

**THEORY OF OPERATION**

FCC ID:APYHRO00207

Confidential

NFC (RFID)

a) The DC V/I at the final RF amplifier device

DC voltage

3.3V max

DC current

12uA at sleep mode, 100mA peak at TX mode.

b) Specification

IC7000 RF & baseband IC

IC7000 is RF transceiver IC for 13.56MHz Mobile NFC (FeliCa) system.

NFC adopts amplitude shift keing. The encoding method is Manchester code without the subcarrier.

Ref CLK 27.12MHz Oscillator

As for encoded method, NFC is two of modified-Miller(Type-A) and NRZ(Type-B), and FeliCa(Type-F) is Manchester code.

Bluetooth / ANT+ / WLAN

a) The DC V/I at the final RF amplifier device

DC voltage

4.0V max

DC current

40uA at sleep mode, 420mA peak at TX mode.

b) Specification

IC6000 Bluetooth/ANT+/WLAN module

IC6000 is IEEE802.11 a/b/g/n/ac W-LAN + Bluetooth 4.0 combo + "ANT+" module.  
Qualcom WCN3680 inside

Ref CLK 48MHz Oscillator

This Oscillator is a reference signal source of frequency synthesizer, and built into IC6000.

The functions of IC6000 are following.

1. Radio Transceiver
2. Bluetooth and ANT+ and WLAN Baseband Core
3. Microprocessor and Memory Unit
4. High-Speed Peripheral Transport Unit
5. Band pass filter
6. RF matching and decoupling circuit
7. Supports 802.11 b/ g/ n (2.4GHz Band), and 802.11a/ n/ ac (5GHz, U-NII-1/ 2/ 2 ext )
8. Supports Bluetooth 4.0
9. Supports ANT+
10. Power Management Unit