

## 5G/4G/3G WiFi Router (CM685VX)

### DETAILS

- World's smallest 5G industrial router
- 5G modem router with lightning internet speeds
- Supports 5G SA and 5G NSA modes
- Supports 4G LTE-A Cat 16
- Worldwide 5G and 4G LTE-A coverage
- OpenWrt fully featured Linux OS
- Two Gigabit Ethernet ports (one LAN and one LAN/WAN)
- Automatic failover between ADSL/NBN and 5G/4G/3G
- Built-in transient and reverse polarity voltage protection, over-current and over-voltage protection
- SMS control (check out the Comset SMS App)
- Fully operational on telstra.corp APN

The Comset CM685VX is a new generation 5G industrial router. Supporting both 5G SA and 5G NSA modes, the CM685VX delivers lightning internet speeds over the 5G networks with failover to 4G LTE-A Cat 16. Powered by Qualcomm Snapdragon X55 chipset and built on the fully featured OpenWrt Linux operating system, the CM685VX provides a powerful and rapidly deployable internet solution to commercial customers and small to medium businesses.



The Comset CM685VX is an innovative router powered by a powerful 580MHz CPU. It features one Gigabit LAN port for fast wired connections, one Gigabit WAN/LAN port for automatic failover between NBN/ADSL and mobile 4G or 5G, as well as a GPIO with four digital input/output ports. Other features include VPN IPSEC, PPTP (Server and Client), L2TP and OpenVPN to establish a secure connection over the 4G/5G network.

The Comset CM685VX is a global router, supporting frequencies across all major carriers worldwide. The innovative design, easy integration and rich built-in features make the CM685VX the router of choice for a wide range of business and commercial applications, including SOHO, SMB, industrial automation, building automation, security, surveillance, transportation, health, mining and environmental monitoring.

## Features

### BASIC

- Built-in 5G NR Sub 6 GHz industrial cellular module supporting both SA and NSA modes
- Supports 4G LTE-A CAT 16
- Worldwide 5G and 4G LTE-A coverage
- Powered by Qualcomm Snapdragon X55
- CPU 580MHz
- MIMO Technology (4x4, DL)
- Load balancing
- 2 x Gigabit Ethernet ports (1 x LAN; 1 x LAN/WAN)
- 6 x SMA standard detachable antennas included: 4 x cellular antennas, 2 x WiFi antennas
- 1 x RS232 Serial port
- 4 x Digital Input ports, that can also be used as Digital Output ports
- WiFi N300 2.4GHz (802.11 a/b/g/n)
- Optimised EMC design
- Always on-line: On-line detection and automatic redial
- Built-in transient and reverse polarity voltage protection, over-current and over-voltage protection
- Wide range power input (5-40VDC)
- Smart power management
- User friendly set-up wizard for easy configuration and setup
- Network traffic real-time graphs
- Network Diagnostic Tools (Ping, Traceroute and NSLookup)
- Advanced security, VPN, and stateful firewall to protect sensitive data
- Robust Metal Case
- Desktop and Wall-mount

### ADVANCED

#### Redundancy and Load Balancing

- Failover between NBN/ADSL and 5G Modem
- Auto-dial feature, keep alive link
- LCP, ICMP check
- Built-in watch dog
- Three-way redundancy: Cellular (3G/4G/5G), RJ45 WAN (xDSL, DHCP, Fixed IP), WiFi client
- Load balancing between 5G and fixed WAN ADSL/NBN

#### Intelligent Routing

- UPnP, DMZ, virtual server/port forwarding, routing rules, NAT-less routing, wired or wireless WAN-to-LAN IP passthrough, route management, per-interface routing, content filtering, IP filtering, website filtering, per-client Web filtering, local DHCP server, DHCP client, DHCP relay, DNS, DNS proxy, Split DNS
- ALGs: PPTP, SIP, TFTP, FTP, IRC
- MAC address filtering, Dynamic DNS, LAN/WAN affinity, STP, enterprise routing protocols: BGP/OSPF/RIP, multicast proxy

#### VPN

- IPsec including Tunnel, NAT-T, and transport modes
- Hash (MD5, SHA128, SHA256, SHA384, SHA512) and Cipher (AES, 3DES, DES)
- GRE tunneling
- PPTP support
- L2TP, L2TP over IPsec support
- VPN pass-through
- OpenVPN
- Multiple networks supported in a single tunnel, site-to-site dynamic VPN with NHRP

- Certificate support
- VTI Tunnel support
- Supports OSPF/BGP/RIP, Virtual Server/Port Forwarding, IPv6, VRRP

#### SMS, SMS Control and Alarm

- Receive and send SMS
- WAN Cell APN configuration via SMS
- SMS Control and Alarm - SMS or Call to control router to be online, offline, reboot, signal and status monitor (check out the Comset SMS App)
- SMS text send and receive

#### Optimised IP communications

- Automated WAN Failover
- WAN Affinity and QoS allow prioritisation of VoIP services
- Advanced VPN connectivity options to HQ
- SIP ALG and NAT to allow VoIP and UC communications to traverse firewall
- MAC Address Filtering
- 802.1p/q for LAN QoS segmentation and treatment of VoIP on LAN
- Private Network support (wired and 4G/5G WAN)

#### DI/DO

- 4 x Digital Input ports for alarm notification via email or SMS
- Can also be used as Digital Output ports to control electrical devices via SMS or GUI (DIO board required)

