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(54) **NETWORK EQUIPMENT AND OPTIONAL TETHER**(75) Inventors: **John F. Austermann, III**, Huntington Woods, MI (US); **Marshall B. Cummings**, Troy, MI (US)(73) Assignee: **ChriMar Systems, Inc.**, Farmington Hills, MI (US)

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See application file for complete search history.(56) **References Cited**

## U.S. PATENT DOCUMENTS

202,495 A 4/1878 Watson  
244,426 A 7/1881 Bell

(Continued)

## FOREIGN PATENT DOCUMENTS

CA 2183106 A1 2/1998  
CN 2050662 U 1/1990

(Continued)

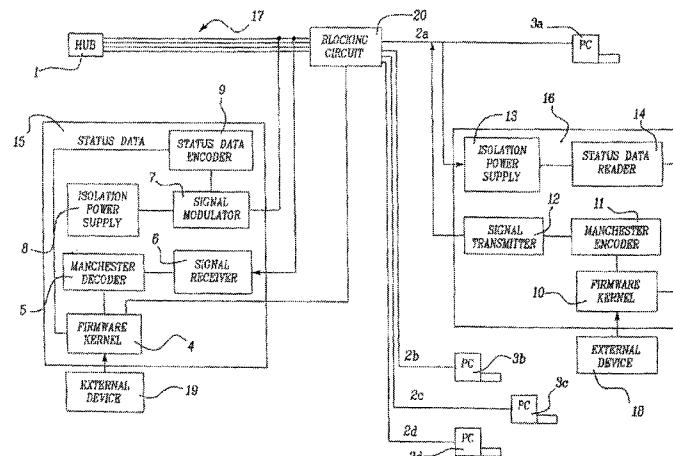
## OTHER PUBLICATIONS

“10BaseT Takes Off” (LAN Magazine, May 1991).

(Continued)

*Primary Examiner — Chi H Pham**Assistant Examiner — Soon-Dong D Hyun*(74) *Attorney, Agent, or Firm — Harness, Dickey & Pierce, P.L.C.*(57) **ABSTRACT**

A piece of data terminal equipment having an Ethernet connector having first and second pairs of contacts used to carry high frequency data communication signals. The piece of data terminal equipment to have at least one path coupled across at least one of the contacts of the first pair of contacts of the Ethernet connector and at least one of the contacts of the second pair of contacts of the Ethernet connector. The piece of data terminal equipment to draw different magnitudes of DC current through the at least one path.

