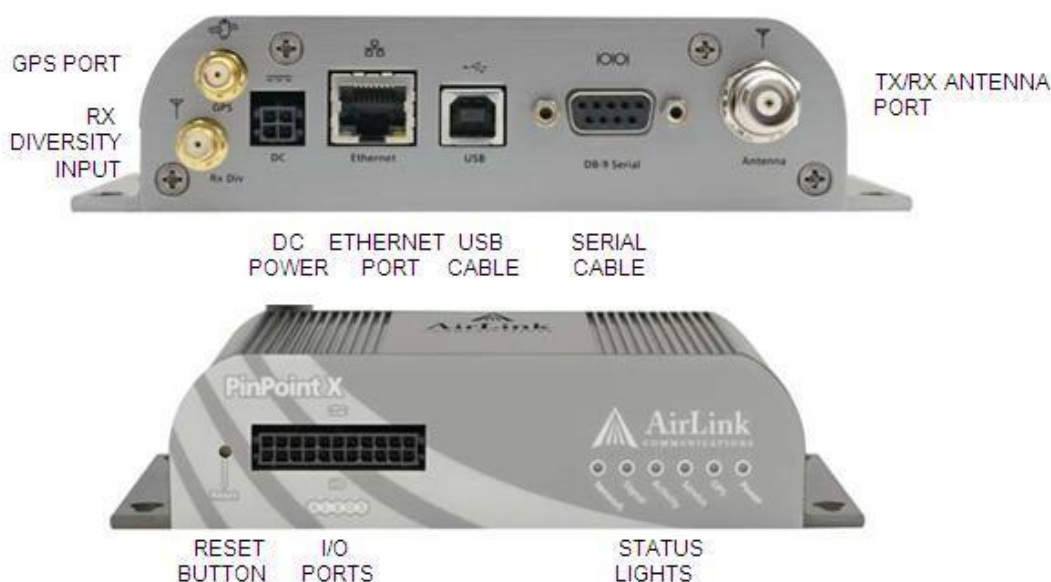


# ***WIRELESS MOBILE DATA***

PO BOX 1088 EL GRANADA, CA 94018 TEL: 650 726 7791 FAX: 650 350 3221

[dsfreeman@wirelessmobiledata.com](mailto:dsfreeman@wirelessmobiledata.com)

**SUMMARY:** This document outlines important new features and functionality of the Sierra Wireless/AIRLINK *PinpointX* modem with latest ALEOS™ firmware update.



Front and Rear view of the PinpointX Modem

## **New features included with the latest ALEOS™ Firmware release:**

- Reporting by Exception
- Transmission of an Exception Incident via SMS Messaging to a Cel Phone
- Transmission of an Exception Incident via E-mail where you have a server capable of processing the E-mail message
- Transmission of outbound GPS to a 3<sup>rd</sup> Party modem (as example sending GPS data a Motorola RD-LAP or Ericsson Orion Modem that can accept GPS traffic. This could be important where you have 800Mhz coverage but lose your Cellular Coverage; GPS data to the 800Mhz system would continue to be processed)
- Variable GPS Output Rate (important so that GPS data to the 800Mhz radio will be sufficient for updates but not swamp the 800Mhz network)
- IPsec Capability within the modem to negate the need for a 3<sup>rd</sup> party VPN Client Application on the Laptop.

New AVL functions include the ability to monitor the following parameters within Wireless Ace:

- Vehicle Speed
- Vehicle Heading
- Vehicle Engine Hours using either Ignition Sense or Power-On Sense

Within Wireless Ace almost all parameters can be monitored and now using SMS and/or SMTP messaging you will be able to be notified of any unusual conditions that develop.

**Standard features on all PinpointX**

**Modems include:**

- Embedded Intelligence
- Multiple peripheral connections
- Mil Spec 810-F Certified
- External SIM card access - HSDPA version
- High-precision 16-channel GPS receiver
- Extensive location-based protocols
- Low Power Mode: User Selectable Low Power threshold shuts down the modem if Battery Voltage gets to a critically low level. This prevents the modem from draining the battery.

**KEY BENEFITS**

- Persistent network connection
- Multiple peripherals and external SIM access simplify integration
- Advanced processor optimizes performance on high speed data networks
- Seamless backwards compatibility ensures reliable and pervasive connectivity
- Store-and-Forward prevents loss of GPS data: This feature allows the modem to continue to receive GPS data whether in range of the Cellular Network or not. If a modem goes out of range of the Cellular system, it will STORE the GPS Data and then FORWARD the GPS data once the modem is back in Cellular Range.

