Message signal=3KHz

Carrier Signal=452KHz (455-449KHz)

Then balanced modulator.

Carrier uses 67 percent power. 33 percent power is contained by upper band and lower band.

Through LSB filter (ceramic filter with bandwidth 4KHz) allow only one band to pass through. Now we use a mixer to concert 455KHz to 1000KHz. pin 6 is sum and pin 12 is difference.

Then there is an amplifier and matching circuit for maximum power transmission.

On reception is there is Rf along with 1000 ohm resistor. Then there is amplifier and then a mixer to convert 1000KHz down. The mixer carrier is 1455 KHz. There will be 2 outputs 2455KHz and 455KHz. To obtain 455 KHz we use an IF (Intermediate filter) filter with bandwidth 3 KHz and it allows only 455 KHz to pass through. To convert 455KHz to 3kh we use a product detector. We give the product detector a BFO which is a reference frequency (452 KHz). It is used as a subtractor . Thus, output will be 455-452=3KHz.

Rf amplifier mixer if product detector bfo