**169 Claims, 13 Drawing Sheets**

(56)	References Cited				
U.S. PATENT DOCUMENTS					
406,567 A	7/1889	Edison	4,397,020 A	8/1983	Howson
2,846,509 A	8/1958	Dubuar	4,398,066 A	8/1983	Sinberg
3,359,379 A	12/1967	Pullum et al.	4,410,982 A	10/1983	Fleischfresser et al.
3,407,400 A	10/1968	Lurie	4,413,250 A	11/1983	Porter et al.
3,408,643 A	10/1968	Sliman	4,438,298 A	3/1984	Rubin
3,423,521 A	1/1969	Friesen et al.	4,446,341 A	5/1984	Rubin
3,425,050 A	1/1969	Tellerman et al.	4,454,477 A	6/1984	Joffe
3,500,132 A	3/1970	Garrett	4,463,352 A	7/1984	Forbes et al.
3,535,472 A	10/1970	Babbitt, III	4,464,658 A	8/1984	Thelen
3,537,095 A	10/1970	Cones	4,467,147 A	8/1984	Rubin
3,593,274 A	7/1971	Krugler, Jr.	4,467,314 A	8/1984	Weikel et al.
3,597,549 A	8/1971	Farmer et al.	4,475,079 A	10/1984	Gale
3,618,065 A	11/1971	Trip et al.	4,479,228 A	10/1984	Crane
3,634,845 A	1/1972	Colman	4,482,999 A	11/1984	Janson et al.
3,659,277 A	4/1972	Brown	4,484,028 A	11/1984	Kelley et al.
3,696,378 A	10/1972	Daniel	4,487,836 A	12/1984	Takayanagi et al.
3,697,984 A	10/1972	Atkinson et al.	4,494,541 A	1/1985	Archibald
3,731,012 A	5/1973	Shaffer	4,495,494 A	1/1985	McCune
3,758,728 A	9/1973	Le Roch et al.	4,507,568 A	3/1985	Ziegler et al.
3,768,084 A	10/1973	Haynes	4,524,349 A	6/1985	Hyatt
3,781,481 A	12/1973	Shaffer et al.	4,525,636 A	6/1985	Kominami et al.
3,794,989 A	2/1974	Manley et al.	4,527,216 A	7/1985	Stammely
3,818,179 A	6/1974	Mase	4,528,667 A	7/1985	Fruhauf
3,828,139 A	8/1974	Chambers, Jr.	4,532,626 A	7/1985	Flores et al.
3,832,521 A	8/1974	Niendorf	4,535,401 A	8/1985	Penn
3,832,678 A	8/1974	Gysell et al.	4,551,671 A	11/1985	Annunziata et al.
3,836,901 A	9/1974	Matto et al.	4,564,726 A	1/1986	Ibata
3,842,218 A	10/1974	DeLuca et al.	4,571,656 A	2/1986	Ruckman
3,848,179 A	11/1974	Kayama	4,575,714 A	3/1986	Rummel
3,863,036 A	1/1975	Mc Crudden	4,578,539 A	3/1986	Townsing
3,868,484 A	2/1975	Bolton et al.	4,586,104 A	4/1986	Standler
3,886,419 A	5/1975	Omura et al.	4,593,389 A	6/1986	Wurzburg et al.
RE28,692 E	1/1976	Highstone et al.	4,602,364 A	7/1986	Herman et al.
3,932,857 A	1/1976	Way et al.	4,611,101 A	9/1986	Walter et al.
3,969,594 A	7/1976	DeLuca et al.	4,617,656 A	10/1986	Kobayashi et al.
3,983,338 A	9/1976	Mathausser	4,622,541 A	11/1986	Stockdale
