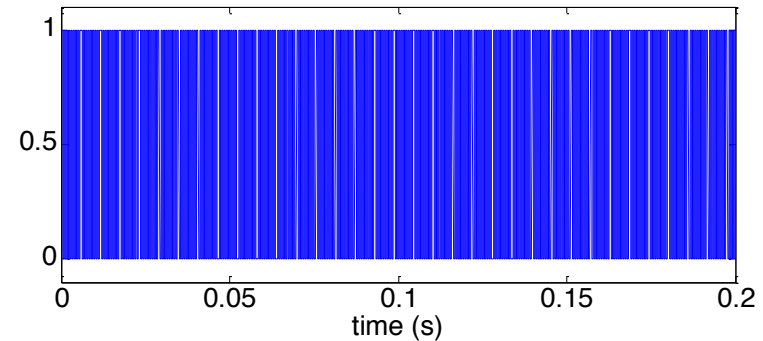
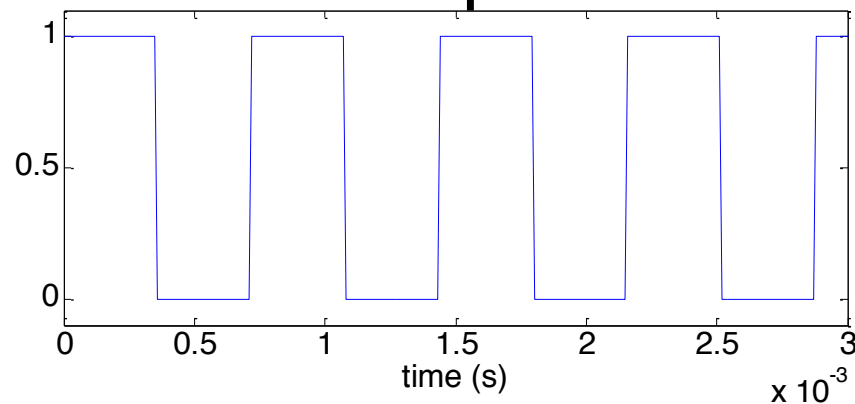


