



A. HE85750 Introduction

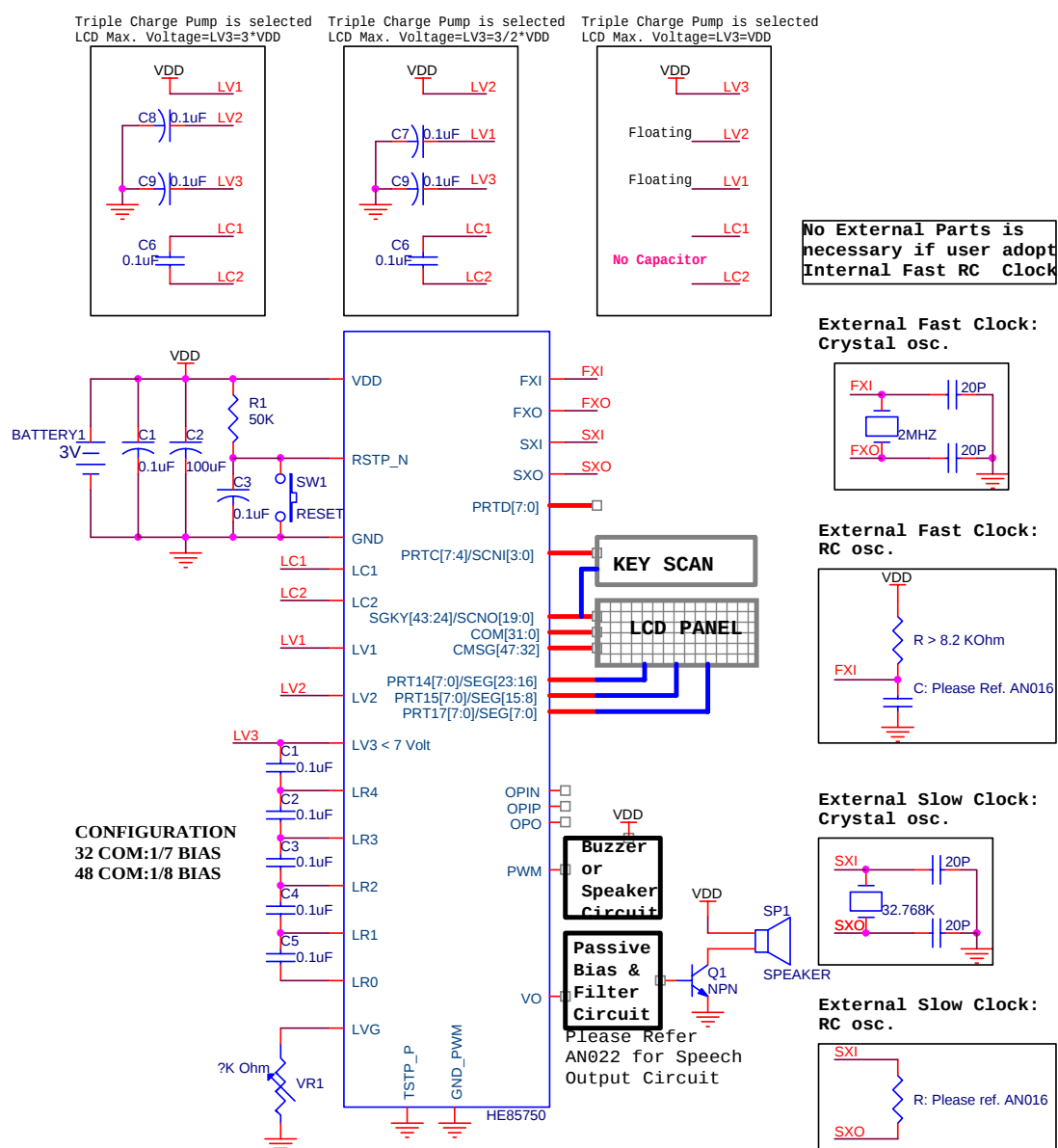
HE83761 is a member of 8-bit Micro-controller series developed by King Billion Electronics Ltd. Users can chose 32 COM for any one of combination among 【2048 dots LCD Driver + 12 Bit I/O Port】... 【1280 dots LCD Driver + 36 Bit I/O Port】 etc.. or 48COM for any one of combination among 【2304 dots LCD Driver + 12 Bit I/O Port】... 【1152 dots LCD Driver + 36 Bit I/O Port】 etc.. The built-in OP comparator can be used with (light voice temperature humility) sensor and used as battery low detection. And the 7-bit current-type D/A converter and PWM device provide the complete speech output mechanism. The 256KB ROM and 2KB RAM Size can be used in the storage of large speech data, graphic, text etc. It can be applicable to the medium systems such as Small-Scale Dictionary, Data Bank, Medium Level Educational Toy, Lower Second Voice Recording System etc..

