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Modern Telecom Systems LLC*

**UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA  
SOUTHERN DIVISION**

MODERN TELECOM SYSTEMS  
LLC, a California limited liability  
company,

Plaintiff,

vs.

EARTHLINK, LLC, a Delaware limited  
liability company,

Defendant.

Case No. SACV14-00347 AG (ANx)

**SECOND AMENDED COMPLAINT  
FOR PATENT INFRINGEMENT**

**JURY TRIAL DEMANDED**

This is an action for patent infringement in which Plaintiff Modern Telecom Systems LLC ("MTS") makes the following allegations against Earthlink, LLC ("EARTHLINK"):

**THE PARTIES**

1. MTS is a California limited liability company.
2. On information and belief, Earthlink, LLC is a Delaware limited liability company with its principal place of business at 1375 Peachtree Street,

1 Atlanta, Georgia 30309. On information and belief, Earthlink, LLC can be served  
2 through its registered agent, National Registered Agents, Inc., 160 Greentree Dr  
3 Ste 101, Dover, DE 19904.

#### 4 **JURISDICTION**

5 3. This action arises under the patent laws of the United States, 35  
6 U.S.C. § 1, et seq., including § 271. This Court has subject matter jurisdiction  
7 pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8 4. This Court has personal jurisdiction over EARTHLINK because, on  
9 information and belief, EARTHLINK has done business in this District, has  
10 committed and continues to commit acts of patent infringement in this District,  
11 and/or has harmed and continues to harm MTS in this District, by, among other  
12 things, using, selling, offering for sale, and/or importing infringing products and  
13 services in this District.

14 5. Venue is proper in this District under 28 U.S.C. §§ 1391(b)-(d) and  
15 1400(b) because, among other reasons, EARTHLINK is subject to personal  
16 jurisdiction in this District, and has committed and continues to commit acts of  
17 patent infringement in this District. On information and belief, for example,  
18 EARTHLINK has used, sold, offered for sale, and/or imported infringing products  
19 or services in this District.

#### 20 **FACTUAL BACKGROUND**

21 6. The technology claimed in the patents asserted in this action was  
22 invented during the research and development activities of the Rockwell,  
23 Conexant, and Mindspeed family of companies. In 1999, Rockwell International  
24 spun off Rockwell Semiconductor group as Conexant Systems Inc. Conexant  
25 inherited Rockwell's mixed signal semiconductor expertise and intellectual  
26 property portfolio, and was focused on developing semiconductor products for a  
27 broad range of communications applications. These applications included wireline  
28 and wireless voice and data communication networks. Conexant's Internet

1 Infrastructure group was incorporated as Mindspeed Technologies (as a wholly-  
 2 owned subsidiary) in 2001 and spun-off as an independent entity in 2003.  
 3 Mindspeed's focus is on semiconductor and software solutions for Internet access  
 4 devices, switching fabric, and network processors.

5 7. MTS is the owner of the patents asserted in this action and has the  
 6 exclusive right to sue for past, present, and future infringement of these patents.  
 7 MTS assumed all the rights and obligations related to these patents from Glocom  
 8 Patents Licensing, LLC, which in turn assumed all the rights and obligations  
 9 related to these patents from V-Dot Technologies, LLC (formerly V-Dot  
 10 Technologies, Limited) ("VDOT"), which in turn assumed all the rights and  
 11 obligations related to these patents from Telecom Technology Licensing, LLC  
 12 ("TTL"), which in turn assumed all the rights and obligations related to these  
 13 patents from Mindspeed Technologies, Inc.

14 8. MTS does not make, offer for sale, or sell within the United States  
 15 any article covered by the patents asserted in this action, nor does MTS import any  
 16 article covered by the patents asserted in this action into the United States.  
 17 Accordingly, MTS has complied with 35 USC § 287.

## 18 COUNT I

### 19 INFRINGEMENT OF U.S. PATENT NO. 6,504,886

20 9. United States Patent No. 6,504,886 ("the '886 patent"), entitled  
 21 "Communication of an impairment learning sequence according to an impairment  
 22 learning sequence descriptor," issued on January 7, 2003 from United States Patent  
 23 Application No. 09/956,207 filed on September 19, 2001. Application No.  
 24 09/956,207 is a Continuation of U.S. Patent Application Ser. No. 08/969,971,  
 25 entitled Method and Apparatus for Generating a Line Impairment Learning Signal  
 26 for a Data Communication System, filed Nov. 13, 1997 now U.S. Pat. No.  
 27 6,332,009, which is a Continuation-In-Part of U.S. Patent Application Ser. No.  
 28 08/922,851, entitled Method and Apparatus for Generating a Programmable

1 Synchronization Signal for a Data Communication System, filed Sep. 3, 1997, now  
 2 U.S. Pat. No. 6,212,247. A true and correct copy of the '886 patent is attached as  
 3 Exhibit A.

