

4 Byte Float Representation

a) $8_{10} \rightarrow 1 \times 2^3 = +0.1 \times 2^4$

0100 0000 0000 0000 0000 0000 0000 0100

MANTISSA Characteristic

Hex 4 0 0 0 0 0 0 4

40000004 = 8_{10}

$-8_{10} \rightarrow 2's \text{ complement}$

C0000004 = -8_{10} first bit is 1

b) $.125_{10} \rightarrow 1 \times 2^{-3} = 0.1 \times 2^{-2}$

Note! 2's complement

0100 0000 0000 0000 0000 0000 1111 1110

4 0 0 0 0 0 0 F E

$-.125_{10}$

C00000FE

— repeats forever

$$c) \quad .1_{10} = .19_{16} = .\underline{00011}_2$$

$$= .\underline{1100} \times 2^{-3}$$

32 bit rep

$0110 \ 0110 \ 0110 \ 0110 \ 0110 \ 0110 \ 1111 \ 1101$
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
 6 6 6 6 6 6 FD

— .1₁₀

9 9 9 9 9 A FD

MEER