

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

IOENGINE, LLC,	)	
	)	
<i>Plaintiff/Counterclaim Defendant,</i>	)	
	)	
v.	)	C.A. No. 18-452-WCB
	)	
PAYPAL HOLDINGS, INC.,	)	
	)	
<i>Defendant/Counterclaim Plaintiff.</i>	)	Jury Trial Demanded
	)	

**FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

1. Plaintiff IOENGINE, LLC (“Plaintiff” or “IOENGINE”), by and through its undersigned counsel, alleges as follows:

**THE PARTIES**

2. IOENGINE is a limited liability company organized and existing under the laws of the State of Delaware, with its principal place of business at 22 Ensign Road, Norwalk, Connecticut 06853.

3. Defendant PayPal Holdings, Inc. (“Defendant” or “PayPal”) is a corporation organized and existing under the laws of the State of Delaware, having a place of business at 2211 North First Street, San Jose, California, 95131.

4. Defendant’s registered agent in the State of Delaware is The Corporation Trust Company, 1209 Orange Street, City of Wilmington, County of New Castle, 19801.

**JURISDICTION AND VENUE**

5. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 100 et seq., including, but not limited to, 35 U.S.C. § 271.

6. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

7. This Court has personal jurisdiction over PayPal. On information and belief, Defendant is subject to this Court's specific and general personal jurisdiction pursuant to due process and the Delaware Long-Arm Statute, due to its (i) substantial business in this forum, including at least a portion of the infringing acts alleged herein; (ii) incorporation in the forum; and (iii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and deriving substantial revenue from infringing goods and services provided to individuals in Delaware.

8. On information and belief, within this state, PayPal has offered for sale and sold, and continues to offer for sale and sell, products and services embodying the patented inventions, knowing the same to have no substantial non-infringing uses and to be especially made or especially adapted for use in infringing the patent inventions, thereby committing, contributing to, and inducing, and continuing to commit, contribute to, and induce, acts of patent infringement alleged herein. On March 23, 2018 IOENGINE sent a letter attaching a copy of the March 23, 2018 Complaint for Patent Infringement (D.I. 1) (the "March 23, 2018 Complaint") in this action and the patents-in-suit to Louise Pentland and Wanji Walcott, Executive Vice President, Chief Business Affairs and Legal Officer at PayPal, and Senior Vice President, General Counsel at PayPal, respectively, by email and Federal Express. The March 23, 2018 Complaint was served on PayPal on April 10, 2018 (D.I. 6). On information and

belief, PayPal maintains a regular and established place of business in this District, including through a facility at 3505 Silverside Road, Wilmington, Delaware 19810. PayPal has committed such purposeful acts and/or transactions in Delaware such that it reasonably should know and expect that it could be haled into this Court as a consequence of such activity.

9. Venue is proper in this District under 28 U.S.C. §§ 1391(b) and (c), and 1400(b) because, among other reasons, Defendant is incorporated in and resides in the State of Delaware and because Defendant regularly transacts or solicits business in this District and has committed at least a portion of the infringing acts at issue in this case from and within this District. On information and belief, Defendant has a regular and established place of business in this District at 3505 Silverside Road, Wilmington, Delaware 19810. In addition, on information and belief, Defendant employs a number of persons in this District and derives and has derived substantial revenue from goods and services provided to persons or entities in this District and from infringing acts occurring within this District.

10. Venue is additionally proper in this District because IOENGINE is incorporated in the State of Delaware and because one of the patents-in-suit has twice been litigated and tried to a jury verdict in this District.<sup>1</sup>

### **BACKGROUND**

11. This dispute involves fundamental technology that allows portable electronic devices, used in conjunction with terminals, to support enhanced functionality. For example, the technology at issue allows users to interact with portable devices through a terminal's interactive user interface, using the terminal's input and output components, while maintaining

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<sup>1</sup> See *IOENGINE, LLC v. Imation, Corp.*, no. 14-cv-1572 (D. Del.); *IOENGINE, LLC v. Interactive Media Corp. d/b/a Kanguru Solutions*, no. 14-cv-1571 (D. Del.).

a secure processing environment on the portable device to enable secure communications between the portable device, the terminal, and a communications network. Further, the technology at issue describes terminals and portable devices that execute program code in a coordinated fashion, allowing for a convenient, secure way to conduct electronic transactions, such as processing mobile credit card payments and refunds.

12. The technology at issue was invented by Mr. Scott McNulty, who also founded IOENGINE.

### **THE IOENGINE PATENTS-IN-SUIT**

13. On September 17, 2013, the United States Patent and Trademark Office duly and legally issued United States Patent No. 8,539,047 (the “’047 Patent”), entitled “Apparatus, Method and System for a Tunneling Client Access Point,” after full and fair examination. The application that led to the ’047 Patent, U.S. Patent Application Ser. No. 12/950,321, was a continuation of U.S. Patent Application Ser. No. 10/807,731, filed on March 23, 2004. A true and correct copy of the ’047 Patent is attached hereto as Exhibit A.

14. On June 16, 2015, the United States Patent and Trademark Office duly and legally issued United States Patent No. 9,059,969 (the “’969 Patent”), entitled “Apparatus, Method and System for a Tunneling Client Access Point” after full and fair examination. The application that led to the ’969 Patent, U.S. Patent Application Ser. No. 13/960,514, was a continuation of U.S. Patent Application Ser. No. 12/950,321, which was a continuation of U.S. Patent Application Ser. No. 10/807,731, filed on March 23, 2004. A true and correct copy of the ’969 Patent is attached hereto as Exhibit B.

15. On September 26, 2017, the United States Patent and Trademark Office duly and legally issued United States Patent No. 9,774,703 (the “’703 Patent”), entitled “Apparatus,

Method and System for a Tunneling Client Access Point” after full and fair examination. The application that led to the ’703 Patent, U.S. Patent Application Ser. No. 14/721,540, was a continuation of U.S. Patent Application Ser. No. 13/960,514, which was a continuation of U.S. Patent Application Ser. No. 12/950,321, which was a continuation of U.S. Patent Application Ser. No. 10/807,731, filed on March 23, 2004. A true and correct copy of the ’703 Patent is attached hereto as Exhibit C.

16. IOENGINE is the assignee of all right, title, and interest in and to the ’047 Patent, the ’969 Patent, and the ’703 Patent (collectively, the “Patents-in Suit”) and possesses all rights of recovery under the Patents-in-Suit, including the right to recover damages for past infringement.

17. All of the Patents-in-Suit are valid, enforceable, and unexpired.

#### **PAYPAL’S INFRINGEMENT**

18. IOENGINE repeats, re-alleges, and incorporates by reference the preceding paragraphs as if fully set forth herein.

19. As described below, PayPal infringes claims of each of the Patents-in-Suit directly (alone or jointly), by making, using, selling, offering for sale, and importing into the United States certain products or services, and indirectly by contributing to and inducing direct infringement by others, by encouraging and instructing others to make and use such products or services in an infringing manner.

20. More specifically, the infringing products (the “PayPal Infringing Products”) include, but are not limited to, PayPal’s card reader products for mobile payments (for example, the PayPal Chip Card Reader, PayPal Mobile Card Reader, PayPal Chip and Swipe Reader, and

PayPal Chip and Tap Reader)<sup>2</sup> alone or in combination with a credit card, debit card, smart card, or contactless payment device; PayPal or third party mobile applications used in connection with PayPal's card reader products (*e.g.*, the PayPal Here App); PayPal's secure financial transaction servers used in connection with PayPal's card reader products to process credit, debit, and smart card transactions and contactless payment transactions; products and systems incorporating the foregoing; and reasonably similar PayPal products with on-board storage and processing capabilities that embody the apparatuses or practice the methods claimed by each of the Patents-in-Suit. The PayPal Infringing Products meet the limitations of at least one claim of each of the Patents-in-Suit literally and/or under the doctrine of equivalents.

21. The PayPal Infringing Products include portable card and contactless payment readers that are designed to provide a “a mobile payment solution” to allow users to “accept multiple forms of payment simply and securely, wherever your business takes you,” both “on-the-go or in your store.”<sup>3</sup>

22. The PayPal Infringing Products are specifically designed to infringe the Patents-in-Suit by engaging in card reader device setup, processing chip card (“EMV”) payments, processing magnetic stripe card payments, processing contactless payments, processing refunds, and processing firmware updates, and have no substantial non-infringing uses.

23. Since receiving notice of the March 23, 2018 Complaint in this action PayPal has had knowledge of the Patents-in Suit, that the PayPal Infringing Products were used in an

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<sup>2</sup> See, *e.g.*, <https://www.paypal.com/us/webapps/mpp/credit-card-reader>.

<sup>3</sup> <https://www.paypal.com/webapps/mpp/credit-card-reader>.

infringing manner, that the PayPal Infringing Products have no substantial non-infringing uses and were especially made or especially adapted for use in infringing the Patents-in Suit, and that PayPal's customers and third parties had used, were using, and continue to use the PayPal Infringing Products in a manner that infringes at least one claim of each of the Patents-in-Suit

24. PayPal contributes to the direct infringement of the Patents-in Suit by providing and/or selling the PayPal Infringing Products to customers and third parties and providing customers and third parties with the necessary software and instructions to operate the PayPal Infringing Products, including the download of the PayPal Here App and POS Partner Apps for use with PayPal's card reader products for mobile payments, to infringe one or more claims of each of the Patents-in Suit. The PayPal Here App and POS Partner Apps are not staple articles of commerce suitable for substantial non-infringing use and were especially made or especially adapted for use in infringing the Patents-in Suit. They are specifically designed to work with PayPal's card reader products for mobile payments and their only purpose is to operate, in connection with PayPal's card reader products for mobile payments, in a manner that directly infringes one or more claims of each of the Patents-in Suit.

25. PayPal instructs and encourages its customers to use the PayPal Infringing Products in a manner that infringes at least one claim of each of the Patents-in-Suit, including by providing the PayPal Here SDK for the PayPal Infringing Products,<sup>4</sup> including at least iOS and Android distributions of the PayPal Here SDK.<sup>5</sup>

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<sup>4</sup> See, e.g., <https://developer.paypal.com/docs/integration/paypal-here/>.

<sup>5</sup> See, e.g., <https://github.com/paypal/paypal-here-sdk-ios-distribution>, <https://github.com/paypal/paypal-here-sdk-android-distribution>.

26. PayPal directs “third-party providers or merchants” to “integrate PayPal Here’s point-of-sale payment solution in their app” using the “PayPal Here (PPH) SDK.”<sup>6</sup> PayPal additionally encourages third-party providers and merchants to “create fully customized, branded apps that enable credit or debit card payments in-store using PayPal card readers,” and advertises that “[w]ith a PayPal Here card reader, PayPal manages the PCI compliance so merchants and partners don’t have to navigate complex compliance requirements.”<sup>7</sup>

27. PayPal further provides third-party providers and merchants with iOS and Android sample applications, a “Sandbox Testing” environment, “Merchant Onboarding guides,” “SDK Documentation Updates for updates to the SDK documentation,” “Best Practices,” “Go Live” support (“[a] last-stop checklist before lau[n]ching [an] SDK-enabled app”), and available “customizations.”<sup>8</sup>

28. PayPal additionally instructs and encourages third-party providers and merchants, including by providing detailed descriptions and instructions, for using and implementing functionality claimed in each of the Patents-in-Suit including, at least, card reader device setup, processing chip card (EMV) card payments, processing magnetic stripe card payments, processing contactless payments, processing refunds, and processing firmware updates.<sup>9</sup>

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<sup>6</sup> <https://developer.paypal.com/docs/integration/paypal-here/>. *See also* <https://developer.paypal.com/docs/integration/paypal-here/sdk-dev/#getting-started-with-the-sdk>.

<sup>7</sup> <https://developer.paypal.com/docs/integration/paypal-here/>.

<sup>8</sup> <https://developer.paypal.com/docs/integration/paypal-here/#additional-information>.

<sup>9</sup> *See, e.g.*, <https://developer.paypal.com/docs/integration/paypal-here/sdk-dev/#sdk-capabilities> (providing detailed descriptions and instructions to “[i]nitialize the [PayPal Here]



29. PayPal additionally instructs and encourages its customers to use the PayPal Infringing Products in a manner that infringes at least one claim of each of the Patents-in-Suit by providing information on its website (*available at* [www.paypal.com](http://www.paypal.com)) and on third-party platforms (*e.g.*, <https://www.youtube.com/user/PayPal>), including videos, demonstrations, and other information, and by providing technical support for the PayPal Infringing Products. In each case, the information and materials provided by PayPal contain detailed descriptions and instructions for using and implementing functionality claimed in each of the Patents-in-Suit including, at least, card reader device setup, processing chip card (EMV) card payments, processing magnetic stripe card payments, processing contactless payments, processing refunds, and processing firmware updates. PayPal additionally instructs and encourages its customers and third parties to use the PayPal Infringing Products in a manner that infringes at least one claim of each of the Patents-in-Suit by instructing and encouraging its customers and third parties to use the PayPal Infringing Products with PayPal's Point of Sale Partners (*e.g.*, the Lavu Point of Sale App,<sup>10</sup> TouchBistro App,<sup>11</sup> Vend Register App,<sup>12</sup> ERPLY cloud-based POS software<sup>13</sup>, Brightpearl POS system,<sup>14</sup> and TouchPoint POS system,<sup>15</sup> each a "POS Partner App").

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SDK," perform "[d]evice discovery" to "connect to a card reader," perform a "[r]eader firmware update," "[a]ccept a transaction," and process refunds).

<sup>10</sup> See, *e.g.*, <https://www.paypal.com/us/webapps/mpp/partner/lavu-pos>.

<sup>11</sup> See, *e.g.*, <https://www.paypal.com/us/webapps/mpp/partner/touchbistro-pos>.

<sup>12</sup> See, *e.g.*, <https://www.paypal.com/us/webapps/mpp/partner/vend-pos>.

<sup>13</sup> See, *e.g.*, <https://www.paypal.com/us/webapps/mpp/partner/erply-pos>.

**FIRST COUNT FOR RELIEF**  
**(DIRECT INFRINGEMENT OF THE '047 PATENT)**

30. IOENGINE repeats, re-alleges, and incorporates by reference the preceding paragraphs as if fully set forth herein.

31. The '047 Patent is presumed valid and PayPal has had actual knowledge of the '047 Patent since the filing of the March 23, 2018 Complaint in this action.

32. PayPal is not licensed under the '047 Patent and has no other right or permission to practice the invention embodied therein.

33. On information and belief, PayPal has infringed and continues to infringe, directly (alone or jointly), literally, and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271, one or more claims of the '047 Patent by performing, without authority, one or more of the following acts: making, having made, using, importing, selling, and offering for sale in the United States one or more products or services that embody the invention claimed in the '047 Patent, including but not limited to the PayPal Infringing Products. Since after receiving notice of the March 23, 2018 Complaint, Defendant has knowingly infringed, and continues to infringe, one or more claims of the '047 Patent by making, having made, using, importing, selling, and offering for sale in the United States the PayPal Infringing Products, which products constitute a material part of the invention and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

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<sup>14</sup> See, e.g., <https://www.paypal.com/us/webapps/mpp/point-of-sale-systems/retail-pos/brightpearl>.

<sup>15</sup> See, e.g., <https://www.paypal.com/us/webapps/mpp/point-of-sale-systems/restaurant-pos/touchpoint>.

34. For example, the PayPal Infringing Products embody the patented invention of the '047 Patent and infringe at least Claim 1 of the '047 patent because each of PayPal's card reader products for mobile payments is:

“[a] portable device, comprising:

(a) an external communications interface configured to enable the transmission of a plurality of communications between the portable device and a terminal comprising a terminal processor, a first input component, a first output component, and a network interface;

(b) a processor; and

(c) a memory having executable program code stored thereon, including:

(1) first program code which, when executed, causes an interactive user interface to be presented on the first output component, wherein the interactive user interface is configured to enable the user to cause the portable device processor to execute program code stored on the portable device memory;

(2) second program code which, when executed, enables the portable device to (i) receive a communication resulting from user interaction with the interactive user interface and (ii) cause a communication to be sent through the terminal network interface to a communications network node; and

(3) third program code which, when executed by the portable device processor in response to a communication resulting from user interaction with the interactive user interface, causes a communication to be transmitted to a communications network node;

wherein the portable device is configured to effect the display on the first output component of processing activity of program code stored on the portable device memory; and

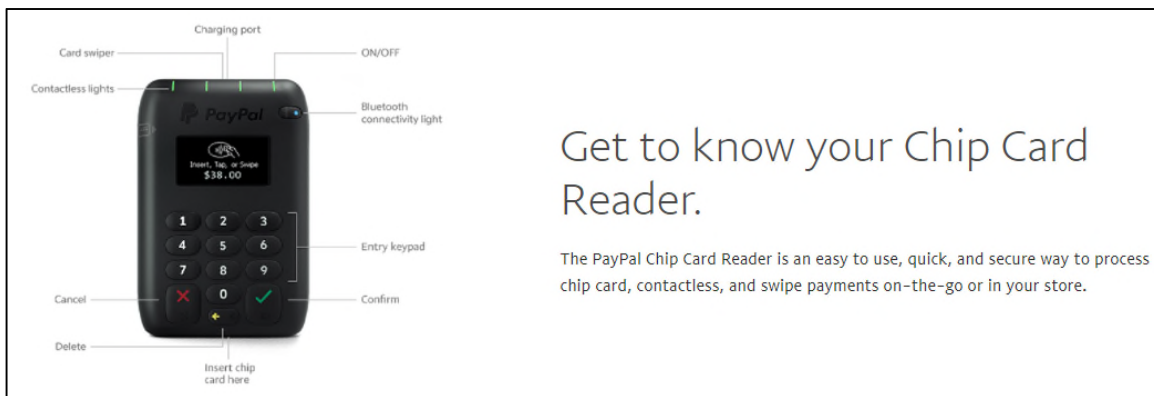
wherein the portable device is configured to communicate with the terminal and to communicate through the terminal network interface with the communications network node.”<sup>16</sup>

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<sup>16</sup> '047 Patent, Claim 1.

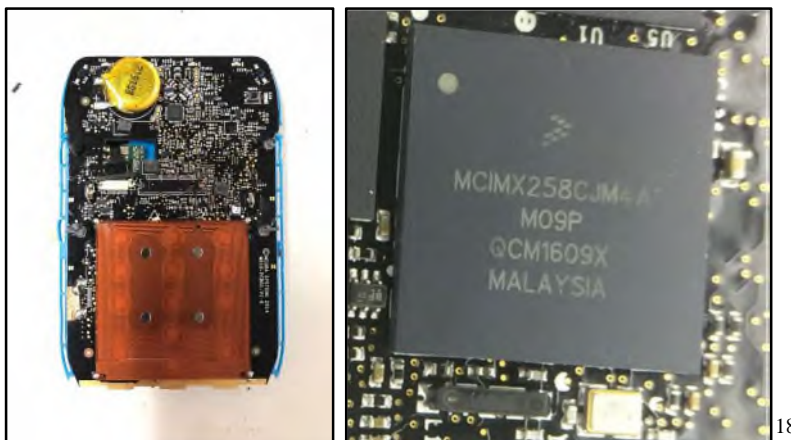
35. **Direct Infringement: PayPal Chip Card Reader.**

The PayPal Chip Card Reader is a portable device that offers a “secure way to process chip card, contactless, and swipe payments on-the-go or in your store”:



36. The PayPal Chip Card Reader contains a Freescale MCIMX258CJM4A M09P

ARM core processor or its equivalent:



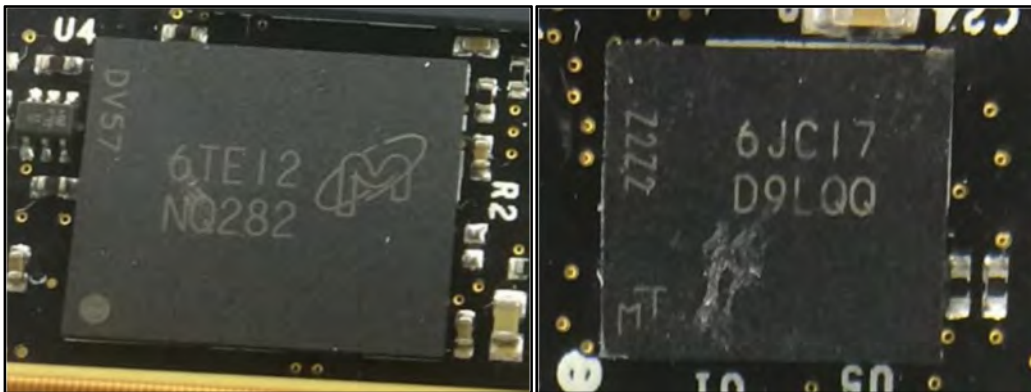
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<sup>17</sup> See PayPal Chip Card Reader Guide, available at <https://www.paypal.com/us/webapps/mpp/credit-card-reader-how-to/chip-card-reader> (the “PayPal Chip Card Reader Guide Website”).

<sup>18</sup> Unless otherwise noted, all pictures of the internal components of the PayPal Chip Card Reader were taken of a PayPal Chip Card Reader with the plastic covering removed.

37. The Freescale MCIMX258CJM4A M09P ARM core processor contains 128 KB SRAM, 32 KB ROM, and/or 16 KB data cache memory, or its equivalent.

38. The PayPal Chip Card Reader contains a 2GB Micron Flash memory module with FBGA code NQ282, corresponding to part number MT29F2G08ABBEAHC-IT:E and/or a 512MB SDRAM memory module with FPGA Code D9LQQ, corresponding to part number MT46H32M16LFBF-5 IT:C, or its equivalent:



39. The PayPal Chip Card Reader contains a Bluetooth communications interface configured to enable the transmission of communications between the PayPal Chip Card Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, and a network interface and that contains the PayPal Here App or a POS Partner App). The PayPal Chip Card

Reader uses Bluetooth to “pair” with the terminal:

The screenshot shows a three-step pairing process:

- 1** Go to your mobile device Settings and turn on Bluetooth®. You'll see a list of available Bluetooth devices.
- 2** Turn on the card reader. The on-screen Bluetooth icon will start to blink rapidly, indicating that it's ready to connect.
- 3** Select the card reader from the list of available Bluetooth devices. A steady Bluetooth light on the card reader will indicate that it's successfully paired.

From now on, your card reader will auto-connect to the app whenever you turn it on. [Watch our video](#) to learn more about pairing devices.

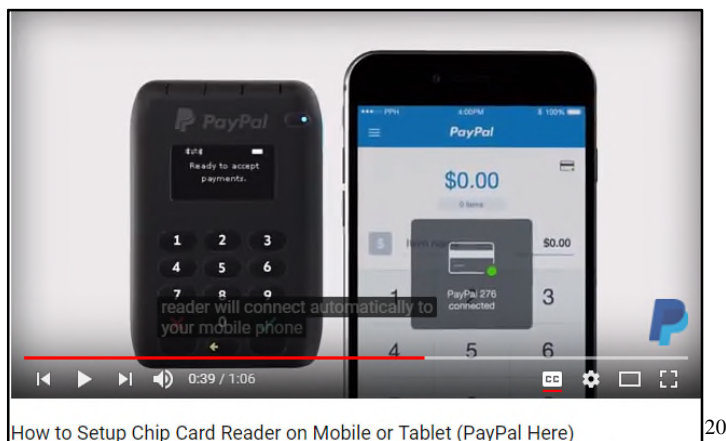
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40. On information and belief, the PayPal Chip Card Reader’s memory stores program code that is configured to cause an interactive user interface to be presented on the terminal’s display (for example, to indicate that the PayPal Chip Card Reader has been paired with the terminal, or to display a message that the PayPal Chip Card Reader requires an update), which the user can interact with (for example, to initiate a credit card transaction, or to initiate a firmware update).

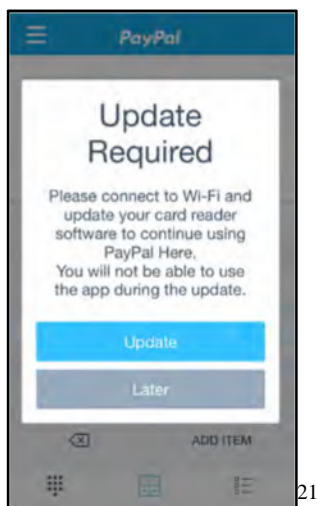
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<sup>19</sup> See PayPal Chip Card Reader Guide Website.

41. For example, the PayPal Here App presents a message when a PayPal Chip Card Reader has been connected and is available for transactions:



42. Also, if a card reader software (“firmware”) update is necessary, the PayPal Here App presents a message that a firmware update is required:



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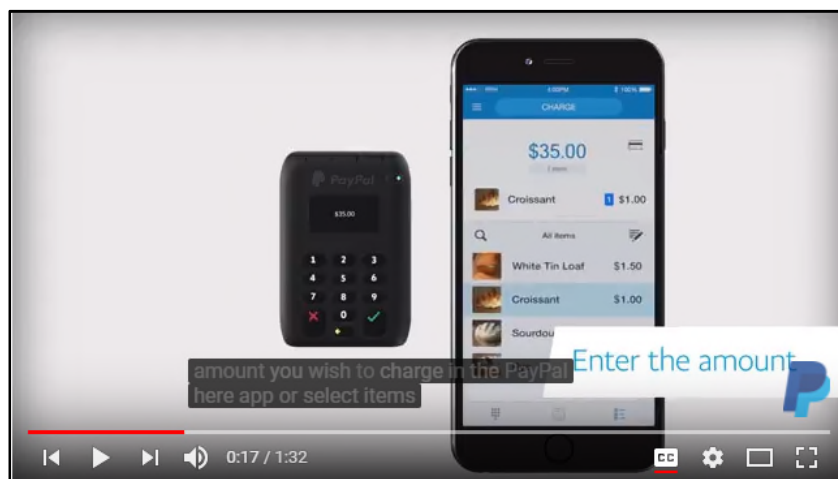
<sup>20</sup> Unless otherwise noted, all screen captures of PayPal’s instructional videos for the PayPal Chip Card Reader were captured from <https://youtu.be/nY5tsHB-S70>, last visited Mar. 23, 2018, also available from <https://www.youtube.com/user/PayPal> (PayPal’s “verified” YouTube channel).

