OTA Firmware Update – User Guide

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Requirements

- ESP32 device (CAM or WROVER)
- One-time USB flashing
- Local or network-accessible HTTPS server
- `.bin` firmware file

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1. Initial Flash (One-Time Setup)

1. Plug ESP32 into your computer via USB.
2. Open terminal (ESP-IDF environment).

   Run:

   ```
   idf.py build
   idf.py -p COMx flash monitor
   ```

3. This loads OTA-enabled firmware to the ESP32.

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2. Host the OTA Firmware

Option 1: Local Server (Windows/macOS/Linux)

1. Place your `.bin` file in a folder.

Start HTTPS server:

bash
CopyEdit

```
python3 -m http.server 8443 --certfile cert.pem --keyfile key.pem
```

2.

Option 2: Host on TuringPi Server

- Upload `.bin` file to a known HTTPS path
- Confirm ESP32 has access to it

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3. Performing the OTA Update

The ESP32 will connect to the server and download the firmware.

You should see serial output like:

```
OTA Update Start
Downloading...
Progress: 50%
OTA Update Successful, Rebooting...
```

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4. Troubleshooting

Issue	Fix
ESP32 not connecting	Check Wifi credentials in menuconfig
TLS error	Make sure certs match and are trusted
No updates taking place	Confirm firmware URL is correct
Stuck in loop	Use UART and flash again manually