AeroNautEquip

19 inch ADS-B Ground Station ADSBS600

Product Introduction

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1. Introduction

The ADSBS600 is a fully integrated ADS-B ground station system, designed for seamless installation with standard 19” 2U rack inserts. Tailored for ground station sites requiring 19” plug-and-play compatibility, the ADSBS600 offers an ideal solution. Featuring a rugged industrial-grade design, an advanced ADS-B decoder, and a high-performance data processor, the ADSBS600 ensures reliable and efficient reception, decoding, and distribution of aircraft ADS-B data.

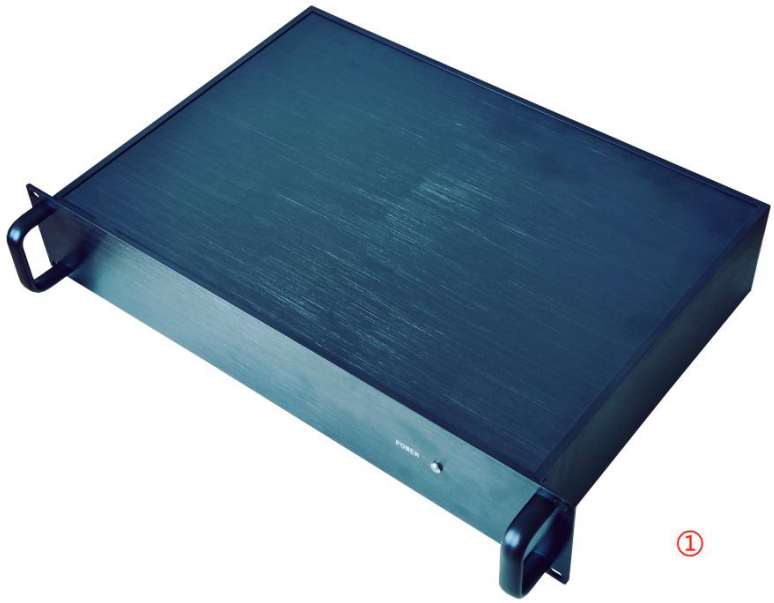
With the ADSBS600, corporate customers gain access to valuable, customizable tracking capabilities tailored to a wide range of operational needs, including:

- Enhanced situational awareness across airfield, apron, and terminal areas.
- Airport surface movement monitoring and vehicle tracking.
- Support for low-altitude operations such as helicopter missions, flight school tracking, wind farm monitoring, and offshore/onshore oil and gas platform oversight.
- UAV and drone tracking.
- Monitoring of aircraft noise in airport vicinities.
- Calibration of radar and navigational aid (navaid) systems.
- Search and rescue operations in mountainous regions and valley surveillance.
- Applications in defense and electronic intelligence.
- Coordination of integrated vessel and helicopter operations.

Fully compliant with Mode-S and ADS-B standards—including ICAO Annex 10, ICAO Doc 9871, RTCA DO-260/A/B, ED-102/A/B, and ED-129/A/B, the ADSBS600 ensures regulatory adherence and seamless compatibility with industry requirements. Designed for efficiency and reliability, it offers low maintenance demands and

minimal life cycle costs, delivering a cost-effective solution over its operational lifespan.

Operating on the 1090 MHz frequency and supporting Mode S Extended Squitter (1090ES), the ADSBS600 is also equipped with multilateration (MLAT) capabilities for high-precision aircraft tracking and surveillance. In addition, its fully remote operation functionality enables convenient monitoring and control from virtually any location, enhancing both operational flexibility and overall efficiency.



