28) **math coprocessor mathematical functions**

***Floating point functions***

**FSQRT** Square root – ST(0)‘s square root is put in ST(0).

**FSCALE** 2’s power. Puts in ST(0) the ST(0)’ s value multiplied with 2\*\*ST (1)

**FPREM** Partial remainder. ST(0) is divided by ST(1) and stored in ST(0).

**FRMDINT** Round. ST(0) is replaced with ST(0) rounded.

**FXTRACT** The value stored in ST(0) is split into characteristic (in ST(0)) and mantissa (in ST(1)).

**FABS** ST(0) is replaced with its absolute value.

**FCHS** ST(0)’s sign is changed.

**FPTAN** Partial tangent. The tangent of the angle contained in ST(0) is determined as fraction of

ST(1) /ST(0). The initial value of the angle contained in ST(0) must be between 0 and /4.

**FPATAN** Partial Arctangent. The arctangent of the value ST(1)/ST(0) is stored in ST(0). The initial

value contained in ST(0) must be positive, while ST(1) must be larger than ST(0).

**F2XM1** calculates 2’s powers. ST(0) will be replaced by 2\*\*ST (0)-1.

**FYL2X** Logarithm. ST (0) ST (1)\*log2(ST (0)).

**FYL2XP1** Logarithm. ST (0) ST (1)\* log2 (ST (0) +1).