4 10. EARTHLINK has been and now is directly infringing one or more  
 5 claims of the '886 Patent, in this judicial District and elsewhere in the United  
 6 States, by, among other things, practicing a method of communicating a learning  
 7 sequence, said method comprising: receiving a first parameter specifying a number  
 8 of segments in said learning sequence; receiving a second parameter specifying a  
 9 sign pattern of each of said segments; receiving a third parameter specifying a  
 10 training pattern of each of said segments, wherein said training pattern is indicative  
 11 of an ordering of a reference symbol and a training symbol in each of said  
 12 segments; constructing said learning sequence based on said parameters; and  
 13 transmitting said learning sequence. Upon information and belief, EARTHLINK  
 14 practices the claimed method during testing of and commercial operation of its  
 15 dial-up internet service when EARTHLINK customers connect using the  
 16 International Telecommunications Union ("ITU") V.90 or V.92 (56Kbps)  
 17 connection protocol. *See, e.g.,* [http://support.earthlink.net/access-numbers/pop-](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 18 [list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 19 [efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 20 [getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find) (listing local access numbers with V.92 compatibility).

21 11. EARTHLINK has also induced infringement of the '886 patent by  
 22 both its vendors and its customers, as further explained below.

23 12. EARTHLINK has had knowledge of the '886 patent no later than  
 24 March 21, 2014 or shortly thereafter, when EARTHLINK was provided with a  
 25 copy of the original Complaint in this action (D.I. 1), and EARTHLINK has  
 26 induced its vendors, providers of dial-up modem banks that support connections  
 27 using the ITU V.90 or V.92 (56Kbps) protocol, to practice a method of  
 28 communicating a learning sequence, said method comprising: receiving a first

1 parameter specifying a number of segments in said learning sequence; receiving a  
2 second parameter specifying a sign pattern of each of said segments; receiving a  
3 third parameter specifying a training pattern of each of said segments, wherein said  
4 training pattern is indicative of an ordering of a reference symbol and a training  
5 symbol in each of said segments; constructing said learning sequence based on said  
6 parameters; and transmitting said learning sequence.

7 13. For example, on information and belief, EARTHLINK makes  
8 available lists of EARTHLINK local access numbers on its website. Each of these  
9 numbers corresponds to a dial-up modem bank operated by one of EARTHLINK's  
10 vendors, some of which are designated with an asterisk, which "[i]ndicates v.92  
11 compatibility." For example, see [http://support.earthlink.net/access-numbers/pop-](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
12 [list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
13 [efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
14 [getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find). Upon information and belief, in contracting with its vendors  
15 to provide dial-up modem banks that support connections using the V.92 protocol  
16 so that EARTHLINK can advertise to customers and potential customers that its  
17 access numbers support V.92 connections, EARTHLINK specifically intended to  
18 encourage its vendors to connect to its customers' modems using the V.92  
19 protocol, knowing that the use of such protocols constituted infringement of the  
20 '886 patent. Thus, EARTHLINK has induced its vendors to infringe the '886  
21 Patent literally and/or under the doctrine of equivalents. Upon information and  
22 belief, EARTHLINK acted with the specific intent to induce its vendors to connect  
23 to its customers' modems using the methods claimed by the '886 Patent by  
24 continuing the above-mentioned activities with knowledge of the '886 Patent.

25 14. EARTHLINK has also induced its customers, users of  
26 EARTHLINK's dial-up internet service who connect using modems operating  
27 according to the ITU V.90 or V.92 (56Kbps) specifications, to practice a method of  
28 communicating a learning sequence descriptor for use in constructing a learning

sequence, said method comprising: transmitting a first parameter specifying a number of segments in said learning sequence; transmitting a second parameter specifying a sign pattern of each of said segments; and transmitting a third parameter specifying a training pattern of each of said segments, wherein said training pattern is indicative of an ordering of a reference symbol and a training symbol in each of said segments.

15. For example, on information and belief, EARTHLINK makes available lists of EARTHLINK local access numbers on its website. Some of these numbers are designated with an asterisk, which “[i]ndicates v.92 compatibility.”

