RUT241

하드웨어

정면 구성도

전원 소켓

모바일 신호
감도표시 LED

모바일 네트워크
유형 LED

LAN 포트

WAN 포트

2G 3G 4G

POWER

SIM

LAN

WAN

전원 LED

SIM
슬롯

LAN LED

WAN LED

후면 구성도

리셋 버튼

WiFi

RESET

MOBILE

MOBILE

Wi-Fi 안테나 커넥터
(RP-SMA female)

모바일 MAIN 안테나
커넥터 (SMA female)

모바일 AUX 안테나
커넥터 (SMA female)

전원 소켓 핀아웃
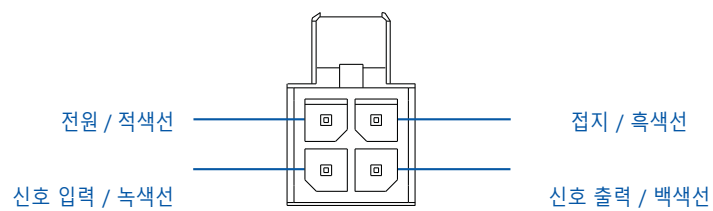
전원 / 적색선

접지 / 흑색선

신호 입력 / 녹색선

신호 출력 / 백색선

기능

MOBILE

Mobile module	4G (LTE) – Cat 4 up to 150 Mbps, 3G – Up to 42 Mbps, 2G – Up to 236.8 kbps
3GPP Release	Release 10/11 depending on the hardware version
Status	Signal strength (RSSI), SINR, RSRP, RSRQ, EC/IO, RSCP, Bytes sent/received, connected band, IMSI, ICCID
SMS	SMS status, SMS configuration, send/read SMS via HTTP POST/GET, EMAIL to SMS, SMS to EMAIL, SMS to HTTP, SMS to SMS, scheduled SMS, SMS autoreply, SMPP
USSD	Supports sending and reading Unstructured Supplementary Service Data messages
Black/White list	Operator black/white list
Multiple PDN	Possibility to use different PDNs for multiple network access and services
Band management	Band lock, Used band status display
APN	Auto APN
Bridge	Direct connection (bridge) between mobile ISP and device on LAN
Passthrough	Router assigns its mobile WAN IP address to another device on LAN

WIRELESS

Wireless mode	IEEE 802.11b/g/n, Access Point (AP), Station (STA)
Wi-Fi security	WPA2-Enterprise - PEAP, WPA2-PSK, WEP, WPA-EAP, WPA-PSK; AES-CCMP, TKIP, Auto Cipher modes, client separation
SSID/ESSID	SSID stealth mode and access control based on MAC address
Wi-Fi users	Up to 50 simultaneous connections
Wireless Hotspot	Captive portal (Hotspot), internal/external Radius server, SMS authorization, internal/external landing page, walled garden, user scripts, URL parameters, user groups, individual user or group limitations, user management, 9 default customizable themes
Wireless Connectivity Features	Fast roaming (802.11r), Relayd
Wireless MAC filter	Whitelist, blacklist

ETHERNET

WAN	1 x WAN port 10/100 Mbps, compliance IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX
LAN	1 x LAN port, 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX

NETWORK

Routing	Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2, EIGRP, NHRP), Policy based routing
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, SFTP, FTP, SMTP, SSL/TLS, ARP, VRRP, PPP, PPPoE, UPNP, SSH, DHCP, Telnet, SMPP, SMNP, MQTT, Wake On Lan (WOL)
VoIP passthrough support	H.323 and SIP-alg protocol NAT helpers, allowing proper routing of VoIP packets
Connection monitoring	Ping Reboot, Wget Reboot, Periodic Reboot, LCP and ICMP for link inspection
Firewall	Port forward, traffic rules, custom rules
DHCP	Static and dynamic IP allocation, DHCP Relay
QoS / Smart Queue Management (SQM)	Traffic priority queuing by source/destination, service, protocol or port, WMM, 802.11e
DDNS	Supported >25 service providers, others can be configured manually
Network backup	Wi-Fi WAN, Mobile, VRRP, Wired options, each of which can be used as an automatic Failover
Load balancing	Balance Internet traffic over multiple WAN connections
SSHFS	Possibility to mount remote file system via SSH protocol

