



# Tech Talk

Fall 2009

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## The Carousel of Progress: A Clear Look At The Latest In TV Technology

About 100 years ago, amplitude modulation (am) radio was just coming into everyday use around the world. Nearly 65 years ago, record discs were the only way to record voice and music. The flood of technology that followed went something like this: tape recorders, black and white television, color TV, frequency modulation (fm) radio, tubes to transistors, 4 & 8 track players, audio cassettes, analog satellite-delivered television (C-band), laserdiscs, hard drives, compact discs (cd), cellular phones, Internet,

digital versatile discs (dvd), satellite phones, global positioning systems (gps), digital satellite television (DTV), digital storage devices, High Definition television (HDTV), and Blu-ray. In 2009, we saw analog television be replaced with digital television (DTV), allowing HDTV to be broadcast over land-based transmission antennas. Technology is a continual progression. As Walt Disney would say, it is a carousel of progress.

During each of these transitions, we as consumers have had to change the

way we listen, watch, and communicate. Some of us can roll with each change in technology with enthusiasm and an understanding of what is going on. Most of us, however, get dizzy as the carousel of progress spins, oftentimes finding ourselves frustrated and confused.

In this newsletter we will attempt to clear things up and give you a better understanding of the technology around you, so that you can utilize and enjoy it to the fullest.

## Keeping Up With Today's Technology: Satellite-Delivered TV

Most media content is delivered via a satellite at some point before it gets to us.

### Satellite Television

Satellite television has grown from the days of large C-band reflectors scanning over 20 satellites in space to today's one-position mini reflectors of providers DIRECTV & DishNetwork in the United States and Shaw Direct & Bell in Canada. The switch to mini reflectors started in the early 90s, with DIRECTV transmitting at some 24,000 miles in a stationary position of 101° over the equator aimed at North America.

DishNetwork turned on its signals shortly thereafter. Then the race between providers began. As the small 18-inch reflectors aimed at high-powered Ku satellites provided increasing numbers of channels, consumers became thirsty for more television.

The satellite industry grew from a single satellite position in space to DIRECTV's five main satellite positions and DishNetwork's three main satellite positions. The reason for the multiple satellite positions is due to the many broadcast & music channel programs that the mass market desires. A single satellite can carry only

so much content. Both DIRECTV and DishNetwork have additional satellite positions that are used for niche programming. Both providers also utilize the single-reflector design to pick up the desired satellite's microwave signals from space. The multiple low noise block (LNB) converters on all reflectors (5 LNBs for DIRECTV & 3 LNBs for DishNetwork) are combined into one big LNB assembly at the end of the LNB arm attached to the bottom of the reflector. This allows for seamless automatic switching between the satellites for the user's viewing pleasure.

After the providers tackled multiple satellite positions, their next advance-

*(Continued on page 3)*

## Televisions

Let's start with your television. If you have a glass picture tube TV (analog) that has been around for awhile, you are currently receiving no picture or sound unless you have a cable or satellite provider or have purchased a new DTV converter box that converts the new digital signals to an analog type signal. It is important, particularly in the RV world, to know that most DTV boxes need 110 volts AC to operate. If you are going to use an analog 12 volt DC television connected to 12 volts, you may not receive anything through your converter box, because all television signals are now transmitted in the DTV format in both emergency and non-emergency scenarios.

Most new flat screen televisions have

both analog and digital tuners built in them, so no converter box is needed. You may ask, "Why do these new TVs still have analog tuners?" That's because all cable companies are not required to switch to DTV at this time (that may change in the near future), and most still deliver some programs in both analog and digital. Another reason that new TVs are still made with analog tuners is because some cities are still transmitting some channels in analog, and some countries, like Canada, are still fully transmitting in analog & digital.

## What About Antennas?

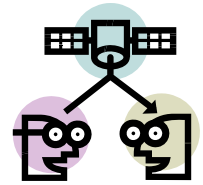
Standard analog antennas can usually receive the new DTV signals when paired with a DTV converter box or a new flat screen TV. There are new digital types of antennas on the market that might address your reception needs if you are having a problem with your standard analog antenna.

In Las Vegas we have seen a number of good and bad off-air reception situations. One example is that for over 20 years, customers staying at the CircusCircus RV park on the Las Vegas strip have called to say that their off-air reception is lousy. We have had to tell them that is normal for that location because the surrounding tall buildings cause ghosts and snowy pictures. As new buildings went up, the ghosts and snowy pictures increased.

Five years ago, when we heard that analog TV was being replaced with digital television, we assumed that change would make reception of television signals more limited, particularly for users in troublesome spots like CircusCircus. We thought that the pure digital signals would be finite like satellite reception, where if you are under a tree or behind a tall building you will not receive a signal at all. Well, we were wrong. Because of the way the digital signal is processed, it can find a reflection off a building in the area, and give you a clear picture, with even HDTV signals coming in very clear. On the other hand, when a plane flies around your location you may get a drop out or still frame picture from time to time. Another interesting fact with digital is that some tuners seem to be better than others in picking up a signal, even in the same model line.

