

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

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SOFTWARE FREEDOM CONSERVANCY, INC. and	:
ERIK ANDERSEN,	:
Plaintiffs,	:
-against-	:
PHOEBE MICRO, INC.,	:
Defendant.	:
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ECF CASE

09-CV-10155 (SAS)

**PLAINTIFFS' RULE 56.1 STATEMENT OF MATERIAL FACTS**

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Conservancy, Inc. and Erik Andersen*

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Pursuant to Local Rule 56.1, plaintiffs submit the following statement of material facts.

**PLAINTIFFS AND THEIR COPYRIGHTS**

1. Plaintiff Erik Andersen is a private individual that resides in Springville, Utah. D. Andersen<sup>1</sup> ¶ 1.

2. Mr. Andersen is a computer programmer and has for many years written and distributed computer software in a professional capacity. D. Andersen ¶ 2.

3. Bradley M. Kuhn is President and Executive Director of Plaintiff Software Freedom Conservancy, Inc. (“Conservancy”), a 501(c)(3) not-for-profit organization incorporated in New York. D. Kuhn ¶ 1.

4. Conservancy’s purpose is to provide fiscal sponsorship and various other non-profit organizational services to volunteer-based, community-oriented Open Source and Free Software projects. D. Kuhn ¶ 1.

5. Conservancy serves as a fiscal sponsor and non-profit home for the BusyBox project, that was maintained for many years by Mr. Erik Andersen (“Andersen”). D. Kuhn ¶ 3.

6. BusyBox is formally part of Conservancy and BusyBox operates under the auspices of Conservancy as a non-profit Open Source and Free Software development project. D. Kuhn ¶ 3.

7. Beginning in about November 1999, Mr. Andersen wrote software and documentation for inclusion in a open source computer program known as BusyBox. D. Andersen ¶ 3.

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<sup>1</sup> The designation “D. [NAME]” refers to the declaration of the identified individual attached to Plaintiffs’ Motion for Summary Judgment.

8. Mr. Andersen allowed his contributions to be included in the BusyBox project, but retained all legal ownership of his copyrights therein. D. Andersen ¶ 3.

9. Over the years, the BusyBox project came to include many of his contributions. D. Andersen ¶ 3.

10. Beginning in about January 2002, Mr. Andersen became maintainer of the BusyBox computer program. D. Andersen ¶ 4.

11. In that capacity, Mr. Andersen supervised, coordinated and managed the release of multiple updates to BusyBox, including every version from 0.60.3 through version 1.1.0. D. Andersen ¶ 4.

12. In addition to the textual modifications Mr. Andersen personally made to BusyBox's source code, as maintainer Mr. Andersen edited and arranged code and documentation contributed by other software developers for inclusion into BusyBox's source code – accepting some contributions, and rejecting other contributions. D. Andersen ¶ 4.

13. Each version of BusyBox released during his tenure comprised a portion of the previous release, together with his own additions and edits to the code, and his arrangement of others' contributions, which Mr. Andersen often edited before adding them. D. Andersen ¶ 4.

14. Mr. Andersen retained all legal ownership of his copyrights associated with his work as maintainer, including his textual modifications, edits, compilations of multiple works, and computer programs therein. D. Andersen ¶ 4.

15. As a maintainer and a developer of the BusyBox program, Mr. Andersen used a version control software program to manage all modifications made to the BusyBox source code

and to store “commit logs” containing all relevant metadata associated with each “commit” (i.e., new and/or modified code submitted for inclusion). D. Andersen ¶ 5.

16. Each commit log is viewable in a format that shows the differences between an affected file before and after the associated commit. D. Andersen ¶ 5.

17. Mr. Andersen used a particular format known as a “patch format,” generated using a utility called “diff.” D. Andersen ¶ 5.

18. Commit logs in patch format contain: (a) a short explanation of where the change occurred; (b) the lines that were added by the commit, if any (preceded with a “+”); and (c) the lines that were removed by the commit, if any (preceded by a “-”). D. Andersen ¶ 5.

19. Mr. Andersen could then generate and/or distribute a “patch,” i.e., a single unit of work that represents a series of changes to the code base in patch format. D. Andersen ¶ 5.

20. A user could then apply that patch to her version of BusyBox and incorporate all of the new changes from the patch into her version of BusyBox. D. Andersen ¶ 5.

21. Each commit log also includes an “author” field, which the version control software program would automatically populate with the name of the developer formally adding (or “committing”) the modification to the BusyBox code base. D. Andersen ¶ 6.

22. As maintainer, Mr. Andersen was responsible for committing many modifications to BusyBox on behalf of other developers who didn't have full access privileges to the version control software program. D. Andersen ¶ 6.

23. In those instances, Mr. Andersen would manually enter the developers' name(s) in a human-readable field of the associated commit logs as recognition of their contributions. D.

Andersen ¶ 6.

24. In contrast, Mr. Andersen did not enter his own name into a human-readable field in commit logs relating to code he personally authored, since his user name was already in the author field. D. Andersen ¶ 6.

25. It would simply have been too burdensome to manually write his own name each time Mr. Andersen made a contribution, especially since the system would automatically identify him as the committer of the change and, thus, the author. D. Andersen ¶ 6.

