
T1 E1 Analyzer

Call Capture and Analysis

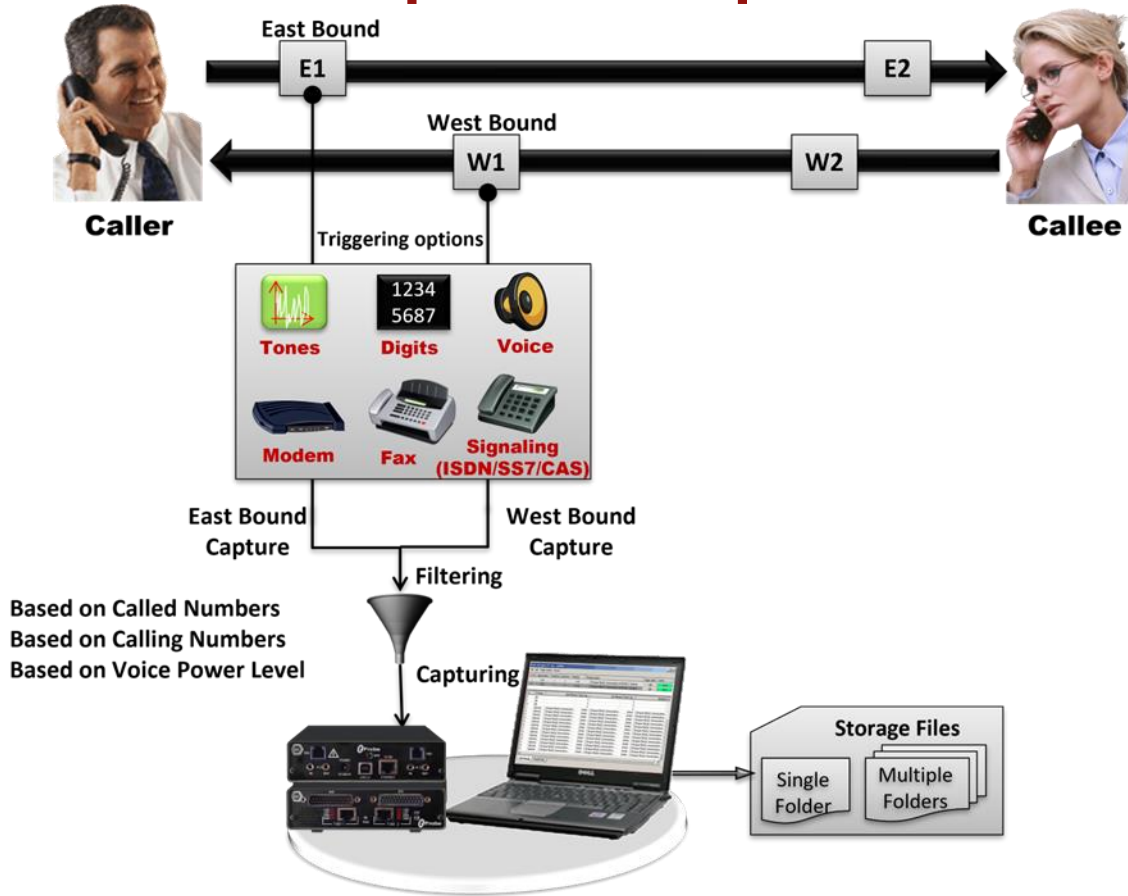


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Index

- Call Capture and Analysis Application (CCA)
- Multi Call Capture and Analysis Application
- View PCM Files (Adobe Audition / Goldwave)
- Call Data Records (CDR)
- Voice Band Analyzer (VBA)
- Analyzing CDR output using EXCEL®

Multiple Call Capture



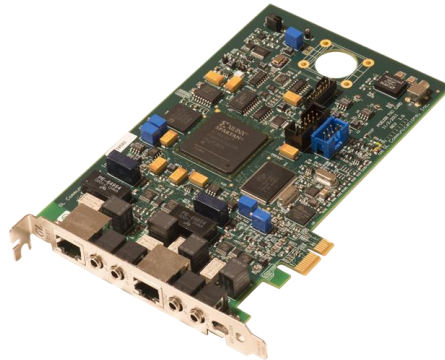
T1 E1 Hardware Platforms



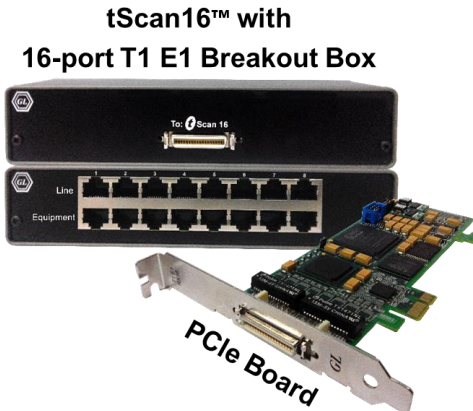
**tProbe™ - Portable USB based T1 E1 VF
FXO FXS and Serial Datacom Analyzer**



Quad / Octal T1 E1 PCIe Card



Dual T1 E1 Express (PCIe) Board

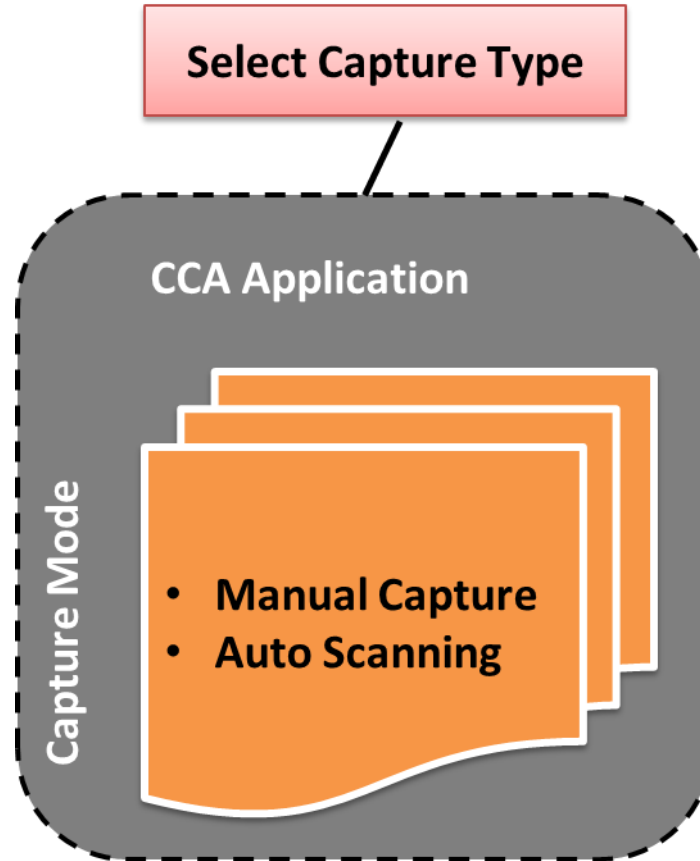


PCIe Board

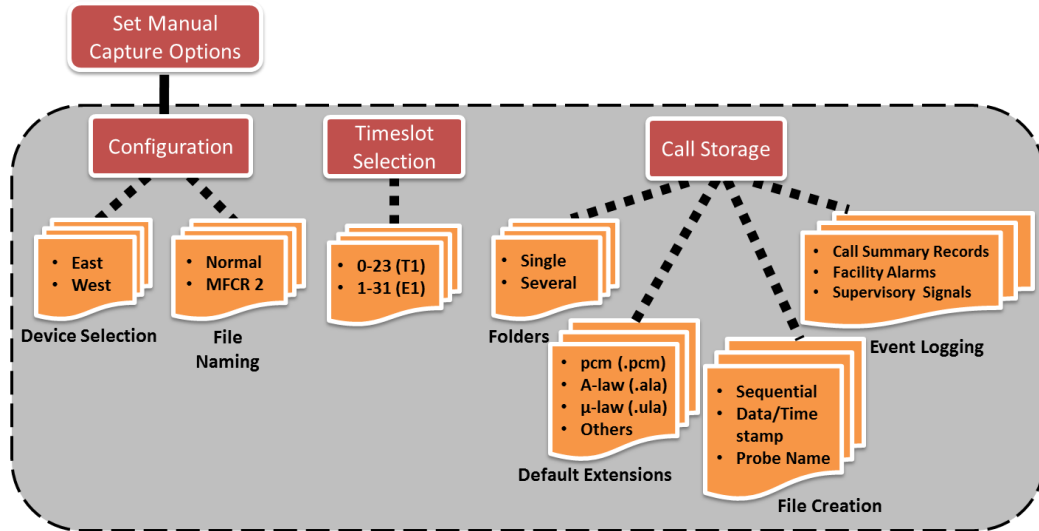
Features

- Run multiple capture instances on different T1/E1 ports from a single GUI
- Ability to capture calls using different Triggering modes ;both signaling (CAS -R1, wink start, MFC-R2), message based (ISDN, SS7) and traffic (voice, fax, modem, tones, digits) activated triggers supported
- Each capture instance is identified by a unique probe name, and can have different trigger options, such as the timeslot selection, output directory, record time, and so on
- Capability of capturing on both directions simultaneously or from a single direction, East or West side
- Supports capturing of various types of traffic including signaling bits, voice-band data, and signaling protocol data (e.g. DTMF or MF digits)
- Different encoding formats supported (u-law, A-law, PCM)
- Provides an option of stamping the captured files sequentially or with date/time
- "Call filtering" feature is used to capture calls with a user-defined called or calling numbers rather than all calls in case of ISDN and SS7 calls

Capture Modes



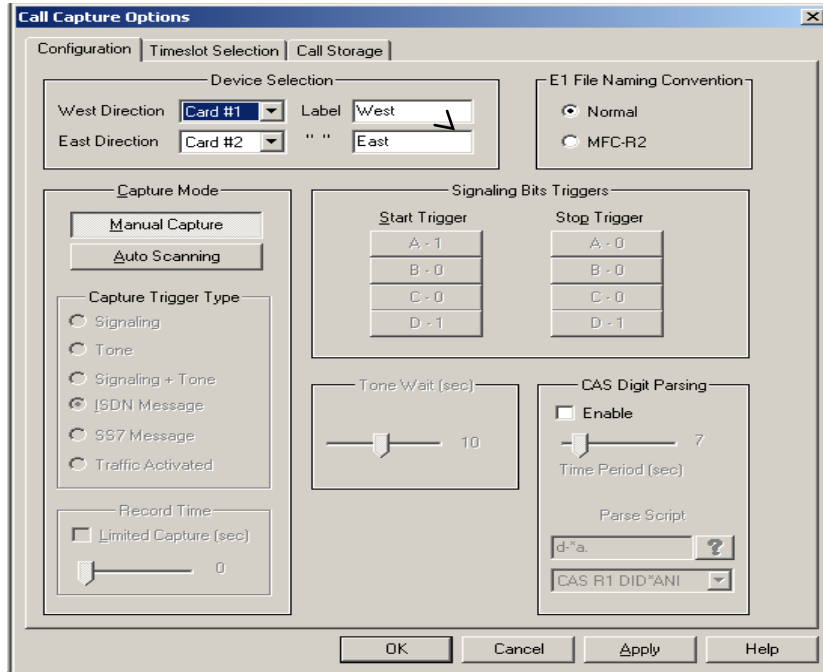
Manual Capture Mode



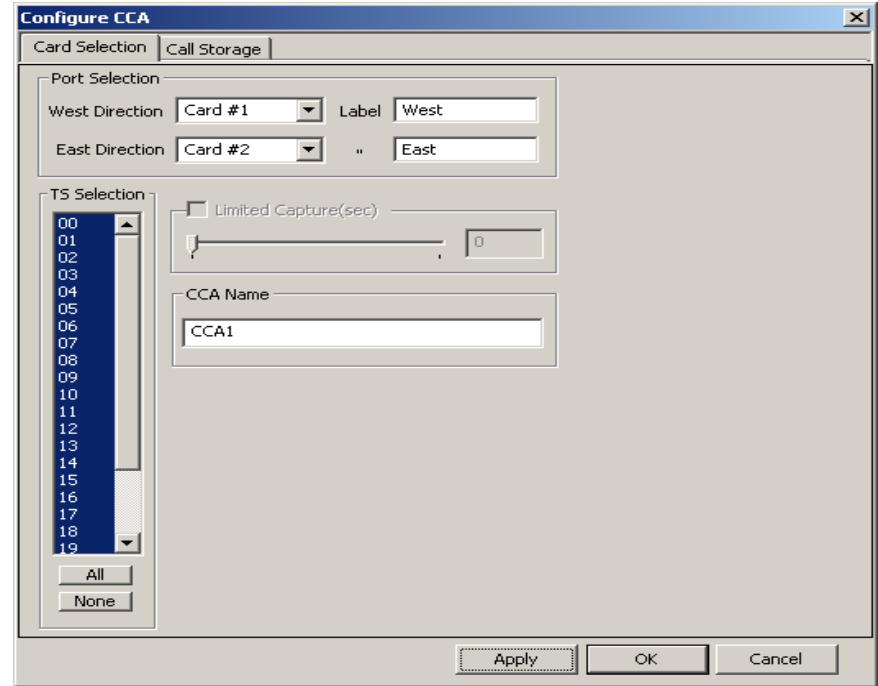
- Permits capture manually, irrespective of signaling bits or tone definitions
- File Naming Convention - Two different types of file naming conventions are provided based on the capture type for signaling - Normal, and MFC-R2
- CAS Digit Parsing - Used for CAS R1 protocol calls to capture called or calling numbers and store in the Call Status Record (*.csr) files

Manual Mode Configuration

Call Capture and Analysis



Multiple Call Capture and Analysis



Manual Call Capture and Analysis

Call Capture and Analysis

The screenshot shows the 'Multiple Call Capture - UsbE1 Card #1 and #2' window. It includes sections for 'File Capture Settings' with fields for 'Capture Directory' (D:\CapturedFiles\ManualCall1210091146), 'Capture File #1' (Dec10w01.000), 'Capture File #2' (Dec10E01.000), and 'Signaling File' (Dec1001.000.000). A 'Bytes Captured' field shows 17024. There is a 'TS Display' dropdown set to 1 and a 'STOP' button. At the bottom, a 'Timeslot Activity' grid shows a sequence of timeslots from 01 to 29, with the first 13 slots highlighted in green.

Multiple Call Capture and Analysis

The screenshot shows the 'Multi Call Capture for Manual - Untitled' window. It features a menu bar (File, Edit, Trigger Options, Process) and a table of captured calls. Below the table is a 'Timeslots Map' section with tabs for 'CCA Details' and 'Timeslots Map'.

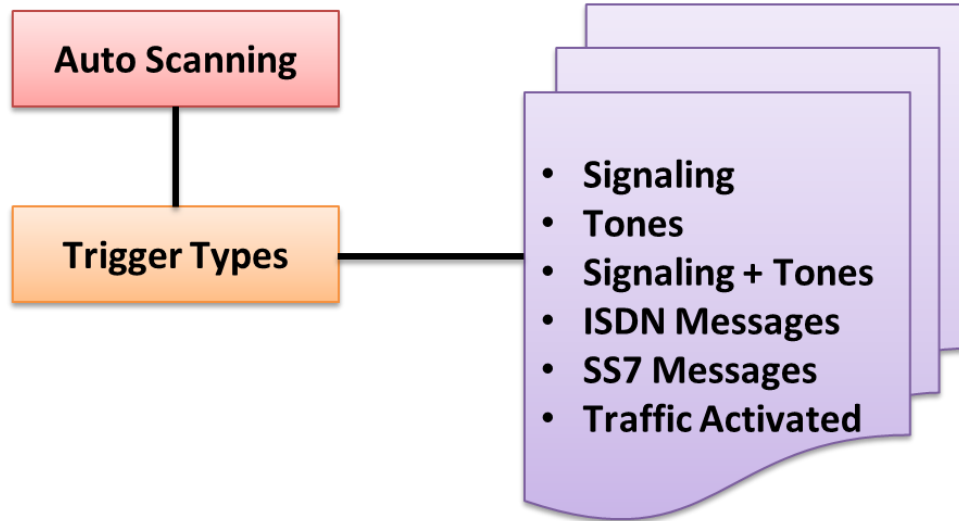
CC No	Capture Name	West(Port)	East(Port)	Timeslots	Storage Location	Trigger Option	Action
1	CCA1	1	2	0-23	C:\Program Files\GL Communications Inc\Dual Ultra HD T1 Analyzer	Edit	Abort
2	CCA2	1	2	0-23	C:\Program Files\GL Communications Inc\Dual Ultra HD T1 Analyzer	Edit	Abort
3	CCA3	1	2	0-23	C:\Program Files\GL Communications Inc\Dual Ultra HD T1 Analyzer	Edit	Abort
4	CCA4	1	2	0-23	C:\Program Files\GL Communications Inc\Dual Ultra HD T1 Analyzer	Edit	Abort

TS	TS Status	West Filename	Bytes Captured(West)	East Filename	Bytes Captured(East)
0	Capturing	C:\Program Files\GL Communications In...	742224	C:\Program Files\GL Communications Inc\Dual Ultra ...	742224
1	Capturing	C:\Program Files\GL Communications In...	742224	C:\Program Files\GL Communications Inc\Dual Ultra ...	742224
2	Capturing	C:\Program Files\GL Communications In...	742224	C:\Program Files\GL Communications Inc\Dual Ultra ...	742224
3	Capturing	C:\Program Files\GL Communications In...	742224	C:\Program Files\GL Communications Inc\Dual Ultra ...	742224
4	Capturing	C:\Program Files\GL Communications In...	742224	C:\Program Files\GL Communications Inc\Dual Ultra ...	742224
5	Capturing	C:\Program Files\GL Communications In...	742224	C:\Program Files\GL Communications Inc\Dual Ultra ...	742224

