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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Technical requirements for freight electronic seals and systems

货运电子铅封及系统技术要求

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7 Communication requirements

7.1 Communication between the electronic seal and the information system should possess characteristics such as low latency, low power consumption, anti-interference, and data encryption. Bluetooth is recommended. Technologies such as Wi-Fi, LoRa, and NFC.

7.2 When detecting signals such as sealing and unsealing, the delay range should be controlled within 3s to 5s.

7.3 During data transmission such as sealing and unsealing, the response time should not exceed 3 seconds under normal communication conditions.

8.1 Key and Security Authentication

8.1.1 The electronic seal shall be equipped with a communication security key, and a secure storage module shall be provided to store the key for communication between the electronic seal and the information system. Encrypted transmission.

8.1.2 Information systems should set up secure login keys to authenticate user information, enabling users to log in legitimately and use electronic seals.

8.1.3 Electronic seals should obtain security certification from the information system before being applied or removed.

8.1.4 Communication between the electronic seal and the information system shall be encrypted using keys and authorization instructions.

8.2 System Security

8.2.1 Information systems shall comply with the relevant requirements of the corresponding security level in GB/T 22239 and establish corresponding security protection measures.

8.2.2 Information systems should fully consider network security and data security, and select domestically developed and controllable operating systems, database management systems, and other software. Systems and servers.

8.2.3 Information systems should establish a data security backup mechanism, and perform data backups in a daily incremental manner and a weekly full manner to prevent data loss.

8.2.4 Electronic seals shall have a unique identification number and shall not be copied or replaced. The identification shall be easily identifiable and convenient for operation.

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