4,024,359 A	5/1977	De Marco et al.	4,629,836 A	12/1986	Walsworth
4,024,360 A	5/1977	Biraghi et al.	4,631,367 A	12/1986	Coviello et al.
4,054,760 A	10/1977	Morgen	4,633,217 A	12/1986	Akano
4,063,220 A	12/1977	Metcalfe et al.	4,636,771 A	1/1987	Ochs
4,064,431 A	12/1977	Cote	4,639,714 A	1/1987	Crowe
4,101,878 A	7/1978	Shimizu et al.	4,647,721 A	3/1987	Busam et al.
4,121,201 A	10/1978	Weathers	4,649,912 A	3/1987	Bates et al.
4,128,804 A	12/1978	Russell	4,649,548 A	3/1987	Crane
4,131,767 A	12/1978	Weinstein	4,654,638 A	3/1987	Clift
4,156,799 A	5/1979	Cave	4,654,640 A	3/1987	Carll et al.
4,160,884 A	7/1979	Bishop	4,656,318 A	4/1987	Noyes
4,161,719 A	7/1979	Parikh et al.	4,658,099 A	4/1987	Frazer
4,162,489 A	7/1979	Thilo et al.	4,658,242 A	4/1987	Zeder
4,173,714 A	11/1979	Bloch et al.	4,661,797 A	4/1987	Schmall
4,179,688 A	12/1979	Romney	4,661,979 A	4/1987	Jakab
4,186,339 A	1/1980	Finger	4,670,902 A	6/1987	Naiwirt
4,191,971 A	3/1980	Dischert et al.	4,674,084 A	6/1987	Suzuki et al.
4,230,912 A	10/1980	Lee et al.	4,685,129 A	8/1987	Gavrilovich
4,232,199 A	11/1980	Boatwright et al.	4,686,514 A	8/1987	Liptak, Jr. et al.
4,254,305 A	3/1981	Treibor	4,691,344 A	9/1987	Brown et al.
4,260,882 A	4/1981	Barnes	4,692,761 A	9/1987	Robinton
4,268,723 A	5/1981	Taylor	4,701,630 A	10/1987	Annunziata et al.
4,273,955 A	6/1981	Armstrong	4,701,946 A	10/1987	Oliva et al.
4,277,740 A	7/1981	Parks	4,712,233 A	12/1987	Kuo
4,282,407 A	8/1981	Stiefel	4,717,896 A	1/1988	Graham
4,290,056 A	9/1981	Chow	4,719,616 A	1/1988	Akano
4,292,480 A	9/1981	Sweatt	4,723,267 A	2/1988	Jones et al.
4,293,948 A	10/1981	Soderblom	4,728,948 A	3/1988	Fields
4,303,073 A	12/1981	Archibald	4,729,125 A	3/1988	Sterling, Jr. et al.
4,313,081 A	1/1982	Smith	4,731,810 A	3/1988	Watkins
4,315,107 A	2/1982	Ciesielka et al.	4,731,829 A	3/1988	Bonnet et al.
4,322,677 A	3/1982	Wright	4,733,223 A	3/1988	Gilbert
4,340,788 A	7/1982	Sbuelz	4,733,389 A	3/1988	Puvogel
4,348,661 A	9/1982	Lucchesi	4,736,195 A	4/1988	McMurtry et al.
4,349,703 A	9/1982	Cheia, Jr.	4,737,787 A	4/1988	Ito et al.
4,350,849 A	9/1982	Ahuja	4,742,334 A	5/1988	Teich et al.
4,367,455 A	1/1983	Fried	4,751,498 A	6/1988	Shalvi et al.
			4,755,792 A	7/1988	Pezzolo et al.
			4,755,922 A	7/1988	Puvogel
			4,758,823 A	7/1988	Berruyer et al.
			4,760,382 A	7/1988	Faulkner

