

# Radio Guide

*Radio's Technology Magazine*



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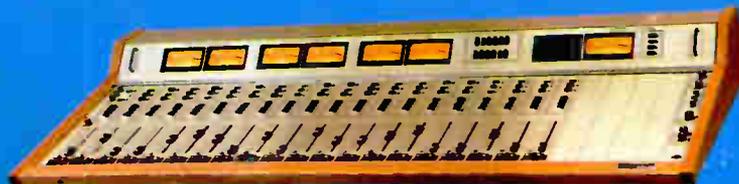
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World Radio History

## Radio Guide

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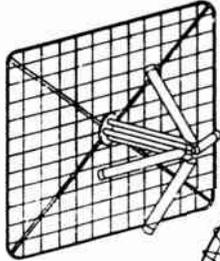
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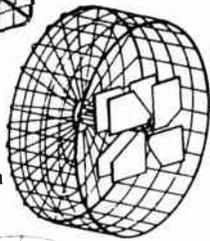


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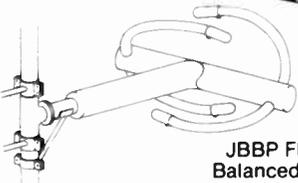
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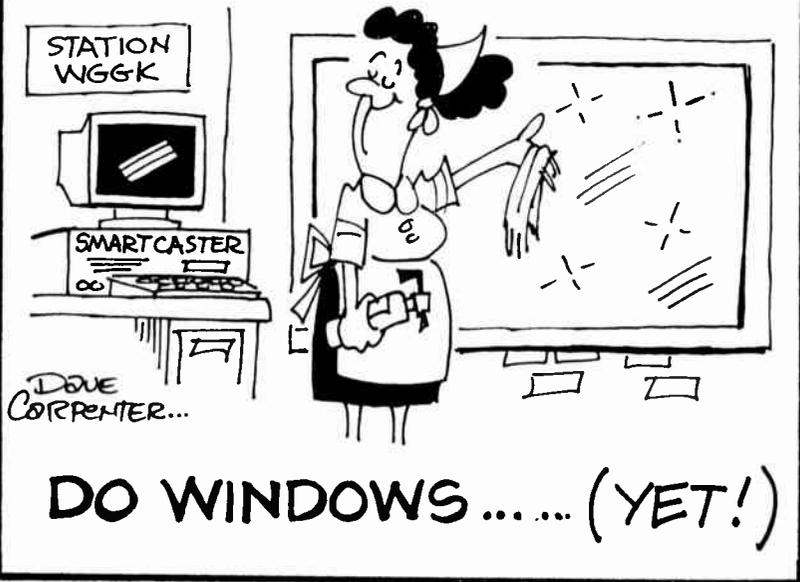
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# DISH AND DAT, FROM THERE TO HERE

by Gordon S. Carter - Pro Audio Services - (708) 482-4142

Over the past several months we have looked at maintenance for most major portions of the audio chain. This month we will tie up some loose ends and deal with a number of smaller items.

## Satellite Equipment

The first item on our list is the station's satellite dish and associated equipment. Entire articles have been written on maintenance of the satellite dish in other publications, so we will only touch on a few key points here.

From my experience and conversations with a number of radio station personnel, it appears that many people think that once the dish is installed and adjusted, you just let it go and it works forever. Of course, those of us in the engineering area know that nothing works forever without attention. But, just what do you have to do to that upside-down umbrella to keep it working well?

The most common problem encountered with satellite dishes is that they are no longer aimed directly at the

satellite. I suggest checking your dish each spring, just after the spring winds (if you have any in your area) have settled down. The strong gusty winds encountered in many northern areas of the United States put a severe strain on the mounts for satellite dishes, especially the larger ones. The winds and gusts can cause your dish to move a fraction of a degree in any direction. Since the satellite spacing is only two or three degrees (depending on the specific satellite you are looking at) this could be a serious problem. It is usually evidenced by lower than normal signal strength and, in more severe cases, by interference from an adjacent satellite. Properly adjusting your dish requires patience and a few extra hands, and may be a bit tricky the first few times you do it. I suggest that you work with someone experienced in the procedures until you get the hang of it.

Another problem, especially for dishes receiving SCPC signals, is crosspole adjustment. This is the alignment of the antenna relative to the polarization of the signal from the satellite. Since most satellites make effective use of the frequency spectrum by using the same frequencies on alternating polarizations, a small error in this adjustment may leave you open for interference from signals on an adjacent transponder. Again, patience and experience are helpful when making these adjustments.

While you are looking after your dish, be sure to check that it is free of debris such as fallen leaves, tree limbs, baseballs, or pop cans and bottles. In the fall, make sure you check your de-icers (if you have them) before the snow falls. If you do not have de-icers, make sure you know how to sweep the snow from your dish without disturbing the antenna. Also, while you are snooping around your dish, check all the waveguide and RF connections. Make sure they are good and tight and free from corrosion. Remember that the frequencies encountered here are much higher than your

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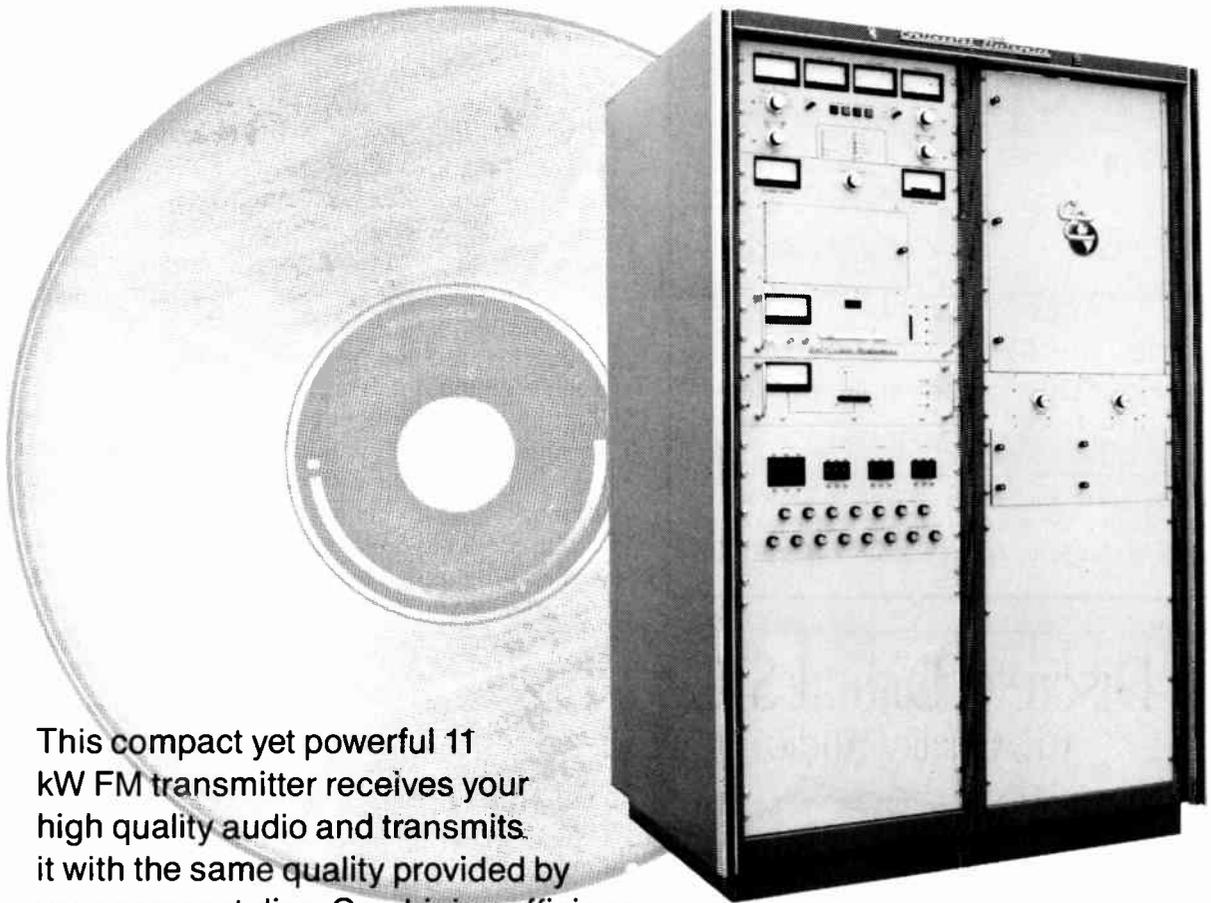
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transmitter, so even what may appear to be a small problem can cause big trouble.

Most of the electronics used with your satellite dish require little attention. Check with the owners' manuals for suggested maintenance and adjustments. Once you have checked over your dish, waveguide, and co-ax, a complete performance check on your system is a good idea. A check of the audio performance of your equipment may lead you to a problem in the RF portion of your system. You will probably have to coordinate this with the operator of your satellite service unless he has a regularly scheduled test period.

### DAT Machines

DAT (Digital Audio Tape) machines are becoming more and more popular with broadcasters. They provide a small, high-quality, low-cost recording medium with many neat features, such as indexing and long recording time on each tape. If you do not have DAT yet, you may have it soon. If you do have it, sooner or later you will be asked to fix one that doesn't work.

The first problem you will encounter with most DAT machines is the lack of any worthwhile service information. Most of these machines are sold with a consumer-style operations manual, but you must buy the service manual separately. The service manuals seem to assume that you understand the theory and principles of operation of the DAT medium, so you will have to do some digging to educate yourself in this area. The next thing you will notice is that the manuals give very little trouble-shooting information. They tell you in excruciating detail how to take the thing apart and how to make every little adjustment, but give you no clue as to what to do when the framistan refuses to mesh with the gezortenclap.

The second problem you will encounter with most DAT machines is the need for special DAT alignment tapes, which seem to be scarce as hen's teeth. Of course, you only need three or four different tapes, plus tension measuring cassettes, to check out your machine, and these things aren't cheap.

All of this brings me to some simple conclusions. If you are going to be servicing a number of DAT machines on a regular basis, go ahead and learn all you can about them and invest in the necessary test equipment. If you only have one or two machines your best bet may be to send them out to a service center for any necessary repairs. You'll have to weigh your situation and make your own decision.

