

MERIDIAN ROUTER

user interface manual

MERIDIAN5G

PRODUCTS: CLASSIC ROUTER, DOME ROUTER

Contents

1. Introduction.....	2
2. Dashboard.....	3
2.1. Overview.....	3
2.2. General Information	4
2.3. Router Status	4
2.4. Modem Information	5
3. Settings.....	6
3.1. Router Configuration	6
3.2. Modem Configuration	8
3.3. Login Credentials	12
3.4. Port Forwarding.....	13
3.5. User interface manual	13
4. Reports	14
4.1. Daily Traffic Reports	14
4.2. Detailed Traffic Reports.....	15
4.3. Network Metrics.....	16
4.4. Performance Charts.....	18
5. SIM Cards.....	25
5.1. SIM Cards.....	25
5.2. Data plans	26
5.3. APN Library	27
5.4. Add New APN	27
6. SMS	28
6.1. Received SMS.....	28
6.2. Sent SMS.....	28
6.3. Send New SMS.....	28
7. Reboot, Shutdown, Logout.....	29

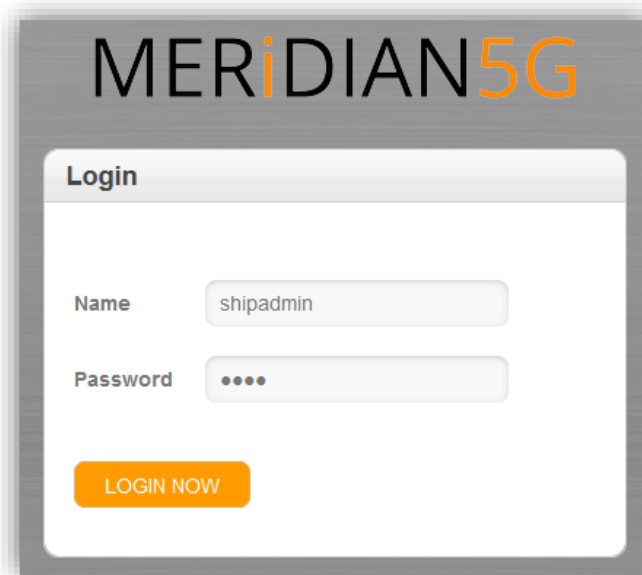
1. Introduction

User interface of Meridian router can be accessed using any web browser from yacht's local network via router's local IP address.

Authentication page will prompt you for login and password. Please use the following credentials to log in:

- Name: shipadmin
- Password: ship

Default username and password can be changed in the router settings (see [3.3 Login Credentials](#)).



2. Dashboard

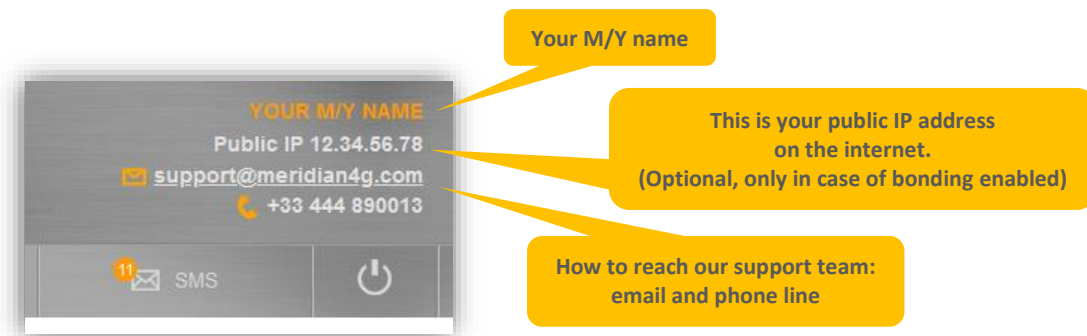
MAIN MENU -> DASHBOARD

2.1. Overview

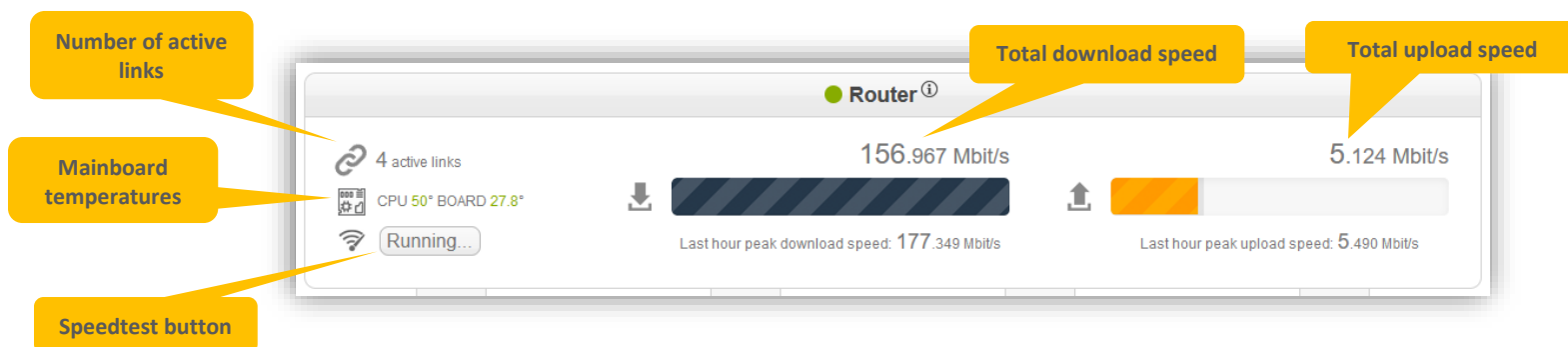
Dashboard presents the most important information about the status of router and each of its 4 modems. Here is an overview of this screen:



2.2. General Information

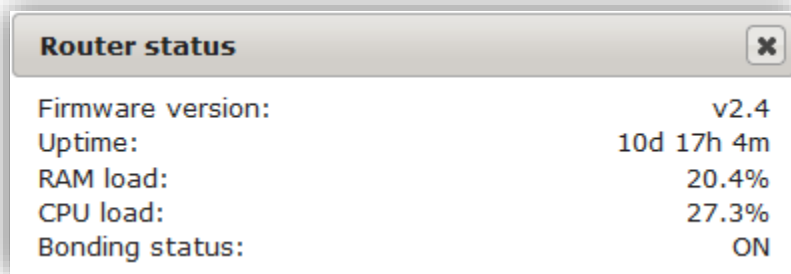


2.3. Router Status



- **Number of active links** shows how many independent data links are used by the router to send your traffic
- **Mainboard temperatures** indicate CPU and BOARD temperatures – if green, there is nothing to worry about
- **Speed test button** runs single speed test between Meridian router and (depending on bonding mode) its data center counterpart or one of Meridian's speed test servers – first, 20 seconds of download test, then 20 seconds of upload test.
- **Total download and upload speeds** show aggregated speed over all active links

- **Last hour peak download and upload speeds** show peak total speeds reached by the system in the last hour. They depend, among other factors, on network load, radio conditions, and yacht's data demand.
- Click on the ⓘ icon to show **system firmware version, uptime, current RAM and CPU load and bonding status**.



2.4. Modem Information

Instantaneous download and upload speeds

Modem status info

Access detailed information about the modem under 'More info'

Modem ON/OFF switch

Modem #4
vodafone IT 5G

Download: 1.304 Mbit/s
Upload: 0.040 Mbit/s

39.0°
0.5km
19ms

Packet session
Data link

SIM No.: 8939104250108890101F
IMSI: 222101632932713
SIM status: SIM OK
IMEI: 867826050227438
Carrier IP: 37.178.194.113
In roaming: No

Powered on: Yes
Registered in network: Yes
Packet data session: Up
IP assigned: Yes
Ping status: Up
Data link: Up

Less info ^

- **39.0°** is a modem's temperature indicator
- **SIM slot** is a name of SIM slot in case of multiple slots
- **0.5km** indicates distance travelled by the signal from the mobile carrier's cell tower to the modem's antenna
- **19ms** shows ping latency (round trip time)
- **Packet session** flag indicates if packet data session with mobile carrier is established
- **Data link** flag indicates if data traffic is going through this modem
- **IMEI** is a unique hardware identifier of the modem
- **SIM No.** is a unique identifier (ICCID) of the SIM card
- **Carrier IP** shows an IP address assigned to each modem by the mobile core network

3. Settings

3.1. Router Configuration

MAIN MENU -> SETTINGS -> ROUTER CONFIGURATION

User interface

Vessel name

Local area network

Eth0 IP addr/mask

Eth1 IP addr/mask

Border router IP

Used only for port forwarding in link aggregation mode

Data center

Aggregation DC IP

☒ Link aggregation mode (bonding ON)

Apply

Apply and return

Cancel

Router configuration page allows to configure:

