



LTE/HSPA+/UMTS/CDMA/EDGE/GPRS
Latest broadband wireless technology... **ROUTERS**

Modular & Flexible
Modular HW and SW concept

Secure & Reliable
VPN support, Fully industrial design

- Industrial systems
- Remote service
- Telemetry & SCADA
- ATM, Lottery, Kiosks
- TELCO & IT

Designed for M2M applications



LINUX inside & Hi-tech functions
Easy to use open platform, advanced networking



LTE/HSPA+/UMTS/CDMA/EDGE/GPRS ROUTERS

Conel manufactures **highly reliable and secure** wireless routers for professional applications requesting secure and fast data transmission via mobile networks. Family of Conel routers supports variable **mobile network technologies**, has a possibility to choose specific communication interfaces and using wide modular software functions according to customers demands.

Routers support interfaces such as **ETHERNET, USB, WiFi, RS232, RS485, RS422, MBUS, Wireless MBUS, I/O.**

Wireless connection covers **2G/3G/4G networks - GPRS, EDGE, UMTS, HSDPA, HSUPA, HSPA+, CDMA and newly LTE.**

Choose right model by data transfer technology

ROUTER	CELLULAR WIRELESS NETWORK TECHNOLOGY	MAX. DOWNLOAD	MAX. UPLOAD
GPRS/EDGE router ER75i v2	GPRS/EDGE	236.8 Kbit/s	118.4 Kbit/s
UMTS/HSDPA router UR5 v2	UMTS/HSDPA & GPRS/EDGE	3.6 Mbit/s	384 Kbit/s
UMTS/HSPA+ router UR5i v2	UMTS/HSPA+ & GPRS/EDGE	21,1 Mbit/s	5,76 Mbit/s
LTE router LR77 v2	LTE & UMTS/HSPA+ & GPRS/EDGE	100 Mbit/s	50 Mbit/s
CDMA router CR10 v2	CDMA 2000 1X, EV-DO Rev. A 400 MHz bands	3,1 Mbit/s	1,8 Mbit/s
UMTS/CDMA router UCR11 v2	UMTS/HSPA+ & GPRS/EDGE & CDMA2000 1X, EV-DO Rev A. 400 MHz bands	21,1 Mbit/s	5,76 Mbit/s
LAN router XR5i v2	ETHERNET 10/100	100 Mbit/s	100 Mbit/s

Applications

Wireless cellular routers are popular in various industrial sectors. Users can connect various end devices wirelessly, such as **industrial control systems**, various energy meters, computers, automated teller machine (ATM), or lottery machines, as well as other self-service machines.

Thanks to extra **fast 3G/4G** communication technology, you may wirelessly connect cameras installed in **transportation/logistic** or security systems or you may transfer large amounts of data wirelessly between **PC/WAN/LAN** without using fixed lines.

• Energy, OIL & GAS, Water and Transportation

- > Production and distribution SCADA systems
- > Remote Monitoring of Power Plants, Water Treatment facilities, Wind and Solar Installations
- > Utility Metering for Power, Water and Gas
- > Oil & Gas pipeline monitoring
- > Traffic Management Systems including - traffic signs, traffic light signals, tunnels, parking etc.



• Camera systems, Security, Telecommunications

- > Transfer of Video images from security IP cameras to Central Control and Monitoring stations
- > Secure networks for Point-of-Sale Systems, ATMs, lottery terminals and vending machines
- > Monitoring key elements of telecommunication networks
- > Back-up connection of telecommunication line
- > Internet access for Vehicles and Mobile Devices - buses, trains, ships, trucks



• Remote Asset Management

- > Remote management of industrial control systems and computers
- > Remote control and servicing of machinery and equipment
- > Remote programming of control machines and SCADA systems
- > Remote monitoring of information kiosks and traffic navigation systems
- > Monitoring of vending machines, self-service gas stations
- > Remote Management of Digital Signage for messaging and Advertising



• Meteorology, Environment, Warning systems

- > Transfer data provided by meteorological stations and sensors
- > Air quality measurement and monitoring
- > Flood control systems, early warning information systems
- > Gas and radiation detection systems
- > Prediction of Seismic events and other natural disasters
- > Monitoring of volcanic activity



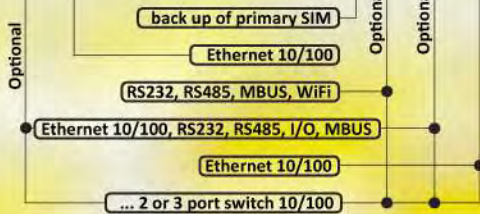
Fully modular concept

Buy exactly what you need...

