

ALLIED ELECTRONICS, INC
STATION SITE CONTROLLER (SSC)

Installation and Start Up Guide

Exxon Mobil / ANDI
to ICB



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1 General Information

1.1 Installation Environment

1. The Allied Electronics ANDI Controller operates on 115 VAC @60Hz, 36 Watts. The ANDI controller is supplied with approximately 8 feet of 115 VAC power cord, and should be connected to an approved isolated ground receptacle on its own dedicated circuit. The ANDI must be installed in a temperature controlled environment (between 32⁰ F and 100⁰ F).
2. The controller must be installed in accordance with the National Electrical Code (NFPA 70), the Automotive and Marine Service Station Code (NFPA 30A), and all state and local electrical codes.
3. The controller must be installed indoors, above the Class 1, Division 2 Hazardous location.
4. The controller is designed for use with peripheral devices which are UL Listed.

1.2 Wiring

1.2.1 Field Wiring

All field wiring (that is, all wiring connected directly to dispensing devices) should be oil and gas resistant, as required by Paragraph 501-13 of the NEC, and should be sealed in accordance with Article 500 of the NEC.

1.2.2 Internal Wiring

1.2.2.1 Introduction

- a. The purpose of this section is to provide a list of installation practices that we feel are crucial to ensure error-free communications.
- b. All cabling must comply with Local, State, and Federal building codes.
- c. Data connections between the Forecourt Controller (SSC or NeXGen) are to be made with CAT-5 Cable compliant with TIA/EIA-568-B or better.
- d. Proper cable installation techniques go a long way to preventing data loss.

1.2.2.2 Planning

- a. Pull cables in continuous runs.
- b. Do not splice any communications cables.
- c. Separate all cables from fluorescent lighting ballasts and neon sign transformers by at least 4 feet.
- d. Separate all cables from electrical supply conductors by at least 2 feet.
- e. Provide extra wire for service loops at the termination points but do not leave more than is required.

1.2.2.3 Execution

- a. Maintain the natural twist of the cable.
 - i. The cables have four pairs of twisted wires that can very easily lose their ability to reject electromagnetic interference when unraveled.
 - ii. Pay-out cable from spools so that the spool rotates.
- b. Avoid kinking and over-stressing the cable.
 - i. Kinks not only pick up interference, but can cause the jacket to chafe and internal conductors to break.
 - ii. Never exert more than 25 pounds of tension when pulling a communications cable.
- c. Provide a generous bend radius whenever the cable turns a corner.
 - i. Never bend the cable more than 90 degrees.
 - ii. Limit the bend to a 3 inch radius.
 - iii. Use a 1 pound coffee can as a guide.
- d. Support all cabling in both horizontal and vertical planes.
 - i. Unsupported horizontal cable runs, especially above drop ceilings, are problematic.
 - ii. In the event that cable trays are not available, the cabling can be secured with zip-ties, hook clips, J-hooks, or plastic coated staples provided they are spaced no greater than 2' apart.
 - iii. Do not use utility piping or drop ceiling grid-work to secure or support communications cables.
- e. Protect the cable from mechanical damage and install appropriate fire blocking whenever cables pass through floors or walls.
- f. Install carefully all zip-ties ensuring that they do not bite into the cable through excessive force.
- g. Label both ends of all cables.
- h. Use the proper punch down tool and ensure it is set properly.
 - i. Remove as little of the jacket as possible.
 - ii. Untwist the conductors as little as possible.

1.2.2.4 Testing

- a. Inspect thoroughly all cables for damage after they are pulled and before they are bundled or otherwise secured.
- b. Perform a continuity test of all pairs.

1.3 Power and Data line protection

Allied Electronics recommends that the controller be installed with the appropriate power and data line protection devices in order to protect against power surges, transients, low voltage (brown outs), and lightning.

Note: Due to the magnitude of power that's contained within a lightning strike it's impossible to totally eliminate the possibility of damage, but we feel with the introduction of high quality protection devices the incidence of failure can be greatly reduced.

1.4 Warranty

The SSC has a one year parts warranty only, from date of installation, which can either be phoned in or submitted using the warranty/registration card enclosed in every SSC. If the start up information is not registered with our office within thirty (30) days of installation, warranty will begin from the date of shipment. Allied will warrant all parts against defects but not against physical damage or improper installation. All parts being returned "under warranty" must be accompanied with a Allied RMA number. When calling Allied for RMA numbers for SSC main boards, you will be asked for the main board serial number, located on the upper left hand corner inside box, and a description of the problem.

