

**Explanation**

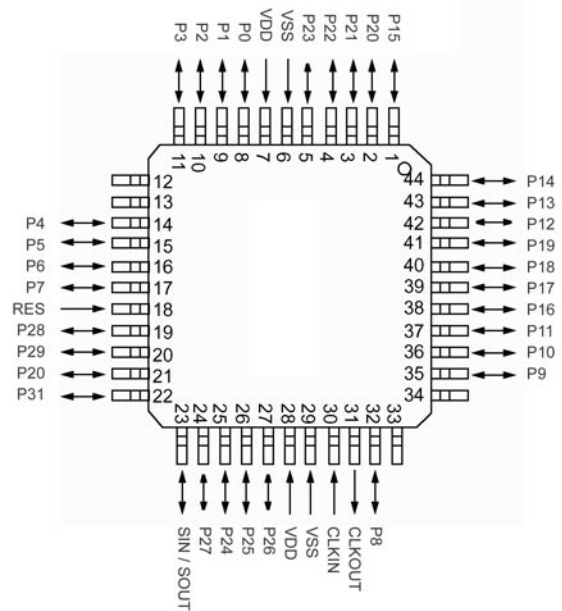
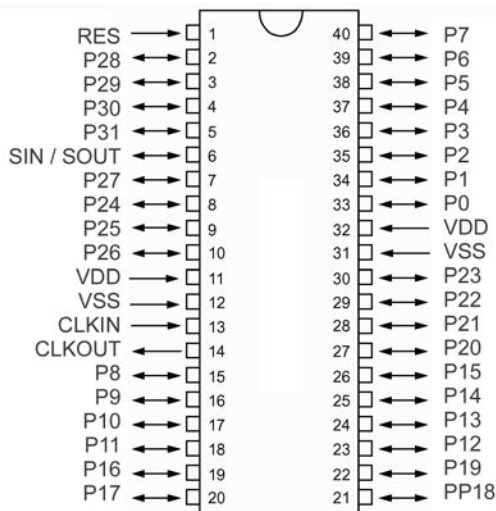
The Atom 40 Pin interpreter chip uses one I/O line for both SIN and SOUT. This is accomplished by using a simple pullup resistor and diode circuit as shown. The Atom 40 Pin interpreter chip has 8 analog inputs. The inputs are pin P24 through P31. Any of these pins can be accessed as analog I/O.

**Important Notes**

The MAX232 is required only when programming. This circuit is not necessary in a final design it can be omitted, if end user programming is not required. When designing a circuit that utilizes the Atom Interpreter chip make sure to include the 1 MEG  $\gamma$  resistor across CLKIN and CLKOUT. This resistor is used to cancel noise. Power supply filtering is important. This will cause many issues if not designed correctly. In most cases it is a good idea to include a bypass cap of .1uf as close to the Atom interpreter chip as possible.