26. Mr. Andersen made all commit logs produced during his tenure as maintainer available for public viewing and inspection at <http://www.busybox.net>. D. Andersen ¶ 7.

27. All of the commit logs associated with the multiple releases of BusyBox produced during his tenure as maintainer were reviewed by him and other members of the BusyBox community, and are still accessible at <http://www.busybox.net> as of today. D. Andersen ¶ 7.

28. BusyBox is currently maintained using the version control software program Git. D. Andersen ¶ 8.

29. Using basic commands in Git, one can parse the commit logs created during his tenure as maintainer and developer of BusyBox to identify which patches Mr. Andersen personally wrote, as well as which additional patches from third party contributors Mr. Andersen examined, edited and adapted for inclusion into BusyBox. D. Andersen ¶ 8.

30. To identify the lines of code Mr. Andersen added, wrote, and/or edited from September 7, 2001 to the date of the release of BusyBox v.0.60.3, one can use the commands `git blame` and `git log` to generate reports using those date parameters. D. Andersen ¶ 8.

31. For all subsequent versions of BusyBox released under his tenure, one can use the same commands to parse the commit logs associated with those releases. D. Andersen ¶ 8.

32. On April 7, 2007, Mr. Andersen designated Software Freedom Conservancy (“Conservancy”) to act as an enforcement agent on behalf of his copyrights in BusyBox. D. Andersen ¶ 9.

33. Mr. Andersen authorized Conservancy to act on his behalf to encourage and compel users of BusyBox to comply with the terms of the license under which his copyrighted works are distributed. D. Andersen ¶ 9 (annexed thereto as Exhibit 1 is a true copy of an email Mr. Andersen sent to Bradley M. Kuhn on April 7, 2007 designating Conservancy to be his enforcement agent on behalf of his copyrighted works)

34. On April 27, 2002, Mr. Andersen supervised, coordinated and managed the release of BusyBox version 0.60.3. D. Andersen ¶ 10.

35. Mr. Andersen began preparing for this release on September 7, 2001. D. Andersen ¶ 10.

36. From that date until the release date of version 0.60.3, Mr. Andersen committed at least 189 patches, adding or changing at least 10,473 lines of code. D. Andersen ¶ 10.

37. For 142 of those patches (corresponding to 6,039 lines of code), Mr. Andersen did not include any additional attribution to other developers – which reflects his standard practice for code that Mr. Andersen personally authored. D. Andersen ¶ 10.

38. The remaining 47 patches (corresponding to 4,216 lines of code) are from patches contributed by other developers that Mr. Andersen included in the software program, often times

after editing them as Mr. Andersen felt appropriate. D. Andersen ¶ 10.

39. For these patches, Mr. Andersen manually updated the associated commit log to include the name of the contributing developer. D. Andersen ¶ 10.

40. As maintainer, Mr. Andersen created the final arrangement of all commits. D. Andersen ¶ 10.

41. Mr. Andersen registered his copyright in the new and revised computer source code written by him that was included in BusyBox version 0.60.3. D. Andersen ¶ 11 (annexed thereto as Exhibit 2 is a true copy of “BusyBox, v.0.60.3.”, Copyright Reg. No. TX0006869051 (10/2/2008)).

42. On July 15, 2003, Mr. Andersen supervised, coordinated and managed the release of BusyBox version 1.00-pre1. D. Andersen ¶ 12.

43. For this release, Mr. Andersen accepted 92 patches from outside contributors, which added or changed 19,514 lines of code and/or documentation. D. Andersen ¶ 12.

44. Mr. Andersen also applied 166 patches of his own, which accounted for 3,833 lines of code and/or documentation added or changed. D. Andersen ¶ 12.

45. As maintainer, Mr. Andersen created the final arrangement of all commits. D. Andersen ¶ 12.

46. On July 30, 2003, Mr. Andersen supervised, coordinated and managed the release of BusyBox version 1.00-pre2. D. Andersen ¶ 13.

47. For this release, Mr. Andersen accepted 18 patches from outside contributors, which added or changed 9,393 lines of code and/or documentation. D. Andersen ¶ 13.

48. Mr. Andersen also applied 33 patches of his own, which accounted for 386 lines of code and/or documentation added or changed. D. Andersen ¶ 13.

49. As maintainer, Mr. Andersen created the final arrangement of all commits. D. Andersen ¶ 13.

50. On September 12, 2003, Mr. Andersen supervised, coordinated and managed the release of BusyBox version 1.00-pre3. D. Andersen ¶ 14.

51. For this release, Mr. Andersen accepted 17 patches from outside contributors, which added or changed 4,447 lines of code and/or documentation. D. Andersen ¶ 14.

52. Mr. Andersen also applied 18 patches of his own, which accounted for 277 lines of code and/or documentation added or changed. D. Andersen ¶ 14.

53. As maintainer, Mr. Andersen created the final arrangement of all commits. D. Andersen ¶ 14.

54. On December 10, 2003, Mr. Andersen supervised, coordinated and managed the release of BusyBox version 1.00-pre4. D. Andersen ¶ 15.

55. For this release, Mr. Andersen accepted 21 patches from outside contributors, which added or changed 866 lines of code and/or documentation. D. Andersen ¶ 15.

