Identification & Payment Technologies

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Advanced Card Systems Ltd.

Card & Reader Technologies

25 YEARS

Global Excellence in Smart Card & Reader Tecnologies

PRODUCT CATALOGUE

2020

CORPORATE PROFILE

Advanced Card Systems Ltd. (ACS, wholly owned subsidiary of HNA Technology Investments Holdings Limited, SEHK: 2086), founded in 1995, is Asia Pacific's top supplier and one of the world's top 3 suppliers of PC-linked smart card readers, as well as 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 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.

A leader in the smart card industry, ACS has the technology, expertise and global resources to facilitate an easier adoption of smart card applications in different industries across the globe.

Mission

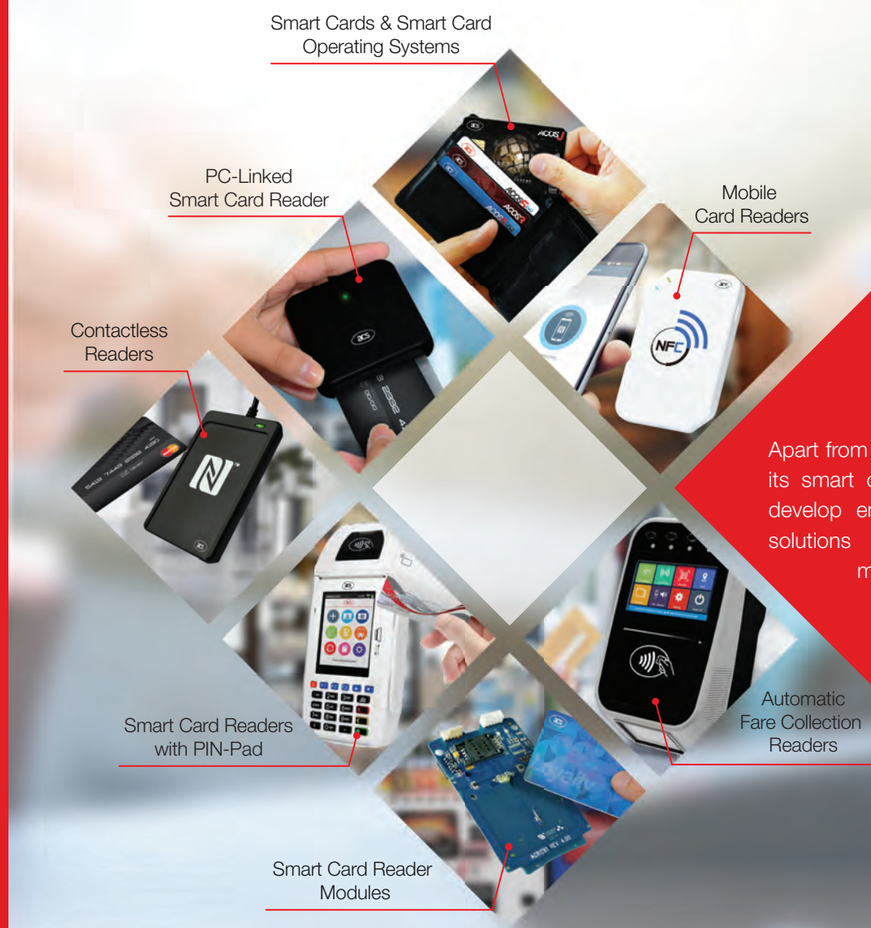
To strengthen its leading position as a provider of card and reader technology in the world.

Vision

Combine scientific spirit and Confucius thoughts to build a sustainable electronic and IT business that is green in order to achieve the dual purposes of business growth and environmental protection.

PRODUCTS

ACS develops and provides smart card operating systems (COS) and readers to facilitate the implementation of smart card-based systems for various applications and industries. ACS products are compliant with major industrial standards, ensuring safe and compatible operations. Products are divided into seven product families: Smart Cards & Smart Card Operating Systems, PC-Linked Smart Card Readers, Contactless Readers, Mobile Card Readers, Smart Card Readers with PIN-Pad, and Smart Card Reader Modules, and Automatic Fare Collection Readers. ACS also offers customization for some of these products, to meet specific needs of customers.



Apart from developing hardware, ACS applies its smart card technology and expertise to develop end-to-end and scalable payment solutions for public transportation and micro-payment operations.

Asia Pacific's No. 1 and Among The World's Top 3 Suppliers of PC-Linked Smart Card Readers

ACS has retained leadership in the global PC-linked reader market for more than 20 years, owing to the high performance, versatility and cost-competitiveness of our readers.

