

WAC RF-ID TAG

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Commonly Available 125 KHz Modules

IC Type	Manufacturer	Memory	Function
H4100	EM Microelectronic	64 bits	R/O
H4102	EM Microelectronic	64 bits	R/O
EM4450	EM Microelectronic	1024 bytes	R/W
TK4100	Taiwan K	64 bits	R/O
T5557	ATMEL	330 bits	R/W
HITAG 1	Philips	2048 bits	R/W
HITAG 2	Philips	256 bits	R/W
HITAG S256	Philips	256 bits	R/W
HITAG S2048	Philips	2048 bits	R/W

Commonly Available 13.56MHz Modules

IC Type	Manufacturer	Memory	Function	ISO Standard
MIFARE 1K (S50)	Philips	1024 bytes	R/W	14443A
MIFARE 4K (S70)	Philips	4096 bytes	R/W	14443A
MIFARE Ultralight (U10)	Philips	512 bits	R/W	14443A
FM11RF08	Fudan	1024 bytes	R/W	14443A
FM11RF005	Fudan	512 bits	R/W	14443A
MIFARE DESFire	Philips	4096 bytes	R/W	14443A
ICODE SLI	Philips	1024 bits	R/W	14443A
ICODE 1	Philips	512 bits	R/W	ICODE1
Ti2048	Texas Instruments	2048 bits	R/W	15693
Ti256	Texas Instruments	256 bits	R/W	15693
INSIDE 2K	INSIDE Contactless	2048 bits	R/W	15693/14443B
SR176 B	STMicroelectronics	176 bits	R/W	14443
Legic MIM256	Legic	256 bytes	R/W	

Commonly Available 886~915MHz Modules

IC Type	Manufacturer	Memory	Function	ISO Standard
UCODE HSL	Philips	2048 bits	R/W	ISO18000
UCODE EPC G2	Philips	512 bits	R/W	EPG G2
EM4223 EM	Microelectronic	128 bits	R/O	ISO18000
EM4122 EM	Microelectronic	64 bits	R/O	ISO18000
XRA00 ST	Microelectronics	128 bits	R/W	ISO18000

Commonly Available Contact Modules

IC Type	Manufacturer	Memory	Function	ISO Standard
SLE4442	Infineon	256 bytes	R/W	ISO7816
SLE4428	Infineon	1024 bytes	R/W	ISO7816
IS23SC4442	ISSI	256 bytes	R/W	ISO7816
IS23SC4428	ISSI	1024 bytes	R/W	ISO7816
AT24C16	ATMEL	16 kbits	R/W	ISO7816
AT24C64	ATMEL	64 kbits	R/W	ISO7816

Dual-Interface Module

IC Type	From	Memory			OS Type	Part Number
		ROM	RAM	EEPROM		
MIFARE PROX	Philips	64 kbyte	256/2048 bytes	16 kbyte	JCOP30	P8RF5016AEV/127V1B1 (Final)

Clamshell Cards



Dimensions	86*54*1.8mm
Weight	9g ± 0.5g
Standard Colour	White, Other Colours Available with MOQ10,000/pcs
Personalization	Offset / Silkscreen Printing, Encoding
Material	Hard Shell ABS, Cover Foil PVC (Matte lamination)
Temperature	-10 ⁰ C to +50 ⁰ C
Packaging	100pcs/box, 2000pcs/carton, 21.5kg/carton Carton Size 50*24*28cm
Available 125KHz IC	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

ISO Cards



Dimensions:	86*54*0.8 (±0.04)mm
Weight:	5.8g ± 0.5g
Standard Colour:	White
Personalization:	Offset / Silkscreen Printing, Encoding
Magnetic Stripe:	Optional LoCo 350oe, HiCo 650oe, 2750oe, 4000oe
Material:	PVC/ABS/PET/PETG (Glossy or Matte Lamination)
Temperature:	-10 ⁰ C to +100 ⁰ C (depending on the card material)
Packaging:	200pcs/box, 2000pcs/carton, 14 kg/carton Carton Size 50*24*15cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, MIFARE PROX, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

