

Turris OMNIA





Open hardware running free operating system based on OpenWrt. It enables you to make your own software modifications and secures you top-level privacy. Having full schematics guarantees that you know what is inside. No backdoors, no calling home.

We are able to deliver our router as a white label device, and even do some hardware modifications according to customer's demands. You can upload your own software too.

PERFORMANCE

High power dual-core ARMv7 CPU at 1.6 GHz, 2 GB RAM and 8 GB eMMC means PC-like performance. The device is designed for high load and long lifespan.

SECURITY

Secure default configuration, easy setup and automatic updates. We also run a farm of honeypots, which simulates a running system and observe would-be attackers. It is possible to easily configure Omnia to redirect specific traffic to the honeypot and get records of caught attackers and their actions. And it is completely safe because the honeypot runs on our server, not on your device.

OpenVPN setup is also possible so you can safely reach your files, stored at home, remotely or make secure connection on public Wi-Fi networks.

NEVER ENDING IMPROVEMENTS

Thanks to automatic updates and growing active community, Omnia receives new features and improvements very often. Unlike common routers, our device is getting better through the time.

HIGH THROUGHPUT NETWORK SETUP

Omnia has three gigabit interfaces in the processor. Thanks to good HW design you can reach a full gigabit speed in a full duplex mode between WAN and LAN. This means your router will not slow down your Internet connection. You can also



dedicate one gigabit line to a single LAN port via a VLAN to guarantee its speed in presence of other traffic.

EXTENSIBILITY

You can extend the device to work as a DLNA server, add a DVB-T tuner to stream television signal through your network, add a USB sound card or use it as an Internet radio. We even have a how-to for using a web camera as a simple burglar alarm with automatic emailing of photos. Connection of devices like thermostats, security and weather sensors, RaspberryPi, Arduino and other IoT devices is also possible. Omnia has huge HW and endless SW extensibility like:

NAS (Network Attached Storage)

Thanks to three miniPCle ports, one mSATA, two USB 3.0 ports and powerful CPU, you can built your home made NAS with performance comparable to dedicated NAS boxes, thus saving you money for running an extra device. There is enough performance to make your own cloud service.

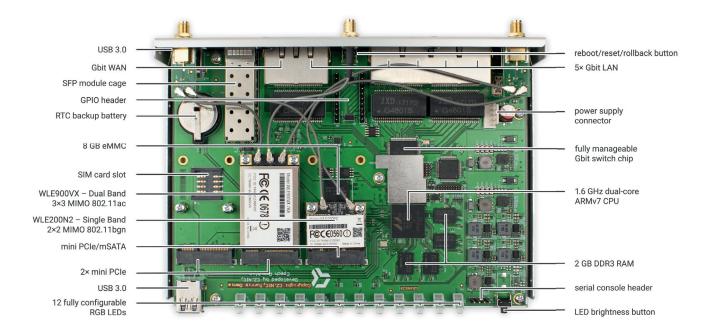
Backup and dual connectivity

You can connect to the Internet via fiber (using built-in SFP), twisted pair or LTE (by using additional USB or miniPCle modem — SIM slot is on board). You can also balance between various means of connectivity either manually or automatically using available packages.

LXC virtualization¹

Virtualization is a common feature on modern servers. It helps organize software, adds new features, improves security by splitting important and less important systems, etc. Because Turris Omnia has enough power and RAM, we decided to add support for virtualization into the core system and prepared several virtual machines for easy download and setup. The virtual server serves as a normal LAN connected computer and you can run any Linux you want on it – even Ubuntu or Debian. This makes experimentation with new software extra simple and safe.

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Turris Omnia: motherboard components

Hardware Specification		
СРИ	Marvell Armada 385, dual-core 1.6 GHz	
Memory	2 GB DDR3	
Storage	8 GB eMMC	
Antenna Type	2×2 MIMO Omni-directional high-gain dipole (2.4 GHz) 3×3 MIMO Omni-directional high-gain dipole (5 GHz)	
Antenna Gain	3× 2.4 GHz 3.5 dBi, 5 GHz 4.6 dBi	
LAN Port	5× 10/100/1000 Mbps (RJ-45)	
WAN Port	1× 10/100/1000 Mbps (RJ-45) + SFP up to 2.5 Gb	
External Ports	2× USB 3.0 (5 V, 1.5 A power output)	
Internal Interfaces ²	1× UART (4 pins header) 1× miniPCle/mSATA 1× miniPCle (without USB and SIM Lock) 1× miniPCle (with USB and SIM Lock)	1x 5 pin Power connector (3V, 5V, 12V) for SATA drives 2x 10 pin GPIO connector (GPIO, SPI, I2C, UART) 1x 20pin JTAG (CPU) 1x 10 pin Programming connector (MCU)
Button and Switch	Reset, LED intensity	
Appearance		
Size (Width × Depth × Height)	190 × 135 × 40 mm (without antennas)	
Weight	1180 g	
Power Supply		
AC Input	100-240 V / 1.0 A	
Power Frequency	50/60 Hz, Single Phase	
DC Output	12 V / 3.33 A	
Power Consumption	5-40 W max (depends on connected peripheries)	
Temperature		
Operating Temperature	0 °C to 40 °C (40 °F to 104 °F)	
Storage Temperature	-20 °C to 60 °C (-5 °F to 140 °F)	

