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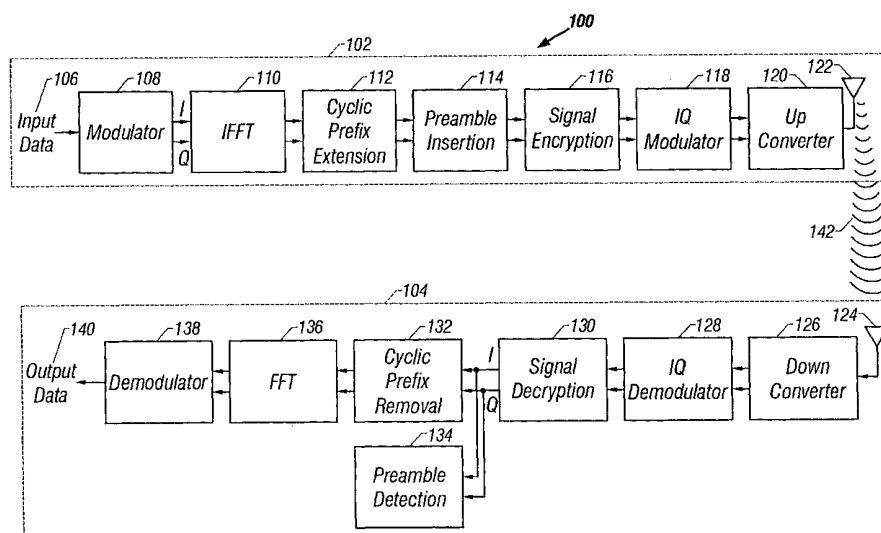
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(54) Title: TRANSMISSION SECURITY FOR WIRELESS COMMUNICATIONS



(57) Abstract: A method of transmission level security, and a corresponding transmission security system, the method consists of the steps of: forming (108) a plurality of digital signals representing a symbol (210) to be transmitted over a communication medium (142), wherein respective ones of the plurality of digital signals are modulated onto respective ones of a plurality of subcarriers (304, 306, 308) according to a multiple carrier modulation scheme; and introducing (116, 1204, 1206) a group delay distortion in one or more of the plurality of subcarriers (304, 306, 308), wherein a peak-to-peak variation of the group delay distortion is greater than a guard time interval (212) corresponding to the symbol (210), such that portions of the one or more of the plurality of subcarriers (304, 306, 308) will be received outside of a time window (302) corresponding to the symbol (210) at a receiver (104).



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/47183

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H 04 J 11/00; H 04 M 1/66; H 04 K 1/00
US CL : 370/203; 455/410; 380/270

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. : 370/203; 455/410; 380/270; 708/400

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US-5,357,502 A (CASTELIAN et al) 18 October 1994 (18.10.1994), Figure 4; column 6, lines 63-67; column 7; lines 1-9	1,10,21,25,30,41,45
Y	US 5,930,231 A (MILLER et al) 27 July 1999 (27.07.1999), Figures 18-19; column 41-45 focus on column 45, lines 30-35	1-45
Y,E	US 6,363,107 B1 (SCOTT) 26 March 2002 (26.03.2002), Figures 5,18; column 7; column 9 lines 28-36; column 18, lines 1-13	5,6,20,24
Y	US 5,901,180 A (ASLANIS et al) 04 May 1999 (04.05.1999), Background	1,10,21,25,30,41,45
Y	US 5,889,759 A (MCGIBNEY) 30 March 1999 (30.03.1999), Background,	1,10,21,25,30,41,45
Y	US 6,128,276 A (AGEE) 03 October 2000 (03.10.2000), Figure 17-20; column 29, lines 14-29	1,10,21,25,30,41,45
Y	US 6,074,086 A (YONGE, III) 13 June 2000 (13.06.2000), Figure 4; column 5, lines 37-52	1,10,21,25,30,41,45
Y	US 5,991,289 A (HUANG et al) 23 November 1999 (23.11.1999), Figure 1 ;Background ;column 3 lines 8-26	1,10,21,25,30,41,45
Y,P	US 6,175,551 B1 (AWATER et al) 16 January 2001 (16.01.2001), column 5, lines 1-10	26,28,37,42,44,45



Further documents are listed in the continuation of Box C.



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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MUSCHALLIK, CLAUS, et al. Improving an OFDM Reception using an Adaptive Nyquist Windowing. June 10, 1996. IEEE	1,10,21,25,30,41,45
Y	MULLER-WEINFURTNER, et al. Optimum Nyquist Windowing for Improved OFDM Receivers. Global Telecommunications Conference, 2000. GLOBECOM '00. IEEE, Volume: 2, 2000 Page(s):7111-7115 vol. 2	1,10,21,25,30,41,45
A	SOLLENBERGER, N.R., et al. Receiver Structures for Multiple Access OFDM. Vehicular Technology Conference, 1999 IEEE 49th, Volume 1, 1999 Page(s): 468-472 vol. 1	1-45
A	STANTCHEV, B., et al. Time-variant Distortions in OFDM. IEEE Communications Letters, Volume 4 Issue 10, October 2000 Page(s): 312-314	1-45

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/47183

Continuation of B. FIELDS SEARCHED Item 3:

IEEE database (ODFM, guard, delay; ODFM, window)

EAST (symbol, delay, guard, time, window)