

ATVM

Automatic Ticket Vending Machine

Now-a-days online ticketing is a very convenient weapon but it is mainly used by a particular segment of consumers. People also avoid it due to the known security holes of the internet. So majority of the consumers usually stands in long queues to make a two-minute ticket booking transaction. Moreover, as ticketing counters operate in a time bound fashion, people can't avail it in 24x7 mode. Higher staffing cost for customer service employees is also a big problem,

Ticketing through Kiosk

With the use of a Ticketing kiosk, all issues can be taken care-off. Kiosks can be placed not only in service centres, but also in various public places.

ATVM Features

- Modular design
- Energy efficient
- Touch Screen based interface
- Cash, Card based payment
- Keyboard input
- Network connectivity
- Ticket printing
- Detailed Transaction reporting



ATVM With Currency Box

1	TVM Enclosure	
i	TVM Mounting Type	Floor Mounting Clamping
ii	Enclosure Construction	Aesthetically rugged, well designed, Sturdy, Durable. Made of High grade 1.6mm MS steel sheet with powder coated cabinet, mounting accessories, internal power distribution arrangements with shock proof.
iii	TVM Security	Doors with mechanical locks to access all the devices. The door open at the front of the kiosk.
iv	Cash Security	Electronic & Mechanical Key Lock for cash chest
v	Dimensions	As per Internal Components, but with small footprint. W x D x H
vi	Color	As per Customer choice
vii	Cooling System	have necessary cooling mechanism
2	System PC	
i	Processor	Quad-core 1.5GHz or above
ii	MEMORY	8 GB RAM
iii	STORAGE	1TB SSD
iv	Ports	4 x UPS
v	OS	Android 11 +
vi	NFC	Mifare reader (certified)
vii	Bluetooth	Bluetooth 2.1/3.0/4.2 BLE
3	Touch Display	
i	Display Size	21.5" LCD/TFT with LED back light
ii	Resolution	Native 1920x1080
iii	Brightness	250 cd / m2
iv	Viewing Angle	178 /178
v	Aspect Ratio	16:09
vi	Touch Technology	Capacitive, Multi Touch Screen
4	Currency Acceptor cum Recycler	
i	Deposit	Bulk / Single-note insertion / Up to 100 note types supported
ii	Dispense	Multi-denomination, bulk-note dispensing (max 30 notes)
iii	Banknote Size Accepted	W: 60 – 85mm, L: 110 – 170mm
iv	Banknote Denominations Accepted	5, 10, 20, 50,100, 200, 500 Notes
v	Deposit Slot Capacity	1 note for SNF/ 30 notes for BNF
vi	Processing Speed	2 banknotes per second
vii	Status LED	On frame next to each module
viii	Escrow Capacity	15 notes for SNF / 30 notes for BNF
ix	Retract Bin	Up to 30 notes, one-time only
x	Loader / Refill Cassette Capacity	Approx. 350 notes – single denomination.
xi		Or 40 notes each for 3 denomi.
xii	Recycler Unit Module	Scalable (From 1 denomi to 8 denomi)
xiii	Recycler Unit Capacity	60 notes x 2 drums (up to 480 notes)
xiv	Cash Box Capacity	Approx. 2,200 notes (ST Notes)
xv	Sensor & Shutter	Shutter is Present at Acceptance & Dispense Mouth, For Currency Validation Different Sensor is Present
xvi	Interface	USB (Full Speed)
xvii	Firmware Updation	Remotely & manually
xviii	Acceptance & Dispense Parameter	As Per RBI Guideline
xix		CISPR 24 & CISPR 32
xx	Industrial Standard Compliance	IEC 60950-1
xxi		Green Procurement Standard
xxii		RoHS
xxiii	Other Features	Shutter (for deposit &dispense)
xxiv		Tito barcode ticket reading(option)
xxv	Mounting	Horizontal
xxvi	Supply Voltage	24VDC +/-10%
5	COIN Recycler / Hopper	
i	Coin Denominations	INR 5 & INR 10 or as per programmed
ii	Deposit	Single Coin at time
iii	Dispense	Bulk Coin

