

**Vodafone**



## **MachineLink 4G**

Firmware release notes

**Vodafone**

Power to you

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1.9 – MR3	27/03/2017
1.10 – Updated for v2.0.57.5	24/05/2017
1.11 – Updated for v2.0.57.6	28/06/2017

## Release information

Item	Details
Product code	NWL-22-02
Hardware version	Hardware v1.1
Router firmware version	2.0.57.6
Module firmware version	05.05.69.02
Beta/Official	Official
Main system firmware file name	vdf_nwl22w_2.0.57.6_m.cdi (53 MB) MD5: 2d6dfa863ac028343ee7f381361e9524
Recovery system firmware file name	vdf_nwl22w_2.0.57.6_r.cdi (13 MB) MD5: e8a7ea41dea2b1fe33c5862d8a218c62
uboot system file name	u-boot.img (305 KB) MD5: 32675b7351d74974764608e28a6902cd
Module firmware file name	SWI9X15C_05.05.69.02_VODA-EU_005.026_000.nvu (102 KB) MD5: 7fbbdffb105769f12a03b7c515a13ec3 SWI9X15C_05.05.69.02.cwe (33.2 MB) MD5: de60a02a682d26fb8847345c42758cfc
Date	28 <sup>th</sup> June 2017

## Upgrade / Downgrade instructions

Please refer to the accompanying “**Vodafone MachineLink 4G Firmware Upgrade Guide**” file for details.

# Changes / New features

## V2.0.57.6

- **Cosmetic**
  - Various cosmetic fixes.
  - Updated user guide.
- **Functional:**
  - GPS can be activated or deactivated manually on the web interface.
  - Resolved an issue where some SNMP parameters were not being saved in non-volatile memory and would lose its settings after the device was rebooted.
  - The log in page accepts the Enter key in the password field to log in.
  - Improved the security of the device.
  - When SNMP v3 was set to authentication enabled and privacy disabled, some settings could not be saved.
  - Added validation check on the destination address field for the port forwarding feature so that misconfiguration is not possible.
  - Removed redundant authentication options from the AP hotspot page.
  - When SNMP v3 security is set to authentication disabled and privacy disabled, the get command now works correctly.
  - When attempting to install a uboot image via SMS, an error message was incorrectly sent even though the installation completed successfully.
  - Connecting or disconnecting an Ethernet interface can trigger an automated even notification via email, SMS or TCP.
  - Due to a change in the OpenSSH package, SSH key authentication with SSH-2 DSA keys was disabled by default. Added options to allow them to work.

## V2.0.57.5

- **Cosmetic**
  - None.
- **Functional:**
  - Updated PLMN lists (17.05.12.20404 and 17.05.12.90128)
  - Moved User Guide from /usr/local to /opt/cdcs.

## V2.0.57.4 (MR3)

- **Cosmetic**
  - Various cosmetic fixes.
- **Functional:**
  - Improved browser support.
  - Improved password strength algorithm.
  - Improved storage management on the router.
  - Improved the reliability of the Event configuration feature when used with I/O events.

## V2.0.57.1 (MR3 RC1)

- **Cosmetic**
  - Miscellaneous cosmetic fixes.
- **Functional:**
  - Added a Network quality page providing ability to conduct a test of network speed.
  - Added WWAN SIM failover.
  - Added a feature to disable the physical reset button and USB port.

- Added Geofence.
- Added new notification events for USB OTG connection state, enter/exit geofence zone, VRRP notification, SD card inserted/removed, reset button disabled/enabled event and I/O event notification/state change.
- Added Simple Certificate Enrolment Protocol (SCEP).
- Administrator account renamed to User account.
- SDK now includes a pre-built VirtualBox image.
- Improved SDK to allow for better debugging.
- SDK documentation improvement.
- Added VRRP WAN watchdog feature to allow monitoring via ping.
- Added function to trigger I/O pin high or low when failover occurs.
- Added IP-subnet based VLAN tagging.
- Added ability to whitelist IP/DNS hostnames on the WiFi hotspot so that they do not have to accept terms and conditions.
- Added list of connected 1-wire devices on IO configuration page.
- **Security:**
  - New password algorithm requires that the root manager account, IPSec VPN Pre-shared key, SMS white list and WiFi access point passwords must now meet certain requirements to ensure a strong password is configured.
  - Warning message is displayed if WEP is configured for WiFi security.
  - Only root user may edit account passwords and view them in clear text.
  - Network services such as SAMBA and Quagga are disabled by default. Warnings are displayed when enabling non-encrypted services (e.g. HTTP, Samba, Quagga).
  - Strengthened HTTP methods and transport security: HTTPS is now the default protocol used to access the web interface and HTTP is disabled by default.
  - Added options to set HTTPS/HTTP on web interface via LAN.
  - Added option to disable web interface access via WiFi.
  - Added support for SNMP v3.
  - Added option to disable SSH and Telnet on LAN interface.
  - Hardened security for web interface logins by adding ability to configure web interface session timeout value, lockout period and number of failed attempts for unsuccessful web interface logins.
  - Various security fixes to prevent unauthorized access and Denial of Service (DoS) attacks.
  - SMS commands now require a password which enhances security.

