



## HAT-12DV4P Variable Delay Pulsed o/p, 4 bits data

This chip emulates the Holtek decoding protocol. The decoder waits for two transmissions with the proper format, then decodes the incoming data and moves it to the outputs for an amount of time determined by T0 (8) and T1 (9). The Valid Transmission (11) pin goes high at the same time the data is sent to the outputs.

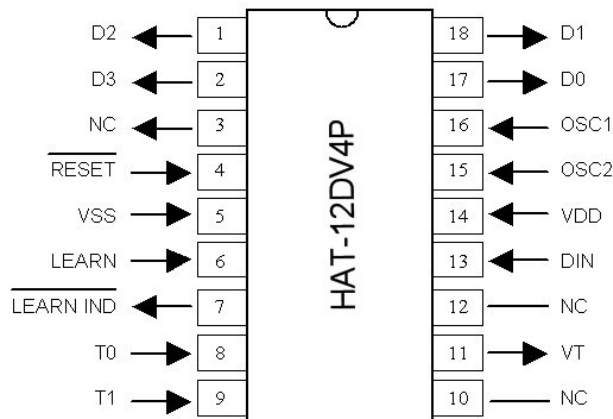
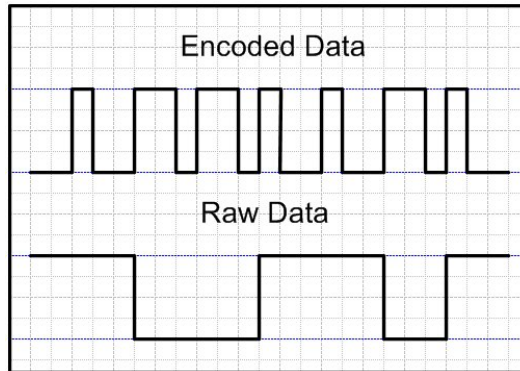
The four bits of data that are received are the last four bits received. The first eight bits contain the address. The address of the decoder can be set by bringing the Learn (6) pin high for approximately 3.5 seconds. After 3.5 seconds Learn IND (7) goes low ; which can be used to sink up to 15mA to drive an LED, and the first valid transmission received sets the address. This address is stored in EEPROM memory and will be retrieved on power up. If being used with a Holtek HT-12E encoder, its oscillator should be configured with a 680k resistor.

### Features

- Operating voltage: 4.5V-5.5V
- 8 Bit address
- 4 Data outputs which are pulsed for a time delay determined by the state of two pins
- Active high valid transmission pin
- 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	D2	Output
2	D3	Output
3	NC	N/A
4	RESET	Input
5	VSS	Input
6	LEARN	Input
7	LEARN IND	Output
8	T0	Input
9	T1	Input
10	NC	N/A
11	VT	Output
12	NC	N/A
13	DIN	Input
14	VDD	Input
15	OSC2	Input
16	OSC1	Input
17	D0	Output
18	D1	Output

## Pin Descriptions

D0—D3: The received data is latched to these outputs. Active high, can sink/source up to 15mA.

RESET: Active low. Tie high for normal operation.

VSS: Ground reference.

LEARN: When pulled high for 3.5 seconds, the next valid transmission received sets the address of the decoder.

LEARN IND: When the chip goes into learn mode (pin 6 has been high for 3.5s) this pin goes low. Can be used to sink up to 15mA to drive an LED indicator.

T0—T1: The state of these pins determines the length of time that the data is on the output. See table below:

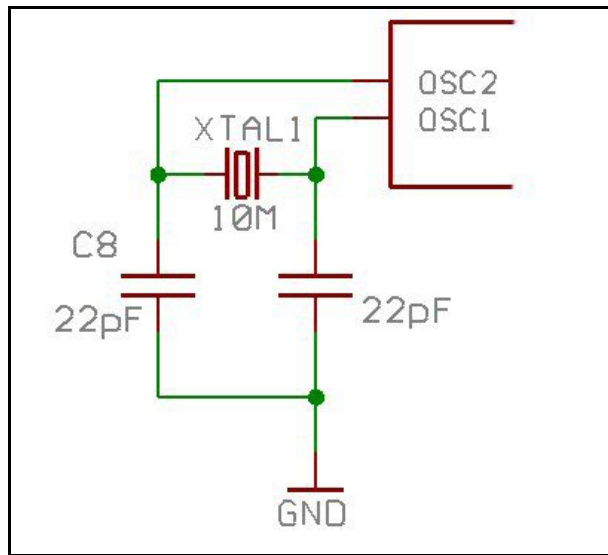
T1	T0	Delay
0	0	105ms
0	1	525ms
1	0	1s
1	1	2s

VT: Upon reception of a valid transmission, this pin goes high until 50ms after the last proper data packet has been received.

DIN: Encoded data input (from the receiver). Encoded data should be encoded according to the Holtek HT-12E protocol. With respect to the HT-12E, A0 to A7 are decoded as the address and D0 to D3 are the four data bits. If used with a Holtek HT-12E encoder, its oscillator should be configured with a 680k resistor.

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.

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