ABS/Leather Key Tags



Dimensions:	Shape as above, dimensions on request
Weight:	6 ~ 12g
Standard Colour:	Blue, Grey, Yellow, Red, White, Purple, Black
Personalization:	Printable with Silkscreen (2 Colors)
Material:	ABS / Leather
Temperature:	-10 ⁰ C to 70 ⁰ C
Packaging:	100pcs/box, 2000pcs/carton, 14 kg/carton, 50pcs/box, 1000pcs/carton, 14 kg/carton, Carton Size 50*24*15cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2,HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10),MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256,INSIDE 2K, SR176

PVC Key Tag



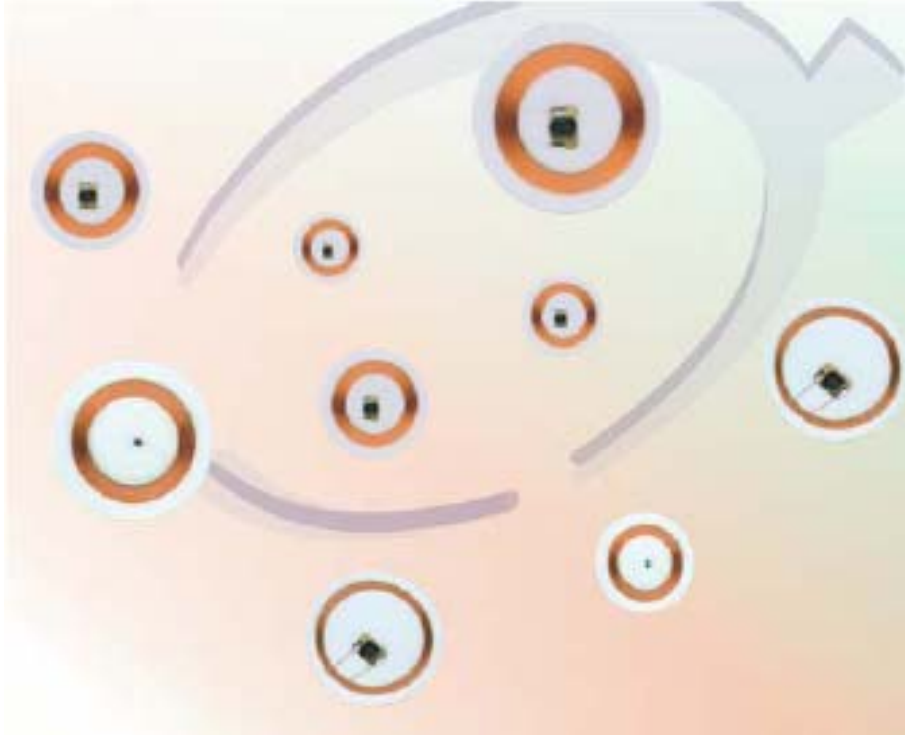
Dimensions:	Shape as above, dimensions on request
Weight:	3 ~ 5g
Personalization:	Offset / Silkscreen Printing, Encoding
Material:	PVC (Glossy or Matte lamination)
Temperature:	-10 ⁰ C to +50 ⁰ C
Packaging:	600pcs/box, 6000pcs/carton, 18 kg/carton, Carton Size 50*24*15cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

PVC Disc Tag



Dimensions:	12mm, 15mm, 20mm, 25mm, 35mm...
Weight:	3 ~ 5g
Personalization:	Offset / Silkscreen Printing, Encoding
Material:	PVC (Glossy or Matte lamination)
Temperature:	-10 ⁰ C to +50 ⁰ C
Packaging:	600pcs/box, 6000pcs/carton, 18 kg/carton, Carton Size 50*24*15cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

