



RF Exposure Evaluation Assessment

Wireless-N Router w 3G+Modem & Voice

Model Number:

Series 1098 Model 4530XY

(X=A,B,C,D or NOTHING)

(Y=A,B,C,D or NOTHING)

Brand: Zoom

Issued for

Zoom Telephonics, Inc.

207 South Street Boston, Ma 02111 USA

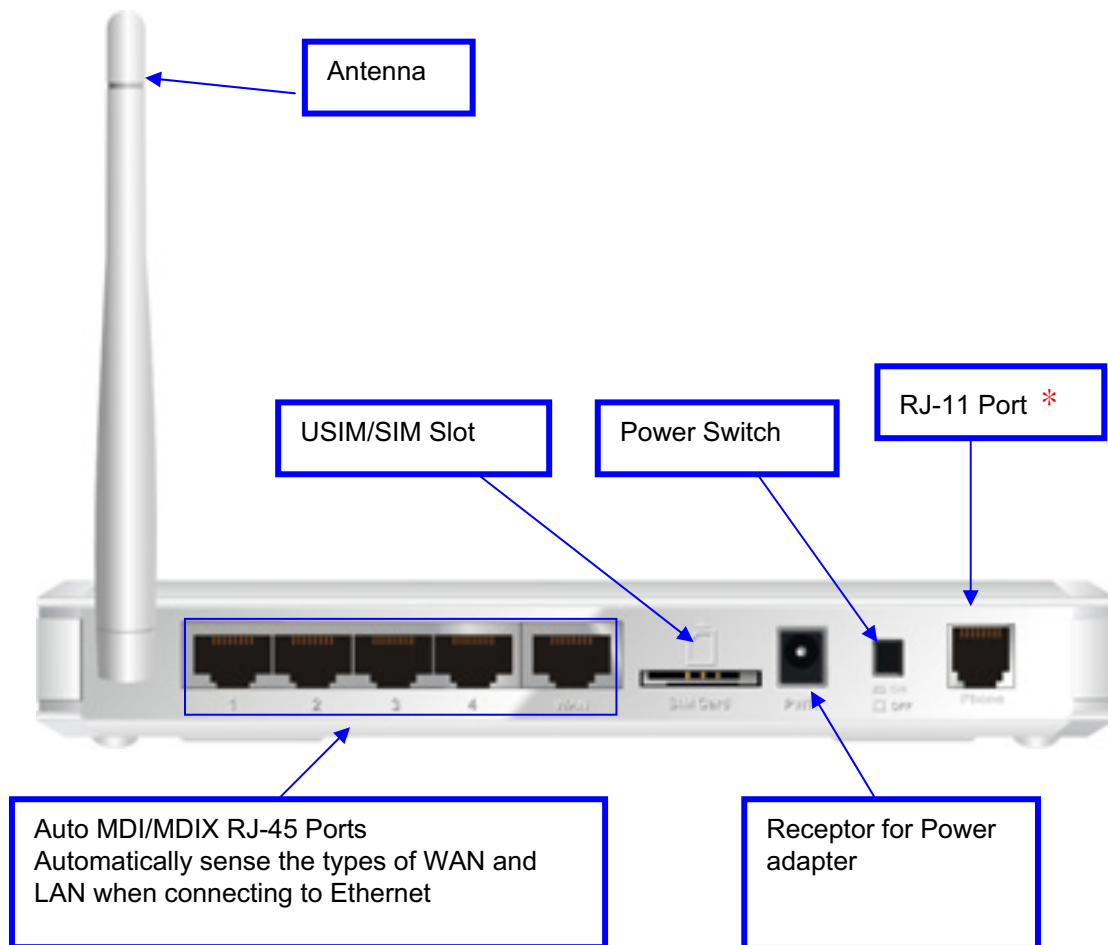


1. Product description: Wireless-N Router w 3G+Modem & Voice

1.1. Functions description :

- This LAN ports and WLAN of the device (Router) can connect to the Internet by the following WAN access interfaces.

