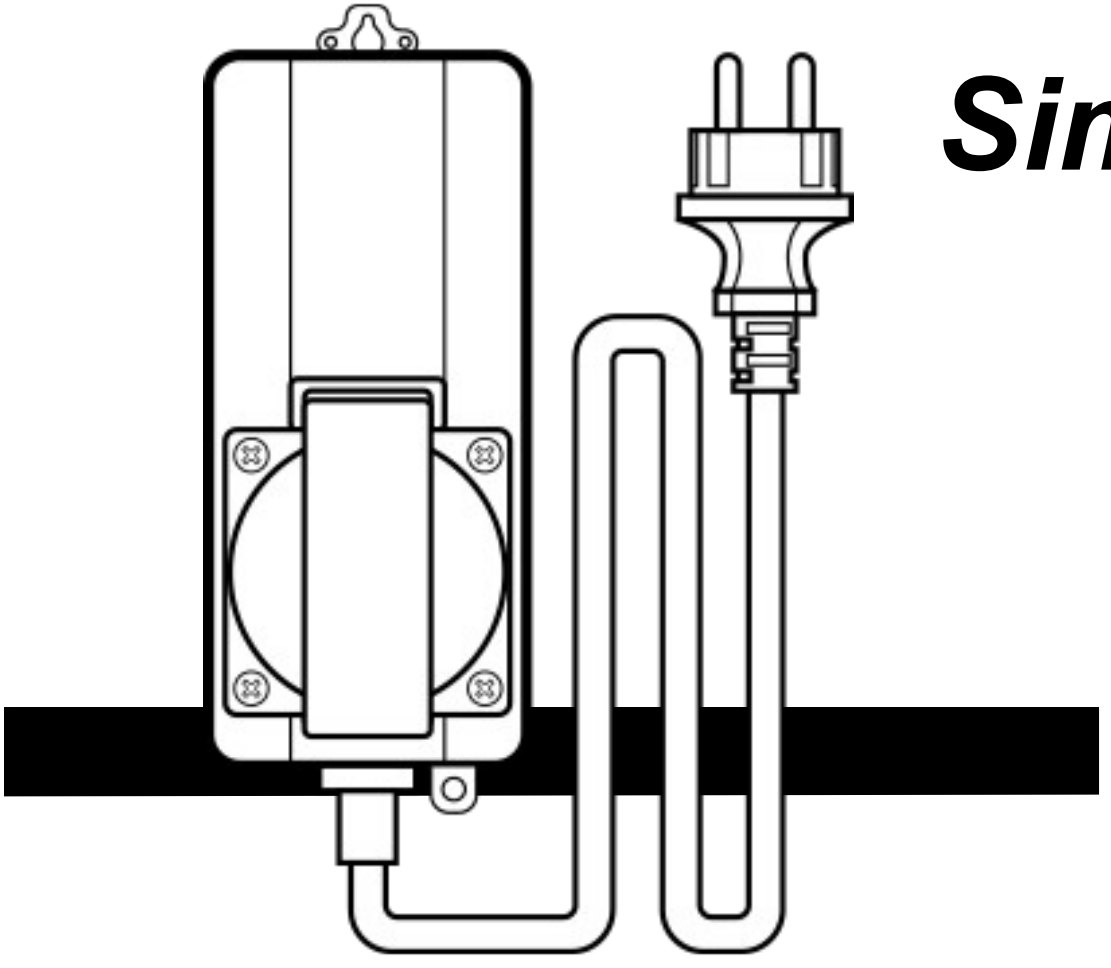


SimPal-WS420

4G Outdoor Power Socket

User Manual

Manual version 1.0

SimPal-WS420 4G Outdoor Power Socket

Thank you for purchasing the SimPal-WS420.

SimPal-WS420 4G outdoor power socket is a remote-controlled socket consisting of a 4G module. With outdoor waterproof IP44 design, the power supply output can be turned on or off remotely by the SMS command or voice calling. It can works as router for slave socket SimPal-T20-V2/SimPal-S20 and wireless accessories. Each SimPal-WS420 can connect 4pcs slave socket, 6pcs wireless sensor.

SimPal-WS420 can works with WTL-063-F Wireless Temperature & Light sensor. With this sensor, it can report temperature changes, set thermostat control and automatically turn on power at dusk.

All services and functions need to be supported by the 4G network and a SIM card.