Clear Disc Tag



Dimensions:	13mm, 15mm, 18mm, 20mm, 25mm, 27mm, 30mm... Thickness 0.6mm
Weight:	1 ~ 3g
Material:	PVC (Clear PVC or PET)
Temperature:	-10 ⁰ C to +50 ⁰ C
Packaging:	100pcs/box, 10000pcs/carton, 9 kg/carton, Carton Size 50*24*15cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2,HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10),MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256,INSIDE 2K, SR176

ABS Disc Tag



Dimension:	Shape as above, dimensions on request
Weight:	3 ~ 12g
Standard Colour:	White or Black
Material:	ABS
Temperature:	-10 ⁰ C to +70 ⁰ C
Packaging:	100pcs/bag, 200-500 pcs/carton, 20 box/carton Carton Size 50*24*28cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2,HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10),MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256,INSIDE 2K, SR176

Epoxy Tag



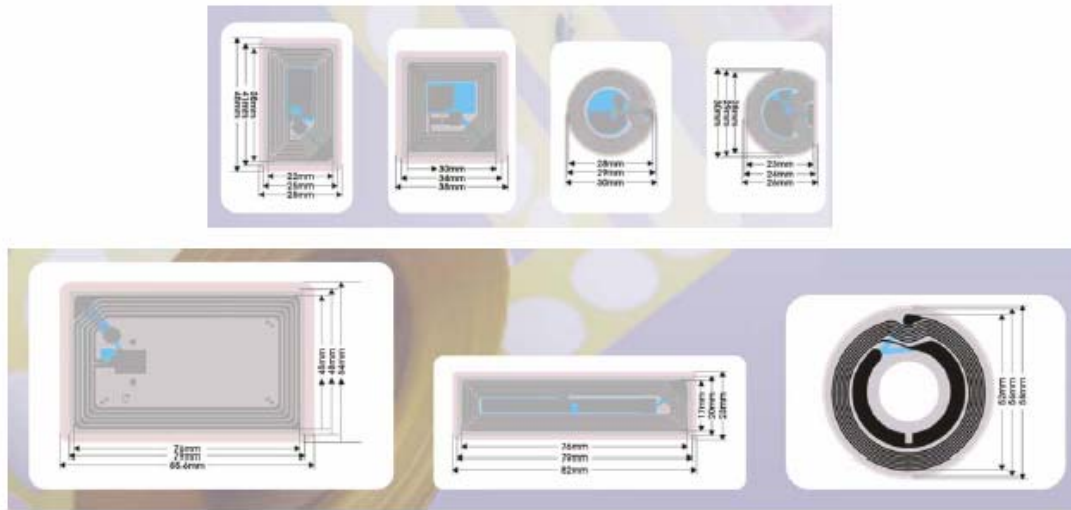
Dimension:	Minimum Outer Diameter 10mm
Weight:	1 ~ 12g
Standard Colour:	Transparent, Black, Green, Yellow, Orange
Personalization:	Offset / Silkscreen Printing, Encoding
Material:	PVC, Transparent Epoxy
Temperature:	-10 ⁰ C to +120 ⁰ C
Packaging:	100pcs/bag Carton Size 50*24*28cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

