Protocol Analysis and Emulation over T3 E3

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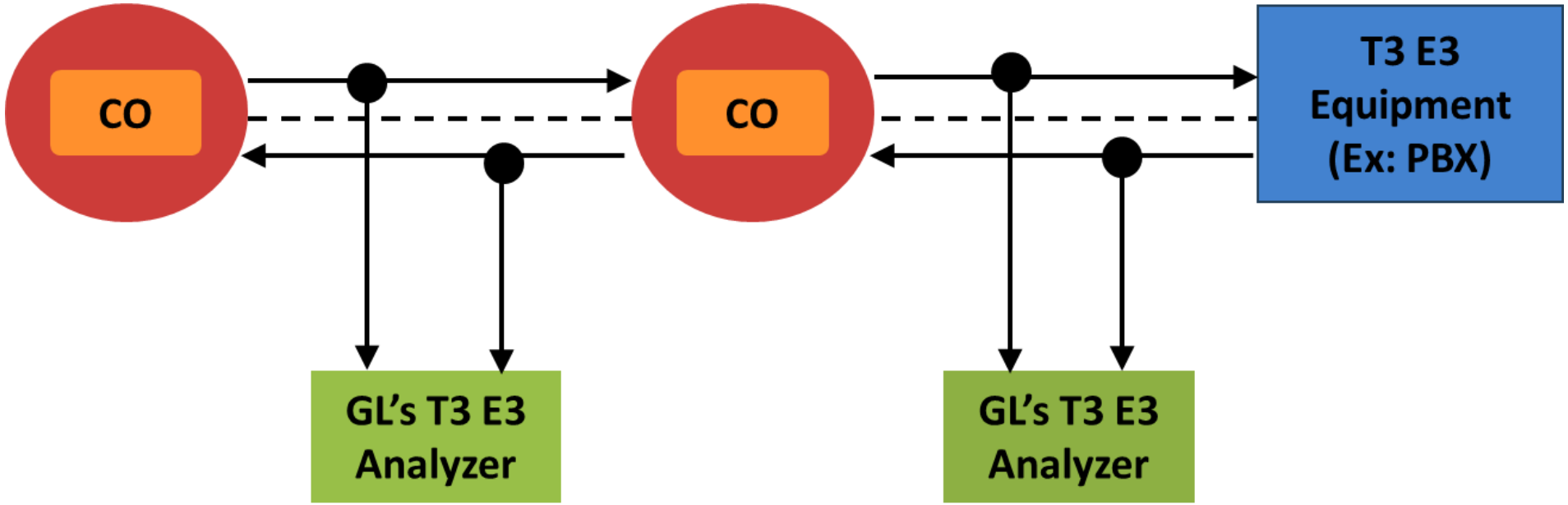
T3 E3 Optional Applications

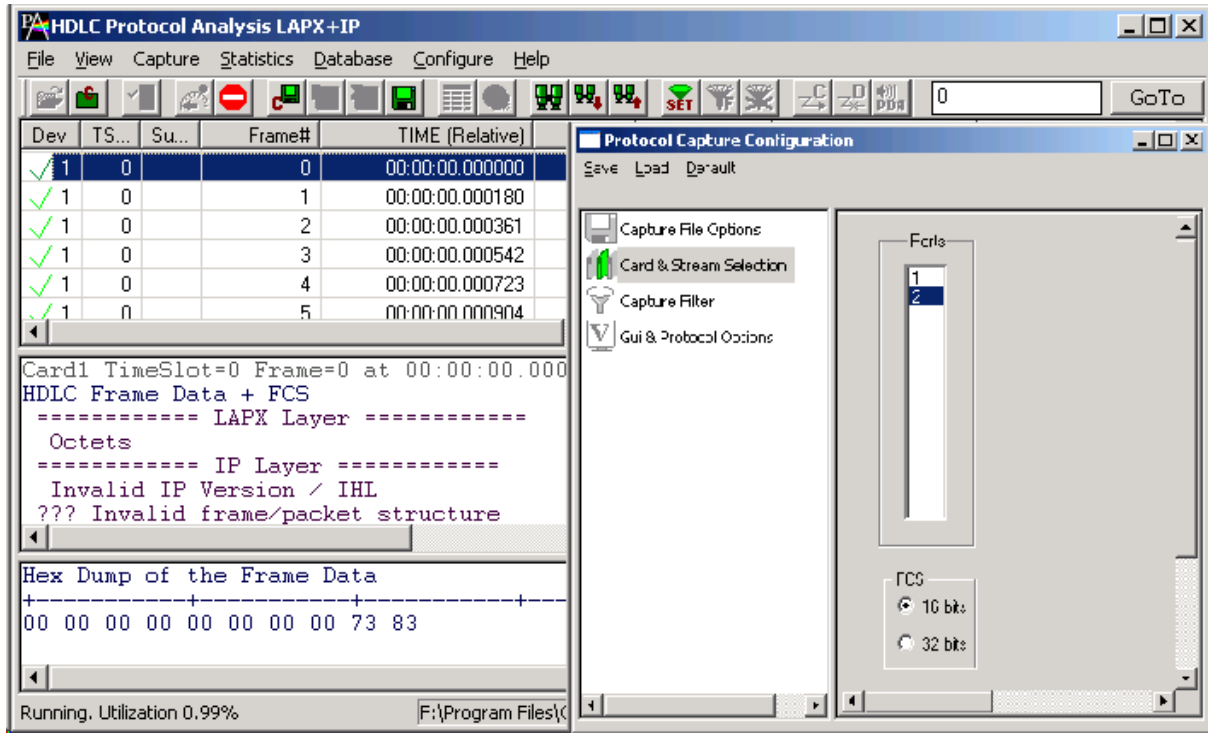
- BERT
- HDLC Test
- Error and Alarm Generation
- Record and Playback Data to/from File
- Rx Tx Memory Loopback
- Monitor Received Data
- Protocol Analyzers – HDLC, Frame Relay, PPP, ATM and Physical Layer
- HDLC Transmit
- Client/Server
- T1 E1 Send/Receive Server

Protocol Analysis

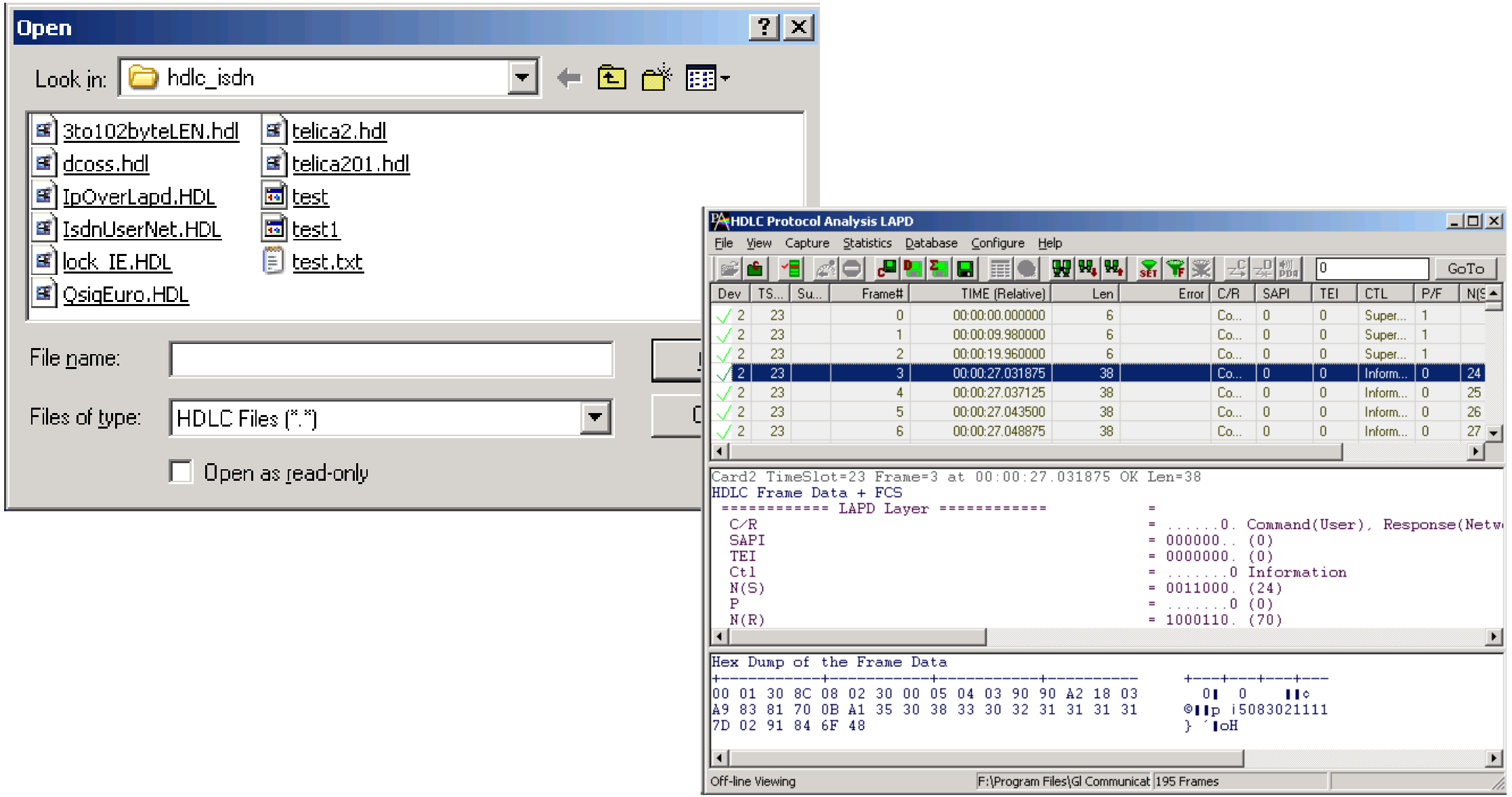


Real-time Protocol Analysis

- GL's T3 (DS3) /E3 analyzer supports protocol decoding and analysis of ATM, Frame Relay, PPP, and HDLC. All the protocol analyzers are based on similar architecture and support sophisticated filtering, statistics and real-time capture options



Offline Protocol Analyzer



Key Features

- Consolidated GUI–displays summary of all decodes, detail and hex-dump view of each frame, statistics view, and call detail record views
- Perform real-time/offline/remote analysis
- Supports various protocol standards for proper decode
- Capture options such as port selection, and FCS
- Fine tune results with filtering and search capability
- Export decode results to ASCII or CSV files
- Trace File Saving Options
- Statistics Computation
- Call detail records for Frame Relay, ATM
- Any protocol field can be added to the summary view, filtering, and search features providing users more flexibility to monitor required protocol fields
- Network Monitoring
- Remote access capability

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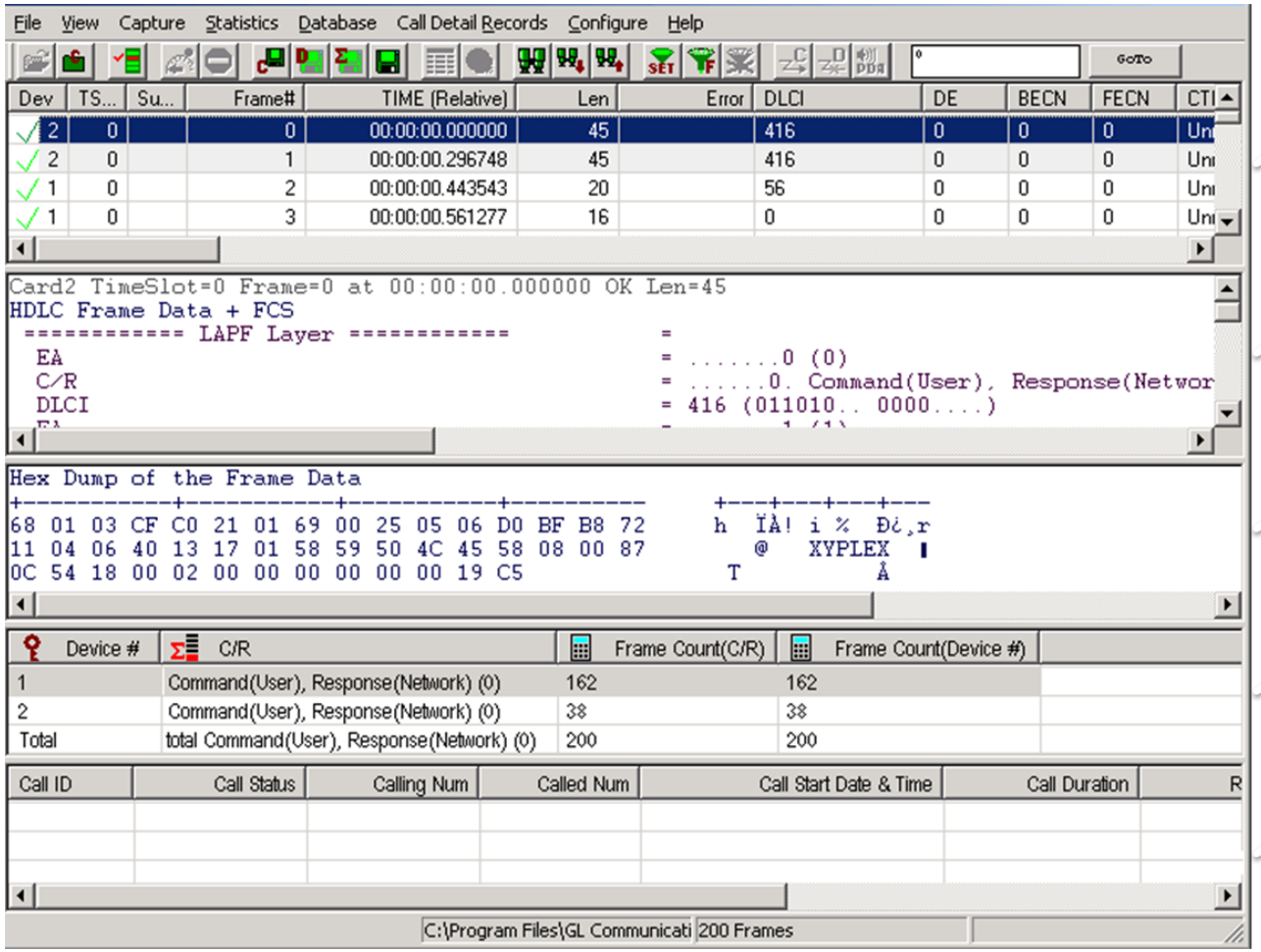
User Interface



Summary View

Detail View

Hex Dump View

Statistics View

Call Detail View

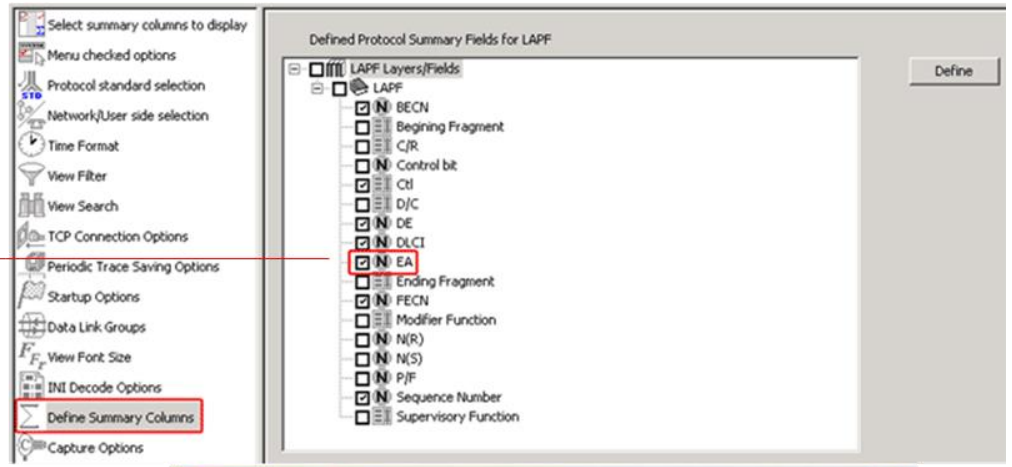
Different Panes

- The user interface comprises of Summary view at the top, followed by the Detail, Hex Dump, Statistics view and an optional Call Trace view at the bottom
  - **Summary View:** displays the columns that contain Frame Number, Time, Frame Error Status, Command/Response, Length, Error, and others in a tabular format
  - **Detail View**: This pane displays in detail about a frame in order to analyze and decode by selecting it in the summary view, the contents of this view can also be copied to clipboard
  - **Hex Dump View**: This pane displays the frame information in HEX and ASCII format, the contents of this view can also be copied to clipboard
  - **Statistics View**: displays the Statistics that are calculated based on the protocol fields
  - **Call Trace View**: displays the call specific information for each individual call from the captured data and display the information in an organized fashion

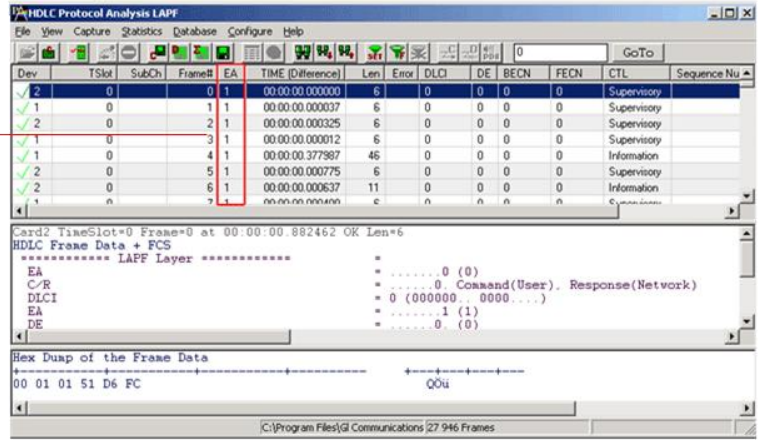
Define Summary Columns

- Required protocol fields can be added through Define summary column option
- User can remove the protocol field which is not required

Selection of Summary Column

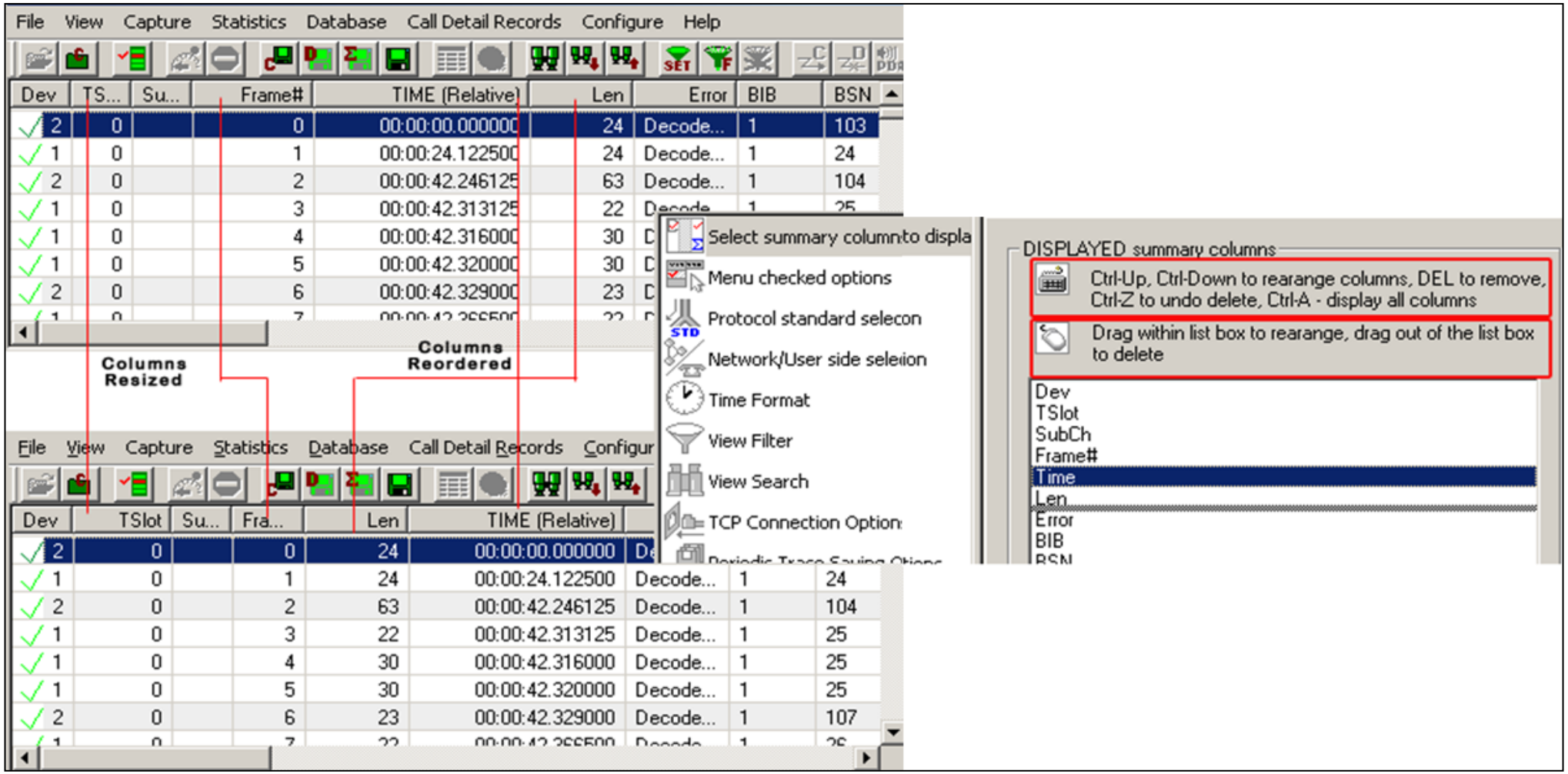


Output display in analyzer



Column Reordering and Resizing

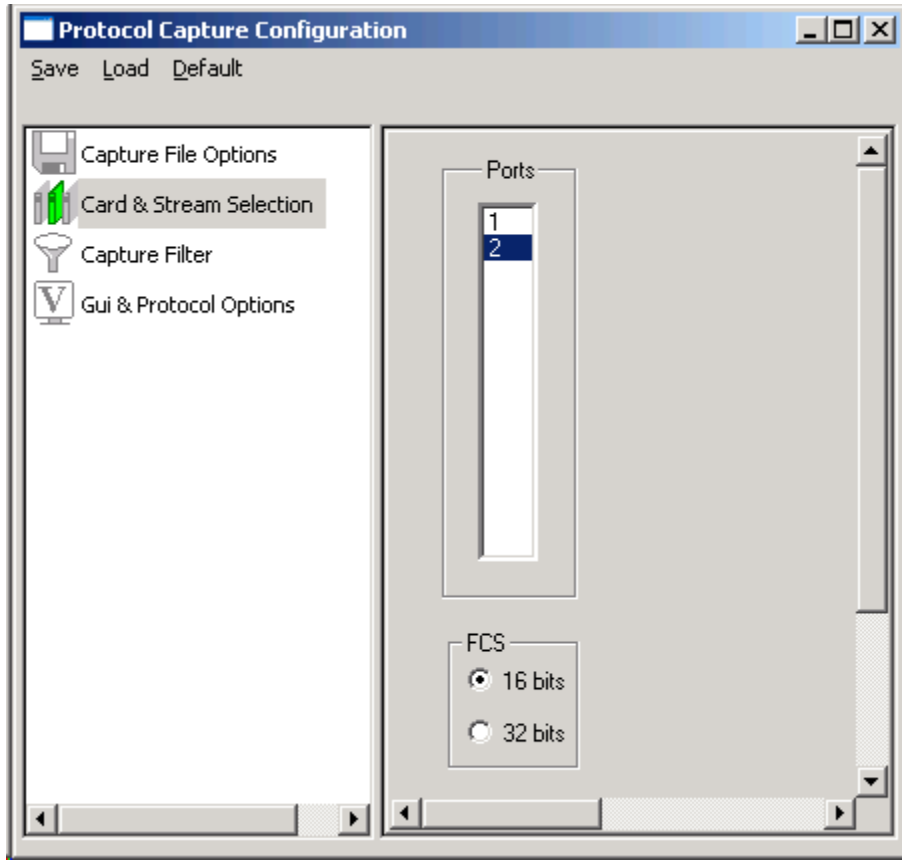
- Click and drag the columns to different positions
- Time (Relative) and Len columns are reordered and TSlot and Frame # columns are resized



Real-time Analysis

HDLC, Frame Relay, and PPP Analyzers

- Capture and analysis of the frames in real-time or offline
- Frames may also be captured based on their FCS (16 bits, 32 bits, none)
- Recorded trace file can then be analyzed offline and exported to ASCII file, or printed



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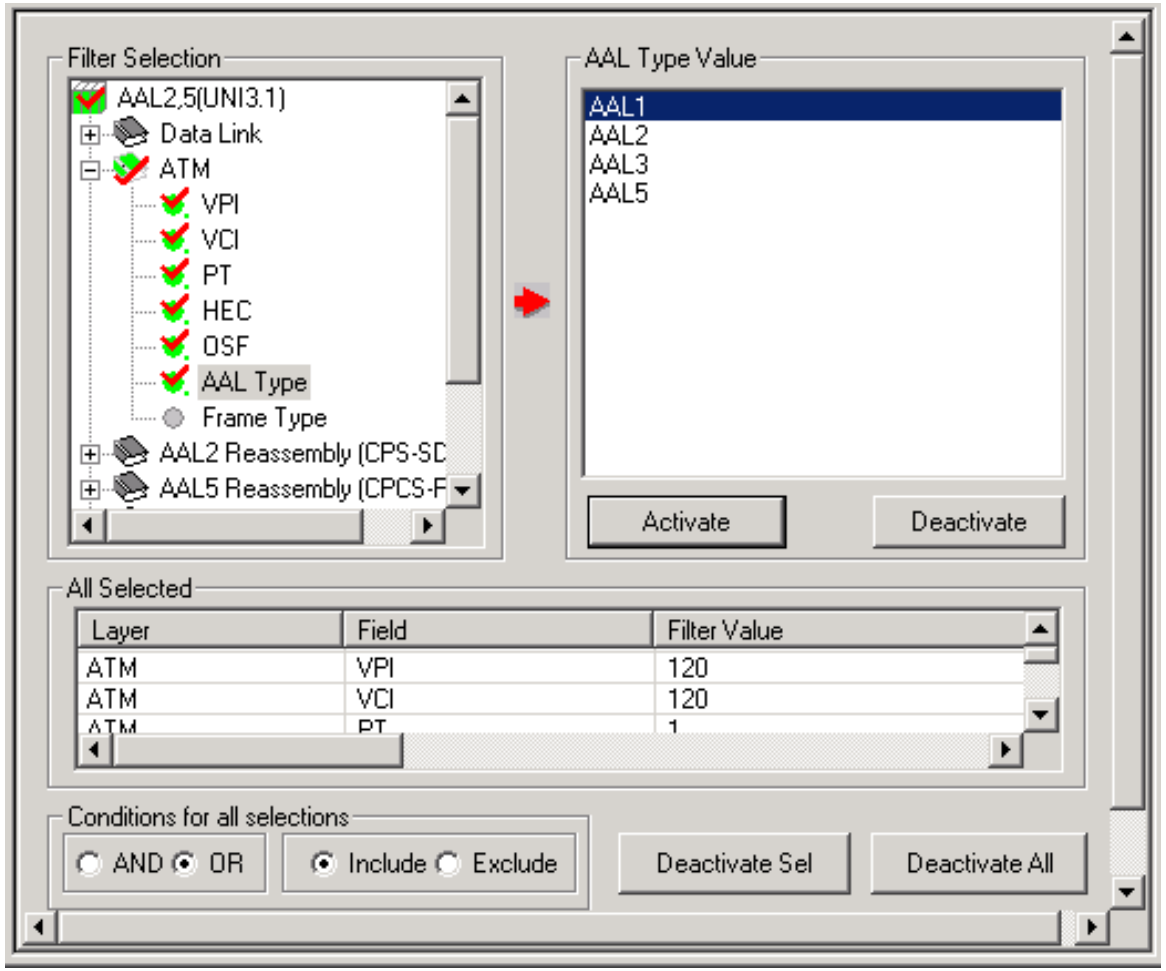
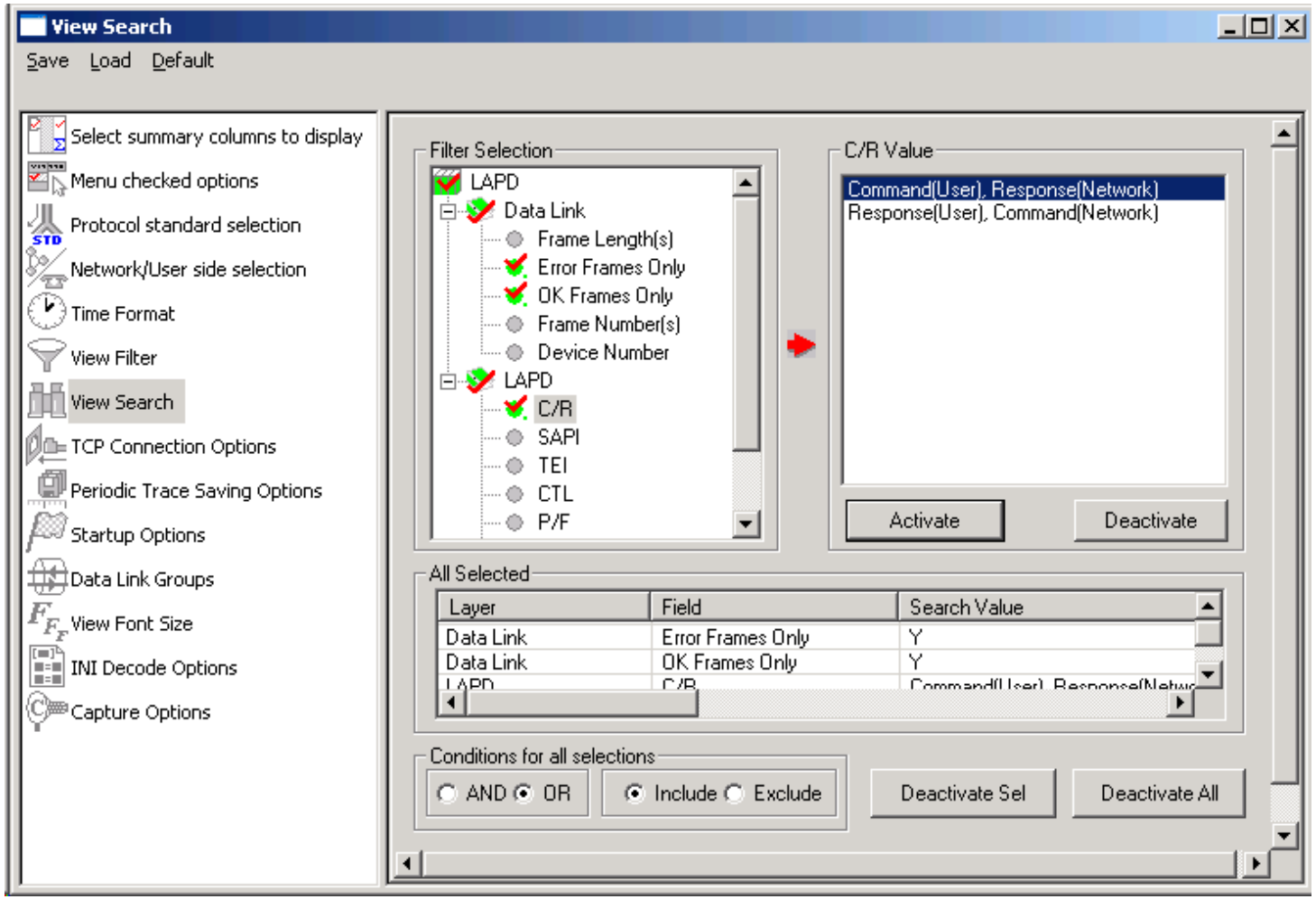
View Filter

- Filtering capability adds a powerful dimension
- Isolate frames of interest from all frames in real-time, as well as offline
- Can specify custom values to filter frames for real-time capture



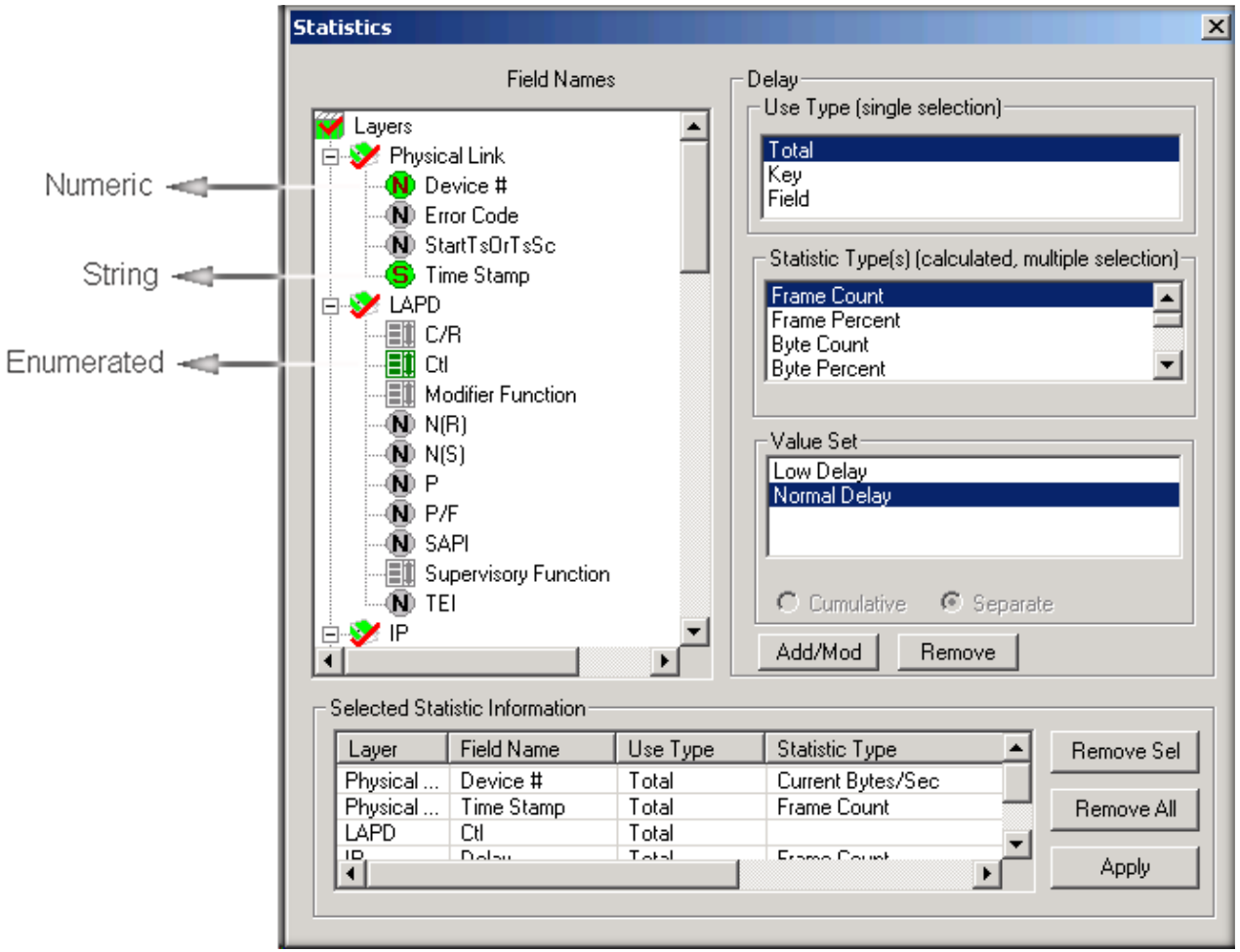
Search Options



- Search capability helps user to search for a particular frame based on a various protocol fields

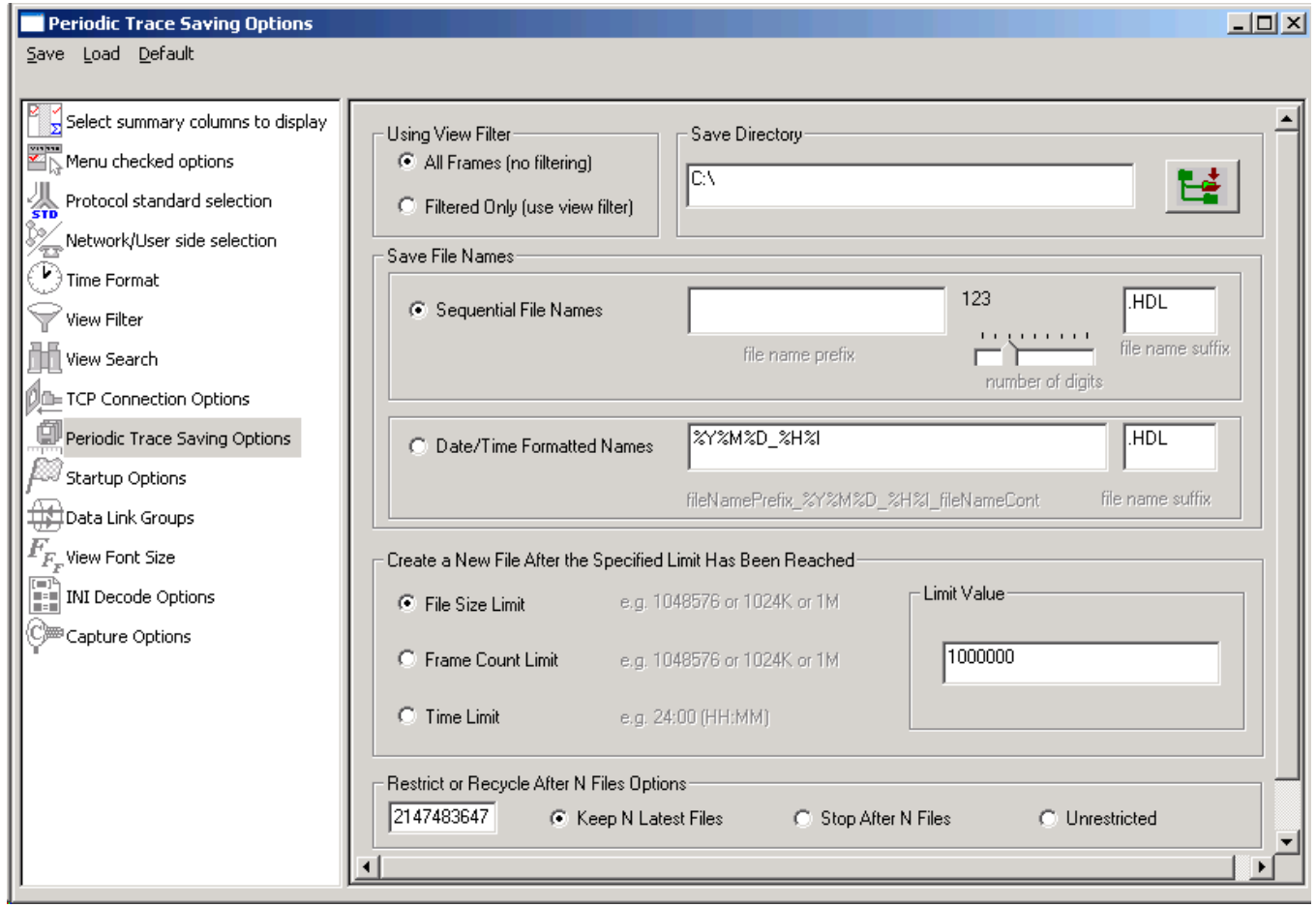
Statistics

- Statistics can be obtained for all frames both in real-time as well as offline mode
- Numerous statistics are obtained to study the performance and trend in the analyzer's network
- It is based on protocol fields and different parameters e.g., Use Type (Key/Total/Field), Statistic type (Frame count, Byte count, Frames/Sec) and patterns like Range List, Wild card



