



### Afternoon In The Backyard

By Paul Stoffel

Living on the east side of Madison, I was happy to hear that WMTV was building a new tower and that WBUW was joining them as a tenant. I could finally point my Radio Shack antenna in a westward direction and receive all of the area DTV channels. I couldn't wait to climb a ladder, tools in hand, to remove the extra antenna that was pointing south toward Janesville.

Also, this seemed like a good time to fine-tune the aim of the remaining antenna. I whipped out my cell phone to call to my wife who was inside the house watching the signal strength indicator on the DTV set-top box. "A little clockwise." "Stop." "A little counter-clockwise." "Stop." "WHA has a locked picture." ALL is good.

I descend, put the ladder away, wash my hands and settle into my favorite chair to do a little DTV channel surfing.

Ugh! ALL was *not* good. I couldn't get WBUW-DT. Why!? Is the reception problem the neighbor's huge maple trees, strategically placed between my antenna and the TV towers? (Always did have bad ghosting on NTSC when it rained.) Darn multipath! Is it the DTV set-top box with the no-longer-trendy 3<sup>rd</sup> generation receiver chip-set? Is it the Radio Shack RF amplifier I use to feed a noise-free NTSC signal to the five other TVs in the house? Why I ask?

I borrowed my workplace's Tektronix Signal Scout™ RFM151 to take a peak at the DTV signals. The Signal Scout, used in the spectrum analyzer mode, shows signal strength and occupied spectrum above the noise floor. A DTV signal's waveform should be seen as somewhat flat across the top, but I found it to be quite jagged (see figure 1).

(continued on page 4)

### Next Meeting:

Wednesday,  
March 16, 2005

Sony HDV Format  
and Nominations

Dutch Treat Dinner  
at 5:30 PM

Tallard's Station  
8152 Forsythia Street

Meeting and Program  
at 7:00 PM

at Full Compass  
Systems  
8001 Terrace Avenue  
Middleton

### In This Issue:

- Minutes ..... page 2
- Amateur Radio News .... page 3
- SBE's Short Circuits ..... page 4
- TiVo Tech Details ..... page 5
- EAS Schedule Info ..... page 9

### Notice Of Elections

By Steve Paugh,  
Nominations Chair

Treasurer – Leslie Franzen  
Secretary – Tom Smith

#### Certification Chair Vacancy

In April we will hold elections for Chapter 24 offices of Chair, Vice-Chair, Secretary and Treasurer for the 2005-2006 term. All interested members of Chapter 24 who are current in their dues are eligible to run for elected office. The nominations committee is now accepting nominations for all four offices. As of this date, the following members have been nominated for the following offices.

Chair – Jim Magee  
Vice Chair – Dennis Baldrige

#### Call For Nominations

During the March 16th meeting, the nominations committee will solicit the members present for additional nominations. If you would like to run for an office, or know someone who wishes to run, please bring it to the attention of the nominations committee. All nominees are requested to submit a short biography for publishing with the ballot. The nominations committee consists of Steve Paugh (Chair), Jim Hermanson, and Leonard Charles.

Jim Hermanson has announced that he will be stepping down as Certification Chair. Please contact Chapter Chair Vicki Kipp or Jim Hermanson if you would like to be considered for the position of Certification Chair.

The following appointed officers have agreed to continue their current position; they are Program Committee Chair– Steve Paugh, Program Committee Members– Fred Sperry and Steve Zimmerman, Membership– Paul Stoffel, Sustaining Membership–

(continued on page 3)

## CHAPTER 24 OFFICERS

### CHAIR:

Vicki Kipp (ECB-TOC)  
W - 264-9631  
vkip@ecb.org

### VICE CHAIR:

Tom Smith (WHA-TV)  
W - 263-2174  
smithtc@vilas.uwex.edu

### SECRETARY:

Jim Magee (Avid Technology Inc.)  
W - 288-5152  
jim\_magee@avid.com

### TREASURER:

Leslie Franzen (WMTV-TV)  
W - 274-1515  
lfranzen@nbc15.com

### Past-Chair

Tom Smith (WHA-TV)  
smithtc@vilas.uwex.edu

## COMMITTEE APPOINTEES

### Program Committee:

Steve Paugh	277-5139
Fred Sperry	264-9806
Steve Zimmerman	274-1234

### Membership:

Paul Stoffel  
stoffel@vilas.uwex.edu

### Sustaining Membership:

Fred Sperry W - 264-9806  
fsperry@ecb.state.wi.us

### Special Events:

Lonnie Cooks W - 264-9631  
lcooks@ecb.state.wi.us

### Certification and Education:

Jim Hermanson 836-8340  
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### Frequency Coordination:

Tom Smith W - 263-2174  
smithtc@vilas.uwex.edu

### National SBE Chapter Liaison:

Leonard Charles  
W - 271-4321 FAX - 271-1709  
lcharles@wisctv.com

## February Business Meeting Minutes

Chapter 24 of the Society of Broadcast Engineers met on Tuesday, February 15, 2005 at Electronic Theater Controls in Middleton, Wisconsin for the chapter's monthly meeting. There were 17 members in attendance, 12 of whom were certified and 3 guests.