56. Mr. Andersen also applied 37 patches of his own, which accounted for 715 lines of code and/or documentation added or changed. D. Andersen ¶ 15.

57. As maintainer, Mr. Andersen created the final arrangement of all commits. D. Andersen ¶ 15.

58. On December 23, 2003, and January 31, 2004, Mr. Andersen supervised,



coordinated and managed the release of BusyBox version 1.00-pre5 and 1.00-pre6, respectively.

D. Andersen ¶ 16.

59. For these releases, Mr. Andersen accepted 21 patches from outside contributors, which added or changed 1,011 lines of code and/or documentation. D. Andersen ¶ 16.

60. Mr. Andersen also applied 35 patches of his own, which accounted for 718 lines of code and/or documentation added or changed. D. Andersen ¶ 16.

61. As maintainer, Mr. Andersen created the final arrangement of all commits for both releases. D. Andersen ¶ 16.

62. On February 4, 2004, and February 23, 2004, Mr. Andersen supervised, coordinated and managed the release of BusyBox version 1.00-pre7 and 1.00-pre8, respectively. D. Andersen ¶ 17.

63. For these releases, Mr. Andersen accepted 9 patches from outside contributors, which added or changed 128 lines of code and/or documentation. D. Andersen ¶ 17.

64. Mr. Andersen also applied 17 patches of his own, which accounted for 187 lines of code and/or documentation added or changed. D. Andersen ¶ 17.

65. As maintainer, Mr. Andersen created the final arrangement of all commits for both releases. D. Andersen ¶ 17.

66. On April 7, 2004, Mr. Andersen supervised, coordinated and managed the release of BusyBox version 1.00-pre9. D. Andersen ¶ 18.

67. For this release, Mr. Andersen accepted 18 patches from outside contributors, which added or changed 656 lines of code and/or documentation. D. Andersen ¶ 18.

68. Mr. Andersen also applied 48 patches of his own, which accounted for 1,627 lines of code and/or documentation added or changed. D. Andersen ¶ 18.

69. As maintainer, Mr. Andersen created the final arrangement of all commits. D. Andersen ¶ 18.

70. On April 13, 2004, and July 20, 2004, Mr. Andersen supervised, coordinated and managed the release of BusyBox version 1.00-pre10 and version 1.00-rc1, respectively. D. Andersen ¶ 19.

71. For these releases, Mr. Andersen accepted 26 patches from outside contributors, which added or changed 1,886 lines of code and/or documentation. D. Andersen ¶ 19.

72. Mr. Andersen also applied 43 patches of his own, which accounted for 413 lines of code and/or documentation added or changed. D. Andersen ¶ 19.

73. As maintainer, Mr. Andersen created the final arrangement of all commits for both releases. D. Andersen ¶ 19.

74. On July 26, 2004, August 16, 2004, and October 13, 2004, supervised, coordinated and managed the release of BusyBox version 1.00-rc2, 1.00-rc3, and 1.00. D. Andersen ¶ 20.

75. For these releases, Mr. Andersen accepted 37 patches from outside contributors, which added or changed 2,299 lines of code and/or documentation. D. Andersen ¶ 20.

76. Mr. Andersen also applied 42 patches of his own, which accounted for 714 lines of code and/or documentation added or changed. D. Andersen ¶ 20.

77. As maintainer, Mr. Andersen created the final arrangement of all commits for all

three releases. D. Andersen ¶ 20.

78. On August 23, 2011, Mr. Andersen authorized Conservancy to act as his agent with regard to the registration of his copyrights in BusyBox and the maintenance of any existing and/or future copyrights in BusyBox. D. Andersen ¶ 21.

79. Mr. Andersen asked Conservancy to register his contributions relating to text, compilation of multiple works, and editing for the releases discussed above; and specifically to versions 1.00-pre1, 1.00-pre2, 1.00-pre3, 1.00-pre4, 1.00-pre6, 1.00-pre8, 1.00-pre9, 1.00-rc1 and 1.00 of the computer program. D. Andersen ¶ 22 (annexed thereto as Exhibit 3 are true copies of “BusyBox, version 1.00-pre1,” Copyright Reg. No. TX007441841 (8/30/2011); “BusyBox, version 1.00-pre2,” Copyright Reg. No. TX007450229 (8/30/2011); “BusyBox, version 1.00-pre3,” Copyright Reg. No. TX007450225 (8/31/2011); “BusyBox, version 1.00-pre4,” Copyright Reg. No. TX007450179 (8/31/2011); “BusyBox, version 1.00-pre6,” Copyright Reg. No. TX007443243 (9/1/2011); “BusyBox, version 1.00-pre8,” Copyright Reg. No. TX007445924 (9/6/2011); “BusyBox, version 1.00-pre9,” Copyright Reg. No. TX007445912 (9/6/2011); “BusyBox, version 1.00-rc1,” Copyright Reg. No. TX007445909 (9/6/2011); and, “BusyBox, version 1.00” Copyright Reg. No. TX007412131 (9/6/2011)).

80. Mr. Andersen allow his contributions to the BusyBox project to be copied, modified and redistributed by others under certain terms. D. Andersen ¶ 23.