Manual Captured PCM Files

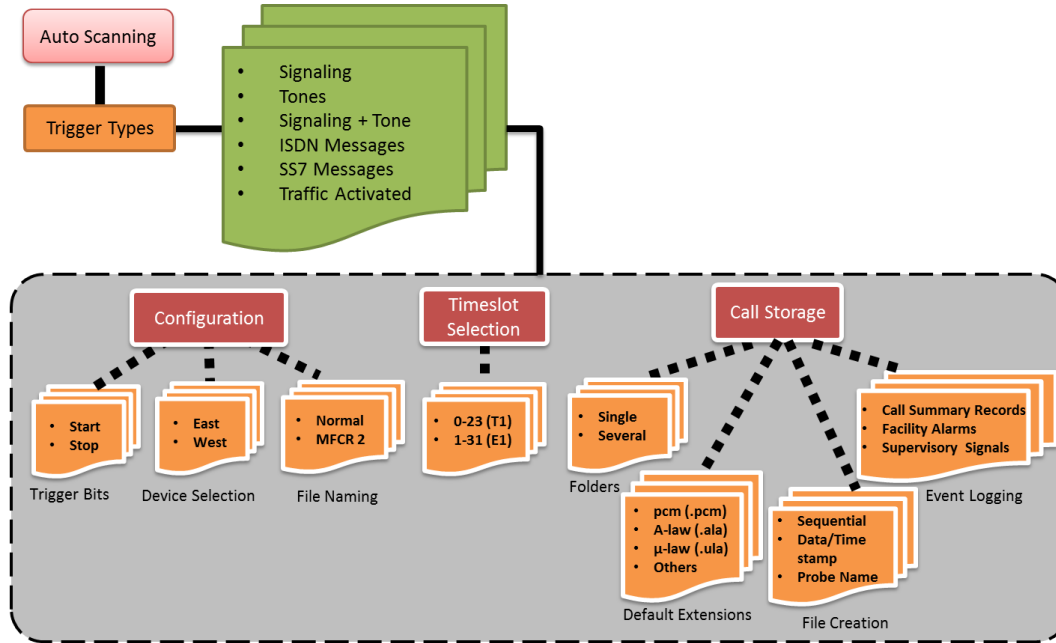


Auto Capture Mode



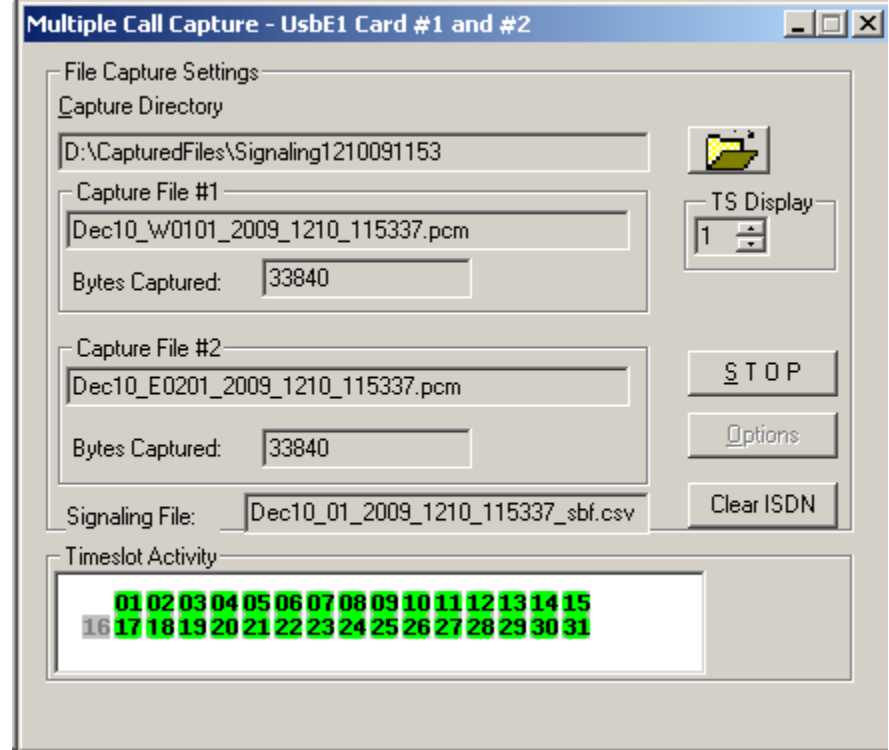
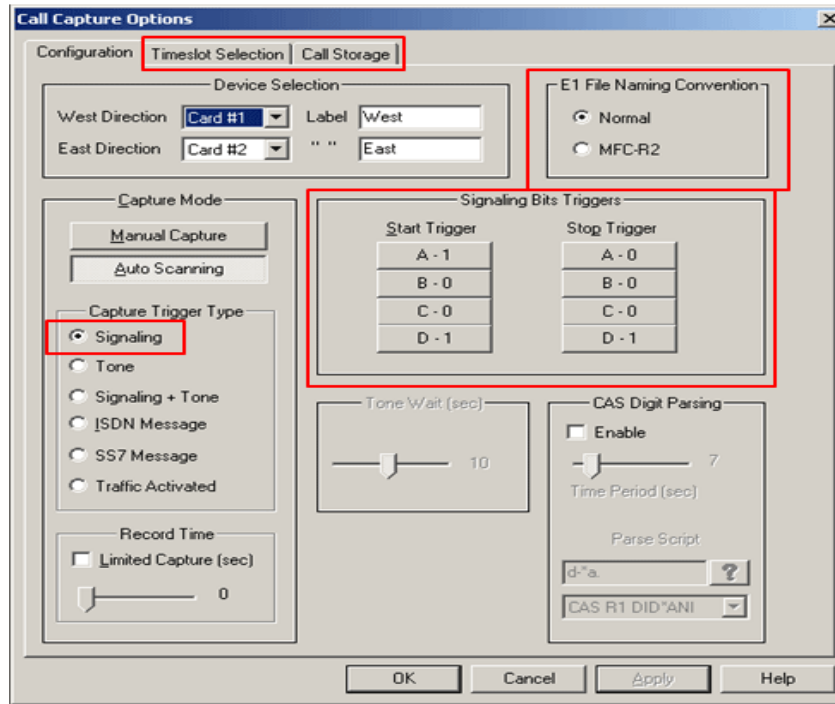
- Triggers capturing based on signaling, tones, signaling+tones, ISDN messages, SS7 messages, and Traffic activated (voice, busy tone, ring back tone, DTMF, any traffic etc.)
- Record Time - limit the duration of the capture to a certain length by specifying the time interval (in seconds)

Signaling Trigger Type

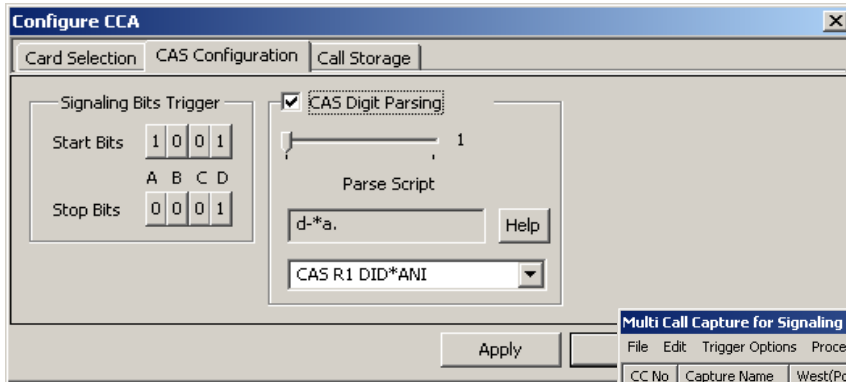


- **Signaling** – This type of triggering requires user-defined start and stop ABCD signaling bits to initiate and terminate capturing of calls on chosen timeslots

Signaling Triggered Capture in CCA (Contd.)



Signaling Triggered Capture in Multi CCA



Multi Call Capture for Signaling - Untitled

File Edit Trigger Options Process

CC No	Capture Name	West(Port)	East(Port)	Timeslots	Storage Location	Trigger Option	Action
1	CCA1	1	2	0-23	C:\Program Files\GL Communications Inc\Universal T1 Analyzer	Edit	Abort

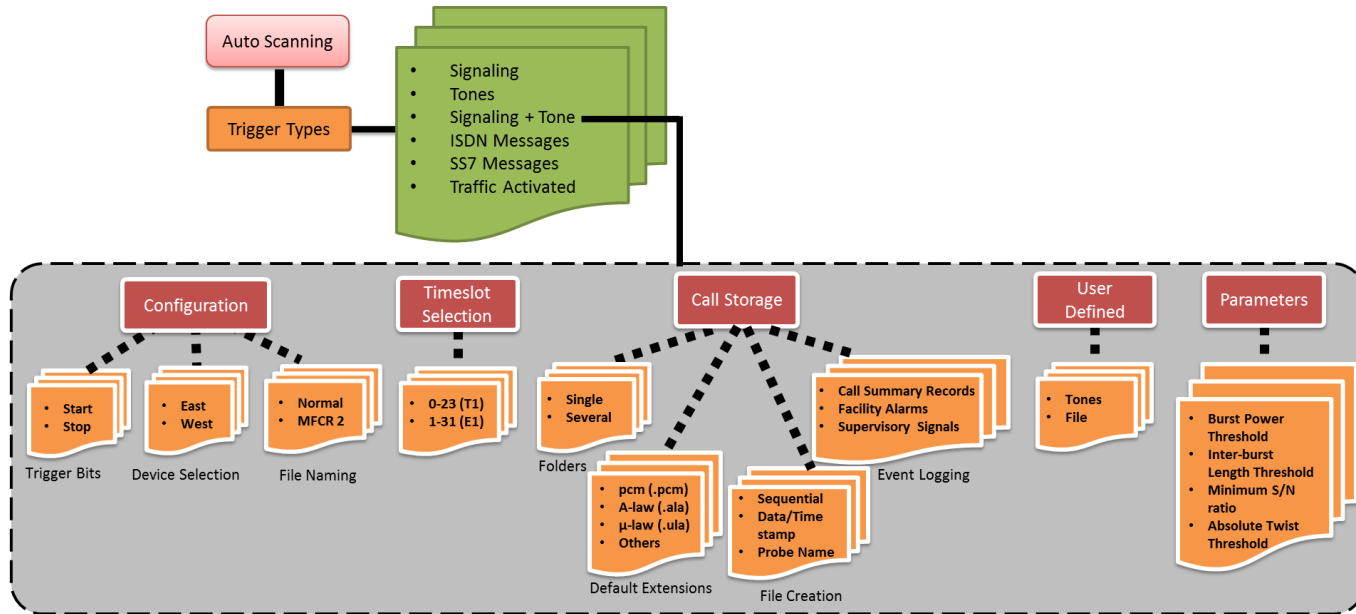
TS	TS Status	West Filename	Bytes Cap...	East Filename	Bytes Cap...	Signaling Fil
0	Capturing	C:\Program Files\GL Communications...	50976	C:\Program Files\GL Communications...	50976	C:\Program Files\GL Communications...
1	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
2	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
3	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
4	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
5	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
6	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
7	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
8	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
9	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
10	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
11	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
12	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
13	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
14	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...
15	Capturing	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...	50520	C:\Program Files\GL Communications...

CCA Details Timeslots Map

Signaling Trigger

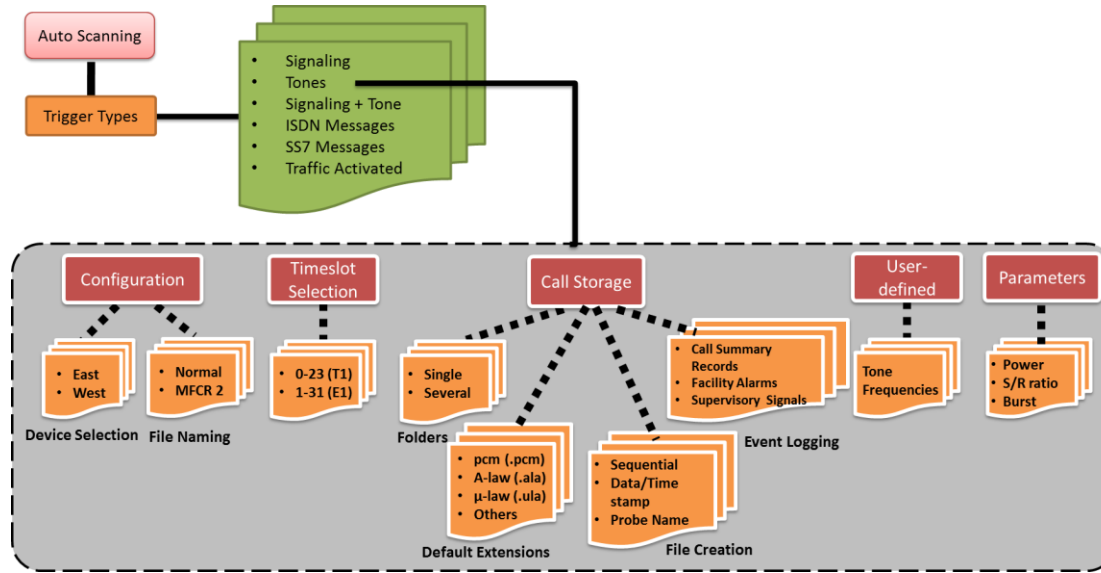


Signaling+Tone Trigger Type



- **Signaling + Tone** - This type of triggering requires a combination of user-defined Start/Stop signaling bits followed by a user-defined mono or dual tone within a specified timeout period

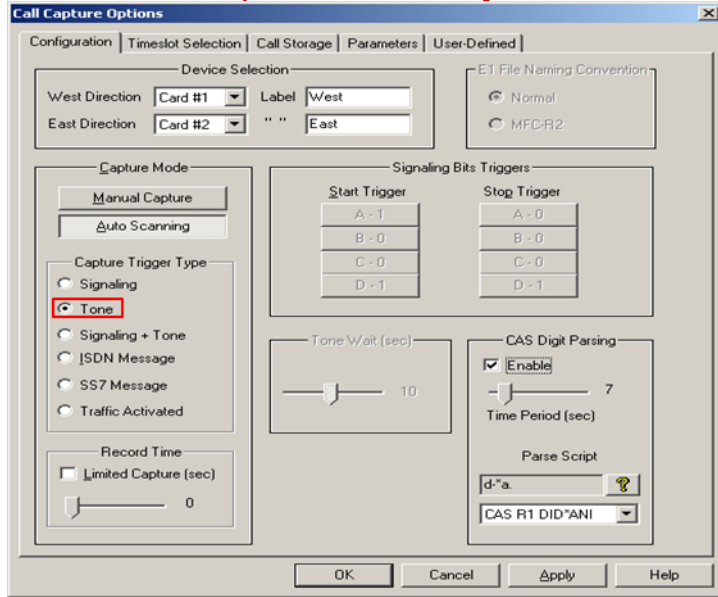
Tone Triggered Capture



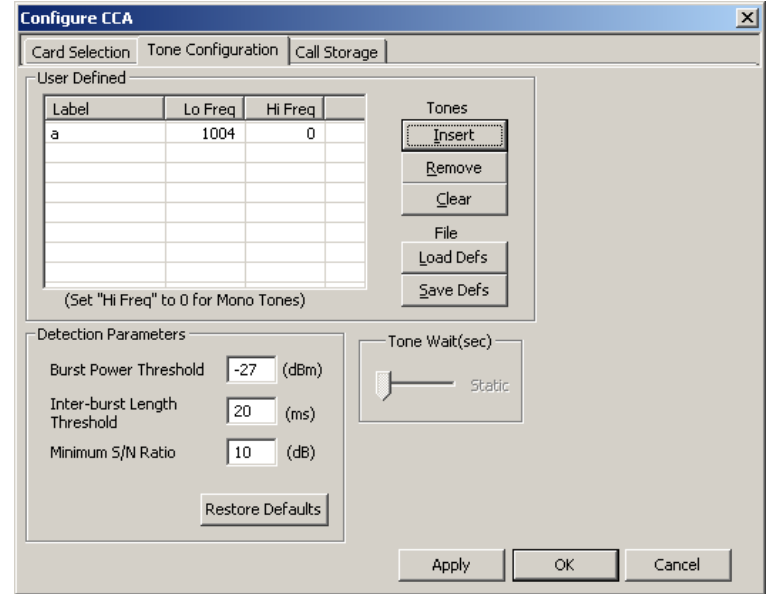
- **Tone** - This type of triggering requires user-defined mono or dual tones to initiate and terminate capturing of calls on chosen timeslots

Tone Triggered Capture

Call Capture and Analysis



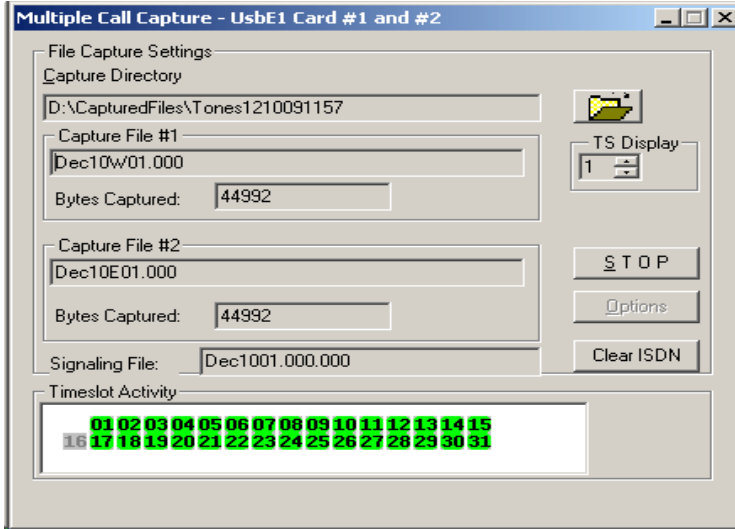
Multiple Call Capture and Analysis



- Tones of specified frequency defined mono or dual tones can trigger the capturing of a call CCA - useful for fax calls
- Signaling + Tone - a combination of user-defined Start/Stop signaling bits followed by a mono or dual tone (user-defined) within a specified timeout period - useful for capturing fax calls

