

Clustering SuperPro Programmers: Why do you need clustering programmers?

This article contains common questions and related answers considering the cluster programming is still an unknown solution for most of us. Clustering Universal Programmers term was first invented up by Xeltek in 2004. **First and foremost, what does “clustering programmers” mean?**

Simply, it means gathering bunch of single socket programming units together, and creating your own gang programming environment.

How does the SuperPro Cluster programming stack up against conventional fixed socket gang programmers?

Many reasons...

1) Often gang programmers do not provide flexibility and economy due to fixed number (4, 8, 16) of sockets. And the ones on the market may not be the best match for your budget! However, a single socket programmer is not enough for planned output. The best solution for such conflict is clustering SuperPro Programmers. Start with 2-3 units, and expand your gang by adding new units as it needed in future.

2) Other limitation of the traditional gang programming is that all sockets share one central CPU(or MCU) and there is only one data buffer to program chips with. This architecture leaves two problems;

a. The first issue is that all chips can be programmed simultaneously but have to be read or verified one at a time. In asynchronous programming, all operations are done independent of other chips, which increases programming efficiency.

b. The 2nd and more important issue is that some of the newer chips require calibration information and serial numbers, which are different from chip to chip. Traditional gang programmers have only one data buffer so they cannot accommodate programming each chip with different data.

Conventional gang programmers come in 4, 8, or 16 socket heads. But, there are several questions.

What if my volume is not enough to justify purchasing a 4socket gang programmer at high cost?

The solution is in the Cluster programming. Here, you can start with 2 or 3 units and add more later as needed.

What if my volume requirement has increased beyond my 4 or 8socket programmer purchased a year ago?

In the SuperPro Cluster set up, just add more units as needed. No need to buy a whole new

set of 4 or 8gang programmer at high cost.

What if my volume has reduced and no longer need the 8gang programmer purchased a year ago?

In the SuperPro Cluster set up, just remove the unit(s) not needed and utilize elsewhere needed. You no longer have to be stuck with the expensive 8gang programmer not needed.

Any Programmer can be clustered?

Absolutely, NOT! In order to cluster programmers, use of stand-alone programmers is necessary.

What is Stand-alone mode?

Stand-alone is a technology first being introduced to the market in August 2000 by Xeltek SuperPro 2000. Stand-alone means, programmer can be used without being connected to a PC. Setup is made through the built-in keyboard/LCD panel. Multiple project files may be stored in the removable memory card.

Cluster Programming is better than Multiprogramming?

It is comparing apple and orange. But we would like to compare SuperPro 501S 4Cluster vs. Beehive 204 for your understanding. When the production requirement increases beyond 4socket heads, incremental addition from 4 to 5 to 6 to 7... sockets heads is possible. For a small increase in production, only one SP501S unit needs to be purchased. In the case of Beehive204, a full set of the same unit purchase is necessary, causing high expense and low efficiency. Or, if the production requirement is decreased in the Superpro501S Cluster operation, one or more SP501S may be removed and utilized on other project. This is not possible in the Beehive204 operation. When a socket head becomes defective in the Superpro501S Cluster, only the defective module is removed and sent for repair. In the Beehive204, entire unit must be sent back for repair, causing production operation stoppage.

What else do Xeltek Cluster Programmers offer?

- *Asynchronous fast programming is ensured by each module being independent from one another.*
- *The programming starts automatically when a chip is inserted. Anyone can operate the units.*
- *Operator interaction is minimized. Therefore, any operator induced error is also minimized.*
- *An operator can easily operate 10 or more units at a time.*
- *Security of the data has been proven. Remove the CF card for safekeeping at end of each day.*
- *Grow with production demand. Additional programming units can be added easily as the volume grows.*
- *When one unit goes bad, only send that faulty unit for repair, and continue the operation with the rest. In a case of 8 socket gang programmer, the entire unit has to be sent back for repair effectively shutting down the entire operation.*

- For most devices, 5 sets of clustered programmers can easily provide same throughput of an 8 gang synchronous programmer.

Model	SuperPro 501S 4C w/ CF cards	Multimax 8g+	Labtool 848XP	Beehive 204	Chiprog G4
Device Support	32654	8000	around 8K *	58700	35681 *
Programming sequence	Concurrent	Concurrent	Synchronous	Concurrent	Concurrent
Programmer architecture	Standalone (no PC)	Standalone	PC required	PC required	PC required
Socket support	Flexible, 1-n (16) sockets	Fixed, 8 sockets	Fixed, 8 sockets	Fixed, 4 sockets	Fixed, 4 sockets
Pin support	48pin each	48pin each	48pin each	48pin each	48pin each
Programspeed (prog+verify)	64mbit nor 11.3 sec	64mbit nor 85 sec	8mb flash in 75 sec	64mbit nor 9sec	64mbit nor 50sec
		2.5mbit/s		480 mbit/s	
Support O/S	all o/s	only xp and win 2000	no win 7 support	all o/s	all o/s
Supported Devices	universal	universal but limited	support eprom, eeprom and flash only	universal	universal but limited
Compliances	CE and RoHS compliant	CE compliant		CE compliant	RoHS Compliant
Ease of maintenance	Yes	No	No	No	No
Operator induced error	Minimal	High	High	High	High
Additional cost factor	None	None	PC + trained operator	PC + trained operator	PC + trained operator
Data security	High	Low / internal memory	Low	Low	Low
Ease of expansion/reduction	Flexible, incremental	Fixed, High	Fixed, High	Fixed, High	Fixed, High
Low Voltage support	1.2V	1.8V	2V	1.8V	1.8V
Total Weight	6 lbs	19 lbs	19 lbs	8 lbs	
Price	4 unit bundle/ \$3980	\$5,950	\$2,995	\$3,650	\$2,450

If you have further questions regarding clustering SuperPro programmers, please contact us immediately at info@xeltek.com