81. Specifically, Mr. Andersen licenses the copyrights in his contributions to BusyBox under the terms of a well known open source software license called the “GNU General Public License, Version 2” (“GPLv2”). D. Andersen ¶ 23 (annexed thereto as Exhibit 4 is a true copy of

GPLv2.)

82. Mr. Andersen does not allow his contributions to be copied, modified or distributed under any other terms. D. Andersen ¶ 23.

### **TECHNOLOGICAL BACKGROUND**

83. Mr. Kuhn holds a summa cum laude Bachelor's degree in Computer Science and a Master's degree in Computer Science. D. Kuhn ¶ 2 (annexed thereto as Exhibit B is a true and correct copy of Mr. Kuhn's resume.).

84. Mr. Kuhn's master's thesis covered topics related to programming language implementations and compilation. D. Kuhn ¶ 2.

85. Mr. Kuhn has extensive industry experience as a software developer and computer systems administrator. D. Kuhn ¶ 2.

86. Since 2001, Mr. Kuhn has been employed at various not-for-profit charities related to Open Source and Free Software. D. Kuhn ¶ 2.

87. His work at these charities has focused extensively around the technical details of proper compliance with the terms and requirements of the GPLv2 and other open source copyright licenses. D. Kuhn ¶ 2.

88. This often includes working directly with companies who had violated the GPLv2 and seek to properly comply with the license. D. Kuhn ¶ 2.

89. Mr. Kuhn has reviewed in detail the original public software releases by Phoebe Micro, Inc. ("Phoebe") that led to Conservancy's filing of this litigation. D. Kuhn ¶ 4.

90. Mr. Kuhn has also monitored Phoebe's software and hardware releases during the

litigation. D. Kuhn ¶ 4.

91. Software is digital information stored on a computer's storage device, such as a hard disk or flash drive. D. Kuhn ¶ 5.

92. Companies and non-profit organizations typically provide software in a variety of different ways to the general public. D. Kuhn ¶ 5.

93. Computers often come with software already installed. D. Kuhn ¶ 5.

94. In addition, consumers can download and install new software to receive updates. D. Kuhn ¶ 5.

95. A programmer creates software in a form called "source code". D. Kuhn ¶ 6.

96. Source code is written in a textual format that humans (trained in computer science) can read and comprehend. D. Kuhn ¶ 6.

97. Before a computer can execute source code, it is translated into binary, which consists of a series of 1's and 0's sequenced such that they cause the computer to perform useful operations. D. Kuhn ¶ 7.

98. A programmer directs a helper program called a "compiler" to translate and modify the programmer's source code into binary. D. Kuhn ¶ 7.

99. A binary is often called an "executable". D. Kuhn ¶ 7.

100. The binary program must be installed onto the computer. D. Kuhn ¶ 8.

101. The process of installation varies depending on the details of the type of computer involved. D. Kuhn ¶ 8.

102. An "operating system" is the base software that every computer needs. D. Kuhn ¶

9.

103. The operating system components are usually organized into a “filesystem”, which is a hierarchical organization of files on the computer’s storage device. D. Kuhn ¶ 9.

104. Software on an embedded computer (such as the wireless routers and Internet cameras in this case) is commonly referred to as “firmware”. D. Kuhn ¶ 10.

105. A firmware comprises the entire set of programs for the computer, including the operating system and any applications, usually organized inside a larger, single file. D. Kuhn ¶ 10.

106. Manufacturers routinely make firmwares for products available online for users to upgrade their embedded computers at home. D. Kuhn ¶ 10.

107. BusyBox is a program that functions well as a core component of the operating system for firmwares in embedded computers. D. Kuhn ¶ 11.

108. BusyBox has been developed on an ongoing basis by many authors, who all license their copyrights under a license called the GNU General Public License, version 2 (“GPLv2”), which is a copyright license. D. Kuhn ¶ 11 (annexed thereto as Exhibit C is a true and correct copy of the GPLv2).

109. GPLv2 § 3 describes the requirements regarding distribution of binary versions of software licensed under GPLv2. D. Kuhn ¶ 12.

110. All three possible options require that the distributor make arrangements for the recipient of binaries to receive the source code for the software. D. Kuhn ¶ 12.

111. GPLv2 further requires that the distributor inform those who receive copies that

they have unlimited permission to copy, modify and/or redistribute the software. D. Kuhn ¶ 12.

**PHOEBE'S INFRINGEMENT**

112. On various dates, Mr. Kuhn examined Phoebe's website and found many different firmwares for various products. D. Kuhn ¶ 13.

113. Mr. Kuhn found that many of these firmwares contained copies of BusyBox and that Phoebe failed to satisfy the requirements of GPLv2 with respect thereto. D. Kuhn ¶ 13.

114. Mr. Kuhn prepared a summary of the Phoebe products, the version of BusyBox found in their firmware, and the dates on which Mr. Kuhn verified Phoebe's failure to meet the requirements of GPLv2 with respect to each. D. Kuhn ¶ 13 (Exhibit A annexed thereto).

