CMPE1250/CMPE2250 Cheat Sheet

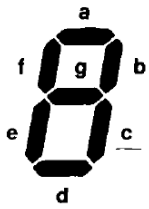
Pin Numbers	
RED LED	82
YELLOW LED	80
GREEN LED	78
Timer Channel 0 (IOC0)	9
PWM Channel 7	109

LCD Address Scheme (HEX Addresses)

	Column 1	2	3	. . .	18	19	20
line 1	00	01	02		11	12	13
line 2	40	41	42		51	52	53
line 3	14	15	16		25	26	27
line 4	54	55	56		65	66	67

Segs Custom Segment Control

Data Input	ID7	ID6	ID5	ID4	ID3	ID2	ID1	ID0
Controlled Segment	Decimal Point	A	B	C	E	G	F	D



Checklist:

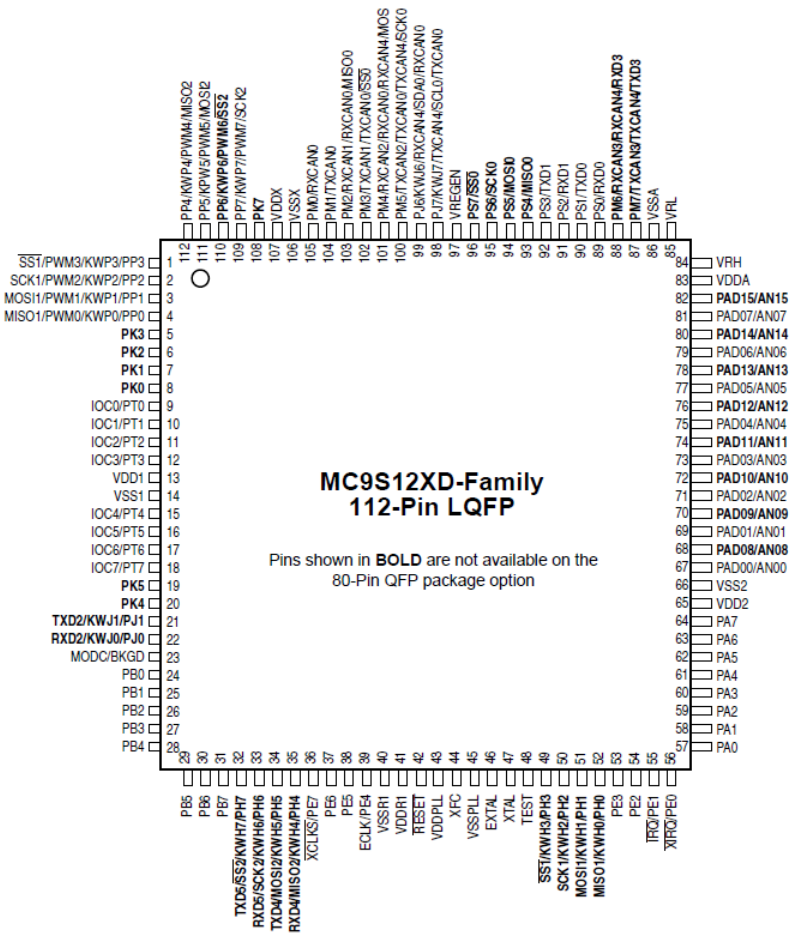
- .C files in project "sources"
- *Necessary* .H files included in *.C files only*
- Library initialization functions called
- Targeting USBDM (new driver package)
- ISRs added for requested interrupts
- Never leave main function
- Small memory model, floats on

Timer Characteristics at 20MHz:

Prescale	Tick Interval/Freq.
2^0 = / 1	50ns (20MHz)
2^1 = / 2	100ns (10MHz)
2^2 = / 4	200ns (5MHz)
2^3 = / 8	400ns (2.5MHz)
2^4 = / 16	800ns (1.25MHz)
2^5 = / 32	1.6µs (625KHz)
2^6 = / 64	3.2µs (312.5KHz)
2^7 = / 128	6.4µs (156.25KHz)

I2C Device Addresses:

Device	Address 7-Bit/8-Bit
LTC2633	0x10/0x20
LSM303 (Accelerometer)	0x19/0x32
LSM303 (Magnetometer)	0x1E/0x3C
24AA512	0x50/0xA0
MPL3551A2	0x60/0xC0
M41T81A	0x68/0xD0



