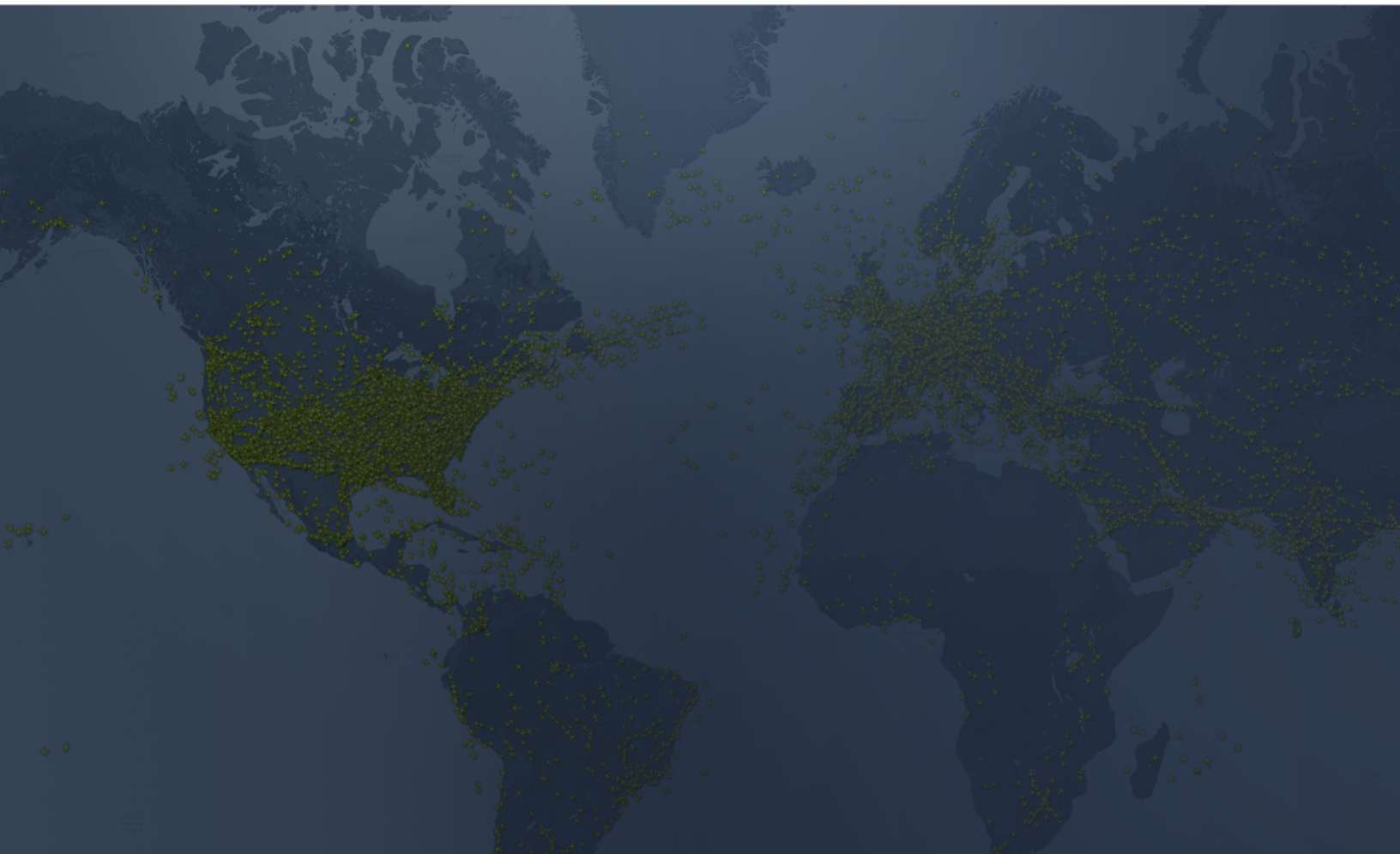
FLIGHTRADAR24

-KNOWLEDGE BASE-

“INSTALLATION GUIDE”



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1. THANK YOU...

...for agreeing to host our Flightradar24 Mode-S receiver and being part of our team of data providers!

