

# Vhi-UhiDIGEST

The Official Publication of the Worldwide TV-FM DX Association

JANUARY 2006

The Magazine for TV and FM DXers

## WELCOME TO 2006!



WILL 2006 BE A MAKE OR BREAK YEAR FOR HD  
RADIO?  
IS HD Radio Too Little...Too Late?  
CAN IT SURVIVE?

**\$499 BUYS YOU THIS?**

**BOSTON ACOUSTICS Receptor Radio HD  
High Definition AM/FM Clock Radio**

Superior sound and reception of HD AM/FM Broadcasts /  
Includes Second Speaker for Stereo / iPod Input /  
Headphone Output / Remote Control



**All Analog Television to End by February 2009!**  
DETAILS INSIDE

# THE WORLDWIDE TV-FM DX ASSOCIATION

*Serving the UHF-VHF Enthusiast*

THE VHF-UHF DIGEST IS THE OFFICIAL PUBLICATION OF THE WORLDWIDE TV-FM DX ASSOCIATION DEDICATED TO THE OBSERVATION AND STUDY OF THE PROPAGATION OF LONG DISTANCE TELEVISION AND FM BROADCASTING SIGNALS AT VHF AND UHF. WTFDA IS GOVERNED BY A BOARD OF DIRECTORS: DOUG SMITH, GREG CONIGLIO, BRUCE HALL, KEITH MCGINNIS AND MIKE BUGAJ.



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Our website: [www.anarc.org/wtfda](http://www.anarc.org/wtfda) Our forums: [www.wtfda.info](http://www.wtfda.info)

**JANUARY 2006**



Finally! For those of you online with an email address, we now offer a quick, convenient and secure way to join or renew your membership in the WTFDA from our page at:

<http://fmdx.usclargo.com/join.html>

Dues are \$25 if paid to our Paypal account. But of course you can always renew by check or money order for the usual price of just \$24. Either way, it's still a bargain!

## VUDS ON A CD!

Every VUD from Jan 1980 to December 1989 is on this disk. You'll need Adobe Reader to read them. Why have a box of old VUDs taking up space when you can have this. **It's yours for just \$8.00 per disk.** Send your check or money order for \$8.00 to WTFDA, P.O. 501, Somersville, CT 06072. Make it payable to **WTFDA.**



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This month we have a few columns missing in action: FM North, TV East and TV West. One of our editors was away due to family problems and the other two had nothing (or next to nothing) to submit.

We've managed to find a couple of good articles on antenna stacking and we've put them in this issue. We hope somebody can make use of them.

Also the post office is raising their rates from 37¢ to 39¢ for 44 pages or less beginning with February, so just be aware that it's costing a little more to mail your VUDs. See you next month and enjoy this issue.

## THE WTFDA FORUMS AT

<http://www.wtfda.info>

This is the newest addition to WTFDA on the internet. The forums consist of a series of public forums for all TV and FM Dxers *plus* two forums just for WTFDA members; the eVUD forum and the Members-Only Forum. Register yourself and go take a look. It costs you **nothing more!**

## THE WTFDA EMAIL LIST AT WTFDA.INFO

Due to popular demand, we've moved the list from Topica to the forums. The emails fly faster and you get subscribed faster! Just send an email to [tvfmdx-subscribe@wtfda.info](mailto:tvfmdx-subscribe@wtfda.info) to be added to the list quickly. If you've had problems with Topica before, try us now and come onboard. Read on the web or by emails. Your choice!



# The Mailbox

P.O. Box 501, Somersville, CT USA 06072  
MIKE BUGAJ MBUGAJ@SNET.NET

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Hi folks and welcome to 2006, for better or for worse. In this issue we'll go over some of the changes to the WTFDA in 2005 and we'll try to figure out what lies ahead for the WTFDA and the TV and FM DXing hobby in the process. And if you don't agree, that's fine because we hope we're wrong anyway.

## MEMBERS AND MORE

From 11/16 through 12/12 we received renewals from **James Roggentine** (CA), **Randall Trapp** (MN), **Wayne Benkinney** (MI), **Ed Norris** (IN), **Rod Thompson** (CA), **James Gould** (IN), **Ted Liscewski** (MJ), **Bob Seybold** (NY), **Les Prus** (VA), **Rick Shaftan** (NJ) and **Bruce Elving** (MN). We thank each and every one of you for staying for another year.

## URGENT REQUEST

From Rich Wertman: As some of you know I've been working with numerous antenna manufacturers to try to bring back a 5-7 ft parabolic antenna. Yesterday I spoke with Wayne from Channel Master Andrew Corp in N.C. We spoke for about an hour. Seems he has been with the company thru thick and thin. When C.M. was bought by Anet back in the mid 90's decisions were made to cut a lot of the popular antenna lines. Like Quantums , Parascopes, Magnadynes, Channel Kings etc. They simply wanted to produce 18" dishes. Now, since being bought by Andrew corp. another large dish and cellular manufacturer, they had an influx of cash. There was rumor of bringing back the Parascope. However all those rumors can be put to rest as well as the Quantum line. Andrew Corp is not interested in producing anything that they can't build and sell at least 10,000 pieces. Also when the changeover happened all production was to move to Mexico. Well, that isn't happening either. But because the idea was to (move) they at N.C scrapped all the machines and tooling for parascopes. So I tried to buy the build plans for the parabolics from them. Guess what??? They can't find the stuff anywhere! So, I'm putting out a plea. Does anyone have a decent 6 or 7 ft parascope that I can get to copy the design and give to a friend in the aluminum business to reproduce this

awesome product?

I will return it with no damage and I will pay for shipping. Even if you have an old broken down model we can still copy the design. Anybody that can help please e-mail me or phone me at 716-434-9216.

## LOOKING BACK AT 2005

2005 saw the creation of the new WTFDA Forums, thanks to WTFDA member Chris Cervantez. Most of the sub-forums located there are for the use of WTFDA members and the DXing community in general, but the Members-Only Forum is restricted for use by WTFDA members only.

One change we made recently is to incorporate the eVUD Forum inside the Members-Only forum. What that move made possible is to allow any WTFDA member to read each and every eVUD if that member wishes. The result is that the eVUD will receive more exposure to the general membership than it did before.

We try to get the print VUD mailed as close to the 1<sup>st</sup> of the month as possible, but the eVUD is usually posted about the time the print version arrives at the printer, so eVUD readers get to see it days before the print version is mailed. And remember that an eVUD subscription is only \$10 a year, great for those on a limited income. And besides, it has color.

We know most of you have computers, or at least have computer usage, so check out the forums, check out the eVUD and see what's going on there.

Another move we made in 2005 was to move our email lists (AM and TV/FM) from Topica.com and bring those to the wtfda.info server. All in all we've had one, maybe two people unhappy with the move, but on the other hand we've made a boatload of members happy. Topica was a good provider in the beginning, but in the past year they have degraded terribly and they still continue to slip.

## FINANCIALLY SPEAKING

All of the checks I had were sent to Keith McGinnis around the middle of December and Keith should have a finance statement for you all in the February VUD.

## FRANKLY SPEAKING

No doubt about it. Times are changing and the TV and FM bands are changing. There's a DX group down in Australia that has banned all DTV related posts from their reflector, but we've adapted. Once analog TV shuts down, DTV DXing will go on. The decision by Radio Shack a few months ago to mark down their Accurian set-top-box to just \$85 meant that DTV DXing was now affordable to many more members, and the digital world opened up to a large group of people. Analog TV DXing will live on for those looking for exotic Central and South American TV DX on low band VHF via Es in the summer. As many stations move off ch2-6, DXers will find new opportunities for logging rarely seen stations.

In FM DXing today there seems to be two distinct worlds; one with IBOC and one without. Those living in the IBOC world are finding FM DXing more difficult than ever. Some don't DX anymore. Every time a station goes HD, the DXer loses two adjacent channels. In urban areas where multiple stations have begun HD broadcasting, even a tuner retrofitted with 100khz filters can't help with the adjacent channels since the IBOC sidebands ARE the adjacent channels. Two antennas and a phaser like the Bolin phase box help reduce them, but don't eliminate them completely in most cases. Some of our members living in urban areas are either out of the hobby or hanging by a thread.

Those fortunate FM DXers who still live in their mostly non-IBOC world are still reporting aurora, meteor shower DX, tropo and plenty of E skip. These folks should be able to carry on as usual.

So, what to expect for the WTFDA in 2006? Well, read this post to the tvfmdx list by **Craig Healy**. Craig is an engineer with a number of radio station clients and he has a handle on the future:

"This will be a make-or-break year for IBOC. By this time in 2006, we will have a very good sense if it will be viable and growing, or stagnant and fading. FM IBOC does seem to work somewhat, though coverage is (to me) half the radius of listenable analog signal. That would change if/when it went to all digital. In a 50kw FM signal, the IBOC sidebands are a kw or so. No wonder it is inferior coverage.

AM will affect this quite a bit. Right now iBiquity and the associated groups are unwilling to separate AM from FM. Night use of IBOC will be problematic, as will many AM directional arrays. Some will never be able to be made broadband enough to pass an IBOC signal and maintain their monitor point readings. I can see the FCC requiring that these measurements be made on the adjacent frequencies used by IBOC, and

possibly issuing separate limits for each sideband. It's the only real way to ensure the protections required. If AM IBOC fails, or cannot be implemented by a significant number of stations, the FCC will be forced to either sever AM from FM requirements, or make the whole thing voluntary. That would permanently lock in the so-called interim period with combined analog and digital transmissions. I doubt anyone would find that acceptable on a permanent basis. Were that to happen, I can see the receiver manufacturers bailing out en masse. That would kill IBOC.

Antenna and receiver research and improvements by the DX community will be crucial, especially being able to null interfering signals to a greater depth than happens now. The need to drop interference below the noise threshold is critical to being able to hear DX. One area that seems to be under-researched is the ability to null groundwave while allowing skywave to be heard. Nulling in a vertical plane, as well as the horizontal. Aiming antennas upwards at some angle, or perhaps vertically stacking yagi antennas and using something like the Bolin phase box may work."

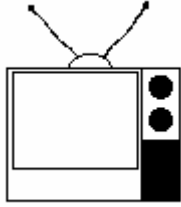
**Doug Smith** adds this: "How quickly can the industry swing to all-digital? It looks like TV will take 13-14 years. (1996-2009/2010) But TV has the advantage of cable and satellite operators downconverting digital signals for us. People own fewer TVs and since they're rarely used portable, cable/satellite/external STBs are practical. You won't use an external converter with your Walkman or the radio in your 2002 Ford. (even in TV we have yet to see what kind of ruckus we raise when we turn off the analog transmitters!)

I would think it would take *at least* 15 years for radio to transition to all-digital and quite likely much longer. "

The best scenario we see is for all analog radio to quickly pull the plug and go HD. If that happened we'd all have to get new radios, but the adjacent channels would open up clear again and FM DXers could go back to DXing, but in HD. But that isn't about to happen.

All IBOC radios available now are hybrid sets and hybrid sets use the digital sidebands. And depending on the acceptance (or non acceptance) of HD, hybrid mode may be around for ten years or more, which means that this chaos on the FM band may be here for a long time to come (unless HD completely flops). Meanwhile, FM DXing takes a big hit in some parts of the country.

A couple of years ago we had a membership in the upper 270s. Now we are in the low 260s. All DX clubs are in the same condition and IBOC is not helping us. Whatever happens, rejection or acceptance, should happen quickly. The longer this takes, the worse off the hobby will be.



# TV News

Douglas E. Smith  
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January 2006

## DROP-DEAD DATE FOR ANALOG SET! See end of column...

### Abbreviations:

AF	Applied For (a new station)	PC	Power (and/or tower height) change on the air
Aux	Auxiliary (backup) transmitter	PG	Power change granted
CC	Callsign change	PR	Power change requested
CL	City-of-license change	QC	Channel (?frequency??) change on the air
DE	License/permit deleted	QG	Channel change granted
FC	Programming (?format??) change	QR	Channel change requested
FTP	Failure to Prosecute	RE	Reinstated (previously-dismissed app.)
GA	Granted amendment (to table of channel allotments)	ROA	Request of Applicant
LC	License to Cover	SI	Off the air (?silent??)
MX	Mutually Exclusive	STA	Special Temporary Authority
NDA	Non-directional antenna	XC	Transmitter site changed
NS	Permit granted for new station	XG	Transmitter site change granted
NW	New station on the air	XR	Transmitter site change requested
PA	Proposed Amendment		

### News:

(full-power analog stations in **bold face**; LPTV and translators in regular type; full-power digital stations in **bold italics**; low-power digital stations in *regular italics*)



#### CANADA:

##### British Columbia:

Revelstoke	11 NEW	NS 50w, to relay CBUT 2
Vancouver	58 CBUT-DT	NW 30.5kw/615m

##### Manitoba:

Winnipeg	35 CIIT-TV	XG; new coordinates unknown
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##### New Brunswick:

St. Andrews	26 CHCT-TV	NS, 100w/39m, 45-04-54/67-03-36
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#### USA:

##### Alabama:

Berry	51 WSFG-LP	PR<11.9kw, 33-41-33/87-49-45
Decatur	35 W56DA	QR from ch. 56, 150kw, 34-36-21/ 86- 58-25, CL from Acton, TN dismissed
Florence	14 WHDF-DT	NW 1000kw/431m
Jasper	51 W66CN	QR from ch. 66, 7kw, 33-50-42/ 87-18-26 dismissed

##### Arizona:

Phoenix	17 KPHO-DT	NW 1000kw/507m
Phoenix	42 KVPA-LP	PR>25kw, 33-20-03/ 112-03-38
Safford	15, KZOL-LP, 21 K21GC	XG 32-39-01/ 109-50-53 (both)

##### Arkansas:

Forrest City	23 K59FB	QR from ch. 59, CL from Batesville dismissed
Fort Smith	33 K52FJ	QC from ch. 52, 23.2kw, 35-18-09/ 93-45-40
Jonesboro	33 K46EM	QR from ch. 46, CL from Batesville dismissed (spelling error, should be Jonesboro)
Searcy	26 K69GT	QR from ch. 69, CL from Batesville dismissed
Searcy	43 K54GT	QC from ch. 54, 150kw

##### California:

Bakersfield	31 KBTF-CA	Telefutura // KTFB-LP 4
Fort Dick	36 K28CU	QC from ch. 28
Fresno	22 KGMC-CA	Azteca // KMSG-55, KFAZ-8, KPMC-42
Inyokern	6 K06OL	QG from K61AJ, 3kw, 35-26-10/ 117-48-56
Lancaster	24 KTAV-LP	PC<8.7kw, 34-32-50/ 118-12-58
Los Angeles	25 KNET-LP	PG>2.8kw, 34-12-46/ 118-03-42
Mariposa	38 K38JC	QG from K27GZ, 2.8kw
Merced- Mariposa	17 KMPH-CA	PC<500w, 37-33-33/ 120-04-29
Monterey	27 K27IE	QC from K53DT, 22.1kw
Redding	42 KQSX-LP	NW 13.5kw, 40-53-12/

