



# Produkty TELTONIKA

MODEMS | ROUTERS | GATEWAYS | SWITCHES





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# **MODEMS**

### **MODEMY**

Industrial cellular modems is the most cost-efficient and scalable method to provide reliable connectivity in industrial networking applications. Large amount of legacy and Industrial IoT infrastructure worldwide requires different methods of connectivity. Robust Industrial Cellular Modems from Teltonika Networks provide numerous cellular connectivity options, ranging from 2G (EGPRS) to 4G LTE Cat 1, LTE Cat-M1 and NB-IoT.







# **TRM240**

INDUSTRIAL CELLULAR MODEM

TRM240 is an Industrial grade USB LTE Cat 1 Modem with rugged housing and external antenna for better signal coverage. This product is perfect for upgrading existing industrial equipment with cost-efficient LTE connectivity.

### CONNECTIVITY

4G/LTE (Cat 1), 3G, 2G

### **EFFICIENT**

Low power consumption

### **DURABLE**

Rugged aluminium housing

### **COMPACT**

Small size, easy installation

### **USB**

Interface for internet accsess

### **EASY TO USE**

Controlled using Network manager



	////
Mobile	4G/LTE (Cat 1), 3G, 2G
Powering option	microUSB, 5 VDC
SIM	1 x Internal SIM holder (2FF)
Antenna connectors	1 x SMA for mobile
USB	1 x Micro USB slave
Status LEDs	1 x LTE, 1 x Network, 1 x Power
Ingress protection rating	IP30
Operating humidity	10 % to 90 % non-condensing
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option
Dimensions (W x H x D)	75 x 25 x 65 mm
Weight	125 g

Network manager	Windows 7/8/8.1/10 Linux distributions
USB serial driver	Windows 7/8/8.1/10 Windows CE 5.0/6.0 Linux 2.6~5.4 Android 4.x/5.x/6.x/7.x/8.x/9.x
RIL driver	Android 4.x/5.x/6.x/7.x/8.x/9.x
NDIS driver	Windows 7/8/8.1/10
Gobinet driver	Linux 2.6~5.4
QMI_WWAN driver	Linux 3.4~5.4
Control via AT commands	3GPP TS27.007 and enhanced AT commands





# **TRM250**

### INDUSTRIAL CELLULAR MODEM

TRM250 is an Industrial grade USB LTE Cat-M1/NB-IoT/EGPRS Modem with rugged housing and external antenna for better signal coverage. This product is perfect for providing cost-efficient Internet connectivity in remote monitoring applications.

### CONNECTIVITY

4G/LTE (Cat M1), NB-IoT, 2G

### **EFFICIENT**

Low power consumption

### **DURABLE**

Rugged aluminum housing

### **COMPACT**

Small size, easy installation

### USB

Interface for internet accsess

### **EASY TO USE**

Controlled using Network manager



Mobile	4G/LTE (Cat M1), NB-IoT, 2G
Powering option	microUSB, 5 VDC
SIM	1 x Internal SIM holder (2FF)
Antenna connectors	1 x SMA for mobile
USB	1 x Micro USB slave
Status LEDs	1 x Network, 1 x Power
Ingress protection rating	IP30
Operating humidity	10 % to 90 % non-condensing
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option
Dimensions (W x H x D)	75 x 25 x 65 mm
Weight	125 g

Network manager	Windows 7/8/8.1/10 Linux distributions
USB serial driver	Windows 7/8/8.1/10 Windows CE 5.0/6.0 Linux 2.6~5.4 Android 4.x/5.x/6.x/7.x/8.x/9.x
RIL driver	Android 4.x/5.x/6.x/7.x/8.x/9.x
NDIS driver	Windows 7/8/8.1/10
Gobinet driver	Linux 2.6~5.4
QMI_WWAN driver	Linux 3.4~5.4
Control via AT commands	3GPP TS27.007 and enhanced AT commands

# GATEWAYS

### **BRÁNY**

Teltonika Networks TRB series is a set of programmable M2M gateways designed to connect one device to the Internet. Linux-based highly functional TRB devices come with industrial networking capabilities and variety of interfaces such as Ethernet, RS232, RS485 or Inputs/Outputs. All our gateways are 4G LTE capable and can be connected to the RMS (Remote management system) for intuitive and convenient remote monitoring, configuration and control.

# REMOTE WATER PUMP AUTOMATION USING SMS AND CALLS

To avoid wastage of water and enable more efficient use of resources, more and more often water systems are getting automated. It ensures that water use is optimized and requires less

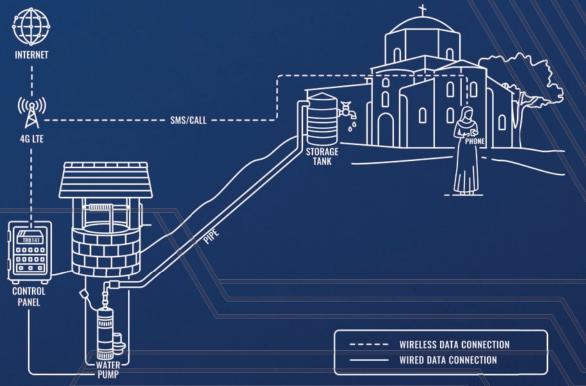
In this project, ALES company created an automation system for remote control of an underground well pump intended for transportation of sanitation and irrigation water in a remote monastery. The water was intended to be transported between two points with a 160 meters elevation and 1.5 km distance which crossed out the wired control option as too expendable.

In this solution, the well, water pump, and control panel are located in a remote plain field, while the monastery, where the water should be transported, is located on a mountain 1,5 km away. The water pump allows to fill up the water storage tank located on the mountain via the water pipe.

The water pipe is not pumping the water continuously due to efficiency reasons. It can be remotely activated by using the control panel with a mobile Teltonika Networks TRB141 gateway, allowing to turn on the water pump whenever the water is needed. The pumping can be initiated either by calling or by sending an SMS to the TRB 141 gateway SIM card from a cell phone. After the tank is filled up, the pump can be remotely deactivated by using the same method (call or SMS).

/Cost-effective and simple remotely controlled solution.
/Remote control by SMS – the pump can be managed by a simple SMS message sent by a specified list of users at any time.
/Remote control by call – the user can turn on the pump for a specified time frame simply by making a call.
/Easy to set up – documentation provided with the product is simple to understand and sufficient to utilize the entire capabilities of the

/ Simplified support enabled by the Remote Management System.



# DIGITAL SIGNAGE & CELLULAR CONNECTIVITY

**RETAIL** 

Digital Signage is a sub-segment of electronic signage and uses different technologies including LCD, LED, projection and many others to communicate messages and advertisements to the public for marketing or informational purposes The concept is not new at all and can be traced back to the neon signs first conceptualized by Georges Claude in 1910. Nowadays, higher quality screens and increased capabilities of media players resulted in the rising popularity of Digital Signage installations, some of which are even including concepts of augmented reality (AR). In fact, KBV Research estimates that the global Digital Signage market will reach \$29.8 billion by 2024.

### SOLUTION

As identified, reliable and convenient connectivity is essential for efficient content management across extensive Digital Signage infrastructure. Cellular solutions based on 4G LTE are prevalent in this use case because they eliminate multiple challenges, such as pace of solution deployment, different connectivity provider management, and dependency on 3rd party wired network infrastructure, which cannot guarantee 100% uptime. As defined in the topology above, the media player is responsible for playback of marketing content, such as pictures or video, while TRB140 is the device which enables the remote upload and management of

such content.TRB140 is a 4G LTE enabled gateway, which is perfect for Digital Signage solutions because it is easy to deploy and scale due to compatibility with Teltonika Networks Remote Management System. With a single TRB140, the user can manage content on the media player and change the parameters and the playing order of the content.

### BENEFITS

/Easy to manage – with Teltonika Remote Management System, system administrators can be in control of thousands of different sites with a single user interface.

/Quick to deploy – no need to wait for wired Internet access contracts and installations.

/Easy to scale – Teltonika TRB140 compatible with RMS which allows configuring an infinite amount of devices in minutes.

/Secure - infrastructure will be safe due to advanced security features of the TRB140, such as VPN, IPsec, Firewall

and Access Control.
/Small size - TRB140 has impressively small footprint allowing it to be installed even in the most compact and

design conscious Digital Signage enclosures.







