

# AUTOMATIC FARE COLLECTION (AFC) READER

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

The ACR350 Secure Validator is an advanced version of ACR330 Validator. It is 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<sup>®</sup>, and FeliCa. Being certified with **PCI PTS 5.1 with SRED**, major payment standards such as PBOC Level 1 (Contactless) and EMV<sup>™</sup> Levels 1 and 2 (Contactless) including MasterCard<sup>®</sup> Contactless and Visa PayWave<sup>®</sup>, this Validator offers flexibility and security to open-loop payment systems. The embedded barcode scanner enables transactions through the use of print or mobile barcodes or other QR payment applications.

It has advanced wireless connectivity options for data transfer such as GSM/GPRS, 3G/4G, and Wi-Fi. With an optional GNSS feature, it can be used to locate vehicles, manage fleets and set flexible distance-based fares. Protecting the bus validator from harsh environments is its IK08 rating for mechanical impact, IP65 rating for dust and water protection and the additional Military Standard MIL-STD-810 for Shock and Vibration.

Control Signals, Ignition sense and Bluetooth 5.1 are featured in this brand-new validator. With these new features, ACR350 could be a perfect choice for transit operators.

### KEY FEATURES

- $\begin{subarray}{c} \begin{subarray}{c} \beg$ 
  - ISO 14443 Type A & B (T=CL), MIFARE<sup>®</sup>, FeliCa, Calypso, CTS512, SRT512
- Improved Security
  - 4 x ISO 7816 Standard SAM Slots
- Connectivity
  - o GSM/GPRS, 3G/4G, Wi-Fi, Bluetooth, GNSS
  - o USB, Serial Port (RS-232 & 485), Ethernet
  - o GPIO Isolated ports, CAN BUS, Ignition sense port
- Accessibility and convenience
  - o 4.3 Inch Capacitive Type Touch TFT Screen
  - Embedded Barcode Scanner (Linear/2D)
  - $\circ$  ~ Support Micro SD card and Firmware Upgrade
- 🗹 Reliable
  - Certified for international compliances and certifications
    - PCI PTS POI v5.1 with SRED, EMV<sup>®</sup> 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





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# Advanced Card Systems Ltd. Card & Reader Technologies

