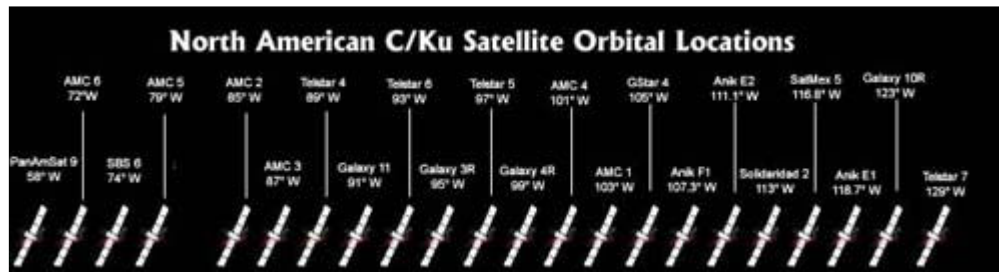


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What is FTA Satellite TV?  
- Free to Air Satellite TV -



**Free to air satellite** systems can be defined as a satellite system primarily designed to receive "in the clear" or unscrambled satellite broadcasts. At the present time, there are literally hundreds of channels of news, sports, networks, special interest programming and ethnic channels and foreign language channels that are available without a subscription. The selection is also constantly changing, with new channels coming online and some old ones going offline or changing their broadcast schemes. In the past 5 years, most broadcasters have switched their broadcasts to digital, although there are still a number of analog broadcasts, mostly in the C band range that are available.

### Introduction

The concept of receiving **free to air satellite** signals dates back to the inception of satellite broadcasts in the mid 1970's and 1980's where large C/Ku band satellite systems were a popular way of tapping into hundreds of available channels from the sky. The downside to these systems were extremely large dish sizes and expensive equipment. These made satellite systems prohibitive for many people. However over the years, increasingly powerful commercial satellites and improvements in technology have brought prices and dish sizes down quite dramatically.

The mid 1990's saw the introduction of digital direct to home technology, which for the first time allowed main stream users to access a wide variety of channels not available

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via their local cable company, while enjoying incredible picture and sound quality, all from a dish far smaller than had ever been seen before. The small dish revolution nearly caused the extinction of the large dish industry, which simply could not compete on dish sizing, price or ease of installation.

The late 1990's saw the digital revolution spread to the large dish industry with services such as 4DTV which brought the same digital picture and sound as the small dish systems to large dish users, although a new and expensive decoder was required for reception.

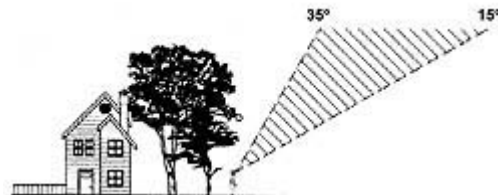
The last several years has seen most broadcasters switch their broadcasts to digital, which allowed broadcasts to be compressed, allowing more channels per satellite transponder and also a superior picture and sound quality. As well, a common digital standard known as MPEG2-DVB has been adopted by many broadcasters, which allows all free to air satellite channels that use the DVB (Digital Video Broadcast) standard to be received from one satellite decoder.

Over the years, the free to air market has slowly begun to see a small comeback, primarily due to an abundance of programming not available anywhere else, such as international and foreign language channels as well as improved picture and sound quality.

## **Required Components**

There are a number of components necessary for free to air satellite reception, some are mandatory and others are optional.

## **Clear line of sight to the satellites**



In order to properly receive free to air satellite signals, you must have a clear view to the satellites. In North America, you need to have a relatively clear view to the southern sky. Obstacles such as tall buildings or trees or mountains will severely impair or make reception impossible. If you are only interested in signals from one or two satellites, you will more than likely be able to locate your dish in a location favorable to reception of the desired satellite. If however you wish to receive multiple satellites, you will need an unobstructed view. A do it yourself site survey with a compass and a satellite location

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chart or a professional satellite site survey will determine your eligibility for free to air reception.

## Dish



In order to receive most Ku band signals in North America, you will require a minimum of a 30"(75cm) Ku band satellite dish antenna. For fringe area reception or reception of signals outside of a satellite footprint, or locations with an abundance of trees, you will need to upgrade to a larger dish size. Additionally, if you live in an area prone to heavily rain showers, you may want to consider a larger dish diameter as weather can adversely affect satellite signal quality. If you also wish to receive the low power C band signals, you will need a much larger (6-10') C band dish and a more elaborate setup. Your dish must be installed in a location where it will not be prone to excessive movement. Smaller dishes, such as 30" can be mounted to a building or roof. Larger dish sizes should probably be mounted to a firm pole in the ground, reinforced with concrete.

