
T1 E1 Analyzer Voice Band Analyzer (VBA)



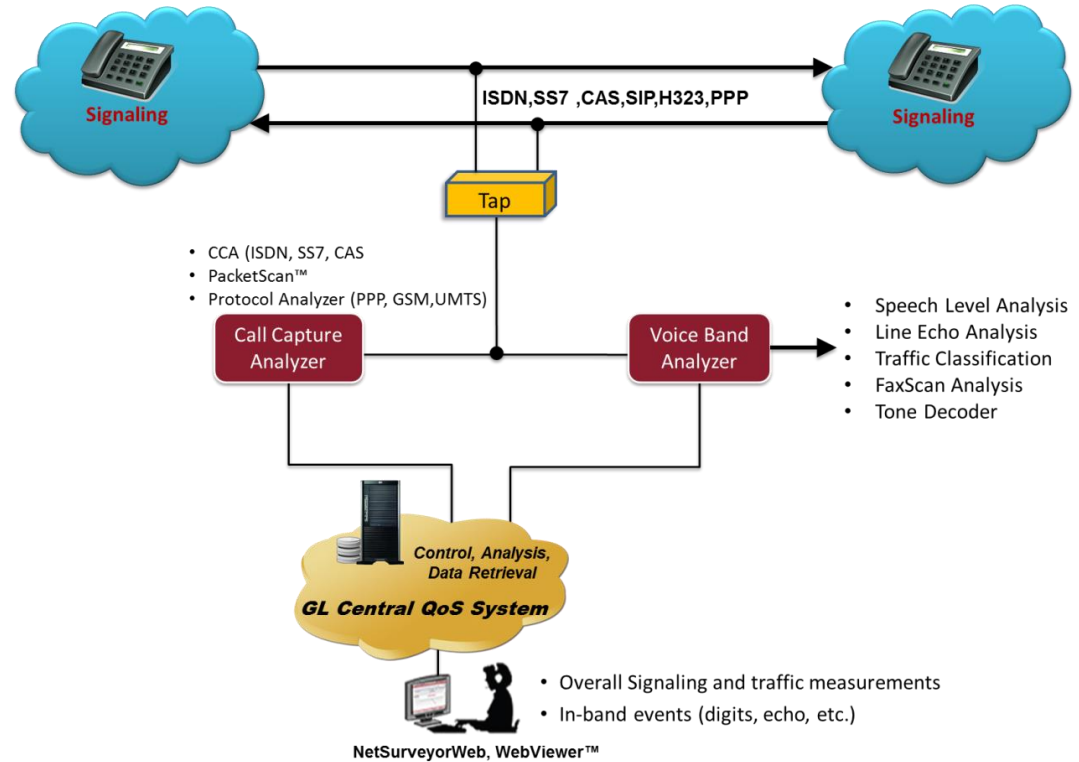
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Network Monitoring Solutions Using VBA

- VBA with VoIP Probe (minimum configuration)
 - Rack PC with VBA032 - Voiceband Analyzer
 - PKV100 – PacketScan™ Probe (requires separate PC)
- VBA with GSM Probe (minimum configuration)
 - Rack PC with VBA032 - Voiceband Analyzer
 - XTE001 – Dual T1 E1 Express (PCIe)
 - XX153 - Real Time TRAU Protocol Analyzer
- VBA with TDM Probe (minimum configuration)
 - Rack PC with VBA032 - Voiceband Analyzer
 - XTE001 – Dual T1 E1 Express (PCIe)
 - XX030 - Call Capture and Analysis w/ MFC-R2
- VBA with FXO RJ11 Hardware Tap and Audio Capture Software (minimum configuration)
 - Rack PC with VBA032 - Voiceband Analyzer
 - VBA033 - 2-Wire Echo Analysis Module
 - VQT035 - 2-Wire Voice/Data Capture

