

US Digital Television Transition

34th Annual Trenton Computer Festival
Sat 25 Apr 2009

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Why Over-the-Air DTV?

- Free (important during a recession!)
- Highest quality picture
 - Many cable and satellite signals are further compressed (transmitted at a reduced bitrate)
- It's fun to experiment with antennas and reception
- Less prone to outages than cable or satellite

DTV Transition Timetable

- Tue 17 Feb 2009 – Initial “final” deadline
 - 220 analog signals terminated prior to 17 Feb
 - 417 terminated at midnight 17 Feb
 - 637 total terminated
 - FCC denied 123 stations: at least 1 analog station must remain on the air in each market:
 - "This is not just about whether people can watch their favorite reality show," said acting FCC Chairman Michael Copps. "It's about whether consumers have access to vital emergency alerts, weather, news and public affairs."
 - 1085 (63%) analog signals remained

DTV Transition Timetable (cont.)

- Current status
 - 927 stations plan to retain analog until 12 Jun
 - 158 stations want to transition early
 - 16 Apr 09 was earliest date FCC allowed
 - Vast majority self-certified that at least 1 “Big Four” affiliate would remain until 12 Jun
 - 2 “hardship cases” were allowed to transition before 12 Jun, 2 were denied
 - A “handful” of noncommercial stations also received waivers to transition early

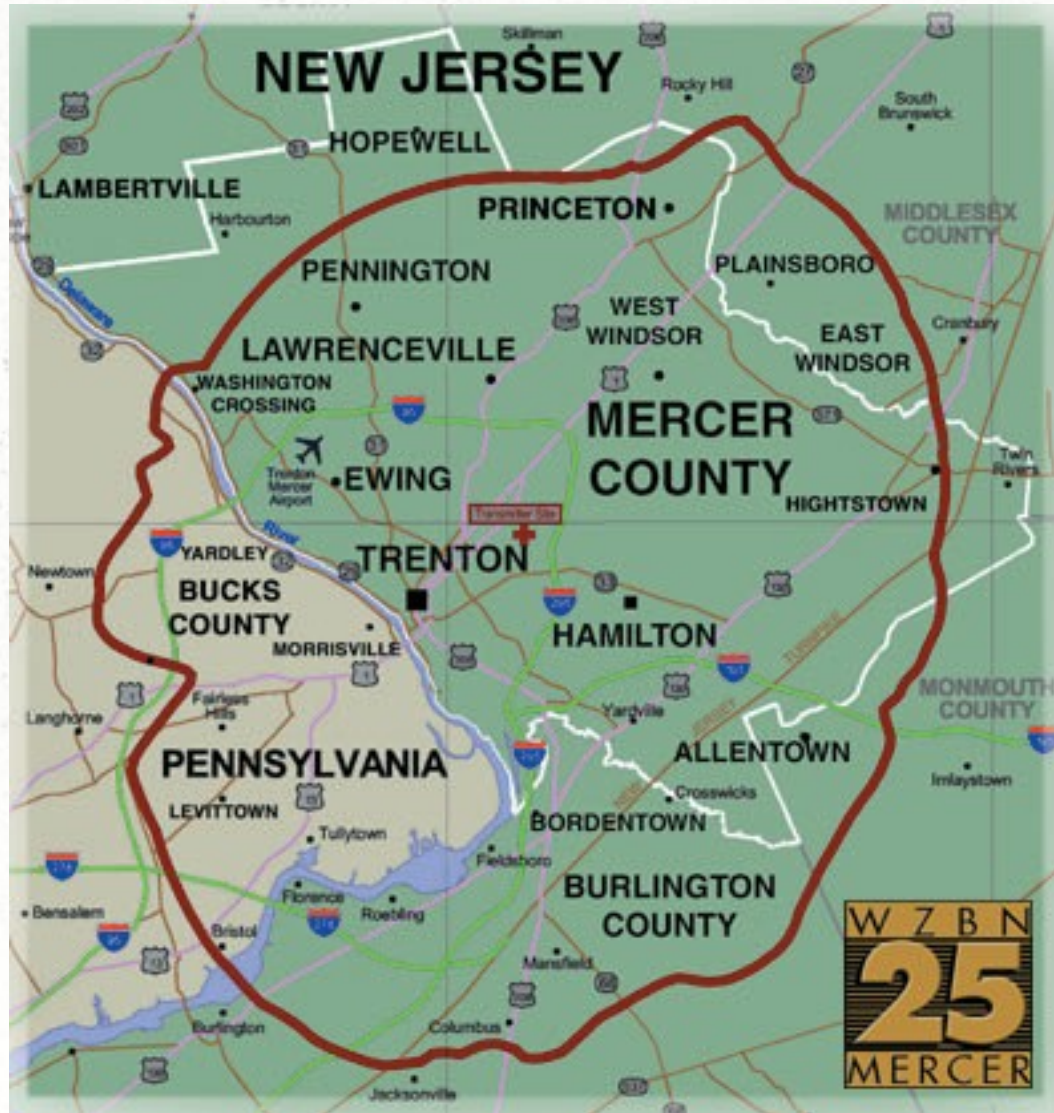
DTV Transition Timetable (cont.)

