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RENEWALS: William Wyllie of Franklin MA, Robert Lazar of Arlington MA John Cairns of Canada. Thank You All. The Best To Everyone For 1996..  
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## DX TEST BULLETIN

**\*\* DX TESTS ARRANGED BY IRCA & NRC \*\***

**SATURDAY, DECEMBER 30, 1995 - CKGY-1170, BAG 5339, RED DEER, AB T4N 6W1, CANADA WILL CONDUCT A DX TEST BETWEEN 2:00 & 4:00 AM EST. THE TEST WILL INCLUDE VOICE ID'S, MORSE CODE ID'S, & COUNTRY MUSIC. RECEPTION REPORTS MAY BE SENT TO: MR. RON THOMPSON - GENERAL MANAGER. (ARRANGED BY J.D. STEPHENS FOR THE IRCA CPC)**

**SATURDAY, JANUARY 6, 1996 - WIBG-1020, 3328 SIMPSON AVENUE, OCEAN CITY, NJ 08226 WILL CONDUCT A DX TEST BETWEEN 2:00 & 6:00 AM EST. THE TEST WILL INCLUDE TEST TONES, MORSE CODE ID'S AND CONTEMPORARY CHRISTIAN MUSIC. RECEPTION REPORTS MAY BE SENT TO: MR. RICK BRANCADO?A - LICENSEE. (ARRANGED BY J.D. STEPHENS FOR THE IRCA CPC)**

**SUNDAY, JANUARY 7, 1996 - HCJB-690, CASILLA 17-17-691, QUITO, ECUADOR WILL CONDUCT A DX TEST BETWEEN 3:00 & 3:15 AM EST. THE TEST WILL INCLUDE MORSE CODE ID'S AND "OTHER UNIQUE ITEMS". CORRECT RECEPTION REPORTS WILL BE VERIFIED WITH A SPECIAL QSL CARD. ACCORDING TO THE STATION, IF YOU HEAR CODE, YOU MUST REPORT EXACTLY WHEN YOU HEARD IT AND WHAT CHARACTERS YOU HEARD. TAPE RECORDINGS ARE WELCOME, BUT TAPES CANNOT BE RETURNED. PLEASE INCLUDE ONE INTERNATIONAL REPLY COUPON OR FIRST CLASS POSTAGE IN U.S. OR CANADIAN STAMPS FOR A REPLY TO YOUR RECEPTION REPORTS, WHICH MAY BE SENT TO: MR. RICH MCVICAR (HC1JMN) - FREQUENCY MANAGER. ATTN: 690 DX TEST, c/o ENGLISH LANGUAGE SERVICE, HCJB. (ARRANGED BY MR. RICH MCVICAR OF HCJB FOR THE BENEFIT OF ALL DXERS)**

**MONDAY, JANUARY 8, 1996 - WOOW-1340, 310 EVANS STREET, GREENVILLE, NC 27835 WILL CONDUCT A DX TEST BETWEEN 1:00 & 1:30 AM EST. THE TEST WILL INCLUDE TEST TONES, MORSE CODE ID'S, POLKAS, & MARCH MUSIC. RECEPTION REPORTS MAY BE SENT TO: MR. EUGENE UNDERWOOD (KE4JEV) - ENGINEER. (ARRANGED BY J.D. STEPHENS FOR THE IRCA CPC)**

**MONDAY, JANUARY 8, 1996 - WARM-590, 600 BALTIMORE DRIVE, WILKES-BARRE, PA 18702 WILL CONDUCT A DX TEST BETWEEN 1:30 & 2:00 AM EST. THE TEST WILL INCLUDE MORSE CODE ID'S, & MARCH MUSIC. RECEPTION REPORTS MAY BE SENT TO: MR. BOB LENIO - TECHNICAL SUPERVISOR. (ARRANGED BY J.D. STEPHENS FOR THE IRCA CPC)**

**MONDAY, JANUARY 15, 1996 - WWLS-640, 2020 EAST ALAMEDA, NORMAN, OK 73071 WILL CONDUCT A DX TEST BETWEEN 1:00 & 2:00 AM EST. THE TEST WILL INCLUDE MORSE CODE ID'S & VOICE IDIS. RECEPTION REPORTS MAY BE SENT TO: MR. TONY SELLARS - OPERATIONS MANAGER. (ARRANGED BY J.D. STEPHENS FOR THE IRCA CPC)**

**MONDAY, JANUARY 15, 1996 - KBOZ-1090, 5445 JOHNSON ROAD, BOZEMAN, MT 59715 WILL CONDUCT A DX TEST BETWEEN 2:30 & 3:00 AM EST. THE TEST WILL INCLUDE COUNTRY MUSIC, MORSE CODE ID'S & VOICE IDIS. RECEPTION REPORTS MAY BE SENT TO: MR. JAMES A. BENDER - CHIEF ENGINEER. (ARRANGED BY J.D.**

# BROADCASTING INFORMATION



Editor:  
Robert Wien  
1309 Dentwood Drive  
San Jose, CA 95118

DEADLINES: 2nd & 4th Saturdays.

Compiled: 12/15/95

Much of this information was compiled from M Street Journal, DXM, and various other sources.

## NEW STATION APPLICATIONS:

NC. Lancaster 1060 khz. 400-D, ND

## NEW STATION GRANTS:

CO. Gunnison 1490 khz. 1000/1000

## FACILITY & PARAMETER APPLICATIONS:

KS. Topeka WREN-1250 150000/3500  
MO. Gladstone KGGN-890 dec. to 960-D (CP)

## FACILITY & PARAMETER GRANTS:

CO. Johnstown KHNC-1360 inc. to 4000-D, DA-2  
NY. Penn Yan WYLF-850 46-N

## CALL LETTER CHANGES:

AK. Anchorage KKSD-1080 becomes KASH  
CO. Boulder KBKS-1490 becomes KBVI  
FL. Kendall WAOP-1020 becomes WRBF (CP)  
GA. Trenton WADX-1420 becomes WKWN  
IA. Sioux Center KVDB-1090 requests KSOU "Sioux Center"  
KY. Georgetown WBBE-1580 becomes WTKT  
Neon WNKY-1480 becomes WEZC  
MI. Cassopolis WLLJ-910 becomes WGTO "Good Time Oldies"  
NC. Charlotte WRFX-610 becomes WFNZ  
OH. Toledo WWM-1470 becomes WLQR  
PA. Hughesville WMRF-1190 becomes WRKK  
RI. West Warwick WKRI-1450 becomes WHIM  
TN. Knoxville WEZK-1240 becomes WIMZ  
TX. Dallas KGBS-1190 becomes KDFX  
WV. Wheeling WBBD-1600 becomes WOHz "Aahs" (corrects  
previous listing)  
BC. Parksville CHPQ-1350 becomes CKCI

## FORMAT CHANGES:

AL. Montgomery WNZZ-950 was nx, adds talk  
CA. Fresno KFRE-940 was country, now nx, talk//KMPH-FM  
Pittsburg KATD-990 was AC, adds Sports By-line  
CO. Boulder KBVI-1490 was KBKS, silent, now AC  
CT. New Haven WAVZ-1300 was talk, now WW1 AS  
FL. Jacksonville WCRJ-1530 was talk, rptd. silent  
Saint Petersburg WSUN-620 was talk, now sports  
IL. Chicago WEJM-950 was urban/?FM, will add ABC Banks

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FORMAT CHANGES (CONT.):