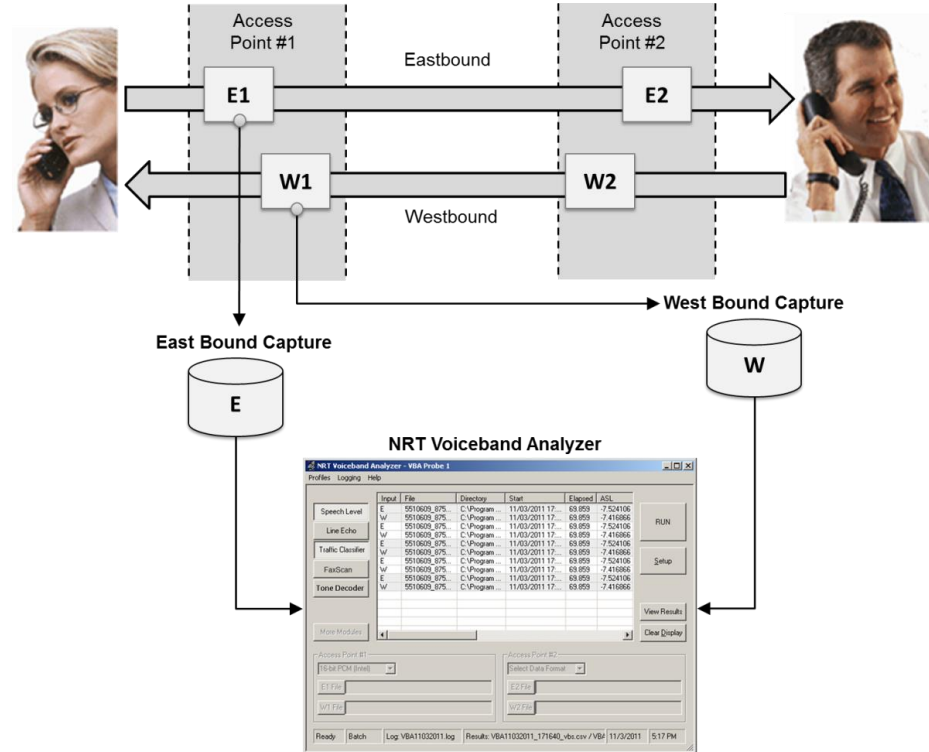
TDM & VoIP Monitoring Probes with VBA

- GL's VoIP & TDM probes capture voice files intrusively and feed them to VBA for analysis
- The VBA then instantly detects the voice file captures and performs measurements using built-in modules



Voice Band Analyzer

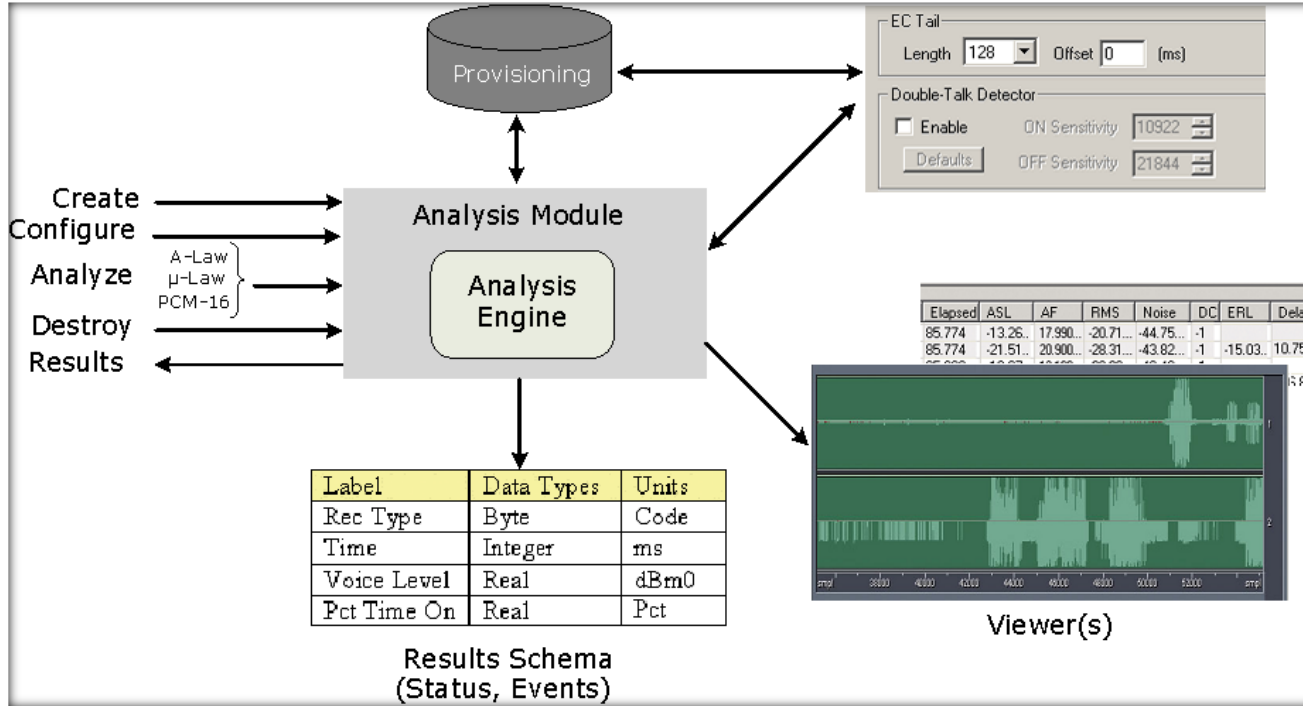
- VBA is a non-intrusive analysis tool for monitoring voice band network traffic. It can host different analysis modules for monitoring speech and noise levels, line (or hybrid) echo, and traffic classifier
- The standard modules included in the application are
 - ITU-T P.56 Active Voice Level analysis
 - Line Echo (Hybrid) analysis
- Other Optional Modules include -
 - 2-Wire Echo analysis
 - Traffic Classifier analysis
 - Fax Demodulate / Decode
 - Other modules- ITU-T P.561, P.562, and P.563 can be hosted as plug-ins