Packing List:

No.	Item	Quantity	Remarks
1	ADSBS600	1 unit	Included
2	Power adapter	1 piece	Included
3	GPS antenna cable	1 piece (10 meters)	Included
4	GPS antenna	1 piece	Included
5	GPS antenna clamp	1 set	Included
6	ADS-B antenna cable	1 piece (10 meters)	Included
7	ADS-B antenna clamp	1 set	Included
8	ADS-B antenna	1 piece	Included

2. Specifications

No.	Specifications	
1	Frequency	1090MHz
2	Sensitivity	≤ -99dBm
3	Coverage	> 420km(no interference, unobstructed)
4	Data Format	ADS-B raw messages / CSV plaintext / JSON plaintext track data
5	Data Interface	RJ45 network port
6	Network Connection	Static IP or DHCP
7	Network Protocol	TCP/UDP
8	ADS-B Antenna Connector	N female
9	GPS Antenna Connector	N female
10	Power Supply	220V
11	Physical Size	43*30*8.9 cm (not include antenna connectors and handle)

3. Functions

- ADSBS600 supports multiple output message formats: CSV plaintext (decoded data, you can easily get longitude, latitude, altitude, speed, flight ID…), json (also decoded data), and DF raw messages.
- ADSBS600 can output data with GPS timestamp.
- ADSBS600 can be connected via network cables.
- ADSBS600 IP address can be configured for direct connection with a computer without the need for routers. However, ADSBS600 can also be configured to connect with a computer via routers, offering flexibility based on your setup preferences.
- ADSBS600 supports static IP address and DHCP.
- A single ADSBS600 unit can send ADS-B data to multiple clients simultaneously,

enabling efficient data distribution across multiple devices or systems.

- ADSBS600 is standard 19" 2U inserts for existing or new racks.

4. Data Format

1. Raw Message

Raw Message Data Example:

```
1A 33 0F E4 A1 CA 43 1F 3B A0 00 0E B0 80 17 45 33 E0 1C D2 5F EC 02
1A 33 0F E4 A2 44 5A FB 3B A0 00 0E B0 BD 9A 59 2A FF E4 00 12 03 8A
1A 33 0F E4 A2 C0 87 11 3D A0 00 0E B0 BD 9A 59 2A FF E4 00 12 03 8A
1A 33 0F E4 A4 6C 80 97 37 8D 78 10 F0 E1 1F 3A 00 00 00 00 CB 7B E9
```

Data Item Description of the Message:

Byte	Data Example	Description
1	1A	Escape character <esc> (hexadecimal representation: 0x1a)
2	33	14 bytes: Identifier for Mode-S long frame
2	32	7 bytes: Identifier for Mode-S short frame
3-8	0F E4 A4 6C 80 97	6 bytes: timestamp
9	37	1 byte: signal level
10-23	8D 78 10 F0 E1 1F 3A 00 00 00 00 CB 7B E9	14 bytes: Mode-S long frame
10-16	5D 78 0D E5 A4 5A DF	7 bytes: Mode-S short frame

2. CSV Plaintext Data

Decoded CSV Plaintext Data Example:

```
2025-01-23T06:23:04.006Z,780BA5,CSN5849 ,5673,36.009475708007812,117.017383575439453,256
00,391.175,351.621,64.000,false#
2025-01-23T06:23:04.144Z,780EF1,CHB6279 ,6276,36.855422973632812,118.872245626246681,246
00,444.933,96.582,0.000,false#
```

Data Description:

Data	Description	Remarks

2025-01-23T 06:23:04.006Z	Time Stamp	In ISO 8601 format in the format: yyyy-MM-ddTHH:mm:ss.zzzZ
780BA5	ICAO Address	in hexadecimal
CSN5849	Call Sign	8 characters output
5673	SSR code	4-digit in octal
36.009475708007812	Latitude	Latitude in decimal degrees, North is positive, South is negative
117.017383575439453	Longitude	Longitude in decimal degrees, East is positive, West is negative
25600	Pressure Altitude	Feet
391.175	Ground Speed	Knots
351.621	Heading	Decimal, in degrees, clockwise to true north
64.000	Vertical Rate	Meters per minute, negative for descent, positive for ascent
false	Air/Ground Indicator	GND stands for ground; AIR stands for air

Note: If one data item is missing, the value will be left empty and will not be output.