(56)	References Cited				
U.S. PATENT DOCUMENTS					
4,779,153 A	10/1988 Tsubota	5,093,828 A	3/1992 Braun et al.		
4,782,322 A	11/1988 Lechner et al.	RE33,900 E	4/1992 Howson		
4,782,355 A	11/1988 Sakai et al.	5,119,398 A	6/1992 Webber, Jr.		
4,782,482 A	11/1988 Kiatipov et al.	5,119,402 A	6/1992 Ginzburg et al.		
4,785,812 A	11/1988 Pihl et al.	5,121,482 A	6/1992 Patton		
4,799,211 A	1/1989 Felker et al.	5,121,500 A	6/1992 Arlington et al.		
4,813,066 A	3/1989 Holtz et al.	5,124,982 A	6/1992 Kaku		
4,815,106 A	3/1989 Propp et al.	5,131,033 A	7/1992 Reum		
4,817,106 A	3/1989 Thompson	5,133,005 A	7/1992 Kelley et al.		
4,821,319 A	4/1989 Middleton et al.	5,136,580 A	8/1992 Videlock et al.		
4,823,600 A	4/1989 Biegel et al.	5,142,269 A	8/1992 Mueller		
4,825,349 A	4/1989 Marcel	5,144,544 A	9/1992 Jenneve et al.		
4,839,886 A	6/1989 Wu et al.	5,148,144 A	9/1992 Sutterlin et al.		
4,862,158 A	8/1989 Keller et al.	5,162,672 A	11/1992 McMahan et al.		
4,864,598 A	9/1989 Lynch et al.	5,164,960 A	11/1992 Winen et al.		
4,866,768 A	9/1989 Sinberg	5,168,170 A	12/1992 Hartig		
4,875,223 A	10/1989 Curtis	5,179,291 A	1/1993 Nishikawa et al.		
4,882,728 A	11/1989 Herman	5,179,710 A	1/1993 Coschieri		
4,884,263 A	11/1989 Suzuki	5,181,240 A	1/1993 Sakuragi et al.		
4,884,287 A	11/1989 Jones et al.	5,189,409 A	2/1993 Okuno		
4,885,563 A	12/1989 Johnson et al.	5,192,231 A	3/1993 Dolin, Jr.		
4,896,315 A	1/1990 Felker et al.	5,195,183 A	3/1993 Miller et al.		
4,901,003 A	2/1990 Clegg	5,199,049 A	3/1993 Wilson		
4,901,217 A	2/1990 Wilson	5,200,686 A	4/1993 Lee		
4,903,006 A	2/1990 Boomgaard	5,200,743 A	4/1993 St. Martin et al.		
4,907,261 A	3/1990 Chapman	5,200,877 A	4/1993 Bettin et al.		
4,916,621 A	4/1990 Bean et al.	5,216,704 A	6/1993 Williams et al.		
4,918,688 A	4/1990 Krause et al.	5,222,164 A	6/1993 Bass, Sr. et al.		
4,922,503 A	5/1990 Leone	5,223,806 A	6/1993 Curtis et al.		
4,926,158 A	5/1990 Zeigler	5,226,120 A	7/1993 Brown et al.		
4,935,926 A	6/1990 Herman	5,231,375 A	7/1993 Sanders et al.		
4,935,959 A	6/1990 Markovic et al.	5,235,599 A	8/1993 Nishimura et al.		
4,937,811 A	6/1990 Harris	5,237,606 A	8/1993 Ziermann		
4,937,851 A	6/1990 Lynch et al.	5,241,160 A	8/1993 Bashan et al.		
4,942,604 A	7/1990 Smith et al.	5,243,328 A	9/1993 Lee et al.		
4,951,309 A	8/1990 Gross et al.	5,249,183 A	9/1993 Wong et al.		
4,953,055 A	8/1990 Douhet et al.	5,255,962 A	10/1993 Neuhaus et al.		
