Be smart. **Measure it.**

English

Instruction and Operation Manual

Wireless Transmission Unit

Dear Customer,

Thank you for choosing our product.

The operating instructions must be read in full and carefully observed before you start up the device. The manufacturer cannot be held liable for any damage which occurs as a result of non-observance or non-compliance with this manual.

Should the device be tampered with in any manner other than a procedure which is described and specified in the manual, the warranty is void and the manufacturer is exempt from liability.

The device is designed exclusively for the described application.

SUTO offers no guarantee for the suitability for any other purpose. SUTO is also not liable for consequential damage resulting from the delivery, capability or use of this device.

Revision: 2025-1

Last modifications: July, 2025

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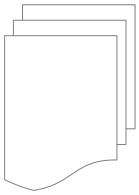
1 Safety Instructions



Please check if this instruction manual accords with the product type.

Please observe all notes and instructions indicated in this manual. It contains essential information which have to be observed before and during installation, operation and maintenance. Therefore this instruction manual has to be read carefully by the technician as well as by the responsible user / qualified personnel.

This instruction manual has to be available at the operation site of the service kit at any time. In case of any obscurities or questions, regarding this manual or the product, please contact the manufacturer.

WARNING!

Voltage used for supply!

Any contact with energized parts of the product, may lead to an electrical shock which can lead to serious injuries or even death!

- Consider all regulations for electrical installations.
- The system must be disconnected from any power supply during maintenance work.
- Any electrical work on the system is only allowed by authorized qualified personal.

ATTENTION!

Permitted operating parameters!

Observe the permitted operating parameters, any operation exceeding the parameters can lead to malfunctions and may lead to damage on the instrument or the system.

- Do not exceed the permitted operating parameters.
- Make sure the product is operated in its permitted limitations.
- Do not exceed or undercut the permitted storage and operation temperature and pressure.

General safety instructions

- It is not allowed to use the product in explosive areas.
- Please observe the national regulations before/during installation and operation.

Remarks

- It is not allowed to disassemble the product.

Storage and transportation

- Make sure that the transportation temperature of the service kit between -10°C ... +50°C.
- For transportation it is recommended to use the packaging that comes with the device.
- Make sure that the storage temperature of the device is between -10°C ... +50°C.
- Avoid direct UV and solar radiation during storage.
- For the storage the humidity must be <90%, no condensation.

2 Registered Trademarks

SUTO®	Registered trademark of SUTO iTEC
MODBUS®	Registered trademark of the Modbus Organization, Hopkinton, USA
Android™, Google Play	Trademarks of Google LLC

3 RF Exposure Information and Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

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.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user’s authority to operate the equipment.

NOTE: 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 or more 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
- This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

4 Introduction

The Wireless Transmission Unit (WTU) conducts wireless data transmission based on the ISM band. It replaces Modbus cables to achieve wireless communication between the Modbus master and slaves, thereby simplifying wiring and expanding communication distance.

The WTU adopts advanced encryption technology to ensure the security of data transmission.

WTU comes with a variety of connectors, which enables it to be conveniently connected to displays and sensors of SUTO-iTEC.

4.1 Features

- Long distance wireless communication
  Enables seamless wireless links between Modbus master and slaves.
- Plug and play solution
  Connect the WTU to SUTO devices for a quick and simple setup.
- User-friendly configuration
  Set up is easy with the S4C-WTU mobile app and its guided instructions.
- Versatile applications
  Available in stationary and portable versions to suit different requirements.
- Robust data security
  Ensure secure communication with advanced encryption.
- Cost-effective communication
  A one-time investment with no ongoing communication costs.

4.2 Types and Interfaces

Three types are available for the WTU.

- WTU-S: Stationary version, which has no battery inside.
- WTU-PM: Portable version, which acts as a WTU master, and no battery inside, no installation required. It is dedicated to be used to connect Modbus master S551.
- WTU-P: Portable version, no installation required. It has battery inside and can power on the connected sensors.

WTU-S and WTU-PM

Connector	Function
A M12	Power in
B LED	Power on/Error/communication indicator
C ODO, M12, or open wire, per request • ODO: connecting with the S551 • Open wire: connecting with the S330/S331 • M12: connecting with SUTO sensors	

WTU-P

Connector	Function
A M12	Power in
B USB-C	Power charging
C M12	Connecting with devices
D LED	Power on /Error /communication indicator
E Battery indicator	Show battery level.
The integrated battery can provide 24 VDC to the WTU and connected devices. External power supply is also supported.	

4.3 Application

The WTU can act as a master, slave, or a repeater, depending on the networking structure.

A WTU is preset as a master or a slave as per your order requirement before delivery to simplify your on-site setup process. Specify you need a WTU master or WTU slave when placing your order.

- WTU master
  A WTU connected to a Modbus master is referred to as a WTU master.
- WTU slave
  A WTU connected to a Modbus slave or multiple Modbus slaves is referred to as a WTU slave.
- WTU repeater
  When a WTU is between a master and a slave for signal repeat, the WTU is referred to as a repeater. It is a communication bridge between Modbus master and Modbus slave. The WTU repeater is used to extend the communication distance when needed.

  Note: The repeater mode is not available at delivery. When you need a repeater, use the S4C-WTU app to configure the slave as a repeater.

4.4 Operation Frequency Band

Three ISM bands are available for different areas.