Tone Triggered Capture

Call Capture and Analysis

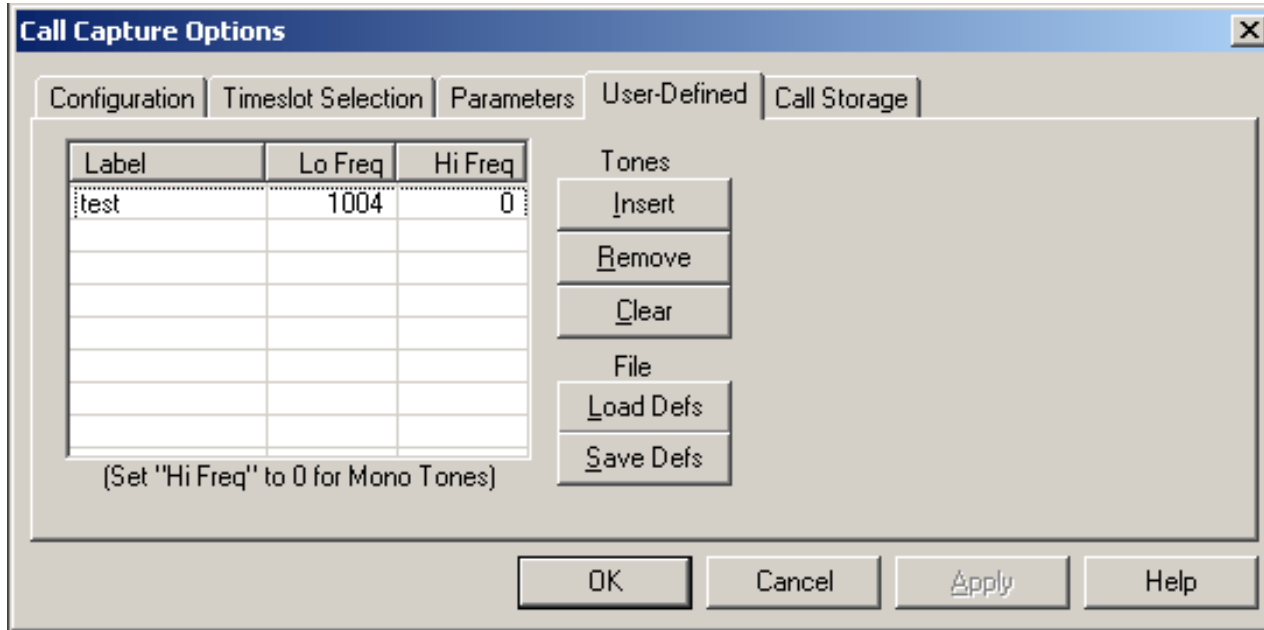


Multiple Call Capture and Analysis

CC No	Capture Name	West (Port)	East (Port)	Timeslots	Storage Location	Trigger Option	Action
1	CCA1	1	2	0-10	C:\Program Files\GL Communications Inc\Probe T1 Analyzer	Edit	Abort
2	CCA2	1	2	11-23	C:\Program Files\GL Communications Inc\Probe T1 Analyzer	Edit	Abort

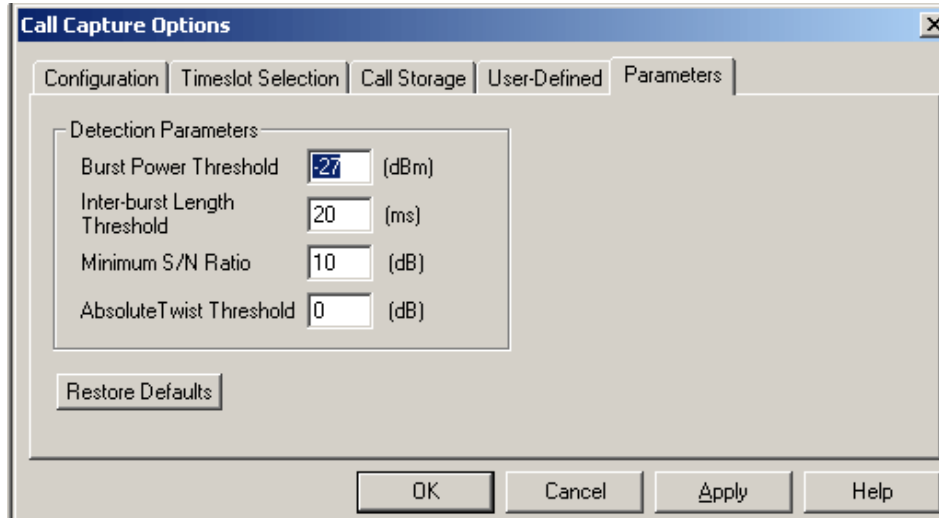
TS	TS Status	West Filename	Bytes Cap...	East Filename	Bytes Cap...	Signaling Fil
0	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
1	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
2	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
3	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
4	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
5	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
6	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
7	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
8	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
9	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
10	Capturing	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...	81072	C:\Program Files\GL Communications...
11	Idle	-	0	-	0	-
12	Idle	-	0	-	0	-
13	Idle	-	0	-	0	-
14	Idle	-	0	-	0	-
15	Idle	-	0	-	0	-
--	--	-	0	-	0	-

Define Tones



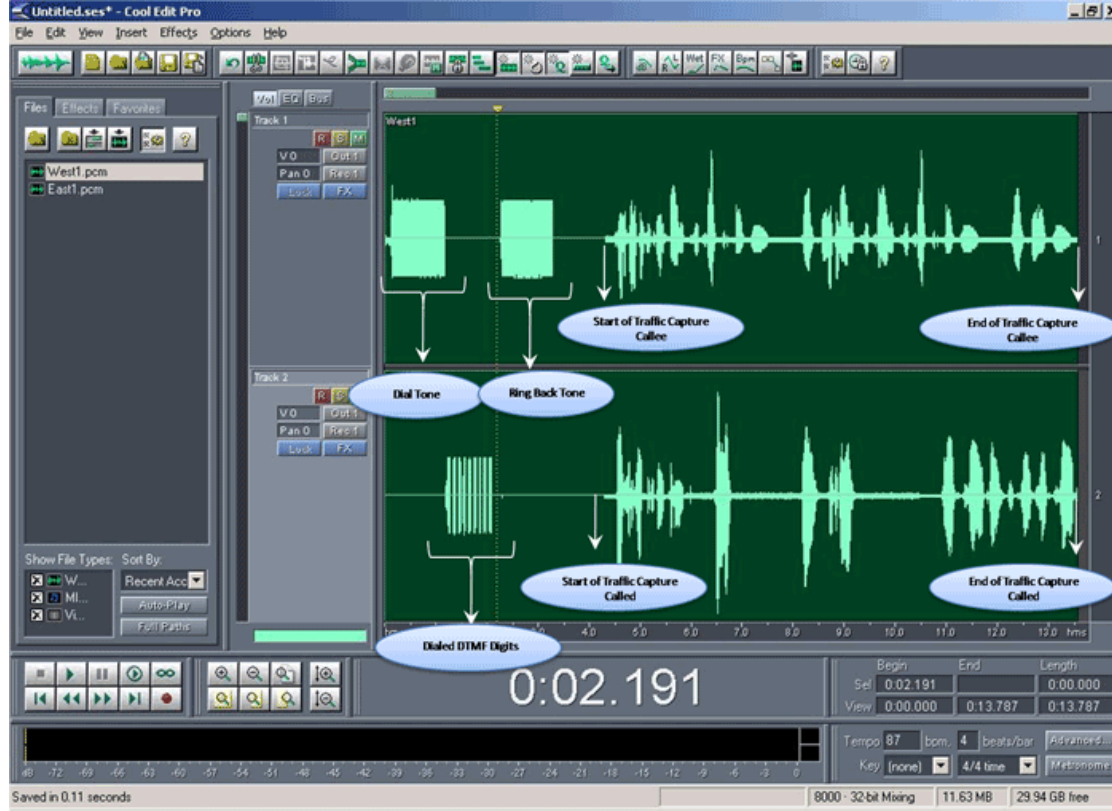
- Allows users to define the type of tone(s) that CCA application should detect. The application can detect single and/or dual tones

Parameters

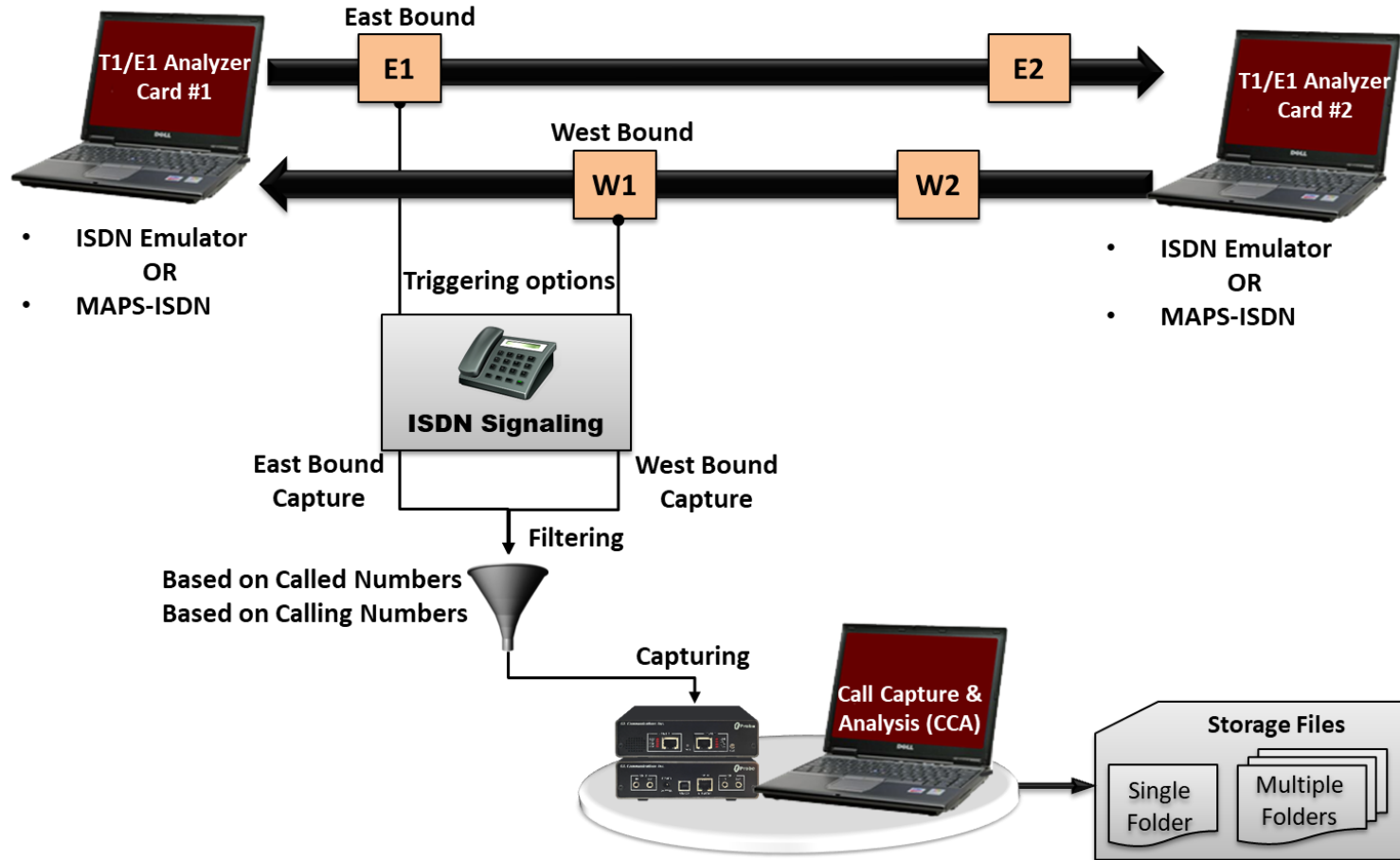


- Sets various parameters for the defined tones such as threshold power above which the tone is classified as a burst segment, minimum duration for an inter-burst so that the preceding and following bursts will be treated separately, signal to noise ratio to treat signal and noise differently, and absolute twist threshold values

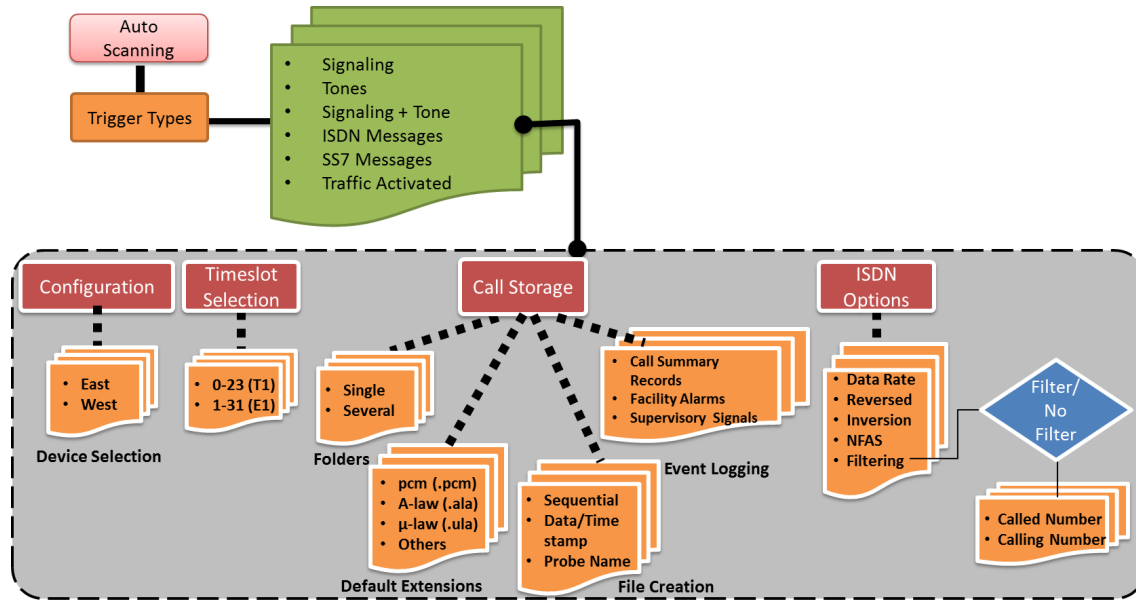
Tone Trigger



ISDN Call Triggered Capture



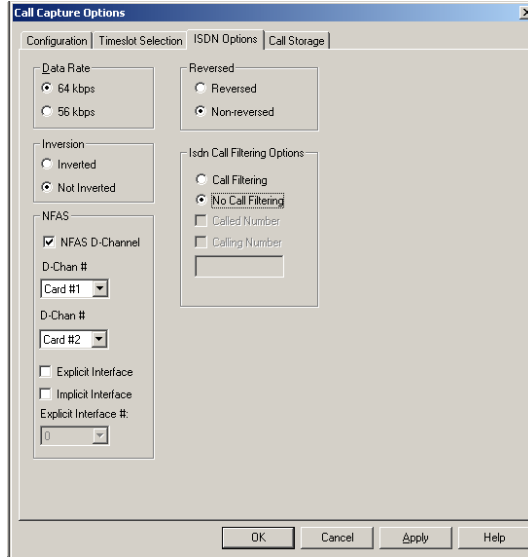
ISDN Call Triggered Capture (Contd.)



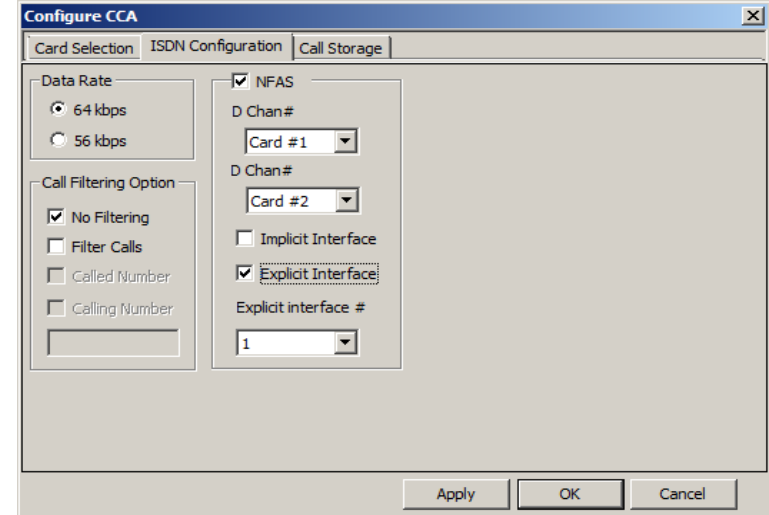
- **ISDN Message** – In this type, CCA gets triggered when any ISDN calls are placed. Call filtering with user-defined called and calling numbers can be filtered out apart from the normal working of capturing all the calls. During call capture, the following parameters are displayed: ISDN message types, CRV, Time slot, card number, called and calling numbers

ISDN Call Capture and Analysis

Call Capture and Analysis



Multiple Call Capture and Analysis



- **NFAS D-Channel** - enables NFAS feature during ISDN call capturing on the trunk that contains the D-Channel or the signaling
- **Filtering** – capture ISDN messages with the called/calling number that matches the filtering criteria

ISDN Call Capture and Analysis (Contd.)

Call Capture and Analysis

The screenshot shows the 'Multiple Call Capture - UsbE1 Card #1 and #2' window. It features a 'File Capture Settings' section with a 'Capture Directory' set to 'C:\Program Files\GL Communications Inc\Usb E1 Analyzer\'. There are two capture file entries: 'Card #1 - West' with file 'Jan25_W0101_0007.pcm' and 'Card #2 - East' with file 'Jan25_E0201_0007.pcm'. Both show 'Bytes Captured: 0'. A 'Signaling File' is set to 'Jan25_01_0007_sbf.csv'. Below this is a 'Timeslot Activity' section showing '01 02 03 04'. At the bottom, an 'ISDN Stats' table shows error counts for Card #1 and Card #2.

