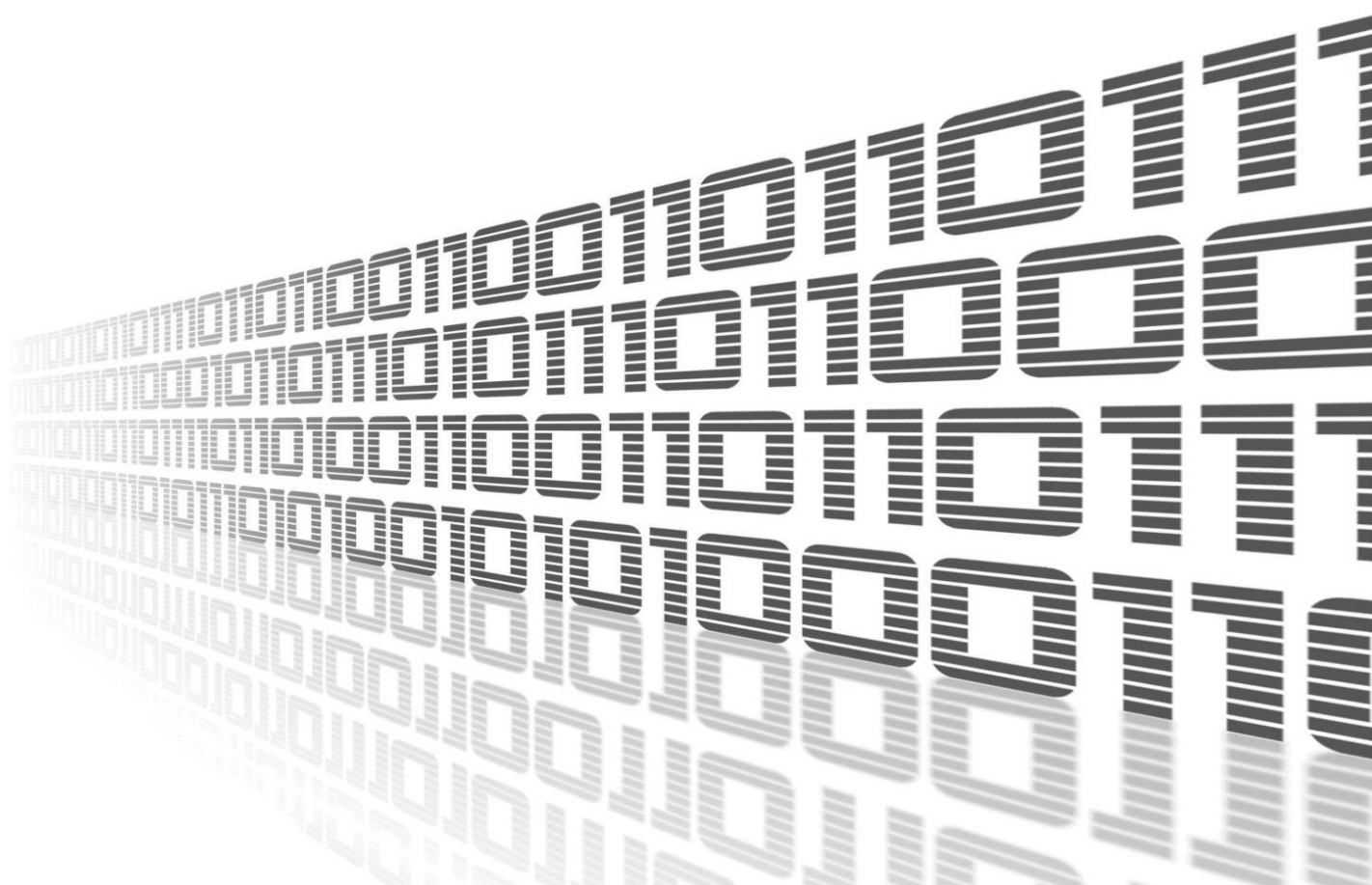




FOTA



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Used symbols



Important

Important — Indicates a risk to personal safety or potential damage to the router. Follow these instructions precisely to prevent injury or equipment damage.