iv	Coin Size Accepted	20mm to 30mm
v	Deposit Slot Capacity	Single Coin at time
vi	Processing Speed	3 coin per second
vii	Validation	By Thickness
viii	Escrow Capacity	15 coins
ix	Recycler Unit Module	Scalable from 1 to 20 (All type)
x	Recycler Unit Capacity	100 coin each
ix	Supply Voltage	24VDC +/-10% / 12VDC
x	Interface	CCNET / RS232
xi	Other Features	Escrow with Mechanical fitting
xii	Mounting	Vertical
5	UPI MODE	ALL RBI approved UPI
6	Ticket Printer	Thermal Ticket Printer with Auto paper cutter
I.	Print Method	Direct Thermal or Thermal Line
II.	Fonts	All vowel characters printed in italic or as fixed
III.	Multi Language Support	With multi-lingual support, for Indian Languages with Hindi and English as default and other regional language support for future.
IV.	Resolution	200 dpi or more
V.	Printing Speed	100 mm or more per sec
VI.	Fast print response	Instant print operation, no warming up.
VII.	Paper width	81 mm
VIII.	Printable width	77 mm
IX.	Paper length	90 mm
X.	Printable length	86 mm
XI.	Paper weight	100 GSM ± 2.5%
XII.	Paper thickness	100 ums ± 2.5%
XIII.	Paper type	Thermal Paper
XIV.	Paper feed speed	150 mm/s (Continuous paper feeding)
XV.	Roll Capacity	Havelnner Dia of inner core is 38mm ±1mm & outer Dia of inner core is 45 mm ± 1mm. Total Dia of Thermal Roll is approx. 98mm.
XXI.	Sensors	Sensors for cover open, papering out and ticket print status success / failure. In case of any manipulation / tampering with sensor, printer not print ticket.
XXII.	Receive Buffer	45 bytes to 4 KB
XXIII.	Interface	Bi-directional Serial / USB
XXIV.	Return Printer status on screen	Printer not ready - In case printer is not able to print ticket due to paper out, cover open, head open or any other error.
XXV.	Line Spacing	The default line spacing is 1/8. It also support 1/6-inch line spacing.
XXVI.	Ticket Safety in Printer	It clear the remaining ticket buffer when power off or printer is open.
XXVII.		Printer must support printing of ticket with ticket length as per fixed by authority
XXVIII.	Baud Rate	In case of Serial interface, default baud rate is 38400.
XXIX.	Reliability (MCBF)	37 million lines
XXX.	Power Requirement	110 V to 240 V AC
7	Speaker	Two x 5Watts speakers
8	Web camera	Extra Security
i	Resolution / FPS	Full HD 1080p/30fps (1920x1080 pixels)
ii	Megapixel	5-megapixel autofocus camera,
iii	Diagonal Field of View	58°
iv	Zoom Capability (Hardware)	1 x
v	Autofocus	Fixed Focus
vi	Auto Light Correction	Right Light 2
vii	Built-in Mic(s)	Yes
viii	Connectivity / Interface	USB -Plug & play
ix	Privacy Shutter	Yes
x	Software Support	Yes

xi	Internet	4G+ (sim card slot) and WIFI
	UPS	TVM have 1KVA UPS with 30-40 minutes backup with SMF (Sealed Maintenance Free) battery must be used for the UPS. UPS have soft shut
10	Internal Maintenance light	The kiosk have proper LED lighting arrangements inside the enclosure.
11	Power Requirement for the kiosk	The ATVM Kiosk operate on 230 Volts, Single Phase and not consume current more than 5 AMPs. The kiosk is fitted with Current surge protector MCB of 5 AMPs/6 AMPs
12	Environmental	
i	Operating Temperature	+5°C to +45°C
ii	Humidity	10 to 90% RH
13	Warranty	3 years warranty