115. On 31 August 2009, Mr. Kuhn downloaded Phoebe's AICAP650W firmware by visiting the Airlink101 Support webpage at <http://www.airlink101.com/support/index.php?cmd=files&id=81>. D. Kuhn ¶ 14.

116. From that webpage, Mr. Kuhn downloaded the firmware file located at [http://www.airlink101.com/support/index.php?cmd=files&\\_a=download&id=214](http://www.airlink101.com/support/index.php?cmd=files&_a=download&id=214), which was a zip file identified as "AICAP650W FW 1.0.5". D. Kuhn ¶ 14.

117. That zip file contained another file called Firmware1.0.5\_20070622/FW\_AICAP650\_1.0.5-35\_20070622.bin. D. Kuhn ¶ 14.

118. Byte location 0 of that file was a gzip-compressed sequence. D. Kuhn ¶ 14.

119. When that sequence was uncompressed, byte location 2183168 of that sequence showed another gzip sequence, which was a gzip-compressed ramdisk (a virtual filesystem). D. Kuhn ¶ 14.

120. Inside that ramdisk, was the binary of BusyBox, which included the specific version number 1.00-pre1. D. Kuhn ¶ 14.

121. On 31 August 2009, Mr. Kuhn examined the website of Phoebe's Airlink101 site. D. Kuhn ¶ 15.

122. Mr. Kuhn found nowhere on their website the source code, nor an offer therefor, for the BusyBox binary found in the AICAP650W product and/or its firmware file. D. Kuhn ¶ 15.

123. There was also no notice that some contents of the AICAP650W firmware were licensed under the GPLv2 or that Mr. Kuhn had any right to himself make unlimited copies, modifications and redistributions of those contents for no fee. D. Kuhn ¶ 15.

124. On 26 January 2011, Mr. Kuhn downloaded Phoebe's Airlink101 ANAS350 firmware by visiting the Airlink101 Support webpage at <http://www.airlink101.com/download/anas350.php>. D. Kuhn ¶ 16.

125. From that webpage, Mr. Kuhn downloaded the firmware file [http://www.airlink101.com/support/index.php?cmd=files&\\_a=download&id=327](http://www.airlink101.com/support/index.php?cmd=files&_a=download&id=327), which was a zip file labeled "ANAS350 Firmware v. 400a7 (.bin)". D. Kuhn ¶ 16.

126. The zip file contained a file called ANAS350\_400a7\_BIN.BIN. D. Kuhn ¶ 16.

127. Byte location 1059729 of that file was a LZMA-compressed sequence. D. Kuhn ¶ 16.

128. When that sequence was uncompressed, it was an ext2 filesystem. D. Kuhn ¶ 16.

129. Inside that filesystem, there was a binary of BusyBox, which included the specific version number 1.00-rc2. D. Kuhn ¶ 16.



130. On 26 January 2011, Mr. Kuhn downloaded Phoebe's AR360W3G firmware by visiting the Airlink101 Support webpage at <http://www.airlink101.com/download/ar360w3g.php>. D. Kuhn ¶ 17.

131. From that webpage, Mr. Kuhn downloaded the firmware file located at [http://www.airlink101.com/support/index.php?cmd=files&\\_a=download&id=278](http://www.airlink101.com/support/index.php?cmd=files&_a=download&id=278), which was a zip file identified as "AR360W3G Firmware Upgrade R7.00b5". D. Kuhn ¶ 17.

132. The zip file contained a file called 20080212\_AR360W3G\_R700b5.EXE. D. Kuhn ¶ 17.

133. Byte location 1694121 of that file was a gzip-compressed sequence. D. Kuhn ¶ 17.

134. When that sequence was uncompressed, it was an ext2 filesystem. D. Kuhn ¶ 17.

135. Inside that filesystem, there was a binary version of BusyBox, which included the specific version number 1.00-rc2. D. Kuhn ¶ 17.

136. On 26 January 2011, at both <http://www.airlink101.com/download/ar360w3g.php>, and <http://www.airlink101.com/download/anas350.php>, there were links labeled "GPL Code". D. Kuhn ¶ 18.

137. However, upon following those links, there was no source code available, nor an offer therefor, for the BusyBox binaries found in the ANAS350 and/or the AR360W products and/or their firmwares. D. Kuhn ¶ 18.

138. There was also no notice that Mr. Kuhn had any right to himself make unlimited copies, modifications and redistributions of some contents of the ANAS350 and/or the AR360W firmwares for no fee. D. Kuhn ¶ 18.

139. On 9 August 2011, Mr. Kuhn downloaded Phoebe's AICAP650W firmware from the Airlink101 website. Specifically, Mr. Kuhn downloaded [http://airlink101.com/LegacyFW/AICAP650W/FW\\_AICAP650\\_1.0.5-35\\_20070622.bin](http://airlink101.com/LegacyFW/AICAP650W/FW_AICAP650_1.0.5-35_20070622.bin). D. Kuhn ¶ 19.

140. Mr. Kuhn confirmed again the presence of a binary of BusyBox, which included the specific version number 1.00-pre1. D. Kuhn ¶ 19.

