

Meeting Notice

Thursday, December 13, Fox and Hound Pub and Grille

19210-A E 39<sup>th</sup> St.; Independence, MO; 816-795-5744

Gather at 11:30 a.m., meeting at noon

*When Good Capacitors Go Bad.* Capacitor problems are a leading cause of equipment performance degradation and failure. Doug Jones of Midwest Devices will offer a tutorial on capacitor troubleshooting, with particular emphasis on Effective Series Resistance (ESR). Jones will also talk about changes in capacitor technology over time, and choosing the right capacitor for a particular job. Feel free to bring a question for Jones, or a favorite capacitor-gone-bad story.

Jones is the owner of Independence-based Midwest Devices and is the designer of the Capacitor Wizard, an in-circuit ESR meter. He has also designed and built test equipment for the cable television industry.

The restaurant is on 39<sup>th</sup> St. between Little Blue Pkwy. and MO-291. The meeting will be held in the Burgundy Room. Order your own lunch when you arrive.

Last Month's Meeting

By Ed Treese

The November meeting of Chapter 59 of the Society of Broadcast Engineers was held Nov. 8, 2007 at Zarda Barbecue in Lenexa. There were 15 in attendance. Robin Cross, chapter chairman, called the business meeting to order at 12:06 p.m. and asked for all attendees to introduce themselves.

Ed Treese read the minutes of the October meeting in the absence of Secretary/Treasurer Ben Weiss. The motion to approve the minutes was made by Greg Best and seconded by Kirk Chestnut. Passed.

Chriss Scherer, chapter certification chairman, reported that the Digital Radio Broadcast (DRB) certification is now available. He included an overview of the requirements to apply for the Specialist Certifications, which include the Digital Radio broadcast, AM Directional, and 8-VSB levels. Applications are available on the SBE website. Contact Chriss or the SBE national office for details on SBE Certification.

Chriss, as chapter newsletter editor, also noted that newsletter sponsorship letters were to be sent in November, and he expected most if not all the sponsors to renew.

Kirk Chestnut, Kansas City EAS coordinator, reported nothing new except that the October monthly test was sent one day late due to operator error at KCMO-FM.

Chris Castro, chapter frequency coordinator and SBE/NFL game-day coordinator, said that there have been no problems with the NFL game-day coordination. A new NFL policy has been implemented that requires all RF users at

an NFL game to coordinate their RF requirements before the game and not at the game. The new NFL policy prohibits any RF use without prior coordination, and RF users that arrive at a game without the prior clearance will have their RF equipment held by NFL security.

Vice Chairman/Program Chairman Dave Buell announced the details of the December meeting. Buell also noted that John Gray has agreed to help arranging locations for the monthly meetings. Dave would appreciate any ideas about future programs. Robin stated that he would still like to have a committee of four people: two radio/audio and two TV/video.

Kirk Chestnut asked if there was any interest in arranging a digital audio measurement seminar that Sencore can provide. If there is enough interest, the company will come to Kansas City. Cost is estimated to be around \$500 per person, based on the total number of attendees. [If you have an interest in this seminar, contact Kirk Chestnut or Dave Buell.]

Greg Best is finalizing the VSB measurement seminar which will be held Dec. 6 at the Missouri Department of Natural Resources office in Lee's Summit, which is near the FCC and KC Scout offices.

Robin announced that Bob Hagg had retired from KCPT

More Inside:

<i>Seminar Ideas</i>	2
<i>Simple Networking</i>	3
<i>IT Job Opening</i>	5
<i>VSB Seminar</i>	5
<i>Webcast Replay</i>	6
<i>Upcoming meetings</i>	6

Certification Exam Dates		
Exam Date	Location	App. Deadline
Feb 8 - 18, 2008	Local Chapter	Dec 31, 2007
Apr 15, 2008	NAB2008	Feb 29, 2008
Jun 6 - 16, 2008	Local Chapter	Apr 18, 2008

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television and introduced the new vice president of technology and broadcasting, Jeff Evans.

Chris Castro reported that former chapter member Bob Schneider, who now lives Topeka, had surgery on one knee and will have surgery on the other one. He is doing well and passed a "hello" to the chapter.

The motion to adjourn was made at 12:31 p.m. by Chriss Scherer and seconded by Chris Castro. Passed.

