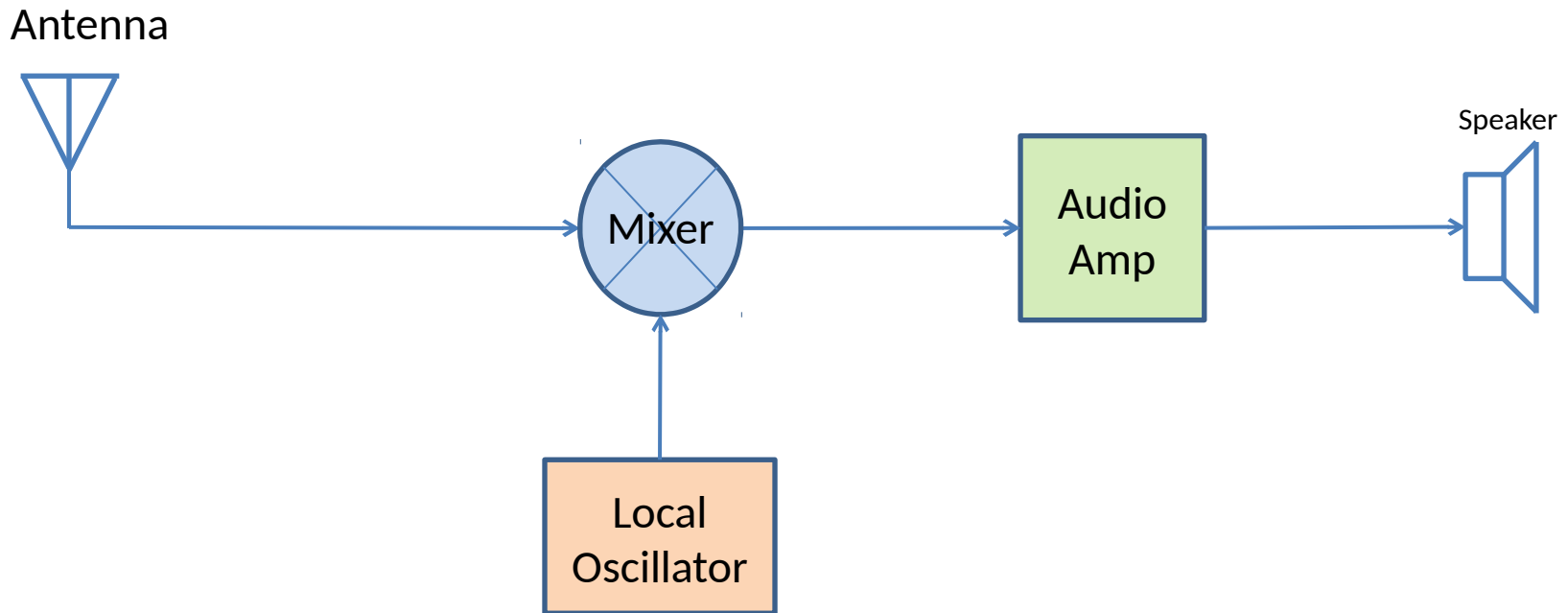


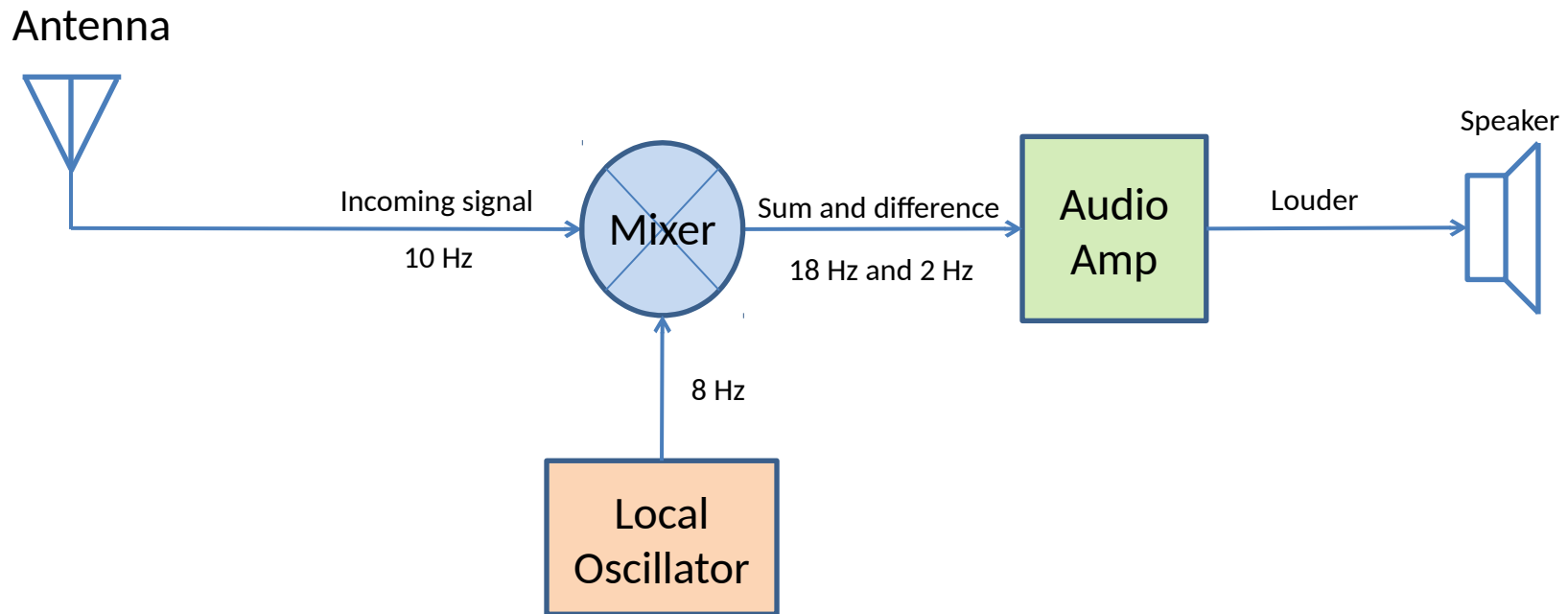
ZZRX-40 Theory of Operation

Essential elements of ANY receiver



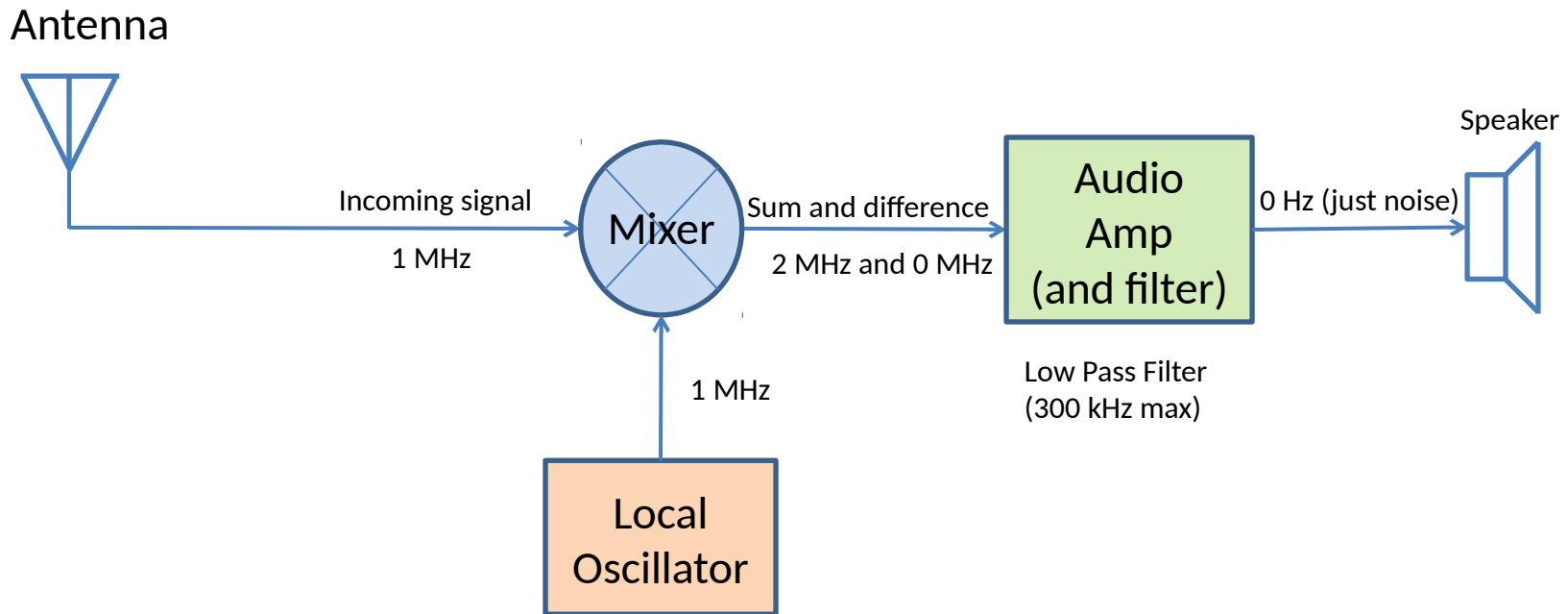
ZZRX-40 Theory of Operation

Simple Mixing



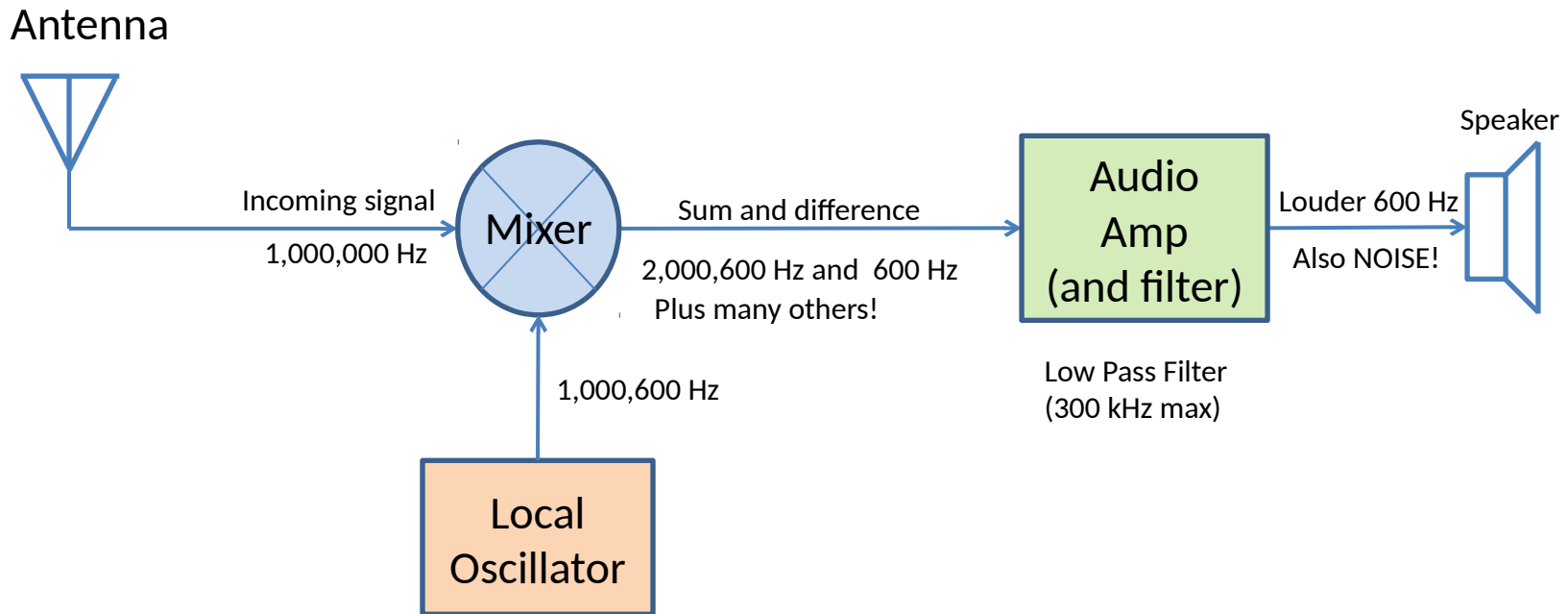
ZZRX-40 Theory of Operation

Simple Mixing



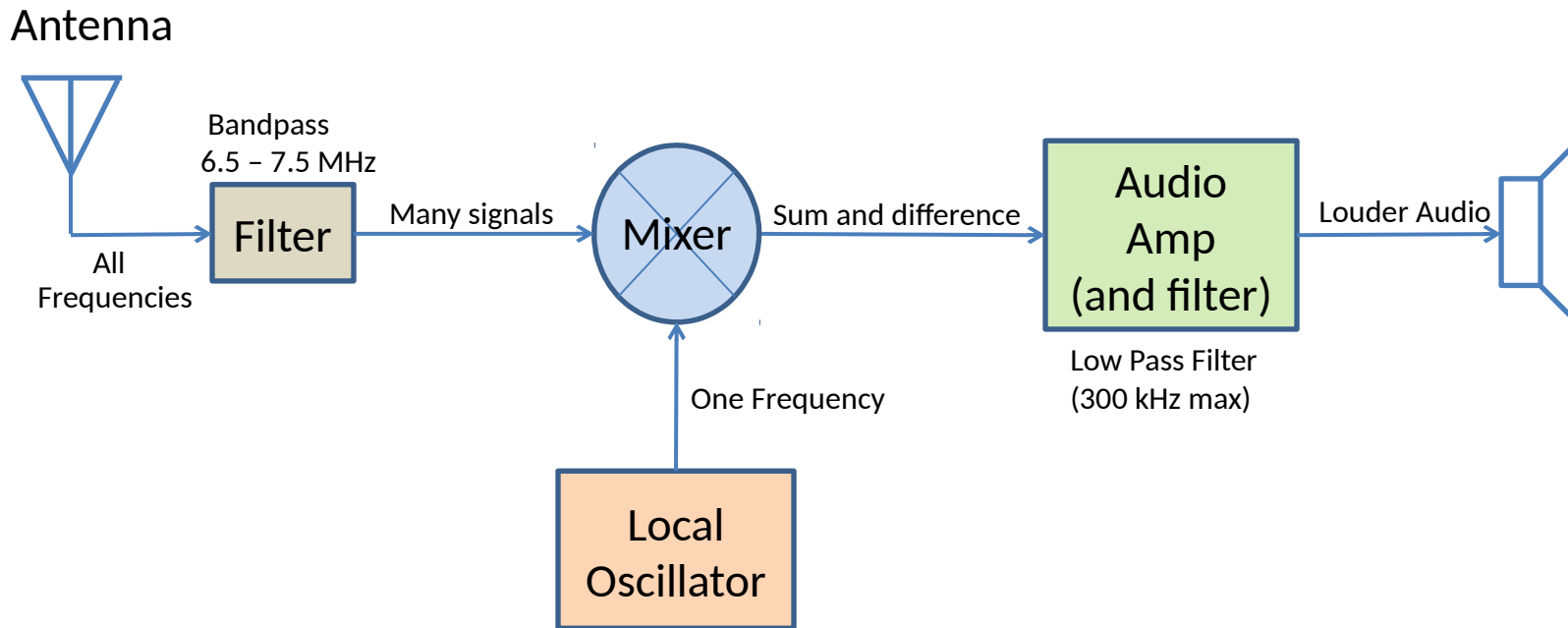
ZZRX-40 Theory of Operation

Simple Mixing



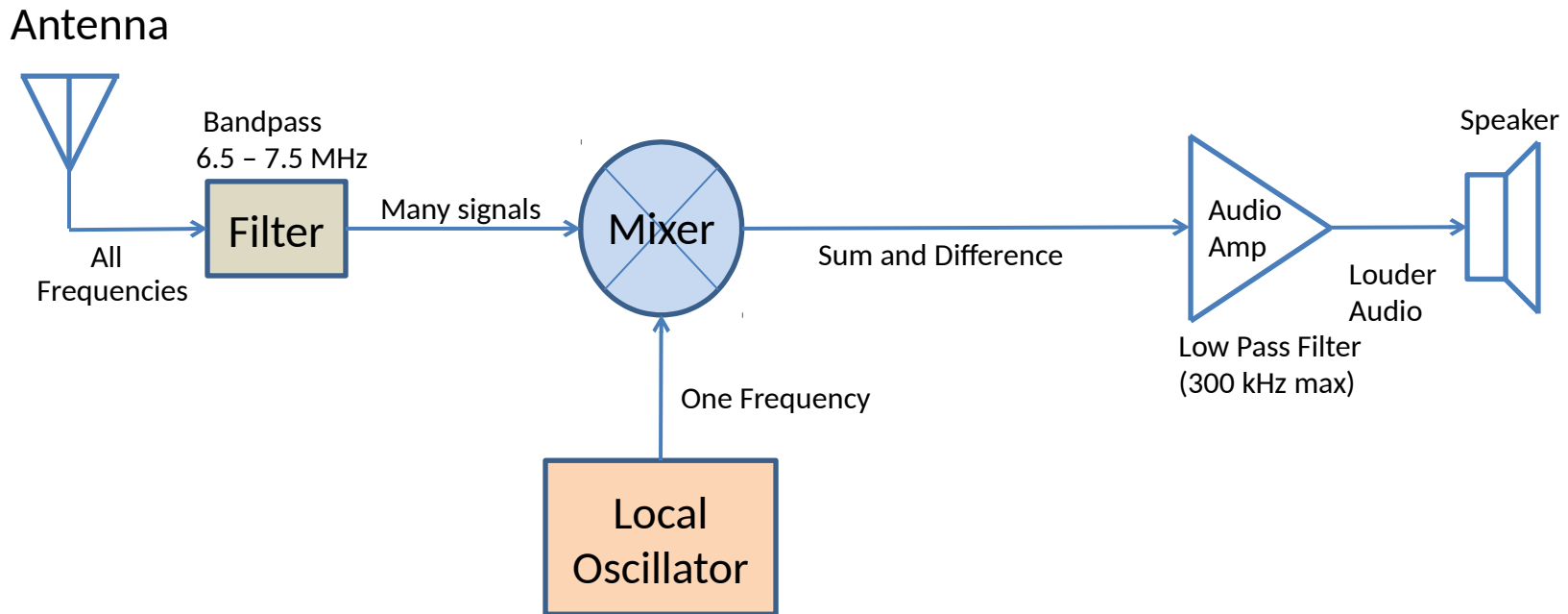
ZZRX-40 Theory of Operation

Add input filter
(select signal from smaller range of frequencies)



