**myconanobit instruction set**

| Command | Get/Set Memory 'low' nibble | Disp.Row = Value | Wait | Relative Jump backwards | A = Value | Register = A | A = Register | A = Expression | Select Page | Jump to byte in page | Dec C and Jump if not zero | Dec D and Jump if not zero | Skip if condition true | Call subroutine at byte | Return from subroutine | Get/Set Memory 'high' nibble |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Inst. / Data | 0<br>0000 | 1<br>0001 | 2<br>0010 | 3<br>0011 | 4<br>0100 | 5<br>0101 | 6<br>0110 | 7<br>0111 | 8<br>1000 | 9<br>1001 | A<br>1010 | B<br>1011 | C<br>1100 | D<br>1101 | E<br>1110 | F<br>1111 |
| 0<br>0000 | A = C (Page) + B (Byte) 'low' nibble | 0 | 1 ms | 0 | 0 | Row = A | A = Row | | 0 | 0 | 0 | 0 | A == 0 | 0 | | A = C (Page) + B (Byte) 'high' nibble |
| 1<br>0001 | C (Page) + B (Byte) 'low' nibble = A | 1 | 2 ms | 1 | 1 | B = A | A = B | A = A + 1 | 1 | 1 | 1 | 1 | A > B | 1 | | C (Page) + B (Byte) 'high' nibble = A |
| 2<br>0010 | | 2 | 5 ms | 2 | 2 | C = A | A = C | A = A – 1 | 2 | 2 | 2 | 2 | A < B | 2 | | |
| 3<br>0011 | | 3 | 10 ms | 3 | 3 | D = A | A = D | A = A + B | 3 | 3 | 3 | 3 | A == B | 3 | | |
| 4<br>0100 | | 4 | 20 ms | 4 | 4 | Disp.Row = A | A = Din | A = A - B | 4 | 4 | 4 | 4 | Din.0 == 1 | 4 | | |
| 5<br>0101 | | 5 | 50 ms | 5 | 5 | Disp.Row.0 = A.0 | A = Din.0 | A = A * B | 5 | 5 | 5 | 5 | Din.1 == 1 | 5 | | |
| 6<br>0110 | | 6 | 100 ms | 6 | 6 | Disp.Row.1 = A.0 | A = Din.1 | A = A / B | 6 | 6 | 6 | 6 | Din.2 == 1 | 6 | | |
| 7<br>0111 | | 7 | 200 ms | 7 | 7 | Disp.Row.2 = A.0 | A = Din.2 | A = A and B | 7 | 7 | 7 | 7 | Din.3 == 1 | 7 | | |
| 8<br>1000 | | 8 | 500 ms | 8 | 8 | Disp.Row.3 = A.0 | A = Din.3 | A = A or B | | 8 | 8 | 8 | Din.0 == 0 | 8 | | |
| 9<br>1001 | | 9 | 1 s | 9 | 9 | PWM = A | A = AD1 | A = A xor B | | 9 | 9 | 9 | Din.1 == 0 | 9 | | |
| A<br>1010 | | A | 2 s | A | A | Dout = A | A = AD2 | A = not A | | A | A | A | Din.2 == 0 | A | | |
| B<br>1011 | | B | 5 s | B | B | Dout.0 = A.0 | | A = A << 1 | | B | B | B | Din.3 == 0 | B | | |
| C<br>1100 | | C | 10 s | C | C | Dout.1 = A.0 | | A = A >> 1 | | C | C | C | S1 == 0 | C | | |
| D<br>1101 | | D | 20 s | D | D | Dout.2 = A.0 | | A = rot << 1 | | D | D | D | S2 == 0 | D | | |
| E<br>1110 | | E | 30 s | E | E | Dout.3 = A.0 | | A = rot >> 1 | | E | E | E | S1 == 1 | E | | |
| F<br>1111 | | F | 60 s | F | F | | Save memory To file | | | F | F | F | S2 == 1 | F | | |

**myconanobit I/O mapping to nanobit buttons and edge connector pins**

| No built-in nanobit LED matrix – use LEDs on Dout pins | | | | |
|---|---|---|---|---|
| | Disp – 4 x 4 mycobit display – Row.Bit (y.x) | | | |
| Byte.0 | 0.3 | 0.2 | 0.1 | 0.0 |
| Byte.1 | 1.3 | 1.2 | 1.1 | 1.0 |
| Byte.2 | 2.3 | 2.2 | 2.1 | 2.0 |
| Byte.3 | 3.3 | 3.2 | 3.1 | 3.0 |
| - | Page.3 | Page.2 | Page.1 | Page.0 |

Byte and Page are only shown on the display when editing the program

| Dout - Digital Outputs | | | |
|---|---|---|---|
| Dout.3 | Dout.2 | Dout.1 | Dout.0 |
| Pin 1* | Pin 2* | Pin 8 | Pin 12 |

| Din - Digital Inputs (with internal pull ups) | | | |
|---|---|---|---|
| Din.3 | Din.2 | Din.1 | Din.0 |
| Pin 13 | Pin 14 | Pin 15 | Pin 16 |

| Analogue Output |
|---|
| PWM |
| Pin 0 |

| Analogue Inputs | |
|---|---|
| AD1 | AD2 |
| Pin 1* | Pin 2* |

*Pin 1 or Pin 2 can only be used as an input or an output, not both

| nanobit Buttons | |
|---|---|
| S1 | S2 |
| Button A | Button B |

**Differences to MyCo/TSP highlighted in red**