Error Type	Card #1	Card #2
Underruns	0	0
Ok Frames	2	2
Frame Errors	0	0
CRC Errors	0	0

Multiple Call Capture and Analysis

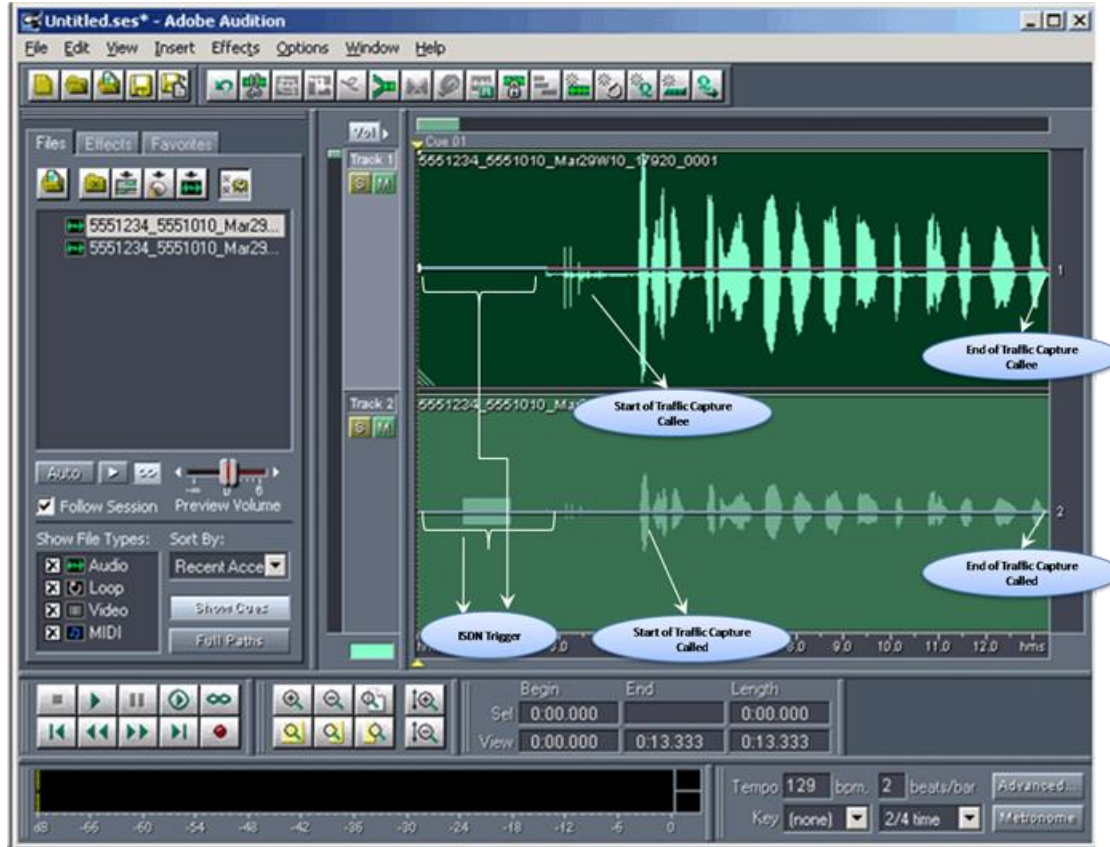
The screenshot shows the 'Multi Call Capture for ISDN Signaling - Untitled' window. It displays a table of call capture data with columns for CC No, Capture Name, West(Port), East(Port), Timeslots, Storage Location, Trigger Option, and Action. Below this is a table of ISDN messages with columns for ISDN Message, Call Reference, ChannelNumber, Device Number, Called Number, Calling Number, and Cause Value. At the bottom, an 'Error Type' table shows statistics for the First Card and Second Card.

CC No	Capture Name	West(Port)	East(Port)	Timeslots	Storage Location	Trigger Option	Action
1	CCA1	1	2	0-10	C:\Program Files\GL Communications Inc\Probe T1 Analyzer	Edit	Abort
2	CCA2	1	2	11-23	C:\Program Files\GL Communications Inc\Probe T1 Analyzer	Edit	Abort

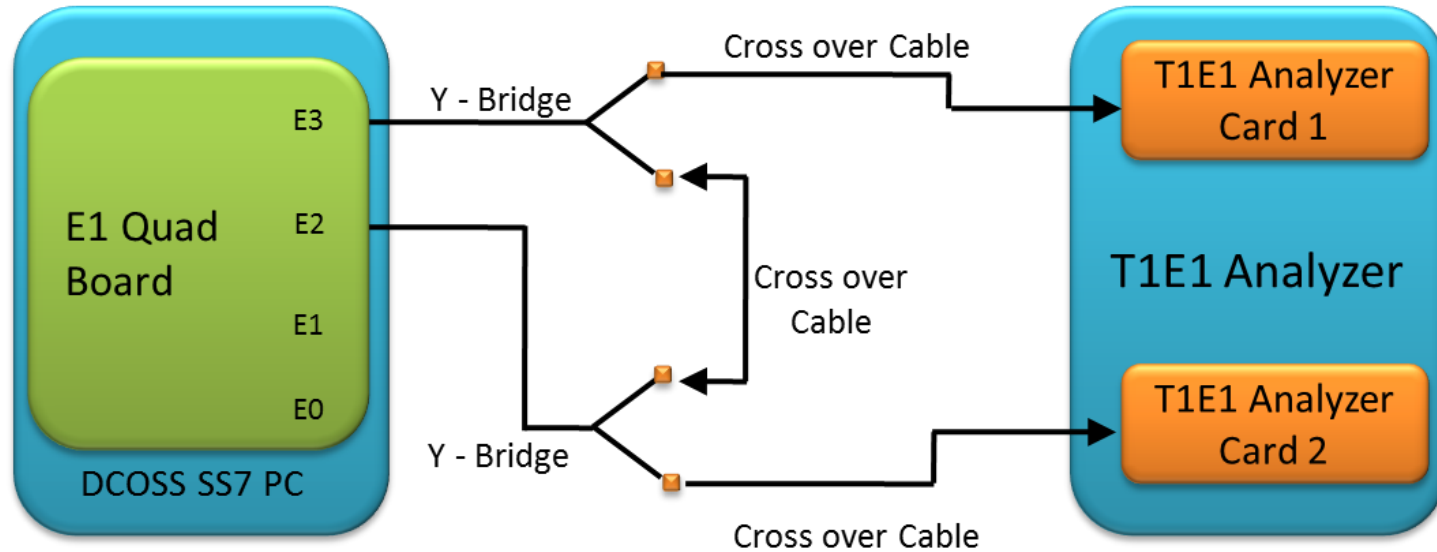
ISDN Message	Call Reference	ChannelNumber	Device Number	Called Number	Calling Number	Cause Value
SETUP	24	0	2	554000	555000	
SETUP	25	1	2	554001	555001	
SETUP	26	2	2	554002	555002	
SETUP	27	3	2	554003	555003	
SETUP	28	4	2	554004	555004	
SETUP	29	5	2	554005	555005	
SETUP	30	6	2	554006	555006	
CALL_PROC	24		1			
ALERTING	24		1			
CONNECT	24		1			

Error Type	First Card	Second Card
Underruns	0	0
Ok Frames	167	136
Frame Errors	0	0
CRC Errors	0	0

ISDN Call Triggered Analysis

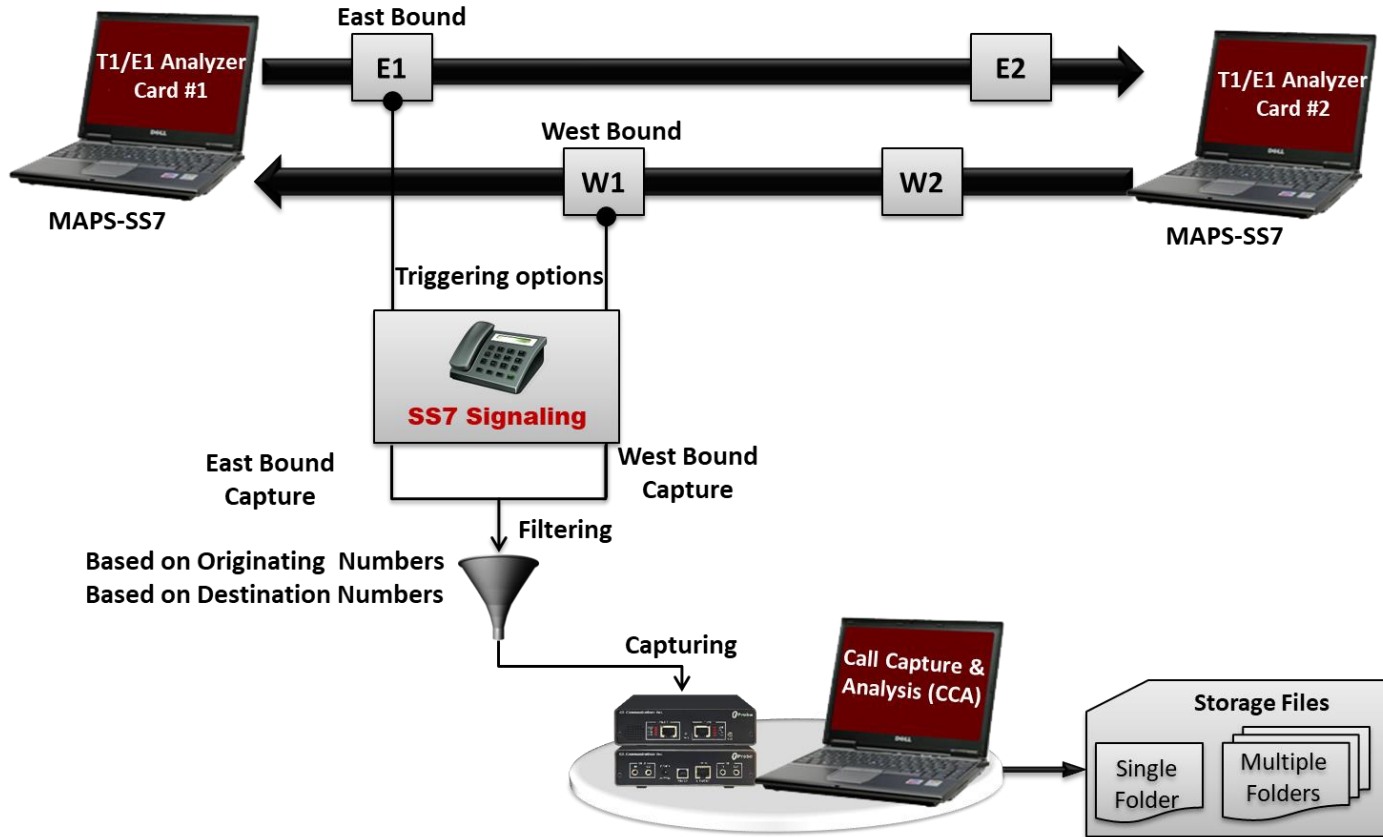


SS7 Call Triggers

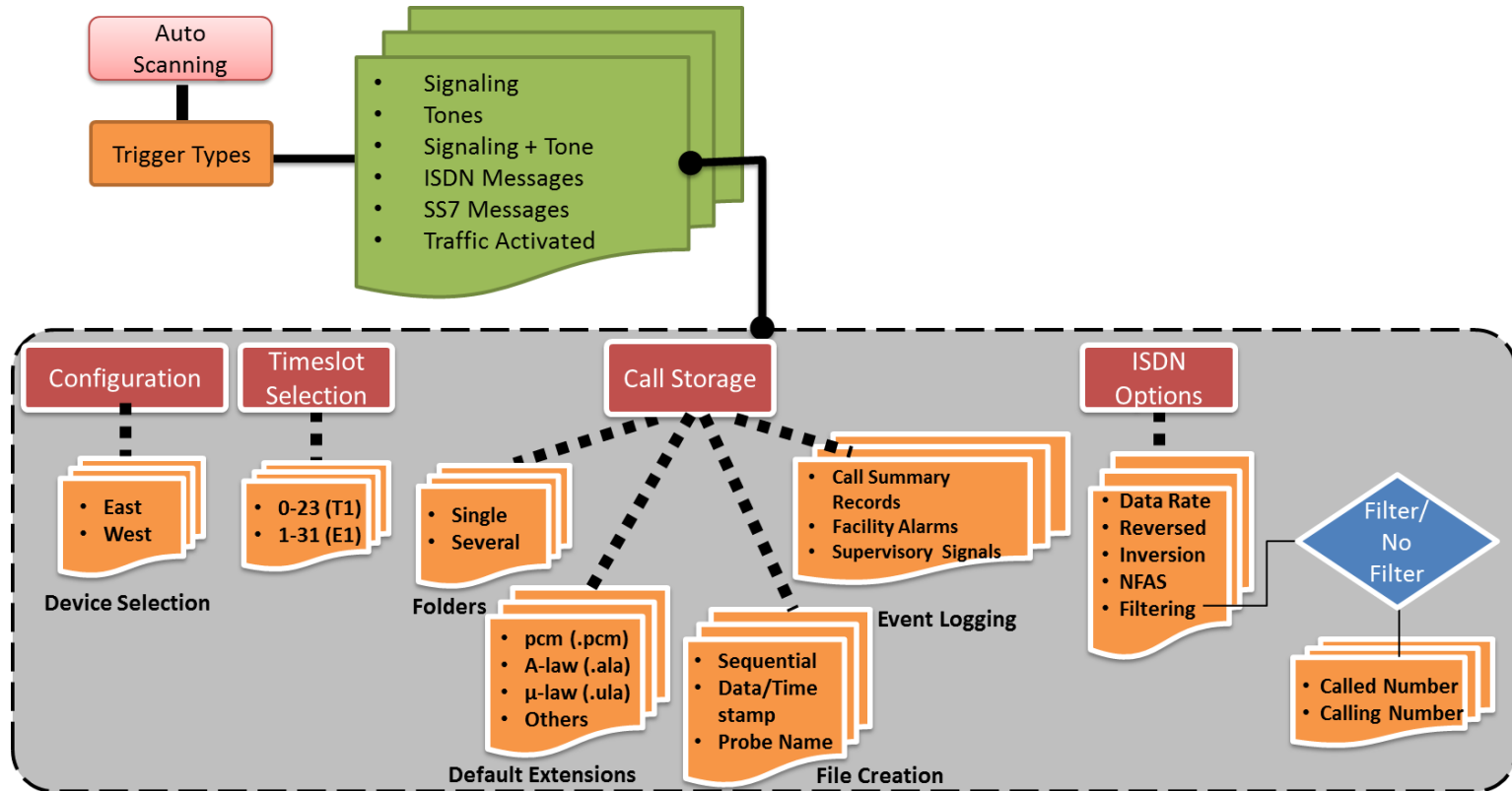


- SS7 voice calls are kept in CIC groups. When an SS7 call is detected, an Origination Point Code (OPC), a Destination Point Code (DPC), and CIC # are retrieved. If the comparison holds good capture task is performed, otherwise the call is discarded

SS7 Call Triggered Capture



SS7 Call Triggered Capture



SS7 Call Triggered Capture

- **Call Filtering:** To capture SS7 messages with the called/calling number that matches the filtering definition
- **Signaling Selection:** Two sources of signaling (primary and secondary) are used to detect the incoming calls on the signaling timeslot
- **CIC (Circuit Identification Codes) Group:** SS7 voice calls are in CIC groups and when a SS7 call is detected, an Origination Point Code (OPC), a Destination Point Code (DPC), and a CIC # is retrieved

SS7 Call Triggered Capture

Call Capture and Analysis

The screenshot shows the 'Call Capture Options' dialog box with the 'Ss7 Options' tab selected. The 'Data Rate' is set to 64 kbps. Under 'Ss7 Call Filtering', 'No Call Filtering' is selected. The 'Signaling Selection' is set to Primary Card # 1 and Secondary Card # 1. The 'Protocol Selection' is ITU. The 'CIC Group Configuration' shows CIC Start: 100, CIC Quantity: 8, Device Selection: Card 1+2, and Timeslot Start: 11. The 'DPC Code' is 2 2 2. The 'OPC' is 1 1 1. A table at the bottom shows the configuration for T1/E1 # 1+2, Start CIC 100, # of Chan... 8, and Start Timeslot 11.

T1/E1 #	Start CIC	# of Chan...	Start Timeslot
1+2	100	8	11

Multiple Call Capture and Analysis

The screenshot shows the 'Call Capture Options' dialog box with the 'Ss7 Options' tab selected. The 'Data Rate' is set to 64 kbps. Under 'Ss7 Call Filtering', 'No Call Filtering' is selected. The 'Signaling Selection' is set to Primary Card # 1 and Secondary Card # 1. The 'Protocol Selection' is ITU. The 'CIC Group Configuration' shows CIC Start: 100, CIC Quantity: 8, Device Selection: Card 1+2, and Timeslot Start: 11. The 'DPC Code' is 2 2 2. The 'OPC' is 1 1 1. A table at the bottom shows the configuration for T1/E1 # 1+2, Start CIC 100, # of Chan... 8, and Start Timeslot 11.

