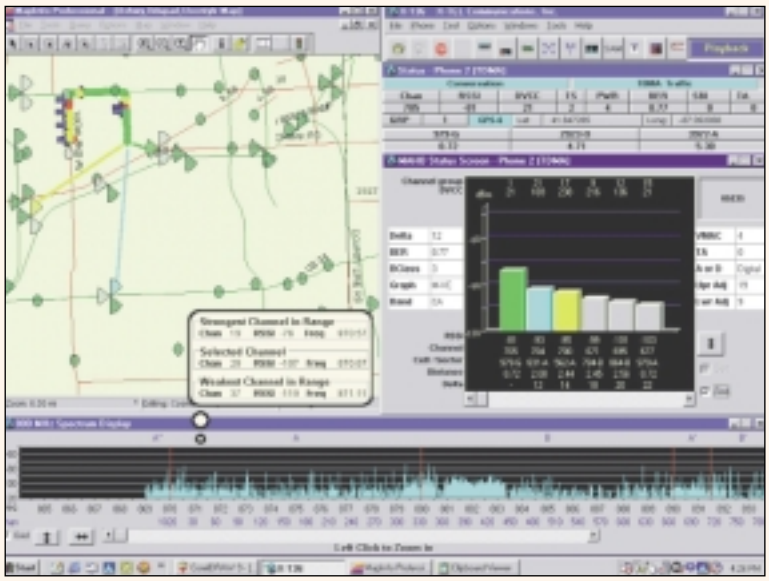
COLLECT DATA ALL DAY
PROCESS IT IN MINUTES

TDMA



X-136 Spectrum Scanner

The Spectrum Scanner is standard as part of the X-136 Host Controller system. The X-136 Spectrum Scanner is one of the fastest scanning receivers available. Measurements taken by the scan receiver are recorded for every channel in the cellular or PCS band, as fast as once per second. A large dynamic range, exceeding most scan units currently available in the industry, protects against misleading measurements due to receiver front-end overloading when in near-field environments.

X-136 Host Controller

The X-136 Host Controller is a modular, fully expandable field measurement tool designed for testing the air interface of cellular, PCS, Data and 3G networks. The Host Controller platform is the first collection system of its kind, employing a sophisticated bus architecture capable of simultaneously supporting many different analog and digital phone standards. Twelve device ports provide support for system expansion—more than any other tool in its class. By inserting additional device interface cards, the X-136 Host Controller can grow from an entry level unit to a full service, network quality benchmarking tool.

Post-Processing

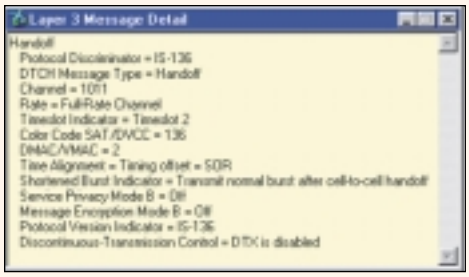
Post-processing is performed utilizing the X-TEL Utilities within MapInfo. The X-136 software includes advanced routines for automated post-processing, cell site database integration, and data merging and reduction based on time and distance.

Real-Time Display

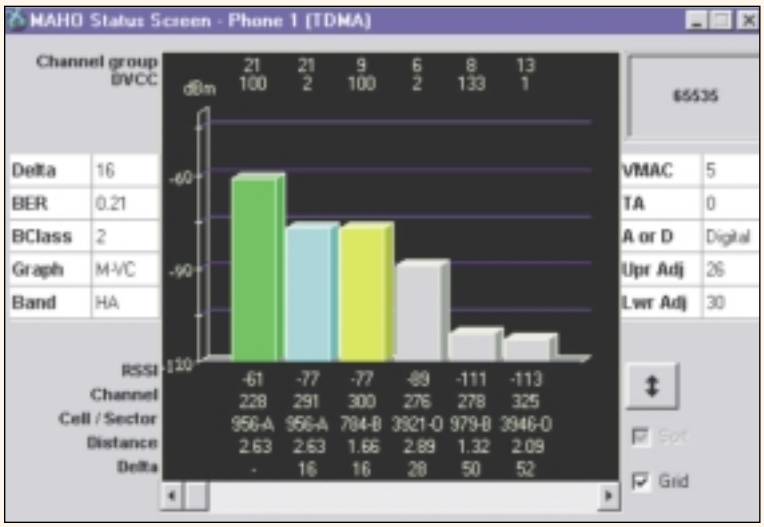
The real-time display shows many TDMA-specific screens consisting of engineering and network performance data. A moving map displays vehicle position, active serving base station, neighboring sites, and colored attributes depicting parameters such as: hand-offs, dropped calls, RSSI levels, bit error rate and many more. Color lines extending from the test vehicle's current location to base station sectors reflect whether cells are server, strongest neighbor or second strongest neighbor. These advanced capabilities of the real-time display enhances rapid identification of missing neighbor sites and serving sectors with poor bit error rate or RSSI.