### **TECHNICAL SPECIFICATION**

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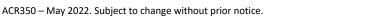
Contactless Smart Carl Interface     Barcode Scanner <sup>1</sup> Supported Card Types     ISO 1443 Type A & B, MIFARE*, FeliCa, Calypso, CTSS12, SRT512     Code 128, EAN, Code 39, UPC, Code 2 of S, DPF417, Data Matrix, QR Code       Reading Distance     Up to 50 mm     Supported Materials     Paper, Mobile phones and Tablets       Reading Distance     Up to 424 kbps     Supported Materials     Paper, Mobile phones and Tablets       Supported Materials     Paper, Mobile phones and Tablets     Physical Characteristics       Control Signals     2.4 GHz, IEEE 802.11 b/g/n     UN table 2.4 GHz, IEEE 802.11 b/g/n     UN table 2.4 GHz, IEEE 802.11 b/g/n       Control Signals     2.x input + 2.x output     Colour     Grey S/Giomass/Belou/Gallieo, GRNS5     Supported       Supported with internal antenna (external antenna poproted     Supported     3.3 sm (Support Vertical or Horizontal Pole)       Standard Supported     4 x ISO 7816 Standard SAM size card slot (groy traing System     20 - 60°C       Memory Processor     Arm <sup>®</sup> Cortex*-8.49 Quad-Core Processor Processor     Tamper Switch (Internal anti-intrusion detection and protection)       Mutter Size A (Green, Red Back: Green, Red Back: Green, Red Back: Green, Red Back: Green, Red Back: Green, Red Back: Green, Red     Supported       Memory Provetating System LDD Indicators     4.3 Inch Cap				
Supported Lard Types     Calypse, CTSS12, SRT512       Operating Frequency     13.56 MHz       Reading Distance     Up to 50 mm       Read/White Speed     Up to 424 kbps       Anti-Collision     Yes       Connectivity     Supported Materials       Serial Port     R5-232 x 1, R5-485 x 1       WiFi 1     2.4 GHz, IEEE 802.11 b/g/n       Biblecoth     Biblecoth       Genestivity     Gress/Gionass/Beilou/Gallieo,       Genestivity     Gress/Gionass/Beilou/Gallieo,       Genestivity     Gress/Gionass/Beilou/Gallieo,       Genestivity     Gress/Gionass/Beilou/Gallieo,       Genestive     Supported with internal antenna port available)       Environment     Built-in 10/100/1000 Ethernet       Control Signals     2 x isor 7816 Standard SAM size card slot, Sandard       Standard     GPS/GSM/3G/4G       Processor     Arm® Cortex®-A9 Quad-Core Processor       Interface     4 x iso 7816 Standard SAM size card slot, ID-000       Standard     GPS/GSM/3G/4G       Processor     GPS/GSM/3G/4G       Processor     Arm® Cortex®-A9 Quad-Core Processor       Ramer Protected	Contactless Smart Card		Barcode Scanner <sup>3</sup>	
Reading Distance   Up to 50 mm     Reading Distance   Up to 424 kbps     Anti-Collision   Ves     Connectivity   Supported Materials   Paper, Mobile phones and Tablets     Physical Characteristics   Dimension   245 x 135 x 91 mm [Main Body]     Wi-Fit   2.4 GHz, JEE 802.11 b/g/n   Use 104 Made     Cellulart   GPS/GSM/3G/4G   Dimension   245 x 135 x 91 mm [Main Body]     GNSS2   Supported with internal antenna (external antenna port available)   Colour   Grey and Black     Gontrol Signals   2 x input + 2 x output   Supported   Supported     ignition Sense   Supported   External Power Adapter (9 - 36 V)     Standard   Supported   Supported   Supported     Standard   4 x 150 7816 Standard SAM size card slot, ID-000   Standard   Souported     Standard   GPS/GSM/3G/4G   Supported   Supported     Processor   In attrastander SAU Bask isse card slot, ID-000   Security   Tamper Switch (Internal anti-intrusion detection)     Memory   Fiash   32 GB (25 GB available for user)   Firmware Upgrade   Supported (Contactless), Mastercard* Contactless), Mastercard* Contactless), Mastercard* Contactless, Mastercard* Contactless,	Supported Card Types		Linear	
Read/White Speed Up to 424 kbps   Anti-Collision Yes   Connectivity Supported Materials Paper, Mobile phones and Tablets   Miter Speed 2.0 High Speed Dimension 245 x 135 x 91 mm [Main Body]   Wi-Fi 2.4 GHz, IEE 802.11 b/g/n Billeototh* 5.1 Dual Mode Dimension 245 x 135 x 135 mm [With Back Mount]   Billeototh Billeototh* 5.1 Dual Mode Colluar GPK/GSM/36/46 Ole Support and Black   Control Signals 2.4 GHz, IEE 802.11 b/g/n Weight 1.3 1, 32, 33 mm (Support Vertical or Horizontal Pole)   Billeototh Built-in 10/100/1000 Cthernet Colour Grey and Black   Control Signals 2.4 input + 2.x output Dever Source External Power Adapter (9 - 36 V)   Supported Supported Supported Supported   GAN Bus Supported Supported Supported   Standard (Support Class A, B and C [SV, 3V, 1.8V] card), D-000 Security Tamper Switch (Internal anti-intrusion detection and protection)   Mitangemet 1 x Standard SIM size card slot, ID-000 Key Management Supported Fireware Upgrade   Supported 1 x Standard SIM size card slot, ID-000 Key Management Supported Fireware Upgrade   Mitherea 1 x Standard SIM size card slot, ID-000 Key Management Supported	Operating Frequency	13.56 MHz	2D	PDF417, Data Matrix, QR Code
Anti-CollisionYesConnectivity2.0 High SpeedUSB Host2.0 High SpeedSerial PortR5-232 x1, R5-485 x1Wri-Fi2.4 CH2, IEEE BOLT Ib /g/nBluetoothBluetooth* 5.1 Dual ModeCellular <sup>1</sup> GPRS/CSM/3G/4GCellular <sup>1</sup> GPRS/CSM/3G/4GGMS5Supported with internal antenna (external antenna port available)EthernetBuilt-in 10/1000 EthernetControl Signals2 x input + 2 x outputControl Signals2 x input + 2 x outputControl Signals2 x input + 2 x outputGAN BusSupportedSAM Card Interface4 x ISO 7816 Standard SAM size card slot (Support Class A, B and C [SV, 3V, 1.8V] card), ID-000StandardFRS/CSM/3G/4GProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHzProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHzMemoryFlash2.2 GB (25 GB available for user) RAMMemoryAs inch Capacitive Type Touch TFT ScreenLCD Display2.3 Inch Capacitive Type Touch TFT ScreenLCD DisplayA.3 Inch Capacitive Type Touch TFT ScreenLCD Display4.3 Inch Capacitive Type Touch TFT ScreenLCD DisplayScreen Red Back: Green, Red Back: Green, Red Back: Green, RedMemory YesYesYesYesSupport SensorYesMemory KereYesFirmware UpgradeSupportedSupportedSupportedSupportedSupportedSuported <td>Reading Distance</td> <td>Up to 50 mm</td> <td>Illumination</td> <td>White LED</td>	Reading Distance	Up to 50 mm	Illumination	White LED