- CN470
- EU868
- US915

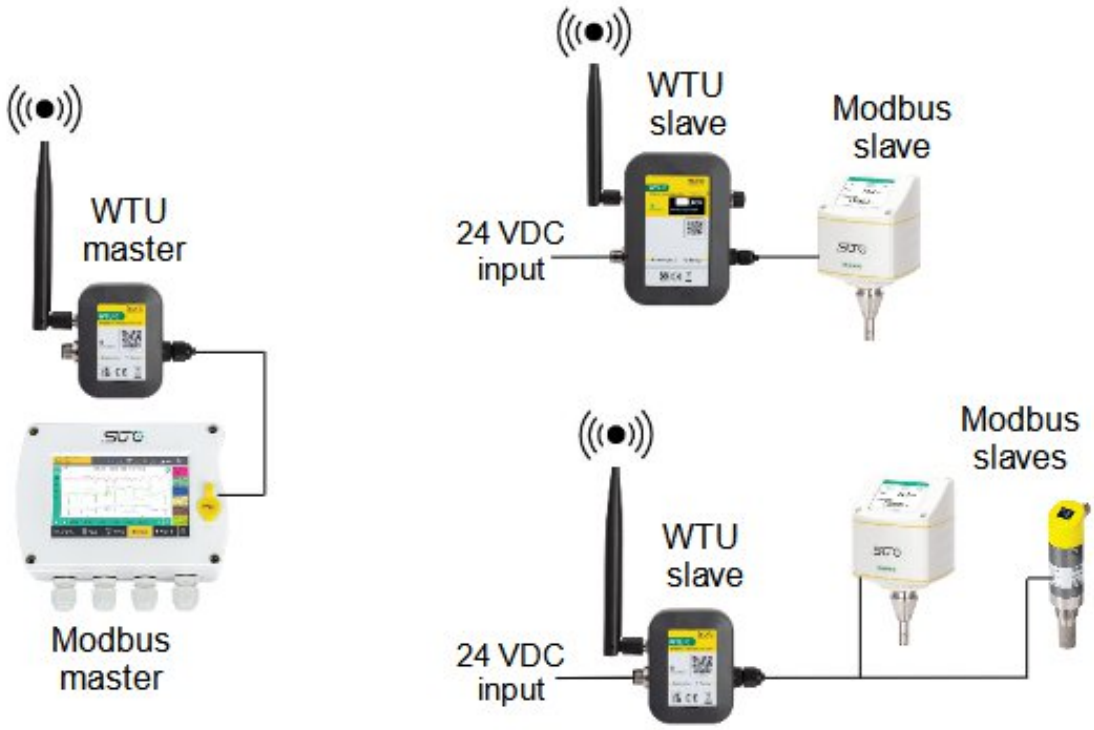
See country/region IDs and their ISM bands in chapter 12 Appendix.

4.5 Networking Mode

One WTU master communicates with multiple slaves

This is the typical application. A WTU master communicates with multiple WTU slaves over a distance.

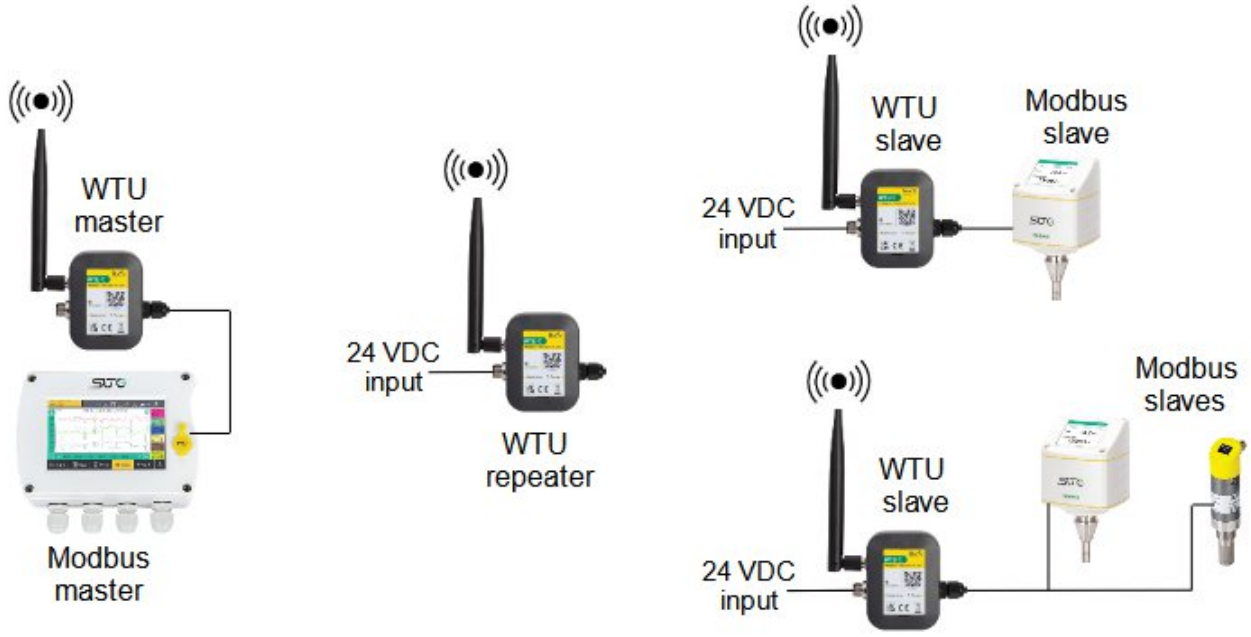
- The WTU-P as a slave can supply 24 VDC/10 W power to sensors (that is, Modbus slaves).
- The WTU-S as a slave can supply 24 VDC/24 W power to sensors (that is, Modbus slaves).



To achieve good communication, a maximum of five Modbus slaves can be connected to each WTU slave, with a total of no more than 16 Modbus slaves connected to a single S331/S330 master.

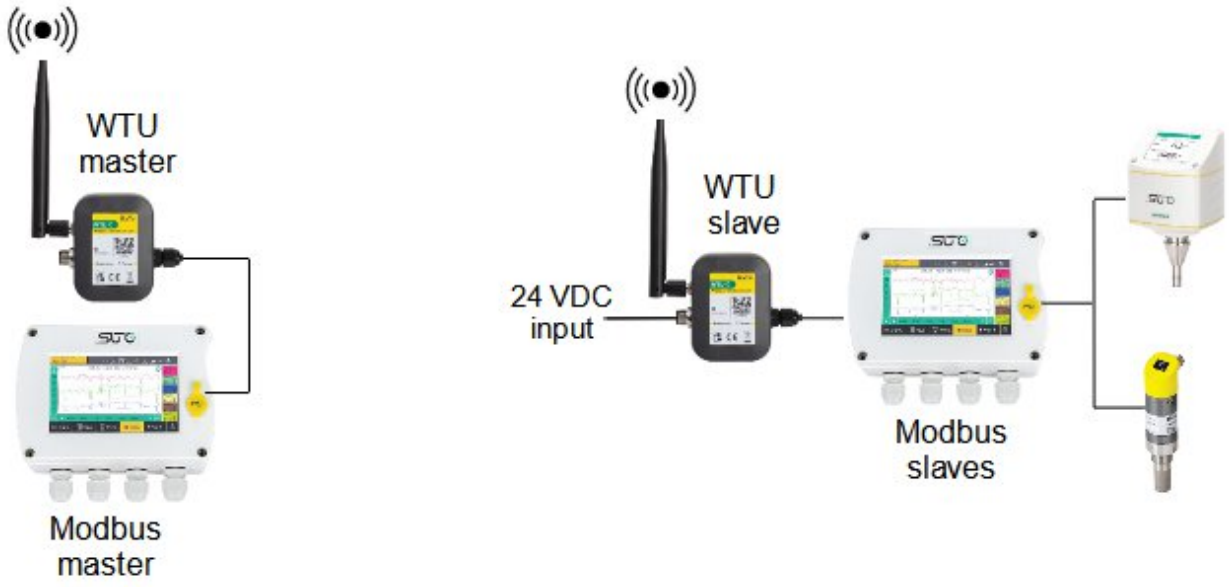
One WTU master communicates with multiple slaves via a WTU repeater

A WTU repeater can help to address communication distance issues or excessive background noise on site effectively.



