

Nextmove ST and SST I/O hardware

There is some info in the installation manual MN1939

2.3

Block 1: User Outputs

Label	Type	Description/Notes	MINT Keyword
0	Output	Output bit 0 NPN open collector	OUT0
1	Output	bit 1	OUT1
2	Output	bit 2	OUT2
3	Output	bit 3	OUT3
4	Output	bit 4	OUT4
5	Output	bit 5	OUT5
6	Output	bit 6	OUT6
7	Output	bit 7	OUT7
Gnd	Input	Return for outputs	

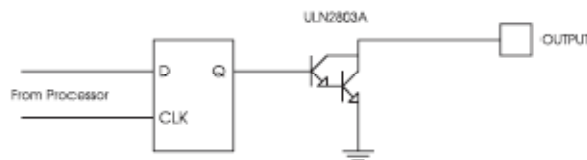
The controller provides 8 uncommitted digital outputs that are controlled through software.

The uncommitted digital outputs are driven by an octal darlington array (ULN2803 device). Each output is capable of sinking 50mA nominal continuously on all channels. A single channel can sink up to 400mA, however the total output for all channels cannot exceed 800mA. The circuit is shown in the figure.

Example:

`OUT = 15`

This example in MINT will turn on outputs 0 to 3 and turn outputs 4 to 7 off. See the MINT Programming Guide for more details on the OUT keyword.



Output driver circuit.

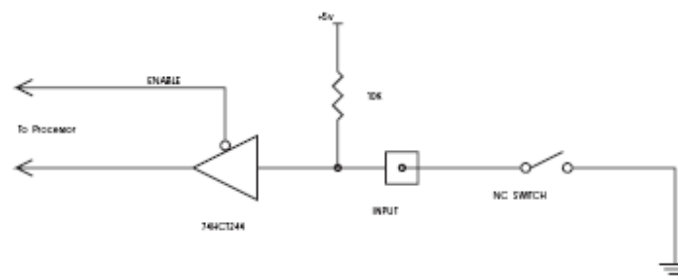
Note: Inductive loads require an external flyback diode

Label	Type	Description/Notes	MINT Keyword
0	Input	Input bit 0 NPN internally pulled up to 5V	IN0
1	Input	bit 1	IN1
2	Input	bit 2	IN2
3	Input	bit 3	IN3
4	Input	bit 4	IN4
5	Input	bit 5	IN5
6	Input	bit 6	IN6
7	Input	bit 7	IN7
fast interrupt	Input	Latches the position within 25 micro-seconds and stores the value to the FASTPOS keyword.	FASTPOS
GND	Input	return for inputs	

The controller provides 8 uncommitted digital inputs which can be configured as interrupts within the MINT interpreter.

When read the uncommitted inputs will return a '1' if the input is not connected or pulled up to 5V and a '0' if the input is connected to ground. The state of the inputs is read using the MINT IN keyword.

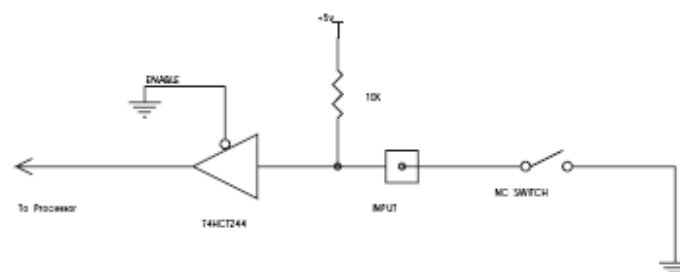
The input buffer circuit is shown in the figure below.