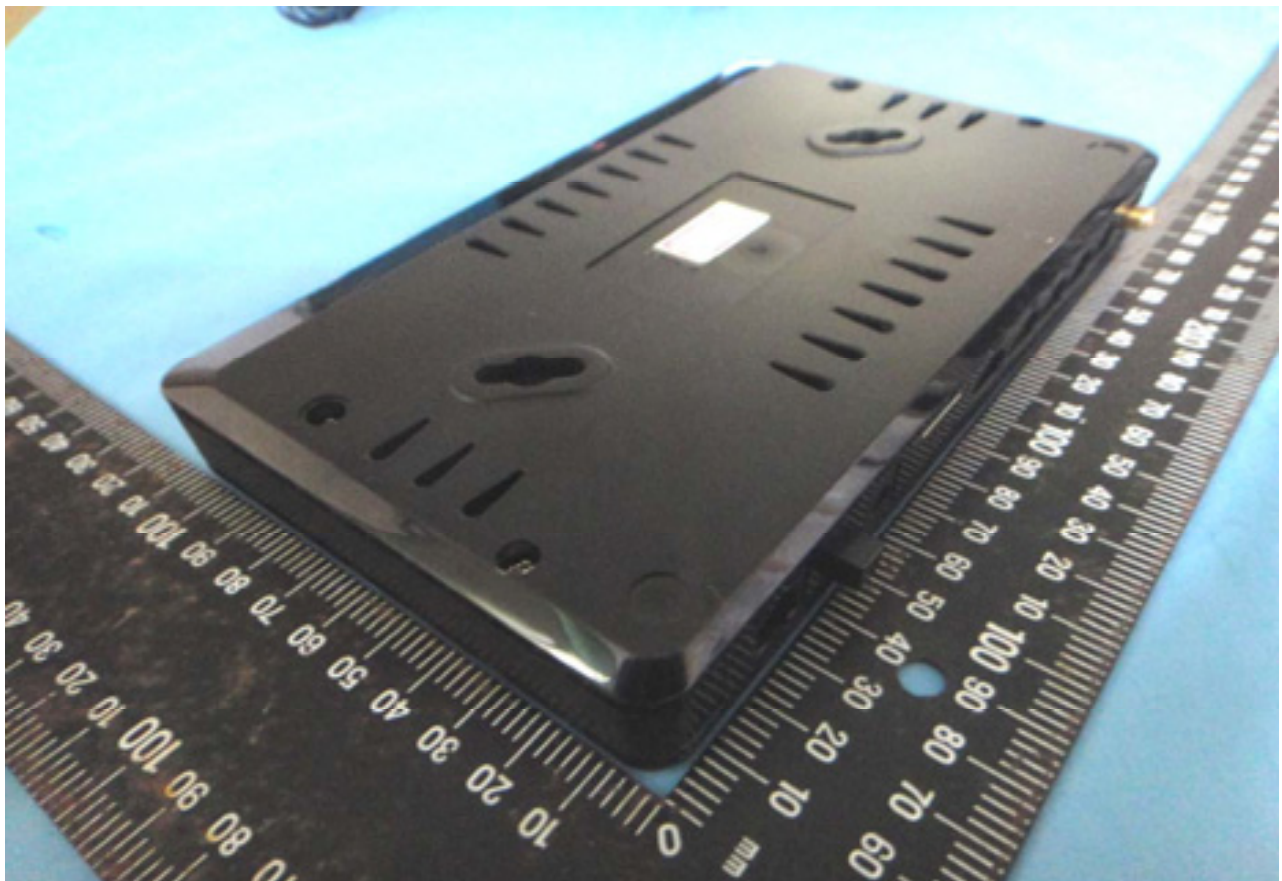
- a. the embedded certified 3G module, with the SIM card.
- b. the Ethernet WAN port that uplink to the xDSL/cable modem.



For detail product information, please refer to attached user manual.

