



# SmartScan

## Model 2600 Next Generation AEI Controller



The SmartScan Next Generation AEI controller provides the core functionality required for configuration of application specific systems that include:

**Mainline S-918 reader systems** | **Legacy system upgrade in place** | **Yard entrance systems**

The SmartScan Next Generation AEI controller is a dual processor device that provides ultimate flexibility for data acquisition, processing, storage and transmission to remote host systems.

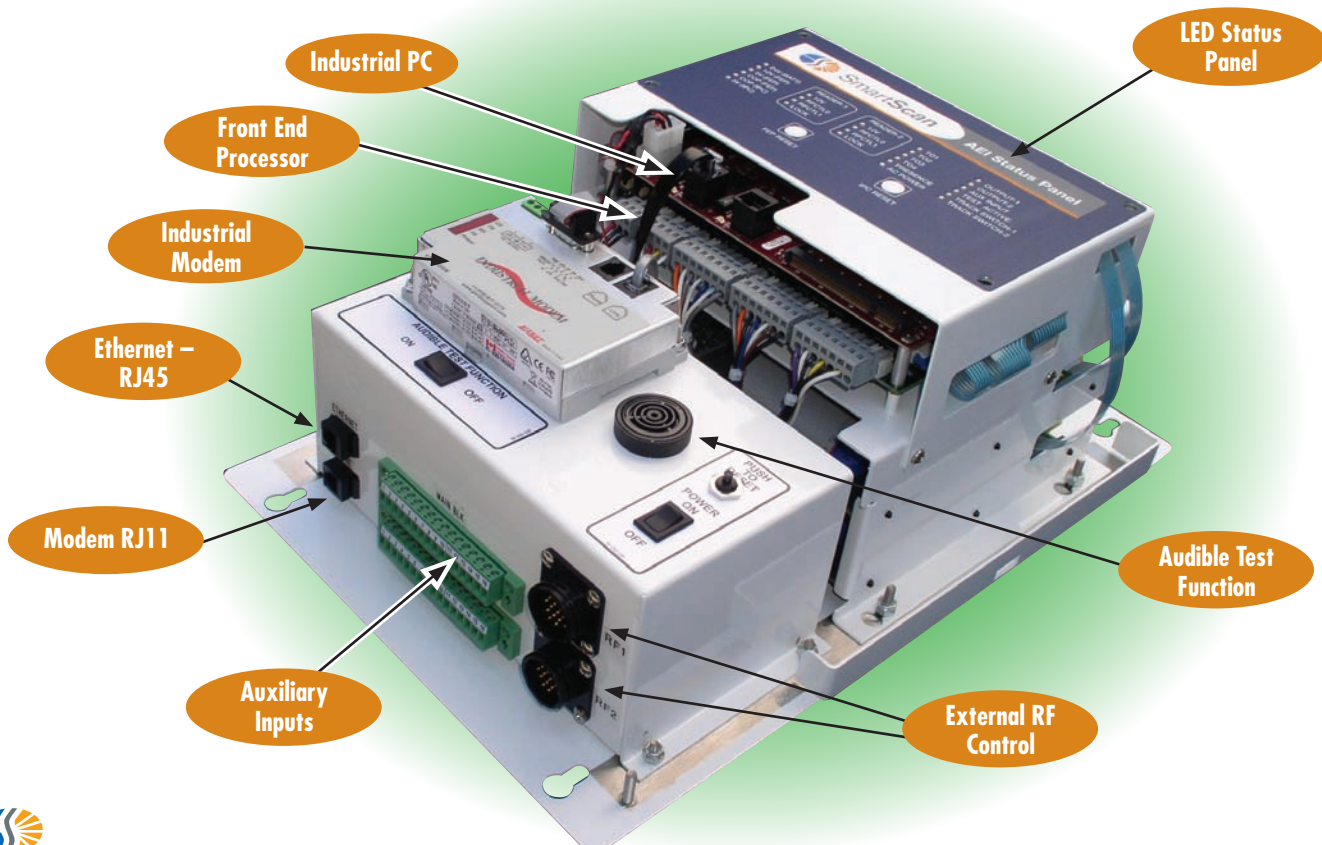
**The Front-End processor (FEP) of the SmartScan Next Generation AEI controller provides dedicated real time acquisition of input from trackside and auxiliary equipment.**

