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MARCH 1998

NEW TECHNOLOGY

Set Composition & Control Software

Evans & Sutherland will demonstrate its new Release 3.0 of FuseBox set composition and control software for the company's MindSet system. FuseBox is the first production-ready software program designed to compose, animate and control all aspects of virtual set production. And Release 3.0 will have twice the number of features and functions it had last year, including new ease-of-use capabilities. **Evans & Sutherland**, 600 Komas Drive, Salt Lake City, UT 84108.

■ **More Information - Write In 131**

Aspect Ratio Converters Will Be Introduced in U.S.

A new line of aspect ratio converters will be introduced in the U.S. by Axon Digital Design, Inc., a Dutch company that manufactures a broad line of digital signal converters, switchers and signal processing modules for broadcast facilities in Europe and the Far East. The principal new product is the 10 bit ARC 2000. The product line of two-way aspect ratio converters is designed for conversion from 4:3 to 16:9 and back, including pan scan, letterbox and pillarbox. **Axon Digital Design, Inc.**, One Rockefeller Plaza, Suite 1420, New York, NY 10020.

■ **More Information - Write In 132**

Wireless Video System

DTC Communications' DynaPIX will feature the new TRIAD Portable true diversity wireless video system that contains up to five receivers. Each receiver's output is simultaneously evaluated. A proprietary logic board switches to the best signal at the horizontal line rate, up to 15,725 times per second. This minimizes the effect of multipath and fades in the video output. An on-camera transmitter supports both Anton/Bauer and NP-1 battery mounting options. The transmitter is capable of transmitting one video channel, two audio channels, and LTC time code text window generator that is available as an option. PAL and NTSC versions are available. **DTC Communications, Inc.**, 75 Northeastern Blvd., Nashua, NH 03062.

■ **More Information - Write In 133**

NAB Next Stop On Digital Tour

IRTS panelists are enthusiastic about prospects of new medium

The "bottleneck" in digital TV will break at this year's National Association of Broadcasters convention in Las Vegas, according to Bruce Allan, vice president-general manager of Harris Corp.'s broadcast division, during a DTV panel sponsored by the International Radio and Television Society in New York. Allan was one of six panelists who dissected the new medium before several hundred industry witnesses.

Moderator Don West, editor-in-chief of *Digital Television*, opened the session by saying: "There are as many different digital television media as there are people on this panel. The Advanced Television Systems Committee took nine years to produce what today looks like a camel, or is threatening to turn into one. The entire television industry is poised to start over in the digital realm—over 1,600 stations wondering what to do. Will it be the top-of-the-line HDTV, at 1080 lines interlace? Will it be 720 lines progressive? Or will as few as 480 lines progressive—the digital equivalent of 525 lines analog—pass muster? Will there be multiple signals? Will consumers cotton to 55-inch screens at roughly $100 an inch? And will cable carry broadcasters' HDTV signals at all."

The digital playground: Coming alive in HDTV

DOUG CHEZEM

Harris's Allan said he expects analog TV sets to endure through the next decade, although consumers "will go with the new technology in the long run and it will win out." On that issue he also said: "If you show a significant difference in picture quality, consumers will step up

(continues on page 4)

The Model Station Project

Testing the HD in HDTV

By Mike Gardner
Regional Sales Manager
(Mid-Atlantic) Leitch Inc.

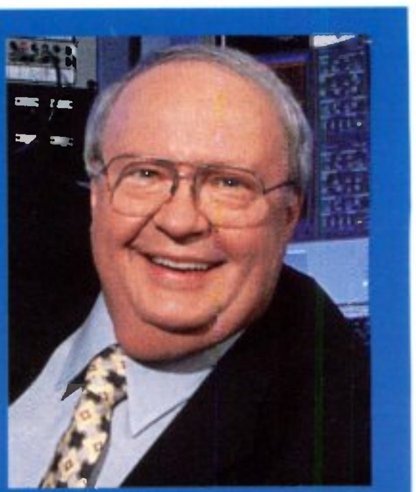
Before the launch, the test. That's standard procedure for any new medium, and HDTV is no exception. Hence the Model HDTV Station Project, being conducted at WRC-TV Washington. That NBC-owned station is serving as a source of encoded digital television broadcast signals to assist equipment manufacturers in the development of new lines of professional and consumer electronic equipment.

Funding for the three-year project—an estimated $6 million—is provided by 270 nationwide television-station members of the Association for Maximum Service Television (MSTV), by equipment manufacturers and by the Consumer Electronics Manufacturers Association (CEMA), a sector of the Electronic Industries Association.

On July 30, 1996, the model HDTV station project accomplished the first on-air demonstration of the broadcast and reception of high-definition television, both live and taped. WRAL-HD Raleigh was the first to transmit HDTV signals but lacked a decoder to display them.

And on Aug. 6, before the ribbon-cutting ceremony of WHD-TV, the station broadcast a taped segment of "Lawrence of Arabia," a Columbia Pictures film supplied by Sony Pictures Entertainment. The movie was transmitted using 24 frames per second and progressive scanning in its original aspect ratio, and according to Allan S. Horlick, then president and general manager of WRC-TV, its

(continues on page 4)



INSIDE / A DT EXCLUSIVE WITH JOE FLAHERTY, FATHER OF HDTV Page 8

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[VTRs]

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More Information Circle 109

NAB Show

Continued from page 1

and pay the premium."

In Allan's view, the next generation of chips will significantly reduce memory costs. "The electronics [costs] will drop fairly quickly," he said, adding that RCA is contemplating direct-view 34- and 38-inch screen sets, to be produced after its first round of rear projection models, generally 50-inches or more.

Allan and others agreed that all formats will be represented in the early days of digital and HDTV, as the medium sorts itself out. The tension, of course, is between such spectrum-intensive formats as 1080i, which give the highest resolution, and such lower-end-of-the-line options as 480p, which afford multiple program opportunities.

"We don't believe in multicasting," said John Greene, vice president for digital operations at Capitol Broadcasting, whose WRAL-HD Raleigh was the first station to broadcast HDTV. "We believe in the best product delivered in a single channel." Greene believes that true HDTV will rule once people see it.

Greene said HDTV "absolutely works" with indoor bow-tie antennas or outdoor receiving equipment, based on Capitol's tests, and even marginal NTSC signals improve to clean digital ones with the switch.

Joe Flaherty, CBS's senior vice president for technology who is considered the father of HDTV, said "the technical quality of HDTV will become a critical factor in attracting the viewers," but said none of the existing display technologies are taking full advantage of the HDTV format. "The display is the weak link today, and a lot of money is being applied to correcting it." (For a full rendition of Flaherty's views on HDTV, see *Digital Television's* Q&A interview beginning on page 8.)

Flaherty expected a lot of digitized 480i in the short term, as stations already are so equipped for analog broadcasting. Prime time he expected to be in 1080i, relying on the 35 mm film production now prevalent in that period. He said CBS affiliates are ahead of the curve in ordering and installing digital TV equipment, and will typically be ahead of their FCC deadline.

Eddy Hartenstein, president of DirecTV, elaborated on his plans to provide two HDTV channels this fall, in time for the introduction of the new generation of TV sets in dealers' showrooms. He said it is "incumbent on us as a delivery platform to enable all formats and allow for on-the-fly switching" between them. "We wanted to have product available as soon as electronic consumer products were there," he said, to "break the chicken-and-egg cycle." Other panelists noted, and he conceded, that the HDTV opportunity was a major advantage for DBS over its cable rivals. Several commented that is was the threat of DBS's multiple channels that prompted cable to design its first generation of digital set-top boxes to carry more channels rather than a better, HDTV picture. Hartenstein said Thomson is committed to having $400-$600 HDTV set-top converters released 60 days after it introduces its HDTV sets.

Pete Mountanos, director of Microsoft's Digital Television Partners Program, said the compelling quality of 480p displays will have an important impact at NAB, and predicted that 480p will be a "very popular format." Challenged about the computer industry's 1997 pledge to have HDTV-capable personal computers in 1998, Mountanos said: "Frankly, we're still on target to deliver on that promise." He emphasized the need to make sure the platform was inexpensive, and would not add $500 to the cost of PCs. "All this is not about pictures," he said. "It's about content."

Joel Brinkley, author of "Defining Vision: The Battle for the Future of Television" (and a Pulitzer Prize-winning reporter for the New York Times), said that the consumer would make the ultimate decision on HDTV, but that in the meantime all formats would be utilized at one time or another in the broadcast day. He said that cable was pursuing a non-HDTV strategy at the moment, and that it might have to pay the price. ■

SUBJECT TO CHANGE

ABC and Fox remain the only two of the top four TV networks not planning a top-of-the-line 1080i feed of high definition. Pre-NAB-convention planning has ABC going for 720p as its HDTV format and 480p as its standard definition format. Fox appears to be opting simply for 480p—not an HDTV format—across the board. CBS and NBC are in the 1080i camp for prime time, with 480i for off-peak formats.

The first generation of digital sets will receive all 18 of the ATSC formats, but—for the most part—will display only 1080i and 480i. None plan to display 720p.

PERILS OF PIONEERING

WFAA-HD Dallas, the A.H. Belo station on the front ranks of HDTV, ran into a technological glitch with its first non-experimental transmissions when nearby Baylor Medical Center called to say that the digital broadcast was interfering with the signal used for cardiac monitors. The problem was not found to be life-threatening, according to the station, which says the spectrum that the hospital was using was so small that it was unregulated by the FCC. But the Baylor spectrum was located on the same channel 9 allocated for WFAA-HD, whose sister station, WFAA-TV, broadcasts in analog on channel 8. The station pulled the signal as soon as the problem was brought to its attention, but was planning to resume transmission after the hospital acquired new equipment, already purchased.

Testing HDTV

Continued from page 1

signal was free of snow, interference and electrical problems, with audio of compact disc quality. "This adds tremendous momentum toward HDTV's real-world introduction," said Margita White, president of MSTV.

In the 18 months following this early high-definition demo, WHD-TV sought and received experimental licenses to broadcast on Washington channels 27, 30 and 34. Using a Comark IOX series transmitter, WHD-TV has broadcast daily on channel 30. MSTV has converted a ENG van into a RF field test van, whic has been gathering reception data fro hundreds of sites throughout the Distri of Columbia, Virginia and Marylan WHD-TV also operates a second tran mitter, provided by Harris Corp. from i Sigma cd series, on channel 27. As th channel is immediately adjacent to analo channel 26 (also on air in Washington WHD-TV can field test adjacent chann interference.

Under the guidance of Bruce Mille now president of the Model HDTV Station Project, several microwave, fiber a satellite projects are nearing completi in the first quarter of 1998. These projects will demonstrate solutions t STL/TSL and acquisition problem posed by the conversion to an all-digit television system.

Leitch, a member of the WHD-TV project since the beginning, provided th wideband distribution amplifiers tha allowed the station to begin converting i technical facility from "a laboratory to model HDTV station," according t Miller. "This shows great confidence b broadcasters in the near-term FCC rulin to support the Grand Alliance technica standard," said Kent Ewing, President o Leitch Inc.

Source material at WHD-TV is prima ily on videotape, HDD-1000, D6, D5 an D3 for previously compressed materia Both full bandwidth HD at 1.5 Gb/s an 270 MB compressed signal level are bein considered as standards in future facilitie Patch panels currently provide interconnection with the Grand Alliance System The station also has a server with which t play sequences to air or transfer them t data tape for members to use in developing products. WHD-TV uses a Son HDC500 camera with a Canon HD5X lens in the studio. The 16x9 aspect rati and precision focus ability offer new chal lenges to camera operators. ■

One From Column A, Two From Column B

This is a partial list of digital broadcast equipment to be offered by major equipment vendors at the National Association of Broadcasters convention in Las Vegas, compiled by CBS Engineering.

BROADCAST DTV EQUIPMENT

EQUIPMENT MANUFACTURER	MONITORS	VTR/ SERVER	CAMERAS	FORMAT CONVERTER	DIGITAL VIDEO SWITCHER	DIGITAL VIDEO EFFECTS	GRAPHICS	TEST/ MEASUREMENT
Chyron				1080/720/480	1080		1080	
Hewlett Packard		480						8 VSB
Hitachi			1080/480	1080/720/480				
Ikegami	1080		1080/480	1080/720/480				
JVC	1080	1080	1080/480					
Leader								1080/480
Leitch					1080			1080/480
Lucent				1080/720/480	1080			
Mitsubishi				1080/720/480	1080			
NEC	1080			1080/720/480	1080			
Nvision					1080			
Osaka	1080							
Matsushita/Panasonic	1080	1080/720*	1080	1080/720/480	1080			
Philips	1080		1080/720*	1080/720/480				
ShiboSoku	1080/480							1080/480
Silicon Graphics						1080	1080	
Snell & Wilcox				1080/720/480	1080	1080	1080	
Sony	1080/480	1080	1080/480	1080/720/480	1080	1080		
Technics				1080/720/480				
Tektronix/Grass Valley				1080/720/480	1080	1080		1080/8 VSB
Toshiba	1080/480							
Utah Scientific					1080			

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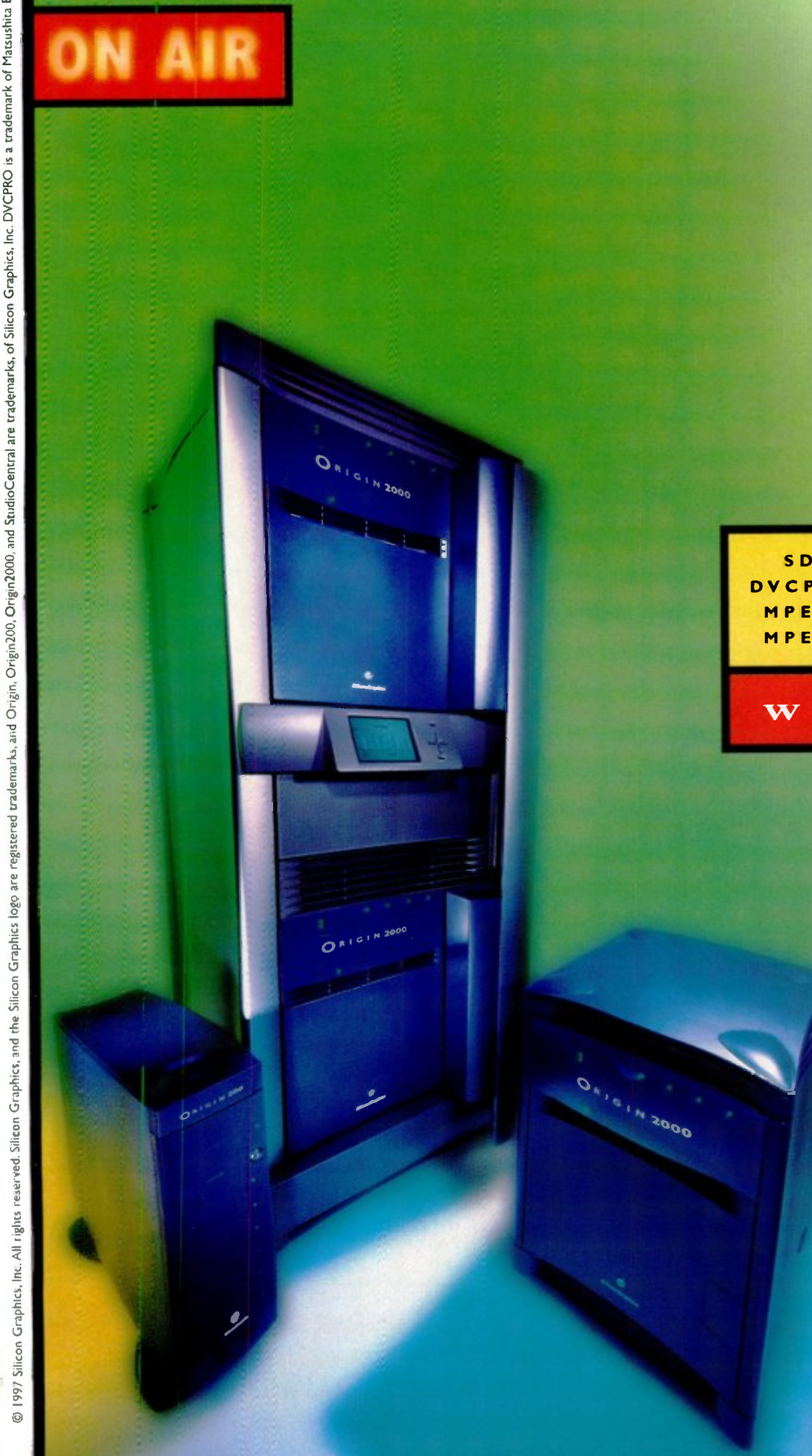

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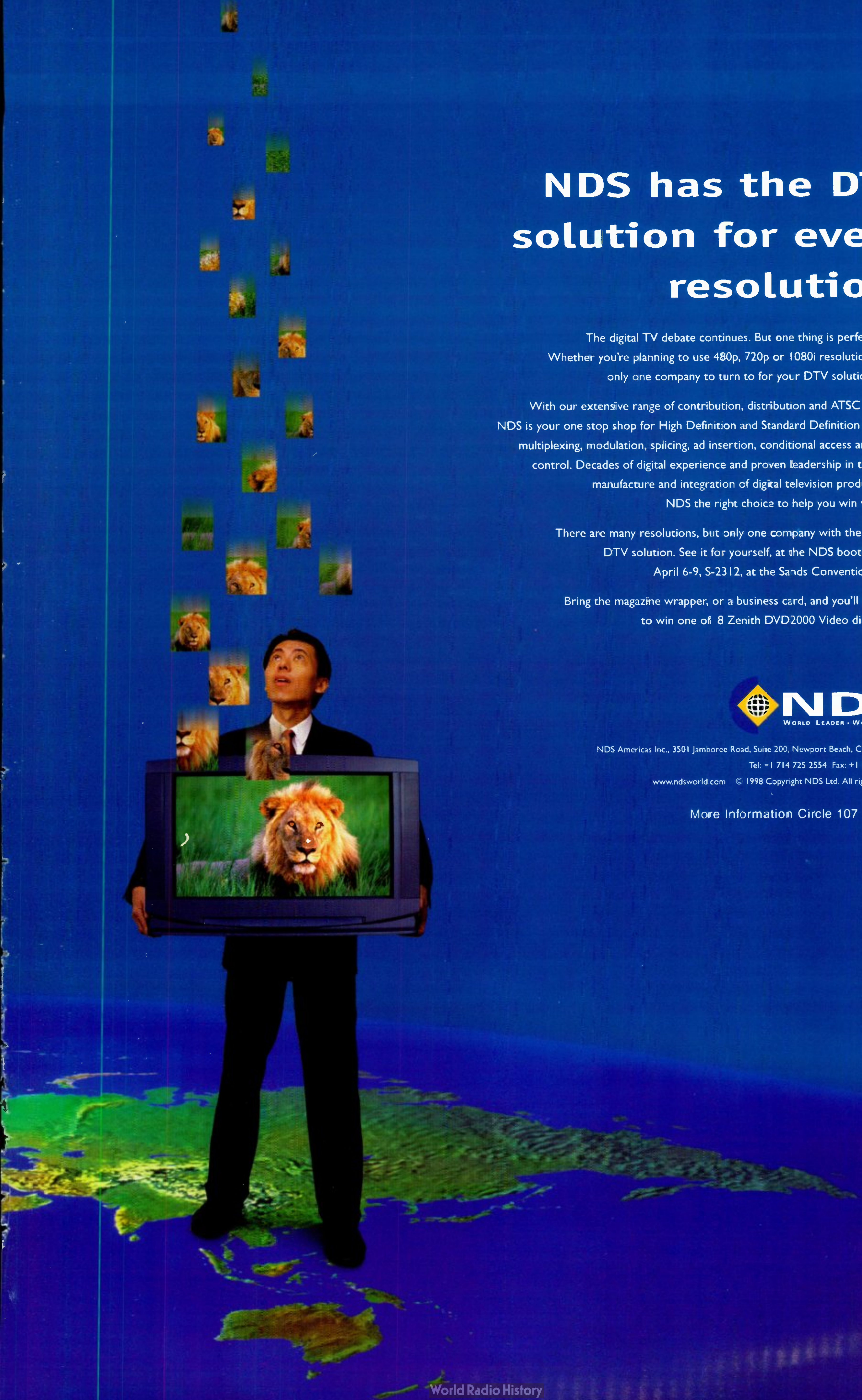


Joe Flaherty on...

THE NUTS AND BOLTS OF PIXELS

If there weren't a Joe Flaherty television would have to invent one. CBS's senior vice president for technology has cornered the market on honors in his generation; the full list would fill most of a page in this magazine. He is without doubt the father of HDTV: no one else has worked longer or more effectively to best both the physics and the politics of this new medium. He is an engineer's engineer: Flaherty and his CBS colleagues have been involved with virtually every key advancement of the late 20th century. In the following interview with *Digital Television*, Flaherty brings readers up to speed on his pride and joy, and points out the path for the television medium to follow.

DT ■ **You have been the pivotal figure in creating this new medium, and motivating those in it, for the last 20 years. Are you on the lip of a tragedy or a triumph?**

Flaherty □ (Laughs) Well, actually, I think the basic work is done; it's a fait accompli. It's now a question of how long it takes people to decide to implement it. There are really two goals: one is to convert the country to digital television, and that much is absolutely assured. The analog world is dead, it will pass away. Those frequencies will pass away, on whatever schedule finally is determined. It's not going to be a quarter century; it will be less than that.

And, by the way, that's an enormous advantage. There's just so much flexibility in what you could do with digital technology. And to the extent that there will be a fusing of other digital technologies—computer, telephone, fax, and all that—with television, it's absolutely essential to have a digital television system. If we were to continue the way we were, the broadcasting world would be the last analog island in an all-digital sea.

The second goal is to improve the quality of the service. We have a world-class analog service today, but the digital services are better than that. All the various formats are better than that, due to the nature of the transmission bandwidth of the analog signal. So we are going to improve service. The question is, how much do we improve it? The 480-line systems are relatively minor improvements. The high-definition formats are a much better improvement. And the top of that line is the full 1,080-line, 1,920-pixel system, which today is interlaced for live pictures, but progressively scanned for film pictures. Within the next five to eight years it will be progressively scanned for all pictures. And that will happen sooner, rather than later, on the production side.

DT ■ **Why do we have to wait eight years?**

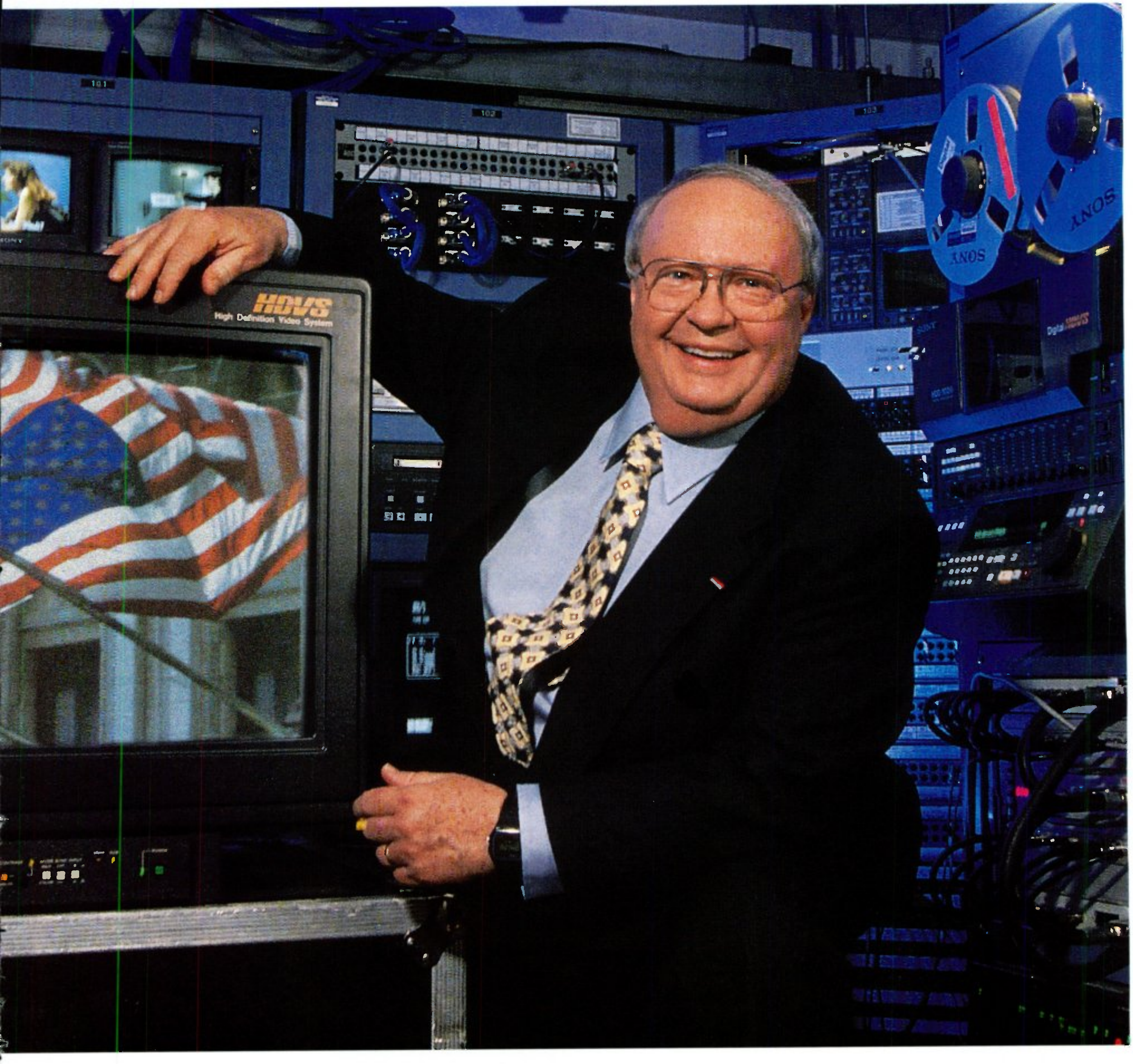
Flaherty □ Because we have to find a way to include the extra bits required for the progressive transmission in that 6 megahertz channel. We could do it tomorrow with a wider channel. As you know, that's 8 megahertz in Europe, 7 in Australia, but here it's 6. We don't yet have the technology to do that, but we will. But all of our film programs, which represent a significant part not only of prime time broadcasting, but a lot of cable and satellite transmission, where not only off-network programs are sold, but cinema films are sold. Those are all going to be full progressively scanned at the 1,080-line rate from the first day.

The question following on that is: How good is good? How high is up? What does it have to be? There's a tendency in humankind to think that what's here when they entered the world is what the Lord planned in the Garde of Eden, and, therefore, there's something particularly sacred about 480 lines. The fact is that Sarnoff went throug a whole series of line resolutions, trying to get the best h could. It started at 353 lines, which he called "high-defin tion," by the way. And it was, compared to the 40-line mechanical system. It then went to 405 in Europe and 525—or 480 active lines—in this country.

You cannot accomplish more than you intend, and o intention was specifically stated by the ITU and th SMPTE and the technical community: to make the syste as good as 35-millimeter film in the cinema. That was th standard that people were used to—and, by the wa which had been totally accepted by the public and by th creative community for at least 50 years. And that ha been accomplished.

So a 1,080-line system is not too good, it's just catchin up with where film has been for many years. And that is system accepted by the public as terrific. So we are finall catching up to that quality, and I believe that the publi will accept that wholeheartedly.

DT ■ **Is there an engineering distinction between operating at 480, 720 or 1,080? Does it affect the costs within the broadcast plant?**



Dennis Brack / Black Star

Flaherty □ In the long term, I think the costs will pretty much equalize. In the short term, while new equipment is being designed and built, there is a difference—because, of course, every television station in the country is fully equipped with 480i. So, except for normal replacement, that's zero cost. In the digital world you have to buy a digital transmitter, antenna and transmission line, but you could just digitize the present 480i and put it on the transmitter. So that wouldn't cost a great deal. On the other hand, 480p, for what relatively minor improvement it gives, is hardly worth the investment of replacing everything in the station that's already at that basic quality level, and then have to do it again when you go to high-definition.

DT ■ **But does 480p buy you access to the computer world?**

Flaherty □ Not really, because chips designed by IBM, and Snell & Wilcox, and now Intel, take whatever signal arrives at either the computer terminal or the television set and convert it to whatever system that device wants to display. And there's little, in the end, to choose from in that. Now, of course, at the station level, if you go to full high-definition, the first sort of "pass-through," as it's been called, is just to have the transmitter, antenna and enough equipment to get somebody else's signal—a network or a program supplier. It's the first expense but it's the unavoidable one. If you don't want to lose the license, that you have to do.

DT ■ **Is that the $2-million figure?**

Flaherty □ Yes, assuming you don't have to rebuild the tower, reinforcements and so on, which would be in addition to that. But, after that, it's sort of a marketplace, station-by-station decision: How soon do you need to originate local commercials in high-definition? How soon do you want to do local productions? Then you need cameras and switchers. And how soon do you do syndicated programming and need a tape machine?

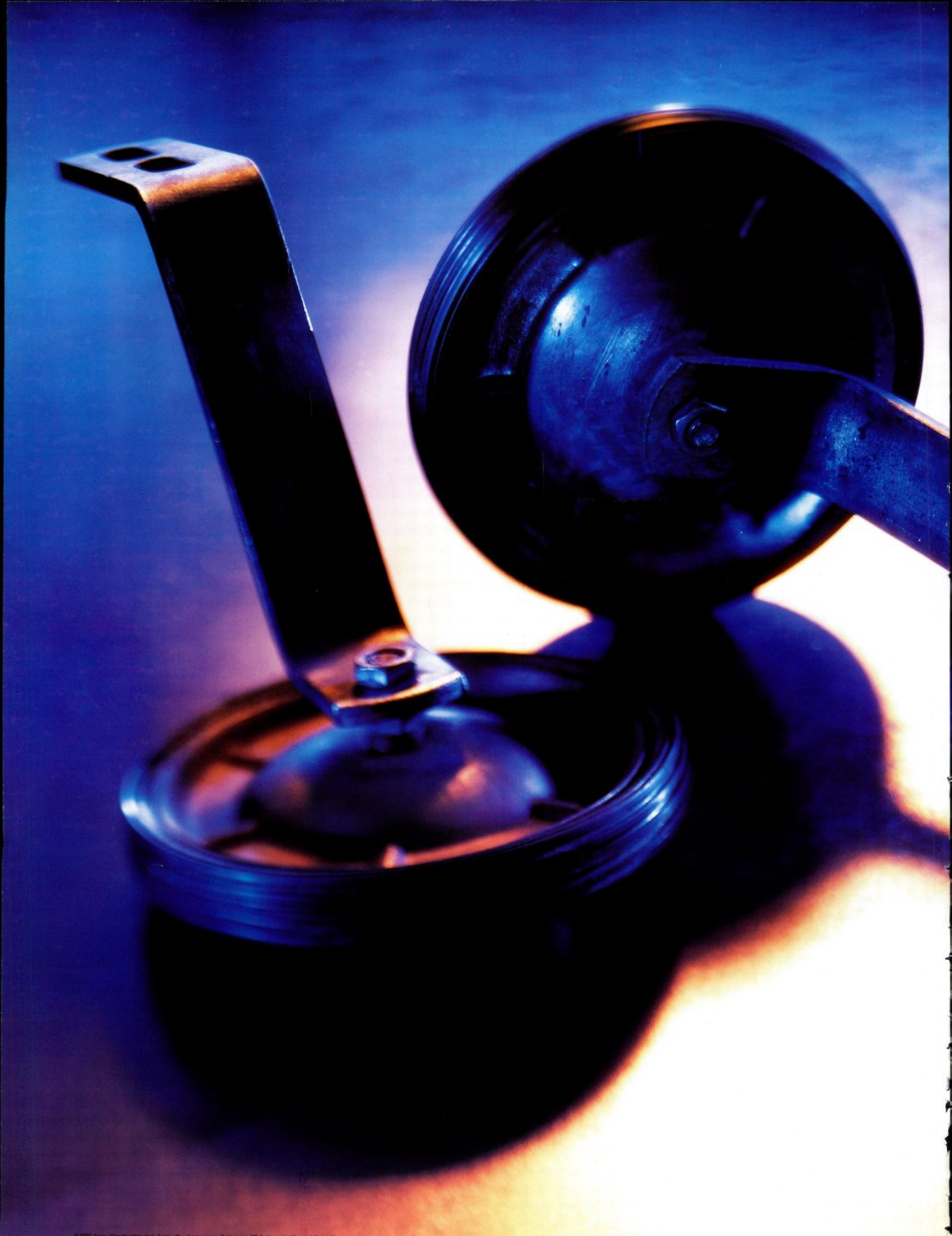
That, of course, is expensive, because it means replacing what's already there. The cost itself can be paced along with the normal replacement schedule—I mean, this equipment doesn't last forever. If it's paced as much as possible with a normal replacement schedule, you only pay the incremental price between the 480i and the high-definition, and that increment is coming down dramatically—about 20% a year. Now, it won't get to zero, but it's reaching the point where it's maybe 20% to 25% more. By the time most stations really have to do that, there'll be a relatively minor penalty to pay. But, yes, that costs money to do.

DT ■ **Is anybody making the 720p equipment out there?**

Flaherty □ No, not today. Most people don't see the need for it. Because, while it's high-definition, it's several hundred thousand pixels per frame less than the 1,080-1,920. And the cost is about the same; the bandwidth required to transmit is the same. So there's probably little to choose from about that. So far, manufacturers are not building it.

Now, tape machines can be converted to do it—their bit boxes, as it were— and you can modify some tape machines to do that. But to make a camera means making a new CCD, with those specific pixels on it, and that's usually a two- to three-year design and manufacturing proposition. The 1,080, 2-million-pixel CCD already exists.

One of the factors that you have to look at is that we are not in this world as an isolated island, as some Americans would like to believe. There is a whole world out there, and in Europe there are no progressive-scanning standards in their standard. And in Asia, the de facto standard is 1,080—1,035 going to 1,080—interlaced. So, worldwide, the International Telecommunications Union has recommended the worldwide common image format for high-definition program production and programming be 1,080 lines by 1,920 pixels. Now there are still 50- and 60-hertz rates around the world, but at least we have a common



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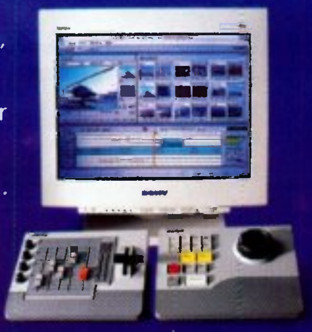

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image format—we don't have to interpolate horizontal or vertical pixels.

So this means, with the world market, the cost of 1,080-1,920 equipment is going to come down not only faster, but come down further, through mass marketing, and that is the format that will be acceptable worldwide for programming exchange.

So there are a lot of reasons to produce in that format. We mustn't confuse production and transmission. Production for any program that has an afterlife value should be made in the best possible standard, and the one acceptable worldwide, because from the highest quality you can always convert down to different transmission formats, but converting up is a much less satisfactory solution. You're generating artificial pixels.

So for most important production worldwide in electronics, to compete with the quality of 35-millimeter film, it will be 1,080-1,920. And that's just a fait accompli.

DT ■ **Is there any advantage or reason to go to 480, as opposed to 1,080, other than multiplexing or multicasting?**

"We mustn't confuse production and transmission. Production for any program that has an afterlife value should be made in the best possible standard, and the one acceptable worldwide, because from the highest quality you can always convert down to different transmission formats, but converting up is a much less satisfactory solution."

Flaherty □ Well, of course, it is already 480i nationwide, so all the receivers are there to receive that in NTSC, and all the plants are equipped. So if you consider the first day that a station goes on the air with its digital signal, the majority of that day will be 480i, digitized. That will erode as more and more high-definition becomes available—maybe never to zero, but in different dayparts you will have high-definition signals, local or network, and you will have 480. Those are going to be two very dominant numbers for a lot of years. The question is whether 480p and 720p will ever become more than curiosities. Only time will tell.

But, yes, in terms of multiplex, you can't transmit multiple high-definition programs with today's technology.

DT ■ **How far away are you from being able to do that?**

Flaherty □ Well, with film programs you can almost do it today, but for electronic programs it's kind of a Catch-22. You can't do it because we designed it not to be able to do it. When the FCC set up the advisory committee in 1987, the direction was: Study, test and recommend an advanced television system—which became a high-definition television system—for the United States. But we had to do it in a 6-megahertz channel.

Well, it started off with a number of experiments, but finally it was very definite by the FCC that it was to be high definition. So for eight years the entire system was dedicated to making the best high-definition system the world could make and fit into 6 megahertz.

Now, the technical miracle was that the engineers did it. They used up every bloody hertz in the 6-megahertz channel in order to make the world's best television high-definition system. And so we filled the channel. So now there's nothing left over when you do high definition.

DT ■ **Well, we assume that, with further advancements in compression, you could have multiple high-definition signals.**

Flaherty □ Well, cable can do that the first day, because it has a signal-to-noise advantage over terrestrial television—enough to do more layers of bit transmission, as it were, and put more bits through that 6-megahertz channel. The throughput is better as a function of the signal-to-noise ratio. A wired system has less noise interference than a wireless system.

So, with the 256 QAM transmission system that cable plans to use, they can put two 1,080-line high-definition signals through a 6-megahertz channel. The answer is that we could do that too. The problem is going to be backward compatibility, because once you put some millions of television sets in the hands of the public, you have a constraint not to change the total system so that those sets don't work.

So, as we develop better compression schemes—or let me say achieve a better signal-to-noise ratio—we can do it, but we have to do it with a backwards compatibility for those old receivers—what will then be old receivers. Otherwise you have to start with another whole new set of channels.

Now, there are people who say: Well, we'll take these new digital channels, and they'll be today's digits, and when NTSC goes off the air we'll take those back for the next level of digits, and we'll keep ping-ponging back and forth between two sets of frequencies. I don't think that's the idea the government had in trying to recapture those channels, but it is a possibility. However, if you do that, each time you have to replace the old television sets, as we're now planning to replace the NTSC television sets.

DT ■ **You can't just change a chip?**

Flaherty □ Yes, there are things you can do. The obvious one is: How do we improve the signal-to-noise ratio? Probably little can be done while NTSC is still on the air because a lot of the interference comes from NTSC. But when NTSC goes off the air, there's a possibility of raising power; there's even a greater possibility, as time goes on, of better front ends and receivers, with lower noise figures, that could buy us the required signal-to-noise ratio. That then allows you to put more bits in the channel. However, it does not avoid the backward-compatibility problem. I don't want to be the one to say it can't be done, because technology has a way of doing things that are impossible. But those are the constraints. You have to try and not obsolete the old receivers.

DT ■ **What are the major considerations in going forward in digital? We know that the broadcaster has a part of the picture. We know that the consumer-electronics industry is going to play a part. We know that cable will play a part. Do we say that the computer world will also play a part? And are there other parts not yet thought of?**

Flaherty □ Well, the consumers themselves are going to pla a key part, because the digital receivers, with all the flexibility that comes with them, will come at a higher price Now, it won't be the high price of the initial sets, but it's always going to be some percentage higher than the present day sets. I don't know if it's 10% or 20%—it's not 100%.

So the speed with which the public accepts, or fails to accept, these new devices is key to the whole thing. Th broadcaster needs to put on the programs, and probably digital repeats of the same old programs and the same ol quality isn't going to do it. There has to be some element o high-definition wide screen. You have to fill that new screen that you're trying to sell to the public. So there will have to be some significant programming motivation to buy the set

Now, on the consumer-equipment side, that industry i starting the whole country at GO—everybody has to buy a new television set. That's perhaps the business for the nex 20 years. That's the way the whole system runs. If we didn' have new cars every year we'd still be driving 1934 cars.

Cable has a key role to play. The public is used to multiple program choices. And when it comes to broadcasting, 60% to 70% of that audience receives its broadcast programs on cable. But in addition, it receives all the cable programs. And I don't think many new digital receivers would be sold that cannot receive those programs, even at better quality, pretty quick. I think that could doom the whole system.

DT ■ **But I understood that this system was supposed to be better in terms of reception, independent of a cable antenna.**

Flaherty □ That's true, except that so many people have either taken the antennas down, or never put them up in new houses, or they're up there, but the lead-in has fallen off and the antenna has rusted.But there has been a push to sell antennas, and I'm told that there have been more antennas sold in the last four or five years than have been sold since the early days of television. That may be due to the fact that people receiving cable-type programs from the satellite don't receive the terrestrial stations by satellite, because of the content that has to be supplied locally. As you know, terrestrial antennas are being integrated as part of the satellite-receiving antenna—so it's two lead-ins and two terminals for your TV set— but you can receive the terrestrial signal as well.

