



## Differences between ICP2(G3) and ICP2 Families

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 (mechanical and electrical) all of them are usually referred as ICP2, ICP2-GANG and ICP2-COMBO respectively. If difference is applied then they are referred as “G3 products” and “non-G3 products”.

The comparison below is **not** applied to ICP2-Portable and ICP2(HC)

###	Parameter	ICP2 Family (non-G3 products)	New - ICP2(G3) Family (G3 products)
	<b>General</b>		
1.	Start of manufacturing	ICP2, ICP2-GANG: year 2006 ICP2-COMBO: year 2014	Sep-2016
2.	Expected end-of-life manufacturing (preliminary)	End 2018	New product
3.	PIC17C support	Yes	No
4.	Pin 8 function on connector D-type 15 (pin B3/B7/B11/B15 on ICP2-COMBO)	T_VTEST (PIC17C dedicated programming output)	T_DIO_2 (general purpose programming I/O)
5.	External flash size (for environment storage)	ICP2/ICP2-GANG: 1 or 4MByte (depends on manufacturing period). ICP2-COMBO: 4MByte	32MByte
	<b>New Families and Protocols</b>		
6.	PIC32MZ and PIC32MM support	No	Yes
7.	Support for CryptoAuthentication™ devices	No	Yes
8.	Support for <b>UPDI</b> , SWD, PDI, JTAG, SPI, UART, QSPI and other popular protocols	No	Yes
	<b>Programming Time</b>		
9.	Programming time for devices bigger than 128KBytes	Standard	Faster
10.	PIC32MX clock frequency	Software (about 1MHz)	Software (about 1MHz), 2.5MHz and 10MHz
11.	Example 1: dsPIC33FJ128GP708 (≈132K, @2.5MHz)	7.9 sec	7.1 sec
12.	Example 2: PIC24EP512GU814 (≈550K, @1.67MHz)	29.9 sec	19.8 sec
13.	Example 3: PIC32MX795F512L (≈536K)	39.9 sec @1MHz	15.5 sec @10MHz
14.	Environment transfer time (≈550K), one-time operation	27 sec	13 sec
	<b>Electrical Parameters</b>		
15.	VDD range	2.0...5.5V	1.8...5.5V
16.	VPP range	2.0...13.5V	1.8...13.5V
17.	I/O range (T_CLOCK, T_MOSI, T_MISO and T_DIO_x)	2.0...5.5V	1.8...5.5V
18.	VPP current limit	25...50mA (depends on VPP voltage)	30mA (contact Softlog Systems if 100mA is required)
19.	I/O output impedance (T_CLOCK, T_MOSI, T_MISO and T_DIO_x)	100-175Ω (depends on manufacturing period)	100Ω
20.	Programmable pull-up and pull-down resistors 2.2K on T_CLOCK, T_MOSI and T_MISO pins	No	Yes
21.	Communication speed via USB (firmware)	460,800bps	921,600bps
22.	VDD rise and fall time	Small differences, should not affect programming – see particular product specifications	
23.	VPP rise and fall time	Small differences, should not affect programming – see particular product specifications	