For example, see <http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find>:

(714) 467-1140 *	GARDEN GROVE, CA	Local
(714) 703-6302	GARDEN GROVE, CA	Local
(714) 467-9604 *	GARDEN GROVE, CA	Local
(714) 262-4006 *	ANAHEIM, CA	Local
(714) 410-0548	ANAHEIM, CA	Local
(714) 905-9601 *	ANAHEIM, CA	Local

\*Indicates v.92 compatibility

In making these lists of EARTHLINK local access numbers available on its website, EARTHLINK specifically intended to encourage its customers to dial into these numbers using V.92 modems to connect to EARTHLINK’s dial-up Internet service using the V.92 protocol in an infringing manner, knowing that the use of such protocols constituted infringement of the ‘886 patent. Thus, EARTHLINK has induced its customers to infringe the ‘886 Patent literally and/or under the doctrine of equivalents. Upon information and belief, EARTHLINK acted with the specific intent to induce its customers to connect to its dial-up internet service

1 using the methods claimed by the '886 Patent by continuing the above-mentioned  
2 activities with knowledge of the '886 Patent.

### 3 COUNT II

#### 4 INFRINGEMENT OF U.S. PATENT NO. 6,332,009

5 16. United States Patent No. 6,332,009 ("the '009 patent"), entitled  
6 "Method and apparatus for generating a line impairment learning signal for a data  
7 communication system," issued on December 18, 2001 from United States Patent  
8 Application No. 08/969,971 filed on November 13, 1997. Application No.  
9 08/969,971 is a Continuation-In-Part of U.S. Patent Application Ser. No.  
10 08/922,851, entitled Method and Apparatus for Generating a Programmable  
11 Synchronization Signal for a Data Communication System, filed Sep. 3, 1997. A  
12 true and correct copy of the '009 patent is attached as Exhibit B.

13 17. EARTHLINK has been and now is directly infringing one or more  
14 claims of the '009 Patent, in this judicial District and elsewhere in the United  
15 States, by, among other things, practicing an impairment learning method for use  
16 over a communication channel, said method comprising: receiving a learning  
17 sequence descriptor over said communication channel, said learning sequence  
18 descriptor having a training symbol order; and transmitting a learning signal over  
19 said communication channel capable of use by a device for learning an impairment  
20 of said communication channel; wherein said learning signal includes a number of  
21 segments, each of said segments being associated with a sequence of symbols  
22 configured in accordance with said learning sequence descriptor, and wherein said  
23 training symbol order is indicative of an assignment of a plurality of training  
24 symbols to said number of segments. Upon information and belief, EARTHLINK  
25 practices the claimed method during testing of and commercial operation of its  
26 dial-up internet service when EARTHLINK customers connect using the  
27 International Telecommunications Union ("ITU") V.90 or V.92 (56Kbps)  
28 connection protocol. See, e.g., <http://support.earthlink.net/access-numbers/pop->



1 [list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 2 [efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 3 [getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find) (listing local access numbers with V.92 compatibility).

4 18. EARTHLINK has also induced infringement of the '009 patent by  
 5 both its vendors and its customers, as further explained below.

6 19. EARTHLINK has had knowledge of the '009 patent no later than  
 7 March 21, 2014 or shortly thereafter, when EARTHLINK was provided with a  
 8 copy of the original Complaint in this action (D.I. 1), and EARTHLINK has  
 9 induced its vendors, providers of dial-up modem banks that support connections  
 10 using the ITU V.90 or V.92 (56Kbps) protocol, to practice an impairment learning  
 11 method for use over a communication channel, said method comprising: receiving  
 12 a learning sequence descriptor over said communication channel, said learning  
 13 sequence descriptor having a training symbol order; and transmitting a learning  
 14 signal over said communication channel capable of use by a device for learning an  
 15 impairment of said communication channel; wherein said learning signal includes  
 16 a number of segments, each of said segments being associated with a sequence of  
 17 symbols configured in accordance with said learning sequence descriptor, and  
 18 wherein said training symbol order is indicative of an assignment of a plurality of  
 19 training symbols to said number of segments.

