APPLICATION OPERATION:

The operation is very simple. The signal input on GP1 is divided by the factor selected at the input S3-S0. The max frequency input is about 25 KHz or more depending on the internal RC.

Division Factor Table:

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<th>S3</th>
<th>S2</th>
<th>S1</th>
<th>S0</th>
<th>Division factor</th>
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<td>1</td>
<td>15</td>
</tr>
</tbody>
</table>
APPENDIX A: SOURCE CODE

;************************************************************************************************
;   Philippe Labonne
;   Student in Electro at College Shawinigan
;   5450 18 Street
;   Grand-Mere
;   Quebec, Canada
;   G9T 6P1
;   Tel: (819) 538-2169
;   Project: PicDiv
;   date: August 24, 1997
;   Note: Internal RC, No MCLR
;************************************************************************************************

list p=12c508, f=inhx8m ; uC number
; and inhx8m output format file

gpio equ 0x06 ; adrs io
tmr0 equ 0x01 ; adrs timer
status equ 0x03 ; status register adrs
osccal equ x05 ; oscillator calibration register
lastlevel equ 0x07 ; Last logic level
di equ 0x08 ; div. factor
temp equ 0x09 ; temp.
org 0000
begin
  movlw 0x3e ; gp0 = output gp1 gp2 gp3 gp4 gp5 = input
  tris 6 ;
  btfss gpio,1 ; Set input level init.
  goto zerlog ; Branch if input is zero
  bsf lastlevel,0 ; set last level to one
  goto readiv ; branch to zerlog

zerlog ; here input level is zero
  bcf lastlevel,0 ; Set last level to zero
  readiv
  movf gpio,0 ; read div. factor
  andlw 0x3c ; be sure that higher bits are 0.
  movwf div ; move W to F to rotate it
  rrf div,1 ; rotate right to put away lower
  rrf div,1 ; 2 bits

readin
  clrw ; Clear W
  btfss gpio,1 ; test input
  goto zero ; branch to zero
  movlw 0x01 ; if one then W = 01

zero
  addwf lastlevel,0 ; add to last level
  movwf temp ; move f to temp to test bit 0
  btfss temp,0 ; If temp = 1 then a input as changed
  goto readin ; If level not changed then branch to readin

change
  movlw 0x01 ; load 1 in W
  xorwf lastlevel,1 ; change last level to is complement
  decfsz div,1 ; dec. div to see if it's time to toggle
  goto readin ; goto readin if div /= to zero

toggle
  movlw 0x01 ; load 1 in W
  xorwf gpio,1 ; Toggle output
  goto readiv ; restart read division
end