Wireless Emergency Button

User Manual

Table of Content

1. Introduction.....2

2. Appearance.....2

3. Main Features 2

4.Set up Instruction.....3

5. Data Report.....3

6. Control Command 4

6-1 ConfigureCmd(Bi-Direction).....4

6-2 ConfigButtonPressTime(Bi-Direction).....6

7. Installation 7

8. Important Maintenance Instruction 8

1. Introduction

The R313MA is a long-range emergency button device for Netvox ClassA type devices based on the LoRaWAN open protocol and is compatible with the LoRaWAN protocol.

LoRa Wireless Technology:
LoRa is a wireless communication technology dedicated to long distance and low power consumption. Compared with other communication methods, LoRa spread spectrum modulation method greatly increases to expand the communication distance. Widely used in long-distance, low-data wireless communications. For example, automatic meter reading, building automation equipment, wireless security systems, industrial monitoring. Main features include small size, low power consumption, transmission distance, anti-interference ability and so on.

LoRaWAN:
LoRaWAN uses LoRa technology to define end-to-end standard specifications to ensure interoperability between devices and gateways from different manufacturers.

2. Appearance

3. Main Features

- Compatible with LoRaWAN
- 2 sections of 3V CR2450 button battery power supply
- Detectable voltage value and emergency button status
- Simple operation and setting
- Easy to fix and carry with key ring
- Protection class IP30
- Compatible with LoRaWANTM Class A
- Frequency hopping spread spectrum
- Configuration parameters can be configured via a third-party software platform, data can be read and alerts can be set via SMS text and email (optional)
- Applicable to third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and long battery life

  Battery Life:
  - Please refer to web: http://www.netvox.com.tw/electric/electric_calc.html
  - At this website, users can find battery life time for varier models at different configurations.

4.Set up Instruction

On/Off

Power on	Insert batteries. (users may need a flat blade screwdriver to open); insert two sections of 3V CR2450 button batteries and close the battery cover.)
Turn on	Press any function key till green and red indicator flashes once.
Turn off (Restore to factory setting)	Press and hold both function keys for 5 seconds till green indicator flashes for 20 times.
Power off	Remove Batteries.
Note:	1. Remove and insert the battery; the device memorizes previous on/off state by default. 2. On/off interval is suggested to be about 10 seconds to avoid the interference of capacitor inductance and other energy storage components. 3. Press and hold any function key and insert batteries at the same time; it will enter engineer testing mode.

Network Joining

Never joined the network	Turn on the device to search the network to join. The green indicator stays on for 5 seconds: success The green indicator remains off: fail
Had joined the network (not at factory setting)	Turn on the device to search the previous network to join. The green indicator stays on for 5 seconds: success The green indicator remains off: fail
Fail to join the network (when the device is on)	First two mins:wake up every 15 seconds to send request. After two mins: enter sleeping mode and wake up every 15 minutes to send request. Note: Suggest to remove batteries if the device is not used to save power. Suggest to check device verification on gateway.

Function Key

Press and hold both keys on the side for 5 seconds	Restore to factory setting / Turn off The green indicator flashes for 20 times: success The green indicator remains off: fail
Press any key on the side once	The device is in the network: green indicator flashes once and sends a report The device is not in the network: green indicator remains off
Emergency Button	Default: press and hold the button for 3 seconds to send an alarm data Remark: users can configure the button pressing time to send alarm by command

Sleeping Mode

The device is on and in the network	Sleeping period: Min Interval. When the reportchange exceeds setting value or the state changes: send a data report according to Min Interval.
The device is on but not in the network	First two mins: wake up every 15 seconds to send request. After two mins: enter sleeping mode and wake up every 15 minutes to send request. Note: Suggest to remove batteries if the device is not used. Suggest to check device verification on gateway.

Low Voltage Warning

Low Voltage	2.4V

5. Data Report

The device will immediately send a version packet report along with an uplink packet including alarm status
The device sends data in the default configuration before any configuration is done.

Maximum time: Max Interval =1 hour (default)
Minimum time: Min Interval=1 hour (default) (by default, the current voltage value is detected every Min Interval)

*if there is special custom shipping, the setting is changed according to customer requirements

Default reportchange:
Battery --- 0x01 (0.1V)
Alarm button trigger:
Alarm status: 1
Normal state: 0

Note:

The actual data sending cycle of the device is subject to the programming configuration before shipment.