20 20. For example, on information and belief, EARTHLINK makes  
 21 available lists of EARTHLINK local access numbers on its website. Each of these  
 22 numbers corresponds to a dial-up modem bank operated by one of EARTHLINK's  
 23 vendors, some of which are designated with an asterisk, which "[i]ndicates v.92  
 24 compatibility." For example, see [http://support.earthlink.net/access-numbers/pop-](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 25 [list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 26 [efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 27 [getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find). Upon information and belief, in contracting with its vendors  
 28 to provide dial-up modem banks that support connections using the V.92 protocol



1 so that EARTHLINK can advertise to customers and potential customers that its  
 2 access numbers support V.92 connections, EARTHLINK specifically intended to  
 3 encourage its vendors to connect to its customers' modems using the V.92  
 4 protocol, knowing that the use of such protocols constituted infringement of the  
 5 '009 patent. Thus, EARTHLINK has induced its vendors to infringe the '009  
 6 Patent literally and/or under the doctrine of equivalents. Upon information and  
 7 belief, EARTHLINK acted with the specific intent to induce its vendors to connect  
 8 to its customers' modems using the methods claimed by the '009 Patent by  
 9 continuing the above-mentioned activities with knowledge of the '009 Patent.

10 21. EARTHLINK has also induced its customers, users of  
 11 EARTHLINK's dial-up internet service who connect using modems operating  
 12 according to the ITU V.90 or V.92 (56Kbps) specifications, to practice an  
 13 impairment learning method for use over a communication channel, said method  
 14 comprising: transmitting a learning sequence descriptor over said communication  
 15 channel, said learning sequence descriptor having a training symbol order;  
 16 receiving a learning signal over said communication channel, said learning signal  
 17 having a member of segments, each of said segments being associated with a  
 18 sequence of symbols configured in accordance with said learning sequence  
 19 descriptor, wherein said training symbol order is indicative of an assignment of a  
 20 plurality of training symbols to said number of segments; and learning an  
 21 impairment of said communication channel according to said learning signal.

22 22. For example, on information and belief, EARTHLINK makes  
 23 available lists of EARTHLINK local access numbers on its website. Some of these  
 24 numbers are designated with an asterisk, which "[i]ndicates v.92 compatibility."  
 25 For example, see [http://support.earthlink.net/access-numbers/pop-](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 26 [list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 27 [efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
 28 [getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find). In making these lists of EARTHLINK local access numbers

1 available on its website, EARTHLINK specifically intended to encourage its  
2 customers to dial into these numbers using V.92 modems to connect to the  
3 EARTHLINK dial-up internet service using the 56K V.92 protocol in an infringing  
4 manner, knowing that the use of such protocol constituted infringement of the '009  
5 patent. Thus, EARTHLINK has induced its customers to infringe the '009 Patent  
6 literally and/or under the doctrine of equivalents. Upon information and belief,  
7 EARTHLINK acted with the specific intent to induce its customers to connect to  
8 its dial-up internet service using the methods claimed by the '009 Patent by  
9 continuing the above-mentioned activities with knowledge of the '009 Patent.

### 10 COUNT III

#### 11 INFRINGEMENT OF U.S. PATENT NO. 6,570,932

12 23. United States Patent No. 6,570,932 ("the '932 patent"), entitled  
13 "Calculation and verification of transmit power levels in a signal point  
14 transmission system," issued on May 27, 2003 from United States Patent  
15 Application No. 10/026,096 filed on December 21, 2001. Application No.  
16 10/026,096 is a continuation of U.S. Patent Application Ser. No. 09/740,567, filed  
17 Dec. 18, 2000, now U.S. Pat. No. 6,359,932, which is a continuation of U.S. Patent  
18 Application Ser. No. 09/075,719, filed May 11, 1998, now U.S. Pat. No.  
19 6,163,570. A true and correct copy of the '932 patent is attached as Exhibit C.

20 24. EARTHLINK has been and now is directly infringing one or more  
21 claims of the '932 patent, in this judicial District and elsewhere in the United  
22 States, by, among other things, practicing a method of communicating over a  
23 communication channel using a constellation including a plurality of signal points,  
24 said method comprising: determining a probability of transmission of each signal  
25 point of said constellation; calculating an average power of said signal points using  
26 a power formula based on said probability of transmission of each said signal  
27 point; and comparing said average power with a transmit power limit. Upon  
28

1 information and belief, EARTHLINK practices the claimed method while testing  
2 its dial-up internet service using the ITU V.92 (56Kbps) connection protocol.

3 25. EARTHLINK has had knowledge of the '932 patent no later than  
4 March 21, 2014 or shortly thereafter, when EARTHLINK was provided with a  
5 copy of the original Complaint in this action (D.I. 1), and EARTHLINK has  
6 induced its customers, users of EARTHLINK's dial-up internet service who  
7 connect using modems operating according to the ITU V.92 (56Kbps)  
8 specification, to practice a method of communicating over a communication  
9 channel using a constellation including a plurality of signal points, said method  
10 comprising: determining a probability of transmission of each signal point of said  
11 constellation; calculating an average power of said signal points using a power  
12 formula based on said probability of transmission of each said signal point; and  
13 comparing said average power with a transmit power limit.