One final word on DAT machines. The heads on these machines only seem to be good for a few hundred hours of playing time or about a year or two depending on your use. With the technology advancing as quickly as it is, you may be better off to simply replace the machines when they don't work if they are more than a few years old. Many of the machines have a built in test program that you can activate by pressing a special combination or sequence of buttons. Check with your service manual or the technician you send the machines to for repair for the details on this. You can often tell the general nature of your problem, and possibly get an idea of the magnitude of the repair bill, by running this program and reading the results.

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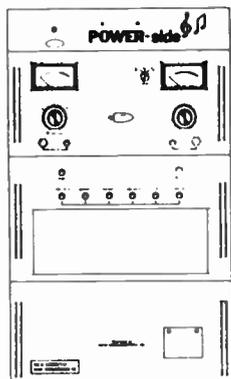


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## VCR's

Some radio stations have been using VCR's for a few years as an audio recording medium. Some have used their VCR's with a PCM (pulse code modulation) converter to record stereo audio which has been converted to digital and then formatted to the video frame. This technique yields audio performance comparable to DAT but has been available for quite some time. Others have used the "hi-fi" tracks on the VCR to record audio, while others have used the digital recording capabilities of 8 mm video cassettes for extended play audio.

All these video machines have the same sort of problems as the DAT machines. In fact, one of the most noticeable differences between a VCR transport and a DAT transport is the size. Many of the principles are the same. Again, due to the complexity of the equipment and the specialized test equipment needed, you may find it more expedient to send this equipment out or replace it than to try to fix it yourself.

A quick word on the PCM units. These units appear to be quite reliable and stable of a long period of time. However, most of them are consumer units are not necessarily designed to operate 24 hours a day, 7 days a week. If they are left on for extended periods of time, you may develop some heat-related problems, especially in the areas of the power supply and voltage regulators (the heat-producing components). With the help of a service manual you can probably track down these problems yourself.

## Microphones and Cables

Generally, microphones work. However, once in a while you come across one that does not work as well as it should. The most common problems are low output or poor frequency response. If you have a mic that you think is not working properly, check it with another console or another input on the same console to eliminate any possible pre-amp problems. Also try it with a different cable to eliminate the possibility of a bad cable. If you get no output or very low output and your microphone requires phantom power, check to make sure your console is providing the phantom on both sides of the line. Check any switches that may be on the microphone for proper settings. These are often recessed and may be hard to see if the mic is old and dirty. Also, these switches can get dirty or go bad, so you may want to try exercising the switches as well. Some newer microphones work with a special "box" between the microphone and the line to the console. If you have a mic like this and have a working spare, try to determine if the problem is the microphone head or the box.

Once you have determined that the problem is definitely with the mic, your best bet is to package it up and send it back to the manufacturer for repairs. When you send in the mic, be sure to include a detailed explanation of the symptoms to assist the repair technicians in finding the problem. If your mic has a separate box, send all the parts, but be sure to let them know which part is defective if you can.

Microphone cables take a lot of abuse at a typical radio station. While they are the glue that keeps everything together, like Rodney Dangerfield they get no respect. Mi-

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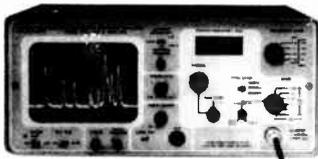
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When checking out a mic cable, a simple ohmmeter or continuity tester is a big help. Check end-to-end continuity for each conductor, including the shield and check for shorts between any conductors. The most common problem is a wire that has been pulled apart within the connector. You can usually spot this with a quick visual inspection and fix it. Sometimes you can spot a damaged area in the cable where the wires are broken or the insulation is damaged enough to cause a short. You can either shorten the cable to this point or try to cut out the bad section. Personally, I prefer not to try to splice out bad sections in cables unless it is necessary for an emergency repair. Splices just don't hold up well as a long-term fix.

While you are checking out the cable, check the condition of the connectors. Make sure the shell is not bent so that it binds when mating to another connector. Check the strain relief on the end of the connector to make sure it is doing its job. Look for corrosion on the connector pins, especially on older connectors. Make sure the pins or sockets line up properly and mate well with other connectors. If any of these is not right, replace the connector or you will have trouble when you go to use the cable again.

When you are finished with the mic cable, check for continuity and shorts once again. Shake the cable and wiggle it to make sure you don't have an intermittent problem. Then plug a microphone into the cable and plug it into a console. Listen to someone talk as you shake the cable and wiggle the connections. If you hear any problems, you missed something. In some cases it will be more economical to simply throw out the cable than to try to fix it. This is especially true if you have a cable with intermittent problems and no visible signs of damage.

### Remote Equipment

Remote equipment is usually no different than studio equipment except that it is usually smaller, lighter, portable, and takes a lot more abuse. This is especially true of the already

abused microphone cable. It is always a good idea to set up all your remote audio equipment in your shop before you go out on a remote and make sure it all works reliably. If you find a problem, you can fix it while you still have the time and your tools and test equipment are available. Once you get out on the remote, you will probably not have time or tools to work with.

Some of the best remote people I know can work their way around almost any problem they may encounter on the remote. They take a little extra equipment (just to be safe) and use their ears extensively. However, when they find a problem while on a remote, they never tell anyone about it, especially the person who has to fix it. Try to get whoever does your remotes to flag any piece of equipment that doesn't work, even a mic cable, so it can be fixed as soon as it comes back. That way it will be ready to go next time.

If you are doing your remotes by phone line, be sure to check out the lines before your remote. Depending on your local phone company, you may or may not be able to get quick reliable service on your lines, so be sure to allow enough time. Your experience will let you know what is enough. When you are checking the lines, be sure to feed them from the proper source impedance and terminate them with the proper load. If you don't the frequency response may be quite screwy.

Once you have checked out your lines, put tone on them and leave it there. Some phone company employees have an annoying habit of using any pair of wires in the cable that is not in use for the next customer. They check by listening to the wire and if they hear nothing, they use it. The tone will give them something to listen to and may keep your lines available for your use.

If you use RPU gear, be sure to check all your RF cables and connections before you take it out. If possible, set up the complete rig and run a test to make sure it is solid. Cables and connectors that are not used often can oxidize and make poor contact, especially when you want to use it NOW.

Finally, when preparing for a remote, make sure your board operator knows how to get it on the air. **RG**

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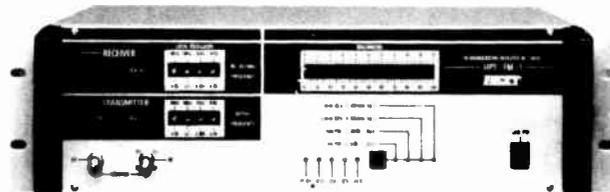
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## Antennas, Towers, Coax, Connectors Etc.

Phelps Dodge CFM-LP-4, 4-bay FM antenna, 94.3 mHz with radomes. Excellent condition. Ready to Ship. \$1,500. Bob Brewer, KOKL, 410 W. 6th, Okmulgee, OK, 74447. Phone 918-756-3646.

ERI 2-bay rototiller FM antenna tuned to 101.7 mHz. 360-feet of coax cable. Charlie Maley, KSIB, P.O. Box 426, Creston, IA, 50801. Phone 515-782-2155 Fax 515-782-6973.

ERI 12-bay hi power FM antenna tuned to 94.5 mHz. \$12,000. Edward Raskelly, KMRK, 4000 Rasco, Odessa, TX, 79764. Phone 915-366-3711.

Jampro 2-bay FM antenna tuned to 106.3 mHz. Mary Lou Maierhofer, WQHG-FM, P.O. Box 506, Huntington, PA, 16652. Phone 717-524-7000 Fax 717-523-9510.

3-1/8" to 1-5/8" reducer, make offer. Andrew 87Z, 1-5/8" air splice, brand new, make offer. Andrew 87Z, 1-5/8" air splice, used, make offer. Danny Tabor, WLCK, P.O. Box 158, Scorsville, KY, 42164. Phone 502-237-3148 Fax 502-237-3533.

4) Andrew type 35381A tunable type "N" female connectors for 1-5/8" transmission line. Mates with UG-21 & adjusts for minimum VSWR. New but aged. Similar to present Andrew #87NT. \$150 each or best offer, or trade. Charlie Osgood, WMWV, P.O. Box 2008, Conway, NH, 03818. Phone 603-447-5988.

250-foot Cablewave HF 4-1/8" CU2Y Flexwell cable and (1) 6-1/8" gas-pass and (1) 6-1/8" gas barrier connector. \$3,000 for all. Ben Weiss, KLSI, 3101 Broadway, Suite 460, Kansas City, MO, 64111. Phone 816-753-0933 Fax 816-753-6654.

Celwave CP-1000-2, tuned to 107.1 mHz (missing harness). John Galanses, WAVI, P.O. Box 25016, St. Croix, VI, 00824. Phone 809-773-3693 Fax 809-773-3435.

440-foot Utility G-480 tower on the ground. New guy wires and insulators. Side lights, beacon, and base insulator included. 2 section less than 5 years old, all but 2-20' sections in good condition. ERI 4-bay CP, high power antenna. Tuned to 105.3, in good condition but bullets should be replaced. Carl Loughry, WFRB, RD2, Box 373, Frostburg, MD, 21532. Phone 301-689-8871 Fax 301-689-8880.

3-bay antenna system with de-icers, tuned to 103.9 mHz. 250-feet of LDF-5-50 Helix. John Carrol, WKJC, 523 Meadow, Tawas, MI, 40764. Phone 517-362-3417 Fax 517-362-4544.

175-foot self-supporting tower. Make offer. Mike Moore, WLOE, P.O. Box 488, Eden, NC, 27288. Phone 919-627-9563.

Celwave 3-bay antenna tuned to 104.5 mHz, in excellent condition, with de-icers. Asking \$2,000. J. Jetzer, WXER, N5569 South 57, Plymouth, WI, 53073. Phone 414-893-1045 Fax 414-892-2706.