#### Other

- Cellular and WiFi MIMO
- Syslog (local and remote)
- Real-time clock (NTP, update with defined hours)
- WAN/LAN/Memory statistics
- Modbus

# Specifications

## HARDWARE

- CPU: 580 MHz
- RAM: 512 Mb DDR, option for up to 4 Gb DDR
- Flash: 256 Mb, option for up to 8 Gb

## WAN

- Integrated 5G modem (with 4G and 3G failover)
- 10/100/1000 Mbps Gigabit Ethernet port – NBN/ADSL
- WiFi as WAN
- MIMO “N” 2.4 GHz
- 802.11 a/b/g/n
- Supports failover and load balancing, advanced modem failure check and IP pass-through
- WAN ports support Cell/Static IP/DHCP/PPPoE (on demand, keep alive, schedule, manual standby)

## LAN

- 10/100/1000 Mbps Gigabit Ethernet LAN port
- Supports DHCP Server, Client, Relay; DNS and DNS Proxy; DDNS; UPnP; DMZ; Multicast/Multicast Proxy; QoS (DSCP and Priority Queuing); MAC Address Filtering; and VLAN 802.1Q

## WiFi

- WiFi N300
- 802.11 a/b/g/n 2.4 GHz
- WPA2 Enterprise
- Hotspot/Captive portal
- SSID-based priority
- Can be used as Ap or Client
- Frequency range from 2.412 GHz to 2.472 GHz

## CELLULAR

### Compatible Mobile Networks

- 5G NR
- 4G LTE (FDD/TDD)
- 3G UMTS WCDMA (HSUPA/HSDPA/HSPA/HSPA+/DC-HSPA+)

### Cellular Frequency

- 5G NR: n1, n2, n3, n5, n7, n8, n12, n20, n28, n38, n40, n41, n48, n66, n71, n77, n78 and n79
- 4G LTE FDD: B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B66 and B71
- 4G LTE TDD: B34, B38, B39, B40, B41, B42 and B48 (4x4 MIMO DL)
- 3G WCDMA: B1, B2, B3, B4, B5, B6, B8 and B19

## Bandwidth

- 5G SA
  - Downlink 2.1 Gbps - Uplink 900 Mbps
- 5G NSA
  - Downlink 2.5 Gbps - Uplink 650 Mbps
- 4G LTE
  - Downlink 1.0 Gbps - Uplink 200 Mbps
- WCDMA
  - Downlink 42 Mbps - Uplink 5.76 Mbps

## INTERFACES

### Ports

- Power (power jack and terminal block)
- 2 x Ethernet LAN/WAN RJ45 ports
- 4 x cellular (or 3 x cellular and 1 x GPS) antenna connectors SMA
- 2 x WiFi antenna connectors SMA
- 1 x Serial connection RS232 (terminal block)
- 4 x Digital I/O ports (terminal block)

### LEDs

- SYS
- CELL
- LAN
- VPN
- WAN
- WiFi
- SIGNAL

### UIM/SIM Card Slot

- Supports 1.8 V/3 V UIM/SIM card
- 1 x SIM card slot

### Other

- Reset button

## SECURITY

- RADIUS and TACACS+ support
- 802.1x authentication for Ethernet
- Certificate support
- ALGs
- MAC Address Filtering
- Advanced Security Mode (local user management only)
- Per-Client Web Filtering
- IP Filtering
- Content Filtering (basic)
- Website Filtering
- Zone-Based Object Firewall with host address (IP or FQDN), port and MAC address
- NAT, SPI, port blocking, service filtering (FTP, SFTP, SMTP, HTTP, RPL, SNMP, DNS, ICMP, NNTP, POP3, SSH), protocol filtering, WAN ping (allow/ignore)

## MANAGEMENT

- Network Management Software (NMS)
- Web GUI and API
- Data Usage Alerts (router and per client)
- Advanced Troubleshooting
- Device Alerts
- SNMP v1, v2c and v3

- SMS control
- TR-069
- CLI over SSH, SSH to serial, SSH to telnet, SFTP

## POWER

### Power supply

- DC input steady state voltage range 5 to 40 VDC
- Requires inline fuse for vehicle installations:
  - For 9 to 24 VDC, use a 3 A fuse
  - For > 24 VDC, use a 2.5 A fuse
- Reverse polarity and transient voltage protection per ISO 7637-2
- Ignition sensing (automatic ON and time-delay OFF)

### Power consumption

- Idle
  - Average 100mA@12VDC
  - Max 500mA@12VDC
- Tx/Rx
  - Average 300mA@12VDC
  - Max 800mA@12VDC

### Power adapter

- 12 VDC 1.5 A adapter (included)

## PHYSICAL

### Dimensions

- 100mm x 60mm x 21mm

### Weight

- 230g (not including the antennas)
- 380g (including the antennas)
- 860g (including all accessories)

### Temperature

- Operating: -35°C to 75°C
- Storage: -40°C to 85°C

### Humidity

- Operating: 5% to 95%
- Storage: 5% to 95%

### Case

- Alloy
- Black colour

## OTHER

### Firmware update

- Update locally or remotely (LAN, WiFi and OTA WAN)

### Warranty

- 1 Year warranty

### Regulatory Compliance

- RCM, CE, RoHS

### Package Contents

- CM685VX 5G router
- Ethernet cable
- Serial cable
- Power adapter
- 4 x cellular antennas (or 3 x cellular and 1 x GPS)
- 2 x WiFi antennas