CLAIMS

What is claimed is:

1. A system for enabling secure data transfer between participating computing devices through audio signals, the system comprising:

an application server;

a plurality of computing devices for registering with the application server;

a plurality of users registered to the application server, wherein the plurality of the users are registered to the application server through an application hosted on the plurality of the devices; and

a communication network for establishing communication between the application server and the plurality of the devices registered on the application network, and wherein the communication is established to complete a financial transaction between the participating computing devices;

wherein the plurality of the devices hosting the application comprises:

an audio signal emitter for emitting audio signals in anti-duplication frequencies, wherein the audio signal emitted include the transaction details, and the information about payload data, and wherein the anti-duplication frequencies are either of audible frequencies and inaudible frequencies, and wherein the anti-duplication frequencies are frequencies other than the frequencies used for transmitting transaction details, and wherein the audio signals are emitted for establishing secure channel and enable financial transactions;

an audio signal receiver communicatively coupled with the audio signal emitter for receiving the audio signals from other participating device, wherein the audio signals are emitted in anti-duplication frequencies, wherein the audio signal received include the

transaction details, and the information about payload data, device type and hardware quality, and wherein the anti-duplication frequencies are either of audible frequencies and inaudible frequencies, and wherein the audio signals are received for establishing secure channel and enable financial transactions;

a proximity detector communicatively coupled with the audio signal receiver for detecting the proximity of the other participating devices, frequency of the signal received, and quality of the hardware;

a frequency selector communicatively coupled with the proximity detector, for selecting a set of frequencies based on the proximity detected by the proximity detector, and wherein one set of frequency is selected from a 32 sets of frequencies provided by the application, and wherein the frequencies are selected based on the used case scenarios and machine learning algorithm; and

a private key decryptor for decrypting the information about the data transacted between the participating devices;

wherein the financial transaction is enabled by transmitting the payload data in the secure channel and the payload data is transmitted using the audio signal.

2. The system according to claim 1, wherein the audio signals includes a customer indicator (CI) data, a customer mode indicator (CMI) data, and an optional key data the key data, and wherein the customer indicator (CI) data indicates that second participating device is a valid receiver, and wherein the customer mode indicator (CMI) data indicates the transaction details, and wherein the optional key data is a dynamic data configured in the form of a public key that is valid either for a single transaction or for multiple transactions.

3. The system according to claim 1, wherein the application server comprises:

a registration module for registering a plurality of users through the application;

a user database in communication with the registration module, wherein the user database stores the information related to the plurality of users, and wherein the information related to the plurality of users include user identity, device identity, hardware identity, frequency of the device, location of the device, currency of the location, information related to third party services, services subscribed, and account information;

a validating module in communication with the user database, for validating the users, wherein the validation of the users is based on one of the native application and a third-party application;

a transaction database in communication with the validating module for tracking the transactions made by the users through the application;

an auxiliary module in communication with the transaction database to support the plurality of computing devices, wherein the support include technology support, providing software patches, providing updates, and replying to a plurality of queries; and

an analytics module communicatively coupled with the auxiliary module, transaction database, and user database to analyze the plurality of the transactions and user behavior.

4. The system according to claim 1, wherein the application server is configured to notify the participating users after the completion of the financial transaction.
5. The system according to claim 1, wherein the participating device is selected from a group consisting of mobile phones, smart phones, desktop computers, laptop computers, palmtop computers, wearable devices, and point of sale (POS) devices.

6. The system according to claim 1, wherein the application server is configured to run the application in the background to control the emitting and receiving capabilities of the participating device.

7. The system according to claim 1, wherein the application server is configured to run the application automatically, when one of the participating device detects the other participating device, and wherein the first participating device sends the payment information to the second participating device providing invisible payment experience to the users.

8. The system according to claim 1, wherein the application is configured to push a notification to a third-party server for completing the transaction when the second participating device receives the payload data from the first participating device through the secure audio channel, wherein the third-party server is a server selected from a group consisting of a remote server, a financial institution linked to the first participating device, a financial institution linked to the second participating device, and an independent third-party financial institution.

9. The system according to claim 1, wherein the audio signal receiver is configured to receive the audio signals, when the distance between the emitting device and the receiving device is equal to or less than ten meters.

10. The system according to claim 1, wherein the proximity is detector is configured to detect the participating device, when the distance between the emitting device and the receiving device is equal to or less than ten meters.

11. A method for establishing data communication through a secure channel using audio signals, the method comprising the steps of:

registering a plurality of users to an application, wherein registering the plurality of users to the application include receiving user name, user identity, user password, device identity, location details, currency of the location, and access to third-party information, and wherein the registration is made through a registration module, and the user details are stored in a user database;

initiating the application by a registered user, wherein the application is initiated using the device hosting the application, and wherein initiating the application includes the user entering the transaction details;

emitting audio signals using the audio signal emitter to establish a secure channel with the other participating device, and wherein the audio signals are emitted in anti-duplication frequencies, and wherein the audio signals are anti-duplication signals, and wherein the anti-duplication frequencies are frequencies other than the frequencies used for transmitting transaction details;

receiving audio signals from the other participating computing device, wherein the received audio signals are emitted in anti-duplication frequencies, and wherein the received audio signals include the transaction data, payload data, and the hardware information about the other participating device;

validating the other participating device using a validating module, wherein the validating module is configured to validate the participating device using one of a native service of the application and a third party application;

detecting the proximity of the other participating device using a proximity detector, wherein the proximity detector determines a distance between the participating devices involved in the financial transaction;

establishing a secure channel between the participating devices, wherein the secure channel is established using audio channels; and

enabling a financial transaction between the participating devices, wherein the financial transaction is enabled by transmitting the payload data in the secure channel, wherein the payload data is transmitted using the audio signal;

wherein the financial transaction is enabled by transmitting the payload data in the secure channel and the payload data is transmitted using the audio signal.

12. The method according to claim 11, wherein the participating users are notified after the enablement of the financial transaction.

13. The method according to claim 11, participating device is selected from a group consisting of mobile phones, smart phones, desktop computers, laptop computers, palmtop computers, wearable devices, and point of sale (POS) devices.

14. The method according to claim 11, wherein the application runs in the background and manage the emitting and receiving capabilities of the participating device.

15. The method according to claim 11, wherein the application is initiated automatically when one of the participating device detects the other participating device, and wherein the first participating device sends the payment information to the second participating device providing invisible payment experience to the users.

16. The method according to claim 11, wherein a notification is pushed to a third-party server for completing the transaction when the second participating device receives the payload data from the first participating device through the secure audio channel, wherein the third-party server is a server selected from a group consisting of a remote server, a financial institution linked to the first participating device, a financial institution linked to the second participating device, and an independent third-party financial institution.

17. The method according to claim 11, wherein the audio signal receiver is configured to receive the audio signals, when the distance between the emitting device and the receiving device is equal to or less than ten meters.

18. The method according to claim 11, wherein the proximity is detector is configured to detect the participating device, when the distance between the emitting device and the receiving device is equal to or less than ten meters.

19. The method according to claim 11, wherein the application is activated automatically for sending the payment instruction on the first participating device, allowing an invisible payment experience for the users, when the user brings the first participating device near to the participating device receiving the payment (POS machine).

20. The method according to claim 11, wherein the audio signals includes a customer indicator (CI) data, a customer mode indicator (CMI) data, and an optional key data the key data, and wherein the customer indicator (CI) data indicates that second participating device is a valid receiver, and wherein the customer mode indicator (CMI) data indicates the transaction details, and wherein the optional key data is a dynamic

data configured in the form of a public key that is valid either for a single transaction or for multiple transactions.