One WTU master communicates with multiple slaves with multiple sensors

The WTU can replace the traditional wired connection between a master and a gateway effectively, thus eliminating the need of cables.



5 Technical Data

5.1 General Data

CE FC Contains FCC ID: 2ABN2-BG22B1 Contains FCC ID: 2BDFV-A39		
Frequency wireless communication	• 470 – 510 MHz (CN470) • 863 – 870 MHz (EU868) • 915 – 928 MHz (US915)	
Housing material	Plastic casing	
Protection class	IP65	
Connector	WTU-S/WTU-PM	WTU-P
	5-pin M12, or ODO, or open wire	2 X M12 (5-pin) USB-C
LED indicator	1 X LED	
Operating temperature	0℃... +50℃	
Humidity	<90% rH, no condensation	
Dimension	WTU-S/WTU-PM: 80 X 60 X 30.3 mm WTU-P: 130 X 90 X 40 mm	
Weight	WTU-S/WTU-PM: 120 g WTU-P: 470 g	
Approval	FCC, CE	

5.2 Electrical Data

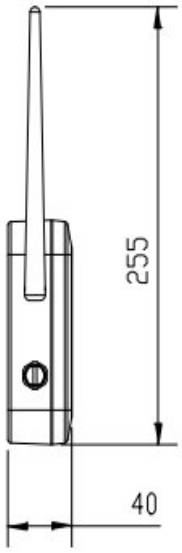
	WTU-S and WTU-PM	WTU-P
Power input	18 … 28 VDC, 0.5 A	18 … 28 VDC, 1 A
Power output to sensors	18 … 28 VDC, 0.5 A, 24 W (WTU-S only)	24 VDC, 0.5 A, 10 W
Power consumption	≤0.3 W	≤0.5 W
Battery	N/A	Rechargeable Lithium battery, 3500 mAh, 11.1 V

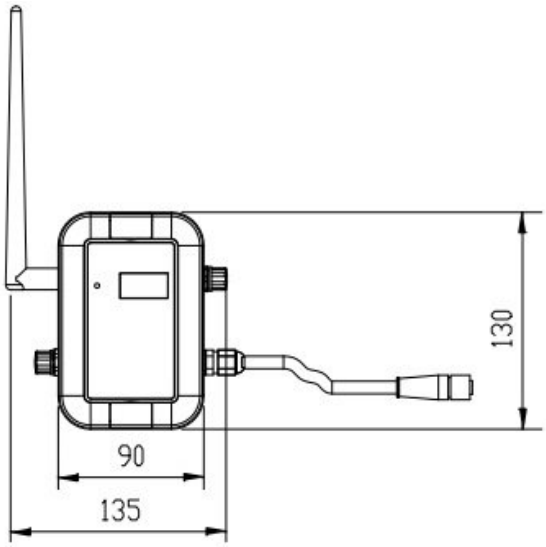
5.3 Interface

LED	Constant green: power on Blinking green: receiving data Constant red: error Blinking red: transmitting data
Status screen	WTU-P: battery level display
Connector	Modbus/RTU
Transmission method	Transparent
Encryption	AES 128-bit encryption

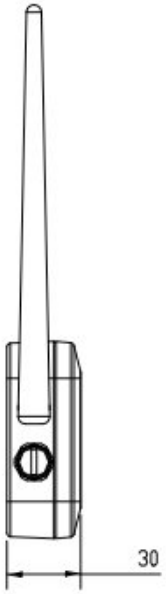
6 Dimension

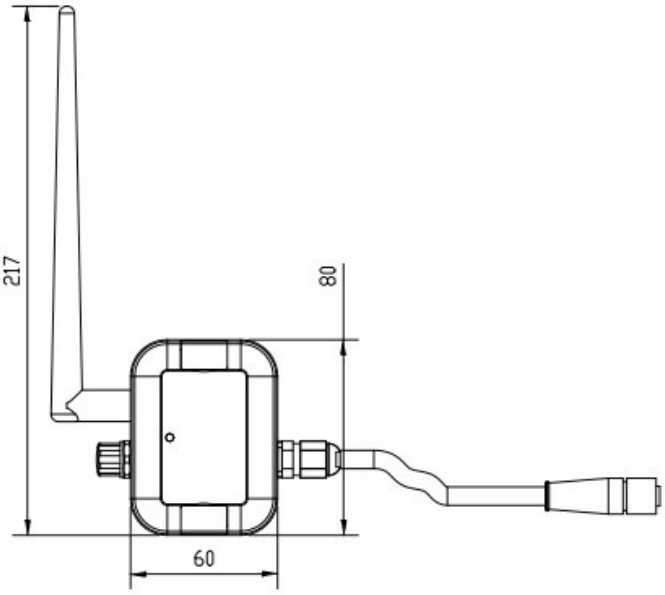
WTU-P





WTU-S
and
WTU-PM





7 Contents in Package

The items in the package have been preset according to your requirements when placing the order.

Verify all items ordered are included in your package.

Qty	Description	Item No.
1	WTU-S and installation accessories	A554 0136 or A554 0137
	or WTU-PM	A554 0138
	or WTU-P	A554 0139
1	Instruction manual	No P/N

WTU-S and WTU-PM	
Item No.	**Description**
A554 0136	WTU-S, Wireless Transmission Unit for stationary installation, Slave(default) /Repeater with 0.5 m M12 connection cable, M12 connector for power supply, all installation accessories included
A554 0137	WTU-S, Wireless Transmission Unit for stationary installation, Master with 1 m open ends, M12 connector for power supply, all installation accessories included
A554 0138	WTU-PM, Wireless Transmission Unit for portable master devices, Master with 0.5 m ODU connection cable to S551
ISM band selection list as per country/region (for WTU-S/WTU-PM)	
A1701	CN470
A1702	EU868
A1703	US915

WTU (Portable Version with Battery)	
Item No.	**Description**
A554 0139	WTU-P, Wireless Transmission Unit, portable version with battery, Slave (default) /Repeater with 0.5 m M12 connection cable, M12 connector for charger, USB-C connector for charger, including charger

ISM band selection list as per country/region (for WTU-P)	
A1704	CN470
A1705	EU868
A1706	US915