Features

- Accepts A-Law, μ -Law, 16-bit PCM (Intel), 16-bit PCM (Motorola), and MS Wave input data formats
- Records its output into two files, the first containing overall channel measurements, and the second containing event records
- Manual, batch, and automatic processing modes
- Hosts built-in algorithms include ITU-T P.56 Active Voice Level analysis, Line Echo (Hybrid) analysis, and licensed modules include 2-Wire Echo Analysis, Traffic Classifier and Fax analysis
- Analysis modules such as ITU-T P.561, P.562, and P.563 can be hosted as plug-ins
- Supports 1-, 2-, 3-, and 4-port signal data analysis
- Supports Fax Decode / Demodulation on 2-wire or 4-wire captures; FaxDD module outputs fax signaling frames in a log file and Fax image in TIF format
- Allows to implement Psophometric and C-Message signal conditioning before the Active Speech Level analysis; reports C-Message filtered files in dB_{rnC}

Integrating Analysis Algorithms (Modules)



User Interface

NRT Voiceband Analyzer - VBA Probe 1

Profiles Logging Help

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

Right-Click to Configure Each Module

More Modules

Access Point #1: A-Law

Access Point #2: Select Data Format

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

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

E2 File:

W2 File:

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

Operating Modes and Reporting Options

- **Manual:** Simultaneously two sets of files can be analyzed with appropriate data format
- **Batch:** In this mode an entire set of assembled data files in a folder or in subfolders can be analyzed at once
- **Automatic:** Analysis of data files continues indefinitely until the execution is stopped manually

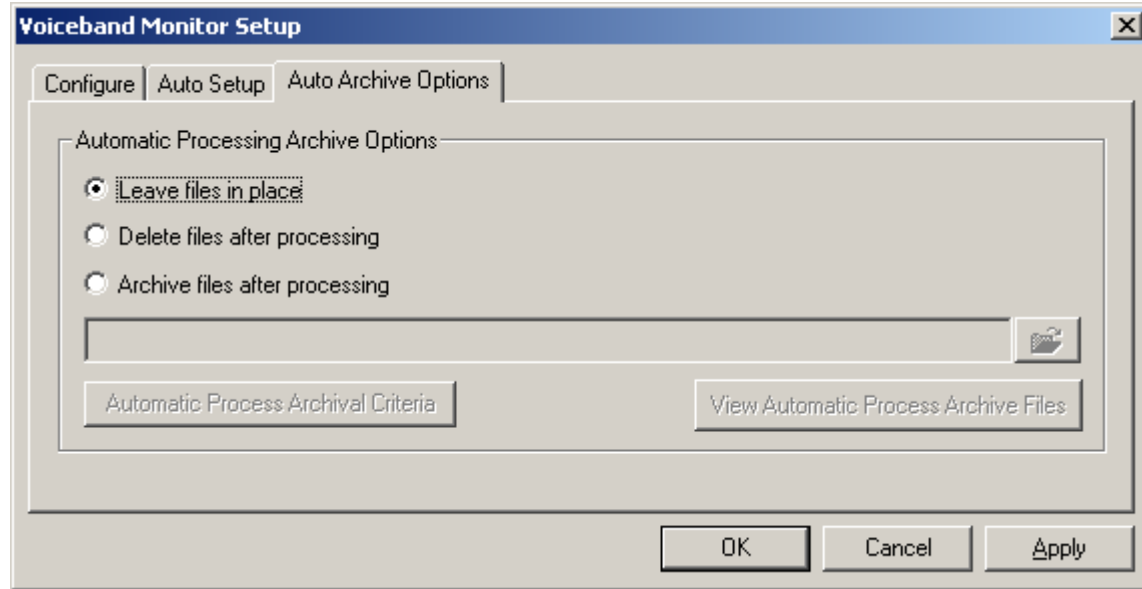
The screenshot shows the 'Voiceband Monitor Setup' dialog box with the following configuration:

- Configure** | Auto Setup | Auto Archive Options
- Probe Name: VBA Probe 1
- Select Operating Mode:** Manual, Batch, Auto. A text box explains: "In Auto mode, you identify the folder that holds your source data files. If you select 'With Sub-Folders', your source data files may also be in subfolders of the directory you select. You may also optionally choose to tag each input with a label. The label must appear somewhere in the names of the files that will be connected to that input. When you press the 'Run' button, the system monitors the folder or folders you specified for new files, analyzing each set of data files as they become available."
- Processing Options:** Initialization timeout: 2 Sec
- Display Options:** Display: 2048 Records
- Reporting Options:**
 - File Output** (selected)
 - File Options:**
 - Generate Separate Report File for Each File Set
 - Replicate Subfolders when Generating Reports
 - Database Options:**
 - DB Loader IP Address: 0 . 0 . 0 . 0
 - Port: 0
 - Database Output** (disabled)

