

## **ICEPIC2**



## MODULAR, REAL TIME EMULATOR SYSTEM FOR ALL PIC's



- RUNS UNDER WinNT, Win98/95, & Win3.X
- THE ONLY 3rd PARTY • EMULATOR OPERATING WITHIN MPLAB.
- SIMPLE TO USE TOOLBAR.
- UNLIMITED NUMBER OF BREAK POINTS.
- SINGLE, MULTIPLE & PROCEDURE STEP.
- **DISPLAY & MODIFY ANY REGISTER (PROGRAM OR** DATA).
- **DISPLAY & WORK IN** HEX/DEC/BIN.
- USER SELECTABLE • PROCESSOR SPEEDS (VIA OSCILLATOR MODULE).
- SAME INTERFACE FOR ALL • PICs
- FULL CONTEXT SENSITIVE HELP.

Image: Solution         Image: Solution         Image: Solution         Image: Solution           Control Solution         Control Solution         Control Solution         Control Solution           Contro Solut	@ PIC In-Circuit Em										_@X
Auxiliary     Solution     Description       0x00020     SamPL     Sink     Description       0x00020     SamPL     Sink     Description       0x00020     SamPL     Sink     Description       0x00020     SamPL     Sink     SamPL       0x00020     Description     SamPL     Description       0x00020     Description     SamPL     Description       0x00020     Description     SamPL     Description       0x00020     Description     SamPL     Description       0x00020     Description     Sam	COST DESIGNATION CO	al al m		and an and a second	and the second se	Fashia Brasky					
Underst         Sail PC         East PC         East PC         East PC         Cons         Desc tains           0x0025         the Construction         ccalls         the Construction         ccalls         the Construction			1 1001001				enale	Sectial For	iction B	uister	
Data Disc David Discussion       CCALL Town Stand. 2::       Data Disc David Discussion       Data Disc Discussion       Data Disc Discussion       Data Discussion <th>0x002d</th> <th></th> <th>Gote</th> <th>Down Source</th> <th>Open Listing</th> <th></th> <th></th> <th></th> <th>_</th> <th>1</th> <th></th>	0x002d		Gote	Down Source	Open Listing				_	1	
Generation         CHRITTERS         Control of the second	0+0.025	0x201E				-10x0025_0x201E /CAT			0x20	32	00100000
0x0020 Dx1046       CDSF SEC07 0x15 (ASOCTO) CALL TestStack_1): CALL TestStack_1]: CALL								NDO	0xFF		111111111
0x0000 Dx2003       CLLL TestStack_1/2         0x0000 Dx2003       CLLL Dx2003         0x0000 Dx2003       CLL Dx2003         0x0000 Dx2003       CLL Dx2003         0x0000 Dx2003       CLL Dx2003         0x0000 Dx2003       <	G 0x0027	Bx1283	TestStad	e CBCF S	SPN3.0x5>	0x0027 0x1283 (BCB		TOC	0xFF		111111111
0x0020       0x00200       0x0020	0x0028	Dx1986		CBSF S	SPOT 0x35 (ascin	0x0028 0x1586 (858	e o 🛙	CL			
→ 0.00122 Dis2005 sais       CCLLI noit prot prot       CCLLI noit prot prot       CCLLI noit prot prot         0.00122 Dis2005 cclli       CCLLI noit prot prot       CCLLI noit prot prot       CCLLI noit prot prot         0.00122 Dis2005 cclli       CCLLI noit prot prot       CCLLI noit prot prot       CCLLI noit prot prot         0.00122 Dis2005 cclli       CCLLI noit prot prot       CCLLI noit prot       CCLLI noit prot         0.00122 Dis2005 cclli       CCLLI noit prot       CCLLI noit prot       CCLLI noit prot         0.00122 Dis2005 cclli       CCLLI noit prot       CCLLI noit prot       CCLLI noit prot         0.00122 Dis2005 cclli       CCLLI noit prot       CCLLI noit prot       CCLLI noit prot         0.00122 Dis2005 cclli       CCLLI noit prot       CCLLI noit prot       CCLII noit prot         0.00122 Dis2005 cclli       CCLII noit prot       CCLII noit prot       CCLII noit prot         0.00122 Dis2005 cclli       CCLII noit prot prot       CCLII noit prot       CCLII noit prot prot         0.00125 Dis2005 cclli       CCLII noit prot prot prot prot prot prot prot pro	0x0029	Dx2023					11	TATUS	0x18	24	00011000
OutDid:         CHOULD High: 203         OutDid:         CHOULD High: 203           OutDid:         CALL mean Awys         OutDid:         CALL mean Awys           OutDid:         CALL mean Awys         CALL mean Awys         CALL mean Awys           OutDid:         CALL mean Awys         CALL mean Awys         CALL mean Awys         CALL mean Awys           OutDid:         CALL mean Awys           OutDid:         CALL mean Awys           OutDid:         CALL mean Awys           OutDid:         CALL mean Awys         CALL mean Awys         CALL mean Awys         CALL mean Awys         CALL mean A	0x0024	DED008		CRETUR	R>	0x002A 0x0008 <ret< td=""><td>TUR E</td><td></td><td>0x01</td><td></td><td>00000001</td></ret<>	TUR E		0x01		00000001
