FLIGHTRADAR24

-KNOWLEDGE BASE-

"OUR RECEIVER"

CONTENT

1. OUR RECEIVER

Our receiver decodes transmitted aircraft data and sends it to the Flightradar24 servers. The receiver works autonomously 24 hours a day.

Flightradar24 offers a free receiver pack for locations that can significantly add extra coverage.

The full kit includes the following components:
- Flightradar24 Mode-S/ADS-B receiver and power supply
- External Mode-S antenna with pole clamp
- Low loss coaxial cable from antenna to receiver
- Ethernet cable from the receiver to your router/modem
- GPS antenna with cable for precision data

THINGS TO CONSIDER

YOUR EXPERIENCE

Although not essential, some experience in amateur radio or interest in aviation is an advantage. A good level of PC knowledge will be helpful although our receivers are self-contained and do not require a PC to operate.

YOUR LOCATION

The UHF 1090MHz frequency is very dependent on "line of sight" and the best installations are far away from buildings, trees or high ground that could block the aircraft signals.

Geographical location is important too. Those near airports contribute more data as they pick up signals from arriving and departing traffic as well as those transiting at higher altitudes.

ADS-B ANTENNA

We supply an external antenna for mounting on a pole or to a wall using the supplied bracket. Our low-loss LMR300 coaxial cable is supplied to an agreed length of between 5 meters and 15 meters. As a rule of thumb, a shorter cable is best, 15m being the maximum for optimum performance. The cable is 6mm in diameter with an N-type connector for the antenna. We recommend wrapping self-amalgamating tape around the connection. The receiver side of the cable has an SMA connector.

Please consider how you will bring the 6mm coax cable inside. You may need to drill a hole for this.

ADS-B ANTENNA SITING

The higher the antenna, the better the reception. If the receiver can be located close to the antenna, there will be less signal degradation from the coaxial cable since this can lose data over longer cable lengths. For this reason, we do not recommend a cable length of more than 15 meters.

Placing the antenna outside, as high as possible, is essential. Internally placed antennas do not produce good results and we advise against this.

! **Some landlords or local authorities may prohibit the installation of an external antenna. We would advise you to check before completing the application form.**

Good position

Bad position – roofline blocking antenna
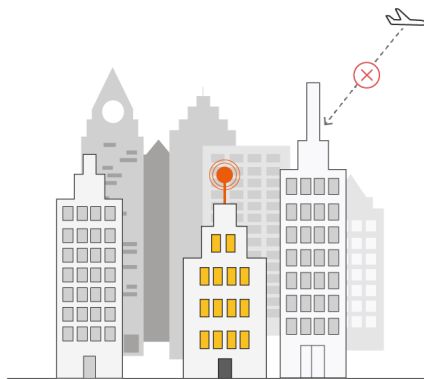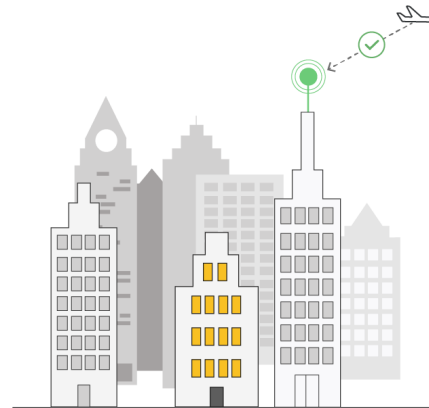
Bad position – inside
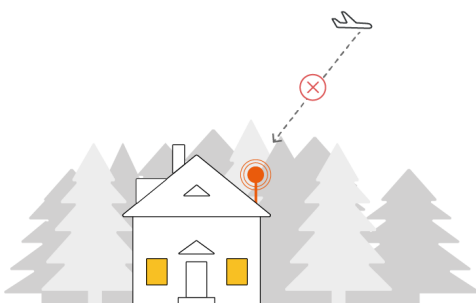
Bad position – hills blocking antenna

