Algorithm Suggestion

For DTMF Dial

Input: Number Vector

Output: DTMF tone

- Define two vectors specifying the row and column frequency related to each number and symbol.
- Define vectors for tone time and silence tone time using sampling frequency Fs.
- When k < length of numbers vector
    - Obtain the frequency related to each number/symbol from the row and column vector defined earlier and evaluate the dtmf tone
    - Cascade the dtmf tone and silence tone

For DTMF Decode

Input: DTMF tone

Output: Number vector

- Define the vector for tone time and silence tone time using sampling frequency Fs
- Obtain the time interval of each tone
- When k < length of the DTMF tone
    - Extract the tone pertaining to each number
    - Evaluate the fft of the extracted tone and determine the two highest frequencies in the frequency spectrum.
    - Compare the frequencies obtained in the previous step with the frequency related to each number/symbol .
    - Cascade the numbers