A.HE83144 Introduction

HE83144 is a member of 8-bit Micro-controller series developed by King Billion Electronics Ltd.

Users can chose any one of combination among   1024 dots LCD Driver + 8Bit I/O Port … 768 dots LCD Driver + 24 Bit I/O Port etc. The 7-bit current-type D/A converter and PWM device provide the complete speech output mechanism. The 64K ROM Size can be used in the storage of speech graphic   text etc.. It can be applicable to the medium systems such as Small-Scale Dictionary, Data Bank, Pocket Dialer, Educational Toy etc.

The instruction set of HE83144 are quite easy to learn and simple to use. Only about thirty instructions with four-type addressing mode are provided. Most of instructions take only 3 oscillator clocks (machine cycles). The processing power is enough to most of battery operation system.

B.HE83144 Feature

- Operation Voltage   2.2V – 5.5V
- System Clock   DC ~ 8MHz @ 5.0V

  DC ~ 4MHz @ 2.2V
- Internal ROM   64K Bytes(64K Program ROM)
- Internal RAM   256 Bytes
- Dual Clock System   Normal (Fast) clock   32.768K ~ 8MHz

  Slow clock   32.768KHz
- Operation Mode   DUAL   FAST   SLOW   IDLE   SLEEP Mode.
- 8~24 bit Bi-directional I/O port. Mask Option can select PUSH-PULL or OPEN DRAIN output mode for each I/O pin. 8 of them are shared with LCD segment pins.
- 1024~768 dots LCD driver (B TYPE selectable).
- One 7-bit current-type DAC output.
- PWM device.
- Two external interrupts and three internal timer interrupts.
- Two 16-bit timers and one Time-Base timer.
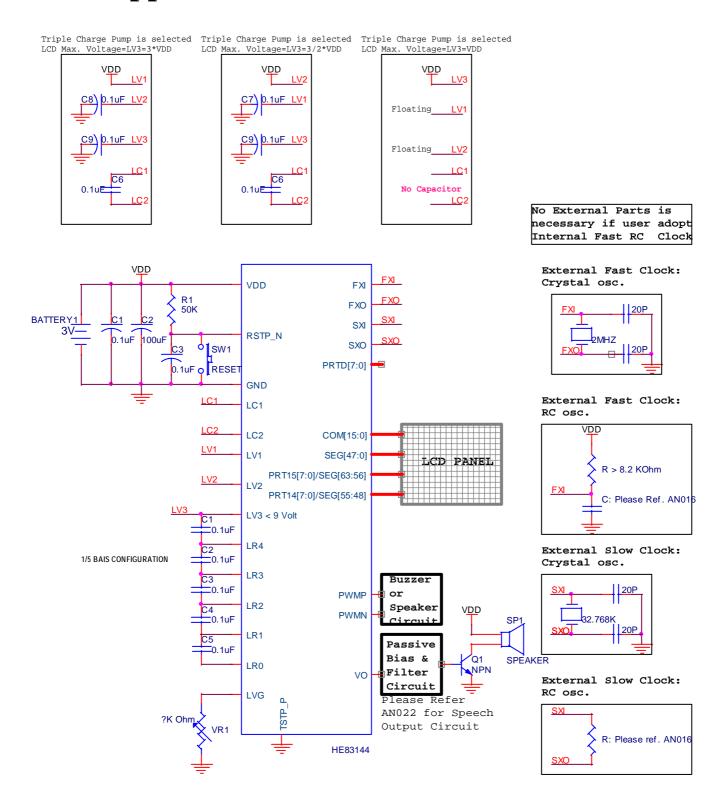- Instruction set   32 instructions, 4 addressing mode. 8-bit DATA POINTER for RAM and 16-bit TABLE POINTER for ROM.

C． Application Circuit

Triple Charge Pump is selected
LCD Max. Voltage=LV3=3*VDD

Triple Charge Pump is selected
LCD Max. Voltage=LV3=3/2*VDD

Triple Charge Pump is selected
LCD Max. Voltage=LV3=VDD

No External Parts is necessary if user adopt Internal Fast RC Clock

External Fast Clock: Crystal osc.

External Fast Clock: RC osc.

External Slow Clock: Crystal osc.

External Slow Clock: RC osc.

1/5 BAIS CONFIGURATION

LCD PANEL

Buzzer or Speaker Circuit

Passive Bias & Filter Circuit

Please Refer AN022 for Speech Output Circuit

HE83144