



US008023580B2

(12) **United States Patent**  
**Bremer**

(10) **Patent No.:** **US 8,023,580 B2**  
(45) **Date of Patent:** **Sep. 20, 2011**

(54) **SYSTEM AND METHOD OF COMMUNICATION USING AT LEAST TWO MODULATION METHODS**

(76) Inventor: **Gordon F. Bremer**, Clearwater, FL (US)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **12/543,910**

(22) Filed: **Aug. 19, 2009**

(65) **Prior Publication Data**

US 2010/0183055 A1 Jul. 22, 2010

**Related U.S. Application Data**

(63) Continuation of application No. 11/774,803, filed on Jul. 9, 2007, now Pat. No. 7,675,965, which is a continuation of application No. 10/412,878, filed on Apr. 14, 2003, now Pat. No. 7,248,626, which is a continuation-in-part of application No. 09/205,205, filed on Dec. 4, 1998, now Pat. No. 6,614,838.

(60) Provisional application No. 60/067,562, filed on Dec. 5, 1997.

(51) **Int. Cl.**  
**H04L 5/12** (2006.01)

(52) **U.S. Cl.** ..... **375/261**; 455/102; 332/108; 332/119; 332/151

(58) **Field of Classification Search** ..... **375/261**, 375/269, 285, 222, 298, 302, 305, 308; 455/102, 455/110; 332/108, 119, 120, 151  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

3,736,528 A 5/1973 Acker et al.  
3,761,840 A 9/1973 Bremer  
3,970,926 A 7/1976 Rigby et al.

4,091,422 A 5/1978 Amster  
4,335,464 A 6/1982 Armstrong et al.  
4,381,546 A 4/1983 Armstrong  
4,464,767 A 8/1984 Bremer  
4,503,545 A 3/1985 Bremer et al.  
4,509,171 A 4/1985 Bremer et al.  
4,516,216 A 5/1985 Armstrong  
4,525,846 A 6/1985 Bremer et al.  
4,525,847 A 6/1985 Bremer  
4,532,640 A 7/1985 Bremer et al.  
4,630,286 A 12/1986 Betts  
4,645,871 A 2/1987 Bremer et al.  
4,654,807 A 3/1987 Bremer  
4,663,766 A 5/1987 Bremer  
4,677,625 A 6/1987 Betts et al.  
4,782,498 A 11/1988 Copeland, III

(Continued)

**OTHER PUBLICATIONS**

“Conelrad Emergency Radio Notification System Born in 1951”, www.modestoradiomuseum.org, Accessed on Dec. 5, 2010, 2 pages.

(Continued)

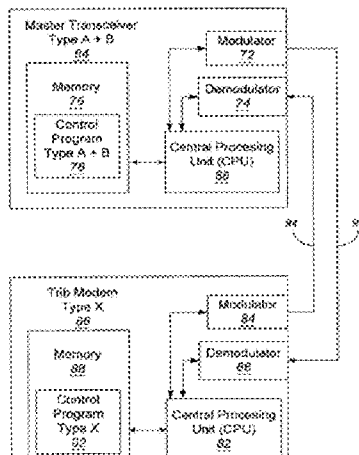
*Primary Examiner* — Dac Ha

(74) *Attorney, Agent, or Firm* — Condo Roccia LLP

(57) **ABSTRACT**

A device may be capable of communicating using at least two type types of modulation methods. The device may include a transceiver capable of acting as a master according to a master/slave relationship in which communication from a slave to a master occurs in response to communication from the master to the slave. The master transceiver may send transmissions discrete transmissions structured with a first portion and a payload portion. Information in the first portion may be modulated according to a first modulation method and indicate an impending change to a second modulation method, which is used for transmitting the payload portion. The discrete transmissions may be addressed for an intended destination of the payload portion.