Buttons: OK, Cancel, Apply

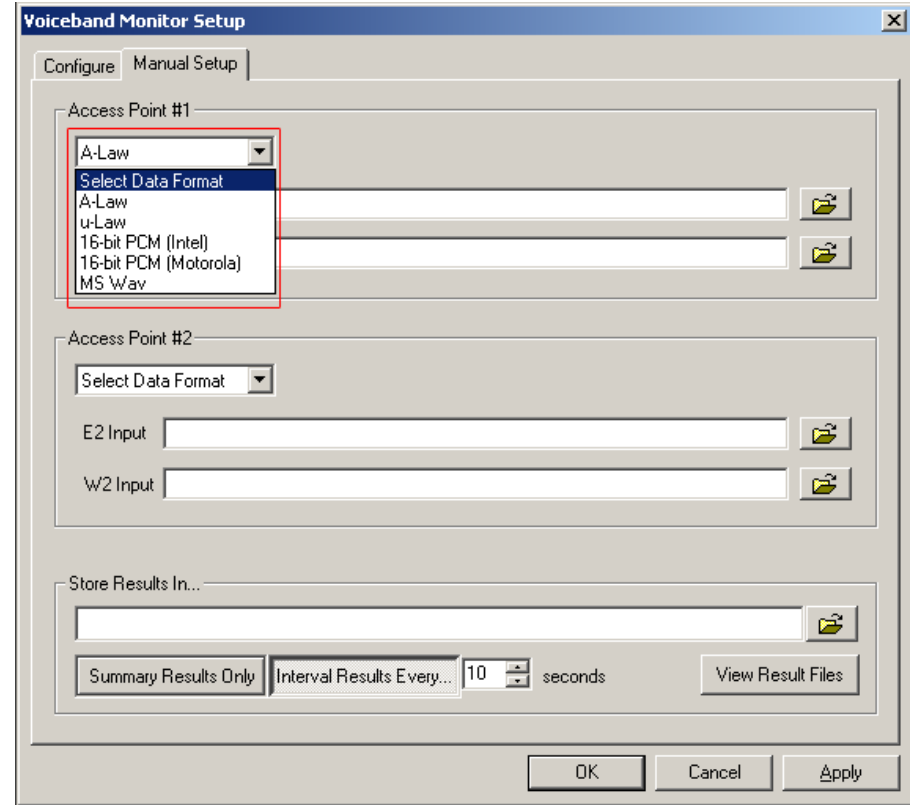
Operating Modes & Reporting Options (Contd.)

- This will allow the user to specify how the source data files to be managed after being analyzed



Manual Mode Setup

- Access Point fields allows user to select the file to be used at each input and a file format for each access point
- Supports A-Law, u-law, 16-bit (Intel/Motorola) PCM, and MS Wav files



Auto and Batch Mode Setup

- Monitors all sets of files in the folders in the specified location and stops the processing once it completes analyzing the files selected
- Access Point fields allows user to select the labels to identify each input and a file format for each access point
- Supported data formats for the Access Points are - A-Law, μ -Law, 16-bit PCM (Intel), 16-bit PCM (Motorola), and MS Wave
- 3 built-in naming conventions: CCA-Standard, CCA-MFCR2, CCA-ISDN, PacketScan-SIP, T1E1-PPP to make VBA compatible with GL's Call Capture and Analysis application

Voiceband Monitor Setup

Configure | **Batch Setup** | Batch Archive Options

Source Data
E:\Program Files\GL Communications Inc\Usb E1 Analyzer\calldata
Use Subfolders | View Source Files

File Name Convention
CCA-Standard | Nov30_E0101_0123.ab | Naming Conventions

Access Point #1
A-Law
E1 Input: Enable | Label: E
W1 Input: Enable | Label: W

Access Point #2
Select Data Format
E2 Input: Enable | Label: E2
W2 Input: Enable | Label: W2

Store Results In...
E:\Program Files\GL Communications Inc\Usb E1 Analyzer\calldata
Summary Results Only | Interval Results Every... 10 seconds | View Result Files