IN. Shelbyville	W000-1520	was country, now JSN oldies
KY. Georgetwoen	WTRT-1580	was oldies, currently Xmas music, look for new format in 1996
Neon	WEZC-1480	was WNKY, religion, now Xtian C&W/contemp. look for new format soon
MI. Alma	WFYC-1280	was stds., talk, now country//WOEX
Cassopolis	WGTO-910	was WLLJ, R&B oldies, now SMN oldies
Howell	WHMI-1350	was hot AC//FM, now silent
MN. Brainerd	KLIZ-1380	was country, now 1 on 1 sports
Minneapolis	KFAN-1130	was sports, adds 1 on 1 sports
MS. Booneville	WBIP-1400	was s. gospel, country, now SMN Real C&W
Meridian	WMOX-1010	was country, talk, now all talk
MO. Kirksville	KIRX-1450	was country, now nx, talk, sports
Mountain Grove	KCMG-1360	was s. gospel, cont. Xtian, now C&W//FM
Springfield	KGMV-1400	was country//FM, now WVI AS
NV. Reno	KNRC-630	was KRCV, silent now country//FM (they are still KRCV as of 12/11-ed.)
Sun Valley	KIRS-1590	was country//FM, currently silent (this info confirmed via phone call-ed.) look for new format soon
NH. Hanover	WTSL-1400	was talk, adds 1 on 1 sports
NY. Buffalo	WWKB-1520	was talk, now country (drops Stern, keeps trucker's show)
Watertown	WATN-1240	was stds., talk, now nx, talk, sports
NC. Pinehurst	WIOZ-550	was stds//FM, now AP nx
Salisbury	WSTP-1490	was AS, now nx, talk, sports
Whiteville	WENC-1220	was oldies, now black gospel, R&B
PA. Lewisburg	WTGC-1010	was country//WWBE, now rock//WZXR
Williamsport	WWPA-1340	was oldies//FM, talk, adds SEL/FAN sports (sim. JWVRT-FM 12 m-9 AM)
SC. Beaufort	WBEU-960	was all nx, rptd. silent
North Myrtle Bch	WGSN-900	was travel info, to be AC//FM (Jan)
Orangeburg	WJZS-1150	was nx, talk, rptd. silent
Summerville	WAZS-980	was C&W/sports/R&B, adds children's midday
TN. Algood	WATX-1590	was religion, now talk, sports (Imus, The Babe, Williams, 1 on 1 sports)
Knoxville	WIMZ-1240	was WEZK, AC//WJXB, now rock//WIMZ-FM
TX. Dallas	KDFX-1190	was KGES, talk, now religion
UT. Salt Lake City	KISN-570	was sports, adds The Fan sports
WA. Bellingham	KBEW-930	was country, adds JSN country
WV. Weston	WHAW-980	was talk, now talk, country

Eric Bueneman of Hazelwood, MO. passes on the following tips:

MO. St. Louis	KSD-550	was SMN AS, ads talk 2200-1300 CLT, drops "Unforgettable 550" slogan, carries Rams football//KSD-FM.
	KSTL-690	was urban gospel, adds urban gospel//WYCA- FM nights, now 18-N (went nites in July)
IN. Highland	WINU-880	was AC/ethnic, adds Bloomsburg nx, now 24 hr. NSP
IL. Springfield	WMAY-970	was talk/oldies, drops oldies
Jacksonville	WLDS-1180	was AC, now AC/oldies
MO. Washington	KSLQ-1350	was AC//FM, adds Rams football//FM
St. Louis	KRAM-1380	talk, drops Art Bell, adds CHR//WKBQ-FM, overnites, weekends
	KATZ-1600	was urban oldies, now talk, R&B, urban gospel weekends

Thanks, Eric. Xmas is just 10 days away, DX cx have been only fair at best of late, and we got drenched here in California, winter came real fast! '73's.



## DX Worldwide - West

PAT MARTIN PO BOX 843 SEASIDE, OR 97138

Time: UTC

Phone (503) 861-3185

DEADLINE: TUESDAYS

Apparently a slow week for DXers as no reports this week. I have done a little DXing inbetween fighting a bug and a few QSLs were received. So away we go, plus a tip from Chuck Boehnke.

### TRANS-PACIFIC DX ROUNDUP

- 531 JAPAN, Morioka, JOQG-fair w/man in JJ at 1400 on 12/18 (PM-OR)  
540 JAPAN, NHK Synchros here almost as strong as 531, but domestic QRM at 1404 12/18 (PM-OR)  
567 JAPAN, Sapporo, JOIK good w/NHK 1 pgm at 1410 12/18 (PM-OR)  
657 D.R.KOREA, Pyongyang, Fair w/make in KK o/JJ at 1440 12/18 (PM-OR)  
765 UNIDS, a couple JJs and others in a jumble at 1421 12/18 (PM-OR)  
864 UNID, woman in language at 1434 12/18, not JJ or KK (PM-OR)  
954 JAPAN, Tokyo-JOKR, Fair w/JJ pop mx and man in JJ 1418 12/18 (PM-OR)  
1053 REPUBLIC OF KOREA, usual jammer here of growls at 1430 12/18 (PM-OR)  
1161 TAIWAN, presume the sorce of CC talk at 1445 12/18 (PM-OR)  
1179 JAPAN, Osaka-JOOR, Fair in splash w/woman in JJ at 1412 12/18 (PM-OR)  
1323 CHINA OR ????, man in RR is splash, slow March type mx at 1426 12/18. (PM-OR)

### VERIFICATIONS

- 657 D.R.KOREA, Pyongyang, sent Full Detailed cd with a beautiful hard covered book (Green in color) on the films in D.R.Korea, schedules, and other material also rec. QSL was signed by unreadable from the English section in 59d. (PM-OR)  
729 P.R.CHINA, Jiangxi PBS Via CRI-Beijing, V/s Ai Giuilim-English Sec. cd along with schedule and beautiful paper cutouts. (PM-OR)  
15010\* VIETNAM, Hanoi, This was a taped report for 632.8 KHZ. Rec. a Full Detailed cd in 62d, all info was correct except for frequency! I will try again. (PM-OR)

Chuck Boehnke sends along this tip.

- 1134 INDIA, Calcutta-AIR, hindi mx at 1610 on 11/26 (CB-HI)

### THANKS TO THESE REPORTERS

- CB-HI CHUCK BOEHNKE-PO BOX 488-KEAAU HI 96749-0488  
R71A, Kahuna Dipole  
PM-OR YOUR EDITOR  
Drake R8, Term. EWE(U) Antenna, 900' NNW Beverage, Ground sys.

## IRCA Foreign Logs

The IRCA has published nine volumes of the IRCA Foreign log. Each volume contains the several hundred actual tips that were reported to the DXWW sections during an entire year, compiled and retyped in a book format. In addition, special features include: articles on foreign DXing (volumes 6, 7 and 8), utility lists (volumes 7 and 8), shortwave parallels (volume 8) and BCB propagation (volumes 6, 7 and 8). The IRCA Bookstore still has volumes 3, 4, 6, 7 and 8 of the IRCA Foreign Log available for \$2.50 each (overseas airmail add \$2.50/book).

Order from the IRCA Bookstore, by sending the correct amount (in US funds) to:

**IRCA Bookstore, 9705 Mary N.W., Seattle, WA 98117-2334. Thank you!**



# WESTERN DX ROUNDUP

Nancy Hardy  
979 Neptune Boulevard  
Billings, MT 59105-2129

 **PRODIGY**  
MPNN49B

Electronic Mail: Internet: WDXR@aol.com

America On Line: WDXR Compuserve: 74444,3075

Prodigy: MPNN49B

WDXR DEADLINES: Each Saturday. Please use Eastern Time.

## REPORTERS FOR THIS ISSUE:

- (FA) Frank Aden-4096 Marcia Place-Boise, ID 83704  
Modified FRG-7, 180' L-longwire, 4' box loop
- (LGB) Larry Godwin-2390 Clydes Dale Lane-Missoula, MT 59801  
Hammarlund HQ-150, Sanserino air-core box loop & KIWA loop
- (NP) Nigel Pimblett-1146 Queen St.-Medicine Hat, AB T1A 1B4  
(NP-AB) Using Kenwood R-5000 and KIWA loop  
(NP-AB1) Using R-5000 and 1000' eastern Beverage
- (DS) Dan Sys-27423-32nd Avenue-Aldergrove, BC V4W 3J3  
GE Superadio II