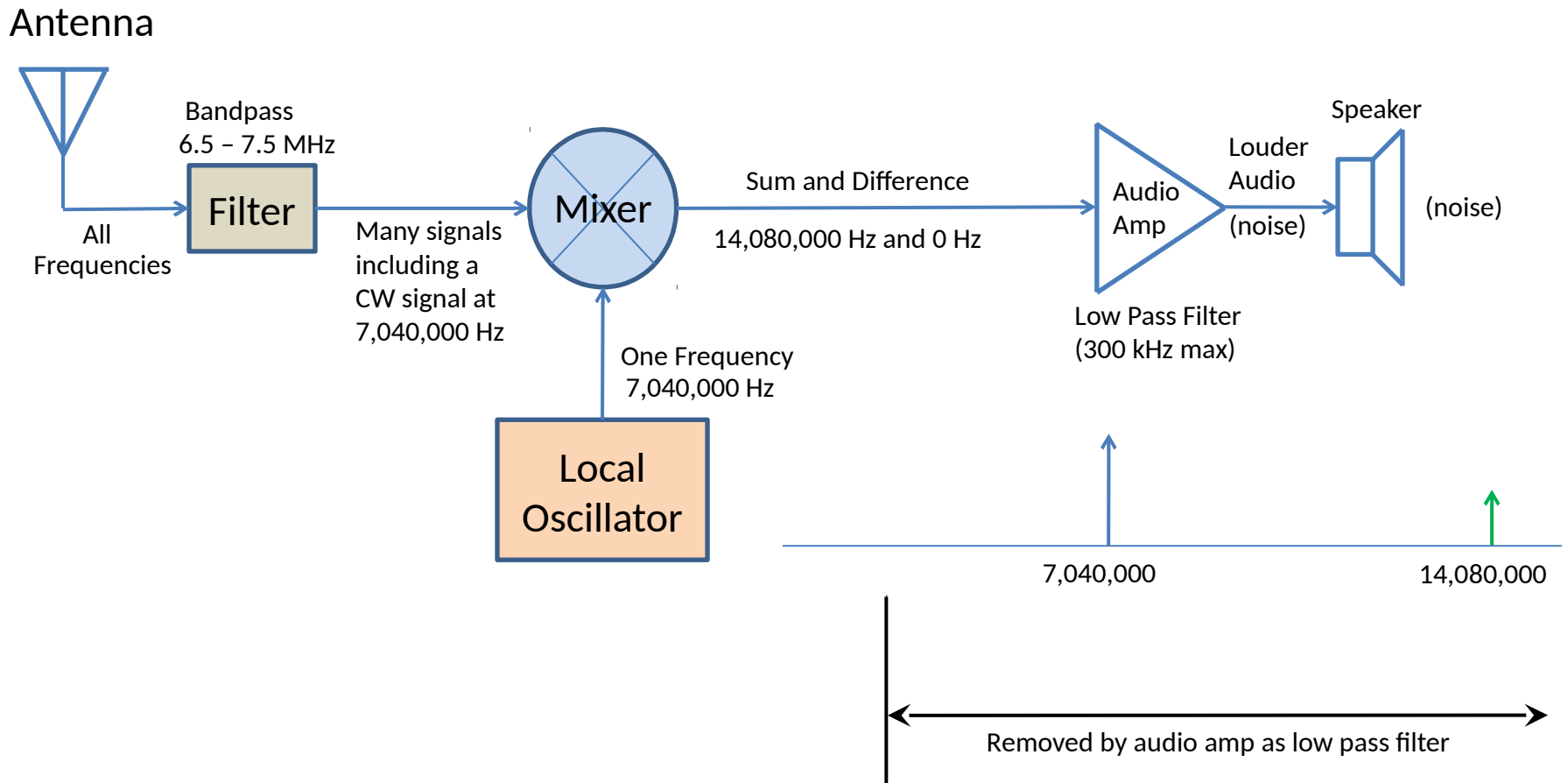
ZZRX-40 Theory of Operation

Example 4: Zero Beat with Audio Filter



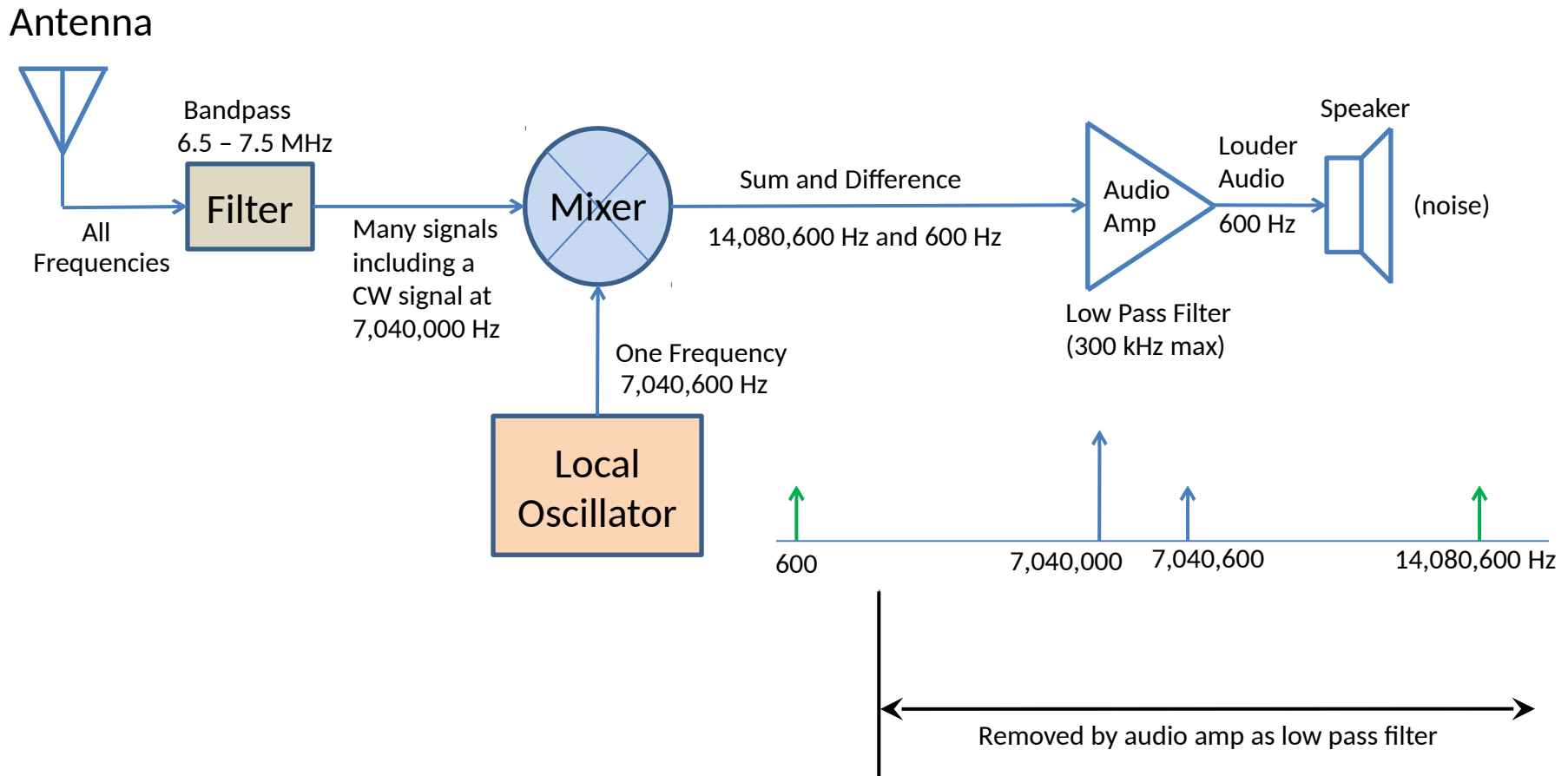
ZZRX-40 Theory of Operation

Example 5: LO **Zero BEAT** with incoming signal



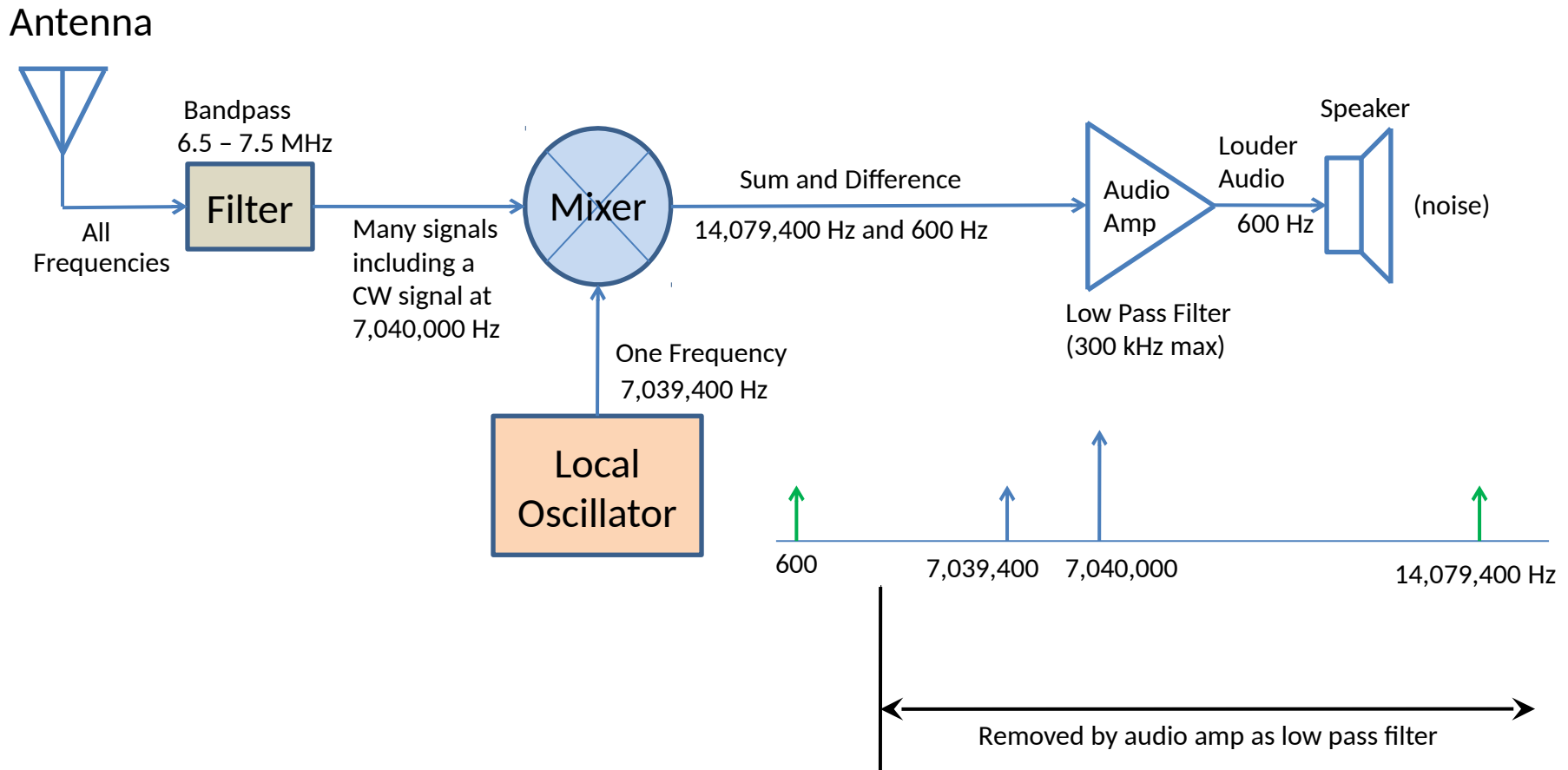
ZZRX-40 Theory of Operation

Example 5: LO **Plus** 600 Hz



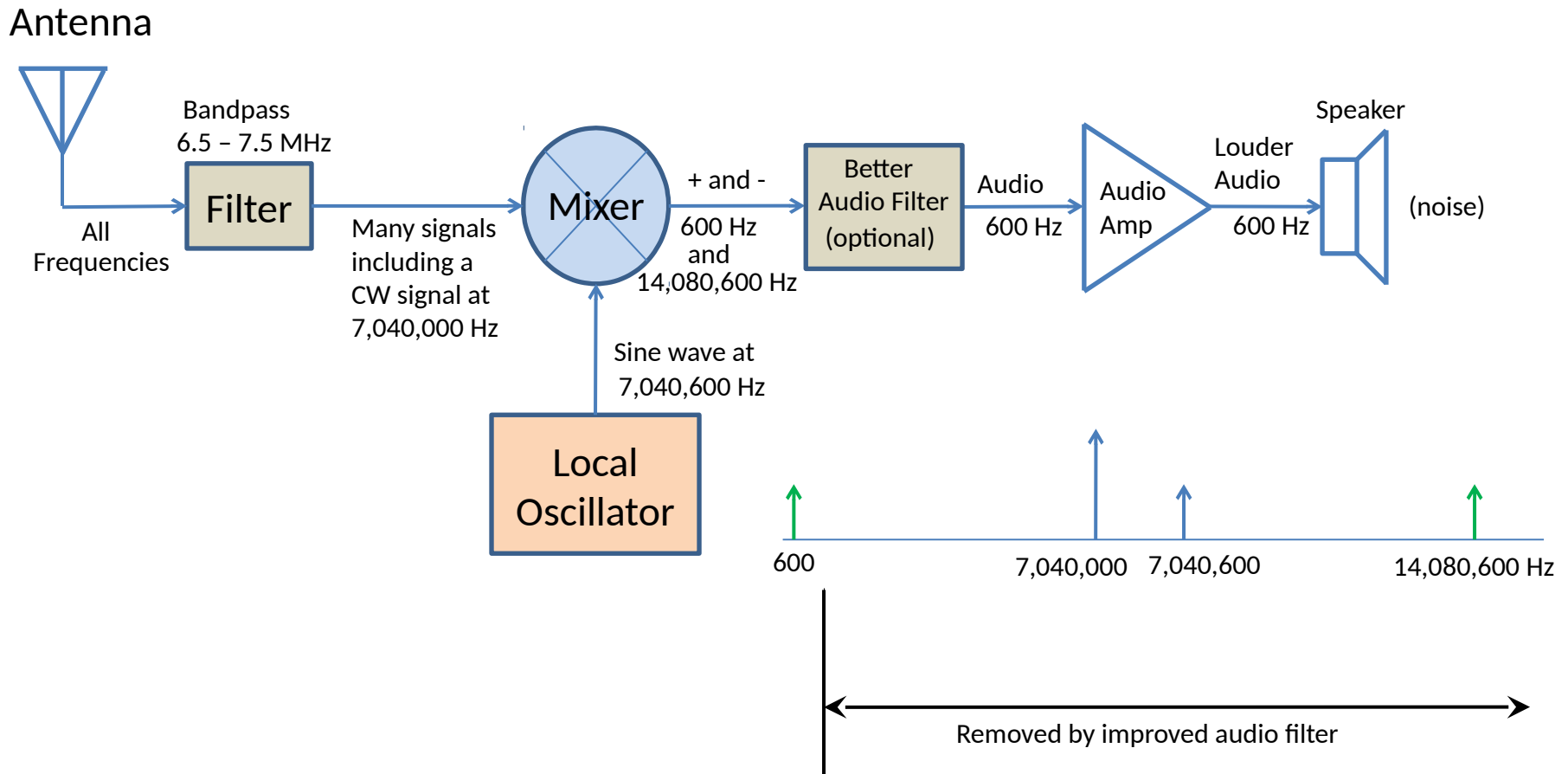
ZZRX-40 Theory of Operation

Example 6: LO **Minus** 600 Hz



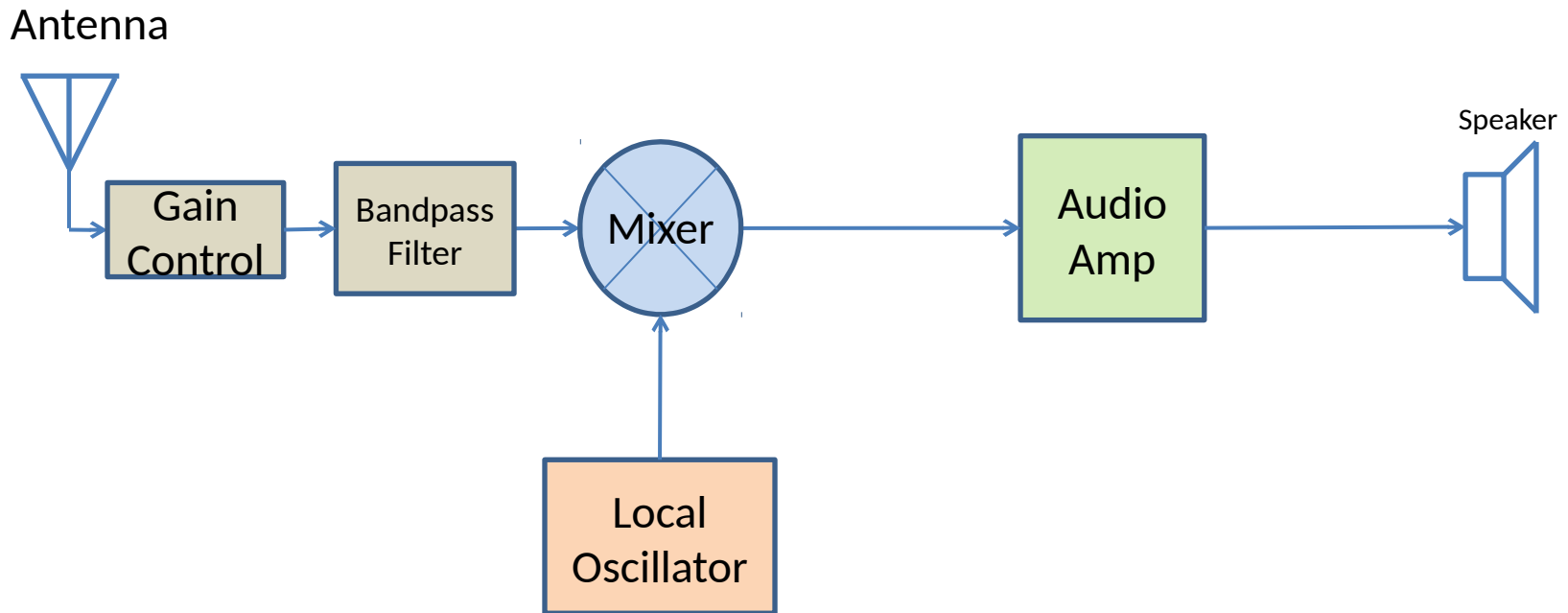
