



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

ICE807 User manual

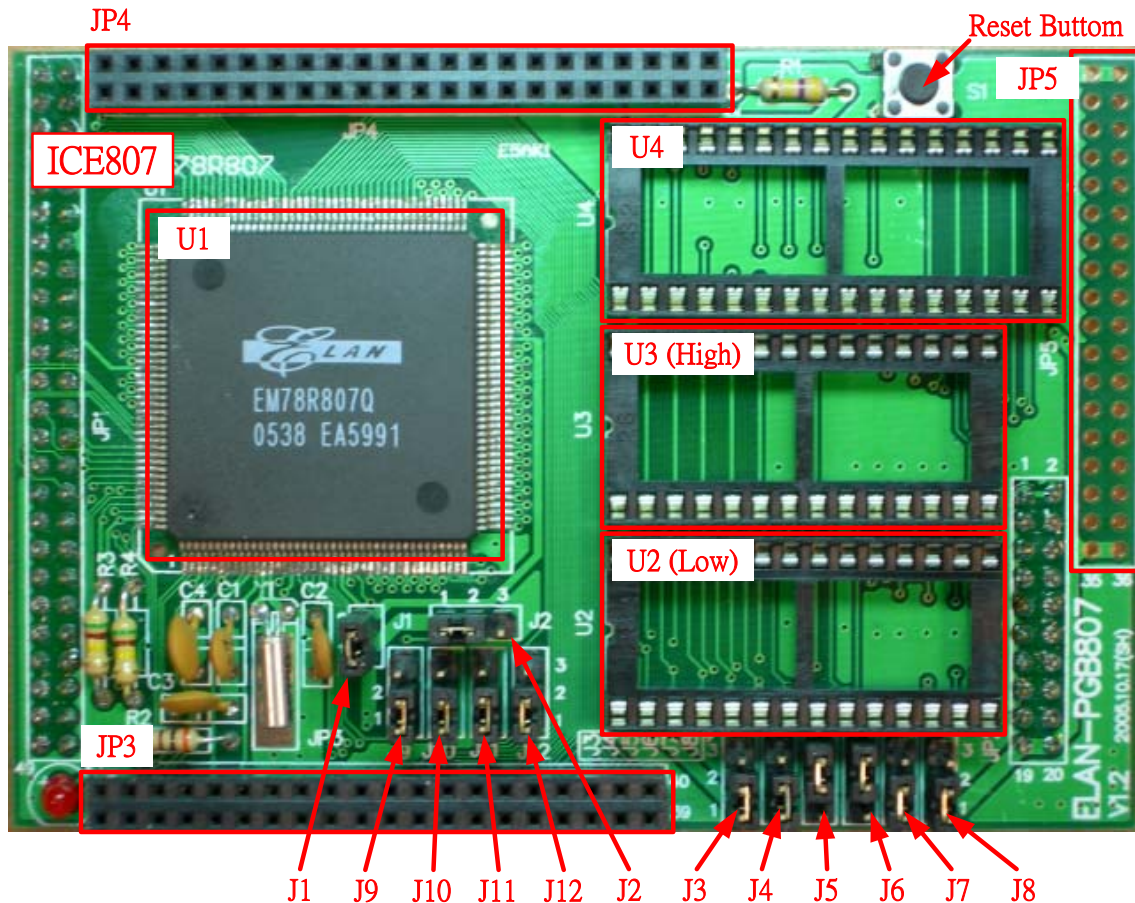
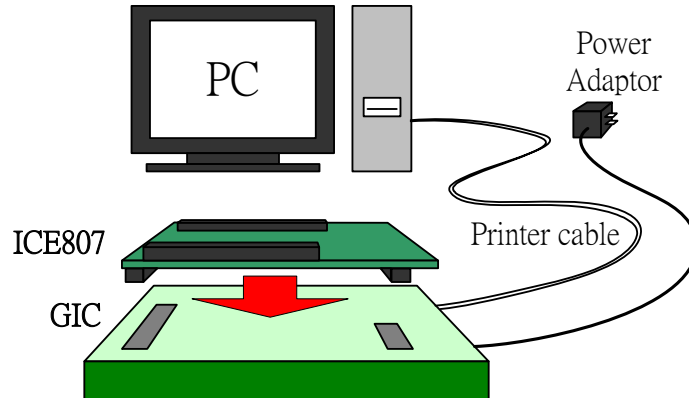
for
EM78807