Now, more than ever, network problems and their causes are easily identified. Relational data visualization is a unique approach to achieving this with real-time software. It allows a user to customize specific colors according to performance limits. The colors are then applied consistently throughout all mapping and data analysis screens.

X-TEL Communications, Inc.
1919 S. Highland Avenue, Suite 255-D
Lombard, IL 60148 USA
(630) 705-9090 Fax: (630) 705-9191
www.x-tel.com

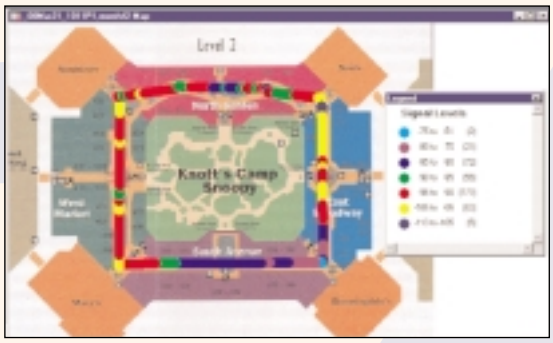


The Layer-Messaging Window displays Layer 2, Layer 3 and detailed Layer 3 messages in real-time and playback modes. The data is formatted so it is easily read by the user. Verification of network operation is achieved by cross-referencing forward and reverse messages with phone activity.



The MAHO Status Window is one of the most useful of all the real-time screens displayed within the X-136 software. It was developed by advanced X-136 users to collectively display key system operational parameters in an easy to follow format. All within one window, engineers can see serving cell identification, bit error rate, interrelationships between MAHO-received signal levels, hand-off thresholds, upper and lower adjacent channel levels and other key operating variables related specifically to IS-136 system performance.

In-building mapping is another one of the most useful benefits included within the X-136 software. Users can import floor plans from various file exchange formats, including simple scanned images uploaded from a scanner, facsimile device, or digital camera. Routes are collected and displayed just as if the data was collected in normal vehicular operation mode, making it easier than ever before to post-process and analyze in-building measurements geographically.



SERVICE

Each x-136 unit comes standard with a 12 month repair/exchange warranty, 24x7 technical support and quarterly software updates.

TRAINING

On-site training is provided with each system purchase.

STANDARD FEATURES

- Real-time map display showing vehicle position
- Single phone interface board with hands-free kit
- Super high-speed spectrum scanner
- Motorola Oncore fast acquisition GPS system
- Active matrix notebook computer
- Cell site database conversion and display
- Customizable screen and window configurations
- Automatic Dial/Terminate with user defined timer settings
- More than ten I/O ports for system expansion
- Parallel Interface for high speed digital phone I/O support
- Heads-Up Display Port for optional HUD Unit
- In-building/Campus Navigation Software
- Audible alarms utilizing Windows standard WAV files
- MapInfo Professional

DATA ANALYSIS CAPABILITIES

- Auto post-processing and plot generation
- Best server (control channel, user selected, MAHO)
- Call monitor (hand-off, BER, power level, RSSI, DVCC)
- Interference (adjacent channel, co-channel, C/I)
- Auto generation of single frequency RSSI plots
- Layer messaging
- Data merging and data reduction
- Playback mode with WAV file support
- Custom user-defined templates

PHYSICAL SPECIFICATIONS

- **Dimensions:** 8.36" x 9.11" x 3.15"
- **Weight:** 3.5lbs.
- **Computer I/O Interface:** 25 Pin Parallel Cable
- **Phone Interface:** RJ-45 Connector
- **Heads-Up Display Interface:** 15 Pin RGB Connector
- **Spectrum Scanner Antenna:** TNC Female

ELECTRICAL SPECIFICATIONS

- **Voltage:** 10.5 to 18 VDC
- **Current:** 465 mA plus 350 mA per phone
- **Operating Temperature:** 0°–47°C (at 13.8 VDC)

SCANNER SPECIFICATIONS

- **Frequency Range:** Cellular 850 MHz/PCS 1900 MHz
- **Scan Time:** 550+ Ch./Sec
- **Dynamic Range:** –120 to –1 dBm
- **Calibrated Accuracy:** +/– 1 dB
- **Adjacent Channel Rejection:** > –50 dB

OPTIONAL ACCESSORIES

- Heads-Up Display with Dash-Mount Hardware
- In-building collection kit with battery belt and computer harness
- Trimble Dead-Reckoning Navigation System
- Multiple phone & technology support (> 10 phones)
- Audio Quality Monitoring Expansion Module