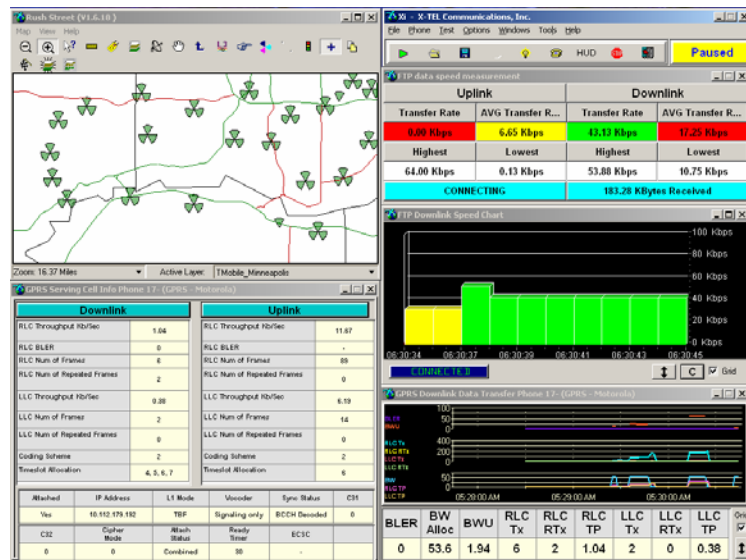


COLLECT DATA ALL DAY PROCESS IN MINUTES

Xi EDGE

GSM Xi EDGE

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



EGPRS Throughput Metrics

The EGPRS Serving Cell Info screen displays GPRS/EGPRS specific parameters in tabular format. The downlink and uplink parameters are placed side by side for easy viewing. Parameters displayed include the actual time slots in use, the modulation and coding scheme in use for the uplink and downlink, RLC/LLC throughput and retransmission metrics.

Downlink		Uplink	
RLC Throughput Kb/Sec	1.07	RLC Throughput Kb/Sec	11.43
RLC BLER	0	RLC BLER	-
RLC Num of Frames	5	RLC Num of Frames	87
RLC Num of Repeated Frames	1	RLC Num of Repeated Frames	0
LLC Throughput Kb/Sec	0.38	LLC Throughput Kb/Sec	5.59
LLC Num of Frames	2	LLC Num of Frames	11
LLC Num of Repeated Frames	0	LLC Num of Repeated Frames	0
Coding Scheme	2	Coding Scheme	2
Timeslot Allocation	4, 5, 6, 7	Timeslot Allocation	6

Attached	IP Address	L1 Mode	Vocoder	Sync Status	C31
Yes	10.112.179.192	TBF	Signaling only	BCCH Decoded	0
C32	Cipher Mode	Attach Status	Ready Timer	ECSC	
0	0	Combined	30	-	

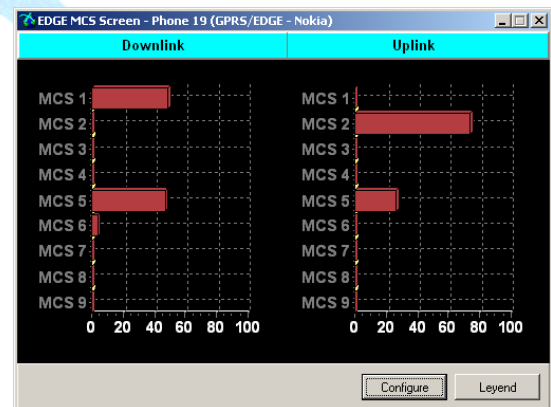
Automated FTP and FTP Displays

X-TEL includes an automated FTP session generator for continuous uplink and downlink measurements. Once the FTP server is selected, the engineer enables the link and opens the appropriate display windows.

The EDGE System Access Monitor (SAM) display includes key metrics during the data transfer session, including RSSI, MCS use and throughput for uplink and downlink.

