

SMINI parts list (in order of recommended assembly)

Qty.	Symbol	Description
2	-	4-40 x 1/4" long pan head machine screws (Digi-Key H142)
2	-	4-40 hex nuts (Digi-Key H216)
1	R1	10K Ω resistor [brown-black-orange]
4	R2-R5	330 Ω resistors [orange-orange-brown]
1	D1	1A, 100V diode (Jameco 76961 or Digi-Key 1N4002)
1	S1	40-pin DIP socket (Jameco 112310)
1	S2	14-pin DIP socket (Jameco 112213)
3	S3-S5	20-pin DIP sockets (Jameco 112248)
6	S9-S14	20-pin DIP sockets (Jameco 112248)
1	RN1	2.2K Ω 7-element SIP resistor network (Digi-Key 770-81-R2.2K)
1	RN2	2.2K Ω 5-element SIP resistor network (Digi-Key 770-61-R2.2K)
3	RN3-RN5	2.2K Ω 9-element SIP resistor networks (Jameco 97893)
6	RN6-RN11	470 Ω 8-element DIP resistor networks (Jameco 108581)
6	RN12-RN17	4.7K Ω 9-element SIP resistor networks (Jameco 24660)
1	SW1	7-segment DIP switch (Digi-Key CT2067)
1	SW2	4-segment DIP switch (Digi-Key CT2064)
3	H4-H6	24-pin right angle headers (Mouser 538-26-48-1242)
15	C0-C14	.1 μ F, 50V monolithic capacitors (JDR .1UF-MONO)
2	C15, C16	18pF, 100V monolithic ceramic disk capacitors (Digi-Key P4840)
2	C17, C18	10 μ F, 16V tantalum capacitors (Jameco 94060)
48	Q1-Q48	2N4401 NPN small signal transistors (Jameco 38421) for standard current-sinking or 2N4403 PNP small signal transistors (Jameco 38447) when using current-sourcing
6	J1-J6	Jumpers (make from excess resistor leads and install either long jumper for current-sinking or short jumper when using current-sourcing – see text for details)
1	L1	Diffused green T1 $\frac{3}{4}$ size LED (Digi-Key P303)
1	L2	Diffused amber T1 $\frac{3}{4}$ size LED (Digi-Key P306)
1	L3	Diffused red T1 $\frac{3}{4}$ size LED (Digi-Key P300)
1	XL1	18.432MHz crystal (Digi-Key X179)
1	U1	Microcontroller PIC16F877-20/P with USIC programmed FLASH Memory (JLC U1B)
1	U2	74LS04 hex inverter (Jameco 46316)
3	U3-U5	74LS540 octal buffer/line drivers – inverting (Jameco 47861)
6	U9-U14	74HCT573 octal D-type latched flip-flops (Jameco 45090)

Used only for RS-485 and RS422

2	S6, S7	8-pin DIP sockets (Jameco 112205)
2	H1, H2	5-pin straight headers (cut from 24-pin straight header - Mouser 538-26-48-1241)
2	U6, U7	RS485 transceivers (Digi-Key MAX487CPA)

Used only for RS-232

1	S8	16-pin DIP socket (Jameco 112221)
5	C19, C23	1.0 μ F, 35V tantalum capacitors (Jameco 33662)
1	H3	3-pin straight header (cut from 24-pin straight header – Mouser 538-26-48-1241)
1	U8	Dual RS232 transmitter & receiver (Digi-Key Max232CPE or Jameco 24811)

Mating connectors for cable to computer, to next node and to external hardware

1 or 2	—	One 3-pin terminal housing for RS232 or two 5-pin terminal housings for RS485/RS422 (cut from 12-pin terminal housing Mouser 538-09-50-3121)
6	—	12-pin terminal housings (Mouser 538-09-50-3121)
82	—	Crimp terminals (Mouser 538-08-50-0106 for wire sizes 18-20 or 538-08-50-0108 for wire sizes 22-26)