



USER MANUAL

v1.08



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www.remuc.fi

Foreword

Congratulations!

You have acquired a REMUC Remote Control System. We dare to say you have chosen one of the best devices available as REMUC combines seamlessly quality design and production with ease of use and reliability.

REMUC is a Finnish Avainlippu product, meaning its degree of domestic origin is over 50%.



More information: www.remuc.fi

All manuals are available in multiple languages from: www.remuc.fi/downloads

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1 General information

REMUC controller enables controlling of different electric equipment like gasoline powered heaters, alarms and remote control system by using a mobile phone. Controller communicates on GSM network using either IP or SMS connection, depending on the mobile phone type in use. A SIM card is needed with a data plan or SMS plan, depending on the selected control method.

1.1 Package contents

- ✓ REMUC controller with an integrated antenna and SIM card reader
- ✓ Cables needed for installation
- ✓ Heat sensor with 2m installation cable
- ✓ Illuminated usage button with 1,5m installation cable
- ✓ QR sticker
- ✓ Embelin SIM card (optional)
 - ⚠ **SIM card supplied by Embelin Ltd. cannot be used in any other target than REMUC. Removing an activated Embelin SIM card from REMUC causes the SIM card to be blacklisted and closed.**
- ✓ Quick start for end user
- ✓ Installer guide



1.2 Electrical features

Operational voltage	+9V...32V
Operational temperature	-30...+80C
Current consumption in stand-by	< 30mA (12V)
Operational range of the heat sensor	-55...+125C

2 Important information



- ✓ **Warning!** Always read usage-, safety-, and service instructions of the device to be controlled using REMUC.
- ✓ **CONTROLLER MUST BE INSTALLED SO THAT THE INSTALLATION NEVER EXCEEDS GIVEN VOLTAGE AND CURRENT INPUT LIMITS. CURRENT INPUT MUST BE GUARDED WITH A 5A FUSE**
- ✓ If the package contains an optional data SIM or a Prepaid SIM card, user may change it to any operator's SIM card but Embelin Ltd. is not able to provide any support regarding any other SIM card than the one included in the package
- ✓ REMUC should be installed by a professional service to ensure proper operation
- ✓ PIN code for the SIM card must be one of the following: "1234", "0000" or the PIN code query must be disabled completely
- ✓ If any other SIM card is used than the one included in the package, SIM card functionality must be verified with a mobile phone before installation. This is because usually after installation the device is located in a hard-to-reach spot.
- ✓ If the SIM card installed in REMUC does not have any kind of fixed rate data plan, switch data connection off by sending SMS "IP OFF" to REMUC.

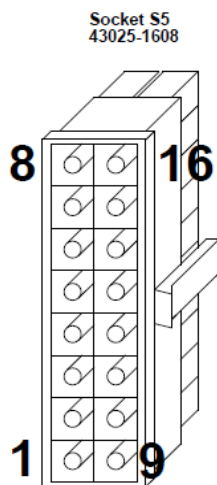
3 Installing the controller

Installation must be performed by a professional service. Controller must be placed in a dry place shielded from water. Under car dashboard is a good example.

3.1 Connector schematics

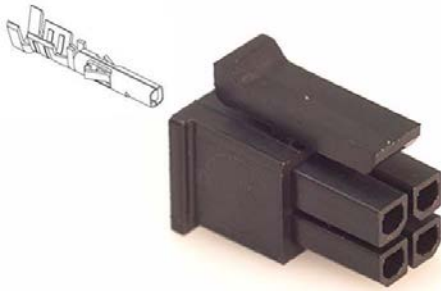
Installation cable wiring may vary, depending on the delivery version:

RC2A	Full connected cable
RC2AE	Basic installation cable (Eberspächer)
RC2AL	Basic installation cable (Webasto)



PIN NO	COLOUR	FUNCTION	Cable			INFORMATION
			RC2A	RC2AE	RC2AL	
1	BLACK	Ground	x	x		
2	ORANGE	WBC	x			
3	NC					
4	NC					
5	GRAY	Button	x	x	x	
6	GRAY		x	x	x	
7	GRAY	Input 1	x			+0V...+24V (>1V = active)
8	VIOLET	Input 2	x			+0V...+24V (>1V = active)
9	RED	V _{in}	x	x		+9V...+32V (5A fuse needed)
10	YELLOW	Output1 (+) (heater control)	x	x		Output 0,5A (no fuse) V _{in} voltage (PIN 9)
11	WHITE	Output2 (+) (Fan control)	x			Output 0,5A (no fuse) V _{in} voltage (PIN 9)
12	GREEN	Button	x	x	x	
13	BROWN	Button	x	x	x	
14	BROWN	Temp sensor	x	x	x	
15	NC					
16	BLACK	Ground	x			

3.2 Connecting the REMUC usage button



Installer should proceed with caution when assembling usage button connector. Wire contact going in the plug must be in correct orientation and of correct color, otherwise breakage may occur.

3.3 Connecting the heat sensor

The heat sensor included in the installation wire set can be installed outside or inside of the vehicle, depending on the preference.

3.4 Configuring inputs

Remuc has two inputs which can be used for example to connect home fire alarm or theft alarm. Input voltage must be between $0V \dots V_{in}$, where $>1V$ is regarded as an active state. Inputs are on/off type.

Inputs can be used to relay alarm or state data to phone or web client. If your Remuc has a SIM card with a data plan, you can configure input settings in <http://www.remuc.fi/settings>. Check [6.8 Web browser client] for detailed reference. You can also configure inputs using mobile application. When adding a new control, choose *Switch* as the type.

If you don't have a data plan but use SMS to access Remuc, you can use INPUT and ACK commands to manage inputs. See [8 SMS interface] for more details.

4 REMUC usage button and status lights

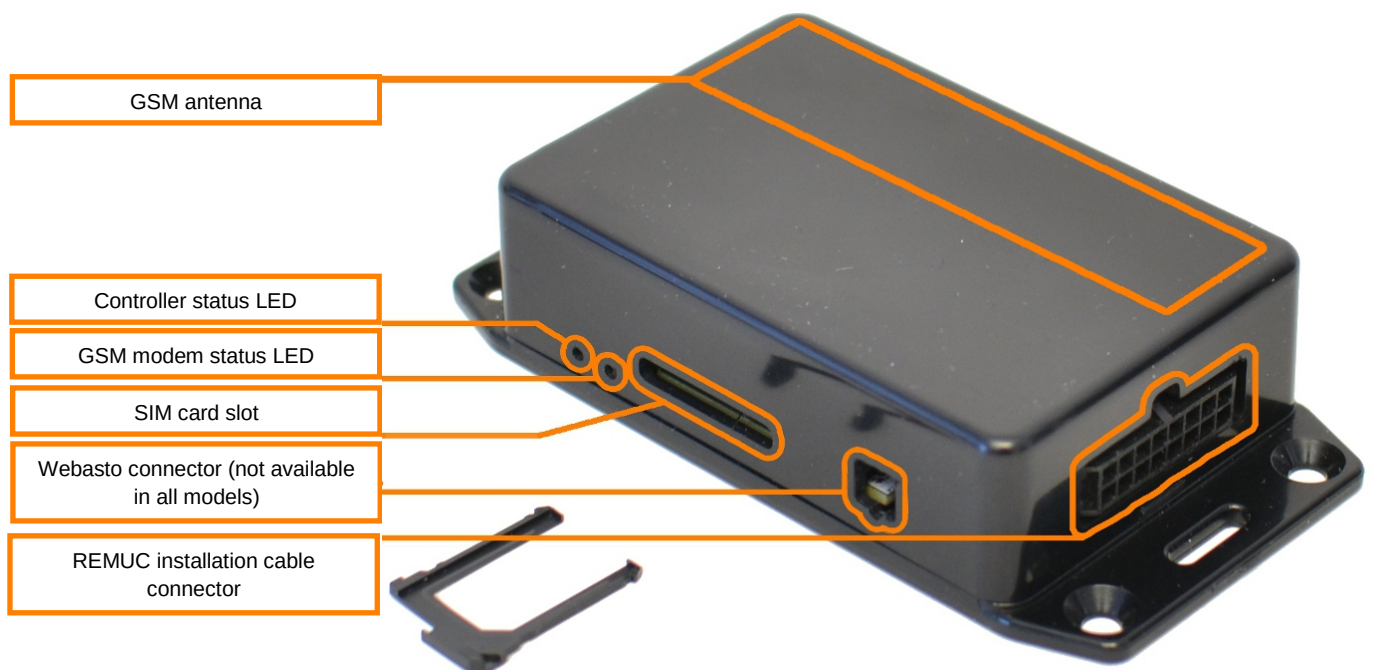
REMUC controller has an illuminated usage button and two separate status leds: one for controller status and another for internal GSM modem.