## CONNECTIVITY

4G/LTE (Cat 4), 3G, 2G

9-30V

Wide range of supported power supply voltages

### **DURABLE**

Rugged aluminum housing

### **COMPACT**

Small size, easy installation

### **RUTOS**

Easy to use, secure and feature rich OpenWRT based operating system

### RMS

Compatible with Teltonika Remote Management System



Mobile	4G/LTE (Cat 4), 3G, 2G
CPU	Qualcomm, ARM Cortex A7, 1.2 GHz
Memory	512 MBytes Flash (70 MBytes for userspace), 128 MBytes RAM (50 MBytes for userspace)
Powering option	4pin power socket, 9-30 VDC
SIM	1 x Internal SIM holder (2FF)
Antenna connectors	1x SMA for mobile
Ethernet	1 x 10/100/1000 Ethernet port
Inputs/Outputs	On 4pin socket: 2 x Digital input/Digital open collector output (configurable)
Other	1 x Micro USB slave
Status LEDs	3 x Connection type, 5 x Signal strength, 2 x Ethernet, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option
Dimensions (W x H x D)	75 x 25 x 65 mm
Weight	134 g

Operating system	RutOS
Mobile features	Auto APN, Band lock, SIM switch, Operator black/white list, Data/SMS limits
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, DHCP, Telnet
Firewall	Port forward, Traffic rules, Custom rules, Pre-configured firewall rules, DMZ, NAT, NAT-T, NAT helpers,
Security	DDOS prevention (SYN flood protection, SSH attack prevention, HTTP/HTTPS attack prevention), Port
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
SMS features	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
Services	DDNS, VRRP, Wake On Lan (WOL), WEB filter, UPNP, Traffic Logging





INDUSTRIAL RUGGED GPIO LTE GATEWAY

Industrial and small LTE Cat 1 Gateway equipped with multiple Inputs/Outputs and MicroUSB port. Compact design makes this Gateway perfect for applications where devices must be remotely managed using I/O's.

### CONNECTIVITY

4G/LTE (Cat 1), 3G, 2G

9-30V

Wide range of supported power supply voltages

### **DURABLE**

Rugged aluminum housing

### **COMPACT**

Small size, easy installation

### **I/0**

Wide range of multiple Inputs/Outputs for remote monitoring and control

### RMS

Compatible with Teltonika Remote Management System



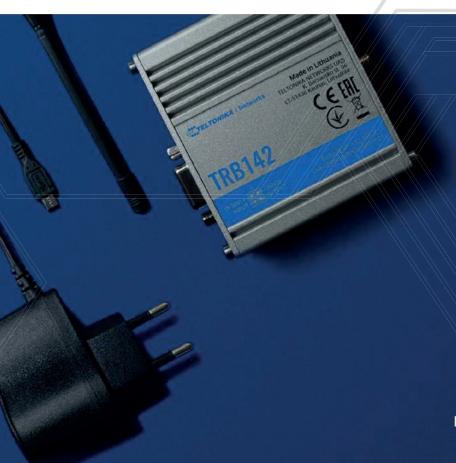
Mobile	4G/LTE (Cat 1), 3G, 2G
CPU	Qualcomm, ARM Cortex A7, 1.2 GHz
Memory	512 MBytes Flash (70 MBytes for userspace), 128 MBytes RAM (50 MBytes for userspace)
Powering option	4pin power socket, 9-30 VDC
SIM	1 x Internal SIM holder (2FF)
Antenna connectors	1 x SMA for mobile
Inputs/Outputs	On 4pin socket: 2 x Digital input/Digital open collector output (configurable) On 16pin socket: 1 x Isolated input, 1 x 1-Wire interface, 1 x Analog input (with 4-20mA capability), 1 x Latching relay output, 1 x Non-latching relay output, 2 x Dry/Wet input (configurable)
Other	1 x Micro USB slave
Status LEDs	3 x Connection type, 5 x Signal strength, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option
Dimensions (W x H x D)	75 x 25 x 65 mm
Weight	136 g

### **SOFTWARE**

Operating system	RutOS
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, DHCP, Telnet
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP
Monitoring and Management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
Services	DDNS, VRRP, WEB filter, UPNP, Traffic Logging

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# **TRB142**

INDUSTRIAL RUGGED LTE RS232 GATEWAY

Ultra-small, lightweight and energy efficient IoT device equipped with mission-critical LTE connectivity. TRB142 comes with a widely used RS232 Industrial interface for remote device management.

### CONNECTIVITY

4G/LTE (Cat 1), 3G, 2G

9-30V

Wide range of supported power supply voltages

### **DURABLE**

Rugged aluminum housing

### **COMPACT**

Small size, easy installation

### SERIAL

Equipped with RS232 for serial communication

### RMS

Compatible with Teltonika Remote Management System



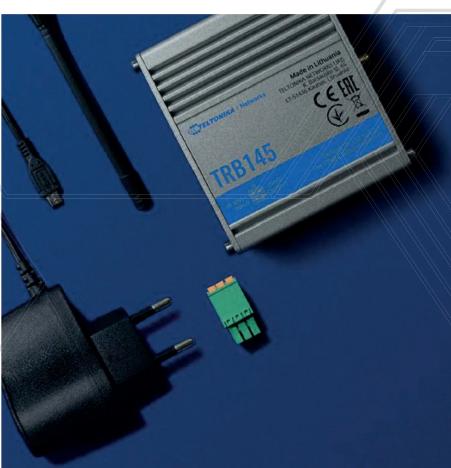
Mobile	4G/LTE (Cat 1), 3G, 2G
CPU	Qualcomm, ARM Cortex A7, 1.2 GHz
Memory	512 MBytes Flash (70 MBytes for userspace), 128 MBytes RAM (50 MBytes for userspace)
Powering option	4pin power socket, 9-30 VDC
SIM	1 x Internal SIM holder (2FF)
Antenna connectors	1 x SMA for mobile
Inputs/Outputs	On 4pin socket: 2 x Digital input/Digital open collector output (configurable)
Serial	1 x RS232
Other	1 x Micro USB slave
Status LEDs	3 x Connection type, 5 x Signal strength, 1 x Power
Operating temperature	-40° C to 75° C
Housing	Aluminium housing with DIN rail mounting option
Dimensions (W x H x D)	75 x 25 x 65 mm
Weight	135 g

### **SOFTWARE**

Operating system	RutOS
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, DHCP, Telnet
Monitoring and Management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
Modbus	TCP slave, TCP master, RTU master, RTU gateway, Modbus over MQTT
Serial	Console, Over IP, Modem, NTRIP, Modbus

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# **TRB145**

INDUSTRIAL RUGGED LTE RS485 GATEWAY

Ultra-small, lightweight and energy efficient IoT device equipped with mission-critical LTE connectivity. TRB145 comes with a widely used RS485 Industrial interface for remote device management.

### CONNECTIVITY

4G/LTE (Cat 1), 3G, 2G

9-30V

Wide range of supported power supply voltages

### **DURABLE**

Rugged aluminum housing

### **COMPACT**

Small size, easy installation

### **SERIAL**

Equipped with RS485 for serial communication

### **RMS**

Compatible with Teltonika Remote Management System



Mobile	4G/LTE (Cat 1), 3G, 2G
CPU	Qualcomm, ARM Cortex A7, 1.2 GHz
Memory	512 MBytes Flash (70 MBytes for userspace), 128 MBytes RAM (50 MBytes for userspace)
Powering option	4pin power socket, 9-30 VDC
SIM	1 x Internal SIM holder (2FF)
Antenna connectors	1 x SMA for mobile
Inputs/Outputs	On 4pin socket: 2 x Digital input/Digital open collector output (configurable)
Serial	1 x RS485
Other	1 x Micro USB slave
Status LEDs	3 x Connection type, 5 x Signal strength, 1 x Power
Operating temperature	-40° C to 75° C
Housing	Aluminium housing with DIN rail mounting option
Dimensions (W x H x D)	75 x 25 x 65 mm
Weight	130 g

RutOS
TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, DHCP, Telnet
WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
RMS, FOTA, Azure loT Hub, Cloud of Things, Cumulocity, ThingWorx
TCP slave, TCP master, RTU master, RTU gateway, Modbus over MQTT
Console, Over IP, Modem, NTRIP, Modbus





Industrial All-In-One M2M LTE Cat 4 Gateway equipped with multiple Inputs/Outputs, R5232, R5485 and Ethernet interfaces. All these features allow this device to be used universally in M2M applications.

