

EzData2 Device Interface Documentation

1. Overview

EzData2 currently provides two connection methods: MQTT and WebSocket, which can be used by devices to implement data interaction. Before device access, the hardware device MAC address must be used to call the registration interface to obtain a Device Token. After completing registration and successfully obtaining the Device Token, visit my.m5stack.com to log in to your personal account, click **Add Group**, and select the **Token** option. Copy and paste the Device Token to create it, completing the binding between the Device Token and the account. The Device Token of a single device is equivalent to one dataset Group. The device side can refer to the communication protocol below; after logging in and verification based on the Device Token, it can perform create, read, update, and delete operations on data fields.

2. Basic Definitions

2.1 Commands and Responses (CMD / RequestType)

Code	Type	Description
100	Data Operation	Device adds data
101	Data Operation	Device modifies data
102	Data Operation	Device deletes data
103	Data Query	Device queries data list
104	Data Query	Device queries data details
105	File Upload	Device uploads file (notification)
106	User Operation	User scans QR code
107	User Operation	User modifies data
108	User Operation	User deletes data
109	User Operation	User adds data
500	Error	Device request error

3. HTTP Interfaces

3.1 Device Registration

Request Interface:

- URL: `https://ezdata2.m5stack.com/api/v2/device/registerMac`
- Method: **POST**
- Description: Register a device via MAC address and generate a **deviceToken**.

Request Parameters:

Parameter	Type	Description
deviceType	string	Refer to the Product name field in Board Definitions
mac	string	Device MAC address, without ":" separators, case-insensitive

```
{
  "deviceType": "basic",
  "mac": "AABBCCDDEEFF"
}
```

Response Parameters:

Parameter	Type	Description
code	int	Status code (0 indicates success)
data	string	Returned deviceToken
msg	string	Response message

```
{
  "code": 0,
  "data": "4fbb52fb5b6243e083377f45d216820f",
  "msg": "success"
}
```

3.2 Device File Upload

Request Interface:

- URL: `https://ezdata2.m5stack.com/api/v2/device/uploadDeviceFile`
- Method: **POST** (**multipart/form-data**)
- Description: Upload a file via HTTP. After a successful upload, the server will send a response message with **cmd**: **105** via WebSocket/MQTT.

Request Parameters:

Parameter	Type	Description
deviceToken	string	Device token
file	file	Uploaded file

Response Parameters:

Parameter	Type	Description
code	int	Status code (200 indicates success)

4. Connection Protocols

4.1 WebSocket Connection

Request Interface:

- URL: `wss://ezdata2.m5stack.com/ws`
- Method: `WebSocket`

4.1.1 Login

Request Interface:

- Message Type: Login request
- Description: Connect to the WebSocket server using the deviceToken

Request Parameters:

Parameter	Type	Description
deviceToken	string	Device token

```
{
  "deviceToken": "4fbb52fb5b6243e083377f45d216820f"
}
```

Response Parameters:

Parameter	Type	Description
-	string	Login success message

```
device Login successful
```

4.1.2 Heartbeat

Request Interface:

- Message Type: Heartbeat request
- Description: Keep the WebSocket connection alive

Request Parameters:

Parameter	Type	Description
deviceToken	string	Device token
body	string	Heartbeat signal (fixed value: "ping")

```
{
  "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
  "body": "ping"
}
```

Response Parameters:

Parameter	Type	Description
-	string	Heartbeat response

```
pong
```

4.2 MQTT Connection

Request Interface:

- Server Address: `uiflow2.m5stack.com`
- Port: `1883`
- Protocol: `MQTT 3.1.1`

Connection Parameters:

Parameter	Type	Description
Name	string	<code>ez{mac}ez</code>
ClientId	string	<code>ez{mac}ez</code>
Username	string	<code>{deviceToken}</code> (Device Token)
Password	string	No password required

Topics:

Topic	Direction	Description
<code>\$ezdata/{deviceToken}/up</code>	Publish	Uplink data
<code>\$ezdata/{deviceToken}/down</code>	Subscribe	Downlink data

Notes:

- mac: Device MAC address, without ":" separators, case-insensitive
- deviceToken: Obtained via the registration interface

5. Business Data Interaction (Payload)

The following content is the message body for WebSocket or MQTT.

5.1 Add Data (CMD: 100)

Request Interface:

- Command Code: **100**
- Type: Data Operation
- Description: Device adds a data field

Request Parameters:

Parameter	Type	Description
deviceToken	string	Device token
body.name	string	Data field name
body.value	string	Data field value
body.requestType	int	Request type (fixed value: 100)

```
{
  "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
  "body": {
    "name": "adasd",
    "value": "ddsad",
    "requestType": 100
  }
}
```

Response Parameters:

Parameter	Type	Description
cmd	int	Command code (100)
code	int	Status code (200 indicates success)
body.deviceToken	string	Device token
body.name	string	Data field name
body.value	string	Data field value

```
{
  "body": {
    "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
    "name": "adasd",
    "value": "ddsad"
  },
  "cmd": 100,
  "code": 200
}
```