Anti-CollisionYesConnectivity2.0 High SpeedUSB Host2.0 High SpeedSerial PortR5-232 x1, R5-485 x1Wri-Fi2.4 CH2, IEEE BOLT Ib /g/nBluetoothBluetooth* 5.1 Dual ModeCellular <sup>1</sup> GPRS/CSM/3G/4GCellular <sup>1</sup> GPRS/CSM/3G/4GGMS5Supported with internal antenna (external antenna port available)EthernetBuilt-in 10/1000 EthernetControl Signals2 x input + 2 x outputControl Signals2 x input + 2 x outputControl Signals2 x input + 2 x outputGAN BusSupportedSAM Card Interface4 x ISO 7816 Standard SAM size card slot (Support Class A, B and C [SV, 3V, 1.8V] card), ID-000StandardFRS/CSM/3G/4GProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHzProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHzMemoryFlash2.2 GB (25 GB available for user) RAMMemoryAs inch Capacitive Type Touch TFT ScreenLCD Display2.3 Inch Capacitive Type Touch TFT ScreenLCD DisplayA.3 Inch Capacitive Type Touch TFT ScreenLCD Display4.3 Inch Capacitive Type Touch TFT ScreenLCD DisplayScreen Red Back: Green, Red Back: Green, Red 	Read/White Speed	Up to 424 kbps	Supported Materials	Paper, Mobile phones and Tablets
USB Host2.0 High SpeedSerial PortR5-232 x1, R5-485 x 1WH-Fi2.45 x 135 x 159 mm [With Back Mount]BluetoothBluetoothBluetoothBluetoothBluetoothBluetoothGNSS <sup>2</sup> SupportedGNSS <sup>2</sup> Supported with internal antenna (external antenna port available)Control Signals2 x input + 2 x outputIgnition SenseSupportedStandardGNSS <sup>2</sup> SupportedStandardGNSS <sup>2</sup> SupportedStandardGNSS <sup>2</sup> GSM/3G/3GStandardGPRS/GSM/3G/3GNumber of slot1 x Standard SIM size card slot, ID-000StandardGPRS/GSM/3G/4GProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHZProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHZProtected32 GB (25 GB available for user)RAM1 GBTamper Protected32 CB (for sensitive data storage with API MemoryFramper Protected32 CB (for sensitive data storage with API MemoryCDD Display4.3 Inch Capacitive Type Touch TFT ScreenLCD Display4.3 Inch Capacitive Type Touch TFT ScreenAudio Speaker30 (Around 80 dB in 1 m distance)Processor30 (Around 80 dB in 1 m distance)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYe		Yes	<b>Physical Characteristics</b>	
Serial PortRS-232 x 1, RS-485 x 1Wi-Fi2.4 GHz, IEEE 802.11 b/g/nBluetooth® 5.1 Dual ModeCellulariGPR5/GSM/3G/4GGPS/Giomas/Beidou/Galileo,GNS52GPS/Giomas/Beidou/Galileo,GNS52Supported with internal antenna(external antenna port available)EthernetBuilt-in 10/100/1000 EthernetControl Signals2 x input + 2 x outputIgnition SenesSupportedStandardSupportedStandardGPRS/GSM/3G/4GStandardGPRS/GSM/3G/4GProcessor4 x ISO 7816 Standard SAM size card slot, ID-000StandardGPRS/GSM/3G/4GProcessorArm® Cortex®-A9 Quad-Core ProcessorProcessorArm® Cortex®-A9 Quad-Core ProcessorProcessorArm® Cortex®-A9 Quad-Core ProcessorProcessorArm® Cortex®-A9 Quad-Core ProcessorRAM1 GBTamper Protected32 CB (25 GB available for user)RAM1 GBTamper Protected32 KB (for sensitive data storage with API MemoryLCD Display4.3 Inch Capacitive Type Touch TFT ScreenLCD DisplayYes (Support MicroSD Card up to 128 GB)Memory YesYes (Support MicroSD Card up to 128 GB)Memory YesYes (Support MicroSD Card up to 128 GB) </td <td>Connectivity</td> <td></td> <td>Dimension</td> <td>245 x 135 x 91 mm [Main Body]</td>	Connectivity		Dimension	245 x 135 x 91 mm [Main Body]
Wi-Fi 2.4 GHz, IEEE 802.11 b/g/n   Bluetooth Bluetooth   Cellulari GFRS/GSM3G/4G   GPS/Glonass/Beidou/Galileo, GSS   Supported with internal antenna Gevernal antenna port available)   Ethernet Built-in 10/100/1000 Ethernet   Control Signals 2 x input + 2 x output   CAN Bus Supported   Standard GPS/GSM3G/4G   Yecessor Tamper Switch (Internal anti-intrusion detection)   Key Management Souport (Linerral antenna)   (Supported Standard   Standard GPRS/GSM3G/4G   Processor Arm® Cortex*-A9 Quad-Core Processor 1.0 GHz   Processor Arm® Cortex*-A9 Quad-Core Processor 1.0 GHz   Processor Arm® Cortex*-A9 Quad-Core Processor 1.0 GHz   Protected 32 GB (25 GB available for user)   RAM 1 GB   Tamper Protected 32 CB (25 GB available for user)   RAM 1 GB   Tamper Protected 32 CB (25 GB available for user)   RAM 1 GB   Tamper Protected 32 CB (25 GB available for user)   RAM 1 GB   Tamper Protected 32 CB (25 GB available for user)   RAM 1 GB   Tamper Protected 32 CB (25 GB available for user)	USB Host	2.0 High Speed	(H x W x T)	245 x 135 x 159 mm [With Back Mount]
Wi-Fi   2.4 GHz, IEEE 807.11 h/g/n     Bluetooth   Bluetooth     Cellulari   GPRS/GSM/3G/4G     GPS/GIOnass/Beidou/Gallieo,   GPS/GIOnass/Beidou/Gallieo,     GNS25   Supported with internal antenna     (external antenna port available)   External Power Adapter (9 - 36 V)     Ethernet   Built-in 10/100/1000 Ethernet     Control Signals   2 x input + 2 x output     GRS/GSM/3G/AG   Supported     CA RBus   Supported     Supported   4 x ISO 7816 Standard SAM size card slot, ID-000     Standard   GPRS/GSM/3G/4G     Processor   Arm® Cortex®-A9 Quad-Core Processor 1.0 GHz     Processor   Arm® Cortex®-A9 Quad-Core Processor 1.0 GHz     RAM   1 GB     Tamper Protected   32 GB (25 GB available for user)     RAM   1 GB     Tamper Protected   32 KB (for sensitive data storage with API provided)     Memory   4.3 Inch Capacitive Type Touch TFT Screen     Audio Speaker   3W (Around 80 dB in 1 m distance)     Front: Blue, Orange, Green, Red Back: Green,	Serial Port	RS-232 x 1, RS-485 x 1	Woight	1.01 kg [Main Body]
