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'=====
'ISEG PROTOTYPE BOARD TEST PROGRAM
'
'iseg_test2.bs2
'
'10/11/2002
'NOBUYOSHI KITAMURA
'=====
'{$STAMP BS2}
'{$PORT COM1}

BUTT0      CON      0      'IN
BUTT1      CON      1      'IN
ONOFF      CON      2      'OUT
CS_ADC     CON      3      'OUT (ACTIVE LOW)
CS_DAC     CON      4      'OUT (ACTIVE LOW)
MISO       CON      5      'IN
MOSI       CON      6      'OUT
SCLK       CON      7      'OUT
BUTT2      CON      8      'IN (ACTIVE LOW)
POT0       CON      9      'IN

ADC_VAL    VAR      WORD
DAC_VAL    VAR      WORD
I          VAR      WORD
ADJST      VAR      WORD
BBUFF      VAR      BYTE

DIRL = %1101100
OUTL = %0011000
BBUFF = 0
DAC_VAL = 0
ADC_VAL = 0
HIGH CS_ADC
HIGH CS_DAC

DEBUG "ISEG PROTOTYPE TEST PROGRAM", CR
DEBUG "=====", CR

START_UP:
    HIGH ONOFF
    DEBUG "HIGH VOLTAGE IS ON",CR, CR
    PAUSE 2000
    DAC_VAL = 0
    GOSUB WRITE_DAC
    PAUSE 100
    GOSUB READ_ADC
    PAUSE 100
    GOSUB READ_POT
    GOSUB REPORT

LOOP:
    BUTTON BUTT2, 0, 255, 1, BBUFF, 1, DO_BUTT2
    GOTO LOOP

DO_BUTT2:
    BBUFF = 0
    GOSUB READ_POT
    ADJST = 3*ADJST/2

    DAC_VAL = ADJST MAX 2047
    GOSUB WRITE_DAC
    PAUSE 100
    GOSUB READ_ADC
    PAUSE 100
    GOSUB REPORT
    GOTO LOOP

STOP

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'=====
WRITE_DAC:
    SHIFTOUT MOSI, SCLK, MSBFIRST, [DAC_VAL\12]
    LOW CS_DAC
    HIGH CS_DAC
    RETURN

'=====
READ_ADC:
    LOW CS_ADC
    HIGH SCLK
    LOW SCLK
    HIGH SCLK
    LOW SCLK
    SHIFTIM MISO, SCLK, MSBPOST, [ADC_VAL\12]
    HIGH CS_ADC
    RETURN

'=====
READ_POT:
    HIGH POT0
    PAUSE 100
    RCTIME POT0, 1, ADJUST
    RETURN

'=====
REPORT:
    DEBUG "POT = ", DEC4 ADJUST
    DEBUG "    DAC = ", DEC4 DAC_VAL
    DEBUG "    ADC = ", DEC4 ADC_VAL, CR
    RETURN

END

```