K1205 Starter Tour

This Guided Tour explains the basic steps needed to configure and process measurements on the K1205 Protocol Tester.

1

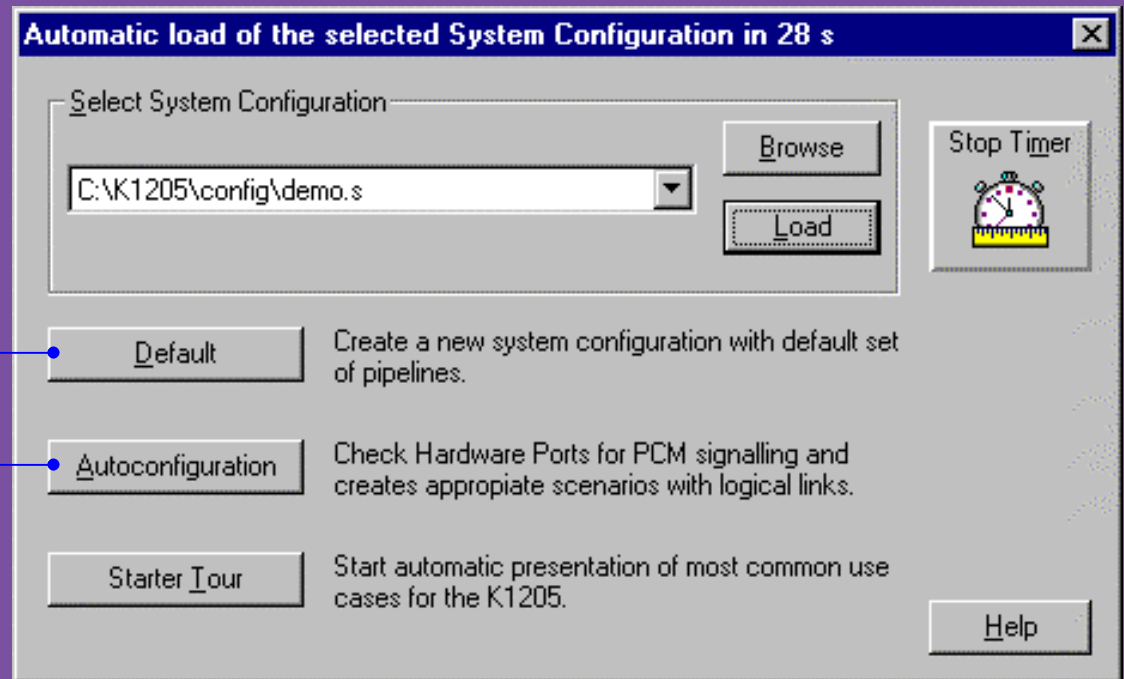## Configuration and Protocol Setup

Monitoring and Evaluating the Tests

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Configuration and Protocol Setup

Starting Configuration: After starting the K1205, this dialog appears.
You may start with the default configuration or open an existing one.
The configuration will open in the »Data Flow Window«.

Automatic load of the selected System Configuration in 28 s

Select System Configuration

C:\K1205\config\demo.s

Browse

Load

Stop Timer

Click on this button if you want to start with a new configuration.

Default — Create a new system configuration with default set of pipelines.

Click on this button if you have incomplete information about the connected lines you want to monitor.

Autoconfiguration — Check Hardware Ports for PCM signalling and creates appropiate scenarios with logical links.

Starter Tour — Start automatic presentation of most common use cases for the K1205.

Help

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Configuration and Protocol Setup

Configuration Center »Data Flow Window«: To carry out measurements you need to configure data sources and data sinks and the criteria for evaluation. All configuration settings can be made in the »Data Flow Window«.