The interval between two reports must be the minimum time

The data report can be decoded by the Netvox LoraWAN Application Command document and http://www.netvox.com.cn:8888/page/index

Report configuration and sending cycle are as follows:

Min Interval (Unit:second)	Max Interval (Unit:second)	Reportable Change	Current Change≥ Reportable Change	Current Change＜ Reportable Change
Any number between 1~65535	Any number between 1~65535	Can not be 0.	Report per Min Interval	Report per Max Interval

6. Control Command

6-1 ConfigureCmd(Bi-Direction)

FPort：0x07

Bytes	1 Byte	1 Byte	Var(Fix =9 Bytes)
	CmdID	DeviceType	NetvoxPayLoadData

CmdID– 1 bytes

DeviceType– 1 byte – Device Type of Device

NetvoxPayLoadData– var bytes (Max=9bytes)

Description	Device	CmdID	Device Type	NetvoxPayLoadData			
Config ReportReq	R313MA	0x01	0x4D	MinTime (2bytes Unit:s)	MaxTime (2bytes Unit:s)	BatteryChange (1byte Unit:0.1v)	Reserved (4Bytes,Fixed 0x00)
Config ReportRsp		0x81		Status (0x00_success)	Reserved (8Bytes,Fixed 0x00)		
ReadConfig ReportReq		0x02		Reserved (9Bytes,Fixed 0x00)			
ReadConfig ReportRsp		0x82		MinTime (2bytes Unit:s)	MaxTime (2bytes Unit:s)	BatteryChange (1byte Unit:0.1v)	Reserved (4Bytes,Fixed 0x00)

