



Moovbox M200R Mobile Broadband Gateway

Rugged In-Vehicle Cellular Router & Wi-Fi Access Point



- ▶ Rugged industrial design
- ▶ EN50155 (Rail), E Mark (Road)
- ▶ IP65, Shock & Vibration resistant
- ▶ Dual WAN radio connections
- ▶ 3G/HSPA, WiMAX and others
- ▶ Plug'n'Play 3rd party modems
- ▶ Built-in 12-channel GPS
- ▶ 802.11b/g WLAN access point
- ▶ Dual M12 Ethernet ports
- ▶ Rail-compliant DC power
- ▶ Remote management
- ▶ Inbound VPN access

Introducing the Moovbox M200R from Icomera, the world's leading provider of cellular broadband gateways.

The Moovbox M200R Mobile Broadband Gateway is a highly ruggedised version of the award-winning M200 – a multi-radio, in-vehicle communications device that delivers Ethernet, Wi-Fi and GPS over a range of carrier-class backhaul networks. The M200R meets strict EMC, shock & vibration and environmental requirements for rolling stock (EN50155) as well as E Mark (2007/46/EC) for road-based passenger vehicles.

Whether for Internet services on passenger transport or secure VPN connectivity for public safety vehicles, the Moovbox M200R works wherever there is cellular data coverage and supports plug-and-play operation with WAN technologies including 3G UMTS/HSPA, EDGE, GPRS, TD-CDMA, HC-SDMA, FLASH-OFDM and mobile WiMAX 802.16e¹. The backhaul-agnostic Moovbox M200R supports two user-supplied 3rd party WAN radios in PCMCIA or Express/34 form factor. These radios operate in tandem providing concurrent backhaul connections that can be configured for load balancing², seamless switching² between different carriers, or for independent connections dedicated to Ethernet and Wi-Fi interfaces respectively. The Moovbox modular WAN approach provides an in-field upgrade path to future WAN technologies such as LTE without the need to change the Moovbox hardware.

The Moovbox M200R gateway features a commercial grade Wi-Fi access point supporting multiple SSIDs, captive portal, and RADIUS AAA making it suitable for delivering Internet access to passengers as well as secure access for transport staff. Dual M12 Ethernet ports provide connectivity for peripheral equipment such as IP-CCTV, digital video recorders (DVR), ticketing, voice announcement and black-box systems.

In situations where static IP addresses from mobile carriers are unavailable, the Moovbox supports secure VPN tunneling to provide inbound access to the device in the field, and control of equipment downstream on the Ethernet interface. Drawing power from a vehicle's electrical system, the bulkhead-mounting Moovbox features industrial-grade external connectors for an in-cabin Wi-Fi antenna and dash, window or roof mounting cellular & GPS antennas³.

Multiple Moovbox M200Rs can be remotely monitored and configured with the optional MoovManage web-based management system which also provides Wi-Fi user authentication and bandwidth statistics reporting. The optional MoovManage Track service leverages the built-in GPS receiver to provide remote device location, vehicle schedule adherence monitoring and cellular network quality analysis.

Installed in trains, coaches, buses and ferries worldwide, the Moovbox is simply the easiest way to provide connectivity wherever it's needed.

Key Features

- ▶ **Compliance for Road/Rail**
- ▶ **Suitable for harsh environments**
- ▶ **WAN Seamless Switching²**
- ▶ **WAN Load Balancing²**
- ▶ **Failover on Ethernet/LAN**
- ▶ **Flexible DC Power options**

Key Applications

- ▶ **Passenger and Freight Rail**
- ▶ **Emergency Vehicles**
- ▶ **Remote device control**
- ▶ **In-Vehicle CCTV, EPOS**
- ▶ **Secure, encrypted Wi-Fi**



¹ Contact Icomera for a full listed of supported WAN radios

² Requires subscription to MoovManage hosted management service and SureWAN option

³ A wide range of Moovbox-compatible 3rd party antennas is available

Dimensions

33cm (W) x 23cm (L) x 11cm (H)

Weight

5kg (11lbs) excluding WAN radios

Materials

Precision cast AISi12 (LM24) aluminium alloy enclosure
Integrated mounting brackets
Fanless operation
Solid-state electronics (no moving parts)

Power Inputs

7-pin circular DC input
24, 52, 72 or 110V DC options available
RIA 12 & EN50155 Compliant
PoE 802.3af (RJ45 version only)
3V Battery Backup for GPS

