



VELOCITY SCANNER DEVELOPMENT

THE CLIENT

The client is a market leader in vehicle system repair system manufacturing.

BUSINESS NEED

The client envisaged to design and develop Velocity Scanner, a frame straightening and measuring equipment used as a vehicle repair system based on a reference design. It uses two lasers reflected off rotating mirrors to triangulate precise 3D locations on the frame of a damaged vehicle. The process met various challenges, some of them being:

- The biggest challenge was to obtain a measurement resolution of one millimeter on a target at five meters distance with each hub (mirror) measurement having an angular accuracy of 0.001 degrees
- Longevity of the design in terms of critical components and selection of readily available motors that would contribute towards long viability of the design

TECHNOLOGY USED

- C8051F132 micro-controller with built-in 128k flash & 8k RAM
- 128KB of External RAM

SOLUTION DELIVERED

- Designed mixed signal micro-controller C8051F132 having a high speed 8051 μ c core with built in 128K banked flash and 8k RAM
- Developed Schematic capture, BOM, Board layout, routing, Gerber and costing for prototype production
- Developed testing and diagnostic softwares
- Functions of the micro-controller include Time-stamping sync and target events, Event Data Buffering, Calibration Data Storage, Motor Speed, Serial Communication and Laser Control

BUSINESS BENEFITS

- Long term one-time investment
- Precisely accurate

ABOUT ALLEN CALSOFT LABS

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www.altencalsoftlabs.com



business@altencalsoftlabs.com