We're now arranging shipment of the equipment which may take between 1 and 4 weeks to arrive. For some remote destinations it could take longer.

We will confirm shipment as soon as it's been dispatched. We may have to send some equipment separately. We will let you know the shipment and tracking details.

For customs purposes the consignment is sent with documents stating:

"Reason for Export: Loan – goods remain the property of Flightradar24 AB. Free sample for testing purposes."

The invoice value is shown as Euros 68.70.

2. EQUIPMENT

!

The equipment remains the property of Flightradar24 AB.

We will cover the cost of returning it should the need arise.

CONTENT OF PACKAGE

Please check the contents of the parcel as soon as it arrives to confirm everything is included:

Item	Description	Dimensions
Mode-S receiver	**Flightradar24 Receiver** *SMA antenna connector* *SMA/SMB GPS connector* *Ethernet RJ45 connector* *Power Socket*	100x60x30mm
Power adapter	To power the receiver *With country specific plug.*	Line voltage 100v to 240v AC 10 -15 Watts
Ethernet cable	To connect the receiver to the router.	5 meter cable
GPS antenna and cable	Connected to the receiver and placed outside.	10 meter cable
External antenna	Mode-S antenna with mounting bracket and pole camps. *1090 MHz*	Length 42/60 cm Weight ~ 325 g
Antenna cable	Low loss LMR400 coaxial with SMA/N-type male connectors.	6mm diameter 5/10/15 meters long

IMAGES OF THE KIT CONTENT

Flightradar24 receiver

Mode-S antenna

Ethernet cable

Coax cable

GPS antenna

Receiver power supply

3. SETTING UP

Please make sure you have received everything listed above and send us an email to confirm it has arrived safely. Please quote your application reference and email support@FR24.com.

If anything is missing or damaged please let us know immediately.

You should set up everything as soon as possible. **If you can't do this within 7 days, please let us know.**

The Mode-S antenna needs to be positioned externally as high as possible with an unobstructed view of the sky in all directions. You may need to use self amalgamating tape to waterproof any exposed connections.

Connect the N-type coax cable to the antenna and bring it indoors to where you will place the Flightradar24 receiver.

GPS antenna should be placed outside and in view of a minimum of half the sky. A window sill should be OK in most situations.

Connect the receiver to your router, Mode-S and GPS antennae using their respective cables.Turn on the power and let us know when you have done so.

Please note that the receiver will not appear online in your FR24 account the moment you switch it on and connect it to the internet. It could take up to a few hours before you see it online as it needs to be activated from our side.

RECEIVER TYPE 1

Please see below what the display will show when you connect the receiver initially while it has not been activated by us:

Once we activate it from our side, the text that is red will turn blue as seen in the image below.

The three buttons (UP, OK, DOWN) on the side are not used at this time and are reserved for future use.

The screen can take upto 30 seconds to power on after the receiver has been plugged in.

Aircraft ADS-B: Shows the number of ADS-B aircraft tracked.

Aircraft Total : Shows the total number of aircraft tracked (ADS-B + non ADS-B).

FR24 radar: Your FR24 receiver identification code.

ADS-B feed:

OK, if connection to ADS-B servers is working.

Offline, if the connection is not working (shows offline also when the receiver has not been activated yet)

MLAT feed:

OK, if connection to MLAT servers is working.

Offline:

ii) GPS is not working

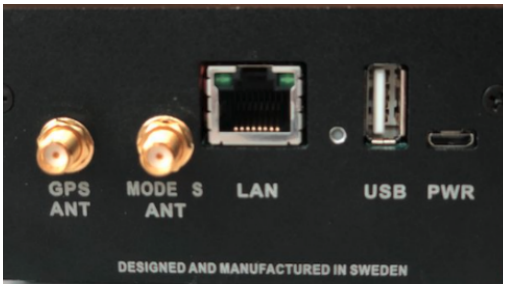
ii) Connection to MLAT servers is not working

iii) MLAT has been turned off on the receiver

iv) shows offline also when the receiver has not been activated yet

You can find details about the GPS issue from the local web interface of the receiver that you can access by typing the receiver's IP in your browser.

