

OUT & ABOUT

Picking an HDTV set is less than crystal clear

Competing technologies, standards create confusion for consumers

Many of you may have bought an HDTV recently, seduced by the "need" to watch the Super Bowl in the maximum possible resolution in case of any further "wardrobe malfunctions." Others are thinking about getting one, at last.

The problem is, which HDTV is right for you? Did you pick the right one, or get suckered by making your decision based on better marketing rather than dot pitch? And what's the deal with all these conflicting standards of resolution and HDTV technology platforms?

The lack of agreement among the HDTV makers, both here in the U.S. and overseas, makes for a lot of conflicting and confusing information that ultimately hurts consumers by making it incredibly difficult to navigate the minefield of offerings to find the one that works best for them. Adding to the problem are different (and shifting) consumer priorities — a wall-hanging TV seems so cool, do you care that the bulb will burn out in two to three years? Does plasma offer a better picture than LCD outside the dealer showroom? What's the best value?

Relax. In a few short paragraphs, I'll explain the different definitions of "Hi-Def" and the different technologies that make it happen, leaving you armed with the knowledge you need to convince that salesman to return your first choice (or to select the best option for you if you're just buying for the first time). Be the envy of your television-loving-but-technically-incompetent friends and family, all before the NCAA playoffs (or that nature-documentary marathon, depending on your tastes).

(Hi) Def Jam

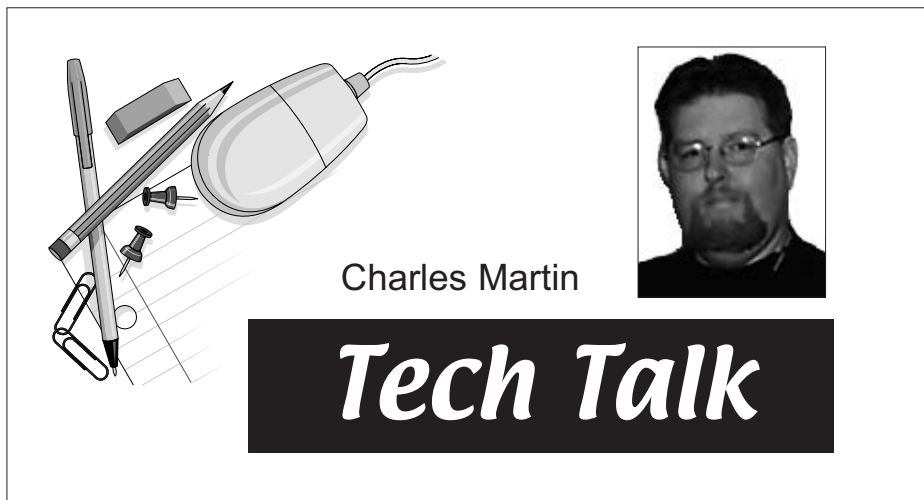
Broadcasters have been working to bring us HDTV since the 1960s, if you can believe it — it's taken them well over three decades just to stop arguing on the particulars. Finally, in 1998, the FCC approved two different, competing HDTV standards, 720p and 1080i, both of which give you about four times as much visual information as traditional TV.

What's the difference?

I'll spare you the boring details, and simply say that 720p uses progressive scanning, meaning they show 60 complete frames (not two interlaced half-frames the way "regular" TV does it) per second. This results in incredibly smooth motion, but it's not quite as high-res as 1080i. In computer terms, 720p is roughly 1280x720.

The 1080i's computer resolution equivalent is 1920x1080, sending only 30 complete frames per second (two interlaced half-fields of even and odd lines), but significantly better resolution on each frame. This means that motion is handled as it is on traditional TVs (i.e., it can get a little fuzzy in very speedy situations), but on the other hand film content (which has only 24 frames per second) actually looks better on 1080i than it would on 720p.

Bottom line on all this? If it's in your budget, get an HDTV that can handle both



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Tech Talk



LCD screens range from small to moderately large, and offer significantly brighter and more vivid pictures.

easily. If it's not, sports and action fans should pick 720p-compatible TVs, while movie and news junkies should go with 1080i TVs. You also want to look for a television that can handle both of the major aspect ratios — 16:9 (film and true hi-def video) and 4:3 (traditional television size). The former is the "widescreen" format we mostly associate with movies, whereas the latter is almost exactly square.

A good HDTV should be able to automatically or easily adjust between the two without trying to "stretch" 4:3 content to fit a 16:9 screen. Black vertical bars on 4:3 content mean you're seeing the picture the way it was intended. An HDTV should almost never show you the horizontal "black bars" you've probably seen on your regular TV when trying to watch a widescreen movie (unless you're watching one of those wonderful "CinemaScope" movies with an extreme 2.5:1 ratio, like some 1950s biblical epics).