		122-31-19; PR<270w, 41-21-12/ 122-15-35	39, K39GZ, 41, K41GK, 43, K43GP, 45, K45GG, 47, K47HF, 49, K49HU, 51 K51HM	1.19kw (chs. 41, 43, 45, 47), 42-37-48/ 111-41-00
Sacramento	38 K38GE	QC from K61DW, 31kw, 38-34-50/ 121-29-33		
Sacramento	47 KSTV-LP	QR from ch. 60, 50kw dismissed		
San Bernardino	64 KSGA-LP	QC from ch. 59, 64.4kw, 34-01-20/ 117-17-46	<b>Illinois:</b> Quincy	69 W69EO QG from W53BP, 150kw, 40-14-10/ 91- 03-35
<b>San Jose</b>	<b>11 KNTV</b>	<b>XC 37-41-07/ 122-26-01, 316kw/392m</b>	<b>Iowa:</b> <b>Ames</b>	<b>34 KEFB</b> <b>NW 87.1kw/150m, 41-58-49/ 93-44-23; CC for NS</b>
Santa Barbara	46 K46GC	OFF		
Simi Valley	55 K55KD	PR>9.98kw, 34-14-38/ 118-40-23; CL from Oxnard	Ottumwa	23, K23CI, 25, K25DE, 27 K27CV PR<740w, 40-55-45/92-23-03 (all 3 channels)
<b>Stockton</b>	<b>62 KTFK-DT</b>	<b>PC&lt;195kw/935m</b>	<b>Kansas:</b>	
Tulare	27 KFRE-CA	OFF	<b>Derby</b>	<b>46 NEW-DT</b> <b>open auction 64</b>
Ventura	17 KIMG-LP	QG from ch. 23, 9.83kw	<b>Hays</b>	<b>7 KBSH-TV</b> <b>PG&lt;112kw</b>
			Independence	50 K50JG QG from K54GC, 19kw
<b>Colorado:</b>			<b>Topeka</b>	<b>22 NEW</b> <b>open auction 64</b>
Basalt	9 K09AG	XR 39-21-11/ 107-05-34; XG	<b>Topeka</b>	<b>28 KSNT-DT</b> <b>NW 16kw/320m</b>
Cortez	6 K06JF	PC>1.16kw, 37-19-32/ 108-14-55	<b>Kentucky:</b>	
Crystal	40 K40IO	QG from K58AA, 500w, 39-25-24/ 107- 22-32	Glasgow	60 WKUW-LP NW 6.9kw, 36-57-34/86-00-08
Denver	36 KDVT-LP	PG>150kw, 39-23-07/ 105-02-52; PR<35kw	<b>Lexington</b>	<b>42 WKLE-DT</b> <b>PG 45.8kw/258m</b>
<b>Greeley</b>	<b>45 NEW-DT</b>	<b>open auction 64</b>	Lexington	25 W24BT QR from ch. 24, CL from Talbert dismissed
Lake George	29 K29GZ	QG from K58FY, 1.2kw	<b>Louisville</b>	<b>49 WDRB</b> <b>PR&gt;390m</b>
Parlin-Doyleville	36 K36GQ	NW 50w, 38-30-22/ 106-40-47	<b>Louisville</b>	<b>49 WDRB-DT</b> <b>NW 1000kw/374m</b>
<b>Pueblo</b>	<b>48 NEW</b>	<b>open auction 64</b>	<b>Louisiana:</b>	
Redstone	18 K18GD	XC 39-14-20/ 107-13-02	Alexandria	45 K45IY QG from K64FT, 7.8kw
			Alexandria	27 KWCE-LP XR 31-18-24/ 92-24-12
			Lafayette	52 K57GK QR from ch. 57, CL from Alexandria dismissed
			Lake Charles	38 K38EG PR>150kw, 30-16-45/93-14-45, CL from Alexandria dismissed
<b>Florida:</b>			New Orleans	51 W65DE QR from ch. 65, CL from Meridian, MS dismissed
<b>Apalachicola</b>	<b>3 NEW-DT</b>	<b>open auction 64</b>		
<b>Key West</b>	<b>3 WDLP-DT</b>	<b>NW 1kw/54m</b>		
Key West	39 W39AC	PR>400w		
<b>Miami</b>	<b>44 WHDT-LP</b>	<b>Converted to digital, 15kw</b>		
Naples	16 W16CJ	QG from W56DW, 77.3kw		
Ocala	29 W29AB	FC to WKMG-6 (CBS)	<b>Maine:</b>	
Palm Beach	43 WTCN-CA	FC to WB, LMA'd by WTVX-34	Skowhegan	4 WGCI-LP PC>300w, 44-42-46/69-43-38; from no offset to minus
Rock Harbor	64 W64AN	PG>25kw		
<b>Georgia:</b>			<b>Michigan:</b>	
Dublin	35 W35BB	PG>150kw, 32-31-26/82-55-21	Ann Arbor	48 W48BZ PR>10kw, 42-16-41/83-44-41, CL from Sault Ste. Marie dismissed
Waycross	45 W45CU	QG from W54CW, 19.8kw	Battle Creek	49 W21BS QR from ch. 21, CL from Houghton Lake dismissed
<b>Idaho:</b>			Big Rapids	44 W18CB QR from ch. 18, CL from Houghton Lake dismissed
Malad City	27, K46IM, 33 K44AD	QR from chs. 46/44, 1.6kw		
Soda Springs	33, K33HO, 35, K35HD,	NW 1.14kw (chs. 33, 35, 39, 49, 51)	<b>Flint</b>	<b>16 WSMH-DT</b> <b>PR&lt;19.3kw/348m,</b>

Jackson	22 W24CG	43-13-31/84-04-33 QR from ch. 24, CL from Houghton Lake dismissed	Albuquerque	39 KTEL-LP	QG from ch. 53, 71.6kw
Muskegon	26 W67DN	QR from ch. 67, CL from Houghton Lake dismissed	Albuquerque	47 K47JZ	QG from K56FB, 50kw
<b>Minnesota:</b>			Clovis	2 K02PW	FC; sold to local church
Bemidji	28 K28DD	PG>16kw	Farmington	21 K21AX	PG>9.88kw, 36-40-17/ 108-13-53; from no offset to zero
<b>Duluth</b>	<b>10 WDIO-TV</b>	<b>PC&lt;299m,</b> <b>46-47-15/92-07-21</b> <b>open auction 64</b>	Lordsburg	14 K14LO	QC from K63DU
<b>Duluth</b>	<b>27 NEW</b>	<b>Converted to digital,</b> <b>40w,</b> <b>44-06-25/94-35-44</b>	Portales	46 K46IN	QG from K62EX, 5kw
<i>St. James</i>	<i>32 K32GX-D</i>		<b>New York:</b>		
Willmar	28 K28IF	QC from K27CK, 1kw	New York	42 WKOB-LP	QC from ch. 53, 50kw, 40-42-19/ 74- 00-34
<b>Mississippi:</b>			<b>Rochester</b>	<b>58 WHEC-DT</b>	<b>NW 415kw/135m</b>
<i>Jackson</i>	<b>9 WLBT-DT</b>	<b>NW 7kw/393m, 32- 12-49/90-22-56</b>	<b>North Carolina:</b>		
Jackson	10 WBMS-CA	XC 32-12-47/ 90-22-54	Edenton	2, WUND-TV 20 & DT	CL changed from Columbia
<b>Jackson</b>	<b>51 NEW</b>	<b>closed auction 64 (5 applicants) (4 other applications dismissed)</b>	<b>North Dakota:</b>		
Natchez	27 W27CX	QG from W59DK, 16.3kw	Grand Forks	17 K17HG	NW 9.4kw, 47-57-52/97-01-46
<b>Missouri:</b>			<b>Oklahoma:</b>		
Joplin	26 KOZJ	XR 37-04-37/ 94-32-15, drop DA	Grove	48 KELF-LP	QC from ch. 43, 9.69kw
<b>Osage Beach</b>	<b>49 NEW</b>	<b>open auction 64</b>	Muskogee	25 K25GJ	PC>11.2kw, 35-41-48/95-18-26
<b>St. Louis</b>	<b>24 KNLC</b>	<b>PR 1148kw/396m,</b> <b>38-21-40/90-32-55</b>	Tahlequah	30 K30IX	QG from K52GX, 10kw
St. Louis	28 KEFN-CA	QC from ch. 62, 50kw	Tulsa	29 KTZT-LP	FC; sold to Daystar
<b>Montana:</b>			<b>Oregon:</b>		
Bozeman	40 KJCX-LP	FC: sold by TBN	<b>Bend</b>	<b>51 NEW</b>	<b>open auction 64</b>
<i>Glendive</i>	<b>10 KXGN-DT</b>	<b>NS 30kw/138m, 47- 02-39/ 104-40-53</b>	Cottage Grove	22, K69AV, 42, K56DK, 40, K54CL, 46, K58CT, 20, K52CV, 48 K60DO	QR from chs. 69, 56, 54, 58, 52, 1kw
Great Falls	50 KBGF-LP	NW 50kw, 47-32-19/ 111-15-41 (KTVH-12, NBC)	Eugene	49 KAMK-LP	QR from ch. 53, 56.3kw, 44-00-11/ 123-06-48 dismissed
Whitehall	40 K40HL	NW 370w, 45-55-15/ 112-01-15	Florence	32, K54DG, 35, K56DL, 40, K58CW, 43, K60DQ, 51 K52DO	QR from chs. 54, 56, 58, 60, 52, 15kw
<b>Nebraska:</b>			Grants Pass	36 K36HL	QC from K59DU, 1.1kw, 42-24-43/ 123-16-54
<b>Lexington</b>	<b>3, KLNE, 26 KLNE-DT</b>	<b>OFF due to plane crash</b>	La Pine	5 K05JV	PC>350w
Norfolk	21 K21HS	QG from K52ES, 1.9kw	London Springs	27,3K53FJ, 3, K57GW, 35, K55HE, 43 K59FS	QR from chs. 53/55/57/59
<b>Omaha</b>	<b>42 KPTM</b>	<b>PC&lt;4800kw, 41-04-14/96-13-33</b>	Portland	42 KPXG-LP	QG from ch. 54, 100kw
<b>Nevada:</b>			Riley	19 K19GC	QC from K05HO, 5.5kw
Elko	19 K19FZ	QC from K52CF	<b>Pennsylvania:</b>		
Winnemucca	43 KPMP-LP	QG from ch. 2, 33.9kw, 41-00-40/ 117-46-04	<b>Erie</b>	<b>35 WSEE-TV</b>	<b>FC; adds UPN to CBS</b>
<b>New Jersey:</b>			<i>Johnstown</i>	<b>34 WJAC-DT</b>	<b>PC&gt;1000kw/386m</b>
<b>Wildwood</b>	<b>40 WMGM-TV</b>	<b>PR&gt;955kw/112m</b>	Mansfield	20 W20CP	QG from W63AB, 1kw
<b>New Mexico:</b>			<b>Scranton</b>	<b>13 WYOU-DT</b>	<b>NW 30kw/471m</b>
Albuquerque	25 KQDF-LP	PR>150kw, 35-12-50/ 106-27-01; PG	Stroudsburg	26 W26DE	QG from W66AL

Towanda	15 W15CO	QG from W69CE, 690w			39-32-22/ 111-23-17
<b>Wilkes-Barre</b>	<b>11 WBRE-DT</b>	<b>NW 30kw/471m, 41-10-58/75-52-26</b> <i>(same tower as co-owned WYOU)</i>		Tooele Tropic & Cannonville	65 K64FZ 29 K29GJ QC from ch. 64 NW 600w, 37-42-41/ 112-04-39 (KSTU)
<b>South Carolina:</b>				Virgin	29 K29GY QG from K64BE, 4.23kw, 37-13-45/ 113-13-45
<b>Charleston</b>	<b>36 WMMP</b>	<b>PC 1000kw/583m, 32-56-24/79-41-45</b>		<b>Vermont:</b>	
Greenville	47 W31BU	QR from ch. 31, CL from Talbert, KY dismissed		Windsor	21 W21CN QG from W22CS, 6.65kw
Myrtle Beach	41 W41DA	QG from W49AN, 50kw, 33-35-28/ 79-02-55		<b>Virginia:</b>	
Spartanburg	51 WSQY-LP	QC from ch. 66, 10kw, 34-56-29/ 82-24-41		Danville	40 WYAT-LP QG from ch. 55, 70kw, 36-42-00/ 79-51-07
<b>South Dakota:</b>				Fairfax	6 W06CJ QG from W42BE, 3kw, 38-53-45/ 77-08-08
<b>Brookings</b>	<b>18 KESD-DT</b>	<b>PC&gt;127kw</b>		<b>Washington:</b>	
<b>Lowry</b>	<b>15 KQSD-DT</b>	<b>PC&gt;82kw</b>		<b>Medical Lake</b>	<b>51 NEW-DT</b> 39 KHBA-LP <b>open auction 64</b> QG from ch. 52, 11.5kw
<b>Martin</b>	<b>23 KZSD-DT</b>	<b>PC&gt;129kw, drops DA</b>		Spokane	43 K14IF QC from ch. 14, 2.2kw, 47-34-45/ 117-17-51
<b>Tennessee:</b>				<b>West Virginia:</b>	
Belle Meade	55 W52CZ	QR from ch. 52, CL from Jackson dismissed		Charleston	21 WOWB-LP QC from ch. 53, 25kw, 38-22-34/ 81-39-24
Columbia	34 W69DB	QR from ch. 69, CL from Acton dismissed		Charleston	21 W26BK QR from ch. 26, CL from Talbert, KY dismissed
<b>Cookeville</b>	<b>52 WCTE-DT</b>	<b>NW 27.73kw/412</b>		Huntington	21 W69ED QR from ch. 69, CL from Talbert, KY dismissed
Knoxville	58 W16BI	QR from ch. 16, CL from Talbert, KY dismissed		<b>Wisconsin:</b>	
<b>Texas:</b>				Beaver Dam	31 W48BY QR from ch. 48, CL from Ludington, MI dismissed
Beaumont	19 K55GT	QR from ch. 55, from Alexandria, LA dismissed		Beaver Dam	56 W34BZ QR from ch. 34, CL from Ludington, MI dismissed
<b>El Paso</b>	<b>15 KFOX-DT</b>	<b>NW 1000kw/602m</b>		Janesville	29 W29DC QG from W65EE, 21.5kw
Harlingen	52 KTIZ-LP	FC? sold to Univision		Waupaca	36 W36DH QG from W66DC, 29.8kw
Houston	21 KVQT-LP	PC<50kw, 29-34-15/95-30-37		<b>Wyoming:</b>	
<b>Killeen</b>	<b>31 KPLE-LP</b>	<b>req. flash-cut to DTV, 15kw</b>		Greybull	50 K50JC QC from K56GY, 44-24-47/ 107-59-49
La Feria	30 KFTN-LP	FC? sold to Univision		Rawlins	51 K51IZ QG from K56AV, 990w
Laredo	47 KLMV-LP	QR from ch. 68, 150kw		<b>Sheridan</b>	<b>13 KSGW-DT</b> <b>NW 50kw/372m</b>
Lubbock	31 K67HQ	QR from ch. 67			
Lubbock	67 K67HQ	NW 10kw, 33-35-05/ 101-50-54			
McAllen	32, KLIA-LP, 67 KSFE-LP	FC? sold to Univision			
Quanah	27, K27HM, 29, K29FR, 31, K31HC, 33 K33HG	NW 750w, 34-12-41/99-44-05 (all 4 channels)			
Victoria	17 KMOL-LP	FC to NBC			
<b>Victoria</b>	<b>31 NEW</b>	<b>open auction 64</b>			
Victoria	41 KXTS-LP	FC to UPN			
<b>Utah:</b>					
Blanding & Monticello	47 K47JI	NW 350w, 37-50-22/ 109-27-42 (KUED-7 or KUEN-9)			
Brian Head	35 K35HG	NW 3.2kw, 37-38-18/ 113-01-52			
Mount Pleasant	48 K48IL	NW 1.8kw,			

Thanks to Bill Hale, Dennis Smith, Dave Sinclair, Ken Simon, Matt Sittel, and an anonymous contributor in Florida for information appearing elsewhere in this month's column...

**Well, the big news this month...** is that Congress has set a drop-dead date for analog TV.



The House and Senate had proposed similar bills bringing an end to analog TV either on the last day of 2008, or on April 17, 2009. (reportedly, the day after the end of the NCAA college basketball championships...)

The week before Christmas, the two houses agreed on **Feb. 17, 2009** as the end date. The compromise legislation passed the House 212-206 and was expected to pass the Senate later in the day. The vote is not on a standalone bill, but on attaching the analog end date as part of a much larger budget bill. Commenters seem confident President Bush will sign the budget legislation.

Congress also appropriated \$990,000,000 to provide digital-to-analog converters for the more than 17,000,000 American households that still rely on over-the-air reception. The money will allow households to request up to two \$40 vouchers for converter boxes. As much as 10% of this money may be spent on administrative expenses and publicity.