1.5 FCC Warning

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class "A" computing device pursuant to Subpart B of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

1.6 Overview

The SSC interfaces to the following devices:

ICB/Mechanical Dispensers

1. Mechanical Dispensers via a 20/45 ma current loop board* which is connected to the GA Inter Connect Box (ICB).

Point - Of - Sale (POS)

Generic PC Based Point -Of -Sale Computer via a fully populated RS-232 board. Supporting the ANDI protocol interface.

Tank gauge

1. Veeder Root TLS 250, 350 & 350R or equivalent tank gauge system via a fully populated RS-232 board.
2. Any Tank Gauge system that uses the Veeder Root protocol.

Car Wash

1. Ryko III, Ryko IV, Unitec POS 4000, Unitec/Enterlink, Unitec Portal Ti, Unitec Smart Terminal, PDQ and Kesseltronics Car Wash controllers via a fully populated RS-232 board.
1. All Ryko compatible controllers

Fuel Price Sign

1. Daktronics and the PWM Price signs via a fully populated RS-232 board.

VSAT

Hughes satellite system used to communicate to the Credit Card host via a fully populated RS-232 board.

1.7 Installation Information

1.7.1 Procedures

1. Hardware Installation

- a. Mount SSC unit onto wall.
- b. Route and connect all communication cables as labeled.
Refer to “*Configuration Diagrams*” section.
- c. Apply AC power to unit.

The SSC software will first initialize the hardware and then run some internal diagnostics before starting the application program. To indicate that the software is active, the SSC will display the following:

- d. The prompt will display, ⇒ [SSC System Reset]
[Initializing ...]

SSC will next show the following on the display for several seconds.

- ⇒ [Software Version]
[SSC Warm Start]

SSC will then show the following on the display when ready.

- ⇒ [Software Version]
[Date & Time]

2. Programming steps

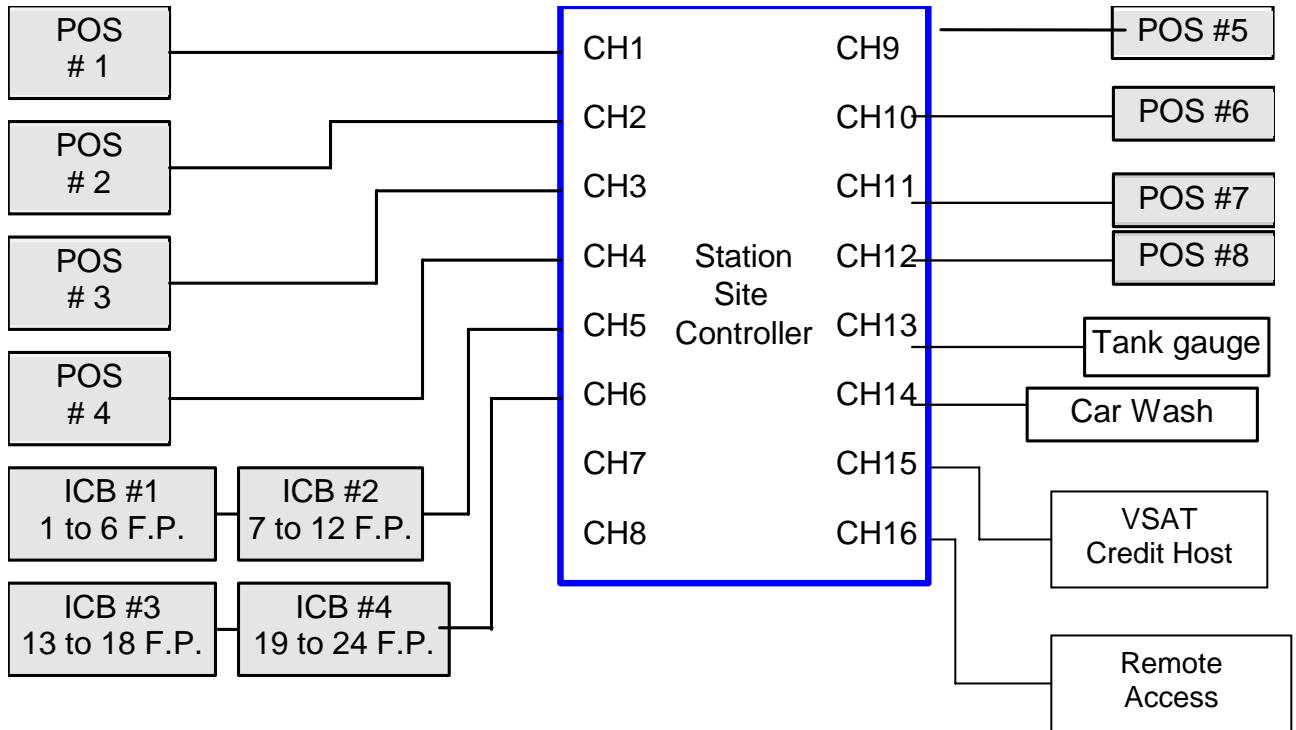
- a. Program the dispensers*.
- b. Program the SSC via the POS**.