<sup>21</sup> Unless otherwise noted, all screen captures of the PayPal Here App in use with the PayPal Chip Card Reader were taken on an iPhone 5s running the PayPal Here App.

43. Further, on information and belief, the PayPal Chip Card Reader's memory stores program code that is configured to enable the PayPal Chip Card Reader to receive communications resulting from user interaction with the PayPal Here App or a POS Partner App's user interface displayed on the terminal and to cause a communication to be sent to a network server through the terminal's network interface (for example, program code to enable the PayPal Chip Card Reader to receive communications and to cause communications to be sent via Bluetooth, in connection with the processing of payments or firmware updates).

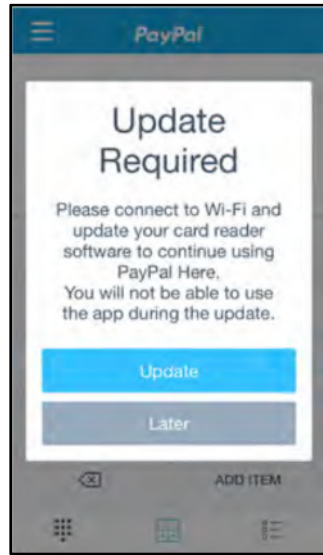
44. On information and belief, the PayPal Chip Card Reader's memory also stores program code to be executed by the PayPal Chip Card Reader's processor in response to a communication resulting from user interaction with a user interface on the terminal that is configured to cause a communication to be sent to a network server through the terminal's network interface (for example, to cause a communication to be sent to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

45. For example, the PayPal Here App's user interface allows the user to enter the charge amount and to initiate the transaction by pressing the "charge" button:

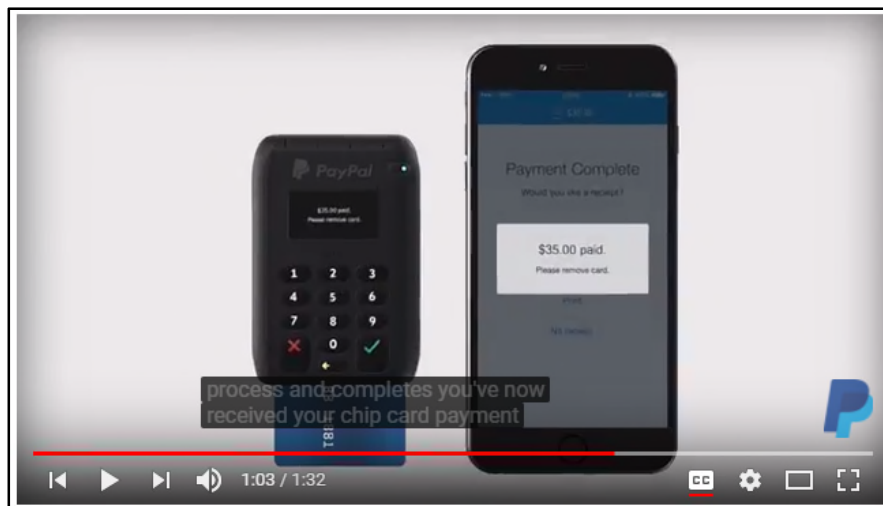




46. The PayPal Here App's user interface also allows the user to initiate a firmware update by pressing the "update" button:



47. On information and belief, the PayPal Chip Card Reader's memory stores program code to be executed by the PayPal Chip Card Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to process the transaction:



48. On information and belief, the PayPal Chip Card Reader's memory also stores program code to be executed by the PayPal Chip Card Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to download a firmware update:

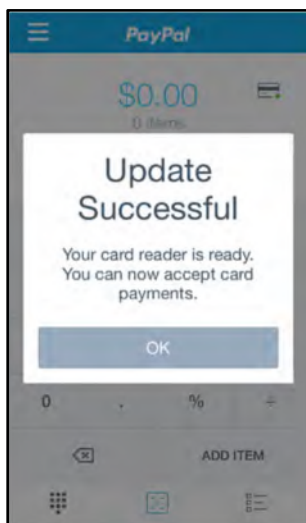


49. On information and belief, the PayPal Chip Card Reader is configured to effect the terminal's display of processing activity of program code stored on the PayPal Chip Card Reader's memory (for example, to indicate successful pairing of the PayPal Chip Card Reader to the terminal, to display payment processing progress details, to provide payment processing confirmation, or to display firmware update details).

50. For example, the PayPal Chip Card Reader is configured to effect the display of the terminal running the PayPal Here App to indicate that a chip card has been inserted and that the transaction is processing:



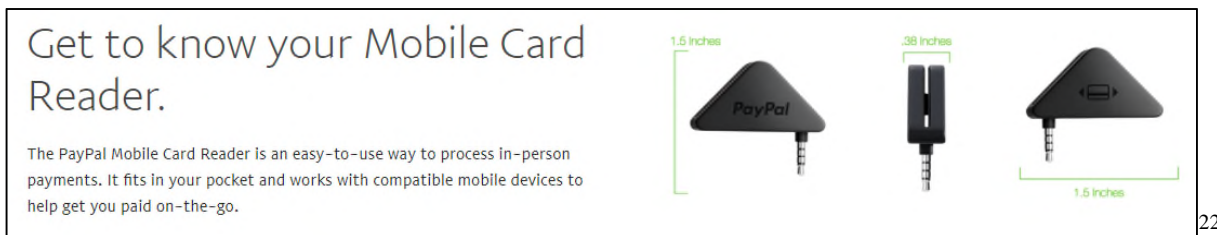
51. The PayPal Chip Card Reader is also configured to effect the display of the terminal running the PayPal Here App to indicate that the firmware has been updated successfully:



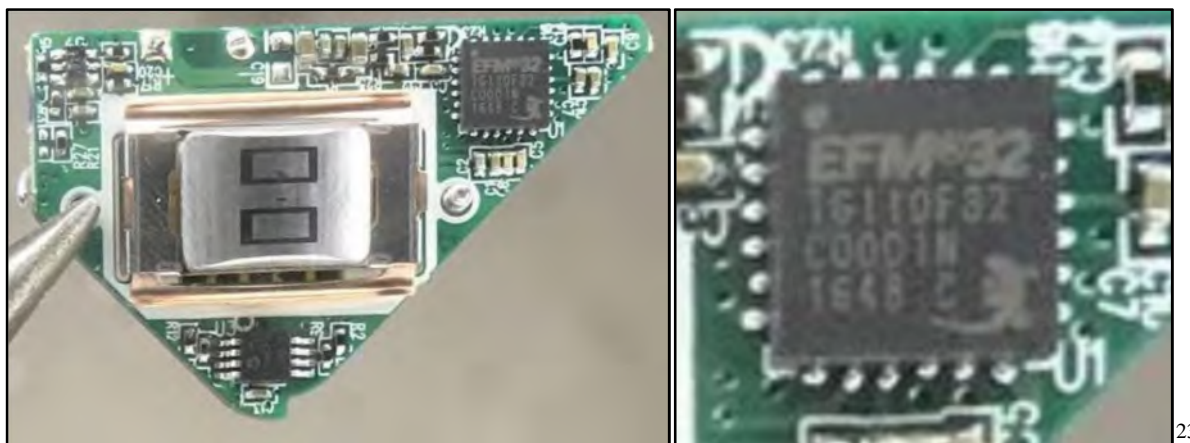
52. The PayPal Chip Card Reader is configured to communicate with the terminal running the PayPal Here App or a POS Partner App, and to communicate through the terminal's network interface to a network server (for example, for securely processing credit card or contactless payment transactions, or firmware updates).

53. **Direct Infringement: PayPal Mobile Card Reader.**

The PayPal Mobile Card Reader is a portable device that “fits in your pocket and works with compatible mobile devices to help get you paid on-the-go”:



54. The PayPal Mobile Card Reader contains a EFM32 TG110F32 ARM Cortex-M3 processor or its equivalent:



55. The PayPal Mobile Card Reader contains memory, including at least up to 32 KB Flash memory and up to 4KB RAM memory integrated into an EFM32 TG110F32 ARM Cortex-M3 processor, or its equivalent.

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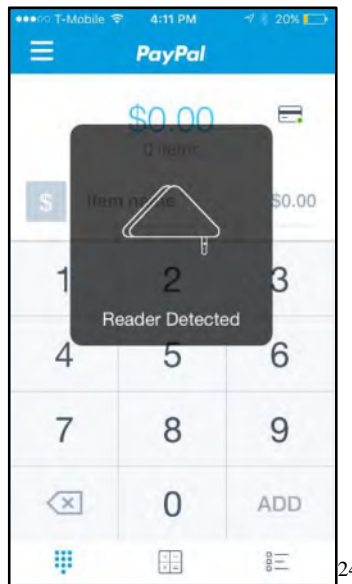
<sup>22</sup> See PayPal Mobile Card Reader Guide, available at <https://www.paypal.com/us/webapps/mpp/credit-card-reader-how-to/mobile-card-reader> (the “PayPal Mobile Card Reader Guide Website”).

<sup>23</sup> Unless otherwise noted, all pictures of the internal components of the PayPal Mobile Card Reader were taken of a PayPal Mobile Card Reader with the plastic covering removed.

56. The PayPal Mobile Card Reader includes an audio jack communications interface (e.g., an AHJ connector) configured to enable the transmission of communications between the PayPal Mobile Card Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, and a network interface and that contains the PayPal Here App or a POS Partner App).

57. On information and belief, the PayPal Mobile Card Reader's memory stores program code that is configured to cause an interactive user interface to be presented on the terminal's display (for example, to indicate that the PayPal Mobile Card Reader has been connected to the terminal and detected), which the user can interact with (for example, to initiate a credit card transaction).

58. For example, the PayPal Here App presents a message when the PayPal Mobile Card Reader has been detected:



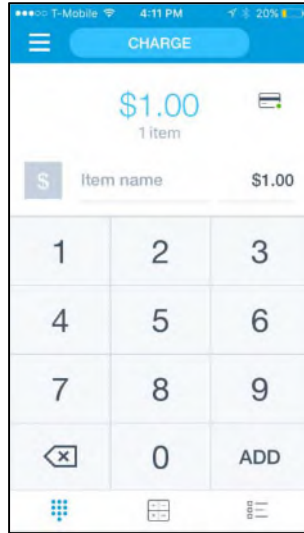
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<sup>24</sup> Unless otherwise noted, all screen captures of the PayPal Here App in use with the PayPal Mobile Card Reader were taken on an iPhone 5s running the PayPal Here App.

59. Further, on information and belief, the PayPal Mobile Card Reader's memory stores program code that is configured to enable the PayPal Mobile Card Reader to receive communications (for example, an audio-data communication sent to the PayPal Mobile Card Reader device over audio pins (pins 3 and 4) of the AHJ interface) resulting from user interaction with the PayPal Here App or a POS Partner App's user interface displayed on the terminal and to cause a communication to be sent to a network server through the terminal's network interface (for example, program code to enable the PayPal Mobile Card Reader to receive communications and to cause communications to be sent via audio-data communication, in connection with the processing of payments).

60. On information and belief, the PayPal Mobile Card Reader's memory also stores program code to be executed by the PayPal Mobile Card Reader's processor in response to a communication resulting from user interaction with a user interface on the terminal that is configured to cause a communication to be sent to a network server through the terminal's network interface (for example, to cause a communication to be sent to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App).

61. For example, the PayPal Here App's user interface allows the user to enter the charge amount and to initiate the transaction by pressing the "charge" button:



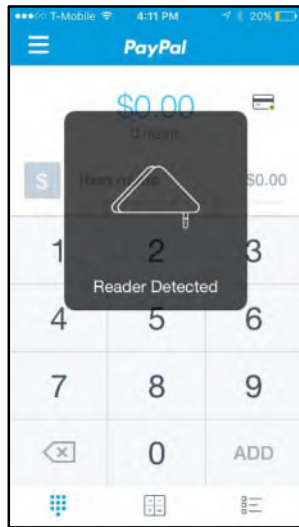
62. On information and belief, the PayPal Mobile Card Reader's memory stores program code to be executed by the PayPal Mobile Card Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to process the transaction:



63. On information and belief, the PayPal Mobile Card Reader is configured to effect the terminal's display of processing activity of program code stored on the PayPal Mobile Card

Reader's memory (for example, to indicate successful connection to the terminal and detection of the PayPal Mobile Card Reader, or to display payment processing progress details and to provide payment processing confirmation).

64. For example, the PayPal Mobile Card Reader is configured to effect the display of the terminal running the PayPal Here App to indicate that the PayPal Mobile Card Reader has been detected:



65. The PayPal Mobile Card Reader is also configured to effect the display of the terminal running the PayPal Here App to indicate that a credit card swipe was successful:

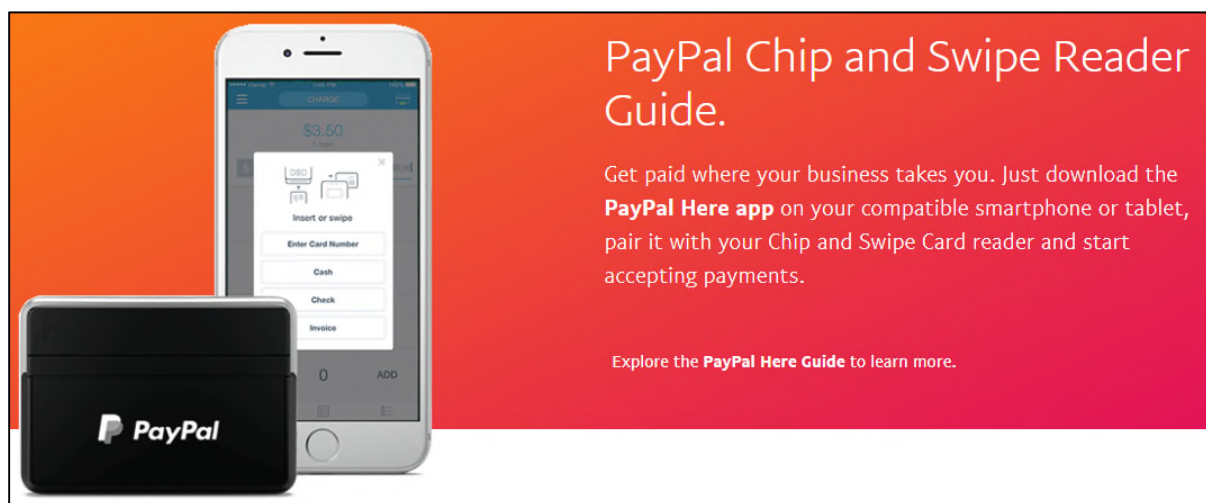




66. The PayPal Mobile Card Reader is configured to communicate with the terminal running the PayPal Here App or a POS Partner App, and to communicate through the terminal's network interface to a network server (for example, for securely processing credit card transactions).

67. **Direct Infringement: PayPal Chip and Swipe Reader.**

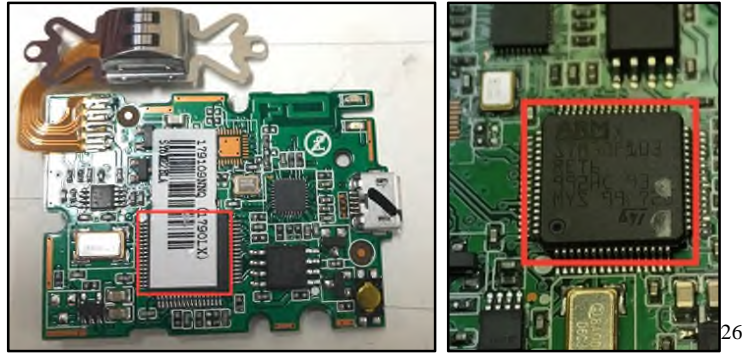
The PayPal Chip and Swipe Reader is a portable device that allows users to “[g]et paid where your business takes you”:



68. The PayPal Chip and Swipe Reader contains an ARM STM 32F103 Series microprocessor or its equivalent:

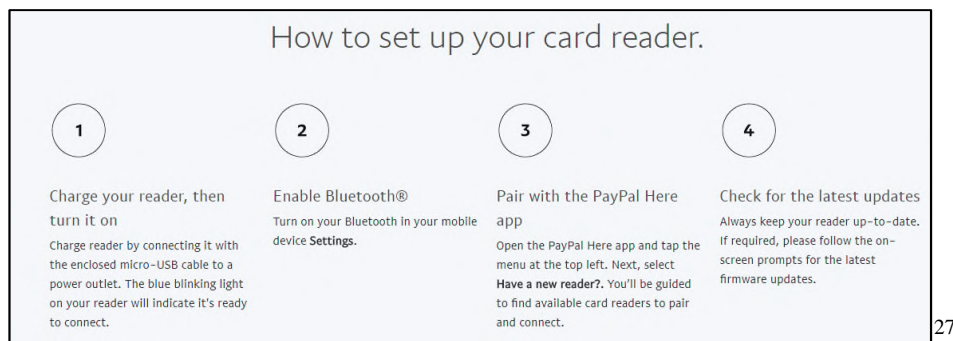
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<sup>25</sup> See PayPal Chip and Swipe Reader Guide, available at <https://www.paypal.com/us/webapps/mpp/credit-card-reader-how-to/chip-and-swipe-reader> (the “PayPal Chip and Swipe Reader Guide Website”).



69. The PayPal Chip and Swipe Reader contains memory, including 16 Kbytes to 1 Mbyte of Flash and 6K to 96K SRAM memory integrated into an ARM STM 32F103 Series microprocessor, or its equivalent.

70. The PayPal Chip and Swipe Reader contains a Bluetooth communications interface configured to enable the transmission of communications between the PayPal Chip and Swipe Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, and a network interface and that contains the PayPal Here App or a POS Partner App). The PayPal Chip and Swipe Reader uses Bluetooth to “pair” with the terminal:



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<sup>26</sup> Unless otherwise noted, all pictures of the internal components of the PayPal Chip and Swipe Reader were taken of a PayPal Chip and Swipe Reader with the plastic covering removed.

<sup>27</sup> See PayPal Chip and Swipe Reader Guide Website.

71. On information and belief, the PayPal Chip and Swipe Reader's memory stores program code that is configured to cause an interactive user interface to be presented on the terminal's display (for example, to indicate that the PayPal Chip and Swipe Reader has been paired with the terminal, or to display a message that the PayPal Chip and Swipe Reader requires an update), which the user can interact with (for example, to initiate a credit card transaction, or to initiate a firmware update).

72. For example, the PayPal Here App presents a message when a PayPal Chip and Swipe Reader has been connected and is available for transactions:

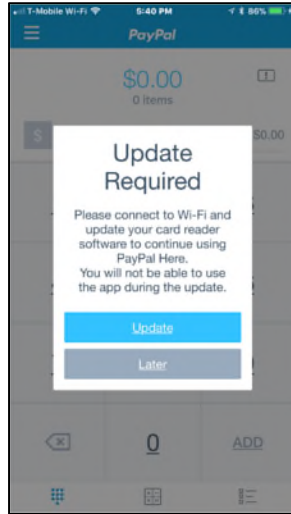


28

73. Also, if a firmware update is necessary, the PayPal Here App presents a message that a firmware update is required:

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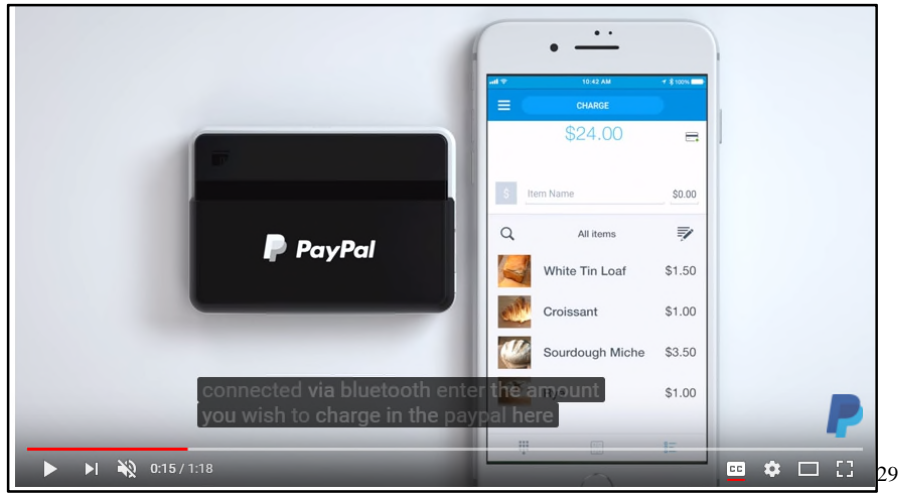
<sup>28</sup> Unless otherwise noted, all screen captures of the PayPal Here App in use with the PayPal Chip and Swipe Reader were taken on an iPhone 7 Plus running the PayPal Here App.



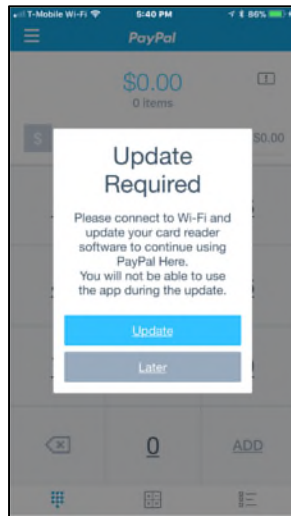
74. Further, on information and belief, the PayPal Chip and Swipe Reader's memory stores program code that is configured to enable the PayPal Chip and Swipe Reader to receive communications resulting from user interaction with the PayPal Here App or a POS Partner App's user interface displayed on the terminal and to cause a communication to be sent to a network server through the terminal's network interface (for example, program code to enable the PayPal Chip and Swipe Reader to receive communications and to cause communications to be sent via Bluetooth, in connection with the processing of payments or firmware updates).

75. On information and belief, the PayPal Chip and Swipe Reader's memory also stores program code to be executed by the PayPal Chip and Swipe Reader's processor in response to a communication resulting from user interaction with a user interface on the terminal that is configured to cause a communication to be sent to a network server through the terminal's network interface (for example, to cause a communication to be sent to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

76. For example, the PayPal Here App’s user interface allows the user to enter the charge amount and to initiate the transaction by pressing the “charge” button:



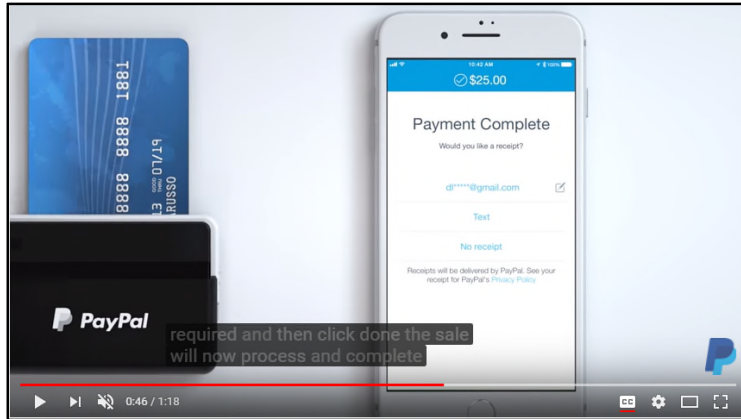
77. The PayPal Here App’s user interface also allows the user to initiate a firmware update by pressing the “update” button:



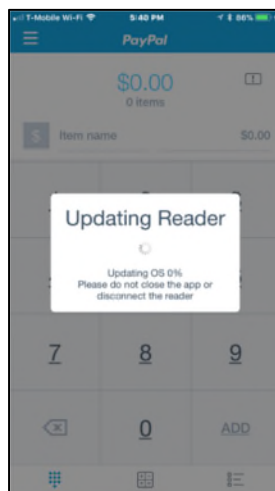
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<sup>29</sup> Unless otherwise noted, all screen captures of PayPal’s instructional videos for the PayPal Chip and Swipe Reader were captured from <https://www.youtube.com/watch?v=1XJ35nrxM6Y>, last visited Mar. 23, 2018, also available from <https://www.youtube.com/user/PayPal> (PayPal’s “verified” YouTube channel).

78. On information and belief, the PayPal Chip and Swipe Reader's memory stores program code to be executed by the PayPal Chip and Swipe Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to process the transaction:

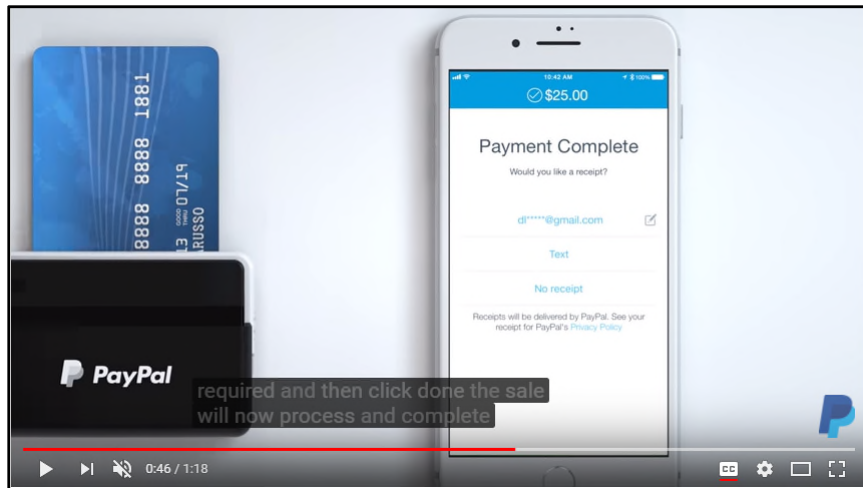


79. On information and belief, the PayPal Chip and Swipe Reader's memory also stores program code to be executed by the PayPal Chip and Swipe Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to download a firmware update:

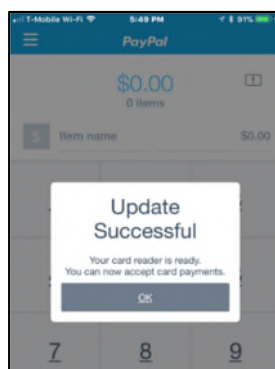


80. On information and belief, the PayPal Chip and Swipe Reader is configured to effect the terminal's display of processing activity of program code stored on the PayPal Chip and Swipe Reader's memory (for example, to indicate successful pairing of the PayPal Chip and Swipe Reader to the terminal, to display payment processing progress details, to provide payment processing confirmation, or to display firmware update details).