## V2.0.39.9 (RC6)

- **Functional:**
  - Applied support for different refresh rate for new memory chips.

## V2.0.39.8 (RC5)

- **Cosmetic**
  - Applied descriptive string "VF GTM Ver 1.0" for module firmware version on Status WebUI

## V2.0.39.6 (RC4)

- **Cosmetic**
  - Added assigned DNS IP address to Wi-Fi client-mode on Status WebUI
  - Fixed incorrect signal strength display on Wi-Fi client-mode
  - Miscellaneous cosmetic fixes
- **Functional:**

- Fixed incorrect network scan result issue
- Implemented updated Linux library (glibc v2.23)
- Fixed incorrect network registration behaviour after power outage
- Fixed RADIUS WPA/WPA2 authentication issue on Wi-Fi client-mode
- Fixed scan/refresh button issue on Wi-Fi client-mode
- Fixed GPS connection stability issue
- Fixed Wi-Fi client connection issue to iPhone hotspot
- Fixed remote management connection issue while Wi-Fi client-mode is active
- Fixed conflict between DMZ and Wi-Fi operation
- Fixed default Wi-Fi country selection to “UK”
- Fixed incomplete scanned SSID list on Wi-Fi client-mode
- Fixed incorrect signal strength
- Fixed using the *back-tick*[ ` ] on AP-mode SSID name
- Fixed dual PDP session configuration conflict
- Implemented updated Open Source Disclaimer PDF file

#### V2.0.39.5 (RC3)

- **Cosmetic**
  - Miscellaneous cosmetic fixes
- **Functional:**
  - Fixed band pre-set issue after power outage
  - Upgraded event notification engine to cover selected Wi-Fi functions
  - Fixed undetected SD cards issue
  - Fixed multiple SIM PIN entry notification on some SIM cards
  - Fixed hotspot bandwidth limitation function
  - Fixed Wi-Fi client mode connectivity using different authentication types
  - Fixed Wi-Fi LED when not responding to exchanged traffic
  - Fixed Wi-Fi broadcast function when not being active for some country selection
  - Fixed failure to establish PDP session after network scan process
  - Fixed Wi-Fi client scan button where sometimes wasn't responding
  - Fixed Wi-Fi WPA/WPA2 RADIUS authentication where it wasn't working properly
  - Fixed incorrect cellular band list when switching between different external SIM cards
  - Fixed SIM PIN remember issue
  - Fixed Wi-Fi client connection to AP using TKIP/AES encryption
  - Fixed Wi-Fi broadcast function when using multiple SSIDs
  - Fixed SIM PIN verification failure when switching between external SIM cards
  - Implemented updated PLMN lists for IMSI range (20404 / 90128)
  - Fixed issue where router firmware file was incorrectly uploaded

#### V2.0.39.4 (RC2)

- **Cosmetic:**
  - Fixed QC centre bug# [368]: WebUI inconsistency between failover priority selection and SIM priority selection
  - Miscellaneous cosmetic fixes
- **Functional:**
  - Added support for 1-Wire I/O communication system

- Fixed QC centre bugs# [373, 377] where cellular connection crashes
- Fixed QC centre bug# [375]: DUT fails to register to the network after settings restore
- Fixed QC centre bug# [367]: No DNS resolve when on WAN
- Fixed QC centre bug# [357]: Wrong behaviour when signal gets lost / IMSI watchdog
- Fixed QC centre bug# [330]: WebUI is blocked during network selection after changing the RAT options
- Fixed incorrect router behaviour when USB hub is connected
- Fixed incorrect front LED colour sequence
- Set default mode of virtual USB-Ethernet interface to LAN
- Fixed incorrect storage un-mount issue
- Added support to set RSRP threshold via remote TR-069 connection
- Fixed Ethernet ports status on recovery mode
- Fixed Wi-Fi clients failure to gain access to AP at first attempt
- Implemented SSID Wi-Fi isolation functionality
- Fixed incorrect behaviour of router when changing country selection under wireless setup WebUI
- Added support for Wi-Fi client mode
- Fixed a virtual serial port's (CDC) driver issue

