



### Inlay Layout and Dimensions

	IN590J
Antenna width	22mm ± 0.02mm(0.87in ± 0.01in)
Antenna length	38mm ± 0.02mm(1.5in ± 0.01in)
Lengthwise pitch	50.8mm ± 0.02mm(1.73in ± 0.01in)
Web width	34mm ± 0.02mm(1.34in ± 0.01in)

### Inlay Composition

Composition	Material	Thickness* [µm]
Top	Aluminium	30
Support	Polyester PET	38
Bottom	Aluminium	10 ÷ 20

\* Overall thickness depends on the IC. For IC thickness please refer to the "Available ICs" table

### Available ICs

ISO15693 ICs	NXP ICODE SL2 ICS20	NXP ICODE SLI-S ICS53	NXP ICODE SLI-L ICS50	EM 4233	ST LRI2K
Product code	<b>IN590J-PSL2</b>	<b>IN590J-PSSS</b>	<b>IN590J-PSLL</b>	<b>IN590J-EM4233</b>	<b>IN590J-LR2K23</b>
Operating frequency	13.56 MHz	13.56 MHz	13.56 MHz	13.56 MHz	13.56 MHz
Standard compliance	ISO 15693 ISO 18000-3	ISO 15693 ISO 18000-3	ISO 15693 ISO 18000-3	ISO 15693 ISO 18000-3	ISO 15693 ISO 18000-3
Thickness	150µm ± 15µm	150µm ± 15µm	150µm ± 15µm	280µm ± 15µm	180µm ± 15µm
Operating temperature	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C	-40°C to +85°C	-20°C to +85°C
Storage temperature	-55°C to +140°C	-55°C to +140°C	-55°C to +140°C	-55°C to +125°C	n/a
Unique serial number	8 bytes	8 bytes	8 bytes	8 bytes	8 bytes
Memory size	1024 bits	2048 bits	512 bits	2048 bits	2048 bits
Memory organization	32 blocks of 4 bytes	16 pages with 4 blocks of 4 bytes	16 blocks of 4 bytes	52 blocks of 4 bytes	64 blocks of 4 bytes
Data retention	10 years	10 years	10 years	60 years	40 years
Write endurance	100 000 cycles	100 000 cycles	100 000 cycles	100 000 cycles	1 000 000 cycles

Other ICs are available upon request (Tag-it Std/Pro family)

ISO15693 ICs	NXP ICODE SLIX	NXP ICODE X SLIX-S	NXP ICODE X SLIX-L		
Product code	<b>IN590J-SLX</b>	<b>IN590J-SLXS</b>	<b>IN590J-SLXL</b>		
Operating frequency	13.56 MHz	13.56 MHz	13.56 MHz		
Standard compliance	ISO 15693 ISO 18000-3	ISO 15693 ISO 18000-3	ISO 15693 ISO 18000-3		
Thickness	120µm ± 15µm	120µm ± 15µm	120µm ± 15µm		
Operating temperature	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C		
Storage temperature	-55°C to +140°C	-55°C to +140°C	-55°C to +140°C		
Unique serial number	8 bytes	8 bytes	8 bytes		
Memory size	1024 bits	2048 bits	512 bits		
Memory organization	32 blocks of 4 bytes	16 pages with 4 blocks of 4 bytes	16 blocks of 4 bytes		
Data retention	50 years	50 years	50 years		
Write endurance	100 000 cycles	100 000 cycles	100 000 cycles		

ISO14443 ICs	NXP Mifare Ultralight	NXP Mifare Ultralight C	NXP Mifare Ultralight Ev1 (80 byte)	NXP Mifare Ultralight Ev1 (164 byte)	NXP Mifare1K	NXP Mifare4K
Product code	<b>IN590J-PMF2</b>	<b>IN590J-PMFUC</b>	<b>IN590J-MFU1</b>	<b>IN590J-MFU2</b>	<b>IN590J-MF1K4</b>	<b>IN590J-MF4K4</b>
Operating freq.	13.56 MHz	13.56 MHz	13.56 MHz	13.56 MHz	13.56 MHz	13.56 MHz
RF Standard	ISO 14443 A (up to level 3)	ISO 14443 A (up to level 3)	ISO 14443 A (up to level 3)	ISO 14443 A (up to level 3)	ISO 14443 A (up to level 3)	ISO 14443 A (up to level 3)
Thickness	120µm ± 15µm	120µm ± 15µm	120µm ± 15µm	120µm ± 15µm	150µm ± 15µm	150µm ± 15µm
Operating temp.	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Storage temp.	-55°C to +125°C	-55°C to +125°C	-55°C to +125°C	-55°C to +125°C	-55°C to +125°C	-55°C to +125°C
UID	7 bytes	7 bytes	7 bytes	7 bytes	4 bytes (MF1K7: 7 bytes)	4 bytes (MF4K7: 7 bytes)
Memory size	64 bytes	192 bytes	80 bytes	164 bytes	1024 bytes	4096 bytes
Memory organization	16 pages of 4 bytes	48 pages of 4 bytes	20 pages of 4 bytes	41 pages of 4 bytes	16 sectors of 64 bytes	32 sectors of 64 bytes + 8 sectors of 256 bytes
Write endurance	5 years	5 years	10 years	10 years	10 years	10 years
Data retention	10 000 cycles	10 000 cycles	100 000 cycles	100 000 cycles	100 000 cycles	100 000 cycles

ISO14443 ICs	NXP Mifare Plus	NXP Mifare DESFire Ev1
Product code	<b>IN590J-MFPxxx</b>	<b>IN590J-DESxxx</b>
Operating frequency	13.56 MHz	13.56 MHz
Standard compliance	ISO 14443 A	ISO 14443 A
Thickness	120µm ± 15µm	120µm ± 15µm
Operating temperature	-25°C to +70°C	-25°C to +70°C
Storage temperature	-55°C to +125°C	-55°C to +125°C
Unique serial number	7 bytes	7 bytes
Memory size	2K / 4K bytes	2K / 4K / 8K bytes
Memory organization	Fixed sectors	Dynamic files
Data retention	10 years	10 years
Write endurance	200 000 cycles	500 000 cycles

Other ICs are available for this antenna (Mifare Plus, DESFire and Infineon families): please contact us for further information

### General supply conditions

Reel dimensions	Internal diameter	76 mm
	External diameter	300 mm
Reel quantity	Inlay per reel	10 000 ± 10% (custom sizes available upon request)