

MicroLifeDevice SDK (WBP_Home - Windows)

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Revise history

| Date | Document Version | Description |
|------------|------------------|---|
| 2024/08/23 | 1.0 | First release. |
| 2024/05/27 | 1.1 | 1.Added Enum.ErrorCode.ParseDateError as the response for date and time decoding failure for API 3-3-6/ 3-3-7/ 3-3-12/ 3-3-14. 2.Added 4.2.7 |
| | | |

Chapter 1 Development Environment

This user manual serves as a quick guide to MicroLifeDeviceSDK / APIs and shows how to integrate into a Windows C# Demo App.

Development Environment in the following

| | |
|------------------------------|---|
| Compatible Development Tools | Microsoft Visual Studio 2022 (recommended) |
| Programming language: | C# |
| Target framework: | .NET Standard 2.0 |

Importing steps are described below.

1.1. First of all, add WBP_Home, Connection.dll into a development project.

1.2. Import class as bellows.

```
using WBP_Home.Class;
```

```
using Connection.Class;
```

Chapter 2 Connection Sequence of WBP_Home

The WBP_Home object is applied managing the USB communication.

2.1 Initiate WBP_Home Object with API key and set connected/disconnected delegation for WBP_Home.

```
Home = new WBP_Home.WBP_Home(key: "");
Home.OnConnected += Home_OnConnected;
Home.OnReceived += Home_OnReceived;
Home.OnDisConnected += Home_OnDisConnected;
```

2.2 Call InitDeviceWatcher to initialize WBP_Home monitoring for USB status.

```
Home.InitDeviceWatcher();
```

2.3 Connection

2.3-1 For USB, the OnConnected delegate will be called automatically when the device is connected to the computer via USB.

2.4 When the data is transferred via USB. The parsed data will be returned through the command object, which will be explained in section 3-4.

The command object will be used as the return value and sent to OnReceived delegate at the same time.

```
var callback = Home.SendMessage(WBP_Home.SendMessage.ToCommand.SN_Read());
if (callback.Command.CMD == (byte)WBP_Home.Enum.Command.Nack) {
    Console.WriteLine(value: "Send command failed");
    return;
} else if (!callback.Success) {
    Console.WriteLine(value: "No call back,Please try again");
    return;
}
Console.WriteLine("SN:" + (string)callback.Command.Data);
```

2.5 The OnDisConnected delegate will be called when the device is disconnected.

The following is the sample code.

```
private static WBP_Home.WBP_Home Home;
1 reference
public Form1() {
    InitializeComponent();
    Home = new WBP_Home.WBP_Home(key: "");
    Home.OnConnected += Home_OnConnected;
    Home.OnReceived += Home_OnReceived;
    Home.OnDisconnected += Home_OnDisconnected;
    Home.InitDeviceWatcher();
}
2 references
private void Home_OnConnected() {
}
2 references
private void Home_OnDisconnected() {
}
```

Chapter 3 APIs of WBP_Home

This chapter will explain the application of each API and the meaning of its parameters.

**** Different WPB Home versions support different APIs and need to be confirmed through command 3-3-1 "WatchBPHomeVersion_Read"**

3-1.WBP_Home Initialize

| | |
|---------------|--|
| API | WBP_Home(string key); |
| Function | Initialize WBP Home object |
| Return object | WBP_Home: After the initialization is successful, a WBP_Home object will be created. |
| Parameter | key: API Key is required to use subsequent APIs, if you do not have it, please contact Microlife ** If the API key is incorrect, you will receive a "Key Fail!" exception.. |

3-2 Initiate and wait for device to connect

| | |
|---------------|---|
| API | void InitDeviceWatcher() |
| Function | Initiate and wait for device to connect |
| Return object | None |
| Parameter | None |

3-3.Send Command to device

| | |
|---------------|--|
| API | (bool Success, Command Command) SendMessage (Message message, Func<Command, bool > predicate = null, int retry = 3, bool ResetCommand = true , int timeout = 0); |
| Function | Transmit message to the Device. |
| Return object | Success: Indicates whether the command was successfully written to the device. Command: A class containing parsed data and message which sent to the device, described in 4-1-1 . ** If the Success is true, and the Command.CMD is not NACK, the device has successfully received this command. |
| Parameter | Message: A class containing message which sent to the device. Predicate: If the command requires additional data, it will be provided here. Retry: Retry times ResetCommand: Whether to clear the last command timeout: timeout in milliseconds ** The contents of the above parameters are generated by the following API. |

