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1 ; *****
2 ; ** PROGRAMME MADE BY FADISHOP Card: FADICLOCK http://www.fadishop.eu FADITECO, S.L.U. Lleonard G. **
3 ; ** This program reads date-time. Is modified to apply every 2 seconds a temperature reading **
4 ; ** SLAVE ADDRESS IS STILL DS3232 I2C $ D0. **
5 ; ** **
6 ; ** **
7 ; *****
8 ; SETTINGS
9 #picaxe 28x2
10 let dirsB=%10000000 ; 1=output 0=input
11 let dirsC=%00000000 ; 1=output 0=input
12 ; C.3 I2C_SCL
13 ; C.4 I2C_SDA
14 ;adcsetup = %00000000 ; SETTING ANALOG
15 ;setfreq em16 ; Oscillator / external oscillator to 16Mhz.
16 device_DS3232SN:
17 symbol adress_slave_A =$D0 ; Address 0xD0 DS3232 I2C only.
18 symbol @now=$00 ; Internal address register of seconds, minutes and hours.
19 symbol @today=$03 ; Internal address register of day, month and year-century.
20 symbol @alm1=$07 ; Internal address register alarm_1 (sec, min, hour and day / day).
21 symbol @alm2=$0B ; Internal address register alarma2 (min, hour and day / day).
22 symbol @control=$0E ; (7)/EOSC (6)BBSQW (5)CONV (4-3)RS2-1 (2)INTCN (1)A2IE (0)A1IE
23 symbol @status=$0F ; (7)OSF (6)BB32KHZ (5-4)CRATE (3)EN32KHZ (2)BSY (1)A2F (0)A1F
24 symbol @offset=$10 ; temperature offset. (adds / subtracts capacitance)
25 symbol @temp=$11 ; Internal word temperature address($11-MSB_temperature and $12-LSB_temperature) .
26 symbol @test=$13 ; Reserved for test.
27 symbol @sram=$14 ; Internal address of the start of the block of 236 bytes SRAM.
28 symbol control=b16 ; Register/shadow control DS3232.
29 symbol status=b18 ; Register/shadow control/status DS3232.
30 ; Program Definitions and Initialization
31 symbol seconds=b0
32 symbol minutes=b1
33 symbol hour=b2
34 symbol day=b3
35 symbol date=b4
36 symbol mounth=b5
37 symbol year=b6
38 symbol T_msb=b7
39 symbol T_lsb=b8
40
41
42 main:
43 i2cslave adress_slave_A, i2cslow, i2cbyte ; DS3232 I2C Address (0xD0-0xD1)
44 readi2c @now, (seconds,minutes,hour,day) ; Read now (seconds minutes, hour and day)
45 readi2c @today, (date,mounth,year) ; Read today (date, mounth and year)
46 readi2c @temp, (T_msb,T_lsb) ; Read 2 bytes temperature
47 readi2c @control, (b17,b19) ; Read control registers.
48 ;readi2c INICI, (b0,b1)
49 call temperature_request
50 debug ; Output data to display PC
51 PAUSE 5000 ; Pause 5 seconds

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52 goto main ; Reboot
53
54
55 temperature_request:
56 i2cslave address_slave_A, i2cslow, i2cbyte ; DS3232 I2C Address (0xD0-0xD1)
57 readi2c @status,(b10) ; Read status register of DS3232.
58 let b10=b10 and %00000100 ; Is performing a conversion (BSY = 1)?
59 if b10<>0 then return ; (Yes = 1) Do nothing, again.
60 else let control=control or %00100000 ; (NO = 0) temperature conversion Force CONV.
61 writei2c @control,(control) ; Send set BSY=1 to control register
62 endif
63 return
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