T1/E1 #	Start CIC	# of Chan...	Start Timeslot
1+2	1	10	1
1+2	100	8	11

SS7 Call Triggered Capture

Call Capture and Analysis

Multiple Call Capture - UsbE1 Card #1 and #2

File Capture Settings
Capture Directory: D:\CapturedFiles\SS7Calls1208091103
Capture File #1: Dec08_0101_0001.pcm
Bytes Captured: 33792
TS Display: 1

Capture File #2: Dec08_0201_0001.pcm
Bytes Captured: 33792

Signaling File:

Timeslot Activity

00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	

SS7 Stats

SS7 Messages	DPC	DPC	CIC	Card:Timeslot
Initialize	2...	1...	1	2:1
Answer	1...	2...	1	1:1
Release	2...	1...	1	2:1
Release Compl...	1...	2...	1	1:1
Initialize	2...	1...	1	2:1
Answer	1...	2...	1	1:1
Release Compl...	1...	2...	1	1:1
Initialize	2...	1...	1	2:1
Answer	1...	2...	1	1:1

Multiple Call Capture and Analysis

Multi Call Capture for SS7 Signaling - Untitled

File Edit Trigger Options Process

CC No	Capture Name	West(Port)	East(Port)	Timeslots	Storage Location	Trigger Option	Action
1	CCA1	1	2	0-23	C:\Program Files\GL Communications Inc\USB T1 Analyzer	Edit	Abort

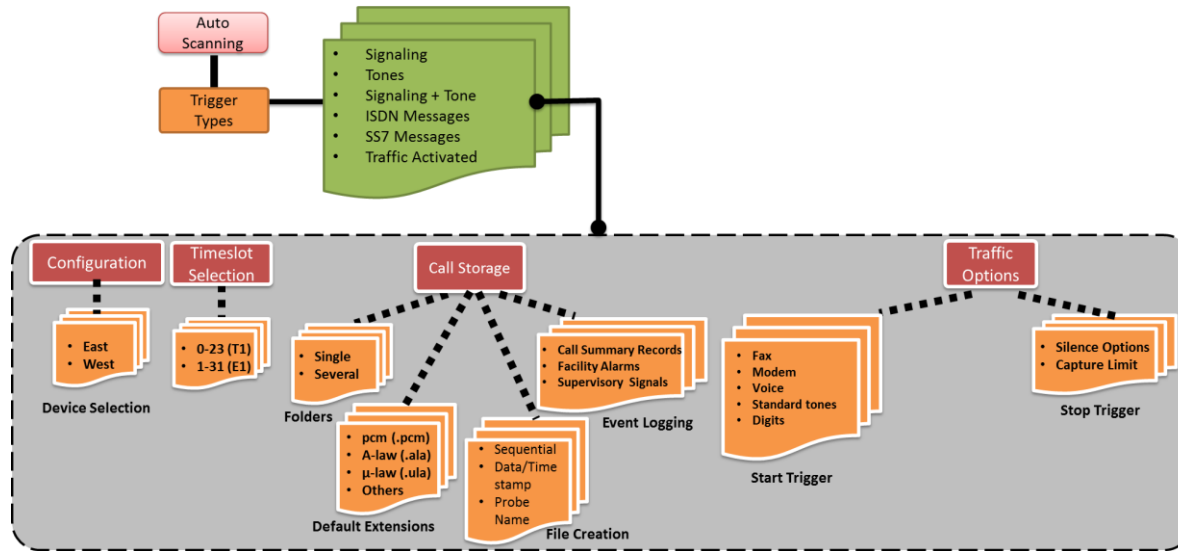
TS	TS Status	West Filename	Bytes Cap...	East Filename	Bytes Cap...
1+2:0	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:1	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:2	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:3	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:4	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:5	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:6	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:7	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:8	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:9	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:10	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:11	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:12	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:13	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:14	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720
1+2:15	Capturing	C:\Program Files\GL Communications Inc\USB T1...	99720	C:\Program Files\GL Communications...	99720

CCA Details Timeslots Map SS7 statistics

SS7 Call Triggered Capture

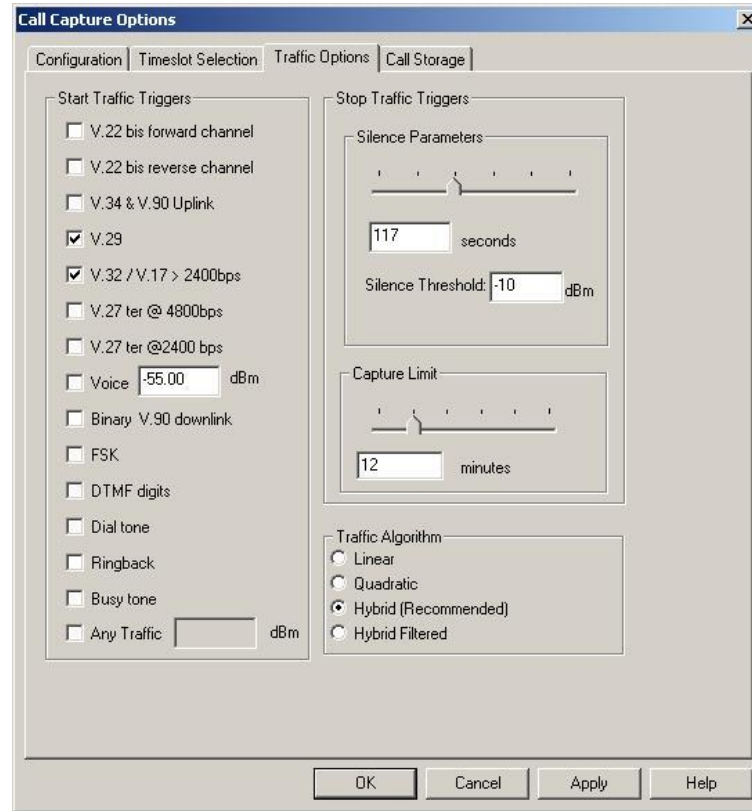


Traffic Activated Triggers (XX031)

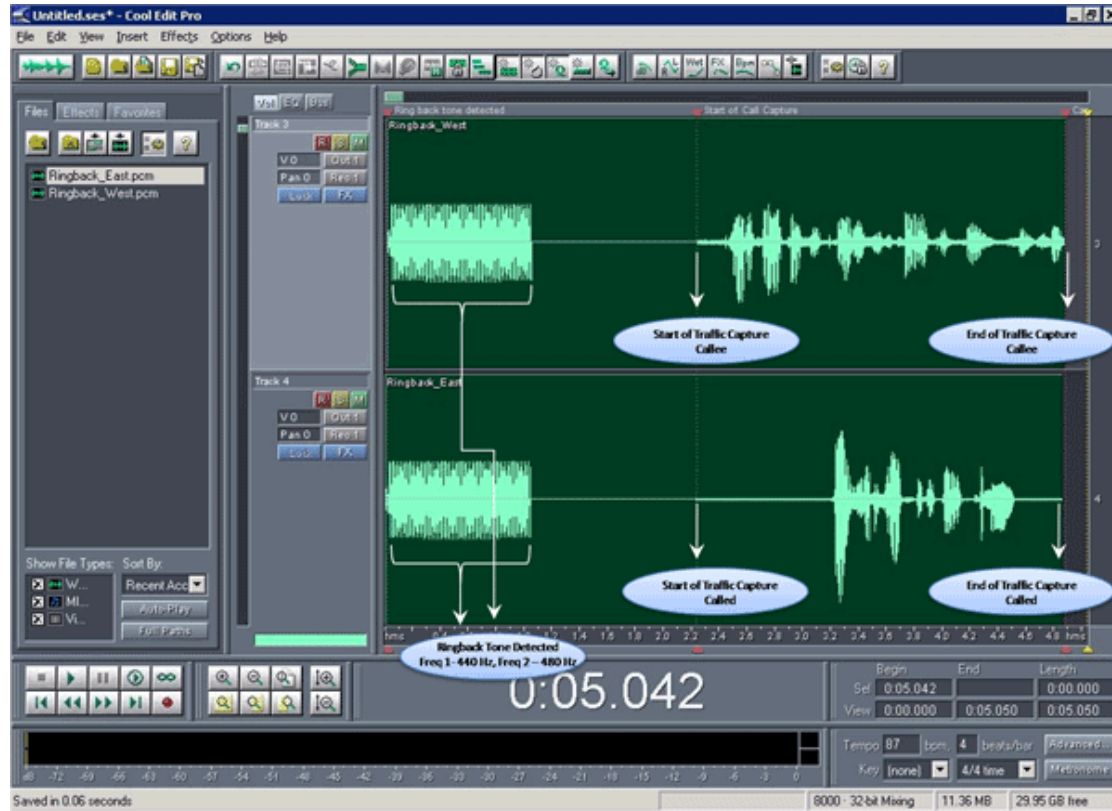


- **Traffic Trigger** - With this trigger option, it is possible to trigger capturing based on various kinds of traffic such as fax, modem, voice, standard tones, digits, V.22 bis forward channel, V.22 bis reverse channel, V.34 and V.90 uplink, V.29, V.32/V.17 > 2400 bps, V.27 ter @ 4800 bps, V.27 ter @ 2400 bps, Voice, binary V.90 downlink, FSK, DTMF digits, Dial tone, Ringback and Busy tone
- **Traffic Algorithm Supported** – Linear, Quadratic, Hybrid, and Hybrid Filtered

Traffic Triggered Capture



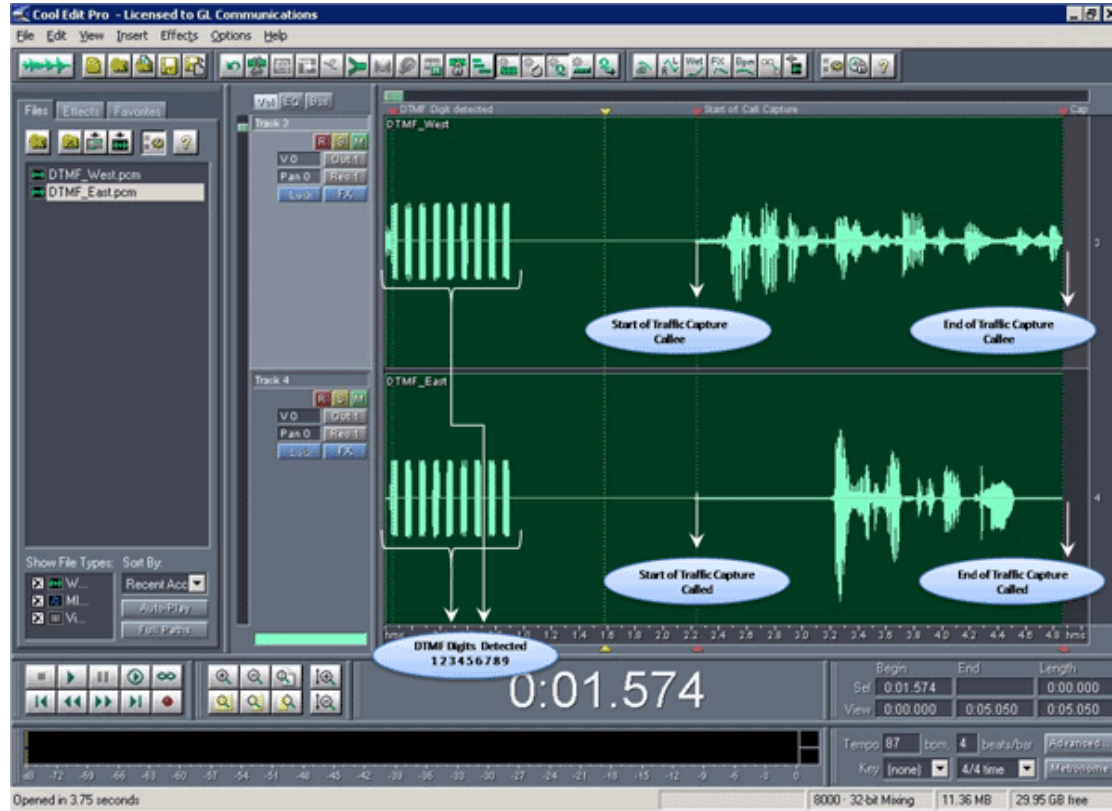
Ringback



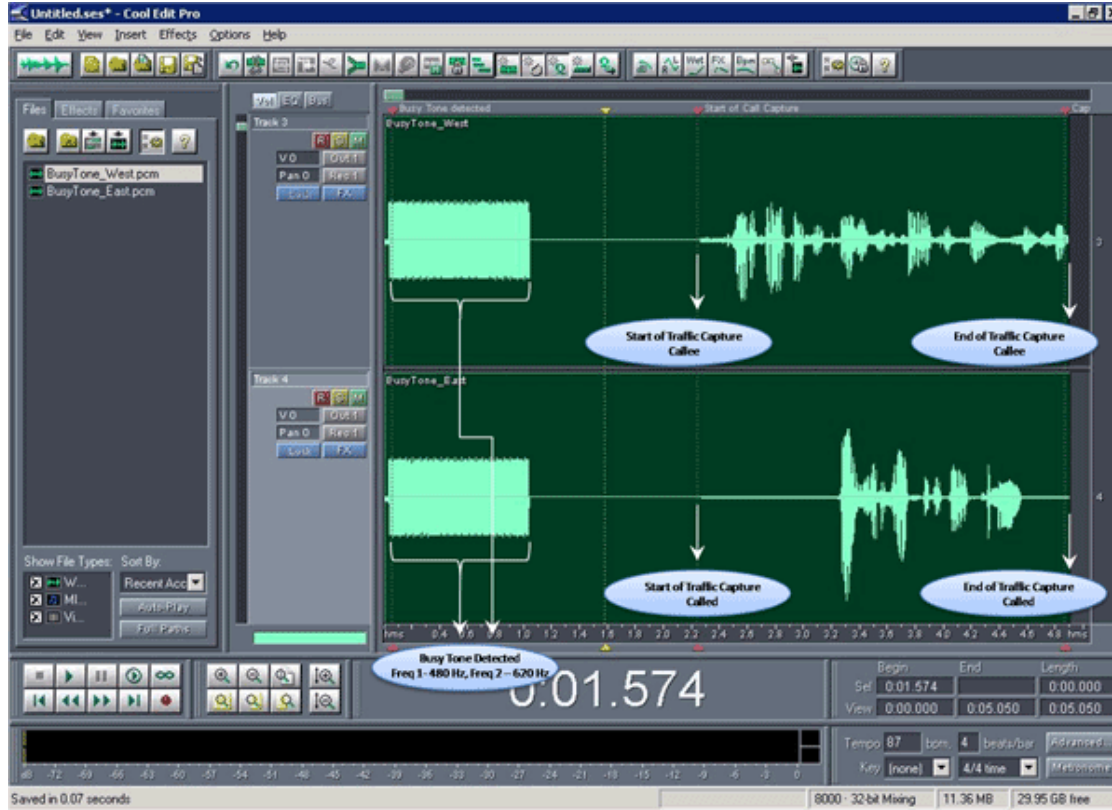
Dial



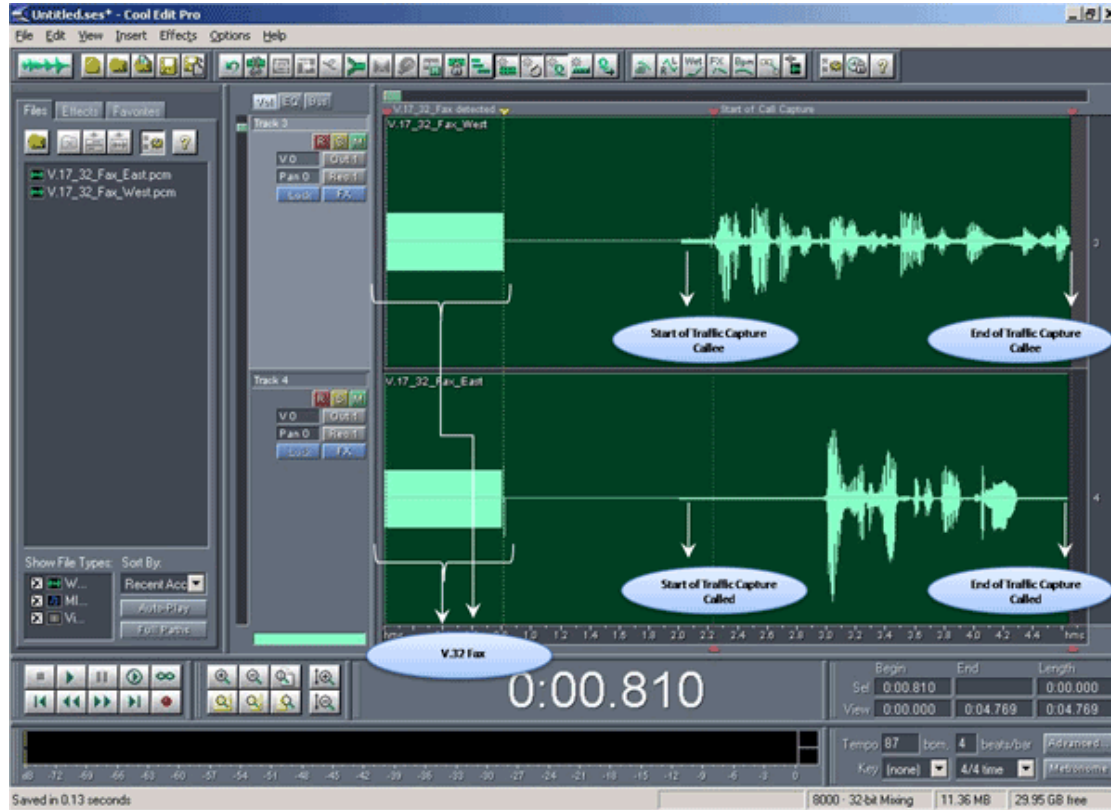
DTMF



Busy Tone



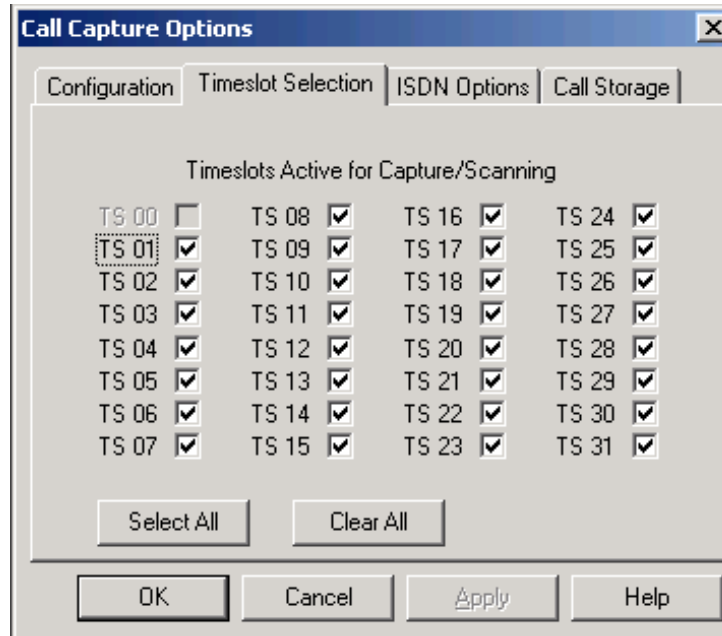
V.17_32_Fax



V.29_Fax



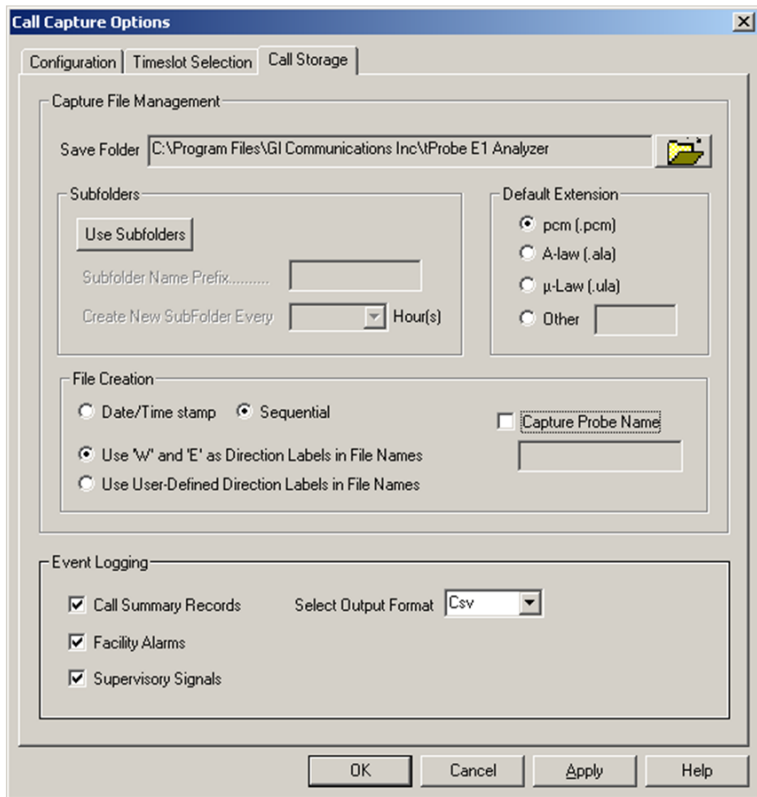
Timeslot Selection



- Lists all the timeslots from T0-T31 or T1-T23 corresponding to E1 or T1 analyzers respectively
- Check the Timeslots that are required to remain active during capturing
- In scanning mode all 24 or 30 channels are scanned for call initiation and recording