Active Speech Level - Configuration

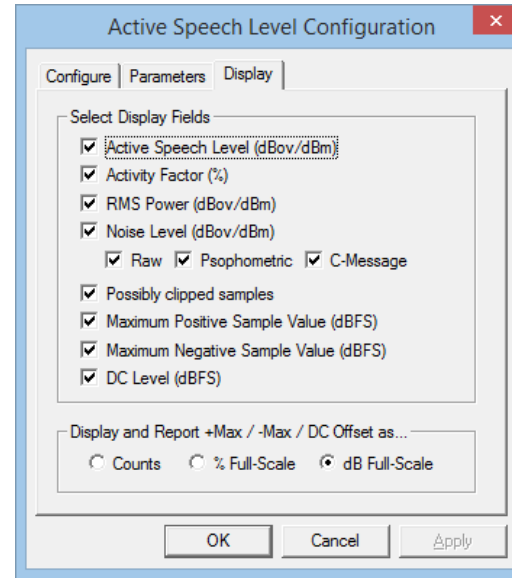
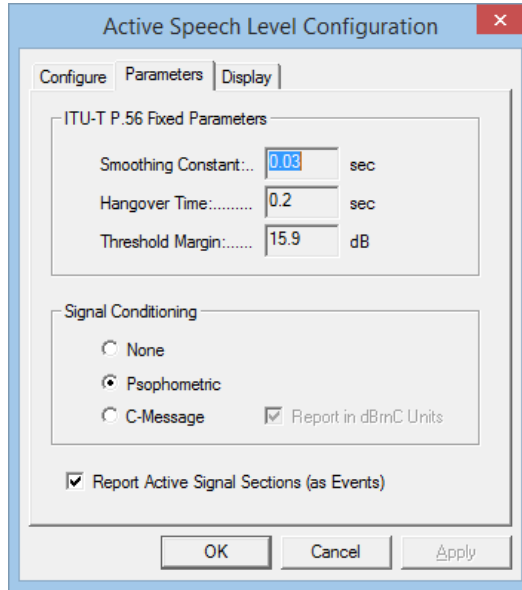
- Analysis of voice band for the modules is defined in ITU-T recommendation P.56.
- 16-bit linear PCM inputs the output is reported as dB relative to a full-scale sine wave.

The screenshot shows a dialog box titled "Active Speech Level Configuration" with three tabs: "Configure", "Parameters", and "Display". The "Configure" tab is active. It contains four sections for Level Monitors:

- Level Monitor E1: Online, Access Point: E1
- Level Monitor W1: Online, Access Point: W1
- Level Monitor E2: Online, Access Point: E2
- Level Monitor W2: Online, Access Point: W2

At the bottom of the dialog are three buttons: "OK", "Cancel", and "Apply".

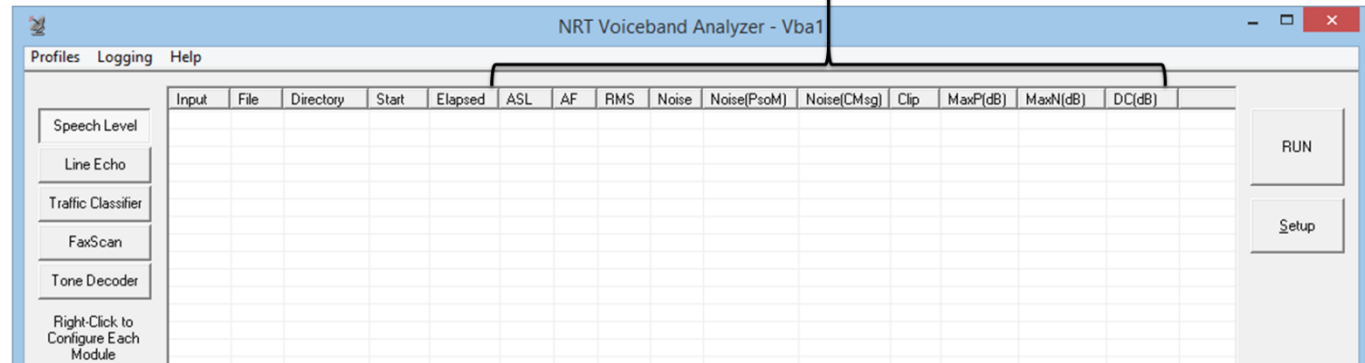
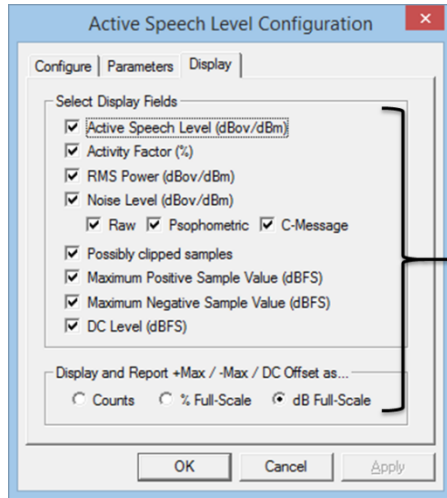
Active Speech Level – Parameters & Display Fields



