

John M. Cioffi patents

Issue date = Grant date

Lapsed patents are noted.

Patent numbers may be either granted patent or application numbers.

Stanford patents are included. Patents pending are at the bottom of the list.

1. Issued date: Jul 9, 2013
Patent number(s): US8483369-B2, CN101461253A, CN101461253B, CN102170596A, EP2030454A2, EP2030454B1, EP2337371A1, US20090207985, WO2007146048A2, WO2007146048A3
DSL system
Inventor(s): Cioffi, John M.; Ginis, George; Rhee, Wonjong; Brady, Mark H.; Silverman, Peter J.
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
2. Issue date: Jun 13, 2013
Patent number(s): WO2013085485 A1
Systems and methods for traffic aggregation on multiple wan backhauls and multiple distinct lan networks
Inventor(s): Cioffi, John M.; Ardavan Maleki Tehrani, Wonjong Rhee, Ramya BHAGAVATULA, Peter Chow, Kenneth Kerpez, Stefano Galli, Marc Goldberg, Sungho Yun
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
3. Issue date: Jun 13, 2013
Patent number(s): WO2013085486 A1
Systems and methods for traffic load balancing on multiple wan backhauls and multiple distinct lan networks
Inventor(s): [Peter Chow](#); [Ramya BHAGAVATULA](#), [Wonjong Rhee](#), [Ardavan Maleki Tehrani](#), [John Cioffi](#), [Stefano Galli](#), [Sungho Yun](#), [Kenneth Kerpez](#), [Marc Goldberg](#)
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
4. Issued date: Apr 23, 2013
Patent number(s): US8428225-B2, CN101785202A, CN101785202B, EP2055086A2, US20090323903, WO2008016585A2, WO2008016585A3
Method and apparatus for analyzing and mitigating noise in a digital subscriber line
Inventor(s): Cioffi, John M.; Jagannathan, Sumanth; Ginis, Georgios; Rhee, Wonjong
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
5. Issued date: Jan 29, 2013
Patent number(s): US8363788-B2, CN101573951A, CN101573951B, EP2095620A2, US20100142601, WO2008073327A2, WO2008073327A3
DSL ring signal compatibility
Inventor(s): Flowers, Mark B.; Cioffi, John M.; Chung, Seong Taek

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

6. Issue date: Jan 23, 2013
Patent number(s): EP2549728 A1
DSL System Training
Inventor(s): [John Cioffi](#); [Wonjong Rhee](#), [Bin Lee](#), [Georgios Ginis](#)
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
7. Issued date: Jan 9, 2013
Patent number(s): EP1784923B1, CA2577489A1, CN101019333A, CN101019333B, EP1784923A2, EP2472729A1, US7573943, US20060039454, WO2006051359A2, WO2006051359A3
Interference cancellation system
Inventor(s): Cioffi, John M.
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
8. Issued date: Nov 13, 2012
Patent number(s): US8310914-B2, CN101218776A, CN101218776B, CN102833059A, EP1880503A1, US7773497, US20060268966, US20110051593, WO2006120510A1, WO2006120510B1
Phantom use in DSL systems
Inventor(s): Rhee, Wonjong; Cioffi, John M.; Lee, Bin; Ginis, Georgios
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
9. Issued date: May 23, 2012
Patent number(s): EP1869790B1, CA2599895A1, CN101133564A, CN101133564B, EP1869790A1, EP2326023A2, EP2326023A3, US7460588, US20060198430, WO2006103557A1, WO2006103557A9
DSL state and line profile control
Inventor(s): Almandoz, Iker; Cioffi, John M.; Rhee, Wonjong
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
10. Issued date: May 9, 2012
Patent number(s): EP 2449758 A1
Method and apparatus for dsl performance enhancement in a dsl network
Inventor(s): [John Cioffi](#), [Mark Flowers](#), [Mark Brady](#), [Ardavan Maleki Tehrani](#), [Marc Goldberg](#), [George Ginis](#), [Peter Silverman](#)
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
11. Issued date: Jan 4, 2012
Patent number(s): EP 2404385 A1
Dsl noise cancellation
Inventor(s): Mark B. Flowers, Mark Mallory, Mark Brady, John M. Cioffi, Mehdi Mohseni
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
12. Issued date: Jan 4, 2012
Patent number(s): EP1756963B1, CA2566499A1, CN103152078A, EP1756963A1, US7593458, US20050259725, WO2005114861A1
FEXT determination system
Inventor(s): Cioffi, John M.
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