Cellular1GPRS/GSM/3G/4G GPS/GIonass/Beidou/Gallieo, GPS/GIonass/Beidou/Gallieo, GPS/GIonass/Beidou/Gallieo, Supported with internal antenna (external antenna port available)Pole Support31, 32, 35 mm (Support Vertical or Horizontal Pole)EthernetBuilt-in 10/100/1000 EthernetPowerSuperCad With Supported WISP Yes (5 seconds)SuperCad With SuperCad UPS Yes (5 seconds)CAN BusSupportedSupported-20 - 60°CSAM Card Interface4 x ISO 7816 Standard SAM size card slot (Support Class A, B and C [SV, 3V, 1.8V] card), ID-000-30 - 80°CSIM Card Interface4 x ISO 7816 Standard SAM size card slot, ID-000Humidity90% (Non-condensing)SIM Card Interface1 x Standard SIM size card slot, ID-000MIBF500,000 HoursStandardGPRS/GSM/3G/4GSecurityTamper Switch (Internal anti-intrusion detection and protection)ProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzSecurityFixed Key, MK/SK, DUKPTProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzFixed Key, MK/SK, DUKPTRAM1 GB32 GB (25 GB available for user) provided)Firmware UpgradeSupportedBuilt-in Peripherals LCD Display32 KB (for sensitive data storage with API provided)Certifications and CompliancesCertifications and CompliancesMemoryBuilt-in Peripherals LCD Display33 Ich Capacitive Type Touch TFT ScreenScienen, Red Back: Green, Red Back: Green, Red Back: Green, RedToolsMemory Card SlotYes (Support MicroSD Card up to 128 GB)Tools<	Wi-Fi	2.4 GHz, IEEE 802.11 b/g/n	weight	1.81 kg [With Back Mount]
GPS/Glonass/Beidou/Galileo, Supported with internal antenna (external antenna port available)   Power     Ethernet   Built-in 10/100/1000 Ethernet   Power Source   External Power Adapter (9 - 36 V)     Control Signals   2 x input + 2 x output   Supported   Yes (5 seconds)     Ignition Sense   Supported   Supported   Standard   Operating (Support Class A, B and C [SV, 3V, 1.8V] card), ID-000   Standard   GPS/GSM/3G/4G     SiM Card Interface   Arm® Cortex®-A9 Quad-Core Processor 1.0 GHz   Tamper Switch (Internal anti-intrusion detection and protection)     Standard   GPS/GSM/3G/4G   Supported   Supported (With independent backup battery)     Operating System Operating System   Linux   Fixed Key, MK/SK, DUKPT     Memory   Firmware Upgrade   Supported (With independent backup battery)     Firmware Upgrade   Supported (Contactless), PCI PTS POI v5.1 with SRED, EMV* Levels 1 (Contactless), MasterCard* Contactless, Visa payWave*, CE, FCC, REACH, RoHS, IP65, IK08 (Impact protection), MiL-STD-810G (Shock and vibration)     LED Indicators   Audio Speaker   3W (Around 80 dB in 1 m distance) Front: Blue, Orange, Green, Red Back: Green, Red Back: Green, Red Back: Green, Red   Tools     Memory Card Slot   Yes (Support MicroSD Card up to 128 GB)   Evaluation Kit (USD 1,200)     Memory Card Slot   Yes (	Bluetooth	Bluetooth <sup>®</sup> 5.1 Dual Mode	Colour	Grey and Black
GPS/Gionass/Beidou/Galleo, GNS3PowerGNS3Supported with internal antenna (external antenna port available)EthernetBuilt-in 10/100/1000 EthernetControl Signals2 x input + 2 x outputIgnition SenseSupportedSAM Card InterfaceSupportedSAM Card Interface4 x ISO 7816 Standard SAM size card slot (Support Class A, B and C [5V, 3V, 1.8V] card), ID-000SIM Card Interface4 x ISO 7816 Standard SIM size card slot, ID-000SIM Card Interface4 x ISO 7816 Standard SIM size card slot, ID-000StandardGPRS/GSM/3G/4GProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzProtestorI unxMemoryFlashS2 GB (25 GB available for user) movided)RAM1 GBTamper Protected Built-in Peripherals32 KB (for sensitive data storage with API provided)LED Indicators4.3 Inch Capacitive Type Touch TFT ScreenLED Indicators4.3 Inch Capacitive Type Touch TFT ScreenLED IndicatorsFront: Blue, Orange, Green, Red Back: Green, Red Back: Green, RedMemory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memo	Cellular <sup>1</sup>	GPRS/GSM/3G/4G	Pole Support	31, 32, 35 mm (Support Vertical or
Built-in PeripheralsPower SourceExternal Power Adapter (9 - 36 V)Control Signals2 x input + 2 x outputSupertedControl Signals2 x input + 2 x outputSupertedCAN BusSupportedOperatingCAN BusSupported-20 - 60°CStandard4 x ISO 7816 Standard SAM size card slotStorage TemperatureStandard4 x ISO 7816 Standard SAM size card slotHumidity9000Standard(Support Class A, B and C [5V, 3V, 1.8V] card), ID-000-30 - 80°CSIM Card Interface-30 - 80°CHumidity9000StandardGPRS/GSM/3G/4GProcessorArm® Cortex®-A9 Quad-Core ProcessorTamper Switch (Internal anti-intrusion detection and protection)0perating SystemContactless,Supported0perating SystemUinuxSupportedSupported0perating SystemLinuxFirmware UpgradeSupported0perating System32 GB (25 GB available for user)Firmware UpgradeSupportedRAM1 GB32 KB (for sensitive data storage with API provided)POC IPTS POI V5.1 with SRED, EMV* Levels 1 (Contactless), PBOC Level 1 (Contactless), PBOC Level 1 (Contactless), MasterCard® Contactless, Visa paWave®, CE, F.CC, RACH, RoHS, IP65, IK08 (Impact protection), MilL-STD-810G (Shock and vibration)LED IndicatorsToolsEvaluation Kit (USD 1,200)MemoryYes (Support MicroSD Card up to 128 GB)ToolsEvaluation Kit (USD 1,200)MemoryYes (Support MicroSD Card up to 128 GB)ToolsEvaluation	GNSS <sup>2</sup>	GPS/Glonass/Beidou/Galileo,	Pole Support	Horizontal Pole)
Ethernet     Built-in 10/100/1000 Ethernet       Control Signals     2 x input + 2 x output       Ignition Sense     Supported       CAN Bus     Supported       SAM Card Interface     -20 - 60°C       Standard     4 x ISO 7816 Standard SAM size card slot (Support Class A, B and C [5V, 3V, 1.8V] card), ID-000     -30 - 80°C       SIM Card Interface     -30 - 80°C       Number of slot     1 x Standard SIM size card slot, ID-000       Standard     GPRS/GSM/3G/4G       Processor     Arm* Cortex*-A9 Quad-Core Processor 1.0 GHz       Operating System     Linux       Memory     Arm* Cortex*-A9 Quad-Core Processor 1.0 GHz       Firsh 32 GB (25 GB available for user)     Firmware Upgrade       RAM     1 GB       Tamper Protected     32 KB (for sensitive data storage with API provided)       Memory     4.3 Inch Capacitive Type Touch TFT Screen       LCD Display     4.3 Inch Capacitive Type Touch TFT Screen       LED Indicators     Front: Blue, Orange, Green, Red Back: Green, Red       Memory Card Slot     Yes (Ssupport MicroSD Card up to 128 GB)       Memory Card Slot     Yes (Ssupport MicroSD Card up to 128 GB)		Supported with internal antenna		