Accessory	
Item No.	**Description**
A554 3310	RS-485 splitter T, with 3 x M12 connectors to connect RS-485 devices to a bus

Country/region ID and their ISM bands

CN470

22	China	52	Kazakhstan	53	Kuwait	93	Sri Lanka
106	Uzbekistan						

EU868

1	Albania	35	France	59	Luxembourg	82	Romania
3	Andorra	36	Germany	60	Macedonia, FYR	85	Saudi Arabia
6	Austria	37	Greece	62	Malta	86	Serbia
9	Bahrain	40	Hong Kong, China	64	Moldova	87	Singapore
10	Bangladesh	41	Hungary	65	Montenegro	88	Slovak Republic
12	Belgium	42	Iceland	66	Morocco	89	Slovenia
15	Bosnia, Herzegovina	43	India	67	Netherlands	90	South Africa
18	Bulgaria	45	Iran	68	New Zealand	92	Spain
19	Cambodia	46	Ireland	70	Nigeria	94	Sweden
25	Croatia	48	Italy	71	Norway	95	Switzerland
27	Cyprus	51	Jordan	72	Oman	98	Tunisia
28	Czech Republic	54	Laos	73	Pakistan	99	Turkey
29	Denmark	55	Latvia	78	Philippines	102	United Arab Emirates

32	Egypt	56	Lebanon	79	Poland	103	United Kingdom
33	Estonia	57	Liechtenstein	80	Portugal	108	Vietnam
34	Finland	58	Lithuania	81	Qatar		

US915

2	Algeria	26	Cuba	50	Japan	91	South Korea
5	Argentina	30	Dominican Republic	61	Malaysia	96	Taiwan, China
7	Australia	31	Ecuador	63	Mexico	97	Thailand
16	Brazil	38	Guatemala	69	Nicaragua	104	United States
20	Canada	39	Honduras	74	Panama	105	Uruguay
21	Chile	44	Indonesia	75	Paraguay	107	Venezuela
23	Colombia	47	Israel	76	Peru		
24	Costa Rica	49	Jamaica	84	Salvador		

8 Installation

The WTU-P and WTU-PM do not need installation.

The WTU-S can be installed on walls, pipes or shafts of sensors, as shown below.

On the wall

On a pipe

On the shaft

Note: While mounting on a pipe, the stainless steel tie supports a maximum pipe size of DN350. For larger pipe size, you need to purchase longer stainless steel by yourself.

9 Configure WTU using S4C-WTU App

The S4C-WTU App is used to configure the WTU. It can run on the following operation systems:

- Android: V14, V13
- ios: V17, V18

9.1 Download and Install S4C-WTU App

- The Android S4C-WTU App is available for download on Google Play Store (play.google.com) and the SUTO Website.
- The iOS S4C-WTU App can be downloaded from Apple App Store.

Install the App on your mobile phone or tablet, same as you do for any other apps.

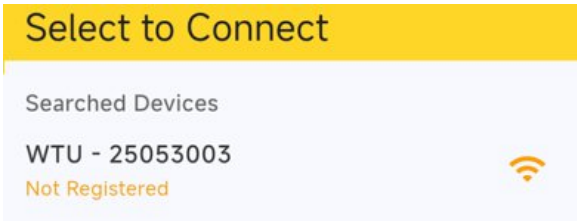
9.2 View WTU Information

To view settings and system information of a WTU, do steps as follows:

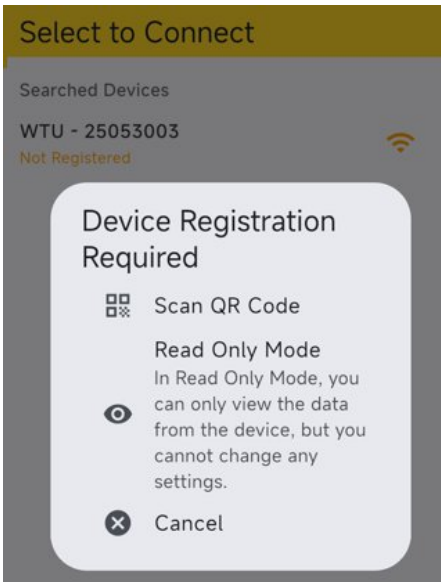
1. Start the S4C-WTU App.
2. Search WTUs

   Click **Search** on the App, the powered-on WTUs within the valid distance are shown with its name and serial number.

   The signal icon in yellow indicates the WTU is Read-only.

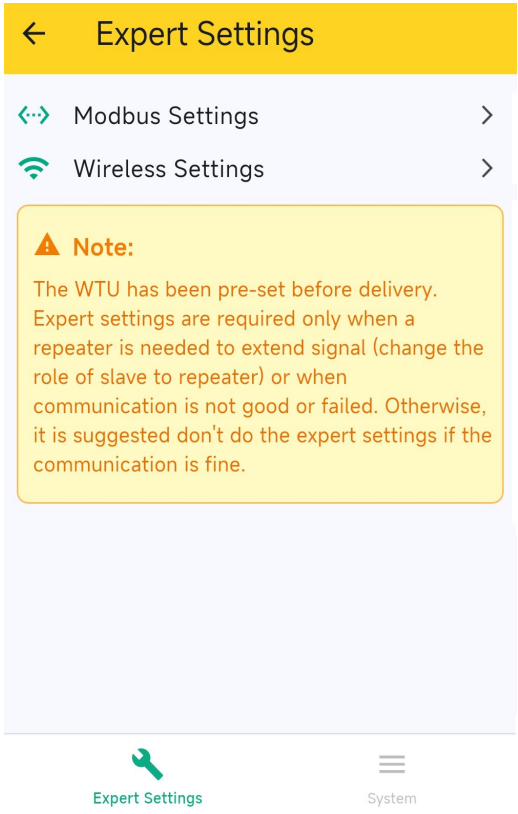


3. Select the WTU you want to view, the page on the right is displayed.



4. Click **Read Only Mode**, and the page on the right is displayed.

- Click **Modbus Settings** or **Wireless Settings** to view settings of the WTU.
- Click **System** to view the WTU information, system log, and the version of the S4C-WTU App.
- Click **Language** on the **System** page to change the App language. English, Chinese German are supported.

