threshold), 03=within, 04=below or over Persistent low temperature threshold: 09+Difference value(2B)+00000000(4B)+ Duration(2B), duration unit: s Persistent high temperature threshold: 120000+Difference value(2B)+0000(2B) Duration(2B), duration unit: s

Examples:

1) Enable temperature and set calibration value.

ffab01fdff		
Channel	Type	Value
ff	ab (Temperature Calibration)	01=Enable fdff=>fffd=-3/10=-0.3 °C

2) Enable threshold alarm and set the below threshold value as 10°C.

ff06 01 6400 000000000000		
Channel	Type	Value

ff	06(Set Threshold Alarm)	CTRL: 01=below Threshold: 64 00=>00 64=100*0.1=10 °C
----	-------------------------	---

3) Enable persistent high temperature threshold difference as 1°C and duration is 10 minutes.

ff06120000 0a00 0000 5802		
Channel	Type	Value
ff	06(Set Threshold Alarm)	Difference: 0a 00=>00 0a=10*0.1=1°C Duration: 58 02=> 02 58=600s=10 mins

3.4 Schedule Settings

WT201 supports to send downlink commands to configure the contents of schedules.

Note:

- 1) if the repeat date is disabled, the schedule plan will only execute once.
- 2) When you send downlink command to modify current executing schedule plan, it will take effect in next time.

Item	Channel	Type	Byte	Description								
Schedule Content	ff	c8	5	Plan(1B) + 03 + Fan Mode(1B) + Target Temp. (1B) + Tolerance(1B) Plan: 00-Wake, 01-Away, 02-Home, 03-Sleep Fan mode: 00=Auto, 01=On, 02=Circulate Target Temp.: INT8, unit: °C Tolerance: UINT8/10, unit: °C								
Schedule Time		c9	6	Plan(1B) + ID(1B) + Enable(1B) + Repeat Day(1B) + Time(2B) Plan: 00-Wake, 01-Away, 02-Home, 03-Sleep ID: 00~0f Repeat Day: 0=disable, 1=enable <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Bit7</th> <th>.....</th> <th>Bit1</th> <th>Bit0</th> </tr> </thead> <tbody> <tr> <td>Sun.</td> <td>,...</td> <td>Mon.</td> <td>0</td> </tr> </tbody> </table> Time: unit: min	Bit7	Bit1	Bit0	Sun.	,...	Mon.	0
Bit7		Bit1	Bit0								
Sun.		,...	Mon.	0								
Switch Schedule Plan	c2	1	00-Wake, 01-Away, 02-Home, 03-Sleep									
Query Schedule	28	1	00, the device will reply schedule contents and times of all plans with the same format as downlink commands. Note: even the schedule time is blank, the device									

				will also reply totally 64 blank time records.
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Examples:

1) Set Wake plan content: temperature control mode is heat, fan mode is on, target temperature is 26°C, tolerance is 1°C.

ffc8 0003011a0a		
Channel	Type	Value
ff	c8 (Schedule Content)	00=Wake, 01=Fan On 1a=26 => Target temp. is 26°C 0a=10 => Tolerance is 10/10=1°C

2) Set Wake plan time: 6:30 am on weekdays (Mon. To Fri.), 8:00am on weekend (Sat. To Sun.).

ffc90000013e8601 ffc9000101c0e001		
Channel	Type	Value
ff	c9 (Schedule Time)	00=Wake, 00=Command ID is 0, 01=Enable 3e=>0011 1110 =Weekday enabled 86 01=>01 86=390 minutes=>6:30
ff	c9 (Schedule Time)	00=Wake, 01=Command ID is 1, 01=Enable c0=>1100 0000 =Weekend enabled e0 01=>01 e0=480 minutes=>8:00

3.5 Milesight D2D Settings

Item	Channel	Type	Byte	Description
D2D Feature		c7	1	10=D2D Controller disabled, 11=D2D Controller enabled, 20=D2D Agent disabled, 22=D2D Agent enabled
D2D Controller	ff	96	8	Byte 1: 00-Wake, 01-Away, 02-Home, 03-Sleep Byte 2: 00-disable, 01-enable Byte 3: 00-disable LoRa Uplink, 01-enable LoRa Uplink Byte 4-5: D2D control command Byte 6-8: 000000
D2D Agent		83	5	Byte 1: Command ID, 0~15 Byte 2: 00-disable, 01-enable Byte 3-4: D2D control command Byte 5: control action, 00=System off, 01=System on,

