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Wireless Data Measurement

Data Sheet

Wireless Data Measurement software options facilitate end-to-end measurement of transmitted and received data payload, allowing simulated performance to be quantified from the user's perspective. Some examples of specific applications include; wireless web access, file transfer and e-mail transactions. This capability is provided by configuring a laptop PC and mobile phone combination and a remote PC in a client / server architecture, with a server being capable of supporting several clients.

Some information is preliminary at publication date.

The Wireless Data Measurement software includes data testing support for both packet switched and IP over circuit switched. Circuit switched (CSD and HSCSD) data testing is supported on commercial wireless devices, which can be configured as a dial-up networking connection in Windows®. Connection to the remote data server is via a dial-up Internet Service Provider (ISP) account.

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About this document

This document gives detailed information on the wireless data measurement features accessible on several of the Agilent E74xx drive-test systems. Wireless data measurements are fundamental in the verification of the end-to-end performance of wireless to IP networks.

Data measurement software options on the E74xxA platforms

Data measurement software license, option #200

The data measurement capability utilizes a client / server architecture, where the client is the test mobile and laptop combination and the server is a remote computer connected to an IP interface within the GPRS network. The E7478A system is designed to allow a single server to support several clients. This option #200 requires the purchase of a data measurement server software license (option #220). The data control and measurement user interface resides on the client laptop and gives access to the following virtual front panels:

- ❑ Data call control
- ❑ Data measurement

Data call control

System software provides automated control of the handsets from the PC and initiates user selectable sequences of data transactions to and from the server. The data call control virtual front panel (VFP) provides the following control and monitoring functions:

- ❑ **Automatic Data Call Sequence**
  - ❑ Sequence Repeats
  - ❑ Base Time Out (m/s)
  - ❑ Additional Time Out (ms/kb)
  - ❑ Window Length (int)
  - ❑ Action Retries
- ❑ **Data Call Sequence Editor**
  - ❑ Action
  - ❑ IP Address / DialUp
  - ❑ Repetitions
- ❑ **Call Initiation**
  - ❑ Start
  - ❑ Stop
- ❑ **Measurement Type**
  - ❑ Enable Data Sequence Statistics
- ❑ **Data Call Sequence Information**
  - ❑ Data Call Sequence Remaining
  - ❑ Connection Time
  - ❑ Dropped Data Call Sequences
  - ❑ Sequence
  - ❑ Measure Log (Note that this window will display; Ping and Traceroute results, error messages and current 'data engine' status (including DISCONNECTED, START DIALUP, DIALTONE DETECTED, DIALLING, LOGGING ON, PROJECTING, START CONNECTING, SERVER CONNECTED)