Warning

Warning — Highlights conditions that may cause malfunction, loss of data, or unexpected behavior in specific situations. Read carefully before proceeding.



Info

Info — Provides helpful tips, context, or references that improve understanding but are not strictly required to complete the task.

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1. Router App Introduction

1.1 FOTA Operation

The *FOTA* (Firmware Over-The-Air) is an additional feature for Advantech routers, enabling automatic or manual firmware updates for their cellular modules. It is important to note that only the cellular module’s firmware is updated, not the router’s main firmware.

For proper operation, the router must have an active Internet connection to access a FOTA server—either the default Advantech server or a custom-configured one.



Figure 1: FOTA operation

1.2 FOTA Router App



Important

Uploading incorrect cellular module firmware may irreversibly damage the device. **Updating firmware from any source other than the Advantech FOTA server is done at your own risk!**



Warning

The *Firmware Over-The-Air* router app is not included in the standard router firmware. Instructions for installing this router app can be found in the Configuration Manual, in the section *Customization* → *Router Apps*. This router app is not available for routers from the v2 production line.

Refer to the router’s configuration manual, specifically the section *Customization* → *Router Apps*, for information on how to install a router app. Once the FOTA router app is installed, access its web interface by clicking on the router app’s name. The left side of the interface will display the router app’s menu, as shown in Figure 2. To return to the router’s main web interface and menu, use the *Return* button located in the *Administration* section.

Status
Supported Modules
System Log
Configuration
Settings
Administration
Update
Return

Figure 2: Router App menu

2. Status

2.1 Supported Cellular Modules

The *Supported Modules* page provides a list of cellular modules compatible with the FOTA router app. These modules are logically grouped by their respective manufacturers for easier navigation.

2.2 Logging Information

The *System Log* page displays log messages specifically related to the FOTA router app. This allows users to monitor the app's operation and identify any messages pertaining to configuration issues. Users can download these log messages as a text file (`.log`) by clicking the *Save Log* button. Additionally, a detailed report (`.txt`) can be generated for communication with technical support by clicking the *Save Report* button.

3. Configuration

3.1 Automatic Updates

This section describes how to configure the FOTA router app for automatic updates. If you prefer to perform only manual checks and updates, refer to Chapter *Administration* → *Online Update* instead.

To configure automatic updates, navigate to *Configuration* → *Settings*. Select the *Enable automatic update* checkbox and click *Apply*. All available configuration options are described in the table below.

FOTA Settings

☐ Enable automatic update

Update Window Start

0:00

Custom Server URL *

Skip Certificate Verification

Use Custom CA Certificate

CA Certificate

Load From File...

* blank means public URL

Apply

Figure 3: Automatic update configuration

Item	Description
Enable automatic update	Enables scheduled automatic updates. This option uses a preset connection to the Advantech FOTA server, which contains up-to-date firmware information.
Update Window Start	Allows selection of the specific hour when automatic updates should be performed. Users can also choose between <i>daily</i> or <i>weekly</i> update frequencies. Note that the update process may start with a delay of a few minutes from the scheduled time.
Custom Server URL	Provides an optional field to specify the address of a local copy of the FOTA server for use in isolated or otherwise separated networks. The local server must contain the same firmware information and firmware files as the FOTA server provided by the manufacturer. You can specify either an <code>https:</code> path or a local <code>file:</code> path. A local path entry, for example for a mounted flash drive, may look like this: <code>file:///mnt/update</code> . Note that this field cannot be used to specify custom or otherwise unsupported firmware that is not available on the manufacturer's FOTA server. For more details, please contact the Support department.

Table 1: FOTA Configuration

FOTA

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Item	Description
<i>Skip Certificate Verification</i>	When enabled, this option allows the router to bypass the server's certificate verification process.
<i>Use Custom CA Certificate</i>	Enable this option to utilize a custom CA certificate instead of the default Advantech CA certificate.
<i>CA Certificate</i>	This field is used to paste or upload your custom CA certificate.