From the broadcasters' viewpoint, recapturing their own distribution, which they've largely lost, doesn't sound like a bad idea, because it eliminates a lot of to-ing and fro-ing with the cable industry, on must carry and like-to-carry and maybe-not-to-carry. Broadcasting lost 60% to 70% of its distribution and recapturing that in many, many areas amounts to antennas, and master antennas, in apartments and so on, that were given up in favor of cable.

DT ■ **But is cable actually able to pass a digital broadcast signal?**

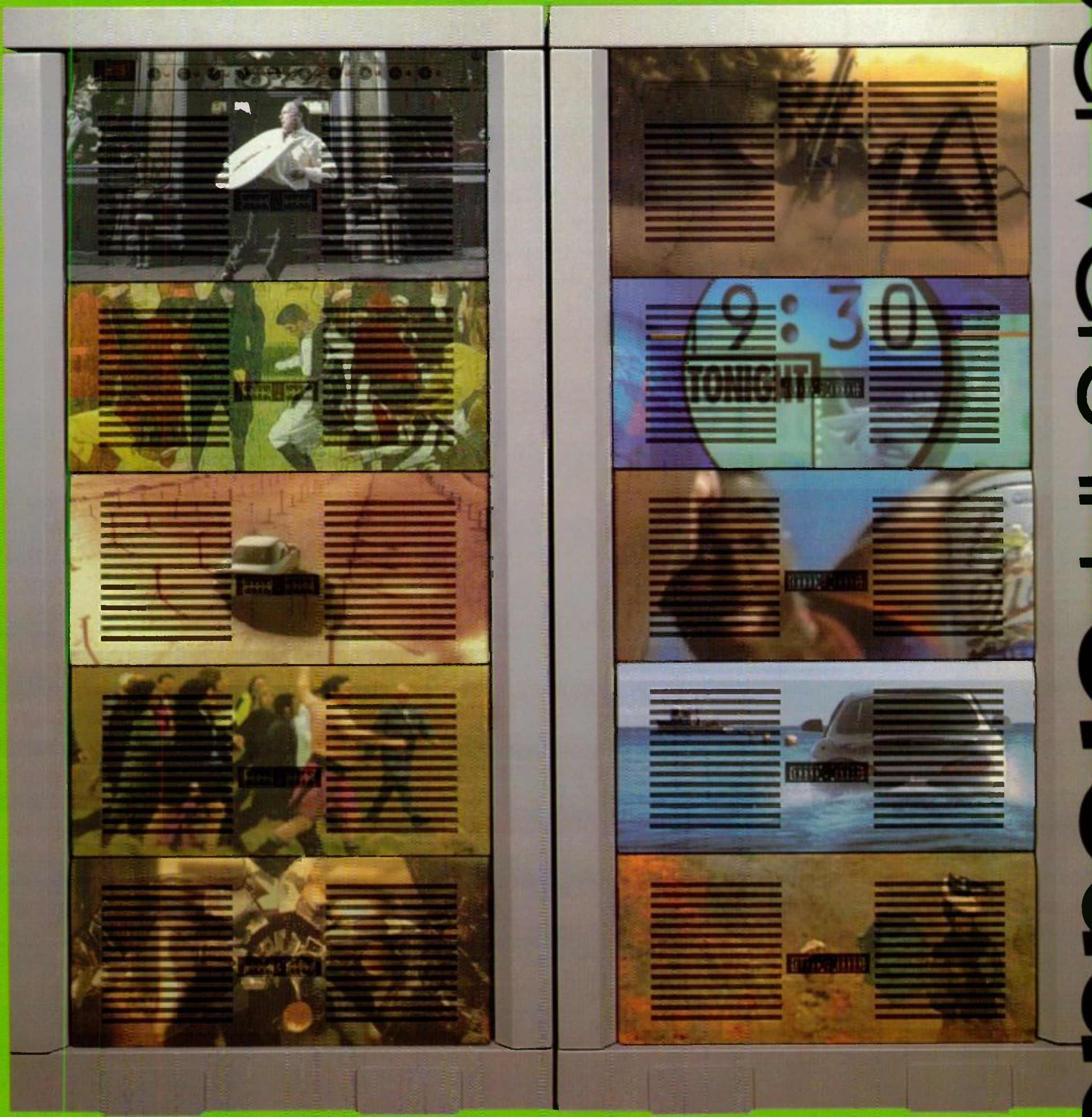
Flaherty □ Yes, they certainly can pass it, in terms of capability of the cable itself. Some systems are more modern than others. Fiber systems have wider total bandwidth capability. It's a question of the capital investment.

DT ■ **In what?**

Flaherty □ Actually in the cable, the headend, the line to the home. And the second piece is the set-top box or the cable-ready television set. Now, there is no cable-ready digital television set, and, as of today, there are no digital set-top boxes that will deliver all of the ATSC digital formats. But that's not a technical problem. That's an investment and capitalization problem. I think, for its own good, that cable's going to have to do that—the analog world is fading away. It's not going to happen in one day, but the government thinks it will happen in 2006. And maybe that will be 2010, or 2015, but it won't be 2050. It will happen, and you want it to happen.

Inevitably, when you have a digital system, it opens the possibility of an integration of data and computer graphics, and computer information, in the same box—both computer information on television sets and television pictures

Servers in **broadcast**



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on computer sets. That will come. How much of an attraction it is to the public depends on what's offered. Remember, it's not very profound to say that the public finally watches programs and not the technology. There's been a lot of interactive technology enabled and tested, and so far they've found no killer application.

But first you have to have the technology, you have to have the platform, and then the creative and business brains in the country have a pretty good track record of finding ways to make it attractive to the public. That hasn't happened yet, but it probably will.

DT ■ **How ready are any of these elements—broadcast or consumer-electronics, cable, computer—to participate in delivering a system this fall?**

Flaherty □ Well, like most start-up things, not all these elements are moving at the same pace. The broadcasters, of course, who had a target to get on the air—this year, next year, and the year after—are moving pretty quickly. The transmitters are readily available; the antennas are readily available. The problem on that side has been tower structures, and strengthening or building, and all the problems that go with that. But that part is pretty well ready.

Prime-time programming in this country has been produced in high-definition for 50 years. Most of that—up to 70%, 80%—is 35-millimeter film. It's already high-definition; Hollywood certainly knows how to do widescreen, so the programs can be made available within a year's notice, and that rollout can be the function of the market and the decisions of the producers.

So the CBS stations, certainly, are going to be ready. Programming can be ready when producers think it's the right time. But there aren't yet enough total systems—with cameras and switchers, and recorders and all of that—that you can walk through the station and, for every piece that's there now, say I have a replacement piece. Some special-effects machines don't exist; not all the switchers that have the flexibility we have today exist. But the vendors are working on these. This is not invention. This is grunt-work engineering and marketing. It's probably a year behind where it needs to be, but it's coming.

On the receiver side, the early sets are going to be expensive. Somewhere between $3,000 and infinity, but probably $3,000 to $6,000 is a reasonable number.

DT ■ **But much larger sets than we're accustomed to now?**

Flaherty □ Yes. That's important. High definition comes into its own with a large picture. Remember, our present system started with 7-inch pictures, and every time we make the picture bigger, you see more warts on the system. And it's time to replace it. So one way to look at digital—and high-definition, particularly—is a new platform that will support these bigger and bigger pictures. So the minute the quality is good enough to support the picture, guess what? The receiver makers make the big picture. So quite a few of them are 55-inch diagonals, with rear projection and vertical projector tubes, shooting into a mirror and reflecting onto a screen. That keeps the depth of the set only 18 inches or so, so that you don't have a giant coffin in the living room to make a picture. Some very innovative things are happening.

That's the good news. It is also slow; it's just rolling out; it's going to be expensive in the beginning—and the weak link in the whole system is the picture display. None of the picture displays—flat panels, kinescopes, projection systems—fully exercise the full high-definition quality. They're somewhere at 700 or 800 lines with 1,100 pixels across each line. This is where the masses of development money are going on the consumer side.

DT ■ **You mean the initial high-definition sets will not be high definition?**

Flaherty □ That's right. They're certainly a lot better than they are today, but when you had a 480-line television system, it was inappropriate to try to design higher-quality displays. You don't want the display too much better than the system, because you get artifacts. So now, with a much better system, massive research is going into better and bigger displays. And here it works in your favor, because the bigger the display, the easier it is to make it better—physically, you have room to put the extra pixels. The smaller the picture, the harder it is to improve that quality.

DT ■ **But are you saying, in a worst-case scenario, that if you were to buy a $6,000 set this fall, that that might be obsolete a year from now?**

Flaherty □ Well, it isn't obsolete to the extent that it still works. But, you'll remember, early color sets didn't have the quality of picture that they make today. Development never stops, and the receivers will get better and better over the next two or three years—not 10 years, but two or three years. So the set that you buy today is going to be a high-quality set—certainly better than anything that's available at the normal NTSC. It's just that they will continue to get better and better.

"It's always been the broadcaster who put on the definitive signal to which the receiver is designed. That was true in color, it was true in black-and-white—and it's true now. If we don't opt to have the best quality, then there will never be the ultimate receivers."

DT ■ **But does it argue that you hold back until they do—before you commit your money.**

Flaherty □ A lot of people do just that, with any new technology. The early adopters are people who are ready to take the risk to be the first ones with the best device—and, you know, I applaud them, because they're the ones who finally start new trends. But the CD didn't start overnight, either, and some of the early disks were not seen as reproducing as well as were expected by the audiophiles.

DT ■ **Could this be used as an argument by those who are pushing for 720, as opposed to 1,080, as a transmission standard?**

Flaherty □ Well, you can always do that. But without the high-quality source, you'll never have the improvements. There has to be a chicken in this chicken-and-egg. It's always been the broadcaster who put on the definitive signal to which the receiver is designed. That was true in color, it was true in black-and-white—and it's true now. If we don't opt to have the best quality, then there will never be the ultimate receivers.

DT ■ **You've said that the analog world is dead or dying, and that it is essentially an artifact of history. There are perhaps 200 million television sets in this country—analog—each one of them seeming to work better by the day, and to last longer. And the stores are going to be filled with analog television sets at Christmas this year. Do you really think that analog will disappear?**

Flaherty □ It's not going to disappear overnight. The government has thought that a nine-year overlap transition perio would be enough; some people believe it's 10 or 20 years. Th has happened a couple of times in this industry. In Europ when the British went from 405 to 625 lines, they simulca both systems for 20 years—and, finally, the last 405-line se was retired into merciful oblivion and they shut off the servic

Now, if it took 20 years—this was about 1964 or '65, i a vacuum-tube era—it can't take as long today. So it somewhere between the government's nine years and 2 years. But it's not just the quality, it's also the aspect ratio We're changing from a narrow screen to a wide screen. S when programs are made for a wide screen, and you se them on a narrow set, either the sides are going to be cu off or you have to see it as a letter box, with black on th top and bottom. And when you do that on a 480-lin system, you're losing probably 100 lines. The vertical resolution goes down quite dramatically. New sets will b built to give you that choice at home.

DT ■ **How long do you think that broadcasters will be operating two stations? You have to have more people, I take it, so there's a cost equation in there.**

Flaherty □ It will take the full transition period, bu not necessarily more people. But there's certainly big power cost for two transmitters. And that's particularly true for UHF NTSC stations. That's a lot o power, and a lot of primary power—that's a very big bill. And then the general maintenance of the transmitter, and the antenna, and the transmission lines and all those things are expensive.

So I guess it's fair to say that it behooves broadcaster to work with the consumer equipment manufacturers to expedite this transition, because the extra cost is at the broadcaster level. And this changeover is inevitable anyway, so getting it behind you is probably worth doing.

DT ■ **Could it be advantageous to the broadcaster to keep both systems going?**

Flaherty □ Well, I guess it would be an advantage to keep both channels going —but someday the analog one would be another digital channel. That's not the present intention of the government, but if they regurgitate those channels and sell them, presumably broadcasters are among the potential buyers. You could double your capacity if that were a good business investment. But I don't know that it would help to keep the analog system going, once the public is used to better pictures. It's only a question of time until the analog is no longer desirable, or certainly not as desirable. So probably it isn't a help at the end of a transition period to keep the analog going, but it probably would be an advantage to have a second channel. It wouldn't necessarily be true that those would be the same broadcasters. There could be quite a competition for that spectrum, which may or may not be in the public interest.

DT ■ **Are smaller stations at a disadvantage?**

Flaherty □ Yes. The cost to everybody is roughly the same, so as a percentage of growth revenues it's a much bigger percentage for a small station than it is for a large-market station. For that reason, they may be slower to roll out the service, or slower to roll out the local high-definition portion of that service. In some sense that's true today. ENG equipment costs the same anywhere, so when you launch a news service in a small market it's percentagewise more expensive than in a big market. But there are a lot of very clever businessmen in those small markets, too, that have managed to make miracles happen, with far less than you'd think they ought to have at their command.

DT ■ **Well, having been almost single-handedly responsible for this revolution, what are you going to do to us next?**

Flaherty □ (Laughs) Well, it was far from single-handed. There was an army of very creative people who made all this happen. It's like the story of the leader of the army who got in front and kept marching, because the army was going to march over him if he stopped. I think that's more my role in this development. ■


"...expect a high today of -60 °C, with winds gusting to 160 kph. We'll be back with sports right after this..."

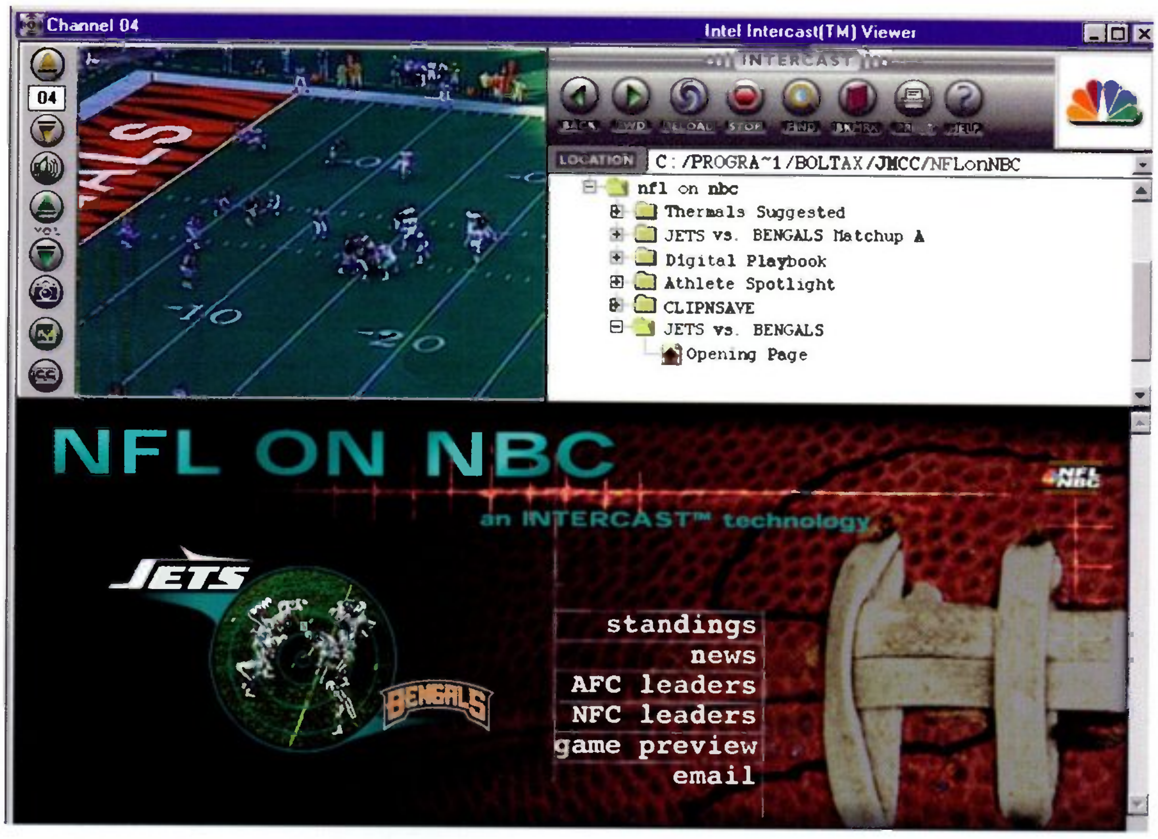
CONVERGENCE AT WORK

Intel charts own course in digital broadcasting

The complex partnerships that characterize the digital media business are, at once, territorial and functional: staking claims while launching R&D projects as people figure out what will play in Palo Alto.

Intel Corp. has been actively contemplating that for some time, and is, perhaps, the best-situated of the Silicon Valley elite to execute a coherent strategy, in both the physical and metaphysical senses. In its own backyard, not far from Palo Alto, Intel will soon start sending digital PBS signals to four low-power TV stations in Santa Clara, Calif.

For the moment, the objective of the test is strictly technical. Signals from San Francisco's KQED-TV and WETA-TV in Washington, D.C., will be pulled down from a satellite, enhanced with text and rebroadcast to PCs on the low-power channels. But it's a relatively small step from testing such a concept to initiating regionalized commercial services that could make it a viable business.



Intel will be adding material to Intercast from Nickelodeon and Lifetime that can be accessed on PCs. It had been presenting NFL games from NBC.

Moving into a business mode is something Intel has already taken a large step in doing through its Intercast venture with NBC. While Intel isn't saying just how many PC users have actually installed the $100 tuner cards that enable the Intercast technology, the number will almost certainly grow as Intel attacks the chicken-and-egg problem of providing content to make the Intercast experience compelling.

Intercast's programming profile will improve sometime this year when Nickelodeon and Lifetime start developing Intercast content to accompany some of its shows. PC users can presently access background about Jay Leno's guests on the Tonight Show, if they're watching on their high-end PC screens. During the past NFL regular season, viewers could use their Pentiums to push running game statistics on-screen as they followed the live game action from NBC's weekly national game telecasts in a window.

The Weather Channel presents surprisingly compelling content to the small band of Intercasters out there with animated weather satellite imagery that takes the usual TV weather graphics into another dimension. MTV has also developed content for Intercast, which offers a promising tact for the music programmer and for NBC with the Leno show: the opportunity to market artist recordings and merchandise to these early adoptors, and those who eventually follow them.

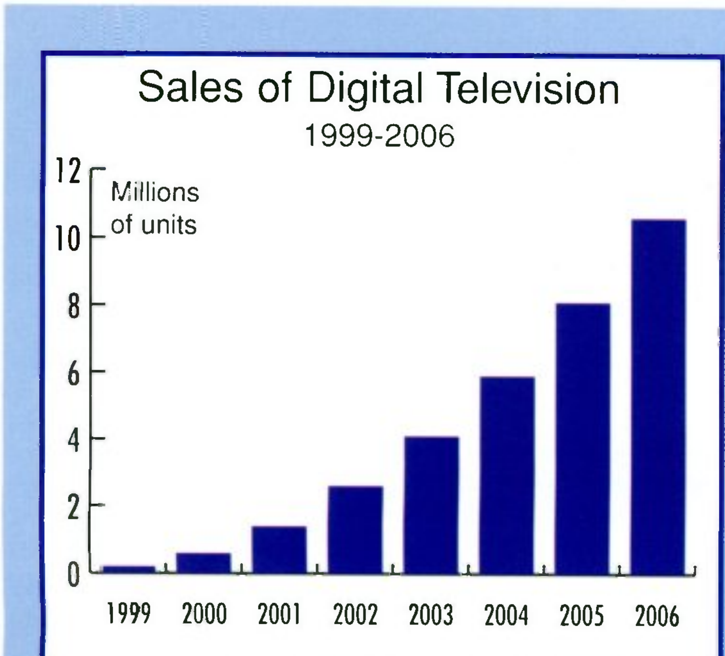
That's not to say there isn't very creative potential here. On Nickelodeon's NickVision Dumpsite, young users will be able to play games and access video content they can't catch on TV. It's that kind of hook that will motivate PC users to spring for the $100 upgrade that will enable receipt of the Intercast signal through the vertical blanking interval. Of course, they've already dropped a few thousand on the high-end machine making this comingling of media possible.

But sports is bound to be a draw, for stat-hungry fans who prefer to divide their attention while they're watching the NBC NFL Game of the Week or NBA contests. The NBA struck a deal to develop content for the ne cross-medium early last year. B mid-year, Intel executives a predicting that compelling Inte cast content will begin to proli erate.

Meanwhile, Intel is workin on a reference design for P receiver cards with Zenith Ele tronics to accommodate thos signals it will retransmit in th Santa Clara data broadcastin test when things advance to th commercial stage. Market tes are planned later this year.

That is, of course, the crucia question in all of the curren round of nascent digital venture When does anyone start makin money with them? In the case o Intel, it can afford to nurture th seeds it's planted on the digita front while it cranks out chip with the kind of revenues tha render big R&D expenditure relatively painless. Intel antici pates spending $100 million o its various digital TV venture over the next two years. Tha includes the advent of a $200 t $250 board to translate DTV sig nals for PCs—whatever forma broadcasters choose to put the in. That turnaround, accom plished as it maintains its allianc with Microsoft Corp. and Com paq endorsing progressive sca as preferred technology, suggest the pragmatic bent that is puttin Intel at the leading edge of th commercially plausible end o the digital spectrum.

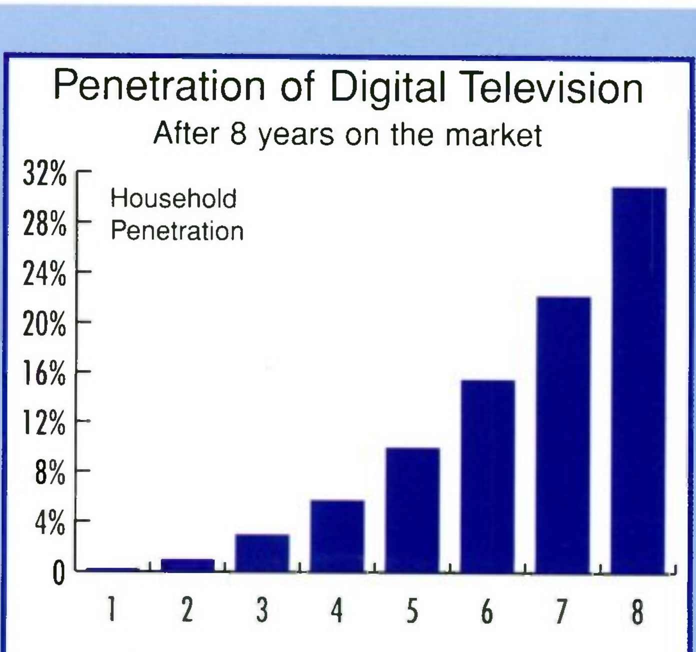
"We are using all-forma decoding," says Ron Whittie Intel senior vice president of it digital content group. "But w think if we build on progressiv scan, we'll build a busines faster." And along with acceler ating chip speeds, that is, afte all, the object of the exercise. ■



Source: Consumer Electronics Manufacturers Association (CEMA)

Two Ways of Looking at the Advent of DTV

The Consumer Electronics Manufacturers Association, whose members will bring digital television to the market this fall, has a vested interest in knowing how those products will be received. These two charts present its best reckoning, based on consumer research. At left: the sales predictions for digital TV sets from 1999 to 2006, beginning with 200,000 sets and progressing to 10.6 million. At right: the effect of digital television in terms of household penetration, from one-quarter of 1% to 31%. Ironically, many retailers expect the introduction of digital sets to spur sales of analog sets, as showrooms fill with the curious.



Source: Consumer Electronics Manufacturers Association (CEMA)

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Product Review

HDTV, IF Lenses

Canon Broadcast will exhibit a full range of breakthrough technologies, including a line of field-proven HDTV lenses; the first IFpro

lens with built-in 2X extender (YJ/YH 18X IRS), and a state of the art digital studio lens, the DIGI-SUPER21 (PJ1X7B). Specifically, the HDTV lenses include: HJ15X8B IRS/IAS standard zoom; HJ18X7.8B IRS/IAS long zoom; HJ9X5.5B IRS/IAS wide angle zoom; UJ20X7B HDTV studio, and the UJ65X9.5B HDTV field zoom. The YJ/YH 18X IRS, a 2X built-in extender version of the 18XIFpro lens, offers an 18-324 mm range of focal length when the extender is employed. **Canon U.S.A., Inc.**, One Canon Plaza, Lake Success, NY 11042.

■ **More Information - Write In 134**

Post Production Products, DDRs, Virtual Set Systems

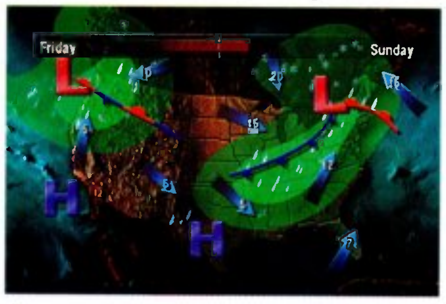
Among Accom's array of products for post production, broadcast, computer graphics and animation and virtual set production is its newest DDR line, APR,

the first DDR with PreRead, the company's exclusive non-destructive preread, and the unique KeyTrack option for V+K or digital RGB recording. Also featured will be the WSD/2Xtreme, for streamlining the computer video I/O process, including 8- and 10-bit recording of up to 20 minutes. The Axess stills & clips store for broadcast graphics and the Axial 300 UnLinear editor will be demonstrated, as will the ELSET line of virtual set products for SGI and NT platforms, showing the latest advances in technology. **Accom, Inc.**, 1490 O'Brien Drive, Menlo Park, CA 94025.

■ **More Information - Write In 135**

Weather Software

AccuWeather 's new software for the UltraGraphics ULTRA high-end weather workstation is the first package to allow combining of all forecast data and mapping data in the same 3D image. It enables



3D rendering and animation of all weather parameters as well as events such as sunrise, sunset, storm systems, etc. Mouse click for instant 2D to 3D conversions. The product produces dramatic fly-through, incorporating weather elements, local geography, and roads. Among the company's new offerings are synchronized audio, in which stations that receive weather video segments can have the video accompanied by a forecaster on a synched audio track, and an Internet feed for TV weather segments that eliminates the need for costly satellite delivery of weather program. **AccuWeather,** 619 West College Ave., State College, PA 16801.

■ **More Information - Write In 136**

WHITHER CABLE AND HDTV

- Can current-generation analog and digital set-top boxes pass through HDTV signals?
- Will advanced digital set-top boxes be able to pass through HDTV?
- Will set-tops be able to convert all HDTV signals to analog NTSC signals?

First, current set-tops don't pass through HDTV signals, because HDTV was in the early developmental stages when those boxes were ordered.

Advanced digital set-tops will be able to pass through HDTV, even though there's no legal requirement for cable to do that. General Instrument's DCT-1000 box, of which Tele-Communications Inc. has ordered roughly 1 million, doesn't have HDTV signal pass-through capability. But TCI intends to move quickly to the DCT-5000, which will be able to pass through HDTV signals. But even then, HDTV pass-through capability may be more an option than a standard feature.

As for whether advanced set-tops will be able to convert HDTV signals to analog NTSC, the answer, for now, is no. The cable industry's rationale is that processing power required to convert 720p-or-better HDTV signals is too costly and would hamstring the industry's ability to roll out advanced set-tops.

Another important issue is the interface with the TV.

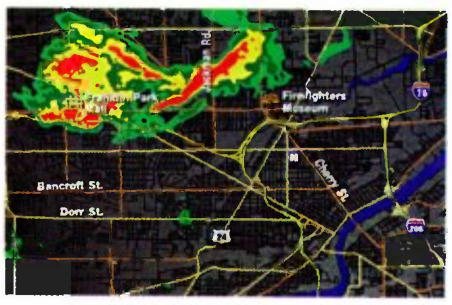
For now, the interface of choice is the 1394 IEEE, or I-Link, interface (also called firewire). For the time being it will be an optional feature because of cost.

It's unclear how much additional cost that 1394 interface will add, $10-$15 perhaps, but cable operators want to ensure that only those people who really want the interface—namely, people with HDTV sets—pay for it. The 1394 interface would also be used as the set-top connection for other digital devices in the home, such as sound systems and DVD (digital versatile disk) players.

It's worth noting that while the 1394 interface has emerged as the leading candidate for that interface, maybe even the de facto standard, it's not the official standard, at least not yet. ■

Doppler Innovations

The latest options to Advanced Designs Corp.'s (ADC) DopRad 32 custom radar display will be demonstrated. And information on the technologically advanced Rockwell Collins Doppler weather radar and its two new high performance dish



antennas will be presented. Also offered is the Rockwell Collins Doppler radar, a fully coherent Doppler, which is extremely supportable: With no costly magnetron to maintain, stations can count on accurate, reliable and live depiction of the weather, including coherent mean radial Doppler velocity data which is extremely useful as a severe weather tool. **Advanced Designs Corp.**, 1169 W. Second St., Bloomington, IN 47403.

■ **More Information - Write In 137**

Broadcast Audio Networking Products

The BCF256 Broadcast Communications Frame from Audio Processing Technology offers broadcast quality audio codex for direct dial ISDN and permanent links such as T1, E1, satellite and microwave. Features include: audio bandwidth to 22kHz; negligible coding delay; analog and digital I/O; integral 256kbits/s terminal adapter; ISDN, X.21, V.35 data interfaces. Also new is NXL256 Broadcast Network Transceiver with broadcast quality codec for audio networks via fixed digital links targeting applications such as STLs and permanent studio networks. It provides 6.8kHz mono through 15kHz stereo audio bandwidth; full duplex operation and automatic transmission backup. **Audio Processing Technology Ltd. (APT)**, Edgewater Road, Belfast BT3 9JQ, Northern Ireland.

■ **More Information - Write in 138**

Dozen New Products: Cameras To Encoders

Thomson Broadcast Systems is offering a dozen new products among its varied lines. In new cameras, there is the 1707 Single Piece Digital Triax model designed for intensive use in all kinds of studio and outside broadcast applications, and 1557D digital studio camera with boards that are interchangeable with the 1657D. In servers, new is the NEXTORE model, a 2 or 4 channel product developed with Digital Equipment Corp. It is suited to production, post-production, or use as a cache for transmission. New in recording is the TTV 4075 P or N, an SX studio digital recorder/player with Betacam and Betacam SP compatible playback. Featured in contribution/digital satellite newsgathering: contribution encoder/decoder, the DBE 4100, built around a Thomso chipset, which incorporates the functio of composite signal decoding, video compression to MPEG-2 4:2:2P standar audio compression, multiplexing an scrambling of the components of a TV se vice (video, audio and data), as well as interfacing with PDH or SDH telecom ne works using ATM technology. Also, Digital Satellite News Gathering system, use for satellite newsgathering (SNG). It i based around the new DBE 4100 SNG encoder, using the MPEG-2 4:2:2P standar And, ATM Multimedia encoder/decode The DBC 8720 encoder and 8721 decode allow video and audio signals to be carrie over contribution and distribution networks. They are based on the ETSI compression standard (ETS300174) **Thomson Broadcast Systems**, 17 ru du Petit Albi, BP 8244/95801, Cergy Pontoise, cedex/France.

■ **More Information - Write In 139**

Editing, Finishing Systems, Special Effects Software

Avid is highlighting its 7.0 Media Composer family of digital editing/finishing systems, used to produce broadcas

program content ranging from commercials to television shows, and Film Composer 24fps digital editing system for projects shot or finished on film. The company's products include Version 5.0 of Media Illusion, an integrated digital effects environment for paint, compositing, image manipulation and special effects. The company will also preview its upcoming release of Media Composer/Film Composer. For the news market, featured is Version 1.1 of AvidNews Newsroom Composing system that enables text, video and audio management on the journalist's desktop and can be seamlessly integrated with a station's existing production equipment. **Avid Technology, Inc.**, One Metropolitan Park West, Tewksbury, MA 01876.

■ **More Information - Write In 140**

Digital Video Cable Upgrades

Clark Wire & Cable has upgraded its most popular lines of video cable. The CV7559CM, the RG6SD and the CV75SM are all now CM- or CMR-rated for assured reliability and safety. The company's new 500 Series Super Low Loss Video Snakes (CV7559CM) are bundled in 3, 4, 5, 6 and 8 channel video snakes. The 3, 4 and 5 configurations are color coded for RGB applications, while the 6 and 8 coax cables are color coded to the resistor code for use as

Every step in video production affects the next.

Your first is the most critical – start with 4:2:2!

BR-D40
Dockable Recorder &
KY-D29 DSP Camera –
package under $18,000
(with viewfinder, less lens)

DY-700 Camcorder
under $12,000
(with viewfinder
and 13:1 lens)

DIGITAL-S Acquisition

To get the most out of today's digital editing systems, you need to begin with the best raw footage possible. And that means shooting in 4:2:2. With DIGITAL-S, you get 4:2:2 color sampling with perceptually lossless compression. This produces an image that remains free of annoying artifacts that could build up through various steps in post production and digital distribution.

DIGITAL-S also offers superior chroma resolution, producing more well-defined colors, chroma keys and effects. In fact, all high-end systems, including the best non-linear editors, require 4:2:2 to achieve these benefits. The result is performance and quality that can stand up through each phase of digital video production. Shooting in a 4:1:1 DV format compromises your image, and you can't bring back the quality once it's lost.

COMPONENT DIGITAL
4:2:2

Take your first step into high performance. Make it DIGITAL-S. For more information call:

1-800-JVC-5825
www.jvcpro.com

JVC
PROFESSIONAL

More Information Circle 105

Product Review

video snakes. **Clark Wire & Cable**, 1355 Amour Blvd., Mundelein, IL 60060.

■ **More Information - Write In 141**

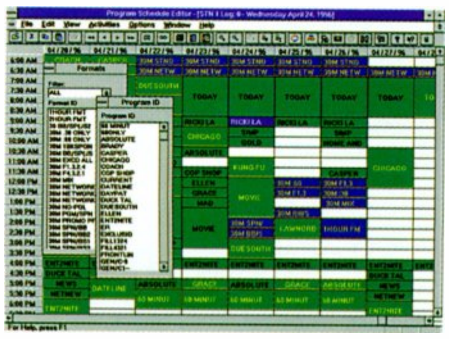
Digital Captioning Service

The closed captioning and subtitling service will present digital captioning. With its technology, when a closed captioned program is created a digital encoder is used to encode the captioning information to line 21 on the videotape. This process ensures that there is no generation loss between the original master tape and the output captioned master, providing the original master is created on a digital format. **CaptionMax, Inc.**, North First Street, Minneapolis, MN 55401.

■ **More Information - Write In 142**

Integrated Management System for Broadcast TV

First launched for national networks and DBS multichannel operations, Columbine JDS' Paradigm Integrated Management System is now available for broadcast television operations. It is the first totally integrated management information system that electronically links all critical business processes of a television facility, including ad sales, programming, traffic, finance and master control automation. Because the program integrates business processes in a single relational database, orders can be instantly booked and scheduled and then aired as planned, greatly improving efficiency, reducing make-goods, and providing greater control of the business. Plus, the Paradigm Traffix Module makes traffic information available in all functions and departments, providing flexibility in selling inventory. As stations transition to multichannel broadcast operations, the module eliminates the time consuming process of rekeying data at every phase of the advertising buying/selling process. **Columbine JDS**, 1999 Broadway, Suite 4000, Denver, CO 80202.



■ **More Information - Write In 143**

Four New Video Server Packages

Highlighted will be Concurrent Computer Corp.'s four new MediaHawk Video Server packages, designed specifically to meet the interactive video-on-demand requirements of hospitality, residential entertainment, intranet and digital video management applications. The server incorporates the company's innovative system architecture and real-time operating system, providing scalable performance exceeding 1000 MPEG-2 digital video streams. It provides complete interactive control. Users are able to start, pause, rewind, fast forward search and fast backward search each digital stream independently with prompt and predictable response times. These streams are delivered with no degradation to performance or video quality, regardless of the number concurrently supported. Variable Frame Size (VFS) technology, variable-bit-rate encoded data can be supported to deliver improved and consistent video quality and reduce content storage requirements and costs by an average of 40 percent. The packages are: H100 and H200 Hospitality System(s); R100, R200 and R1000 Residential Entertainment System(s); T100, T200 and T1000 Video Systems(s), and the D100 Digital Video Management Systems(s). **Concurrent Computer Corp.**, 2101 W. Cypress Creek Road, Ft. Lauderdale, FL 33309.

■ **More Information - Write In 144**

HDTV Filters

Faraday Technology Ltd. has introduced a range of HDTV filters designed specifically to meet the filtering requirements laid down by SMPTE 274M. The new filter will allow users to assume the correct configuration in advance of the forthcoming introduction of HDTV in the U.S. The range covers pre and post configurations for analog component input and output interfaces. Each filter is housed in a 49 mm (l) x 28 mm (w) x 11 mm (h) plastic package. A screened metal case version is also available. **Faraday Technology Ltd.**, Croft Road Industrial Estate, Newcastle, Staffordshire 5T5 OQZ, England.

■ **More Information - Write In 145**

Editing System, Open Media Recorder

The Sabre Plus compact editing system will be complemented by Digital Audio Research's OMR8 Open Media Recorder, designed for digital dubbing applications, and the innovative TheatrePlay system—a multichannel sound-effects replay system that utilizes the OMR8 technology. Making its U.S. debut is the company's Genesis software platform that provides users with a new level of functionality across the spectrum of audio editing tasks. It provides audible audio editing features, including Slip, Trim and Slide, new Roll and Copy/Spot Over functions. Also making its first U.S. appearance is CDAdvance—a unique system for accessing CD material directly from DAR SoundStation or Sabre systems. This combines faster than real time transfer, with varispeed and scrub facilities, and gives users integrated access to CD-based effects from within a DAR workstation or network. **Digital Audio Research Ltd.**, 2 Silverglade Business Park, Leatherhead Road, Chessington, Surrey KT9 2QL, England.

■ **More Information - Write In 146**

ATSC Encoding System For Digital Television

An MPEG-2 ATSC encoding system for the delivery of digital television globally will be highlighted by General Instrument Corp. Developed by the company's Satellite Data Networks business unit, the system will compress and multiplex both standard definition TV (SDTV) and high definition (HDTV) signals in a single ATSC-compliant integrated encoding and transmissions system for DTV applications in terrestrial broadcast, satellite, microwave and fiber network transmission. The new DTV encoding system is backward compatible with GI's current standard definition MPEG-2 system that is widely deployed around the world. It provides a natural growth path for current users and a proven platform for new customers to launch high definition, standard definition, or a mix of both services. **General Instrument Corp.**, 101 Tournament Drive, Horsham, PA 19044.

■ **More Information - Write In 147**

Fully Integrated Wireless Camera System

The STAR CAM (Stand Alone Totally Agile Rf CAMera) system for single and multicamera remotes integrates a multiband microwave video/audio link with a telemetry link providing full paint control for the camera, pan and tilt control, as well as the video/audio link controls. Each system is controlled from a dedicated ful size panel identical in form to those currently in use, making it operator friendly Additional features include simple an quick set up with two wire interconnect fo a single unit; modular hub allowing up t ten controllers; ability to seamlessly ad modules while on the air; ability to contro numerous camera models in the manufacturer's line without reconfiguration; ability to select 2, 7 or 13 GHz microwave bands with a change of the antenna. **Global Microwave Systems, Inc.**, 4141 Avenida De La Plata, Oceanside, CA 92056.

■ **More Information - Write In 148**

ICE Product Supports Avid

The company's ICEfx system for superfast desktop special effects creation is supporting Avid Technology's Media Composer and Avid Xpress digital nonlinear editing systems, giving Avid editors access to brilliant, eye-catching filters and up to 20 times faster rendering speeds from within the Avid Effects Palette—without having to exit Avid software. One of the first products to employ Avid's new (AVX) plug-in interface is the Avid Media Composer 7.0. **Integrated Computing Engines, Inc.** (ICE), 460 Totten Pond Road, Waltham, MA 02154.

■ **More Information - Write In 149**

25th Anniversary Catalog

Jameco Electronics has released its twenty-fifth anniversary catalog featuring 5,000 ICs, components, tools test equipment and computer products for OEMs, engineers, educators and service/repair technicians. In addition to new memory chips, embedded development boards, tools, hobby kits and power supplies, the catalog's 270 new product additions include full lines from manufacturers such as Panamax, DTK Computer, Shaxon, Wavetek and Velleman. **Jameco**, 1355 Shoreway Road, Belmont, CA 94002.