3-1/8" rigid line. RCA MI-19113C, 51.5 ohm Steatite insulated. Over 600 feet with lots of elbows and various accessories. Make offer. 415-feet 1-5/8" coax, Cablewave HCC-158-50J air dielectric and 549-feet Andrew HJ7-50A air dielectric, \$6.00 per foot or best offer. Steve West, KRIS-TV, 409 S. Staples St., Corpus Christi, TX, 78401. Phone 512-886-6153 Fax 512-887-6666.

Phelps Dodge SPC-5, 5-bay antenna in like new condition, tuned to 92.3 mHz. Have original packing boxes, has been stored inside. Heavy duty model, best offer takes it. Located at Polson, Montana. A.L. Anderson, KQRK, 3500 east Rosser Ave., Bismark, ND, 58501. Phone 701-258-9400 Fax 701-222-1131.

Complete "A-2" red lighting system including beacon, obstruction lights, 350-feet of conduit, wire and controls. Asking \$2,250 plus shipping. Paul Lierman, KCSF, 601 W. Collins Dr., Casper, WY, 82601. Phone 307-265-5414 Fax 307-265-6238.

1400-feet used Dielectric 6-1/8" 75-ohm coax. 20-foot sections, Marmon clamp flanges, elbows, all crated and ready to go. Some section may need replacement center conductors. Asking \$300 per section or per elbow. Deanna Morris, WKOW-TV, 5727 Tokay Blvd., Madison, WI, 53719. Phone 608-274-1234 Fax 608-277-9447.

150-foot Rohn 25, like new, dry storage, with all guy wires and base insulator. \$1,100 or best offer. Kelly Wallingford, WIRV, P.O. Box 281 Irvine, KY, 40336. Phone 606-723-5138 Fax 606-723-5180.

425-feet 1-5/8" coax in good condition with no leaks; 25-foot 100-pair phone cable. Kevin Grice Z-92, 2728 Williams Ave, Box D, Woodward, OK, 73801. Phone 405-256-3692 Fax 405-256-3825.

Andrew LDF4-50A foam 5/8" Helix, 48 feet long, unused. \$65 plus shipping. Chuck Sellman, KGVY, 1510 W. Camino Anigua, Greenvally, AZ, 85614. Phone 602-281-8642.

Cablewave splice for 1-5/8" coax. \$195. Cablewave gas-block end connector for 1-5/8" line, with EIA flange, \$145. Bob Brewer, KOKL, 410 W. 6th St., Okralugee, OK, 74447. Phone 918-756-3646.

3-bay FM antenna, CP, tuned to 105.5 mHz. Doug Stannard, KRCK, Box 1180, DeRidder, LA, 70634. Phone 318-463-9298 Fax 318-463-9291.

2) Delta 3-1/8" coax switches and Electro-Impulse 20kW dummy load, \$4,500. ERI G5-CPS-4, 4-bay FM antenna tuned to 94.9, \$4,000. 450-feet 3" air Helix with connectors and Andrew dehydrator in excellent condition, \$5,000. Jim Stitt, WOFX, 250 W. Court St., Suite 300E, Cincinnati, OH, 45202. Phone 513-241-9500 Fax 513-241-8896.

Rigid 6-1/8" coax, 75 ohm, 19-1/2' sections, \$200 per section or 84 sections, including 5 elbows for \$16,800. FOB KOZK Springfield. Bill Ellis, KOZK-TV, MPO Box 21, Springfield, MO, 65801. Phone 417-865-2100 Fax 417-863-1599.

20-foot Cablewave 2" solid RF line, in crate, never used \$325. (2) Scala PR-450/U microwave antennas, \$100 each. Chuck Hastings, KCSB-FM, Room 3185 UCEN/University of California, Santa Barbara, CA, 93106. Phone 805-893-3921.

ERI FML 3-bay antenna tuned to 92.5. Used 2 years, packed in original boxes with all parts, like new. \$2,900 (1/2 cost). Harry Thompson, WLYU-FM, 901 N. Victory Dr., Lyons, GA, 30436. Phone 912-526-8122 Fax 912-526-8123.

Phelps Dodge FMHP-8, 8-bay, high power FM antenna on 93.3 mHz. Make offer. Chuck Springer, KLMR, P.O. Box 890, Lamar, CO, 81052. Phone 719-336-2206 Fax 719-336-7973.

ERI/Harris FMC3, 3-bay antenna tuned to 97.7, 1-5/8", one bay leaks pressure. Best offer. Thomas Benson, 17A Orchard Dr., Olney, IL, 62450. Phone 618-395-7064.

320-foot Pi-Rod solid steel tower. 24" face, lights included. New in 1982, \$3,000, you take down and haul. Cliff Jennings, WQLA, Box, 1530, LaFollette, TN, 37716. Phone 615-566-1000 Fax 615-457-5900.

Gates FMC-4A, 4-bay antenna tuned to 103.1 mHz, in good condition, asking \$1,000. guy wires for Rohn 55200-foot tower, make offer. Bruce Dierking, KNDP, RFR3, Marysville, KS, 66500. Phone 913-562-2361

## Automation Equipment

5) Cetec Shafer I/O cards and cables to interface Revox A-77 reel decks to 902 or 903 automation systems. Was \$350 new, now \$50 each or (5) for \$200. Bill Spitzer, KKLS, P.O. Box 460, Rapid City, SD, 57709. Phone 605-343-6161 Fax 605-343-9012.

4) ITC 750 reel playback decks in good condition with spare brake bands; SMC EOM sensors available also with cables. Also have (3) SMC 350-RS Carousels and (1) 450 Carousel in very good condition, cables included. Best offer. Chuck Springer, KLMR, P.O. Box 890, Lamar, CO, 81053. Phone 719-336-2206.

3) SMC model 450 Carousels and an Audicord E-series triple playback plus SMC tone generator all in good condition. also have a series 350 Carousels and MSP-1 programmer & control head to be used as parts. John Galanses, WAVI, P.O. Box 25016, St. Croix, VI, 00824. Phone 809-773-3693 Fax 809-773-3435.

Harris 9000 automation system with: (2) TEC-70 control screens and keyboards, (2) Xtel printers, (1) Micropolis dual disc drive, (4) IGM Go Cart 24's. Includes complete manuals for equipment. Working when removed from service two years ago. You pay shipping. Call for details. Asking \$4,500 firm. Jonathan Steele, KSYZ, 3532 Capitol Ave., Grand Island, NE, 68802. 308-382-0108 Fax 308-384-8900.

Format Sentry FS-12C, new still in box, asking \$2,900. Broadcast Automation controller, fully automated, satellite or live assist, walk-away event memory, silence sensor. Original cost \$5,000 - now \$2,900. Larry Gamble, KAAAT, P.O. Box 1912, Oakhurst, CA, 93644. Phone 209-683-5107 Fax 209-683-5488.

2) Complete cassette based automation. Includes commercial, music, liner, Id, news, weather and backannounce decks. Use both or just have one for backup. These systems are complete with cabinetry, computers and production units. Asking \$18,000 or make offer. Photos available. Scott Smidt, KELO, 500 S. Phillips, Sioux Falls, SD, 57103. Phone 605-371-0396 Fax 605-336-0415

Total SMC Automation system: SMC DAS-6/12 digital audio switcher, (2) SMC CH4 programmers, (2) Magnavox Monitor-80 monitors, (1) SMC MSP-12, (3) Mono SMC Carousels, racks, cables, etc. Looking for negotiable offers. Patrick Berger/Bob Gorjance, WNAM, P.O. Box 707, Neenah, WI, 54956. Phone 414-727-2040 Fax 414-722-0211

4) SMC 350 Carousels in fair condition, \$1,000. SMC DP-1, \$500. SMC DP-2, \$700. SMC Instacart interface, \$100. Schafer 903 in good condition, \$2,000. (4) Scully reel decks for parts, \$500. David Rose, KAAA, 2534 Hualapai Rd., Kingman, AZ, 86401. Phone 602-753-2537 Fax 602-753-1551.

2) IGM Go-Cart 24's both in mint condition and on the air at present. Price negotiable. Jay Amburn, KTUE, P.O. Box 1260, Tulia, TX, 79088. Phone 806-995-3531 Fax 806-995-2215

Sentry System FS12C with (2) Tandy 1000 computers, software, modem and (2) printers. (4) racks include: (3) RA carousel-24, (2) Go-Cart 78, (4) Criterion 80, audio processing, 1000 watt UPS, air monitor, (2) cart racks, assorted carts, cables, manuals, spare parts. 6 months in flawless operation, works and looks great. Over 21K invested. Call Abbott at 813-454-0007.

Systemation Superswitch, 6 months in service, \$400. Conex CG25-A tone sensor, dual channel, \$75. Conex CG25-A tone encoder, dual channel, \$250. Mike Peterson, WSDM, P.O. Box 650, Brazil, IN, 47834. Phone 812-446-2507 Fax 812-446-1250.

SMC DP-1 complete system. DP1 programmer, AS-16 switcher, (5) 350 carousels, (2) 710 cart machines, (1) 721 dual cart machine, (1) TS-25 dual sensor, remote control. In excellent condition. \$3,000 or best offer. Jim Keane, KAPS, P.O. Box 70, Mt. Vernon, WA, 98273. Phone 206-424-0660 Fax 206-424-1660

Harris System 90 converted to 9000 controller, logger. Complete with (5) SMC 350 Carousels. All or part, cheap. Smokey King, KATP-FM, 7700 I-40 West, Suite 660, Amarillo, TX, 79110. Phone 806-359-5999 Fax 806-355-5832.

Broadcast Automation "Live Assist" live assist automation controller. Up to 8 sources, 24 events, silence sensor, closed loop fail safe, etc. \$1,500. Ran Bullard, KDB, 23 Michel Tarena St., Santa Barbara, CA, 93101. Phone 805-966-4131 Fax 805-966-4788.

3) SMC 250 Carousels with front panels, mounting hardware, and full documentation. working or for parts. \$400 each or all for \$1,000. You pay shipping. Alan LoPresti, 21 Carter Rd., Geneva, NY, 14456. Phone 315-789-4019

M.W. Persons Programmer, like new, \$700. (1) Otari ARS-1000 reel deck in good condition, \$1,000. Paul Wolf, 241 NE 10th Ave., Cape Corral, FL, 33909. Phone 813-574-5548.