This brochure suits for **SimPal-WS420** model.

Details of the functioning and advanced operation of this socket are described in this

instruction manual.

CONTENT

1. Purchase a GSM SIM card (mobile phone card) from GSM network service provider and install it in the socket. This SIM card number is referred as SimPal-WS420 number on this brochure.

2. The user needs to activate the Caller ID Presentation function of SIM card, and deactivate PIN code of the SIM. Contact with GSM

network service provider for support.

For your safety

- This socket was designed waterproof IP44, forbid to put inside water or installed in open air. It is recommended to install in outdoor places with ceiling protection.
- Please ensure that the mobile phone is allowed to be used in this area, otherwise, do not use this socket.
- The power consumption of the appliances connected with the socket cannot exceed 3500W and the current cannot exceed 16A.
- The electrical appliance which power consumption is higher than 1500W must be grounded.

- Do not make two plugs of socket short circuit.
- Do not touch the socket jack by any metal objects or hand.
- Do not plug this socket in a row, only allow connect other electricity device on the socket. (nicht hintereinander stecken, nur andere Stromgeräte an der Steckdose anschließen lassen).
- Do not open the case unless maintenance needed by professionals.
- Do not keep shaking or fall down this socket, otherwise it can be damaged.
- This socket is a wireless signal transmission socket. Keep it away from electronic equipment likely to interfere with the wireless signals, in order to avoid signals interference.

- Switch off this socket and mobile phone when entering areas marked "Explosive", "Might explode", "Closed wireless transceiver sockets" etc.
- Do not cast this socket in a fire, as this may cause explosion.
- Keep the socket and its accessories out of the children reach.

Exception clause

1. We operate on a policy of continuous development. We reserve the right to make changes and improvements to any of the sockets described in this document without prior notice.

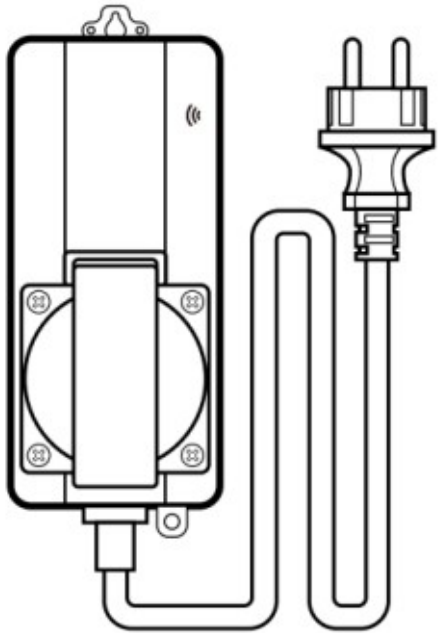
2. For the latest socket information, please visit: http://www.simpal.cn. We don’t guarantee for the document veracity, reliability or any content except regulate in proper laws. Including no guarantee for socket suitable market or suitable area promise.

3. We hold no responsibility for the illegal use of this socket.

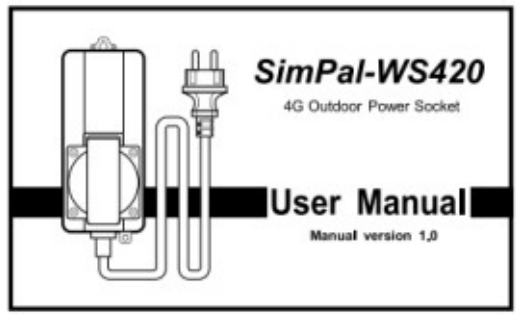
4. We hold no responsibility for any loss of income or any special, incidental, consequential or indirect damages howsoever caused.

5. The contents of this document are provided “as is”. Except as required by applicable law, no warranties of any kind, either expressed or implied, including, but not limited to the accuracy, reliability or contents of this document. We reserve the right to revise this document or cancel some functions at any time without prior notice