ZZRX-40 Theory of Operation

Example x: LO **Plus** 600Hz with Audio Filter



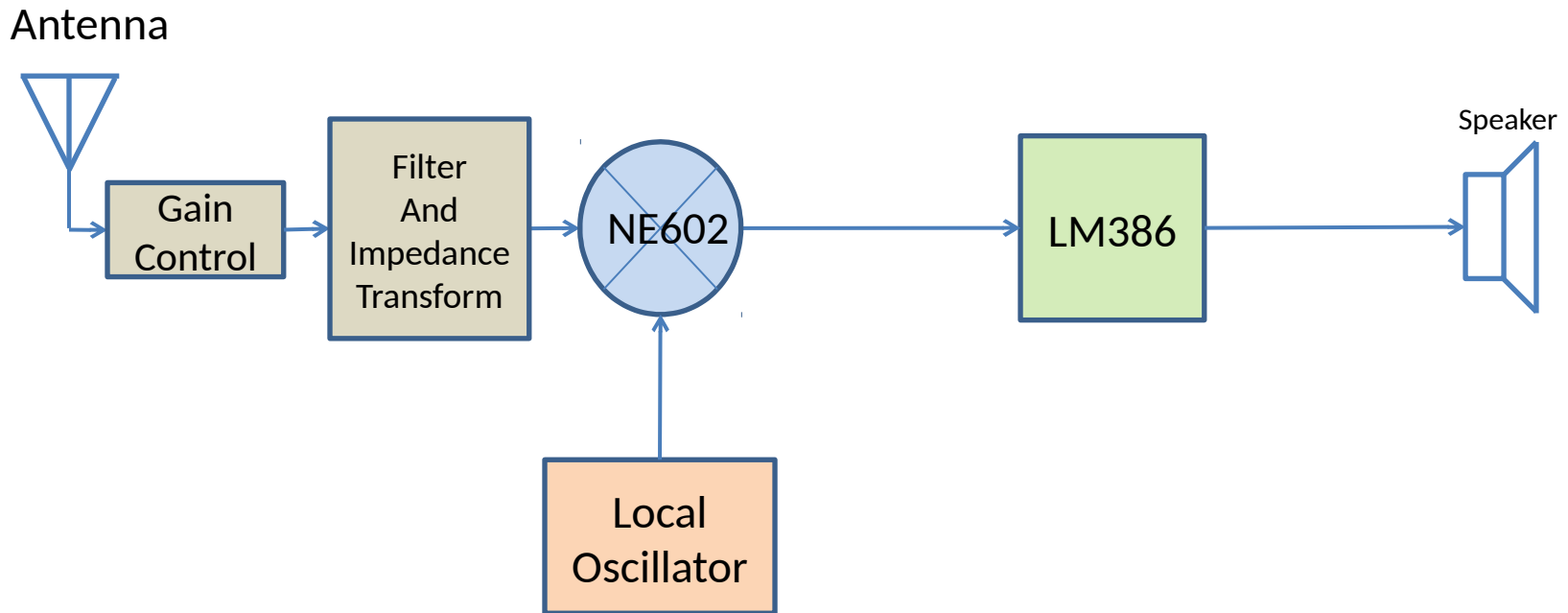
ZZRX-40 Block Diagram

Front End



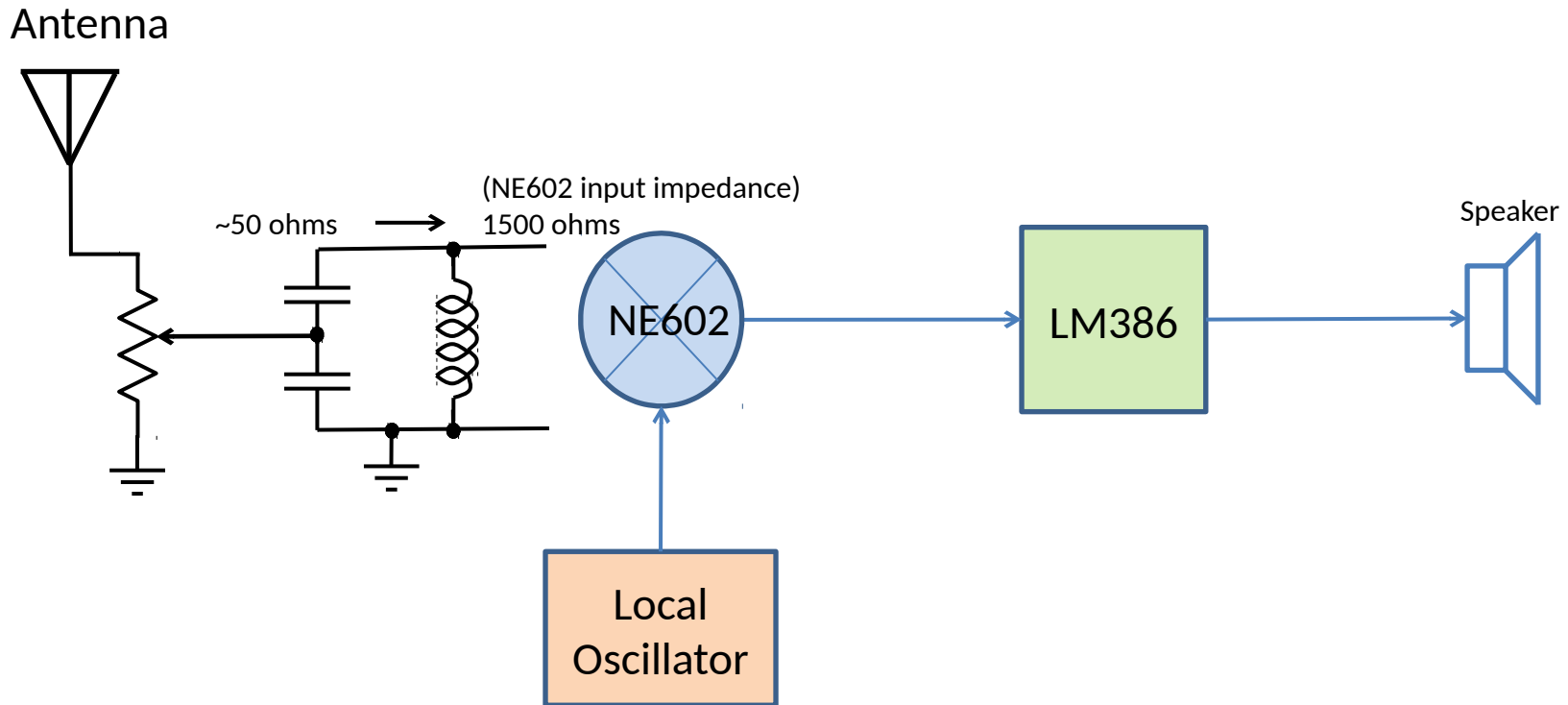
ZZRX-40 Block Diagram

Front End



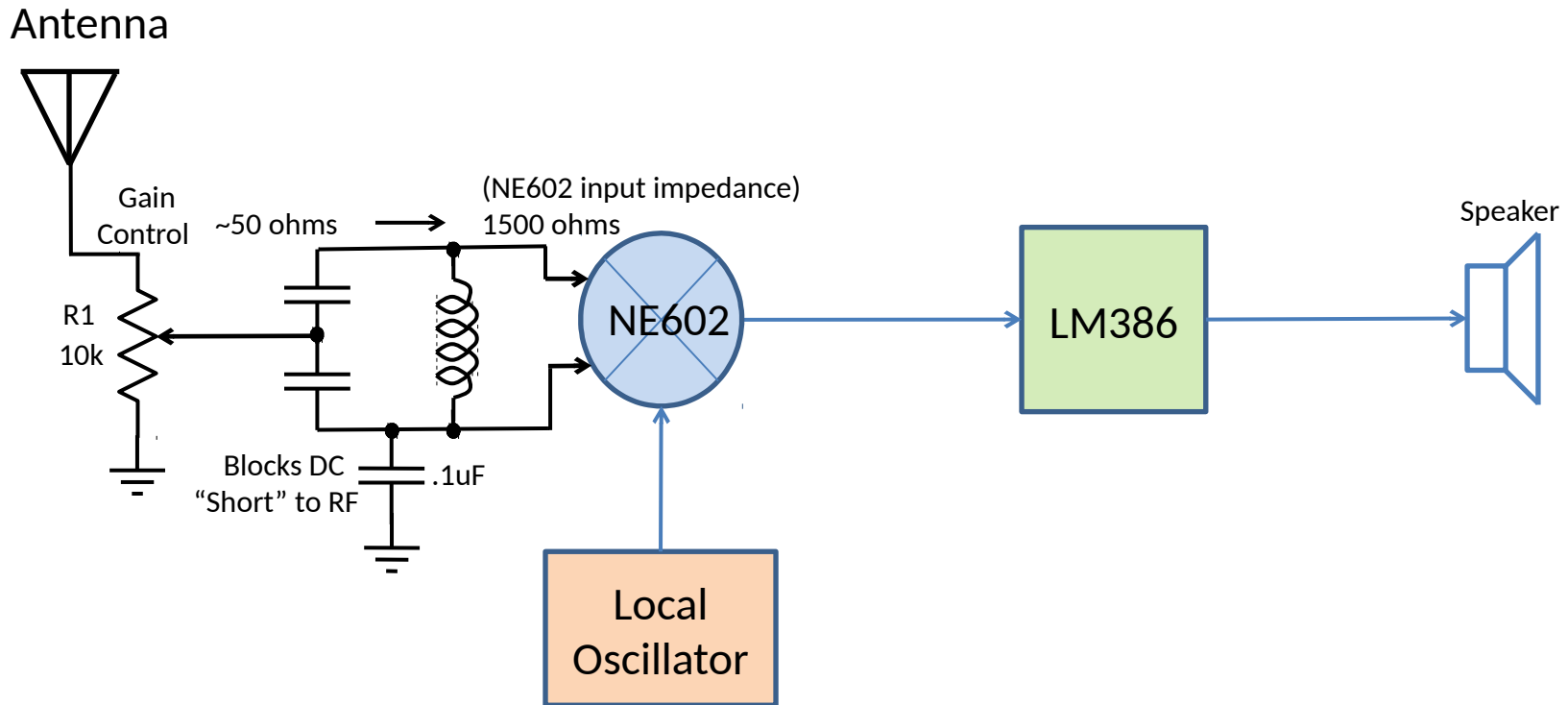
ZZRX-40 Block Diagram

Front End



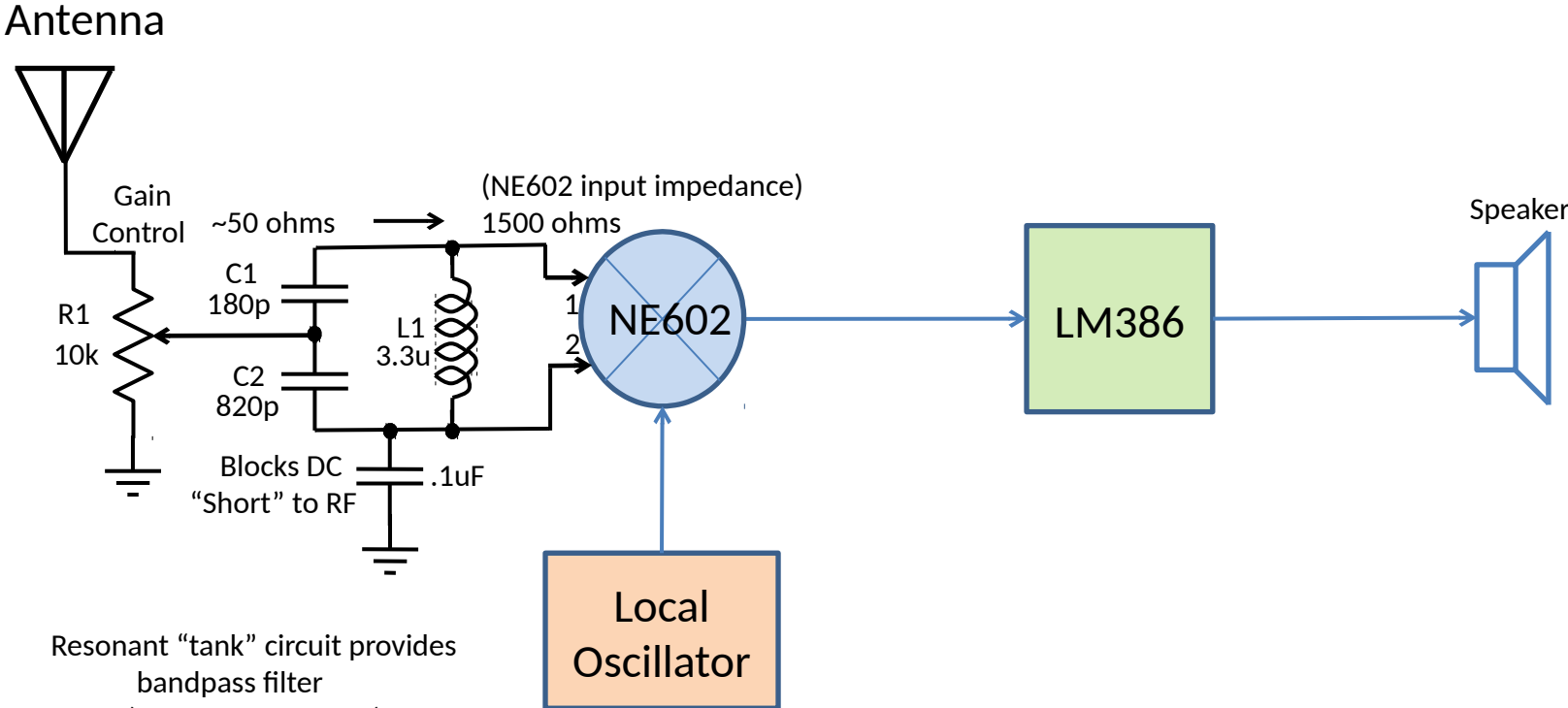
ZZRX-40 Block Diagram

Front End



ZZRX-40 Block Diagram

Front End

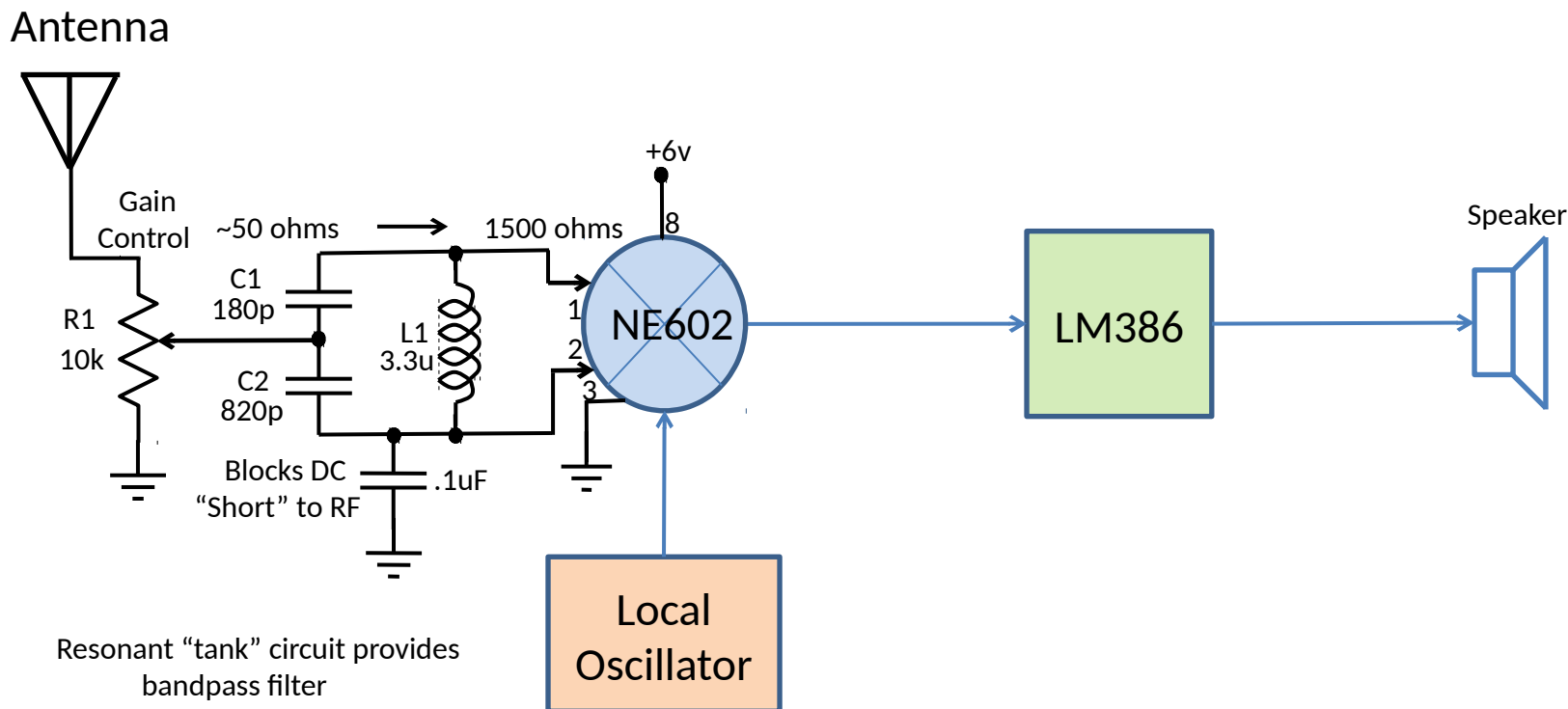


Resonant "tank" circuit provides bandpass filter