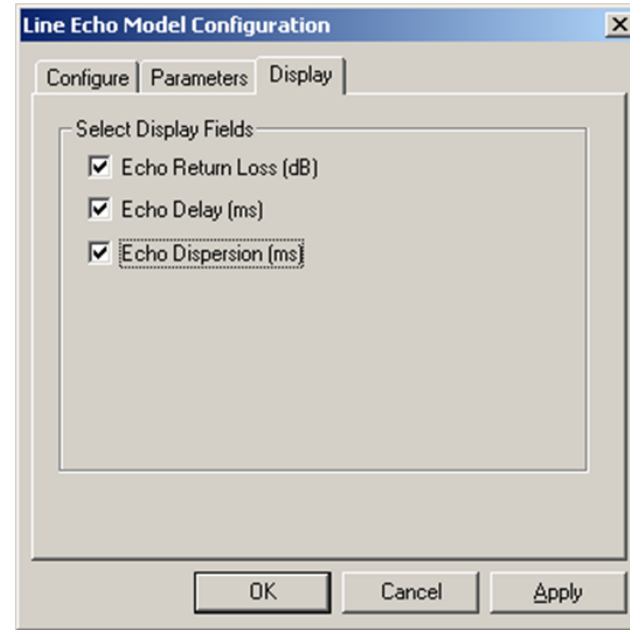
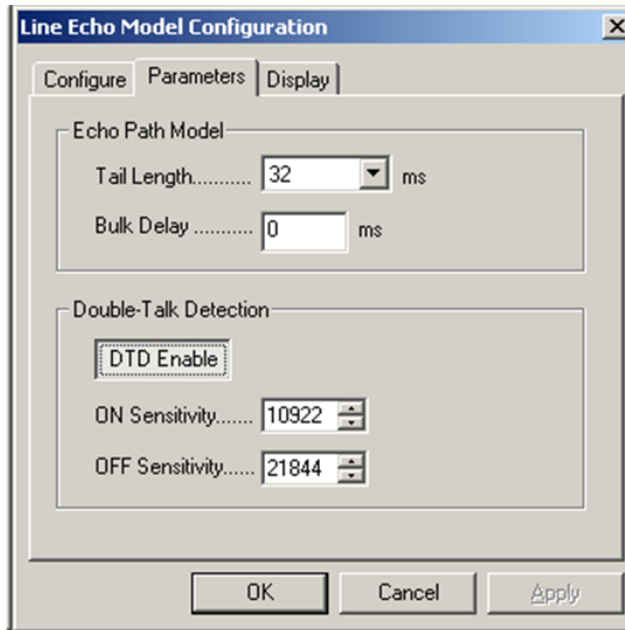
- The Active Speech Level is reported either in units of dBm (P.56 standard) or as dB relative to a full-scale sine wave (PCM standard)
- All the parameters have fixed values

Display Fields

Use this tab to select the fields that you want to have displayed and reported.



Line Echo Model Parameters & Display Fields



- Line Echo has two classes of variable parameters: Echo Path Model and Double-Talk Detection parameters
- The application displays the echo parameters such as ERL (dB), Echo Delay (ms) and Echo Dispersion (ms)

Traffic Classifier Model

Parameters & Display Fields

Traffic Classifier Configuration

Configure Parameters Reporting

Select Status Reporting Options

- % Fax/Modem
- % Voice
- % Digits/Tones
- % Silent
- % Idle

Select Event Reporting Options

- Traffic Segments
- Digits/Tones

OK Cancel Apply

Traffic Classifier Configuration

Configure Parameters Reporting

Country Code: United States

Idle Codes

ALaw	D5	55		
uLaw	FF	7F	FE	7E
PCM-16	0	1	-1	

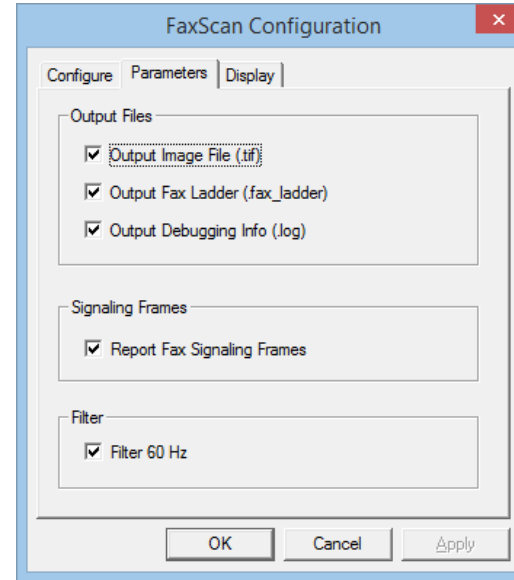
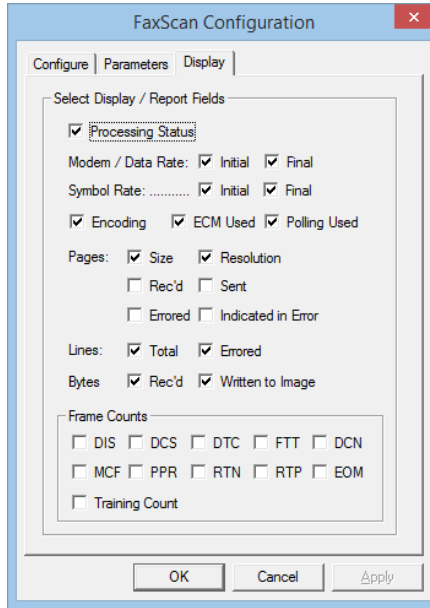
Digit/Tone Detection

