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Our purpose, mission statement, this current edition, archived editions and other relative information is posted on our website. We've had over 21,200 different visitors since we started the website on July 1st, 2000.

Thanks to our regulars and welcome to the new folks.
This is YOUR forum!

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Editor's Comments

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Ahhhhh! The Tech-Notes Taste of NAB Road Show is over and after a much deserved rest; we re finally back at the home base, getting this edition out from more familiar territory. In addition to mail server problems, doing the Tech-Notes from a laptop on the road, was not the easiest thing we ve ever tried. I think I d rather have to go up to a mountain top transmitter site to do extensive repairs on a tower during a major snow storm then have to put out another edition on the road, but then there s next year.

Just a few notes on the logistics of getting things done on the road via the internet: Getting local access numbers nearly anywhere we were to go was of prime importance. Having been an AOL customer once before, we decided to try our luck with Earthlink: bad choice. They had no problem taking our money, but when we tried to use the configuration we needed to access our regular e-mail, etc. here at

home base, which we were told we could do, it didn t work, no matter what we did. We were never successfully using their service, so we canceled the service with them. They still charged us for a full month. If it didn t work, why should we have to pay anything? Be careful when dealing with this company.

So, it was back to AOL. I have to say that AOL did work from the very first time we tried our configuration, but they did not honor our 1000 free minutes that the install disk promised. Access numbers were never a problem, but each time, from each motel/hotel, was a completely different experience. The last Tech-Notes we put out is an indictment of this fact; the system put codes for hyphens and apostrophizes. After Starband and DSL, we re spoiled; dial-up isn t fun.

We will never be able to thank enough the ten companies: AJA, Acrodyne Industries, Clark Wire & Cable, Dorrough (meters), ESE, Kathrein Scala Division, Leader Instruments, Panasonic Broadcast, Pixel Instruments and Sundance Digital Automation, who underwrote this venture. Their continued support on the road was very commendable.

We will be doing a series of articles on the road show beginning with this issue. Each venue has its own story and each underwriter has things we found out that we d like to share with you. We have also been asked to report on the trip for both US and European publications. Each will be from a different prospective than what you ll see here. We ll keep you informed when and where those other reports will be available. The winner of the Tech-Notes road show door prize, a Fluke 189 multimeter, is Dennis Morton, Asst. Director of Engineering at Telefutura in Miami, FL. dkmorton@Univision.net. Morton should have the meter in his possession with in the week. Although we were promised an additional door prize by Leighton M. (Linc) Reed-Nickerson of Rohde & Schwarz, Inc., he choose not to show up after San Diego and we don t have any idea what the status of the cash value at Ham Radio Outlet, that he promised, is.

New subject: with this edition, we ll be offering the views of a long time associate and friend, Burt I. Weiner. You ve seen Burt s input here from time-to-time, but he has a lot more to say. Burt is a well respected engineer in the Los Angeles, CA area and has been in the broadcast business for many years. His keen sense of humor is an always welcomed addition to the more mundane engineering issues many of us have to deal with. Please join us in welcoming him to Tech-Notes as a
welcoming him to Tech-Notes as a regular.

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Features

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Subject: **Some of My Observations**
By: Burt I. Weiner biwa@earthlink.net

The biggest problem I see with "new" advertising is that it is annoying, invasive plus some other things I can't think of right now. I don't like having someone scream at me! I don't like having two people (in a spot) screaming at each other! I don't like having "wall climbing music" or effects blaring out at me! Those are things that make my wife and/or I dive for the pushbutton. When we do hear some of these spots, through we tend to remember the product as being associated with something that was an unpleasant experience. Other times I say to myself, "One more spot and I'm changing stations". It's a mental threat I'm always forced to carry out.

I remember a time when radio and TV used to sell by being "more informative" about a product. Sure, it's always been about selling but, as I remember, it was done a little more tastefully. Do any of you remember Charles Antel? He sold hair care products. He bought 15 minute blocks everywhere telling about what people would do to try to grow hair. It was 15 minutes of hilarity. Things such as: "People will rub alcohol on their heads to try and grow hair. If alcohol would grow hair a lot of people would have the inside of their stomach fur-lined!" There

are very few creative spots anymore.

Hopefully, the creative services folks will take a hint with HDTV and give us those kinds of spots that will sell the product instead of annoy us. That might be what it will take for HDTV to be the success that goes with the technology.