# CONNECTIVITY

4G/LTE (Cat 4), 3G, 2G

9-30V

Wide range of power supply voltages

### **DUAL SIM**

With auto failover, backup WAN and other switching scenarios

**Multiple Inputs and Outputs for remote** monitoring and control

### **SERIAL**

RS232/RS485 serial communication interfaces

### GNSS

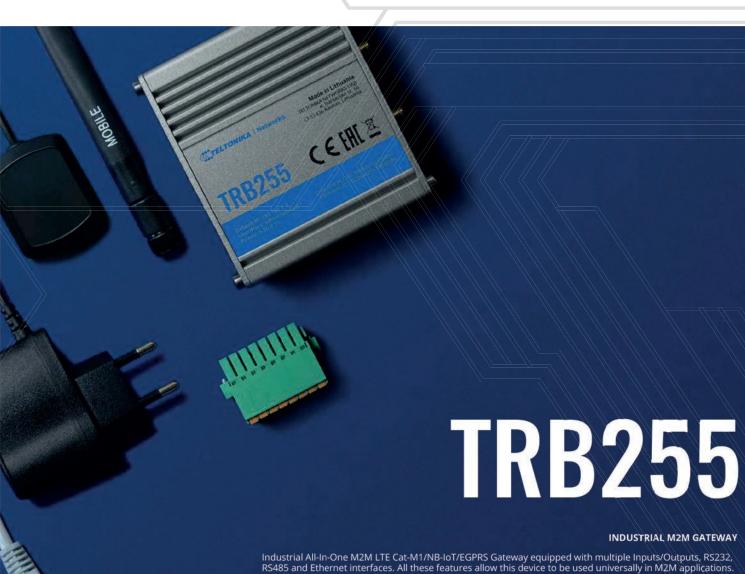
Global Navigation Satellite System for location services with geofencing functionality



IIMIDIAN	. —
Mobile	4G/LTE (Cat 4), 3G, 2G
CPU	Qualcomm, MIPS 24Kc, 650 MHz
Memory	16 MBytes Flash, 64 MBytes RAM
Powering option	16pin terminal, 9-30 VDC
SIM	2 x Internal SIM holders (2FF)
Antenna connectors	1 x SMA for mobile, 1 x SMA for GPS
Ethernet	1 x 10/100 Ethernet port
GNSS	GPS, GLONASS, BeiDou, Galileo, QZSS
Inputs/Outputs	On 16pin socket: 3 x Digital input/Digital open collector output (configurable), 1 x Analog input
Serial	1 x RS232, 1 x RS485
Status LEDs	3 x Connection type, 3 x Signal strength, 2 x Ethernet, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option
Dimensions (W x H x D)	83 x 25 x 74 mm
Weight	165 g

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Multiple PDN, Auto APN, Band lock, SIM switch, Operator black/white list, Data/ SMS limits
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, DHCP, Telnet
Monitoring and Management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
NTP	NTP Server, NTP Client, Sync with: External NTP server, GNSS, Mobile operator
GNSS	NMEA forwarding, AVL, Geofencing
Modbus	TCP slave, TCP master, RTU master, RTU gateway, Modbus over MQTT
Serial	Console, Over IP, Modem, NTRIP, Modbus
Administration	Multi user, Configuration profiles, Diagnostics, logs, Configuration backup





# CONNECTIVITY

4G/LTE (Cat M1), NB-IoT, 2G

9-30V

Wide range of supported power supply voltages

### **DUAL SIM**

With auto failover, backup WAN and other switching scenarios

1/0

Multiple Inputs and Outputs for remote monitoring and control

### **SERIAL**

RS232/RS485 serial communication interfaces

### GNSS

Global Navigation Satellite System for location services with geofencing functionality



, 2G
24Kc, 650 MHz
64 MBytes RAM
0 VDC
olders (2FF)
e, 1 x SMA for GPS
t port
leiDou, Galileo, QZSS
3 x Digital input/Digital open collector output (configurable),
85
oe, 3 x Signal strength, 2 x Ethernet, 1 x Power
g with DIN rail mounting option
3 'F

Operating system	DutOC (OpenMyt based Linux OC)
Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Multiple PDN, Auto APN, Band lock, SIM switch, Operator black/white list, Data/SMS limits
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, DHCP, Telnet
Monitoring and Management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
NTP	NTP Server, NTP Client, Sync with: External NTP server, GNSS, Mobile operator
GNSS	NMEA forwarding, AVL, Geofencing
Modbus	TCP slave, TCP master, RTU master, RTU gateway, Modbus over MQTT
Serial	Console, Over IP, Modem, NTRIP, Modbus
Administration	Multi user, Configuration profiles, Diagnostics, logs, Configuration backup

# ROUTERS

### ROUTERY

Our routers are equipped with a variety of wireless and wired connectivity options and technologies which makes them an essential tool to connect people, machines and infrastructure across most market sectors. The Teltonika Networks RUT series is engineered to be deployed easily in challenging connectivity scenarios and our RutOS based on Linux OpenWRT has become one of the most functional router operating systems in the market.

# REAL-TIME BEACH OCCUPANCY MONITORING

**SMART CITY** 

Tourism is one of the main economic drivers in Spain. Although it has been highly disrupted due to the global pandemic, with certain measures in place, people may start enjoying some of the usual holiday activities, including spending time at the beach. The number of people allowed on public beaches is strictly limited. Technological solutions need to be implemented to monitor the capacity and busyness of each beach in real-time to ensure safety and inform the public for better planning.

### SOLUTION

Several sensors and cameras are installed to count the number of several sensors and cameras are installed to count the number of people at the beach. These devices are connected to the RUT950 dual-SIM cellular router providing connectivity to the solution. The collected information is sent to the Public Monitoring Center and further communicated through various channels. A digital signage screen shows the occupancy rates at the entrance. It also informs about the busyness of nearby beaches. A speaker is connected to the solution to communicate important announcements and the traffic is managed by a traffic light. Whenever the maximum canacity is reached it turns by a traffic light. Whenever the maximum capacity is reached, it turns red and no more people are allowed to enter.

The same information is also sent to another important piece of the solution - the mobile app. It allows for people to check the information before their trip and avoid queues by choosing the beach according to availability in real-time. This way two major goals are achieved - the safety of the public and at least partial revival of tourism, which has been greatly affected by the pandemic.

/Reliability ensured by dual SIM and auto-failover switching to a

backup option whenever any network issues occur.

Industrial robustness allows to use the device in outside conditions

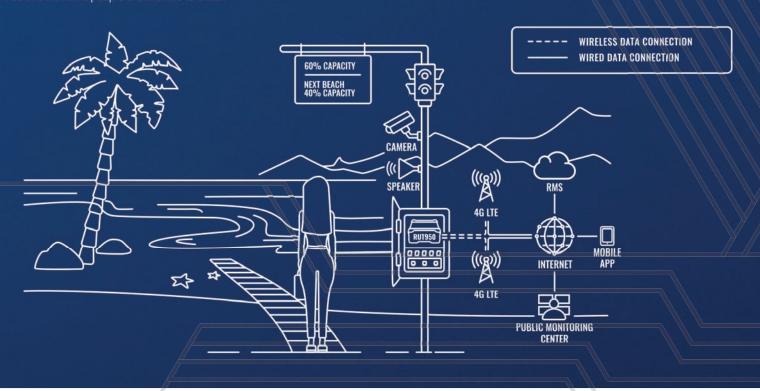
Industrial robustness allows to use the device in outside conditions. since it can sustain a temperature range between -40 °C to 75 °C and humidity of 10% to 90%. /Professional level security ensured by a pre-installed Firewall,

multiple VPNs and attack prevention.

/ A single RUT950 router is enough to provide connectivity for the

whole solution.

Remote management and maintenance via Remote Management System (RMS).



# **IoT FOR REDUCING RISKS IN CONSTRUCTION SITES**

**SMART CITY** 

The construction business is challenging for many reasons. One of the biggest problems is ensuring the security of the sites. Can you imagine that in the UK alone construction site theft costs 800 million pounds per year? The most common target of thieves is expensive construction equipment and costly materials, like metal. Besides theft, construction sites often become victims of vandals or arsonists. Implementing smart technology is an efficient way to prevent such crimes or track the criminals after a break-in.

### SOLUTION

In this solution, we have chosen a highly powerful and rugged RUTX12 router. It has two simultaneously operational LTE Cat6 modems and a load balancing option for fast and seamless performance. Dual SIM with instant automatic failover ensures there is no internet downtime.

Another Teltonika Networks device - TSW100 is used to connect CCTV cameras with Power over Ethernet (PoE) technology for a simplified power installation. The footage from the cameras is sent to a Centralized CCTV Control room for remote management and monitoring. This way the footage is safe from theft and damage. Various expensive tools and machinery have got ID Coin or ID Puck

sensors for easy inventory tracking using Bluetooth. Besides, the Slim ID beacons enable easy monitoring of people entering and leaving the site at an exact time. Zerotouch access control with a thermal camera at the entrance ensures staff with fever cannot enter the site and is important for the prevention of COVID-19 or other diseases.