## Ask Warren!

*How Can I Get The Best In HDTV?*  
-Terry from Seattle



Believe it or not, the best quality HDTV signals come right off your local off-air transmitter tower. At this time, due to the way signals are processed and the off-air bandwidth available to the local broadcasters, these signals are even better than satellite HDTV signals.

*Will the digital tuner in my new TV make everything run nice & easy?*  
-Francis from Las Vegas

Not exactly. One of the quirks of the latest technology is that you must auto scan your digital tuner in every city you visit. Almost every city uses different channel frequencies. It's not like the analog days where 3 is 3 and 5 is 5 no matter where you roam. Those days are gone.

FYI: VCRs, dvd players and video hardware are no longer manufactured with ch. 3 or 4 modulators.

On the up side, the digital signal that is transmitted today has many features that were never possible with analog. Where we used to get one channel from our local or national network, we can now get 2, 3 or 4 different options (i.e. selection of different camera angles and Internet, with more to come as technology marches on).

*Have a question to ask Warren? Send it to [warren@satworld.biz](mailto:warren@satworld.biz), and you just might find your question in the next issue of Tech Talk!*

*Be sure to check out the article about Warren on page 4 of this issue.*

**Something To Think About:**  
*If you wait for the best,  
you will never buy anything.*

*(Keeping Up With Today's Technology, continued from page 1)*

ment was into the world of satellite-delivered High Definition Television (HDTV). As in the case of off-air delivered HDTV, satellite-delivered HDTV requires a lot of bandwidth. The only way to deliver this robust content was to put up more satellites. DIRECTV shot two new Ka type satellites that strictly handle HDTV programs. DishNetwork shot up a third Ku satellite strictly for HDTV. (C, Ku, & Ka band are terms the satellite industry uses to identify the frequency spectrum that satellites use) Both providers deliver crystal clear programming.

DIRECTV and DishNetwork have almost the same basic programming, with some specialty programming available on each. Prices are plus or minus a few dollars. So, do your homework. Remember, too, that there are about 30,000,000 DIRECTV & DishNetwork customers, and less than 1% are RVers and boaters. So when you call DIRECTV or DishNetwork because of a technical problem with your mobile system, be prepared for some long call times and for the possibility of wrong information being given to you. When I install any satellite system, dome or pop-up, I always tell customers to *call me* before they call the provider, as it makes the journey so much more enjoyable.

### **Mobile Satellite TV**

In a fixed location such as a house or building, it's somewhat easy to bolt a satellite antenna & adjust it. As long as no trees grow in front of it and nothing hits it, you may never have to realign it after the initial installation. RV & marine users, on the other hand, have to realign their antenna every time they move, which can become frustrating with traditional hand crank and tripod antennas.

### **Automatic Mobile Satellite Systems**

Enter in the semi-automatic & automatic roof-mounted satellite systems, and gone are the days of manual realignment. With most of the automatic systems the user simply has to turn it on, and then the antenna is aligned and locked-on automatically. With semi-automatic systems, you have to hunt for the satellite you want, then watch the signal meter from the satellite receiver on the TV screen.

### **Dome Systems**

One automatic option is the dome-enclosed type of satellite reflector used by those who want in-motion satellite reception while under way or by those who want the look of a sleek dome on the roof. The upside of a dome antenna is that it can be used either while driving down the road or while parked. The downside of a dome is that when the outside of the plastic dome gets wet from rain, dew or water spray, the signal becomes attenuated to the point of no picture until the dome is somewhat dry. Then it will perform again as it should.

DIRECTV's single satellite position of 101° transmitting standard definition (SD) programming is recommended for

dome type systems. DishNetwork transmits 80% of its SD programming on satellite 119° and 20% on the 110° Satellite. A dome can only look at one satellite at a time, which may cause problems when two or more receivers are being used at the same time.

### **Pop-Up**

The alternative to a dome antenna is the stationary pop-up reflector system. Today's pop-up reflectors can take very strong wind loads. In fact, manufacturers have recommended leaving it up during windy weather, as when you attempt to park the antenna, it will raise up to 90° and may catch a gust of wind as it travels to the park position.

If HDTV is a must, the pop-up is your only choice. The reflector and LNB used on a land-based system is the same used in mobile applications, which allows the proper interfacing to the receiver. Another reason to choose a pop-up if you want HDTV is the fact that HDTV is not available with DIRECTV in a dome system. (There is one in-motion type dome that provides HDTV. However, it is designed for the marine industry, is 50' tall & costs about \$30,000.) Dome systems can be used to get HDTV with DishNetwork, but there are some ifs, ands or buts, so, again, do your homework.

When a pop-up is used, DIRECTV and DishNetwork both deliver clear pictures.

If both in-motion and HDTV is desired, your best bet is to install both a pop-up system and a dome system, along with an A/B switch, so you can easily switch between the dome when under way and the pop-up when parked.