On second thought, if the programming isn't any better than it is now I'm still not going to watch it anyhow. And, if it does get better I'm willing to watch it on my good old NTSC set. That is, of course, if I haven't already dumped it on the front porch of the local TV station. Commercials of any kind won't make digital or HDTV a success with the viewer, but more attractive programming will.

On another subject; I understand that members of Congress are being encouraged to fund a study by the U.S. Fish and Wildlife Service into whether there is a relationship between bird deaths and communications towers.
http://www.rwonline.com/dailynews/one.php?id=1681

Yesterday while I was at a site I noticed a hawk enjoying the height of a tower. I looked and found no dead birds at the bottom of the tower/s. I did however, find a few dead rodents. We need to do something about the tower foundations. Burrowing animals are running into the foundations, killing themselves and then floating to the top!

I have found more dead birds at the bottom of street lights, telephone poles and trees, and don't forget large windows, as I have at the bottom of towers. The question is, will birds leave us alone? http://www.utahbirds.org/BirdStory.htm. The people that are so concerned about birds vs. towers need to get a life and leave those of us who live in the real world alone.

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Subject: **The Road Show A Taste of NAB Part I of VIII**
By: Larry Bloomfield

On a local basis, the only chance the local engineer has is either from the trades or the programs his or her local chapter of SBE or SMPTE section offers at their regular meetings. If you Section or Chapter are not putting on educational programs to help keep you up to date and on a regular basis, it s time to get officers who can see to it. There s nothing wrong with the camaraderie and fellowship that comes from SBE or SMPTE meetings, but the educational aspects of these meeting is paramount and more important to the attendees than any other aspect of the meeting. It s quite simple: Those who don t keep informed will find themselves looking at the call letters on the outside of the building, wondering why they are no longer working inside.

There is only once place in the US where an engineer can go and have available to him or her all the latest technology and keep abreast of what the industry is doing. There is no question that the technology is advancing and changing so fast that it is nearly impossible to keep up with it. It was in this spirit that we embarked on this whole trip: to bring a taste of the technology at NAB 2002 to those who couldn t make it to Las Vegas.

For those who still don t get it, it was NOT a sales or marketing ploy, it was an educational event. >It all started on April 22nd, when we departed our headquarters on the Central Coast of Oregon. The first stop along the way was Sacramento. Our host was VMI of Sacramento and we were supposed to be part of the SBE gathering. We had a total of three people show up the whole day. Sacramento had the distinction of having the worst attendance of the whole two and a half month venture. Pictures of our layout can be seen at: http://www.tech-notes.tv/Trip/Venue%2001/Venue01.htm. It seems that the local SBE Chairperson neglected to let us know that there was a meeting elsewhere in town the same day. We would have gladly set up there, but there was no communications.

San Francisco was much more rewarding. We meet as part of the BABES meeting. BABES is an acronym for Bay Area Broadcast Engineering Society and is held in conjunction with the SBE chapter.

We had about thirty-five in attendance and shared the program and dais with BE who gave a very interesting presentation on I-BOC digital AM and FM radio. It was a refreshing experience after Sacramento. Except for the mysterious disappearance temporary of our digital camera we were able to get some pictures for the website: http://www.tech-notes.tv/Trip/Venue%2002/Venue02.htm. The local SMPTE section knew about our event and many of the attendees were joint members, but SF-SMPTE chose not publicize the event.

Glen Thompson s Piper Digital provided the refreshments and KCET-TV the location for our Los Angeles presentation. It was an all day event in conjunction with the local SBE chapter. The folks at KCET-TV (PBS) in Los Angeles were impeccable hosts and we had a great day as we shared our information. Estimated attendance: about fifty. Attendees were from a variety of Los Angeles broadcast facilities. The local SBE chapter was very well represented and members of The Society of Television Engineers (STE) were in attendance also. The SMPTE section didn t seem to be interested. Our partners at Piper Digital provided a nice table of goodies to satisfy the physical hunger as the technology on display feed the professional hunger of those in attendance. You man recognize some of those in attendance at: http://www.tech-notes.tv/Trip/Venue%2003/Venue03.htm.