				10=Wake, 11=Away, 12=Home, 13=Sleep
--	--	--	--	-------------------------------------

Examples:

1) D2D Controller

ff96 03 01 01 04e0 000000		
Channel	Type	Value
ff	96 (D2D Controller)	03=> Sleep, 01=> Enable; 01=>Enable LoRa Uplink; 04 e0=>e0 04, Control Command is e004;

2) D2D Agent

ff83 03 01 04e0 01		
Channel	Type	Value
ff	83 (D2D Agent)	03=> Command ID, 01=> Enable; 04 e0=>e0 04, Control Command is e004; 01=>System on

3.6 Use External Temperature Sensor

WT201 supports to disable internal temperature sensor and use external temperature sensor data via downlink commands.

Item	Channel	Type	Byte	Description
External Temperature Sensor	ff	c4	2	Byte 1: 00-disable, 01-enable Byte 2: timeout, unit: min Note: when the device does not receive the temperature for timeout, it will stop working to control the temperature.
Send External Temperature Value	03	-	3	Byte 1-2: INT16/10, unit: °C Byte 3: 00

Examples:

1) Enable external temperature sensor and set the timeout as 60 minutes.

ffc4013c		
Channel	Type	Value
ff	c4 (External Temperature Sensor)	01=Enable 3c=> 60 minutes

2) Send external temperature sensor data.

03640000	
Channel	Value
03	64 00=>00 64=100/10=10 °C

4. Historical Data Enquiry

WT201 supports sending downlink commands to enquire historical data for specified time point or time range. Before that, ensure **the device time is correct and data storage feature was enabled to store the data.**

Command format:

Channel	Type	Description
fd	6b (Enquire data in time point)	4 Bytes, Unix timestamp
fd	6c (Enquire data in time range)	Start time (4 bytes) + End time (4 bytes), Unix timestamp
fd	6d (Stop query data report)	ff
ff	6a (Report Interval)	3 Bytes Byte 1: 01 Byte 2-3: interval time, unit:s range: 30~1200s (60s by default)

Reply format:

fc	6b/6c	00: data enquiry success 01: time point or time range invalid 02: no data in this time or time range
20	ce (Historical Data)	Data time stamp (4 Bytes) + Data Contents (4 Bytes)

Data Content Format:

Bit	15-5	4	3	2	1	0
	(Current temperature+100)*10, unit: °C	System on=1, off=0	Fan status, 00=Off, 01=High, 10=Low, 11=On		Fan mode, 00=Auto, 01=On, 10=Circulate	
Bit	15-5	4	3	2	1	0
	(Target temperature+100)*10, unit: °C	control status, 000=Standby, 001=1-stage heat, 010=2-stage heat, 011=3-stage heat, 100=4-stage heat, 101=emergency heat, 110=1-stage cool, 111=2-stage cool			Temp. Control mode, 00=Heat, 01=EM Heat, 10=Cool, 11= Auto	

Note:

1. The device only uploads 300 data records per range enquiry at most.
2. When enquiring the data at the specific time point, it will upload the data which is closest to the search point within the reporting interval range. For example, if the device reporting interval is 10 minutes and users send command to search for the data at 17:00, if the device find there is data stored in 17:00, it will upload this data; If not, it will search for data between 16:50 to 17:10 and upload the data which is closest to 17:00.

Example:

1. Enquire historical data between 2023/10/16 16:30:00 to 2023/10/16 16:40:00.

fd6c 88f42c65 e0f62c65		
Channel	Type	Value
fd	6c (Enquire data in time range)	Start time: 88f42c65 => 652cf488 = 1697445000 =2023/10/16 16:30:00 End time: e0f62c65 => 652cf6e0 = 1697445600 =2023/10/16 16:40:00

Reply:

fc6c00		
Channel	Type	Value
fc	6c (Enquire data in time range)	00: data enquiry success

20ce e0f62c65 969f 1ea0			
Channel	Type	Time Stamp	Value
20	ce (Historical Data)	e0f62c65 => 652cf6e0=2023/10/16 16:40:00	969f=>9f96 => 10011111100 1 01 10 Current temperature: 10011111100=>1276/10-100=27.6°C System: 1=On Fan Status: 01=High Fan Mode: 10=Circulate 1ea0=>a01e=> 10100000000 111 10 Target Temperature: 10100000000=> 1280/10-100=28°C Control Status: 111=2-stage cooling Temp. Control Mode: 10=Cool

-END-