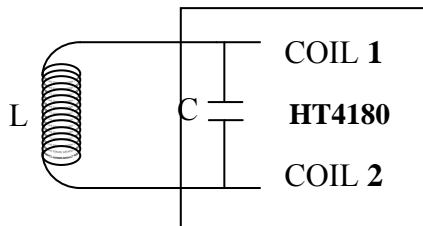


## HT4180 非接触式唯读传输装置

### 概述

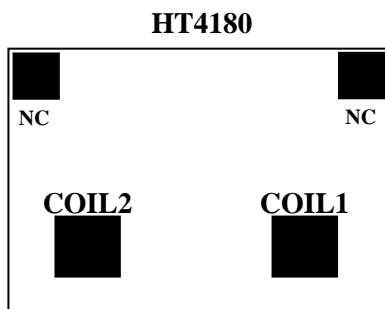
HT4180 是一个由 CMOS 所组成的非接触式只读传输积体线路。其电源由 IC 两端之线圈所提供，且 IC 运作所需要的频率，也是经由相同的路径所得到。HT4180 的用途是调变射频，使 96 个 BIT 的资料加载于射频，达到非接触式传输资料的目的。其最大特点是相容于 ISO 15693 的标准。

### 外部线路示意图



图(一)  
IC 内置电容 23.5pF

### IC 脚位图



COIL1 / CLOCK INPUT  
COIL2 / DATA TRANSMISSION  
PAD size 90um\*90um  
Chip size 635um\*437um

图(二)

### 电气条件

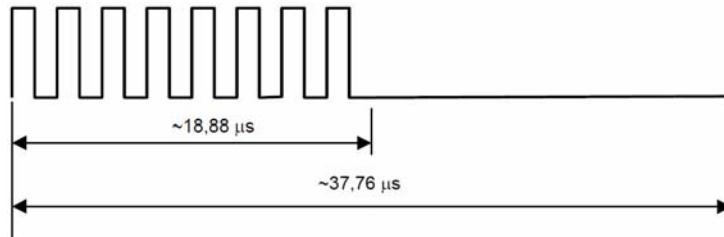
表(一)

参数	最小值	典型值	最大值	单位
工作温度	- 40		+ 85	°C
工作电压	3.5	5		V
工作频率		13.56		MHz
储存温度	- 55		+ 200	°C
静电破坏		2000		V

### 编码方式

#### 逻辑 0 :

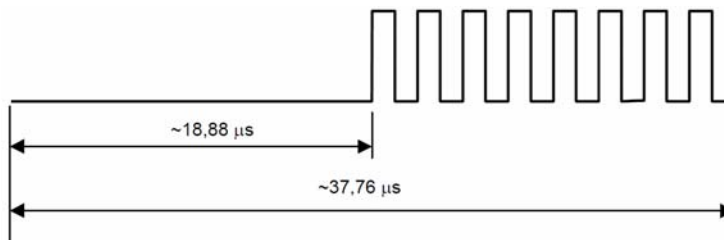
A logic 0 starts with 8 pulses of  $f_c/32$  ( $\sim 423.75\text{kHz}$ ) followed by an unmodulated time of  $256/f_c$  ( $\sim 18.88\mu\text{s}$ ), see figure 3 ◦



图(三) Logic 0

#### 逻辑 1 :

A logic 1 starts with an unmodulated time of  $256/f_c$  ( $\sim 18.88\mu\text{s}$ ) followed by 8 pulses of  $f_c/32$  ( $\sim 423.75\text{kHz}$ ), see figure 4 ◦



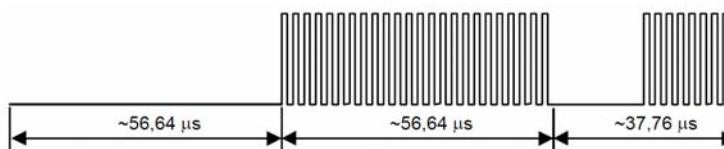
图(四) Logic 1

#### SOF :

SOF comprises 3 parts :

1. an unmodulated time of  $56.64\mu\text{s}$  ( $768/f_c$ ) ◦
2. 24 pulses of  $423.75\text{kHz}$  ( $f_c/32$ ) ◦
3. a logic 1 which starts with an unmodulated time of  $18.88\mu\text{s}$  ( $256/f_c$ ), followed by 8 pulses of  $423.75\text{kHz}$  ( $f_c/32$ ) ◦

The SOF for one subcarrier is illustrated in Figure 5 ◦



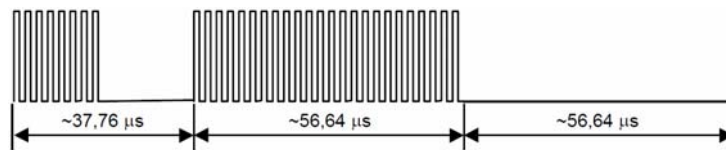
图(五) Start of frame when using one subcarrier

**EOF :**

EOF comprises 3 parts :

1. a logic 0 which starts with 8 pulses of 423.75kHz ( $f_c/32$ ) , followed by an unmodulated time of 18.88 $\mu$ s ( $256/f_c$ ) .
2. 24 pulses of 423.75kHz( $f_c/32$ ) .
3. an unmodulated time of 56.64 $\mu$ s ( $768/f_c$ ) .

The EOF for one subcarrier is illustrated in Figure 6 .