1.1 Package contents

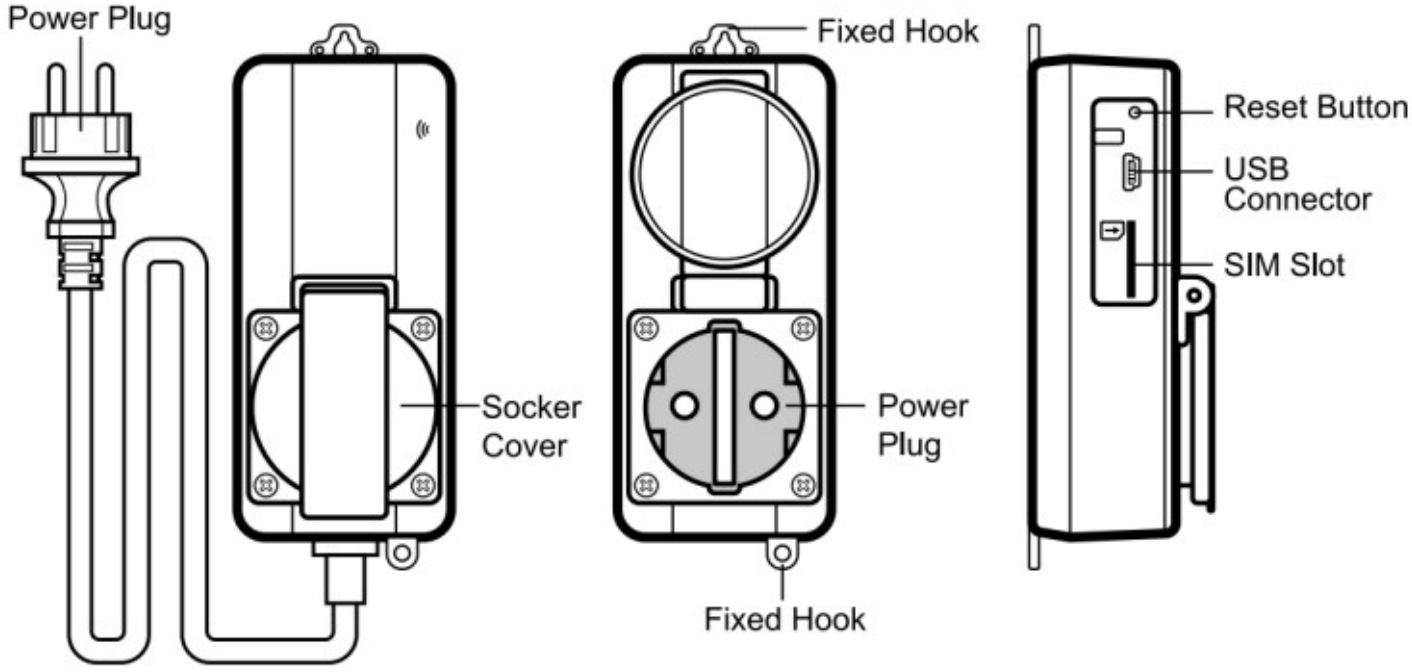


4G Socket
（1 unit）



User manual
（1 PC）

1.2 Sockets instructions



1.3 LED indicator

Color	Action	Status
RED	Slowly breath	Power ON, Standby and sensor alarm OFF.
	Constant light	Power ON, Standby and sensor alarm ON.
	Flash fast	Power ON, lost network connection or sending SMS.
Blue	Slowly breath	Power OFF, Standby and sensor alarm OFF.
	Constant light	Power OFF, Standby and sensor alarm ON.
	Flash fast	Power OFF, lost network connection or sending SMS.

2.1 User authorization level

Socket settings can be set or adjusted via a SMS command.

There are two mobile phone user controlling levels:

Master-user ("Master")**:**

Only one **Master** has authorization to use all features of SimPal-WS420.

In order to enable all the functions on the socket, the **Master** must store his/ her mobile number in the socket's memory. Only one **Master**'s mobile number is allowed for a socket.

Family users ("Family")**:**

There are four families have authorization to control the device, Family number can receive SMS notification or change device setting.

The other mobile phone users have no authorization to control the socket.

2.2 About the SMS Command

- **SMS command format:** #code#content#.
- The maximum digits that are allows for the phone number is sixteen.
- SimPal-WS420 will reply to the user after it receives the SMS command.

