SNS COLLEGE OF TECHNOLOGY

An Autonomous Institution

Coimbatore-35

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

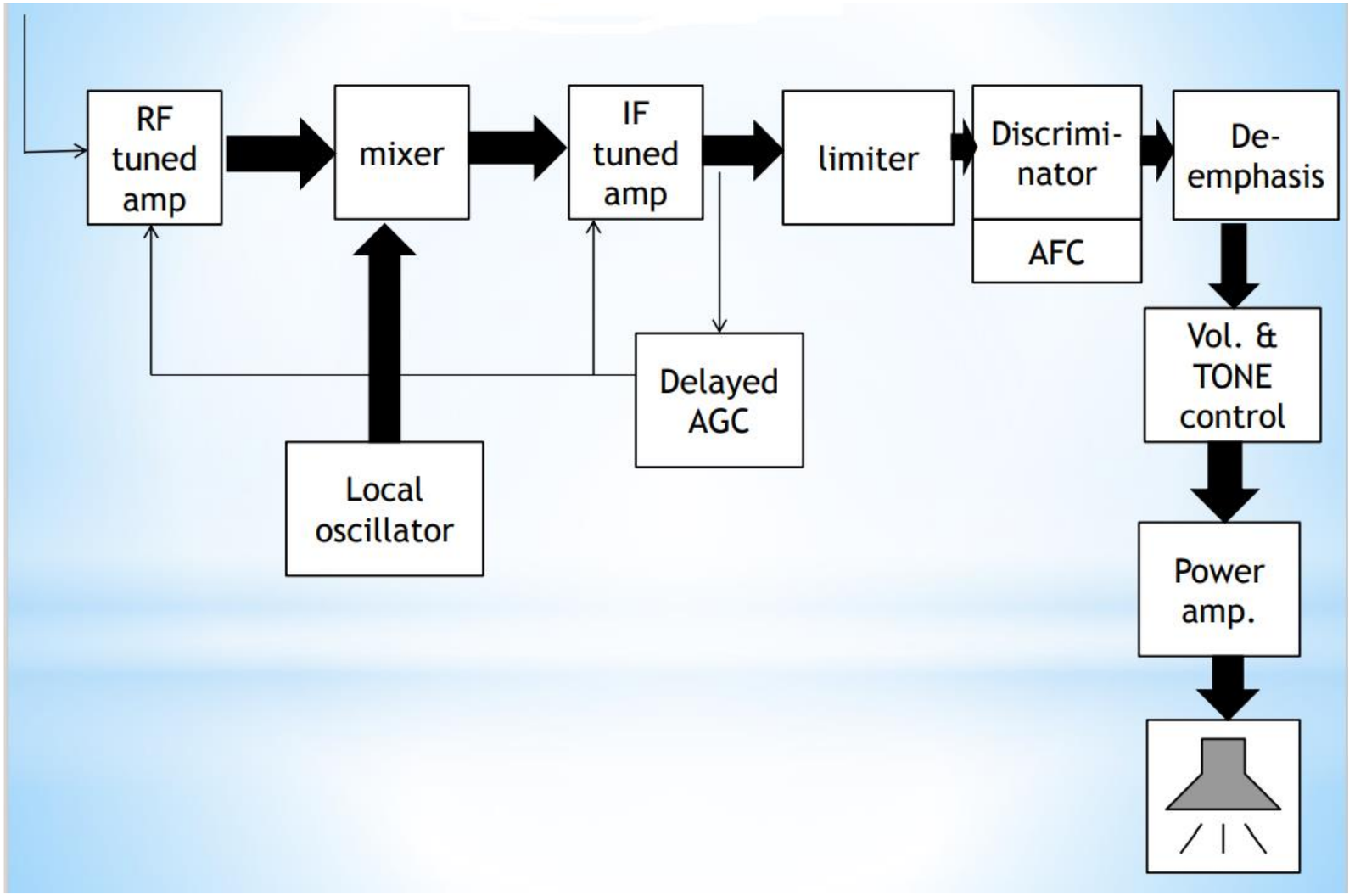
19ECB301-ANALOG AND DIGITAL COMMUNICATION

III YEAR/ V SEMESTER

UNIT 2 – RADIO TRANSMITTER & RECEIVER

TOPIC – FM RECEIVER

FM RECEIVER


RF tuned amp
mixer
IF tuned amp
limiter
Discrimi-nator
AFC
De-emphasis
Vol. & TONE control
Power amp.
Delayed AGC
Local oscillator

FM RECEIVER

RF tuned amplifier-

These amplifiers are used for impedance matching to minimise noise level

Mixers-

These oscillator circuits are take any form to mix up the frequency modulated signal for performing the operation in such circuit central frequency are change but deviation are constant

Intermediate frequency amplifier-

The IF amplifier provides most of the gain and bandwidth requirement of the receiver.

