

CT650 DATA SHEET

*** Preliminary ***

FEATURE SUMMARY

- Linux OS
- Programmable with open-source tools
- Robust eMMC flash
- Internal un-interruptible power supply
- Wide input voltage range, 7.5 – 36 V
- Electrical transient protection
- Wide operating temperature
- CAN bus (J1939-compatible)
- RS-232
- RS-485
- Ethernet
- Digital I/O
- Audio output
- Liquid sealed
- Integrated cell phone w/ GPS

Description

ControlTrac CT650™ is the successor to the CT6xx series of vehicle telematics computers, a rugged computer legacy used in the fleet vehicles for over 15 years.

CT650 represents a substantial evolution, using ControlTrac's own build of the Linux operating system for this custom computer.

CT650 includes both CAN bus and Ethernet. CAN bus allows programmers to collect vehicle parameters, such as road speed, odometer, and engine temperature with standard system calls.

The open-source operating system allows software developers to utilize familiar programming tools and data interfaces in order to create a custom solution in a short time.

CT650 is provided with a custom configured ARM GNU cross compiler allowing the programmer to build applications on their Linux desktop with ease. CT650 includes common command line scripting.

Applications

In the standard configuration, the CT650 may be programmed to monitor vehicle status through the CAN bus, provide geo-fencing or location features, monitor vehicle operation, provide messaging to a driver terminal, and enhance security.

With the optional cell phone module, CT650 can serve as a multi-mode communication modem. When used in conjunction with an external satellite, the device can be programmed for least-cost message routing.



CT650

Key Features

J1939: SAE J1939 vehicle data bus is used in heavy-duty trucks. Vehicle parameters such as road speed, fuel usage, engine RPM, and throttle position are among the hundreds of values available.

These messages may be used for vehicle diagnostics, logging, security, or monitoring of driver behavior.

UPS: CT650 includes an integrated un-interruptible power supply that will sustain full run mode during cold-crank conditions and other power transients. The application may use the power-good interrupt for clean shutdown.

Flash File System: Robust eMMC memory incorporates a transaction-based flash memory file system ensuring data integrity.

Open-source Tools: Development on the CT650 is inexpensive with open-source programming tools. Programmers will find a familiar environment, enabling efficient application development using GNU tools.

Hardware Configuration: The CT650 can be configured for price and feature optimization specific to needs of integrators.

ENVIRONMENTAL

Operating Temp	-35 °C to 75 °C
Storage Temp	-40 °C to 85 °C
Humidity	90% RH, non-condensing
Vibration Operating	TBD
Sealing, Liquid	Submersible to 3 ft (base configuration)

J1939 Features

API Interface	Receive J1939 and CAN bus messages
	Send J1939 and CAN bus messages

POWER FEATURES

Input	7.5 V to 36 V
	Transient protected
	Reverse voltage protected
	Approximately 45 mA max avg. @ 13 V
Un-interruptible Supply	30 s full run mode (Dependant on software controls and hardware configuration.)
	Bad-power detection signal
Ultra-capacitor	UPS Support

I/O AND CONNECTORS

Connector 1	Deutsch sealed connector
	Power input
	Ethernet
	J1939 Vehicle Data Bus
	Digital outputs 1 and 2 (500 mA, sourcing)
	Digital inputs 1 and 2, w/ programmable pull resistors
	Ground
	CAN bus
Connector 2	Deutsch sealed connector
	Com 1: RS-232 (RXD, TXD)
	Com 2: RS-485 (2-wire)
	Digital output 3 (500 mA, sourcing)
	Digital output 4 (low current, logic sinking)
	Digital input 3, w/ programmable pull resistors
Antenna Connector 1	SMA for optional GPS receiver
Antenna Connector 2	SMA for optional cell phone transceiver

OS, MEMORY, & μ P

OS	Linux 4.14
Processor	32-bit ARM Cortex-A5
	500 MHz
RAM	128 MB DDR2 SDRAM
Flash	4 GB eMMC (Optional 32 GB)
Clock (Optional)	RTC, battery-backed
Security (Optional)	Secure Boot

MECHANICAL

Enclosure	Deutsch case
	Thermoplastic
	Silicon Elastomer seals
	0.29" dia mounting holes at 4" O.C. (7.4 mm dia at 102 mm O.C.)
Dimensions	1.5" H x 4.8" W x 5.5" D (36.5 mm x 118 mm x 134 mm)

REGULATORY

Emissions	TBD
Immunity	TBD

USER INTERFACE

Indicators	Red LED, software controlled
	Green LED, software controlled
	Blue LED, software controlled

Developer I/O (Internal)

Console Port	TTL serial port (TX, RX, Gnd) Terminal program interface, 115 kbps
USB	USB micro OS loading
Removable Media (Optional)	Micro SD Card File loading

Wireless Features

Cell Phone	Embedded LTE cell phone modem
GPS	Internal to cell phone. Optional GPS-only.