14 26. For example, on information and belief, EARTHLINK makes  
15 available lists of EARTHLINK local access numbers on its website. Some of these  
16 numbers are designated with an asterisk, which "[i]ndicates v.92 compatibility."  
17 For example, see [http://support.earthlink.net/access-numbers/pop-](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
18 [list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
19 [efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
20 [getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find). In making these lists of EARTHLINK local access numbers  
21 available on its website, EARTHLINK specifically intended to encourage its  
22 customers to use V.90 or V.92 modems to connect to EARTHLINK's dial-up  
23 internet service using the V.90 or V.92 connection protocol, knowing that such use  
24 constituted infringement of the '932 patent. Thus, EARTHLINK has induced its  
25 customers to infringe the '932 Patent literally and/or under the doctrine of  
26 equivalents. Upon information and belief, EARTHLINK acted with the specific  
27 intent to induce its customers to connect to its dial-up internet service using the  
28

1 method claimed by the '932 Patent by continuing the above-mentioned activities  
2 with knowledge of the '932 Patent.

3 **COUNT IV**

4 **INFRINGEMENT OF U.S. PATENT NO. 7,062,022**

5 27. United States Patent No. 7,062,022 ("the '022 patent"), entitled  
6 "Method and apparatus for fast V.90 modem startup," issued on June 13, 2006  
7 from a United States Patent Application No. 10/753,570 filed on January 8, 2004.  
8 Application No. 10/753,570 is a Continuation of U.S. Patent Application Ser. No.  
9 09/361,842, filed Jul. 27, 1999 now U.S. Pat. No. 6,819,749, which claims the  
10 benefit of U.S. Provisional Application Ser. No. 60/128,874, filed Apr. 12, 1999.  
11 A true and correct copy of the '022 patent is attached as Exhibit D.

12 28. EARTHLINK has been and now is directly infringing one or more  
13 claims of the '022 Patent, in this judicial District and elsewhere in the United  
14 States, by, among other things, practicing a method for reducing startup latency  
15 associated with a data transmission system having a first device configured to  
16 communicate with a second device over a communication channel, said method  
17 comprising the steps of: establishing a call between said first device and said  
18 second device; determining whether a characteristic of said communication  
19 channel is similar to a corresponding characteristic associated with a previously  
20 established communication channel; and initializing at least one of said first and  
21 second devices using a number of stored parameters associated with said  
22 previously established communication channel, said initializing step being  
23 performed if said determining step determines that said characteristic is similar to  
24 said corresponding characteristic. Upon information and belief, EARTHLINK  
25 practices the claimed method while testing its dial-up internet service using the  
26 ITU V.92 (56Kbps) connection protocol.

27 29. EARTHLINK has had knowledge of the '022 patent no later than  
28 March 21, 2014 or shortly thereafter, when EARTHLINK was provided with a

1 copy of the original Complaint in this action (D.I. 1), and EARTHLINK has  
2 induced its customers, users of EARTHLINK's dial-up internet service who  
3 connect using modems operating according to the ITU V.92 (56Kbps)  
4 specification, to practice a method for reducing startup latency associated with a  
5 data transmission system having a first device configured to communicate with a  
6 second device over a communication channel, said method comprising the steps of:  
7 establishing a call between said first device and said second device; determining  
8 whether a characteristic of said communication channel is similar to a  
9 corresponding characteristic associated with a previously established  
10 communication channel; and initializing at least one of said first and second  
11 devices using a number of stored parameters associated with said previously  
12 established communication channel, said initializing step being performed if said  
13 determining step determines that said characteristic is similar to said corresponding  
14 characteristic.

15 30. For example, on information and belief, EARTHLINK makes  
16 available lists of EARTHLINK local access numbers on its website. Some of these  
17 numbers are designated with an asterisk, which "[i]ndicates v.92 compatibility."  
18 For example, see [http://support.earthlink.net/access-numbers/pop-](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
19 [list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr-](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
20 [efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
21 [getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find). In making these lists of EARTHLINK local access numbers  
22 available on its website, EARTHLINK specifically intended to encourage its  
23 customers to dial into these numbers using V.92 modems to connect to the  
24 EARTHLINK dial-up internet service using the 56K V.92 protocol in an infringing  
25 manner, knowing that the use of such protocol constituted infringement of the '022  
26 patent.