Metal Mount Tags



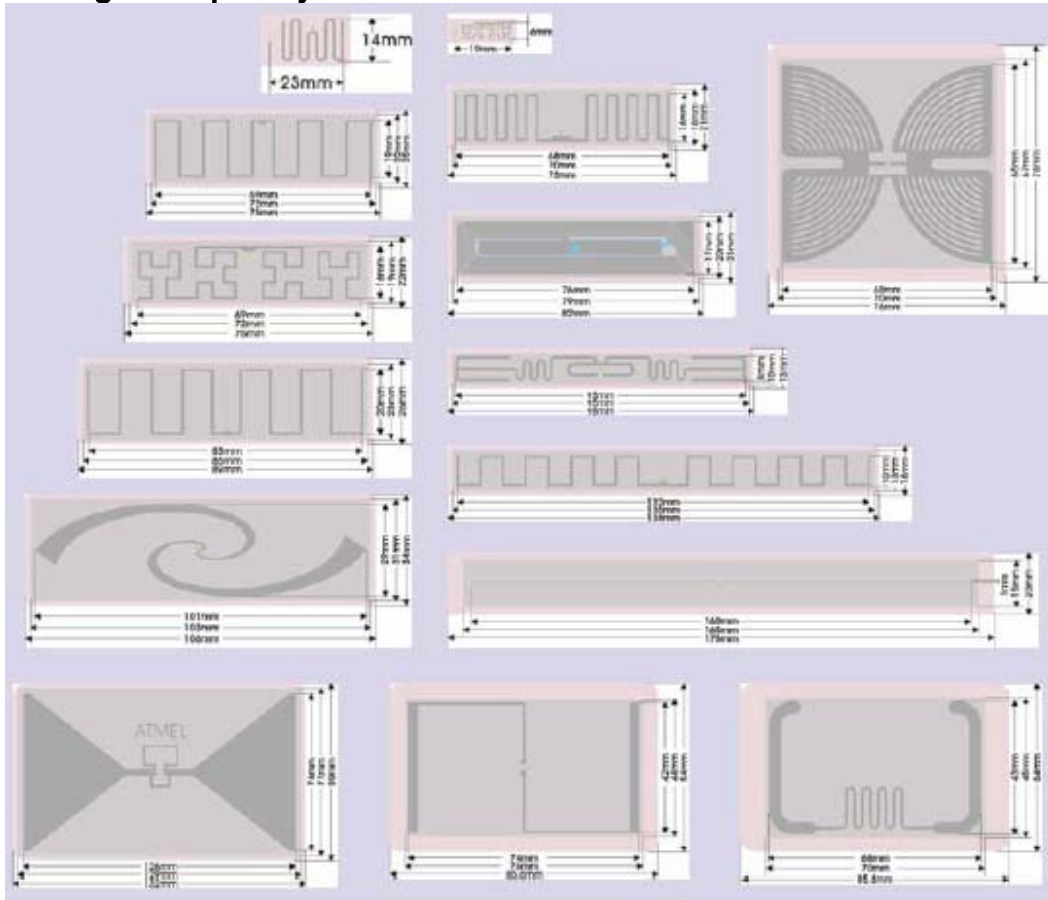
Types:	- Semi-flexible, EMI shielded adhesive tags for application on clean metal surfaces - Easy surface mounting or installation in metal recess for subsequent embedding into epoxy protection
Shapes/Sizes:	31*46*3.5mm; other sizes on request
Storage Temperature:	-25 ⁰ C to +80 ⁰ C
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

High Frequency Labels



Dimensions:	As Above
Types:	<ul style="list-style-type: none"> - Paper ticket with paper, PET or PVC top sheet - Inlays (Transponder on PET substrate) with/without adhesive - Adhesive labels of 0.55mm thickness - PET transparent card of 0.55mm thickness
Personalization:	Offset / Silkscreen Printing, Encoding
Packaging:	Single or Roll
Storage Temperature:	-25 ⁰ C to +50 ⁰ C
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