- 690 KRCO OR, Prineville 11/30 2200 good signal over XETRA in CBU null with C&W. Has been quite dominant in the evenings lately, must be more powerful than the 78 watts listed in the M Street Directory. (DS-BC)
- 730 KBSU ID, Boise 12/14 2259 ended a musical request program from "The Voice of America" (doesn't that violate a copyright law?), then ID mentioning "Nampa-Boise-Caldwell." Too strong for listed night power of 500 watts. I think it didn't power down at sunset. (LGB-MT)
- 750 KOAL UT, Price 11/23 0858 recreation report, ID as "AM 750 KOAL." (NP-AB)
- 760 WJR MI, Detroit 11/25 2106 Red Wings NHL game against NY Rangers. (NP-AB)
- 860 CBKF SK, Saskatoon 12/8 0710 good signal over/under CFPR with "Radio Canada" newscast and what sounded like weather reports for various prairie cities in French. No sign of KTRB. New. (DS-BC)
- 900 CHML ON, Hamilton 11/21 1845 ad for "Opera Hamilton's" presentation of The Barber of Seville, ID as "Hometown Radio, 900 CHML.." (NP-AB1)
- 920 CFRY MB, Portage-la-Prairie 11/25 1720 time check as "C-Fry time 4:20," then weather and into country music. (NP-AB)
- 930 KTKN AK, Ketchikan 12/9 1010 real surprise with a good solid signal in KBFW null for about 10 minutes. Tail end of ABC Sports, ID "Ketchikan's First Station...Classic KTKN," into AC-oldies music. Report sent. New. (DS-BC)
- 950 KMER WY, Kemmerer 12/9 1604 football game halftime on Wyoming Network. At 1606 had promo for K-95 Bargain Hunt on "AM 950, MER." New catch. (LGB-MT)
- 1060 CHMX AB, Calgary 12/1 0830 Canada's only modern rock station on the AM band has gone to the other musical extreme becoming adult standards. "Great songs, great memories, AM 1060 CKMX." Also appears to simulcast CFRN-1260 Edmonton at times (same ownership). (DS-BC)  
+ 12/1 0919 "AM 1060, CKMX" ID by man, talk with the morning man at CFRN Edmonton (CKMX's sister station) about new nostalgia format, then into 50's tune. Note: Dec. 1 was first day for new format. (NP-AB)
- 1070 WTSO WI, Madison 11/25 1827 talk program with ID as "This is Inside-Out on WTSO." Dominated for a couple of hours, most unusual. (NP-AB)
- CBA NB, Moncton 11/25 1815 CBC sports, with report from the Vanier Cup (Canada's college football championship). Faded out for a few minutes, then back at 1829

- with local ID "This is CBC serving the Maritimes," then into weather for Maritime provinces. New catch and new province for me!! (NP-AB) (Congratulations!--NH)
- 1150 KKEY OR, Portland 12/2 1100 my only holdout from Portland finally made a brief appearance over/under KEZX with a legal ID "This is Talkradio 1150...KKEY Portland," into Mutual news. New. (DS-BC)
- 1180 KOIL NE, Omaha 11/25 1758 "Stereo 1180 Koi!" ID, then call letter ID as "Stereo 1180, K-O-I-L..." (NP-AB)
- WHAM NY, Rochester 12/10 2307 momentarily atop KOFI with ID as "Rochester's news leader, Newsradio 1180, WHAM." Rare here. (LBG-MT)
- 1190 KBCO CO, Boulder 11/25 1756 ad string, "World Class Rock on 97-3, KBCO." (NP-AB)  
CFSL SK, Weyburn 12/8 0740 fair signal in KEX null giving rundown of school closures due to snowstorm. ID "1190 CFSL" into country music. New. (DS-BC)
- 1230 KTRF MN, Thief River Falls 11/23 2100 "Good evening, it's 8 o'clock, you're listening to 1230 KTRF, Thief River Falls, MN. It's 4 degrees above zero." (NP-AB)
- 1240 CKMX BC, Mackensie 12/8 1745 faded up over CKGO & KGY with adult contemp. music, ads for Prince George, weather, and "Mix 55" ID (simulcasting CKPG-550). (DS)
- 1250 ?KQDZ? WA, Seattle 12/16 0753 believed the stong one with "Radio Ahs, radio just for kids." No sign of KWSU, which I assume was off, and may have abbreviated schedule on weekends. (LBG-MT)
- 1340 KCAP MT, Helena 11/23 2300 "1340, KCAP Helena" ID through the mess. (NP-AB)  
CJCM AB, Grand Centre 11/24 2351 "AM 1340, CJCM" ID, ad for the "Trading Post" program, into "Good Time Oldies" program. (NP-AB)  
CKGF BC, Grand Forks 12/9 1540 couldn't hear these guys during last years DX test, but got them today with a fair signal in KLKI's null, with ads for Castlegar and a "Sunshine Radio" ID, simulcasting CKQR-760. New. (DS-BC)
- 1350 KDIO MN, Ortonville 11/21 1912 ads for shoe store & condos, into weather with "...forecast time on KDIO..." New one for me. (NP-AB1)
- 1380 KLIZ MN, Brainerd 11/21 1919 "You're tuned to all sports radio, 1380 KLIZ-AM, Brainerd." Into "One-on-One Sports." (NP-AB1)
- 1400 CKSQ AB, Settler 12/8 1820 in briefly over CIOR and KLCK with country music and ID "Q14 has more country music back to back." New. (DS-BC)  
CKGR BC, Golden 12/9 1405 fair signal all alone with end of newscast, ads for Salmon Arm, "Network Radio" ID, into sports (simulcasting CKXR-580). New. (DS-BC)
- 1450 CFHC AB, Canmore 12/6 1650 fairly consistant signal under KONG with "Good Time Oldies," ads for Canmore & Banff, and "CFHC Satellite Weather." New. (DS-BC)
- 1470 KKTY WY, Douglas 11/25 2659 ID during break in a football game "You're listening to Wyoming Cowboys football on KKTY, Douglas." (NP-AB)
- 1480 KRAE WY, Cheyenne 11/25 1901 ID through the mess as "K-Ray, Cheyenne's premier sports station." (NP-AB)
- 1490 CJPR AB, Crowsnest Pass 12/4 1835 in briefly atop the mess with C&W and dual ID "CJPR-1490 and CJEV-1340." New. Mid-afternoon DX sessions on the graveyard frequencies has been phenominal this past week. (DS-BC) (I agree! -- NH)
- 1520 KOLM MN, Rochester 11/21 1814 "...that's news on KOLM," into oldies. (NP-AB1)
- 1570 CKMW MB, Winkler 11/21 1936 "Winnipeg Jets hockey, live on your sports station, 1570 CKMW." (NP-AB1)
- 1580 CBJ PQ, Chicoutimi 11/21 1938 man in French talking with a girl caller. Faded for a few minutes, then back at 2000 with Radio Canada ID & news. Best signal in years. (NP-AB1)
- 1590 KDJS MN, Willmar 11/25 1637 oldies program, with inserted ID as "1590 KDJS." New catch, at 2:37pm local time! (NP-AB)

#### DX TESTS

- 1460 WIXN IL, Dixon 12/4 0130-0230 heard code IDs weak but readable, no noticeable signal change during test (was supposed to go non-directional 0200-0230). (FA-ID)
- 1590 (WPWA) PA, Aston 12/11 0000-0030 nothing heard as expected. (FA-ID)

#### UNIDS

- 900 12/14 2303 station seemed to be in French, possibly one of listed Quebec stations. (LBG)
- 930 12/16 0901 C&W station with no break on the hour, into CBS news, through KOFI. (LBG)
- Congratulations to Nigel for hearing New Brunswick. Happy New Year everyone!

# Central DX Roundup



Editor: John C. Johnson  
Internet Address: CDXR@aol.com

## FOR THE RECORD

You may send your reports via regular mail or E-mail:

E-Mail: CDXR@aol.com

Snail-Mail: 979 Neptune Blvd., Billings, MT 59105-2129

America On Line: JohnJ53816

CompuServe: 74444,3075

Prodigy: MPNN49A

Report all times as Eastern.

Deadline: Saturdays

## RIDING GAIN

- [SA-MB] Shawn Axelrod, 30 Becontree Bay, Winnipeg, Manitoba R2N 2X9  
Icom IC-R70 w/PLAM board & 4kHz filter, 4-foot box loop, Quantum loop,  
100' wire.
- [VAL-DX] DX'pedition at Valhalla Beach, MB 12/2-3  
Attending: Shawn Axelrod, Wayne McRae, and Lorne Chestnut.  
Two Icom IC-R70's with PLAM boards and 4kHz filters, Grundig 700.  
12 long wires and beverages in various directions.
- [TN-WI] Tim Noonan, 4609 Crescent Road, Apt. 5, Madison, WI 53711-4672  
Drake SW-4A, "Radio West" loop.  
E-Mail: tnoonan@doit.wisc.edu
- [RCP-IN] Robert C. Pote, 766 Ashford Lane, Greenwood, IN 46143-9048  
GE Superadio III, Realistic DX-392. Quantum loop.
- [RS-MO] Randy Stewart, 4225 West La Casa, Springfield, Missouri 65802-5615  
Yaesu FRG-100 modified by EEB with 6-kc Collins filter, 4-kc filter.  
15" Sanserino amplified box loop..
- [JcJ+NjH-MT] Your editor and Nancy Hardy using an Icom IC-R71A with a Radio West loop.

