number of possible symbols). Therefore $f_k = c_k f_{n-1}$. To ensure that calculations are carried out to the maximum possible precision, when scaling operations are carried out, multiplications will be carried out before divisions. Unfortunately, an intermediate result may exceed the maximum value that can be stored in the registers. To avoid this, products are calculated in a register which is big enough to hold a value of at least MAX $\pounds f_{n-1}$, where MAX is the maximum value that can be stored in HIGH or LOW. The results of divisions are transferred back to the relevant registers afterwards. This must be implemented in both the encoder and the decoder.

2.4 Adaptive probabilities

In the preceding discussion, we have assumed that the symbol probabilities are known in advance.

- a convergence_check module,
- an arithmetic_

set at const. Enable is (shift_all or set_value or reset) for the most signi¯cant bit, (shift_all or shift_most or set_value or reset) for the remainder. clk is connected to the limit_register