4,958,371 A	9/1990 Damoci et al.	5,257,287 A	10/1993 Blumenthal et al.		
4,961,222 A	10/1990 Johansson et al.	5,260,664 A	11/1993 Graham		
4,969,179 A	11/1990 Kanare et al.	5,264,777 A	11/1993 Smead		
4,973,954 A	11/1990 Schwarz	5,267,238 A	11/1993 Yano et al.		
4,980,913 A	12/1990 Skret	5,270,896 A	12/1993 McDonald		
4,991,123 A	2/1991 Casamassima	5,275,172 A	1/1994 Ives		
4,992,774 A	2/1991 McCullough	5,278,888 A	1/1994 Myllymaki		
4,998,275 A	3/1991 Braunstein et al.	5,280,251 A	1/1994 Strangio		
4,998,850 A	3/1991 Crowell	5,285,477 A	2/1994 Leonowich		
5,003,457 A	3/1991 Ikei et al.	5,289,359 A	2/1994 Ziermann		
5,003,579 A	3/1991 Jones	5,289,458 A	2/1994 Taha		
5,007,858 A	4/1991 Daly et al.	5,289,461 A	2/1994 de Nijls		
5,020,100 A	5/1991 Gardiner	5,297,141 A	3/1994 Marum		
5,020,773 A	6/1991 Tuft et al.	5,301,246 A	4/1994 Archibald et al.		
5,021,779 A	6/1991 Bisak	5,302,889 A	4/1994 Marsh		
5,029,201 A	7/1991 Bindels	5,306,956 A	4/1994 Ikeda et al.		
5,032,819 A	7/1991 Sakuragi et al.	5,311,114 A	5/1994 Sambamurthy et al.		
5,032,833 A	7/1991 Laporte	5,311,518 A	5/1994 Takato et al.		
5,033,112 A	7/1991 Bowling et al.	5,313,642 A	5/1994 Seigel		
5,034,723 A	7/1991 Maman	5,315,237 A	5/1994 Iwakura et al.		
5,034,738 A	7/1991 Ishihara et al.	5,319,363 A	6/1994 Welch et al.		
5,034,948 A	7/1991 Mizutani et al.	5,321,372 A	6/1994 Smith		
5,034,978 A	7/1991 Nguyen et al.	5,323,461 A	6/1994 Rosenbaum et al.		
5,038,782 A	8/1991 Gevins et al.	5,333,177 A	7/1994 Braitberg et al.		
5,051,723 A	9/1991 Long et al.	5,333,192 A	7/1994 McGinn		
5,055,827 A	10/1991 Philipp	5,336,946 A	8/1994 Segaram et al.		
5,056,131 A	10/1991 Kanare et al.	5,345,422 A	9/1994 Redwine		
5,059,782 A	10/1991 Fukuyama	5,345,592 A	9/1994 Woodmas		
5,059,948 A	10/1991 Desmeules	5,347,225 A	9/1994 Graham		
5,063,563 A	11/1991 Ikeda et al.	5,351,272 A	9/1994 Abraham		
5,063,585 A	11/1991 Shapiro	5,353,009 A	10/1994 Marsh et al.		
5,066,939 A	11/1991 Mansfield, Jr.	5,357,145 A	10/1994 Segaram		
5,066,942 A	11/1991 Matsuo	5,365,515 A	11/1994 Graham		
5,073,919 A	12/1991 Hagensick	5,368,041 A	11/1994 Shambroom		
5,076,763 A	12/1991 Anastos et al.	5,379,441 A	1/1995 Watanabe et al.		
5,077,526 A	12/1991 Vokey et al.	5,381,804 A	1/1995 Shambroom		
		5,384,429 A	1/1995 Bulson et al.		
		5,389,882 A	2/1995 I'Anson et al.		
		5,391,932 A	2/1995 Small et al.		
		5,396,555 A	3/1995 Shibata et al.		

