

jetvision®



Manual

Air!Squitter

ADS-B MLAT FLARM Receiver

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ADS-B MLAT FLARM RECEIVER

General Notes

Thank you for choosing a Jetvision Air!Squitter ADS-B MLAT FLARM receiver. The Air!Squitter was developed to make live flight tracking as easy as possible. Besides a very low installation effort, it is the special features that make this receiver so unique. No other ADS-B receiver on the market has as many technical features as the Air!Squitter. Whether you have chosen the Basic version or the FLARM version, both have multilateration, provided by the Jetvision Flight Tracking Network. Our MLAT server is highly accurate and is also used at airports. Multilateration quality, Made in Germany'.

Please read this manual completely before operating the device.

To ensure that you can enjoy your Air!Squitter for a long time, protect it from moisture and static electricity. Always ground your ADS-B and FLARM antenna. A separate sealing of the antenna connectors must be avoided, as this can lead to water accumulation inside the antenna. All Jetvision antennas have forced ventilation in the socket of the antenna and the antenna connector is specially protected against weather influences by the sleeve.

Scope of delivery

The Air!Squitter Basic and Air!Squitter FLARM are supplied with the following equipment:

1. Air!Squitter device, WiFi antenna.
2. Power Supply (country specific).
3. LAN cable.

The bundles are additionally supplied with antenna(s) and cable(s).

Required Equipment

To operate, you need a stable Internet connection to access the Jetvision Flight Tracking Network to get Multilateration (MLAT). Furthermore an ADS-B / GPS combined antenna or separate ADS-B and GPS antennas with an ADS-B/GPS splitter, in the FLARM version additionally a FLARM antenna.

Air!Squitter

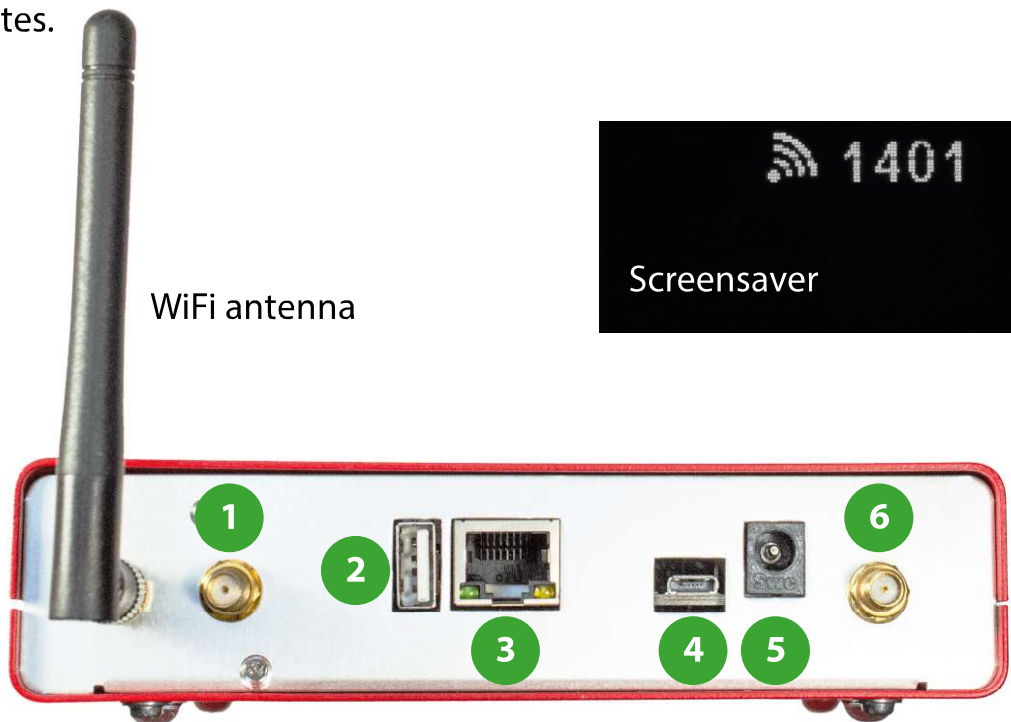
INSTALLATION OUT OF THE BOX

Notes

Check everything for completeness before you start the installation. The antenna (usually the combined ADS-B/GPS antenna) should already be installed. For separate antenna installation use Jetvision ADS-B/GPS Splitter article #71300. In case of an outdoor installation, it is essential that the antenna is grounded due to thunderstrikes and static overload which can damage your device.