3-3-1. Read Watch BP Home version

| | |
|---------------------------|---|
| Command | WatchBPHomeVersion_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.WatchBPHomeVersion_Read()) |
| Return Command Data Type. | The object type of Command.data is a Enum of WBP_Home_Ver, described in 4-2-1 . ** Different versions support different APIs, please refer to the comparison table in 3-4 |

3-3-2. Write User ID and clear memory

| | |
|---------------------------|---|
| Command | ID_WriteAndClearData |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.ID_WriteAndClearData(string ID, bool clearCasual, bool clearDiag)) |
| Return Command Data Type. | None. ** If the Success is true, and the Command.CMD is not NACK, the device has successfully received this command. |
| Parameter | ID: User ID string to be written, maximum 6 ASCII characters clearCasual: If set to true, Casual mode data will be cleared. clearDiag: If set to true, Diagnostic mode data will be cleared. |

3-3-3. Read User ID from BPM

| | |
|--------------------------|---|
| Command | ID_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.ID_Read()) |
| Return Command Data Type | The object type of Command.data is String . |

3-3-4. Read device Time from BPM.

| | |
|---------------------------|---|
| Command | DateTime_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.DateTime_Read()) |
| Return Command Data Type. | The object type of Command.data is DateTimeOffset . |

3-3-5. Write device Time to BPM.

| | |
|---------|---|
| Command | DateTime_Write |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.DateTime_Write((DateTimeOffset dateTime) |
| Return | None. |

| | |
|--------------------|---|
| Command Data Type. | ** If the Success is true, and the Command.CMD is not NACK, the device has successfully received this command. |
|--------------------|---|

3-3-6. Read Casual mode data from BPM.

| | |
|---------------------------|---|
| Command | CasualData_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.CasualData_Read()); |
| Return Command Data Type. | The object type of Command.data is Data class, which is a class containing parsed BP data, described in 4-1-2 . **If the date and time of the blood pressure data cannot be parsed, The object type of Command.data will be Enum.ErrorCode, described in 4-2-7. |

3-3-7. Read Diagnostic mode data from BPM.

| | |
|---------------------------|--|
| Command | DiagnosticData_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.DiagnosticData_Read()); |
| Return Command Data Type. | The object type of Command.data is Data class, which is a class containing parsed BP data, described in 4-1-2 . **If the date and time of the blood pressure data cannot be parsed, The object type of Command.data will be Enum.ErrorCode, described in 4-2-7 |

3-3-8. Read device Setting from BPM.

| | |
|---------------------------|---|
| Command | BPMSetting_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.BPMSetting_Read()); |
| Return Command Data Type. | The object type of Command.data is BPMSetting class, which is a class containing parsed BP data, described in 4-1-3 . |

3-3-9. Read device Setting2 from BPM.

| | |
|---------------------------|--|
| Command | BPMSetting2_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.BPMSetting2_Read()); |
| Return Command Data Type. | The object type of Command.data is BPMSetting2 class, which is a class containing parsed BP data, described in 4-1-4 . |

3-3-10. Read serial number

| | |
|----------------|---|
| Command | SN_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.SN_Read()); |
| Return Command | The object type of Command.data is String . |

| | |
|------------|--|
| Data Type. | |
|------------|--|

3-3-11. Read memory index (usual mode)

| | |
|---------------------------------|--|
| Command | MemoryIndex_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.MemoryIndex_Read()); |
| Return Command Data Type. | The object type of Command.data is MemoryIndex class, which is a class containing parsed BP data, described in 4-1-5 . |

3-3-12. Read single memory data by index (usual mode).

| | |
|---------------------------------|--|
| Command | SingleMemoryDataByIndex_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.SingleMemoryDataByIndex_Read(int index)); |
| Return Command Data Type. | The object type of Command.data is Data class, which is a class containing parsed BP data, described in 4-1-2 . **If the date and time of the blood pressure data cannot be parsed, The object type of Command.data will be Enum.ErrorCode, described in 4-2-7 ** If the Success is true, and the Command.CMD is not NACK, the device has successfully received this command. |
| Parameter | index: The data index to be read, which needs to be smaller than the CurrentMemoryIndex obtained in API: MemoryIndex_Read |

3-3-13. Read device ID

| | |
|---------------------------------|---|
| Command | Device_ID_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand. Device_ID_Read ()); |
| Return Command Data Type. | The object type of Command.data is String . |

3-3-14. Read casual mode memory include each measurements.

| | |
|---------------------------------|--|
| Command | Device_ID_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand. CasualData_include_each_Read ()); |
| Return Command Data Type. | The object type of Command.data is UsualDataWithEachMeasurements . , which is a class containing parsed BP data, described in 4-1-6 . **If the date and time of the blood pressure data cannot be parsed, The object type of Command.data will be Enum.ErrorCode, described in 4-2-7 |

