TURRIS OMNIA

FUNDED ON $1.2M INDIEGOGO

HI-PERFORMANCE & OPEN SOURCE ROUTER

OPEN SOURCE

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

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, 1 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:
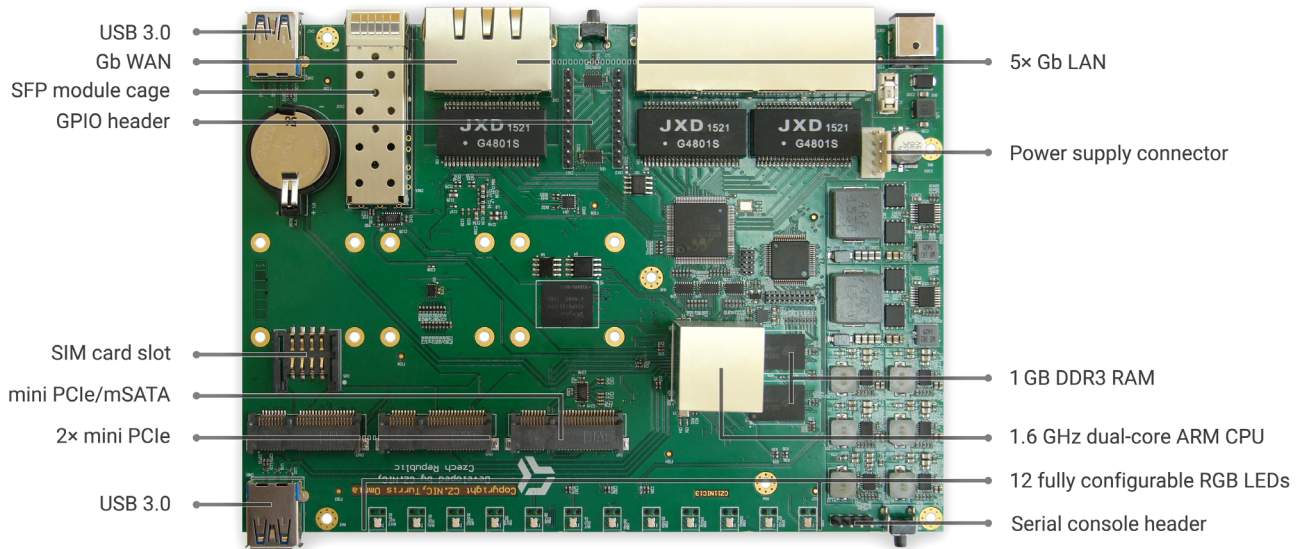
NAS (Network Attached Storage)

Thanks to three miniPCIe 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 use an LTE USB or miniPCIe modem (there is even a SIM slot built into the device) for backup connectivity as the same as dual WAN or direct optical connection, thanks to SFP.

LXC virtualization

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.

Turris Omnia: motherboard components

Hardware Specification	
CPU	Marvell Armada 385, dual-core 1.6 GHz
Memory	1 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	1× UART (4 pins header) 1× miniPCIe/mSATA 1× miniPCIe (without USB and SIM Lock) 1× miniPCIe (with USB and SIM Lock) 1× JTAG 20 pin (CPU) 1× Programming connector 10 pin (MCU) 1× 5 pin Power connector (3V, 5V, 12V) for SATA drives 2× 10 pin GPIO connector (GPIO, SPI, I2C, UART)
Button and Switch	Reset, LED intensity
Appearance	
Size (Width x Depth x Height)	190 × 135 × 40 mm (without antena)
Weight	1180 g (no Wi-Fi 1130 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)
Relative Humidity	10 % to 90 % RH
Certification	CE
Wi-Fi Certification	CE
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 (miniPCIe or USB), USB soundcards, smart sensors via GPIO pins…
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*
Maximum UPnP Rules	Unlimited*
Port Triggering	
Maximum Port Triggering Rules	Unlimited*
Minimum Port Triggering Timeouts	Unlimited*
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
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 Translation (NAT), PPPoE Relay	
Maximum IPv4 Static Rroutes	Unlimited*
Maximum IPv6 Static Routes	Unlimited*
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*
Notification	Email, push notifications in mobile aplication in plan
SSH	Yes
SNMP	By third party packages
Configuration, Backup & Restore	Yes, simple Foris UI, advanced LuCI or SSH, UART serial bus accesible, easy reflash from USB drive
User Account Management	Yes
Printer Server	2× USB 3.0 ports, possible extension by USB hub
Parental Control	
Customized Internet Schedule, DNS-based Web-filter with Built-in Database, Customized Allow/Block List	Setup by single/multiple devices

Maximum Devices	Unlimited*
Maximum Blocked URLs	Unlimited*
Maximum Allowed URLs	Unlimited*
Traffic Control	
Internet Ban, Device Speed & Priority	Yes
Application Layer (L7) Quality of Service (QoS)	
Maximum Device Rules	Unlimited*
Maximum Application Rules per Device	Unlimited*
Traffic Monitor for Graphical Live /History Statistics	Yes, in Majordomo package for now, in advanced parental control in 2017
Security	
Wi-Fi Encryption	WEP, WPA/WPA2-Personal, WPA/WPA2-Enterprise
Wi-Fi MAC Address Filter	Yes
Firewall/SPI Firewall	Yes, with unlimited settings*
DoS Protection	Yes, by optional central-maintained, shared firewall
Special Security Features	Honeypots and minipots that are getting informations about attacker and share them with other Turris routers.
Mobile App	In development
File Service	
File System	EXT2/3/4, Btrfs, FAT, NTFS, HFS+, exFAT (depending on installed packages)
Access Support	Web browser, SSH, mobile app (in development)
Protocol Support	SMB, AFP, DLNA, FTP/FTPS, WebDAV
Apple Time Machine	User installable by package
Shared Folder Privileges	Manageable by Linux permissions
Storage Hibernation	Yes
DNS Server	Based on high quality, secure and high performance Knot DNS resolver with DNSSEC
Download Protocols	Support depending on installed packages
Maximum Concurrent Download Tasks	Unlimited*
Maximum Concurrent BT Download Tasks	Unlimited*
Media Server (DLNA/UPnP)	Yes
RADIUS Server	Provides centralized authentication, authorization, and accounting for wireless network access
VPN Server	Supported VPN protocols: OpenVPN by default, other installable
Maximum Connections	Unlimited*
Packaging	
Packaging Content	Main Unit 3× Antenna Wall Mount AC Power Adapter RJ-45 LAN Cable User manual

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

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