The final stop in California was San Diego. TV Magic provided the venue and again, Glen Thompson s Piper Digital provided the refreshments. The local SBE chapter had been invited and their program chair was a TV Magic employee, but he neglected to let anyone know, despite a great deal of communications on our part. TV Magic s Steve Rosen said: I d have had more folks here, if I had known more about what it was about. His employee fail to tell him what was happening. Communications, like in Sacramento was our downfall at this venue. We had less then ten show up. You can see what we had set up in San Diego at: http://www.tech-notes.tv/Trip/Venue%2004/Venue04.htm.

During each report on the trip, we will speak about one of our underwriters. The first we ll talk about is Dorrough. If you are not familiar with them, they are the manufacturers of the digital (led)

loudness monitor. In addition to measuring the average audio level, as does the more common analog volume indicator (VI) that measure in volume units (VU), it also measures peak levels as well. Peak is important as it is the peak that can over modulate or over-deviate a transmitter.

Also, it is the distance between the peaks and average levels that is an indication of the amount of compression. Boosting the over all level, boosts both peak and average. To make the audio sound louder, it is necessary to address the compression equipment and as you can do, you’ll see the distance between the averages and peak decrease, giving a perceived louder audio sound.

One other thing most users of the Dorrough Loudness Monitor are not aware of is the jack on the back that permits either immediate release of the peak (normal), hold peak for a few seconds or hold peak permanently, until manually released.

We have one pair of new, unpacked Loudness Monitors that we’ve have been authorized by Dorrough to ship to anyone interested for twenty percent off the full list price. Kay says that she never gives discounts, but will make an exception in this one case. If we don’t hear from anyone by August 15th, we’ll send them back to the factory.

Over all, we had about four hundred fifty total in attendance at the thirty-one venues (there were thirty-three scheduled). Most associated with the Taste of NAB road show considered it a success. We sure learned a lot from this experience and met some rather great people. In our next edition of Tech-Notes, we’ll talk about the trip across the southwestern US and New Orleans; the next four venues. Will we do it again next year? Stay tuned.

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News

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Subject: **Nanotube – The cylindrical molecule of carbon**

From a story by KENNETH CHANG as it appeared in the New York Times

It is stronger than steel and far sharper than a pin. It shoots electrons and draws away heat. It can become the thinnest of wires and, potentially, electronic devices almost as minuscule as molecules.

In the last decade, the nanotube has become a do-all wonder substance, touted for future use in everything from X-ray machines to paint. Nanotubes are already sprinkled in more than half of lithium ion batteries: their ability to carry electricity hastens recharging, and they act like tiny springs to hold apart the sheets of graphite in the battery, extending its lifetime.

Nanotubes glow in infrared light. They can be welded together. They can be used for fluorescent lights.

The reasons for nanotubes' remarkable properties are chemical and architectural.

In one form of carbon, the orbits of its outer electrons form three lobes that flare outward at 120-degree angles. Each lobe bonds with a lobe of a neighboring carbon atom, forming a honeycomb pattern that looks like a piece of chicken wire. The bonds between the carbon atoms are strong stronger than those of diamond.

This flat chicken-wire configuration of carbon is well known; it's graphite, the stuff of pencil lead. But graphite sheets do not cling very strongly to one another, so a lump of it is soft and easily rubs off.

Just as a piece of paper is stronger when rolled up, graphite becomes extraordinarily stiff when the opposite edges of a rectangular sheet are connected, forming a cylinder.

That is a nanotube. "This is the strongest material that will ever be made," said Dr. David E. Luzzi, a professor of materials science at the University of Pennsylvania.

And very thin. The nanotube gets its name from nanometer, or a billionth of a meter, which is roughly the diameter of the thinnest of nanotubes.

At the conference, Dr. Philippe Poulin, a scientist at the National Center for Scientific Research in France, described how nanotubes could be dispersed into a liquid, mixed with polymers and spun into a fiber thinner than a human hair. Dr. Poulin says he expects scientists to find ways to strengthen the bonds between individual nanotubes, perhaps by heating the fibers or dipping them in a chemical.

The fibers could also find use in tiny machines. Adding electrical charge expands the bonds between carbon atoms, lengthening the fiber by a small fraction. If the nanotube fiber is glued to a strip of another material that does not shrink or expand, the voltage causes the fiber to bend like an archer's bow. "You're making it a muscle," Dr. Poulin said.

Because of the strength of nanotubes, the fiber would exert 50 to 100 times as much force as a human muscle of the same size.

