



## CONTACTLESS ISO COMBINATION CARD FOR UHF AND UHF/MIFARE® APPLICATIONS

- High quality contactless ISO card or prelaminated
- UHF for long range applications compliant to EPC C1G2 and ISO 18000-6C
- Optional HF (MIFARE DESFire EV1, EV2) for access or payment applications
- Antenna design prepared for optional contact chip
- Encoding, laser engraving, printing and other card surface options available

ASSA ABLOY's ISO cards with ultra-high frequency (RAIN UHF) technology allow for new use cases, such as hands-free access or parking lot access. In addition, UHF identification badges are especially useful in environments where UHF readers are already installed for other purposes to save reader investment costs.

RAIN UHF ISO cards are compliant with EPC global-certified UHF Gen 2 readers, provide 512 bit user memory, a read range of up to 39 ft (12 m), and cover worldwide UHF frequency ranges in a single tag – ideal for international operations. The UCODE DNA option combines exceptional long-range performance with a cutting-edge cryptographic security implementation for authentication.

These UHF cards can be combined with HF technology, such as MIFARE to address additional HF use cases like

Near Field Communication (NFC), contactless payment schemes, loyalty or access control.

The antenna design has been optimized to foresee additional options like a contact chip or a horizontal punch slot to attach a badge holder without sacrificing RF performance.

Customers can rely on our engineering and manufacturing expertise to deliver the world's most advanced and reliable contactless cards. These cards combine innovative radio frequency identification (RFID) technology with industry-leading knowledge in the production of secure identity materials. Proven processes and automated manufacturing ensure efficient and cost-effective production of high-quality cards.



**TECHNOLOGY HIGHLIGHTS:**

- High quality, high performance ISO card
- UHF EPC Class 1 Gen2 and ISO 18000-6C
- up to 224 bit EPC number, up to 3kbit user memory
- Worldwide UHF frequency coverage
- MIFARE® DESFire™ EV1 is NFC Tag Type 4 compliant
- Optional 3-Tech LF, HF, UHF
- 128 bit AES crypto key on UCODE DNA

**APPLICATION AREAS:**

- Hands free or parking access
- Closed payment systems
- NFC applications
- Access control
- Loyalty schemes

**SPECIFICATIONS**

	ISO Card UHF or UHF / MIFARE
<b>Base Model Number</b>	6A7401-100 (Monza 4QT), 6C3401-100 (Monza 4QT + MIFARE DESFire EV1 4K) 6C2401-100 (Monza 4QT + MIFARE Classic EV1 1K), 6I1401 (UCODE DNA), 6I2401 (UCODE DNA + MIFARE DESFire EV2 4K)
<b>Dimensions</b>	ISO card: 3.4 x 2.1 x 0.03 in (85.6 x 54 x 0.76 mm)
<b>Material</b>	PVC (default, others on request)
<b>Color</b>	White
<b>Chip Type</b>	Monza 4QT (+ optional MIFARE DESFire EV1 4K or MIFARE EV1 1K), UCODE DNA (+ optional MIFARE DESFire EV2 4K, MIFARE EV1 1K)
<b>Memory</b>	Monza 4QT: 128 bit EPC, 512 bit user memory, 96 bit TID; UCODE DNA: 224 bit EPC, up to 3k bit user memory, 96 bit TID MIFARE DESFire: 4KB (optional: 256B, 2KB, 8KB), MIFARE EV1 1KB (optional: 4KB)
<b>Operating Frequency</b>	860-960 MHz (Worldwide) + 13.56 MHz (MIFARE)
<b>Standards</b>	UHF: EPC Class 1 Gen 2, ISO 18000-6C MIFARE DESFire: ISO 14443 / NFC Tag Type 4 (if NDEF formatted); ISO 10373, ISO 7816-1
<b>Anti Collision</b>	Yes
<b>CHEMICAL AND MECHANICAL RESISTANCE</b>	
<b>Water IP68</b>	68° F / 20° C (1m, 24h)
<b>Resistances</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>Storage Temperature</b>	-31° to +122° F (-35° to +50° C)
<b>Operating Temperature</b>	-31° to +122° F (-35° to +50° C)
<b>Shock / Fatigue Temperature</b>	-31° to +176° F (-35° to +80° C), 50 cycles, 5 min soaking time, 20 sec transition
<b>Force</b>	Dynamic bending and torsion, 4 x 250 bends
<b>Reading Distance</b>	UHF up to 39 ft / 12 m (2W reader ERP, free space)
<b>Options</b>	Artwork; encoding; laser engraving; magnetic stripe; other contactless-, contact- or memory-chips; signature panel and optical security features ; UHF only cards support an optional horizontal punch slot
<b>Prelaminates</b>	For card manufacturers this technology is alternatively available in form of 410 µm (16 mil) prelaminates



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