

Technical Guide: Credit Cards

1. Introduction:

A credit card is a small plastic or metal card issued by a financial institution, allowing the cardholder to borrow funds to pay for goods and services. Credit cards impose the condition that cardholders pay back the borrowed money, plus any applicable interest, as well as any additional agreed-upon charges.

2. Structure and Design of a Credit Card:

2.1 Physical Attributes:

- **Size and Shape:** Typically 85.60 × 53.98 mm (3.370 × 2.125 inches) with rounded corners.
- **Material:** Most are made of PVC plastic; premium cards may be made of metal.
- **Embedded Technologies:** Magnetic stripe, EMV chip, contactless payment technology (NFC).

2.2 Data on the Card:

- **Card Number:** Usually 16 digits, serves as an identifier.
- **Cardholder Name:** Name of the authorized user.
- **Expiration Date:** Indicates when the card becomes invalid.
- **Security Code (CVV):** A 3-4 digit number used for security verification.

3. Working Mechanism:

3.1 Authorization Process:

1. A merchant submits a credit card transaction request.
2. The payment gateway or terminal verifies the card's details.
3. The issuing bank receives the transaction details and checks the available credit.
4. The transaction is approved or denied, and the merchant receives the response.

3.2 Billing Cycle:

- Typically monthly, wherein the cardholder receives a statement detailing their transactions, outstanding balance, and the minimum payment due.

4. Interest and Fees:

4.1 Interest:

- Charged on the balance not paid by the due date.

- Based on the Annual Percentage Rate (APR).

4.2 Common Fees:

- **Annual Fee:** Yearly charge for card usage.
- **Late Payment Fee:** If the minimum amount isn't paid by the due date.
- **Cash Advance Fee:** For withdrawing cash using the card.
- **Over-the-limit Fee:** If you exceed your credit limit.
- **Foreign Transaction Fee:** For transactions in a foreign currency.

5. Security Features:

5.1 EMV Chip Technology: Enhances security by creating a unique transaction code for each use.

5.2 Tokenization: Replaces card details with a unique symbol or "token", useful in digital transactions.

5.3 Two-factor Authentication: Requires two types of identification before a transaction is approved.

6. Benefits and Features:

6.1 Reward Points: Points awarded per transaction, redeemable for gifts, travel, etc.

6.2 Cash Back: A percentage of the amount spent is returned to the cardholder.

6.3 Travel Insurance, Purchase Protection, Extended Warranties: Additional perks offered by certain cards.

7. Conclusion:

Credit cards offer a convenient way to make payments, build credit, and earn rewards. However, they require responsible management to avoid excessive debt and interest. Users should regularly monitor their statements, be aware of their credit limits, and ensure they understand any associated fees and charges.