Problem: Derive the IEEE Short Real representation of 17.35

Step 1: Convert Decimal to Binary Fixed Point

\[
17.35 = b10001.010110 \quad \text{(the underline indicates a repeating digit sequence)}
\]

Step 2: Convert Binary Fixed Point to Normalized Binary Floating Point

Floating Point: \[10001.010110 \times 2^0\]

Normalized:

Step 3: Rewrite the Sign, Exponent and Fraction in IEEE Short Real Format

<table>
<thead>
<tr>
<th>S</th>
<th>Exponent</th>
<th>Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1 0 0 0 0 1 1</td>
<td>0 0 0 1 0 1 0 1 1 0 0 1 1 0 0 1 1 0 0</td>
</tr>
</tbody>
</table>

Step 4: Express the result as a Hexadecimal Doubleword

IEEE Short Real (32 bits): __________________________

Hex Doubleword: __________________________