- 1 - Series overlay track circuit or loop presence detection system
- 4 - Zero speed wheel detectors
- 2 - Independent AEI reader devices – AI 1200 / AR 2200
- 1 - Switch position monitor
- 1 - AC power monitor
- 1 - External temperature monitor

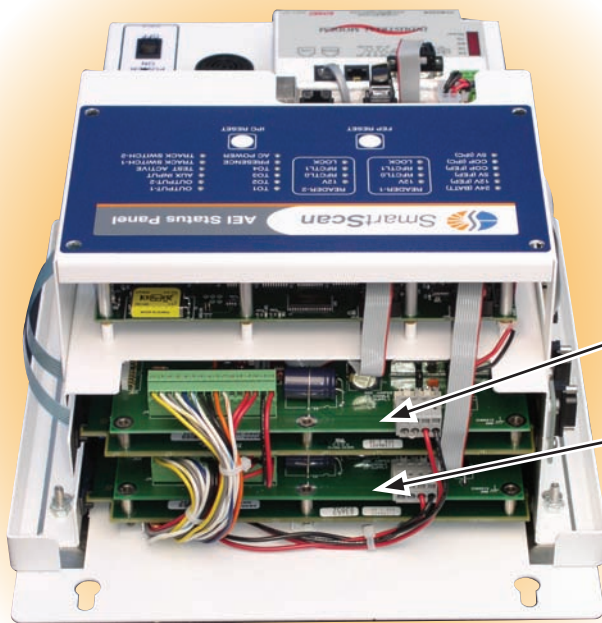
All captured data is buffered in non-volatile memory and transferred in real-time to the Industrial PC during the train passage. When train presence clears, the Industrial PC handles post processing and transfer of data to remote locations.

**The Industrial PC (IPC) is a single board PC built to industrial specifications**

- Temperature range – 40 + 70C
- Ruggedized to withstand the harsh conditions of the wayside environment.
- Linux operating system provides advanced processing algorithms
  - Clean List development
  - Double track logic
  - Maintenance reporting
  - S-918 consist reporting
  - Multiple host sessions
  - Serial communications, modem and IP connectivity
  - Ethernet ready







Reader 1 with power supply

Reader 2 with power supply

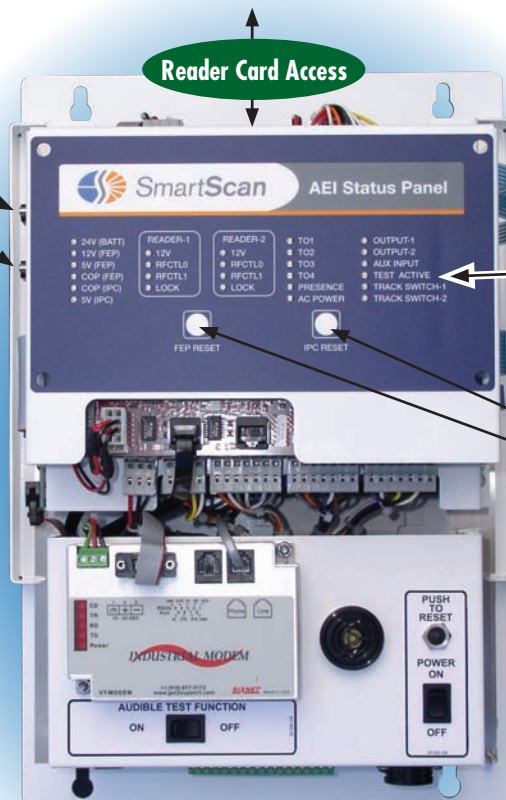
- The SmartScan Next Generation AEI controller is designed for operation with dedicated or multiplexed readers from Transcore. The controller has an internal bay that will accommodate a maximum of two AI 1200 reader boards; each with dedicated power supplies.
- Each SmartScan Next Generation AEI Controller is equipped with an extended temperature range (-40 - +70C) industrial modem. The modem supports an expanded AT command set that allows a high level of flexibility for communications configuration. Operating voltage for the modem is 10 – 30 VDC.
- The front panel of the SmartScan Next Generation AEI controller has several arrays of LED's that give visual indications of system activity.
  - Power supply voltages – 3, 5, 8, 12 volts
  - Reader status
  - Train presence
  - Wheel detector activation
  - Switch position
  - AC power supply
  - Audible test function
- Two sealed switches located at the bottom of the status panel provide the external reset functions for the FEP and IPC.

