1. General Specification

1.1. General Layout

1.2. Purpose

To develop a waterproof digital weighing scale which matches OIML Standard.

1.3. Features

- Waterproof digital weighing scale
- Quick response to weight change
- Capacity: Dual Range: 10kg, 20kg, 100kg, 200kg with 1/1,000 display resolution;
  Single Range: 3, 6, 15, 30, 60, 150, 300, 600kg/lb with 1/3,000 resolution
- Resolution:
  A. Display Resolution 1/1000(Dual Range), Internal Resolution 1/16000.
  B. Display Resolution 1/3000(Single Range), Internal Resolution 1/24000.
- Low power consumption: 6* C size dry batteries backup for more than 200 hours of continuous usage
- Fast self-test when power on
- Selectable automatic shut off function
- Two-Point low battery detects
  A. When battery is lower, the battery indicator will light on
  B. When the power from battery becomes lower that the display will shut off except the Battery indicator, and then the power will shut off completely after 1 minute
- Software Calibration
- High contrast LCD display
- 3 Operation Keys: Re-Zero, Tare and On/Off keys
- Water proof plastic housing

1.4. Operating Conditions

- Power Source: AC 240/230/220V, 117/100V or DC 9V for 6* C size dry batteries
- Operating Temperature: -10 ~ +40℃ (OIML)
- Humidity: 15 ~ 85% RH
- Power Consumption: 0.07w for 6V, 0.1w for 9V

1.5. Analog Specification

- Input Sensitivity: 0.67mV/V for 10kg and 20kg, 1mV/V for else
- Zero Adjust Range: 40% F.S.
- Zero Balance Range: 10% F.S.
- L/C Exiting Voltage: DC 5V
- A/D Conversion Speed: 4 times/sec
- Internal Resolution: 16000 or 24000 for certain capacity

1.6. Capacity/Minimum Graduation/Tare range

1.6.1. 1/1000 Multi-Interval

Capacity	Minimum Graduation		Tare Range
10kg	5g (0 - 4.995kg) (1d = 8IR)	10g (5.000kg - 10.000kg) (1d = 16IR)	0 - 4.995kg
20kg	10g (0 - 9.990kg) (1d = 8IR)	20g (10.000kg - 20.000kg) (1d = 16IR)	0 - 9.990kg
100kg	50g (0 - 49.95kg) (1d = 8IR)	100g (50.00kg - 100.00kg) (1d = 16IR)	0 - 49.95kg
200kg	100g (0 - 99.90kg) (1d = 8IR)	200g (100.00kg - 200.00kg) (1d = 16IR)	0 - 99.90kg

1.6.2. 1/3000 Single-Interval

Capacity	Minimum Graduation	Tare Range
3 kg/lb	1g/0.001lb (1d = 8IR)	0 - 1.499 kg/lb
6 kg/lb	2g/0.002lb (1d = 8IR)	0 - 2.998 kg/lb
15 kg/lb	5g/0.005lb (1d = 8IR)	0 - 7.495 kg/lb
30 kg/lb	10g/0.01lb (1d = 8IR)	0 - 14.990 kg/lb
60 kg/lb	20g/0.02lb (1d = 8IR)	0 - 29.98 kg/lb
150 kg/lb	50g/0.05lb (1d = 8IR)	0 - 74.95 kg/lb
300 kg/lb	100g/0.1lb (1d = 8IR)	0 - 149.90 kg/lb
600 kg/lb	200g/0.2lb (1d = 8IR)	0 - 299.8 kg/lb

*NOTE : IR -> Internal Resolution, d -> Division(Minimum Increment).
Internal count(full capacity) = 16000IR(1/1000 Multi-Interval)
Internal count(full capacity) = 24000IR(1/3000 Single-Interval).

1.7. Dimensions

Overall Dimension: 234 * 190 * 91.5 mm

1.8. External Connectors

AC receptacle

1.9. Main Components

- Microcomputer: NEC uPD75304GF, uPD75308GF, uPD75P308GF or uPD75P316AGF
- Crystal Oscillator: 4.19 MHz
- Display device: Liquid crystal Display (LCD)

1.10. Existing parts to be used

- Electronic parts (DS-671)