Control Signals2 x input + 2 x outputIgnition SenseSupportedCAN BusSupportedSAM Card Interface4 x ISO 7816 Standard SAM size card slot (Support Class A, B and C [SV, 3V, 1.8V] card), ID-000SIM Card Interface4 x ISO 7816 Standard SIM size card slot, (Support Class A, B and C [SV, 3V, 1.8V] card), ID-000SIM Card Interface4 x ISO 7816 Standard SIM size card slot, ID-000Number of slot1 x Standard SIM size card slot, ID-000StandardGPRS/GSM/3G/4GProcessorArm® Cortex*-A9 Quad-Core Processor 1.0 GHzOperating SystemLinuxOperating SystemLinuxMemoryFlash32 GB (25 GB available for user) RAM32 KB (for sensitive data storage with API provided)Audio Speaker3W (Around 80 dB in 1 m distance)LED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedMemory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)		(external antenna port available)		
Operating Image: Example is a supportedOperating Temperature20 - 60°CSAM Card Interface4x ISO 7816 Standard SAM size card slot (Support Class A, B and C [5V, 3V, 1.8V] card), ID-000Storage Temperature30 - 80°CSIM Card Interface4x ISO 7816 Standard SAM size card slot (Support Class A, B and C [5V, 3V, 1.8V] card), ID-000Storage Temperature30 - 80°CSIM Card InterfaceTamper Switch (Internal anti-intrusion detection and protection)MTBFNumber of slot1 x Standard SIM size card slot, ID-000SecurityTamper Switch (Internal anti-intrusion detection and protection)StandardGPRS/GSM/3G/4GFixed Key, MK/SK, DUKPTProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHzSupportedOperating SystemLinuxSupportedOperating SystemLinuxReal-time Clock battery)Memory32 GB (25 GB available for user)Firmware UpgradeRAM1 GBSupportedCertifications and CompliancesBuilt-in Peripherals33 (An Capacitive Type Touch TFT ScreenCertifications and CompliancesLED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedToolsLED IndicatorsYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)Memory Card SlotYes (Support MicroSD Card up to 128 GB)	Ethernet	Built-in 10/100/1000 Ethernet		Yes (5 seconds)
Temperature20 - 60 °CCAN BusSupportedSAM Card Interface4 × ISO 7816 Standard SAM size card slot (Support Class A, B and C [5V, 3V, 1.8V] card), ID-000Storage Temperature-30 - 80 °CSIM Card Interface4 × ISO 7816 Standard SAM size card slot, (Support Class A, B and C [5V, 3V, 1.8V] card), ID-000MTBE500,000 HoursSIM Card Interface1 × Standard SIM size card slot, ID-000MTBE500,000 HoursStandardGPRS/GSM/3G/4GTamper Switch (Internal anti-intrusion detection and protection)ProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzFixed Key, MK/SK, DUKPTOperating SystemLinuxSupportedSupportedOperating SystemLinuxSupportedSupportedMemoryFlash32 GB (25 GB available for user) provided)Firmware UpgradeSupportedMemoryGB (25 GB available for user) provided)PCI PTS POI v5.1 with SRED, EMV® Levels 1 (Contactless), MasterCard® Contactless), PBOC Level 1 (Contactless), MasterCard® Contactless, Visa payWave®, CE, FCC, REACH, RoHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)LED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedToolsEvaluation Kit (USD 1,200)Memory Card SlotYes (Support MicroSD Card up to 128 GB)ToolsEvaluation Kit (USD 1,200)Memory Card SlotYesSupport MicroSD Card up to 128 GB)Default ValidatorACR350-A4	Control Signals	2 x input + 2 x output		
CAN BusSupportedTemperatureSAM Card Interface4 x ISO 7816 Standard SAM size card slot(Support Class A, B and C [5V, 3V, 1.8V] card), ID-000StandardSIM Card InterfaceHumidityNumber of slot1 x Standard SIM size card slot, ID-000StandardGPRS/GSM/3G/4GProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHzOperating SystemLinuxOperating SystemLinuxMemoryFlash32 GB (25 GB available for user) RAMA.3 Inch Capacitive Type Touch TFT ScreenMemory4.3 Inch Capacitive Type Touch TFT ScreenLCD Display4.3 Inch Capacitive Type Touch TFT ScreenLCD DisplayFront: Blue, Orange, Green, Red Back: Green, RedLED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedMemory Card SlotYes (Support MicroSD Card up to 128 GB)Temperature SensorYes	Ignition Sense	Supported		-20 - 60°C
Humidity90% (Non-condensing)Standard4 x ISO 7816 Standard SAM size card slot (Support Class A, B and C [5V, 3V, 1.8V] card), ID-000MTBF500,000 HoursSIM Card InterfaceStandard SIM size card slot, ID-000StandardGPRS/GSM/3G/4GTamper Switch (Internal anti-intrusion detection and protection)Number of slot1 x Standard SIM size card slot, ID-000SecurityTamper Switch (Internal anti-intrusion detection and protection)ProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzKey Management SupportedFixed Key, MK/SK, DUKPTOperating SystemLinuxReal-time ClockSupportedSupportedMemoryI GBSig 25 GB available for user)Firmware UpgradeSupportedEMV® Levels 1 (Contactless), MasterCard® Contactless), MasterCard® Contactless, Visa payWave®, CE, FCC, REACH, RoHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)LED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedToolsEvaluation Kit (USD 1,200)Memory Card SlotYes (Support Card up to 128 GB)ToolsEvaluation Kit (USD 1,200)Memory Card SlotYes (Support Card up to 128 GB)ToolsEvaluation Kit (USD 1,200)	CAN Bus	Supported		