- Fri 12 Jun 2009 – New “final” deadline
 - All full-power stations must switch

Low Power Television Stations

- Low power stations may continue as analog after 12 Jun 2009
 - Use converter box with “analog pass-through”
 - Use antenna A-B switch
 - Use signal splitter
- Example: Trenton W25AW, aka WZBN-TV, “New Jersey's Capital News Station”

Typical Low-Power UHF Coverage



What You Need To Receive DTV

- Cable, FIOS, Satellite
 - Unaffected by June 12 transition date
 - Note: Analog signals are gradually being deprecated on cable systems
 - Cable subscribers will eventually require a set-top box, integrated “clear QAM” tuner, or CableCARD to receive most channels
- Over-the-Air
 - Newer TV with ATSC tuner
 - DTV Converter Box
 - Very likely a better antenna!

DTV Converter Box Coupons

- <https://www.dtv2009.gov/>
- Value \$40 each, coupons expire after 90 days
 - Holders of expired coupons may re-apply
 - Applications accepted until end of July
- Order rate ~118,000 coupons/day
- Original coupons were exhausted
 - Wait list > 4,000,000 coupons by 17 Feb 09!
 - \$490,000,000 additional funding in stimulus act
- Total coupon funding: \$1,830,000,000

Status as of Wed 11 Feb 2009

PUBLIC INFORMATION

TV CONVERTER BOX COUPON PROGRAM WEEKLY STATUS UPDATE *

Wednesday, February 11, 2009- 4:00PM EDT

Households Approved	28,252,611
Coupons Requested*	52,429,629
Coupons Mailed	47,902,372
Coupons Expired	15,011,135
Coupons Redeemed	23,407,643
Coupons On Wait List	3,982,732
Coupons Active	9,483,594
Total Funds Committed	\$1,330,000,000
Total Funds Available	\$0
Funds Settled	\$911,231,519
Average Daily Orders**	119,327
Average Daily Orders Last 30 Days	139,143
Average Daily Orders Last Week	102,290
Redemption Rate	54.2%
Retailers/Locations	2,321 / 34,146
Phone/Online Retailers	10 / 36
Converters/Pass-through	188 / 110

