

# User Manual

## FOTA (Firmware Over-The-Air) User Module OWL LTE / OWL LTE M12 (Industrial Cellular Router)

The naming of copyrighted trademarks in this manual, even when not specially indicated, should not be taken to mean that these names may be considered as free in the sense of the trademark and tradename protection law and hence that they may be freely used by anyone.

© 2018 Hirschmann Automation and Control GmbH

Manuals and software are protected by copyright. All rights reserved. The copying, reproduction, translation, conversion into any electronic medium or machine scannable form is not permitted, either in whole or in part. An exception is the preparation of a backup copy of the software for your own use.

The performance features described here are binding only if they have been expressly agreed when the contract was made. This document was produced by Hirschmann Automation and Control GmbH according to the best of the company's knowledge. Hirschmann reserves the right to change the contents of this document without prior notice. Hirschmann can give no guarantee in respect of the correctness or accuracy of the information in this document.

Hirschmann can accept no responsibility for damages, resulting from the use of the network components or the associated operating software. In addition, we refer to the conditions of use specified in the license contract.

You can get the latest version of this manual on the Internet at:  
<https://www.doc.hirschmann.com>

Hirschmann Automation and Control GmbH  
Stuttgarter Str. 45-51  
72654 Neckartenzlingen  
Germany

## Used symbols



*Danger* – Information regarding user safety or potential damage to the router.



*Attention* – Problems that can arise in specific situations.



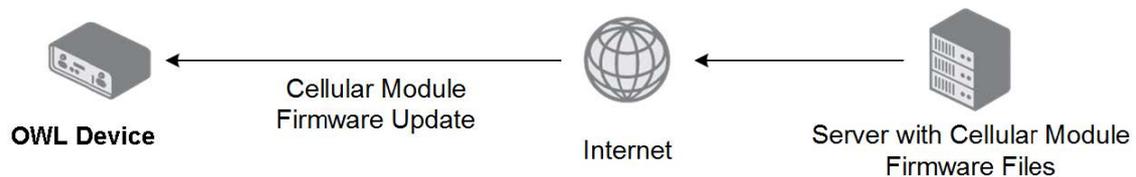
*Information, notice* – Useful tips or information of special interest.

# Contents

<b>1</b>	<b>Description of the FOTA user module</b>	<b>1</b>
<b>2</b>	<b>Installation of the FOTA user module</b>	<b>2</b>
<b>3</b>	<b>Update of the cellular module firmware</b>	<b>4</b>
3.1	Automatic update . . . . .	5
3.2	Manual update . . . . .	7
<b>4</b>	<b>System Log</b>	<b>11</b>
<b>5</b>	<b>Recommended Literature</b>	<b>12</b>

# 1. Description of the FOTA user module

The *Firmware Over-The-Air* (FOTA) user module is an additional feature of OWL routers. This allows the router to update the firmware of the cellular module automatically. Only the firmware of the cellular module is updated (not the firmware of the router). The FOTA user module is easy to use – it can be activated with just one checkbox. The router must be connected to the Internet in order to use FOTA updates. The connection to the server with firmware files provided is already defined in the FOTA user module, but it is possible to enter your own server credentials. The FOTA user module checks for the new cellular module firmware every 24 hours. It is also possible to check for new cellular module firmware manually.



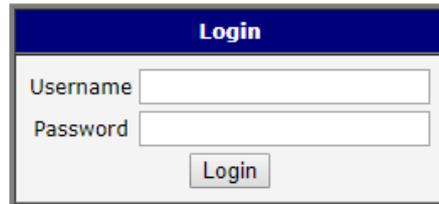
FOTA user module operation



The FOTA user module is NOT part of the standard router firmware. The FOTA user module is available for OWL LTE and OWL LTE M12.