Many scientists also expect that nanotubes will be an important component in future molecular-scale electronic circuits.

Nanotubes vary in diameter and in how they are rolled up. If a nanotube is rolled evenly, like a sheet of paper with the top and bottom edges lined up, it is a metallic conductor, efficiently carrying electricity. Adding metallic nanotubes to plastic, for example, changes it from an insulator to a conductor allowing an automaker, for instance, to use electrically charged paint that adheres better to conducting surfaces.

If a nanotube is twisted askew, like a misbuttoned shirt, then its electrical properties can change to those of a silicon-like semiconductor whose current can be switched on and off.

Putting other atoms and molecules inside a nanotube could alter its electronic behavior in the same way that impurities are added to silicon for use in electronic devices. "Now we are working on ways we can tune its properties," Dr. Luzzi said.

Another trick is that when a voltage is applied along a nanotube, it

shoots out electrons, like a cathode ray tube at the back of a television tube, but much, much smaller.

"We basically take the C.R.T. and flatten it by putting millions of electron guns instead of one gun," said Dr. Zvi Yaniv, president of SI Diamond Technology of Austin, Tex. SI Diamond has developed nanotube displays for lighted billboards like those in Times Square, but at a quarter of the cost of L.E.D.'s.

Samsung of Korea has also latched onto this idea and plans to begin selling large flat-panel televisions that are lighted by thin layers of nanotubes in late 2003.

In a variation on that theme, scientists at the University of North Carolina reported on July 8 in Applied Physics Letters that they had built a novel X-ray machine, using nanotubes to fire electrons at a piece of metal. The collisions produce X-rays, a higher energy form of light.

Nanotubes may also prove useful as sensors. Molecules that latch onto specific molecules carbon monoxide, hydrocarbons or, more ambitiously, a piece of DNA can be attached to the outside of a nanotube. Electric current runs along the surface of a nanotube, so when the sensor molecule snags its target, it redirects the current like a stone in a river.

What will limit the large-scale use of nanotubes in electronics in the near future is that current manufacturing techniques produce a clump of tubes of different diameters and different amounts of twist, or chirality. For some uses, like the fibers, the mixture of different types of nanotubes does not pose much of a problem. But metallic nanotubes short-circuit electronic devices and must be sifted out from the semiconducting ones.

"The holy grail would be to turn a knob and out comes the nanotube of the right diameter and chirality," said Dr. Mildred S. Dresselhaus, a professor of physics at the Massachusetts Institute of Technology. "We have yet to figure out how to do this."

That slows the research. "If you don't have material, you don't have an experiment," Dr. Dresselhaus said.

Nanotubes are also still very expensive; purified ones cost about $250,000 a pound.

Still, even in limited quantities, the molecule is providing moments of pure scientific surprise. Dr. Richard E. Smalley, a professor of chemistry at Rice University in Houston, and his colleagues are studying what colors of light are absorbed by single nanotubes, a technique known as spectroscopy that can tell details about a molecule's structure. They found that the nanotubes not only absorbed certain frequencies of infrared light, but also emitted them.

An undergraduate student at Rensselaer was surprised when a clump of nanotubes caught fire as he took a picture of it. The nanotubes had captured the energy from the camera flash and turned it into heat.

Besides its strength and electronic properties, a nanotube is also an excellent conductor of heat. Because it is so stiff, it vibrates at high frequencies like a taut guitar string and heat is no more than the vibrations of atoms. Thus, for computer chips as envisioned by I.B.M., the nanotubes may not only do the calculating, but they could also help carry heat away and keep the chip from overheating.

This property of nanotubes allowed Dr. Morinobu Endo, a professor of engineering at Shinshu University in Japan, to make what he says are the world's smallest working gears. He mixed nanotubes into molten nylon and then squirted the nylon into a tiny mold. Instead of the outer skin cooling first, the heat-diffusing property of nanotubes kept the nylon uniformly molten as it filled every nook and cranny of the mold.

That produced a finely chiseled gear about as wide as a human hair. The nanotubes also give it strength. Coincidentally, they also conduct electricity, a superfluous capability for a gear. Sometimes some of nanotubes' amazing properties are more than needed.