20+

International & Industry-Level Awards and Recognitions

Our extensive knowledge and ability to coordinate closely with clients have led to effective solutions that have been lauded by expert juries and organizations worldwide.

200M+

Global Users

Our technologies are making an impact in telecommunications, transportation, banking, identification, government, mobile commerce, and other fields.

100+

Countries Served

Our global distribution network and partnerships guarantee our ability to provide products, services, and support in a world-class manner.

100+

High-Quality Products Developed

Our products are certified and compliant to international performance and security standards.

50+

Cities Benefitting from our Contactless Payment Technologies

We collaborate with the public and private sector; and provide component technologies and complete systems globally for transportation and other applications.

30K+

Ticket Validators Deployed

Our technologies are reducing congestion, improving service delivery, and maximizing savings for cities all over the globe.

More than 50%

Workforce Comprised of R & D

We invest in innovation: Engineering personnel make up more than half of our workforce, and R&D makes up half of organizational resources.

Figures based on the 2018 Annual Report

SMART CARDS & SMART CARD OPERATING SYSTEMS

ACS develops and provides smart cards with a proprietary smart card operating system (ACOS). Often noted for their 'secure and elegant' architecture, ACOS cards uncover the powerful potential of smart cards, enabling a single card to support multiple applications, from physical/network access control to payment. ACOS cards meet the security requirements of these applications via multilevel secured access hierarchy.

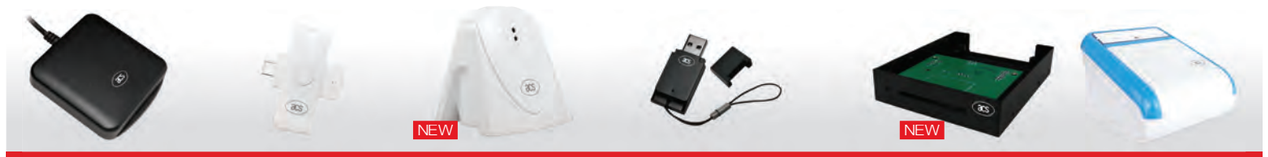
One of these cards, the ACOS5 Cryptographic Smart Card, is especially designed for RSA public-key cryptographic operations that are essential in smart card PKI, digital signature, etc.