13. Issued date: Dec 20, 2011
Patent number(s): US8081704-B2, CN1535513A, CN100508432C, CN101005323A, CN101005323B, EP1396101A1, EP1396101A4, EP1396101B1, EP2259456A1, EP2533436A1, US7158563, US20030086514, US20070081582, US20120063531, US20120257691, WO2002100008A1
Dynamic digital communication system control
Inventor(s): Ginis, Georgios; Yu, Wei; Zeng, Chaohuang; Cioffi, John M.
Original Assignee: Leland Stanford Junior University
14. Issued date: Dec 6, 2011
Patent number(s): US 8073135-B2, CA2608329A1, CN101199196A, CN101199196B, EP1886480A1, US20070036340, WO2006120513A1
Binder identification
Inventor(s): Cioffi, John M.; Rhee, Wonjong; Almandoz, Iker; Ginis, Georgios; Lee, Bin
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
15. Issued date: Nov 22, 2011
Patent number(s): US8064325-B1
Concurrent frequency-sharing multi-user communication system with rate allocation approach
Inventor(s): Cioffi, John M.; Agrawala, Avneesh
Original Assignee: Leland Stanford Junior University
16. Issued date: Nov 16, 2011
Patent number(s): EP 1700423B1; CA2548736A1, CN1914855A, CN1914855B, CN102710445A, EP1700423A2, EP2187558A2, EP2187558A3, EP2259495A1, EP2259495B1, EP2259564A1, US7302379, US7558315, US7711530, US20050123027, US20050123028, US20080071516, WO2005057857A2, WO2005057857A3
DSL system estimation and parameter recommendation
Inventor(s): Cioffi, John M.; Rhee, Wonjong
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
17. Issued date: Nov 16, 2011
Patent number(s): EP1700423B1, CA2548736A1, CN1914855A, CN1914855B, CN102710445A, EP1700423A2, EP2187558A2, EP2187558A3, EP2259495A1, EP2259495B1, EP2259564A1, US7302379, US7558315, US7711530, US20050123027, US20050123028, US20080071516, WO2005057857A2, WO2005057857A3
Estimation pour systeme de lignes d'abonnes numeriques et recommandation de parametres
Inventor(s): Rhee, Wonjong; Cioffi, John M.
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
18. Issued date: Oct 25, 2011
Patent number(s): US8045629-B1, CA2577533A1, CN101019410A, CN101019410B, CN101572760A, CN101572760B, EP1782615A2, EP1843565A1, US7535966, US20060039486, WO2006018716A2, WO2006018716A3

DSL data collection system

Inventor(s): Cioffi, John M.; Rhee, Wonjong

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

19. Issued date: Oct 4, 2011

Patent number(s): US8031761-B2, US20110051906

Adaptive margin and band control

Inventor(s): Cioffi, John M.; Rhee, Wonjong; Ginis, Georgios; Chung, Seong Taek

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

20. Issued date: Aug 30, 2011

Patent number(s): US8009665-B2, CN102099779A, EP1932076A2, EP1932076A4, US20080298444, US20110299579, WO2007044326A2, WO2007044326A3

DSL system

Inventor(s): Cioffi, John M.; Rhee, Wonjong; Ginis, Georgios; Jagannatha, Sumanth; Silverman, Peter Joshua; Mohseni, Medhi

Original Assignee: ASSIA INC

21. Issued date: Aug 10, 2011

Patent number(s): EP2030454B1, CN101461253A, CN101461253B, CN102170596A, EP2030454A2, EP2337371A1, US8483369, US20090207985, WO2007146048A2, WO2007146048A3

Vectored DSL

Inventor(s): Brady, Mark H.; Cioffi, John M.; Ginis, George; Rhee, Wonjong; Silverman, Peter J.

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

22. Issued date: Aug 10, 2011

Patent number(s): EP2030454B1, CN101461253A, CN101461253B, CN102170596A, EP2030454A2, EP2337371A1, US8483369, US20090207985, WO2007146048A2, WO2007146048A3

Vektorisiertes DSL

Inventor(s): Brady, Mark H.; Cioffi, John M.; Ginis, George; Rhee, Wonjong; Silverman, Peter J.

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

23. Issued date: Aug 3, 2011

Patent number(s): EP1733550-B1, CA2561009A1, CN1954586A, CN1954586B, EP1733550A1, EP2278785A1, US7639596, US20050152385, WO2005094052A1

High speed multiple loop DSL system

Inventor(s): Cioffi, John M.

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

24. Issued date: Aug 3, 2011

Patent number(s): EP1733550B1, CA2561009A1, CN1954586A, CN1954586B, EP1733550A1, EP2278785A1, US7639596, US20050152385, WO2005094052A1

Systeme de ligne d'abonne numerique multiboucle haut debit

Inventor(s): Cioffi, John M.