Installation

Connect the device with the delivered power supply unit. You will find no power switch, because the Air!Squitter is built for 24/7 operation. If the device has correct power, you can follow the initialization process on the display. To protect the display, a screen saver is activated after a few minutes.



- 1 - FLARM antenna (option)
- 2 - USB-A
- 3 - LAN
- 4 - Micro-USB
- 5 - DC input (5V)
- 6 - ADS-B/GPS

Operation

Air!Squitter usage and operation is very simple and for the most part self-explanatory. The built-in OLED display informs you about the important settings and operational parameters. Configuration and live flight tracking are done via a web browser. Multiple users can access the Air!Squitter at the same time.

The Air!quitter has the same raw data interfaces as the Radarcape. These can be unlocked with a commercial license. For further information please contact support@jetvision.de.

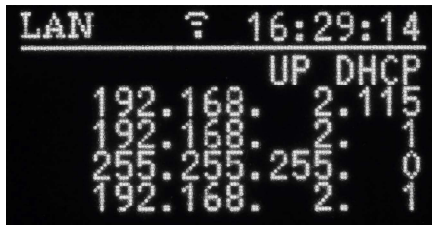
Network Setup

You will need a computer for the first start-up. WiFi is switched off in the device at delivery time. You need to connect to the Air!Squitter via your network or directly via USB cable to have access via web browser. There you can enable WiFi and make all settings using your web browser.

The default user is „**Administrator**“, the required password is „**radarcape**“.

Connect the Air!Squitter to your internet router over ethernet or connect it with a Micro-USB cable to your computer.

After booting type `http://air-squitter.local` in the web browser (when connected with LAN cable). If you connected with Micro-USB cable please type **`http://192.168.73.1`**. Now you should see the aircraft list on your screen. If this fails, you need the Air!Squitter IP in your local LAN. Press the button at the Air!Squitter several times to get the „LAN“ display with the given IP address from your router. Type this IP address in your web browser e.g. `http://192.168.2.115`.

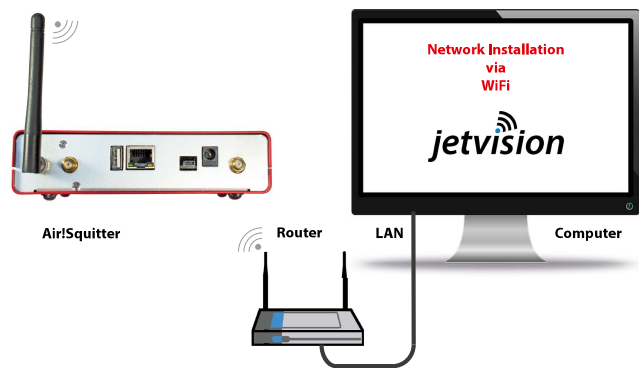


```
LAN  16:29:14
UP DHCP
192.168. 2.115
192.168. 2. 1
255.255.255. 0
192.168. 2. 1
```

After these steps you can continue with the WiFi network setup or enable the Air!Squitter WiFi access point (AP).

Network Connection

WiFi Connection



Connect the Air!Squitter to your WiFi network

To access the WiFi setup dialog connect the Air!Squitter via Ethernet (LAN) or USB cable to your computer. In the top menu of the web browser GUI goto „Settings“->“Network“.

1. Ethernet connection

As a regular network device, Air!Squitter can be connected to an ethernet LAN. By default it uses DHCP and is accessible under **http://air-squitter.local** or **http://air-squitter.fritz.box** (see above) or under its IP address, which can be monitored in the OLED screen. Static IP address can be also configured in the web configuration menu.

2. USB Cable Connection (alternative)

Air!Squitter provides USB network connectivity. On Windows 7, Windows 10, IOS and Linux it will install a network adapter. In this mode, Air!Squitter is accessible under **http://192.168.73.1** with your web browser.

See also

https://wiki.jetvision.de/wiki/Air!Squitter:Network_Connectivity

Note:

In order to get the 2D maps, the host PC must have an internet connection or, when being used as WiFi access point (AP), the Air!Squitter needs an Internet connection.

