

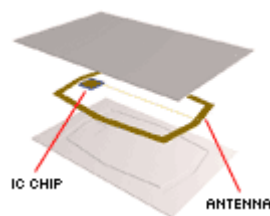


Shenzhen Mochua Smart Information Technology Co., Ltd.

Contactless Smart Card

Contactless smart card communicates with and is powered by the reader through RF induction technology (at data rates of 106–848 Kbit/s). These cards require only proximity to an antenna to communicate. They are often used for quick or hands-free transactions such as paying for public transportation without removing the card from a wallet.

Like smart cards with contacts, contactless cards do not have an internal power source. Instead, they use an inductor to capture some of the incident radio-frequency interrogation signal, rectify it, and use it to power the card's electronics.



Available ICs containing but not limited to:

Mifare Classic 1K / 4K, Mifare Ultralight 512b, Mifare Ultralight C, Mifare DESFire EV1 2K/4K/8K,
Mifare Plus 2K / 4K, Icode 2, Icode SLI-S, TI Tagit 2, ST SR176, SR512, ATMEL Temic 555Z,
ATA557Z, EM 4200, EM4450, Hitag 1, Hitag 2, Hitag S F1108, TK4100

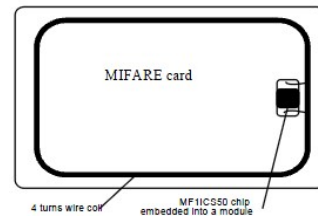
NXP Mifare Classic 1K

About the IC chip:

Part number	MF IC S50
IC Manufacturer	NXP (founded by Philips)
RF Protocol	ISO/IEC 14443 Type A
EEPROM	1 Kbyte, organized in 16 sectors with 4 blocks of 16 bytes each
Operating frequency	13.56 MHz
Data transfer	106 kbit/s
Reading distance	Up to 100mm, depending on acceptor
Data retention	10 years.
Write endurance	100.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG / ABS
Packaging process	Wired winding by manual
Typical application	Public transportation, Access control, Event ticketing, Gaming & Identity.



NXP Mifare Classic 4K

About the IC chip:

Part number	MF IC S70
IC Manufacturer	NXP (founded by Philips)
RF Protocol	ISO/IEC 14443 Type A
EEPROM	4 Kbyte, organized in 32 sectors with 4 blocks and 8 sectors with 16 blocks
Operating frequency	13.56 MHz
Data transfer	106 kbit/s
Reading distance	Up to 100mm, depending on acceptor
Data retention	10 years.
Write endurance	100.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG / ABS
Packaging process	Wired winding by manual
Typical application	Public transportation, Access control, Event ticketing, Gaming & Identity.



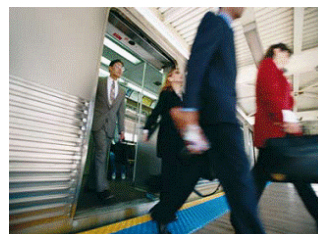
NXP Mifare Ultralight 512bit

About the IC chip:

Part number	MF0ICU1
IC Manufacturer	NXP (founded by Philips)
RF Protocol	ISO/IEC 14443 Type A
EEPROM	512 bits, organized in 16 pages with 4 bytes per page
Operating frequency	13.56 MHz
Data transfer	106 kbit/s
Reading distance	Up to 100mm, depending on acceptor
Data retention	5 years.
Write endurance	10.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG / ABS
Packaging process	Wired winding by manual
Typical application	Public transport ticketing, Event ticketing, and many others.



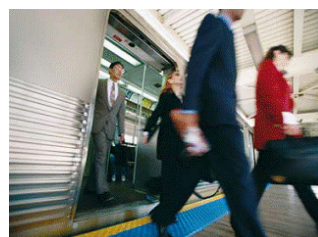
NXP Mifare Ultralight C

About the IC chip:

Part number	MF0ICU2
IC Manufacturer	NXP (founded by Philips)
RF Protocol	ISO/IEC 14443 Type A
EEPROM	1536 bits total memory; 1184 bits user memory;
Operating frequency	13.56 MHz
Data transfer	106 kbit/s
Reading distance	Up to 100mm, depending on acceptor
Data retention	5 years.
Write endurance	10.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG / ABS
Packaging process	Wired winding by manual
Typical application	Public transport, Event ticketing, Prepaid applications, Loyalty schemes, NFC Forum Tag Type 2, Toy and amusement.



NXP Mifare DESFire EV1 2k/4k/8k

About the IC chip:

Part number	DesFire EV1(MF3ICD(H)21/41/81
IC Manufacturer	NXP (founded by Philips)
RF Protocol	ISO/IEC 14443 Type A
EEPROM	2K bytes, 4K bytes and 8K bytes
Operating frequency	13.56 MHz
Data transfer	106 kbit/s, 212 kbit/s, 424 kbit/s, 848 kbit/s
Reading distance	Up to 100mm, depending on acceptor
Data retention	10 years.
Write endurance	500.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG
Packaging process	Wired winding by manual
Typical application	Advanced public transportation schema; Highly secure access management; Closed-loop e-payment scheme; Event ticketing; eGovernment applications.