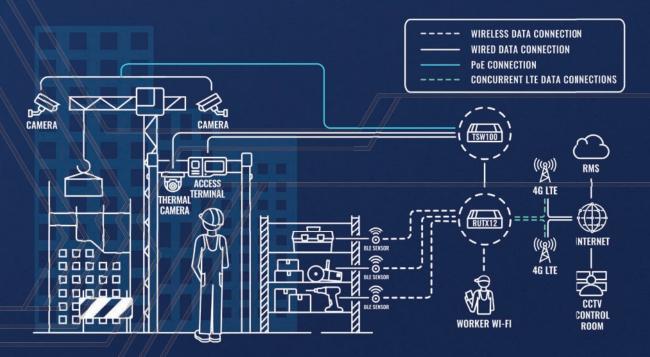
### RENEFITS

/Easy installation allows using the same infrastructure on multiple sites regardless of location. /Reliable and fast connection ensured by two simultaneously working

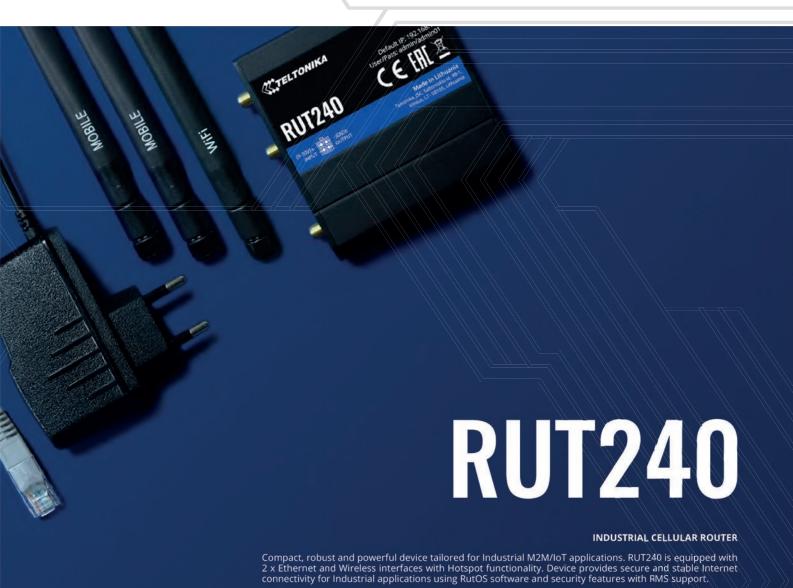
LTE Cat 6 modems and a load balancing.
/Safe storage of CCTV data outside of the construction site.

/Real-time tracking of tools using Bluetooth technology. /Remote management allows to access data about employee working hours, location of tools and equipment, video footage as well as complete configuration, updates, and troubleshooting from anywhere in the world.

/COVID-19 prevention is enabled by zero-touch access control and a thermal camera.







### CONNECTIVITY

4G/LTE (Cat 4), 3G, 2G

### **COMPACT**

Small size - easy integration

### **WAN FAILOVER**

Automatic switch to available backup connection

### 1/0

Digital Input/Output for remote monitoring and control

### WIF

Wireless Access Point with Hotspot functionality

### **RMS**

Compatible with Teltonika Remote Management System



4G/LTE (Cat 4), 3G, 2G
Atheros, MIPS 24Kc, 400 MHz
16 MBytes Flash, 64 MBytes RAM
4pin power socket, 9-30 VDC
1 x External SIM holder (2FF)
2 x SMA for mobile, 1 x RP-SMA for WiFi
2 x 10/100 Ethernet ports: 1 x WAN (configurable as LAN), 1 x LAN
IEEE 802.11b/g/n, Access point (AP), Station (STA)
On 4pin socket: 1 x Digital input, 1 x Digital open collector output
3 x Connection type, 5 x Signal strength, 2 x Ethernet, 1 x Power
-40 °C to 75 °C
Aluminium housing with DIN rail mounting option
83 x 25 x 74 mm
135 g

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Auto APN, Band lock
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, PPPoE, DHCP, Telnet
Network	Failover (Network backup), VLAN, QoS, Load Balancing
Security	DDOS prevention (SYN flood protection, SSH attack prevention, HTTP/HTTPS attack prevention), Port
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP, Stunnel, DMVPN, SSTP
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
SMS features	SMS status, SMS configuration, Send/Read SMS via HTTP POST/GET, EMAIL to SMS, SMS to Email, SMS to
Services	DDNS, VRRP, Wake On Lan (WOL), WEB filter, UPNP, Traffic Logging





### INDUSTRIAL ETHERNET ROUTER

Rugged industrial fast Ethernet router that comes with the benefits of RutOS and the possibility to connect to the RMS. Five fast Ethernet ports, two configurable digital Inputs/Outputs, and a USB 2.0 allow to easily connect industrial machinery, office or retail equipment, and other devices to the internet, while advanced pre-configured Firewall and multiple VPNs ensures security.

### **INTERFACES**

5 x Fast Ethernet ports (10/100 Mbps). 2 x Configurable digital Inputs/Outputs and USB 2.0

### **VLAN**

Supports up to 4096 VLAN IDs for VLAN tagging and port based VLANS

### VPN

Numerous VPN services including OpenVPN, IPsec, PPTP, L2TP & DMVPN, L2TP, DMVPN, Stunnel and others

### **FIREWALL**

Unlimited firewall configuration via CLI; DMZ; NAT; NAT-T

### **DURABILITY**

Aluminum housing, which is capable to withstand harsh environments

### RMS

Compatible with Teltonika Remote Management System



uts/Outputs open collector output
otion

Operating system	RutOS (OpenWrt based Linux OS)
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, PPPoE,
Routing	Static routes, Routing rules, (Planned - Dynamic routes (BGP, OSPFv2, RIPv1/v2, EIGRP, NHRP)
Firewall	Port forward, Traffic rules, Custom rules, Pre-configured firewall rules, DMZ, NAT, NAT-T, NAT
Security	DDOS prevention (SYN flood protection, SSH attack prevention, HTTP/HTTPS attack prevention),
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP, WireGuard, ZeroTier, (Planned - Stunnel, SSTP, DMVPN)
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Cloud solutions	RMS, FOTA
Services	DDNS, Wake On Lan (WOL), WEB filter, UPNP, Network shares (Samba), Traffic Logging
Administration	Multi user, Configuration profiles, Diagnostics, logs, Configuration backup



Rugged aluminium housing



Firewall and numerous VPN services,

including OpenVPN, IPsec, PPTP, L2TP & SSTP

Compatible with Teltonika Remote

Management System



Mobile	4G/LTE (Cat 6), 3G
CPU	Qualcomm, MIPS 24Kc, 650 MHz
Memory	16 MBytes Flash, 128 MBytes RAM
Powering option	4pin power socket, 9-30 VDC
SIM	1 x External SIM holder (2FF)
Antenna connectors	2 x SMA for mobile, 2 x RP-SMA for WiFi
Ethernet	2 x 10/100 Ethernet ports: 1 x WAN (configurable as LAN), 1 x LAN
WiFi	IEEE 802.11b/g/n, Access point (AP), Station (STA)
Inputs/Outputs	On 4pin socket: 2 x Digital input/Digital open collector output (configurable)
Status LEDs	2 x Connection type, 3 x Signal strength, 2 x Ethernet, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option
Dimensions (W x H x D)	100 x 30 x 85 mm
Weight	247 g

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Auto APN, Band lock
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, PPPoE, DHCP, Telnet
Network	Failover (Network backup), VLAN, QoS, Load Balancing
Security	DDOS prevention (SYN flood protection, SSH attack prevention, HTTP/HTTPS attack prevention), Port
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP, Stunnel, DMVPN, SSTP
Monitoring and management	WEB UI, CLI, SSH, SMS, SNMP, JSON-RPC, MQTT, RMS
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
SMS features	SMS status, SMS configuration, Send/Read SMS via HTTP POST/GET, EMAIL to SMS, SMS to Email, SMS to
Services	DDNS, VRRP, Wake On Lan (WOL), WEB filter, UPNP, Traffic Logging



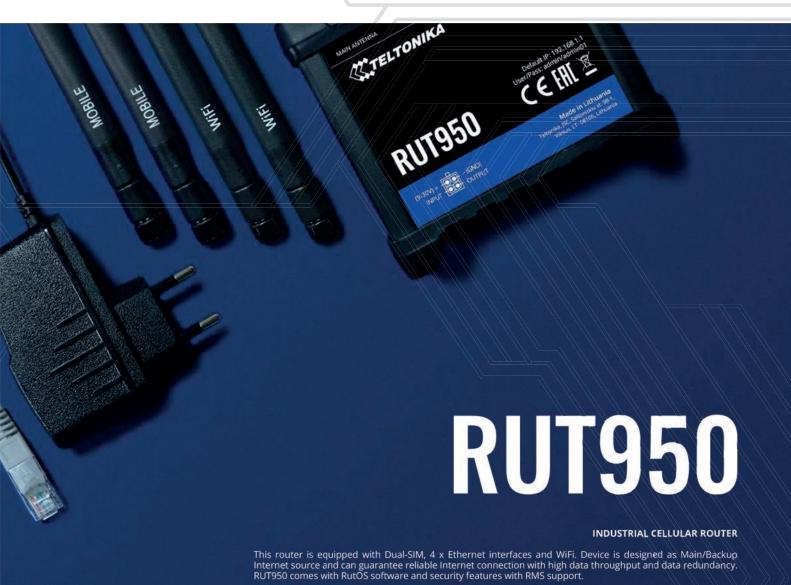




4G/LTE (Cat 4), 3G, 2G
Atheros, MIPS 74Kc, 550 MHz
16 MBytes Flash, 64 MBytes RAM
4pin power socket, 9-30 VDC
1 x External SIM holder (2FF)
2 x FAKRA D for mobile, 1 x FAKRA C for GPS
IEEE 802.11b/g/n, Access point (AP), Station (STA)
GPS, GLONASS, BeiDou, Galileo, QZSS
On 4pin socket: 1 x pin for ignition detection
3 x Connection type, 5 x Signal strength, 1 x WiFi, 1 x Power
-40 °C to 75 °C
Plastic housing
131 x 18 x 79 mm
110 g