- DTMF Digits
- Tones (Dial/Ring/Busy)
- MF Digits
- MFR2-Fwd Digits
- MFR2-Bkwd Digits

OK Cancel Apply

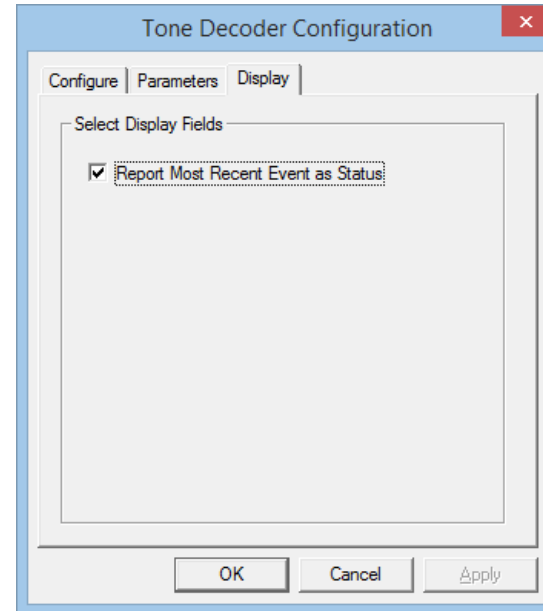
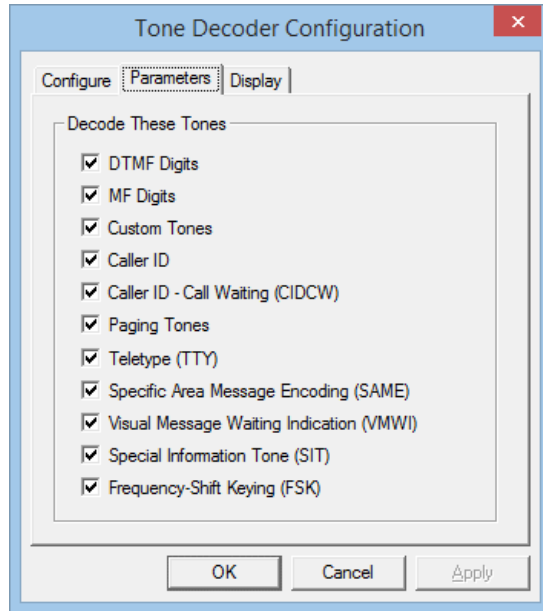
- The Traffic Classifier algorithm, allow parameter settings such as Idle code and Digit/Tone Detection for various country codes
- Displays the amount of Fax/Voice/Digits/Tones/Silent traffic detected in the network under test

FaxScan™ Configuration Parameters & Display Fields



- The FaxScan™ parameter tab produce Fax image in a TIF (Tagged Information File Format) and Generates log file in the text format with an extension “.log”
- User can configure Display tab to select the required outputs to be reported. By default, all fields are checked

Tone Decoder Configuration Parameters & Display Fields



- This Tone Decoder module within VBA features a highly efficient FFT module, converts a raw captured file to spectrum data. With this module, the VBA can monitor the signal arriving at the receive end, detects, and decodes the tone

Customize File Naming Convention

- The file name convention identifies data files and groups them in Batch / Auto Mode operations
- Supports user-defined naming convention for use with third party applications
- Built-In naming conventions allows VBA to be used seamlessly with CCA – Standard, CCA-MFCR2, and CCA-ISDN

File Naming Conventions

Select File Name Pattern
Test [New] [Delete]

Pattern Builder
<MON><DAY><LIT:_><INP><PORT:2><CHAN:2><LIT:_><INT:3><LIT:.abc>
Example: 1127_E0101_012.abc [Accept Pattern]

Signal Source Patterns
[Access Point Input Label]
[Port ID (Device#)]
[Channel ID]
[Literal Text]
[Integer]
[Unspecified Text]

Date Patterns
[Month: 2 Digit]
[Month: 1 or 2 Digits]
[Day: 2 Digits]
[Day: 1 or 2 Digits]
[Year: 2 Digits]
[Year: 4 Digits]
[Month Abbr.]
[Day of Year]

