GENIE E28 Microcontroller

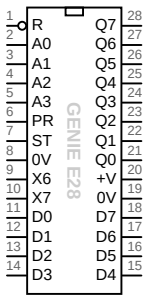
Capabilities

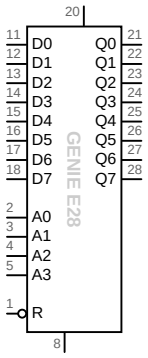
The following table outlines the capabilities of this GENIE device:

Type	**ELITE**
Version	**1**
Signals	
Pins	**28**
Analogue inputs	**4**
ADC resolution	**8 bits**
Digital inputs	**8**
Digital outputs	**9**
Features	
Parallel processing	**Yes**
Plug and play	**Yes**
Debug live	**Yes**
Device control	**Yes**
Sensor calibration	**Yes**
RTTTL music	**Yes**
16 channel MIDI music	**No**
Sound effects	**Yes**
PWM outputs	**1**
Servo motor control	**8**
Infra-red control	**Yes**
1-Wire® and I2C	**Yes**
Ultrasonic sensing	**Yes**
Events and interrupts	**Yes**
1-second clock	**Yes**
Programming	
Program memory	**3.2 K bytes**
Variables	**10 (A-J)**
Data (array) memory	**0**
EEPROM locations	**16**
Program start limit	**4**
Subroutine limit	**No limit**
Call stack limit	**32**
Electrical	
PICmicro® device	**16F883**
Power supply	**2.1-5.5V**
Pin current limit	**25mA**
Total current limit	**200mA**

Component

The GENIE E28 microcontroller has 28 legs (known as pins) and these are used as follows (a simplified view is also shown):





Pin	Description
1	Reset (when pin goes low)
2	Analogue input A0
3	Analogue input A1
4	Analogue input A2
5	Analogue input A3
6	Programming input (PR)
7	Status output (ST)
8	Ground (zero volt) supply voltage
9	Unused
10	Unused
11	Digital input D0
12	Digital input D1
13	Digital input D2
14	Digital input D3
15	Digital input D4
16	Digital input D5
17	Digital input D6
18	Digital input D7
19	Ground (zero volt) supply voltage
20	Power supply voltage (2.1-5.5V only)
21	Digital output Q0
22	Digital output Q1
23	Digital output Q2
24	Digital output Q3
25	Digital output Q4
26	Digital output Q5
27	Digital output Q6
28	Digital output Q7

The required circuit for a GENIE E28 is shown below. It includes a reset switch, download socket and three resistors.