GROUPS	MODEM DATA		PRINTABLE VIEW
INFO	AT	Name	Value
STATUS	*NETIP	Network IP	70.0.62.53
COMMON	*NETSTATE	Network State	Network Ready
Misc	*NETCHAN	Channel	25
USB	*NETRSSI	RSSI (dBm)	-29
Serial		Host Mode	AT
TCP		Host Signal Level	DCB: LOW DTR: LOW DSR: HIGH CTS: HIGH RTS: LOW
UDP		Network Error Rate	255
DNS		Network Bytes Sent	1406
Dynamic IP		Network Bytes Rcvd	1231
PPP/Ethernet		Host Serial Bytes Sent	12
PassThru		Host Serial Bytes Rcvd	0
SMTP		Network IP Packets Sent	7
Other		Network IP Packets Rcvd	8
Low Power		Host IP Packets Sent	7
Friends		Host IP Packets Rcvd	14
LOGGING		Carrier	Sprint
PINPOINT	*NETOP	Network Service Type	1X, EV-DO Rev.A
1X/EV-DO	+PRL	PRL Version	20227
I/O	*PRLSTATUS	PRL Update Status	2
		Radio Module Internal Temperature	16
	*POWERMODE	PinPoint Low Power Mode State	ON
		GPS Fix	0
		Satellite Count	0
		Latitude	+0000000
		Longitude	+00000000
	+ECIO	CDMA ECIO	1
		Number of System Resets	46
		IP Reject Count	0
	*POWERIN	Battery Voltage	13.95

## **BASELINE ALEOS™ FUNCTIONALITY**

The AirLink Embedded Operating System (ALEOS™) is the industry benchmark for reliable and feature-rich embedded intelligence. With extensive capabilities like remote monitoring and configuration, packet-level diagnostics and over-the-air firmware updates, ALEOS™ simplifies integration, installation, operation and maintenance of any wireless data solution. ALEOS™ provides the “always-on” and “always aware” connection management required for today’s mission-critical applications.

- Integrated IP Stack
- Standard AT Commands
- Telemetry protocols
- Encryption & Security
- Dynamic DNS
- Remote configuration
- Network Address Translation
- Packet Filter/Firewall
- SNMP
- DHCP (Ethernet version)
- Over the air upgrading
- Remote downloads & troubleshooting

### **Benefits**

- Processor agnostic RTOS
- Common ALEOS™ code used across all Airlink intelligent devices
- Provides a common experience to customers regardless of the modem technology
- Allows customers to migrate to next generation networks with no change to their application
- Constantly evolving in new directions to satisfy customer's requirements
- Helps reduce customer migration path by maintaining device consistency

## **RADIO CARD UPGRADE**

Additional features developed for the PinpointX platform include an upgrade option for the internal radio cards. As we know, the carriers continue to evolve their network capability. As new RF features are expanded, it will be possible to upgrade the radio cards instead of replacing the modem. This provides for an open-ended upgrade path at time of purchase.

## **TEMPLATE DEVELOPMENT**

Wireless Ace supports the building of a master template that is then pushed to each modem during set up. It is not necessary to individually configure each and every

characteristic for each modem. During set up, just plug in an Ethernet cable and push the system configuration to each modem with a single mouse click. This feature alone will save hours of manpower.

## OTHER GPS FUNCTIONALITY

Wireless Ace supports independent GPS configurations. Using pull down menus you can select format (TAIP/NEMA/RAP), speed of updates over the air based on time, distance or stationary, independent GPS updates to the screen (separate from the configuration over the air) and other remote GPS functionality.


Some customers want GPS to flow to an external private data modem (example, Motorola RD-LAP modem, Dataradio Gemini Modem) for back up or if the modem travels outside of the Cellular Network. It is now possible to push PinpointX GPS data to the external modem. This allows legacy modems to continue to provide functionality. The PinpointX GPS data can be sent to the legacy modem either as a continuous data stream or at a variable rate based on settings within Wireless Ace. This feature is in addition to Store and Forward discussed earlier.

GROUPS	MODEM DATA		Value	New Value
INFO	AT	Name		
STATUS	*PPIP	ATS Server IP		
COMMON	*PPPORT	Server Port	22335	22335
Misc	*PPPTIME	Report Interval Time (Seconds)	0	0
USB	*PPDIST	Report Interval Distance (100 Meters)	0	0
Serial	*PPTSV	Stationary Vehicle Timer (Minutes)	0	0
TCP	*PPMINTIME	PinPoint Minimum Report Time (secs)	0	0
UDP	*PPGPSR	GPS Report Type (hex)	12	12-GPS+Date
DNS	*PPGPSDATUM	GPS Datum Mode	0	0-WGS84
Dynamic IP	*PPDEVID	Use Device ID in Location Reports	0	0-FALSE
PPP/Ethernet	*PPSNF	SNF Enable	0	0-OFF
PassThru	*PPSNFR	SNF Reliable Mode	0	0-OFF
SMTD	*PPSNFB	SNF Mode	0	0-Normal
Other	*PPSNFM	SNF Minimum Reports	0	0
Low Power	*PPMAXRETRIES	SNF Simple Reliable Max. Retries	10	10
Friends	*PPCTCPOLL	TCP GPS Port	9494	9494
LOGGING	*PPPLATS	Local ATS Reporting Time Interval (secs)	0	0
PINPOINT	*PPPLATSR	ATS Local Report Type (hex)	12	12-GPS+Date
1X/EV-DO	*PPPLATSEXTRA	ATS Local Extra Report Ports	0	0
I/O	*PPPINUTEVT	Enable input event reports	0	0-OFF
	*PPPODOM	Odometer Enable	0	0-OFF
	*PPPODOMVAL	Odometer Value (meters)	0	0
	*PPPTAIPID	TAIP ID		
	*PPGPS	Enable Persistent GPS Report Strings	0	0-NONE
	*PPGPSR	Select Persistent GPS Report	E1	E1-NMEA GGA+VT
	*PPDRGPS	Add GPS Time and Lat/Long	0	0-FALSE
	*PPIGNOREIP	Ignore RAP Server IP Update	0	0-Use
	*MF	Legacy Format	8F	8F

