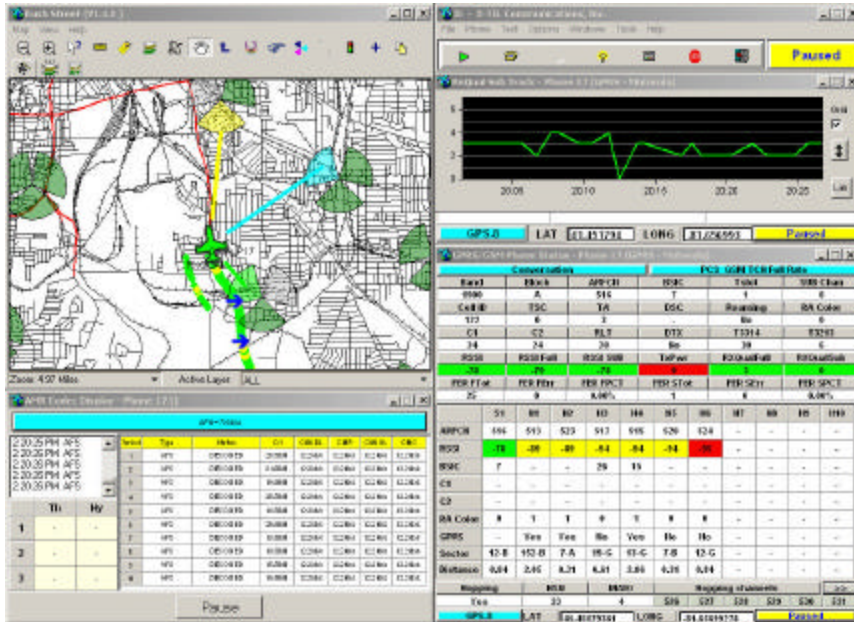


COLLECT DATA ALL DAY PROCESS IN MINUTES

GSM/GPRS



Real-Time Display

The real-time display shows many GSM/GPRS 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: handovers, dropped calls, RxLev (RSSI), RxQual and many more. Color lines extending from the test vehicle's current location to base station sectors indicate whether the sector is a server, strongest neighbor or second strongest neighbor. These advanced capabilities of the real-time display enhance rapid identification of missing neighbor sites and serving sectors with poor signal or quality.

GSM Xi

X-TEL's GSM Xi is a modular, fully expandable, field measurement tool designed for testing the air interfaces of 850, 900, 1800, and 1900 MHz networks. The Xi platform is the first collection system of its kind, employing sophisticated bus architecture capable of simultaneously supporting many different analog and digital standards. The Xi Host Controller Unit (HCU) includes 12 device ports and the HCU-2 provides additional expansion for 8 USB and another 6 serial devices, in total 26 devices – more than any other tool in its class. By adding additional interfaces, the GSM Xi can grow to support TDMA/GSM overlay testing, EDGE data verification and UMTS performance testing.

Rush Street - Analysis

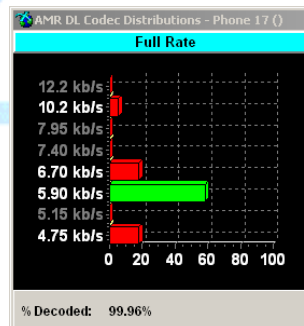
Rush Street is a set of collection and analysis features that complement XTEL's Xi collection software. Using Rush Street, engineers have access to many analysis features that are typically only found in post processing tools. Key features include the ability to show multiple data traces in real time and a powerful plot preview tool with querying and synchronized playback. X-TEL's GSM Xi system is fully Rush Street compatible.

GSM Status Window

The GSM Xi Status Window consolidates important GSM parameters into one easy to read display screen. Key performance factors relating to the operation of the network are organized so engineers can review the information effectively. Signal levels, quality indicators and FER readings are color coded to match the color codes defined for mapping.

AMR Vocoder Verification

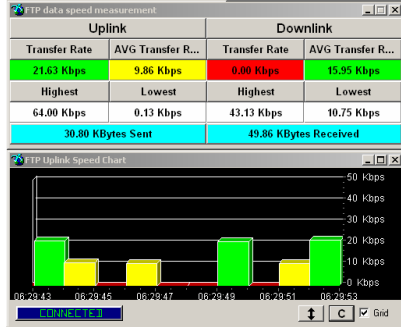
X-TEL's GSM Xi includes graphs and tables including C/I, downlink codec mode requests, uplink codec commands and current codec mode indicators for both uplink and downlink.