Note

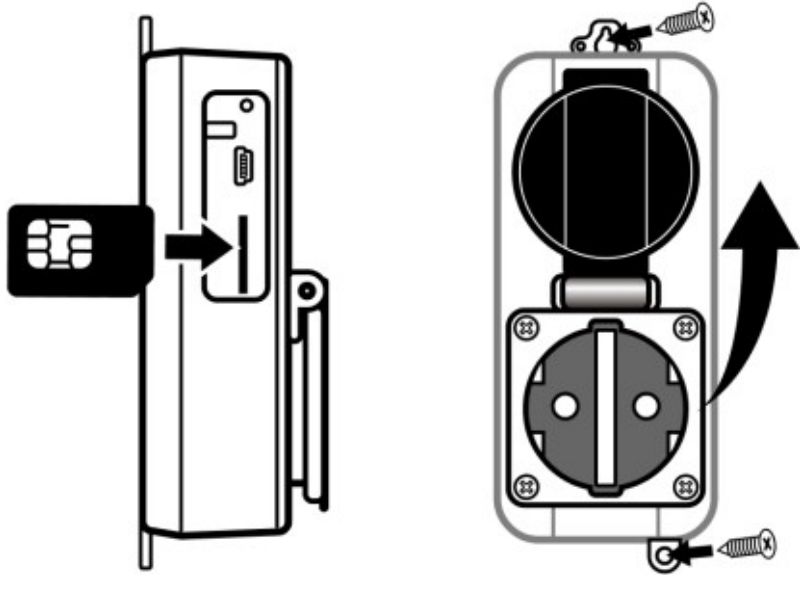
- The “#” symbol must not be ignored when typing an SMS command.
- No allow any space within the commands.

3.1 Start to use

- Open the cover of the SIM card slot, and push it upwards at the bevel.

- Installed SIM card to SimPal-WS420 4G power socket; you will see a SIM card slot inside, make the SIM card metal contact upside, round corner on the right, and hardly push the SIM card until SIM card fixed.

- Install back the SIM card slot cover.



- Install the socket vertically on the wall and fix the two clips on the socket with screws. Make sure the cover of the socket is opened upward to prevent rainwater from seeping into the cover

Power on:

1. Plug the SimPal-WS420 in an AC power socket.

   The LED will be flashing slowly for about 15 seconds, and turn to slowly breathe status and beep ring, breathe LED means the socket already register GSM network, its ready to working.

   The socket default LED in blue and power output is OFF.

2. Insert the plug of electronic appliance in the SimPal-WS420 electrical outlet.
3. After register numbers to the socket, users can send SMS command or make calling to control the power supply output.

Note:

1. If the LED light flashing fast all the time, which imply the SIM card working abnormally, all functions of this socket are invalid.
2. Check GSM network signal of the using place:
   - GSM network's signal strength may affect the socket feature. Therefore, before using, the user should ensure that SimPal-WS420 is used in an area with a strong GSM network signal (CSQ higher than 10).

3.2 Download "GSM Socket V3" APP

We offer free APP to work with SimPal-WS420, search "GSM Socket V3" on Google Play or Apple APP Store, download and install the APP, then it can use APP to control SimPal-

WS420.

First time register device on APP, input device name and SIM card number which installed on SimPal-WS420 device. The APP will create SMS content, send the SMS to device, it will operate according APP function description.

Even without APP, user can send SMS manually according following instruction.

3.3 Register Master-number.

Sending following SMS to socket SIM card number from your mobile phone (the phone

number will be the **Master** number):

Register Master-number: #00# **(1)**

3.3.1 Change Master number

Master sends following SMS message in order to:

Change master-number: #14#***NewMasterNumber*** **(2)**

- ***NewMasterNumber*** should be the new Master mobile phone number.

3.3.2 Register Family-number

Up to 4 Family-number can be stored on GSM socket.

Family-number have the authority to change device setting and receive SMS notification.

Method

Master sends following SMS message in order to:

Register a Family: #06#***Family-Number***# **(3)**

- ***Family-Number*** should be the User's mobile phone number. It request to fill country code for Family number. For example: +49123456780

Check Family number:

Master sending SMS to check Family number: #06# **(4)**

Delete Family

Method

Master sends following SMS message in order to:

Delete a Family: #15#***Family-Number*** # **(5)**

Delete all Family numbers: #15# **(6)**

3.4 Turn on/off power

Method

Master sends following SMS message to socket in order to set:

Master socket power - ON: #01#0# **(7)**

Master socket and all Slave socket power – ON: #01# **(8)**

Master socket power - OFF: #02#0# **(9)**

Master socket and all Slave socket power – OFF: #02# **(10)**

3.5 Power load alarm

🕮 Description

The socket support power load alarm function. It can monitor connected appliances

power consumption and report power consumption daily, weekly or monthly. Also can set power load alarm, it will send SMS when power load out or back setting range,