27 31. Thus, EARTHLINK has induced its customers to infringe the '022  
28 Patent literally and/or under the doctrine of equivalents. Upon information and

1 belief, EARTHLINK acted with the specific intent to induce its customers to  
2 connect to its dial-up internet service using the method claimed by the '022 Patent  
3 by continuing the above-mentioned activities with knowledge of the '022 Patent.

4 **COUNT V**

5 **INFRINGEMENT OF U.S. PATENT NO. 5,970,100**

6 32. United States Patent No. 5,970,100 ("the '100 patent"), entitled  
7 "System for controlling and shaping the spectrum and redundancy of signal-point  
8 limited transmission," issued on October 19, 1999 from United States Patent  
9 Application No. 09/047,802 filed on March 25, 1998. Application No. 09/047,802  
10 is a continuation-in-part of U.S. Pat. Application Serial No. 08/756,383 filed on  
11 November 27, 1996. Application No. 08/756,383 is a continuation-in-part of U.S.  
12 Pat. Application Ser. No. 08/746,731, filed November 15, 1996. A true and correct  
13 copy of the '100 patent is attached as Exhibit E.

14 33. EARTHLINK has been and now is directly infringing one or more  
15 claims of the '100 patent, in this judicial District and elsewhere in the United  
16 States, by practicing a method of spectrally shaping transmitted samples with a set  
17 of predetermined frequency characteristics and a predetermined set of allowable  
18 transmitted signal levels, wherein a transmitted sample is either of an unmodified  
19 source sample or a dependent sample, the transmitted samples being transmitted in  
20 data frames, said method comprising the steps of: (a) calculating, for each of the  
21 transmitted samples, a Running Filter Sum of unwanted components up to the  
22 current sample, wherein said Running Filter Sum is based on a biquad filter; (b)  
23 computing an objective function in accordance with the Running Filter Sum  
24 obtained in Step (a); (c) selecting, for each data frame of transmitted samples, at  
25 least one redundant sample to be added or modified within the data frame such that  
26 the objective function of Step (b) is optimized. Upon information and belief,  
27 EARTHLINK practices the claimed method during testing of and commercial  
28 operation of its dial-up internet service when EARTHLINK customers connect



1 using the ITU V.92 (56Kbps) connection protocol. See, e.g.,  
2 [http://support.earthlink.net/access-numbers/pop-](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
3 [list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
4 [efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
5 [getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find) (listing local access numbers with V.92 compatibility).

6 34. EARTHLINK has had knowledge of the '100 patent no later than  
7 March 21, 2014 or shortly thereafter, when EARTHLINK was provided with a  
8 copy of the original Complaint in this action (D.I. 1), and EARTHLINK has  
9 induced its vendors, providers of dial-up modem banks that support connections  
10 using the ITU V.90 or V.92 (56Kbps) protocol, to practice a method of spectrally  
11 shaping transmitted samples with a set of predetermined frequency characteristics  
12 and a predetermined set of allowable transmitted signal levels, wherein a  
13 transmitted sample is either of an unmodified source sample or a dependent  
14 sample, the transmitted samples being transmitted in data frames, said method  
15 comprising the steps of: (a) calculating, for each of the transmitted samples, a  
16 Running Filter Sum of unwanted components up to the current sample, wherein  
17 said Running Filter Sum is based on a biquad filter; (b) computing an objective  
18 function in accordance with the Running Filter Sum obtained in Step (a); (c)  
19 selecting, for each data frame of transmitted samples, at least one redundant  
20 sample to be added or modified within the data frame such that the objective  
21 function of Step (b) is optimized.

22 35. For example, on information and belief, EARTHLINK makes  
23 available lists of EARTHLINK local access numbers on its website. Each of these  
24 numbers corresponds to a dial-up modem bank operated by one of EARTHLINK's  
25 vendors, some of which are designated with an asterisk, which "[i]ndicates v.92  
26 compatibility." For example, see [http://support.earthlink.net/access-numbers/pop-](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
27 [list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)  
28 [efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find)

1 [getDomNums=Find](#). Upon information and belief, in contracting with its vendors  
2 to provide dial-up modem banks that support connections using the V.92 protocol  
3 so that EARTHLINK can advertise to customers and potential customers that its  
4 access numbers support V.92 connections, EARTHLINK specifically intended to  
5 encourage its vendors to connect to its customers' modems using the V.92  
6 protocol, knowing that the use of such protocols constituted infringement of the  
7 '100 patent. Thus, EARTHLINK has induced its vendors to infringe the '100  
8 Patent literally and/or under the doctrine of equivalents. Upon information and  
9 belief, EARTHLINK acted with the specific intent to induce its vendors to connect  
10 to its customers' modems using the methods claimed by the '100 Patent by  
11 continuing the above-mentioned activities with knowledge of the '100 Patent.