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Subject: **Adelstein filling FCC s fifth slot?**
By Larry Bloomfield

The Senate Commerce Committee has endorsed Jonathan Adelstein to be the fifth Federal Communications Commission Commissioner. The 39 year old, longtime aide to Senate Majority Leader Tom Daschle, D-S.D., is the heir to a large South Dakota construction company.

Adelstein s nomination was forwarded to the full Senate for a final vote. Adelstein pledged that one of his priorities will be to make sure the FCC fulfills its duty to provide all Americans, especially in rural, access to the full range of communications services.

Under questioning of Adelstein by Sen. John McCain, the committee's ranking Republican, he said that the telecommunications industry is faced with a crisis because of the WorldCom meltdown and declining values of other infrastructure companies.

Adelstein also called violence on television "an incredibly important issue" and called on broadcasters to be "vigilant" about what is aired in hours children are likely to be watching TV.

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Subject: **Trees as Absorbers of RF**
By Roy Trumbull
From: CGC Communicator, by permission

At a cable receive site in the Santa Cruz Mountains, the antennas were pointing through a cluster of pines on adjacent property. VHF reception was okay, but there was no UHF. The company used a site DOWN the hill that was free of trees for UHF.

At 2.5 gigs, heavy foliage in the residential section of Hillsborough

made it just about impossible to receive ITFS.

Terrain clutter has become a hot item as none of the prediction methods for signal contours have much meaning unless it can be factored in. Topo programs won't tell you about trees.

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Subject: **Intentionally Blocking RF**
From: CGC Communicator, by permission

Some restaurants and theaters have installed cellular/PCS jamming transmitters to keep wireless phones from ringing. Of course, these jammers are illegal in the U.S., but there are other ways of blocking cellular/PCS signals such as making the room in question into a Faraday cage by blocking the electric field component of the incoming signal.

Now, CGC readers Oscar Medina and Mark Van der Hoek have pointed to a new product which claims to attack the magnetic field instead. So-called "magnetic wood" may be seen at:
http://www.newscientist.com/news/news.jsp?id=ns99992461

Even if "magnetic wood" works by the mechanism claimed (the jury is still out), we suspect that more filtering will be needed to effectively shield a room - much more than the mere installation of "magnetic wood."

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Subject: **Post-It Notes Cause Problems**
From: CGC Communicator, by permission

Warning: The effect of Post-It Notes on archived material is devastating. According to the Scripps Institution of Oceanography Library (UCSD, La Jolla), the glue on Post-It notes eventually hardens

and leaves a film that becomes acidic. This results in eventual discoloration and brittleness of the paper. In fact, Post-Its left for more than a month or two on already brittle paper (old books) cause the paper to tear when the notes are removed.

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Subject: **Commission Requires Radar Detectors to Comply with Emission Limits to Prevent Interference to Satellite Services.**
By: Fred Lawrence.

The FCC has taken new steps to protect satellite operations from interference caused by radar detectors by imposing new emission limit and certification requirements for radar detectors.

The FCC s actions taken will prevent interference to very small aperture satellite terminals (VSATs), which operate with downlink frequencies in the 11.7-12.2 GHz band. Specifically, the Commission has modified Part 15 of its rules to require radar detectors to meet emission limits in the 11.7-12.2 GHz band and to require that radar detectors obtain certification under the Commission s equipment authorization procedures. All radar detectors marketed within the U.S. must comply with the new rules within 60 days after the rules are published in the Federal Register. All radar detectors imported into and manufactured for sale within the U.S. must comply with the new rules within 30 days of Federal Register publication.

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Subject: **CRTC Announces Its Regulatory Framework for the Transition to Over-The-Air Digital Television Services**
By: Larry Bloomfield

The Canadian Radio-television Telecommunications Commission (CRTC), an independent public authority that regulates and supervises broadcasting and telecommunications in Canada, equivalent to the

US s FCC, has announced its regulatory framework for the transition to digital over-the-air television.

The CRTC is confident that this regulatory framework will ensure a smooth and efficient transition to digital television by combining market forces and the proper incentives for steady progress. They say that this framework will lead Canada into the future of digital television broadcasting.

Along with this new framework for digital over-the-air services, the CRTC announced a request for public feedback on proposed policies to govern how digital broadcast services should be distributed by cable, satellite and wireless undertakings.

Like here in the US, the Canadian DTV transition is intended to eventually replace the current analog over-the-air broadcasting system. The Canadian plan is said to improve television viewing by providing wide-screen, high definition images with better color and picture quality.