141. On 9 August 2011, Mr. Kuhn downloaded Phoebe's AICAP650 firmware from the Airlink101 website. Specifically, Mr. Kuhn downloaded the firmware file from: [http://airlink101.com/LegacyFW/AICAP650/FW\\_AICAP650\\_1.0.5-35\\_20070622.bin](http://airlink101.com/LegacyFW/AICAP650/FW_AICAP650_1.0.5-35_20070622.bin). D. Kuhn ¶ 20.

142. Mr. Kuhn confirmed again the presence of a binary of BusyBox, which included the specific version number 1.00-pre1. D. Kuhn ¶ 20.

143. On 9 August 2011, Mr. Kuhn downloaded Phoebe's AICN500 firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded the firmware file: [http://airlink101.com/LegacyFW/AICN500/AICN500\\_FW\\_100\\_B25.zip](http://airlink101.com/LegacyFW/AICN500/AICN500_FW_100_B25.zip). D. Kuhn ¶ 21.

144. The zip file contained a file called FW\_AICN500\_1.0.0-25\_20090303.pck. D. Kuhn ¶ 21.

145. Byte location 681088 of that file was a gzip-compressed sequence. D. Kuhn ¶ 21.

146. This sequence was a gzip-compressed minix filesystem (a virtual filesystem). Inside that filesystem, there was a binary of BusyBox, which included the specific version number 1.01. D. Kuhn ¶ 21.

147. On 9 August 2011, Mr. Kuhn downloaded Phoebe's AICN500W firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded the firmware file: [http://airlink101.com/LegacyFW/AICN500W/AICN500W\\_FW\\_100\\_B30.zip](http://airlink101.com/LegacyFW/AICN500W/AICN500W_FW_100_B30.zip). D. Kuhn ¶ 22.

148. The zip file contained a file called AICN500W\_FW\_100\_B30/FW\_AICN500W\_1.0.0-30\_20090305.pck. D. Kuhn ¶ 22.

149. Byte location 681088 of that file was a gzip-compressed sequence. D. Kuhn ¶ 22.

150. That sequence was a gzip-compressed minix filesystem (a virtual filesystem). Inside that filesystem, there was a binary of BusyBox, which included the specific version number 1.01. D. Kuhn ¶ 22.

151. On 9 August 2011, Mr. Kuhn downloaded Phoebe's AICN747W firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded the firmware file: [http://airlink101.com/LegacyFW/AICN747W/FW\\_AICN747W\\_1\\_1\\_0-28\\_20100609\\_r531.rar](http://airlink101.com/LegacyFW/AICN747W/FW_AICN747W_1_1_0-28_20100609_r531.rar). D. Kuhn ¶ 23.

152. The rar archive file contains a file called FW\_AICN747W\_1\_1\_0-28\_20100609\_r531.pck. D. Kuhn ¶ 23.

153. Byte location 681088 of that file was a gzip-compressed sequence. D. Kuhn ¶ 23.

154. That sequence was a gzip-compressed minix filesystem (a virtual filesystem). D. Kuhn ¶ 23.

155. Inside that filesystem, there was a binary of BusyBox, which included the specific version number 1.01. D. Kuhn ¶ 23.

156. On 9 August 2011, Mr. Kuhn downloaded a copy of Phoebe's AICN777W

firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded the firmware file: [http://airlink101.com/LegacyFW/AICN777W/FW\\_AICN777W\\_1\\_1\\_0-28\\_20100610\\_r532.rar](http://airlink101.com/LegacyFW/AICN777W/FW_AICN777W_1_1_0-28_20100610_r532.rar). D. Kuhn ¶ 24.

157. The rar archive file contained a file called FW\_AICN777W\_1\_1\_0-28\_20100610\_r532.pck. D. Kuhn ¶ 24.

158. Byte location 798096 of that file was a gzip-compressed sequence. D. Kuhn ¶ 24.

159. That sequence was a gzip-compressed minix filesystem (a virtual filesystem). D. Kuhn ¶ 24.

160. Inside that filesystem, there was a binary of BusyBox, which included the specific version number 1.01. D. Kuhn ¶ 24.

161. On 9 August 2011, Mr. Kuhn downloaded a copy of the firmware for Phoebe's ANAS350 firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded [http://airlink101.com/LegacyFW/ANAS350/ANAS350\\_400a7.zip](http://airlink101.com/LegacyFW/ANAS350/ANAS350_400a7.zip). D. Kuhn ¶ 25.

162. The zip file contained a file called ANAS350\_400a7.EXE. D. Kuhn ¶ 25.

163. Byte location 2038245 of that file was an LZMA-compressed sequence. D. Kuhn ¶ 25.

164. That sequence was a ext2 filesystem (a virtual filesystem). D. Kuhn ¶ 25.

165. Inside that filesystem, there was a binary of BusyBox, which included the specific version number 1.00-rc2. D. Kuhn ¶ 25.

166. On 9 August 2011, Mr. Kuhn downloaded Phoebe's AP671W firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded

[http://airlink101.com/LegacyFW/AP671W/EW7529APN\\_Phoebe\\_1\\_06\\_upg.bin](http://airlink101.com/LegacyFW/AP671W/EW7529APN_Phoebe_1_06_upg.bin). D. Kuhn ¶ 26.

