vodafone

Vodafone MachineLink

Low Power Mode Configuration Guide

Document History

This guide covers the following products:

- Vodafone MachineLink 4G Lite NWL-221

- Vodafone MachineLink 4G Lite NWL-222

- Vodafone MachineLink 4G Lite NWL-224

Ver.	Document Description	Date
v. 1.0	Initial document release.	November 2019

Table i - Document revision history

Note – Before performing the instructions in this guide, please ensure that you have the latest firmware version installed on your router.

Visit http://vodafone.netcommwireless.com to download the latest firmware.

Note – The functions described in this document require that the router is assigned with a publicly routable IP address.

Please ensure that your mobile carrier has provided you with a publicly routable IP address before performing the instructions in this document.

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Note – This document is subject to change without notice.

Contents

Notation

The following symbols are used in this user guide:

Note – The following note provides useful information.

Important – The following note includes important information that may require attention.

Warning – The following note provides a warning.

Introduction

This document describes the power consumption statistics and power management features of the Vodafone- MachineLink Series routers.

Intended audience

The individual reading this document is assumed to have a good understanding of telecommunications technologies and electronics. This document is also intended for customers using the applicable devices in situations where reducing power consumption is of great importance such as when the router is running on solar power.

Power management

The Vodafone- MachineLink Series routers can be configured to enter or return from a low power 'sleep' mode. You can configure this to occur automatically after a timer has expired, by the status of the ignition pin, a combination of timer and ignition pin status or by manually triggering sleep mode.

During the sleep state, the router is effectively powered off. That is, it has no ability to communicate wirelessly or process any information. When in sleep mode, it draws approximately 5mA current at 12V. When sleep state is triggered, the router takes approximately 30 seconds to enter low power mode. When the wake-up sequence is initiated, the router takes approximately 2 minutes to return from the sleep state. This is because returning from sleep state involves a full boot up sequence.

Ignition pin

Vodafone- MachineLink Series routers have a dedicated input called "Ignition". This input is intended for connection to an ignition switch in vehicular applications or where an input to switch the device to a sleep/wake mode is required.

The Ignition input threshold voltage is around 3V. The input responds to a high input state (above 3V). A signal below this level is considered as a low state. If the software is configured to activate in the low state, for example 0V, it must still have the high state above 3V to turn it off.
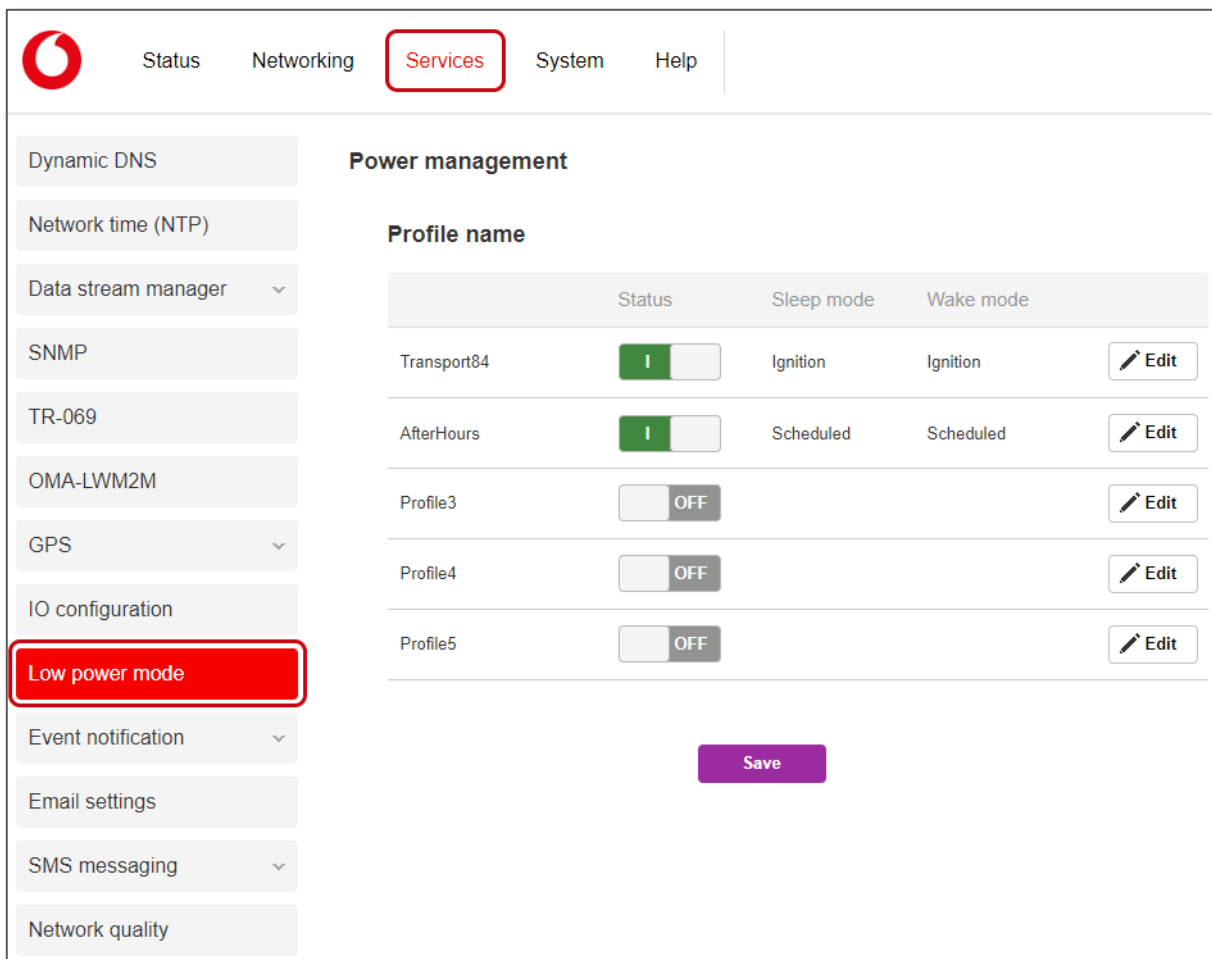
> **Note** – There is a period of about 10 seconds after sleep state has been triggered where the ignition line cannot be monitored. Please take this into account when designing your ignition power on system.