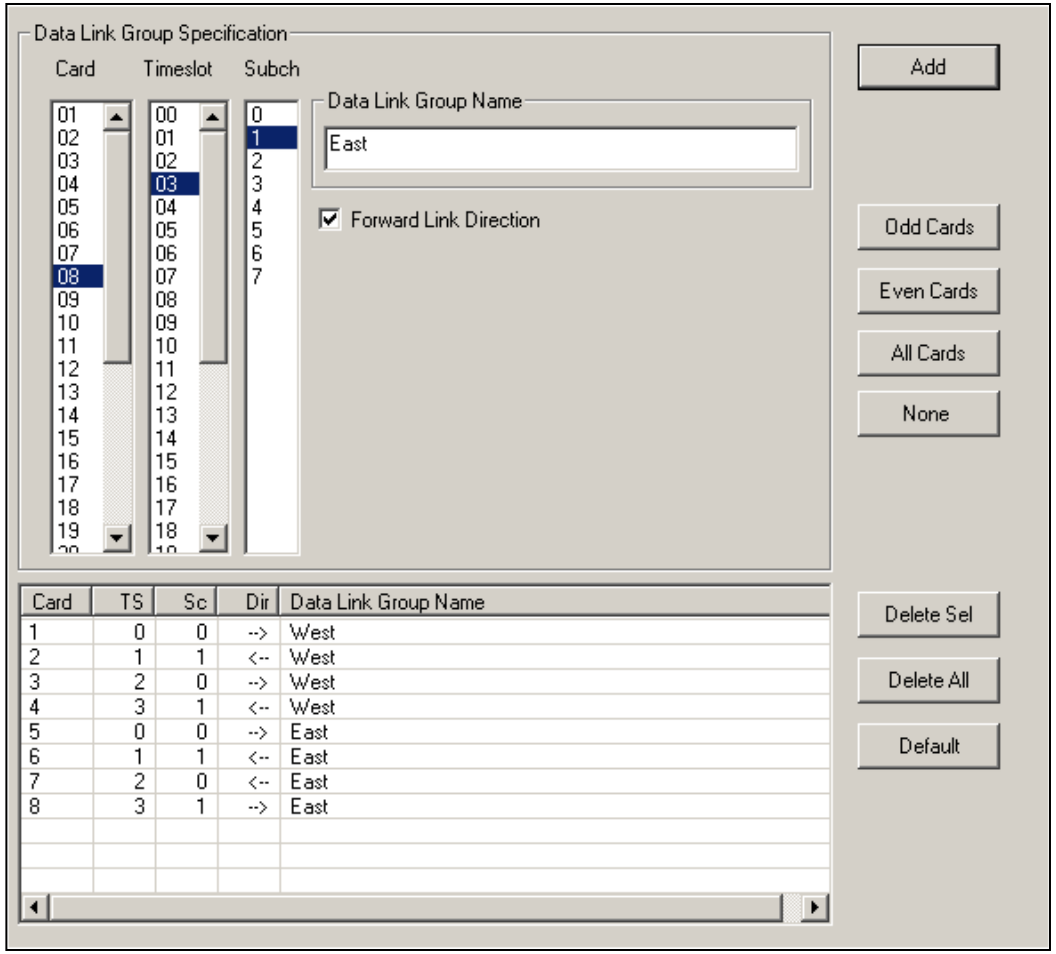
Periodic File Saving Option

- Captured trace files can be controlled by saving the trace using different conventions such as –
  - ➢ Trace files with user-defined prefixes
  - ➢ Trace file with date-time prefixes
  - ➢ Slider control to indicate the total number of files, file size, frame count, or time limit



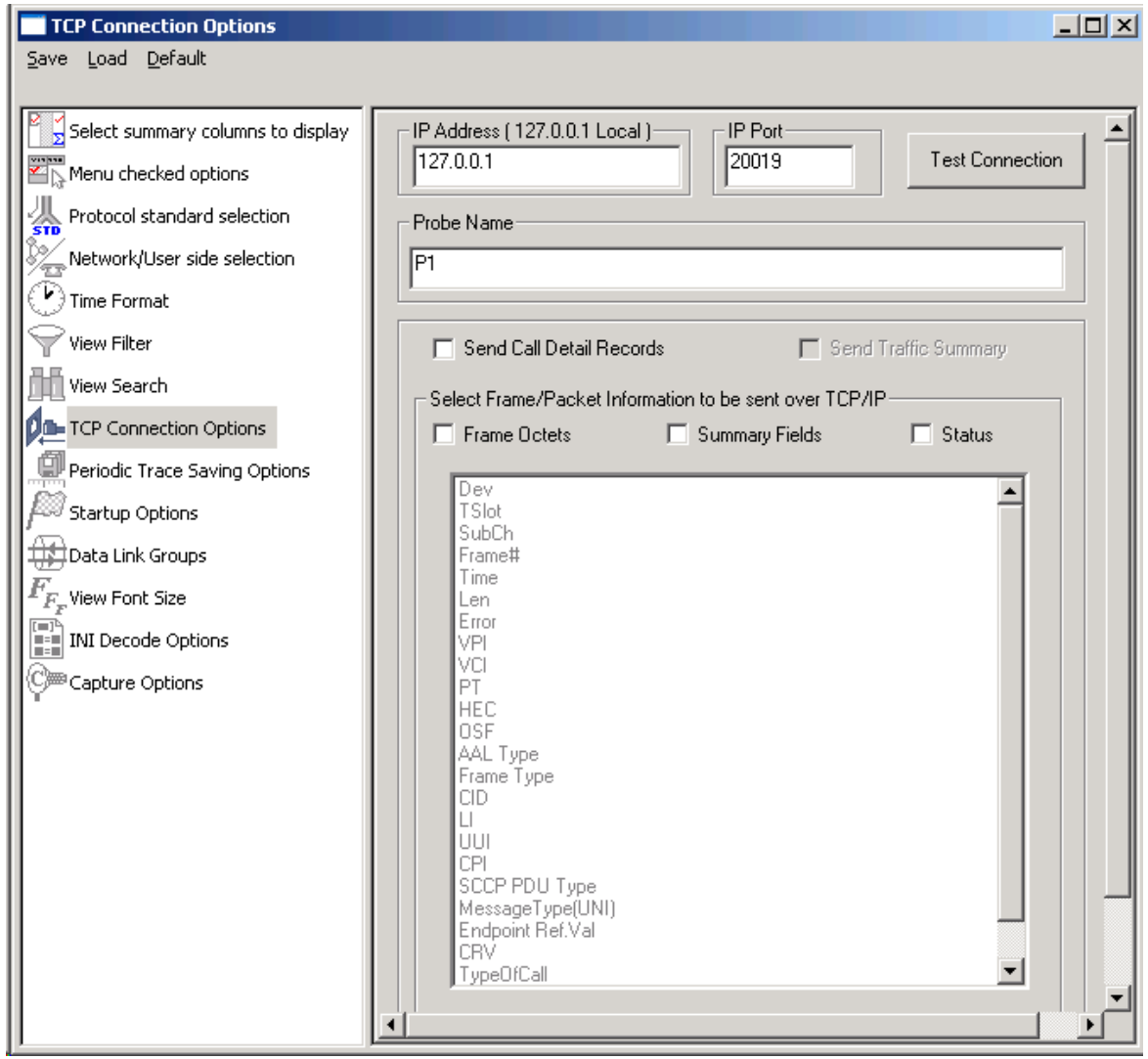
Data Link Groups

- Currently applicable to only Frame Relay analyzer, used to define the direction of the calls in a given network and form logical groups comprised of unidirectional (either 'Forward' or 'Backward') data links



TCP Connection Options

- Used for Network Surveillance and Monitoring
- Designed to send protocol summary information and binary frame data via TCP- IP connection to a Database Loader to load data into a database



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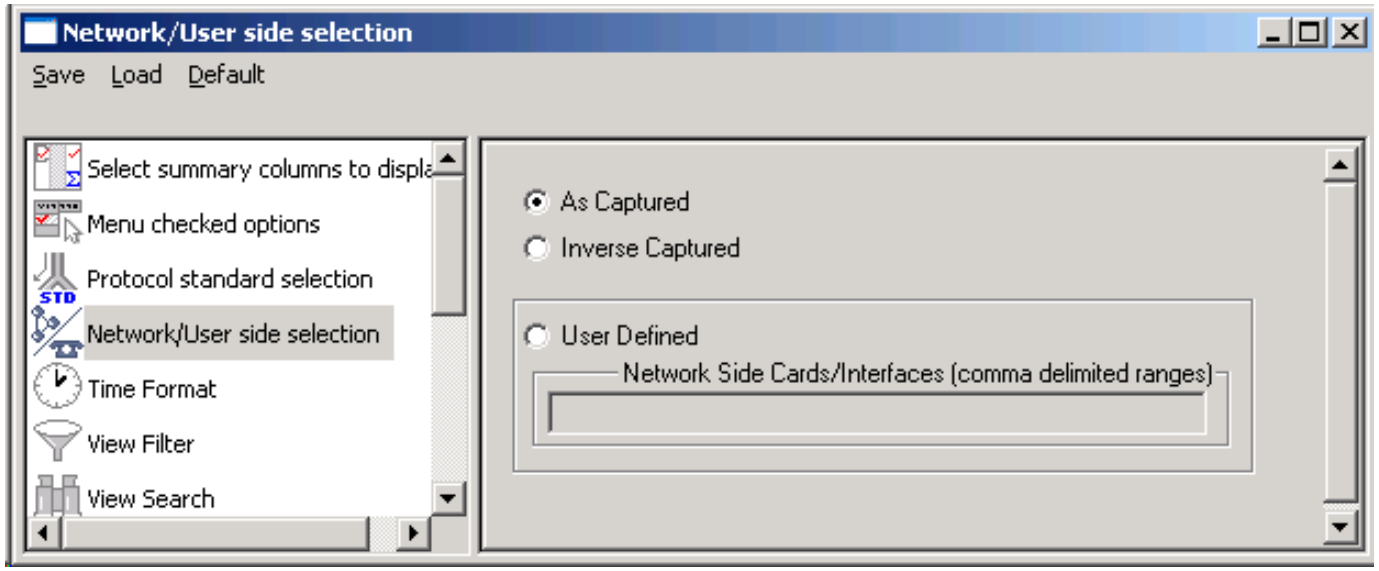
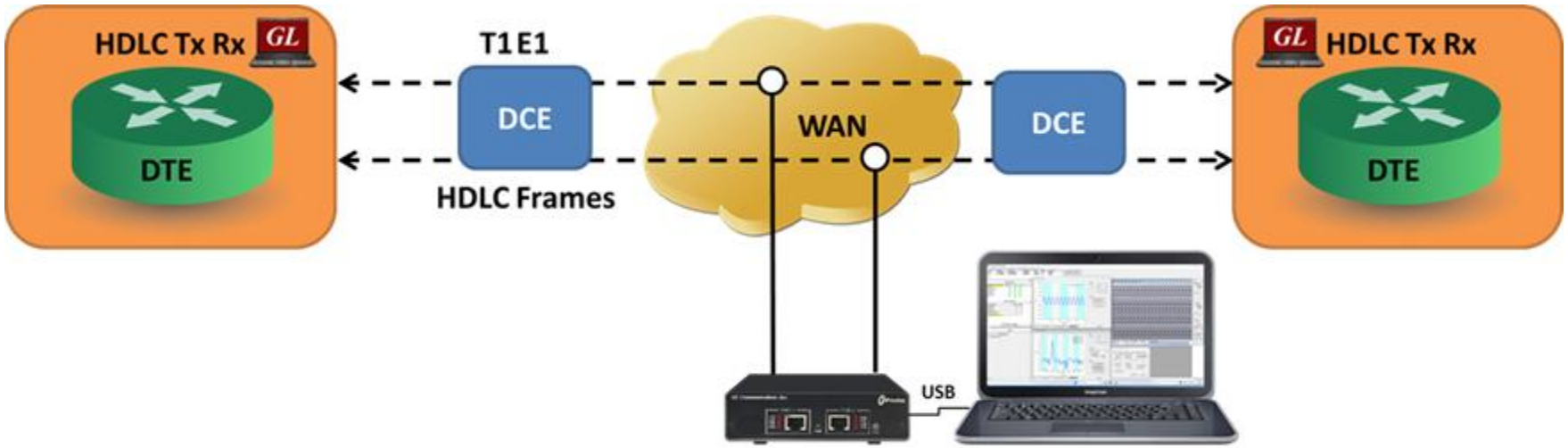
Save/Load All Configuration Settings



- Provides a consolidated interface for all the settings required in the analyzer such as protocol selection, stream/interface selection, etc.
- Configuration settings can be saved to a file, loaded from a configuration file, or just prefer to revert to the default values using the default option

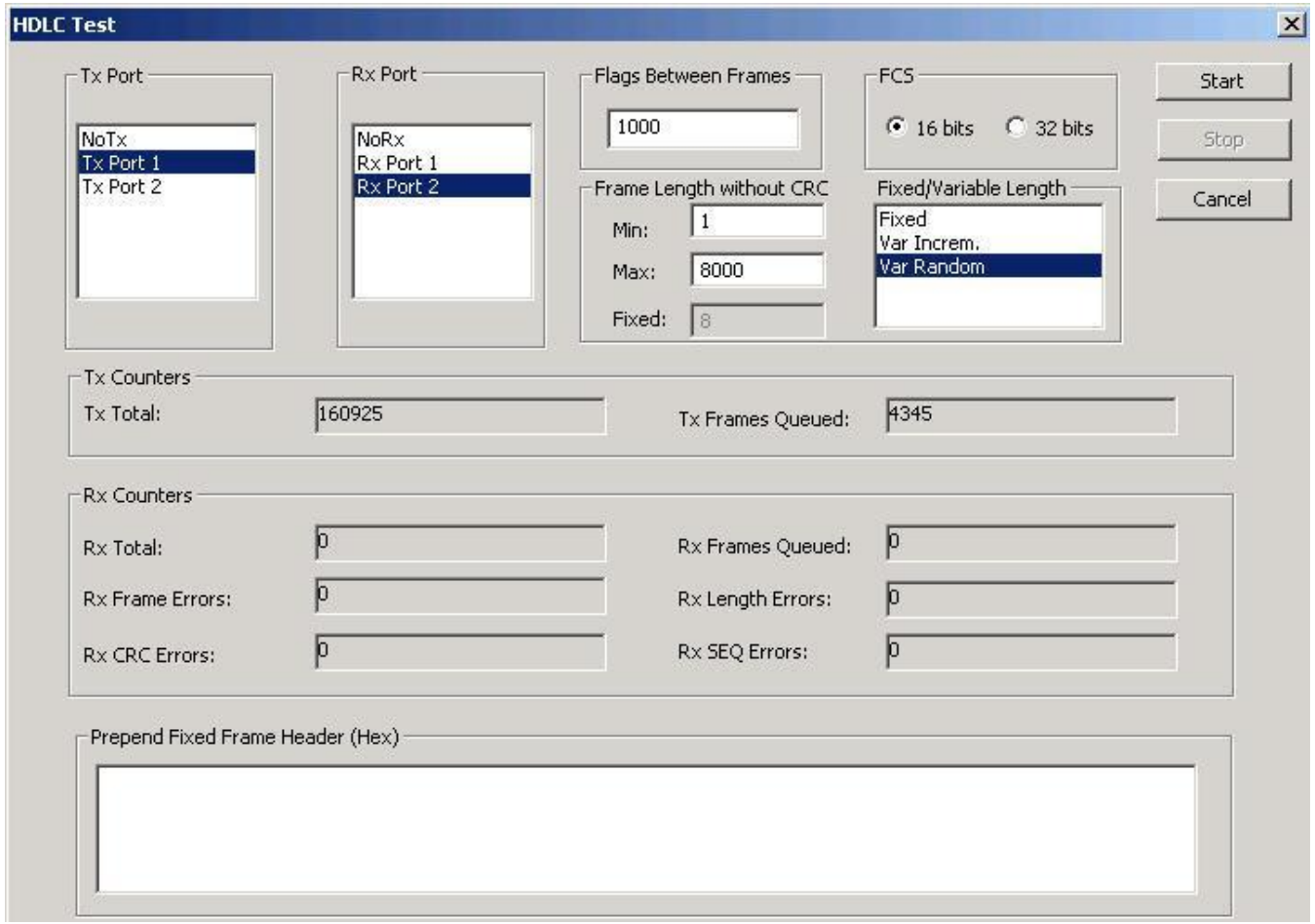
GL's HDLC Analysis and Emulation Products



GL's HDLC Analysis and Emulation

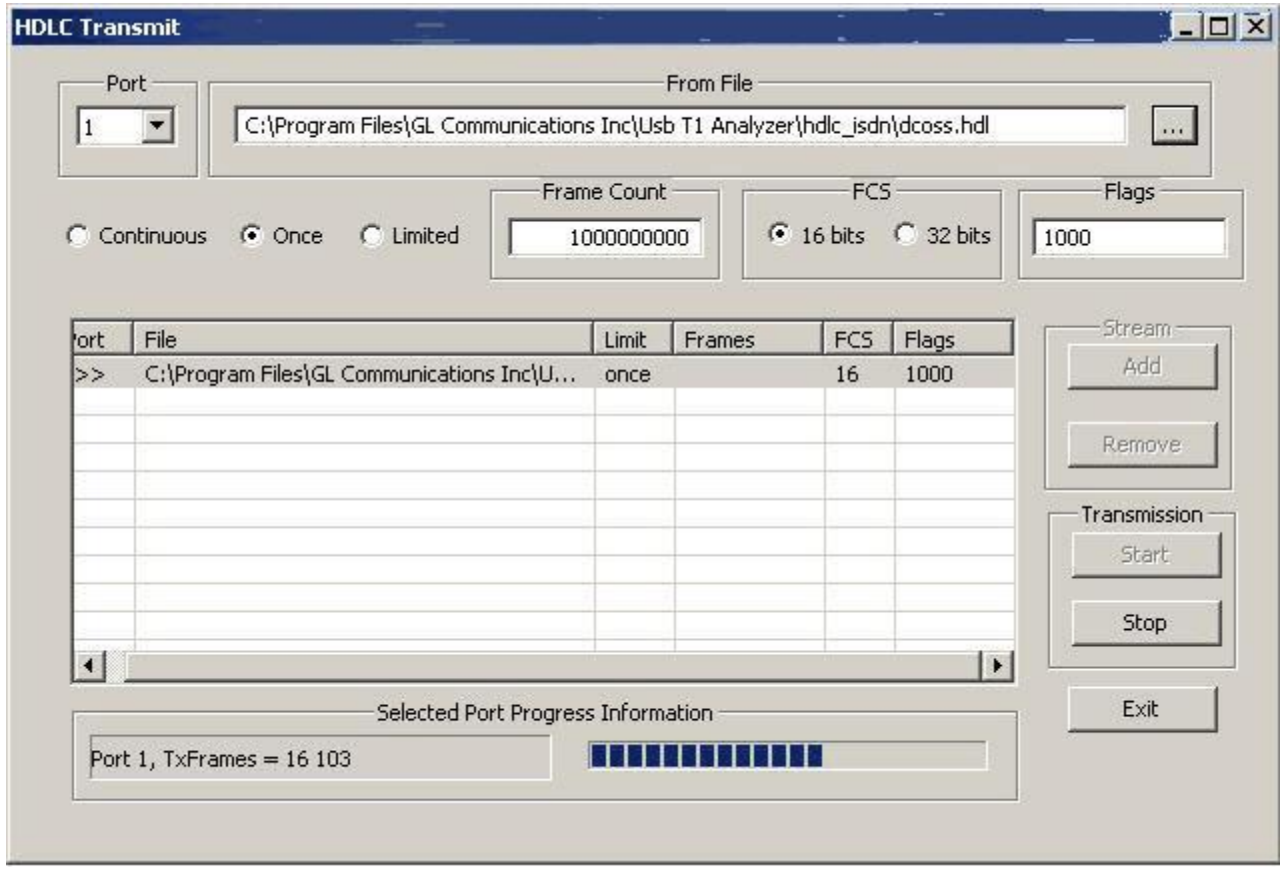
HDLC Emulation (Tx/Rx)

- Designed to transmit and receive HDLC frames over unstructured T3 E3
- The FCS (also known as cyclic redundancy check CRC) is calculated using a polynomial
  - 16 bit FCS is generated using polynomial 1+x^5+x^12+x^16
  - 32 bit FCS is defined in RFC 1662 and is using polynomial x^0+x^1+x^2+x^4+x^5+x^7+x^8+x^10+x^11^x^12+x^16+x^22+x^23+x^26+x^32



HDLC Transmit

- Transmit HDLC frames in the pre-recorded files over T3 stream. It can transmit HDL files by creating streams on each card (port #1, #2)
- Frame Check Sequence (FCS) at the end of each frame to verify the data integrity
- HDLC files transmission continuously or only once (without loss) through the T3 (DS3) stream

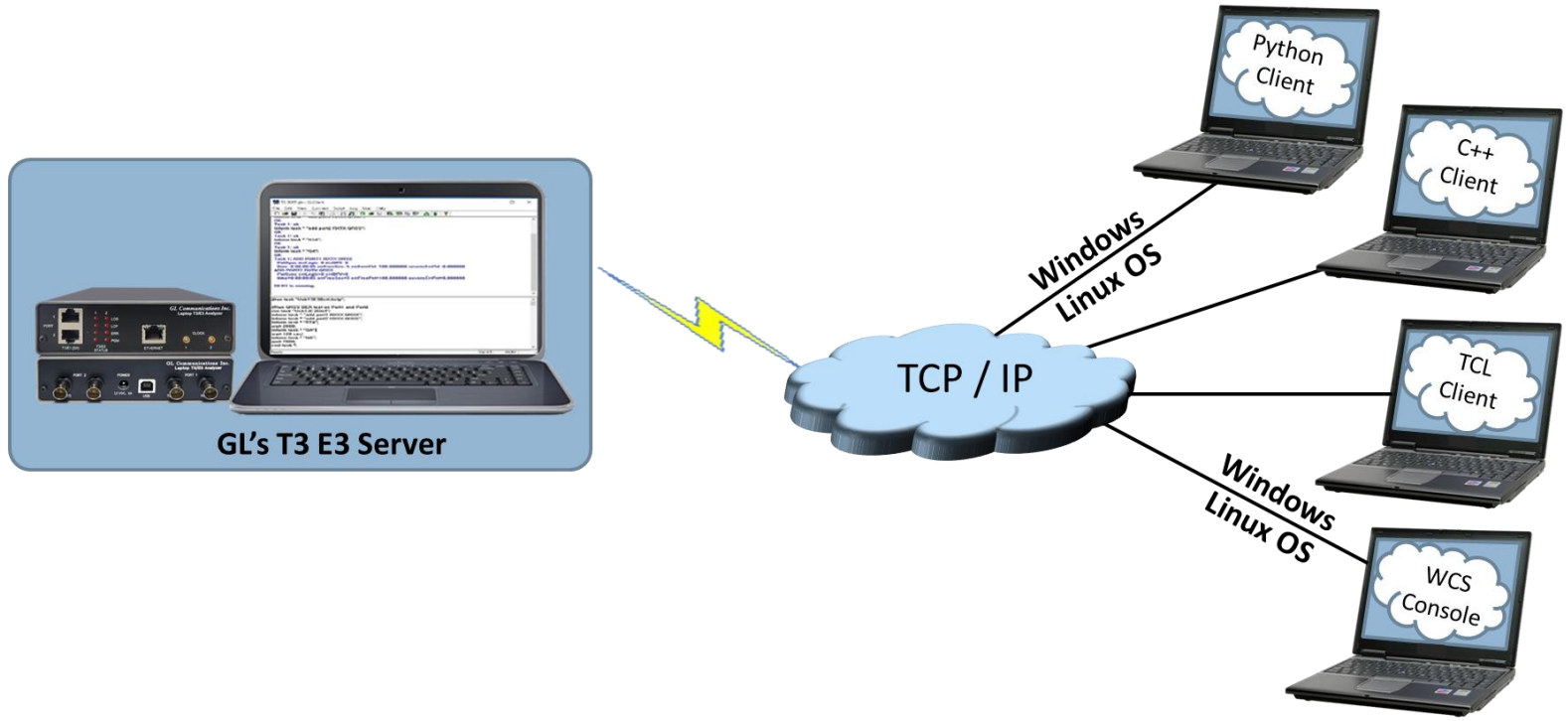


Features

- Verifies the proper working of HDLC protocols by simulating various scenarios taking place in a real-time network
- The HLIU application has the following features:
  - Logic Error insertion
  - CRC Error insertion
  - Drop a Frame
  - Change Frame Order
  - Duplicate a Frame
  - Insert a Frame
  - Delay a Frame

Windows Client Server for T3 E3 Analysis

- GL's Windows Client/Server software is a non-GUI based program for remote, scripted, and automated control of T3 E3 configuration, capture, transmission and more
- Supported clients are C++, C#, Windows TCL, and Windows/Linux Python on Windows® and Linux® operating systems



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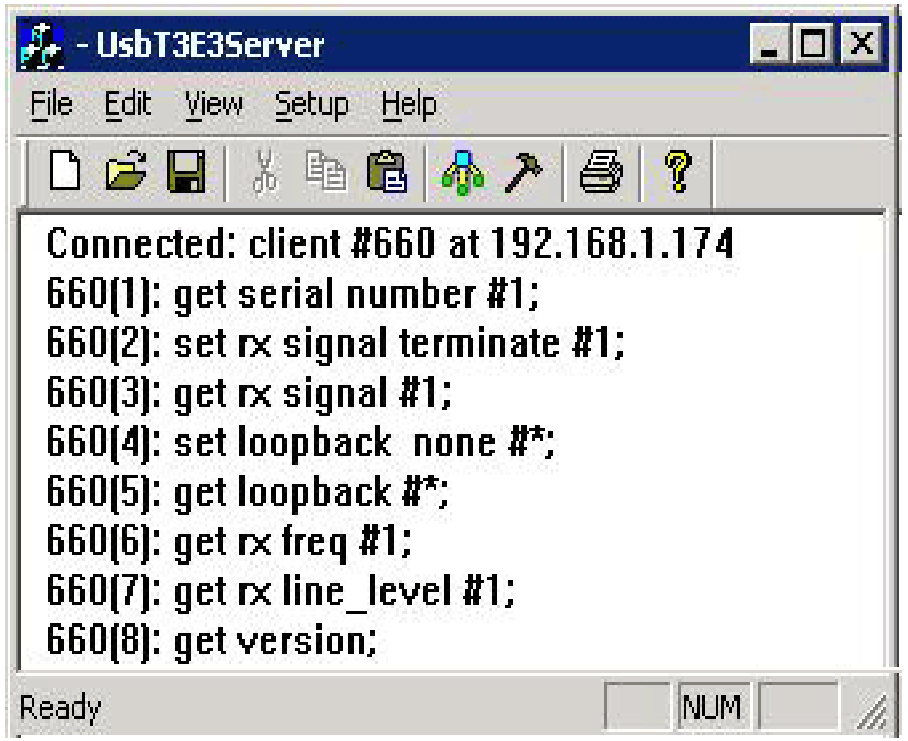
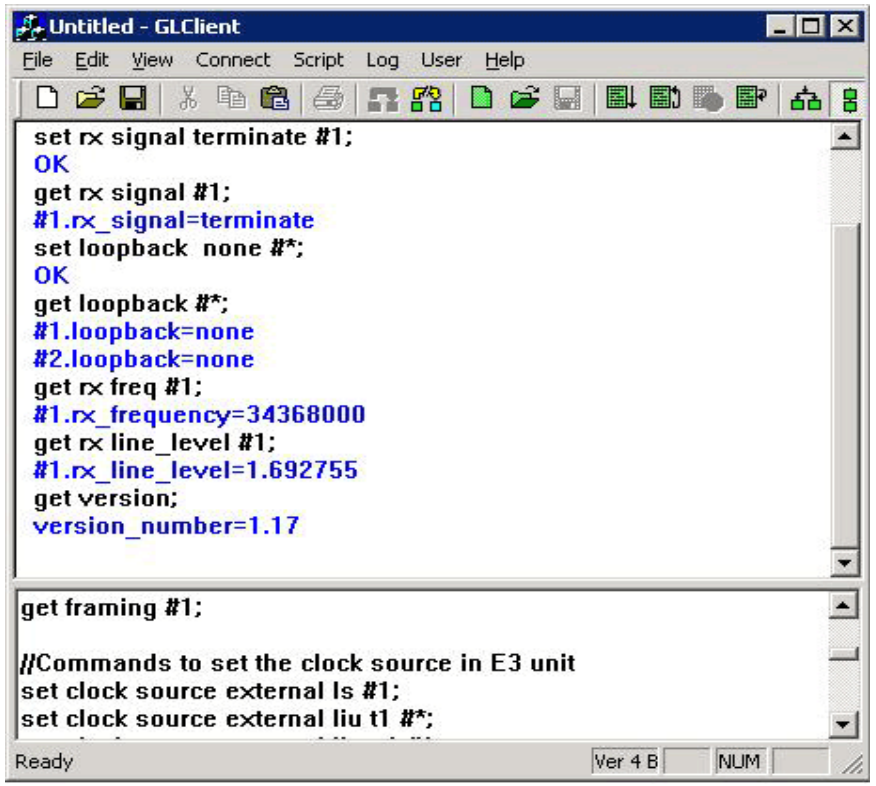
Server and Client Interface

Server Interface

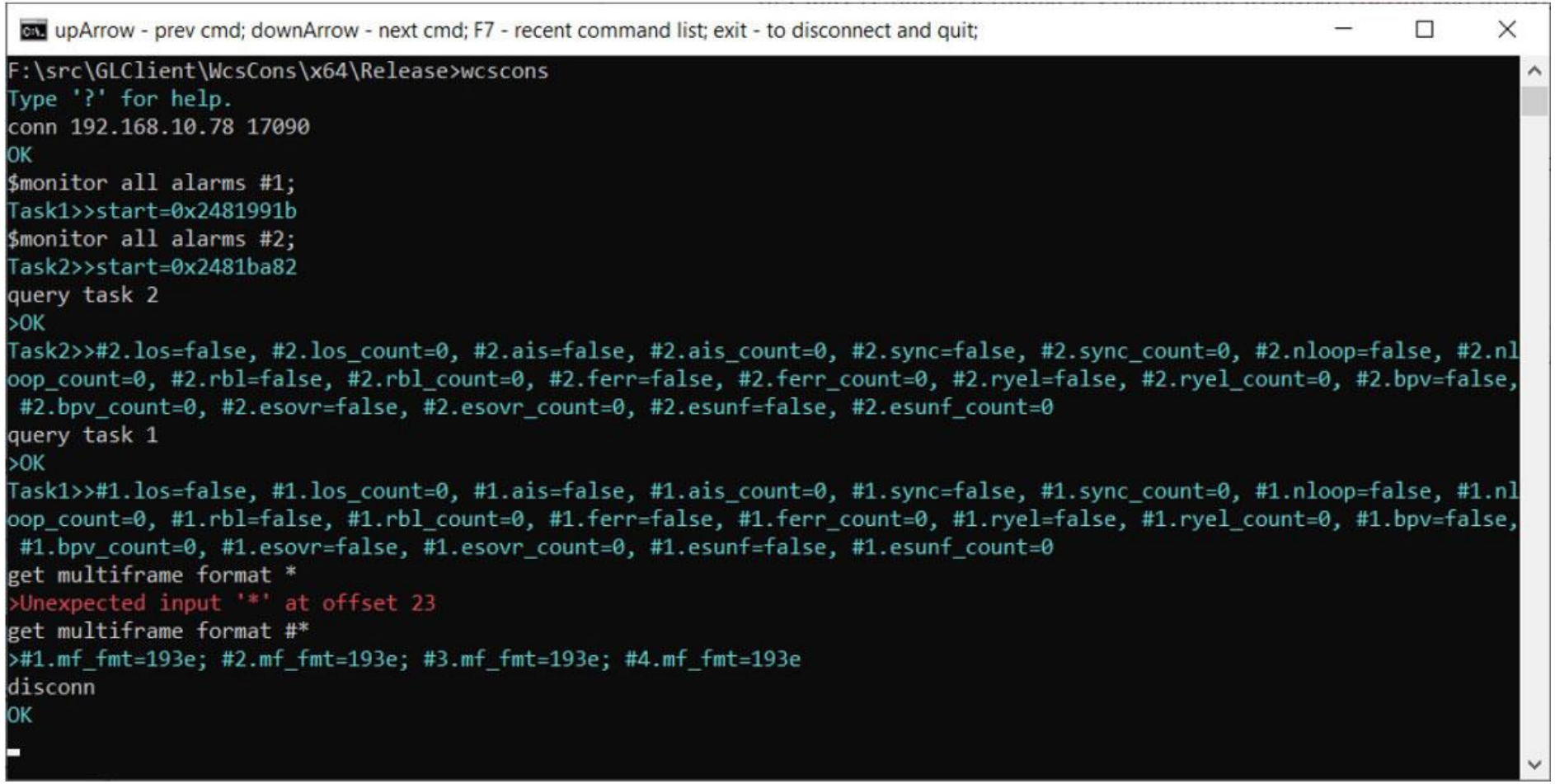


Client Interface



Windows/Linux Client Console

- Windows/Linux Client (WLC) is a Command Line Interface (CLI) application that issues commands to T1 E1 WCS server and display replies into Console/PowerShell/Terminal Windows. WLC works in Windows® and Linux® versions. However, through SSH or another remote access terminal it can be used on any operating system. WLC is a portable Windows/Linux WCS client communication library compatible with WCS server



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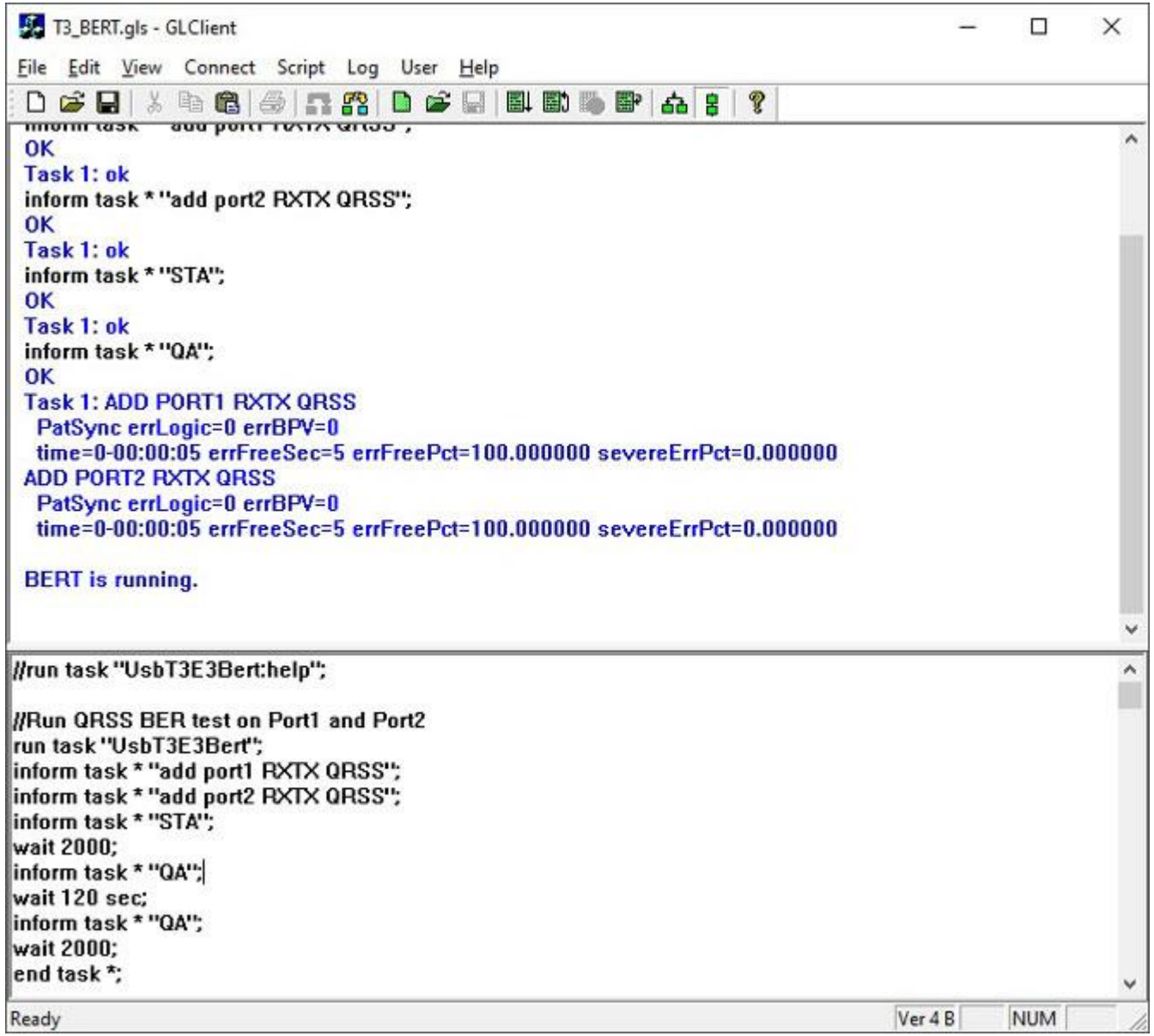
WCS Module TT3600/EE3600 – Bit Error Rate Test (BERT)

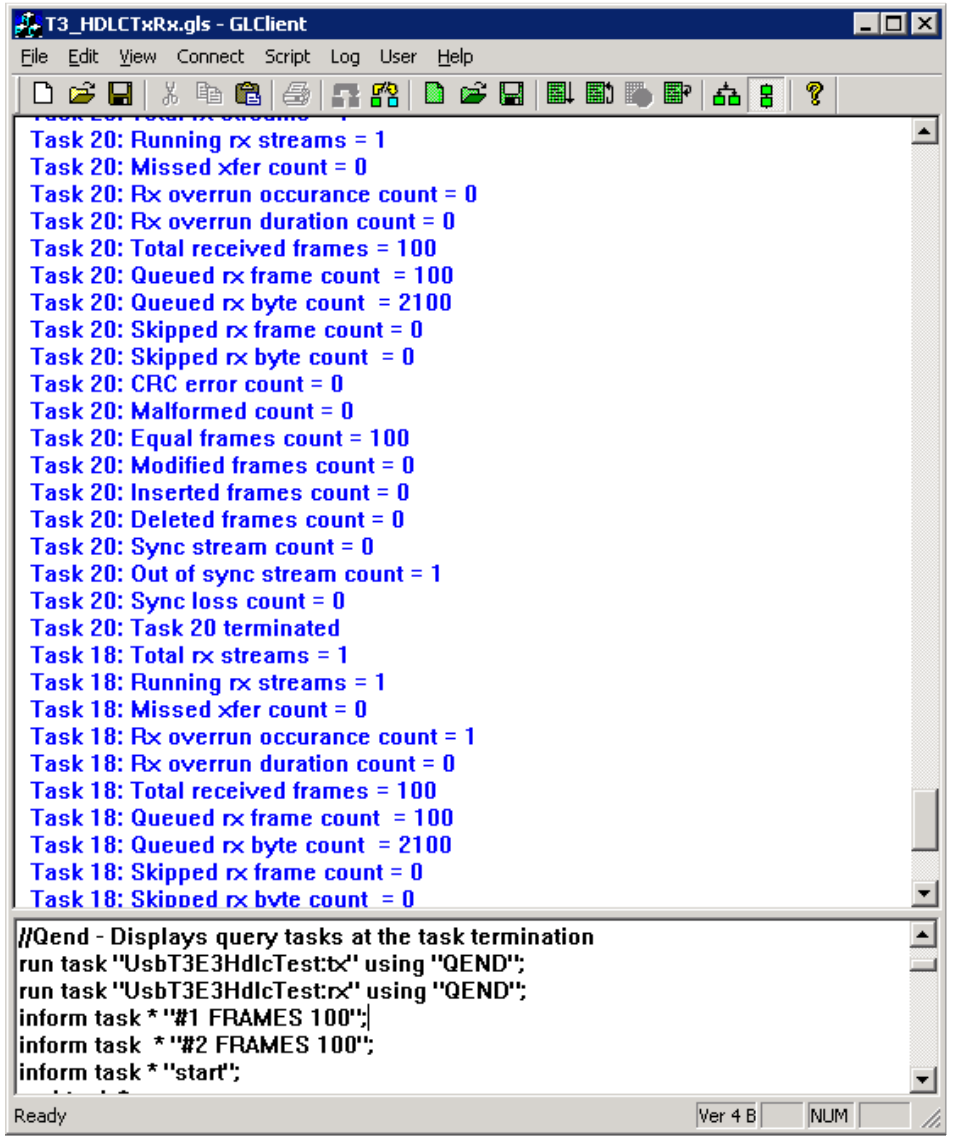
BERT on framed or unframed unchannelized T3 E3 is an optional WCS Server side module that:

- Performs BERT on pseudo random patterns such as QRSS, 2^6-1, 2^9-1, 2^{11}-1, 2^{15}-1, 2^{20}-1, 2^{23}-1, etc.
- Single or continuous Bit Error insertion for Logic and BPV errors
- Capability of remote operation, automation, and multi-site connectivity



WCS Module - HDLC Emulation and Analysis

- The FCS (also known as cyclic redundancy check CRC) is calculated using a polynomial
  - Sends HDLC frames with or without impairments
  - Receives and verifies HDLC frames and optionally logs the errors
  - Capability of remote operation, automation, and multi-site connectivity



WCS Module - HDLC Emulation and Analysis

Sample script for transmit and receive function:

//creates 2 streams on port 1 and 2, sequential numbers of fixed length 8 byte long + 4 byte (crc 32 by default) each consisting of 12000 frames with 200 flags between frames

// insert some impairment (corrupt 10 consecutive frames, skipping 9 frames, offs 3 XOR 5) on both the cards.

run task "UsbT3E3HdlcTest:tx";

inform task * "#1,2 SEQNUM FIXLEN 8 FRAMES 12000 FLAGS 200";

inform task * "error rep 10 skip 9 offs 3 xor f5";

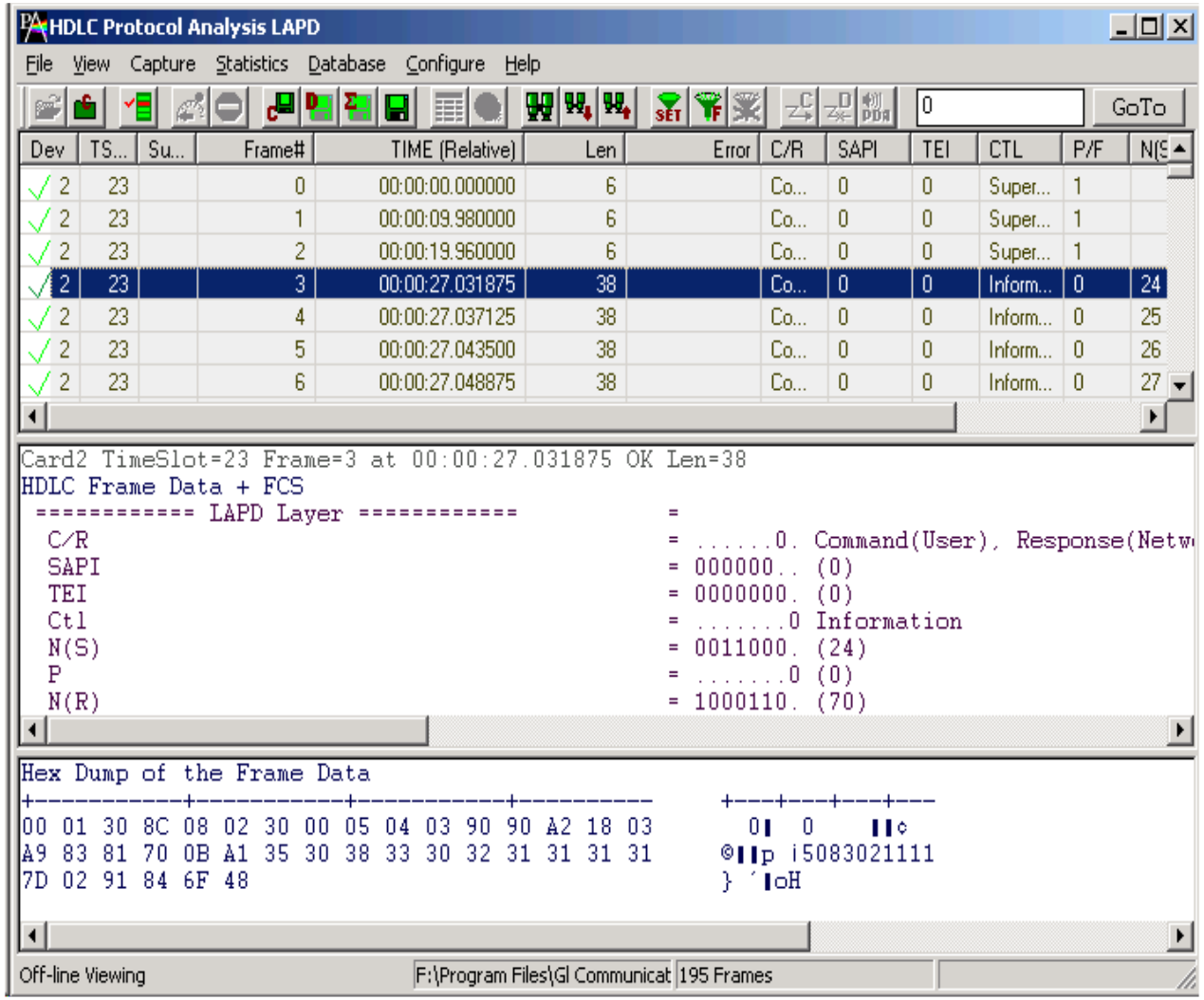
inform task * "start";

end task *;

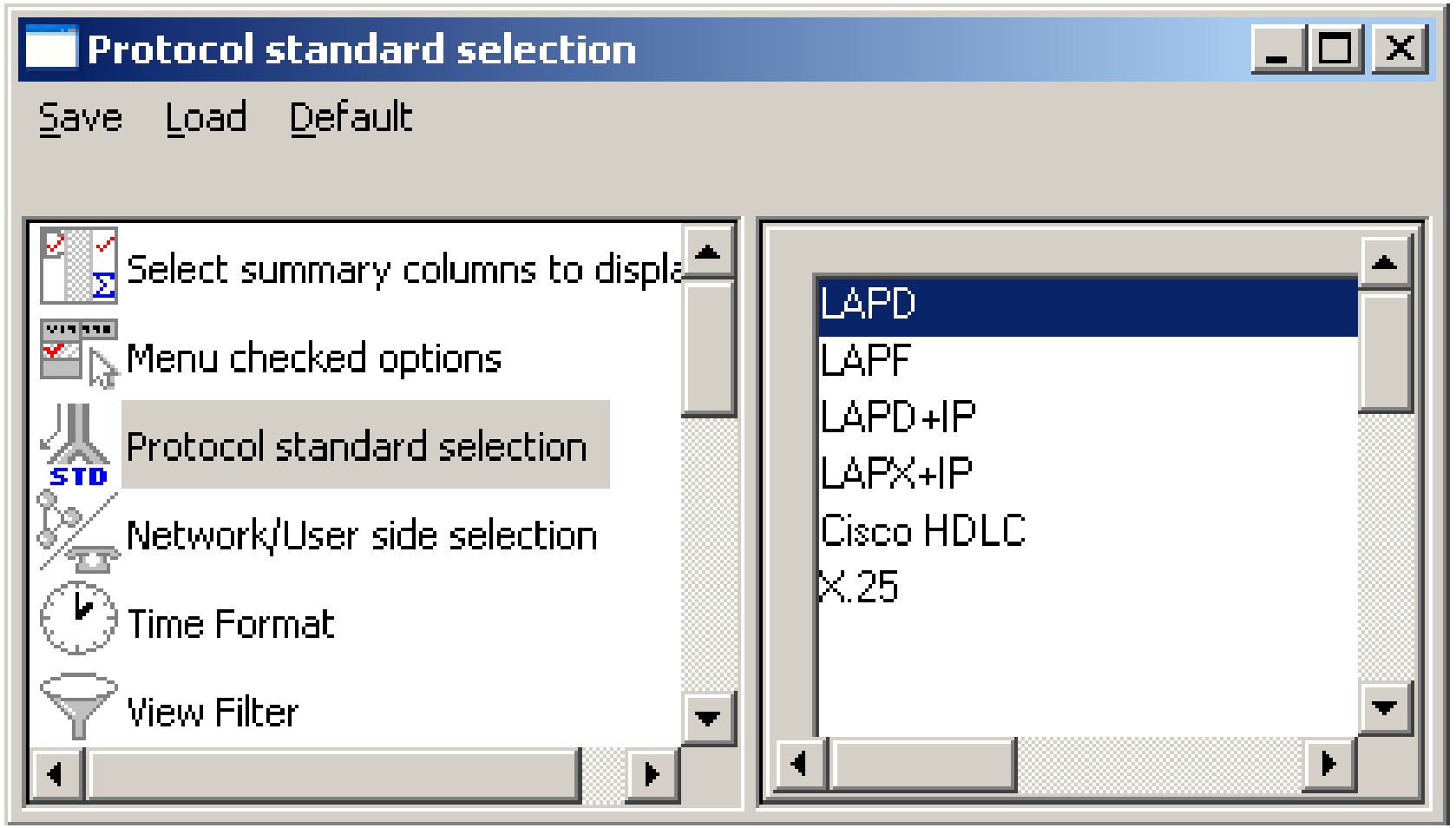
HDLC Analyzer

HDLC Protocol Analyzer

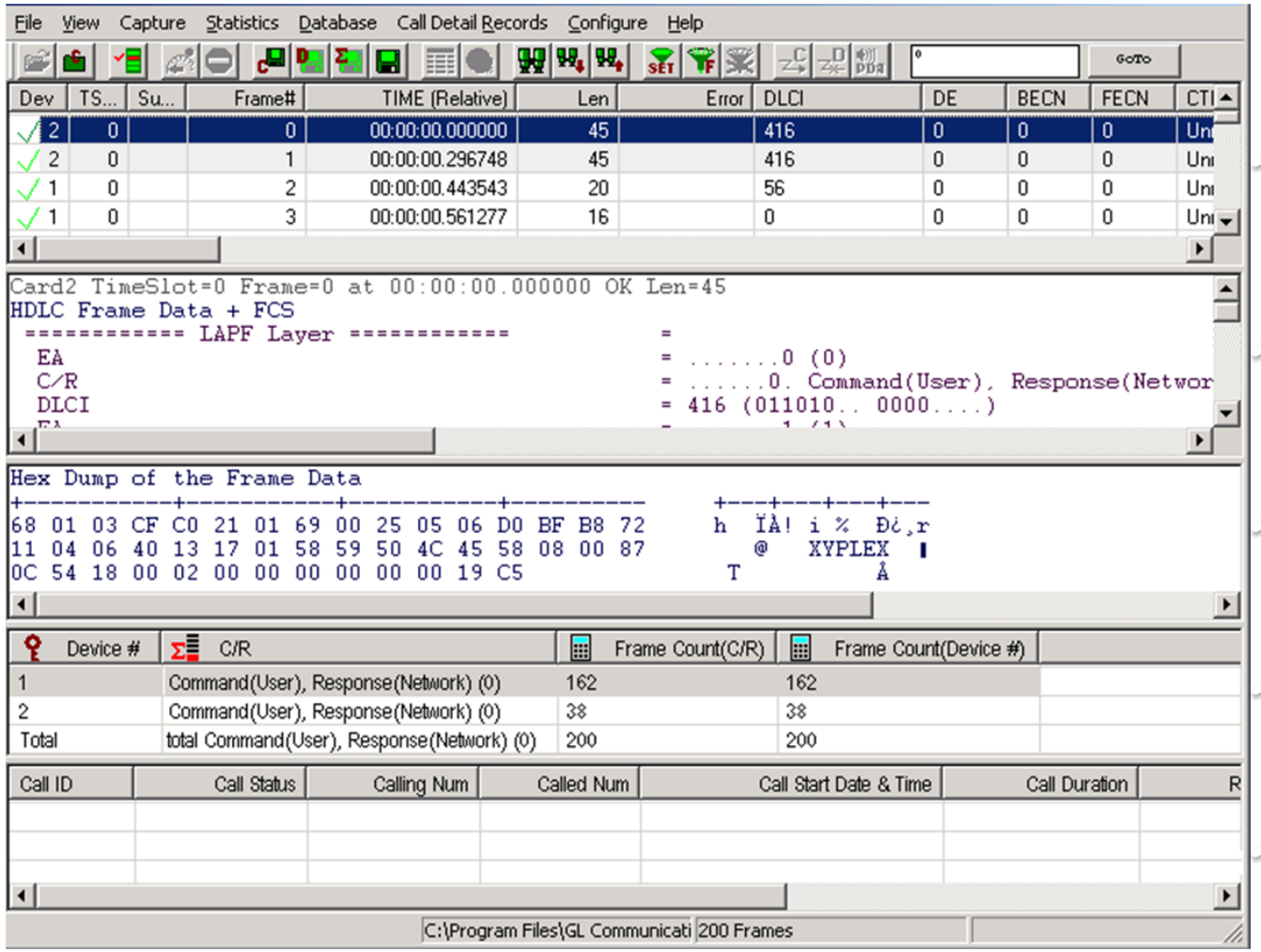
- GL's T3 (DS3) /E3 analyzer supports protocol decoding and analysis of ATM, Frame Relay, PPP, and HDLC. All the protocol analyzers are based on similar architecture and supports sophisticated filtering, statistics and real-time capture options



Supported Protocol Standards



User Interface



Summary View

Detail View

Hex Dump View

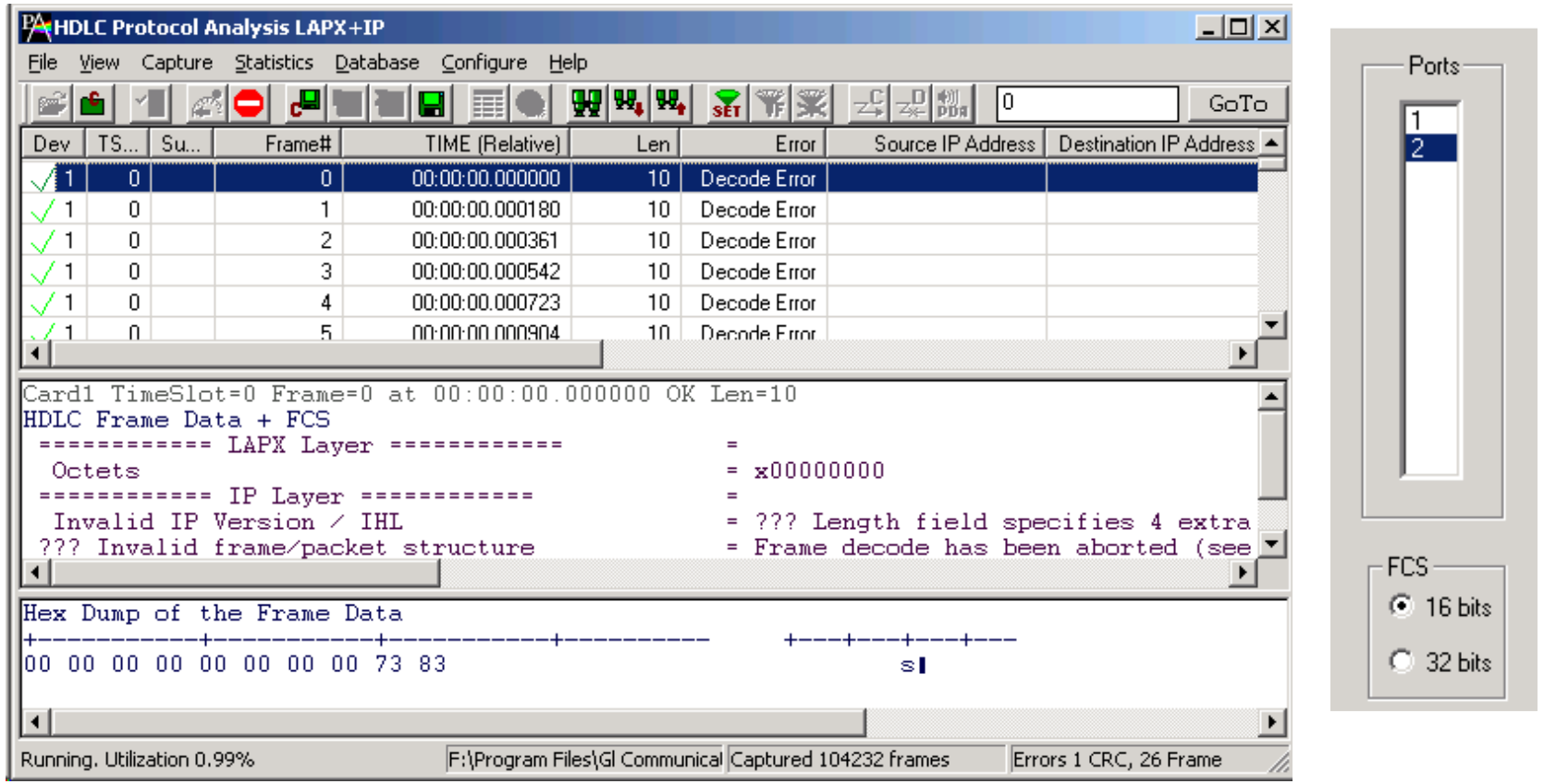
Statistics View

Call Detail View

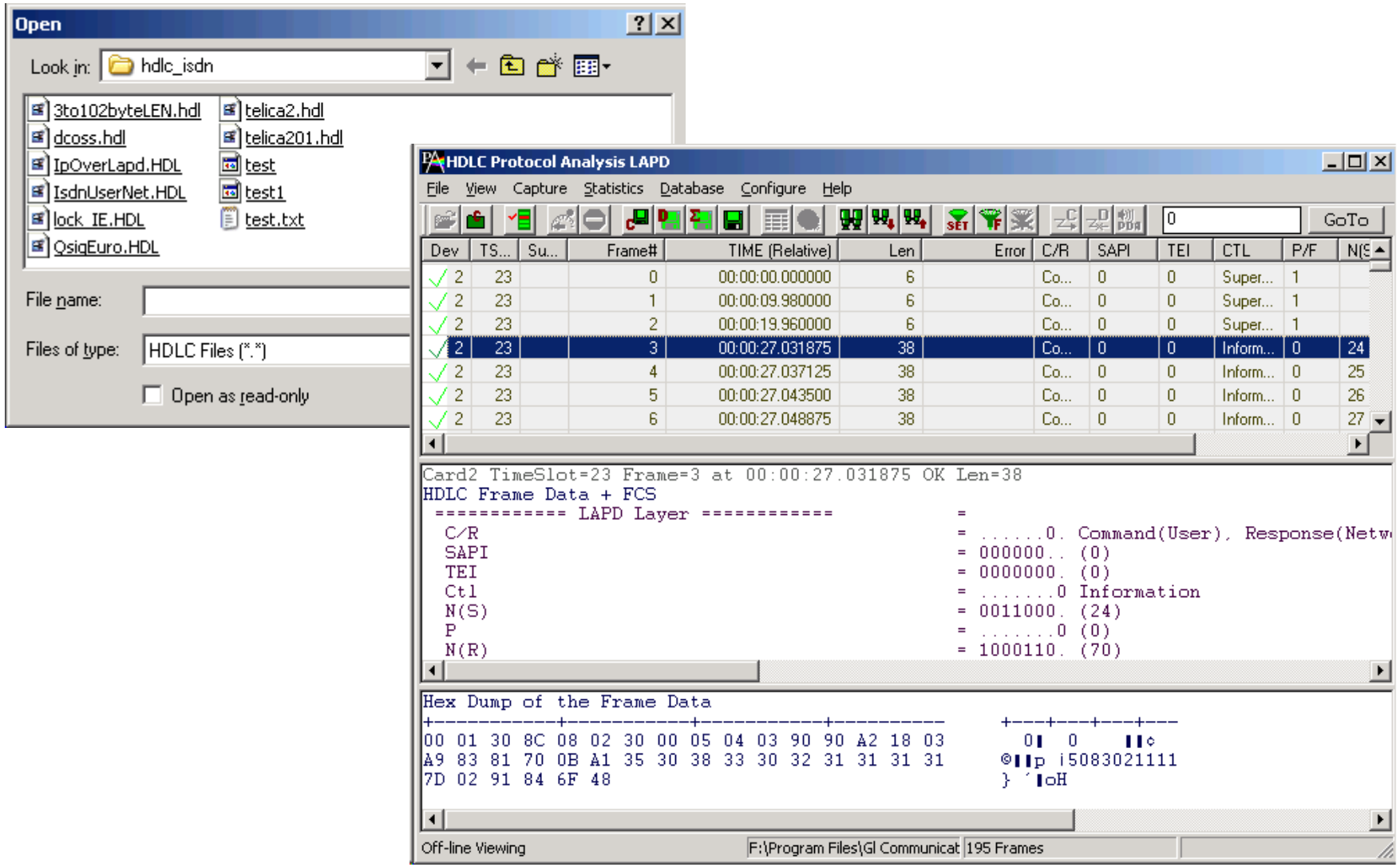
Different Views

- **Summary View**: This pane displays the columns that contain Card Number, Timeslots, Frame Number, Time, Frame Error Status, Command/Response, Length, Error, C/R, SAPI, CTL, P/F, FUNC, and more in a tabular format
- **Detail View**: This pane displays in detail about a frame in order to analyze and decode by selecting it in the summary view
- **Hex Dump View**: This pane displays the frame information in HEX and ASCII format
- **Statistics View**: This pane displays the Statistics that are calculated based on the protocol fields

Real-time Analyzer

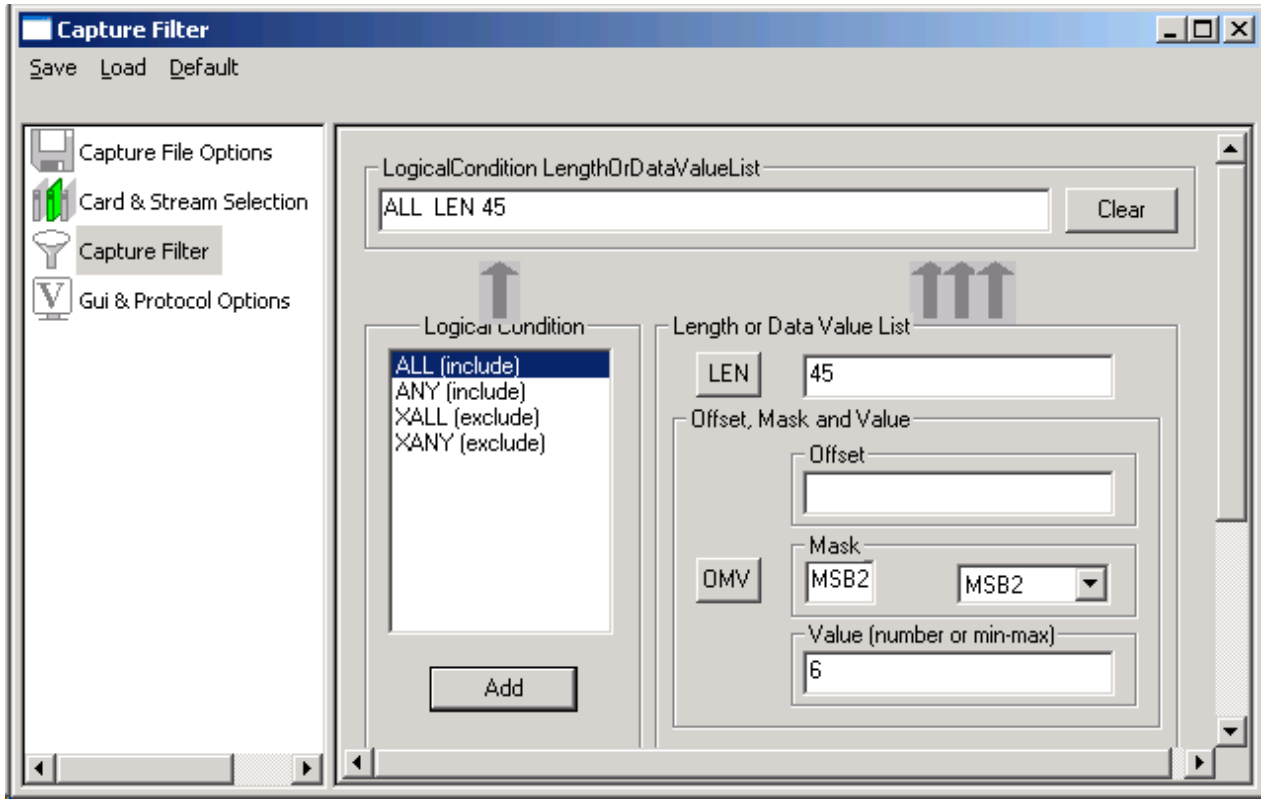


Offline Analyzer

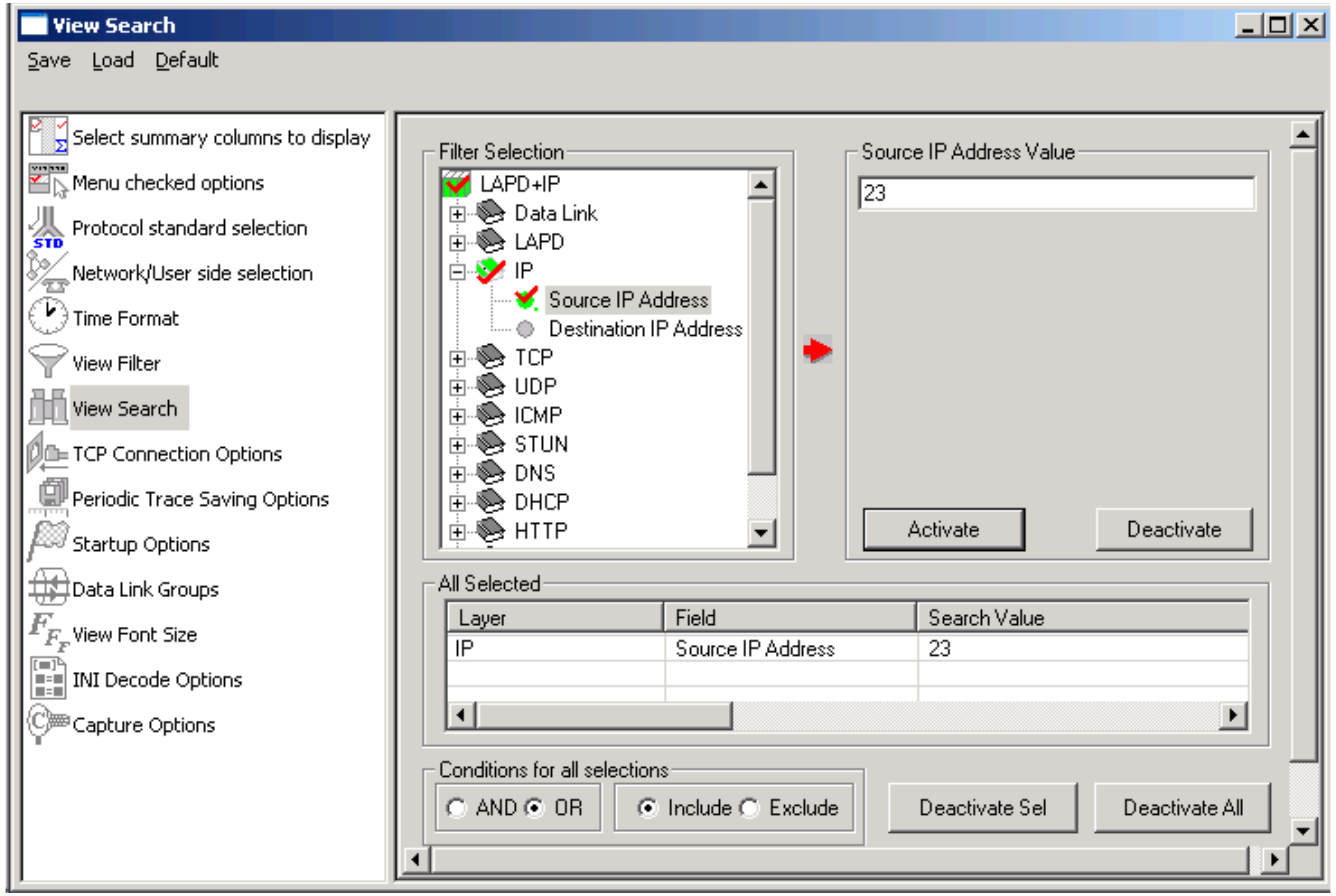


HDLC Based Capture Filter

- Real-time filter for HDLC based protocols like Frame Relay, and PPP allows the capture of frames with defined length, offset, mask, and values
- Logical conditions to include (ALL and ANY) and to exclude (XALL and XANY)



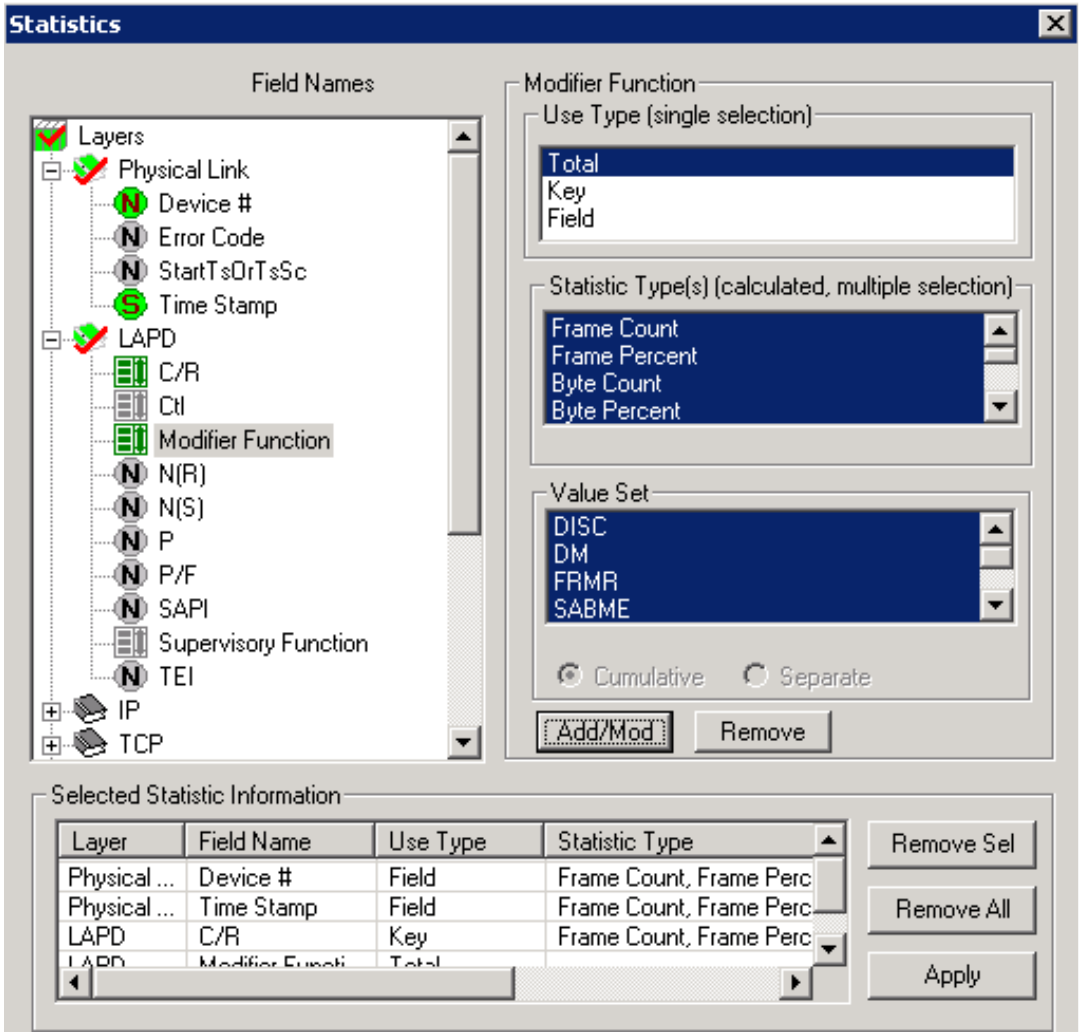
Offline View Filter



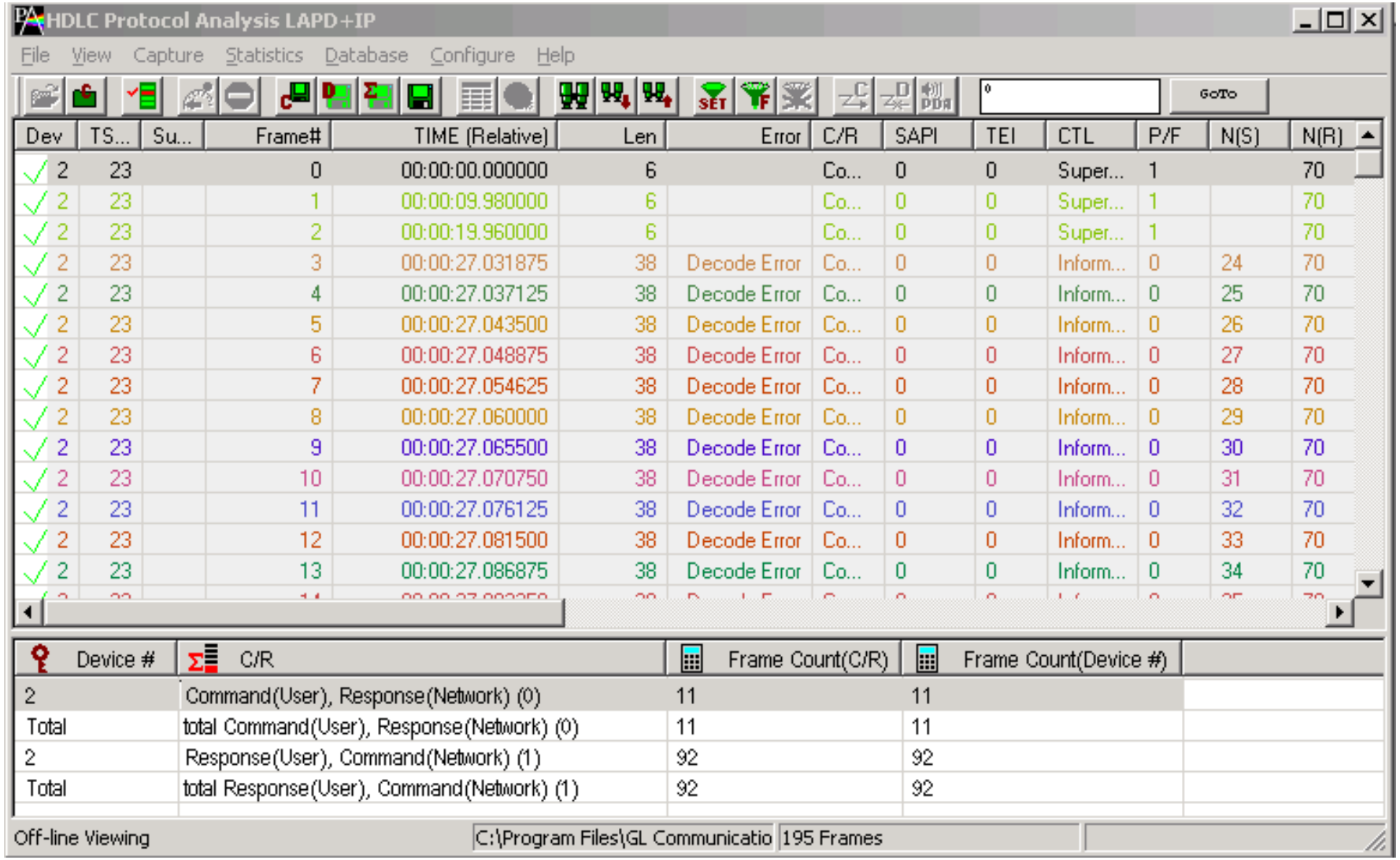
- Isolates required frames from all frames in real-time/offline
- Filter applies to the captured frames and is based on the data link and other decoded protocol field values: CTL, C/R, Modifier Function, N(R), N(S), P, P/F, SAPI, supervisory function and TEI

Statistics

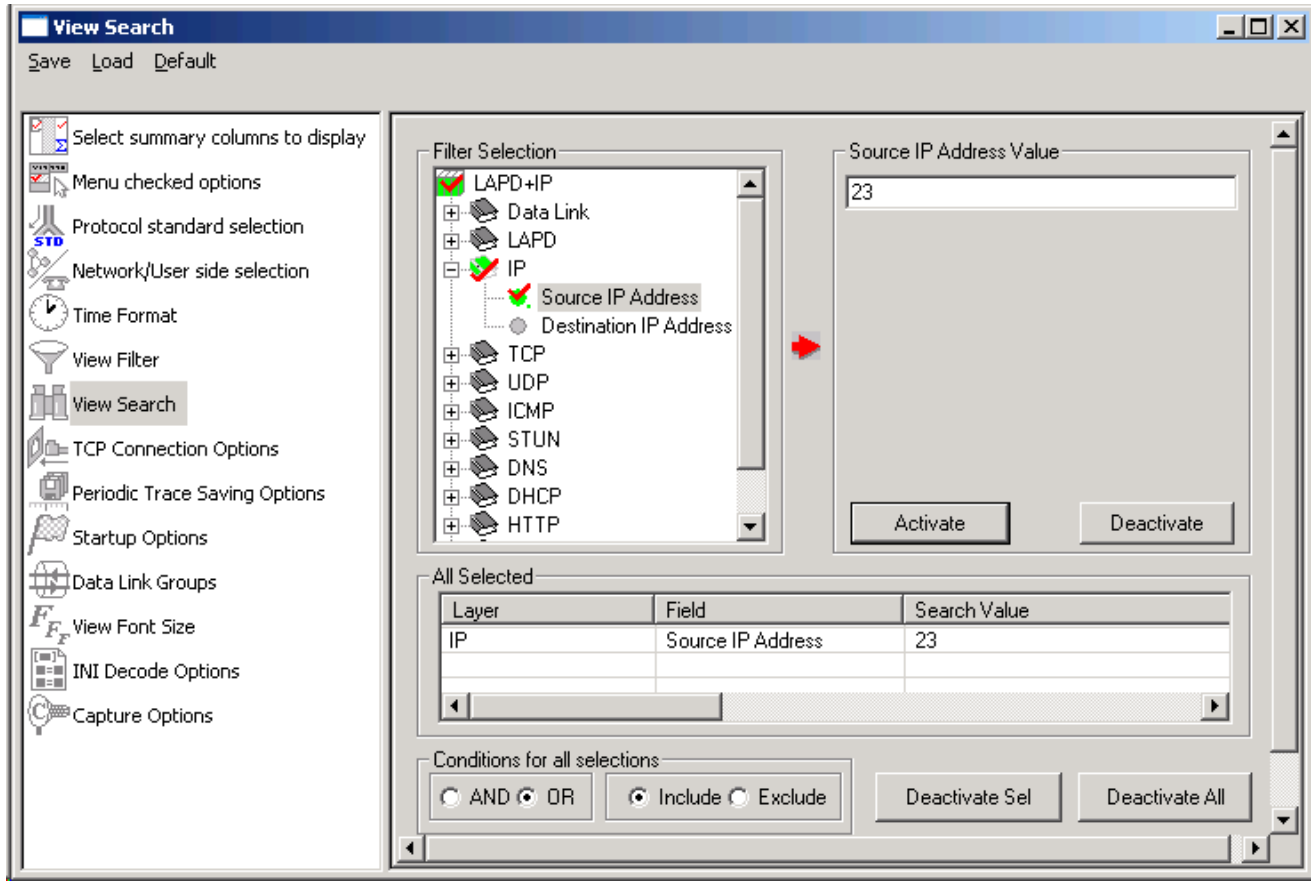
- Statistics is an important feature available in HDLC analyzer and can be obtained for all frames both in real-time as well as offline mode
- Numerous statistics can be obtained to study the performance and trend in the HDLC networks based on various protocol fields and parameters



