



AUTOMATIC FARE COLLECTION (AFC) READER

# ACR350

## Secure Validator with QR code Scanner (PCI PTS POI v5.1 with SRED Certified)

The ACR350 Secure Validator is an advanced version of the ACR330 Validator, designed specifically for Automatic Fare Collection (AFC) systems to offer the convenience of cashless and secure payment in buses, ferries, trams, railways, and other transportation modes. This validator enables high-speed transaction processing through 13.56 MHz contactless (RFID) technology. It supports ISO 14443 Type A and B cards, MIFARE®, and FeliCa. Certified with PCI PTS 5.1 with SRED, it complies with major payment standards such as PBOC Level 1 (Contactless) and EMV™ Levels 1 and 2 (Contactless), including MasterCard® Contactless and Visa PayWave®, offering flexibility and security for open-loop payment systems.

The embedded barcode scanner facilitates transactions using printed or mobile barcodes and other QR payment applications. It features advanced wireless connectivity options for data transfer, such as GSM/GPRS, 3G/4G, and Wi-Fi. Additionally, an optional GNSS feature allows for vehicle location, fleet management, and flexible distance-based fare settings.

To protect the bus validator from harsh environments, it has an IK08 rating for mechanical impact, an IP65 rating for dust and water protection, and complies with Military Standard MIL-STD-810 for shock and vibration. Control signals and ignition sense are included, while Bluetooth support is available only via an external Bluetooth 5.0 USB dongle<sup>4</sup>. With these features, the ACR350 is an excellent choice for transit operators.



### KEY FEATURES

- ✔ **Support various type of card type**
  - ISO 14443 Type A & B (T=CL), MIFARE®, FeliCa, Calypso, CTS512, SRT512
- ✔ **Improved Security**
  - 4 x ISO 7816 Standard SAM Slots
- ✔ **Connectivity**
  - GSM/GPRS, 3G/4G, Wi-Fi, GNSS, Support for an External Bluetooth 5.0 USB Dongle<sup>4</sup>
  - USB, Serial Port (RS-232 & 485), Ethernet
  - GPIO Isolated ports, CAN BUS, Ignition sense port
- ✔ **Accessibility and convenience**
  - 4.3 Inch Capacitive Type Touch TFT Screen
  - Embedded Barcode Scanner (Linear/2D)
  - Support Micro SD card and Firmware Upgrade
- ✔ **Reliable**
  - Certified for international compliances and certifications
    - PCI PTS POI v5.1 with SRED, EMV® Level 1 (Contactless), PBOC Level 1 (Contactless), MasterCard® Contactless, Visa payWave®
    - CE, FCC, REACH, RoHS
    - IK08, IP65 and MIL-STD-810G military grade certified (Shock and vibration)

### Common Applications

- e-Banking
- e-Payment
- Transportation
- Access Control





## TECHNICAL SPECIFICATION

### Contactless Smart Card Interface

Supported Card Types	ISO 14443 Type A & B, MIFARE®, FeliCa, Calypso, CTS512, SRT512
Operating Frequency	13.56 MHz
Reading Distance	Up to 50 mm
Read/Write Speed	Up to 424 kbps
Anti-Collision	Yes

### Connectivity

USB Host	2.0 High Speed
Serial Port	RS-232 x 1, RS-485 x 1
Wi-Fi	2.4 GHz, IEEE 802.11 b/g/n
Bluetooth <sup>4</sup>	Support for an external Bluetooth® 5.0 USB Dongle
Cellular <sup>1</sup>	GPRS/GSM/3G/4G
GNSS <sup>2</sup>	GPS/Glonass/Beidou/Galileo, Supported with internal antenna (external antenna port available)
Ethernet	Built-in 10/100/1000 Ethernet
Control Signals	2 x input + 2 x output
Ignition Sense	Supported
CAN Bus	Supported