Power management profiles

The Vodafone- MachineLink Series routers provides you with the ability to create up to five power profiles which may all be active simultaneously.

To configure power management profiles, click the **Services** menu item, then select the **low power mode** menu item on the left.

The user-defined **Profile name** appears at the beginning of its each profile's row. The **Status** column indicates whether the profile is active, while the **Sleep mode** and **Wake mode** columns summarize the method used to put the router to sleep or to wake the router.
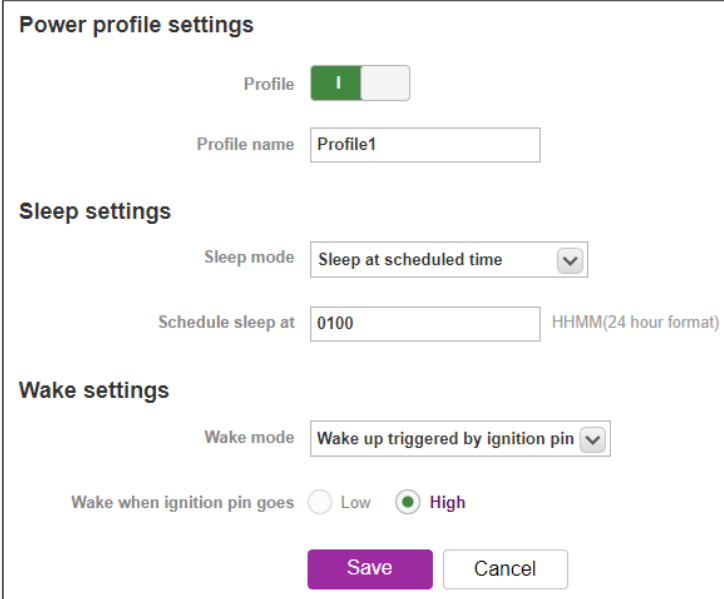
⚠️ **Important** – When configuring multiple power profiles, be careful so that they do not overlap or conflict with one another, for example, configuring a schedule which wakes up the unit when another profile has it scheduled to be in low power mode.

Configuring power management

To begin using Low power mode, click the **Edit** ✏Edit button for one of the profiles. The **Power profile settings** page is displayed.

