

THE WORLDWIDE TV-FM DX ASSOCIATION IS DEDICATED TO THE OBSERVATION AND STUDY OF LONG DISTANCE VHF AND UHF PROPAGATION AS IT APPLIES TO SIGNALS FROM 30MHZ THROUGH 600MHZ WITH EMPHASIS ON BROADCAST TELEVISION AND FM RADIO. The WTFDA Board of Directors are: Keith McGinnis (longwave@comcast.net), James Thomas (jethomas1955@gmail.com), Nick Langan (nickl@wtfda.org), Mike bugaj (mike@wtfda.org) and Jon Klingerman (jon@wtfda.org).



APRIL 2024

Welcome back! It's April, and for most of us, this is the month when our favorite flea markets open back up for the year and offer us some antique and unique FM DX equipment at prices even my cat could afford. You just never know what you'll find; from pre-amps to amplifiers to tuners and receivers. It's all out there. If you have one locally, drive over and take a look. The photo above was taken last summer at the huge Brimfield shows in Brimfield, MA.

This month we welcome John Hourigan back to the fold. John reports in from his new address in Parker, Colorado. Welcome back, John. It's nice to see you on the logger.

Last month I wrote this: We call your attention to WTFDA member Ivan Cholokov, no2cw, near Miami. Ivan has taken his TEF6686 radio (the silver one) and converted it to remote web use by creating a webserver on his

computer. You can access his server and tune his TEF6686 radio up and down the dial, I used it recently to do a complete bandscan and update to the FM Database without ever leaving home. Go to <http://57.135.105.35:8080/> and click 'play' and tune around the South Florida radio dial. I predict you see more of these pop us in the near future, like soon.

Radios with TEF6686 chips are cool radios indeed. One thing you can do with the radio is to 'flash' or upgrade the firmware of the radio allowing you to have new features available that you didn't have before. You can do this because you can connect your radio to a computer. If you have a TEF radio and the firmware isn't v2.0 or greater, try flashing it. Most radios you buy online are still using v1.8 or thereabouts. There are YouTube videos that show you how to do this in Windows.

Now a super bright 29 year old developer from the Czech Republic has gone a step or two further. He has developed software that, when installed on a computer, turns the computer into a webserver. With a computer being used as a webserver, two things are possible. Using the webserver makes it possible for you to listen to and tune your TEF radio using any other computer or device connected to your local network. For example, my TEF radio downstairs is connected to an old Dell i5 computer with the webserver software installed. On an upstairs computer I can type the IP address of the downstairs computer plus add :8080 (192.168.18.xx:8080) in the address bar and connect to the radio from my i7.

The next thing that's possible once you have the webserver running on a computer is sending your radio out into the internet where anybody, anywhere can control your radio. But before you even attempt to do this, read this about something called CGNAT. If your ISP has CGNAT, the process just became much more complicated. Read about CGNAT on the last page of this issue.

Here's how to test for CGNAT. Log into your router settings. See what ipv4 IP address is used for your WAN settings. Then compare it with the IP address of your webserver's computer. If they match, then breathe a sigh of relief because you don't have CGNAT. If they don't, your ISP is using CGNAT, and port forwarding, which is an important part of the setup, will NOT work. If your ISP uses CGNAT, then you have a couple of options: you can call your ISP to see if they offer static public IP addresses and switch to a static address instead of the dynamic IP they gave you, or you can try to figure out and use port tunneling. This is the point where, in my opinion, you need to know what you're doing and this is where I'm hitting a wall because I would like to have the server online 24/7 and the free options I see so far only offer limited bandwidth, and those who offer more don't do it for free (around \$15/month).



Here is what the interface looks like that lets you control your radio. You can tune up or down with the < and > keys. You can use your mouse wheel in the frequency box or you can type in the frequency in the box between the < and >. The rounded square on the left is your on/off switch.

There is a list of worldwide TEF webserver at <https://servers.fmdx.org>. Pick some and listen. Notice there is one in Chile and another in Melbourne, Australia, plus NO2CW's in Miami, **and now, [Nick Langan's new webserver in New Jersey is online](#)**. Some are not 24/7, so may not be running when you are checking. Come back and check at another time.

One thing that's really cool is listening to your TEF radio over your phone while 30 miles from home or watching someone from Australia accessing your radio and tuning around the dial.