4.1 Status lights

- ✓ Controller status LED lit: Controller is active and network connection is established
- ✓ GSM modem status LED blinks depending on the network activity
- ✓ If controller status LED does not switch to continuously lit mode after 5 minutes from restart, check SIM card PIN code. PIN code MUST be "1234", "0000" or disabled.

TIP:

You can switch PIN code query off from SIM card by installing it temporarily to a mobile phone and using it's settings to deactivate PIN query



4.2 Usage button

REMUC controller installation includes a usage button which is used to control default output state, for example switch heater on/off. It can also be used to reset the controller. Button use does not require GSM network coverage.

Usage button is illuminated to ease locating the button in dark.

When defined default output is active (for example car heater), button light is brightly illuminated.

4.3 Resetting the controller with usage button

✓ RESET / RESTART

1. Press and hold usage button at least 10 seconds. Release button.
2. Status light on usage button blinks for 10 seconds. After this controller is reset.
3. REMUC is ready for use when usage button LED stops blinking.

✓ FACTORY RESET

1. Press and hold usage button for at least 10 seconds. Release button.
2. Status light in usage button blinks for 10 seconds. During this time press button shortly 3 times.
3. Controller will be reset to factory settings.
REMUC is ready for use when usage button LED stops blinking.



If REMUC does not have any SMS users configured, it will go into *user addition mode* automatically on reset. REMUC will leave user addition mode when a phone call is made to REMUC or timeout occurs (30 minutes).

5 Controller initialization and settings

The steps needed for REMUC controller initialization depend on the user's mobile phone type and desired control method:

1	If only newer smart phones are used, initialization can be completed using QR code printed on the controller casing. See chapter [5.2 Connecting phone using QR code]
2	If there's at least one older type smart phone or a plain mobile phone in use, the phone number must be added to REMUC controller. Also mobile application must be configured to connect correct REMUC controller. See chapter [5.3 Connecting the phone using Android, Meego or Symbian application]

	Mobile phone operating system	Connection method	Mobile application available?	Needs to add user?
1	Android (e.g. Samsung Galaxy S II) iOS (Apple iPhone) Windows Phone (e.g. Nokia Lumia 800)	IP	Yes	Ni
2	Android (e.g. Samsung Galaxy S II) Symbian Belle (Other smart phones by Nokia) Meego (Nokia N9)	SMS	Yes	Yes
	Muut puhelinmallit	SMS	No	Yes

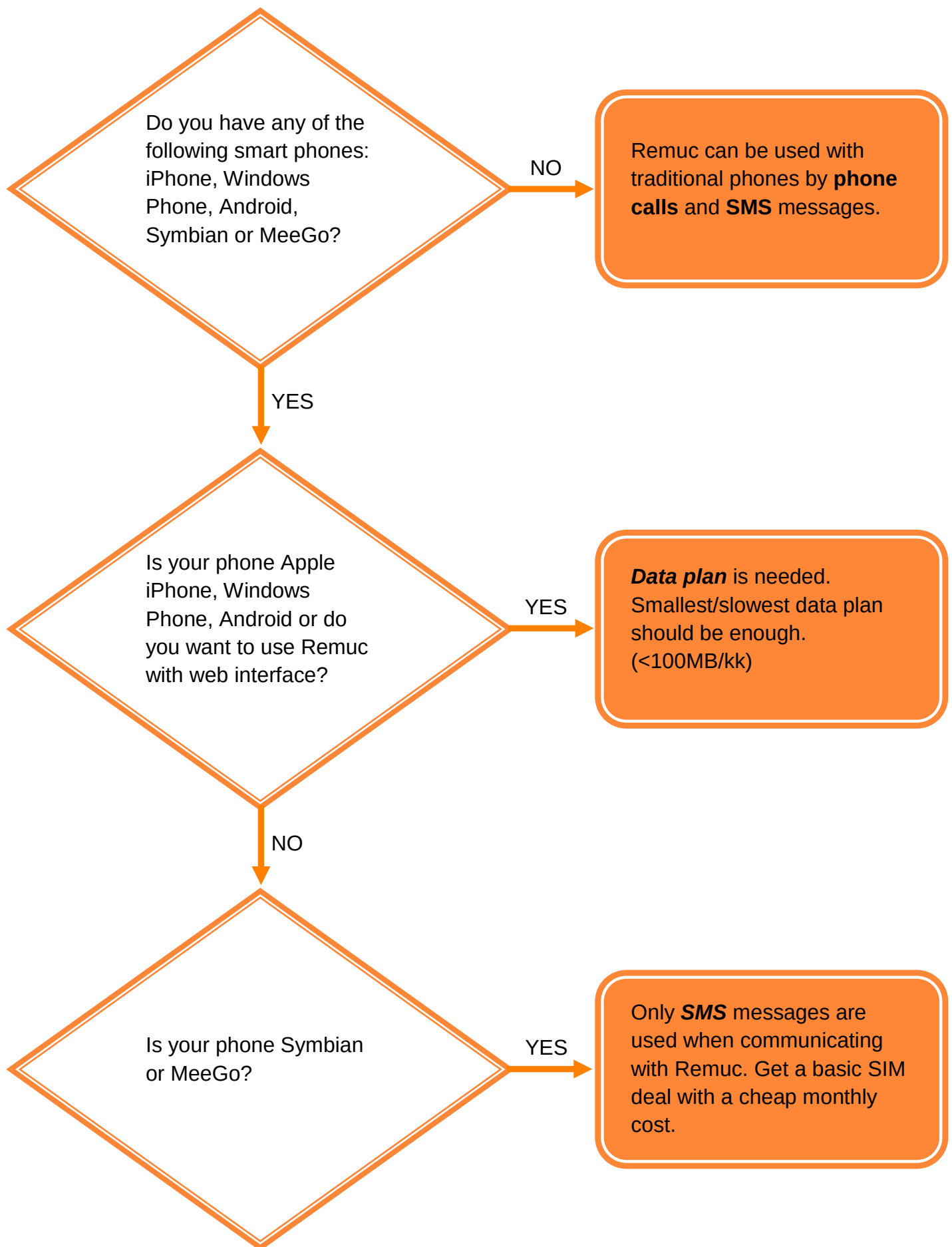
Android exists in both categories because there's both data-driven and SMS-driven application available for it.