SMC Automation: SSP-3060 stepper, AS-10 switcher, (2) SMC 250 Carousels, (1) SMC 350 Carousel, (3) RSC-50 fifty step random access controllers for carousels, (2) SMC 700 series single play cart machines, (1) SMC 700 series R/P cart deck, (2) system real-time clocks, (4) Scully 270 reel playback decks plus extra 270 for parts, (3) Otari ARS-1000 reel playback decks, (2) SMC 25Hz dual tone sensors, (1) 25Hz tone generator, (4) Matching SMC mounting racks, (1) Gates mounting rack, various circuit boards, 6-output DA. All equipment listed is stereo, wiring harness and manuals are included. \$7,000 or best offer. Bert Williams, KPSM, 2009 W. Gary, Broken Arrow, OK, 74012. Phone 918-455-9522.

MEI Satmaster with 1,000 step memory, (3) SMC Carousels model 250/252. Asking \$5,800. Larry Spence, KUKU, Box 250, Willow Springs, MO, 65793. Phone 417-469-2500.

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Radio Guide Page-16

Otari MX5050B (black) stereo 2-track recorder, \$995. Otari MX5050 (silver) stereo 2-track recorder, \$795. (2) Audicord "Modu-Cart 100" mono R/P cart deck with 3 tones, \$595. (2) Audi-Cord "E" series, 3-deck sets of mono cart decks with 3 tones, \$895 each set. ITC ESL-IV eraser/splice finder, \$695. Bill Mountjoy, WITM, P.O. Box 1240, Elizabethton, TN, 37644. Phone 615-543-5849.

Ampex portable R/P reel deck, all in case with amp., \$150 or best offer, plus shipping ore will trade for AM/FM exciter. Top load R/P cart deck with good heads, needs cleaning, \$400 or best offer plus shipping. Roberts R/P reel deck in working condition, but need a little work, good home unit, \$100 or best offer. Bobby Phipps, WMDR, P.O. Box 130, Alcoa, TN, 37701. Phone 615-983-0890 Fax 615-983-0891.

Ampex 602 F/T mono, \$60 UPS paid. Ampex AG500 F/T mono, \$150 UPS paid. Warren Arnett, WBAT, P.O. Box 839, Marion, IN, 46952. Phone 317-664-6239 Fax 317-662-0730.

BE Spotmaster cart deck, stereo with secondary and tertiary tones, automatic fast forward, low hours, excellent condition. R/P model 3200 RPS, \$1,600. PB model 3200PS, \$850. Both for \$2,250. Otari 1" 8-track take deck model MX7308, low hours, 15/30 IPS, excellent condition with remote, \$4,500. Ampex model 612 PB only tape deck (antique?), \$50. Lon Wagner, Ardnigva Radio Network, P.O. Box 1788, Orlando, FL, 32802. Phone 407-299-1299.

Spotmaster 500D mono R/P cart deck, completely rebuilt and tested, mint, \$495. BE 3203 stereo R/P with all tones, used very little, mint, \$1,495. BE 3102 stereo PB with all tones, used little, mint, \$995. BE

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2) Inovonics 375 R/P electronics, solid state with stereo interconnect cable, make offer. (2) Scully 280B, 2-track in Rustang cabinets, working condition, \$300 each or \$500 for pair. You ship or pick up. John Ramsey, WVUH, University of Hartford, West Hartford, CT, 06117. Phone 203-243-4703 (afternoons).

Sparta cart R/P deck, stereo Century series, needs heads and some work, \$350 or offer. Brad Johnson, K093, 2121 Lancey Dr. #1, Modesto, CA, 95355. Phone 209-551-1306 Fax 209-551-1359. Call on Fridays only.

Over 1000 Scotchcart II's like new, most unused, will sell in any quantity, I pay shipping. (500) 3.5 min., (250) 5.5 min., (250) 7.5 min. \$2.00 each or all for \$1,750, must sell. Frank Befera, WHLB, P.O. Box 959, Virginia, MN, 55792. Phone 218-741-2233 Fax 218-741-1415.

ITC 750 playback reels in pretty good condition. Tapecaster 700's, good for parts. Make an offer. Edd Monksie, WLPA, 24 S. Queen St., Lancaster, PA, 17603. Phone 717-397-0333 Fax 717-397-4763.

ITC Delta triple-deck, great condition, \$3,000. ITC Delta R/P, \$2,500. Get both for \$5,000. Call Mike or Jay, Phone 702-798-4004.

Otari ARS-1000 PB reel deck with 25Hz detector, \$800 or will consider trade. Harris mono triple-deck PB cart deck and mono R/P deck, make offer. Audicord mono dual transport with record on one and playback on both, rack mount, make offer. Bill Payne, KTFX, 8107 E. Admiral Place, Tulsa, OK, 74115. Phone 918-836-5512.

BE phase-track 90 stereo R/P cart deck. BE phase-track 90 stereo PB cart deck. (200) Scotchcart II carts less than one year old. Complete package, \$5,000. Mint condition. Eddie Provost, KDEA, P.O. Box 12948, New Iberia, LA, 70562. Phone 318-365-6651 Fax 318-365-6314.

Ampex AG440B with 2-channel electronics, full-track 1/4" heads. Looks good, needs AC cord and one tape guide. \$500 or best offer. Richard Tiner, 1914 Rose Lane, Coeur d'Alene, ID, 83814. Phone 208-664-0690.

3) reel to reel formats: (1) vinyl library 27 rocks reels, 13 adult contemporary oldies, 30 adult contemporary oldies. \$20 per tape all in great shape. Complete country music library well over 5000 45's, top hits, good shape. \$2,500. Kelly Wallingford, WIRV, P.O. Box 281, Irvine, KY, 40336. Phone 606-723-5138 Fax 606-723-5180.

TASCAM Porta-One multi-track cassette machine, new in box, \$400. Glenn Swiderski, 19 Willa Drive, Buffalo, WY, 82834. Phone 307-684-5349.

2) Otari ARS-1000 automation reel reproducers in good shape. \$650 per unit. Smokey King, King Engineering, 13310 Cisco Dr., Amarillo, TX, 79111. Phone 806-335-1954 Fax 806-355-5832.

ITC mono cart deck PD-II, \$100. Ralph Carlson, KRSP-FM, 5320 S. 9th East, Salt Lake City, UT, 84157. Phone 801-268-8181 Fax 801-268-8497.

5) Otari ARS-1000 reel to reel PB decks with 25Hz tone detectors. One year of use, \$750 each. Ran Bullard, KDB, 23 W. Micheltorenea, Santa Barbara, CA, 93101. Phone 805-966-4131 Fax 805-966-4788

Broadcast Electronics 5-deck stereo PB cart deck with tones and switcher, \$2,000. Doug Stannard, KORK, Box 1180, DeRidder, LA, 70634. Phone 318-463-9298 Fax 318-463-9291.

2) ITC Omega mono play cart decks, fast cue. (1) ITC Omega mono R/P cart deck, fast cue. Parts included are: power control n=board, motor control board. All in excellent condition, 2 years old. All for \$2,950. Paul Boone, WCHZ, Box 3300, Chapel Hill, NC, 27515. Phone 919-968-4811 Fax 919-942-2826.

ITC Omega R/P mono cart deck, \$1,190. Harris Criterion-90 R/P, excellent condition, \$1,100. Criterion mono R/P with new heads, \$675. Paul Willey, H&W Broadcast Services, 372 Reservoir Rd., North Adams, MA, 01247. Phone 413-663-3419 Fax 413-663-8135.

Hundreds of carts, all types. R.D. Rushing, 11710 Hoyt St., Tampa, FL, 33617. Phone 813-988-0496 Fax 813-988-1354.

Infonics reel duplicator, full-track 30-IPS, 3 copies per pass, \$250. Infonics reel duplicator, 2-track 30-IPS, 3 copies per pass, \$250. Auditronics AV123-4TS reel duplicator, 1/4-track, 3 copies per pass, \$250. Shafer logger, 10-1/2" reel, good condition, \$200. Spotmaster 505, (2) R/P and (1) PB, good condition, \$200 each. Magnacord PT-6 reel decks, (3) full-track, Sparta cart-delay machine, like new, \$500. R. Meyers, Benchmark Communications, 4700 SW 75th Ave., Miami, FL, 33155. Phone 305-264-5963 Fax 305-264-2357.

4) ITC 770 2-track PB decks in good condition with almost new heads, best offer. Paul Lierman, KCSP, 601 W. Collins, Casper, WY, 82601. Phone 307-265-5414 Fax 307-265-6238.

2) MCI JH-100, 2-track stereo in roll-around cabinets, very good condition, \$1,000. Bill Croghan, KCEE, Box 5886, Tucson, AZ, 85703. Phone 602-623-7556 Fax 602-628-2122.

Tapecaster R/P unit, \$300. Playback unit only, \$150. W.L. Moring, 2187 Wappoo Dr., Charleston, SC, 29412. Phone 803-928-3886.

Over 125 7" reels of 1 mil tape in boxes. Most played only once. You pay shipping, \$300 for the lot. Alan LoPresti, 21 Carter Rd., Geneva, NY, 14456. Phone 315-789-4019.

Tascam 34 4-track 1/4" reel deck, \$990 or best offer. Electro-voice RE-20 mike, \$290. Yamaha SPX-90, \$390. Dennis Kinkaid, KXBS-FM, 5200 Valentine Rd. #230, Ventura, CA, 93003. Phone 805-644-6800 Fax 805-644-6181.

2) Tascam 22-2 1/2-track stereo reel decks, 7-1/2 & 15 IPS, excellent condition. \$400 each. (1) Revox A-77 1/4-track stereo reel deck in walnut case, excellent condition, looks new, \$500. (1) ITC R/P-0004, Premium series, stereo cart deck, 3 tones, excellent condition, good heads, very little use, \$1,600 or best offer. Cliff Jennings, WQLA, Box 1530 LaFollette, TN, 37766. Phone 615-566-1000 Fax 615-457-5900.

