Comparison table for Basys 2 and Basys 3

	Basys 3	Basys 2
FPGA Family	Artix (XC7A35T)	Spartan (XC3S100E)
FPGA resources	33,280 logic cells 90 DSP slices 1800Kb BRAM	2,160 logic cells 0 DSP (4 multipliers) 72Kb BRAM
Works with Vivado	✔	✘
On-board USB programming	✔	✔
USB powered	✔	✔
On-board configuration ROM	✔	✔
USB-HID port for mouse and keyboard	✔	✘
PS-2 port	✘	✔
USB thumb drive for FPGA config and user data	✔	✘
USB COM port with Windows and Linux drivers	✔	✘
7-segment display	✔	✔
VGA port	16-bit, hi-res	8-bit, med. res
Slide switches	16	8
LEDs	16	8
Push buttons	6	4
Pmods ports	Four double	Four single
Analog inputs	4	0
Power switch and power good LED	✔	✘
FPGA reset button and DONE LED	✔	✘

BASYS 2 board:

JA JB JC JD
(B2) (A3) (J3) (J5) GND VCC
(C6) (B6) (C5) (B7) GND VCC
(A9) (B9) (A10) (C9) GND VCC
(C12) (M13) (D12) (C13) GND VCC
JP3 MODE PC ROM

PS2C(B1)
PS2D(C3)
50MHz
100MHz 25MHz
MCLK (B8)
RCCLK (C8)

IC4
C16
C17
C15
R0 (C14)
B1(H13) R2(F13)
B2(J13) G0(F14)
HS(J14) G1(G13)
VS(K13) G2(G14)
UCLK (G6)

QC.OK 1

BASYS 2
IC3

DIGILENT®
BEYOND THEORY

BATTERY STATUS LED
5V DC ONLY
ON SW8
OFF
POWER

LD7 LD6 LD5 LD4 LD3 LD2 LD1 LD0
(G1) (P4) (N4) (N5) (P6) (P7) (M11) (M5)

HIGH
LOW

SW7-N3 SW6-E2 SW5-F3 SW4-G3 SW3-B4 SW2-K3 SW1-L3 SW0-P11

BTN3-A7 BTN2-M4 BTN1-C11 BTN0-G12

DISP1
CA(L14)
CB(H12)
CC(N14)
CD(P12)
CE(P13)
CF(L13)
CG(M12)
DP(N13)
AN3(F12) AN2(J12) AN1(M13) AN0(K14)

BASYS 3 board:

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LINEAR TECHNOLOGY

XILINX
UNIVERSITY PROGRAM

BASYS 3

ARTIX-7

JA
JXADC
3V3 GND
3V3 GND
DISP1

3V3 GND
3V3 GND

POWER
OFF ON
EXT GND
5V Only

USB
UART
JTAG
USB

DONE
PROG

BTNU (T18)
BTNL (W19) BTNC (U18) BTNR (T17)
BTND (U17)

CLK100MHz (W5)

LD15 LD14 LD13 LD12 LD11 LD10 LD9 LD8 LD7 LD6 LD5 LD4 LD3 LD2 LD1 LD0
(L1) (P1) (N3) (P3) (U3) (W3) (V3) (V13)(V14)(U14)(U15)(W18)(V19)(U19)(E19)(U16)

SW15 SW14 SW13 SW12 SW11 SW10 SW9 SW8 SW7 SW6 SW5 SW4 SW3 SW2 SW1 SW0
(R2) (T1) (U1) (W2) (R3) (T2) (T3) (V2) (W13)(W14)(V15)(W15)(W17)(W16)(V16)(V17)