(56)	References Cited			
U.S. PATENT DOCUMENTS				
5,414,708 A	5/1995	Webber et al.	5,642,248 A	6/1997
5,414,709 A	5/1995	Baze	5,645,434 A	7/1997
5,420,572 A	5/1995	Dolin, Jr. et al.	5,649,001 A	7/1997
5,422,519 A	6/1995	Russell	5,652,479 A	7/1997
5,424,710 A	6/1995	Baumann	5,652,575 A	7/1997
5,432,505 A	7/1995	Wise	5,652,893 A	7/1997
5,438,606 A	8/1995	Cerulli	5,652,895 A	7/1997
5,440,335 A	8/1995	Beveridge	5,655,077 A	8/1997
5,441,520 A	8/1995	Olsen et al.	5,659,542 A	8/1997
5,444,184 A	8/1995	Hassel	5,664,002 A	9/1997
5,444,856 A	8/1995	Bowers et al.	5,670,937 A	9/1997
5,446,914 A	8/1995	Paul et al.	5,671,354 A	9/1997
5,448,565 A	9/1995	Chang et al.	5,675,321 A	10/1997
5,450,486 A	9/1995	Maas et al.	5,675,371 A	10/1997
5,451,923 A	9/1995	Seberger et al.	5,675,811 A	10/1997
5,452,344 A	9/1995	Larson	5,675,813 A	10/1997
5,455,467 A	10/1995	Young et al.	5,678,547 A	10/1997
5,457,629 A	10/1995	Miller et al.	5,678,559 A	10/1997
5,459,283 A	10/1995	Birdwell, Jr.	5,679,987 A	10/1997
5,461,671 A	10/1995	Sakuragi et al.	5,684,826 A	11/1997
5,467,061 A	11/1995	Aden et al.	5,684,950 A	11/1997
5,467,384 A	11/1995	Skinner, Sr.	5,686,826 A	11/1997
5,469,437 A	11/1995	Runaldue	5,687,174 A	11/1997
5,477,091 A	12/1995	Fiorina et al.	5,689,230 A	11/1997
5,483,574 A	1/1996	Yuyama	5,692,917 A	12/1997
5,483,656 A	1/1996	Oprescu et al.	5,696,660 A	12/1997
5,485,488 A	1/1996	Van Brunt et al.	5,706,287 A	1/1998
5,488,306 A	1/1996	Bonaccio	5,715,174 A	2/1998
5,491,463 A	2/1996	Sargeant et al.	5,715,287 A	2/1998
5,493,684 A	2/1996	Gephhardt et al.	5,729,154 A	3/1998
5,497,460 A	3/1996	Bailey et al.	5,729,204 A	3/1998
5,498,911 A	3/1996	Bossler et al.	5,742,216 A	4/1998
5,513,370 A	4/1996	Paul	5,742,514 A	4/1998
5,514,859 A	5/1996	Seigel	5,742,833 A	4/1998
5,515,303 A	5/1996	Cargin, Jr. et al.	5,754,764 A	5/1998
5,517,172 A	5/1996	Chiu	5,756,280 A	5/1998
5,519,882 A	5/1996	Asano et al.	5,758,101 A	5/1998
5,523,747 A	6/1996	Wise	5,761,084 A	6/1998
5,526,349 A	6/1996	Diaz et al.	5,764,647 A	6/1998
5,528,248 A	6/1996	Steiner et al.	5,766,133 A	6/1998
5,528,507 A	6/1996	McNamara et al.	5,768,301 A	6/1998
5,528,661 A	6/1996	Siu et al.	5,779,196 A	7/1998
5,531,611 A	7/1996	Reed et al.	5,781,015 A	7/1998
5,532,898 A	7/1996	Price	5,783,999 A	7/1998
5,535,336 A	7/1996	Smith et al.	5,784,441 A	7/1998
5,537,468 A	7/1996	Hartmann	5,790,363 A	8/1998
5,540,235 A	7/1996	Wilson	5,793,764 A	8/1998
5,541,957 A	7/1996	Lau	5,796,185 A	8/1998
5,548,466 A	8/1996	Smith	5,796,965 A	8/1998
5,560,022 A	9/1996	Dunstan et al.	5,799,040 A	8/1998
5,560,357 A	10/1996	Faupel et al.	5,799,194 A	8/1998
5,563,489 A	10/1996	Murry	5,799,196 A	8/1998
5,568,525 A	10/1996	de Nijls et al.	5,802,042 A	9/1998
5,570,002 A	10/1996	Castleman	5,802,305 A	9/1998
5,572,182 A	11/1996	De Pinho Filho et al.	5,805,597 A	9/1998
5,574,748 A	11/1996	Vander Mey et al.	5,805,904 A	9/1998
5,577,023 A	11/1996	Marum et al.	5,808,846 A	9/1998
5,577,026 A	11/1996	Gordon et al.	5,810,606 A	9/1998
5,578,991 A	11/1996	Scholder	5,812,531 A	9/1998
5,581,772 A	12/1996	Nanno et al.	5,814,900 A	9/1998
5,586,054 A	12/1996	Jensen et al.	5,815,665 A	9/1998
5,586,273 A	12/1996	Blair et al.	5,821,868 A	10/1998
5,594,332 A	1/1997	Harman et al.	5,828,293 A	10/1998
5,594,732 A	1/1997	Bell et al.	5,834,942 A	11/1998
5,596,473 A	1/1997	Johnson et al.	5,835,005 A	11/1998
5,596,637 A	1/1997	Pasetti et al.	5,836,785 A	11/1998
5,608,545 A	3/1997	Kagawa	5,838,683 A	11/1998
5,608,792 A	3/1997	Laidler	5,841,203 A	11/1998
5,610,593 A	3/1997	Seto	5,841,360 A	11/1998
5,617,418 A	4/1997	Shirani et al.	5,842,955 A	12/1998
5,623,184 A	4/1997	Rector	5,845,150 A	12/1998
5,630,058 A	5/1997	Mosley et al.	5,845,190 A	12/1998
5,631,570 A	5/1997	King	5,848,149 A	12/1998
			5,854,824 A	12/1998
			5,854,839 A	12/1998
			5,859,584 A	1/1999
			5,859,596 A	1/1999