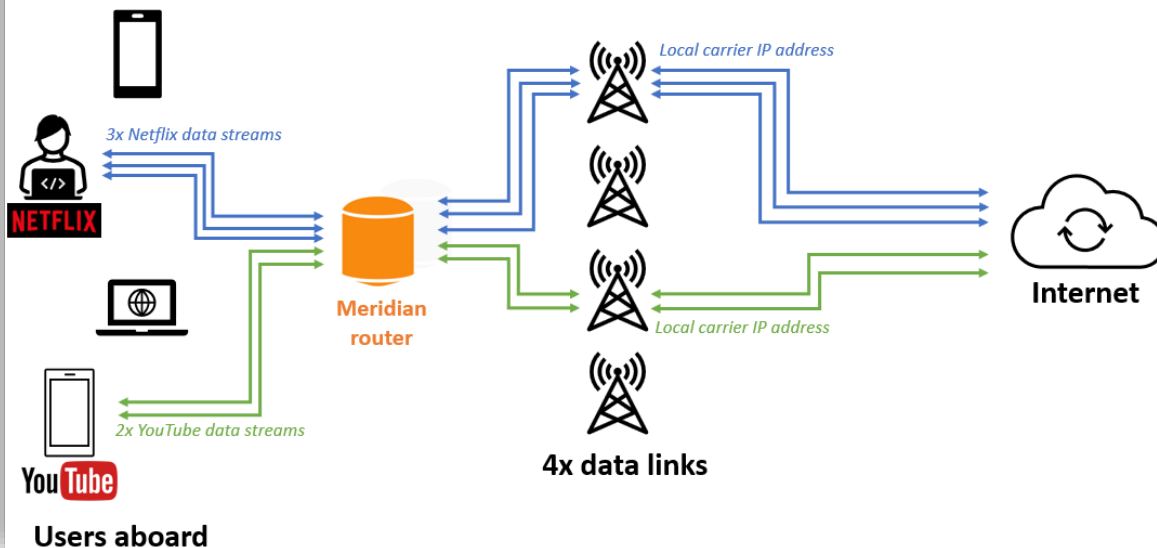
- User interface settings
 - Vessel name to be displayed in router's web interface.
- Local area network settings
 - IP address and subnet mask for the primary, 'Eth0' Ethernet/LAN interface
 - Secondary 'Eth1' Ethernet/LAN interface IP and mask are not configurable. Use this interface for support / maintenance and direct access to the router.
 - Border router IP, which is used only for port forwarding in link aggregation mode.
- Data center settings
 - Aggregation DC IP (not configurable), which is your IP address in case of link aggregation.
 - [Optional switch] "Link aggregation" and "Load balancing" modes of traffic routing.
 1. Link aggregation: traffic is split between modems on the router and combined back together in our Data Center. You are provided with static public IP in the region of choice (usually, UK or US, but locations tailored to client demands are possible).
 2. Load balancing: traffic is split between the modems, but no Data Center counterpart is involved. You are assigned different dynamic IP addresses by the carrier.

- [Optional switch] “Support link” toggle, available in Load balancing mode. Enables or disables remote connection for Meridian support engineers.

“Load balancing” and “link aggregation” modes are explained in more detail below:

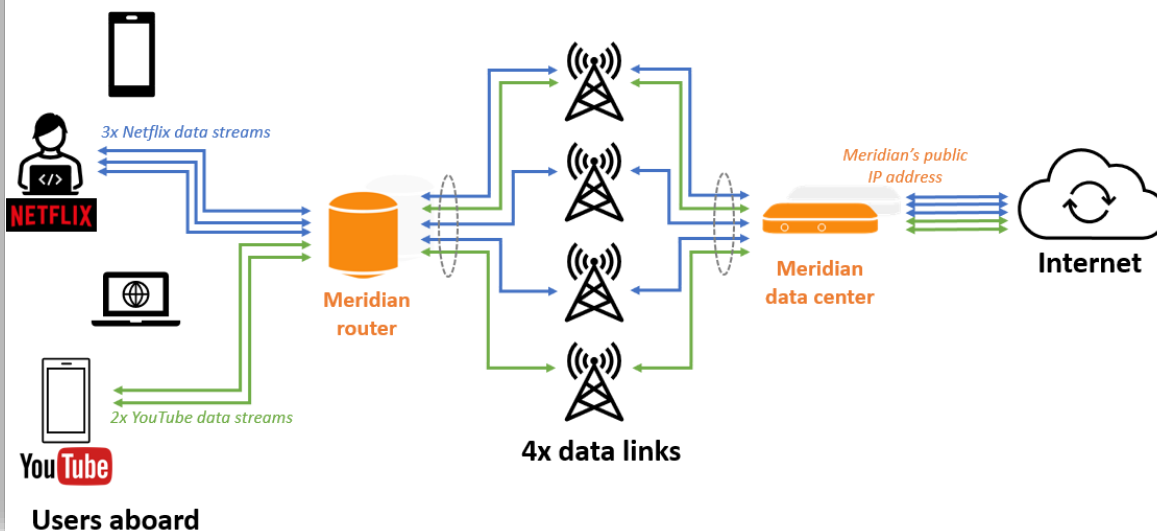
Bonding OFF (“load balancing” mode)

Any single user & application can use only one link to transfer data
Underutilized capacity, uneven load distribution, decreased reliability



Bonding ON (“link aggregation” mode)

Any single user & application may use multiple links to transfer data
Fully utilized capacity, fair load distribution and increased reliability



3.2 Modem Configuration

MAIN MENU -> SETTINGS -> MODEM CONFIGURATION

The screenshot displays the 'Modem Configuration' screen with four panels for Modem #1, Modem #2, Modem #3, and Modem #4. Each panel has a 'Carrier configuration' header and contains the following settings:

- Data mode:** A dropdown menu to select the data mode (e.g., '4G only', '4G+5G').
- Carrier selection:** Two toggle switches. The first toggle is labeled 'Automatic' and the second is labeled 'From network scan'.
- Select network scan:** A dropdown menu showing the last scan time (e.g., 'Modem #1 scan (0h:0m ago)').
- Select carrier:** A dropdown menu showing the selected carrier (e.g., 'France: Orange (20801)').
- New network scan:** A button to initiate a new network scan.

- Carrier configuration, per modem
 - Data mode: 3G only, 3G+4G, 4G only, 4G+5G, 3G+4G+5G
 - Carrier selection: Automatic or Manual
 - For manual carrier selection: from list of preset carriers or from network scan results
 - In case of manual carrier selection from preset carriers, select the carrier to lock on from drop-down menu, containing the list of pre-defined mobile carriers per country.
 - In case of manual carrier selection from network scan,

This screenshot shows a detailed view of the 'Select carrier' dropdown menu. It lists various carriers with their country codes and status (e.g., 'allowed'). The selected carrier is '3G| Orange (20801, allowed)'.

- Perform network scan using "New network scan" button on any of activated modems. Note: scan can take up to 5 minutes, and packet data would be disabled.
- Select carrier to lock on from drop-down menu, containing the list of mobile carriers available in your current location
- You can use network scan results from any modem (but actual carrier availability depends on the SIM card used)

- 4G bands configuration, per modem
 - Use “All LTE bands” checkbox to enable all supported 4G-LTE bands on the modem.
 - Use “High bands (Europe)” and “Low bands (Europe)” to enable either only high frequency or only low frequency 4G-LTE bands used by European carriers.
 - Use “High bands (North America)” and “Low bands (North America)” to enable either only high frequency or only low frequency 4G-LTE bands used by North American and Caribbean carriers
 - Use corresponding checkboxes to enable only desired 4G-LTE bands manually.

The image displays four panels of the 4G bands configuration interface. Each panel is titled "4G bands configuration" and contains a list of checkboxes for enabling various 4G-LTE bands. The first three panels show the "Show enabled 4G bands" button, while the fourth panel shows the "Hide enabled 4G bands" button.

Panel 1 (Show enabled 4G bands):

- ☐ All LTE bands
- ☒ High bands (Europe)
- ☒ Low bands (Europe)
- ☐ High bands (North America)
- ☐ Low bands (North America)

Panel 2 (Show enabled 4G bands):

- ☐ All LTE bands
- ☒ High bands (Europe)
- ☒ Low bands (Europe)
- ☐ High bands (North America)
- ☐ Low bands (North America)

Panel 3 (Show enabled 4G bands):

- ☐ All LTE bands
- ☒ High bands (Europe)
- ☐ Low bands (Europe)
- ☐ High bands (North America)
- ☐ Low bands (North America)

Panel 4 (Hide enabled 4G bands):

- ☐ All LTE bands
- ☐ High bands (Europe)
- ☒ Low bands (Europe)
- ☐ High bands (North America)
- ☐ Low bands (North America)

Manual Band Selection (Visible in Panel 4):

<input checked="" type="checkbox"/> B1 (2100)	<input type="checkbox"/> B25 (1900)
<input type="checkbox"/> B2 (1900)	<input type="checkbox"/> B26 (850)
<input checked="" type="checkbox"/> B3 (1800)	<input checked="" type="checkbox"/> B28 (700)
<input type="checkbox"/> B4 (1700)	<input type="checkbox"/> B29 (700)
<input type="checkbox"/> B5 (850)	<input type="checkbox"/> B30 (2300)
<input checked="" type="checkbox"/> B7 (2600)	<input checked="" type="checkbox"/> B32 (1500)
<input checked="" type="checkbox"/> B8 (900)	<input type="checkbox"/> B34 (2000)
<input type="checkbox"/> B12 (700)	<input checked="" type="checkbox"/> B38 (2600)
<input type="checkbox"/> B13 (700)	<input type="checkbox"/> B39 (1900)
<input type="checkbox"/> B14 (700)	<input checked="" type="checkbox"/> B40 (2300)
<input type="checkbox"/> B17 (700)	<input type="checkbox"/> B41 (2600)
<input type="checkbox"/> B18 (800)	<input type="checkbox"/> B42 (3500)
<input type="checkbox"/> B19 (800)	<input type="checkbox"/> B66 (2100)
<input checked="" type="checkbox"/> B20 (800)	<input type="checkbox"/> B71 (600)

- 5G bands configuration
 - 5G mode: “SA and NSA” enables operation in both 5G standalone and 5G non-standalone networks. “Disable SA” and “Disable NSA” turn off support for corresponding 5G network types.
 - Use “All 5G NR SA bands” checkbox to enable all supported 5G NR standalone bands.
 - Use “All 5G NR NSA bands” checkbox to enable all supported 5G NR non-standalone bands.
 - Use corresponding checkboxes to enable only desired 5G NR bands manually.