Network Connection

WiFi Access Point



Connect to the Air!Squitter via WiFi Access Point

Air!Squitter can provide a WiFi Access Point (AP). To setup the access point follow these steps:

1. Connect to the Air!Squitter via USB cable

Air!Squitter provides USB network connectivity. refer to WiFi connection point „2. USB cable connection“ in the chapter before. Access the Air!Squitter via your web browser at <http://192.168.73.1>.

2. Setup access point in the menu:

Air!Squitter provides a network setup menu in the top bar of the web browser GUI. Goto „Settings“->“Network“->“Wireless Network Settings“. Enable Wireless Access Point Mode and enter a SSID. With these parameters you can access your Air!Squitter directly via WiFi from your wireless computer device (desktop, tablet or smartphone). With these parameters you can access your Air!Squitter directly from your computer (desktop, tablet or smartphone) via WLAN and your web browser at <http://192.168.73.1>.

See also

https://wiki.jetvision.de/wiki/Air!Squitter:Network_Connectivity

Note:

In order to get the 2D maps, either the host PC must have an internet connection or the Air!Squitter has to be connected to internet via wired LAN or as a WiFi Client.

User Interface

Quick Start


Live Flight Tracking

For live flight tracking maps and Multilateration (MLAT) the Air!Squitter must have an internet connection (OpenLayers Maps or Google Maps) and for MLAT calculations on the Jetvision MLAT server.





1. Map View

Select „Aircraft Data“ menu at the Air!Squitter web browser GUI. Choose „Live 2D Openlayers map“ or „Live 2D Gmap“.

2. Live 2D Openlayers map

This map view has the most functions. At the top right corner you have a menu button . Here you can toggle between map or ATC view and you can enable various overlays.

The buttons at the right bottom corner have the following functions.

1.  enable the filter menu.
2.  lock on the selected aircraft position.
3.  center the map to your GPS receiver location.
4.  toggle full screen mode (use ESC to get back).
5. +- to zoom in and out the map.

2. Live 2D Gmap

In Google maps you don't have point 2 to 4 from the OpenLayers map and there is no mapstyle switching and overlays.

3. Aircraft Filtering

Use the filter menu (1.) to select aircrafts filtered by many parameters. Set-up your parameters and enable the desired filter row. Your personal filter setup is saved. If you restart your browser session all filter parameters are enabled again. Please take a look to the OpenLayers map and Gmap filter parameters.

OLED Display

Various display indications

To switch to the various display indications press the button at the front panel. Each press will select a new indication.

SIGNALS -> GNSS -> STATUS -> LAN -> WIFI -> VERSION -> ID

SIGNALS (Home)

This screen shows the current frames per second as a graphical track and value, and the number of aircraft from the sources.

```
SIGNALS ? 16:30:00
1464 Total 177
-----
ADS-B 148
MLAT 176
FLARM 0
```

GNSS

Information about the antenna connection, satellite infos, receiver location and height.

```
GNSS ? 16:28:55
ANTENNA SHORT
Fix 3D
Sats 9 417.8m
Accur 14 43.391N
PDOP 1.5 23.311E
```

STATUS

CPU temperature, uptime, disk space

```
STATUS ? 16:29:04
TEMP 43.3°C
SYS 57d 05:34:17
APP 57d 05:34:03
DISK 0.3 / 7.168
```

LAN

Air!Squitter IP address given from DHCP server.
Gateway address.

```
LAN ? 16:29:14
UP DHCP
192.168. 2.115
192.168. 2. 1
255.255.255. 0
192.168. 2. 1
```

WIFI

Access point SSID, access key and number of connected WiFi clients.

```
Wi-Fi ? 16:29:26
ACCESS POINT
ir!Squitter-94D63E
459749629205
0 clients
```

VERSION

Information about firmware version, Linux kernel version and application version.

```
VERSION ? 16:29:36
BASE 191216.1830
KERNEL 5.4.5-1-opz
APP 191120.0904.02
```

ID

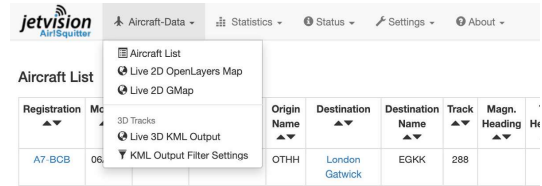
LAN name, MAC address and MLAT identifier.

```
ID ? 16:29:49
air-squitter-uwe
02:42:1a:b2:25:c5
eule2
```


Web Browser GUI Menus

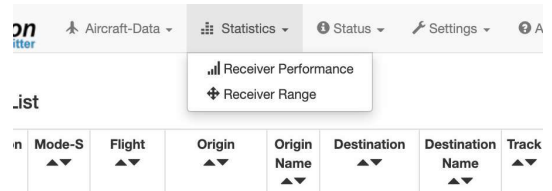
Aircraft Data

Select the various map styles, aircraft list and Google Earth KML file. See Jetvision Wiki for more information to setup 3D view (search for KML).