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

25. Issued date: Aug 2, 2011
Patent number(s): US7991122-B2, CA2610811A1, CN101213826A, CN101213826B, CN102833438A, EP1894401A1, EP2549728A1, US20110286503, WO2006129140A1
DSL system training
Inventor(s): Cioffi, John M.; Rhee, Wonjong; Lee, Bin; Ginis, Georgios
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
26. Issued date: Apr 12, 2011
Patent number(s): US7924736-B2, CA2614936A1, CN101233721A, CN101238645A, EP1905195A2, EP1905195A4, US20080205501, US20110188640, WO2007008835A2, WO2007008835A3
DSL system estimation
Inventor(s): Chung, Seong Taek; Cioffi, John M.; Ginis, Georgios; Rhee, Wonjong, Lee, Bin
Original Assignee: ADAPTIVE SPECTRUM&SIGNAL ALIGNMENT INC
27. Issued date: Feb 1, 2011
Patent number(s): US7881438 B2, CN101213827A, CN101213827B, EP1894402A2, US20070036339, WO2006129145A2, WO2006129145A3
Self-learning and self-adjusting DSL system
Inventor(s): Cioffi, John M.; Rhee, Wonjong; Lee, Bin; Ginis, Georgios; Almandoz, Iker
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
28. Issued date: Jan 26, 2011
Patent number(s): EP1894377B1, CN101238693A, CN101238693B, DE602006019862D1, EP1894377A2, US7852952, US20060280237, WO2006131793A2, WO2006131793A3
DSL system loading and ordering
Inventor(s): Rhee, Wonjong; Almandoz, Iker; Cioffi, John M.; Lee, Bin; Ginis, Georgios
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
29. Issued date: Jan 26, 2011
Patent number(s): EP1894377B1, CN101238693A, CN101238693B, DE602006019862D1, EP1894377A2, US7852952, US20060280237, WO2006131793A2, WO2006131793A3
Chargement et mise en sequence de systeme DSL
Inventor(s): Rhee, Wonjong; Almandoz, Iker; Cioffi, John M.; Lee, Bin; Ginis, Georgios
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
30. Issued date: Dec 14, 2010
Patent number(s): US7852952-B2, CN101238693A, CN101238693B, DE602006019862D1, EP1894377A2, EP1894377B1, US20060280237, WO2006131793A2, WO2006131793A3
DSL system loading and ordering
Inventor(s): Rhee, Wonjong; Almandoz, Iker; Cioffi, John M.; Lee, Bin; Ginis, Georgios
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

31. Issued date: Nov 9, 2010
Patent number(s): US7830955-B2, CA2614942A1, EP1905164A2, EP1905164A4, US20080219290, WO2007008836A2, WO2007008836A3, WO2007008836A8
Adaptive Margin and Band Control
Inventor(s): Chung, Seong Taek; Cioffi, John M.; Rhee, Wonjong; Ginis, Georgios
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
32. Issued date: Oct 19, 2010
Patent number(s): US7817745-B2; CA2610814A1, EP1897306A1, EP2317714A2, US20060274825, WO2006129141A1
Tonal precoding
Inventor(s): Cioffi, John M.; Rhee, Wonjong; Ginis, Georgios
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
33. Issued date: Oct 12, 2010
Patent number(s): US7813420-B2, CN101248636A, CN101248636B, EP1897305A1, US20060276918, WO2006129143A1
Adaptive GDFE
Inventor(s): Cioffi, John M.; Rhee, Wonjong; Lee, Bin; Ginis, Georgios
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
34. Issued date: Oct 5, 2010
Patent number(s): US7809116-B2, CN101133632A, CN101133632B, EP1875729A1, US20060098725, WO2006092730A1
DSL system estimation including known DSL line scanning and bad splice detection capability
Inventor(s): Rhee, Wonjong; Brady, Mark Harold; Cioffi, John M.
Original Assignee: Adaptive Spectrum and Signal Alignment Inc.
35. Issued date: Oct 5, 2010
Patent number(s): US7809996-B2, CA2548743A1, CN1906879A, CN1906879B, CN101841389A, DE602004026918D1, EP1700410A1, EP1700410B1, US7428669, US20050138524, US20090086800, WO2005057837A1
Adaptive FEC codeword management
Inventor(s): Cioffi, John M.
Original Assignee: Cioffi, John M.; Adaptive Spectrum and Signal Alignment Inc.
36. Issued date: Oct 5, 2010
Patent number(s): EP1700410B1, CA2548743A1, CN1906879A, CN1906879B, CN101841389A, DE602004026918D1, EP1700410A1, US7428669, US7809996, US20050138524, US20090086800, WO2005057837A1
Adaptive FEC codeword management
Inventor(s): Cioffi, John M.
Original Assignee: Cioffi, John M.; Adaptive Spectrum and Signal Alignment Inc.
37. Issued date: Aug 10, 2010
Patent number(s): US7773497-B2, CN101218776A, CN101218776B, CN102833059A, EP1880503A1, US8310914, US20060268966, US20110051593, WO2006120510A1, WO2006120510B1
Phantom use in DSL systems
Inventor(s): Rhee, Wonjong; Cioffi, John M.; Lee, Bin; Ginis, Georgios

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

38. Issued date: Aug 10, 2010

Patent number(s): US7774398-B2, CN101248431A, CN101248431B, EP1889177A1, US20060259535, WO2006120511A1

Tonal rotors

Inventor(s): Almandoz, Iker; Cioffi, John M.; Ginis, Georgios

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

39. Issued date: May 4, 2010

Patent number(s): US7711530-B2, CA2548736A1, CN1914855A, CN1914855B, CN102710445A, EP1700423A2, EP1700423B1, EP2187558A2, EP2187558A3, EP2259495A1, EP2259495B1, EP2259564A1, US7302379, US7558315, US20050123027, US20050123028, US20080071516, WO2005057857A2, WO2005057857A3

DSL system estimation and parameter recommendation

Inventor(s): Cioffi, John M.; Rhee, Wonjong

Original Assignee: Cioffi, John M.; Adaptive Spectrum and Signal Alignment Inc.

40. Issued date: Apr 28, 2010

Patent number(s): EP1700410 B1, CA2548743A1, CN1906879A, CN1906879B, CN101841389A, DE602004026918D1, EP1700410A1, US7428669, US7809996, US20050138524, US20090086800, WO2005057837A1

Adaptive FEC codeword management

Inventor(s): Cioffi, John M.

