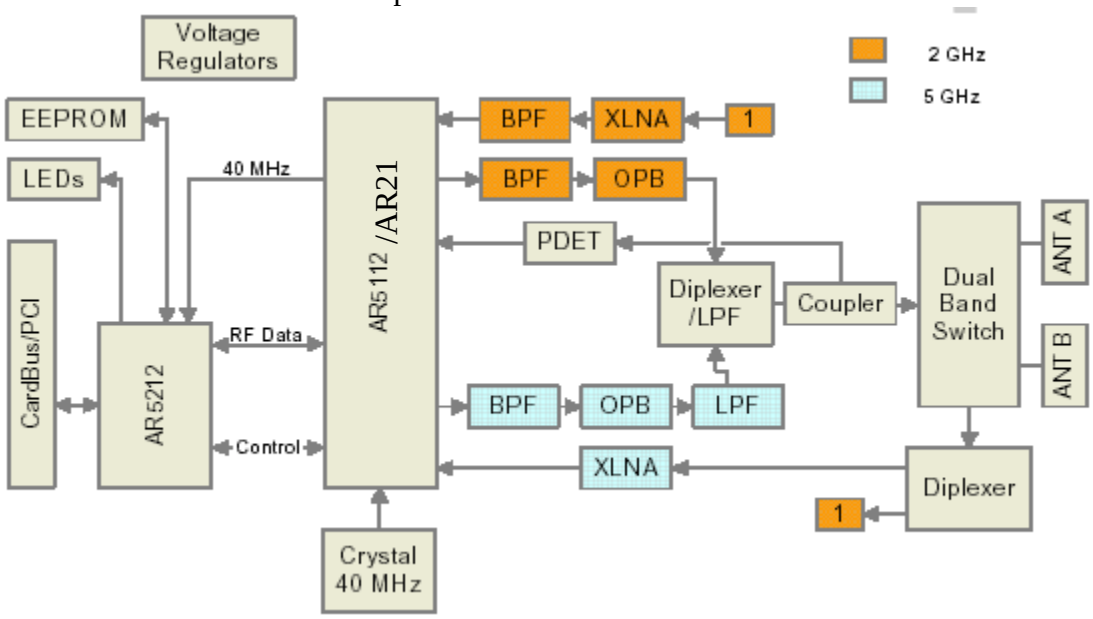
802PAG Theory of Operation

AR5212: MAC/Baseband Processor for IEEE 802.11a/b/g Wireless LANs
AR5112: Radio-on-a-Chip for 5/2.4-GHz Wireless LANs
AR2112: Radio-on-a-Chip for 2.4-GHz Wireless LANs



The AR5212 is the origin and destination for all the front-end signals. Both transmit (Tx) and receive (Rx) signals are transferred by the AR5112 to either a 5GHz front-end, or a 2.4GHz front end.

The 5GHz and the 2.4GHz front ends share a single set of antennae, dual band switch, Rx diplexer, Tx diplexer/low pass filter, coupler, and power detect circuitry.

The 5GHz transmit signal is boosted with output booster (OPB). The output booster drives a diplexer and a coupler/detector (PDET) assembly. The diplexer's function is to combine the 5GHz and 2.4GHz signals. While the coupler/detector's function is to sample the transmit signal and rectify it. The rectified signal is proportional to the output power and is used for power leveling and control.

The RF transmit signal then passes through a dual band switch. The switch enables the connection of the input to either one of the two antennae.

The 5GHz receive signal is transferred in a reverse order from the antenna through the switch and receive diplexer. It is then boosted using a Low Noise Amplifier (LNA) and fed back into the AR5112.

The transmit and receive 2.4GHz signals follow a similar path as the 5GHz signals in the 2GHz front-end.