500) 642 Ampex, 10-1/2" NAB reels with boxes, \$4.00 per reel. (100) ploy cassette boxes, \$10 for the lot. Bruce Dierkjkng, KNDP, RR#, Marysville, KS, 66500. Phone 913-562-2361.

2) Otari ARS-1000 reel decks with instruction and maintenance manuals plus Soundolier 77" equipment rack. All in excellent condition, 2 years old. \$1,800. Joe Cunningham, KNOC, 720 Front St., Nachitoches, LA, 71457. Phone 318-352-9596 Fax 318-352-9598.

3) Otari ARS-1000 reels decks with tones, \$800 each. Al Miller, WKMX, 100 N. Main St., Enterprise, AL, 36630. Phone 205-347-2278 Fax 205-393-2141.

## Audio Source: CD, TT, Mikes, Hard Disks

QRK 12C turntable with S-20 Rek-O-Kut tone arm. Like new, \$150 or best offer. Bill Spitzer, KKLS, Box 460, Rapid City, SD, 57709. Phone 605-343-6161 Fax 605-343-9012.

2) Technics SL-P1300 CD players. One in very good condition, \$700. One in good condition, \$500. But both, and service manual included. John Hofstetter, WOL-AM, 400 H. St. NE, Washington, DC, 20002. Phone 202-675-4800 Fax 202-675-4842.

3) Electro-Voice 535 mikes. 2 like new and 1 with paint blemish. \$60 each. Warren Arnett, WBAT, Box 839, Marion, IN, 46952. Phone 317-664-6239 Fax 317-662-0730.

Technics SL-1200 turntable with Audio-Technica cartridge. Like new, \$250. Ben Weiss, KLSI, 3101 Broadway, suite 460, Kansas City, MO, 64111. Phone 816-753-0933 Fax 816-753-6654.

2) SONY CDK-006 Juke Boxes. Interfaced to Sentry Systems FS-12C Format Sentry Unit. Includes spare interface unit, documentation, software, no computer. Each Juke Box is \$2,500. Format Sentry is \$2,500. Will sell as unit or separately. Ralph Sherman, WKBW, 32401 S., Route 53, Wilmington, IL, 60481. Phone 815-476-5855.

2) Technics SL-3200 direct drive turntables with arms, \$75 or best offer. (2) Russco stereo broadcast preamps, \$150 or best offer. (2) Russco turntables with arms, no cartridges, \$40 each or best offer. Bert Williams, KPSM, 2009 W. Gary, Broken Arrow, OK, 74012. Phone 918-455-9522.

2) Colrad DM-17 mikes. (2) Older Electro-Voice mikes with fins on top. (1) Electro-Voice 635 with wire screen, (1) Electro-Voice 623. (1) Astatic DK1 mike. (1) Electro-Voice 654 mike. Ron Peterson, KDMO, Box 426, Carthage, MO, 64836. Phone 417-358-2648 Fax 417-358-1278.

SWA phono pre-amp, needs work. Tim Pozar, KKSF-FM, 77 Maiden Lane, San Francisco, CA, 94108. Phone 415-788-2022 Fax 415-956-4177.

## Consoles and Mixers

Howe 7500 audio console, 12-channel, slide pot, spare parts. Charlie Maley, KQWC, Box 550, Webster City, IA, 50595. Phone 515-782-2155.

Harris Medalist stereo 8-channel console with rotary faders in very good condition, \$2,000. Harris Medalist stereo 8-channel console with slide faders in very good condition, \$2,000. McMartin 1082V, 8-channel stereo console, very clean, good condition with manual, \$1,295. Russco 505S, 5-channel stereo console, \$595. Bill Mountjoy, WITM, Box 1240, Elizabethton, TN, 37644. Phone 615-543-5849.

2) Pyramid, PR-8900, 8-channel mixers. One rack mount, one table mount. In great shape. John Galanes, WAVI, Box 25016, St. Croix, VI, 00824. Phone 809-773-3693 Fax 809-773-3435.

Opamp Labs 2008-4E console. 20 inputs, 8 sub plus stereo mix out, good production board, very clean. \$3,500. Lon Wagner, Ardnigva Radio Network, Box 1788, Orlando, FL, 32802. Phone 407-299-1299.

Harris Stereo-5, 5-channel stereo console, \$400. Shure M67, 4-channel remote mixer, balanced terminal post output, adjustable metering. M68, 4-channel mixer with balanced male inputs, female output, \$130. J. Brown, CAVC, Box 3471, Charlottesville, VA, 22903. Phone 804-979-0402.

Sparta self-contained ditty setup: Good 5-pot board, (2) OK Sparta turntables. \$250 or best offer, you pay shipping. Cecil Hall, KUKU, 401 Caldwell St., West Plains, MO, 65775. Phone 417-469-2500.

Pacific Recorders ABX26 production room package. Pre-wires with custom PRE furniture. Also complete BMX-18 control room package, pre-wired in custom furniture. Each room must go as a complete package, call for details. David Solinske, WSUN, 877 Executive Center Drive W., St. Petersburg, FL, 33702. Phone 813-576-1073.

Gates solid state 8-channel mono console with several extra modules. \$250 plus shipping. Bill Norman, WZKY, Box 550, Albermarle, NC, 28002. Phone 704-983-1580 Fax 704-983-1436.

Sparta AS-10 stereo console, 5 pots controlling 2 mikes and 8 sources, \$300 or best offer. Gates Stereo Statesman console, 5 pots controlling 2 mikes and 9 sources, \$650 or best offer. Realistic battery operated mixer for remotes, \$15 or best offer. SMC SSP-3060 automation stepper with AS-10 audio switcher, \$2,000 or best offer. Bert Williams, KPSM, 2009 W. Gary, Broken Arrow, OK, 74012. Phone 918-455-9522.

Ramko DC-5M mono console in good condition, best offer. CCA Ultimate 10-channel dual mono console in good condition, asking \$400 plus shipping. Bob Graham, WEMR, RR#3, Box 1460, Tunchannock, Pa, 18657. Phone 717-836-1460.

2) Ramko DC-38S audio consoles. 8-channel, 4 inputs per channel, program-audition-mono mix outputs. Both in excellent condition and physical appearance. Marv Olson, KAUS-FM, Box 159, Austin, MN, 55912. Phone 507-437-7666 Fax 507-437-7669.

Quad-8 QE2082 audio console. 20 mic/line inputs, 30 VU meters, 16-8-4-2 outputs. New cost was \$48,000. Make an offer. Joseph DiFranco, WBEZ, 1819 W. Pershing Rd., Chicago, IL, 60609. Phone 312-535-8225 Fax 312-535-8228.

Shure M67 mixer. Tim Pozar, KKFS-FM, 77 Maiden Lane, San Francisco, CA, 94108. Phone 415-788-2022 Fax 415-956-4177.

LPB, S-12 Signature-II Series, 5-channel stereo console with step attenuators in excellent condition, very clean. \$975. Cliff Jennings, WQLA, Box 1530, LaFollette, TN, 37766. Phone 615-566-1000 Fax 615-457-5900.

### Audio Processors, and EQ

McMartin BFM-1514R stereo audio processor with book, in good condition. CBS Labs Volumax 400 and Audimax 4440 processors in good condition. Joe Strauss, KIJK, Box K, Prineville, OR, 97754. Phone 503-447-6239 Fax 503-447-4754.

CBS Volumax, \$150. Lon Wagner, Ardnigva Radio Network, Box 1788, Orlando, FL, 32802. Phone 407-299-1299.

CRL SMC-600, works, as-is, \$400 or make offer. Brad Johnson, KO93, 2121 Lancy Dr. #1, Modesto, CA, 95355. Phone 209-551-1306 Fax 209-551-1359 Call Fridays only.

Eventide H-3000B Ultra-Harmonizer, used very little, \$2,000, negotiable. Larry Cochran, KPLT, 1255 SE 24th, Paris, TX, 75460. Phone 903-784-3311 Fax 903-784-5758.

Orban 8100 in mint condition, purchased in 1986. Jim Phillips, WZOM, 408-1/2 Clinton, Defiance, OH, 43512. Phone 419-782-8591.

ADC Paragraphic stereo equalizer, Sound shaper Three. Best of parametric and graphic, 12-band, like new, rack mount, \$275. Richard Tiner, 1914 Rose Lane, Cour d'Alene, ID, 83814. Phone 208-664-0690.

2) CBS Audimax 410's. UREI BL-40 limiter. Best offer. Smokey King, King Engineering, 13310 Cisco Dr., Amarillo, TX, 79111. Phone 806-335-1954 Fax 806-355-5832.

2) Valley Gain Brian with power supply/enclosure, \$400. Symetrix CL-100 limiter, \$200. Gates Sta-Level with good tubes, \$60. CBS Volumax 4110, \$200. (2) Allison Research Gain Brains, \$150 each. Allison LX-100 power supply, \$65. Kevin Smith, Box 203, Burnt Hills, NY, 12027. Phone 518-884-2749.

Modulation Sciences Clipper, \$500 Al Taylor, KVVP, Box K, Leesville, La, 71446. Phone 318-537-5887 Fax 318-537-4152.

CBS Audimax stereo compressor, \$200 or best offer. CBS Volumax stereo limiter, \$200 or best offer. Buy both for \$350. (2) Marti CLA-40H compressor-limiter, mono, \$75 each or best offer. Bert Williams, KPSM, 2009 W. Gary, Broken Arrow, OK, 74012. Phone 918-455-9522.

Aphex II broadcast Aural Exciter in very good condition. \$500 or best offer. Bill Emanuel, KHYL-FM, 2435 Marconi Ave., Sacramento, CA, 95821. Phone 916-338-2800 Fax 916-974-0802.

Howe Series 2000 Phase Chaser, includes manual. Dan Donovan, KCGR-FM, 1620 American Bank Plaza, Corpus Christi, TX, 78475. Phone 512-888-8555 Fax 512-888-8464.

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2) Dorough DAP-610's. Scott Wallace, WYMJ-FM, 699 N. Valley Rd., Beavercreek, OH, 45385. Phone 513-429-9080 Fax 513-429-9965.