Original Assignee: Cioffi, John M.; Adaptive Spectrum and Signal Alignment Inc.

41. Issued date: Mar 30, 2010

Patent number(s): US7688884-B2, CN101194435A, CN101194435B, EP1897241A1, US20060280238, WO2006131791A1

Vectored DSL nesting

Inventor(s): Cioffi, John M.; Ginis, Georgios

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

42. Issued date: Mar 23, 2010

Patent number(s): US7684546-B2, US20060268733, WO2006120521A1

DSL system estimation and control

Inventor(s): Cioffi, John M.; Almandoz, Iker; Ginis, Georgios; Lee, Bin; Rhee, Wonjong; Sylke, C. Thomas

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

43. Issued date: Feb 2, 2010

Patent number(s): US7657818-B2, CN101204014A, CN101204014B, EP1900106A1, US20070011559, WO2006136883A1

Dynamic minimum-memory interleaving

Inventor(s): Cioffi, John M.; Ginis, Georgios

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

44. Issued date: Dec 29, 2009

Patent number(s): US7639596B2, CA2561009A1, CN1954586A, CN1954586B, EP1733550A1, EP1733550B1, EP2278785A1, US20050152385, WO2005094052A1

High speed multiple loop DSL system

Inventor(s): Cioffi, John M.

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

45. Issued date: Oct 20, 2009

Patent number(s): US7606350-B2, CA2566502A1, DE602005012393D1, EP1757042A1, EP1757042B1, US20050271075, WO2005114924A1

Incentive-based DSL system

Inventor(s): Cioffi, John M.; Rhee, Wonjong

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

46. Issued date: Sep 22, 2009

Patent number(s): US7593458-B2, CA2566499A1, CN103152078A, EP1756963A1, EP1756963B1, US20050259725, WO2005114861A1

FEXT determination system

Inventor(s): Cioffi, John M.

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

47. Issued date: Sep 22, 2009

Patent number(s): US7593426-B1

Bit rate and power allocation for multi-carrier communication systems

Inventor(s): Chung, Seong Taek; Cioffi, John M.; Lee, Jungwon.

Original Assignee: Leland Stanford Junior University

48. Issued date: Aug 11, 2009

Patent number(s): US 7573943-B2, CA2577489A1, CN101019333A, CN101019333B, EP1784923A2, EP1784923B1, EP2472729A1, US20060039454, WO2006051359A2, WO2006051359A3

Interference cancellation system

Inventor(s): Cioffi, John M.

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

49. Issued date: Jul 7, 2009

Patent number(s): US7558315-B2, CA2548736A1, CN1914855A, CN1914855B, CN102710445A, EP1700423A2, EP1700423B1, EP2187558A2, EP2187558A3, EP2259495A1, EP2259495B1, EP2259564A1, US7302379, US7711530, US20050123027, US20050123028, US20080071516, WO2005057857A2, WO2005057857A3

Adaptive margin and band control in digital subscriber line (DSL) systems

Inventor(s): Cioffi, John M.; Rhee, Wonjong

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

50. Issued date: May 19, 2009

Patent number(s): US 7535966-B2, CA2577533A1, CN101019410A, CN101019410B, CN101572760A, CN101572760B, EP1782615A2, EP1843565A1, US8045629, US20060039486, WO2006018716A2, WO2006018716A3

DSL data collection system

Inventor(s): Cioffi, John M.; Rhee, Wonjong

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

51. Issued date: Jan 14, 2009

Patent number(s): EP1757042B1, CA2566502A1, DE602005012393D1, EP1757042A1, US7606350, US20050271075, WO2005114924A1

Incentive-based DSL system

Inventor(s): Cioffi, John M.; Rhee, Wonjong

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

52. Issued date: Jan 14, 2009

Patent number(s): EP1757042B1, CA2566502A1, DE602005012393D1, EP1757042A1, US7606350, US20050271075, WO2005114924A1

Systeme dsl fonde sur l'incitation

Inventor(s): Cioffi, John M.; Rhee, Wonjong

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

53. Issued date: Jan 14, 2009

Patent number(s): EP1757042B1, CA2566502A1, DE602005012393D1, EP1757042A1, US7606350, US20050271075, WO2005114924A1

Incentive-basierendes dsl-system

Inventor(s): Cioffi, John M.; Rhee, Wonjong

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

54. Issued date: Dec 2, 2008

Patent number(s): US7460588-B2, CA2599895A1, CN101133564A, CN101133564B, EP1869790A1, EP1869790B1, EP2326023A2, EP2326023A3, US20060198430, WO2006103557A1, WO2006103557A9

Digital subscriber line (DSL) state and line profile control

Inventor(s): Almandoz, Iker; Cioffi, John M.; Rhee, Wonjong

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

55. Issued date: Sep 23, 2008

Patent number(s): US7428669 B2, CA2548743A1, CN1906879A, CN1906879B, CN101841389A, DE602004026918D1, EP1700410A1, EP1700410B1, US7809996, US20050138524, US20090086800, WO2005057837A1

Adaptive FEC codeword management

Inventor(s): Cioffi, John M.