Note* - Dispenser programming is not within the scope of this manual.

Note** - It is not within the scope of this manual to supply complete step-by-step programming of the POS.

1.8 Configuration Diagram

1.8.1 SSC to ICB/Mechanical Dispensers



Communication Boards



| | |
|--------------------------------|-------------------------------------------------|
| CH1 (POS) |0399-1610-F (RS-232 Fully Populated board) |
| CH2 (POS) "Optional" |0399-1610-F (RS-232 Fully Populated board) |
| CH3 (POS) "Optional" |0399-1610-F (RS-232 Fully Populated board) |
| CH4 (POS) "Optional" |0399-1610-F (RS-232 Fully Populated board) |
| CH5 (ICB/Dispenser) |499-2410 (Current loop board) |
| CH6 (ICB/Dispenser) "Optional" | ..499-2410 (Current loop board) |
| CH9 (POS) "Optional" |0399-1610-F (RS-232 Fully Populated board) |
| CH10 (POS) "Optional" |0399-1610-F (RS-232 Fully Populated board) |
| CH11 (POS) "Optional" |0399-1610-F (RS-232 Fully Populated board) |
| CH12 (POS) "Optional" |0399-1610-F (RS-232 Fully Populated board) |
| CH13 (Tank Gauge) "Optional" |0399-1610-F (RS-232 Fully Populated board) |
| CH14 (Car wash) "Optional" |0399-1610-F (RS-232 Fully Populated board) |
| CH15 (VSAT) |0399-1610-F (RS-232 Fully Populated board) |
| CH16 (Remote Access) |0399-1610-F (RS-232 Fully Populated board) |

1.9 Communication Cable Pin Assignments

1.9.1 POS Communication Cables

The SSC supports up to 8 POSs. The POS is a PC Based computer which runs the Point-Of-Sale software. The serial port on the POS can be either a DB-25 or a DB-9 connector.

SSC (CH1 - CH4 & CH9 - CH12) RJ45 adapter to POS (Serial Port, DB25) (Part #HT9325-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Adapter Pins | POS DB25 Female Pins |
|-------------------------------------------------------------------------------------------|-------------------------|------------------------------|-------------------------|----------------------------|
| TXD 2 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 3 RXD |
| RXD 3 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 2 TXD |
| RTS 4 | (Grn) 5 | ----- Wht/Blu ----- | 5 (Grn) | 5 CTS |
| CTS 5 | (Red) 4 | ----- Blue ----- | 4 (Red) | 4 RTS |
| DSR 6 | (Brn) 7 | ----- Wht/Brn ----- | 7 (Brn) | 11 N/C |
| GND 7 | (Blu) 1 | ----- Wht/Org ----- | 1 (Blu) | 20 DTR |
| DTR 11  | (Org) 2 | ----- Orange ----- | 2 (Org) | 7 GND |
| N/C 20  | | | | 6 DSR |

SSC (CH1 - CH4 & CH9 - CH12) RJ45 adapter to POS (Serial Port, DB9) (Part #HT9359-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Adapter Pins | POS DB9 Female Pins |
|----------------------------|-------------------------|------------------------------|-------------------------|---------------------------|
| TXD 2 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 2 RXD |
| RXD 3 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 3 TXD |
| RTS 4 | (Red) 4 | ----- Blue ----- | 4 (Red) | 8 CTS |
| CTS 5 | (Grn) 5 | ----- Wht/Blu ----- | 5 (Grn) | 7 RTS |
| DSR 6 | (Brn) 7 | ----- Wht/Brn ----- | 7 (Brn) | 4 DTR |
| GND 7 | (Blu) 1 | ----- Wht/Org ----- | 1 (Blu) | 5 GND |
| DTR 11 | (Org) 2 | ----- Orange ----- | 2 (Org) | 6 DSR |

1.9.2 ICB Control Cables

Up to 12 “Mechanical” fueling positions may be connected to the ANDI/SSC on each dispenser communications channel (CH5 and CH6). Each channel must have a 2-wire custom cable which will hard wire directly into the ICB. (Interconnect Box).