PIRATES! Sent to me by Bob Seaman:

[Here is an article](#) that was forwarded to me about a pirate that had been operating in Hazleton, PA from July 2020 until June 2023. The new regulations that allow the FCC to issue larger fines finally got this pirate off the air. The reason the fine was issued is that the FCC agents came to town in April or May 2023 and they attempted to get them off the air. They emailed me to see if the 90.1 transmitter was still broadcasting. When I told them that they had never stopped broadcasting since they had been here, the FCC agent was quite annoyed. They had to come back to get them off the air. If the 90.1 pirate had gone off the air, they wouldn't have been fined. This pirate was back on the air on weekends recently. They would come on around 4 PM on Friday and stay on until early Monday morning. Once the notice of the fine was issued, they are off the air. I have another article to send to you later today. I have pictures of the 90.1 pirate transmitting antenna at two locations, but they are on my cell phone.

The statement that this local pirate was interfering with WKCR 90.1 in Brooklyn, NY is not correct. My house is about 1.5 miles to the east of the pirate transmitter and it was difficult to get their signal there due to the WVIA-HD signal on 89.9 whose transmitter is about 17 miles to the north. There must have been another pirate in the NYC area that was causing that interference.

Here's one more: Station fined \$40,000 in Hazleton, PA. [This FCC document](#) was sent to the owner of the Hazleton National bank building located downtown. The antenna for the unlicensed 95.3 transmitter was on an anted space on the roof of the HNB building. There is more information below, but the same programming was

on a legal 95.3 translator located at Mountaintop, PA, about 17 miles north of Hazleton. You could get that signal on the north side of the hill in Hazleton. They apparently thought that no one would notice an additional transmitter on 95.3 here. They also had a legal 94.9 translator in Scranton. The translators were allowed to carry the Spanish language programming because they had their programming on WGGY-HD3 101.3 in Scranton. They called it "Mega 95". The unlicensed 95.3 transmitter was on the air from Oct. 2022 until early May 2023.

And with that we wrap up this edition of the online VUD. Hope you have/or had a pleasant Easter. – Mike

FORMAT FLIPS DURING MARCH 2024

From radioinsight.com

Cumulus Media has flipped Classic Country "**106.1 Nash Icon**" WRKN Picayune MS/New Orleans back to Sports "[106.1 The Ticket](#)". (3/1)



Following [last week's move](#) of Adult R&B "[Lawton's Heart & Soul](#)" to 1380 KKRX/96.7 K244DW Lawton, Mollman Media launched Alternative "[X93.7](#)" on 1050 KXCA/93.7 K229DG Lawton at noon today. (3/1)

Audacy relaunched Hot AC "**105.1 The Buzz**" KRSK Molalla/Portland OR as "[Bella 105](#)" at 12pm today. (3/1)

KGAY PSP LGBTQ+ Dance "[KGAY 106.5](#)" 1270 KGAY/106.5 K293CL Thousand Palms/Palm Springs has expanded its coverage in the Coachella Valley as it is now simulcasting on 92.1 KKCM Thermal/Indio. (3/4)

In addition to its move to 103.1 WFYY Windermere/Orlando this morning, JVC Broadcasting has made additional changes at its Conservative Talk "[Florida Man Radio](#)" network this morning. The brand has also launched in Ocala on 101.1 W266DY/102.3 WXUS-HD3 Dunnellon and continues to air on 103.1 WZLB Valparaiso/Fort Walton Beach (3/4)

Following the [closing of its sale](#) to Mark Bohach's WLGN Radio Company, Variety Hits "**98.3 Sam-FM**" WKNA Logan OH has relaunched as Classic Hits "[98.3 WLGN](#)". (3/6)

Adams Radio Group relaunched Oldies "**104.5 Kool-FM**" 570 KWML/104.5 K283CG Las Cruces NM as Rhythmic AC "[Kool 104.5](#)"

After the [termination of its LMA](#) of 1580 WWCD/92.9 W225BS Columbus and 1550 WQCD/92.9 W225CM Delaware OH to Randy Malloy's WWCD Ltd. to operate "[CD 92.9](#)" on February 1, ICS Communications and Delmar Media [relaunched the stations](#) as "[93X](#)" WXGT with their own Alternative format.