Original Assignee: Cioffi, John M.; Adaptive Spectrum and Signal Alignment Inc.

56. Issued date: Jul 1, 2008

Patent number(s): US7394752-B2; US2003086362-A1

Joint reduction of NEXT and FEXT in xDSL systems

Inventor(s): Aldana, Carlos; Hasegawa, Kazutomo; Cioffi, John M.; Ginis, Georgios

Original Assignee: Leland Stanford Junior University; Fujitsu Ltd.

57. Issued date: Nov 27, 2007

Patent number(s): US7302379-B2; CA2548736A1, CN1914855A, CN1914855B, CN102710445A, EP1700423A2, EP1700423B1, EP2187558A2, EP2187558A3, EP2259495A1, EP2259495B1, EP2259564A1, US7558315, US7711530, US20050123027, US20050123028, US20080071516, WO2005057857A2, WO2005057857A3

DSL system estimation and parameter recommendation

Inventor(s): Cioffi, John M.; Rhee, Wonjong

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

58. Issued date: Jan 2, 2007

Patent number(s): US7158563-B2, CN1535513A, CN100508432C, CN101005323A, CN101005323B, EP1396101A1, EP1396101A4, EP1396101B1, EP2259456A1, EP2533436A1, US8081704, US20030086514, US20070081582, US20120063531, US20120257691, WO2002100008A1

Dynamic digital communication system control

Inventor(s): Ginis, Georgios; Yu, Wei; Zeng, Chaohuang; Cioffi, John M.

Original Assignee: Leland Stanford Junior University(STRD)

59. Issued date: Sep 19, 2006

Patent number(s): US7110370-B2, US6937623, US20020090008, US20020122437
Method and apparatus for coordinating multi-point to point communications in a multi-tone data transmission system

Inventor(s): Cioffi, John M.; Bingham, John A C; Jacobsen, Krista S.

Original Assignee: Cioffi, John M.; Texas Instruments Inc.

60. Issued date: Aug 30, 2006

Patent number(s): EP1048129B1, DE69736614D1, DE69736614T2, EP1048129A1, US5887032, WO1998010528A1

Method and apparatus for crosstalk cancellation

Inventor(s): Cioffi, John M.

Original Assignee: Amati Communications Corp.

61. Issued date: Aug 30, 2006

Patent number(s): EP1048129B1, DE69736614D1, DE69736614T2, EP1048129A1, US5887032, WO1998010528A1

Verfahren und vorrichtung zur unterdrückung des nebensprechens

Inventor(s): Cioffi, John M.

Original Assignee: Amati Communications Corp.

62. Issued date: Jul 18, 2006

Patent number(s): US 7079549-B2, CA2191437A1, CA2191437C, DE69528646D1, DE69528646T2, EP0763295A1, EP0763295B1, US6473438, US7068678, US20020093989, US20020131455, WO1995034149A1

Method and apparatus for coordinating multi-point to point communications in a multi-tone data transmission system

Inventor(s): Cioffi, John M.; Bingham, John A C; Jacobsen, Krista S.

Original Assignee: Cioffi, John M.; Texas Instruments Inc.

63. Issued date: Jun 27, 2006

Patent number(s): US 7068678-B2, CA2191437A1, CA2191437C, DE69528646D1, DE69528646T2, EP0763295A1, EP0763295B1, US6473438, US7079549, US20020093989, US20020131455, WO1995034149A1

Method and apparatus for coordinating multi-point to point communications in a multi-tone data transmission system

Inventor(s): Cioffi, John M.; Bingham, John A C; Jacobsen, Krista S.

Original Assignee: Cioffi, John M.; Texas Instruments Inc.

64. Issued date: Apr 11, 2006

Patent number(s): US7027537-B1, WO200052845-A; WO200052845-A1; AU200036145-A; US7027537-B1

Iterative multi-user detection

Inventor(s): Cheong, Kok-Wui; Choi, Won-Joon; Fan, Johnny Li-Shung; Wu, Zining;
Cioffi, John M.
Original Assignee: Leland Stanford Junior University

