THEORY OF OPERATION for NFC (FeliCa), Bluetooth and W-LAN

NFC (RFID)

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

DC voltage	3.0V max
DC current	15uA at sleep mode, 200mA peak at TX mode.

b) Specification

IC5200	RF & baseband IC	IC5200 is RF transceiver IC for 13.56MHz Mobile NFC (FeliCa) system. NFC adopts amplitude shift keying.
Ref CLK	19.2MHz Oscillator	As for encoded method, Type A is modified-Miller, Type B is NRZ, FeliCa is Manchester code, and Type V is Pulse Position Modulation.

Bluetooth / WLAN

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

DC voltage	3.3V max
DC current	1mA at sleep mode, 370mA peak at TX mode.

b) Specification

IC3000	Bluetooth/WLAN IC	IC3000 IEEE802.11 a/b/g/n/ac W-LAN + Bluetooth 5.1 IC(Qualcomm WCN3988).
Ref CLK	38.4MHz Oscillator	This Oscillator is a reference signal source of frequency synthesizer from X2750(Crystal). The functions of IC3000 are following. 1. Supports 802.11 b/ g/ n (2.4GHz Band), 802.11a/n/ac(5GHz Band) 2. Supports Bluetooth 5.1 3. FM Radio Receiver