**79 Claims, 8 Drawing Sheets**



U.S. PATENT DOCUMENTS		
4,811,357	A	3/1989 Betts et al.
4,862,464	A	8/1989 Betts et al.
4,924,516	A	5/1990 Bremer et al.
4,926,448	A	5/1990 Kraul et al.
4,939,748	A	7/1990 Betts et al.
5,008,903	A	4/1991 Betts et al.
5,050,536	A	9/1991 Baker
5,081,647	A	1/1992 Bremer
5,099,478	A	3/1992 Bremer et al.
5,168,535	A	12/1992 Laor
5,206,854	A	4/1993 Betts et al.
5,230,010	A	7/1993 Betts et al.
5,239,306	A	8/1993 Siwiak et al.
5,239,607	A	8/1993 Da Silva et al.
5,251,236	A	10/1993 Brehmer et al.
5,251,328	A	10/1993 Shaw
5,257,396	A	10/1993 Auld, Jr. et al.
5,280,503	A	1/1994 Betts et al.
5,311,557	A	5/1994 Betts et al.
5,311,578	A	5/1994 Bremer et al.
5,345,332	A	9/1994 Da Silva et al.
5,355,362	A	10/1994 Gorshe et al.
5,373,149	A	12/1994 Rasmussen
5,392,154	A	2/1995 Chang et al.
5,412,651	A	5/1995 Gorshe
5,414,540	A	5/1995 Patel et al.
5,436,930	A	7/1995 Bremer et al.
5,444,704	A	8/1995 Henderson et al.
5,448,555	A	9/1995 Bremer et al.
5,473,675	A	12/1995 Chapman et al.
5,475,713	A	12/1995 Bremer et al.
5,506,866	A	4/1996 Bremer et al.
5,513,212	A	4/1996 Bremer
5,513,213	A	4/1996 Patel et al.
5,521,942	A	5/1996 Betts et al.
5,530,718	A	6/1996 Gradeler et al.
5,537,398	A	7/1996 Siwiak
5,537,411	A	7/1996 Plas
5,537,436	A	7/1996 Bottoms et al.
5,540,456	A	7/1996 Meier-Burkamp et al.
5,548,222	A	8/1996 Jensen et al.
5,550,881	A *	8/1996 Sridhar et al. .... 375/377
5,559,791	A	9/1996 Bremer et al.
5,559,792	A	9/1996 Bottoms et al.
5,559,810	A *	9/1996 Gilbert et al. .... 714/704
5,563,883	A	10/1996 Cheng
5,570,295	A	10/1996 Isenberg et al.
5,577,087	A	11/1996 Furuya
5,602,869	A	2/1997 Scott
5,629,992	A	5/1997 Amersfoort
5,642,379	A	6/1997 Bremer et al.
5,651,114	A	7/1997 Davidson, Jr.
5,661,718	A	8/1997 Bremer et al.
5,671,250	A	9/1997 Bremer et al.
5,684,825	A	11/1997 Ko
5,684,834	A	11/1997 Betts et al.
5,711,012	A	1/1998 Bottoms et al.
5,719,922	A	2/1998 Bremer et al.
5,719,923	A	2/1998 Bremer et al.
5,748,811	A	5/1998 Amersfoort et al.
5,764,699	A *	6/1998 Needham et al. .... 375/261
5,793,800	A	8/1998 Jylha et al.
5,805,669	A	9/1998 Bingel et al.
5,805,755	A	9/1998 Amersfoort et al.
5,812,537	A	9/1998 Betts et al.
5,825,517	A	10/1998 Antoniadis et al.
5,828,657	A	10/1998 Betts et al.
5,841,500	A	11/1998 Patel
5,844,944	A	12/1998 Betts et al.
5,859,877	A	1/1999 Betts et al.
5,881,047	A	3/1999 Bremer et al.
5,881,142	A	3/1999 Frankel et al.
5,901,205	A	5/1999 Smith et al.
5,915,003	A	6/1999 Bremer et al.
