

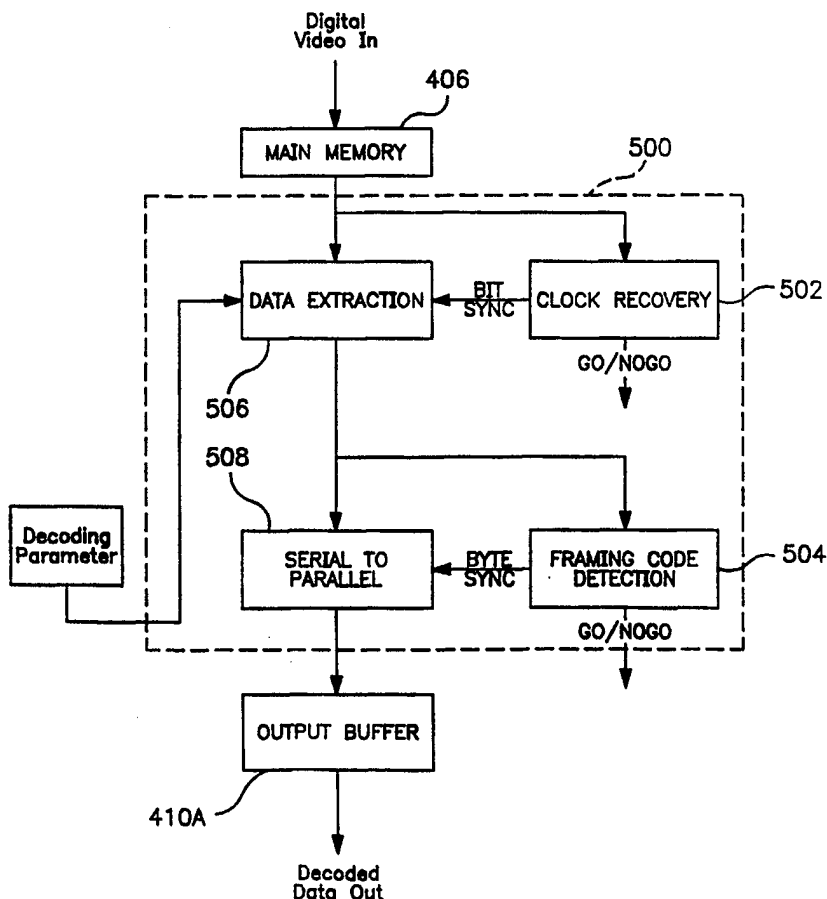


## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification</b> <sup>6</sup> : H04H 7/087, H04N 7/08, G06F 17/30, 3/14 H04N 7/56, 7/64, 5/04, H04L 7/02, H04N 5/18, 7/025, 5/262, 5/272, 5/278, H04J 3/06, H04B 11/16, 1/16	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 98/51069</b>  <b>(43) International Publication Date:</b> 12 November 1998 (12.11.98)
<b>(21) International Application Number:</b> PCT/US98/09172  <b>(22) International Filing Date:</b> 5 May 1998 (05.05.98)  <b>(30) Priority Data:</b> 08/841,794      5 May 1997 (05.05.97)      US  <b>(71) Applicant</b> ( <i>for all designated States except US</i> ): WAVEPHORE, INC. [US/US]; 3311 N. 44th Street, Phoenix, AZ 85018 (US).  <b>(72) Inventor; and</b> <b>(75) Inventor/Applicant</b> ( <i>for US only</i> ): GAUDREAU, Jean, Etienne [CA/US]; Apartment #2059, 2700 N. Hayden Road, Scotts- dale, AZ 85257 (US).  <b>(74) Agent:</b> NOBLITT, Daniel, J.; Snell & Wilmer, One Arizona Center, 400 E. Van Buren Street, Phoenix, AZ 85004-0001 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>  <b>(88) Date of publication of the international search report:</b> 18 March 1999 (18.03.99)

**(54) Title:** METHOD AND SYSTEM FOR DECODING DATA IN A SIGNAL**(57) Abstract**

A decoding system (Fig. 4, 106) for extracting digital teletext and closed caption data from a video signal comprises a software implementation executed on a processor (Fig. 4, 408) which includes both a closed caption module (Fig. 5) and a teletext module (Fig. 8). The decoder system calls the closed caption module to detect a clock synchronization signal (Fig. 5, 502). Upon finding such signal, the closed caption module synchronizes to the signal (Fig. 5, 506), identifies a framing code (Fig. 5, 504), and extracts the closed caption data (Fig. 5, 506). Similarly, the decoder system may call the teletext module for the teletext lines, which also synchronizes using a teletext clock synchronization signal. When the clock synchronization signal is detected (Fig. 8, 802), the teletext module interpolates the incoming data to reconstruct the data signal (Fig. 8, 804). The data signal is then processed to normalize the amplitude (Fig. 8, 806) and reduce the "ghost" effects of signal echoes (Fig. 8, 808) prior to the slicing of the data signal (Fig. 8, 812). Hamming code error detection may be used to ensure the accuracy of the data (Fig. 8, 814).



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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/09172

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(6) : Please See Extra Sheet.

US CL : Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : Please See Extra Sheet.