65. Issue date: Jan 24, 2006
Patent number(s): US6990196-B2, EP1358755A2, EP1358755A4, US20020136397,
WO2002063813A2, WO2002063813A3
Crosstalk identification in xDSL systems
Inventor(s): Zeng, Chaohuang; Aldana, Carlos; Salvehar, Atul; Cioffi, John M.
Original Assignee: Leland Stanford Junior University
66. Issued date: Aug 30, 2005
Patent number(s): US6937623-B2, US7110370, US20020090008,
US20020122437
Method and apparatus for coordinating multi-point to point communications
in a multi-tone data transmission system
Inventor(s): Cioffi, John M.; Bingham, John; Jacobsen, Krista S.
Original Assignee: Texas Instruments Inc.
67. Issued date: Dec 7, 2004
Patent number(s): US6829307-B1,
Express bit swapping in a multicarrier transmission system
Inventor(s): Hoo, Louise Min Chuin; Salvekar, Atul; Aldana, Carlos; Cioffi, John M.;
Chow, Peter S; Carlo, James
Original Assignee: Leland Stanford Junior University; Texas Instruments Inc.
68. Issued date: Nov 5, 2003
Patent number(s): EP0755601B1, CA2187753A1, CA2187753C, CN1080030C,
CN1149360A, CN1193507C, CN1380754A, CN1529492A, DE69532076D1,
DE69532076T2, EP0755601A1, EP0755601A4, EP0755601B1, US5519731,
US5673290
Improved ADSL compatible discrete multi-tone apparatus
Inventor(s): Cioffi, John M.
Original Assignee: Amati Communications Corp.
69. Issued date: Nov 5, 2003
Patent number(s): EP 0755601 B1, CA2187753A1, CA2187753C, CN1080030C,
CN1149360A, CN1193507C, CN1380754A, CN1529492A, DE69532076D1,
DE69532076T2, EP0755601A1, EP0755601A4, US5519731, US5673290,
WO1995028773A1
Amelioration d'un appareil a frequences vocales discrettes compatibles avec
les lignes d'abonnees numeriques asymetriques
Inventor(s): Cioffi, John M.
Original Assignee: Amati Communications Corp.
70. Issued date: Apr 2, 2003
Patent number(s): EP894364B1, CA2251887A1, CA2251887C, CN1211944C,
CN1222269A, DE69720436D1, DE69720436T2, EP0894364A1, US5995567,
WO1997040587A1
Radio frequency noise canceller
Inventor(s): Bingham, John A C; Cioffi, John M.; Mallory, Mark P.
Original Assignee: Amati Communications Corp.

71. Issued date: Apr 2, 2003
Patent number(s): EP894364B1, CA2251887A1, CA2251887C, CN1211944C, CN1222269A, DE69720436D1, DE69720436T2, EP0894364A1, US5995567, WO1997040587A1
Rauschunterdrückung für hochfrequenzsignale
Inventor(s): Bingham, John A C; Cioffi, John M.; Mallory, Mark P.
Original Assignee: Amati Communications Corp.
72. Issued date: Jan 28, 2003
Patent number(s): US6512797-B1
Peak to average power ratio reduction
Inventor(s): Tellado, Jose; Cioffi, John M.
Original Assignee: Leland Stanford Junior University
73. Issued date: Oct 29, 2002
Patent number(s): US6473438B1, CA2191437A1, CA2191437C, DE69528646D1, DE69528646T2, EP0763295A1, EP0763295B1, US7068678, US7079549, US20020093989, US20020131455, WO1995034149A1
Method and apparatus for coordinating multi-point to-point communications in a multi-tone data transmission system
Inventor(s): Cioffi, John M.; Bingham, John; Jacobsen, Krista S.
Original Assignee: Amati Communications Corp.
74. Issued date: Oct 23, 2002
Patent number(s): EP7063295B1, CA2191437A1, CA2191437C, DE69528646D1, DE69528646T2, EP0763295A1, US6473438, US7068678, US7079549, US20020093989, US20020131455, WO1995034149A1
Method and apparatus for coordinating multi-point to point communications in a multi-tone data transmission system
Inventor(s): Cioffi, John M.; Bingham, John A C; Jacobsen, Krista S.
Original Assignee: Amati Communications Corp.
75. Issued date: Oct 23, 2002
Patent number(s): EP763295B1, CA2191437A1, CA2191437C, DE69528646D1, DE69528646T2, EP0763295A1, US6473438, US7068678, US7079549, US20020093989, US20020131455, WO1995034149A1
Verfahren und einrichtung zum koordinieren von mehrlpunktkommunikation in einem mehrtonübertragungssystem
Inventor(s): Cioffi, John M.; Bingham, John A C; Jacobsen, Krista S.
Original Assignee: Amati Communications Corp.
76. Issued date: Jul 23, 2002
Patent number(s): US6424681-B1
Peak to average power ratio reduction
Inventor(s): Tellado, Jose; Cioffi, John M.
Original Assignee: Leland Stanford Junior University
77. Issued date: Nov 6, 2001
Patent number(s): US6314146B1, WO9955025-A; WO9955025-A2; AU9936573-A; US6314146-B1; US6424681-B1; US6512797-B1
Peak to average power ratio reduction
Inventor(s): Tellado, Jose; Cioffi, John M.
Original Assignee: Leland Stanford Junior University

78. Issued date: Sep 26, 2000 - lapsed
Patent number(s): US6125150-A
Transmission system using code designed for transmission with periodic interleaving
Inventor(s): Cioffi, John M.; Wesel, Richard Dale
Original Assignee: Leland Stanford Junior University
79. Issued date: Nov 30, 1999
Patent number(s): US5995567-A
Radio frequency noise canceller
Inventor(s): Bingham, John A C; Cioffi, John M.; Mallory, Mark P.
Original Assignee: Texas Instruments Inc.
80. Issued date: Aug 3, 1999
Patent number(s): US 5933454-A
Multi-carrier data transmissions system using an overhead bus for synchronizing multiple remote units
Inventor(s): Cioffi, John M.
Original Assignee: Amati Communications Corp.
81. Issued date: Mar 23, 1999
Patent number(s): US5887032A, DE69736614D1, DE69736614T2, EP1048129A1, EP1048129B1, WO1998010528A1
Method and apparatus for crosstalk cancellation
Inventor(s): Cioffi, John M.
Original Assignee: Amati Communications Corp.
- Issued date: Nov 17, 1998
Patent number(s): US5838779-A, WO1995007576A2, WO1995007576A3
Digital sound broadcasting using a dedicated control channel
Inventor(s): Cioffi, John M.; Bingham, John A. C.; Mallory, Mark P.
Original Assignee: Amati Communications Corp.
82. Issued date: Jul 28, 1998
Patent number(s): US5787113A, EP0734618A1, US5623513, WO1995017049A1
Mitigating clipping and quantization effects in digital transmission systems
Inventor(s): Bingham, John A C; Chow, Jacky S; Cioffi, John M.; Flowers, Mark Bradford;
Original Assignee: Amati Communications Corp.
83. Issued date: Jun 30, 1998 - lapsed
Patent number(s): US5774500-A
Multi-channel trellis shaper
Inventor(s): Zogakis, T. Nicholas; Cioffi, John M.
Original Assignee: Leland Stanford Junior University
84. Issued date: Apr 29, 1997
Patent number(s): US5625651-A, US5933454