Table 1: FOTA Configuration (continued)

3.2 Firmware Update Process

Once automatic updates are enabled, the router establishes a connection to the configured server to check for new firmware. This check is performed according to the period specified in the *Update Window Start* setting.

The FOTA server hosts a JSON file that contains critical information, including cellular module names, associated firmware release numbers, dependencies, and links to the firmware files. The router app downloads this JSON file and compares the available firmware releases with the version currently installed on the device. If a newer firmware version is available, the corresponding file is downloaded. For a successful download, the router requires a stable Internet connection and a continuous power supply.

The router app consistently checks for new firmware updates when connected to the Internet, regardless of which interface is in use.

Once a new firmware file has been downloaded, the update is applied automatically. The cellular module will restart during this process. The router remains operational throughout the update, but cellular connectivity will be temporarily unavailable until the module completes its restart.

4. Administration

4.1 Online Update

The *Update* page, which serves as the main interface for the FOTA Router App, displays available FOTA packages, with the newest version shown first. To manually refresh the list, click the *Reload Available FOTA Packages* button.

Depending on the cellular module, the FOTA system may use a *delta upgrade* mechanism. In this case, instead of a single universal update package, multiple installation files may be listed, all targeting the same final firmware version.

The figure below shows an example of a module using the delta upgrade mechanism. The module model is *SIM7070*, with the currently installed firmware version *1951B14SIM7070*. Three packages are listed, all targeting version *1951B17SIM7070*. Each package is designed for a specific source firmware version.

As a result, only the package that matches the currently installed firmware version can be used. In this example, only the package intended for upgrading from *1951B14SIM7070* to *1951B17SIM7070* has the *Install* button enabled. Clicking this button initiates the upgrade process.

Info

The *Upgrades* field, displayed as a tooltip for each entry, indicates which source firmware version the update package applies to, not the version that will be installed.

FOTA Online Update				
Module Model	SIM7070			
Release	1951B14SIM7070			
Reload Available FOTA Packages		Last check 2026-04-15 10:11:35		
1951B17SIM7070	3 MiB	Install	not upgradable from your version	
1951B17SIM7070	3 MiB	Install	not upgradable from your version	
1951B17SIM7070	1 MiB	Install		

Upgrades:
1951B14SIM7070

Figure 4: Update page

The list below outlines messages you may observe in the last column of the available firmware list, along with recommended actions:

- *not upgradable from your version* → choose the highest upgradable version
- *requires ICR-OS x.y.z* → update the router's firmware first
- *requires FOTA x.y.z* → update the FOTA router app first

Info

When you hover the mouse over a firmware entry in the list, a pop-up window appears showing the compatible firmware versions available for an upgrade. Similarly, hovering over the firmware size will display the actual filename of the firmware.

5. Related Resources

You can obtain all product-related documents, software updates, and supplementary materials on the Advantech *Engineering Portal* at icr.advantech.com.

For easy access to specific resources, please refer to the following sections of the portal:

- **Router Support Materials:** To access your router's supporting documents (such as the *Hardware Manual* and *Configuration Manual*), the latest firmware, or other technical resources, navigate to *Support* → [Router Models](#). Locate your specific model and select the appropriate tab under the *Documents to download* section. Available tabs include *Brochures*, *Manuals*, *Certificates*, *Firmware*, *Images/3D Models*, *PCN/SA*, and *Others*.
- **Router Apps:** To extend your router's functionality, installation packages and comprehensive manuals for various extension modules are available by navigating to *Download* → [Router Apps](#).
- **Application Notes:** For detailed guides, configuration examples, and step-by-step instructions for implementing specific networking features and use cases, navigate to *Download* → [Application Notes](#).
- **Development Documents:** If you are interested in custom scripting, programming your own applications, or compiling custom modules, navigate to [Development](#) page.