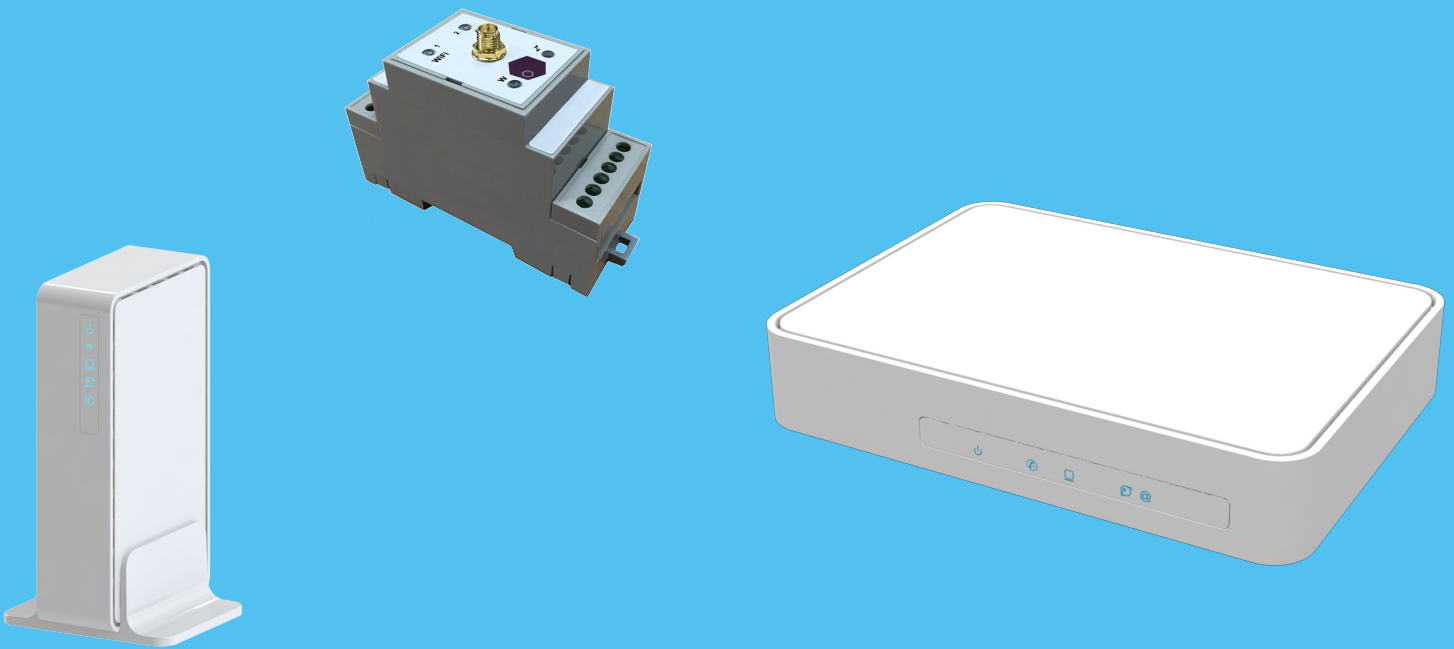

Oxygen *smart*Gateway Broadband & IoT series



DSL, LTE, Fiber, SFP or
Ethernet WAN
NB-IoT, Cat-M1, LoRa IoT
Ethernet LAN
WiFi 802.11n / ac, dual-band
Bluetooth LE
Zigbee
USB Host
WAN backup
Firewall, VPN server/client
Power-over-Ethernet
Embedded Smart Battery

The Oxygen *smartGateway* routers are advanced broadband access and/or IoT solution terminals, which provide a flexible combination of high-speed WAN access (DSL, 3G/4G or Ethernet) with multiple IoT technology options (NB-IoT, Cat-M1, LoRa, Zigbee, Bluetooth LE) and a complete set of LAN Interfaces (Ethernet ports, 802.11b/g/n and 802.11ac Wi-Fi and USB) along with an extended list of software features.

Oxygen *smartGateway* routers offer in a compact design, the needed functionality and performance for a diverse list of applications ranging from residential, business or industrial broadband services to advanced IoT and M2M deployment scenarios. Versatile and network-oriented, the devices offer impressive functionality for multi-Service access, with comprehensive support for:

- **High speed Copper, Fiber, LTE or IoT broadband access**
- **Multiple IoT technology options: NB-IoT, Cat-M1, LoRa, Zigbee, Bluetooth LE**
- **Assured communication for multiple IP-enabled devices**
- **VPN tunneling for secure remote access communication**



Based on the Linux OS, Oxygen *smartGateway* routers are future-proof designs with increased CPU and memory capacities. These characteristics allow their integration in an enhanced portfolio of services and applications and ensure that the solution is robust and future proof, as more and more IP-enabled devices join the network. At the same time, advanced policy-based Quality of Service (QoS), WAN backup connectivity in case of primary broadband network failure, together with complete service separation and a powerful and flexible firewall ensure carrier-grade real-time applications and services.