■ **More Information - Write In 150**

DIGITAL TELEVISION SYSTEMS

"Harris created an all-digital facility that let us double saleable inventory, and they did it at a near-analog cost."

Robert Allbritton, Chief Operating Officer, Allbritton Communications

When Allbritton Communications wanted to reach two television markets from a single location, Harris incorporated a centrally located all-digital studio with microwave links to three transmitters over 100 miles apart, two remote news bureaus and 3 additional microwave repeater sites. This solution enables Alabama's ABC 33/40 to blanket the state with city-grade signals.

"Harris' digital solution gives us multichannel capabilities which allow us to offer four distinct channels to advertisers," Robert Allbritton notes. *"Not only do we now have twice the product to sell; we have the ability to broadcast DTV as soon as we're ready. What's more, Harris designed and implemented our digital solution faster than we ever thought possible – and at a cost only 10-15% greater than analog."*

From an all-digital studio and C-/Ku-band teleport facility...to a fleet of Harris ENG and SNG vehicles that proudly bear the ABC 33/40 logo, Harris met Allbritton's unique challenge with state-of-the-future technology.

Whether your needs call for digital-ready analog, or digital right now, call Harris today. We'll show you how digital is more of a practical reality than you may think.

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BROADCAST DIVISION
7920 Kentucky Drive
Florence, KY 41042 USA
TEL: +1 606 282-4800
FAX: +1 606 283-2818

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A new world of broadcast solutions

Systems: Electronic News Gathering — Fly-away Satellite — Mobile Production — Radio Studio — Satellite News Gathering
Satellite Uplink — Television Production — Television Transmission — Terrestrial Microwave

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World Radio History

Product Review

HDTV Studio Camera, Imaging Applications

Among Hitachi Denshi America Ltd.'s Broadcast and Professional Division's product introductions are the SK-3000, a

multistandard studio camera that provides simultaneous HDTV and NTSC outputs; a new low-cost, portable camera with a switchable 16:9/4:3 aspect ratio; the Eagle System, a remote observation system using Hitachi's new HV-D3 or HVC-10A CCD cameras; the SK-2700W, a 12-bit 16:9/4:3 switchable digital studio/field camera, and the SK-2060PW low-cost broadcast studio camera system. The SK-3000 conforms to today's NTSC standards and offers total compatibility for future ATSC digital broadcasting. The 1.5Gb/s digital output from the camera head is brought to the camera control unit via optical fiber cable, where it is digitally converted to the NTSC rate, in addition to the standard digital HDTV output. **Hitachi Denshi America Ltd.**, 150 Crossways Park Drive, Woodbury, NY 11797.

■ **More Information - Write In 151**

File System And VDRs

The CentraVision File System (CVFS) overcomes the limitations of existing systems for working with large video and film files in shared environments. Today's standard file systems (such as NTFS) were designed for local storage and do not provide the functionality required for central storage and shared access. With CVFS, as soon as a workstation writes information it is immediately available across the entire network. The system also features implicit data converters, providing cross platform support for Windows NT, SGI and Mac. It supports IRIX 6.2, 6.3 and 6.4, Windows NT 4.x and soon MacOS 8.x. Other features include bandwidth management, generation sequence control and support for real time devices such as VDRs. In the VDR category, the company's CV6200 features familiar VTR-like control from the front panel, 8- and 10- bit support, and support for CCIR 601, 525 and 625 inputs and outputs as well as analog composite inputs; AES/EBU audio and analog audio inputs and outputs are also supported. **MountainGate,** 9393 Gateway Drive, Reno, NV 89511.

■ **More Information - Write In 152**

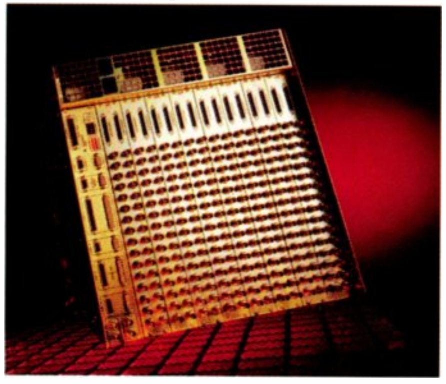
Full-Featured 3D, 8 Bit DVE

New from Pinnacle Broadcast Systems is the Alladin PRO, a single or dual channel fully featured 3D DVE with 8 bit 422 processing for 525 video systems. Each channel includes video and key. The product can be configured for either digital or analog input and outputs. It is an ideal match for the new DVC Pro format as well as other digital video formats. The system can begin as analog and be upgraded to digital. The control panel gives it the high end feel of an on-air DVE. And the Studio Tools option gives the system an array of professional features to create high quality programs. The Tools include a Deko character generator, Pinnacle Paint, and still store. Also demonstrated will be the BroadNet system, which enables the company's broadcast products to be networked together over both standard video and computer networks. **Pinnacle Systems**, 280 North Bernardo Ave., Mountain View, CA 94043.

■ **More Information - Write In 153**

Intermediate Routing Switcher Added to Line

MetaWave has added the MX64, an intermediate routing switcher, between the



MX32 and the MX256. This new router will accommodate future growth by providing a simple upgrade path to the full MX256. The Mx64 includes all the features and options of the MX series, including 360-Mbit compatibility for use with the latest HDTV technology and an option for fiber optic inputs. Designed for use in SDI installations where flexibility and expandability are expected, typical applications will be found in broadcast facilities, satellite uplink facilities, telecom applications and post production houses. The MX64 is housed in an 11 U chassis that will handle up to a 64x64 serial digital router along with redundant control cards and power supplies. Also new is the MXA256 routing switcher designed for use in large AES/EBU installations. It supports synchronous and asynchronous digital audio signals as well as analog audio. **MetaWave Ltd.**, 11 Kingsclere Park, Kingsclere, Hampshire, RG20 4SW, UK.

■ **More Information - Write In 154**

Fluid Heads

The Miller Arrow 50 fluid head with rear control illumination now supports the industry's widest range of ENG, EFP and film camera configurations with an

extended 4-position counterbalance to complement its 7-position pan/tilt drag range. Regardless of choice in camera, tap or disk back, battery, lens, matte box, microphone or on-camera light configurations, the model's selectable counterbalance, 70mm offset sliding plate and extended drag range ensure optimum support for any camera payload from 15 to 50 pounds. **Miller Fluid Heads**, 30 Hotham Parade, Artarmon, Sydney, NSW 2064, Australia. **Miller Fluid Heads USA**, Inc., 216 Little Falls Road, Cedar Grove, NJ 07009.

■ **More Information - Write In 155**

Virtual Set, Sports, Advertising Products

Highlighted by Orad High-Tec Systems will be CyberSet O, a unique virtual sets solution based on pattern recognition that allows for camera and lens parameters to be measured in real time without mechanical or other sensors being attached; new CyberSet M, which delivers all the power and capabilities of the company's CyberSet O at only 50 percent of the cost and handles virtual sets composed of up to 12,500 polygons; CyberSet E, an entry level system (that can be upgraded to CyberSet O) for the SGI 02 workstation based on the same proven software and DVP hardware as the CyberSet. New CyberSet features include: shadow enhancement and foreground video manipulation; improved video delay factor; RealSet for inserting virtual elements in conventional productions; widescreen capabilities; software loader for soft image designed sets; improved user interface, and multipanel operation. **Orad Hi-Tec Systems Ltd.**, PO Box 2177, Kfar Saba 44425, Israel.

■ **More Information - Write In 156**

Working Solutions For ATSC/HDTV

NDS will launch new products in areas such as: DTV/DTTV-ATSC/HDTV; MPEG-2 4:2:2 contribution, distribution and DSNG; Digital Conditional Access; program distribution for small and medium broadcasters, private networks and business TV, and data broadcasting. The company supports the most prevalent of the HDTV profiles — 480P, 720P, and 1080I. And it will demonstrate live, real-time transmission through the end-to-end system that incorporates new products such as seamless MPEG splicing and the new 2U encoder range for both 4:2:0 and 4:2:2 transmission, as well as 8VSB modulation, 8PSK modulations for contribution and NDS Reflex statistical multiplexing. **NDS**, 1 Heathrow Blvd., 286 Bath Road, West Drayton, Middlesex, UB7 ODQ, UK.

■ **More Information - Write In 157**

Keyer-Switchers, Input Expander

New products highlighted by PSP Digital Ltd. will be a PVS-4 digital linear 4:4:4 keyer-switcher and a PVS-2 digital linear keyer-switcher. The PVS-4 A/B digital linear keyer is the only stand-alone product available that is capable of true 4:4:4 signal processing, making it ideally suited to the needs of telecine applications. It can be controlled under GVG emulation from a PC or workstation or it can be used with an optional control panel. The PVS-2, for autoconforming and graphics composition applications, is a 4:2:2 A/B model. For broadcast environments it has an optional control panel, making it suitable for presentation and master control applications. Also to be demonstrated is the PVE-32 input expander that allows up to sixteen 4:4:4: inputs on the PVS-4 and thirty-two 4:2:2 inputs on the PVS-2. **PSP Digital**, 6 Votec Centre, Hambridge Lane, Newbury, Berkshire, RG 14 5TN, UK.

■ **More Information - Write In 158**

Full-Featured Digital Mixer

Panasonic will highlight its fully featured DA7 8-bus digital mixer that comes at

a suggested retail price under $5,000, making digital mixing accessible for the growing segment of digital music and video project studios, as well as the expanding number of those mixing for surround sound. Professional features in the 32 input, 8-bus, 6 aux product include 24

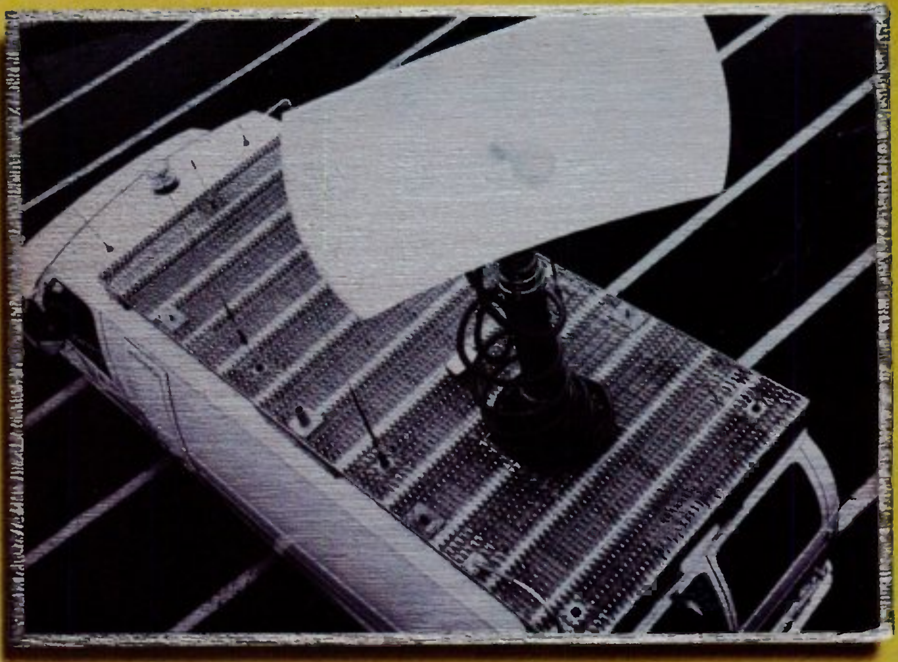
It's good to know that the world has standardized on MPEG-2 for transmission, considering all the uncertain aspects of DTV.

You may also be pleased to know there are some good reasons for making MPEG-2 your standard.

As an open standard, MPEG-2 can be applied to many applications in the

Why the MPEG-2 standard should be standard equipment.

broadcast chain. For example, using MPEG-2 for recording at high bit rates with a small group of pictures (GOP) delivers maximum image quality and signal performance for demanding, multi-generation editing requirements. Transmitting at low bit rates and longer GOP is ideal for delivery to the home. The MPEG-2 compression standard is flexible and powerful enough to cover both,



Everything is here. The complete Betacam SX® system. The only digital ENG solution that employs the MPEG-2 compression standard from acquisition, through production, to delivery. The choice is clear. Especially when you consider all the operational advantages of Betacam SX: high quality 4:2:2 digital component video, four audio channels, a low 18 Mb/s video data rate, and analog Betacam® playback capability. But there's more to the story.

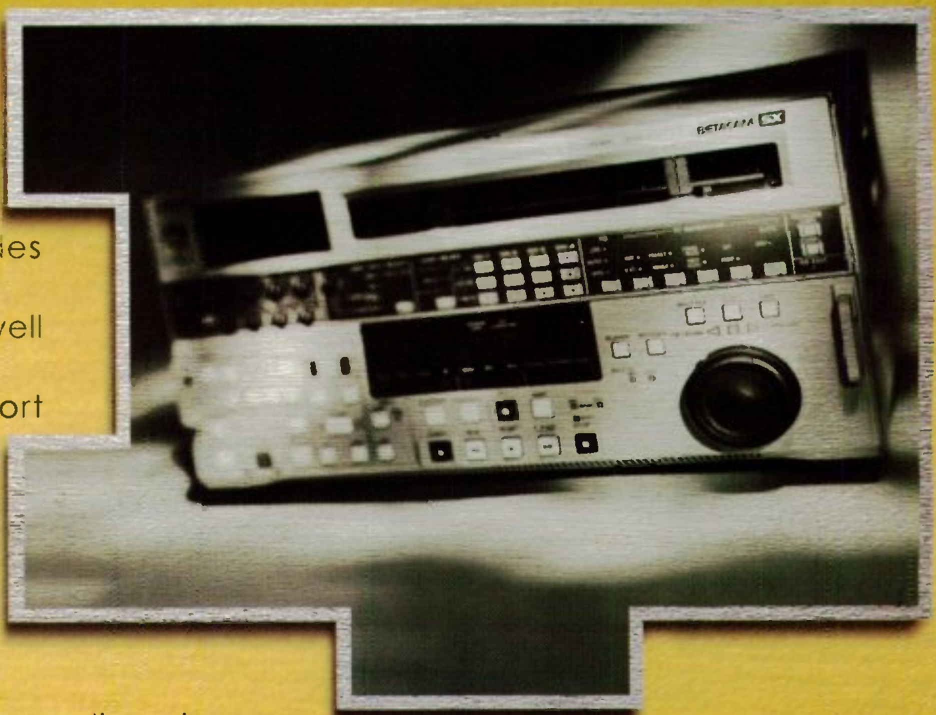
BETACAM SX

New for 1998 is the DNW-A75 VTR. Adding to our extensive line of SX Hybrid Recorders and Players, the A75 offers frame-accurate video and audio insert editing on Betacam SX tape.

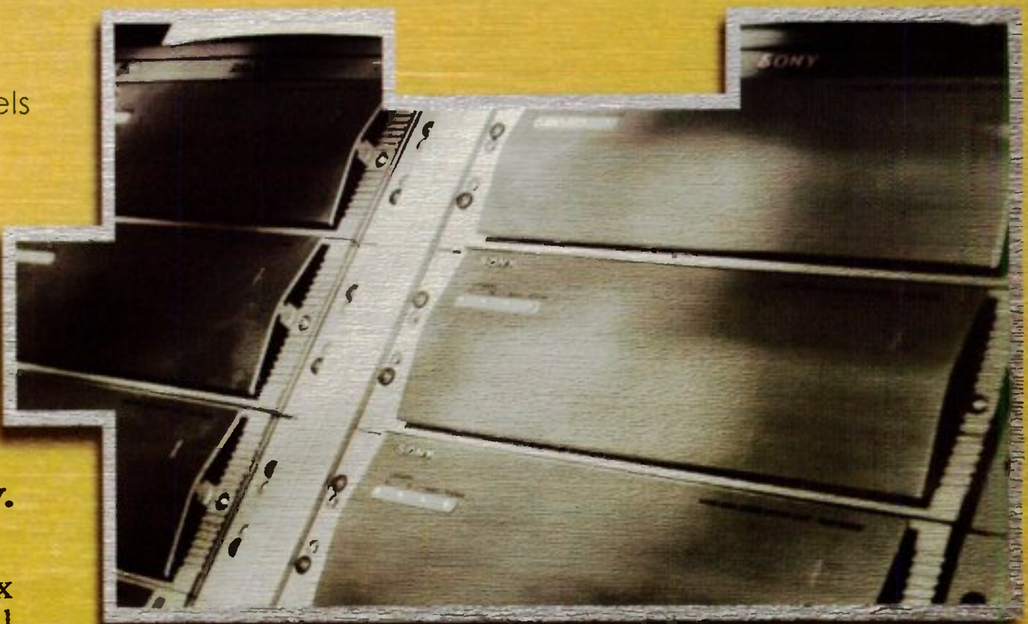
All the elements of a great news story.

It includes Preread technology, compressed digital output in either SDTI or MPEG ES formats, and the analog Betacam playback features of the legendary BVW-65. All for a list price of $27,000.

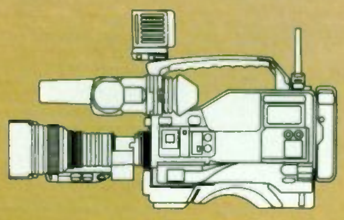
The Betacam SX acquisition products include a dockable recorder and a full-line of one-piece camcorders. Sony's camcorders are known for their ruggedness and reliability. Betacam SX equipment continues this tradition in packages that are smaller and lighter in weight than analog Betacam camcorders. The line-up includes products supporting both 4:3 and true 16:9 aspects with IT or FIT imaging. New CCDs and DSP processing have significantly extended low light shooting capabilities, improved overall picture quality, and added important new operational aids, including set-up cards and the Good Shot Marker™ system.

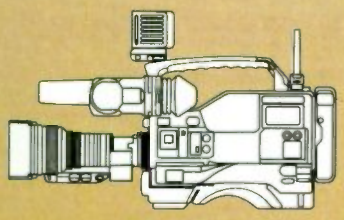


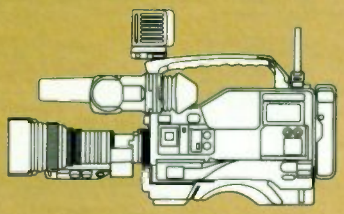

Acquisition
Camcorders
Dockable Recorder
Production
Linear Editors
Hybrid Recorders
Nonlinear Editors
Portable Editors
Delivery
Flexicart
Servers
Recorders/Players

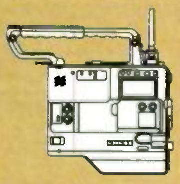


Acquisition

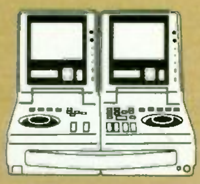

DNW-7


DNW-9WS


DNW-90WS


DNV-5
Dockable Recorder

Editing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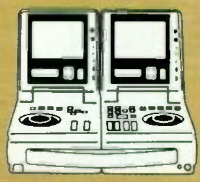
DNE-50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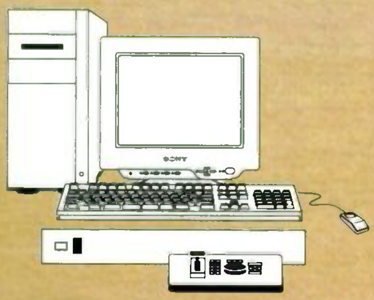
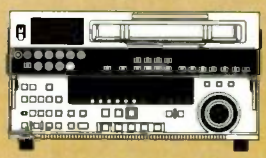

DLE-110


DNW-A25


DNE-700

Recorders/Players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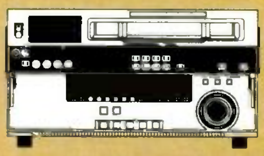
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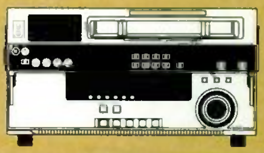
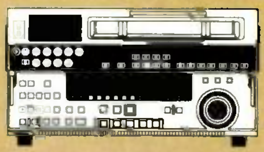

DNW-A30

Hybrid Recorders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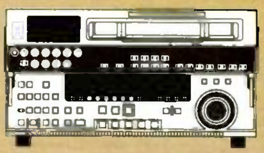
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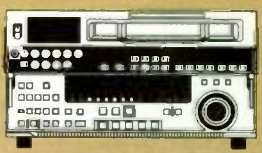
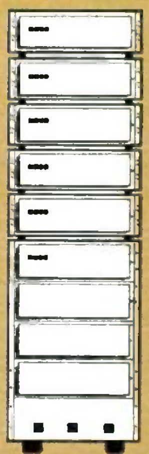

DNW-A50

Playback/Transmission


Flexicart


News Servers


FlexSys™

BETACAM SX

Product Review

bit I/O capability, surround sound mixing capabilities, dynamic and snapshot automation and one function/one step screen layer operation. Back panel expansion slots enable increased console functionality, and four plug-in modules are available initially. One module enables up to 16 A to D converters for expanding analog source input capability, another ADAT/ODI format I/Os, another TDIF IOs and another AES/S/P DIF digital inputs. The rear panel offers a 1/4 inch jack for backtalk mic or for handling automated record functions. Also available is a Word Clock In and Out, a nine-pin socket for connection to external PRs and an RS-422/485 remote control port. **Panasonic Broadcast & Television Systems Co.**, 6550 Katella Ave., Cypress, CA 90630.

■ **More Information - Write In 159**

Innovative Industrial DVD-Video Player

A new innovative industrial DVD-Video player—DVD-V7200—will be unveiled by Pioneer New Media Technologies.

It is designed to meet a wide range of business, industrial and educational applications, including corporate training, classroom education, public exhibits, in-store displays, and kiosks. A highly interactive unit, the player offers users a dynamic presentation, display, marketing and training tool. It has a standard PS/2 mouse port that enables the selection of on screen buttons designed into programs. The player can also be used to play conventional CD-DA discs and full audio/video playback of video CDs. Dimensions are: 8 1/4" (w), x 4 11/16" (t) x 16 1/16" (d). Weight: 10 pounds 13 ounces. **Pioneer New Media Technologies, Inc.**, 2265 E. 220th St., Long Beach, CA 90810.

■ **More Information - Write In 160**

Compression Technology

Scientific-Atlanta is supplying its fourth generation of digital video compression technology to programmers, broadcasters and service providers, and will conduct, via the DTV-ready PowerVu system, a live HDTV demonstration and show 4:2:2 profile @ ML support in the new PowerVu Compact Digital Encoder. DVB-based PC applications for Internet access, file transfer and data carousel applications into existing MPEG-2 commercial networks will be previewed. The SkyStation Controller earth station management system will be introduced, and enhancements to the PowerView Command Centre will also be shown. **Scientific-Atlanta Co.**, 4356 Communications Dr., ATL 31T, PO Box 6850, Norcross, GA 30091.

■ **More Information - Write 161**

Real-Time DVE System

Charisma X-VTL will be demonstrated. Questech's new Visual TimeLine method makes effects creation intuitive, powerful and interactive; and, because Charisma X is a real time DVE, this makes the rehearsal and adjustment cycle more productive. Other highlights in the company's line up include: X-ray, a new dramatic lighting system for X-VTL DVE; QuiCK, a new high performance digital studio chromakeyer targeted at users of virtual sets, and composite decoders, encoders and synchronizers. **Questech Ltd.**, Eastheath Ave., Wokingham, Berkshire, RG41 2PP England.

■ **More Information - Write In 162**

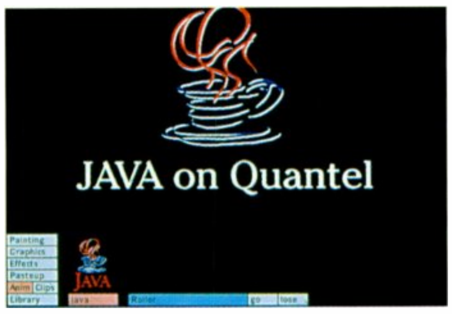
Digital Production Switchers

The company's new line of three digital production switchers, called the Synergy Series, is designed for live news, live sports and live production. Over-the-shoulder boxes, picture freezes, repositioning of keys, pushes and more are available with its Squeeze & Tease feature. Complex switcher and remote control operations are made simple through the Custom Control Hot Buttons. Additional features include Preview Overlay, 12 aux busses, up to 64 inputs, VTR control, external DVE integration, and redundant power. The series is packaged in a compact 11RU, 600 watt frame. The models are Synergy 4 (4 MLEs), Synergy 3 (3MLEs), and Synergy 2 (2 MLEs). **Ross Video**, 8 John St., Iroquois, Ont. KZE1K0, Canada.

■ **More Information - Write In 163**

Step-by-Step HDTV Approach

Quantel will unveil its step-by-step approach to HDTV. Also, existing systems in effects, editing, graphics, servers and networking will move forward across the board, with developments that extend the scope of what can be achieved; 1998 also sees the release of the first Java-enabled Quantel systems. And the company will demonstrate the first applications from Java on its developers. **Quantel**, 28 Thomas Circle, Darien, CT 06820.



■ **More Information - Write In 164**

Over 10 Products Will Be Unveiled

Scitex Digital will unveil more than 10 products, including: 16:9 Aspect Ratio Support for DTV capability; Abekas QuickStore Presentation System for video audio, graphics and animations, with streamlined interface and simplified timeline that are ideal for building and running playlists and for creating storyboards; Version 6 Software for Abekas Dveous DVE, a new effects creation method that applies oscillators to image parameters and provides more flexibility; Version 6 Software for Abekas Brutus DVE that provides OrbitalFX capabilities to the industry's only DVE with eight simultaneous video streams; Version 3.5 Software for Abekas 8150 Switcher that features support for Iomega Jaz drive and enhanced control from edit controllers. Also, SPORT Software for Sphere Nonlinear Systems, for fast, easy creation of sports highlight packages; NT Codec for Sphere Systems, which delivers cross-platform support and instant playback for graphics, animations and footage created using Windows NT applications; TextFX PCI Board for MicroSphere System, which delivers real time title animations, including rolls, crawls and reveals; Version 2 Software for MicroSphere, which supports the TextFX board; Version 2 Software for StrataSphere, which delivers optimized performance, high-speed compositing and title border extrusions. **Scitex Digital Video**, 101 Galveston Drive, Redwood City, CA 94063.

■ **More Information - Write In 165**

Set Top Box Design Kit

An advanced Set Top Box Design Kit that enables rapid development of differentiated digital signal processor-based digital set top box (STB) systems and gets them to market quickly will be featured by Texas Instruments. The kit combines the company's TMS320AV7000 series of single-chip STB digital signal processor (DSP) solutions with ISI's pSOSystem real-time operating system (RTOS) and networking products and pRISM+ development environment. The kit's integrated approach reduces STB time to market by providing a complete platform to allow the developer to focus on building the application-specific software that differentiates the STB. **Texas Instruments, Inc.**, Semi Conductor Group, SC-98008, Literature Response Center, P.O. Box 172228, Denver, CO 80217.

■ **More Information - Write In 166**

HDTV Upconverters, Production Switchers

Snell & Wilcox will introduce two HDTV upconverters to complement the company's HD5100 HDTV upconverter, already in daily use by all U.S. networks. The new HD5050 is a 10-bit serial HDTV unit that accepts 10-bit serial digital SD inputs and delivers full 10-bit studio quality 1.5 Gbit/sec true HD serial digital output. It is the ideal tool for broadcasters who must upconvert program material prior to ATSC encoding for transmission. Compact—only 4 RU—and highly integrated, the model also offers the user the ability to tailor I/O interfaces in their exact requirements. Model HD 50 is a compact HDTV upconverter designed to satisfy the requirement for an economical unit. It provides an 1125/60 or 1125/59.94 HDTV signal (either 1080 or 1035 active lines) from 525 or 625 input signals. It will also deliver a 720 line progressive output, and it also includes aspect ratio control. Also new are two 12- and 24-input HDTV production switchers, models HD 1012 and HD 1024. A key benefit of the units is their ability to add an integrated DVE system that provides a future migration path to a fully featured HDTV post production switcher. **Snell & Wilcox Ltd.**, Durford Mill, Petersfield, Hampshire GU31 5AZ, UK.

■ **More Information - Write In 167**

Audio Patch Panels

Switchcraft's new TTP96 audio patch panel is available as a patch panel, patch kit, with EDAC connectors and now, in a unique front access version. All of the company's TTP96 panels have corrosion resistant nickel-plated jacks (.173") with steel frames for superior life. The panel's rugged anodized aluminum face will not break. The panels are offered with a choice of three jack configurations to meet exact switching requirements: full normal, half normal and open circuit. Fanned solder terminals make soldering connections easy. The TTP96 also features gold switching contacts for long-term reliability in normal-through connections. The EDAC and front access versions are available with normals brought out. **Switchcraft, Inc.**, 5555 North Elston Ave., Chicago, IL 60630.

■ **More Information - Write In 168**

Family of Low Cost Solutions for DTV

TeraLogic, which develops integrated circuit (IC) and software solutions that allow consumer electronics manufacturers to quickly bring to market advanced—yet affordable—digital television receivers and set-top boxes with a retail cost of under $400, will introduce a family of low-cost, high-performance solutions for the rapidly emerging digital (DTV) market. **TeraLogic, Inc.**, 707 California St., Mountain View, CA 94041.

■ **More Information - Write In 169**

Remote Control Panel

Available from Sierra Video is a new remote control panel option for its Mirage real time digital image compositing system. This new panel unveils a small production switcher built into Mirage and puts familiar tactile switches and control in the hands of the technical director. The panel can be used with the system's on-screen graphical user interface and has a trackball mounted in the middle that provides control of all the functions that the mouse can operate in addition to a lever arm mode. **Sierra Video Systems**, P.O. Box 2462, Grass Valley, CA 95945.

■ **More Information - Write In 170**

Product Review

HDTV Glue Products To Premiere

The highlight of Leitch's line will be the premiere of its HDTV Glue product family, which includes: HD Frame Synchronizer that features reclocking, serial in and out, genlock (locks to NTSC black burst), no jitter; HD Test Generator with built-in line-based, frame-based and static test signals; HD Logo Generator, which offers serial or component output, external logo creation and data interface; HD Serial DA, with 3 outputs, serial 1.5Gb/s input and 1.5Gb/s output, reclocking, no jitter; HD conversion products featuring component analog to 1.5Gb/s and vice versa.

These units are based on the company's popular DigiBus platform. The company will also introduce: HD Upconverter that has inputs for all formats (SDI, NTSC, PAL, PAL-M), outputs of serial 1.5Gb/s and/or analog component; HD Video Router, 16x16, 1.5 Gb/s, controlled by RouterWorks software and Leitch's current control panels, and HD Master Control Switcher that features 1.5Gb/s, 16 inputs, basic effects. **Leitch Inc.**, 920 Corporate Lane, Chesapeake, VA 23320.

■ **More Information - Write In 171**

Modular Text-Based Messaging System

The new MCM-96 Multichannel Text Messaging System is a modular product capable of providing keyed text or billboard displays on up to 96 channels simultaneously. Designed for multichannel environments, it is a cost effective solution for a wide range of applications, including Emergency Alert Systems (EAS), pay-per-view interstitial overlay, cross channel promotion, and logo insertion, among others. The product offers total flexibility in displaying text to be unique for each channel, simultaneously displayed on all channels or displayed on selected groups of channels. Display cards offer monochrome or full color displays, from a single line message, logo, or crawl to a full page two region display with a crawl line. Control from remote PCs and touchtone phones is available. **Video Data Systems**, 40 Oser Avenue, Hauppauge, NY 11788.

■ **More Information - Write In 172**

Product Catalog

Introduced will be Canare's all-new for 1998 Catalog 9, covering a full line of professional audio and video broadcast products, including cable, connectors, digital video patchbays, bulkhead panels, snake systems, cable reels, specialty tooling and related accessories. The catalog shows detailed technical product specifications with expanded full-color focus sections on the latest in serial digital video SDI interconnects for HDTV, true 75 ohm coaxial crimp connectors, plus a new line of rugged ENG composite cables. **Canare Corp. of America**, 532 5th St., Unit A, San Fernando, CA 91340.

■ **More Information - Write In - 173**

Heavy Emphasis On Digital Audio

Ward-Beck Systems (WBS) will place heavy emphasis on digital audio products. The company's first video products will also be featured. Among its 8200 Series Digital products are: D8201, Digital Audio Distribution Amplifier, an eight output DA that is frame-compatible with its 8200 analog audio equipment; D8202, Digital-to-Analog Converter that uses the latest 24-bit converter technology; D8203 Analog-to-Digital Converter, with selectable sample rates or lock to external reference; D8204, a high performance digital audio distribution amplifier. Also highlighted: POD 10 6x1 AES/EBU Digital Audio low cost switcher that may be used as a preselector and may be remote controlled; POD 11 AES/EBU Digital Audio Monitor that features a dual channel, 20 segment LED level display along with eight signal status LED indicators that display sampling frequency rate, signal lock, CRC error, confidence, consumer mode and phase error; POD 12 AES/EBU Reclocking Distribution Amplifier, a 1x6 digital audio product that features cable equalization, data reclocking and signal error detection; POD 13 Dual AES/EBU Digital-to-Analog Converter that houses two digital-to-analog converters which feature the latest in 24-bit conversion technology. Analog products include: M8252 1x8 Video Distribution Amplifier that features level control and is extremely cost effective and M82552 1x8 Video Distribution Amplifier that offers cable equalization and clamping. **Ward-Beck Systems LTD** (WBS), 841 Progress Ave., Toronto, Ontario, M1H 2X4 Canada.

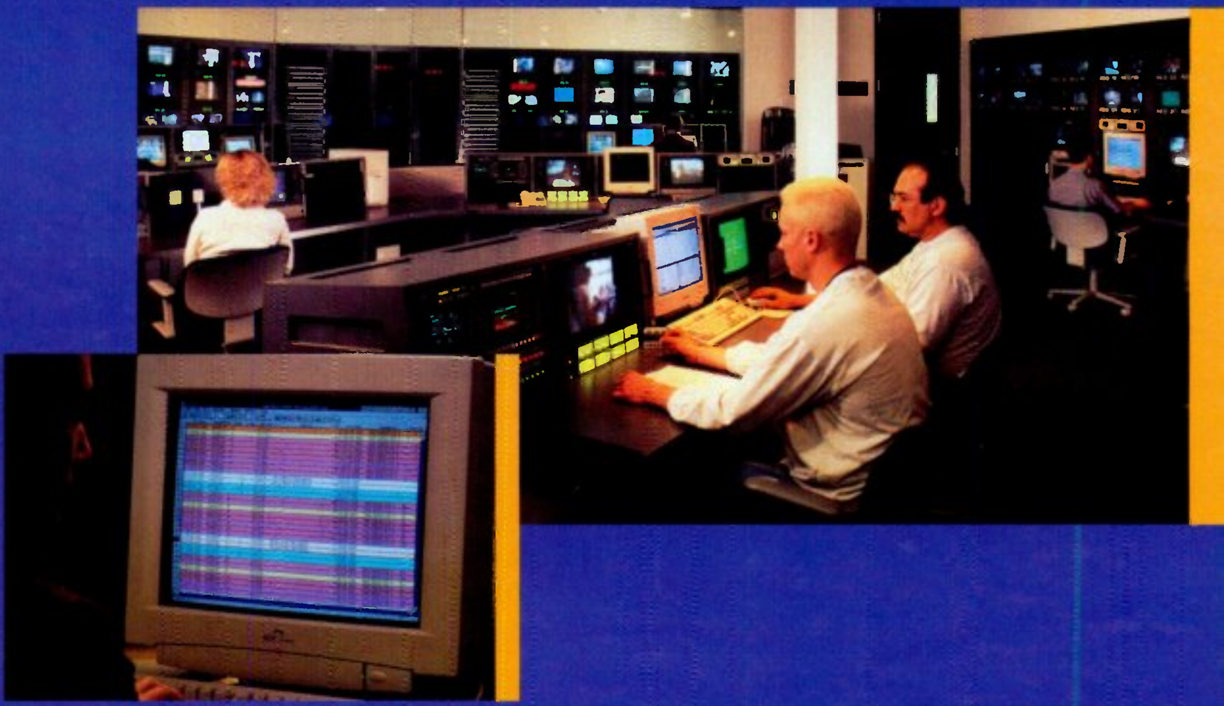
■ **More Information - Write In 174**

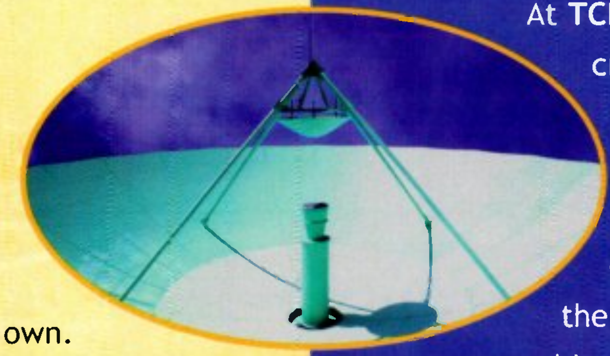
Don't Forget To Fill Out The Postage Paid Card.

We Can Channel Your Creativity

You create great programs. You know there's a television audience just waiting to see them. The challenge lies in finding the most effective way to deliver those great programs to that anxiously awaiting audience. So why not create your own network? Your own channel? A place where people can always find *your* unique brand of creativity.

It's called network origination. And it's no longer limited to giant corporations with alphabet names. Network origination is a viable option and a genuine opportunity for producers of quality television programming... like you. It can, however, be complicated and costly to do on your own. Fortunately, there is a better way.





At **TCI's National Digital Television Center** (NDTC), those who create don't need to channel their energy or resources away from the creative process, in order to originate a high quality network of their own. NDTC can provide *everything* needed to establish a quality channel, and confidently deliver your signal to the cable markets and the people you want to reach. One source, NDTC, offers everything it takes—packaged to meet your specific needs—priced right—quality guaranteed. Nobody offers more or does it better than NDTC.

- MASTER CONTROL
- TRAFFIC SERVICES
- SATELLITE SERVICES
- FULL PRODUCTION SERVICES
- QUALITY CONTROL

Encore, Discovery's Animal Planet, Ovation, Primestar, Foxnet, BBC Americas, Your Choice TV, Request TV, Starz!, Classic Sports Network, and others, all rely on NDTC's experience, expertise, and tremendous depth of resources. You can too.

Let NDTC, provide the perfect channel for your creativity.

Call Kathy Standage at 303-486-3809,

or e-mail her at Standage.Kathy@tci.com

More Information Circle 108

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NDTC National Digital Television Center

From A to V on Digital Allocations

Complete text of the FCC's target list of 1,606 stations

The Federal Communications Commission has released its revised plan for matching each broadcaster with a new channel for delivering digital TV. Seeking to reduce interference among the expected DTV stations, the commission has changed 42 of the channel assignments from the version of the "allotment table" released last April. The FCC has also sought to preserve low-power TV stations in the new list, resulting in more assignment changes. All told, 137 stations received a different DTV channel assignment than that assigned last April.

The chart below lists (from left to right) all the analog channels and their new digital counterparts, the power limits that will apply to the new channel; the height of the DTV antenna above the broadcast area's average terrain; the area and population that the digital signal will cover during the transition period; the area and population covered by the station's existing analog service; and the amount of new interference the existing service will experience once the digital stations begin broadcasting. The last column shows the percentage of the station's existing service area that the digital signal will cover.