NXP Mifare Plus 2k/4k

About the IC chip:

Part number	Mifare Plus
IC Manufacturer	NXP (founded by Philips)
RF Protocol	ISO 14443 Type A
EEPROM	2K bytes, 4K bytes
Operating frequency	13.56 MHz
Data transfer	106...848kbit/s
Reading distance	Up to 100mm, depending on acceptor
Data retention	10 years.
Write endurance	200.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG
Packaging process	Wired winding by manual
Typical application	Public transportation; Electronic toll collection; Event ticketing; Access management; Car parking; School and campus cards; Employee cards; Internet cafes; Loyalty; E-locks.



NXP Icode SLI

About the IC chip:

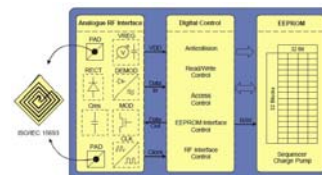
Part number	Icode SLI
IC Manufacturer	NXP (founded by Philips)
RF Protocol	ISO/IEC 15693
EEPROM	1024bits, organised in 32 blocks of 4 byte each
Operating frequency	13.56 MHz
Data transfer	Up to 53 kbit/s
Reading distance	Up to 1.5m, depending on antenna geometry
Data retention	10 years.
Write endurance	100.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG
Packaging process	Wired winding by manual
Typical application	Public transportation; Electronic toll collection; Event ticketing; Access management; Car parking; School and campus cards; Employee cards; Internet cafes; Loyalty; E-locks.



Block Diagram



NXP Icode SLI-S

About the IC chip:

Part number	Icode SLI
IC Manufacturer	NXP (founded by Philips)
RF Protocol	ISO/IEC 15693
EEPROM	2048 bits, organised in 64 blocks of 4 byte each, 4 blocks are summed up to 1 page
Operating frequency	13.56 MHz
Data transfer	Up to 53 kbit/s
Reading distance	Up to 1.5m, depending on antenna geometry
Data retention	10 years.
Write endurance	100.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG
Packaging process	Wired winding by manual
Typical application	Supply Chain Management; Asset Management; Container Identification; Pallet & Case Tracking.



TI Tagit 2

About the IC chip:

Part number	TI Tagit 2
IC Manufacturer	TI (Texas Instruments)
RF Protocol	ISO/IEC 15693, ISO/IEC 18000
EEPROM	2048 bits user memory in 64-bit * 32-bit blocks
Operating frequency	13.56 MHz
Reading distance	1 m
Data retention	More than 10 years.
Write endurance	100.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC
Packaging process	Wired winding by manual
Typical application	Product Authentication; Library; Supply-Chain Management; Asset Management; Ticketing/Stored Value.



ST SR176

About the IC chip:

Part number	SR176
IC Manufacturer	ST
RF Protocol	ISO 14443 Type B
EEPROM	176 bits
Operating frequency	13.56 MHz
Data transfer	106 Kbit/s
Reading distance	6cm typically
Data retention	More than 40 years.
Write endurance	100.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / ABS / PET / PAPER
Packaging process	Wired winding by manual
Typical application	Attendance Record; Access Control; Identification.



ST SR512

About the IC chip:

Part number	ST SR512
IC Manufacturer	ST
RF Protocol	ISO 14443 Type B
EEPROM	512 bits
Operating frequency	13.56 MHz
Data transfer	106 Kbit/s
Reading distance	6cm typically
Data retention	40 years.
Write endurance	1 million cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / ABS / PAPER
Packaging process	Wired winding by manual
Typical application	Access control; Parking lot; Campus ID; Time attendance; Hotel Management; Transportation etc.



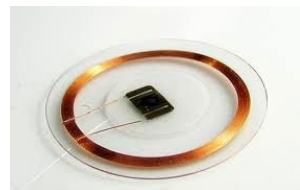
ATEML T5557

About the IC chip:

Part number	ATEML T5557
IC Manufacturer	ATEML
RF Protocol	N/A
EEPROM	330 bits
Operating frequency	125 KHz
Data transfer	1-2 Mbit/s
Reading distance	3-10cm
Data retention	10 years.
Write endurance	100.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / ABS / PS
Packaging process	Wired winding by manual
Typical application	Access Control(Key Fobs, Proximity card); Asset Management; Waste Management; Alarm Systems; Car Applications etc.



ATEML ATA 5577

About the IC chip:

Part number	ATA 5557
IC Manufacturer	ATEML
RF Protocol	N/A
EEPROM	363 bit, 11 blocks of 33 bits each
Operating frequency	125 KHz or 134KHz
Reading distance	1-10cm
Data retention	10 years.
Write endurance	100.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG
Packaging process	Wired winding by manual
Typical application	Access control cards, key fobs and coins; Animal identification; Waste management; Laundry; Manufacturing and logistics etc.