 $X_c = X(c1 \text{ in series with } c2)$
At resonant frequency $X_c = X_L$
Ideal resonance at 1 frequency but actually it's a curve.

Split capacitors and coil provide impedance transformation

ZZRX-40 Block Diagram

Front End



Resonant "tank" circuit provides bandpass filter

$X_c = X(c_1 \text{ in series with } c_2)$

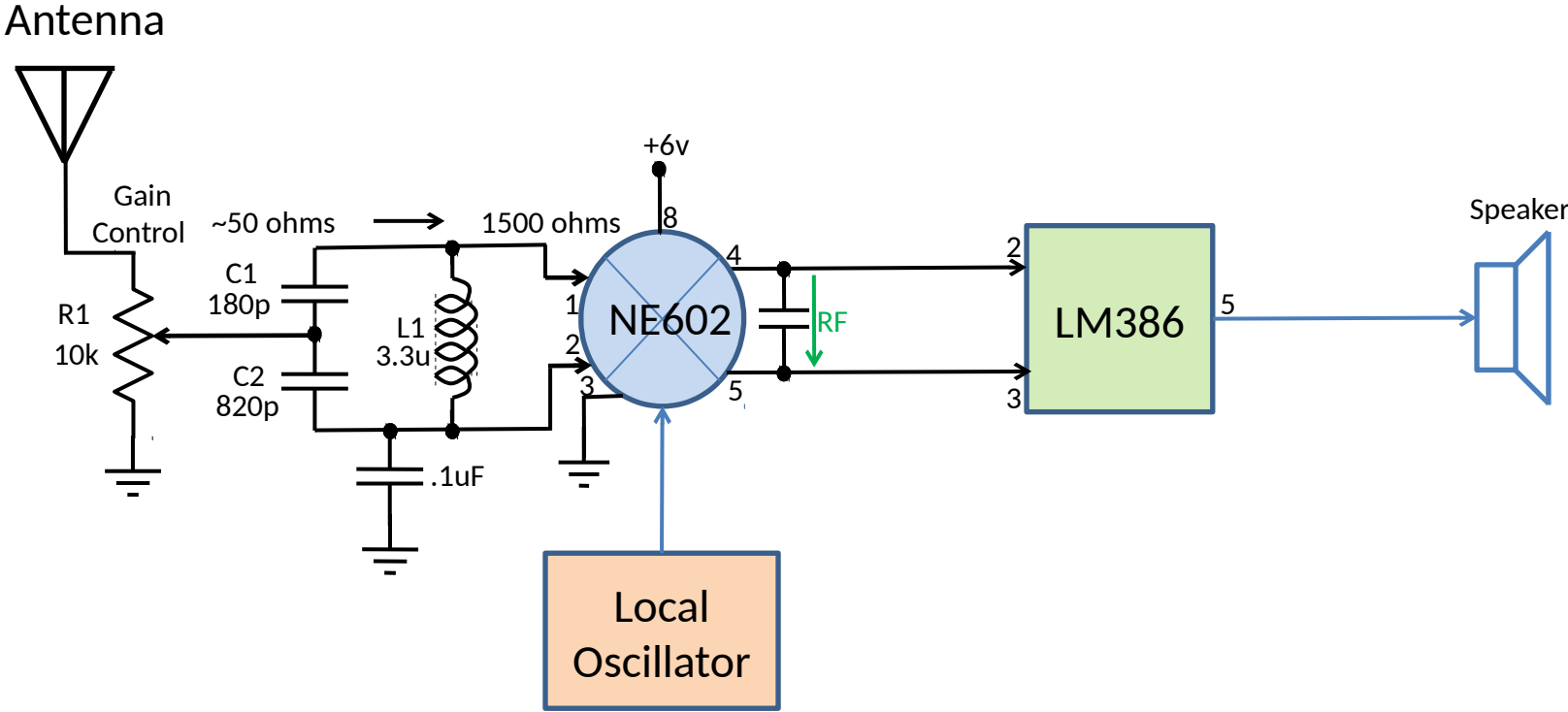
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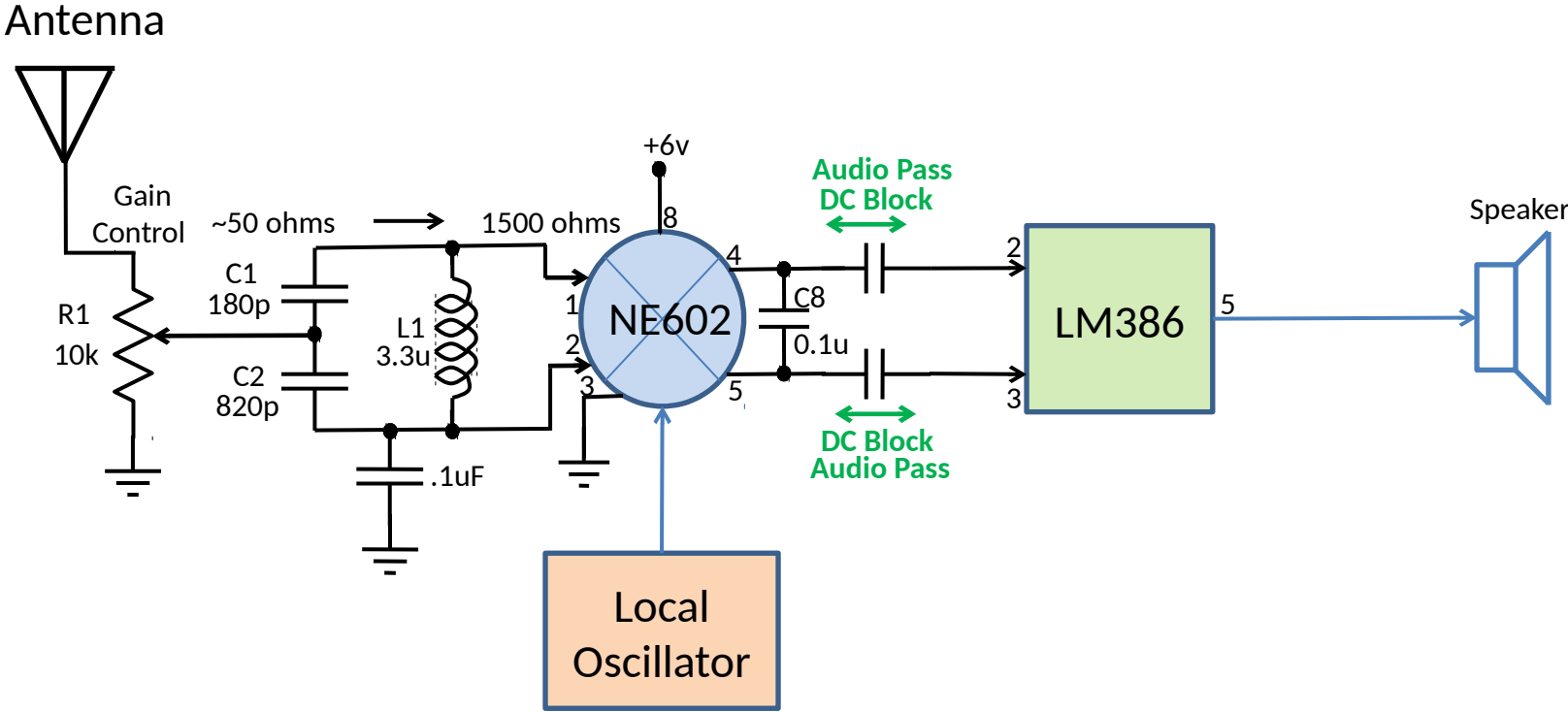
ZZRX-40 Block Diagram