Outdobc husdia         CHONER MEER, 203         Control of the second sec	→ 0x002B	0x2005	sain	CALL	init_port_B>	0x002B 0x2005 cCAI	LL I	ORTA	0x00		00000000
Callor backing         Call areas         Callor backing         Approx         Approx         Callor backing           Callor backing         Avanceurption         Av	0x002C	Dx3014				0x002C 0x3014 <803					
0x10127       0x10120       0x10100       0x101000       0x101000         0x1010000       0x1010000       0x1010000       0x1010000       0x1010000         0x101200000       0x10100000       0x10100000       0x10100000       0x10100000         0x1012000000000000000000000000000000000	STATISTICS IN COLUMN STATISTICS	042031		30203	And and a second	0x002D 0x2009 <cai< td=""><td></td><td></td><td></td><td></td><td></td></cai<>					
Under Drive       WindelFLS1       // tast local ware       Diff of the set int;         Over Drive       Over Drive       Over Drive       Over Drive       Over Drive         Outdots       Diff Drive       Diff Drive       Over Drive       Over Drive       Over Drive         Outdots       Diff Drive				COMIL	scan_keys>	0x002E 0x2013 <cai< td=""><td></td><td></td><td></td><td></td><td></td></cai<>					
0x000000       // text local vars wnsigned int 0x0002 Dd 0x0022 Dd 0x002 Dd 0x0022 Dd 0x002 Dd 0x0000 Dd 0x0000 Dd 0x0000		000000 00 15	ANCHO   CT.						0×00		00000000
Outside Unit         Outside Unit<		0.81			All second land						
Card Color         Color <thcolor< th="">         Color         Color</thcolor<>	0x0031	DX: OU 4D				test int:					
OutD034 Dat         DetD         SEF         DetD5.7           OutD035 Dat	080035	Dati			( ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )						
OwedDats Dr. OwedDats Dr. O					FORTS.SCARZ =						
OutDid Did     OutDid Did     OutDid Did     OutDid Did       OutDid Did     OutDid Did     OutDid Did     OutDid Did     OutDid Did       OutDid Did     OutDid Did     OutDid Did     OutDid Did     OutDid Did       OutDid Did     OutDid Did     OutDid Did     OutDid Did     OutDid Did       OutDid Did     OutDid Did     OutDid Did     OutDid Did     OutDid Did       OutDid Did     OutDid Did     OutDid Did     OutDid Did     TratStack 1();       OutDid Did     OutDid Did     OutDid Did     OutDid Did     TratStack 1();       OutDid Did     OutDid Did     OutDid Did     OutDid Did     TratStack 1();;       OutDid Did     OutDid Did     OutDid Did     OutDid Did     TratStack 1();;       OutDid Did     OutDid Did     OutDid Did     OutDid Did     TratStack 1();;       OutDid Did     OutDid Did     OutDid Did     OutDid Did     TratStack 1();;       OutDid Did     OutDid Did     OutDid Did     OutDid Did     TratStack 1();;       OutDid Did     OutDid Did     OutDid Did     OutDid Did     TratStack 1();;       OutDid Did     OutDid Did     OutDid     OutDid Did     OutDid       OutDid Did     OutDid Did     OutDid     OutDid     OutDid       OutDid <td>0x0034</td> <td>Dix1 0028</td> <td>1586 B</td> <td></td> <td>Test Stark 1/1</td> <td></td> <td>191</td> <td>THOOM</td> <td>0,800</td> <td></td> <td>00000000</td>	0x0034	Dix1 0028	1586 B		Test Stark 1/1		191	THOOM	0,800		00000000
Outlobe Dec GadDab Dec GadDabb Dec GadDabb Dec GadDab Dec GadDabb Dec GadDab De	0x0035	DR OOZA	0008 8		1						
0x00000 Dz 0x00000 Dz 0x00000000 Dz 0x00000 Dz 0x0000 Dz 0x000 Dz 0x		Line.			· · · · · · · · · · · · · · · · · · ·						5
0x00000 DC 0x00000 DC 0x0000 DC 0x000											
Outload Date       Point aligned       Point aligned       Point aligned         Outload Date       // Point aligned       Point aligned       Point aligned       Point aligned         Outload Date       // Point aligned       Inste point       Point aligned       Point aligned       Point aligned         Outload Date       // Point aligned       // Point aligned       // Point aligned       Point	No. of the second s					unsigned int test int	6.2 C				
