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Faroudja

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(54) **INTERLACED VIDEO PRE-PROCESSOR**

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H04N 7/01 (2006.01)

(52) **U.S. Cl.**
USPC **348/446; 348/452; 348/459**

(58) **Field of Classification Search**

USPC 348/446, 441, 451, 452, 448, 458, 348/459

IPC H04N 7/01, 11/20
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,108,041 A * 8/2000 Faroudja et al. 348/446

* cited by examiner

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(57) **ABSTRACT**

Methods and systems for pre-processing a progressive scan signal comprise: receiving by a processor thea progressive scan signal; detecting an amount of vertical motion present in the progressive scan signal; low pass filtering the progressive scan signal in a vertical domain as a function of the amount of vertical motion present to generate a pre-filtered progressive signal; and interlacing the pre-filtered progressive signal to generate an interlaced signal having a minimal amount of artifacts.

27 Claims, 8 Drawing Sheets