Audio Out



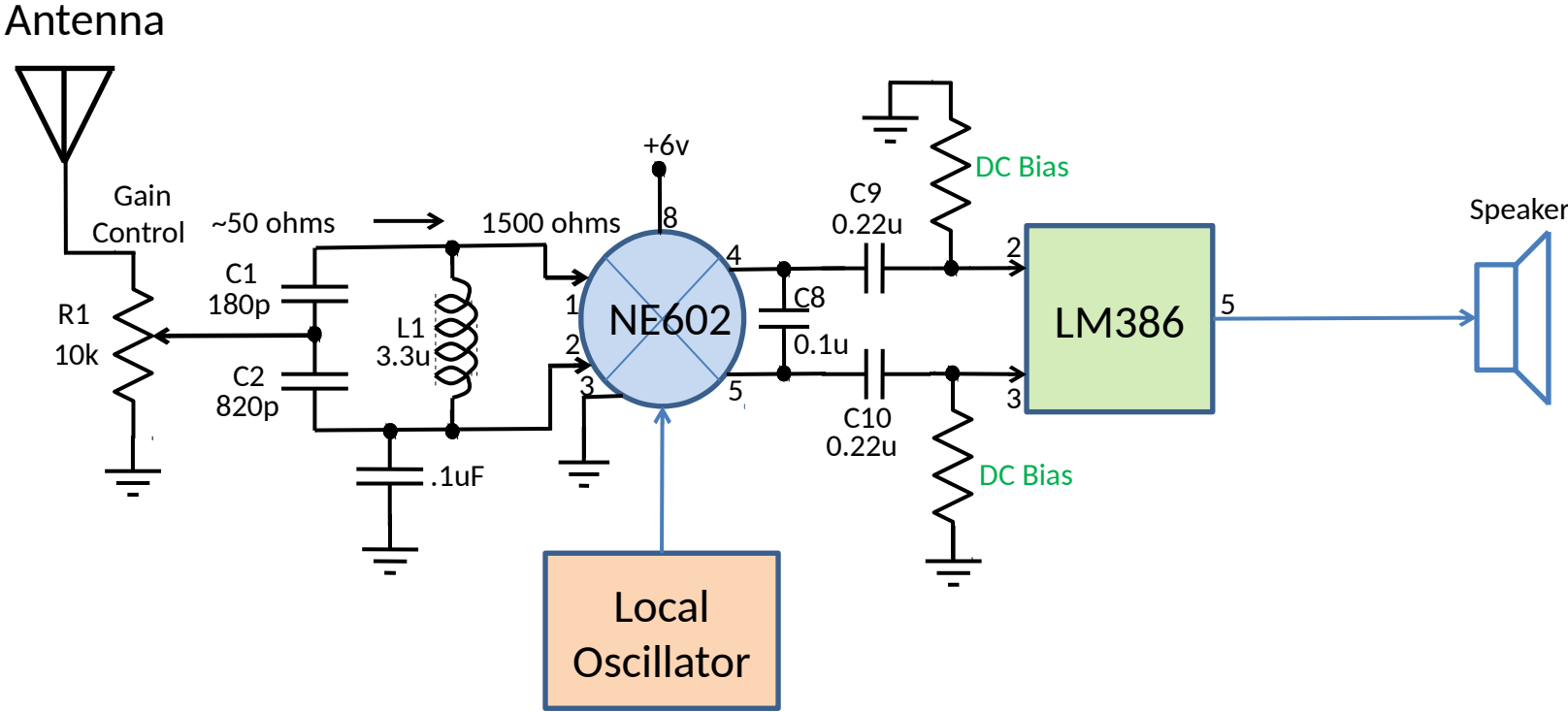
ZZRX-40 Block Diagram

Audio Out



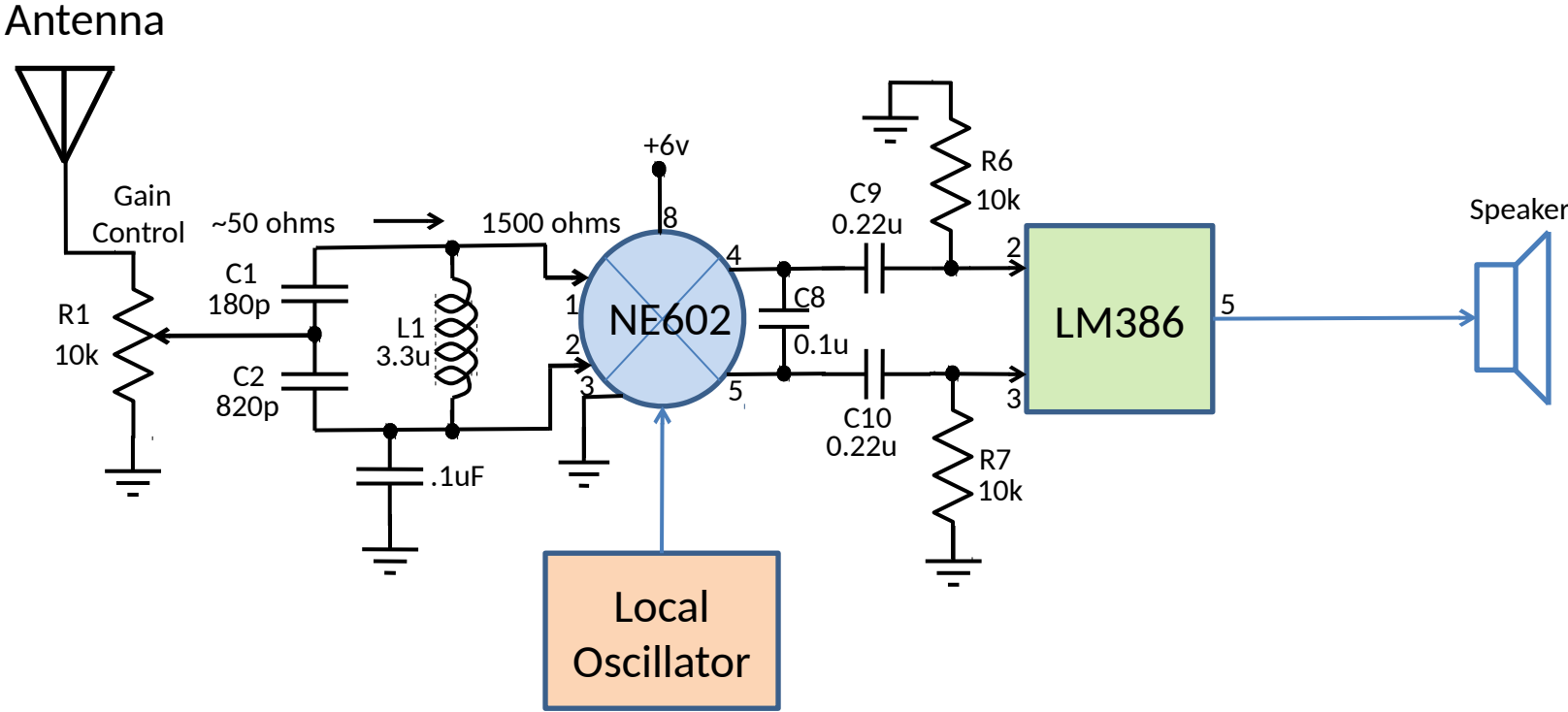
ZZRX-40 Block Diagram

Audio Out



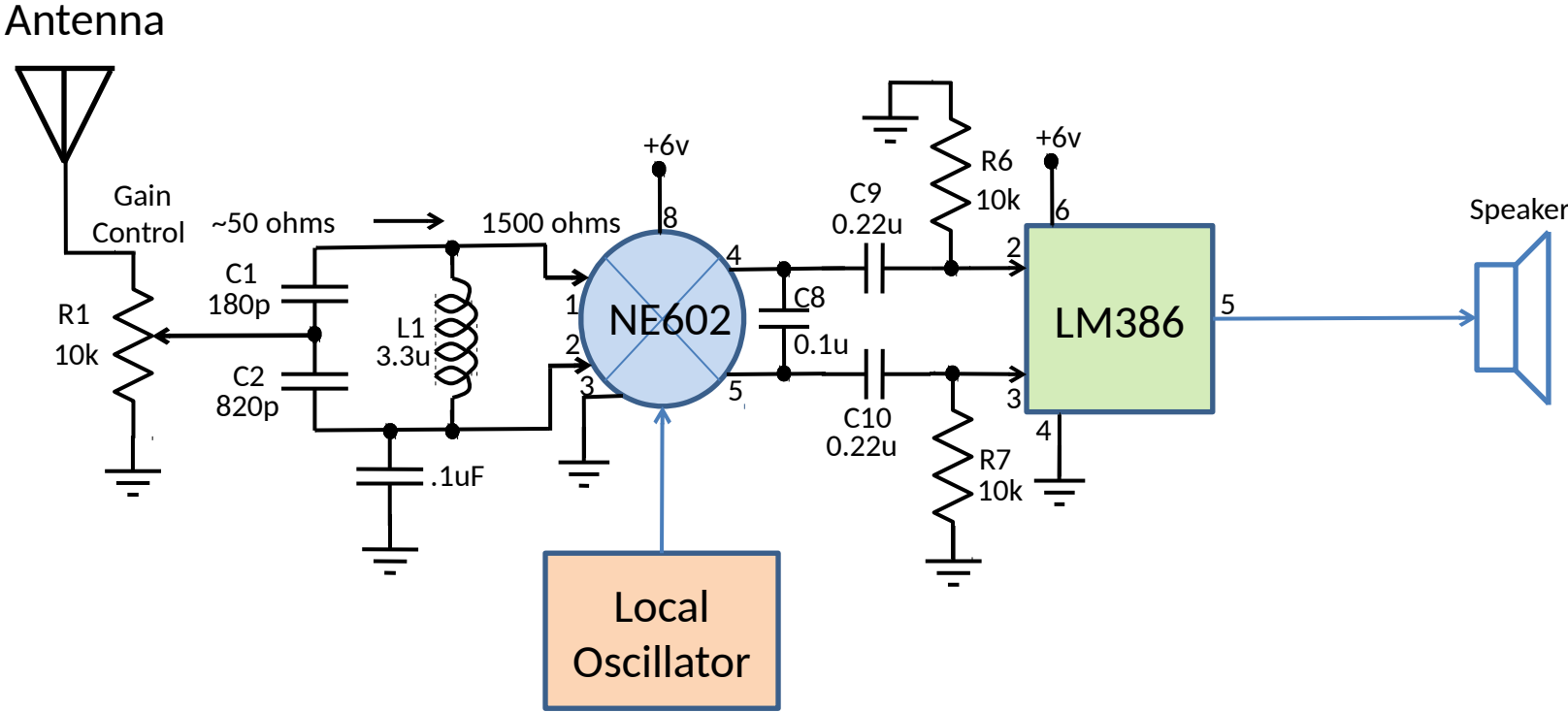
ZZRX-40 Block Diagram

Audio Out



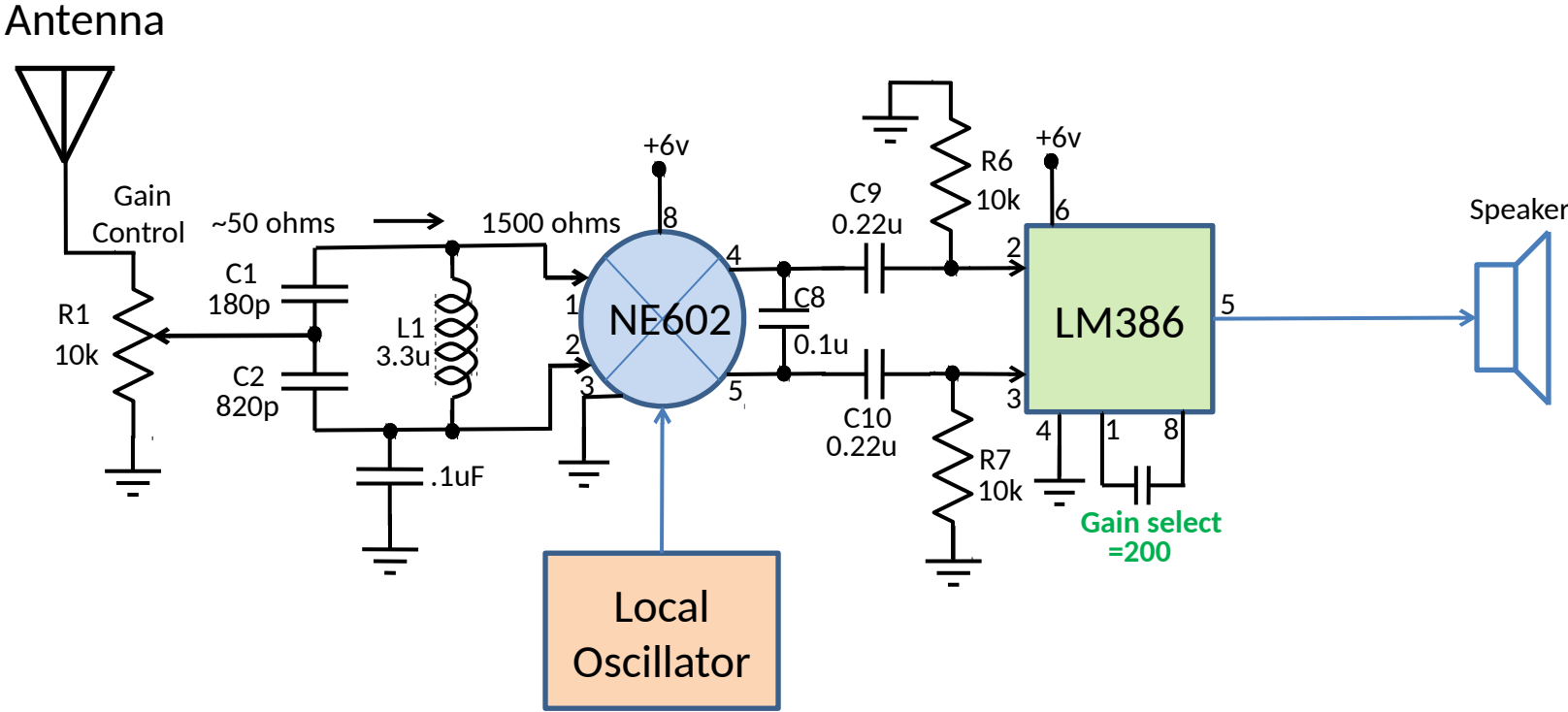
ZZRX-40 Block Diagram

Audio Out



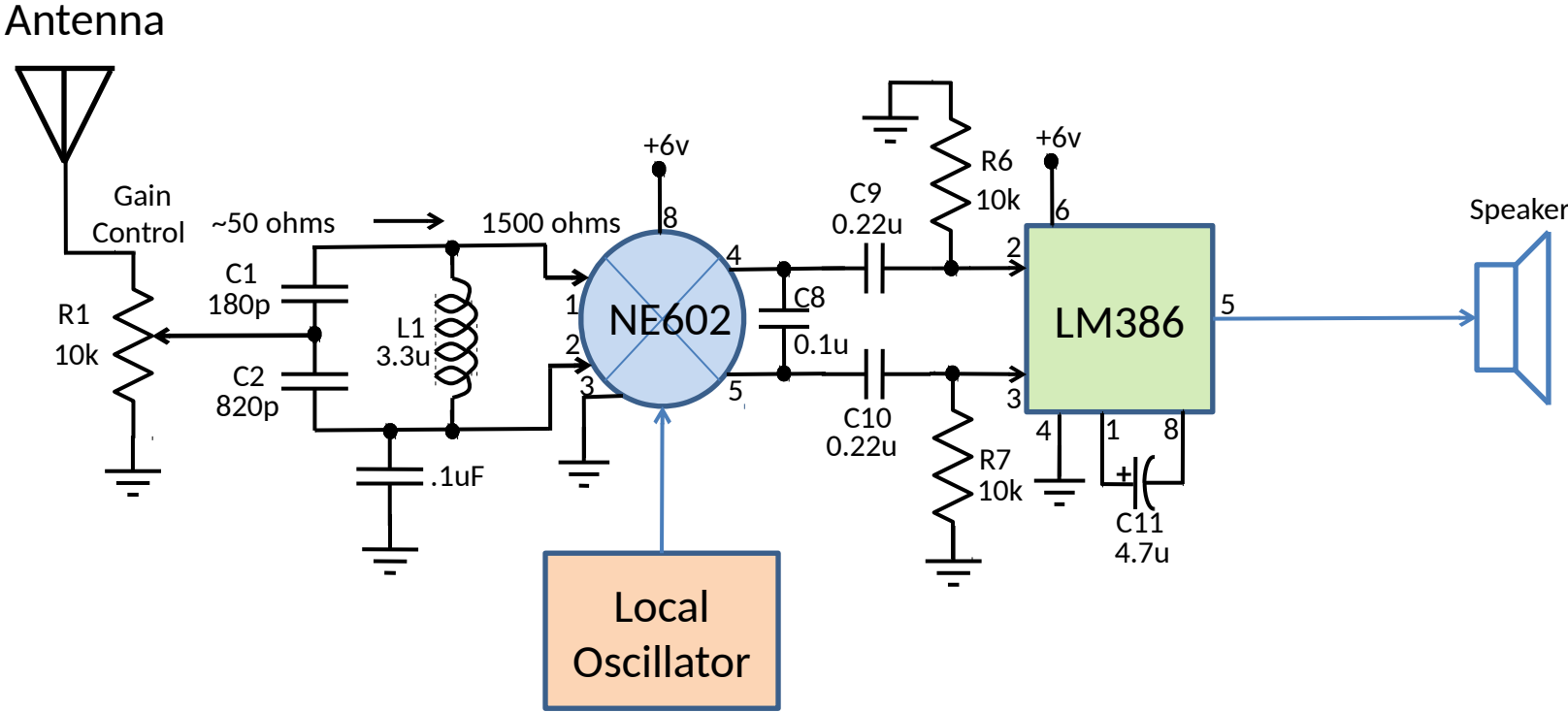
ZZRX-40 Block Diagram

Audio Out



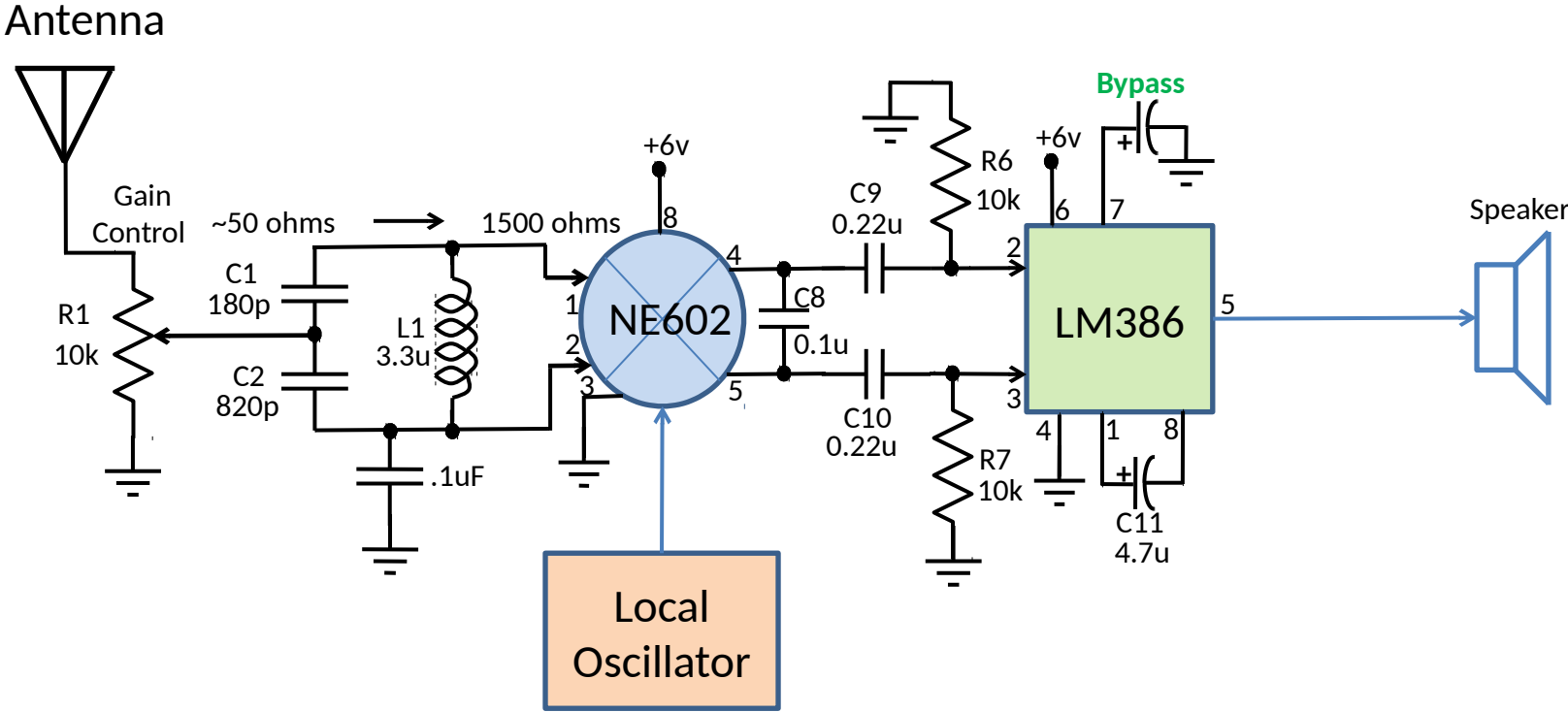
ZZRX-40 Block Diagram