Method

Master sends following SMS message in order to:

Check power load: #07# **(11)**

Check today power consumption: #52#1# **(12)**

Check this week power consumption: #52#2# **(13)**

Check this month power consumption: #52#3# **(14)**

Set power loading alarm - ON: #53#0#1# **(15)**

Set power loading range: #53#0#*MinValue*#*MaxValue*# **(16)**

- **MinValue** and **MaxValue**: The values can be set within the range of 0 to 3500, means 0-3500W. Default value is 5-3500.
- The power alarm is executed only when the power is turned on. When the power is turned off, the power is always zero, it does not send alarm message.
- After the power is turned on, it will compare the power before the power is turned off. If the two powers are in the same range, no SMS alarm will be sent.

Set power loading alarm - OFF(default)**:** #53#0#0# **(17)**

Set daily report power consumption: #54#1# **(18)**

Set weekly report power consumption: #54#2# **(19)**

Set monthly report power consumption: #54#3# **(20)**

Set report power consumption function - OFF(default)**:** #54#0# **(21)**

Note:

The power consumption data will lost when device reboot, it will new calculate from beginning when socket power restore.

3.6 Delay control

🕮 Description

- The socket output can be set to delay switch ON/OFF for a period time.
- When the “delayed switch on the socket” command is received and if the socket output is switched on, the socket output will be switched off immediately and be switch on again as the setting delayed time is reaching. Contrarily, if the socket output is switched off, the output will remain switching off until the setting delayed time is reaching.

Method

Master sends following SMS message in order to set:

Turn on power after certain minutes: #12#0#***Minutes***#1# **(22)**

Turn off power after certain minutes: #12#0#***Minutes***#0# **(23)**

Minutes are time parameters, its range is 1-720,

Set delay control – OFF: #11#0# **(24)**

3.7 Schedule control

3.7.1 Activate schedule control

🕮 Description

- The socket power can be set to automatically turn on according schedule.
- It allows to temporary manual change power on/off by send SMS, press button, Delay control etc. Schedule control will activate again when it reach next time point.

Method

Master sends following SMS message in order to:

Set schedule control time period and enable schedule control:

#20#0#ID#***WorkDay#StartTime#EndTime#*** **(25)**

- ***ID:*** *the value is 1-3, it means allow to set three group schedules.*
- ***WorkDay***: one digit, the values lie in the range of “0” to “9”.

  The following table contains the descriptions of each value: It can select different single day. For example: 125 means Monday, Tuesday and Friday.

Value	Corresponding day
0	Everyday
1	Monday

2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday
7	Sunday

- ***StartTime*** and ***EndTime***: Be consists of 4 digits (hh:mm) and works on a 24 hour clock. If ***StartTime*** bigger than ***EndTime***, it will operate until next day EndTime.

- The socket output will switch on at the ***StartTime*** and cut off at the ***EndTime***.

- For example: #20#0#1#12345#0800#2130# , 0 means the SimPal-WS420, 1 means first group schedule, 12345 means from Monday-Friday, 0000 means time 08:00(hh:mm)AM, 2130 means time 21:30. It will turn on power at 08:00, and turn off at 21:30 on Monday- Friday.

Schedule control - OFF: #19#0#0# **(26)**

3.8 Temperature control

3.8.1 Pair Temp & Light sensor

🕮 Description

Each SimPal-WS420 can pair one WTL-063-F Temp & Light sensor. It will receive temperature and light level data from this sensor and use the data for temperature alarm, thermostat control and light control.

Master send following SMS to:

Pair Temp & Light sensor: #30#4# **(27)**

Remove Temp & Light sensor: #45#2# **(28)**

3.8.1 Activate temperature control

📖 Description

- After paired Temp & Light sensor, the power output can be auto controlled according environment temperature change.
- Temperature control will always activate when the temperature within action range.
- There are warming mode and cooling mode for temperature control function. In warming mode, socket will auto turn on when temperature lower than smaller temperature value, and turn off when higher than bigger temperature value; Cooling

mode, socket will auto turn on when temperature higher than bigger temperature value and turn off when temperature lower than smaller value.