IP: Receiver's IP address.



Rear view of the Flightradar24 receiver with the available connections

RECEIVER TYPE 2

Power LED: The power LED can be red or green - both are OK as long as it is illuminated.

Mode-S LED: The Mode-S LED flashes constantly on each frame that is received from aircraft.

If no frames are received (e.g., no antenna connected), it flashes once per second in order to indicate working state.

GPS LED: The GPS LED flashes green once every second exactly when the second changes. In case of GPS degradation, it occasionally flashes yellow.

RECEIVER TYPE 3

Power: Steady red.

GPS: Flashes blue once per second. If there is no GPS lock, it will either stay lit or will not light up at all. In other words, if GPS led is not blinking it is not locked. In such cases try moving your GPS antenna to a better spot.

Mode-S: Flashes green when aircraft data is received and decoded. If it does not flicker and you are sure there is air traffic around, something might be wrong with the antenna.

4. FEEDING DATA

Everything is pre-installed and pre-configured. Just connect the receiver to your router and it should immediately start sending us data.

You do not need a computer or use additional software.

There is no need to use the Flightradar24 feeder software.

Depending on your local traffic, the receiver will typically upload 40MB per 24 hours to the Flightradar24.com servers.

In locations where MLAT plotting is more prevalent, the uploaded data can be higher, averaging up to 300MB per 24 hours. MLAT will be more prevalent in dense traffic areas where aircraft don't transmit positional data. For example, in or near larger cities in the USA and close to major airports in Europe. Please bear this in mind if you have a monthly Internet upload limit.

Hardly any data will be downloaded.

The Flightradar24 receiver is an advanced and proven product. However, there may be times when it stops functioning and may need a restart. What's more likely is a local power outage, Internet disruption or the router assigning a new local IP address range. We constantly monitor the data upload and will let you know if the connection has been down for more than 6 hours. You may need to access the installation to diagnose any issues so please bear this in mind.

You can easily check the receiver's performance in your free account under **My data sharing > Show Statistics**. Here you can also view the receiver's range and uptime performance.

We will provide on-going technical support and will continuously work with you to ensure your receiver delivers the optimum range and data.

We expect you to run the receiver 24x7x365 and ask that you notify as soon as possible if, for any reason, this can't be achieved.

By accepting our equipment you agree to **NOT** feed data to other aircraft tracking providers.

In return we will provide you with a **free Business subscription** only to Flightradar24.com for as long as you continue to upload your local data.

Should either of us choose to cancel the arrangement, we will cover the cost of shipping all the equipment back to Flightradar24.com or another address.

The equipment remains the property of Flightradar24 AB trading as Flightradar24.com

5. FIREWALL

In case you are behind a Firewall, you need to open the following **Outgoing Ports** in order for us to receive data. Your receiver will appear offline to us and we won't receive any data if you are behind a Firewall and the mentioned ports are not opened.

80 TCP, 22 TCP, 443 TCP, 19788 UDP/TCP, 8099 UDP/TCP, 123 UDP/TCP, 53 UDP/TCP, 15666 UDP

Here are our domains as well

*.fr24.com

*.flightradar24.com

LOCAL STATUS PAGE

The local status page for the receiver can be accessed via its IP which you can see on the front screen.

CHECK LIST

1. Does the parcel **contain all items**? ☐
2. Is the Mode-S **antenna** placed outside in **optimum position** and as **high as possible**? ☐
3. Is the **coax cable connected to the antenna**? ☐
4. Is the **coax cable attached to the receiver**? ☐
5. Is the **GPS antenna cable connected to the receiver**? ☐
6. Is the **GPS antenna placed outside with a view of a minimum of half the sky**? ☐
7. Is the **ethernet cable attached to the receiver and your router/modem**? ☐
8. Is the **receiver powered up using the supplied power adapter**? ☐
9. **Contact** the Flightradar24 **support** to check that your data is being received ☐

If you have any questions or need help, please:

>> email: support@fr24.com

OR

>> visit our FAQ at https://support.fr24.com/support/home

SETUP EXAMPLE