Statistics View in HDLC Analyzer



Search Options



- Search features helps users to search for a particular frame based on specific search criteria

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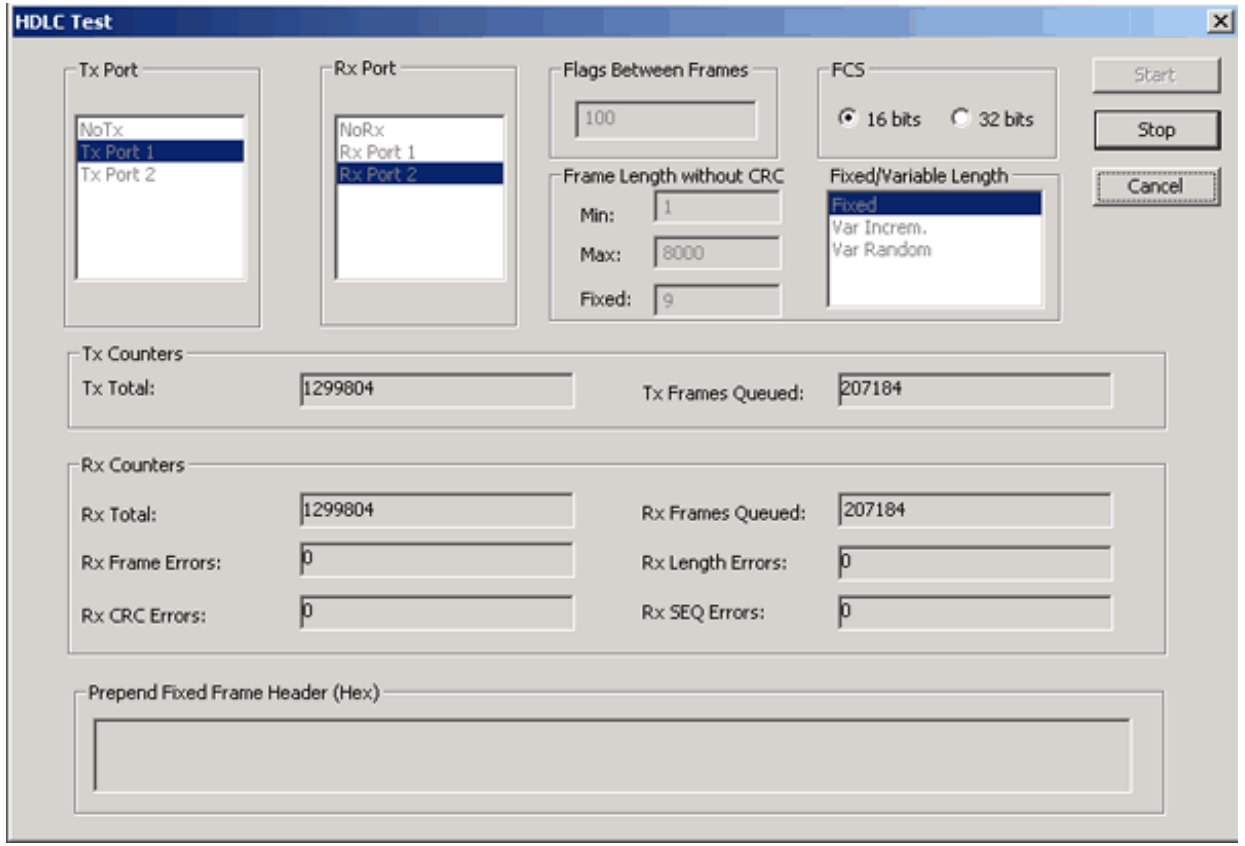
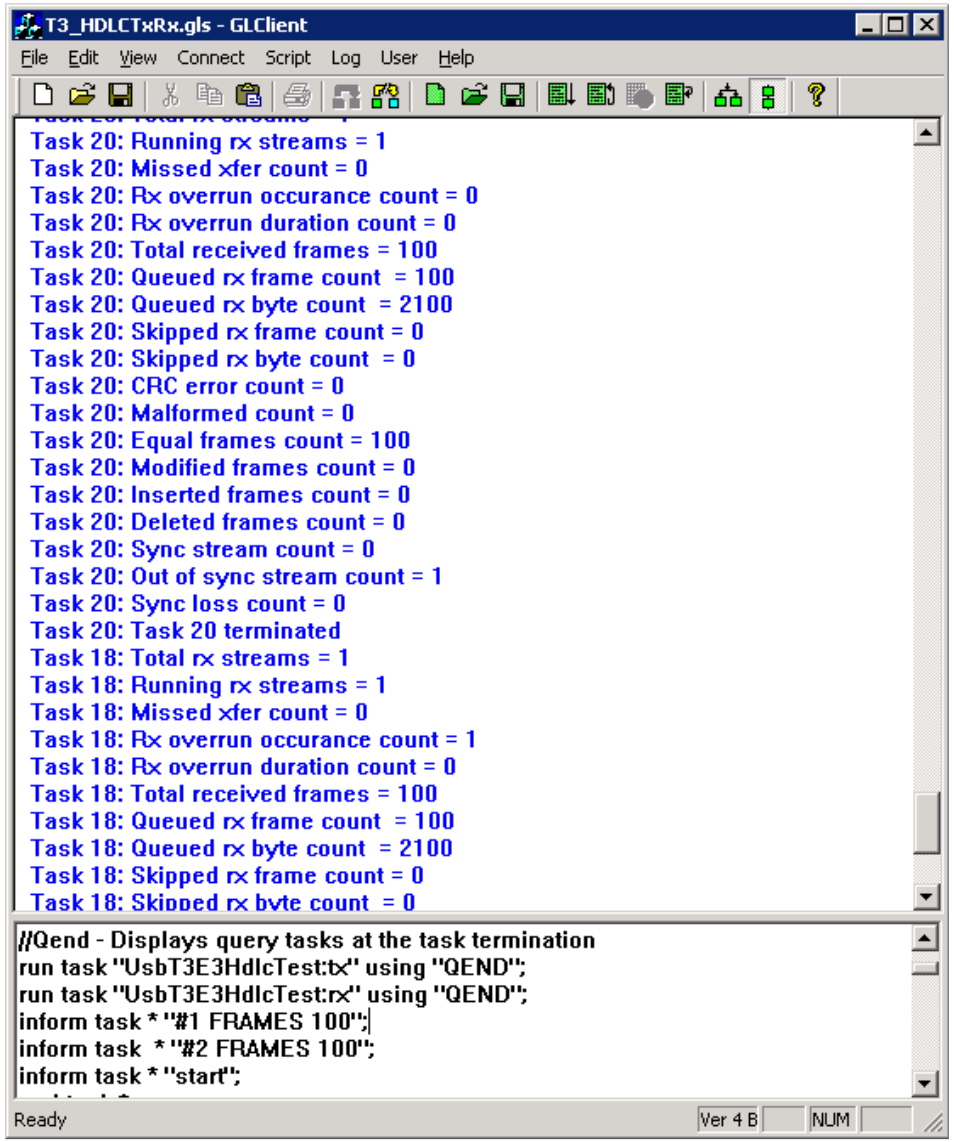


WCS Module - HDLC Emulation and Analysis

- USB T3 E3 HDLC Tx/Rx Test (UsbT3E3HdlcTest) is an optional WCS Server side module that:
  - Sends HDLC frames with or without impairments
  - Receives and verifies HDLC frames and optionally logs the errors
  - Capability of remote operation, automation, and multi-site connectivity