Fairchild echo unit. Multi-sensing type, in small rack, make offer or trade, you ship. Charlie Rohde, KNRR, 121 NE Loop 820, Fort Worth, TX, 76053. Phone 817-589-1100 Fax 817-590-9590.

Furman RV1 reverb. Orban Reverb IIIB. Alexis Mid-iverb II effect processor. Delta Labs Effectron II. Dan Donovan, KCGR-FM, 1620 American Bank Plaza, Corpus Christi, TX, 78475. Phone 512-888-8555.

Yamaha SPX-90, \$390. Electro-Voice RE-20, \$290. Tascam 34, 4-track 1/4" reel deck, \$990. Dennis Kinkaid, KYBS-FM, 5200 Valentine Rd. #230, Ventura, CA, 93003. Phone 805-644-6800 Fax 805-644-6181.

dBx model 166, dual gated compressor/limiter. Like new, asking \$500. Bruce Dierking, KNDP, RR3, Marysville, KS, 66508. Phone 913-562-2361.

3) Compex F760-X-RS stereo limiter. UREI LA-4 compressor/limiter. Modulation Sciences CP-803 composite clipper. Burwen DNF-1100 dynamic noise filter. Shure M63 Audiomaster equalizer. ADR Transdynamic audio processor. Tim Pozar, KKSF-FM, 77 Maiden Lane, San Francisco, CA, 94108. Phone 415-788-2022 Fax 415-956-4177.

Valley International 440 processor. New in original carton, plus manual. \$450 or best offer. Jay Bromley, 8805 S. 18th Apt. #6, Fort Smith, AR, 72903. Phone 501-648-9138.

CBS Volumax 4000, \$300 plus shipping. Orban 111B, \$400 plus shipping. ATI Emph-A-Sizer, \$700 plus shipping. Modulation Sciences CP-803 Composite Clipper, \$300. Dave Seavy, KROC, 1224th St. SW, Rochester, MN 55902. Phone 507-286-1010.

Modulation Sciences CP-803 composite clipper. Good condition, make offer. Edd Monskie, WLPA, 24 S. Queen St., Lancaster, PA, 17603. Phone 717-397-0333 Fax 717-397-4763.

## STL, RPU, Remote Controls

Micro Controls RCR-9/RCT-9, 9-channel remote control with digital read-out. May be used with STL or wire. Includes relay interface. In great shape, \$1,200. Moseley Isocoupler model ICU-2C, 450-470 mHz, \$200. Danny Tabor, WLCK, Box 158, Scottsville, KY, 42164. Phone 502-237-3148.

TFT 7610 remote control with relay panel. Transmitter unit is fine, studio unit needs work. Wire version. John Galanses, WAVI, Box 25016, St. Croix, WI, 00824. Phone 809-773-3693 Fax 809-773-3435.

QEI model 7775 ATS with books. Joe Strauss, KJK, Box K, Prineville, OR, 97764. Phone 503-447-6239 Fax 503-447-4754.

Moseley TRC-15AR, 15-channel remote control in good condition with spare board. 110/67 kHz. Asking \$450 or best offer. John Ramsey, WWUH, University of Hartford, West Hartford, CT, 06117. Phone 203-243-4703 afternoons.

Moseley PRB-15 remote control, as-is, \$1,900 or best offer. Brad Johnson, KO93, 2121 Lnacey Dr. #1, Modesto, CA, 95355. Phone 209-551-1306 Fax 209-551-1359.

Moseley TRTC-15AW remote control in good condition. Includes studio and transmitter units. \$500 or best offer. Ronald Cowell, KNTR, P.O. Box 308, Ferndale, WA, 98248. Phone 206-384-5117.

Telfax TFX-31B remote sports units. 3 mike jacks, 1 aux input, telco output. Dial up station and do clean play by play. Rechargeable battery pack built in. \$300. Richard Tiner, 1914 Rose Lane, Cour d'Alene, ID, 83814. Phone 208-664-0690.

Moseley TRC-15AR. Fully operation condition. Fax offer to: Alberto Perira, WIDA-AM, 203-7 Arzuaga Ave., Carolina, PR, 00628. Phone 809-757-1414 Fax 809-763-4250.

Gates RDC-10 remote control unit, plus one for parts, \$100. (3) Motorola Moxy 25W solid state under-dash mobile radios on 161.64 mHz, includes base, mike, power supply, VP base antenna, mobile antennas, \$1,000 or best offer. Bert Williams, KPSM, 2009 W. Gary, Broken Arrow, OK, 74012. Phone 918-455-9522.

Single section cavity resonator for operation in 406-512 mHz band. New, never used, \$100, in original box. Paul Wolf, WZCR, 241 NE 10th Ave., Cape Coral, FL, 33909. Phone 813-574-5548.

TFT digital remote control system model 7601. Includes SCA generator for STL control or wire line. Includes manual. D. Donovan, KCGR-FM, 1620 American Bank, Corpus Christi, TX, 76226. Phone 512-888-8555 Fax 512-888-8464.

Moseley TRC-15AW remote control system in good condition. \$500. Galeno Glibert, CSRG Stations, Box 50539, Denton, TX, 76206. Phone 817-380-0229 Fax 817-380-0329.

RPU/Remote gear: (2) Motorola lunch-pail 150mHz portables, 2 channels, 5 watts with tone, \$75 each. GE Portamobile, 1 channel, 7 watt, UHF transceiver with charger on 455.65 mHz, \$150. Mike McKenna, KNGS, Box 90277, Long Beach, CA, 90809. Phone 213-597-1961.

Moseley MRC-1600 digital remote control system, \$2,000. Fairchild DART-384 digital audio receiver with Satcom-1R cards, \$5,000. Leader Audio Generator model LAG-120B, best offer. SMC model TG-25 25Hz tone generator, best offer. Optimod 8100A/ST audio processor, best offer. Larry Penke, WKTT-FM, 1 Washington Square, Cleveland, WI, 53015. Phone 414-693-3103.

2) TFT 7601 systems. 4 units in all: (2) 7601-C and (2) 7601-R units. Telco style, new in 1982, excellent condition, just out of service. \$1,600 each systems or best offer. Cliff Jennings, WQLA, Box 1530, LaFollette, TN, 37766. Phone 615-566-1000 Fax 615-457-5900.

5-foot Mark STL dish, \$450. Dan Donovan, KCGR-FM, 1620 American Bank Plaza, Corpus Christi, TX, 78775. Phone 512-888-8555 Fax 512-888-8464.

RCA BTR-30A remote control, transmitter unit only. Time Pozar, KKSF-FM, 77 Maiden Lane, San Francisco, CA, 94108. Phone 415-788-2022 Fax 415-956-4177.

Moseley MIU-2, \$250 plus shipping. Moseley SCD-8, \$150. Dave Seavy, KROC, 1224th St. SW, Rochester, MN 55904. Phone 507-286-1010.

## AM Transmitters

CSI T-25A1, 25kW AM transmitter tunes to 1200kHz, may be modified for shortwave, \$30,000. Sparta 701A, 1kW, tuned to 1190kHz, very good condition, \$5,500. RCA BTA-10U2 AM transmitter, 10kW, tuned to 1220kHz, very good condition, \$15,000. CSI, 1kW AM transmitter, tuned to 1480kHz, very good condition, \$6,000. George M. Arroyo, WOEQ, West Palm Beach, FL. Phone 407-687-9350 Fax 407-687-3398.

Gates BC-5P, 5kW Am transmitter. Currently on the air. Pete Low, WCBG, Box 92, Mercersburg, PA, 17236. Phone 717-597-9200 Fax 717-597-9210.

RCA BTA-50-F1 transmitter parts. Randy Grammar, WJNT, Suite 286, Highland Village, Jackson, MS, 39236. Phone 601-366-1989 Fax 601-366-2065.

Ratheon RA-1000, 1kW AM transmitter, 1580kHz, PCB caps removed, some lightning damage but many usable parts, \$200 plus shipping. Bill Norman, WZKY, Box 550, Albemarle, NC, 28002. Phone 704-983-1580 Fax 704-483-1436.

CSI 25kW Am transmitter, tuned to 1200kHz, like new condition, used 200 hours, (2) cabinets plus transformer cabinet, \$30,000.

ITA Phasor, 2-tower, just out of service, \$2,000. Jim Keane, KAPS, Box 70, Mt. Vernon, WA, 98273. Phone 206-424-0660 Fax 206-424-1660.

Gates BC-5B, 5,000 watt AM transmitter, 1270kHz, excellent condition, stored inside, \$1,000 you ship. (2) Gates BC-1J transmitters, combine for good unit, \$400 you ship. Ratheon RA-250, complete, \$250 you ship. Carl Jacobson, WSAE, Spring Arbor College, Spring Arbor, MI, 49283. Phone 517-750-1200 Fax 517-750-2108.

LPB RC-6 4-watt carrier current transmitters, tuned to 1085kHz, tested, \$150 or best offer. K. Smith, Box 203, Burnt Hills, NY, 12027. Phone 518-884-2749.

Collins 20-V-3, 1kW AM transmitter on 1350kHz, \$2,500 or best offer. Nautel Ampfet 2.5, used 8-10 hours, like new, used as backup only, new price was \$25,000, will sell at \$16,500 firm! Paul Wolf, WCRM, 241 NE 10th Ave., Cape Coral, FL, 33909. Phone 813-574-5548.

300 watt RF amplifier module. Broadband using 8-15 watts drive and 48 volts power supply. Chuck Springer, KLMR, Box 890, Lamar, CO, 81052. Phone 719-336-2206 Fax 719-336-7973.

RCA BTA-1R2 on the air. 1kW on 1490kHz, PCB caps replaced, best offer. Lee Afflerbach, WLOJ-AM, 5550 Sterrett Place, Columbia, MD, 21004. Phone 301-964-5700 Fax 301-964-6478.

## FM Transmitters

Continental 831G-2, 20kW FM transmitter with 310Z-2 exciter on 94.9 mHz, \$19,000. Collins 830F-1B, 5kW FM transmitter with 310Z-1B exciter on 94.9 mHz, \$4,500. Jim Stitt, WOFX, 250 W. Court St., Suite 300E, Cincinnati, OH, 45202. Phone 513-241-9500 Fax 513-241-8896.