## LNBF/LNB



The LNBF or LNB is the device at the end of the dish arm that collects the signal, amplifies it and sends it to the receiver to be decoded. Ku band systems use an LNBF(Low Noise Block Amplifier with integrated Feed) and large C band systems use an LNB(Low Noise Block Amplifier) with an external feedhorn. Most dedicated Ku band systems use offset dishes, meaning the dish is designed in such a way that the LNBF is offset towards the bottom of the dish so as not to interfere with the signal. This allows a

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smaller dish size as opposed to large C band systems which locate the LNB at the focal point or center of the dish which tend to block out a portion of the incoming signal. Quality of the LNBF/LNB is paramount. Ku band LNBF's are measured in DB(Decibals). A good quality Ku band LNBF will have a rating not above .6db. A superior one will be .5db or lower. C band LNB's are measured in degrees. A good quality C band LNB will have a rating of 17 degrees or below. There are also 2 distinct types of Ku band LNBF's. LNBF's designed for use with direct to home satellite services such as Directv or Dish Network which use circular polarization and are not compatible with free to air satellite signals. For all free to air signals, you will want a linear Ku band LNBF as conventional Ku satellites use linear(horizontal or vertical) polarization.

### **Actuator/Rotor**



Also known as a satellite dish positioner or dish mover, this is the electric motor device that moves a dish from left to right(azimuth) and up and down(elevation) in order to receive programming from multiple satellites. If you only are interested in programming from a single satellite, you will more than likely not require one of these devices as your satellite dish will be fixed in one constant position. However if you wish to receive signals from multiple satellite, you will need a dish positioner. Most recent quality receivers now come with a feature known as DiSEqC(Digital Satellite Equipment Control), which can control a dish positioner directly. However if you have an older satellite receiver than does not support this feature, you will likely need to purchase a separate dish positioner control if you wish to track multiple satellites.

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## Free to Air Satellite Receiver



This of course is the most important part of your system. There are currently several different digital broadcast formats, however most free to air broadcasts use the common MPEG2-DVB format. When selecting a satellite receiver, you will want to ensure that you are choosing a receiver that decodes the correct format. If you reside in Europe, many pay broadcasters such as Irdeto, Viaaccess, Nagravision, Mediaguard, Betacrypt also use the MPEG2-DVB format and you can receive these signals (upon subscription) if you select a receiver that supports a common interface module which is a removable module that allows for a smart card which is required for reception of various European pay services. Additionally, a number of foreign pay channels receivable in North America can be decoded using a common interface and a subscription. If you intend on using your DVB receiver for pay programming, you will need a smart card and a subscription, both of which are available from the satellite service provider. North American direct to home services cannot be received via a DVB receiver as they use proprietary equipment. Common interface modules are due to laws in several European countries that forbid sales of proprietary satellite receivers that are locked into a single service. However, for most North American free to air applications, you will need little more than a quality free to air receiver. If you wish to record your programming, you may wish to invest in a free to air receiver with a integrated personal video recorder (pvr), allowing for dozens of hours of recorded programming. Additionally, there are a number of things to be taken into consideration when choosing a satellite receiver. Some retail outlets offer European DVB satellite receivers. While these will work with North American signals, some are not pre-programmed with the locations of North American satellites as are most receivers designed for North American users and most come equipped with connections that are for the most part inapplicable here in North America, such as SCard connections and different coaxial connectors. As well, not all receivers are created equal, many have features that others do not. For example, if you are interested in good sound quality, then you will want a receiver with a Dolby Digital or AC3 connection. Not all receivers are equipped with this. As well, you will likely want a receiver equipped with an S-Video or at the very least composite video and audio connections. Also if you are interested in looking for hard to find channels or "wild satellite feeds", then you may want to invest in a receiver that has a blind search function which will scan an entire satellite for all channels on all bands. As well, you will want to ensure that your receiver has a fairly fast processor, some can take 1.5-2 seconds to change between channels which can be painful, especially if you are used to DTH systems which are relatively fast.

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