In general, you can complete the configuration in five steps. **1.** Configure scenarios **2.** Configure hardware **3.** Configure data sources **4.** Configure data sinks **5.** Configure processing elements
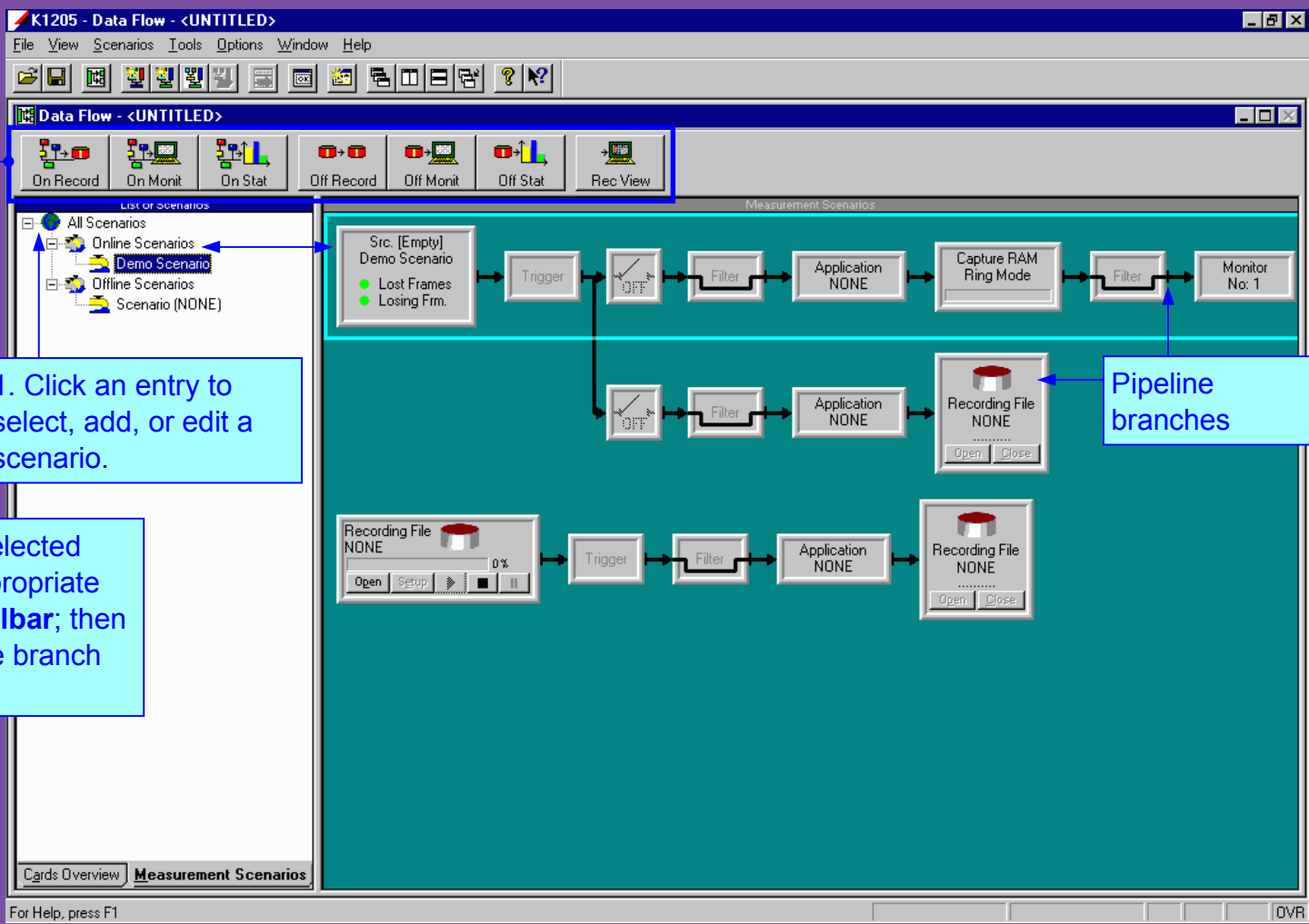

Pipelines symbolize measurement tasks.
Each pipeline consists of the following:
a A data source (first box)
b A data sink (last box)
c Various processing elements to evaluate the data flow (boxes between)

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Configuration and Protocol Setup

Configure Measurement Scenarios: Various pipeline branches can be assigned to one source to carry out different measurements on the received data. A measurement scenario bundles all measurement tasks (symbolized by pipeline branches) that should be executed on a single data source.

K1205 - Data Flow - <UNTITLED>

File   View   Scenarios   Tools   Options   Window   Help

Data Flow - <UNTITLED>

On Record   On Monit   On Stat   Off Record   Off Monit   Off Stat   Rec View

List of Scenarios

- All Scenarios
  - Online Scenarios
    - Demo Scenario
  - Offline Scenarios
    - Scenario (NONE)

Measurement Scenarios

Src. [Empty] Demo Scenario
- Lost Frames
- Losing Frm.

Trigger → OFF → Filter → Application NONE → Capture RAM Ring Mode → Filter → Monitor No: 1

OFF → Filter → Application NONE → Recording File NONE   Open   Close

Recording File NONE   0%   Open   Setup   ▶   ■   ❚❚ → Trigger → Filter → Application NONE → Recording File NONE   Open   Close

1. Click an entry to select, add, or edit a scenario.

2. Add a pipeline to the selected scenario. Click on the appropriate button in the pipeline toolbar; then drag and drop the pipeline branch into the green window.

Pipeline branches

Cards Overview   Measurement Scenarios

For Help, press F1   OVR

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Configuration and Protocol Setup

Start	Scenarios	Hardware	Data Sources	Data Sinks	Processing Elements	Exit

Configure Hardware - Select Cards: Configure hardware in the »Cards Overview« pane of the »Data Flow Window«.
Note: Hardware configuration is only needed when you configure an online measurement scenario.

1. Click to open the hardware section of the »Data Flow Window«.

2. Select the card and click to open the »Ports Setup« dialog.

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Configuration and Protocol Setup

Start	Scenarios	Hardware	Data Sources	Data Sinks	Processing Elements	Exit

Configure Hardware - Set Up Ports: In the »Ports Setup« dialog configure the ports for the type of data you will receive during the measurement. For different interface modules, the dialog offers individual setup options.
This example shows the »Ports Setup« dialog for the DS1/E1 module (PRIMO), which supports monitoring of 1.544 Mbit or 2.048 Mbit lines.