Outload Dig Dig Outload Dig Dig Outload Chik       Outload Chik       Outload Chik       Outload Chik       Outload Chik       Tratitative () Instepret 1         Outload Chik       Outload Chik       Outload Chik       // Whit till outload Chik       // Whit till outload Chik       // Unit till outload Chik         Outload Chik       Outload Chik       Outload Chik       // Whit till outload Chik       // Unit till outload Chik         Modig       Outload Chik       Doutload Chik       // Chick if key       // Initialize PUBTB         Modig       Outload Chik       Outload Chik       // Chick if key       // Initialize PUBTB         COPICON (Dust)       Doutload Chik       Outload Chik       // Yourn LED(c)       // Wait till outload Chik         PORTIA (Dust)       Outload Chik       Outload Chik       // Turn LED(c)       // Yourn LED(c)         PORTIA (Dust)       Outload Chik       Outload Chik       Outload Chik       Outload Chik         PORTIA (Dust)       Outload Chik       Outload Chik       Outload Chik       Outload Chik         PORTIA (Dust)       Outload Chik       Outload Chik       Outload Chik       Outload Chik         PORTIA (Dust)       Outload Chik       Outload Chik       Outload Chik       Outload Chik         PORTIA (Dust)       Outload Chik       Outloa					- 0						
Wards Variance       // Initialize /         Image: Second Sec						Trank Thursday, 2015 a					
dimensional state       Outcome and particular state         Winter Writehest       Outcome and particular state         Watter Writehest       Outcome and particular state         Post (Dust)       Outcome and particular				ATT DODD							
Working Virtures       Obc 2009       CALL Control       Obc 2009       CALL Control       Void main() (         Void Main()       // Chack if key       // Chack if key       Void main() (         Void Main()       // Instailing PORTB       // Instailing PORTB         Void Main()       // Instailing PORTB       // Instailing PORTB         Void Main()       // Instailing PORTB       // Instailing PORTB         CCPICON (Dul7)       processor (control Ports)       // Void Main()         PORTD (Dus8)       processor (control Ports)       // Turn LED(s)         PORTD (Dus9)       processor (control Ports)       // Turn LED(s)         PORTD (Dus9)       processor (control Ports)       // Turn LED(s)         PORTD (Dus9)       processor (control Ports)       // Turn LED(s) on         PORTD (Dus9)       processor (control Ports)       // Turn LED(s) on         PEC (Dus9)       processor (control Ports)       // Turn Red LED on         PEC (Dus9)       processor (control Ports)       PORTS)       PORTS)         PEC (Dus9)       processor (control Ports)       // Turn Red LED on       PORTS)         PEC (Dus9)       processor (control Ports)       // Turn Red LED on       PORTS)			2005 0	and boosh	this pore i						
Working Virtures       Obc 2009       CALL Control       Obc 2009       CALL Control       Void main() (         Void Main()       // Chack if key       // Chack if key       Void main() (         Void Main()       // Instailing PORTB       // Instailing PORTB         Void Main()       // Instailing PORTB       // Instailing PORTB         Void Main()       // Instailing PORTB       // Instailing PORTB         CCPICON (Dul7)       processor (control Ports)       // Void Main()         PORTD (Dus8)       processor (control Ports)       // Turn LED(s)         PORTD (Dus9)       processor (control Ports)       // Turn LED(s)         PORTD (Dus9)       processor (control Ports)       // Turn LED(s)         PORTD (Dus9)       processor (control Ports)       // Turn LED(s) on protocol Ports         PORT (Dus9)       processor (control Ports)       // Turn LED(s) on protocol Ports         PORT (Dus9)       processor (control Ports)       // Turn Red LED on protocol Ports         PS0 (Du01)       processor (control Ports)       PORTS       PORTS (control Ports)         PS0 (Du01)       processor (control Ports)       // Turn Red LED on protocol Ports)       PORTS         PS0 (Du01)       protocol Ports)       PORTS       PORTS)       PORTS)         PS0 (Du01)       <	4	_			// Wait till ca		mm				
