義隆電子股份有限公司
ELAN MICROELECTRONICS CORP.

ICE806C
User manual

FOR

EM78806C

Version 1.2

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I. Introduction

E8 ICE is intended to provide the product development engineer a powerful microcontroller design tool. The E8 ICE operates on PC compatible 386 and above machines

1. System Requirement

1. EGA and above MONITOR.
2. 1M RAM.
3. and above IBM PC compatible machines.
4. In circuit emulator (ICE).
5. PC host ICE control software.
6. 16V 500mA power adapter.
7. ICE software setup by soft disk: extracted WICE20.ZIP file and run setup.exe.
8. You can get User manual or other software at EMC internet . www.emc.com.tw
9. Customer => download => micro controller (8-bit) =>ICE software

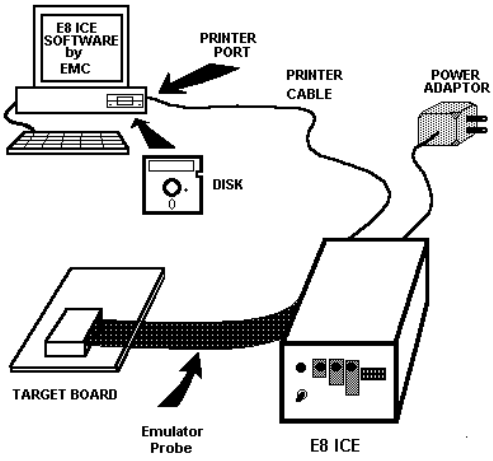

Figure 1.1 ICE System Configuration

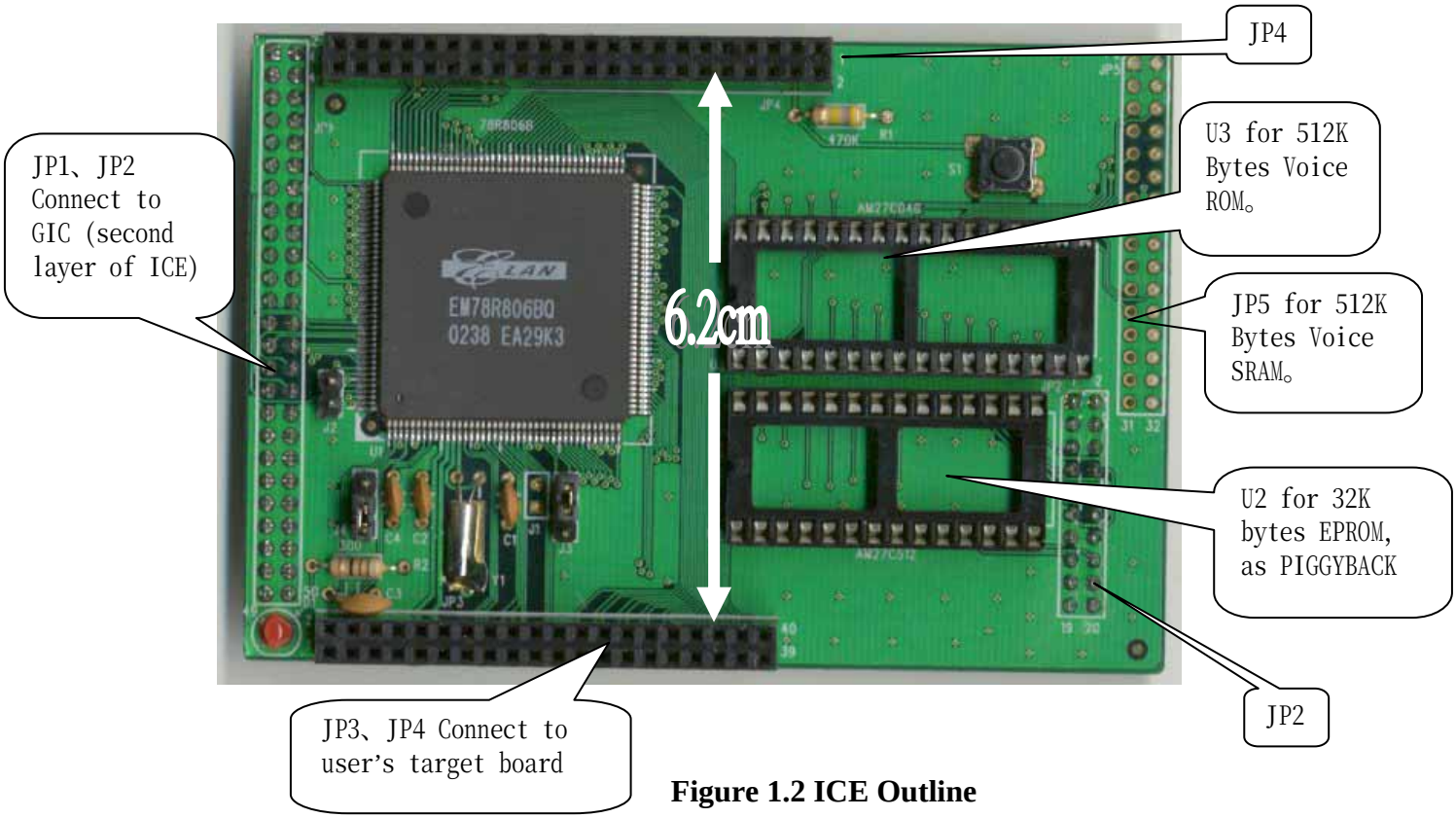

Figure 1.2 ICE Outline

2. Power on the E8 ICE before executing the control software, or an error message due to lack of hardware will appear.

3. E8 - ICE uses the printer port to communicate with host PC. If a user wants to use the printer, it is recommended to install another printer port.