Method

The **Master** sends following SMS message in order to set:

Temperature control - ON: #23#0#1# **(29)**

Temperature control - OFF: #23#0#0# **(30)**

3.8.2 Set temperature control parameters

Method

Master sends following SMS message in order to:

Set temp control parameters: #24#0#mode#low-temp#high-temp# **(31)**

Mode parameter can be 1 or 2, Warming mode is 1, cooling mode is 2;

Temperature range should be within -30 to 70 degree.

For example #24#0#1#15#25#, it means set temperature control parameter, work with warming mode, turn on power when temperature lower than 15 degree, turn off power when temperature higher than 25 degree.

After successful setting of temperature range, the temperature parameter will be saved on the socket until socket reset to factory settings.

3.9 Temperature alarm

🕮 Description

After paired WTL-063-F Temp & Light sensor, it can set temperature alarm for this device. A range of temperature can be pre-set onto the socket. When surroundings temperature is detected out of the pre-set temperature range, It will auto-send the SMS alarm message to your mobile phone.

Method

Master sends following SMS message in order to set:

Temperature alarm - ON: #21#0#1# **(32)**

Set temperature range: #22#0#*MinTemp*#*MaxTemp*# **(33)**

- **MinTemp** and **MaxTemp**: The values can be set within the range of -30 to 70 centigrade degree.

Temperature alarm - OFF: #21#0#0# **(34)**

3.10 Twilight power control

🕮 Description

After paired WTL-063-F Temp & Light sensor, it can set this socket twilight power control. The power will automatically turn on at dusk, and turn off at dawn.

Method

Master sends following SMS message in order to set:

Twilight power control - ON: #55#1# **(35)**

Set turn on power X hours at dusk: #55#1#time# **(36)**

- **Time** range is 0-8, when set 1-8 hours, it will turn on power at dawn, and turn off after

1-8 hours. When set 0 hour, it will turn on power at dusk and turn off at dawn.

Twilight power control - OFF: #55#0# **(37)**

3.11 Wireless sensor alarm

🕮 Description

SimPal-WS420 can be working with 6pcs wireless sensor and 2pcs remote control, it can use for alarm functions. Only following sensor can be working with WS420:

- WRC-048-F V2 remote control
- WDS-051-F V2 Wireless door sensor

- WIR-053-F V2 Wireless PIR motion detector
- WSI-055-F V2 Wireless strobe siren
- WLD-061-F V2 Wireless water leak detector

There are two types of alarm sensor, one is alarm type, only alarm when WS420 alarm function on, the other one is emergency type, it will always alarm even WS420 alarm function off. For smoke detector and water leak detector, suggest to pair as emergency type sensor.

Method

Master sends following SMS message in order to:

Pair alarm sensor: #30#1#Name# **(38)**

Pair emergency sensor: #30#2#name# **(39)**

Pair remote control: #30#3# **(40)**

Check pair sensor list: #30# **(41)**

Remove single sensor: #44#name# **(42)**

Remove all wireless sensor: #44# **(43)**

Remove all remote control: #45# **(44)**

Set alarm function - ON: #40#1# **(45)**

Set alarm function - OFF: #40#0# **(46)**

Set schedule alarm time period: #46#ID#day#start-time#end-time# **(47)**

Schedule alarm parameter day time parameters is same as Schedule control.

Set schedule alarm function - OFF: #47#0# **(48)**

Pair wireless siren: #43# **(49)**

Set beeper alarm duration: #50#time# **(50)**

When sensor alarm, WS420 will beep sound, default beep 10 seconds, it can send SMS to change beep duration. The time range is 0-60. Such as #50#30# to set beep 30 seconds.

3.12 Pairing slave socket

SimPal-WS420 can be working with 4pcs wireless slave socket SimPal-T20-V2 or SimPal-S20. Slave socket needs to buy separately. Master sends SMS to paring slave socket, before paring, need to make sure slave socket reset factory setting, if this slave socket already paired before, need to keep press slave socket M button for 10 seconds to reset factory setting. Master send following SMS message in order to:

Pairing Slave socket: #60#name# **(51)**

After receive SMS reply “Power on “name” socket now！”, plug the slave socket to main power, slave socket LED flash slowly for some seconds and go to slowly breath status after

connected with WS420 socket.

Note

- “name” is the slave socket ID communicate with Master socket, operate slave socket by sending SMS request included “name” in SMS command.
- Request different slave socket “name” for one GSM socket.
- “Name” only can be English letter or digital number, max 7 characters.