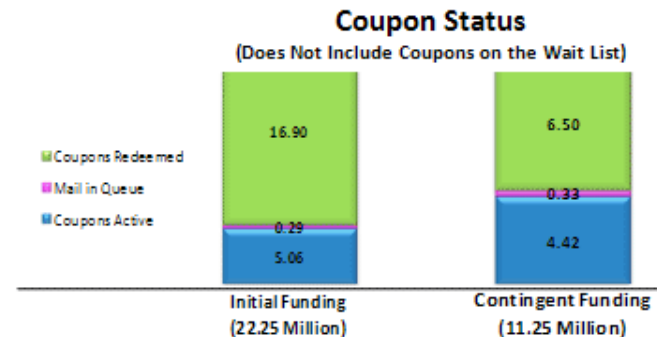
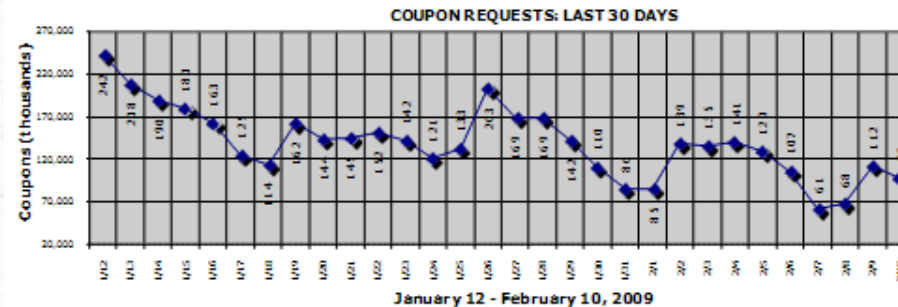
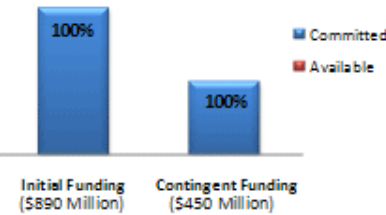
*Data thru 2/10/09

**Includes Wait List Coupons

**Inception To Date



Total Coupon Funding (\$1.34 Billion)



Status as of Wed 22 Apr 2009

PUBLIC INFORMATION

TV CONVERTER BOX COUPON PROGRAM WEEKLY STATUS UPDATE

Wednesday, April 22, 2009- 4:00PM EDT*

Households Approved	30,430,869
Coupons Requested	56,358,855
Coupons Mailed	55,710,635
Coupons Expired	20,650,072
Coupons Redeemed	28,037,543
Coupons Active	7,023,020
Total Funds Committed*	\$ 1,419,211,027
Total Funds Available*	\$ 410,788,973
Funds Settled*	\$ 1,101,715,011
Average Daily Orders**	117,906
Average Daily Orders Last 30 Days	67,883
Average Daily Orders Last Week	63,914
Redemption Rate	55.9%
Retailers/Locations	2,174/31,267
Phone/Online Retailers	9 / 29
Converters/Pass-through	191/ 113

*Data thru 4/21/09 @ 6pm EST

**Includes ARRA Funds

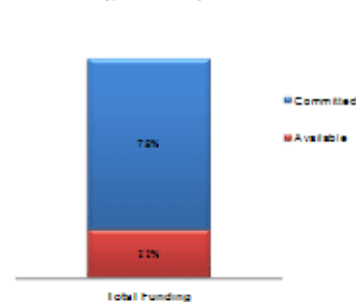
**Inception To Date

American Recovery and Reinvestment Act (ARRA)

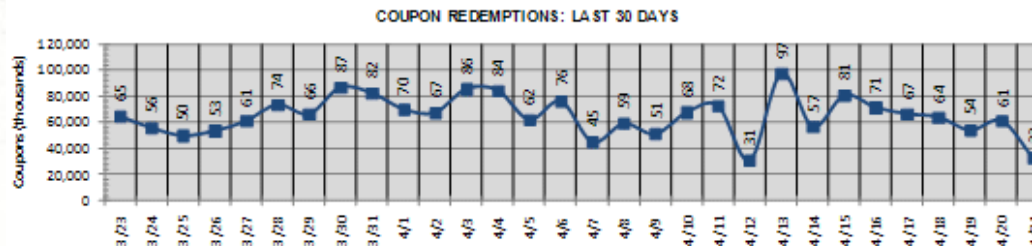
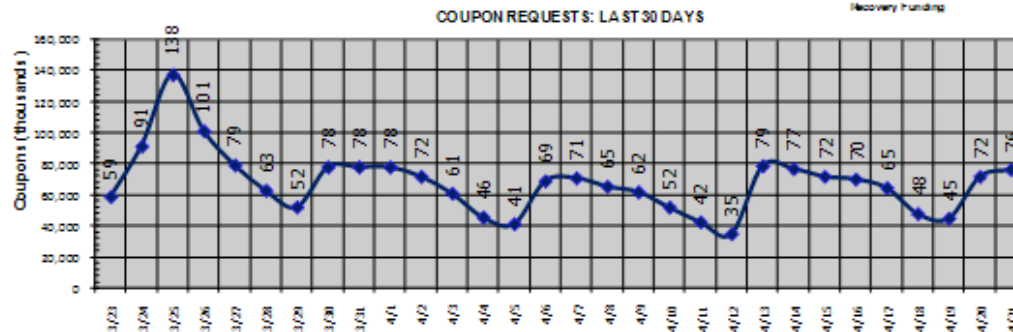
Recovery Funds Available	\$ 216,874,695
Recovery Funds Committed	\$ 273,125,305
Recovery Total	\$ 490,000,000