5,936,949	A	8/1999 Pasternak et al.
5,940,438	A *	8/1999 Poon et al. .... 375/222
5,999,563	A	12/1999 Polley et al.
6,011,814	A	1/2000 Martinez et al.
6,021,158	A	2/2000 Schurr et al.
6,031,897	A	2/2000 Bremer et al.
6,061,392	A	5/2000 Bremer et al.
6,067,297	A	5/2000 Beach
6,072,779	A	6/2000 Tzannes et al.
6,075,512	A	6/2000 Patel et al.
6,097,858	A	8/2000 Laor
6,097,860	A	8/2000 Laor
6,101,299	A	8/2000 Laor
6,108,347	A	8/2000 Holmquist
6,111,936	A	8/2000 Bremer
6,125,148	A *	9/2000 Frodigh et al. .... 375/261
6,134,245	A	10/2000 Scarmalis
6,154,524	A	11/2000 Bremer
6,157,680	A	12/2000 Betts et al.
6,160,790	A	12/2000 Bremer
6,175,436	B1	1/2001 Jackel
6,185,083	B1	2/2001 Mathieu et al.
6,212,227	B1	4/2001 Ko et al.
6,236,481	B1	5/2001 Laor
6,236,717	B1	5/2001 Bremer et al.
6,243,391	B1	6/2001 Holmquist
6,252,644	B1	6/2001 Patel
6,272,108	B1	8/2001 Chapman
6,272,154	B1	8/2001 Bala et al.
6,292,281	B1	9/2001 Bala et al.
6,307,653	B1	10/2001 Bala et al.
6,307,893	B1	10/2001 Bremer et al.
6,307,923	B1	10/2001 Bremer et al.
6,320,879	B1	11/2001 Bremer
6,320,993	B1	11/2001 Laor
6,330,275	B1	12/2001 Bremer
6,335,992	B1	1/2002 Bala et al.
6,347,008	B1	2/2002 Vodhanel
6,348,986	B1	2/2002 Doucet et al.
6,408,056	B1	6/2002 Bremer et al.
6,445,733	B1	9/2002 Zuranski et al.
6,470,110	B1	10/2002 Lin
6,480,645	B1	11/2002 Peale et al.
6,493,475	B1	12/2002 Lin
6,529,652	B1	3/2003 Bremer
6,535,589	B1	3/2003 Nauman et al.
6,546,090	B1	4/2003 Bremer et al.
6,549,692	B1	4/2003 Harel et al.
6,556,540	B1	4/2003 Mawhinney et al.
6,580,709	B1	6/2003 Gorshe et al.
6,580,785	B2	6/2003 Bremer et al.
6,591,029	B1	7/2003 Lin et al.
6,597,827	B1	7/2003 Bremer et al.
6,603,894	B1	8/2003 Pu
6,614,838	B1	9/2003 Bremer
6,628,857	B1	9/2003 Bonadeo et al.
6,631,119	B1	10/2003 Mawhinney et al.
6,633,693	B1	10/2003 Peale et al.
6,647,058	B1	11/2003 Bremer et al.
6,658,096	B2	12/2003 Bremer et al.
6,671,328	B1	12/2003 Poon et al.
6,690,644	B1	2/2004 Gorshe
6,690,849	B1	2/2004 Dadap, Jr. et al.
6,715,124	B1	3/2004 Betts
6,744,883	B1	6/2004 Bingel et al.
6,771,740	B1	8/2004 Bingel
6,775,355	B1	8/2004 Bingel et al.
6,782,094	B1	8/2004 Venz et al.
6,782,096	B1	8/2004 Bremer et al.
6,885,730	B1	4/2005 Bremer
6,922,415	B1	7/2005 Bremer et al.
6,950,444	B1	9/2005 Holmquist et al.
6,970,501	B1	11/2005 Bremer et al.
7,006,445	B1	2/2006 Cole et al.
7,013,421	B2	3/2006 Betts
7,020,266	B2	3/2006 Bremer et al.
7,023,829	B1	4/2006 Holmquist et al.
7,035,380	B1	4/2006 Bingel et al.
7,046,798	B2	5/2006 Betts et al.