Doug Wynn, regional sales manager of VCI Solutions provided lunch and presented the program. The program discussed television automation and traffic systems, and how they integrate. Wynn also discussed a standards initiative for automation system data.

**Chairman's Chat**  
**How About More Seminars?**  
*By Robin Cross*

I have heard of some interest in having a digital audio program. I have contacted a couple of equipment providers and there seems to be a problem in that they can show you how to troubleshoot anomalies with their own equipment, which is reasonable, but they don't know how to use other's equipment—and rightly so. What seems to be needed is a seminar on digital audio (AES-3 or S/PDIF) that is not company centric. I would like to know how to identify *and solve* problems. Getting a light on a piece of equipment that says it is not locked helps, but does nothing to help me understand why so I can eliminate the problem. That is what our business is based on, eliminating problems.

This brings up the upcoming seminar on 8-VSB that SBE59 is helping to sponsor. I have worked with Greg Best and Chriss Scherer to make this happen. This is a big feather in the SBE59 cap to host this. I have even received inquiries from other states about it. Your support and encouragement is helpful for its success. If you know someone at another station who would benefit from this training, please mention it to him or her.

We may need to also put together a seminar in a similar vein for HD Radio. When I installed the KCUR IBOC transmitter there seemed to be only one STL option available. Now there are at least three ways to get the digital signal to the transmitter site. It seems that the solutions are settling down. The RF side of things has changed little with its five ways to implement HD Radio.

As far as my HD Radio installation, it is perking along. I

did go through troubleshooting a problem without any test equipment other than existing analog mod monitors, an analog Bird power meter and a DVM. It would have been much simpler and quicker if I had the correct equipment from the get-go.

**Simple Networking**

By Steve Epstein, CPBE

[www.broadcastbuyersguide.com](http://www.broadcastbuyersguide.com)

Most of us have dealt with networks, but not all have had the opportunity to really dive in. Over the next few months, I want to cover not only the basics but some in-depth networking concepts of IP networks. We will not cover SONET, Token-ring or other legacy technologies. We will start with the physical side and then move to the logical side.

Category 5 wiring is used for 100Base-T (100 Megabit) networks, while CAT 5e is used for 1000Base-T (Gigabit) networks. Cabling consists of both shielded and unshielded versions in both solid and stranded versions. Stranded cabling is normally used as patch cables to connect PCs to wall jacks. Solid cabling is stiffer and is used within walls. It is important to match the cabling and connectors; use connectors designed for stranded cable only with stranded cable, and not with solid. Metalized connectors are used for termination of shielded cabling. Quality tools are necessary to make proper connections. Wall connectors are similar to punch down blocks and use similar impact-type tools. Blades for both 66 and 110 blocks are normally included and the tools run around \$50. I have had some success with non-impact tools but do not recommend them.

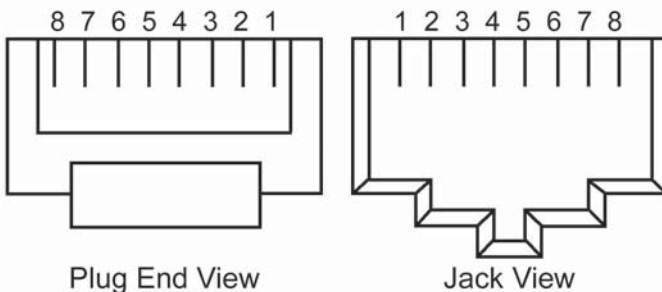


Figure 1. RJ-45 pinouts

The patch cable ends can be considerably trickier. The most common tool is much like the tool for RJ-11 plugs, and you simply slip the cables all the way into the connector and crimp. A slightly fancier connector has a small plastic guide that slips into the connector making it slightly easier to ensure the individual wires make it into their re-

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spective slots. The best tool/connector I have worked with has an open end and allows the wires all the way through the connector. The tool crimps and cuts the wires in a single action.

Figure 1 shows the pinout of an RJ-45 plug and jack. Table 1 shows the color code for A and B wiring, but B is the most common. Crossover cables (the equivalent of a null modem) are simply wired as an A connector on one end and a B connector on the other. The main difference between the two is that the green and orange pairs are swapped.