SECURITY

Authentication	Possibility to mount remote file system via SSH protocol
Firewall	Pre-configured firewall rules can be enabled via WebUI, unlimited firewall configuration via CLI; DMZ; NAT; NAT-T
Attack prevention	DDOS prevention (SYN flood protection, SSH attack prevention, HTTP/HTTPS attack prevention), port scan prevention (SYN-FIN, SYN-RST, X-mas, NULL flags, FIN scan attacks)
VLAN	Port and tag-based VLAN separation
Mobile quota control	Mobile data limit, customizable period, start time, warning limit, phone number
WEB filter	Blacklist for blocking out unwanted websites, Whitelist for specifying allowed sites only
Access control	Flexible access control of TCP, UDP, ICMP packets, MAC address filter

VPN

OpenVPN	Multiple clients and a server can run simultaneously, 27 encryption methods
OpenVPN Encryption	DES-CBC 64, RC2-CBC 128, DES-EDE-CBC 128, DES-EDE3-CBC 192, DESX-CBC 192, BF-CBC 128, RC2-40-CBC 40, CAST5-CBC 128, RC2-64-CBC 64, AES-128-CBC 128, AES-128-CFB 128, AES-128-CFB1 128, AES-128-CFB8 128, AES-128-OFB 128, AES-128-GCM 128, AES-192-CFB 192, AES-192-CFB1 192, AES-192-CFB8 192, AES-192-OFB 192, AES-192-CBC 192, AES-192-GCM 192, AES-256-GCM 256, AES-256-CFB 256, AES-256-CFB1 256, AES-256-CFB8 256, AES-256-OFB 256, AES-256-CBC 256
IPsec	IKEv1, IKEv2, with 14 encryption methods for IPsec (3DES, DES, AES128, AES192, AES256, AES128GCM8, AES192GCM8, AES256GCM8, AES128GCM12, AES192GCM12, AES256GCM12, AES128GCM16, AES192GCM16, AES256GCM16)
GRE	GRE tunnel, GRE tunnel over IPsec support
PPTP, L2TP	Client/Server instances can run simultaneously, L2TPv3, L2TP over IPsec support
Stunnel	Proxy designed to add TLS encryption functionality to existing clients and servers without any changes in the program's code
DMVPN	Method of building scalable IPsec VPNs
SSTP	SSTP client instance support
ZeroTier	ZeroTier VPN client support
WireGuard	WireGuard VPN client and server support
Tinc	Tinc offers encryption, authentication and compression in it's tunnels. Client and server support

MODBUS TCP SLAVE

ID range	Respond to one ID in range [1;255] or any
Allow Remote Access	Allow access through WAN
Custom registers	MODBUS TCP custom register block requests, which read/write to a file inside the router, and can be used to extend MODBUS TCP Slave functionality

MODBUS TCP MASTER

Supported functions	01, 02, 03, 04, 05, 06, 15, 16
Supported data formats	8-bit: INT, UINT; 16-bit: INT, UINT (MSB or LSB first); 32-bit: float, INT, UINT (ABCD (big-endian), DCBA (little-endian), CDAB, BADC)

DATA TO SERVER

Protocol	HTTP(S), MQTT, Azure MQTT, Kinesis

MQTT GATEWAY

MQTT Gateway	Allows sending commands and receiving data from MODBUS Master through MQTT broker

DNP3

Supported modes	TCP Master, DNP3 Outstation

MONITORING & MANAGEMENT

WEB UI	HTTP/HTTPS, status, configuration, FW update, CLI, troubleshoot, event log, system log, kernel log
FOTA	Firmware update from server, automatic notification
SSH	SSH (v1, v2)
SMS	SMS status, SMS configuration, send/read SMS via HTTP POST/GET
Call	Reboot, Status, Mobile data on/off, Output on/off, answer/hang-up with a timer, Wi-Fi on/off
TR-069	OpenACS, EasyCwmp, ACSLite, tGem, LibreACS, GenieACS, FreeACS, LibCWMP, Friendly tech, AVSystem
MQTT	MQTT Broker, MQTT publisher
SNMP	SNMP (v1, v2, v3), SNMP Trap
JSON-RPC	Management API over HTTP/HTTPS
MODBUS	MODBUS TCP status/control
RMS	Teltonika Remote Management System (RMS)