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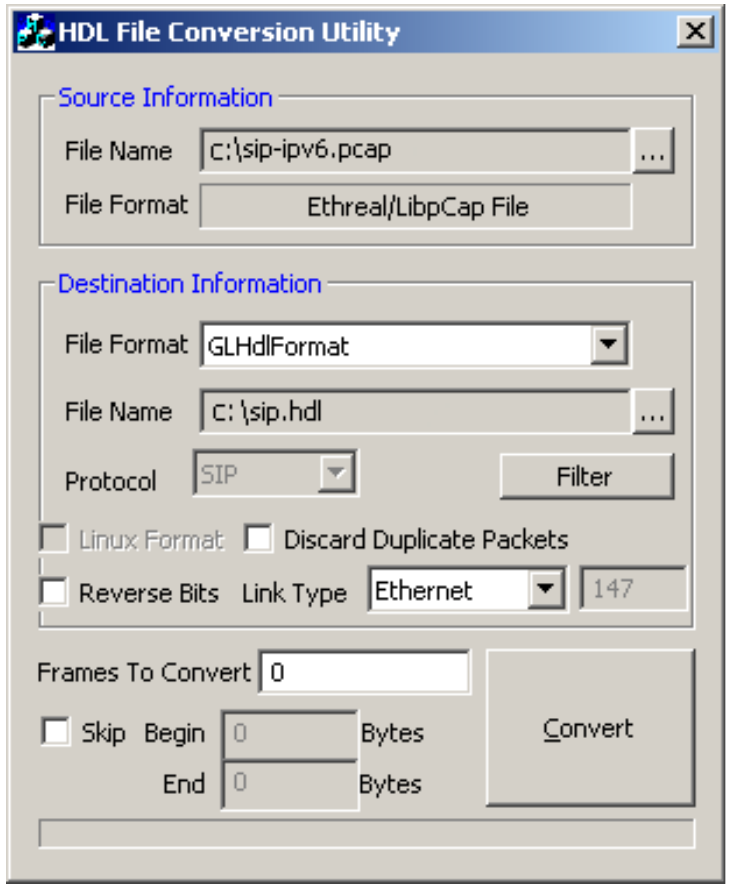
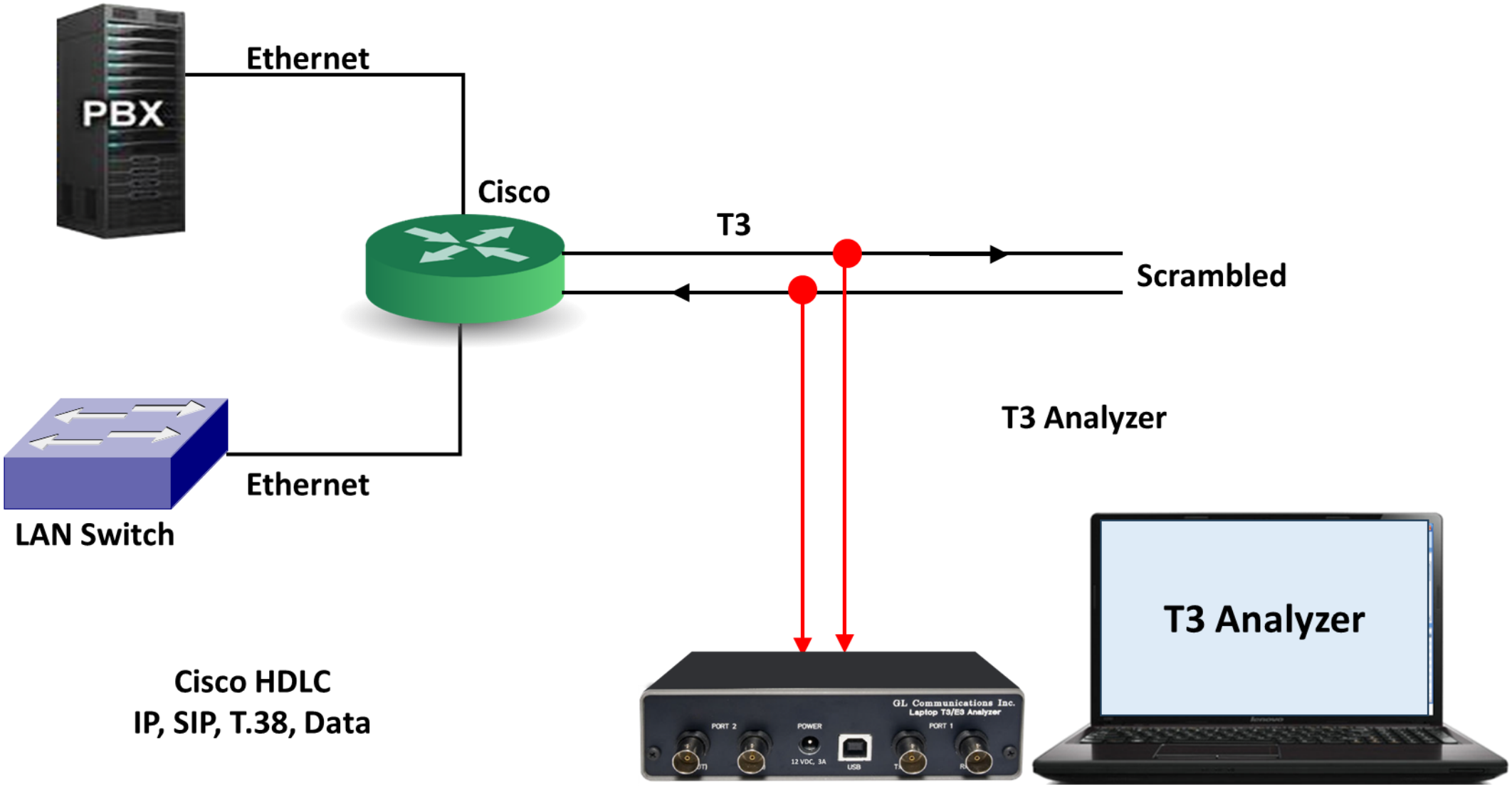
inform task * "start";
end task *;
```

HDL File Conversion Utility

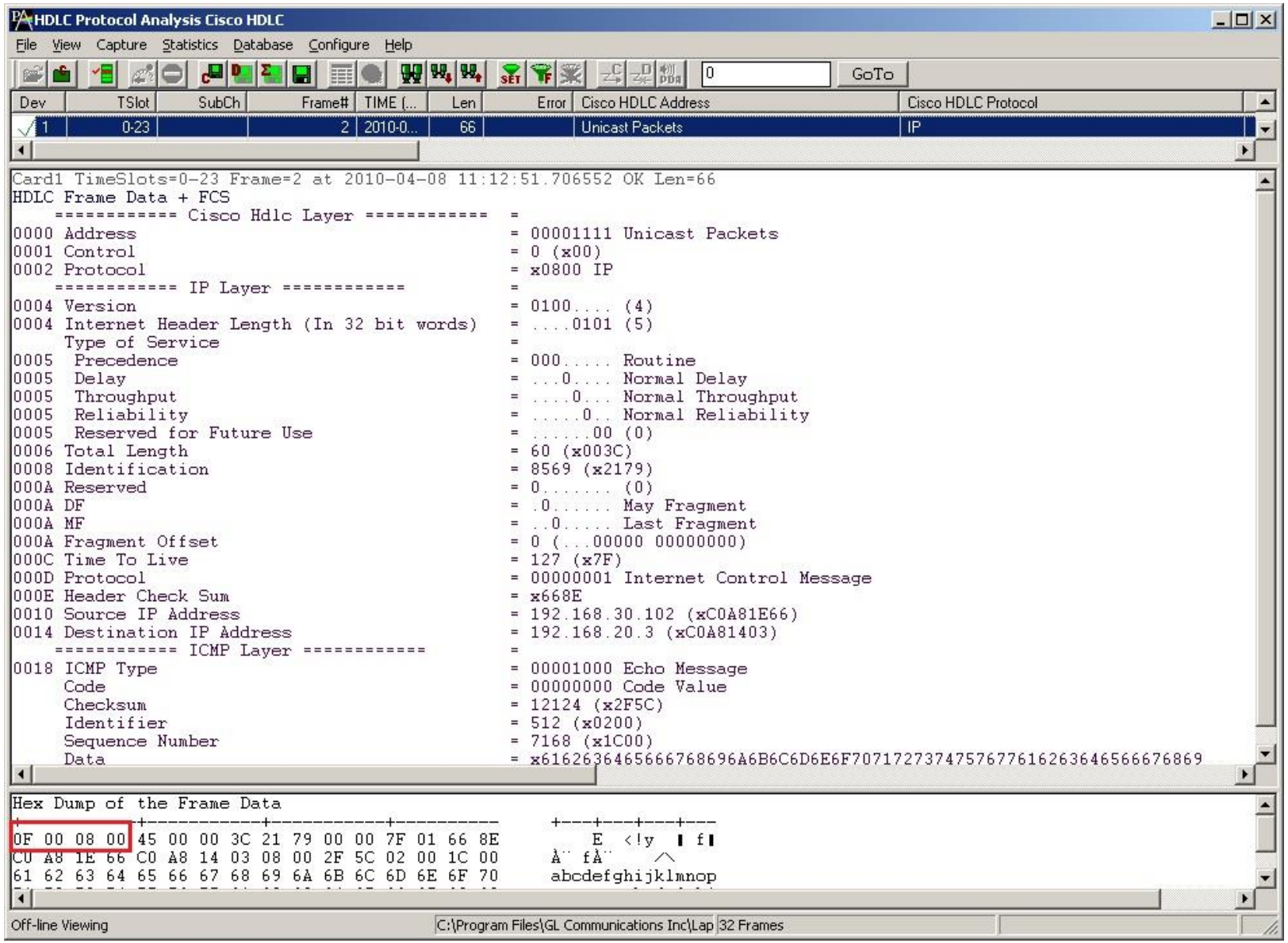


- HDL File Conversion Utility converts a file from Ethereal format (.PCAP and .CAP) to GL proprietary file format (.HDL) and vice-versa

Cisco HDLC

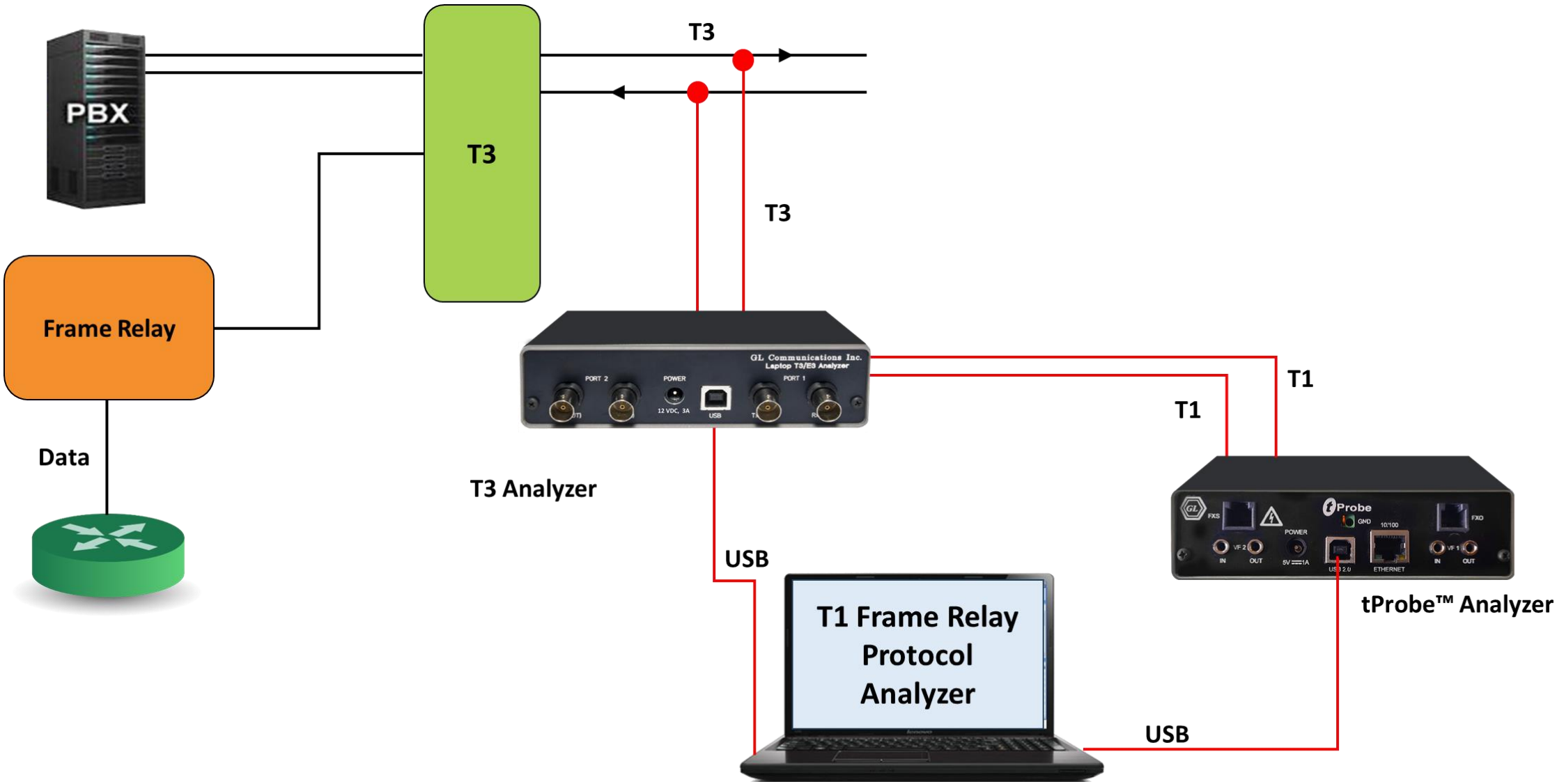

PBX
Ethernet
Cisco
T3
Scrambled
T3 Analyzer
Ethernet
LAN Switch
Cisco HDLC
IP, SIP, T.38, Data
GL Communications Inc.
Laptop T3/E3 Analyzer
PORT 2
POWER
PORT 1
12 VDC, 3A
USB
T3 Analyzer

Cisco HDLC Protocol Standard

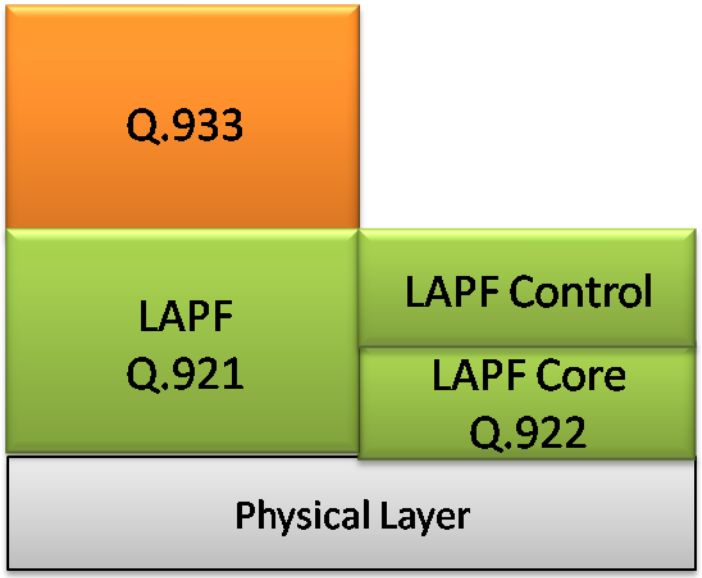


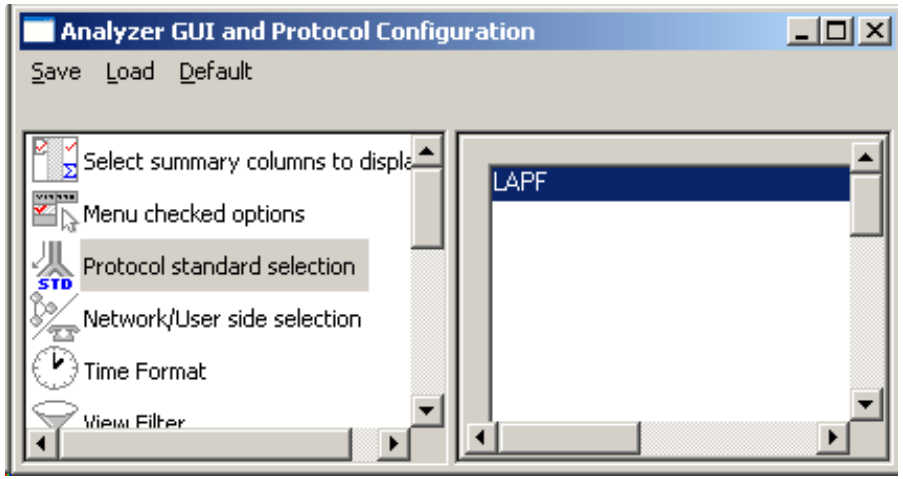
Frame Relay Analyzer

Frame Relay


PBX
T3
T3
T3
Frame Relay
Data
GL Communications Inc.
Laptop T3/E3 Analyzer
PORT 2
POWER
12 VDC, 3A
USB
PORT 1
T3 Analyzer
T1
T1
tProbe
FXS
GND
10/100
FXO
POWER
VF 2
IN
OUT
5V 1A
ETHERNET
VF 1
tProbe™ Analyzer
USB
T1 Frame Relay Protocol Analyzer
USB

Supported Protocols (Frame Relay)

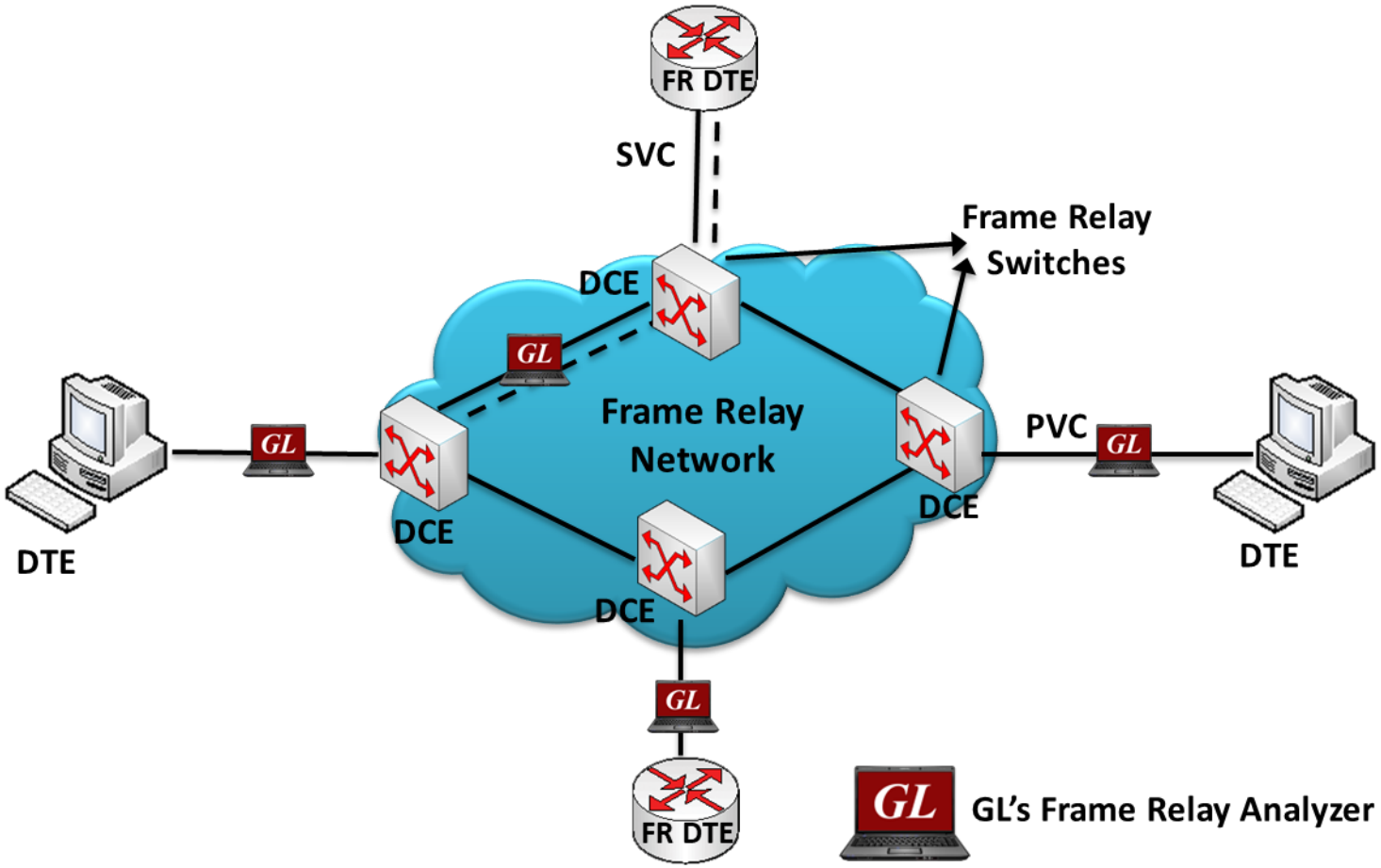




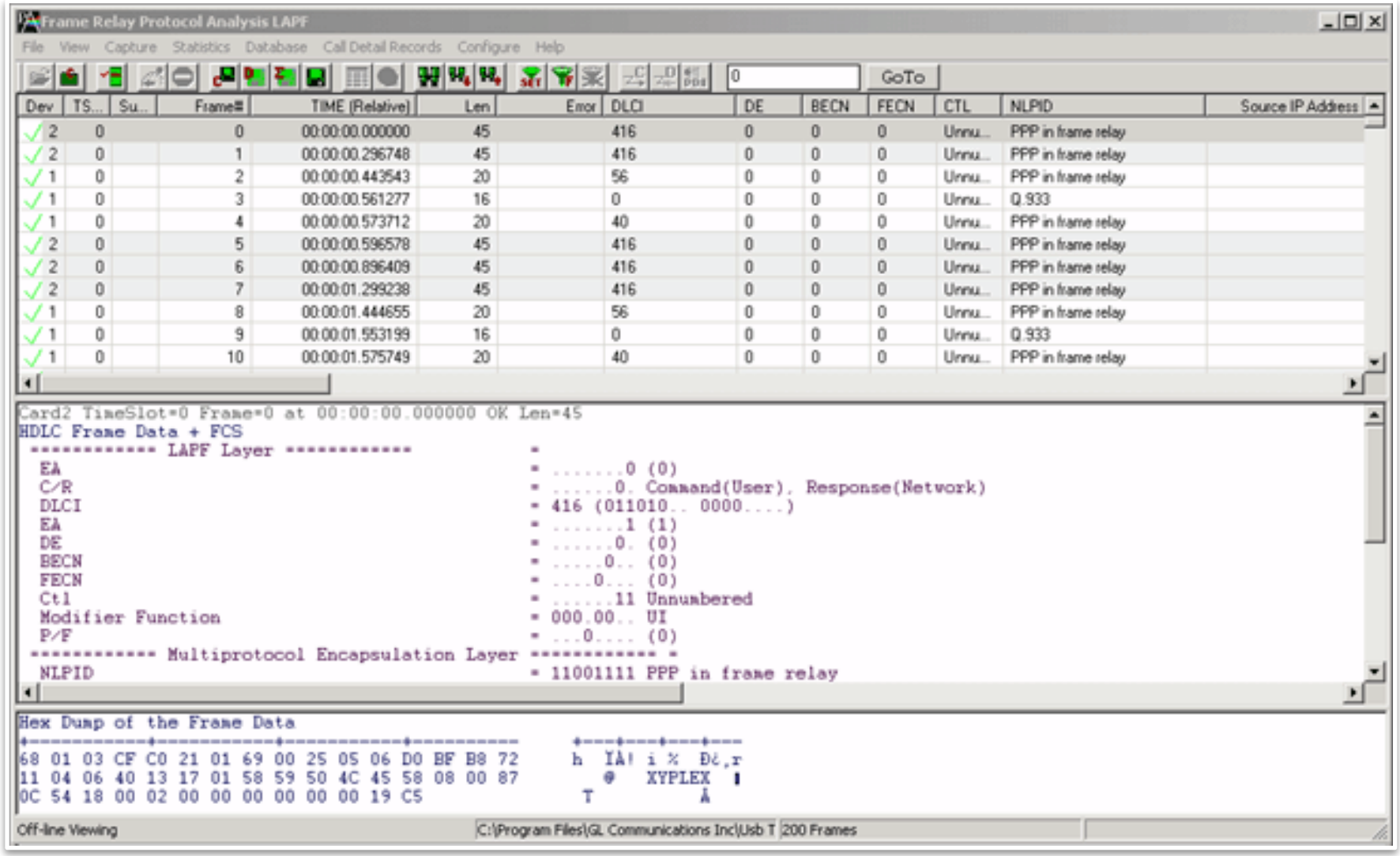
- LAPF – Enhanced version of LAPD (Q.921) and decodes Layer 2 as Link Access Procedure/Protocol (LAPF) as defined in the ITU Q.922
- ITU Q.921, Q.922
- Multi-protocol encapsulation, FRF.9, FRF.12, SNAP, PPP, link control protocol RFC 1661
- Q.933, SVC, and LMI signaling
- IP, TCP, UDP, SMTP, POP3, STUN, DNS, DHCP, HTTP, FTP, SNMP, RIP

GL Communications

GL's Frame Relay Analyzer



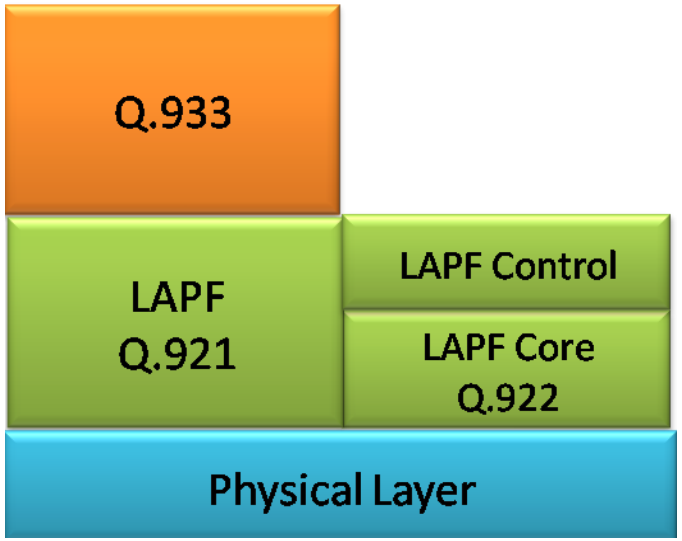
T3 (DS3) Frame Relay Analyzer



Features

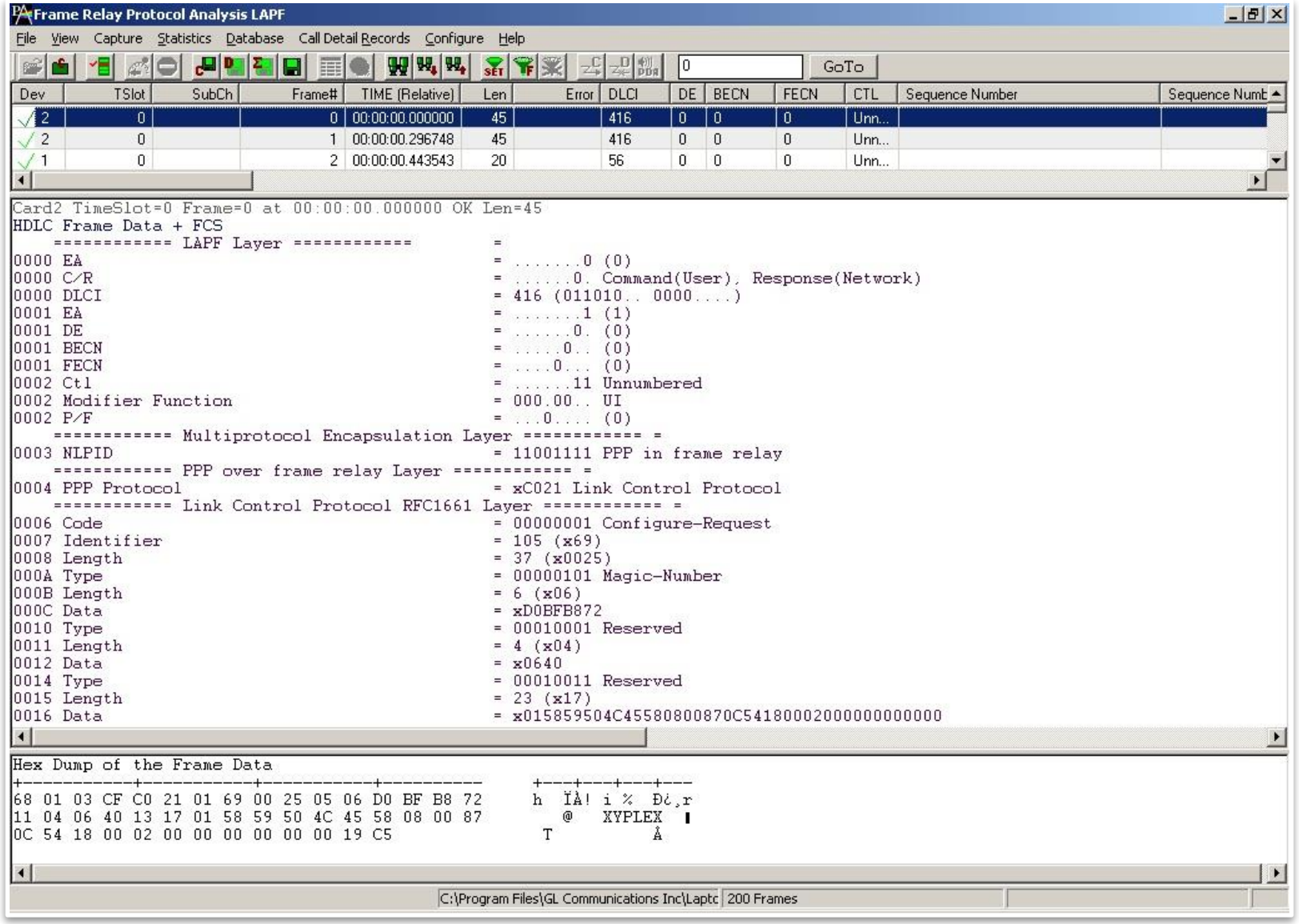
- Supports decoding of encapsulated protocols, and long frames up to 16 Kbytes
- Analyze Permanent Virtual Connection (PVC) and Switched Virtual Connection (SVC) frames
- Supports filtering and search features based on LAPF parameters and Q.933 layer parameters such as DLCIs, Message Type, FECN, BECN, DE, NLPID's TCP, IP, SMTP, POP3, and so on
- Provides Summary View, Detail View, Hex dump, statistics, and call trace views
- Capability to export summary as well as detail information to an ASCII file for subsequent import into a database or spreadsheet
- Streams can be captured on the selected ports
- Multiple streams of traffic on various T3 E3 ports can be simultaneously decoded (single instance can decode multiple streams)

Supported Protocols Structure



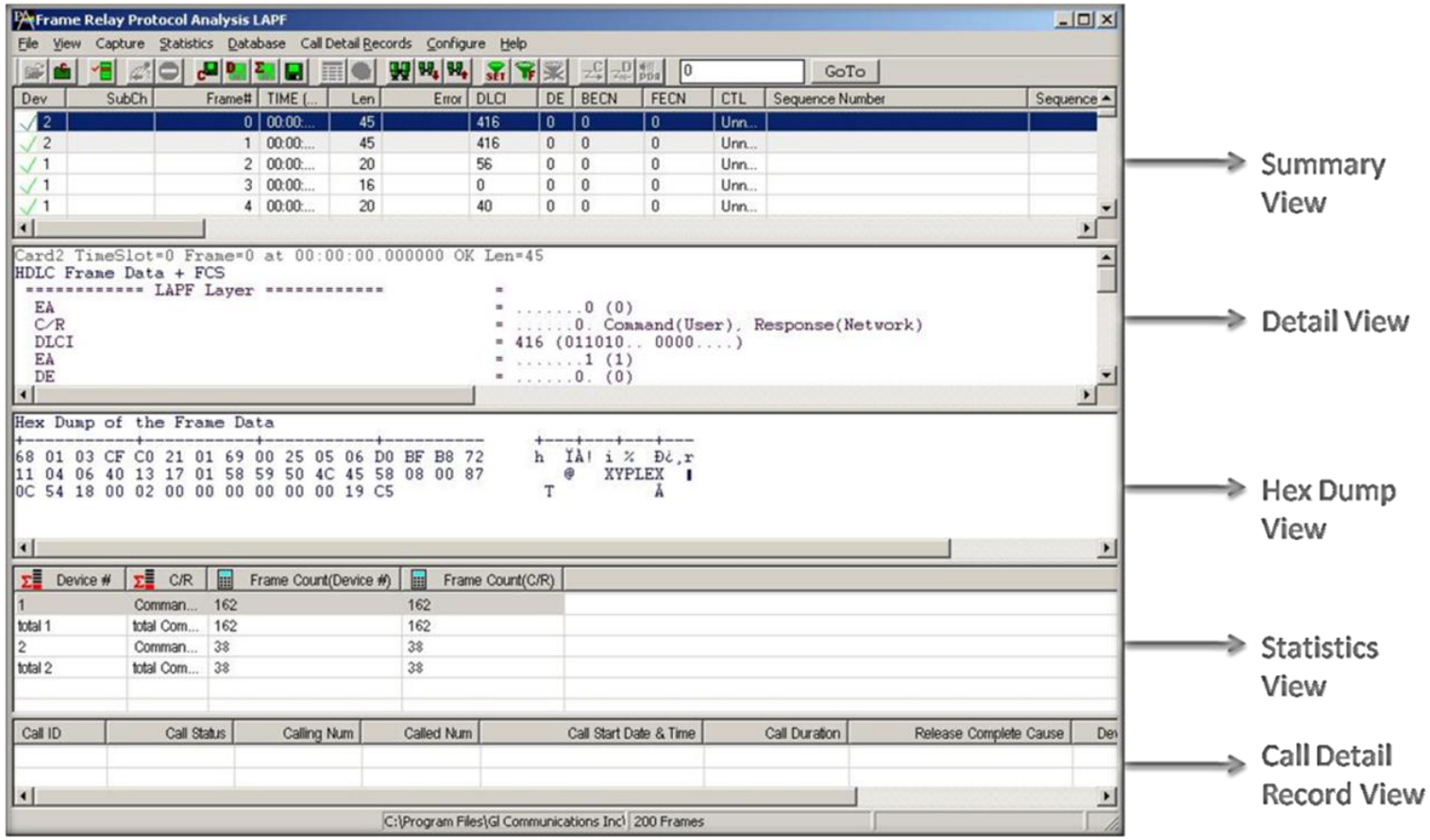
- Q.921, Q.922, LAPF
- Multi-protocol encapsulation, FRF.9, FRF.12, SNAP, PPP, link control protocol RFC 1661
- Q.933, SVC, and LMI signaling
- IP, TCP, UDP, SMTP, POP3, STUN, DNS, DHCP, HTTP, FTP, SNMP, RIP

Frame Relay Header Information



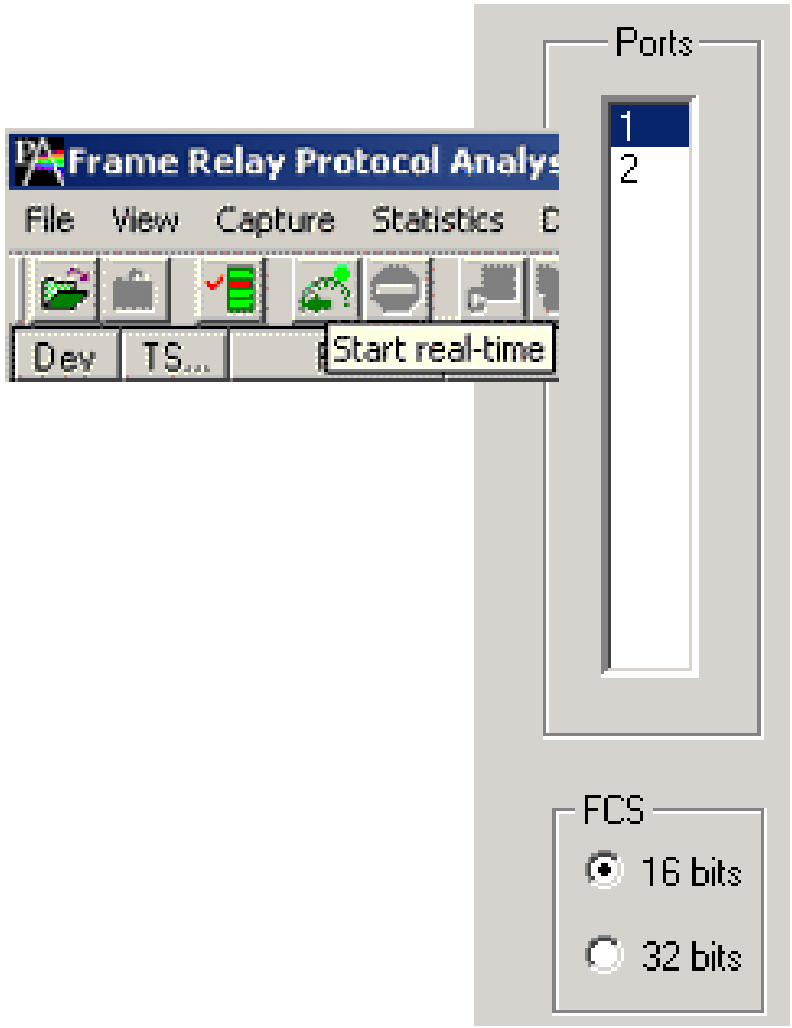
Real-time Protocol Analyzer

- Frame Relay is commonly used data link protocol based on packet switching technology
- It is mainly incorporated by the corporate data networks due to its cost-effective data transmission, and flexible bandwidth
- Displays Summary, Detail, Hex-dump, Statistics, and Call Trace Views

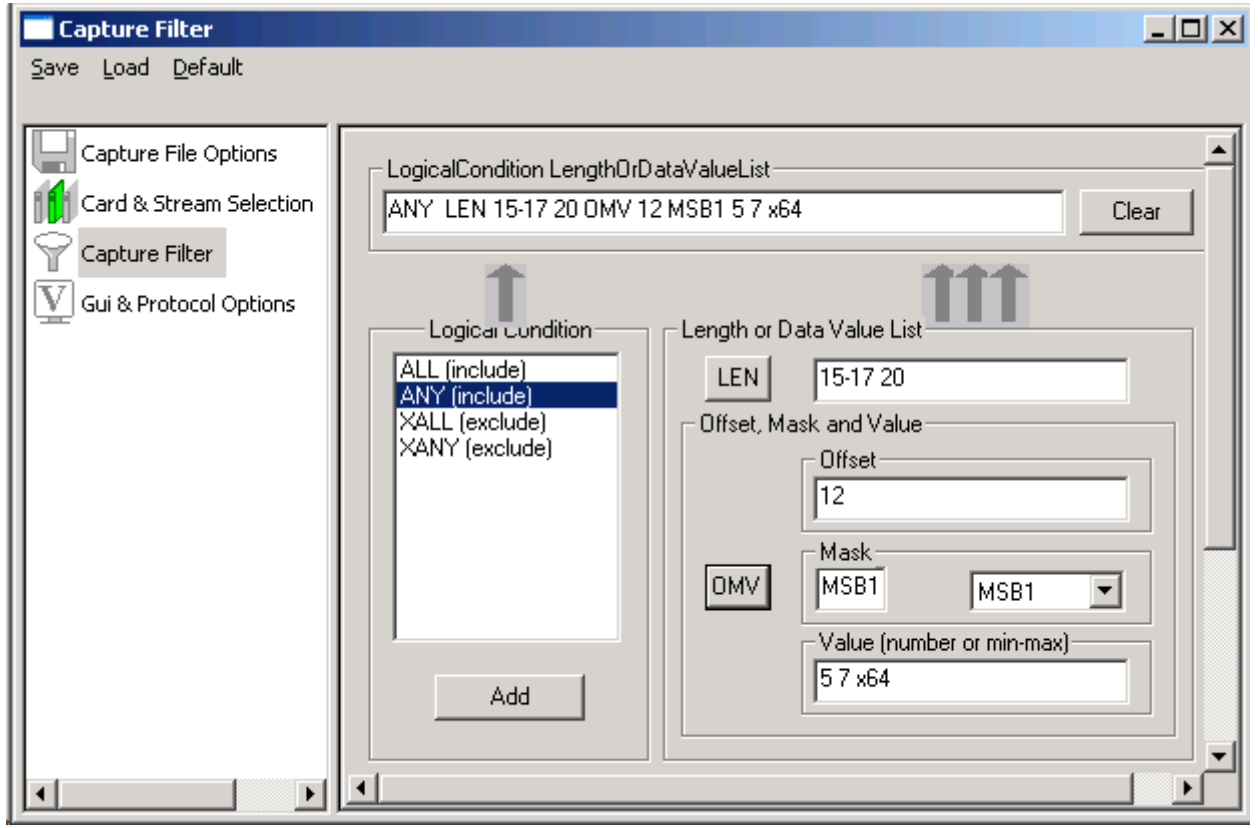


Real-time Capture

- Capture and analyze Frame Relay frames using T3 E3 real-time analyzers
- All or filtered traffic can be recorded into a trace file
- Real-time capturing requires user to specify ports

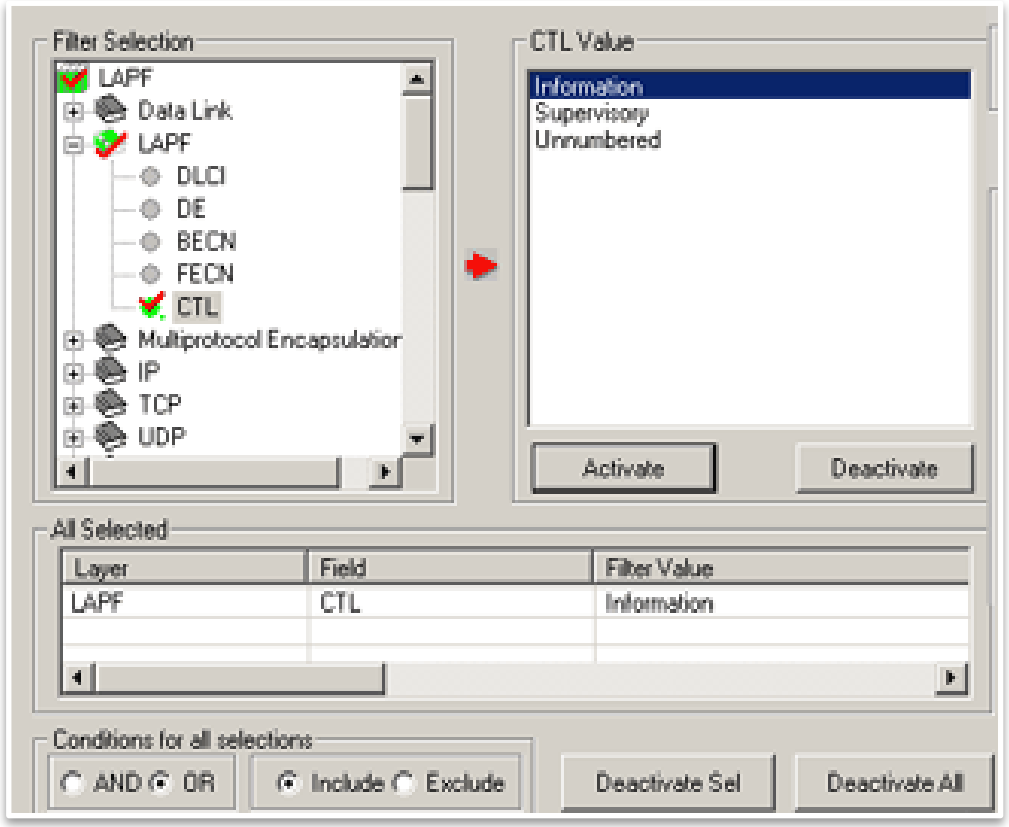


Real-time Filter and Search Criteria



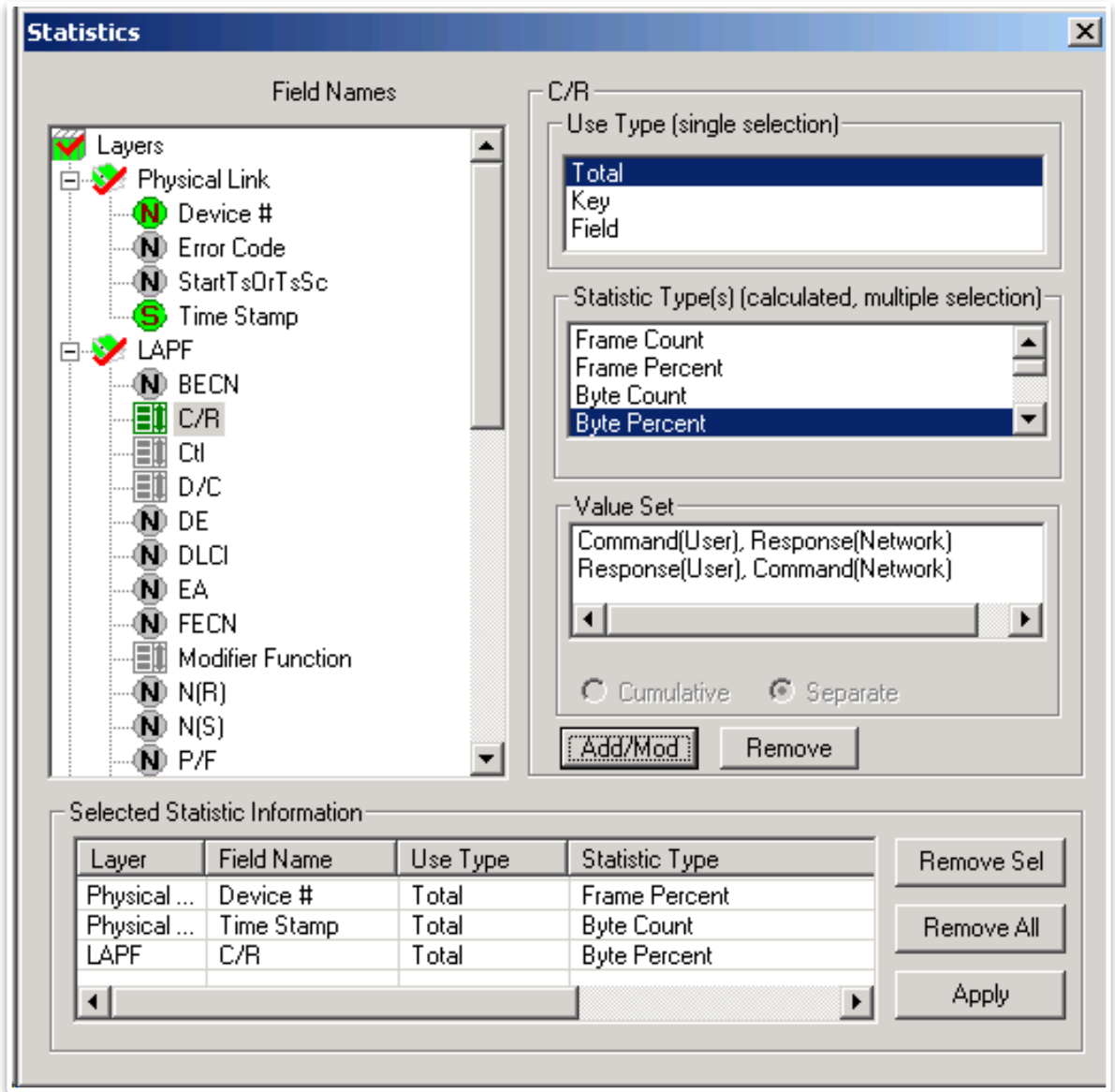
- Capture frames with specified length and/or, a value at an offset
- Capture Filter based on ALL and ANY or to exclude XALL and XANY logical conditions

Offline Filter and Search Criteria

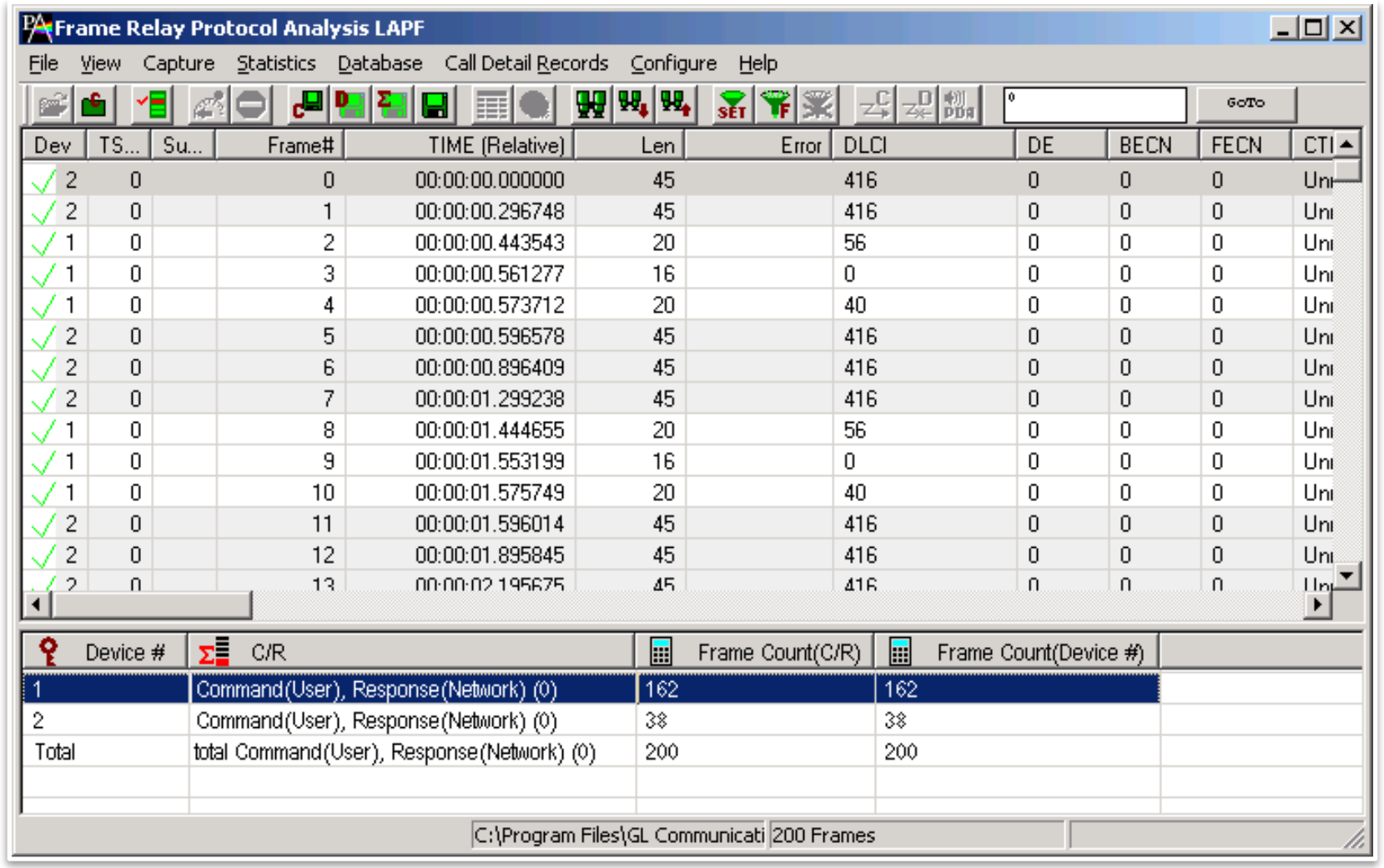