Statistics

Some awesome pages shows your current receiver performance.

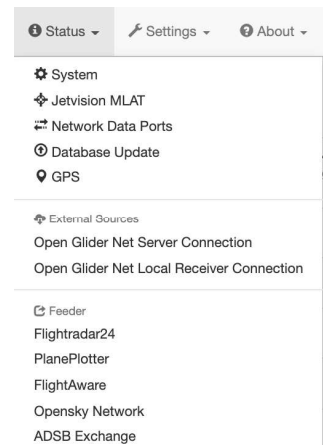


Status

First part is to check System, MLAT, GPS status pages and data port settings.

Second part is for Open Glider Network (OGN) setup. Use this if you have access data or if the Air!Squitter is equipped with the FLARM option.

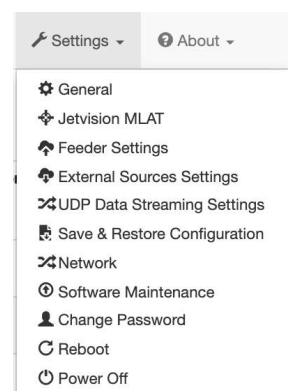
Thrid part is to check your current feeder activity



Settings

This is the password protected place to setup your Air!Squitter, or to update to the latest software version (Software Maintenance).

Feeder Settings lets you setup your flight tracking network feeder. Enter your account data and feed your live flight tracking data.



If you have a commercial license enabled, you will have additional menus to setup data streaming ports or Eurocontrol ASTERIX protocol. The license also sets a better timestamp resolution for raw data.

Screenshots GUI

The screenshot displays the Jetvision software interface. At the top, there are navigation tabs: Aircraft-Data, Statistics, Status, Settings, and About. The main area is a map of Germany with an orange flight path overlaid. On the left, a sidebar contains several sections:

- General Information:** UTC Time 12:28, Local Time 13:28. Total receivable: 193, recently seen: 170, located: 167, in current map view: 29.
- Aircraft Details:** Registration D-AIHW, Mode-S 3C6517, Type A346, Category A5.
- Flight Details:** Flights DLH453, Squawk 1000, Origin KLAX, Destination EDDM.
- Aircraft Tracking:** Latitude 48.38284°, Longitude 12.01322°, Distance 50.1 km, Source MLAT, Last Signal 0 sec.

 Below the map, there are several smaller windows: a radar display, a track plot, and a detailed aircraft data window. The bottom right corner shows the BAC Version: 191120.0904.02 (non commercial) and options for Logout and Online Help.