The image displays four identical screenshots of the "5G bands configuration" interface, arranged horizontally. Each interface shows the following elements:

- 5G mode:** A dropdown menu set to "SA and NSA".
- Checkboxes:**
 - ☒ All 5G NR SA bands
 - ☒ All 5G NR NSA bands
- 5G SA bands:** A list of 16 bands with checkboxes, all of which are checked:

<input checked="" type="checkbox"/> n1 (2100)	<input checked="" type="checkbox"/> n38 (2600)
<input checked="" type="checkbox"/> n2 (1900)	<input checked="" type="checkbox"/> n40 (2300)
<input checked="" type="checkbox"/> n3 (1800)	<input checked="" type="checkbox"/> n41 (2600)
<input checked="" type="checkbox"/> n5 (850)	<input checked="" type="checkbox"/> n48 (3600)
<input checked="" type="checkbox"/> n7 (2600)	<input checked="" type="checkbox"/> n66 (2100)
<input checked="" type="checkbox"/> n8 (900)	<input checked="" type="checkbox"/> n71 (600)
<input checked="" type="checkbox"/> n12 (700)	<input checked="" type="checkbox"/> n77 (3700)
<input checked="" type="checkbox"/> n20 (800)	<input checked="" type="checkbox"/> n78 (3500)
<input checked="" type="checkbox"/> n25 (1900)	<input checked="" type="checkbox"/> n79 (4500)
<input checked="" type="checkbox"/> n28 (700)	
- 5G NSA bands:** A list of 16 bands with checkboxes, all of which are checked:

<input checked="" type="checkbox"/> n1 (2100)	<input checked="" type="checkbox"/> n38 (2600)
<input checked="" type="checkbox"/> n2 (1900)	<input checked="" type="checkbox"/> n40 (2300)
<input checked="" type="checkbox"/> n3 (1800)	<input checked="" type="checkbox"/> n41 (2600)
<input checked="" type="checkbox"/> n5 (850)	<input checked="" type="checkbox"/> n48 (3600)
<input checked="" type="checkbox"/> n7 (2600)	<input checked="" type="checkbox"/> n66 (2100)
<input checked="" type="checkbox"/> n8 (900)	<input checked="" type="checkbox"/> n71 (600)
<input checked="" type="checkbox"/> n12 (700)	<input checked="" type="checkbox"/> n77 (3700)
<input checked="" type="checkbox"/> n20 (800)	<input checked="" type="checkbox"/> n78 (3500)
<input checked="" type="checkbox"/> n25 (1900)	<input checked="" type="checkbox"/> n79 (4500)
<input checked="" type="checkbox"/> n28 (700)	
- Footer:** A button labeled "Hide enabled 5G bands" with an upward arrow icon.

- SIM settings, per modem
 - APN (Access Point Name) settings: Automatic or Manual.
 - In case of Automatic APN settings, information from the APN library is used.
 - In case of Manual APN settings, enter APN, User and Password according to your SIM card provider. APN is required; User and Password are optional.
 - SIM unlock PIN. PIN should be 4 digits long.

The image displays four identical panels for SIM configuration, each titled 'SIM configuration'. Each panel contains the following elements:

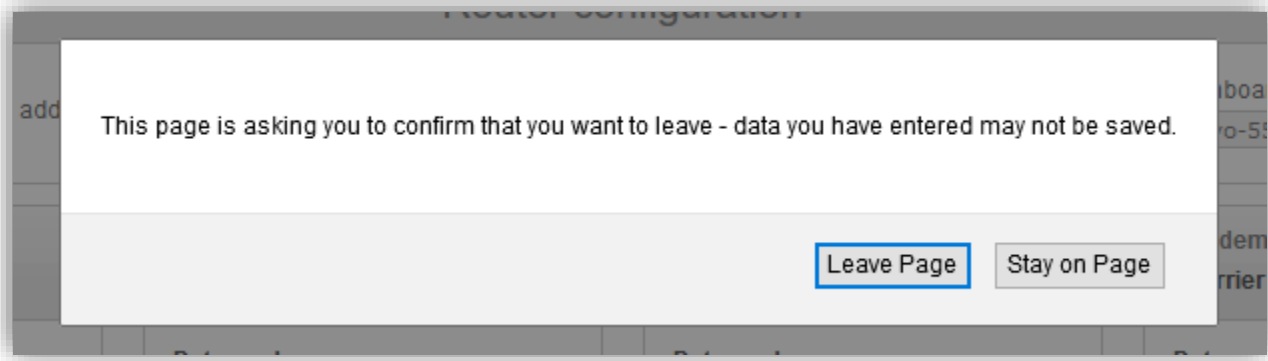
- SIM slot:** A radio button and a SIM card icon.
- APN settings:** A toggle switch between 'Manual' and 'Automatic'.
 - In the first panel, 'Manual' is selected. Below it are three input fields labeled 'APN' (containing 'orange'), 'User', and 'Password'.
 - In the other three panels, 'Automatic' is selected.
- SIM unlock:** A label and a PIN input field.

- Signal threshold, per modem
 - Use slider to select minimal signal strength level. If cellular signal is below selected level, modem will disconnect and stay offline, until signal rises back above the threshold.
 - Thresholds for 4G (RSRP): -140dBm, -130dBm, -120dBm, -110dBm, -100dBm, -90dBm
 - Thresholds for 3G (RSCP): -120dBm, -110dBm, -100dBm, -90dBm, -80dBm, -70dBm

The image displays four identical panels for signal threshold settings, each titled 'Signal threshold'. Each panel contains the following elements:

- Set acceptable level:** A horizontal slider with a green dot indicating the selected threshold level. To the right of the slider is a signal strength indicator (four vertical bars of increasing height).

- Click “Apply” or “Apply and return” in order to save changes. A warning will be displayed when leaving the Router configuration page with unsaved changes.



3.3 Login Credentials

MAIN MENU -> SETTINGS -> LOGIN CREDENTIALS

On this page you can change username and password of the Meridian router's web interface.

A screenshot of the 'Login Credentials' form. At the top, it says 'Please enter your old password and then your new password twice.' and 'You can also update username if required.' Below this are four input fields: 'Username:' with the value 'shipadmin', 'Old password:', 'New password:', and 'New password confirmation:'. The password fields are masked with dots. At the bottom left is a 'Submit' button.

3.4 Port Forwarding

MAIN MENU -> SETTINGS -> PORT FORWARDING

Configure port forwarding for incoming connections.

All forwarded traffic is routed towards the vessel's border router (configured in Router Configuration).

Available protocols: TCP and UDP (port defined), ICMP, ESP and AH (no port defined).

Port forwarding is generally possible only in link aggregation mode (with bonding enabled).

Name	Port	Protocol	Action
Sophos	4444	TCP	Delete
Outlook	443	TCP	Delete
ICMP		ICMP	Delete
IPsec ESP		ESP	Delete
		TCP	Delete

+

Apply Apply and return Cancel

3.5 User interface manual

MAIN MENU -> SETTINGS -> USER INTERFACE MANUAL

Access to this manual.

4 Reports

4.1 Daily Traffic Reports

MAIN MENU -> REPORTS -> DAILY TRAFFIC REPORTS

Daily traffic reports page provides information about daily traffic usage, in GBytes.

You will find one daily report per SIM card (hence, 4 reports per day if 4 SIM cards are in use).

It is possible to filter records by SIM No. and by the time period of interest.

You can also create .csv file with filtered records ('Export as csv')

Daily traffic reports

Filters: <input type="text" value="ALL SIM No."/> <input type="button" value="Apply"/> From <input type="text" value="1.05.2021"/> To <input type="text" value="1.06.2021"/> <input type="button" value="Reset"/> <input type="button" value="Apply"/> <input type="button" value="Export as csv"/>				
Date	SIM No.	GBytes sent	GBytes received	GBytes total
TOTAL		20.73	196.32	217.04
May 31, 2021	89441000304178836025	0.69	10.47	11.16
May 31, 2021	89441000304178835985	0.81	19.13	19.94
May 30, 2021	89441000304178836025	1.02	1.25	2.27
May 30, 2021	89441000304178835985	1.16	1.16	2.31
May 29, 2021	89441000304178836025	0.34	2.29	2.63
May 29, 2021	89441000304178835985	0.66	10.49	11.15
May 28, 2021	89441000304178836025	0.42	8.61	9.02
May 28, 2021	89441000304178835985	0.48	8.59	9.07
May 27, 2021	89441000304178836025	0.24	1.71	1.96
May 27, 2021	89441000304178835985	0.25	2.33	2.59
May 26, 2021	89441000304178836025	0.2	2.65	2.85
May 26, 2021	89441000304178835985	0.28	3.95	4.23
May 25, 2021	89441000304178836025	0.14	1.07	1.21
May 25, 2021	89441000304178835985	0.26	6.85	7.11

4.2 Detailed Traffic Reports

MAIN MENU -> REPORTS -> DETAILED TRAFFIC REPORTS

Daily traffic reports page provides detailed, per-minute information about traffic usage, in MBytes.

It is possible to filter records by SIM No. and by the time period of interest.

You can also create .csv file with filtered records ('Export as csv')

Detailed traffic reports

Filters: [Apply](#) From To [Reset](#) [Apply](#) [Export as csv](#)

Created	SIM No.	Modem	Carrier	MBytes sent	MBytes received	MBytes total
TOTAL since 2021-06-01 00:00:46				593.24	2,417.2	3,010.44
June 1, 2021, 11:59 p.m.	89441000304178835985	Modem #4	SFR	0.19	0.23	0.42
June 1, 2021, 11:58 p.m.	89441000304178835985	Modem #4	SFR	0.24	0.23	0.47
June 1, 2021, 11:57 p.m.	89441000304178835985	Modem #4	SFR	0.16	0.33	0.49
June 1, 2021, 11:56 p.m.	89441000304178835985	Modem #4	SFR	1.14	3.13	4.26
June 1, 2021, 11:55 p.m.	89441000304178835985	Modem #4	SFR	0.11	0.57	0.69
June 1, 2021, 11:54 p.m.	89441000304178835985	Modem #4	SFR	0.3	0.38	0.68
June 1, 2021, 11:53 p.m.	89441000304178835985	Modem #4	SFR	0.2	0.33	0.54
June 1, 2021, 11:52 p.m.	89441000304178835985	Modem #4	SFR	0.21	0.59	0.81
June 1, 2021, 11:51 p.m.	89441000304178835985	Modem #4	SFR	0.14	0.69	0.83
June 1, 2021, 11:50 p.m.	89441000304178835985	Modem #4	SFR	0.23	0.66	0.89
June 1, 2021, 11:49 p.m.	89441000304178835985	Modem #4	SFR	0.2	0.42	0.62
June 1, 2021, 11:48 p.m.	89441000304178835985	Modem #4	SFR	0.28	0.27	0.55
June 1, 2021, 11:47 p.m.	89441000304178835985	Modem #4	SFR	0.15	0.75	0.9
June 1, 2021, 11:46 p.m.	89441000304178835985	Modem #4	SFR	0.23	0.68	0.91
June 1, 2021, 11:45 p.m.	89441000304178835985	Modem #4	SFR	0.14	0.45	0.59

4.3 Network Metrics

MAIN MENU -> REPORTS -> NETWORK METRICS

Presents detailed technical information about the cellular network configuration and conditions.