- Offline filter based on Frame Number, Time, Length, Error, DLCI, DE, BECN, FECN, CTL, NLPID and other parameters
- Search for a specific frame based on the criteria

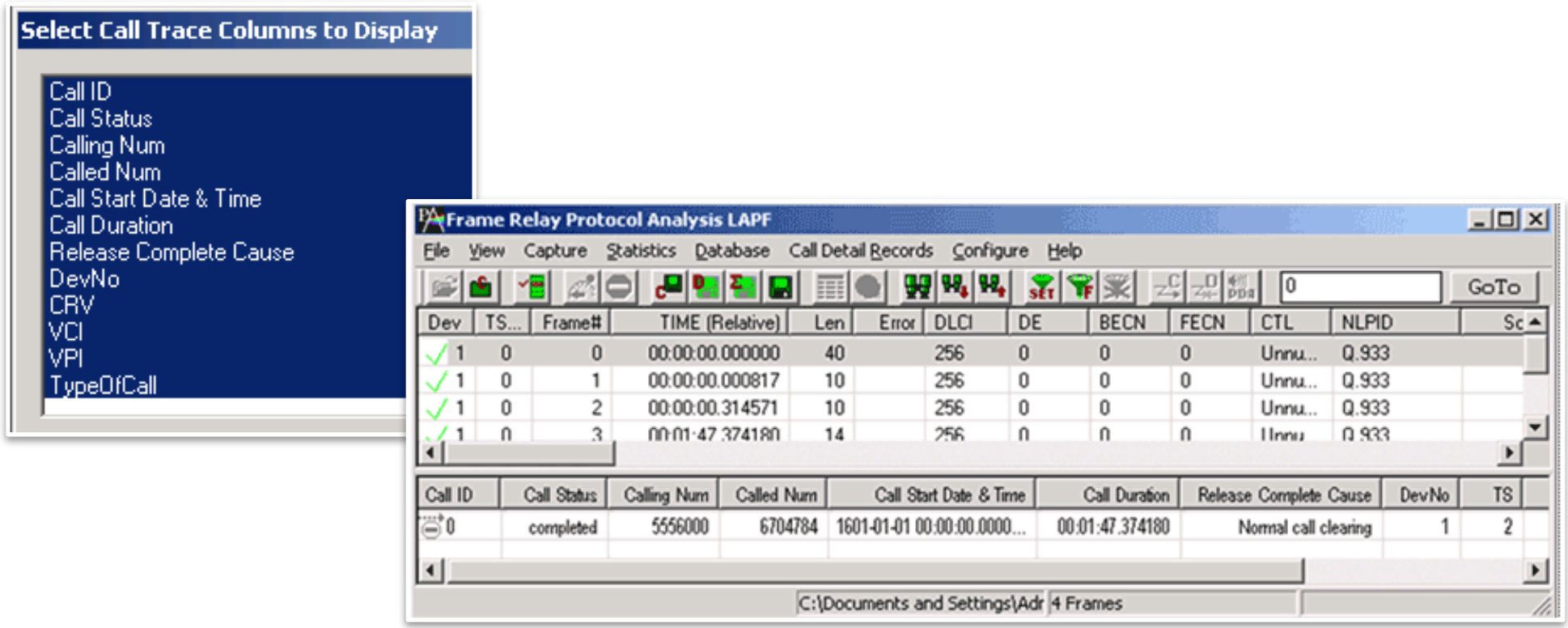
Statistics Option



Statistics View



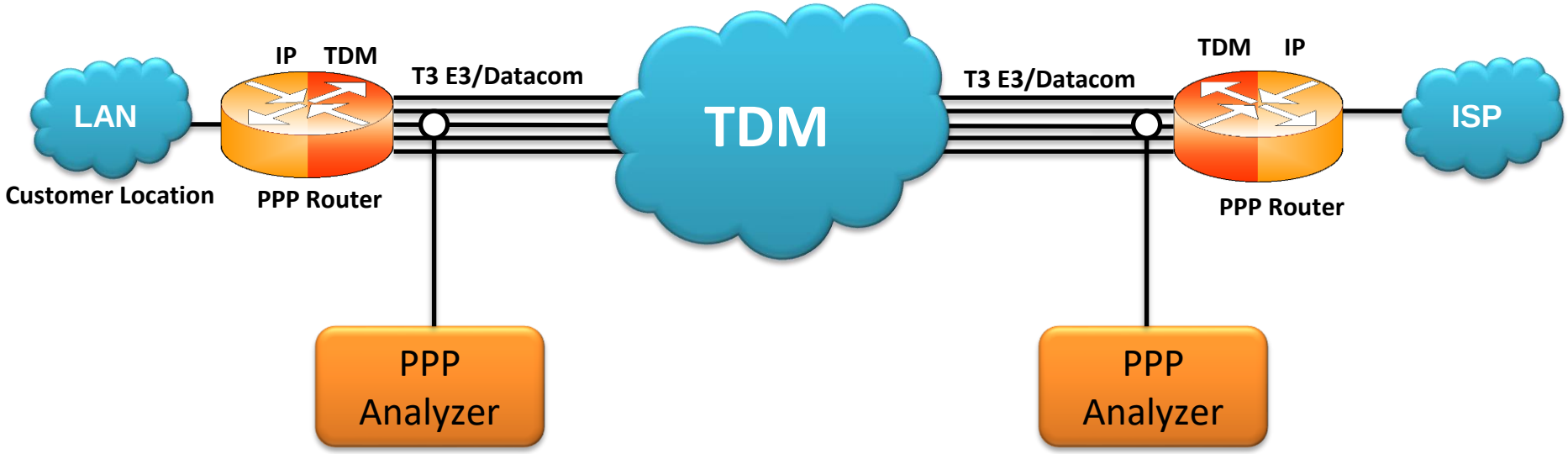
Call Detail Records



- Call trace defining important call specific parameters such as call ID, status (active or completed), duration, CRV, release complete cause etc. are displayed

PPP Analyzer

GL's T3 PPP Analyzer

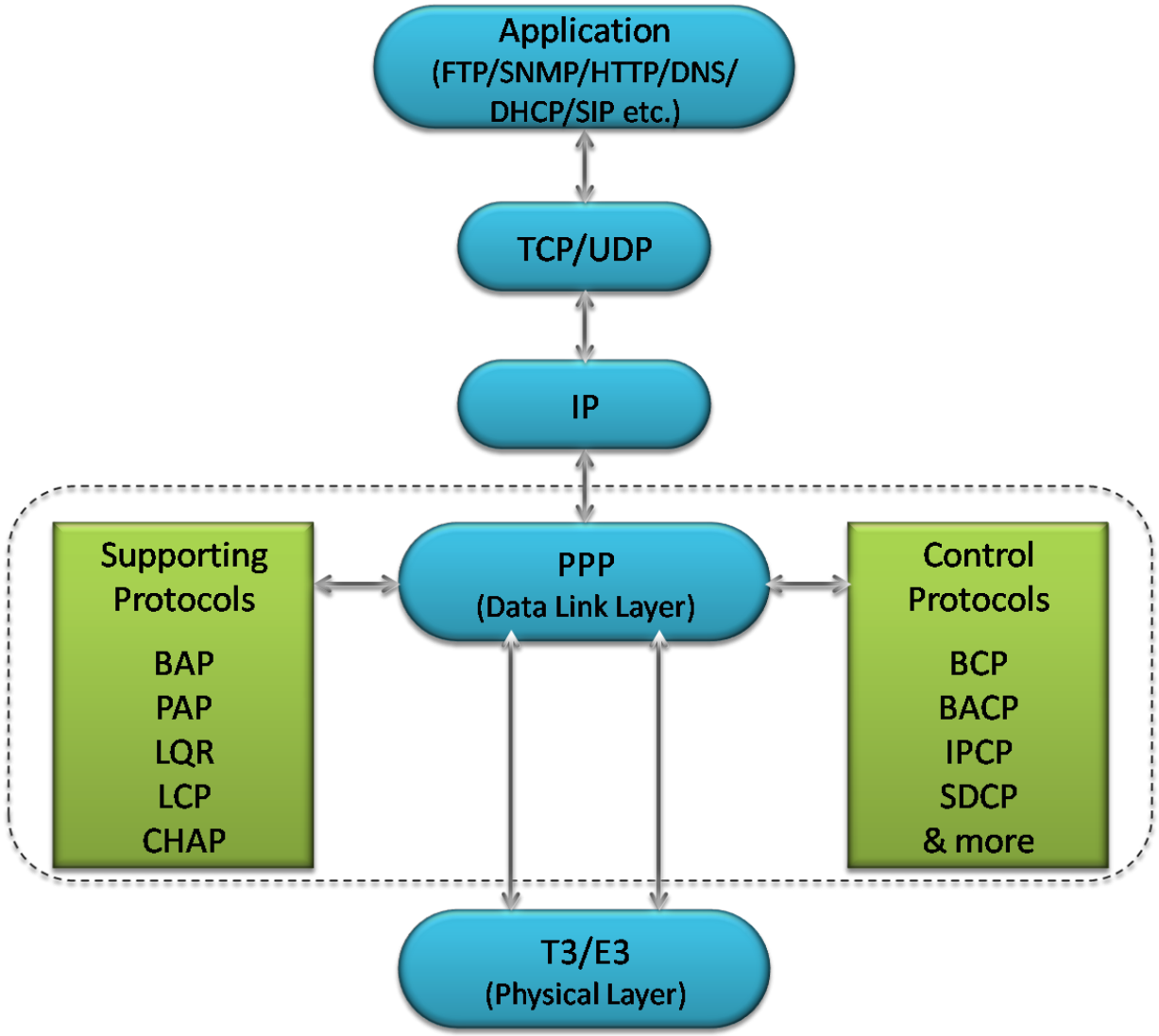


- Ability to decode and analyze PPP, MLPPP, and MC-MLPPP packets exchanged between the two nodes over T1 E1 link
- MLPPP analyzer also supports Packet Data Analysis module (requires additional license) to perform detail analysis of MLPPP packets over IP and segregates them into SIP/H323/MEGACO/MGCP/T.38 Fax calls

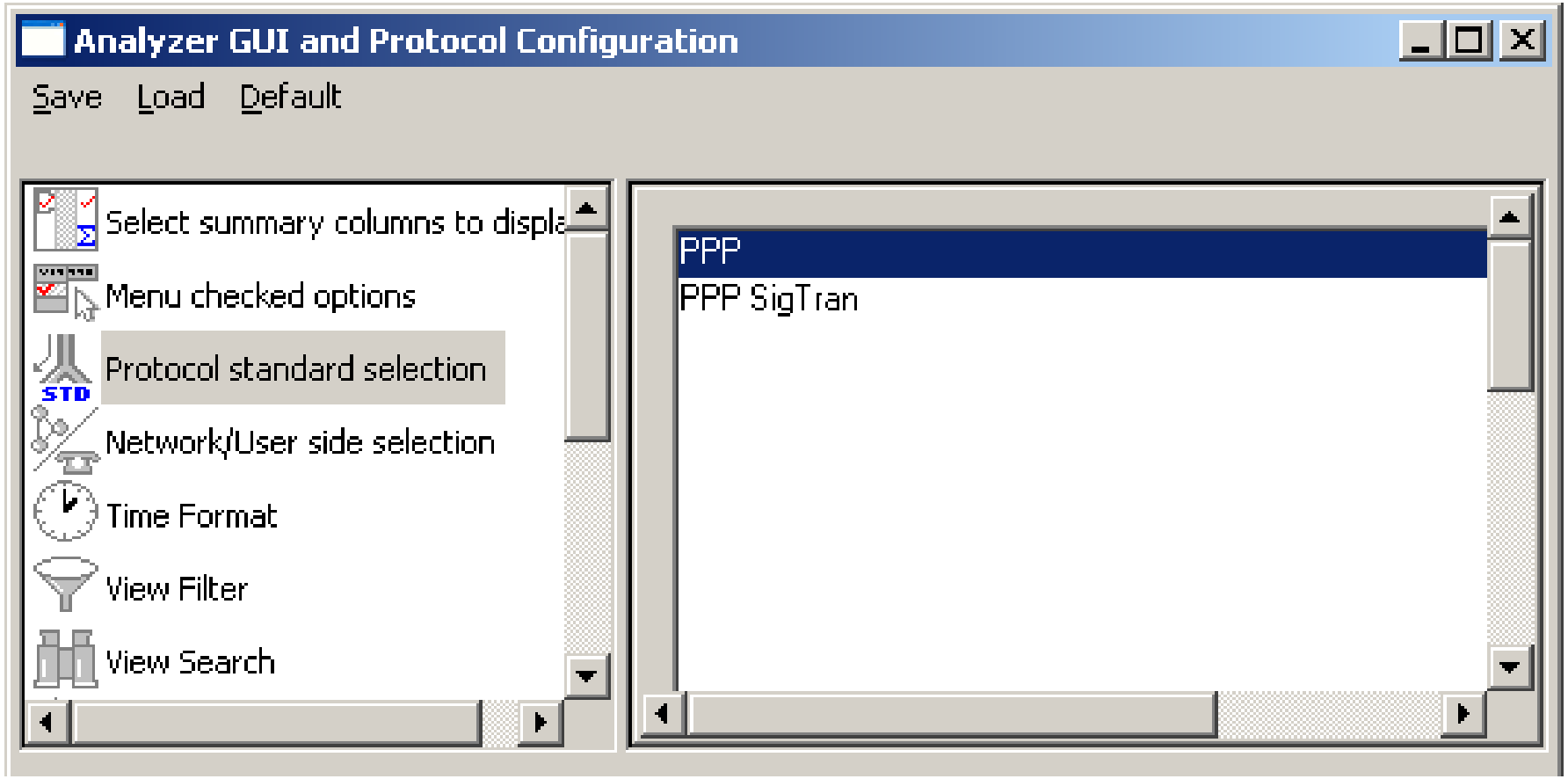
Features

- Supports a host of protocols PPP, IPCP, BCP, BPDU, PAP, CHAP, HTTP, SNMP, STUN, FTP, DNS, and DHCP
- Ability to test and perform numerous measurements across WAN- LAN or LAN-LAN connection
- Ability to test and analyze HDLC based PPP protocol in synchronous environment
- Search and filtering capabilities for both real-time as well as offline analysis
- Provides Summary, Detail, Statistics, and Hex dump views
- Supports Packet Data Analysis module for real-time IP call analysis including SIP, RTP, MEGACO, H.323, and MGCP, and T.38 Fax calls
- Detailed information of all the captured Frames or only the filtered frames can be exported to ASCII file for the further off-line analysis and printed
- Capability to export summary as well as detail information to an ASCII file for subsequent import into a database or spreadsheet
- Ability to capture and decode both PPP routed protocols, PPP bridged protocols
  - ➢ User can decode frames from the recorded trace files and can be played back using HDLC playback application

Protocols Supported

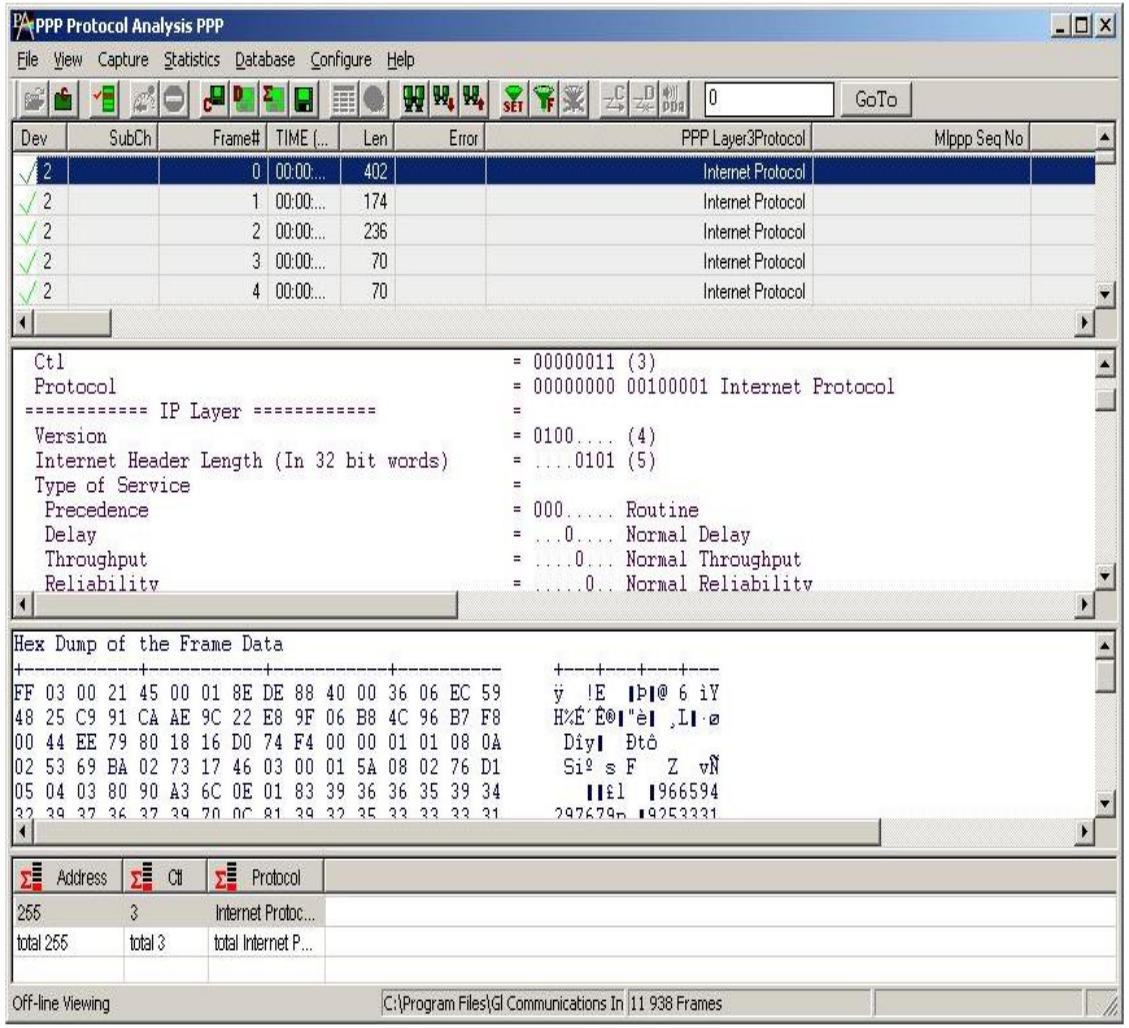


Supported Protocol Standards

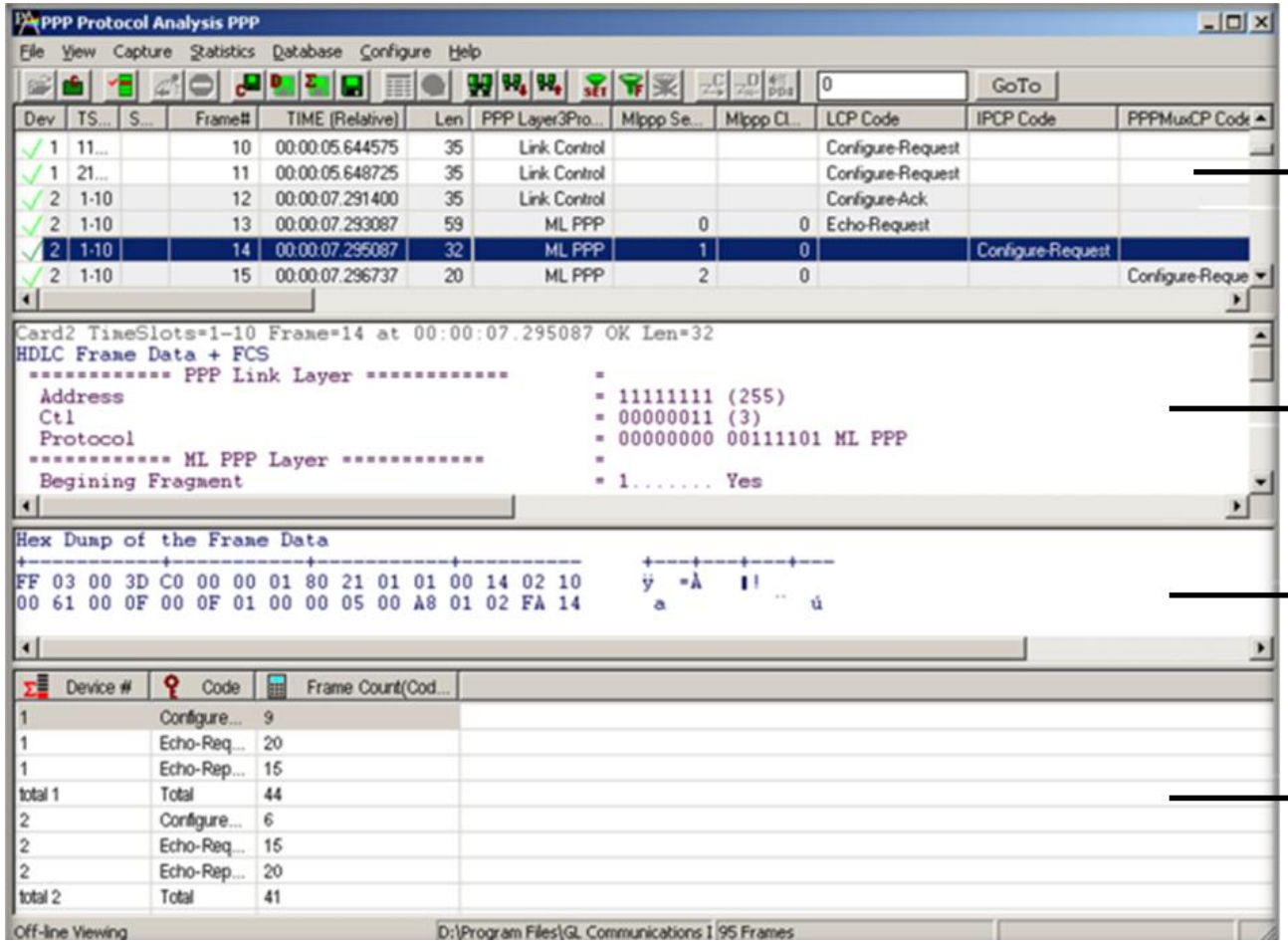


PPP Protocol Analysis

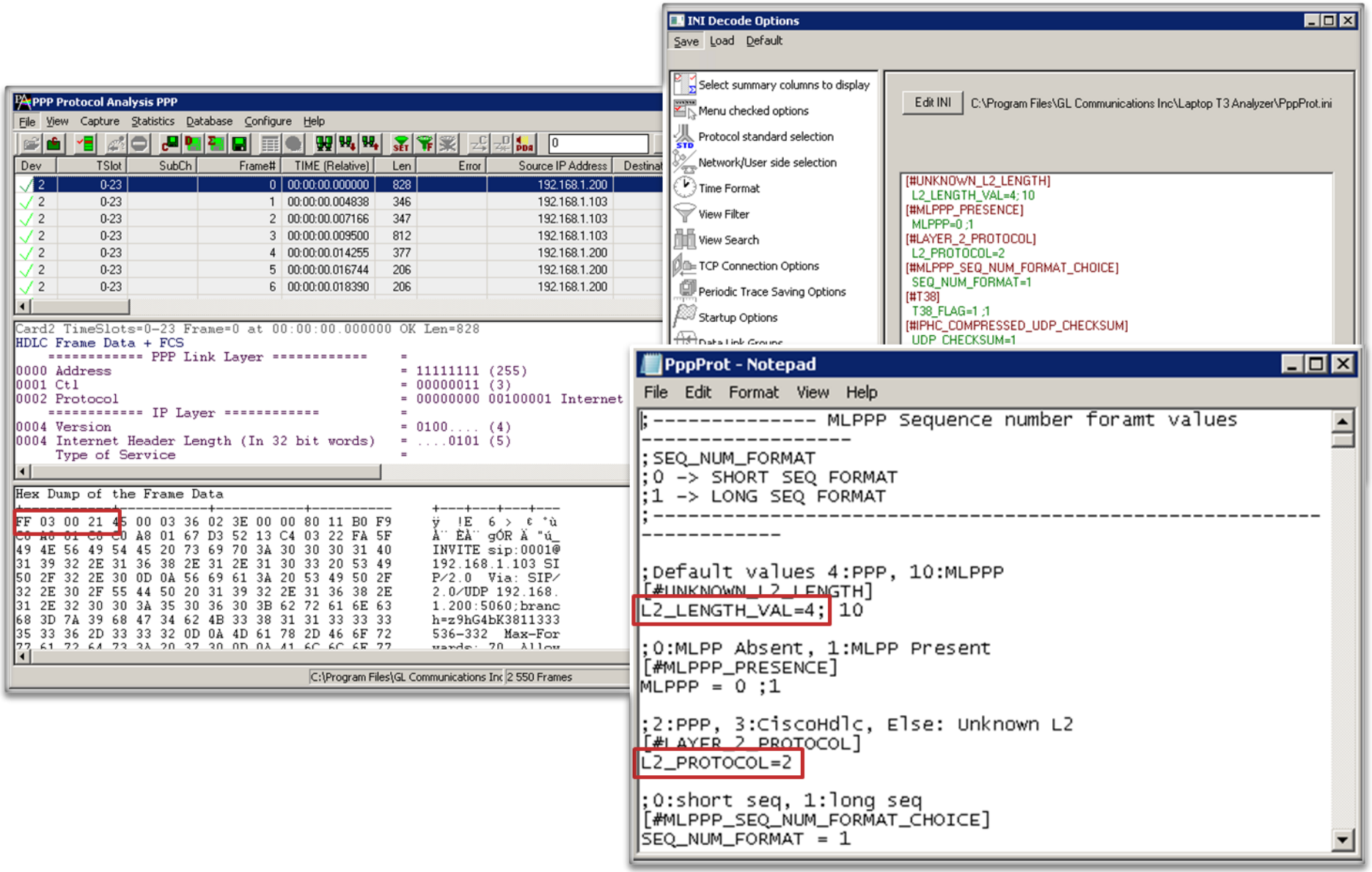
- It provides useful analysis of the PPP, MLPPP, and MC-MLPPP protocols which includes distribution of protocols, protocol fields, frame lengths and frame status



Real-time Analysis

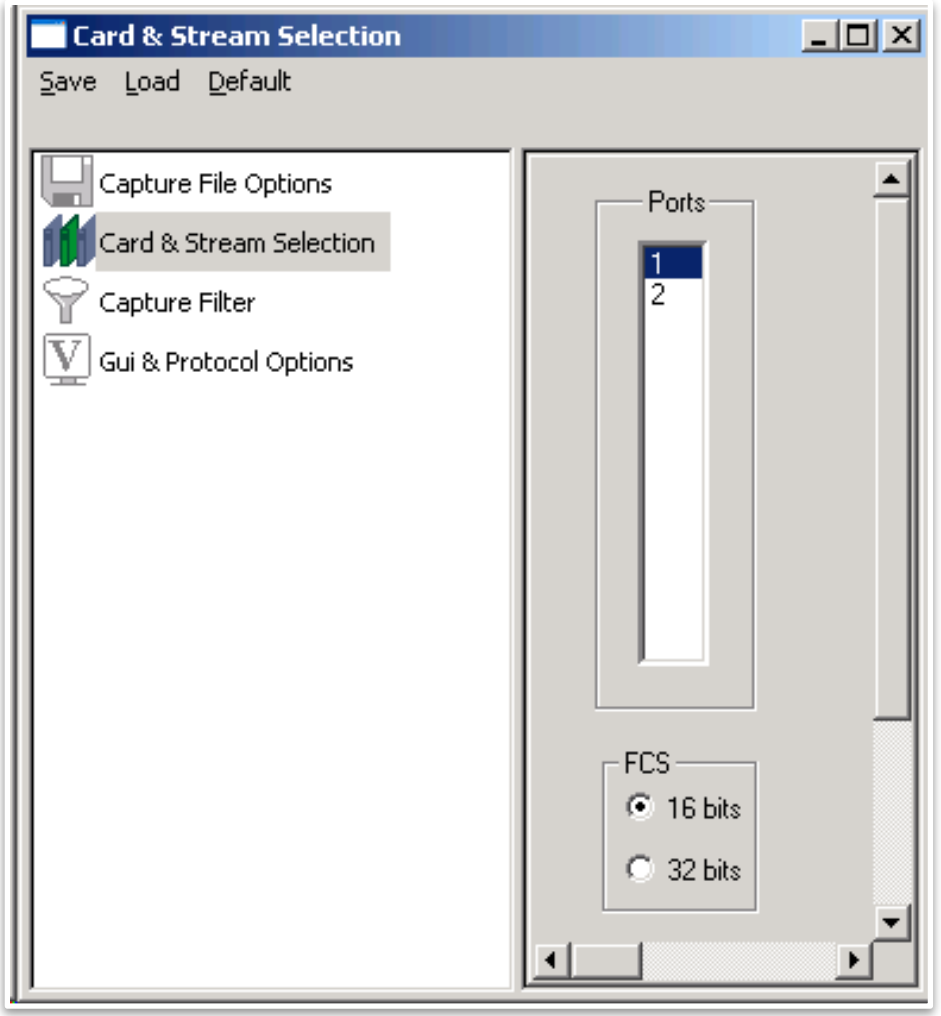


Configure *.ini File



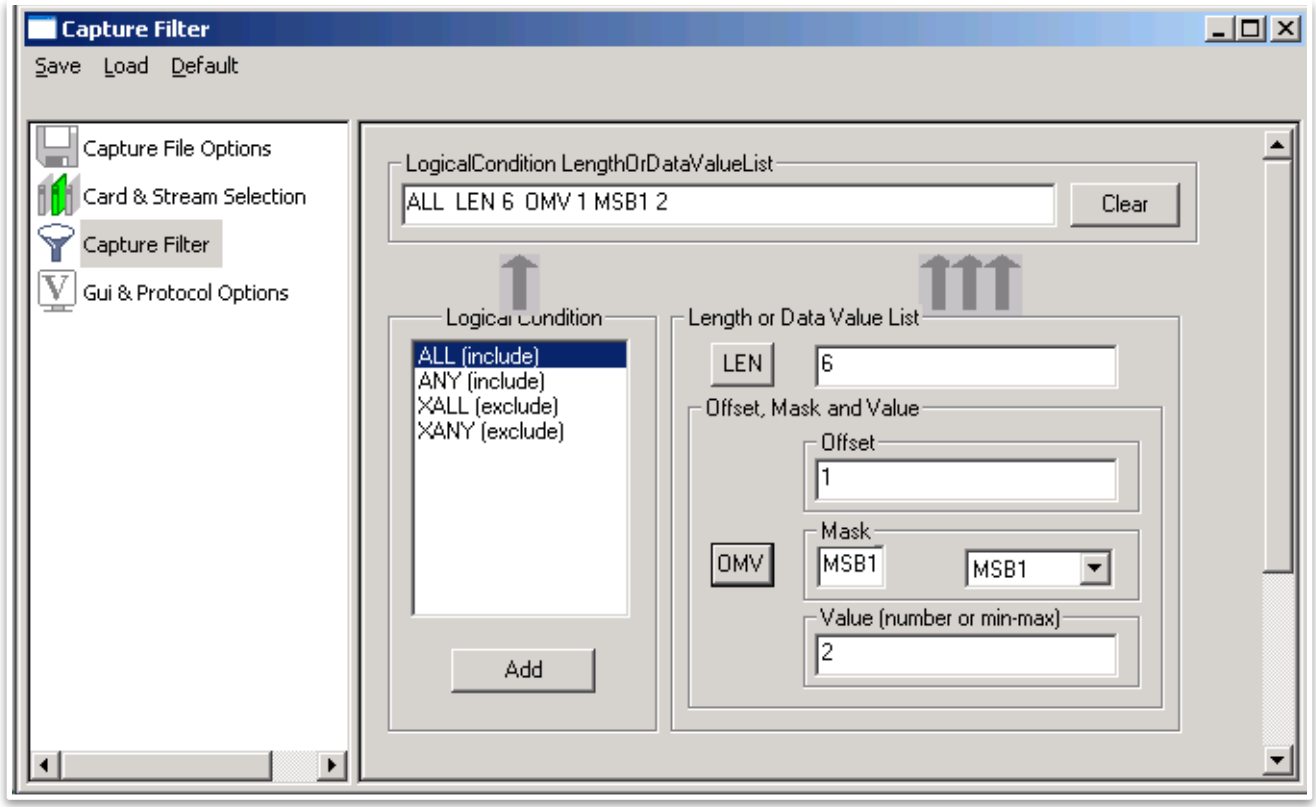
Real-time Analysis

- Multiple ports can be selected for a single instance of analyzer to capture the frames simultaneously
- Specify ports, and Frame Check Sequence (FCS) for real-time capture

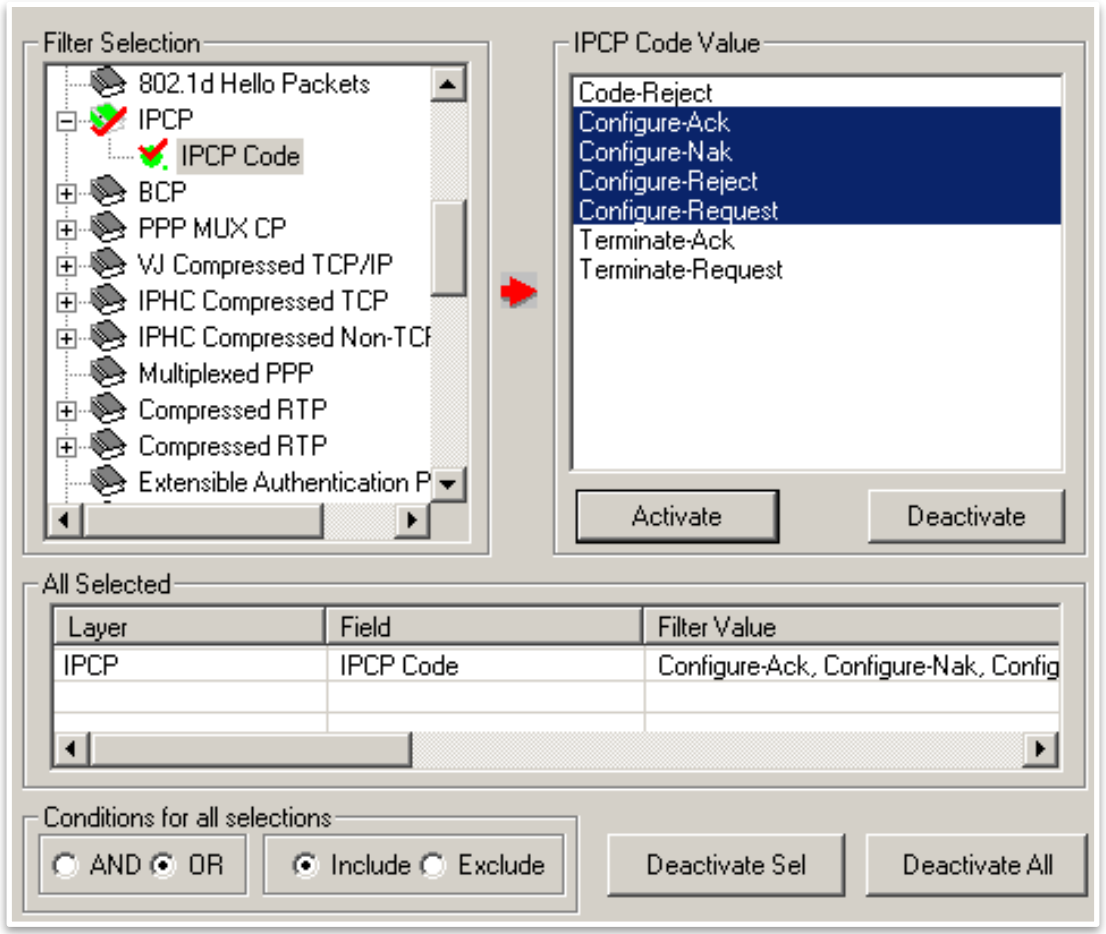


Real-time Filtering and Search Criteria

- Filter can be set based on length of frames, Frame Number, Time, Length, Error, Layer3 Protocol, LCP Code, IPCP code, TCP and UDP source and destination port, PPP Message type, and so on
- Based on specific search criteria users can search for a particular frame

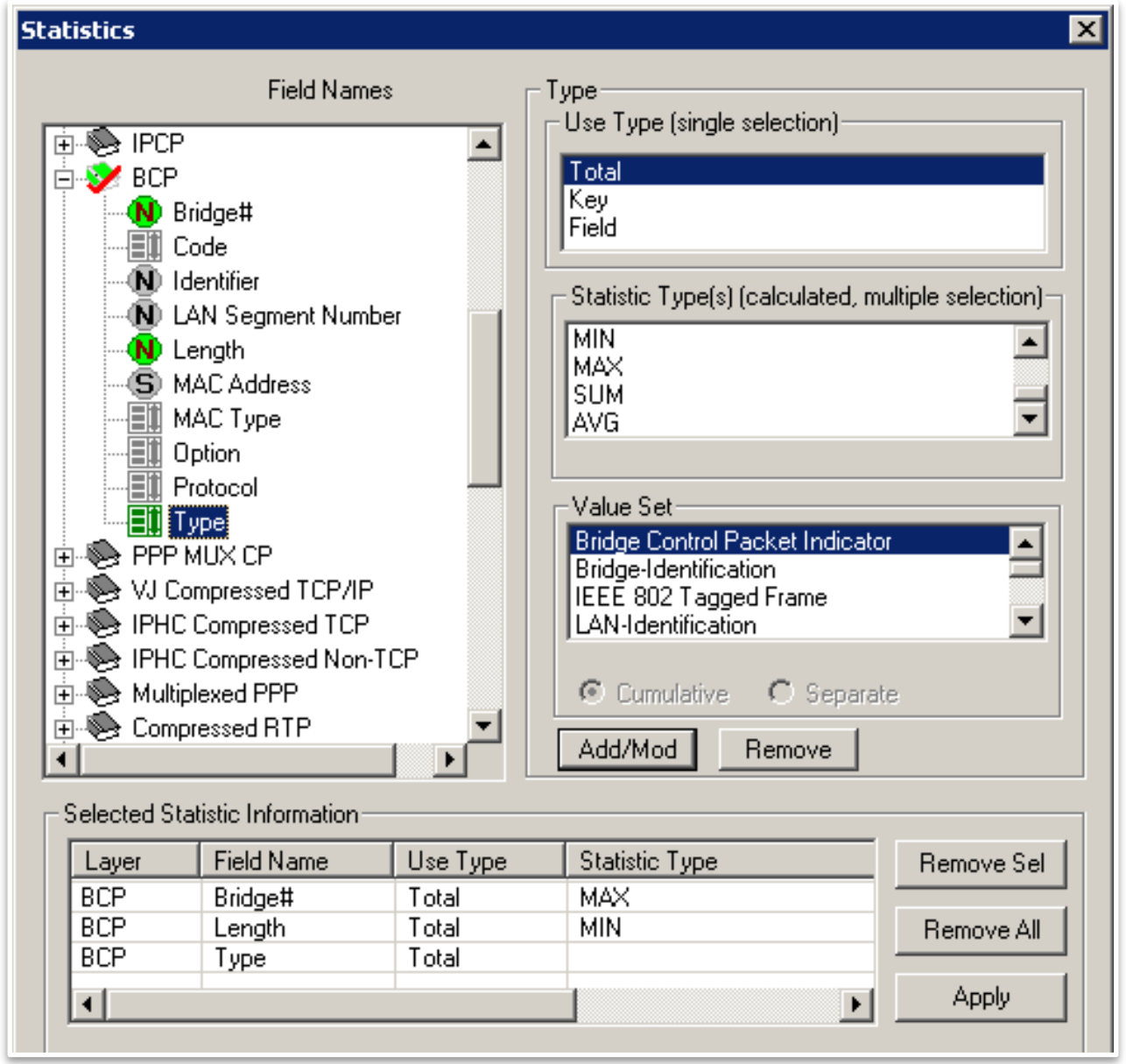


Offline Filtering and Search Criteria

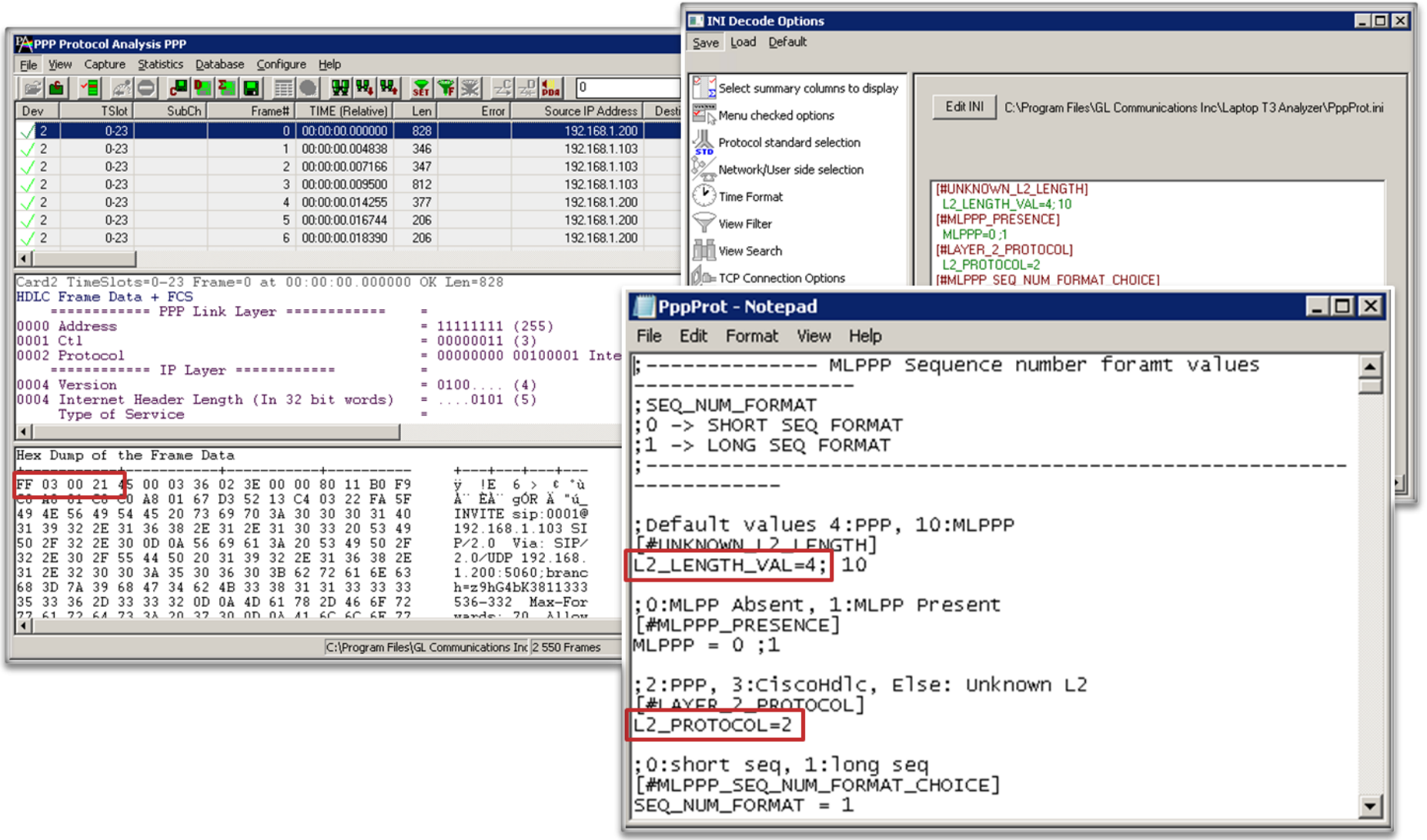


- Users can use recorded trace files for offline analysis. Filtering and search criteria can be set for offline analysis as well

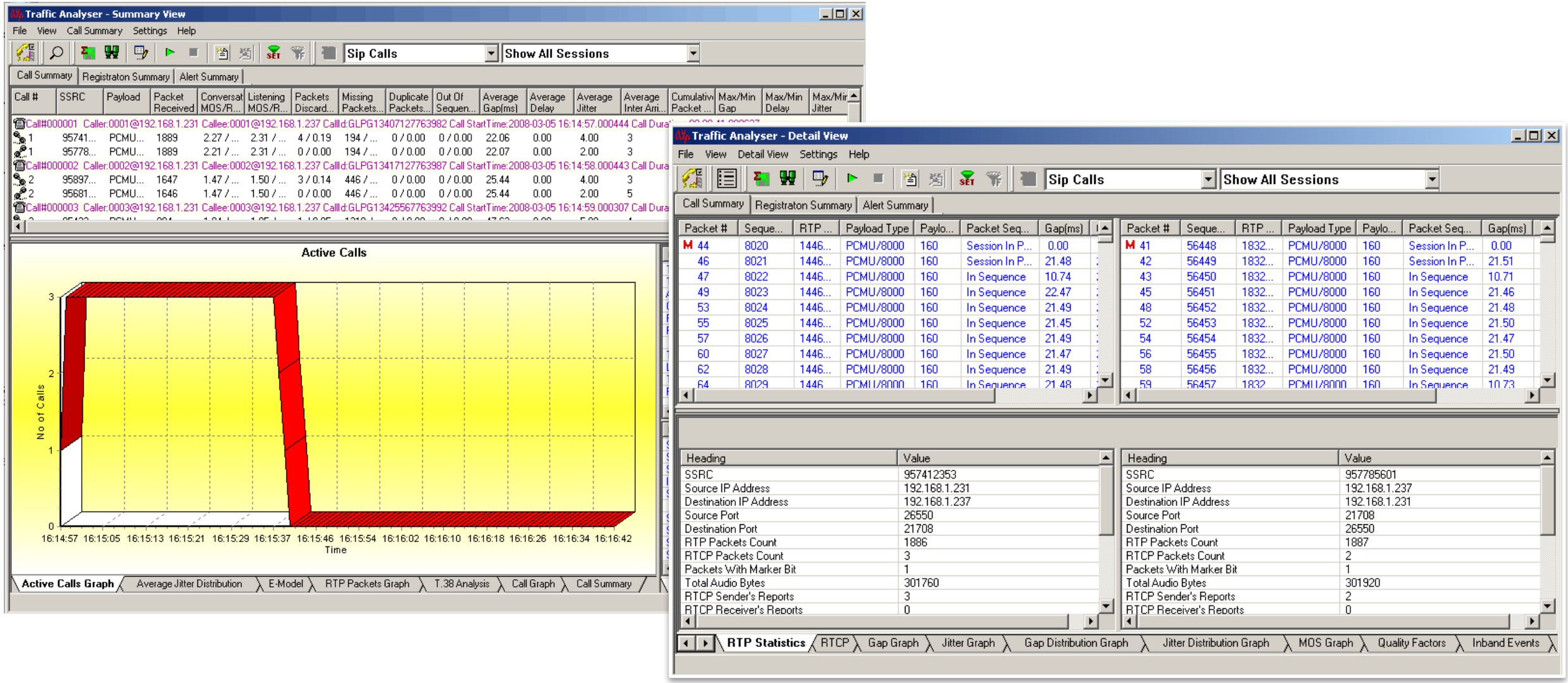
Statistics Options



Configure *.ini File (PPP)

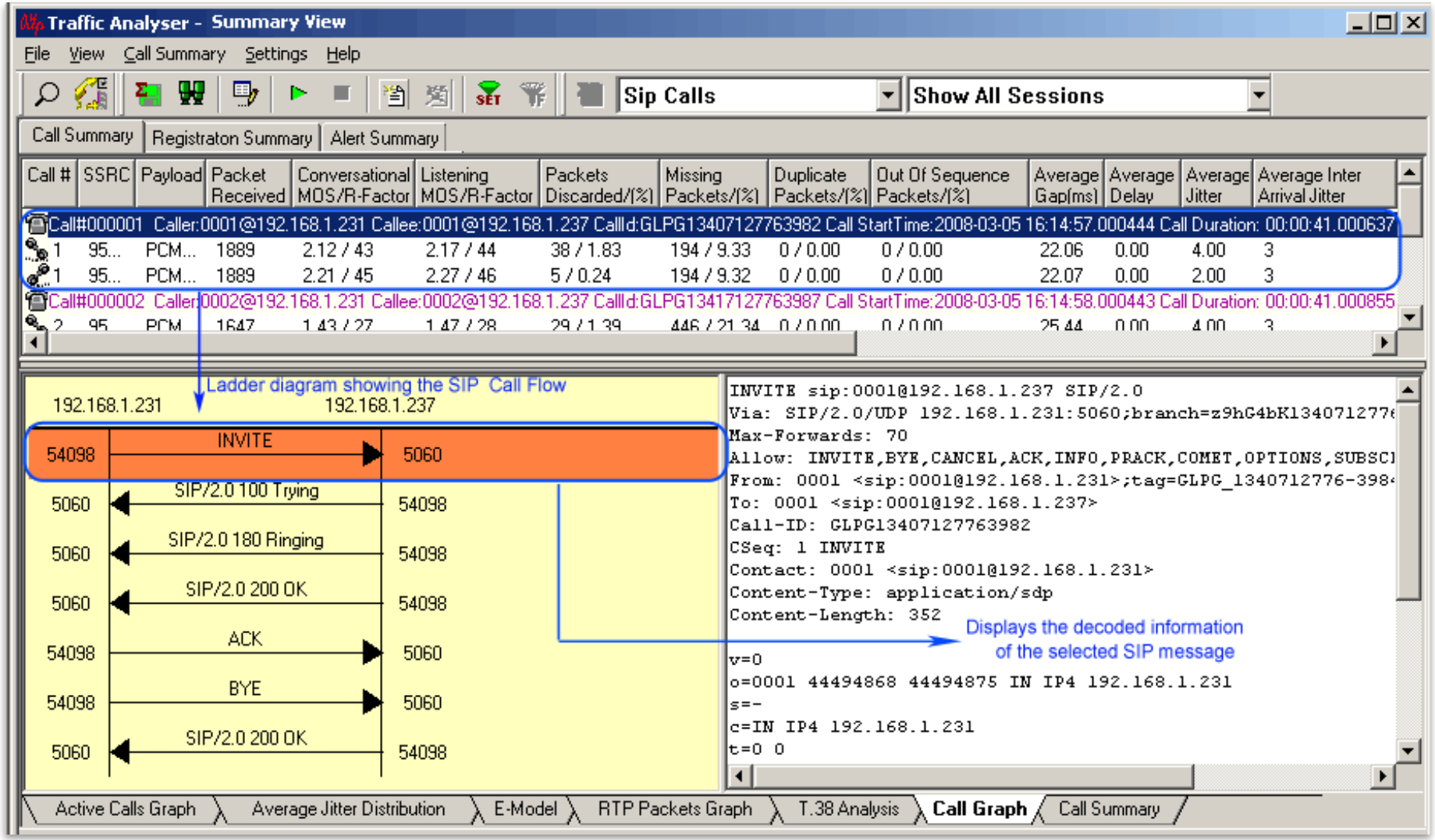


Packet Data Analysis (Traffic Analysis Tool for IP)



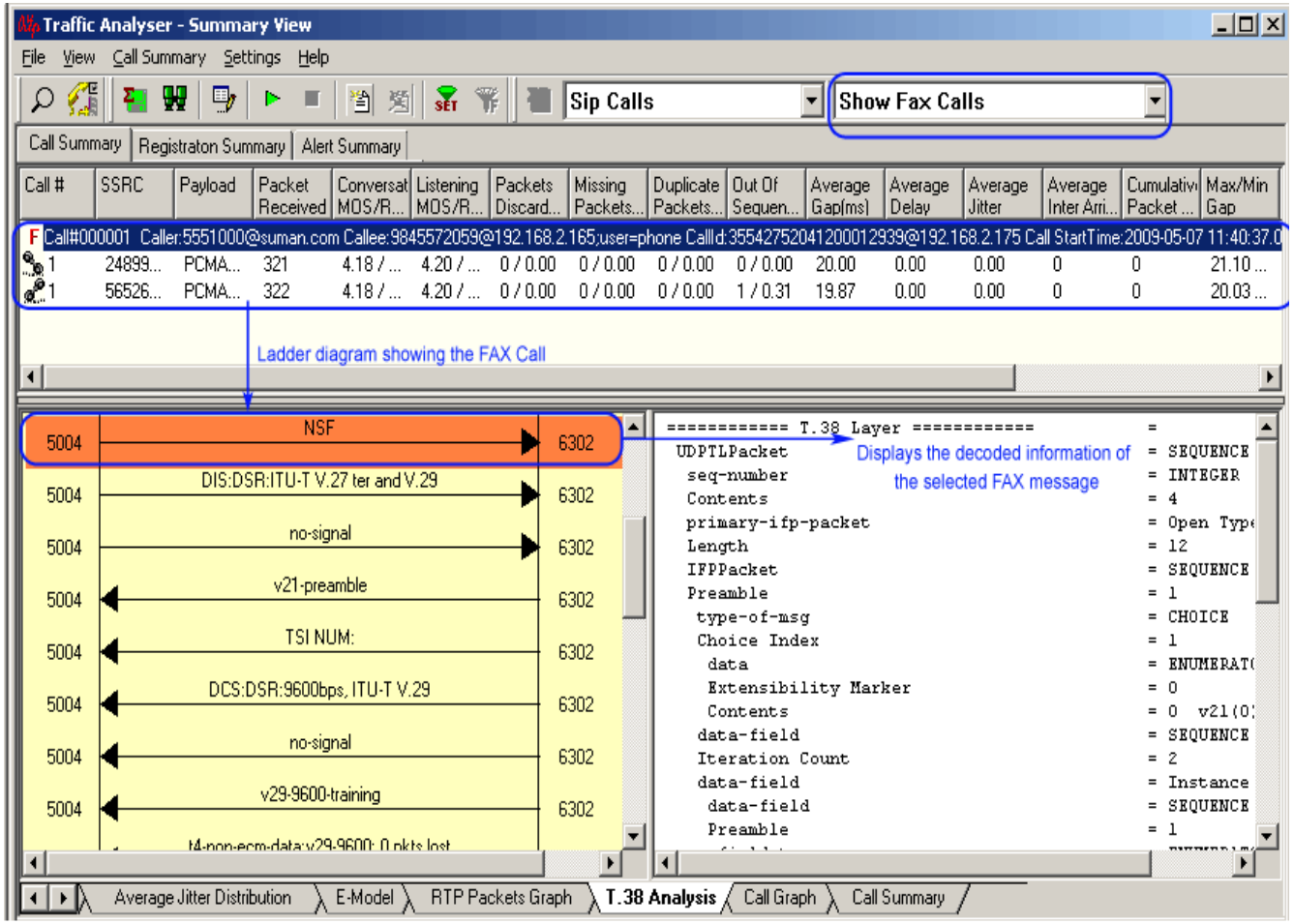
GL Communications

PDA Call Graph

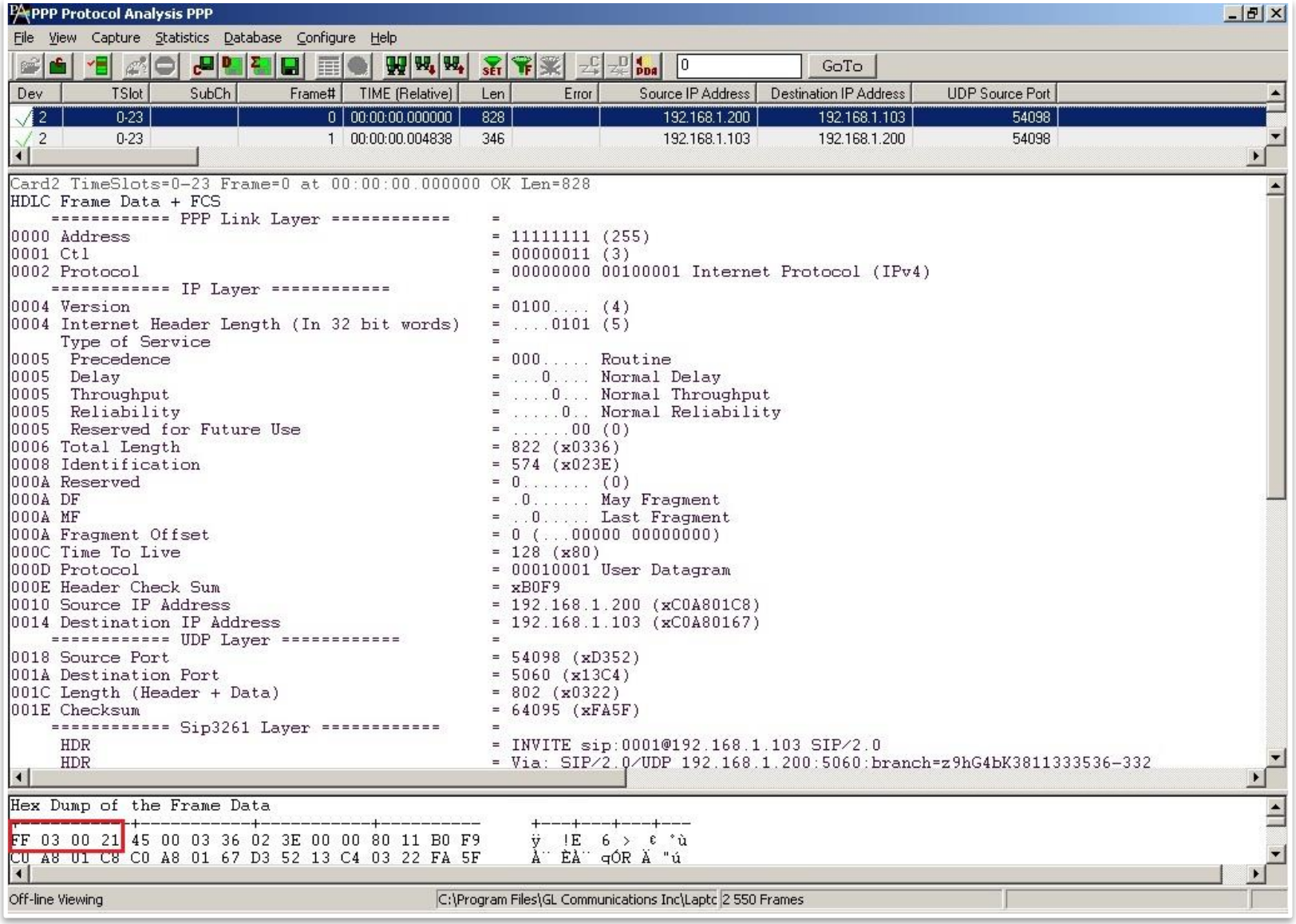


FAX over IP (T.38) Calls Analysis

- Packet Data Analyzer (PDA) provides Fax (T.38 data) over VoIP monitoring and decoding capability