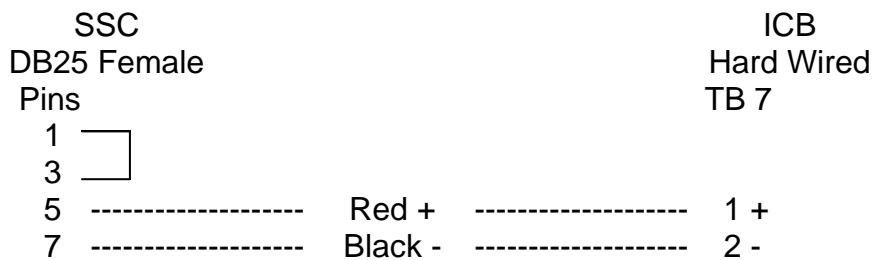
Pump Control ⇒ **“SSC CH5 and CH6 to ICB Box”**

The connections are as follows:

Pin-1 is jumped to Pin-3 at the SSC end.

Interface board switches should be set to 20 ma/2 wire.

SSC (CH5 or CH6) To ICB #1 or #3 (Hard wired)
(Part #HT9355-# ft)



1.9.3 Tank Gauge Cable

The SSC uses Channel 13 to interface to the Veeder-Root or Equivalent tank gauge systems. Configure the tank gauge communication parameters as follows:

Baud Rate: 9600 Parity: Odd Stop Bits: 1 Data Bits: 7

1.9.3.1 Veeder Root TLS

On a TLS-250, the communication parameters are set using a rotary switch and DIP switches, (please refer to the TLS 250 manual).

On a TLS-350, the communication parameters are programmed via the TLS keyboard (please refer to TLS 350/350R manual).

SSC (CH13) RJ45 adapter to the VR TLS
(Part #HT9338-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | | CAT 5 Cable (T568B Spec.) | | RJ45 Adapter Pins | TLS DB25 Male Pins |
|-------------------------------------|----------------------------------|-------|--------------------------------------|-------|----------------------------------|-----------------------------------|
| TXD 2 | (Blk) 3 | ----- | Wht/Grn | ----- | 3 (Blk) | 3 RXD |
| RXD 3 | (Wht) 8 | ----- | Brown | ----- | 8 (Wht) | 2 TXD |
| RTS 4 | | | | | | |
| CTS 5 | | | | | | |
| DSR 6 | | | | | | |
| DTR 11 | | | | | | |
| GND 7 | (Red) 4 | ----- | Blue | ----- | 4 (Red) | 7 GND |

1.9.3.2 Red Jacket ST

SSC (CH13) RJ45 adapter to the Red Jacket “ST” tank gauge

| SSC DB25 Female Pins | RJ45 Adapter Pins | | CAT 5 Cable (T568B Spec.) | | RJ45 Modular Jack Pins | Red Jacket DB9 Female Pins |
|-------------------------------------|----------------------------------|-------|--------------------------------------|-------|---------------------------------------|-------------------------------------------|
| TXD 2 | (Blk) 3 | ----- | Wht/Grn | ----- | 3 (Blk) | 2 RXD |
| RXD 3 | (Wht) 8 | ----- | Brown | ----- | 8 (Wht) | 3 TXD |
| CTS 5 | (Grn) 5 | ----- | Wht/Blu | ----- | 5 (Grn) | 7 RTS |
| GND 7 | (Red) 4 | ----- | Blue | ----- | 4 (Red) | 5 GND |

1.9.3.3 Omntec OEL8000 II

SSC (CH13) RJ45 adapter to the OMNTEC Model OEL8000 II Tank / Leak detection system

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Modular Jack Pins | OMNTEC DB9 Female Pins |
|----------------------------|-------------------------|------------------------------|------------------------------|------------------------------|
| TXD 2 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 3 RXD |
| RXD 3 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 2 TXD |
| GND 7 | (Red) 4 | ----- Blue ----- | 4 (Red) | 5 GND |