- **Connection status** shows link's ICMP ping round trip time and MTU, mobile carrier's DNS servers and VPN status.
- **RF metrics** contains data about channel radio conditions, signal strength and quality. Different set of data is available for 3G, 4G and 5G networks.

Network metrics			
Modem #1	Modem #2	Modem #3	Modem #4
Connection status	Connection status	Connection status	Connection status
Ping RTT 71.5 ms	Ping RTT 65 ms	Ping RTT 54.6 ms	Ping RTT 51.1 ms
MTU 1500	MTU 1440	MTU 1500	MTU 1500
Primary DNS 10.203.128.1	Primary DNS 212.166.210.1	Primary DNS 10.203.128.1	Primary DNS 10.206.128.1
Secondary DNS 10.203.128.1	Secondary DNS 212.166.167.73	Secondary DNS 10.203.128.1	Secondary DNS 10.206.128.1
VPN up true	VPN up true	VPN up true	VPN up true
Modem #1	Modem #2	Modem #3	Modem #4
RF metrics	RF metrics	RF metrics	RF metrics
Distance to cell 1.8 km	Distance to cell 1.9 km	Distance to cell 1.8 km	Distance to cell 1.9 km
4G RSSI -61 dBm	4G RSSI -63 dBm	4G RSSI -54 dBm	4G RSSI -58 dBm
4G RSRP -87 dBm	4G RSRP -85 dBm	4G RSRP -80 dBm	4G RSRP -87 dBm
4G RSRQ -9 dB	4G RSRQ -8 dB	4G RSRQ -8 dB	4G RSRQ -11 dB
4G SNR 14.2 dB	4G SNR 21.8 dB	4G SNR 20 dB	4G SNR 16 dB
Rx0 Rx power -64.2 dBm	Rx0 Rx power -66.2 dBm	Rx0 Rx power -53.6 dBm	Rx0 Rx power -58.9 dBm
Rx1 Rx power -64.1 dBm	Rx1 Rx power -65.5 dBm	Rx1 Rx power -54.8 dBm	Rx1 Rx power -- dBm
Rx0 4G RSRP -86.8 dBm	Rx0 4G RSRP -86.4 dBm	Rx0 4G RSRP -79.2 dBm	Rx0 4G RSRP -86.4 dBm
Rx1 4G RSRP -86.8 dBm	Rx1 4G RSRP -86 dBm	Rx1 4G RSRP -80.5 dBm	Rx1 4G RSRP -- dBm
DL modulation 16QAM	DL modulation QPSK	DL modulation QPSK	DL modulation 256QAM
UL modulation UNKNOWN	UL modulation 64QAM	UL modulation 16QAM	UL modulation 64QAM
Tx traffic on 0	Tx traffic on 0	Tx traffic on 1	Tx traffic on 1
Tx power -- dBm	Tx power -- dBm	Tx power 6 dBm	Tx power 7 dBm

- **4G Carriers** section contains data about LTE CA configuration (up to 5CA). Available only on 4G.

4G Carriers	4G Carriers	4G Carriers	4G Carriers
-----PCC-----	-----PCC-----	-----PCC-----	-----PCC-----
PCC band B3 (1800MHz)	PCC band B1 (2100MHz)	PCC band B3 (1800MHz)	PCC band B3 (1800MHz)
PCC EARFCN 1675	PCC EARFCN 547	PCC EARFCN 1675	PCC EARFCN 1300
PCC bandwidth 15 MHz	PCC bandwidth 10 MHz	PCC bandwidth 15 MHz	PCC bandwidth 20 MHz
PCC PCI 475	PCC PCI 262	PCC PCI 475	PCC PCI 256
PCC RSRP -86 dBm	PCC RSRP -86 dBm	PCC RSRP -79 dBm	PCC RSRP -86 dBm
PCC RSSI -60 dBm	PCC RSSI -62 dBm	PCC RSSI -54 dBm	PCC RSSI -55 dBm
PCC RSRQ -8 dB	PCC RSRQ -8 dB	PCC RSRQ -8 dB	PCC RSRQ -10 dB
PCC SINR 12.8 dB	PCC SINR 22.2 dB	PCC SINR 19.8 dB	PCC SINR 13.4 dB
-----SCC0-----	-----SCC0-----	-----SCC0-----	-----SCC0-----
SCC0 band --	SCC0 band B3 (1800MHz)	SCC0 band B28 (700MHz)	SCC0 band B1 (2100MHz)
SCC0 EARFCN --	SCC0 EARFCN 1300	SCC0 EARFCN 9460	SCC0 EARFCN 547
SCC0 bandwidth --	SCC0 bandwidth 20 MHz	SCC0 bandwidth 10 MHz	SCC0 bandwidth 10 MHz
SCC0 PCI --	SCC0 PCI 256	SCC0 PCI 491	SCC0 PCI 262
SCC0 state --	SCC0 state ACTIVE	SCC0 state ACTIVE	SCC0 state ACTIVE
SCC0 RSRP --	SCC0 RSRP -86 dBm	SCC0 RSRP -78 dBm	SCC0 RSRP -82 dBm
SCC0 RSSI --	SCC0 RSSI -52 dBm	SCC0 RSSI -50 dBm	SCC0 RSSI -59 dBm
SCC0 RSRQ --	SCC0 RSRQ -14 dB	SCC0 RSRQ -11 dB	SCC0 RSRQ -6 dB
SCC0 SINR --	SCC0 SINR 14.6 dB	SCC0 SINR 6.8 dB	SCC0 SINR 22.2 dB
More carriers ▾	More carriers ▾	More carriers ▾	More carriers ▾

- **Cell info** shows information about network registration and cell tower in use.

Cell info	Cell info	Cell info	Cell info
Radio RADIO_IF_LTE	Radio RADIO_IF_LTE	Radio RADIO_IF_LTE	Radio RADIO_IF_LTE
Registration REGISTERED	Registration REGISTERED	Registration REGISTERED	Registration REGISTERED
CS attach state CS_ATTACHED	CS attach state CS_ATTACHED	CS attach state CS_ATTACHED	CS attach state CS_ATTACHED
PS attach state PS_ATTACHED	PS attach state PS_ATTACHED	PS attach state PS_ATTACHED	PS attach state PS_ATTACHED
Roaming ROAMING_IND_ON	Roaming ROAMING_IND_ON	Roaming ROAMING_IND_ON	Roaming ROAMING_IND_ON
MCC 208	MCC 208	MCC 208	MCC 208
MNC 15	MNC 01	MNC 15	MNC 01
Network Free	Network Orange F	Network Free	Network Orange F
Cell ID 6483552	Cell ID A4BF06	Cell ID 6483552	Cell ID A4BF04
LAC/TAC 26B	LAC/TAC 9A4	LAC/TAC 26B	LAC/TAC 9A4
Operating mode ONLINE	Operating mode ONLINE	Operating mode ONLINE	Operating mode ONLINE
EMM and RRC states	EMM and RRC states	EMM and RRC states	EMM and RRC states
EMM_REG	EMM_REG	EMM_REG	EMM_REG
EMM_REG_NORMAL_SERVICE	EMM_REG_NORMAL_SERVICE	EMM_REG_NORMAL_SERVICE	EMM_REG_NORMAL_SERVICE
RRC_CONNECTED_STATE	RRC_CONNECTED_STATE	RRC_CONNECTED_STATE	RRC_CONNECTED_STATE