81. For example, the PayPal Chip and Swipe Reader is configured to effect the display of the terminal running the PayPal Here App to indicate that a transaction has been completed:



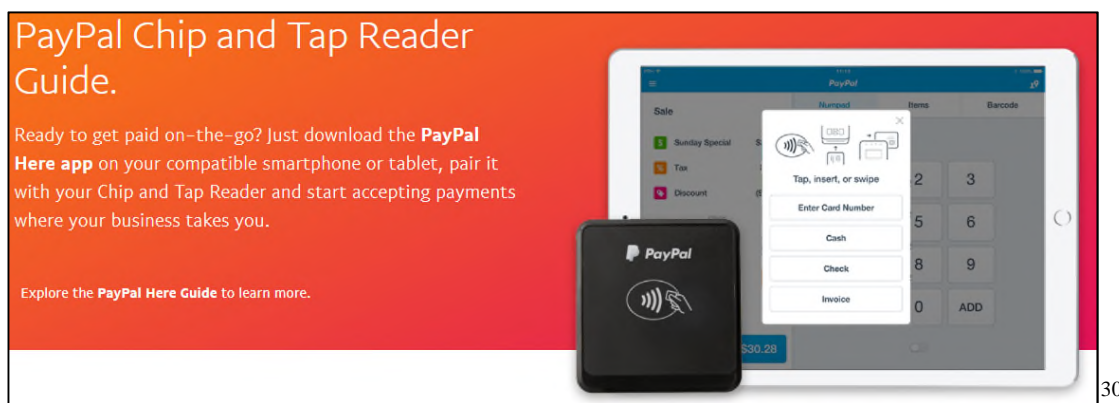
82. The PayPal Chip and Swipe Reader is also configured to effect the display of the terminal running the PayPal Here App to indicate that the firmware has been updated successfully:



83. The PayPal Chip and Swipe Reader is configured to communicate with the terminal running the PayPal Here App or a POS Partner App, and to communicate through the terminal’s network interface to a network server (for example, for securely processing credit card or contactless payment transactions or firmware updates).

84. **Direct Infringement: PayPal Chip and Tap Reader.**

The PayPal Chip and Tap Reader is a portable device that allows users to “get paid on-the-go” and “start accepting payments where your business takes you”:

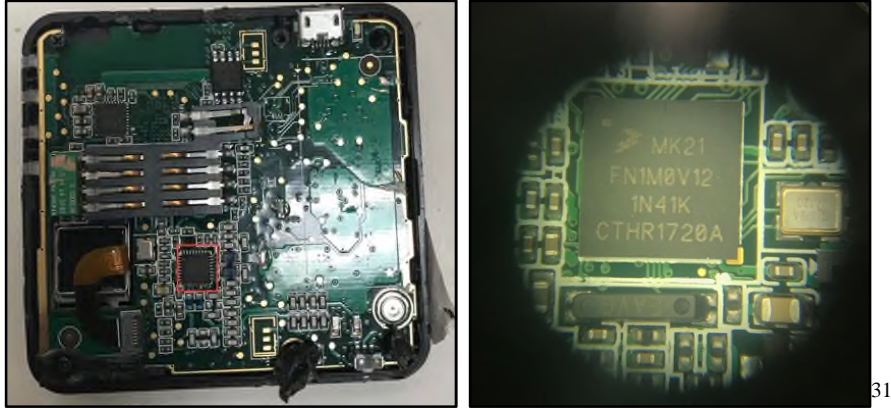


85. The PayPal Chip and Tap Reader contains a Kinetis MK21FX512VMC12 microprocessor or its equivalent:

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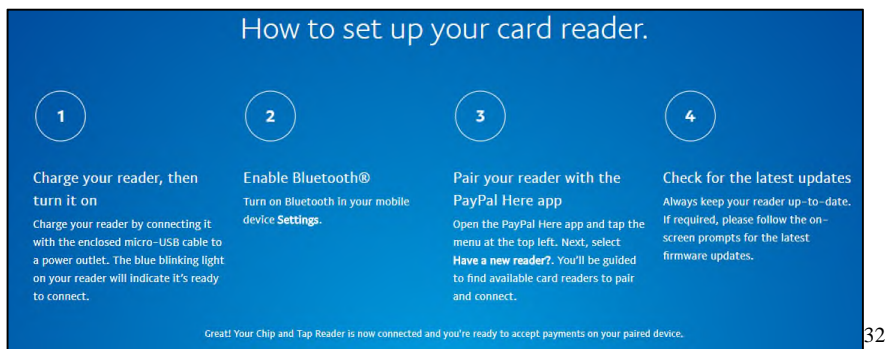
<sup>30</sup> PayPal Chip and Tap Reader Guide, available at <https://www.paypal.com/us/webapps/mpp/credit-card-reader-how-to/chip-and-tap-reader> (the “PayPal Chip and Tap Reader Guide Website”).





86. The PayPal Chip and Tap Reader contains memory, including FLASH and SRAM memory integrated into a Kinetis MK21FX512VMC12 microprocessor, or its equivalent.

87. The PayPal Chip and Tap Reader contains a Bluetooth communications interface configured to enable the transmission of communications between the PayPal Chip and Tap Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, and a network interface and that contains the PayPal Here App or a POS Partner App). The PayPal Chip and Tap Reader uses Bluetooth to “pair” with the terminal:



<sup>31</sup> Unless otherwise noted, all pictures of the internal components of the PayPal Chip and Tap Reader were taken of a PayPal Chip and Tap Reader with the plastic covering removed.

<sup>32</sup> See PayPal Chip and Tap Reader Guide Website.

88. On information and belief, the PayPal Chip and Tap Reader's memory stores program code that is configured to cause an interactive user interface to be presented on the terminal's display (for example, to indicate that the PayPal Chip and Tap Reader has been paired with the terminal, or to display a message that the PayPal Chip and Tap Reader requires an update), which the user can interact with (for example, to initiate a credit card transaction, or to initiate a firmware update).

89. For example, the PayPal Here App presents a message when a PayPal Chip and Tap Reader has been connected and is available for transactions:

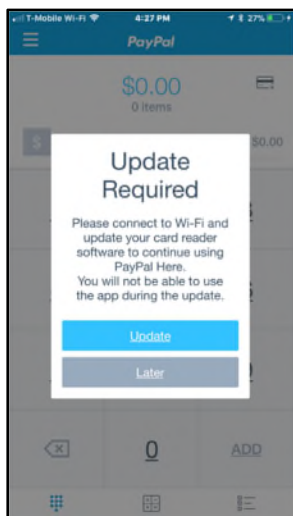


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90. Also, if a firmware update is necessary, the PayPal Chip and Tap Reader presents a message that a firmware update is required:

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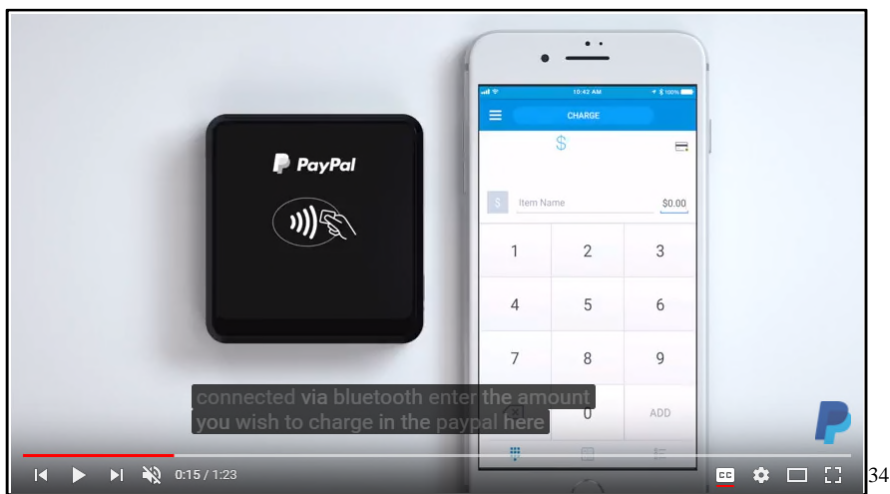
<sup>33</sup> Unless otherwise noted, all screen captures of the PayPal Here App in use with the PayPal Chip and Tap Reader were taken on an iPhone 7 Plus running the PayPal Here App.



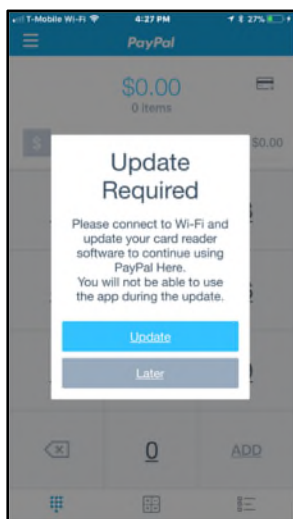
91. Further, on information and belief, the PayPal Chip and Tap Reader's memory stores program code that is configured to enable the PayPal Chip and Tap Reader to receive communications resulting from user interaction with the PayPal Here App or POS Partner App's user interface displayed on the terminal and to cause a communication to be sent to a network server through the terminal's network interface (for example, program code to enable the PayPal Chip and Tap Reader to receive communications and to cause communications to be sent via Bluetooth, in connection with the processing of payments and/or firmware updates).

92. On information and belief, the PayPal Chip and Tap Reader's memory also stores program code to be executed by the PayPal Chip and Tap Reader's processor in response to a communication resulting from user interaction with a user interface on the terminal that is configured to cause a communication to be sent to a network server through the terminal's network interface (for example, to cause a communication to be sent to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

93. For example, the PayPal Here App’s user interface allows the user to enter the charge amount and to initiate the transaction by pressing the “charge” button:



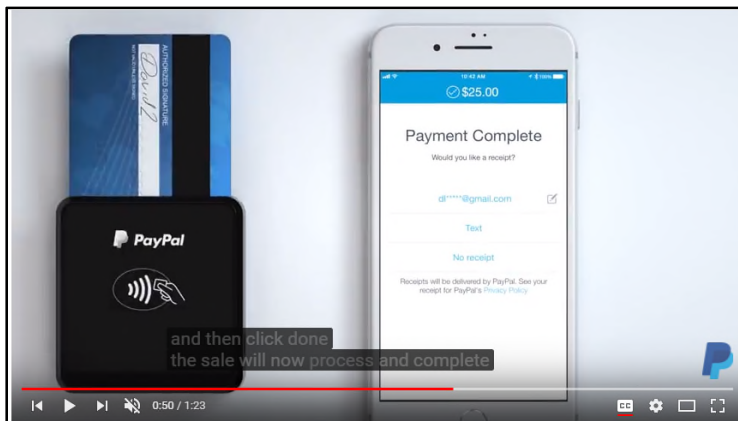
94. The PayPal Here App’s user interface also allows the user to initiate a firmware update by pressing the “update” button:



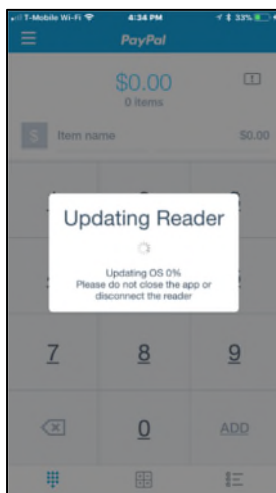
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<sup>34</sup> Unless otherwise noted, all screen captures of PayPal’s instructional videos for the PayPal Chip and Tap Reader were captured from <https://youtu.be/CvuJmLDBvbI>, last visited Mar. 23, 2018, also available from <https://www.youtube.com/user/PayPal> (PayPal’s “verified” YouTube channel).

95. On information and belief, the PayPal Chip and Tap Reader's memory stores program code to be executed by the PayPal Chip and Tap Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to process the transaction:

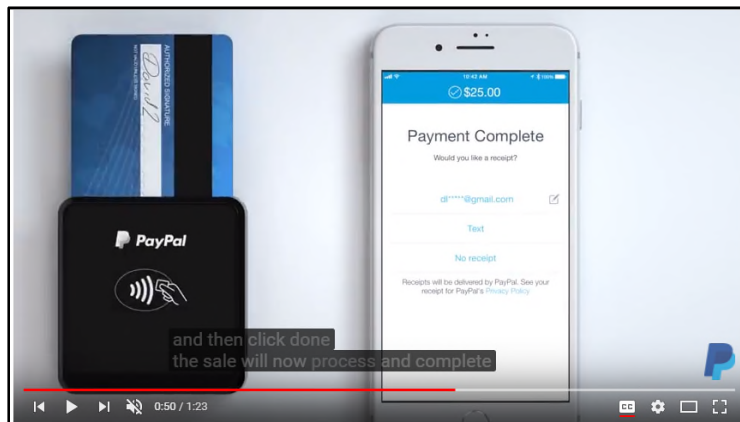


96. On information and belief, the PayPal Chip and Tap Reader's memory also stores program code to be executed by the PayPal Chip and Tap Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to download a firmware update:

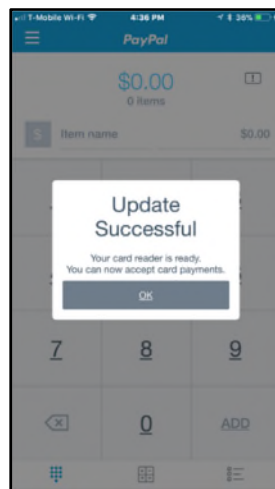


97. On information and belief, the PayPal Chip and Tap Reader is configured to effect the terminal's display of processing activity of program code stored on the PayPal Chip and Tap Reader's memory (for example, to indicate successful pairing of the PayPal Chip and Tap Reader to the terminal, to display payment processing progress details, to provide payment processing confirmation, or to display firmware update details).

98. For example, the PayPal Chip and Tap Reader is configured to effect the display of the terminal running the PayPal Here App to indicate that the transaction has been completed:



99. The PayPal Chip and Tap Reader is also configured to effect the display of the terminal running the PayPal Here App to indicate that the firmware has been updated successfully:



100. The PayPal Chip and Tap Reader is configured to communicate with the terminal running the PayPal Here App or a POS Partner App on the terminal and to communicate through the terminal's network interface to a network server (for example, for securely processing credit card or contactless payment transactions, or firmware updates).

101. By infringing the '047 Patent, PayPal has caused and will continue to cause Plaintiff IOENGINE to suffer damages in an amount to be determined at trial *i.e.* in an amount that cannot be less than would constitute a reasonable royalty for the use of the patented technology, together with pre-judgment and post-judgment interest thereon.

102. IOENGINE has no adequate remedy at law against PayPal's acts of infringement, and unless PayPal is permanently enjoined from infringing the '047 Patent, IOENGINE will suffer irreparable harm.

103. To the extent that PayPal has continued or continues to make, have made, use, import, sell, or offer for sale products or services that infringe the '047 Patent following its awareness of the '047 Patent, PayPal's infringement is willful and entitles IOENGINE to an award of enhanced damages pursuant to 35 U.S.C. § 284 and attorneys' fees pursuant to 35 U.S.C. § 285.

**SECOND COUNT FOR RELIEF**  
**(INDIRECT INFRINGEMENT OF THE '047 PATENT)**

104. IOENGINE repeats, re-alleges, and incorporates by reference the preceding paragraphs as if fully set forth herein, including but not limited to paragraphs 18 to 29 and 30 to 103.

105. On information and belief, PayPal has infringed and continues to infringe indirectly by way of inducement and contributory infringement, literally and/or under the

doctrine of equivalents, in violation of 35 U.S.C. § 271, one or more claims of the '047 Patent by performing, without authority, one or more of the following acts: making, having made, using, importing, selling, and offering for sale in the United States one or more products or services that embody the invention claimed in the '047 Patent, including but not limited to the PayPal Infringing Products, and encouraging and instructing its customers, Point of Sale Partners, and third parties to make and use the PayPal Infringing Products in a manner that infringes the '047 Patent. Since receiving notice of the March 23, 2018 Complaint, Defendant has knowingly contributed to the infringement of and induced infringement of, and continues to knowingly contribute to the infringement of and induce infringement of, one or more claims of the '047 Patent by selling and offering for sale in the United States the PayPal Infringing Products and encouraging their use in, for example, the processing of credit card transactions with specific intent that the PayPal Infringing Products be used by its customers, Point of Sale Partners, and third parties to directly infringe the '047 Patent, which PayPal Infringing Products constitute a material part of the invention and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

106. PayPal contributes to the direct infringement of the '047 Patent by providing and/or selling the PayPal Infringing Products to customers and third parties and providing customers and third parties with the necessary software and instructions to operate the PayPal Infringing Products, including the download of the PayPal Here App and POS Partner Apps for use with PayPal's card reader products for mobile payments, to infringe one or more claims of the '047 Patent. The PayPal Here App and POS Partner Apps are not staple articles of commerce suitable for substantial non-infringing use and were especially made or especially adapted for use in infringing the '047 Patent. They are specifically designed to work with



PayPal's card reader products for mobile payments and their only purpose is to operate, in connection with PayPal's card reader products for mobile payments, in a manner that directly infringes one or more claims of the '047 Patent.

107. Defendant instructs and encourages its customers, Point of Sale Partners, and third parties to use the PayPal Infringing Products in a manner that infringes at least Claim 1 of the '047 Patent.

108. For example, Defendant provides software development kits that allow, instruct, and encourage customers, Point of Sale Partners, and third parties to "create fully customized, branded apps that enable credit or debit card payments in-store using PayPal card readers."<sup>35</sup>

109. Defendant further provides information and technical support on its website (*available at* [www.paypal.com](http://www.paypal.com); *see also* <https://www.paypal.com/us/webapps/mpp/credit-card-reader>) that instructs and encourages customers, Point of Sale Partners, and third parties on how to use the PayPal Infringing Products.

110. Defendant further provides information and technical support on third-party platforms (*e.g.*, <https://www.youtube.com/user/PayPal>), including videos, demonstrations, and other information, that instructs and encourages customers, Point of Sale Partners, and third parties on how to use the PayPal Infringing Products.

111. PayPal also instructs and encourages the use of the PayPal Infringing Products in an infringing manner by directing users to the videos on PayPal's YouTube Channel (*e.g.*, <https://www.youtube.com/user/PayPal>).<sup>36</sup>

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<sup>35</sup> See, *e.g.*, <https://developer.paypal.com/docs/integration/paypal-here/>.

<sup>36</sup> See, *e.g.*, <https://www.paypal.com/us/webapps/mpp/credit-card-reader-how-to/chip-card-reader> (directing users to "[w]atch our video to learn more about pairing devices," and providing

112. In each case, the information and materials provided by PayPal contain detailed descriptions and instructions for using and implementing the functionality claimed in at least Claim 1 of the '047 Patent including, at least, card reader device setup, processing chip card (“EMV”) card payments, processing magnetic stripe card payments, processing contactless payments, processing refunds, and processing firmware updates.

113. Defendant additionally instructs and encourages its customers, Point of Sale Partners, and third parties to use the PayPal Infringing Products in a manner that infringes at least Claim 1 of the '047 Patent by instructing and encouraging its customers and third-parties to use the PayPal Infringing Products with PayPal’s Point of Sale Partners.

**THIRD COUNT FOR RELIEF**  
**(DIRECT INFRINGEMENT OF THE '969 PATENT)**

114. IOENGINE repeats, re-alleges, and incorporates by reference the preceding paragraphs as if fully set forth herein.

115. The '969 Patent is presumed valid and PayPal has had actual knowledge of the '969 Patent since the filing of the March 23, 2018 Complaint.

116. PayPal is not licensed under the '969 Patent and has no other right or permission to practice the invention embodied therein.

117. On information and belief, PayPal has infringed and continues to infringe, directly (alone or jointly), literally, and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271, one or more claims of the '969 Patent by performing, without authority, one or more of the following acts: making, having made, using, importing, selling, and offering for sale in the

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a link to the video entitled “How to Setup Chip Card Reader on Mobile or Tablet (PayPal Here)” on PayPal’s YouTube channel).

United States one or more products or services that embody the invention claimed in the '969 Patent, including but not limited to the PayPal Infringing Products. Since receiving notice of the March 23, 2018 Complaint, Defendant has knowingly infringed, and continues to infringe, one or more claims of the '969 Patent by making, having made, using, importing, selling, and offering for sale in the United States the PayPal Infringing Products, which products constitute a material part of the invention and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

118. For example, the PayPal Infringing Products embody the patented invention of the '969 Patent and infringe at least Claim 2 of the '969 patent because each of PayPal's card reader products for mobile payments is:

“A portable device configured to communicate with a terminal comprising a processor, an input component, an output component, a network communication interface, and a memory configured to store executable program code, including first program code which, when executed by the terminal processor, is configured to present an interactive user interface on the terminal output component, and second program code which, when executed by the terminal processor, is configured to provide a communications node on the terminal to facilitate communications to the portable device and to a communications network node through the terminal network communication interface, the portable device comprising:

(a) an external communication interface configured to enable the transmission of communications between the portable device and the terminal;

(b) a processor; and

(c) a memory having executable program code stored thereon, including:

(1) third program code which, when executed by the portable device processor, is configured to provide a communications node on the portable device to coordinate with the communications node on the terminal and establish a communications link between the

portable device and the terminal, and facilitate communications to the terminal and to a communications network node through the terminal network communication interface; and

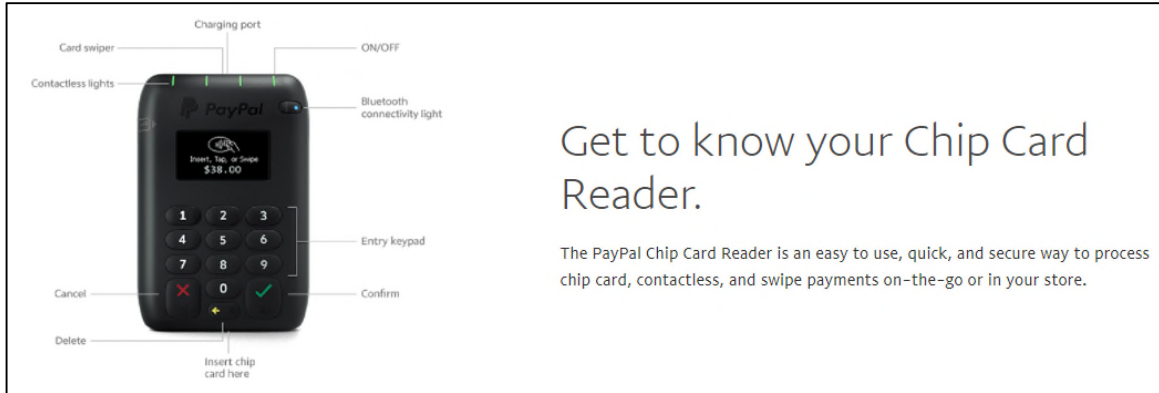
(2) fourth program code which is configured to be executed by the portable device processor in response to a communication received by the portable device resulting from user interaction with the interactive user interface;

wherein the portable device is configured to facilitate communications through the communication node on the terminal and the terminal network interface to a communications network node ... [37]

wherein the fourth program code which, when executed by the portable device processor, is configured to cause a communication to be transmitted to the communication network node.”38

119. **Direct Infringement: PayPal Chip Card Reader.**

The PayPal Chip Card Reader is a portable device that offers a “secure way to process chip card, contactless, and swipe payments on-the-go or in your store”:



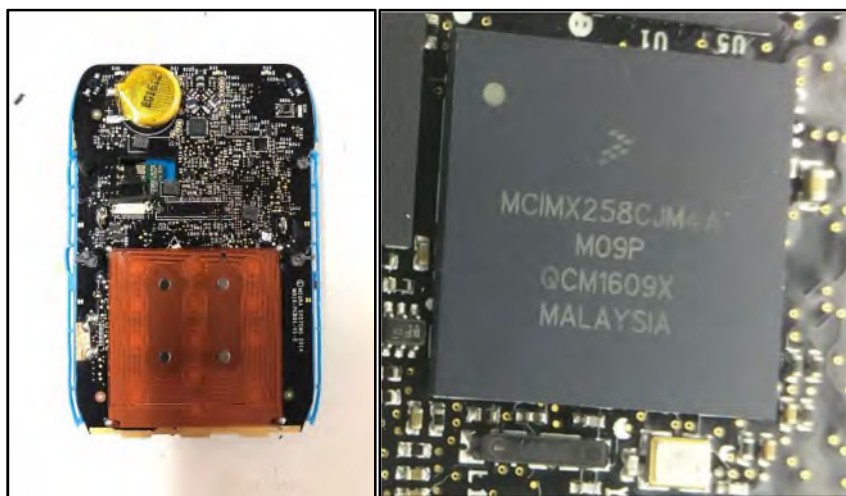
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37 '969 Patent, Claim 1.

38 *Id.* at Claim 2.