### V2.0.39.3 (RC1.1)

- **Functional:**
  - Fixed Wi-Fi low throughput issue

### V2.0.39.2 (RC1)

- **Cosmetic:**
  - Fixed micro SD display on status WebUI
  - Fixed cosmetic issues on the OpenVPN/IPSec configuration WebUI
  - Other miscellaneous cosmetic fixes on WebUI
- **Functional:**
  - Fixed RSCP issues where it was reverting back to default
  - Fixed remote access control when enabling PPPoE mode
  - Removed accessibility to log files when no user was logged in
  - Fixed the Ethernet LED indicators according to requirements
  - Fixed USB OTG mode incorrect functionality when power save mode enabled
  - Added support for u-boot.img for remote upgrade via TR-069
  - Fixed VRRP incorrect functionality
  - Fixed low power mode incorrect functionality
  - Fixed default setting of "Network mode" to mixed mode "b/g/n" on Wi-Fi WebUI
  - Added open source software disclaimer download link on Help WebUI
  - Implemented Vodafone software requirement [S17]: Manual Wi-Fi bridge mode (WDS)
  - Implemented Vodafone software requirement [S14]: De-prioritise hotspot traffic
  - Added support for USB OTG driver on Windows 8

### V2.0.26.1 (Beta)

- **Cosmetic:**
  - Changed product name in the title bar to "Vodafone MachineLink 4G"
  - Changed the 'Hardware version' on status WebUI to "MachineLink 4G"

- Changed the formatting of “Multiple SSID list”
- Re-arranged the system log menu by adding separate “System log settings”
- Added equal padding to drop down boxes on WebUI
- Updated all 'i' (information) icons to have hover over information and pop up box when clicked
- Fixed ‘Email settings’ side menu on WebUI
- Parsed sierra wireless module firmware version to display only the version number
- Fixed ‘Send heartbeat’ button on SNMP WebUI where it wasn’t working
- Fixed ‘Save’ button on Ethernet WAN configuration WebUI where it wasn’t working
- Added ‘WLAN client connection status’ section to status WebUI
- Changed ‘Email server’ menu to ‘Email settings’
- Added ‘Save’ and ‘Cancel’ buttons to WAN failover configurations WebUI
- Added PRI version details to ‘Advanced settings’ on status WebUI
- Changed default SSID name to “Vodafone ML4G xxxx”, where ‘xxxx’ are unique random generated numbers
- Added ‘External storage’ menu on status WebUI
- Miscellaneous cosmetic fixed in WebUI
- **Functional:**
  - Implemented Vodafone software requirement [S1]: WAN failover/failback –
    - Apply a delay mechanism to control failover/failback between WAN interfaces
    - Re-arrange default WAN interfaces’ order for failover with Ethernet WAN given highest priority
  - Implemented Vodafone software requirement [S4]: Add support for 3rd party managed public hotspot service (via hotspotsystem.com) – client mode
  - Implemented Vodafone software requirement [S18]: Expand ‘Event notification’ engine by adding the following events:
    - Number of connected Wi-Fi clients change
    - Monitored Wi-Fi client connection status change
    - Storage SD card status change (mounted/unmounted)
    - WAN failover interface change
  - Implemented Vodafone software requirement [S19]: Updated LTE Roaming Algorithm –
    - Added latest PLMN lists for IMSI (20404/90128), version [14.11.09.20404 / 14.11.09.90128]
    - Added ‘4G’ network access technology preference to operator settings
    - Incorporated ‘4G’ networks into ‘Cost effective mode’ selection criteria
    - Set ‘4G’ network selection as default option
    - Updated the ‘Network registration status’ messages on status WebUI when registration fails due to low signal strength
    - Updated the ‘Signal strength’ value displayed on status WebUI to show relevant signal strength measurement per radio access technology
    - Added (RSRP, RSRQ, RSCP, RSSI) values under ‘Advanced settings’ section on status WebUI
    - Introduced ‘Signal assurance watchdog’ for controlling of signal strength thresholds (RSRP, RSRQ, RSSI) per radio access technology
  - Implemented Vodafone software requirement [S20]: Change the default settings –
    - Set the configuration of 'WAN/LAN' Ethernet port to WAN mode
    - Set Wi-Fi functionality OFF by default
    - Automatic detection of failover whenever multiple WAN interfaces are UP
    - Carried over the rest of default settings as in ML3G/ML3G Plus
  - Implemented Vodafone software requirement [S22]: Apply Vodafone WebUI branding style and proper validation check process