Cell	Layer	RSSI	IP Address	MCS DL					
409		-87	10.216.131.190	1					
DL Timeslots	UL Timeslots	Est. DL Thrput	Est. UL Thr...	MCS UL					
2	1	0.00 Kbps	0.00 Kbps	2					
	MCS-1	MCS-2	MCS-3	MCS-4	MCS-5	MCS-6	MCS-7	MCS-8	MCS-9
DL	48.5%	0.3%	0.0%	0.3%	47.0%	3.7%	0.0%	0.0%	0.3%
UL	0.0%	74.0%	0.0%	0.0%	26.0%	0.0%	0.0%	0.0%	0.0%

The Modulation Coding Scheme histogram display shows the distribution of downlink and uplink assigned MCSs.



X-TEL EDGE Functional Specifications

The Nokia 6200 test mobile is one of the first 3GPP Release 99 terminals supporting EGPRS and GPRS. X-TEL will also offer a Motorola solution once the test mobile is available.

Nokia 6200 Terminal

- Triband Terminal: 850 MHz, 1800 MHz and 1900 MHz
- GPRS/EGPRS Class B
- EGPRS Bearer: Multislot Class 2 (2 + 1)
- GPRS Bearer: Multislot Class 6 (3 + 1, 2+2)
- Number of Simultaneously supported PDP Contexts: 3

Power Classes:

Band/Modulation	GMSK	8-PSK
GSM 850	Class 4	E2
GSM 1800	Class 1	E2
GSM 1900	Class 1	E2

Application Support

MMS Messaging: per 99 MMS standards, Email Messaging (no email client), WAP, MIDI, SMS and Dial Up

Mobile Features

- E-OTD Support
- Settings locking (WAP, (E)GPRS)
- Flexible PLMN indicator
- Enhanced PLMN search
- SIM lock
- Number grouping
- CLI presentation (name + number)
- CNAP
- DTMF (Dual Tone Multi Frequency) signal transmitting
- DTMF control characters (pause, wait)
- Data calls send and receive
- Circuit switched non-transparent / transparent data up to 14.4 kbps
- GPRS / EGPRS packet data up to 118.4 kbps
- Smart Messaging (Over The Air)

System Specific Features

- GSM Phase 2 signaling
- 3V /1.8V SIM support
- AMR (Adaptive multirate) speech codec
- Enhanced Full Rate (EFR) speech codec
- Full Rate speech codec
- Encryption algorithms: none, A5.1, A5.2
- Discontinuous Transmission (DTX)
- Cell Broadcast DRX
- SIM Application Toolkit 2

Xi GPRS/EGPRS Standard Features

- Real time map display showing vehicle position and key metrics
- Base station database conversion and display
- Customizable screen and window configurations
- Automatic data testing with FTP connection
- Automatic Dial/Terminate with user defined timers and auto redial
- In-building / Campus Navigation Software
- Integrated data throughput analysis including application, RLC and LLC throughputs
- Audible alerts utilizing Windows standard WAV files
- User defined Heads Up Display (HUD)
- Auto post-processing and plot generation
- Call monitor (hand-over, dropped, RSSI, RxQual, etc.)
- Synchronized playback customizable windows and wave file support
- Planet, Wizard, ASCII export utilities

Xi EDGE Metrics

- DL RxLev, C/I, Mean_BE, CV-BEP
- USF indicated on DL, % of time each USF is used, % of time each corresponding UL
- UL RLC transmissions and retransmissions
- UL number of RLC data blocks for each MCS
- UL instantaneous and average RLC/MAC Throuput
- UL instantaneous and average LLC throughput
- UL instantaneous and average application layer throughput
- DL RLC transmissions and retransmissions
- DL number of RLC data blocks for each MCS
- DL instantaneous and average RLC/MAC Throuput
- DL instantaneous and average LLC throughput
- DL instantaneous and average application layer throughput
- EGPRS layer 3 messages
- Attached/Detached, Attach Status
- IP Address
- L1 Mode
- Sync Status

SERVICE AND MAINTENANCE

Each new EGPRS system comes standard with a 12-month repair/exchange warranty, 24X7 technical support, software upgrades and training.

Upgrade pricing are for units under a current service and maintenance agreement.