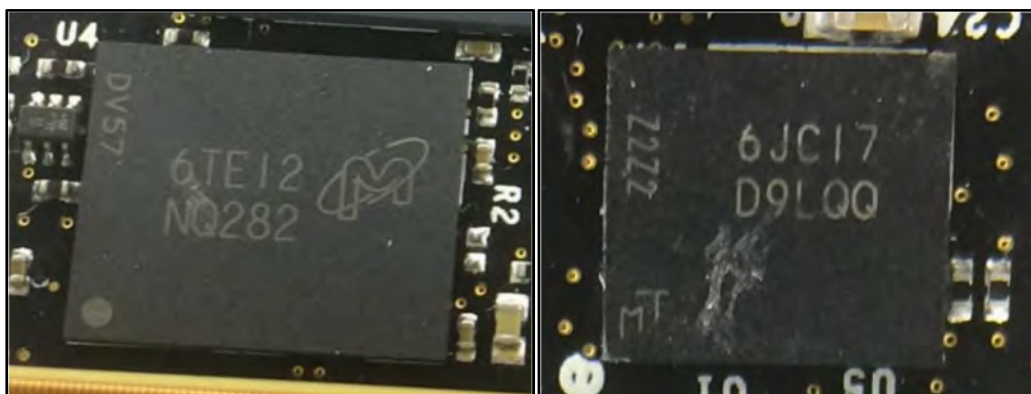
39 PayPal Chip Card Reader Guide Website.

120. The PayPal Chip Card Reader contains a Freescale MCIMX258CJM4A M09P ARM core processor or its equivalent:



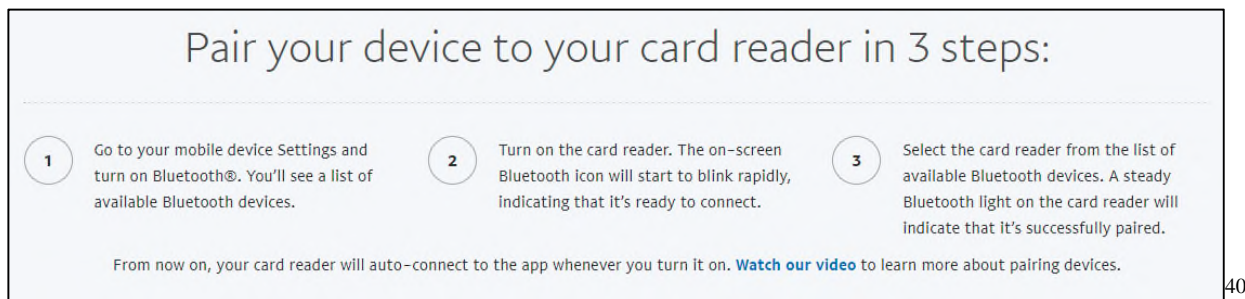
121. The Freescale MCIMX258CJM4A M09P ARM core processor contains 128 KB SRAM, 32 KB ROM, and/or 16 KB data cache memory or its equivalent.

122. The PayPal Chip Card Reader contains a 2GB Micron Flash memory module with FBGA code NQ282, corresponding to part number MT29F2G08ABBEAHC-IT:E and/or a 512MB SDRAM memory module with FPGA Code D9LQQ, corresponding to part number MT46H32M16LFBF-5 IT:C, or its equivalent:



123. The PayPal Chip Card Reader contains a Bluetooth communication interface configured to enable the transmission of communications between the PayPal Chip Card Reader

and a terminal (for example, an Apple iOS or Android device storing and having a processor, an input component such as a touchscreen sensor, an output component such as a display, a network communications interface, and a memory that contains the PayPal Here App or a POS Partner App). The PayPal Chip Card Reader uses Bluetooth to “pair” with the terminal:

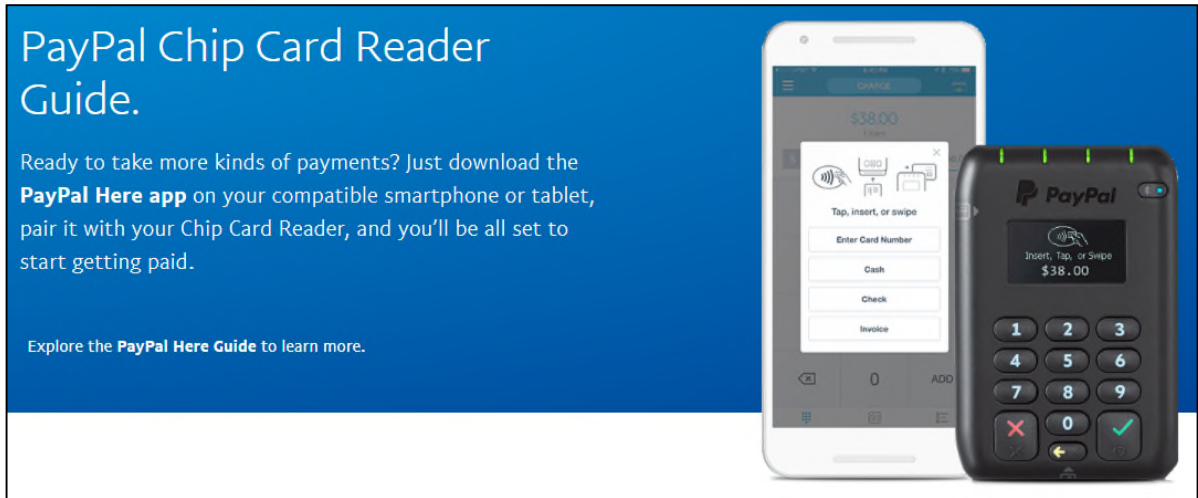


124. On information and belief, the PayPal Here App or POS Partner App is designed to be stored on and run on a terminal and contains program code that is configured to present an interactive user interface on the terminal output component.

125. For example, the PayPal Here App is program code designed to be stored on and run on a terminal and that is configured to present an interactive user interface on the terminal display:

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<sup>40</sup> See PayPal Chip Card Reader Guide Website.



126. The terminal running the PayPal Here App or POS Partner App runs program code that is configured to provide a communications node on the terminal to communicate over a Bluetooth connection to the PayPal Chip Card Reader and to facilitate communications with the PayPal Chip Card Reader and with a communications network node, such as PayPal's secure financial transaction servers, through the terminal's network communication interface.

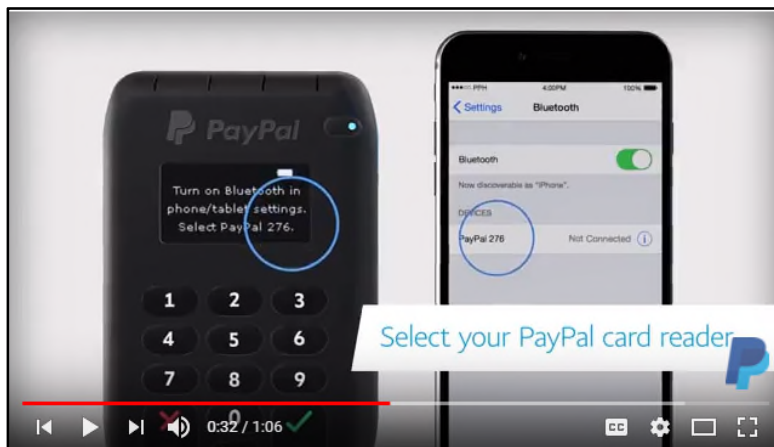
127. Further, on information and belief, the PayPal Chip Card Reader's memory stores program code to be executed by the PayPal Chip Card Reader's processor or Bluetooth controller that is configured to provide a communications node and establish a communications link with the PayPal Here App or a POS Partner App running on a terminal, and to facilitate communications between the PayPal Chip Card Reader and the terminal running the PayPal Here App or a POS Partner App and with a communications network node, such as a network server, through the terminal's network communication interface (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to

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<sup>41</sup> See PayPal Chip Card Reader Guide Website.

process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

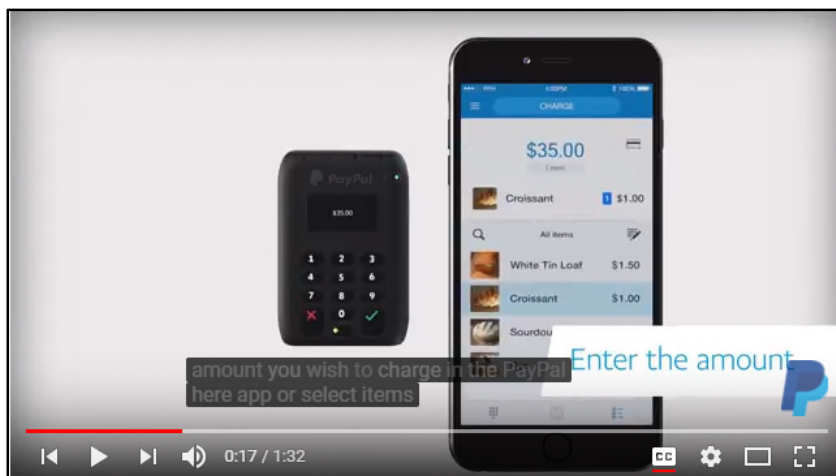
128. For example, on information and belief, the PayPal Chip Card Reader stores program code to be executed by the PayPal Chip Card Reader's processor or by a Bluetooth controller that is configured to make use of Bluetooth pairing of the PayPal Chip Card Reader to the terminal:



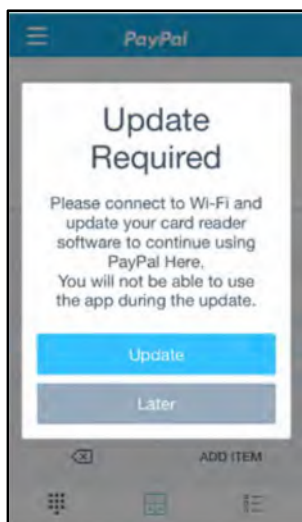
129. Further, on information and belief, the PayPal Chip Card Reader's memory stores program code to be executed by the PayPal Chip Card Reader's processor in response to a communication resulting from user interaction with the PayPal Here App or a POS Partner App's interactive user interface that is configured to cause a communication to be sent to a network server (for example, to cause a communication to be sent to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

130. For example, the PayPal Here App's user interface allows the user to enter the charge amount and to initiate the transaction by pressing the "charge" button:

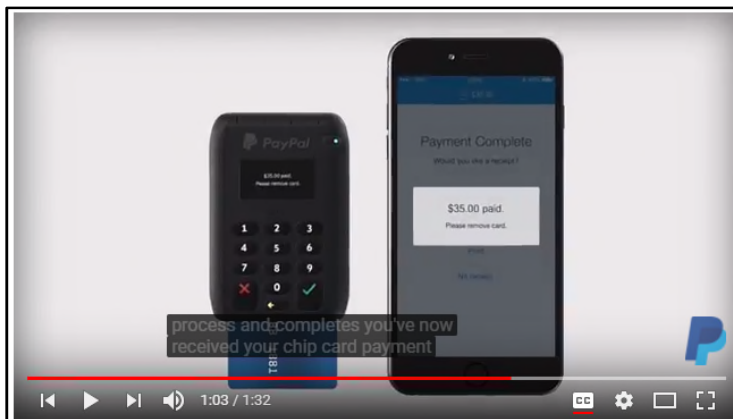




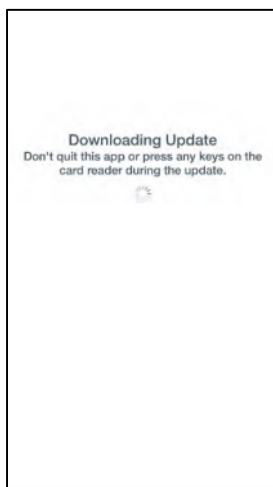
131. The PayPal Here App’s user interface also allows the user to initiate a firmware update by pressing the “update” button:



132. On information and belief, the PayPal Chip Card Reader’s memory stores program code to be executed by the PayPal Chip Card Reader’s processor in response to a communication resulting from user interaction with the PayPal Here App’s user interface that is configured to cause a communication to be transmitted to a communications network node to process the transaction:



133. On information and belief, the PayPal Chip Card Reader’s memory also stores program code to be executed by the PayPal Chip Card Reader’s processor in response to a communication resulting from user interaction with the PayPal Here App’s user interface that is configured to cause a communication to be transmitted to a communications network node to download a firmware update:



134. On information and belief, the PayPal Chip Card Reader is configured to facilitate communications through the communications node on the terminal running the PayPal Here App or a POS Partner App and through the terminal’s network interface to a network server for processing (for example, to facilitate communication of data to the terminal and to PayPal’s

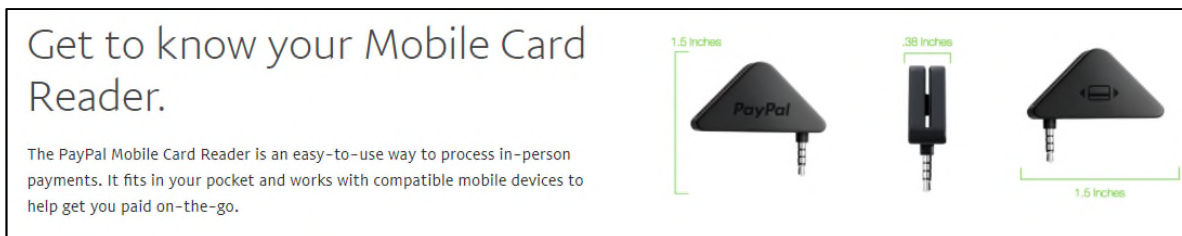
secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

135. For example, the PayPal Chip Card Reader facilitates communication of payment data to the terminal and to PayPal’s secure financial transaction servers to process payments:



136. **Direct Infringement: PayPal Mobile Card Reader.**

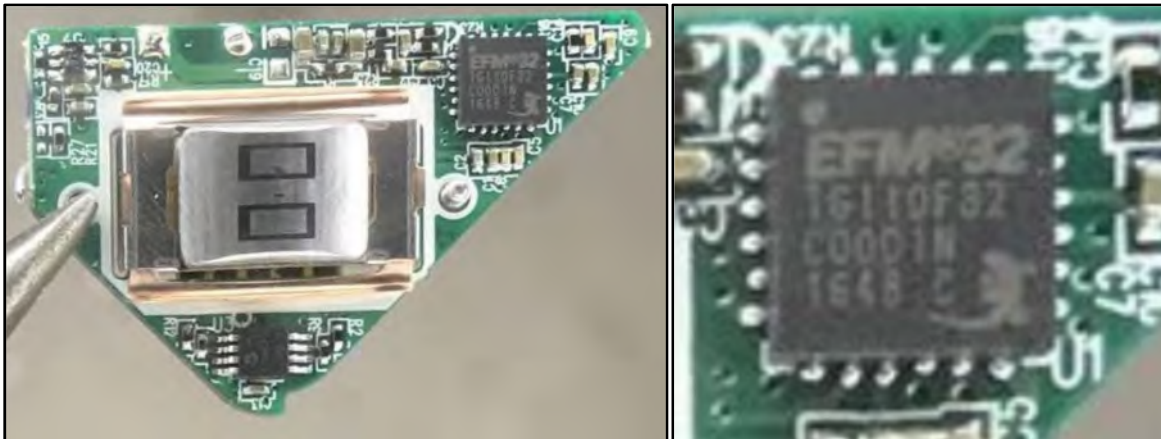
The PayPal Mobile Card Reader is a portable device that “fits in your pocket and works with compatible mobile devices to help get you paid on-the-go”:



137. The PayPal Mobile Card Reader contains a EFM32 TG110F32 ARM Cortex-M3 processor or its equivalent:

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<sup>42</sup> See PayPal Mobile Card Reader Guide Website.

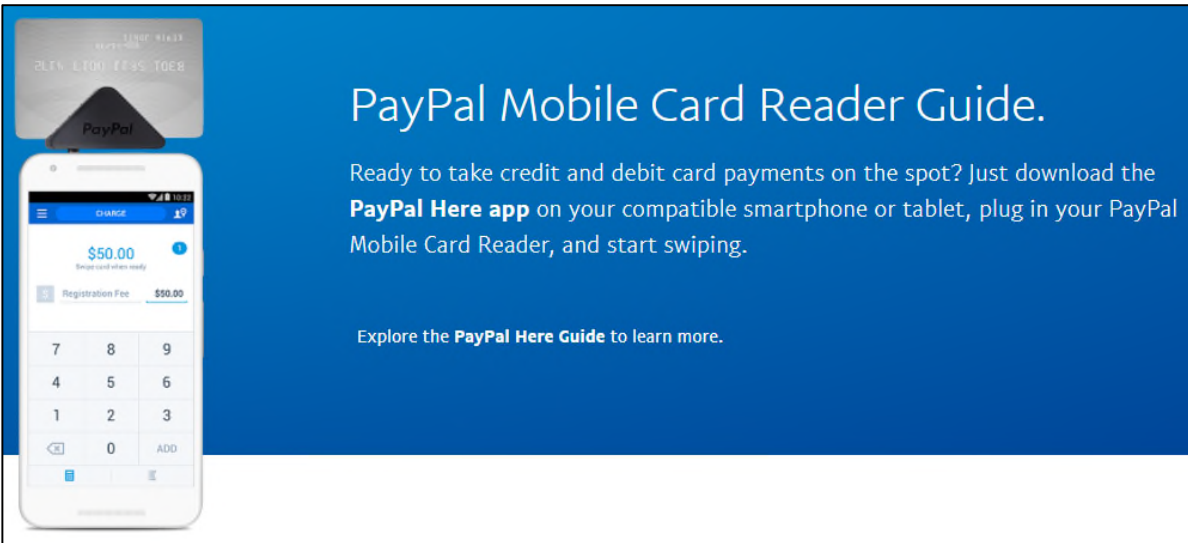


138. The PayPal Mobile Card Reader contains memory, including at least up to 32 KB Flash memory and up to 4KB RAM memory integrated into an EFM32 TG110F32 ARM Cortex-M3 processor, or its equivalent.

139. The PayPal Mobile Card Reader includes an audio jack communications interface (*e.g.*, an AHJ connector) configured to enable the transmission of communications between the PayPal Mobile Card Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, a network communications interface, and a memory that contains the PayPal Here App or a POS Partner App).

140. On information and belief, the PayPal Here App or POS Partner App is designed to be stored on and run on a terminal and contains program code that is configured to present an interactive user interface on the terminal output component.

141. For example, the PayPal Here App is program code designed to be stored on and run on a terminal and that is configured to present an interactive user interface on the terminal display:



142. The terminal running the PayPal Here App or POS Partner App runs program code that is configured to provide a communications node on the terminal to communicate over an AHJ interface and to facilitate communications with the PayPal Mobile Card Reader and with a communications network node, such as PayPal’s secure financial transaction servers, through the terminal’s network communication interface.

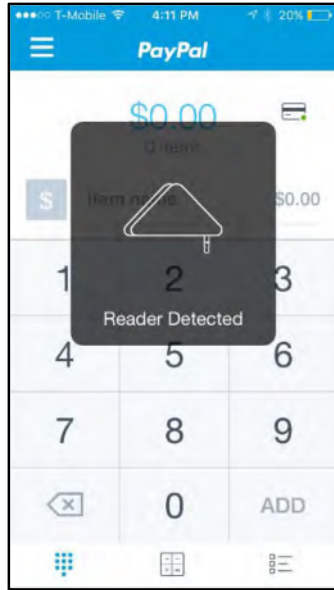
143. Further, on information and belief, the PayPal Mobile Card Reader’s memory stores program code to be executed by the PayPal Mobile Card Reader processor that is configured to provide a communications node and establish a communications link (*e.g.*, using audio-data communications sent over audio pins (pins 3 and 4) of the AHJ interface) with the PayPal Here App or a POS Partner App running on a terminal, and to facilitate communications between the PayPal Mobile Card Reader and the terminal running the PayPal Here App or a POS Partner App and with a communications network node, such as a network server, through the terminal’s network communication interface (for example, to facilitate communication of data to

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<sup>43</sup> See PayPal Mobile Card Reader Guide Website.

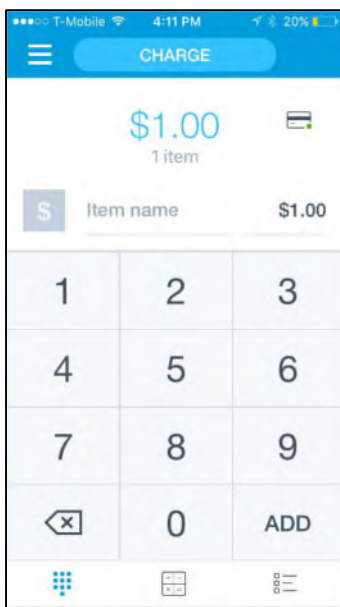
the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App).

144. For example, on information and belief, the PayPal Mobile Card Reader stores program code to be executed by the PayPal Mobile Card Reader's processor that is configured to allow for communications with the terminal over the audio pins of an AHJ interface:



145. Further, on information and belief, the PayPal Mobile Card Reader's memory stores program code to be executed by the PayPal Mobile Card Reader's processor in response to a communication resulting from user interaction with the PayPal Here App or a POS Partner App's interactive user interface that is configured to cause a communication to be sent to a network server (for example, to cause a communication to be sent to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App).

146. For example, the PayPal Here App's user interface allows the user to enter the charge amount and to initiate the transaction by pressing the "charge" button:



147. On information and belief, the PayPal Mobile Card Reader's memory stores program code to be executed by the PayPal Mobile Card Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network node to process the transaction.

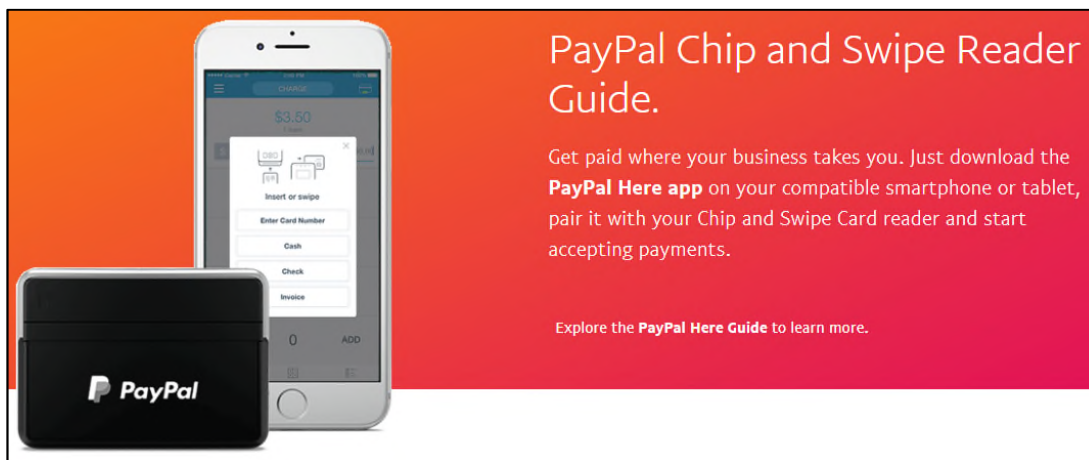
148. On information and belief, the PayPal Mobile Card Reader is configured to facilitate communications through the communication node on the terminal running the PayPal Here App or a POS Partner App and through the terminal's network interface to a network server for processing (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App).

149. For example, the PayPal Mobile Card Reader facilitates communication of payment data to the terminal and to PayPal's secure financial transaction servers to process payments:



150. **Direct Infringement: PayPal Chip and Swipe Reader.**

The PayPal Chip and Swipe Reader is a portable device that allows users to “[g]et paid where your business takes you”:

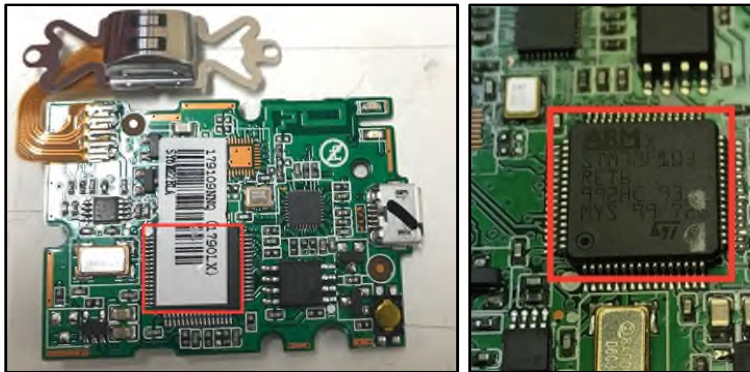


151. The PayPal Chip and Swipe Reader contains an ARM STM 32F103 Series microprocessor or its equivalent:

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<sup>44</sup> See PayPal Chip and Swipe Reader Guide Website.





152. The PayPal Chip and Swipe Reader contains memory, including 16 Kbytes to 1 Mbyte of Flash and 6K to 96K SRAM memory integrated into an ARM STM 32F103 Series microprocessor, or its equivalent.

153. The PayPal Chip and Swipe Reader contains a Bluetooth communication interface configured to enable the transmission of communications between the PayPal Chip and Swipe Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, a network communications interface, and a memory that contains the PayPal Here App or a POS Partner App):

How to set up your card reader.

