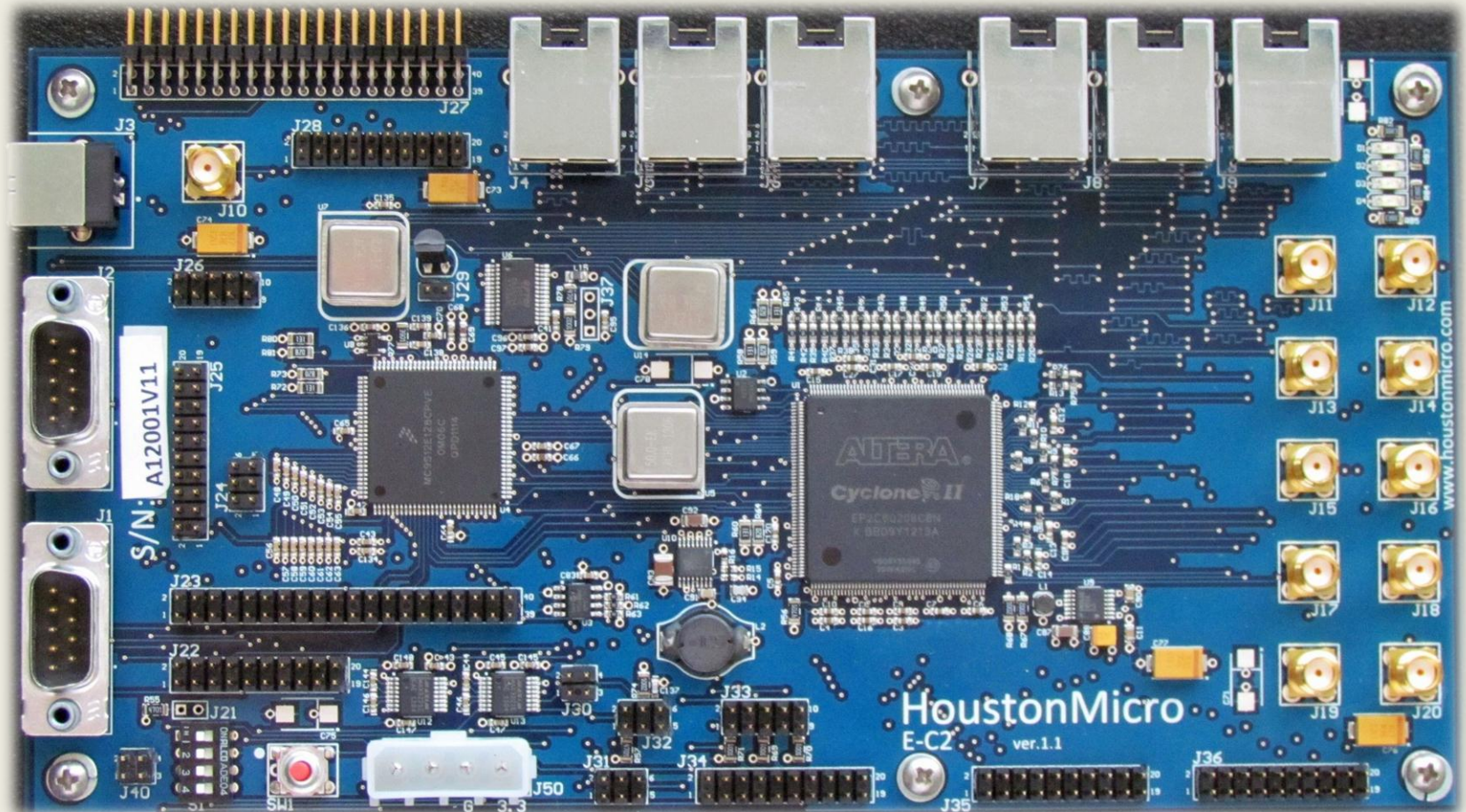


Product Brochure

Model

E-C2

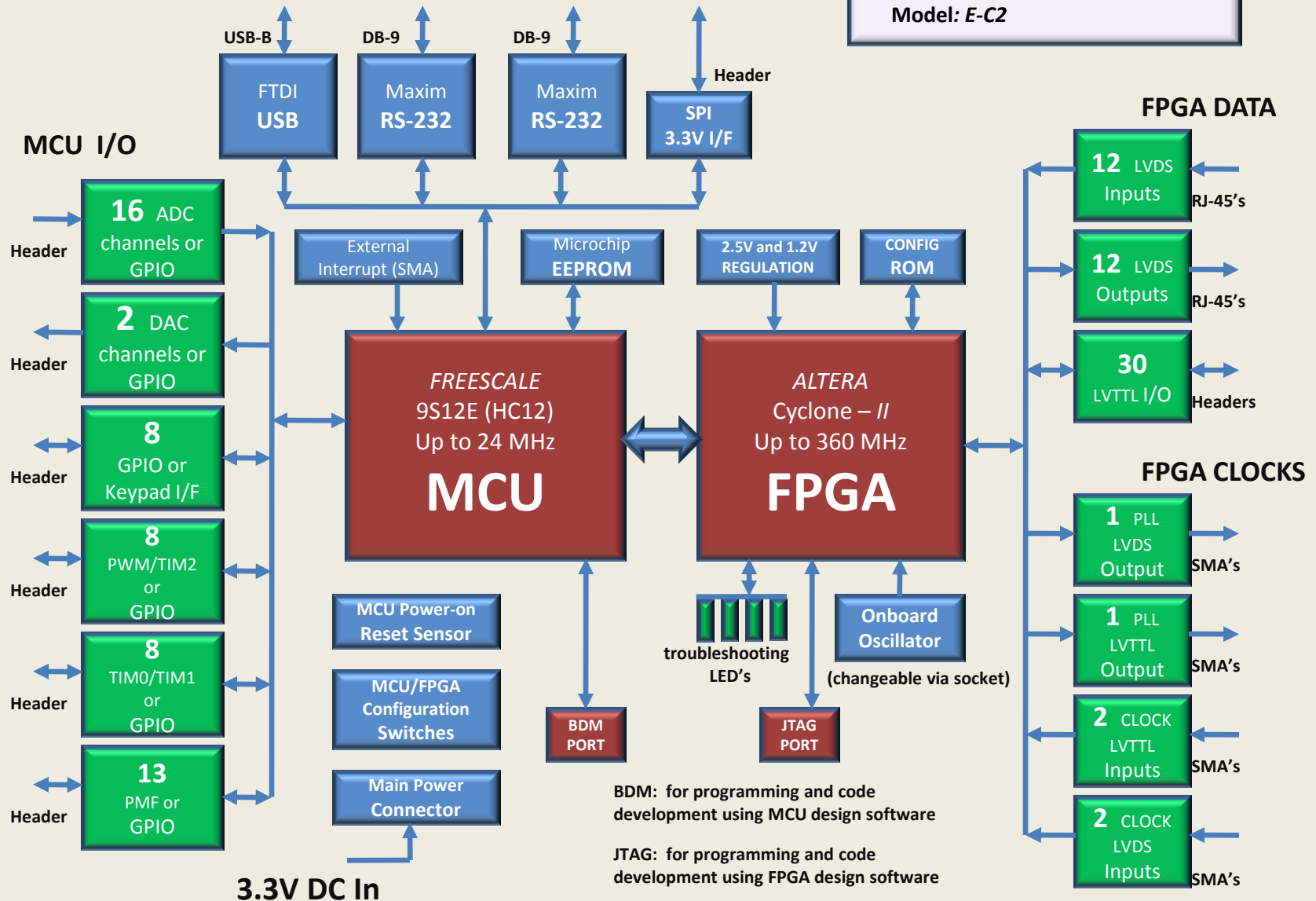
HoustonMicroTM
MCU-FPGA Embedded Board

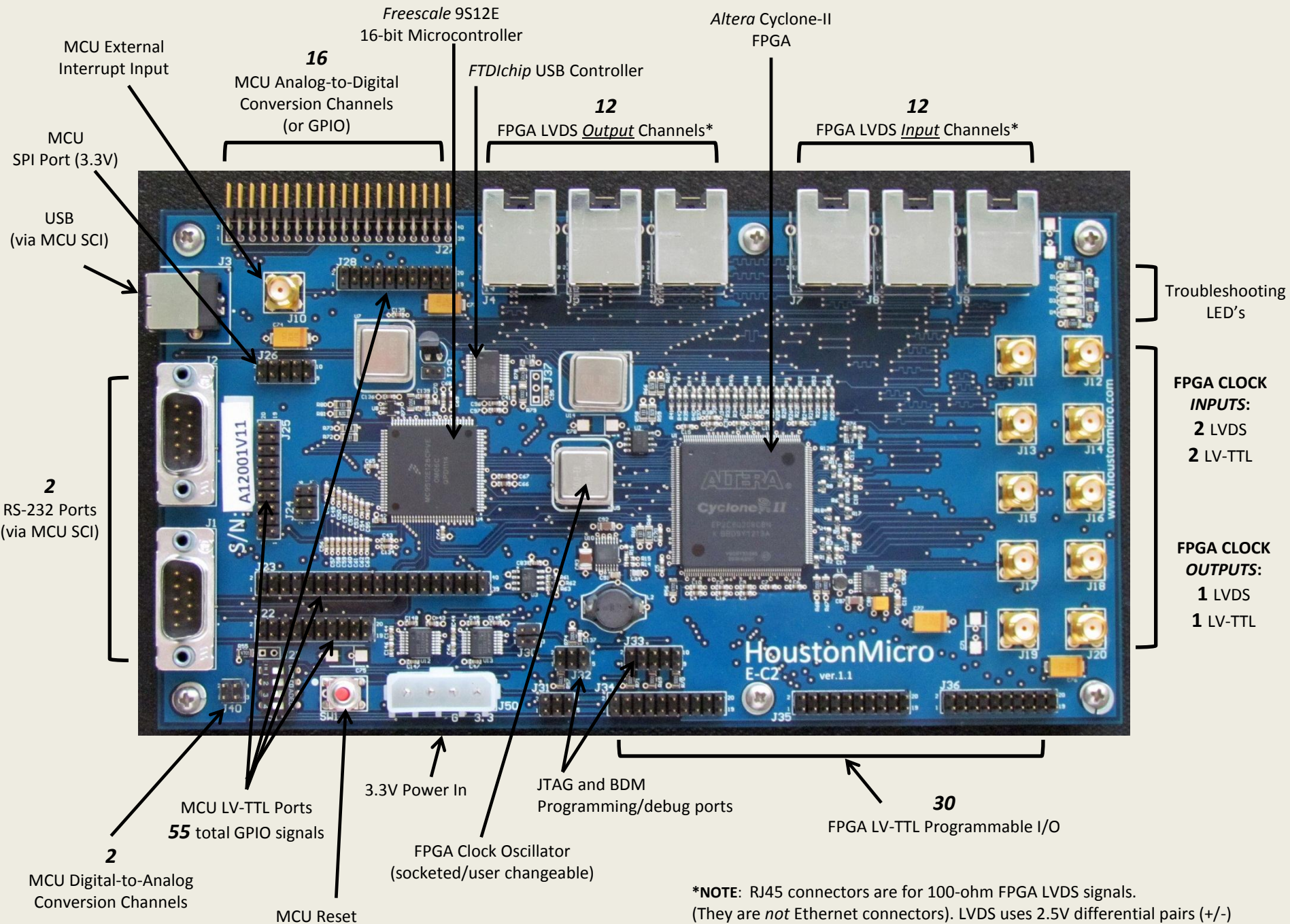


HoustonMicro™

MCU-FPGA System Board

Model: E-C2





***NOTE:** RJ45 connectors are for 100-ohm FPGA LVDS signals. (They are *not* Ethernet connectors). LVDS uses 2.5V differential pairs (+/-) LV-TTL signals are single-ended 3.3V levels.

E-C2

MCU-FPGA System Board Features and Specifications

MCU:

Freescall 9S12E128 (HC12)

- * 16-bit CPU
- * HC11 upward compatible*
- * Up to 25 MHz (50 MHz internal)
- * BDM programming port

I/O:

USB (1) (FTDI)
RS-232 (2)
SCI (2) (via RS-232 above)
SPI (1) (3.3V)
55 pins of GPIO (3.3V)*

MEMORY:

FLASH 128K
SRAM 16K
EEPROM (onboard)

SPECIAL FUNCTION*

