

CHAPTER 3

SPECIFICATIONS

3.1 PERFORMANCE

Detector input : Can be used with any scintillation, Geiger
Mueller or proportional detector

Counting rate : 1.5 MHz typical

Automatic clear : Initiated when power is first turned on or
after power failure.

Time base stability : Using crystal-controlled oscillator.

3.2 HIGH VOLTAGE POWER SUPPLY

Range : Regulated; variable by front panel control
from 200 V. to 2.4 KV.

Current : 100 μ A maximum

Voltage dependence : The high voltage will change less than $\pm 3\%$
with battery voltage change from 9.5 - 12 V.

3.3 DISCRIMINATOR AMPLIFIER

Amplifier : Charge sensitive input with pole zero cancellation
followed by AC coupled amplifier. Over all
gain selections by front panel switch x 1 and
x 10 for 0.03 volt per millivolt and 0.3 volt per
millivolt respectively.

Discriminator : Adjustable in range of 0 to 2 V. for unwanted

signal by front panel control.

3.4 COUNTER OR SCALER

- Capacity : Six decades, $10^6 - 1$ counts : indicated by seven segments light emitting diodes; leading zeros are suppressed.
- Mode : Toggle switch to select ADD and SUB mode of data counting and background subtraction.
- Blank : Automatic blanking displays during counting mode enable.

3.5 TIMER

- Preset time : Independent thumbwheel switches select the preset time in unit of second. The N switch selects a multiplier (0 - 9) and the 10^M switch selects the power of ten ($10^0 - 10^4$) by which it is multiplied.
- Time base : Using a 3.58 MHz crystal to control the time base oscillator.

3.6 RATE METER

- Range : Four linear ranges of 500, 5K, 50K count per minute full scale selected by rotary switch on the front panel.
- Response time : Continuously variable by a screw adjust on front panel from 1 - 10 second.

3.7 INDICATORS

- OFL. LED : Illuminated from the first overflow unit reset data counting
- COUNTING LED : Illuminated when counting mode enable.
- LOW BATT. LED : Illuminated when the voltage level from battery is below 9.5 volts.

3.8 CONTROLS

- TEST : Toggle seitch for proper operation check. By setting the time to 2 second, press START switch, display should stop after counting 100 counts.
- RESET : Push button switch is provided for resetting the display to zero
- START : Push button switch, depress to start the counting time
- CLEAR : Push button switch to clear all data in counter in TIMED mode.
- TIMED-STOP-MAN. : Selects counting mode. TIMED position automatically stops count after preset time selected on timer. MAN. position: counts continuously. STOP position does not count.

3.9 LOW VOLTAGE POWER SUPPLY

- AC.line : 220 V. 50 Hz, 0.025 amp.
- Battery : 12 V, 0.25 amp.

3.10 MECHANICAL

- Size : 8.9 cm. H. x 23.5 cm.D. x 25.0 cm. W.