IoT PLATFORMS

Cloud of Things	Allows monitoring of: Device data, Mobile data, Network info, Availability
ThingWorx	Allows monitoring of: WAN Type, WAN IP, Mobile Operator Name, Mobile Signal Strength, Mobile Network Type
Cumulocity	Allows monitoring of: Device Model, Revision and Serial Number, WAN Type and IP, Mobile Cell ID, ICCID, IMEI, Connection Type, Operator, Signal Strength
Azure IoT Hub	Can send device IP, Number of bytes send/received, Temperature, PIN count to Azure IoT Hub server, Mobile connection state, Network link state, IMEI, ICCID, Model, Manufacturer, Serial, Revision, IMSI, SIM State, PIN state, GSM signal, WCDMA RSCP, WCDMA EC/IO, LTE RSRP, LTE SINR, LTE RSRQ, CELL ID, Operator, Operator number, Connection type

SYSTEM CHARACTERISTICS

CPU	Mediatek, 580 MHz, MIPS 24KEc
RAM	128 MB, DDR2
FLASH storage	16 MB, SPI Flash

FIRMWARE / CONFIGURATION

WEB UI	Update FW from file, check FW on server, configuration profiles, configuration backup
FOTA	Update FW
RMS	Update FW/configuration for multiple devices at once
Keep settings	Update FW without losing current configuration

FIRMWARE CUSTOMIZATION

Operating system	RutOS (OpenWrt based Linux OS)
Supported languages	Busybox shell, Lua, C, C++
Development tools	SDK package with build environment provided

INPUT/OUTPUT

Input	1 x Digital Input, 0 - 6 V detected as logic low, 8 - 30 V detected as logic high
Output	1 x Digital Output, Open collector output, max output 30 V, 300 mA
Events	Email, RMS, SMS
I/O juggler	Allows to set certain I/O conditions to initiate event

POWER

Connector	4-pin industrial DC power socket
Input voltage range	9 – 30 VDC, reverse polarity protection; surge protection >31 VDC 10us max
PoE (passive)	Passive PoE over spare pairs. Possibility to power up through LAN1 port, not compatible with IEEE802.3af, 802.3at and 802.3bt standards, Mode B, 9 - 30 VDC
Power consumption	< 6.5 W Max

PHYSICAL INTERFACES

Ethernet	2 x RJ45 ports, 10/100 Mbps
I/O's	1 x Digital Input, 1 x Digital Output on 4-pin power connector
Status LEDs	3 x Connection type status LEDs, 5 x Connection strength LEDs, 2 x LAN status LEDs, 1 x Power LED
SIM	1 x SIM slot (Mini SIM – 2FF), 1.8 V/3 V, external SIM holder
Power	1 x 4-pin power connector
Antennas	2 x SMA for LTE, 1 x RP-SMA for Wi-Fi antenna connectors
Reset	Reboot/User default reset/Factory reset button

PHYSICAL SPECIFICATION

Casing material	Aluminium housing, plastic panels
Dimensions (W x H x D)	83 x 25 x 74 mm
Weight	125 g
Mounting options	Bottom and sideways DIN rail mounting slots

OPERATING ENVIRONMENT

Operating temperature	-40 °C to 75 °C
Operating humidity	10% to 90% non-condensing
Ingress Protection Rating	IP30

REGULATORY & TYPE APPROVALS

Regulatory	CE/RED, UKCA, CB, EAC, RoHS, REACH, ICASA, ANRT, RCM, IMDA, ETA-WPC, KC, GITEKI, NTC, FCC, IC, PTCRB, NOM, GCF, E-mark
Operator	AT&T, Verizon, T-Mobile, UScellular

EMI IMMUNITY

IMMUNITY Standards	EN 301 489-1 V2.2.3 EN 301 489-17 V3.2.4 Final draft EN 301 489-52 V1.2.0 EN 55032:2015+A1:2020 EN 55035:2017+A11:2020 EN 61000-3-3:2013+A1:2019 EN IEC 61000-3-2:2019
ESD	EN 61000-4-2:2009
RS	EN 61000-4-3:2020
EFT	EN 61000-4-4:2012
Surge immunity (AC Power Line)	EN 61000-4-5:2014+A1:2017
CS	EN 61000-4-6:2014
DIP	EN IEC 61000-4-11:2020

RF

Standards	EN 300 328 V2.2.2, EN 301 511 V12.5.1, EN 301 908-1 V13.1.1, EN 301 908-2 V13.1.1, EN 301 908-13 V13.1.1