The meeting was called to order at 7:14 PM by Chapter Chair Vicki Kipp. The minutes of the January meeting as published in the February newsletter were approved.

Newsletter Editor Mike Norton reported the deadline for the March newsletter is Friday, March 4<sup>th</sup> at midnight. The folding party is Wednesday, March 9<sup>th</sup> at 5:30 PM at WKOW-TV.

Treasurer Leslie Franzen reported that the chapter has a balance in the black.

Sustaining Membership Chair Fred Sperry reported on the recent renewal of Sarch Electronics. The chapter has 22 total sustaining members.

Program Chair Steve Paugh reported the next meeting will be Wednesday, March 16<sup>th</sup> at Full Compass and will be a presentation on the Sony HDV format. The April meeting will be on Tuesday, April 12<sup>th</sup> and will be a presentation on tower inspections by CPH Engineering. The May meeting will be held Thursday, May 19<sup>th</sup> and will be a tour of Token Creek's new digital production unit. Elections will be held at the April 12<sup>th</sup> meeting.

Certification and Education Chair Jim Hermanson submitted his report that Dennis Baldrige has earned his CPBE designation. Jim also reported that he would like to step down as Certification and Education Chair after the April elections. Anyone interested in serving as this Chair, please let Vicki know.

Frequency Coordinator Tom Smith reported on the 2GHZ transition plan as written in the February newsletter. Nextel accepted the terms of the agreement on February 7<sup>th</sup>. There is also a bill before Congress regarding WiFi in the TV band. The bill would require that TV stations wanting to increase power protect low-power WiFi sites, which is a change to the Part 15 rules that low power devices are secondary users.

National Liaison Leonard Charles reported that the National Nominations Committee is accepting nominations and can be sent to Larry Wilkins. Nominations are also being accepted for SBE Fellow and can be sent to Martin Sandberg. Submittal information can be found on the National SBE website. The 2005 Ennes Workshop at NAB will cover the next generation of master control in an IP world. Leonard also announced that he has a schedule of all of the SBE meetings and events at NAB 2005. He also reported that the Chapter 24 email list server is back up and running after being impacted by the problems that broadcast.net had with the sudden demise of their service provider.

(continued on page 9)

## Notice Of Elections (continued from page 1)

Fred Sperry, Special Events— Lonnie Cooks, Frequency Coordination— Tom Smith, and National Liaison— Leonard Charles.

### Ballots

The election ballot will be included in the April newsletter. The deadline for nominations and the submission of biographies will be 48 hours prior to the deadline for submissions to the April newsletter, as announced during the March 16th meeting.

The *Chapter 24 Newsletter* is published monthly by SBE Chapter 24 Inc., Madison, WI.

Could you be the next newsletter editor? Chapter 24 is seeking a volunteer to become the next editor of the award winning Chapter 24 newsletter. Good PC skills are important and experience with PageMaker for Windows a plus. Please contact Chapter Chair Vicki Kipp for more information.



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## AMATEUR RADIO NEWS

By Tom Weeden, WJ9H

- The ARRL has asked the FCC to invalidate a Florida law that prohibits anyone making radio transmissions without a license or Commission "exemption" from interfering with licensed broadcast stations, apparently including interference caused by poor receiver design. In a Request for Declaratory Ruling to the Commission February 25, the League maintains that only the FCC has authority to regulate radio stations and radio-frequency interference (RFI). "It would appear that Commission-licensed amateur radio stations in Florida are subject to felony prosecution if their transmissions interfere with interference-susceptible broadcast or other radio receivers used in listening to public or commercial radio stations," the ARRL said.

Citing case law and legal opinions dating as far back as the 1930s, the ARRL requested a declaratory ruling from the FCC that the Florida statute "exceeds the jurisdiction of the State of Florida and intrudes on the exclusive jurisdiction afforded the Commission by the Communications Act of 1934 as amended, to regulate radio stations and to address interference phenomena."

The Florida Legislature enacted the law, §877.27 of the Florida Criminal Statutes (under "Miscellaneous Crimes"), last year. Violations would be considered third-degree felonies in Florida. The ARRL says it's not clear that Florida lawmakers intended the law to be as broad in its application as it reads, but that the new law—apparently aimed at unlicensed "pirate" broadcasters—"nonetheless on its face prohibits any person from causing interference" with an FCC-licensed broadcast station.