StandardStandard(Support Class A, B and C [5V, 3V, 1.8V] card), ID-000SIM Card InterfaceNumber of slot1 x Standard SIM size card slot, ID-000StandardGPRS/GSM/3G/4GProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHzFixed Key, MK/SK, DUKPTProcessorArm* Cortex*-A9 Quad-Core Processor 1.0 GHzSupportedOperating System Operating System Operating SystemLinuxReal-time Clock SupportedSupportedMemoryFirmware Upgrade provided)SupportedCertifications and CompliancesMemoryAt GBCertifications and CompliancesMasterCard* Contactless), Visa payWave*, CE, FCC, REACH, RoHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)LED IndicatorsFront: Blue, Orange, Green, Red Back: Green, Red Back: Green, RedToolsMemory Card SlotYesToolsDefault ValidatorACR350-A4	SAM Card Interface			
Other FeaturesSim Card InterfaceCard), ID-000Sim Card InterfaceI x Standard SIM size card slot, ID-000StandardGPRS/GSM/3G/4GProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzSupportedProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzOperating SystemLinuxOperating SystemLinuxRAM1 GBTamper Protected Memory32 KB (for sensitive data storage with API provided)LCD Display4.3 Inch Capacitive Type Touch TFT ScreenLCD Display4.3 Inch Capacitive Type Touch TFT ScreenLED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedMemory Card SlotYes (Support MicroSD Card up to 128 GB)Temperature SensorYes (Support MicroSD Card up to 128 GB)Temperature SensorYes Support MicroSD Card up to 128 GB)		4 x ISO 7816 Standard SAM size card slot		
SIM Card Interface   Security   Tamper Switch (Internal anti-intrusion detection and protection)     Number of slot   1 x Standard SIM size card slot, ID-000   Security   Tamper Switch (Internal anti-intrusion detection and protection)     Processor   Arm® Cortex®-A9 Quad-Core Processor   Supported   Fixed Key, MK/SK, DUKPT     Processor   Arm® Cortex®-A9 Quad-Core Processor   Real-time Clock   Supported     Operating System   Linux   Real-time Clock   Supported     Memory   Flash   32 GB (25 GB available for user)   Fixed Key, MK/SK, DUKPT     RAM   1 GB   Supported   Supported     Tamper Protected   32 KB (for sensitive data storage with API provided)   PCI PTS POI v5.1 with SRED, EMV® Levels 1 (Contactless), PBOC Level 1 (Contactless), PBOC Level 1 (Contactless), MasterCard® Contactless, Visa payWave®, CE, FCC, REACH, RoHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)     Audio Speaker   3W (Around 80 dB in 1 m distance)   Front: Blue, Orange, Green, Red Back: Green, Red Security Yes   Tools     Memory Card Slot   Yes   Yes	Standard			500,000 Hours
Securitydetection and protection)Number of slot1 x Standard SIM size card slot, ID-000Securitydetection and protection)StandardGPRS/GSM/3G/4GKey Management SupportedProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzSupportedSupportedSupportedOperating SystemLinuxReal-time ClockSupportedSupportedOperating SystemLinuxFirmware UpgradeSupportedMemoryFlash32 GB (25 GB available for user)Firmware UpgradeSupportedRAM1 GBPCI PTS POL v5.1 with SRED, EMV® Levels 1 (Contactless), PBOC Level 1 (Contactless), PBOC Level 1 (Contactless, Visa payWave®, CE, FCC, REACH, RoHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)Built-in PeripheralsToolsToolsLED IndicatorsFront: Blue, Orange, Green, Red Back: Green, Red Back: Green, RedToolsEvaluation Kit (USD 1,200)Memory Card SlotYesVesDefault ValidatorACR350-A4		card), ID-000	Other Features	Taura a Cultab (latana di anti internica
StandardGPRS/GSM/3G/4GProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzSupportedOperating SystemInuxReal-time ClockSupported (With independent backup battery)Operating SystemLinuxFirmware UpgradeSupportedMemoryFlash32 GB (25 GB available for user)Firmware UpgradeSupportedRAM1 GBEMV® Levels 1 (Contactless), PBOC Level			Security	
ProcessorSupportedFixed Key, MK/SK, DUKPTProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzReal-time ClockSupported (With independent backup battery)Operating SystemLinuxReal-time ClockSupportedOperating SystemLinuxFirmware UpgradeSupportedMemory1 GBPCI PTS POI v5.1 with SRED, EMV® Levels 1 (Contactless), PBOC Level 1 (Contactless), MasterCard® Contactless, Visa payWave®, Certifications and CompliancesPCI PTS POI v5.1 with SRED, EMV® Levels 1 (Contactless), MasterCard® Contactless, Visa payWave®, CE, FCC, RACH, RoHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)LED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedToolsMemory Card SlotYes (Support MicroSD Card up to 128 GB)ToolsTemperature SensorYesAcR350-A4				detection and protection)
ProcessorArm® Cortex®-A9 Quad-Core Processor 1.0 GHzSupported (With independent backup battery)Operating SystemLinuxReal-time ClockSupported (With independent backup battery)Operating SystemLinuxReal-time ClockSupported (With independent backup battery)MemoryInuxPirmware UpgradeSupportedMemory32 GB (25 GB available for user)Pirmware UpgradeSupportedRAM1 GBPirmware UpgradeSupported (Contactless),Tamper Protected Memory32 KB (for sensitive data storage with API provided)Certifications and CompliancesMasterCard® Contactless,Built-in Peripherals4.3 Inch Capacitive Type Touch TFT Screen4.3 Inch Capacitive Type Touch TFT ScreenKo8 (Impact protection), MIL-STD-810G (Shock and vibration)LED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedToolsEvaluation Kit (USD 1,200)Memory Card SlotYesYesDefault ValidatorACR350-A4		GPRS/GSM/3G/4G		Fixed Key, MK/SK, DUKPT
Processor1.0 GHzReal-time Clockbattery)Operating SystemLinuxFirmware UpgradeSupportedMemory1 GB2 GB (25 GB available for user)Firmware UpgradePCI PTS POI v5.1 with SRED,RAM1 GBS2 KB (for sensitive data storage with API provided)POI v5.1 with SRED,Built-in Peripherals32 KB (for sensitive data storage with API provided)Certifications and CompliancesMasterCard® Contactless, Visa payWave®, CE, FCC, REACH, ROHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)Audio Speaker3W (Around 80 dB in 1 m distance)ToolsEvaluation Kit (USD 1,200)Memory Card SlotYes (Support MicroSD Card up to 128 GB) Temperature SensorToolsEvaluation Kit (USD 1,200)	Processor		Supporteu	Supported (With independent backup