MARC Radio relaunched "**Classic Hits 100.9**" WXJZ Gainesville FL as "[100.9 The Beach](#)" on Tuesday. (3/13)

As first reported in our [3/18 Domain Insight report](#), Connoisseur Media flipped Classic Hits "[103.1 Max-FM](#)" WBZO Bay Shore NY to Country "[103.1 The Wolf](#)" at 10:31am this morning. (3/20)



Davis Media's 107.9 WBQK West Point/Williamsburg VA has dropped its simulcast of AAA "[92.3 The Tide](#)" WTYD Deltaville and has flipped to Country "[Cannon Country 107.9](#)". (3/24)

iHeartMedia has relaunched Classic Hits 103.7 WQOL Vero Beach FL as "[Coast 103.7](#)". (3/25)

Radio Training Network has closed on its \$900,000 purchase of Brewer Media's Sports "**ESPN Chattanooga**" 95.3 WALV-FM Ooltewah/Chattanooga TN and Classic Hits "**Big 106.9**" W295BI Chattanooga leading to three format changes in the market this morning.

WALV-FM has flipped to RTN's Christian AC "[The Joy FM](#)" network as the organization begins operating in its sixth state and bringing "**The Joy FM**" [to its fourth](#). W295BI/WALV-HD2 joined the Worship "[Joy Worship](#)" network. Another translator was also affected by the sale as Radio By Grace's 92.7 W224AZ/WALV-HD4 dropped Spanish "**Tu Radio 92.7**" and flipped to RTN's Christian CHR "[LF Radio](#)". (3/25)

Lotus Communications flipped Variety Hits "**100.1 The Hits**" KWEE Dayton/Reno NV to Classic Country "[100.1 Hank-FM](#)" KXZZ on Monday at 5pm. (3/26)

Townsquare Media has launched Hot AC "Zoey 103.9" WPBZ-FM Rensselaer/Albany NY. (3/28)

TV DX and Photos

Eric Bueneman N0UIH 631 Coachway Ln, Hazelwood, MO 63042-1347
Email: n0uiheric@gmail.com - Deadline the 10th of the month

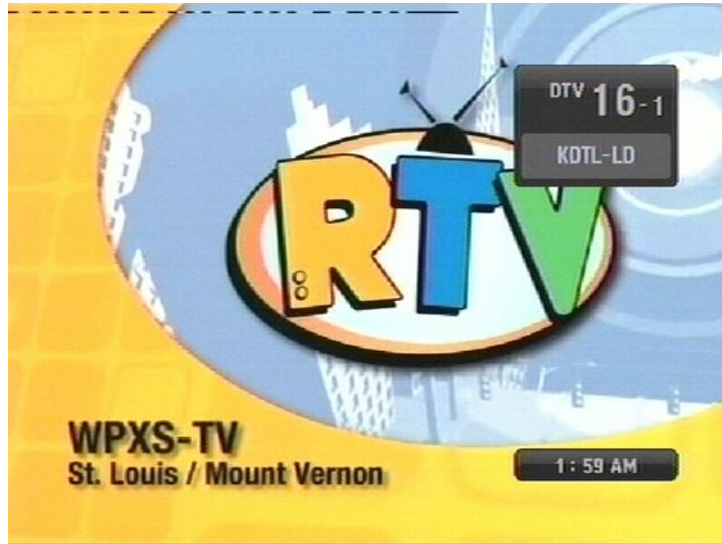


The TV DX season is around the corner and it's time to get your antennas, tuners and receivers ready for another season. I look forward to your logs this season; I encourage you to report your DX to this column in addition to the Logger. I, for one, prefer to put my logs in the pages of the VUD rather than use the Logger on the Web site. This column will feature the most common forms of propagation.

First off, the mode of propagation that you pull in your locals (full or low power) is ground wave (GW) propagation. Two examples of reception via ground wave propagation are pictured here. Both of these are 15 miles (24 km) 1,070ft from my shack in Hazelwood.