Media         // Check if key         Void main() { // Instalize PORTS           sermey1 (0x45) bull (0x52) bull (0x52) corpl038 (0x617) PORTA (0x53) PORTA (0x53) PORTA (0x5) PORTA (0x5) PORTA (0x5) PORTA (0x5) PORTA (0x6) PORTA (0x7) PORTA (0x7) PORT	Watch Variables				delay(HSEC	// PIC16C54 ones here at RESET		· · · ·			
CCFTE (Dx5)     // Check if key Void main() f       marmayi (Dx45)     coll 2013 CALL 0017h       marmayi (Dx45)     coll 2013 CALL 0017h       marmayi (Dx45)     p       pCCFTCOM (Dx17)     p       CCFTCOM (Dx17)     p       PORTA (Dx5)     // Turn LED(s)       PORTA (Dx5)     p       PORTA (Dx5)     coll 10 (coll	Mod	1 002D	2009 0	ALL 0009h	and a second sec						
erresp(1(bx45))     ODEX 2013 CALL 0013h     scan keys(: // Mattering and the second s					// Check if key						
bit1 (DxSE) CCPICOM (Dx17) PORTC (Cx 2) PORTC (Cx 2) PORTC (Cx 2) PORTC (Dx 2) PORTC (Dx 2) PORTC (Dx 4) PORTC (DX 4) P	arrey1 (0x45)	0023	2013 0	ALL 0013h	scan keys()	// Initialize Pokto					
CONTA (ONL)         PPC *C* CONTLER VI.10m 17*7mr1394         PPC *C* CONTLER VI.10m 17*7mr1394           PORTA (ON2)         // Turn LED(e)         // Check if key messed avitable(en)           PORTB (DN9)         OUZE 1283         PCF TATUS, MPD           PORTB (DN9)         OUZE 1283         PCF TATUS, MPD           PE2 (DN9)         OUZE 1283         PCF TATUS, MPD           PE3 (DN9)         PC0N2         PC0N2           PE3 (DN9)         PC0N2         PC0N2	bit1 (Dx3E)				5332303633						
PORTA (Du6)         // Turn LED(s)         // Check if key pressed           PORTD (Du8)         painteh(rean)         // Turn LED(s)         // Turn LED(s)           PORTD (Du8)         painteh(rean)         // Turn LED(s)         // Turn LED(s)           PORTD (Du8)         painteh(rean)         // Turn LED(s)         // Turn LED(s)           PORTD (Du8)         painteh(rean)         // Turn LED(s)         // Turn LED(s)           PS0 (Du0)         painteh(rean)         // Turn Red LED on		Pare .	CO COMPLE	10 91 10s 17-7atra	1994	<pre>// Wait till capacitor charges</pre>	8				
200710 (Du8)         // Tubb LB0(4)         acces keys(1):           POBTE (Dx9)         outr 1283 BOY STATUS,870         case 1: // Tubb LB0(s) on Proceeding acces heys(1):           PS0 (Dx0)         0522 BMVP 25,97         case 1: // Tubb LB0(s) on Proceeding acces heys(1):           PS0 (Dx0)         0522 BMVP 25,97         case 1: // Tubb LB0(s) on Proceeding acces heys(1):           PS0 (Dx0)         05 (Dx0)         0522 BMVP 25,97         case 1: // Tubb LB0(s) on Proceeding acces heys(1):           PS0 (Dx0)         05 (Dx0)         05 (Dx0)         05 (Dx0)         05 (Dx0)           PS0 (Dx0)         05 (Dx0)         05 (Dx0)         05 (Dx0)         05 (Dx0)	PORTA (0x5)	1000									
200710 (Du8)         // Tubb LB0(4)         acces keys(1):           POBTE (Dx9)         outr 1283 BOY STATUS,870         case 1: // Tubb LB0(s) on Proceeding acces heys(1):           PS0 (Dx0)         0522 BMVP 25,97         case 1: // Tubb LB0(s) on Proceeding acces heys(1):           PS0 (Dx0)         0522 BMVP 25,97         case 1: // Tubb LB0(s) on Proceeding acces heys(1):           PS0 (Dx0)         05 (Dx0)         0522 BMVP 25,97         case 1: // Tubb LB0(s) on Proceeding acces heys(1):           PS0 (Dx0)         05 (Dx0)         05 (Dx0)         05 (Dx0)         05 (Dx0)           PS0 (Dx0)         05 (Dx0)         05 (Dx0)         05 (Dx0)         05 (Dx0)	FORTC (Da7)				192340122000	1/ Check if key pressed					
CONTE (Dar9) COLET LERA BOTY STATUE, DED SERVE 1: // Yuxh LED(s) on writch(scan) [ PS0 (Dar9) 0 cole BOTY 2:5,8 PS0 (Dar0) 0 cole BO	FORTD (DEB)					scan keys();					
ER2         (Dx/92)         (Dx020)         0e24         more failed	PORTE (0x9)	0027	1283 5	CF STATUS, DED		A Martin Barrison and					
FS0         Obsects         // Turn Red LED on	PR2 (0x92)					77 LUCH LEPIDI ON					
	PS0 (0x0)	0.					on				1
# Start Mail 9-VAnPopus // Bchedule+ ØPDC in Clevel Emotion 9-46-64	Execute In Real 7	lime			- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10		je je	OM2, 9600	Bx003	18	PIC16C71
	🛤 Start 🛶 Mail			WAnPopup	Schedule+	PIC In-Circal Emulator					9:45 AM

