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<div style="text-align: justify;"></div> <div
style="text-align: justify;"><br /></div> <div style="text-align: justify;">Kompatibiln zapojen
<span style="color: #000000;"><a target="_blank"
href="index.php/koutek-avr/94-kit-2-lcd-panel-s-atmega8-zapojeni-a-programy/524-avr-lcd-pane
l-s-atmega8">LCD panel s ATmega8</a></span></div> <div style="text-align: justify;"><br
/></div> <div style="text-align: left;">Ke sta en <a target="_blank"
href="http://www.ok1kvk.cz/upload/ok1wmr/clanky/avr/programy/LCD/kbd_2x3dm.c">kbd_2x3d
m.c</a> == <a target="_blank"
href="http://www.ok1kvk.cz/upload/ok1wmr/clanky/avr/programy/LCD/kbd_2x3dm.c">kbd_2x3d
m.pdf</a> == <a target="_blank"
href="http://www.ok1kvk.cz/upload/ok1wmr/clanky/avr/programy/LCD/kbd_2x3dm.htm">kbd_2x
3dm.htm</a><br /></div> <div style="text-align: justify;"><span style="color:
#ffffff;">.</span><br /></div> <div style="text-align: justify;"><span style="color:
#ffffff;">.</span><br /></div> <hr /> <br /> <span style="font: 10pt Courier New;"><span
class="cpp1-comment"></span></span> Untitled & amp;lt;!-- body { color: #000000;
background-color: #FFFFFF; } .cpp1-assembler { } .cpp1-brackets { } .cpp1-comment { color:
#008000; font-style: italic; } .cpp1-float { color: #000080; } .cpp1-hexadecimal { color: #000080;
} .cpp1-character { } .cpp1-identifier { } .cpp1-illegalchar { } .cpp1-number { color: #000080; }
.cpp1-octal { color: #0000FF; } .cpp1-preprocessor { } .cpp1-reservedword { font-weight: bold; }
.cpp1-space { color: #008080; } .cpp1-string { color: #800000; } .cpp1-symbol { }
--& amp;gt; <span style="font: 10pt Courier New;"><span
class="cpp1-comment"> /*----- soubor:
kbd_2x3dm.c verze: 1.0 datum: 9.1.2012 popis: Rutiny pro obsluhu maticove klavesnice
2x3 klavesy. Prepinani rad klavesnice je rizeno pomoci signalu KBDAB. Pokud jsou v serii s
klavesami zapojeny diody, jsou presne detekovana vsechna stisknuta tlacitka (umoznuje
pouziti dvojhmatu) rutina kbd_ini() slouzi k inicializaci portu a pinu ke kterym je pripojena
klavesnice rutina kbd_read() prectne klavesnici a vrati hodnotu stiskle klavesy (klaves) -
optimalni je spoustet tuto funkci 10 - 20 krat za sekundu
-----*/ </span><span
class="cpp1-preprocessor">#ifndef setb </span><span class="cpp1-comment"> //setb = makro
ze souboru "wait.c" </span><span class="cpp1-preprocessor">#include "wait.c" #endif
</span><span class="cpp1-comment"> //Defaultni definice portu a pinu, ke kterym je pripojena
klavesnice </span><span class="cpp1-preprocessor">#ifndef PIN_KBD1 #define PIN_KBD1
PINC #define PORT_KBD1 PORTC #define DDR_KBD1 DDRC #endif #ifndef PIN_KBD2
#define PIN_KBD2 PINC #define PORT_KBD2 PORTC #define DDR_KBD2 DDRC #endif
#ifndef PIN_KBD3 #define PIN_KBD3 PINC #define PORT_KBD3 PORTC #define
DDR_KBD3 DDRC #endif #ifndef PORT_KBDAB #define PORT_KBDAB PORTC #define
DDR_KBDAB DDRC #endif #ifndef KBD1 #define KBD1 0 #endif #ifndef KBD2
#define KBD2 1 #endif #ifndef KBD3 #define KBD3 2 #endif #ifndef KBDAB #define
KBDAB 3 #endif </span><span class="cpp1-comment"> //konstanty pro kl esnici:
</span><span class="cpp1-preprocessor">#ifndef KBD_SKIP #define KBD_SKIP 20
</span><span class="cpp1-comment"> //pocet vynechanych cyklu mezi opakovanym
navracenim </span><span class="cpp1-preprocessor">#endif </span><span