Discrete multi-tone data transmission system using an overhead bus for synchronizing multiple remote units
Inventor(s): Cioffi, John M.
Original Assignee: Amati Communications Corp.; Cioffi, John M.; Texas Instruments Inc.

85. Issued date: Apr 22, 1997
Patent number(s): US 5623513-A, EP0734618A1, US5787113, WO1995017049A1
Mitigating clipping and quantization effects in digital transmission systems
Inventor(s): Chow, Jacky S; Bingham, John A C; Flowers, Mark B; Cioffi, John M.
Original Assignee: Amati Communications Corp.
86. Issued date: Jan 21, 1997 - lapsed
Patent number(s): CA2113330-A; US5596604-A; CA2113330-C
Multicarrier modulation transmission system with variable delay
Inventor(s): Cioffi, John M.; Tong, Po; Aslanis, James T; Gooch, Antoinette H.
Original Assignee: Cioffi, John M.; Amati Communications Corp.
87. Issued date: May 21, 1996
Patent number(s): US5519731-A, CA2187753A1, CA2187753C, CN1080030C, CN1149360A, CN1193507C, CN1380754A, CN1529492A, DE69532076D1, DE69532076T2, EP0755601A1, EP0755601A4, EP0755601B1, US5673290, WO1995028773A1
ADSL compatible discrete multi-tone apparatus for mitigation of T1 noise
Inventor(s): Cioffi, John M.
Original Assignee: Cioffi, John M.; Amati Communications Corp.
88. Issued date: Dec 26, 1995
Patent number(s): US5479447-A
Method and apparatus for adaptive, variable bandwidth, high-speed data transmission of a multicarrier signal over digital subscriber lines
Inventor(s): Chow, Peter S; Cioffi, John M.
Original Assignee: Leland Stanford Junior University
89. Issued date: Jul 4, 1995 - lapsed
Patent number(s): US5430661-A, EP0560945A1, EP0560945A4, WO1992010029A1
Adaptive decision feedback equalizer apparatus for processing information stored on digital storage media
Inventors: Abbott, William L; Bednarz, Philip S; Cioffi, John M; Fisher, Kevin D.
Original Assignee: Leland Stanford Junior University
90. Issued date: May 31, 1994
Patent number(s): US5317596-A
Method and apparatus for echo cancellation with discrete multitone modulation
Inventor(s): Ho, Minnie; Cioffi, John M.
Original Assignee: Leland Stanford Junior University
91. Issued date: Feb 8, 1994
Patent number(s): US 5285474 A, WO9326096-A1

Method for equalizing a multicarrier signal in a multicarrier communication system

Inventor(s): Chow, Jacky; Cioffi, John M.

Original Assignee: Leland Stanford Junior University

92. Issued date: Jun 15, 1993

Patent number(s): US5220570-A

Programmable viterbi signal processor

Inventor(s): Lou, Huiling; Cioffi, John M.

Original Assignee: Leland Stanford Junior University

93. Issued date: Jul 21, 1992 - lapsed

Patent number(s): US5132988 A

Adaptive decision feedback equalizer apparatus for processing information stored on digital storage media

Inventor(s): Fisher, Kevin D.; Abbott, William L.; Cioffi, John M.; Bednarz, Philip S.

Original Assignee: Leland Stanford Junior University

APPLICATIONS FILED - PENDING

94. Application Filing date: Mar 4, 2009

Patent number(s): WO2010101568-A1; AU2009341558-A1; CA2754351-A1; EP2404385-A1; US2012051410-A1; CN102379090-A; JP2012520007-W; IN201106822-P4; JP5221778-B2

DSL noise cancellation

Inventor(s): Brady, Mark; Cioffi, John M.; Flowers, Mark B.; Mallory, Mark; Mohseni, Mehdi

Original Assignee: Adaptive Spectrum and Signal Alignment Inc. ; Flowers, Mark B.; Cioffi, John M.; Mallory, Mark; Mohseni, Mehdi; Brady, Mark;

95. Application Filing date: Oct 11, 2007

Patent number(s): WO2008045525-A2; WO2008045525-A3; EP2077030-A2; IN200900919-P3; AU2007308107-A1; CN101536482-A; JP2010507274-W; US2010074312-A1; AU2007308107-B2

High speed multiple user multiple loop DSL system

Inventor(s): Cioffi, John M.; Ginis, Georgios; Jagannathan Sumanth

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

96. Application Filing date: Oct 5, 2007

Patent number(s): WO2008045332A2, CN101536343A, EP2076972A2, US8340279, US20100135482, WO2008045332A3

Interference cancellation system

Inventor(s): Cioffi, John M.; Chen, Chiang-Yu; Jagannathan Sumanth

Original Assignee: Cioffi, John M.; Chen, Chiang-Yu; Jagannathan Sumanth; Adaptive Spectrum and Signal Alignment Inc.

