## Tips OTA DTV (Over-The-Air Digital TeleVision)



OTA DTV Hand-made Indoor Antenna Schematic

Big transition from NTSC (National Television System Committee) analog television to ATSC (Advanced Television System Committee) digital television happened. Actually, Analog TV broadcasting ceased on 6/12/2009 (originally 2/17/2009) in USA.

To get more television channels, the frequency band for television broadcasting was already shifted from VHF (Very High Frequency: 30 MHz to 300 MHz, 10 to 1 m wave length) to UHF (Ultra High Frequency: 300 MHz to 3 GHz, 1 m to 10 cm wave length). The size of UHF television antenna became smaller.

However, a certain TV channel stays at VHF. The antenna combined both VHF and UHF is necessary.

Screen quality of OTA DTV is much better than the one of cable TV, satellite TV, and Internet streaming video because MPEG compression rate of OTA DTV is smaller than others (MPEG video bit rate can be as much as 19 Mbps). I have actually compared display quality of OTA DTV and Dish Network satellite TV watching and switching the same television program. The display quality of OTA DTV was much better and a couple of second faster than others (Other TVs need MPEG encoding after receiving the OTA DTV signal).



Done with Antenna Mast

Placed 2nd Floor with 25 dB Gain UHF/VHF/FM Antenna Booster

VHF		UHF							
Channel	Frequency (MHz)								
2	54 - 60	14	470 - 476	32	578 - 584	50	686 - 692	68	794 - 800
3	60 - 66	15	476 - 482	33	584 - 590	51	692 - 698	69	800 - 806
4	66 - 72	16	482 - 488	34	590 - 596	52	698 - 704	70	806 - 812
5	76 - 82	17	488 - 494	35	596 - 602	53	704 - 710	71	812 - 818
6	82 - 88	18	494 - 500	36	602 - 608	54	710 - 716	72	818 - 824
7	174 - 180	19	500 - 506	37	608 - 614	55	716 - 722	73	824 - 830
8	180 - 186	20	506 - 512	38	614 - 620	56	722 - 728	74	830 - 836
9	186 - 192	21	512 - 518	39	620 - 626	57	728 - 734	75	836 - 842
10	192 - 198	22	518 - 524	40	626 - 632	58	734 - 740	76	842 - 848
11	198 - 204	23	524 - 530	41	632 - 638	59	740 - 746	77	848 - 854
12	204 - 210	24	530 - 536	42	638 - 644	60	746 - 752	78	854 - 860
13	210 - 216	25	536 - 542	43	644 - 650	61	752 - 758	79	860 - 866
		26	542 - 548	44	650 - 656	62	758 - 764	80	866 - 872
		27	548 - 554	45	656 - 662	63	764 - 770	81	872 - 878
		28	554 - 560	46	662 - 668	64	770 - 776	82	878 - 884
		29	560 - 566	47	668 - 674	65	776 - 782	83	884 - 890
		30	566 - 572	48	674 - 680	66	782 - 788		
		31	572 - 578	49	680 - 686	67	788 - 794		

## **OTA TV Channels vs. Frequency**

## Red : Occupied in Bay area

6 MHz of bandwidth for one TV channel is assigned. It can be divided into several digital TV channels as well as digital audio channels.



Antenna Mast Crossing by U-bolts and Steel Board



10' 1" Conduit Pipe and 5' Pipe Engaged by Coupling





15' 1" Antenna Mast Held on Eaves



Antenna Mast Wall Mount



Antenna Feed Line at Radiator



Built over the Second Floor Roof