Histograms containing the last 100 codec mode indicators for uplink and downlink show the most used codec while collecting data. Use GSM Xi to verify proper thresholds and hysteresis settings on a sector-by-sector basis.

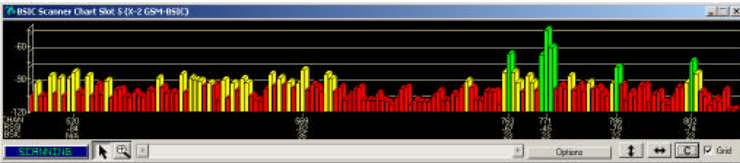
GPRS/E-GPRS Data Testing

GSM/GPRS test mobiles provide real time performance data on both the uplink and downlink paths. Collect throughput metrics, coding schemes and layer 3 messaging using Xi's automated FTP utility. Display all critical metrics in tables and in user-defined graphs.



GSM Scanning with BSIC

The GSM Xi supports optional X2 Scan modules. The GSM BSIC scan modules support 850 MHz, 1900 MHz and dual band 850/1900 MHz networks. The BSIC Scanner Chart shows signal level data color coded according to signal level strength.



Channel number and BSIC values are displayed below each channel. All channel information, including BSIC, is stored in a scanner database and is easily exported and plotted using the X-TEL post processing utilities or Rush Street. Best server plots, C/I ratios, BSIC and other outputs are available to assist in the analysis of radio frequency performance unique to GSM systems.

Subscriber Performance Mobile

- Standard performance metrics
- RxLev, RxQual and Neighbor Information
- C1 and C2, TX Power
- Call Status
- Cell ID and more...

GSM/GPRS Test Mobile

- All subscriber performance metrics
- GPRS Class B; WAP Protocol
- Uplink and Downlink transfer metrics
- Layer messaging
- One-cell mode and cell barring

850/1900 MHz AMR Test Mobile

- All GSM/GPRS Test Mobile metrics
- AMR Codec Logging; C/I, CMI, etc.
- FER Sub/ Full Metrics
- AMR phone state
- CMI Histogram



SERVICE

Each GSM unit comes standard with a 12-month repair/exchange warranty, 24X7 technical support and software upgrades.

TRAINING

On-site training is provided with each system purchase.

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Standard Features

- Real time map display showing vehicle position and key metrics
- Motorola Oncore Fast Acquisition GPS system
- Base station database conversion and display
- Customizable screen and window configurations
- Automatic Dial/Terminate with user defined timers and auto redial
- More than 20 ports for system expansion
- Parallel and USB interface for high speed I/O support
- In-building / Campus Navigation Software
- Audible alerts utilizing Windows standard WAV files
- User defined Heads Up Display
- Laptop Computer and MapInfo License

Data Analysis Capabilities

- Rush Street Mobile (optional)
 - Plot Preview
 - Data query and playback
 - Multiple Metrics
- Auto post-processing and plot generation
- Call monitor (hand-over, dropped, RSSI, RxQual, etc.)
- Best server (BCCH, user selected, neighbors)
- Interference (adjacent channel, co-channel, C/I's)
- Synchronized playback customizable windows and wave file support
- Export in industry standard formats

Xi Specifications

- Dimensions: 8.36" x 9.11" x 3.15"
- Weight: 3.5 lbs.
- Computer I/O interfaces: parallel and USB
- Phone Interface: RJ-45 and USB
- Scanner antenna: TNC female
- 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: 850 MHz, 900 MHz, 1800 MHz, 1900 MHz
- Scan Time: 250 Ch./Sec (70 Ch./Sec. w/BSIC)
- Dynamic Range: -110 to -30 dBm
- Calibrated Accuracy: +/- 1dB
- Adjacent Channel Rejection: >50 dB

Optional Accessories

- Tablet PC
- In-building collection kit with battery belt, computer harness and floor plan software
- Trimble dead-reckoning navigation system
- Multiple phone and scanner support
- HCU-2 USB, serial and power module for additional device support