class="cpp1-comment"> //hodnoty stale stiskleho tlacitka (autorepeat) </span><span
class="cpp1-preprocessor">#ifndef KBD_ACC #define KBD_ACC 4 </span><span
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class="cpp1-comment">//pocet cyklu, o který se zrychluje opakování (autorepeat)
</span><span class="cpp1-preprocessor">#endif    </span><span
class="cpp1-comment">//inicializace klavesnice </span><span
class="cpp1-reservedword">void</span><span class="cpp1-space"> </span><span
class="cpp1-identifier">kbd_ini(</span><span class="cpp1-reservedword">void</span><span><span
class="cpp1-brackets">)</span> { clrbb(DDR_KBD1,KBD1); clrbb(DDR_KBD2,KBD2);
clrbb(DDR_KBD3,KBD3);</span><span class="cpp1-space"> </span><span
class="cpp1-comment">//tlacitka - vstupy </span><span
class="cpp1-identifier">setb(PORT_KBD1,KBD1); setb(PORT_KBD2,KBD2);
setb(PORT_KBD3,KBD3);</span><span class="cpp1-space"> </span><span
class="cpp1-comment">//zapnutí pull-up rezistoru na vstupech </span><span
class="cpp1-identifier">setb(DDR_KBDAB,KBDAB);</span><span class="cpp1-space">
</span><span class="cpp1-comment">//prepinání rad klaves - vystup </span><span
class="cpp1-brackets">}</span><span class="cpp1-comment">//čtení klavesnice
</span><span class="cpp1-reservedword">unsigned</span><span class="cpp1-space">
</span><span class="cpp1-reservedword">char</span><span class="cpp1-space">
</span><span class="cpp1-identifier">kbd_read(</span><span><span
class="cpp1-reservedword">void</span><span class="cpp1-brackets">)</span> { </span><span
class="cpp1-reservedword">static</span><span class="cpp1-space"> </span><span
class="cpp1-reservedword">unsigned</span><span class="cpp1-space"> </span><span
class="cpp1-reservedword">char</span><span class="cpp1-space"> </span><span
class="cpp1-identifier">klavesa_old=</span><span class="cpp1-number">0</span><span><span
class="cpp1-symbol">,</span><span class="cpp1-space"> </span><span
class="cpp1-identifier">cekani=</span><span class="cpp1-number">0</span><span><span
class="cpp1-symbol">,</span><span class="cpp1-space"> </span><span
class="cpp1-identifier">zrychleni=</span><span class="cpp1-number">0</span><span><span
class="cpp1-symbol">;</span><span class="cpp1-reservedword">unsigned</span><span><span
class="cpp1-space"> </span><span class="cpp1-reservedword">char</span><span><span
class="cpp1-space"> </span><span class="cpp1-identifier">klavesa=</span><span><span
class="cpp1-number">0</span><span class="cpp1-symbol">,</span><span><span
class="cpp1-space"> </span><span class="cpp1-identifier">i; clrbb(PORT_KBDAB,KBDAB);
</span><span class="cpp1-reservedword">for</span><span><span
class="cpp1-brackets">(i=</span><span class="cpp1-number">0</span><span><span
class="cpp1-symbol">;i</span><span class="cpp1-number">2</span><span><span
class="cpp1-symbol">;i++)</span><span class="cpp1-space"> </span><span
class="cpp1-comment">//cyklus proběhne dvakrát (2 rády tlacítek) </span><span
class="cpp1-space"> </span><span class="cpp1-brackets">{ </span><span
class="cpp1-space"> </span><span class="cpp1-identifier">wait_us(</span><span><span
class="cpp1-number">5</span><span class="cpp1-brackets">);</span><span><span
class="cpp1-space"> </span><span class="cpp1-comment">//čekání (kvůli fyzické konstrukci
klavesnice (parazitní kapacita) </span><span class="cpp1-space"> </span><span
class="cpp1-reservedword">if</span><span><span
