ZoneTouch 3
Communication Protocol

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version	data	content
V1.0	11/03/2021	Create

Contents

1. Overview

ZoneTouch 3 allows connection through TCP to control the device. It supports querying and controlling of the groups.

2. Connection

Join ZoneTouch 3 console to local WiFi network.

Connect to ZoneTouch 3 console at port 7030 by TCP protocol. If there are two consoles, connect to the one with touchpad address 1 which can be found in “System Settings” -> “Installers” -> “Parameters” on the console. If this fails, try to connect to the other one.

To see the IP address of the console, go to “System Settings” -> “WiFi Settings”, click the SSID which is connected, the IP address of the console will be shown.

3. Message Format

A message has following components:

- Header (4 bytes)
- Address (2 bytes)
- Message id (1 byte)
- Message type (1 byte)
- Data length (2 bytes)
- Data
- CRC16 check bytes (2 bytes)

a. Header

Header is always 0x55 0x55 0x55 0xAA.

b. Address

Address should be 0x80 0xb0 or 0x90 0xb0 (for Extended message) when sending to ZoneTouch. When receiving from ZoneTouch, last byte of address will be 0x80 or 0x90 (for Extended message).

c. Message id

When sending message to ZoneTouch, message id can be any data. The response message should have the same message id.

d. Message type

There are two message types: 0xC0 – control command and status message, 0x1F – extended message.

Ignore any other received type.

e. Data length

Data length is the length of actual data. The first byte is the high byte, the second byte is the low byte.

f. Data

See section 4 Messages contents.

g. Check bytes

The algorithm of checksum is CRC16 MODBUS. Use all data except the header and redundant bytes.

h. Redundant bytes in message

To prevent the message from containing the same data as header, a 00 is inserted after every three consecutive 0x55s in the message. The inserted 00 is redundant bytes.

4. Messages

a. Control command and status message (0xC0)

This message contains sub message type (Group control and Group status), data length detail and sub data.

First 8 bytes are the sub message type and data length details.

Byte1	Sub message type
Byte2	Keep 0
Byte3	Common data length
Byte4	
Byte5	Repeat data count
Byte6	
Byte7	Each repeat data length
Byte8	

For one (0xC0) message:

Data length (3.e.) = 8 + Common data length + repeat data length * repeat data count

Sub data length = Common data length + repeat data length * repeat data count = Data length - 8

i. Group control (0x20)

Group control messages are to control all groups. Each message to ZoneTouch is to control one or more specific groups.

No common data (byte3 byte4: 0).

Each repeat data (4 bytes) control one specific group. (byte7 byte8: 0x00 0x04).

Byte in repeat data			
Byte1	Bit8-7		Keep 0
	Bit6-1	Group number	Valid value 0 - 15(0x00 – 0x0F).
Byte2	Bit8-6	Group setting value	010: Value decrease (-5%) 011: Value increase (+5%) 100: Set open percentage Other: Keep setting value
	Bit5-4		Keep0
	Bit3-1	Power	001: Change to next state 010: Set to off 011: Set to on 101: Set to turbo Other: Keep power state
Byte3		Percentage to set	0-100: Open percentage to set Other: Keep setting value
Byte 4			Keep 0

Example:

Turn off the second group:

0x55 0x55 0x55 0xAA 0x80 0xB0 0x01 0xC0 0x00 0x0C

Header Address Id Type Length

0x20 0x00 0x00 0x00 0x00 0x01 0x00 0x04

Sub Type Common data length Repeat data count Repeat data length

0x01 0x02 0x00 0x00 0x64 0xFD

Data CRC

Set first and second groups to open 10%:

0x55 0x55 0x55 0xAA 0x80 0xB0 0x01 0xC0 0x00 0x10

0x20 0x00 0x00 0x00 0x00 0x02 0x00 0x04

0x00 0x80 0x0A 0x00 0x01 0x80 0x0A 0x00 0x2B 0xD2

ZoneTouch will respond a message with sub type 0x21. (See next table)

ii. Group status (0x21)

Sending this message to ZoneTouch without any sub data (data length: 0x00 0x08, repeat count: 0x00, repeat length: 0x00) to request group status from ZoneTouch.

Note: ZoneTouch will send a group status message automatically when group status is changed.

Data received from ZoneTouch:

No common data (byte3 byte4: 0).

Repeat data count is the group count in this message.

Each repeat data (8 bytes) contains one group data. (byte7 byte8: 0x00 0x08).

