

4G Private Enhanced Transmission Service

Deployment Manual

V1.2



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Function Introduction

DJI 4G enhanced transmission function combines the aircraft's OcuSync image transmission and 4G automatic image transmission. With a good OcuSync image transmission signal, the 4G link will maintain basic connection but will not conduct data transmission. When the OcuSync signal has interference, is blocked, or is working in a long-distance transmission scenario, the 4G video transmission will be automatically enabled in order to start the enhanced transmission.

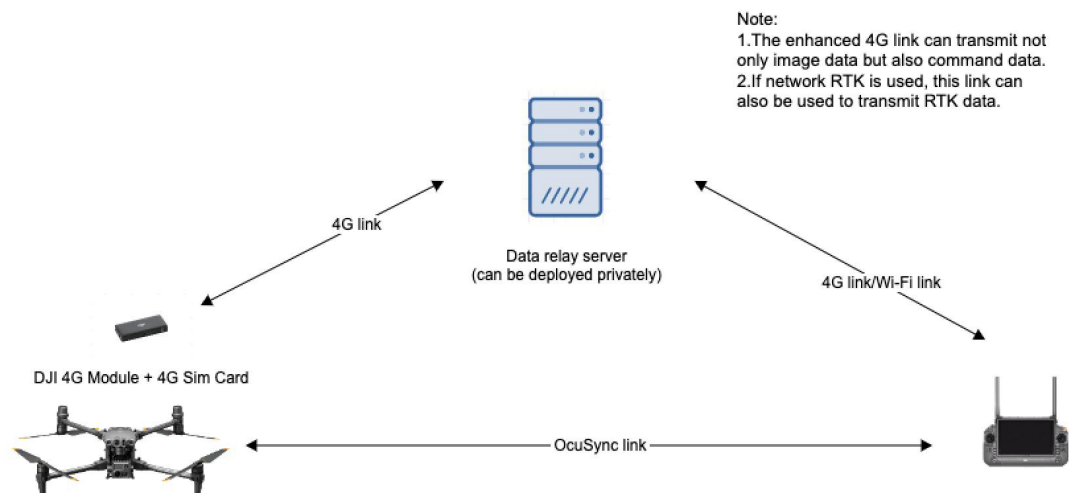
4G enhanced transmission can achieve the following functions:

- If the OcuSync signal has interference, 4G enhanced link can be used as a backup.
- When the aircraft flies too far away, the aircraft signal becomes weak and the image transmission breaks. 4G enhanced link allows for an expanded control range.
- When the RTK differential data between the aircraft and remote controller is prone to loss, 4G enhanced link can help to transmit the RTK differential data from the remote controller to the aircraft.

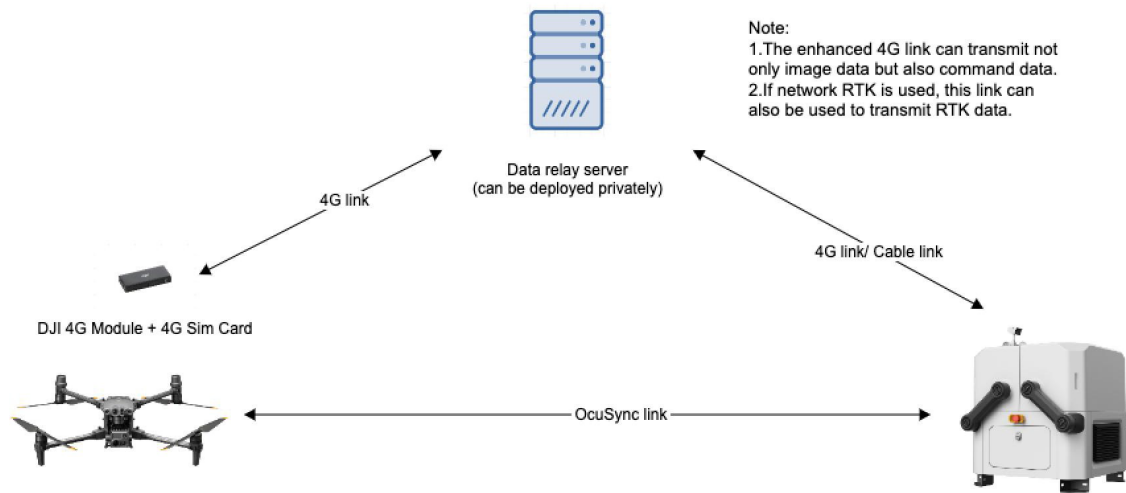
For enterprise applications, privately deploying the **4G enhanced link data relay service** is necessary.

DJI provides deployment ability for the private 4G enhanced transmission servers. Target users:

1. Enterprise aircraft users in need of private 4G enhanced image service deployment.



2. DJI Dock users in need of private 4G enhanced image service deployment.



Device Versions

Product	Version
DJI Dock 3	Please use the latest version from DJI official website.
DJI Dock 2	
Matrice 3D/3TD (DJI RC Pro Enterprise)	
DJI Dock	
Matrice 30/30T (DJI RC Plus)	
Mavic 3E/3T/3M (DJI RC Pro Enterprise)	
Matrice 300 RTK (DJI RC Plus)	
Matrice 350 RTK (DJI RC Plus)	

Private Service Automatic Deployment

Before the Deployment

Operating System Requirements

Tested systems:

1. Ubuntu Server 18.04/20.04/22.04 LTS
2. All released versions after Ubuntu 20.04
3. Kylin v10

Ubuntu Server 22.04 LTS is recommended.

Minimum Version Requirement for Core Components

Core Component	Minimum Version
Docker	27.0.0+ Reference: https://docs.docker.com/engine/release-notes/27.0/#2700
Docker Compose	2.27.0+ Reference: https://docs.docker.com/compose/release-notes/#2270 Note: Ensure to use Docker Compose v2

Network Requirements

1. Public IP address is required. (Private IP address can also be used if the aircraft can visit this address through the internal APN address)
2. Server reserves 8096 (TCP port number) for heart beat service and arbitration logic.
3. Server reserves 8090 - 8095 (TCP/UDP port number) for image transmission service. 8093 currently in used. Other ports will be used for future features and multiple link path.
4. Server reserves 8097 for managing backend as a monitor. For details, [4G Private Operation and Maintenance Manual](#)
5. Server reserves 8098 for managing backend as a container. For details, [4G Private Operation and Maintenance Manual](#)
6. Server reserves 8099 for OpenAPI usage. For details, [4G Private Operation and Maintenance Manual](#)

Safety Warning:

Please do not expose the 8097, 8098, and 8099 ports to the public internet. Based on the least privilege principle, only 8090-8096 ports are recommended to be exposed.

Server Configuration

Configuration Items	Recommended Configuration	Explanation
CPU core number	2 Core	Adjustable according to actual sequence.
Memory	8 GHz	Same as above
Data disk	20 GHz	Same as above
Network	100 Mbps	100 Mbps supports around 20 aircraft online at the same time. If more devices are needed, network bandwidth should be increased proportionally.

Notes:

- IDC data center or public cloud environment is required. Hypervisor 2C8G.
- Fixed public IP. 100Mbps. Static, Symmetric Upload and Download.


Applying for Server Licenses

Note: Once the activation code is bound, no refunds can be provided. Please apply for the trial before you decide to purchase. After you obtain the trial activation code, make sure the entire deployment process can be run successfully in your environment.

Trial Application

1. Apply for the trial at the developer website (Service Resource > 4G Private).

DJI will review the application and the result will be sent via email. If your application passes, you can find the "activation code" from the email or check it from the activation code list on the DJI developer website.

 DEVELOPER

App Dev.

Device Dev.

Cloud Dev.


Private Service


Developer Tools


Solution

Support

Algorithm Dev.







4G Private Enhanced Transmission Service

DocumentationFeedback

Trial Application

License Tool

History Records

Trial Application

Once the formal activation code is binded, it cannot be refunded. Please apply for a trial before purchasing. After getting the trial version of the activation code, ensure that the complete deployment process can be run in the actual environment. Once you have submitted the application, we will review it within 3 business days.

Company Profile *

Solution Overview *

Region *

Selecting "Others" will disable the usage of the related service within Chinese Mainland. Please choose your region carefully.

☐ Chinese Mainland ☐ Non-Chinese Mainland

* Application results will be sent via email. Please check your inbox.

Submit Application

Official Application

Contact the dealer to purchase the official activation code and activation code for service upgrade, or directly purchase the 4G official activation code from the DJI Store.

4G official activation code online purchase link:
<https://store.dji.com/product/4g-private-server-deployment-license>.