Strangely enough.. the House had proposed

allotting \$1,500,000,000 for this subsidy; the Senate proposed \$3,000,000,000; and they compromised on \$990,000,000... I guess math works differently in Congress<grin>! Seriously, Congress expects to come out ahead on the deal, believing that the auction of channels 52-69 will bring between \$10,000,000,000 and \$20,000,000,000 in revenue to the government.

The FCC has set a number of channel auctions for early this year. Most of them are "open auctions", meaning any qualified applicant may bid. However, channel 51 in Jackson, Miss. is a "closed auction" with bidding limited to five specified applicants.

Some of the auctions indicate NTSC channels while others indicate DTV. Even on those channels that indicate NTSC, the winning applicants will be free to build DTV stations instead. Since the auction process will likely be completed only a year or two before the final demise of NTSC, it seems likely all of these stations will be built as DTV. Note one of the auctions involves channel 3 in Florida.



# SATELLITE NEWS

**GEORGE W. JENSEN**  
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Greetings and welcome to 2006. Not too many deletions this time around, but that will change in the coming months - hopefully they will involve only a change in format to digital/Digicipher. Now to the changes and additions.

**AMC 7** at 137 West - All Denver channels have been deleted and are available only on Dish.

**Satcom C4** (now AMC 10 at 134 West - most of the following are additions unless otherwise noted:-

- 250 - Cine Latino
- 251 - Cine Mexicano
- 450 - unknown Spanish
- 550 - Canal 52
- 580 - CNN Espanol
- 630 - Home and Garden TV West
- 650 - Discovery Espanol
- 651 - History Espanol
- 660 - Toon Disney En Espanol
- 661 - unknown Spanish

700 - Delete EyeNet and change to 801  
802 - MTV Spanish

**Galaxy 4** KuBand:-

400 - ADD - ESPN College

431 - Delete News World International and relocate to 581

580 - Bloomberg Business

Starz/Encore ANALOGUE ONLY feeds will soon be dropped

CNN services will go to Digital/Digicipher SOON

SciFi Channel will also soon drop analogue and be Digital/Digicipher

That's all for this time around - more to come as it happens. See you in 30.

'73's

# FM NEWS

from the WTFDA

3860 Shorewood Drive  
Fremont Michigan 49412-9604  
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Chris Kadlec

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JAN 2006

• Due to time and space constraints as well as a recent illness, this month's FM News will be shorter than normal. However, everything of importance is still included. A few states/provinces with no recent changes (Connecticut, Delaware, District of Columbia, Nebraska, Newfoundland, Puerto Rico, and Vermont) have been omitted from this report while U.S. Virgin Islands and Yukon have been specially included this month with changes.

• Update from December: Deborah Tate has been elected to the FCC and Michael Copps reinstated on Dec. 23.

• As promised last month to supplement recent Arbitron ratings, the first-ever released BBM ratings are included.

• **ABBREVIATIONS NOTE:** Some additional abbreviations to keep in mind this month include: **CSN** (Calvary Satellite Network - a Christian network based at KAWZ 89.9 Twin Falls, ID); **ROA** (request of applicant); and **(aux)** (auxiliary (backup) transmitter).

## BBM Canada Major Market FM Ratings: Survey 4 2005

<b>CALGARY</b>		<b>MONTRÉAL FRANCO</b>		<b>REGINA</b>	
105.1 CKRY	13.7%	105.7 CFGL	12.8%	104.9 CFWF	15.1%
096.9 CKIS	11.5%	099.9 CKFM	12.3%	098.9 CIZL	13.1%
<b>EDMONTON</b>		<b>OTTAWA ANGLO</b>		<b>TORONTO</b>	
103.9 CISN	11.2%	100.3 CJMJ	11.8%	104.5 CHUM	9.1%
104.9 CFMG	9.5%	106.9 CKQB	9.7%	098.1 CHFI	9.0%
<b>HALIFAX</b>		<b>OTTAWA FRANCO</b>		<b>VANCOUVER</b>	
100.1 CIOO	24.4%	094.9 CIMF	26.9%	103.5 CHQM	8.8%
104.3 CFRQ	18.0%	104.1 CKTF	18.4%	096.9 CKLG	7.3%
<b>MONTRÉAL ANGLO</b>		<b>QUÉBEC</b>		<b>WINNIPEG</b>	
092.5 CFQR	17.9%	107.5 CITF	15.0%	104.1 CFQX	10.1%
095.9 CJFM	17.2%	098.1 CHOI	14.0%	103.1 CKMM	8.8%

### INDEX OF ABBREVIATIONS

AF	applied for (a new station)	NS	new station granted
AFA	American Family Association	NW	new station signs on
CC	call letter change	OSA	one step application granted for change
CL	city of license change	PA	proposed amendment change to FM allocation table
CX	a construction permit has been cancelled	PC	power change on the air (> = increase, < = decrease)
C1-C5	change in status to that FM license class	PG	power change granted (> = increase, < = decrease)
DA	directional antenna	PR	power change requested
DE	station has been deleted	QC	frequency change occurred
FC	format change	QG	frequency change granted
GA	granted amendment to table of FM allocations	QR	frequency change requested
GE	granted extension of construction permit	RA	silent station returns to the air
GX	granted replacement of expired permit	RE	station requests an extension on permit
LC	license to cover filed (ready to come on air)	RX	station requests replacement of expired permit
MC	multiple-city ID	SC	slogan change or update
NC	no change yet on a reported change or permit	SI	station is silent
ND	non-directional antenna	SOA	signed on the air
NO	not on the air	XA	dismissed amendment to FM allocations
		XC	transmitter site change occurred
		XG	transmitter site change granted

## UNITED STATES and CANADA

### Alabama / AL

<b>Hobson City</b>	95.5 WHMA-FM / PC 530w/332m, 33-37-38/85-53-25; CL from Ashland
<b>Munford</b>	92.7 WTDR / PG 250w/481m, 33-29-06/85-48-32; CL from Talladega
<b>Sheffield</b>	89.9 WAKD / PG>12kw-V

### Alaska / AK

<b>Anchorage</b>	89.9 NEW / NS (Anchorage School District)
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### Alberta / AB

<b>Medicine Hat</b>	FM NEW / AF; call issued for further applications
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### Arizona / AZ

<b>Bisbee</b>	96.1 KBRP-LP / PG ?w/137m, 31-26-31/109-54-50
<b>Coolidge</b>	89.9 KCOO / FC; sold to K-Love
<b>Fountain Hills</b>	89.1 KLVK / PR>29.97kw/703m, 33-35-33/112-34-49 dismissed
<b>Mammoth Mayer</b>	88.1 KLTU / PR>1.5kw-V 98.3 KKLK / PR>41kw/843m, 34-14-03/112-22-01; CL from Prescott Valley
<b>Phoenix</b>	89.5 KBAQ / PR 30kw/474m, 33-19-58/112-03-53 dismissed
<b>Tucson</b>	89.1 KUAZ-FM / PC>1.6kw/187m, 32-12-53/111-00-21

Yuma 88.9 KAWC-FM / PG 2.4kw/33m, 32-41-23/114-30-01

### Arkansas / AR

Gould 102.5 KAFN / PG<54m, 33-58-11/91-32-58  
Hot Springs 105.9 KLAZ / PG 100kw/299m, 34-19-55/92-39-55  
Hot Springs 105.9 KLAZ / XG 34-19-55/92-39-55 rescinded, returned to pending  
Hot Springs Vil. 92.9 KVRE / PC>25kw/100m  
Huntsville 99.5 KAKS / PR>13.8kw  
Murfreestboro 99.5 KMTB / PG 25kw/80m, 34-00-41/93-52-03  
Nashville 105.5 KNAS / PG>6kw/62m, 34-00-41/93-52-03  
Texarkana 104.7 KTOY / PC>3.1kw/138m, 33-25-45/94-07-11

### British Columbia / BC

Hornby Island 96.5 CHFR-FM / QG from 91.5  
Kelowna 91.1 NEW / AF 47.8w/-33m, religious

### California / CA

Alpine 107.9 KRLY-LP / NW ?w/249m, 32-51-09/116-44-28  
Arroyo Grande 103.7 KWOL-LP / NW 100w/-13m, 35-07-27/120-34-59  
Bakersfield 103.5 KRHM-LP / NW 100w/24m, 35-16-02/119-01-49  
Borrego Sps. 99.3 KKJD-LP / NW 100w/-223m, 33-14-39/116-22-30  
Chester 98.9 KWLW / PG<12kw/740m  
Chester 98.9 KWLW / PR<12kw/740m  
Chico 107.1 KQIP-LP / NW 100w/-20m, 39-43-46/121-48-25  
City of Angels 95.9 KBYN / PA from Arnold  
East Sonora 89.5 KARQ / NW 1.3kw/507m, 38-03-46/120-14-45 (K-Love)  
Eureka 98.1 KMKE-LP / NW 100w/-6m, 40-47-29/124-10-27  
Guerneville 95.1 KGGV-LP / NW 100w/-95m, 38-30-32/122-59-44  
Laytonville 90.3 KLAJ / PG>500w-V/741m (to drop H)  
Los Angeles 104.3 KBIG-FM / AF 54kw/883m, 34-13-42/118-01-01 (aux) dismissed ROA  
Modesto 107.9 KPSR-LP / NW ?w/50m, 37-38-31/120-59-49  
Mojave 98.9 NEW / GA  
Mountain Pass 99.7 KHYZ / PG 50kw/150m, 35-28-12/115-28-43  
Mt. Shasta 107.9 KMJC-FM / PC>20kw/249m, 41-13-37/122-14-23  
Nevada City 93.3 KYRR-LP / NW ?w/109m, 39-18-57/120-56-29  
Occidental 107.3 KOWS-LP / NW ?w/197m, 38-24-15/122-58-44  
Oxnard 101.5 KOCC-LP / NW 100w/1m, 34-11-55/119-09-16  
Paradise 101.3 KRGR-LP / NW ?w/131m, 39-45-12/121-37-07  
Pasadena 106.7 KROQ-FM / NW 6.5kw/204m, 34-09-50/118-11-46 (aux)  
Pt. Reyes Station 90.5 KWMR / PR>230w/328m  
Prunedale 89.7 KLVM / PG>520w  
San Diego 106.5 KLVN / AF 530w/562m, 32-41-48/116-56-10 (aux)  
San Diego 107.5 KHHS-LP / NW ?w/48m, 32-52-40/117-12-44  
Santa Maria 89.7 KHFR / NW 2.45kw/569m, 34-54-37/120-11-08 (Family R.)  
Shasta Lake 93.9 KIHP-LP / NW ?w/179m, 40-45-00/122-18-10  
Sunnyvale 104.9 KCNL / PR>-24m  
Trona 97.3 NEW / GA from 98.9  
Ukiah 105.1 KMEC-LP / NW 100w/-181m, 39-09-15/123-12-24  
Visalia 101.5 KVLP-LP / NW 100w/26m, 36-20-32/119-17-01  
Yuba City 104.7 KCYC-LP / NW 100w/16m, 39-06-03/121-37-04  
Yucca Valley 97.1 KJSM-LP / PG 136m, 34-05-56/116-23-30; NW

### Colorado / CO

Brush 106.3 KPRB / PG>25kw/80m, 40-10-33/103-29-49  
Carbondale 90.5 KVOV / NW 450w/775m, 39-25-08/107-22-10 (Public R. of Colo.)  
Colona 89.9 KTMH / NW 4kw/498m, 38-23-15/107-40-31  
Eaton 88.9 KLCQ / FC? sold by K-Love  
Grand Junction 89.5 KPRN / PC>19.83kw/402m  
Greenwood Vil. 102.3 KCUV-FM / PC<64m, 39-39-55/104-51-38; CL from Strasburg  
Gypsum 91.3 KLRY / NW 110w-H/10w-V/859m, 39-46-30/106-50-45 (K-Love)  
Kremmling 106.3 KZMV / PC 50kw/150m, 40-07-12/106-14-13  
Loveland 102.5 KTRR / PC 17kw/234m, 40-38-31/104-49-03  
Security 105.5 KSKX / PG>1.65kw/676m  
Steamboat Sps. 88.5 KTAH / FC; sold to KUNC  
Walsenburg 101.3 NEW / NS 95.5kw/305m, 37-47-20/104-29-12

### Florida / FL

Cross City 88.5 WWLC / PR>100kw/103m, 29-31-35/83-14-17  
Fruit Cove 94.1 WSOS-FM / GA from St. Augustine  
Gainesville 107.7 WPZM-LP / PG 52m  
Greenville 90.3 WYJC / NW 330w-V/56m, 30-23-56/83-39-24  
Lafayette 99.9 WEGT / PG>91m, 30-29-38/84-13-57  
Lecanto 88.3 WLMS / PC 4.1kw/73m, 28-53-01/82-31-21 (Diocese of St. Petersburg)  
Marco 91.7 WMKO / PC 6.9kw/113m  
Miami 99.1 WEDR / AF 40kw/214m (aux)  
Miami 99.1 WEDR / NS 40kw/214m (aux)  
Ocala 100.7 WJND-LP / program test authority reinstated after suspension for failing to respond to inquiry  
Pensacola 101.5 WTKX-FM / PG>417m, 30-35-16/87-33-13  
St. Marks 91.1 WUJC / NW 7kw/95m, 30-08-32/83-54-58 (CSN)  
Stock Island 89.1 NEW / AF dismissed  
Tampa 88.5 WMNF / PR 6.65kw/469m, 27-49-10/82-15-39  
Tampa 90.5 WBVM / AF 2kw/294m (aux)  
Tampa 90.5 WBVM / NS 2kw/294m (aux)  
Tampa 90.5 WBVM / NW 2kw/294m (aux)  
Tampa 90.5 WBVM / PC<77kw/294m, 27-50-53/82-15-48  
Titusville 98.1 WNUE-FM / PC 100kw/145m, 28-50-52/80-51-50; NW 100kw/139m (aux)  
Titusville 98.1 WNUE-FM / XG 28-50-52/80-51-50

### Georgia / GA

Boynton 103.7 WBFC-LP / PR 4w/156m, 34-55-35/85-05-45 dismissed  
Boynton 103.7 WBFC-LP / PR>156m, 34-55-35/85-05-45  
College Park 100.5 WWWQ / PC 12.5kw/298m, 33-45-34/84-23-19  
Folkston 89.3 WECC-FM / PC>30kw/149m  
Gainesville 106.7 WYAY / NW 55kw/478m (aux)  
Gainesville 106.7 WYAY / PC 77kw/505m, 33-52-02/83-49-44  
Greenville 104.1 WALR-FM / GA from LaGrange  
Nashville 95.3 WJYF / PC>29kw  
Omega 107.5 WTIF-FM / PC>4kw  
Savannah 88.1 WLXP / PC>5.5kw/104m, 32-03-48/81-02-56  
Springfield 93.1 WEAS-FM / XC 32-02-45/81-20-27; CL from Savannah  
Statenville 97.5 WHLJ / NS 1.5kw/57m (aux)  
Swainsboro 100.5 WXRS-FM / PG>25kw/84m  
Waverly Hall 95.7 WKZJ / GA from Greenville, class C3 to A  
Wrightsville 107.9 WDBN / PR>25kw

### Hawai'i / HI

Honolulu 89.3 KIPO / PG>26kw/529m, 21-20-12/157-49-03  
 Kealakekua 101.5 KAOY / PC 6.5kw/909m, 19-43-15/155-55-16  
 Wahiawa 103.5 KHAI / FC; sold to K-Love

**Idaho / ID**

Pocatello 90.3 KZJB / NW 910w/314m, 42-51-46/112-31-03 (CSN)

**Illinois / IL**

Belvidere 104.9 WXRX / NS 3.46kw/107m (aux)  
 Bloomington 103.3 WEWT-LP / NW 23w/62m, 40-29-21/89-00-23  
 Champaign 94.5 WLRW / NS 17.5kw/124m (aux)  
 Champaign 94.5 WLRW / PC>138m  
 Heyworth 97.9 WBBE / NW 5.4kw/105m, 40-27-08/88-57-48  
 Ottawa 88.9 WWGN / PC<1.4kw/148m, 41-18-05/88-57-11  
 Pekin 104.9 WXCL / XR 40-38-34/89-32-38  
 Salem 91.3 WSLE / NW 770w/47m, 38-37-34/88-56-41 (AFR)  
 St. Anne 106.5 NEW / NS 1.95kw/141m, 41-00-20/87-41-42  
 Urbana 104.5 WRFU-LP / NW 100w/20m, 40-06-41/88-12-25