Audio Out



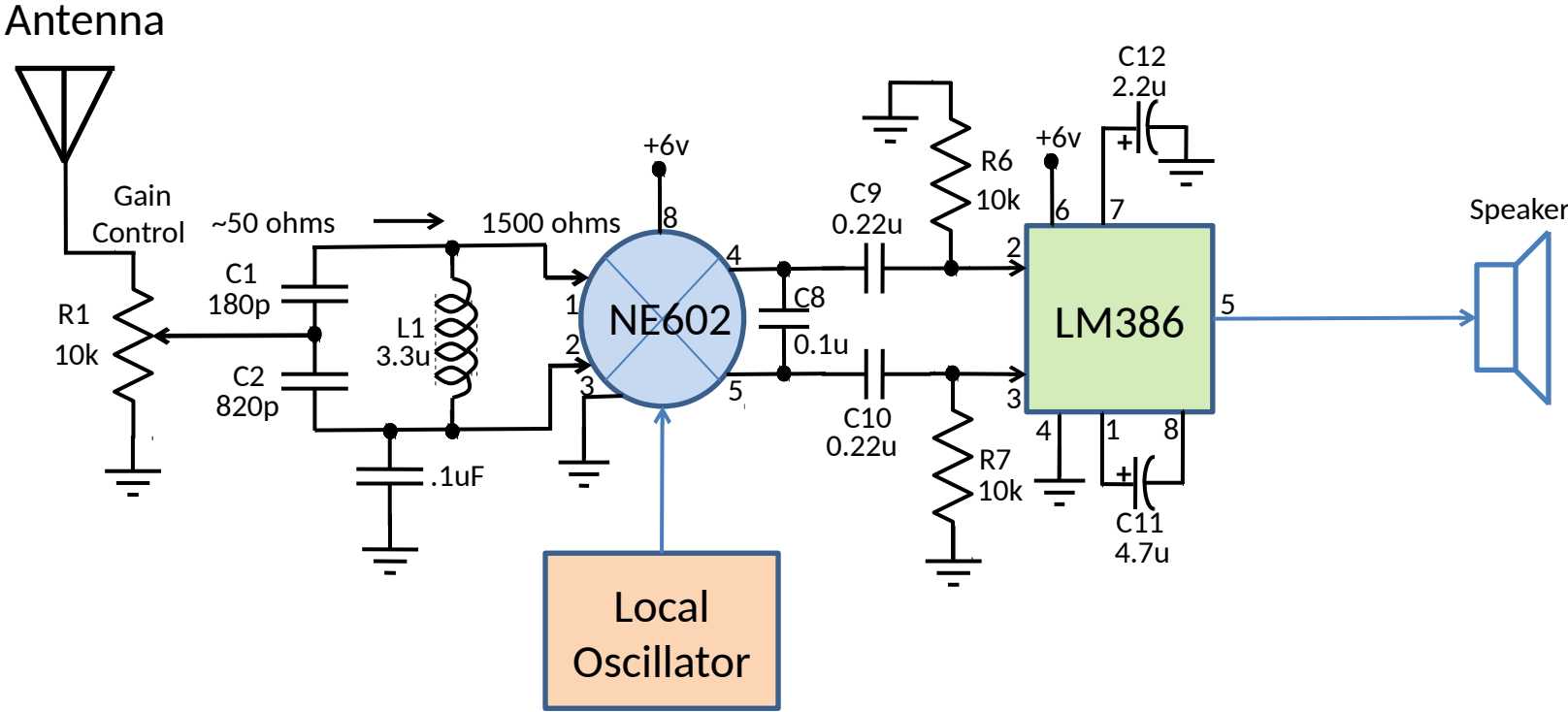
ZZRX-40 Block Diagram

Audio Out



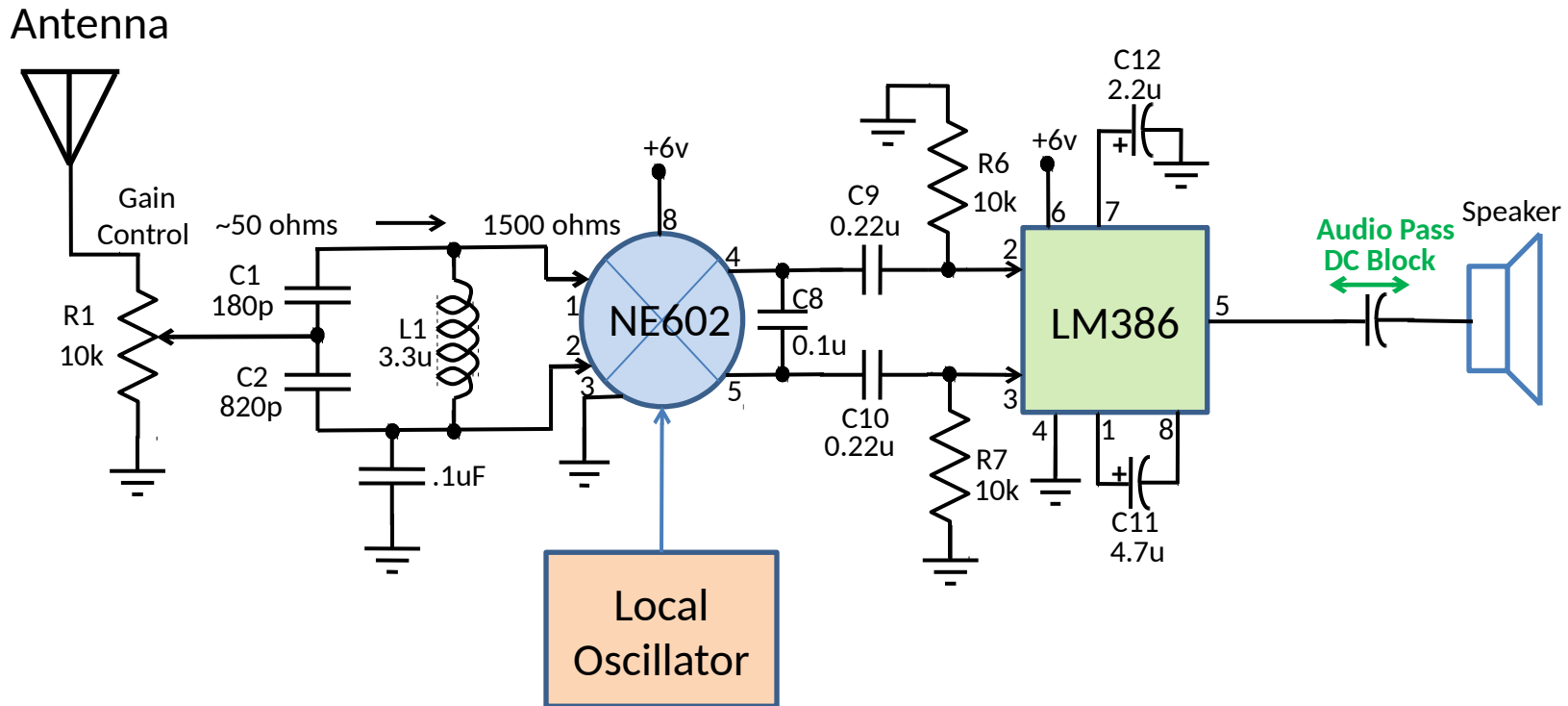
ZZRX-40 Block Diagram

Audio Out



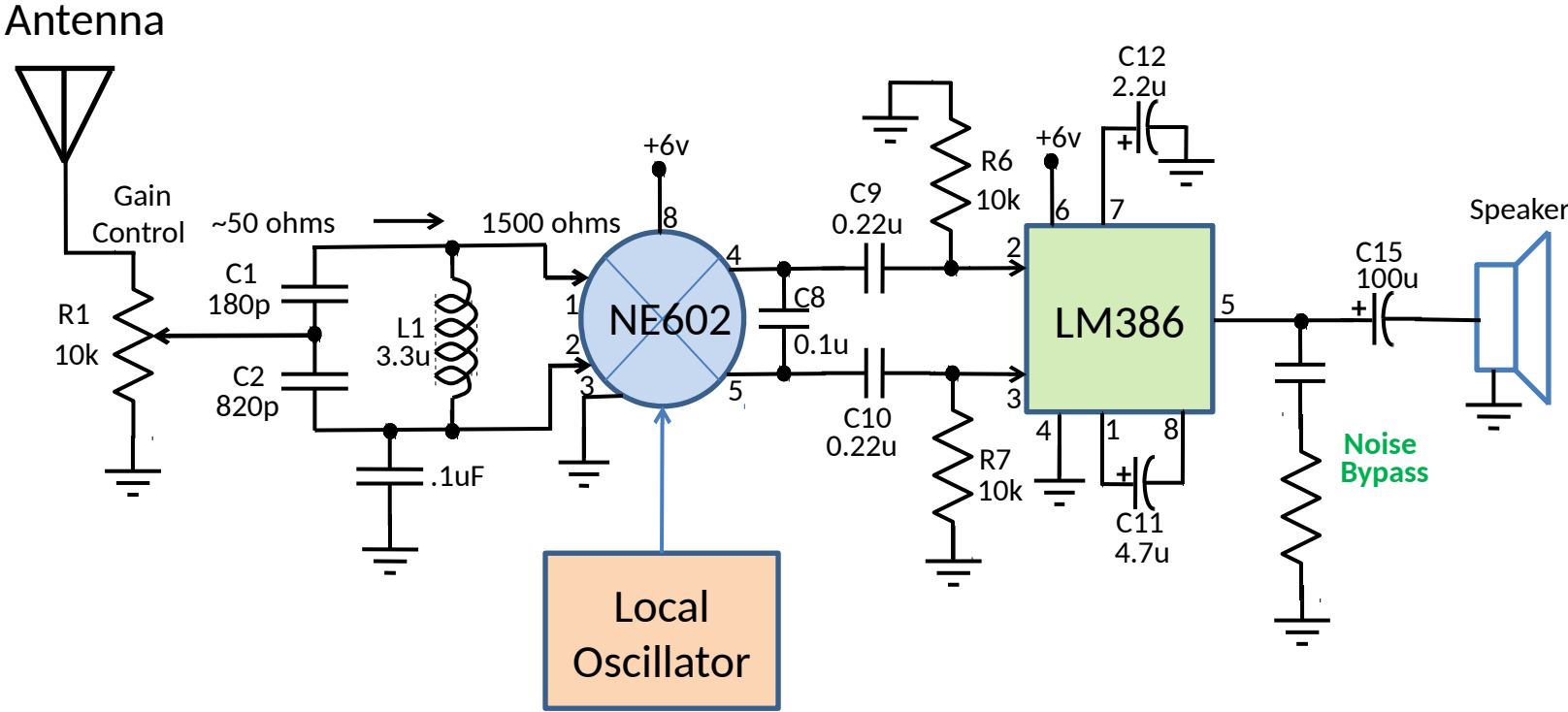
ZZRX-40 Block Diagram

Audio Out



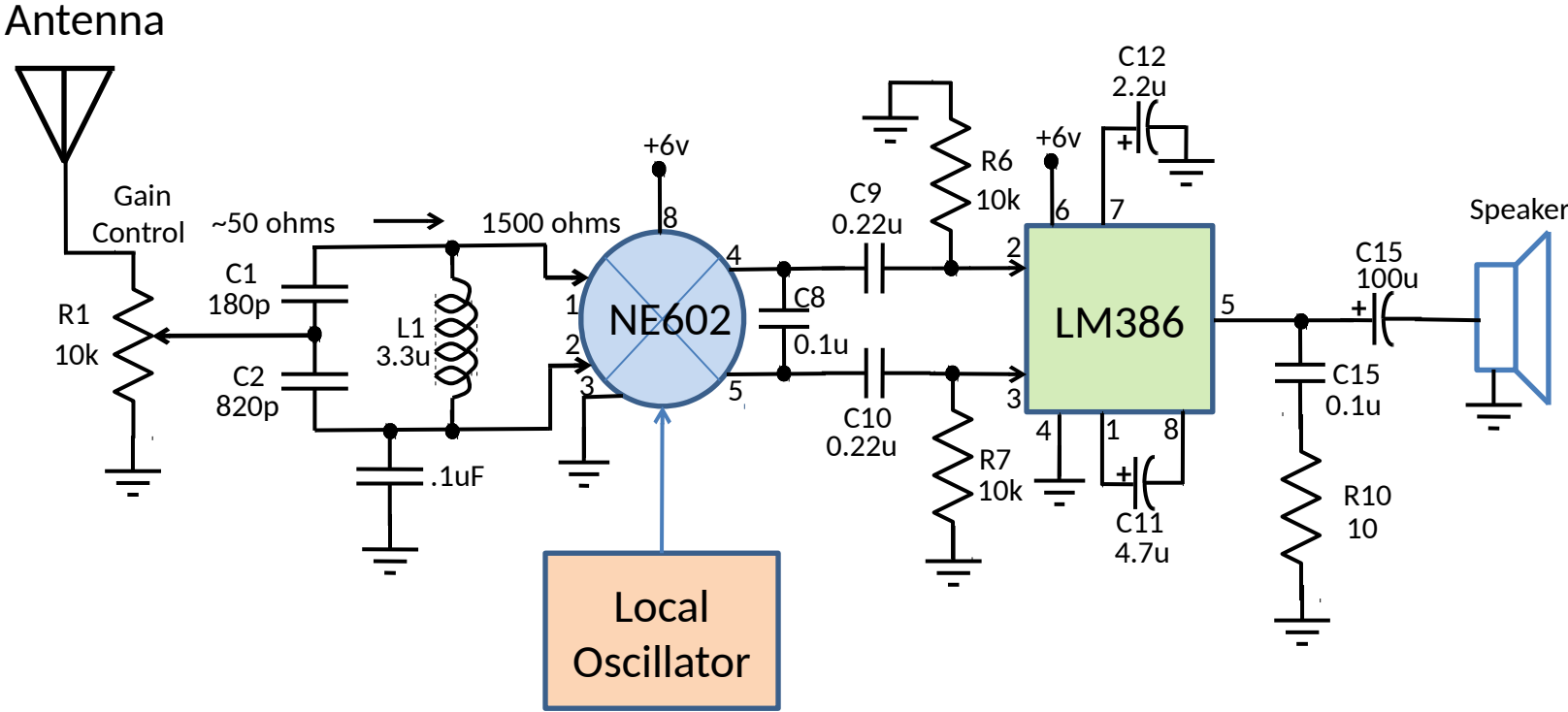
ZZRX-40 Block Diagram

Audio Out



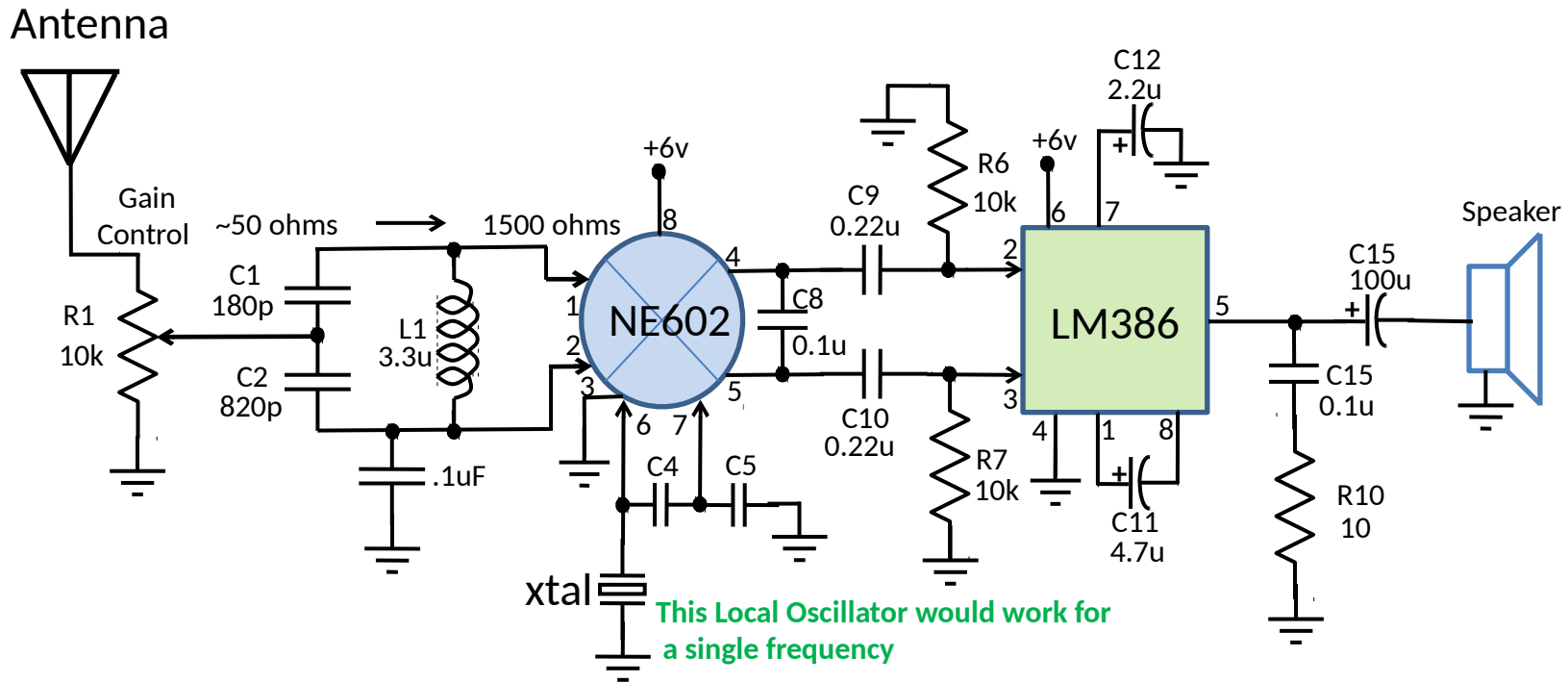
ZZRX-40 Block Diagram

Audio Out



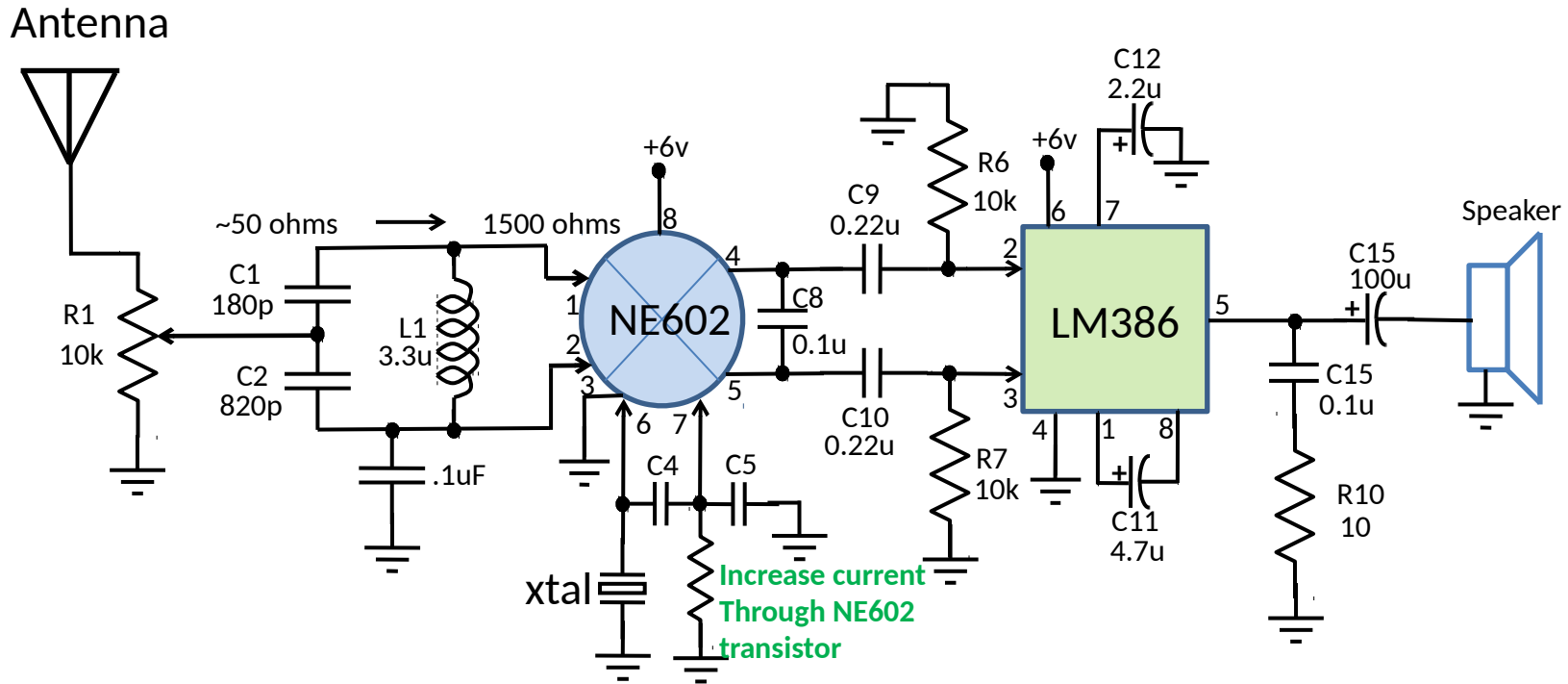