Ultra High Frequency Labels



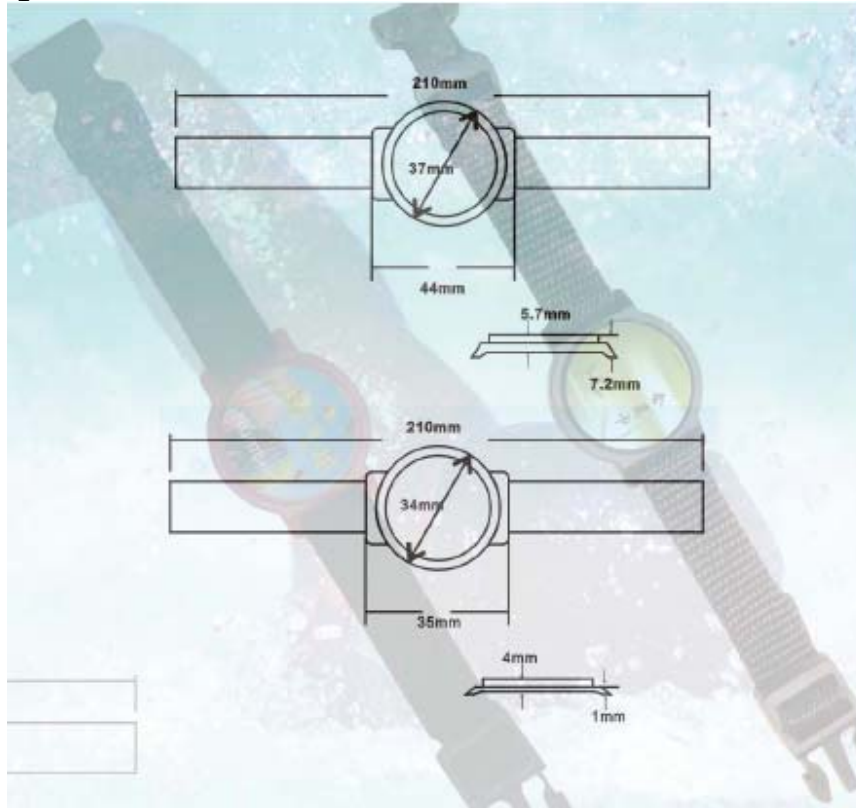
Dimension:	As Above
Types:	<ul style="list-style-type: none"> - Paper ticket with paper, PET or PVC top sheet - Inlays (Transponder on PET substrate) with/without adhesive - Adhesive labels of 0.55mm thickness - PET transparent card of 0.55mm thickness
Personalization:	Offset / Silkscreen Printing, Encoding
Storage Temperature:	-25 ⁰ C to +50 ⁰ C
Available UHF IC:	UCODE EPC G2, UCODE HSL, XRA000, ATA5590

Ultra High Frequency Hard Tags and Cards



Dimensions:	As Above
Types:	- ABS Hard Tags (Optional Silkscreen Printing) - ISO Size Card (Optional Offset Printing and Personalization)
Storage Temperature:	-25 ⁰ C to +80 ⁰ C
Available UHF IC:	UCODE EPC G2, UCODE HSL, XRA000, ATA5590

Wrist Tag



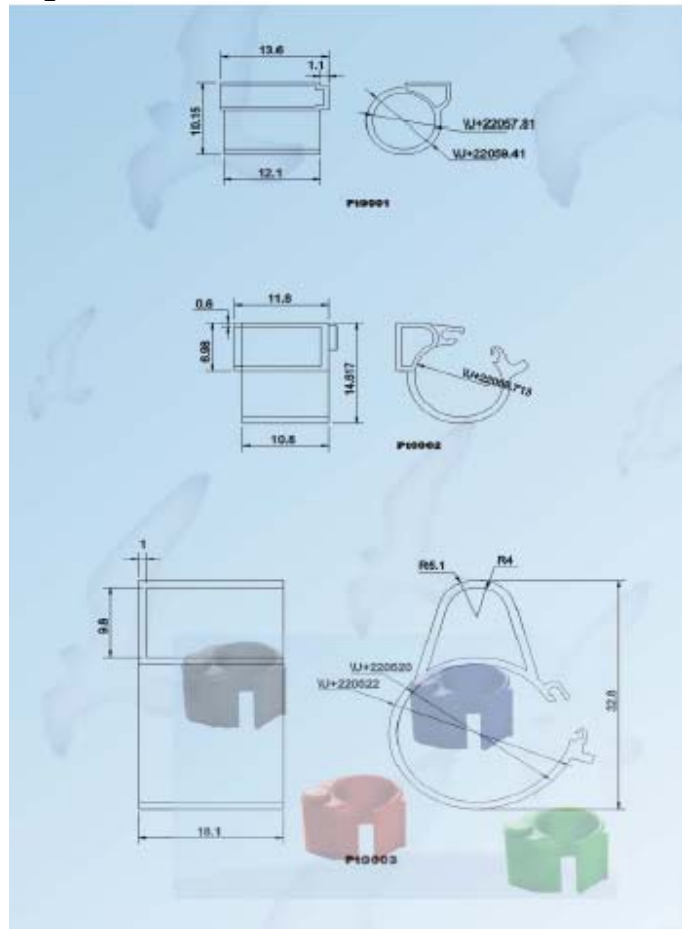
Dimensions:	As Above
Weight:	15 ± 2g
Personalization:	Silkscreen / Offset Printing on PVC Disc Tag, Encoding
Types:	- PVC disc tag, ABS housing, fastener, Nylon Band- PVC disc tag and Band
Temperature:	-10 ⁰ C to +50 ⁰ C
Packaging:	30 pcs/box, 600pcs/carton, 10 kg/carton Carton size 50*24*28cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

