

A collection of Hitachi itPower UPS systems, including tall tower units and smaller rack-mountable units, displayed against a background of a server room with blue lighting and server racks.

# HITACHI itPower UPS SYSTEMS FOR ATM APPLICATION IN BANKING INDUSTRY

## ABOUT ATM APPLICATION

Automated Teller Machines (ATMs) have revolutionized the banking industry since their inception in the late 1960s. Initially designed to dispense cash, ATMs have evolved to offer a wide range of banking services, making them an indispensable part of modern financial systems. This essay explores the development, functionalities, technological advancements, and future prospects of ATM applications.

Over the years, ATMs have undergone significant transformations, incorporating advanced technologies to enhance user experience and security.

### Core Functionalities of ATMs

- **Cash Withdrawal and Deposit:** The primary function of ATMs is to facilitate cash withdrawals. Modern ATMs also allow users to deposit cash and checks, providing a convenient alternative to visiting a bank branch.
- **Balance Inquiry and Mini Statements:** ATMs enable customers to check their account balances and obtain mini statements, helping them keep track of their financial transactions.
- **Fund Transfers:** Many ATMs support interbank and intrabank fund transfers, allowing users to move money between accounts seamlessly.
- **Bill Payments and Mobile Recharges:** Some ATMs offer bill payment services for utilities, credit cards, and other expenses. Additionally, users can recharge their mobile phones through ATMs.
- **Cardless Transactions:** With advancements in technology, cardless transactions have become possible. Users can withdraw cash using mobile banking apps or QR codes, enhancing convenience and security.

### Technological Advancements in ATM Applications

- **Biometric Authentication:** To enhance security, modern ATMs are equipped with biometric authentication systems, such as fingerprint and facial recognition. This reduces the risk of fraud and unauthorized access.
- **Contactless Transactions:** Near Field Communication (NFC) technology enables contactless transactions, allowing users to perform ATM operations by simply tapping their smartphones or contactless cards.
- **Enhanced User Interface:** Touchscreen interfaces and multilingual support have made ATMs more user-friendly, catering to a diverse customer base.
- **Integration with Mobile Banking:** The integration of ATMs with mobile banking apps has streamlined banking operations. Users can initiate transactions on their mobile devices and complete them at ATMs.

# HITACHI itPower UPS SYSTEM FOR ATM APPLICATION IN BANKING INDUSTRY

HITACHI  
Inspire the Next

- **Real-Time Monitoring and Maintenance:** Advanced ATMs are equipped with sensors and IoT technology for real-time monitoring and maintenance. This ensures minimal downtime and enhances service reliability.

ATM applications have come a long way since their inception, evolving from simple cash dispensers to multifunctional banking terminals. Technological advancements have significantly enhanced their functionalities, security, and user experience. As the banking industry continues to innovate, ATMs will remain a vital component of the financial ecosystem, adapting to meet the changing needs of customers and ensuring seamless access to banking services.



*[Symbolic Picture for reference]*

## CHALLENGE/ISSUES

Automated Teller Machines (ATMs) have become an integral part of the banking infrastructure, providing convenient access to financial services. However, despite their widespread use and technological advancements, ATMs face several challenges and issues that can disrupt their operation. Among these, voltage fluctuations and power outages are particularly significant, as they directly impact the reliability and availability of ATM services.

### Voltage Fluctuations

Voltage fluctuations refer to variations in the electrical supply voltage, which can range from minor deviations to significant spikes or drops. These fluctuations can have several adverse effects on ATMs:

# HITACHI

## itPower UPS SYSTEM FOR

### ATM APPLICATION IN BANKING INDUSTRY

HITACHI  
Inspire the Next

- **Hardware Damage:** Sudden spikes in voltage can damage sensitive electronic components within the ATM, leading to costly repairs and downtime.
- **Data Corruption:** Voltage fluctuations can cause data corruption, affecting transaction records and potentially leading to financial discrepancies.
- **System Reboots:** Frequent voltage fluctuations can cause the ATM to reboot unexpectedly, disrupting service and frustrating customers.
- **Reduced Lifespan:** Continuous exposure to voltage fluctuations can reduce the lifespan of ATM components, necessitating more frequent maintenance and replacements.

#### Power Outages

Power outages, or blackouts, are periods when the electrical power supply is interrupted. ATMs require a consistent power supply to function correctly, and outages can cause significant disruptions:

- **Service Disruption:** During a power outage, ATMs become inoperative, preventing customers from accessing cash and other banking services.
- **Security Risks:** Power outages can compromise the security of ATMs, making them vulnerable to tampering and theft. Additionally, the lack of power can disable surveillance cameras and alarm systems.
- **Data Loss:** Unexpected power outages can result in data loss, affecting transaction records and potentially leading to financial discrepancies.
- **Customer Inconvenience:** Frequent power outages can lead to customer dissatisfaction, as they are unable to access essential banking services when needed.