Weight : 2.35 Kg, not including battery

Connector input : MHV. type

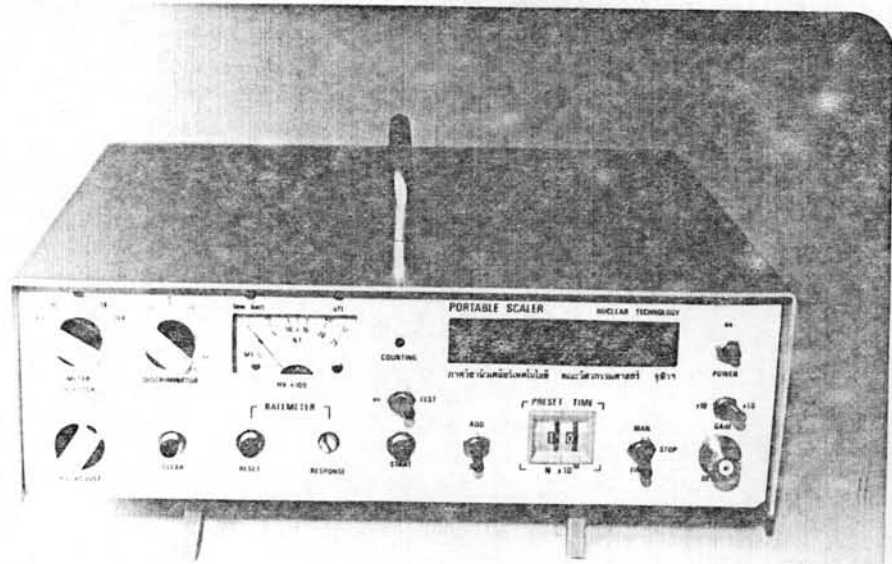


Fig. 3.1 A portable scaler

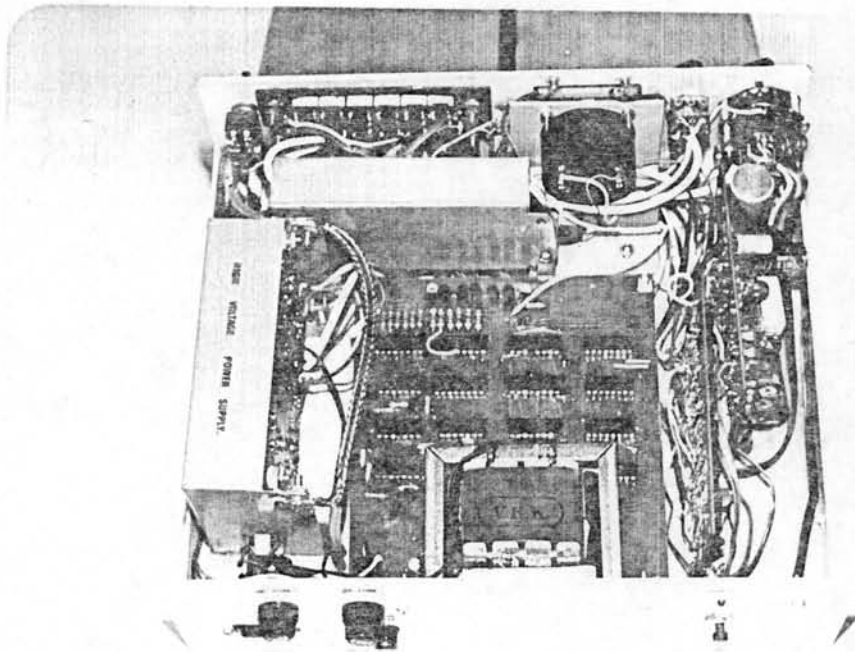


Fig. 3.2 Interior view

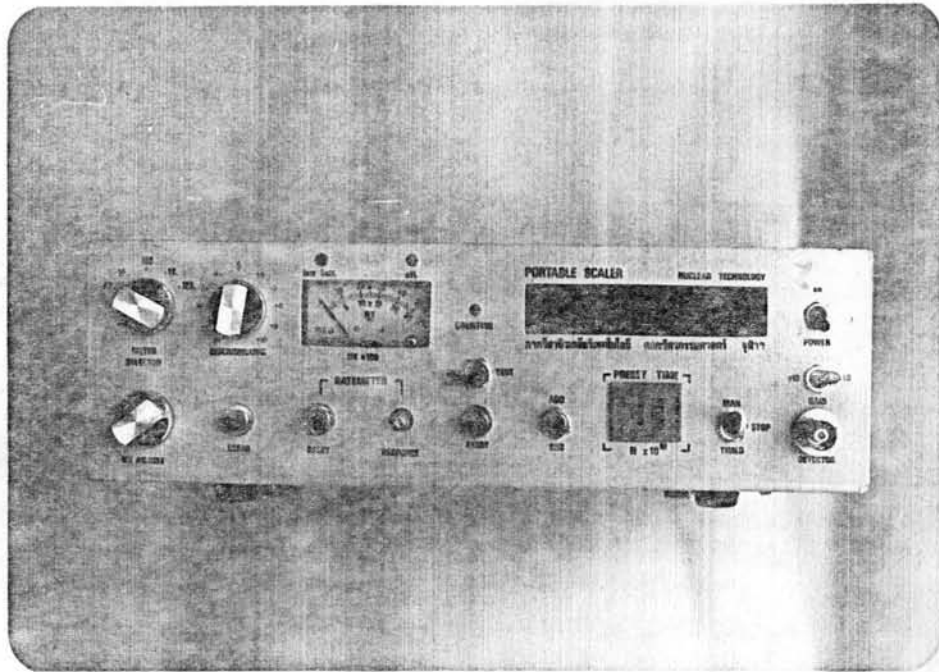