						DTV SERVICE DURING TRANSITION		EXISTING NTSC				DTV/NTSC
								CURRENT SERVICE		NEW INTERFERENCE		AREA
STATE AND CITY		NTSC CHAN	DTV CHAN	DTV POWER (kW)	ANTENNA HAAT(m)	AREA (Sq km)	PEOPLE (thous)	AREA (Sq km)	PEOPLE (thous)	AREA (% NL Area)	PEOPLE (% NL Pop)	MATCH (%)
ALASKA												
AK	ANCHORAGE	2	18	1000.0	219.0	23462	265	28907	265	0.0	0.0	81.2
AK	ANCHORAGE	4	20	234.4	55.0	10968	256	10912	256	0.0	0.0	100.0
AK	ANCHORAGE	5	22	1000.0	250.0	25716	265	30730	266	0.0	0.0	83.7
AK	ANCHORAGE	7	24	1000.0	240.0	24954	265	26028	265	0.0	0.0	95.9
AK	ANCHORAGE	9	26	1000.0	212.0	23059	267	24726	268	0.0	0.0	93.3
AK	ANCHORAGE	11	28	50.0	91.0	10708	251	10259	250	0.0	0.0	100.0
AK	ANCHORAGE	13	30	1000.0	238.0	24829	265	25978	265	0.0	0.0	95.6
AK	ANCHORAGE	33	32	50.0	33.0	6438	233	1175	212	18.7	5.3	100.0
AK	BETHEL	4	3	1.0	61.0	9999	8	5629	7	0.0	0.0	100.0
AK	DILLINGHAM	2	9	39.8	305.0	33890	4	33677	4	0.0	0.0	100.0
AK	FAIRBANKS	2	18	60.3	33.0	6744	77	6670	77	0.0	0.0	100.0
AK	FAIRBANKS	7	22	50.0	33.0	6523	77	2167	70	0.0	0.0	100.0
AK	FAIRBANKS	9	24	79.4	152.0	13637	78	13637	78	0.0	0.0	100.0
AK	FAIRBANKS	11	26	50.0	33.0	6524	77	4966	76	0.0	0.0	100.0
AK	FAIRBANKS	13	28	50.0	33.0	6524	77	4966	76	0.0	0.0	100.0
AK	JUNEAU	3	6	1.0	33.0	6622	27	2155	27	0.0	0.0	100.0
AK	JUNEAU	8	11	3.2	33.0	6793	27	771	25	0.0	0.0	100.0
AK	KETCHIKAN	4	13	3.2	174.0	18251	17	6873	15	0.0	0.0	100.0
AK	KETCHIKAN	9	8	3.3	305.0	22274	17	22184	17	0.0	0.0	100.0
AK	NORTHPOLE	4	20	213.8	485.0	30801	79	30801	79	0.0	0.0	100.0
AK	SITKA	13	2	1.0	33.0	6622	9	1132	8	0.0	0.0	100.0
ALABAMA												
AL	ANNISTON	40	58	264.5	350.0	20802	1137	17127	616	0.2	0.0	98.0
AL	BESSEMER	17	18	186.0	675.0	32102	1304	28690	1131	2.4	0.3	99.7
AL	BIRMINGHAM	6	50	1000.0	420.0	35806	1598	34251	1547	0.0	0.0	96.5
AL	BIRMINGHAM	10	53	1000.0	404.0	31917	1522	28399	1428	2.0	2.2	99.5
AL	BIRMINGHAM	13	52	1000.0	408.0	32879	1564	29111	1465	0.0	0.0	99.5
AL	BIRMINGHAM	42	30	166.3	421.0	26176	1333	23781	1253	0.4	0.4	100.0
AL	BIRMINGHAM	68	36	50.0	314.0	14489	1012	13255	977	0.0	0.0	100.0
AL	DEMOPOLIS	41	19	50.0	333.0	15093	121	15040	121	1.6	1.6	99.9
AL	DOTHAN	4	36	1000.0	573.0	48846	788	44475	765	0.0	0.0	99.8
AL	DOTHAN	18	21	50.0	223.0	13968	291	13879	291	2.6	1.3	100.0
AL	DOZIER	2	59	1000.0	210.0	25630	463	21786	298	0.0	0.0	98.2
AL	FLORENCE	15	14	50.0	223.0	12681	283	12862	285	2.5	5.0	98.5
AL	FLORENCE	26	20	50.0	230.0	12018	258	10994	240	1.8	1.1	100.0
AL	FLORENCE	36	22	50.0	221.0	12324	261	12098	259	8.0	3.6	100.0
AL	GADSDEN	44	45	50.0	303.0	12167	595	11830	523	1.8	1.4	99.2
AL	GADSDEN	60	26	86.9	352.0	14274	1147	13949	1129	2.8	6.4	99.4
AL	HOMEWOOD	21	28	280.4	409.0	27594	1394	26602	1316	0.7	0.8	98.8
AL	HUNTSVILLE	19	59	89.0	533.0	24418	879	23489	857	1.0	0.7	99.6
AL	HUNTSVILLE	25	24	50.0	352.0	18210	723	17357	706	0.3	0.1	100.0
AL	HUNTSVILLE	31	32	50.0	546.0	22888	845	21705	810	1.6	1.5	100.0
AL	HUNTSVILLE	48	49	50.0	579.0	22033	816	21115	792	0.6	0.3	99.4
AL	HUNTSVILLE	54	41	53.4	515.0	18686	714	18097	704	0.7	0.4	100.0
AL	LOUISVILLE	43	44	168.8	275.0	14457	267	14481	267	1.0	0.5	99.8
AL	MOBILE	5	27	1000.0	581.0	49332	1311	49268	1310	0.0	0.0	99.6
AL	MOBILE	10	9	16.5	381.0	31418	1008	30422	998	0.0	0.0	99.9
AL	MOBILE	15	47	494.6	521.0	25702	1024	25722	1039	1.7	1.0	99.6
AL	MOBILE	21	20	198.9	436.0	21838	950	21326	882	0.3	0.1	100.0
AL	MOBILE	42	41	50.0	183.0	11664	544	11453	533	1.3	0.5	100.0
AL	MONTGOMERY	12	57	1000.0	610.0	43525	908	41216	868	0.0	0.0	99.9
AL	MONTGOMERY	20	16	50.0	226.0	12730	369	12234	365	0.5	0.2	100.0
AL	MONTGOMERY	26	14	50.0	183.0	12881	376	12595	372	4.0	2.9	100.0
AL	MONTGOMERY	32	51	284.8	545.0	28418	538	28011	535	3.2	2.1	99.8
AL	MONTGOMERY	45	46	50.0	308.0	11831	366	11666	365	1.9	1.1	100.0
AL	MOUNT CHEAHA	7	56	1000.0	610.0	41663	2006	38089	1739	0.3	0.1	99.6
AL	OPELIKA	66	31	50.0	207.0	10492	469	9990	460	0.0	0.0	100.0
AL	OZARK	34	33	50.0	142.0	8785	229	8749	228	0.7	0.1	100.0
AL	SELMA	8	55	1000.0	515.0	38823	665	34978	632	0.0	0.0	100.0
AL	TROY	67	48	50.0	592.0	17954	430	17658	427	0.2	0.0	99.4
AL	TUSCALOOSA	33	34	198.4	662.0	34878	1329	33354	1300	0.7	0.9	96.4
AL	TUSKEGEE	22	24	104.6	325.0	17791	473	17643	464	3.6	1.5	99.4
ARKANSAS												
AR	ARKADELPHIA	9	46	937.1	326.0	26260	329	24331	322	0.0	0.0	93.2
AR	EL DORADO	10	27	733.8	605.0	43667	630	31478	508	0.0	0.0	98.3
AR	FAYETTEVILLE	13	45	1000.0	506.0	35965	706	31152	624	0.0	0.0	99.6
AR	FAYETTEVILLE	29	15	50.0	270.0	14581	299	13571	286	0.7	0.4	99.7
AR	FORT SMITH	5	18	1000.0	384.0	32049	616	28831	536	0.0	0.0	98.2
AR	FORT SMITH	24	27	96.5	317.0	14461	398	14779	410	0.7	0.3	96.3
AR	FORT SMITH	40	21	77.8	610.0	21389	310	19262	290	1.0	1.4	100.0
AR	HOT SPRINGS	26	14	50.0	258.0	13296	205	12577	180	1.2	0.3	100.0
AR	JONESBORO	8	58	1000.0	533.0	40658	703	36662	630	0.0	0.0	100.0
AR	JONESBORO	19	20	50.0	311.0	17554	246	17453	245	0.0	0.0	100.0
AR	JONESBORO	48	49	57.2	305.0	17180	256	17128	255	0.0	0.0	100.0
AR	LITTLE ROCK	2	47	1000.0	543.0	42551	971	39045	963	0.0	0.0	92.4
AR	LITTLE ROCK	4	32	1000.0	503.0	43063	1003	40761	981	0.0	0.0	99.1
AR	LITTLE ROCK	7	22	649.7	591.0	42855	976	39421	949	0.0	0.0	100.0
AR	LITTLE ROCK	11	12	21.5	521.0	37672	950	34630	919	0.0	0.0	100.0
AR	LITTLE ROCK	16	30	346.5	539.0	28913	892	28841	887	0.8	0.3	98.8
AR	LITTLE ROCK	42	43	139.7	156.0	14218	604	14165	604	0.0	0.0	99.8
AR	MOUNTAIN VIEW	6	35	1000.0	424.0	37995	518	31053	357	0.0	0.0	99.3
AR	NEWARK	17	27	50.0	162.0	4239	57	4049	55	1.0	0.9	100.0
AR	PINE BLUFF	25	24	131.3	182.0	11636	584	11390	582	2.4	1.0	99.9
AR	PINE BLUFF	38	39	206.5	593.0	25660	804	24909	792	0.8	0.5	100.0
AR	ROGERS	51	50	50.0	143.0	6500	228	6004	221	0.0	0.0	100.0
AR	SPRINGDALE	57	39	50.0	117.0	5681	223	5089	216	0.7	0.1	100.0
ARIZONIA												
AZ	FLAGSTAFF	2	22	1000.0	488.0	37453	172	40817	196	1.7	0.1	91.5
AZ	FLAGSTAFF	4	18	726.0	487.0	33861	166	30625	158	0.0	0.0	97.9
AZ	FLAGSTAFF	9	32	50.0	594.0	9414	63	8146	63	0.0	0.0	100.0
AZ	FLAGSTAFF	13	27	655.0	474.0	30058	150	27363	133	0.0	0.0	100.0
AZ	GREEN VALLEY	46	47	72.0	1095.0	25960	632	23982	614	0.0	0.0	100.0
AZ	KINGMAN	6	19	1000.0	585.0	32207	118	37735	114	0.0	0.0	81.7
AZ	LAKE HAVASU CIT	34	32	50.0	817.0	13724	81	12442	74	0.0	0.0	100.0
AZ	MESA	12	36	843.9	543.0	32650	2225	30934	2221	0.0	0.0	99.4
AZ	PHOENIX	3	24	1000.0	542.0	36902	2232	39938	2234	0.0	0.0	91.0
AZ	PHOENIX	5	17	1000.0	539.0	37709	2230	39498	2234	0.0	0.0	93.5
AZ	PHOENIX	8	29	729.8	536.0	32860	2225	31649	2223	0.0	0.0	99.4
AZ	PHOENIX	10	31	778.6	558.0	33054	2225	31705	2216	0.0	0.0	98.6
AZ	PHOENIX	15	56	75.2	521.0	19790	2207	19733	2207	0.0	0.0	99.8
AZ	PHOENIX	21	20	50.0	489.0	20113	2209	18889	2200	0.0	0.0	100.0
AZ	PHOENIX	33	34	80.3	521.0	18050	2198	17534	2195	0.8	0.8	99.4
AZ	PHOENIX	45	26	64.0	545.0	23121	2219	20831	2202	0.0	0.0	100.0
AZ	PHOENIX	61	49	61.4	541.0	18332	2205	17585	2192	0.0	0.0	100.0
AZ	PRESCOTT	7	25	50.0	856.0	18566	165	16868	137	0.2	0.0	100.0
AZ	SIERRA VISTA	58	44	148.2	331.0	13360	683	12715	678	0.0	0.0	100.0
AZ	TOLLESON	51	52	203.8	533.0	24651	2219	23153	2208	0.0	0.0	100.0
AZ	TUCSON	4	23	405.3	1100.0	40396	723	45568	806	0.0	0.0	84.5
AZ	TUCSON	6	30	486.1	1106.0	39397	710	39559	741	0.0	0.0	89.7
AZ	TUCSON	9	35	233.2	1134.0	33741	686	33524	702	0.0	0.0	97.0
AZ	TUCSON	11	25	666.3	507.0	25573	686	23904	685	0.0	0.0	99.5
AZ	TUCSON	13	32	783.4	622.0	31165	749	26425	729	0.0	0.0	100.0
AZ	TUCSON	18	19	103.2	600.0	19942	704	17894	699	1.5	0.1	100.0
AZ	TUCSON	27	28	50.0	175.0	3633	629	3028	618	0.4	0.1	100.0
AZ	TUCSON	40	42	50.0	619.0	15188	673	13979	672	0.2	0.0	100.0
AZ	YUMA	11	41	962.3	493.0	34473	233	33353	232	0.0	0.0	99.9
AZ	YUMA	13	16	509.7	475.0	28059	231	26438	229	0.0	0.0	100.0
CALIFORNIA												
CA	ANAHEIM	56	32	75.1	728.0	19805	11348	19520	11398	0.7	0.4	97.5
CA	ARCATA	23	22	50.0	510.0	12225	112	11147	99	0.1	0.0	100.0
CA	BAKERSFIELD	17	25	285.1	427.0	17512	545	17028	507	0.0	0.0	100.0
CA	BAKERSFIELD	23	10	4.6	1128.0	22757	671	20817	611	1.0	0.0	99.9
CA	BAKERSFIELD	29	33	70.1	1137.0	15846	538	15051	472	0.0	0.0	100.0
CA	BAKERSFIELD	45	55	245.8	404.0	16271	562	15924	517	0.0	0.0	100.0
CA	BARSTOW	64	44	70.2	518.0	14984	626	14214	623	0.0	0.0	99.5
CA	CALIPATRIA	54	50	185.2	507.0	21324	226	20704	226	0.0	0.0	100.0
CA	CERES	23	15	50.0	47.0	1623	359	1623	359	3.2	2.3	100.0
CA	CHICO	12	43	1000.0	396.0	28773	570	28649	562	0.5	0.6	99.1
CA	CHICO	24	36	306.0	564.0	21868	357	21703	355	1.0	5.3	99.8
CA	CLOVIS	43	44	201.0	671.0	24994	1163	24310	1150	6.5	1.3	99.9
CA	CONCORD	42	63	61.0	856.0	26590	6581	25956	6208	1.2	3.1	99.5
CA	CORONA	52	39	63.5	896.0	16781	12071	17469	12070	8.1	9.1	94.9
CA	COTATI	22	23	50.0	620.0	10421	1149	8985	1054	0.7	0.2	99.5
CA	EL CENTRO	7	22	611.2	389.0	22604	181	21793	181	0.2	0.0	99.8
CA	EL CENTRO	9	48	997.9	488.0	26945	229	26621	229	0.0	0.0	99.5
CA	EUREKA	3	16	1000.0	503.0	31134	134	35054	139	0.0	0.0	88.8
CA	EUREKA	6	17	1000.0	530.0	38962	139	41892	143	0.0	0.0	92.8
CA	EUREKA	13	11	14.2	515.0	30342	121	28654	120	0.0	0.0	100.0
CA	EUREKA	29	28	50.0	334.0	6416	92	5885	88	0.1	0.0	100.0
CA	FORT BRAGG	8	15	371.2	746.0	27303	114	26639	96	0.0	0.0	99.6
CA	FRESNO	18	40	87.0	677.0	22864	1125	22598	1117	1.3	0.7	99.6
CA	FRESNO	24	16	50.6	716.0	23275	1126	22381	1109	0.4	0.0	100.0
CA	FRESNO	30	9	8.7	622.0	20834	1140	19684	1130	2.3	0.6	99.7
CA	FRESNO	47	14	50.2	597.0	19355	1089	17869	1057	0.4	0.0	99.9
CA	FRESNO	53	7	3.2	581.0	17074	1090	16227	1075	1.3	0.2	99.9
CA	HANFORD	21	20	279.0	605.0	25523	1225	24849	1208	2.7	0.3	99.8
CA	HUNTINGTON BEAC	50	48	174.7	330.0	9907	9025	9534	8947	0.8	0.1	98.5
CA	LOS ANGELES	2	60	865.9	1107.0	39414	13330	48050	14289	0.4	0.0	80.0
CA	LOS ANGELES	4	36	711.4	984.0	41111	13829	46739	14262	0.0	0.0	84.4
CA	LOS ANGELES	5	31	661.0	976.0	40390	13494	47300	14401	0.0	0.0	85.4
CA	LOS ANGELES	7	53	455.6	978.0	31810	13156	34407	13555	0.1	-0.0	92.1
CA	LOS ANGELES	9	43	357.5	970.0	23370	12755	24577	12876	0.1	0.0	93.7
CA	LOS ANGELES	11	65	688.7	896.0	32730	13229	34448	13536	0.0	0.0	93.4
CA	LOS ANGELES	13	66	679.7	899.0	31938	12964	33784	13490	0.0	0.0	94.1
CA	LOS ANGELES	22	42	172.8	889.0	16223	11481	17628	12151	0.6	0.9	91.0
CA	LOS ANGELES	28	59	190.3	927.0	25044	12593	24863	12621	1.0	0.8	98.2
CA	LOS ANGELES	34	35	73.5	896.0	21708	12379	21279	12427	0.6	1.0	98.3
CA	LOS ANGELES	58	41	58.2	875.0	21457	12504	20290	12096	0.4	0.7	99.6
CA	MERCED	51	38	135.2	680.0	21599	1284	20953	1275	0.1	0.0	99.8
CA	MODESTO	19	18	248.8	573.0	26528	2689	26692	2748	4.1	1.4	98.1
CA	MONTEREY	46	32	50.0	771.0	15633	692	15629	705	0.3	0.2	97.7
CA	MONTEREY	67	31	50.0	701.0	13402	790	12867	716	0.0	0.0	99.0
CA	NOVATO	68	47	129.7	431.0	20011	4106	18713	3674	0.1	0.0	98.3
CA	OAKLAND	2	56	1000.0	479.0	33796	5784	36057	5970	0.0	0.0	92.2
CA	ONTARIO	46	47	73.0	927.0	17967	12177	17391	11983	0.2	0.4	100.0
CA	OXNARD	63	24	50.0	549.0	11667	1513	10943	1280	0.2	0.6	99.6
CA	PALM SPRINGS	36	46	50.0	207.0	5970	255	5890	259	1.1	1.4	99.3
CA	PALM SPRINGS	42	52	67.3	1087.0	14000	823	14077	927	4.5	8.3	96.9
CA	PARADISE	30	20	71.4	440.0	17593	370	17246	364	0.9	1.2	99.7
CA	PORTERVILLE	61	48	77.8	811.0	21854	1330	21494	1278	0.1	0.0	100.0
CA	RANCHO PALOS VE	44	51	235.0	451.0	13238	7851	16382	7109	0.0	0.0	79.0
CA	REDDING	7	14	166.2	1103.0	35522	327	35198	321	0.0	0.0	99.3
CA	REDDING	9	18	183.8	1097.0	35070	322	34666	319	0.0	0.0	99.0
CA	RIVERSIDE	62	68	180.1	723.0	17271	11672	16882	11441	0.4	1.7	100.0
CA	SACRAMENTO	3	35	1000.0	591.0	40861	4499	41289	4261	0.0	0.0	94.6
CA	SACRAMENTO	6	53	1000.0	567.0	37635	4317	37776	4081	0.0	0.0	94.0
CA	SACRAMENTO	10	61	1000.0	595.0	35465	4022	35298	4047	0.5	0.2	97.7
CA	SACRAMENTO	29	48	270.4	321.0	12538	1562	13056	1575	12.6	4.5	96.0
CA	SACRAMENTO	31	21	181.2	558.0	25170	3537	25170	3554	0.6	0.1	95.5
CA	SACRAMENTO	40	55	275.9	597.0	24683	3582	24651	3387	1.4	0.9	98.5
CA	SALINAS	8	43	448.5	896.0	28177	4679	26635	2944	0.0	0.0	91.8
CA	SALINAS	35	13	3.2	735.0	17120	765	16367	760	0.6	0.0	99.5
CA	SAN BERNARDINO	18	61	413.6	725.0	23074	11391	23623	11875	12.0	1.6	96.9
CA	SAN BERNARDINO	24	26	50.0	509.0	14332	8702	12957	5696	2.3	8.4	99.9
CA	SAN BERNARDINO	30	38	210.0	715.0	16989	11222	16905	11248	8.4	3.9	98.4
CA	SAN DIEGO	8	55	1000.0	226.0	24010	2704	23545	2660	0.0	0.0	98.9
CA	SAN DIEGO	10	25	809.1	229.0	20867	2694	20089	2655	0.0	0.0	100.0
CA	SAN DIEGO	15	30	191.7	613.0	22924	2527	23823	2548	0.0	0.0	95.5
CA	SAN DIEGO	39	40	93.3	577.0	19553	2458	20018	2314	9.2	0.0	95.5
CA	SAN DIEGO	51	18	52.1	579.0	17316	2422	19500	2403	9.6	7.3	86.0
CA	SAN DIEGO	69	19	62.9	594.0	20726	2504	19310	2405	0.0	0.0	99.9
CA	SAN FRANCISCO	4	57	1000.0	512.0	36097	5941	36969	5930	0.0	0.0	93.1
CA	SAN FRANCISCO	5	29	1000.0	506.0	34977	5800	37021	5968	0.0	0.0	94.2
CA	SAN FRANCISCO	7	24	621.2	509.0	30529	5503	31509	5866	1.4	1.5	93.7
CA	SAN FRANCISCO	9	30	708.6	509.0	32429	5827	29666	5424	0.1	0.0	99.8
CA	SAN FRANCISCO	14	51	476.3	701.0	16358	5310	17169	5313	2.0	1.2	94.5
CA	SAN FRANCISCO	20	19	147.7	472.0	18054	5343	17673	5268	1.3	1.0	97.6
CA	SAN FRANCISCO	26	27	95.2	421.0	15665	5173	14492	4950	0.7	1.0	100.0
CA	SAN FRANCISCO	32	33	50.0	491.0	15589	5288	13582	4849	8.4	1.4	100.0
CA	SAN FRANCISCO	38	39	216.8	440.0	16904	5207	14924	4781	0.7	0.1	100.0
CA	SAN FRANCISCO	44	45	206.3	491.0	16415	5223	15218	4859	0.7	0.6	100.0
CA	SAN JOSE	11	12	6.2	844.0	31737	5170	29472	4933	0.0	0.0	99.6
CA	SAN JOSE	36	52	251.3	686.0	15638	5256	14441	5063	2.0	1.2	95.6
CA	SAN JOSE	48	49	194.6	631.0	14403	4923	12982	4803	3.5	3.1	99.8
CA	SAN JOSE	54	50	50.0	585.0	7749	4309	7636	4349	7.5	6.3	95.8
CA	SAN JOSE	65	41	79.2	812.0	16801	4486	15633	4358	0.0	0.0	100.0
CA	SAN LUIS OBISPO	6	15	1000.0	543.0	40194	398	41708	414	0.0	0.0	95.4
CA	SAN LUIS OBISPO	33	34	50.0	440.0	6564	272	5665	245	0.0	0.0	100.0
CA	SAN MATEO	60	59	107.3	362.0	11787	4746	11176	4612	0.4	0.8	100.0
CA	SANGER	59	36	50.0	591.0	14995	761	14043	745	0.0	0.0	100.0

STATE AND CITY		NTSC CHAN	DTV CHAN	DTV POWER (kW)	ANTENNA HAAT(m)	DTV SERVICE DURING TRANSITION AREA (Sq km)	DTV SERVICE DURING TRANSITION PEOPLE (thous)	EXISTING NTSC CURRENT SERVICE AREA (Sq km)	EXISTING NTSC CURRENT SERVICE PEOPLE (thous)	EXISTING NTSC NEW INTERFERENCE AREA (% NL Area)	EXISTING NTSC NEW INTERFERENCE PEOPLE (% NL Pop)	DTV/NTSC AREA MATCH (%)
CA	SANTA ANA	40	23	50.0	881.0	19085	12468	17952	12273	6.5	1.1	99.7
CA	SANTA BARBARA	3	27	698.8	917.0	42096	1166	45650	1276	0.0	0.0	90.2
CA	SANTA BARBARA	38	21	67.8	887.0	24246	837	22947	768	4.1	0.6	99.7
CA	SANTA MARIA	12	19	188.3	591.0	26039	378	24810	368	0.5	0.1	100.0
CA	SANTA ROSA	50	54	50.0	939.0	11196	413	10137	393	2.5	3.7	98.2
CA	STOCKTON	13	25	691.8	594.0	36232	4245	35709	4593	2.1	0.7	96.2
CA	STOCKTON	58	46	156.4	559.0	21148	3361	21483	3377	2.0	2.5	97.7
CA	STOCKTON	64	62	63.5	874.0	26826	6635	25391	5855	0.3	0.0	99.2
CA	TWENTYNINE PALM	31	23	50.0	90.0	2529	52	2341	50	0.0	0.0	100.0
CA	VALLEJO	66	34	63.9	466.0	13195	5161	11634	3741	0.0	0.0	98.2
CA	VENTURA	57	49	169.7	530.0	15057	3256	13570	1584	0.0	0.0	100.0
CA	VISALIA	26	28	174.4	792.0	27346	1137	26475	1132	0.1	0.0	100.0
CA	VISALIA	49	50	82.3	835.0	20266	1291	19894	1225	0.0	0.0	100.0
CA	WATSONVILLE	25	58	50.0	675.0	11608	783	11399	737	0.9	0.1	99.7
COLORADO												
CO	BOULDER	14	15	99.6	351.0	17345	2086	17309	2095	3.5	0.1	97.9
CO	BROOMFIELD	12	38	1000.0	738.0	31261	2162	30560	2153	0.0	0.0	97.8
CO	CASTLE ROCK	53	46	128.8	193.0	10925	1687	10375	1663	0.0	0.0	100.0
CO	COLORADO SPRING	11	10	20.1	725.0	29934	1040	26513	618	1.0	0.0	99.8
CO	COLORADO SPRING	13	24	459.0	652.0	29384	1273	24843	643	0.0	0.0	99.9
CO	COLORADO SPRING	21	22	75.1	656.0	18914	559	18277	549	1.2	0.1	99.1
CO	DENVER	2	34	1000.0	319.0	28224	2255	31110	2312	0.0	0.0	89.3
CO	DENVER	4	35	1000.0	451.0	32693	2295	32149	2340	0.0	0.0	91.2
CO	DENVER	6	18	1000.0	292.0	28048	2224	27181	2145	0.0	0.0	95.7
CO	DENVER	7	17	1000.0	310.0	25665	2247	24881	2210	0.0	0.0	99.1
CO	DENVER	9	16	1000.0	280.0	25576	2250	23510	2210	0.0	0.0	99.4
CO	DENVER	20	19	247.9	383.0	19667	2097	18609	2041	2.9	0.5	98.8
CO	DENVER	31	32	233.2	317.0	17119	2051	16663	2047	0.5	0.1	100.0
CO	DENVER	41	40	74.8	344.0	12086	1889	11934	1873	0.6	0.1	100.0
CO	DENVER	50	51	81.7	233.0	12111	1876	11694	1870	0.0	0.0	100.0
CO	DENVER	59	43	144.8	356.0	17315	2049	16527	2045	0.0	0.0	99.8
CO	DURANGO	6	15	50.0	110.0	8515	63	9280	62	0.0	0.0	91.0
CO	FORT COLLINS	22	21	50.0	256.0	13966	426	13878	431	0.4	0.0	99.5
CO	GLENWOOD SPRING	3	23	879.2	771.0	26314	77	31163	85	0.1	0.4	82.1
CO	GRAND JUNCTION	4	15	71.5	422.0	12688	103	13808	106	0.0	0.0	88.5
CO	GRAND JUNCTION	5	2	1.0	33.0	7035	92	6692	92	0.0	0.0	100.0
CO	GRAND JUNCTION	8	7	9.7	829.0	31861	143	26289	113	0.4	0.0	100.0
CO	GRAND JUNCTION	11	12	10.8	429.0	21026	111	19309	103	0.0	0.0	100.0
CO	GRAND JUNCTION	18	17	50.0	883.0	13770	96	12748	95	0.0	0.0	100.0
CO	LONGMONT	25	29	234.1	325.0	17790	2148	17770	2144	0.2	0.1	99.4
CO	MONTROSE	10	13	3.2	33.0	4659	33	4430	33	0.0	0.0	100.0
CO	PUEBLO	5	42	1000.0	396.0	30740	588	31495	580	0.4	0.0	92.6
CO	PUEBLO	8	26	364.3	727.0	29914	851	26336	621	0.0	0.0	99.6
CO	STEAMBOAT SPRIN	24	10	3.2	157.0	1891	12	1499	11	0.0	0.0	100.0
CO	STERLING	3	23	1000.0	232.0	25691	70	22797	62	0.0	0.0	99.9
CONNECTICUT												
CT	BRIDGEPORT	43	42	50.0	156.0	9545	2622	9689	2664	2.6	3.8	97.3
CT	BRIDGEPORT	49	52	50.0	222.0	10021	3223	9688	3156	6.3	10.2	98.8
CT	HARTFORD	3	33	1000.0	276.0	21991	3476	24532	3877	0.0	0.0	85.9
CT	HARTFORD	18	46	219.5	299.0	17043	3203	17368	3157	6.0	6.2	90.1
CT	HARTFORD	24	32	50.0	262.0	13076	2852	11674	2651	11.3	11.0	98.6
CT	HARTFORD	61	5	1.0	515.0	22582	3667	23105	3792	7.9	10.7	86.5
CT	NEW BRITAIN	30	35	134.0	451.0	22623	3872	22140	3765	17.4	13.1	96.1
CT	NEW HAVEN	8	10	8.6	363.0	22646	5353	23122	4690	3.7	2.4	90.0
CT	NEW HAVEN	59	6	1.0	314.0	16594	4189	18681	4424	2.3	0.9	85.9
CT	NEW HAVEN	65	39	50.0	82.0	1425	546	1369	530	0.0	0.0	100.0
CT	NEW LONDON	26	34	116.7	381.0	16634	2417	15227	1723	0.6	1.6	99.4
CT	NORWICH	53	45	50.0	207.0	9654	839	9558	838	3.1	4.5	97.5
CT	WATERBURY	20	12	3.2	366.0	18905	4400	18645	4039	8.2	4.6	92.9
DISTRICT OF COLUMBIA												
DC	WASHINGTON	4	48	1000.0	237.0	26989	6541	24745	6454	6.6	3.0	98.9
DC	WASHINGTON	5	36	1000.0	235.0	26351	6530	26711	6533	0.0	0.0	95.9
DC	WASHINGTON	7	39	1000.0	235.0	23331	6004	23215	6365	0.0	0.0	95.4
DC	WASHINGTON	9	34	1000.0	235.0	24624	6440	22883	6299	0.0	0.0	100.0
DC	WASHINGTON	20	35	231.6	235.0	17347	6010	17179	5746	0.1	0.0	96.0
DC	WASHINGTON	26	27	67.2	233.0	15070	5823	15606	5637	13.3	4.1	94.9
DC	WASHINGTON	32	33	194.3	213.0	13878	5588	14310	5777	10.0	2.3	93.5
DC	WASHINGTON	50	51	65.0	247.0	14147	5160	14207	5376	0.1	0.0	97.7
DELAWARE												
DE	SEAFORD	64	44	50.0	195.0	4202	154	4202	154	3.2	2.9	100.0
DE	WILMINGTON	12	55	1000.0	294.0	23176	7443	20136	6742	0.0	0.0	99.8
DE	WILMINGTON	61	31	50.0	292.0	16054	5337	15401	5324	5.3	6.5	97.1
FLORIDA												
FL	BOCA RATON	63	44	61.7	310.0	13892	3705	13892	3705	0.0	0.0	100.0
FL	BRADENTON	66	42	50.0	465.0	18294	2380	18282	2379	0.0	0.0	100.0
FL	CAPE CORAL	36	35	216.1	450.0	24093	879	23907	870	0.0	0.0	100.0
FL	CLEARWATER	22	21	232.4	433.0	21082	2536	21082	2536	9.1	5.2	100.0
FL	CLERMONT	18	17	240.6	458.0	28579	2143	28566	2101	0.0	0.0	99.4
FL	CCCOA	52	51	154.7	285.0	14214	1507	14142	1510	0.0	0.0	99.7
FL	COCOA	68	30	50.0	287.0	13459	1043	13446	1039	0.0	0.0	100.0
FL	DAYTONA BEACH	2	11	47.2	503.0	44133	2602	41617	2380	0.0	0.0	99.7
FL	DAYTONA BEACH	26	49	145.7	304.0	16535	1271	13794	830	0.0	0.0	100.0
FL	FORT LAUDERDALE	51	52	151.7	262.0	13422	3627	13422	3627	0.0	0.0	100.0
FL	FORT MYERS	11	53	1000.0	451.0	36265	1082	34767	1033	7.4	5.4	99.6
FL	FORT MYERS	20	15	215.4	451.0	24348	847	24348	847	0.1	0.0	100.0
FL	FORT MYERS	30	31	50.0	293.0	16321	651	16188	651	6.5	4.2	100.0
FL	FORT PIERCE	21	38	117.7	147.0	11558	446	11088	436	0.0	0.0	100.0
FL	FORT PIERCE	34	50	301.7	454.0	24332	1376	23318	1068	0.0	0.0	100.0
FL	FORT WALTON BEA	35	25	50.0	60.0	4682	155	4678	155	4.7	1.0	100.0
FL	FORT WALTON BEA	53	40	56.2	219.0	12566	488	12574	488	0.0	0.0	99.9
FL	FORT WALTON BEA	58	49	50.0	59.0	1170	106	1170	106	0.0	0.0	100.0
FL	GAINESVILLE	5	36	1000.0	262.0	31845	1206	31333	1154	0.0	0.0	100.0
FL	GAINESVILLE	20	16	91.0	287.0	16217	546	16225	547	0.3	0.1	100.0
FL	HIGH SPRINGS	53	28	103.9	278.0	13464	443	13293	416	0.0	0.0	99.9
FL	HOLLYWOOD	69	47	97.4	264.0	13806	3583	13806	3583	0.0	0.0	100.0
FL	JACKSONVILLE	4	42	1000.0	293.0	33336	1218	31927	1179	0.0	0.0	100.0
FL	JACKSONVILLE	7	38	1000.0	277.0	27783	1087	26495	1082	3.7	1.8	100.0
FL	JACKSONVILLE	12	13	14.6	296.0	27737	1084	27930	1091	3.6	2.1	98.4
FL	JACKSONVILLE	17	34	300.6	304.0	21158	1047	20982	1045	6.3	1.9	100.0
FL	JACKSONVILLE	30	32	96.5	302.0	16097	1004	16097	1004	0.0	0.0	100.0
FL	JACKSONVILLE	47	19	102.8	299.0	18851	1019	18851	1019	0.0	0.1	100.0
FL	JACKSONVILLE	59	44	64.2	289.0	14310	967	14310	967	0.0	0.0	100.0
FL	KEY WEST	8	12	3.2	33.0	1460	34	1460	34	0.0	0.0	100.0
FL	KEY WEST	22	3	1.0	62.0	1741	33	1741	33	0.0	0.0	100.0
FL	LAKE WORTH	67	36	50.0	60.0	3822	717	3822	717	0.0	0.0	100.0
FL	LAKELAND	32	19	145.7	331.0	17465	2429	17465	2429	0.0	0.0	100.0
FL	LEESBURG	45	46	133.0	138.0	11551	1425	10900	1419	0.0	0.0	100.0
FL	LEESBURG	55	40	149.1	515.0	22927	1953	22638	1965	0.0	0.0	98.7
FL	LIVE OAK	57	48	50.0	137.0	8563	161	8563	161	0.0	0.0	100.0
FL	MELBOURNE	43	20	90.3	299.0	14936	1541	14876	1539	0.0	0.0	100.0
FL	MELBOURNE	56	48	170.8	472.0	27441	2120	24824	1902	1.1	1.9	99.1
FL	MIAMI	2	18	1000.0	283.0	32748	3999	31340	3901	0.0	0.0	100.0
FL	MIAMI	4	22	1000.0	304.0	33960	4013	33960	4013	0.0	0.0	100.0
FL	MIAMI	6	30	1000.0	549.0	47149	3619	43965	2793	0.0	0.0	98.9
FL	MIAMI	7	8	14.3	293.0	28109	3947	28109	3947	0.1	0.0	100.0
FL	MIAMI	10	9	14.8	305.0	28742	3954	28730	3954	0.0	0.0	100.0
FL	MIAMI	17	20	113.3	309.0	16727	3755	16727	3755	0.0	0.0	100.0
FL	MIAMI	23	24	192.6	297.0	15913	3794	15913	3794	0.0	0.0	100.0
FL	MIAMI	33	32	201.3	280.0	17636	3748	17259	3598	0.0	0.0	100.0
FL	MIAMI	35	26	66.2	102.0	8033	2890	7442	2300	0.0	0.0	99.6
FL	MIAMI	39	19	123.1	276.0	14200	3712	14982	3725	0.0	0.0	94.8
FL	MIAMI	45	46	73.1	308.0	12757	3710	12757	3710	0.0	0.0	100.0
FL	NAPLES	26	41	283.7	368.0	19538	625	19530	625	0.0	0.0	100.0
FL	NAPLES	46	45	94.3	309.0	14551	548	14551	548	0.0	0.0	100.0
FL	NEW SMYRNA BEAC	15	33	50.0	176.0	10158	659	10158	659	0.0	0.0	100.0
FL	OCALA	51	31	50.0	280.0	14383	592	14383	592	0.6	0.4	100.0
FL	ORANGE PARK	25	10	3.2	151.0	9390	960	8960	953	0.0	0.0	100.0
FL	ORLANDO	6	58	1000.0	445.0	40976	2471	36463	2429	0.0	0.0	98.3
FL	ORLANDO	9	39	839.9	479.0	38033	2482	35179	2183	0.1	0.0	98.3
FL	ORLANDO	24	23	50.0	381.0	20679	1954	20591	1953	8.8	5.1	100.0
FL	ORLANDO	27	14	171.3	550.0	35564	3673	29084	3043	0.0	0.0	100.0
FL	ORLANDO	35	22	67.5	451.0	20573	1953	20939	1971	0.0	0.0	98.0
FL	ORLANDO	65	41	123.1	465.0	21706	2059	21799	2061	0.0	0.0	99.5
FL	PALM BEACH	61	49	101.0	125.0	12399	1406	12750	1445	0.0	0.0	97.2
FL	PANAMA CITY	7	42	1000.0	265.0	27025	394	26252	371	0.0	0.0	100.0
FL	PANAMA CITY	13	19	537.6	437.0	35665	571	33760	511	0.0	0.0	100.0
FL	PANAMA CITY	28	29	50.0	228.0	12704	211	12644	210	0.1	0.0	100.0
FL	PANAMA CITY	56	38	50.0	155.0	10333	201	10321	198	0.0	0.0	100.0
FL	PANAMA CITY BEA	46	47	50.0	59.0	1418	86	1418	86	0.3	0.0	100.0
FL	PENSACOLA	3	17	1000.0	372.0	36542	1108	31164	943	0.0	0.0	100.0
FL	PENSACOLA	23	31	91.9	149.0	11627	471	11282	465	0.7	3.6	100.0
FL	PENSACOLA	33	34	132.8	415.0	18793	868	18561	866	0.0	0.0	100.0
FL	PENSACOLA	44	45	122.3	454.0	19008	896	18984	896	0.3	0.0	100.0
FL	SARASOTA	40	52	88.9	235.0	13344	1974	12951	1857	0.2	0.2	99.4
FL	ST. PETERSBURG	10	24	607.5	458.0	31241	2783	30743	2795	0.0	0.0	99.0
FL	ST. PETERSBURG	38	57	52.6	438.0	20978	2908	21394	2918	2.8	0.8	98.0
FL	ST. PETERSBURG	44	59	272.7	454.0	27852	3105	26940	3082	0.0	0.0	100.0
FL	TALLAHASSEE	11	32	1000.0	232.0	25777	430	23062	384	0.0	0.0	100.0
FL	TALLAHASSEE	27	22	91.4	518.0	29111	609	28079	595	0.4	0.1	100.0
FL	TALLAHASSEE	40	2	1.0	268.0	13664	361	13704	362	0.0	0.0	99.6
FL	TAMPA	3	54	1000.0	473.0	41755	3671	39567	3244	0.0	0.0	96.1
FL	TAMPA	8	7	19.0	471.0	37631	3452	35000	3222	1.4	0.2	99.8
FL	TAMPA	13	12	17.8	433.0	34655	3345	35523	3387	6.9	2.0	97.6
FL	TAMPA	16	34	73.3	308.0	16910	2770	16934	2772	1.3	0.4	99.9
FL	TAMPA	28	29	101.0	471.0	27073	3079	22441	2914	0.0	0.0	100.0
FL	TAMPA	50	47	149.3	445.0	25345	3034	23509	2957	1.0	0.3	99.9
FL	TEQUESTA	25	16	191.2	453.0	22790	1447	22565	1268	0.0	0.0	100.0
FL	TICE	49	33	133.6	312.0	15015	716	14724	714	0.0	0.0	100.0
FL	VENICE	62	25	55.5	167.0	10475	664	10354	662	0.0	0.0	99.6
FL	WEST PALM BEACH	5	55	1000.0	302.0	33787	4048	30886	2486	0.0	0.0	100.0
FL	WEST PALM BEACH	12	13	14.7	299.0	28672	3707	27252	3701	1.0	0.5	100.0
FL	WEST PALM BEACH	29	28	225.7	457.0	24721	3869	24681	3850	1.3	7.3	100.0
FL	WEST PALM BEACH	42	27	50.0	439.0	19161	2452	19157	2452	0.0	0.0	100.0
GEORGIA												
GA	ALBANY	10	17	611.1	293.0	27571	589	25456	542	1.2	0.4	97.6
GA	ALBANY	31	30	50.0	302.0	17242	406	17234	406	0.7	0.5	100.0
GA	ATHENS	8	22	600.2	326.0	28979	3373	25822	3264	0.0	0.0	99.9
GA	ATHENS	34	48	277.5	440.0	22260	3052	21347	2821	1.2	0.3	99.9
GA	ATLANTA	2	39	1000.0	316.0	31734	3513	28857	3391	0.0	0.0	99.0
GA	ATLANTA	5	27	1000.0	326.0	32598	3523	31015	3442	0.0	0.0	99.4
GA	ATLANTA	11	10	15.7	320.0	26462	3322	25851	3314	0.0	0.0	98.4
GA	ATLANTA	17	20	82.5	332.0	20181	3107	18911	3044	2.9	0.4	97.6
GA	ATLANTA	30	21	50.0	334.0	15764	2905	16865	2956	2.0	1.0	92.2
GA	ATLANTA	36	25	67.1	332.0	19555	3104	18956	3076	5.0	0.7	99.4
GA	ATLANTA	46	19	50.0	332.0	18719	3090	18442	3077	0.8	0.1	99.5
GA	ATLANTA	57	41	50.0	319.0	9926	2613	9890	2606	3.8	1.0	99.6
GA	ATLANTA	69	43	50.0	299.0	15421	2953	15790	2961	0.0	0.0	95.9
GA	AUGUSTA	6	42	1000.0	418.0	37310	939	33843	885	0.0	0.0	99.1
GA	AUGUSTA	12	31	716.9	485.0	37268	998	32219	921	0.0	0.0	99.7
GA	AUGUSTA	26	30	60.4	485.0	24272	667	23574	625	0.1	0.0	98.3
GA	AUGUSTA	54	51	65.1	385.0	16955	537	16931	537	0.3	0.1	99.9
GA	BAINBRIDGE	49	50	192.8	410.0	22695	493	22683	493	0.1	0.0	100.0
GA	BAXLEY	34	35	50.0	147.0	6497	93	6465	93	0.0	0.0	100.0
GA	BRUNSWICK	21	24	262.3	600.0	31785	996	31608	951	0.1	0.3	100.0
GA	CHATSWORTH	18	33	331.5	564.0	19455	1485	17109	1056	1.2	2.2	99.3
GA	COCHRAN	29	7	4.8	350.0	20633	537	19851	520	0.0	0.0	98.7
GA	COLUMBUS	3	15	1000.0	543.0	45960	1149	35466	889	0.0	0.0	99.8
GA	COLUMBUS	9	47	985.2	503.0	38776	980	31136	724	0.5	0.1	99.9
GA	COLUMBUS	28	23	192.0	461.0	22702	843	22061	833	4.2	4.2	99.6
GA	COLUMBUS	38	35	50.0	399.0	20127	589	19841	586	0.3	0.1	100.0
GA	COLUMBUS	54	49	50.0	345.0	15376	492	14812	486	0.0	0.0	100.0
GA	CORDELE	55	51	50.0	125.0	5069	62	5065	62	0.0	0.0	100.0
GA	DALTON	23	16	50.0	447.0	12110	704	10601	655	1.9	1.5	100.0
GA	DAWSON	25	26	50.0	329.0	14774	306	14699	304	0.9	2.1	99.9
GA	MACON	13	45	1000.0	238.0	25508	671	20877	590	0.0	0.0	100.0
GA	MACON	24	16	50.0	244.0	14633	474	14304	467	0.5	1.0	99.9
GA	MACON	41	40	50.0	237.0	12902	429	12850	429	1.6	0.5	100.0
GA	MACON	64	50	50.0	185.0	2523	254	2466	253	0.0	0.0	100.0
GA	MONROE	63	44	119.9	363.0	17274	2962	17752	3051	0.0	0.0	96.3
GA	PELHAM	14	20	273.3	378.0	22980	645	22614	638	0.1	0.0	99.9
GA	PERRY	58	32	50.0	247.0	13047	432	12959	431	0.0	0.0	100.0
GA	ROME	14	51	408.4	616.0	28081	3421	26996	3239	1.0	1.0	100.0
GA	SAVANNAH	3	39	1000.0	451.0	41918	738	34691	654	0.0	0.0	100.0
GA	SAVANNAH	9	46	958.3	320.0	29284	641	25467	597	0.0	0.0	100.0
GA	SAVANNAH	11	15	487.6	445.0	36273	697	34178	673	0.7	0.8	99.8
GA	SAVANNAH	22	23	170.3	436.0	25152	549	24027	539	0.2	0.1	100.0
GA	THOMASVILLE	6	52	1000.0	619.0	51636	878	45896	839	0.0	0.0	99.8
GA	TOCCOA	32	24	50.0	253.0	12060	460	11262	432	0.8	0.8	100.0
GA	VALDOSTA	44	43	50.0	277.0	11316	233	11324	233	0.6	0.4	99.9
GA	WAYCROSS	8	18	531.9	314.0	28738	370	25186	342	0.0	0.0	98.8
GA	WRENS	20	36	325.9	452.0	24569	613	24593	614	4.8	3.3	97.9
HAWAII												
HI	HILO	2	22	50.0	33.0	6524	67	2155	58	0.0	0.0	100.0
HI	HILO	4	19	1000.0	366.0	29712	119	30256	110	0.0	0.0	90.6
HI	HILO	9	8	3.2	33.0	6793	69	2391	58	0.0	0.0	100.0
HI	HILO	11	21	50.0	33.0	6524	67	4051	65	0.0	0.0	100.0
HI	HILO	13	18	50.0	33.0	6523	67	4051	65	0.0	0.0	100.0
HI	HILO	14	23	50.0	33.0	6524	67	751	46	0.0	0.0	100.0
HI	HILO	32	31	50.0	366.0	20338	83	17557	80	0.6	0.0	100.0
HI	HILO	38	39	50.0	366.0	20338	83	17557	80	0.0	0.0	100.0
HI	HONOLULU	2	22	1000.0	33.0	9594	797	11517	836	0.0	0.0	83.3
HI	HONOLULU	4	40	1000.0	33.0	10686	835	11185	836	0.0	0.0	93.8
HI	HONOLULU	5	23	1000.0	629.0	47397	842	52476	842	0.0	0.0	90.3
HI	HONOLULU	9	8	7.2	33.0	8305	836	8484	836	0.0	0.0	97.9
HI	HONOLULU	11	18	120.2	33.0	7255	799	7519	836	0.0	0.0	95.4
HI	HONOLULU	13	35	549.5	33.0	9761	836	9683	836	0.0	0.0	100.0
HI	HONOLULU	14	31	50.0	33.0	6289	802	1898	721	0.0	0.0	100.0
HI	HONOLULU	20	19	50.0	622.0	28646	836	20876	836	2.0	6.2	100.0
HI	HONOLULU	26	27	50.0	580.0	21625	836	17512	836	0.4	5.1	96.9
HI	HONOLULU	32	33	50.0	33.0	5603	826	2501	754	2.6	1.0	100.0
HI	HONOLULU	38	39	50.0	580.0	27550	832	17796	836	0.4	6.7	100.0
HI	HONOLULU	44	43	50.0	580.0	27550	836	18040	836	0.0	1.3	100.0
HI	KAILUA KONA	6	25	812.8	887.0	53971	133	54363	145	0.0	0.0	98.9
HI	KANEOHE	66	41	50.0	632.0	28895	842	14374	837	0.0	0.0	100.0
HI	LIHUE	8	12	3.3	305.0	22274	51	22184	51	4.9	0.0	100.0
HI	LIHUE	21	7	3.2	305.0	24677	51	17541	51	0.0	0.0	100.0
HI	LIHUE	27	28	50.0	366.0	20338	51	17557	51	27.3	0.0	100.0
HI	LIHUE	67	45	50.0	366.0	20338	51	17557	51	0.0	0.0	100.0
HI	WAILUKU	3	24	72.4	1814.0	53585	120	52313	138	0.0	0.0	97.8
HI	WAILUKU	7	36	50.0	1811.0	51943	139	40173	121	0.0	0.0	100.0
HI	WAILUKU	10	30	50.0	1811.0	51943	139	40768	121	0.0	0.0	100.0
HI	WAILUKU	12	29	50.0	1664.0	51106	138	45250	128	0.0	0.0	100.0
HI	WAILUKU	15	16	50.0	1723.0	50272	138	42954	123	0.0	0.0	100.0
HI	WAILUKU	21	20	50.0	33.0	6373	90	2364	85	6.3	6.0	100.0
HI	WAILUKU	27	28	50.0	366.0	20337	100	17557	100	17.2	5.2	100.0
HI	WAILUKU	33	34	50.0	366.0	20338	100	17557	100	6.4	1.2	100.0
IOWA												
IA	AMES	5	59	1000.0	564.0	48378	984	40402	884	0.0	0.0	100.0
IA	BURLINGTON	26	41	50.0	96.0	3829	91	3821	91	1.1	0.2	100.0
IA	CEDAR RAPIDS	2	51	1000.0	442.0	37088	809	34974	779	0.0	0.0	92.9
IA	CEDAR RAPIDS	9	52	1000.0	607.0	44258	948	34935	764	0.0	0.0	100.0
IA	CEDAR RAPIDS	28	27	226.0	452.0	24320	649	24312	641	0.1	0.0	99.6
IA	CEDAR RAPIDS	48	47	83.3	323.0	15823	490	15815	490	0.8	3.4	100.0
IA	COUNCIL BLUFFS	32	33	50.0	98.0	6340	642	5791	631	4.2	0.8	100.0
IA	DAVENPORT	6	56	1000.0	408.0	36341	1070	32108	941	0.0	0.0	98.3
IA	DAVENPORT	18	49	209.7	302.0	17562	629	17166	627	0.1	0.0	100.0
IA	DAVENPORT	36	34	50.0	65.0	734	259	734	259	0.5	0.0	100.0