Byte in repeat data			
Byte1	Bit8-7	Group power state	00: Off 01: On 11: Turbo
	Bit6-1	Group number	0-15
Byte2	Bit8		*NOT USED*
	Bit7-1	Open percentage	Current open percentage setting
Byte3			*NOT USED*
Byte4			
Byte5			
Byte6			
Byte7	Bit8	Turbo support	1: Support turbo, 0: not support turbo
	Bit7-3		*NOT USED*
	Bit2	Spill	1: Spill active, 0: Spill inactive.
	Bit1		*NOT USED*
Byte8			*NOT USED*

Example:

Request status of groups:

0x55 0x55 0x55 0xAA **0x80 0xB0** **0x01** **0xC0** **0x00 0x08**
Header Address Id Type Length
0x21 **0x00** **0x00 0x00** **0x00 0x00** **0x00 0x00** **0xA4 0x31**
Sub type CRC

ZoneTouch 3 response with data for 2 groups:

0x55 0x55 0x55 0xAA **0xB0 0x80** **0x01** **0xC0** **0x00 0x18**
0x21 **0x00** **0x00 0x00** **0x00 0x02** **0x00 0x08**
0x00 0x00 0x00 0x00 0x00 0x00 0x80 0x00 **0x41 0x32 0x00 0x00 0x00 0x00 0x02 0x00** **0x83 0x2F**

Group 1 data:

0x00 **0x00** **0x00 0x00 0x00 0x00** **0x80** **0x00**
00000000 **0**0000000 ~~00000000...00000000~~ **1**~~000000~~**0**~~0~~ ~~00000000~~
Power off, Current open percentage setting: 0, Support turbo.

Group 2 data:

0x41 0x32 0x00 0x00 0x00 0x00 0x02 0x00

01000001 10011010 *00000000...00000000* 0*000001*0 *00000000*

Power on, Current open percentage setting: 50 (0011010 = 0x32) .

Not support turbo, spill active.

b. Extended message(0x1F)

Extended messages are used to obtain the name of groups.

When sending an extended message, **the address should be 0x90 0xB0**. When receiving the date for the extended message, **the last byte of address will be 0x90**.

The first two bytes of the data are used to specify the specific command.

i. Group name (0xFF 0x13)

Sending an extended message with data 0xFF 0x13 [0-15] to request the name of all groups or one specific group.

Data received from ZoneTouch:

Byte1		Fixed 0xFF
Byte2		Fixed 0x13
Byte3	Name data length	12 (This value may change in future)
Byte4	Group number	0-15
Byte5 - 16	Group name	12 bytes in total. If less than 12 bytes, end with 0.

If there are more than one group, the data will be repeated with relevant values. E.g. 2 groups will receive 29(3+13+13) bytes data, 3 groups will receive 42(3+13+13+13) bytes data.

Example:

Request name of group 0:

0x55 0x55 0x55 0xAA | 0x90 0xB0 | 0x01 | 0x1F | 0x00 0x03 | 0xFF 0x13 0x00 | 0x69 0x83
Header | Address | Id | Type | Length | Data | CRC

ZoneTouch 3 response:

0x55 0x55 0x55 0xAA | 0xB0 0x90 | 0x01 | 0x1F | 0x00 0x10 | 0xFF 0x13 | 0x0C
0x00 | 0x55 0x55 0x55 | 0x00 | 0x55 0x55 0x55 | 0x00 | 0x00 0x00 0x00 0x00 0x00 0x00
Group0 U U U Redundancy **U U U** Redundancy
0x35 0xAD

Name of Group 0 is “UUUUUU”

Note: There are 6 bytes in a row that are 0x55, so a 0x00 must be inserted after every 3 0x55. Those bytes(0x00) are **NOT** used to calculate the checksum and are **NOT** included in the length.

Request name of all groups:

0x55 0x55 0x55 0xAA | 0x90 0xB0 | 0x01 | 0x1F | 0x00 0x02 | 0xFF 0x13 | 0x42 0xCD
Header | Address | Id | Type | Length | Data | CRC

ZoneTouch 3 response:

0x55 0x55 0x55 0xAA | 0xB0 0x90 | 0x01 | 0x1F | 0x00 0x2A | 0xFF 0x13 | 0x0C

0x00 | 0x4C 0x69 0x76 0x69 0x6E 0x67 0x00 0x00 0x00 0x00 0x00 0x00
Group0 L i v i n g

0x01 0x4B 0x69 0x74 0x63 0x68 0x65 0x6E 0x00 0x00 0x00 0x00 0x00

Group1 K i t c h e n

0x02 0x42 0x65 0x64 0x72 0x6F 0x6F 0x6D 0x00 0x00 0x00 0x00 0x00 0x92 0x8E

Group2 B e d r o o m

Name of group0 is “Living”.
Name of group1 is “Kitchen”.
Name of group2 is “Bedroom”.