



Satellite operating

Chapter 6.6





International Space Station (ISS)

ISS has onboard 2m and 70cm transceivers

Call sign NA1SS

Uplink: 145.990 MHz (67.0 Hz PL), Downlink: 145.800 MHz

Cross band repeater

Uplink : 145.990 MHz (67.0 Hz PL), Downlink: 437.800 MHz

Also running SSTV special events

LEO – Low Earth Orbit

- about 250 miles from the Earth surface
- around the world in 90 minutes





Other amateur satellites

50++ OSCAR satellites since 1961

Orbiting **S**atellite **C**arrying **A**mateur **R**adio

Anyone may listen – even with no license

License required to transmit to the satellite (uplink)

Keplerian Elements

- The data points needed to calculate the position of a satellite
- Many tracking programs to choose from

Online: n2yo.com

N2YO.com Tracking **28208** objects as of 14-Nov-2023
 HD Live streaming from Space Station
1,850 objects crossing your sky now
 ISS will cross your sky in 0h 2m 42s
 Find a satellite... Search
 N2YO.com on Facebook Advanced

Home Most tracked Just launched Satellites on orbit Alerting tools More stuff Sign in

SPACE STATION

| | |
|--------------------------------------|-------------|
| NORAD ID: | 25544 |
| LOCAL TIME: | 21:39:58 |
| UTC: | 05:39:58 |
| LATITUDE: | 40.10 |
| LONGITUDE: | -151.25 |
| ALTITUDE [km]: | 422.54 |
| ALTITUDE [mi]: | 262.55 |
| SPEED [km/s]: | 7.66 |
| SPEED [mi/s]: | 4.76 |
| AZIMUTH: | 286.0 WNW |
| ELEVATION: | -2.4 |
| RIGHT ASCENSION: | 18h 15m 48s |
| DECLINATION: | 11° 02' 55" |
| Local Sidereal Time: | 01h 04m 08s |
| The satellite is in Earth's shadow | |
| SATELLITE PERIOD: 93m | |
| 10-DAY PREDICTIONS FOR SPACE STATION | |
| Make A Donation | |

Resources

- [IP2Location IP Geolocation](#)
- [Find your Magnetic Declination](#)
- [Space Station HD Live!](#)
- [Last Minute Stuff!](#)

Your current location

Your IP address: **73.185.77.61**
 Latitude: **37.323°**
 Longitude: **-122.03218°**
 Magnetic decl.: **12° 65' E**
 Local time zone: **GMT-8**
 Is this incorrect?
[Set your custom location](#)

Partner links

Live Meteors - Listen to the sound of meteors as they hit the Earth [Learn more](#)

HOW MANY SATELLITES CAN WE SAFELY FIT IN EARTH ORBIT? - Experts have been sounding alarm bells for years that Earth orbit is getting a bit too crowded. So how many satellites can we actually launch to space before it gets to be too much?
[Read article](#)



Satellite Communications

Find it : Listen for Beacon

- periodically sending ID
- usually using CW or RTTY

Some transmit telemetry data

- includes status and health of the satellite

The “mode” of a satellite is “V/V”, “V/U”, “U/V” or “U/U”

- Refers to uplink / downlink band
- So “V/U” means VHF uplink, UHF downlink

The modulation mode may be SSB, FM, CW or Data

Avoid excessive uplink power.

Satellites may tumble, causing “spin fading”





FIND MORE ABOUT

**SIERRA Foothills
AMATEUR RADIO CLUB**
www.w6ek.org