		ACOS3	ACOS6	ACOS6-SAM	ACOS10	ACOS5-64	ACOS5-K1 (ACOS5-EVO)	ACOS5T2-B100 (CryptoMate Nano)	ACOS5T2-B1E1 (CryptoMate EVO)	ACOSJ	ACOSJ-V
Form Factor											
Card - Contact Only		●	●	●	●	●	●			●	●
Card - Contactless Only		●			●		●			●	●
Card - Combi (Contact and Contactless)		●			●		●			●	●
Token - Contact Card and USB Full Speed								●	●		
Communication Speed											
Contact Interface	9.6 - 223.2 kbps	●	●	●	●	●	up to 446.4 kbps	●	up to 446.4 kbps	●	●
Contactless Interface	106 - 848 kbps	●			●		up to 424 kbps			●	●
Memory (EEPROM Size)											
Contact Interface		32KB/ 72KB/ 256KB	64KB	64KB	32KB	64KB	192KB	64KB	192KB	95KB	60KB
Contactless Interface		8KB			8KB		193KB			95KB	60KB
Combi Interface		8KB			8KB		194KB			95KB	60KB
Protocol											
Contact Interface	T = 0	●	●	●	●	●	●	●	●	●	●
	T = 1						● (Default)		● (Default)	●	●
Contactless Interface	T = CL	●			●		●			●	●
Certifications / Compliance											
Contact Interface	ISO 7816 - 1/2/3	●	●	●	●	●	●	●	●	●	●
	ISO 7816 - 4		●	●	●	●	●	●	●	●	●
	ISO 7816 - 8/9					●	●	●	●		
Contactless Interface	ISO 14443 - 1/2/3/4	●			●		●			●	●
	ISO 14443 Type A						●			●	●
	ISO 14443 Type B									●	●
Common Criteria EAL5+		Chip Level Combi/Contactless			Chip Level Combi/Contactless	Chip Level	Chip Level	Chip Level	Chip Level	Chip Level	Chip Level
Global Platform 2.2.1										●	●
Java Card Classic 3.0.4										●	●
Visa VSDC											●
MasterCard M/Chip										*Upon Request*	
PBOC 3.0 Credit/Debit (China)										*Upon Request*	
PBOC 3.0 qPBOC (China)										*Upon Request*	
PBOC 2.0 e-Deposit/e-Purse (China)					●						
FIPS 140-2 (US)						●	(FIPS Compliant)	Module Level	(FIPS Compliant)		
File Systems											
Transparent/Binary File		●	●	●	●	●	●	●	●		
Linear Fixed Record		●	●	●	●	●	●	●	●		
Linear Variable Record			●	●	●	●	●	●	●		
Cyclic File			●	●	●	●	●	●	●		
Cryptographic Capabilities											
3DES		56/112-bits	56/112-bits	56/112/168-bits	56/112-bits	56/112/168-bits	56/112/168-bits	56/112/168-bits	56/112/168-bits	56/112/168-bits	56/112/168-bits
AES				128 bits		128/192/256-bits	128/192/256-bits	128/192/256-bits	128/192/256-bits	128/192/256-bits	128/192/256-bits
RSA						Up to 4096 bits	Up to 4096 bits	Up to 4096 bits	Up to 4096 bits	Up to 2048 bits	Up to 2048 bits
ECC							Up to 521 bits		Up to 521 bits	Up to 384 bits	Up to 384 bits
HASH						SHA1, SHA256	SHA1, SHA224, SHA256 SHA384, SHA512	SHA1, SHA256	SHA1, SHA224, SHA256 SHA384, SHA512	SHA1, SHA224, SHA256 SHA384, SHA512	SHA1, SHA224, SHA256 SHA384, SHA512
CMAC							●		●		
SCP02										●	●
Mutual Authentication		●	●	●	●	●	●	●	●	●	●
Secure Messaging		●	●	●	●	●	●	●	●	●	●
Random Number Generator		●	●	●	●	●	●	●	●	●	●
EEPROM Endurance											
100,000 Read/Write Cycles		Contact	●	●	Contact						
500,000 Read/Write Cycles		Combi/Contactless			Combi/Contactless	●	●	●	●	●	●
Data Retention											
10 Years		●	●	●	●						
30 years						●	●	●	●	●	●

Subject to change without prior notice

PC-LINKED SMART CARD READERS

ACS develops and provides high-quality and reliable PC-linked smart card readers, based on various industry standards such as PC/SC (Personal Computer/Smart Card) and EMV (Europay, MasterCard and Visa). ACS PC-linked readers are ideal for individual authentication in security applications such as e-government services, e-commerce, banking services, healthcare management, digital signature and internet lottery.



	ACR39U-U1 / ACR39U-UF	ACR39U-N1 / ACR39U-NF	ACR39U-H1	ACR39T-A1	ACR39F-A2	ACR33U-A1
Physical Characteristics						
Dimensions (mm)	72.2 x 69.0 x 14.5	58.0 x 20.0 x 13.7	71.5 x 80.0 x 80.0	49.5 x 21.5 x 9.0	125.0 x 101.5 x 25.5	103.5 x 85.0 x 59.9
Weight (g)	65.0	12.0	174.0	8.5	82.5	310.0
Host Interface						
USB (Full Speed)	Type A (ACR39U-U1) / Type C (ACR39U-UF)	Type A (ACR39U-N1) / Type C (ACR39U-NF)	Type A	Type A	Optional Detachable USB Cable	Type A
Serial (RS232)	*Upon Request*					
Contact Smart Card Interface						
ISO 7816 (Class A, B and C)	●	●	●	●	●	Class A only
MCU Cards, T=0 and T=1	●	●	●	●	●	●
Memory Cards	●	●	●	●	●	
Smart Card Read/Write Speed (kbps)	600	600	600	600	600	344
Card Form	Full-Sized	Full-Sized	Full-Sized	SIM-Sized / Micro SIM-Sized *(Upon Request)*	Full-Sized	Full-Sized
Card Slot	1	1	1	1	1	2
Built-In Peripherals						
SAM Slot						3
LED	1	1	2	1	2	3
Buzzer						●
Certifications/Compliance						
PC/SC	●	●	●	●	●	●
CCID	●	●	●	●	●	●
WHQL	●	●	●	●	●	●
EMV Level 1 (Contact)	●	●	●			
J-LIS (Japan)	●	*Upon Request*	●		*Upon Request*	
CE, FCC	●	●	●	●	●	●
VCCI (Japan)	●	*Upon Request*	●	●	*Upon Request*	●
KC (Korea)	●	*Upon Request*			*Upon Request*	
BIS (India)	ACR39U-U1					
RoHS	●	●	●	●	●	●
REACH	●	●	●	●	●	
MTBF (hours)	500,000	500,000	500,000	500,000		500,000
Supported OS Platforms						
Windows	●	●	●	●	●	●
Mac OS X	●	●	●	●	●	●
Linux	●	●	●	●	●	●
Android	●	●	●	●	●	●
Solaris	●	●	●	●	●	

