

Specification for an Automated Fuel Control and Data Acquisition System

1.0 General

1.1 Scope

- 1.1.1 The bidder shall supply and install an automated fuel management and data acquisition system per the attached specifications. Any exceptions to the bid specifications must be noted by line item number.

1.2 System Description

- 1.2.1 The system shall automatically control the dispensing of fuel to authorized vehicles through the use of special keys.
- 1.2.2 Based on how the keys are encoded, fuel access shall require a single key or separate keys identifying the driver and vehicle or a vehicle key and manual entry of the driver ID.
- 1.2.3 Based on information supplied by the key, the system shall control which fuels are allowed to be accessed and limit the amount of fuel for each transaction.
- 1.2.4 The system shall prompt for odometer readings and check for reasonability based on the last odometer reading and reasonableness range stored on the key. Accepted odometer readings shall then be recorded on the key to be used at the next fueling.
- 1.2.5 The system shall record fueling transactions in the system memory for later recall. Transactions shall include a transaction number, the key id data, date and time, pump number, product number, quantity dispensed, odometer, miles between fueling, and error message.

1.3 Warranty & Service

- 1.3.1 The system shall include a one year parts and labor warranty.
- 1.3.2 The system shall include start-up and training by a factory-trained Authorized Service Representative.
- 1.3.3 Local service and parts supply are required.

1.4 Approved Manufacturers

- 1.4.1 Gasboy International, LLC, 7300 West Friendly Avenue Greensboro, NC 27420, (336) 547-5000, Gasboy FleetKey.

1.5 Equipment List

<u>Quantity</u>	<u>Description</u>	<u>Price</u>	<u>Total Price</u>
System Controller Components			
_____	FleetKey System	_____	_____
_____	Built-in Modem	_____	_____
_____	Computer Display with Keyboard	_____	_____
_____	Printer, Serial	_____	_____
_____	Short Haul Modem	_____	_____
_____	Cable Assembly	_____	_____
_____	Key Encoder	_____	_____
_____	Blank Keys	_____	_____

2.0 System Controller Components

- 2.1 The system controller shall contain:
 - system microprocessor
 - battery-backed memory
 - real-time clock with battery back-up
 - pump control electronics and relays
 - manual override switch per hose
 - pulser, AC, and communication terminations
- 2.2 The system controller shall control up to eight dispenser hoses.
- 2.3 The system controller shall be housed in a security locked enclosure with a pedestal for ease of mounting.
- 2.4 The system controller shall be weatherproof for mounting on the fueling island.
- 2.5 The system controller shall contain the necessary heaters for reliable operation in the local climate. Fans shall not be required.
- 2.6 The system shall contain two asynchronous communication ports which shall be field configurable for RS232 or RS422 output.
- 2.7 The system controller shall contain an optional internal modem for remote communication.
- 2.8 The system controller shall contain a pump disable button on the face of the island reader which will terminate all transactions when depressed in case of emergency.
- 2.9 The system controller shall contain an island reader with a key receptacle, LCD, and membrane keypad.

- 2.10 The key receptacle shall contain an audible key left in reader alarm.
- 2.11 The system controller must be Listed by Underwriter's Laboratories and have a FCC approval.

3.0 System Software

- 3.1 System shall be designed to allow all hoses to be activated at the same time.
- 3.2 System shall provide a supervisor key function which will prompt for id information normally encoded on the key for fueling vehicles not equipped with a key.
- 3.3 The system shall record the following information for each fueling transaction:
- Transaction number 4 digits
 - Key 1 number 5 digits
 - Key 2 number 5 digits
 - Vehicle identification up to 20 alphanumeric digits
 - Transaction type 1 digit
 - Calendar date 6 digits
 - Military time 4 digits
 - Pump number 2 digits
 - Product number 2 digits
 - Quantity dispensed 5 whole digits, 3 decimal places
 - Price per gallon 1 whole digit, 3 decimal places
 - \$ total 6 whole digits, 2 decimal places
 - Odometer 7 digits
 - Miles since last transaction 4 digits
 - Miles per gallon 2 whole digits, 1 decimal place
 - Error message
- 3.5 The system shall handle pulser resolution up to 1000:1.
- 3.6 The system shall have before and after pump activation no pulse timers, loadable up to a minimum of 180 seconds.
- 3.7 The system controller shall hold approximately 600 transactions in battery-backed RAM with remote communication capability for on-demand transmission of stored transactions.
- 3.8 The system shall be able to handle a minimum of 10,000 vehicles with up to 100,000 maximum.
- 3.9 All vehicles shall be able to be locked out - individually, string, or by range.
- 3.10 System shall have the capability to print transactions on an optional logger printer upon transaction completion.
- 3.11 System shall be able to be controlled by a terminal on-site and communicate via a modem and telephone line to a remote location.
- 3.12 System shall provide fuel tank inventory totalizers with loadable reorder levels for up to eight tanks.
- 3.13 System shall provide pump totalizers for up to eight hoses.
- 3.14 System shall automatically disable a dispenser after a user-defined amount of no quantity transactions.

- 3.15 System shall provide the following reports:
- Current date, time, transaction number, and program revision
 - Pump status, assignments, price, and totalizer amount
 - Pump pulses per gallon and timeouts table
 - Tank inventory totalizers and reorder levels
 - Valid key list
 - Invalid key list
 - Chronological transaction listing
 - First and second level sort of transactions by specified transaction headings with totals
 - Fuel limit table
 - Fuel authorization table
 - User commands
- 3.16 System shall have a maintenance reminder option where you have the ability to display *maintenance due soon, due now, or overdue* messages for up to three maintenance types on the system LCD display depending upon the mileage and/or time interval between maintenance.

4.0 Keys

- 4.1 Keys shall fit on a standard vehicle key ring.
- 4.2 Keys shall be constructed of a durable, one piece, injection molded design. The integrated circuit shall not be accessible. Exposed EPROMS are not acceptable. Contacts shall be gold.
- 4.3 Keys shall be available in black, green, and gray colors.
- 4.4 Keys shall be read/write technology.
- 4.5 A key encoder shall be provided for encoding the keys.