In a 2003 case, in Anne Arundel County, Maryland, the FCC "held clearly that all attempts by states and municipalities to regulate RFI are void as preempted by the supremacy clause of the Constitution," the ARRL said. The League's petition concludes that the Florida statute "is void as preempted by federal communications law."

- The FCC continues to work toward developing a Notice of Proposed Rule Making (NPRM) that will spell out what the Commission has in mind with respect to possible changes in the current Morse code requirement and amateur radio licensing. 18 petitions have been filed seeking Part 97 rule changes addressing the future of the 5 WPM Morse requirement (Element 1) and revisions to the overall amateur radio licensing structure. The FCC is planning to tackle all 18 rulemaking petitions within the framework of a single proceeding.

As far as the code issue is concerned, petitions—and comments in response to them—run the gamut from retaining or even beefing up the Morse requirement to eliminating it altogether. The American Radio Relay League (ARRL) proposed to retain the 5 WPM Morse examination for Amateur Extra class applicants only. The League and others have also put forth proposals for a new entry-level amateur radio license class.

At this point, personnel in the FCC Wireless Telecommunications Bureau are continuing to review the thousands of comments filed on the 18 petitions. While the FCC appears unlikely to release an NPRM any sooner than mid-2005, the issue still may be a major discussion topic during the FCC Forum at Dayton Hamvention, May 20-22.

(Excerpts from the arrl.org web site)

## Afternoon In The Backyard (continued from page 1)

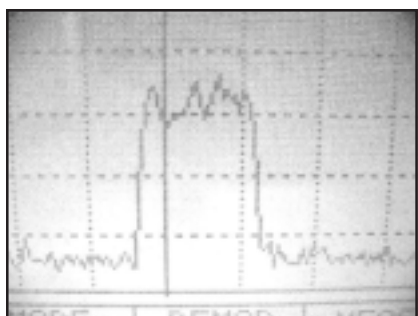
Remember that retired antenna? I hooked it up to the Signal Scout and walked around the back yard, pointing west under the canopy of the neighbor's trees, watching for the flatness of WBUW's DTV waveform to appear. I found *THE* location. It looked great! (See figure 2).

But wait, now WHA's waveform looked jagged. Keep hunting. Ten minutes later I found a location near the flower bed where all the DTV signals

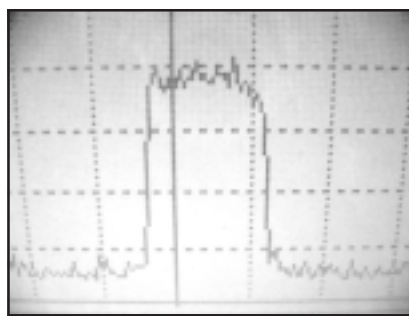
were received as expected.

This spring, the mast and antenna, now anchored in the frozen ground, should make a good trellis for the climbing morning glory. And be careful not to nick the RG-6 with the lawnmower.

*Note:* The Signal Scout is now sold by <http://www.tempo.textron.com>  
[http://65.36.183.19/prod\\_detail.cfm?cat=950&subcat=951&pid=10847](http://65.36.183.19/prod_detail.cfm?cat=950&subcat=951&pid=10847)



**Figure 1.** DTV signal as depicted by the Signal Scout. The jagged, non-flat top resulted in receive problems.



**Figure 2.** DTV signal after receive antenna relocation. The amplitude is more constant over the 6 MHz band.

### CERTIFICATION EXAM SESSION DATES ANNOUNCED FOR 2005

The SBE National Certification Committee has announced exam session dates for 2005. Check the list below for the exam period that is best for you. For more information about SBE Certification, see your Chapter Certification Chair or contact Linda Baun, Certification Director at the SBE National Office at (317) 846-9000 or [lbaun@sbe.org](mailto:lbaun@sbe.org).

<u>2005 Exam Dates</u>	<u>Location</u>	<u>Application</u>	<u>Application Deadline</u>
June 3-13 .....	Local Chapters .....		April 22, 2005
August 12-22 .....	Local Chapters .....		June 10, 2005
November 11-21 .....	Local Chapters .....		September 23, 2005

Please note: SBE Certification exams are administered only by SBE and are proctored in-person by qualified and approved representatives of SBE. No other organization is authorized to administer SBE exams.

## SBE's Short Circuits — March 2005

By **John L. Poray, CAE**  
SBE Executive Director

### RECRUIT SOME ALL-STARS!

SBE wants to add more all-stars to its team during the annual Membership Drive. A special mailing about this year's recruitment effort was mailed to members in February. Recruiters will earn a discount on their 2006 membership renewal for each new member recruited (up to five) during the Drive.

They'll also be eligible for some great prizes, including the Grand Prize of a trip to the 2005 SBE National Meeting and Broadcast Engineering Expo (sponsored by Chapter 67) to be held in Dallas, TX, October 19-20. The Grand Prize includes hotel and airfare for one and a Longley-Rice Coverage Map Poster. The Drive runs March 1 through May 31.