### SAM Card Interface

Standard	4 x ISO 7816 Standard SAM size card slot (Support Class A, B and C [5V, 3V, 1.8V] card), ID-000
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### SIM Card Interface

Number of slot	1 x Standard SIM size card slot, ID-000
Standard	GPRS/GSM/3G/4G

### Processor

Processor	Arm® Cortex®-A9 Quad-Core Processor 1.0 GHz
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### Operating System

Operating System	Linux
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### Memory

Flash	32 GB (25 GB available for user)
RAM	1 GB
Tamper Protected Memory	32 KB (for sensitive data storage with API provided)

### Built-in Peripherals

LCD Display	4.3 Inch Capacitive Type Touch TFT Screen
Audio Speaker	3W (Around 80 dB in 1 m distance)
LED Indicators	Front: Blue, Orange, Green, Red Back: Green, Red
Memory Card Slot	Yes (Support MicroSD Card up to 128 GB)
Temperature Sensor	Yes

### Barcode Scanner<sup>3</sup>

Linear	Code 128, EAN, Code 39, UPC, Code 2 of 5, Interleaved 2 of 5, Codabar, etc
2D	PDF417, Data Matrix, QR Code
Illumination	White LED
Supported Materials	Paper, Mobile phones and Tablets

### Physical Characteristics

Dimension (H x W x T)	245 x 135 x 91 mm [Main Body] 245 x 135 x 159 mm [With Back Mount]
Weight	1.01 kg [Main Body] 1.81 kg [With Back Mount]
Colour	Grey and Black
Pole Support	31, 32, 35 mm (Support Vertical or Horizontal Pole)

### Power

Power Source	External Power Adapter (9 - 36 V)
SuperCap UPS	Yes (5 seconds)

### Environment

Operating Temperature	-20 - 60°C
Storage Temperature	-30 - 80°C
Humidity	90% (Non-condensing)
MTBF	50,000 Hours

### Other Features

Security	Tamper Switch (Internal anti-intrusion detection and protection)
Key Management Supported	Fixed Key, MK/SK, DUKPT
Real-time Clock	Supported (With independent backup battery)
Firmware Upgrade	Supported

### Certifications and Compliances

Standards	PCI PTS POI v5.1 with SRED, EMV® Levels 1 (Contactless), PBOC Level 1 (Contactless), MasterCard® Contactless, Visa payWave®, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)
Regulatory / Environmental	CE, FCC, REACH, RoHS

### Tools

Tools	Evaluation Kit (USD 1,200)
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### Model/Part Number

Default Validator	ACR350-A4
Default Back Mount	ACR330-STD

## SUPPORTED FREQUENCY BANDS

ACR350-A4 Supported Frequency Bands	
4G LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66
4G LTE-TDD	B34/B38/B39/B40/B41
3G WCDMA	B1/B2/B4/B5/B6/B8/B19
2G GSM	850/900/1800/1900 MHz

<sup>1</sup> Please refer to the above Supported Frequency Bands table for a more detailed frequency band support;