3-3-15. Read measurement setting

| | |
|------------------------------------|---|
| Command | Measurement_setting_Read |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.Measurement_setting_Read()) |
| Return Command Data Type. | The object type of Command.data is MeasurementSetting . , which is a class containing parsed Device measurement setting, described in 4-1-7 . |

3-3-15. Change measurement setting

| | |
|------------------------------------|--|
| Command | Measurement_setting_Change |
| API | SendMessage(WBP_Home.SendMessage.ToCommand.Measurement_setting_Change(MeasurementSetting measurementSetting)); |
| Return Command Data Type. | None. ** If the Success is true, and the Command.CMD is not NACK, the device has successfully received this command. |
| Parameter | measurementSetting : Measurement_setting to be written. |

3-4.API support comparison table

| API | Supported version. Ref to 4-2-1 WBP_Home_Ver |
|--------------------------------------|--|
| 3-3-1.WatchBPHomeVersion_Read | All version support |
| 3-3-2.ID_WriteAndClearData | |
| 3-3-3.ID_Read | |
| 3-3-4.DateTime_Read | |
| 3-3-5.DateTime_Write | |
| 3-3-6.CasualData_Read | |
| 3-3-7.DiagnosticData_Read | |
| 3-3-8.BPMSetting_Read | |
| 3-3-9.BPMSetting2_Read | |
| 3-3-10.SN_Read | BT014 support |
| 3-3-11.MemoryIndex_Read | For BT011, please use SN_Read first. If you receive NACK, it means these three commands are not supported. |
| 3-3-12.SingleMemoryDataByIndex_Read | |
| 3-3-13.Device_ID_Read | BT014 support |
| 3-3-14. CasualData_include_each_Read | BT014 Home A support |

| | |
|------------------------------------|---|
| 3-3-15. Measurement_setting_Read | These three commands can only be used when the command BPMSetting2_Read receives HomeAUI as True & WBP_Home_Ver is equal to BT014 |
| 3-3-16. Measurement_setting_Change | |

Chapter 4 Class & Object of WBP_Home

4-1 Class

4-1-1.Command Class

| | |
|------------|--|
| Name: | Command |
| Definition | A class containing parsed data and message sent to the device. |
| members | byte CMD: Record the current command, if it is NACK, it means the transmission failed. byte Device: Record the device. object Data: parsed data |

4-1-2.Data Class

| | |
|------------|--|
| Name: | Data |
| Definition | A class containing parsed BP data. |
| members | int ID: The ID of the data ,which is only valid in command “SingleMemoryDataByIndex_Read” DateTypeEnum DateType: A Enum of DateTypeEnum, described in 4-2-2. DateTimeOffset MeasureDateTime: Record time int Systole: The value of systole int Diastole: The value of diastole int Pulse: heart rate int Mam: Deprecated int Comments: Deprecated ArrhythmiaEnum Arr: A Enum of ArrhythmiaEnum, described in 4-2-3. AMPM Ampm: A Enum of AMPM, described in 4-2-4, which is only valid in Diagnostic mode. DayNightEnum DayNight: Deprecated DataTypeEnum DataType: A Enum of DataTypeEnum, described in 4-2-5. ErrMsgEnum ErrMsg: Deprecated int MAP: Deprecated string Err: Deprecated |

4-1-3. BPMSetting Class

| | |
|------------|---|
| Name: | BPMSetting |
| Definition | A class containing parsed Device setting. |
| members | int MorAFrom: Diagnostic moring period start. int MorATo: Diagnostic moring period end. <i>For example: Diagnostic moring period 5:00~12:00</i> |

| | |
|--|--|
| | <p><i>MorAFrom</i> : “5” <i>MorATo</i>: “12”</p> <p>int EveAFrom: Diagnostic evening period start.</p> <p>int EveATo: Diagnostic evening period end.</p> <p>int DiagTimes: Diagnostic times: 1~4 time.</p> <p>int WaitTime: Diagnostic first wait time(second)</p> <p>int RESTTime: Diagnostic reset time(second)</p> <p>int WorkingDay: Diagnostic WorkingDay</p> <p>int MemorySet: Diagnostic MemorySet</p> <p>BPMSetting1 Setting1: A class of BPMSetting1, described in 4-1-3-1.</p> <p>BPMSetting2 Setting2: A class of BPMSetting2, described in 4-1-3-2.</p> |
|--|--|