1. Select the ports you want to configure.

2. Specify the port settings.

Ports Setup

Port Selection

Cards	Ports
DS1 / E1 #2	A (Rx),B (Rx),C (Rx),
DS1 / E1 #2	E (Rx),F (Rx),G (Rx),

Port Properties for DS1 / E1 #2 A (Rx),B (Rx),C (Rx),D (Rx)

Port Name

Port A (Rx): A
Port C (Rx): C
Port B (Rx): B
Port D (Rx): D

Type:
- ⦿ E1
- ○ DS-1

Voice Data

Default Start Mode
Current Mode: Standard Mode
Next Mode: Standard Mode

Common Settings A (Rx) & B (Rx)
- Framing Type: Double Frame
- Line Code: HDB3
- Impedance: High Impedance
- ☐ Inverted bits
- ☐ Sa7 Bit - A   ☐ Sa7 Bit - B

Common Settings C (Rx) & D (Rx)
- Framing Type: Double Frame
- Line Code: HDB3
- Impedance: High Impedance
- ☐ Inverted bits
- ☐ Sa7 Bit - C   ☐ Sa7 Bit - D

OK
Cancel
Help

Apply to
- these Ports
- all Ports
- all E1/DS1 Cards

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Configuration and Protocol Setup

Start	Scenarios	Hardware	Data Sources	Data Sinks	Processing Elements	Exit

Configure Data Sources - Select Source: Configure data sources in the »Measurement Scenarios« pane of the »Data Flow Window«. You need to set up the logical links from which the data will be evaluated.
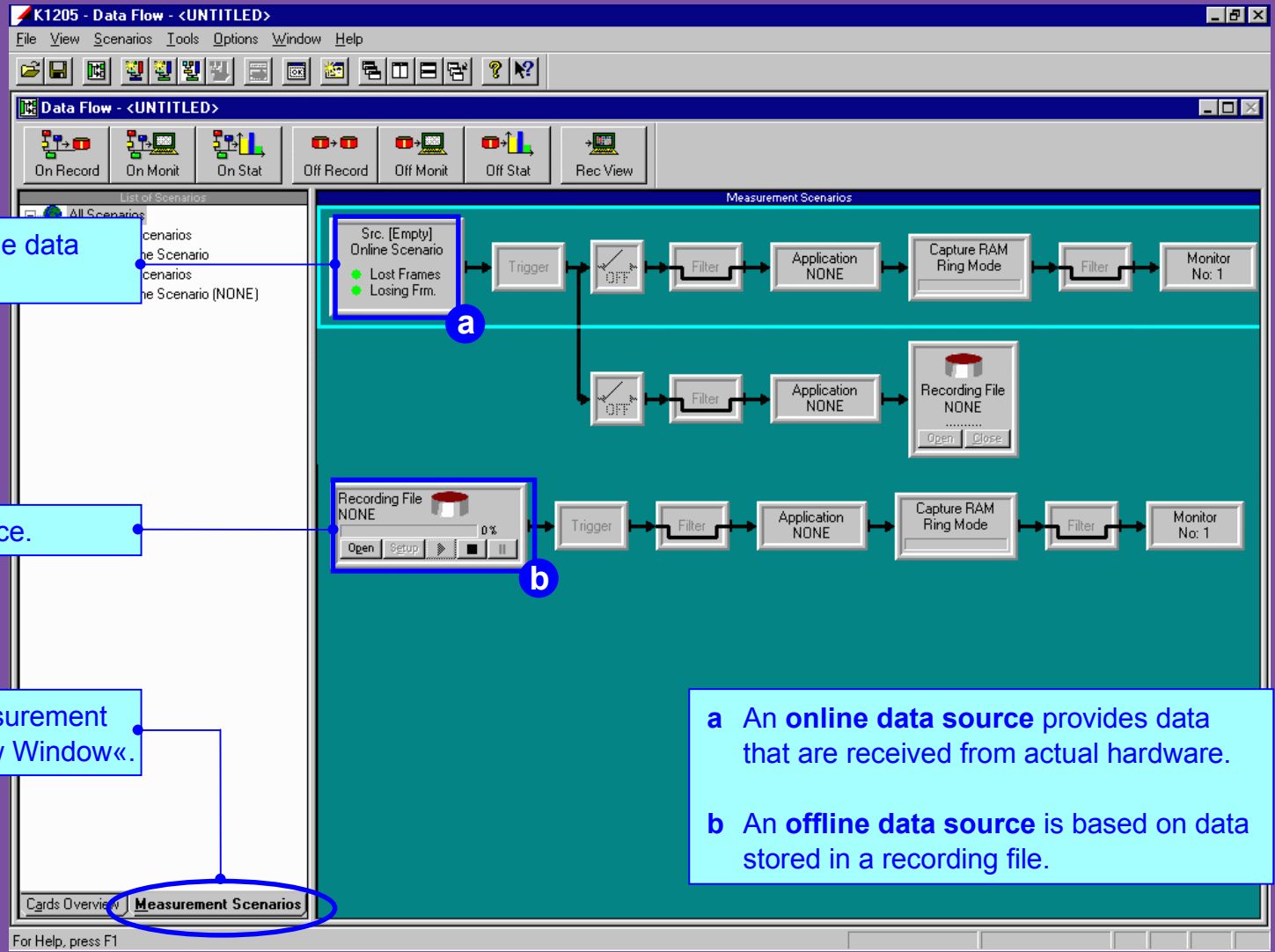
2. Click to set up an online data source …

… or an offline data source.

1. Click to open the measurement section of the »Data Flow Window«.

K1205 - Data Flow - <UNTITLED>

File   View   Scenarios   Tools   Options   Window   Help

Data Flow - <UNTITLED>

On Record | On Monit | On Stat | Off Record | Off Monit | Off Stat | Rec View

List of Scenarios

All Scenarios

Src. [Empty] Online Scenario
- Lost Frames
- Losing Frm.

a

Trigger → OFF → Filter → Application NONE → Capture RAM Ring Mode → Filter → Monitor No: 1

OFF → Filter → Application NONE → Recording File NONE (Open / Close)

Recording File NONE 0% (Open / Setup)

b

Trigger → Filter → Application NONE → Capture RAM Ring Mode → Filter → Monitor No: 1

Cards Overview | **Measurement Scenarios**

For Help, press F1

a An **online data source** provides data that are received from actual hardware.

b An **offline data source** is based on data stored in a recording file.