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CONTACTLESS READERS

ACS offers contactless smart card readers/writers to address the growing demand for contactless applications. Hinged upon the 13.56 MHz RFID technology, these readers are developed to support various contactless protocols, such as ISO 14443 Type A and B, MiFare®, FeliCa and NFC, to facilitate their use in a wide range of applications.

	ACR122U	ACR122T	ACR1251T	ACR1251U / ACR1252U	ACR1281U-C1 / ACR1281S-C1	ACR1281U-C2	ACR1222L / ACR1222LS	ACR123U / ACR123S
Physical Characteristics								
Dimensions (mm)	98.0 x 65.0 x 12.8	75.0 x 30.0 x 12.7	75.0 x 30.0 x 12.7	98.0 x 65.0 x 12.8	120.5 x 72.0 x 20.4	120.5 x 72.0 x 20.4	158.0 x 95.0 x 95.0 w/ Base Stand)	177.0 x 100.0 x 94.5 w/ Base Stand)
Weight (g)	70. 0	15. 0	15. 8	81. 0	140. 0 (ACR1281U-C1) 150.0 (ACR1281S-C1)	140. 0	415. 0 (w/ Base Stand)	506. 0 (w/ Base Stand)
Processor								
Processor	8-bit	8-bit	8-bit	8-bit (ACR1251) 32-bit (ACR1252)	8-bit	8-bit	8-bit	32-bit
Embedded Platform								FreeRTOS
Operation Modes								
PC-Linked	●	●	●	●	●	●	●	●
Power								
USB Powered	●	●	●	●	●	●	●	●
Host Interface								
USB (Full Speed)	Type A	Type A	Type A	Type A	Type A (ACR1281U-C1)	Type A (HID Keyboard Class)	Type A (ACR1222L)	Type A (ACR123U)
Serial (RS232)					DB9 (ACR1281S-C1)		DB9 (ACR1222LS)	RJ45 (ACR123S)
Contactless Smart Card Interface								
ISO 14443 Type A and B	●	●	●	●	●	●	●	●
ISO/IEC 18092 (NFC)	●	●	●	●			●	
Mifare	●	●	●	●	●	●	●	●
FeliCa	●	●	●	●			●	
Smart Card Read/Write Speed (kbps)	106, 212, 424	106, 212, 424	106, 212, 424	106, 212, 424	106, 212, 424, 848	106, 212, 424, 848	106, 212, 424	106, 212, 424, 848
Reading Distance (mm)	50	30	30	50	50	50	50	50
FeliCa Mobile Device			●	●				
Extended APDU Support			●	●	●			
Secure Mifare Key Storage				●	●			●
NFC Reader/Writer Mode	●	●	●	●			●	
NFC Peer-to-Peer (P2P) Mode			●	●				
NFC Card Emulation Mode				ACR1252U				
Contact Smart Card Interface								
ISO 7816 (Class A, B and C)					●			
MCU Cards, T=0 and T=1					●			
Smart Card Read/Write Speed (kbps)					420			
Upgradeability								
Firmware Upgradeable			●	●	●	●	●	●
Built-In Peripherals								
LCD Resolution							128 x 32	128 x 64
Graphical LCD for Multiple Languages							16 alphanumeric characters x 2 lines	16 alphanumeric characters x 8 lines
LED	1 bi-colour	1 bi-colour	1 bi-colour	1 bi-colour	2	2	4	4
Buzzer	●			●	●	●	●	●
SAM Slot				1	1		3	3
Tamper Switch								●
Real Time Clock								●
Certifications/Compliance								
PC/SC	●	●	●	●	ACR1281U-C1		ACR1222L	ACR123U
CCID	●	●	●	●	ACR1281U-C1		ACR1222L	ACR123U
WHQL	●	●	●	●	ACR1281U-C1		ACR1222L	ACR123U
EMV Level 1 & 2 (Contactless)								*Upon Request*
Mastercard® Contactless								*Upon Request*
Visa payWave®								*Upon Request*
American Express® ExpressPay								*Upon Request*
NFC Forum Certification Mark				ACR1252U				
CE, FCC	●	●	●	●	●	●	●	●
J-LIS (Japan)				●				
VCCI (Japan)	●	●	●	●			●	●
MIC (Japan)			●	●				
KC (Korea)	●		●	●			ACR1222L	●
BIS (India)	●			ACR1252U				
NTC (The Philippines)	●			ACR1252U	ACR1281U-C1		ACR1222L	
RoHS	●	●	●	●	●		●	●
REACH	●		●	●	ACR1281U-C1		ACR1222LS	●
Supported OS Platforms								
Windows	●	●	●	●	●	●	●	●
Mac OS X	●	●	●	●	ACR1281U-C1	●	ACR1222L	ACR123U
Linux	●	●	●	●	●	●	●	●
Android	●	●	●	●	ACR1281U-C1	●	ACR1222L	ACR123U
Solaris	●	●	●	●	ACR1281U-C1		ACR1222L	ACR123U