class="cpp1-brackets">((PIN_KBD1&</span><span class="cpp1-number">1</span><span><span
class="cpp1-symbol"><<KBD1))==</span><span class="cpp1-number">0</span><span><span
class="cpp1-brackets">)</span><span class="cpp1-space"> </span><span><span
class="cpp1-comment">//pokud je stisknuta tlačítka 1 (na vstupu je log. nula) </span><span><span

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class="cpp1-space"> </span><span class="cpp1-identifier">setb(klavesa,</span><span
class="cpp1-number">0</span><span class="cpp1-symbol">+(</span><span
class="cpp1-number">3</span><span class="cpp1-symbol">*i));</span><span
class="cpp1-space"> </span><span class="cpp1-comment">//nastav prislusny bit promenne
klavesa </span><span class="cpp1-space"> </span><span
class="cpp1-reservedword">if</span><span
class="cpp1-brackets">((PIN_KBD2</span><span class="cpp1-number">1</span><span
class="cpp1-symbol"><<KBD2))==</span><span class="cpp1-number">0</span><span
class="cpp1-brackets">)</span><span class="cpp1-space"> </span><span
class="cpp1-comment">//pokud je stisknute tlacitko 2 </span><span class="cpp1-space">
</span><span class="cpp1-identifier">setb(klavesa,</span><span
class="cpp1-number">1</span><span class="cpp1-symbol">+(</span><span
class="cpp1-number">3</span><span class="cpp1-symbol">*i));</span><span
class="cpp1-space"> </span><span class="cpp1-comment">//nastav prislusny bit promenne
klavesa </span><span class="cpp1-space"> </span><span
class="cpp1-reservedword">if</span><span
class="cpp1-brackets">((PIN_KBD3</span><span class="cpp1-number">1</span><span
class="cpp1-symbol"><<KBD3))==</span><span class="cpp1-number">0</span><span
class="cpp1-brackets">)</span><span class="cpp1-space"> </span><span
class="cpp1-comment">//pokud je stisknute tlacitko 3 </span><span class="cpp1-space">
</span><span class="cpp1-identifier">setb(klavesa,</span><span
class="cpp1-number">2</span><span class="cpp1-symbol">+(</span><span
class="cpp1-number">3</span><span class="cpp1-symbol">*i));</span><span
class="cpp1-space"> </span><span class="cpp1-comment">//nastav prislusny bit promenne
klavesa </span><span class="cpp1-space"> </span><span
class="cpp1-identifier">negb(PORT_KBDAB,KBDAB);</span><span class="cpp1-space">
</span><span class="cpp1-comment">//prepni na druhou radu tlacitek </span><span
class="cpp1-space"> </span><span class="cpp1-brackets">}</span><span
class="cpp1-space"> </span><span class="cpp1-reservedword">if</span><span
class="cpp1-brackets">(klavesa</span><span class="cpp1-number">0</span><span
class="cpp1-brackets">)</span><span class="cpp1-space"> </span><span
class="cpp1-comment">//pokud bylo stisknuto nejake tlacitko </span><span
class="cpp1-space"> </span><span class="cpp1-brackets">{ </span><span
class="cpp1-space"> </span><span class="cpp1-reservedword">if</span><span
class="cpp1-brackets">(klavesa_old==klavesa)</span><span class="cpp1-space">
</span><span class="cpp1-comment">//pokud je stisknuto porad stejne tlacitko </span><span
class="cpp1-space"> </span><span class="cpp1-brackets">{</span><span
class="cpp1-space"> </span><span class="cpp1-reservedword">if</span><span
class="cpp1-brackets">(cekani>KBD_SKIP)</span><span class="cpp1-space"> </span><span
class="cpp1-comment">//pokud se jiz vynechal dostatecny pocet cyklu </span><span
class="cpp1-space"> </span><span class="cpp1-brackets">{ </span><span