(56)

**References Cited****U.S. PATENT DOCUMENTS**

5,896,509 A	4/1999	Sugimoto	6,157,534 A	12/2000	Gallagher et al.
5,909,445 A	6/1999	Schneider	6,169,475 B1	1/2001	Browning
5,915,002 A	6/1999	Shimosako	6,169,883 B1	1/2001	Vimpari et al.
5,918,016 A	6/1999	Brewer et al.	6,171,152 B1	1/2001	Kunz
5,920,253 A	7/1999	Laine	6,172,606 B1	1/2001	Lockyer
5,920,266 A	7/1999	Allgood et al.	6,175,556 B1	1/2001	Allen, Jr. et al.
5,923,363 A	7/1999	Elberbaum	6,178,176 B1	1/2001	Voloshin et al.
5,923,663 A	7/1999	Bontemps et al.	6,178,455 B1	1/2001	Schutte et al.
5,929,624 A	7/1999	Ricq et al.	6,178,458 B1	1/2001	Wang
5,929,626 A	7/1999	Iwasaki et al.	6,178,514 B1	1/2001	Wood
5,929,778 A	7/1999	Asama et al.	6,181,140 B1	1/2001	Vokey et al.
5,933,073 A	8/1999	Shuey	6,186,803 B1	2/2001	Garside
5,933,590 A	8/1999	Allen	6,205,137 B1	3/2001	Ariga
5,937,033 A	8/1999	Bellows	6,215,789 B1	4/2001	Keenan et al.
5,939,801 A	8/1999	Bouffard et al.	6,218,930 B1	4/2001	Katzenberg et al.
5,944,659 A	8/1999	Flach et al.	6,219,216 B1	4/2001	Holce et al.
5,944,824 A	8/1999	He	6,222,852 B1	4/2001	Gandy
5,944,831 A	8/1999	Pate et al.	6,233,613 B1	5/2001	Walker et al.
5,946,180 A	8/1999	Simpson	6,233,689 B1	5/2001	Allen et al.
5,948,077 A	9/1999	Choi et al.	6,236,625 B1	5/2001	Schell et al.
5,949,806 A	9/1999	Ness et al.	6,236,653 B1	5/2001	Dalton et al.
5,949,974 A	9/1999	Ewing et al.	6,243,394 B1	6/2001	Deng
5,953,314 A	9/1999	Ganmukhi et al.	6,243,818 B1	6/2001	Schwan et al.
5,960,208 A	9/1999	Obata et al.	6,246,748 B1	6/2001	Yano
5,963,557 A	10/1999	Eng	6,252,878 B1	6/2001	Locklear, Jr. et al.
5,971,804 A	10/1999	Gallagher et al.	6,253,121 B1	6/2001	Cline et al.
5,991,311 A	11/1999	Long et al.	6,259,745 B1	7/2001	Chan
5,991,885 A	11/1999	Chang et al.	6,272,219 B1	8/2001	De Bruycker et al.
5,994,998 A	11/1999	Fisher et al.	6,272,552 B1	8/2001	Melvin et al.
5,995,348 A	11/1999	McCartan et al.	6,275,498 B1	8/2001	Bisceglia et al.
5,995,353 A	11/1999	Cunningham et al.	6,278,357 B1	8/2001	Croushore et al.
6,000,003 A	12/1999	Allen et al.	6,278,665 B1	8/2001	Schell et al.
6,005,760 A	12/1999	Holce et al.	6,279,060 B1	8/2001	Luke et al.
6,009,479 A	12/1999	Jeffries	6,292,901 B1	9/2001	Lys et al.
6,011,680 A	1/2000	Solleder et al.	6,295,356 B1	9/2001	De Nicolo
6,011,794 A	1/2000	Mordowitz et al.	6,295,569 B1	9/2001	Shimura et al.
6,011,910 A	1/2000	Chau et al.	6,300,847 B1	10/2001	Gallagher et al.
6,016,519 A	1/2000	Chida et al.	6,301,527 B1	10/2001	Butland et al.