The policy framework will guide broadcasters, distributors and producers through the transition to digital with the aim of ensuring that: (1) Canadians will benefit from these technological advances to the fullest possible extent. (2) The Canadian broadcasting industry will be encouraged to grow and strengthen. (3) The transition will not be slowed by unnecessary regulation. And (4) The Broadcasting Act s cultural objectives will be maintained.

Unlike their neighbors to the south, the Canadian plan will allow broadcasters to make the transition to digital voluntarily, without imposed deadlines. Viewers will continue to have access to all of their over-the-air analog services throughout the transition period. Consumers will be able to upgrade their equipment at their own pace and convenience. Broadcaster investment and consumer demand will dictate the rate at which the upgrade to digital broadcasting will occur.

Broadcasters will be encouraged to construct new digital transmitters that will provide full off-air coverage to match their existing analog

coverage. Broadcasters will also be expected to maintain their existing analog coverage in full throughout the transition period. Canadians will continue to have free universal access to over-the-air television during the transition.

Existing broadcasters will be given the first opportunity to apply for licenses to broadcast digitally, but if they fail to do so in a reasonable amount of time, the CRTC will consider other applicants for the relevant frequencies.

Transitional digital licenses will authorize broadcasters to offer a certain amount of programming not offered on their analog transmitters up to 14 hours per week - on their digital transmitters, provided that it is high definition and that at least half of it is Canadian.

The CRTC is confident that requiring all of the separate programming to be in high definition will help create consumer demand for the new digital services. And stipulating that at least half of it must be Canadian will assist the country s production industry during the transition to digital.

As further encouragement, all Canadian digital programs aired by licensees between 6 p.m. and 12 p.m. will have to be high-definition where such a version exists. Broadcasters should also ensure that, by the end of December 2007, two thirds of their schedules are available in the high definition format.

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Subject: **Paxson reasserts complaint of digital interference in Sacramento, Calif**.
From a story by Bill McConnell of Broadcasting & Cable

Paxson Communications is the latest broadcaster urging the FCC to face up to what could be a growing number of interference complaints as new digital TV stations power up.

On June 11, WBOC-TV Salisbury, Md., filed a complaint accusing WHRO-DT Hampton Roads, Va., of encroaching on Ch. 16 across the Chesapeake Bay on Maryland's Eastern Shore. Soon after, Paxson Communications' lawyer reminded the FCC that KSPX(TV) Sacramento, Calif., had filed a similar complaint four months earlier against CBS digital affiliate KPIX-DT San Francisco. The California stations use Ch. 29.

In both instances, the stations are in separate markets and were expected to have no interference problems when digital channel assignments were issued.

But industry sources say they know the cause of today's problems: The lack of real-world knowledge about digital signal propagation forced the FCC to rely on theoretical modeling to allocate channels. As more digital stations come on-air, however, broadcasters are finding that the actual coverage area and signal strength of DTV stations are sometimes quite different from the theoretical. Consequently, the new signals may interfere with existing analog stations.

"The commission must decide how it will resolve complaints where DTV interference extends well beyond the predicted into an [analog] station's existing city grade service area," Paxson attorney John Feore wrote in a letter to Rick Chessen, the FCC's DTV point person.

The FCC would like stations to work out problems privately, as WMVS-DT Milwaukee did when it agreed to cut power after it interfered with WOOD-TV Grand Rapids, Mich. But the government will have to step in eventually because few stations are likely to give up some of their broadcast rights willingly.

Hampton Roads' WHRO, for instance, contends that it is complying with FCC regs and that WBOC-TV has not demonstrated a reception problem that requires FCC intervention. Even if serious interference is demonstrated, "there is no legal basis for the FCC to declare WHRO-DT to be 'at fault' ... so long as WHRO-DT's facilities are in compliance with FCC rules."

In a 98-page counter-reply filed July 5, WBOC-TV's attorneys argued

that WHRO's response is wrong "as a matter of policy and law" and "does not make sense."

WBOC-TV submitted additional evidence of harm, including interference reports, e-mails, charts and a sworn statement from a Cox Cable executive saying that Comcast "has observed significant levels of interference" with WBOC-TV's signal from late April through July 3. More than "2,000 complaints regarding WBOC-TV's picture" have been received from cable viewers, WBOC said.