## SPECIAL INTEREST

- 1560 KQYX MO, Joplin. 12/3. 0858 with dual ID as "15-60 KQYX and 14-50 WMBH" and  
telling listeners to tune to 1450 after they sign off. [VAL-DX]
- 1660 WJDM NJ, Elizabeth. 12/14 very good. 2037 with Ids at 10 minute intervals in soft AC/  
Oldies/Standards music format. [TN-WI]  
+12/16 weak, lots of deep fades. 2145 with Christmas music. Caught one legal  
ID. Sounded like carrier off around 2201. Finally heard this one! New state #44  
for me. Nancy had logged NJ when she lived in Fredonia, NY. [JcJ+NjH-MT]

## DOWN THE DIAL

- 620 WSUN FL, St. Petersburg. 12/4 fair, mixing with WRJZ, the Cuban, and others. 1900  
with ID "WSUN St. Petersburg, Tampa, Clearwater. The home of Tampa Bay  
Legends hockey, Dolphins football and Orlando Magic basketball." [RS-MO]
- 640 WOI IA, Ames. 12/3 very good mixing with Cuban and others. 2225 with BBC World  
Service. || shortwave 5975, etc. [RS-MO]
- 710 KEEL LA, Shreveport. 12/3 fair w/WHB. 2105 with promo for "Keel Listener Comment  
Line, 227-6474. 71-Keel, first in music, first in talk." [RS-MO]
- 730 CKAC PQ, Montreal. 11/27 fair. 1733 with FF programming, discussion of Toronto  
Blue Jays, mentions of Quebec. [RCP-IN]
- KLOE KS, Goodland. 11/26 fair. 0806 with MST TC, CBS News, and ID as "Full  
Service Radio KLOE." [SA-MB]
- WJYM OH, Bowling Green. 11/27 very good mixing with CKAC. 1735 with spot for  
Hollinger Insurance Agency then back to Anderson Arena for Bowling Green  
Univ. vs Heidelberg College basketball. [RCP-IN]

CDXR Continued....

- 780 KSPI OK, Stillwater. 11/26 poor, but all alone on frequency. No WBBM. 0820 with country music. [SA-MB]
- 790 KXXX KS, Colby. 11/26 poor under KFGO. 0811 with country music and talk of Colby, Kansas. [SA-MB]
- 830 WADU LA, Norco. 12/1 good o/WCCO. 2140 with Hahnville Tigers high school football "... here on the Big Wah-Doo, 94.9 FM, 8-30 on your AM dial. Home of the River Parishes High School football network." Spot for Shell Oil/Norco. Call ID at 2149. New for me. No SS heard as listed in new NRC log. [RS-MO]
- 860 WDMG GA, Douglas. 12/3 fair atop 860. 2132 with "WDMG AM and FM" between songs. [RS-MO]
- 880 WMDB TN, Nashville. 12/11 fair to poor. 1732 with sign off mentioning 2.5 kW. [TN-WI]
- 950 CFAM MB, Altona. 11/26 at 0848 and 11/30 at 2240. Excellent signals with German language programming. Running more of this for local Mennonite communities in area. [SA-MB]
- 970 KNFX MN, Austin. 11/15 fair to poor. 1703 with Minnesota news then country music. This was || KMFX-1190. New for me. [SA-MB]
- WDAY ND, Fargo. 11/26 fair to poor. 2059 occasionally atop 970. 2059 with ID "Follow the national champion.....(?).... Woman's Basketball team right here on 9-70 WDAY Fargo, Morehead." This into NBC news, then 2104 local news. 2107 TalkNet. Report sent as this is much needed. [RS-MO]
- 990 WWCW MI, Ypsilanti. 12/8 briefly u/CBW poor. 2026 with religious format. Legal ID and slogan "WWCW your Christian station." [RCP-IN]
- 1060 KFIL MN, Preston. 11/25 poor u/KGFX. 1723 with TC and talk of Preston, then into country music. New for me. [SA-MB]
- 1070 CHOK ON, Sarnia. 12/11. 2022 with Ids "CHOK" and "Good Time Oldies" Oldies rock format. I can receive this station late nights and mornings by merely turning the radio and nulling local WIBC. [RCP-IN]
- KFDI KS, Wichita. 11/26 fair o/KNX, etc. 2252 with country music. "KFDI" Ids. Song request from "The Ranch Line." Very rare at night here due to directional pattern. [RS-MO]
- 1130 KFAN MN, St. Paul. 11/26 good o/KWKH, often dominating 1130. 2200 coming out of ESPN Radio with ID "This is David Brower. Join me Monday morning from 6 to 9 on AM 1130 KFAN Minneapolis, St. Paul. Now here is ABC news." New for me. [RS-MO]
- 1190 KXKS NM, Albuquerque. 12/1 poor u/WOWO. 2050 with Mexican Ranchera music. 2100 with EE ID by woman "KXKS Albuquerque, New Mexico. 11-90 AM, 10,000 watts AM stereo." New logging for me. [RS-MO]
- 1200 WLXX IL, Chicago. 11/27. Very good on peaks, WOAI not heard. 1745 with SS format. Music and many mentions of Chicago. Also heard a traffic report. [RCP-IN]
- WMRE PA, Hughsville. 11/29 very very strong, way o/WOAI. 1753 with "WRACK 1400" ID. Also Iding WMRE. Frequent Ids. Called station, said 10kW days. [RCP-IN]
- 1230 KAAA AZ, Kingman. 12/3 fair. 0800 with clear ID. New for us. [VAL-DX]
- KLCB MT, Libby. 12/3 fair. 0810 with country music, talk about Libby, and a program called "Horse World." New for us. [VAL-DX]
- 1250 CHSM MB, Steinbach. 11/26 0848 and 11/30 2240. || to CFAM-950 with German programming. [SA-MB]
- 1270 WKBF IL, Rock Island. 12/1 very good. 1756 with "All Hits 98.9" and frequent Ids. Top 40 rock music. Listened for 15 minutes and never heard a spot. [RCP-IN]
- 1320 WJAS PA, Pittsburgh. 12/10. Fair, much fading. 2038 with EZL format. Such songs as "Dr. Zhivago Theme" and "Laura's Theme." Frequent Ids. [RCP-IN]
- WOBL OH, Oberlin. 12/10. Briefly in until WJAS popped up. Poor. 2031 with country format, legal ID, slogan "Great country music by request" also spot for Burger King. [RCP-IN]
- 1340 WLZR WI, Milwaukee. 12/11 fair to good. 1645 with slogan "Pure Rock Lazer 103" and promos. No calls heard. [TN-WI]



CDXR Continued....

- 1530 WYGR MI, Wyoming. 12/10 fair-good. 1659 caught "YGR Wyoming" at tune-in. [TN-WI]  
1560 WNWN MI, Portage. 12/10 fair to good. 1702 with mentions of Kalamazoo and Battle Creek. Mention of FM on 98.5, but no calls. Country format. [TN-WI]  
1610 .... IL, Chicago. 12/3 fair. 2200 TIS with info from the IL DOT and gave a phone number of 1-800-452-IDOT. [VAL-DX]  
WTED455 KS, Emporia. 12/3 good. 2147 with ID "WTED445 Emporia, Kansas Travel Advisory Radio." This one was in and out for the evening and most of the next morning as late as 0940. At times we could hear both KS TIS stations just out of sync with a weird echo effect. New for us. [VAL-DX]  
WTFT994 KS, Bonner Springs. 12/3 good signals. 2350 with same info as WTED445 - woman doing a weather forecast, then a man iding as "You're listening to the Kansas Turnpike Authority's Travellers Advisory Radio broadcast at 1610 kiloHertz on your AM dial under the call sign WTFT at Bonner Springs, Kansas." New for us. [VAL-DX]  
WQNF NE, Lincoln. 12/2 fair. 1811 with info about I-80 and the Lincoln area. [VAL-DX]  
1641.95 MIN MN, Aitken. 11/27. 0153 MedFer beacon coming in with fair signals. [VAL-DX]  
1690 STLMO MO, St. Louis. 12/2 poor. 2118 with Morse code ID and address. If anyone has the whole address we would appreciate the info as we could not copy all of the info. [VAL-DX]

DX TESTS

- 730 WJYM OH, Bowling Green. 11/27 DX Test fair to poor. 0000 noted about 1 minute of code under dominant XEX with call and city, then faded and nothing else to ID. Taped report sent. [RS-MO]  
+11/27. Listened for DX Test at 0000, nothing but CKDM and XEX. [SA-MB]  
1190(WDCS) NY, Cobleskill. 11/20. Listened for DX Test at 0000, nothing but WOWO and CFSL. [SA-MB]

