The TALAN detects and locates illicit tampering and security vulnerabilities on digital, analog, and VoIP telephone systems.

The TALAN provides a suite of tools in a single piece of equipment to accurately analyze phones and lines for faults and security breaches.
The TALAN includes a built-in automatic switching matrix for testing all pair combinations. For example, if a cable has 8 conductors, there are 28 combinations of pairs to test; the TALAN can automatically switch through all combinations, performing test functions and storing test results for comparison.

**VoicePlus Analysis**

The TALAN can capture and analyze network streams for fast identification of unauthorized VoIP traffic. Users can quickly detect if a VoIP phone system is passing data packets when it should not be.

Connect inline with a phone using an REI VoIP adapter, port mirroring, or an ethernet hub to capture VoIP packet traffic for analysis. VoIP data collected by the TALAN includes source and destination MAC/IP addresses, header type, statistics - total packets, packet rate, and run time. The TALAN software recognizes older protocols that other equipment may miss, increasing the probability of detection.

The easy-to-use interface allows users to visually observe patterns of consistent, repetitive traffic. Common VoIP services will often display a unique set of characteristics that can be used to visually identify similar sets of traffic. Effective, advanced filtering makes it easier to locate and identify suspicious packet information. New functionality allows for on-board analysis versus exporting information to third-party packet analyzing software.

New functionality allows for on-board analysis versus exporting information to third-party packet analyzing software.

**Non-Linear Junction Detection (NLD) on a Line**

The TALAN includes a NLD test to detect electronics connected to an isolated line. This is one of the most powerful tests for quickly determining whether there are additional electronics attached to a wire. The example to the right indicates a possible tap on pair 3-6. Because of multiple pair combinations any combination with either a 3 or 6 indicates some response, but the electronics are clearly detected on pair 3-6 with the strongest response.

**Frequency Domain Reflectometer (FDR)**

Similar to a TDR (Time Domain Reflectometer) but based on a different technical approach, the TALAN’s FDR can “shoot” a line for impedance anomalies indicating a potential security threat.

The FDR also has the ability to plot FDR traces of multiple pairs for historical comparison on one display.

The Harmonic Locator Probe (HLP) is used for tracing wires and determining the location of any electronics connected to the wire such as an eavesdropping device.

**Test Data Storage and Analysis**

The TALAN provides the ability to store data for all testing functions in a database structure for future review and comparison.

**TALAN Data Viewer Software** - A PC application that provides the ability to organize, analyze, and export TALAN test sequence data and charts for report writing. Moreover, the software provides the ability to compare numerous phones/targets on the same chart allowing the user to quickly identify anomalies. The TALAN Data Viewer Software can be downloaded for free on the REI website.

**High Gain Audio Amplifier and Built-in Audio Oscilloscope**

The TALAN includes a High Gain Audio Amplifier (30 Hz to 20 kHz) with up to 80 dB of total system gain (voice band). A DC Bias Voltage Generator (+/-80 VDC) is also provided to power attached electronics.

**RF Analysis and Detection**

The TALAN includes a Spectrum Analyzer that provides a detailed frequency spectrum display up to 85 MHz. This function also includes a time domain display to show the modulation for AM and FM signals.

The TALAN also includes a Broadband RF Probe to check free space RF energy up to 8 GHz, graphing the RF level over time to identify the location of a transmitter.
The TALAN includes a built-in automatic switching matrix for testing all pair combinations. For example, if a cable has 8 conductors, there are 28 combinations of pairs to test; the TALAN can automatically switch through all combinations, performing test functions and storing test results for comparison.

Analyze digital and analog, and VoIP phone systems and wiring for faults, anomalies, and security risks.

Digital Multimeter Tests
The TALAN includes multimeter tests such as Voltage, Current, Capacitance, and Resistance. The automatic switching matrix allows the user to quickly measure and display results for all pair combinations, easily identifying any anomalies. A new input panel provides the ability to test paired pairs against modern telecommunication threats including shield and ground. Dwell selection options allow for greater accuracy without sacrificing speed.

Digital Demodulation
Includes digital decoding capabilities for approximately 80% of the world’s digital phone systems.

Frequency Domain Reflectometer (FDR)
Similar to a TDR (Time Domain Reflectometer) but based on a different technical approach, the TALAN’s FDR can “shoot” a line to find impedance anomalies indicating a potential security threat.

Non-Linear Junction Detection (NJD) on a Line
The TALAN includes a NLJD test to detect electronics connected to a wire such as an eavesdropping device.

Digital Demodulation
Includes digital decoding capabilities for approximately 80% of the world’s digital phone systems. Audio demodulation also provides the opportunity to listen to live packet streams.