(Editor s Note: This Sacramento Paxson station is the one located just a few doors down from VMI where we conducted the Tech-Notes Road Show. The Chief engineer said he was too busy to learn of the technology we were presenting. Perhaps he was busy trying to figure out why he was having problems in a world we were explaining such things so close to where he worked. Ignorance is only bliss when it doesn t include others.)

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Subject: **Stations use WOW set-top box to plot their digital course**
From a story by Daisy Whitney

LIN TV Corp., Sunbelt Communications and other station groups are taking digital matters into their own hands.

Rather than wait for cable operators to decide whether, where and how many of their digital signals to carry, some broadcasters have decided to circumvent the cable company and offer the content on their digital spectrum directly to consumers through a set-top box that can receive such signals.

The box comes from South Jordan, Utah-based WOW Digital TV, which also provides digital content that can be customized for the stations. The high-definition receiver takes in digital signals from broadcasters and displays them on a digital or analog TV. The company, which was started last fall, plans to launch the service

commercially in late September with independent station KJZZ-TV in Salt Lake City following extensive tests during July and August with several other broadcasters.

The box will sell for about $200, said Steve Lindsley, chairman and CEO of WOW Digital TV. WOW works with its station partners to develop interactive digital content while the TV stations promote the service and the boxes on-air.

"The important point of this [digital] transition it to figure out how to get an enabling box into the homes. For broadcasters, the distribution to consumers has been dependent on cable retransmission, and broadcasters are just one of many channels," he said.

Summer tests

Broadcasters are concerned that not all of their digital channels will be carried on the cable system, or that the channels will receive poor placement on the lineup since many of their digital services -- interactive television, electronic program guides, trivia and games -- compete with cable operators' ITV services.

"They could put you on 382 and have their own competing service on Channel 5," said Peter Maloney, VP of finance for LIN in Providence, R.I. "Having another means of distribution is attractive."

WOW conducted its first trial earlier this year with KSL-TV in Salt Lake City during the Olympics with 30 prototype boxes. The service provided digital pictures, multiple video feeds and additional Olympics information such as the medal count, Olympics facts and the NBC schedule. "All of that content is retrieved on demand," Mr. Lindsley said.

Tests will be conducted this summer with Sinclair Broadcast Group's KOVR-TV in Sacramento, Calif., McGraw-Hill's KGTV in San Diego, Sunbelt's KVBC-TV in Las Vegas and other stations.

The service allows broadcasters to reap new revenue streams with

premium content, Mr. Lindsley said. "We're not going to leave on the table revenues that can be enabled as you go to digital," he said. That's why LIN plans to test the service this summer at one of its stations.

Mr. Maloney expects the LIN stations to increase the amount of local news and weather for their markets on the digital spectrum. Instead of turning to the Weather Channel for the local forecast, viewers could turn to a LIN station's digital channel any time of the day, he said. WOW's service allows a broadcaster to provide "hyper-local" information for towns and cities within a metro area, he said.

Sunbelt is also looking at what it can gain from its digital spectrum.

"With the amount of money broadcasters are spending to do the digital transition, you need to think about a way to make money," said Ralph Toddre, president and chief operating officer of Sunbelt Communications. If consumers are willing to pay for a digital TV set, they will be willing to pay for a box and a service that will enable them to harness digital content, he added.

Mr. Lindsley said his company plans to target owners of high-definition television sets, since those viewers are interested in digital-quality pictures. To reach them, WOW's broadcast partners offer 30-second spots promoting the converter boxes.

The key to the success of WOW will be getting the retail outlets to bundle it with digital TV, said Bruce Leichtman, with Leichtman Research Group in Winchester, Mass. Stores should not promote it as a substitute for DBS or cable but rather as a supplemental service, because consumers spending upward of $2,000 on a TV probably already have DBS or cable, he said.

The total number of digital TVs shipped from manufacturers to retail outlets from 1998 to 2001 was 2.2 million, a number that is expected to grow to 4.5 million by the end of this year, according to the Consumer Electronic Association. The majority of those sets are HDTV.

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Subject: Str**eaming Media Survey -- Call for Inputs!**
From: Desmond Chaskelson, Research Director, SCRI International.