### MASTER CONTROL TOPIC OF ENNES WORKSHOP AT NAB2005

What does the next generation broadcast master control look like? Is it an IT closet? Is it glass and fly by wire? Is it baseband or precompressed? Is it centralized, distributed, multichannel, or is the pendulum swinging back to dedicated ergonomic, operator centric environments? Is it twisted pairs or coax? Are master control routers circuit-switched or packet-switched devices? Does multichannel sound or SCTE 35 have a role? What are the architectural design fundamentals that lend to, or take away from, reliability, maintainability and quality?

The topic for the Ennes Program at  
(continued on page 8)

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## TiVo: the Box and TiVo: the Service

By Vicki W. Kipp

While Digital Video Recorders (DVRs) may be harmful to broadcasters, people who own DVRs are very attached to these appliances. The number of DVR brands available increases almost weekly, but one DVR in particular has become a household name. "TiVo," used as both a noun and a verb, is the best publicized DVR on the market.

### TiVo Delay

TiVo never really displays live TV. When a viewer watches "live" TV, they're actually seeing TiVo's recording which appears onscreen about one second after the signal reaches the home. That one second of latency is the time TiVo requires to convert the incoming analog signal to digital. TiVo constantly records whatever channel is selected on the TiVo, and buffers the past 30 minutes of signal. TiVo owners can come home fifteen minutes after a show has started, play it from the beginning, skip through the commercials, and have the show recorded to hard drive for future access. If a viewer is interrupted during a live show and hits "pause," TiVo will continue to capture the next 30 minutes of content. If the viewer will be gone more than 30 minutes, they should hit the record button.

To give the viewer a context of where they are in a particular show, TiVo has an elapsed time status bar (Figure 1). The bar on the bottom of the screen always represents one full hour of live TV. The light-colored block inside the Status Bar represents TiVo's recorded portion of the show. By looking at the size of the block and its location within the hour time slot, the viewer can gauge how much of the show has been recorded and which portion of the show

they're currently viewing.

### TiVo IS TWO THINGS: A BOX AND A SERVICE.

#### TiVo: the Box

The hardware portion of TiVo is a box sold in electronics stores or at TiVo.com. Viewers who purchase TiVo from an electronics store may be able to order a professional installation package at the same time. Viewers who purchase TiVo from TiVo.com can purchase a professional installation from TiVo.

The TiVo box is a computer with a hard-drive running a Unix OS. TiVo runs on two programming languages: C and Tcl. C performs much of the heavy lifting in TiVo, and the main processes are written in C. Tcl (pronounced "tickle") is the glue that passes commands between interactive applications, and is a general purpose tool command language used to build lightweight TiVo applications.

There are two types of TiVo boxes: TiVo Series 1 and TiVo Series 2. TiVo box choices include a 40, 80, 120 GB, or larger hard drive, and an optional internal DVD Recorder. While the TiVo box has great potential, there is little the box can do without the TiVo service. A TiVo box alone is limited to manual programming to record specific channels at specific times and pestering its owner to pay for TiVo service.

Older Series 1 TiVos limp along without service by permitting the user to schedule records manually, by entering the date, time, channel, and recording length of desired shows. Without a subscription, the Series 1 TiVo's internal clock slowly loses accuracy, leading to missed record times. The clock may be reset if the

viewer forces the Series 1 TiVo to make a daily call to TiVo Headquarters.

### Classifying TiVo: the box

Four types of TiVos have been released so far. Series 1 (first generation) TiVo, Series 2 (second generation) TiVo, DirecTV TiVo (Series 2), and non-TiVo brand consumer recorders that incorporate TiVo and come with TiVo Basic service.

Series 1 TiVo is no longer sold. They were bulkier and heavier and had a slower CPU and less RAM than Series 2. The modem in Series 1 is failure-prone, but used open-source code which is easier to modify. Series 1 TiVos lack some popular software enhancements found in Series 2 models such as folders and the Home Media Option.

TiVo Series 2 is the current model. Along with a faster CPU and more RAM, Series 2 TiVos boasts popular software enhancements such as grouping shows into convenient folders, TiVoToGo, and the Home Media Option. The Series 2 have more recording capacity than Series 1. Despite these improvements, the standalone Series 2 lacks some desired features, such as the inability to receive or record HD format and reducing 5.1 surround sound audio to a stereo signal.

DirecTV TiVo records 5.1 AC-3 Dolby Digital surround sound and records all signals at "best" quality in the same pre-compressed format that DirecTV transmits in. Since the DirecTV TiVo has two tuners, viewers can simultaneously record two live shows on different channels or can record one channel while watching a different live channel. There is a DirecTV TiVo model available that records HD signals.