97. Application Filing date: Apr 27, 2007

Patent number(s): WO2007130878-A2; WO2007130878-A3; EP2025115-A2; AU2007248256-A1; US2009168972-A1; CA2651247-A1; IN200806478-P4; CN101523882-A; JP2009536000-W; AU2007248256-A2; EP2388984-A1; BR200709756-A2; AU2007248256-B2

Methods and Apparatus to Perform Line Testing at Customer Premises

Inventor(s): Cioffi, John M.; Ginis, George; Hart, Richard Denis, Silverman, Peter J.; Lee, Bin

Original Assignee: AT & T Knowledge Ventures; Cioffi, John M.; Ginis, George; Hart, Richard Denis, Silverman, Peter J.; Lee, Bin

98. Application Filing date: Mar 17, 2006

Patent number(s): US2006280235-A1; WO2006131794-A1; AU2006256483-A1; EP1911256-A1; IN200800016-P3; CN101233742-A; CA2611387-A1; JP2008546340-W; AU2006256483-B2; CN101233742-B; BR200611734-A2; JP4928546-B2

User-preference-based DSL system

Inventor(s): Rhee, Wonjong; Cioffi, John M.; Silverman, Peter J.; Ginis, Georgios

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

99. Application Filing date: Feb 28, 2006

Patent number(s): EP1889177A1, CN101248431A, CN101248431B, US7774398, US20060259535, WO2006120511A1

QR decomposition in DSL equalizers using real Givens rotations

Inventor(s): Almandoz, Iker; Cioffi, John M.; Ginis, Georgios

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

100. Application Filing date: Jan 18, 2006

Patent number(s): WO2006078692A3, EP1839411A2, EP1839411A4, US7453822, US7826391,

US20060159106, US20090040939, WO2006078692A2

System and method for managing broadband services

Inventor(s): Slyke, John Porter Van; Cioffi, John M.; Jiang, Baofeng; Savor, Raghendra G.

Original Assignee: Slyke, John Porter Van; Cioffi, John M.; Jiang, Baofeng; Savor, Raghendra G.

101. Application Filing date: Dec 2, 2004

Patent number(s): EP1700410A1, CA2548743A1, CN1906879A, CN1906879B, CN101841389A, DE602004026918D1, EP1700410B1, US7428669, US7809996, US20050138524, US20090086800, WO2005057837A1

Gestion adaptative des mots de code de correction d'erreurs sans voie de retour

Inventor(s): Cioffi, John M.

Original Assignee: Adaptive Spectrum and Signal Alignment Inc.

102. Application Filing date: Aug 29, 1997

Patent number(s): WO1998009381A1, CA2264170A1, CA2302289A1, CA2302289C, DE69725995D1, DE69725995T2, EP0920738A1, EP0920738A4, EP0931388A2, EP0931388B1, US6144711, US6377631, US6452981, US6888899, US7145971, US7203249, US7555060, US7664188, US7826560, US8036307, US8442152, US20030072382, US20050157810, US20050195915, US20070019754, US20070140374, US20100091906, US20110019771, US20110310996, WO1998009385A2, WO1998009385A3, WO1998009395A1

High capacity wireless communication using spatial subchannels

Inventor(s): Raleigh, Gregory G.; Cioffi, John M.
Original Assignee: Leland Stanford Junior University; Cisco Systems Inc.; Cisco
Technology Inc.

103. Application filing date: Dec 6, 1994

Patent number(s): WO1995017049A1, EP0734618A1, US5623513, US5787113

Method of mitigating the effects of clipping or quantization in the d/a
converter of the transmit path of an echo canceller

Inventor(s): Bingham, John A C; Chow, Jacky S.; Cioffi, John M.; Flowers, Mark
Bradford

Original Assignee: Amati Communications Corp.

104. Application filing date: Feb 4, 1992

Patent number(s): EP498369-A; EP498369-A2; AU9210549-A; CA2060250-A;
JP4354212-A; EP498369-A3

Echo cancellation for multi carrier data signals on two-wire lines - emulating echoes
using transmitted signals, subtracts from hybrid output and adapting emulator
parameters continuously with transmitted data.

Inventor(s): Cioffi, John M.; Bingham, John A C.

Original Assignee: Telebit Corp.

105. Application filing date: Dec 2, 1991

Patent number(s): WO1992010029A1, EP0560945A1, EP0560945A4,
US5430661

Egaliseur recursif adaptatif pour le traitement d'informations stockees sur des
supports de donnees numeriques

Inventors: Abbott, William L; Bednarz, Philip S; Cioffi, John M; Fisher, Kevin D.

Original Assignee: Leland Stanford Junior University