According to number of optional ports and **SIM cards** are available 2 versions:

version Basic
1× SIM card holder
1× optional port

version Full
2× SIM card holder
2× optional port



Fixed communication interfaces:

- **ETHERNET 10/100**
- **USB HOST**
- **I/O port** with 1× input and 1× output

Optional interfaces - optimize your application or add new interface in future:

- **1-2× ETHERNET 10/100** with possible modes:
 - 2-port **ETH** switch
 - 3-port **ETH** switch
 - 2× independent **LAN**
 - 1× independent **LAN** and 2-port **ETH** switch
- **WiFi** – AP or client mode
- **RS232** serial port
- **RS485**, galvanic separation possible
- **RS422**, galvanic separation possible
- **MBUS** Master for up to 30 slave meters
- **Wireless MBUS**
- **I/O CNT** interface including 4× binary inputs (2 inputs may be configured as counter) 2× analogue inputs and 1× binary output

For all routers you can choose **Metallic** or **Plastic** casing.



Functions and software features

Conel routers enhanced functionality, incorporating, self-diagnostics and a **HW watchdog**, ensure, secure and consistent operation and **ultra-reliable wireless connections**.

For critical applications, these routers offer wireless redundancy through **dual SIM failover with SMS** and **e-mail** messaging and control capability for remote alerts and resets. They support the most commonly used **LAN/WAN** network protocols, and Conel's custom software allows for easy, **flexible and effective networking and management**.

Networking

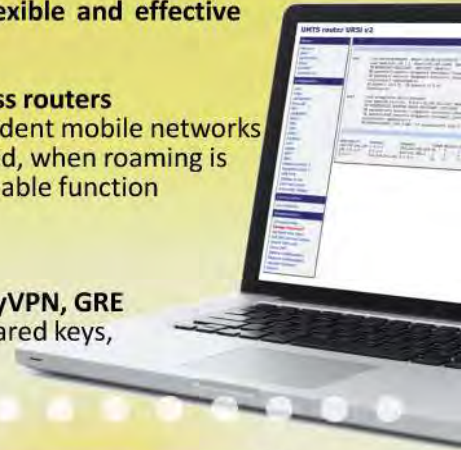
- **DHCP** - automatic IP addressing in LAN network
- **NAT/PAT** - IP address and ports translation
- **Firewall** - filtering of addresses, ports, protocols
- **VRRP** - virtual backup router function
- **DynDNS client** - access to the dynamic IP address
- **VLAN 802.1Q** - virtual LAN
- **QoS** - quality of service
- **PPPoE Bridge** - PPP over Ethernet Bridge mode
- **Dial-in** - communicate over dial CSD call
- **NTP client, NTP server** - time synchronization

2x SIM for all FULL versions wireless routers

- Backup by switching two independent mobile networks
- Switch when data limit is exceeded, when roaming is detected or by any other programable function

VPN tunnelling

- **IPSec, OpenVPN, PPTP, L2TP, EasyVPN, GRE**
- Authentication by certificates, shared keys, name/password



Remote router supervision & Mass network management

- **HTTP/HTTPS, Telnet/SSH** for local and remote configuration and firmware update
- **Automatic configuration** and firmware update from FTP/HTTP server by schedule
- Up to 4 independent **configuration profiles** can be stored and remotely switched using scripts, SMS messages, I/O etc.
- Additional software for easy networking and monitoring **SmartCLUSTER** and **R-SeeNet**

Diagnostics

- **Detailed logs** of operational information, including signal status and data traffic
- Signal level data, cell identifiers and data traffic are saved in router's memory for up to 2 months
- **SNMP** - router diagnostics, communication with I/O and M-BUS
- **LED indication:** Signal strength, connection status, ports

SMS & E-mail info

- Information about status, connection or disconnection and many others
- **SMS control** - on/off connection, switching SIM, router profile, I/O etc.
- **SMS communication** - AT commands (RS232 and TCP/IP), I/O or HTTP



Modular LINUX software environment

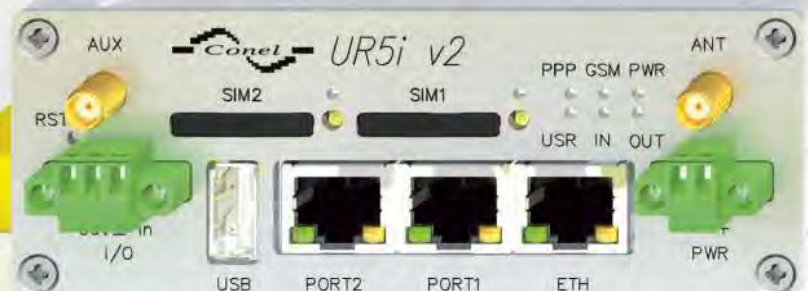
Open LINUX based system allows using of common Linux commands, scripts and other features. Conel offers extension of standard firmware by software plug-ins.

