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This page will contain the information about the combined lcd/button matrix forum  $topic^{uCApps}$ 

right now I'm using a modified version of the sm\_simple C example this code will be rewritten to make it more coherent

modifications to scan matrix example uCApps

## **Hardware**

**DOUT** wiring

**DIN** wiring

\*note: schematics not finished!

## **Software**

in main.c:

in sm simple.asm:

```
...
global _sm_button_column
global _sm_button_row
global _sm_button_value
```

```
global
            sm col
    ;; import lables
              _SM_NotifyToggle
   extern
                              ; (no access ram required, these variables can
accessram
                udata
be located anywhere)
_sm_button_column
                                 ; exported to C, therefore an " " has been
                           1
added
                           1
sm button row
                    res
_sm_button_value
                           1
                    res
_sm_col
                    res 1
. . .
SM PrepareCol
    ;; select next DOUT register
    ;; (current column + 1) & 0x07
   SET BSR
               sm selected column
            sm selected column, W, BANKED ; (* see note below)
   incf
   andlw
             0x07
    ; sm col is used by LM SetRow()
   movwf
             _sm_col
   call
            MIOS HLP GetBitANDMask
                                       ; (inverted 1 of 8 code)
```

and finally in sm simple.h:

```
extern unsigned char sm_button_value;
extern unsigned char sm_col;
...
```

## **Appendum**

To avoid flickering leds when pushing a button the MIOS button debouncing should be turned off!!

Due to the setup of the SRIO driver the debounce algoritm also delays the DOUT chain when a DIN event is being debounced. So when a button is pushed the led update frequency is reduced, the higher the debounce value, the lower the update frequency.

According to this post TK will fix this in a future MIOS release:

This is something what I'm planning to solve in one of the next MIOS versions - currently the same

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SR scanning routine is used for DIN and DOUT registers, which means, >when the DINs are temporary disabled due to the cheap debouncing method, the DOUT registers won't be updated.

The solution is to add a second scan routine which only services the DOUTs so long the debouncing delay is active.

In the meantime THIS ISSUE IS SOLVED WITH MIOS1.9c!!!

## Workaround

To turn the debouncing off, set

#define DIN\_DEBOUNCE\_VALUE

0

back to DSEQ32

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