CHAPTER 24 — SBE — MADISON, WI.

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CHAPTER 24 - MADISON, WISCONSIN
OCTOBER NEWSLETTER 1988

Edited by: Leonard Charles

Articles Welcome!! Send them to:
Chapter 24 Newsletter
5714 Modernaire St.
Madison, WI 53711
(hard copy or text files on 360K disk)

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MEETING ANNOUNCEMENT

DATE: Tue - Oct 11, 1988

PLACE: Channel 47 Studios
====== 7847 Big Sky Drive

Program: THE RF SEMINAR

An educational night with the following tentative evening schedule:

5:30) RF THEORY by Joe Thomas, Professor at UW Platteville
6:45) Dinner (Paid by Chapter 24)
7:15) ANTENNAS by the Andrew Corp
8:30) SPECTRUM ANALYSERS by Ron Austin of Tektroniks
9:45) Close

We need to get an accurate count for food so if you haven't sent in your registration form from last month's newsletter, and you wish to attend, please call Andy Murphy at 833-0047 or Kevin Peckham at 271-3778.

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UPCOMING MEETING DATES
Wednesday November 9
Tuesday December 13

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UPDATE....

At last report, LPTV Channel 5 is transmitting from the city owned Larkin Street tower. No formal lease has yet been signed but one is in the process of being worked out.

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THE LEGALS....info by Doug McDonell

The Pacer Television Company has filed to amend an application for Channel 52 licensed to Mayville, WI. The location is .6KM south of Wis Hwy 33 and .3KM west of Madison Road five miles east of Horicon, WI near Iron Ridge. Visual Power to be 2500 KW at 233 meters (764 ft). Location is approximately 40 miles NW of Downtown Milwaukee, 23 miles south of the center of Fondulac, and about 50 miles from Madison's Capital Square.

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PCB EFFORT....

Fort Atkinson based Chapter 28 member Clif Groth has sent a letter to the WBA proposing a joint WBA/SBE effort to organize a common collection point for disposal of PCB capacitors and the like. Chapter 24 members who yet face the problems of disposing of those nasty PCBs might give Clif a call at WSJY Fort Atkinson. You may save a few bucks through consolidated disposal.

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FCC ANNOUNCES ARREST....

As a result of an FCC investigation, the U.S. Marshal's Service arrested John R. Ross, Sr., of Cartersville, Georgia, last week for marketing unauthorized satellite descrambling equipment. Seized were several receivers, descramblers, an EPROM burner along with numerous chips, software for use in modifying the chips, customer receipts, and business invoices. FCC's Chairman Dennis R. Patrick stressed his concern over the problem of satellite programming theft emphasizing that this crime is not only stealing from the creators of the programming, but also from law abiding citizens who are willing to pay for the programming. He said if the wide-spread theft continues, many programmers are likely to implement more secure and more expensive scrambling techniques to the ultimate detriment of the many law abiding subscribers to these services. For more details on this story, download -FCC888.new- from the SBE files area of Dave Willow's Computer Bulletin Board.

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IN THE SAME BOAT....

In August, an engineer's worse nightmare came true when an electrical fire in the Empire State building forced 8 radio stations off the air. For some, several moments had past before backup systems were switched on while others remained off for several hours. Several radio stations operated at reduced power for several days. The only television station affected was UHF Channel 68. All stations returned to the air at reduced power early that evening.

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CHICAGO SEMINAR SERIES SET....

NBC/WMAQ Chicago is in the process

of conducting a series of technical seminars to help prepare broadcast technical personnel for SBE Certification. All classes are led by NBC staff or representatives of the SBE; the classes are free, and open to any SBE member. For more information, contact Michael Pratts, Chicago Chapter Certification Chairperson at (312) 861-5674.....or see me at our RF seminar. I have a list of the seminar topics remaining in their schedule.

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LOW POWER FM ?....

Expressing fears that a proposed change of service of FM translators would result in what effectively would be low power FM stations across the country, the NAB and other broadcast groups have filed comments opposing such expansion. The Commission had asked for comments on allowing local origination for FM translators. Those opposed say that translators should remain as secondary services to full power FMs used only to fill in coverage.

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TELEPHONE CABLE....

The FCC is considering recommending to Congress a lift of the cross ownership ban on telephone companies providing cable television service. The FCC will soon seek comments on the subject. Being considered is to allow phone companies to be transporters of other programming but not programming of their own. Needed to make it happen would be a modification of FCC regulations, the 1984 Cable Act, and the final judgement handed down be US Judge Harold Greene in his mandated breakup of AT&T.

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HDTV UPDATE....

It looks like the FCC will eliminate from consideration transmission systems with continuous 9MHZ channels which would be incompatible with NTSC receivers as a means to deliver terrestrial HDTV. The Commission also decided to restrict any possible additional spectrum for advanced television to the current VHF and UHF spectrum thus ruling out the proposed use of the band above 1GHZ for augmentation channels. Meanwhile the FCC released an inquiry on four possible methods of transmitting HDTV... 1) one 6MHZ channel 2) one 6MHZ channel with one 3MHZ augmentation channel 3) one 6MHZ channel with on 6MHZ augmentation channel 4) one 6MHZ NTSC channel with on non compatible 6MHZ simulcast channel. Meanwhile the Telecommunications Subcommittee held its second meeting on the HDTV subject in September. Economic and trade implications were considered at the meeting.

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HDTV RELATED....

The FCC has delayed its decision on whether to reallocate UHF TV channels in eight markets to land mobile radio use until after it is decided whether those channels will be needed for transmission of the HDTV standard.

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WHAT'S NEW WITH R-DAT....