- Implemented Vodafone software requirement [S24]: Apply new LED colour scheme (GSM/GPRS=Red, UMTS=Orange, LTE=Green)
- Implemented Vodafone software requirement [Dual SIM]: Add support for Dual SIM management
- Applied the corresponding RSRP measure for LED display when using LTE bands
- Fixed the 'Save' button on Wireless client configuration WebUI
- Fixed UDP MTU size to 1340 byte when using GDSP SIMs
- Fixed manual PLMN selection on MC7304 module where it wasn't saving after router reboot
- Added new PPPoE design to WebUI
- Fixed conflict between reported and displayed 'Roaming status' values on WebUI
- Fixed incorrect 'SIM security settings' functionality where PIN protection wasn't working
- Fixed SMS issue where it wasn't sending whenever PIN protection was enabled
- Fixed incorrect functionality where wireless client couldn't connect to AP if 'wireless client mode' lost connection to remote AP
- Added support for dual APN on MC7304 module
- Added new settings to 'Email settings' WebUI:
  - Sender address & 'CC' fields
  - Encryption mode (None, SSL, STARTTLS)
  - Sender authentication
- Fixed received SMS issue where the router receives each SMS in duplicate
- Fixed the conflict between WAN failover and event notification process where the later stops whenever failover is enabled
- Fixed default band settings issue where it wasn't saved after factory reset
- Fixed the issue where SIM remember PIN wasn't save
- Fixed TR-069 client issue where it wasn't functioning after restoring configurations file
- Fixed the issue where using the double quotation special character (") into SSID name caused hotspot process to stop functioning
- Added restriction to access TR-069 parameters list without user login
- Fixed wrong behaviour of network LED where while scanning for networks
- Fixed LAN port status on recovery mode WebUI where it wasn't matching the actual state of the port
- Added restriction that non-default gateway WWAN profile does not involve into WAN failover
- Fixed the issue where the router stops using the manual setup LAN IP subnet after reboot from recovery mode
- Fixed the issue where hotspot wasn't working if associated with the second SSID
- Fixed conflict between hotspot process and router firewall where the later settings disappear if hotspot is disabled
- Fixed security issue where logged in admin user was able to extract the configurations file
- Fixed the issue where refreshing hotspot WebUI breaks the main Wi-Fi function
- Fixed the issue where VRRP function wasn't working properly
- Fixed the issue where reset to factory defaults was broken on recovery mode image
- Fixed DNS issue where settings are not saved after changing WWAN profile configurations
- Fixed the session history retrieve via SMS where it wasn't reporting correct usage data
- Fixed the issue where the router responds to incoming SMS messages even if the process is disabled
- Fixed the issue of power management where it reboots the router instead of going into sleep mode
- Fixed incorrect behaviour of network LED when LED operation mode is set to turn-off after a timer expiry
- Fixed the issue of hotspot landing page where it doesn't display when using HTTPS browsing protocol
- Fixed PPTP issue where client couldn't access server via Ping, Telnet and SSH
- Introduced new 'Server certificate' section for users to generate self-signed certificates
- Introduced Wi-Fi client auto roaming feature

## Known Issues/ Features under modification

### V2.0.57.4 (MR3)

To do:

- None

### V2.0.57.1

To do:

- None

### V2.0.39.9 (RC6)

To do:

- None

### V2.0.39.8 (RC5)

To do:

- None

### V2.0.39.6 (RC4)

To do:

- None

### V2.0.39.5 (RC3)

To do:

- None

### V2.0.39.4 (RC2)

To do:

- Need to fix band pre-set issue after power outage
- Implement upgraded event notification engine
- Verify the issue of some micro SD cards that are not detected
- Verify the issue of getting multiple PIN entry notification on some SIM cards

### V2.0.39.3 (RC1.1)

To do:

- Add support for Wi-Fi client and expand event notifications engine

### V2.0.39.2 (RC1)

To do:

- Add support for remaining event notifications attributes relevant to Wi-Fi connected clients and WDS bridge.
- Add support for Wi-Fi client mode
- Add support for virtual serial port's (CDC) driver

### V2.0.26.1 (Beta)

- Implementing Vodafone software requirement [S14]: De-prioritise hotspot traffic

- Implementing Vodafone software requirement [S17]: Manual Wi-Fi bridge mode (WDS)
- Implementing Vodafone software requirement [S18]: Add support to trigger event notification when WDS status changes
- Adding support for MS-based AGPS
- Adding open source software disclaimer
- Adding support for USB OTG driver on Win8
- Implementing updated user guide into router software
- Updating user guide cover page image on Help WebUI