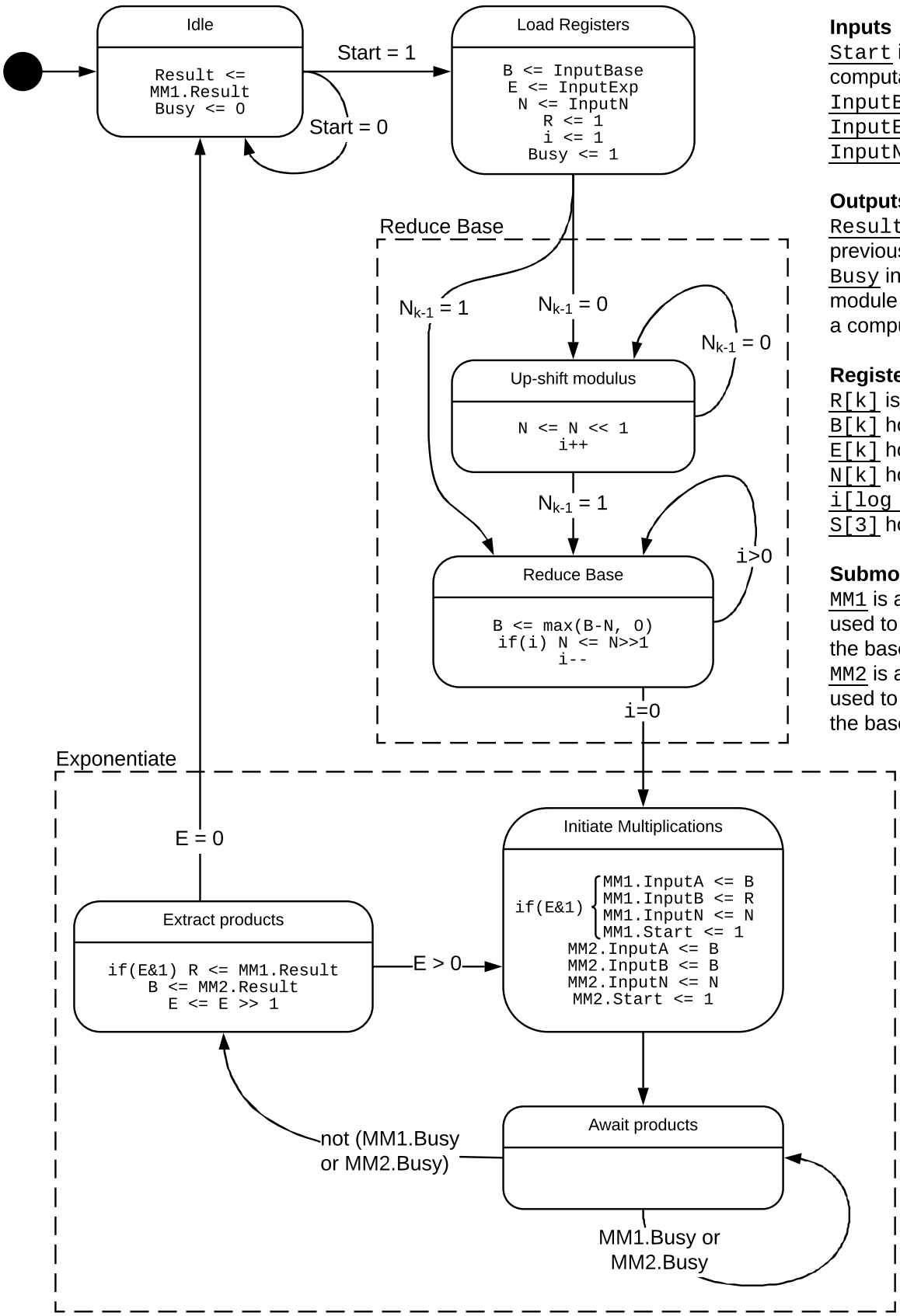
Modular Exponentiation Calculation



Inputs
`Start` is set to 1 to initiate the computation
`InputBase` is the base
`InputExp` is the exponent
`InputN` is is the modulus

Outputs
`Result` gives the result of the previous calculation
`Busy` indicates wether the module is currently performing a computation

Registers
`R[k]` is the result register
`B[k]` holds the base
`E[k]` holds the exponent
`N[k]` holds the modulus
`i[log k]` is a counter
`S[3]` holds the current state

Submodules
`MM1` is a modular multiplier used to multiply in squares of the base
`MM2` is a modular multiplier used to generate squares of the base

Modular Multiplication Calculation

Inputs
`Start` is set to 1 to initiate the multiplication
`InputA` is is the first factor
`InputB` is is the second factor
`InputN` is is the modulus

Outputs
`Result` gives the result of the previous calculation
`Busy` indicates wether the module is currently performing a computation

Registers
`P[k]` is the result register
`A[k]` holds factor A
`B[k+1]` holds factor B
`N[k]` holds the modulus
`C[log k]` holds the current iteration
`S[3]` holds the current state