Total Coupon Funding
(\$1.33 Billion)



Recovery Act Funding
(\$490 Million)



DTV Transition Preparedness

- Nielsen says that as of 12 Apr 09, 3.6 million TV households are “completely unready”
 - Albuquerque-Santa Fe is least ready (9.13%)
 - Hartford-New Haven most ready (0.00%)
- National Association of Broadcasters disagrees
 - Nielsen figures do not include homes which have purchased converter boxes but not connected them

Important DTV Points to Remember

- Many digital stations will move to different channel numbers after transition
 - Rescan for new channels, repeat periodically after transition
- Post-transition Philadelphia area reception will still require a VHF/UHF antenna
 - VHF: 6, 12
 - UHF: 3 (real 26), 10 (real 34), 17, 23 (real 22), 29 (real 42), 35, 52 (real 43), 57 (real 32), etc.

DTV Reception Resources

- <http://www.dtv.gov/fixreception.html>
- 1-888-CALL-FCC

DTV Reception Databases

- Consumer Electronics Association
 - <http://www.antennaweb.org/>
- TV Fool
 - <http://tvfool.com/>

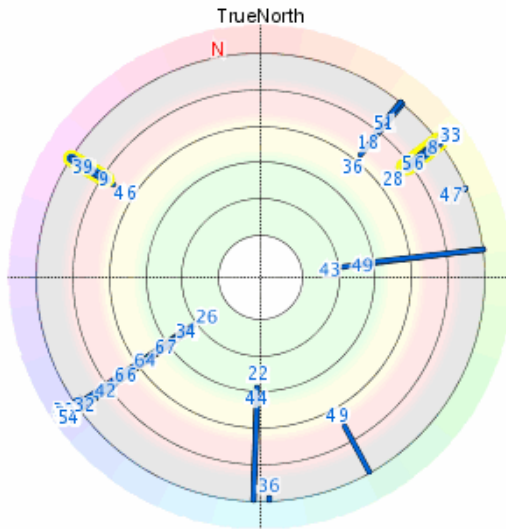
Show All Stations
 Show Digital Stations Only
 Show Analog Stations Only