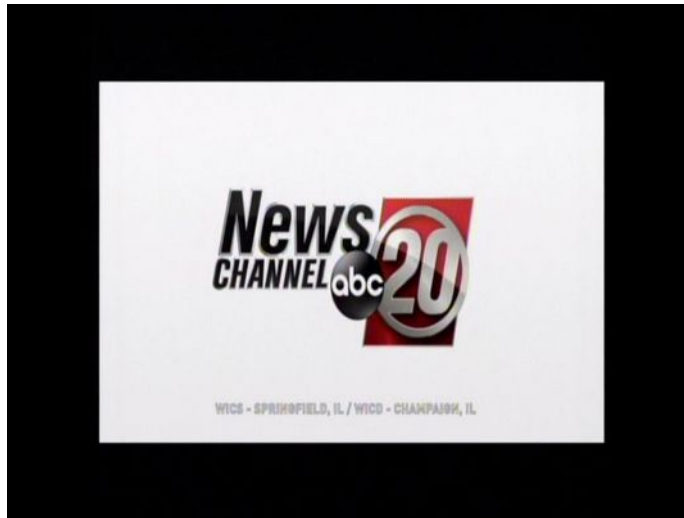


W36EX 36 (36) Alton, IL (seen July 10, 2021)

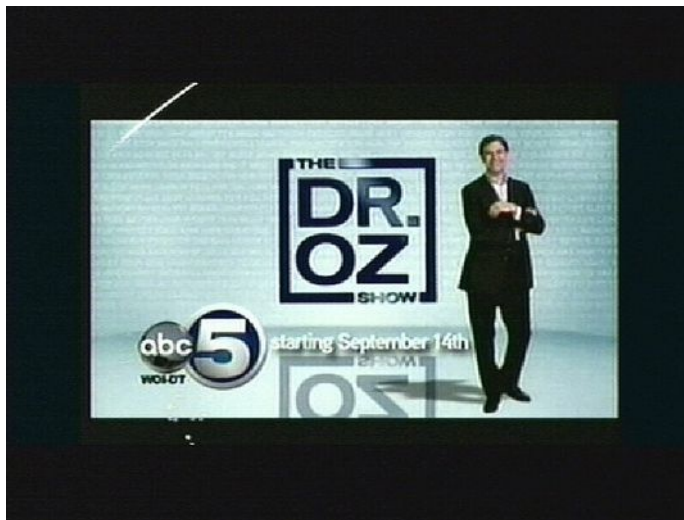


KDTL-LD 16 (16) Saint Louis, MO (seen December 15, 2011)
Now on channel 17 (4.6)

The most common form of propagation on TV occurs most often on high band VHF and UHF; it also occurs on low band VHF. This is tropospheric enhancement (Tr). This type of propagation depends on topography. In an area of relatively flat terrain, like the Saint Louis area, I've received stations up to 665 miles (1,070 km) away via this mode of propagation in the analog era (Buffalo, NY, WNED 17 in 1995 and WUTV 29 in 1999); my personal best on digital has been 470 miles (WJHL 58, virtual 11 in 2006). If you are near, say, the Gulf of Mexico or the Atlantic coast, don't be surprised to pull in stations over 1,000 miles (1,609 km) from your location. This mode of propagation can pull in stations as close as 70 miles (113 km) away. Here are several examples from the analog and digital eras.



An example of short distance tropo: WICS 15 (20) Springfield, IL
80 miles (128 km), as seen on July 3, 2020



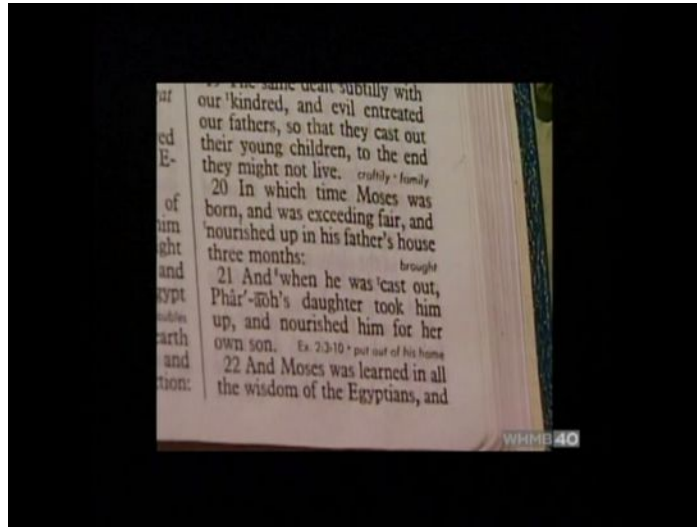
An example of tropo on low-band VHF: WOI 5 (5) Ames, IA
275 miles (441 km), as seen on August 24, 2009



