AboCom Systems, Inc.
Head Office: 1F, No. 21, R&D Rd. II, SBIP, Hsin-Chu 300, Taiwan, R.O.C.
Factory: No. 77, Yu-Yih Rd., Chu-Nan Chen, Miao-Lih Hsian 350, Taiwan, R.O.C.
Mobile Interconnected Products: 8F, No. 123, Lane 235, Bao-Chiao Rd,
Hsin-Tien City, Taipei 231, Taiwan, R.O.C.

TEL: +886-37-580-777   FAX: +886-37-580-799   http://www.abocom.com

FCC ID: PY3FWG114P / WG2K4

MAC + BASEBAND Circuit :

1. Mac+B.B, U1(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. TNETW1130 host-adapter system that features a 32-bit, 33-MHz, PCI/mini PCI/CardBus host interface, the TNETW1130 chip with eCPU, external memory, and a 2.4-GHz radio.

2. Power part, U6: Regulator transfers D3.3V to A2.85V, supplying transceiver power, Q2 : transistor, it results in 1.35V voltage dropout, producing 1.5V,and provides PLL circuit power.U8 : Regulator transfers D3.3V to A1.8V, supplying U1 analog power. U7: Regulator transfers D3.3V to D1.5V, supplying U1 core.

3. Crystal Frequency, U5+Y1: sleep clock (32.768KHz) will be turn on when system is in doze mode. U9+X1 : 40MHz is always turn on except doze mode, providing U1 and U10 as system clock.

RF PART Circuit:

1.Tranceiver, U10(RC2422B): The RC2422 is a fully integrated IQ transceiver specifically for use in 802.11 b/g applications. The RC2422 is designed to perform the IQ conversion at 374MHz IF as well as provide an RFLO and control logic to the RFFE (Radio Frequency Front End). The RC2422 also has an internal IQ DC offset calibration function for the receive IQ interface.

The RC2422 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.

2. Power Amplifier, U11(RC2326): The RC2326 is a fully integrated Dual Mode Radio Frequency Front End (RFFE) designed specifically for use in 802.11 b/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 ASIC includes the LNA, PA, mixer, bias circuitry, RX gain control, transmit coupler detector, and T/R switches. High integration and internal RF matching enhances performance and greatly reduce external part count. The only external components needed (other than simple passives) for operation are RF filters and external low power DC switching FETs.

3. Filter, FL3: SAW filter

Center Frequency, f0	:	374MHZ
Minimum Insertion Loss	:	- 8.5 dB
3 dB Bandwidth	:	20.5 dB

Relative Attenuation (4)

309 - 352 MHz	:	50 dB
352 - 357.5 MHz	:	50 dB
390.5 - 392 MHz	:	45 dB
392 - 396 MHz	:	40 dB
396 - 439 MHz	:	42 dB
439 - 454 MHz	:	45 dB

FL1, FL2 : BandPass Filter

Fc   2450MHz

Pass Band   2400~2500MHz

Insertion Loss   1.2dB Max.

VSWR   2.0 Max

ATT. :   25 dB.

4. TX/RX Switch, U12:

Tx : U12.6 (CTRLA=L) RF$\rightarrow$ RF2
RX: Antenna diversity

Insertion Loss = 0.5 dB

Isolation = 22 dB

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Function Theorem:

WG2K4 is a CardBus interface to Wireless Adapter. The frequency range is from 2400 ~2500 MHz. It combines B/G mode—11b mode of CCK modulation technology to producing 11Mbps data rate, and 11g mode of OFDM modulation technology to producing 54 Mbps date. At TX mode: all of digital signals will be modulated on U1 (MAC+B.B), delivering I/Q signals to transceiver. Transceiver will up-converter its frequency to 374 MHz (IF LO) and to RF frequency (2.4G), using heterodyne structure. The RF signals will be sent to P.A.(U11)—to amplify its power—delivering through antenna. At RX mode : vice versa.