LOCAL CHANGES

- 1400 KGMV MO, Springfield. Format change as of 11/20. Was simulcasting "MY Country 100.5 FM," now running satellite fed adult standards from the 40s-70s. New slogan "Memories 1400." Also airing CNN News. [RS-MO]

unIDs

- 970 unID 11/25. 1650 with heavy rock music. Best east to west in WDAY null. [SA-MB]  
1230 unID 12/6 fair. 2126 someone surfaced briefly with "This is Chicago Bulls Basketball" and PBP. No local spots. No calls heard. [RS-MO]  
1610 unID 12/2 unID with poor signals. 1907 with man and woman talking about Yellowstone and "the geyser" and a mention to tune to 1490 for local information. Possibly WY or MT near Yellowstone National Park. [VAL-DX]

25 YEARS AGO

January 2, 1971 issue of IRCA's "DX Monitor"....We were told KWYO-1410 aired their last regularly scheduled frequency check on 12/21. KWYO was at one time the most likely WY catch...Gordon Hanson of Seattle, WA told of his recent get together, attending included Bruce Portzer and Chuck Albertson...David Oliphant of Medicine Hat, AB said he had logged 28 states and 4 provinces...Robert Kramer told of his parakeet Georgie.

OPEN MIKE

Anybody can win, unless there happens to be a second entry. Shawn mentioned the weather was good for the Valhalla Beach DXpedition. Overnight lows of only -10c. They logged new TIS stations, and said to check the foreign column for some hot DX tool He mentioned this was the last DXpedition for 1995. Speaking of last, this is the last CDXR for 1995! It was great logging a new state before the year ended. None added since 1964! As you are reading this, 1996 is just about here! I hope all of you have a Happy New Year. 1996 should be a very interesting year. I hope all of you find 1996 to be your best year ever. 73, John.



# Eastern DX Roundup

Editor: LEE FRESHWATER  
414 SE 3rd ST  
OCALA FL 34471

DEADLINES every Thursday @ 6:00 PM E-mail at Lfreshwate@AOL.COM or FAX at 1-904-732-7223.....Pre-paid calls prior to 9PM EST 1-904-732-6408

## STARS OF THE WEEK

- (LF-FL) your editor Hammarlund HQ-180A/Patomic FIM-41 KIWA Loop various longwires
- (LH-AL) Lynn Hollerman 514 Carrsbrook Rd. Huntsville, Al 35803  
DX-440 w/MJF-956 Tuner and 60' l.w. VIA E-MAIL  
ircacpc@AOL.COM

## LOGGINGS

- 690 WJOX AL Birmingham 12/22 1735 in Fair with Sports Call in Pgm. (LF-FL)
- 700 WGZS AL Dothan 12/22 1737 been trying for this one for months. finally caught good sign off over/under WLW no SSB, but full address. Note odd time for s/off..Perhaps late ? (LF-AL)
- 840 WBHY AL Mobile 12/22 1802 in with Full s/off address as P.O. Box 1328, and inviting folks to tune to FM 88.5 (LF-FL)
- 1350 WJBD IL Salem 12/17 0024 ID, onto "Chestnuts Roasting on an Open Fire." (LH-AL)
- KRNT IA Des Moines 12/17 0100 "Let It Snow", "Home of your original hits, 13-50 KRNT" (LH-AL)

## SPECIAL INTEREST

Note from Lynn: If anyone remembers how excited I was when hubby got me a DX-440 for Christmas back in 1991, well, he did it again- asked me to open a present for me a little early to make sure it was "Okay"- and this time, it was a Yacht Boy 400 ! Something tells me he's been conferring with some of you behind my back ! Anyway, once I got the unit away from my daughter, who thought it was "so cool", I noticed some odd signals on 890 khz, that were also there when I checked my DX-440 to make sure it wasn't the radio...that SS station completely dominated the frequency this evening, at least from about 1945-2020 CST, and then I heard a female voice say "This is WCQR"- there IS a WCQR in Fairlawn, VA, but all the info I have on it says that it was a new station back in 1990, and a daytimer at that. Anybody have any updated (or further) info on that ?? (LH-AL) (Lynn-1995 M street lists as "new" 2500 watts DAYTIME, no format listed- ed)

## DX TESTS

- 770 WCGW KY Versailles 12/18 DX test CW, tones, beeping, assorted CW at 0045 beneath WABC and local WVNN from 0057-0130 (LH-AL)
- 1350 WGDN MI Gladwin 12/18 DX test possibly heard- possible CW at 0045, but nothing clearly heard. (LH-AL)

Well, the Holidays got us all busy. Thanks to Lynn we have a column this week. I was able to find about 30 minutes this evening and was rewarded with three new catches. Only a state away, but new they were. For those of you wanting the home base phone number, please note above. I, (by habit) wrongly listed the WTRS phone number a couple of weeks ago. As I type this up a day late, its 3 Days before Christmas. This will be the last column for 1995 and I would like to take a moment and THANK all of you who have supported and contributed to this column this year. Your support during 1995 has meant a great deal to both myself and Mark McMillan. We may have done the typing, but YOU have made the EDXR the success it is. And a SPECIAL thanks to Ralph, who is the one who "Really" makes it all work....HAPPY NEW YEAR !!!! fresh



## Western DX Forum ★ ★ ★ ★ ★

Reid Wheeler 5910 Boulevard Loop SE Olympia, WA 98501

Deadline: Saturday 2 weeks before publication

### Frank Aden, 4096 Marcia Place, Boise ID 83704

My trip to NYC to see the GOLDENEYE premier and the 2nd 007 Convention turned out to be a good one. Stayed at the Novotel Hotel on the 21st floor in Times Square. Did some band checking there and at the airport in Philadelphia. Was surprised at the lack of severe interference in the hotel. Wished I had brought a loop antenna and had more time to DX. The premier was at Radio City Music Hall which is across the street from NBC Studios. Quite a place! Bill Frahm, CE at KBOI, tells me there has been another suspension of the 1600-1700 band expansion which may also stop WJDM from further testing. Has anyone heard anything about this? For those of you interested in broadcast history I have found BROADCAST PRO-FILE, PO BOX 982, Hollywood CA 900078-0982 has a very large base of information on individual stations (cost is \$10 per station history). I have been able to obtain a considerable amount of additional information on several early Idaho stations. Jim Paluzzi of KBSU Radio (our guest speaker at the convention) said they may do a DX test this season but have not seen them listed so far. I still have several IRCA Baseball hats and T-shirts (large only) still available. 73

### Gary Larson, 2806 Lincoln, Burbank CA 91504

818-842-5454

[12/10] Hope all of you have a nice holiday season and will have good DX in 1996. As to 540 XETIM//K-news here, I can't say, but Tim Hall or others within XETIM coverage can tell. This morning near local midnight hear an OC on 1040 at my work location. San Diego? 73 to all.

### Larry Godwin, 2390 Clydes Dale Ln, Missoula MT 59801

(E-Mail to lbg@selway.umd.edu)

[12/9] Greetings! I now have an E-mail account with the University of Montana (above) but will probably check my mail only once a week or so. I got it set up mainly to send my DXR reports to Nancy on a more timely basis. I hesitated to take this step for some time, but now that I have the software configured, it's quite easy. I encourage long hold-outs like myself to take the plunge, so that **DX Monitor** will include the most recent tips. Hopefully more of our editors will set up E-mail accounts in the new year to facilitate receiving reports via this medium. Welcome back to IRCA, Leonard Hyde! I look forward to reading your reports again. I like Reid's idea of an IRCA bulletin board. My communications software Q-Modem has the facility to set up a BBS, at it looks pretty easy. Maybe Ralph, Phil or another of our technical gurus could research the idea further. Good DX.

-----33-15-----

### **IRCA Almanac Updaters 5.6 and 5.7 Are Now Available!**

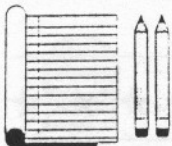
Two new updaters to the IRCA AM-FM ALMANAC are now available from the IRCA Bookstore

Updater 5.6 features the most complete listing of Travelers Information Stations (TIS) ever produced. The 32-page listing includes every known TIS station in the US and Canada between 530 and 1710 kHz and even some on FM. Updater 5.6 also includes the FCC Allotment List for stations assigned to the new expanded AM band, 1610 to 1700 kHz. Stations are listed by new frequency, old frequency, and city/state. Those who DX the band from 1600-1710 kHz will find this reference indispensable.

