Operational Description

Product Description

This product integrated a Bluetooth and WIFI chipset to support the Bluetooth and wifi function that allows users to use it transfer data with other product.

The brief introduction of the circuit

1. The Bluetooth signal is transmitted and received through the Ceramics antenna.
2. The WIFI 802.11b/g signal is transmitted and received through the cable antenna.
3. Power of the whole body is provided by USB 5V.
4. U1-A IC is MCU of whole system, it is use process the data.

Technical Description of Bluetooth

The Bluetooth standard describes a frequency hopping spread spectrum system (FHSS). The frequency hopping sequence is governed by one unit known as the master in any group of units communicating together. The group is known as a piconet, and all units other than the master are known as slaves. The master determines the pseudo random hopping sequence internally and without reference to any external information, there is no co-ordination with any other Bluetooth or other FHSS systems to avoid simultaneous occupancy of hopping channels. Bluetooth uses re-transmission, interleaving and coding techniques to mitigate against lost transmissions when simultaneous occupancy of a channel cause loss of data. The pseudo random hopping sequence is initialized at the start of a new connection between master and slave to a random frequency (hopping channel), and the hopping sequence is generated such that an equal time is spent in each of 79 channels throughout the duration of the connection.

The antenna supplied with the unit is a short monopole of 1/4 wavelength with a nominal gain of 0 dBi. The antenna is an integral part of the device.

The peak power of the BC01 transceiver is approximately 0 dBm, and the maximum EIRP is approximately 0 dBm.

Technical Description of WIFI 802.11b/g

The WIFI 802.11b/g standard operated in 2412 to 2462MHz Direct sequence spread spectrum (DSSS) system. It use to communicate with 802.11b/g network. the maximum EIRP is approximately 10 dBm.

802.11b has a maximum raw data rate of 11 Mbit/s and uses the same CSMA/CA media access method defined in the original standard. Technically, the 802.11b standard uses Complementary code keying (CCK) as its modulation technique. The dramatic increase in

throughput of 802.11b (compared to the original standard) along with simultaneous substantial price reductions led to the rapid acceptance of 802.11b as the definitive wireless LAN technology. Typical indoor range is 30 m (100 ft) at 11 Mbit/s and 90 m (300 ft) at 1 Mbit/s

802.11g is the third modulation standard for wireless LANs. It works in the 2.4 GHz band (like 802.11b) but operates at a maximum raw data rate of 54 Mbit/s, or about 19 Mbit/s net throughput (identical to 802.11a core, except for some additional legacy overhead for backward compatibility). 802.11g hardware is fully backwards compatible with 802.11b hardware. Details of making b and g work well together occupied much of the lingering technical process. In an 802.11g network, however, the presence of a legacy 802.11b participant will significantly reduce the speed of the overall 802.11g network.

The modulation scheme used in 802.11g is orthogonal frequency-division multiplexing (OFDM) copied from 802.11a with data rates of 6, 9, 12, 18, 24, 36, 48, and 54 Mbit/s, and reverts to CCK (like the 802.11b standard) for 5.5 and 11 Mbit/s and DBPSK/DQPSK+DSSS for 1 and 2 Mbit/s. Even though 802.11g operates in the same frequency band as 802.11b, it can achieve higher data rates because of its heritage to 802.11a.