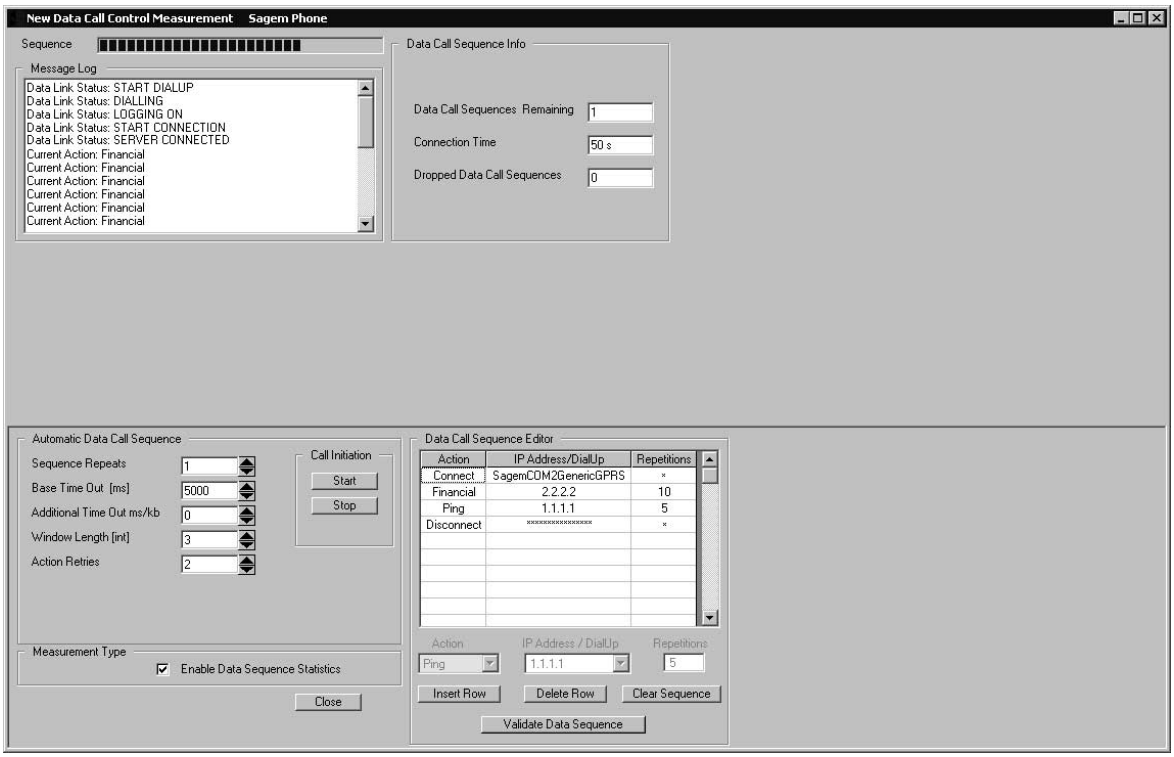

Figure 1 - Data call control user interface

Data measurement

The E74xx data measurement option #200 captures information from the mobile handset, the client PC and the server PC (when used in conjunction with option #220). Measurement data on availability, reliability and data throughput can be captured with these options. The measurements are based on user selectable data page sequences, constructed of lines of data allowing simulation of various applications (for example e-mail, file download, web browsing). Page sizes are also independently selectable on transmit and on receive.

Extraction of specific measurement types is controlled by a set of check boxes. Measurement data is displayed and logged for both IP link layer and Application layer.

- ❑ **Measurement Type**
  - ❑ Enable Data Measurements
- ❑ **Data Link status**
- ❑ **Page Number**
- ❑ **IP Throughput (Kb/s)**
  - ❑ Tx
    - ❑ Line #
    - ❑ Rate
    - ❑ Avg
    - ❑ Max
    - ❑ Min
  - ❑ Rx
    - ❑ Line #
    - ❑ Rate
    - ❑ Avg
    - ❑ Max
    - ❑ Min
- ❑ **Application T'put (Kb/s)**
  - ❑ Tx
    - ❑ Line #
    - ❑ Rate
    - ❑ Avg
    - ❑ Max
    - ❑ Min
  - ❑ Rx
    - ❑ Line #
    - ❑ Rate
    - ❑ Avg
    - ❑ Max
    - ❑ Min
- ❑ **IP BER**
  - ❑ Tx
    - ❑ Line #
    - ❑ Rate
    - ❑ Avg
    - ❑ Max
    - ❑ Min
  - ❑ Rx
    - ❑ Line #
    - ❑ Rate
    - ❑ Avg
    - ❑ Max
    - ❑ Min
- ❑ **DATAGRAMS**
  - ❑ Per Page
  - ❑ Lost
  - ❑ Out of Order

