

The Transition to Digital TV

On February 17, 2009 all full-power broadcast television stations in the United States will stop broadcasting analog and begin broadcasting only Digital TV signals. The FCC's [Digital TV Transition Web page](#) has more information on this transition, including an [FAQ Page](#)

The new DTV channel allocations will remain 6 MHz wide, the same as the present analog TV signals. However, instead of each channel slot carrying an analog NTSC television signal (visual carrier, color subcarrier, & aural carrier), the channel slot will carry an 8-VSB digitally modulated signal. The 6 MHz-wide channel slots themselves won't change, just what is carried in them! So, Ch. 2 will still be 54-60 MHz, Ch. 3 will be 60-66 MHz, and so forth up to channel 51. The existing UHF TV channels 52-69 will be reallocated to other uses.

The designation "8-VSB" refers to 8-level vestigial sideband modulation. This is similar to 64-QAM, which means 64-state quadrature amplitude modulation (the 64 "states" are 64 combinations of signal phase and amplitude values that represent the 64 different transmitted symbols). In the case of 8-VSB, the "8" refers to the eight-level baseband DTV signal that amplitude modulates an IF signal. With 8-VSB or 64-QAM digital modulation, the RF signal looks somewhat like a 6 MHz-wide pile of noise or "haystack." One physical difference between 8-VSB and 64-QAM that one would see on a spectrum analyzer is the presence of a pilot carrier on the left end of the 8-VSB signal's "haystack." For more info about 8-VSB modulation, see [What Exactly Is 8-VSB Anyway?](#)

by David Sparano.