- The captured fax calls are indicated with “F”



PPP SIP Header Info – PPP/SIP/RTP

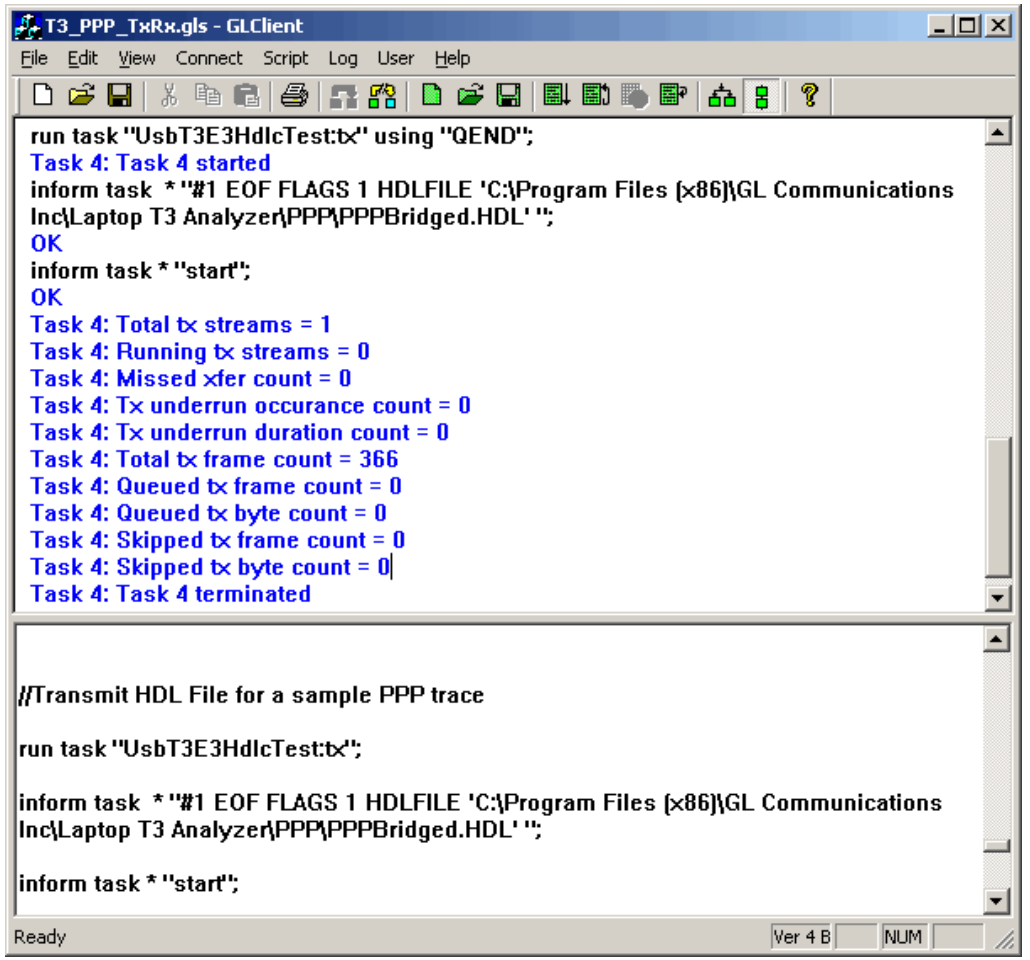


GL Communications

WCS Module (TT3635/EE3635)

T3 E3 PPP Tx/Rx Test (UsbT3E3HdlcTest) is an optional WCS module that:

- Sends PPP frames with or without impairments
- Receives and verifies PPP frames and optionally logs the errors
- Provides remote operation, automation, and multi-site connectivity



Sample Script

- Sample Script for PPP Emulation and Analysis:
- //Transmit HDL File for a sample PPP trace
- run task "UsbT3E3HdlcTest:tx" using "QEND";

    run task "UsbT3E3HdlcTest:rx" using "QEND";

    inform task * "#2 EOF FLAGS 1 HDLFILE 'C:\Temp.HDL' ";

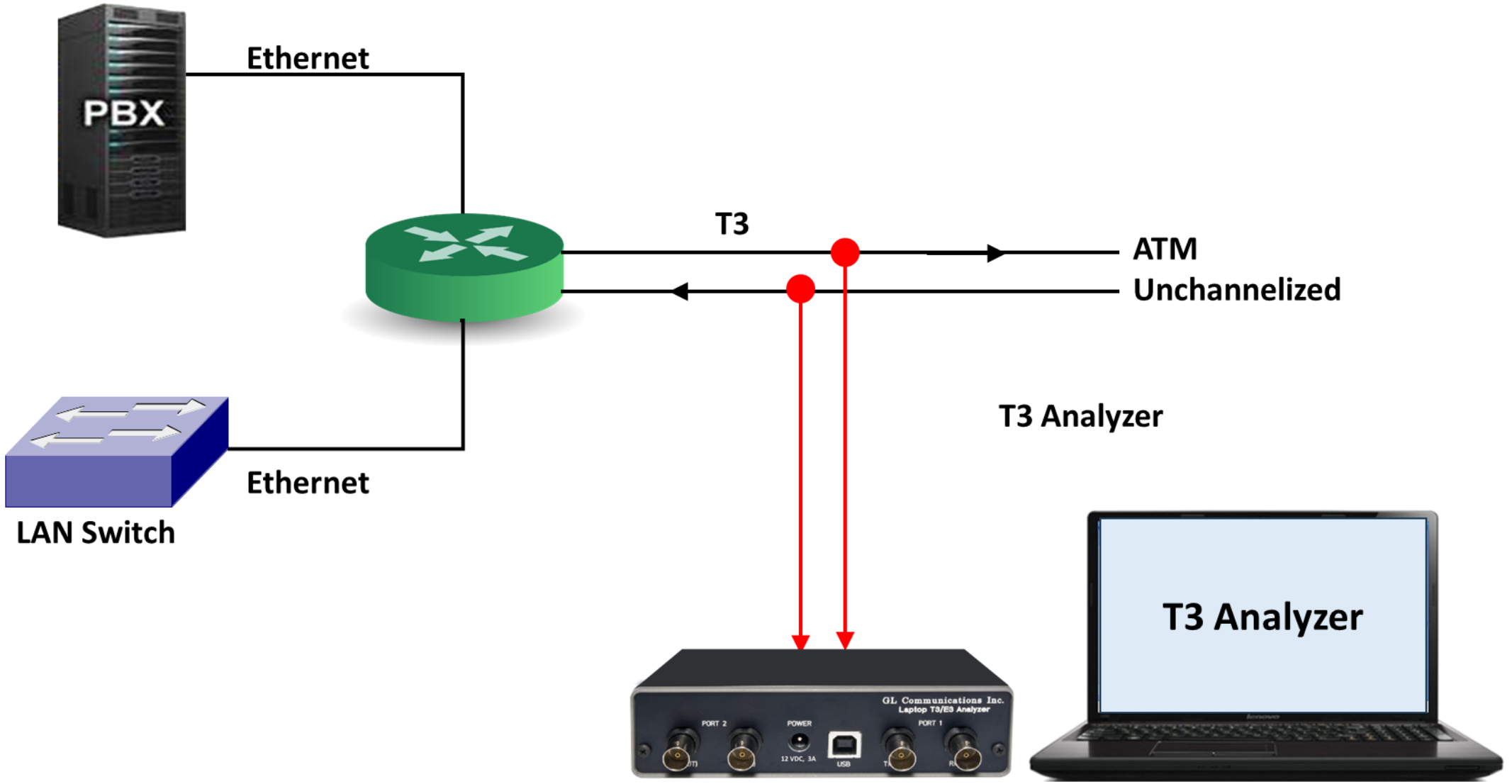
    inform task * "#1 EOF FLAGS 1 HDLFILE 'C:\Program Files\GL Communications Inc\Laptop T3 Analyzer\PPP\PPPBridged.HDL' ";

    inform task * "start";

    end task *;

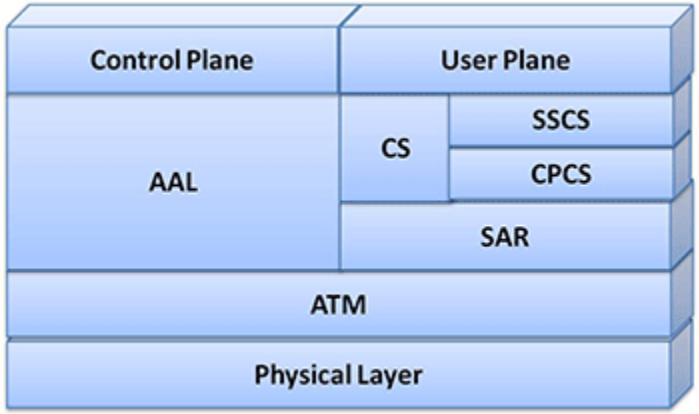
ATM Analyzer

ATM Unchannelized

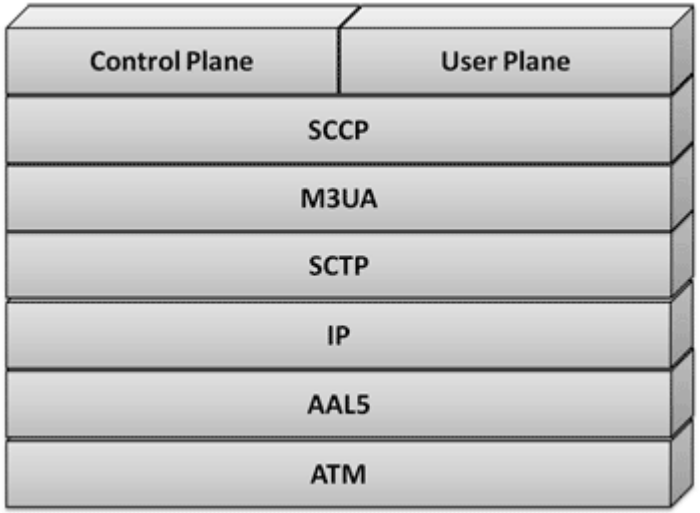


Supported Protocols (ATM)

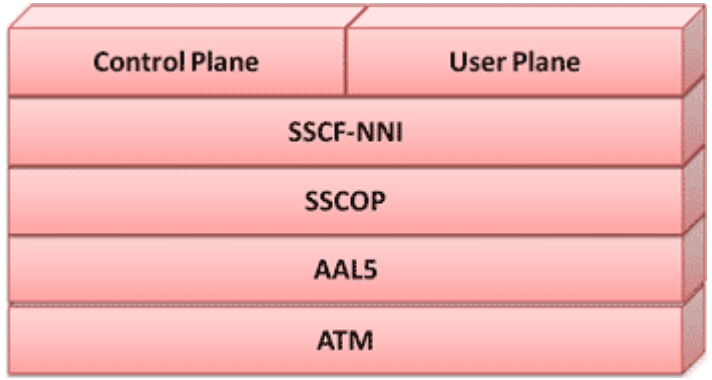
ATM Protocol Stack



Classical IP over ATM
Protocol Stack



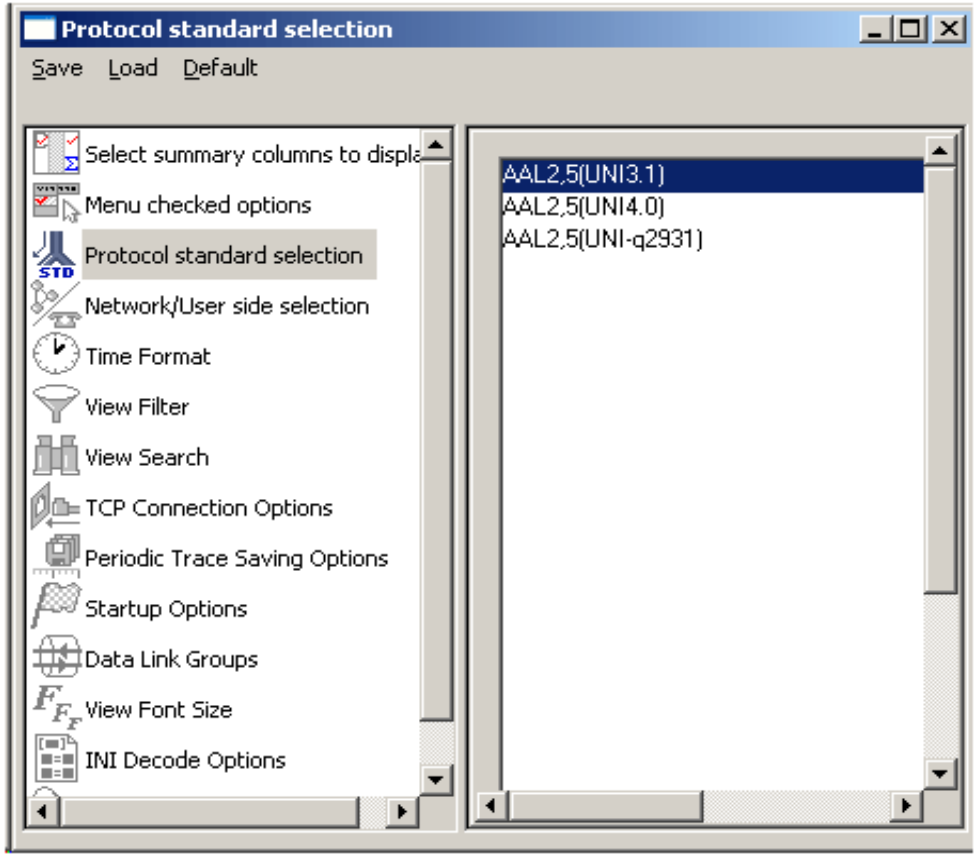
SS7 over ATM Protocol Stack



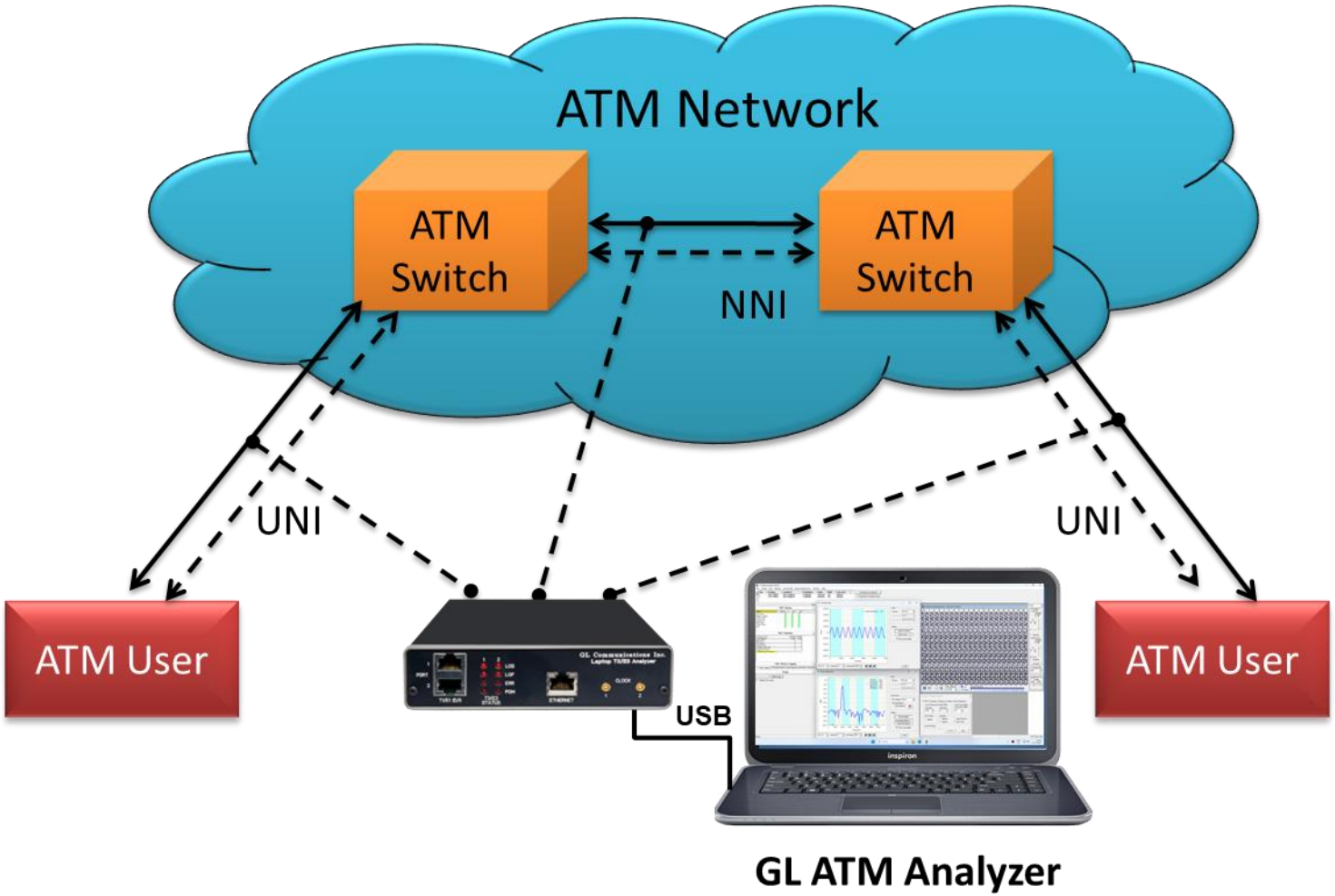
GL Communications

Supported Protocols Standards

- ITU-T Recommandation I.361, I.366.1, I.366.2
- ITU-T Standard Interfaces(UNIQ.2931), ATM Forum Standard Interfaces (UNI 3.0, 3.1, 4.0)

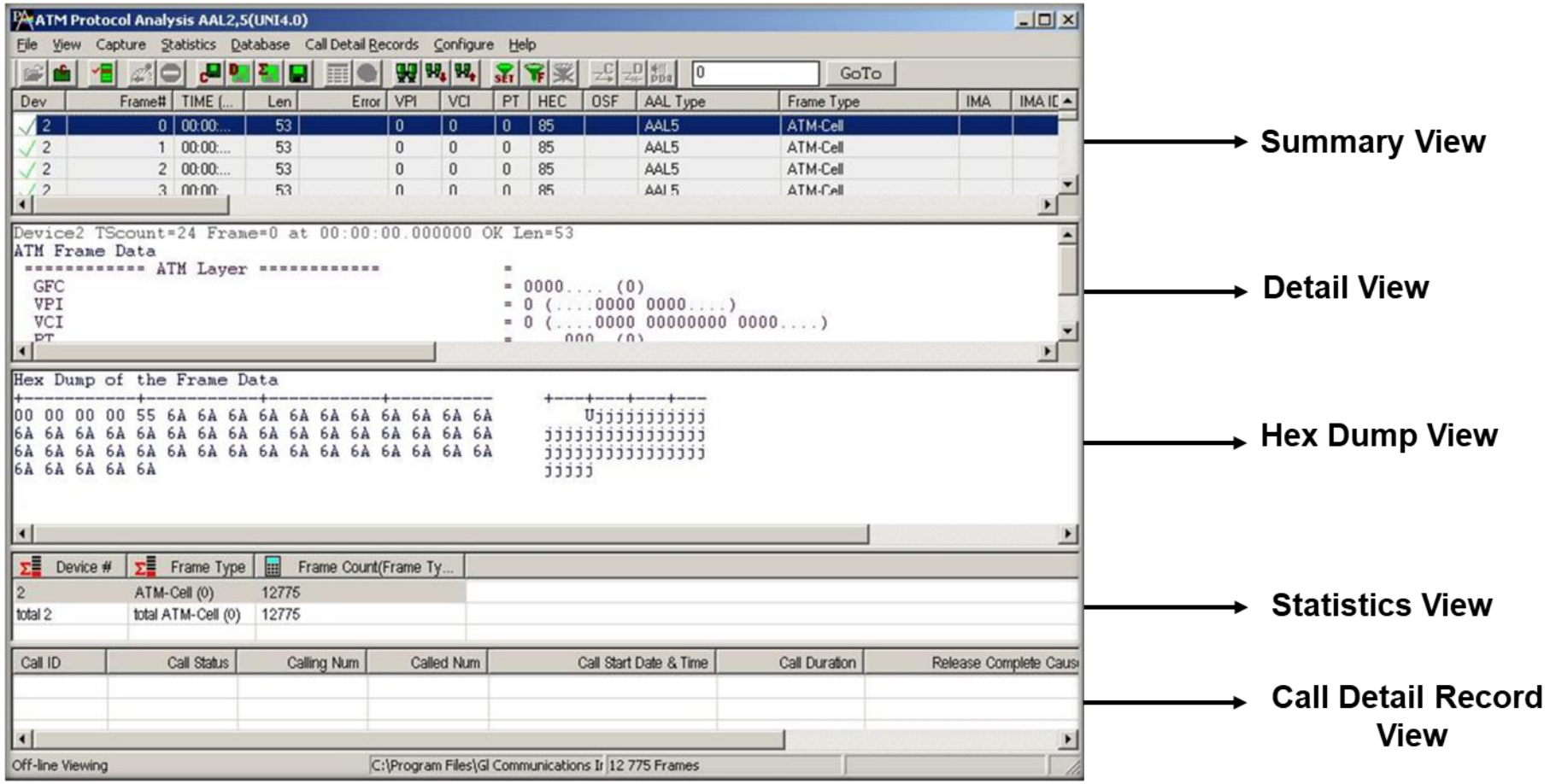


GL's ATM Protocol Analyzer



ATM Protocol Analysis

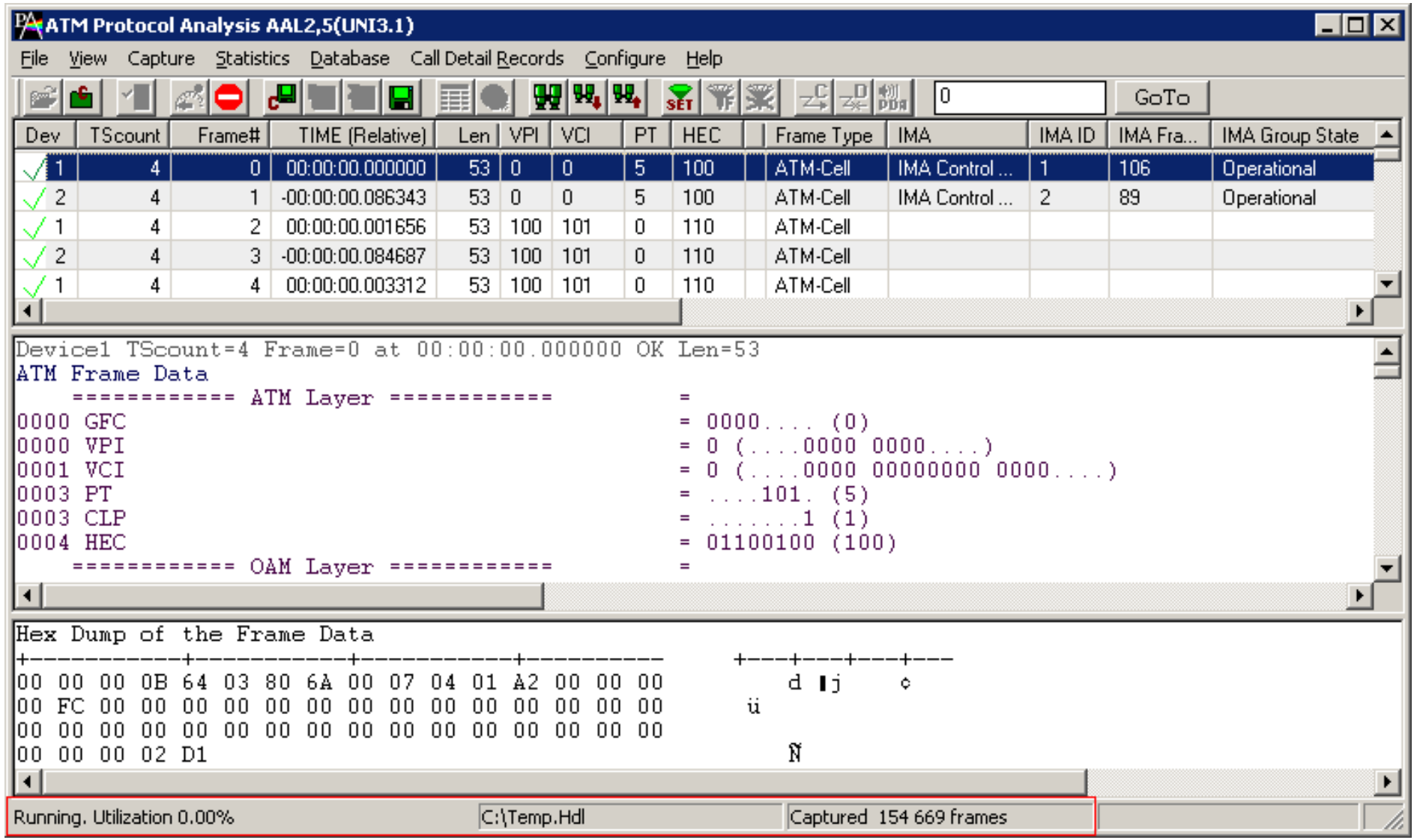
- Asynchronous Transfer Mode (ATM) is a flexible network, which carries voice, video, and data in the same way, i.e. fixed length cells
- Displays Summary, Detail, Hex-dump, Statistics, and Call Trace Views



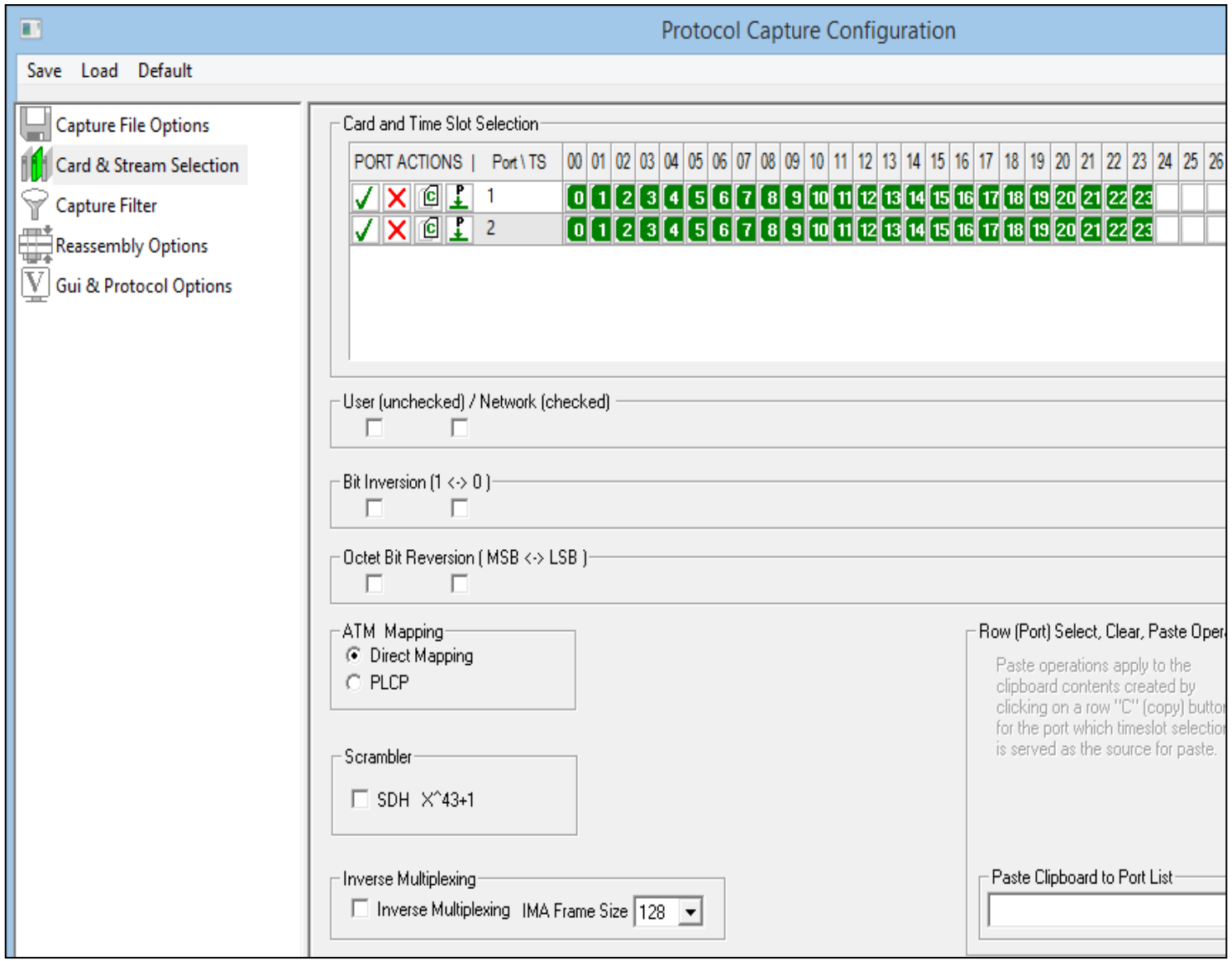
Features

- Ability to configure .ini file for PVC carrying UNI signaling messages to get the proper decoding options
- Any protocol field can be added to the summary view, filtering, and search features providing users more flexibility to monitor required protocol fields
- CRC verification for AAL5 carrying packet data
- Call trace capability based on UNI signaling parameters, VPI/VCI etc.
- Displays Summary, Detail, Hex-Dump, Statistics, and Call Detail View
- Captures, decodes, filters, and reassembles AAL2 and AAL5 frames in real-time, from within the ATM cells according to user defined VPI/VCI
- Capturing and re-assembling frames that were transmitted with Inverse Multiplexing. IMA combines up to 8 T1 E1 links to form a single high-speed connection with flexible bandwidth options
- Unscrambling of ATM cells based on SDH X^43 + 1 algorithm
- Advanced search and filtering capabilities
- Recorded raw data can be played back using raw data playback application

Real-time Analysis

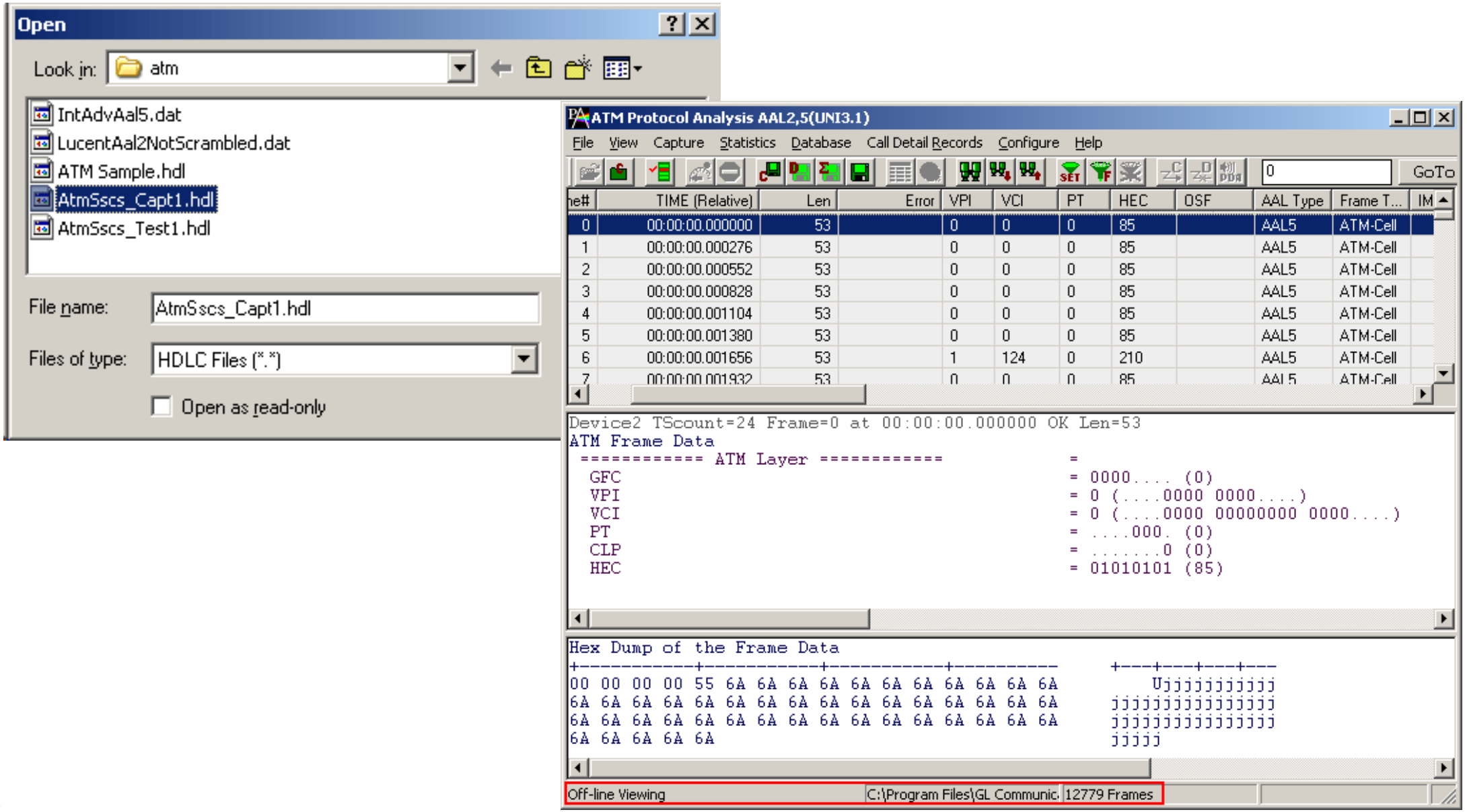


Stream Selection for Real-time Capture

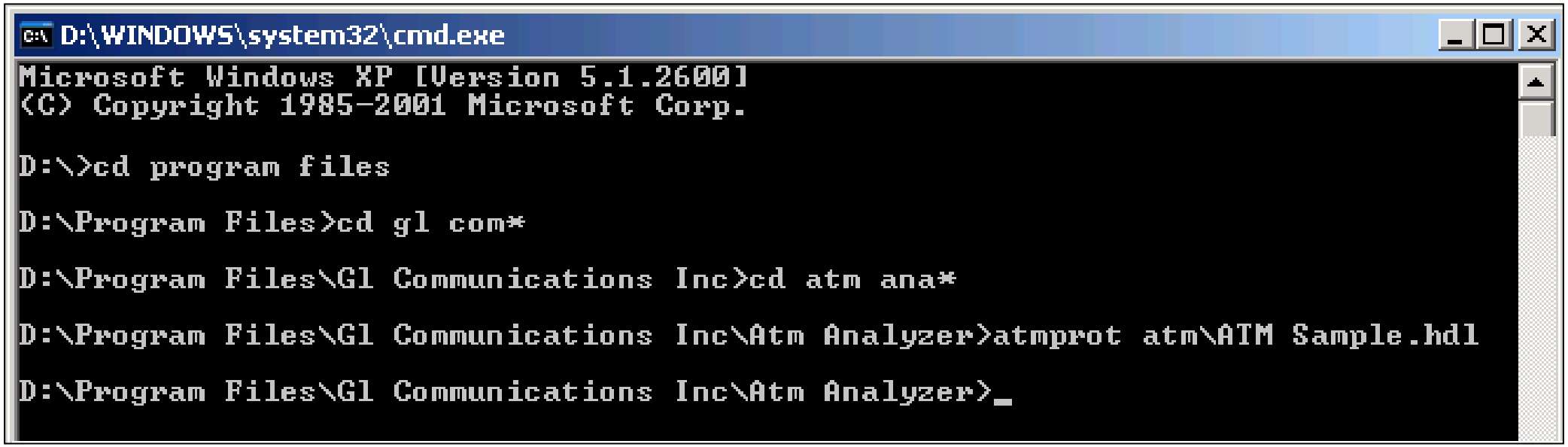


GL Communications

Offline Analysis

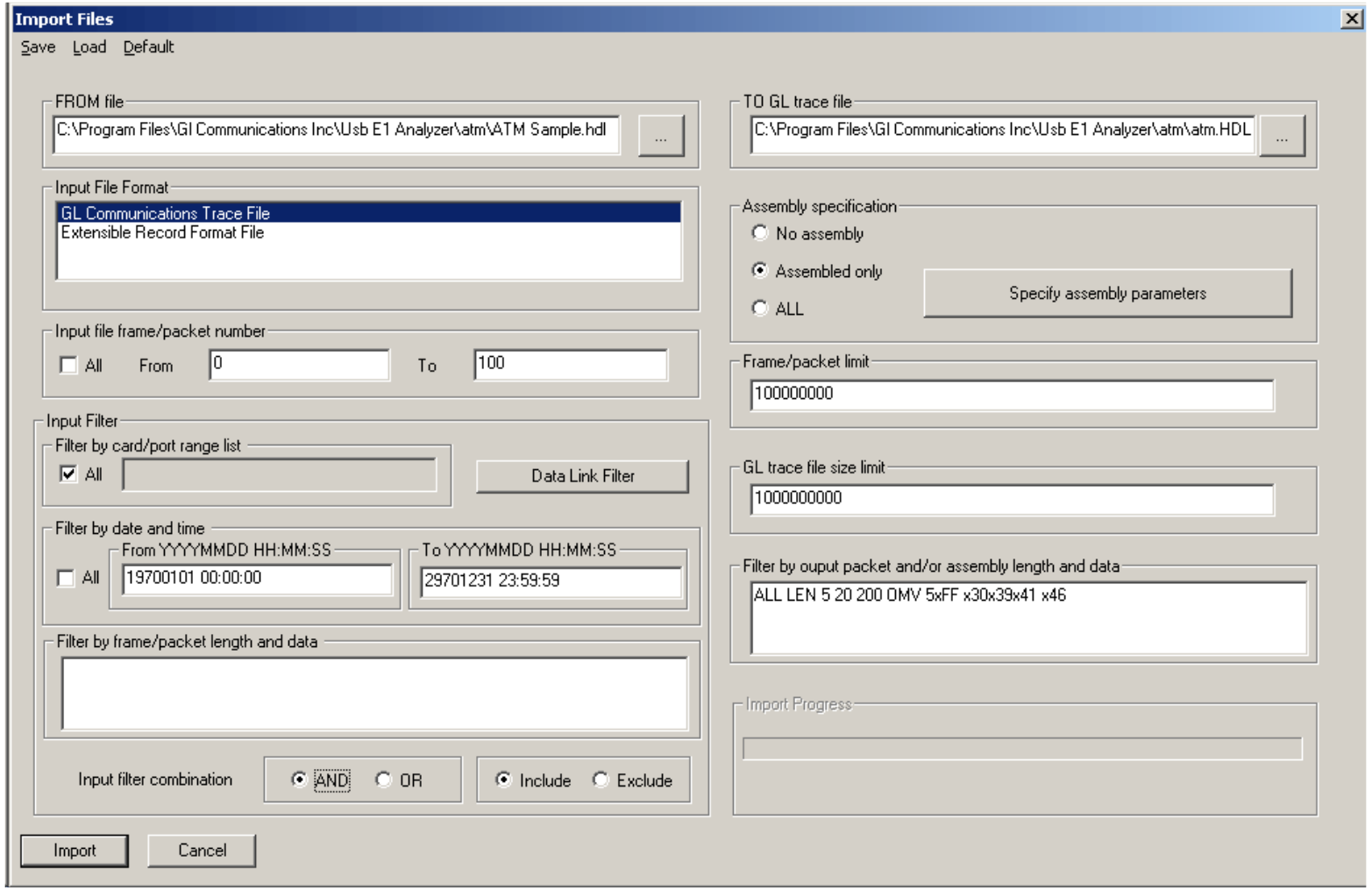


Opening Trace File from Command Prompt



- The trace files can be loaded using the command prompt

Import Captured Files



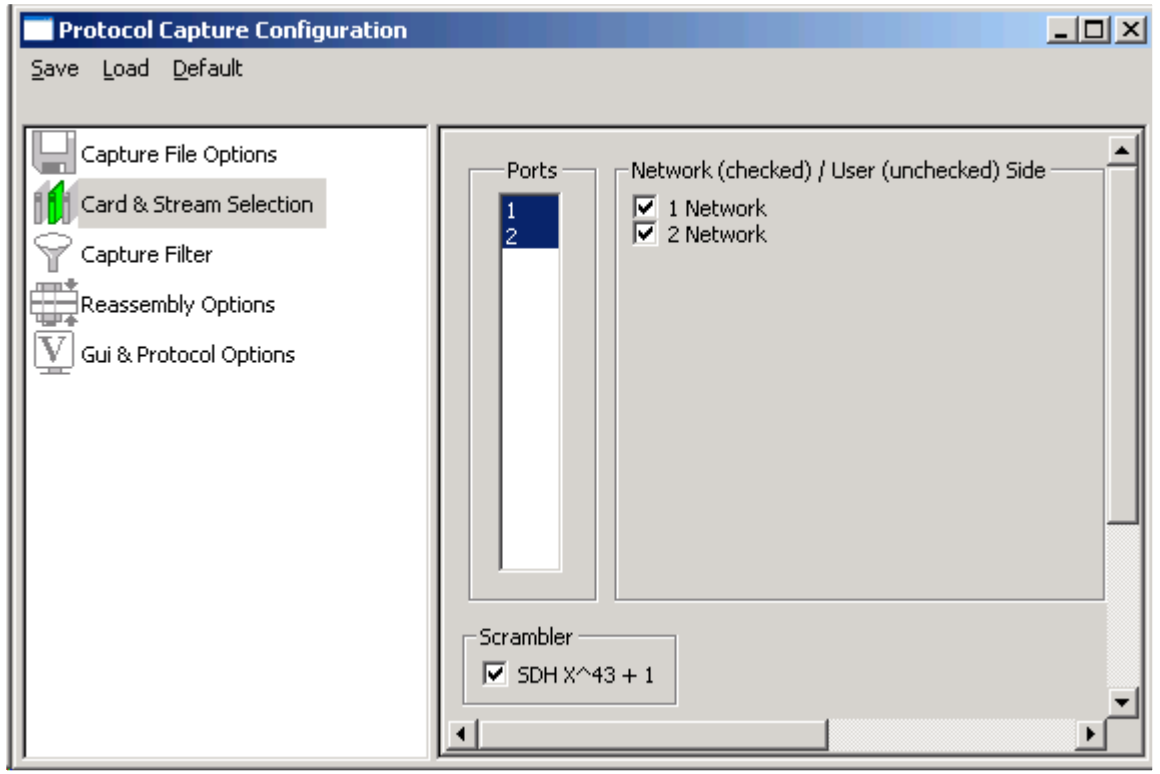
- ATM Import Plug-in (AIP) is an option can open off-line files, apply filter and re-assembly according to the user specified criteria

Applications

- Can be used as independent standalone units as "probes" integrated in a network surveillance systems
- Triggering, collecting, and filtering for unique subscriber information and relaying such information to a back-end processor
- Collecting Call Detail Records (CDR) information for billing