(continued on page 6)



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## TiVo: the Box and TiVo: the Service (continued)

DirecTV TiVos work only with DirecTV's satellite source, and the Home Media Option is not available for these boxes.

The final type of TiVo is a non-TiVo brand consumer recorder that incorporates TiVo and come with Basic TiVo service, allowing the viewer to control live TV with pause, rewind, and instant replay functions. Basic TiVo service also includes a three-day advance program guide with a simple TiVo interface for easy program selection. Basic service can be upgraded to standard "TiVo Plus" service subscription with Season Pass, WishList, and Suggestions. Basic TiVo can also be upgraded with the Home Media Option.

### Setting Up TiVo: the Box

First, viewers should connect TiVo to their phone line and television signal. Viewers with a separate cable box or satellite receiver must follow two additional steps: They must set up TiVo to change the subscription box channels by running the included TiVo IR control cable or serial control cable between TiVo and the receiver. Viewers should then connect the audio and video cables from the subscription box to TiVo's input ports.

The on-screen setup leads viewers to indicate which channels and subscription services they receive. If they choose to record a show on a channel they don't receive, TiVo will record a black screen. While it may seem illogical for a viewer to tell TiVo that they receive channels that they don't get, it will enable the Electronic Program Guide information for those channels. Lastly, the viewer needs to instruct TiVo which shows to record.

TiVo is only designed to record shows that come in from broadcast or

subscription television service because it gets its record cues from Tribune Media Service (TMS) listings. To date, TiVo-brand DVRs are not set up to record manual inputs such as camcorder feeds or router feeds. However, TiVos can be "tricked" in to recording these sources by adding a fake channel. Some TV stations use DVRs to record air checks.

### TiVo: the Service

The TiVo service supplies the TiVo box with area station listings. The service sorts through the users personalized channel lineup and content preferences to record the shows they've chosen.

### Service Costs

When it comes to the TiVo Service, the cost varies according to the TiVos circumstances. TiVo service for a standalone TiVo for over-the-air/cable viewers costs \$12.95/month for the first TiVo owned and \$6.95/month for each additional TiVo, or \$299 for a lifetime subscription for each TiVo owned. Viewers come out money ahead to buy the lifetime subscription if they use TiVo for more than 23 months.

The TiVo for DirecTV box is purchased by viewers, but the DirecTV subscribers are not eligible to purchase a Lifetime service membership. DirecTV subscribers pay \$4.99/month for the service, regardless of how many DirecTV TiVos they own.

### Lifetime Defined

A lifetime subscription is tied to the life of a TiVo motherboard, not the lifetime of the subscription owner. If a viewer sells the TiVo, they sell the Lifetime Subscription along with it. It is up to the seller to ask the TiVo company

to transfer the subscription to a new owner. If a TiVo motherboard dies within its warranty and it is repaired through a TiVo authorized service center, TiVo allows viewers to transfer the dead TiVo's Lifetime Subscription to the replacement TiVo. Viewers can replace non-motherboard TiVo parts such as the hard drive and still keep their Lifetime Subscription valid.

### TiVo EPG and Metadata:

TiVo gets its data from TMS, which lists its program data at www.zap2it.com. If viewers see incorrect show listings or descriptions, they can notify a TiVo Lineup Specialists by filling out a form at Tivo.com. Viewers are also asked to notify the station of the problem.

TiVo automatically adjusts for lineup changes, and catches requested shows at their new time. However, if a show is preempted because a game or news event ran long, the end of that show will get cut off. TiVo can't correct for long-running live events because it relies on pre-published network schedules to make decisions.

### TiVo Phones Home

Each day, TiVo phones TiVo headquarters for five minutes to fetch updated program listings, software updates, and messages from the TiVo company. The service automatically loads the upcoming fourteen days of listings, noting any schedule changes. It then compares that list with the shows the viewer wants recorded, and juggles all the recordings to avoid schedule conflicts. Aside from the initial setup of TiVo, viewers don't need a landline connection for TiVo if they connect TiVo to a computer network with a broadband connection.

(continued on next page)



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## TiVo: the Box and TiVo: the Service (continued)

Removing any personally identifiable information, the unit tells the TiVo company what shows have been watched. By allowing their monitoring habits to be reported, the viewer gives ratings support to the shows they like to watch. The user can opt not to report their viewing habits.

### Unique to TiVo

Besides enjoying the status of being a household name, TiVo owns patents on unique features such as Season Pass and WishList. With the Season Pass feature, the viewer selects a show title, and then TiVo records every episode of that show. TiVo recognizes when a show is a rerun, and does not record that show unless the user has requested TiVo to record reruns. TiVo offers a WishList to automatically search for and record shows with a particular topic, title, actor, director, or band.