167. At byte location 1241310 of that file, there was an LZMA-compressed sequence. D. Kuhn ¶ 26.

168. That sequence was a binary of BusyBox, which included the specific version number 1.11.1. D. Kuhn ¶ 26.

169. On 9 August 2011, Mr. Kuhn downloaded a copy of the firmware for Phoebe's AR360W3G firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded [http://airlink101.com/LegacyFW/AR360W3G/20080212\\_AR360W3G\\_R700b5.zip](http://airlink101.com/LegacyFW/AR360W3G/20080212_AR360W3G_R700b5.zip). D. Kuhn ¶ 27.

170. A file comparison showed that this file, 20080212\_AR360W3G\_R700b5.zip, was the same file analyzed in ¶ 17, and thus it contained a binary of BusyBox, which included the specific version number 1.00-rc2. D. Kuhn ¶ 27.

171. On 9 August 2011, Mr. Kuhn downloaded a Phoebe's AR525W firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded: [http://airlink101.com/LegacyFW/AR525W/AirLink\\_MIMO\\_20060710-v1.0.54.rar](http://airlink101.com/LegacyFW/AR525W/AirLink_MIMO_20060710-v1.0.54.rar). D. Kuhn ¶ 28.

172. The rar archive contained a file called [AirLink\\_MIMO\\_20060710-v1.0.54/AirLink\\_MIMO\\_20060710-v1.0.54\\_crc\\_hdr.img](#). D. Kuhn ¶ 28.

173. Byte location 726280 of that file was a squashfs filesystem (a virtual filesystem). D. Kuhn ¶ 28.

174. Inside that filesystem, there was a binary of BusyBox, which included the specific

version number 1.00. D. Kuhn ¶ 28.

175. On 9 August 2011, Mr. Kuhn downloaded a copy of the firmware for Phoebe's AR570W firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded: [http://airlink101.com/LegacyFW/AR570W/BR6225N\\_Phoebe\\_1.31\\_upg.bin](http://airlink101.com/LegacyFW/AR570W/BR6225N_Phoebe_1.31_upg.bin). D. Kuhn ¶ 29.

176. At byte location 1299331 of that file, there was an LZMA-compressed sequence. D. Kuhn ¶ 29.

177. That sequence was a binary of BusyBox, which included the specific version number 1.15.2. D. Kuhn ¶ 29.

178. On 9 August 2011, Mr. Kuhn downloaded Phoebe's AR660W3G firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded: [http://airlink101.com/LegacyFW/AR660W3G/3G6400N\\_Phoebe\\_2\\_09.bin](http://airlink101.com/LegacyFW/AR660W3G/3G6400N_Phoebe_2_09.bin). D. Kuhn ¶ 30.

179. Byte location 1284697 of that file was an LZMA-compressed sequence. D. Kuhn ¶ 30.

180. That sequence was a binary of BusyBox, which included the specific version number 1.11.1. D. Kuhn ¶ 30.

181. On 9 August 2011, Mr. Kuhn downloaded Phoebe's AR675W firmware by visiting the Airlink101 website. Specifically, Mr. Kuhn downloaded [http://airlink101.com/LegacyFW/AR675W/BR6428N\\_Phoebe\\_v1\\_19\\_upg.bin](http://airlink101.com/LegacyFW/AR675W/BR6428N_Phoebe_v1_19_upg.bin). D. Kuhn ¶ 31.

182. At byte location 608290 of that file, there was a squashfs filesystem (a virtual filesystem). D. Kuhn ¶ 31.

183. Inside that filesystem, there was a binary of BusyBox, which included the specific

version number 1.00-pre8. D. Kuhn ¶ 31.

184. On 9 August 2011, Mr. Kuhn downloaded a copy of the firmware for Phoebe Micro's AR680W firmware by visiting the Airlink101 file archive site. Specifically, Mr. Kuhn downloaded [http://airlink101.com/LegacyFW/AR680W/ar680w\\_v1\\_01\\_849a.bin](http://airlink101.com/LegacyFW/AR680W/ar680w_v1_01_849a.bin). D. Kuhn ¶ 32.

185. At byte location 852096 of that file, there was a squashfs filesystem (a virtual filesystem). D. Kuhn ¶ 32.

186. Inside that filesystem, there was a binary of BusyBox, which included the specific version number 1.00. D. Kuhn ¶ 32.

187. On 9 August 2011, Mr. Kuhn examined the website of Phoebe's Airlink101 site. D. Kuhn ¶ 33.

188. Mr. Kuhn found nowhere on their website the source code, nor an offer therefor, for the BusyBox binaries found in the AICAP650W, AICAP650, AICN500, AICN500W, AICN747W, AICN777W, ANAS350, AP671W, AR360W3G, AR525W, AR570W, AR660W3G, AR675W, and/or AR680W products and/or their respective firmwares. D. Kuhn ¶ 33.

189. There was also no notice that some contents of these firmwares were licensed under the GPLv2 or that Mr. Kuhn had any right to himself make unlimited copies, modifications and redistributions of those contents for no fee. D. Kuhn ¶ 33.

190. BusyBox is currently maintained using the version control software program Git, and was previously maintained in a version control software called SVN. D. Kuhn ¶ 34.

