



HAT-12E4OS One Shot Four Channel Encoder

This chip emulates the Holtek encoding protocol. The eight bit address and four bits of data are factory pre-programmed. When transmitted, the eight address bits are the first eight bits transmitted, and the four data bits are the last four to be transmitted. The complimentary RF_PWR pins toggle before the data is transmitted. These pins can sink/source up to 15mA each.

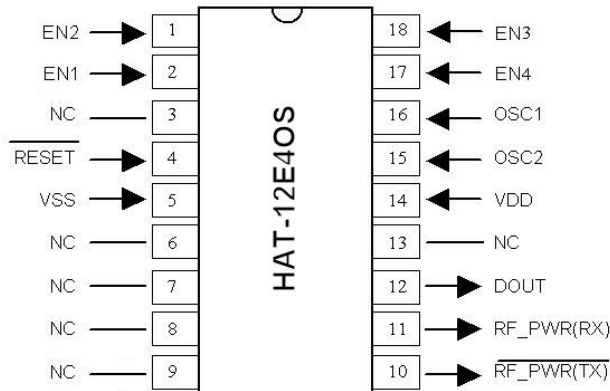
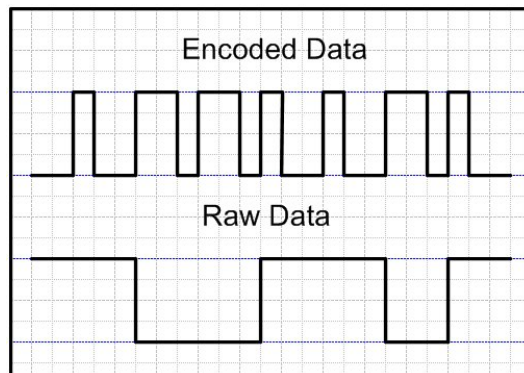
To transmit the data, EN1, EN2, EN3 or EN4 must be brought high momentarily. When one of these is brought high, five data packets are transmitted via DOUT (12). One shot operation means that no more data will be transmitted until TXEN (9) is taken low and then high again. This encoder outputs data at the same speed as the Holtek HT-12E that is configured with a 680k resistor for the oscillator.

Features

- Operating voltage: 4.5V-5.5V
- Complementary RF_PWR pins can be used to switch a transmitter on or a receiver off
- 8 Bit address pre-programmed
- 4 Bit data which is pre-programmed
- 4 Channel one shot operation allowing for four push buttons
- Very few external components (10MHz crystal and two 22pF capacitors)

Typical Applications

- Security systems
- Remote monitoring
- Remote control
- Smoke/Fire alarm systems



Pinouts

PIN	Function	Signal Direction
1	EN2	Input
2	EN1	Input
3	NC	N/A
4	RESET	Input
5	VSS	Input
6	NC	N/A
7	NC	N/A
8	NC	N/A
9	NC	N/A
10	RF_PWR(TX)	Output
11	RF_PWR(RX)	Output
12	DOUT	Output
13	NC	N/A
14	VDD	Input
15	OSC2	Input
16	OSC1	Input
17	EN4	Input
18	EN3	Input

Pin Descriptions

RESET: Active low. Tie high for normal operation.

VSS: Ground reference.

EN1—EN4: When taken high, five data packets are transmitted, each containing first eight bits of address, and the last four bits of data. Must be taken low and then high again to transmit again. See 'Data Table' on next page.

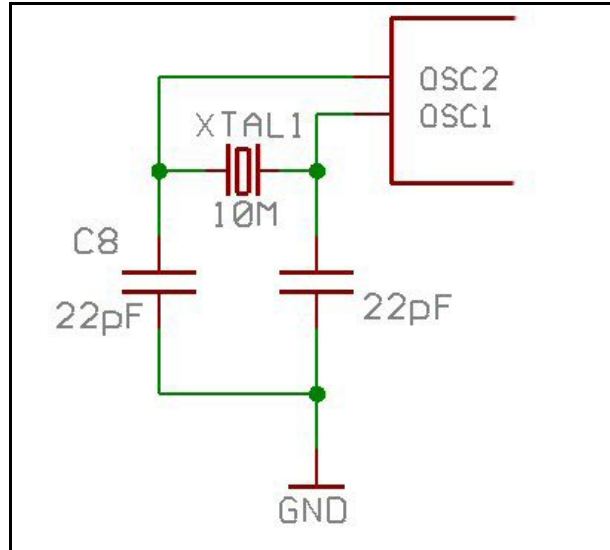
RF_PWR(TX): Normally low, until a TXEN has been pressed. At this time, the line toggles and stays high for the duration that data is being transmitted. Can be used to power a transmitter, providing the transmitter does not draw more than 15mA. If more than 15mA are required, a transistor should be used to provide the necessary current.

RF_PWR(RX): Normally high. This is the compliment to pin 10 and similarly can source up to 15mA. If more than 15mA is required, a transistor should be used to provide the necessary current.

DOUT: Encoded data output pin. Encoded data is in the same format that is used by the Holtek HT-12E encoders.

VDD: Positive voltage reference.

OSC1—OSC2: Oscillator input. Each should have a 22pF capacitor to ground and a 10MHz crystal across the pins. See the figure below.



Oscillator configuration.

Output Data

The actual data that is transmitted is dependant on which input (Enx) is enabled. See the table below for the data values:

DATA TABLE							
EN1	EN2	EN3	EN4	D3	D2	D1	D0
1	0	0	0	0	0	0	1
0	1	0	0	0	0	1	0
0	0	1	0	0	1	0	0
0	0	0	1	1	0	0	0

Disclaimer:

Technical specifications are subject to change without notice. Whilst every effort has been made to ensure the accuracy of the information contained in this document, ABACOM Technologies Inc. does not assume responsibility for any errors or omissions that may exist. ABACOM Technologies Inc. does not assume responsibility for any damage caused through use or misuse of their products and the onus lies entirely with the end user in determining the suitability of and use of the product for any particular application. ABACOM Technologies Inc. products are not recommended for applications where human life may be at risk.