6,018,452 A	1/2000	Meyerhoefer et al.	6,311,173 B1	10/2001	Levin et al.
6,021,493 A	2/2000	Cromer et al.	6,314,102 B1	11/2001	Czerwiec et al.
6,021,496 A	2/2000	Dutcher et al.	6,317,675 B1	11/2001	Stolzl et al.
6,031,368 A	2/2000	Klippel et al.	6,324,268 B1	11/2001	Balachandran et al.
6,033,101 A	3/2000	Reddick et al.	6,329,810 B1	12/2001	Reid
6,038,457 A	3/2000	Barkat	6,332,166 B1	12/2001	Cranford, Jr. et al.
6,042,390 A	3/2000	Leung	6,344,794 B1	2/2002	Ulrich et al.
6,044,081 A	3/2000	Bell et al.	6,348,874 B1	2/2002	Cole et al.
6,047,376 A	4/2000	Hosoe	6,349,353 B1	2/2002	Lewis et al.
6,049,139 A	4/2000	Nagaura et al.	6,351,648 B1	2/2002	Karapetkov et al.
6,049,881 A	4/2000	Massman et al.	6,359,906 B1	3/2002	Dyke et al.
6,057,670 A	5/2000	Sink et al.	6,362,909 B1	3/2002	Bedrosian
6,064,305 A	5/2000	Lockyer	6,366,143 B1	4/2002	Liu et al.
6,069,899 A	5/2000	Foley	6,366,208 B1	4/2002	Hopkins et al.
6,091,722 A	7/2000	Russell et al.	6,366,618 B1	4/2002	Miller
6,092,131 A	7/2000	Caldwell et al.	6,373,851 B1	4/2002	Dadario
6,092,196 A	7/2000	Reiche	6,377,874 B1	4/2002	Ykema
6,095,867 A	8/2000	Brandt et al.	6,383,076 B1	5/2002	Tiedeken
6,097,761 A	8/2000	Buhring et al.	6,384,755 B1	5/2002	Hayden
6,100,471 A	8/2000	Fouache	6,385,030 B1	5/2002	Beene
6,101,459 A	8/2000	Tavallai et al.	6,393,050 B1	5/2002	Liu
6,108,330 A	8/2000	Bhatia et al.	6,393,474 B1	5/2002	Eichert et al.
6,111,936 A	8/2000	Bremer	6,393,607 B1	5/2002	Hughes et al.
6,115,468 A	9/2000	De Nicolo	6,396,391 B1	5/2002	Binder
6,121,778 A	9/2000	Moore	6,398,779 B1	6/2002	Buyssse et al.
6,125,448 A	9/2000	Schwan et al.	6,415,244 B1	7/2002	Dickens et al.
6,130,894 A	10/2000	Ojard et al.	6,418,332 B1	7/2002	Mastrototaro et al.
6,130,896 A	10/2000	Lueker et al.	6,420,976 B1	7/2002	Baggs et al.
6,134,666 A	10/2000	De Nicolo	6,449,348 B1	9/2002	Lamb et al.
6,137,839 A	10/2000	Mannering et al.	6,456,625 B1	9/2002	Itoi
6,140,911 A	10/2000	Fisher et al.	6,459,175 B1	10/2002	Potega
6,141,763 A	10/2000	Smith et al.	6,473,608 B1	10/2002	Lehr et al.
6,144,722 A	11/2000	Anderson et al.	6,480,510 B1	11/2002	Binder
6,147,601 A	11/2000	Sandelman et al.	6,483,903 B1	11/2002	Itay et al.
6,147,603 A	11/2000	Rand	6,496,103 B1	12/2002	Weiss et al.
			6,504,825 B1	1/2003	Atkins et al.
			6,522,151 B2	2/2003	Armistead et al.
			6,526,516 B1	2/2003	Ishikawa et al.
			6,529,127 B2	3/2003	Townsend et al.

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