

A.HE83115 Introduction

HE83115 is a member of 8-bit Micro-controller series developed by King Billion Electronics Ltd. Users can choose any one of combination among 【80 dots LCD Driver + 12 Bit I/O Port】 ... 【48 dots LCD Driver + 20 Bit I/O Port】 etc. The built-in OP comparator can be used with (light, voice, temperature, humidity) 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 64K ROM Size can be used in the storage of speech (20 seconds at 3Kbytes per second), graphic, text etc. This IC is applicable to the small systems such as sport match, sport recorder, digital watch etc..

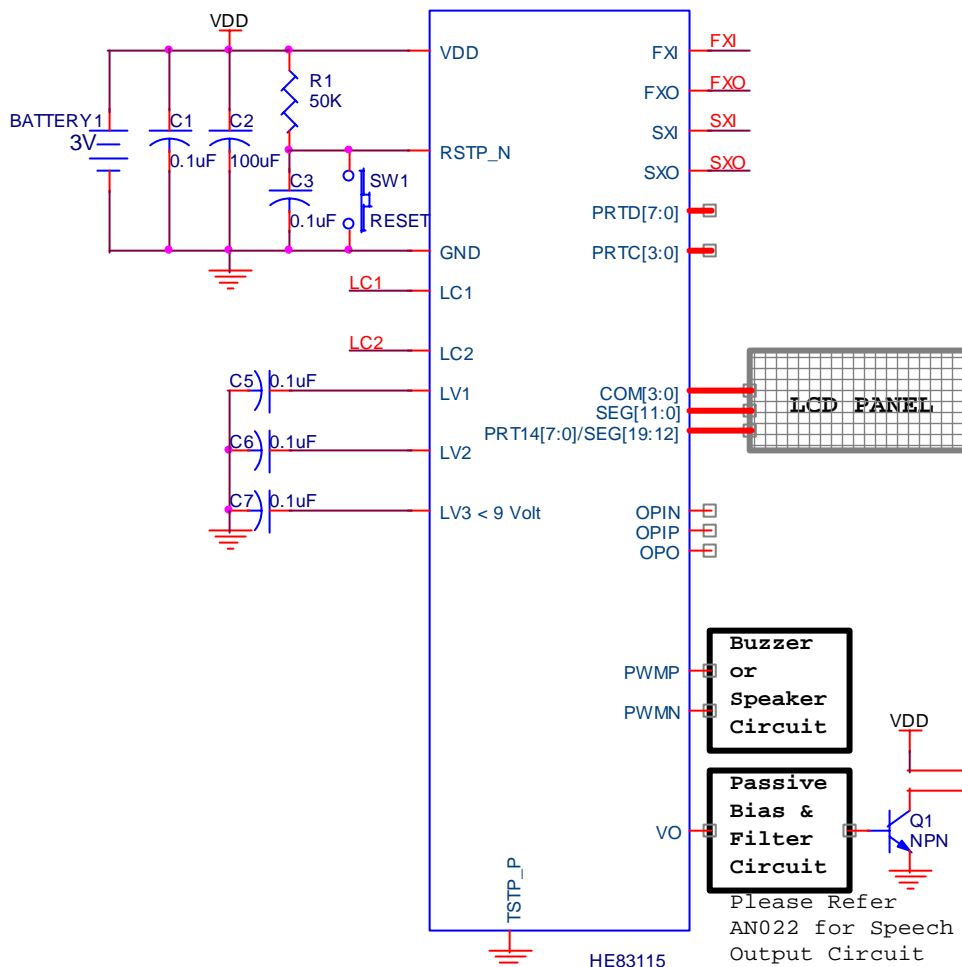
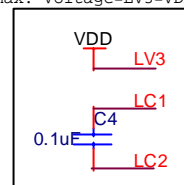
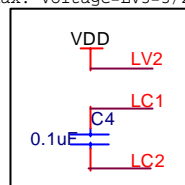
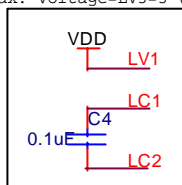
The instruction set of HE83115 are quite easy to learn and simple to use. Only about thirty instructions with four-type addressing mode are provided. Most of instructions take only 3 oscillator clocks (machine cycles). The processing power is enough to most of battery operation system.

B.HE83115 Features

- Operation Voltage : 2.4V – 5.5V
- System Clock : DC ~ 8MHz @ 5.0V
DC ~ 4MHz @ 2.4V
- 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.
- With WDT (WATCH DOG TIMER) to prevent deadlock condition..
- 12~20 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.
- 80~48 dots LCD driver (A、B TYPE selectable).
- One 7-bit current-type DAC output.
- PWM device.
- Two external interrupts and two internal timer interrupts.
- Two 16-bit timer.
- Instruction set : 32 instructions, 4 addressing mode. 8-bit DATA POINTER for RAM and 16-bit TABLE POINTER for ROM.

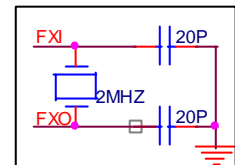
C. Application Circuit

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

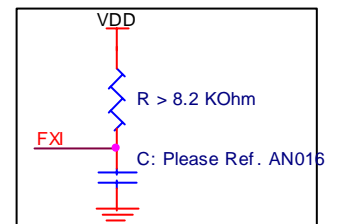


No External Parts is necessary if user adopt Internal Fast RC Clock

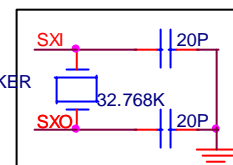
External Fast Clock: Crystal osc.



External Fast Clock: RC osc.



External Slow Clock: Crystal osc.



External Slow Clock: RC osc.