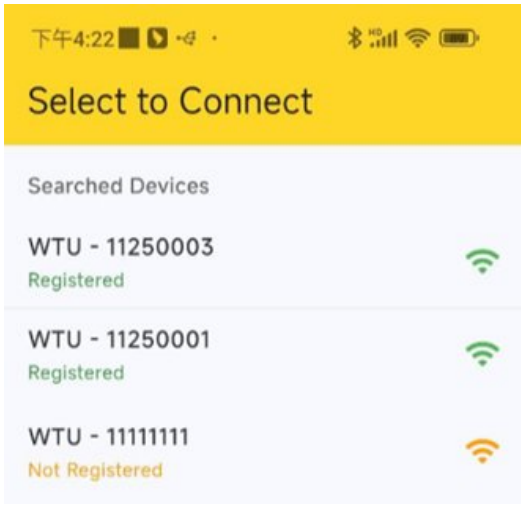


9.3 Get Configuration Permission

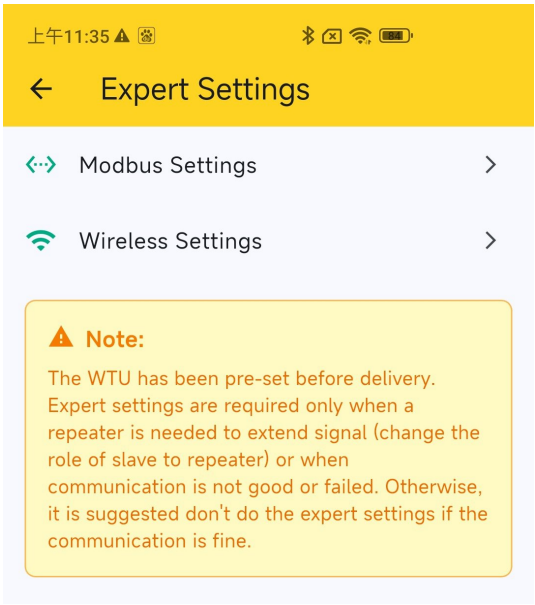
When you need to change the WTU settings, scan the QR code on the WTU body to obtain configuration permissions. Steps are as follows:

1. Start the S4C-WTU App on your mobile phone.
   Make sure your mobile phone can access the Internet.
2. Power on the WTU.
   - Power on the WTU-S and WTU-PM by connecting it to the external power supply.
   - Power on the WTU-P by connecting it to a sensor.
3. Click **Register** on the bottom left of the App to scan the QR code, and the WTU is shown with green icon .

   Note: The QR code is on the panel of the WTU.



4. Select the desired WTU with icon from the searched device(s) list. The **Expert Settings** page appears, then you can configure the WTU.



9.4 Configure WTU

The WTU has been preset according to your order requirements before delivery. You usually do not need to change it. Settings are only necessary for the following conditions:

- A repeater is needed to extend the distance.
- The default channel is occupied by other devices.
- The default wireless data rate cannot meet your requirement.

9.4.1 Configurable Parameters

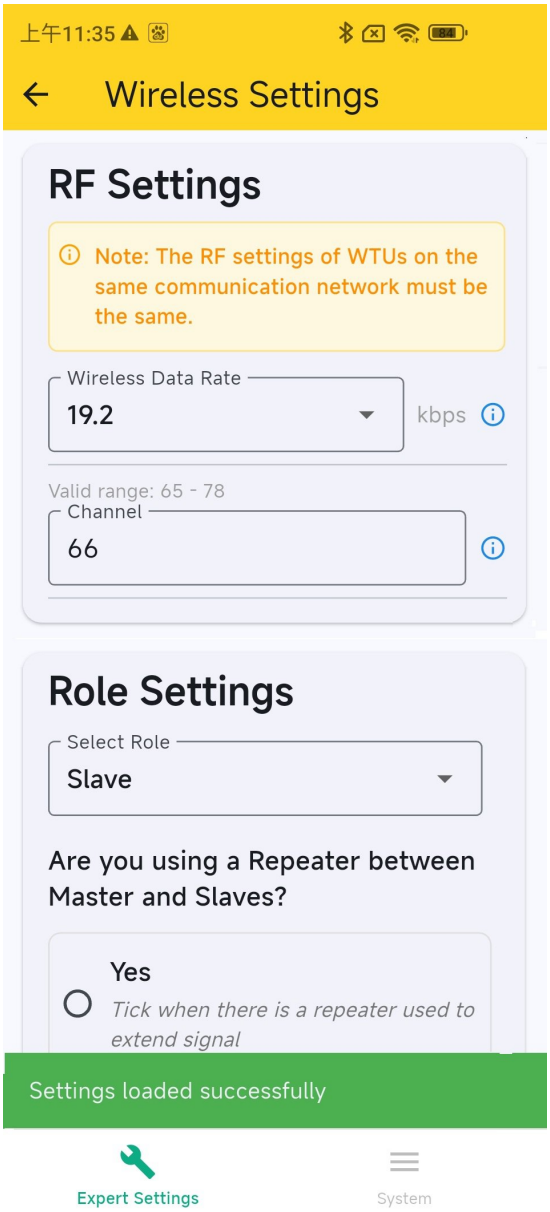
Parameter	Explanation	Settings
Wireless data rate	Indicates the transmission rate among a group of WTUs. The higher the air speed, the shorter the transmission distance. **Note**: Set the wireless data rate and the Modbus baud rate the same.	- 1.2 Kbps - 2.4 Kbps - 4.8 Kbps - 9.6 Kbps - 19.2 Kbps (default) - 38.4 Kbps
Channel	Indicates the frequency band used in a group. Each channel is associated with a specific frequency and a channel number. The channel number have been preset before delivery according to the country/region based on your order.	The mapping between country/region and frequency band is shown in the section 12 appendix.
Role settings	The role has been preset as **master** or **slave** before delivery. If a repeater is needed, change the role of the **slave** to **repeater**.	- Slave - Repeater
Are you using a repeater between master and slaves?	Select it for master and all WTU salves in the same network when a repeater is needed. **Note**: Only one repeater is supported in the same network (that is, a group).	N/A

Note: All WTU in the same network must be use the same wireless data rate and same channel.

