

[TEMS™ PRODUCTS]

TEMS™ MONITOR MASTER
ACTIVE TESTING AND MONITORING
OF CONVERGED APPLICATIONS



TEMS™ Monitor Master is a carrier-grade software and hardware solution designed to test and monitor the **end-to-end quality** and **user experience** of wireless and fixed-line services.



TEMS MONITOR MASTER

Understanding, measuring, and improving the quality of network services is vital for mobile operators who want to keep their customers satisfied and subscribed. However, the good service that subscribers demand is getting harder to deliver as networks, devices, and applications converge and new services appear.

To attract and retain subscribers for maximum revenue, operators must be able to:

- Prove that subscribers are getting good services
- Detect problems both in and out of the network
- Know instantly when problems arise
- Obtain enough detail to correct problems quickly
- Monitor a wide range of services that is getting wider all the time

TEMS Monitor Master helps operators to provide high-performance, quality services by giving them the tools to quickly pinpoint and resolve problems when they arise.

TEMS Monitor Master is used for end-to-end monitoring, regression testing, content testing, roaming, and revenue assurance. Used by regulators, operators, and content providers, TEMS Monitor Master is flexible enough to test any service, including pre-launch multi-modal service testing, monitoring, and roaming scenarios.

“TEMS Monitor Master now comes in standard application packages for voice, IP and data, and messaging services”



KEY FEATURES

- Limitless flexibility for service testing
- End-to-end voice and data services testing from the customer perspective
- Full engineering detail
- Active probes run 24x7
- Test any service on any bearer
- Central management
- Central SIM server
- Highly flexible and configurable reporting and data warehousing



TEMS MONITOR MASTER HELPS OPERATORS TO QUICKLY PINPOINT AND RESOLVE PROBLEMS

“Ensure the quality of experience on the mobile services you deliver”

The TEMS Monitor Master platform uses fixed remote agents. These active test probes run 24x7 to test any service over GSM, GPRS, UMTS, HSDPA, LTE, CDMA, TD-SCDMA, PSTN, WiFi, and LAN bearers, and also support testing of services such as Web, Web 2.0, MMS, VVM, SMS, e-mail, Mobile TV, voice, and VoIP – in any combination. Agents can be situated anywhere in the world, with convenient centralized control by the quality manager management system. The agents provide detailed diagnostic information for root cause analysis, while the system also includes centralized reporting and data warehousing for short-term, long-term, and trend analysis reports.

APPLICATION PACKAGE OPTIONS: VOICE, IP AND DATA, OR MESSAGING

In addition, TEMS Monitor Master now comes in standard application packages. These contain everything required to fully implement a full monitoring solution for the following basic services:

- Voice
- IP and data
- Messaging

Each package contains the software, hardware, reports, professional services, documentation, support and warranty needed for implementation.

The packages represent a low-risk, low-cost entry level to get rapid value from TEMS Monitor Master.



RECENT ENHANCEMENTS

TEMS Monitor Master 8.5 includes the following:

- New interactive mode views
- Interactive mode BlackBerry integration
- Interactive mode L3 trace
- Interactive mode IP trace
- New Sierra Wireless 8700 (HSPA+) modems
- Improved scheduler interface
- Automated agent status measurement

The most recent release of TEMS Monitor Master has added support for LTE as well as TD-SCDMA. TEMS Monitor Master is based on Microsoft® Windows technology and this allows the modem drivers for the latest USB dongles to be utilized easily and quickly. The use of Microsoft technology also ensures that measurements from these devices are closer to what a real user would experience. This means measurement results can be used to prioritize and resolve service-affecting issues.

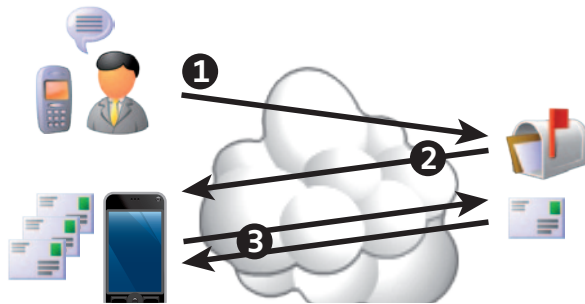
BLACKBERRY E-MAIL AND VOICE

TEMS Monitor Master supports the BlackBerry 8320 and 8330 for GSM and CDMA testing. Mounted inside an X1000 or X1100 agent, these devices can be used for comprehensive and reliable testing of BlackBerry e-mail services as well as standard ETSI voice tests. BlackBerry integration has been extended to include interactive mode. This allows remote control of the BlackBerry as if it is in the user's hand. Key strokes and screen view are possible with audio send and receive. Interactive mode has also been extended to L3 trace and IP trace, and is displayed in several new interactive mode views.