<p>1</p> <p>Charge your reader, then turn it on</p> <p>Charge reader by connecting it with the enclosed micro-USB cable to a power outlet. The blue blinking light on your reader will indicate it's ready to connect.</p>	<p>2</p> <p>Enable Bluetooth®</p> <p>Turn on your bluetooth in your mobile device <b>Settings</b>.</p>	<p>3</p> <p>Pair with the PayPal Here app</p> <p>Open the PayPal Here app and tap the menu at the top left. Next, select <b>Have a new reader?</b> You'll be guided to find available card readers to pair and connect.</p>	<p>4</p> <p>Check for the latest updates</p> <p>Always keep your reader up-to-date. If required, please follow the on-screen prompts for the latest firmware updates.</p>
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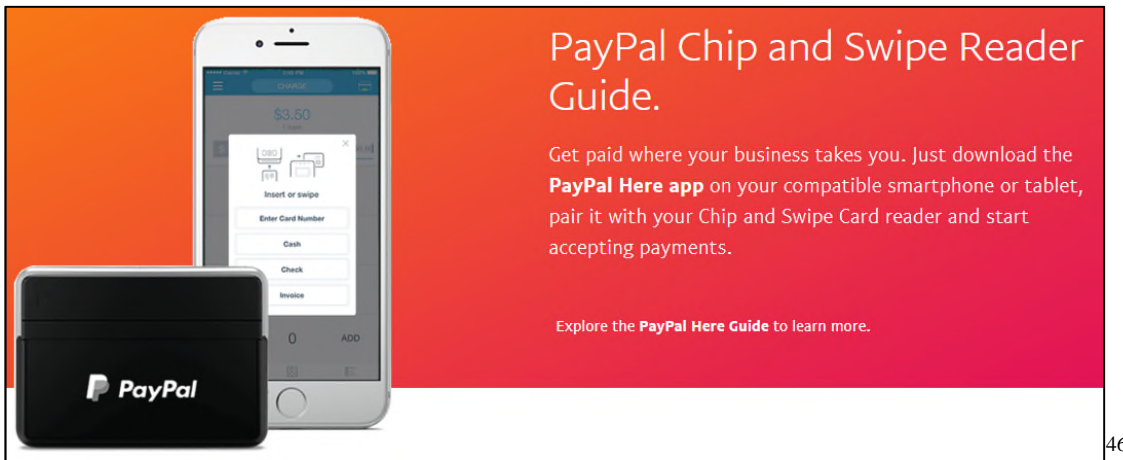
45

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<sup>45</sup> See PayPal Chip and Swipe Reader Guide Website.

154. On information and belief, the PayPal Here App or POS Partner App is designed to be stored on and run on a terminal and contains program code that is configured to present an interactive user interface on the terminal output component.

155. For example, the PayPal Here App is program code designed to be stored on and run on a terminal and that is configured to present an interactive user interface on the terminal display:



156. The terminal running the PayPal Here App or POS Partner App runs program code that is configured to provide a communications node on the terminal to communicate over a Bluetooth connection to the PayPal Chip and Swipe Reader and to facilitate communications with the PayPal Chip and Swipe Reader and with a communications network node, such as PayPal's secure financial transaction servers, through the terminal's network communication interface.

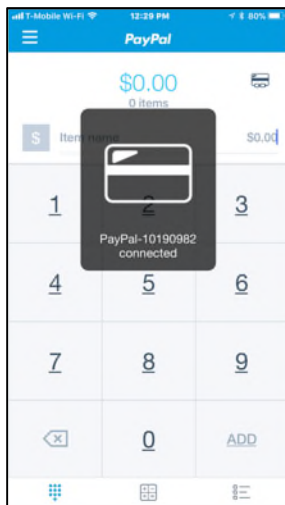
157. Further, on information and belief, the PayPal Chip and Swipe Reader's memory stores program code to be executed by the PayPal Chip and Swipe Reader's processor or

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<sup>46</sup> See PayPal Chip and Swipe Reader Guide Website.

Bluetooth controller that is configured to provide a communications node and establish a communications link with the PayPal Here App or a POS Partner App running on a terminal, and to facilitate communications between the PayPal Chip and Swipe Reader and the terminal running the PayPal Here App or a POS Partner App and with a communications network node, such as a network server, through the terminal's network communication interface (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

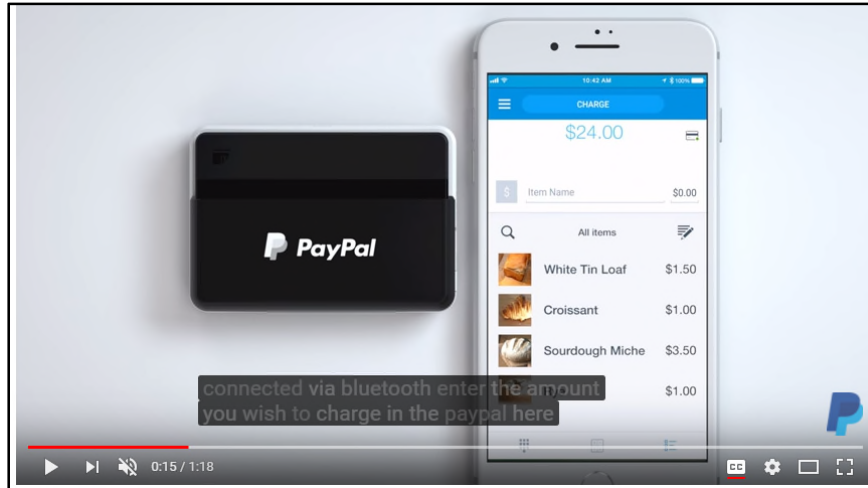
158. For example, on information and belief, the PayPal Chip and Swipe Reader stores program code to be executed by the PayPal Chip and Swipe Reader's processor or by a Bluetooth controller that is configured to make use of Bluetooth pairing of the PayPal Chip and Swipe Reader to the terminal:



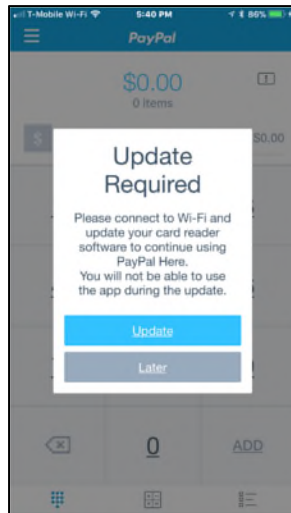
159. Further, on information and belief, the PayPal Chip and Swipe Reader's memory stores program code to be executed by the PayPal Chip and Swipe Reader's processor in response to a communication resulting from user interaction with the PayPal Here App or a POS Partner App's interactive user interface that is configured to cause a communication to be sent to

a network server (for example, to cause a communication to be sent to PayPal’s secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

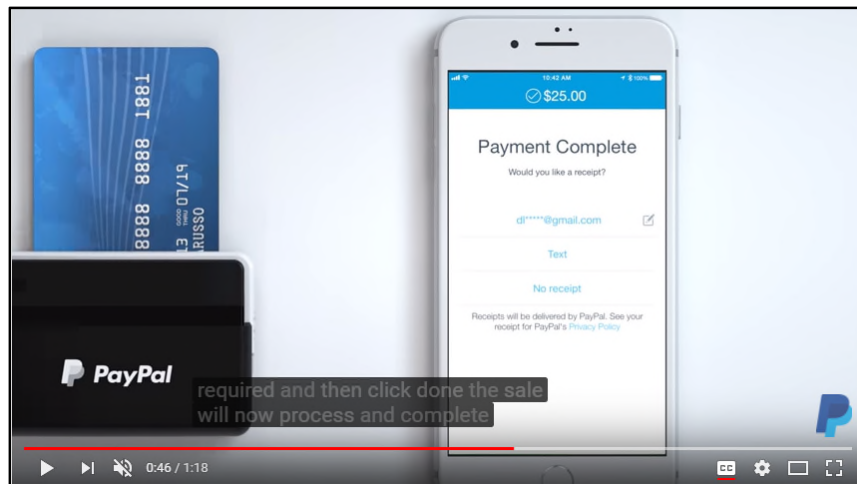
160. For example, the PayPal Here App’s user interface allows the user to enter the charge amount and to initiate the transaction by pressing the “charge” button:



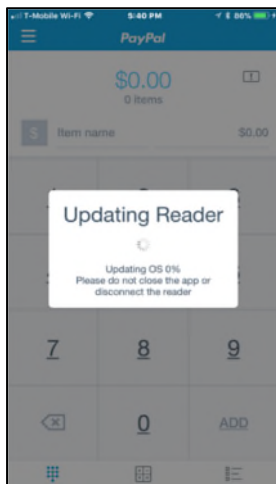
161. The PayPal Here App’s user interface also allows the user to initiate a firmware update by pressing the “update” button:



162. On information and belief, the PayPal Chip and Swipe Reader's memory stores program code to be executed by the PayPal Chip and Swipe Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network node to process the transaction:

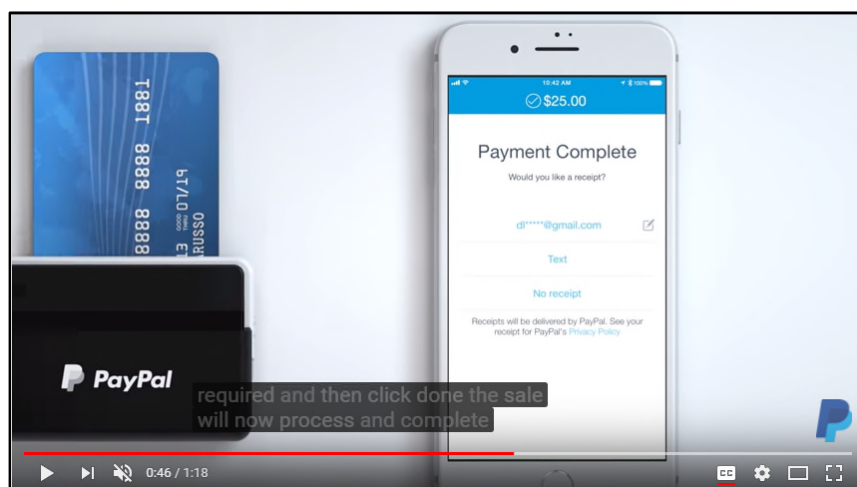


163. On information and belief, the PayPal Chip and Swipe Reader's memory also stores program code to be executed by the PayPal Chip and Swipe Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network node to download a firmware update:



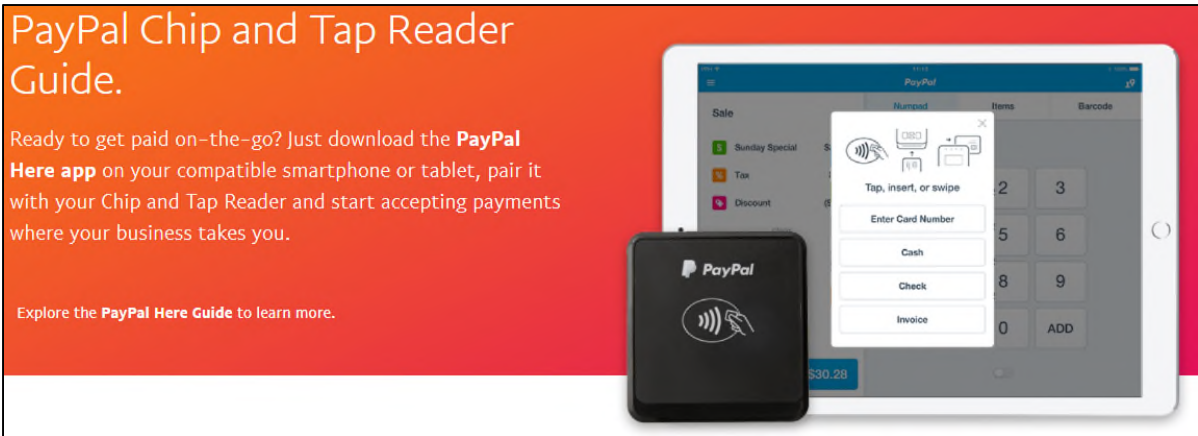
164. On information and belief, the PayPal Chip and Swipe Reader is configured to facilitate communications through the communications node on the terminal running the PayPal Here App or a POS Partner App and through the terminal's network interface to a network server for processing (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

165. For example, the PayPal Chip and Swipe Reader facilitates communication of payment data to the terminal and to PayPal's secure financial transaction servers to process payments:

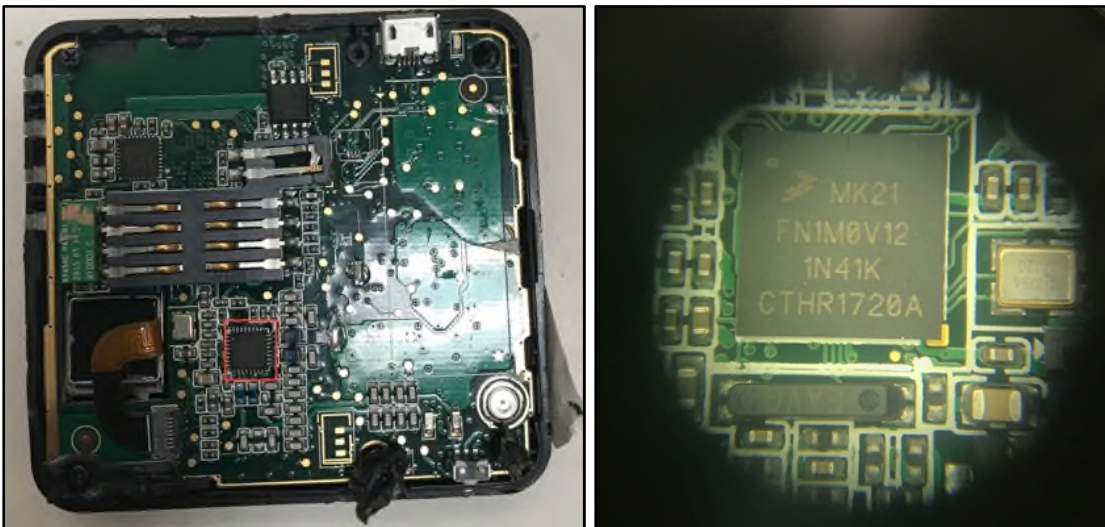


166. **Direct Infringement: PayPal Chip and Tap Reader.**

The PayPal Chip and Tap Reader is a portable device that allows users to “get paid on-the-go” and “start accepting payments where your business takes you”:



167. The PayPal Chip and Tap Reader contains a Kinetis MK21FX512VMC12 microprocessor or its equivalent:

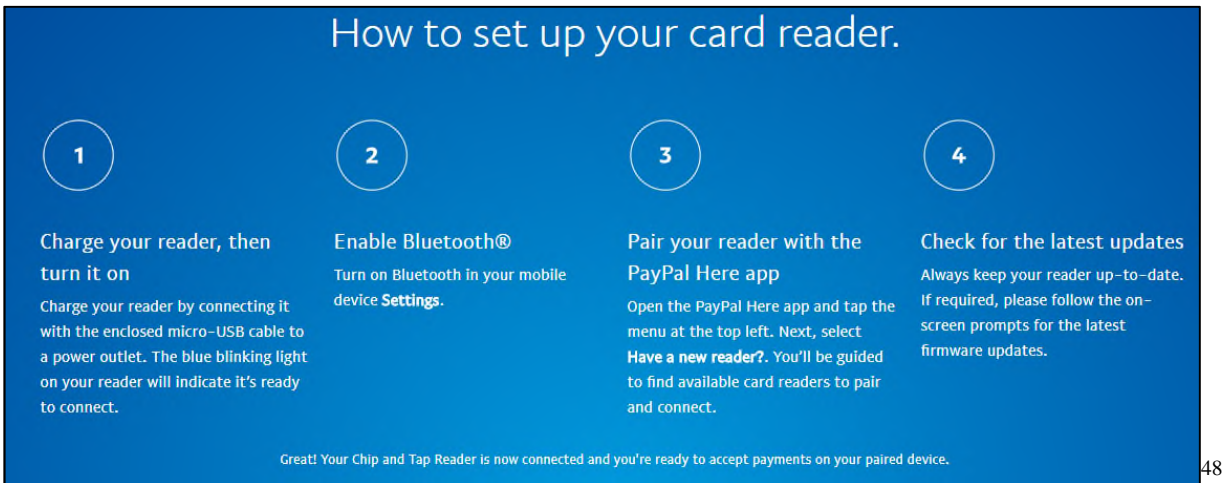


168. The PayPal Chip and Tap Reader contains memory, including FLASH and SRAM memory integrated into a Kinetis MK21FX512VMC12 microprocessor, or its equivalent.

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<sup>47</sup> See PayPal Chip and Tap Reader Guide Website.

169. The PayPal Chip and Tap Reader contains a Bluetooth communication interface configured to enable the transmission of communications between the PayPal Chip and Tap Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, a network communications interface, and a memory that contains the PayPal Here App or a POS Partner App). The PayPal Chip Card Reader uses Bluetooth to “pair” with the terminal:



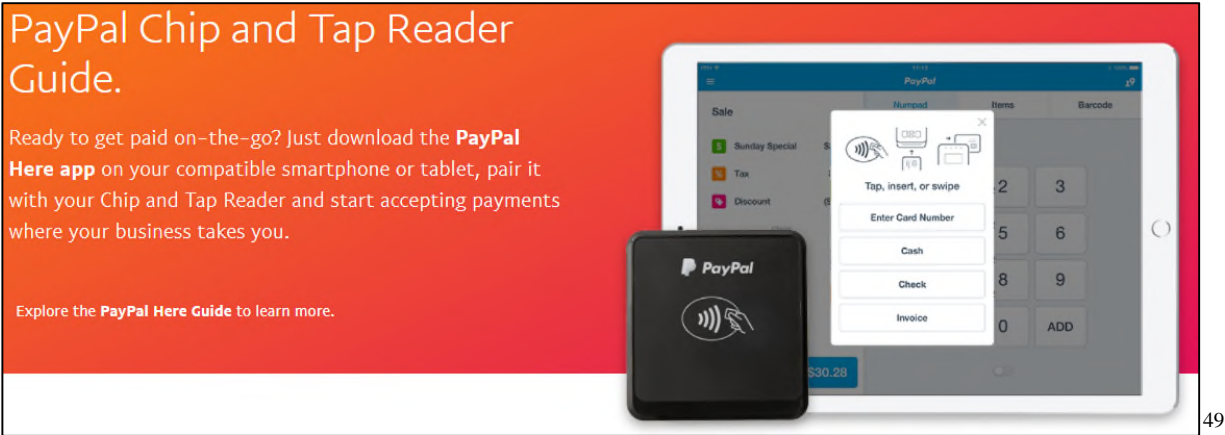
170. On information and belief, the PayPal Here App or POS Partner App is designed to be stored on and run on a terminal and contains program code that is configured to present an interactive user interface on the terminal output component.

171. For example, the PayPal Here App is program code designed to be stored on and run on a terminal and that is configured to present an interactive user interface on the terminal display:

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<sup>48</sup> See PayPal Chip and Tap Reader Guide Website.





172. The terminal running the PayPal Here App or POS Partner App runs program code that is configured to provide a communications node on the terminal to communicate over a Bluetooth connection to the PayPal Chip and Tap Reader and to facilitate communications with the PayPal Chip and Tap Reader and with a communications network node, such as PayPal's secure financial transaction servers, through the terminal's network communication interface.

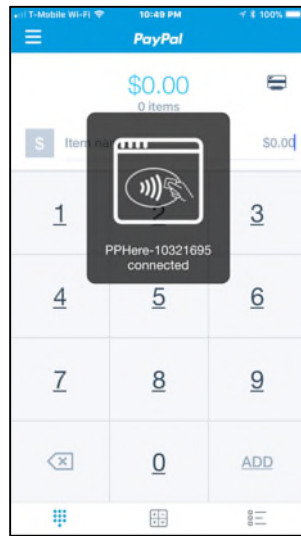
173. Further, on information and belief, the PayPal Chip and Tap Reader's memory stores program code to be executed by the PayPal Chip and Tap Reader's processor or Bluetooth Controller that is configured to provide a communications node and establish a communications link with the PayPal Here App or a POS Partner App running on a terminal, and to facilitate communications between the PayPal Chip and Tap Reader and the terminal running the PayPal Here App or a POS Partner App and with a communications network node, such as a network server, through the terminal's network communication interface (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to

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<sup>49</sup> See PayPal Chip and Tap Reader Guide Website.

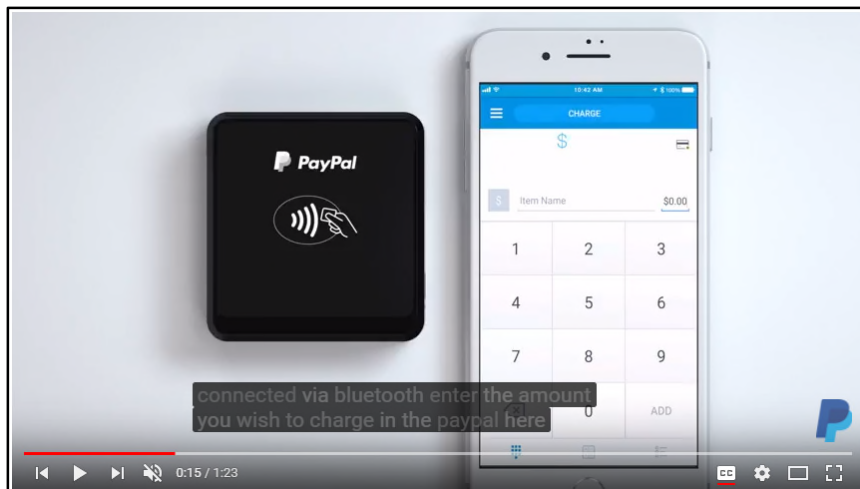
process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

174. For example, on information and belief, the PayPal Chip and Tap Reader stores program code to be executed by the PayPal Chip and Tap Reader's processor or by a Bluetooth controller that is configured to make use of Bluetooth pairing of the PayPal Chip and Tap Reader to the terminal:

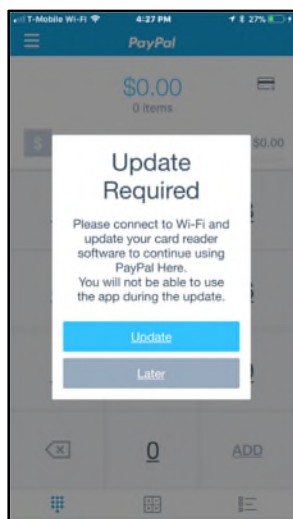


175. Further, on information and belief, the PayPal Chip and Tap Reader's memory stores program code to be executed by the PayPal Chip and Tap Reader's processor in response to a communication resulting from user interaction with the PayPal Here App or a POS Partner App's interactive user interface that is configured to cause a communication to be sent to a network server (for example, to cause a communication to be sent to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

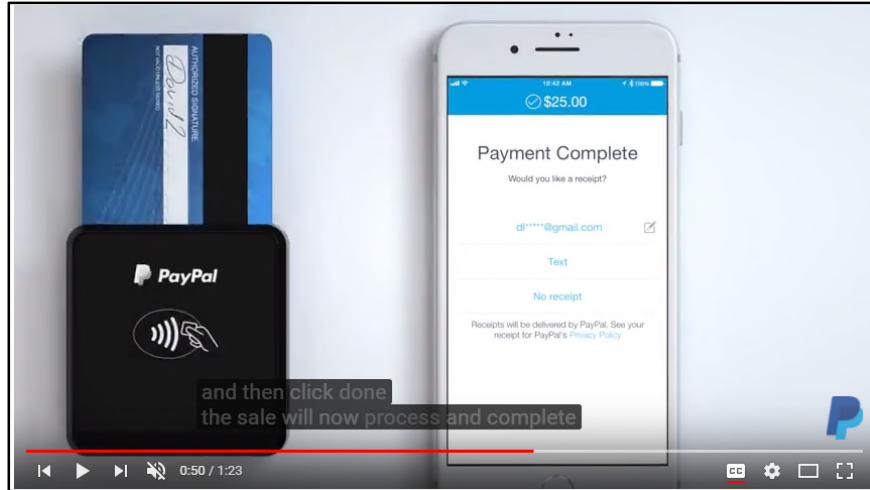
176. For example, the PayPal Here App's user interface allows the user to enter the charge amount and to initiate the transaction by pressing the "charge" button:



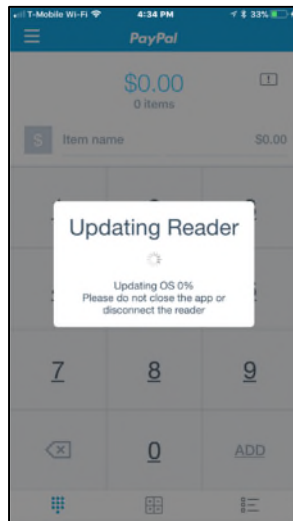
177. The PayPal Here App’s user interface also allows the user to initiate a firmware update by pressing the “update” button:



178. On information and belief, the PayPal Chip and Tap Reader’s memory stores program code to be executed by the PayPal Chip and Tap Reader’s processor in response to a communication resulting from user interaction with the PayPal Here App’s user interface that is configured to cause a communication to be transmitted to a communications network node to process the transaction:



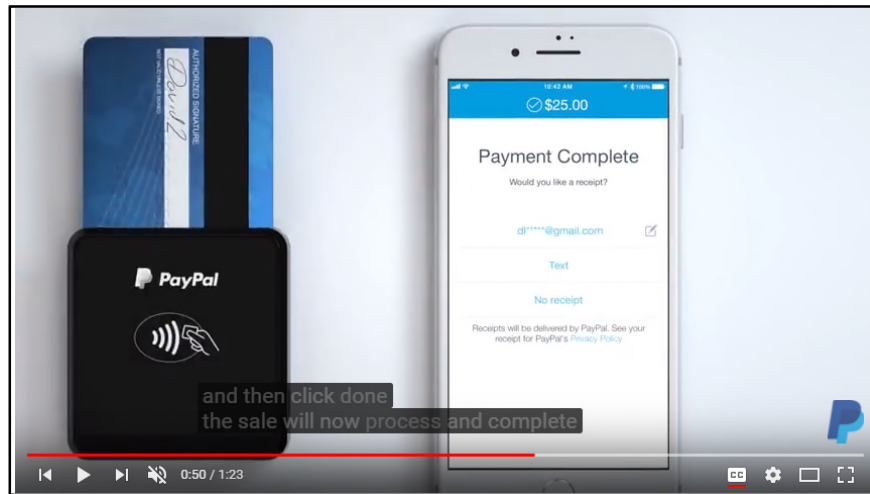
179. On information and belief, the PayPal Chip and Tap Reader's memory also stores program code to be executed by the PayPal Chip and Tap Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network node to download a firmware update:



180. On information and belief, the PayPal Chip and Tap Reader is configured to facilitate communications through the communications node on the terminal running the PayPal Here App or a POS Partner App and through the terminal's network interface to a network server

for processing (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

181. For example, the PayPal Chip and Tap Reader facilitates communication of payment data to the terminal and to PayPal's secure financial transaction servers to process payments:



182. By infringing the '969 Patent, PayPal has caused and will continue to cause Plaintiff to suffer damages in an amount to be determined at trial *i.e.* in an amount that by law cannot be less than would constitute a reasonable royalty for the use of the patented technology, together with pre-judgment and post-judgment interest thereon.