**Indiana / IN**

Brazil 92.7 WSDM-FM / QC from 97.7  
 Delphi 102.9 WXXB / NW 3.7kw/127m (aux)  
 Fishers 93.9 WISG / NW 500w/133m, 39-48-01/86-04-39 (aux)  
 Greenfield 88.1 WFCI / PA from 89.5, from Franklin denied  
 Indianapolis 103.3 WRZX / NW 4.76kw/227m, 39-46-11/86-09-26 (aux)  
 Indianapolis 94.7 WFBQ / NW 12.9kw/227m, 39-46-11/86-09-26 (aux)  
 Jasper 91.7 WKJR / NW 2.6kw/84m, 38-25-23/86-49-47  
 Lafayette 90.7 WQSG / NW 17kw-V/100m, 40-22-14/86-30-32 (AFR)  
 Lowell 88.5 WTMK / NW 1.5kw/51m, 41-04-59/87-10-47 (CSN)  
 Madison 100.9 NEW / GA from 101.1  
 Morristown 100.3 WJCF / PA from 88.1 denied  
 Plymouth 89.3 WRXH / NW 400w/76m, 41-20-51/86-20-23 (AFR)  
 Richmond 101.3 WFMG / GA from class B to B1  
 Spencer 97.7 WCLS / QC from 92.7, 6kw/100m, 39-13-22/86-38-40

**Iowa / IA**

Carroll 93.7 KKRL / PC 100kw/84m, 42-02-57/94-53-03  
 Chariton 105.3 KELR-FM / PG 50kw/150m, 40-53-10/93-01-21  
 Clear Lake 103.7 KLKK / PG>100m, 43-07-15/93-11-36  
 Keokuk 90.9 KMDY / FC; sold to WLWJ  
 Perry 105.5 KDLS-FM / PG 25kw/100m, 41-43-23/94-00-27

**Kansas / KS**

Enterprise 90.5 KBMP / FC; sold by AFR  
 Independence 91.9 KARF / FC; sold by AFR  
 Pittsburg 89.9 KRPS / AF 14kw/243m dismissed ROA (aux)  
 Topeka 94.5 WIBW-FM / PR 100kw/354m, 39-01-34/95-55-01

**Kentucky / KY**

Corbin 88.5 WEKF / NW 21kw/152m, 37-01-13/84-23-41 (WEKU)  
 Erlanger 101.1 WIZF / GA from 100.9  
 Hodgenville 107.3 WKMO / PA from 106.3 denied  
 Horse Cave 106.5 WHHT / PA from 106.7 denied  
 Lebanon 100.9 WLSK / GA from class C3 to A  
 Lebanon Jct. 102.7 WAKY-FM / PA from Springfield  
 Lebanon Jct. 99.3 WTHX / PA from 107.3 denied

New Haven 102.7 WAKY / PA from Springfield denied  
 New Haven 107.3 WTHX / PA from Lebanon Junction  
 Salt Lick 97.7 WAXZ / PR 3kw/143m, 38-10-33/83-24-28; CL from Georgetown, OH  
 Springfield 100.9 WLSK / PA from class C3 to A, from Lebanon  
 Springfield 100.9 WLSK / PA from Lebanon denied

**Louisiana / LA**

Alexandria 96.9 KZMZ / PG<98kw/321m, 31-01-59/92-30-08  
 Dubach 97.7 KPCH / GA from class C1 to C2  
 Hornbeck 101.7 NEW / GA, class A  
 Houma 107.5 KCIL / PG>69kw  
 Natchitoches 97.5 KDBH-FM / GA from 97.3, class C3 to A  
 Natchitoches 97.5 KDBH-FM / PR<6kw  
 Natchitoches 97.5 KDBH-FM / QG from 97.3, 6kw; 73.203(a) waived  
 New Orleans 98.5 WYLD-FM / PC>97.8kw/300m  
 Oil City 101.1 KRMD / GA from Shreveport  
 Shreveport 91.3 KSCL / PR 2.6kw/56m, 32-28-51/93-43-51

**Maine / ME**

Howland 103.9 WVOM / NW 450w/315m, 44-39-31/68-36-17 (aux)  
 Oakland 88.9 WMDR-FM / NW 600w-V/175m, 44-42-48/69-43-39

**Manitoba / MB**

Winnipeg 104.7 NEW / AF 10kw/206m, 49-45-20/97-07-52, ethnic  
 Winnipeg 106.3 NEW / AF 897w/88m, ethnic (African)  
 Winnipeg 106.3 CIJA-FM / AF 897w/88m, 49-53-13/97-08-24, ethnic (African) (replaces unknown temporary sta.)

**Maryland / MD**

Cambridge 94.3 WINX-FM / PA from class A to B1, CL from St. Michaels, denied, but FCC indicated a B1 upgrade could be approved without a city-of-license change.  
 Cambridge 94.3 WINX-FM / PR>21.6kw/107m dismissed  
 Newark 94.9 NEW / GA, class A (instead of 94.5 as originally requested)  
 Stockton 94.3 NEW / PA, class A, denied  
 Westminster 100.7 WZBA / PG 25kw/210m, 39-26-50/76-46-48

**Massachusetts / MA**

Brockton 97.7 WILD-FM / PG 1.7kw/173m, 42-12-42/71-06-51  
 Greenfield 107.9 WLPV-LP / NW 100w/-11m, 42-36-28/72-35-57  
 Holyoke 104.9 WREA-LP / NW 48w/43m, 42-11-15/72-38-30  
 Newburyport 91.7 WNEF / PC>1kw

**Michigan / MI**

Atlanta 104.3 NEW / PA, class C3, dismissed  
 Augusta 90.9 980810MB / AF dismissed (AFR)  
 Benton Harbor 105.3 WVBH-LP / PR<19m, 42-06-33/86-26-30  
 Benton Harbor 105.3 WVBH-LP / PG<19m, 42-06-33/86-26-30  
 Benton Harbor 96.5 WBHC-LP / NW 100w/16m, 42-06-55/86-27-13  
 Caseville 101.3 NEW / PA, class A, counter-proposal to 105.7, withdrawn  
 Caseville 105.7 NEW / PA, class A, withdrawn  
 Grand Lodge 92.9 WJZL / QR from 92.7, 4.6kw/114m, 42-43-58/84-33-13; CL from Charlotte  
 Grand Rapids 89.9 WAYG / PG 4kw/74m  
 Harbor Beach 99.1 NEW / PA, class A, withdrawn

Harrisville	93.1 NEW / PA, class A, dismissed
Lapeer	103.1 WQUS / PC 2.6kw/104m, 43-04-43/83-11-24
Lexington	99.1 NEW / GA, class A, counter-proposal to Harbor Beach
Muskegon	103.7 WUVS-LP / PC<26m
Pigeon	101.3 NEW / GA, class A, counter-proposal to Caseville 101.3
Presque Isle	93.3 NEW / PA, class A, dismissed
Rogers City	96.7 WVXA / PC>42kw/162m
Three Oaks	106.7 WRHC-LP / NW ?w/41m, 41-48-04/86-36-52
Vanderbilt	92.5 WFDX / PA from Atlanta dismissed, would delete only operating station there.
West Branch	105.5 WBMI / XG 44-17-57/84-15-54

#### Minnesota / MN

Bemidji	92.3 KBJL-LP / NW ?w/37m, 47-33-21/94-48-04
Crookston	97.1 KYCK / PR>113m, 47-49-20/96-49-13
E. Grand Forks	104.3 KZLT-FM / PR>140m, 47-48-49/96-55-48
Grand Marais	88.7 WMLS / NW 6kw/194m, 47-46-04/90-20-47 (MN Public Radio)
Grand Portage	96.9 NEW / GA, class C0
Virginia	99.9 WUSZ / PC 100kw/162m, 47-22-24/93-00-48 (sharing antenna w/WTBX 93.9)

#### Mississippi / MS

Forest	91.7 WSQH / FC; sold to AFR
Forest	91.7 WSQH / NW 15kw/145m, 32-23-57/89-05-02 (AFR)
Gulfport	96.7 WUJM / PR 4.27kw/119m, 30-27-31/89-04-46
Natchez	95.1 WQNZ / PC>317m
Ocean Springs	103.1 WOSM / PG>100kw/204m, 30-36-21/88-38-51
Tylertown	107.3 WFCG / PG 2.2kw/168m, 31-04-39/90-04-46
Yazoo City	89.5 WYAZ / NW 25kw-V/158m, 32-48-04/89-56-32 (AFR)

#### Missouri / MO

Clayton	90.3 KWUR / PC<29m, 38-38-55/90-18-28
Eminence	103.1 NEW / PA, class C3, dismissed in favour of 104.1A
Eminence	104.1 NEW / GA, class A
Lebanon	103.7 KJEL / GA from class C to C0
Linn	97.5 NEW / GA from 103.1
Malta Bend	103.9 KRLL / PG>12kw
Moberly	104.3 KZZT / AF 28.9kw/82m, 39-27-10/92-21-58 (aux)
Potosi	97.7 KHZR / GA from class C3 to C2
Rolla	103.1 KDAA / GA from 97.5

#### Montana / MT

Butte	88.1 KFRD / QC from 88.3, 850w
Columbia Falls	95.9 KKMT / PR 53.5kw/711m dismissed ROA
Helena	90.1 KHLV / NW 3.5kw-V/202m, 46-46-07/112-01-21 (K-Love) (has some H power but less than 5 watts. H antenna is 5m lower than V...)
Joliet	105.9 NEW / PG 100kw/134m, 45-39-31/108-34-14
Missoula	94.9 KYSS-FM / PG>63kw/729m, 47-01-57/113-59-30
Poplar	96.9 KPLR-LP / NW ?w/165m, 48-17-28/105-15-09 (Poplar Schools)
Whitefish	105.1 KWOL-FM / NW 62kw/733m, 48-30-43/114-22-13

#### Nevada / NV

Elko	94.5 KOYT / NW 36kw/463m, 40-55-18/115-50-58
Hawthorne	90.1 QMCM / NW 480w-V/957m, 38-27-28/118-45-52
Mesquite	88.5 KEKL / PG 30kw/563m, 36-36-04/114-35-06

#### New Brunswick / NB

Amherst	99.1 CITA-FM-2 / NS 50w
Moncton	105.9 CITA-FM / PG> (new facilities unknown)
Saint John	103.5 CFHA-FM / PG>, XG, new facilities not given
Sussex	107.3 CITA-FM-1 / NS 48w

#### New Hampshire / NH

Campton	105.7 WLKC / PC>622m
Claremont	106.1 WHDQ / PC>1.6kw
Mt. Washington	94.9 WHOM / NW 20.5kw/1160m (aux)

#### New Jersey / NJ

Belvidere	107.1 WWYY / PR 1.05kw/230m, 40-56-56/75-09-29
Burlington	97.5 WTHK / PC<13kw/130m, 40-11-22/74-50-47
Dover	105.5 WDHA-FM / PC>1kw
Manahawkin	100.1 WJRZ-FM / PC>1.7kw
Medford Lakes	90.5 WVBV / NW 21kw-V/138m, 39-33-20/74-44-48
Newark	105.9 WCAA / AF 25kw/99m, 40-49-35/74-04-34 (aux)
Newark	105.9 WCAA / NS 25kw/99m, 40-49-35/74-04-34 (aux)

#### New Mexico / NM

Chama	96.1 KZRM / PG>25kw/92m
Dexter	96.1 NEW / NS 50kw/150m, 33-23-55/104-22-30
Socorro	102.1 NEW / NS

#### New York / NY

Albion	102.1 WJCA / FC; sold to WJFM
Auburn	106.9 WPHR-FM / AF 500w/284m, 42-48-05/76-26-14 (aux)
Dannemora	97.9 NEW / NS 18kw/253m, 44-46-30/73-36-48
Honeoye Falls	95.1 WFXF / AF 2kw/135m (aux)
Jamestown	94.1 WIHR-LP / NW ?w/84m, 42-05-42/79-14-38
Johnson City	101.7 WLTB / PG 580w/312m, 42-03-22/75-56-39
New York	101.9 WQCD / NS 6.2kw/408m, 40-44-54/73-59-10 (aux)
New York	98.7 WRKS / NS 6.2kw/408m, 40-44-54/73-59-10 (aux)
Newport	106.1 WKUY-LP / QC from 105.9, 58m, 43-14-42/74-59-50
Rochester	100.5 WVOR-FM / AF 2kw/135m (aux)
Rochester	100.5 WVOR-FM / NS 2kw/135m (aux)
Rochester	91.5 WXXI-FM / AF 4.4kw/130m (aux)
Watertown	90.1 WWJS / FC; sold to K-Love

#### North Carolina / NC

Dallas	91.7 WSGE / PC>6kw/260m, 35-24-26/81-07-48
Wilmington	89.7 WDVV / PG>13.5kw-V/106m

#### North Dakota / ND

Grand Forks	101.3 KOBT-LP / NW 100w/28m, 47-53-12/97-02-20
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#### Nova Scotia / NS

Halifax	89.7 CKRH-FM / AF 1.925kw-H/218m, 44-39-03/63-39-28, French community (replaces temporary st.?)
Halifax	89.9 CHNS / QR from AM 960, 100kw-H/224m, 44-39-03/63-39-28

#### Ohio / OH

Archbold	89.5 WBCY / PC<96m, 41-28-59/84-16-58
Beavercreek	103.9 WXEG / NW 1.5kw/133m, 39-43-36/84-12-23 (aux)
Belpre	91.9 WLKP / PR>5.2kw
Bowling Green	93.5 WRON / PR>7kw

Cincinnati	101.9 WKRO / AF 16kw/190m (aux)
Cincinnati	101.9 WKRO / NS 16kw/190m (aux)
Cincinnati	101.9 WKRO / NW 16kw/190m (aux)
Eden	88.7 980406MC / AF dismissed
Hamilton	103.5 WGRR / NW 6.1kw/232m (aux)
Harrison	104.3 WNLT / NW 6kw/88m (aux)
Lancaster	90.9 WFCO / PC>1.2kw/78m
Norwood	100.3 WIFE / GA from class B to A, CL from Connersville, Ind.
South Webster	94.9 WSNA / FC; sold to K-Love

#### Oklahoma / OK

Atoka	102.1 KHKC-FM / PR 3.38kw/135m dismissed (for second time; had been dismissed once & then reinstated)
Frederick	95.9 KYBE / PR>25kw/53m, 34-18-16/99-04-42
Grandfield	89.9 KWKL / PG>45kw
Holdenville	100.9 NEW / GA, class A
Pauls Valley	101.1 NEW / PA, class A, counterproposal to Holdenville 265, denied because proposed site wouldn't cover the community
Sapulpa	107.7 KPOP-LP / NW ?w/40m, 36-00-46/96-06-42
Tulsa	107.9 KJZT-LP / NW 76w/34m, 36-04-03/95-55-41

#### Ontario / ON

Chatham	89.3 NEW / AF 16.7kw/182m, 42-27-00/82-05-00, religious
Hamilton/Burl.	94.7 CIMV-FM / PG>21.4kw
Little Current	102.1 CJTK-FM-n / NS, 1.3kw, to relay Sudbury contemporary Christian station
Toronto	103.9 NEW / AF 50w/132m, 43-42-20/79-23-44, BLGT (gay/lesbian) oriented st. w/adcon/pop music; co-owned w/2nd adjacent CIDC 103.5
Toronto	98.7 NEW / AF 1kw/277m, 43-38-56/79-22-55, Caribbean/African oriented station