7,127,048 B2 10/2006 Bremer et al.  
 7,130,338 B2 10/2006 Bremer et al.  
 7,155,016 B1 12/2006 Betts et al.  
 7,170,867 B2 1/2007 O'Toole et al.  
 7,248,626 B2 7/2007 Bremer  
 7,272,215 B2 9/2007 Bremer et al.  
 7,289,604 B2 10/2007 Bremer  
 7,289,610 B2 10/2007 Bremer et al.  
 7,352,803 B2 4/2008 Bremer et al.  
 7,471,777 B2 12/2008 Bremer et al.  
 7,675,965 B2 3/2010 Bremer  
 7,707,446 B2 4/2010 Bremer et al.  
 7,711,109 B2 5/2010 Betts et al.  
 7,747,000 B2 6/2010 Bremer et al.  
 2001/0022836 A1 9/2001 Bremer et al.  
 2002/0041662 A1 4/2002 Bremer et al.  
 2002/0167949 A1 11/2002 Bremer et al.  
 2003/0039348 A1 2/2003 Bremer et al.  
 2003/0210773 A1 11/2003 Bremer et al.  
 2003/0210779 A1 11/2003 Bremer et al.  
 2004/0013183 A1 1/2004 Bremer  
 2004/0042510 A1 3/2004 Bremer et al.  
 2004/0052361 A1 3/2004 Betts et al.  
 2004/0066929 A1 4/2004 Bremer et al.  
 2004/0081233 A1 4/2004 Bremer et al.  
 2004/0179662 A1 9/2004 Bremer et al.  
 2004/0213170 A1 10/2004 Bremer et al.  
 2004/0258236 A1 12/2004 Bremer et al.  
 2005/0025153 A1 2/2005 Bremer et al.  
 2005/0074057 A1 4/2005 Bremer et al.  
 2005/0147158 A1 7/2005 Bremer et al.  
 2005/0152404 A1 7/2005 Holmquist et al.  
 2005/0163303 A1 7/2005 Bremer  
 2005/0180545 A1 8/2005 Bremer et al.  
 2006/0188088 A1 8/2006 Bingel et al.  
 2006/0193465 A1 8/2006 Betts  
 2006/0195712 A1 8/2006 Bremer et al.  
 2007/0047730 A1 3/2007 Bremer  
 2007/0047733 A1 3/2007 Bremer  
 2007/0286187 A1 12/2007 Bremer  
 2008/0013608 A1 1/2008 Bremer  
 2008/0019432 A1 1/2008 Bremer et al.  
 2009/0111422 A1 4/2009 Bremer  
 2009/0262911 A1 10/2009 Bremer  
 2009/0262912 A1 10/2009 Bremer  
 2010/0183055 A1 7/2010 Bremer  
 2010/0246598 A1 9/2010 Bremer

## OTHER PUBLICATIONS

"Emergency Alert System", Public Safety and Homeland Security Bureau, [www.fcc.gov/pshs/services/eas](http://www.fcc.gov/pshs/services/eas), Accessed on Dec. 5, 2010, 2 pages.

"Specialized Communications Techniques for the Radio Amateur", The American Radio Relay League, Inc., 1975, 1<sup>st</sup> Edition, Chapter 4, 78-83.

"Specialized Communications Techniques for the Radio Amateur", The American Radio Relay League, Inc., 1975, 1<sup>st</sup> Edition, Chapter 5, 99-113.

Bates (Ed.), "Broadband Telecommunications Handbook", McGraw-Hill Publishing, NY, 2000, Chapter 9, 128, 129, 131, 132, 133 and 134.

Benson (Ed.), "Television Engineering Handbook", McGraw-Hill Publishers, NY, 1992, 5 pages, 4.14, 4.15, 4.24, 4.34 and 4.35.

