Ha'Vangarda 2016

Commodore Plus/4 / C16 section

Variations of C=264 series

50$ version is the C116 + C16:
(rubber keys, very small, 16K
 no user port, etc)
C16: black C64 housing

299$ version became the Plus/4:

 (normal keys, User port, 64K
 3+1 SW (almost useless))

For 299$ it should look like:
(Plus/4+Num KB + Voice IC)

Cancelled :-(

Commodore 264 series

Some facts:

- Released in 1984, planned to be a 49$ cheap ZX Spectrum competitor, but became 299$ "small office PC" due to bad Management --> no sales

- 7501 CPU at variable FRQ, 0,9 - 2.2 Mhz (at border), 64K RAM + 64K ROM with 3+1SW

- Fully integrated Audio/Video/Keyboard IC (TED)

- 121 colors, all available any time on screen, attribute style. No spites :-(

- 320x200 Hires or 160x200 Multi (same as C64)

- Two Square wave channels :-(

- Rich BASIC V3.5 (GFX, SFX), Assembly monitor

- One of the **fastest 8bit machine** ever made :-)

+4 Speed Demon! Pi calculation table (by Litwr)

Computer	OS	Digit counted in (s) 3000	Emulator used and its quality	%	Factor X
Amiga 1200	WB	34	FS-UAE 2.6.2 (high)	**2,62%**	38,1
IBM PC Clone 386DX 12.5MHz	DOS	36	real iron	**2,78%**	36,0
IBM PC Clone 386DX 12.5MHz	DOS	37	real iron	**2,85%**	35,0
Amiga 1200	WB	39	FS-UAE 2.6.2 (high)	**3,01%**	33,2
IBM PC 5170 AT 8MHz VGA	DOS	63	real iron, thanks to modem7	**4,86%**	20,6
IBM PC Clone 386DX 6.25MHz	DOS	72	real iron	**5,56%**	18,0
IBM PC 5162 XT/286 VGA	DOS	74	real iron, thanks to per	**5,71%**	17,5
ARM Evaluation system	ROM OS	85	real iron, thanks to BigEd	**6,56%**	15,2
Commodore SuperCPU-64/PAL	ROM Basic	87	VICE Version 2.4.22 (high)	**6,71%**	14,9
IBM PC 5170 AT 6MHz CGA	DOS	88	real iron, thanks to modem7	**6,79%**	14,7
Commodore SuperCPU-64/NTSC	ROM Basic	90	VICE Version 2.4.22 (high)	**6,94%**	14,4
microPDP-11/83	RT11SB	115	real iron, thanks to form	**8,87%**	11,3
Commodore SuperCPU-64/PAL	ROM Basic	134	VICE Version 2.4.22 (high)	**10,34%**	9,7
Commodore SuperCPU-64/NTSC	ROM Basic	140	VICE Version 2.4.22 (high)	**10,80%**	9,3
Amiga 500	WB	171	FS-UAE 2.6.2 (high)	**13,19%**	7,6
MSX turbo R	ROM Basic	199	openmsx 0.10.1 (high)	**15,35%**	6,5
microPDP-11/83	RT11SB	212	real iron, thanks to form	**16,36%**	6,1
IBM PC 5150 MDA (8088 4.77MHz)	DOS	416	**real iron, thanks to modem7**	**32,10%**	3,1
Tiki-100 (8088 board @ 4.77MHz)	DOS	481	real iron, thanks to per	**37,11%**	2,7
BBC Micro (TUBE 6502 @4MHz)	ROM Basic	695	B-EM v2.2 (high) & real iron, thanks to BigEd and Kieran	**53,63%**	1,9
BBC Micro (TUBE Acorn z80 @6MHz)	ROM Z80 Basic	871	real iron, thanks to BigEd	**67,21%**	1,5
BBC Micro (TUBE 6502 @3MHz)	ROM Basic	958	BeebEM v4.14 (high) & real iron, thanks to BigEd and hoglet	**73,92%**	1,4
Commodore +4/PAL (7501 @0.9-2.2MHz)	**ROM Basic**	**1296**	**real iron**	**100,00%**	1,0
BBC Micro (6502 @ 2MHz)	ROM Basic	1419	B-EM v2.2 (high) & **real iron**, thanks to BigEd and hoglet	**109,49%**	0,9
Commodore 128/NTSC	ROM Basic	1433	VICE Version 2.4.22 (high)	**110,57%**	0,9
Commodore 128/PAL (6502 @2.0MHz)	ROM Basic	1492	VICE Version 2.4.22 (high)	**115,12%**	0,9
Amstrad CPC6128 (Z80 @4 MHz)	ROM Basic	1564	ep128emu version 2.0.9.1 (very high)	**120,68%**	0,8
Tiki-100 (Z80 @ 4MHz)	KP/M	1576	real iron, thanks to per & estimation	**121,60%**	0,8
Commodore +4/NTSC	ROM Basic	1602	plus4emu version 1.2.9.2 (very high)	**123,61%**	0,8
Amstrad CPC6128	CP/M 2.2	1640	ep128emu version 2.0.9.1 (very high)	**126,54%**	0,8
Amstrad CPC6128	CP/M 3	1707	ep128emu version 2.0.9.1 (very high)	**131,71%**	0,8
Amstrad PCW8256	CP/M 3	1721	CP/M Box 1.7.0 ß (very high) & real iron, thanks to habi	**132,79%**	0,8
MSX 1, 2, 2+ (Z80 @3.58 MHz)	ROM Basic	1851	openmsx 0.10.1 (very high)	**142,82%**	0,7
MSX 1, 2, 2+ (Z80 @3.58 MHz)	MSX DOS	1886	openmsx 0.10.1 (very high)	**145,52%**	0,7
Commodore 64/NTSC	ROM Basic	2714	VICE Version 2.4.22 (high)	**209,41%**	0,5
Commodore 64/PAL	ROM Basic	2819	VICE Version 2.4.22 (high)	**217,52%**	0,5
Commodore 128/NTSC z80	CP/M 3	3213	VICE Version 2.4.22 (high)	**247,92%**	0,4
Commodore 128/PAL z80	CP/M 3	3336	VICE Version 2.4.22 (high)	**257,41%**	0,4