FM RECEIVER

Limiters-

Limiters are those circuit which allows the certain frequency range to pass out and block the other signals

Discriminator-

The discriminator change FM into AM. A simple diode detection then recover the intelligence contained in the envelop of the AM waveform.

De-emphasis-

The artificial boosting given to the higher modulating frequencies in the process of pre-emphasis is nullified or compensated at the receiver by the process of De-emphasis

FM RECEIVER

Vol & tone controller-

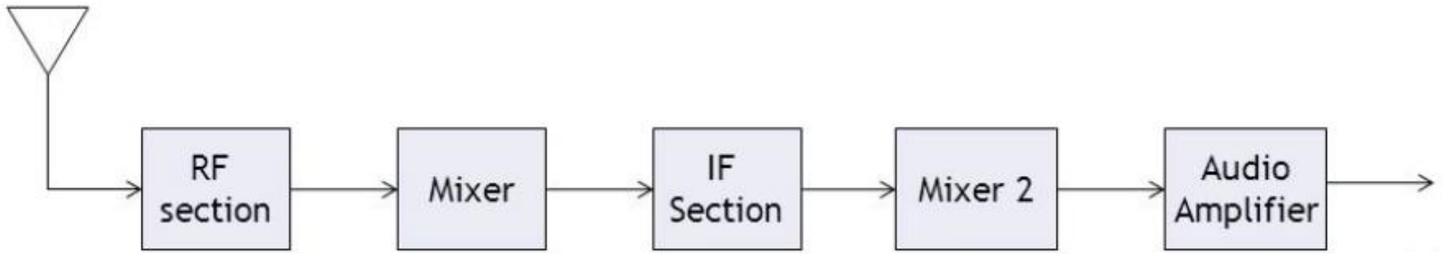
In this circuit it control the efficiency of audio signal. The signal whose efficiency is more then audible range are neglected in this circuit.

Power amplifier-

The power amplifier gives the required power level to the signal which passes through the loudspeaker.

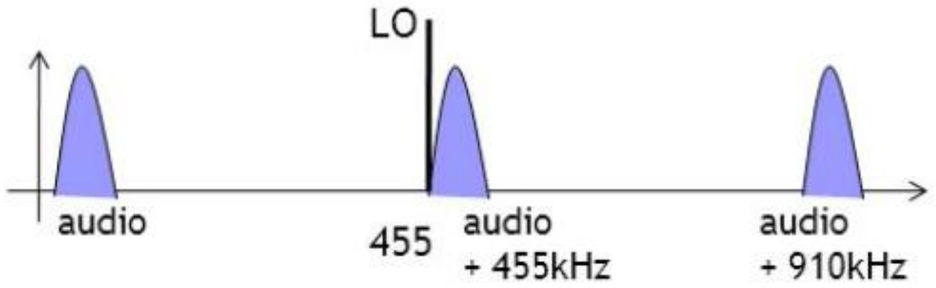
SSB RECEIVER

- The receiver is of the normal superhet design. The first stages are the same as we met for DSBFC.
- The incoming signal is amplified by the RF Amplifier and passed to the mixer.
- The other input to the mixer is the local oscillator that is running at 455kHz above the frequency to which the receiver is tuned.
- The mixer generates sum and difference signals and the lower of the two is the resulting IF signal occupying a range of frequencies around 455kHz.
- The audio information must now be separated from these IF frequencies.



SSB RECEIVER

- One way of extracting the audio signals is to use a mixer to shift the frequencies.
- If a mixer combined an input of (audio + 455kHz) with another input of 455kHz, the resultant outputs would be the usual 'sum' and 'difference' frequencies.
  - The 'sum' would be (audio + 455kHz) + (455kHz) = (audio + 910kHz) which is far too high a frequency to be of much interest to us.
  - The 'difference' frequency is just what we wanted (audio + 455kHz) - (455kHz) = (audio).



THANK YOU