# 1. Create Square Wave

- Sample rate: 100 kHz
- Length: 200 ms

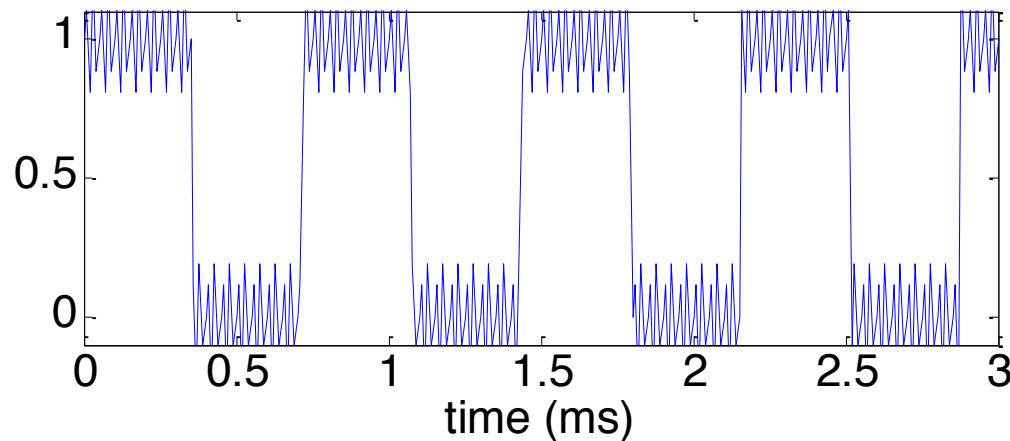


- Zoom in to see square wave



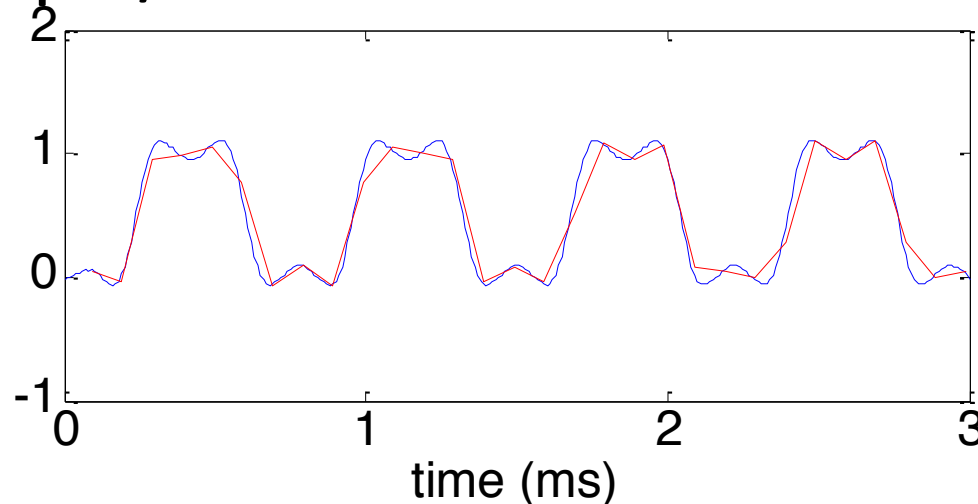
## 2. Add Sine to Square Wave

- Add in 40 kHz sine wave
  - This represents noise



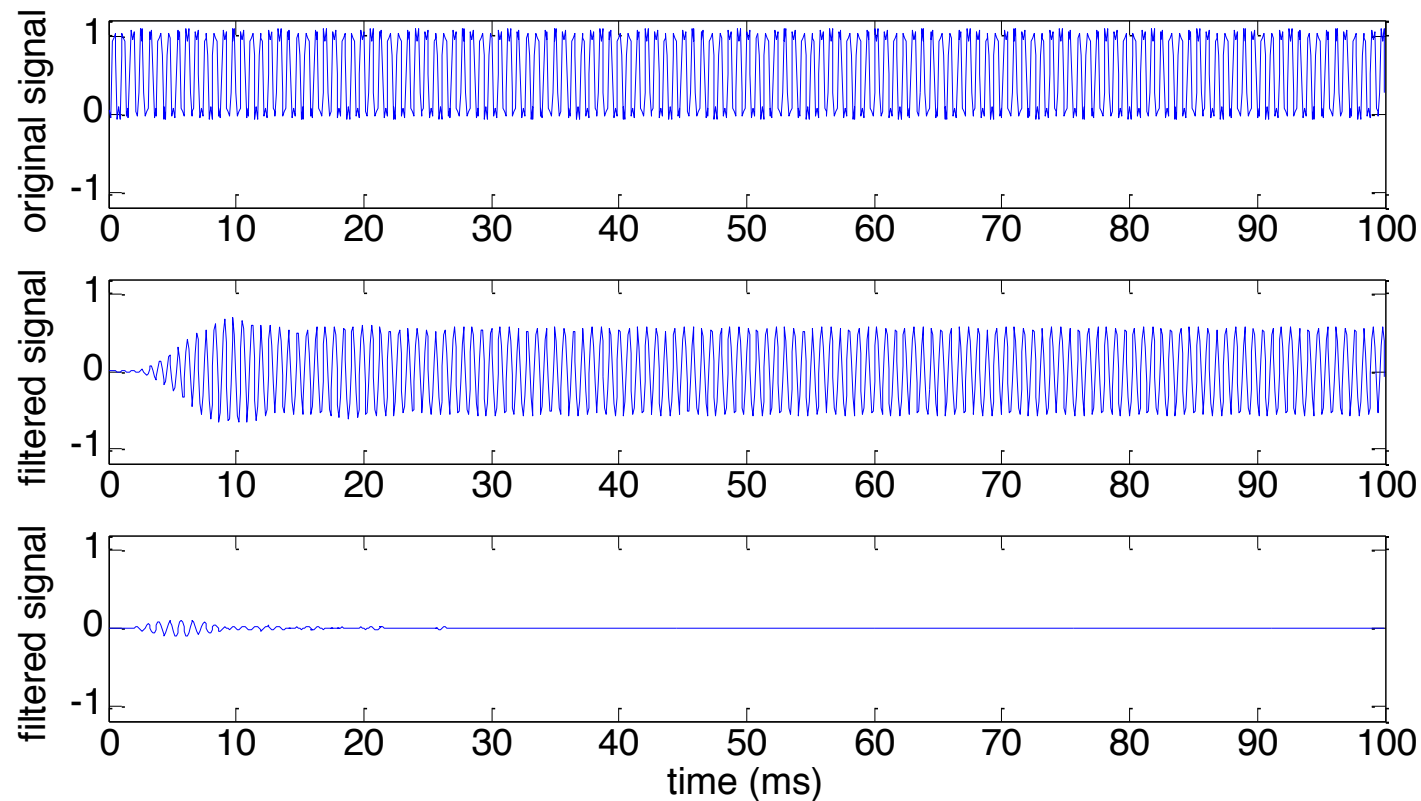
### 3. Create a Lowpass FIR Filter

- Sine wave is gone
- Some harmonics are filtered out (square wave becomes more rounded)
- Decimate to reduce sample rate to 10 kSample/sec



## 4. Create a bandpass filter

- Lets just look at 2 of the filters



## 5. Square Signal and Sum

- Square signal to eliminate negative numbers