## 12 COUNT VI

### 13 INFRINGEMENT OF U.S. PATENT NO. 6,163,570

14 36. United States Patent No. 6,163,570 (the '570 patent'), entitled  
15 "Methods and apparatus for verifying transmit power levels in a signal point  
16 limited transmission system," issued on December 19, 2000 from United States  
17 Patent Application No. 09/075,719 filed on May 11, 1998. A true and correct copy  
18 of the '570 patent is attached as Exhibit F.

19 37. EARTHLINK has been and now is directly infringing one or more  
20 claims of the '570 patent, in this judicial District and elsewhere in the United  
21 States, by practicing a method for verifying transmit power levels in a signal point  
22 limited transmission system, wherein said system having: a first device configured  
23 to communicate with a second device over a communication channel; said method  
24 comprising the steps of: receiving at said first device, a plurality of signal points  
25 from said second device, said plurality of signal points having a first computed  
26 transmit power, as determined by said second device, less than or equal to a  
27 transmit power limit, said first computed transmit power being calculated in  
28 accordance with a transmit power calculation formula; calculating, at said first

1 device, in accordance with said transmit power calculation formula, a second  
 2 computed transmit power of said plurality of signal points; and comparing, at said  
 3 first device, said second computed transmit power with said transmit power limit,  
 4 to determine whether said second computed transmit power is less than or equal to  
 5 said transmit power limit. Upon information and belief, EARTHLINK practices  
 6 the claimed method during testing of and commercial operation of its dial-up  
 7 internet service when EARTHLINK customers connect using the ITU V.90 or  
 8 V.92 (56Kbps) connection protocol. *See, e.g.,* [http://support.earthlink.net/access-  
 11 numbers/pop-  
 12 list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr  
 13 efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&  
 14 getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr<br/>
  9 efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&<br/>
  10 getDomNums=Find) (listing local access numbers with V.92 compatibility).

15 38. EARTHLINK has had knowledge of the '570 patent since at least the  
 16 filing of this Amended Complaint for Patent Infringement or shortly thereafter, and  
 17 EARTHLINK has induced its vendors, providers of dial-up modem banks that  
 18 support connections using the ITU V.90 or V.92 (56Kbps) protocol, to practice a  
 19 method for verifying transmit power levels in a signal point limited transmission  
 20 system, wherein said system having: a first device configured to communicate with  
 21 a second device over a communication channel; said method comprising the steps  
 22 of: receiving at said first device, a plurality of signal points from said second  
 23 device, said plurality of signal points having a first computed transmit power, as  
 24 determined by said second device, less than or equal to a transmit power limit, said  
 25 first computed transmit power being calculated in accordance with a transmit  
 26 power calculation formula; calculating, at said first device, in accordance with said  
 27 transmit power calculation formula, a second computed transmit power of said  
 28 plurality of signal points; and comparing, at said first device, said second  
 computed transmit power with said transmit power limit, to determine whether said  
 second computed transmit power is less than or equal to said transmit power limit.

39. For example, on information and belief, EARTHLINK makes available lists of EARTHLINK local access numbers on its website. Each of these numbers corresponds to a dial-up modem bank operated by one of EARTHLINK's vendors, some of which are designated with an asterisk, which "[i]ndicates v.92 compatibility." For example, see <http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&prefix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&getDomNums=Find>. Upon information and belief, in contracting with its vendors to provide dial-up modem banks that support connections using the V.92 protocol so that EARTHLINK can advertise to customers and potential customers that its access numbers support V.92 connections, EARTHLINK specifically intended to encourage its vendors to connect to its customers' modems using the V.92 protocol, knowing that the use of such protocols constituted infringement of the '570 patent. Thus, EARTHLINK has induced its vendors to infringe the '570 Patent literally and/or under the doctrine of equivalents. Upon information and belief, EARTHLINK acted with the specific intent to induce its vendors to connect to its customers' modems using the methods claimed by the '570 Patent by continuing the above-mentioned activities with knowledge of the '570 Patent.