Updater 5.7 features a complete 42-page AM and FM station slogan list, plus current station lists for the Tom Leykis, David Brenner, Pat Buchanan, and Larry King talk shows.

Special prices for these two updaters \$3 each in the US and Canada, \$4 elsewhere. Order either or both updaters from the IRCA Bookstore, by sending the correct amount (in US funds) to

**IRCA Bookstore, 9705 Mary N.W., Seattle, WA 98117-2334. Thank you!**



# Eastern DX Forum

Richard C. Evans

P.O. Box 21883

Milwaukee, WI 53221-0883

Phone: 414-Atlantic 2-9035

DEADLINES: Saturdays thru 3/16/96  
Anniversary Issue: 3/2 in Milwaukee

A quick explanation of the column for this week and next: I have lengthy reports from J.D. Stephens and Lynn Hollerman, both of which would be two columns. Since they are on the same subject (E-mail DX Monitor), I think it would be less confusing if I ran one in its entirety this week, and the other next week. J.D.'s was here first...

Bill Townshend, 4509 Connecticut Avenue NW, #901, Washington, DC 20008  
Greetings once again from the land of crooked politics and of such NSP pests as WTEM-570, WMAL-630, WRC-980, WWDC-1260, WYCB-1340, WMZQ-1390, WOL-1450, and WTOP-1500. It's been a year since my last Forum. I rejoined after a lapse of several months. I'm 64, single and work as a computer specialist at the National Weather Service (don't blame me for lousy wx, hi). I made it to Boise, ID last July for the IRCA convention for four days, followed by four more days in Oregon including two days at Seaside, seven miles south of Astoria at the mouth of the Columbia River, the end of the Lewis and Clark trail. DXing has picked up with the colder wx. LXXIII, good DX and season's greetings to all.

J.D. Stephens, 1155 Old Monrovia, #3E, Huntsville, Alabama 35806-3510  
E-Mail: JSteph6711@aol.com It's been a long, long time since I've "Forum'd". The closest thing to one I've sent in during the last few seasons has been the "Word From Your CPC" submissions. However, there are certain ideas being tossed around, combined with certain practices still in use, that have finally got the ol' dander up enough to sit down and pound away at the computer with a genuine Forum. If we go to an all E-mail DX Monitor, we might as well say "So Long IRCA". Consider the following: 1) Aside from the erroneous suppositions that such a method would be much easier and cost very little, this would not be a "club". Does anyone really consider Jihad DX and other "electronic bulletins" such as HardCore DX to be clubs? Come on! Although excellent sources of DX information - they are, plainly and simply, mailing lists. NRC, NASWA, ACE, WTFDA and many other fine, well-respected clubs have a high rate of information via E-Mail, and most of the above either have WEB pages and/or are part of a major DX hobby BBS. The astute DXer will immediately realize that each of the aforementioned clubs continue to attract more members, thrive, and grow - by providing a high-quality bulletin, thus giving people an important reason to belong to their club. 2) Take a look at DX Monitor. Notice how much bulletin information still seems to be transferred via "snail mail". Notice that about half of the column editors don't list E-Mail addresses - most likely because they don't have E-Mail. (PLEASE NOTE: this is NOT an attack on column editors who don't have E-Mail). This means that you will either have an electronic DX Monitor that's about half the size (and half as useful) as the printed version, or existing column editors without E-Mail their columns to someone in the club who can post these via E-Mail - thus adding to delays and extra work on column editors (who could very likely quit doing columns altogether because of the hassle involved). Barring that, to have a complete electronic version of DX Monitor, it will be necessary to remove certain column editors (who don't have E-Mail) from their posts and replace them with new editors who do have the necessary online capability - a move which could cause division among the membership and certainly a good deal of ill will. 3) DX Monitor IS the club. Okay, I know that really it's people that make up IRCA, but there is a strong connection between a club's membership

and its printed bulletin. A printed bulletin is a club's identity, its personality, its "living and breathing", so to speak. Ever stronger a connection is made with a club's printed bulletin by a DX Monitor in a rural area (or any area) where there's not easy access to other club members. It's sort of like when your kids leave home for college or life on their own. Sure, talking to them on the phone or via E-Mail is great, but isn't it a lot better to actually have them there for a visit? To forge a strong club, we've got to continue to give to people - 34 times a year - a tangible part of IRCA that they can actually hold in their hand, read, reread, and make notes on with minimum difficulty on their part. Which brings me to my next point. 4) Club members spend 25 dollars a year because they want a printed bulletin. Many, myself included, save each issue of DX Monitor. Speaking for myself, I am continually referencing old issues. With an electronic version of DXM, I would first have to log on to my online service, spend time downloading, and then convert the file to a text format my software utilizes so that I could read it. If I wanted to save this particular version of DXM (which I most likely would want to), I would either have to save it to disk (something I don't have a lot of extra space for, unless I went out and spent more money), or print it - not as desirable, since printer paper is not as durable as the DXM stock, or as compact in size as DXM is. In short-hassle, hassle, hassle, this is too much trouble, quit IRCA, join a club that still puts out a printed bulletin. In his Forum of Vol. 33, No. 12, Chuck Boehnke is correct in his assertion that, in this day and age, IRCA needs to have some sort of electronic presence. As many of you may know, Phil Bytheway is already putting out "AM DX Newsflash" via E-Mail, and this is a great vehicle to give IRCA some much-needed visibility. Also, a Web Page would be a great way to promote the club and attract new members (check out NRC's Web Page), and I would fully support adding such an item to the club's resources. However, getting rid of a printed DXM is, at this point, NOT the way to go for IRCA's future. As mentioned previously, many clubs have not abandoned the printed bulletin concept and continue to flourish. If we give folks a quality product, they will stay with us. As an example - for any of you who receive NRC's DX News - take a look at the large amount of submissions they receive each issue. You will notice many familiar names (including some who still hold IRCA membership) that used to grace the pages of DXM with their submissions who now send their contributions to DX News instead. Chuck Boehnke also mentioned that it's time we "stop thinking about 1900 and move forward". Well, I agree that we should move forward as a club, but I don't think our ways of thinking are stuck at the beginning of the century. However, we SHOULD stop thinking like the 1960's and producing a bulletin that looks like it's from that era. This is the age of desktop publishing, and high-quality printshops, and we should first improve the quality of DX Monitor. With the resources available today, there should be no excuse for not printing a great-looking bulletin.

Rick Evans, 4841 South 26th Street, Milwaukee, Wisconsin 53221-29370

How do you cut that report in sections, then run it along with another report, also cut in sections, looking at the same subject from a different angle? Just too confusing. I was up 12/18 for the WCGW-770 KY test. Heard Morse Code, plus a voice ID at 0127 giving their location as Nicholasville. In the background was WABC and WYNN-770 AL ("Your Auburn connection") for stations 2 & 3 on 770 here. Later on, I picked off CFFX-960 Kingston, Ont., and now I'm going nuts trying to figure out who "Star 98" is with the oldies on 980. Without Star 98, I'm up to 293 heard here. Next week, a long report from Lynn Hollerman. 73 and have a good New Year. PS: The STAR 98 turned out to be WONE-980, unnn here, but I also picked off an ID from WRC-980 DC, much needed here.