<u> </u>	
Operating system	RutOS (OpenWrt based Linux OS)
Network protocols	TCP, UDP, IPv4, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, PPPoE, DHCP, Telnet
Network	Failover (Network backup), VLAN, QoS, Load Balancing
Monitoring and management	WEB UI, SSH, SMS, TR-069, RMS
Connection monitoring	Ping Reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA
Hotspot	External/Internal Radius, SMS OTP, MAC authentication, Walled Garden
Supported Hotspot platforms	IronWiFi, HotspotSystem, Cloud4Wi, SAI + WiFi, MugiCloud, Purple.ai
NTP	NTP Server, NTP Client, Sync with: External NTP server, GNSS
GNSS	NMEA forwarding, AVL, Geofencing





### CONNECTIVITY

4G/LTE (Cat 4), 3G, 2G

### **DUAL SIM**

With auto failover, backup WAN and other switching scenarios

### **WAN FAILOVER**

Automatic switch to available backup connection

### ETHERNET

4 x Ethernet interfaces with VLAN functionality

### WIF

Wireless Access Point with Hotspot functionality

### RMS

Compatible with Teltonika Remote Management System



Mobile	4G/LTE (Cat 4), 3G, 2G
CPU	Atheros, MIPS 74Kc, 550 MHz
Memory	16 MBytes Flash, 128 MBytes RAM
Powering option	4pin power socket, 9-30 VDC
SIM	2 x External SIM holders (2FF)
Antenna connectors	2 x SMA for mobile, 2 x RP-SMA for WiFi
Ethernet	4 x 10/100 Ethernet ports: 1 x WAN (configurable as LAN), 3 x LAN
WiFi	IEEE 802.11b/g/n, Access point (AP), Station (STA)
Inputs/Outputs	On 4pin socket: 1 x Digital input, 1 x Digital open collector output
Status LEDs	1 x Bi-Color connection type, 5 x Signal strength, 4 x Ethernet, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option, plastic panels with flat mounting option
Dimensions (W x H x D)	109 x 50 x 103 mm
Weight	263 g

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Auto APN, Band lock, SIM switch, Operator black/white list, Data/SMS limits
Network	Failover (Network backup), VLAN, QoS, Load Balancing
Routing	Static routes, Dynamic routes (BGP, OSPFv2, RIPv1/v2, NHRP), Routing rules
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP, Stunnel, DMVPN, SSTP
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA, Telenor, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
Hotspot	External/Internal Radius, SMS OTP, MAC authentication, Walled Garden
Supported Hotspot platforms	IronWiFi, HotspotSystem, Cloud4Wi, SAI + WiFi, MugiCloud, Purple.ai
SMS features	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
Services	DDNS, VRRP, Wake On Lan (WOL), WEB filter, UPNP, Traffic Logging





### CONNECTIVITY

4G/LTE (Cat 4), 3G, 2G

1/0

Multiple digital and analog inputs and outputs for equipment control and event notification

### **DUAL SIM**

For additional connection reliability

### **SERIAL**

RS232/RS485 serial communication interfaces

### **GNSS**

Global Navigation Satellite System for location services and time synchronization

### **RMS**

Compatible with Teltonika Remote Management System



Mobile	4G/LTE (Cat 4), 3G, 2G
CPU	Atheros, MIPS 74Kc, 550 MHz
Memory	16 MBytes Flash, 128 MBytes RAM
Powering option	4pin power socket, 9-30 VDC
SIM	2 x External SIM holders (2FF)
Antenna connectors	2 x SMA for mobile, 2 x RP-SMA for WiFi, 1 x SMA for GPS
Ethernet	4 x 10/100 Ethernet ports: 1 x WAN (configurable as LAN), 3 x LAN
WiFi	IEEE 802.11b/g/n, Access point (AP), Station (STA)
GNSS	GPS, GLONASS, BeiDou, Galileo, QZSS
Inputs/Outputs	On 4pin socket: 1 x Digital input, 1 x Digital open collector output On 10pin socket: 1 x Isolated digital input, 1 x Digital dry input, 1 x Analog input, 1 x Isolated open collector output (requires external voltage), 1 x Relay output (non-latching)
Serial	1 x RS232, 1 x RS485
Other	1 x USB host, 1 x MicroSD
Status LEDs	1 x Bi-Color connection type, 5 x Signal strength, 4 x Ethernet, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option, plastic panels with flat mounting option
Dimensions (W x H x D)	109 x 50 x 103 mm
Weight	295 g

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Band lock, SIM switch, Operator black/white list, Data/SMS limits
Network	Failover (Network backup), VLAN, QoS, Load Balancing
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Cloud solutions	RMS, FOTA, Telenor, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
NTP	NTP Server, NTP Client, Sync with: External NTP server, GNSS, Mobile operator
GNSS	NMEA forwarding, AVL, Geofencing
Modbus	TCP slave, TCP master, RTU master, RTU gateway, Modbus over MQTT
Serial	Console, Over IP, Modem, NTRIP, Modbus





This robust industrial router is equipped with 4 x Gigabit Ethernet ports, Quad-core CPU and 256 MB of RAM. These powerful specifications combined with core RutOS software features, such as multiple VPN services, advanced Firewall and RMS support, makes this device a superb Industrial performer.

### **GIGABIT ETH**

4 x Gigabit Ethernet ports with up to 128 port/tag-based VLANs supported

### **PROTOCOLS**

Multiple protocols supported including MQTT, Modbus TCP, BGP, GRE

### 1/0 & USB

Digital Input / Output for remote monitoring and control and USB 2.0 interface

### **SECURITY**

Firewall and numerous VPN services including OpenVPN, IPsec, PPTP, L2TP & DMVPN

### 9-50 V

This router supports a wide range of power supply voltage for versatile integration

### RMS

Compatible with Teltonika Remote Management System



CPU	Qualcomm, 4 x ARM Cortex A7, 717 MHz
Memory	256 MBytes Flash, 256 MBytes RAM
Powering option	4pin power socket, 9-50 VDC
Ethernet	4 x 10/100/1000 Ethernet ports: 1 x WAN (configurable as LAN), 3 x LAN
Inputs/Outputs	On 4pin socket: 1 x Digital input, 1 x Digital open collector output
Other	1 x USB Host
Status LEDs	8 x Ethernet, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option and grounding capability
Dimensions (W x H x D)	115 x 32 x 95 mm
Weight	345 g

Operating system	RutOS (OpenWrt based Linux OS)
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, PPPoE, DHCP, Telnet
Routing	Static routes, Dynamic routes (BGP, OSPFv2, RIPv1/v2, EIGRP, NHRP), Routing rules
Firewall	Port forward, Traffic rules, Custom rules, Pre-configured firewall rules, DMZ, NAT, NAT-T, NAT helpers, Unlimited firewall configuration via CLI
Security	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)
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP, Stunnel, DMVPN, SSTP, WireGuard, ZeroTier
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
Services	DDNS, VRRP, Wake On Lan (WOL), WEB filter, UPNP, Network shares (Samba), Traffic Logging
Administration	Multi user, Configuration profiles, Diagnostics, logs, Configuration backup





This powerful LTE Cat 6 cellular industrial router is designed for professional and IoT applications where steady and fast connection and high data throughput is required.