Call Storage

Call Capture and Analysis



Call Capture Options

Configuration | Timeslot Selection | Call Storage

Capture File Management

Save Folder: C:\Program Files\GL Communications Inc\Probe E1 Analyzer

Subfolders

Use Subfolders

Subfolder Name Prefix: _____

Create New SubFolder Every: _____ Hour(s)

Default Extension

pcm (.pcm)
 A-law (.ala)
 μ -Law (.ula)
 Other: _____

File Creation

Date/Time stamp Sequential

Capture Probe Name: _____

Use 'W' and 'E' as Direction Labels in File Names
 Use User-Defined Direction Labels in File Names

Event Logging

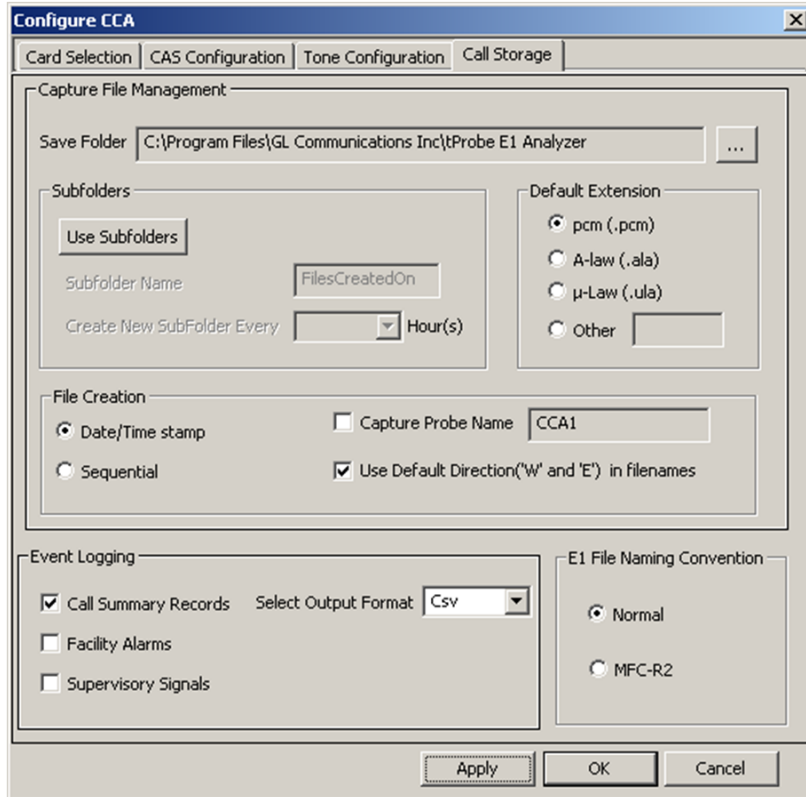
Call Summary Records Select Output Format: Csv

Facility Alarms

Supervisory Signals

OK Cancel Apply Help

Multiple Call Capture and Analysis



Configure CCA

Card Selection | CAS Configuration | Tone Configuration | Call Storage

Capture File Management

Save Folder: C:\Program Files\GL Communications Inc\Probe E1 Analyzer

Subfolders

Use Subfolders

Subfolder Name: FilesCreatedOn

Create New SubFolder Every: _____ Hour(s)

Default Extension

pcm (.pcm)
 A-law (.ala)
 μ -Law (.ula)
 Other: _____

File Creation

Date/Time stamp Sequential

Capture Probe Name: CCA1

Use Default Direction('W' and 'E') in filenames

Event Logging

Call Summary Records Select Output Format: Csv

Facility Alarms

Supervisory Signals

E1 File Naming Convention

Normal
 MFC-R2

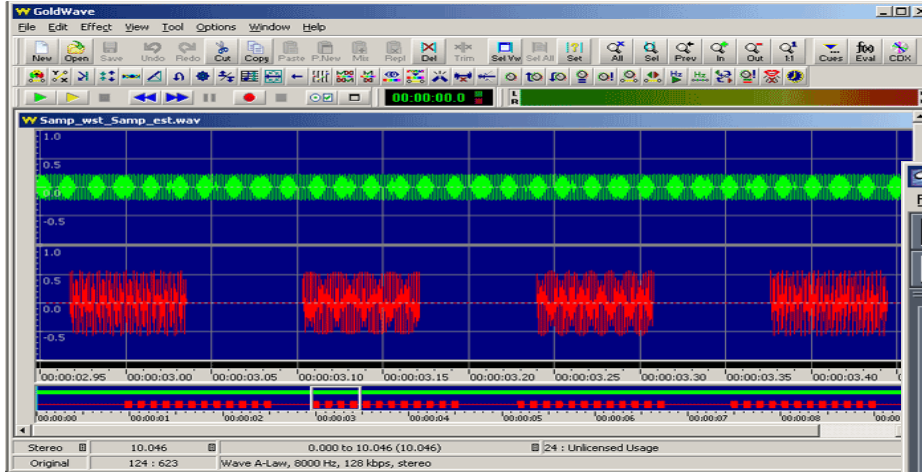
Apply OK Cancel

Call Storage Features

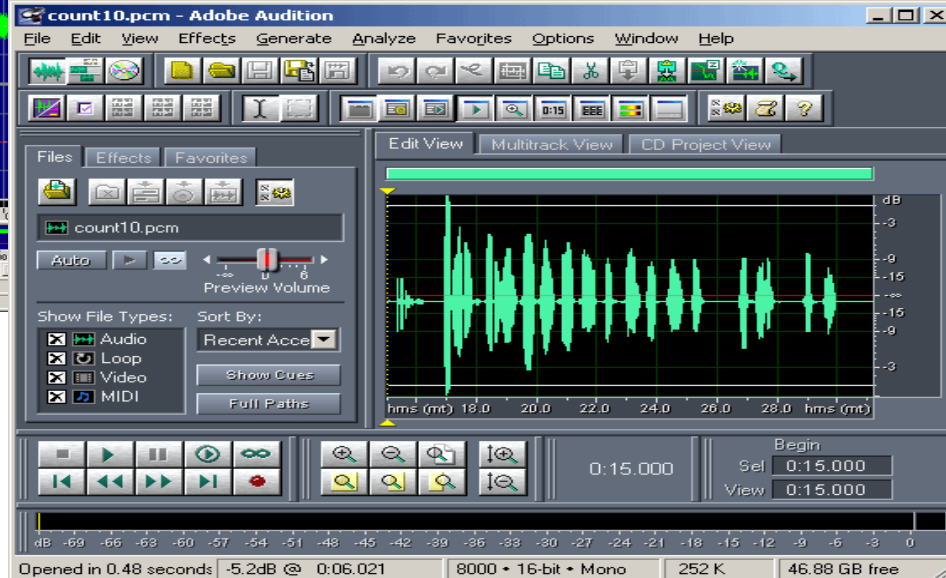
- Captured file names are named sequentially or with date/timestamp; File names can be prefixed with Probe names
- Allows to save the captured files into a single folder or in several subfolders
- Option to save call summary records, facility alarms, and supervisory signals into either CSV or binary format
- Default extension such as .pcm, ala, .ula ,or any other file extension can be given to the captured files

View PCM File

Goldwave



Adobe Audition



MFC-R2 Digit Analysis (Tabular)

The screenshot displays the T1 Analyzer interface with a terminal window showing the following analysis results:

```

MFC-R2 Analysis Ver. 1.0      (C)'97 GL Communications
Captured file directory: C:\PROGRA~1\GLCOMM~1\DUALPC~2\R2ANALX.E
Files:      JAMES5181_886      Call Summary
           JAMES5181_886      Call Duration (min):
           JAMES5181_886      Error:
PCR File Date: 01/05/1997    12:03:12      Timeslot: 1
Key1 = <Next File/Save Day>      Key2 = <Previous File>
Key3 = <Next Day>                Key4 = <Previous Day>
Key5 = <Change Timeslot>        Key6 = <Enter File Name>
Key7 = <Directory Listing>      Key8 = <Clear>
Key9 = <Scroll or Save>         Key0 = <Change directory>

Time   E abcd   E PCR   W PCR   W abcd  Comments
-----
7324   0         0       0       0       silence  Cessation
19416  15 B      0       0       0       silence  Cessation
19440  0         0       0       0       silence
20064  15 B      0       0       0       silence  Cessation
20100  0         0       0       0       silence
37791  0         0       0       0       silence  Cessation
    
```

The interface also shows a 'Timeslots Active for Capture/Scanning' table and a 'Signaling Bits' grid.

Timeslots Active for Capture/Scanning			
TS 00	<input checked="" type="checkbox"/>	TS 08	<input checked="" type="checkbox"/>
TS 01	<input checked="" type="checkbox"/>	TS 09	<input checked="" type="checkbox"/>
TS 02	<input checked="" type="checkbox"/>	TS 10	<input checked="" type="checkbox"/>
TS 03	<input checked="" type="checkbox"/>	TS 11	<input checked="" type="checkbox"/>
TS 04	<input checked="" type="checkbox"/>	TS 12	<input checked="" type="checkbox"/>
TS 05	<input checked="" type="checkbox"/>	TS 13	<input checked="" type="checkbox"/>
TS 06	<input checked="" type="checkbox"/>	TS 14	<input checked="" type="checkbox"/>
TS 07	<input checked="" type="checkbox"/>	TS 15	<input checked="" type="checkbox"/>
TS 16	<input checked="" type="checkbox"/>	TS 24	<input type="checkbox"/>
TS 17	<input checked="" type="checkbox"/>	TS 25	<input type="checkbox"/>
TS 18	<input checked="" type="checkbox"/>	TS 26	<input type="checkbox"/>
TS 19	<input checked="" type="checkbox"/>	TS 27	<input type="checkbox"/>
TS 20	<input checked="" type="checkbox"/>	TS 28	<input type="checkbox"/>
TS 21	<input checked="" type="checkbox"/>	TS 29	<input type="checkbox"/>
TS 22	<input checked="" type="checkbox"/>	TS 30	<input type="checkbox"/>
TS 23	<input checked="" type="checkbox"/>	TS 31	<input type="checkbox"/>

Call Capture and Analysis Output

CCA CSV Output Files

Call Side Record



	A	B	C	D	E	F	G	H	I	J	K
1	Probe ID	Call ID	Side	Address	File Name	Port	TimeSlot	MC Digits			
2		120125163917-4	West		Jan25_W0104_0008.pcm	1	4				
3		120125163917-4	East		Jan25_E0204_0008.pcm	2	4				
4											

Call Master Record



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Probe ID	Call ID	Side 1	Side 2	Protocol	Start	Released	Duration	Orig	Term	Rel Code	Src Dir	Arch Dir
2		120125163917-4	West	East	CAS	1/25/2012 16:39	1/25/2012 16:41	0:01:55	West			C:\Program Files	
3													

Facility Alarms



	A	B	C	D	E	F	G	H	I	J
1	Probe ID	Call ID	Side	Class ID	Class	Code ID	Code	Data	Start	Dur
2		120125163917-4	East	1	Alarm	1	Line Sync Loss	on	41.719	0
3		120125163917-4	East	1	Alarm	1	Line Sync Loss	off	44.703	0
4										

Call Event Record

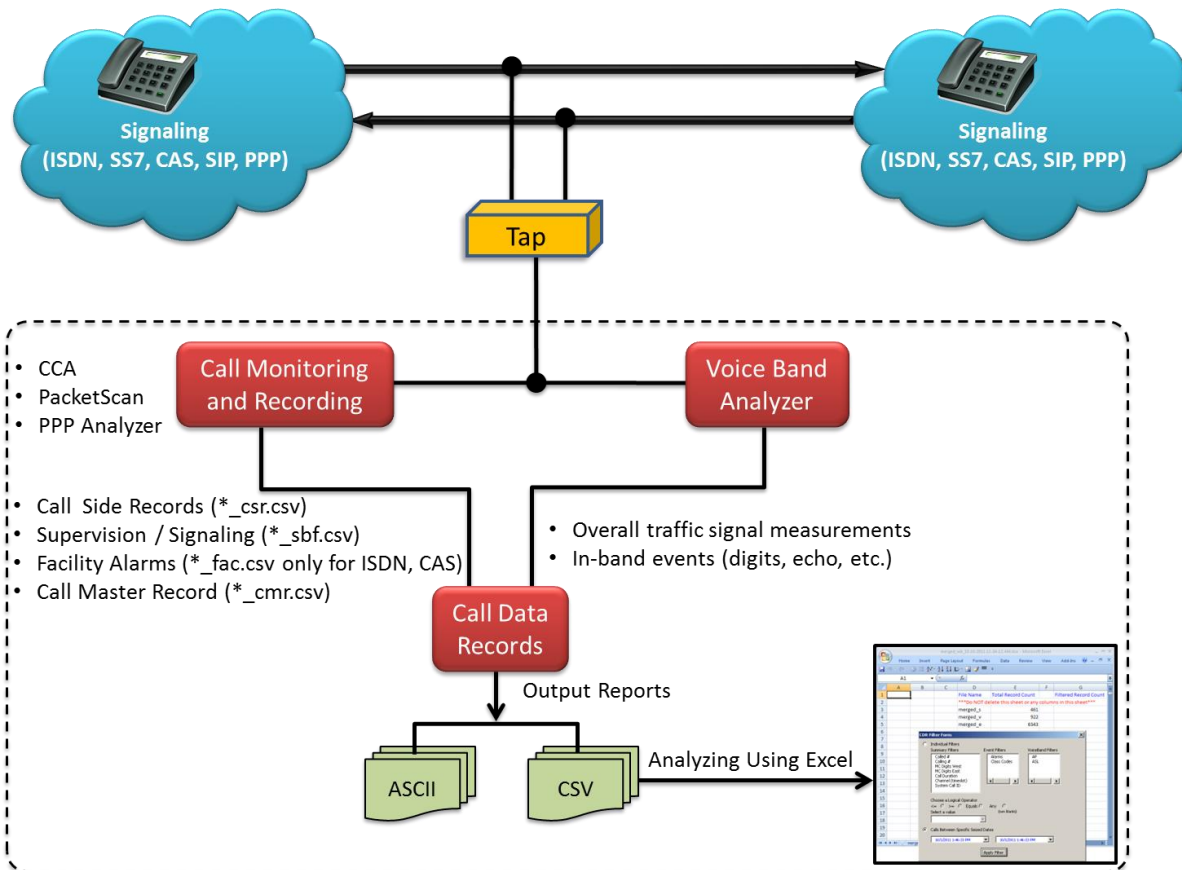


	A	B	C	D	E	F	G	H	I	J
1	Probe ID	Call ID	Side	Class ID	Class	Code ID	Code	Data	Start	Dur
2		120125163917-4	West	3	SigBits	4	OffHook	1	0	0
3		120125163917-4	East	3	SigBits	4	OffHook	1	0	0
4		120125163917-4	East	3	SigBits	5	OnHook	1001	0.616	0
5		120125163917-4	West	3	SigBits	5	OnHook	1001	3.446	0
6		120125163917-4	East	3	SigBits	0	<Undefined	1100	42.314	0
7		120125163917-4	East	3	SigBits	5	OnHook	1001	42.316	0
8										

- CCA captures bidirectional channel data and records it into PCM signal files
- Records signaling and alarm events, as well as producing a summary record for each call
- CCA logs the capture events in CSV or binary files and feed these results into Call Data Records

Call Capture and Analysis application with Voice Band Analyzer (VBA) and Call Data Records (CDR)

Call Data Records



Voice Band Analyzer

NRT Voiceband Analyzer - VBA Probe 1

Profiles Logging Help

Input	File	Directory	Start	Elapsed	ASL	AF	RMS
E1	S1L.ala	C:\Program Fil...	06/12/2007 15:19:36	200.000	-20.59...	52.897...	-23.36...
W1	S1R.ala	C:\Program Fil...	05/09/2007 12:22:04	200.000	-22.36...	44.043...	-25.92...

