```
 1  TITLE "Konwerter liczby U2 (8bit) na 4 znaki ASCII: ZDDD";
 2  %
 3  Z - '+' lub '-'
 4  D - 0..9
 5  %
 6  INCLUDE "bcd_sumator.inc";
 7
 8  SUBDESIGN U2_TO_ASCII
 9  (
10      U2I[7..0]   : input;
11      Z[7..0]     : output;
12      D2[7..0]    : output;
13      D1[7..0]    : output;
14      D0[7..0]    : output;
15  )
16
17  VARIABLE
18      BCD[7..0]   : NODE;
19      U2[7..0]    : NODE;
20      S0          : bcd_sumator;
21      S1          : bcd_sumator;
22      S2          : bcd_sumator;
23      S3          : bcd_sumator;
24
25  BEGIN
26      S0.CIN  = U2I[7];   % jesli liczba ujemna, dodajemy 1 %
27      if (U2I[7]==1) then U2[] = !U2I[];  % negacja na potrzeby
    dodawania %
28          else            U2[] = U2I[];
29      end if;
30
31      S0.XX[] = (0,0,0,0,0,U2[2],U2[1],U2[0]);
32      S0.YY[] = (0,0,0,0,U2[3],0,0,0);
33      S1.XX[] = S0.ZZ[];
34      S1.CIN  = S0.NAD;
35      S2.CIN  = S1.NAD;
36      S3.CIN  = S2.NAD;
37
38      % 16 %
39      if (U2[4]==1) then  S1.YY[] = (0,0,0,1,0,1,1,0);
40          else            S1.YY[] = (0,0,0,0,0,0,0,0);
41      end if;
42      S2.XX[] = S1.ZZ[];
43
44      % 32 %
45      if (U2[5]==1) then  S2.YY[] = (0,0,1,1,0,0,1,0);
46          else            S2.YY[] = (0,0,0,0,0,0,0,0);
47      end if;
48      S3.XX[] = S2.ZZ[];
49
50      % 64 %
51      if (U2[6]==1) then  S3.YY[] = (0,1,1,0,0,1,0,0);
52          else            S3.YY[] = (0,0,0,0,0,0,0,0);
53      end if;
54      BCD[]   = S3.ZZ[];
```

```
55
56       % wyznaczenie wartosci znakow ASCII %
57       if (U2I[7]==1) then Z[] = H"2D";    % '-' %
58           else            Z[] = H"2B";    % '+' %
59       end if;
60       D2[] = (0,0,1,1,0,0,0,S3.NAD);
61       D1[] = (0,0,1,1,BCD[7],BCD[6],BCD[5],BCD[4]);
62       D0[] = (0,0,1,1,BCD[3],BCD[2],BCD[1],BCD[0]);
63   END;
```