#### Oregon / OR

Ashland	101.9 KCMX-FM / PC>448m, 42-17-55/122-44-53
Ashland	101.9 KCMX-FM / PG>448m, 42-17-55/122-44-53
Cottage Grove	100.5 KCGR / PC>10.5kw/154m, 43-45-40/123-02-07
Gleneden Beach	97.5 KSHL / PG<14kw/259m, 44-45-24/124-02-53
Medford	93.7 KTMT-FM / PC<27kw/980m, 42-04-52/122-43-09
Medford	93.7 KTMT-FM / PG<980m, 42-04-52/122-43-09
Portland	93.9 KPDQ-FM / QG from 93.7, 50kw
Veneta	105.5 KEUG / PR>12.5kw dismissed

#### Pennsylvania / PA

McConnellsburg	88.7 WWCF / NW 10w/364m, 39-54-58/77-57-25
Palmyra	92.1 WWKL / PG 1.5kw/183m, 40-23-28/76-43-31
Philadelphia	98.1 WOGL / NW 9.6kw/338m, 40-02-30/75-14-11 (aux)
Philadelphia	98.1 WOGL / PC 9.6kw/338m, 40-02-30/75-14-11
Pittsburgh	99.7 WSHH / PG 15.5kw/274m

#### Prince Edward Island / PE

St. Edward	97.5 NEW / NS 1.88kw-H/108m, 46-53-34/64-08-56, // CBAF-FM-15, Première Chaîn (CBC network)
Urbainville	106.9 NEW / NS 173w/121m, 46-27-38/64-03-14, // CBAF-FM-15, Première Chaîn (CBC network)

#### Québec / QC

Chibougamau	96.9 NEW / AF withdrawn at request of applicant
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#### Rhode Island / RI

Coventry	91.5 WCVY / signs time-sharing agreement with "Educational Radio for the Public of the New Millennium", applicant for new station. Will share time - WCVY operating 2pm to 10pm on school days, new station using all other hours.
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#### Saskatchewan / SK

Moose Jaw	101.9 NEW / AF 46w/13m, religious
Moose Jaw	103.9 NEW / AF 100kw/258m, adcon
Moose Jaw	99.9 CKVY-FM / AF 100kw/204m, 50-35-44/105-04-09, adcon
Moose Jaw	99.9 NEW / AF 100kw/204m, adcon
Tisdale	103.1 NEW / AF withdrawn, will be heard later

#### South Carolina / SC

Clearwater	98.3 WSLT / AF 6.2kw/148m (aux)
Clearwater	98.3 WSLT / NS 6.2kw/148m (aux)
Clearwater	98.3 WSLT / NW 6.2kw/148m (aux)
Dillon	91.1 WWHW / CX, DE ROA
Gray Court	100.5 WSSL-FM / PC>381m, 34-34-18/82-06-44
Lexington	98.5 WLXC / PC<99m, 33-53-59/81-13-30
Parris Island	103.1 WGZO / PR 9.5kw/127m, 32-13-36/80-50-53

#### South Dakota / SD

Ipswich	107.7 NEW / NS
Rapid City	89.9 KOFR / NW 2.3kw/562m, 44-19-42/103-50-03 (Family Radio)

#### Tennessee / TN

Alamo	93.1 WWGM / XR 35-43-28/89-03-35 (suspect correction only)
Belle Meade	97.1 WRQQ / PA from Goodlettsville denied
Chattanooga	96.5 WDOD-FM / GA from class C to C0
Goodlettsville	92.1 WQKQ / PA from Hendersonville denied
Halls Crossrds.	96.7 WXJB / GA from 96.5, from Harrogate
Hendersonville	99.7 WWTN / PA from Manchester denied
Lake City	96.7 NEW / PA denied in favour of Halls Crossroads
Lewisburg	94.3 WJIM-FM / PG>6kw
Millersville	106.7 WNFN / PA from class A to C3, from Belle Meade denied
Smyrna	94.1 WFFH / PG>138m
Union City	88.9 WTNN / NW 860w/190m, 36-24-48/89-08-59 (K-Love)

#### Texas / TX

Abilene	92.5 KULL / PR 27.5kw/202m, 32-16-35/99-35-38
Austin	90.5 KUT / AF 6.3kw/183m (aux)
Austin	90.5 KUT / NS 6.3kw/183m (aux)
Beaumont	97.5 KFNC / AF 4kw/156m, 29-46-06/94-01-04 (aux)
Beaumont	97.5 KFNC / NS 4kw/156m, 29-46-06/95-01-04 (aux)
Brookshire	107.9 KQLC-LP / PC>38m
Carrizo Springs	93.5 NEW / NS
Corpus Christi	107.9 KXVR-LP / NW ?w/31m, 27-46-44/97-36-48
Corpus Christi	95.5 KZFM / PR>451m dismissed ROA
Dallas	90.1 KERA / AF 31.3kw/474m, 32-32-35/96-57-32 (aux)
Dallas	90.1 KERA / NS 31.3kw/474m, 32-32-35/96-57-32 (aux)
Dallas	90.1 KERA / NW 31kw/474m, 32-32-35/96-57-32 (aux)
Gainesville	94.5 KSOC / PC>100kw
Gainesville	94.5 KSOC / PG>100kw

George West 100.9 NEW / KEPG requests deletion of vacant Class A channel  
 Groesbeck 107.7 NEW / PA, class A  
 Helotes 101.1 KONO-FM / NS 1.3kw/273m (aux)  
 Houston 102.9 KLTN / AF 27kw/225m, 29-45-26/95-20-19 (aux)  
 Houston 102.9 KLTN / NS 27kw/225m, 29-45-26/95-20-19 (aux)  
 Jourdanton 95.7 KLEY-FM / PR>11.23kw/316m, 28-54-57/98-39-39  
 Kerrville 88.7 KKER / PC>52kw/174m, 30-03-30/99-03-50  
 La Porte 103.7 KIOL / AF 10kw/156m, 29-46-06/95-01-04 & 100kw/555m, 29-56-09/94-30-39 (both aux)  
 La Porte 103.7 KIOL / NS 10kw/156m, 29-46-06/95-01-04 & 100kw/555m, 29-56-09/94-30-39 (both aux)  
 Lewisville 107.9 KESS-FM / NW 5kw/2m, 32-49-15/96-52-18 (aux)  
 Longview 107.9 NEW / GA from 97.3  
 Madisonville 91.5 KHML / PG>27kw  
 Missouri City 104.9 KPTY / AF 3.2kw/225m, 29-45-26/95-20-19 (aux)  
 Mt. Enterprise 94.1 NEW / GA  
 Nacogdoches 107.7 KTBO / GA from class C2 to C3  
 Nacogdoches 107.7 KTBO / PG<13kw/122m, 31-34-50/94-40-15  
 Palestine 89.1 KYFP / PR>100kw/148m  
 Pasadena 92.9 KKBQ-FM / NW 55kw/513m, 29-34-06/95-29-57 (aux)  
 Pearsall 95.3 KSWG-FM / PR>3kw/100m, 28-53-23/99-13-11  
 Prairie View 91.3 KPVI / AF 9.8kw/128m (aux) (use old main as aux)  
 Rankin 102.5 NEW / PA, class C1 dismissed, applicant withdrew interest  
 San Antonio 100.3 KCYY / NS 1.31kw/273m (aux)  
 Sanderson 102.7 NEW / GA, class C1  
 Silsbee 101.7 KAYD-FM / NW 110w/113m, 29-59-19/94-14-41 (aux)  
 Stanton 88.1 KFRI / NW 100kw/139m, 32-05-44/101-48-47 (K-Love)  
 Tennessee Col. 107.9 NEW / PA, class A, withdrawn  
 Terrell Hills 106.7 KELZ-FM / NS 6.2kw/276m (aux)  
 Three Rivers 100.9 NEW / Counterproposal to KEPG upgrade request, dismissed at request of applicant  
 Tom Bean 97.5 KLAK / PG 32kw/188m, 33-28-30/96-26-45; CL from Durant, OK  
 Victoria 100.9 KEPG / PA from class A to C3  
 Victoria 99.5 KETI-LP / NW ?w/34m, 28-48-46/96-59-45  
 Waskom 97.3 KQHN / GA from 107.9, CL from Oil City, LA  
 Waskom 97.3 KQHN / QG from 107.9, CL from Magnolia, Ark. via Oil City, La.; PG>42kw; 73.203(a) waived  
 Waskom 97.3 KQHN / QR from 107.9, 42kw, CL from Oil City LA (or Magnolia AR)

**U.S. Virgin Islands / VI**

Frederiksted 103.5 WAXJ / NW 6kw/-10m, 17-43-28/64-53-03

**Utah / UT**

Elsinore 97.7 KCYQ / QC from 97.5, 43kw/879m, 38-32-30/112-03-31  
 Price 100.1 KWSA / QR from 100.9, 3kw/41m, 39-32-42/110-48-56  
 St. George 106.1 KSNN / PR>100kw  
 Woodruff 100.7 KEGH / PR 89kw-H/647m, 40-52-16/110-59-43, CL from Brigham City

**Virginia / VA**

Chincoteague 94.5 NEW / GA, class A  
 Culpeper 89.9 WPER / PR 41kw/127m dismissed  
 Deltaville 92.3 WSRV / PR 4.8kw/112m  
 Glade Spring 100.5 NEW / PA from 102.7  
 Marion 102.5 WOLD-FM / PA from 100.5  
 Narrows 101.3 WZFM / PC>210w/366m, 37-17-54/80-48-36; petition for

reconsideration of cancellation of license for remaining off the air for more than a year granted  
 Weber City 102.7 WVEK-FM / PA from Cumberland, KY; from class A to C3  
 White Stone 104.9 WNDJ / PR>100m, 37-43-26/76-23-27  
 Williamsburg 100.9 WYOU-LP / NW ?w/43m, 37-16-37/76-45-07  
 Winchester 91.3 WTRM / PC 5.6kw/427m, 39-11-02/78-23-15

**Washington / WA**

Bellingham 102.3 KMRE-LP / PG>-24m, 48-45-07/122-28-45  
 Bellingham 102.3 KMRE-LP / PR>-24m, 48-45-07/122-28-45  
 Long Beach 99.7 KAQX / QG from 94.3, 6kw  
 Seattle 100.7 KQBZ / PR>71kw/707m  
 Seattle 107.7 KNDD / PR>71kw/707m  
 Seattle 98.1 KING-FM / PR>72kw/707m  
 Seattle 99.9 KISW / PR>71kw/707m  
 Tacoma 103.7 KMTT / PR>71kw/707m  
 Yakima 91.9 KDNA / AF 180w/270m (aux)  
 Yakima 91.9 KDNA / NS 180w/270m (aux)

**West Virginia / WV**

Blennerhassett 88.7 981006MK / NS 9kw/114m, 39-14-06/81-53-16

**Wisconsin / WI**

Amery 95.7 WPCA-LP / PG 50w/42m, 45-19-02/92-20-27  
 Fond du Lac 91.7 WLWR / FC; sold to K-Love  
 Milwaukee 102.1 WLUM-FM / PG<8.8kw/257m, 43-06-42/87-55-50  
 Plymouth 104.5 WXER / PR<95m  
 Shawano 94.5 NEW-LP / NS ?w/36m, 44-46-51/88-37-52  
 Stevens Point 89.9 WWSP / PR>30kw/98m

**Wyoming / WY**

Cheyenne 106.3 KLEN / PC>6kw/99m, 41-03-09/104-49-55  
 Kemmerer 107.3 KAOX / PC<13.5kw  
 Rock Springs 99.7 KSIT / PC 100kw/493m, 41-26-00/109-07-02  
 Sheridan 88.1 KPRQ / NW 450w/341m, 44-37-26/107-07-02 (MT St. U - Billings)  
 Sheridan 88.9 KOHR / NW 500w-V/25m, 44-47-54/106-55-51 (YNOP religious)  
 Sheridan 89.3 KWCF / NW 1kw/293m, 44-36-10/106-55-42 (CSN)

**Yukon / YK**

Destruction Bay 98.1 VF2147 / PG>10w  
 Tsiigehtchic 90.5 NEW / AF 10w, to relay CHON  
 98.1 Whitehorse

**Sources**

Corporations: BBM Canada  
 Government: Canadian Radio-Television and Telecommunications Commission (CRTC), Federal Communications Commission (FCC)  
 Internet Media: FMOB

This report includes 419 changes to the FM dial.



-Chris Kadlec  
 FM News Editor

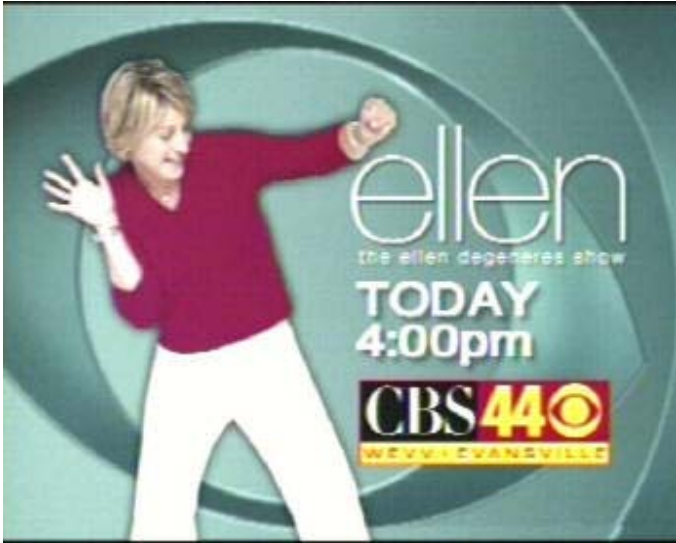


# PHOTO-NEWS

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 jkruszka@bellsouth.net

January 2006

Since this is now the digital age, I've finally brought the Photo News logo into the digital age as well with a digital camera capture. We continue with more pics from Girard Westerberg, Lexington, KY. You can see all of his DX photos and a lot more at [www.dxfm.com](http://www.dxfm.com).



WEVV-DT-45 Evansville, IN  
 168 mi Tr seen 9/19/05



WDEF-DT-47 Chattanooga, TN  
 202 mi Tr seen 7/25/05



KBSD-6 Ensign, KS  
 856 mi Es seen 6/20/05



WAKA-8 Selma, AL  
 423 mi Tr seen 10/9/05



KRMA-6 Denver, CO  
 1121 mi Es seen 6/21/05  
*"Rocky Mountain PBS logo LR"*





Here's more from Joe Veldhuis, of Grand Haven, MI. Joe also has a nice DX website at [www.electroblog.com:8090/radio/index.shtml](http://www.electroblog.com:8090/radio/index.shtml).