4-1-3-1. BPMSetting. BPMSetting1 Class

| | |
|------------|--|
| Name: | BPMSetting. BPMSetting1 |
| Definition | A class containing parsed Device setting. |
| members | <p>bool Linear_Or_Passive_Value: False: passive valve, True: linear valve</p> <p>bool MeasureOnOffLine: Deprecated</p> <p>bool O12h_Or_24h: False: 24hr, True: 12hr</p> <p>bool AutoSendDataAfterMeasure: Deprecated</p> <p>bool BeepOn_Or_BeepOff: Deprecated</p> <p>bool WithEliminate1DayReading: True: without eliminate 1st day reading, False: with eliminate 1st day reading</p> <p>bool Kpa: False: mmHg True:Kpa</p> <p>bool With_Or_Without_LabVIEW_RS232: False: without LabVIEW rs232, True: with LabVIEW rs232</p> |

4-1-3-2. BPMSetting. BPMSetting2 Class

| | |
|------------|---|
| Name: | BPMSetting. BPMSetting2 |
| Definition | A class containing parsed Device setting. |
| members | <p>bool ALL_AFIBOn_Or_AFIBOff: False: AFib all off, True: AFib all on</p> <p>bool UsualMode_PADOn_Or_PADOff: False: Usual mode PAD off, True: Usual mode PAD on</p> <p>bool UsualMode_AFIBOn_Or_AFIBOff: False: Usual mode AFib off, True: Usual mode AFib on</p> <p>bool ALL_BeepOn_Or_BeepOff: False: Beep on(all mode), True: Beep off(all mode)</p> <p>bool ALL_PADOn_Or_PADOff: False: PAD all off, True: PAD all on</p> <p>bool NocturnalModePAD: Deprecated</p> |

| | |
|--|--|
| | bool NocturnalModeAFIB: Deprecated |
| | bool NocturnalMode: Deprecated |

4-1-4. BPMSetting2 Class

| | |
|------------|---|
| Name: | BPMSetting2 |
| Definition | A class containing parsed Device setting. |
| members | BaudRate BaudRate: reserved double Batteryf: Voltage of the device battery. BPMSetting3 Setting3: A class of BPMSetting3, described in 4-1-4-1 . int HI_infPressure: Highest inflation pressure int OffsetYear: reserved |

4-1-4-1. BPMSetting2. BPMSetting3 Class

| | |
|------------|---|
| Name: | BPMSetting. BPMSetting3 |
| Definition | A class containing parsed Device setting. |
| members | bool MAPCorrection: False: MAPCorrection off, True: MAPCorrection on bool RxWakeup: Deprecated bool HomeAUI: False: WBP Home UI , True:: WBP HomeA UI bool HideDiagnosticModeResults: False: N/A , True:: Hide diagnostic mode results bool Bluetooth: False: N/A , True:: with Bluetooth function bool Bluetooth_NewUI: False: Bluetooth old UI , True:: Bluetooth new UI bool FactoryTest: False: N/A , True:: continuous measure for factory test. |

4-1-5. MemoryIndex Class

| | |
|------------|--|
| Name: | MemoryIndex |
| Definition | A class containing parsed Memory index |
| members | int Mode: reserved int TotalMemoryIndex: Total memory index, currently fixed at 250 int CurrentMemoryIndex: Current memory index |

4-1-6. UsualDataWithEachMeasurements Class

| | |
|------------|--|
| Name: | MemoryIndex |
| Definition | A class containing parsed BP Data |
| members | int Mode: 0: Casual mode / 1: Diagnostic mode , fixed to Casual mode int History_Data_Number: The history measurement times store in memory. List<AvgData> MData: BP Data. , described in 4-1-6-1 . |

4-1-6-1. AvgData Class

| | |
|------------|---|
| Name: | AvgData |
| Definition | A class containing parsed BP data. |
| members | <p>int ID: Deprecated</p> <p>DateTypeEnum DateType: Deprecated</p> <p>DateTimeOffset MeasureDateTime: Record time</p> <p>int SystoleAvg: Average systolic data for each measurement</p> <p>int DiastoleAvg: Average diastole data for each measurement</p> <p>int PulseAvg: Average heart rate data for each measurement</p> <p>int Sys1: The single data of systole for each measurement.</p> <p>int Sys2: The single data of systole for each measurement.</p> <p>int Sys3: The single data of systole for each measurement.</p> <p>int Dia1: The single data of diastole for each measurement.</p> <p>int Dia2: The single data of diastole for each measurement.</p> <p>int Dia3: The single data of diastole for each measurement.</p> <p>int Pulse1: The single data of heart rate for each measurement.</p> <p>int Pulse2: The single data of heart rate for each measurement.</p> <p>int Pulse3: The single data of heart rate for each measurement.</p> <p>bool AF1: The single data detect with Afib.</p> <p>bool AF2: The single data detect with Afib.</p> <p>bool AF3: The single data detect with Afib.</p> <p>int Mam: Deprecated</p> <p>int Comments: Deprecated</p> <p>ArrhythmiaEnum Arr: A Enum of ArrhythmiaEnum, described in 4-2-3.</p> <p>AMPM Ampm: Deprecated</p> <p>DayNightEnum DayNight: Deprecated</p> <p>DataTypeEnum DataType: Deprecated</p> <p>ErrMsgEnum ErrMsg: Deprecated</p> <p>int MAP: Deprecated</p> <p>string Err: Deprecated</p> |