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Configuration and Protocol Setup

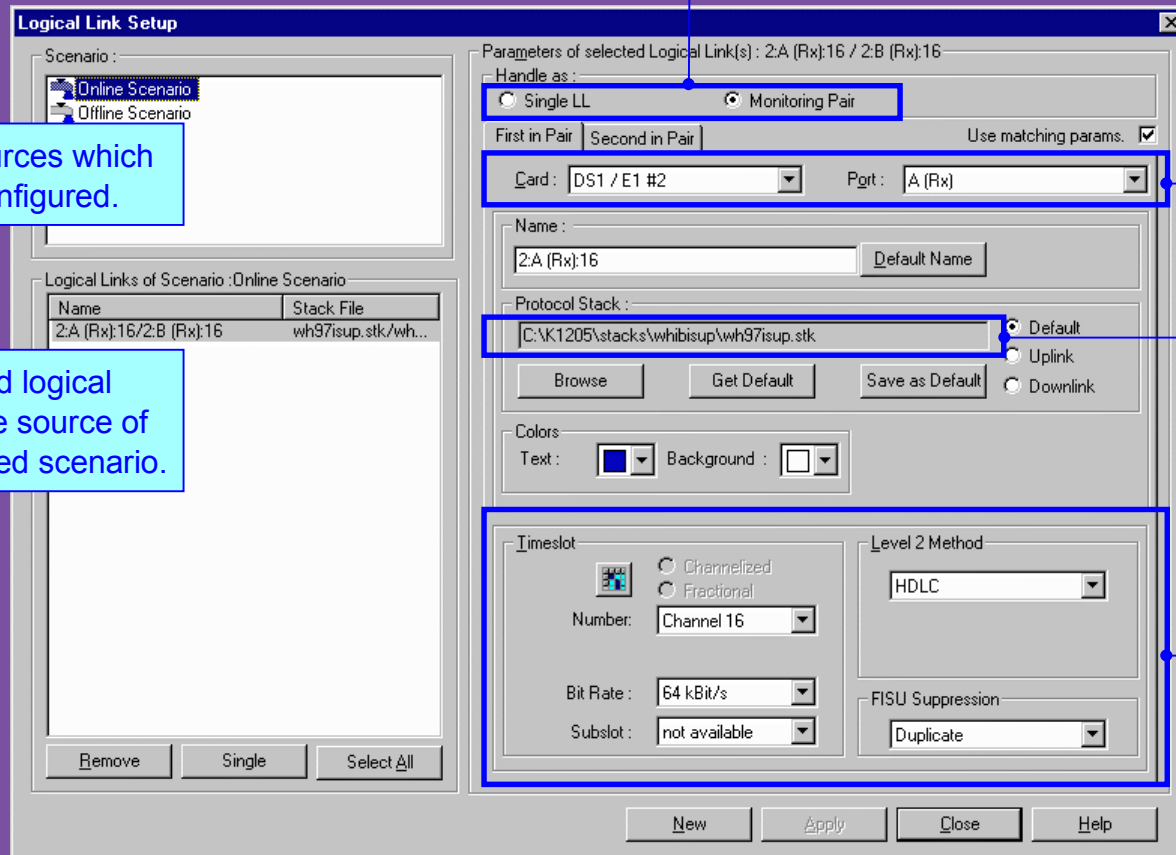| Start		Scenarios	Hardware		Data Sources		Data Sinks	Processing Elements	Exit

Configure Data Sources - Set Up Logical Links: In the »Logical Link Setup« dialog you configure the logical links of a data source. A logical link is a channel with an assigned protocol stack and a specified channel decoding method (level 2 method).

1. Select the link type: single link or pair. Create a pair if you want to monitor both directions between two systems (such as two switching centers).

Logical Link Setup

Scenario:
- Online Scenario
- Offline Scenario

List of sources which can be configured.

Logical Links of Scenario :Online Scenario

Name	Stack File
2:A (Rx):16/2:B (Rx):16	wh97isup.stk/wh...

Configured logical links in the source of the selected scenario.

Parameters of selected Logical Link(s) : 2:A (Rx):16 / 2:B (Rx):16

Handle as :
- ○ Single LL
- ● Monitoring Pair

First in Pair | Second in Pair

Use matching params. ☑

Card : DS1 / E1 #2   Port : A (Rx)

2. Assign a logical link to the card and port from which data will be received.

Name :
2:A (Rx):16   Default Name

Protocol Stack :
C:\K1205\stacks\whibisup\wh97isup.stk
- ● Default
- ○ Uplink
- ○ Downlink

Browse | Get Default | Save as Default

3. Select protocol stack. This defines the interpretation rules for the processing of the received data.

Colors
Text :   Background :

Timeslot
- ○ Channelized
- ○ Fractional

Number: Channel 16

Bit Rate : 64 kBit/s
Subslot : not available

Level 2 Method
HDLC

FISU Suppression
Duplicate

4. Define the logical link settings according to the hardware prerequisites.

Remove | Single | Select All

New | Apply | Close | Help

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Configuration and Protocol Setup

| Start | | Scenarios | Hardware | | Data Sources | | Data Sinks | Processing Elements | Exit |