**40 Pin PDIP Interpreter Chip**

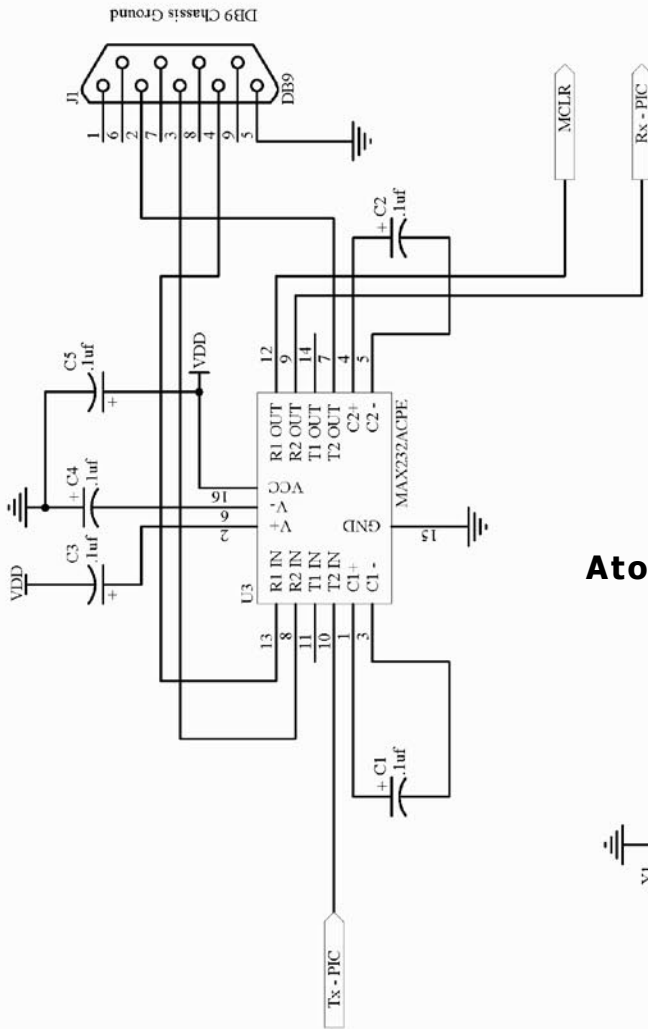
**44 Pin TQFP Interpreter Chip**



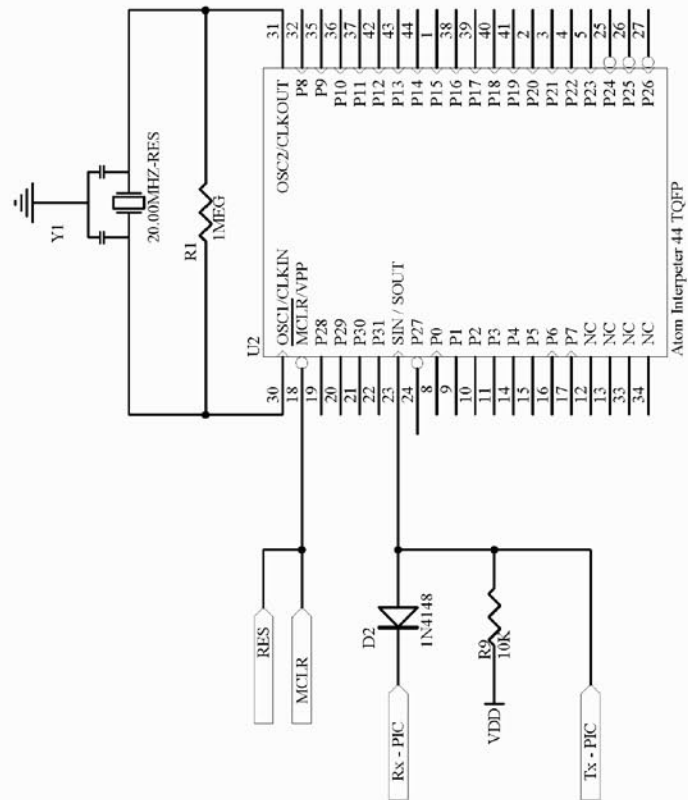
**Bill Of Material For Atom 40 Pin Interpreter Schematic**

Part	Quantity	Component	Part Number	Supplier
.1uf	6	C1, C2, C3, C4, C5, C8	B0071	Basic Micro Inc.
10uf	2	C7, C9	B0059	Basic Micro Inc.
1MEG	1	R1	1.1MQBK-ND	DigiKey
20.00MHz	1	Y1	B0062	Basic Micro Inc.
7805	1	U2	B0063	Basic Micro Inc.
DB-9RA/F	1	J1	104951	Jameco
232ACPE	1	U3	MAX232ACPE	Future-Active
Atom DIP	1	U1	B0030	Basic Micro Inc.
Atom TQFP	1	U1	B0032	Basic Micro Inc.

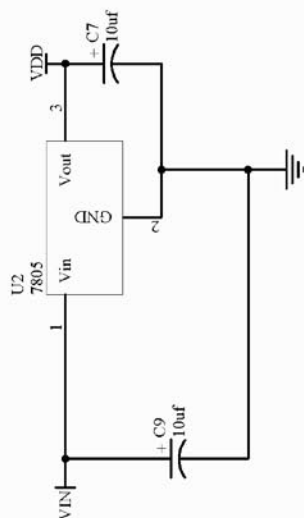
**RS-232 Level Inverter**



**Atom 44 Pin TQFP Interpreter Chip**

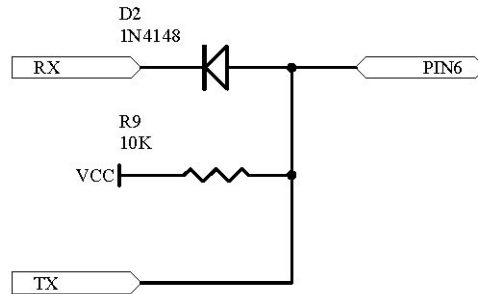


**Power Supply**



## Using the Interpreter Chip with the 2840 Board

Follow the schematic shown below. Pin 6 refers to physical pin 6 on both the 28 and 40 pin interpreter chips. Pin 1 on the 28 or 40 pin chips must be connected to RTS. On the 2840 board RTS is clearly marked. You will need to use a jumper wire to connect RTS to MCLR labeled on the board.



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