(HD)TV Party Tonight

That wasn't so hard, was it? Well, wait, we're only starting to enter the morass of HDTV spec shopping. Once you figure out the formats, now you have to ponder which of the many differing technologies of presentation is right for you. There are, essentially, four types of HDTVs each with advantages and disadvantages.

Direct View (or CRT) — this is the basis of regular televisions, otherwise known as "tube" TVs. The technology behind them is both very inexpensive and surprisingly adaptable. CRT-based HDTVs are the least expensive and longest-lasting of the various technologies, but they do have their limits — namely size and weight.

Direct-view CRT televisions generally top out at about 40 inches. Rear-projection CRTs can go much bigger, but the resulting picture gets dimmer and fuzzier as a result. Both are incredibly heavy and hard to move. Great for normal family

viewing, not so hot for serious sports fans or movie buffs. But for those on a budget, this is a great way to get "into" HDTV without taking a risk on the pricier, shorter-life-span technologies below.

Flat Panel or Projection TVs (LCD) — this is the same Liquid Crystal Display technology used in your laptop computer or flat-panel monitor, and if you have one you don't need me to tell you that they are about twice as bright and sharp as conventional TVs.

If rich, beautiful color is a high priority for you (nature fans, travel-show watchers, underwater exploration fans), or if you want to have your HDTV do double-duty as computer monitor, this might be the choice for you — but of course you'll have to pay for it. Be aware that LCDs, which get their illumination from backlit lamps, seem to dim over time and can fail in as little as three years (and replacements are expensive).

Flat Panel or Projection TVs (DLP) — think of DLP as "LCD Deluxe." Generally a bit pricier than LCD TVs, but with the benefit of having slightly better color fidelity and much richer blacks (very important when watching old movies). Like LCDs, however, DLP televisions can suffer from "motion artifacts" on dark areas (sometimes called "dancing pixels") occasionally. I've noticed in field tests, however, that DLPs — particularly those from RCA — seem to reflect a lot less glare than most LCD models, and therefore I enjoy watching them more. These, like the LCD flat panels, are remarkably light and thin, which is a huge selling point for many people; just expect to replace or repair the unit about as often as you do your personal computer.

Flat Panel TVs (Plasma) — While all the flat-panel technologies can be priced as high as you care to spend, the king of money hill is generally considered to be plasma TVs. They are among the

few TVs that can actually show every pixel of 1080i format without compromise, and you can get them in sizes approaching 70 inches if your bank account can handle it. These are the hi-res TVs you often see in business centers, arenas and airports. These TVs can sell for up to \$13,000, but surprisingly better picture quality can be had for a lot less.

The jury's still out on how reliable these units are, but be aware that plasma TVs are extremely fragile, even more so than the other platforms. They should be mounted very sturdily and above the reach of small children. They use a heck of a lot of electricity (comparable with a conventional TV of that size if such a thing existed, about twice as much as an LCD or DLP set).

The biggest drawback for me is the reflective, glare-prone glass face that's required, meaning that rooms that house a plasma TV must be carefully lit and light-controlled or you're not going to be able to see them very well. But if the lighting is good, boy does it look nice.

Pay TV

So how much will you shell out for each of these high-technology boob tubes? That of course depends on various factors, like size (plasmas and DLPs can be much larger than LCDs and CRTs) and technology, but in general the following guidelines apply:

If you're on a limited budget or don't need a huge screen, a nice CRT "HD Ready" unit of 30 inches or more (or an LCD of 17-20 inches) will probably serve you well. The LCD will be brighter and much more vivid, but won't last as long as the good ol' CRT.

If impressing your neighbors is your goal at all costs, the big DLP or plasma screens are guaranteed to draw oohs and aahs of envy. As true HDTV programming and forthcoming HD-DVDs grow, you may end up glad that you spent the money — if your luck holds and the unit lasts more than a couple of years. On the other hand, if the price tag on large plasma TVs doesn't phase you, you're probably a rich athlete or hip-hop star who can afford to replace your \$10,000-plus TV every so often.

The "sweet spot" at the moment seems to belong to LCD projection units, which can give you size and LCD brightness for prices that are falling rapidly (but still much higher than CRT units). Go with DLP instead if you find a good deal, as they generally look better for critical viewing.

Bottom line: our parents and grandparents would probably be ashamed of us throwing our hard-earned money away in such sums on what is, after all is said and done, still just television — all 500 channels of empty-headed nonsense. They would be ashamed of us, that is, if they weren't always coming over on game day.



The CRT-based HDTVs provide the longest life and best value, but top out at 40 inches.



The plasma TVs are among the largest and most expensive.