图(六) End of frame when using one subcarrier

记忆区的内码格式

**The HT4180 memory array contains of the following fields :**

1. Flags .
2. One parameter fields .
3. Data (See Table 3) .
4. CRC16 (See Table 4) .

<b>SOF</b>	<b>Flags</b>	<b>Parameters</b>	<b>Data</b>	<b>CRC16</b>	<b>EOF</b>
	8 bits	8 bits	64 bits	16 bits	

表(二) Memory array

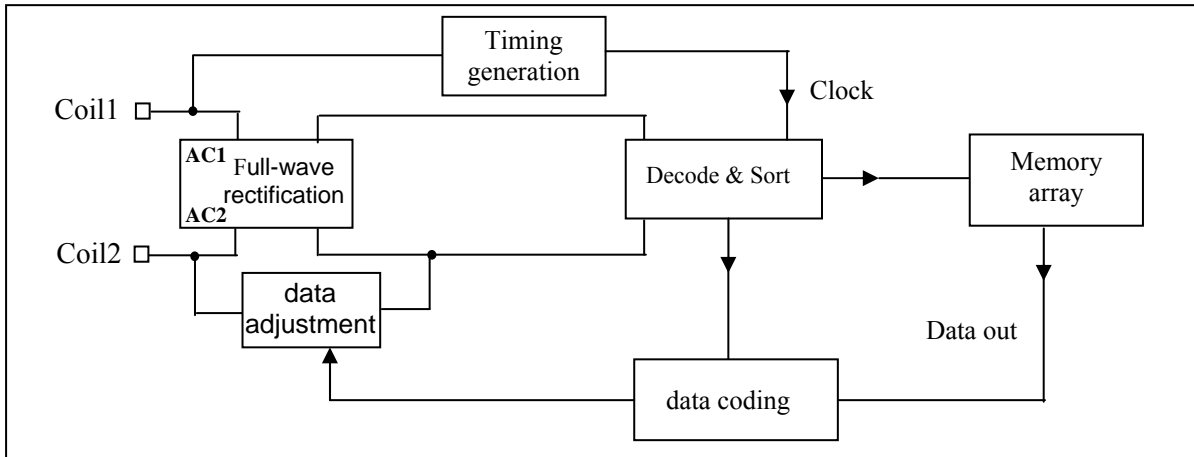
MSB	<b>Data</b>			LSB
64	57	56	1	
E0	Serial number			

表(三) Data format

LSByte		MSByte	
LSBit	MSBit	LSBit	MSBit
<b>CRC 16 (8 bits)</b>		<b>CRC 16 (8 bits)</b>	

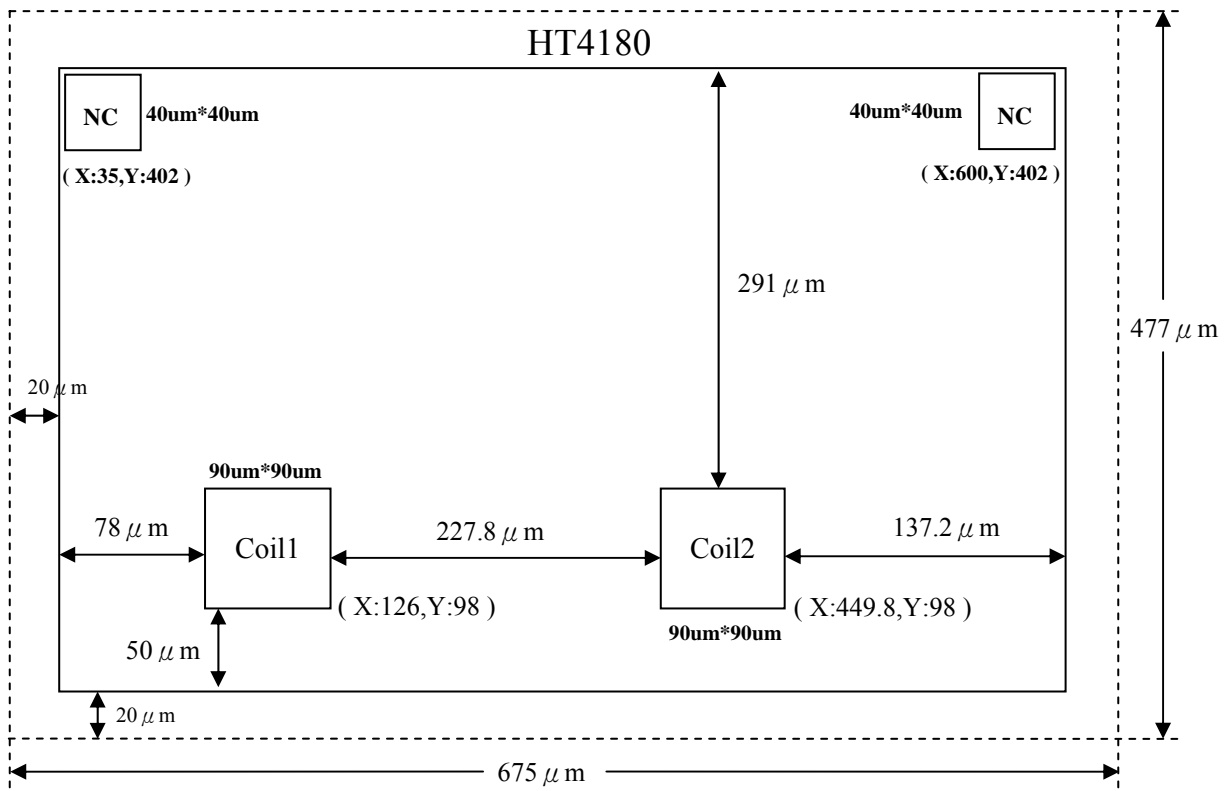
表(四) CRC bits and bytes transmission rules

## IC 方块图



图(七)

## CHIP PAD 位置示意图



图(八)