SAFETY

Standards	EN IEC 62311:2020, EN 50665:2017, EN IEC 62368-1:2020+A11:2020, IEC 62368-1:2018

구성품

- Router RUT241
- 2 x LTE antennas (swivel, SMA male)
- 1 x Wi-Fi antenna (swivel, RP-SMA male)
- Ethernet cable (1.5 m)
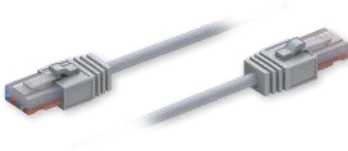- SIM Adapter kit
- QSG (Quick Start Guide)
- Packaging box

ROUTER RUT241	**2 X LTE ANTENNAS (SWIVEL, SMA MALE)**	**1 X WI-FI ANTENNA (SWIVEL, RP-SMA MALE)**
ETHERNET CABLE (1.5 M)	**SIM ADAPTER KIT**	**QSG**

표준 주문 코드

PRODUCT CODE	HS CODE	HTS CODE	PACKAGE CONTAINS
RUT241 000000	851762	8517.62.00	Standard package with EU PSU
RUT241 010000	851762	8517.62.00	Standard package with EU PSU
RUT241 022020	851762	8517.62.00	Standard package without PSU
RUT241 030000	851762	8517.62.00	Standard package with EU PSU
RUT241 065000	851762	8517.62.00	Standard package with AU PSU
RUT241 070000	851762	8517.62.00	Standard package with EU PSU
RUT241 087000	851762	8517.62.00	Standard package with JP PSU
RUT241 098000	851762	8517.62.00	Standard package with US PSU

지역별 버전

PRODUCT CODE	REGION (OPERATOR)	FREQUENCY
RUT241 *0****	Europe[1], The Middle East, Africa, Thailand	• **4G (LTE-FDD):** B1, B3, B7, B8, B20, B28A • **3G:** B1, B8 • **2G:** B3, B8
RUT241 *1****	Europe[1], The Middle East, Africa	• **4G (LTE-FDD):** B1, B3, B5, B7, B8, B20 • **4G (LTE-TDD):** B40 • **3G:** B1, B5, B8 • **2G:** B3, B8
RUT241 *3****	South Korea	• **4G (LTE-FDD):** B1, B3, B5, B7, B8, B20 • **4G (LTE-TDD):** B38, B40, B41 • **3G:** B1, B5, B8 • **2G:** B3, B8
RUT241 *6****	Global[1]	• **4G (LTE-FDD):** B1, B2, B3, B4, B5, B7, B8, B12, B13, B18, B19, B20, B25, B26, B28 • **4G (LTE-TDD):** B38, B39, B40, B41 • **3G:** B1, B2, B4, B5, B6, B8, B19 • **2G:** B2, B3, B5, B8
RUT241 *9****	Australia, New Zealand, Taiwan	• **4G (LTE-FDD):** B1, B3, B5, B7, B8, B28 • **4G (LTE-TDD):** B40 • **3G:** B1,B5, B8 • **2G:** B3, B5, B8
RUT241 *8****	Latin America	• **4G (LTE-FDD):** B1, B2, B3, B4, B5, B7, B8, B28 • **4G (LTE-TDD):** B40 • **3G:** B1, B2, B4, B5, B8 • **2G:** B2, B3, B5, B8
RUT241 *8****	Japan	• **4G (LTE-FDD):** B1, B3, B8, B18, B19, B26 • **4G (LTE-TDD):** B41 • **3G:** B1, B6, B8, B19
RUT241 *8****	North America[2]	• **4G (LTE-FDD):** B2, B4, B5, B12, B13, B14, B66, B71 • **3G:** B2, B4, B5

치수 및 무게정보

MAIN MESUREMENT

W x H x D (mm):

