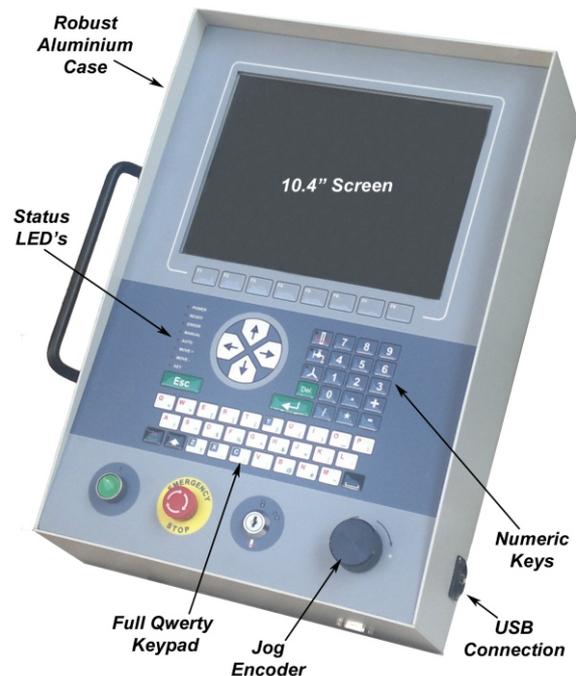


CNC Machine Controller

- **Cost Saving Design**
- **All-in-one Solution**
- **Digital and Analog I/O**
- **Program with MAP or G-Code**
- **Rugged Industrial Design**
- **Enclosure Style Options**
- **Supports USB and CAN**



MAP CNC Software

MAP is a very powerful and easy to use system designed by TRM for engineers or operators alike. Create/Edit/Test programs as needed in one screen then switch to operator mode to give just the functions needed to produce the item. Once the program is verified it can be saved to local memory or pen drive for future use.

The user can also add extra MAP code around G-Code to enable extra functions of the machine, be it electric clamps, pneumatic valves or a hydraulic system, MAP has the functionality and versatility to cater for most applications.

G-Code Support

- ⊙ MAP subroutines can be called from G-Code.
- ⊙ Many G Code commands supported with more available on request
- ⊙ G Code is verified before the operator is allowed to run the job reducing waste
- ⊙ Graphical image of job following verification stage.
- ⊙ Live drawing of tool path

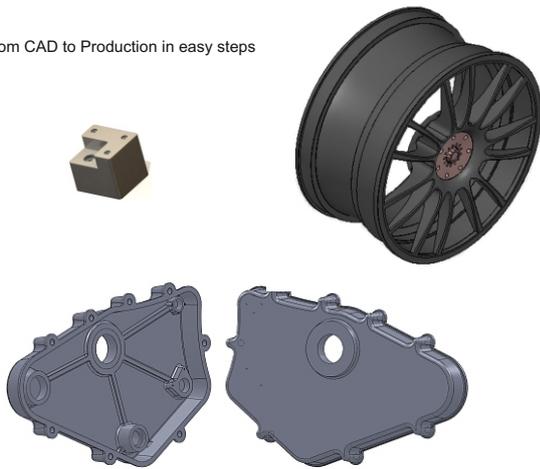
Motion Control Functions

- ⊙ Absolute and Relative Positioning
- ⊙ Point-to-Point Moves
- ⊙ Position Tracking
- ⊙ Manual Setup with Jog Options
- ⊙ Origins and Offsets Programmable
- ⊙ Tool Size Tables
- ⊙ Over xx Commands to Customise Setup and Production

Processing Power

- ⊙ Freescale Version 2 Coldfire Microprocessor for Embedded Designs
- ⊙ High Processing Speed of 160 million instructions per second
- ⊙ 16 Mb Flash Memory
- ⊙ 2 Mb of Battery Backed 16 bit SRAM
- ⊙ 64 Mb of Double Data Rate High Speed RAM
- ⊙ FPGA design for high speed processing of IO, Encoders, Registration Inputs etc.
- ⊙ Low power consumption for battery run applications

From CAD to Production in easy steps



Operating System

- ⊙ Blackthorn OS for speed and stability developed by TRM
- ⊙ Design ensures minimal code size
- ⊙ Updates available via Pen Drive
- ⊙ Used throughout our range of controls
- ⊙ Interrupt driven architecture for stability
- ⊙ Designed for the embedded environment

System Memory

- ⊙ 64Mb DDR
- ⊙ 2Mb SRAM
- ⊙ 16Mb FLASH
- ⊙ USB upto 8Gb
- ⊙ SD Card option

Communications

- ⊙ USB 2 Host
- ⊙ USB On-The-Go (optional)
- ⊙ Controller Area Network (CAN)Port
- ⊙ RS232 Serial
- ⊙ RS485 Multidrop Serial



PLC Support Services

- ⊙ **Alarms and events:** The system supports up to eight 'events', events are interrupts generated from change of input, timeout, position capture/match or keystroke. Events can be used as an alarm, emergency stop function, motion control manager, timer function etc.
- ⊙ **Timer:** Eight precision timers are supported
- ⊙ **Maths and calculations:** Comprehensive mathematics used throughout. From basic addition and subtraction to sine and cosine plus many more.

I/O Services

- ⊙ **Inputs:** 16 Opto Isolated (PNP or NPN)
- ⊙ **Outputs:** 12 1A current limited sourcing outputs. Suitable for relay and contactor control etc.
- ⊙ **Control Outputs:** 4 Motion control outputs +/- 10VDC.
- ⊙ **Stepper Motor:** 4 Channels of Step & Direction
- ⊙ **Analogue Inputs:** 4 High Speed at 0 -10V
- ⊙ **High Speed Digital Inputs:** 2 for fast registration capture
- ⊙ **Encoder Inputs:** 4 channels per Axis plus upto 3 internal Jog/Velocity