4. Power on switch located on the left side of ICE box. By switching left or right side to turn off or turn on the ICE power.

5. Printer port and the adapter locate on the right side. The ICE connects to personal computer by printer port. The adapter connects to the power. Besure turn power off of ICE before plug in the adapter for avoiding over current which may be burn the chip off.

6. On the top sight, we have five connections and one EM78R806B Romless chip and some switches. The JP1 and the JP2 connect to the second layer of ICE for the code instruction accessing. The JP3 and the JP4 is more important for ICE user. They are the EM78806B control signals and I/O ports. ICE user can connect these connections to user's application board. The connections are list in Figure 1.3.

7. The U1 is EM78R806B Romless chip. The U2 can place a 32K/64K Bytes ROM for on-board testing one day by piggyback. If user have developed application code by this ICE. User can use PIGGYBACK (user can buy from ELAN) to connect to user's application board with 32K/64K Bytes EPROM (27C256/27C512). To verify user's program.

8. The U3 can be placed a 512K bytes EPROM (27C040) for external Voice Rom。
   JP5 can be connected a 512K bytes SRAM for external Voice ROM。

9. The D1 is a LED that indicate power is on or off.

10. X1 is 32.768kHz crystal. C1 and C2 is capacitor 27p.
    C3 is PLL capacitor(0.01u).

11. ICE setup: (1)X1=> 32.768kHz crystal (2) J1 short (3)J2 open (4)J3=>VDD

12. PIGGYBACK setup. (1)X1=> 32.768kHz crystal (2)J1 short (3)J2 short (4)J3 connect to GND (5)U2=> 32k/64k bytes EPROM (27C256/27C512)

(User can use file "*.MIX" which generate by WICE for masking EPROM . The *.mix file is a binary file and addressing from zero.)

13. RUN WICE software to enter ICE environment.

II. ICE connect interface

	pin	Name	pin	Name	pin	Name	pin	name	Pin	name
JP3	1	GND	11	NC	21	P61	31	SEG0		
	2	GND	12	NC	22	P60	32	SEG1		
	3	DEDD	13	EST	23	COM0	33	SEG2		
	4	VOICE	14	ST/GT	24	COM1	34	SEG3		
	5	TONE	15	P67	25	COM2	35	SEG4		
	6	NC	16	P66	26	COM3	36	SEG5		
	7	NC	17	P65	27	COM4	37	SEG6		
	8	NC	18	P64	28	COM5	38	SEG7		
	9	RING	19	P63	29	COM6	39	SEG8		
	10	TIP	20	P62	30	COM7	40	SEG9		
JP4	1	VDD	11	P72	21	SEG33/P91	31	SEG23/P57	41	SEG13
	2	VDD	12	P73	22	SEG32/P90	32	SEG22/P56	42	SEG12
	3	NC	13	P70	23	SEG31/P87	33	SEG21/P55	43	SEG11
	4	/RESET	14	P71	24	SEG30/P86	34	SEG20/P54	44	SEG10
	5	NC	15	SEG39/P97	25	SEG29/P85	35	SEG19/P83		
	6	NC	16	SEG38/P96	26	SEG28/P84	36	SEG18/P82		
	7	P76	17	SEG37/P95	27	SEG27	37	SEG17/P81		
	8	P77	18	SEG36/P94	28	SEG26	38	SEG16/P80		
	9	P74	19	SEG35/P93	29	SEG25	39	SEG15		
	10	P75	20	SEG34/P92	30	SEG24	40	SEG14		
JP5	1	GND	8	VRA13	15	VRA6	22	VRD4	29	RC4M
	2	GND	9	VRA12	16	VRA5	23	VRD3	30	PD
	3	VRA18	10	VRA11	17	VRA4	24	VRD2	31	VDD
	4	VRA17	11	VRA10	18	VRA3	25	VRD1	32	VDD
	5	VRA16	12	VRA9	19	VRA2	26	VRD0		
	6	VRA15	13	VRA8	20	VRA1	27	VRRD		
	7	VRA14	14	VRA7	21	VRA0	28	VRRW		

JP5 pin description

PIN	I/O	DESCRIPTION
VRA0~VRA18	Output	External voice ROM address
VRD0~VRD4	I、O	External voice ROM data bus
VRRD	Output	External voice ROM reading signal. Normal high. When you read voice ROM, it will generate a low pulse a instruction long.
VRRW	Output	External voice ROM writing signal. Normal high. When you write voice ROM, it will generate a low pulse a instruction long.
PD	Input	Power down control of RC 4MHz oscillator When PD is high, the output pin RC_4M has 4MHz oscillating frequency output; when PD is low, RC oscillator is disabled. This pin is normal low.
RC_4M	Output	RC 4MHz oscillator output It is enabled/disable by PD input pin.