5.1 Choosing the SIM card

(Valid only if delivery contents did not include a SIM card)

REMUC system can be controlled with SMS message or by data connection. SMS messages are used with all regular mobile phones and also MeeGo, Symbian and Android phones. Newer mobile phones like Windows Phone and iPhone connect using data connection.

TIP: Every REMUC state change generates one SMS (if SMS users have been configured).



5.2 Connecting phone using QR code

QR code is a two-dimensional bar code found in every REMUC controller casing. It is a unique identification used to connect user's smart phone to the correct controller.

There's an application available for newer smart phones which can be connected to correct REMUC just by taking a picture of the QR code on REMUC casing.

When QR code is used to connect phone to REMUC controller, *user configuration by phone calls or SMS messages is not needed.*

Prerequisites



Familiarize yourself with usage, service and safety instructions supplied with the device that is controlled using REMUC.



Make sure REMUC controller has an active SIM card with a packet data plan.

- ✓ SIM card PIN code must be either "1234", "0000" or PIN query completely disabled
- ✓ REMUC controller has been installed to your car

Get the mobile application from the phone software market

Every smart phone operating system has its own marketplace for free and non-free applications user can download to their mobile phone. REMUC controller application is available in the following stores:



Search from **Play Store**:
“remuc controller” or use QR
code below:



Search from **Marketplace**:
“remuc controller” or use QR
code below:



Search from **App Store**:
“remuc controller” or use QR
code below:



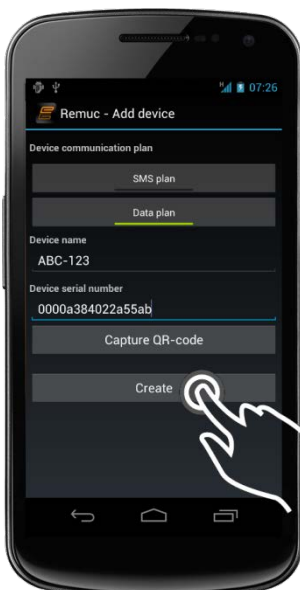


Connect mobile application to REMUC controller (Windows Phone)

1 Launch mobile application by clicking REMUC icon 	2 Select "Add remote" 	3 Select ID field to activate camera 
4 Use mobile device camera to shoot QR code in REMUC sticker 	5 Accept new remote 	6 You're done! Left icon switches heating on and clock icon shows timers. 



Connect application to REMUC controller (Android)

1 Launch mobile application by clicking REMUC icon 	2 Select "Add device" 	3 Select "Data plan" 	4 Select "Capture QR code" 
5 Use mobile device camera to shoot QR code in REMUC sticker 	6 Accept new device by clicking "Create" 	7 You're done! Left icon switches heating on and clock icon shows timers. 	



Connect mobile application to REMUC controller (iPhone)

- 1** Launch mobile application by clicking REMUC icon

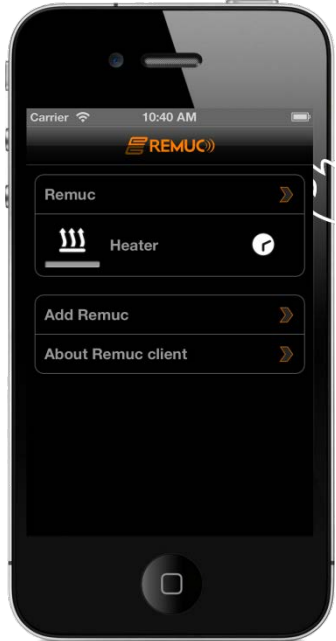

- 2** Select "Add Remuc"


- 3** Click "Scan device id" to start camera


- 4** Use mobile device camera to shoot QR code in REMUC sticker


- 5** Accept new remote by clicking "Done".


- 6** You're done! Left icon switches heating on and clock icon shows timers.



5.3 Connecting the phone using Android, Meego or Symbian application

If user has a phone that uses SMS messages as its connection method (category 2, check [5 Controller initialization and settings], it has to be configured to REMUC as user. If there aren't any previous SMS users, the phone number will be automatically added as such when configuring the mobile application. If there are previous users, one of them must allow the new user addition.

TIP: If you have previously used only QR code configurable smart phones, your REMUC most likely does not have configured SMS users.

Prerequisites



Familiarize yourself with usage, service and safety instructions supplied with the device that is controlled using REMUC.



If the installed SIM card doesn't have a *flat rate data* plan, switch data connection off after first user has been added. You can switch data connection off with an SMS "IP OFF.

- ✓ REMUC controller has been installed to your car
- ✓ REMUC controller has an active SIM card (SMS plan preferred)
- ✓ SIM card PIN code must be either "1234", "0000" or PIN query completely disabled
- ✓ When controlling REMUC with phone calls, caller ID blocking must not be active

Get the mobile application from the phone software market

- ✓ Mobile application is available to Android and all Nokia phones with Symbian Belle operating system. It is also available on MeeGo OS (Nokia N9)



Search **Play Store** for “remuc” or use the QR code below:



Search **Nokia Ovi Store** for “remuc” or use the QR code below:



Search **Nokia Ovi Store** for “remuc” or use the QR code below:

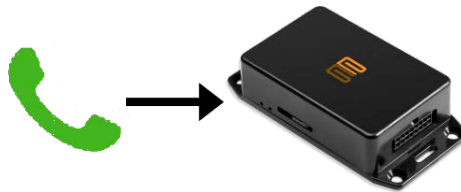


Option 1: REMUC does not have any previously added SMS user

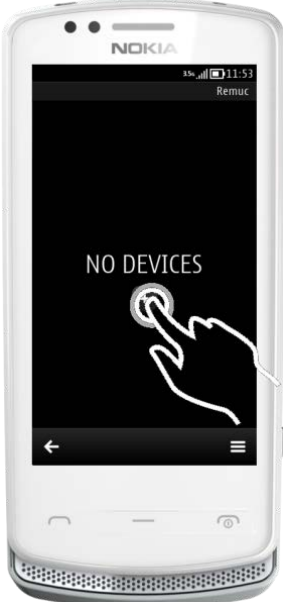
- ✓ Go directly to section “Connect mobile application to REMUC controller”.

Option 2: REMUC has a previously added user

- ✓ Reset REMUC by pressing and holding usage button >10s.
- ✓ REMUC restarts and goes into user addition mode
- ✓ After the usage button status LED stops blinking, make a phone call to REMUC.

