

# Satellite Television

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How does satellite television work? How do you point your dish?

How it works:

A 30-40 ft diameter ground antenna points to a specific orbital satellite and uplinks signal within a predefined frequency. The orbital satellite transponder receives the uplinked signal, translates signal to the C-band (4–8 GHz) or Ku-band (12–18 GHz) or both in what is known as downlink. The downlinked signal is received back on earth by the commonly seen parabolic receiving dish. This dish then reflects this weak signal to a feedhorn that collects the signal connected to a low noise block filter that filters and amplifies the signal. Look at the table for general frequency allocations.

535 - 1605 KHz (1.6 MHz) AM Radio

30 - 300 MHz VHF Band: 54 - 72 TV Ch 2 - 4, 88 - 108 FM Radio

300 -3000 MHz UHF Band: Television 1-2 GHz; cellular GSM/3G/4G; WiFi 2.4 GHz

4 - 8 GHz C Band

12 -18 GHz Ku band

You can see that TV and radio broadcasts, cellular communications, weather services, government and research facilities reserve a piece of the frequency spectrum. NTIA allocates the frequency spectrum in the US-see the latest US frequency allocation chart [here](#). Satellites in orbit identify their location by their longitude coordinate going from -180 degrees West to +180 degrees East.

Throughout the world, viewers receive thousands of channels of TV broadcasters signal free of charge. There are thousands of TV channels broadcast via satellite available free of charge in the US. Lyngsat shows the following list of Free TV in America and Free Radio in America.

Pointing your dish is easy with this calculator:

type your address in the box below to calculate your coordinates: latitude and longitude. Select one of popular satellites to calculate dish elevation, azimuth, and LNB skew angles.

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