ISRs with Flag Clearing Statements

Timer

```
interrupt VectorNumber_Vtimch0 void IOC0 (void)
{
  TFLG1 = TFLG1_C0F_MASK;

  // rearm for next event
  TC0 += XXXX;
}
```

PIT

```
interrupt VectorNumber_Vpit0 void PIT0Int (void)
{
  PITTF = PITTF_PTF0_MASK;
}
```

Port J

```
interrupt VectorNumber_Vportj void IntJ (void)
{
  if (PIFJ_PIFJ0) // 22.3.2.61
    PIFJ = PIFJ_PIFJ0_MASK;

  if (PIFJ_PIFJ1)
    PIFJ = PIFJ_PIFJ1_MASK;
}
```

Format Specifiers

```
(void)sprintf(buff, "Value: %d", 42); // outputs "Value: 42"

(void)sprintf(buff, "%x", 42); // outputs "2a"

(void)sprintf(buff, "%X", 42); // outputs "2A"

(void)sprintf(buff, "%f", 42 / 3.1f); // outputs "13.548387"

(void)sprintf(buff, "%0.2f", 42 / 3.1f); // outputs "13.55"

(void)sprintf(buff, "%12.2f", 42 / 3.1f); // outputs "       13.55" (seven spaces + 5 chars == 12)

(void)sprintf(buff, "%4d", 42); // outputs "  42"

(void)sprintf(buff, "%4.4d", 42); // outputs "0042"

(void)sprintf(buff, "%08.2f", 22 / 7.0f); // outputs "00003.14"

(void)sprintf(buff, "*%-10.2f*", 42 / 3.1f); // outputs "*13.55     *"

(void)sprintf(buff, "%ld", (long)-20E6); // outputs "-20000000"

(void)sprintf(buff, "%lu", (unsigned long)20E6); // outputs "20000000"
```

Clock Stuff

Periodic Interrupt Timer (PIT)

BUS / ((8-bit factor + 1) * (16-bit factor + 1))

8-bit factor into **`PITMTLD(0-1)`**

16-bit factor into **`PITLD(0-3)`**

`PITMUX_PMUX(0-3)` = 1 to select **`PITMTLD1`**

PWM

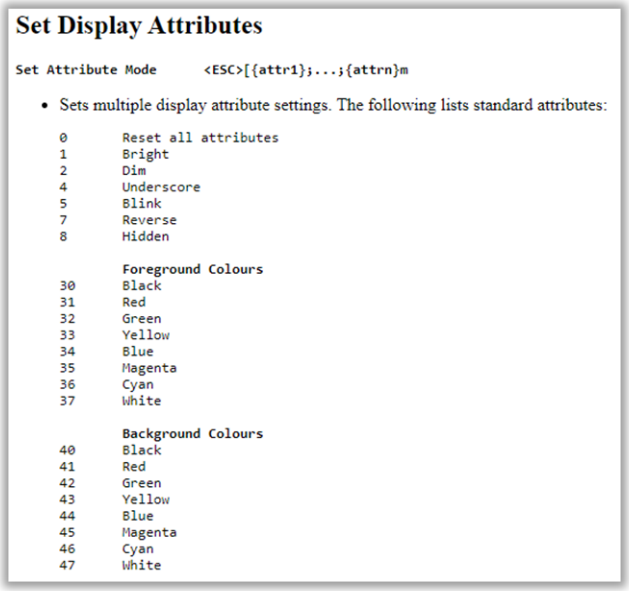
BUS / ((2^n) * (2 x 8-bit factor))

n into **`PWMPRCLK`** (bottom nibble for A groups, upper nibble for B groups)

8-bit factor into **`PWMSCLA`** or **`PWMSCLB`** for A/B groups, if using scaled clock.

VT-100 Escape Sequences
(Escape stored as `\x1B`, example: `"\x1b[32m"`)

`\x1b[32;1m`	**`bright green foreground`**
`\x1b[43m`	**`yellow background`**



Set Display Attributes

Set Attribute Mode <ESC>[{attr1};...;{attrn}m

- Sets multiple display attribute settings. The following lists standard attributes:

0	Reset all attributes
1	Bright
2	Dim
4	Underscore
5	Blink
7	Reverse
8	Hidden
	Foreground Colours
30	Black
31	Red
32	Green
33	Yellow
34	Blue
35	Magenta
36	Cyan
37	White
	Background Colours
40	Black
41	Red
42	Green
43	Yellow
44	Blue
45	Magenta
46	Cyan
47	White