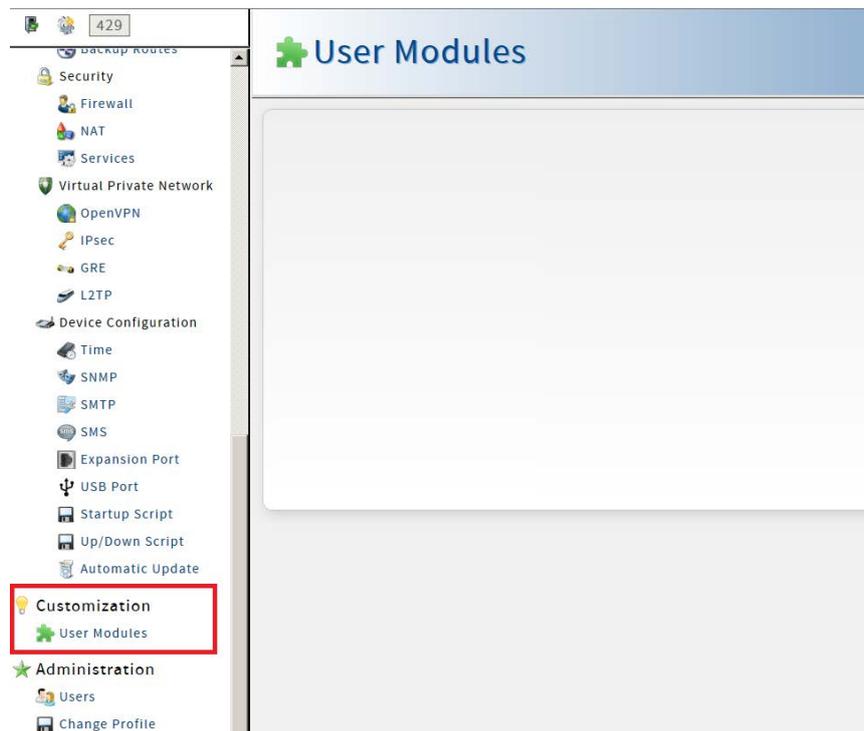
## 2. Installation of the FOTA user module

1. Use the web interface for installing the FOTA user module. Enter your user name and password



A login form with a blue header containing the word "Login". Below the header are two input fields: "Username" and "Password". A "Login" button is positioned below the "Password" field.

2. Select *User Modules* item in the *Customization* section



## 2. INSTALLATION USER MODULE

3. Select the file of the FOTA user module and click on *Add or Update* button



The screenshot shows a horizontal bar with a light gray background. On the left, the text "New Module" is displayed. To its right is a "Browse..." button with a small folder icon. Further right, the filename "fota.v3.tgz" is entered into a text field. On the far right of the bar is a blue button with white text that reads "Add or Update".

## 3. Update of the cellular module firmware

There are 2 ways of updating the cellular module firmware:

**Automatic update:** Use the automatic update as standard option. For detailed information see chapter "3.1. Automatic update".

**Manual update:** Use this option only if is explicitly described in the Release Information. For detailed information see chapter "3.2. Manual update".

## 3.1. Automatic update

In this chapter, the configuration of the FOTA user module is described. Go to the *Automatic Update* page in the *Configuration* section. To enable the FOTA user module, tick the *Enable automatic update* checkbox and click *Apply*. The other configuration items are described in the table below. The behavior of the FOTA user module is described on the next page.

Item	Description
Enable automatic update	Enables the FOTA user module. There is a preset connection to the server with up to date firmware information.
URL	Optional. Fill in a different server address where the JSON file with firmware information is stored, along with firmware files.
Username	Optional. Specify only if you have specified URL. The preset username for the preset server is saved in the FOTA user module.
Password	Optional. Specify only if you have specified URL. The preset password for the preset server is saved in the FOTA user module.
Apply	Configuration changes will take effect after pressing the <i>Apply</i> button.
Start Manually	Press this button to check manually for a new cellular module firmware. Otherwise, a check for updates takes place every 24 hours at the same time that the FOTA user module was first enabled.

### Behavior of the FOTA user module

When the FOTA user module is enabled, it will connect to the preset server to check for new firmware updates of the cellular module and of the FOTA user module. It is then done every 24 hours at the same time the FOTA user module was enabled. You can also run this firmware update check manually using the *Start Manually* button.



This file is in JSON format, complete – with cellular module names, associated firmware revision numbers and links to firmware files. The FOTA user module will download this file and compare it to the current firmware revision number. If there is new firmware available (higher revision number), the firmware file for the cellular module is downloaded. The router needs a stable connection and power supply to download the firmware file properly. If the downloading of the firmware fails, the FOTA user module will recognize the incomplete file when next attempting to download the firmware file. It will then continue to download the rest of the file – it does not unnecessarily download duplicate data again.

The FOTA user module will regularly check for new firmware updates of the cellular module and the of FOTA user module when it is connected to the Internet (it does not matter which interface is used). The preset server address, username and pass-word are saved in the FOTA user module, so there is no need to fill-in credentials unless you want to use another server.

## 3.2. Manual update



It is strongly recommended to double-check the firmware to be uploaded to the cellular module. If the firmware is not intended for a cellular module used in this router, uploading may irretrievably damage the device. **Firmware update is at your own risk!**



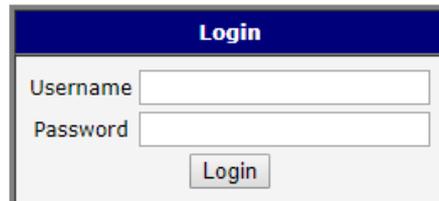
Use this option only if is explicitly required in the Release Information.