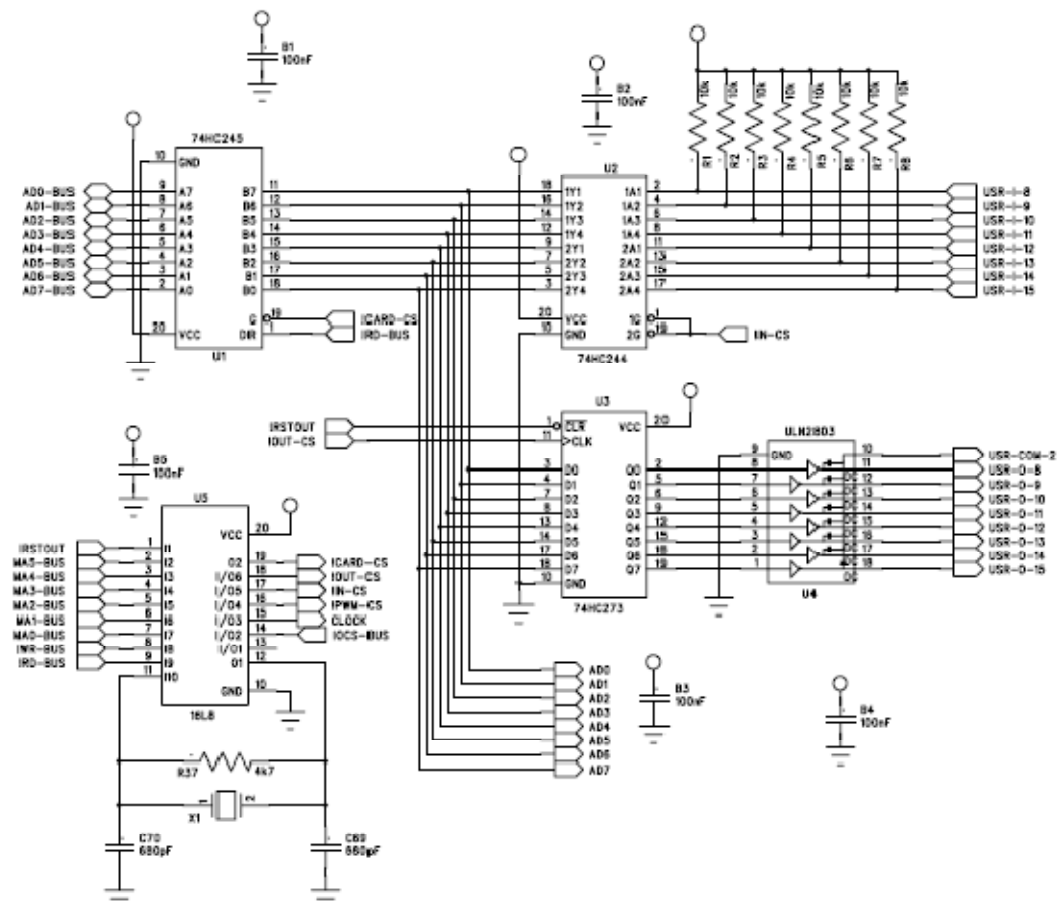
User inputs buffer circuit.

The fast interrupt is used to record the instantaneous position of all three axes. The Fast Interrupt has a fast response time and will capture spurious voltage spikes if care is not taken over cable connections. An individually screened cable should be used to connect to this signal, and the neighbouring User Gnd connection may be used to earth the respective screen.