#### NEED FOR THE SOLUTION

Automated Teller Machines (ATMs) are critical components of the banking infrastructure, providing essential financial services to customers around the clock. However, their operation is heavily dependent on a consistent power supply. Power outages and voltage fluctuations can significantly disrupt ATM services, leading to customer dissatisfaction and potential financial losses. To address these challenges, there is a pressing need for advanced solutions that ensure uninterrupted power supply, including high battery backup during power outages and the integration of Uninterruptible Power Supply (UPS) systems with USB communication capabilities.

#### The Importance of Uninterrupted Power Supply (UPS)

- **Service Continuity:** ATMs must be operational 24/7 to meet customer needs. Power interruptions can lead to service downtime, preventing customers from accessing cash and other banking services when needed.
- **Security and Data Integrity:** Consistent power supply is crucial for maintaining the security and integrity of ATM transactions. Power outages can compromise security systems and lead to data loss or corruption.
- **Customer Satisfaction:** Reliable ATM services are essential for maintaining customer trust and satisfaction. Frequent power-related disruptions can erode customer confidence in the banking institution.

#### High Battery Backup During Power Outages

- **Extended Operation:** High-capacity battery backups can ensure that ATMs remain operational during prolonged power outages. This is particularly important in regions with unstable power supply.
- **Seamless Transition:** Advanced battery systems can provide a seamless transition from main power to battery power, preventing any interruption in ATM services.

# HITACHI

## itPower UPS SYSTEM FOR

### ATM APPLICATION IN BANKING INDUSTRY

**HITACHI**  
Inspire the Next

- **Reduced Downtime:** By maintaining ATM functionality during power outages, high battery backups minimize downtime and ensure continuous availability of banking services.

#### UPS with USB Communication

- **Real-Time Monitoring:** UPS systems with USB communication capabilities can provide real-time data on power status, battery health, and other critical parameters. This information can be communicated directly to the ATM and the bank's central monitoring system.
- **Proactive Maintenance:** Real-time data from the UPS can help identify potential issues before they lead to service disruptions. This enables proactive maintenance and reduces the risk of unexpected failures.
- **Enhanced Security:** USB communication allows for secure data transmission between the UPS and the ATM, ensuring that sensitive information is protected from cyber threats.
- **Automated Alerts:** UPS systems with USB communication can send automated alerts to the bank's technical team in case of power issues, enabling quick response and resolution.

#### HITACHI'S OFFERED PRODUCT / SOLUTION

In the ever-evolving landscape of technology and infrastructure, ensuring a reliable power supply is paramount. Hitachi, a leader in technological innovation, offers advanced solutions to address power-related challenges. One such offering is the IP11H-2 UPS system with a Li-ion battery solution. This state-of-the-art product is designed to provide extended backup time, compactness, and cost efficiency, making it an ideal choice for modern enterprises.

Hitachi's IP11H-2 UPS system is a cutting-edge solution that integrates lithium-ion (Li-ion) battery technology. This combination offers several advantages over traditional UPS systems that use sealed maintenance-free (SMF) batteries.

- **Extended Backup Time:** The IP11H-2 UPS system with Li-ion batteries provides significantly longer backup time compared to conventional systems. This ensures continuous operation of critical equipment during power outages, enhancing reliability and performance.
- **Compact Design:** The compact nature of the IP11H-2 system allows for efficient space utilization. This is particularly beneficial for customers with limited space, as it reduces the physical footprint of the power backup infrastructure.
- **Cost Savings on Operation and Maintenance:** Li-ion batteries have a longer lifespan than traditional SMF batteries. This translates to reduced frequency of battery replacements and lower maintenance costs over the system's lifecycle. Customers can achieve substantial savings on operational expenses.
- **Enhanced Efficiency and Performance:** The IP11H-2 UPS system is designed to deliver high efficiency and performance. The integration of Li-ion batteries ensures stable and reliable power supply, minimizing the risk of downtime and enhancing overall system resilience.
- **Environmental Benefits:** Li-ion batteries are more environmentally friendly compared to SMF batteries. They have a lower environmental impact due to their longer life and higher energy density, contributing to sustainability goals.

#### BENEFITS OF USING HITACHI itPOWER UPS SYSTEM IN ATM APPLICATION

- **Wide Range of Ratings**  
Hitachi offers a diverse range of UPS systems with various ratings to meet the specific requirements of different customers. This flexibility ensures that each ATM installation can be equipped with the most suitable power backup solution, optimizing performance and reliability.

# HITACHI

## itPower UPS SYSTEM FOR

### ATM APPLICATION IN BANKING INDUSTRY

**HITACHI**  
Inspire the Next

- **24/7 Service Support and Nationwide Network**

Hitachi provides round-the-clock service support through its extensive PAN India service network. This ensures that any issues with the UPS systems can be addressed promptly, minimizing downtime and ensuring continuous operation of ATMs.

