

RUT901 Mobile

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The information in this page is updated in accordance with firmware version [RUT9M_R_00.07.08](#).

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Summary

The **Mobile** page is used to configure mobile connection settings.

This manual page provides an overview of the Mobile page in RUT901 devices.

If you're having trouble finding this page or some of the parameters described here on your device's WebUI, you should **turn on "Advanced WebUI" mode**. You can do that by clicking the "Advanced" button, located at the top of the WebUI.

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General

The **General** section is used to configure SIM card parameters that define how the device will establish a mobile connection.

SIM card settings

The **SIM Card Settings** section is used to configure main SIM card parameters. Refer to the figure and table below for information on the fields contained in that section.

Field	Value	Description
Default SIM	off on; default: on	Sets this SIM slot as the default one.
Deny data roaming	off on; default: off	Denies data connection on roaming conditions.
PIN	integer [0000..99999999]; default: none	SIM card's PIN (Personal Identification Number) is a secret numeric password used to authenticate the device to the SIM card. PIN codes are comprised of numbers only and the length can range from 4 to 8 symbols. PIN number is saved in flash memory therefore it does not reset when default settings are restored.

Interface mob1s1a1 APN configuration

Field	Value	Description
Auto APN	on off ; default: on	Auto APN scans an internal APN database and selects an APN based on the SIM card's operator and country. If the first automatically selected APN doesn't work, it attempts to use the next existing APN from the database (APN database)
APN	string; default: none	An Access Point Name (APN) is a gateway between a GSM, GPRS, 3G or 4G mobile network and another computer network. Depending on the contract, some operators may require you to use an APN just to complete the registration on a network. In other cases, APN is used to get special parameters from the operator (e.g., a public IP address) depending on the contract. An APN Network Identifier cannot start with any of the following strings: <ul style="list-style-type: none">• rac;• lac;• sgsn;• rnc; it cannot end in: <ul style="list-style-type: none">• .gprs; and it cannot contain the asterisk (*).

Authentication type	None PAP CHAP; default: None	Authentication method that your carrier uses to authenticate new connections on it's network
Username	string; default: empty	Username provided by your carrier
Password	string; default: empty	Password provided by your carrier

Connection

Connection



Field	Value	Description
VoLTE	Auto On Off; default: Auto	Enables Voice over LTE, a digital packet technology that uses 4G LTE networks to route voice traffic and transmit data.
Preferred network type	4G/3G/2G auto 3G/2G auto 4G only 3G only 2G only; default: 4G/3G/2G auto	Network connection type preference.
Band selection	Auto Manual; default: Auto	Network frequency band selection method. When set to <i>Auto</i> , the device connects to the band with the best connectivity conditions, while <i>Manual</i> provides the possibility to manually select the bands which the device will obliged to use. Selecting bands manually shows their duplex modes for 4G and 5G capable devices only.

Low signal reconnect

The **Low signal reconnect** section is used to configure modem operator connection resetting based on signal strength for specified SIM card.



Field	Value	Description
Enable	off on; default: off	Enables Low signal reconnect.
Reset threshold	integer [-120..-50]; default: none	Signal threshold in dB for the connection. When signal is under this value modem resets connection.
Reset timeout	integer [15..65535]; default: 600	Time for the device to wait in seconds before trying to reset the connection again.

Limits

Data limit

The **Data Limit** section provides you with the possibility to set up a maximum used data cap for your SIM card.

To configure **Data Limit** press **Edit**

Field	Value	Description
Enable data connection limit	off on; default: off	Disables mobile data when the limit for the current period is reached
Data limit (MB)	integer; default: none	Disable mobile data after the limit value in MB is reached
Reset period	Day Week Month; default: Day	Interval for resetting mobile data usage limit.
Reset time	0-23 / Monday - Sunday / 0-31; default: 0	Specify the hour (in 24-hour format) when the mobile data limit reset occurs.
Enable SMS warning on off; default: off		Enables sending of warning SMS message when mobile data limit is reached.
Warning threshold	integer; default: none	Send warning SMS message after threshold in MB is reached. Warning threshold cannot be higher than data limit!
Phone number	integer; default: none	A phone number to send warning SMS message to
Clear collected data	- (interactive button)	The data collected for this interface will be cleared, but only if the interface is active

SMS limit

The **SMS Limit** section provides you with the possibility to set up a maximum sent SMS message cap for your SIM card.