（1）**Command Configuration:**

MinTime = 1min、MaxTime = 1min、BatteryChange = 0.1v

Downlink：014D003C003C0100000000　　003C($H_{ex)}$ = 60($D_{ec)}$

Response：

814D000000000000000000（Configuration success）

814D010000000000000000（Configuration failure）

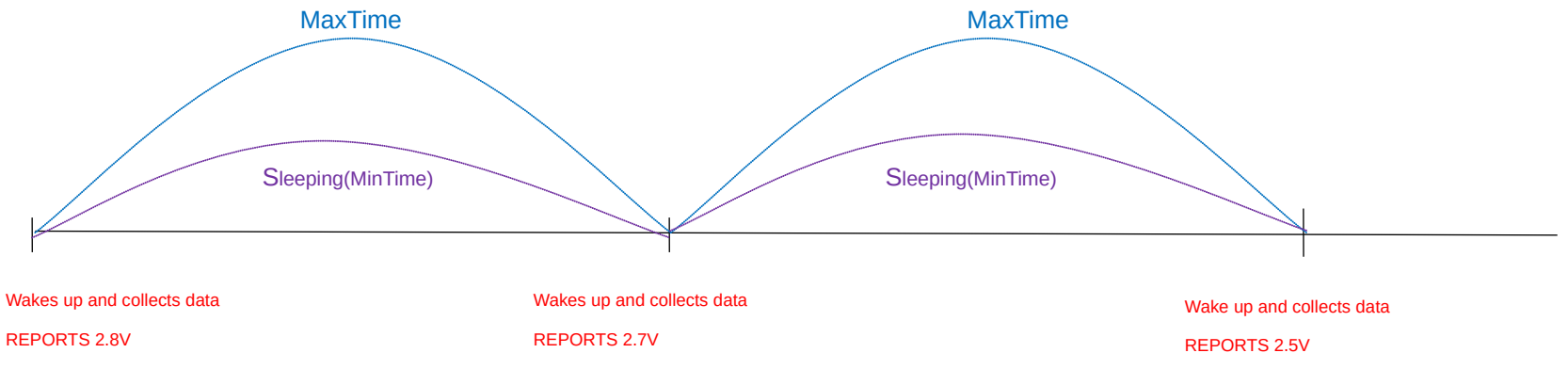
（2）**Read Configuration:**

Downlink：024D000000000000000000

Response：

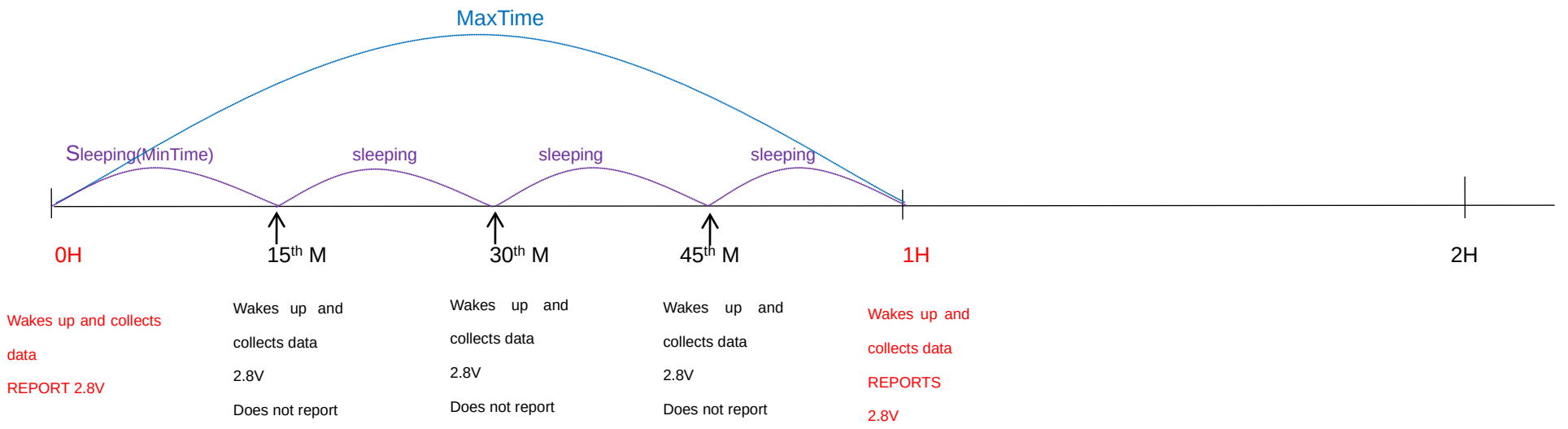
824D003C003C0100000000（Current configuration）

Example#1 based on MinTime = 1 Hour, MaxTime= 1 Hour, Reportable Change i.e. BatteryVoltageChange=0.1V

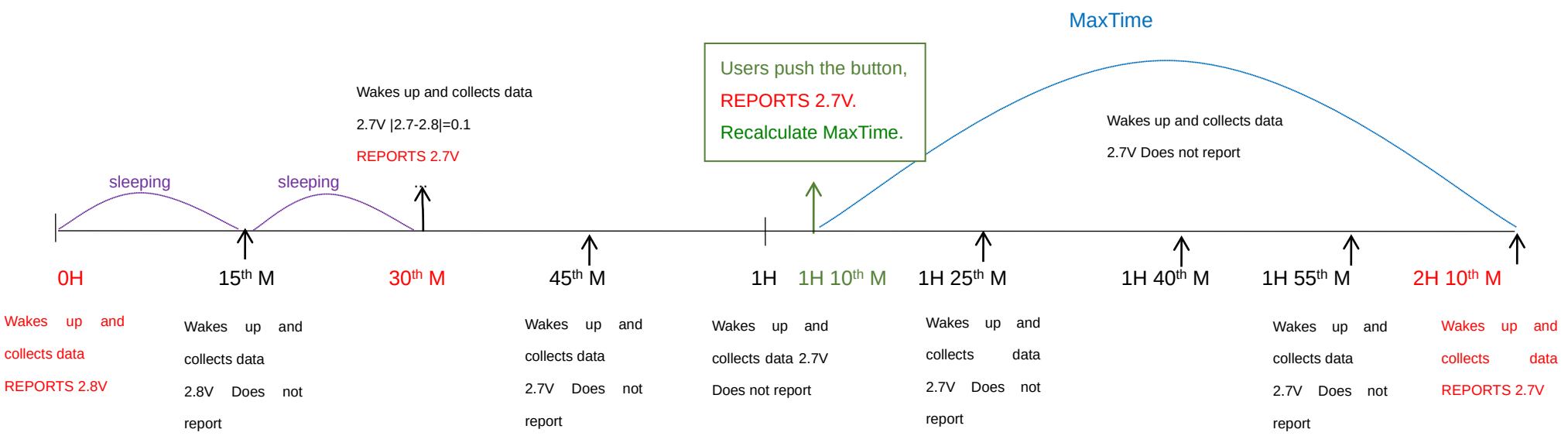


Note: MaxTime=MinTime. Data will only be report according to MaxTime (MinTime) duration regardless BtteryVoltageChange value.

Example#2 based on MinTime = 15 Minutes, MaxTime= 1 Hour, Reportable Change i.e. BatteryVoltageChange= 0.1V.