### 3.2.1 Firmware Compatibility

Choose the cellular module firmware according to the information given in the Release Information.

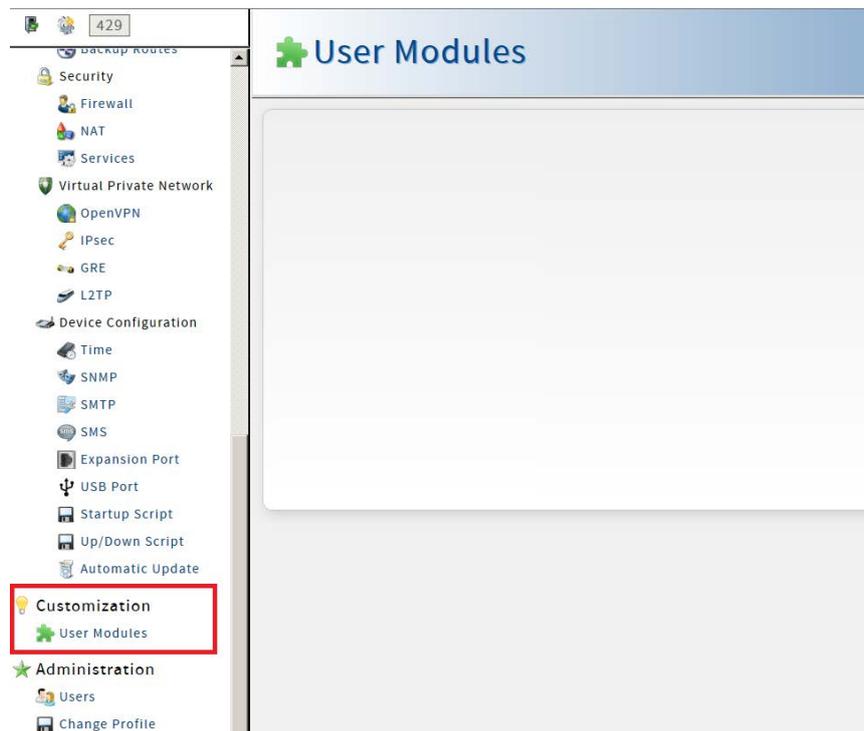
### 3.2.2. Step-by-step Manual update

1. Use the web interface for installing the FOTA-manual user module. Enter your user name and password



The image shows a login form with a blue header containing the word "Login". Below the header, there are two input fields: "Username" and "Password". A "Login" button is positioned below the "Password" field.

2. Select *User Modules* item in the *Customization* section



## 3.2. MANUAL UPDATE

3. Select the file of the FOTA-manual user module and click on *Add or Update* button



The screenshot shows a horizontal bar with a light gray background. On the left, the text "New Module" is displayed. To its right is a "Browse..." button. Further right, the filename "fota-manual.v3.tgz" is shown. On the far right of the bar is a blue button labeled "Add or Update".

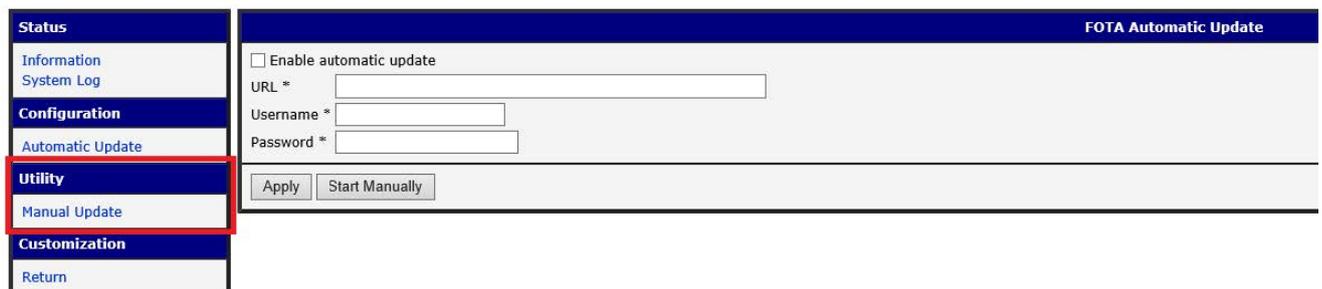
4. Select the FOTA-manual user module.



