DriverBoard Test Evaluation

Preliminary wishes

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Chapter 1

Introduction

In the following chapter a brief introduction to the Flying Basket firmware implementation is reported. Figure **??** shows the fundamental system architecture. From **functionality** point of view it is possible to select the following main structures:

– power stage (inverter, dclink, motor);

– auxiliary power supply, gate drivers, high side voltage and current measure systems;

– low side voltage and current measure conditioning and hardware protections;

– μ-processor based control architecture;

– field bus communication (interface to external environment).

Before to proceed forward a short list of symbols and acronyms used in this document is reported, as follows:

– OCP: over-current protection.

– DMA: direct memory access.

– ADC: analog to digital converter.

– DAC: digital to analog converter.

– GPIO: general purpose I/O.

– SVPWM: space vector pulse-width modulation.

– PMSM: permanent magnet synchronous motor.

– MTPA: max torque per ampere.

– TIMx: timers available into microcontroller.

– HAL: hardware abstraction layer.

– n.a.: not applicable.

Bibliography

[1] A. Volke, M. Hornkamp, *IGBT Modules. Technologies, Driver and Application.* Infineon 2011.