



# Vodafone MachineLink 3G

Robust M2M communications



The **Vodafone MachineLink 3G** is a compact HSPA+ router for M2M applications that provides optimised IP data network access anywhere there's 2G or 3G network coverage.

## What it does

Vodafone MachineLink 3G features built-in Ethernet for plug-and-play IP connectivity and high-performance internal antennae in a compact and stylish casing, with an optional external antenna connector. Freed from the constraints of a fixed landline connection and designed to work anywhere in the world, the MachineLink 3G's wide operating temperature range, flexible power-up options and built-in mounting versatility make it perfect for virtually any M2M application.

## Package contents

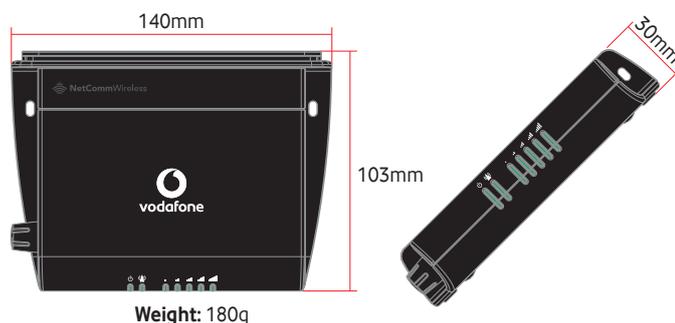
### In the box:

- 1x Vodafone MachineLink 3G router
- 1x 1.5m yellow Ethernet cable 8P8C
- 1x DIN rail mounting bracket
- 1x DC terminal block
- 1x quick start guide and safety manual

### Available accessories

- AC/DC power adapter with four interchangeable plugs
- Standard or extended-temperature power adapters
- External antennae

## Weight and dimensions



## Mounting options

The Vodafone MachineLink 3G can be installed quickly and easily in a variety of locations.

### Description

#### Option 1

Mount flat against the wall



#### Option 2

Mount perpendicular to the wall



#### Option 3

Mounted via DIN rail bracket



#### C Section DIN rail mount

Slide onto a rail



#### Top hat DIN rail mount

Mount on a bracket and slide onto a rail



#### Desk mount

Stand on a desk



# Technical specifications

## Processor and storage

- Powerful 450MHz ARM9 processor with 64MB DDR2 RAM
- 256MB flash memory storage (120MB available on-board storage space)

## Operating system

- Embedded Linux 3.6

## Cellular

- Bands: UMTS/HSDPA/HSUPA: 800/850/900/2100/1900 MHz and GSM/GPRS/EDGE: 850/900/1800/1900 MHz
- Profile managed packet data connections
- Default profile is plug-and-play auto configuring APN – instantly access private or internet APNs right out of the box
- Roaming algorithm with prioritisation for cost-effective and flawless network connection around the world
- NAT disable for framed route configuration
- Transparent bridge mode using PPPoE to allow the router to transparently forward Public WAN IP address to a downstream device
- SIM security management (PIN configuration, enable and disable)
- Automatic and manual cellular band selection, and operator selection

## Peak data speed

- HSPA+ data rates: DL: 14.4 Mbps, UL: 5.76 Mbps
- UMTS data rates: DL/UL: max. 384 kbps
- EDGE class 12: DL/UL: max. 237 kbps
- GPRS class 12: DL/UL: max. 85.6 kbps

## Connectivity

- 1x (RJ-45) 802.3af Power over Ethernet (PoE) 10/100Base-TX Port with Auto MDIX

## SIM card reader

- Lockable tray reader with push button release
- Supports Mini USIM/SIM format (2FF)
- Option for QFN8 SIM card soldered to the PCB

## Reset button

- Reset button (recessed, requiring pen/paperclip) with three functions: Reboot, reboot into recovery mode, and reset unit to factory defaults

## Antennae

- 2x internal cellular antennae (1x main antenna and 1x receive diversity antenna)
- 1x SMA connector for optional external main antenna (including mechanical RF switch for auto changeover to external antenna)

## LED indicators

- 7x tri-colour LEDs. Power, Network and 5x Signal Strength indicators
- Easy, clear LED status display for connection status, connected network type, and connection errors

## Network and routing

- Static Routing, RIP (v1/v2), Port Forwarding, DMZ
- Dynamic DNS
- VRRP for redundant router failover
- DHCP Server, including:
  - Address reservation by MAC address
  - Custom DNS server definitions
  - DHCP relay and DHCP list display in Web-UI
  - Advanced DHCP option configuration (option 42 NTP, option 66 TFTP, option 150, option 160)

## Software development kit

- Develop and install custom software applications
- Open Linux standard development environment
- Develop applications/scripting in standard ANSI C/Shell script and LUA
- Package manager built into web UI for app installation/removal
- API (C, LUA and Shell libraries) to the unit's internal Runtime Database to allow full status monitoring configuration and control of the device from custom applications

## VPN

- PPTP Client for VPN connectivity to remote PPTP VPN Server
- IPSec tunnel termination (for up to 5 tunnels)
- GRE Tunneling
- OpenVPN (Client, Server and P2P)

## Administration and configuration

- Web-based User Interface (HTTP/HTTPS) for full device status and configuration
- Password-protected configuration file backup and restore for quick device configuration and cloning
- Telnet Command Line Interface for status monitoring, configuration and control
- SNMP v1/v2 including cellular specific MIB, configuration and firmware download
- TR-069 Client for remote device configuration, configuration backup and restore, and firmware upgrade
- SMS Client (Send/Receive) including inbox, outbox
- Ping monitor watchdog (Reset connection on repeated ping failure)
- Diagnostic Log Viewer (remote and local)
- System status and security logs
- NTP server support for device system clock network time sync
- User guide stored on the device and accessible via the web-based UI (HTTP/HTTPS)
- Advanced diagnostics and control via SMS
  - Query status information such as signal strength, WAN IP, uptime and more
  - Execute commands via SMS – such as reboot, reset to defaults, go offline, and many more
  - Secure SMS management using sender whitelisting and password management
  - SMS acknowledgement replies for queries and commands

## Firmware management

- Upgrade firmware locally via LAN or remotely over the air (HTTP/HTTPS, SNMP, TR-069)
- Extensive firmware image storage on device with dynamic install

## Temperature

- Operating temperature range -20°C to +65°C
- Storage temperature range -30°C to +80°C

## Power supply

- DC Power input via 2 pin connector (8 - 35V DC) or optionally via 802.3af Power over Ethernet (PoE)
- Recommended power input rating of 6W via DC Jack (e.g 12V 1.5A), or Class 3 Power Level via PoE
- Field terminable power input via screw type terminal block included (No 3 flathead screwdriver required)
- 60V load dump protection on DC input jack
- Dual power mode supported (PoE primary, seamless failover to DC Jack on PoE loss)

## Dimensions, weight and mounting

- Device dimensions (excluding external antenna): 140mm (L) x 103mm (W) x 30mm (D) / 180g
- Wall mount support in multiple orientations via embedded mounting holes
- DIN Rail mount support via plastic bracket included in box (Top hat section rail TH 35 IEC60715)
- C Rail mount support via mounting rail built into housing (C section rail C30 IEC60715)

## Regulatory compliancy

- FCC, PTCRB, CE, GCF, REACH, WEEE, e-mark, RoHS, A-Tick, IC.

If you're interested to know what Vodafone MachineLink 3G can do for you, email [m2m@vodafone.com](mailto:m2m@vodafone.com), contact your account manager or visit:

[m2m.vodafone.com](http://m2m.vodafone.com)

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