

## ANTENNA POINTING

Do not move the antenna while the antenna is transmitting a signal unless instructed to do so by the access center.

For permanent services, the antenna should be pointed when the satellite is in the center of the box. Satellite operators have tools on their websites to estimate the time of day for a center of the box event.

It is recommended to point the antenna using a spectrum analyzer to measure the received satellite signals levels.

Make sure you calculated the azimuth and elevation angle of the antenna for the antenna location.

Set the elevation, and then move the antenna on the azimuth axis around the calculated azimuth. Once signals appear on the spectrum analyzer, verify that you are pointing to the correct satellite. If not on the correct satellite, keep moving the antenna on the azimuth axis.

Once on the correct satellite, verify that the satellite is on the main lobe of the antenna and not a side lobe, by moving on the azimuth axis until you find the maximum signal strength. Then move on the elevation axis to maximize the received signal strength.

For linear polarization systems, proceed to align the polarizer of the antenna (rotate the feed) to maximize the received signal level.

## OPERATOR CERTIFICATION

Uplinker certification training is important for preventing adjacent satellite, cross-pol and other interference causes. If you are operating a manually controlled uplink station, you should hold EUI Basic or Advanced Technical Operator

certification. If you are operating an auto-point terminal with a VSAT (managed) modem, you should hold EUI Basic Autopoint Operator certification, and if your terminal is not type approved per GVF 104 or equivalent, you should hold General Autopoint Operator certification. If you are installing a fixed terminal (including VSAT), you should hold GVF Advanced Satcom Professional certification. For details, visit [satirg.org](http://satirg.org) and [www.gvf.org](http://www.gvf.org).

## ADDITIONAL INFORMATION

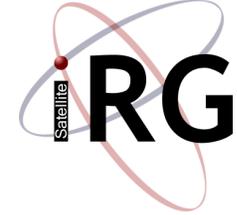
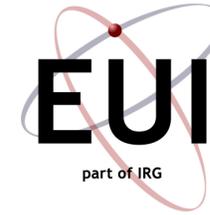
**Power Levels.** The required transmit power level is calculated using a link budget analysis. Make sure that you have sufficient power for your transmission.

**Time of Day.** The time of day for occasional use services is given in UTC (Universal Coordinated Time). Make sure you know the conversion factor for your local time.

**Inclined Orbit Satellites.** Special antenna tracking equipment is required for transmission to inclined orbit satellites.

**Mobile Earth Stations and Fly Aways.** Make sure that the antenna is properly secured and not on a platform that could move (e.g., long bridge, windy, unanchored truck, etc.)

**Comms on the Move Earth Stations.** It is important that the terminal stops transmission to the satellite if it loses tracking to the assigned satellite.



# Guide to Carrier Identification (CID) For Satellite Operators

*Your guide for an interference free  
satellite user community.*



This is a summary and user reference related to Carrier Identification (CID) for Satellite Transmissions which can be found on the Satellite Interference reduction group website at [www.satirg.org](http://www.satirg.org).

**What is Carrier Identification?**

In essence, Carrier Identification consists of the following

1. Every Satellite Transmission (carrier) contains a unique DVB-CID Global identifier. This identifier will enable Satellite users and operators to identify the source of a carrier causing interference.
2. The identification code is assigned to an organization which operated a fixed or transportable satellite facility.
3. The user/operator code is assigned from a database which is derived from the IEEE 64-bit extended unique identifier (EUI-64) and is assigned by a certified satellite hardware manufacturer at the time of hardware purchase.
4. All user/operator specific information such as contact information, station location or other information specific to that transmission remains proprietary. However, if the customer chooses any of all additional information can be included and is at the user/operators discretion.
5. Satellite Operators, through the Space Data Association (SDA) will have exclusive access to and governance over and this CID information

**THE FOUR KEY ELEMENTS**

A successful satellite transmission is one that provides the intended service without affecting other satellite users. The following four elements must be available for successful Carrier Identification:

1. Modulation equipment must support CID.
2. Enter all optional user information within the CID table, this includes uplink Latitude, Longitude, Telephone Number, and any other user identification deemed viable by the user.
3. Maintain an accurate transmission schedule.
4. Assure that all satellite transmissions follow the transmission plan

Not having all elements right will result in poor service and the potential introduction of interference with other users.

**PROCEDURES FOR MINIMIZNG CARRIER INTERFERENCE**

**Know Your Transmission Plan**

Have ready your name, phone number, earth station registration code, technical contacts, and assigned satellite, frequency, transponder, polarization, transmission time (UTC), and carrier power level.

**Inspect Your Equipment**

Verify that all equipment is functioning as designed: antenna reflector is clean, not dented, secured; cables are properly terminated and shielding is not compromised; waveguide is not cracked and not filled with water; etc.

Make sure the equipment is warmed up for at least fifteen (15) minutes before start of testing.

**Setup for Transmission**

Ensure a clear line-of-sight to the satellite. Peak the antenna to the correct satellite using the satellite beacon or a known carrier on the satellite. Adjust the elevation, azimuth, and polarizer for maximum receive signal levels.

**Transmit when Permission Granted**

Contact the access center. If the access center cannot be contacted, **DO NOT PROCEED** with any transmissions. Once in contact with the access center, verbally state the satellite, transponder, frequency, and polarity that you will be using for your transmission.

The access center verifies or adjusts these parameters for accuracy. Follow the access center instructions from this point on. The access center may ask you to bring up a CW at a test frequency to verify your antenna polarization. Always start your transmission at a very low power level and raise the power as instructed by the access center. Once the pointing and polarization is verified, the access center will ask you to come up with a modulated carrier on your assigned frequency. Again, start your transmission at a low power level and raise the power as instructed by the access center.

**Bringing Carrier Down**

When ready to bring the carrier down, contact the access center and provide the satellite, transponder, frequency, and polarity of the carrier whose transmissions you are terminating. The access center will verify that you have stopped the transmission and that the space is clear. Exchange names (or initials) with the access center.