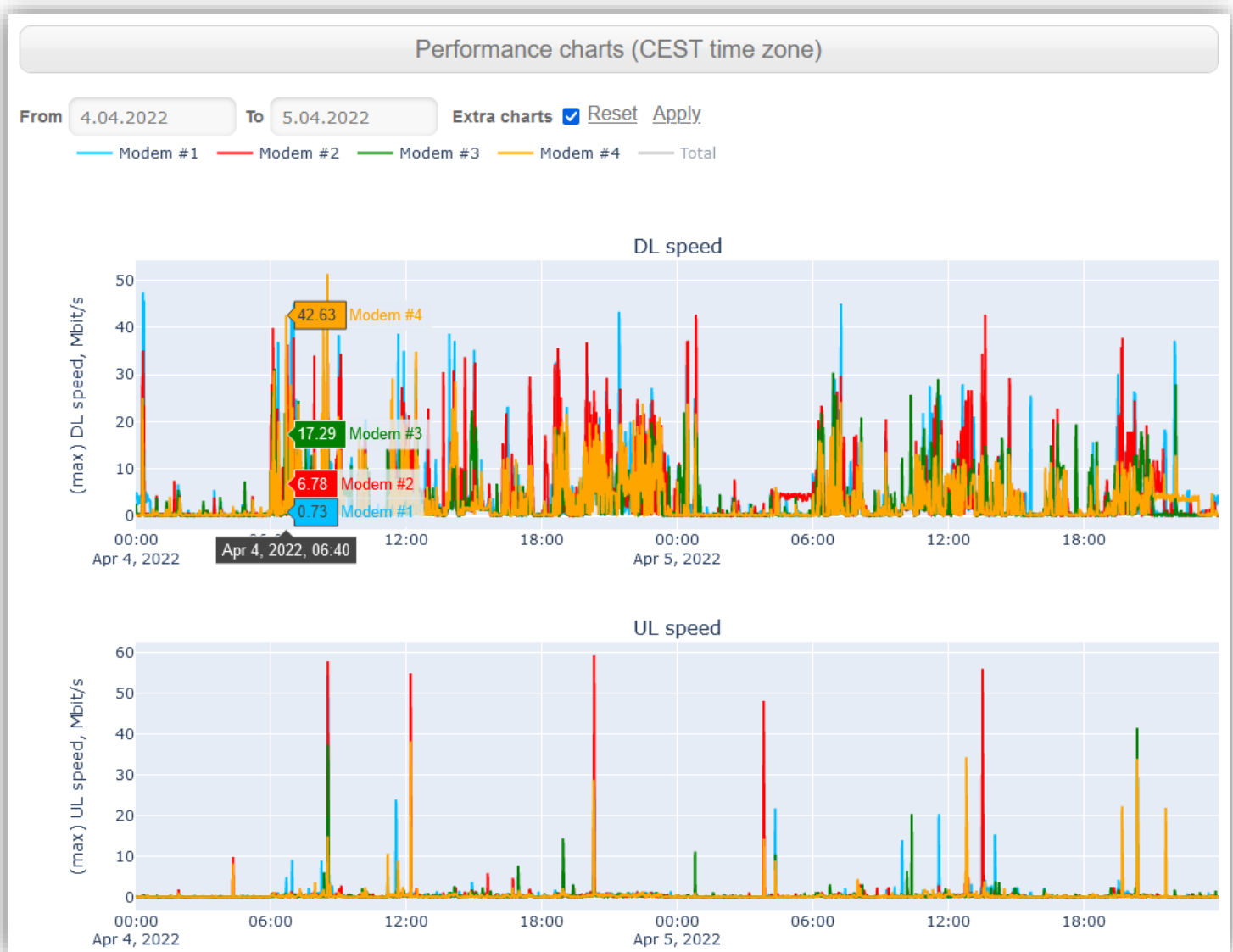
4.4 Performance Charts

[MAIN MENU](#) -> [REPORTS](#) -> [PERFORMANCE CHARTS](#)

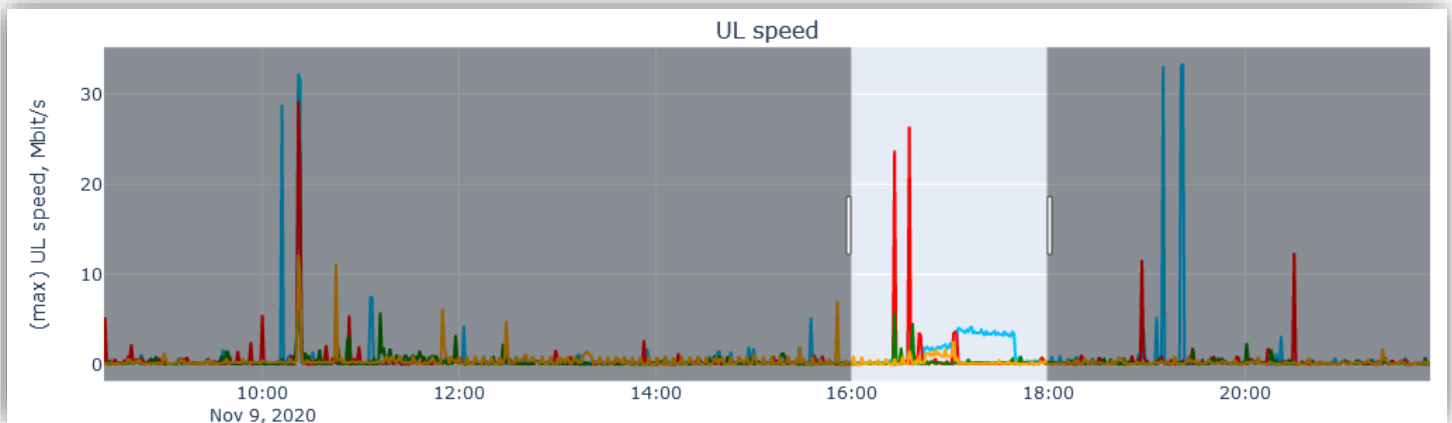
Performance charts present historical records on key performance metrics such as Download speed, Upload speed, Distance to cell and Latency.

It is possible to filter and show only target dates range. Hover over charts to get detailed data point information; select time periods to zoom in for more fine-grained information; double-click to zoom back out.

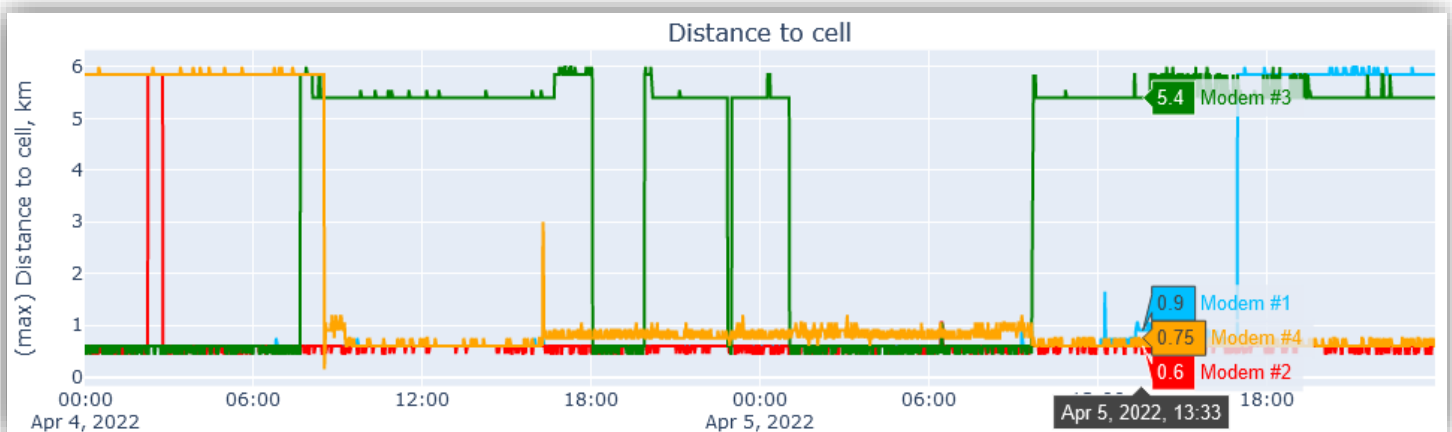
- Download and Upload speed charts
 - Aggregated as maximum DL/UL speed measurement per minute



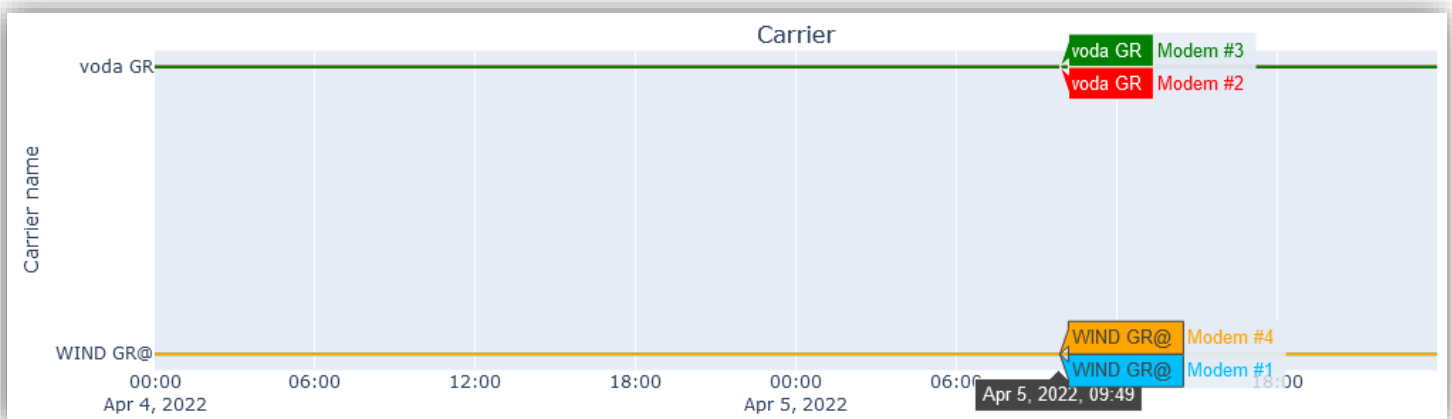
- Zooming in to desired time period:



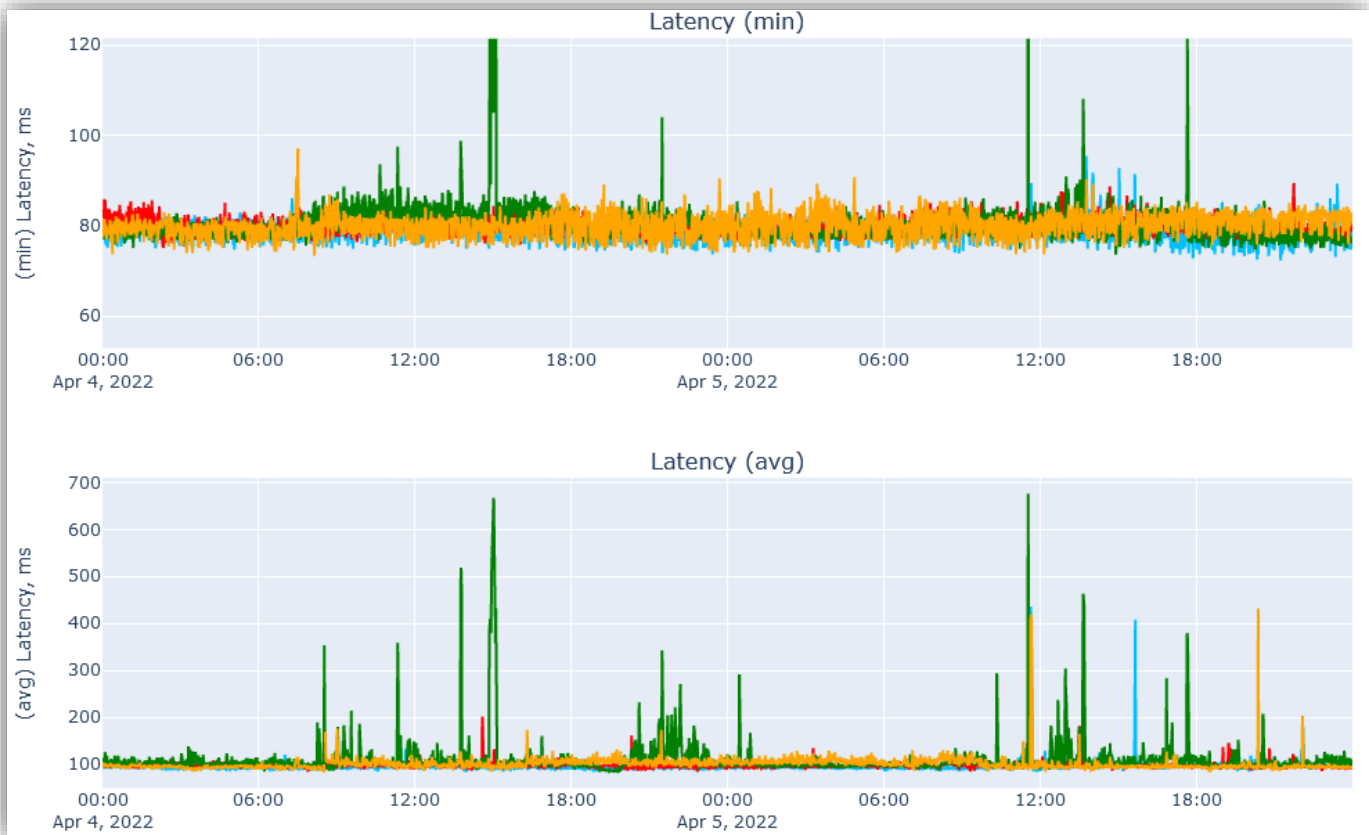
- Distance to cell chart



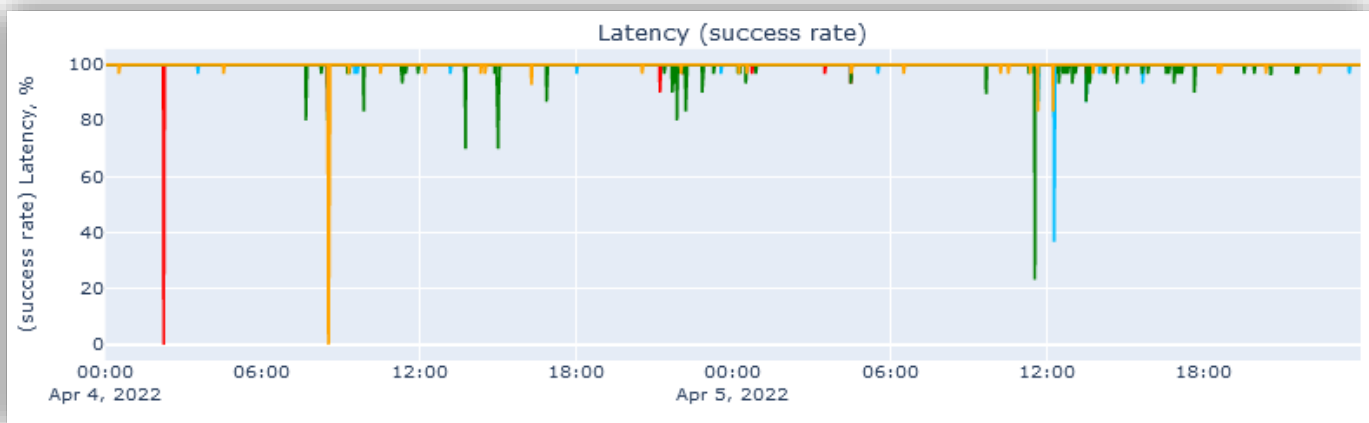
- Carrier name: which carrier was in use by each modem



- Latency charts, minimum and average per-minute aggregates
 - Latency is measured as ICMP ping round trip time of the mobile carrier's link
 - Minimum shows minimum latency measured during each minute
 - Average shows average latency during each minute



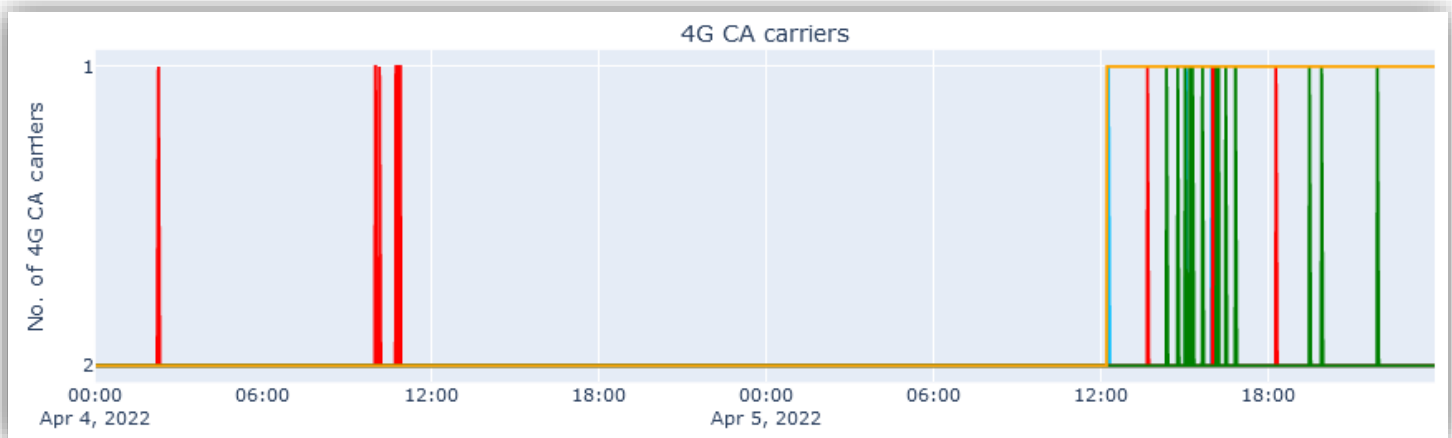
- Latency success rate shows % of successful ICMP pings, with RTT time < 1 second, per minute
 - When system load increases, success rate may decrease, since user traffic is prioritized



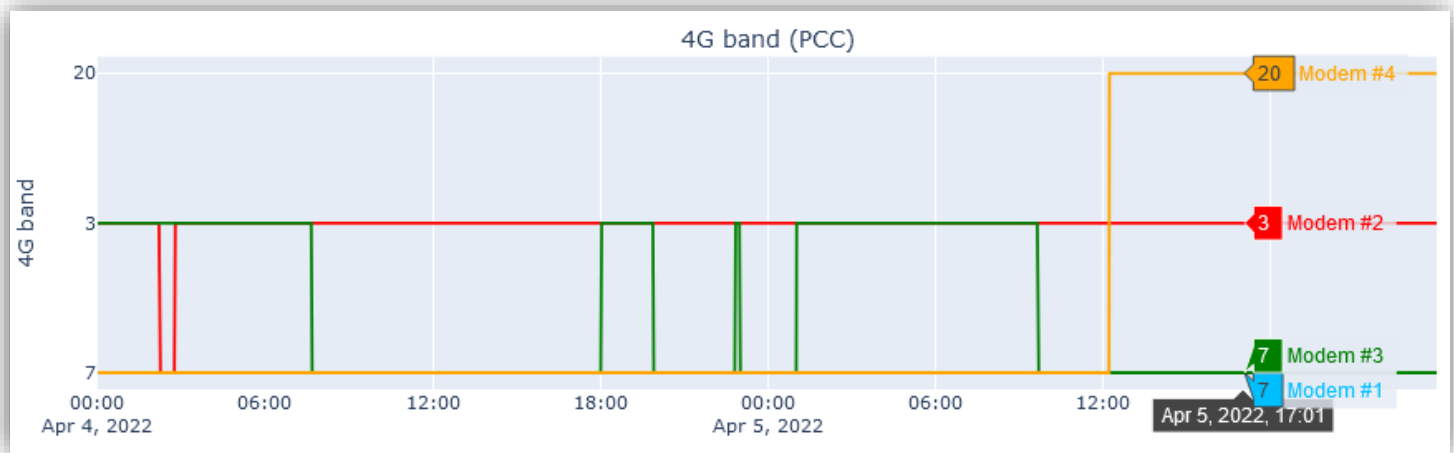
- Connectivity charts indicate
 - % of time VPN tunnels are up and running (in aggregation mode only)
 - % of time data links are connected and passing data