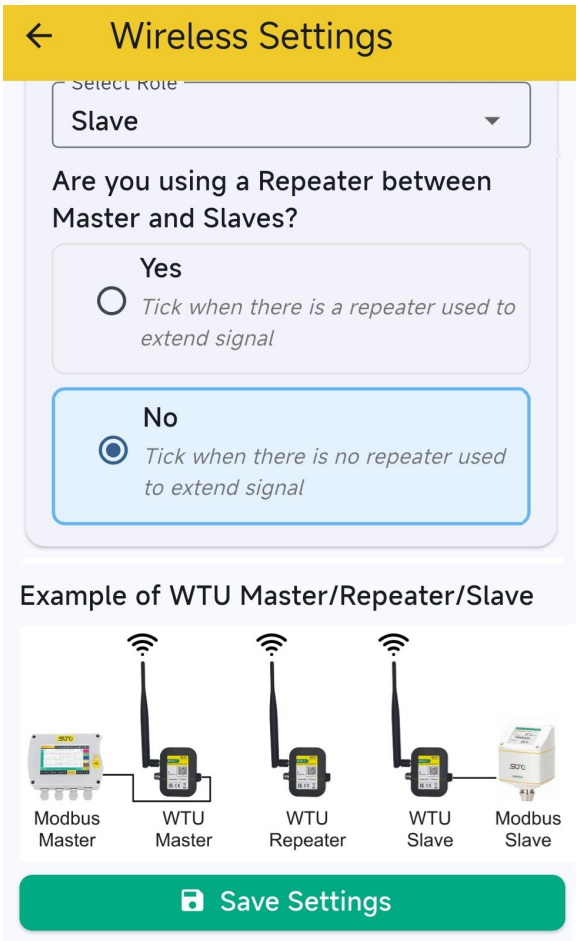
9.4.2 Wireless Setting

- RF settings
  Set the wireless data rate and channel in case of special circumstances, such as signal quality is poor, wireless communication fails, or the channel is occupied by other devices.

- Role settings
  If you need a repeater, change the **Slave** to **Repeater**.

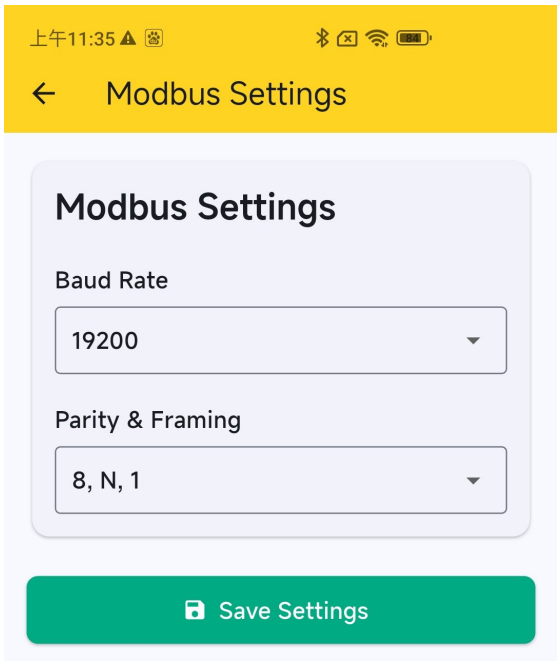


- Use repeater or not?
  If using a repeater, select **Yes**.
  If not using a repeater, select **No**.



9.4.3 Modbus Setting

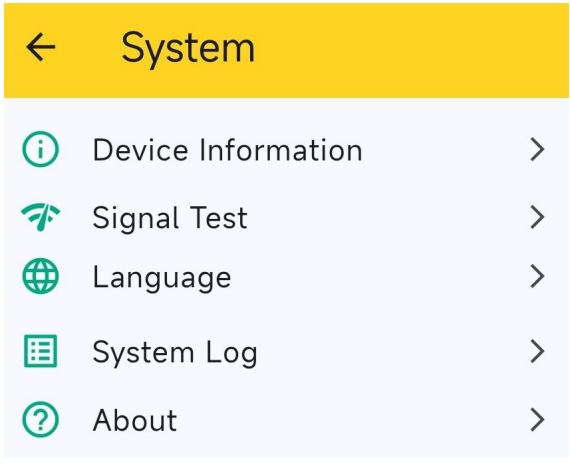
Set baud rate and parity & framing for the Modbus.



9.5 System Information and Settings

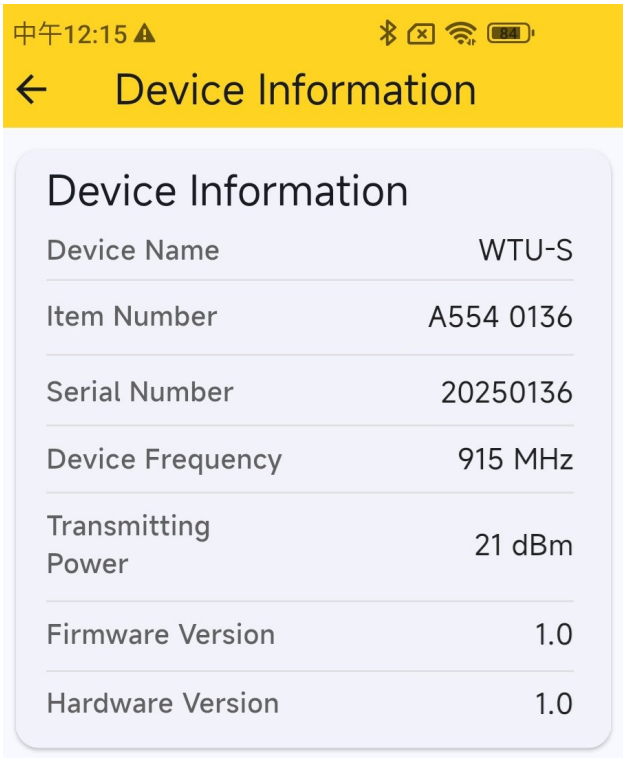
Using the **System** menu, you can do followings:

- View the WTU's information
- Set language of the App
- Test wireless signal quality
- View system log
- View the version of the App



9.5.1 Device Information

Device information is necessary when service is required. Please take a screen-shot and send it to the STUO service team.



Note:

- The device frequency is not fixed and depends on the selected channel. Make sure that the selected frequency is legal in your region or country.
- In different countries and regions, a WTU has different transmission power to meet the requirements of radio management. The following are the power levels of the WTU:
  China: 17 dBm
  USA: 21 dBm
  Others: 14 dBm

9.5.2 Signal Test

A signal test is used to verify the wireless signal quality.

The signal test is conducted between the two WTUs, one WTU sending data to the desired WTU. The result of sending and receiving is shown on the App. You can identify the signal quality based on the test result.

Follow steps below to do signal test:

1. Enter the last 4 digits of serial number of the WTU communicated with.

   Note: if you enter a wrong serial number, the Received Packets is no value, showing **---- dBm**.

2. Click **Start Test**.

The signal test will stop automatically after the test is done.

Notes:

- The wireless date rate and channel between two WTUs must be the same.
- Do not conduct signal tests when WTUs are performing normal measurements. The testing will interrupt the normal communication if the WTU is working.