Fig. 3.3 Front panel

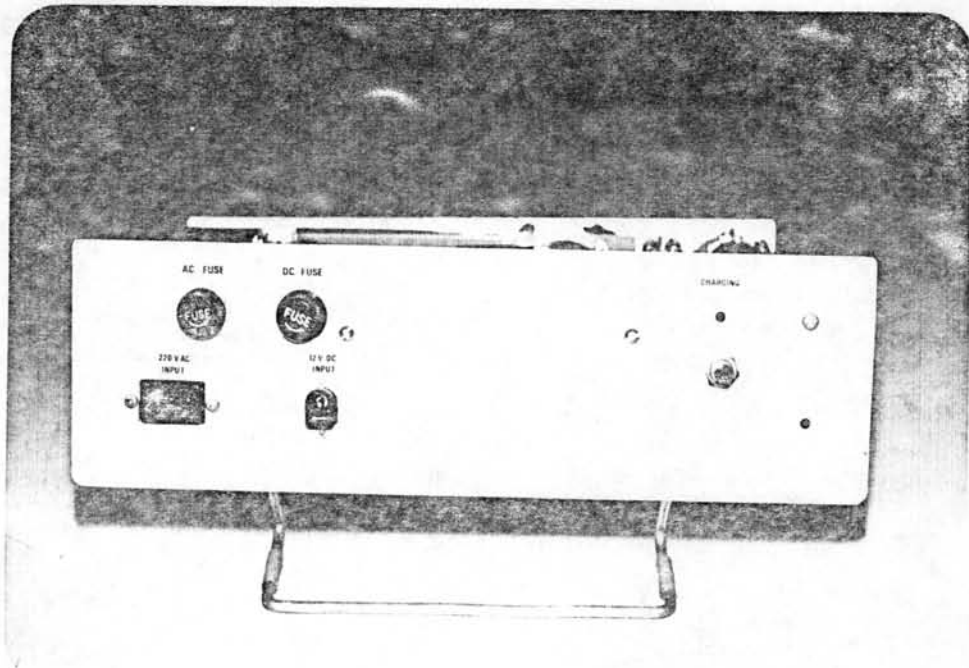


Fig. 3.4 Rear panel

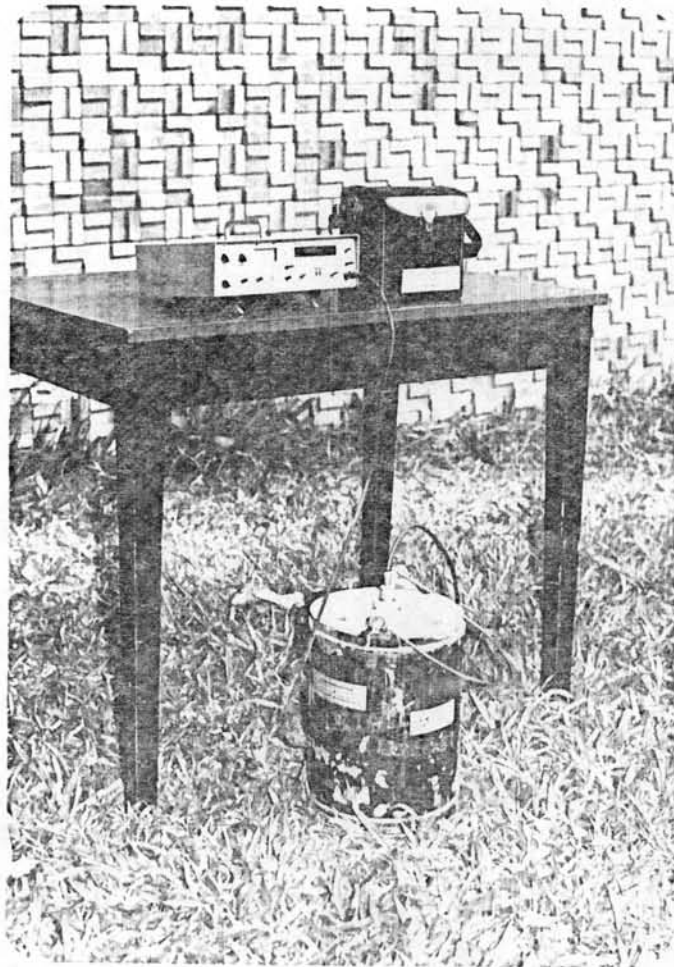


Fig. 3.5 Set up of a portable scaler in field work

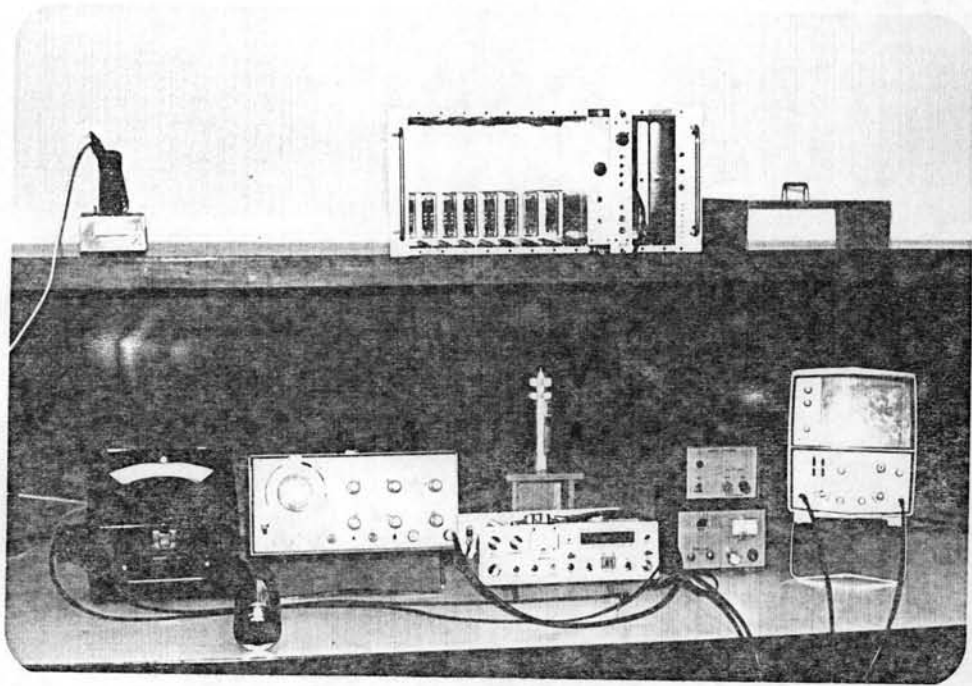


Fig. 3.6 A portable scaler under testing