SCRI is currently working on the questionnaire for the 2002-2004 Global Streaming Media Trends survey and is calling for inputs. If your company is interested in these reports and would like to review the draft surveys and provide survey inputs, please contact des_chas@scri.com ASAP.

SCRI facility survey respondents who provide the data for SCRI research reports receive 3 Months free access to the SCRI Insider Reports and/or one of several 2002 Technology Reports (Pro DVD; D-Cinema; HDTV; MPEG-4).

SCRI's New 2002 Broadcast/Pro Video Product Reports include 27 Broadcast/Pro Video Product Reports with market size, brand share, trends etc.; the Broadcast/Pro Video Brand Awareness and Ratings Report tracking 32 brands; and the 2002 Digital Media Facility Report. New Reports due in July/August include the HDTV Trends - Broadcast and Production/Post; and Pro DVD Report.

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Parting Shorts

By Larry Bloomfield

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As of July 20, 2002, according to the NAB, there are 443 Stations, in 134 Markets, delivering digital television signals here in the US. Many of these are educational stations.
http://www.nab.org/Newsroom/issues/digitaltv/DTVStations.asp

PBS lists 76 non-commercial DTV stations in operation (they're not due on the air until May 1 of NEXT year).
http://www.pbs.org/digitaltv/localstation.htm

The Federal Communications Commission (FCC) has not updated its lists since June 12. - So, given the discrepancy between the FCC and NAB numbers, how many U.S. DTV stations are REALLY on the air? I don't know and I don't think anyone does.

The FCC says there are, as of (they only up date their public record once a year) October 30, 2001: 737 UHF 572 VHF commercial TV stations (subtotal 1309) and 252 UHF 125 VHF educational TV stations (subtotal 377), for a grand total of 1,686 full power stations on the air in the US. Do the math. This is just over 26 percent.

In addition to this, there are 336 Class A UHF and 88 Class A VHF, for a total of 424 Class A stations on the air. The FCC did not answer our inquiry about these kinds of stations with respect to their transition.

That s not all. There are many communities served by translators and low power stations. According to these same records there are 2658 UHF and 2104 VHF translators, for a total of 4762, not to mention the 1674 UHF and 538 VHF low power TV (total 2,212) stations. So, what s up with these services, FCC?

According to a recent press release, if and when Dish Network and DirecTV combine operations, they both say they can serve all 210 DMAs with local channels by 2005.

That's what the two companies are trying to sell regulators in Washington, D.C., when they recently met with the FCC staff.

In a presentation delivered earlier in the month, the companies told agency personnel that a combined DBS platform could have locals available in 100 markets in 2003, serving 86 percent of all TV Households. They went on to promise that in 2004, the number of DMAs getting local TV service via satellite from the combined company could total 150, reaching 96 percent of all TV households. All 210 of the nation's DMAs would get local TV from a merged satellite TV giant sometime in 2005, the companies said. That sure as hell is a better transition than our full power stations are making to digital.

The companies have said the only way they can deliver local TV to all DMAs would be through their proposed merger. The promise to offer all local TV stations in all markets can be done by combining orbital spectrum controlled by each company, and eliminating duplicative programming services, they have argued. A new satellite also is part of the all locals/all DMAs mix.

As a satellite viewer, I m tried of being required to watch a station nearly a thousand miles away for my local news, when a local into local is available that serves a community less than three hours from my home/office. I m not alone. Hello Congress, let s get real.

In any event, it s one down and two to go for the merger. The Internal Revenue Service ruled recently that the split-off of Hughes Electronics from General Motors, a decision needed for Hughes' proposed $26 billion merger with EchoStar, would be tax-free for federal income-tax purposes.

The IRS move was the first of three crucial OKs the merging companies need from regulators in Washington, D.C. All that are needed now are regulatory clearances and approvals from the Department of Justice and the Federal Communications Commission for their proposed transaction.

Muzzling the troupes joining a growing line of media companies, Infinity joins such outfits as Disney/ABC and Clear Channel Communications, that forbid employees to speak to or provide any information to the media, whether on or off the record, according to published accounts. This could account for why some engineers now sound so stupid when it come to their professional responsibilities. Hay guys! It s not brain surgery or the plans for the invasion of Normandy. Dealing with the PR types is like asking a middle school dropout about algorithms. When they do get around setting up an interview, they usually don t have a clue what either of us is talking about.

What do you think about all of this? Let s go to press!

Later,

Larry

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