

A unique platform to accelerate MCS development

Ready to use controller platform, configurable to your technology development

- Safety Critical Architecture suitable for a future Class III medical device
- Customisable Field Oriented Control
- Ease of integration of physiological and motor control algorithms
- 2 motor drives with status indicators (can customise for more)
- Programmable sensor inputs/outputs, LED status indicators & function switches
- Removable SD card for data logging
- Data streaming to the LUDO User Application
- Switching between RM57 and FPGA processor



Customisable user interface supports flexible testing with real-time feedback

- Data visibility in real time
- Data logging from all available streams
- Configurable physiological & motor control parameter including pump speed, motor control gains, motor on/off, pulse rate, and pulse amplitude
- Customisable to view extra data streams
- Customisable dashboards to monitor tests and trials
- Event & fault extracts from the controller

Motor Control		External interfaces		Customer Algorithm Support	
Motor Drive	2 Independent BLDC	Engineering Console	USB (Virtual Serial COMs) with isolation, OTS connector	Physiological Drive	Customisable @ 1kHz
Drive Power	Nominal 24V Up to 33.6V (to allow for future use of 8 series connected LiPo batteries) ~5A continuous	Driveline	Customer specific during initial customisation	Physiological & pump control algorithms	C/C++/17/Matlab*/Simulink* * via code generation to C
Physical		Available for connection to expansion boards or front panel I/O connector during initial customisation		FOC Algorithm	Standard, customisable with customer Simulink model via code generation
Physical Dimensions	250 x 212 x 110 mm	I2C	1	Microcontroller	
Configurable Indicators	6 LEDs	SPI	1	Model	TI RMS57L843
Configurable Switches	3 illuminated momentary switches	GPIO uC (incl PWM)	8	Frequency	330 MHz
Fixed Indicators	Motor status (x2), Power, Error, Computer Connected and FPGA Bypass	GPIO FPGA	8	DMIPS	1.66 DMIPS/MHz
USB-C Port	For computer connection	ADC uC	3	Flash	4096KB
SD Card	1 removable micro SD	UART	2	RAM	512KB
Integrated Touchscreen	In development	Data Streaming		Safety Features	Dual-core lockstep, ECC on RAM & FLASH
Operating Conditions	Room temperature 20 - 25°C and laboratory humidity	Data Streaming channels	20	Realtime Clock	Yes
Connectors		Data Streaming rate	100 Hz	FPGA (hardware included but not activated in default configuration)	
DC Power – Logic	12-34VDC	Data Streaming resolution	16 bits	Model	M2GL050
DC Power – Motor Drive	12-52VDC	Batteries		Max Logic Elements	56K
Motor Drive connector	2 x 3 phase	Internal/external batteries	Not supported	Math Blocks	72
				Embedded Memory	1826Kbit



Contact us to arrange a meeting with our dedicated MCS specialists to learn more about LUDO, and how we can apply our experience to your unique development challenge.

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