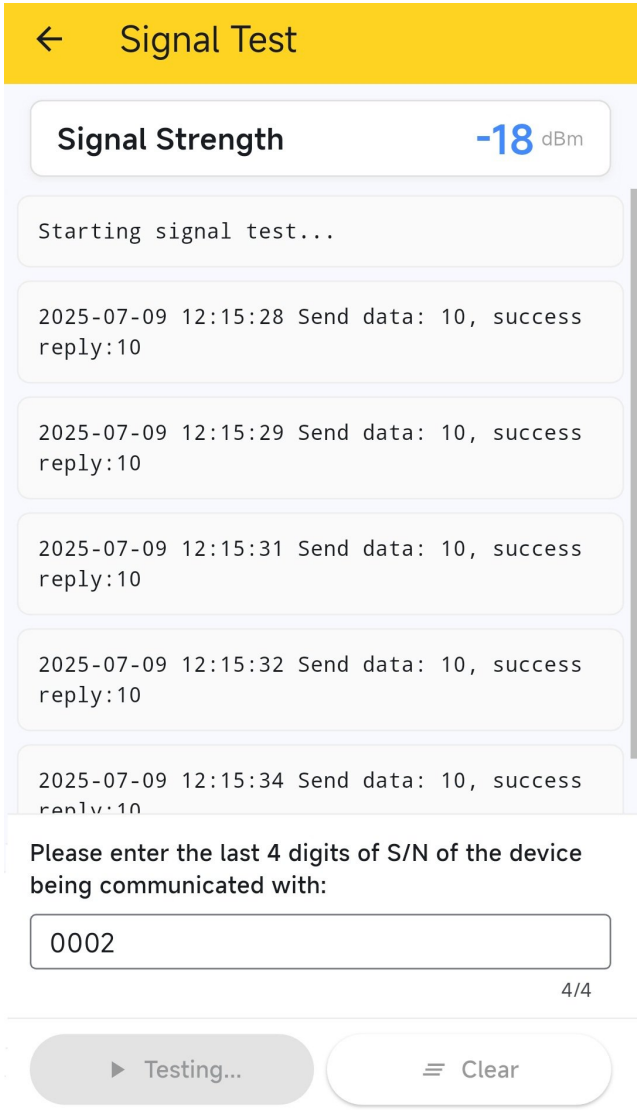
Signal strength: The received signal strength of the tested WTU.

Sent / replied packets: The values reflect the data transmission situation.

When the replied packets are the same as the sent packets, no data is lost.

When the replied packets are less than the sent packets, data lose occurs. You can improve the signal strength by follows:

- Change the channel in the RF settings for all WTUs in the same network.
- Place the WTU in another place to avoid the wall or iron gate.
- Use a repeater to extend communication distance.
- Adjust the position of the WTU or the direction of the antenna to obtain better signal quality.



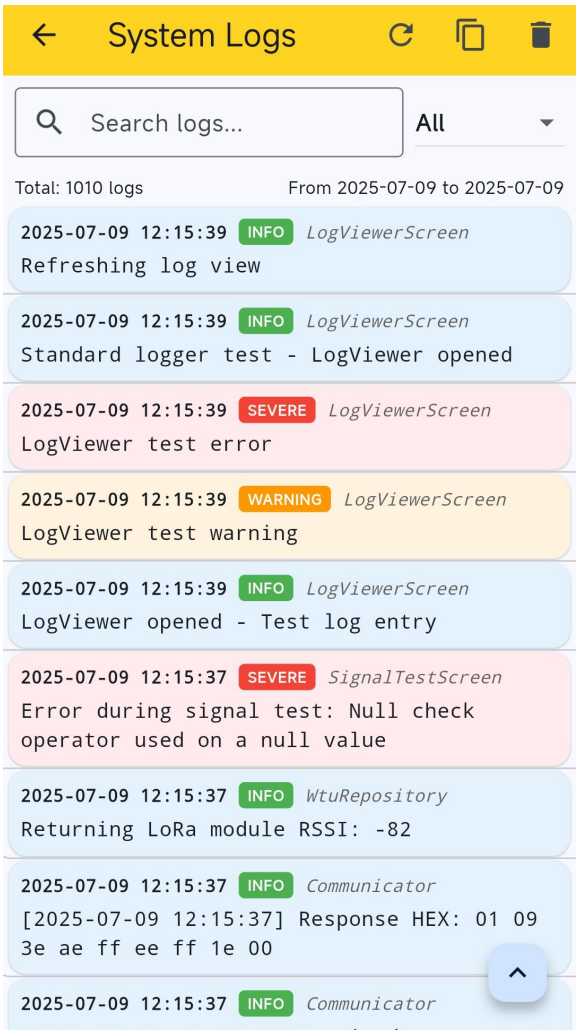
9.5.3 System Log

The system log is used for debugging and analysis of a WTU.

If you need help, you can capture the screen or copy the log and send to SUTO support.

Three icons are available on the top right of the page.

- Refresh icon : to refresh the log.
- Copy icon : to copy the log out.
- Delete icon : to clear all the log data.



9.5.4 Language

Three languages, English, German, and Chinese, are supported. Select the language you want to use.

9.5.5 About App

Shows the App version.

10 Maintenance

To clean the WTU, wipe the outer surface only with a wet cloth.

ATTENTION!

Do not use isopropyl alcohol to clean the service kit!

11 Disposal of Waste

Electronic devices are recyclable material and do not belong in the household waste.
The device, the accessories and its packings must be disposed according to your local statutory requirements.
The disposal can also be carried by the manufacturer of the product, for this please contact the manufacturer.

12 Appendix - ISM Bands of Country/Region

Country/ region	ID	Channel number	Default	Frequency band	ISM band
Albania	1	13 - 23	18(868MHz)	863 - 873 MHz	EU868
Algeria	2	65 - 71	65(915MHz)	915 - 921 MHz	US915
Andorra	3	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Argentina	5	65 - 78	65(915MHz)	915-928 MHz	US915
Austria	6	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Australia	7	65 - 78	65(915MHz)	915 - 928 MHz	
Bahrain	9	12 - 20	18(868MHz)	863 – 870 MHz	
Bangladesh	10	13 - 19	18(868MHz)	863 - 869 MHz	
Belgium	12	13 - 20	18(868MHz)	863 - 870 MHz	
Bosnia and Herzegovina	15	13 - 20	18(868MHz)	863 - 870 MHz	
Brazil	16	65 - 78	65(915MHz)	915 - 928 MHz	US915
Bulgaria	18	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Cambodia	19	16 - 19	18(868MHz)	866 - 869 MHz	
Canada	20	65 - 78	65(915MHz)	915 - 928 MHz	US915
Chile	21	65 - 78	65(915MHz)	915-928MHz	
China	22	60 - 100	60(470MHz)	470 - 510 MHz	CN470
Colombia	23	65 - 78	65(915MHz)	915 - 928 MHz	US915
Costa Rica	24	71 - 78	73(923MHz)	920.5 - 928 MHz	
Croatia	25	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Cuba	26	65 - 71	65(915MHz)	915 - 921 MHz	US915
Cyprus	27	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Czech Republic	28	13 - 20	18(868MHz)	863 - 870 MHz	
Denmark	29	13 - 23	18(868MHz)	863 - 870 MHz	
Dominican Republic	30	65 - 78	65(915MHz)	915 - 928 MHz	US915
Ecuador	31	65 - 78	65(915MHz)	915 - 928 MHz	
Egypt	32	13 - 26	18(868MHz)	863 - 870 MHz	EU868
Estonia	33	13 - 23	18(868MHz)	863 - 870 MHz	