The instruction set of HE85750 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. HE85750 Feature

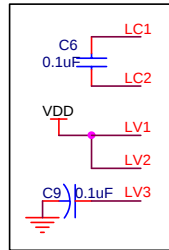
- Operation Voltage : 2.4V – 3.6V
- System Clock : DC ~ 8MHz @ 3.6V
DC ~ 4MHz @ 2.4V
- Internal ROM : 256K Bytes(64K Program ROM, 192K Data ROM)
- Internal RAM : 2K Bytes.
- Dual Clock System : Normal (Fast) clock : 32.768K ~ 8MHz(No Internal Clock)
Slow clock : 32.768KHz
- Operation Mode : DUAL、FAST、SLOW、IDLE、SLEEP Mode.
- With WDT (WATCH DOG TIMER) to prevent deadlock condition.
- 12~36 bit Bi-directional I/O port. Mask Option can select PUSH-PULL or OPEN DRAIN output mode for each I/O pin.
- One built-in OP comparator.
- 2048~1280 dots LCD driver for 32 COM or 2304~1152 dots LCD driver for 48 COM (B TYPE selectable). LV3 must less than 8.5V.
- LCD refresh cycle of 85750 is different from other's 64 Hz. For this IC:
32 COM : Refresh Cycle=~170Hz , 48 COM : Refresh Cycle=~110Hz.
- One 7-bit current-type DAC output.
- PWM device.
- Two external interrupts and three internal timer interrupts.
- Two 16-bit timer and one Time Base.
- Instruction set : 32 instructions, 4 addressing mode. 11-bit DATA POINTER for RAM and 18-bit TABLE POINTER for ROM.

C. Application Circuit

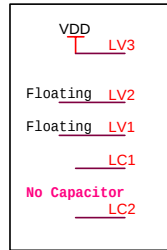




Twice Charge Pump is selected
LCD Max. Voltage=LV3=2*VDD

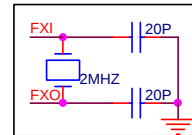


Twice Charge Pump is selected
LCD Max. Voltage=LV3=VDD

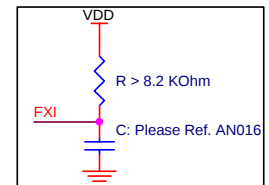


No External Parts is
necessary if user adopt
Internal Fast RC Clock

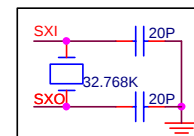
External Fast Clock:
Crystal osc.



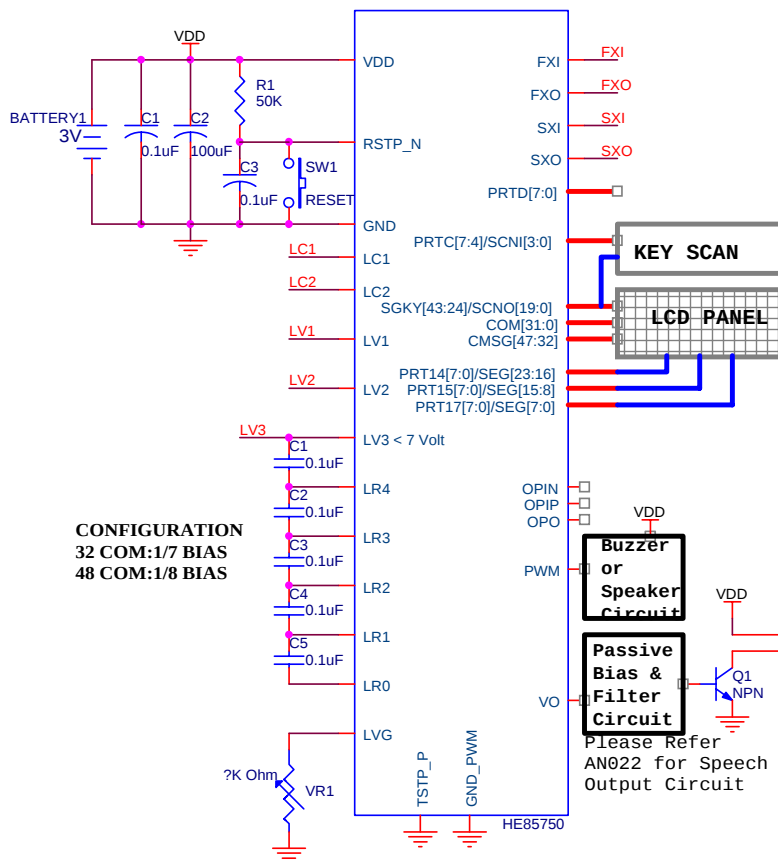
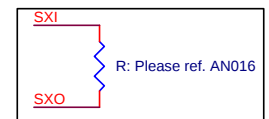
External Fast Clock:
RC osc.



External Slow Clock:
Crystal osc.



External Slow Clock:
RC osc.



CONFIGURATION
32 COM:1/7 BIAS
48 COM:1/8 BIAS

Buzzer
or
Speaker
Circuit

Passive
Bias &
Filter
Circuit

Please Refer
AN022 for Speech
Output Circuit