### Recommendations

TiVo fills empty hard drive space with shows it thinks the viewer might enjoy, based on previously recorded shows. When its hard drive fills up, TiVo cleans house by automatically deleting its suggestions. Users can help TiVo pick suitable recommendations by pressing the "Thumbs Up" or "Thumbs Down" buttons to rate shows they've watched. The more that viewers utilize the "Thumbs" buttons, the better TiVo gets to know their tastes.

### Save to Media

The "Save to VCR" option lets users archive programming to VHS tapes or DVDs so they can be deleted from TiVo's hard drive to free up space. When TiVo begins playing back a show for archive, it neatly displays a slate with the show's name, date, length, and episode title at the head of the record. TiVo won't edit out the commercials, but the user can do that if they are willing to babysit their VHS or DVD recorder pause button during the archive process. In certain situations TiVo is tightly integrated with a record device. For example, Sony brand TiVo's mind-meld with Sony VCRs;

the "Save to VCR" option enables TiVo to turn on a Sony VCR, automatically record the show, and turn off the VCR when the show concludes.

I predict that TiVo will soon rename the "Save to VCR" option to "Save to DVD." TiVos with an integrated DVD recorder are now available for a few hundred dollars. Standalone DVD Recorders are now available for less than \$300.

When using a standalone DVD Recorder to record shows from TiVo, the user needs to monitor the dub in order to stop the DVD Recorder promptly at the end of the show. If not stopped, the DVD recorder will keep recording until it fills up the disc. Once the DVD media has been written to, it cannot be written on again. The exception to this rule is DVD+/- RW rewritable discs which allow users to erase the entire disc. Some DVD+/-R recorders allow users to erase a file on a DVD by rendering that file unreadable during playback.

### TiVoToGo

TiVo recently released a new content transfer feature called TiVoToGo. TiVoToGo pulls shows from a networked Series 2 TiVo to a computer. Once on a computer, the shows can be played back with Windows Media Player 9 or 10, or burned to DVD.

TiVoToGo is available at no charge, and does not require TiVo's Home Media package. However, users may incur a few related expenses while setting up TiVoToGo. To get started with TiVoToGo, TiVo must push their new TiVo software to the user's TiVo box. TiVoToGo is being distributed in stages. However, eager users can request to be bumped to the top of the list. Once the TiVo box has been updated, users must connect TiVo to their computer network. Since TiVo's output is USB, a USB-to-Ethernet or

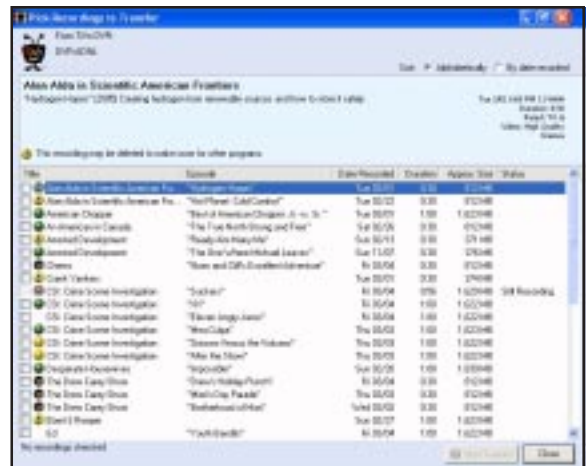


Figure 1. TiVoToGo Desktop enables programs to be transferred from TiVo to a computer.

USB-to-Wireless adapter is required to connect to their Ethernet network. Once TiVo is connected to the network, it will get its program schedule updates over the Internet instead of over a telephone connection. Lastly, users need to download TiVo Desktop software (Figure 1) on their computer. TiVo Desktop allows users to see what is saved on their TiVo, request shows to be transferred to the computer, and play transferred shows on the computer.

The time needed to transfer a show from TiVo to a computer can take from several minutes to several hours, depending on network speed, quality the show was recorded at, and length of show. It is not unusual for a transfer to take almost as much time as real-time playback. Users can begin watching a show on the computer as soon as the transfer begins. TiVoToGo Desktop also enables users to transfer music and photos to their TiVo box for playback on TV.

Shows saved on the computer have a .TIVO file extension. In order to record shows to DVD, users have to buy Sonic MyDVD 6. This is the only software available that can write .Tivo formatted files to DVD. Sonic creates a fancy menu for TiVo shows recorded to DVD, but so far lacks the episode slate that is displayed when you record shows to a VCR or standalone DVD player.

(continued on page 8)

## TiVo: the Box and TiVo: the Service (conclusion)

### Home Media Option

For an additional \$99/TiVo box, TiVo will supply the Home Media Option (HMO). This upgrade lets viewers connect TiVo to their computer through an Ethernet or 802.11 connection. Viewers can then schedule TiVo recordings from anywhere over an Internet interface, send music (MP3 files, playlists in PLS and ASX format, and Internet radio stations) and digital photos to their TiVo for TV or stereo playback, and copy shows from one TiVo that they own to another TiVo that they own for multi-room viewing. Once a viewer purchases the HMO, the HMO setup process is almost identical to the TiVoToGo setup.