Speech Level

Line Echo

Traffic Classifier

FaxScan

Tone Decoder

Right-Click to Configure Each Module

More Modules

RUN

Setup

View Results

Clear Display

Access Point #1

A-Law

E1 File C:\Program Files (x86)\GL Communications Inc\Voiceband Analyzer

W1 File C:\Program Files (x86)\GL Communications Inc\Voiceband Analyzer

Access Point #2

Select Data Format

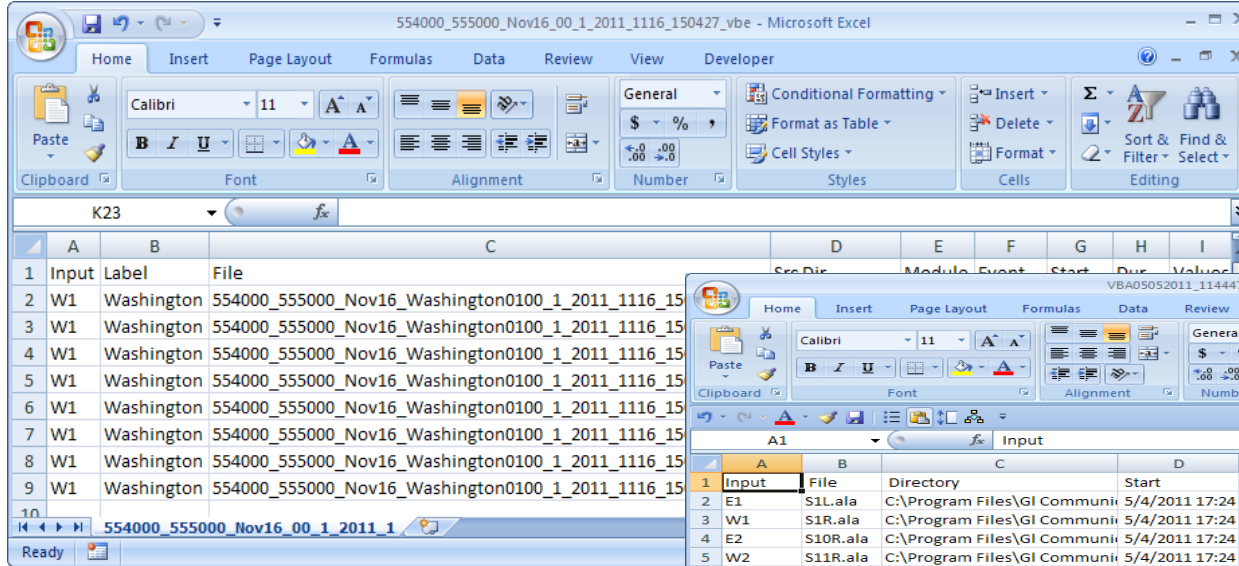
E2 File

W2 File

Ready Manual Log: disabled Results: S1_vbs.csv / S1_vbe.csv 25-02-2015 11:07

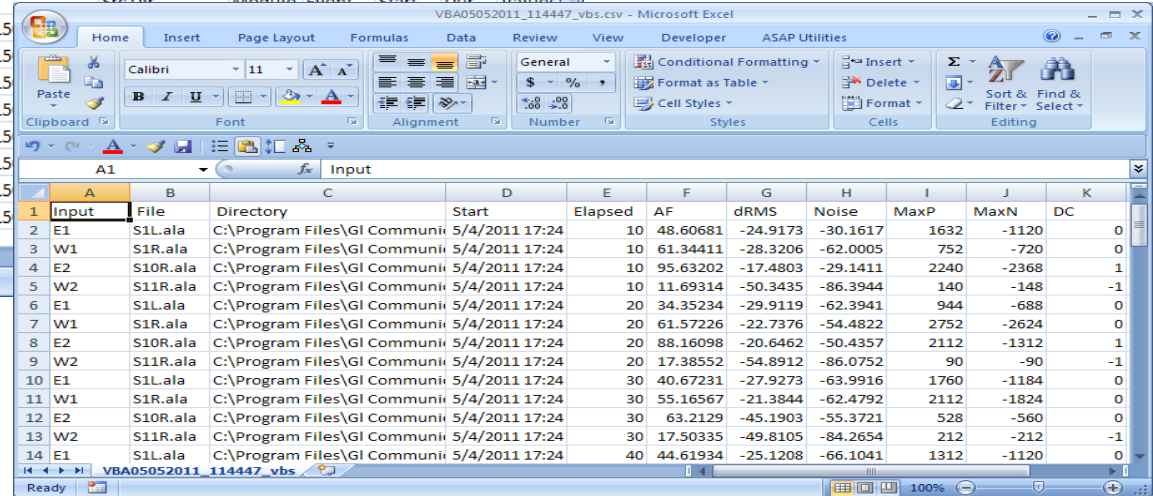
CSV Output of VBA

Call Event (*_vbe.csv)



	A	B	C	D	E	F	G	H	I
1	Input	Label	File						
2	W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_15						
3	W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_15						
4	W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_15						
5	W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_15						
6	W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_15						
7	W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_15						
8	W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_15						
9	W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_15						

Call Summary (*_vbs.csv)



	A	B	C	D	E	F	G	H	I	J	K
1	Input	File	Directory	Start	Elapsed	AF	dRMS	Noise	MaxP	MaxN	DC
2	E1	S1L.ala	C:\Program Files\GI Communi	5/4/2011 17:24	10	48.60681	-24.9173	-30.1617	1632	-1120	0
3	W1	S1R.ala	C:\Program Files\GI Communi	5/4/2011 17:24	10	61.34411	-28.3206	-62.0005	752	-720	0
4	E2	S10R.ala	C:\Program Files\GI Communi	5/4/2011 17:24	10	95.63202	-17.4803	-29.1411	2240	-2368	1
5	W2	S11R.ala	C:\Program Files\GI Communi	5/4/2011 17:24	10	11.69314	-50.3435	-86.3944	140	-148	-1
6	E1	S1L.ala	C:\Program Files\GI Communi	5/4/2011 17:24	20	34.35234	-29.9119	-62.3941	944	-688	0
7	W1	S1R.ala	C:\Program Files\GI Communi	5/4/2011 17:24	20	61.57226	-22.7376	-54.4822	2752	-2624	0
8	E2	S10R.ala	C:\Program Files\GI Communi	5/4/2011 17:24	20	88.16098	-20.6462	-50.4357	2112	-1312	1
9	W2	S11R.ala	C:\Program Files\GI Communi	5/4/2011 17:24	20	17.38552	-54.8912	-86.0752	90	-90	-1
10	E1	S1L.ala	C:\Program Files\GI Communi	5/4/2011 17:24	30	40.67231	-27.9273	-63.9916	1760	-1184	0
11	W1	S1R.ala	C:\Program Files\GI Communi	5/4/2011 17:24	30	55.16567	-21.3844	-62.4792	2112	-1824	0
12	E2	S10R.ala	C:\Program Files\GI Communi	5/4/2011 17:24	30	63.2129	-45.1903	-55.3721	528	-560	0
13	W2	S11R.ala	C:\Program Files\GI Communi	5/4/2011 17:24	30	17.50335	-49.8105	-84.2654	212	-212	-1
14	E1	S1L.ala	C:\Program Files\GI Communi	5/4/2011 17:24	40	44.61934	-25.1208	-66.1041	1312	-1120	0

CDR Highlights

- CDR compiles the output of CCA (Call Capture and Analysis) application and (optionally) VBA (Voice Band Analyzer) application and provides comprehensive information on every call occurring on T1 and E1 lines, including:-
 - Complete signaling information for each direction for CAS, ISDN, SS7, SIP
 - All alarms and errors occurring during the call including BPV, Frame Errors, CRC errors, LOS, and more
 - Detailed voice band event information occurring during the call including dual tones (DTMF, MF, MFC-R2), fax tones, modem signals, and more
 - Detailed analysis of the voice band call including noise level, speech level, speech activity factor, echo measurements, and more

Working Principle

- CDR captures the events until manually stopped by the user
- CDR Classifies the captured events from CCA into Call side record (CSR), Channel supervision (CAS, ISDN, etc.), and Facility alarms results
- VBA processes the signal files recorded by CCA and provides voice band measurements of the captured signals, including active speech levels, noise level, percent time active, and DC offset
- CDR Classifies the captured events from VBA into In-band events (digits, echo, etc.) results and overall traffic signal measurements
- Can be configured to output its results to ASCII files or direct CSV file for loading into a database or spreadsheet

Call Data Records

NRT Call Records

Probe ID	Call ID	Orig	Calling	Called	Start	Released	Duration	Rel Code	CRV	Data Rate
	120125172126-4	East(#2:4)	555003	554003	01/25/2012 17:21:38	01/25/2012 17:23:21	00:01:43	CONN_ACK	94	64k
	120125172609-4	East(#2:4)	555003	554003	01/25/2012 17:26:19	01/25/2012 17:26:34	00:00:15	REL_CO...	4	64k
	120125172126-3	East(#2:3)	555002	554002	01/25/2012 17:21:38	01/25/2012 17:23:21	00:01:43	CONN_ACK	93	64k
	120125172609-3	East(#2:3)	555002	554002	01/25/2012 17:26:19	01/25/2012 17:26:34	00:00:15	REL_CO...	3	64k
	120125172126-2	East(#2:2)	555001	554001	01/25/2012 17:21:38	01/25/2012 17:23:21	00:01:43	CONN_ACK	92	64k
	120125172609-2	East(#2:2)	555001	554001	01/25/2012 17:26:19	01/25/2012 17:26:34	00:00:15	REL_CO...	2	64k
	120125172126-1	East(#2:1)	555000	554000	01/25/2012 17:21:38	01/25/2012 17:23:21	00:01:43	CONN_ACK	91	64k
	120125172609-1	East(#2:1)	555000	554000	01/25/2012 17:26:19	01/25/2012 17:26:34	00:00:15	REL_CO...	1	64k

Configure Clear Display Enable Logging Run

Running ISDN Scanning directories... 1/25/2012 5:28 PM

Output Formats of CDR

- CDR can be configured to output its results to Text (ASCII) or Comma-Separated Values (“CSV”) files
- ASCII Text – A single Call Detail Report text file is produced, which contains summary of calls, individual call events, and in-band summary
- CSV - Different sections of the Call Detail Report are segregated into CSV files
 - Call Summary - gives an overall summary of the call, including the Probe ID, CALL ID, TimeSlot, Call Ref Value, Protocol, Data Rate, Release Code and so on
 - Call Side Information – This section gives Telephone number, Port and Timeslot number, Mid call digits, and Capture file name
 - Call Events - gives an event-by-event account of the call. Events include channel supervision events, sporadic echo, alarms, ISDN calls, and various traffic
 - In-band Summary – display depends on the Display Fields configurations for each algorithm in the VBA

Call Summary Report (ASCII Output Format)

ISDN Calls

ISDN1115111533_summary.txt - Notepad

File Edit Format View Help

ISDN CALL LIST REPORT

Call ID	Chan	CRV	Time Calling #	Time Called #	Seized	Released	Duration	Direction	Mid-Call Digits	Release Code
111115153238-1	6	1	555006	554006	15:32:42	15:32:52	00:00:10	New York	-/-	REL_COMPLETE
111115153238-2	1	1	555001	554001	15:36:10	15:36:39	00:00:29	Washington	-/-	REL_COMPLETE
111115153238-3	0	2	555001							

CAS Calls

CAS1116111116_summary.txt - Notepad

File Edit Format View Help

CAS CALL LIST REPORT

Call ID	Chan	Time Calling #	Time Called #	Seized	Released	Duration	Direction	Mid-Call Digits	Release Code
111116111506-20	19	3014242219	3012242219	11:15:25	11:16:06	00:00:41	New York	-/-	Normal
111116111506-22	21	3019242221	3016242220	11:15:25	11:16:06	00:00:41	New York	-/-	Normal
111116111506-4	3	3019242233	3016242233	11:15:24	11:16:05	00:00:41	New York	-/-	Normal
111116111506-5	4	3019242234	3016242234	11:15:24	11:16:06	00:00:42	New York	-/-	Normal
111116111506-6	5	3019242235	3016242235	11:15:24	11:16:06	00:00:42	New York	-/-	Normal
111116111506-7	6	3019242236	3016242236	11:15:24	11:16:06	00:00:42	New York	-/-	Normal
111116111506-8	7	3019242237	3016242237	11:15:24	11:16:07	00:00:43	New York	-/-	Normal
111116111506-9	8	3019242288	3017242238	11:15:24	11:16:06	00:00:42	New York	-/-	Normal
111116111506-10	9	3019242289	3017242239	11:15:24	11:16:06	00:00:42	New York	/90*#ABCD 12345678/-	Normal
111116111506-11	10	3016241010	3019241010	11:15:24	11:16:06	00:00:42	New York	-/-	Normal
111116111506-12	11	3016241011	3019242211	11:15:24	11:16:06	00:00:42	New York	-/-	Normal
111116111506-13	12	3016242212	3019242212	11:15:24	11:16:07	00:00:43	New York	-/-	Normal
111116111506-14	13	3016242213	3019242213	11:15:24	11:16:07	00:00:43	New York	-/-	Normal
111116111506-15	14	3016242214	3019242214	11:15:24	11:16:06	00:00:42	New York	-/-	Normal
111116111506-16	15	3016242215	3019242215	11:15:24	11:16:06	00:00:42	New York	-/-	Normal
111116111506-17	16	3016242216	3019242216	11:15:24	11:16:06	00:00:42	New York	-/-	Normal
111116111506-18	17	3015242217	3019242217	11:15:25	11:16:08	00:00:43	New York	-/-	Normal

- Each call occupies one line of the report with Channel, CRV, Called Number, Calling Number, Time (Seize/Release information), Call Duration, Call Direction

Call Detail (ASCII Output Format)

- Call Summary
- Call Events
 - supervisory messages
 - digit detection
- In-band Summary
 - signal level
 - activity factor
 - RMS power level
 - noise level
 - voice file names

```

ISDN111511533_detail.txt - Notepad
File Edit Format View Help
===== Call Summary =====
Probe ID: ATTSARD1
Call ID: 11115153238-3
Timeslot: 0
Call Ref Value: 2
Protocol: ISDN
Data Rate: 64K
Start Time: 11/15/2011 15:37:20
Release Time: 11/15/2011 15:39:14 } Call Duration with
Call Duration: 00:01:54           } Seized & Release time
Originating side: New York (#2)
Terminating side: (#2)
Caller #: 555000 } Called and Calling #s
Called #: 554000
Release Code: REL_COMPLETE
Source Folder: C:\Program Files\GL Communications Inc\TProbe T1
Analyzer\ATT\Device\capture115111532
Archive Folder: C:\inetpub\ftproot\TestFiles\voicefiles\device1capture115111532

CALL SIDE INFORMATION
-----
Value Washington New York
-----
Telephone #: 554000 555000
#Port:Timeslot: #1:0 #2:0
Mid-Call Digits: 12345678
Capt File Name: 554000_555000_Nov15_Washington0100_2_2011_1115_153720.pcm
554000_555000_Nov15_New York0200_2_2011_1115_153720.pcm

CALL EVENTS
-----
Time of Day Since Last Event Since Last Supv Direction T y Event Resulting Call Duration Status
-----
15:37:20.000 0.000 0.000 New York S SETUP(on)
15:37:20.125 0.125 0.125 Washington S ALERTING(1)
15:37:22.594 2.469 2.469 Washington S CONNECT(255)
15:37:22.719 0.125 0.125 New York S CONN_ACK(15)
15:38:32.040 69.321 Washington V DTMF-1 0.088
15:38:32.231 0.191 Washington V DTMF-2 0.101
15:38:32.435 0.204 Washington V DTMF-3 0.101
15:38:32.639 0.204 Washington V DTMF-4 0.088
15:38:32.830 0.191 Washington V DTMF-5 0.101
15:38:33.034 0.204 Washington V DTMF-6 0.101
15:38:33.238 0.204 Washington V DTMF-7 0.088
15:38:33.429 0.191 Washington V DTMF-8 0.101
15:39:06.188 32.759 103.469 Washington A OOF Error(0)
15:39:06.219 0.031 0.031 Washington A Line Sync Loss
15:39:06.219 0.000 0.000 Washington A Frame Error(on)
15:39:06.954 0.735 0.735 Washington A Frame Error(of)
15:39:07.688 0.734 0.734 Washington A Bipolar Violat
15:39:07.704 0.016 0.016 Washington A Bipolar Violat
15:39:08.485 0.781 0.781 Washington A Line Sync Loss

IN-BAND SUMMARY
-----
Value Washington New York
-----
Probe W1 E1
Input Label Washington New York
Start 11/15/2011 15:37:20 11/15/2011 15:37:20
Elapsed 113.214 113.214
ASL -10.701504 -100.000000
AF 30.008584 0.000000
RMS -15.929049 -100.000000
Noise -37.269003 -100.000000
% Voice 31.797235 0.000000
% Digits 1.612903 0.000000
% Quiet 0.000000 0.000000
% Idle 66.589862 100.000000
    
```

Call Duration with Seized & Release time

Called and Calling #s

Summary of Signaling and duration of each signaling

Midcall Digits

BPV, Line Sync Loss, Carrier Loss, Frame Error, and other errors inserted during the call

Active Speech & Noise Level

Call Events

- **Call Events** displays an event-by-event account of the call. Events include channel supervision events, sporadic echo, alarms

```

ISDN111511533_detail.txt - Notepad
File Edit Format View Help
===== Call Summary =====
Probe ID: ATTCARD1
Call ID: 111115153238-3
Timeslot: 0
Call Ref Value: 2
Protocol: ISDN
Data Rate: 64K
Start Time: 11/15/2011 15:37:20
Release Time: 11/15/2011 15:39:14 } Call Duration with Seized & Release time
Call Duration: 00:01:54
Originating side: New York (#2)
Terminating side: (#2)
Caller #: 555000
Called #: 554000 } Called and Calling #s
Release Code: REL_COMPLETE
Source Folder: C:\Program Files\GL Communications Inc\Probe T1
Analyzer\ATT\device\capture\111511532\
Archive Folder: C:\inetpub\ftproot\TestFiles\voicefiles\device\capture\111511532\

CALL SIDE INFORMATION
Value Washington New York
-----
Telephone #: 554000 555000
#Port:Timeslot: #1:0 #2:0
Mid-Call Digits: 12345678
Capt File Name: 554000_555000_Nov15_Washington0100_2_2011_1115_153720.pcm
554000_555000_Nov15_NewYork0200_2_2011_1115_153720.pcm

CALL EVENTS
-----
Time of Day Since Last Event Since Last Supv Direction T p Event Resulting Call Duration Status
-----
15:37:20.000 0.000 0.000 New York S SETUP(on)
15:37:20.125 0.125 0.125 Washington S ALERTING(1)
15:37:22.394 2.469 2.469 Washington S CDRNET(253)
15:37:22.719 0.125 0.125 New York S CONN_ACK(15)
15:38:32.040 0.9321 Washington V DTMF-1 0.088
15:38:32.231 0.191 Washington V DTMF-2 0.101
15:38:32.435 0.204 Washington V DTMF-3 0.101
15:38:32.639 0.204 Washington V DTMF-4 0.088
15:38:32.830 0.191 Washington V DTMF-5 0.101
15:38:33.034 0.204 Washington V DTMF-6 0.101
15:38:33.238 0.204 Washington V DTMF-7 0.088
15:38:33.429 0.191 Washington V DTMF-8 0.101
15:39:06.188 32.759 103.469 Washington A ODF_Error(8)
15:39:06.219 0.031 0.031 Washington A Line Sync Loss
15:39:06.219 0.000 0.000 Washington A Frame Error(on)
15:39:06.254 0.735 0.735 Washington A Frame Error(of)
15:39:07.688 0.734 0.734 Washington A Bipolar Violat
15:39:07.704 0.016 0.016 Washington A Bipolar Violat
15:39:08.485 0.781 0.781 Washington A Line Sync Loss

IN-BAND SUMMARY
Value Washington New York
-----
Probe W1 E1
Label Washington New York
Start 11/15/2011 15:37:20 11/15/2011 15:37:20
Elapsed 113.214 113.214
ASL -10.701504 -100.000000
AF 30.008584 0.000000
RMS -15.929049 -100.000000
Noise -37.249003 -100.000000
% Voice 31.797235 0.000000
% Digits 1.612903 0.000000
% Quiet 0.000000 0.000000
% Idle 66.589862 100.000000
    
```

