



EMTRAC

Vehicle Computer Unit ST-9284

Vehicles equipped with the EMTRAC system carry a compact, yet rugged, Vehicle Computer Unit (VCU), which is connected to an omni-directional antenna that receives location data and transmits priority requests to intersections through secure RF communication. The positioning functionality is able to track vehicle location with precision, and the radio range allows reliable intersection response—even in adverse conditions.



Vehicle
Computer Unit

Features:

- 900 MHz, frequency-hopping spread spectrum radio with secure, 256-bit AES encryption
- Typical transmission range of 3,000 feet, enabling intersection-approach zones of the same length
- Integrated computer board contains ultra-fast processor and superior memory, while the MicroSD-card offers vast activity-log storage capability
- Operates off nominal 10 to 40-volt DC power source and draws a maximum current of 500 mA.
- Capable of communication through Ethernet, RS-232, or wireless connection
- Supports up to 16 inputs and outputs in any combination
- Capable of storing up to 5,000 intersection-approach zones
- Ability to accept multiple inputs to prompt priority requests, including bus-door or pull-cord activity, schedule adherence, passenger count, and emergency light-bar
- Time-out feature configurable to cease priority requests after designated amount of no-motion time
- Programmable with Windows XP, Vista, 7 (or later) operating systems

Specifications:

GPS Engine

Parameter	Specification
Receiver Type:	50-channel, 6-engine, GPS L1 C/A code
Navigation Update Rate:	4 Hz Max, 1 Hz (GPS + Dead Reckoning), 2 Hz (Non DR)
Accuracy:	Position 2.5 m CEP SBAS 2.0 m CEP
Sensitivity:	Tracking -162 dBm
	Cold Starts -147 dBm
	Hot Starts -156 dBm
Heading Accuracy:	0.5 degrees
Operational Limits:	Velocity 1,640 ft/sec [500 m/s]

Dimensions

VCU:	2.35" (H) x 4.75" (W) x 8.5" (D)
Antenna:	1.15" (H) x 4.55" (Diameter)

15-foot cable provided with antenna (with additional cable available).

Environmental

Temp:	-34°C (-30°F) to +74°C (+165°F)
Humidity:	5% to 95% Relative

UHF Radio

Performance	Standard Range	High-Speed Short Range
Transmit Power Options:	1mW - 1 Watt	1mW - 1 Watt
Urban Range:	Up to 3,600 ft (1100 m)	Up to 1,500 ft (450 m)
Interface Data Rate:	1,200 - 230,400 bps	1,200 - 230,400 bps
Throughput Data Rate:	9,600 bps	115,200 bps
Receiver Sensitivity:	-110 dBm	-100 dBm

All specifications are subject to change without notice.

Radio, Security, and Networking

Frequency:	902 - 928 MHz
Spread Spectrum:	Frequency-Hopping Spread Spectrum
Modulation:	FSK (Frequency Shift Keying)
Certifications:	FCC (Part 15.247), Industry Canada (IC)
Encryption:	256-bit AES
Data Comm.:	Ethernet 100Base-T or Serial (RS-232)