



## STANDARD-SIZED ISO CARDS, CONFIGURABLE TO PRACTICALLY ANY APPLICATION REQUIREMENTS INCLUDING MULTIPLE TECHNOLOGIES

- **Application compatibility:** Specify one, or combine multiple technologies per card, in contact, low frequency, high frequency or RAIN® RFID.
- **DBond™ Technology:** Highly durable, patented direct bonding technology, allowing trouble-free direct to card printing.
- **Incomparable expertise and innovation:** From the worldwide leader in card identification systems.

Customers can trust ASSA ABLOY engineering and manufacturing expertise to deliver the world's most advanced and reliable contact and contactless cards. These cards combine innovative printing and RFID technologies with industry-leading knowledge in the production of secure identity components. Proven processes and automated manufacturing ensure efficient and cost-effective production of high quality cards.

ISO cards are used in billions around the world, ranging from simple, non-technology printed loyalty cards to highly secure access control, payment or citizen ID cards. ASSA ABLOY's expertise allows fulfilling almost any need you may have on an ISO card.

Cards can be made from a choice of materials ranging from low-cost PVC over composite to high-end polycarbonate materials for increased temperature resistance and durability. Cards may be delivered blank-white for later personalization with Direct to Card (DTC) printers or already be delivered

pre-printed with high-quality offset or silk-screen printing. Optionally, features like holograms, micro-text, security inks, custom magnetic stripes, thermo-rewriteable areas and many more may be included on a card.

ASSA ABLOY can provide cards with almost any contact or passive RFID technology ranging from LF, HF/NFC to RAIN UHF. All major chip manufacturers are supported. Dual-Interface cards allow the mix of contact and contactless interface sharing a single chip. Multiple technologies may be combined in one card to support migration or multi-application scenarios. High security applications are supported by crypto chips like MIFARE DESFire, UCODE DNA or HID Trusted Tag (NFC compatible).

Patented DBond™ technology connects the antenna directly to the chip instead of using a bulky chip module. This method is available for many common RFID chips. It provides perfect printability of cards in DTC printers and improves mechanical reliability of the RFID components.



### TECHNOLOGY HIGHLIGHTS:

Contactless ISO cards from ASSA ABLOY offer extensive options – customers choose to embed a single IC or select multiple technologies in a card -- including LF, HF and RAIN® RFID. Dual-Interface or contact technologies including smart card controllers, and magnetic stripe can also be incorporated in these standard ISO size cards for universal compatibility in card printer/ encoders. Cards with certain chips are manufactured using patented DBond™ technology for improved robustness with perfectly flat printable surfaces. Cards are ISO 7810 compliant. Alternatively, custom shapes or sizes are available on request to support special use cases.

### APPLICATION AREAS:

ASSA ABLOY ISO cards are used in a wide variety of applications. They are effective for managing physical access, time and attendance, and logical access as well as providing a convenient method for cashless payment including automatic fare collection (e.g. MIFARE® family or Calypso), loyalty programs, point-of-sale, as well as near field communication (NFC) applications.

## SPECIFICATIONS

Contactless Cards				
Frequency	LF	HF	UHF	LF/HF/UHF
<b>ELECTRONIC</b>				
<b>Operating Frequency</b>	125 kHz	13.56 MHz	860 to 960 MHz	125 kHz, 13.56 MHz or UHF
<b>Chip Type</b>	HITAG: 1, 2, S Q5, Titan, Unique, ATA5577	MIFARE Ultralight, MIFARE Hospitality, MIFARE Classic, MIFARE Plus, MIFARE DESFire, SmartMX, NTAG, ICODE, LEGIC Prime, LEGIC Advant, Calypso, Cipurse, KIAT™, Vigo™, HID Trusted Tag™, SLE66R35R chip families.	Monza 4QT, Monza R6, UCODE DNA family	Combine multiple chips per card
<b>Memory</b>	64 bit read-only to 2048 bit read-write	48 byte to 140 KB EEPROM	up to 224 bit EPC + up to 3 kbit user memory	Based on requirements
<b>Anti-Collision</b>	Yes (Hitag)	Yes		Based on requirements
<b>PHYSICAL</b>				
<b>Dimensions</b>	ISO card: 3.4 x 2.1 x 0.03 in (85.6 x 54 x 0.76 mm)			
<b>Card Body Material</b>	PVC (default)			
<b>Color</b>	White (other colors or transparent on request)			
<b>CHEMICAL AND MECHANICAL</b>				
<b>Water</b>	IP68, 68° F (20° C), 3.3 ft (1 m) x 24 h			
<b>Withstands Exposure to</b>	Acetic acid water, artificial perspiration, carbonated sodium water, ethylene glycol, fuel B, salt mist, salt water, sugared water; humidity 95% at 122° F (50° C) 24 h			
<b>Force</b>	Dynamic bending and torsion, 4 x 250 bends			
<b>THERMAL</b>				
<b>Storage</b>	PVC: -31° to +122° F (-35° to +50° C), Composite: -40° to +158° F (-40° to +70° C)			
<b>Operating</b>	PVC: -31° to +122° F (-35° to +50° C), Composite: -40° to +158° F (-40° to +70° C)			
<b>Shock/Fatigue</b>	-31° to +176° F (-35° to +80° C), 50 cycles, 5 min soaking time, 20 sec transition			
<b>OTHER</b>				
<b>Standards</b>	ISO 7810, ISO 7816, optional NFC			
	ISO 14443 or ISO 15693 depending on chip	EPC C1G2, ISO 18000-6	Depending on chips used	
<b>Optional Features</b>	Artwork; encoding: visual (pre-)personalization via inkjet, thermal printing or laser marking; magnetic stripe; thermo-rewritable area; signature panel and optical security features. Non-technology cards, or other contact, contactless or dual-interface chips.			
<b>Optional Materials</b>	PC, PETG or Composite (Note: Chemical, mechanical and thermal tolerances will vary versus standard PVC, listed above.)			
<b>Warranty</b>	1 year			

ASSA ABLOY can create a custom card solution to fit your application requirements for chip type, programming and memory. Also, inquire about alternate form factors, such as contactless sticker cards, mini cards and fobs.



# ASSA ABLOY