Configure Data Sinks: A data sink defines the output of the received data. It is symbolized by the last box of a pipeline branch. This example shows all possible output devices for an online measurement. The received data of this source can be:
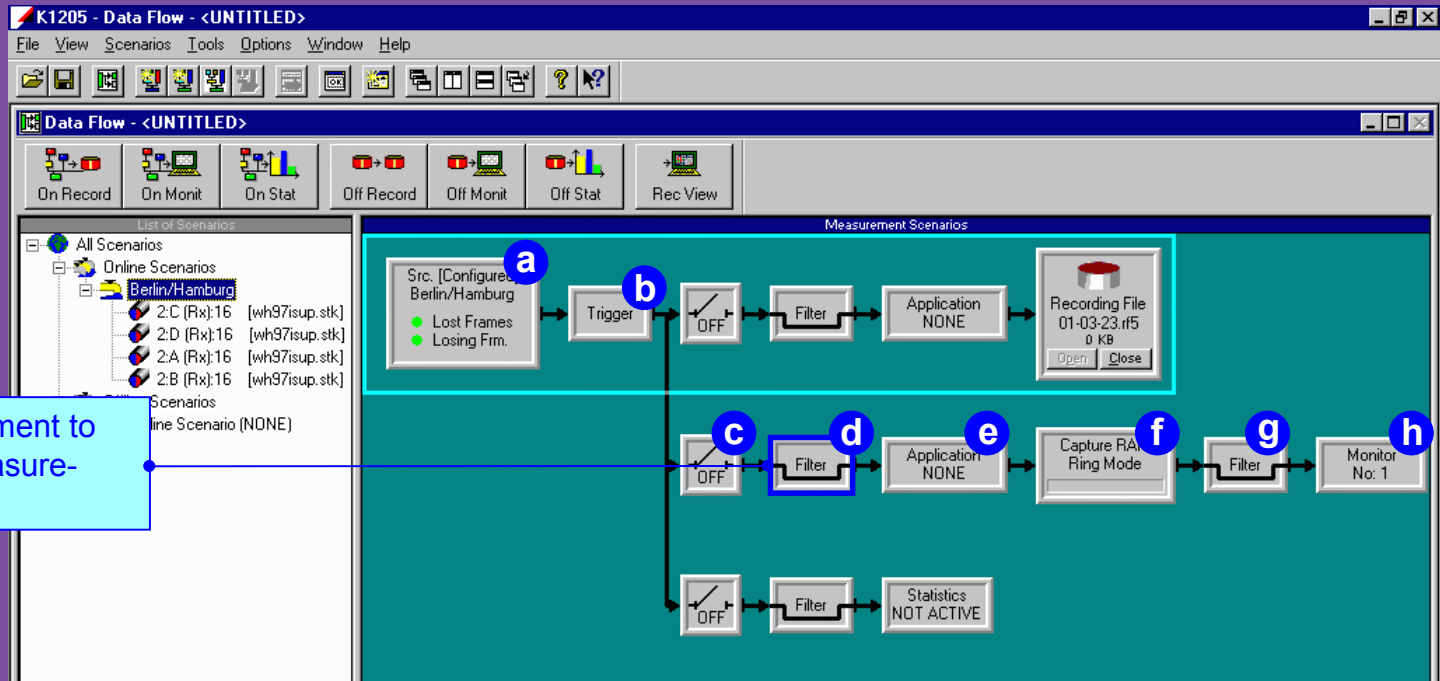**a** Recorded   **b** Viewed in the Monitor Window   **c** Evaluated statistically

Click to set up the data sink »Recording File« …

… or open the »Statistics«

… or open the »Monitor«

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Configuration and Protocol Setup

Configure Processing Elements: Each pipeline contains all of the modules necessary to process a measurement. These modules are called processing elements.
By configuring the processing elements, you define your individual criteria for receiving and evaluating data.

Click on a processing element to define your individual measurement criteria.

K1205 - Data Flow - <UNTITLED>

File View Scenarios Tools Options Window Help

Data Flow - <UNTITLED>

On Record   On Monit   On Stat   Off Record   Off Monit   Off Stat   Rec View

List of Scenarios
- All Scenarios
  - Online Scenarios
    - Berlin/Hamburg
      - 2:C (Rx):16   [wh97isup.stk]
      - 2:D (Rx):16   [wh97isup.stk]
      - 2:A (Rx):16   [wh97isup.stk]
      - 2:B (Rx):16   [wh97isup.stk]
    - Scenarios
    - line Scenario (NONE)

Cards Overview

For Help, press F1

Measurement Scenarios

a Src. [Configured] Berlin/Hamburg — Lost Frames / Losing Frm.
b Trigger
OFF
Filter
Application NONE
Recording File 01-03-23.rf5 0 KB Open Close

c OFF
d Filter
e Application NONE
f Capture RAM Ring Mode
g Filter
h Monitor No: 1

OFF
Filter
Statistics NOT ACTIVE

Processing Elements of the Pipeline »Online Monitoring«

a Data source: currently received data.
b Trigger: defines the starting point for the measurement (example).
c Start: runs, interrupts and terminates the measurement.
d Filter: reduces the amount of data to be evaluated.

e Additional evaluation program: call a program such as CallTrace.
f Memory area: reserve for buffering signalling data on the interface modules.
g Filter: reduces the amount of data to be displayed in the Monitor window.
h Data sink: data is directed to Monitor.