Roth Broadcasting of Quad Cities, Inc.  
225 18th Street  
P.O. Box 3100  
Rock Island, IL 61204-3100  
(309) 786-1800

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# HEARING IT THROUGH THE GRAPEVINE

SHAWN AXELROD 30 BECONTREE BAY  
WINNIPEG MB R2N 2X9 204-253-8644  
DEADLINE ONE MONTH AFTER PUBLICATION



## CONTRIBUTORS

DAN SYS 27423 32nd AV Aldergrove BC V4W 3J3  
MIKE SANBURN PO BOX 1256 Bellflower CA 90707  
MIKE BROOKER 99 Wychcrest av Toronto ON M6G 3X8  
YE OLDE EDITOR As Above

## FREQUENCY 660 KHZ

### DAN SYS

KAPS	Mount Vernon WA	Semi-local	CFFR	Calgary AB	Semi regular nights
KTNN	Window Rock AZ	Occ nights			

### MIKE SANBURN

KTNN	Window Rock AZ	Dominant nights	KGDP	Orcutt CA	Nights U/KTNN
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### SHAWN AXELROD

CFFR	Calgary AB	SRS	CJWW	Saskatoon SK	Nights
KCRO	Omaha NE	SRS Rare	KEYZ	Williston ND	Old Pest
KTNN	Window Rock AZ	SRS Rare	R PROGRESSO	Santa Clara Cuba	Auroral Nights
WFAN	New York NY	Nights	WMIC	Sandusky MI	Heard Once
WVAL	Sauk Rapids MN	SRS	XERPM	Mexico DF	Auroral Nights

### MIKE BROOKER

WFAN	New York NY	Dominant nights	WVAL	Sauk Rapids MN	SSS in 1986
WMIC	Sandusky MI	SRS & SSS u/WFAN	WESC	Greenville SC	SRS in 1994
HJHM	Cali Columbia	1980 Auroral skip			

## TEN MOST WANTED STATIONS

### DAN SYS

570	CKEK	Cranbrook BC	850	KMTT	Tacoma WA
850	KOA	Denver CO	850	CKBA	Athabasca AB
970	KTRW	Spokane WA	970	CJYR	Edson AB
1150	KKEY	Portland OR	1240	CFNI	Port Hardy BC
1340	CKGF	Grand Forks BC	1480	KNTB	Lakewood WA

Dan says the 850 stations are due to living near local CKMA Abbotsford

### MIKE SANBURN

580	CKXR	Salmon BC	660	WFAN	New York NY
720	CHTN	Charlottetown BC	770	WABC	New York NY
990	CKIS	Montreal QU	1090	KAAY	Little Rock AR
1160	WSKW	Skowhegan ME	1170	KJNP	North Pole AK
1560	WPAO	Paducah KY	1660	WJDM	Elizabeth NJ

### SHAWN AXELROD

550	WCKY	Cincinnati OH	630	CHLT	Sherbrooke QU
730	KSVN	Ogden UT	920	CFLS	Levis QU
970	KNFX	Austin MN	1060	KFIL	Preston MN
1350	KBRX	O'Neil NE	1390	KLGN	Logan UT
1540	KTNO	Universal TX	1600	KUSH	Cushing OK

### MIKE BROOKER

Any station from AK, HI, WA, OR, ID, MT, WY, NV, AZ, and NM. I suppose you can guess which states Mike still needs to hear from this listing

# BANDSCAN

## MIKE SANBURN BOISE ID IRCA CONVENTION JULY 17 1995

580	KFXD	Nampa ID	590	KID	Idaho Falls ID
630	KIDO	Boise ID	670	KBOI	Boise ID
730	KBSU	Boise ID	790	KSPO	Boise ID
930	KSEI	Pocatello ID	950	KKIC	Boise ID
1060	KBGN	Caldwell ID	1140	KGEM	Boise ID
1160	KSL	Denver CO	1240	KLJV	Mountain Home ID
1260	KWEI	Weiser ID	1270	KTFI	Twin Falls ID
1310	KLIX	Twin Falls ID	1340	KTIK	Nampa ID
1450	KIOV	Payette ID	1490	KCID	Caldwell ID

## MIKE SANBURN AURORA CO NRC CONVENTION SEPTEMBER 1 1995

530	WNFP510	Aurora CO	TIS	560	KLZ	Denver CO
590	KCSJ	Pueblo CO		600	KIIX	Fort Collins CO
630	KHOW	Denver CO		710	KNUS	Denver CO
730	KLOE	Goodlands KS		740	KTWK	Colorado Springs CO
760	KTLK	Thornton CO		800	KLTT	Brighton CO
850	KOA	Denver CO		890	WNEN689	Denver CO TIS
910	KPOF	Denver CO		920	KLMR	Lamar CO
950	KKFN	Denver CO		970	KFEL	Pueblo CO
990	KRKS	Denver CO		1010	KSIR	Brush CO
1040	KCBR	Monument CO		1060	KLMO	Longmont CO
1090	KYBG	Denver CO		1150	KCUV	Englewood CO
1170	KVVS	Windsor CO		1190	KBCO	Boulder CO // FM
1220	KBNO	Denver CO		1240	KRDO	Colorado Springs CO
1280	KXKL	Denver CO	//FM	1300	KVOR	Colorado Springs CO
1310	KFKA	Greeley CO		1340	KKYD	Denver CO
1350	KGHF	Pueblo CO		1360	KHNC	Johnson CO
1370	KTMG	Deertrail CO		1390	KJME	Denver CO
1400	KFTM	Fort Morgan CO		1410	KCOL	Fort Collins CO
1430	KEZW	Aurora CO		1450	KGRE	Greeley CO
1460	KKCS	Colorado Springs CO	//FM	1470	KRKI	Estes Park CO
1480	KRRU	Pueblo CO		1510	KDKO	Littleton CO
1550	KQXI	Aurora CO		1570	KLOV	Loveland CO
1580	KWYD	Colorado Springs CO		1600	KYGO	Lakeland CO

A big thanks to Mike for these two Convention Bandscans. It looks like Boise may be a better place to DX due to a lack of stations compared to Denver. For Those of us who could not make it to either convention at least we can read about the stations that are around.

## NEXT TIME AROUND:

FREQUENCY 1090 KHZ

STATE/PROVINCE/COUNTRY GEORGIA USA

Not a big column this time around. I am not sure which issue this will be in but I do want to wish all of you the best of the season and a happy and healthy 1996. Let us all hope that the club will prosper and grow in the up coming year so that we can all enjoy this great hobby of ours.

I would like to thank everybody who sent in material to the column this last year. Without your support and ideas this column would disappear. Take care and I hope to hear from you in 1996.

*Shawn*

REMEMBER ON A CLEAR DAY YOU CAN HEAR FOREVER

15



People reading this have likely heard of the Watkins-Johnson HF-1000 with its many DSP filters, and other receivers or transceivers using DSP filtering are appearing, such as the Yaesu FT-1000MP. Although DSP can be performed on any form of data (such as the results of a survey on spending habits), our concern is with a relatively broadband analog signal in time (such as a collection of audio or radio frequencies) which is sampled periodically and converted into a continuing sequence of digital words. Digital Signal Processing (DSP) takes this sequence of digital words and performs computer computations on it, which result in another sequence of digital words, which, for example, might be a filtered version of the input signal, and would be perceived as such when the digital signal is converted back to analog. Although DSP can be performed on a stored set of data using a personal computer, real-time DSP usually takes place in hardware dedicated to those computations.

In the past few years, DSP has been used in commercial units only at audio frequencies or at the low IF frequency of 25 kHz used in the Watkins Johnson HF-1000. This is because the analog to digital (A/D) converters used to provide the digital signal for processing were only capable of handling these low frequencies. However, A/D conversion technology is developing at such a swift rate that digital signal processing at the frequency of reception is already a possibility.

The following article describes these possibilities and was originally published in the EDN Products Edition of September 21, 1995, and is used with permission of the author who works for Pentek, Inc., a company which specializes in producing DSP boards, including receivers.

## Digital Receivers Bring DSP to Radio Frequencies

by Rodger H. Hosking, Pentek, Inc.

With the advent of digital receivers and high speed digitizers, the benefits of modern digital signal processing techniques have become available at radio frequencies. Economical, high-speed sampling A/D converters offer sample rates in excess of 50 MHz with 10-bit resolution. Digital receiver chips perform down conversion, lowpass filtering and decimation of the sampled RF signal. The resulting bandwidth and sample rate reduction makes it possible to perform real-time calculations, such as FFT spectrum analysis.

Digital receiver chips are available from manufacturers such as Graychip and Harris. The first one, introduced by Graychip in 1990, was the GC1011 narrowband receiver. Harris introduced the HSP50016, its first single-chip digital receiver in 1992. Graychip followed the GC1011 with the improved GC1011A in 1992 and with its GC1012, a single chip wideband receiver, also introduced in 1992.

In this article we'll present an overview of the classic analog superheterodyne receiver and compare it with its digital receiver counterpart. If you'd rather not assemble your own boards, you'll be happy to know that off-the shelf boards and the software required to implement receivers on the VMEbus are now available from board manufacturers. To this end, we'll give you an example of how to assemble the better part of a digital receiver and signal analysis system with commercially available boards.

### The Analog Receiver

Radio receivers have been around for approximately one hundred years. While there have been dramatic advances in component technology since the crystal radio and revolutionary improvements in system architecture such as the superheterodyne circuit, receivers have relied primarily on analog devices for the RF signal path.



During the last 25 years, receivers have been equipped with features such as digital readouts for frequency display, and digitally-controlled phase-locked loop synthesizers to replace the older LC local oscillators. Nevertheless, these receivers still employ analog signal processing and do not meet the definition of "digital receiver" as used in this article.