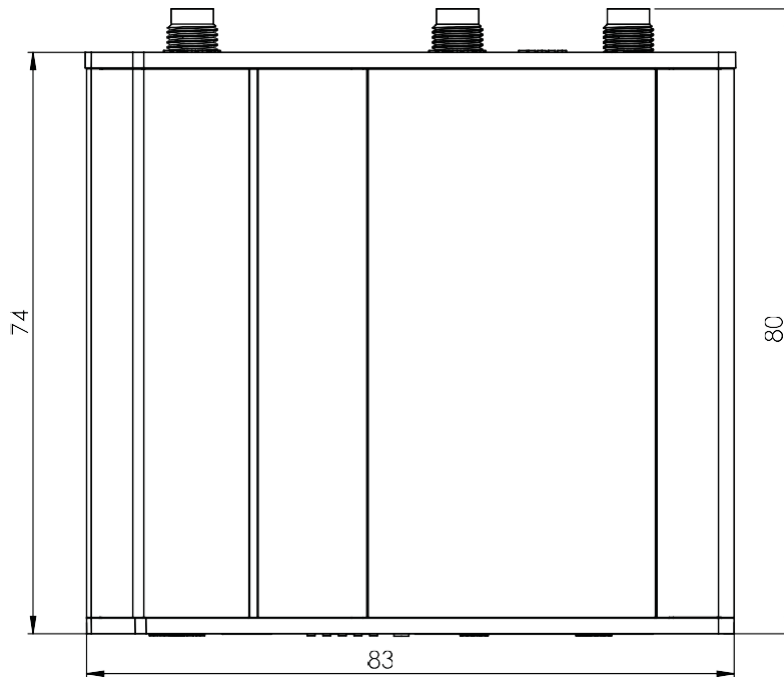하우징*:   83 x 25 x 74 mm

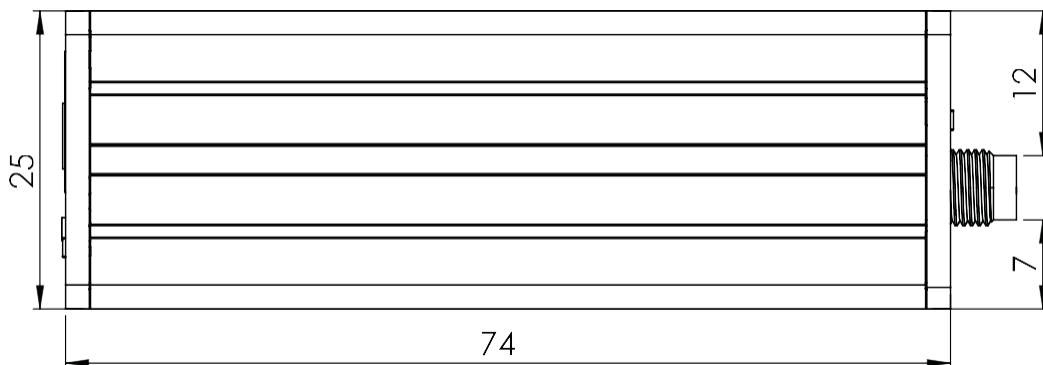박스: 173 x 71 x 148 mm

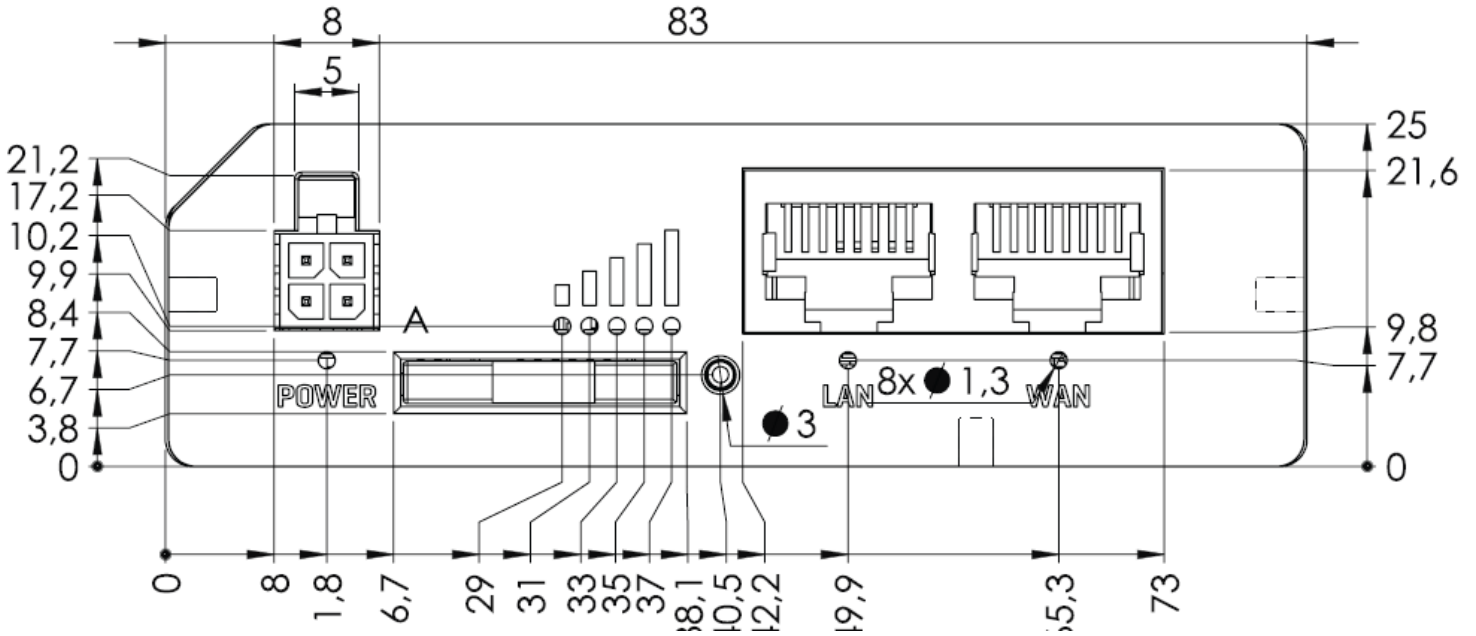*안테나 커넥터와 나사를 제외한 수치입니다..