RF Analysis and Detection
The TALAN includes a Spectrum Analyzer that provides a detailed frequency spectrum display up to 85 MHz. This function also includes a time domain display to show the modulation for AM and FM signals.

High Gain Audio Amplifier and Built-in Audio Oscilloscope
The TALAN includes a High Gain Audio Amplifier (20 Hz to 20 kHz) with up to 80 dB of total system gain (voice band). A DCA Bias Voltage Generator (±80 VDC) is also provided to power attached electronics.

Connections:
- Connect inline with a phone using an REI VoIP adapter, port mirroring, or an Ethernet hub to capture VoIP packet traffic for analysis.
- A VoIP call collected by the TALAN includes source and destination MAC/IP addresses, header type, statistics - total packets, packet rate, and run time. The TALAN software recognizes older protocols that other equipment may miss, increasing the probability of detection.
- The easy-to-use interface allows users to visually observe patterns of consistent, repetitive traffic.
- Common VoIP services will often display a unique set of characteristics that can be used to visually identify similar sets of traffic. Extended, advanced filtering makes it easier to locate and identify suspicious packet information. New functionality allows for on-board analysis versus exporting information to third-party packet analyzing software.

The patent-pending Fast Fourier Transform (FFT) algorithm converts the arrival times of network traffic into a packet frequency graph. By transforming this information from time domain to frequency domain, the TALAN creates a line plot of frequency against time, allowing the user to quickly view any anomalies in the audio spectrum.

The FDR also has the ability to plot FDR traces of multiple pairs for historical comparison on one display.

Non-Linear Junction Detection (NJD) on a Line
The TALAN includes an NLJD test to detect electronics connected to a wire such as an eavesdropping device.

Digital Demodulation
Includes digital decoding capabilities for approximately 80% of the world’s digital phone systems. Audio demodulation also provides the opportunity to listen to live packet streams.

RF Analysis and Detection
The TALAN includes a Spectrum Analyzer that provides a detailed frequency spectrum display up to 85 MHz. This function also includes a time domain display to show the modulation for AM and FM signals.

High Gain Audio Amplifier and Built-in Audio Oscilloscope
The TALAN includes a High Gain Audio Amplifier (20 Hz to 20 kHz) with up to 80 dB of total system gain (voice band). A DCA Bias Voltage Generator (±80 VDC) is also provided to power attached electronics.

Connections:
- Connect inline with a phone using an REI VoIP adapter, port mirroring, or an Ethernet hub to capture VoIP packet traffic for analysis.
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Non-Linear Junction Detection (NJD) on a Line
The TALAN includes an NLJD test to detect electronics connected to a wire such as an eavesdropping device.

Digital Demodulation
Includes digital decoding capabilities for approximately 80% of the world’s digital phone systems. Audio demodulation also provides the opportunity to listen to live packet streams.
Suite of Telephone Tests Including an Automatic Switching Matrix

The TALAN includes a built-in automatic switching matrix for testing all pair combinations. For example, if a cable has B conductors, there are 28 combinations of pairs to test; the TALAN can automatically switch through all combinations, performing test functions and storing test results for comparison.

High Gain Audio Amplifier and Built-in Audio Oscilloscope

The TALAN includes a High Gain Audio Amplifier (30 Hz to 20 kHz) with up to 80 dB of total system gain (voice band).

A DCA Bus Voltage Generator (+120 VDC) is also provided to power attached electronics.

RF Analysis and Detection

The TALAN includes a Spectrum Analyzer that provides a detailed frequency spectrum display up to 85 MHz. This function also includes a time domain display to show the modulation for AM and FM signals.

The TALAN also includes a Broadband RF Probe to check free space RF energy up to 8 GHz, graphing the RF level over time to identify the location of a transmitter.

Harmonic Locator Probe (HLP)

The TALAN includes a Harmonic Locator Probe (HLP), used for tracing wires and determining the location of any electronics connected to the wire such as an eavesdropping device.

Non-Linear Junction Detection (NLJD) on a Line

The TALAN includes a NLJD test to detect electronics connected to an isolated line. This is one of the most powerful tests for quickly determining whether there are additional electronics attached to a wire.

The example to the right indicates a parallel tap on pair 3:6. Because of multiple pair combinations any combination with either a 3 or 6 indicates some response, but the electronics are clearly detected on pair 3:6 with the strongest response.

The easy-to-use interface allows users to visually observe patterns of consistent, repetitive traffic. Common VoIP services will often display a unique set of characteristics that can be used to visually identify similar sets of traffic. Extreme, advanced filtering makes it easier to locate and identify suspicious packet information. New functionality allows for on-board analysis versus exporting information to third-party packet analyzing software.

Test Data Storage and Analysis

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