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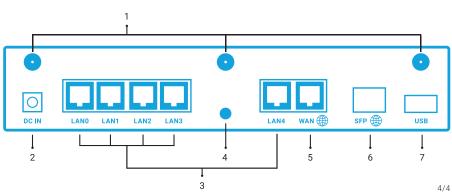
Relative Humidity	10 % to 90 % RH
Certification	CE, FCC
Wi-Fi Certification	CE, FCC
Warranty	2 years
Wireless Specification	
Standard (IEEE 802.11a/b/g/n/ac)	IEEE 802.11a/b/g/n/ac Simultaneous dual-band Wi-Fi (2 Wi-Fi interfaces installed) Compex WLE200N2: 2.4 GHz, 300 Mbps Compex WLE900VX: 5 GHz, 1.3 Gbps or 2.4 GHz, 450 Mbps
Transmitting Power	23 dBm max.
Secured Transmission	64/128 bit WEP, WPA/WPA2, WPA-PSK/WPA2-PSK
Standard (IEEE 802.11b/g/n)	IEEE 802.11b/g/n 2.4 GHz: 300 Mbps
Transmitting Power	16 dBm max.
Secured Transmission	WEP, WPA, WPA2
HW Extensibility	NAS box with SATA connectivity, TV tuners via USB, security cameras, printers, LTE modem (miniPCle or USB), USB soundcards
Network	
Internet Connection	By default: Dynamic IP, Static IP, PPPoE; other by Linux packages
Port Forwarding	Setup via web UI or via SSH
Maximum Port Forwarding Rules	Unlimited ³
Maximum UPnP Rules	Unlimited ³
Port Triggering	
Maximum Port Triggering Rules	Unlimited ³
Minimum Port Triggering Timeouts	Unlimited ³
DMZ	Yes
Network Standards	IPv4, IPv6 (DHCPv6 client, server and RA) by default, OSPF, BGP, NAT64 and DN64 by packages
DHCP	Server/client mode, client list, MAC address reservation
Maximum DHCP Reservations	Unlimited ³
LAN/WLAN IGMP Snooping	
VPN	VPN server/client (OpenVPN by default, other by packages) VPN pass-through (OpenVPN by default, other by packages)
Policy Route, Static Route, Network Address Tran	slation (NAT), PPPoE Relay
Maximum IPv4 Static Rroutes	Unlimited ³
Maximum IPv6 Static Routes	Unlimited ³
Diagnosis Tools	Any Linux package
Management	
Operating System	Turris OS, open source, based on OpenWrt, endless SW extensibility by Linux packages
Free OS Upgrade	Frequent automatic security and feature updates
Remote Access	VPN, SSH
Operation Modes	Wireless Router, Wireless AP, Wireless Client
Wake on LAN (WOL)	Yes
Maximum Connected Devices	Unlimited ³
Notification	Email
SSH	Yes
SNMP	By third party packages
Configuration, Backup & Restore	Yes, simple Foris UI, advanced LuCl or SSH, UART serial bus accesible, easy reflash from USB drive