5.2 Modify Data (CMD: 101)

Request Interface:

- Command Code: **101**
- Type: Data Operation
- Description: Device modifies a data field

Request Parameters:

Parameter	Type	Description
deviceToken	string	Device token
body.name	string	Data field name
body.value	string	Data field value
body.requestType	int	Request type (fixed value: 101)

```
{
  "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
  "body": {
    "name": "adasd",
    "value": "ddsad",
    "requestType": 101
  }
}
```

Response Parameters:

Parameter	Type	Description
cmd	int	Command code (101)
code	int	Status code (200 indicates success)
body.deviceToken	string	Device token
body.name	string	Data field name
body.value	string	Data field value

```
{
  "body": {
    "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
    "name": "adasd",
    "value": "ddsad"
  },
  "cmd": 101,
  "code": 200
}
```

5.3 Delete Data (CMD: 102)

Request Interface:

- Command Code: 102
- Type: Data Operation
- Description: Device deletes a data field

Request Parameters:

Parameter	Type	Description
deviceToken	string	Device token
body.name	string	Data field name
body.value	string	Data field value
body.requestType	int	Request type (fixed value: 102)

```
{
  "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
  "body": {
    "name": "adasd(3)",
    "value": "ddsad",
    "requestType": 102
  }
}
```

Response Parameters:

Parameter	Type	Description
cmd	int	Command code (102)
code	int	Status code (200 indicates success)
body.deviceToken	string	Device token
body.name	string	Data field name
body.value	string	Data field value

```
{
  "body": {
    "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
    "name": "adasd(3)",
    "value": "ddsad"
  },
  "cmd": 102,
  "code": 200
}
```

5.4 Query Data List (CMD: 103)

Request Interface:

- Command Code: **103**
- Type: Data Query
- Description: Device queries the data list

Request Parameters:

Parameter	Type	Description
deviceToken	string	Device token
body.requestType	int	Request type (fixed value: 103)

```
{
  "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
  "body": {
    "requestType": 103
  }
}
```

Response Parameters:

Parameter	Type	Description
cmd	int	Command code (103)
code	int	Status code (200 indicates success)
body[].id	string	Data ID
body[].dataToken	string	Data token
body[].name	string	Data field name
body[].value	string	Data field value
body[].createTime	long	Creation time (milliseconds timestamp)
body[].updateTime	long	Update time (milliseconds timestamp)

```
{
  "body": [
    {
      "createTime": 1751274100000,
      "dataToken": "6a330c4bf0924da3a2b11c833f9c2db1",
      "id": "6a330c4bf0924da3a2b11c833f9c2db1",
      "name": "adasd",
      "updateTime": 1751274100000,
      "value": "ddsad"
    },
    {
      "createTime": 1751274119000,
      "dataToken": "60ea29ff4df446358b7bf2151939abb4",
      "id": "60ea29ff4df446358b7bf2151939abb4",
      "name": "adasd(1)",
      "updateTime": 1751274119000,
      "value": "ddsad"
    }
  ],
  "cmd": 103,
  "code": 200
}
```

Request Interface:

- Command Code: 104
- Type: Data Query
- Description: Device queries details of a single data item

Request Parameters:

Parameter	Type	Description
deviceToken	string	Device token
body.name	string	Data field name
body.requestType	int	Request type (fixed value: 104)

```
{
  "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
  "body": {
    "name": "adasd",
    "requestType": 104
  }
}
```

Response Parameters:

Parameter	Type	Description
cmd	int	Command code (104)
code	int	Status code (200 indicates success)
body.id	string	Data ID
body.dataToken	string	Data token
body.name	string	Data field name
body.value	string	Data field value
body.createTime	long	Creation time (milliseconds timestamp)
body.updateTime	long	Update time (milliseconds timestamp)

```

{
  "body": {
    "createTime": 1751274100000,
    "dataToken": "6a330c4bf0924da3a2b11c833f9c2db1",
    "id": "6a330c4bf0924da3a2b11c833f9c2db1",
    "name": "adasd",
    "updateTime": 1751274100000,
    "value": "ddsad"
  },
  "cmd": 104,
  "code": 200
}

```

5.6 File Upload Result Notification (CMD: 105)

Description:

This message is triggered by an HTTP upload. The device receives the response through a persistent connection.

Request Interface:

- Trigger Source: HTTP <https://ezdata2.m5stack.com/api/v2/device/uploadDeviceFile>
- Command Code: **105**
- Type: File Upload
- Description: The server returns the file upload result via WebSocket/MQTT

Response Parameters (WebSocket/MQTT):

Parameter	Type	Description
cmd	int	Command code (105)
code	int	Status code (200 indicates success)
body.deviceToken	string	Device token
body.name	string	File field name
body.value	string	File URL

```

{
  "body": {
    "deviceToken": "4fbb52fb5b6243e083377f45d216820f",
    "name": "deviceFile",
    "value": "https://ezdata2-oss-dev.m5stack.com/37a6259cc0c1dae299a7866489dff0bd/deviceFile/deviceFil"
  },
  "cmd": 105,
  "code": 200
}

```