©1999 RF Solutions Ltd, ENGLAND. Tel +44 (0) 1273 898 000. Fax +44 (0) 1273 480661.

DS000044

V2.0

All Trademarks acknowledged and remain the property of the respective owners.

- FULL SPEED, REAL TIME ۲ EMULATION TO 33MHz.
- CAN EMULATE ALL PIC DEVICES (12CXX, 16C5X, 16CXX & 17CXX)
- SOURCE LEVEL DEBUG IN ASSEMBLER OR "C".
- 8K HARDWARE REAL TIME TRACE BUFFER.
- UNLIMITED HARDWARE "TRIGGER OUTPUTS" ON ANY ADDRESS OR ADDRES RANGES
- HARDWARE FILTER TO CONTROL MULTI CYCLE INSTRUCTION CAPTURE.
- MICROCHIP EMULATION CHIP INSIDE!
- 16K OF 16CXX EMULATION MEMORY







## **TECHNICAL SPECIFICATION** SPECIFICATION **FEATURES** COMMENTS **Emulation Speed** 32KHz to Real Time Emulation from 32KHz to the following speeds according to the Microchip Emulation chip on the Daughterboard (DB): to 20Mhz for DB's using PIC16C01/3 to 33Mhz for DB's using PIC17C03 (for 17CXX series) **Emulation Memory** 16K **Real Time Trace** Circular 8k memory Unlimited hardware trace points on any address/address ranges Unlimited Trigger outputs on any address/address ranges Hardware Trigger Output one 3 Available -IDE Yes Microchip MPLAB interface ICEPIC32 for Windows 95/NT ICEPIC16 for Windows 3.X Source Level Debug Yes MPASM Compatible (Microchip Assembler) "C" Source Level Debug Yes Compatible with all known currently available Compilers Freeze Mode Yes Peripherals run/stop when halted, software controlled **Break Points** Yes Effectively unlimited number of Break Points Stack Breaks Limited by Emulator Chip (available on all 16CXX, & 17CXX) Yes Limited by Emulator Chip (available on all 16CXX, & 17CXX) WDT Breaks Yes Stack View Direct Stack watch window available Yes **Custom WatchPoints** Yes Multibyte watch points can be set and modified Assembler Support MPASM Microchip Universal Assembler Support MS Windows NT, 98, 95, & 3.11. **User Interface** Windows Host Interface RS-232"C' Communications Speed up to 115Kbps Power Supply Supplied International power supply. (IEC Connector)

ICEPIC2 is supplied as a system, including emulator unit, power supply, RS232 cable, full supporting documentation and software (including Microchip's MPASM). Each personality daughter boards is interchangeable with ICEPIC and ICEPIC2 (as listed below) and are available separately. New daughterboards are continually in development so please check with our sales department for the latest product availability.

EMULATOR SYSTEM	PART No
ICEPIC2 SYSTEM	ICEPIC2-SYS

For further information and demo software -

RF Solutions Ltd, Unit 12, Cliffe Industrial Estate, Lewes, E Sussex. BN8 6JL Tel : +44 (0)1273 898 000 Fax : +44 (0)1273 480 661

## E-mail sales@rfsolutions.co.uk

Web Page : http://www.rfsolutions.co.uk

V2.0