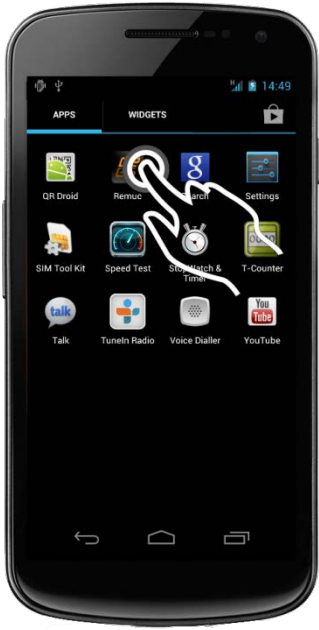
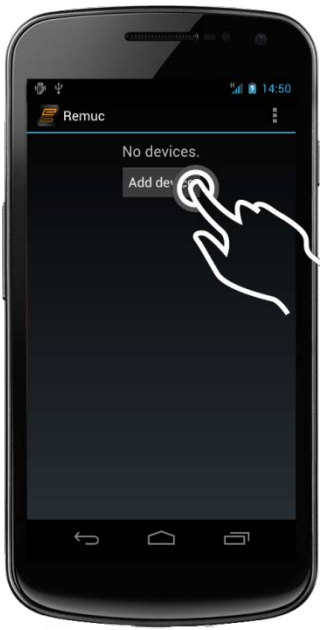
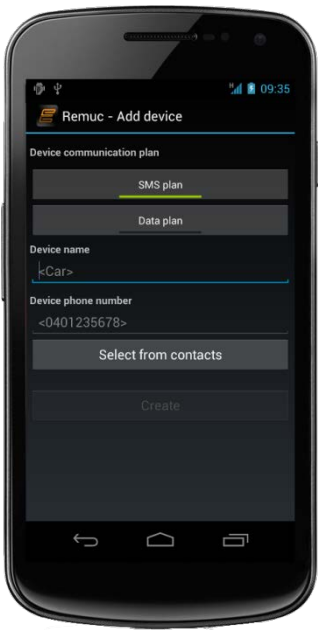
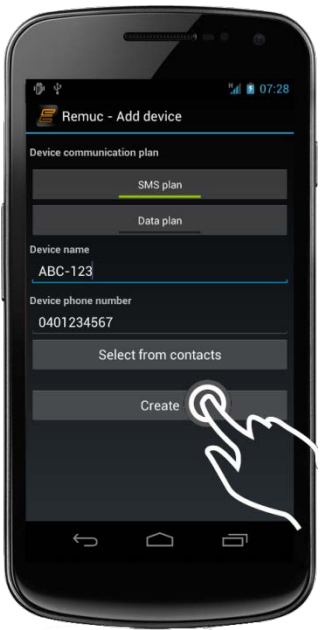


- ✓ Call will be terminated automatically
- ✓ Your phone number is now added as a REMUC user and you can control REMUC using calls and SMS

1 Launch mobile application by clicking REMUC icon 	2 Add new device by clicking "+" button 	3 Insert name, REMUC phone number and click "Add" 	4 Add a new control by clicking and holding on just added service 
5 Select "Add control" 	6 Enter name and click "Add" 	7 You're done! 	



Yhdistä mobiilisovellus REMUC:iin (Android)

1 Launch mobile application by clicking REMUC icon 	2 Select "Add device" 	3 Select "SMS plan" 
4 Enter device name and phone number 	5 Click "Create" 	6 You're done! 

5.4 Connect phone using SMS and/or phone calls

Prerequisites



Familiarize yourself with usage, service and safety instructions supplied with the device that is controlled using REMUC



If the installed SIM card doesn't have a *flat rate data* plan, switch data connection off after first user has been added. You can switch data connection off with an SMS "IP OFF".

- ✓ REMUC controller has been installed to your car
- ✓ REMUC controller has a working SIM card (SMS plan recommended)
- ✓ SIM card PIN code must be either "1234", "0000" or PIN query completely disabled
- ✓ When controlling REMUC with phone calls, caller ID blocking must not be active

Add user to REMUC

- ✓ Reset REMUC by holding usage button at least 10 seconds.
- ✓ REMUC restarts and goes into user add mode
- ✓ Once usage button led stops blinking, make a phone call to REMUC number
- ✓ Call is terminated automatically
- ✓ Your phone number is now added as a REMUC user and you can control REMUC using calls and SMS
- ✓ *If this was the first user added, switch REMUC data connection off by sending an SMS "IP OFF"..*



Start using REMUC

When your phone number is added to REMUC, you can start using controller. You can switch default output on and off by making a phone call to controller. More advanced control can be achieved using SMS commands.

5.5 Web user interface

In address <http://www.remuc.fi/settings> you can find a web page which allows your REMUC settings modification. More details are in section [6.8 Web browser client].



6 REMUC usage

REMUC can be used in many different ways:

- ✓ with usage button
- ✓ with phone calls
- ✓ with SMS messages
- ✓ using mobile application on following platforms:
 - o Windows Phone
 - o Android
 - o Apple iPhone
 - o Nokia Symbian Belle, MeeGo

Requirements for normal usage are that controller is installed successfully to the target, there's a tested and working SIM card installed, controller is powered on and it's successfully connected to GSM network. Functionality can be verified from usage button light. After logging into network it stops blinking and is left lightly illuminated.

Usage button and phone calls control the default output on and off immediately. SMS messages allow more advanced control: output on time, switch on delays can be controlled freely. Also, different configuration settings are controller with SMS.

Mobile applications are able to control all REMUC output both immediately and scheduled. You can also define recurring switching, for example: "switch output 1 on for an hour every weekday at 07:30".

6.1 Windows Phone application

See chapter [5.2 Connecting phone using QR code], on how to connect the first mobile phone.



Switching control state

State switching is done by clicking the state icon. The light under the icon is green when that output is active.

Control output timers

Scheduling allows delaying of state switching, defining how long output is switched on and creating of recurring timers.

All previously defined timers can be viewed by clicking the clock icon. Adding and removal is also done there.

- ⚠ All Windows Phone timers are REMUC-specific, meaning that all timers added on one phone will be seen in all other phones defined to control REMUC.

Additional features

- ✓ **Add remote:** Add a new REMUC to connect to. If the REMUC already has configured users, must one of the previous users approve adding of the new user. When adding new remote, user defines a password which will be shown to previous users through the mobile application. New user won't be able to control REMUC if the adding is not approved by any of the previous users. (in the approval dialog: *Master user* can approve new users, *Regular user* cannot)
- ✓ **Modify settings:** Rename REMUC or set REMUC in Service Mode, see chapter [5.5 Web user interface].
- ✓ **Delete remote:** Deletes the previously added REMUC
- ✓ **Application settings**
 - Notifications: Switches background notifications on/off. If notifications are switched off, mobile application won't get any status updates from REMUC when left to background. It is recommended to be left on.
 - Information about the mobile application.

Switching between multiple configured REMUC remotes

If you have more than one REMUC configured in the application, you can switch between them by panning horizontally.

Configuring multiple control for one REMUC remote

Depending on the installation, you can define more than one control for one REMUC remove. Additional control can be, for example, a fan/ventilation control (output) or a car alert status icon (input).

Removing a control

Press and hold on control name text. Dialog opens with an option "Delete control".

6.2 Apple iPhone application

See chapter [5.2 Connecting phone using QR code], on how to connect the first mobile phone.



Switching control state

State switching is done by clicking the state icon. The light under the icon is green when that output is active.

Control output timers

Scheduling allows delaying of state switching, defining how long output is switched on and creating of recurring timers.

All previously defined timers can be viewed by clicking the clock icon. Adding and removal is also done there.