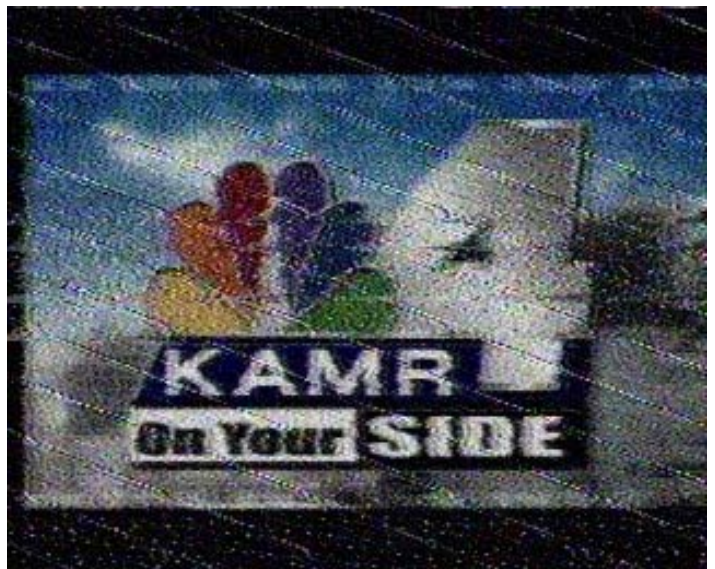
KJRH-2 Tulsa, OK  
701 mi Es seen 5/28/05  
@2240 ET



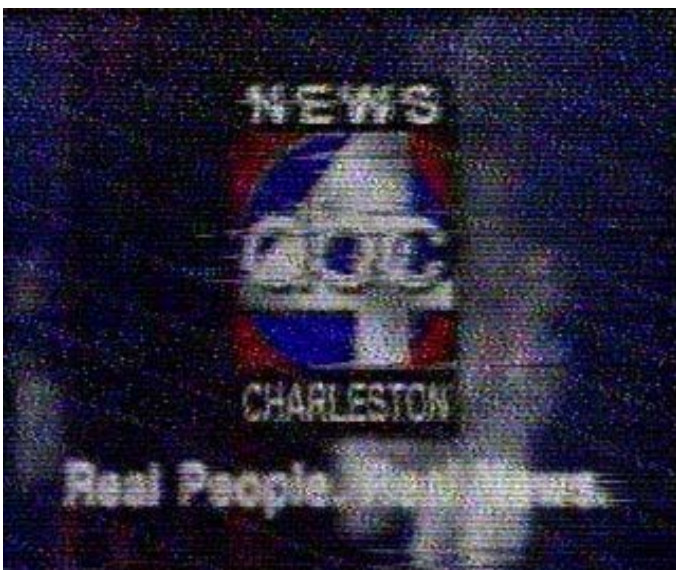
WEAR-3 Pensacola, FL  
861 mi Es seen 7/31/05  
@1853 ET  
"ID text in sync bar at bottom"



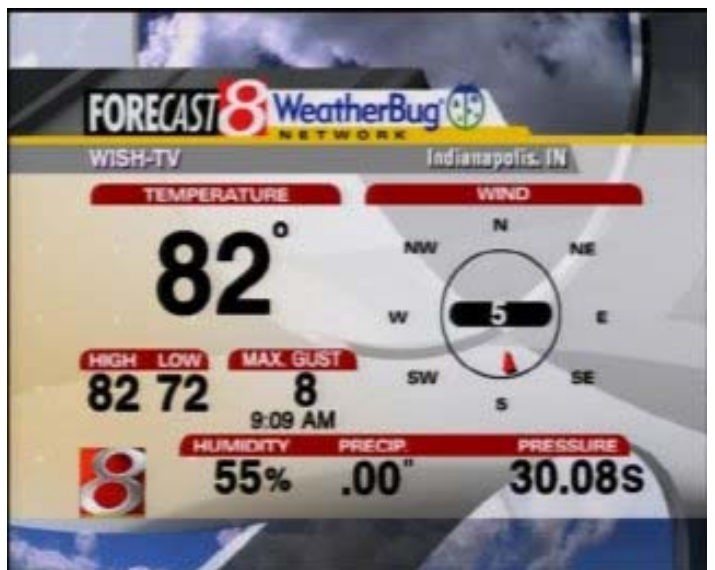
KOTA-3 Rapid City, SD  
861 mi Es seen 5/24/05  
@1932 ET



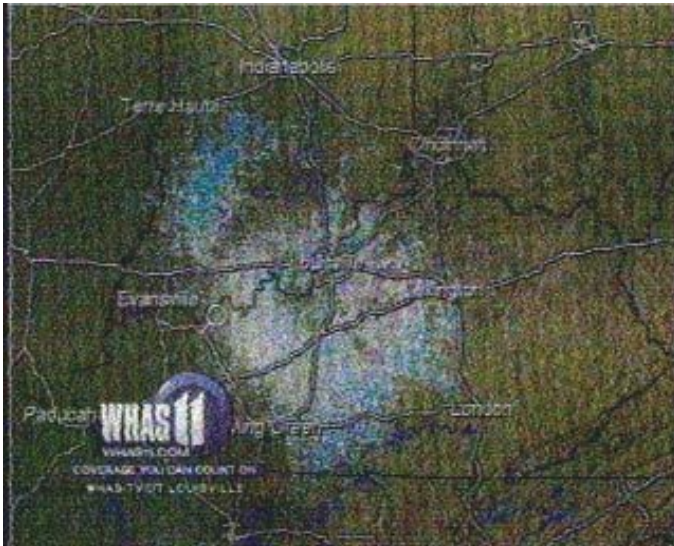
KAMR-4 Amarillo, TX  
992 mi Es seen 5/20/05  
@1759 ET



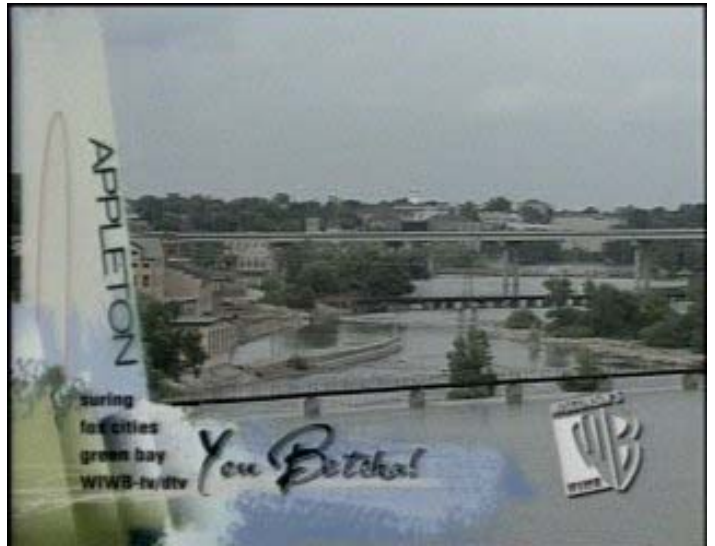
WCIV-4 Charleston, SC  
779 mi Es seen 6/5/05  
@1329 ET



WISH-DT-9 Indianapolis, IN  
215 mi Tr seen 6/27/05  
@1010 ET



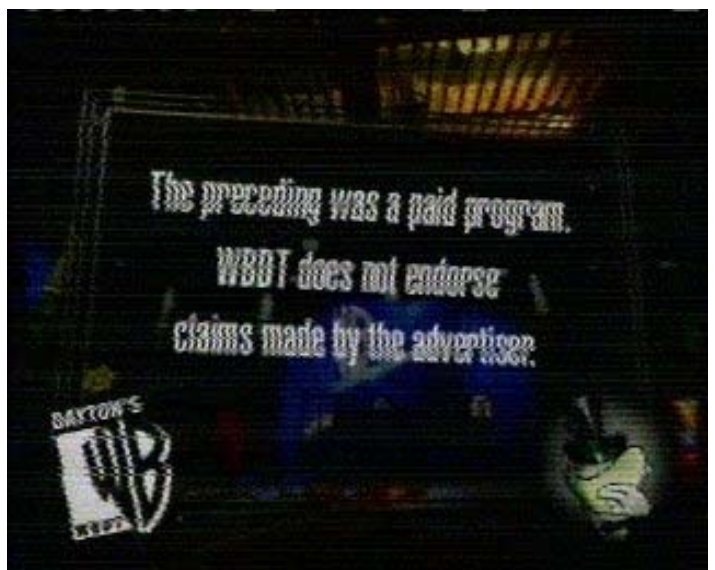
WHAS-11 Louisville, KY  
321 mi Tr seen 7/24/05  
@0428 ET



WIWB-14 Suring, WI  
160 mi Tr seen 9/19/05  
@0029 ET



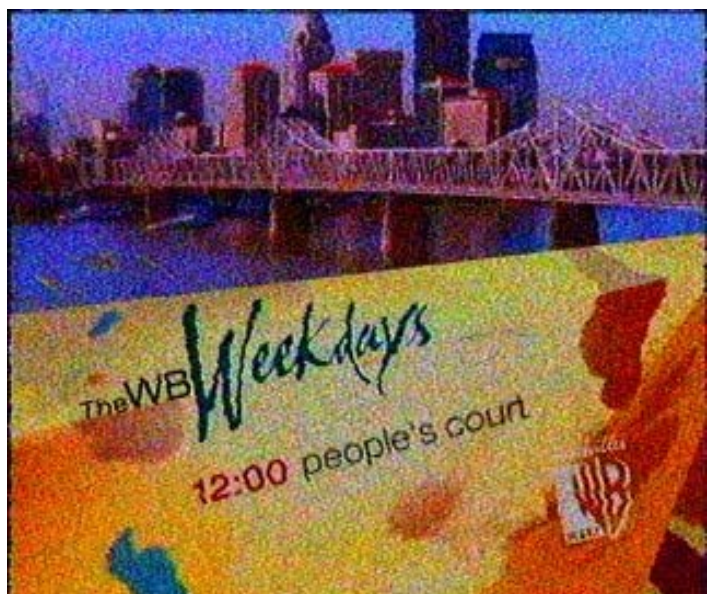
WEWS-DT-15 Cleveland, OH  
252 mi Tr seen 8/26/05  
@0359 ET



WBTV-26 Springfield, OH  
246 mi Tr seen 2/6/05  
@0458 ET



WHWC-DT-27 Menomonie, WI  
319 mi Tr seen 5/7/05  
@0803 ET



WBKI-34 Campbellsville, KY  
380 mi Tr seen 9/27/05  
@0358 ET

More from Joe next month. 73's, Jeff

# SOUTHERN FM DX



John Zondlo  
4009 Driftwood Circle  
Yukon, OK 73099  
jzondlo@cox.net  
Deadline: 15th

For DXers in AL, AZ, AR, CA, CO, DE, DC, FL, GA, HI, KS, KY, LA, MD, MS, MO, NV,  
NM, NC, OK, SC, TN, TX, UT, VA, WV, Cuba & Mexico

January 2006

**Fred Nordquist** - 147 Travis Hill Rd –  
Moncks Corner, SC 29461 -

[nordquis@homexpressway.net](mailto:nordquis@homexpressway.net).

Statistics Web Page:

[http://web.infoave.net/~fmjnordquist/  
statistics.html](http://web.infoave.net/~fmjnordquist/statistics.html)

Equipment: Denon TU-1500RD with 4 110khz IF  
Filter Mod & RDS Mgr, Ant: APS-13 at 25' AGL,  
CDR Rotor, CAC-11 coax lead-ins.

#### 10/10 Gw

0756 W237AS 95.3 SC Florence, "Rock 102.9,"  
multi-station ID 68

#### 10/13 Tr

1316 WNCW 88.7 NC Spindale, ID, membership  
drive 218

#### 10/15 Gw

2037 W206AR 89.1 SC Florence, //CSN webcast, rel  
64

2225 W204BQ 88.7 SC Andrews, Sonlife //WJFM,  
rel 64

2225 W242AO 96.3 SC Elloree, dual frequency ID  
w/105.5 WLRE-LP, k

2310 W242AH 96.3 SC Sumter, //BBN webcast, rel  
48

#### 10/15 Tr

1538 WJYF 95.3 GA Nashville, "Your positive hit  
music station," //webcast 236

#### 10/17 Gw

2026 W205BJ 88.9 SC Charleston, //CSN webcast,  
rel 29

#### 10/18 Tr

0620 WRCM 91.9 NC Wingate, "Charlotte's #1  
family friendly station," RDS PI  
81CC 133

0719 WPRW 107.7 GA Martinez, "Power 107," local  
ads, hiphop & R&B 138

0729 WBMZ 103.7 GA Metter, local ad, "The  
Boomer" 134

1600 WJCT 89.9 FL Jacksonville, NPR, ID,  
pledge campaign 224

#### 10/28 Tr

2120 WZBX 106.5 GA Sylvania, football, local ads  
102

2159 WRBX 104.1 GA Reidsville, Gospel mx, ID  
148

2255 WKXC 99.5 SC Aiken, SID, continuous k,  
local ad 117

#### 10/29 Gw

1002 W240AX 95.9 SC Columbia, ID, //WYFV, rel  
82

#### 10/30 Tr

2147 WOKA 106.7 GA Douglas, k, "You are in Dixie  
Country 106.7" 200

#### 10/31 Tr

0735 WYFG 91.1 SC Gaffney, BBN // webcast, rel  
167

0910 WTCQ 97.7 GA Vidalia, local ad, "98-Q" 160

1613 WZLA 92.9 SC Abbeville, ad, dual city ID  
151

#### 10/31 Gw

0800 WSIM 93.7 SC Bishopville, "Kool 93.7," ID,  
nx, ABC Good Time Rock & Roll  
82

1045 WAAW 94.7 SC Williston, Gospel music, ID,  
call in program, Bob & Sherry  
82

2250 WYNN 106.3 SC Florence, many local ads  
82

#### 11/1 Tr

1538 WMUU 94.5 SC Greenville, classical, rel, ID  
184

#### 11/2 Gw

1035 WHLZ 100.5 SC Marion, "Wheels 100.5," k  
84

#### 11/4 Tr

2200 WETS 89.5 TN Johnson City, bluegrass mx,  
PRI, ID, TN #1 254

2140 WQUT 101.5 TN Johnson City, ID, local ad  
254

#### 11/5 Gw

0815 WWNQ 94.3 SC Forest Acres, k, "Country  
Legends 94.3" 82

#### 11/9 Tr

0900 WPMX 102.9 GA Statesboro, ID, nx, local  
ads, wx 128

#### 12/2 Tr

1217 WMIT 106.9 NC Black Mountain, ID, holiday  
mx, "The new 106.9 WMIT"  
218

#### 12/4 Tr

2353 WKUB 105.1 GA Blackshear, RDS PI 7119,  
PS=WKUB, k 192

#### 12/5 Tr

0017 WGLF 104.1 FL Tallahassee, "Gulf 104 35  
year of rock" 305

#### 12/8 Ms

0100 WFFF 90.5 WI Sturgeon Bay, first Ms  
logged in SC, RDS PI  
7CCB 898

Totals now at 302

# 6 Meter/2 Meter Amateur DX



Peter Baskind, N4LI  
 3225 Forest Hill-Irene Rd  
 Germantown, TN 38138  
 N4LI@ARRL.net

6 meter and 2 meter conditions have been a good news/bad news sort of thing lately. The bad news, of course, is the quiet. There has been almost nothing unusual on the band lately via tropo or E<sub>s</sub>. The good news is that, most likely, by the time you are reading this, we should have enjoyed some nice mid-Winter E<sub>s</sub>, what some folks call "The Second Season."

Here in Memphis, November brought very little. I heard a few scattered sporadic-E signals, but nothing noteworthy. Hopefully, things will ramp up quickly. Quentin Davis in Indiana, WA9WME (who I worked in 2004 for the difficult short-haul grid of EM78), wrote a note with a couple of loggings. He reports a quick opening on December 4<sup>th</sup> with contacts to K0IKY/EM25 in Oklahoma and Bill, W5WVO in Albuquerque (Bill's a good guy; he and I often chat when the path from Memphis to New Mexico is strong).

Here's hoping 2006 brings you that needed grid, state, or station you have been looking for!

## Loggings

**Bill Smith, WA1NYV, 56 Locust Street, Douglas, MA 01516 FN42**

A few short openings [in November]. Probably missed a few as they didn't last long.

5 Nov. '05

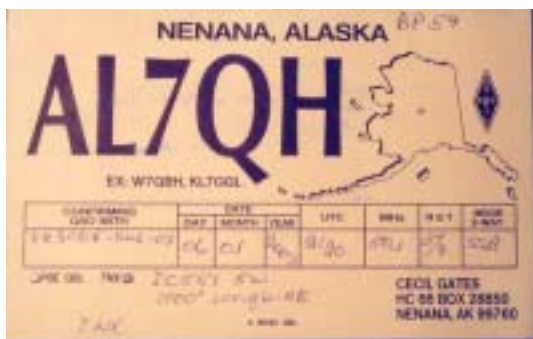
1505 W5HEZ	EM40	1522 KG4AQW	EM75
1509 KC5PIA	EM51	1536 N4JDB	EM64
1515 KE4IDW	EL96	1540 KE4WBO	EL96

6 Nov. '05

1440 KD4CMV	EL89	1450 KI4EDJ	EM90
mobile			

27 Nov. '05

0111 NV4I	EM92
0038 WB4GMB	EM91



Here is another card from the collection Morris Sorenson sent. This 2002 reception was a 6m station near Fairbanks, AK.