183. Plaintiff has no adequate remedy at law against PayPal's acts of infringement, and unless PayPal is permanently enjoined from infringing the '969 Patent, Plaintiff will suffer irreparable harm.

184. To the extent that PayPal has continued or continues to make, have made, use, import, sell, or offer for sale products or services that infringe the '969 Patent following its awareness of the '969 Patent, PayPal's infringement is willful and entitles IOENGINE to an

award of enhanced damages pursuant to 35 U.S.C. § 284 and attorneys' fees pursuant to 35 U.S.C. § 285.

**FOURTH COUNT FOR RELIEF**  
**(INDIRECT INFRINGEMENT OF THE '969 PATENT)**

185. IOENGINE repeats, re-alleges, and incorporates by reference the preceding paragraphs as if fully set forth herein, including but not limited to paragraphs 18 to 29 and 114 to 184.

186. On information and belief, PayPal has infringed and continues to infringe indirectly by way of inducement and contributory infringement, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271, one or more claims of the '969 Patent by performing, without authority, one or more of the following acts: making, having made, using, importing, selling, and offering for sale in the United States one or more products or services that embody the invention claimed in the '969 Patent, including but not limited to the PayPal Infringing Products, and encouraging and instructing its customers, Point of Sale Partners, and third parties to make and use the PayPal Infringing Products in a manner that infringes the '969 Patent. Since receiving notice of the March 23, 2018 Complaint, Defendant has knowingly contributed to the infringement of and induced infringement of, and continues to knowingly contribute to the infringement of and induce infringement of, one or more claims of the '969 Patent by selling and offering for sale in the United States the PayPal Infringing Products and encouraging their use in, for example, the processing of credit card transactions with specific intent that the PayPal Infringing Products be used by its customers, Point of Sale Partners, and third parties to directly infringe the '969 Patent, which PayPal Infringing Products constitute a

material part of the invention and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

187. PayPal contributes to the direct infringement of the '969 Patent by providing and/or selling the PayPal Infringing Products to customers and third parties and providing customers and third parties with the necessary software and instructions to operate the PayPal Infringing Products, including the download of the PayPal Here App and POS Partner Apps for use with PayPal's card reader products for mobile payments, to infringe one or more claims of the '969 Patent. The PayPal Here App and POS Partner Apps are not staple articles of commerce suitable for substantial non-infringing use and were especially made or especially adapted for use in infringing the '969 Patent. They are specifically designed to work with PayPal's card reader products for mobile payments and their only purpose is to operate, in connection with PayPal's card reader products for mobile payments, in a manner that directly infringes one or more claims of the '969 Patent.

188. Defendant instructs and encourages its customers, Point of Sale Partners, and third parties to use the PayPal Infringing Products in a manner that infringes at least Claim 2 of the '969 Patent.

189. For example, Defendant provides software development kits that allow, instruct, and encourage customers, Point of Sale Partners, and third parties to "create fully customized, branded apps that enable credit or debit card payments in-store using PayPal card readers."<sup>50</sup>

190. Defendant further provides information and technical support on its website (*available at* [www.paypal.com](http://www.paypal.com); *see also* <https://www.paypal.com/us/webapps/mpp/credit-card->

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<sup>50</sup> See, e.g., <https://developer.paypal.com/docs/integration/paypal-here/>.

reader) that instructs and encourages customers, Point of Sale Partners, and third parties on how to use the PayPal Infringing Products.

191. Defendant further provides information and technical support on third-party platforms (*e.g.*, <https://www.youtube.com/user/PayPal>), including videos, demonstrations, and other information, that instructs and encourages customers, Point of Sale Partners, and third parties on how to use the PayPal Infringing Products.

192. PayPal also instructs and encourages the use of the PayPal Infringing Products in an infringing manner by directing users to the videos on PayPal's YouTube Channel (*e.g.*, <https://www.youtube.com/user/PayPal>).<sup>51</sup>

193. In each case, the information and materials provided by PayPal contain detailed descriptions and instructions for using and implementing the functionality claimed in at least Claim 2 of the '969 Patent including, at least, card reader device setup, processing chip card ("EMV") card payments, processing magnetic stripe card payments, processing contactless payments, processing refunds, and processing firmware updates.

194. Defendant additionally instructs and encourages its customers, Point of Sale Partners, and third parties to use the PayPal Infringing Products in a manner that infringes at least Claim 2 of the '969 Patent by instructing and encouraging its customers and third-parties to use the PayPal Infringing Products with PayPal's Point of Sale Partners.

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<sup>51</sup> See, *e.g.*, <https://www.paypal.com/us/webapps/mpp/credit-card-reader-how-to/chip-card-reader> (directing users to "[w]atch our video to learn more about pairing devices," and providing a link to the video entitled "How to Setup Chip Card Reader on Mobile or Tablet (PayPal Here)" on PayPal's YouTube channel).



**FIFTH COUNT FOR RELIEF**  
**(DIRECT INFRINGEMENT OF THE '703 PATENT)**

195. IOENGINE repeats, re-alleges, and incorporates by reference the preceding paragraphs as if fully set forth herein.

196. PayPal is not licensed under the '703 Patent and has no other right or permission to practice the invention embodied therein.

197. The '703 Patent is presumed valid and PayPal has had actual knowledge of the '703 Patent since the filing of the March 23, 2018 Complaint.

198. On information and belief, PayPal has infringed and continues to infringe, directly (alone or jointly), literally, and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271, one or more claims of the '703 Patent by performing, without authority, one or more of the following acts: making, having made, using, importing, selling, and offering for sale in the United States one or more products or services that embody the invention claimed in the '703 Patent, including but not limited to the PayPal Infringing Products. Since receiving notice of the March 23, 2018 Complaint, Defendant has knowingly infringed, and continues to infringe, one or more claims of the '703 Patent by making, having made, using, importing, selling, and offering for sale in the United States the PayPal Infringing Products, which products constitute a material part of the invention and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

199. For example, the PayPal Infringing Products embody the patented invention of the '703 Patent and infringe at least Claim 104 of the '703 patent because the PayPal Infringing Products constitute:

“A system implementing a terminal having a processor, an input component, an output component, a network communication

interface, and a memory configured to store executable program code, including first program code which, when executed by the terminal processor, is configured to affect the presentation of an interactive user interface by the terminal output component, and second program code which, when executed by the terminal processor, is configured to provide a communications node on the terminal to facilitate communications to and from the terminal, the system comprising:

(a) a communications network node; and

(b) a portable device comprising an external communication interface for enabling the transmission of a plurality of communications between the portable device and the terminal, a processor, and a memory, wherein the memory has executable program code stored thereon, the portable device configured to:

(1) cause the terminal to execute the first program code to affect the presentation of an interactive user interface by the terminal output component;

(2) execute third program code stored on the portable device memory to provide a communications node on the portable device configured to coordinate with the communications node on the terminal and establish a communications link between the portable device and the terminal, and to facilitate communications to the terminal and to a communications network node through the terminal network communication interface;

(3) execute fourth program code stored on the portable device memory in response to a communication received by the portable device resulting from user interaction with the interactive user interface to cause a communication to be transmitted to a communications network node; and

(4) facilitate communications through the terminal network communication interface to a communications network node.”<sup>52</sup>

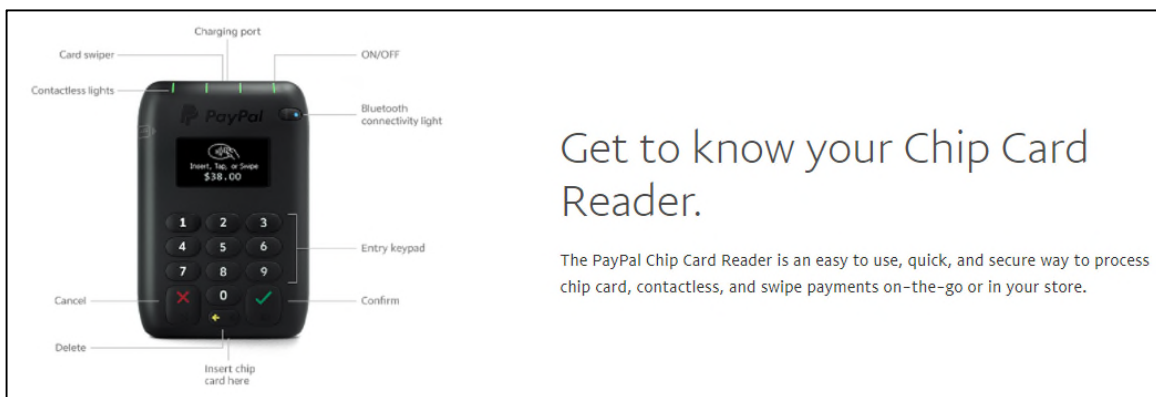
200. **Direct Infringement: The PayPal Here Mobile Payment System Utilizing the**

**PayPal Chip Card Reader.**

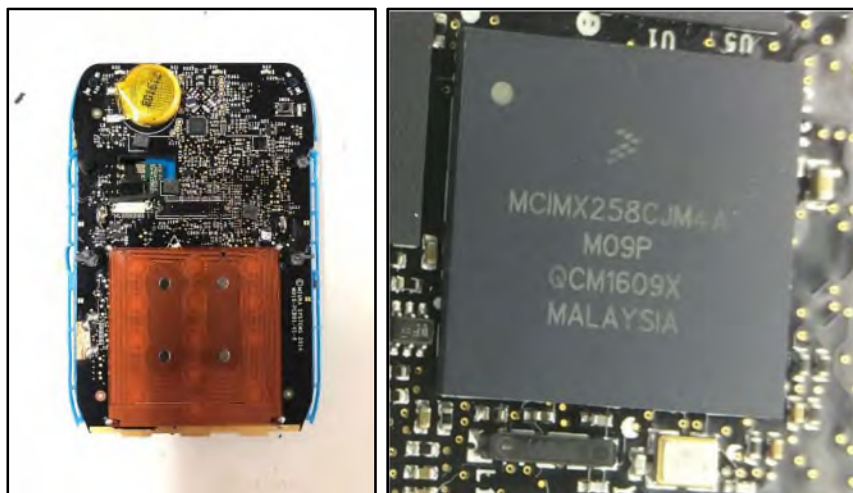
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<sup>52</sup> '703 Patent, Claim 104.

The PayPal Chip Card Reader is a portable device that offers a “secure way to process chip card, contactless, and swipe payments on-the-go or in your store”:



201. The PayPal Chip Card Reader contains a Freescale MCIMX258CJM4A M09P ARM core processor or its equivalent:



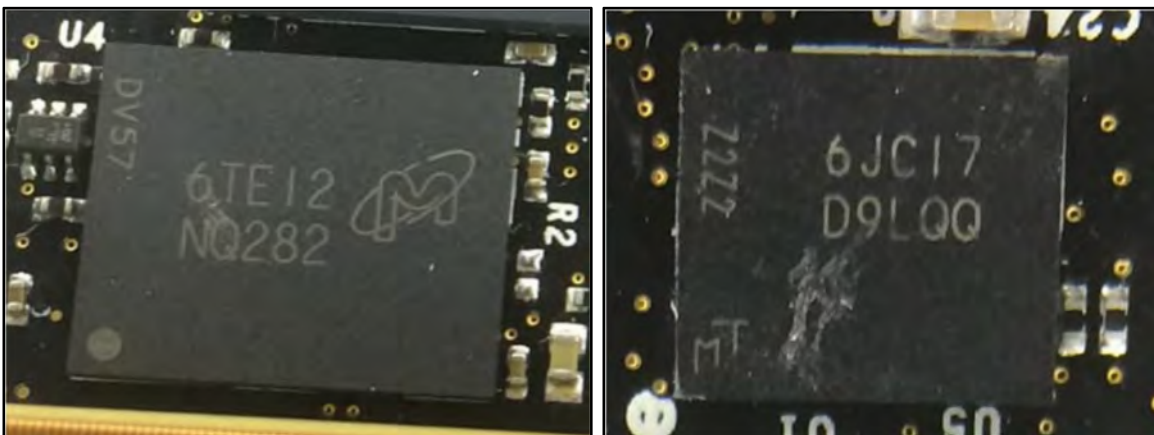
202. The Freescale MCIMX258CJM4A M09P ARM core processor contains 128 KB SRAM, 32 KB ROM, and/or 16 KB data cache memory or its equivalent.

203. The PayPal Chip Card Reader contains a 2GB Micron Flash memory module with FBGA code NQ282, corresponding to part number MT29F2G08ABBEAHC-IT:E and/or a

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<sup>53</sup> See PayPal Chip Card Reader Guide Website.

512MB SDRAM memory module with FPGA Code D9LQQ, corresponding to part number MT46H32M16LFBF-5 IT:C, or its equivalent:



204. The PayPal Chip Card Reader contains a Bluetooth communications interface configured to enable the transmission of communications between the PayPal Chip Card Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, a network communications interface, and a memory that is configured to store the PayPal Here App or a POS Partner App). The PayPal Chip Card Reader uses Bluetooth to “pair” with the terminal:

Pair your device to your card reader in 3 steps:

- 1 Go to your mobile device Settings and turn on Bluetooth®. You'll see a list of available Bluetooth devices.
- 2 Turn on the card reader. The on-screen Bluetooth icon will start to blink rapidly, indicating that it's ready to connect.
- 3 Select the card reader from the list of available Bluetooth devices. A steady Bluetooth light on the card reader will indicate that it's successfully paired.

From now on, your card reader will auto-connect to the app whenever you turn it on. [Watch our video](#) to learn more about pairing devices.

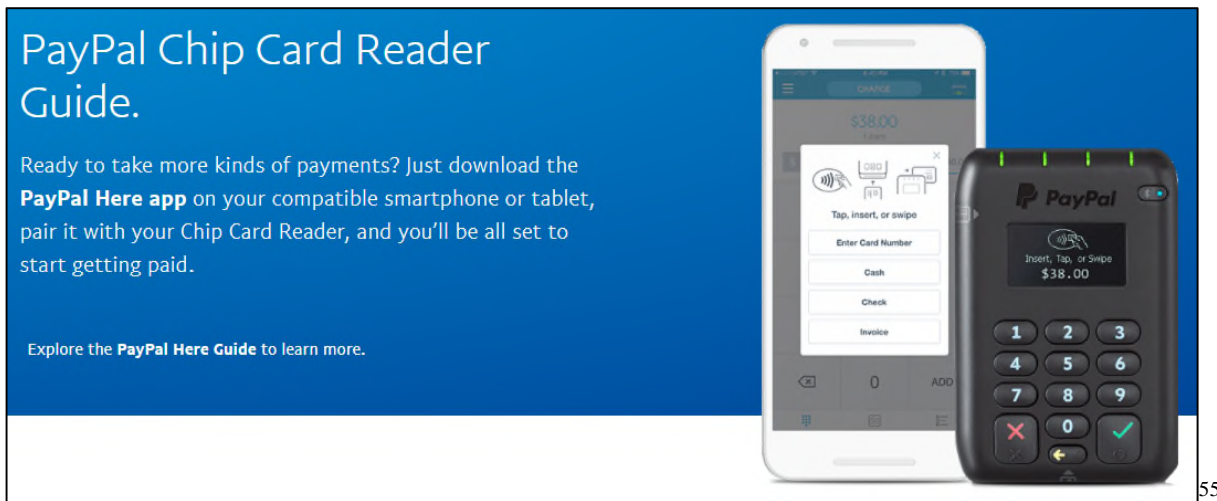
54

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<sup>54</sup> See PayPal Chip Card Reader Guide Website.

205. On information and belief, the PayPal Here App or POS Partner App is designed to be stored on and run on a terminal and contains program code that is configured to affect the presentation of an interactive user interface on the terminal's output component.

206. For example, the PayPal Here App is configured to present an interactive user interface on the terminal display:

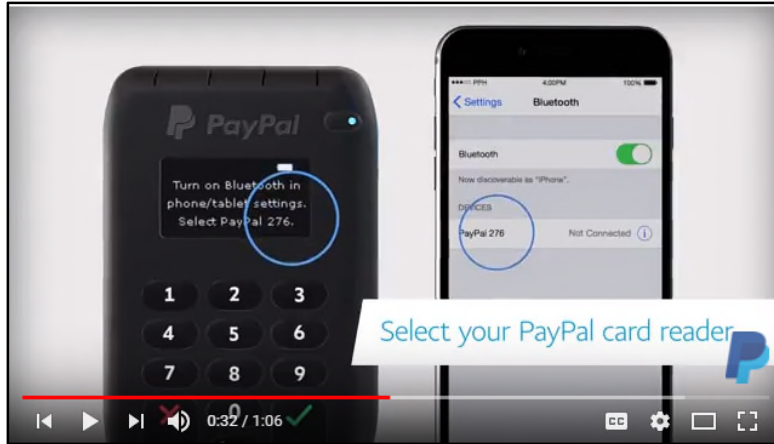


207. Further, on information and belief, the terminal configured to store the PayPal Here App or POS Partner App contains program code that is configured to provide a communications node on the terminal and to facilitate communications to and from the terminal.

208. For example, on information and belief, the PayPal Here App or POS Partner App is configured to make use of Bluetooth pairing of the PayPal Chip Card Reader to the terminal:

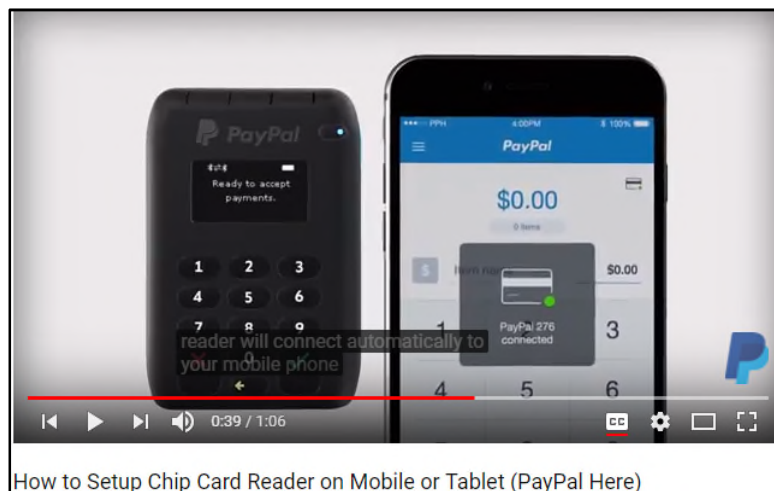
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<sup>55</sup> See PayPal Chip Card Reader Guide Website.



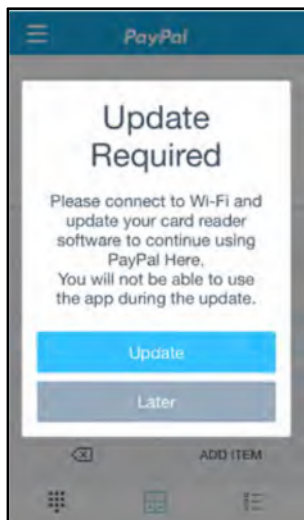
209. On information and belief, the PayPal Chip Card Reader is configured to cause the terminal to execute program code contained in the PayPal Here App or a POS Partner App that is configured to affect the presentation of a PayPal Here App or POS Partner App's interactive user interface on the terminal (for example, to indicate that the PayPal Chip Card Reader has been paired with the terminal, or to display a message that the PayPal Chip Card Reader requires an update to continue).

210. For example, the PayPal Chip Card Reader is configured to cause the presentation of a message on the interactive user interface of the PayPal Here App that the PayPal Chip Card Reader has been connected and is available for transactions:



How to Setup Chip Card Reader on Mobile or Tablet (PayPal Here)

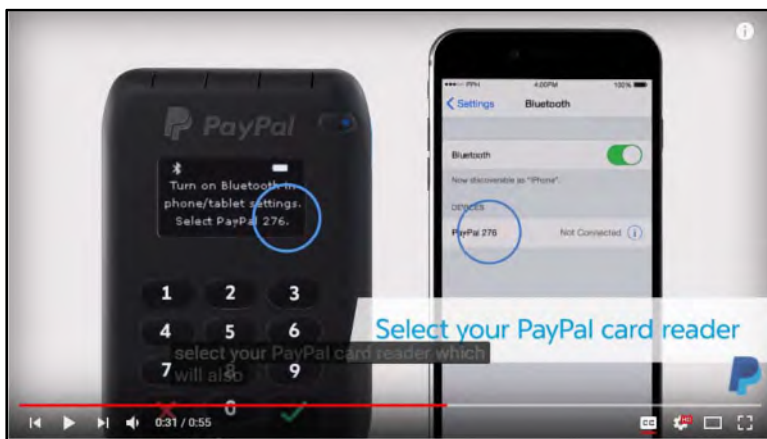
211. The PayPal Chip Card Reader is also configured to cause the presentation of a message on the interactive user interface of the PayPal Here App that a firmware update is required:



212. Further, on information and belief, the PayPal Chip Card Reader is configured to execute program code stored in the PayPal Chip Card Reader's memory that provides a communications node to coordinate with the communications node on the terminal and establishes a communications link with the PayPal Here App or POS Partner App running on the terminal, and that facilitates communications with the PayPal Here App or a POS Partner App running on the terminal and with a communications network node, such as a network server, through the terminal's network communication interface (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

213. For example, on information and belief, the PayPal Chip Card Reader stores program code to be executed by the PayPal Chip Card Reader's processor or by a Bluetooth

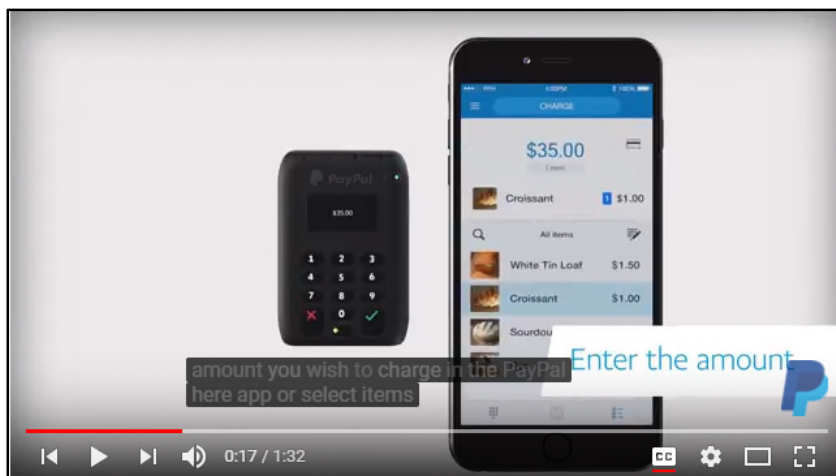
controller that is configured to make use of Bluetooth pairing of the PayPal Chip Card Reader to the terminal:



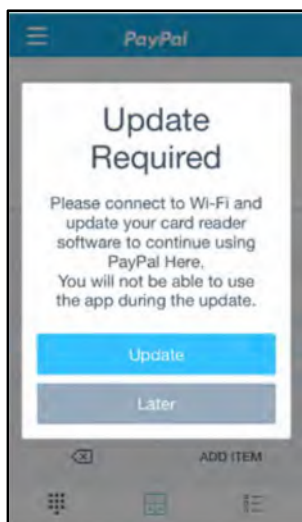
214. Further, on information and belief, the PayPal Chip Card Reader is configured to execute program code stored in the PayPal Chip Card Reader's memory in response to a communication resulting from user interaction with the PayPal Here App or POS Partner App's interactive user interface, which is configured to cause a communication to be transmitted to a communications network node such as a network server (for example, to provide data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or POS Partner App, or to request firmware updates).