ZZRX-40 Block Diagram

Crystal-controlled Local Oscillator



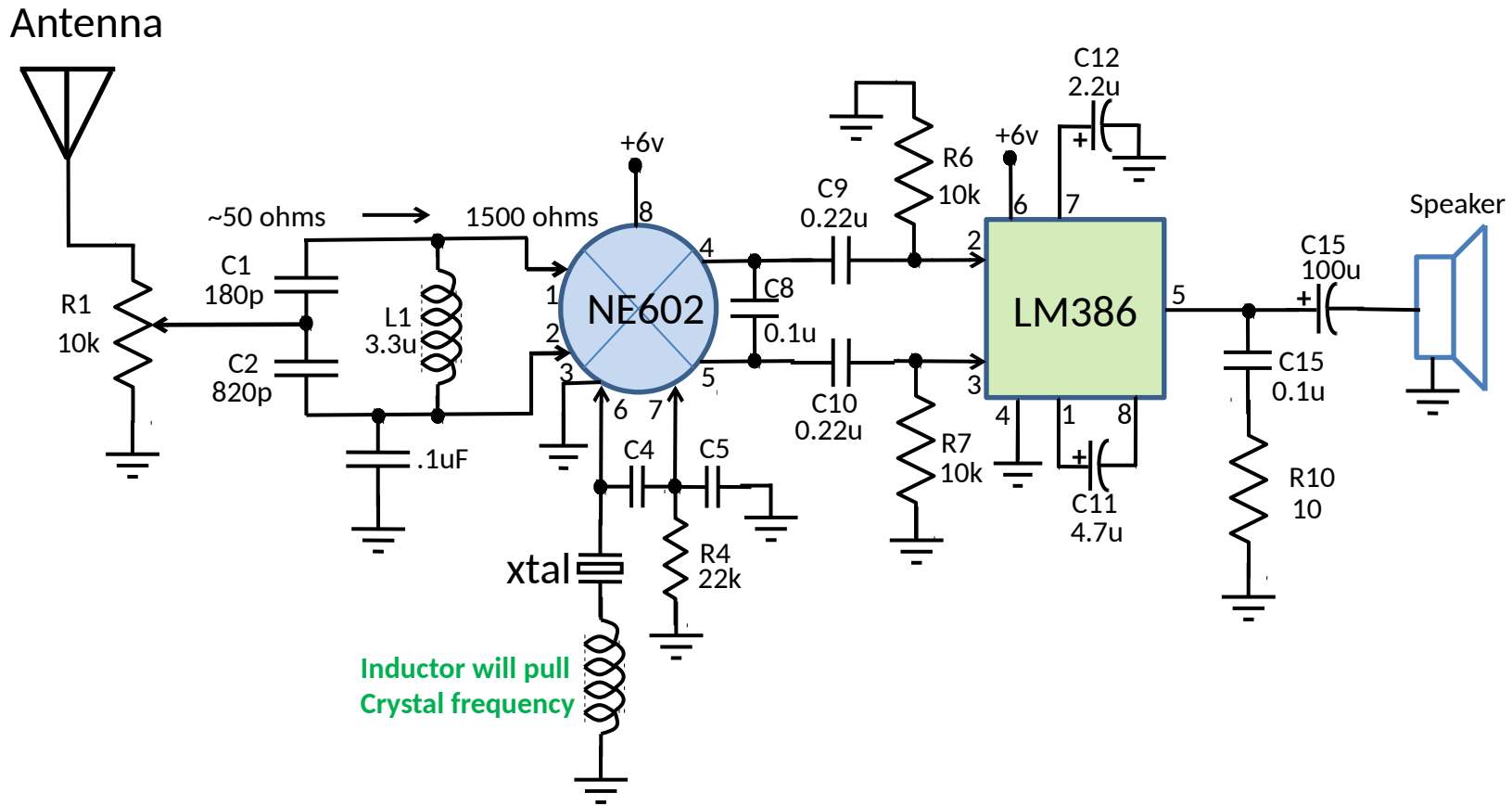
ZZRX-40 Block Diagram

Crystal-controlled Local Oscillator



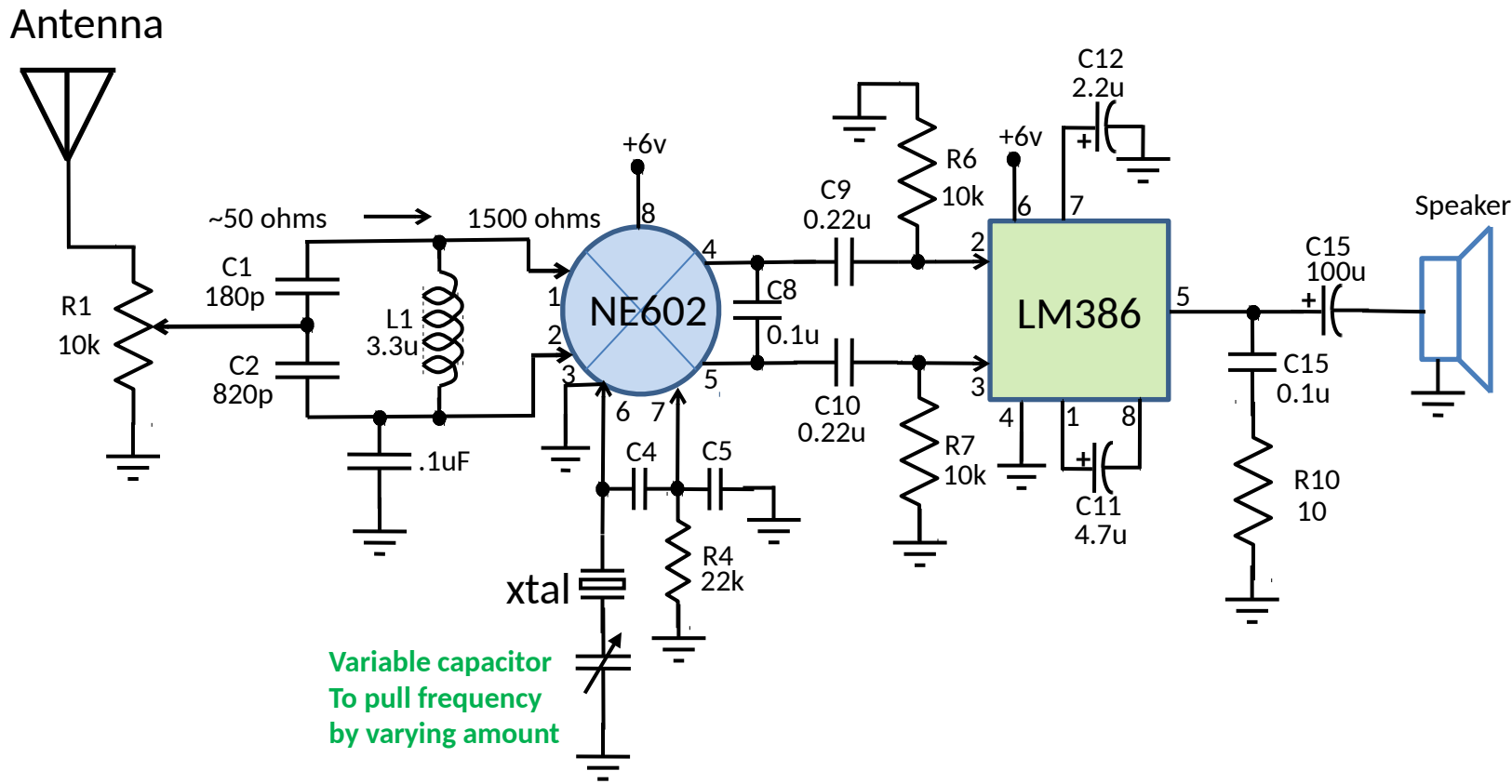
ZZRX-40 Block Diagram

Crystal-controlled Local Oscillator



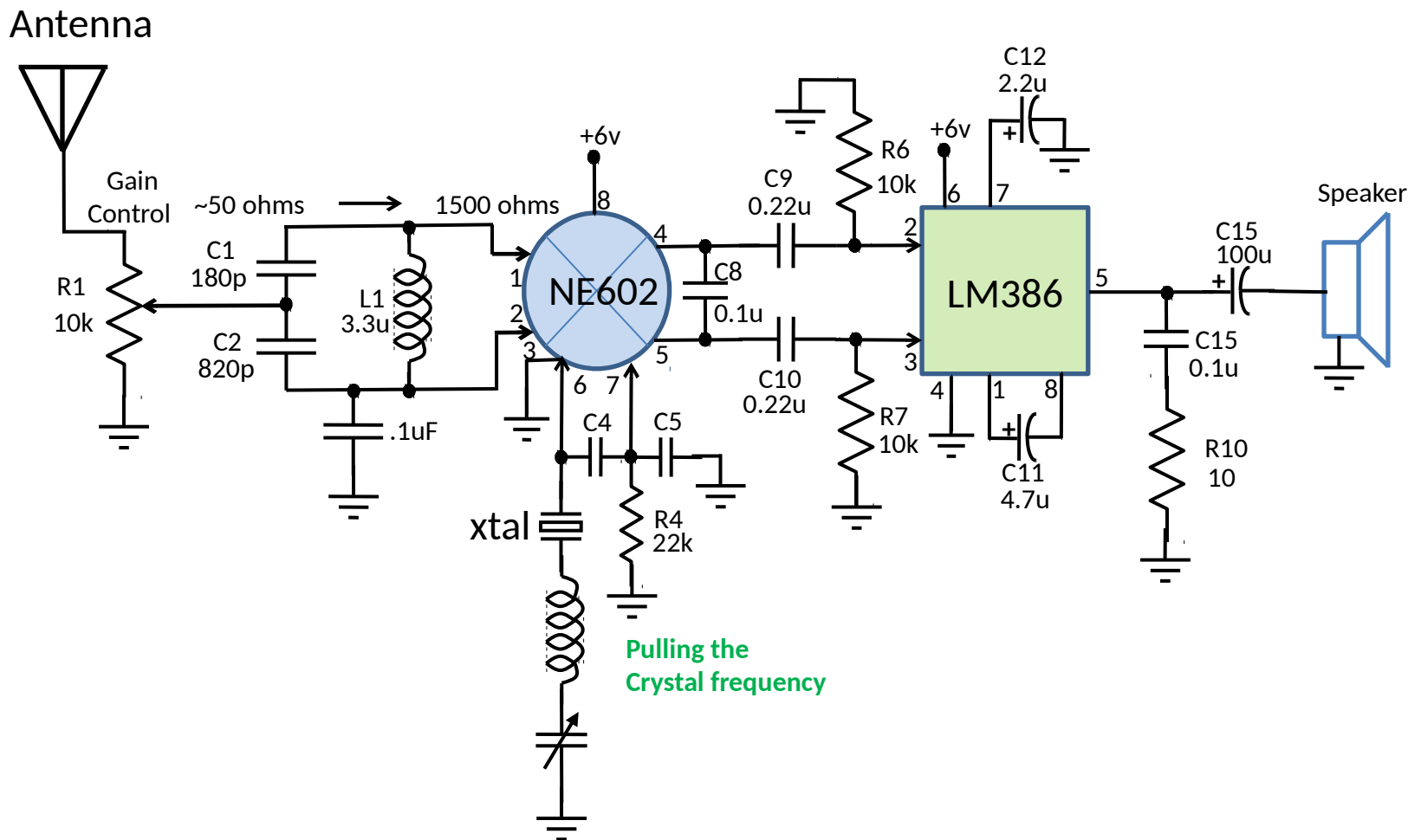
ZZRX-40 Block Diagram

Crystal-controlled Local Oscillator



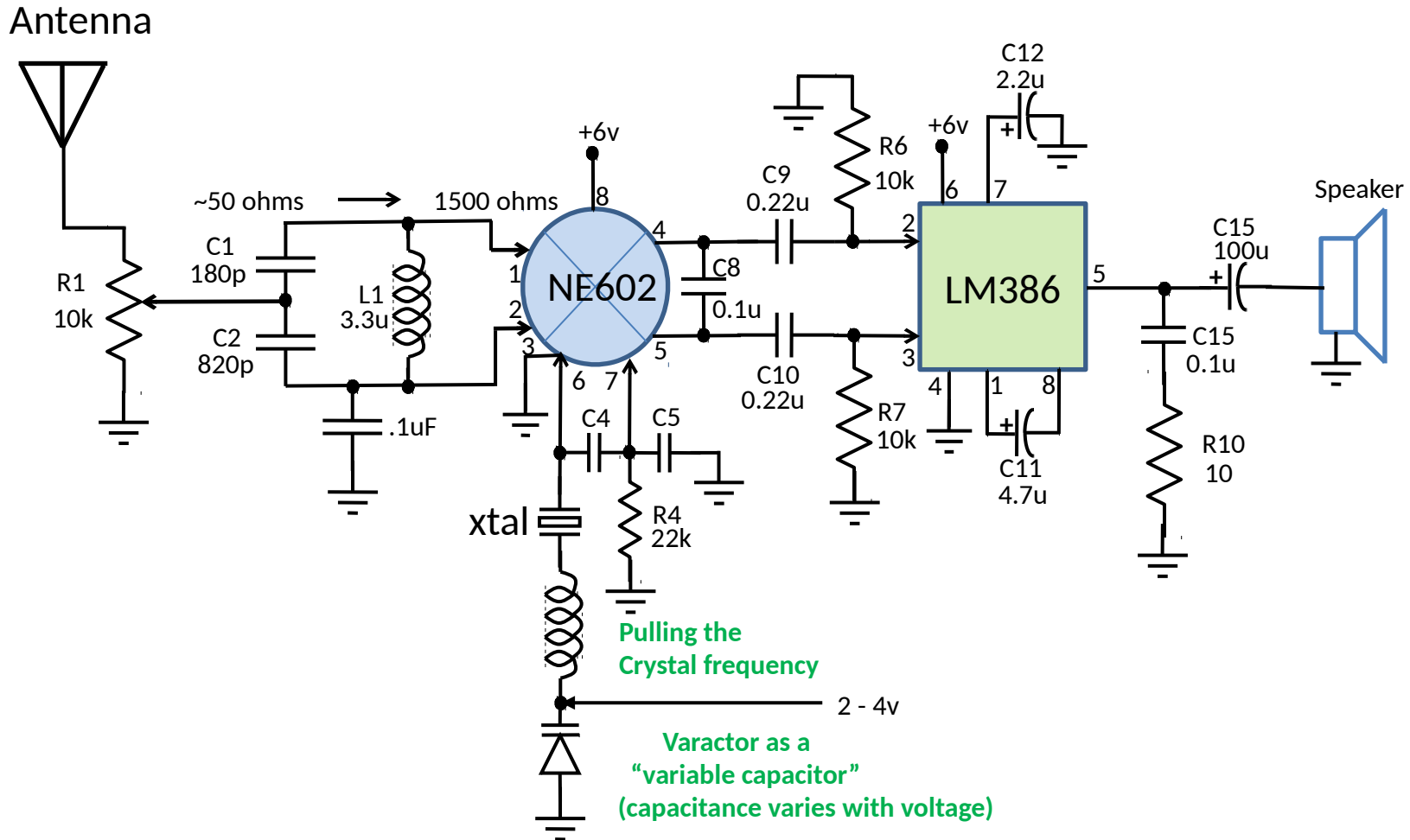
ZZRX-40 Block Diagram

Crystal-controlled Local Oscillator