- ⚠ All Apple iPhone timers are REMUC-specific, meaning that all timers added on one phone will be seen in all other phones defined to control REMUC

Adding new REMUC remotes

If the REMUC already has configured users, must one of the previous users approve adding of the new user. When adding new remote, user defines a password which will be shown to previous users through the mobile application. New user won't be able to control REMUC if the adding is not approved by any of the previous users. (in the approval dialog: *Master user* can approve new users, *Regular user* cannot)

REMUC-specific settings

Remote-specific settings can be accessed by clicking the remote name.

✓ Service Mode

Service mode is needed when accessing REMUC device settings using web user interface. See chapter [5.5 Web user interface]

✓ Configuring multiple controls

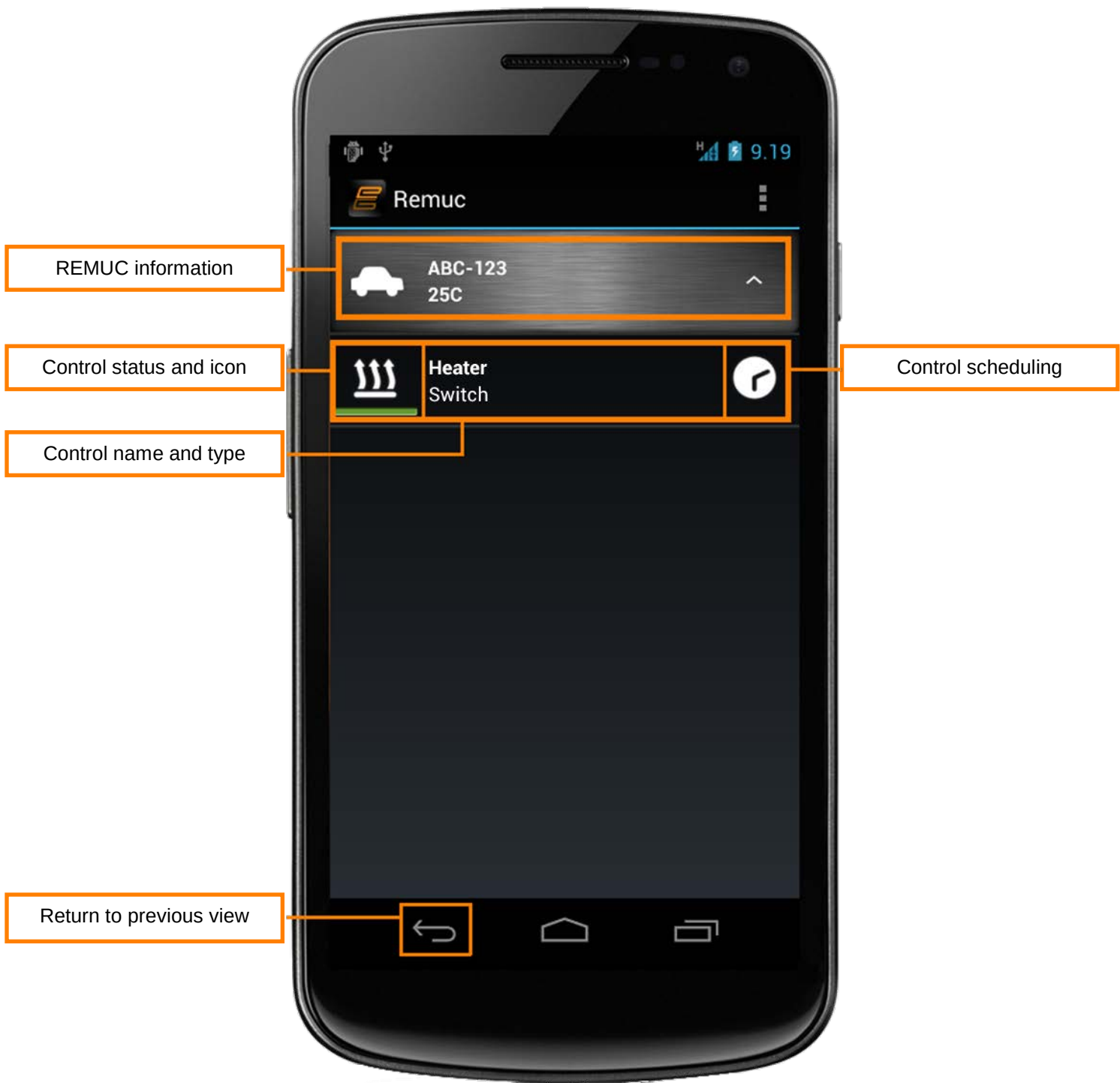
Depending on the installation, you can define more than one control for one REMUC remove. Additional control can be, for example, a fan/ventilation control (output) or a car alert status icon (input).

✓ Removing a control

Press and hold on control name text. Choose "Delete OUT <number>".

6.3 Android application

See chapter [5.2 Connecting phone using QR code], on how to connect the first mobile phone.



Placing the widget on home view

Android application also includes a widget which can be added into home view. Widget allows quick REMUC output switching without starting the application itself. Note: Widget can't be added to home view if there are no remotes or controls defined in the application.

Switching control state

State switching is done by clicking the state icon. The light under the icon is green when that output is active.

Control output timers

Scheduling allows delaying of state switching, defining how long output is switched on and creating of recurring timers.

All previously defined timers can be viewed by clicking the clock icon. Adding and removal is also done there.

- ⚠ All timers created when using data connection mode are REMUC-specific, meaning that other mobile phones using the same REMUC see them also.
- ⚠ If application connection method is SMS, are timers phone-specific.

Timer can be removed by clicking it.

REMUC-specific settings

REMUC-specific settings can be accessed by pressing and holding on device name or icon.

- ✓ **Add control:** Depending on the hardware installation, you may add more than one control pre device. Additional device can be, for example a vent control (output) or alert status (input)
- ✓ **Refresh:** Refresh device status. Usually status refreshes automatically only when some state changes.
- ✓ **Modify:** Change device name, defined phone number (only SMS usage) and device color on widget.
- ✓ **Delete:** Deletes the device
- ✓ **SMS log** (only applicable on SMS connection mode): Displays the SMS message traffic between REMUC device and the mobile phone. Sending messages also possible from this view.

Modifying and deleting controls

Press and hold on control name. In the opening dialog there's "Modify" and "Delete control".

6.4 Symbian and MeeGo applications

Symbian and MeeGo application are very similar to Android version, so refer to chapter [6.3 Android application]. Connecting the first phone is shown in chapter [5.3 Connecting the phone using Android, Meego or Symbian application]

6.5 Phone calls

REMUC can also be controlled using plain phone calls if user's phone number is added to REMUC users. When a call is made to REMUC number, it will be disconnected automatically and default output will switch state immediately.

TIP: If mobile application is installed on Symbian or MeeGo phone, all SMS traffic between the phone and REMUC can be viewed in the application's "SMS Log" view. REMUC messages will not be visible in the phone's own messaging application.