Master sends following SMS message in order to:

Remove slave socket: #71#name# **(52)**

Remove all slave socket: #71# **(53)**

3.13 SMS when on/off button pressed

🕮 Description

SimPal-WS420 will default sending SMS notify Master and Family when press M button to turn on/off power. The Master can enable/disable this SMS notification.

Method

Master sends following SMS message in order to set:

SMS when on/off button pressed - ON (Default): #03#1# **(54)**

SMS when on/off button pressed - ON: #03#0# **(55)**

3.14 Power failure alarm

🕮 Description

SimPal-WS420 will default sending SMS notify when main power supply lost or restore.

Master can enable/disable this SMS notification.

Method

Master sends following SMS message in order to set:

SMS when power lost or restore - ON (Default): #05#1# **(56)**

SMS when power lost or restore - OFF: #05#0# **(57)**

3.15 Calling control

SimPal-WS420 default send SMS reply when Master or Family calling to turn on/off power, it can change the setting to calling control without SMS reply.

Method

Master sends following SMS message in order to:

SMS when calling control – ON (Default): #49#1# **(58)**

SMS when calling control – OFF: #49#0# **(59)**

Calling control function – ON (Default): #09#1# **(60)**

Calling control function – OFF: #09#0# **(61)**

Allow any number calling control – ON : #31#1# **(62)**

Allow any number calling control (Default): #31#0# **(63)**

3.16 SMS notification to User

SimPal-WS420 will sending SMS alert when mains power lost/restore, temperature alert or other information. Default sending SMS to both Master and family. Master

can change the setting only send SMS to Master number.

Method

Master sends following SMS message in order to:

SMS to family number – ON (Default): #16#1# **(64)**

SMS to family number – OFF: #16#0# **(65)**

3.17 Check status

Method

Master or Family sends following SMS message in order to:

Check Master socket operating status: #07# **(66)**

After receiving the SMS commands, it will reply SMS message like this:

Main unit: OFF, 22C, 13W, T, S, D, H, L Daylight

“ESP1”: OFF, 25C, 0W, T, S, D

It may display different characters after the power loading, it means the socket under different status. The detail function as following:

“D”: means this socket under delay control.

“S”: means this socket under schedule control.

“T”: means this socket under temperature control.

“H”: means this socket alarm function is on.

“L”: means this socket under twilight control.

“Daylight” or “Night” means the light level from light sensor.

If the socket do not paired with Temp & Light sensor, then it will do not display temperature, “T”, “L” and light information.

3.18 Weak GSM signal alarm

The socket can send a SMS notification when the GSM signal strength is too weak. The

Master user can enable/disable this SMS notification.

Method

The **Master** user sends following SMS message in order to set:

Check GSM signal #27# **(67)**

Weak GSM signal alarm - ON: #27#1# **(68)**

Weak GSM signal alarm - OFF (Default): #27#0# **(69)**

The GSM signal is show as CSQ, CSQ range is 0-31, when CSQ lower than 14, it will set as weak GSM signal. When CSQ lower than 10, device will stop working.

4. Reset factory setting

🕮 Description

- This function resets all programmed settings to their original values, including cleaning all user number, timing parameter and temperature parameter.
- If the setting status is wrong or the malfunctions can’t be corrected, users can restore the socket to its original status to make it work normally.

Master socket reset factory setting:

Method 1: Keep press the side **M** button of the device for 10 seconds.

Method 2: Master sends following SMS message in order to:

Reset Master socket: #08#1234# **(70)**

5. Main Technical Parameters

Input power plug	110~230V/50HZ, CEE 7/7 hybrid Schuko/French/American/Australia plug
Output power outlet	110~ 230V/50HZ, 16A CEE7/4 German “Schuko”/ French/ American/Australia
Operating temperature	-30℃~+35℃
Store temperature	-30℃~+50℃
Waterproof level	IP44

Relative humidity	10-90%，without condensation
Communication protocols	GSM PHASE 2/2+ (including data operation)
Data interface	GSM SIM 1.8V/3.0V socket
RF frequency	434Mhz FSK
Slave socket distance	Up to 30 meters
4G LTE bands	Cat1 LTE FDD: B1, B3, B5, B7 ,B8 ,B20 LTE TDD: B40 GSM 900/1800Mhz