To configure **SMS Limit** press **Edit**



Field	Value	Description
Enable SMS Limit	off on; default: off	Turns SMS limiting on or off.

SMS limit count	integer; default: none	Sets the SMS sending cap, i.e., how many SMS messages can be sent from this SIM card during the specified period.
Period	Day Week Month; default: Day	Period for which SMS limiting should apply. After the period expires, the SMS limit counter will be reset.
Reset time	0-23 / Monday - Sunday / 0-31; default: 0	Starting hour of the day / day of the week / day of the month for SMS limiting period.
Clear SMS Limit	- (interactive button)	Clears the SMS limit counter for the selected period.

SIM Switch

The **SIM Switch** section provides you with the possibility to configure SIM switching rules, i.e., set up circumstances under which the device will perform a switch from using one SIM card to another. Refer to the figure and table below for information.



Field	Value	Description
Enable automatic switching	off on; default: off	Turns automatic SIM switching on or off.
Check interval	integer [3..3600]; default: 30	The frequency (in seconds) at which the device will check for SIM switch conditions. If such a condition exists, the router will perform a SIM switch, if not - it will check for the same conditions again after the amount of time specified in this field passes.
Attempts before SIM switch	integer [1..10]; default: 3	How many times a condition will be checked before executing a SIM switch. For example, if the device is a state that meets at least one SIM switch condition, the device will perform a number of additional checks specified in this field and will perform a SIM switch only if the condition is met on every check.
On weak signal*	off on; default: off	Performs a SIM switch when the signal strength drops below a certain threshold.
*Signal strength (dBm)	integer [-120..-50]; default: -90	Lowest signal's strength value (RSSI) in dBm below which a SIM card switch should occur. More information: RSSI
On data limit	off on; default: off	Performs a SIM switch when the mobile data limit for this SIM card is reached. You can set up a mobile data limit in the Network → WAN (Basic WebUI mode) or Network → Interfaces (Advanced WebUI mode) pages by clicking 'Edit' next to the interface you wish limit the data for.
On SMS limit	off on; default: off	Performs a SIM switch when the SMS limit for this SIM card is reached. You can set up SMS limit in the Network → Mobile → General page.
On roaming	off on; default: off	Performs a SIM switch when roaming conditions are detected.
No network	off on; default: off	Performs a SIM switch when a network connection is not available.
On network denied	off on; default: off	Performs a SIM switch when access to a network is denied by an operator.

On data connection fail off | on; default: **off**

Performs a SIM switch when mobile data connection fails. Possible failure determination methods are:

- **LCP echo**
- **ICMP echo**

If no echo is received, the data connection is considered to be down.

When configuring SIM switching from the Secondary card, an additional field called "Switch back to primary SIM card after timeout" becomes available:



Field	Value	Description
Switch back to primary SIM card after timeout	yes no; default: no	Attempts to switch back to the primary SIM card once the specified period of time passed.
Initial timeout (min)	integer; default: 1	Indicates a time value (in minutes) after which the device will attempt to switch back to the primary SIM card.

Network selection

The **Network operators** section provides you with the possibility to scan for and manage mobile network operators to which the device's SIM card can connect to. Operator selection is only available for the primary SIM card. In order to specify an operator for the other SIM card it must first be selected as the Primary SIM in the [SIM card settings](#) section.



Field	Value	Description
Active SIM	SIM 1 SIM 2; default: SIM 1	Displays which SIM card is currently active.
Current operator	string; default: none	Displays the name of the operator the which the device is currently connected.
Connection mode	Auto Manual Manual-Auto; default: Auto	Operator selection method. <ul style="list-style-type: none"> • Auto - selects the operator automatically. • Manual - requires you to select the operator manually. (More on this selection below.)

Manual operator selection

To select an operator manually, specify **Connection mode: *Manual*** and click '**Scan For Operators**'.



Will be prompted with a pop-up asking if you're sure. Click 'Scan' if you wish to proceed.



Wait for the scan to finish. As indicated by the onscreen message, the process can take up to 3 minutes.



Once the scan has finished, you will see the results in the 'Available operators'.




In order to lock the SIM card to using a single operator, select operator from Operator code field and click 'Save & Apply'.

Operators list

This section is used to create lists of operators codes, which can then be used in [Operator settings section](#) to Whitelist or Blacklist them. Operator code consists of two parts - Mobile Country Code (MCC) and Mobile Network Code (MNC).



By clicking Edit  on a list you will be redirected to editing page in which you can enter operator codes for that list.



