SIERRA WIRELESS

HEART OF THE WIRELESS MACHINE®

Reducing Costs and Increasing Efficiency Through Analog to Digital Migration

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Agenda

- About Sierra Wireless AirLink™ products and markets
- Phasing out of analog
- Progress Energy Florida case study
  - analog to digital migration
- Q & A

MOBILE & M2M OVERVIEW

- Pioneer and trusted innovator in Wireless Wide Area Networking space
  - AirLink Communications Founded in 1993 and acquired by Sierra Wireless in 2007 – Becomes Sierra's Mobile & M2M Group
- We Make Wireless Data Work





Products

- Mobile and M2M Intelligent Modems
  - In-vehicle
  - M2M Platforms
  - Fixed Wireless Terminals
- Embedded Intelligence
- Remote management tools and utilities

Key Markets & Applications

- Mobile Data
- Utilities/Automation
- Infrastructure
- Financial
- Wireless Internet /Networking

CORPORATE OVERVIEW

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Embedded Modules

PC Adapters

Rugged Mobiles

M2M Modems & Gateways

Software

Real time OS, M2M Protocols, Remote device MGT, UI, Development tools

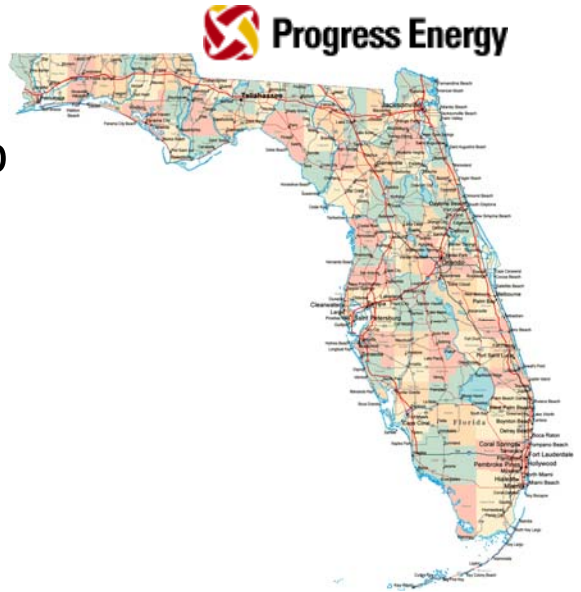
Phasing out of Analog

- All major US cellular phone service providers stopped supporting analog coverage in March, 2008
- Digital has its advantages:
  - Maintains data integrity during transmission, enabling transmission over longer distances
  - Digital is more easily encrypted and offers more robust security
  - Digital enables easier multiplexing of larger channel capacities
- Legacy systems and customers
  - Hundreds of customers and many thousands of devices will need to bridge the gap between analog equipment and digital service
  - Exorbitant costs to replace legacy analog equipment with digital

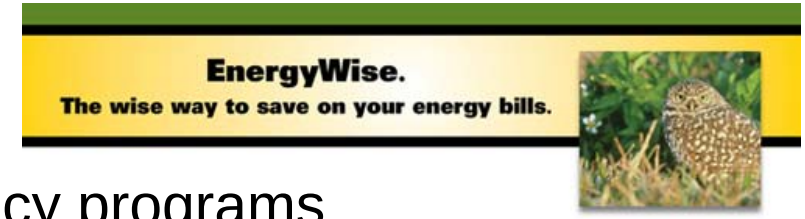
PLC – typically monitored by analog networks

Progress Energy Florida (PEF) – *case study*

- Subsidiary of Fortune 250 energy company Progress Energy
- Provides electricity and related services to 1.7 million customers
- Serves a territory encompassing more than 20,000 square miles
- Pursuing a balanced approach to meeting the future energy needs of the region
  - Increased energy efficiency programs
  - Investments in renewable energy techno the-art electricity system



PEF Project Background



- Energy efficiency programs
  - Fast-growing tool for utility companies to better understand customers
  - Plan accordingly for future consumption trends
- GoodCents contracted to complete end-use load study
- Participating customers had individual loads monitored though K20 data logger
  - Usage recorded in 15 or 30 minute intervals

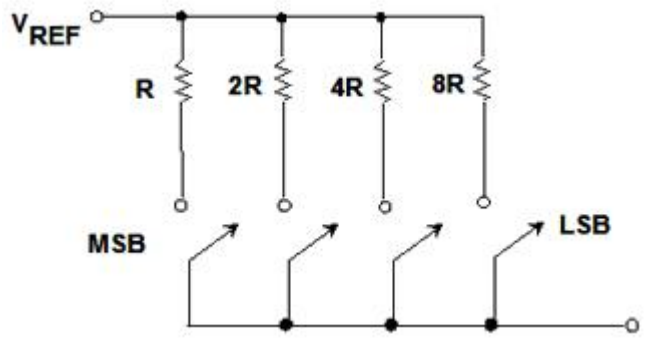
Business Challenge

- Equipment requirements:
  - Existing landline
  - Circuit-switched connectivity device
- Problem: circuit-switched device interfered with digital voicemail, DSL, VoIP
  - Number of viable participants dropped with consumer complaints of phone and Internet interference
- Solution: to cost-effectively upgrade landline circuit- switched connectivity devices in order to relieve interference

Solution Options

- Option #1: new landlines
- Problems:
  - Datalogger typically located in garage - no phone jack
  - Landline and RJ-11 installation exceptionally costly upfront
  - Costs included recurring monthly usage fee & additional fee for disconnecting line at completion of study
  - Landline could not be moved and reused from project-to-project or customer-to-customer
- Option #2: upgrade to digital, wireless connectivity device

Analog to Digital Conversion



Analog to Digital Migration

- Deployment:
  - AirLink RJ-11 IP Gateway communicating with AirLink Raven intelligent connectivity devices installed in the field
  - Running on 3G cellular network
  - Integration by systems integrator MOBILE electron
- Solution details:
  - Legacy circuit-switched devices connected to the public Internet by encapsulating CSD signal to IP for transmission over cellular IP networks
  - Seamless migration from analog to digital without replacing host system infrastructure
  - Connected wireless devices enable remote configuration, packet-level diagnostics, reliable network session persistence

Results

- 88 percent of PEF consumers in research program use wireless devices
  - 183 wireless devices currently deployed, with additional participants moving to wireless as needed
- Benefits:
  - Decreased costs – Eliminated the need to install additional landlines
  - Device portability – Allowed for re-use in future energy efficiency programs
  - Improved customer relationships – Eradicated interference caused by landline circuit switch device and required only one additional visit to replace the device with a wireless modem
  - Increased data download reliability – Reduced the number of landline circuit switch devices in the field
  - Simplified conversion – Moved from circuit switched data to wireless IP data without any costly replacement of legacy equipment

Common Issues for Analog to Digital Migration

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- Reluctance to change
  - Unfamiliarity with existing system
  - Distrust of using the Internet
  - Lack of resources to address the change
- Apparent Incompatibility
  - Host software can only dial a phone number
  - RJ-11 only connection at remote device
  - Serial only connections in a packetized digital world

Q & A

- Read the entire study in the September issue of *Remote Site & Equipment Management* or at: http://www.sierrawireless.com/resources/corporate/documents/REM%20Byline%20Article%20Aug08.pdf

WINNER: SILVER

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