Generate Server Fingerprint File

1. Download [the server fingerprint file](#) generation tool and extract it:

The directory structure after extraction is as follows:

```
license_generate.tar.gz
```

```
|— GenerateLicenseRequestFile.sh
```

```
|— 6000010.WibuCmLIF
```

```
└─ package
```

```
    |— codemeter-lite_8.10.6221.500_amd64.deb
```

```
    |— codemeter-lite-dev_8.10.6221.500_amd64.deb
```

```
    └─ libusb-1.0-0_2-1.0.24-3_amd64.deb
```

2. Run the script with root privileges, input 4G:

```
./GenerateLicenseRequestFile.sh
```

Example:

```

luz@luz-HP-ProDesk-680-G6-PCI-Microtower-PC:~/v12ig830/dji-cellular-enterprise-v2025.2.27/license_generate$ sudo ./GenerateLicenseRequestFile.sh
请输入产品类型 (FH2, Terra 或 4G)
Enter product type (FH2, Terra 或 4G):4G
Installing ./package/libusb-1.0-0_2-1.0.24-3_amd64.deb...
(正在读取数据库 ... 系统当前共安装有 228179 个文件和目录。 )
准备解压 .../libusb-1.0-0_2-1.0.24-3_amd64.deb ...
正在解压 libusb-1.0-0:amd64 (2:1.0.24-3) 并覆盖 (2:1.0.24-3) ...
正在设置 libusb-1.0-0:amd64 (2:1.0.24-3) ...
正在处理用于 libc-bin (2.35-0ubuntu3.9) 的触发器 ...
Installing ./package/codemeter-lite_8.10.6221.500_amd64.deb...
(正在读取数据库 ... 系统当前共安装有 228179 个文件和目录。 )
准备解压 .../codemeter-lite_8.10.6221.500_amd64.deb ...
正在解压 codemeter-lite (8.10.6221.500) 并覆盖 (8.10.6221.500) ...
正在设置 codemeter-lite (8.10.6221.500) ...
正在处理用于 man-db (2.10.2-1) 的触发器 ...
Installing ./package/codemeter-lite-dev_8.10.6221.500_amd64.deb...
(正在读取数据库 ... 系统当前共安装有 228179 个文件和目录。 )
准备解压 .../codemeter-lite-dev_8.10.6221.500_amd64.deb ...
正在解压 codemeter-lite-dev (8.10.6221.500) 并覆盖 (8.10.6221.500) ...
正在设置 codemeter-lite-dev (8.10.6221.500) ...
Stopping CodeMeter service...
Modifying server.ini...
Modified server.ini:
IsNetworkServer=1
CleanUpTimeOut=1
Starting CodeMeter service...
Synchronizing state of codemeter.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable codemeter
Executing: cmu -i -f 6000010.WibuCmLIF
cmu - CodeMeter Universal Support Tool.
Version 8.10 of 2024-Apr-17 (Build 6221) for Linux
Copyright (C) 2007-2024 by WIBU-SYSTEMS AG. All rights reserved.

The file contains 1 Update:
  CmActLicense binding information: FirmCode 6000010

Execute Update ...
The file contains 1 Update:
  CmActLicense update: Serial number 130-3264327265, FirmCode 6000010.
  --> successful
1 successful update done
Extracted Serial number: 130-3264327265
Executing: cmu -c6000010 -s130-3264327265 -f 4G.WibuCmRaC
cmu - CodeMeter Universal Support Tool.
Version 8.10 of 2024-Apr-17 (Build 6221) for Linux
Copyright (C) 2007-2024 by WIBU-SYSTEMS AG. All rights reserved.

Write CmFAS for 130-3264327265 for FirmItem 6000010
cmu - CodeMeter Universal Support Tool.
Version 8.10 of 2024-Apr-17 (Build 6221) for Linux
Copyright (C) 2007-2024 by WIBU-SYSTEMS AG. All rights reserved.

Write CmFAS for 130-3264327265 for FirmItem 6000010
All tasks completed successfully.

请把 4G.WibuCmRaC 文件上传到DJI开发者网站进行证书申请
Upload 4G.WibuCmRaC file to DJI developer website to apply for license
luz@luz-HP-ProDesk-680-G6-PCI-Microtower-PC:~/v12ig830/dji-cellular-enterprise-v2025.2.27/license_generate$

```

3. Import the server fingerprint file 4G.WibuCm RaC on the DJI Developer website to obtain the license and installation package. The image shows an example of uploading a fingerprint file on the DJI Developer website page:

Trial Application

License Tool

History Records

Create License



License Name * (The License name displayed in the history records cannot be changed. For further management, do not use the same name.)

Server Fingerprint File * [How to obtain server fingerprint file?](#)

Import File

Import the fingerprint file of the device where the "4G Private Enhanced Transmission Service" will be deployed.

4G.WibuCmRaC

Notes

Next

Exporting License

1. Enter the 4G Private Enhanced Transmission service page on the DJI Developer website, and click "Create License" under the License Tools tab.
2. Use the obtained activation code and server fingerprint file to create a license step by step.
3. After creation, you can download the corresponding license and installation package from the completion page or history.

[Trial Application](#)[License Tool](#)[History Records](#)

Create License



License Details

License ID	ea9ed6c4-b8f9-4eaf-a8da-a6b999de37ae
Expiration Date	2026-02-25
4G Private Enhanced Transmission Service	
License Type	Trial
Usage Scenarios	Chinese Mainland
Number of devices supported simultaneously (unit)	5
Upgraded service validity period (day)	365
Verify Phone Number	Yes
Upgraded service validity period	2026-02-25
License Name	test
Minimum supported image version	2024.06.25.1771678

Image Information

Released Date	2025-02-25
Release Note	1. v1.1 test

[Export License](#)[Export Installation Package](#)

Upgrading License

If developers wish to support more new models and quantities, they need to upgrade to the latest version of the Docker image. This requires not only upgrading to the latest Docker image but also upgrading the service license. Then, export the license, install the license to complete the upgrade. When upgrading the license, first go to the License Tools page, then click "Upgrade License", enter the activation code to obtain the upgraded license. Refer to the image below:

Trial Application

License Tool

History Records

License Tool



Once the formal activation code is binded, it cannot be refunded. Please apply for a trial before
① purchasing. After getting the trial version of the activation code, ensure that the complete deployment
process can be run in the actual environment.

Create License

Upgrade License

Download Installation Package

After obtaining the upgraded license, you can upgrade the license by importing the service license file. The license takes effect immediately after import.

Example:

```
luz@luz-HP-ProDesk-680-G6-PCI-Microtower-PC:~/v12ig830/dji-cellular-enterprise-v2025.2.27$ ./InstallLicense.sh 0323fa30-d350-44d2-91f6-0323a96f7660_20250219092713.tar.gz
请输入产品类型 (FH2, Terra, 4G 或 EI200):
Enter product type (FH2, Terra, 4G 或 EI200): 4G
File found: ./tmp.XMFiFk/4G_0323fa30-d350-44d2-91f6-0323a96f7660_20250219092713.json
File found: ./tmp.XMFiFk/4G_0323fa30-d350-44d2-91f6-0323a96f7660_20250219092713.WibuCmRaU
cmu - CodeMeter Universal Support Tool.
Version 8.10 of 2024-Apr-17 (Build 6221) for Linux
Copyright (C) 2007-2024 by WIBU-SYSTEMS AG. All rights reserved.

The file contains 2 Updates:
  CmActLicense binding information: FirmCode 6000010
  CmDongle update for 130-2093186572 (FirmCode 6000010).

Execute Update ...
The file contains 2 Updates:
  CmActLicense update: Serial number 130-2093186572, FirmCode 6000010.
  --> successful
1 successful update done
  CmDongle update for 130-2093186572 (FirmCode 6000010).
  --> successful
2 successful updates done
cmu - CodeMeter Universal Support Tool.
Version 8.10 of 2024-Apr-17 (Build 6221) for Linux
Copyright (C) 2007-2024 by WIBU-SYSTEMS AG. All rights reserved.

List all locally connected CmContainers:
- CmContainer with Serial Number 130-2093186572 and version 3.00 (enabled)
- CmContainer with Serial Number 130-2170118438 and version 3.00 (empty)
- CmContainer with Serial Number 130-2240187775 and version 3.00 (empty)
- CmContainer with Serial Number 130-3246151899 and version 3.00 (empty)
- CmContainer with Serial Number 130-4224096082 and version 3.00 (empty)
Result: 5 CmContainer(s) listed.
License 安装完成
Installation completed
luz@luz-HP-ProDesk-680-G6-PCI-Microtower-PC:~/v12ig830/dji-cellular-enterprise-v2025.2.27$
```

Notes:

1. If it is a dual-control scenario, where two remote controllers are simultaneously connected to the same aircraft through a 4G private link, the allowed number of online aircraft will be reduced by

- 2.
2. The maximum expansion allows up to 200 devices to be online simultaneously.

Server Deployment

Obtaining Installation Package

Upon completing the creation of the page or downloading the license and installation package from the history, the directory explanation for the installation package after unpacking is as follows:

```
dji-cellular-enterprise-vx.x.x
├── conf                                //Service configuration file
├── dji-cellular-enterprise-linux-amd64 //Linux system. Service installation program for x86_64
architecture
├── docker-compose.yaml                //Docker Compose file
├── images                             //Service container image
└── InstallLicense.sh                  //Script for installing license
```

Installing License

1. Refer to the "Applying for Server Licenses" section in this manual to obtain the license file license.tar.gz.
2. Execute the command in the root directory of the installation package to install the license. Replace \${license license.tar.gz path} accordingly, and input 4G for the business being installed:

```
./InstallLicense.sh ${license license.tar.gz path}
```

Example:

```
cmu - CodeMeter Universal Support Tool.
Version 8.10 of 2024-Apr-17 (Build 6221) for Linux
Copyright (C) 2007-2024 by WIBU-SYSTEMS AG. All rights reserved.

List all locally connected CmContainers:
- CmContainer with Serial Number 130-2093186572 and version 3.00 (enabled)
- CmContainer with Serial Number 130-2170118438 and version 3.00 (empty)
- CmContainer with Serial Number 130-2240187775 and version 3.00 (empty)
- CmContainer with Serial Number 130-3246151899 and version 3.00 (empty)
- CmContainer with Serial Number 130-4224096082 and version 3.00 (empty)
Result: 5 CmContainer(s) listed.
License 安裝完成
Installation completed
```

Installation Service

Execute the command at the project root directory after the decompression:

```
chmod +x dji-cellular-enterprise-linux-amd64
./dji-cellular-enterprise-linux-amd64 install
```

The IP will be installed automatically. The following operation will be executed during the installation process:

- Check the Docker environment: If Docker and Docker Compose is not installed or the versions do not match, the installation will stop. Please pre-install the environment.
- Check the license information: If the license does not match, the installation will stop. Please Importing the License File in advance.
- Configure the IP. Developers **have to select the IP configuration mode as needed**.