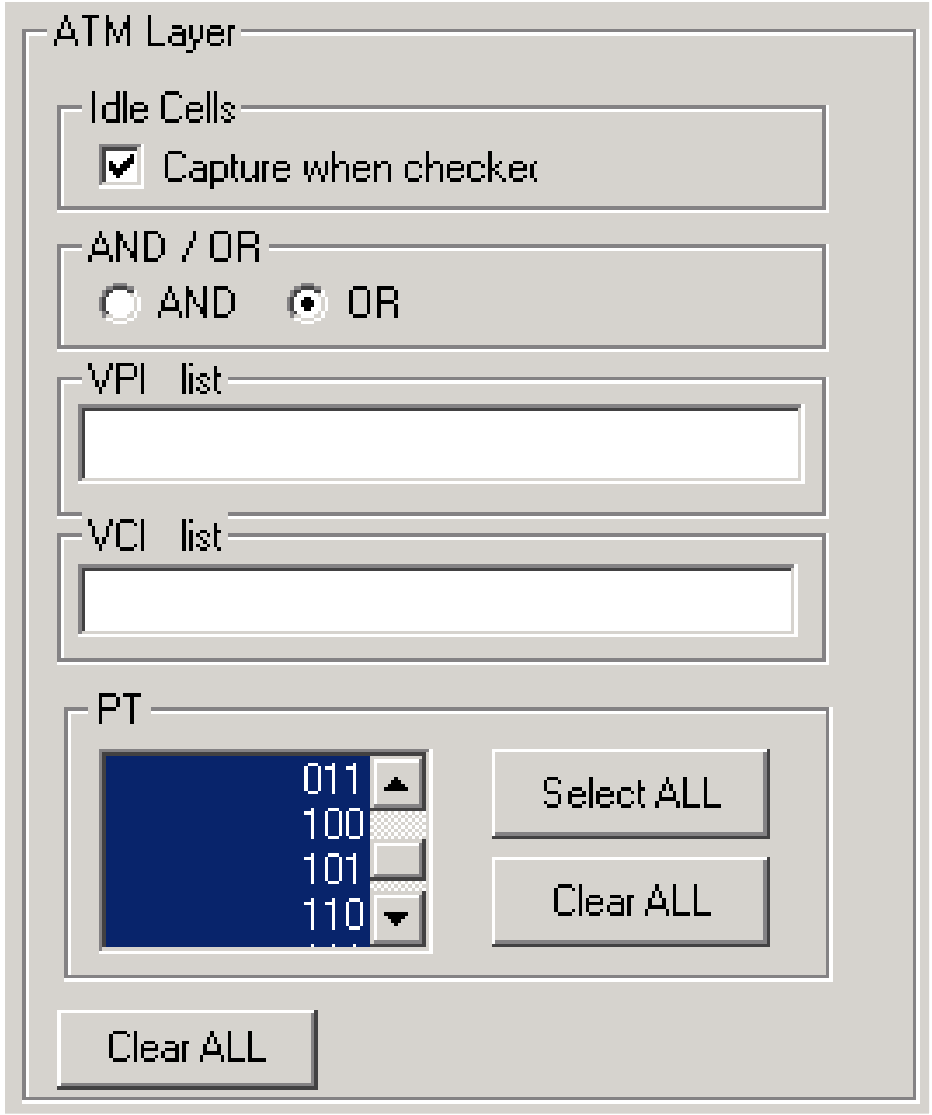
Real-time Analysis

- Capture and analysis of the frames in real-time or offline
- ATM raw data capturing requires users to specify ports, user/network side, and scrambling options
- Recorded trace file can then be analyzed offline and exported to ASCII file, or printed



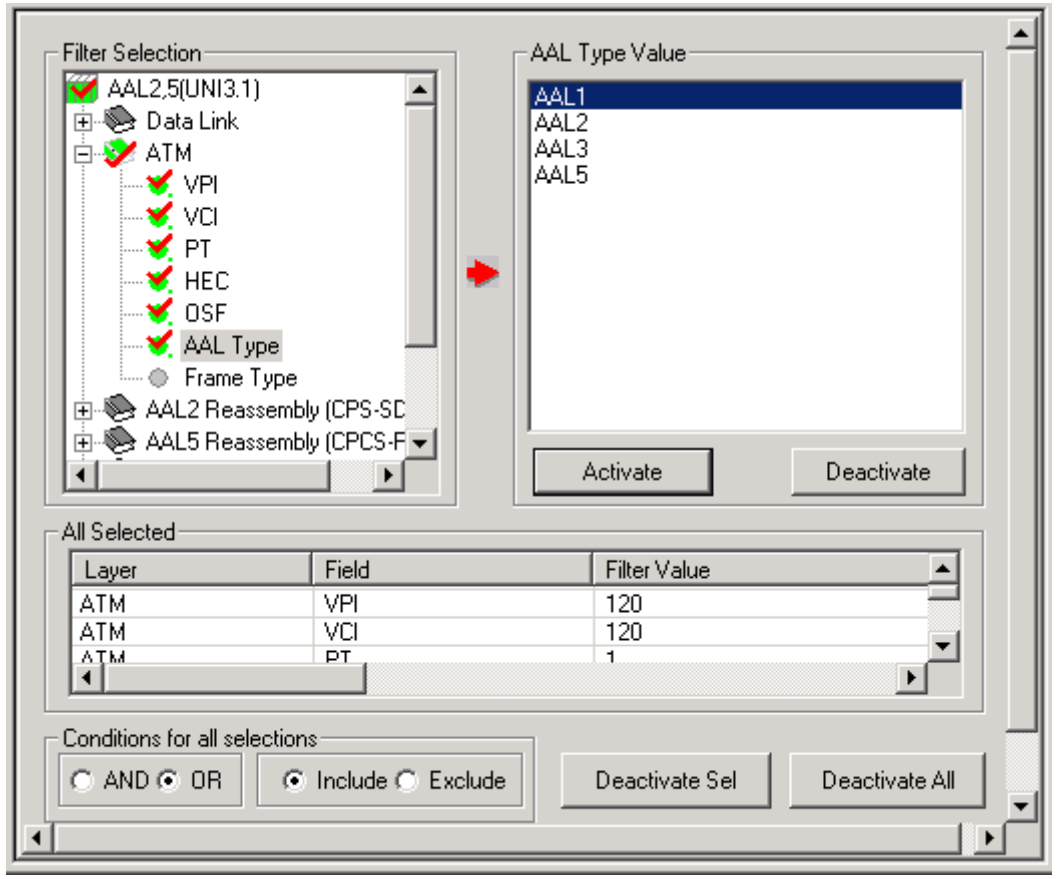
Real-time Filtering and Search Criteria

- Specify custom VPI, VCI, and PT type values to filter frames during real-time capture
- Similarly, search capability helps user to search for a particular frame based on specific search criteria

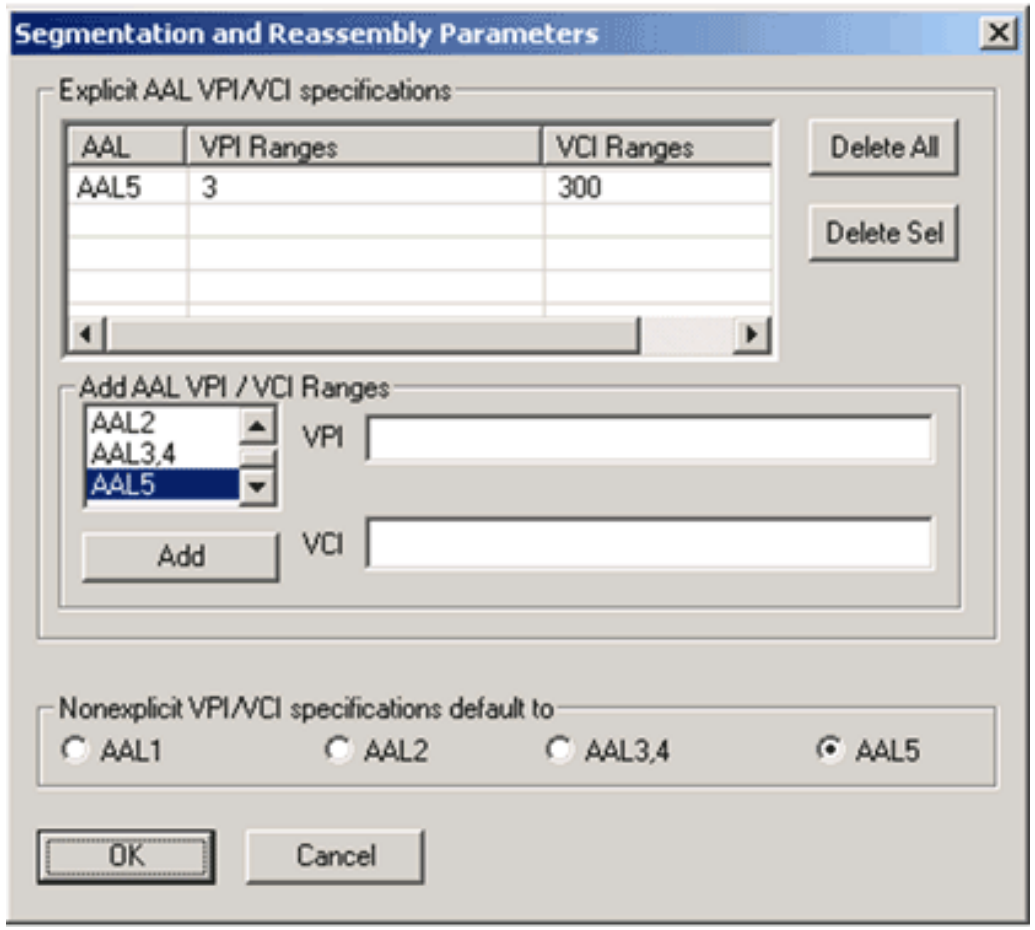


Offline Filtering and Search Criteria

- Filtering capability adds a powerful dimension
- Isolate frames of interest from all frames in real-time, as well as offline
- Can specify custom values to filter frames for real-time capture



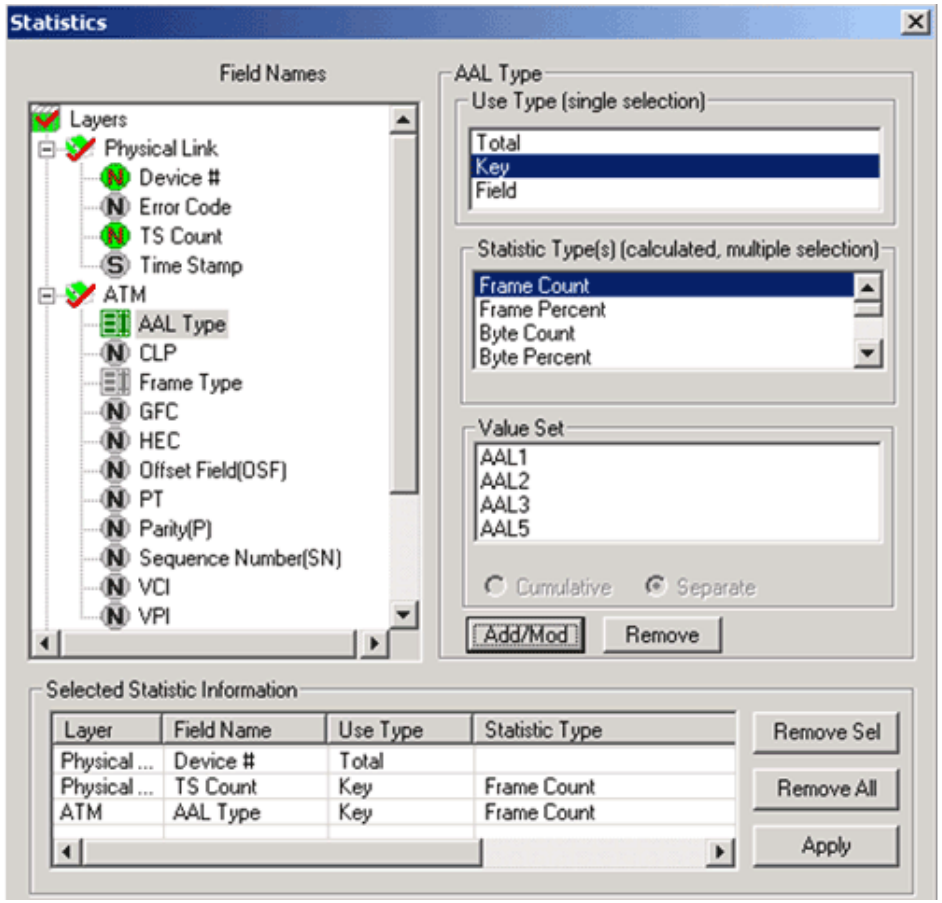
Reassembly Option in ATM Analyzers



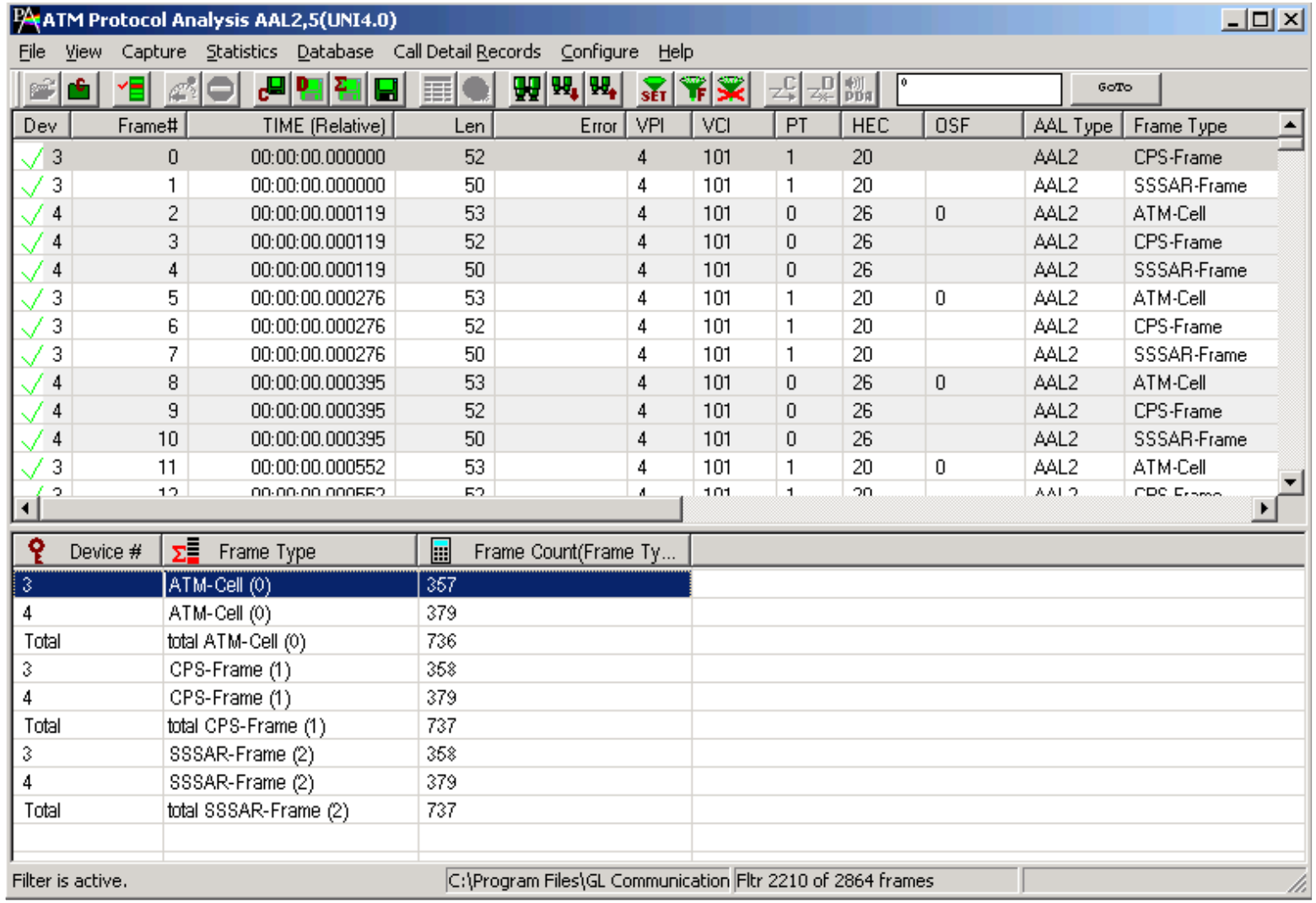
- Reassembly option is used to specify VPI /VCI value to reassemble as per the Segmentation and Reassembly rules

Statistics

- Statistics can be obtained for all frames both in real-time as well as offline mode
- Numerous statistics are obtained to study the performance and trend in the analyzer's network
- It is based on protocol fields and different parameters e.g., Use Type (Key/Total/Field), Statistic type (Frame count, Byte count, Frames/Sec) and patterns like Range List, Wild card

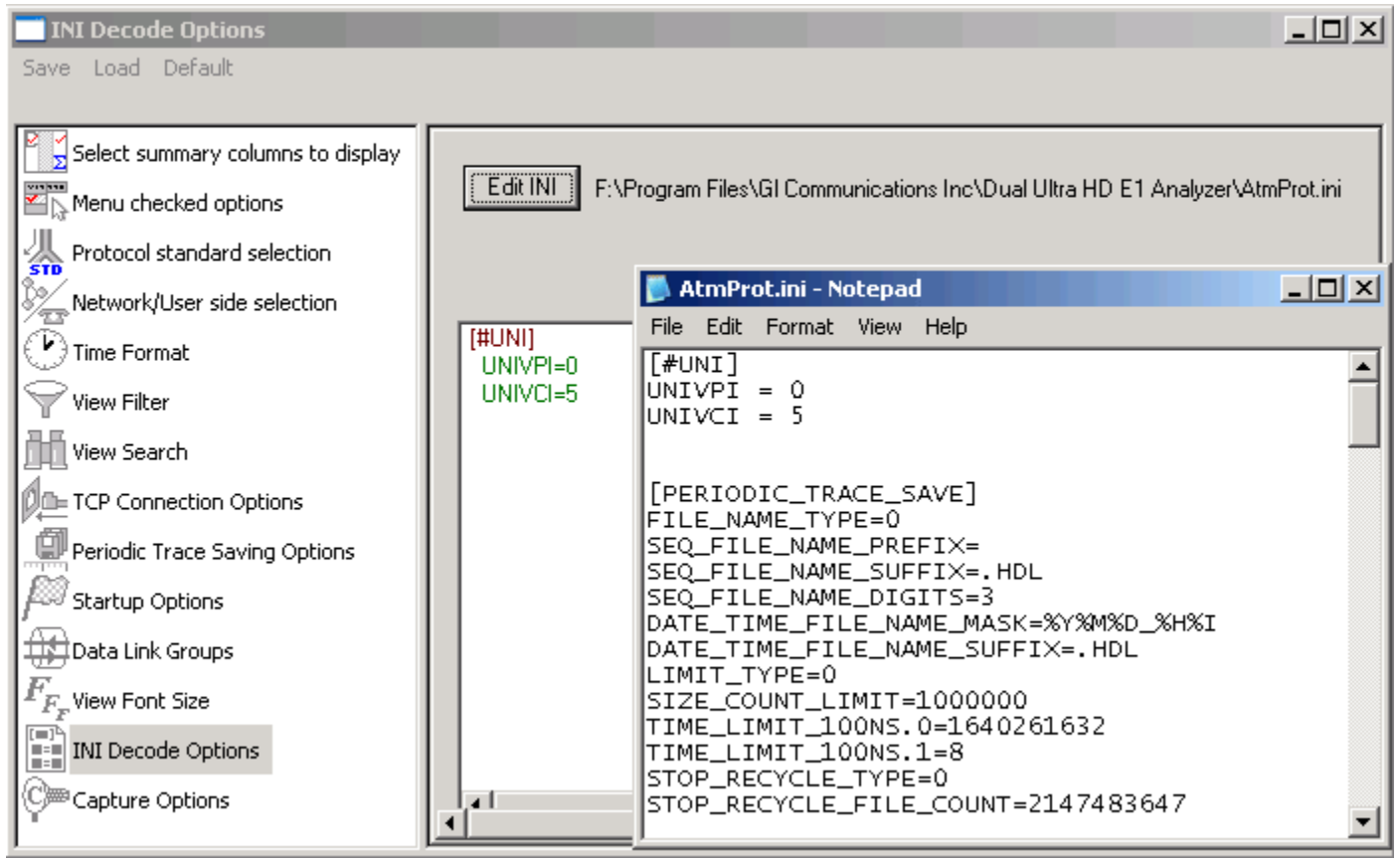


Statistics View in ATM Analyzer



GL Communications

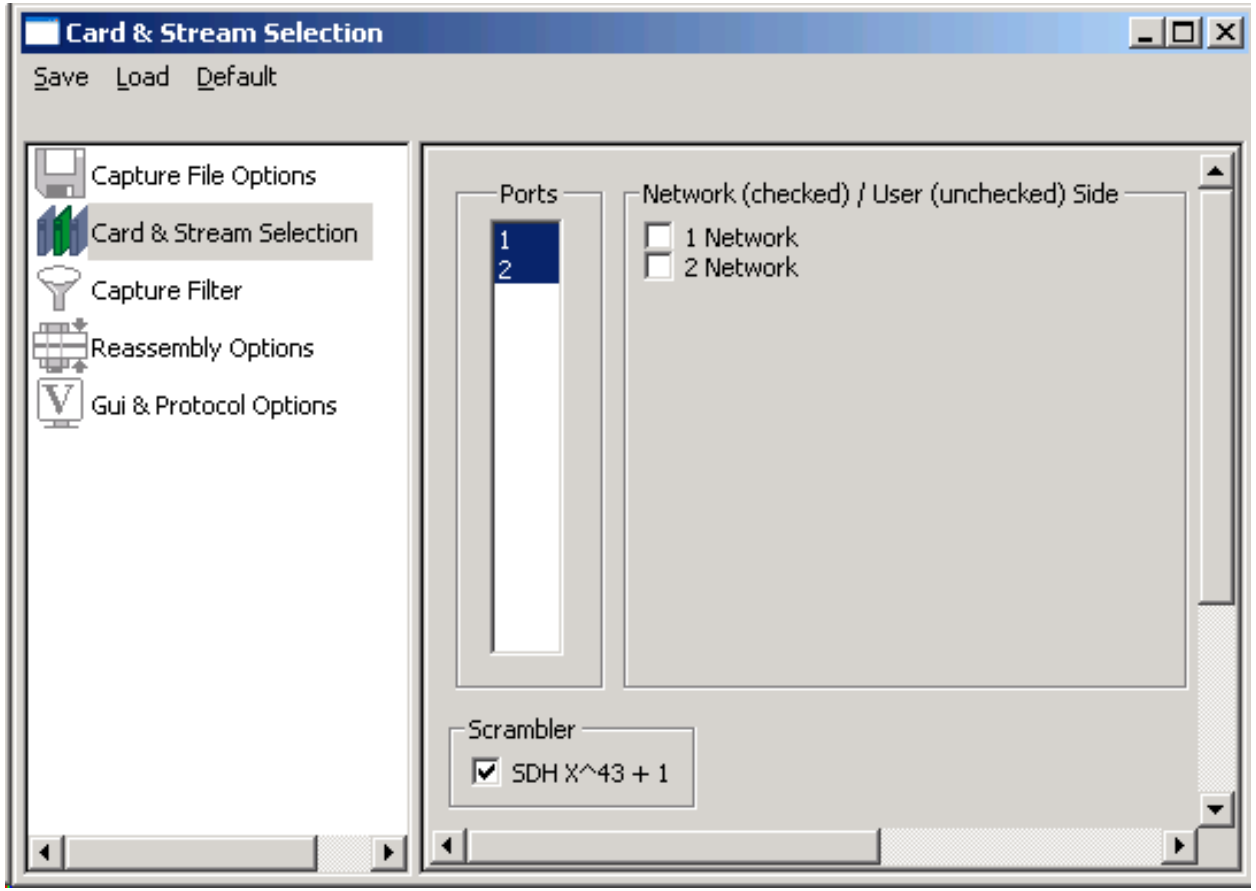
Configuring INI Decode Options



- Currently applicable to only ATM analyzer, INI configuration file enables the user to enter custom values for PVC carrying UNI signaling messages to get the proper decoding

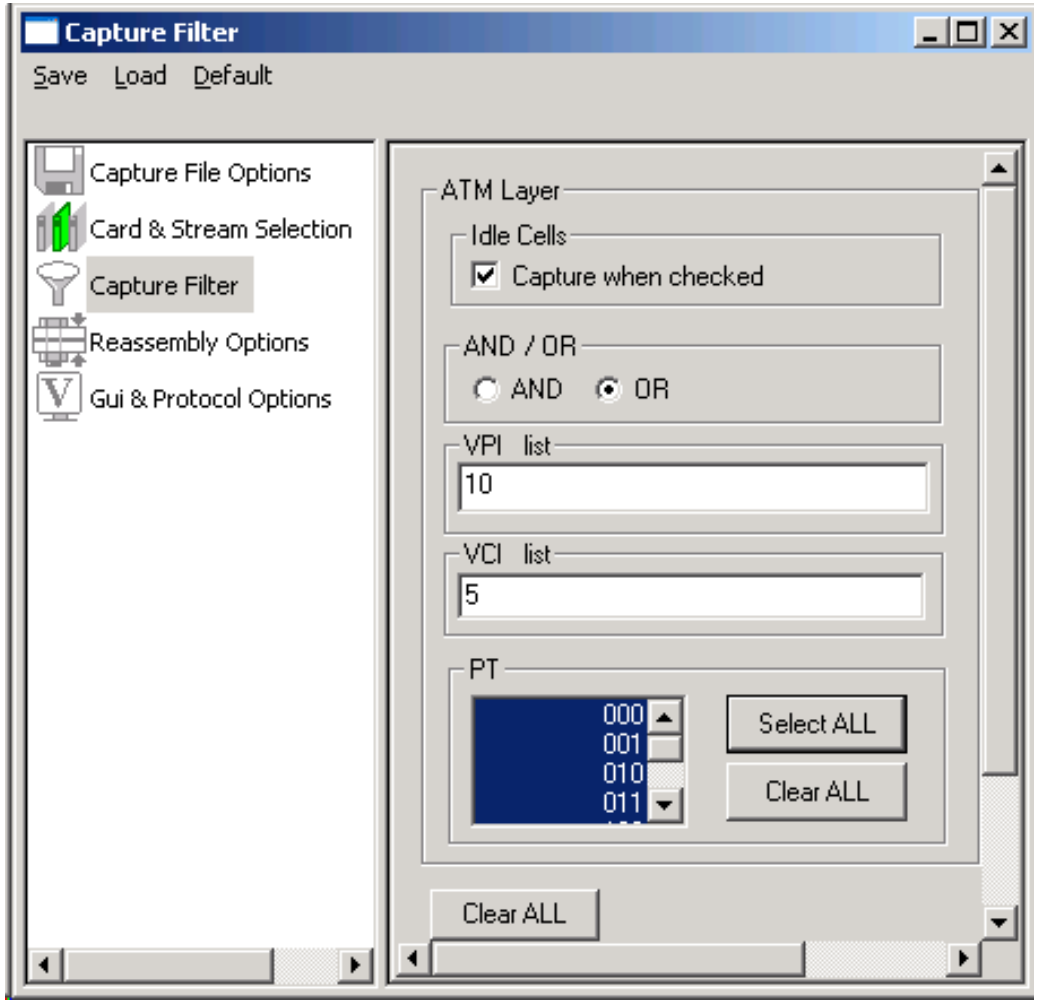
Real-time Analysis

- Captures, decodes, filters, and reassembles AAL2 and AAL5 frames in real-time, from within the ATM cells according to user defined VPI/VCI
- ATM raw data capturing requires users to specify ports, user/network side, and scrambling options
- Recorded trace file can then be analyzed offline and exported to ASCII file, or printed

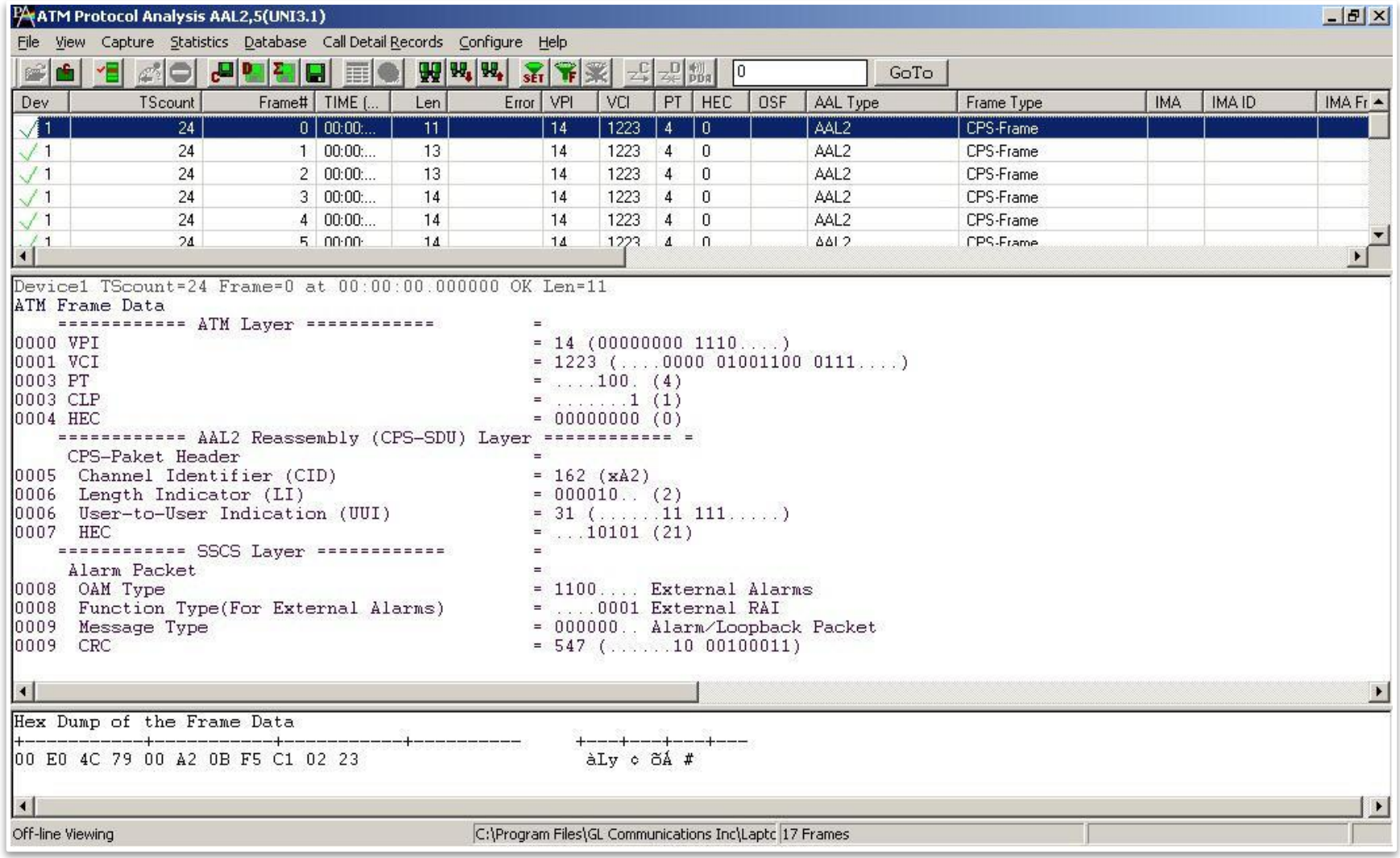


ATM Based Capture Filter

- Real-time filter for ATM based protocols allows the capture of frames with defined VPI and VCI values
- Can specify multiple values for the options

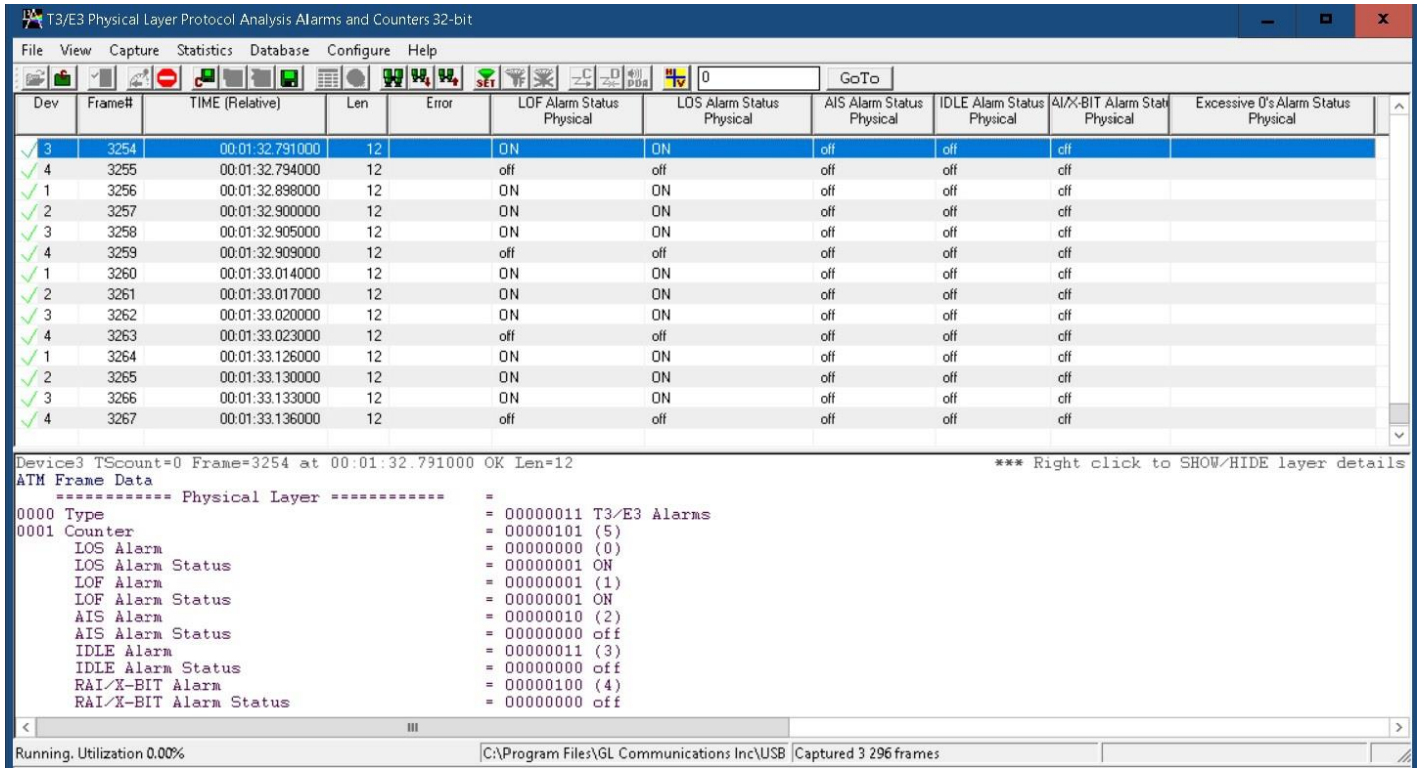


ATM Header Info - ATM SSCS Layer



Physical Layer Analyzer

- Captures LOS, LOF, AIS, IDLE, RAI/X-BIT, Excessive 0's alarms at T3 E3 level
- Captures Sync Loss, Carrier Loss, AIS, Blue, Yellow, Distance MF, Frame Error alarms at T1 E1 level
- Alarms can be captured for a specified time interval
- Advanced filtering and search based on any user selected alarms
- Displays Summary, Detail, Hex-Dump, and Statistics views

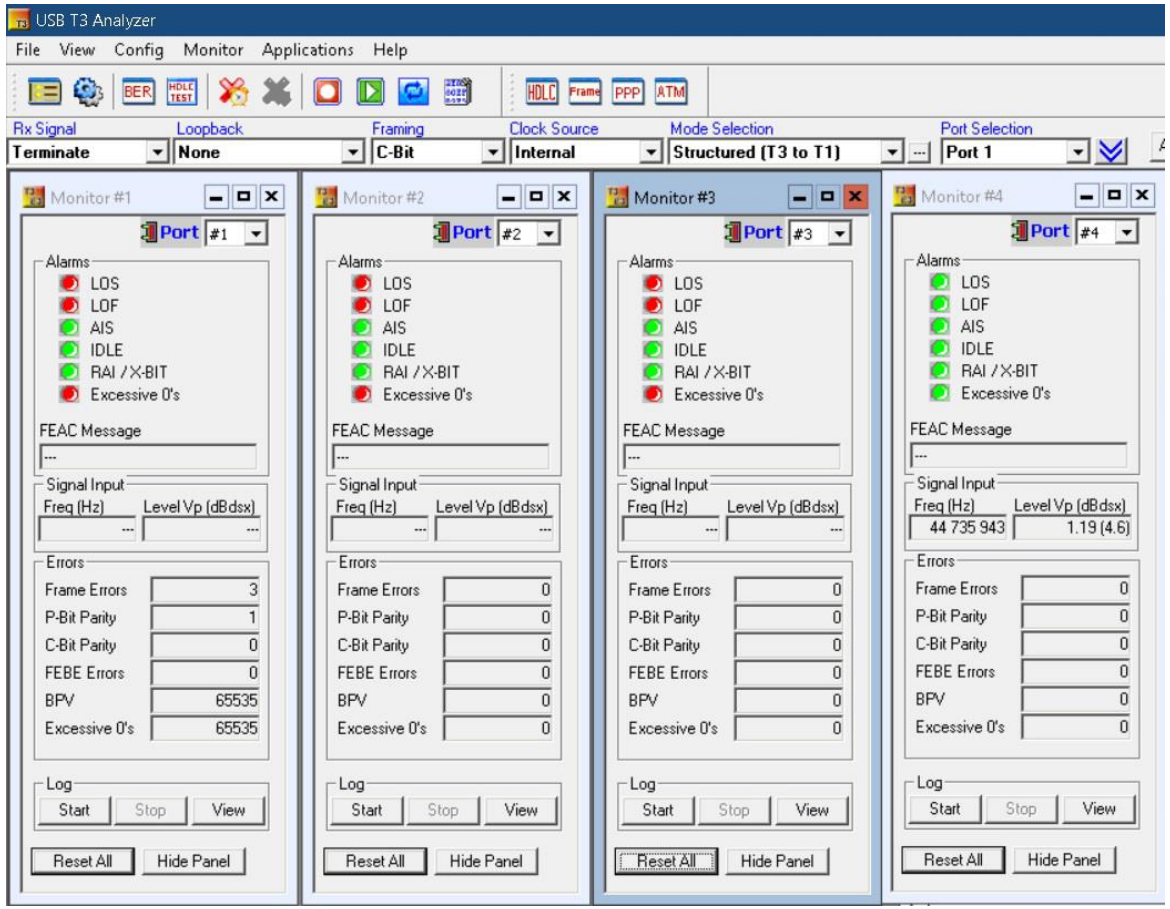


- Exports Summary and Detail View information is to an ASCII file
- Provides options to save captured alarms into an HDL file and these files can be imported offline for further analysis
- Channelized T3 E3 application can monitor Physical Layer Alarms up to 336 ports
- USB T3 E3 application can monitor Physical Layer Alarms up to 12 ports

Observing T3 Alarms

- The Monitor T3 Alarms windows are used to show T3 line status - 4 ports are shown below. Alarms will track the T3 signals states. The **Green** LED indicates No Alarm, **Red** LED indicates Alarm is present, and **Yellow** LED indicates Alarm is detected (Active) and switches to Non-active state

Monitoring T3 Alarms in USB T3 Analyzer



Thank you