Finland	34	13 - 23	18(868MHz)	863 - 870 MHz	
France	35	13 - 20	18(868MHz)	863 - 870 MHz	
Germany	36	13 - 20	18(868MHz)	863 - 870 MHz	
Greece	37	18 - 20	18(868MHz)	868 - 870 MHz	
Guatemala	38	65 - 78	65(915MHz)	915-928 MHz	US915
Honduras	39	65 - 78	65(915MHz)	915-928 MHz	
Hong Kong, China	40	15 - 18	18(868MHz)	865 - 868 MHz	EU868
Hungary	41	13 - 23	18(868MHz)	863 - 870 MHz	
Iceland	42	13 - 23	18(868MHz)	863 - 870 MHz	
India	43	15 - 17	15(865MHz)	865 - 867 MHz	
Indonesia	44	73 - 75	73(923MHz)	923 - 925 MHz	US915
Iran	45	13 - 23	18(868MHz)	863 - 870 MHz	EU868
Ireland	46	13 - 23	18(868MHz)	863 - 870 MHz	
Israel	47	65 - 67	65(915MHz)	915 - 917 MHz	US915
Italy	48	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Jamaica	49	65 - 78	65(915MHz)	915-928 MHz	US915
Japan	50	71 - 77	73(923MHz)	921 - 927 MHz	
Jordan	51	15 - 18	18(868MHz)	865 - 868 MHz	EU868
Kazakhstan	52	23 - 24	23(433MHz)	433.05 - 434.79 MHz	CN470
Kuwait	53	23 - 24	23(433MHz)	433.05 - 434.79 MHz	
Laos	54	12 - 25	18(868MHz)	863 - 870 MHz	EU868
Latvia	55	13 - 20	18(868MHz)	863 - 870 MHz	
Lebanon	56	12 - 20	18(868MHz)	863 - 870 MHz	
Liechtenstein	57	13 - 23	18(868MHz)	863 - 873 MHz	
Lithuania	58	13 - 20	18(868MHz)	863 - 870 MHz	
Luxembourg	59	13 - 23	18(868MHz)	863 - 873 MHz	
Macedonia, FYR	60	13 - 20	18(868MHz)	863 - 870 MHz	
Malaysia	61	69 - 74	73(923MHz)	919 – 924 MHz	US915
Malta	62	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Mexico	63	65 - 78	65(915MHz)	915 - 928 MHz	US915
Moldova	64	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Montenegro	65	13 - 20	18(868MHz)	863 - 870 MHz	

Morocco	66	18 - 19	18(868MHz)	867.6 - 869 MHz	
Netherlands	67	13 - 20	18(868MHz)	863 - 870 MHz	
New-Zealand	68	14 - 20	18(868MHz)	864 - 870MHz	
Nicaragua	69	65 - 78	65(915MHz)	915-928 MHz	US915
Nigeria	70	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Norway	71	13 - 23	18(868MHz)	863 - 870 MHz	
Oman	72	13 - 20	18(868MHz)	863 - 870 MHz	
Pakistan	73	15 - 19	18(868MHz)	865 - 869 MHz	
Panama	74	65 - 75	65(915MHz)	915 - 928 MHz	US915
Paraguay	75	65 - 78	65(915MHz)	915 - 928 MHz	
Peru	76	65 - 78	65(915MHz)	915 - 928 MHz	
Philippines	78	18 - 20	18(868MHz)	868 – 869.2 MHz	EU868
Poland	79	13 - 23	18(868MHz)	863 - 873 MHz	
Portugal	80	13 - 20	18(868MHz)	863 - 870 MHz	
Qatar	81	18 - 20	18(868MHz)	868 - 868.6 MHz	
				868.7 - 869.2 MHz	
				869.4 - 869.65 MHz	
				869.7 - 870 MHz	
Romania	82	13 - 20	18(868MHz)	863 - 870 MHz	
Salvador	84	65 - 78	65(915MHz)	915 - 928 MHz	US915
Saudi Arabia	85	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Serbia	86	13 - 20	18(868MHz)	863 - 870 MHz	
Singapore	87	16 - 19	18(868MHz)	865 - 869 MHz	
Slovak Republic	88	13 - 23	18(868MHz)	863 - 870 MHz	
Slovenia	89	13 - 23	18(868MHz)	863 - 870 MHz	
South Africa	90	15 - 18	18(868MHz)	865 – 868.6 MHz	
South Korea	91	67 - 73	73(923MHz)	917 - 923.5 MHz	US915
Spain	92	13 - 20	18(868MHz)	863 - 870 MHz	EU868
Sri Lanka	93	23 - 24	23(433MHz)	433.05 - 434.79 MHz	CN470
Sweden	94	18 - 20	18(868MHz)	868 - 870 MHz	EU868
Switzerland	95	13 - 23	18(868MHz)	863 - 870 MHz	
Taiwan, China	96	70 - 75	73(923MHz)	920 - 925 MHz	US915
Thailand	97	70 - 75	73(923MHz)	920 - 925 MHz	

Tunisia	98	18 - 20	18(868MHz)	868 – 868.6 MHz	EU868
				868.7 – 869.2 MHz	
				869.4 – 869.65 MHz	
				869.7 – 870 MHz	
Turkey	99	13 - 20	18(868MHz)	863 - 870 MHz	
United Arab Emirates	102	13 - 20	18(868MHz)	863 - 870 MHz	
United Kingdom	103	13 - 23	18(868MHz)	863 - 873 MHz	
United States	104	65 - 78	65(915MHz)	915 - 928 MHz	US915
Uruguay	105	65 - 78	65(915MHz)	915 - 928 MHz	
Venezuela	107	72 - 78	73(923MHz)	922 - 928 MHz	
Uzbekistan	106	23 - 24	23(433MHz)	433.05 - 434.79 MHz	CN470
Vietnam	108	13 - 20	18(868MHz)	863 - 870 MHz	EU868

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