IP Configuration Mode	Mode Descriptions
1	Use Public Network IP If you are using the public network server or cloud server with internet access, please select this mode. The program will get the IP automatically.
2	Use Internal Network IP If you are using an internal network server without internet access and connecting to the server with APN, please select this mode.
3	Use Custom Network IP If you want to customize your IP, please select this mode.

- Generate the OpenAPI key. Refer to the [4G Private Operation and Maintenance Manual for more instructions](#).
- Close and delete the local private service.
- Developer to select whether to delete the historical images. (Tap "enter" represents not to delete.)
- Start loading the private images and private service.
- Automatically check the service status. When you see the three following expected results, the deployment has succeeded.
 - The first response body returns "OK".
 - The second response body returns "-1" or the IP you configured.
 - The third response body returns the IP you configured.

Example:

```
检查服务状态...
| Checking service status...
当您看到第一段返回“OK”
第二段返回“-1”或者“包含您配置好的IP”
第三段返回的结果内“包含能部署的IP”的时候，即代表部署成功！
| When you see the first part return "OK"
The second part returns "-1" or "contains the IP you configured"
When the result of the third part contains the IP you configured, it means the deployment is successful!
响应正文
| response Body: {"status":"OK"}
响应正文
| response Body: {"code":-1}
响应正文
| response Body: {"additional_info":{"arbitration_time_ms":37,"ip":"172.21.0.1","arbitrated_worker":[{"domain":"","ip":"[REDACTED]","latency":0,"load":"","port":8093,"region":"cn-sh"},"code":0,"token":"eyJhbGciOiJIUzI1NiIsInR5cCI6IkpzcmkiLCJpdCI6ImFMTyZmYTI1NjQvODVkaXNjaWNoZWlnaGVlZG9wZXI2NS9jLmNlIiwic29ucyI6bnVyc29uLmptIiwiaWF0IjE5MjA5MDg0NDkxOTQwOSt0dPtaGjA397WDs="}
```

Configuration Service (Optional)

To accommodate different network scenarios (such as the network between the remote controller

and the aircraft being unable to communicate while both accessing the same 4G private server), DJI offer the capability to configure custom multi-IP rules for the 4G private server.

After completing the "Installation Service" step, execute the following commands and input 1 to select rule configuration:

```
./dji-cellular-enterprise-linux-amd64-v3-0-0 config
```

Example:

```
配置选择：
| configuration select:
1. 客户端 IP 和节点 IP 匹配规则的设置
| The setting of the matching rules for the client IP and the node IP
1
输入匹配规则,例: {"192.168.1.0/24":"59.110.251.12","192.150.1.0/24":"182.92.29.13"}
| Enter matching rules,example:{"192.168.1.0/24":"59.110.251.12","192.150.1.0/24":"182.92.29.13"}
{"192.168.1.0/24":"59.110.251.12","192.150.1.0/24":"182.92.29.13"}
配置读取 cidr:192.168.1.0/24 ip:59.110.251.12
Configuration reading cidr:192.168.1.0/24 ip:59.110.251.12

配置读取 cidr:192.150.1.0/24 ip:182.92.29.13
Configuration reading cidr:192.150.1.0/24 ip:182.92.29.13

容器已重启
| Restarted container devarbitration
```

Notes:

- The configuration content is a JSON key-value pair, where the key is a CIDR address used for matching the client's IP, and the value is the IP address of the 4G private server that the corresponding client IP segment is expected to access.
- After completing the configuration, as shown in the image above, the read configuration content and the final container restart will be displayed.

Importing SN whitelist file

For security reasons, 4G private service only allows devices on the whitelist to connect to the server. Other devices cannot be used. Please store all your device SN (aircraft, remote controller, and dock) to the sn_list.txt file under ./conf/devarbitration/. The sn_list.txt is SN whitelist file. The file format is each SN on a new line.

Notes:

- If new device needs to be added, please execute "docker restart devarbitration" to restart the service to take effect after the sn_list.txt file is modified.
- Please do not delete the "test_rc_sn" and "test_uav_sn". They are used to check the service availability without consuming connection count quota.

```
test_rc_sn
test_uav_sn
test_rc_sn_1
test_uav_sn_1
test_rc_sn_2
test_uav_sn_2
test_rc_sn_3
```

```
test_uav_sn_3
test_rc_sn_4
test_uav_sn_4
test_rc_sn_5
test_uav_sn_5
```

Device Networking Preparation

Ensure that your aircraft, remote controller, and dock have all been updated to the latest firmware version.

Device Networking Instructions

Before using a 4G private server, confirm that the network status of your devices is normal.

Two networking methods for the remote controller:

1. Using the 4G Dongle: Install the 4G module and ensure that the Dongle's indicator light is green.
2. Using the WIFI Hotspot: Connect to a WIFI hotspot.

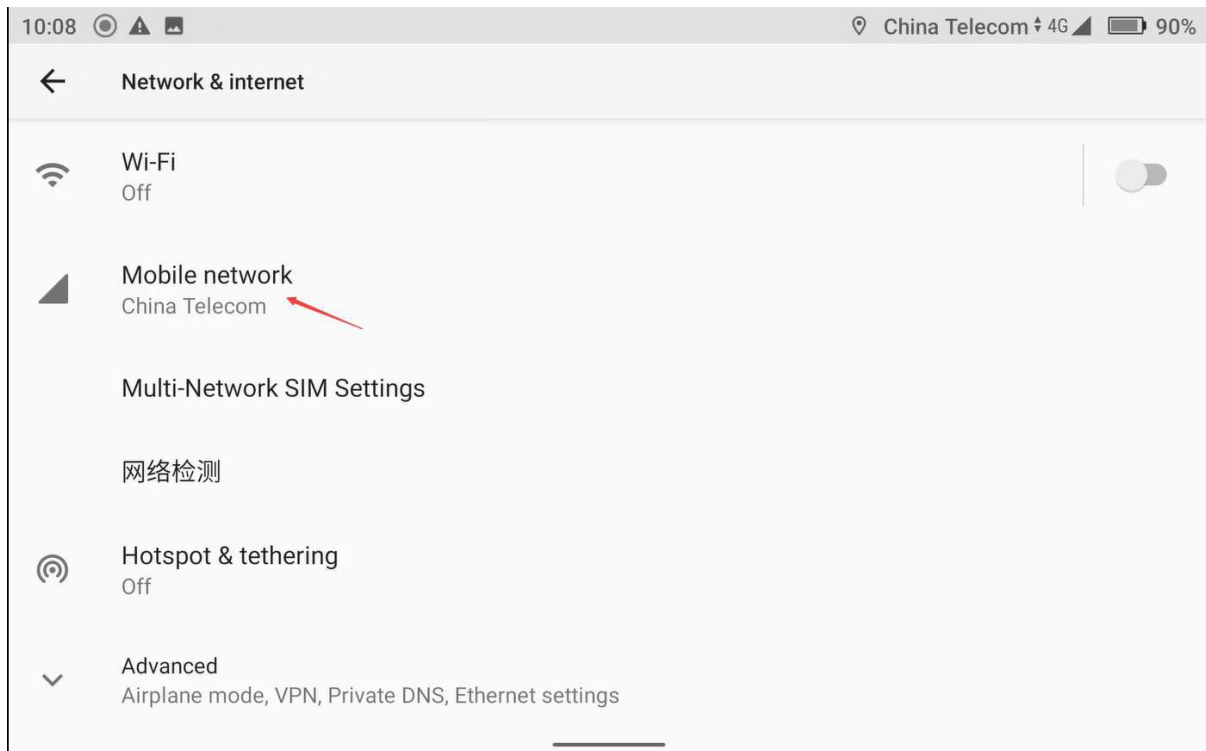
Two networking methods for the DJI Dock:

1. Using the 4G Dongle: Install the 4G module and ensure that the Dongle's indicator light is green.
2. Using a Wired Connection: Use a Cat5e or higher twisted pair cable for network connection.

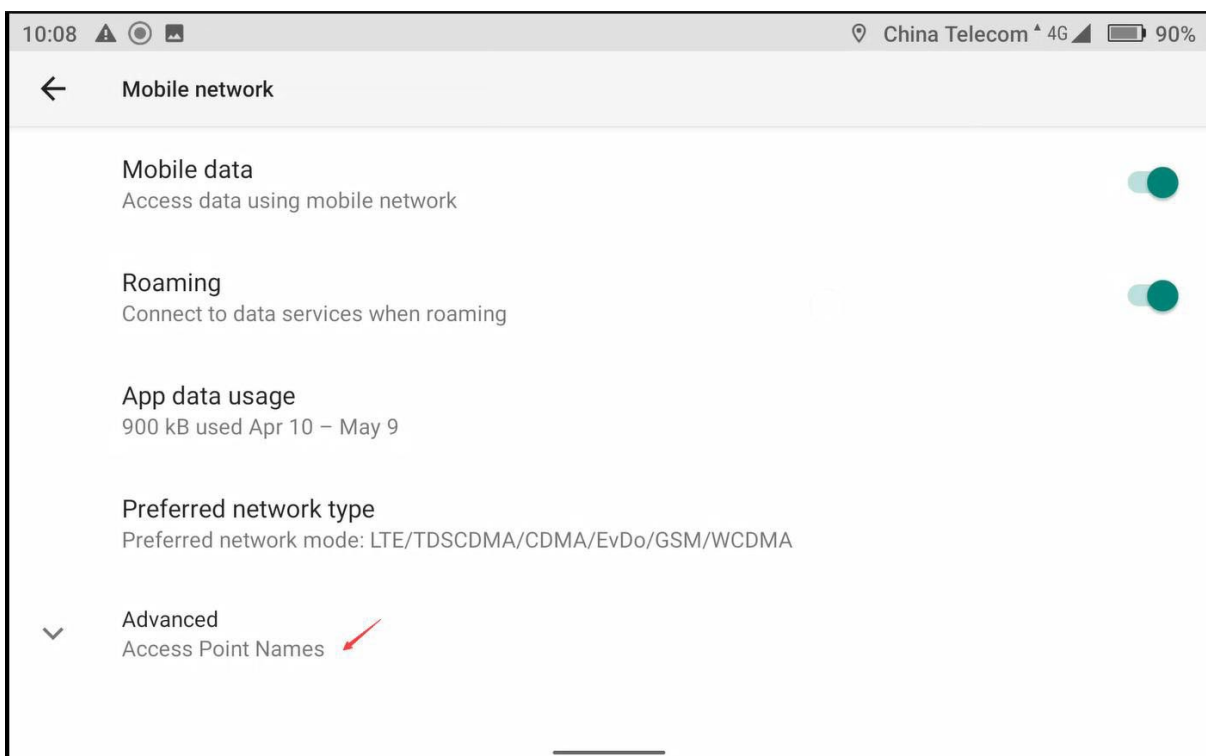
The aircraft have only one networking method: Install the 4G module and ensure that the Dongle's indicator light is green.

