User Manual

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

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 username and password

![Login interface](image)

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

![User Modules section](image)
3. Select the file of the FOTA user module and click on *Add or Update* button
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.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable automatic update</td>
<td>Enables the FOTA user module. There is a preset connection to the server with up to date firmware information.</td>
</tr>
<tr>
<td>URL</td>
<td>Optional. Fill in a different server address where the JSON file with firmware information is stored, along with firmware files.</td>
</tr>
<tr>
<td>Username</td>
<td>Optional. Specify only if you have specified URL. The preset username for the preset server is saved in the FOTA user module.</td>
</tr>
<tr>
<td>Password</td>
<td>Optional. Specify only if you have specified URL. The preset password for the preset server is saved in the FOTA user module.</td>
</tr>
<tr>
<td>Apply</td>
<td>Configuration changes will take effect after pressing the Apply button.</td>
</tr>
<tr>
<td>Start Manually</td>
<td>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.</td>
</tr>
</tbody>
</table>
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

![Login interface](image1)

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

![User Modules interface](image2)
3. Select the file of the FOTA-manual user module and click on *Add or Update* button.

4. Select the FOTA-manual user module.

5. Select *Manual Update* item in the *Utility* section.
6. Select the firmware for the cellular module as described in the Release Information.

7. Press the *Update* button.

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

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](image-url)
5. Recommended literature

- User Manual "Configuration"
- Release Information OWL LTE / OWL LTE M12