SuperNTSC FOR SUPER CABLE

-abstract-

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Cable television executives are currently examining a variety of proposed options for improving the television images delivered by their systems to the cable subscriber in his home. This effort has been catalyzed by the plethora of new TV systems being proposed by others as the solutions to the problem of high definition television in the future.

Such systems as the NHK-developed HDTV system employing 1125 lines, the NYIT-augmented channel system, the Fukinuki EDTV system, the Del Ray pixellized NTSC, the GE/RCA ACTV system, and event the S-VHS dual channel Y-C system have been discussed as potentials for an improved cable TV delivery method.

The authors of this paper will describe a system that retains full compatibility with the existing NTSC receivers in nearly 50 million cable TV households. While providing stepped improvements in picture quality to existing sets, as this SuperNTSC system lays the ground work for very improved NTSC images that would take advantage of newer TV sets built with bi-dimensional comb filter decoders, and line doubling frame stores. The results, which have already been demonstrated experimentally, emulate the performance of an HDTV system, without imposing the burden of extra bandwidth and significant added cost.

SuperNTSC can fit into a cable company's present operations by the addition of a more advanced NTSC encoding process than what is currently being used, and greater care in the handling of component or composite signals at the headend. Once a "clean" NTSC signal is sent down the cable, current viewers will notice some improvements on their present NTSC receivers, the improvement being commensurate with the type of receiver they own.

Future receivers with precision, dual delay line decoders and a line-doubling frame store will display a 1050 line image in which the scanning lines are invisible, and in which the subjective horizontal and vertical resolutions are improved.

The net result of this system is that everyone benefits, and cable TV images will compete favorably from an image quality standpoint with improved VCR or video disk systems, or even with other more expensive HDTV systems via DBS or augmented channels. SuperNTSC is a combination of a variety of present technologies that can be applied to the NTSC system to bring it to its full potential as a high quality television service, while still retaining full reverse compatibility with the huge number of cable TV receivers already in use.

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