6.6 SMS messages

Example SMS messages:

Description	SMS message
Output 1 ON indefinitely	"OUT 1 ON 0"
Output 1 OFF	"OUT 1 OFF"
Output 2 ON for 60 minutes	"OUT 2 ON 3600"
Output 1 ON for 30 minutes (1800 s), starting after 12 hours (720 min)	"OUT 1 ON 1800 720"
Output and input status query	"STATUS"
Add next caller as USER in user database	"CALLADD"

All SMS commands are described in detail in section [TBD]

6.7 Usage button

Usage button can be used to switch default output on and off independently from GSM network coverage, defined users or connected mobile phones.

Usage button is also used for device reset. See chapter [4.3 Resetting the controller with usage button].

6.8 Web browser client

Web client can be found from <http://www.remuc.fi/settings>, but it's also accessible from www.remuc.fi front page. Login is done with QR code or a previously defined *alias*. You can log in without password if you set Remuc into *service mode*.

QR code is a device specific, unique 16 character identification.



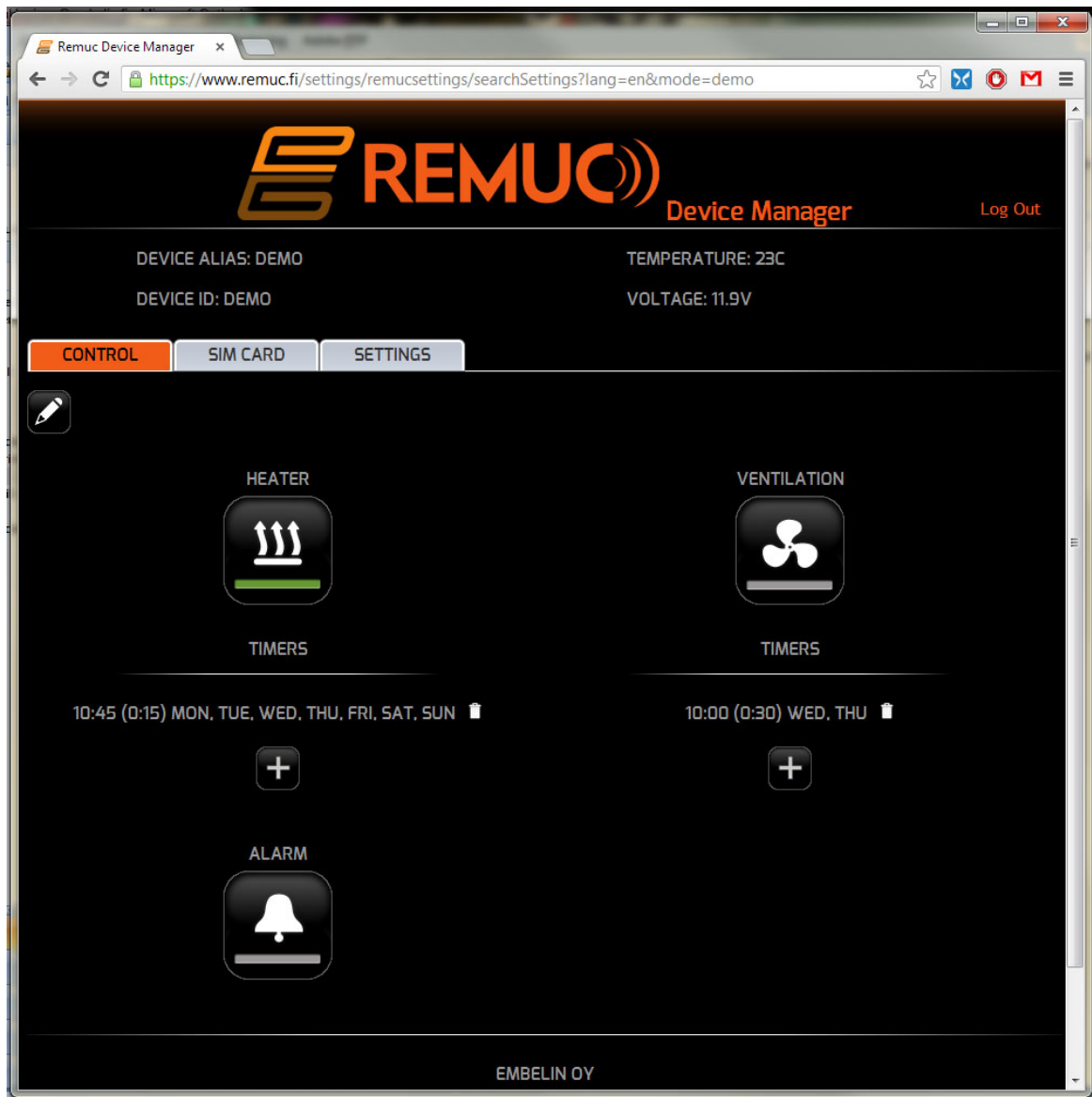
You can access a feature specific online help by moving the mouse cursor on top of the orange question mark .

SERVICE MODE

Service mode allows logging in to Remuc web client without password. Service mode can be set using the mobile client or a SMS "SET SERVICE ON". Service mode is disabled automatically in 60 minutes.