Utilities

SIM PIN management



Field	Value	Description
SIM card lock	off on; default: off	Correct PIN code is required to enable or disable SIM card lock. Once SIM card lock is disabled you will not need to enter PIN code on any device to use SIM card.
Change PIN	- (interactive button)	Open modal window to change SIM PIN

USSD

Unstructured Supplementary Service Data (USSD) is communication protocol used in communication between cellular devices and mobile network operators. It is usually used with prepaid SIM cards to enable/disable certain services or to obtain information from a network operator.

This section provides the possibility to send USSD messages to the mobile operator.





Field	Value	Description
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USSD	string; default: none	Enter a USSD code (up to 182 character) that you wish to send. To send the entered USSD code, click the 'Send' button below the Response box.
Send	- (interactive button)	Click to send the message entered in the USSD field.
Response message	string; default: No response yet	Displays the response to the last sent USSD message. Receiving the response may take up to a minute.

PIN/PUK lock notification

If you set an invalid PIN/PUK code or insert a locked/blocked SIM card, a side message will pop up with information that the SIM card is locked or blocked. Click 'Unlock SIM here` to open the modal window where you can enter the SIM card PIN/PUK codes.

Side message where the SIM is locked 

Side message where the SIM is blocked 



Field	Value	Description
PIN	4-8 positive numeric chars (positive number); default: none	SIM card's PIN (Personal Identification Number) is a secret numeric password shared between a user and a system that can be used to authenticate the user. PIN is saved in flash memory, it will be saved after device reset.
PUK	8 positive numeric chars (positive number); default: none	SIM PUK (Personal Unblocking Key) is a code consisting of 8 digits. It is used to unblock your SIM card when you entered 3 times a wrong PIN code

APN Database

APN stands for Access Point Name and allows a device's network to connect to the internet. With the APN settings in place, your device builds a connection to a carrier's gateway. APN Database page section provides you with possibility to create/edit/delete APN records. **Note:** APN Database is additional software that can be installed from the **System** → [Package Manager](#) page.



Adding new APN

In order to create new APN to database, insert required information and click Add button.



Field	Value	Description
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Carrier name	default: empty	Carrier name - name of a company that sells wireless connectivity to customers for cellphone data and telephone calls. It may also be called a mobile network operator, a mobile carrier, cellular company or wireless service provider.
Mobile Country Code	default: empty	Mobile Country Code (MCC) - a mobile code consisting of three digits used to identify GSM networks. MCC is also used along with the International Mobile Subscriber Identity (IMSI) to identify the region from which mobile subscriber belongs.
Mobile Network Code	default: empty	Mobile Network Code (MNC) - a unique two- or three-digit number used to identify a home Public Land Mobile Network (PLMN) to. MNC is allocated by the national regulator.
APN	default: empty	APN (Access Point Name) is configurable network identifier used by a mobile device when connecting to a carrier
PDP type	IPv4/IPv6 IPv4 IPv6; default: IPv4/IPv6	Specifies what type of address is requested from the operator
Authentication type	none PAP CHAP ; default: none	Authentication method that your GSM carrier uses to authenticate new connections on it's network
Username	default: empty	Your username that you would use to connect to your GSM carrier's network
Password	default: empty	Your password that you would use to connect to your GSM carrier's network

SIM Idle Protection

Some operators block user SIM cards after a period of inactivity. The **SIM Idle Protection** tab provides you with the possibility to configure the router to periodically switch to the secondary SIM card and establish a data connection with a mobile network operator in order to break the idleness and prevent the SIM card from being blocked.

Note: SIM Idle Protection is additional software that can be installed from the **System** → [Package Manager](#) page.



Field	Value	Description
Enable	off on; default: off	Turns SIM Idle Protection on or off.
Period	Month Week; default: Month	How often SIM Idle Protection will be performed. Use the two following fields ('Day' and 'Time') to set the exact time of the action.
Day	integer [1..30]; default: 1	The day of the month on which SIM Idle Protection will be performed.
Time	hh:mm; default: 01:00	The time when SIM Idle Protection will be performed.
IP type	IPv4 IPv6; default: IPv4	IP type to be used for ping.
Host to ping	ip; default: 8.8.8.8	IP address of a host that will be pinged during the SIM Idle Protection action.

Ping package size	integer [1..1000]; default: 56	ICMP packet size in bytes.
Ping requests	integer [1..30]; default: 2	How many ping requests will be sent.