From A to V on Digital Allocations—*Complete text of the FCC's target list of 1,606 stations*

STATE AND CITY		NTSC CHAN	DTV CHAN	DTV POWER (kW)	ANTENNA HAAT(m)	DTV SERVICE DURING TRANSITION		EXISTING NTSC				DTV/NTSC AREA MATCH (%)
								CURRENT SERVICE		NEW INTERFERENCE		
						AREA (Sq km)	PEOPLE (thous)	AREA (Sq km)	PEOPLE (thous)	AREA (% NL Area)	PEOPLE (% NL Pop)	
IA	DES MOINES	8	31	796.2	591.0	44002	915	34792	837	0.0	0.0	100.0
IA	DES MOINES	11	50	1000.0	600.0	43262	904	38472	872	0.0	0.0	98.0
IA	DES MOINES	13	19	611.9	600.0	44568	917	37303	855	0.0	0.0	100.0
IA	DES MOINES	17	16	126.7	463.0	23435	720	23117	717	0.2	0.0	100.0
IA	DES MOINES	63	26	58.1	550.0	20137	674	20089	673	0.0	0.0	100.0
IA	DUBUQUE	40	43	50.0	256.0	12330	221	12033	218	2.1	1.0	100.0
IA	FORT DODGE	21	25	50.5	355.0	20624	211	20632	211	0.1	0.1	99.9
IA	IOWA CITY	12	45	922.3	439.0	35414	1080	31000	929	0.0	0.0	100.0
IA	IOWA CITY	20	25	50.0	123.0	11519	390	11169	371	1.4	0.7	100.0
IA	MASON CITY	3	42	1000.0	472.0	42310	734	32426	513	0.0	0.0	99.8
IA	MASON CITY	24	18	50.0	436.0	19783	275	19674	275	0.5	0.2	100.0
IA	OTTUMWA	15	14	69.1	363.0	19978	338	19746	333	1.3	0.5	100.0
IA	RED OAK	36	35	63.1	475.0	20212	748	19928	745	1.9	2.7	100.0
IA	SIOUX CITY	4	41	1000.0	585.0	49038	632	38681	499	0.0	0.0	99.8
IA	SIOUX CITY	9	30	766.6	616.0	44129	531	38211	463	0.0	0.0	99.4
IA	SIOUX CITY	14	39	50.0	351.0	19053	257	19017	256	2.5	1.3	99.9
IA	SIOUX CITY	27	28	161.7	326.0	18801	255	19331	262	1.1	1.1	96.1
IA	SIOUX CITY	44	49	226.4	610.0	29824	360	29043	352	0.1	0.0	100.0
IA	WATERLOO	7	55	1000.0	604.0	42494	922	35926	780	0.0	0.0	99.8
IA	WATERLOO	32	35	237.6	579.0	28849	734	28450	698	1.8	2.2	99.5
IDAHO												
ID	BOISE	2	28	978.1	777.0	45244	393	50231	396	0.0	0.0	90.0
ID	BOISE	4	21	724.1	754.0	44481	394	48296	395	0.0	0.0	92.0
ID	BOISE	7	26	407.8	808.0	38677	391	38283	390	0.0	0.0	99.4
ID	CALDWELL	9	10	14.0	805.0	26995	386	25535	385	0.2	0.0	100.0
ID	COEUR D'ALENE	26	45	50.0	465.0	5958	315	4501	184	0.0	0.0	100.0
ID	FILER	19	18	50.0	161.0	6675	83	6659	83	0.0	0.0	100.0
ID	IDAHO FALLS	3	36	1000.0	488.0	37465	234	40914	237	0.0	0.0	91.3
ID	IDAHO FALLS	8	9	21.8	463.0	35031	232	33586	231	0.0	0.0	100.0
ID	LEWISTON	3	32	1000.0	384.0	25292	137	28029	141	0.0	0.0	84.3
ID	MOSCOW	12	35	804.7	346.0	26273	140	25834	151	1.6	3.4	98.6
ID	NAMPA	6	24	822.6	811.0	44997	394	47567	393	0.0	0.0	93.1
ID	NAMPA	12	44	525.4	829.0	37704	391	37104	390	0.0	0.0	99.1
ID	POCATELLO	6	23	1000.0	466.0	33212	267	34995	265	0.0	0.0	90.4
ID	POCATELLO	10	17	189.6	465.0	29785	229	28233	228	0.0	0.0	100.0
ID	TWIN FALLS	11	16	578.8	323.0	27977	131	26495	129	0.0	0.0	100.0
ID	TWIN FALLS	13	22	50.0	161.0	11305	101	11221	101	0.0	0.0	100.0
ID	TWIN FALLS	35	34	50.0	164.0	3197	69	3181	69	0.0	0.0	100.0
ILLINOIS												
IL	AURORA	60	59	187.8	494.0	24765	8255	24885	8277	0.1	0.0	99.2
IL	BLOOMINGTON	43	28	50.0	293.0	14988	595	14689	563	0.9	0.3	100.0
IL	CARBONDALE	8	40	1000.0	268.0	26138	695	21296	537	0.0	0.0	100.0
IL	CHAMPAIGN	3	48	1000.0	287.0	32382	894	22935	724	6.8	2.4	99.9
IL	CHAMPAIGN	15	41	50.0	396.0	18190	457	17815	451	0.1	0.0	100.0
IL	CHARLESTON	51	50	50.0	70.0	2801	71	2801	71	0.0	0.0	100.0
IL	CHICAGO	2	3	2.6	418.0	26774	8356	22397	8193	9.5	0.9	96.1
IL	CHICAGO	5	29	200.1	494.0	30933	8519	27979	8322	6.2	0.7	98.2
IL	CHICAGO	7	52	153.6	515.0	29047	8459	27413	8361	4.8	0.4	100.0
IL	CHICAGO	9	19	163.8	415.0	27649	8411	26313	8333	4.5	0.6	99.9
IL	CHICAGO	11	47	157.0	497.0	28320	8427	25860	8218	6.3	0.4	99.9
IL	CHICAGO	20	21	81.7	378.0	19467	8030	16941	7946	1.7	0.4	99.1
IL	CHICAGO	26	27	70.5	472.0	22593	8200	22488	8183	2.0	0.4	99.2
IL	CHICAGO	32	31	218.0	430.0	24077	8332	23929	8322	3.6	0.7	99.6
IL	CHICAGO	38	43	215.3	381.0	21549	8076	21794	8099	3.9	0.7	98.4
IL	CHICAGO	44	45	167.9	433.0	22393	8196	22361	8189	3.1	0.6	99.8
IL	DECATUR	17	18	241.7	393.0	23354	845	21829	813	1.3	0.7	99.5
IL	DECATUR	23	22	58.1	314.0	14066	648	13731	640	0.0	0.0	100.0
IL	EAST ST LOUIS	46	47	186.6	345.0	19143	2563	19026	2562	0.1	0.0	100.0
IL	FREEPORT	23	41	50.0	219.0	12406	710	12128	704	10.3	5.8	100.0
IL	HARRISBURG	3	34	1000.0	302.0	34357	759	24621	570	0.0	0.0	100.0
IL	JACKSONVILLE	14	15	50.0	94.0	3790	58	3778	58	5.5	5.2	100.0
IL	JOLIET	66	53	134.4	393.0	15996	7887	17763	8010	0.0	0.0	90.0
IL	LASALLE	35	10	4.2	418.0	18453	1214	17920	772	1.8	7.5	96.4
IL	MACOMB	22	21	50.0	149.0	4469	57	4409	56	1.4	1.7	100.0
IL	MARION	27	17	61.5	233.0	13712	366	13708	363	2.7	1.0	99.7
IL	MOLINE	8	38	836.6	308.0	28284	857	24345	827	0.0	0.0	99.8
IL	MOLINE	24	23	50.0	276.0	14161	557	14009	556	0.0	0.0	100.0
IL	MOUNT VERNON	13	21	592.3	302.0	28244	707	20594	430	0.0	0.0	100.0
IL	OLNEY	16	19	50.0	283.0	16293	258	16405	258	0.1	1.0	98.9
IL	PEORIA	19	40	90.1	194.0	14017	570	12447	537	1.8	0.5	99.9
IL	PEORIA	25	57	120.2	207.0	15183	573	14420	567	0.3	0.0	99.9
IL	PEORIA	31	30	50.0	195.0	12249	549	11981	545	0.3	0.0	100.0
IL	PEORIA	47	46	50.0	216.0	12912	553	12880	553	1.9	0.3	100.0
IL	PEORIA	59	39	50.0	178.0	6389	406	6393	409	0.4	0.5	99.5
IL	QUINCY	10	54	1000.0	238.0	26173	313	23635	294	0.0	0.0	100.0
IL	QUINCY	16	32	50.0	302.0	15165	198	15084	197	0.0	0.0	99.8
IL	QUINCY	27	34	50.0	173.0	4121	103	4109	102	4.1	1.1	100.0
IL	ROCK ISLAND	4	58	1000.0	408.0	37725	1120	31894	1005	0.0	0.0	99.8
IL	ROCKFORD	13	54	1000.0	216.0	24061	1472	18731	913	0.0	0.0	100.0
IL	ROCKFORD	17	16	196.0	203.0	15163	881	13542	775	1.5	1.0	100.0
IL	ROCKFORD	39	42	50.0	176.0	11480	691	11331	686	1.1	0.9	100.0
IL	SPRINGFIELD	20	42	75.2	436.0	23636	680	21745	607	0.6	0.1	100.0
IL	SPRINGFIELD	49	53	50.0	189.0	5296	228	5296	228	0.0	0.0	100.0
IL	SPRINGFIELD	55	44	50.0	439.0	21743	581	21659	581	0.0	0.0	100.0
IL	URBANA	12	33	778.3	302.0	28501	970	22557	808	0.0	0.0	100.0
IL	URBANA	27	26	88.0	139.0	11120	335	11296	336	3.4	1.0	98.4
INDIANA												
IN	ANGOLA	63	12	3.2	144.0	10301	560	10281	559	0.0	0.0	100.0
IN	BLOOMINGTON	4	53	1000.0	357.0	31346	2064	24868	1805	0.2	0.1	99.9
IN	BLOOMINGTON	30	14	50.0	216.0	12337	504	12192	503	2.0	0.9	100.0
IN	BLOOMINGTON	42	56	236.0	317.0	14996	1559	14261	1516	0.3	0.3	100.0
IN	BLOOMINGTON	63	27	50.0	328.0	16403	1563	16250	1555	0.0	0.0	99.9
IN	ELKHART	28	58	358.8	335.0	21179	1308	20784	1220	8.3	10.0	99.4
IN	EVANSVILLE	7	28	696.1	305.0	28593	796	26079	763	0.0	0.0	100.0
IN	EVANSVILLE	9	54	1000.0	177.0	22441	717	17469	617	0.5	0.1	100.0
IN	EVANSVILLE	14	58	184.8	311.0	16923	576	17035	577	1.5	0.3	99.3
IN	EVANSVILLE	25	59	56.5	314.0	17143	587	17090	588	3.1	1.8	99.8
IN	EVANSVILLE	44	45	50.0	296.0	15321	562	15301	562	0.1	0.0	100.0
IN	FORT WAYNE	15	4	1.0	253.0	10500	585	10038	557	0.0	0.0	100.0
IN	FORT WAYNE	21	24	50.0	226.0	12253	651	11554	603	1.4	0.7	99.2
IN	FORT WAYNE	33	19	50.0	235.0	11933	635	11732	608	0.1	0.1	99.4
IN	FORT WAYNE	39	40	50.0	223.0	13192	678	13477	689	2.3	1.3	97.9
IN	FORT WAYNE	55	36	50.0	238.0	11227	620	11227	620	0.0	0.0	100.0
IN	GARY	50	51	194.8	494.0	25797	8325	25387	8307	3.0	0.6	99.9
IN	GARY	56	17	50.0	306.0	15222	4407	15198	4390	1.3	1.8	99.9
IN	HAMMOND	62	36	75.8	146.0	11370	6950	11286	6855	0.0	0.0	99.9
IN	INDIANAPOLIS	6	25	1000.0	302.0	31298	2348	27352	2226	0.0	0.0	97.0
IN	INDIANAPOLIS	8	9	15.3	305.0	24826	2179	24755	2134	1.2	0.5	94.6
IN	INDIANAPOLIS	13	46	1000.0	299.0	27302	2262	22987	2053	0.3	0.0	99.7
IN	INDIANAPOLIS	20	21	50.0	259.0	15689	1647	15114	1632	0.0	0.0	99.9
IN	INDIANAPOLIS	40	16	50.0	302.0	17013	1689	17045	1685	1.8	0.7	98.4
IN	INDIANAPOLIS	59	45	114.5	304.0	18753	1777	18429	1759	0.1	0.2	98.2
IN	INDIANAPOLIS	69	44	50.0	167.0	2526	1016	2526	1016	0.0	0.0	100.0
IN	KOKOMO	29	54	139.9	236.0	13621	1123	13694	1187	0.9	3.5	99.5
IN	LAFAYETTE	18	11	3.2	238.0	12618	509	12438	485	3.4	0.8	99.9
IN	MARION	23	32	260.9	295.0	19262	1850	19056	1848	0.4	0.9	98.4
IN	MUNCIE	49	52	50.0	155.0	9558	534	9550	532	2.3	1.4	99.7
IN	RICHMOND	43	39	59.9	302.0	14996	2761	14735	2655	3.9	4.7	99.3
IN	SALEM	58	51	50.0	346.0	15053	1217	14714	1209	1.6	0.3	99.9
IN	SOUTH BEND	16	42	390.9	326.0	25322	1436	23194	1284	2.9	6.9	99.4
IN	SOUTH BEND	22	30	242.3	325.0	24373	1378	22931	1365	3.2	7.4	99.2
IN	SOUTH BEND	34	35	50.0	246.0	13979	944	14096	961	7.1	6.1	97.1
IN	SOUTH BEND	46	48	50.0	305.0	15185	987	14975	960	4.6	2.9	100.0
IN	TERRE HAUTE	2	36	1000.0	290.0	32150	898	22591	576	0.0	0.0	99.9
IN	TERRE HAUTE	10	24	855.9	293.0	26981	710	25223	675	1.9	4.7	98.8
IN	TERRE HAUTE	38	39	56.8	299.0	14220	406	14127	389	0.4	0.1	100.0
IN	VINCENNES	22	52	60.4	174.0	11033	250	11009	249	1.2	1.6	99.9
KANSAS												
KS	COLBY	4	17	1000.0	229.0	28663	51	22993	38	0.0	0.0	100.0
KS	ENSIGN	6	5	6.8	219.0	28358	121	27103	117	0.0	0.0	99.7
KS	FORT SCOTT	20	40	327.0	233.0	19340	329	19106	325	0.1	0.0	100.0
KS	GARDEN CITY	11	16	606.3	244.0	23127	118	22492	114	0.0	0.0	99.4
KS	GARDEN CITY	13	18	673.9	265.0	25000	114	23749	114	0.0	0.0	100.0
KS	GOODLAND	10	14	714.6	299.0	27752	43	26772	41	0.8	1.8	100.0
KS	GREAT BEND	2	22	1000.0	296.0	31693	199	29002	175	0.0	0.0	100.0
KS	HAYS	7	20	1000.0	216.0	24887	100	23445	95	0.0	0.0	100.0
KS	HAYS	9	16	495.6	332.0	29090	130	24912	114	0.0	0.0	98.7
KS	HUTCHINSON	8	29	1000.0	244.0	23973	670	18724	566	0.0	0.0	100.0
KS	HUTCHINSON	12	19	544.3	463.0	37037	755	32857	724	0.3	0.0	100.0
KS	HUTCHINSON	36	35	117.3	733.0	16065	605	16065	605	0.2	0.0	100.0
KS	LAKIN	3	23	1000.0	171.0	25489	91	21264	88	0.0	0.0	99.8
KS	LAWRENCE	38	36	168.6	330.0	16625	1755	16553	1731	0.3	0.1	99.4
KS	PITTSBURG	7	30	667.9	332.0	29825	494	28150	475	0.0	0.0	100.0
KS	SALINA	18	17	50.0	317.0	12033	156	11974	156	1.4	5.3	100.0
KS	TOPEKA	11	23	815.1	305.0	27129	708	23472	909	0.0	0.0	96.1
KS	TOPEKA	13	44	912.4	421.0	34202	632	28513	553	0.0	0.0	100.0
KS	TOPEKA	27	28	50.0	320.0	16927	404	16384	388	0.0	0.0	100.0
KS	TOPEKA	49	48	120.8	451.0	19798	477	19151	444	0.0	0.0	100.0
KS	WICHITA	3	45	1000.0	305.0	32834	684	27039	660	0.0	0.0	99.9
KS	WICHITA	10	21	625.7	314.0	28411	675	26335	664	0.0	0.0	100.0
KS	WICHITA	24	26	137.1	328.0	17810	618	17898	618	1.8	0.1	99.5
KS	WICHITA	33	31	174.6	240.0	16869	613	16869	613	0.0	0.0	100.0
KENTUCKY												
KY	ASHLAND	25	26	50.0	152.0	7413	388	6797	371	4.5	8.1	100.0
KY	ASHLAND	61	44	50.0	189.0	8436	457	8234	441	0.6	0.3	98.7
KY	BEATTYVILLE	65	7	3.2	197.0	5903	89	4788	66	0.0	0.0	100.0
KY	BOWLING GREEN	13	33	1000.0	226.0	24743	589	20458	466	0.0	0.0	100.0
KY	BOWLING GREEN	24	18	50.0	198.0	10561	244	9937	235	2.2	1.1	100.0
KY	BOWLING GREEN	40	16	50.0	244.0	10618	240	10382	236	1.7	1.0	100.0
KY	BOWLING GREEN	53	48	50.0	247.0	11890	254	11637	250	2.6	1.5	100.0
KY	CAMPBELLSVILLE	34	19	50.0	314.0	14021	267	13341	248	2.3	2.8	100.0
KY	COVINGTON	54	24	50.0	122.0	5890	1572	5419	1533	3.7	1.6	100.0
KY	DANVILLE	56	4	1.0	351.0	15951	687	15417	674	4.1	2.1	99.3
KY	ELIZABETHTOWN	23	43	50.0	198.0	12088	734	10995	409	0.5	0.2	100.0
KY	HARLAN	44	51	50.0	601.0	18668	547	16849	475	2.2	4.0	99.6
KY	HAZARD	35	16	50.0	384.0	15054	347	13472	295	4.2	3.4	100.0
KY	HAZARD	57	12	3.2	475.0	16532	383	14617	324	0.4	0.3	100.0
KY	LEXINGTON	18	22	50.0	195.0	12859	624	12783	622	0.9	0.2	99.5
KY	LEXINGTON	27	59	72.3	300.0	16825	679	16781	678	1.3	0.5	99.7
KY	LEXINGTON	36	40	69.5	305.0	17808	692	17412	691	1.4	1.3	99.9
KY	LEXINGTON	46	42	50.0	265.0	13599	637	13491	635	6.1	3.2	99.0
KY	LOUISVILLE	3	47	1000.0	555.0	45139	2883	35162	2244	0.6	0.4	99.6
KY	LOUISVILLE	11	55	447.7	390.0	27492	1480	26136	1462	0.0	0.0	99.8
KY	LOUISVILLE	15	17	50.0	262.0	13848	1186	13303	1177	1.4	0.3	100.0
KY	LOUISVILLE	21	8	3.2	212.0	12357	1139	11893	1114	3.4	0.6	98.1
KY	LOUISVILLE	32	26	160.2	384.0	25254	1450	24714	1433	5.3	1.7	100.0
KY	LOUISVILLE	41	49	247.8	391.0	25464	1450	23878	1395	4.3	1.1	100.0
KY	LOUISVILLE	68	38	50.0	249.0	13093	1166	12722	1158	0.0	0.0	99.5
KY	MADISONVILLE	19	20	81.1	241.0	14290	551	14161	549	2.7	4.6	99.8
KY	MADISONVILLE	35	42	50.0	317.0	14285	293	13997	291	2.3	1.9	100.0
KY	MOREHEAD	38	15	50.0	293.0	13653	218	12686	200	0.3	0.4	100.0
KY	MOREHEAD	67	21	65.6	247.0	15554	349	15470	346	0.0	0.0	97.9
KY	MURRAY	21	36	50.0	201.0	12306	288	12298	288	8.7	3.9	100.0
KY	NEWPORT	19	29	258.7	306.0	19927	2281	19628	2340	0.8	0.2	98.7
KY	OWENSBORO	31	30	50.0	140.0	9949	461	9789	459	1.1	0.4	100.0
KY	OWENTON	52	44	50.0	216.0	11101	423	10787	409	0.3	0.1	100.0
KY	PADUCAH	6	32	1000.0	482.0	43501	865	38359	809	0.0	0.0	99.8
KY	PADUCAH	29	41	50.0	152.0	7265	177	7069	174	3.7	3.4	100.0
KY	PADUCAH	49	50	68.2	327.0	14893	435	14881	435	0.3	0.2	99.8
KY	PIKEVILLE	22	24	50.0	430.0	16937	452	15936	431	1.1	0.9	99.7
KY	SOMERSET	29	14	50.0	445.0	18571	401	17371	371	1.2	1.8	100.0
LOUISIANA												
LA	ALEXANDRIA	5	35	1000.0	485.0	42562	987	43135	982	0.0	0.0	97.2
LA	ALEXANDRIA	25	26	67.5	415.0	19587	318	19531	317	1.5	0.8	100.0
LA	ALEXANDRIA	31	32	50.0	333.0	17708	257	17600	256	0.9	0.9	100.0
LA	BATON ROUGE	2	42	1000.0	515.0	44519	1833	40635	2324	0.0	0.0	95.8
LA	BATON ROUGE	9	46	958.8	509.0	40157	1877	31609	1220	0.1	0.0	100.0
LA	BATON ROUGE	27	25	79.6	303.0	16020	809	15122	761	0.2	0.0	99.8
LA	BATON ROUGE	33	34	226.5	522.0	26892	1315	25957	1288	0.0	0.0	100.0
LA	BATON ROUGE	44	45	143.3	426.0	16097	877	19373	985	0.1	0.0	83.1
LA	COLUMBIA	11	57	1000.0	572.0	43149	690	32856	566	0.0	0.0	100.0
LA	LAFAYETTE	3	28	1000.0	530.0	47367	911	35053	718	0.0	0.0	100.0
LA	LAFAYETTE	10	56	1000.0	530.0	41182	1001	32293	794	0.0	0.0	100.0
LA	LAFAYETTE	15	16	93.0	360.0	19890	586	19890	586	0.0	0.0	100.0
LA	LAFAYETTE	24	23	64.3	369.0	18304	536	18304	536	0.0	0.0	100.0
LA	LAKE CHARLES	7	53	1000.0	451.0	36967	954	35159	940	0.0	0.0	100.0
LA	LAKE CHARLES	18	20	50.0	314.0	17597	368	18010	374	0.4	0.1	97.7
LA	LAKE CHARLES	29	30	84.6	394.0	19653	610	19649	610	0.0	0.0	100.0
LA	MONROE	8	55	1000.0	576.0	43668	728	41197	688	0.0	0.0	100.0
LA	MONROE	13	19	554.1	543.0	40749	688	36053	621	0.0	0.0	100.0
LA	NEW ORLEANS	4	30	1000.0	305.0	34052	1782	33649	1767	0.0	0.0	100.0
LA	NEW ORLEANS	6	43	1000.0	283.0	32237	1750	32893	1788	0.0	0.0	96.9
LA	NEW ORLEANS	8	29	699.9	302.0	28503	1679	26365	1603	0.0	0.0	99.7
LA	NEW ORLEANS	12	11	14.8	308.0	21811	1549	19930	1488	0.0	0.0	100.0
LA	NEW ORLEANS	20	14	129.7	275.0	16707	1451	16429	1443	0.0	0.0	100.0
LA	NEW ORLEANS	26	15	70.1	308.0	16761	1404	16186	1389	0.0	0.0	100.0
LA	NEW ORLEANS	32	31	66.7	308.0	12114	1354	14995	1381	0.0	0.6	80.7
LA	NEW ORLEANS	38	40	202.0	311.0	17993	1432	17993	1432	0.0	0.0	100.0
LA	NEW ORLEANS	49	50	61.7	271.0	13440	1317	13440	1317	0.0	0.0	100.0
LA	SHREVEPORT	3	28	1000.0	543.0	45594	1047	33729	899	0.0	0.0	99.7
LA	SHREVEPORT	12	17	545.7	549.0	42207	1013	32645	899	2.3	1.0	100.0
LA	SHREVEPORT	24	25	50.0	326.0	19138	561	18901	560	0.0	0.0	99.7
LA	SHREVEPORT	33	34	202.0	553.0	28959	838	28076	809	0.0	0.0	100.0
LA	SHREVEPORT	45	44	100.3	507.0	20150	618	20089	617	0.6	0.7	100.0
LA	SLIDELL	54	24	63.2	213.0	12140	1346	12140	1346	0.0	0.0	100.0
LA	WEST MONROE	14	36	404.8	572.0	33237	533	33516	598	0.6	0.1	97.9
LA	WEST MONROE	39	38	50.0	152.0	9444	261	8715	256	0.1	0.0	100.0
MASSACHUSETTS												
MA	ADAMS	19	36	50.0	637.0	19860	1696	16984	1124	4.0	1.3	100.0
MA	BOSTON	2	19	1000.0	317.0	29979	6740	29402	6697	0.0	0.0	97.6
MA	BOSTON	4	30	818.0	354.0	28923	6694	29628	6716	8.1	1.8	96.3
MA	BOSTON	5	20	1000.0	299.0	29346	6612	25483	5683	5.4	1.7	97.0
MA	BOSTON	7	42	947.9	306.0	27652	6651	26156	6552	0.0	0.0	100.0
MA	BOSTON	25	31	67.5	357.0	19107	6051	18684	6013	1.3	0.6	96.9
MA	BOSTON	38	39	70.8	354.0	20192	6230	19603	6037	10.4	3.9	99.5
MA	BOSTON	44	43	50.0	329.0	16483	5731	16011	5657	13.3	4.5	98.2
MA	BOSTON	68	32	50.0	249.0	12605	4708	12162	4583	0.0	0.0	98.6
MA	CAMBRIDGE	56	41	50.0	360.0	17066	5802	16816	5805	2.6	1.0	98.2
MA	LAWRENCE	62	18	52.6	186.0	6861	3440	10914	4377	0.0	0.0	61.4
MA	MARLBOROUGH	66	23	50.0	326.0	19093	5977	17821	5420	0.4	0.1	99.7
MA	NEW BEDFORD	6	49	1000.0	283.0	30222	5065	22848	2645	4.9	2.1	99.3
MA	NEW BEDFORD	28	22	155.1	229.0	14921	3499	13032	2424	0.3	0.1	99.2
MA	NORWELL	46	52	50.0	107.0	5376	2081	5745	1865	19.3	8.9	88.1
MA	SPRINGFIELD	22	11	3.2	268.0	12785	2116	12269	2079	6.5	3.2	95.6
MA	SPRINGFIELD	40	55	200.8	322.0	13479	2108	13687	2146	2.8	3.4	96.0
MA	SPRINGFIELD	57	58	50.0	306.0	12528	1839	11414	1677	8.1	2.6	99.9
MA	VINEYARD HAVEN	58	40	50.0	155.0	8686	528	8674	526	0.0	0.0	100.0
MA	WORCESTER	27	29	50.0	466.0	18382	5509	16597	5107	0.1	0.2	91.7
MA	WORCESTER	48	47	101.0	398.0	20329	3870	19394	3643	4.9	14.2	98.2
MARYLAND												
MD	ANNAPOLIS	22	42	349.5	265.0	19689	6003	19485	5762	10.9	3.4	95.4
MD	BALTIMORE	2	52	1000.0	305.0	29402	6740	29023	7078	0.0	0.0	95.2
MD	BALTIMORE	11	59	1000.0	305.0	25782	6693	25368	6610	1.0	1.3	95.7
MD	BALTIMORE	13	38	1000.0	302.0	25537	5874	22887	6187	1.0	1.0	95.9
MD	BALTIMORE	24	41	50.0	326.0	15186	5643	15436	5451	2.2	1.1	96.1
MD	BALTIMORE	45	46	50.0	386.0	18281	5774	18217	5762	0.9	3.8	98.9
MD	BALTIMORE	54	40	140.8	349.0	20712	5507	19914	5667	7.8	1.8	98.7
MD	BALTIMORE	67	29	50.0	250.0	11105	3999	10599	3156	13.9	6.3	96.4

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NAB98

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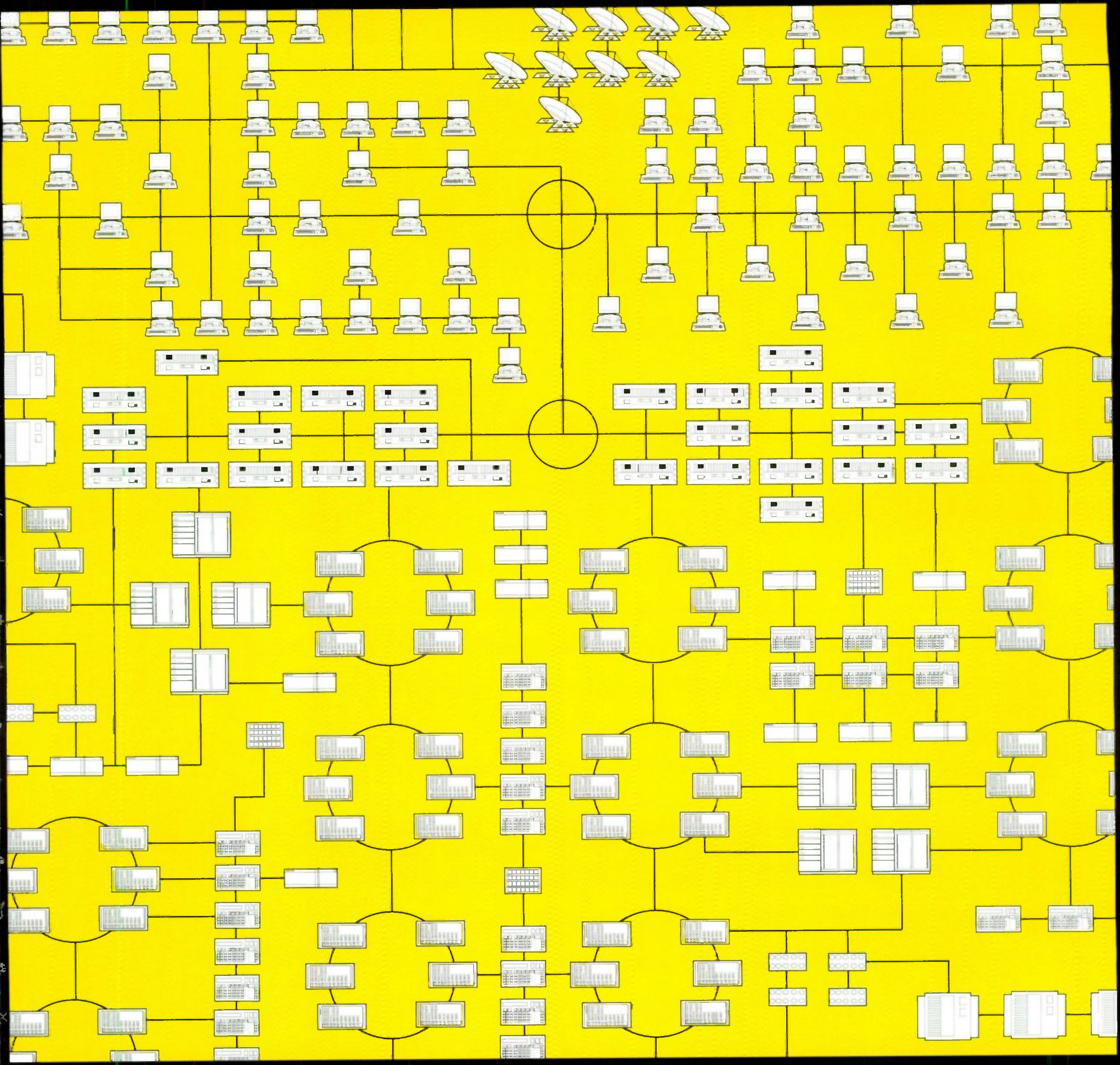
EXHIBITS: April 6–9, 1998