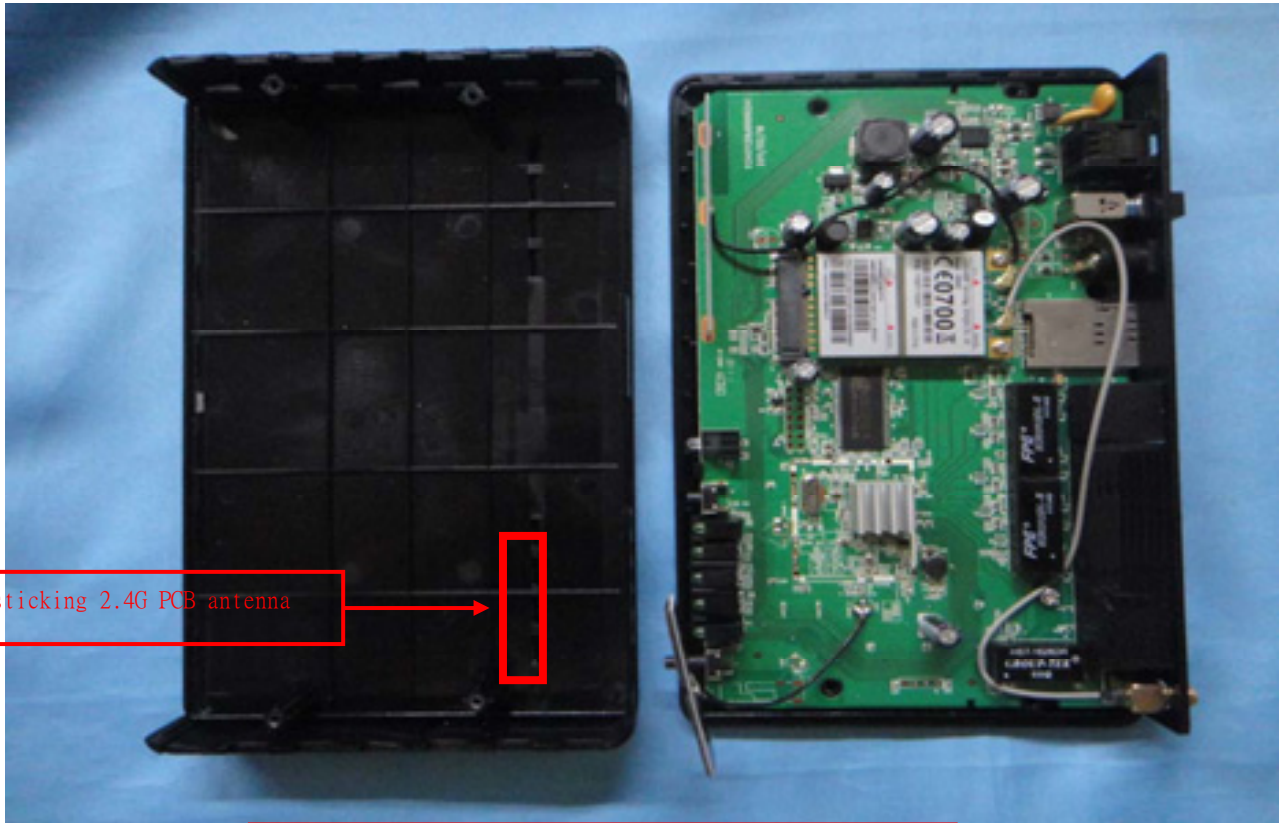


2. EUT photos and antenna locations

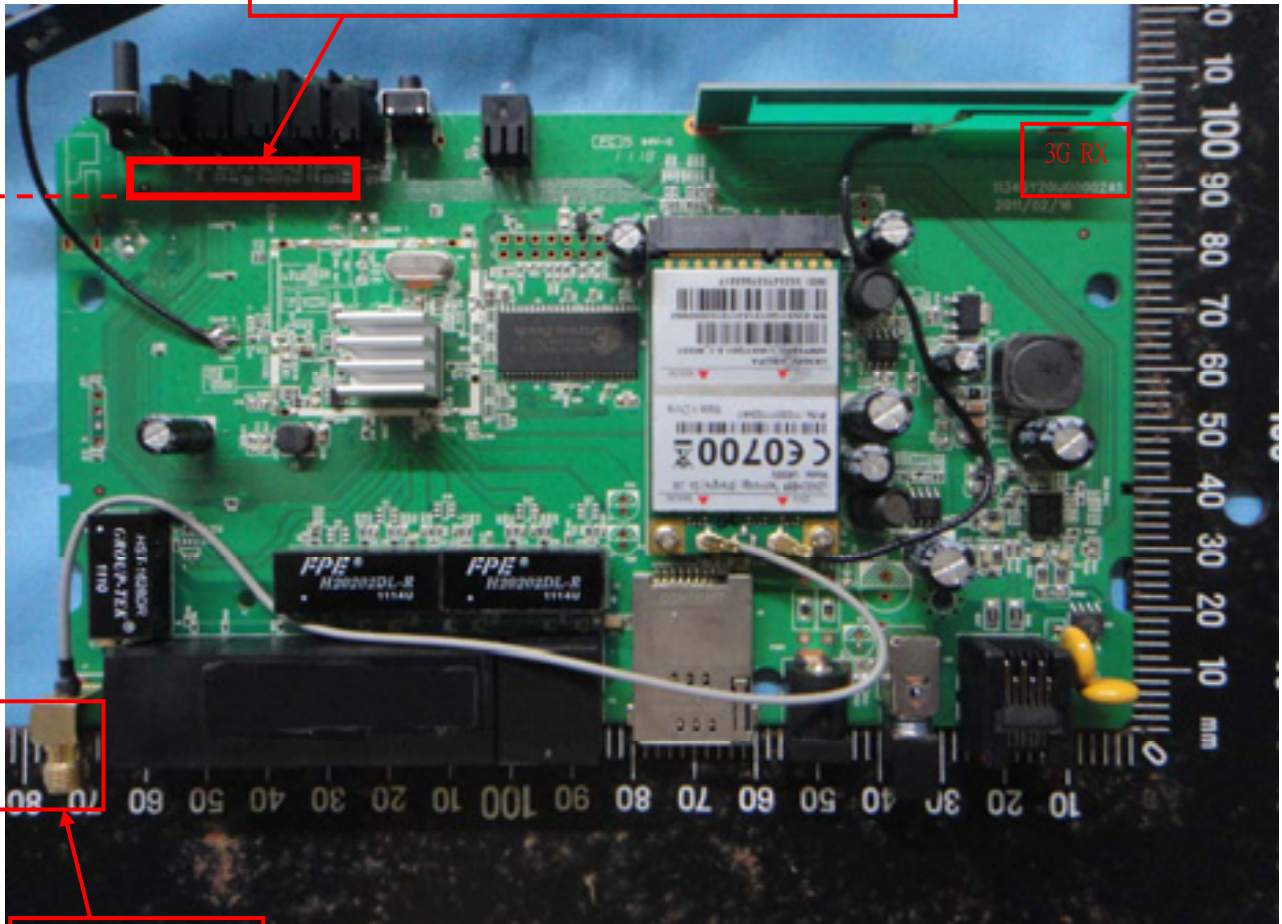




2.4G PCB antenna and 3G Dipole antenna distance



The 2.4G antenna is sticking on the corresponding position on the inside of the top cover



3G TX/RX Antenna



3. Conducted average output power

802.11b mode

Channel	Frequency (MHz)	Average Power Chain0 (dBm)
Low	2412	14.25
Middle	2437	14.67
High	2462	14.33

802.11g Normal Mode

Channel	Frequency (MHz)	Average Power Chain0 (dBm)
Low	2412	16.89
Middle	2437	17.68
High	2462	15.93

802.11n HT-20 Mode

Channel	Frequency (MHz)	Average Power Chain0 (dBm)
Low	2412	16.38
Middle	2437	17.70
High	2462	16.09

802.11n HT-40 Mode

Channel	Frequency (MHz)	Average Power Chain0 (dBm)
Low	2422	12.58
Middle	2437	17.92
High	2452	11.93



4. Summary of the RF evaluation result

4.1 Justification of Stand-alone SAR evaluation

The maximum average output power of 802.11bgn:

b mode: 14.67dBm (29.31mW)

g mode: 17.68dBm (58.61mW)

HT-20 : 17.70dBm (58.88mW)

HT-40 : 17.92dBm (61.94mW)

According to KDB 447498 D01 Mobile Portable RF Exposure v04, Stand-alone SAR evaluation for WLAN is not required because the output power is higher than the power threshold= $60/f$: $60/2.437=24.62\text{mW}$, but the minimum separation distance is greater than 20 cm from users and nearby persons.

No stand-alone SAR evaluation required

4.2 Justification of the co-location simultaneous transmission SAR evaluation

- Internal 3G card of the EUT
- based on current WLAN antenna distance to the 3G antenna connector as indicated in page 5, the min. distance is 7cm;
- and assume the max. SAR value of 3G module is 1.6W/kg
- per KDB 447498 D01 Mobile Portable RF Exposure v04, item 3) b) ii) (1):
Min. WLAN Antenna- 3G antenna = 7cm >5cm

No co-location simultaneous transmission SAR evaluation required.