Technical Specifications

Network Interface Options

WAN

- 1 x VDSL1, VDSL2, VDSL2-Vplus G.993.2 (VDSL2), G.993.1-2004 (VDSL) G.INP (G.998.4), ANSI T1.424-2004 ETSI TS 101 270-1 and TS 101 270-2 G.992.x (auto ADSL2+, ADSL2, ADSL fallback) 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a, 35b, G.fast*
- Option:** VDSL over Coax
- Option:** Remote Power Feed (19Watt max on output connector)
- and/or
- 1 x 10/100/1000 BaseT, Auto-MDIX
- and/or
- 1 x GPON G.983.1/2/3/4/5, G.984.1/2/3/4, 2.5/1.24Gbps, 1490/1310nm +
- 1 x CATV 75Ω interface 1550-1560nm
- and/or
- 1 x SFP slot for FTTH (Ethernet, GPON, G.fast)
- and/or
- 1 x internal LTE/HSPA+ module, Cat4 or Cat6 GPRS/EDGE/HSPA+/DC-HSPA+/LTE

IoT WAN

- 1 x internal LTE Cat.M1 & Cat.NB1 & EGPRS module with ultra-low power consumption
- and/or
- 1 x internal Cat.1 10/5 Mbps

LAN

- 1/2/4 x Ethernet ports (10/100/1000 BaseT, Auto-MDIX)
- Wi-Fi 802.11n 2.4GHz MIMO (2x2 or 3x3) (optional also 802.11ac 5 GHz, dual-concurrent MIMO 2x2, 3x3 or 4x4), on/off switch, internal or external antenna
- 1/2 x USB Host (master) interfaces (optional)
- Option to use one LAN Ethernet port as WAN
- 802.3af Power-over-Ethernet (optional)

IoT LAN

- 1 x Zigbee HA1.2 coordinator
- and/or
- 1 x Bluetooth 4.0 / LE

Other

- 1/2 x RS-485 or RS-232 serial interface
- GPS antenna
- 1 x SD card reader
- Internal buzzer
- Internal RTC
- NFC controller
- Internal smart battery

Routing/Bridging

- RFC 2364 PPPoA, RFC 2684 MPoA, RFC 1577 Classical IPoA, RFC 2516 PPPoE
- 8 Virtual Circuits, UBR, VBR-rt, VBR-nrt, CBR
- Per-PVC/VLAN Queuing and Traffic Shaping
- PVC/VLAN-to-Service mapping support
- 802.1d bridging, 802.1q VLAN, Private VLANs
- RIP v1/v2, OSPF*, BGP*, Static Routing
- DHCP Client/Server/Relay
- SNTP Client/Server
- IPv6 support (dual-stack, DS-lite, MAP-T, MAP-E)
- NAT, PAT and DNS relay agent
- IGMP v1/2/3, proxy, snooping
- IP QoS (ToS/DSCP), WMM
- Ethernet QoS (802.1p/q CoS)
- Queuing, rate limitation, fragmentation
- Low latency handling of VoIP/Video services
- Multihoming, Load-balancing, 3G/4G backup
- Dynamic DNS
- Multiple WLAN SSIDs, WLAN Captive Portal
- Radius Server
- PPP Server / Proxy
- VRRP

Security

- Enhanced policy-based and SPI firewall
- Standard and Extended Access Lists
- URL Filter, Virtual Server, DMZ
- MAC filtering
- VPN IPsec*, TLS/SSL OpenVPN, L2TP, L2TPv3*, PPTP*, GRE, VPN pass-through
- WLAN: WEP 64/128-bit, WPA, WPA2, 802.1x, WPS

Management

- DSL Forum TR-069, TR-098, TR-181
- Multilevel Web-based graphical user interface
- SSH/Telnet remote access to CLI
- Console port (optional)
- SNMP v1/2c/3
- ATM F4&F5 OAM
- Automatic LAN device detection and provision
- Diagnostic and performance monitoring
- Connection test (end-user), ping, traceroute
- Remote management through SMS*
- E-mail / SMS alerts
- Syslog with network support
- Packet capturing (sniffer)
- Configuration backup and restore
- Zero-touch deployment mechanism
- Automatic remote firmware upgrades
- Dual firmware image support
- Wi-Fi Protected Setup (WPS), WDS
- UPnP IGD, NAT-PMP
- Wake on LAN
- Time-of-day Schedule, Paternal control

USB Services

- Print Server support
- File Server support (FTP, SMB/CIFS, NFS)
- UPnP Media Server support
- Data-backup through external LTE modem

Additional specifications

- Flash/RAM: 128-512MB / 128-256MB
- Functional LED indicators
- Power and WiFi on/off switch
- Factory reset pin
- Embedded 802.3af PoE module (optional)
- External power adaptor: 12V DC, 1 or 1.5A / 90-240V AC, 50-60Hz
- Temperature: 0 to 40°C (oper.), -20 to 70°C (stor.)
- Humidity (non-cond.): 10-90% (oper.), 5-95% (stor.)
- Dimensions: 179x129x32mm
- CE Mark, IEC 60950, EN 60950, K.21, RoHS
- ADSL: TR-67 / TR-100

(*) Optional