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## DESCRIPTION

RT1527 is a one time programmable Encoder Utilizing CMOS technology process. RT1527 has a maximum of 20 bits providing up to 1 million codes. It can reduce code collision and unauthorized code scanning possibilities.

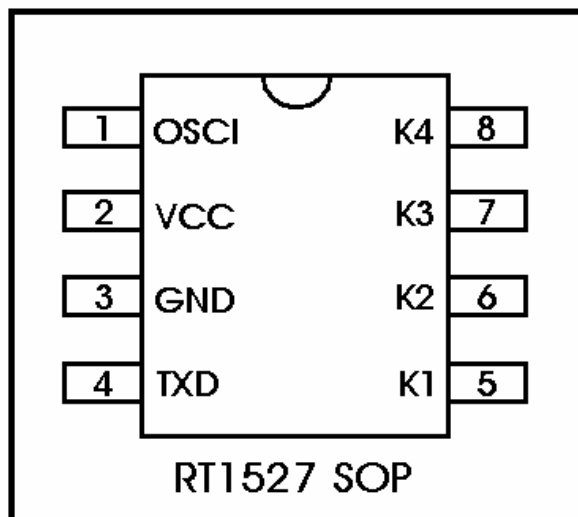
## FEATURES

1. CMOS technology.
2. Low stand by current  $< 1\mu\text{A}$ .
3. Wide range of Operating Voltage:  $V_{cc} = 1.8\text{V} \sim 13\text{V}$ .
4. Up to 4 data pins.
5. Total 1048576 address codes.
6. Single Resistor Oscillator.

## APPLICATIONS

1. Car and Motorcycle Security system.
2. Wireless Door Bell.
3. Home Security System.

## PIN OUT



## PIN DESCRIPTION

Symbol	DESCRIPTION	PIN	I/O
OSCI	Single resistor oscillator pin. Connected R to VCC.	1	I
VCC	Positive power supply.	2	—
GND	Ground.	3	—
TXD	Transmission data output pin.	4	O
K0	Data input with pull-low R. Active High.	5	I
K1	Data input with pull-low R. Active High.	6	I
K2	Data input with pull-low R. Active High.	7	I
K3	Data input with pull-low R. Active High.	8	I

## FUNCTIONAL DESCRIPTION

When data pin (K0~ K3) set to "1", RT1527 will transmit serial data waveform from C0~ C19 to D0~ D3 by radio frequency (RF) modulation. This can be use in most of the remote control application.

### Data Transmission

#### Code Frame

A code frame period is depended on data pin active period. When data pin is active the code word transmit continuously until data pin inactive. Format is as follow:

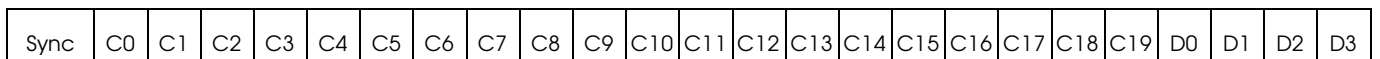


### CODE Word

Code word consists of full set of serial data format. The combination is as follow:

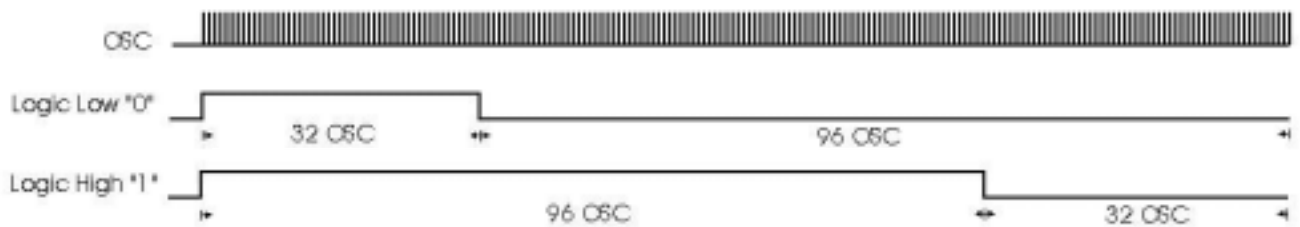
Sync.	20 Address Bits (C0~ C19)	4 Data Bits (D0~ D3)
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Each code word consists of 20 address bits, 4 data bits and a synchronous bit. The transmission sequence is as the diagram shown:



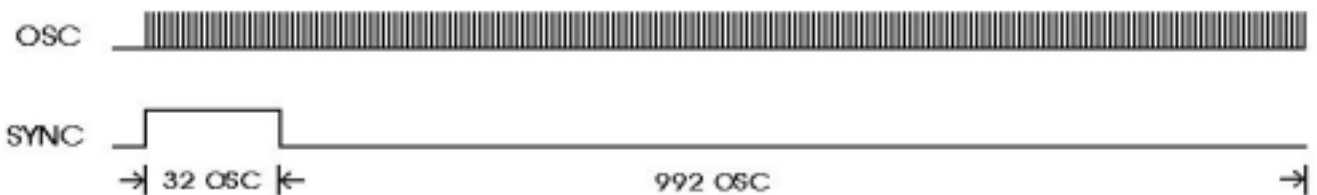
### CODE BIT

Code bit is the combination of address and data bits, RT1527 transmit a serial of waveform is consist of code bits and sync. Code bit can be defined into 2 states: Logic low ("0") and Logic high ("1"). Each length of code bit is equal to 128 oscillation pulse. Please refer to the diagram shown below:

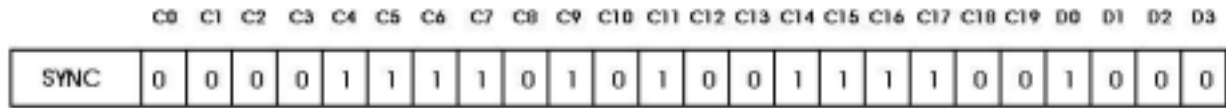


### SYNC BIT

The synchronous bit length is equal to 1024 oscillation pulse.



EXAMPLE: SERIAL DATA OUT



Transmission address code is : "3CAF0"; Data code is : "1".

DATA COMBINATION TABLE(K3~ K0)

K3	K2	K1	K0	D3	D2	D1	D0
0	0	0	1	0	0	0	1
0	0	1	0	0	0	1	0
0	0	1	1	0	0	1	1
0	1	0	0	0	1	0	0
0	1	0	1	0	1	0	1
0	1	1	0	0	1	1	0
0	1	1	1	0	1	1	1
1	0	0	0	1	0	0	0
1	0	0	1	1	0	0	1
1	0	1	0	1	0	1	0
1	0	1	1	1	0	1	1
1	1	0	0	1	1	0	0
1	1	0	1	1	1	0	1
1	1	1	0	1	1	1	0
1	1	1	1	1	1	1	1

## ABOSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Condition	Rating	Unit
VCC	supply voltage		-0.3 ~ 15	V
VI	input voltage		-0.3 ~ Vcc + 0.3	V
VO	output voltage		-0.3 ~ Vcc + 0.3	V
Tst	storage Temp.		-40 ~ 125	□
Top	operating Temp.		-20 ~ 70	□
Pdis	Max. power dissipation	Vcc= 12V	300	mW

## DC ELECTRICAL CHARACTERISTICS:

Symbol	Parameter	Condition	min.	Type	Max.	Unit
VCC	operating voltage		1.8	—	13	V
I <sub>sb</sub>	stand by current	OSC STOP output unloaded			1	μA
I <sub>op</sub>	operating current	VCC = 12V, OSC = 80KHZ		0.5	1	mA
I <sub>oh</sub>	source current	VCC = 12V, V <sub>oh</sub> = 6V	3			mA
I <sub>ol</sub>	skin current	VCC = 12V, V <sub>ol</sub> = 6V	3			mA

## OSCILLATION RESISTANCE AND FREQUENCY