215. For example, the PayPal Here App's user interface allows the user to enter the charge amount and to initiate the transaction by pressing the "charge" button:

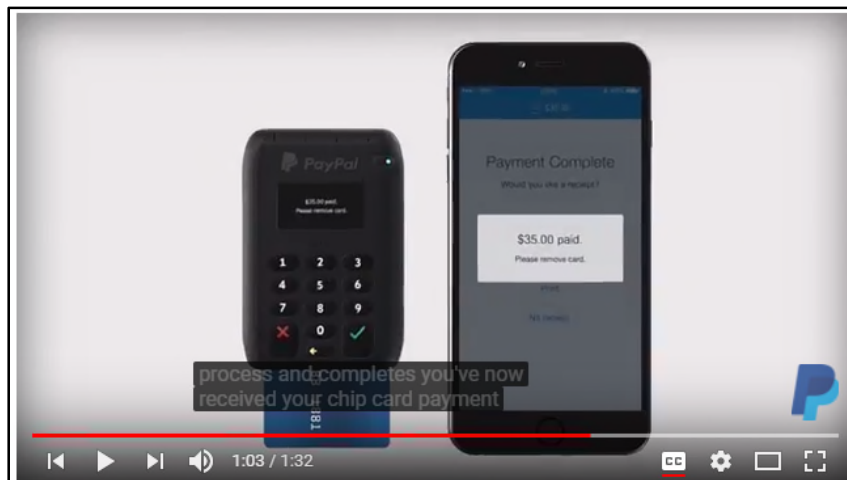




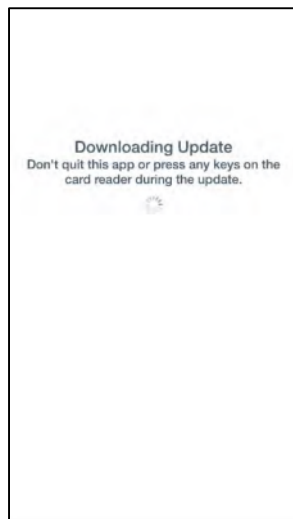
216. The PayPal Here App’s user interface also allows the user to initiate a firmware update by pressing the “update” button:



217. The PayPal Chip Card Reader’s memory stores program code to be executed by the PayPal Chip Card Reader’s processor in response to a communication resulting from user interaction with the PayPal Here App’s user interface that is configured to cause a communication to be transmitted to a communications network to process the transaction:



218. The PayPal Chip Card Reader's memory also stores program code to be executed by the PayPal Chip Card Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to download a firmware update:



219. On information and belief, the PayPal Chip Card Reader is configured to facilitate communications through the network communications interface on the terminal to a communications network node such as a network server (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to

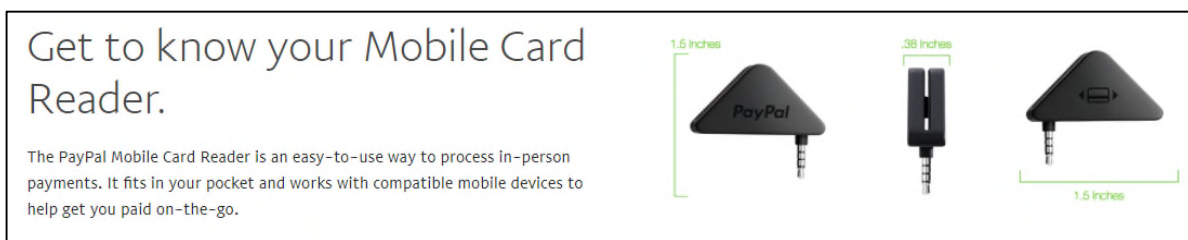
process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

220. For example, the PayPal Chip Card Reader facilitates communication of payment data to the terminal and to PayPal’s secure financial transaction servers to process payments:



221. **Direct Infringement: The PayPal Here Mobile Payment System Utilizing the PayPal Mobile Card Reader.**

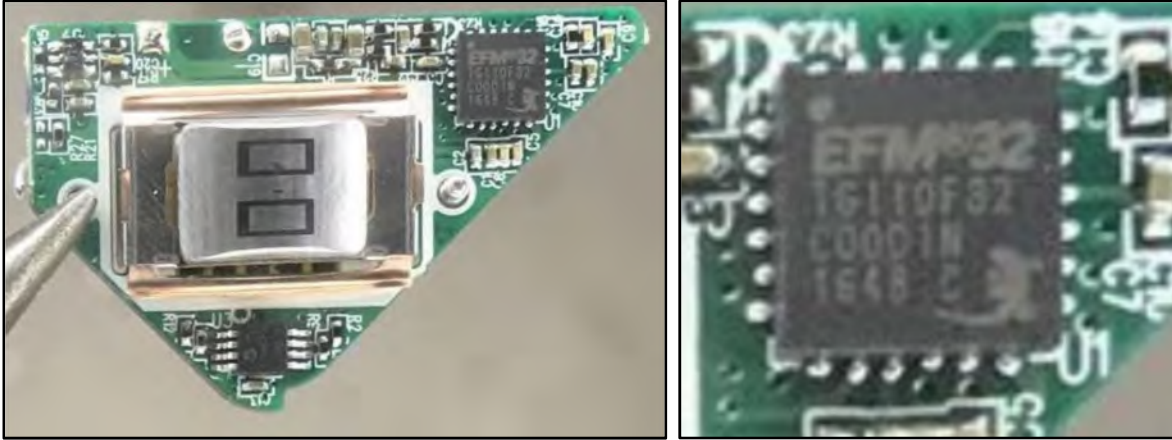
The PayPal Mobile Card Reader is a portable device that “fits in your pocket and works with compatible mobile devices to help get you paid on-the-go”:



222. The PayPal Mobile Card Reader contains a EFM32 TG110F32 ARM Cortex-M3 processor or its equivalent:

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<sup>56</sup> See PayPal Mobile Card Reader Guide Website.

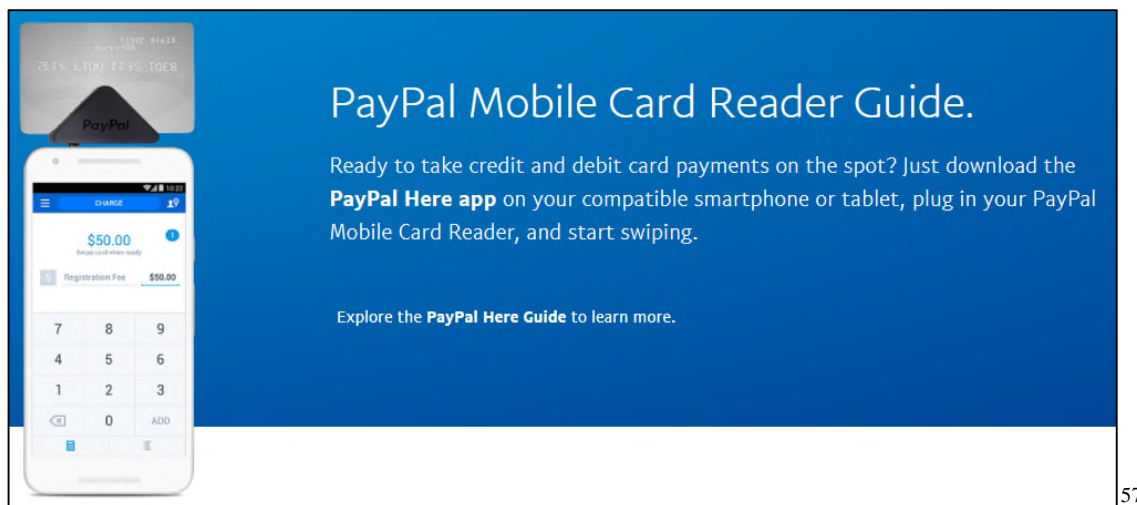


223. The PayPal Mobile Card Reader contains memory, including at least up to 32 KB Flash memory and up to 4KB RAM memory integrated into an EFM32 TG110F32 ARM Cortex-M3 processor, or its equivalent.

224. The PayPal Mobile Card Reader includes an audio jack communications interface (*e.g.*, an AHJ connector) configured to enable the transmission of communications (for example, an audio-data communication sent to the PayPal Mobile Card Reader device over audio pins (pins 3 and 4) of the AHJ interface) between the PayPal Mobile Card Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, a network communications interface, and a memory that is configured to store the PayPal Here App or a POS Partner App).

225. On information and belief, the PayPal Here App or POS Partner App is designed to be stored on and run on a terminal and contains program code that is configured to affect the presentation of an interactive user interface on the terminal's output component.

226. For example, the PayPal Here App is configured to present an interactive user interface on the terminal display:



227. Further, on information and belief, the terminal configured to store the PayPal Here App or POS Partner App contains program code that is configured to provide a communications node on the terminal to facilitate communications to and from the terminal.

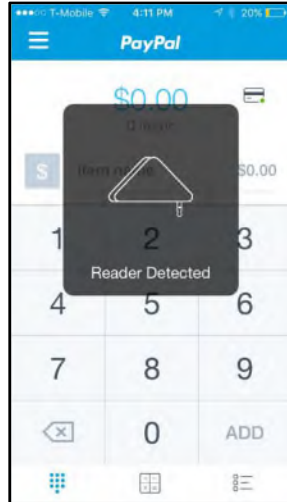
228. For example, on information and belief, the PayPal Here App or POS Partner App is configured to allow for communications with the terminal over the audio pins of an AHJ interface.

229. On information and belief, the PayPal Mobile Card Reader is configured to cause the terminal to execute program code contained in the PayPal Here App or POS Partner App that is configured to affect the presentation of a PayPal Here App or POS Partner App's interactive user interface on the terminal (for example, to indicate that the PayPal Mobile Card Reader has been connected to the terminal and detected).

230. For example, the PayPal Mobile Card Reader is configured to cause the presentation of a message on the interactive user interface of the PayPal Here App that the PayPal Mobile Card Reader has been detected:

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<sup>57</sup> See PayPal Mobile Card Reader Guide Website.



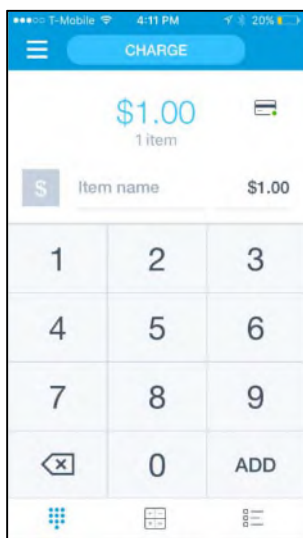
231. Further, on information and belief, the PayPal Mobile Card Reader is configured to execute program code stored in the PayPal Mobile Card Reader's memory that provides a communications node to coordinate with the communications node on the terminal and establishes a communications link with the PayPal Here App or POS Partner App running on the terminal, and that facilitates communications (*e.g.*, audio-data communications sent over audio pins of the AHJ interface) with the PayPal Here App or a POS Partner App running on the terminal and with a communications network node, such as a network server, through the terminal's network communication interface (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App).

232. For example, on information and belief, the PayPal Mobile Card Reader stores program code to be executed by the PayPal Mobile Card Reader's processor that is configured to allow for communications with the terminal over the audio pins of an AHJ interface.

233. Further, on information and belief, the PayPal Mobile Card Reader is configured to execute program code stored in the PayPal Mobile Card Reader's memory in response to a communication resulting from user interaction with the PayPal Here App or POS Partner App's

interactive user interface, which is configured to cause a communication to be transmitted to a communications network node such as a network server (for example, to provide data to the terminal and to PayPal’s secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App).

234. For example, the PayPal Here App’s user interface allows the user to enter the charge amount and to initiate the transaction by pressing the “charge” button:



235. The PayPal Mobile Card Reader’s memory stores program code to be executed by the PayPal Mobile Card Reader’s processor in response to a communication resulting from user interaction with the PayPal Here App’s user interface that is configured to cause a communication to be transmitted to a communications network to process the transaction:



236. On information and belief, the PayPal Mobile Card Reader is configured to facilitate communications through the network communications interface on the terminal to a communications network node such as a network server (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App).

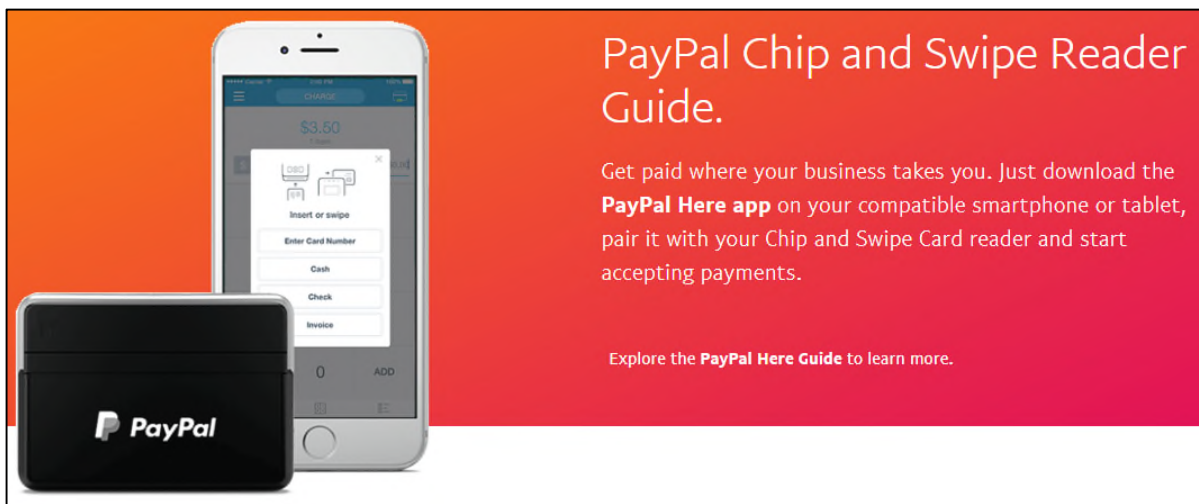
237. For example, the PayPal Mobile Card Reader facilitates communication of payment data to the terminal and to PayPal's secure financial transaction servers to process payments:





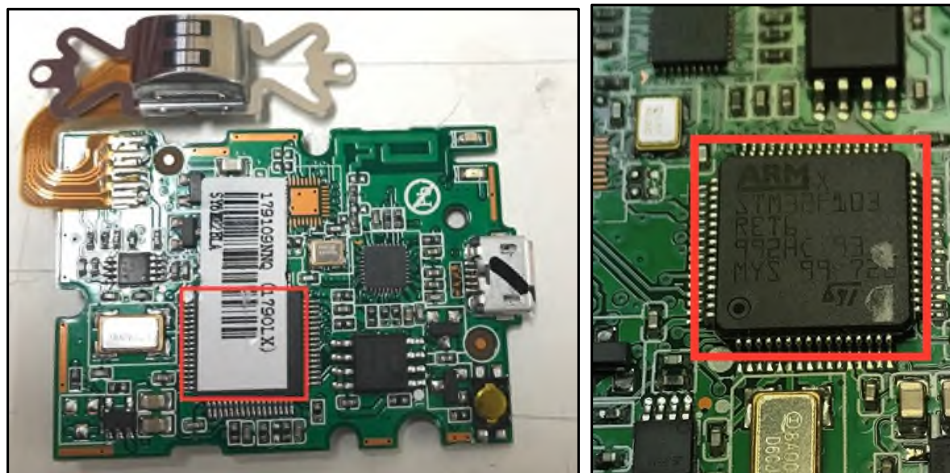
238. Direct Infringement: The PayPal Here Mobile Payment System Utilizing the PayPal Chip and Swipe Reader.

The PayPal Chip and Swipe Reader is a portable device that allows users to “[g]et paid where your business takes you”:



58

239. The PayPal Chip and Swipe Reader contains an ARM STM 32F103 Series microprocessor or its equivalent:

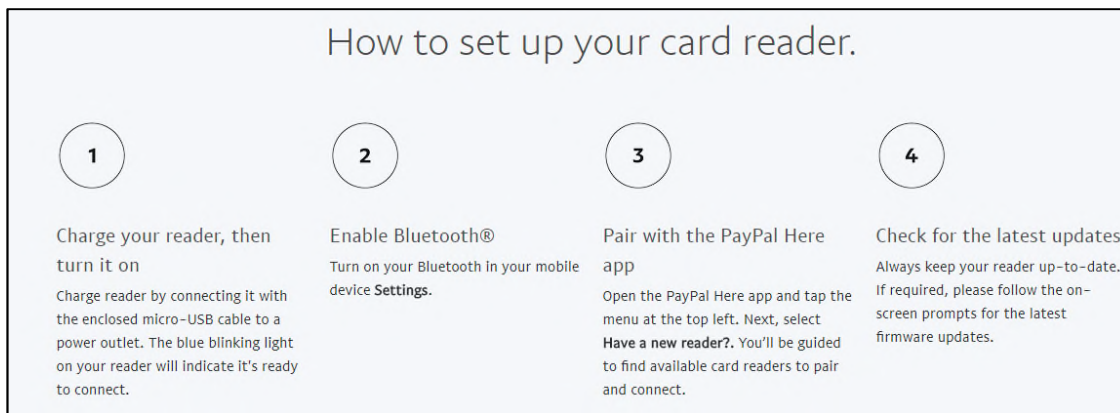


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<sup>58</sup> See PayPal Chip and Swipe Reader Guide Website.

240. The PayPal Chip and Swipe Reader contains memory, including 16 Kbytes to 1 Mbyte of Flash and 6K to 96K SRAM memory integrated into an ARM STM 32F103 Series microprocessor, or its equivalent.

241. The PayPal Chip and Swipe Reader contains a Bluetooth communications interface configured to enable the transmission of communications between the PayPal Chip and Swipe Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, a network communications interface, and a memory that is configured to store the PayPal Here App or a POS Partner App). The PayPal Chip and Swipe Reader uses Bluetooth to “pair” with the terminal:



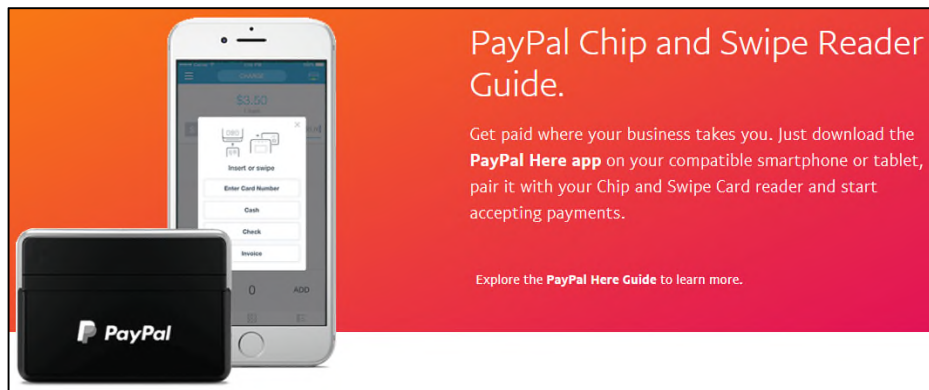
59

242. On information and belief, the PayPal Here App or POS Partner App is stored on and run on a terminal and contains program code that is configured to affect the presentation of an interactive user interface on the terminal’s output component.

243. For example, the PayPal Here App is configured to present an interactive user interface on the terminal display:

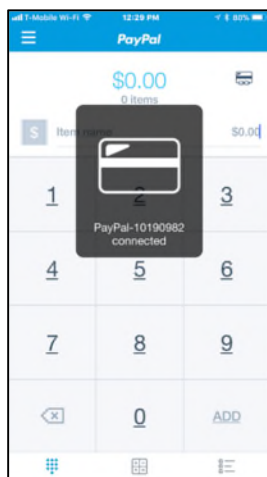
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<sup>59</sup> See PayPal Chip and Swipe Reader Guide Website.



244. Further, on information and belief, the terminal configured to store the PayPal Here App or POS Partner App contains program code that is configured to provide a communications node on the terminal and to facilitate communications to and from the terminal.

245. For example, on information and belief, the PayPal Here App or POS Partner App is configured to make use of Bluetooth pairing of the PayPal Chip and Swipe Reader to the terminal:



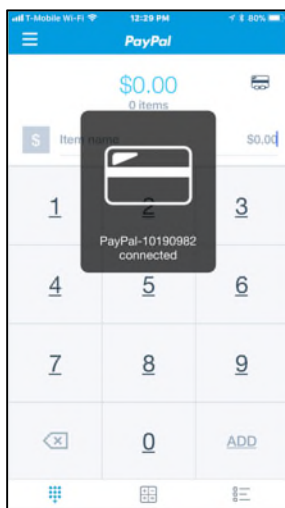
246. On information and belief, the PayPal Chip and Swipe Reader is configured to cause the terminal to execute program code contained in the PayPal Here App or a POS Partner

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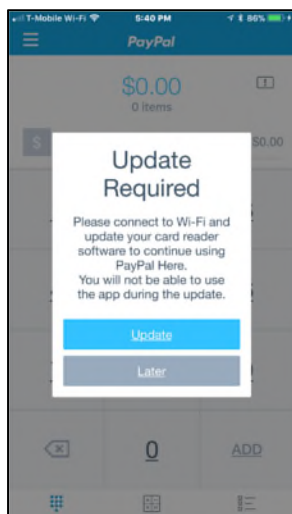
<sup>60</sup> See PayPal Chip and Swipe Reader Guide Website.

App that is configured to affect the presentation of a PayPal Here App or POS Partner App's interactive user interface on the terminal (for example, to indicate that the PayPal Chip and Swipe Reader has been paired with the terminal, or to display a message that the PayPal Chip and Swipe Reader requires an update to continue).

247. For example, the PayPal Chip and Swipe Reader is configured to cause the presentation of a message on the interactive user interface of the PayPal Here App that the PayPal Chip and Swipe Reader has been connected and is available for transactions:

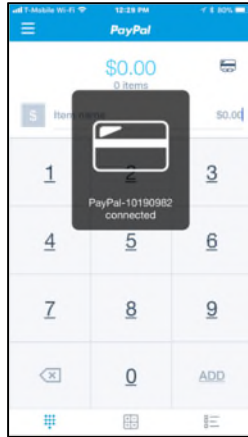


248. The PayPal Chip and Swipe Reader is also configured to cause the presentation of a message on the interactive user interface of the PayPal Here App that a firmware update is required:



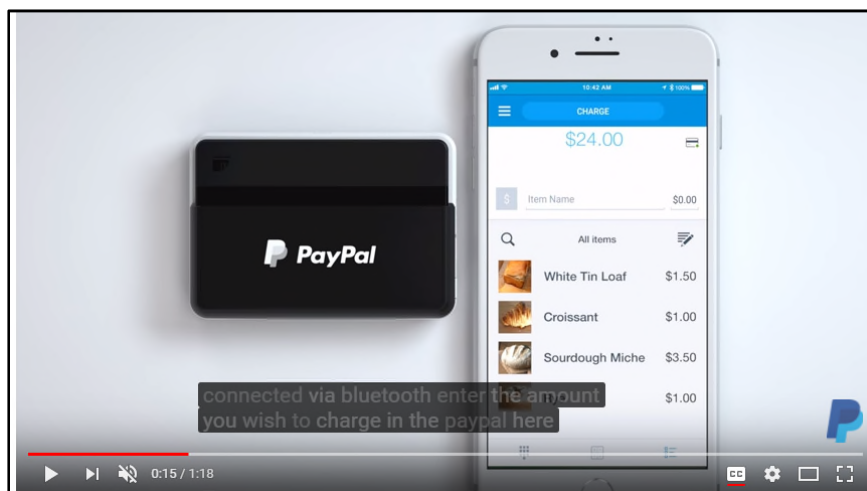
249. Further, on information and belief, the PayPal Chip and Swipe Reader is configured to execute program code stored in the PayPal Chip and Swipe Reader's memory that provides a communications node to coordinate with the communications node on the terminal and establishes a communications link with the PayPal Here App or a POS Partner App running on the terminal, and that facilitates communications with the PayPal Here App or a POS Partner App running on the terminal and with a communications network node, such as a network server, through the terminal's network communication interface (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

250. For example, on information and belief, the PayPal Chip and Swipe Reader stores program code to be executed by the PayPal Chip and Swipe Reader's processor or by a Bluetooth controller that is configured to make use of Bluetooth pairing of the PayPal Chip and Swipe Reader to the terminal:

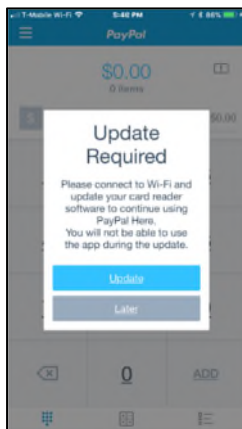


251. Further, on information and belief, the PayPal Chip and Swipe Reader is configured to execute program code stored in the PayPal Chip and Swipe Reader’s memory in response to a communication resulting from user interaction with the PayPal Here App or POS Partner App’s interactive user interface, which is configured to cause a communication to be transmitted to a communications network node such as a network server (for example, to provide data to the terminal and to PayPal’s secure financial transaction servers to process payments using the PayPal Here App or POS Partner App, or to request firmware updates).