1.9.3.4 OPW EECO

SSC (CH13) RJ45 adapter set to the OPW EECO #1500, 2000, 3000
(Part #HT9396-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Modular Jack Pins | EECO DB9 Male Pins |
|----------------------------|-------------------------|------------------------------|------------------------------|--------------------------|
| TXD 2 | (Org) 2 | ----- Orange ----- | 2 (Org) | 2 RXD |
| RXD 3 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 3 TXD |
| RTS 4 | (Grn) 5 | ----- Wht/Brn ----- | 5 (Grn) | 5 TXD |
| CTS 5 | | | | 7 RTS |
| GND 7 | | | | 8 CTS |
| DSR 6 | | | | |
| DTR 11 | | | | |

1.9.3.5 Incon Tank Sentinel

SSC (CH13) RJ45 adapter set to the Incon Tank Sentinel
(Part #HT9389-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Modular Jack Pins | Incon/Comm 2 DB9 Female Pins |
|----------------------------|-------------------------|------------------------------|------------------------------|------------------------------------|
| TXD 2 | (Org) 2 | ----- Orange ----- | 2 (Org) | 2 RXD |
| RXD 3 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 3 TXD |
| RTS 4 | (Grn) 5 | ----- Wht/Brn ----- | 5 (Grn) | 1 DCD |
| CTS 5 | | | | 4 DTR |
| GND 7 | | | | 5 Gnd |
| DSR 6 | | | | |
| DTR 11 | | | | |

1.9.4 Car Wash Communication

The SSC uses channel 14 to interface to the car wash controller. The following car wash controllers are supported.

1.9.4.1 Ryko Code A Wash III and Kesseltronics Standard

SSC (CH14) RJ45 adapter to the Ryko Code-A-Wash III and Kesseltronics Standard (Part #HT9348-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Modular Jack Pins | Car Wash DB9 Male Pins |
|---------------------------------|-------------------------|------------------------------|------------------------------|------------------------------|
| TXD 2 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 8 RXD |
| RXD 3 | (Red) 4 | ----- Blue ----- | 4 (Red) | 9 TXD |
| RTS 4 <input type="checkbox"/> | | | | |
| CTS 5 <input type="checkbox"/> | | | | |
| DSR 6 <input type="checkbox"/> | | | | |
| DTR 11 <input type="checkbox"/> | | | | <input type="checkbox"/> 1 |
| GND 7 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 4 CTS 7 Gnd |

1.9.4.2 Ryko Code A Wash IV (Serial number less than 166600), Unitec POS 4000 and Portal Ti

SSC (CH14) RJ45 adapter to the Ryko Code A Wash IV (Serial number less than 166600), Unitec POS 4000 and Portal Ti

(Part #HT9344-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Adapter Pins | Car Wash DB9 Female Pins |
|----------------------------|-------------------------|------------------------------|-------------------------|--------------------------------|
| TXD 2 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 2 RXD |
| RXD 3 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 3 TXD |
| RTS 4 | (Grn) 5 | ----- Wht/Blu ----- | 5 (Grn) | 8 CTS |
| CTS 5 | (Red) 4 | ----- Blue ----- | 4 (Red) | 7 RTS |
| GND 7 | (Brn) 7 | ----- Wht/Brn ----- | 7 (Brn) | 5 GND |
| DSR 6 | (Org) 2 | ----- Orange ----- | 2 (Org) | 4 DTR |
| DTR 11 | (Blu) 1 | ----- Wht/Org ----- | 1 (Blu) | 6 DSR |

1.9.4.3 Ryko Code A Wash IV (Serial number “166600” or greater”)

SSC (CH14) RJ45 adapter to the Ryko Code A Wash IV (S/N 166600 or greater)
(Part #HT9352-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Modular Jack Pins | Car Wash DB9 Female Pins |
|---------------------------------|-------------------------|------------------------------|------------------------------|--------------------------------|
| TXD 2 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 2 RXD |
| RXD 3 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 3 TXD |
| RTS 4 <input type="checkbox"/> | | | | |
| CTS 5 <input type="checkbox"/> | | | | |
| DSR 6 <input type="checkbox"/> | | | | |
| DTR 11 <input type="checkbox"/> | | | | |
| GND 7 | (Brn) 7 | ----- Wht/Brn ----- | 7 (Brn) | 5 Gnd |