DTV	Antenna Type	Call Sign	Channel	Network	City, State	Live Date	Compass Heading	Miles From	Frequency Assignment
*	yellow uf	WGTW-DT	48.1	TBN	BURLINGTON, NJ		247°	26.7	27
*	yellow uf	WUVP-DT	65.1	UNI	VINELAND, NJ		247°	26.7	66
*	yellow uf	WPSG-DT	57.1	CW	PHILADELPHIA, PA	Jun 12, 2009 (post-transition)	247°	26.7	12
*	yellow uf	KYW-DT	3.1	CBS	PHILADELPHIA, PA		248°	26.9	26
*	yellow uf	WPVI-DT	6.1	ABC	PHILADELPHIA, PA		248°	26.9	64
*	yellow uf	WNJT-DT	41.1	PBS	TRENTON, NJ		94°	7.4	41
*	yellow uf	WUVP-DT	65.1	UNI	VINELAND, NJ	Jun 12, 2009 (post-transition)	247°	26.7	29
*	yellow uf	WPPX-DT	61.1	ION	WILMINGTON, DE	Jun 12, 2009 (post-transition)	247°	26.7	11
*	yellow uf	WPHL-DT	17.1	MNT	PHILADELPHIA, PA	Jun 12, 2009 (post-transition)	247°	26.8	17
*	yellow uf	WCAU-DT	10.1	NBC	PHILADELPHIA, PA	Jun 12, 2009 (post-transition)	247°	26.7	14
*	yellow uf	WYBE-DT	34.1	PBS	PHILADELPHIA, PA	Jun 12, 2009 (post-transition)	247°	26.7	15
*	yellow uf	KYW-DT	3.1	CBS	PHILADELPHIA, PA	Jun 12, 2009 (post-transition)	248°	26.9	26
*	yellow uf	WTFX-DT	29.1	FOX	PHILADELPHIA, PA	Jun 12, 2009 (post-transition)	247°	26.8	42
*	yellow uf	WNJT-DT	41.1	PBS	TRENTON, NJ	Jun 12, 2009 (post-transition)	94°	7.4	41
*	yellow uf	WPSG-DT	57.1	CW	PHILADELPHIA, PA		247°	26.7	12
*	yellow uf	WPPX-DT	61.1	ION	WILMINGTON, DE		247°	26.7	11
*	yellow uf	WPHL-DT	17.1	MNT	PHILADELPHIA, PA		247°	26.7	54
*	yellow uf	WTFX-DT	29.1	FOX	PHILADELPHIA, PA		249°	26.1	42
*	yellow uf	WYBE-DT	34.1	PBS	PHILADELPHIA, PA		247°	26.7	14
*	green uf	WPVI-DT	6.1	ABC	PHILADELPHIA, PA	Jun 12, 2009 (post-transition)	248°	26.8	6
*	green uf	WHYY-DT	12.1	PBS	WILMINGTON, DE	Jun 12, 2009 (post-transition)	247°	26.8	12
*	green uf	WHYY-DT	12.1	PBS	WILMINGTON, DE		247°	26.8	50
*	red uf	WCAU-DT	10.1	NBC	PHILADELPHIA, PA		247°	26.7	67
*	purple uf	WBPH-DT	59.1	FMN	BETHLEHEM, PA	Jun 12, 2009 (post-transition)	115°	18.1	9
*	purple uf	WNJS-DT	22.1	PBS	CAMDEN, NJ	Jun 12, 2009 (post-transition)	194°	17.2	22
*	purple uf	WNJB-DT	8.1	PBS	NEW BRUNSWICK, NJ		47°	29.8	8

Note:

The above listing is a conservative prediction of stations received. Depending on the specifics of your installation, you may be able to receive stations that do not appear in this list.

TCF Demo Digital Only



Search Criteria

Zipcode 08628
Height: 25.0 ft.

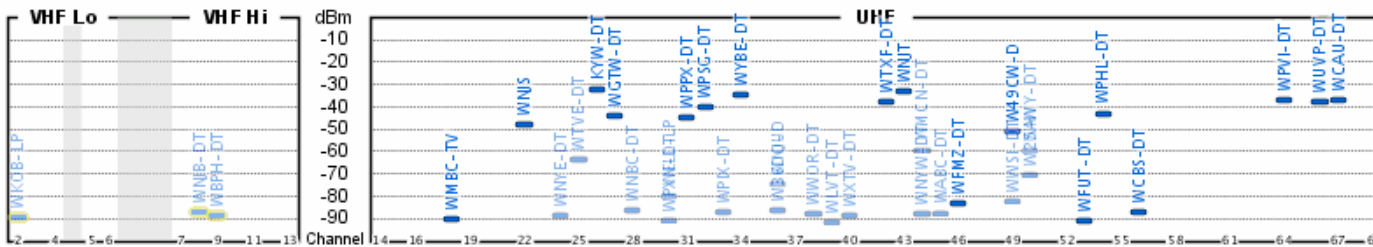
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200904170029