The screenshot shows a light gray bar with the text "FOTA-manual" on the left and a "Delete" button on the right.

5. Select *Manual Update* item in the *Utility* section

### Firmware Over-The-Air

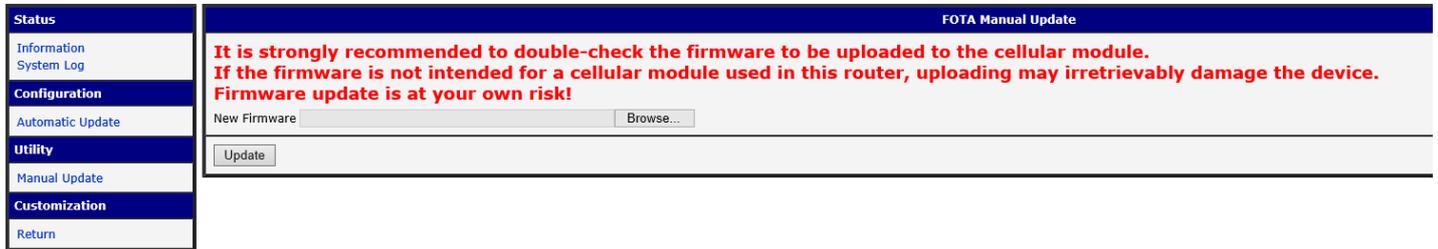


The screenshot shows the "Firmware Over-The-Air" configuration page. On the left is a vertical navigation menu with the following items: "Status", "Information", "System Log", "Configuration", "Automatic Update", "Utility", "Manual Update", "Customization", and "Return". The "Utility" item is highlighted with a red box, and "Manual Update" is also highlighted. The main content area is titled "FOTA Automatic Update" and contains the following elements:

- Enable automatic update
- URL \*
- Username \*
- Password \*
- Apply  Start Manually

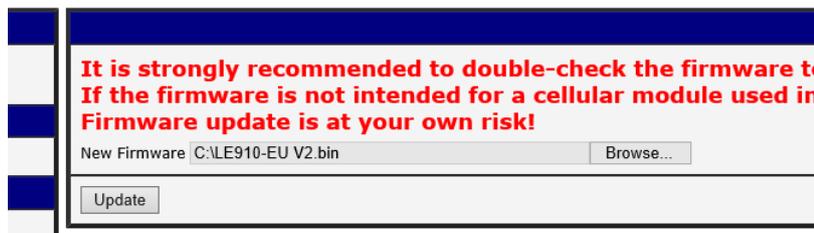
- 6. Select the firmware for the cellular module as described in the Release Information.

**Firmware Over-The-Air**



- 7. Press the *Update* button.

**ver-The-Air**



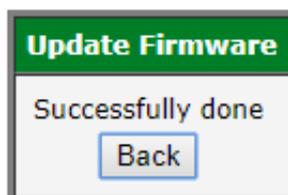
- 8. Do not turn off the router during the update.  
The cellular module firmware update can take up to 10 minutes to complete.

**Module Firmware Update**

**Do not turn off the router during the update.  
The firmware update can take up to 10 minutes to complete.**

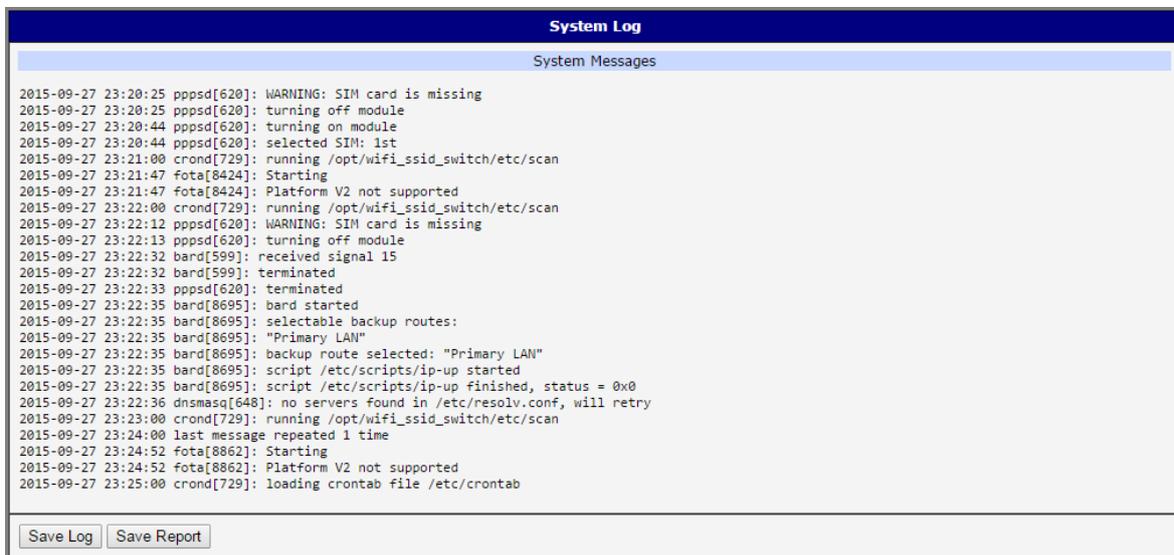
Stopping Mobile WAN connection... ok  
Checking firmware file... ok  
Powering down module... ok  
Powering up module... ok  
Firmware download in progress.....