1.9.4.4 Unitec Enterlink

SSC (CH14) RJ45 adapter to the Unitec/Enterlink
(Part #HT9352-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Modular Jack Pins | Enterlink DB9 Female Pins |
|---------------------------------|-------------------------|------------------------------|------------------------------|---------------------------------|
| TXD 2 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 2 RXD |
| RXD 3 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 3 TXD |
| RTS 4 <input type="checkbox"/> | | | | |
| CTS 5 <input type="checkbox"/> | | | | |
| DSR 6 <input type="checkbox"/> | | | | |
| DTR 11 <input type="checkbox"/> | | | | |
| GND 7 | (Brn) 7 | ----- Wht/Brn ----- | 7 (Brn) | 5 Gnd |

1.9.4.5 PDQ

SSC (CH14) RJ45 adapter to the PDQ
(Part #HT9352-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Modular Jack Pins | PDQ DB9 Female Pins |
|---------------------------------|-------------------------|------------------------------|------------------------------|---------------------------|
| TXD 2 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 2 RXD |
| RXD 3 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 3 TXD |
| RTS 4 <input type="checkbox"/> | | | | |
| CTS 5 <input type="checkbox"/> | | | | |
| DSR 6 <input type="checkbox"/> | | | | |
| DTR 11 <input type="checkbox"/> | | | | |
| GND 7 | (Brn) 7 | ----- Wht/Brn ----- | 7 (Brn) | 5 Gnd |

1.9.4.6 Kesseltronics Advanced dual bay via the MUX PAP isolator box

SSC (CH14) RJ45 adapter to the Kesseltronics “Advanced Dual bay” via MUX PAP isolator box /DB9
(Part #HT9352-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Modular Jack Pins | Kesseltronics ADB DB9 Female Pins |
|---------------------------------|-------------------------|------------------------------|------------------------------|-----------------------------------------|
| TXD 2 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 2 RXD |
| RXD 3 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 3 TXD |
| RTS 4 <input type="checkbox"/> | | | | |
| CTS 5 <input type="checkbox"/> | | | | |
| DSR 6 <input type="checkbox"/> | | | | |
| DTR 11 <input type="checkbox"/> | | | | |
| GND 7 | (Brn) 7 | ----- Wht/Brn ----- | 7 (Brn) | 5 Gnd |

SSC (CH14) RJ45 adapter to the Kesseltronics “Advanced Dual bay” via MUX PAP isolator box /RJ45
(Part #HT9406-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | Kesseltronics ADB RJ45 Pins |
|---------------------------------|-------------------------|------------------------------|-----------------------------------|
| TXD 2 | (Org) 2 | ----- Orange ----- | 2 RXD |
| RXD 3 | (Blk) 3 | ----- Wht/Grn ----- | 3 TXD |
| RTS 4 <input type="checkbox"/> | | | |
| CTS 5 <input type="checkbox"/> | | | |
| DSR 6 <input type="checkbox"/> | | | |
| DTR 11 <input type="checkbox"/> | | | |
| GND 7 | (Red) 4 | ----- Blue ----- | 4 GND |

1.9.5 Fuel Price Sign Communication

The SSC uses channels 9, 10, 11 or 12 and to interface to Electronic price signs. The following price signs are supported.

1.9.5.1 Daktronics Price Sign

SSC (CH9, 10 or 11) RJ45 adapter set to the Daktronics Price Sign (Part #HT9359D-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | RJ45 Modular Jack Pins | Daktronics DB9 Female Pins |
|----------------------------|-------------------------|------------------------------|------------------------------|----------------------------------|
| TXD 2 | (Blk) 3 | ----- Wht/Grn ----- | 3 (Blk) | 2 RXD |
| RXD 3 | (Wht) 8 | ----- Brown ----- | 8 (Wht) | 3 TXD |
| RTS 4 | (Red) 4 | ----- Blue ----- | 4 (Red) | 8 CTS |
| CTS 5 | (Grn) 5 | ----- Wht/Blu ----- | 5 (Grn) | 7 RTS |
| DSR 6 | (Brn) 7 | ----- Wht/Brn ----- | 7 (Brn) | 4 DTR |
| GND 7 | (Blu) 1 | ----- Wht/Org ----- | 1 (Blu) | 5 GND |
| DTR 11 | (Org) 2 | ----- Orange ----- | 2 (Org) | 6 DSR |