FM Class "A" Package: CCA FM3000DS transmitter, Shively 6811-3 antenna with de-icers, CCA 10DS exciter, CCA SG-1D stereo generator, Harris Iso-Coupler. All on 104.9 mHz. Bill Zollman, KDLS-FM, Box 548, Perry, IA, 50220. Phone 515-465-5357.

## AM/FM Exciters SCA & Stereo Generators

CCA 10D Exciter with power supply. Danny Tabor, WLCK, Box 158, Scottsville, KY, 42164. Phone 502-237-3148.

2) RCA FM exciters, \$500 each. (1) RCA BTS-1B stereo generator, \$200. All Miller, WKMX, 100 N. Main St., Enterprise, AL, 36331. Phone 205-347-2278.

Harris MS-15R stereo generator with IB, \$750. Glenn Bell, KGOK, 2750 S. 167th W., Goddard, KS, 67052. Phone 316-794-2334 Fax 316-942-8927.

McMartin SCA generator on 67kHz, like new, \$750 or best offer. Gates TE-1 exciter and stereo generator, \$500 or best offer. Collins A-830 exciter and stereo generator, \$750 or best offer. Bert Williams, KPMS, 2009 W. Gary, Broken Arrow, OK, 74012. Phone 918-455-9522.

QEI Type 675 exciter on 93.5 mHz. 10-40 watt power output, 12 months of service. \$1,550, with manual, and you pay shipping. Michael Lowery, Satellite Systems, 121 Alsace Way, Suite 310, Colorado Springs, CO, 80906. Phone 719-634-6319 Fax 719-635-8151.

Modulation Sciences Sidekick model SCA-186, clean and like new, \$2,000. Johnson ST-4A SCA receiver on 99.3 mHz, \$100. Delta C-Quam AM exciter and stereo mod monitor, clean like new, \$6,500 or best offer. Paul Wolf, WZCR, 241 NE 10th Ave., Cape Coral, FL, 33909. Phone 813-574-5548.

Elcom Bauer 690-B exciter. Harris MS-15 exciter. Both programmable. Dan Donovan, KCGR, 1620 American Bank Plaza, Corpus Christi, TX, 78475. Phone 512-888-8555 Fax 512-888-8469.

Moseley SCG-8, 67kHz SCA generator, \$350, will ship COD. CSIFrequency agile exciter with book, 20 watts, \$600. W.L. Moring, WITV, 2187 Wappo Dr., Charleston, SC, 29412. Phone 803-795-8942.

Moseley SCG-9, stereo generator, \$300 plus shipping. Dave Seavy, KROC, 122 4th St. SW, Rochester, MN 55904. Phone 507-286-1010.

## Test & Monitor Equipment

Potomac AM-19 antenna monitor, 2-tower, excellent condition, \$1,500. Jim Keane, KAPS, Box 70, Mt. Vernon, WA, 98273. Phone 206-424-0660 Fax 206-424-1660.

TFT 730 AM modulation monitor with pre-selector, \$500. Smokey King, King Engineering, 13310 Cisco Dr., Amarillo, TX, 79111. Phone 806-335-1954 Fax 806-355-5832.

Tektronix 52A NTSC monitor, \$1,500. Tektronix RM-529 monitor, \$250. Michael Murphy, 11621 Valle Vista Rd, Lakeside, CA, 92040. Phone 619-561-2726.

Hickok counter model DP-150, \$100. McMartin TBM-3000 FM broadcast freq. monitor, \$395. Gates model M-1693 AM modulation monitor, \$100. CBS Volumax FM-411, \$250. Ralph Carlson, KRSP-FM, 5320 S. 9th East, Salt Lake City, UT, 84157. Phone 801-268-8181 Fax 801-268-8497.

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TFT 760 EBS System. Tim Pozar, KKSF-FM, 77 Maiden Lane, San Francisco, CA, 94108. Phone 415-788-2022 Fax 415-956-4177

Technical Materials Corp., 5kW dummy load. Convection cooled (no water or blowers), 50 ohms, in 6-foot high by 4-foot wide, 2-1/2-foot deep ventilated housing. Weatherproof, new, \$1,000. R. Meyers, Benchmark Communications, 4700 SW 75th Ave., Miami, FL, 33155. 305-264-5963 Fax 305-264-2357.

Belar Monitors: FMM-1 FM monitor, FMS-1 Stereo monitor, SCM-1 SCA monitor, External meter panel. All on 103.9 mHz. Scott Wallace, WYMJ-FM, 699 N. Valley Rd., Beaver Creek, OH, 45385. Phone 513-429-9080 Fax 513-429-9965.

WX2-E Field Intensity Meter, \$600. H.P. 330B audio distortion meter, \$100. G.R. 916A RF impedance bridge, \$200. Heath audio distortion meter, \$75. David Messing, KNCY-FM, 1819 2nd Ave., Nebraska City, NE, 68410. Phone 402-873-3348 Fax 402-873-7883.

## Sound & PA Equipment

Bose 802E active equalizer for 2 Bose 802speakers. Make offer or trade. Bill Spitzer, KKLS, Box 460, Rapid City, SD, 57709. Phone 605-343-6161 Fax 605-343-9012.

McCurdy SA-141 mixer. Make offer. Glenn Bell, KGOK, 2750 S. 167th W., Goddard, KS, 67052. Phone 316-794-2334 Fax 316-942-8927.

Peavy XR-1100, 12-channel stereo, 250 watt per channel powered mixer, \$595. Shure SR-101, 8-channel mono mixer, \$200. Shure SR-105, 250 watt mono power amp, \$200. Bozak CMA-10-1, 10-channel mike mixer, \$100. Bill Mountjoy, WITM-AM, Box 1240, Elizabethton, TN, 37644. Phone (615) 543-5849.

Complete RAMSA PA loudspeaker system: Pair of WS-A200 2-way full range cabinets with 12" woofers rated at 2350 watts. Pair of 400-watt WS-A240 12" subwoofers and WS-P2A subwoofer processor. Very compact and portable speaker cabinets weigh only 35lbs. each. Incredible bass response and very clean mids and highs. All units in new condition. great system for mobile D.J. or remotes. Still in warranty. \$1,500 or best offer. Brian Fisher, KPOK, Box 477, Bowman, ND, 58623. Phone 701-523-3883.

PA System: Crown-BiAmp amplifiers, Ashley 4-way crossover, JBL transducers, (8) Shure mikes, snakes, all cables, Yamaha PM-700 board, (2) floor monitors. Excellent condition. Harry Bous, American Community Sound, 1204 Axtell Dr., Cayce, SC, 29033. Phone 803-791-3804.

## Tubes and Components

(2) 8122 driver tubes, used but good. (1) Johnson capacitor part #124-0113-001, new. (2) 8122 tube sockets., Best offer for all. Danny Tabor, WLCK, Box 158, Scottsville, KY, 42164. Phone 502-237-3148.

(4) New 833A tubes, never used, \$60 each. Several used 833 and 845 tubes still in good condition, \$15 each. Bill Norman, WZKY, Box 550, Albemarle, NC, 28002. Phone 704-983-1580 Fax 704-983-1436.

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## Satellite Equipment

(3) Scientific Atlanta DAT 15 kHz demods, \$400 each plus shipping. Scientific Atlanta DAT 7.5 kHz demod, \$400 plus shipping. Dave Seavy, KROC, 122 4th St. SW, Rochester, MN, 55902. Phone 507-286-1010.

Wegener 1602 and 1603 mainframes with the following cards: 1621, 1645, 1646, 1606-21, 1683-08, 1605-12. Used to receive SMN, John Galanes, WAVI, Box 25016, St. Croix, VI, 00824. Phone 809-773-3693 Fax 809-773-3435.

Drake ESR-2240 satellite receiver, tuneable over 24 channels, subcarrier audio, adjustable video and audio outputs, metered tuning, \$500. Arunta SSP-312 satellite audio stereo processor, \$200. California amplifier CFK-100 dual hybrid feed horn with polarotar, Garnder C-band LNB, Norsat Ku-Band LNB, \$250. J. Brown, CAVC, Box 3471, Charlottesville, VA, 22903. Phone 804-979-0402.

Ma/Com Videocipher II descrambler, \$500 or make offer. Jack Farrance, WAZT, 123 E. Court St., Woodstock, VA, 22664. Phone 703-459-8810 Fax 703-459-5834.

Wegener receiver model 1602-57 mainframe with 1619-99 card, 1606-21 card. Receives USA radio network for Christian format stations. Richard Tiner, 1914 Rose Lane, Coeur d'Alene, ID, 83814. Phone 208-664-0690.

Scientific Atlanta (Adcom) 7550 satellite receiver. 18 months old, used for Unistar ACII format, make offer. (2) Scientific Atlanta 7.5 kHz, 2-channel DAT receiver cards, 1 new and 1 used, make offer. (1) ABC Network News Decoder, make offer. J.R. Curtis, KFRO, Box 4299, Longview, TX, 75606. Phone 903-663-3700 Fax 903-663-1022.

Avcom SCPC-100 satellite receiver with down-converter and LNA. Just returned from factory, \$550 or best offer. Kelly Wallingford, WIRV, Box 281, Irvine, KY, 40336. Phone 606-723-5138 Fax 606-723-5180.

Rack electronics for SMN "Heat" format, with all tones, etc, \$3,000. Al Taylor, KVVP, Box K, Leesville, LA, 71446. Phone 318-537-5887 Fax 318-537-4152.

Wegener receiver for SMC "Pure Gold" format with all cards. Sandy Glasby, WJNZ, Box 25, Gaylord, MI, 49735. Phone 517-732-2341 Fax 517-732-6202.

Scientific Atlanta DAT-32 15 kHz dual audio decoder card. Will trade for a 7.5 kHz dual card for either the S/A DAT-32 or the Fairchild DART-384 receiver. Marv Olson, KAUS-FM, Box 159 Highway 105 South, Austin, MN, 55912. Phone 507-437-7666 Fax 507-437-7669.

Adcom 7550 receiver with Transtar Adult Contemporary module cards. Complete and now in service. Gary Weber, KDRQ, RR2, Wisel, ND, 58495. Phone 701-452-2345 Fax 701-927-9328.