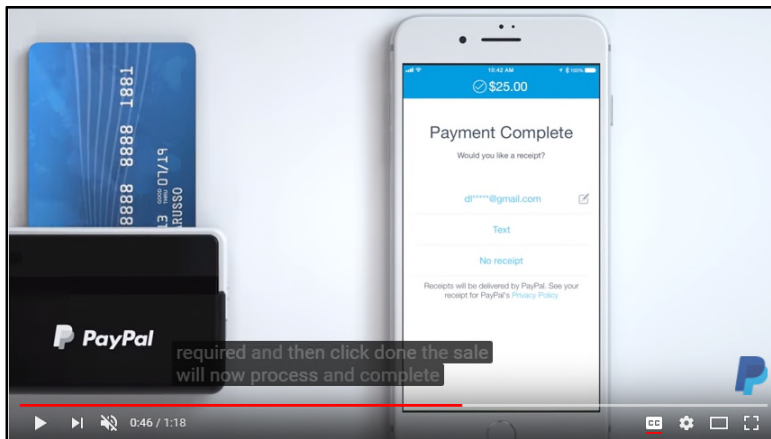
252. For example, the PayPal Here App’s user interface allows the user to enter the charge amount and to initiate the transaction by pressing the “charge” button:



253. The PayPal Here App’s user interface also allows the user to initiate a firmware update by pressing the “update” button:

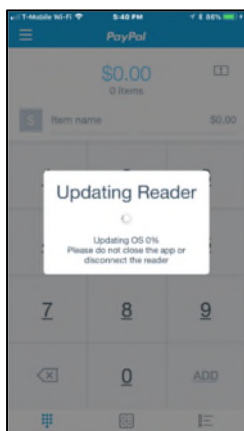


254. The PayPal Chip and Swipe Reader’s memory stores program code to be executed by the PayPal Chip and Swipe Reader’s processor in response to a communication resulting from user interaction with the PayPal Here App’s user interface that is configured to cause a communication to be transmitted to a communications network to process the transaction:



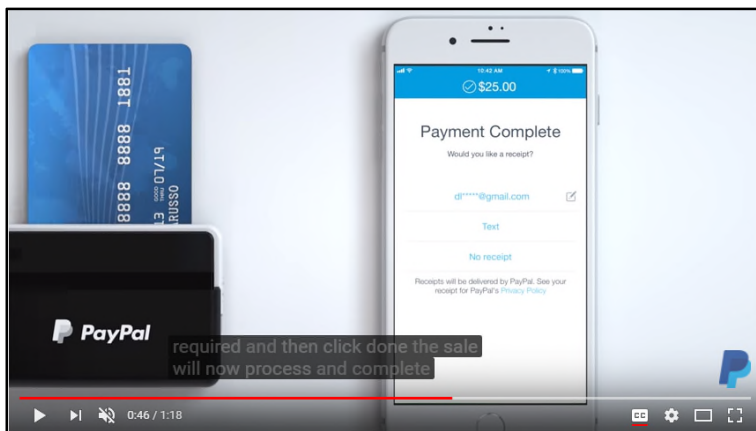
255. The PayPal Chip and Swipe Reader’s memory also stores program code to be executed by the PayPal Chip and Swipe Reader’s processor in response to a communication resulting from user interaction with the PayPal Here App’s user interface that is configured to

cause a communication to be transmitted to a communications network to download a firmware update:



256. On information and belief, the PayPal Chip and Swipe Reader is configured to facilitate communications through the network communications interface on the terminal to a communications network node such as a network server (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

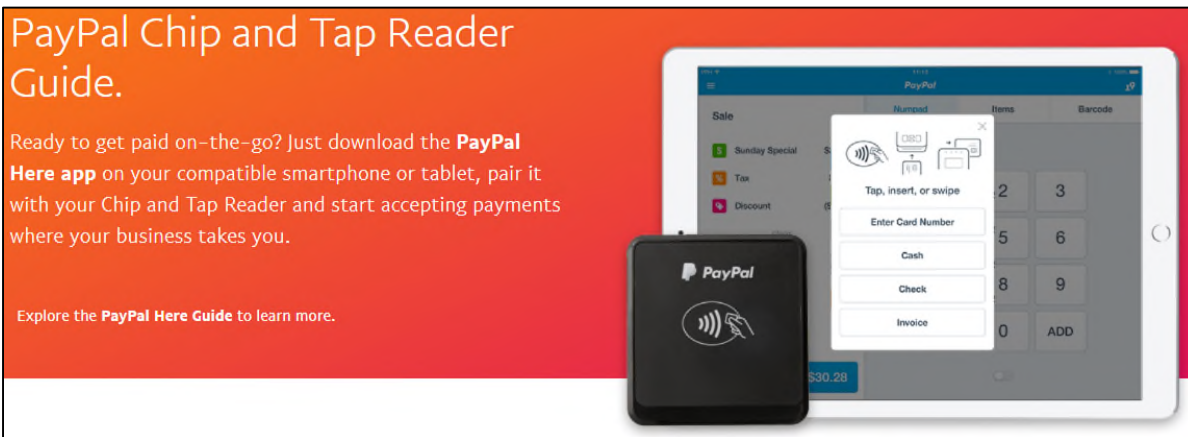
257. For example, the PayPal Chip and Swipe Reader facilitates communication of payment data to the terminal and to PayPal's secure financial transaction servers to process payments:





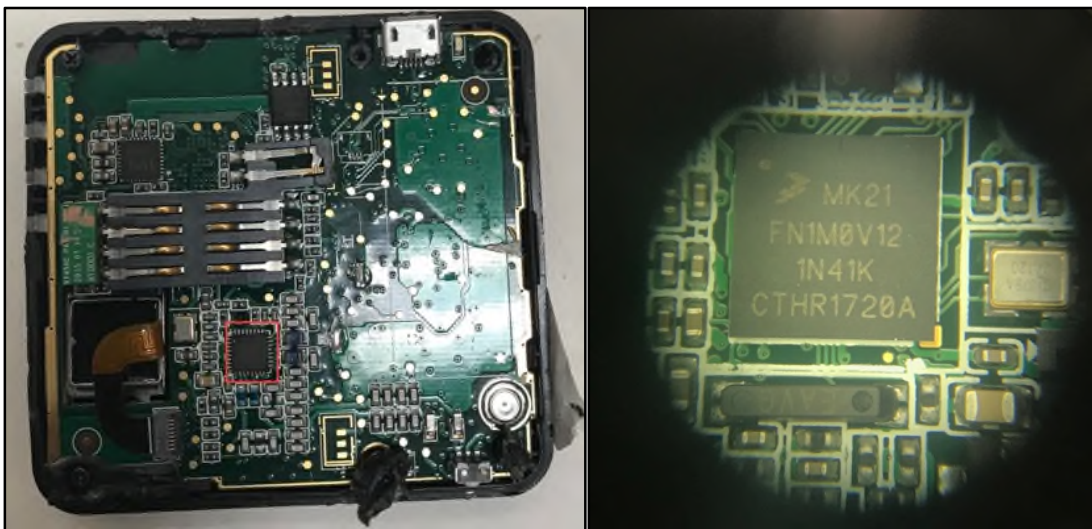
258. **Direct Infringement: The PayPal Here Mobile Payment System Utilizing the PayPal Chip and Tap Reader.**

The PayPal Chip and Tap Reader is a portable device that allows users to “get paid on-the-go” and “start accepting payments where your business takes you”:



61

259. The PayPal Chip and Tap Reader contains a Kinetis MK21FX512VMC12 microprocessor or its equivalent:

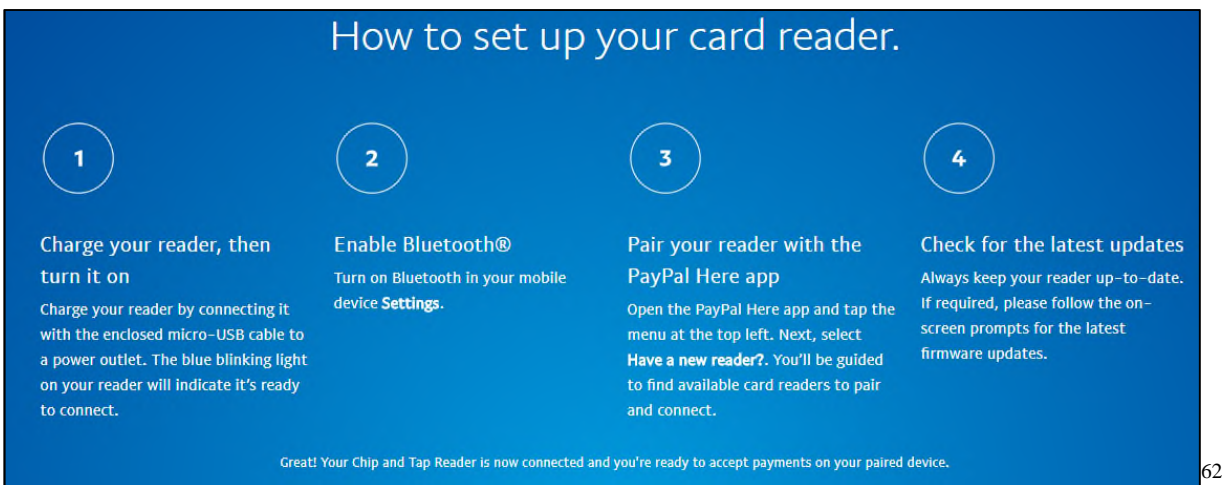


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<sup>61</sup> See PayPal Chip and Tap Reader Guide Website.

260. The PayPal Chip and Tap Reader contains memory, including FLASH and SRAM memory integrated into a Kinetis MK21FX512VMC12 microprocessor, or its equivalent.

261. The PayPal Chip and Tap Reader contains a Bluetooth communications interface configured to enable the transmission of communications between the PayPal Chip and Tap Reader and a terminal (for example, an Apple iOS or Android device having a processor, an input component such as a touchscreen sensor, an output component such as a display, a network communications interface, and a memory that is configured to store the PayPal Here App or a POS Partner App). The PayPal Chip and Tap Reader uses Bluetooth to “pair” with the terminal:

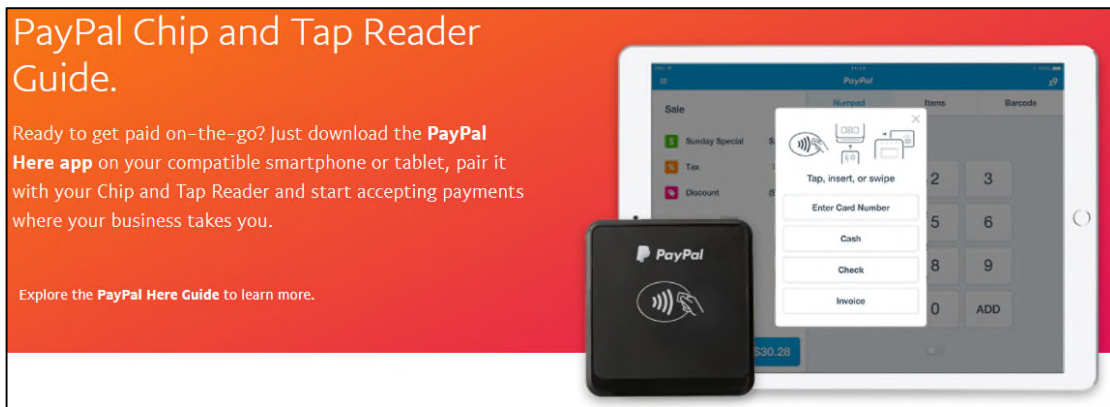


262. On information and belief, the PayPal Here App or POS Partner App is designed to be stored on and run on a terminal and contains program code that is configured to affect the presentation of an interactive user interface on the terminal's output component.

263. For example, the PayPal Here App is program code configured to present an interactive user interface on the terminal display:

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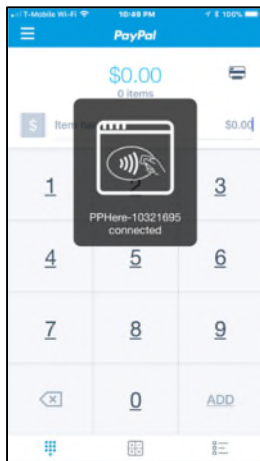
<sup>62</sup> See PayPal Chip and Tap Reader Guide Website.



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264. Further, on information and belief, the terminal configured to store the PayPal Here App or POS Partner App contains program code that is configured to provide a communications node on the terminal to facilitate communications to and from the terminal.

265. For example, on information and belief, the PayPal Here App or POS Partner App is configured to make use of Bluetooth pairing of the PayPal Chip and Tap Reader to the terminal:



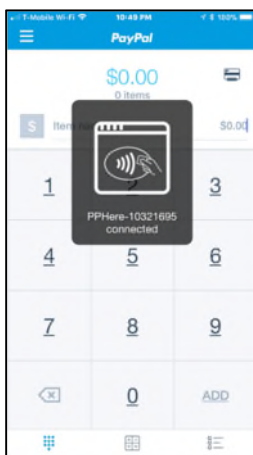
266. On information and belief, the PayPal Chip and Tap Reader is configured to cause the terminal to execute program code contained in the PayPal Here App or a POS Partner App

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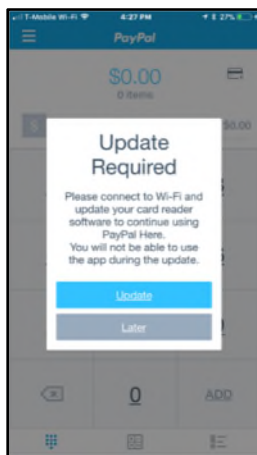
63 See PayPal Chip and Tap Reader Guide Website.

that is configured to affect the presentation of a PayPal Here App or POS Partner App's interactive user interface on the terminal (for example, to indicate that the PayPal Chip and Tap Reader has been paired with the terminal, or to display a message that the PayPal Chip and Tap Reader requires an update to continue).

267. For example, the PayPal Chip and Tap Reader is configured to cause the presentation of a message on the interactive user interface of the PayPal Here App that the PayPal Chip and Tap Reader has been connected and is available for transactions:

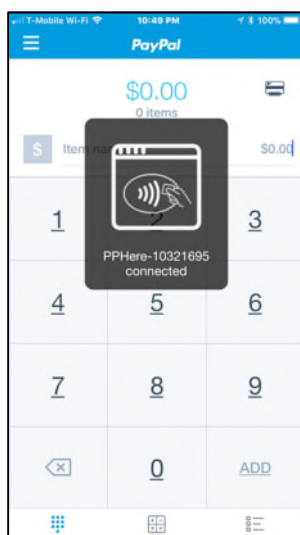


268. The PayPal Chip and Tap Reader is also configured to cause the presentation of a message on the interactive user interface of the PayPal Here App that a firmware update is required:



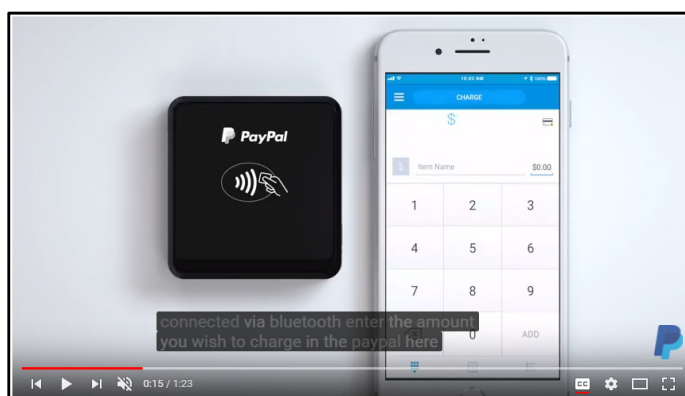
269. Further, on information and belief, the PayPal Chip and Tap Reader is configured to execute program code stored in the PayPal Chip and Tap Reader's memory that provides a communications node to coordinate with the communications node on the terminal and establishes a communications link with the PayPal Here App or a POS Partner App running on the terminal, and that facilitates communications with the PayPal Here App or POS Partner App running on the terminal and with a communications network node, such as a network server, through the terminal's network communication interface (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

270. For example, on information and belief, the PayPal Chip and Tap Reader stores program code to be executed by the PayPal Chip and Tap Reader's processor or by a Bluetooth controller that is configured to make use of Bluetooth pairing of the PayPal Chip and Tap Reader to the terminal:

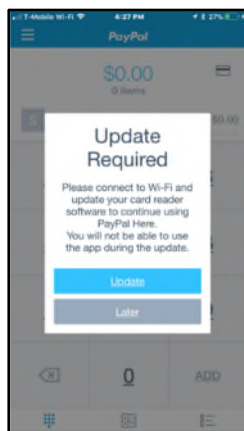


271. Further, on information and belief, the PayPal Chip and Tap Reader is configured to execute program code stored in the PayPal Chip and Tap Reader's memory in response to a communication resulting from user interaction with the PayPal Here App or POS Partner App's interactive user interface, which is configured to cause a communication to be transmitted to a communications network node such as a network server (for example, to provide data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

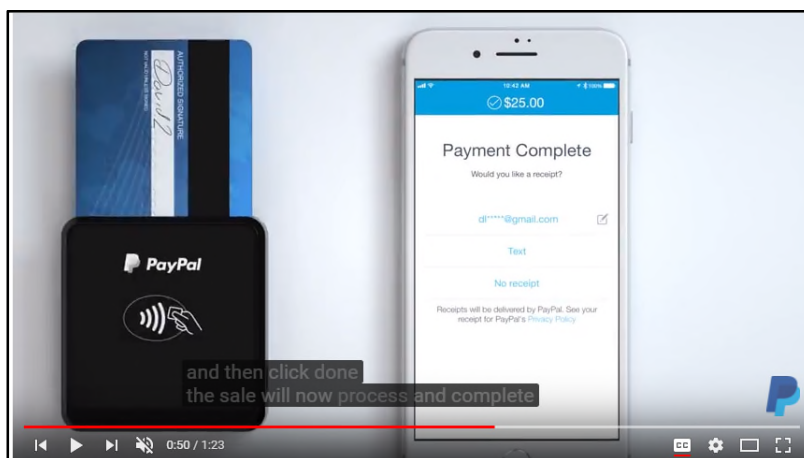
272. For example, the PayPal Here App's user interface allows the user to enter the charge amount and to initiate the transaction by pressing the "charge" button:



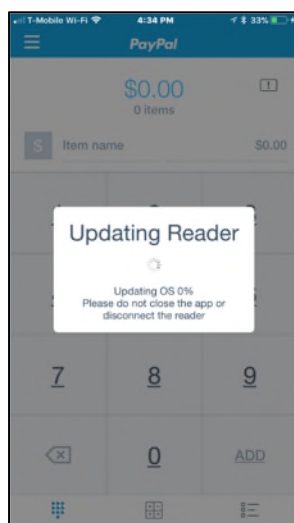
273. The PayPal Here App's user interface also allows the user to initiate a firmware update by pressing the "update" button:



274. The PayPal Chip and Tap Reader's memory stores program code to be executed by the PayPal Chip and Tap Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to process the transaction:

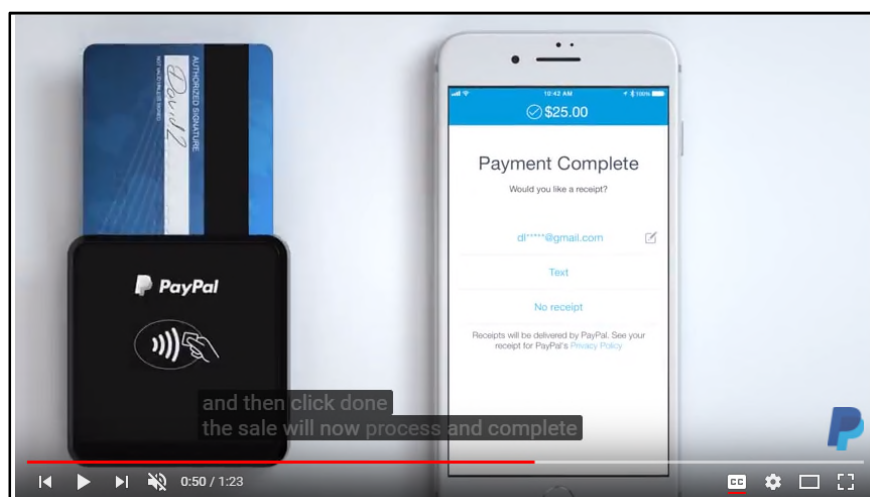


275. The PayPal Chip and Tap Reader's memory also stores program code to be executed by the PayPal Chip and Tap Reader's processor in response to a communication resulting from user interaction with the PayPal Here App's user interface that is configured to cause a communication to be transmitted to a communications network to download a firmware update:



276. On information and belief, the PayPal Chip and Tap Reader is configured to facilitate communications through the network communications interface on the terminal to a communications network node such as a network server (for example, to facilitate communication of data to the terminal and to PayPal's secure financial transaction servers to process payments using the PayPal Here App or a POS Partner App, or to request firmware updates).

277. For example, the PayPal Chip and Tap Reader facilitates communication of payment data to the terminal and to PayPal's secure financial transaction servers to process payments:



278. By infringing the '703 Patent, PayPal has caused and will continue to cause Plaintiff to suffer damages in an amount to be determined at trial *i.e.* in an amount that by law cannot be less than would constitute a reasonable royalty for the use of the patented technology, together with pre-judgment and post-judgment interest thereon.

279. Plaintiff has no adequate remedy at law against PayPal's acts of infringement, and unless PayPal is permanently enjoined from infringing the '703 Patent, Plaintiff will suffer irreparable harm.



280. To the extent that PayPal has continued or continues to make, have made, use, import, sell, or offer for sale products or services that infringe the '703 Patent following its awareness of the '703 Patent, PayPal's infringement is willful and entitles IOENGINE to an award of enhanced damages pursuant to 35 U.S.C. § 284 and attorneys' fees pursuant to 35 U.S.C. § 285.

**SIXTH COUNT FOR RELIEF**  
**(INDIRECT INFRINGEMENT OF THE '703 PATENT)**

281. IOENGINE repeats, re-alleges, and incorporates by reference the preceding paragraphs as if fully set forth herein, including but not limited to paragraphs 18-29 and 195 to 280.

282. On information and belief, PayPal has infringed and continues to infringe indirectly by way of inducement and contributory infringement, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271, one or more claims of the '703 Patent by performing, without authority, one or more of the following acts: making, having made, using, importing, selling, and offering for sale in the United States one or more products or services that embody the invention claimed in the '703 Patent, including but not limited to the PayPal Infringing Products, and encouraging and instructing its customers, Point of Sale Partners, and third parties to make and use the PayPal Infringing Products in a manner that infringes the '703 Patent. Since receiving notice of the March 23, 2018 Complaint, Defendant has knowingly contributed to the infringement of and induced infringement of, and continues to knowingly contribute to the infringement of and induce infringement of, one or more claims of the '703 Patent by selling and offering for sale in the United States the PayPal Infringing Products and encouraging their use in, for example, the processing of credit card transactions with specific

intent that the PayPal Infringing Products be used by its customers, Point of Sale Partners, and third parties to directly infringe the '703 Patent, which PayPal Infringing Products constitute a material part of the invention and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

283. PayPal contributes to the direct infringement of the '703 Patent by providing and/or selling the PayPal Infringing Products to customers and third parties and providing customers and third parties with the necessary software and instructions to operate the PayPal Infringing Products, including the download of the PayPal Here App and POS Partner Apps for use with PayPal's card reader products for mobile payments, to infringe one or more claims of the '703 Patent. The PayPal Here App and POS Partner Apps are not staple articles of commerce suitable for substantial non-infringing use and were especially made or especially adapted for use in infringing the '703 Patent. They are specifically designed to work with PayPal's card reader products for mobile payments and their only purpose is to operate, in connection with PayPal's card reader products for mobile payments, in a manner that directly infringes one or more claims of the '703 Patent.

284. Defendant instructs and encourages its customers, Point of Sale Partners, and third parties to use the PayPal Infringing Products in a manner that infringes at least Claim 104 of the '703 Patent.

285. For example, Defendant provides software development kits that allow, instruct, and encourage customers, Point of Sale Partners, and third parties to "create fully customized, branded apps that enable credit or debit card payments in-store using PayPal card readers."<sup>64</sup>

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<sup>64</sup> See, e.g., <https://developer.paypal.com/docs/integration/paypal-here/>.

286. Defendant further provides information and technical support on its website (*available at* [www.paypal.com](http://www.paypal.com); *see also* <https://www.paypal.com/us/webapps/mpp/credit-card-reader>) that instructs and encourages customers, Point of Sale Partners, and third parties on how to use the PayPal Infringing Products.

287. Defendant further provides information and technical support on third-party platforms (*e.g.*, <https://www.youtube.com/user/PayPal>), including videos, demonstrations, and other information, that instructs and encourages customers, Point of Sale Partners, and third parties on how to use the PayPal Infringing Products.

288. PayPal also instructs and encourages the use of the PayPal Infringing Products in an infringing manner by directing users to the videos on PayPal's YouTube Channel (*e.g.*, <https://www.youtube.com/user/PayPal>).<sup>65</sup>

289. In each case, the information and materials provided by PayPal contain detailed descriptions and instructions for using and implementing the functionality claimed in at least Claim 104 of the '703 Patent including, at least, card reader device setup, processing chip card ("EMV") card payments, processing magnetic stripe card payments, processing contactless payments, processing refunds, and processing firmware updates.

290. Defendant additionally instructs and encourages its customers, Point of Sale Partners, and third parties to use the PayPal Infringing Products in a manner that infringes at least Claim 104 of the '703 Patent by instructing and encouraging its customers and third-parties to use the PayPal Infringing Products with PayPal's Point of Sale Partners.

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<sup>65</sup> *See, e.g.*, <https://www.paypal.com/us/webapps/mpp/credit-card-reader-how-to/chip-card-reader> (directing users to "[w]atch our video to learn more about pairing devices," and providing a link to the video entitled "How to Setup Chip Card Reader on Mobile or Tablet (PayPal Here)" on PayPal's YouTube channel).

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff prays for judgment on the complaint as follows:

- a. Judgment in favor of IOENGINE and against Defendant for infringement, either literally and/or under the doctrine of equivalents, of one or more claims of each of the Patents-in-Suit;
- b. Entry of a permanent injunction enjoining Defendant and its affiliated entities, officers, agents, servants, employees, and those persons in active concert or participation with them who receive actual notice thereof, from directly or indirectly infringing, inducing the infringement of, or contributing to the infringement of each of the Patents-in-Suit;
- c. An award to IOENGINE of compensatory damages arising out of Defendant's infringement, including damages for any continuing post-verdict infringement up until entry of the final judgment, and increased damages for Defendant's willful infringement since receiving notice of the March 23, 2018 Complaint, together with pre-judgment and post-judgment interest thereon;
- d. An award to IOENGINE of costs, interest, and reasonable attorneys' fees incurred herein;
- e. An accounting for future sales and an award to IOENGINE of compensatory damages arising out of Defendant's ongoing infringement and increased damages for Defendant's willful, ongoing infringement; and
- f. Such other and further relief as the Court may deem just and appropriate.

**DEMAND FOR JURY TRIAL**

291. In accordance with Rule 38 of the Federal Rules of Civil Procedure, Plaintiff demands a trial by jury on all issues so triable.

Dated: June 6, 2019

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