Appendix: SMS commands list

Category	Function	Command
Define the	Register Master-number	(1) #00#

Category	Function	Command
users	Change Master-number	(2) #14#***NewMasterNumber***#
	Add Family-number	(3) #06#***Family-Number***#
	Check Family-number	(4) #06#
	Delete Family-number	(5) #15#***Family-Number***#
	Delete all Family-number	(6) #15#
Power control	Turn power - ON	(7) #01#0#
	All socket power - ON	(8) #01#
	Turn power - OFF	(9) #02#0#
	All socket power - OFF	(10) #02#
Power Monitor	Check power load	(11) #07#
	Check today power consumption	(12) #52#1#

Category	Function	Command
	Check this week power consumption	(13) #52#2#
	Check this month power consumption	(14) #52#3#
	Power loading alarm - ON	(15) #53#0#1#
	Set power loading range	(16) #53#0#*MinValue*#*MaxValue*#
	Power loading alarm - OFF (Default)	(17) #53#0#0#
	Daily report power consumption	(18) #54#1#
	Weekly report power consumption	(19) #54#2#
	Monthly report power consumption	(20) #54#3#
	Report power consumption - OFF (Default)	(21) #54#0#

Category	Function	Command
Delay control	Turn power ON after a certain minutes	(22) #12#0#***Minutes***#1#
	Turn power OFF after a certain minutes	(23) #12#0#***Minutes***#0#
	Set delay control – OFF (Default)	(24) #11#0#
Schedule control	Set schedule control time period	(25) #20#0#ID#***WorkDay***# ***StartTime***#***EndTime***#
	Set schedule control – OFF (Default)	(26) #19#0#0#
Temperature control	Pair Temp & Light sensor	(27) #30#4#
	Remove Temp & Light sensor	(28) #45#2#
	Temp control - ON	(29) #23#0#1#
	Temp control - OFF (Default)	(30) #23#0#0#

Category	Function	Command
	Set temp control parameters	(31) #24#0#mode#low-temp#high-temp#
Temperature alarm	Temperature alarm - ON	(32) #21#0#1#
	Set temp range	(33) #22#0#***MinTemp***#***MaxTemp***#
	Temperature alarm - OFF (Default)	(34) #21#0#0#
Twilight control	Twilight power control - ON	(35) #55#1#
	Set turn on power X hour at dusk	(36) #55#1#time#
	Twilight power control - OFF (Default)	(37) #55#0#
Wireless sensor alarm	Pair alarm sensor	(38) #30#1#name#
	Pair emergency sensor	(39) #30#2#name#
	Pair remote control	(40) #30#3#

Category	Function	Command
	Check sensor list	(41) #30#
	Remove single sensor	(42) #44#name#
	Remove all sensors	(43) #44#
	Remove all remote control	(44) #45#
	Alarm function – ON	(45) #40#1#
	Alarm function – OFF (Default)	(46) #40#0#
	Set schedule alarm parameters	(47) #46#ID#day#start-time#end-time#
	Schedule alarm - OFF (Default)	(48) #47#0#
	Pair wireless siren	(49) #43#
	Set beeper duration	(50) #50#time#
Slave Socket	Pair Slave socket	(51) #60#name#
	Remove single slave socket	(52) #71#name#

Category	Function	Command
	Remove all slave sockets	(53) #71#
SMS notification	SMS when on/off button pressed - ON (Default)	(54) #03#1#
	SMS when on/off button pressed - OFF	(55) #03#0#
	SMS when power lost or restore – ON (Default)	(56) #05#1#
	SMS when power lost or restore – OFF	(57) #05#0#
Calling control	SMS when calling control – ON (Default)	(58) #49#1#
	SMS when calling control – OFF	(59) #49#0#
	Calling control function – ON (Default)	(60) #09#1#
	Calling control function – OFF	(61) #09#0#

Category	Function	Command
	Allow any number calling control - ON	(62) #31#1#
	Allow any number calling control - OFF(Default)	(63) #31#0#
SMS to Users	SMS to Users – ON (Default)	(64) #16#1#
	SMS to Users – OFF	(65) #16#0#
Check status	Check all socket status	(66) #07#
	Check GSM signal	(67) #27#
	Weak GSM signal alarm – ON	(68 #27#1#
	Weak GSM signal alarm – OFF (Default)	(69) #27#0#
Reset socket	Reset to factory setting	(70) #08#1234#