40. EARTHLINK has also induced its customers, users of EARTHLINK's dial-up internet service who connect using modems operating according to the ITU V.90 or V.92 (56Kbps) specification, to practice a method for verifying transmit power levels in a signal point limited transmission system having a first device configured to communicate with a second device over a communication channel, said method comprising the steps of: receiving, at said second device, a transmit power limit calculated in accordance with a predetermined power calculation formula; selecting at least one signal point constellation such that said at least one signal point constellation has a first computed transmit power less than or equal to said transmit power limit, said first

1 computed transmit power being calculated in accordance with said predetermined  
2 power calculation formula; transmitting said at least one signal point constellation  
3 from said second device to said first device; and prompting said first device to  
4 verify that the transmit power of said at least one signal point constellation is less  
5 than or equal to said transmit power limit.

6 41. For example, on information and belief, EARTHLINK makes  
7 available lists of EARTHLINK local access numbers on its website. Some of these  
8 numbers are designated with an asterisk, which “[i]ndicates v.92 compatibility.”  
9 For example, see [http://support.earthlink.net/access-numbers/pop-  
12 list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr  
13 efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&  
14 getDomNums=Find](http://support.earthlink.net/access-numbers/pop-list.php?linkName=log.access.modifiedsubmit&linkParam=&state=&area=949&pr<br/>10 efix=824&num=5011&atype=Modem&getDomNums.x=22&getDomNums.y=5&<br/>11 getDomNums=Find). In making these lists of EARTHLINK local access numbers  
15 available on its website, EARTHLINK specifically intended to encourage its  
16 customers to use V.90 or V.92 modems to connect to EARTHLINK’s dial-up  
17 internet service using the V.90 or V.92 connection protocol in an infringing  
18 manner, knowing that the use of such protocols constituted infringement of the  
19 ‘570 patent. Thus, EARTHLINK has induced its customers to infringe the ‘570  
20 Patent literally and/or under the doctrine of equivalents. Upon information and  
21 belief, EARTHLINK acted with the specific intent to induce its customers to  
22 connect to its dial-up internet service using the methods claimed by the ‘570 Patent  
23 by continuing the above-mentioned activities with knowledge of the ‘570 Patent.

24 \*\*\*\*\*

25 42. By engaging in the conduct described herein, EARTHLINK has  
26 injured MTS and is thus liable for infringement of the ‘886 patent, ‘009 patent,  
27 ‘932 patent, ‘022 patent, ‘100 patent, and ‘570 patent pursuant to 35 U.S.C. § 271.

28 43. EARTHLINK has committed these acts of infringement without  
license or authorization.

44. As a result of EARTHLINK's infringement of the '886 patent, '009 patent, '932 patent, '022 patent, '100 patent, and '570 patent, MTS has suffered monetary damages and is entitled to a money judgment in an amount adequate to compensate for EARTHLINK's infringement, but in no event less than a reasonable royalty for the use made of the invention by EARTHLINK, together with interest and costs as fixed by the Court.

45. MTS has also suffered and will continue to suffer severe and irreparable harm unless this Court issues a permanent injunction prohibiting EARTHLINK, its agents, servants, employees, representatives, and all others acting in active concert therewith from infringing the '886 patent, '009 patent, '932 patent, '022 patent, '100 patent, and '570 patent. In particular, EARTHLINK's disregard for MTS's property rights threatens MTS's relationships with the actual and potential licensees of this intellectual property, inasmuch as EARTHLINK will derive a competitive advantage over any of MTS's current or future licensees by using MTS's patented technology without paying compensation for such use. Accordingly, unless and until EARTHLINK's continued acts of infringement are enjoined, MTS will suffer further irreparable harm for which there is no adequate remedy at law.

#### **PRAYER FOR RELIEF**

WHEREFORE, MTS prays that this Court grant it the following relief:

A. A judgment in favor of MTS that EARTHLINK has infringed the '886 patent, '009 patent, '932 patent, '022 patent, '100 patent, and '570 patent;

B. A permanent injunction enjoining EARTHLINK and its officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in active concert therewith from infringement of the '886 patent, '009 patent, '932 patent, '022 patent, '100 patent, and '570 patent, or such other equitable relief the Court determines is warranted;



C. A judgment and order requiring EARTHLINK to pay MTS its damages, costs, expenses, and prejudgment and post-judgment interest for Defendant's infringement of the '886 patent, '009 patent, '932 patent, '022 patent, '100 patent, and '570 patent, as provided under 35 U.S.C. § 284;

D. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to MTS its reasonable attorneys' fees against EARTHLINK;

E. A judgment and order requiring EARTHLINK to provide an accounting and to pay supplemental damages to MTS, including without limitation, pre-judgment and post-judgment interest; and

F. Any and all other relief to which MTS may be entitled.

#### **DEMAND FOR JURY TRIAL**

MTS, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

DATED: October 30, 2014

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