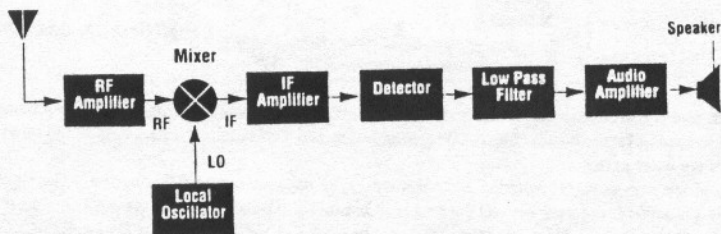


Figure 1. Analog Receiver Block Diagram

To better understand the differences between analog and digital receivers, let's review the typical block diagram of a traditional analog receiver:

As shown in Figure 1, we need an antenna to pick up the signals from the air. Then we need a tuned radio frequency (RF) amplifier to boost the weak signal from the antenna. Its output is fed into a multiplier, usually referred to as a mixer or down converter. This device has an additional input that comes from an internal variable-frequency local oscillator (LO). When we tune to a station, all we are doing is changing the center frequency of the RF amplifier ( $F_{RF}$ ) and the frequency of the LO ( $F_{LO}$ ), so that we can make the difference equal a fixed frequency  $F_{IF} = F_{RF} - F_{LO}$ .

The output of the mixer is the difference frequency between its two inputs. Actually, when we multiply two frequencies as we just did, we get sum and difference products of the two frequencies and of the harmonics of these frequencies. However, by judicious filtering at the output of this device, we can eliminate all but the lowest frequency, which is the difference frequency of the fundamental components of the input frequencies.

This is the so-called intermediate frequency, or IF. In the FM band, for example, it is equal to 10.7 MHz. This difference signal is further amplified in the IF amplifier, a narrowband amplifier aimed at boosting the IF signal, while rejecting all the undesirable by-products of the mixing process. Again, in the FM example, the bandwidth of the IF amplifier is 200 kHz.

The next essential component of a receiver is the detector, or demodulator. Its function is to extract the information signal such as speech or music from the IF carrier and deliver it to the audio amplifier which drives the loudspeaker. The detection process is always accompanied by a low pass filter, which is required to limit noise bandwidth and to band limit and shape the information spectrum to meet broadcasting requirements.

This is the basic block diagram of the classic superheterodyne receiver, so named because it employs this mixing and down conversion process. Why all this fancy analog signal processing? Simply because it improves some important parameters of radio reception such as sensitivity, selectivity, signal/noise ratio and adjacent channel rejection.

### Enter the Digital Receiver

Today's digital signal processing technology has made inroads into analog technologies including radio reception. We are now talking about true DSP, not just the buttons and digital readouts of the analog receiver.

Let's take a look at a digital receiver such as shown in Figure 2. A quick overview will readily confirm that its main task is to take a signals sampled at a high rate, down convert it, low pass filter it,

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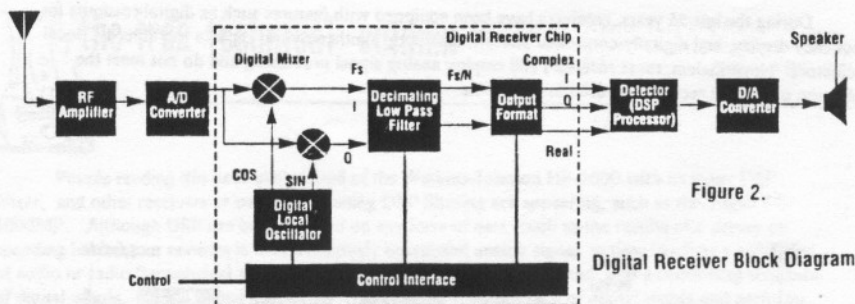


Figure 2.

Digital Receiver Block Diagram

decimate it, and format it into one or more of several forms. After demodulation, we can then convert this signal to analog form and apply it to a power amplifier and loudspeaker, if listening to the news or music is all we want to do.

To pluck a weak signal from the air, we still need an antenna and an RF amplifier. The signal up in the air is still analog, but now we will convert it to digital form with the aid of the A/D converter following the RF amplifier. Next, we take this signal of ones and zeroes and apply it to a digital mixer, just as we did in the analog receiver. Only this time we apply it to two mixers, driven by digital in-phase (I) and quadrature (Q) components of a local oscillator, which in turn is provided by a digital frequency synthesizer. In essence, we are multiplying the input signal with the sine and also with the cosine output of the LO. We need both components, if we want to perform calculations such as computing the complex FFT.

Just as in the case of the analog receiver, the output of the mixer consists of sum and difference frequencies extending way up in the sampled data spectrum. We need to remove the higher order components so that we may recover the baseband signal. We do this by passing the signal through a decimating low pass filter. This digital filter has the property of reducing the bandwidth and sample rate of the input signal by some factor which can be programmed to be as low as one or as high as 131,072 ( $2^{17}$ ). Since this filter is digital, it has very low bandpass ripple, extremely sharp bandpass characteristic and linear phase, something not possible in the analog world.

The final block in this diagram formats the output signal and makes it available in one or more of several forms, such as complex, i.e. consisting of I and Q components separately available from the two outputs, real only, or interleaved I and Q components in serial form. Depending on the digital receiver chip used, the formatter can also be programmed to provide 16, 24 or 32 bit 2's complement output or IEEE floating point data.

As far as the demodulator function is concerned, it is best performed digitally in a DSP processor outside the digital receiver chip. The processor offers the flexibility of implementing different demodulation algorithms by simply downloading the appropriate software code.

We can now follow the demodulator with a D/A converter and speaker, to complete the analogy between the analog and digital receiver.

## A Digital Receiver and Signal Analysis System

Except for the antenna, the RF amplifier, and the VGA display, a multi-channel receiver and signal analysis system can be put together with off-the-shelf boards.

Pentek offers two such digital receiver boards called the 4271 and 4272. The 4271 has four identical narrowband receiver channels, while the 4272 has one wideband and two narrow-band receivers.

The bandwidth of the narrowband receivers can be programmed from less than 1 kHz to over 1 MHz, while that of the wideband receiver can be set from less than 1 MHz to more than 20 MHz.

Pentek also offers a variety of A/D boards, including the Model 6472, which is a dual channel high-speed 10-bit A/D capable of operating at sampling rates of up to 70 MHz.

We can use the two-channel 6472 A/D and one 4271 to construct a multichannel receiver with different center frequencies that could be used for continuous monitoring of select frequencies in, say, the short-wave band.

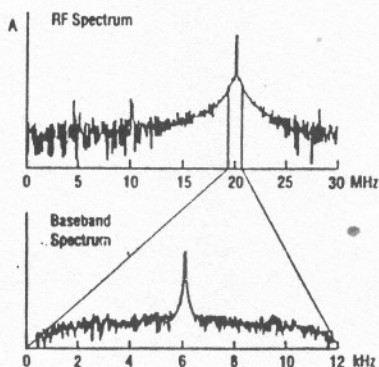


Figure 3. Down Conversion To Baseband

We can take the outputs of the receivers and apply them to a Model 4270 Quad 'C40 DSP processor board, perform the demodulation function, and also calculate and display the real-time spectra of each band under observation.

As stated before, the advantage of using a digital receiver is the down conversion and resulting bandwidth and sample rate reduction, which makes it possible to perform real-time calculations. As shown in Figure 3, an FFT calculation of the receiver output signal is an actual "zoomed-in" view of the selected slice of the input RF spectrum. The position and bandwidth of the slice are programmed by setting the LO frequency and decimation factor of the digital receiver.

#### Digital Receiver Applications

These new digital receivers offer an excellent solution when DSP is required for signals contained in a certain frequency band of a wideband RF signal. This is typical of many frequency-division multiplexed communications systems, modem modulation schemes and many forms of radar signals. By taking advantage of the receiver hardware to selectively remove out-of-band data, the signal processing demands of more expensive DSP hardware can be dramatically reduced.

\* \* \* \* \*

(ed. note: The above should provide some food for thought. A complete DSP glossary would be a good idea, but I'm not the person to do it. However, an FFT is a "Fast Fourier Transform", which is a computation which can take a series of samples of a waveform in time, and delivers a representation of the frequency spectrum of that waveform. And decimation is a process which takes a sequence of samples, and breaks it down to subsets which can be manipulated more easily and/or quickly, but I believe that there is more to it than that. DSP is not a trivial subject!)

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