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## INTRODUCING THE TALAN 3.0

Research Electronics International is pleased to announce the **TALAN 3.0 Telephone and Line Analyzer** with enhanced VoIP analysis and new earth/shield/ground testing. The portable TALAN 3.0 analyzes digital, analog, and VoIP phone systems and wiring for faults, anomalies, and security risks using a suite of telephone tests including an automatic switching matrix.

### Advantages

The TALAN 3.0 captures and analyzes network streams for fast identification of unauthorized VoIP traffic. It quickly detects if a VoIP phone system is passing data packets when the phone is not in use.

Connect inline with a phone using an REI VoIP adapter, port mirroring, or 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, peak rate, and run time. TALAN 3.0 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 later be used to visually identify similar sets of traffic. Extensive, advanced filtering makes it easier to locate and identify suspicious packet information.

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### WHAT'S NEW IN TALAN 3.0

- VoIP traffic analysis on phones, networks
- Patent-pending FFT algorithm for visual display of VoIP traffic
- Earth/Ground testing for modified connections to extraneous wiring
- Advanced input panel to accept and test shielded ethernet cables

Questions, comments, suggestions, or to add someone to the REI Newsletter mailing list, please e-mail: [newsletter@reiusa.net](mailto:newsletter@reiusa.net)



# INTRODUCING THE TALAN 3.0 (Continued)

(Continued)

The patent-pending Fast Fourier Transform (FFT) algorithm converts the arrival times of an entire set of network traffic into a packet frequency graph. By transforming this information from time domain to frequency domain, TALAN 3.0 creates identifiable patterns not easily noticed in a traditional packet list allowing the user to detect live VoIP traffic.

Analyze traffic by packet hits on all streams or isolated streams, the size of data in the packets over time, and frequency.

The audio demodulation function also provides the opportunity for users to listen to live packet streams.

TALAN 3.0's new input panel provides the ability to test all cable conductors against modern telecommunication threats including shield and ground. Dwell selection options allow for greater accuracy without sacrificing speed.

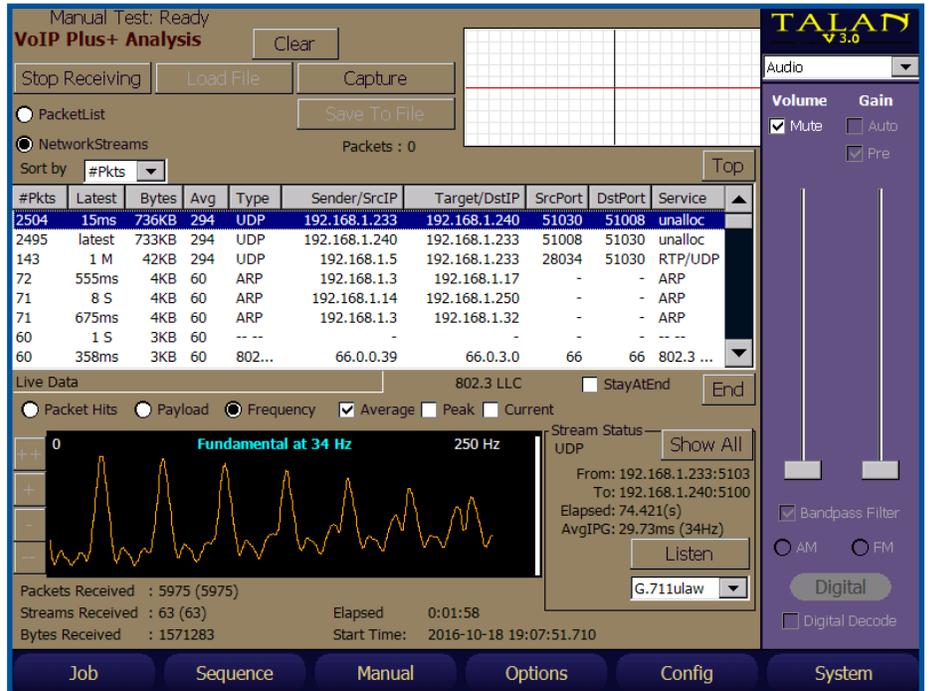
These new features are in addition to the TALAN's state-of-the-art capability to rapidly and reliably detect and locate illicit tampering and security vulnerabilities on digital and analog telephone systems. The TALAN provides a set of tools in a single piece of equipment containing test functions not available in any other product.

## Applications

In recent studies, 74% of business owners indicated that despite the rise of email, video, and social media, voice communication still remains very important to their operations\* and in spite of the popularity of the mobile phone, 83% of employees still have a desk phone in their office.\*\*

Each one of those phones could leave a business or organization vulnerable to electronic eavesdropping. Secure these private and proprietary conversations with the TALAN 3.0.