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Monitoring and Evaluating the Tests

Monitoring	Evaluating	Control	Changing Interpretation	Recording	Exit

Starting Measurements: Following configuration, start the measurement by activating the pipeline. If a measurement is running, the corresponding pipeline branch is highlighted, as shown in the example below. In the »Monitor Window« you can view the protocol data flow during a measurement. In addition, you can use other evaluation tools to interpret data (filters, applications, or statistics).

Click to start the measurement.

Monitoring and Evaluating the Tests

Monitoring	Evaluating	Control	Changing Interpretation	Recording	Exit

Evaluate Data in the Monitor Window: Use the monitor control to fit the incoming data to your measurement task.

Click to view data in the Monitor

You can view data simultaneously as it is received (LIVE) or freeze the display (FREEZE) for further processing. Using the ZOOM function, you can display all messages for a single connection.

Identifies the pipeline that evaluated the data.

a Short View

b Frame View

c Packet View

The Monitor window display the data at different resolution levels:
a »Short View« lists the data packets (frames) in short form.
b »Frame View« decodes the protocol parameters of the frame selected in short view.
c »Packet View« displays the values of a parameter selected in frame view.

The monitor status bar displays abbreviated information on selected frames.

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Monitoring and Evaluating the Tests

Evaluate Data Problem-Based by Using Applications: Additional applications can be looped into the measurements to provide problem-based analyses of the signaling data. These applications can interpret the data either in a separate window, in the statistics tool »RealChart«, or as text messages in the Monitor.

1. Click to set up the application.

Load / Unload Monitoring Application Programs (Mon APP)

☐ Single Mode

Available Programs:

Name	Loadable
✗ AbisMon	No
✗ BHCA	No
✗ CallMon	No
✗ CallTr/Seq	No
✗ Count All	No
✗ Erlang	No
✗ NFN	No
✗ IpTrafficAnalyzer	No
✗ PCR	No
✗ Statistic	No
✗ TCA	No

Quick Start

Load>>

<<Unload

Show

Loaded Programs:

Name	Id	State
? CallTr/Seq	1	Prepared for run
? NFN	2	Prepared for run

2. Select application.

Example: »CallTrace« is a protocol-specific application that provides functions for tracing one or more calls. The results are output in the »Monitor Window« together with their data frames.
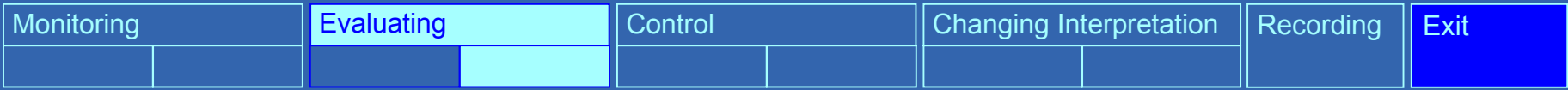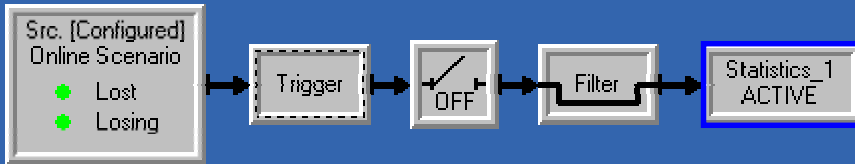
Description:

Application is loaded but not running yet - press 'OK' to run or 'Cancel' to avoid.

OK   Cancel   Help

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Monitoring and Evaluating the Tests

Monitoring	Evaluating	Control	Changing Interpretation	Recording	Exit

Evaluate Data Statistically by Using the Statistics and RealChart: The »Statistics« window allows to evaluate and graphically display received data in real time. The separate program »RealChart« displays this data in various views.
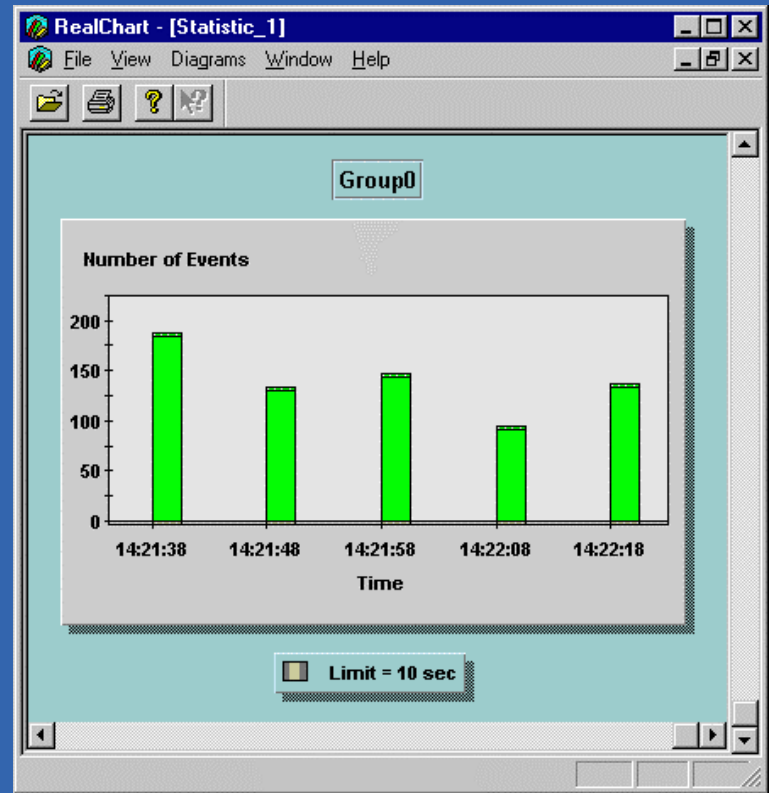
1. Click to open statistics.