Subject to change without prior notice

MOBILE SMART CARD READERS

ACS offers a line of mobile card readers to work in conjunction with most tablets and smartphones in the market. Not only do these mobile card readers entail less installation costs, they also enable users to perform card transactions at any location, without being bogged down by PCs or other bulky equipment. With a mobile card reader, virtually anywhere is a point of sale.

	ACR3201-A1	ACR35-A1	ACR39T-A3	ACR39U-ND	ACR3901U-S1	ACR3901T-W1	ACR1255U-J1	AMR220
Physical Characteristics								
Dimensions (mm)	60.0 x 45.0 x 16.0	60.0 x 45.0 x 13.3	49.5 x 21.5 x 9.0	58.0 x 20.0 x 13.9	94.0 x60.0 x 12.0	66.0 x 24.0 x 14.0	85.0 x 54.0 x 10.0	70.0 x 70.0 x 15.0
Weight (g)	30.5	29.0	7.9	9.7	30.8	17.0	37.5	50.8
Power								
USB Powered			●	●	PC-Linked Mode	PC-Linked Mode	PC-Linked Mode	PC-Linked Mode
Battery Powered	1 x Rechargeable Li-ion Battery (charging through USB)	1 x Rechargeable Li-ion Battery (charging through USB)			1 x Rechargeable Li-ion Battery (charging through USB)	1 x Rechargeable Li-ion Battery (charging through USB)	1 x Rechargeable Li-ion Battery (charging through USB)	1 x Rechargeable Li-ion Battery (charging through USB)
Host Interface								
3.5 mm Audio Jack	●	●						
USB (Full Speed)			Micro-USB	Micro-USB	Type A	Type A	Type A	Type A
Bluetooth 4.0					●	●	●	●
Magnetic Card Interface								
ISO 7811	●	●						
Hi-Coercivity and Lo-Coercivity Magnetic Card	●	●						
Bi-directional	●	●						
JIS1	●	●						
JIS2	●	●						
Contact Smart Card Interface								
ISO 7816 (Class A, B and C)	●		●	●	●	●		●
MCU Cards, T=0 and T=1	●		●	●	●	●		●
Memory Cards	●		●	●	●	●		
Smart Card Read/Write Speed (kbps)	300		600	600	600	600		600
Card Form	Full-Sized		SIM-Sized / MicroSIM-Sized (Upon Request)	Full-Sized	Full-Sized	SIM-Sized		Full-Sized
Contactless Smart Card Interface								
ISO 14443 Type A and B		●					●	●
ISO/IEC 18092 (NFC)		●					●	●
Mifare		●					●	●
FeliCa		●					●	●
Smart Card Read/Write Speed (kbps)		106, 212, 424					106, 212, 424	106, 212, 424, 848
Reading Distance (mm)		50					50 (depends on tag type)	50 (depends on tag type)
Upgradeability								
Firmware Upgradeable					●	●	●	●
Built-In Peripherals								
LED	1	1	1	1	3	2	2	4
Buzzer							●	●
Certifications/Compliance								
PC/SC			●	●	●	●	●	●
CCID			●	●	●	●	●	●
Microsoft WHQL			●	●	●	●	●	●
Bluetooth					●	●	●	●
EMV Level 1 & 2 (Contact)				EMV Level 1	EMV Level 1			●
EMV Level 1 & 2 (Contactless)								●
Mastercard® Contactless								●
Visa payWave®								●
CE, FCC	●	●	●	●	●	●	●	●
VCCI (Japan)	●	●	●	●	●		●	
MIC (Japan)					●			●
TELEC (Japan)							●	
BIS (India)							●	
NTC (The Philippines)							●	●
RoHS	●	●	●	●	●	●	●	●
REACH	●	●	●	●	●	●	●	●
Encryption Algorithm								
AES - 128	●	●			●	●	●	*Upon Request*
Key Management								
DUKPT	●	●						*Upon Request*
Supported OS Platforms								
Windows			●	●	●	●	●	●
Mac OS X			●	●	●	●	●	●
Linux			●	●	PC-Linked Mode	PC-Linked Mode	PC-Linked Mode	PC-Linked Mode
Android	●	●	●	●	●	●	●	●
iOS	●	●			●	●	●	●
Solaris			●	●				