class="cpp1-space"> </span><span class="cpp1-identifier">cekani=zrychleni;</span><span
class="cpp1-space"> </span><span class="cpp1-comment">//priste se bude cekat o nekolik
cyklu mene </span><span class="cpp1-space"> </span><span
class="cpp1-comment">//(pocet je dan aktualni hodnotou promenne "zrychleni") </span><span
class="cpp1-space"> </span><span class="cpp1-reservedword">if</span><span

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class="cpp1-brackets">(zrychleni<=KBD_SKIP)</span><span class="cpp1-space">
</span><span class="cpp1-comment">//pokud jeste ma smysl zrychlovat </span><span
class="cpp1-space">    </span><span
class="cpp1-identifier">zrychleni+=KBD_ACC;</span><span class="cpp1-space">
</span><span class="cpp1-comment">//zrychli    </span><span class="cpp1-space">
</span><span class="cpp1-reservedword">return</span><span class="cpp1-space">
</span><span class="cpp1-identifier">klavesa;</span><span class="cpp1-space">
</span><span class="cpp1-comment">//vrat hodnotu klavesy volajici funkci </span><span
class="cpp1-space">    </span><span class="cpp1-brackets">} </span><span
class="cpp1-space">    </span><span class="cpp1-reservedword">else</span><span
class="cpp1-space">    </span><span class="cpp1-comment">//pokud se jeste nevynechal
dostatecny pocet cyklu    </span><span class="cpp1-space">    </span><span
class="cpp1-identifier">cekani++;</span><span class="cpp1-space">    </span><span
class="cpp1-comment">//pripocti dalsi vynechany cyklus </span><span class="cpp1-space">
</span><span class="cpp1-brackets">}</span><span
class="cpp1-comment">//if(klavesa_old==klavesa) </span><span class="cpp1-space">
</span><span class="cpp1-reservedword">else</span><span class="cpp1-space">
</span><span class="cpp1-comment">//pokud neni stisknuto stejne tlacitko jako minule
</span><span class="cpp1-space">    </span><span class="cpp1-brackets">{ </span><span
class="cpp1-space">    </span><span class="cpp1-identifier">cekani=</span><span
class="cpp1-number">0</span><span class="cpp1-symbol">; </span><span
class="cpp1-space">    </span><span class="cpp1-identifier">zrychleni=</span><span
class="cpp1-number">0</span><span class="cpp1-symbol">; </span><span
class="cpp1-space">    </span><span
class="cpp1-identifier">klavesa_old=klavesa;</span><span class="cpp1-space">
</span><span class="cpp1-comment">//uloz jeho hodnotu pro priste </span><span
class="cpp1-space">    </span><span class="cpp1-reservedword">return</span><span
class="cpp1-space">    </span><span class="cpp1-identifier">klavesa;</span><span
class="cpp1-space">    </span><span class="cpp1-comment">//a vrat tuto hodnotu volajici
funkci </span><span class="cpp1-space">    </span><span
class="cpp1-brackets">}</span><span class="cpp1-comment">//else(klavesa_old==klavesa)
</span><span class="cpp1-space">    </span><span class="cpp1-brackets">}</span><span
class="cpp1-comment">//if(klavesa>0) </span><span class="cpp1-reservedword">else
</span><span class="cpp1-space">    </span><span
class="cpp1-identifier">klavesa_old=</span><span class="cpp1-number">0</span><span
class="cpp1-symbol">; </span><span class="cpp1-reservedword">return</span><span
class="cpp1-space">    </span><span class="cpp1-number">0</span><span
class="cpp1-symbol">; } </span><span class="cpp1-comment">//eof //(c) OK1ZKV 2012
</span></span>

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