#### **4G LTE CAT 6**

Cellular speeds up to 300Mbps with Carrier Aggregation

#### **GNSS**

Global Navigation Satellite System for location services and time synchronization

#### **DUAL SIM**

With auto failover, backup WAN and other switching scenarios

#### **SECURITY**

Firewall and numerous VPN services including OpenVPN, IPsec, PPTP, L2TP & DMVPN

#### **GIGABIT ETH**

4 x Gigabit Ethernet ports with up to 128 port/tag-based VLANs supported

#### **RMS**

Compatible with Teltonika Remote Management System



Mobile	4G/LTE (Cat 6), 3G
CPU	Qualcomm, 4 x ARM Cortex A7, 717 MHz
Memory	256 MBytes Flash, 256 MBytes RAM
Powering option	4pin power socket, 9-50 VDC
SIM	2 x External SIM holders (2FF)
Antenna connectors	2 x SMA for mobile, 1 x SMA for GPS
Ethernet	$4 \times 10/100/1000$ Ethernet ports: $1 \times$ WAN (configurable as LAN), $3 \times$ LAN
GNSS	On 4pin socket: 1 x Digital input, 1 x Digital open collector output
Other	1 x USB host
Status LEDs	3 x WAN type, 2 x Connection type, 5 x Signal strength, 8 x Ethernet, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option and grounding capability
Dimensions (W x H x D)	115 x 44 x 95 mm
Weight	455 g

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Multiple PDN, Auto APN, Band lock, SIM switch, Operator black/white list, Data/SMS limits
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, PPPoE, DHCP, Telnet
Network	Failover (Network backup), VLAN, QoS, Load Balancing
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP, Stunnel, DMVPN, SSTP, WireGuard, ZeroTier
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
NTP	NTP Server, NTP Client, Sync with: External NTP server, GNSS, Mobile operator
GNSS	NMEA forwarding, AVL, Geofencing
Services	DDNS, VRRP, Wake On Lan (WOL), WEB filter, UPNP, Network shares (Samba), Traffic Logging
Administration	Multi user, Configuration profiles, Diagnostics, logs, Configuration backup





This professional router combines the best of wired and wireless routing functionalities with Gigabit Ethernet, Bluetooth LE, and AC Wi-Fi. Advanced remote management capabilities along with numerous security & networking protocols supported make RUTX10 an ideal choice for professional applications.

#### **GIGABIT ETH**

4 x Gigabit Ethernet ports with up to 128 port/tag-based VLANs supported

#### **PROTOCOLS**

Multiple protocols supported including MQTT, Modbus TCP, BGP, GRE

#### 1/0 & USB

Digital Input / Output for remote monitoring and control and USB 2.0 interface

#### **SECURITY**

Firewall and numerous VPN services including OpenVPN, IPsec, PPTP, L2TP & DMVPN

#### WIFI & BT

Wave-2 802.11ac Dual Band WIFI and

#### **RMS**

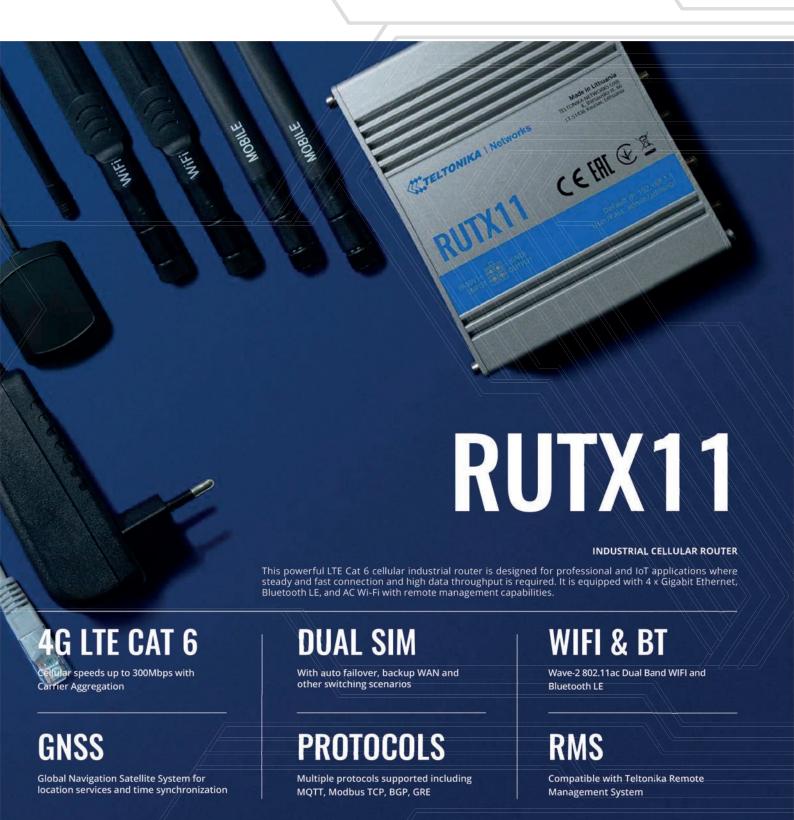
Compatible with Teltonika Remote Management System



CPU	Qualcomm, 4 x ARM Cortex A7, 717 MHz	
Memory	256 MBytes Flash, 256 MBytes RAM	
Powering option	4pin power socket, 9-50 VDC	
Antenna connectors	2 x RP-SMA for WiFi, 1 x RP-SMA for Bluetooth	
Ethernet	4 x 10/100/1000 Ethernet ports: 1 x WAN (configurable as LAN), 3 x LAN	
WiFi	IEEE 802.11a/b/g/n/ac 2.4GHz/5GHz, Access point (AP), Station (STA)	
Bluetooth	4.0 (Low energy)	
Inputs/Outputs	On 4pin socket: 1 x Digital input, 1 x Digital open collector output	
Other	1 x USB host	
Status LEDs	2 x WiFi, 8 x Etherner, 1 x Power	
Operating temperature	-40 °C to 75 °C	
Housing	Aluminium housing with DIN rail mounting option and grounding capability	
Dimensions	115 x 32 x 95 mm	
Weight	355 g	

Operating system	RutOS (OpenWrt based Linux OS)
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, PPPoE, DHCP, Telnet
Routing	Static routes, Dynamic routes (BGP, OSPFv2, RIPv1/v2, EIGRP, NHRP), Routing rules
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP, Stunnel, DMVPN, SSTP, WireGuard, ZeroTier
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
Hotspot	External/Internal Radius, MAC authentication, Walled Garden
Supported Hotspot platforms	IronWiFi, HotspotSystem, Cloud4Wi, SAI + WiFi, MugiCloud, Purple.ai
Services	DDNS, VRRP, Wake On Lan (WOL), WEB filter, UPNP, Network shares (Samba), Traffic Logging







Mobile	4G/LTE (Cat 6), 3G
CPU	Qualcomm, 4 x ARM Cortex A7, 717 MHz
Memory	256 MBytes Flash, 256 MBytes RAM
Powering option	4pin power socket, 9-50 VDC
SIM	2 x External SIM holders (2FF)
Antenna connectors	2 x SMA for mobile, 2 x RP-SMA for WiFi, 1 x RP-SMA for Bluetooth, 1 x SMA for GPS
Ethernet	4 x 10/100/1000 Ethernet ports: 1 x WAN (configurable as LAN), 3 x LAN
WiFi	IEEE 802.11a/b/g/n/ac 2.4GHz/5GHz, Access point (AP), Station (STA)
GNSS	GPS, GLONASS, BeiDou, Galileo, QZSS
Bluetooth	4.0 (Low energy)
Inputs/Outputs	On 4pin socket: 1 x Digital input, 1 x Digital open collector output
Other	1 x USB host
Status LEDs	4 x WAN type, 2 x Connection type, 5 x Signal strength, 2 x WiFi, 8 x Ethernet, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option and grounding capability
Dimensions	115 x 44 x 95 mm
Weight	456 g

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Multiple PDN, Auto APN, Band lock, SIM switch, Operator black/white list, Data/SMS limits
Network	Failover (Network backup), VLAN, QoS, Load Balancing
Routing	Static routes, Dynamic routes (BGP, OSPFv2, RIPv1/v2, EIGRP, NHRP), Routing rules
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP, Stunnel, DMVPN, SSTP, WireGuard, ZeroTier
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
Hotspot	External/Internal Radius, SMS OTP, MAC authentication, Walled Garden
NTP	NTP Server, NTP Client, Sync with: External NTP server, GNSS, Mobile operator
GNSS	NMEA forwarding, AVL, Geofencing







Mobile	2 X 4G/LTE (Cat 6), 3G
CPU	Qualcomm, 4 x ARM Cortex A7, 717 MHz
Memory	256 MBytes Flash, 256 MBytes RAM
Powering option	4pin power socket, 9-50 VDC
SIM	2 x External SIM holders (2FF)
Antenna connectors	4 x SMA for mobile, 2 x RP-SMA for WiFi, 1 x RP-SMA for Bluetooth, 1 x SMA for GPS
Ethernet	5 x 10/100/1000 Ethernet ports: 1 x WAN (configurable as LAN), 4 x LAN
WiFi	IEEE 802.11a/b/g/n/ac 2.4GHz/5GHz, Access point (AP), Station (STA)
GNSS	GPS, GLONASS, BeiDou, Galileo, QZSS
Connectors	$1\times4$ pin DC, $5\times$ Ethernet, $4\times$ SMA for LTE, $2\times$ WiFi RP-SMA, $1\times$ SMA for GNSS, $1\times$ RP-SMA for Bluetooth
Bluetooth	4.0 (Low energy)
Inputs/Outputs	On 4pin socket: 1 x Digital input, 1 x Digital open collector output
Other	1 x USB host
Status LEDs	4 x WAN type, 6 x Connection type, 6 x Signal strength, 2 x WiFi, 10 x Ethernet, 1 x Power
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option and grounding capability
Dimensions (W x H x D)	132 x 44 x 95 mm
Weight	540 g