Disposable Wrist Tag



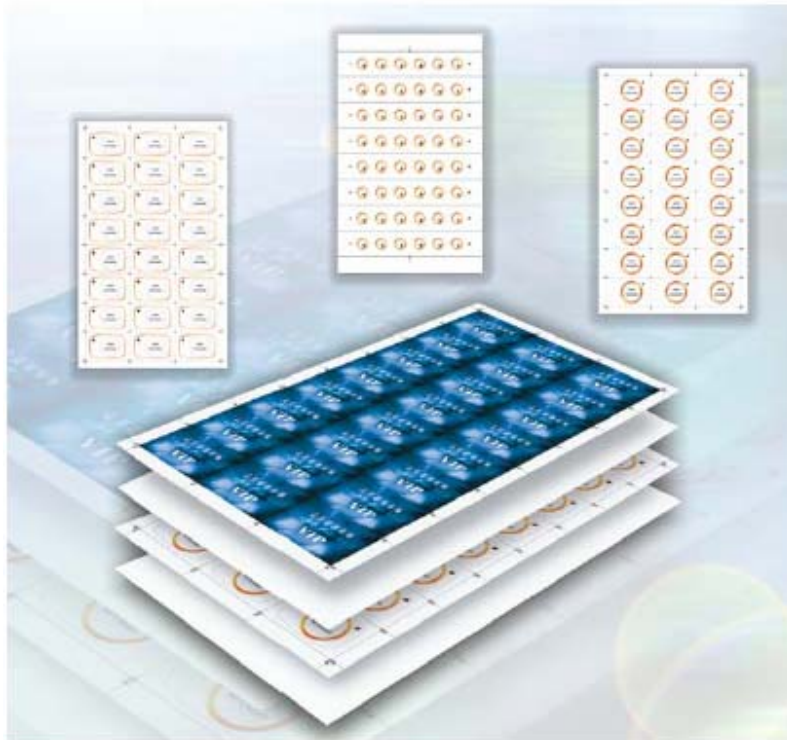
Dimensions:	290mm X 27mm/13mm 132mm X 34mm/12mm
Personalization:	Silkscreen / Offset Printing, Encoding
Temperature:	-25 ⁰ C to +50 ⁰ C
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight(U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

Poultry Ring Tags



Dimensions:	As Above
Weight:	1.5 ± 0.2g, 6.0 ± 0.2g
Material:	Plastic
Types:	- Baby Pigeon Ring Tag - Adult Pigeon Ring Tag - Chicken/Duck Ring Tag
Temperature:	-10 ⁰ C ~ +50 ⁰ C
Packaging:	100 pcs/bag Carton size 50*24*28cm
Available 125KHz IC:	H4100, TK4100