- **Experienced Technical Team**

Hitachi's highly skilled technical team is well-equipped to handle any challenges that may arise. Their expertise ensures that the UPS systems are installed, maintained, and serviced to the highest standards, providing reliable power backup for ATMs.

- **In-House R&D Centre**

Located at its Gujarat plant in India, Hitachi's in-house research and development centre is dedicated to continuous innovation. This commitment to R&D ensures that Hitachi's UPS systems incorporate the latest technologies and advancements, providing cutting-edge solutions for ATM applications.

- **Proven Expertise in Critical Applications**

With vast experience in handling critical applications, Hitachi has a proven track record of delivering reliable and robust power solutions. This expertise ensures that their UPS systems can meet the demanding requirements of ATM operations, providing uninterrupted power supply and enhancing overall system resilience.

## ABOUT HITACHI itPOWER UPS SYSTEM FOR ATM APPLICATION

(<https://www.hitachi-hirel.com/products/ups/it-power-online-ups-system> )

### IP11 Series itPower UPS System

Range: 1 kVA to 3 kVA (1:1)

- High frequency and double conversion on line technology
- Advanced PFC & IGBT technology
- Lighting and surge protection
- Fan speed auto control when loads varies
- Short circuit and overload protection
- Smart RS 232 communication with monitoring software
- EMI/RFI noise filter
- Cold start facility / MTBF 300000 hrs
- Hot standby configuration / High input power factor



### HS11 Series itPower UPS System

Range: 6 kVA to 10 kVA (1:1)

- High frequency and double conversion on line technology
- Advanced PFC & IGBT technology
- Lighting and surge protection
- Fan speed auto control when loads varies
- Short circuit and overload protection
- Smart RS 232 communication with monitoring software
- EMI/RFI noise filter
- Cold start facility / MTBF 300000 hrs
- Hot standby configuration / High input power factor



# HITACHI

## itPower UPS SYSTEM FOR

### ATM APPLICATION IN BANKING INDUSTRY

**HITACHI**  
Inspire the Next

#### ABOUT HITACHI HI-REL POWER ELECTRONICS PRIVATE LIMITED

Founded & established in 1983 as Hi-Rel Electronics Pvt. Ltd., which later on in year 2015 had become the 100% subsidiary company of Hitachi, Japan which is one of the Global fortune 500 companies with a new name as Hitachi Hi-Rel Power Electronics Private Limited, which is being recognized as one of the pioneers in power electronics domain. Hitachi Hi-Rel, today, is a leading manufacturer of Industrial UPS, IT & Infra UPS, Medium & Low Voltage Variable Frequency Drives, Grid Tied Solar Inverters, Air Compressors and Railway Inverters.

Hitachi Hi-Rel has state-of-the art manufacturing facility at Sanand near Ahmedabad in Gujarat-India. Hitachi Hi-Rel is helping a wide array of industries and organizations to meet the mission critical demands through technologically superior, low polluting and innovative products Solutions and continue to offer world class power electronics products, value added services & customized solutions.

With a vision of “To be recognized as the most trusted Power Electronics Company by supplying superior products and services”, Hitachi Hi-Rel has garnered a significant level of trust in Indian power electronics market segment wherein it serves the entire gamut of Industries, particularly in mission critical applications for Refineries, Petro-Chemicals, Power Generation, Steel & Metals, and Process Industries as well as Critical Data Processing Applications. Besides offering greater energy efficiency & lower carbon footprint, each of the company product streams bears the hallmark of excellence with company accreditations. Hitachi Hi-Rel is an ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018 certified company having export house status. Hitachi Hi-Rel sales network & service infrastructure expands out to the world & with this network, we have made strong inroad in Global markets like South East Asia, Middle East, Africa and Brazil. Also, with a presence of strategically located skilled service engineers in India helps us to score high in terms of customer expectations on service deliverables & uptime of the product.

With expertise, experience and an efficient product line, Hitachi Hi-Rel will always try to be your power electronics partner. When you choose to do business with Hitachi Hi-Rel, you are partnering with a company who cares.

#### FOR MORE INFORMATION

To know more about Hitachi Hi-Rel Power Electronics Private Limited and its offered products and solutions, please visit [www.hitachi-hirel.com](http://www.hitachi-hirel.com)

You may also share your requirements at <https://www.hitachi-hirel.com/inquiry> to receive the phone call or Hitachi product information email from our authorized sales representative of your region.

---

#### © 2024 Hitachi Hi-Rel Power Electronics Private Limited.

All rights reserved. Information has been shared in good faith but is for general informational purposes only. No part of this document may be used, reproduced, photocopied, transmitted, or stored in any retrieval system of any nature, without the written permission of the copyright owner.

All the specifications in this document are subject to change without any prior notice.