# STACKING WINEGARD OFF-AIR ANTENNAS

**For improved directivity, stacking antennas can significantly reduce or eliminate most types of off-air television interference.**

Multiple outdoor television antenna arrays, reminiscent of the *SOs*, are making a comeback in some areas. Proper stacking of the sophisticated off-air antennas of today significantly improve reception, boosting directivity and selectivity as well as gain. Stacking eliminates a lot of reception problems found with multiple high-rise buildings and heavy users of electrical power, both of which cause television interference (TVI) problems. Typical TVI problems (ghosts, electrical noise, interfering radio signals, picture breakup) can also be caused by ground reflections, moving reflectors such as trucks and airplanes, and ignition noise. Stacked antennas will overcome many of these reception problems.

Winegard Chromstar and Prostar off-air antennas are designed to provide high gain, sharp directivity and excellent front-to-back ratio on a single VHF TV channel. These Yagi-type antennas are adaptable for stacking – horizontally and vertically. This type of antenna, the most commonly used type for television reception, “sees” electromagnetic radio waves in a manner similar to the way we see. Our eyes see in the general direction we point our head. And the antenna “sees” in the general direction in which its boom is pointed. Viewed from the top, a Yagi-type antenna resembles an arrowhead, tapering from front to rear (figure 1).

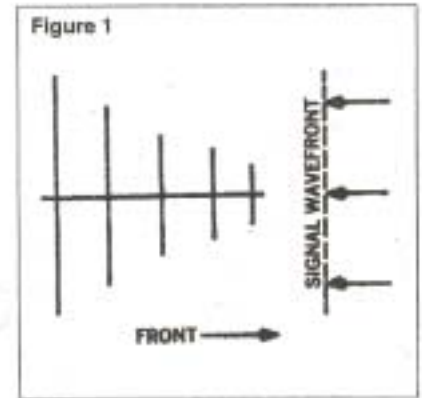


Figure 1: Top view of typical Yagi antenna.

This taper is more pronounced in broadband antennas than in single channel antennas. The arrowhead (narrow end) of the antenna should, generally, point in the direction of the signal transmitter. Ideally this should be a straight-line path, with the antenna “seeing” nothing above, below or on either side, but even the best antennas “see” undesirable signals from an angle off the axis of the antenna. These signals can cause ghosting and other interference patterns.

A Yagi-type antenna is designed with many parallel elements on a common axis, oriented toward the signal source. Length, spacing and phasing of each element in relation to others determines how voltages introduced in individual elements reinforce (add) at the antenna terminals. The elements are arranged and spaced so the signal wavefront reaches each element *sequentially* – and the voltage induced in each antenna element combines at the antenna terminals with voltages from the other elements to yield an optimized voltage which produces maximum gain over the desired bandwidth.

If the signal comes from a source *above* or *below* the horizontal plane of the antenna, *all* elements receive it at the same time instead of sequentially. Under these conditions, the combined voltage at the antenna terminals will be something less than the optimum for which the antenna was designed.

## Vertical Stacking

Vertical stacking improves both gain and vertical directivity. This helps reduce airplane flutter and attendant picture roll, plus certain types of ground noise and ground reflections

Stacking two identical antennas on a common vertical mast significantly (30%) narrows the *vertical* beam-width angle. Vertically stacked antennas reject the interfering signals *above* or *below* their horizontal plane more effectively than a single antenna. It’s as though they were looking through a mini-blind. Because there’s nothing mounted to the side of either antenna, their horizontal vision is virtually unaffected. In the process, gain increases about 2.5 dB over that of a single antenna.

The basic principle of stacked antennas involves the difference in the time of arrival, and therefore the phase, of signals intercepted by the antenna combination. If a pair of identical Chromstar antennas are mounted one above the other a wavelength apart on a common vertical mast and are both pointed toward the signal source, any TV signals traveling horizontally and arriving from any direction will be intercepted simultaneously by both antennas. And those signals received on axis from the direction in which the antenna is pointed (figure 2B, page 2) will be the strongest.

Because the antennas are identical, the generated signal voltages arriving at the output terminals shared by the antennas will be in phase, causing them to add directly. Theoretically, there should be a 3 dB increase (double) in signal power over that of a single antenna, but because of losses in the coupler and cable, the actual gain increase will be somewhat less than 3 dB.

An important point to remember is that regardless of the azimuth angle between the antenna orientation and the signal

source, the arriving signal will strike any given identical points on the two antennas simultaneously. If the signal is arriving from a source *above* or *below* the horizontal plane of the antenna, this is no longer true. For example, if the wavefront is from a source below the plane of the antenna (figure 2A), the signal will arrive first at the lower antenna and the signal voltage from the top antenna will lag the signal from the lower antenna. The signal voltages at the antenna output terminals will no longer be in phase, and partial cancellation will take place. The opposite is true if the signal arrives from above (figure 2C).

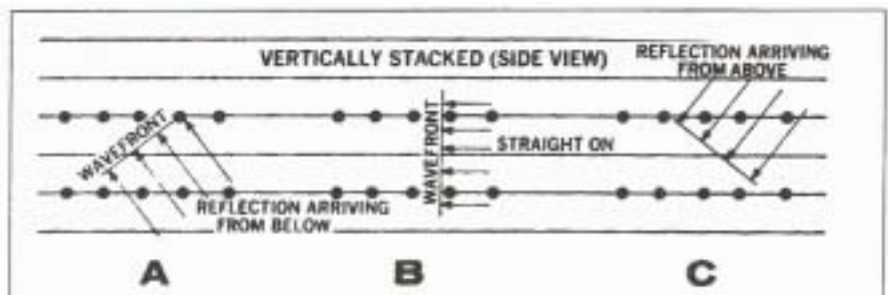


Figure 2: Side views of vertically stacked Yagi-type antennas showing relationship of antenna elements and arriving signals. (A) Signal reflected from below. (B) Signal received straight from source. (C) Signal reflected from above.

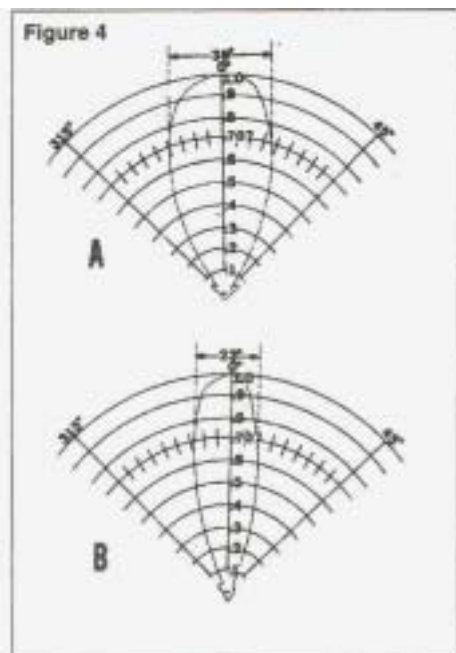


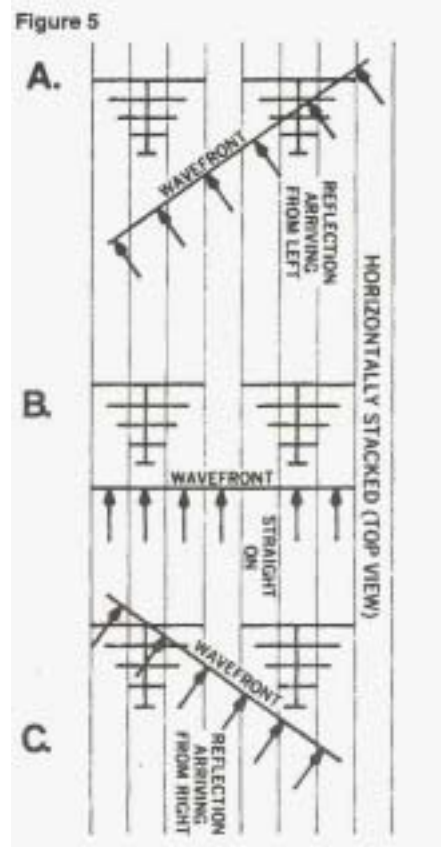
Figure 4: Polar patterns showing the effect of the horizontal stacked antennas in figure 3. (A) Pattern for a single CA-0000. (B) Narrower pattern produced by horizontally stacking two CA-0000 antennas one wavelength apart.

The angle of arrival and the resultant difference in arrival time causes a phase difference which reduces the magnitude of the combined voltages. You should begin to see now why two vertically stacked, identical antennas have a more restricted “vision” to signals arriving from a point above or below the horizontal plane than does a single antenna.

## Horizontal Stacking

Stacking two identical antennas side by side in a horizontal plane significantly narrows the *horizontal* beamwidth angle (figure 4). This antenna combination, like a horse wearing blinders, “sees” fewer interfering signals arriving from the sides while its vision vertically is virtually unaffected. In the process, gain increases approximately 2.5 dB over that of a single antenna.

If two identical antennas are arranged side by side in a horizontal plane and the signal wavefront arrives directly from the front (figure 5B), each antenna “sees” the same wave or field at the same time. If the wavefront arrives from a source above or below, the same is still true, except that the individual antennas are not operating as efficiently. However, if the wavefront arrives from one side or the other (figure



5A and C), the antenna on the side the signal is coming to will “feel” the signal *first*, causing the voltages induced in each antenna to be out of phase. This causes partial cancellation of the antenna voltages when they are combined.

The vertical “vision” of a horizontal stack is comparable to that of a single antenna, but its side-to-side “vision” is more restricted.

## Quad Stacks

Stacking four identical antennas, two vertically and two horizontally in a rectangular or diamond pattern, restricts the vision of this combination in all directions off the axis. Called a quad stack, it “sees” as though it were looking through a tube pointed in the direction of the transmitting antenna. Gain increases approximately 4 to 5 dB over that of a single antenna.

# Techniques for stacking antennas

Before putting up an antenna array, check these basic considerations that apply to dual and quad stacking.

1. Stack only identical antennas.
2. Maintain approximately one wavelength spacing (at lowest channel frequency) between antennas.
3. Cut phasing lines or connecting cables to *equal* lengths,  $\pm 1/8$ ”.
4. Length and phase of twinlead interconnecting harnesses is critical.
5. Horizontal supports should be nonmetallic.
6. Avoid running interconnecting cables horizontally.

Vertical stacking is easier than horizontal stacking simply because vertical stacks mount on the same mast and spacing is easily adjusted.

Horizontally stacked antennas also must be spaced so booms are separated by a distance equal to more than one-half wavelength of the lowest channel frequency. This spacing is needed to prevent the tips of the longest reflector elements from touching. Horizontal supports must be *nonmetallic* – cypress, redwood or treated wood 2” x 4”s are commonly used.

SPACING & CABLE LENGTHS		
Channel	Vertical Spacing	Coax Length
2	145”	85.0”
3	130”	76.5”
4	120”	69.5”
5	105”	60.5”
6	100”	56.0”
7	48”	52.0”
8	46”	51.0”
9	44.5”	49.5”
10	43.5”	48.0”
11	42.25”	46.5”
12	41”	45.0”
13	40”	43.5”

## Spacing

For optimum performance, stacked antennas must be properly spaced. If you do not space vertically and horizontally stacked antennas more than one-half wavelength apart, they will adversely “load” each other. Loading is caused by the elements of one antenna reradiating some of their received energy into the element of the other antenna, with consequent reinforcement and cancellation of fields and voltages. **Optimum** minimum spacing is 0.94 and 0.60 wavelength, respectively, at the lowest frequency received. Spacing exceeding one wavelength reduces the performance of the stack. (See Winegard’s Spacing & Cable Lengths Chart.)

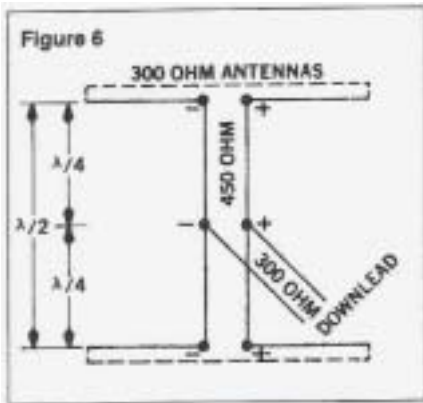


Figure 6: Harness arrangement for vertical stacking. Using a phasing harness to couple 300 ohm stacked antennas eliminates a coupler and avoids losses but can only be optimized for one channel. A harness is also susceptible to noise and is more time consuming to install. Phasing harnesses, made from balanced transmission line, must be precisely dimensioned, properly phased and carefully positioned to achieve satisfactory performance. Vertically stacked single channel 300 ohm antennas are connected in parallel using two quarter-wave lengths or 450 ohm transmission line. Phasing polarities must be strictly observed. In absence of polarity marking on antenna, consider corresponding right and left terminals on identical antennas as same polarity.

Antennas may be coupled by a phasing harness made from balanced transmission line (figures 6 and 7) or may be coupled with a hybrid antenna coupler (figures 8, 9, 10, p.4). Antenna couplers are simpler to hook up and are less critical and more durable than phasing harnesses. Harnesses must be cut to the precise length for a single channel frequency, kept straight and untwisted and, for horizontal stacking, must be installed and maintained at a 45 degree angle to the horizontal. The harness connections at the antenna and the combining point must be phased properly or the performance will be less than that from a single antenna. Along the length of any transmission line there will be voltage maximums and minimums. If the lines are to be interconnected, cut and connect them at points at which the voltages are maximum, or at odd multiples of a quarter wavelength. If the transmission lines are of different lengths, connect them at a point where their signals are in phase (multiples of a whole wavelength, longer or shorter) so the voltages will add.

Because wavelength changes with frequency, wiring harnesses are only practical for single-channel antennas. Multiple-band and wide-band antennas should always be connected with *broadband hybrid couplers*.

Antenna couplers simplify the interconnection of stacked antennas with 75 ohm coaxial cable, as shown in figure 10. Because of cable loss, cables should be kept as short as possible and of equal lengths. They can be taped to the metal boom or mast. But because cable is a metallic conductor, horizontal lengths parallel to antenna elements should be avoided; the cable shield might act as an antenna element, reradiating energy into the antenna and causing cancellation and ghosts.

Winegard offers two different series for stacking applications: the SD signal doubler and the CC multi-set couplers. CC multi-set couplers, although designed and sold principally for coupling two TV sets to a single antenna download, also function well as antenna couplers.

In figure 8, SD signal doublers combine signals from any two identical 300 ohm antennas and provide either a balanced 300 ohm output (SD-3300) or a coaxial 75 ohm output (SD-3700).

Because SDs have only 300 ohm inputs, they are not recommended as highly for horizontal stacking as the CC-7870 which have 75 ohm inputs.

When connecting stacked antennas, correct phasing must be achieved or a null signal (no picture) will be produced at the coupler. If a null is observed, put a half twist in one of the 300 ohm lines to reverse the phase at the coupler terminals.

The CC-7870 channel multi-set coupler (figures 9 and 10) is preferred over SDs for coupling identical, stacked antennas. When used as an antenna coupler, the individual antennas are coupled into the "TV set" (output) terminals of the CC and the output is taken from the "antenna download" (input) terminal. The device simply separates or combines

In a horizontal stack with elements tip-to-tip and the longest element, the minimum practical spacing will be some distance over .6 wavelength, to prevent the longest element of one antenna from touching the tip of the corresponding element of the other antenna. Recommended spacing is 0.94 wavelength between booms at the lowest channel involved.

Because of restrictions on space (usually height), there will be times when it is not practical to space antennas a full wavelength apart. But it should never be less than .6 wavelength. At less than .6 wavelength, performance deteriorates and advantages of stacked antennas are lost.

All parts of the antenna supporting structure should be made of wood or plastic. Horizontal metallic supporters act like antenna elements, and can cause unusual voltage/frequency effects from the antenna array. If using wooden supports subject to weather, use redwood or treated wood.

### Interconnections

Connecting the antennas properly is as important as spacing and orienting them. Getting the individual voltages from each antenna to the point where they are combined without: 1) Combining out of phase, 2) Adding extraneous signals and noise through improper positioning, dimensioning and coupling of antennas, harness and/or connecting cables.

Antennas may be coupled by a phasing harness made from balanced transmission line (figures 6 and 7) or may be coupled with a hybrid antenna coupler (figures 8, 9, 10, p.4). Antenna couplers are simpler to hook up and are less critical and more durable than phasing harnesses.