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,589,886 (EZAKI) 31 DEC. 1996, ABSTRACT 23RD PARAGRAPH OF SUMMARY	1, 44
X	US 5,555,025 (MCARTHUR) 10 SEP. 1996, 6TH PARAGRAPH OF SUMMARY 15TH PARAGRAPH OF DETAILED DESCRIPTION	1, 44
X	US 4,725,886 (GALUMBECK ET AL) 16 FEB. 1988, 22ND PARAGRAPH OF DETAILED DESCRIPTION	1, 44
Y	US 5,666,548 (GRIMM ET AL) 9 SEP. 1997, ABSTRACT, 2ND PARAGRAPH OF SUMMARY, 49TH PARAGRAPH OF DETAILED DESCRIPTION	1-9, 45-50, 83-86, 89-91, 123, 128-133



Further documents are listed in the continuation of Box C.



See patent family annex.

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/09172

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,483,292 (Ko) 9 Jan. 1996, 4th, 10th 18th, 20th, 22nd, 23rd, 24th, 25th, 31st, 37th, 38th paragraph of detailed description	1-9, 45-50, 83-86, 89-91, 123, 128-133
Y	US 4,794,626 (Tanabe) 27 Dec. 1988, 4th paragraph of detailed description	1-9, 45-50, 83-86, 89-91, 123, 128-133
Y	US 5,666,548 (Grimm et al) 9 Sep. 1997, 10th paragraph of detailed description	10-17, 51-56, 92-98, 126-127
Y	US 5,506,626 (Yagi et al) 9 Apr. 1996, abstract, 11th paragraph of summary, 21st, 42nd, 50th, 61st paragraph of detailed description	10-17, 51-56, 92-98, 126-127
Y	US 4,673,979 (Kobo et al) 16 Jun. 1987, 33rd paragraph of detailed description	10-17, 51-56, 92-98, 126-127
Y	US 5,715,011 (Bramwell) 3 Feb. 1998, 5th paragraph of detailed description	22, 61, 103
Y	US 5,561,469 (Schultz) 1 Oct. 1996, abstract, 11th paragraph of detailed description	22, 61, 103
Y	US 5,517,249 (Rodriguez-Cavazos et al) 14 May 1996, abstract, 14th paragraph of summary	22, 61, 103
Y	US 5,301,023 (Zato) 5 Apr. 1994, 7th paragraph of summary	24-28, 63-67, 105-109
Y	US 4,719,510 (Kinghorn) 12 Jan. 1988, 10th paragraph of detailed description	24-28, 63-67, 105-109
Y	US 4,380,027 (Leventer) 12 Apr. 1983, 88th paragraph of detailed description	24-28, 63-67, 105-109
Y	US 5,483,292 (Ko) 9 Jan. 1996, 14th paragraph of summary, 14th detailed description	28-37, 68-76, 110-118
Y	US 4,434,438 (Rzeszewski) 28 Feb. 1984, abstract, 3rd to 7th, 10th to 19th paragraph of summary, 2nd, 3rd, 6th, 7th, 12th, 20th, 21st, 28th, 29th paragraph of detailed description, claims 5-9	28-37, 68-76, 110-118
Y	US 4,424,533 (Rzeszewski) 3 Jan. 1984, abstract 2nd to 7th, 10th to 18th paragraph of summary, 2nd, 3rd, 6th, 8th, 13th, 21st to 25th, 27th, 28th, 32nd, 36th paragraph of detailed description, 1 claims 1, 2, 4, 5, 22, and 23	28-37, 68-76, 110-118

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/09172

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,654,763 (Bruckner et al) 5 Aug. 1997, 4th paragraph of summary, 6th, 8th, 10th, and 12th paragraph of detailed description	38-40, 77-79, 119-121
Y	US 5,627,593 (Eitz) 6 May 1997, 4th paragraph of summary	38-40, 77-79, 119-121
Y	US 5,278,845 (Reintjes, et al) 11 Jan. 1994, 4th paragraph of summary	38-40, 77-79, 119-121
Y	US 5,543,850 (Pratt) 6 Aug. 1996, 5th paragraph of detailed description	87
Y	US 5,212,551 (Conanan) 18 May 1993, 4th paragraph of detailed description	87
Y	US 5,666,548 (Grimm et al) 9 Sep. 1997, 43rd paragraph of detailed description	88
Y	US 5,530,655 (Lokhoff et al) 25 Jun. 1996, 113rd paragraph of detailed description	88
Y	US 5,483,292 (Ko) 9 Jan. 1996, 6th and 32nd paragraph of detailed description	88

INTERNATIONAL SEARCH REPORT

International application No.  
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A. CLASSIFICATION OF SUBJECT MATTER:

IPC (6):

H04H 7/087; H04N 7/08; G06F 17/30; G06F 3/14; H04N 7/56; H04N 7/64; H04N 5/04; H04L 7/02; H04N 5/18;  
H04N 7/025; H04N 5/262; H04N 5/272; H04N 5/278; H04J 3/06; H04B 11/16; H04B 1/16

A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

348/465, 348/461, 348/478, 348/465, 380/5; 707/100; 395/800.01, 348/537; 375/368; 348/691; 348/589, 3348/478;  
380/10; 370/513; 455/186.1; 348/468, 348/464, 348/476

B. FIELDS SEARCHED

Minimum documentation searched

Classification System: U.S.

348/465, 348/461, 348/478, 348/465, 380/5; 707/100; 395/800.01, 348/537; 375/368; 348/691; 348/589, 3348/478;  
380/10; 370/513; 455/186.1; 348/468, 348/464, 348/476