Bluetooth®, "Specification of the Bluetooth System, Master Table of Contents & Compliance Requirements", Specification vol. 0, Nov. 4, 2004, V2.0, 1-1230.

Bluetooth™, "Specification of the Bluetooth System, Core", Dec. 1, 1999, V1.0B, 1-1082.

Bluetooth™M, "Specification of the Bluetooth System, Profiles", Specification vol. 2, Dec. 1, 1999, V1.0B, 1-440.

Chorafas (Ed.), "Telephony: Today and Tomorrow", Prentice-Hall, Inc., NJ, Chapter 15, 1984, 191-197.

Freeman (Ed.), "Telecommunications Systems Engineering: Analog and Digital Network Design", John Wiley and Sons, Inc., NY, 1980, 1 page, 180.

Goodman (Ed.), "Radio Amateur's Handbook", The American Radio Relay League, Inc., CN, 1965, Chapter 10, 291-295.

Green (Ed.), "RTTY Handbook", Tab Books, Chapter 4, 1972, 266-273.

IEEE Information Technology, "Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications", 1997, 1-466.

Jurgen (Ed.), "Digital Consumer Electronics Handbook", McGraw-Hill Publications, NY, 1997, 27.7-27.10.

Kuecken (Ed.), "Talking Computers and Telecommunications", Van Nostrand Reinhold Company, Inc., NY, 1983, 32-36.

Margulies (Ed.), "SCSA Book", Telecom Library, Inc., NJ, Chapter 8, 1993, 250.

Martin (Ed.), "Telecommunications and The Computer", Prentice-Hall, Inc., NJ, 2<sup>nd</sup> Edition, Chapter 21, 1976, 410-423.

Mazda (Ed.), "Electronics Engineer's Reference Book", 5<sup>th</sup> Edition, Butterworth and Company Publishers, London, 1983, 54.5-54.8.

Newton (Ed.), "Newton's Telecom Dictionary", Flatiron Publications, Inc., NY, Apr. 1994, 7<sup>th</sup> Edition, 9, 363, 364, 426, 427, 428, 429 and 430.

Pallott and Miller, "Implementing Message Priority Polices Over an 802.11 Based Mobile Ad Hoc Network", IEEE, Military Communications Conference, 2001, MILCOM 2001, Communications for Network-Centric Operations: Creating the Information Force, Oct. 28-31, 2001, 2, 860-864.

The National Association for Amateur Radio (ARRL), Radioteletype (RTTY), "Basic Principles and Machines", Chapter 2.1, Book or Journal Title Unknown, Date Unknown, pp. 13 and 14.

The National Association for Amateur Radio (ARRL), Radioteletype (RTTY), "Autostart", Chapter 3.4, "references", Chapter 8, Book or Journal Title Unknown, Date Unknown, pp. 107-111, 183, 185, 186 and 187.

Rzeszewski (Ed.), "Color Television", IEEE Press, John Wiley and Sons, Inc, NY, 1983, 3, 8 and 9.

Shrader (Ed.), "Electronic Communication", 1959, McGraw-Hill Publishers, NY, 551-555.

Shrader (Ed.), "Electronic Communication", 1959, McGraw-Hill Publishers, NY, 519.

Third Generation Partnership Project (3GPP)—Technologies Web Page, <http://www.3gpp.org/technologies->, Accessed on Feb. 8, 2011, 2 pages.

Vilips (Ed.), "Data Modem: Selection and Evaluation Guide", Artech House, Inc, MA, Section 1, 1972, 3 pages.

Wilson et al (Ed.), "The ARRL Handbook for Radio Communications", 64<sup>th</sup> Edition, The American Radio Relay League, Inc., Chapter 19, 1986, 19-9-19-13.

Wilson et al. (Ed.), "The ARRL Handbook for Radio Communications", 85<sup>th</sup> Edition, The American Radio Relay League, Chapter 9, 2008, 9.32, 9.33 and 9.34.