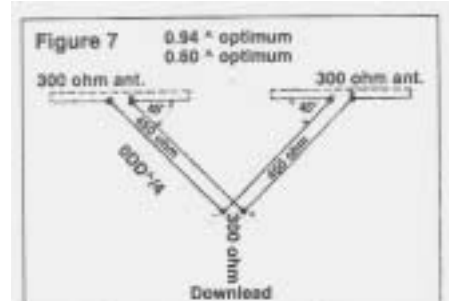
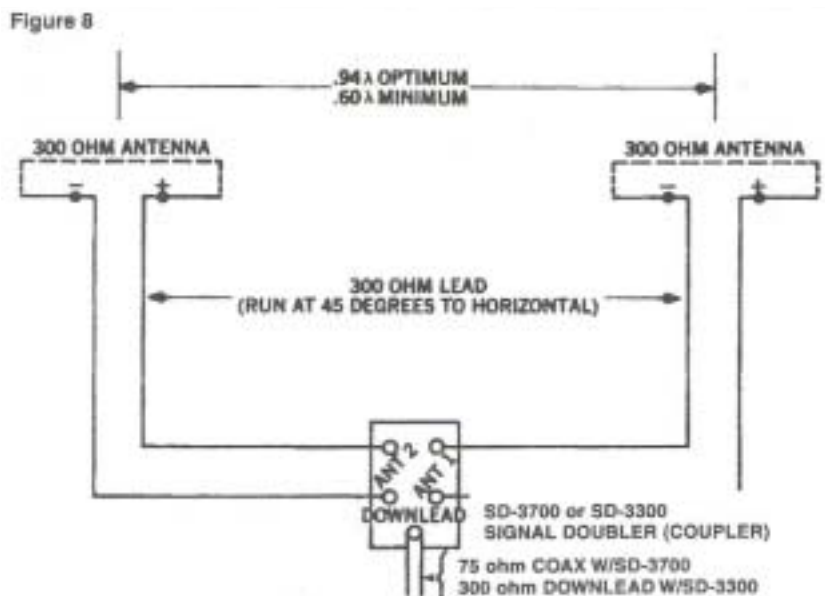


Figure 7: Harness arrangement for horizontal stacking. Two horizontally stacked, 300 ohm single-channel antennas require two equal lengths of 450 ohm balanced transmission line cut to an odd multiple of a quarter wavelength at the center frequency of the channel to be received and positioned at 45° to the horizontal. Phasing polarity must be strictly observed. To connect a phasing harness, a quad stack (2 x 2) is seen as two separate vertical stacks, each preconnected and arranged in a horizontal stacked pattern. Connect the output of each vertical stack as you would each output of identical antennas in a horizontal stacked arrangement.



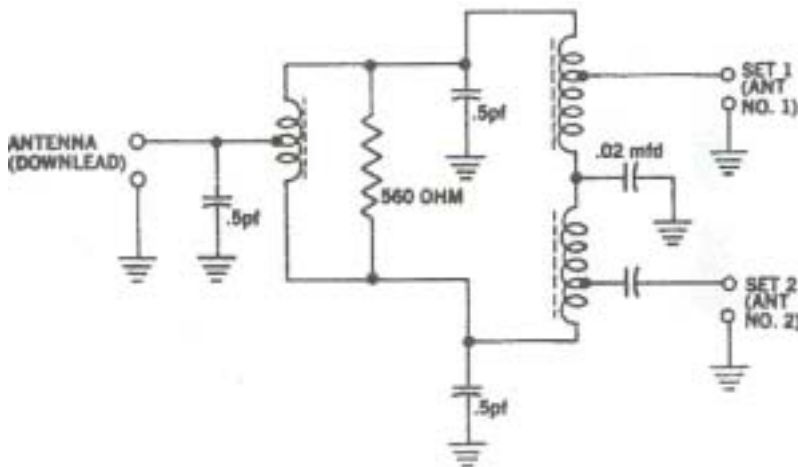
signals. It doesn't know its input from its output and is only concerned with the *impedance* of the devices connected to its terminals.

Because 75 ohm coax cable is recommended for interconnecting stacked antennas and for download, coupler choices are CC-7870 two set coupler (for dual stacks) and a 75 ohm four-splitter in a weatherproof housing (for quad stacks).

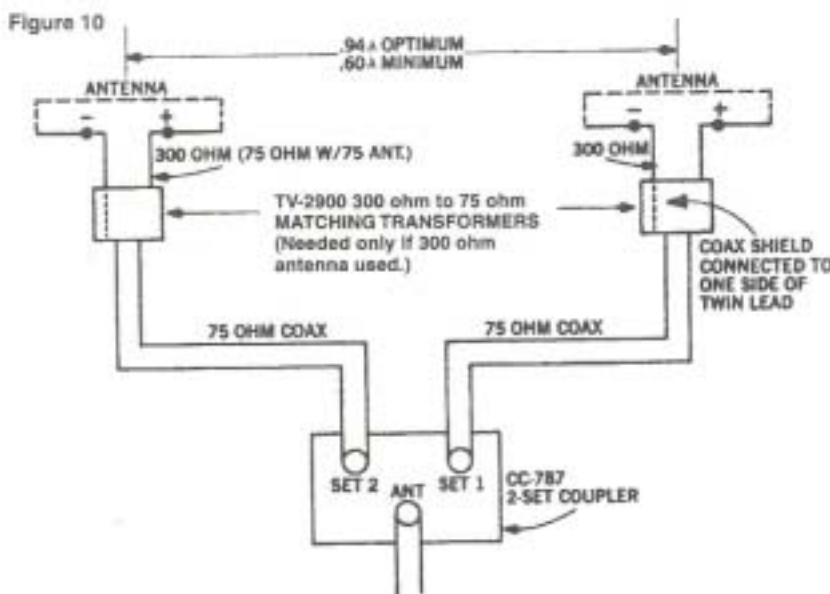
Cautions to be observed when coupling stacked antennas include cutting the coaxial interconnecting cables into equal lengths, observing the correct phase, and installing cables away from antenna elements.

If 300 ohm antennas are used, impedance matching transformers such as TV-2900 (figure 10) are recommended to adapt the antenna output to the 75 ohm coax cable.

When using this or some other matching transformer, you must have correct *phasing* on the 300 ohm side. You can easily measure for continuity between the threaded (shield) portion of the coaxial connector and one conductor on the 300 ohm side. The conductor that is determined should always be connected to a corresponding right or left screw terminal on each of the identical antennas for in-phase connections, or reversed for out-of-phase connections.



**Figure 9: Photo and schematic diagram of Winegard CC-7870.** This two-set coupler is designed for connecting two televisions to single download. It can also be used to combine the outputs of two stacked antennas.



**Figure 10: Method of using CC-7870 two-set coupler to combine the outputs of two horizontally stacked antennas.** Coupling stacked antennas with a hybrid coupler and 75 ohm coax cable simplifies installation. Coaxial cable routed along the boom and metal supports causes no adverse effects. Phasing doesn't need to be considered except to make sure the coax shield is directly connected through the matching transformer to the corresponding antenna terminals. A simple ohm meter check on the matching transformer will show which side of the 300 ohm output lead is directly connected to the coax shield. Connecting antennas to a coupler using 300 ohm transmission line – an alternate method – does require careful attention to phasing.

## Preamplifiers...

MODEL	INPUT			OUTPUT	AVERAGE GAIN		AVERAGE NOISE FIG.		MAXIMUM TOTAL INPUT* (MICROVOLTS)	
	VHF	UHF	82 CH.		VHF	UHF	VHF	UHF	VHF	UHF
AP-2870	75	75		75	17 dB	19 dB	2.9 dB	2.9 dB	110,000 μV	93,000 μV
AP-2880	75	75		75	29 dB	19 dB	2.9 dB	2.9 dB	29,000 μV	93,000 μV
AP-3700	75 or		75	75	17 dB	By-Passed	2.6 dB	N/A	110,000 μV	N/A
AP-3800	75 or		75	75	29 dB	By-Passed	2.9 dB	N/A	29,000 μV	N/A
AP-4700		75 or	75	75	By-Passed	19dB	NA	2.9dB	NA	93,000 μV
AP-4800		75 or	75	75	By-Passed	28 dB	N/A	2.7 dB	N/A	30,000μV
AP-8275			75	75	29 dB	28 dB	2.9 dB	2.8 dB	29,000 μV	30,000 μV
AP-8283			300	75	29 dB	28 dB	2.9 dB	2.8 dB	29,000 μV	30,000 μV
AP-8700			75	75	17 dB	19 dB	2.8 dB	2.8 dB	110,000 μV	93,000 μV
AP-8703			300	75	17 dB	19 dB	3.9 dB	3.9 dB	110,000 μV	93,000 μV
AP-8733	300	300		75	17 dB	19 dB	3.9 dB	3.9 dB	110,000 μV	93,000 μV
AP-8780			75	75	17 dB	28 dB	2.9 dB	2.7 dB	110,000 μV	30,000 μV
AP-8783			300	75	17 dB	28 dB	3.9 dB	3.9 dB	110,000 μV	30,000 μV
AP-8800			75	75	29 dB	19 dB	2.7 dB	2.8 dB	29,000 μV	93,000 μV
AP-8803			300	75	29 dB	19 dB	3.9 dB	3.9 dB	29,000 μV	93,000 μV
AP-8833	300	300		75	29 dB	19 dB	3.9 dB	3.9 dB	29,000 μV	93,000 μV

Output capability is stated for 7 VHF and 5 UHF channels at -46 dB cross modulation.



## VERTICAL STACKING WINEGARD CHROMSTAR FM ANTENNAS

Stacking two CA-6065 FM antennas is an excellent way to increase gain, improve directivity and increase capture area.

When **gain** is an important factor, stacking FM antennas can provide enough boost in signal to establish a much better signal-to-noise ratio in the first amplifier.

Good **directivity** in an FM antenna can eliminate many reception problems such as airplane flutter, reflected signals and noise pickup from ground level sources. Vertically stacking two FM antennas can also narrow vertical beam width directivity up to 30%.

By increasing capture area of the CA-6065, fading problems of very weak signals can be eliminated. There can be up to 40% improvement (3 dB extra gain) when using more than one antenna.

For vertically stacking two Chromstar FM antennas on a tower, the following procedure allows the array to be assembled in steps as the mast is raised up out of the tower top.

### Equipment required:

1. Two Chromstar FM antennas.
2. One CC-7870 coupler.
3. Two (2) pieces coax, 52" long.
4. Mast 10' long.
5. Mount
6. Coax downlead.

### Assembly instructions:

1. Unfold both antennas.
2. Install terminal board/housing.
3. Insert coax up through boot and install F-connector on coax, then attach coax to cartridge housing. Slide boot onto boot collar.
4. Mount upper antenna on mast.
5. Mount CC-7870 coupler approximately 36" below upper antenna.
6. Connect coax cable from upper antenna to "set 1" jack of coupler and tape cable to mast.
7. Connect coax cable from housing bottom for lower antenna to "set 2" jack on coupler and tape to the mast.

**NOTE 1:** If preamplifier is not required, the downlead should be connected to the "antenna" jack on coupler at this point.

**NOTE 2:** If a preamp is required, a third length of coax cable must be attached to "antenna" jack on coupler and taped to mast at lower antenna.

8. Mount lower antenna on mast approximately 72" below upper antenna.
9. Secure coax to mast.

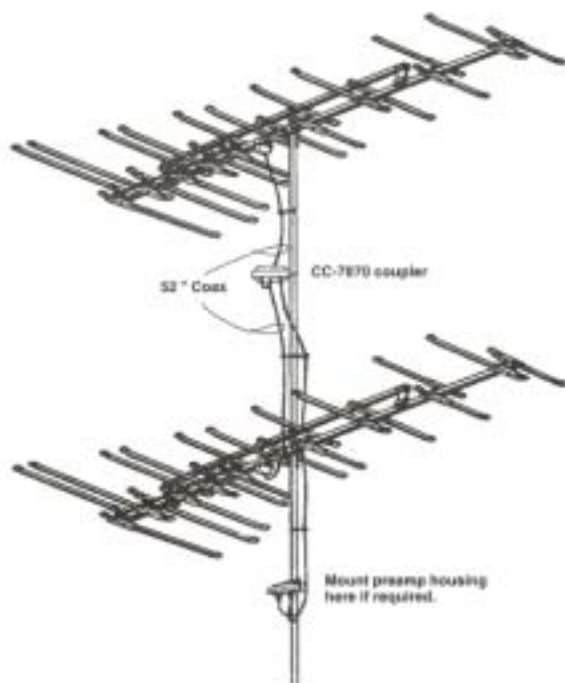
This completes assembly if preamplifier is not used. **Go to step 10 if preamp is used.**

10. Mount preamplifier housing below bottom antenna.
11. Slide boot over loose end of coax cable and install connector. Attach to "antenna" jack of coupler.
12. Attach other end of coax to "input" on preamplifier.
13. Run coax downlead to "input" on power supply.
14. Hook up jumper to jack marked "To TV" and plug into power source.

### Selecting preamplifier..

In metropolitan areas or where strong local TV signal is present, use **AP-3700** (FM trap out-position).

For medium to weak reception areas, or where no strong TV or FM stations are present (FM trap out position), **AP-3800**.





And now...more of

# The Mailbox

## CHRISTMAS E SKIP!

E skip has two seasons. The season we all know is the major season which begins around May and ends around the end of August.

The other skip season, which we either neglect, ignore or just plain forget about, is that one which occurs in late November, December and possibly into January. Sometimes winter Es never shows up; sometimes all we get is one or two weak openings but sometimes it shines!

This is being written on Christmas Day 2005, and on this day much of North America is experiencing winter Es to some extent, even into FM in some locations.

One picture that just appeared on the WTFDA list today is a screen capture of WTWC-HD-2 in Tallahassee, viewed by Greg Barker in Greensburg, IN.

Congrats on a nice catch, Greg. And remember, Es doesn't stop just because it's winter.



From **Bob Cooper**: Setting aside the apparent decision to turn off USA analog(ue) in 2009, it might provide some relief to know the balance of the world is in no better shape regarding digital transition. Only the UK appears to have a precarious handle on it (2012) and their justification is the rapid take-up of what is called "FreeView" - 30 + channels of digital TV, FTA (free to air). Australia's conversion has been - is - a disaster - under 6% after four years. Sweden and Denmark claim to be doing better but they are handing out STBs willie-nillie. New Zealand continues to debate the merits of transferring everything to satellite digital rather than rebuilding several thousand (!) terrestrial analog transmitters for digital (for a country of 4 million, we have the most TV transmitters per capita in the world - because of the very rugged terrain and the frequent use of 10-100 watt translators each of which requires its own AC powered mountain top/side site). Japan, India, China - everyone is in a state of indecision. Scott is dead right - the government logic in each case is by abandoning present analog space, and selling it on the open market, all will be well at the end. What I fear is that with compression

algorithms improving each month or two, that bandwidth as we know it will disappear as a commodity long before such sales are actually held. Certainly here in NZ spectrum planners retain an analog mindset about bandwidth during a period in history when data crunching into more and more efficient "packets" is improving at a logarithmic rate. An example: Our local ambulance, police and fire services have for decades all operated individual VHF-FM (160 MHz region) FM systems for two-way and for this volunteer supported area (fire, ambulance) sending alerts to supporters. Now they are combining their need into a single 160 MHz transmitter (which coincidentally is to be side mounted on our FM transmitter tower in my side yard) using digital packets. They calculate under 2% total time use meaning the same RF system will support dozens of similar transmitter-share users without priority problems since a typical fire or ambulance (10-20 word text) call alert for example takes 0.4 seconds to go to all pagers connected to their system. This is where we are all headed - data packets shared between divergent users freeing up significant chunks of spectrum worldwide.

## SIGN UP/Renewal form

Name \_\_\_\_\_

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Sign me up/renew me for: 1 year ( ) 2 years ( ) More ( )

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**Mail your dues to: WTFDA, P.O. Box 501, Somersville, CT USA 06072**

**Make your checks/money orders payable to: WTFDA**

**And *thanks* for your support of the WTFDA!**

Return this form with your dues or make a copy of it and return that.

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