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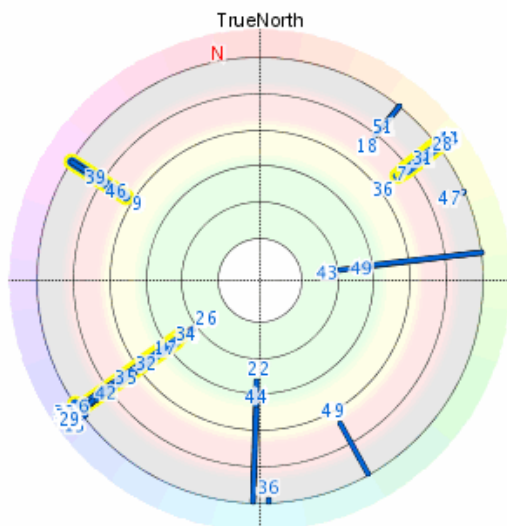
Callsign	Channel		Netwk	Signal			Dist miles	Azimuth	
	Real	(Virt)		NM(dB)	Pwr(dBm)	Path		True	(Magn)
KYW-DT	26	(3.1)	CBS	58.6	-32.3	LOS	27.2	235°	(247°)
WNJT	43	(52.1)	PBS	57.5	-33.3	LOS	7.2	83°	(95°)
WYBE-DT	34	(35.1)	Ind	56.0	-34.9	LOS	27.0	234°	(247°)
WCAU-DT	67	(10.1)	NBC	54.0	-36.8	LOS	27.0	234°	(247°)
WPVI-DT	64	(6.1)	ABC	53.7	-37.1	LOS	27.2	235°	(247°)
WUVP-DT	66	(65.1)	Uni	53.4	-37.5	LOS	27.0	234°	(247°)
WTVX-DT	42	(29.1)	Fox	53.3	-37.5	LOS	27.1	234°	(247°)
WPSG-DT	32	(57.1)	CW	50.5	-40.4	LOS	27.0	234°	(247°)
WPHL-DT	54	(17.1)	MyN	48.0	-42.8	LOS	27.0	234°	(247°)
WGTW-DT	27	(48.1)	Ind	47.0	-43.9	LOS	27.0	234°	(247°)
WPPX-DT	31	(61.1)	ION	45.9	-45.0	LOS	27.0	234°	(247°)
WNJS	22	(23.1)	PBS	42.7	-48.2	LOS	37.5	182°	(194°)
W49CW-D	49			39.5	-51.4	LOS	7.2	83°	(95°)
WMCN-DT	44	(44.1)	Ind	31.6	-59.3	LOS	37.5	182°	(194°)
WHYY-DT	50	(12.1)	PBS	31.5	-59.3	LOS	27.1	234°	(247°)
WTVL-DT	25	(51.1)	Ind	27.4	-63.5	LOS	27.0	234°	(247°)
W25AW	50	(25.1)		20.5	-70.4	LOS	23.7	235°	(248°)
WNJU	36	(47.1)	TEL	16.4	-74.4	2Edge	47.7	39°	(52°)
WELL-LP	30	(45.1)		11.2	-79.7	LOS	27.0	234°	(247°)
WWSI-DT	49	(62.1)	TEL	8.8	-82.1	LOS	50.6	151°	(163°)
WFMZ-DT	46	(69.1)	Ind	7.6	-83.3	2Edge	38.5	302°	(315°)
W36DO-D	36	(53.1)		4.5	-86.3	1Edge	27.0	234°	(247°)
WNBC-DT	28	(4.1)	NBC	4.5	-86.4	2Edge	55.1	53°	(65°)
WCBS-DT	56	(2.1)	CBS	4.1	-86.7	2Edge	55.1	53°	(65°)