- 9. Installation is completed.



## 4. System log

The *System Log* page displays System Log messages. It is the same system log as the one in the main menu of the router. FOTA user module messages are indicated by fota strings. You can check the operation of the FOTA user module in the log or view any messages in the event of configuration problems. You can download these messages and save them to a computer as a text file (.log) by clicking the *Save Log* button. You can also download a detailed report (.txt) for communication with technical support by clicking the *Save Report* button.



```
System Log
System Messages
2015-09-27 23:20:25 pppsd[620]: WARNING: SIM card is missing
2015-09-27 23:20:25 pppsd[620]: turning off module
2015-09-27 23:20:44 pppsd[620]: turning on module
2015-09-27 23:20:44 pppsd[620]: selected SIM: 1st
2015-09-27 23:21:00 crond[729]: running /opt/wifi_ssid_switch/etc/scan
2015-09-27 23:21:47 fota[8424]: Starting
2015-09-27 23:21:47 fota[8424]: Platform V2 not supported
2015-09-27 23:22:00 crond[729]: running /opt/wifi_ssid_switch/etc/scan
2015-09-27 23:22:12 pppsd[620]: WARNING: SIM card is missing
2015-09-27 23:22:13 pppsd[620]: turning off module
2015-09-27 23:22:32 bard[599]: received signal 15
2015-09-27 23:22:32 bard[599]: terminated
2015-09-27 23:22:33 pppsd[620]: terminated
2015-09-27 23:22:35 bard[8695]: bard started
2015-09-27 23:22:35 bard[8695]: selectable backup routes:
2015-09-27 23:22:35 bard[8695]: "Primary LAN"
2015-09-27 23:22:35 bard[8695]: backup route selected: "Primary LAN"
2015-09-27 23:22:35 bard[8695]: script /etc/scripts/ip-up started
2015-09-27 23:22:35 bard[8695]: script /etc/scripts/ip-up finished, status = 0x0
2015-09-27 23:22:36 dnsmasq[648]: no servers found in /etc/resolv.conf, will retry
2015-09-27 23:23:00 crond[729]: running /opt/wifi_ssid_switch/etc/scan
2015-09-27 23:24:00 last message repeated 1 time
2015-09-27 23:24:52 fota[8862]: Starting
2015-09-27 23:24:52 fota[8862]: Platform V2 not supported
2015-09-27 23:25:00 crond[729]: loading crontab file /etc/crontab
```

Save Log Save Report

## 5. Recommended literature

Application Notes, the “Installation” user manual, the “Configuration” user manual and documentation of several OWL user modules can be found as PDF files for downloading on the Internet at:

<https://www.doc.hirschmann.com/>

# 6. Further support

### Technical questions

For technical questions, please contact any Hirschmann dealer in your area or Hirschmann directly.

You find the addresses of our partners on the Internet at <http://www.hirschmann.com>

A list of local telephone numbers and email addresses for technical support directly from Hirschmann is available at <https://hirschmann-support.belden.com>

This site also includes a free of charge knowledge base and a software download section.

### Customer Innovation Center

The Customer Innovation Center is ahead of its competitors on three counts with its complete range of innovative services:

- Consulting incorporates comprehensive technical advice, from system evaluation through network planning to project planning.
- Training offers you an introduction to the basics, product briefing and user training with certification. You find the training courses on technology and products currently available at <https://www.belden.com/solutions/customer-innovation-center>
- Support ranges from the first installation through the standby service to maintenance concepts.

With the Customer Innovation Center, you decide against making any compromises in any case. Our client-customized package leaves you free to choose the service components you want to use.

Internet:

<https://www.belden.com/solutions/customer-innovation-center>



**HIRSCHMANN**

---

A **BELDEN** BRAND