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(57) Abstract :  
 The present invention discloses a blockchain-based portable device (100) for secure offline transaction processing using a secure element (120), mesh transceiver (106), and tamper-evident enclosure (190). It enables peer-to-peer transactions through a micro-ledger (160) with double-spend protection via a write-once memory counter (140). A quantum-seeded beacon (180) provides time-locking, while a detachable printer (170) generates verifiable receipts. The device operates on a renewable energy subsystem (194, 196), ensuring prolonged, secure usage without internet or grid connectivity.

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