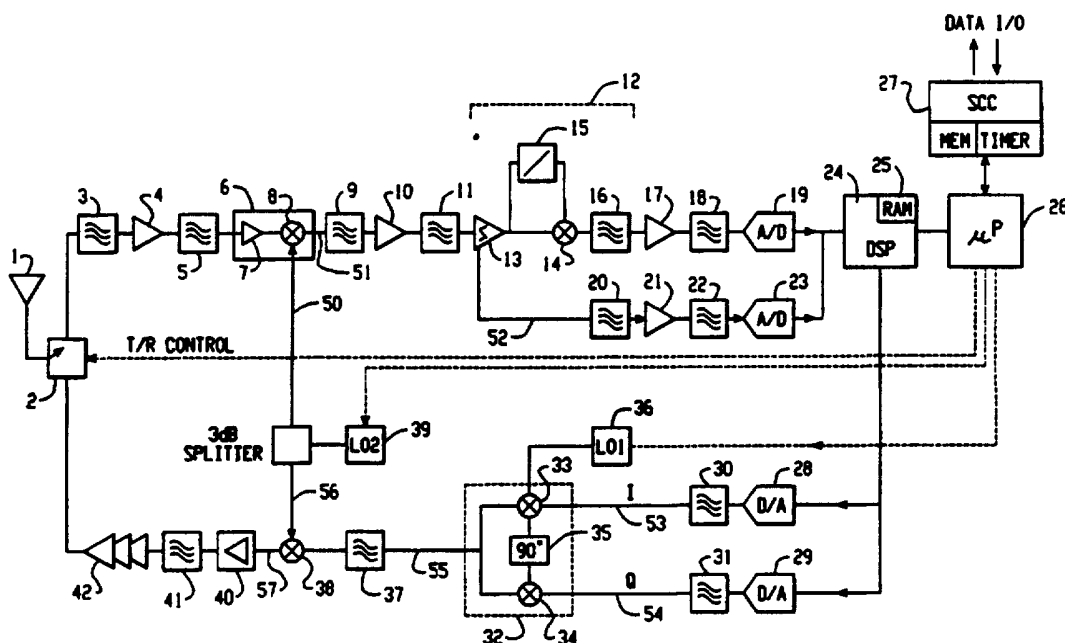


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H04B 1/20, H04L 12/28	A3	(11) International Publication Number: WO 96/15594 (43) International Publication Date: 23 May 1996 (23.05.96)
(21) International Application Number: PCT/CA95/00648 (22) International Filing Date: 14 November 1995 (14.11.95) (30) Priority Data: 08/337,841 14 November 1994 (14.11.94) US 08,488,695 8 June 1995 (08.06.95) US (71) Applicant: RESEARCH IN MOTION LIMITED [CA/CA]; 295 Phillip Street, Waterloo, Ontario N2L 3W8 (CA). (72) Inventors: TAYLOR, Bryan; Unit 61, 279 Bluevale Street No., Waterloo, Ontario N2J 4L8 (CA). LAZARIDIS, Mihal; 272 Northcrest Place, Waterloo, Ontario N2J 3X5 (CA). EDMONSON, Peter; 138 Stonechurch Road E., Hamilton, Ontario L9B 1A9 (CA). JARMUSZEWSKI, Perry; 31 Hood Street, Guelph, Ontario N1E 5W4 (CA). ZHU, Lizhong; Apartment #1, 13 High Street, Waterloo, Ontario N2L 3X4 (CA). CARKNER, Steven; 504 B Lonelm Court, Waterloo, Ontario N2L 5E1 (CA). WANDEL, Matthias; 203 Dawson Street, Waterloo, Ontario N2L 1S3 (CA). LITTLE, Herb, A.; 523A Rosemeadow Crescent, Waterloo, Ontario N2T 1Z9 (CA).		(74) Agent: PARSONS, Richard, A., R.; Ridout & Maybee, Suite 2300, Richmond-Adelaide Centre, 101 Richmond Street West, Toronto, Ontario M5H 2J7 (CA). (81) Designated States: AU, BR, CA, CZ, FI, HU, JP, KP, KR, MX, NO, PL, RO, RU, SG, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 11 July 1996 (11.07.96)

(54) Title: WIRELESS RADIO MODEM WITH MINIMAL INTERDEVICE RF INTERFERENCE



(57) Abstract

A wireless radio modem that may be incorporated into a host system or connected through a PCMCIA or similar port to a host system includes radio frequency modulation/demodulation circuitry employing electronic device elements that operate in a frequency range that minimizes the RF interference between the radio modem and the host system. Radio modem power conservation is maximized by 1) simplifying signal modulation processing by use of a two-point waveform transition table, thereby reducing processing requirements; and 2) incorporating a "sleep mode" feature in which all non-timer circuitry is powered-down when not in use.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 95/00648

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 H04B1/20 H04L12/28

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)
IPC 6 H04L H04B

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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP,A,0 416 423 (TELENOKIA) 13 March 1991 see abstract see column 1, line 6 - line 21 see column 1, line 48 - line 53 see column 2, line 5 - line 15 ---	1-23
A	EP,A,0 599 632 (COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION) 1 June 1994 see abstract see column 2, line 41 - line 58 see column 8, line 11 - line 22 --- -/--	1-23

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- *&* document member of the same patent family

Date of the actual completion of the international search

9 May 1996

Date of mailing of the international search report

15.05.96

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INTERNATIONAL SEARCH REPORT

Inter. Application No.
PCT/CA 95/00648

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ELECTRONIC DESIGN, vol. 41, no. 16, 5 August 1993, pages 45-50, XP002002684 LEONARD : "PCMCIA-sized radio links portable Wlan terminals" see figure 2 ---	1-23
A	US,A,5 230 094 (KITCHING & MITTEL) 20 July 1993 see abstract ---	1-23
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X	EP,A,0 584 872 (PHILIPS ELECTRONICS UK LTD ;PHILIPS) 2 March 1994 see figure 5 see page 5, line 55 - page 6, line 8 ---	24
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X,P	EP,A,0 631 398 (MATSUSHITA) 28 December 1994 see page 1, line 16 - line 18 see page 5, line 55 - page 6, line 23 -----	24

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CA95/00648

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. claims 1-23: radio modem specifically designed for use in, or close to the housing of a personal computer or other data processing device
2. claim 24: generation of shaped baseband pulses for a GMSK modulator

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 95/00648

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