CONFERENCE: April 4–9, 1998

Las Vegas,
Nevada USA

From A to V on Digital Allocations—*Complete text of the FCC's target list of 1,606 stations*

STATE AND CITY		NTSC CHAN	DTV CHAN	DTV POWER (kW)	ANTENNA HAAT(m)	DTV SERVICE DURING TRANSITION		EXISTING NTSC CURRENT SERVICE		EXISTING NTSC NEW INTERFERENCE		DTV/NTSC AREA MATCH (%)
						AREA (Sq km)	PEOPLE (thous)	AREA (Sq km)	PEOPLE (thous)	AREA (% NL Area)	PEOPLE (% NL Pop)	
MD	FREDERICK	62	28	50.0	138.0	7183	1924	6929	1990	0.1	0.1	96.5
MD	HAGERSTOWN	25	55	67.7	375.0	13709	652	13228	631	4.7	3.5	98.5
MD	HAGERSTOWN	31	44	209.2	378.0	14847	769	13813	713	1.2	1.3	99.2
MD	HAGERSTOWN	68	16	50.0	394.0	13806	703	10798	525	0.0	0.0	99.9
MD	OAKLAND	36	54	50.0	216.0	5649	109	4898	97	3.1	1.4	100.0
MD	SALISBURY	16	21	196.9	299.0	17447	470	17443	470	0.0	0.0	100.0
MD	SALISBURY	28	56	85.1	157.0	13114	339	13190	341	0.0	0.0	99.4
MD	SALISBURY	47	53	62.5	304.0	13990	417	13990	417	0.2	0.2	100.0
MAINE												
ME	AUGUSTA	10	17	628.9	305.0	2694	791	24295	73	0.0	0.0	100.0
ME	BANGOR	2	25	1000.0	192.0	22331	326	19917	297	0.0	0.0	99.9
ME	BANGOR	5	19	464.	402.0	30324	470	26450	429	0.0	0.0	[illegible]
ME	BANGOR	7	14	994.4	250.0	25837	340	22964	288	0.0	0.0	99.9
ME	BIDDEFORD	6	45	50.0	244.0	11213	6	11449	45	0.2	0.1	3.9
ME	CALAIS	13	15	186.0	134.0	15131	32	12154	28	0.0	0.0	100.0
ME	LEWISTON	35	28	50.0	258.0	9256	80	8947	47	2.8	1.1	00.0
ME	ORONO	12	22	990.7	302.0	27549	331	24328	320	0.0	0.0	99.8
ME	POLAND SPRING	8	46	256.7	1173.0	40168	82	38522	995	0.0	0.0	98.2
ME	PORTLAND	6	44	1000.0	610.0	35125	1082	34674	1046	0.0	0.0	94.7
ME	PORTLAND	13	38	[illegible].4	491.0	32110	33	32033	995	3.1	8.6	95.7
ME	PORTLAND	51	4	1.0	280.0	13863	608	13155	599	1.7	1.0	99.3
ME	PRESQUE ISLE	8	16	59.9	107.0	8131	55	7518	53	0.0	0.0	98.5
ME	PRESQUE ISLE	10	20	544.0	332.0	28867	80	26107	77	0.0	0.0	100.0
MICHIGAN												
MI	ALPENA	6	57	1000.0	448.0	37515	253	29145	180	0.0	0.0	99.1
MI	ALPENA	11	13	12.2	204.0	17634	110	16801	108	0.0	0.0	99.2
MI	ANN ARBOR	31	33	50.0	329.0	17256	3197	14239	2248	1.5	3.3	99.7
MI	BAD AXE	35	15	50.0	155.0	6141	80	6141	80	0.1	0.1	100.0
MI	BATTLE CREEK	41	20	122.9	329.0	22689	1793	22821	1789	6.5	5.0	99.1
MI	BATTLE CREEK	43	44	191.7	323.0	21051	1811	21319	1786	4.4	2.1	95.8
MI	BAY CITY	5	22	1000.0	305.0	32648	1711	25468	1309	0.2	0.5	99.9
MI	CADILLAC	9	40	857.6	497.0	37337	656	33871	592	0.0	0.0	98.5
MI	CADILLAC	27	58	50.0	180.0	7371	87	7043	84	0.0	0.0	100.0
MI	CADILLAC	33	47	50.0	311.0	11377	151	11125	147	9.2	5.5	100.0
MI	CALUMET	5	18	1000.0	295.0	23214	54	21939	53	0.0	0.0	99.8
MI	CHEBOYGAN	4	14	1000.0	189.0	26704	147	24239	133	0.0	0.0	99.9
MI	DETROIT	2	58	1000.0	305.0	29671	5601	26496	5215	29.2	8.9	90.2
MI	DETROIT	4	45	1000.0	306.0	31676	5587	25357	5127	0.0	0.0	98.3
MI	DETROIT	7	41	1000.0	305.0	26867	5516	24481	5147	2.9	0.5	99.3
MI	DETROIT	20	21	50.0	293.0	16508	4641	16512	4692	4.9	2.4	99.3
MI	DETROIT	50	14	50.0	293.0	17063	4770	15265	4505	0.7	0.3	100.0
MI	DETROIT	56	43	50.0	293.0	14810	4513	16254	4720	10.1	3.8	91.1
MI	DETROIT	62	44	121.8	327.0	17107	4516	18769	4695	0.6	0.1	91.1
MI	EAST LANSING	23	55	56.8	296.0	16608	1379	16287	1333	1.0	0.5	100.0
MI	ESCANABA	3	48	1000.0	363.0	36154	175	35639	173	0.0	0.0	99.9
MI	FLINT	12	36	1000.0	287.0	27126	1943	24490	1807	0.7	0.5	99.4
MI	FLINT	28	52	120.9	265.0	14635	2661	14356	2578	0.0	0.0	99.6
MI	FLINT	66	16	60.7	287.0	18396	1552	18533	1571	0.1	0.0	99.2
MI	GRAND RAPIDS	8	7	15.1	302.0	23097	1840	26015	1949	8.0	1.8	86.8
MI	GRAND RAPIDS	13	39	1000.0	305.0	26490	1179	23938	1139	0.0	0.0	95.4
MI	GRAND RAPIDS	17	19	50.0	334.0	17990	1481	18259	1488	3.1	4.3	96.2
MI	GRAND RAPIDS	35	11	3.2	262.0	14630	1077	14702	1076	5.6	2.3	99.3
MI	IRON MOUNTAIN	8	22	50.0	190.0	12831	75	11714	67	0.0	0.0	100.0
MI	JACKSON	18	34	50.0	73.0	1772	152	1772	152	0.0	0.0	100.0
MI	KALAMAZOO	3	2	7.2	305.0	28693	1975	30599	2051	13.1	4.6	91.7
MI	KALAMAZOO	52	5	1.0	125.0	4044	342	4028	341	5.6	2.4	100.0
MI	KALAMAZOO	64	45	50.0	319.0	16437	1351	17368	1439	0.0	0.0	94.6
MI	LANSING	6	59	1000.0	305.0	30080	2427	19821	1773	0.0	0.0	97.7
MI	LANSING	47	38	50.0	305.0	15311	1012	15380	1012	1.9	0.8	99.2
MI	LANSING	53	51	50.0	299.0	11745	777	11637	775	0.0	0.0	100.0
MI	MANISTEE	21	17	50.0	104.0	4535	47	4479	46	1.3	2.3	100.0
MI	MARQUETTE	6	35	1000.0	296.0	32976	194	24010	149	0.0	0.0	99.9
MI	MARQUETTE	13	33	740.1	332.0	29653	185	25973	170	0.0	0.0	100.0
MI	MOUNT CLEMENS	38	39	148.0	192.0	12866	4149	13046	4167	6.5	2.6	98.2
MI	MOUNT PLEASANT	14	56	50.0	158.0	8653	265	8617	264	3.0	1.7	100.0
MI	MUSKEGON	54	24	80.0	294.0	13717	1048	13471	1042	0.1	0.0	99.7
MI	ONONDAGA	10	57	1000.0	299.0	27147	1924	20902	1404	0.0	0.0	100.0
MI	SAGINAW	25	30	193.3	402.0	25367	1892	24865	1838	0.0	0.0	98.7
MI	SAGINAW	49	48	50.0	287.0	13994	1230	13882	1198	0.0	0.0	100.0
MI	SAULT STE. MARI	8	56	1000.0	290.0	26042	78	25375	82	0.0	0.0	96.4
MI	SAULT STE. MARI	10	49	977.6	370.0	31041	90	27587	86	0.0	0.0	100.0
MI	TRAVERSE CITY	7	50	1000.0	411.0	34182	404	30396	329	5.0	7.0	100.0
MI	TRAVERSE CITY	29	31	63.0	399.0	20257	268	19263	257	0.2	0.1	100.0
MI	UNIVERSITY CENT	19	18	50.0	140.0	12016	682	11960	680	2.7	2.4	100.0
MI	VANDERBILT	45	59	50.0	324.0	14759	141	14486	139	0.0	0.0	100.0
MINNESOTA												
MN	ALEXANDRIA	7	[illegible]	581.	341.0	30569	401	2877	388	0.0	0.0	100.0
MN	ALEXANDRIA	42	14	50.0	358.0	21267	314	19835	213	0.1	0.1	100.0
MN	APPLETON	10	31	696	381.0	3266	24	2812	202	0.0	0.0	100.0
MN	AUSTIN	6	33	1000.0	320.0	33538	594	27107	510	0.0	0.0	99.9
MN	AUSTIN	15	20	50.0	116.0	9286	171	9153	168	0.6	2.0	100.0
MN	BEMIDJI	9	18	523.6	329.0	29798	106	26575	83	0.0	0.0	100.0
MN	BRAINERD	22	28	[illegible]	227.0	9946	10	9937	102	2.5	0.5	100.0
MN	DULUTH	3	33	1000.0	302.0	31348	273	31104	278	0.0	0.0	97.5
MN	DULUTH	8	38	1000.	290.0	27761	25	24845	244	0.0	0.0	100.0
MN	DULUTH	10	43	1000.0	301.0	28230	261	25074	238	0.0	0.0	100.0
MN	DULUTH	21	17	50.0	80.0	578	17	5746	79	8.0	0.8	100.0
MN	HIBBING	13	36	511.2	204.0	14891	113	13719	109	0.0	0.0	100.0
MN	MANKATO	12	38	845.4	117.0	2927	393	25681	326	0.0	0.	100.0
MN	MINNEAPOLIS	4	32	1000.0	436.0	39593	2983	33920	2902	0.0	0.0	99.9
MN	MINNEAPOLIS	9	26	631.6	435.0	34517	2903	29749	2798	0.0	0.0	99.7
MN	MINNEAPOLIS	11	35	762.3	439.0	35551	2939	31918	2853	0.0	0.0	99.9
MN	MINNEAPOLIS	23	22	186.1	351.0	21525	2665	21464	2663	0.0	0.0	100.0
MN	MINNEAPOLIS	29	21	175.1	373.0	22419	2676	21411	2662	0.8	0.1	100.0
MN	MINNEAPOLIS	45	44	182.8	375.0	21129	2649	1056	2648	0.0	0.0	100.0
MN	REDWOOD FALLS	43	27	50.0	167.0	8284	74	8244	74	0.0	0.0	100.0
MN	ROCHESTER	10	36	772.2	81.0	3162	56	26783	462	0.	0.0	100.0
MN	ROCHESTER	47	46	50.0	104.0	3712	139	3640	137	0.0	0.0	100.0
MN	ST. CLOUD	41	0	92.1	448.0	0220	596	19027	2349	0.0	0.	100.0
MN	ST. PAUL	2	34	1000.0	399.0	37452	2965	34436	2909	0.0	0.0	99.6
MN	ST. PAUL	[illegible]	50	1000.0	436.0	39359	2991	36686	292	0.0	0.	98.6
MN	ST. PAUL	17	16	50.0	396.0	13296	2506	13263	2505	0.2	0.0	100.0
MN	THIEF RIVER FAL	[illegible]	57	692.6	183.0	12729	121	10201	106	0.0	0.	100.0
MN	WALKER	12	20	736.5	283.0	27768	190	25818	176	0.0	0.0	100.0
MN	WORTHINGTON	20	15	72.7	332.0	1787	145	17891	14	0.6	.8	99.9
MISSOURI												
MO	CAPE GIRARDEAU	12	57	1000.0	610.0	43667	916	37135	781	0.1	0.1	100.0
MO	CAPE GIRARDEAU	23	22	62.0	543.0	22999	524	22580	518	0.0	0.0	100.0
MO	COLUMBIA	8	36	1000.0	242.0	26054	441	21983	413	0.0	0.0	100.0
MO	COLUMBIA	17	22	53.9	348.0	20500	413	20055	411	3.4	3.8	100.0
MO	HANNIBAL	7	29	1000.0	271.0	27374	319	24036	291	0.0	0.0	100.0
MO	JEFFERSON CITY	13	12	15.1	308.0	24445	446	21642	404	0.0	0.0	99.6
MO	JEFFERSON CITY	25	20	56.0	314.0	16148	326	15871	324	0.0	0.1	99.7
MO	JOPLIN	12	43	1000.0	311.0	27520	507	23933	429	0.6	0.3	97.8
MO	JOPLIN	16	46	176.1	313.0	21689	398	20104	392	1.6	0.5	99.6
MO	JOPLIN	26	25	50.0	283.0	14621	302	14417	300	0.1	0.0	100.0
MO	KANSAS CITY	4	34	1000.0	344.0	34558	2095	30394	1903	0.0	0.0	100.0
MO	KANSAS CITY	5	24	1000.0	342.0	33260	1944	28753	1935	0.0	0.0	96.0
MO	KANSAS CITY	9	14	471.0	357.0	30105	1965	28907	1910	0.0	0.0	97.9
MO	KANSAS CITY	19	18	50.0	357.0	19068	1751	18797	1734	4.9	0.5	100.0
MO	KANSAS CITY	32	31	200.8	322.0	23377	1763	23325	1763	0.3	0.0	100.0
MO	KANSAS CITY	41	42	50.0	323.0	16422	1681	16223	1676	0.0	0.0	99.9
MO	KANSAS CITY	50	51	50.0	341.0	16177	1670	15490	1659	0.9	0.1	100.0
MO	KANSAS CITY	62	47	129.7	340.0	21142	1803	20991	1799	0.0	0.0	99.5
MO	KIRKSVILLE	3	33	1000.0	339.0	34545	352	27492	260	0.0	0.0	99.6
MO	POPLAR BLUFF	15	18	50.0	184.0	10131	127	9950	123	0.1	0.0	100.0
MO	SEDALIA	6	15	1000.0	235.0	28672	471	24120	402	0.0	0.0	99.9
MO	SPRINGFIELD	3	44	1000.0	622.0	47586	735	41787	671	0.0	0.0	98.9
MO	SPRINGFIELD	10	52	1000.0	631.0	45444	749	40916	683	0.0	0.0	100.0
MO	SPRINGFIELD	21	23	50.0	546.0	26748	495	26097	488	0.7	0.3	99.8
MO	SPRINGFIELD	27	28	237.5	515.0	27119	502	25568	481	1.0	0.7	100.0
MO	SPRINGFIELD	33	19	162.6	596.0	27381	523	27053	518	0.5	0.3	99.8
MO	ST. JOSEPH	2	53	1000.0	247.0	29250	1473	28365	1498	0.0	0.0	99.2
MO	ST. JOSEPH	16	21	245.7	326.0	17846	1569	17080	1404	1.9	9.9	100.0
MO	ST. LOUIS	2	43	1000.0	332.0	34129	2771	28971	2678	0.0	0.0	99.4
MO	ST. LOUIS	4	56	1000.0	335.0	32806	2762	29620	2723	0.0	0.0	98.0
MO	ST. LOUIS	5	35	1000.0	332.0	34185	2779	33240	2764	0.0	0.0	99.4
MO	ST. LOUIS	9	39	990.9	326.0	28522	2688	24359	2623	0.0	0.0	100.0
MO	ST. LOUIS	11	26	778.9	308.0	28630	2710	26261	2667	0.0	0.0	100.0
MO	ST. LOUIS	24	14	88.5	305.0	19966	2538	19531	2532	0.5	0.1	99.9
MO	ST. LOUIS	30	31	68.2	335.0	20264	2555	20128	2554	0.0	0.0	100.0
MISSISSIPPI												
MS	BILOXI	13	39	822.1	408.0	34271	1095	27954	738	0.0	0.0	100.0
MS	BILOXI	19	16	50.8	478.0	21138	634	21018	648	1.0	0.8	99.3
MS	BOONEVILLE	1	55	01.9	229.0	555	295	13444	261	0.0	0.0	100.0
MS	BUDE	17	18	50.0	341.0	16476	224	14775	207	2.7	3.5	99.3
MS	COLUMBUS	4	35	1000.0	610.0	7921	736	42821	652	0.0	0.0	97.8
MS	GREENVILLE	15	17	103.3	271.0	15891	259	15891	259	0.0	0.0	100.0
MS	GREENWOOD	6	54	1000.0	597.0	50197	869	40373	506	0.0	0.0	100.0
MS	GREENWOOD	23	25	50.0	317.0	15296	249	15236	249	0.0	0.0	100.0
MS	GULFPORT	2	48	28.4	488.0	22650	745	22499	76	1.8	6.	98.5
MS	HATTIESBURG	22	58	52.0	244.0	14644	277	14576	277	0.0	0.0	100.0
MS	HOLLY SPRINGS	40	41	29.2	142.0	9985	1026	9904	102	0.0	0.	00.0
MS	JACKSON	3	51	1000.0	610.0	46699	917	34506	734	0.0	0.0	99.8
MS	JACKSON	12	5	000.0	497.0	38935	784	33270	721	0.1	0.	99.3
MS	JACKSON	16	21	239.7	359.0	21185	592	21939	592	2.1	1.3	94.7
MS	JACKSON	2	20	50.0	598.0	24998	38	24663	631	3.0	.5	99.9
MS	JACKSON	40	41	50.0	479.0	23283	614	22928	602	0.5	0.2	100.0
MS	LAUREL	7	28	1000.0	155.0	21287	45	19210	328	0.0	0.	100.0
MS	MERIDIAN	11	49	1000.0	165.0	21891	290	19815	260	0.0	0.0	100.0
MS	MERIDIAN	14	44	50.0	369.0	18021	14	17016	3	0.9	0.	100.0
MS	MERIDIAN	24	26	50.0	177.0	9932	150	9884	150	0.1	0.0	100.0
MS	MERIDIAN	[illegible]	31	50.0	187.0	11126	167	11090	167	4.2	2.2	100.0
MS	MISSISSIPPI STA	2	38	1000.0	381.0	37226	550	29916	422	0.0	0.0	100.0
MS	NATCHEZ	48	49	82.2	316.0	15256	178	15268	178	0.0	0.0	9
MS	OXFORD	18	36	50.0	423.0	17703	338	18417	348	0.5	0.3	96.1
MS	TUPELO	9	57	1000.0	542.0	41492	73	38641	61	0.1	0.0	00.0
MS	WEST POINT	27	16	53.0	512.0	22357	423	22373	423	2.0	1.8	99.5
MONTANA												
MT	BILLINGS	2	17	1000.0	165.0	22231	135	23159	136	3.5	0.2	95.0
MT	BILLINGS	6	18	1000.0	249.0	27382	130	26226	135	0.0	0.0	99.1
MT	BILLINGS	8	11	14.5	229.0	21573	133	20805	129	0.2	0.0	100.0
MT	BOZEMAN	7	16	56.9	249.0	8504	59	8797	59	0.0	0.0	95.5
MT	BOZEMAN	9	20	50.0	33.0	2264	46	2200	46	0.0	0.0	100.0
MT	BUTTE	4	15	1000.0	576.0	32132	125	40009	138	0.0	0.0	80.0
MT	BUTTE	6	2	11.2	591.0	43956	163	38276	141	0.0	0.0	100.0
MT	BUTTE	18	19	110.7	585.0	14658	57	13761	57	0.1	0.0	99.2
MT	GLENDIVE	5	15	125.6	152.0	13546	14	11386	12	0.0	0.0	100.0
MT	GREAT FALLS	3	44	1000.0	180.0	22092	88	23804	89	0.0	0.0	92.3
MT	GREAT FALLS	5	39	1000.0	180.0	21932	89	22921	89	0.0	0.0	94.8
MT	GREAT FALLS	16	45	125.6	319.0	15237	85	15402	85	0.1	0.0	98.4
MT	HARDIN	4	22	1000.0	323.0	30058	135	29423	136	0.0	0.0	97.7
MT	HELENA	10	29	776.4	579.0	27784	95	26705	87	0.0	0.0	98.8
MT	HELENA	12	14	169.8	686.0	30107	150	28974	149	0.0	0.0	99.1
MT	KALISPELL	9	38	52.5	850.0	23448	85	23069	79	0.0	0.0	98.4
MT	MILES CITY	3	13	3.2	33.0	5349	11	5430	11	0.0	0.0	98.2
MT	MISSOULA	8	35	1000.0	655.0	32011	129	32749	127	0.2	0.0	96.0
MT	MISSOULA	11	27	50.0	631.0	10001	86	8972	85	0.0	0.0	100.0
MT	MISSOULA	13	40	1000.0	610.0	32561	129	33340	131	1.1	0.0	97.3
MT	MISSOULA	23	36	96.6	642.0	17675	117	17374	118	0.0	0.0	99.0
NORTH CAROLINA												
NC	ASHEVILLE	13	56	647.6	853.0	31351	1685	33144	1786	0.0	0.0	91.
NC	ASHEVILLE	21	57	329.8	765.0	27272	1483	27004	1467	1.0	0.6	97.2
NC	ASHEVILLE	33	25	101.0	16.	22699	1450	20498	1338	0.9	1.2	99.4
NC	ASHEVILLE	62	45	140.4	556.0	22273	1368	21386	1334	0.6	0.2	99.6
NC	BELMONT	46	4	208.8	594.0	31814	2297	28640	2125	3.9	1.4	100.0
NC	BURLINGTON	16	14	52.3	256.0	14242	1373	11351	1056	1.6	0.4	99.6
NC	CHAPEL HILL	4	59	1000.0	469.	40300	2842	30307	2263	0.0	0.0	99.
NC	CHARLOTTE	3	23	1000.0	567.0	46452	3199	35588	2375	1.0	0.8	98.7
NC	CHARLOTTE	9	34	40.5	359.0	30151	2143	24160	1859	2	4.8	00.0
NC	CHARLOTTE	18	27	86.5	366.0	21413	1769	20090	1610	12.6	4.9	96.2
NC	CHARLOTTE	36	22	162.3	595.0	32095	2305	31309	2289	2.2	0.9	96.9
NC	CHARLOTTE	42	24	50.0	390.0	17305	1525	18348	1606	6.0	2.2	93.3
NC	COLUMBIA	2	20	1000.0	302.0	3275	507	27798	245	0.0	0.0	100.0
NC	CONCORD	58	44	148.9	422.0	24897	2091	24274	2084	4.4	2.4	99.3
NC	DURHAM	1	52	000.0	607.0	2896	2304	38519	2109	0.	0.0	97.5
NC	DURHAM	28	27	226.3	585.0	33775	2032	34874	2096	0.6	0.4	95.0
NC	FAYETTEVILLE	40	38	205.6	561.0	30687	2123	30578	2229	0.5	0.3	92.6
NC	FAYETTEVILLE	62	36	50.0	256.0	9617	539	9597	537	0.0	0.0	99.8
NC	GOLDSBORO	17	55	531.8	480.0	2476	2034	30320	1902	.9	0.8	98.6
NC	GREENSBORO	2	51	1000.0	561.0	42754	2851	36651	2442	0.1	0.0	97.8
NC	GREENSBORO	48	33	0.0	517.0	0533	1563	20380	1507	3.5	1.4	96.9
NC	GREENSBORO	61	43	50.0	168.0	8844	982	8520	976	0.1	0.0	100.0
NC	GREENVILLE	9	0	2.1	73.0	134	1128	33999	1054	0.0	0.0	91.1
NC	GREENVILLE	14	21	50.0	209.0	11543	487	11352	467	0.0	0.0	100.0
NC	GREENVILLE	25	23	50.0	351.0	1542	645	14301	598	.2	1.7	100.0
NC	HICKORY	14	40	50.0	183.0	7426	504	7711	511	7.5	4.8	91.0
NC	HIGH POINT	8	35	759.	387.0	30793	221	25181	796	.	0.0	00.0
NC	JACKSONVILLE	19	44	212.3	561.0	25214	728	25182	727	0.2	0.0	100.0
NC	JACKSONVILLE	35	34	52.4	301.0	504	415	14985	415	.3	0.1	00.0
NC	KANNAPOLIS	64	50	50.0	300.0	15248	1477	15907	1497	0.0	0.0	95.5
NC	LEXINGTON	20	9	84.5	297.0	7330	424	16748	1352	4.7	2.3	99.5
NC	LINVILLE	17	54	130.3	546.0	17895	879	16899	842	0.9	0.3	98.3
NC	LUMBERTON	3	25	96.2	319.0	20289	846	20623	853	.5	8.9	98.0
NC	MOREHEAD CITY	8	24	976.6	249.0	20009	303	13893	96	0.0	0.0	100.0
NC	NEW BERN	2	48	1000.	591.0	43008	1180	34531	862	0.0	0.0	100.0
NC	RALEIGH	5	53	1000.0	604.0	47437	2615	40781	2317	0.0	0.0	99.6
NC	RALEIGH	22	57	69.2	510.0	305	2098	28232	1903	[illegible]	3.2	99.8
NC	RALEIGH	50	49	198.0	548.0	31572	1972	30988	1968	3.1	4.6	99.6
NC	ROANOKE RAPIDS	36	39	50.	368.0	1928	53	1841	51	[illegible]	.6	00.0
NC	ROCKY MOUNT	47	15	94.5	371.0	17002	1184	17134	1181	0.7	0.3	96.5
NC	WASHINGTON	[illegible]	32	806.2	594.0	4467	129	36849	1102	0.0	0.0	100.0
NC	WILMINGTON	3	46	1000.0	594.0	51153	1051	41539	758	0.0	0.0	100.0
NC	WILMINGTON	6	54	1000.0	588.0	48041	1581	38276	1195	0.0	0.0	100.0
NC	WILMINGTON	26	30	212.7	500.0	22230	481	22206	480	0.0	0.0	100.0
NC	WILMINGTON	39	29	151.3	553.0	26650	63	26311	62	0.0	0.0	100.0
NC	WILSON	30	42	75.4	539.0	22163	1279	21978	1266	7.1	2.5	100.0
NC	WINSTON-SALEM	12	31	805.4	604.0	38013	2216	32992	2000	0.0	0.0	98.1
NC	WINSTON-SALEM	26	32	262.6	504.0	22544	1618	23447	1642	0.8	0.6	92.6
NC	WINSTON-SALEM	4	29	149.	597.0	2513	174	23587	165	0.8	0.5	99.0
NORTH DAKOTA												
ND	BISMARCK	3	22	906.8	425.0	37269	123	29285	111	0.0	0.0	99.8
ND	BISMARCK	5	31	1000.0	427.0	39795	126	33172	116	0.0	0.0	100.0
ND	BISMARCK	12	23	601.0	466.0	36324	123	31990	113	0.0	0.0	99.8
ND	BISMARCK	17	16	50.0	290.0	13983	90	13803	89	0.1	0.0	100.0
ND	DEVILS LAKE	8	59	1000.0	451.0	36452	170	35321	170	0.0	0.0	98.6
ND	DICKINSON	2	19	1000.0	256.0	29196	46	29160	45	0.0	0.0	98.3
ND	DICKINSON	7	18	1000.0	223.0	21489	37	20573	34	0.0	0.0	92.4
ND	DICKINSON	9	20	739.7	246.0	23645	43	21684	37	0.0	0.0	100.0
ND	ELLENDALE	19	20	50.0	179.0	8894	12	8866	12	4.6	1.3	100.0
ND	FARGO	6	21	1000.0	351.0	36126	339	30659	253	0.0	0.0	100.0
ND	FARGO	11	58	1000.0	610.0	43197	343	39529	319	0.0	0.0	95.9
ND	FARGO	13	23	427.0	344.0	29025	239	27002	226	0.0	0.0	100.0
ND	FARGO	15	19	196.5	379.0	19387	250	19399	250	0.0	0.0	99.9
ND	GRAND FORKS	2	56	1000.0	408.0	35965	170	32916	167	0.0	0.0	99.9
ND	JAMESTOWN	7	14	1000.0	135.0	19707	50	15434	41	0.0	0.0	100.0
ND	MINOT	6	57	1000.0	323.0	34005	100	31671	98	0.0	0.0	99.9
ND	MINOT	10	58	1000.0	207.0	17900	72	20623	77	0.0	0.0	83.8



LOOK AT WHAT'S HAPPENING AT LeBLANC®

LOOK AT WHY.

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Our new television group **LeBLANC Broadcast Inc., (LBI)** is a member of the LeBLANC Group. We are uniquely positioned to offer turnkey services ranging from tower construction to antenna installation and testing for analog and DTV systems. We form teams of highly trained professionals from our staff of 2400. They work directly with your staff and consulting engineers to nail down tight specifications and cost effective solutions.

LeBLANC's specialty is designing, constructing and installing towers up to 2000 feet. Starting with a thorough structural feasibility study of the existing tower...and working with our LARCAN teammates...we provide comprehensive DTV solutions to ensure your tower, transmitter, waveguide and antenna requirements are met...and to your complete satisfaction.

You are always concerned about quality and safety. So is LeBLANC. No other company has achieved the myriad of certifications in as many jurisdictions for our products and services as LeBLANC.

At NAB '98
Booth 9861

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LOOK AT WHAT'S HAPPENING AT LARCAN

LOOK AT WHY.

LARCAN pioneered high-power solid-state VHF transmitter technology and is a recognized leader worldwide.

With the advent of Digital TV we contributed to its development and in 1993 LARCAN supplied the VHF solid-state transmitter for ACATS 'air' tests in Charlotte, North Carolina.

At NAB '97 our new LANDMARK Series DTV transmitter demonstrated the Zenith DTV 8-VSB exciter...live...an industry first.

In January 1997 we assisted KOMO-HD to transmit the first HDTV signal west of the Mississippi. In early 1998 we delivered a LANDMARK UHF digital transmitter to KOMO-HD.

These LARCAN pioneering successes translate into major LANDMARK features and benefits for your DTV Transition, and include...

• LARCAN/Zenith exciters ensure ATSC compliance. • Microprocessor control ensures complete system stability. • Touch screen controllers and fiber optic LAN control. • Solid-State LDMOS Class AB Broadband Driver ensures exceptional linearity. • LARCAN conservative power ratings in 8kW to 25kW IOT socket modules...up to 100kW. • Our Quality Assurance System has attained ISO 9001 registration.

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From A to V on Digital Allocations—*Complete text of the FCC's target list of 1,606 stations*