Plus/4 color palette
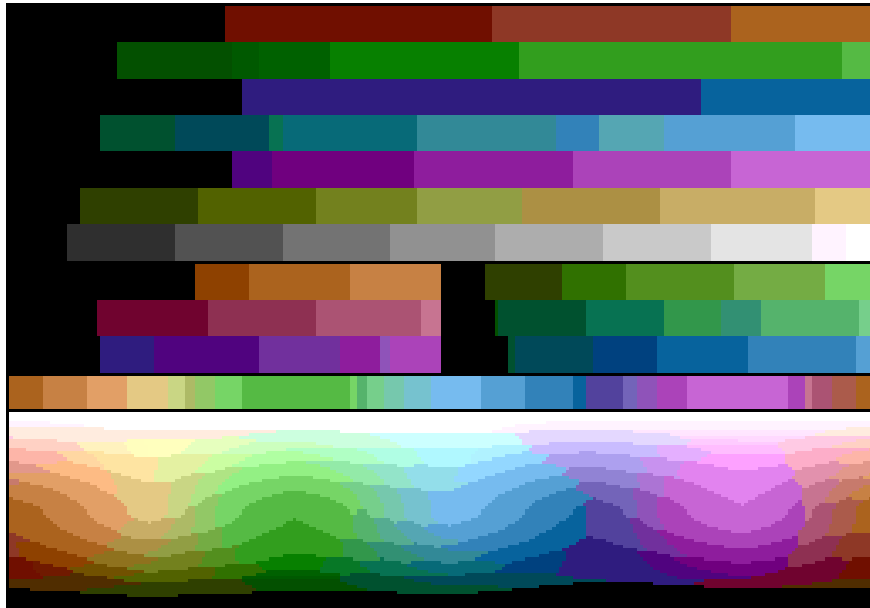
Piesiu/Agenda/Mystic Bytes

Mielnik, Tomasz (carrion)

By Jeni, Laszló Attila (Jedi)

+4 Scene activities, technical breakthroughs PART1

- 1984:   Release of Commodore +4

- '84-87: just official games, and cracks, small intros

- '88-89: very first SID FRQ real time converter,
               first really oldshool demos

- 90-92: Lot of converted games from C64, Spectrum
  Strong scene activity, but focus on missing gamebase
   Demos: GFX from C64, Music frrom C64, Font from C64

- '92:   Solder's real SID HW card for Plussy!   Music! :-)

- '93-99: decreasing scene activity, almost die out. #demos
   93: 31;   94:21; 95:19, 96:10; 97:5;   98:2;   99:0 (!!!)

+4 Scene activities, technical breakthroughs PART2

- 2000: new SID HW card, SID Digi conv SW developped

- 2002- www.plus4world.com started by Luca+Csabo
  It is new level for Plussiers scene
  YAPE emulator by Gaia release, very faithful emulation

- 2003-2006 New techniques (FLI, DYCP, HSP, etc) seen on
  C64 worked out and documented on plus4world

- 2007 Plus4Emu by I.Varga, fantastic emulation + a fantastic
  FLI/HFLI,IHFLI gfx converter GUI, 6 dithering method,
  compression, etc

- 2010- Brand new games (AIT), conversions (Lode Runner,
  Asteroids, SabreWulf), and tools/crosstools

- 2014-: some well known graphicians(carrion) and musicians
  (YERZMYEY) join the fun to do some experiments on Plus/4

- 2015/2016: very first TED native professional music editors!

THE END

THANKS
FOR
WATCHING!!!!

THE END