

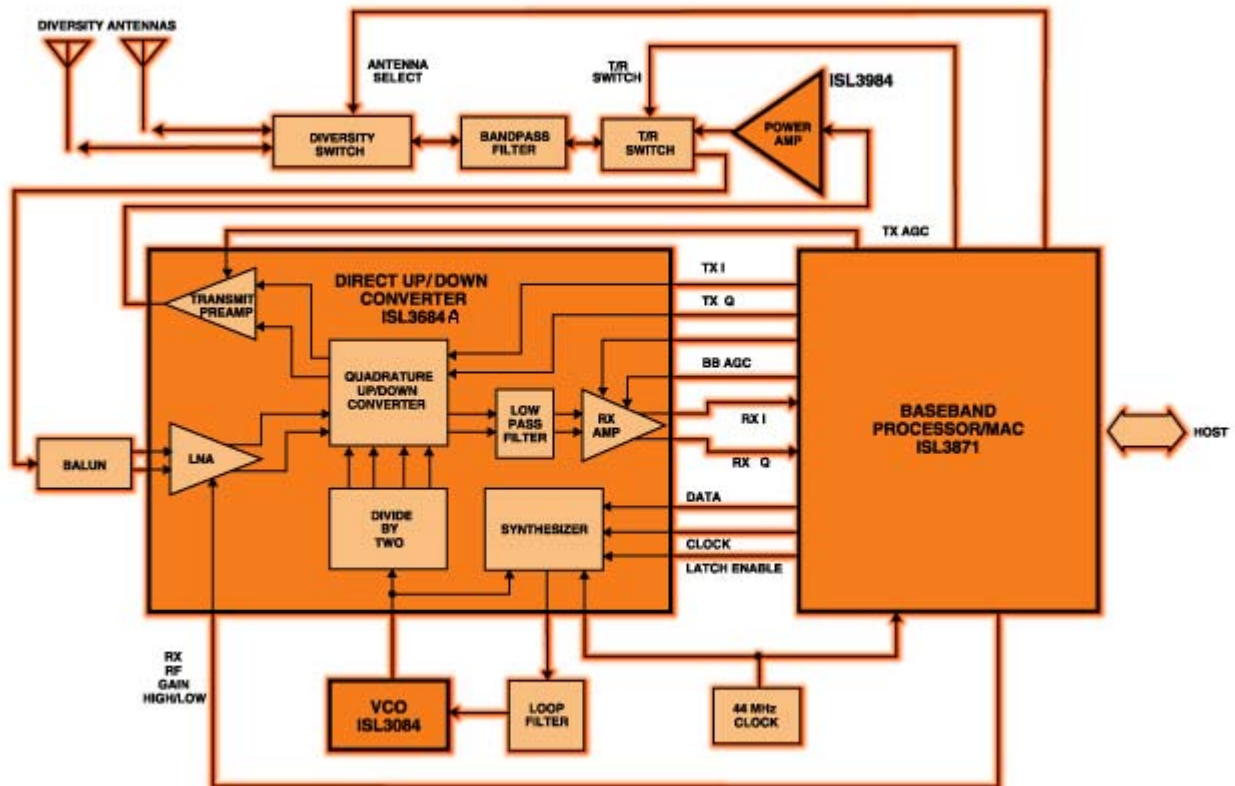
802CI3 Theory of Operation

ISL3871IK18: Intersil, Wireless LAN integrated Medium Access Controller with Baseband Processor

ISL3084: Intersil, 2.4GHz Voltage Controlled Oscillator

ISL3684A: Intersil, 2.4GHz Direct Up/Down Converter Single chip PHY

ISL3984: Intersil, 2.4GHz Power Amp and Detector



The input signal to the radio is received through either one of the antennas. The selection of the antenna is performed through the operations of the ISL3871 BBP/MAC and the Diversity Switch. The received signal from the selected antenna is then fed to a bandpass filter (BPF). After filtering out these unwanted signals, the signal is routed to the ISL3684A Zero Intermediate Frequency (ZIF) chip, which serves as a direct down conversion transceiver. The local oscillator for the down conversion mixer is derived from the ISL3084 RF VCO. The RF LO frequency is phase locked by the synthesizer to the 44 MHz clock. The RF VCO operates at twice the channel frequency. Signals from ISL3684A are then fed to the BBP/MAC chip.

The MAC ISL3871 then processes the packet data and sends it on through the CF interface to the host computer.

On the transmit signal path, data from the host computer is sent to the MAC through the CF interface. After being converted from digital to an analog signal in the ISL3871 BBP/MAC, the outputs are routed to the ISL3684A ZIF chip. The transmit output signal from the ZIF chip is then fed to the ISL3984 Power Amplifier. After the RF PA, the signal travels through a Transmit/Receive (T/R) Switch and a Bandpass Filter (BPF). There is approximately +14dBm of available transmit power at the antenna.