IPHONE VISUAL VOICEMAIL

TEMS Monitor Master creates thorough testing scenarios for the Apple™ iPhone®'s tremendously popular Visual Voicemail feature, giving an unparalleled view of Visual Voicemail performance at all stages. This is of tremendous value in diagnosing pre-launch problems as well as for monitoring and testing once the service is established.



- ❶ Caller leaves voice mail
- ❷ Voice mail server notifies recipient handset
- ❸ Handset connects to server and downloads voice mail

STANDARD SCRIPTS

TEMS Monitor Master includes a number of standard scripts that have been designed to comply with ETSI measurement requirements. These include GPRS attach and context activate, Ping, DNS lookup, Web, WAP, FTP upload and download, voice availability and quality, SMS and MMS, e-mail SMTP/IMAP/POP3, and video streaming.

Customers can quickly and easily use the standard scripts off-the-shelf, or use them to develop more complex service-testing scenarios.

- ❶ TEMS Monitor Master sends e-mail from one BlackBerry to another BlackBerry
- ❷ TEMS Monitor Master receives e-mail on BlackBerry

BlackBerry hardware contained within X1100 or X219
These devices can be placed in different geographical locations

“If a user can do it, TEMS Monitor Master can test it”

TEMS™ BOX OFFICE FOR REPORTING AND PRESENTATION

OPERATING SYSTEMS AND PLATFORMS

TEMS Monitor Master 8.5 supports a wide range of operating systems and platforms.

- 64 bit Microsoft® Windows Server 2008 R2 environment
- Microsoft SQL Server 2008
- Microsoft Windows 7
- Microsoft Internet Explorer 8

Customization

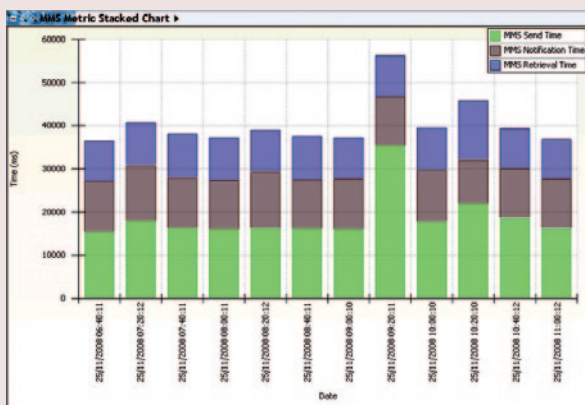
Users can customize TEMS Monitor Master to suit their unusual or complex requirements without needing additional hardware or software. This unique ability allows customers to devise custom test scenarios, create new KPIs and metrics, and integrate with third-party systems.

TEMS BOX OFFICE

TEMS Box Office is the reporting and presentation tool of choice for TEMS Monitor Master. Its powerful capabilities allow customers to develop their own reports for their service tests without requiring a product change.

Gathering data from multiple sources, this Web-based package performs detailed analysis and delivers the right reports to the right people throughout the organization. TEMS Box Office requires no special client, and delivers reports via a conventional browser.

Dashboard information is presented via multiple displays, called “viewlets,” that allow users to study related information from various perspectives simultaneously.

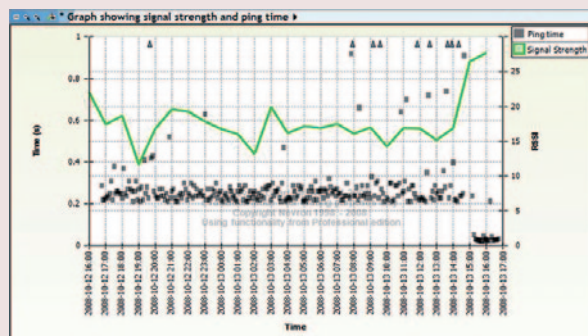


Presentation formats include:

- Area graphs
- GPS-based maps
- Line graphs
- Pie charts
- Bar graphs
- Gantt charts
- Frequency analysis
- WAP site structures
- Simple grids
- XSL transformation
- Pivot tables

Reports can incorporate links to Web sources, embedded Web pages, and Microsoft® Excel exports, as well as invocation of external helper applications.

TEMS Box Office offers virtually unlimited presentation options, with variables such as filters, custom formatting, selection of data sources, rules for alerts, and report recipients. Broad customization capabilities allow users to create reports precisely fitting their business needs, pinpointing their KPIs, tailoring security rights, and branding and distributing reports.





“The advanced technology in TEMS Monitor Master allows operators to see their networks from a customer’s perspective so that they can introduce new services quickly and keep existing services operating profitably”



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The advanced technology in TEMS Monitor Master allows operators to see their networks from a customer's perspective so that they can introduce new services quickly and keep existing services operating profitably. It is a cost-effective solution that can test what operators want, when they want, and is always adaptable to their current testing requirements.

Learn more about TEMS Monitor Master and the other offerings in the Ascom Network Testing portfolio at www.ascom.com/tems.

Evolving Networks. Trusted Solutions.



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