Power Consumption

Max 14W including two WAN radios

Antenna Connectors

1 x N-Type for 3rd party Wi-Fi antenna
2 x N-Type for 3rd party WAN antenna
1 x N-Type for 3rd party GPS antenna

Interface Ports

2 x 10/100 Ethernet M12 connector
Option for RJ45 connectors

Indicators

1 x Red Power LED
1 x Green Status LED (WAN connection)

Environmental

IP65 rating against water and dust
NEMA 4X
CSA, UL & FM Class 1 Division 2
-20°C to +60°C Operating Range⁴
-40°C to +70°C Storage Range⁴

Management

Embedded web configuration via HTTPS
Remote monitoring via SNMP
Inbound VPN tunneling using OpenVPN
Supports optional MoovManage service

Wi-Fi Radio

Wi-Fi Certified Atheros 5004 chipset
100mW maximum power (EU version)
200mW and 400mW options available

Wi-Fi Frequencies

802.11b/g 2.4GHz

Wi-Fi RX Sensitivity

802.11b
-95dB @ 1Mbps, -90dB @ 11Mbps
802.11g
-90dB @ 6Mbps, -74dB @ 54Mbps

Wi-Fi Access Point Features

Multiple SSIDs, 802.1q VLANs, QoS
DHCP, NAT, captive portal⁵, port forwarding, TX power control

Wi-Fi Security

WPA with AES TKIP (802.11i)
128-bit WEP, 802.1x, RADIUS AAA⁵
Layer 2 Isolation to prevent client-side bridging

GPS

12-channel simultaneous operation
L1 frequency (1575.42 MHz)
Dual sensitivity with automatic switching
MoovManage GPS transmission protocol

GPS Accuracy

Horizontal: <5m (50%), <8m (90%)
Altitude: <10m (50%), <16m (90%)
Velocity: 0.06m/sec

GPS Acquisition

Reacquisition: <2 sec (90%)
Cold Start: <50 sec (50%), <84 sec (90%)
Warm Start: <38 sec (50%), <42 sec (90%)
Cold Start: <50 sec (50%), <84 sec (90%)

WAN Radios

2 x open slots for 3rd party modems
32-bit PCMCIA/CardBus
Supports Express/34 cards with adaptor
Supports USB modems with adaptor
Supports optional SureWAN switching

WAN Interface

GSM/EDGE, EV-DO, CDMA2000
3G UMTS/HSPA
WiMAX 802.16e
TD-CMDA, HC-SDMA, FLASH-OFDM

Compliance

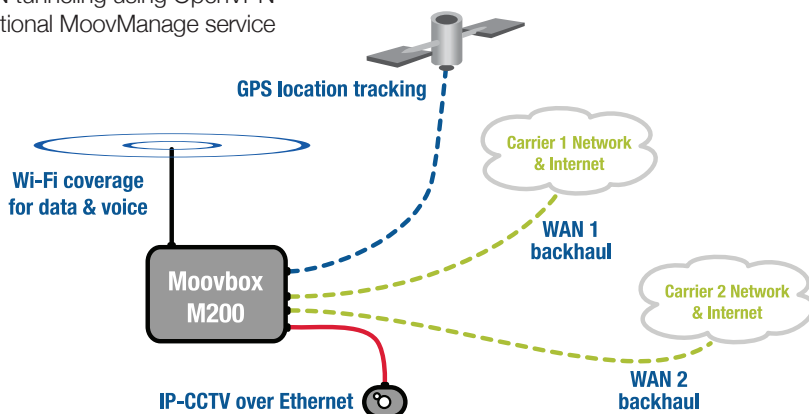
R&TTE (1999/5/EC)
RoHS (2002/95/EC)
CE, C-Tick, FCC Part 15
2004/104/EC, 2007/46/EC – E Mark
EN50155, IEC60571 – Rail
Shock & Vibration – IEC61373
EMC – EN50121-3-1, 50121-3-2

Warranty

One Year Hardware Warranty
MoovCare Extended Warranty available

SKU

1020002000
Contact Icomera for product options



Icomera AB

Vikingsgaten 3
SE 411 04 Göteborg
Sweden
Telephone +46 (0)31 799 21 00

Icomera UK

1092 Galley Drive
Kent Science Park
Sittingbourne
Kent ME9 8GA
United Kingdom
Telephone +44 (0)870 446 0461

Email contact@icomera.com
www.icomera.com

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⁴3rd party WAN radios may not support these temperature ranges; check manufacturers specifications

⁵Requires MoovManage hosted management service or customer-supplied remote server