

Operation Theory for BC1000

The BC1000 BlueTooth CarKit is make up of four parts: Audio unit, RF(Bluetooth) unit, DSP (Digital Signal Processor) and PMU (Power Management Unit).

1. Bluetooth Unit transmit and receive the signal through the Antenna (PCB antenna) and the Balun Filter (U504), and send/receive to/from DSP (Parrot 4+, U2) by the UART interface, the EEPROM (U507) saves the config data (such as the MAC address) and the device information. The Frequency Bandwidth is 2.4GHz ~ 2.4835GHz.
2. Audio unit receives the signal from MIC (Internal or External, connector J4 or J6), ADC by the codec (U6), send the digital data to DSP (U2), or receive the digital data from DSP, after DAC (U6) and 1W Audio Amplifier (U8) to Speaker (connector J5), output the sound.
3. 16 bit DSP (Parrot 4+) deals with the audio signal (from Mic and Bluetooth) and the operation of the Buttons and Switchs and the LEDs indication. One 26MHz OSC supply the clock for the DSP and Bluetooth Chipset. The Flash Memory (U4) saves the device application firmware, and the paired BlueTooth phone's information, so BC1000 can auto pair with the used phone next time. The SRAM (U3) saves the temp sound data.
4. PMU (U9, L5, D3, C12, C59 and U502, C505) convert the 12VDC (Input) to 3.3V (DSP, Flash Memory (U4) and SRAM (U3)) and 2.8V (Bluetooth chipset, EEPROM).