Low Frequency/High Frequency PVC Inlays



Dimension:	0.55mm / 0.75mm (thickness)
Material:	PVC
Packaging:	3*3, 5*2, 4*4, 8*3, 5*5, 8*4 (customized upon request)
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

Combination Smart Card + Dual Interface Cards

Dimensions:	86*54*0.8 (±0.04)mm
Personalization:	Offset / Silkscreen Printing, Encoding
Magnetic Stripe:	Optional LoCo 350oe or HiCo 650oe, 2750oe, 4000oe
Material:	PVC/ABS/PET/PETG (Glossy or Matte Lamination)
Temperature:	-10 ⁰ C ~ +100 ⁰ C (depending on the card material)
Packaging:	200pcs/box, 2000pcs/carton, Carton Size 50*24*15cm
Available IC:	MIFARE PROX

+ Contact/Contactless (13.56MHz) Cards

Dimensions:	86*54*0.8 (±0.04)mm
Personalization:	Offset / Silkscreen Printing, Encoding
Magnetic Stripe:	Optional LoCo 350oe or HiCo 650oe, 2750oe, 4000oe
Material:	PVC/ABS/PET/PETG (Glossy or Matte Lamination)
Temperature:	-10 ⁰ C ~ +100 ⁰ C (depending on the card material)
Packaging:	200pcs/box, 2000pcs/carton Carton Size 50*24*15cm
Available Contact IC:	SLE4442, SLE4428, IS23SC4442, IS23SC4428, AT24C16, AT24C64
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

+ 125KHz/13.56MHz Dual Frequency Cards

Dimensions:	86*54*0.8 (±0.04)mm
Personalization:	Offset / Silkscreen Printing, Encoding
Magnetic Stripe:	Optional LoCo 350oe or HiCo 650oe, 2750oe, 4000oe
Material:	PVC/ABS/PET/PETG (Glossy or Matte Lamination)
Temperature:	-10 ⁰ C ~ +100 ⁰ C (depending on the card material)
Packaging:	200pcs/box, 2000pcs/carton Carton Size 50*24*15cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2, HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10), MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256, INSIDE 2K, SR176

+ 13.56MHz/915MHz Dual Frequency Cards

Dimensions:	86*54*0.8 (±0.04)mm
Personalization:	Offset / Silkscreen Printing, Encoding
Magnetic Stripe:	Optional LoCo 350oe or HiCo 650oe, 2750oe, 4000oe
Material:	PVC/ABS/PET/PETG (Glossy or Matte Lamination)
Temperature:	-10 ⁰ C ~ +100 ⁰ C (depending on the card material)
Packaging:	200pcs/box, 2000pcs/carton Carton Size 50*24*15cm
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10),MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256,INSIDE 2K, SR176
Available UHF IC:	UCODE EPC G2, UCODE HSL, XRA000, ATA5590

+ 125KHz/13.56MHz/915MHz Triple Frequency Cards

Dimensions:	86*54*0.8 (±0.04)mm
Personalization:	Offset / Silkscreen Printing, Encoding
Magnetic Stripe:	Optional LoCo 350oe or HiCo 650oe, 2750oe, 4000oe
Material:	PVC/ABS/PET/PETG (Glossy or Matte Lamination)
Temperature:	-10 ⁰ C ~ +100 ⁰ C (depending on the card material)
Packaging:	200pcs/box, 2000pcs/carton Carton Size 50*24*15cm
Available 125KHz IC:	H4100, H4102, EM4450, TK4100, T5557, HITAG 1, HITAG 2,HITAG S258, HITAG S2048
Available 13.56MHz IC:	MIFARE 1K (S50), MIFARE 4K (S70), MIFARE Ultralight (U10),MIFARE DESFire, ICODE SLI, ICODE 1, Ti2048, Ti256,INSIDE 2K, SR176
Available UHF IC:	UCODE EPC G2, UCODE HSL, XRA000, ATA5590

WAC RF-ID TAG

OTR800 reader is a high performance MIFARE card reader and writer commonly used in a variety of applications including access control, transport and e-purse schemes. The antenna and associated electronics are all assembled in a single ABS casing.

