



UbiqMesh Technology

**HIL Recorder
With
BTX-MCU/BRX Wireless
Transceiver**

System Specification and User Manual

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I. Product Information

Description : Wireless Physiological Information
Transmission Recording System

1. Product Name: HIL Recorder Model No: BTX-MCU
2. Product Name: HIL Recorder Model No: BRX

II. System Information

Information Transmission Function

1. Hardware platform (HIL Recorder Model No. BRX):

This software can be used on PC, laptop, tablet and smartphone. Physiological data is transmitted to the above devices through a wireless transmitter on physiological equipment. With the transmitter and wireless receiver, physiological data can be received, saved temporarily and sync with remote database.

2. Information processing software (HIL Recorder Model No. BTX-MCU):

Wireless Physiological Information Transmission Recording System is to be installed on the information transmitting equipment.

Specifications:

- a. Integrate auto-ID devices i.e. barcode and wireless identification, either scanner or card reader can be used.
- b. Support multiple users for continuous information auto recording and transmitting.
- c. Support one-on-many measurements and real-time wireless transmission.

- d. A single platform which supports various vital sign measuring equipments for data recording and transmission, including: blood pressure, body temperature, blood sugar, uric acid, cholesterol totals, blood oxygen content, heart rate and body weight ...etc.
 - e. Support physiological equipment with constantly data recording and transmission of data such as blood oxygen content and heart rate.
 - f. Record, transmit and back up the vital sign data of physiological measurement.
 - g. Auto detect and switch between batch and real-time remote database synchronization.
3. Appliances, specifications and how to install please refer to appendix

III. Settings and Operations

(A) Setting:

- a. Wireless transmitter – BTX-MCU : Connect the corresponding BTX and pairing physiological equipment and ensure the baud rate setting of data transmission is consistent with equipment data transmission.
- b. Wireless receiver – BRX : Connect to the standard USB interface on PC, tablet and mobile phone.

(B) How to operate:

Once the (A)setting procedure is completed, make sure the BRX is corrected detected by the Windows OS.

Apply the provided DLL(**VitalSignsDLL_release-date.dll**), activate the sample codes and find the output.

* In case of trouble between Windows OS and BRX, users can find the driver in the CD or visit the website for downloading:

<https://www.silabs.com/products/mcu/Pages/USBtoUARTBridgeVCPDrivers.aspx>

Appendix: Accessories, Specifications, Certifications, Software Development Kit (including sample codes)

1. Accessories

Transmitters: Transmit the data

Micro USB connector: BTX-MCU

Mini USB connector: BTX-MNU

Phone Jack connector: BTXPHJ

On-board pin connector: BTX-PIN

D-Sub 9 connector: BTX-DSB

D-Sub 9 connector with RS232 converter: BTX-DSB+

D-Sub 9 connector with RS232 converter and an External DC input:
BTX-DSB+E

Receiver: Receive the data

USB Type A connector: BRX

2. Specifications

2-1	Baud Rate	Adjustable, Default Setting=4800 bps.
2-2	RF Band	Unlicensed ISM band : 2.402 GHz~2.480 GHz.
2-3	Transmitted Power	0.25mW~1mW.
2-4	Effective Distance	Indoor \cong 12M.
2-5	Data Rate	Selective Data Rate= 250k/1M/2Mbps.

3. Certifications:

Model: BTX-MCU

FCC ID : 2AEE7UBIQMESH01HIL

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE
D OPERATION.

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Software Development Kit

Users apply the provided **VitalSignsDLL_release-date.dll** in the codes.

Sample Code(VB) :

```
Dim ComPort As SerialPort
Dim showData As String
Dim Thread1 As Thread
    ComPort.PortName = "COM1"
    With ComPort
        .BaudRate = 57600
        .DataBits = 8
        .Parity = Parity.None
        .StopBits = StopBits.One
        .Handshake = Handshake.None
    End With
    ComPort.Open()
    Dim df As New VitalSigns.VitalSigns
    df.setNewDongle(ComPort)
    Thread1 = New Thread(AddressOf getDataThread)
    Thread1.IsBackground = True
    Thread1.Start()
```

```
Sub getDataThread()
    Dim df As New VitalSigns.VitalSigns.dataFormatNew
    Dim VitalSigns As New VitalSigns.VitalSigns
    Do While (True)
        df = VitalSigns.getNewVitalSigns(ComPort)

        If df.getDid <> vbNullString Then
            showData += df.getPid + " " + df.getDid + " " + df.getData1 + " " +
df.getData2 + " " + df.getData3 + " " + df.getData4 + " " + df.getData5 + " " +
df.getData6 + vbCrLf
        End If
    Loop
End Sub
```

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- . Reorient or relocate the receiving antenna.
- . Increase the separation between the equipment and receiver.
- . Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- . Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 0.5 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 0.5 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.