Operating SystemOperating SystemLinuxMemoryFlash32 GB (25 GB available for user)Certifications and CompliancesRAM1 GBTamper Protected32 KB (for sensitive data storage with API provided)PCI PTS POI v5.1 with SRED, EMV® Levels 1 (Contactless), PBOC Level 1 (Contactless), MasterCard® Contactless, Visa payWave®, CE, FCC, REACH, RoHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)LED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedToolsMemory Card SlotYes (Support MicroSD Card up to 128 GB) Temperature SensorFes	Processor		Real-time Clock	
Operating SystemLinuxCertifications and CompliancesMemoryFlash32 GB (25 GB available for user)PCI PTS POI v5.1 with SRED,RAM1 GBEMV® Levels 1 (Contactless),Tamper Protected32 KB (for sensitive data storage with API provided)PBOC Level 1 (Contactless),Built-in Peripherals4.3 Inch Capacitive Type Touch TFT ScreenCertifications and CompliancesLCD Display4.3 Inch Capacitive Type Touch TFT ScreenIt distance)Audio Speaker3W (Around 80 dB in 1 m distance)Front: Blue, Orange, Green, Red Back: Green, RedToolsMemory Card SlotYes (Support MicroSD Card up to 128 GB)Temperature SensorYes	Operating System	1.0 GH2	Firmware Ungrade	
MemoryPCI PTS POI v5.1 with SRED,RAM1 GBTamper Protected32 KB (for sensitive data storage with API provided)Built-in Peripherals4.3 Inch Capacitive Type Touch TFT ScreenLCD Display4.3 Inch Capacitive Type Touch TFT ScreenAudio Speaker3W (Around 80 dB in 1 m distance)Front: Blue, Orange, Green, Red Back: Green, RedMemory Card SlotYes (Support MicroSD Card up to 128 GB)Temperature SensorYes		Linux		
Flash32 GB (25 GB available for user)RAM1 GBTamper Protected32 KB (for sensitive data storage with API provided)Built-in PeripheralsCertifications and CompliancesLCD Display4.3 Inch Capacitive Type Touch TFT ScreenAudio Speaker3W (Around 80 dB in 1 m distance)Front: Blue, Orange, Green, RedMemory Card SlotYes (Support MicroSD Card up to 128 GB)Temperature SensorYes		LINUX	Certifications and Com	
RAM1 GBTamper Protected32 KB (for sensitive data storage with API provided)PBOC Level 1 (Contactless), MasterCard® Contactless, Visa payWave®, CE, FCC, REACH, RoHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)Built-in Peripherals4.3 Inch Capacitive Type Touch TFT ScreenLCD Display4.3 Inch Capacitive Type Touch TFT ScreenAudio Speaker3W (Around 80 dB in 1 m distance)Front: Blue, Orange, Green, Red Back: Green, RedFront: Blue, Orange, Green, Red Back: Green, RedMemory Card SlotYes (Support MicroSD Card up to 128 GB) Temperature Sensor		32 GB (25 GB available for user)		
Tamper Protected Memory32 KB (for sensitive data storage with API provided)MasterCard® Contactless, Visa payWave®, Certifications and CompliancesBuilt-in Peripherals4.3 Inch Capacitive Type Touch TFT ScreenCertifications and CompliancesMasterCard® Contactless, Visa payWave®, CE, FCC, REACH, RoHS, IP65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)Audio Speaker3W (Around 80 dB in 1 m distance)ToolsToolsLED IndicatorsFront: Blue, Orange, Green, Red Back: Green, RedToolsEvaluation Kit (USD 1,200)Memory Card SlotYesYesDefault ValidatorACR350-A4				
Memory   provided)   Visa payWave®,     Built-in Peripherals   Compliances   Visa payWave®,     LCD Display   4.3 Inch Capacitive Type Touch TFT   Front: Blue, Orange, Green, Red     Audio Speaker   3W (Around 80 dB in 1 m distance)   MIL-STD-810G (Shock and vibration)     LED Indicators   Front: Blue, Orange, Green, Red   Tools     Memory Card Slot   Yes (Support MicroSD Card up to 128 GB)   Default Validator		-		
Built-in Peripherals   Compliances   CE, FCC, REACH, RoHS, IP65, IF65, IK08 (Impact protection), MIL-STD-810G (Shock and vibration)     Audio Speaker   3W (Around 80 dB in 1 m distance)   IK08 (Impact protection), MIL-STD-810G (Shock and vibration)     LED Indicators   Front: Blue, Orange, Green, Red Back: Green, Red   Tools   Evaluation Kit (USD 1,200)     Memory Card Slot   Yes   Yes   Default Validator   ACR350-A4				
LCD Display   4.3 Inch Capacitive Type Touch TFT   IP65,     Screen   IK08 (Impact protection),   IK08 (Impact protection),     Audio Speaker   3W (Around 80 dB in 1 m distance)   MIL-STD-810G (Shock and vibration)     LED Indicators   Front: Blue, Orange, Green, Red   Tools     Memory Card Slot   Yes (Support MicroSD Card up to 128 GB)   Model/Part Number     Default Validator   ACR350-A4		provided)	Compliances	
LCD Display   Screen   IK08 (Impact protection),     Audio Speaker   3W (Around 80 dB in 1 m distance)   MIL-STD-810G (Shock and vibration)     LED Indicators   Front: Blue, Orange, Green, Red   Tools     Memory Card Slot   Yes (Support MicroSD Card up to 128 GB)   Model/Part Number     Temperature Sensor   Yes   Default Validator		4 3 Inch Canacitive Type Touch TET		
Audio Speaker   3W (Around 80 dB in 1 m distance)   MIL-STD-810G (Shock and vibration)     LED Indicators   Front: Blue, Orange, Green, Red Back: Green, Red   Tools     Memory Card Slot   Yes (Support MicroSD Card up to 128 GB)   Model/Part Number     Temperature Sensor   Yes	LCD Display			IK08 (Impact protection),
LED Indicators     Front: Blue, Orange, Green, Red Back: Green, Red     Tools       Memory Card Slot     Yes (Support MicroSD Card up to 128 GB)     Model/Part Number       Temperature Sensor     Yes	Audio Speaker			
LED Indicators Back: Green, Red Tools Evaluation Kit (USD 1,200)   Memory Card Slot Yes (Support MicroSD Card up to 128 GB) Model/Part Number   Temperature Sensor Yes	· · · ·		Tools	
Memory Card Slot     Yes (Support MicroSD Card up to 128 GB)     Model/Part Number       Temperature Sensor     Yes     Default Validator     ACR350-A4	LED Indicators	-		Evaluation Kit (USD 1,200)
Temperature Sensor Yes Default Validator ACR350-A4	Memory Card Slot	· · · · · · · · · · · · · · · · · · ·		
Default Back Mount ACR330-STD	· · · · · ·			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	

