

## TEST PROGRAM: INTERNAL RESISTANCE TEST (AC & DC)

### Objective:

The Internal Resistance (IR) of a battery is the opposition to the current flow through it. Two methods were used by IEC standard: the AC method or DC method. Thus it is used as a general guideline and can provide valuable information about the battery performance. The higher value of IR indicates battery reaching its end-of-life.

### Procedure and Standard:

Depending on the specified battery internal resistance in the manufacturer datasheet, the proper equipment was selected. For DC test method, the internal resistance test are embedded into other test program, such as Auto or Cycle test. Thus it takes a few hours until the test is finished. For AC method, the internal resistance can be carried out individually so it only takes a few minutes.

### Equipment:

Internal Resistance Method	Cadex C7x00	Cadex C8000	Cadex C5100	WMR CBAIV	Vencon UBA	Hioki BT3563-01
AC		Yes**				Yes
DC	Yes	Yes	Yes	Yes	Yes	

\*\*AC method using Impedance test on Channel #1 only.

Cadex C5100



Cadex C7x00



Cadex C8000



Vencon UBA



CBAIV + Amplifier



HIOKI BT3563-01.



### Result Sample:

The results in the table below are derived from testing on 12V SLA Panasonic LC-R127R2P1 batteries.

	Date	Time	AC Impedance(mΩ)	Voltage(V)
1	1/22/2016	13:17:42	21.9	12.679
2	1/22/2016	13:17:47	21.2	12.663