4-1-7. MeasurementSetting

| | |
|------------|--|
| Name: | MeasurementSetting |
| Definition | A class containing parsed device measurement setting |
| members | <p>int MeasurementTimes: It's the measurement times (1~3) for usual mode.</p> <p>Measurement_Setting_Time RestTime, A Enum of RestTime, described in 4-2-6.</p> <p>Measurement_Setting_Time IntervalTime: A Enum of IntervalTime, described in 4-2-6.</p> |

| | |
|--|--|
| | <p>bool ExcludeAverage: False:average all measurements True:average excludes 1st measurement</p> <p>bool SW_Afib: Enable the Afib function. (this setting is valid with the Afib option enable in API 3-3-9)</p> |
|--|--|

4-2 Enum

4-2-1 WBP_Home_Ver

| value | | Note |
|-------|-------|------------|
| 0 | none | |
| 1 | BT011 | |
| 2 | WN001 | Deprecated |
| 3 | BT012 | Deprecated |
| 4 | WN002 | Deprecated |
| 5 | WN004 | Deprecated |
| 50 | BT014 | |

4-2-2 DateTypeEnum

| value | | Note |
|-------|---------|--|
| 0 | normal | Default |
| 1 | Average | average of all morning diag bp records |
| 2 | Morning | average of all morning diag bp records |
| 3 | Evening | average of all evening diag bp records |

4-2-3 ArrhythmiaEnum

| value | |
|-------|------|
| 0 | NONE |
| 1 | PAD |
| 2 | AFIB |

4-2-4 AMPM

| value | | Not |
|-------|------|--|
| 0 | none | |
| 1 | am | The data is measured in night with diagnostic mode |
| 2 | pm | The data is measured in morning with diagnostic mode |

4-2-5 DataTypeEnum

| value | | Note |
|-------|-------|------------|
| 0 | none | Deprecated |
| 1 | all | Deprecated |
| 2 | usual | |

| | | |
|---|------------|------------|
| 3 | diagnostic | |
| 4 | ABP | Deprecated |
| 5 | memo | Deprecated |

4-2-6 Measurement_Setting_Time

| value | | Note |
|-------|---------|---------|
| 0 | skip | 0 sec |
| 1 | sec_15 | 15 sec |
| 2 | Sec_30 | 30 sec |
| 3 | Sec_60 | 60 sec |
| 4 | Sec_120 | 120 sec |
| 5 | Sec_180 | 180 sec |
| 6 | Sec_240 | 240 sec |
| 7 | Sec_300 | 300 sec |

4-2-7 ErrorCode

| value | | Note |
|-------|----------------|---|
| 1000 | None | |
| 1001 | ParseDateError | The date and time of the blood pressure data cannot be parsed |

Chapter 5 Instruction of Demo App

5-1. Input the API Key on the API Key textbox and click “Check” button to active the demo.

WBP_Home_API_Demo_Customer v1.0.1.4 WBP_Home v2.2.8.0

API Key: Check

Device Connect

Device Path

===All Device Support

UserID read

ID

Device Time

2024/08/22 13:50

UserID write and Clear Memory

New ID

Device SN

SN:

Device ID

ID:

Clear Usual

Clear Diagnostic

BPM Setting 2

HI_infPressure

Baud Rate

Batteryf

OffsetYear

MAPCorrection

Rx wakeup for connection

WBP UI

diagnostic mode results

Bluetooth function

Bluetooth UI

FactoryTest

sent single memory data by index

Measurement Setting

Measuremen Times

Rest Time

Interval Time

Exclude Average

SW_Afib

5-2. If the device is connected, the Send button will be enabled and Device Path will display the path

WBP_Home_API_Demo_Customer v1.0.1.4 WBP_Home v2.2.8.0

API Key: Check

Device Connect

Device Path

===All Device Support

UserID read

ID

Device Time

2024/08/22 13:50

UserID write and Clear Memory

New ID

Device SN

SN:

Device ID

ID:

Clear Usual

Clear Diagnostic

BPM Setting 2

HI_infPressure

Baud Rate

Batteryf

OffsetYear

MAPCorrection

Rx wakeup for connection

WBP UI

diagnostic mode results

Bluetooth function

Bluetooth UI

FactoryTest

sent single memory data by index

Measurement Setting

Measuremen Times

Rest Time

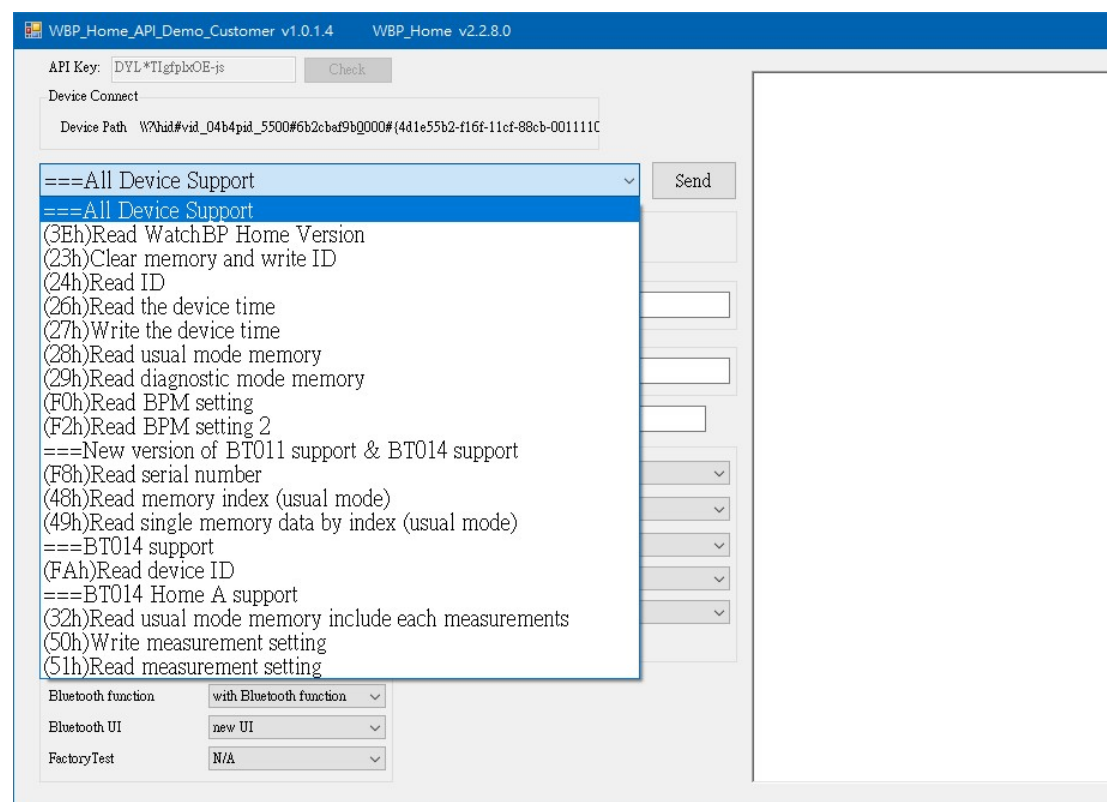
Interval Time

Exclude Average

SW_Afib

Similarly, if the device is disconnected in anytime, the Send button will be disabled.

5-3. Select the command on the combobox and click the “Send” button to send it.



The output will be displayed in the textbox on the right

WBP_Home_API_Demo_Customer v1.0.1.4

WBP_Home v2.2.8.0

API Key:

Device Connect

Device Path

(3Eh)Read WatchBP Home Version

Send

UserID read

ID

UserID write and Clear Memory

New ID

Clear Usual

Clear Diagnostic

DeviceTime

2024/08/23 11:34

Device SN

SN:

Device ID

ID:

BPM Setting 2

HI_infPressure

Baud Rate

Batteryf

OffsetYear

MAPCorrection

Rx wakeup for connection

WBP UI

diagnostic mode results

Bluetooth function

Bluetooth UI

FactoryTest

sent single memory data by index

Measurement Setting

Measuremen Times

Rest Time

Interval Time

Exclude Average

SW_Afib

CMD: 62

Device: 39

Data: BT014

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Chapter 6 The description for each command of Demo App

6-1. Read WatchBP Home Version

The results of the data received are as follows

CMD: 62

Device: 39

Data: BT014

The description is as follows

(a) CMD:

Record the current command.

(b) Device:

Record the device.

(c) Data:

WatchBP Home Version, ref to 4-2-1 WBP_Home_Ver.

6-2. Clear memory and write ID

The result could be one of the following.