OTR800A contains a micro-controller unit that controls a RF field generated at a frequency of 13.56MHz.

OTR800A can detect the existence of all MIFARE cards through a sensitive RF circuit with a true anti-collision function facilitating simultaneous identification of several cards even when these are wrapped. Information from the card is passed on to the micro-controller. **OTR800A** will process the information to the controller via a RS232 or USB interface. **OTR800A** comes complete with an LCD character display and audible beeper.



ISO Standard	ISO 14443A
Operating Frequency	13.56MHz
Reading Distance	0~10cm
Card Types	MIFARE ultralight / 1K / 4K / ProX / DESFire ISO7816 Contact Card Option
Interface	USB or RS232
Baud Rate	106 kbit
Power Supply	5VDC±5% Maximum: 500mW
Read Response	< 0.1 sec
Operating Temperature	0 °C~+50 °C
Storage Temperature	0 °C~+70 °C
Operating Humidity	0~90%RH
Dimensions	L148 x W106 x H33 mm
Supports	One Main IC card and two SAM cards
Housing	ABS
Weight	200g
Read Indication	122x32mm dot LCD / Beeper

OTR990 UHF Long Range Reader



OTR990 Long Range UHF RFID Reader System can read/write common passive tags of UHF band. Ideal for application like Supply Chain Management, Auto-tolling, Asset Control, Automated Vehicle ID, Logistics Management etc, where long range and high-speed item identification is required.

UHF Tag Operation	Read/Write
Read Range	14dBi Antenna: Read <8m / Write <6m
	12dBi Antenna: Read <7m / Write <5m
	9dBi Antenna: Read <5m / Write <4m
	7dBi Antenna: Read <4m / Write <3m
Operating Frequency	ISM Band 902-928MHz (Optional Customization)
Supporting Standards	ISO18000-6B / EPCglobal Class1 Gen2 (Philips, TI, UPM Rafsec, Avery, EM UHF Band Tags)
Interface	TCP/IP (10Mbps full duplex communication) / RS232 (max. 19200 bps) / Weigand 26bit
Antenna Interface	Single/Double Waterproof Antenna
Programmable I/O	3 Input Ports, 2 Output Ports
Data Storage Space	16Mbits
Microwave Output Power	<+32 dBm
R/W speed	6 ms/word
Operating temperature	-10~+50°C
Power supply	AC 200V ± 20%
Dimensions	L165 x W146 x H42 mm
Weight	550 g

OTR35 Contactless ISO14443A/ISO15693 Reader

WAC RF-ID Tags' OTR35 reader is a versatile card reader and writer for ISO14443A and ISO15693 standards. Commonly used in a variety of applications including access control, transport and e-purse schemes. The antenna and associated electronics are all assembled in a single ABS casing.

OTR35 can detect the existence of all ISO15693 and ISO14443A cards through a sensitive RF circuit with a true anti-collision function facilitating simultaneous identification of several cards even when these are wrapped. Information from the card is passed on to the micro-controller.

OTR35 will process the information to the controller via a RS232 interface. OTR35 comes complete with an LED character display and audible beeper.



ISO Standard	ISO 14443A, ISO 15693
Operating Frequency	13.56MHz
Reading Distance	0~10cm
Card Types	MIFARE ultralight / 1K / 4K / ProX / DESFire ICode SLI, Tag-it HF-I, Tag-it HF-I Pro
Interface	RS232
Baud Rate	106 kbit
Power Supply	5VDC±5% Maximum: 500mW
Read Response	< 0.1 sec
Operating Temperature	0 °C~+50 °C
Storage Temperature	0 °C~+70 °C
Operating Humidity	0~90%RH
Dimensions	L148 x W110 x H33 mm
Housing	ABS
Weight	200g
Read Indication	8X8 LED / Beeper