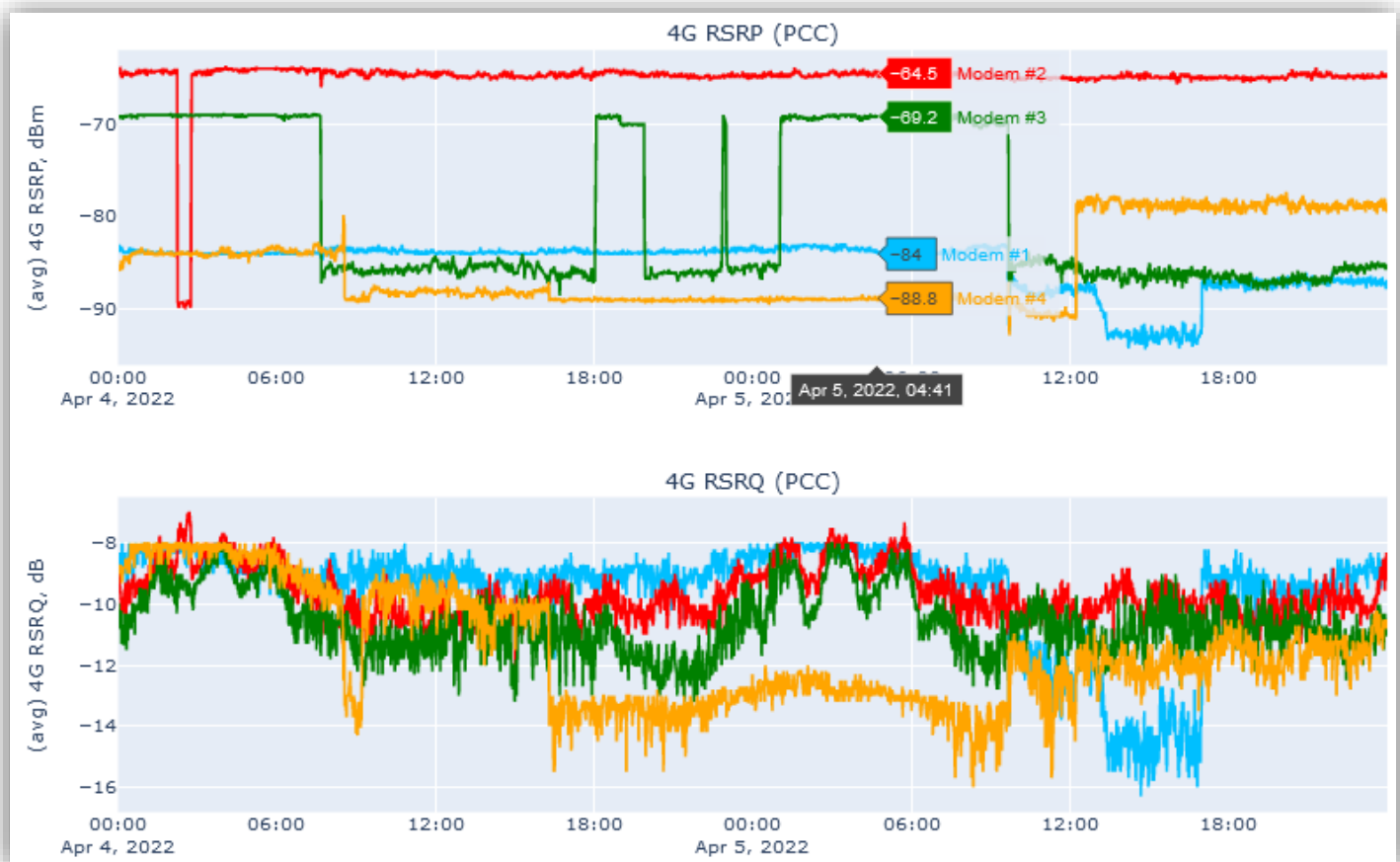
- 4G CA carriers indicate number of simultaneously used carrier bands in 4G

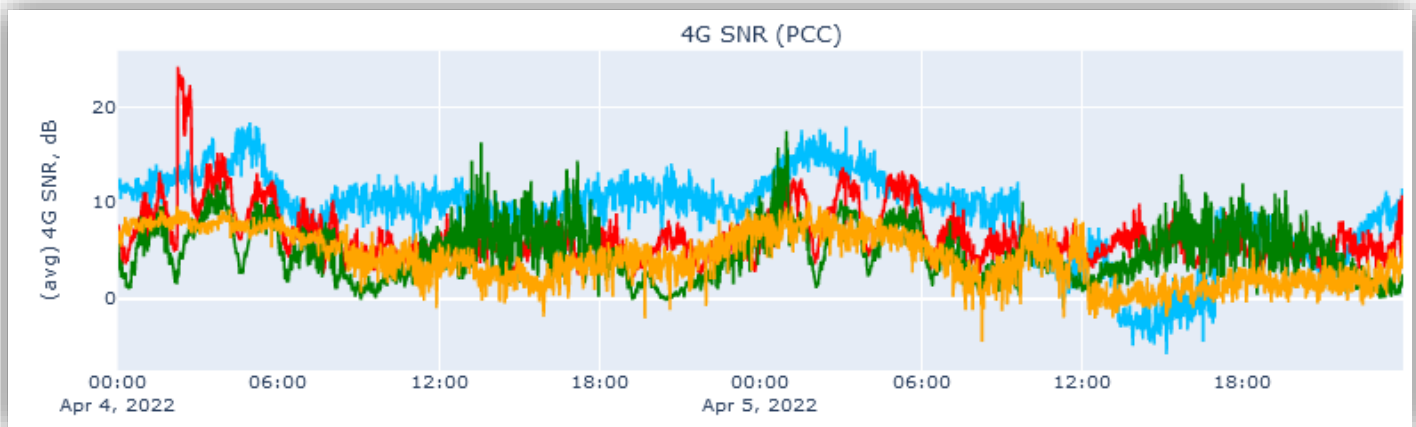


- 4G PCC band indicated 4G band used as primary component carrier

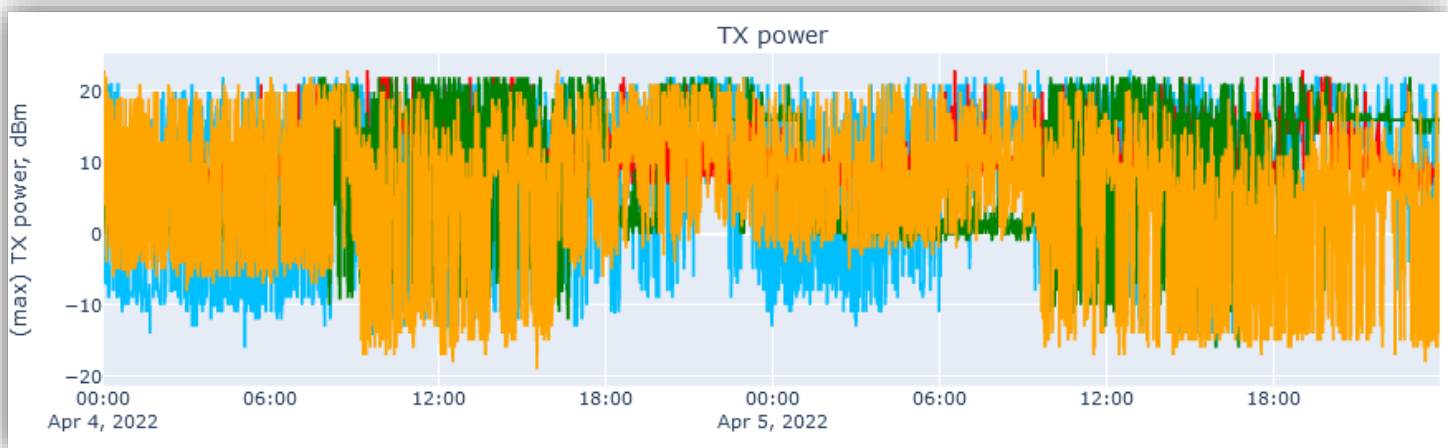


- 4G RSRP, RSRQ and SNR (only for the PCC) are main 4G metrics of signal strength and quality

