Patent Application by Matthew Scott Tan, 18 October 2021

Patent Abstract

Audio QR for Financial Transactions (FAQRT):
Data Transmission through Fourier Transform Modulation for Sound Waves Between Two Devices for Financial Transactions

A mechanism for data transmission in FinTech application, characterised by a medium of transmission of sound waves, modulation scheme of Discrete Fourier Transform or Fast Fourier Transform, a text to binary encoding method, attenuating features for calibration of sending and receiving devices, and encryption of data pre-modulation. Data defining a financial transaction can thus be shared between two devices, allowing for a financial transaction between two individuals to occur through Audio QR. The transmission occurs purely through sound waves, not requiring radio waves and thus bypasses any hardware restrictions and allows phones in developing countries which do not have Bluetooth or NFC chips to carry out mobile payment transactions.

Data is encoded in the form of text in the sending device, followed by optional encryption and conversion to binary, before Inverse Fast Fourier Transform is applied to produce discretised sound wave, followed by digital to analogue transmission of sound wave. Receiving device captures such sound waves and converts from analogue to digital to produce discretised sound wave. Fast Fourier Transform is applied to retrieve data in binary form in receiving device, followed by decryption and decoding to obtain original information.