2. Configure the evaluation criteria counters.

3. Select the statistics output RealChart; then select Start.

Data displayed in the RealChart window

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Monitoring and Evaluating the Tests

Monitoring	Evaluating	Control	Changing Interpretation	Recording	Exit

Control Measurement by Using Triggers: With the help of triggers, you can control the measurement processes. A trigger links an event (a trigger condition) with a predefined action. As soon as the event occurs (the trigger condition is fulfilled), the action is carried out.
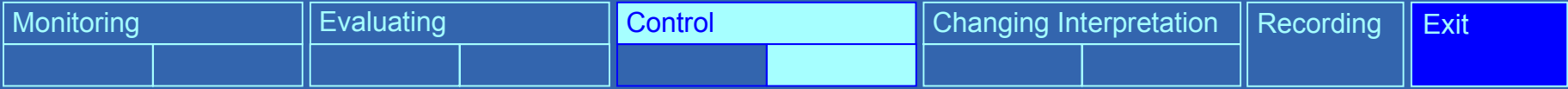
Src. [Empty]
Demo Scenario
● Lost Frames
● Losing Frm.

Trigger

Off

Filter

Application
NONE

Capture RAM
Ring Mode
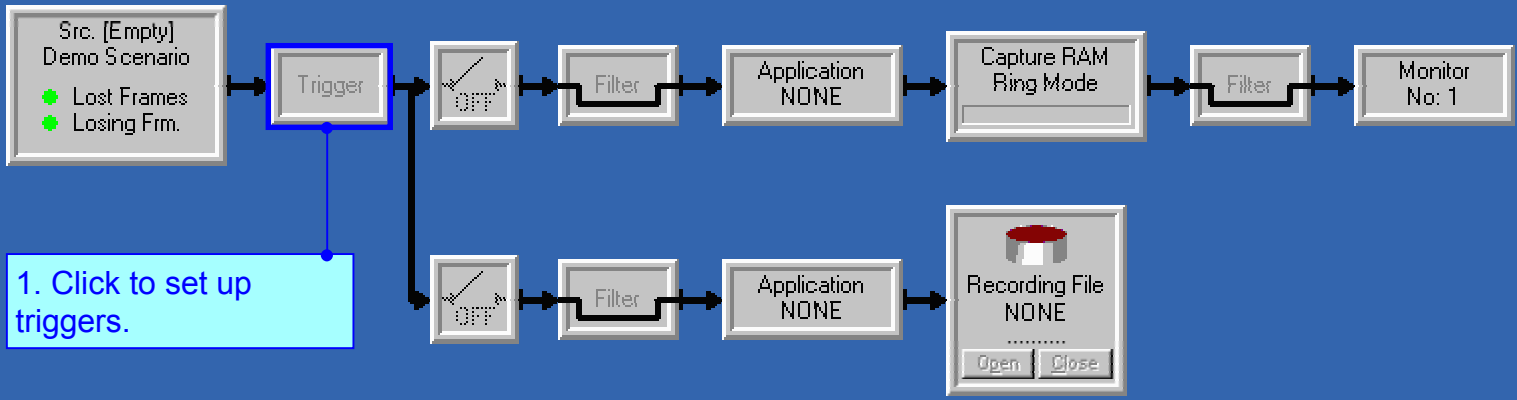
Filter

Monitor
No: 1

1. Click to set up triggers.

Off

Filter

Application
NONE

Recording File
NONE
....
Open   Close

Trigger Configuration ☒

Conditions	Relations	Actions
☑ ▪ Condition 1: Detect IAM		1 Start Recording
☑ ▪ Condition 2: Recording Time=1h		2 Enable Trigger Condition 2
		☑ Stop Recording

The »Trigger Configuration« dialog shows the current trigger settings.

☑ Show all relations

2. Set up trigger conditions …

New Condition	Delete Condition
Edit Condition	Rename Condition

New Action	Delete Action
Edit Action	Rename Action

3. Assign trigger actions.

? ☐ Enable the whole trigger

OK   Cancel   Help

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Monitoring and Evaluating the Tests

Reduce Data Amount by Using Filters: A filter reduces the amount of data to be evaluated (Input Filter) or displayed in the Monitor window (Display Filter). The K1205 provides various filters to restrict the scope of your test.

Src. [Empty]
Demo Scenario
● Lost Frames
● Losing Frm.

Trigger → Off → **Input Filter** Filter → Application NONE → Capture RAM Ring Mode → **Display Filter** Filter → Monitor No: 1

1. Click to set up the filter.
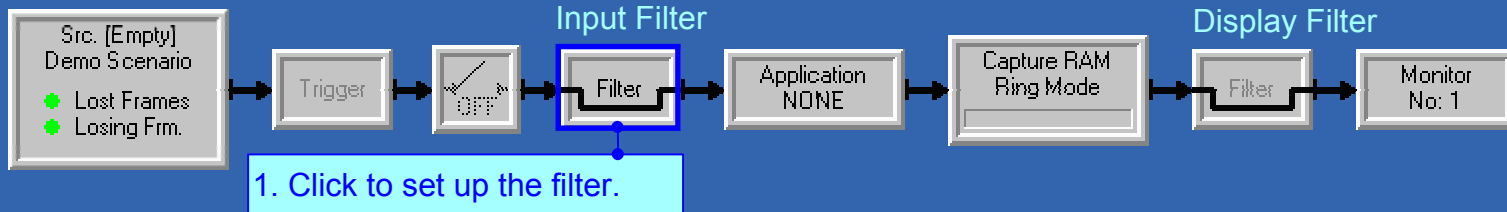
2. Define the filter criteria, for example Protocols and Parameters.