Example#3 based on MinTime = 15 Minutes, MaxTime= 1 Hour, Reportable Change i.e. BatteryVoltageChange= 0.1V.



Notes:

1) The device only wakes up and performs data sampling according to MinTime Interval. When it is sleeping, it does not collect data.
2) The data collected is compared with the last data reported. If the data change value is greater than the ReportableChange value, the device reports according to MinTime interval. If the data variation is not greater than the last data reported, the device reports according to MaxTime interval.
3) We do not recommend to set the MinTime Interval value too low. If the MinTime Interval is too low, the device wakes up frequently and the battery will be drained soon.
4) Whenever the device sends a report, no matter resulting from data variation, button pushed or MaxTime interval, another cycle of MinTime / MaxTime calculation is started.

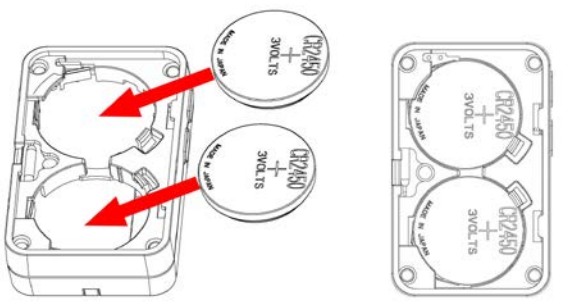
6-2 ConfigButtonPressTime(Bi-Direction)

FPort：0x0D　Default：3s

Description	CmdID	PayLoad (Var bytes)
SetButtonPress TimeReq	0x01	PressTime(1bytes) 0x00_QuickPush_Less then 1 Second, 0x01_1 Second push, 0x02_2 Seconds push, 0x03_3 Seconds push, 0x04_4 Seconds push, 0x05_5 Seconds push, Other value is reserved
SetButtonPress TimeRsp	0x81	Status (0x00_Success　0x01_Failure)
GetButtonPress TimeReq	0x02	
GetButtonPress TimeRsp	0x82	PressTime(1bytes) 0x00_QuickPush_Less then 1 Second, 0x01_1 Second push, 0x02_2 Seconds push, 0x03_3 Seconds push, 0x04_4 Seconds push, 0x05_5 Seconds push, Other value is reserved

7. Installation

(1) This product does not have a waterproof function. After the screening is completed, please place it indoors.
(2) The dust at the equipment installation position needs to be wiped clean and then pasted.
(3) The battery installation method is as shown below (the battery has a "+" side facing outward)



1.The key ring of the portable one-button emergency button (R313MA) can be snapped onto the backpack, the keychain around the waist, or hangs around the neck with a lanyard.

Note:
Do not install the device in a metal shielded box or other electrical equipment around it to avoid affecting the wireless transmission of the device.

2.Press and hole the emergency button for 3 seconds, the "alarm" message is generated.
When the device reports data periodically, it restores the "normal" status and sends "normal" status information.

Note:
When alarming, the data alarm bit is “1”;
When it returns to normal, the data alarm bit is “0”.

The emergency button (R313MA) can be applied to the following scenarios:

- Nursing home
- Family (bathroom)
- School
- Hospital
- Bank
- Wisdom site
- Wait for scenes where there is a possibility of an emergency.

8. Important Maintenance Instruction

Your device is a product of superior design and craftsmanship and should be used with care. The following suggestions will help you use the warranty service effectively.

- Keep the equipment dry. Rain, moisture, and various liquids or moisture may contain minerals that can corrode electronic circuits. In case the device is wet, please dry it completely.
- Do not use or store in dusty or dirty areas. This can damage its detachable parts and electronic components.
- Do not store in excessive heat. High temperatures can shorten the life of electronic devices,destroy batteries, and deform or melt some plastic parts.
- Do not store in excessive cold place. Otherwise, when the temperature rises to normal temperature,moisture will form inside, which will destroy the board.
- Do not throw, knock or shake the device. Rough handling of equipment can destroy internal circuit boards and delicate structures.
- Do not wash with strong chemicals, detergents or strong detergents.
- Do not apply with paint. Smudges can block debris in detachable parts and affect normal operation.
- Do not throw the battery into a fire to prevent the battery from exploding. Damaged batteries may also explode.

All of the above suggestions apply equally to your device, battery and accessories. If any device is not working properly. Please take it to the nearest authorized service facility for repair.