## REMOTE I/O PORT

The PinpointX modem is available with an optional cabling kit illustrated that plugs into the front of the modem. Now up to 10 i/o inputs/outputs are available for better system management control of the fleet. As example lights being turned on the vehicle, shotgun release or vehicle telemetrics could be monitored. I/O conditions are set within Wireless Ace.

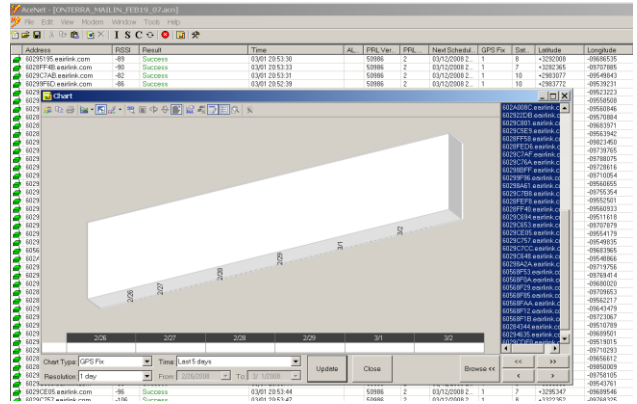
GROUPS	MODEM DATA		Value	New Value
INFO	AT	Name		
STATUS	*DIGITALIN1	Digital IN 1	1	
COMMON	*DIGITALIN2	Digital IN 2	1	
Misc	*DIGITALIN3	Digital IN 3	1	
USB	*DIGITALIN4	Digital IN 4	1	
Serial	*ANALOGIN1	Analog IN 1	00.32	
TCP	*ANALOGIN2	Analog IN 2	00.29	
UDP	*ANALOGIN3	Analog IN 3	00.29	
DNS	*ANALOGIN4	Analog IN 4	00.32	
Dynamic IP	*RELAYOUT1	Relay Output 1	0	0-OFF
PPP/Ethernet	*RELAYOUT2	Relay Output 2	0	0-OFF
PassThru				
SMTD				
Other				
Low Power				
Friends				
LOGGING				
PINPOINT				
1X/EV-DO				
I/O				



## **MANAGEMENT TOOLS INCLUDE:**

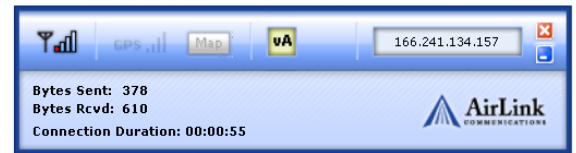
### **ACENET**

Acenet supports remote fleet management from 10 to 1,000 mobiles at a time. With Acenet you can monitor all functions of the data modems both numerically as well as graphically. In addition, ACENET allows updates to be pushed to the modems in batches rather than one modem at a time.



### **ACEVIEW**

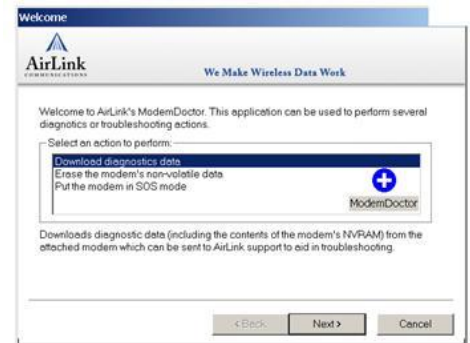
Aceview is an end-user program that instantly tells the user the modem network, signal strength, the network connection type (EVDO REV A, IxRTT; HSPDA, EDGE), GPS position and IP address. This is a very handy tool that takes just a minute to learn how to use. With this tool you could ask a vehicle operator to advise if there is signal strength (and how much), if GPS data is being captured and if an IP address has been assigned.



### **MODEM DOCTOR**

Modem Doctor is a utility that allows a Sierra Wireless Support Engineer to download log files and other parameters.

This is a helpful utility which often times allows a modem to be diagnosed and fixed in the field thereby providing better vehicle uptime and communications to vehicle staff.



### **OTHER ENHANCEMENTS**

Customer input drives many features offered by ALEOS™. Sierra Wireless continues to add enhancements. Check the Sierra Wireless website for latest ALEOS™ revisions at <http://www.sierrawireless.com>