Set the Remote Controller's APN

1. Enter the system setting and click "Mobile network":



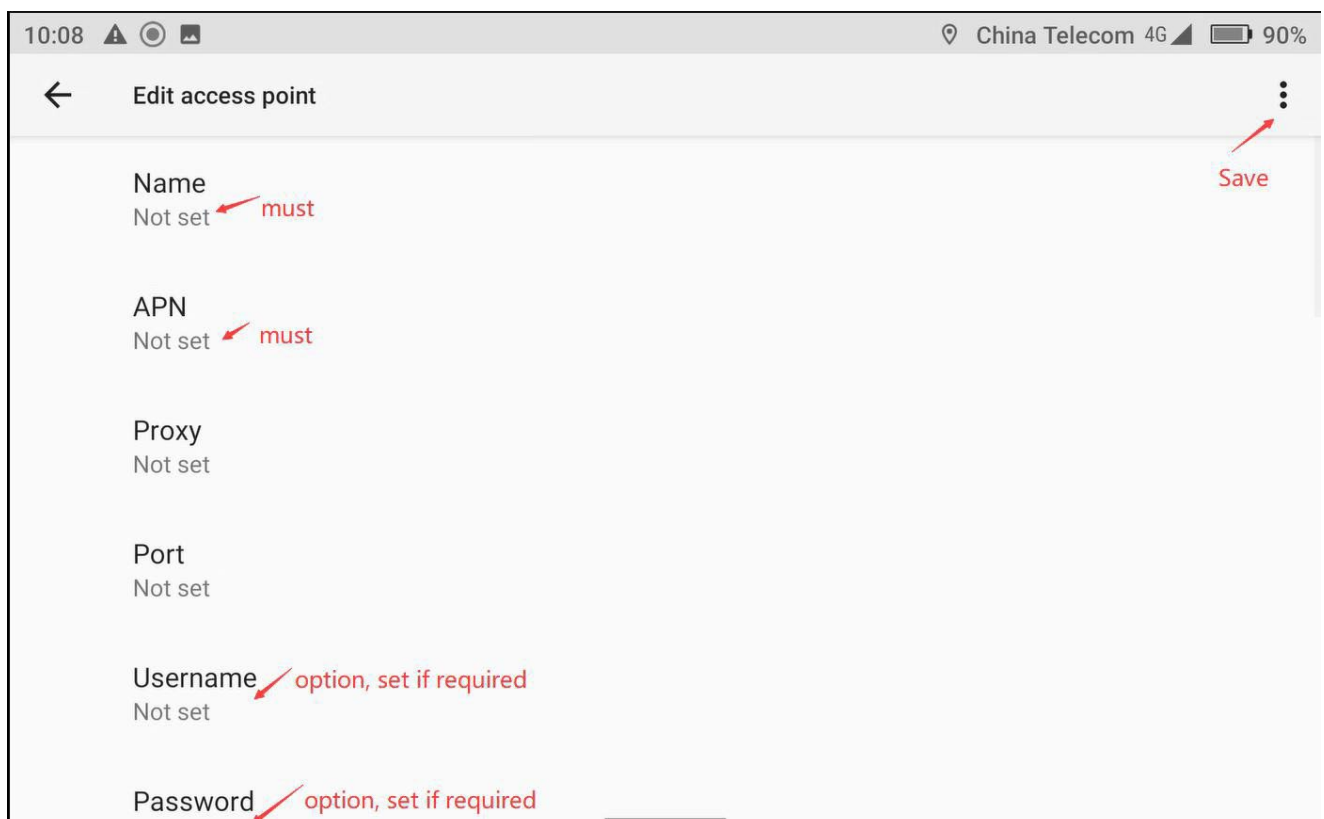
2. Click "Advanced" and enter the access point setting page:



3. Click the "+" in the upper right corner to add new setting:



4. Check the setting information for different mobile operators, then save after the configuration. The "Name" and "APN" is required, while the others depend on the specific situation.



Notes:

- If the version of DJI 4G Dongle 2 is 00.02.0018, the user name and password might expire. It's a known issue and has been fixed. Please update to the latest 4G Dongle version.
- The 4G Dongle's indicator light is green after the correct configuration. The remote controller can access the internet via 4G Dongle. You can close the WiFi connection and open the browser to check whether the webpage can be accessed normally.

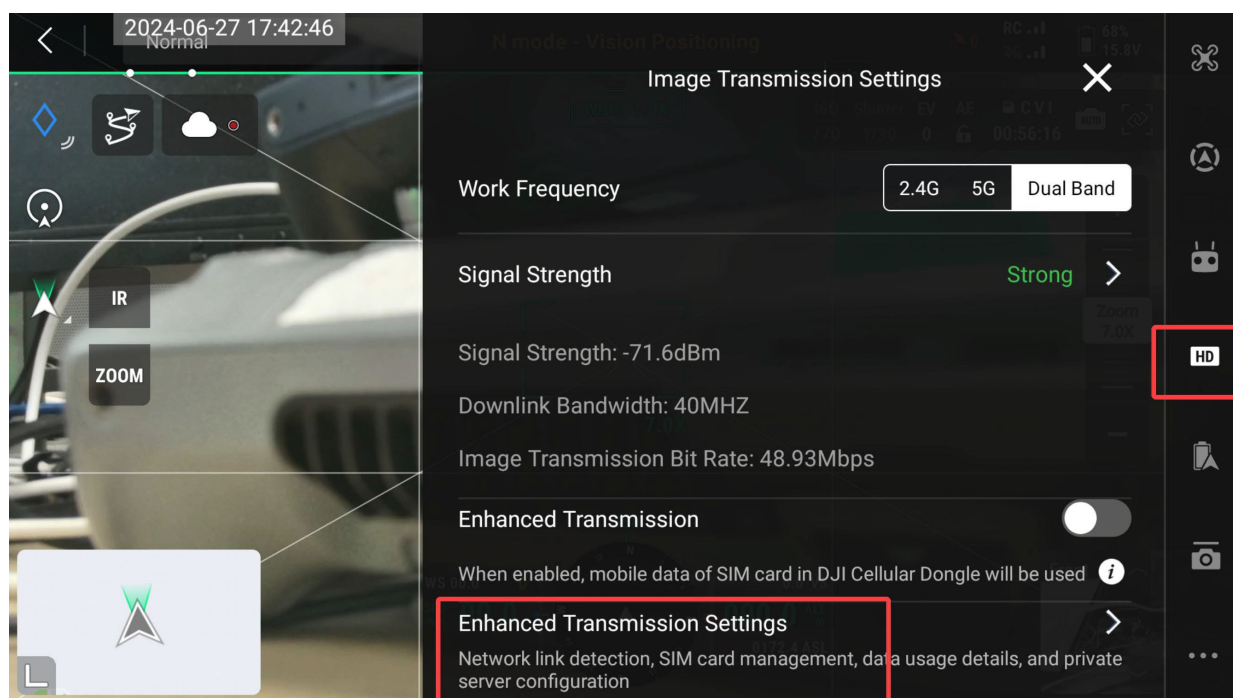
Set the Aircraft's APN

Ensure the aircraft has a 4G Dongle inserted:

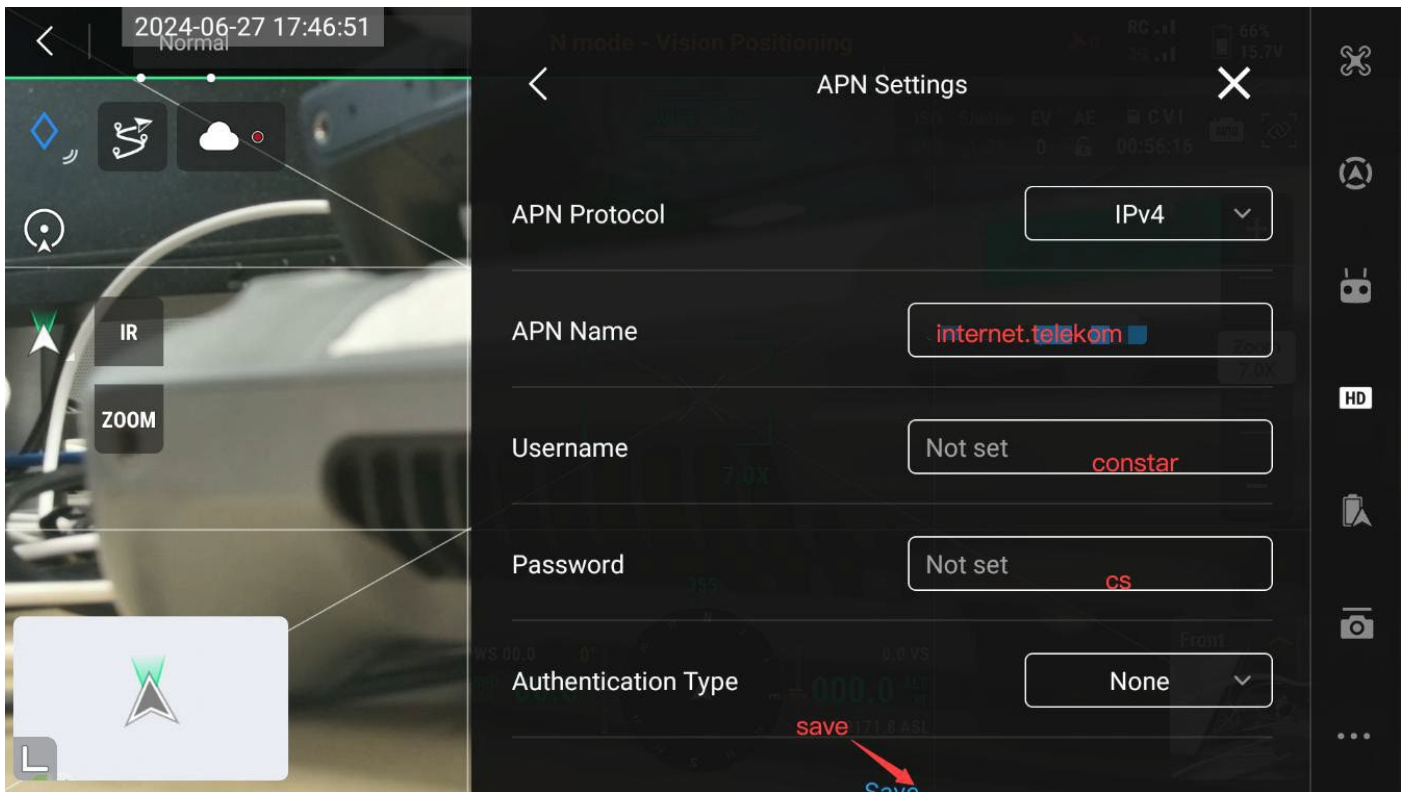
1. Click the "... " in the upper right corner of the DJI Pilot interface to enter the settings menu.



2. Go to the HD tab and click the "Enhanced Transmission Settings".



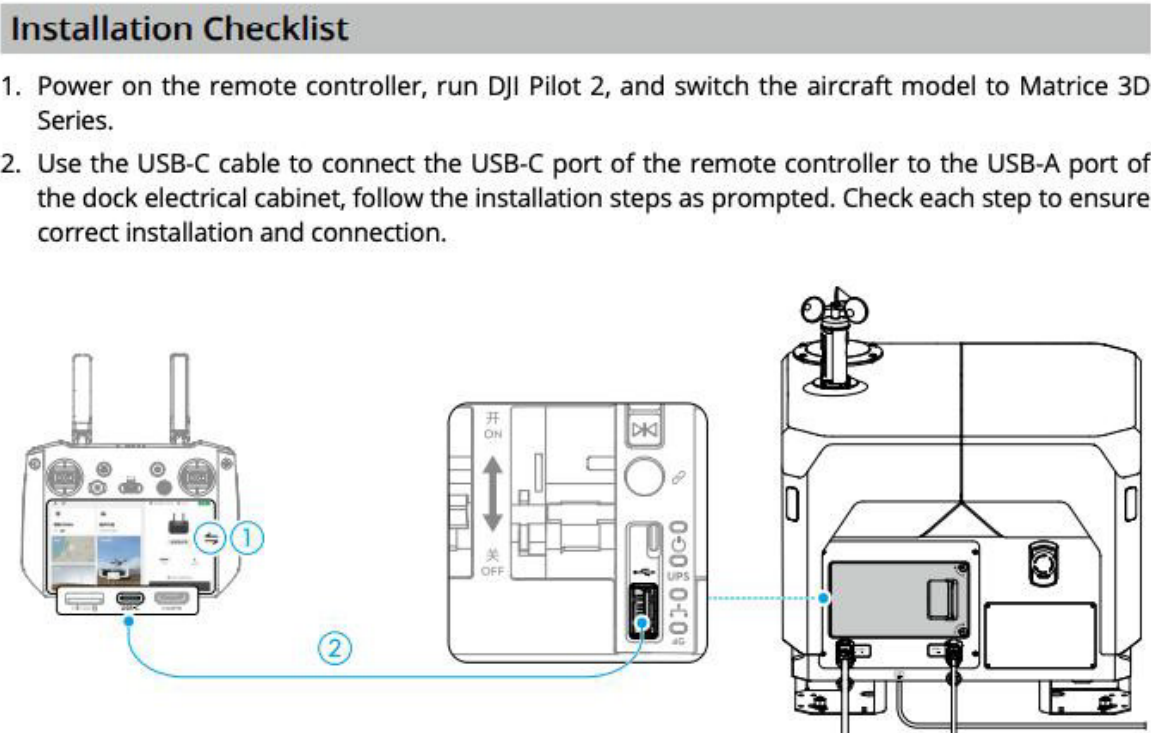
3. Check the requirements of your mobile operator and set the "APN Name", "Username" and "Password", then save after the configuration.



After the settings are correctly configured, the 4G Dongle will flash green. At this point, the aircraft can connect to the internet via the 4G Dongle.

Set the Dock's APN

1. Refer to the [*DJI Dock 2 Installation and Setup Manual*](#) to connect the remote controller to the dock. Take the DJI Dock 2 as an example:




2. Wait for the debugging page of the dock to pop up, then select the "Reconfigure" option at the


bottom left.

Dock Onsite Debugging

Place aircraft inside dock and close dock cover after debugging. Distribute task in DJI FlightHub 2 or through third-party

NFZ >

DJI Maintenance Program >
 Overdue


DJI Care Enterprise >
 Network error

4G Enhanced Transmission Service >
Disabled

Reconfigure >

Dock Linking 2 ressed down(0x19111800) Er

Running time 17 d	Flights 4	AC Idle	
Battery Switch On	Battery Volt 13.3V	Battery Temp 30.3°C	Int. Temp 27.8°C
Int. RH 26%	Ext. temp 28.0°C	Rainfall Scale No Rainfall	Wind Speed 0.0 m/s

Network
 Connected (Gigabit Ethernet)

Dock Location
Searching for satellite sign

Alternate landing site
Not set

3. Enter "Network Configuration", then click the "Mobile Network" (Note: 4G Dongle should be connected to the DJI Dock at first)

<

Network Configuration

Next

Cable Network
Connected (Gigabit Ethernet) >

Mobile Network
Not connected

Network Check >

Note: If cable and 4G networks are connected at the same time, cable network will be prioritized

4. Check the requirements of your mobile operator and set the "APN Name", "Username", and "Password" as needed, then save after the configuration.

×

4G Network Configuration

Save

APN Protocol

IPv6

APN Name

pepper

Username

Unset

Password

Unset

Authentication Type

Reset

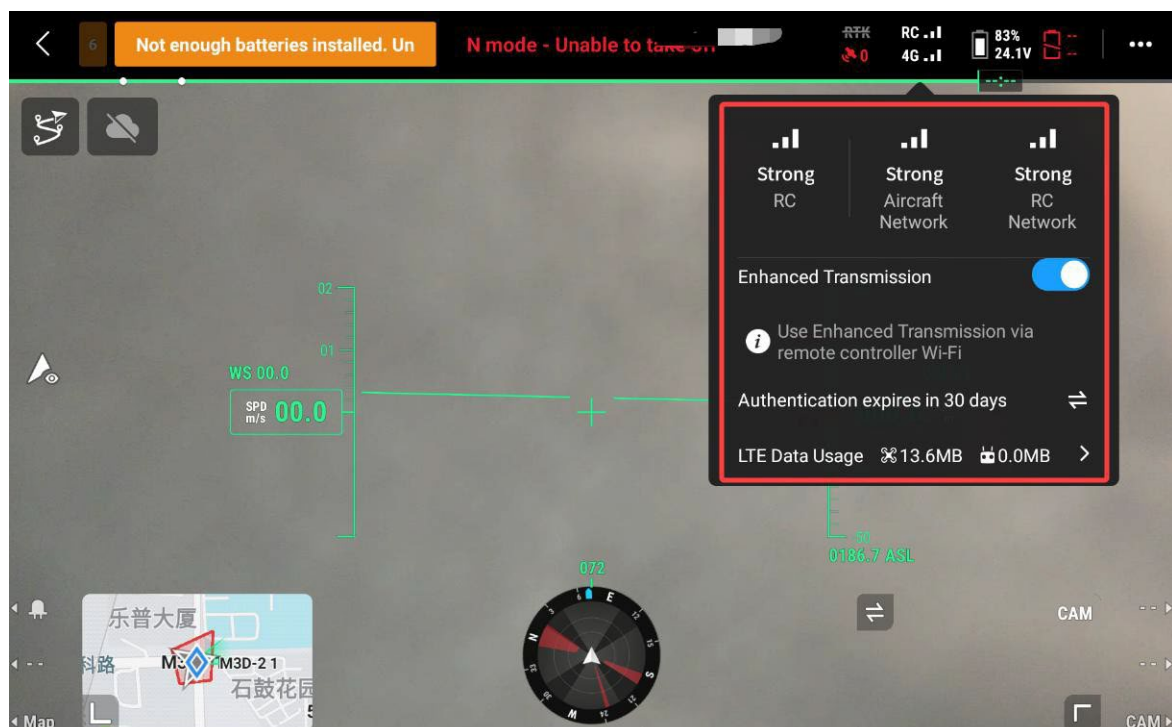
Note: Field length of APN settings must not exceed 32 characters

After the settings are correctly configured, the 4G Dongle will flash green. At this point, the airport can connect to the internet via the 4G Dongle.

