# Specification of 10K1 RF pedometer

## [ Human Interface ]

1. LCD : 5-digit numerical display. Range : 00000 ~ 99999.
2. Buttoms :

2-1) Send : to start transmitting RF data function

2-2) Clear : to reset the steps counter to 00000.

## [ Electronic Character ]

1. Single CR1220 or CR1225 Lithium battery for pedometer, the life of a new battery should provide over (6) months for taking 10K steps everyday.

2. Input voltage range : DC 2.9V ~ 3.3V

3. Power consumption

3-1.    Sleeping : 1uA Typically

3-2.    Standby : 30uA Typically

3-3.    walking : 55uA Max.

3-4.    Take workout with RF : 2.6mA

4. RF carrier frequency : 315MHz

5. Communication protocol : 1200bps, N, 8, 1. There are 5 bytes in a valid payload. These data bytes contend with Start Code (8bit), ID Code (7bit), Counted Steps (17bit), and checksum(8bit)   Each payload will spend 42 milliseconds (ms). Because that there will be two same adjacent payloads sent out continuously, the total in emission state will spend ***84ms***.

6. Operative RF range : over 85cm

## [ Function Character ]

1. Step counting precision　under 5% as the speed over 2.0MPH.

2. Possessing RF function for uploading Step information to treatmill.

3. As manipulating uploading process, user must press SEND key over **2** seconds at first. The pedometer will send datas which dependent on its protocol 3 times continually. The treatmill will show up User-ID and Step informations on its console. And then, pedometer will send data out in every **30** steps increased or after **_15 seconds_** from last sent action automatically.

4. When stopping step increased counting for lasting over **30** seconds, the pedometer will stop to send out data automatically. If user wants to use treatmill with pedometer, he or she must manipulate the action of term (4) again.

5. Press 'Clear' key over **2** seconds to reset STEPs counter to '00000'.

6. It is recommended to fasten the pedometer on user's Waist Belt.

7. To keep power saving, the pedometer will turn off LCD display after falling sleep mode. And it will awaken by acting contact switch, or by pushing any button (Clear / Send). If there is no any switch or buttons signal changed for lasting over 30 seconds, it will fall into Sleep mode again.

Based on Electronic and Function characters, the transmitting ratio, job-duty to silent duration, is calculated as follow.

$$r = 84ms / 15sec = 1 / 178,$$ where $r$ is the ratio of job-duty to silent duration

**Content of Sticker:**

1. Pressing 'Send' key over 2 seconds to send STEP data to console.
2. Automatically update STEP data while increasing each 30 steps or over 15 seconds.
3. Automatically stop sending STEP data without increasing any step during 30 seconds.
4. Pressing 'Clear' key over 2 seconds to reset the system.
5. Close LCD window and keep it perpendicular as possible for counting accuracy.