Fairchild DART-384 digital audio receiver with Satcom 1-R cards, \$5,000. WKTT Phone 414-693-3103.

## TV and Video

3/4" edit system: Sony 5800/5850/RM-440 in good condition, \$4,900. Telecine: Laird 5300 multiplexer, Spectrum 32D slide projector, Eiki 16mm film projector, Hitachi FP-50S color camera, like new, \$1,000 or best offer. Skip Moretti, KLXV-TV, 2315 Canoas Garden Ave., San Jose, CA, 95125. Phone 408-264-6565 Fax 408-723-1670.

Tektronix 149A NTSC test signal generator and VITS and VIRS inserter, good condition, \$3,750 or best offer, will trade. Tektronix 1485C wave form monitor in good condition, \$3,950 or best offer, will trade. TV transmitter, 50 watt ITFS channel 1A with Andrew dual polarized antenna, used 2 years, \$10,000 or best offer, will trade. (2) Sony AC-340B AC power adapters for portable equipment, \$100 each. William Ellis, KOZK-TV, MPO Box 21, Springfield, MO, 65801. Phone 417-865-2100 Fax 417-863-1599.

RCATK-76 Color camera with microphone, viewfinder and power supply. Looks good with Canon lens, make offer. R.D. Rushing, 11710 Hoyt St., Tampa, FL, 33617. Phone 813-988-0496 Fax 813-988-1354.

(1) RCA TR-70, 2" VTR, with head. (5) RCA Tk-44 complete color cameras. All \*\*FREE\*\*, you pay shipping. Blake Richert, WPCBV-TV, Signal Hill Dr., Wall, Pa, 15148. Phone 412-842-3930 Fax 412-824-5442.

3M (Pesa) character generator model D8800. Dual channel with camera compose and 2nd (remote) keyboard options. Has dual 8" floppy drives, with spare. Includes (2) Lenco encoders. In good condition, large selection of fonts, \$2,000 or best offer. Sid Shumate, WVIR-TV, Box 769, Charlottesville, VA, 22901. Phone 804-977-7082 Fax 804-971-2800.

## Misc. RF Equipment

Phenolic loading coil, 24 inches long by 6 inches diameter with 56 taps and 300 turns of #16 ga. wire. Internal variometer measures 4-3/4" diameter with 22 turns of #16 wire, \$65. James Cunningham, KHKC, Route 2 Box 113B, Stonewall, OK, 74871. Phone 405-265-4496.

Tepeco J317M Translator, 10 watts out, tuned to 106.3 in and 102.3 out. Charles Maley, KQWC, Box 550, Webster City, IA, 50595. Phone 515-782-2155.

(2) TTC XLFM2 translators on 102.3 mHz with (2) 10 watt amps each and code identifier and demodulator boards. (4) Scala 10-element yagis on 102.3 mHz. (4) Lengths of 1/2" Helix with connectors. (1) Sitco and (1) Scala receive antennas, \$7,000 for all. David Rose, KAAA, 2534 Hualapai Rd., Kingman, AZ, 86401. Phone 602-753-2537 Fax 602-753-1551.

1KW plate transformers with 208/230 primary and 3200 secondary. (1) New Peter Dahl, \$550 and (1) used, \$250. Bill Spitzer, 1010 Allen Ave, Rapid City, SD, 57701. Phone 605-343-6986.

(2) Utilicom UC102, FM 2-way hand-held units for VHF. (1) Shinway UHF programmable 2-way hand-held (new). (1) Reim RH256NB, track tuned, 16-channel VHF FM 2-way, 25 watts. Chris Daniel, KENA, HCR #9 Box 28C, Mena, AR, 71953. Phone 501-394-6654 in evenings.

Delta TCA-10/20 EXR with extra TCT-4, \$500 or best offer. Glenn Swiderski, 19 Willa Dr., Buffalo, WY, 82834. Phone 307-684-5349.

Bird Electronics "Birdwatcher" RF power monitor alarm model 3128 plus an in-line section and elements. One year old, barely used. \$1,000 or best offer. Chris Poshpeck, WJSC, Johnson State College, Johnson, VT, 05656. Phone 802-635-2314.

Tepeco booster system: Downconverter, booster and RF amps. Tim Pozar, KKSF-FM, 77 Maiden Lane, San Francisco, CA, 94108. Phone 415-788-20223 Fax 415-956-4177.

(7) Regency ACTR-10 Lo/Hi/UHF scanners, 10-channels, \$100 each. (2) Regency TMR-8 Hi/Lo scanners with 8 channels, \$80 each. Over 2,000 scanner crystals, \$4.00 each, send for list. (2) Wilson WH-2516 VHF high-band transceivers, fully programmable, 16 channels, 25 watts, covers 15-162 mHz, new one \$425, used one \$225. (2) Wilson WU-1516 programmable UHF transceivers, 16 channels, 15 watts, 450-470 mHz, new, \$475 each. Mike Kenna, KNGS, Box 90277, Long Beach, CA, 90809. Phone 213-597-1961.

## Misc. Audio & Telco Equipment

Yamaha PM-700 mixer, \$475. BiAmp 500 watts amplifier, \$275. UREI 1176 compressor limiter, \$225. (2) Tehcnics 1200 turntables with Stanton, \$500 for the pair. Electro-Voice balanced 10-band EQ, \$200. 10 mikes, 58's, 78's, others, \$440. Snakes, cables, \$240. Crown PS-400 with balanced inputs, \$485. Harry Bous, WVSC-FM, 1204 Axtell Dr., Cayce, SC, 29033. Phone 803-791-3804.

ABC Radio Tone Decoder, \$195. Ramko ACL-25 cart rewriter counter, \$100. (3) Marti CLA-40H compressor limiters, \$100 each. LPB, RC-5A AM carrier current transmitter, \$100. LPB, BC-6A AM carrier current transmitter, \$125. Kahn AM "Non-Symetra-Mod". Bill Mountjoy, WITM-AM, Box 1240, Elizabethton, TN, 37644. Phone 615-543-5849.

Pioneer 150 watt integrated power amp, \$95. Pioneer RT-909 reel deck, needs work, \$100. Mike Peterson, WSDM, Box 650, Brazil, IN, 47834. Phone 812-446-2507 Fax 812-446-1250.

(2) Conrex telephone coupler with 1/4" line out jack, \$50 each. Home-made auto answering circuit box and Sparta mono pb tape deck used to provide weather forecasts on dedicated phone number, \$3540 or best offer. 100's of 10" plastic reels of audio tape in box, recorded only once, some are old and some are new, buy as many as you want at \$1.50 per reel. Bert Williams, KPSM, 2009 West Gary, Broken Arrow, OK, 74012. Phone 918-455-9522.

Code-A-Phone 3500 phone answering equipment with power supply, make offer. Symetrix T1-101 telephone interface, \$250. Ron Peterson, KDMO, Box 426, Carthage, MO, 64836. Phone 417-358-2648 Fax 417-358-1278.

Shure Pre-Amps, Harris/Gates preamps, RCA preamp cards, Altec Line Amp. R.D. Rushing, 11710 Hoyt St., Tampa, FL, 33617. Phone 813-988-0496 Fax 813-988-1354.

## Misc. & Computer Equipment

(2) Weatherbank, 20-key keyboards, terminated in 5-pin 180-degree DIN plug. In good condition, for color systems. \$50 each. Bill Spitzer, KKLS, Box 460, Rapid City, SD, 57709. Phone 605-343-6161 Fax 605-343-9012.

(2) 72" Gates gray racks. (2) Step-down/up 208/110 VAC transformers. Deicer control with 500-foot conduit. Ceiling mount electronic air filter, make offer. Glenn Bell, KGOK, 2750 S. 167th W., Goddard, KS, 67052. Phone 316-794-2334. Fax 316-942-8927.

Bendix RDR-1 aircraft weather radar. Complete with antenna, power supply and display. Needs magnetron. \$750 or best offer. Clark Ratcliff, WADE, #1 Radio St., Wadesboro, NC, 28170. Phone 704-694-2175.

BRD Dual Drive CPU for 8" floppies. Model FDC-80 complete with printer and keyboard and big supply of floppy disks for cable and radio applications. Programming includes A/R, A/P, Daily log and billing. will sell with or without programming. Make offer. Ron Peterson, KDMO, Box 426, Carthage, MO, 64836. Phone 417-358-2684 Fax 417-358-1278.

Phillips Security monitor system: (2) 4-channel security cameras and monitor systems. Monitor-4 cameras manually or automatically records audio and video. Perfect night shift, rear door or entrance monitor. \$250. J. Brown, CAVC, Box 3471, Charlottesville, VA, 22903. Phone 804-979-0402.

1972 motorhome converted to mobile studio. Reconditioned engine, new roof and A/C. Generator, new paint, new tires, large custom windows, external speakers and lights. Includes Marti Transmitter, antenna, control board and wireless mike. Ready for remotes. \$10,000 negotiable. Lu Lacy, 3507 A Van Tassel, Amarillo, TX, 79121. Phone 806-355-4554.

New, still in crate, 3-Henry, 4.5-Amp DC filter chokes made by Peter Dahl Company. Our mistake is your gain. Purchase price was \$725 - your price is \$525 plus shipping. Dennis Dodd, KKTZ, 107 West 9th St., Mountain Home, AR, 72653. Phone 501-425-5100 Fax 501-424-2463.

Ellason E250 color weather radar system. Complete package provides adjustable range, sensitivity, antenna tilt, automatic operation. Selling for assumption of remaining debt. Brian Beasley, WJMH-FM, 4002-E Spring Garden St., Greensboro, NC, 27407. Phone 919-855-6500 Fax 919-855-5899.

Trendsetter Sound Effects Library on LP's. Good condition. Scott Wallace, WYMJ-FM, 699 N. Valley Rd., Beavercreek, OH, 45385. Phone 513-429-9080 Fax 513-429-9965.

Tower paint, 5 gallons Glidden #6930 International Orange and 3 gallons #6925 white. Dwight Mulder, KDMA, Box 738, Montevideo, MN, 56265. Phone 612-269-8815 Fax 612-269-8449

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