In-Band Statistics

- In-band summary displays in-band summary details dependant on the fields chosen during VBA configuration
- In the example, various Active Speech Level measurements as well as traffic classification estimates are displayed

ISDN11511532_detail.txt - Notepad

```

===== Call Summary =====
Probe ID: ATTCARD1
Call ID: 11115153238-3
TimeSlot: 0
Call Ref Value: 2
Protocol: ISDN
Data Rate: 64K
Start Time: 11/15/2011 15:37:20
Release Time: 11/15/2011 15:39:14
Call Duration: 00:01:54
Originating side: New York (#2)
Terminating side: (#2)
Caller #: 554000
Called #: 554000
Release Code: REL_COMPLETE
Source Folder: C:\Program Files\GL Communications Inc\Probe T1
Analyzer\ATT\device1capture11511532\
Archive Folder: C:\inetpub\httproot\TestFiles\voicefiles\device1capture11511532\

CALL SIDE INFORMATION
-----
Value Washington New York
-----
Telephone #: 554000 555000
#Port: Timeslot: #1:0 #2:0
Mid-Call Digits: 12345678
Capt File Name: 554000_555000_Nov15_Washington0100_2_2011_1115_153720.pcm
554000_555000_Nov15_NewYork0200_2_2011_1115_153720.pcm

CALL EVENTS
-----
Time of Day Since Last Event Since Last Supp Direction p Event Resulting Call Duration Status
-----
15:37:20.000 0.000 0.000 New York S SETUP(an)
15:37:20.125 0.125 0.125 Washington S ALERTING(1)
15:37:22.594 2.469 2.469 Washington S CONNECT(255)
15:37:22.719 0.125 0.125 New York S CDNM_ACK(13)
15:38:32.040 69.321 Washington V DTMF-1 0.088
15:38:32.231 0.191 Washington V DTMF-2 0.101
15:38:32.435 0.204 Washington V DTMF-3 0.101
15:38:32.639 0.204 Washington V DTMF-4 0.088
15:38:32.830 0.191 Washington V DTMF-5 0.101
15:38:33.034 0.204 Washington V DTMF-6 0.101
15:38:33.238 0.204 Washington V DTMF-7 0.088
15:38:33.429 0.191 Washington V DTMF-8 0.101
15:39:06.188 32.759 103.469 Washington A DOF Error(0)
15:39:06.219 0.031 0.031 Washington A Line Sync Loss
15:39:06.219 0.000 0.000 Washington A Frame Error(on)
15:39:06.954 0.735 0.735 Washington A Frame Error(of)
15:39:07.688 0.734 0.734 Washington A Bipolar Violat
15:39:07.704 0.016 0.016 Washington A Bipolar Violat
15:39:08.485 0.781 0.781 Washington A Line Sync Loss

IN-BAND SUMMARY
-----
Value Washington New York
-----
Probe W1 E1
Label Washington New York
Start 11/15/2011 15:37:20 11/15/2011 15:37:20
Elapsed 113.214 113.214
ASL -10.701504 -100.000000
AF 30.008584 0.000000
RMS -15.929049 -100.000000
Noise -37.269003 -100.000000
% Voice 31.79235 0.000000
% Digits 1.612933 0.000000
% Quiet 0.000000 0.000000
% Idle 66.589862 100.000000
    
```

Call Duration with Seized & Release time

Called and Calling #s

Summary of Signaling and duration of each signaling

Midcall Digits

BPV, Line Sync Loss, Carrier Loss, Frame Error, and other errors inserted during the call

Active Speech & Noise Level

Call Detail (CSV Output Format)

- Call Side Record (*_csr.csv)
- Supervision (*_sbf.csv)
- Alarms (*_fac.csv)
- In-band Statistics(*_vbs.csv)
- In-band Events(*_vbe.csv)

	A	B	C	D	E	F	G	H
1	Probe ID	Call ID	Side	Address	File Name	Port	TimeSlot	MC Digits
2	ATTCARD1	111116111506-20	Washington	3012242219	3012242219_3012422219_Nov16_Washington0119_2011_1116_111525.pcm	1	19	
3	ATTCARD1	111116111506-20	New York	3014242219	3012242219_3014242219_Nov16_New York0219_2011_1116_111525.pcm	2	19	
4	ATTCARD1	111116111506-22	Washington	3016242220	3016242220_3019242221_Nov16_Washington0121_2011_1116_111525.pcm	1	21	
5	ATTCARD1	111116111506-22	New York	3019242221	3016242220_3019242221_Nov16_New York0221_2011_1116_111525.pcm	2	21	
6	ATTCARD1	111116111506-4	Washington	3016242233	3016242233_3019242233_Nov16_Washington0103_2011_1116_111524.pcm	1	3	
7	ATTCARD1	111116111506-4	New York	3019242233	3016242233_3019242233_Nov16_New York0203_2011_1116_111524.pcm	2	3	
8	ATTCARD1	111116111506-5	Washington	3016242234	3016242234_3019242234_Nov16_Washington0104_2011_1116_111524.pcm	1	4	
9	ATTCARD1	111116111506-5	New York	3019242234	3016242234_3019242234_Nov16_New York0204_2011_1116_111524.pcm	2	4	
10	ATTCARD1	111116111506-6	Washington	3016242235	3016242235_3019242235_Nov16_Washington0105_2011_1116_111524.pcm	1	5	
11	ATTCARD1	111116111506-6	New York	3019242235	3019242235_3019242235_Nov16_New York0205_2011_1116_111524.pcm	2	5	
12	ATTCARD1	111116111506-7	Washington	3016242236	3016242236_3019242236_Nov16_Washington0106_2011_1116_111524.pcm	1	6	
13	ATTCARD1	111116111506-7	New York	3019242236	3016242236_3019242236_Nov16_New York0206_2011_1116_111524.pcm	2	6	
14	ATTCARD1	111116111506-8	Washington	3016242237	3016242237_3019242237_Nov16_Washington0107_2011_1116_111524.pcm	1	7	
15	ATTCARD1	111116111506-8	New York	3019242237	3016242237_3019242237_Nov16_New York0207_2011_1116_111524.pcm	2	7	
16	ATTCARD1	111116111506-9	Washington	3017242238	3017242238_3019242288_Nov16_Washington0108_2011_1116_111524.pcm	1	8	
17	ATTCARD1	111116111506-9	New York	3019242288	3017242238_3019242288_Nov16_New York0208_2011_1116_111524.pcm	2	8	
18	ATTCARD1	111116111506-10	Washington	3017242239	3017242239_3019242289_Nov16_Washington0109_2011_1116_111524.pcm	1	9	
19	ATTCARD1	111116111506-10	New York	3019242289	3017242239_3019242289_Nov16_New York0209_2011_1116_111524.pcm	2	9	90*#ABCD
20	ATTCARD1	111116111506-11	Washington	3019241010	3019241010_3016241010_Nov16_Washington0110_2011_1116_111524.pcm	1	10	12345678

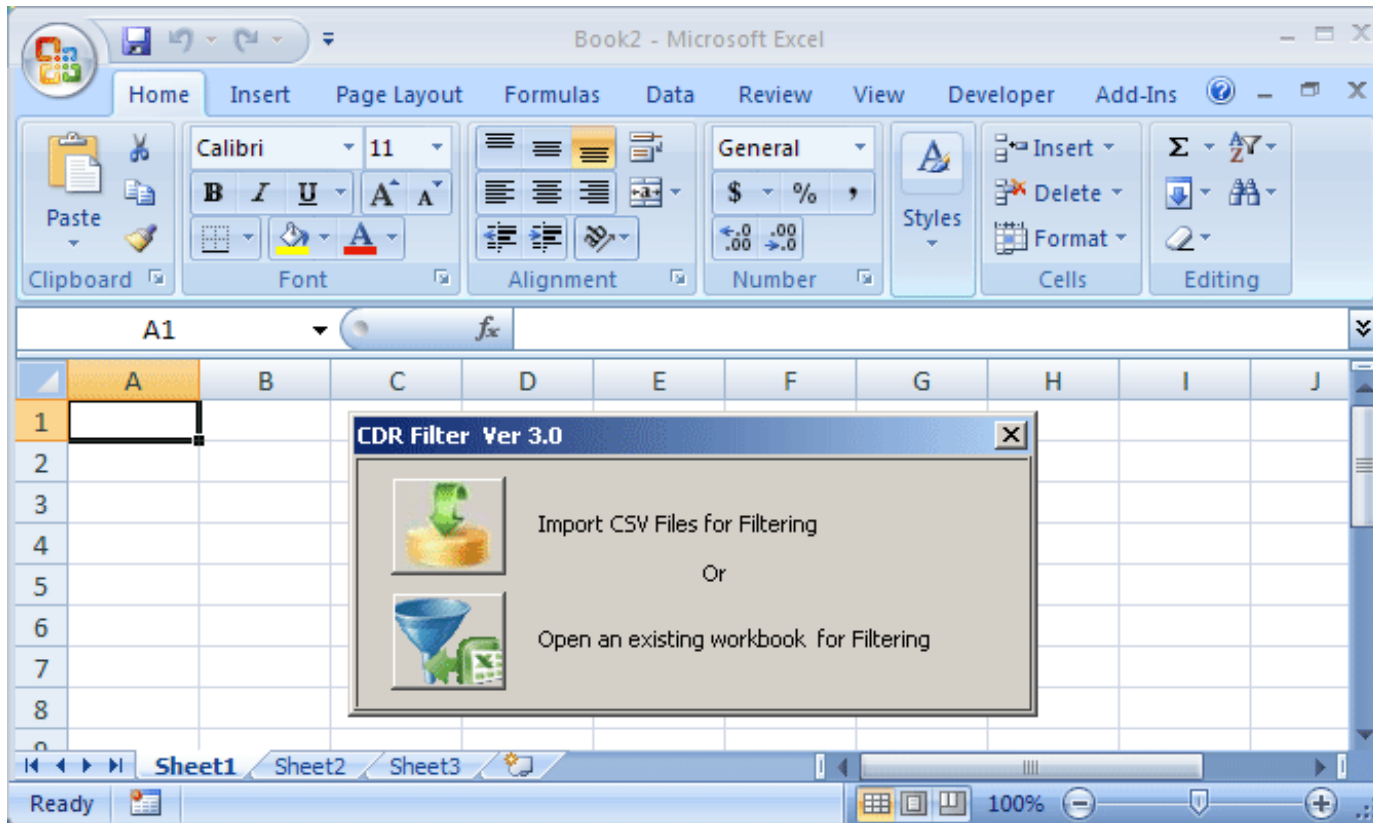
Voice Files

The screenshot shows a Microsoft Internet Explorer window displaying an FTP directory listing. The address bar shows the URL: `ftp://192.168.30.120/TestFiles/voicefiles/voicecapture1104091206/`. The main content area displays a table of files with columns for Name, Size, Type, and Modified. The files are all Raw PCM audio files with various sizes and modification dates. The left sidebar shows the folder structure, including Desktop, My Computer, My Network Places, Recycle Bin, CD DCOSS 5.4, license, Internet Explorer, and a local connection to 192.168.30.120 containing TestFiles, report, and voicefiles subdirectories.

Name	Size	Type	Modified
5552301_5551000_Nov04_E...	455 KB	Raw PCM audio file	11/4/2009 12:23 PM
5552301_5551000_Nov04_E...	1.04 MB	Raw PCM audio file	11/4/2009 12:48 PM
5552301_5551000_Nov04_E...	1.08 MB	Raw PCM audio file	11/4/2009 12:26 PM
5552301_5551000_Nov04_E...	994 KB	Raw PCM audio file	11/4/2009 12:51 PM
5552301_5551000_Nov04_E...	703 KB	Raw PCM audio file	11/4/2009 12:29 PM
5552301_5551000_Nov04_E...	681 KB	Raw PCM audio file	11/4/2009 12:53 PM
5552301_5551000_Nov04_E...	554 KB	Raw PCM audio file	11/4/2009 12:32 PM
5552301_5551000_Nov04_E...	670 KB	Raw PCM audio file	11/4/2009 12:56 PM
5552301_5551000_Nov04_E...	455 KB	Raw PCM audio file	11/4/2009 12:09 PM
5552301_5551000_Nov04_E...	670 KB	Raw PCM audio file	11/4/2009 12:58 PM
5552301_5551000_Nov04_E...	621 KB	Raw PCM audio file	11/4/2009 12:41 PM
5552301_5551000_Nov04_E...	763 KB	Raw PCM audio file	11/4/2009 12:35 PM
5552301_5551000_Nov04_E...	532 KB	Raw PCM audio file	11/4/2009 12:12 PM
5552301_5551000_Nov04_E...	906 KB	Raw PCM audio file	11/4/2009 1:01 PM
5552301_5551000_Nov04_E...	681 KB	Raw PCM audio file	11/4/2009 12:14 PM
5552301_5551000_Nov04_E...	736 KB	Raw PCM audio file	11/4/2009 12:38 PM
5552301_5551000_Nov04_E...	444 KB	Raw PCM audio file	11/4/2009 1:05 PM
5552301_5551000_Nov04_E...	944 KB	Raw PCM audio file	11/4/2009 1:03 PM
5552301_5551000_Nov04_E...	1.01 MB	Raw PCM audio file	11/4/2009 12:44 PM
5552301_5551000_Nov04_E...	571 KB	Raw PCM audio file	11/4/2009 12:20 PM
5552301_5551000_Nov04_E...	1.11 MB	Raw PCM audio file	11/4/2009 12:17 PM
5552301_5551000_Nov04_W...	455 KB	Raw PCM audio file	11/4/2009 12:23 PM
5552301_5551000_Nov04_W...	1.04 MB	Raw PCM audio file	11/4/2009 12:48 PM

Analyzing CDR output using EXCEL®

Analyzing CDR output using EXCEL®



Record Statistics and Advanced Filter

The screenshot displays a Microsoft Excel spreadsheet with a menu open over the 'Add-Ins' tab. The menu includes 'Import CSV and Voice Files', 'CDR Filters (ctrl+d)', 'Find Call Of Interest (ctrl+j)', and 'Other Actions'. A red arrow points from the 'CDR Filters (ctrl+d)' option to a 'CDR Filter Form Ver 3.0' dialog box. The spreadsheet shows columns for 'File Name', 'Total Statistics', and 'Filtered Statistics'. The data includes call counts for various file names and a duration filter set to '<1min'.

File Name	Total Statistics	Filtered Statistics
merged_m	19 Total Calls	
merged_s	38 Total End Point Records	
merged_v	38 Total Voice Band Statistics	
merged_e	190 Total Events Statistics	
*****More Stats*****		
	19 Tot# Calls - Short Duration (<1min)	
	0 Tot# Calls - Medium Duration (1-3min)	
	0 Tot# Calls - Long Duration(3-10min)	
	0 Tot# Calls - Very Long Duration(>10min)	

CDR Filter Form Ver 3.0

- Main Record Filters:** Probe ID, Call ID, Start, Released, **Duration**, Orig, Term, Rel Code, CRV
- Side Record Filters:** Address, Port, TimeSlot, MC Digits
- VoiceBand Filters:** ASL, AF, RMS, Noise, % Voice, % Digits, % Quiet, % Idle
- Event Filters:** Class, Code

Duration: Between 00:00:05 to 0:00:08

Contains Eg1: 555 Eg2: 5:*:* Eg3: * - For Non Blanks

Apply Filter

Filtered Calls (Calls of Interest)

The screenshot displays a software application window titled "merged_wb_1-25-2012-6-19-49 PM.xlsx - Microsoft Excel". The main window shows a "Calls of Interest" dialog box with a table of filtered calls. The table has columns for Probe ID, Call ID, Side 1, Side 2, Protocol, Start, Released, and Duration. Five calls are listed, all with a duration of 00:00:05. The third call, with Call ID 120125181409-17, is selected and highlighted in blue. A red arrow points from this row to the "Call Events" tab in the detailed view below. The detailed view shows the following information for the selected call:

- Probe ID: VBA Probe 1
- Call ID: 120125181409-17
- Protocol: ISDN
- Start Time: 01/25/2012 18:17:29
- Release Time: 01/25/2012 18:17:34
- Call Duration: 00:00:05
- Call Originating Side: East
- Call Terminating Side: West
- Release Code: REL_COMPLETE
- CRV: 83
- Archive Folder: C:\Program Files\GL Communications Inc\Usb E1 Analyzer\test\voice files

On the right side of the detailed view, there are two radio button options: "Play the Voice Files (requires the voice file path to have write permissions)" and "Download and Play the Voice Files". The second option is selected, and a text box next to it contains "C:\Test\" with a green play button icon. Below these options is a "Print Selected Record" button. At the bottom of the application window, the status bar shows "Completed...", "merged_e", "record count", and "callOfInterest".

Probe ID	Call ID	Side 1	Side 2	Protocol	Start	Released	Duration
VBA Probe	120125181409-4	West	East	ISDN	01/25/2012 18:14:37	01/25/2012 18:14:42	00:00:05
VBA Probe	120125181409-16	West	East	ISDN	01/25/2012 18:17:29	01/25/2012 18:17:36	00:00:07
VBA Probe	120125181409-17	West	East	ISDN	01/25/2012 18:17:29	01/25/2012 18:17:34	00:00:05
VBA Probe	120125181409-18	West	East	ISDN	01/25/2012 18:17:29	01/25/2012 18:17:36	00:00:07
VBA Probe	120125181409-19	West	East	ISDN	01/25/2012 18:17:29	01/25/2012 18:17:37	00:00:08

Thank you