191. Using basic commands in Git and/or SVN, one can parse the commit logs to identify which lines of source code Andersen revised and/or added in each released version of

BusyBox. D. Kuhn ¶ 34.

192. Mr. Kuhn examined the SVN and Git logs of the BusyBox project, and Mr. Kuhn arrived at various conclusions about Andersen's contributions. D. Kuhn ¶ 35.

193. Specifically, Mr. Kuhn analyzed these logs in an automated way to compare how many of Andersen's lines of textual contribution in the versions of BusyBox registered with the copyright office appear in specific versions of BusyBox that Phoebe distributed (in binary form) in their products. D. Kuhn ¶ 35.

194. The most scientifically sound way to compare source code to binaries is to identify the source code that produced the binary, and compare the two sets of source code to each other. D. Kuhn ¶ 36.

195. For each BusyBox binary distributed by Phoebe, Mr. Kuhn determined the specific version number of BusyBox. D. Kuhn ¶ 37 (Exhibit A annexed thereto).

196. The version numbers, along with other identifying strings found in each binary, show the binaries distributed by Phoebe are derived from the source code releases of BusyBox, with the respective version numbers, on BusyBox's website. D. Kuhn ¶ 37.

197. Mr. Kuhn produced the following table matching up (a) Andersen's lines of textual contribution (lines he added and/or revised) to specific versions of BusyBox, to (b) the versions of BusyBox that appear in Phoebe's products. The columns of the table represent released BusyBox versions found, in binary form, in Phoebe's products. The rows represent Andersen's lines of source code added and/or revised for that row's BusyBox version. Each cell, thus, represents the number of lines of source code added and/or revised by Andersen for that row's



version that appear identically in the complete work of source code for that column's BusyBox version (which was, in turn, distributed in binary form by Phoebe). D. Kuhn ¶ 38.

#### Versions of BusyBox in Phoebe's Products

		Versions of BusyBox in Phoebe's Products						
		1.00-pre1	1.00-pre8	1.00-rc2	1.00	1.01	1.11.1	1.15.2
		(AICAP650W, AICAP650)	(AR675W)	(ANAS350, AR360W3G)	(AR525W, AR680W)	(AICN500, AICN500W, AICN747W, AICN777W)	(AR660W3G, AP671W)	(AR570W)
Andersen's Additions and/or Modificati ons First Published in These BusyBox Versions	0.60.3	221	213	208	203	195	89	29
	1.00-pre1	2125	1928	1730	1696	1520	865	690
	1.00-pre2	N/A	322	300	297	284	80	71
	1.00-pre3	N/A	261	258	258	218	151	91
	1.00-pre4	N/A	667	658	660	262	419	104
	1.00-pre6	N/A	462	449	435	282	137	47
	1.00-pre8	N/A	172	184	189	127	129	67
	1.00-pre9	N/A	N/A	1597	1536	1218	623	565
	1.00-rc1	N/A	N/A	342	307	254	146	66
	1.00	N/A	N/A	N/A	583	186	261	117
TOTAL		2346	4025	5726	6164	4546	2900	1847

198. For example, as shown in Mr. Kuhn's table, Phoebe's AICAP650W and AICAP650 products contained a binary of BusyBox, version 1.00-pre1. D. Kuhn ¶ 39.

199. The first cell (row: 0.60.3, column: 1.00-pre1) in Mr. Kuhn's table shows that the complete work of source code for BusyBox 1.00-pre1 contained 221 lines of source code that were identical to lines of source code added and/or revised by Andersen in 0.60.3. D. Kuhn ¶ 39.

200. Meanwhile, the cell below that cell (row: 1.00-pre1, column: 1.00-pre1) shows the complete work of BusyBox 1.00-pre1 itself contained 2,125 lines of added and/or revised source code from Andersen. D. Kuhn ¶ 39.

201. Finally, in that column, the table shows that a total of 2,346 lines of source code added and/or revised by Andersen appeared in the whole work of source code of BusyBox 1.00-pre1, which Phoebe distributed in binary form in its AICAP650W and AICAP650 products. D. Kuhn ¶ 39.

202. In Mr. Kuhn's opinion, the versions of BusyBox found in Phoebe's products containing such significant amounts of contributions Mr. Andersen made are derived from the versions of BusyBox he published. For example, the version of BusyBox found in the AICAP650W and AICAP650 products was derived from both the contributions Mr. Andersen made to version 0.60.3 and the contributions he made to version 1.00-pre1. D. Kuhn ¶ 40.

203. Mr. Kuhn's table only covers lines of textual additions and/or revisions that Andersen registered with the copyright office. D. Kuhn ¶ 41.

204. In Mr. Kuhn's analysis of the SVN and Git logs, Mr. Kuhn observed that Andersen also made many lines of textual revisions and/or additions to all these versions of BusyBox that were not registered with the copyright office. D. Kuhn ¶ 41.

205. The BusyBox revision history shows that Andersen incorporated and/or arranged contributions from others for all versions of BusyBox between the dates of 7 September 2001 through 22 March 2006 even if he did not specifically modify those contributions at the time he incorporated and/or arranged them into BusyBox. D. Kuhn ¶ 42.

(continued on next page)

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