Write id and clear data success

Nack

6-3. Read ID

The results of the data received are as follows

Read ID:12345

The description is as follows

(a) Read ID:

User ID

6-4. Read the device time

The results of the data received are as follows

DeviceDateTime:2024/8/23 02:22:00

The description is as follows

(a) DeviceDateTime:

Device DateTime

6-5. Write the device time

The result could be one of the following.

NACK

Write Time Success

6-6. Read usual mode memory

****Please refer to 4-1-2**

The results of the data received are as follows

| | | | Sys | Dia | Hr | Arr |
|---|------------|----------|-----|-----|----|-------|
| 0 | 2023-01-01 | 01:01:00 | 120 | 80 | 60 | noArr |
| 1 | 2023-01-02 | 02:02:00 | 120 | 80 | 60 | noArr |

The description is as follows

(a) Date / Time:

Recode Date time

(b) Sys

The value of systole

(c) Dia:

The interval of the first measurement time zone

(d) Arr:

The data detect with Afib / PAD

6-7. Read diagnostic mode memory

****Please refer to 4-1-2**

The results of the data received are as follows

| | | | Sys | Dia | Hr | Arr |
|---------|------------|----------|-----|-----|----|-------|
| 0 | 2023-01-01 | 01:01:00 | 120 | 80 | 60 | noArr |
| 1 | 2023-01-02 | 02:02:00 | 120 | 80 | 60 | noArr |
| average | Average | | 122 | 72 | 62 | |
| average | Morning | | 122 | 72 | 62 | |
| average | Evening | | 123 | 73 | 63 | |

The description is as follows

(a) Date / Time:

Recode Date time

(b) Sys

The value of systole

(c) Dia:

The interval of the first measurement time zone

(d) Arr:

The data detect with Afib / PAD

(e) Average:

calculate average by all data

(f) Average-Morning:

calculate average by data which measure time is during 4:00~11:59.

(g) Average-Evening:

calculate average by data which measure time is during 18:00~23:59.

6-8. Read BPM setting

The results of the data received are as follows

CMD: 240

Device: 39

Data:

MorAFrom: 5

MorATo: 12

EveAFrom: 18

EveATo: 24

DiagTimes: 2

WaitTime: 60

RESTTime: 60

WorkingDay: 7

MemorySet: 250

Setting1:

Linear_Or_Passive_Value: True

MeasureOnOffLine: False

O12h_Or_24h: False

AutoSendDataAfterMeasure: False

BeepOn_Or_BeepOff: True

WithEliminate1DayReading: True

Kpa: False

With_Or_Without_LabVIEW_RS232: False

Setting2:

ALL_AFIBOn_Or_AFIBOff: True

UsualMode_PADOn_Or_PADOff: False

UsualMode_AFIBOn_Or_AFIBOff: True

ALL_BeepOn_Or_BeepOff: False

ALL_PADOn_Or_PADOff: False

NocturnalModePAD: False

NocturnalModeAFIB: True

NocturnalMode: TrueNACK

The description is as follows

(a)CMD:

Record the current command.

(b) Device:

Record the device.

(c) Data:

Please refer to 4-1-3

6-9. Read BPM setting 2

The results of the data received are as follows

CMD: 242

Device: 39

Data:

BaudRate: r9600

Batteryf: 4.9

Setting3:

MAPCorrection: False

RxWakeup: False

HomeAUI: True

HideDiagnosticModeResults: False

Bluetooth: True

Bluetooth_NewUI: True

FactoryTest: False

HI_infPressure: 0

OffsetYear: 23

The description is as follows

(a)CMD:

Record the current command.

(b) Device:

Record the device.

(c) Data:

Please refer to 4-1-4

6-10. Read serial number

The results of the data received are as follows

CMD: 248

Device: 39

Data: 2021-11-0900006

The description is as follows

(a)CMD:

Record the current command.

(b) Device:

Record the device.

(c) Data:

Device SN

6-11. Read memory index (usual mode)

The results of the data received are as follows

CMD: 72

Device: 39

Data:

Mode: 1

TotalMemoryIndex: 250

CurrentMemoryIndex: 250

The description is as follows

(a)CMD:

Record the current command.

(b) Device:

Record the device.

(c) Data:

Memory index, Please refer to 4-1-5

6-12. Read single memory data by index (usual mode)

The results of the data received are as follows

CMD: 73

Device: 39

Data:

ID: 1
DateType: normal
MeasureDateTime: 2023-01-01 01:01:00
Systole: 120
Diastole: 80
Pulse: 60
Mam: 0
Comments: 0
Arr: noArr
Ampm: none
DayNight: none
DataType: usual
ErrMsg: none
MAP: 0
Err: null

The description is as follows

(a)CMD:

Record the current command.

(b) Device:

Record the device.