Tropo on high band VHF in the analog era: KOAM 7 Pittsburg, KS
260 miles (418 km), as seen on July 19, 2003



Tropo on UHF in the analog era: KWCV 33 Wichita, KS (now KSCW)
400 miles (660 km), as seen on July 19, 2003



Tropo on high band VHF in the digital era: WHMB 7 (40) Indianapolis, IN
240 miles (386 km), as seen on September 16, 2020



Tropo on UHF in the digital era: WAWV 18 (38) Terre Haute, IN
170 mile (274 km), as seen on July 12, 2023

The next form of propagation commonly reported is E-layer skip (Es). This is most common on low band VHF and has been less common in the digital era than in the analog era, with most digital TV in the United States on high band VHF and UHF. Signals that propagate via the E-layer in the ionosphere can be received several hundred miles away, depending on the direction of the opening. A single hop can go as much as 1,500 miles (2,414 km).



US analog station via E-skip: WCAX 3 Burlington, VT
970 miles (1,561 km), as seen on August 4, 2004



Mexican analog station via E-skip: XHWX 4 Monterrey, NL
1,075 miles (1,730 km), as seen June 16, 2014



My first digital reception via E-skip: WRGB 6 (6) Schenectady, NY
900 miles (1,448 km), as seen on July 29, 2009



Another example of digital TV via E-skip: WACP 4 (4) Atlantic City, NJ
855 miles (1,376 km), as seen on June 18, 2015

Some stations are only strong enough to be identified by the PSIP information displayed on the screen or in the manual tuning function on your DTV tuner. Here are a pair of examples.



PSIP info via E-skip from KYUS 3 (3) Miles City, MT
945 miles (1,521 km), as received on May 25, 2014



PSIP info via tropo: W40CV 40 (17) Jacksonville, IL
Relay of WAND 17 (17) Decatur, IL (now on RF 20)
70 miles (113 km), as seen on August 30, 2013

These are just a few examples of how TV signals propagate. I'll be interested in seeing pictures of your DX in both ATSC 1.0 and ATSC 3.0 formats. I'm also interested in your reports. The TV DX season is just around the corner! 73 and good DX from the Florissant Valley Dial Twister.

What is CGNAT and why is it used?

CGNAT, which stands for Carrier-grade NAT or Large Scale NAT, is a method used by internet service providers (ISPs) to manage the limited pool of available IPv4 addresses. Here's a breakdown of how it works and why it's important:

How CGNAT Works

Imagine a scenario where traditionally, each device on a network is assigned a unique public IP address for identification on the internet. However, IPv4 addresses are like real estate - there are only so many available. CGNAT acts like an apartment building for these addresses. Instead of giving each user their own house (IP address), the ISP assigns everyone in their network a private address within their building (private network) and translates that to a single public address for the entire building (shared public IP) when communicating with the broader internet.

Why is CGNAT Used?

The main reason ISPs use CGNAT is to address the shortage of IPv4 addresses. With the ever-growing number of internet users and devices, the pool of unique IPv4 addresses has become depleted. CGNAT allows ISPs to stretch their limited supply by assigning a single public address to many users. This keeps things running smoothly for most basic internet activities like browsing and email.

Are there any downsides to CGNAT?

While CGNAT helps with address management, it can cause some drawbacks:

- **Disrupts end-to-end communication:** CGNAT breaks the traditional way internet communication works where devices can directly connect with each other. This can cause issues with applications that rely on this direct connection, such as **hosting a server** or online gaming.
- **Limits control:** Since users share a public IP address, they can't configure their devices for certain functionalities that require unique identification, **like port forwarding**.
- **Security concerns:** Sharing an IP address can raise security concerns, but most ISPs implement measures to mitigate these risks.

The future of CGNAT

As a temporary solution, CGNAT helps manage the current situation. In the long run, the internet is transitioning to a new addressing system called IPv6, which offers a vast pool of addresses. This will eventually eliminate the need for CGNAT.