### Record Capacity

TiVo is commonly available in 40-, 80-, or 120-hour record capacity. The hour rating indicates the hours of recording typically available at medium or high quality recording. Viewers can store more hours of programming on their TiVo if they select slower record speeds. Record quality choices are basic, medium, high, and best. Best is recommended for fast-paced action films, sports, and movies. Medium is well-suited for talk or cooking shows. News and some animation shows look

acceptable at basic quality.

Viewers can increase their TiVos record capacity by replacing the original hard drive with a bigger hard drive and/or adding a second hard drive. TiVo owners can send their TiVo in for an upgrade or order parts to do the upgrade themselves. Upgrade parts and service are available through Weaknees.com or Ptvupgrade.com. Upgrade providers sell TiVo owners a hard drive, printed instructions, and installation tools.

There is a caveat to upgrading a TiVo: The warranty for most models covers 90 days of free labor and one year of free parts, but opening the case voids the warranty. If something breaks during an upgrade which requires the DVR to be sent to TiVo for repair, TiVo is likely to charge for that repair.

### Hackers

TiVo hackers don't write malicious codes, but rather write their own software to make their TiVos do unique things. TiVo hacks have been written to display a stock market ticker along the bottom of the TV screen. A hack for DirecTV TiVo displays caller ID information for incoming calls on the TV screen if the TiVo owner subscribes to caller ID. The "Shagwell" Easter egg

on TiVo lets the viewer see a closed caption list of the names of TiVo developers. By pressing the TiVo button followed by the zero key on the remote control, viewers can activate an animated sequence of the TiVo guy playing in a mechanical contraption

A popular TiVo hack allows users to manually skip commercials by jumping ahead in 30-second increments. Although the 30-second jump is not officially supported by TiVo, nor covered in its manuals, this hidden feature can be activated by using the remote control to program the Skip-to-End (Advance) button to move forward 30 seconds each time it is pressed. Since TiVo doesn't officially support the 30-second skip feature, it could be discontinued at any time.

Hackers connect a computer to TiVo to load their hacks. This requires a TiVo serial control cable and a null modem adapter. The TiVo serial control cable has a male headphone jack connector on the TiVo end and an RS-232 connector on the computer end.

### Wrapping Up

Well, there you have it: all the details of the record device that became a noun, a verb, and a household word.

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## SBE's Short Circuits – March 2005 (continued from page 4)

NAB2005 is neither radio nor TV centric. Clearly, the bulk of the material is applicable or has implications to broadcasting, with or without pictures, but the program will intertwine the more specific material. As in years past, presenters will include chief technical officers who direct the design and rollout of technology, chief engineers and system's integrators with insights from behind the racks and noted pundits and futurists of our industry.

For 2005, PBS joins the Ennes Educational Foundation Trust and SBE in presenting this one-day program. The event will be held on Saturday, April 16 at the Las Vegas Convention Center beginning at 9 a.m. The Ennes Program is a part of the Broadcast Engineering Conference, co-presented by NAB and SBE at NAB2005. To

register, visit the NAB web site, [www.nab.org](http://www.nab.org).

### NEXTEL ACCEPTS FCC R&O

On February 7, 2005, Nextel Communications announced its formal acceptance of the Federal Communications Commission (FCC) Report and Order (R&O) in the matter of improving public safety communications in the 800 MHz band and reallocating spectrum at 2 GHz for use by Mobile Satellite Service and Advanced Wireless Services.

SBE is pleased to be on record in support of the plan advocated by Nextel and other organizations, which addresses BAS relocation equitably across all broadcast markets while simultaneously alleviating problems

affecting some public safety communications systems in the 800 MHz band.

SBE is acting as a consultant to Nextel for purposes of ensuring the smoothest possible 2 GHz relocation to the new channel plan – the channel plan which SBE proposed in its comments, and which the FCC adopted in November, 2003.

### MARCH 31 DEADLINE FOR FELLOW NOMINATIONS

There is still time to nominate a deserving member for the SBE Fellow award. Submit nominations by March 31 to Martin Sandberg, CPBE, Chairman, SBE Fellowship Committee, 9807 Edgecove Drive, Dallas, Texas, 75238-1535 or to [sandytex@swbell.net](mailto:sandytex@swbell.net).



### February Business Meeting Minutes (continued)

Under new business it was reported by Chapter Chair Kipp that Special Events Coordinator Lonnie Cooks is recovering from recent surgery. The Chapter wishes him a speedy recovery.

Under old business, the first round of nominations for Chapter officers was held. Treasurer Leslie Franzen will be seeking a second term. Jim Magee was nominated for Chapter Chair. Tom Smith was nominated as Chapter Secretary.