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SMART CARD READERS with PIN-PAD

ACS develops and provides secure PIN-pad smart card readers, featuring built-in keypads, LCDs and a host of other features. This type of reader is ideal for applications where a simple PC-linked smart card reader does not meet the user's security requirements, such as PIN entry and the confirmation of transaction details.

	APG8201-B2	ACR890-A1	ACR900-B1
Physical Characteristics			
Dimensions (mm)	95.0 x 60.0 x 13.0	208.0 x 85.5 x 53.0	192.0 x 83.0 x 68.0
Weight (g)	98.0	585.0	513.0
Processor			
Processor	8-Bit	32-Bit A8	32-Bit Secure Processor
Embedded Platform		Linux	Linux
Operation Modes			
PC-Linked	●		
Standalone		●	●
Power			
USB Powered	●		
Battery Powered		1 x Rechargeable Li-ion Battery	1 x Rechargeable Li-ion Battery
External Power Adapter		●	●
USB (Full Speed)	Type A		
Contact Smart Card Interface			
ISO 7816 (Class A, B and C)	Class A only	●	●
MCU Cards, T=0 and T=1	●	●	●
Smart Card Read/Write Speed (kbps)	250	200	200
Card Form	Full-Sized	Full-Sized	Full-Sized
Card Slot	1	1	1
Contactless Smart Card Interface			
ISO 14443 Type A and B		●	●
ISO/IEC 18092 (NFC)		●	●
Mifare		●	●
FeliCa		●	●
Smart Card Read/Write Speed (kbps)		106, 212, 424, 848	106, 212, 424, 848
Reading Distance (mm)		up to 40	up to 40
NFC Reader/Writer Mode		●	●
Magnetic Stripe Card			
ISO 7810		●	●
ISO 7811		●	●
Hi-Coercivity and Lo-Coercivity Magnetic Card		●	●
Bi-directional		●	●
Memory			
Third-party Application and Data Storage		4 GB	512 MB
RAM		256MB	128MB
Micro SD Card Slot		●	●
Upgradeability			
Firmware Upgradeable		●	●
Built-In Peripherals			
SAM Slot		2	4
LCD Type	16 alphanumeric characters x 2 lines	3.5" Color LCD	2.8" Color LCD
LCD Resolution	96 x 16	240 x 320	240 x 320
Keypad	20-Key	20-Key	22-Key
LED		4	4
Buzzer	●		
Built-in Speaker		●	●
Tamper Switch			●
Real Time Clock		●	●
SIM Slot (GPRS)		1	1
USB Port			USB Host (Type A) and Client (Mini-B)
Serial Port			RS232 Protocol: DB9
Wifi		●	●
3G / WCDMA		●	●
Ethernet			●
Printer		Built-in Thermal Printer	Built-in Thermal Printer
Certifications/Compliance			
PC/SC	●		
PC/SC 2.0 Part 10 - Secure PIN Entry	●		
CCID	●		
WHQL	●		
EMV Level 1 (Contact)			●
EMV Level 2 (Contact)			●
EMV Level 1 (Contactless)			●
MasterCard® Contactless			●
Visa payWave®			●
Apple Pay			●
PCI-PTS			●
CE, FCC	●	●	●
RoHS	●	●	●
Encryption			
RSA, AES, 3DES, HASH			●
Key Management			
DUKPT, MK/SK, Fixed KEY			●
Supported OS Platforms			
Windows	●		
Mac OS X	●		
Linux	●		
Android	●		
Solaris	●		