WNJB-DT	8	(58.1)	PBS	3.6	-87.3	2Edge	55.4	53°	(65°)
WPIX-DT	33	(11.1)	CW	3.4	-87.4	2Edge	55.1	53°	(65°)
WABC-DT	45	(7.1)	ABC	3.3	-87.5	2Edge	55.1	53°	(65°)
WWOR-DT	38	(9.1)	MyN	3.1	-87.8	2Edge	55.1	53°	(65°)
WNYW-DT	44	(5.1)	Fox	2.8	-88.1	2Edge	55.1	53°	(65°)
WBPH-DT	9	(60.1)	Ind	2.4	-88.4	2Edge	38.5	302°	(315°)
WXTV-DT	40	(41.1)	Uni	2.3	-88.6	2Edge	55.1	53°	(65°)
WNYE-DT	24	(25.1)	Ind	2.0	-88.8	2Edge	55.4	53°	(65°)
WKOB-LP	2	(42.1)		1.5	-89.3	2Edge	55.1	53°	(65°)
WMBC-TV	18		Ind	0.6	-90.2	2Edge	52.6	38°	(51°)
WPXN-DT	30	(31.1)	ION	0.2	-90.7	2Edge	55.1	53°	(65°)
WFUT-DT	53	(68.1)	Tel	0.1	-90.7	2Edge	55.5	53°	(65°)
WLVT-DT	39	(39.1)	PBS	-0.6	-91.5	2Edge	38.5	302°	(315°)
WNET-DT	61	(13.1)	PBS	-10.9	-101.7	2Edge	55.1	53°	(65°)
WNJN	51	(50.1)	PBS	-11.2	-102.0	2Edge	52.7	38°	(51°)
WNAI-LP	41	(41.1)		-11.3	-102.1	LOS	27.0	234°	(247°)
WJZ-DT	38	(13.1)	CBS	-17.0	-107.9	Tropo	116.1	236°	(249°)
WNUV-DT	40	(54.1)	CW	-17.4	-108.2	Tropo	116.0	236°	(249°)
WLNY-DT	47		Ind	-18.8	-109.6	Tropo	109.5	67°	(79°)
WMGM-DT	36	(40.1)	NBC	-18.9	-109.7	Tropo	79.4	178°	(190°)
WTVB-DT	27	(54.1)	Ind	-20.2	-111.1	Tropo	96.2	29°	(41°)
WSAH-DT	42	(43.1)	Ind	-20.3	-111.1	Tropo	117.6	50°	(62°)
WMAR-DT	52	(2.1)	ABC	-20.6	-111.4	Tropo	116.1	236°	(249°)
W45CP	45	(45.1)		-21.3	-112.2	2Edge	66.4	161°	(174°)
WRNN-DT	48		Ind	-21.4	-112.2	Tropo	96.1	29°	(41°)
WASA-LP	25	(64.1)		-21.6	-112.4	2Edge	55.4	53°	(65°)
WUSA	34	(9.1)	CBS	-21.8	-112.7	Tropo	150.0	232°	(245°)