EM4200/EM4100

About the IC chip:

Part number	EM4200/EM4100/EM4102
IC Manufacturer	EM Microelectronic
RF Protocol	N/A
EEPROM	64 bits
Operating frequency	125 KHz
Data transfer	106 kbit/s
Reading distance	2-6cm
Data retention	10 years.
Write endurance	100.000 cycles

About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG
Packaging process	Wired winding by manual
Typical application	Animal Identification according to ISO11785; Waste management standard; Access Control; Logistics automation; Anti-counterfeiting; Industrial transponder.



EM4450



About the IC chip:

Part number	EM4450
IC Manufacturer	EM Microelectronic
RF Protocol	N/A
EEPROM	1K bit
Operating frequency	125 KHz
Data transfer	54 Mbit/s
Reading distance	depends on the antenne geometry
Data retention	10 years.
Write endurance	100.000 cycles



About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG
Packaging process	Wired winding by manual
Typical application	Ticketing; High Security Hands Free Access Control; Industrial automation with portable database; Manufacturing automation; Prepayment Devices

NXP Hitag 1

About the IC chip:

Part number	Hitag 1
IC Manufacturer	NXP (founded by Philips)
RF Protocol	N/A
EEPROM	2048 bits
Operating frequency	125KHz
Data transfer	2 kbit/s
Reading distance	6cm typically
Data retention	10 years.
Write endurance	100.000 cycles



About the Card

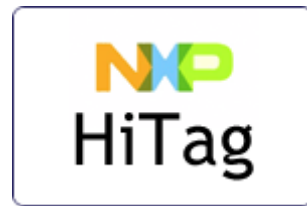
Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / ABS/ PAPER
Packaging process	Wired winding by manual
Typical application	Livestock tracking & Food Safety; Automation of Laundry Services; Access Control; Vending Machines; Sports Timing; Casino Gaming.



NXP Hitag 2

About the IC chip:

Part number	Hitag 2
IC Manufacturer	NXP (founded by Philips)
RF Protocol	N/A
EEPROM	256bits, organised in 8 pages with 32 bits each
Operating frequency	125KHz
Data transfer	4 kbit/s
Reading distance	6cm typically
Data retention	10 years.
Write endurance	100.000 cycles



About the Card

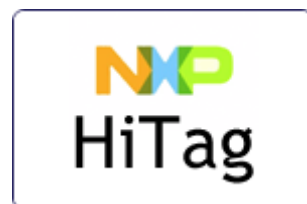
Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / ABS/ PAPER
Packaging process	Wired winding by manual
Typical application	Hotel key lock, access control, parking etc.



NXP Hitag S

About the IC chip:

Part number	Hitag S
IC Manufacturer	NXP (founded by Philips)
RF Protocol	N/A
EEPROM	2048 bits
Operating frequency	125KHz
Data transfer	8 kbit/s
Reading distance	Up to 5cm
Data retention	10 years.
Write endurance	10.000 cycles



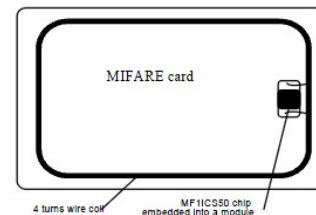
About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET \
Packaging process	Wired winding by manual
Typical application	Hotel key lock, access control, Parking, Casino Gaming etc.

NXP Mifare Classic 1K Compatible--F1108

About the IC chip:

Part number	F M11RF08 (F1108)
IC Manufacturer	FUDAN MICROELECTRONICS
RF Protocol	ISO/IEC 14443 Type A
EEPROM	1 Kbyte, organized in 16 sectors with 4 blocks of 16 bytes each
Operating frequency	13.56 MHz
Data transfer	106 kbit/s
Reading distance	Up to 100mm, depending on acceptor
Data retention	10 years.
Write endurance	100.000 cycles



About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG / ABS
Packaging process	Wired winding by manual
Typical application	Public transportation, Access control, Event ticketing, Gaming & Identity.

EM4200/EM4100 Compatible--TK4100

About the IC chip:

Part number	TK4100
IC Manufacturer	Tatwah Design
RF Protocol	N/A
EEPROM	64 bits
Operating frequency	125 KHz
Data transfer	106 kbit/s
Reading distance	2-6cm
Data retention	10 years.
Write endurance	100.000 cycles



About the Card

Dimension	ISO Standard 85.5*54mm, or Customized size, 0.76 ~0.88mm thick
Card Material	PVC / PET / PETG
Packaging process	Wired winding by manual
Typical application	Animal Identification according to ISO11785; Waste management standard; Access Control; Logistics automation; Anti-counterfeiting; Industrial transponder.