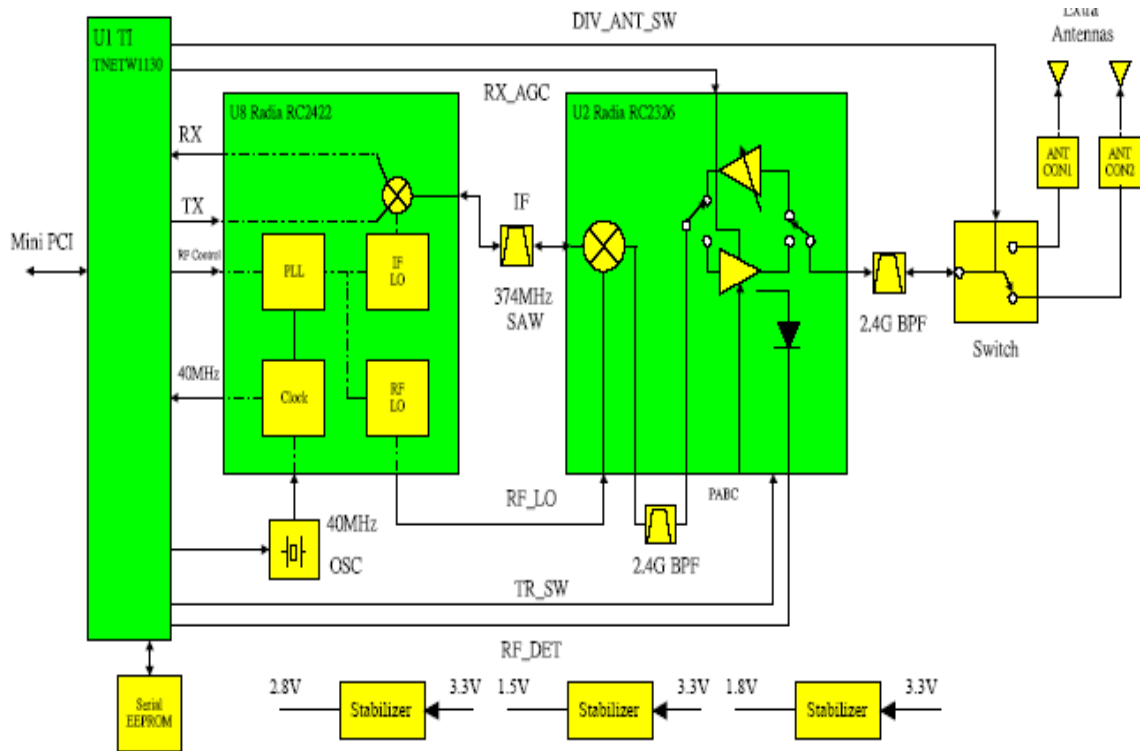


# XG-650E Circuit Description



## MAC/Baseband Processor(TNETW1130)

The 288-terminal TNETW1130 is a single-chip wireless local-area network (WLAN) medium-access controller (MAC) and baseband processor that combines high performance and functionality.

The TNETW1130 supports IEEE Std 802.11a (5-GHz band), 802.11b (2.4-GHz band), and IEEE draft Std 802.11g (2.4-GHz band) systems, as well as dual-band 802.11a/b and 802.11a/g systems. While the proprietary application of PBCC™ technology in 802.11b mode of operation provides data rates up to 22 Mbit/s, data rates up to 54 Mbit/s may be provided in 802.11a and 802.11g modes of operation.

With its simultaneously available application interfaces, the TNETW1130 is versatile in its potential applications. Its low-power features are ideal for a variety of WLAN applications. As shown in Figure 1, the TNETW1130 directly interfaces to a host and a radio to provide a complete high-speed networking solution for WLAN-system original equipment manufacturers (OEMs) (see *System Level* on the previous page for this system application).

## Radio frequency Front End(RC2326)

The RC2326 is a fully integrated Dual Mode Radio Frequency Front End(RFFE) designed specifically for use in 802.11b/g

applications. The RC2326 is designed to perform RF up and down conversions in the unlicensed ISM band. Combined with the Radia RC2422 IF/IQ Transceiver/Synthesizer, the RC2326 completes the Radia WLAN two-chip radio.

The RC2326 INCORPORATES all of the blocks for both the b/g band except for low ceramic filters. The ASIC includes the LNA, PA, mixer, bias circuitry, RX gain control, transmit coupler detector, and T/R switches

## 2.4G Radio IF Transceiver(RC2422)

The RC24x2 is a fully integrated IQ transceiver specifically for use in 802.11 applications. The RC24x2 is designed to perform the IQ conversion at 374MHz IF as well as provide an RFLO and control logic to a Radia RFFE (Radio Frequency Front End). The RC2432 uses a common IF frequency for both bands, which eliminates the need for an additional IF filter in dual band applications. The RC24x2 has an internal IQ DC offset calibration function for the receive IQ interface. Combined with a Radia integrated RFFE, the RC24x2 completes the Radia WLAN two-chip radio.

The RC24x2 incorporates all of the system blocks from the modem to the RFFE except for the IF filtering and the reference crystal. The ASIC uniquely incorporates an internal PLL reference oscillator where only a crystal is needed, and also provides a clock output for base-band/MAC ASICs. RC24x2 includes two synthesizers with VCOs, IQ modulator, IQ demodulator, anti aliasing filters, IF amplifiers, receive AGC circuit, transmit power control and serial interface.

## Band Pass Filter

The 2.4GHz Band pass filters used between the PA to switch, and mixer output, the low pass filter is intended to reduce spurious emission.

## Switch(AS179-92)

The AS179-92 is an IC FET SPDT switch in a low cost miniature SC-70 6 lead plastic package. The AS179-92 features low insertion loss and positive voltage operation with very low DC power consumption. This general purpose switch can be used in a variety of telecommunications applications.