Lecture 21
AM Modulators
Binary Receiver

Figure 3.19 Modulator
Binary Receiver

Figure 3.23 (a) Gating
Binary Receiver

Figure 3.23 (b) Gating
Figure 3.24 – The Ring Modulator
Binary Receiver

Figure 3.27 – Square-Law Modulator
Binary Receiver

Figure 3.28 (a) – Balanced AM Modulator
Binary Receiver

Figure 3.28 (b) – Balanced AM Modulator
General Description

The LM1596/LM1496 are doubled balanced modulator-demodulators which produce an output voltage proportional to the product of an input (signal) voltage and a switching (carrier) signal. Typical applications include suppressed carrier modulation, amplitude modulation, synchronous detection, FM or PM detection, broadband frequency doubling and chopping.

The LM1596 is specified for operation over the -55°C to +125°C military temperature range. The LM1496 is specified for operation over the 0°C to +70°C temperature range.

Features

- Excellent carrier suppression
  - 66 dB typical at 0.5 MHz
  - 50 dB typical at 10 MHz

- Adjustable gain and signal handling

- Fully balanced inputs and outputs

- Low offset and drift

- Wide frequency response up to 100 MHz

Figure 3.29 – LM1496 Balanced AM Modulator
Figure 3.29 – LM1496 Balanced AM Modulator