

# Temperature Compensation Explanation

--- for the digital battery Tester BT--

dated Feb.02, 2007

The battery performance is affected by temperature. When cold the battery produces less power. The test results of a cold battery will be lower than the actual condition. The user can compensate for this difference by the remarks as follows:

I.

## Battery Temperature

The most accurate test results will be obtained when battery temperature is at approximately 70°F (21.1°C). If testing battery between 70°F (21.1°C) and 40°F (4.4°C), add 0.1 volt for every 10°F (5.6°C) below 70°F. If testing a battery between 70°F (21.1°C) and 100°F (37.8°C), subtract 0.1V for every 10°F (5.6°C) above 70°F (21.1°C).



II.

## BATTERY CAPACITY CCA (COLD-CRANKING AMPERAGE)

When battery tested at 70°F (21.1°C), the battery capacity rated at 300 CCA, the voltage is 10.4V and the min. cranking volt at 9.7V. And then for battery capacity rated at other ranges(CCA), add 0.1V for every 50 CCA when testing air temperature at 70°F (21.1°C) .

III.

## Voltage Tested Reference Chart for Temperature Compensation:

CCA Range	300	400	500	600	700	800	900	999
Load Voltage	10.4	10.6	10.8	11.0	11.2	11.4	11.6	11.8
Min. Cranking volts at 70°F (21.1°C) & above	9.7	10.0	10.3	10.6	10.9	11.2	11.4	11.6
Min. Cranking volts at 60°F (16°C)	9.6	9.9	10.2	10.5	10.8	11.1	11.3	11.5
Min. Cranking volts at 50°F (10°C)	9.5	9.8	10.1	10.4	10.7	11.0	11.2	11.4
Min. Cranking volts at 40°F (4°C)	9.4	9.7	10.0	10.3	10.6	10.9	11.1	11.3
Min. Cranking volts at 30°F (-1°C)	9.3	9.6	9.9	10.2	10.5	10.8	11.0	11.2
Min. Cranking volts at 20°F (-7°C)	9.2	9.5	9.8	10.1	10.4	10.7	10.9	11.1
Min. Cranking volts at 10°F (-12°C)	9.1	9.4	9.7	10.0	10.3	10.6	10.8	11.0
Min. Cranking volts at 0°F (-18°C)	9.0	9.3	9.6	9.9	10.2	10.5	10.7	10.9

#### IV.

#### CCA range Reference Chart for Temperature Compensation:

EXAMPLE. If rated capacity is 800 CCA and internal temperature is approximately 35~F (1.7~3). Assume test capacity to be 560 CCA  
(560 = 800 x 70)

#### Internal Battery Temperature