TIA/EIA-568-A			
Pin	Pair	Wire	Color
1	3	1	white/green
2	3	2	green
3	2	1	white/orange
4	1	2	blue
5	1	1	white/blue
6	2	2	orange
7	4	1	white/brown
8	4	2	brown

TIA/EIA-568-B			
Pin	Pair	Wire	Color
1	2	1	white/orange
2	2	2	orange
3	3	1	white/green
4	1	2	blue
5	1	1	white/blue
6	3	2	green
7	4	1	white/brown
8	4	2	brown

Table 1. CAT-5 wiring pairs

A simple network consists of two devices typically two PCs with network interface cards (NICs). Most computers have built-in NICs, but if not they are available at a small cost as PCI or PCMCIA cards. When directly connecting two NICs, use a crossover cable. Straight-through cables can be used to connect a NIC to a hub/switch. Multiple PCs can be networked this way. Hubs are just a common bus that puts any incoming traffic on all output ports. Switches are capable of learning which address is connected to which port and route traffic accordingly. Because of this more bandwidth is available across a 10/100Mbit switch than across a 10/100Mb hub.

**Next EAS Required Monthly Test: December 25**  
The RMT is sent on the last Tuesday of the month



To setup a simple network, connect two PCs to each other with a crossover cable, or connect each PC to a hub/switch with straight cables. Give one PC 192.168.1.1 as its IP address and set the other PC's address to 192.168.1.2. Set the subnet mask to 255.255.255.252. You now have a two-machine network. A six-machine network would have addresses from 192.168.1.1 to 192.168.1.6 and a subnet mask of 255.255.255.248. I'll have more on addresses and subnets next month.

**Help Wanted: IT Professional**

KMBC-TV seeks an IT professional who has a strong understanding of network technology to work in its state-of-the-art new facility in Kansas City. Successful candidates must be competent in operating systems such as Windows and Linux and have at least three years experience in a broadcast environment. The individual must have strong interpersonal skills. Cisco certification a plus. Send resumes to Jerry Agresti; KMBC-TV; 6455 Winchester Ave.; Kansas City, MO 64133; or e-mail to jagresti@hearst.com. No phone calls. Women and minorities encouraged to apply. EOE

**SBE59 Hosts VSB Measurements Seminar**

Greg Best Consulting and SBE59 have arranged to present a one-day seminar on the ATSC's DTV VSB transmission system measurement methodologies. This seminar, a follow up to the original VSB Fundamentals seminar, is aimed at broadcasters, consultants, manufacturers, translator/LPTV operators and cable operators.

The seminar will be held Dec. 6, 2007, from 8:30 a.m. to 5:45 p.m. at the Missouri Department of Natural Resources, 500 N.W. Colbern Rd., Lees Summit, MO 64086.

Gary Sgrignoli, DTV transmission engineer with Meintel, Sgrignoli and Wallace, is the presenter. The seminar will help attendees develop a basic understanding of 8-VSB transmission system measurements in the laboratory, at a transmitter site, and at remote field test sites. Practical test equipment information such as features, options, specs and other performance requirements will be covered. Attendance at this seminar earns one SBE credit towards recertification and it can facilitate preparation for the SBE VSB Specialist Certification exam.

Enrollment is limited, so RSVP soon. The cost is \$60 for preregistered SBE59 members; \$65 for preregistered non-members. Cost is \$75 at the door.

The registration form is on the SBE59 website, or contact Greg Best at gbconsulting@kc.rr.com for more info. ©

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<b>Upcoming Chapter Meetings and Events</b>
<p><b>December 6</b>  <i>8-VSB Measurements Seminar</i>            Gary Sgrignoli,  <i>MO Dept. of Natural Resources</i>  <i>Register Today!</i></p> <p><b>December 13</b>  <i>When Good Capacitors Go Bad</i>            Doug Jones, Midwest Devices  <i>Fox and Hound, Independence</i></p> <p><b>January 10</b>  <i>Marr Sound Archives</i></p>
<p>Do you have a suggestion for a program topic?            Please share it with Dave Buell.</p>

**SBE Webcast Available for Replay**

Originally airing on Oct. 9, 2007, the SBE National Webcast was streamed live via the Internet to provide SBE members with an opportunity to ask questions about the Society to then President Chriss Scherer, then President-elect Barry Thomas and national staff. Thomas' term as president began on Oct. 11. During the webcast, viewers could e-mail, instant message or call to pose questions for the webcast.

A link to the webcast is posted on the SBE home page. The hour-long webcast is available in four parts. A similar event is in the works for the 2008 SBE National Meeting.

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