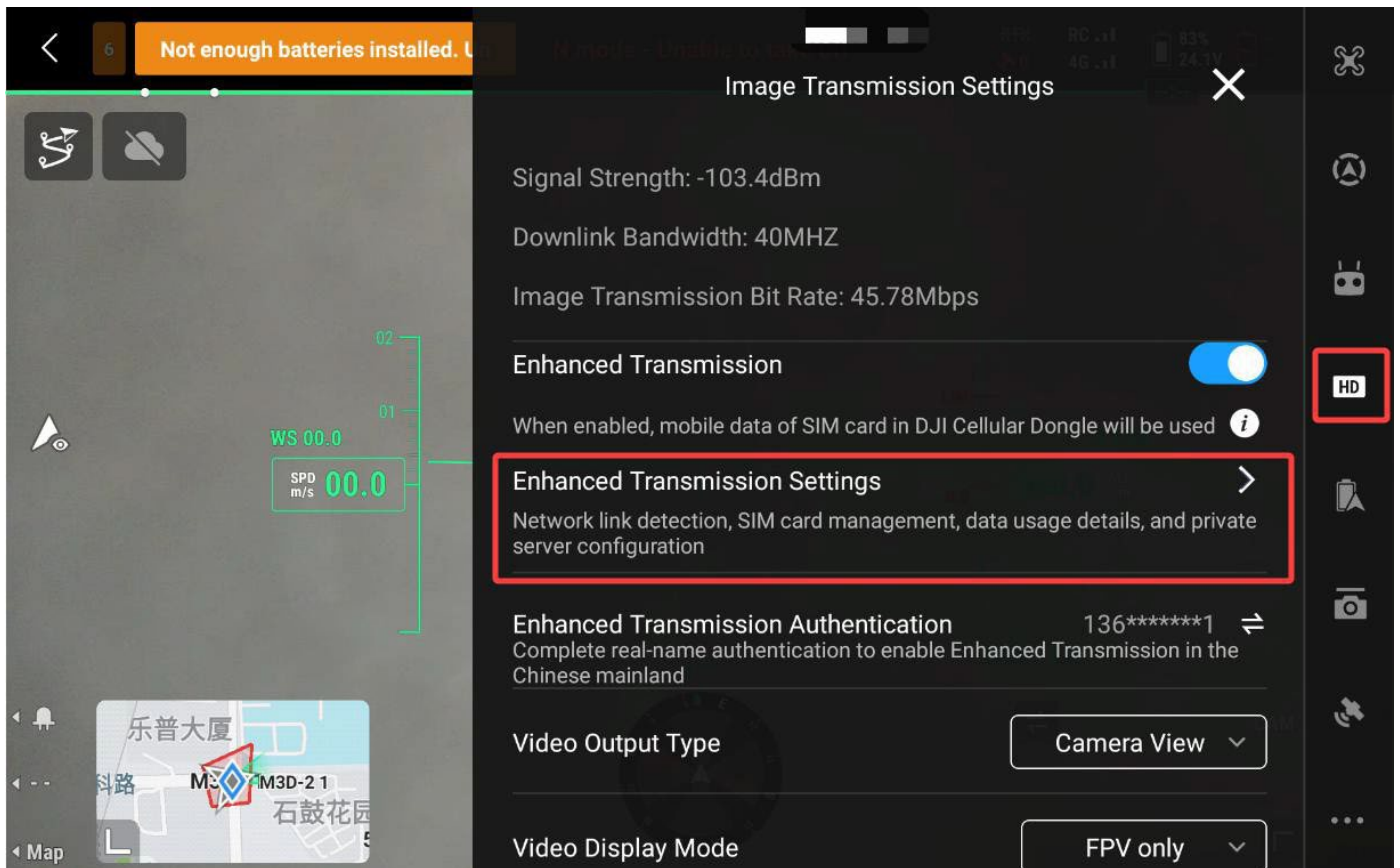
Test Procedure

Test on the aircraft

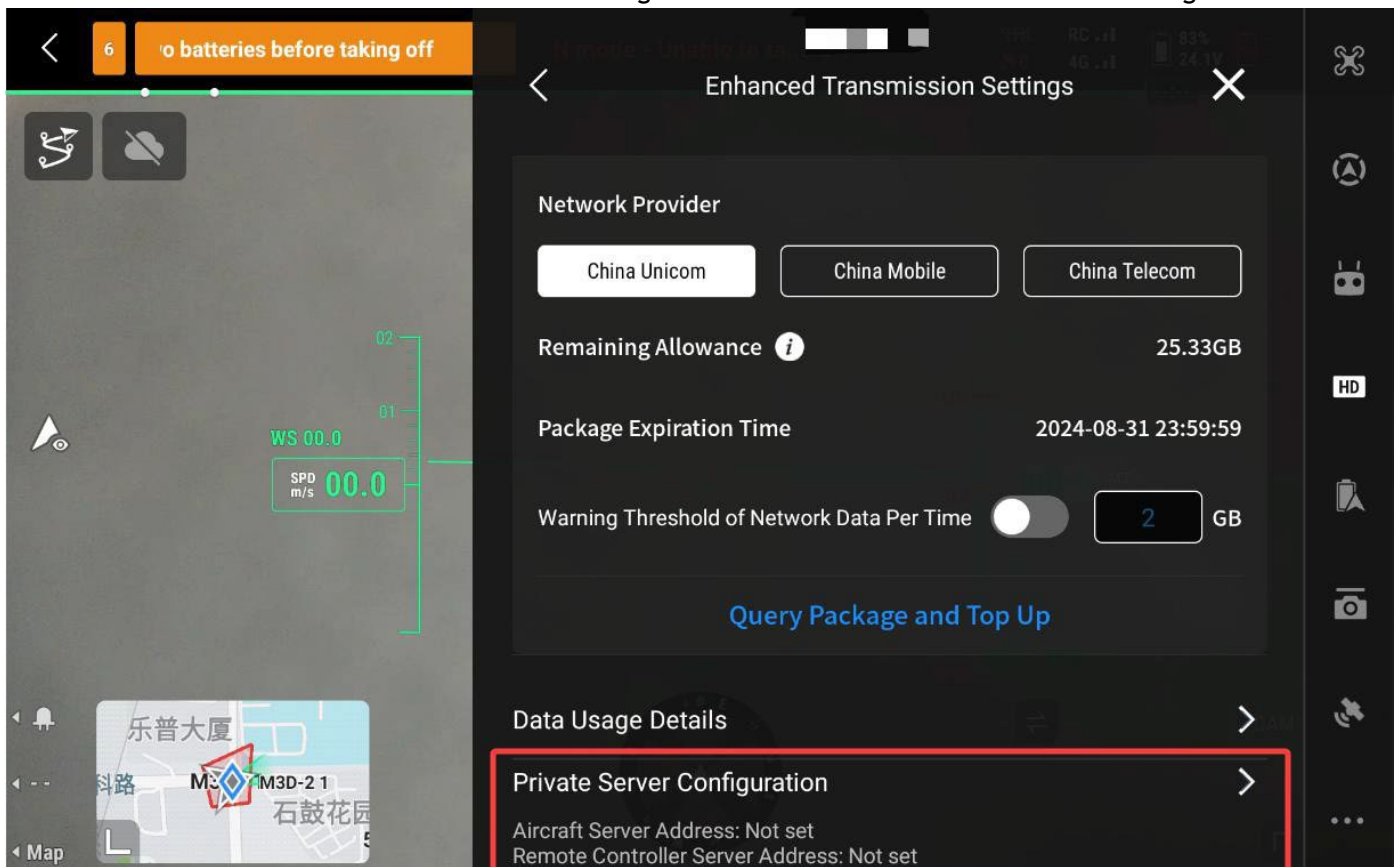
1. Connect the dongle to the aircraft and the remote controller. (Remote controller can be accessed via Wi-Fi.) Wait for the remote signal on the top bar to change to "RC + 4G".