ATVM Without Currency Box

1	TVM Enclosure	
i	TVM Mounting Type	Floor Mounting Clamping
ii	Enclosure Construction	Aesthetically rugged, well designed, Sturdy, Durable. Made of High grade 1.6mm MS steel sheet with powder coated cabinet, mounting accessories, internal power distribution arrangements with shock proof.
iii	TVM Security	Doors with mechanical locks to access all the devices. The door open at the front of the kiosk.
iv	Dimensions	As per Internal Components, but with Small footprint. W x D x H
v	Color	As per Customer choice
vi	Cooling System	Have necessary cooling mechanism
2	System PC	
i	Processor	Intel Core i3 2.5GHz or higher Processor
ii	MEMORY	8GB RAM
iii	STORAGE	512 GB SSD
iv	Ports	4 x UPS
v	OS	Android 11 +
3	Touch Display	
i	Display Size	21.5" LCD/TFT with LED back light
ii	Resolution	Native 1920x1080
iii	Brightness	250 cd / m2
iv	Viewing Angle	178 /178
v	Aspect Ratio	16:09
vi	Touch Technology	Capacitive, Multi Touch Screen
4	UPI MODE	
		ALL RBI approved UPI
5	Contactless Loyalty Smart Card Reader	
i	Interface	USB
ii	Protocol	USB HID Keyboard Class
iii	Speed	USB Full Speed (12 Mbps)
iv	Standard	ISO 14443 A & B Parts 1-4, MIFARE®
v	Protocol	ISO 14443-4 Compliant Card, T=CL , MIFARE® Classic Card.
vi	LED	2 single-color: Red and Green
vii	Buzzer	Monotone
viii	Built-in anti-collision feature	Built-in anti-collision feature (only one tag is accessed at any time)
ix	Firmware Upgrade	Supported
x	Certifications/Compliance	ISO 14443, USB Full Speed, USB-HID, CE, RoHS
xi	Device Driver Operating System Support	Windows®, Linux®, Android™, MAC OS®

6	Ticket Printer	Thermal Ticket Printer with Auto paper cutter
i	Print Method	Direct Thermal or Thermal Line
ii	Fonts	All vowel characters is printed in italic or as fixed
iii	Multi Language Support	With multi-lingual support, for Indian Languages with Hindi and English as default and other regional language support for future.
iv	Resolution	200 dpi or more
v	Printing Speed	100 mm or more per sec
vi	Fast print response	Instant print operation, no warming up.
vii	Paper width	81 mm
viii	Printable width	77 mm
ix	Paper length	90 mm
x	Printable length	86 mm
xi	Paper weight	100 GSM \pm 2.5%
xii	Paper thickness	100 um \pm 2.5%
xiii	Paper type	Thermal Paper
xiv	Paper feed speed	150 mm/s (Continuous paper feeding)
xv	Roll Capacity	Have Inner Dia of inner core is 38mm \pm 1mm & outer Dia of inner core is 45 mm \pm 1mm. Total Dia of Thermal Roll is approx 98mm.
xvi	Paper Cutter	Automatic & Integrated and High Speed paper cutter
xvii	Print Head Life	100 km paper length
xviii	Cutter life	Minimum 0.7 million cuts with 100 gsm paper
xvix	QR Code support	Support for QR Code / graphics printing capability.
xx	Printer Monitoring & Status	Very comfortable & comprehensive monitoring program for checking & verifying all main printer functions (Paper out, printer cover open, power off/on) and status messages from the printer through Serial / USB port. All these statuses is returned in response of commands so that ticket printing application can be programmed to retrieve the status messages of the printer.
xxi	Sensors	Sensors for cover open, paper out and ticket print status success / failure. In case of any manipulation / tampering with sensor, printer not print ticket.
xxii	Interface	Bi-directional Serial / USB
xxiii	Return Printer status on screen	Printer not ready - In case printer is not able to print ticket due to paper out, cover open, head open or any other error.
xxiv	Line Spacing	The default line spacing is 1/8. It support 1/6 inch line spacing.
xxv	Ticket Safety in Printer	It clear the remaining ticket buffer when power off or printer is open.
xxvi		Printer must support printing of ticket with ticket length as per fixed by authority
xxvii	Baud Rate	In case of Serial interface, default baud rate is 38400.
xxviii	Reliability (MCBF)	37 million lines
xxix	Power Requirement	110 V to 240 V AC
7	Speaker	Two x 5 Watts speakers
8	Web camera	Extra Security
i	Resolution / FPS	Full HD 1080p/30fps (1920x1080 pixels)
ii	Megapixel	2 MP
iii	Diagonal Field of View	58°
iv	Zoom Capability (Hardware)	1 x
v	Autofocus	Fixed Focus
vi	Auto Light Correction	Right Light 2
vii	Built-in Mic(s)	Yes
viii	Connectivity / Interface	USB -Plug & play
ix	Privacy Shutter	Yes
x	Software Support	Yes
9	UPS	TVM have1KVA UPS with 30-40 minutes backup with SMF (Sealed Maintenance Free) battery must be used for the UPS. UPS hassoft shut facility (UPS goes online when power returns).
10	Environmental	
i	Operating Temperature	+5°C to +45°C
ii	Humidity	10 to 90% RH
11	Warranty	3 years warranty