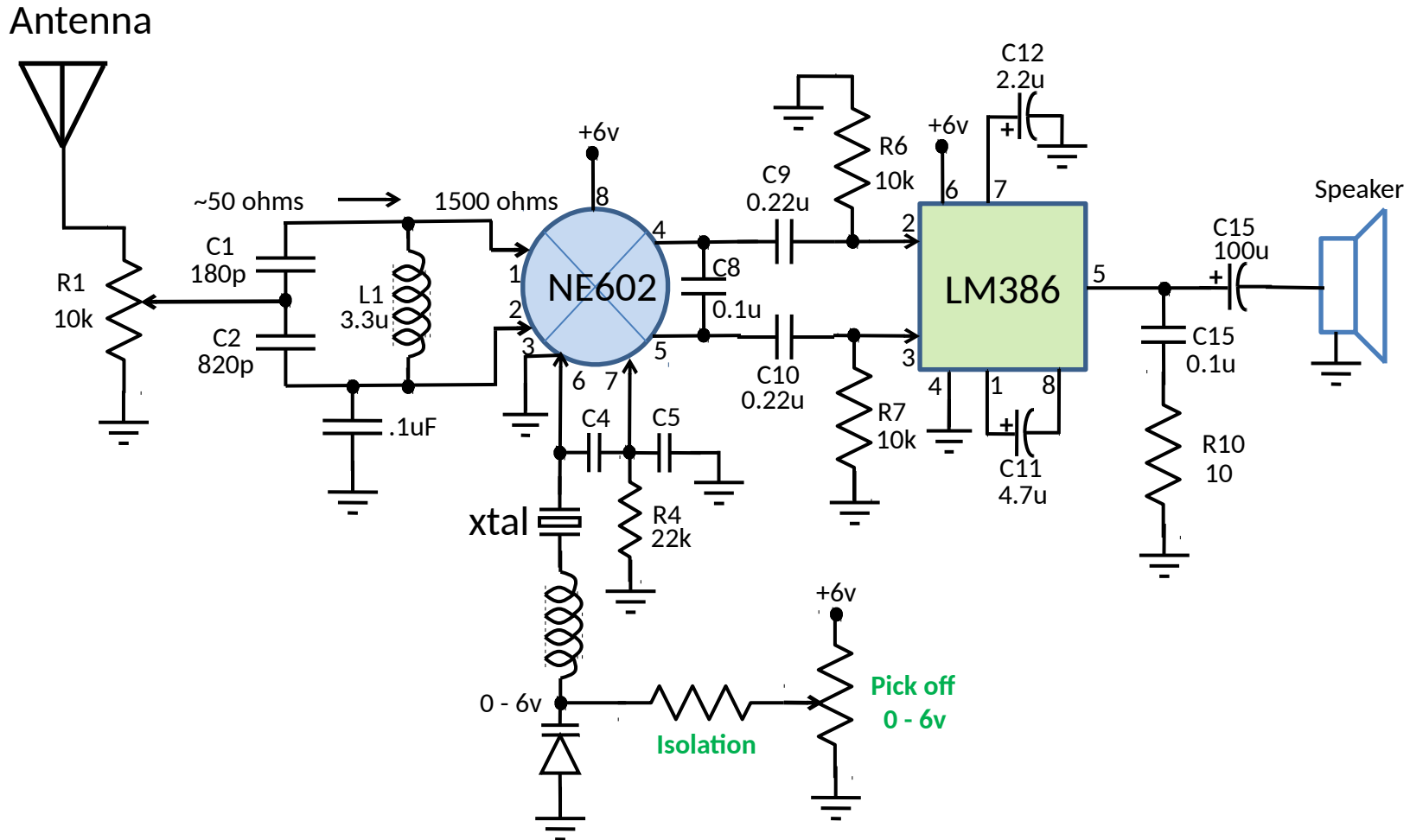
ZZRX-40 Block Diagram

Crystal-controlled Local Oscillator



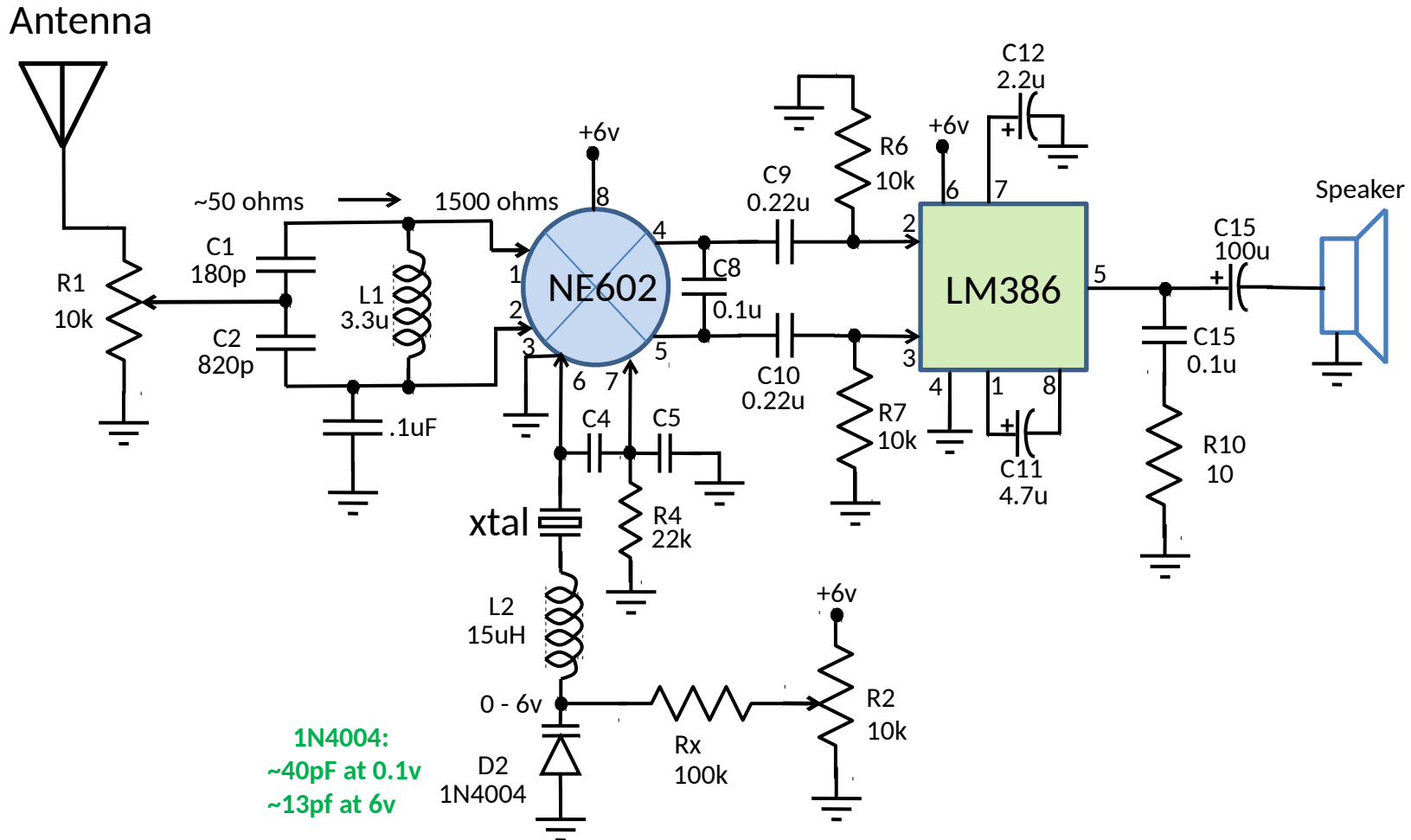
ZZRX-40 Block Diagram

Crystal-controlled Local Oscillator



ZZRX-40 Block Diagram

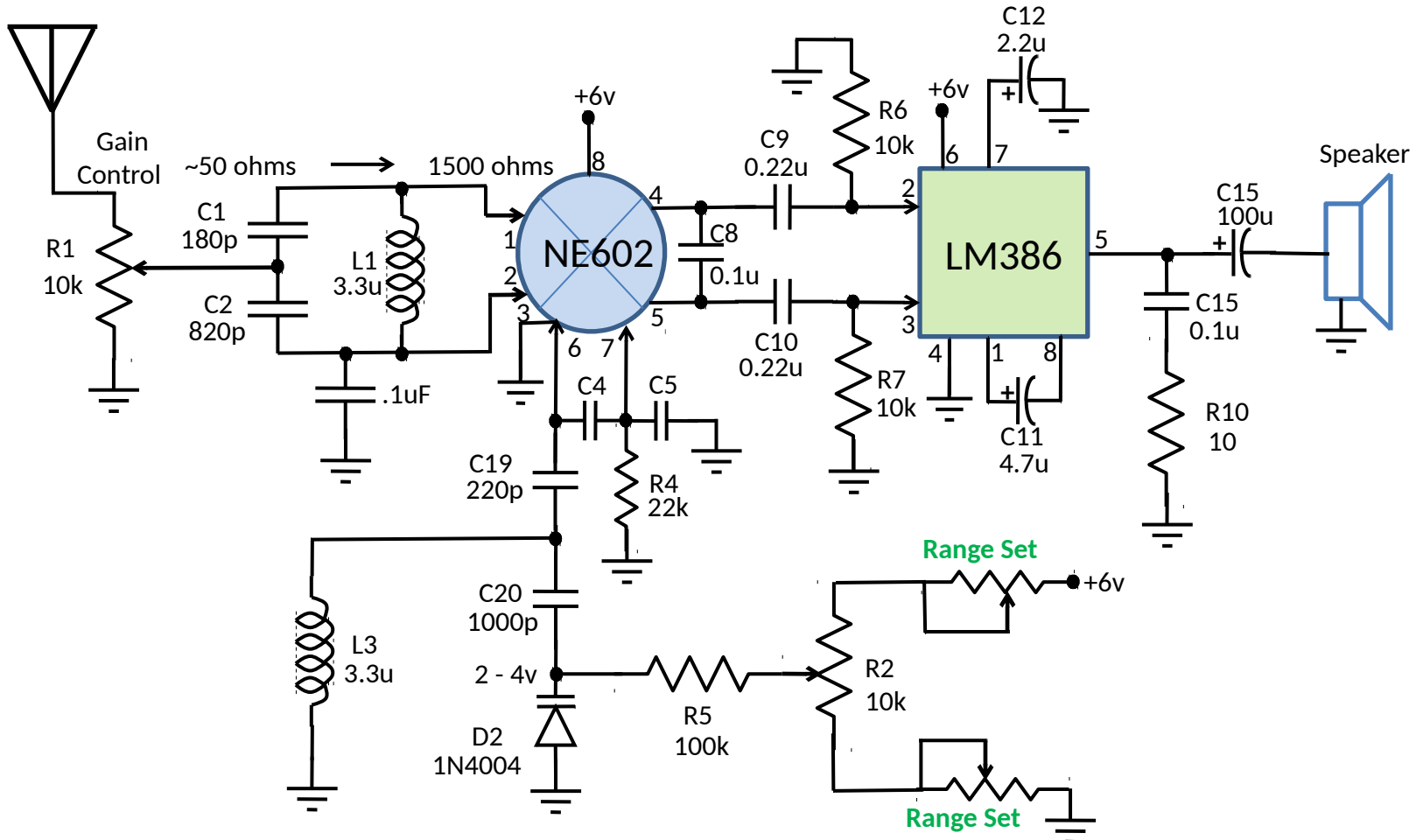
Crystal-controlled Local Oscillator



ZZRX-40 Block Diagram

Variable Frequency Oscillator as LO

Antenna



ZZRX-40 Block Diagram

Variable Frequency Oscillator as LO