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Multiple PDN, Auto APN, Band lock, SIM switch, Operator black/white list, Data/SMS limits
Network	Failover (Network backup), VLAN, QoS, Load Balancing
Routing	Static routes, Dynamic routes (BGP, OSPFv2, RIPv1/v2, EIGRP, NHRP), Routing rules
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
Hotspot	External/Internal Radius, SMS OTP, MAC authentication, Walled Garden
Supported Hotspot platforms	IronWiFi, HotspotSystem, Cloud4Wi, SAI + WiFi, MugiCloud, Purple.ai







Mobile	4G/LTE (Cat 12)
CPU	Qualcomm, 4 x ARM Cortex A7, 717 MHz
Memory	256 MBytes Flash, 256 MBytes RAM
Powering option	4 pin power socket, 9-50 VDC
SIM	2 x External SIM holders (2FF)
Antenna connectors	4 x SMA for mobile, 2 x RP-SMA for WiFi, 1 x RP-SMA for Bluetooth, 1 x SMA for GPS
Ethernet	5 x 10/100/1000 Ethernet ports: 1 x WAN (configurable as LAN), 4 x LAN
WiFi	IEEE 802.11b/g/n 2.4GHz, IEEE 802.11n/ac 5GHz, Access point (AP), Station (STA)
GNSS	GPS, GLONASS, BeiDou, Galileo, QZSS
Connectors	$1\times4$ pin DC, $5\times$ Ethernet, $4\times$ SMA for LTE, $2\times$ WiFi RP-SMA, $1\times$ SMA for GNSS, $1\times$ RP-SMA for Bluetooth
Bluetooth	4.0 (Low energy)
Inputs/Outputs	On 4 pin socket: 1 x Digital input, 1 x Digital open collector output
Other	1 x USB host, 1 x Grounding screw
Status LEDs	$4 \times WAN \ type, \ 2 \times Connection \ type, \ 3 \times Signal \ strength, \ 2 \times WiFi, \ 10 \times Ethernet, \ 1 \times Power$
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with DIN rail mounting option and grounding capability
Dimensions (W x H x D)	132 x 44 x 95 mm
Weight	515 g
	l .

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Multiple PDN, Auto APN, Band lock, SIM switch, Operator black/white list (planned), Data/SMS limits
Network	Failover (Network backup), VLAN, QoS, Load Balancing
Routing	Static routes, Dynamic routes (BGP, OSPFv2, RIPv1/v2, EIGRP, NHRP), Routing rules
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Cloud solutions	RMS, FOTA, Telenor, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
Hotspot	External/Internal Radius, SMS OTP, MAC authentication, Walled Garden
Supported Hotspot platforms	IronWiFi, HotspotSystem, Cloud4Wi, SAI + WiFi, MugiCloud, Purple.ai





#### **ENTERPRISE SFP/LTE RACK MOUNT READY ROUTER**

Rack-mounted LTE Cat6 router with redundant power supplies and WAN interfaces (WAN failover), Dual SIM, SFP, USB and dedicated console ports. This feature-rich device with well-known and powerful RutOS is perfect where fast and ultra-reliable connection is needed.

#### 4G LTE CAT 6

Cellular speeds up to 300Mbps with Carrier Aggregation

SFP port for long-range Fiber-optic communication

#### **DUAL SIM**

With auto failover, backup WAN and other switching scenarios

#### **GIGABIT ETH**

5 x Gigabit Ethernet ports

Wave-2 802.11ac Dual Band WIFI

#### **RMS**

Compatible with Teltonika Remote Management System



Mobile	4G/LTE (Cat 6), 3G
CPU	Qualcomm, 4 x ARM Cortex A7, 717 MHz
Memory	256 MBytes Flash, 256 MBytes RAM
Powering option	4pin power socket, 9-50 VDC (main) 4pin power socket, 9-50 VDC (redundant)
SIM	2 x External SIM holders (2FF)
Antenna connectors	2 x SMA for mobile, 2 x RP-SMA for WiFi
Ethernet	5 x 10/100/1000 Ethernet ports: 1 x WAN (configurable as LAN), 4 x LAN
WiFi	IEEE 802.11a/b/g/n/ac 2.4GHz/5GHz, Access point (AP), Station (STA)
Other	1 x USB host, 1 x SFP, 1 x RS232 console
Status LEDs	2 x WAN type, 2 x Connection type, 3 x Signal strength, 2 x SIM, 2 x Console, 10 x Ethernet, 2 x Power
Operating temperature	-40 °C to 75 °C
Housing	Full aluminium rack unit housing with grounding capability
Dimensions (W x H x D)	272 x 44 x 123 mm
Weight	1 050 g

Operating system	RutOS (OpenWrt based Linux OS)
Mobile features	Multiple PDN, Auto APN, Band lock, SIM switch, Operator black/white list, Data/SMS limits
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSLv3, TLS 1.3, ARP, PPP, PPPoE, DHCP, Telnet
Network	Failover (Network backup), VLAN, QoS, Load Balancing
Routing	Static routes, Dynamic routes (BGP, OSPFv2, RIPv1/v2, EIGRP, NHRP), Routing rules
VPN and tunneling	OpenVPN, IPsec, GRE, PPTP, L2TP, Stunnel, DMVPN, SSTP, WireGuard, ZeroTier
Monitoring and management	WEB UI, CLI, SSH, SMS, TR-069, SNMP, JSON-RPC, MQTT, RMS
Cloud solutions	RMS, FOTA, Azure IoT Hub, Cloud of Things, Cumulocity, ThingWorx
Services	DDNS, VRRP, Wake On Lan (WOL), WEB filter, UPNP, Network shares (Samba), Traffic Logging

# **SWITCHES**

#### **SWITCHE**

Teltonika Networks provides a range of industrial Ethernet Switches. They feature industrial-grade reliability, network redundancy, security and easy management. Switches have multiple mounting options for faster and easier

# RELIABLE CONNECTION OF INDUSTRIAL SYSTEMS

#### INDUSTRIAL & AUTOMATION

Industrial communication is changing. The rise of IoT caused the industrial sector to evolve and turn to automation to survive in the competitive market and maximize their potential in sense of time resources, productivity and scale.

A problem with the legacy industrial protocols is that due to long lifecycle of industrial systems, over the years they accumulated many various standards. It is difficult to implement such a variety of protocols into nowadays automation tools.

Ethernet-based solutions are becoming the new standard in the industrial communication. As it is more flexible, economical and speedy, we may witness more and more solutions changing their serial protocols to IP.

In factories, there usually are multiple different manufacturing lines. All of them consist of various HMIs, PLCs, and sensors interconnected into a network. This task is accomplished by a TSW110 industrial switch, which works as an intermediary among all pieces and enables data transmission to the server, where it can be processed and analyzed. TSW110 is an unmanaged industrial switch with five 10/100/1000 Mbps Ethernet ports for an economical highbandwidth solution that is more than enough for connecting various manufacturing equipment.

Besides, it's compact size combined with DIN rail or surface mounting options make it a quick and easy task to deploy it. This plug-n-play device will take seconds to set up!

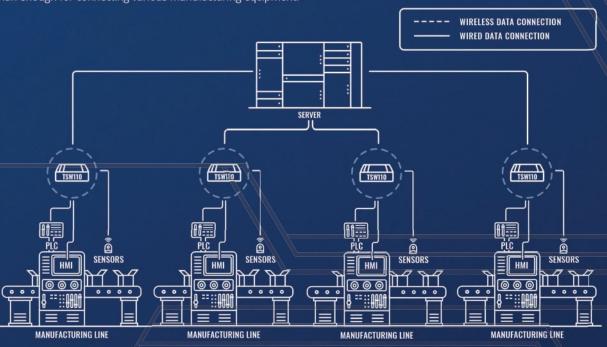
Factory environment requires a rugged device. Therefore, a product with sturdy aluminum housing is the best option. TSW110 operates in a wide range of temperatures - from -40 C to 75 C, so it offers a broad amplitude of application scenarios. For example, it would work just as smoothly in factories producing frozen products as in a confectionery.

/Compact – measuring 100 x 30 x 85 mm, this device fits in any electronic box or server cabinet and takes seconds to deploy using a DIN rail or surface mounting options.

/Wide temperature range – from -40 to 75 C, ensures reliable connectivity in most industrial environments.