1.9.5.2 PWM Price Sign

SSC (CH9, 10 or 11) RJ45 adapter set to the PWM Price Sign (Part #HT9428-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | CAT 5 Cable (T568B Spec.) | PWM RJ45 Connector |
|----------------------------|--------------------------|------------------------------|--------------------------|
| TXD 2 | (Grn) 5 | ----- Wht/Blu ----- | 4 RXD |
| RXD 3 | (Blk) 3 | ----- Wht/Grn ----- | 5 TXD |
| RTS 4 | (Red) 4 | ----- Blue ----- | 2 CTS |
| CTS 5 | (Yel) 6 | ----- Green ----- | 3 RTS |
| GND 7 | (Wht) 8 | ----- Brown ----- | 1 GND |
| DSR 6 | <input type="checkbox"/> | | |
| DTR11 | <input type="checkbox"/> | | |

1.9.6 Exxon Mobil VSAT Cable

The SSC uses Channel 15 to interface with the Exxon Mobil Credit Host Network and with other remote computers via a Personal Earth Station that is connected to the VSAT.

The Earth station has to be configured (baud-rate, parity, time-outs, etc.) to properly communicate with the SSC. This is done remotely by Exxon Mobil personnel. The SSC does not configure the Earth Station.

SSC (CH15) To the VSAT Cable
(Part #HT9383-ADP)

| SSC DB25 Female Pins | RJ45 Adapter Pins | | CAT 5 Cable (T568B Spec.) | | RJ45 Modular Jack Pins | VSAT DB25 Male |
|----------------------------|-------------------------|-------|------------------------------|-------|------------------------------|-------------------|
| (TXD) 2 | (Blk) 3 | ----- | Wht/Grn | ----- | 3 (Blk) | 2 (RXD) |
| (RXD) 3 | (Wht) 8 | ----- | Brown | ----- | 8 (Wht) | 3 (TXD) |
| (CTS) 5 | (Red) 4 | ----- | Blue | ----- | 4 (Red) | 8 (DCD) |
| (DSR) 6 | (Grn) 5 | ----- | Wht/Blu | ----- | 5 (Grn) | 6 (DTR) |
| (GND) 7 | (Brn) 7 | ----- | Wht/Brn | ----- | 7 (Brn) | 7 (GND) |
| (DTR) 11 | (Blu) 1 | ----- | Wht/Org | ----- | 1 (Blu) | 20 (DSR) |

2 Programming

2.1.1 ICB/Mechanical Dispenser Addressing

2.1.1.1 Mechanical Dispensers

Two channels (5 and 6) have been designated to communicate with the ICBs/dispensers. Each channel can accommodate up to 12 “Mechanical” fueling positions. The addresses of the fueling positions on channel 5 will be set from 1 to 12, If channel 6 is used, the addresses of those fueling positions will also be set from 1 to 12 (*See example*).

| Fueling Positions | | |
|--------------------------|-------------|-------------|
| Fueling Position | ICB Address | SSC Channel |
| 1 | 1 | CH-5 |
| 2 | 2 | CH-5 |
| 3 | 3 | CH-5 |
| 4 | 4 | CH-5 |
| 5 | 5 | CH-5 |
| 6 | 6 | CH-5 |
| 7 | 7 | CH-5 |
| 8 | 8 | CH-5 |
| 9 | 9 | CH-5 |
| 10 | 10 | CH-5 |
| 11 | 11 | CH-5 |
| 12 | 12 | CH-5 |
| 13 | 1 | CH-6 |
| 14 | 2 | CH-6 |
| 15 | 3 | CH-6 |
| 16 | 4 | CH-6 |
| 17 | 5 | CH-6 |
| 18 | 6 | CH-6 |
| 19 | 7 | CH-6 |
| 20 | 8 | CH-6 |
| 21 | 9 | CH-6 |
| 22 | 10 | CH-6 |
| 23 | 11 | CH-6 |
| 24 | 12 | CH-6 |

2.2 SSC Parameters Values and Options

The SSC keypad is not used to configure the SSC. The SSC configuration is done by the POS. The POS has to download all required parameters to the SSC. The SSC will start polling the dispensers and/or card readers only after the POS has downloaded station configuration data. If the SSC has not received the download from the POS the unit will display [CHXX Await Cnfg.]

