

11.14 See Chapter 11 for distributed arithmetic.

The number range for the values stored in the ROM must be increased to $[-2, 2[$. One shift-accumulator that can accumulate word with a word length of six bits, i.e., with six bit-slices, is required.

| x_1 x_2 x_3 | ROM | ROM |
|-------------------|-------------------|---------|
| 0 0 0 | 0 | 00.0000 |
| 0 0 1 | a_3 | 00.1001 |
| 0 1 0 | a_2 | 11.1010 |
| 0 1 1 | $a_2 + a_3$ | 00.0011 |
| 1 0 0 | a_1 | 00.1000 |
| 1 0 1 | $a_1 + a_3$ | 01.0001 |
| 1 1 0 | $a_1 + a_2$ | 00.0010 |
| 1 1 1 | $a_1 + a_2 + a_3$ | 00.1011 |