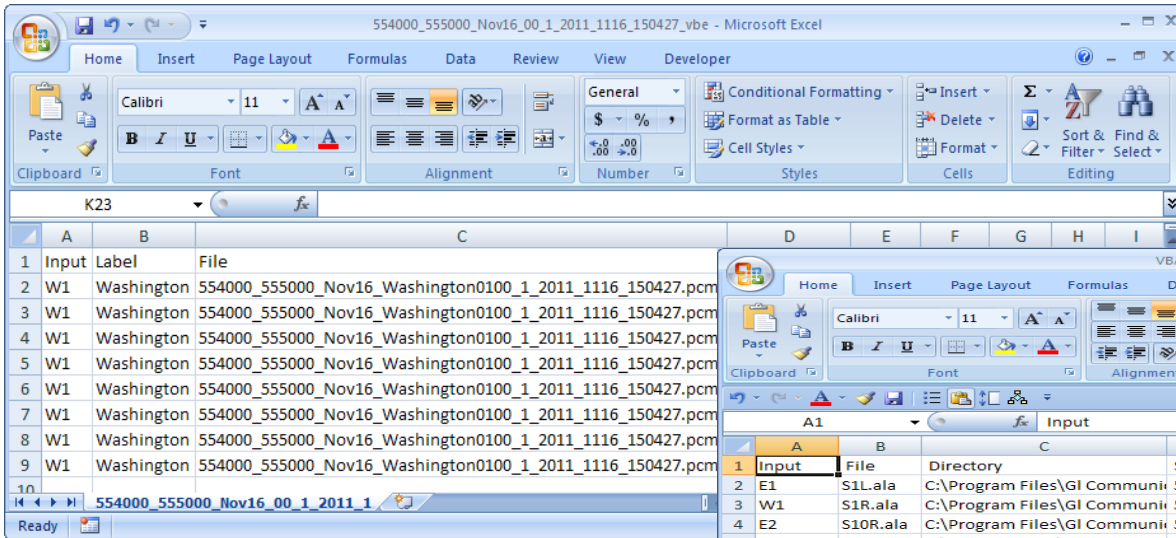
Time Patterns
[Hour: 2 Digits]
[Minute: 2 Digits]
[Seconds: 2 Digits]
[AM/PM]
[Time Zone]

Alternatives
[(] [OR]

[OK] [Cancel]

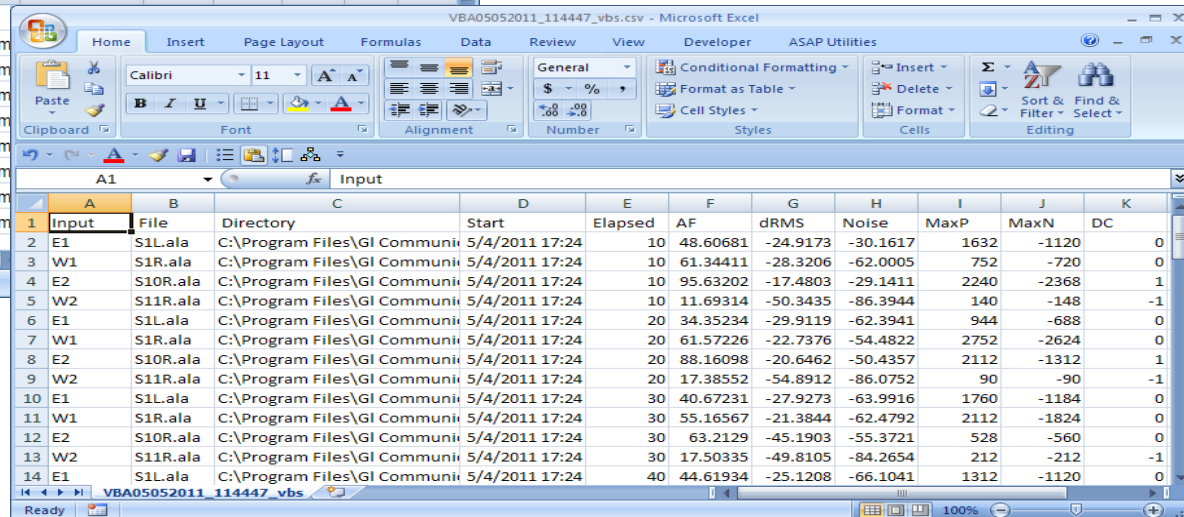
CSV Output to Excel Spreadsheet

Call Event (*_vbe.csv)



Input	Label	File
W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_150427.pcm
W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_150427.pcm
W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_150427.pcm
W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_150427.pcm
W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_150427.pcm
W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_150427.pcm
W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_150427.pcm
W1	Washington	554000_555000_Nov16_Washington0100_1_2011_1116_150427.pcm

Call Summary (*_vbs.csv)



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

Thank you