External RS 232 Connections

Reader Card Access

System status indicators

FEP & IPC Reset Switches



General Specifications

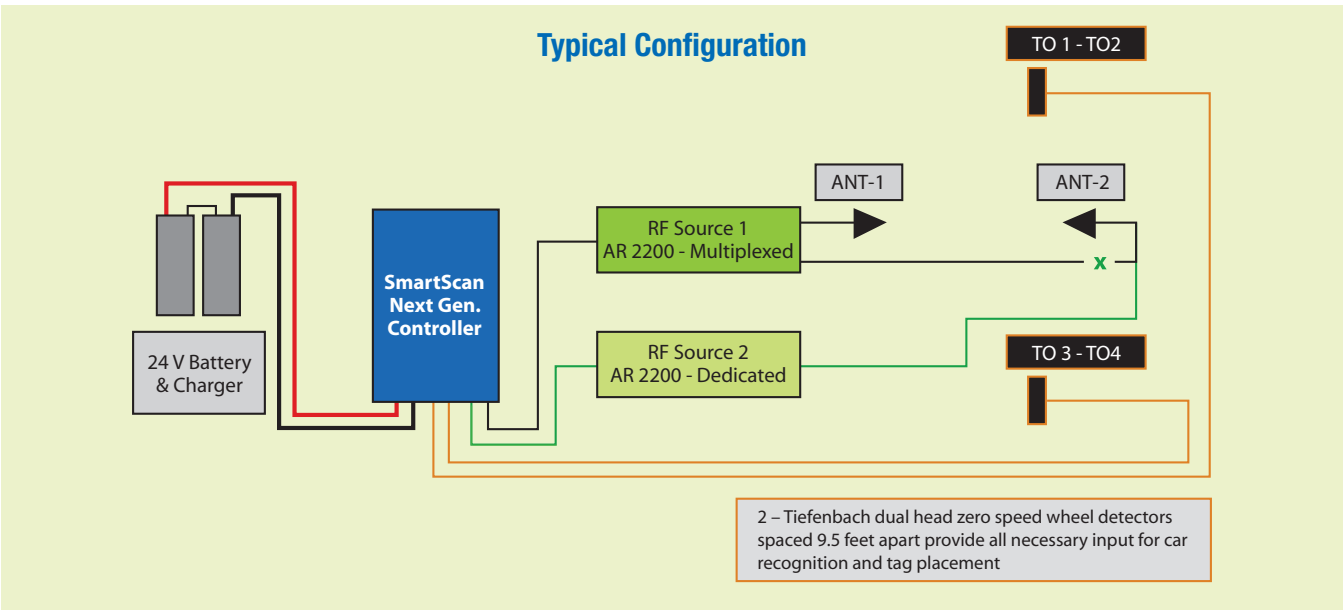
Operating Input Voltage	20 – 30 VDC @ 5 Amps
Input Voltage Protection	Circuit Breaker + self-restoring fuses on each processor and reader power supply. Reverse polarity and surge protected
Communications	External RS 232 ports – 2 Internal RS 232 ports – 3 RJ45 - Ethernet port – 1 RJ11 – Modem port - 1
Temperature specification – Industrial	–40 + 70C Fanless operation
Size	11.3" W x 17.1" H x 7" D
Weight	21 lbs.
Finish	White powder coat over stainless steel

Front End Processor / Interface

Manufacturer	Southern Technologies Corporation
Processor	Motorola 68 HC11
Program storage	512K Bytes - FLASH
Data storage	512K Bytes – Non-volatile
Inputs	8 – Analog – Battery voltage, internal temp., outside temp, 3v, 5v,8v,12v power supply monitor 6 – Digital – Opto Isolated switch point position 1 & 2, power fail, presence, test, spare 4 - Zero speed transducer – RF filtration and surge suppression.
Outputs	2 – Digital – 24 volt relay drivers
Operating temperature range	-40 +70C

Industrial PC

Manufacturer	VersaLogic
Architecture	Single board – PC104 – Plus Expansion
Processor	AMD LX800
Operating System	Linux
Program storage/Data storage	Non-volatile Compact Flash – 2GB
Communications	Serial – Ethernet – TCP-IP
Operating temperature range	-40 +70C



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**Southern Technologies Corporation**  
6145 Preservation Drive  
Chattanooga, Tennessee 37416-3638  
USA