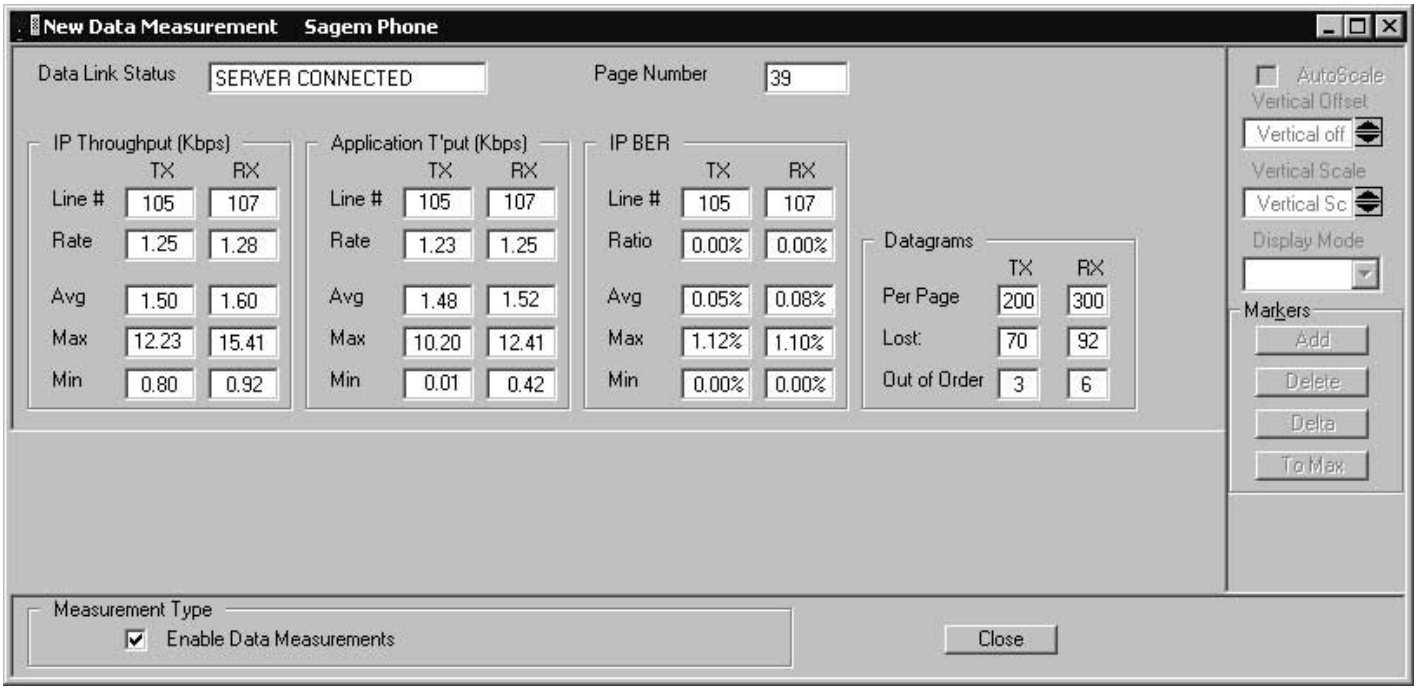

Figure 2 - Data measurement user interface

Data measurement server software license, option #220

The server is used to capture a number of data flow throughput measurements and to transmit them along with predefined data pages (for example, simulating Internet / Intranet browsing, e-mail service, file transfer and more) back to the mobile client for analysis and characterization. Option 220 requires the purchase of at least one data measurement software license (option 200) and will support several option 200s. Option 220 software resides on the server and once installed, requires no user access.

Minimum Server PC Specification

500MHz Pentium III, 64MB RAM running Windows NT, 4.0 +service pack 5 (or later) or Windows 2000 operating system

Server Setup

Note that it is the user's responsibility to ensure that the server is setup with a fixed IP address and is addressable from the wireless network.

Additional literature

- ❑ E7478A GPRS Drive-Test System Product Overview 5980-2375E
- ❑ E7478A GPRS Drive-Test System Configuration Guide 5988-1505EN
- ❑ Wireless Data Measurement Product Overview 5980-1470E
- ❑ E7475A GSM Technical Specifications 5968-5564E
- ❑ Network Optimization Brochure 5980-0216E
- ❑ **I**ndoor Wireless Measurement System Product Overview 5968-8691E

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