Sharp has released the latest professional version R-DAT digital audio tape recorder. The model SX-D100 specs include 5 to 22000 hertz frequency response +/- 0.5db, 92db S/N ratio, 90db separation, and .005 percent distortion rating. The consumer units are still on hold pending an adequate copy protection scheme.

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COMPUTER HARDWARE SYSTEMS....

IBM XT/ AT & Compatibles

Summary By: Chris Cain

Most "Personal Computers" (PC's) these days are designed around two microcomputer chips:

1) 8088/ 8 bit chip. Most "XT" type machines utilize this chip. Typical operating speed is 4.77 MHZ. (most XT clones run faster) For most "basic" operations such as word processing & telecommunications this speed of processing is adequate.

2) 80286/ 16 bit chip. All "AT" type machines utilize this chip. Operating speeds range from 6MHZ to 12 MHZ depending upon the system crystal installed and heat dissipating materials. With 16 data lines and faster operating speeds, overall speed performance is much faster than the 8 bit/ 8088 machines. (Note: Even if a 8088 chip is "hopped" up to 10 MHZ speed, you are still limited to 8 data lines, which still results in "slower" operations.) Such applications such as data base searching, Spread Sheet processing and Autocad type applications run considerably faster on a 80286 based machine. Other microprocessor chips are becoming more readily available, such as the 80386. These chips offer 32 bit/ multi- tasking operations and operating speeds up to 20 MHZ. These systems are quite expensive compared to the 8088 & 80286 systems. The above chips are "operationally" compatible. This means that software written in same operating systems are compatible.

3) System BIOS: The above systems come with ROM chips that contain operating parameters of the system. When the computer is turned on the system BIOS tells the system what to do. (Testing memory, Testing installed disks, read information from the CMOS ROM chip, etc.) On IBM's computers, these chips also contain part of the BASIC language. On clones, these chips don't contain any part of BASIC: therefore, you can't run IBM BASIC on a non-IBM computer.

Another version of BASIC is available for these computers. (this is because of copyright legalities)

4) CMOS RAM chip: On "AT" computers, calendar & clock plus specific system information are programmed and stored. (Amount of memory, Type of hard disk(s), number & type of floppy drives, type of video display, etc.) A battery is used to "hold up" this memory when the computer is turned off. On "XT" type computers, disk drive and video display information is selected with switches; the clock and calendar (if any) is maintained with a watch battery.

5) RAM (on board memory): Most machines come standard with 512 Kbytes of memory. By adding memory boards, memory can be beefed up to over 3 Megabytes. For most typical operations 512K-640 K of memory is adequate. The more memory you have the more applications you can run at one time. Some programs will run faster with additional memory. Other tricks such as assigning sections of memory as "RAMDISKS" can offer storage for programs and files that will operate at the speed of the microprocessor. (There are some negatives here: Power fails and you loose data!)

6) 80287- X (8087 for "XT" computers) Math Co- Processor chip. (Where X is the system speed). Some programs are written to take advantage of this chip. Math functions are delegated to this specialty chip and the main microprocessor can be doing other functions. (Example of programs that address the 80287: Lotus 123, AutoCad). In AutoCad it takes twice the time to write a screen or plot a drawing without the 80287!

7) I/O Cards: Control selected outputs to Printers, back & forth communications with devices such as modems, plotters, mice, larger computer systems.

8) Video Cards: There are many kinds of video monitors. From Black and White to color. Some color monitors will only reproduce 16 different colors, others up to 256 different colors. Higher levels of picture resolution is accomplished by using higher & higher horizontal scanning rates. These cards have their own Bios, ROM & RAM.

9) Magnetic Media...
There are many formats that use magnetic media to store information for computer use:

A) Floppy Disks: Ranging from 8" discs down to 3 1/2". These diskettes can store anywhere from 160 Kbytes to 1.44 Megabytes depending upon the media and machine compatibility. Most XT & AT PC's use 5.25" floppy disks.
a) The XT machines typically utilize the Double Sided, Double Density disks. Most XT operating systems will format these disks to 40 tracks and will hold 360 Kbytes of data. (Caution: 360K drives cannot read or write to the 1.2 MB floppies!)
b) The AT machines typically can utilize the double sided, double density disks plus the "High Density" floppies. The operating system can instruct the drive to format 40 tracks or 80 tracks depending on the media. (Caution: An instruction to format a high density disk as a 40 sector disk won't work and visa versa.) As above; the Double Sided, Double Density disks will hold 360 Kbytes of data. The High Density disks will hold 1.2 Megabytes of data. BECAUSE OF THE 360K DISK "UNIVERSAL" COMPATIBILITY, ALL "STORE BOUGHT" PROGRAMMING IS DISTRIBUTED ON 360K FLOPPIES.
c) Newer model machines can be supplied with the 3.5 inch mini- floppy discs. These disks can be formatted to hold from 720K to 1.44 MB. Radio Shack machines include 3.5" drives standard.

B) Hard Drives: A spinning cylindrical device using as many as 6 or more read/ write heads with capacities ranging from 10 MegaBytes to well over 200 MegaBytes. Depending upon what your storage needs and how much money you have to spend will determine what size hard disk you require. Obvious advantages of the hard drive:
a) Greater storage capacity over floppy diskettes.
b) Vastly improved speed in retrieving and storing data.

C) Data Cassettes: Looking like the industry "Phillips" standard audio cassette, these cassettes can store upwards of 60 Megabytes of data! Utilizing special drives these devices are used to "back up" hard disks. This is a more convenient & efficient method to back up a hard disk to. (Older methods involved sitting, plugging upwards of fifty or more floppies into drives depending upon the hard disc size!) However, like a cassette, it's difficult to find a specific file (song) on the tape; therefore, these tapes are usually used only for backing up a hard disk, where you can copy all the files to/from the tape, in order, and don't have to look for one specific file.

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