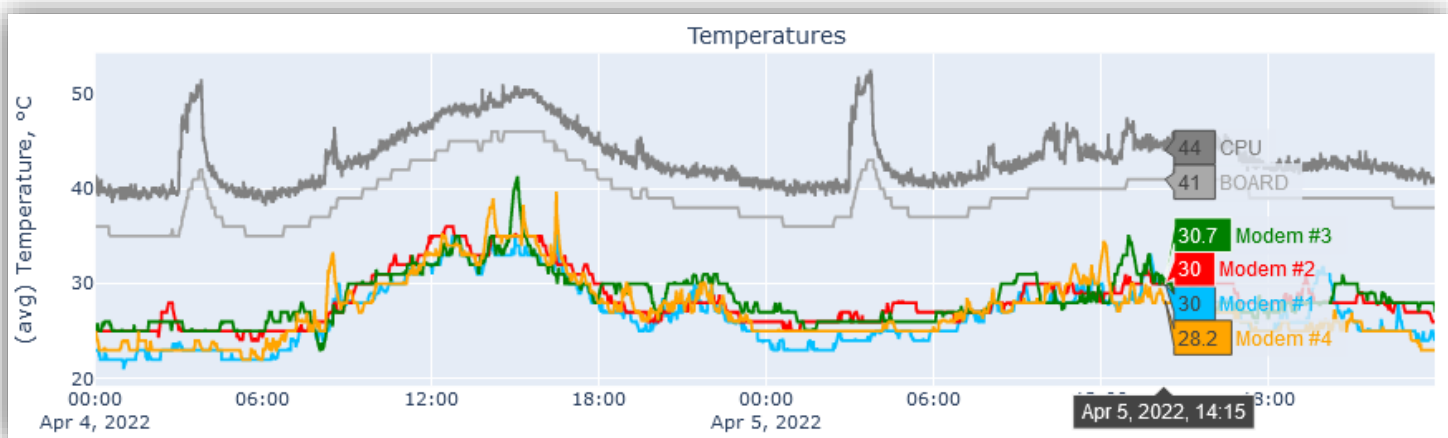




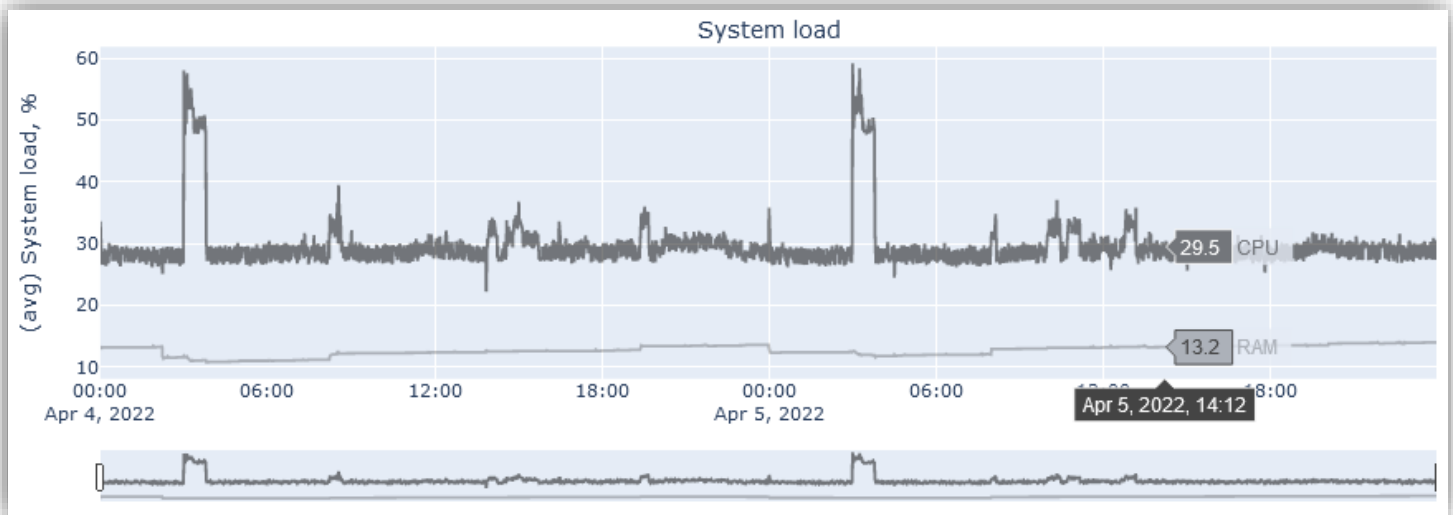
- TX power chart shows maximum transmission power by each modem, per minute



- Temperatures chart shows (averaged per minute) temperatures of each modem, as well as CPU and motherboard temperatures.



- System load chart shows system CPU load (in %) and RAM memory usage (in %)



5 SIM Cards

5.1 SIM Cards

MAIN MENU -> SIM CARDS -> SIM CARDS

Contains the list of SIM cards ever used together with the device, and highlights which ones are currently in use.

You can enable and disable SMS service on a per-SIM basis. By default, SMS service is ENABLED for all newly inserted SIM cards.

Each SIM can be assigned to a “Data plan” (see [5.2 Data plans](#)), which helps to monitor data traffic usage, warn user when reaching “warning level” and disable data traffic on SIM when exceeding “data limit”.

SIM cards								
Action: ----- ▼		Apply 0 of 4 selected						
<input type="checkbox"/>	SIM No.	IMSI	SMS on	Data plan	Data usage	Warning level	Data limit	Warnings
<input type="checkbox"/>	89852350120000044255 (modem #4)	240075817286488	✖	Carrier B	6.32 GB	20.0 GB		
<input type="checkbox"/>	89852350120000044263 (modem #2)	240075817286489	✖	Carrier A	25.43 GB (46.95 total)	40.0 GB	100.0 GB	Warning level exceeded!
<input type="checkbox"/>	89852350120000044271 (modem #3)	240075817286490	✖	Carrier B	9.36 GB	20.0 GB		
<input type="checkbox"/>	89852350120000044289 (modem #1)	240075817286491	✖	Carrier A	21.53 GB (46.95 total)	40.0 GB	100.0 GB	Warning level exceeded!
<div> < > </div>								
4 SIMs								

5.2 Data plans

MAIN MENU -> SIM CARDS -> DATA PLANS

Data plans can be created by users to help them monitor and control data traffic consumption per SIM/device.

Each data plan has the following options:

- Plan is “shared” if its data allowance is split between all assigned SIM cards
 - Example: Data plan “Carrier A” has data usage limit of 500GB and 2 SIM cards assigned. When *total* data consumption for *both* assigned SIM cards over billing period exceeds this limit, data service will be disabled for both SIM cards.
- Billing period start
 - Either every n -th day of each month
 - Or every n days, starting on specific date
- Data usage warning level: after reaching this threshold, warning is displayed in user interface
- Data usage limit (can be enabled/disabled): after reaching this threshold, data is disabled for SIM cards using this plan.

Data plans

Add new
Delete selected

Carrier A
Carrier B

Settings

Name Carrier A

Shared plan ☒ data allowance split between SIM cards

Billing period start

☒ Day 1 of each month

☐ Every 30 days starting 25.03.2022

Data usage warning level 40.0 GB

Apply data usage limit ☒

Data usage limit 500.0 GB

Assigned SIM cards

Add new
Delete selected

89441000304178836025 (modem #1)
8934568622100219218F (modem #2)

Apply

Apply and return

Cancel

5.3 APN Library

MAIN MENU -> SIM CARDS -> APN LIBRARY

APN library contains APN, Username and Password data for a number of mobile carriers.

If you use 'Automatic' APN setting in 'Router Configuration' menu, APN is taken from the APN library.

APN library

Action: ----- Apply 0 of 31 selected

<input type="checkbox"/>	Country	1 ▲	Provider	2 ▲	MCC-MNC	APN	Username	Password
<input type="checkbox"/>	Antigua and Barbuda		Digicel Antigua		344930	web.digicelantigua.com		
<input type="checkbox"/>	Antigua and Barbuda		Flow Antigua		344920	ppinternet		
<input type="checkbox"/>	Bahamas		Aliv		364490	pda.newcomobile.com		
<input type="checkbox"/>	Bahamas		BTC		364390	internet.btcbahamas.com		
<input type="checkbox"/>	France		Orange FR / M4G		20801	wbdata		
<input type="checkbox"/>	France		SFR FR		20810	websfr		
<input type="checkbox"/>	French West Indies		Digicel FWI		340200	web.digicelfr.com		
<input type="checkbox"/>	Germany		Deutsche Telekom (T-Mobile)		26201	internet.telekom	tm	tm
<input type="checkbox"/>	Germany		O2 (Alice)		26207	internet.partner1		
<input type="checkbox"/>	Germany		Vodafone DE		26202	web.vodafone.de		
<input type="checkbox"/>	Greece		Cosmote		20201	internet		
<input type="checkbox"/>	Greece		Vodafone GR		20205	internet.vodafone.gr		
<input type="checkbox"/>	Italy		TIM IT		22201	ibox.tim.it		
<input type="checkbox"/>	Jamaica		Digicel Jamaica		338050	web.digiceljamaica.com		

5.4 Add New APN

MAIN MENU -> SIM CARDS -> ADD NEW APN

Allows to add new APN to the APN library. Please consult with our support team in case of any questions.

Add new APN

MCC-MNC:
MCC code (3 digits) + MNC code (2 or 3 digits) together, e.g. 310280

Carrier:
Mobile carrier name

Country:

APN:
APN URL address

Username:

Password:

Save

6 SMS

6.1 Received SMS

MAIN MENU -> SMS -> RECEIVED SMS

Shows incoming SMS messages: to which SIM No, when, from whom they came and message text.

Received SMS					
Action: ----- ▼		Apply 0 of 8 selected			
<input type="checkbox"/>	SIM No.	Date	From	Message	Unread
<input type="checkbox"/>	89331015200727946453 (modem#2)	Oct. 12, 2020, 10:50 a.m.	FONCIA	LE MADRID LA CHAUDIERE VA ETRE MISE EN ROUTE. IL EST RAPPELE ...	✓
<input type="checkbox"/>	89331015200727946453 (modem#2)	Sept. 28, 2020, 6 p.m.	PEUGEOT	PEUGEOT DREUX - Utilitaire, hybride et électrique, notre gamme busines...	✗
<input type="checkbox"/>	89331015200727946453 (modem#2)	Sept. 28, 2020, 4:36 p.m.	8860	MBOXUPDATE	✗
<input type="checkbox"/>	89331015200727946453 (modem#2)	Sept. 25, 2020, 1:33 p.m.	8860	MBOXUPDATE	✗
<input type="checkbox"/>	89331015200727946453 (modem#2)	Sept. 22, 2020, 10:51 a.m.	3300	confiance.	✓
<input type="checkbox"/>	89331015200727946453 (modem#2)	Sept. 22, 2020, 10:51 a.m.	3300	ine de cette demande, contactez rapidement le 1023. Merci de votre	✓
<input type="checkbox"/>	89331015200727946453 (modem#2)	Sept. 22, 2020, 10:51 a.m.	3300	dans l'espace SFR DISTRIBUTION Menton. Si vous n'êtes pas à l'orig	✓
<input type="checkbox"/>	89331015200727946453 (modem#2)	Sept. 22, 2020, 10:51 a.m.	3300	Info SFR : Une demande d'activation d'une nouvelle SIM est en cours	✓
8 Received SMS					

6.2 Sent SMS

MAIN MENU -> SMS -> SENT SMS

Shows outgoing SMS messages.

6.3 Send New SMS

MAIN MENU -> SMS -> SENT SMS

Allows to send new SMS message.

Send new SMS	
SIM No.	89331015200727946453 (modem#2) ▼ ✎
From which SIM to send SMS	
To:	+1234567890
International format starting with country code, e.g. +12345678900	
Message:	Hello, world!
Status:	Not yet sent
Date:	-
Send	

7 Reboot, Shutdown, Logout

MAIN MENU -> 

Reboots or shuts down the router.