➤ Functionality

- ATVM is an automated (passenger operated) sale machine able to sell tokens and reload cards, including bus cards and other transport.
- ATVM have the capability of accepting banknotes & Coin and UPI. It provides a function with notes and coins. ATVM also indicate to the passenger the remaining stored value of card information.
- ATVM has interface to the passenger through a touch screen using a user-friendly man machine interface.
- ATVM able to display the relevant card information to the passenger (usable product, remaining value, validity of a product, etc.). ATVM able to print a customer receipt on demand following a sale, a reload or card information.
- ATVM able to handle cash and UPI payment.
- ATVM able to handle cash payment by banknotes.
- ATVM has housed in secure suit unpaid area.
- ATVM able to accept up to 6 types of notes. The notes not accepted rejecte by the passenger. The notes accepted could be modified without hardware modification; ATVM impacted only by firmware or software modification. In case accepted notes are not returned to the customer on cancellation of the transaction, ATVM provide the necessary receipt.

ATVM able to give change with banknotes and coins to the passengers. ATVM self-detect its capacity to give change or not based on downloadable parameters and display the information to the passenger: when the amount of change is insufficient, ATVM switch to no change mode automatically. ATVM return to the change mode automatically once enough change is deposited

➤ Specification

- ATVM display a cancel button enabling the passenger to cancel the transaction at any time. When the passenger cancels the operation during payment, the notes inserted returned.
- ATVM handle properly a failure during distribution or reload: the undue amount returned to the passenger; if it is not possible a claim receipt indicating the due amount to the passenger will be printed.
- ATVM can terminate any transaction after a time-out period if no action is taken to continue the transaction. And original cash will be returned to the passenger.
- ATVM visually alert the passenger when there is change or returned cash in the cash tray.
- ATVM record all transactions and errors and transmit it periodically to Depot Computer Unit (files have contained all needed information such as device identification, station, date and time, card id, transaction related value, agent, etc.). If the ATVM is opened before or without access being granted following the agent's identification, an audible alarm played to alert the station staff.
- The ATVM change module is positioned in the area named "cash safety area" separated from the other module. The entry to this area requires one key different from the ATVM door.
- A different key needed to open the cash box.
- The cash collection end by the issuance of two cash collection receipts containing relevant information.
- The ATVM issue two receipts with relevant information at the end of the cash collection from ATVM.
- ATVM able to store data in case of network failure.
- ATVM automatically turn "Out of service" in the data storage capacity is reached.
- ATVM turn automatically in degraded mode (informing the passenger of the available function) if a key module is in failure and make a main function is unavailable.
- ATVM inform the passenger if the printer is in failure.
- ATVM turn automatically "Out of service" if none of the main functions can be used safely (add value and sale module or UPS in failure, etc.).
- In case of power interruption, the ATVM be able to handle properly the on-going sale.
- Shutdown properly, save all necessary data and transfer them to the SCU.
- ATVM fulfil the security requirements listed in this document.