Give the profile a meaningful **Profile name**, this will identify it in the table on the **Power Management** page, see above.
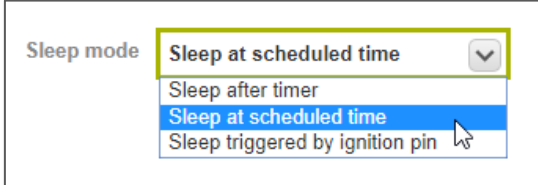
Sleep settings

Use the **Sleep mode** drop-down list to select a condition under which the router will enter the sleep state.

The options available include:

- Sleep after timer

- Sleep at scheduled time

- Sleep triggered by ignition pin

The exact sleep setting fields available for configuring the profile will differ depending on the mode selected.

Sleep after timer

When this mode is selected, the router will enter the sleep state after the number of minutes specified in the **Sleep after** field, regardless of the state of the ignition pin.

Sleep at scheduled time

When this mode is selected, the router goes to sleep at the time specified in the **Schedule sleep at** field, regardless of the state of the ignition pin.

Enter the time in 24 hour format without the semi-colon.

Sleep triggered by ignition pin

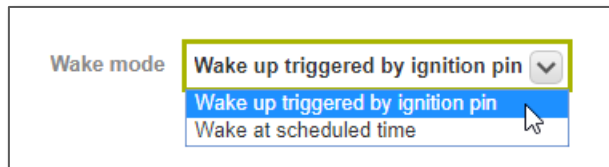This mode sets the router to enter sleep state when the signal on the ignition pin reaches the specified value.

Use the **Sleep when ignition pin goes** setting to select **Low** or **High**. By default, this is set to **Low**. Additionally, the router will stay on for the number of minutes specified in the **Remain awake after ignition off** field.

The minimum value for this field is 2 minutes AND the maximum is 255 minutes.

Wake settings

Use the **Wake mode** drop down list to select a condition under which the router should return from the sleep state.
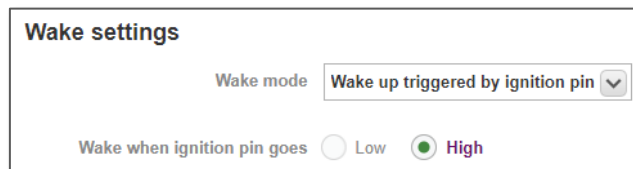

The options available include:

- **Wake up triggered by ignition pin**
- **Wake at scheduled time**

The exact wake up setting fields available for configuring the profile will differ depending on the mode selected.

Wake triggered by ignition pin

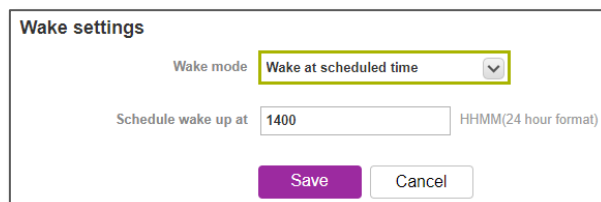This mode sets the router to wake up when the signal on the ignition pin reaches the specified value.

Use the **Wake up when ignition pin goes** setting to select **Low** or **High**. By default, this is set to **High.**

Wake up at scheduled time

When this mode is selected, the router wakes up at the time specified in the **Schedule wake up at** field, regardless of the state of the ignition pin. Enter the time in 24 hour format without the semi-colon.

Enter the time in seconds to wait before returning from sleep state in the **Always wake up after** field. A setting of 0 means that the router will automatically wake from sleep state immediately.

Save profile

These settings, including the enabling or disabling of Low power mode functionality, only take effect when you click the **Save** button.

Power consumption

To assist with power consumption planning, the following table summarizes average power consumption during the various states of the NTC-220 series router under normal usage conditions.

⚠️ **Important** – It is important to note that this table serves as an **indication only** as the power consumed by the device is affected by many variables including signal strength, network type, and network activity.

Average power consumption figures:

Power Input	State	Power Consumption
12V	Powered on, all functions disabled	1.38 W
12V	Powered on, connected to LTE and idle	1.92 W
12V	Powered on, connected to packet data with heavy traffic	4.86 W
12V	Peak power draw at maximum 4G module transmission power.	5.88 W