PLD & Programmer Info

PLD info

There are many types of PLD usable on these cards.
And there is a Gal table for each card.
Where the type tested with the Jedec file used and the programming device to be used.

In addition to the types stated in the tables, the speed -7 and -10 type has also been tested for some.
These types also work, but are not in the tables because of their power consumption, GALS's 115mA - 140mA.

The power consumption of an PLD depends on the species: GAL, ATF, PALCE, and the chip option.
But also depends on the chip speed and the signal frequency to be processed.

The manufacturers use the following options to indicate the power consumption
"H" for half and "Q" for quarter.
But sometimes other options such as "L" for low and "Z" for Zero.
Combinations also occur such as "QZ" and "QL".

PLD Current Table.

Type	Typ. Current		Current ~5Mhz ±10%
GAL16V8A-15LP	75mA	< 15Mhz	70mA
GAL16V8B-15LP	75mA	Typ. Currents	70mA
GAL16V8D-15LP	75mA	from tables	70mA
GAL16V8D-25LP	75mA	5Mhz >	70mA
GAL22V10B-15LP	90mA	calculated	88mA
GAL22V10D-15LP	90mA	Normalized	88mA
GAL22V10D-25LP	75mA	table factor	73mA
ATF16V8B-15PC	55mA	< 20Mhz	50mA
ATF16V8B-25PC	55mA	extracted	50mA
ATF16V8BQL-15PC	20mA	from table	10mA
ATF22V10B-15PC	65mA	ICC vs. Frequency	60mA
ATF22V10C-15PC	70mA	5Mhz >	66mA
ATF22V10CQZ-20PC	40mA	output pins no load	18mA
PALCE16V8-15PC	75mA		73mA
PALCE16V8-25PC	65mA		60mA
PALCE16V8H-15PC/4	55mA	< 20Mhz	52mA
PALCE16V8H-25PC	55mA	extracted	52mA
PALCE16V8Q-15PC/4	35mA	from table	55mA
PALCE16V8Z-15	30mA	ICC vs. Frequency	15mA
PALCE16V8Z-25	25mA	5Mhz >	10mA
PALCE22V10H-15PC/4	60mA	output pins no load	50mA
PALCE22V10H-25PC/4	55mA		45mA
PALCE22V10Q-25PC	40mA		30mA

The ATF and PALCE chips are using less power then the GAL -chips.
For a cool running system you can go for the ATF16V8BQL-15PC and the ATF22C10CQZ-20PC chips.

For the PALCE chips avoid the PALCE22V10H-25 and PALCE22V10Q-25,
unless you have a good programming device.
The PALCE16V8H-25 and the PALCE22V10 -15 speed are no problem.

Cool system

CPU09CMI + CPU09IDE + SD35VCO + 32GB CF Card, power consumption on 16MHz:
All chips GAL16V8D-15LP and GAL22V10D-15LP and 74LS461 ~595 mA.
All chips ATF16V8BQL-15PC and ATF22C10CQZ-20PC ~296 mA.
That is a 50% power reduction!
For a fully Uniflex system this can give a >1Amp less power consumption.

Programmer test

GALEP-4

Processes all PLD chips without problems.
If the GALEP-4 gives a programming error, the PLD is certainly defective.

Xgpro TL866II Plus

Has the PALCE chips, not in the device list.
Sometimes an PLD gives an error on this programmer,
but it can be programmed on the Galep-4 and even on the TOP2013.
All vector test files are also available for this programmer,
do these tests to make sure that the PLD works correctly!

TOP2013

Has the PALCE chips in the device list.
But the PALCE22V10H-25 and the PALCE22V10G-25 cannot be selected.
The -15 types can be programmed.
Look at the TOP programmer in the Position tab where the PALCE16V8 can be placed.

TOP3000

This type has been updated via TOP3001 and TOP3002 to TOP3002E.

Model TOP3002E

However, the TOP3002 series no longer works with the old version 8.xx software
but needs version 9.21, a version that Windows-XP does not support.
Has the PALCE chips in the device list.
But the PALCE22V10H-25 and the PALCE22V10G-25 'Write' let the programmer crash!
Fortunately, the TOP3002 and the PALCE chips remain intact.
Look at the TOP programmer in the Position tab where the PALCE16V8 can be placed.

TOP3100

Has the PALCE chips in the device list.
But the PALCE22V10H-25 and the PALCE22V10G-25 'Read/Erase/Write' not work!

Programmer info

Type:	*Brand:*	*Info:*		*Rating:*	*Netto Price Range:*
Galep-4,	Conitec,	needs a real parallel port,	excellent device	10	€ 300 - 400
Galep-5,	Conitec,	works on USB port,	excellent device	10	€ 400 - 600
TL866II Plus,	XGecu,	works on USB port,	good device	9	€ 35 - 45
TOP2013,	*China,	works on USB port,	usable device	8	€ 70 - 85
TOP3002,	*China,	works on USB port,	not worth the money	4	€ 100 - 165
TOP3100,	*China,	works on USB port,	not worth the money	5	€ 180 - 280

* Seeit and Chihui.

Remarks:

The TOP programming devices are not so good. There are strange things in the software.
None of the TOP units tested is able to program an "Intel D27256" eprom,
they all stop programing at address 0253.
The GALEP-4 and even the 'Xgpro TL866II Plus' do the D27256 without a problem.
The TOP units will program this chip if you select as i27C256-12.7V, the device list is a mess.
The TOP programmers have the 74xx461 in the 'Test IC' list.?, it's useless, all 74LS461 chip are bad!

The vectort tests on the "XGPRO TL866II plus" can be used for all the programmed PLD chips.
Even for the PLD chips that the XGPRO itself cannot program.

CdeJ