



Softlog
Systems

Softlog Systems (2006) Ltd.

ICP Family Programmers: Programming Times

IMPORTANT NOTE: starting from Sep-2016 Softlog Systems manufactures ICP2(**G3**), ICP2-GANG(**G3**) and ICP2-COMBO(**G3**) programmers additionally to existing ICP2, ICP2-GANG and ICP2-COMBO. Due to nearly full compatibility all of them are referred below as ICP2, ICP2-GANG and ICP2-COMBO respectively. If difference is applied then they are referred as “G3 products” and “non-G3 products”

1 ICP2(**G3**) Family, Firmware 30.10 (Jul-2016)

###	Device	Time sec	Flash Memory bytes	EEPROM bytes	Operations	Conditions
1.	PIC16LF1933	4.1	8192	excluded	Erase + Program + Verify	PGC≈320KHz
		5.8	8192	256	Erase + Program + Verify	PGC≈320KHz
2.	PIC16LF18877	8.8	65536	256	Erase + Program + Verify	PGC=2.5MHz
3.	PIC18F85J10	4.6	32,760	-	Erase + Program + Verify	PGC=2.5MHz
4.	dsPIC33FJ128GP708	7.1	132,096	-	Erase + Load PE + Program + Verify	PGC=2.5MHz, Enhanced ICSP™
5.	PIC24EP512GU814	19.8	549,888	-	Erase + Load PE + Program + Verify	PGC=1.67MHz, Enhanced ICSP™
6.	PIC32MX795F512L	15.5	536,560	-	Erase + Load PE + Program + Verify	PGC≈10MHz, Enhanced ICSP™
7.	PIC32MZ2048EFH100	38.0	2,097,152	-	Erase + Load PE + Program + Verify	PGC≈10MHz, Enhanced ICSP™

2 ICP2 (non-G3) Family, Firmware 16.1 (Jan-2012)

###	Device	Time sec	Flash Memory bytes	EEPROM bytes	Operations	Conditions
1.	PIC10F200	0.95	510	-	Erase + Program + Verify	PGC≈320KHz
2.	PIC12F508	1.7	1022	-	Erase + Program + Verify	PGC≈320KHz
3.	PIC16F716	2.0	4096	-	Erase + Program + Verify	PGC≈320KHz
		5.2	8192	128	Erase + Program + Verify	PGC≈320KHz
4.	PIC16LF1933	3.4	8192	excluded	Erase + Program + Verify	PGC≈320KHz
5.	PIC16F1825	7.5	16,384	256	Erase + Program + Verify	PGC≈320KHz
6.	PIC18F4420	2.2	16,384	excluded	Erase + Program + Verify	PGC=2.5MHz
		3.2	16,384	256	Erase + Program + Verify	PGC=2.5MHz

ICP2 Family: Programming Times

###	Device	Time sec	Flash Memory bytes	EEPROM bytes	Operations	Conditions
7.	PIC18F85J10	5.2	32,760	-	Erase + Program + Verify	PGC=2.5MHz
8.	PIC18F87K90	9.6	131,072	excluded	Erase + Program + Verify	PGC=2.5MHz
		14.0	131,072	1,024	Erase + Program + Verify	PGC=2.5MHz
9.	dsPIC30F2010	2.7	12,288	excluded	Erase + Program + Verify	PGC=2.5MHz
		3.2	12,288	1,024	Erase + Program + Verify	PGC=2.5MHz
10.	PIC24F16KA102	4.4	16,896	excluded	Erase + Program + Verify	PGC=2.5MHz
		5.5	16,896	512	Erase + Program + Verify	PGC=2.5MHz
11.	dsPIC33EP128MC202	11.5	132,066	-	Erase + Load PE + Program + Verify	PGC=1.67MHz, Enhanced ICSP™, DLL 4.16.1a, firmware 20.3
12.	dsPIC33FJ128GP708	7.9	132,096	-	Erase + Load PE + Program + Verify	PGC=2.5MHz, Enhanced ICSP™
13.	PIC24FJ256GA110	12.8	262,644	-	Erase + Load PE + Program + Verify	PGC=2.5MHz, Enhanced ICSP™
14.	PIC24EP512GU814	29.9	549,888	-	Erase + Load PE + Program + Verify	PGC=1.67MHz, Enhanced ICSP™, DLL 4.16.1a, firmware 20.3
15.	PIC32MX320F064H	6.6	77,808	-	Erase + Load PE + Program + Verify	PGC≈1MHz, Enhanced ICSP™
16.	PIC32MX795F512L	39.9	536,560	-	Erase + Load PE + Program + Verify	PGC≈1MHz, Enhanced ICSP™
17.	24LC64	2.5	8,192	-	Program + Verify	I2C 400KHz
18.	24LC1026	19.3	131,072	-	Program + Verify	I2C 400KHz

Notes:

- VddOff=20ms (defines a delay between power OFF and power ON)
- Vdd-to-Vpp=4ms
- Programming times are measured on ICP2/ICP2(G3) programmer in the following conditions (if not specified):
 - standalone mode
 - hardware activation of programming (GO button)
- All results are also applicable to ICP2-GANG/ICP2-GANG(G3), ICP2-COMBO/ICP2-COMBO(G3), ICP2(HC) and ICP2-Portable
- Programming times depend on implemented programming algorithms. Softlog Systems reserves the right to change programming algorithms at any time without notice