Under professional announcements, Jeff Juniet was congratulated on his article "Acrodyne Makes Smooth Upgrade for WBUW" that was published in the June 23 issue of *TV Technology*. Dennis Baldrige has created a web site listing broadcast engineering educational books at [broadcastingbooks.com](http://broadcastingbooks.com), whose ad appeared in the November *Radio Guide*.

Under Tech Tips, Vicki Kipp reported that as a result of recent DTV stream changes, several viewers needed some assistance to properly receive the

modified signal. In most cases, rescanning for channels made the correction. Some Samsung and Mitsubishi receivers took a little more work. Samsung HDTVs with integrated turners (models TXP2670W, TXP2675W, TXP2775W, and TXP3275W) required disconnection of the antenna, performing an autoscans, reconnecting the antenna, and then performing a second autoscans worked. Mitsubishi HDTV with integrated turner (Model WD52725) worked with unplugging the set for 24 hours – the tuner reboots upon power up.

The meeting adjourned at 7:32 PM

The evening's program was a presentation and tour by Sylvia Sinclair of Electronic Theater Controls.

*Submitted by Jim Magee, Secretary*

## CHAPTER 24 SUSTAINING MEMBERS

### THANKS TO ALL OUR SUSTAINING MEMBERS:

- Alpha Video
- Belden CDT
- Broadcast Richardson
- CPH Engineering Inc
- CTI
- Clark Wire and Cable
- Full Compass Systems
- Harris Corporation
- Heartland Video Systems
- maney-logic
- Norlight Telecommunications
- Roscor Wisconsin
- Scharch Electronics
- Sony Broadcast
- Sound Devices, LLC
- Swiderski Electronics
- Token Creek Productions
- WISC-TV 3
- WKOW-TV 27
- WMSN-TV 47
- WMTV-TV 15
- Wave Communications
- Wisconsin Public TV

### EAS TEST SCHEDULE AVAILABLE

The schedule of Required Weekly Test (RWT) and Required Monthly Test (RMT) times to be sent on Wisconsin Public Radio is listed on the web. It can be found at [www.wpr.org/eas](http://www.wpr.org/eas).

All of the designated State Relay stations in Wisconsin are members of Wisconsin Public Radio.

Also listed on the web page are scheduled time for RMTs from NOAA Weather Radio stations.

#### SBE CHAPTER OF THE AIR:

HamNet meets the second Sunday of each month at 0000 GMT on 14.205 MHz. Hal Hostetler WA7BGX is the Control Station.

Thanks to WKOW-TV for providing copying and folding facilities for the Chapter 24 newsletter!

Thanks to WISC-TV for maintaining the web server for the Chapter 24 Web page!




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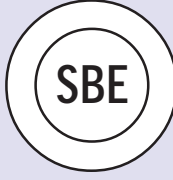
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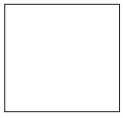
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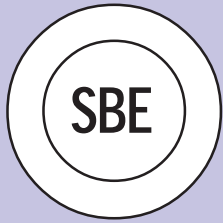


**FIRST CLASS MAIL**

Newsletter edited on Pagemaker 7.0 by: Mike Norton  
 Contributors this month: Vicki W. Kipp, Jim Magee, Steve Paugh, Paul Stoffel, and Tom Weeden.  
 Thanks to Leonard Charles for his work on the Chapter 24 WWW page.

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# MARCH MEETING and PROGRAM



## Society of Broadcast Engineers CHAPTER 24 MADISON, WISCONSIN Wednesday, March 16, 2005

### Sony HDV Format – Nominations

Sony has introduced a low cost HD tape format that will be of interest to anyone looking for an entry-level system for shooting HD video. Joe Guerrero of Sony will demonstrate their new HVR-Z1U camcorder. This is a 3 chip, 1080i, 16:9 camcorder with a 12:1 lens, listing under \$6000.

We will also continue our preparation for April elections by finalizing the nominations for elected offices.

Dutch Treat Dinner at 5:30 PM  
Tallard's Station  
8152 Forsythia Street  
(off Airport Road, west of Zimbrick Acura/Volkswagen West)  
Middleton, WI  
(no reservation - just gather together)

Meeting and Program at 7:00PM  
(use the front door entrance)  
Full Compass Systems  
8001 Terrace Ave  
Middleton, WI

Visitors and guests are welcome at all of our SBE meetings!

#### 2005 UPCOMING MEETING/PROGRAM DATES:

<u>Day</u>	<u>Date</u>	<u>Program</u>
Tuesday	April 12, 2005	Tower Inspections/Elections
Thursday	May 19, 2005	Token Creek Truck Tour
Tuesday	June 21, 2005	Summer Picnic

Program Committee:

Steve Paugh  
277-5139

Fred Sperry  
264-9806

Steve Zimmerman  
274-1234