3. JSON Plaintext Track Data

Decoded JSON Data Example:


```
{
    "altitude_baro": 22600,
    "altitude_baro_last_update": "2025-01-23T06:37:14.213Z",
    "ground": false,
    "ground_last_update": "2025-01-23T06:37:14.485Z",
    "ground_speed": 396.50472884948044,
    "ground_speed_last_update": "2025-01-23T06:37:14.485Z",
    "heading": 182.89126959679598,
    "heading_last_update": "2025-01-23T06:37:14.485Z",
    "icao_addr": "7820E2",
    "last_update": "2025-01-23T06:37:14.485Z",
    "latitude": 36.20709228515625,
    "longitude": 117.28546142578125,
    "position_last_update": "2025-01-23T06:37:14.213Z",
    "squawk": "4136",
    "squawk_last_update": "2025-01-23T06:37:02.356Z",
    "vertical_rate_baro": 0,
    "vertical_rate_baro_last_update": "2025-01-23T06:37:14.485Z"
},
{
```

```
        "acid": "CDG2230 ",
        "acid_last_update": "2025-01-23T06:36:46.170Z",
        "altitude_baro": 20700,
        "altitude_baro_last_update": "2025-01-23T06:37:15.406Z",
        "ground": false,
        "ground_last_update": "2025-01-23T06:37:15.406Z",
        "ground_speed": 438.308110807911,
        "ground_speed_last_update": "2025-01-23T06:37:14.160Z",
        "heading": 130.55875881014302,
        "heading_last_update": "2025-01-23T06:37:14.160Z",
        "icao_addr": "7809A2",
        "last_update": "2025-01-23T06:37:15.406Z",
        "latitude": 36.25309753417969,
        "longitude": 117.35332489013672,
        "position_last_update": "2025-01-23T06:37:15.406Z",
        "squawk": "0052",
        "squawk_last_update": "2025-01-23T06:37:01.379Z",
        "vertical_rate_baro": 0,
        "vertical_rate_baro_last_update": "2025-01-23T06:37:14.160Z"
    },
```


Data Description:

Data Items	Example Data	Descriptions
acid	CDG2230	Callsign
acid_last_update	2025-01-23T06:36:46.170Z	Last Updated Time of Callsign
altitude_baro	20700	Pressure Altitude (feet)
altitude_baro_last_update	2025-01-23T06:37:15.406Z	Last Updated Time of Pressure Altitude
ground	false	Ground Indicator, true indicates on the ground, false indicates in the air
ground_last_update	2025-01-23T06:37:15.406Z	Last Updated Time of Ground Indicator
ground_speed	438.308110807911	Ground Speed (knots)
ground_speed_last_update	2025-01-23T06:37:14.160Z	Last Updated Time of Ground Speed
heading	130.55875881014302	Heading Angle (degrees)
heading_last_update	2025-01-23T06:37:14.160Z	Last Updated Time of Heading Angle
icao_addr	7809A2	ICAO 24-bit Address

last_update	2025-01-23T06:37:15.406Z	Last Updated Time of Track
latitude	36.25309753417969	Latitude (degrees)
longitude	117.35332489013672	Longitude (degrees)
position_last_update	2025-01-23T06:37:15.406Z	Last Updated Time of Position
squawk	0052	Secondary Code
squawk_last_update	2025-01-23T06:37:01.379Z	Last Updated Time of Secondary Code
vertical_rate_baro	0	Vertical Rate (feet/minute)
vertical_rate_baro_last_update	2025-01-23T06:37:14.160Z	Last Updated Time of Vertical Rate

5. ADS-B Display Software adsbscope

(1) The ADSBS600 can be connected to the ADS-B display software adsbscope.

6. Customization

All our products can be supplied tailored to your specific needs and customized with your brand and logo. We tailor designs, enclosures, features, and data formats to meet your specifications. Our OEM services empower you to launch unique products swiftly and risk-free.

7. Contact Us

We welcome users, integrators, and distributors to contact us.

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