2. Tap the "..." in the top right corner of the interface and select "HD".



3. Enter the "Enhanced Transmission Settings" and select the "Private Server Configuration".

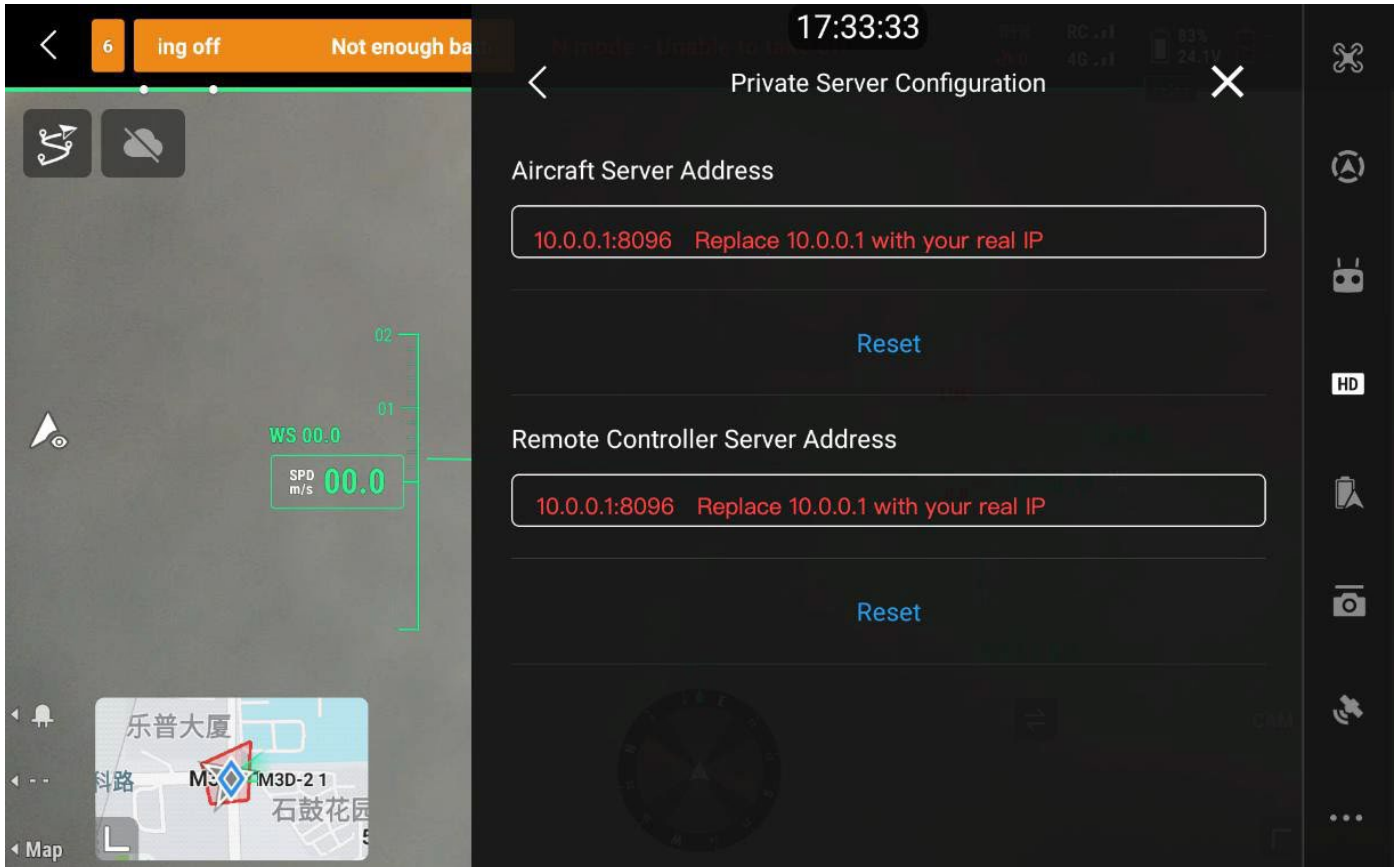


4. Set the server configuration of the aircraft and remote controller separately. (IP:port. For example: 10.0.0.1:8096. Replace the 10.0.0.1 with real IP. The default port is 8096. Please avoid to use the 192.168 network band. If necessary, please use 192.168.142.01-192.168.254.254.

Notes:

- For real IP, please check [the execution result screenshot from FAQ5](#). The location of the mosaic is your real IP.

- The "IP:port" of the aircraft and remote controller are the same.



5. Testing the network quality under 4G connection:
Break the image transmission between the aircraft and remote controller. (Do not take off. Move the aircraft to position where remote controller reception is obstructed.) Test the image quality under 4G connection. When the network signal is strong, there should be no freezing or lag.

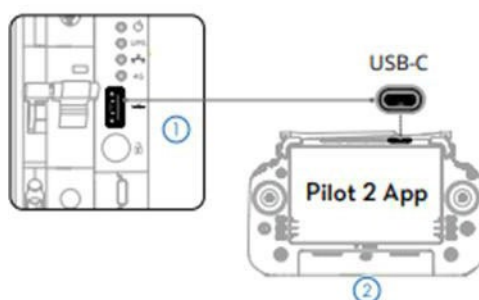
Testing on the dock

1. Connect the dongle to the aircraft and the dock. (Dock can be accessed via network cable.) Wait for the remote signal on the third-party cloud platform to change to "RC + 4G".
If a third-party platform has not been developed, you need to subscribe to the following information to judge whether the 4G private service has been deployed successfully.
 - 1) Subscribe to the Topic `sys/product/{gateway_sn}/status`. Judge whether the dock has been connected to the third-party platform through Method: `update_topo`.
 - 2) Subscribe to the Topic `thing/product/{gateway_sn}/events`. Obtain the error code and error cause through Method: `hms`.
 - 3) Subscribe to the Topic `thing/product/{device_sn}/osd`. Judge whether the 4G link is connected successfully through the following fields.

»4g_link_state	4G link connection state	enum_int	{"0":"Not connected","1":"Connected"}
»sdr_link_state	SDR link connection state	enum_int	{"0":"Not connected","1":"Connected"}
»link_workmode	Dock's video transmission link mode	enum_int	{"0":"SDR Mode","1":"4G Fusion Mode"}
»sdr_quality	SDR signal quality	int	{"max":"5","min":"0","step":"1"}
»4g_quality	Overall 4G signal quality	int	{"max":"5","min":"0","step":"1"}
»4g_uav_quality	Sky-side 4G signal quality	int	{"max":"5","min":"0","step":"1"}
»4g_gnd_quality	Ground-side 4G signal quality	int	{"max":"5","min":"0","step":"1"}

For details, please read:

- [Topic subscription](#)
 - [Device Topology update protocol](#)
 - [HMS Management](#)、[HMS Function](#)
 - [Properties of CloudAPI](#)
- Use the USB-C cable included to connect the USB-C port of the remote controller to the USB-A port of the dock's electrical cabinet.



- Enter Local Debugging and select the "4G Enhanced Transmission Service".

Dock Onsite Debugging

Place aircraft inside dock and close dock cover after debugging. Distribute task in DJI FlightHub 2 or through third-party

NFZ >

DJI Maintenance Program >
Overdue

DJI Care Enterprise >
Not bound

4G Enhanced Transmission Service >
Disabled

Reconfigure >

Dock
Linking
2
on calibration data error(0x19110012)

Running time	Flights	AC	Input Voltage
54 d	66	Idle	229V
Battery Switch	Battery Volt	Battery Temp	Int. Temp
On	26.8V	25.0°C	48.2°C
Int. RH	Ext. temp	Rainfall Scale	Wind Speed
78%	23.5°C	No Rainfall	0.0 m/s

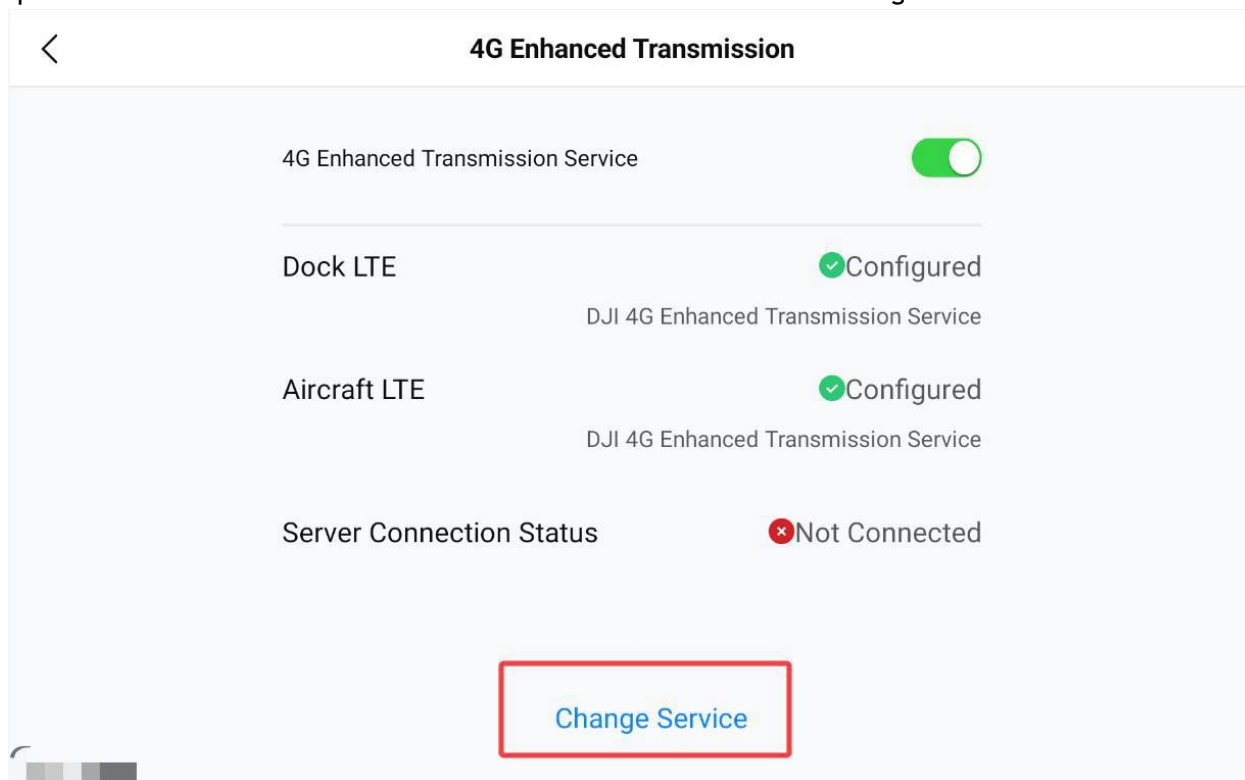
Network
 Connected (Gigabit Ethernet)