STATE AND CITY		NTSC CHAN	DTV CHAN	DTV POWER (kW)	ANTENNA HAAT(m)	DTV SERVICE DURING TRANSITION		EXISTING NTSC				DTV/NTSC AREA MATCH (%)
						AREA (Sq km)	PEOPLE (thous)	CURRENT SERVICE AREA (Sq km)	CURRENT SERVICE PEOPLE (thous)	NEW INTERFERENCE AREA (% NL Area)	NEW INTERFERENCE PEOPLE (% NL Pop)	
ND	MINOT	13	45	1000.0	344.0	30372	96	28469	90	0.0	0.0	100.0
ND	MINOT	14	15	50.0	829.0	12063	67	12055	67	6.5	1.9	100.0
ND	PEMBINA	12	15	486.2	427.0	29986	36	24366	34	0.0	0.0	100.0
ND	VALLEY CITY	4	38	1000.0	619.0	52327	409	46357	376	0.0	0.0	100.0
ND	WILLISTON	4	51	1000.0	278.0	29166	51	25943	45	0.0	0.0	98.9
ND	WILLISTON	8	52	719.1	323.0	25295	43	24027	42	0.0	0.0	99.8
ND	WILLISTON	11	14	447.6	299.0	24273	43	22884	42	0.0	0.0	99.6
NEBRASKA												
NE	ALBION	24	23	87.1	378.0	23553	99	23453	99	0.7	0.3	100.0
NE	ALLIANCE	13	24	619.7	469.0	35748	92	31465	83	0.0	0.0	99.8
NE	BASSETT	7	15	494.7	453.0	36326	51	32997	38	0.0	0.0	99.9
NE	GRAND ISLAND	11	32	770.5	308.0	28628	207	24684	183	0.0	0.0	100.0
NE	GRAND ISLAND	17	19	50.0	187.0	11158	148	11170	148	0.1	0.0	99.9
NE	HASTINGS	5	21	1000.0	223.0	28512	220	26274	213	0.6	0.2	99.9
NE	HASTINGS	29	14	50.0	372.0	20167	166	20155	166	2.6	0.8	100.0
NE	HAYES CENTER	6	18	1000.0	216.0	28849	84	26822	80	0.0	0.0	100.0
NE	KEARNEY	13	36	752.6	338.0	30437	213	27104	197	0.0	0.0	100.0
NE	LEXINGTON	3	26	1000.0	323.0	34465	169	25618	118	0.0	0.0	100.0
NE	LINCOLN	8	31	702.8	440.0	35318	625	28642	477	0.0	0.0	99.9
NE	LINCOLN	10	25	624.6	454.0	37031	749	33522	687	0.0	0.0	99.9
NE	LINCOLN	12	40	1000.0	253.0	26202	1040	24175	1023	0.0	0.0	99.8
NE	MCCOOK	8	12	11.6	216.0	22870	50	21284	45	0.0	0.0	99.5
NE	MERRIMAN	12	17	589.6	328.0	28624	31	24104	23	0.1	0.0	100.0
NE	NORFOLK	19	16	50.0	348.0	16097	204	14712	199	3.9	2.3	100.0
NE	NORTH PLATTE	2	22	1000.0	192.0	26243	64	24037	61	0.0	0.0	99.9
NE	NORTH PLATTE	9	16	567.9	311.0	28654	66	25659	61	0.0	0.0	100.0
NE	OMAHA	3	45	1000.0	418.0	39181	1131	30293	1040	0.0	0.0	100.0
NE	OMAHA	6	22	1000.0	418.0	39359	1136	36448	1117	0.0	0.0	100.0
NE	OMAHA	7	20	550.3	415.0	34379	1099	29303	991	0.0	0.0	100.0
NE	OMAHA	15	38	406.2	453.0	26114	1040	25781	1039	3.0	0.9	100.0
NE	OMAHA	26	17	50.0	130.0	9260	698	9120	696	4.2	0.5	100.0
NE	OMAHA	42	43	214.9	577.0	33989	1108	33700	1106	0.8	0.1	100.0
NE	SCOTTSBLUFF	4	20	1000.0	610.0	50074	108	40276	93	0.0	0.0	99.9
NE	SCOTTSBLUFF	10	29	1000.0	256.0	24339	75	22210	70	0.0	0.0	99.8
NE	SUPERIOR	4	34	1000.0	344.0	35113	236	24571	116	0.0	0.0	100.0
NEW HAMPSHIRE												
NH	BERLIN	40	15	50.0	91.0	2588	23	1839	20	0.0	0.0	100.0
NH	CONCORD	21	33	74.6	320.0	16735	1911	17048	1880	2.3	3.8	96.7
NH	DERRY	50	35	96.1	213.0	9823	3191	10043	3191	3.3	15.8	96.6
NH	DURHAM	11	57	1000.0	302.0	25758	3758	24132	2649	0.5	0.2	98.4
NH	KEENE	52	49	50.0	329.0	7340	204	5671	135	0.0	0.0	100.0
NH	LITTLETON	49	48	50.0	390.0	7270	74	6258	62	0.7	0.1	100.0
NH	MANCHESTER	9	59	1000.0	314.0	24405	4731	23489	4322	0.0	0.0	97.0
NH	MERRIMACK	60	34	50.0	308.0	10385	1917	10603	1876	4.2	1.8	93.7
NEW JERSEY												
NJ	ATLANTIC CITY	53	46	50.0	85.0	1323	203	1323	203	0.0	0.0	100.0
NJ	ATLANTIC CITY	62	49	98.5	133.0	11223	1021	9334	753	2.6	1.9	100.0
NJ	BURLINGTON	48	27	50.0	335.0	17337	6471	16922	6439	3.9	1.4	98.1
NJ	CAMDEN	23	22	71.7	271.0	17321	5932	17865	6092	3.3	3.9	96.9
NJ	LINDEN	47	36	148.9	460.0	15152	16271	14745	16110	0.8	0.1	99.7
NJ	MONTCLAIR	50	51	179.2	243.0	14372	15468	14138	15296	0.0	0.0	94.4
NJ	NEW BRUNSWICK	58	18	50.0	223.0	11833	12755	8997	10885	2.0	8.6	100.0
NJ	NEWARK	13	61	198.7	500.0	23049	17015	23140	17110	1.6	0.6	94.2
NJ	NEWARK	68	53	55.9	439.0	16001	15982	15412	15684	0.2	0.0	99.7
NJ	NEWTON	63	8	3.2	223.0	11538	5709	10979	8387	3.2	19.0	93.7
NJ	PATERSON	41	40	69.1	421.0	17576	16545	17028	16233	1.1	0.3	99.9
NJ	SECAUCUS	9	38	136.4	500.0	26254	17915	22677	16641	1.7	0.3	99.5
NJ	TRENTON	52	43	50.0	271.0	13758	7778	13051	7454	1.8	1.0	97.5
NJ	VINELAND	65	66	107.8	280.0	16418	5655	16899	5868	2.2	2.7	97.1
NJ	WEST MILFORD	66	29	50.0	217.0	4104	3917	2891	2439	1.1	0.2	100.0
NJ	WILDWOOD	40	36	50.0	128.0	9396	448	9396	448	3.4	1.5	100.0
NEW MEXICO												
NM	ALBUQUERQUE	4	26	293.2	1280.0	46755	759	50842	779	0.0	0.0	90.9
NM	ALBUQUERQUE	5	25	285.3	1289.0	46814	759	51101	776	0.0	0.0	91.6
NM	ALBUQUERQUE	7	21	92.2	1292.0	38823	752	39015	751	0.0	0.0	98.9
NM	ALBUQUERQUE	13	16	106.9	1287.0	41933	752	40657	749	0.0	0.0	100.0
NM	ALBUQUERQUE	23	24	50.0	1259.0	29909	731	29481	726	0.1	0.0	98.9
NM	ALBUQUERQUE	32	17	50.0	1236.0	9145	648	8577	647	0.3	0.0	99.9
NM	ALBUQUERQUE	41	42	50.0	1266.0	24251	724	23639	717	0.2	0.0	100.0
NM	ALBUQUERQUE	50	51	50.0	1276.0	32970	735	31739	729	0.0	0.0	100.0
NM	CARLSBAD	6	19	1000.0	366.0	34885	156	32739	118	0.0	0.0	99.6
NM	CLOVIS	12	20	598.0	204.0	21300	84	18025	82	0.0	0.0	100.0
NM	FARMINGTON	3	8	31.7	138.0	20222	111	20910	114	0.0	0.0	96.7
NM	FARMINGTON	12	17	1000.0	125.0	18078	114	16423	107	0.0	0.0	100.0
NM	HOBBS	29	16	50.0	159.0	2995	39	2995	39	0.0	0.0	100.0
NM	LAS CRUCES	22	23	50.0	137.0	10017	209	9113	124	0.2	0.0	100.0
NM	LAS CRUCES	48	36	99.3	134.0	7546	598	7295	571	0.0	0.0	100.0
NM	PORTALES	3	32	1000.0	351.0	35934	187	35342	187	0.0	0.0	100.0
NM	ROSWELL	8	35	839.0	536.0	40236	162	39969	159	0.0	0.0	97.2
NM	ROSWELL	10	41	987.6	610.0	45138	183	38701	168	0.0	0.0	100.0
NM	ROSWELL	27	28	50.0	115.0	5832	58	5824	58	0.8	0.1	100.0
NM	SANTA FE	2	27	321.1	1275.0	47290	762	52571	786	0.0	0.0	89.8
NM	SANTA FE	11	10	23.3	618.0	36578	732	33228	708	0.0	0.0	100.0
NM	SANTA FE	19	29	208.5	33.0	7469	139	7063	136	0.0	0.0	100.0
NM	SILVER CITY	10	12	3.2	485.0	15964	46	13028	42	0.0	0.0	100.0
NEVADA												
NV	ELKO	10	8	3.2	564.0	13671	27	9850	27	0.1	0.0	100.0
NV	HENDERSON	5	24	1000.0	363.0	22268	732	27543	734	0.0	0.0	78.2
NV	LAS VEGAS	3	2	11.2	387.0	34344	745	31087	735	0.0	0.0	100.0
NV	LAS VEGAS	8	7	26.4	610.0	31021	739	27145	737	0.0	0.0	99.9
NV	LAS VEGAS	10	11	19.3	372.0	21343	730	19621	730	0.0	0.0	99.7
NV	LAS VEGAS	13	17	590.5	610.0	28901	737	25542	733	0.0	0.0	100.0
NV	LAS VEGAS	15	16	50.0	564.0	11527	725	12220	726	0.2	0.0	90.0
NV	LAS VEGAS	21	22	103.2	353.0	12232	728	11359	726	0.6	0.0	99.9
NV	LAS VEGAS	33	29	50.0	581.0	13627	726	12481	726	0.0	0.0	100.0
NV	PARADISE	39	40	102.1	367.0	9421	724	8797	724	0.0	0.0	100.0
NV	RENO	2	32	1000.0	656.0	27353	385	35365	451	0.0	0.0	76.7
NV	RENO	4	34	1000.0	133.0	11905	331	18649	393	0.0	0.0	63.7
NV	RENO	5	15	50.0	140.0	5739	293	7799	315	0.0	0.0	73.3
NV	RENO	8	23	315.2	893.0	33814	480	34281	492	0.0	0.0	97.3
NV	RENO	11	44	525.4	856.0	27170	388	28173	392	0.0	0.0	94.7
NV	RENO	21	22	50.0	189.0	5432	265	5264	261	1.3	0.4	93.8
NV	RENO	27	26	125.9	894.0	22554	394	20515	387	0.2	4.7	100.0
NV	WINNEMUCCA	7	12	3.2	650.0	11120	12	7696	12	0.0	0.0	100.0
NEW YORK												
NY	ALBANY	10	26	1000.0	305.0	21162	1290	19688	1230	1.3	0.8	99.6
NY	ALBANY	13	15	505.7	357.0	21407	1277	18951	1181	0.4	0.0	100.0
NY	ALBANY	23	4	1.0	366.0	18238	1287	16337	1162	0.5	0.9	99.1
NY	AMSTERDAM	55	50	136.8	223.0	8687	858	8459	848	0.2	0.1	99.8
NY	BATAVIA	51	53	50.0	124.0	8027	951	7369	911	2.1	18.3	100.0
NY	BINGHAMTON	12	7	8.6	369.0	23743	906	22315	790	0.5	1.8	99.8
NY	BINGHAMTON	34	4	1.0	281.0	15489	662	13102	489	0.3	0.1	99.9
NY	BINGHAMTON	40	8	3.2	375.0	14057	533	12037	441	0.2	0.1	99.7
NY	BINGHAMTON	46	42	50.0	375.0	13841	512	12317	450	0.1	0.1	100.0
NY	BUFFALO	2	33	1000.0	287.0	31314	2191	26823	1718	1.7	0.8	97.5
NY	BUFFALO	4	39	1000.0	366.0	34568	2229	32541	1918	0.4	0.2	98.5
NY	BUFFALO	7	38	238.1	433.0	26280	1807	21697	1528	0.3	0.0	99.3
NY	BUFFALO	17	43	156.0	330.0	21137	1391	21060	1373	2.0	0.9	99.5
NY	BUFFALO	23	32	50.0	314.0	15722	1307	15706	1311	0.6	0.2	97.2
NY	BUFFALO	29	14	50.0	280.0	15724	1323	15534	1311	2.1	0.6	99.8
NY	BUFFALO	49	34	148.9	376.0	16701	1440	16849	1451	0.0	0.1	97.1
NY	CARTHAGE	7	35	1000.0	221.0	23938	277	22351	250	3.1	3.4	100.0
NY	CORNING	48	50	50.0	166.0	2398	128	1874	83	0.0	0.0	100.0
NY	ELMIRA	18	2	1.0	376.0	13827	546	11052	366	0.1	0.1	99.7
NY	ELMIRA	36	55	50.0	320.0	11704	380	10408	316	0.6	0.5	99.9
NY	GARDEN CITY	21	22	88.3	122.0	10285	12547	9063	11134	1.3	0.4	98.7
NY	JAMESTOWN	26	27	238.7	463.0	20750	1485	20662	1438	0.7	0.5	98.0
NY	KINGSTON	62	21	98.0	591.0	18233	1732	15913	1456	0.2	0.2	99.0
NY	NEW YORK	2	56	364.6	482.0	28354	18053	24095	16955	0.0	0.0	98.4
NY	NEW YORK	4	28	163.5	515.0	27891	18116	25113	17182	0.7	0.1	94.6
NY	NEW YORK	5	44	224.8	515.0	28095	17949	25113	17159	9.0	4.8	97.6
NY	NEW YORK	7	45	164.3	491.0	26043	17845	23891	17189	2.0	0.3	99.5
NY	NEW YORK	11	33	116.8	506.0	24825	17618	23184	17102	1.7	0.5	96.1
NY	NEW YORK	25	24	80.7	395.0	18412	16618	18363	16695	6.3	1.6	98.7
NY	NEW YORK	31	30	104.1	475.0	17322	16202	17886	16434	5.3	1.7	95.6
NY	NORTH POLE	5	14	215.8	607.0	31001	438	25552	424	0.0	0.0	95.4
NY	NORWOOD	18	23	50.0	243.0	13073	149	12357	136	0.0	0.0	100.0
NY	PLATTSBURGH	57	38	50.0	741.0	14864	260	14412	258	0.0	0.0	100.0
NY	POUGHKEEPSIE	54	27	117.5	490.0	16625	2059	14940	1742	1.5	0.4	99.4
NY	RIVERHEAD	55	57	131.5	194.0	10114	3061	10190	3221	3.8	14.9	97.9
NY	ROCHESTER	8	45	1000.0	152.0	20761	1182	17894	1108	1.5	1.4	99.9
NY	ROCHESTER	10	58	1000.0	152.0	20721	1182	17186	1079	0.0	0.0	99.9
NY	ROCHESTER	13	59	1000.0	152.0	20612	1179	16740	1100	0.0	0.0	99.9
NY	ROCHESTER	21	16	50.0	152.0	9247	1000	9891	1015	17.2	3.2	92.8
NY	ROCHESTER	31	28	50.0	152.0	11335	1021	11142	998	0.1	0.0	100.0
NY	SCHENECTADY	6	39	1000.0	311.0	25950	1438	25617	1434	1.1	0.4	94.9
NY	SCHENECTADY	17	34	156.4	299.0	17363	1188	17014	1155	2.1	0.7	99.2
NY	SCHENECTADY	45	43	98.6	338.0	14144	1089	13868	1071	1.2	0.3	99.5
NY	SMITHTOWN	67	23	50.0	219.0	11054	2941	10985	3074	0.1	0.2	99.0
NY	SPRINGVILLE	67	46	50.0	160.0	1575	98	992	36	0.0	0.0	100.0
NY	SYRACUSE	3	54	1000.0	305.0	29245	1469	26185	1295	0.1	0.1	97.9
NY	SYRACUSE	5	47	1000.0	290.0	27926	1394	26367	1340	0.0	0.0	96.8
NY	SYRACUSE	9	17	108.2	462.0	23696	1289	21052	1205	0.1	0.1	99.2
NY	SYRACUSE	24	25	86.5	422.0	22744	1269	21801	1245	0.2	0.6	100.0
NY	SYRACUSE	43	44	50.0	445.0	13952	1009	13359	970	0.9	0.5	99.9
NY	SYRACUSE	68	19	50.0	445.0	14537	1032	13052	978	0.0	0.0	100.0
NY	UTICA	2	29	546.1	421.0	27212	1189	22175	666	0.7	0.2	97.1
NY	UTICA	20	30	50.0	244.0	11161	455	12328	447	0.2	0.1	86.7
NY	UTICA	33	27	50.0	193.0	10688	671	9838	625	5.0	7.1	100.0
NY	WATERTOWN	16	41	50.0	370.0	16951	206	16449	200	1.8	1.9	100.0
NY	WATERTOWN	50	21	50.0	387.0	14424	176	14002	173	0.4	0.3	99.8
OHIO												
OH	AKRON	23	59	449.1	293.0	22395	3919	20985	3623	1.5	0.1	99.7
OH	AKRON	49	50	50.0	299.0	13287	3159	13146	3112	9.0	7.9	99.7
OH	AKRON	55	30	108.8	356.0	18196	3465	18536	3478	0.5	1.7	95.4
OH	ALLIANCE	45	46	50.0	253.0	13961	1862	13494	1972	0.5	0.3	97.7
OH	ATHENS	20	27	50.0	244.0	14130	480	13715	456	3.3	4.4	100.0
OH	BOWLING GREEN	27	56	50.0	320.0	16401	1112	16601	1148	0.0	0.0	98.8
OH	CAMBRIDGE	44	35	50.0	393.0	15459	605	14436	551	0.1	0.1	100.0
OH	CANTON	17	39	50.0	137.0	9384	1382	8453	1277	6.7	4.7	100.0
OH	CANTON	67	47	85.1	148.0	11032	2892	11092	2864	0.1	0.0	97.5
OH	CHILLICOTHE	53	46	154.7	362.0	18653	1769	17836	1689	6.6	4.8	99.5
OH	CINCINNATI	5	35	1000.0	305.0	31943	3036	27785	2835	0.0	0.0	99.4
OH	CINCINNATI	9	10	15.4	305.0	23606	2609	23981	2781	8.3	5.3	92.7
OH	CINCINNATI	12	31	839.3	305.0	27626	2572	25519	2800	0.3	0.1	96.9
OH	CINCINNATI	48	34	50.0	326.0	18013	2267	17522	2170	2.6	2.5	99.1
OH	CINCINNATI	64	33	95.5	337.0	21010	2751	20336	2719	0.0	0.0	99.7
OH	CLEVELAND	3	2	9.3	305.0	27851	3824	28219	3783	0.0	0.0	90.7
OH	CLEVELAND	5	15	1000.0	311.0	32803	4064	26249	3694	1.9	0.5	100.0
OH	CLEVELAND	8	31	937.2	305.0	28382	3886	25576	3659	0.0	0.0	99.8
OH	CLEVELAND	25	26	66.9	304.0	17099	3291	15343	3019	6.6	2.5	99.9
OH	CLEVELAND	61	34	50.0	354.0	18152	3325	18024	3318	1.3	3.4	99.9
OH	COLUMBUS	4	14	1000.0	274.0	29825	2326	20823	1872	0.1	0.5	99.9
OH	COLUMBUS	6	13	40.8	286.0	24515	2056	22531	1855	0.0	0.0	96.3
OH	COLUMBUS	10	21	897.9	271.0	25581	2069	22429	1915	11.7	8.8	99.6
OH	COLUMBUS	28	36	65.8	293.0	17256	1672	16990	1675	2.5	2.7	97.7
OH	COLUMBUS	34	38	50.0	329.0	16958	1672	16567	1642	2.5	1.6	99.8
OH	DAYTON	2	50	1000.0	305.0	31600	3422	23541	3049	0.6	0.1	99.7
OH	DAYTON	7	41	493.2	348.0	27263	3242	22628	3069	0.0	0.0	99.9
OH	DAYTON	16	58	104.6	350.0	20293	2869	18568	2681	3.4	2.1	99.9
OH	DAYTON	22	51	138.8	351.0	20578	2964	19726	2774	5.4	2.1	94.5
OH	DAYTON	45	30	133.5	357.0	18639	2431	18391	2724	7.8	1.4	95.0
OH	LIMA	35	20	50.0	165.0	10462	439	10054	433	2.7	4.2	100.0
OH	LIMA	44	47	50.0	207.0	11873	480	11788	478	0.0	0.0	100.0
OH	LORAIN	43	28	125.6	336.0	19371	3374	18868	3315	5.0	2.3	99.3
OH	MANSFIELD	68	12	3.2	180.0	11703	560	11882	566	0.0	0.0	97.2
OH	NEWARK	51	24	50.0	189.0	10379	1287	9830	1265	8.6	16.8	100.0
OH	OXFORD	14	28	50.0	91.0	6062	1091	5898	1202	22.9	31.5	97.1
OH	PORTSMOUTH	30	17	50.0	237.0	15306	537	14379	446	2.7	1.1	100.0
OH	PORTSMOUTH	42	43	50.0	382.0	14521	456	14020	445	3.4	3.0	99.3
OH	SANDUSKY	52	42	50.0	236.0	13436	657	13432	657	0.1	0.0	100.0
OH	SHAKER HEIGHTS	19	10	3.6	351.0	18511	3396	18107	3086	17.1	3.6	88.9
OH	SPRINGFIELD	26	18	50.0	149.0	11998	1308	11922	1299	2.0	2.6	99.6
OH	STEUBENVILLE	9	57	1000.0	268.0	25596	3369	21576	2862	0.0	0.0	99.9
OH	TOLEDO	11	17	543.6	305.0	28616	4266	26457	4003	0.0	0.0	100.0
OH	TOLEDO	13	19	559.0	305.0	21300	2438	22248	2293	6.0	2.9	90.6
OH	TOLEDO	24	49	315.8	424.0	23784	2278	23321	2257	6.2	2.1	100.0
OH	TOLEDO	30	29	50.0	314.0	16186	1774	16109	1767	4.5	2.9	100.0
OH	TOLEDO	36	46	66.2	372.0	17224	1402	17031	1398	5.7	2.0	100.0
OH	TOLEDO	40	5	1.0	174.0	10435	925	11127	958	10.4	3.9	93.7
OH	YOUNGSTOWN	21	20	147.0	302.0	20889	2676	19013	1952	3.6	4.4	99.8
OH	YOUNGSTOWN	27	41	50.0	436.0	19743	2533	19241	2366	2.1	6.4	99.2
OH	YOUNGSTOWN	33	36	50.0	177.0	11361	1212	11212	1190	6.0	5.1	100.0
OH	ZANESVILLE	18	40	50.0	162.0	10820	399	10509	384	2.1	5.0	100.0
OKLAHOMA												
OK	ADA	10	26	642.3	445.0	36091	448	32152	390	0.0	0.0	100.0
OK	BARTLESVILLE	17	15	152.9	316.0	16167	791	15901	782	0.0	0.0	97.6
OK	CHEYENNE	12	8	15.7	299.0	26702	90	23103	77	0.0	0.0	100.0
OK	CLAREMORE	35	36	79.0	256.0	14049	786	14037	786	0.7	0.7	99.9
OK	ENID	20	18	50.0	136.0	7094	71	7094	71	0.0	0.0	100.0
OK	EUFAULA	3	31	1000.0	399.0	35124	656	25056	348	0.0	0.0	98.9
OK	LAWTON	7	23	605.3	320.0	27415	384	26852	378	0.0	0.0	93.8
OK	OKLAHOMA CITY	4	27	1000.0	469.0	42440	1352	38465	1290	0.0	0.0	99.1
OK	OKLAHOMA CITY	5	16	1000.0	464.0	39681	1316	33032	1235	0.4	0.1	100.0
OK	OKLAHOMA CITY	9	39	840.8	465.0	37311	1296	33951	1267	0.6	0.2	100.0
OK	OKLAHOMA CITY	13	32	731.3	465.0	37597	1299	32294	1233	0.0	0.0	100.0
OK	OKLAHOMA CITY	14	15	50.0	344.0	15252	1008	17082	1060	0.8	0.1	89.2
OK	OKLAHOMA CITY	25	24	130.8	469.0	25445	1151	25388	1151	0.1	0.0	100.0
OK	OKLAHOMA CITY	34	33	50.0	369.0	16799	1038	18533	1078	0.3	0.2	90.5
OK	OKLAHOMA CITY	43	42	57.7	475.0	23167	1123	23352	1128	2.2	0.8	98.6
OK	OKLAHOMA CITY	52	51	50.0	183.0	11406	980	11642	992	0.0	0.0	97.4
OK	OKLAHOMA CITY	62	50	50.0	240.0	14486	1002	14607	1004	0.0	0.0	98.8
OK	OKMULGEE	44	28	133.8	277.0	15920	821	15326	816	0.3	0.1	100.0
OK	SHAWNEE	30	29	207.4	255.0	20211	1092	19843	1087	0.8	0.6	100.0
OK	TULSA	2	56	1000.0	558.0	46668	1242	39680	1155	0.0	0.0	99.7
OK	TULSA	6	55	1000.0	573.0	47667	1267	38333	1100	0.0	0.0	99.8
OK	TULSA	8	58	1000.0	578.0	42260	1170	36166	1095	0.0	0.0	100.0
OK	TULSA	11	38	838.3	521.0	39756	1140	35069	1080	0.0	0.0	99.5
OK	TULSA	23	22	129.2	399.0	25825	990	25477	988	0.9	0.3	100.0
OK	TULSA	41	42	50.0	460.0	20869	913	20817	913	0.0	0.0	97.5
OK	TULSA	47	48	50.0	460.0	18322	876	17256	866	0.0	0.0	99.9
OK	TULSA	53	49	50.0	182.0	11957	763	11952	763	0.3	0.0	98.0
OREGON												
OR	BEND	3	11	20.1	227.0	19106	104	22110	104	0.0	0.0	86.4
OR	BEND	21	18	50.0	197.0	6180	86	5596	83	0.0	0.0	100.0
OR	COOS BAY	11	21	50.0	192.0	9207	67	8895	63	0.0	0.0	99.5
OR	COOS BAY	23	22	50.0	190.0	3059	56	2667	52	0.6	0.2	99.7
OR	CORVALLIS	7	39	1000.0	375.0	24328	917	23686	848	0.0	0.0	97.6
OR	EUGENE	9	14	547.9	539.0	32350	680	28911	574	0.0	0.0	99.7
OR	EUGENE	13	25	629.7	451.0	27781	593	25081	519	0.0	0.0	99.9
OR	EUGENE	16	17	72.7	512.0	18041	420	17099	415	0.4	0.1	99.8
OR	EUGENE	28	29	50.0	276.0	8602	343	7830	333	1.2	0.2	100.0
OR	EUGENE	34	31	97.6	259.0	9072	382	8740	379	0.0	0.0	100.0
OR	KLAMATH FALLS	2	40	1000.0	671.0	35666	86	44515	159	0.0	0.0	79.4
OR	KLAMATH FALLS	22	33	50.0	656.0	7845	56	6265	55	0.0	0.0	100.0
OR	KLAMATH FALLS	31	29	50.0	691.0	5471	55	4555	54	0.0	0.0	100.0
OR	LA GRANDE	13	5	1.0	787.0	21321	76	14506	39	0.9	0.2	100.0

From A to V on Digital Allocations—*Complete text of the FCC's target list of 1,606 stations*

STATE AND CITY		NTSC CHAN	DTV CHAN	DTV POWER (kW)	ANTENNA HAAT(m)	DTV SERVICE DURING TRANSITION AREA (Sq km)	DTV SERVICE DURING TRANSITION PEOPLE (thous)	EXISTING NTSC CURRENT SERVICE AREA (Sq km)	EXISTING NTSC CURRENT SERVICE PEOPLE (thous)	EXISTING NTSC NEW INTERFERENCE AREA (% NL Area)	EXISTING NTSC NEW INTERFERENCE PEOPLE (% NL Pop)	DTV/NTSC AREA MATCH (%)
OR	MEDFORD	5	15	664.3	823.0	38563	341	44981	370	0.0	0.0	85.7
OR	MEDFORD	8	42	550.4	818.0	31908	308	32810	322	0.0	0.0	95.5
OR	MEDFORD	10	35	309.7	1009.0	33858	276	34402	277	0.0	0.0	97.5
OR	MEDFORD	12	38	510.0	823.0	32605	310	31335	314	0.0	0.0	98.7
OR	MEDFORD	26	27	50.0	428.0	6395	161	5790	151	0.0	0.0	100.0
OR	PENDLETON	11	8	22.0	472.0	30046	267	28921	260	0.1	0.0	99.2
OR	PORTLAND	2	43	1000.0	475.0	30189	1998	35413	2000	0.0	0.0	84.8
OR	PORTLAND	6	40	1000.0	533.0	30619	1892	36086	2002	0.0	0.0	84.5
OR	PORTLAND	8	46	1000.0	539.0	29454	1981	27469	1845	0.4	0.0	98.0
OR	PORTLAND	10	27	675.5	530.0	29878	1962	28520	1882	0.0	0.0	99.8
OR	PORTLAND	12	30	735.3	543.0	30042	1959	28256	1882	0.0	0.0	99.8
OR	PORTLAND	24	45	160.7	463.0	17258	1710	17370	1762	0.5	0.1	95.0
OR	ROSEBURG	4	19	50.0	305.0	10683	87	12503	98	0.0	0.0	85.4
OR	ROSEBURG	36	18	50.0	211.0	3812	69	2997	62	0.0	0.0	98.8
OR	ROSEBURG	46	45	50.0	109.0	2111	65	1700	60	0.7	0.4	100.0
OR	SALEM	22	20	54.6	363.0	18188	1839	16795	1405	0.0	0.0	100.0
OR	SALEM	32	33	256.8	544.0	24262	1922	23053	1826	0.4	1.1	100.0
PENNSYLVANIA												
PA	ALLENTOWN	39	62	50.0	302.0	11219	2237	11343	2543	5.2	11.6	96.2
PA	ALLENTOWN	69	46	50.0	313.0	11087	2075	9892	1919	2.5	7.8	99.6
PA	ALTOONA	10	32	1000.0	338.0	21871	796	20969	764	0.0	0.0	98.1
PA	ALTOONA	23	24	50.0	324.0	7008	344	5674	289	0.6	0.0	100.0
PA	ALTOONA	47	46	50.0	308.0	12472	576	11515	530	1.6	0.4	100.0
PA	BETHLEHEM	60	59	67.4	284.0	10914	3323	10389	2283	1.0	2.7	95.6
PA	CLEARFIELD	3	15	1000.0	268.0	27149	731	25059	691	0.0	0.0	97.3
PA	ERIE	12	52	1000.0	305.0	27852	731	24477	671	0.0	0.0	100.0
PA	ERIE	24	58	50.0	290.0	13453	464	13321	456	0.0	0.0	99.8
PA	ERIE	35	16	50.0	287.0	11280	432	11012	422	0.3	0.3	100.0
PA	ERIE	54	50	50.0	268.0	13301	442	13006	426	0.1	0.1	100.0
PA	ERIE	66	22	50.0	271.0	10828	414	10264	396	0.0	0.0	100.0
PA	GREENSBURG	40	50	50.0	299.0	13058	2424	13820	2528	1.5	3.3	92.4
PA	HARRISBURG	21	4	1.0	372.0	17633	1864	16062	1741	3.0	3.3	96.2
PA	HARRISBURG	27	57	115.5	346.0	13200	1309	15276	1653	9.4	7.1	85.3
PA	HARRISBURG	33	36	50.0	427.0	16220	1774	16987	1804	3.3	1.9	92.8
PA	HAZLETON	56	9	3.2	329.0	11237	794	8230	489	1.9	0.6	99.7
PA	JOHNSTOWN	6	34	1000.0	341.0	27271	2717	27752	2648	0.0	0.0	94.3
PA	JOHNSTOWN	8	29	662.0	368.0	21527	2628	18655	2234	0.0	0.0	99.3
PA	JOHNSTOWN	19	30	162.1	325.0	17170	2422	16346	2044	0.3	0.4	97.4
PA	LANCASTER	8	58	382.7	415.0	21401	2864	21703	2785	1.3	1.1	94.0
PA	LANCASTER	15	23	50.0	415.0	17230	2072	17386	2079	9.7	7.5	95.0
PA	PHILADELPHIA	3	26	1000.0	305.0	31386	9263	25543	7578	0.0	0.0	98.9
PA	PHILADELPHIA	6	64	1000.0	332.0	30479	9176	27031	7747	0.0	0.0	97.3
PA	PHILADELPHIA	10	67	791.8	354.0	25161	8072	23491	7190	0.4	0.3	95.5
PA	PHILADELPHIA	17	54	172.0	320.0	18786	6675	19964	6768	1.0	0.7	92.8
PA	PHILADELPHIA	29	42	273.3	347.0	22158	7212	23279	7499	15.1	9.8	92.7
PA	PHILADELPHIA	35	34	50.0	284.0	11498	5617	11619	5690	1.1	1.6	97.5
PA	PHILADELPHIA	57	32	108.6	353.0	16275	6365	15698	6210	2.6	0.7	99.1
PA	PITTSBURGH	2	25	1000.0	302.0	28831	3488	26900	3339	7.7	5.2	97.3
PA	PITTSBURGH	4	51	1000.0	293.0	27941	3209	24960	3089	0.0	0.0	97.0
PA	PITTSBURGH	11	48	1000.0	302.0	26332	3429	23126	3090	0.0	0.0	99.9
PA	PITTSBURGH	13	38	1000.0	210.0	23083	3079	20243	2892	1.0	0.3	100.0
PA	PITTSBURGH	16	26	50.0	215.0	11220	2353	12154	2493	1.1	0.2	90.5
PA	PITTSBURGH	22	42	330.8	280.0	15791	2649	14380	2580	0.6	0.4	98.4
PA	PITTSBURGH	53	43	51.9	312.0	16273	2744	16057	2729	3.3	1.6	99.0
PA	READING	51	25	120.0	395.0	14707	3607	16585	5176	5.1	5.0	84.9
PA	RED LION	49	30	50.0	177.0	9595	1498	8685	1319	5.6	7.2	99.1
PA	SCRANTON	16	49	73.5	506.0	18628	1383	18311	1353	0.4	0.5	97.6
PA	SCRANTON	22	13	4.3	505.0	22657	1671	21186	1555	1.5	1.5	97.4
PA	SCRANTON	38	31	50.0	385.0	14891	855	13968	817	6.0	3.2	98.8
PA	SCRANTON	44	41	50.0	509.0	15873	1209	14479	1057	3.4	6.1	99.0
PA	SCRANTON	64	32	50.0	374.0	3270	481	2498	441	4.2	0.4	100.0
PA	WILKES-BARRE	28	11	3.7	509.0	22448	1642	21831	1618	6.8	9.6	95.8
PA	WILLIAMSPORT	53	29	50.0	222.0	3514	156	2437	121	0.0	0.0	100.0
PA	YORK	43	47	225.5	417.0	18468	2298	18552	2529	7.2	12.5	96.1
RHODE ISLAND												
RI	BLOCK ISLAND	69	17	50.0	213.0	11722	1628	11291	1552	0.0	0.0	100.0
RI	PROVIDENCE	10	51	1000.0	305.0	27786	6170	23550	5267	11.2	3.0	100.0
RI	PROVIDENCE	12	13	15.3	305.0	26516	5943	25661	5488	8.4	2.5	99.2
RI	PROVIDENCE	36	21	50.0	182.0	10571	2351	11133	2569	8.0	3.2	93.6
RI	PROVIDENCE	64	54	92.6	315.0	14609	3667	13709	2800	0.0	0.0	99.6
SOUTH CAROLINA												
SC	ALLENDALE	14	33	50.0	244.0	13632	364	13573	358	1.7	2.0	99.8
SC	ANDERSON	40	14	50.0	311.0	15464	1025	14654	984	0.1	0.1	99.5
SC	BEAUFORT	16	44	50.0	390.0	19731	670	19643	670	0.5	0.7	100.0
SC	CHARLESTON	2	59	1000.0	594.0	50697	985	45904	819	0.0	0.0	100.0
SC	CHARLESTON	4	53	1000.0	597.0	51379	974	41971	713	0.0	0.0	100.0
SC	CHARLESTON	5	52	1000.0	597.0	51423	987	46921	835	0.0	0.0	100.0
SC	CHARLESTON	7	49	1000.0	564.0	33353	825	30920	757	0.0	0.0	100.0
SC	CHARLESTON	24	40	329.2	542.0	29291	697	27779	655	0.0	0.0	100.0
SC	CHARLESTON	36	35	97.7	256.0	14028	502	14020	502	0.0	0.0	100.0
SC	COLUMBIA	10	41	874.0	472.0	36808	1452	33424	1229	0.8	0.2	96.9
SC	COLUMBIA	19	17	232.0	533.0	28744	1051	27875	1020	0.1	0.0	99.4
SC	COLUMBIA	25	8	3.2	253.0	16297	769	15619	757	14.0	5.1	97.1
SC	COLUMBIA	35	32	50.0	314.0	14227	726	14039	721	9.8	4.2	99.8
SC	COLUMBIA	57	48	109.7	193.0	13082	714	13074	714	20.2	6.3	99.9
SC	CONWAY	23	58	85.1	250.0	16081	450	15408	427	0.5	0.3	100.0
SC	FLORENCE	13	56	1000.0	594.0	43246	1416	38937	1320	0.0	0.0	100.0
SC	FLORENCE	15	16	50.0	594.0	29016	1066	28884	1054	2.7	2.6	99.8
SC	FLORENCE	21	20	73.8	567.0	22692	787	22073	775	0.1	0.1	99.9
SC	FLORENCE	33	45	50.0	241.0	12380	382	12120	379	1.0	0.6	100.0
SC	GREENVILLE	4	59	1000.0	610.0	41044	1886	39428	1774	0.0	0.0	92.0
SC	GREENVILLE	16	35	50.0	351.0	16128	1098	16413	1105	0.3	0.1	97.2
SC	GREENVILLE	29	9	5.1	392.0	18622	1164	19313	1191	0.5	0.3	92.9
SC	GREENWOOD	38	18	50.0	235.0	14183	772	14390	764	0.4	0.4	97.9
SC	HARDEEVILLE	28	27	226.7	457.0	24859	570	24815	568	0.2	0.0	100.0
SC	MYRTLE BEACH	43	18	124.6	463.0	25516	758	25592	760	0.0	0.1	99.7
SC	ROCK HILL	30	15	50.0	210.0	11306	1017	11334	1006	6.5	6.5	95.6
SC	ROCK HILL	55	39	147.1	570.0	30046	2244	29164	2209	6.2	4.2	99.6
SC	SPARTANBURG	7	53	1000.0	610.0	38918	2224	38650	2204	0.0	0.0	97.5
SC	SPARTANBURG	49	43	50.0	296.0	15798	1060	15059	977	2.7	1.7	99.9
SC	SUMTER	27	28	50.0	354.0	17101	715	16471	529	3.2	1.2	100.0
SC	SUMTER	63	38	50.0	165.0	2186	116	2118	115	0.0	0.0	100.0
SOUTH DAKOTA												
SD	ABERDEEN	9	28	672.0	427.0	34180	131	28565	112	0.0	0.0	100.0
SD	ABERDEEN	16	17	50.0	357.0	20455	75	20039	71	0.0	0.0	100.0
SD	BROOKINGS	8	18	801.6	229.0	24013	139	20117	127	0.4	1.6	100.0
SD	EAGLE BUTTE	13	25	660.8	518.0	39363	20	34778	17	0.0	0.0	100.0
SD	FLORENCE	3	25	1000.0	512.0	44498	192	44067	198	0.0	0.0	97.0
SD	HURON	12	22	979.2	259.0	25074	80	21367	69	0.0	0.0	99.3
SD	LEAD	5	29	1000.0	564.0	42705	145	43909	149	0.0	0.0	94.1
SD	LEAD	11	30	793.0	576.0	40395	145	38672	144	0.0	0.0	99.7
SD	LOWRY	11	15	368.5	317.0	27749	29	21318	24	0.0	0.0	100.0
SD	MARTIN	8	23	1000.0	265.0	25911	29	23533	27	0.0	0.0	100.0
SD	MITCHELL	5	26	1000.0	460.0	40741	373	38297	340	0.0	0.0	96.5
SD	PIERRE	4	19	1000.0	378.0	36571	51	32608	46	0.0	0.0	99.9
SD	PIERRE	10	21	586.1	488.0	35323	58	32008	55	0.0	0.0	99.3
SD	RAPID CITY	3	22	1000.0	201.0	23926	126	23814	128	0.0	0.0	95.6
SD	RAPID CITY	7	18	945.5	204.0	20618	122	18203	118	0.0	0.0	99.9
SD	RAPID CITY	9	26	76.3	202.0	13922	106	13113	106	0.0	0.0	99.4
SD	RAPID CITY	15	16	50.0	155.0	10537	103	10141	98	3.5	0.3	100.0
SD	RELIANCE	6	14	1000.0	338.0	34748	59	32119	56	0.0	0.0	99.6
SD	SIOUX FALLS	11	32	819.1	610.0	43499	531	34181	412	0.0	0.0	100.0
SD	SIOUX FALLS	13	29	769.2	610.0	41744	447	35241	417	0.0	0.0	98.1
SD	SIOUX FALLS	17	7	3.2	151.0	6670	160	6618	159	2.8	3.5	100.0
SD	SIOUX FALLS	23	24	50.0	54.0	1623	122	1623	122	0.2	0.0	100.0
SD	SIOUX FALLS	36	40	50.0	293.0	15246	228	15226	228	1.5	0.9	99.9
SD	SIOUX FALLS	46	47	154.0	607.0	32796	387	31976	377	0.0	0.0	100.0
SD	VERMILLION	2	34	1000.0	232.0	29218	441	28686	434	0.0	0.0	99.8
TENNESSEE												
TN	CHATTANOOGA	3	55	1000.0	320.0	26184	1033	27338	1025	0.0	0.0	90.3
TN	CHATTANOOGA	9	35	1000.0	317.0	24577	993	21972	892	0.0	0.0	99.7
TN	CHATTANOOGA	12	47	1000.0	384.0	27223	1041	25944	1001	0.0	0.0	98.0
TN	CHATTANOOGA	45	29	50.0	329.0	15572	752	14511	722	0.8	1.0	100.0
TN	CHATTANOOGA	61	40	127.3	370.0	13957	723	13584	702	0.0	0.0	99.0
TN	CLEVELAND	53	42	50.0	356.0	11706	709	11072	686	2.8	2.2	99.9
TN	COOKEVILLE	22	52	73.5	425.0	19872	346	19688	347	1.5	1.6	99.6
TN	COOKEVILLE	28	36	50.0	279.0	10675	200	9879	192	4.3	2.7	100.0
TN	CROSSVILLE	20	50	355.9	738.0	34644	1251	33955	1230	0.2	0.1	99.3
TN	GREENEVILLE	39	38	129.8	802.0	20934	1058	19728	970	1.3	1.0	99.7
TN	HENDERSONVILLE	50	51	140.6	235.0	11900	996	11660	966	4.2	1.9	99.6
TN	JACKSON	7	43	920.0	323.0	29202	565	25511	510	0.0	0.0	100.0
TN	JACKSON	16	39	336.3	322.0	20258	451	20105	449	0.9	0.5	99.8
TN	JELLICO	54	23	50.0	395.0	4856	221	3759	163	0.0	0.0	100.0
TN	JOHNSON CITY	11	58	980.9	707.0	29717	1064	29358	1028	0.0	0.0	95.5
TN	KINGSPORT	19	27	54.3	707.0	18226	695	18524	709	0.4	0.2	96.2
TN	KNOXVILLE	6	26	1000.0	454.0	32436	1194	33026	1181	0.0	0.0	92.2
TN	KNOXVILLE	8	30	663.5	382.0	19804	936	19888	941	0.0	0.0	95.0
TN	KNOXVILLE	10	31	767.9	546.0	32432	1194	29785	1101	3.0	1.7	98.9
TN	KNOXVILLE	15	17	92.1	513.0	19946	930	19520	922	0.6	0.3	99.8
TN	KNOXVILLE	43	34	50.3	351.0	13921	812	13576	800	2.0	2.7	99.5
TN	LEBANON	66	44	50.0	161.0	8926	919	8313	866	0.0	0.0	100.0
TN	LEXINGTON	11	47	1000.0	195.0	23549	474	20401	417	0.0	0.0	100.0
TN	MEMPHIS	3	28	1000.0	305.0	33403	1443	24845	1287	0.0	0.0	99.9
TN	MEMPHIS	5	52	1000.0	308.0	32952	1427	29582	1379	0.0	0.0	99.3
TN	MEMPHIS	10	29	670.8	329.0	29711	1364	24952	1276	1.6	0.5	100.0
TN	MEMPHIS	13	53	1000.0	308.0	28576	1343	25719	1304	0.0	0.0	100.0
TN	MEMPHIS	24	25	111.4	308.0	20834	1195	20718	1193	0.0	0.0	100.0
TN	MEMPHIS	30	31	207.6	305.0	17506	1124	17330	1123	0.4	0.1	99.9
TN	MEMPHIS	50	51	50.0	315.0	14801	1118	15581	1129	0.4	0.1	94.6
TN	MURFREESBORO	39	38	183.2	250.0	15043	1090	14421	1066	3.5	2.5	100.0
TN	NASHVILLE	2	27	1000.0	411.0	37573	1658	32297	1472	0.0	0.0	99.5
TN	NASHVILLE	4	10	39.7	434.0	36718	1612	34521	1561	0.0	0.0	98.4
TN	NASHVILLE	5	56	1000.0	425.0	37265	1656	33627	1569	0.0	0.0	99.0
TN	NASHVILLE	8	46	936.5	390.0	31972	1497	28879	1420	0.0	0.0	100.0
TN	NASHVILLE	17	15	121.8	354.0	23686	1338	23718	1337	1.7	0.7	99.2
TN	NASHVILLE	30	21	183.0	430.0	23658	1364	23658	1364	1.9	2.6	98.5
TN	NASHVILLE	58	23	52.6	240.0	13345	1075	13084	1067	4.2	3.6	100.0
TN	SNEEDVILLE	2	41	1000.0	536.0	36323	1629	38851	1659	0.0	0.0	90.1
TEXAS												
TX	ABILENE	9	29	1000.0	259.0	26409	221	19985	205	4.5	3.3	100.0
TX	ABILENE	32	24	50.0	287.0	17234	182	17206	182	0.7	0.2	100.0
TX	ALVIN	67	36	107.6	543.0	19402	3615	22591	3738	0.1	0.0	85.9
TX	AMARILLO	2	21	1000.0	401.0	38166	317	36338	310	0.0	0.0	99.9
TX	AMARILLO	4	19	1000.0	433.0	40439	325	39077	324	0.0	0.0	100.0
TX	AMARILLO	7	23	631.8	518.0	38673	315	35708	316	0.0	0.0	99.2
TX	AMARILLO	10	9	20.8	466.0	36500	313	33165	304	0.0	0.0	100.0
TX	AMARILLO	14	15	50.0	464.0	24095	285	23951	285	0.0	0.0	100.0
TX	ARLINGTON	68	42	105.6	360.0	14497	3771	17975	3879	0.0	0.0	80.5
TX	AUSTIN	7	56	1000.0	384.0	30828	1245	30089	1269	0.0	0.0	97.1
TX	AUSTIN	18	22	66.7	335.0	18312	904	18352	904	4.3	0.8	98.8
TX	AUSTIN	24	33	81.4	387.0	22472	997	20626	965	1.7	0.2	100.0
TX	AUSTIN	36	21	158.2	374.0	25028	1084	23977	1044	0.1	0.0	99.9
TX	AUSTIN	42	43	82.7	393.0	17588	911	16501	878	0.6	0.0	99.8
TX	AUSTIN	54	49	177.6	374.0	21850	948	21914	1005	5.5	7.0	93.2
TX	BAYTOWN	57	41	144.4	585.0	26201	3625	26197	3625	0.0	0.0	100.0
TX	BEAUMONT	6	21	1000.0	293.0	32847	702	28386	640	0.0	0.0	100.0
TX	BEAUMONT	12	50	1000.0	305.0	26741	650	23716	603	0.0	0.0	100.0
TX	BEAUMONT	34	33	50.0	312.0	13852	541	13852	541	0.0	0.0	100.0
TX	BELTON	46	47	50.0	384.0	15417	611	14824	547	1.3	0.3	100.0
TX	BIG SPRING	4	33	136.0	116.0	12023	55	11902	55	0.0	0.0	99.9
TX	BROWNSVILLE	23	24	100.0	445.0	19570	667	19566	667	0.0	0.0	100.0
TX	BRYAN	3	59	1000.0	515.0	42756	2830	30202	522	0.0	0.0	100.0
TX	BRYAN	28	29	50.0	220.0	12694	224	12742	224	0.4	0.1	99.6
TX	COLLEGE STATION	15	12	3.2	119.0	4071	137	4071	137	0.0	0.0	100.0
TX	CONROE	49	5	1.0	359.0	15427	3326	13430	2266	0.1	0.0	99.7
TX	CONROE	55	42	155.3	570.0	31654	3838	31975	3838	3.5	0.3	98.5
TX	CORPUS CHRISTI	3	47	1000.0	262.0	31435	490	30486	488	0.0	0.0	100.0
TX	CORPUS CHRISTI	6	50	1000.0	291.0	28932	493	28236	490	0.0	0.0	100.0
TX	CORPUS CHRISTI	10	18	631.2	287.0	27969	493	27637	491	0.0	0.0	100.0
TX	CORPUS CHRISTI	16	23	50.0	296.0	15085	447	15085	447	0.0	0.0	100.0
TX	CORPUS CHRISTI	28	27	50.0	232.0	10892	419	10892	419	0.0	0.0	100.0
TX	DALLAS	4	35	1000.0	511.0	45408	4395	40690	4278	0.0	0.0	100.0
TX	DALLAS	8	9	21.5	512.0	38703	4202	35954	4161	0.0	0.0	99.9
TX	DALLAS	13	14	484.6	469.0	37811	4200	34201	4145	0.0	0.0	100.0
TX	DALLAS	27	36	280.2	515.0	26874	4049	27151	4058	1.9	0.1	98.6
TX	DALLAS	33	32	218.7	518.0	26899	4047	26714	4044	0.1	0.0	99.8
TX	DALLAS	39	40	221.3	512.0	31240	4093	31248	4095	0.5	0.0	99.0
TX	DALLAS	58	45	154.3	438.0	21176	3939	21140	3939	0.0	0.0	99.7
TX	DECATUR	29	30	99.3	160.0	12473	3741	11916	3713	1.1	0.1	99.9
TX	DEL RIO	10	28	1000.0	100.0	7805	47	7493	47	0.0	0.0	100.0
TX	DENTON	2	43	1000.0	412.0	38925	4212	36831	4176	0.0	0.0	99.8
TX	EAGLE PASS	16	18	50.0	85.0	2385	36	2385	36	0.0	0.0	100.0
TX	EL PASO	4	18	1000.0	475.0	39024	722	39212	722	0.0	0.0	98.3
TX	EL PASO	7	17	1000.0	265.0	22864	721	23481	722	0.0	0.0	91.1
TX	EL PASO	9	16	650.3	582.0	40320	724	37215	723	0.0	0.0	99.9
TX	EL PASO	13	30	1000.0	265.0	23268	720	21850	720	0.0	0.0	100.0
TX	EL PASO	14	15	50.0	604.0	21194	719	19668	720	0.1	0.1	98.5
TX	EL PASO	26	25	71.0	457.0	16234	717	16029	717	0.0	0.0	99.8
TX	EL PASO	38	39	50.0	557.0	8401	628	7981	628	0.2	0.0	100.0
TX	EL PASO	65	51	50.0	557.0	15868	703	15091	703	0.0	0.0	100.0
TX	FORT WORTH	5	41	1000.0	514.0	45441	4404	39610	4227	0.0	0.0	100.0
TX	FORT WORTH	11	19	552.2	509.0	39460	4217	34825	4150	1.0	0.1	100.0
TX	FORT WORTH	21	18	220.0	503.0	26985	4045	27744	4053	0.7	0.0	97.1
TX	FORT WORTH	52	51	172.9	328.0	14497	3809	14188	3802	0.0	0.0	99.9
TX	GALVESTON	22	23	246.6	566.0	30569	3689	30801	3696	0.0	0.0	99.2
TX	GALVESTON	48	47	168.1	358.0	18400	3461	18133	3350	0.0	0.0	99.8
TX	GARLAND	23	24	172.9	348.0	12957	3159	12589	3047	1.7	0.4	100.0
TX	GREENVILLE	47	46	50.0	155.0	2533	70	2533	70	0.0	0.0	100.0
TX	HARLINGEN	4	31	1000.0	396.0	38632	687	36762	686	0.0	0.0	100.0
TX	HARLINGEN	44	34	50.0	296.0	13869	657	13869	657	0.0	0.0	100.0
TX	HARLINGEN	60	38	50.0	372.0	14082	661	14082	661	0.0	0.0	100.0
TX	HOUSTON	2	35	1000.0	588.0	50318	3934	44930	3865	0.0	0.0	100.0
TX	HOUSTON	8	9	21.9	564.0	37773	3868	37240	3850	0.0	0.0	99.4
TX	HOUSTON	11	31	785.4	570.0	44534	3901	42875	3879	0.0	0.0	100.0
TX	HOUSTON	13	32	796.8	588.0	44297	3900	41721	3870	0.0	0.0	100.0
TX	HOUSTON	14	24	277.1	438.0	25772	3782	25619	3781	0.1	0.0	100.0
TX	HOUSTON	20	19	239.0	552.0	27880	3788	27863	3788	0.7	0.1	100.0
TX	HOUSTON	26	27	239.1	594.0	31352	3825	31101	3816	0.4	0.1	100.0
TX	HOUSTON	39	38	208.4	594.0	27711	3779	27530	3776	0.0	0.0	100.0
TX	HOUSTON	61	44	122.2	429.0	20486	3695	20482	3695	0.0	0.0	100.0
TX	IRVING	49	48	181.4	365.0	19464	3910	19323	3907	0.9	0.2	100.0
TX	JACKSONVILLE	56	22	101.2	482.0	19968	553	19872	552	2.3	2.7	99.9
TX	KATY	51	52	70.9	500.0	20118	3688	20050	3687	0.0	0.0	100.0
TX	KERRVILLE	35	32	207.4	536.0	23092	1416	22701	1411	1.6	1.4	99.8
TX	KILLEEN	62	23	50.0	408.0	16884	540	16864	540	0.0	0.0	99.4
TX	LAKE DALLAS	55	54	70.7	142.0	10413	3602	10253	3565	0.0	0.0	100.0
TX	LAREDO	8	15	526.4	312.0	26393	140	25684	137	0.0	0.0	99.9
TX	LAREDO	13	14	143.5	280.0	19978	143	20347	143	8.6	5.3	95.8
TX	LAREDO	27	19	81.0	67.0	6996	132	6972	132	0.0	0.0	100.0
TX	LLANO	14	27	174.1	269.0	18908	236	17301	119	6.9	4.9	99.9
TX	LONGVIEW	51	52	169.0	381.0	17537	536	17275	521	0.6	0.4	99.7
TX	LUBBOCK	5	39	1000.0	226.0	28414	364	28269	364	0.0	0.0	99.8
TX	LUBBOCK	11	43	1000.0	232.0	25326	351	24403	349	1.8	0.3	100.0
TX	LUBBOCK	13	38	1000.0	268.0	25086	342	24059	342	0.0	0.0	100.0
TX	LUBBOCK	16	25	50.0	83.0	5191	235	5179	235	0.3	0.0	100.0
TX	LUBBOCK	28	27	52.7	256.0	16287	300	16194	300	1.3	0.0	100.0
TX	LUBBOCK	34	35	121.0	256.0	14190	295	14980	295	0.0	0.0	94.5
TX	LUFKIN	9	43	813.3	204.0	18032	223	16010	206	3.6	5.0	100.0
TX	MCALLEN	48	46	80.1	288.0	14991	658	14959	656	0.0	0.0	100.0
TX	MIDLAND	2	26	1000.0	323.0	34576	345	33060	341	0.0	0.0	100.0

