

1. End Point

GET /v2/lat/{lat}/lon/{lon}/dist/{radius}

e.g <https://api.adsb.lol/v2/lat/13.7/lon/100.76/dist/100>

2. Query Parameter

Parameter	Type	Description	Example
lat	float	Center latitude for the map view	13.7
lon	float	Center longitude for the map view	100.76
radius	number (km)	Range around the center to include aircraft	100

3. Response Format

```
{
  "ac": [
    {
      "hex": "884205",
      "type": "adsb_icao",
      "flight": "BKP246",
      "r": "HS-PPE",
      "t": "A320",
      "lat": 14.033219,
      "lon": 99.786505,
      "alt_baro": 36000,
      "gs": 461.0,
      "track": 183.86,
      "baro_rate": -32,
      "seen": 0.0,
      "rssi": -8.5,
      "dst": 60.169,
      "dir": 289.5
    },
    ...
  ],
  "msg": "No error",
  "now": 1762504658000,
  "total": 46,
  "ctime": 1762504658000,
  "ptime": 0
}
```

4. Key Response Field

Field	Type	Description
ac	array	List of aircraft detected within the specified area
hex	string	24-bit ICAO aircraft address
flight	string	Flight callsign
r	string	Registration (tail number)
t	string	Aircraft type/model
lat, lon	float	Current position
alt_baro	number / string	Barometric altitude (ft)
gs	number	Ground speed (knots)
track	number	Heading (degrees)
baro_rate	number	Vertical rate (ft/min)
seen	number	Seconds since last message
rsi	number	Signal strength (dBFS)
dst	number	Distance from center (km)
dir	number	Direction from center (degrees)
msg	string	Status message (“No error”)
total	integer	Total aircraft count
now	integer	Unix timestamp (ms)

What should we keep

Category	Field	Example	Purpose / Why It's Needed
Identification	hex	"884205"	Unique aircraft ID (used as id on the radar map)
	flight	"THA123"	Callsign or flight number (for radar label)
	r (<i>optional</i>)	"HS-PPE"	Registration number (optional display)
	t (<i>optional</i>)	"A320"	Aircraft type/model (for info tooltip)
Position & Movement	lat	13.7002	Latitude — aircraft position
	lon	100.7604	Longitude — aircraft position
	alt_baro	35000	Altitude (ft) — used to show flight level
	gs	450	Ground speed (knots) — shows aircraft speed
	track	90	Heading (degrees) — shows direction of movement
	baro_rate	500	Vertical rate (ft/min) — climb or descent rate
Status & Quality	seen	0.2	Seconds since last update — for data freshness
	rsi (<i>optional</i>)	-26.3	Signal strength — for debugging or filtering quality

For a Lightweight radar API response.

hex, flight, lat, lon, alt_baro, gs, track, baro_rate, seen

5. Data Flow

5.1) **Fetch** data from <https://api.adsb.lol/v2/lat/{lat}/lon/{lon}/dist/{radius}> every 1 second.

5.2) Process & Filter

- Convert units if needed
- Filter aircraft within requested radius

5.3) Store in memory for 1 s validity

5.4) Serve to Frontend

6. Error Responses

Code	Meaning	Example
200	OK	Normal successful response
400	Invalid parameter	{ "detail": "Not Found or Invalid Parameter" }
503	Data unavailable	{ "error": "No ADS-B data available" }