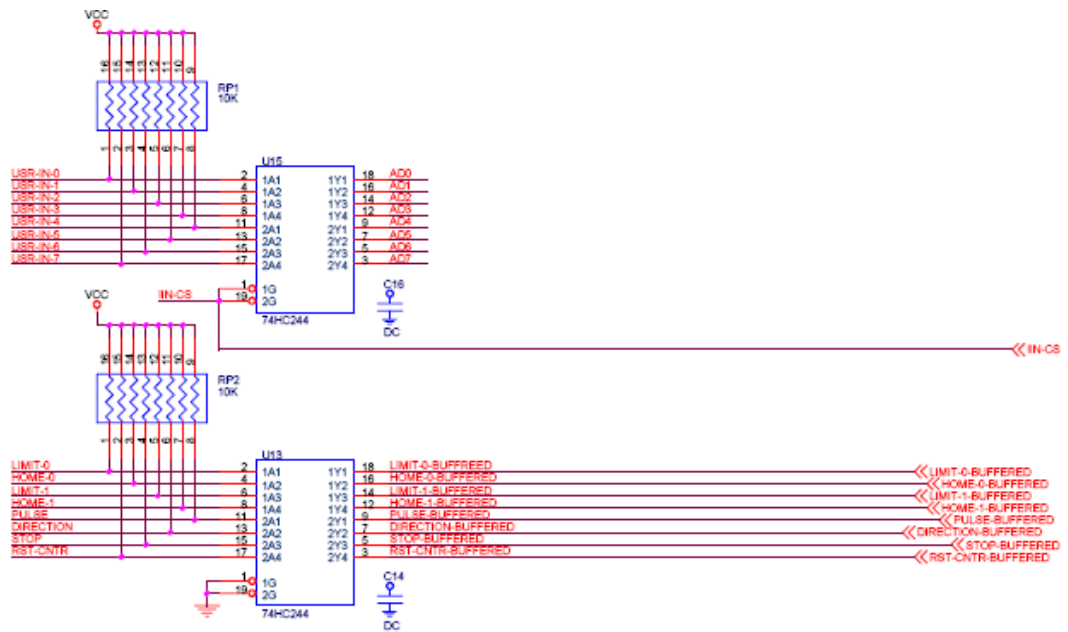
The fast-interrupt buffer circuit is shown in the figure below:



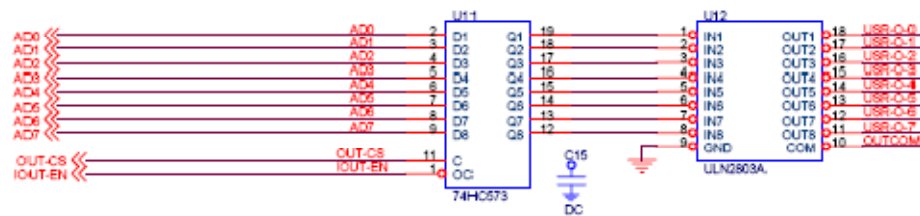
Also here is an extract of the design schematic of Smart / Next Step base board



Eurosystem Inputs

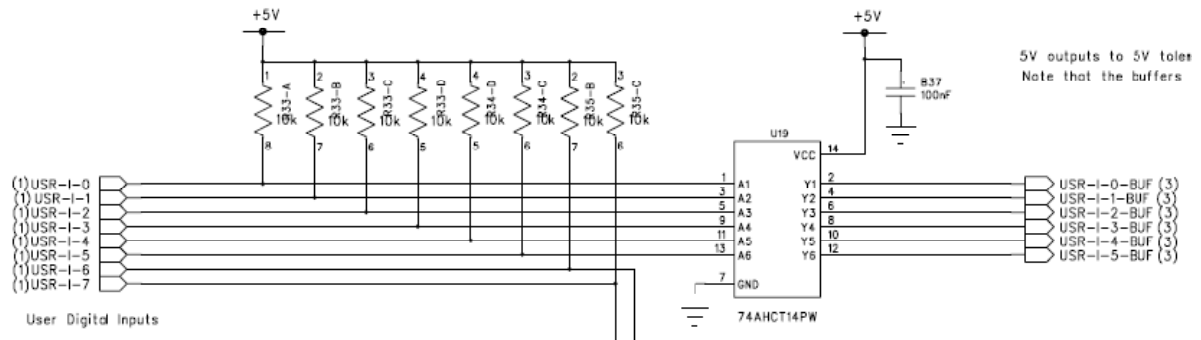


Eurosystem outputs



Nextmove ST - New RoHS part number EB0553A05 (Board number H100i2)

Nextmove ST Inputs - U19 74AHCT14PW



Nextmove ST Outputs – U35 74HCT244 + U28 ULN2803