Wilson et al. (Ed.), "The ARRL Handbook for Radio Communications", 64<sup>th</sup> Edition, The American Radio Relay League Inc., Chapter 14, 1986, 14-13 and 14-14.

International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminal Equipments and Protocols for Telematic Services, "Procedures for Document Facsimile Transmission in the General Switched Telephone Network", ITU-T Recommendation T.30, Jul. 1996, 176 pages.

International Telecommunications Union, The International Telegraph and Telephone Consultative Committee (CCITT), Data Communication Over The Telephone Network, "A 2-Wire Modem for Facsimile Applications with Rates Up to 14 400 bit/s", Recommendation V.17, Feb. 1991, 13 pages.

International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminal Equipments and Protocols for Telematic Services, "Standardization of Group 3 Facsimile Terminals for Document Transmission", ITU-T Recommendation T.4, Jul. 1996, 60 pages.

Services, "Standardization of Group 3 Facsimile Terminals for Document Transmission", ITU-T Recommendation T.4—Amendment 1, Jul. 1997, 10 pages.

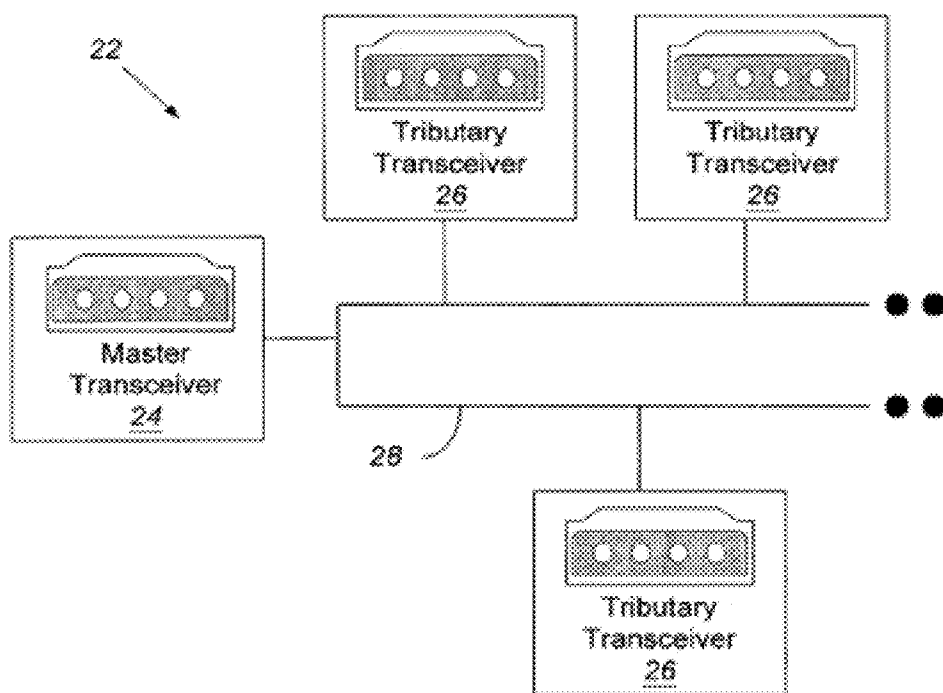
International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminals for Telematic Services, "Standardization of Group 3 Facsimile Terminals for Document Transmission", ITU-T Recommendation T.4—Amendment 2, Oct. 1997, 14 pages.

International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminals for Telematic

Services, "Procedures for Document Facsimile Transmission in the General Switched Telephone Network", ITU-T Recommendation T.30—Amendment 1, Jul. 1997, 110 pages.

International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminals for Telematic Services, "Procedures for Document Facsimile Transmission in the General Switched Telephone Network", ITU-T Recommendation T.30—Amendment 2, Oct. 1997, 18 pages.

\* cited by examiner



**FIG. 1**  
**Prior Art**

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.