All domes and pop-ups must have a 110VAC to 12- 15VDC regulated power supply. Do not wire to the coach's 12 VDC supply, as it varies too much, and at times the voltage is not clean enough for the sensitive circuits in the satellite system. The 12 VDC that is provided in the chassis is used to power water pumps, fans, lights, motors, etc. that are not as sensitive to voltage variations.

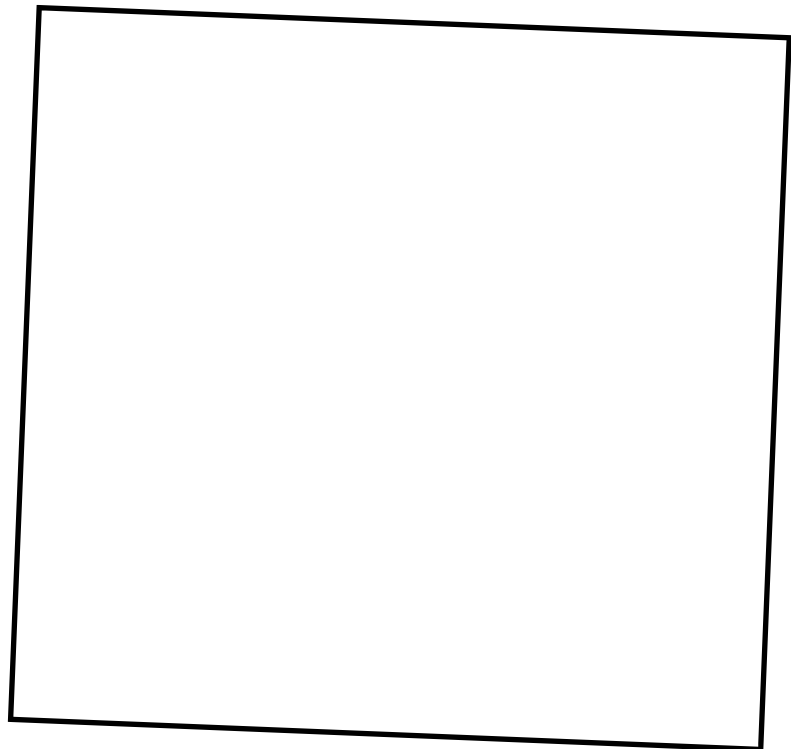
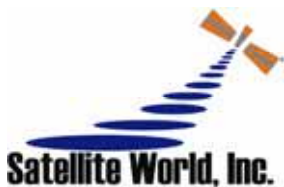
*In the next Tech Time newsletter, look for our continuation of "Keeping Up With Today's Technology," as we take a look at satellite-delivered Internet, radio, phone and GPS.*

## Contact us!

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*When the lines are down,  
the satellites are up!*



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## Warren Teasley: The Brains Behind The Brawn

Warren Teasley is a legend in the technology world. Having no formal training, he climbed his way to the top of the industry armed only with his natural ability and innovation.

His interest in technology and communications started in 1955 when he was a guest on *The Howdy Doody Show* and *The Arthur Godfrey Show* in New York. Growing up in Azusa, California, he built Ham radios as a boy and spent his teenage years repairing 8 and 4 track audio machines and constructing amplifiers for friends' guitars. Directly after high school, Warren joined the United States Marine Corps, where he further developed his technical skills by working with electronic avionics in military aircraft.

After the Marines, he used his skills in the music industry in Hollywood where he owned and ran Devista Recording with his uncle, master musician, Jimmy Carroll. Besides the typi-

cal recordings, he also developed some electronic music and commercial jingles, and he created the sound effects for the first animated scoreboard at the Dallas Cowboy's football stadium. During this time, Warren also worked on modifying and designing video equipment such as VTRs and VCRs for specialized needs of the recording industry. Warren became known for his quality work and innate ability, leading to several connections in the industry.

In 1975, Warren started Audio Video Service Center in West Hollywood, California. There he became a leader in equipment repair and multimedia system set-up. His reputation became so notable, that he was asked to supply, service, and maintain the large screen projection television systems for the 1984 Olympic Games in Los Angeles. After that notable feat, Warren went on to work with government agencies in developing specialized cameras and equipment. He has also

worked with major companies, including IBM and Motorola, interfacing e-mail technologies for training by those companies.

In 1990, Warren relocated to Las Vegas, Nevada, where he changed his focus to satellite technology. He became a frontrunner in the satellite industry, working with residential, marine, mobile, and commercial systems. His work with satellite technology led to the development of a revolutionary GPS tracking system. Warren is a master of satellite-delivered television feeds & distribution and is a leader in mobile communications. He has also developed multimedia systems for many top Las Vegas hotels and residences and is currently developing communications systems for homeland security, integrating cutting edge technology such as satellite phones and satellite Internet.

Time will only tell what Warren will bring next to the table.

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