<sup>2,3</sup> Can be optional

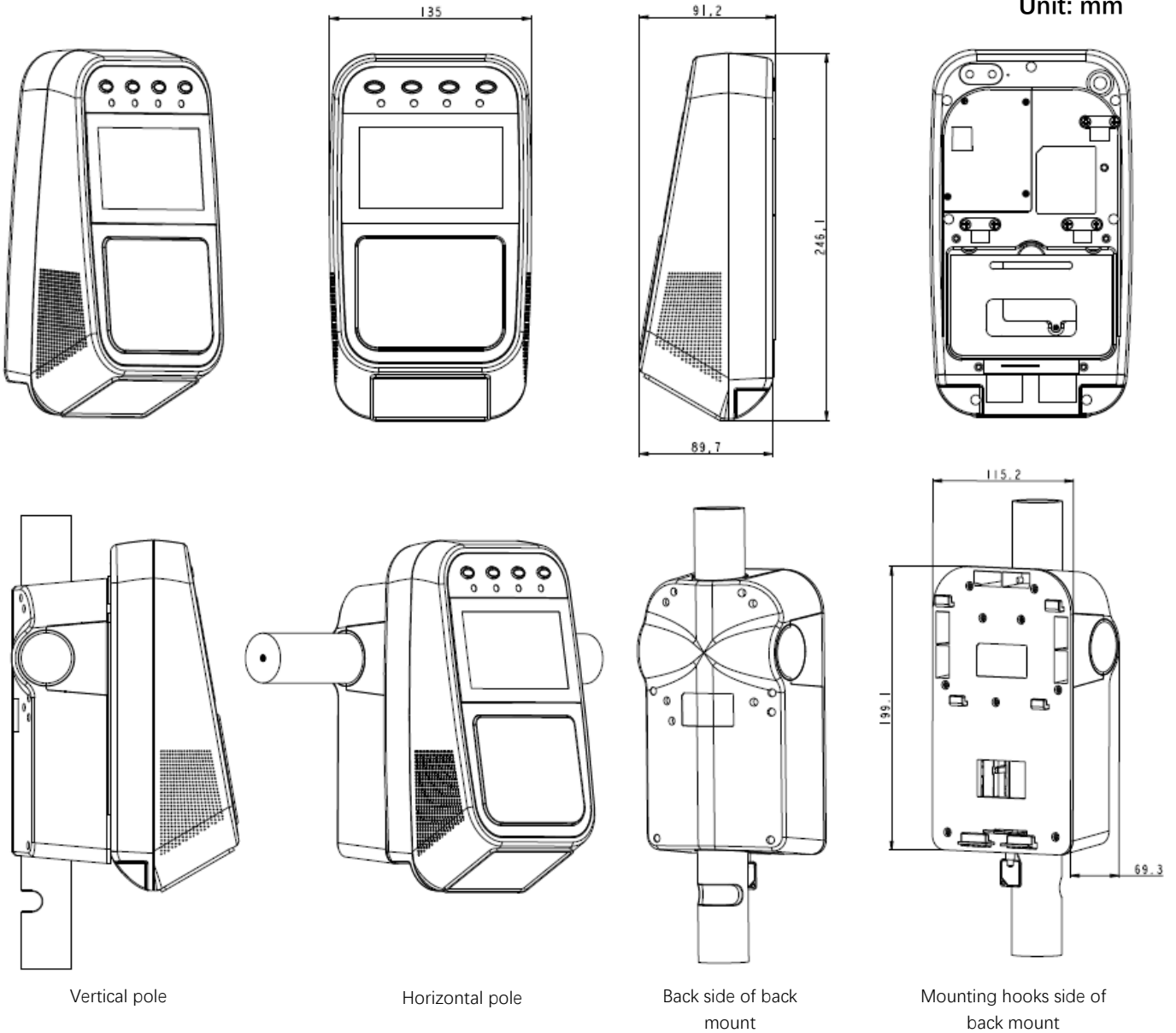
<sup>4</sup> Support for an external Bluetooth® 5.0 USB Dongle (Edimax BT-8500)





**MECHANICAL SPECIFICATION**

Unit: mm



Vertical pole

Horizontal pole

Back side of back mount

Mounting hooks side of back mount

**About ACS**

Advanced Card Systems Ltd. (ACS), founded in 1995, is Asia Pacific's top supplier and one of the world's top 3 suppliers of PC-linked smart card readers. ACS is the winner of the Product Quality Leadership Award for Smart Card Readers from Frost & Sullivan. ACS is listed in Forbes Asia's "Best Under a Billion" list for several years, an inter-industry list comprised of 200 top-performing publicly listed companies in the Asia-Pacific, with sales between US\$5 million and US\$1 billion. ACS develops a wide range of high-quality smart card reading/writing devices, smart cards and related products and distributes them to over 100 countries worldwide.

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