Filter Setup

Predefined | Logical Links | Protocols | Binary | Error Event | Frame Type | Timestamp / Length | Expert Mode

☐ Bypass Protocol Filter

Protocol stack:

wh97isup.stk [X] c:\k1205\stacks\whibisup\wh97isup.stk

Parameters of MTP-L2 / All Parameters:

Parameter or Field Name	Operation and Value
Backward Indicator Bit	
Backward Sequence ...	
Circuit Ident Code	
Destination Point Code	
Forward Indicator Bit	
Forward Sequence Nu...	
Heading code 0	
Heading code 1	
Length Indicator	
Originating Point Code	

Protocols:

MTP-L2	None
MTP-L3	None
MTP-T&M	None
SCCP	None
ISUP	None

Messages of MTP-L2:

All Parameters	No
??SU	No
FISU	No
LSSU-????	No
LSSU-SIB	No
LSSU-SIE	No
LSSU-SIN	No

Complete Protocol | Complete Message | Search for: [ ] Search | Edit ...

All Protocols | All Messages | ☐ Show selected parameters only | Overview

MTP-L2

MTP Level 2

The filter overview illustrates the relationships between the various filter settings.

Filter operations define passing frames.

→ Logical Link → Protocols / Binary / Error Event / Frame Type → Timestamp / Length →

☐ Bypass

Reset | OK
Undo | Cancel
Config ▼ | Help

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Monitoring and Evaluating the Tests

Monitoring	Evaluating	Control	Changing Interpretation	Recording	Exit

Determine Interpretation Rules by Assigning Protocol Stacks: When configuring sources, you assign protocol stacks and determine the interpretation rules for the measurement. The K1205 provides a number of predefined protocol stacks for various networks measuring. If necessary, you can change the existing stacks or build new ones using the »Protocol Stack Editor«.

Click on one of these buttons to build or open a protocol stack in the »Protocol Stack Editor«.

The »List of Scenarios« provides an overview of which protocol stacks [*.stk] are assigned to the configured logical links.

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Monitoring and Evaluating the Tests

Monitoring	Evaluating	Control	Changing Interpretation	Recording	Exit

Edit Protocol Stacks in the Protocol Stack Editor: During a measurement, it may be necessary to change an assigned stack, if the decoded data in the Monitor window does not contain test-related information.

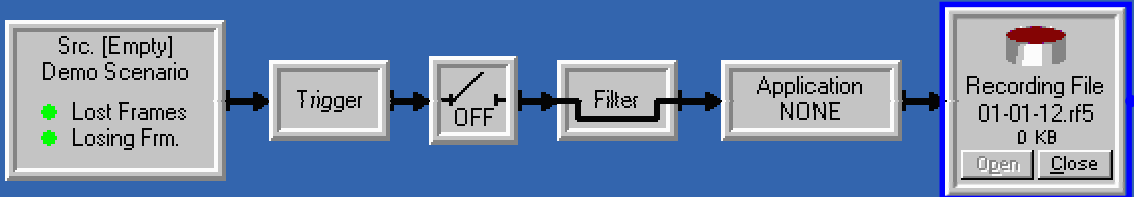Click to add, delete, configure Protocols in stack.

»Stack View« displays the stack structure: items (protocols) and their relations.

»Layer View« displays parameter information on selected protocols, here: LAPD.

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Monitoring and Evaluating the Tests

Delayed Intepretation of Data by Recording: A delayed interpretation of long-term measurements is made possible by recording of the measurement data. The recording can be played back and evaluated at a later time. You can run offline scenarios of these recordings on the K1205, or on the K1205 PC version, which can be installed on a standard Windows PC.

Src. [Empty]
Demo Scenario
● Lost Frames
● Losing Frm.
→ Trigger → OFF → Filter → Application NONE → Recording File 01-01-12.rf5 0 KB Open Close

1. Set up an Online Recording pipeline with the appropriate recording options.

K1205 - Data Flow - <UNTITLED>

File View Scenarios Tools Options Window Help

On Record   On Monit   On Stat   Off Record   Off Monit   Off Stat   Rec View

Data Flow - <UNTITLED>

of Scenarios

cenarios
e Scenario (NONE)
rding Viewer (NONE)

Measurement Scenarios

Recording File NONE 0% Open Setup ▶ ■ ❚❚ → Trigger → Filter → Application NONE → Capture RAM Ring Mode → Filter → Monitor No: 1

2. Click on the Playback Recording File element to select the recording file and set up the playback options

Pipeline »Offline Monitoring«

Recording File NONE Open Close → Filter → Monitor No: 1

Or click on the Recording Viewer element and view the contents of a recording file in the Monitor window.

Pipeline »Recording Viewer«

NUM

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K1205 Tour

End

You find additional information in …

the K1205 User Manual

the K1205 Online Help

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