Version 1.2

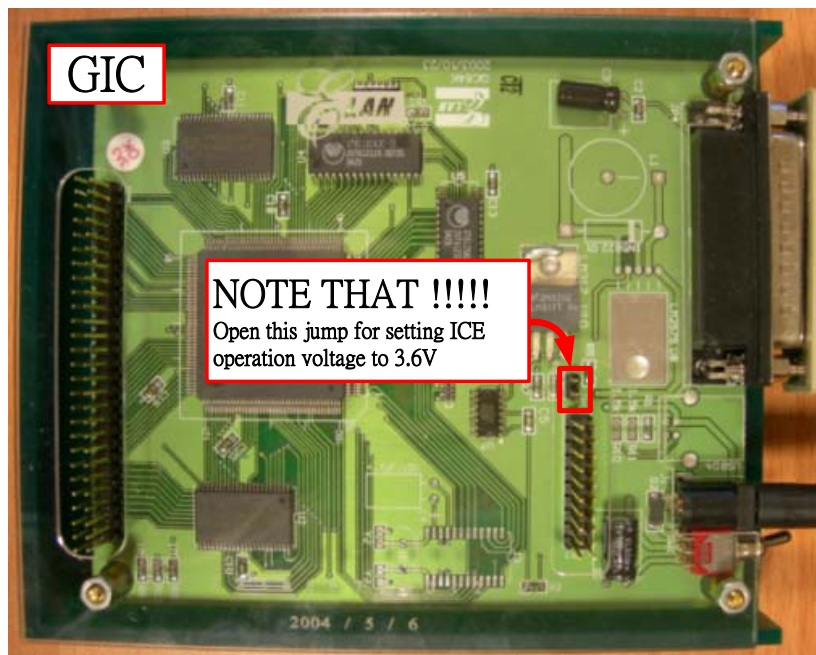
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I. Introduction

ELAN IN-CIRCUIT-EMULATOR is intended to provide the product development engineer a powerful microcontroller design tool suit. ICE807 is a simulation tool for developing EM78807.



- (1) Power on the ICE before executing the control software, or an error message due to lack of hardware will appear.
- (2) ICE807 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.
- (3) Power on switch located on the right side of GIC box. By switching left or right side to turn off or turn on the ICE power. **Please note that the operation voltage of ICE807 is 3.6V, it is necessary to open the jump on the top side of GIC for setting ICE operation voltage to 3.6V.**



- (4) 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. Be sure turn power off of ICE before plug in the adapter for avoiding over current which may be burn the chip off
- (5) On the top sight of ICE807, we have five connections, one EM78R807 ROM-less chip and some switches. The JP1 and the JP2 connect to the GIC of ICE for the code instruction accessing. The JP3 and JP4 is more important for ICE user, they are the EM78R807 control signals and I/O ports. ICE user can connect these connections to user's application board.
- (6) The U1 is EM78R807 ROM-less chip. User can use this ROM-less IC to develop EM78807. The U2 and U3 are 32K/64K words ROM for on board testing one day by piggyback. If user has developed application code by this ICE. User can use PIGGYBACK to connect to user's application board with 32K/64K bytes EPROM (27C256/27C512) to verify user's program.
- (7) The U4 can be placed a 512K bytes EPROM (27C040) for external voice ROM. JP5 can be connected a 512K bytes SRAM for external voice ROM
- (8) The D1 is a LED that indicate power is on or off
- (9) X1 is 32.768k crystal. C1 and C2 is capacitor 27p. C3 is PLL capacitor 0.01u.
- (10) ICE setup:
 - a、 Connect ICE807 to GIC
 - b、 U2 floating
 - c、 U3 floating
- (11) PIGGYBACK setup:
 - a、 Disconnect ICE807 from GIC
 - b、 U2 connect to a 32K/64K x8 EPROM (27C256/27C512) with *.lo file for mimicking program ROM (with low 8-bit data)
 - c、 U3 connect to a 32K/64K x8 EPROM (27C256/27C512) with *.hi file for mimicking program ROM (with high 5-bit data)
 - d、 VDD => 3.6V power supplyUser can use files *.hi and *.lo which generate by WICE software (Tools → Piggy back Hi Lo format) for masking EPROM. The *.hi and *.lo file are binary files and addressing from zero.
- (12) Run WICE software to enter ICE environment.