Defining the Future... Broadcasting & Cable Announces Digital Television

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By the Editors of Digital Television

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By Rob Ettridge, Quantel

NEW TECHNOLOGY

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SPACE is a full-bandwidth, CCIR-601, eight or 10 bit digital video recorder that is designed for speed and reliability in storage, recording, and networking applications. The unit handles 525 and 625 formats, film rates and pull down. It can be "strapped," allowing 4:4:4, 4:2:2:4, or up to 8:8:8:8 recording. SPACE also offers shock-mounted drives to optimize disk performance and improve MTBF. This feature also protects the internal connectors from vibration corrosion and provides sound dampening. **Pluto Technologies International, Inc.**, 2511 55th Street, Boulder, CO 80301.

■ More Information - Circle 101

Serial Video to Fiberoptic Links

The RF-3004 is a standard 19" sub-rack frame designed to complement the current Matthey 3000 series digital interconnect and distribution system from Matthey Electronics. Applications can be found in any broadcast, post-production or mobile environment where the transport of digital video is required over distances greater than that achieved with standard coax cable. **Television Equipment Associates, Inc.**, P.O. Box 499, South Salem, NY 10590-0499.

■ More Information - Circle 102

Transport Stream Generator

Digital Transport Systems' second generation Transport Stream Generator is designed to provide greater system flexibility, PCI bus-based architecture and WindowsNT® functionality. The Transport Stream Generator allows equipment designers and manufactures to perform real-time capture and playback of MPEG-2/DVB Transport Streams for use as a test source. **Digital Transport Systems**, 11545 West Bernardo Court, Ste. 200, San Diego, CA 92127.

■ More Information - Circle 103

DigitalTelevision is exclusively dedicated to reporting on the latest developments in digital technologies, strategies being employed by leading-edge companies and new product introductions.

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From A to V on Digital Allocations—*Complete text of the FCC's target list of 1,606 stations*

STATE AND CITY		NTSC CHAN	DTV CHAN	DTV POWER (kW)	ANTENNA HAAT(m)	DTV SERVICE DURING TRANSITION		EXISTING NTSC				DTV/NTSC AREA MATCH (%)
						AREA (Sq km)	PEOPLE (thous)	CURRENT SERVICE AREA (Sq km)	CURRENT SERVICE PEOPLE (thous)	NEW INTERFERENCE AREA (% NL Area)	NEW INTERFERENCE PEOPLE (% NL Pop)	
TX	NACOGDOCHES	19	18	50.0	222.0	8477	141	8445	140	6.7	3.1	100.0
TX	ODESSA	7	31	1000.0	226.0	25478	279	25006	278	0.0	0.0	100.0
TX	ODESSA	9	15	486.4	387.0	33018	325	29562	297	0.0	0.0	100.0
TX	ODESSA	24	23	99.8	335.0	18882	289	18874	289	0.8	0.0	100.0
TX	ODESSA	36	22	50.0	88.0	4555	225	4823	225	0.0	0.0	94.4
TX	ODESSA	42	43	50.0	146.0	7035	243	7435	243	0.0	0.0	94.6
TX	PORT ARTHUR	4	40	1000.0	360.0	36385	778	32998	763	0.0	0.0	99.7
TX	RIO GRANDE CITY	40	20	50.0	113.0	10336	106	10328	106	0.0	0.0	100.0
TX	ROSENBERG	45	46	65.7	439.0	19437	3656	19380	3655	0.0	0.0	100.0
TX	SAN ANGELO	3	16	204.5	183.0	17390	120	16339	119	0.0	0.0	100.0
TX	SAN ANGELO	6	19	1000.0	277.0	30653	140	26403	127	0.0	0.0	99.5
TX	SAN ANGELO	8	11	18.8	442.0	32951	154	29799	148	0.0	0.0	99.4
TX	SAN ANTONIO	4	58	1000.0	451.0	40688	1703	37111	1591	0.0	0.0	99.4
TX	SAN ANTONIO	5	55	1000.0	424.0	37732	1587	36112	1588	0.0	0.0	97.5
TX	SAN ANTONIO	9	20	827.3	283.0	26936	1510	25660	1499	0.6	0.3	99.6
TX	SAN ANTONIO	12	48	989.1	451.0	35839	1572	34879	1571	0.5	0.4	99.0
TX	SAN ANTONIO	23	16	50.0	261.0	11425	1363	11306	1362	1.2	0.2	99.9
TX	SAN ANTONIO	29	30	231.8	443.0	23843	1505	23364	1497	0.3	0.1	100.0
TX	SAN ANTONIO	41	39	196.8	432.0	22602	1488	22090	1466	0.0	0.0	100.0
TX	SAN ANTONIO	60	38	125.6	456.0	19327	1465	18560	1454	0.0	0.0	100.0
TX	SHERMAN	12	20	394.0	543.0	38698	684	29746	384	0.0	0.0	100.0
TX	SNYDER	17	10	3.2	135.0	5587	21	5431	21	0.0	0.0	99.9
TX	SWEETWATER	12	20	560.8	427.0	32329	238	29841	233	2.1	0.6	97.4
TX	TEMPLE	6	50	1000.0	573.0	47381	1090	35310	971	0.0	0.0	99.2
TX	TEXARKANA	6	15	1000.0	482.0	43756	1018	32460	884	0.0	0.0	100.0
TX	TYLER	7	38	1000.0	302.0	28271	703	23380	619	0.0	0.0	100.0
TX	VICTORIA	19	34	50.0	149.0	7797	117	7797	117	0.1	0.0	100.0
TX	VICTORIA	25	15	52.3	311.0	16145	165	16084	164	0.0	0.0	100.0
TX	WACO	10	53	732.0	552.0	39010	853	35434	811	0.0	0.0	99.9
TX	WACO	25	26	234.7	558.0	28933	716	26263	595	0.0	0.0	100.0
TX	WACO	34	20	50.0	155.0	4781	201	4721	201	0.1	0.0	100.0
TX	WACO	44	57	200.2	552.0	22375	599	22407	608	0.5	0.0	98.9
TX	WESLACO	5	13	40.0	290.0	32933	672	31728	675	0.0	0.0	99.7
TX	WICHITA FALLS	3	28	1000.0	305.0	33377	388	30557	369	0.0	0.0	100.0
TX	WICHITA FALLS	6	22	1000.0	311.0	32101	367	28057	358	0.0	0.0	94.2
TX	WICHITA FALLS	18	15	96.3	329.0	17791	320	17915	320	2.4	1.0	99.3
UTAH												
UT	CEDAR CITY	4	14	365.6	836.0	36597	75	40743	86	0.0	0.0	88.8
UT	OGDEN	9	34	304.0	893.0	20702	1368	21568	1375	0.2	0.0	95.4
UT	OGDEN	30	29	60.3	1190.0	22509	1371	21299	1358	0.0	0.0	99.5
UT	PROVO	11	39	402.8	896.0	23981	1360	24644	1359	0.0	0.0	94.9
UT	PROVO	16	17	253.0	57.0	8179	329	7461	295	0.0	0.0	100.0
UT	SALT LAKE CITY	2	35	737.0	933.0	33667	1402	44486	1484	0.0	0.0	75.2
UT	SALT LAKE CITY	4	40	529.6	1180.0	34890	1401	44280	1479	0.0	0.0	77.1
UT	SALT LAKE CITY	5	38	539.4	1152.0	35596	1407	47582	1468	0.0	0.0	74.8
UT	SALT LAKE CITY	7	42	430.5	924.0	29562	1392	30768	1397	0.1	0.0	95.9
UT	SALT LAKE CITY	13	28	190.6	1116.0	21249	1385	19545	1356	0.0	0.0	96.5
UT	SALT LAKE CITY	14	27	84.2	1181.0	28260	1384	26587	1374	0.1	0.0	99.7
UT	ST. GEORGE	12	9	3.2	42.0	1767	43	1631	41	0.0	0.0	100.0
VIRGINIA												
VA	ARLINGTON	14	15	90.2	173.0	14889	5804	15213	5853	4.8	0.8	97.5
VA	ASHLAND	65	47	50.0	262.0	11365	925	10517	908	0.0	0.0	100.0
VA	BRISTOL	5	28	1000.0	680.0	36741	1255	38646	1387	0.0	0.0	89.7
VA	CHARLOTTESVILLE	29	32	234.1	363.0	20632	651	20736	649	2.7	6.7	95.6
VA	CHARLOTTESVILLE	41	14	50.0	352.0	8353	227	7661	205	2.0	0.7	99.8
VA	DANVILLE	24	41	50.0	107.0	5695	306	5650	296	5.5	3.0	99.4
VA	FAIRFAX	56	57	50.0	215.0	11753	4371	11068	4071	3.9	2.0	98.8
VA	FRONT ROYAL	42	21	50.0	398.0	7856	243	6366	225	2.7	1.8	100.0
VA	GOLDVEIN	53	30	50.0	229.0	14199	3791	13042	2821	1.1	0.2	99.9
VA	GRUNDY	68	49	50.0	763.0	14722	612	13657	575	0.0	0.0	99.9
VA	HAMPTON	13	41	923.2	301.0	28338	1715	23151	1590	0.0	0.0	100.0
VA	HAMPTON-NORFOLK	15	16	113.5	294.0	17265	1537	17265	1537	0.5	0.0	100.0
VA	HARRISONBURG	3	49	95.2	646.0	16415	443	20828	532	1.6	0.4	75.5
VA	LYNCHBURG	13	56	1000.0	625.0	33092	1044	26866	836	0.0	0.0	97.7
VA	LYNCHBURG	21	20	186.3	500.0	18430	642	18438	627	1.1	5.3	95.9
VA	MANASSAS	66	43	68.5	168.0	12144	3867	12814	4000	0.1	0.0	93.8
VA	MARION	52	42	50.0	445.0	11661	316	9959	265	0.9	0.5	99.9
VA	NORFOLK	3	58	1000.0	299.0	33646	1832	26137	1739	0.0	0.0	100.0
VA	NORFOLK	33	38	226.8	277.0	14070	1498	14074	1498	0.0	0.0	100.0
VA	NORFOLK	49	46	50.0	155.0	6111	1349	6111	1349	0.0	0.0	100.0
VA	NORTON	47	32	50.0	591.0	18409	750	15776	624	1.1	0.6	100.0
VA	PETERSBURG	8	22	520.7	320.0	27478	1244	24875	1178	0.0	0.0	99.6
VA	PORTSMOUTH	10	31	729.0	302.0	28891	1778	26971	1652	13.8	3.4	100.0
VA	PORTSMOUTH	27	19	60.4	296.0	18588	1563	18925	1566	0.4	0.1	98.2
VA	RICHMOND	6	25	1000.0	256.0	31166	1473	26888	1361	0.0	0.0	99.6
VA	RICHMOND	12	54	1000.0	241.0	25977	1257	20983	1103	0.0	0.0	99.7
VA	RICHMOND	23	24	108.8	327.0	21675	1104	21868	1106	0.0	0.0	99.0
VA	RICHMOND	35	26	67.8	384.0	22035	1068	22414	1089	7.2	3.5	96.5
VA	RICHMOND	57	44	50.0	293.0	13908	945	13872	945	2.8	0.4	100.0
VA	ROANOKE	7	18	605.0	610.0	37673	1237	33927	1131	0.0	0.0	99.6
VA	ROANOKE	10	30	773.7	610.0	33596	1141	31364	1092	0.2	0.2	97.5
VA	ROANOKE	15	3	1.0	634.0	25760	930	20742	827	1.2	0.9	99.2
VA	ROANOKE	27	17	88.7	607.0	19044	818	18536	815	3.4	2.8	95.1
VA	ROANOKE	38	36	50.0	616.0	14302	649	13842	640	2.6	1.6	99.4
VA	STAUNTON	51	11	3.2	680.0	7437	249	6357	220	1.3	0.5	100.0
VA	VIRGINIA BEACH	43	29	133.3	261.0	18835	1572	18847	1573	0.0	0.0	99.9
VERMONT												
VT	BURLINGTON	3	53	817.0	835.0	40609	564	39340	592	0.0	0.0	91.9
VT	BURLINGTON	22	16	50.0	835.0	27349	485	24512	444	0.4	0.2	99.9
VT	BURLINGTON	33	32	50.0	815.0	24890	447	23364	428	0.6	0.3	100.0
VT	BURLINGTON	44	43	50.0	840.0	25178	453	23659	428	0.3	0.1	99.8
VT	HARTFORD	31	25	72.6	677.0	16298	365	15770	351	2.5	1.9	97.1
VT	RUTLAND	28	56	50.0	429.0	10646	249	10054	243	0.0	0.0	100.0
VT	ST. JOHNSBURY	20	18	50.0	592.0	17041	177	13973	146	0.6	0.3	100.0
VT	WINDSOR	41	24	50.0	684.0	18661	458	16023	370	2.0	2.9	99.1
WASHINGTON												
WA	BELLEVUE	33	32	50.0	286.0	4020	1944	3539	1889	7.0	9.0	99.8
WA	BELLEVUE	51	50	50.0	739.0	21493	2960	21087	2949	0.1	0.4	100.0
WA	BELLINGHAM	12	35	612.2	722.0	39879	1034	37790	581	0.0	0.0	99.7
WA	BELLINGHAM	24	19	50.0	676.0	6322	206	5934	193	0.0	0.0	100.0
WA	CENTRALIA	15	19	50.0	347.0	12675	317	11570	297	0.8	1.3	97.0
WA	EVERETT	16	31	290.6	239.0	15341	2878	14315	2789	0.2	0.0	99.4
WA	KENNEWICK	42	44	50.0	390.0	14786	250	14141	238	0.0	0.0	100.0
WA	PASCO	19	18	50.0	366.0	15893	242	15293	225	0.0	0.0	100.0
WA	PULLMAN	10	17	189.6	408.0	25735	256	23762	208	0.0	0.0	99.9
WA	RICHLAND	25	26	50.0	411.0	17257	267	16636	250	0.0	0.0	100.0
WA	RICHLAND	31	38	50.0	370.0	6994	162	6483	158	0.0	0.0	100.0
WA	SEATTLE	4	38	1000.0	247.0	26917	3048	28573	3061	0.0	0.0	93.9
WA	SEATTLE	5	48	1000.0	250.0	27042	3052	27359	3034	0.0	0.0	94.5
WA	SEATTLE	7	39	1000.0	250.0	23973	3014	23832	3015	0.0	0.0	98.6
WA	SEATTLE	9	41	1000.0	252.0	22539	2947	23225	2982	0.0	0.0	92.7
WA	SEATTLE	22	25	247.1	271.0	20306	2972	18838	2933	0.1	0.0	100.0
WA	SEATTLE	45	44	50.0	287.0	4035	1885	3533	1818	1.6	1.6	100.0
WA	SPOKANE	2	20	1000.0	671.0	44955	567	46495	549	0.0	0.0	93.8
WA	SPOKANE	4	13	27.3	933.0	47131	538	49444	551	0.0	0.0	94.4
WA	SPOKANE	6	15	1000.0	653.0	45136	562	45962	568	0.0	0.0	96.5
WA	SPOKANE	7	39	945.6	558.0	35010	543	34472	518	0.0	0.0	98.7
WA	SPOKANE	22	36	50.0	429.0	16529	434	15967	423	0.6	0.1	98.9
WA	SPOKANE	28	30	95.4	601.0	26297	494	24953	477	0.2	2.7	100.0
WA	TACOMA	11	36	772.7	363.0	27063	3031	25764	2978	0.0	0.0	99.6
WA	TACOMA	13	18	602.8	610.0	34985	3160	31399	3038	0.0	0.0	98.7
WA	TACOMA	20	14	135.4	491.0	21540	2985	20756	2893	0.6	0.4	99.9
WA	TACOMA	28	27	50.0	232.0	11775	2542	11033	2456	1.3	5.4	99.6
WA	TACOMA	56	42	152.4	570.0	26206	2943	25599	3046	0.1	0.2	99.1
WA	VANCOUVER	49	48	107.7	527.0	17144	1772	16628	1743	0.0	0.0	99.9
WA	WENATCHEE	27	46	50.0	424.0	10409	106	8623	101	0.0	0.0	100.0
WA	YAKIMA	23	16	50.0	293.0	9705	196	8523	195	0.0	0.0	100.0
WA	YAKIMA	29	33	50.0	296.0	9706	198	8783	198	0.0	0.0	100.0
WA	YAKIMA	35	14	50.0	293.0	10411	199	8832	197	2.6	0.8	100.0
WA	YAKIMA	47	21	50.0	280.0	9737	194	8382	193	0.0	0.0	100.0
WISCONSIN												
WI	APPLETON	32	59	50.0	336.0	17094	760	16889	750	0.0	0.0	100.0
WI	CHIPPEWA FALLS	48	49	50.0	213.0	11489	233	11695	238	0.1	0.0	96.8
WI	EAGLE RIVER	34	28	52.8	127.0	9995	70	10007	71	1.5	0.8	99.1
WI	EAU CLAIRE	13	39	944.3	607.0	41500	711	37390	643	0.0	0.0	98.7
WI	EAU CLAIRE	18	15	50.0	226.0	11397	231	11320	230	0.3	0.1	100.0
WI	FOND DU LAC	68	44	122.7	506.0	26083	1986	26740	2424	0.1	1.6	96.3
WI	GREEN BAY	2	23	1000.0	381.0	37771	1055	35158	1004	1.0	0.4	99.9
WI	GREEN BAY	5	56	1000.0	341.0	35496	1037	33443	988	0.0	0.0	99.9
WI	GREEN BAY	11	51	1000.0	384.0	33121	1007	31547	956	3.5	2.4	100.0
WI	GREEN BAY	26	41	285.5	356.0	23465	924	23171	915	3.0	1.5	100.0
WI	GREEN BAY	38	42	50.0	360.0	17370	729	17366	728	0.0	0.0	99.3
WI	JANESVILLE	57	32	79.3	342.0	15937	1061	16225	1067	1.1	0.6	97.0
WI	KENOSHA	55	40	97.2	144.0	11200	2080	10924	2040	0.3	0.1	100.0
WI	LA CROSSE	8	53	1000.0	469.0	36877	681	29076	525	0.5	0.4	100.0
WI	LA CROSSE	19	14	50.0	347.0	16453	300	15633	286	6.5	3.5	100.0
WI	LA CROSSE	25	17	50.0	306.0	12633	250	11804	228	0.2	0.1	100.0
WI	LA CROSSE	31	30	50.0	347.0	17544	310	16864	297	2.6	1.7	100.0
WI	MADISON	3	50	380.2	469.0	30593	1315	25483	1060	2.7	6.4	99.8
WI	MADISON	15	19	50.0	352.0	18214	816	17836	771	0.5	0.4	98.3
WI	MADISON	21	20	50.0	453.0	21941	893	21768	888	2.0	1.3	98.7
WI	MADISON	27	26	228.3	455.0	25909	1056	26561	1071	2.9	4.3	97.1
WI	MADISON	47	11	3.2	450.0	19564	832	19310	822	1.1	1.4	98.4
WI	MANITOWOC	16	19	50.0	129.0	3415	81	3415	81	1.5	0.7	100.0
WI	MAYVILLE	52	43	50.0	120.0	2183	87	2155	85	1.3	0.8	100.0
WI	MENOMONIE	28	27	50.0	346.0	17181	344	16347	319	0.2	0.0	100.0
WI	MILWAUKEE	4	28	1000.0	305.0	33003	2715	24264	2170	0.0	0.0	98.8
WI	MILWAUKEE	6	33	1000.0	305.0	33449	2801	22286	2072	0.0	0.0	99.9
WI	MILWAUKEE	10	8	9.9	343.0	26703	2457	24134	2110	0.1	0.0	98.4
WI	MILWAUKEE	12	34	832.8	305.0	29063	2570	22473	2066	0.0	0.0	100.0
WI	MILWAUKEE	18	61	519.8	307.0	20074	2243	19192	2150	0.1	0.0	100.0
WI	MILWAUKEE	24	25	111.2	313.0	17125	2087	17044	2071	0.7	0.2	99.7
WI	MILWAUKEE	30	22	50.0	293.0	13307	1847	13315	1848	1.0	1.3	99.8
WI	MILWAUKEE	36	35	59.6	283.0	13997	1854	14630	1875	1.3	0.8	95.7
WI	MILWAUKEE	58	46	139.7	339.0	22271	2212	20629	2155	0.5	1.1	99.7
WI	PARK FALLS	36	47	50.0	445.0	19939	106	19134	97	1.7	1.4	100.0
WI	RACINE	49	48	176.4	303.0	17140	2103	16621	1997	2.7	1.1	100.0
WI	RHINELANDER	12	16	510.5	506.0	39393	351	29821	251	0.0	0.0	100.0
WI	SUPERIOR	6	19	1000.0	308.0	32476	286	28518	256	0.0	0.0	99.9
WI	SURING	14	21	50.0	201.0	13334	541	13330	541	0.2	0.3	100.0
WI	WAUSAU	7	40	836.0	369.0	30184	481	27045	431	0.0	0.0	97.2
WI	WAUSAU	9	29	669.8	369.0	32021	491	25727	433	0.0	0.0	99.6
WI	WAUSAU	20	24	50.0	300.0	17800	354	17796	354	1.5	0.7	99.8
WEST VIRGINIA												
WV	BLUEFIELD	6	46	1000.0	372.0	24174	682	24693	690	0.0	0.0	93.3
WV	BLUEFIELD	40	14	50.0	387.0	15497	461	12482	337	0.1	0.1	100.0
WV	CHARLESTON	8	41	388.5	372.0	26064	929	24529	889	0.0	0.0	99.7
WV	CHARLESTON	11	19	71.4	525.0	22981	846	20575	785	0.0	0.0	100.0
WV	CHARLESTON	29	39	50.0	212.0	11145	513	10379	426	0.5	0.3	100.0
WV	CLARKSBURG	12	52	1000.0	262.0	23066	589	21524	531	0.1	0.0	99.8
WV	CLARKSBURG	46	28	50.0	244.0	8517	286	7660	251	3.9	2.7	100.0
WV	GRANDVIEW	9	53	1000.0	305.0	23498	599	22111	545	0.0	0.0	97.1
WV	HUNTINGTON	3	23	444.5	388.0	30090	1068	27305	998	0.1	0.0	99.6
WV	HUNTINGTON	13	54	430.9	387.0	26782	983	25164	948	6.3	4.5	100.0
WV	HUNTINGTON	33	34	63.1	379.0	16652	735	16434	723	1.4	0.4	99.5
WV	LEWISBURG	59	48	50.0	568.0	13201	308	12445	283	0.2	0.0	100.0
WV	MARTINSBURG	60	12	3.2	312.0	11165	503	9860	476	0.1	0.0	99.7
WV	MORGANTOWN	24	33	145.4	457.0	19594	1297	19799	1254	2.5	7.5	96.5
WV	OAK HILL	4	50	1000.0	226.0	22396	568	22416	539	0.0	0.0	91.3
WV	PARKERSBURG	15	49	50.0	189.0	9484	281	9187	271	6.7	7.7	100.0
WV	WESTON	5	58	1000.0	268.0	27279	561	25870	516	0.0	0.0	96.2
WV	WHEELING	7	32	996.9	293.0	25185	2292	23153	2013	0.0	0.0	98.6
WYOMING												
WY	CASPER	2	17	1000.0	610.0	44057	80	45716	79	0.0	0.0	94.3
WY	CASPER	14	15	54.7	573.0	24755	65	23799	65	0.2	0.0	99.8
WY	CASPER	20	18	50.0	582.0	9746	63	9090	63	3.7	0.0	95.5
WY	CHEYENNE	5	30	1000.0	189.0	22470	345	22768	359	0.0	0.0	93.7
WY	CHEYENNE	27	28	173.0	232.0	13238	331	13110	329	0.1	0.0	99.6
WY	CHEYENNE	33	11	3.2	148.0	4174	71	3913	71	4.2	0.1	100.0
WY	JACKSON	2	14	50.0	304.0	4438	11	4626	11	1.2	0.0	95.7
WY	LANDER	4	8	60.0	463.0	36374	33	37280	33	0.0	0.0	96.7
WY	LANDER	5	7	31.7	82.0	15722	31	19486	32	0.0	0.0	80.7
WY	RAWLINS	11	9	3.2	70.0	2330	10	2097	10	0.0	0.0	100.0
WY	RIVERTON	10	16	274.5	526.0	26376	48	25118	47	0.0	0.0	99.4
WY	ROCK SPRINGS	13	21	393.4	495.0	33285	45	30589	45	0.0	0.0	100.0
WY	SHERIDAN	12	21	1000.0	372.0	27652	37	27424	37	0.0	0.0	97.5
GUAM												
GU	AGANA	8	2	1.0	305.0	Clear channels; no interference evaluation performed						
GU	AGANA	10	4	3.2	304.0	Clear channels; no interference evaluation performed						
GU	AGANA	12	5	3.2	61.0	Clear channels; no interference evaluation performed						
GU	TAMUNING	14	17	50.0	33.0	Clear channels; no interference evaluation performed						
PUERTO RICO												
PR	AGUADA	50	62	50.0	343.0	19152	-	13149	-	9.8	-	100.0
PR	AGUADILLA	12	69	691.8	665.0	46001	-	38301	-	0.0	-	100.0
PR	AGUADILLA	32	34	50.0	296.0	15358	-	4652	-	65.4	-	98.8
PR	AGUADILLA	44	17	50.0	372.0	20575	-	13040	-	5.0	-	100.0
PR	ARECIBO	54	53	50.0	600.0	27756	-	26609	-	11.4	-	99.3
PR	ARECIBO	60	61	55.0	242.0	15529	-	15203	-	0.0	-	100.0
PR	BAYAMON	36	59	50.0	329.0	18547	-	4283	-	14.9	-	100.0
PR	CAGUAS	11	56	707.9	355.0	31007	-	21824	-	0.0	-	100.0
PR	CAGUAS	58	57	50.0	329.0	18628	-	8316	-	13.2	-	100.0
PR	CAROLINA	52	51	50.0	585.0	26949	-	21606	-	3.7	-	99.5
PR	FAJARDO	13	33	281.8	863.0	45149	-	32793	-	0.0	-	100.0
PR	FAJARDO	40	16	50.0	839.0	30510	-	28981	-	3.6	-	96.7
PR	GUAYAMA	46	45	50.0	642.0	28750	-	27956	-	5.5	-	99.1
PR	HUMACAO	68	49	50.0	594.0	27390	-	13282	-	3.6	-	100.0
PR	MAYAGUEZ	3	35	1000.0	691.0	49598	-	40712	-	0.0	-	94.8
PR	MAYAGUEZ	5	29	1000.0	610.0	45004	-	44597	-	0.0	-	91.1
PR	MAYAGUEZ	16	63	50.0	347.0	19379	-	11527	-	41.7	-	100.0
PR	MAYAGUEZ	22	23	50.0	620.0	28506	-	27691	-	0.0	-	99.9
PR	NARANJITO	64	65	50.0	142.0	11499	-	10359	-	6.4	-	94.0
PR	PONCE	7	66	407.4	826.0	46962	-	46824	-	0.0	-	100.0
PR	PONCE	9	43	380.2	857.0	44518	-	45819	-	0.0	-	96.8
PR	PONCE	14	15	50.0	861.0	33311	-	30272	-	1.1	-	99.9
PR	PONCE	20	19	50.0	259.0	15818	-	7812	-	17.5	-	100.0
PR	PONCE	26	25	50.0	302.0	17367	-	12274	-	9.6	-	100.0
PR	PONCE	48	47	50.0	247.0	15454	-	7081	-	5.9	-	100.0
PR	SAN JUAN	2	28	871.0	861.0	53035	-	46686	-	0.0	-	100.0
PR	SAN JUAN	4	27	851.1	873.0	53006	-	41839	-	0.0	-	96.8
PR	SAN JUAN	6	55	977.2	825.0	54314	-	41882	-	0.0	-	99.9
PR	SAN JUAN	18	32	50.0	848.0	33066	-	22841	-	0.9	-	100.0
PR	SAN JUAN	24	21	50.0	581.0	27602	-	21905	-	1.1	-	100.0
PR	SAN JUAN	30	31	75.9	287.0	17985	-	17932	-	3.8	-	100.0
PR	SAN SEBASTIAN	38	39	50.0	332.0	18642	-	8720	-	6.0	-	100.0
PR	YAUCO	42	41	50.0	852.0	33204	-	31628	-	0.8	-	100.0
VIRGIN ISLANDS												
VI	CHARLOTTE AMALI	10	50	776.2	558.0	41952	-	39160	-	0.0	-	100.0
VI	CHARLOTTE AMALI	12	44	50.0	451.0	22957	-	15899	-	0.0	-	100.0
VI	CHARLOTTE AMALI	17	48	50.0	429.0	22404	-	10386	-	0.1	-	100.0
VI	CHRISTIANSTED	8	20	501.2	292.0	25457	-	24907	-	0.0	-	100.0
VI	CHRISTIANSTED	27	5	1.0	121.0	14403	-	3162	-	94.1	-	100.0

COMING MAY/JUNE 1998

AN IN-DEPTH LOOK AT THE POWER PLAYERS SHAPING DIGITAL TV

DigitalTelevision is the premiere publication dedicated to the digital field. In our May/June 1998 issue, we offer this opportunity to present your company to the broadcasting, cable, satellite and post-production industries. Our May/June issue of Digital Television will include a special section entitled, "Corporate Profiles". This will be a comprehensive reference on who's doing what in the digital TV industry. Our corporate profile will be a must-read issue.

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Technology For The Digital Age

Zeros and Ones

Commentary from the Editors of Digital Television

The one world of digital

If there is a consensus among technologists everywhere, it is that the digital dimension will change television in ways beyond present imagining. Take, for example, this contemporary commentary:

> *"It may be 10 years or so before the fully fledged digital age comes to pass. But the process has already begun, and is advancing rapidly.*
>
> *"In a few months time, digital broadcasting begins—first via satellite. The first digital televisions will soon be connected, via telecom lines, to the emerging magic of the Internet and to online services tailored for television. The desktop PC can already receive reasonable sound and rudimentary moving pictures via the Internet. The next generation of Microsoft Windows will turn the PC into a high quality TV receiver. The workplace will be an important media opportunity.*
>
> *"Television will become more mobile. Robust digital transmission will be readily receivable on small portable screens. Some you will fold up and put in your pocket.*
>
> *"In the home, in a few years' time, you will have a large, flat, widescreen display bringing brilliantly coloured, luminescent and sharp pictures and CD quality sound. With DVD—Digital Versatile Disc—a near cinema-quality playback machine will replace your current VCR."*

We cite this speaker for two reasons: to remind the technologists within our reach of how wide is their opportunity, and how high is up in this new environment, but also to remind that the United States is not alone on this new frontier. The preceding observations originated with John Birt, director general of the BBC, who was alerting his colleagues to the challenges of digital television. As he remarked, the globalization of culture will both enrich and threaten national diversity. But, even more importantly, digits will end the scarcity in media opportunity that until now has shaped national policy toward television and radio.

It will be more than a brave new world. It will be a complicated one, requiring skills not necessarily transferable from the analog environment. Add this to the challenges facing today's chief television technologists: the demand for training and recruitment. The first convergence in the digital media may be through the next generation of talent in the nation's broadcast centers and headends.

Cable's coming

As difficult as the transition to digital will be for broadcast television, it will be even more difficult for cable. That medium is hampered by having to build its technology one home at a time, while broadcasters can leap continents in a single bound. (The public, of course, has to cooperate in building the medium one home at a time.) Right now cable is stuck in its first generation of digital boxes, designed not for maximizing the quality of pictures but their numbers. Happily, an HDTV-ready second generation is on its way.

Nonetheless, forward thinkers in that medium also have their eyes on digital, and on high definition. Two major cable networks—Discovery and HBO— will have high-definition services on satellite by the time terrestrial broadcasters are ready to loose their own miracles. Other cable networks—especially the movie services—will surely follow.

As we always say, the engineers come first. Cable's are no less busy.

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