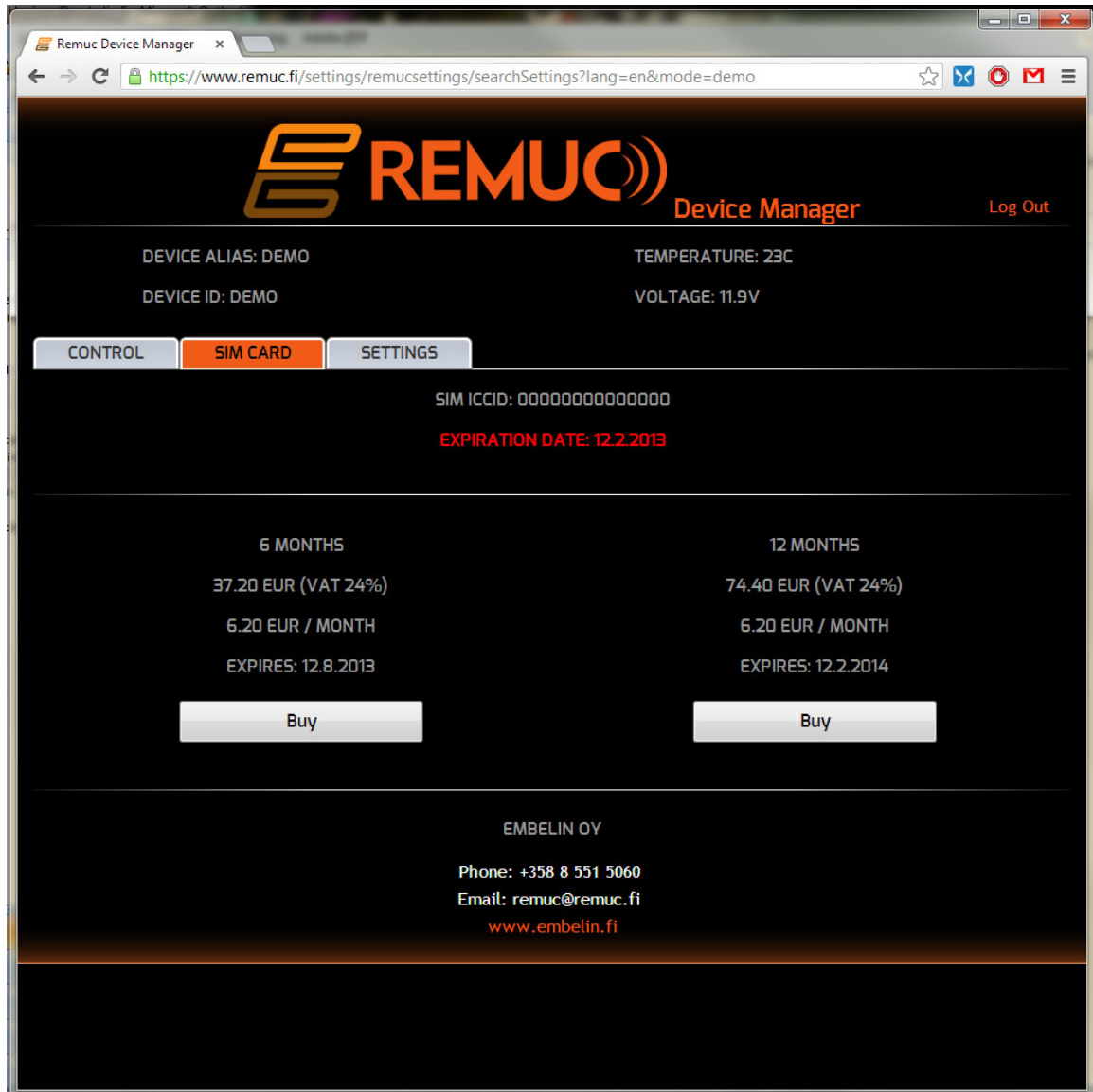
6.8.1 Control tab

“Control” tab allows adding, removing and modifying of Remuc device controls. You can also add and remove single and recurring timers.



6.8.2 SIM card tab

If you have an activated Embelin-supplied SIM card in your Remuc device, there will be a SIM card tab available also in the web client. In SIM card tab you can see how much paid use time you have left on your Embelin SIM card. When mobile application notifies user about the SIM subscription expiration, you can go to this tab to renew SIM subscription.



If the package did not include an Embelin SIM card or your card subscription has expired, this tab is not visible.

6.8.3 Settings tab

Last tab is labeled “Settings”. There you can modify all Remuc specific settings.



7 REMUC settings

General settings

Default output	Selected default output which can be controlled with phone calls and usage button
Temp unit	Celsius or Fahrenheit
Allow roaming	Allow network roaming
Button led boost	Led indicator light intensity
Low voltage cutoff	Disable all control if voltage under defined limit
Timeout after signal lost	Timeout after which all outputs are switched off if GSM network coverage is lost.
Password for device manager	Define password to access this device manager without settings the Remuc to service mode

Webasto®

Webasto emulation mode	Choose which Webasto controller type Remuc will emulate
Webasto / OUT1 parallel mode	Enable OUT1 automatically when Webasto heating or ventilation is enabled

Inputs

* Configure when to send status messages about output changes

Acknowledgement	Send next status message only if user has acknowledged the previous one
Reporting	Status message is sent on chosen levels of input signal

Output timeouts

Defines the default ON time for outputs when switched on without specified duration (e.g. "OUT 1 ON")

SMS-users

* Configure REMUC users

User phone number	Added phone number
Delete data connection users	Remove all data connection users from Remuc

Aliases

Define a free formed shortcut for most used commands.

For example:

Alias: "WARM"

Command: "OUT 1 ON 3600"

8 SMS interface

REMUC can be controlled extensively using SMS messages. Use of SMS messages require that the user phone number is added to REMUC user groups using CALLADD command.

OUTPUT CONTROL [OUT]	38
INPUT CONFIGURATION [INPUT]	38
INPUT STATUS CHANGE ACKNOWLEDGEMENT [ACK]	39
STATUS QUERY [STATUS]	39
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OUTPUT CONTROL [OUT]																							
Action:	Set selected output state. Return message contains status of all outputs, current temperature from both sensors and current voltage level																						
Command:	OUT <PORT> <STATE> <OUTPUTTIME> <STARTDELAY>																						
Parameters:	<table><tr><th>VARIABLE</th><th>DESCRIPTION</th><th>VALUE</th><th>DEFAULT</th></tr><tr><td>PORT</td><td>Output number</td><td>1,2,H,V</td><td></td></tr><tr><td>STATE</td><td>Output state</td><td>ON/OFF</td><td></td></tr><tr><td>OUTPUTTIME</td><td>ON duration (s)</td><td>0-65534</td><td>If not given, output will stay on for the duration of OUTTIME-setting. For OUT1 and OUT2 0 means it will stay on indefinitely. Outputs H and V can be ON only the maximum time of the heater connected on the WBUS.</td></tr><tr><td>STARTDELAY</td><td>Output set delay (min)</td><td>0-65534</td><td>If not given or 0, start will set without delay</td></tr></table>			VARIABLE	DESCRIPTION	VALUE	DEFAULT	PORT	Output number	1,2,H,V		STATE	Output state	ON/OFF		OUTPUTTIME	ON duration (s)	0-65534	If not given, output will stay on for the duration of OUTTIME-setting. For OUT1 and OUT2 0 means it will stay on indefinitely. Outputs H and V can be ON only the maximum time of the heater connected on the WBUS.	STARTDELAY	Output set delay (min)	0-65534	If not given or 0, start will set without delay
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STARTDELAY	Output set delay (min)	0-65534	If not given or 0, start will set without delay																				
Examples:	OUT 1 ON Output 1 ON, stays ON for OUTTIME seconds.																						
Response:	OUT H ON Output 1 ON indefinitely																						
	OUT 1 ON 45 900 Output 1 ON for 45 s, switch on delay 15h (900 min)																						
	OUT 2 ON 1800 Output 2 ON for 1800 s (30 min)																						
Action:	REMU STATUS <variable>:<value>...																						
Command:	REMU STATUS OUT1:ON OUT2:OFF IN1:LOW IN2:LOW T1:20C T2:10C V:12.3V																						

INPUT CONFIGURATION [INPUT]																			
Action:	Modify status reporting conditions for the selected input																		
Command:	INPUT <index> <edge> <ack>																		
Parameters:	<table><tr><th>VARIABLE</th><th>DESCRIPTION</th><th>VALUE</th><th>DEFAULT</th></tr><tr><td>index</td><td>Input port number</td><td>1-2</td><td></td></tr><tr><td>edge</td><td>Choose whether to report on rising, falling or both signal edges. (rise, falling, both, none)</td><td>R, F, B, N</td><td></td></tr><tr><td>ack</td><td>Require acknowledgement before next status message? R = Input status stays up after change until acknowledged F = Input status stays down after change until acknowledged B = Input stays in the state after change until acknowledged N = No acknowledgement required</td><td>R, F, B, N</td><td></td></tr></table>			VARIABLE	DESCRIPTION	VALUE	DEFAULT	index	Input port number	1-2		edge	Choose whether to report on rising, falling or both signal edges. (rise, falling, both, none)	R, F, B, N		ack	Require acknowledgement before next status message? R = Input status stays up after change until acknowledged F = Input status stays down after change until acknowledged B = Input stays in the state after change until acknowledged N = No acknowledgement required	R, F, B, N	
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ack	Require acknowledgement before next status message? R = Input status stays up after change until acknowledged F = Input status stays down after change until acknowledged B = Input stays in the state after change until acknowledged N = No acknowledgement required	R, F, B, N																	
Examples:	INPUT 1 R R	Sends a message when input 1 goes up. Stays up until acknowledged.																	
	INPUT 2 B N	Sends a message every time input 2 switches state.																	
Response:	REMU INPUT <index>:<edge>:<ack>...																		
Example response:	REMU INPUT 1:B:B 2:R:R																		