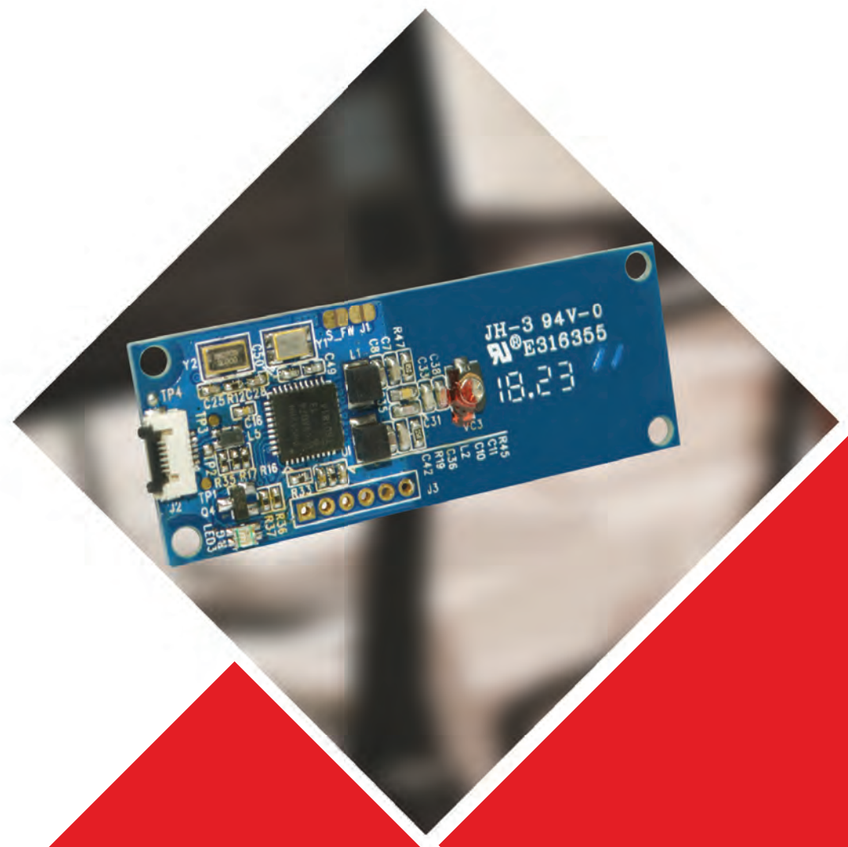
Subject to change without prior notice

SMART CARD READER MODULES

ACS develops smart card reader solutions in embeddable form. These smart card reader modules are designed to be integrated into embedded systems, which include smart card readers, ATM machines, kiosks, and gaming machines. SAM slots add layers of security to the modules. This product line offers contactless reader module options to help it add value to a wide range of applications.

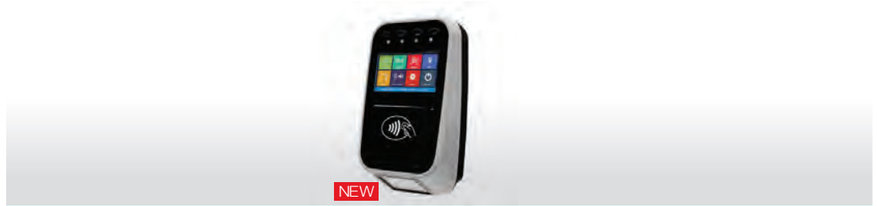
	ACM1252U-Y3	ACM1252U-Z2	ACM1252U-Z6	ACM1281U-C7 / ACM1281S-C7	ACM39U-Y3
Physical Characteristics					
Dimensions (mm)	55.0 x 45.0 x 5.1 (Main Board) 91.0 x 49.5 x 5.1 (Antenna Board)	52.0 x 20.0 x 6.0	52.0 x 20.0 x 6.0	106.52 x 67.0 x 16.0	82.0 x 70.0 x 10.1
Weight (g)	26.6	3.7	3.5	20.8	32.0
Power					
USB powered	●	●	●	●	●
Host Interface					
USB (Full Speed)	Optional Detachable USB Type A Cable	Optional Detachable USB Type A Cable	Optional Detachable Flexible Flat Cable	Optional Detachable USB Type A Cable (ACM1281U-C7)	Optional Detachable USB Cable
Serial (RS232)				Optional Detachable Serial DB9 Cable (ACM1281S-C7)	
Contact Smart Card Interface					
ISO 7816 (Class A, B and C)					●
MCU Cards, T=0 and T=1					●
Menory Cards					●
Smart Card Read/Write Speed (kbps)					600
Card Form					Full-Sized
Contactless Smart Card Interface					
ISO 14443 Type A and B	●	●	●	●	
ISO/IEC 18092 (NFC)	●	●	●		
Mifare	●	●	●	●	
FeliCa	●	●	●		
Smart Card Read/Write Speed (kbps)	106, 212, 424	106, 212, 424	106, 212, 424	106, 212, 424, 848	
Reading Distance (mm)	up to 50	up to 30	up to 30	up to 50	
Extended APDU Support	●	●	●	●	
Secure Mifare Key Storage				●	
NFC Reader/Writer Mode	●	●	●		
NFC Peer-to-Peer (P2P) Mode	●	●	●		
NFC Card Emulation Mode	●	●	●		
Upgradeability					
Firmware Upgradable	●	●	●	●	
Built-In Peripherals					
SAM Slot	*Upon Request*			1	
LED	1 bi-colour	1 bi-colour	1 bi-colour	2	2
Buzzer	●			●	
Certifications/Compliance					
PC/SC	●	●	●	ACM1281U-C7	●
CCID	●	●	●	ACM1281U-C7	●
WHQL	●	●	●	ACM1281U-C7	●
CE, FCC	●	●	●	●	●
VCCI (Japan)	●				
RoHS	●	●	●	●	●
REACH	●	●	●	●	●
Supported OS Platforms					
Windows	●	●	●	●	●
Mac OS X	●	●	●	ACM1281U-C7	●
Linux	●	●	●	●	●
Android	●	●	●	ACM1281U-C7	●
Solaris	●	●	●	ACM1281U-C7	●