■ = Co-channel warning

■ = Adjacent channel warning



TCF Demo Digital Only



Search Criteria

POST-TRANSITION
Zipcode 08628
Height: 25.0 ft.

db datecode
200904170029

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Callsign	Channel		Netwk	Signal			Dist miles	Azimuth	
	Real	(Virt)		NM(dB)	Pwr(dBm)	Path		True	(Magn)
KYW-TV	26	(3.1)	CBS	58.7	-32.2	LOS	27.2	235°	(247°)
WNJT-DT	43	(52.1)	PBS	58.6	-32.3	LOS	7.2	83°	(95°)
WCAU-DT	34	(10.1)	NBC	57.5	-33.3	LOS	27.0	234°	(247°)
WPHL-DT	17	(17.1)	MyN	56.7	-34.2	LOS	27.1	234°	(247°)
WPSG	32	(57.1)	CW	55.5	-35.3	LOS	27.0	234°	(247°)
WYBE-DT	35	(35.1)	Ind	55.3	-35.5	LOS	27.0	234°	(247°)
WTFX-DT	42	(29.1)	Fox	53.3	-37.5	LOS	27.1	234°	(247°)
WPVI-DT	6		ABC	49.2	-41.7	LOS	27.0	235°	(247°)
WUVP-DT	29	(65.1)	Uni	48.6	-42.2	LOS	27.0	234°	(247°)
WGTW-DT	27	(48.1)	Ind	47.0	-43.9	LOS	27.0	234°	(247°)
WNJS	22	(23.1)	PBS	46.9	-43.9	LOS	37.5	182°	(194°)
WPPX-DT	31	(61.1)	ION	45.9	-44.9	LOS	27.0	234°	(247°)
WHYY-DT	12	(12.1)	PBS	45.6	-45.2	LOS	27.1	234°	(247°)
W49CW-D	49			39.5	-51.4	LOS	7.2	83°	(95°)
WMCN-DT	44	(44.1)	Ind	31.6	-59.3	LOS	37.5	182°	(194°)
WTVE-DT	25	(51.1)	Ind	27.4	-63.5	LOS	27.0	234°	(247°)
W25AW	50	(25.1)		20.5	-70.4	LOS	23.7	235°	(248°)
WBPH-DT	9	(60.1)	Ind	15.3	-75.5	2Edge	38.5	302°	(315°)
WWSI	49	(62.1)	TEL	12.7	-78.1	LOS	50.6	151°	(163°)
WELL-LP	30	(45.1)		11.2	-79.7	LOS	27.0	234°	(247°)
WNJU	36	(47.1)	TEL	10.7	-80.2	2Edge	55.1	53°	(65°)
WFMZ-DT	46	(69.1)	Ind	7.5	-83.4	2Edge	38.5	302°	(315°)
WABC-DT	7	(7.1)	ABC	7.3	-83.6	2Edge	55.1	53°	(65°)
WPXN-DT	31	(31.1)	ION	7.1	-83.8	2Edge	55.1	53°	(65°)
WNBC-DT	28	(4.1)	NBC	5.0	-85.8	2Edge	55.1	53°	(65°)
WNYW-DT	44	(5.1)	Fox	4.6	-86.2	2Edge	55.1	53°	(65°)
W36DO-D	36	(53.1)		4.5	-86.3	1Edge	27.0	234°	(247°)
WNET-DT	13	(13.1)	PBS	4.4	-86.4	2Edge	55.1	53°	(65°)
WCBS-DT	56	(2.1)	CBS	4.1	-86.7	2Edge	55.1	53°	(65°)
WPIX-DT	11	(11.1)	CW	4.0	-86.8	2Edge	55.1	53°	(65°)
WNJB-DT	8	(58.1)	PBS	3.6	-87.3	2Edge	55.4	53°	(65°)
WMOR-DT	38	(9.1)	MyN	3.1	-87.8	2Edge	55.1	53°	(65°)
WFUT-DT	30	(68.1)	Tel	2.6	-88.2	2Edge	55.1	53°	(65°)
WXTV-DT	40	(41.1)	Uni	2.2	-88.6	2Edge	55.1	53°	(65°)
WNYE-DT	24	(25.1)	Ind	2.1	-88.7	2Edge	55.4	53°	(65°)
WKOB-LP	2	(42.1)		1.5	-89.3	2Edge	55.1	53°	(65°)
WMBC-TV	18		Ind	0.6	-90.2	2Edge	52.6	38°	(51°)
WLVT-DT	39	(39.1)	PBS	-0.6	-91.5	2Edge	38.5	302°	(315°)
WNJN	51	(50.1)	PBS	-7.9	-98.7	2Edge	52.6	38°	(51°)
WNAI-LP	41	(41.1)		-11.3	-102.1	LOS	27.0	234°	(247°)
WMAR-DT	38	(2.1)	ABC	-17.0	-107.9	Tropo	116.1	236°	(249°)
WNUV-DT	40	(54.1)	CW	-17.4	-108.2	Tropo	116.0	236°	(249°)
WLNY-DT	47		Ind	-18.8	-109.6	Tropo	109.5	67°	(79°)
WMGM-DT	36	(40.1)	NBC	-18.9	-109.7	Tropo	79.4	178°	(190°)
WFDC-DT	15	(14.1)	Uni	-18.9	-109.8	Tropo	150.6	232°	(245°)
WJZ-TV	13	(13.1)	CBS	-19.9	-110.7	Tropo	116.1	236°	(249°)
WTBY-DT	27	(54.1)	Ind	-20.2	-111.1	Tropo	96.2	29°	(41°)
WSAH-DT	42	(43.1)	Ind	-20.3	-111.1	Tropo	117.6	50°	(62°)
WPMT	47	(43.1)	Fox	-20.4	-111.2	Tropo	95.2	260°	(272°)
WTTG-DT	36	(5.1)	Fox	-20.7	-111.5	Tropo	149.9	233°	(245°)
W45CP	45	(45.1)		-21.3	-112.2	2Edge	66.4	161°	(174°)

☐ = Co-channel warning

☐ = Adjacent channel warning