You can make your own plug-in and simply add it to the router. Router is ready for data collection and processing applications thanks to 128kB **Non volatile RAM** memory inside.

Software plug-ins by Conel

- **EASY VPN client** - secure encrypted VPN
- **Dynamic routing protocols** - BGP, OSPF, RIP
- **QoS** - quality of service
- **IGMP** - multicast protocols
- **MODBUS RTU/TCP** gateway and mapping - convert data from RTU to TCP/IP format

Other features are continuously added...



OVERVIEW of Conel routers

- Wireless technology
- Basic parameters
- Design of routers
- Basic functions

CELLULAR WIRELESS NETWORK TECHNOLOGY	ER75i v2	UR5 v2	UR5i v2	LR77 v2	CR10 v2	UCR11 v2	XR5i v2
GPRS/EDGE	•	•	•	•		•	
UMTS/HSDPA		•	•	•		•	
UMTS/HSPA+			•	•		•	
LTE				•			
CDMA 2000 1X, EV-DO Rev. A					•	•	
WAN ETHERNET	optional	optional	optional	optional	optional	optional	•
FREQUENCY BANDS							
GSM 900, 1800 MHz	•	•	•	•		•	
GSM 850, 1900 MHz	•		•	•		•	
UMTS (WCDMA/FDD) 900, 2100 MHz		•	•	•		•	
UMTS (WCDMA/FDD) 850, 1900 MHz			•	•		•	
LTE 800, 900, 1800, 2100, 2600 MHz				•			
CDMA 2000 450 MHz, 410 MHz					•	•	
COMMUNICATION INTERFACES AND EXPANSIONS							
Ethernet 10/100	•	•	•	•	•	•	•
Ethernet 10/100 3-port switch	optional	optional	optional	optional	optional	optional	
Wi-Fi (IEEE 802.11 b, g, n)	optional	optional	optional	optional	optional	optional	optional
USB Host	•	•	•	•	•	•	•
RS232/RS485/RS422	optional	optional	optional	optional	optional	optional	optional
MBUS, Wireless MBUS	optional	optional	optional	optional	optional	optional	optional
I/O CNT	optional	optional	optional	optional	optional	optional	optional
I/O (1xIN/1xOUT)	•	•	•	•	•	•	•
GPS receiver			optional				
DESIGN, DIMENSION, SIM, ENVIROMENTAL							
Plastic casing (50x83x116 mm)	optional	optional	optional	optional	optional	optional	optional
Metal casing (42x80x113 mm)	optional	optional	optional	optional	optional	optional	optional
2xSIM card	•	•	•	•	•	•	•
Antenna Rx diversity			•	•	optional		
Power supply 10V - 30V DC	•	•	•	•	•	•	•
Operating temperature from -30°C to +60°C	•	•	•	•	•	•	•
DIN holder TS35/TS32	•	•	•	•	•	•	•
FUNCTIONS							
Linux	•	•	•	•	•	•	•
IPSec (DES, 3DES, AES, MD5, SHA-1, DH2, DH5)	•	•	•	•	•	•	•
OpenVPN, PPTP, L2TP, GRE	•	•	•	•	•	•	•
Authentication (X.509 certificate, Pre-shared key, Password)	•	•	•	•	•	•	•
EasyVPN	optional	optional	optional	optional	optional	optional	optional
Firewall	•	•	•	•	•	•	•
DHCP	•	•	•	•	•	•	•
NAT/PAT	•	•	•	•	•	•	•
HTTP/HTTPS server	•	•	•	•	•	•	•
Telnet/SSH	•	•	•	•	•	•	•
DynDNS	•	•	•	•	•	•	•
FTP server	•	•	•	•	•	•	•
NTP server, NTP client	•	•	•	•	•	•	•
SNMP	•	•	•	•	•	•	•
VRRP	•	•	•	•	•	•	•
SMTP, E-mail	•	•	•	•	•	•	•
SMS functions	•	•	•	•	•	•	•
VLAN 802.1Q	•	•	•	•	•	•	•
QoS, IGMP, BGP, OSPF, RIP	optional	optional	optional	optional	optional	optional	optional
PPPoE bridge	•	•	•	•	•	•	•
COM port TCP/UDP server/client	•	•	•	•	•	•	•
MODBUS RTU/TCP gateway	optional	optional	optional	optional	optional	optional	optional
4 configuration profiles	•	•	•	•	•	•	•
Automatic configuration and FW update	•	•	•	•	•	•	•
ADDITIONAL SOFTWARE SUPPORT							
SW Plug-in - modules	•	•	•	•	•	•	•
R-SENET	•	•	•	•	•	•	•
SMART	•	•	•	•	•	•	•