➤ General Design

- Each ATVM consist of a compactly designed, free standing, self-supporting cubiclesuitable for installation in the unpaid areas of each station concourse.
- Designed ergonomically with a high-quality man machine interface for passengerinteraction.
- All materials durable and non-corrosive.
- External surfaces manufactured from stainless steel and smooth with nosharp edges or corners.
- The construction vandal and tamper resistant, equipped with environmentalcontrols, mechanically protected with an external surround barrier.
- A color, video touchscreen with toughened glass supplied.
- 21-inch.
- All modules included in the ATVMs of current manufacture.
- All units within the ATVM fully withdrawable either from the front or from rear formaintenance access as per the decision of the client.
- An access clearance of a minimum of 1 meter provided with the ATVM door in afully open position.
- Access to the ATVM for servicing purposes require the use of a pass and highsecurity access keys to open the associated covers and locks.
- The ATVM enclosure a minimum of IP54 except for functional opening slotssuch as banknote slots which IP43 minimum.

➤ User Accessibility and Operation

- The design compliant with the 'Persons with Disabilities' Act of India.
- Physically accessible to users with operating parts at a maximum height above finished floor level of 1200 mm and a minimum height of 500 mm.
- The diameter of any operating buttons required minimum of 20mm, be suitably spaced and protrude sufficiently to enable the buttons to be used by those who rely upon palm pressure.
- Tickets, receipts, and change easy to retrieve by people with limited manual dexterity.
- Design facilitate use by visually impaired people with all controls within comfortable reach range.
- Minimum force required to operate any controls.
- Banknote slots equipped with a hinged mechanical shutter which opens only during a payment transaction but remain closed under the following minimum conditions.
- The fair amount due has been inserted.
- Cancel button has been pressed or the transaction is automatically cancelled.
- TVM or coin processing unit fault condition.

➤ Color

- External metal work painted in a Color using the latest technology or useadhesive graphic sheet.
- To facilitate ease of use the constituent elements of the equipment have contrasting colors and texture from the main body of the ATVM.
- Buttons contrast well with the background and their function describedboth in text and tactile form.

➤ Fire Safety Compliance

In sub-surface stations, materials compliant with Fire Safety Performance ofMaterials regulations.

➤ Cabling and Equipment Fixing

- TVM is suitable for floor mounting.
- Equipped with a minimum 100 mm high mounting plinth and fixing facilities for floormounting.
- All modules and termination points have a minimum ground clearance 300 mm.
- Equipped with gland plates for bottom cable access.

➤ Lighting

Equipped with suitable lighting with automatic adjustment of lighting levels so that information and operating instructions are clearly visible to the users under varying ambient lighting conditions.

➤ Maintenance

Readily accessible for equipment maintenance, removal and replacement of consumables, coins, and banknotes.

➤ Labelling

- A label to identify the equipment.
- All user clearly and indelibly labelled, providing clear instructions on the purchase and processing of fares.
- Suitable stickers provided on the ATVM outer case to improve the aesthetics of TVM or for advertising purposes as decided by the Employer.

➤ Security and Access

- Equipped with suitable dual control mechanical locks and smart card key for maintenance access by authorized staff to appropriate ATVM functions for set-up, maintenance, and diagnostics, etc.
- Access to the inside of the ATVM controlled using a Contactless Smart Card configured as a pass and/or the entry of a PIN.
- The System record all salient details of the person attempting entry and such details appear in relevant reports.
- All coins and notes held within the ATVM suitably protected to prevent unlawful retrieval by ATVM users.
- On detection of an ATVM Security alarm an audio alarm broadcast and visual indication initiate in the SCR and a CCTV image of the relevant ATVM present automatically to the SCR operators.
- Access to components containing money and Contactless Smart Media restricted to authorized revenue staff only using special keys or additional PIN entry to be agreed with the Employer.
- It possible to remove all cash from the ATVM by removing bulk hoppers and dumping all coins and Banknotes held in ESCROW and the re-circulating change assembly into cash boxes for audit purposes and/or when maintenance staff is required to access areas of the machine which would normally permit access to cash.
- All removable components including cash boxes and change hoppers size, position, and provided with lifting handles such that they can be removed and inserted without requiring more than the average strength or dexterity of a young female Indian person.



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