```
# Read from SPI routine
#
# - reads the reading address from R3
# - writes the 32-bit data to R4-R7
# - returns to the address stored in R8-R9

rd_spi  ldi 31          # number of iterations (Nbits - 1)
        ldih 31
        wrw R1
        ldi R7
        ldih 0
        wrw R2
        ldi 0
        wrw R4
        wrw R5
        wrw R6
        wrw R7
        ldih 0x1        # constant for toggle the sclk signal
        wrw R0          # assert sclk signal
        rdw R3          # reads address for reading
        wrw SPI_CTRL_REG
        wrw R10
rdloop  rdw R10
        xor R0
        wrw SPI_CTRL_REG
        xor R0
        wrw SPI_CTRL_REG
        wrw R10
        rdw R2
        wrw RB
        ldi 0
        wrw RB,1
        rdwb
        shft -1
        add RTC_REG
        wrwb
        ldi 0x7
        and R1
        bneqi nincrd
        rdw R2
        addi -1
        wrw R2
nincrd  ldi rdloop
        ldih rdloop
        wrw RB
        ldi rdloop>>8
        wrw RB,1
        rdw R1
        bneq
        wrw R1
        rdw R8          # reads return address
        wrw RB
        rdw R9
        wrw RB,1
        ldi 0           # clears the SPI control register
        wrw SPI_CTRL_REG
        beq
        nop
```