Dock Location
Searching for satellite sign

Alternate landing site
Not set

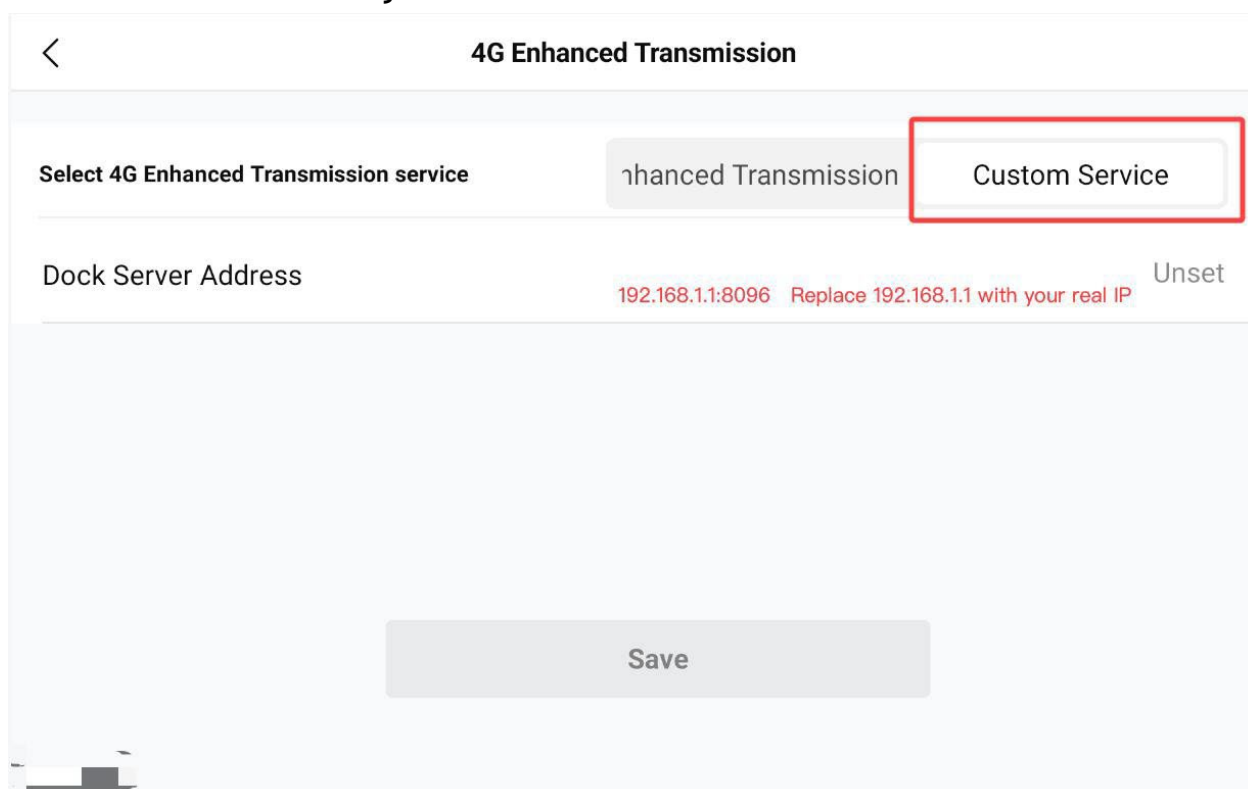
Aircraft

4. Open the "4G Enhanced Transmission Service" and select "Change Service".



5. Select custom service and configure the service address according to the format. (IP:port. For example: 10.0.0.1:8096. Replace the 10.0.0.1 with real IP. The default port is 8096.)

Note: For real IP, please check the execution result screenshot from FAQ5. The location of the mosaic is your real IP.



6. If using on FlightHub platform, please enter dock debugging mode, then enable 4G enhanced transmission. If using a third-party cloud system developed with the CloudAPI, please call the `sdr_workmode_switch` interface to enable 4G enhanced transmission.
7. Select the configured dock for testing:
After disconnecting the DJI image transmission between the aircraft and the dock (do not take off immediately and manually move the aircraft to a position where it is obstructed from the

dock), test the network smoothness on the cloud platform under the 4G connection. There should be no noticeable stuttering or delay if the network is good.

FAQs

1. Can the 4G private deployment transmit the RTK positioning data?

Yes.

2. Is it necessary to insert a 4G card into the remote controller? Are network cable and Wi-Fi supported?

The remote controller of Mavic 3 Enterprise Series supports 4G card SIM cards and Wi-Fi. The DJI Dock supports 4G SIM cards and network cables.

3. Where can I check for the log?

Execute the following comm and replace the *container id* by yourself. Command:
`docker logs container id`

4. How to determine if the service is running properly?

Execute the following command:

```
./dji-cellular-enterprise-linux-amd64 check
```

Example:

```
[root@ ]# ./dji-cellular-enterprise-linux-amd64 check
当您看到第一段返回“OK”
第二段返回“-1”或者“包含您配置好的IP”
第三段返回的结果内“包含您配置好的IP”的时候，即代表部署成功！
response Body: {"status": "OK"}
response Body: {"additional_info": {"arbitration_time_ms": 8, "ip": "192.168.1.1"}, "arbitrated_worker": [{"domain": "", "ip": "192.168.1.1", "port": 8093, "region": "cn-sz"}], "code": 0, "token": "eyJ1IjI1NiIsInR5cCI6IkpXVCJ9.eyJleHAiOiJlE2OTQ2Nzg4MzIsIm1hdCI6MTY5NDY3NzZlZjI2aWNLIIiwic3ViIjoizGppX2Rldm1jZSJ9.19KE8Ax1CzXTrk...xXp8pMf1FL8Tvr0Xk1N1U"}
response Body: {"additional_info": {"arbitration_time_ms": 2, "ip": "192.168.1.1"}, "arbitrated_worker": [{"domain": "", "ip": "192.168.1.1", "port": 8093, "region": "cn-sz"}], "code": 0, "token": "eyJ1IjI1NiIsInR5cCI6IkpXVCJ9.eyJleHAiOiJlE2OTQ2Nzg4MzIsIm1hdCI6MTY5NDY3NzZlZjI2aWNLIIiwic3ViIjoizGppX2Rldm1jZSJ9.19KE8Ax1CzXTrk...xXp8pMf1FL8Tvr0Xk1N1U"}
```

5. When the server is configuring, the error "Docker. Error: Cannot start container: port has already been allocated" occurred.

This error will occur if the default port 8096 is occupied. Please [submit a request to our technical support engineer](#).

6. What kind of data will go through the server after the 4G private deployment?

The real-time image, controlling commands, and RTK data will go through the server. Then the data will be transmitted to target devices. (aircraft, remote controller, dock)

7. What is the data consumption for the 4G private deployment?

The real-time streaming media data will go to the relay server first. Then the server transmits the data to the remote controller/dock. The data consumption is about 5 Mbps. This data is only for reference. You can also obtain the consumption result from the server background.

8. How to solve the high latency issue after the 4G private deployment?

Because 4G private deployment has to penetrate multiple firewalls, there might be some delay. It is recommended that users compare the latency situation with the OcuSync image transmission and 4G image transmission

9. What's the meaning of the DJI Cellular light colors and blinking patterns ?

Read the following table for the color meanings. For details about the DJI Cellular module, please refer to [DJI Cellular Dongle User Manual](#).

Blinking Patterns	Description
Solid green	Strong 4G signal
Blinks green	Weak 4G signal
Solid blue	Strong 2G/3G signal
Blinks blue	Weak 2G/3G signal
Solid red	No SIM card detected. Check if SIM card is in good condition and inserted correctly
Blinks red	SIM card inserted, but no network signal. Check the network signal coverage and the network service of the SIM card

10. How does a new license take effect in the 4G private server?

If you reapply for a license, for example, replacing the trial license with the official license, you need to re-execute [Importing the License Files](#) and then re-execute [4G Private Installation Service](#). Then

the new license will take effect.

11. Error "Error sending request to API endpoint Post ..." occurs during the deployment?

```
向API endpoint发送请求时出错
| Error sending request to API endpoint Post "https://127.0.0.1:8096/worker/heartbeat": dial tcp 127.0.0.1:8096: connect: connection refused
An error occurred, but we're recovering gracefully.
```

The main reason is the Docker Compose version mismatch. Ensure the Docker Compose version is 2.27.0 or higher.

12. How to know the version of the currently running 4G private service?

Execute the following command:

```
docker ps
```

The suffix of ig830-devabitation indicates the version:

```
root@iZwz9em0dlztt0c08criwJZ ~/myapp/dji-cellular-enterprise-v3.0.0 (0.051s)
docker ps
```

CONTAINER ID	IMAGE	NAMES	COMMAND	CREATED	STATUS	PORTS
3970e046410a	ig830-devabitation:v3.0.0	devarbitration	"/bin/devarbitration..."	10 minutes ago	Up 10 minutes	

13. Is the annual fee for 4G Private service required?

Once purchase a basic version license, it is permanent for use. But we only provide one-year free upgrade service. Beyond this period, if you don't continue to purchase an upgrade license, the origin 4G enhanced transmission service can be normally used but no upgrade is available.

14. Does the 4G private service support to modify the port?

NO. 4G private service will occupy the ports from 8090 to 8098. Ensure these ports are available.

15. If purchase multiple 4G private activation code, how to import them into a same container to achieve an expansion in the device number?

Currently up to four official version activation codes are supported to be overlaid onto a same license. At first, you need to use the earliest activation code purchased from the developer website to generate a license. Enter the "License List" page and click "Details" button. Click the "Expansion"

button to import the other activation codes to generate a new license. Reimport the new license to the container to achieve expansion.

16. Single license supports up to 50 airports. Does it refer to the number of configured aircrafts or the number of simultaneous online aircrafts?

It refers that the number of simultaneous online aircrafts cannot exceed 50. For example, although 1000 aircraft serial numbers have been added to the white list file, the service can function normally as long as no more than 50 aircrafts are online simultaneously. **If both the A control and B control of the aircraft connect to the 4G private service, the system will count it as 2 connected devices.**

17. What kind of license can be upgraded and expanded?

- Only formal license can be upgraded and expanded.
- When new firmware is released, there will be an "Update" button in the license detail page. Click to upgrade within the validity period of the upgrade license. For detail, refer to Upgrading License section.
- By default, one license can support up to 50 devices online simultaneously. There is an "Expansion" button in the license detail page and click to start the expansion. For detail, refer to Expand the Number of Online Devices.