Technical Description

The Equipment Under Test (EUT) is a Kibeam Wand Reading System with Wi-Fi function operating at 2412-2462MHz for 802.11b/g/n-HT20, 11 channels with 5MHz channel spacing and 2422-2452MHz for 802.11n-HT40, 7 channels with 5MHz channel spacing, and Bluetooth 5.0 (BLE single mode) function operating in 2402-2480MHz. The EUT is powered by DC 3.7V rechargeable battery. Once use the USB cable charging to the EUT, the wireless function will be disabled. For more detailed features description, please refer to the user's manual.

Antenna Type: Integral antenna.
Antenna Gain: 3.4dBi.
Modulation Type: GFSK for BLE, BPSK, QPSK, 16QAM, 64QAM for OFDM; CCK, DQPSK, DBPSK for DSSS.
Bluetooth Version: 5.0 BLE (Single Mode)

For 802.11b/g and 802.11n-HT20:
The normal radiated output power (e.i.r.p) is: 21.0dBm (tolerance: +/-3dB).
The normal conducted output power is 17.6dBm (tolerance: +/-3dB).

BLE:
The normal radiated output peak power (e.i.r.p) is: 0.0dBm (tolerance: +/- 3dB).
The normal conducted output peak power is -3.4dBm (tolerance: +/- 3dB).

Channel List:
(802.11b/g/n-HT20)

2412	2417	2422	2427	2432	2437
2442	2447	2452	2457	2462	

(802.11n-HT40)

2422	2427	2432	2437
2442	2447	2452	

BLE:
2402MHz to 2480MHz and the channel list with 2 MHz channel spacing.

Main Chip Function:
U2: BUCK power management chip
U27: This is voltage regulator for 3.3v voltage
U19: This is voltage regulator for system voltage
U32: This is voltage regulator for 1.8v voltage
U24: This is voltage regulator for 1.5v voltage
U25: This is voltage regulator for 2.8v voltage
U30: Battery management IC to measure fuel gauge of battery
U3: Battery charging management IC
U28: programmed mixed signal chip to provide
U23: Emmc chip is to storage contents
U29: LED driver IC and control LED
U7: IMU control IC, 3D accelerometer and 3D gyroscope

U18: IMU control IC, 3D accelerometer and 3D gyroscope
U10: Audio control chip
U31: Audio control chip
Y1: 12.288MHz OSC for U31

RF Module Chip Function.
U1: ESP32-S3 – is the WiFi and BLE SOC that contains a dual core processor, 802.11 b/g/n WiFi and Bluetooth 5 (LE).
Y1: 40MHz OSC for U1.
U2: Flash IC