Aircraft List

Registration	Mode-S	Flight	Origin	Origin Name	Destination	Destination Name	Track	Altitude	GNSS Altitude	Speed	Type	Category	Operator	Country	Source	Squawk	Latitude	Longitude	Distance	Indicator	Alert	Autopilot engaged	TCAS	QNH	Altitude set.	Head set.	Total aircraft: 193 ADS-B: 169 MLAT: 190 Form: 0 Active: 161		
A7-BCD	06A0A8	QTR4FE		OTH	Manchester	EGCC	296	40000	38550	443	B788	A5	GTR	Ota	ADS-B	3223	49.64493	10.13983	149.4	false	0	true	1	1012.7	40000	291			
A7-ANA	06A11D	QTR8EB		OTH	Charles de Gaulle International, Paris	LFPG	297	40000	39900	445	A35K	A5	GTR	Ota	ADS-B	3266	49.43233	10.80223	103.6	false	0	false	1	1013.5	40000	291			
I-BKA	3000C5	AZA165	Brussels	EBBR	Leonardo da Vinci-Fiumicino, Rome	LIRF	148	39025	38925	486	A320	A3	AZA	Ital	ADS-B	1000	48.00997	9.59955	151.5	false	0		1						
I-ADJV	300738	DLH2AR	Munich	EDDM	Vicow Havel Prague	LKPR	21	22000	21675	391	E195	A3	DLA	Ital	ADS-B	1000	49.19187	12.39250	98.1	false	0	true	1	1013.5	22016				
EC-HPR	3414C4	ANE5391	Braunschweig-Wolfsbu	EDVE	Barcelona International	LEBL	199	33025		387	CRJ2		ANE	Spai	MLAT	1132	47.96967	7.80095	276.1	false	0								
EC-MAH	3444C9	VLG18NE	Barcelona International	LEBL	Munich	EDDM	38	30000	29950	453	A320	A3	VLG	Spai	ADS-B	1000	46.99285	12.78991	205.6	false	0	false	1	1012.7	30016				
F-GRHV	3944F5	AFR45GU	Vienna International	LOWW	Charles de Gaulle International, Paris	LFPG	296	37950	37850	406	A319	A0	AFR	Fran	ADS-B	1000	48.73612	13.04196	121.0	false	0								
F-GUOM	3950CC	AFR11KN	Zagreb	LDDA	Charles de Gaulle International, Paris	LFPG	267	38000		413	A318	A0	AFR	Fran	MLAT	0605	47.33127	6.90145	364.1	false	0								
F-GUGR	3950D1	AFR122B	Venice Marco Polo	LIPZ	Charles de Gaulle International, Paris	LFPG	287	37950	37875	404	A318	A0	AFR	Fran	MLAT	0255	46.96271	8.73027	270.2	false	0								
F-HEPF	3991E5	AFR39PP	Hervé Coandă International, Bucharest	LROP	Charles de Gaulle International, Paris	LFPG	273	38025		423	A320	A3	AFR	Fran	MLAT	1000	49.65993	7.76996	288.8	false	0	false	1	1012.7	28016				
F-HEPJ	3991E9	AFR45Z	Charles de Gaulle International, Paris	LFPG	Queen Alia International, Amman	OJAI	104	37000	36900	526	A320	A3	AFR	Fran	ADS-B	5635	47.57555	9.13287	203.6	false	0	false	1	1012.7	36992	-73	-43	74	
D-ATLU	3C00A2	TUI6WX					306	8050	7600	248	B738	A3	TUI	Germ	ADS-B	2136	49.40384	10.75648	102.3	false	0	false	1	992.7	4192	298.8	-79	-5	56
D-ABAF	3C4826						104	35000		519	B738		EWG	Germ	MLAT		50.18578	9.78257	213.1	false	0								
D-ABGH	3C48E8	EWG6ZE	Stuttgart	EDDS	Vienna International	LOWW	97	28825	28000	449	A319	A0	Germ	Germ	ADS-B	7642	48.68600	10.35517	79.7	false	0								
D-ABGN	3C48EE	EWG6PU	Hamburg	EDDH	Stuttgart	EDDS	183	24725		346	A319	A3	EWG	Germ	MLAT	1342	50.19717	9.67553	218.5	false	0	false	1	1013.5	24992				

Further information

More useful and further Air!Squitter and ADS-B receiver information can be found at Jetvision websites and Wiki:

<https://wiki.jetvision.de>

<https://airsquitter.com>

<https://shop.jetvision.de/blog>



Security Warnings

The Air!Squitter is only approved for operation in dry rooms. Clean only with dry cloth and protect the device from moisture.

Outdoor antennas must be grounded to protect the unit and your life from lightning and static electricity. You may lose all warranty claims if you do not observe this. See also antenna mounting instructions:

https://jetvision.de/manuals/Info_Antenna_INSTALLATION.pdf



19" and 10" rack ADS-B single and dual receiver



Radarcape

Air!Squitter

Indoor Sensor Station



Indoor Sensor Station (small)



Outdoor Sensor Station



Mobile Sensor Stations



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ISO 9001 certified supplier



Feature List:

- ADS-B
- Multilateration (MLAT)
- FLARM
- GSM (LTE data link)

MLAT server connectivity

Customized configurations
Industrial quality



CE FCC RoHS
compliant



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The Air!Squitter has best performances and technical features, but it is not certified and not for use in highly sensitive air traffic control environments. We do not give any warranty to the results and data. Any liability is excluded!

V1.0.0 - 02.2020

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