

Specifications

Goals

Affordable
Rugged
easy to manufacture
easy to service

Supply:

input voltage : 6 cells - 25V
5V rail for CAN, 3V3 rail for the rest
linear reg ?
analog domain - separate rail (I vote no separate regulator for analog)?

IOs:

	FUNCTION	DRIVER	CONNECTOR
1	CAN	5V PHY driver	2 pins MOLEX 2.54mm
1	SPI	MCU direct	8 pins picoblade
1	I2C	PCA9306 : 3V3, 5V, external level	6 pins picoblade
2	UARTs	1 optional max (232/485), 1 optional 5V (spare channel of servo driver)	2 * 4 pins molex 2.54
1	JTAG	MCU direct	10 pins Piotr :)
6	Servos	5V shifting for signal	6 * 3 pins MOLEX 2.54mm
8	ADCs	a couple of resistor bridges	2 * 7 pins picoblade
2	GPIOs	-2*5 pins with GND, 5V, 3V3, IO1, IO2 (PWM in/out, adc, i2c if possible)	2 * 5 pins picoblade
4	LEDs	MCU direct	N/A
1	power switch	MCU direct	?? 2 pins picoblade
1	USB	for flashing through bootloader	4pin picoblade/ mini USB ?

FLASHING:

JTAG on 10 pin 1.25 mm headers
populated only on dev boards
serial flashing on prod boards
flash/run button switch

MCU:

-Medium density family
48 pin QFP or 36 pin QFN ? (QFP is nicer to service)
crystal to save cost (not external oscillator)

Misc

- address encoding by solder jumpers ?
-8 reset power supervisor

Budget

	MIN	MAX
MCU	STM32F103RB (128/20) 7.1\$	STM32F103RE (512/64) 11.22\$
SUPPLY		
CONNECTOR		
LEVEL CONV		
TOTAL	30\$	50\$

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