INPUT STATUS CHANGE ACKNOWLEDGEMENT [ACK]				
Action:	Acknowledge input signal change report.			
Command:	ACK <index>			
Parameters:				
	VARIABLE	DESCRIPTION	VALUE	DEFAULT
	index	Input number	1-2	
Examples:	ACK 2 Acknowledge report from input 2 signal change			
	REMU STATUS <variable>:<value>...			
Response:	REMU STATUS OUT1:ON OUT2:OFF IN1:LOW IN2:LOW T1:20C T2:10C V:12.3V			

STATUS QUERY [STATUS]	
Action:	Returns all output, input, temperature and voltage statuses
Command:	STATUS
Examples:	STATUS
Response:	REMU STATUS <variable>:<value>...
Example response:	REMU STATUS OUT1:ON OUT2:OFF IN1:LOW IN2:LOW T1:20C T2:10C V:12.3V

GENERAL INFO QUERY [INFO]	
Action:	Returns the amount of outputs and inputs, service mode status, offline status, default output number, low voltage cutoff limit and automatic heating setting.
Command:	INFO
Examples:	INFO
Response:	REMU INFO <variable>:<value>...
Example response:	REMU INFO OUTPUTS:4 INPUTS:2 HW:1 SQ:1 SERVICE:ON OFFLINE:OFF DEFOUTPUT:1 UVOLTAGE:7.5V HEAT:OFF

REMUC SMS USERS [USERS]	
Action:	Returns all users
Command:	USERS
Examples:	USERS
Response:	REMU USERS <index>:<number>...
Example response:	REMU USERS 0:+358401231234 1:+358501123344 2:+358441123321

ADDING A USER BY CALLING [CALLADD]	
Action:	Adds next caller to controller user database. Mode is active for 5 minutes or until call arrives. Call must not be made before controller replies with"REMU WAITING CALL".
Command:	CALLADD
Examples:	REMU WAITING CALL (controller waits call for 5 minutes) REMU USERS <index>:<number>... (added user shown on list)
Response:	REMU WAITING CALL REMU USERS 0:+358401231234 1:+358501123344 2:+358441123321

REMOVING A USER BY CALLING [CALLDEL]	
Action:	Removes next calling number from user database. Controller waits call for 5 minutes. Call must not be made before controller reports"REMU WAITING CALL".
Command:	CALLDEL
Examples:	CALLDEL
Response:	REMU WAITING CALL (controller waits call for 5 minutes) REMU USERS <index>:< number>... (just removed user is not in this list anymore)
Example response:	REMU WAITING CALL REMU USERS 0:+358401231234 1:+358501123344

REMOVE A USER [DEL]				
Action:	Removes user from selected slot			
Command:	DEL <index>			
Parameters:				
	VARIABLE	DESCRIPTION	VALUE	DEFAULT
	index	Muistipaikka	0 - 9	
Examples:	DEL 2 Removes user from slot 2			
	REMU USERS <index>:<number>...			
Response:	REMU USERS 0:+358401231234 1:+358501123344 2:+358401233211			

SET BALANCE LIMIT [BALANCE SET]			
Action:	Sets a SMS cost-based use limit for the controller. Meant especially for prepaid usage.		
Command:	BALANCE SET <balance> <price> <notify>		
Parameters:			
	VARIABLE	DESCRIPTION	VALUE
	balance	Total balance (cents)	0-
	price	One SMS cost (cents)	0-
	notify	Notify limit (cents)	0-
DEFAULT			
Examples:	BALANCE SET 30000 20 2000 Set total balance to 300€, one SMS costs 0,20€ and notification SMS received when total balance under 20€		
	REMU BALANCE <balance> <price> <notify>		
Response:	REMU BALANCE 30000 20 2000		

QUERY BALANCE [BALANCE]	
Action:	Returns balance, sms cost, notify limit
Command:	BALANCE
Examples:	BALANCE
Response:	REMU BALANCE <balance> <price> <notify>
Example response:	REMU BALANCE 30000 20 2000

LIST AVAILABLE NETWORKS [NETWORK]	
Action:	Returns a list of available GSM networks
Command:	NETWORK
Examples:	NETWORK
Response:	REMU NETWORK <auto> <index>:<name>...
Example response:	REMU NETWORK A 0:*elisa

MANUAL NETWORK SELECTION [NETWORK]

Action:	Selects given GSM network manually or sets the automatic mode
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Command: NETWORK <index>

Parameters:

VARIABLE	DESCRIPTION	VALUE	DEFAULT
index	Index of the network	0 - / A	

Examples:	NETWORK 2	Use network number 2
------------------	-----------	----------------------

NETWORK A	Enable automatic network selection
-----------	------------------------------------

Response: REMU NETWORK <auto> <index>:<name>...

Action: REMU NETWORK M 0:*elisa 1:dna 2:SONERA

RESET

Action:	Restarts REMUC. Does not affect any settings.
----------------	---

Command: RESET

Examples: RESET

Response: -

Example response:

DATA CONNECTION CONFIGURATION [IP]

Action:	Enables and disables REMUC IP connection.
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Command: IP <state>

Parameters:

VARIABLE	DESCRIPTION	DESCRIPTION	DEFAULT
state	IP connection possible	ON/OFF	ON

Examples:	IP ON	Enables data connection
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IP OFF	Disables data connection
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Response: IP <state> <remote server ip>

Example	IP ON 80.75.106.230
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response:

SETTINGS [SET]																																																																			
Action:	Modify controller settings																																																																		
Command:	SET <variable> <value>																																																																		
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Examples:	SET SERVICE OFF Disables service mode																																																																		
Action:	SET APN internet.saunalahti Sets access point to internet.sau""nalahti																																																																		
	SET UVOLTAGE 10.8 Sets low voltage cutoff to 10.8V																																																																		
	SET DEFOUTPUT 2 Sets output port 2 as default port																																																																		
Command:	REMU INFO <variable>:<value>...																																																																		
Parameters:	REMU INFO OUTPUTS:2 INPUTS:2 HW:5 SW:7 SERVICE:ON OFFLINE:OFF DEFOUTPUT:2 UVOLTAGE:10.8 HEAT:OFF SLOFF:0 ROAMING:OFF WB:YES WBFAN:0 LEDBOOST:ON																																																																		

9 CE certification



This device fulfills CE-certificate EN 50498 (2010).

Embelin Ltd. declares that Remuc conforms directive 1999/5/EC relevant standards and regulations. Full Declaration of Conformity is in address <http://www.embelin.fi/uploads/pdf/Remuc-DoC.pdf>

10 WEEE directive

This symbol indicates that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC) and your national law. This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (WEEE).



11 User manual

This user manual is prepared thoroughly. Constant product development may cause some information to end being out of date. Embelin Ltd. reserves the right to modify this user manual without any further notice. Embelin Ltd. disclaims any responsibility of any possible technical or delivery related errors, lack of information, random or direct damages caused by the quality or usage of this material.

12 Changes

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13 Liability notice

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