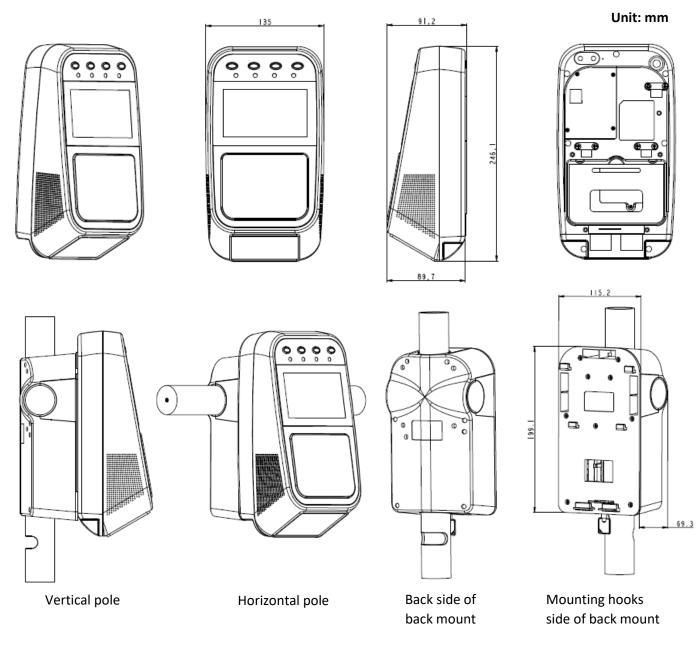


<sup>1</sup> Please refer to the above Supported Frequency Bands table for a more detailed frequency band support; <sup>2,3</sup> Can be optional



Advanced Card Systems Ltd.

### MECHNICAL SPECIFICATION



### 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. In 2010, 2014 and 2015, ACS was listed in Forbes Asia's "Best Under a Billion" list, 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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