II. Jump Description

Symbol	Function	Description
JP1, JP2	ICE interface	Connect to ICE
JP3, JP4	Function pin in/out	Connect to user application board
JP5	External memory interface	Connect to external SRAM for simulating voice ROM
U1	EM78R807	EM78R8807 ROM-less IC
U2	27C256 / 27C512	32K/64K x 8 dip package memory. It mimicked to embedded low 8-bit program ROM
U3	27C256 / 27C512	32K/64K x 8 dip package memory. It mimicked to embedded high 5-bit program ROM
U4	27C040	8-bit data width dip package memory. It mimicked to voice ROM
J1	VDDI	Always short.
J2	ERS	<i>Please always set this jump to 1-2</i>
J3	/POVD option	Power on voltage detector reset. This option simulates the code option of EM78807 <i>1-2: disable POVD</i> <i>2-3: enable POVD</i>
J4	CDAR option	Current DA reference current control option. This option simulates the code option of EM78807 <i>1-2: set to 0 mA when IOC5 PAGE1 bit Bit 3 ~ Bit 0 (VOL3 ~ VOL0) = 0</i> <i>2-3: set to 0.3125 mA when IOC5 PAGE1 bit Bit 3 ~ Bit 0 (VOL3 ~ VOL0) = 0</i>
J5	-	<i>Please always set this jump to 2-3</i>
J6	-	<i>Please always set this jump to 2-3</i>
J7	-	<i>Please always set this jump to 1-2</i>
J8	-	<i>Please always set this jump to 1-2</i>
J9	-	<i>Please always set this jump to 1-2</i>
J10	-	<i>Please always set this jump to 1-2</i>
J11	-	<i>Please always set this jump to 1-2</i>
J12	-	<i>Please always set this jump to 1-2</i>

III. Pin Description

Please note that: the pin assignment of JP3, JP4 and JP5 are different to ICE807C

	Pin	Name	Pin	Name	Pin	Name	Pin	Name	Pin	Name
JP3	1	GND	11	NC	21	NC	31	SEG0		
	2	GND	12	NC	22	NC	32	SEG1		
	3	DEDD	13	NC	23	COM0	33	SEG2		
	4	CDAO1	14	NC	24	COM1	34	SEG3		
	5	NC	15	NC	25	COM2	35	SEG4		
	6	CDAO2	16	NC	26	COM3	36	SEG5		
	7	NC	17	NC	27	COM4 / P90	37	SEG6		
	8	NC	18	NC	28	COM5 / P91	38	SEG7		
	9	RING / P95	19	NC	29	COM6 / P92	39	SEG8		
	10	TIP / P94	20	NC	30	COM7 / P93	40	SEG9		
JP4	1	VDD	11	P72	21	SEG33 / P66	31	SEG23 / P57	41	SEG13 / P52
	2	VDD	12	P73	22	SEG32 / P65	32	SEG22 / P56	42	SEG12 / P51
	3	NC	13	P70	23	SEG31 / P64	33	SEG21 / P55	43	SEG11 / P50
	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	NC	17	SEG37 / P77	27	SEG27 / P63	37	SEG17 / P81		
	8	NC	18	SEG36 / P76	28	SEG26 / P62	38	SEG16 / P80		
	9	P74	19	SEG35 / P75	29	SEG25 / P61	39	SEG15 / P87		
	10	NC	20	SEG34 / P67	30	SEG24 / P60	40	SEG14 / P53		
JP5	1	GND	9	VRA12	17	VRA4	25	VRD5	33	RC4M
	2	GND	10	VRA11	18	VRA3	26	VRD4	34	PD
	3	VRA18	11	VRA10	19	VRA2	27	VRD3	35	VDD
	4	VRA17	12	VRA9	20	VRA1	28	VRD2	36	VDD
	5	VRA16	13	VRA8	21	VRA0	29	VRD1		
	6	VRA15	14	VRA7	22	NC	30	VRD0		
	7	VRA14	15	VRA6	23	VRD7	31	VRRD		
	8	VRA13	16	VRA5	24	VRD6	32	VRRW		

JP5 pin description:

PIN	I/O	Description
VRA0~VRA18	O	External voice ROM address
VRD0~VRD7	I/O	External voice ROM data bus
VRRD	O	External voice ROM reading signal. Normal high. When you read voice ROM, it will generate a low pulse a instruction long.
VRRW	O	External voice ROM writing signal. Normal high. When you write voice ROM, it will generate a low pulse a instruction long.
PD	I	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	O	RC 4MHz oscillator output. It is enabled/disable by PD input pin.