mycobpibit 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 Etc.	Get/Set Memory 'high' nibble
Inst. / Data	0 0000	1 0001	2 0010	3 0011	4 0100	5 0101	6 0110	7 0111	8 1000	9 1001	A 1010	B 1011	C 1100	D 1101	E 1110	F 1111
0 0000	A = C (Page) + B (Byte) 'low' nibble	0	1 ms	0	0	Row = A	A = Row		0	0	0	0	A == 0	0	Ret	A = C (Page) + B (Byte) 'high' nibble
1 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	Red = A	C (Page) + B (Byte) 'high' nibble = A
2 0010		2	5 ms	2	2	C = A	A = C	A = A – 1	2	2	2	2	A < B	2	Green = A	
3 0011		3	10 ms	3	3	D = A	A = D	A = A + B	3	3	3	3	A == B	3	Blue = A	
4 0100		4	20 ms	4	4	Disp.Row = A	A = Din	A = A - B	4	4	4	4	Din.0 == 1	4	A = Red	
5 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	A = Green	
6 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	A = Blue	
7 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	Red, Green, Blue = Disp.Row.A	
8 1000		8	500 ms	8	8	Disp.Row.3 = A.0	A = Din.3	A = A or B	8	8	8	8	Din.0 == 0	8		
9 1001		9	1 s	9	9	PWM = A	A = AD1	A = A xor B	9	9	9	9	Din.1 == 0	9		
A 1010		A	2 s	A	A	Dout = A	A = AD2	A = not A	A	A	A	A	Din.2 == 0	A		
B 1011		B	5 s	B	B	Dout.0 = A.0		A = A << 1	B	B	B	B	Din.3 == 0	B		
C 1100		C	10 s	C	C	Dout.1 = A.0		A = A >> 1	C	C	C	C	S1 == 0	C		
D 1101		D	20 s	D	D	Dout.2 = A.0		A = rot << 1	D	D	D	D	S2 == 0	D		
E 1110		E	30 s	E	E	Dout.3 = A.0		A = rot >> 1	E	E	E	E	S1 == 1	E		
F 1111		F	60 s	F	F		Save memory To file		F	F	F	F	S2 == 1	F		

mycobpibit I/O mapping to bpi:bit display, buttons and edge connector pins

bpi:bit RGB LED matrix				
	Disp – 4 x 4 mycobpibit 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

Analogue Output
PWM
Pin 0

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

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

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

micro:bit Buttons	
S1	S2
Button A	Button B

Nibble values shown in red, Byte shown in green, Page shown in blue

Runtime pixel colour can be set using Red, Green and Blue values, see 'E' commands

Differences to MyCo/TSP highlighted in red

Differences to mycobit highlighted in blue