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Busbnished Mehr fifter with Built-in Database, Customized Allow/Block List Steps by single/multiple devices Maximum Devices Unifficeded* Maximum Blocked URLs Unifficiteded* Maximum Blocked URLs Unifficiteded* Maximum Blocked URLs Unifficiteded* Maximum Device Speed & Priority Yes Maximum Device Rules Unlimiteded* Maximum Device Rules Ves. Unlimiteded* Maximum Device Rules Ves. With Unlimited Settings? WiFit Rock Database Ves. With Unlimited Settings? Special Security Features Processory Septiment Setting Informations about attacker and share them with other Turis outers and Individual processory and	Parental Control		
Maximum Blocked URLs Unlimited® Maximum Allowed URLs Unlimited® Traffic Control Internet Ban, Device Speed & Priority Yes Maximum Device Rules Unlimited® Maximum Application Rules per Device Unlimited® Maximum Application Rules per Device Unlimited® Maximum Application Rules per Device Unlimited Properties Security WFF Enception WEP WPA/WPA2-Personal, WPA/WPA2-Enterprise WIFF IMAC Address Filter Yes Ves. with unlimited settings® Properties Special Security Features Honespots and minipots that are getting informations about attacker and share them with other Turnis routers Mobile App In development Fle Service EXT2/3/4, Birtis, FAT, NTES, HFS+, edfaT (depending on installed packages) Access Support Web trowsers SSH, mobile app (in development) Protocol Support SMB, AFP, DINA, FTP/FTPS, WebDAV Apple Time Machine User installable by package Storage Hibernation Yes Downsead Protocols Support depending on installed packages Meaning Concurrent BT Downlo	DNS-based Web-filter with Built-in Database,	Setup by single/multiple devices	
Maximum Allowed URLs UniffritiedP Traffic Control UniffritedP Internet Ban, Device Speed & Priority Yes Maximum Device Rules UniffritedP Maximum Application Rules per Device UniffritedP Traffic monitoring with history Yes, using deep pasclet inspection Security WFF Encyption WEP, WRA/WPA2-Personal, WPA/WPA2-Enterprise WiFF IMAC Address Filter Yes Firewall/SPI Frewall Yes, by optional central-maintained, shared firewall Special Security Features Honeypoits and minipots that are getting informations about attacker and share them with other Turnis routers Mobile App In development File Service EXT2/3/4,8 ltrls, FAT, NTFS, HFS+, exFAT (depending on installed packages) Access Support Web browser, SSH, mobile app (in development) Protocol Support SMB, AFP, DINA, FTIP/FTPS, WebDAV Apple Time Machine User installable by package Shared Folder Privileges Maringeable by Linux permissions Storage Hibernation Yes Download Protocols Support depending on installed packages Maximum Concurrent BT Download Tasks UnlimitedP	Maximum Devices	Unlimited ³	
Internet Ban, Device Speed & Priority Yes Maximum Device Rules Unifimited? Maximum Application Rules per Device Unifimited? Traffic monitoring with history Yes, using deep packet inspection Security Wi-Fi Encryption Wi-F, WAC Address Filter Yes Wi-F, WAC Address Filter Yes, with unlimited settings? DoS Protection Sepoid Security Features Honeypots and minipots that are getting informations about attacker and share them with other Turns routers Mobile App In development File Service File Service File System EXT2/3/4, Birfs, FAT, NTFS, HFS+, exFAT (depending on installed packages) Access Support Web browser, SSH, mobile app (in development) Protocol Support SMB, AFR, DLNA, FTF/FTPS, WebDAV Apple Time Machine User installable by package Storage Hibernation Yes Charage Based on high quality, secure and high performance Knot DNS resolver with DNSSEC Download Protocols Maximum Concurrent Download Tasks Unifimited? Media Server (DLNA/UPPP) Yes RADIUS Server Supported VPN protocols: OpenVPN by default, other installable Maximum Connections Unifimited? Ven Supported VPN protocols: OpenVPN by default, other installable Maximum Connections Unifimited? Provides centralized authentication, authorization, and accounting for wireless network access VPN Server Supported VPN protocols: OpenVPN by default, other installable Maximum Connections	Maximum Blocked URLs	Unlimited ³	
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RADIUS Server Provides centralized authentication, authorization, and accounting for wireless network access VPN Server Supported VPN protocols: OpenVPN by default, other installable Maximum Connections Unlimited³ Packaging	Maximum Concurrent BT Download Tasks	Unlimited ³	
VPN Server Supported VPN protocols: OpenVPN by default, other installable Maximum Connections Unlimited³ Packaging	Media Server (DLNA/UPnP)	Yes	
Maximum Connections Unlimited ³ Packaging	RADIUS Server	Provides centralized authentication, authorization, and accounting for wireless network access	
Packaging	VPN Server	Supported VPN protocols: OpenVPN by default, other installable	
	Maximum Connections	Unlimited ³	
Packaging Content Main Unit, 3× Antenna, Wall Mount, AC Power Adapter, RJ-45 LAN Cable, User manual	Packaging		
	Packaging Content	Main Unit, 3× Antenna, Wall Mount, AC Power Adapter, RJ-45 LAN Cable, User manual	

¹ Make sure to either configure your containers properly or to use external device for storage as excessive writes can irreparably damage your router.

- 1) Wi-Fi antenna connectors
- 2) Power connector
- 3) LAN interface connectors
- 4) RESET button
- 5) WAN interface connector
- 6) SFP interface connector
- **7)** USB 3.0



² Two miniPCle slots are by default occupied by replaceable WiFi cards.

³ No artificial limit imposed, but limited by the available hardware resources. These are, however, plentiful and unlikely to be exhausted in any common setups.