Design and Implementation of a Digital Mixer with Digital Logic
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**1. INTRODUCTION**

Digital mixer:
- Use digital circuits (digital gates)
- Digital signals

**1. Functional diagram of the proposed mixer**

**2. MIXER DESIGN**

- Analogic mixer can be expressed
- Replace analogic signal by digital
- Multiplication is XOR
- Implement addition
- Implement phase shift - (using Dflip)

**Addition**

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<th>A</th>
<th>B</th>
<th>A+B</th>
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<tr>
<td>1</td>
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- A and B are two level signal while A+B are three level signal.
- The first line is low level and is neither A NOR B, while the last one is high level and can be implemented as AND
- The output of the first line and last line will be input of RS trigger

**3. SIMULATION**

**4. IMPLEMENTATION AND MEASUREMENT**

D flip flop CD74HC74E, NOT gate CD74HC04E, XOR gate CD74HC86E, NOR gate CD74HC02E, AND gate CD74HC08E, PLL chip CD74HC4046AE

**REFERENCES**