Input Capture Timers
Output Compare Timers
Pulse Width Modulators
COP Watchdog
Clock Monitor
Real Time Interrupt
External Interrupt (SMA conn.)
Interrupt from FPGA

ANALOG CONVERSION:

DAC's (2)
A/D Converters (16)
A/D external trigger

FPGA:

Altera Cyclone-II C8

- * Up to 360 MHz clock speed*
- * Onboard configuration ROM
- * JTAG programming port

DATA I/O:

12 LVDS Inputs (differential)
12 LVDS Outputs (differential)
30 LV-TTL 3.3V Input or Output*

Programmable:

LV-TTL source terminators
LV-TTL drive current

CLOCK I/O:

2 Clock LVDS Inputs
2 Clock LV-TTL Inputs
1 Clock LVDS Output
1 Clock LV-TTL Output
1 socketed oscillator Input
1 clock input from MCU

INTERNAL:

8,256 Logic Elements
36 RAM Blocks (M4K)
8 global clock networks
18 DSP multipliers
2 PLL's (based on any clock input)

Misc. and Error Handling:

- * Integrated MCU-FPGA Interface
- * Interrupt signal, FPGA to MCU
- * error signal, FPGA to MCU
- * MCU can restart FPGA via software
- * 4 Troubleshooting LED's

SOFTWARE:

MCU:

Compatible with Free CodeWarrior* design software from Freescale.

MCU Programmable in:

- * C
- * C++
- * HC12 Assembly
- * HC11 Assembly
- * MC6800 Assembly

- * Firmware routines for Communications with FPGA

FPGA:

Compatible with Free Quartus* design software from Altera.

FPGA Programmable in:

- * VHDL
- * Verilog
- * AHDL
- * Schematic Drawing Entry
- * Classic "7400-series" Logic
- * MegaWizards and MegaFunctions
- * Graphical State Machine Editor
- * Combinations of above (HDL's, schematics, etc...)
- * FPGA IP-core for Communications with MCU