Parameters Downloaded from POS:

- DPT Configuration
- Fuel Information
- Product Information
- Car Wash Information
- Cash / Credit Limits
- Mode of Service
- Default Price Level
- Sale Stacking
- Number of fueling points
- Credit Configuration

2.3 Keypads

2.4 Peripheral Devices

2.4.1 Tank Gauge Systems

The ANDI/SSC uses Channel 13 to interface to either the Veeder-Root tank gauge system or the Red Jacket "ST Model" tank gauge system. The SSC is connected to the Serial board on a Device and it may be connected to the DIM board on a TLS 350R.

When the SSC is connected to the DIM board on a TLS 350R it will send real-time fuel transaction data i.e. sale started, sale complete, volume dispensed, meter reading etc. This is accomplished by implementing the Veeder-Root Dispenser Interface Protocol (a proprietary interface defined by Veeder-Root. to the TLS 350R). This will allow the TLS to utilize the AccuChart Automatic Tank Calibration feature for underground storage tank reconciliation.

Configure the TLS-250/350/350R or the Red Jacket communication parameters as follows:

Baud Rate - 9600, Parity - Odd, Stop Bits - 1, Data Bits - 7

Notes:

On a TLS-250 the communication parameters are set using a rotary switch and some DIP switches, (please refer to the TLS 250 manual).

On a TLS-350/350R the communication parameters are programmed via the TLS keyboard (please refer to the TLS 350/350R manual).

No additional SSC configuration is needed, the SSC will automatically check if it is connected to a DIM card. If not, the SSC will not send any Dispenser Interface commands to the TLS. Communicating with other devices requires POS programming.

To display the TLS link status press the "D" key on the SSC keyboard.

CH-13 Link Up
TLS RS-232 FP

Once the SSC detects it is connected to a DIM board the device name changes to TLS-R

CH-13 Link Up
TLS-R RS-232 FP

2.4.2 Car Wash Controllers

The following requirements must be met in order for the Car Wash controllers to communicate to the “ANDI”.

| Car Wash controller | Software Version |
|----------------------|--------------------------------|
| Ryko Code A Wash III | “8B” or newer |
| Ryko Code A Wash IV | “V” ⁽¹⁾ |
| Unitec POS 4000 | “6.50” or newer ⁽²⁾ |
| Unitec/Interlink | Any version |
| PDQ | Any version |

Notes:

1. The Ryko Code A Wash IV should communicate to the ANDI using any version of software. However, Ryko recommends that the controller be upgraded to the latest version.

2. The Unitec software must be able to support External POS 1, 2 or 3. This information may be found either on the PROM label which is located inside the controller, or via the configuration report printed from the controller. There will be a line on the report indicating the “External POS” type.

The Unitec controller must be programmed to use the Ryko protocol. See section 6.2.10 in the External POS Menu of the Unitec manual. Set POS offset to “0”, Down. Set External POS type to “2”. Set baud rate to 9600.

If the Unitec hardware version is 6.1, a (SA1606) 9 pin adapter (which can be ordered from Unitec, if required) must be used to connect the serial port to the communication cable. If the hardware version is 6.2 or higher, the communication cable must be connected directly to the 9 pin serial port.

To distinguish 6.1 from 6.2 hardware, look at the label attached to the base of the unit. If the Model field has “POS4000” then it is 6.1 hardware. If it has “POS4000/2” (or /3 etc.) then it is 6.2 or higher hardware. The 6.2 and higher cable pinouts are standard for a 9-pin DTE serial port, which is not the case for 6.1 units.

3. The Ryko Code A Wash II will not work with the ANDI system. It can be upgraded to a Code A Wash III.

1.1.1. Fuel Price Signs

The ANDI controller supports electronic price sign controllers.

The following signs communicate with the ANDI controller via the use of the ANDI protocol message set. These devices physically connect to an available POS RS232 for communications.

- PWM
- Daktronics

For specific versions available with support for the FMD protocol, please visit the Allied Electronics, Inc. website and review the release notes for the system in question. The release notes can be found at the link noted below:

http://www.alliedelectronics.com/Software_Release_Notes.html

The controllers noted above may have specific software version requirements for the support of the ANDI protocol interface. Please contact the respective manufacturer for specific details.

Other sign integrations are currently under development. Please contact Allied Electronics, Inc. for up to date details regarding other possible signs that have integrated to the controller.