TOP VIEW

상단에서 바라본 수치입니다.

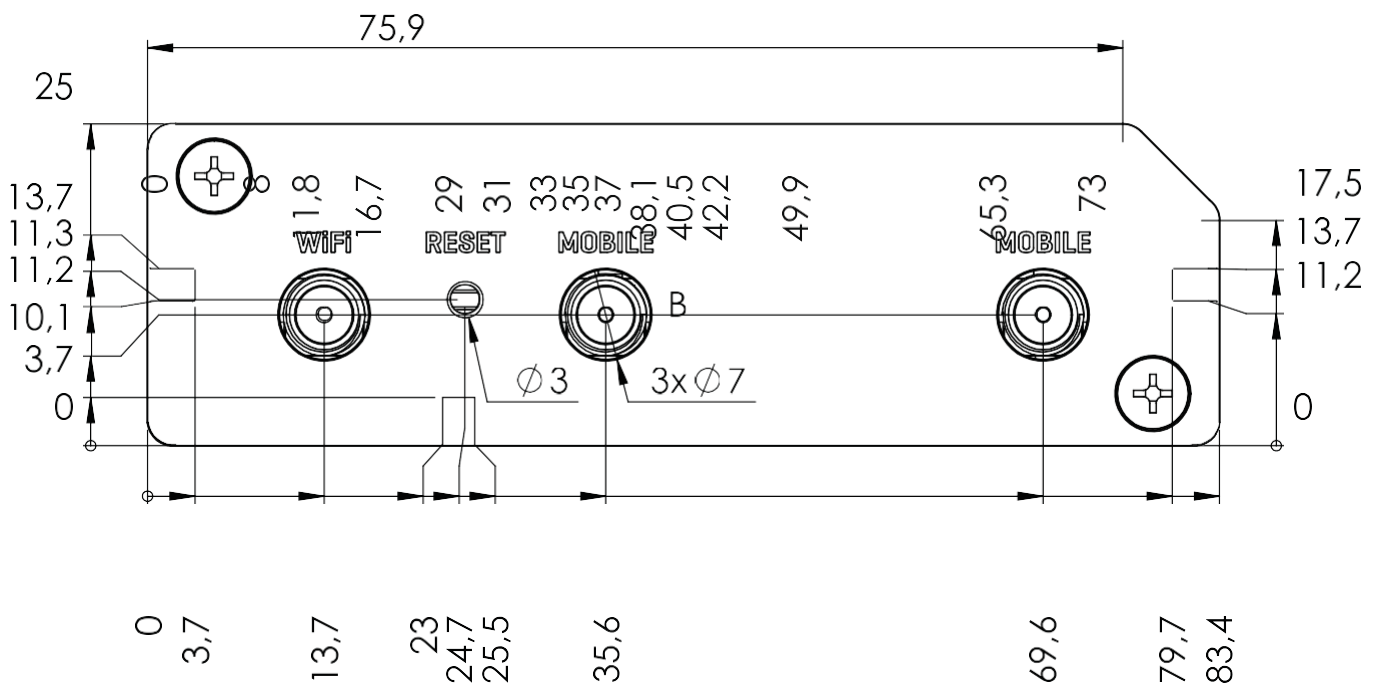## RIGHT VIEW
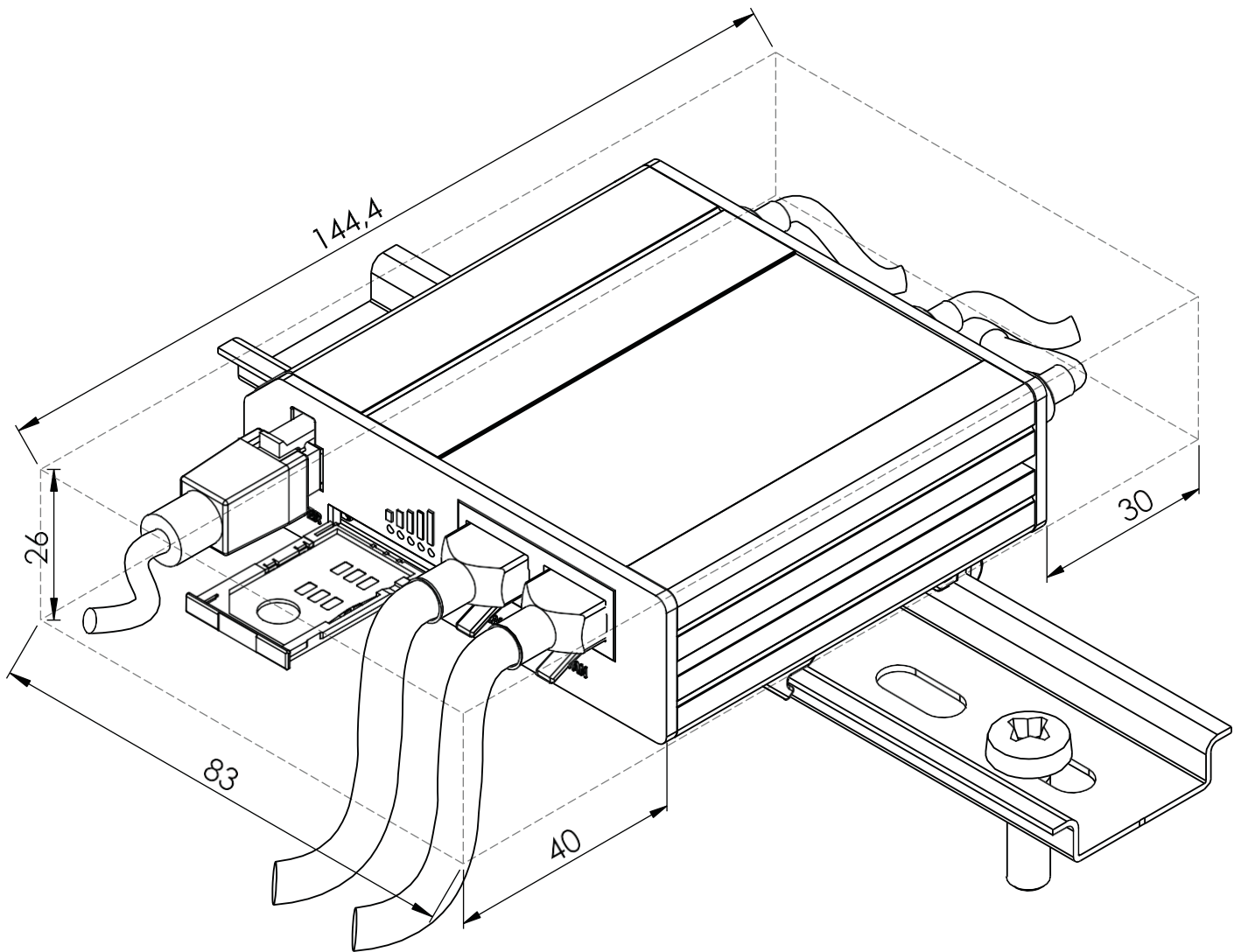
우측에서 바라본 수치입니다.

정면에서 바라본 수치입니다.

후면에서 바라본 수치입니다.

MOUNTING SPACE REQUIREMENTS

아래 그림은 케이블과 안테나를 포함하여 설치에 필요한 대략적인 공간정보를 표시합니다:

144.4

26

83

40

30

DIN Rail 장착시의 수치를 표시합니다.

16,7