(c) Data:

Memory index, Please refer to 4-1-2

6-13. Read device ID

The results of the data received are as follows

CMD: 250

Device: 39

Data: FAC591212208421

The description is as follows

(a)CMD:

Record the current command.

(b) Device:

Record the device.

(c) Data:

Device ID

6-14. Read usual mode memory include each measurements

The results of the data received are as follows

Mode:0

History_Data_Number:250

MData

The description is as follows

(a)CMD:

Record the current command.

(b) Device:

Record the device.

(c) Data:

Memory index, Please refer to 4-1-6

| Mode:0 | | | | | | | | | | | | | | | | | | | |
|-------------------------|------------|----------|---------|--------|------|-------|-------|-------|------|-----|-------|-------|------|-----|-------|-------|------|-----|-------|
| History_Data_Number:250 | | | | | | | | | | | | | | | | | | | |
| MData | | | | | | | | | | | | | | | | | | | |
| | | Sys_Avg | Dia_avg | Hr_avg | Afib | Type | Sys_1 | Dia_1 | Hr_1 | AF1 | Sys_2 | Dia_2 | Hr_2 | AF2 | Sys_3 | Dia_3 | Hr_3 | AF3 | |
| 0 | 2023-01-01 | 01:01:00 | 120 | 80 | 60 | noArr | usual | 120 | 80 | 60 | True | 115 | 75 | 55 | False | 125 | 85 | 65 | False |
| 1 | 2023-01-02 | 02:02:00 | 120 | 80 | 60 | noArr | usual | 120 | 80 | 60 | False | 115 | 75 | 55 | True | 125 | 85 | 65 | False |
| 2 | 2023-01-03 | 03:03:00 | 120 | 80 | 60 | noArr | usual | 120 | 80 | 60 | True | 115 | 75 | 55 | True | 125 | 85 | 65 | False |
| 3 | 2023-01-04 | 04:04:00 | 120 | 80 | 60 | noArr | usual | 120 | 80 | 60 | False | 115 | 75 | 55 | False | 125 | 85 | 65 | True |
| 4 | 2023-01-05 | 05:05:00 | 120 | 80 | 60 | AFIB | usual | 120 | 80 | 60 | True | 115 | 75 | 55 | True | 125 | 85 | 65 | True |
| 5 | 2023-01-06 | 06:06:00 | 120 | 80 | 60 | noArr | usual | 120 | 80 | 60 | False | 115 | 75 | 55 | False | 125 | 85 | 65 | False |
| 6 | 2023-01-07 | 07:07:00 | 120 | 80 | 60 | noArr | usual | 120 | 80 | 60 | True | 115 | 75 | 55 | False | 125 | 85 | 65 | False |
| 7 | 2023-01-08 | 08:08:00 | 120 | 80 | 60 | noArr | usual | 120 | 80 | 60 | False | 115 | 75 | 55 | True | 125 | 85 | 65 | False |
| 8 | 2023-01-09 | 09:09:00 | 120 | 80 | 60 | noArr | usual | 120 | 80 | 60 | True | 115 | 75 | 55 | True | 125 | 85 | 65 | False |
| 9 | 2023-01-10 | 10:10:00 | 121 | 81 | 61 | AFIB | usual | 121 | 81 | 61 | True | 116 | 76 | 56 | True | 126 | 86 | 66 | True |
| 10 | 2023-01-11 | 11:11:00 | 121 | 81 | 61 | noArr | usual | 121 | 81 | 61 | True | 116 | 76 | 56 | False | 126 | 86 | 66 | True |
| 11 | 2023-01-12 | 12:12:00 | 121 | 81 | 61 | noArr | usual | 121 | 81 | 61 | False | 116 | 76 | 56 | False | 126 | 86 | 66 | False |
| 12 | 2023-01-13 | 13:13:00 | 121 | 81 | 61 | noArr | usual | 121 | 81 | 61 | True | 116 | 76 | 56 | False | 126 | 86 | 66 | False |
| 13 | 2023-01-14 | 14:14:00 | 121 | 81 | 61 | noArr | usual | 121 | 81 | 61 | False | 116 | 76 | 56 | True | 126 | 86 | 66 | False |

6-15. Write measurement setting

The result could be one of the following.

Measurement setting Change Success

Nack

6-16. Read measurement setting

The results of the data received are as follows

CMD: 81

Device: 39

Data:

MeasurementTimes: 3

RestTime: Sec_30
IntervalTime: Sec_60
ExcludeAverage: False
SW_Afib: True

The description is as follows

(a)CMD:

Record the current command.

(b) Device:

Record the device.

(c) Data:

Memory index, Please refer to 4-1-7