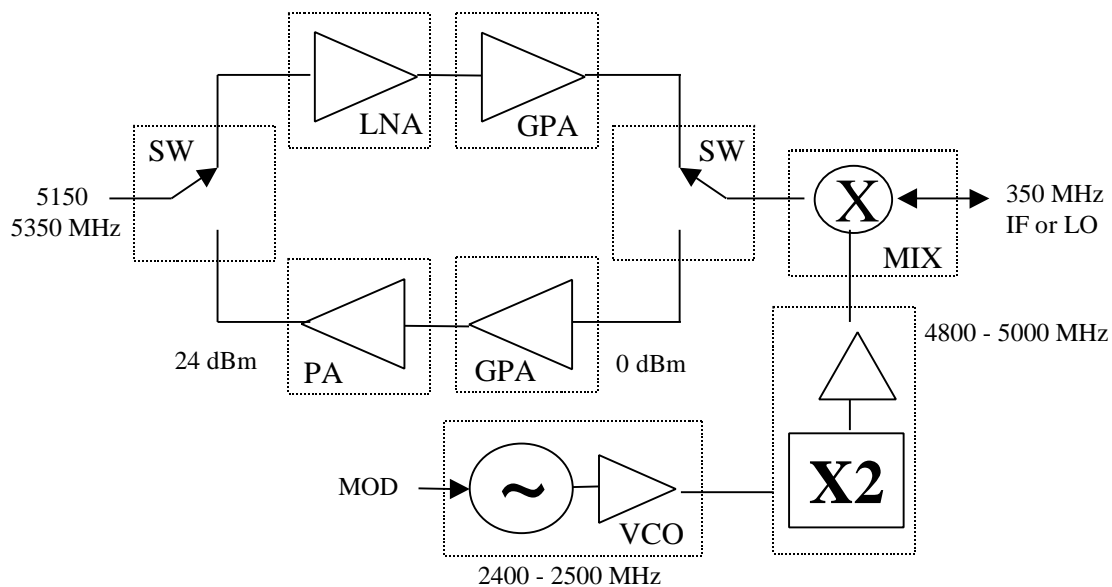


This year's project for the MMIC Design class at The Johns Hopkins University is a simplex transceiver for the C-band HYPERLAN wireless local area network (WLAN) frequencies. The up-down conversion scheme uses a C-band frequency converter, which produces a 350 MHz IF signal that can be down converted to baseband with a 350 MHz second LO. The second LO is upconverted to C-band in the transmit mode. Modulation can be introduced onto the second LO or by direct frequency modulation of the VCO in the transceiver. The up-down converter consists of a mixer, VCO, and frequency doubler. The VCO operates from 2.4 to 2.5 GHz, which is in the industrial, scientific, and industrial (ISM) band. Thus, the VCO has dual band usage. C-band SPDT switches are employed to route the receive and transmit signals appropriately. The receive chain consists of an LNA and a general purpose amplifier (GPA) in cascade. The transmit path employs the same GPA driving a ¼ watt power amplifier. Seven unique MMIC designs make up the nine chip C-band transceiver. Each design is to be contained on a 60 mil square die in the TQS TRx process. The proposed block diagram is shown below.

MMIC DESIGN (EE 787) FALL '00 PROJECT



WLAN for 5150 - 5350 MHz HYPERLAN BAND