/Sturdy – we chose aluminum housing for this product to increase

/stardy
durability.
/Plug-n-Play – no additional set-up required.
/Economical – this device offers exactly what is needed in most industrial applications with no excess functionalities, making it very economical and competitive in the market.



# RELIABLE MULTIPLE CAMERA CONNECTIVITY

**SMART CITY** 

The adoption of Closed-circuit television (CCTV) surveillance has been steadily growing in recent years. This technology provides reliable information for area monitoring, public order, and crime prevention. Surveillance systems play an integral role today because they are fast and easy to deploy and provide valuable data for private and public security and business operations. Finally, CCTV solutions are highly demanded across Smart City projects and can public smart solutions such as smart parking and provide projects and can enable smart solutions such as smart parking and rétail business

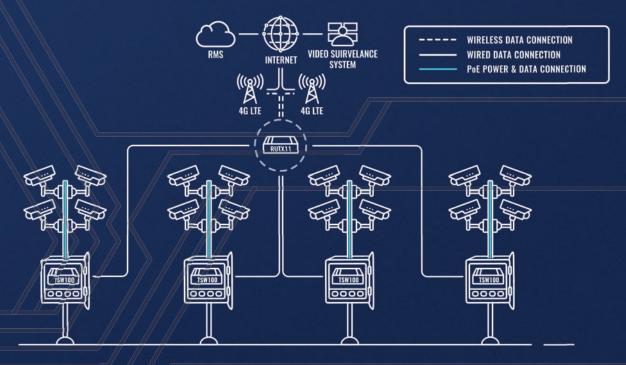
As presented in the topology, the RUTX11 cellular router is responsible for stable and robust Internet connectivity delivered through 4G LTE. At the same time, all CCTV cameras are connected to PoE (Power-over-Ethernet) compatible switch - TSW100. This device is equipped with five Gigabit Ethernet ports, four of which support IEEE 802.3af and IEEE802.3 at PoE standards. Because of this TSW100 can power up the devices up to 30W power per port. Router and switch can withstand harsh weather conditions with wide operating temperature ranges and have numerous mounting options for faster and easier installations. This solution can be options for faster and easier installations. This solution can

deployed very fast and can be operational within a few hours. The router – RUTX11 - is compatible with the Teltonika Remote Management System, which allows remote set-up, configuration, and management of the whole solution.

/Reliable connectivity – Dual SIM functionality makes mission-critical

connectivity in remote areas. /Quick to deploy – no need to wait for wired Internet access deployment, the solution can be preconfigured before installation

on-site.
/Easy to install – with TSW100 and PoE technology, you can just use Ethernet for both power and data delivered to the cameras.
/Industrial Mounting Options – Both switch and router can be mounted on DIN Rail with the help of accessories.
/Easy to manage – with Teltonika Remote Management System, system administrators can be in control of remote infrastructure with a convenient, user-friendly interface.
/Secure - data will be safe due to advanced security features of the RUTX11, such as VPN, IPsec, Firewall, and Access Control.





**POWER BUDGET** 

Total power budget at PSE up to 120 W



ETHERNET

1000 Mbps

5 x Gigabit Ethernet with speeds up to

PLUG-N-PLAY

No additional configuration needed



Powering option	4pin power socket, 7-57 VDC
Power consumption	Idle: < 2 W, Max: < 9 W (no PoE device connected)
PoE standart	802.3af/at (max 30 W per port, total power budget 120W*)
Ethernet	5 x 10/100/1000 Ethernet ports: 4 x PoE, 1 x Uplink
Status LEDs	10 x Ethernet, 1 x Power
Ingress protection rating	IP30
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with wall or DIN rail mounting option and grounding capability
Dimensions (W x H x D)	115 x 32 x 95 mm
Weight	340 g

# PERFORMANCE SPECIFICATIONS

				_		<u> </u>
Bandwidth	10 Gbps					
Packet buffer	128 KB					
Jumbo frame support	9216 bytes					
MAC address table size	2K entries			1/	_//	
Auto MDI/MDI-X Cable Detection	Yes					





# TSW110

L2 UNMANAGED SWITCH

TSW110 is a layer 2 unmanaged switch that is a simplified version of our earlier product – TSW100. It is a tiny but rugged device for industrial high bandwidth applications requiring a reliable data connection. It has five Gigabit Ethernet ports and supports wide power supply voltages (9-30 V).

#### PLUG-N-PLAY

No additional configuration needed

#### RESILIENT

Operating temperature -40 °C to 75 °C

#### **DURABILITY**

Rugged aluminium housing

#### 9-30 V

Wide range of supported power supply voltages

#### **MOUNTING**

DIN rail and surface mounting options

#### **GIGABIT ETH**

5 x Gigabit Ethernet with speeds up to 1000 Mbps



Powering option	4pin power socket, 9-30 VDC
Power consumption	Idle: < 0.4 W, Max: < 1.8 W (no PoE device connected)
Ethernet	5 x 10/100/1000 Ethernet ports
Status LEDs	10 x Ethernet, 1 x Power
Ingress protection rating	IP30
Operating temperature	-40 °C to 75 °C
Housing	Aluminium housing with wall or DIN rail mounting option and grounding capability
Dimensions (W x H x D)	100 x 30 x 85 mm
Weight	227 g

## PERFORMANCE SPECIFICATIONS

Bandwidth	10 Gbps	
Packet buffer	128 KB	
Jumbo frame support	9216 bytes	
MAC address table size	2K entries	
Auto MDI/MDI-X Cable Detection	Yes	

# FEATURE COMPARISON

	MODE	NS	GATEWAY	S				SWITCHES		
	TRM240	TRM250	TRB140	TRB141	TRB142	TRB1/45	TRB245	TRB255	TSW100	TSW110
4G/LTE category	Cat1	M1/NB	Cat4	Cat1	Cat1	Cat1	Cat4	M1/NB		
3G										
2G										
CPU (MHz)			1200	1200	1200	1200	650	650		
RAM (MB)			128	128	128	128	64	64		
Flash memory (MB)			512	512	512	512	16	16		
Passive PoE										
PoE out									802.3af/at	
Power voltage (VDC)			9-30	9-30	9-30	9-30	9-30	9-30	7-57	9-30
SIM card slots							2	2		
Ethernet ports										
Ethernet speed (Mbps)			1000				100	100	1000	1000
WiFi standard										
GNSS										
Inputs/Outputs			2	8	2	2	4	4		
RS232										
RS485										
Bluetooth										
USB	Slave	Slave	Slave	Slave	Slave	Slave				
DIN Rail mounting										
Rack mounting										
Flat surface mounting										
Grounding terminal										
Sleep mode										
RMS support										
RutOS										

# FEATURE COMPARISON

R			

Products key features	RUT240	RUT300	RUT360	RUT850	RUT950	RUT955	RUTX08	RUTX09	RUTX10	RUTX11	RUTX12	RUTX14	RUTXR1
4G/LTE category	Cat4		Cat6	Cat4	Cat4	Cat4		Cat6		Cat6	2xCat6	Cat12	Cat6
3G													
2G													
CPU (MHz)	400	650	650	550	550	550	4x717						
RAM (MB)	64	64	128	64	128	128	256	256	256	256	256	256	256
Flash memory (MB)	16	16	16	16	16	16	256	256	256	256	256	256	256
Passive PoE													
Power voltage (VDC)	9-30	7-30	9-30	9-30	9-30	9-30	9-50	9-50	9-50	9-50	9-50	9-50	2x(9-50)
SIM card slots					2	2		2		2	2	2	2
Ethernet ports	2	5	2		4	4	4	4	4	4			5
Ethernet speed (Mbps)	100	100	100		100	100	1000	1000	1000	1000	1000	1000	1000
WiFi standard									ac	ac	ac	ac	ac
GNSS													
Inputs/Outputs	2	2	2	2	2	6	2	2	2	2	2	2	
RS232													
RS485													
Bluetooth													
USB		Host				Host							
DIN Rail mounting													
Rack mounting													
Flat surface mounting													
Grounding terminal													
Sleep mode													
RMS support													
RutOS													



#### **ACCESSORIES / POWERING OPTIONS**

PŘÍSLUŠENSTVÍ / NAPÁJENÍ



Power cabel whit 4-way screw terminal Order code: PR2FK20M



COMBO MIMO mobile/GNSS/ WiFi ROOF SMA antenna Order code: PR1KCO28



COMBO SISO mobile/GNSS/ WiFi ROOF SMA antenna Order code: PR1KCS28



COMBO MIMO mobile ROOF SMA antenna Order code: PR1KCL25

#### **ACCESSORIES / MOUNTING OPTIONS**

PŘÍSLUŠENSTVÍ / MONTÁŽNÍ DRŽÁKY



Compact DIN Rail Kit Order code: PRMEC11



DIN Rail Kit
Order code: PR5MEC00



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