Subject to change without prior notice



AUTOMATIC FARE COLLECTION READERS

ACS develops and provides multi-interface devices to offer the convenience of cashless payment in transportation, parking and retail establishments such as fast food chains and convenience stores. These readers support ISO 14443 Type A & B, MIFARE®, FeliCa, any of 4 types of NFC (ISO18092), Mastercard® Contactless or Visa payWave® cards/ tags, and printed or mobile barcodes. Accepting a wide range of payment options, this product line enables you to speed up operations and defend transactions against evolving threats.



ACR330

Physical Characteristics	
Dimensions (mm)	245.0 x 135.0 x 91.0 (Main Body) 245.0 x 135.0 x 159.0 (Main Body + Back mount)
Weight (kg)	1.08 (Main Body) 1.88 (Main Body + Back mount)
Mounting	Pole Dimension: 31mm, 32mm, 35mm (Both Vertical and Horizontal)
Processor	
Processor	ARM Cortex-A8 1GHz Processor
Embedded Platform	Linux 4.4
Operation Modes	
Standalone	●
Power	
Supply Voltage	9-36 VDC Reversed voltage polarity protection: up to -24VDC Over voltage protection: up to +60VDC
Supply Current	Max. 4A
Contactless Smart Card Interface	
ISO 14443 Type A and B	●
ISO/IEC 18092 (NFC)	●
Mifare	●
FeliCa	●
Smart Card Read/Write Speed (kbps)	106, 212, 424
Reading Distance (mm)	up to 50
NFC Reader/Writer Mode	●
Memory	
Third-party Application and Data Storage	900MB
RAM	512MB
FRAM	32KB
Tamper Protected RAM	32KB
Micro SD Card Slot	up to 32GB
Upgradeability	
Firmware Upgradable	●
Built-In Peripherals	
SAM Slot	4 (Size: ID-000)
LCD Type	4.3" Color LCD
LCD Resolution	480 x 272
Touch Panel	Capacitive Type
Button	4 with blue back-lit
LED	6 (4pcs at the front and 2pcs at the back)
Built-in Speaker	●
Buzzer	●
Tamper Switch	●
Real Time Clock	●
USB Port	USB Host (Type A)
Serial Port	RS232 x 1, RS485 x 1
Wifi	IEEE 802.11 b/g/n
Network	4G/3G/GPRS
SIM Slot	1 (Size: ID-000)
Ethernet	10/100 Mbps
Positioning System	GPS, Glonass, Beidou,Galileo AGPS Support
Bluetooth	4.0 Dual Mode
1D/2D Barcode Scanner	●
Certifications/Compliance	
PC/SC	●
EMV Level 1 (Contactless)	●
MasterCard® Contactless	●
Visa payWave®	●
CE, FCC	●
RoHS	●
REACH	●
Shock and Vibration	Military Standard MIL-STD-810D
IP54	●

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