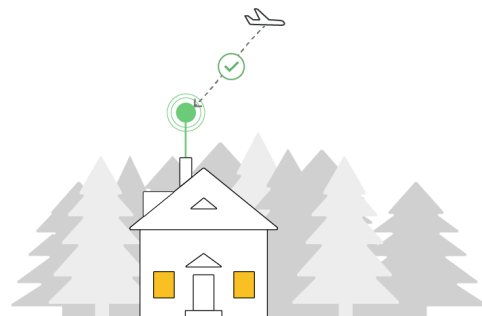Good position – as high as possible

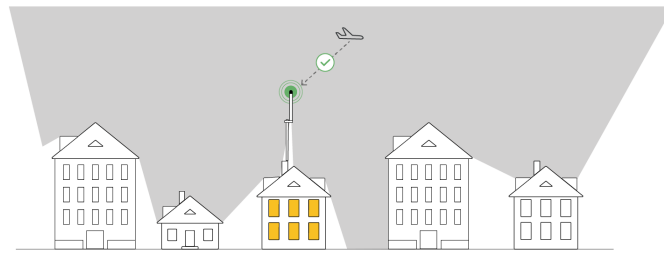Bad position – buildings blocking antenna

Good position – as high as possible

Bad position – trees blocking antenna

Good position – as high as possible
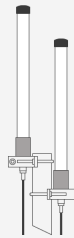
Correct antenna placement –
good reception of ADS-B signals

Incorrect placement with blockage –
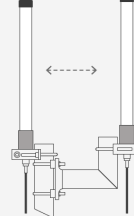bad or no ADS-B signal reception

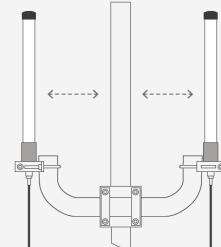Mounting on the top
of a mast

1 antenna

2 antennas

If you **can not** mount
on the top of a mast

THE FLIGHTRADAR24 RECEIVER

Our receiver has been developed to our own specification and has many unique features. It should be placed inside or, if placed outside, inside an IP68 weather-proof enclosure and kept online 24/7.

Everything is **pre-installed** and **pre-configured**.

!   **No computer or additional software is required**

THE GPS ANTENNA

The receiver kit includes an external GPS antenna which must be placed in an area in view of at least half the sky. It is very important that the GPS antenna be mounted in a good area as drift may occur without time synchronization.

INTERNET CONNECTION AND POWER SUPPLY

The Flightradar24 receiver is connected via ethernet cable to your internet router, modem or access point.

The receiver will need a nearby power outlet for the supplied power adapter. It must be left powered and connected to the internet 24/7. Power consumption can be up to 15 watts.

!   **You must only use the supplied power adapter**

Depending on your local traffic volume, 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, around 300MB per 24 hours. MLAT will be more prevalent in dense traffic areas where aircraft don't transmit positional data. For example in larger cities in the USA and close to major airports in Europe.

Only a small amount of data will be downloaded to update the receiver firmware.

! **Please bear this in mind if you have a monthly internet upload limit**

DOWNTIME

The Flightradar24 receiver is an advanced and reliable product. However, there may be times when it stops functioning and may need to be restarted. Downtime is most commonly attributed to local power or internet disruption. A common disruption would be the router assigning a new IP address to the receiver. This will need to be reconfigured on your internet router's firewall.

We constantly monitor the data upload and will let you know if the connection has been down for more than 1, 6, 24 or 48 hours (depending on the notification frequency you have selected - the default is 6 hours).

We also may request that you perform occasional inspections of the installation. Since the antenna and a length of coaxial cable is mounted outside, weathering may take place which can affect the antenna. Periodic inspections and damage control may be requested and it would be advised to periodically check.

CHANGES IN LOCATION OR CONTACT DATA

We approve applications based on the location. If the receiver were to ever be moved due to a house or location move, we request that you inform us as the new area may already have a sufficient level of ADS-B coverage. We reserve the right to request the receiver back if we determine the new location is not required.

!

Important

In case of changes to your contact information (email, address, phone number), please inform us immediately with the new information at support@fr24.com. Thank you!

2. OUR AGREEMENT

If we approve your application, we will arrange to ship all the required equipment to you as soon as possible, insured, tracked and at our own cost. We will send you shipping and tracking details and you will be required to sign for the parcel.

Typically we would expect you to be uploading data within 7 calendar days following delivery. Let us know if you can't install within 7 days.

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

We expect you to run the receiver 24/7/365 and ask that you notify us as soon as possible if, for any reason, this cannot be achieved.

By accepting our equipment you agree to **<u>NOT</u>** feed receiver data to other ADS-B tracking providers.

In return we will provide you with a free Business subscription for as long as you continue to upload your local data to our servers.

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

We may request additional contact information from you also, a secondary email address and phone number. We would be happy to add this information after the application has been submitted.

!

Important

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

3. THE FLIGHTRADAR24 RECEIVER KIT

The Flightradar24 receiver kit includes everything you need to get up and running.

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

SETUP EXAMPLE