In addition to digital multimeter tests, the TALAN includes a wire-based non-linear junction detector, spectrum analyzer, and frequency domain reflectometer test.



TALAN 2.0 units will require a hardware and software upgrade to utilize the 3.0 functionality. Arrangements can be made with your sales manager to determine requirements, obtain a price quote, and issue an RMA to return your equipment to REI for update. All newly purchased TALAN units will have the new software and hardware included.

Visit the [REI website](#) for more information about the TALAN 3.0 and to request a price quote.



Shielded MOD8/RJ45 Jacks      Banana Jacks      Expansion Port      RF Antenna Input



\*Windstream: <http://investor.windstream.com/investors/releasedetail.cfm?releaseid=902667>

\*\*Ring Central Blog: <https://www.ringcentral.com/blog/2015/09/infographic-survey-shows-desk-phone-is-headed-for-retirement-but-isnt-dead-yet/>

# ANDRE FIRMWARE UPDATE AVAILABLE

New firmware for the ANDRE has been released on the REI website. You can locate the current version on your ANDRE by visiting SETUP and selecting Version.

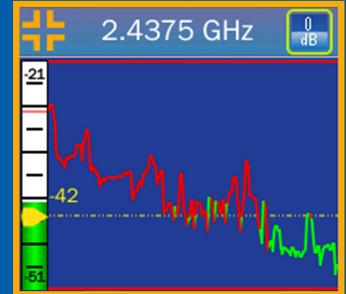
If your version is lower than 1.2.21, you will benefit from installing the new firmware. The 1.2.21 update includes:

- Redesigned display (see below) with new buttons, icons, and improved navigation
- Zoom View\* that shows 30 dB enhanced signal strength window
- Improved signal merging
- Live audio or signal tone available while viewing histogram
- Attenuation/gain adjustment controls on the main screen

\*The ANDRE **Zoom View** takes the full  view and displays a 30 dB segment of the signal level histogram. This improves the view of RF activity.

Users in **Zoom View** will notice the  icon.

While in Zoom View, tapping the upper half of the signal level display will adjust the trigger level based on the noise floor. Tapping the bottom half of the signal level display will adjust the zoom range based on the noise floor.



[Click here to download the new firmware.](#) Installation instructions are provided with the download.

**SCREEN CAPTURE**

**BATTERY LEVEL**

**CURRENT TIME**

**VOLUME CONTROL**  
Volume adjustment   
Mute   
Headphone volume adjustment   
Headphone mute 

**ZOOM VIEW\***  
Full View   
Zoom View 

**ATTACHMENT NAME & FREQUENCY RANGE**  
Toggle to switch between current attachment, IR/VL probe, and audio mode.

**ATTENUATION & GAIN SELECT OPTIONS**

**FREQUENCY COUNTER**  
Locks on strongest signal.

**SIGNAL LEVEL HISTOGRAM**  
Signal activity and strength over time.

**CHART DURATION & ADJUSTMENT**  
Time span represented on histogram. Range is 5 seconds - 24 hours. Adjust by tapping arrows.

**AUDIO MODE**  
Oscilloscope of audio activity with record and playback functions.

**DECAIVING PEAK LEVEL**

**TRIGGER LEVEL & ADJUSTMENT**  
Haptic and audio alerts notify user when detected RF levels exceed trigger level. Adjust level by dragging marker or tapping above/below trigger level.

**DETECTED RF LEVEL**

**RESET**  
On settings screen, resets ANDRE to factory default. On signal list screen, clears captured signals.

**SETTINGS**

**SIGNAL LIST**

**CHART SCREEN**  
Selected navigation button will be outlined in orange.

An updated manual and quick reference guide are also available on the ANDRE page of the REI website.

We hope you are as excited about these new features as we are. If you have any questions, please do not hesitate to contact your REI Sales Manager. The update can be downloaded for free at [www.reiusa.net/ANDRE](http://www.reiusa.net/ANDRE).



## ANDRE Advanced Kit - Audio Transformer

The Audio Transformer included with the ANDRE Advanced Kit shouldn't be mistaken for an audio amplifier. The Audio Transformer is a balanced audio coupler that provides electrical isolation for audio testing. Positive and negative bias voltage can be applied from 0 to 22 volts using the banana jacks included with the transformer.



# THE IMPORTANCE OF MOBILITY

There are many different types of spectrum analyzers including benchtop models, portable models, handheld units, and Software Defined Radio (SDR) units. While there are many different ways of comparing these products, most choose to focus primarily on the traditional spectrum analyzer specifications such as:

- Frequency Range
- SFDR – Spurious Free Dynamic Range
- DANL – Displayed Average Noise Level
- Phase Noise
- Sweep Speed
- Frequency Resolution

However, when using a spectrum analyzer to search for unknown signals which may pose a threat, mobility is another very important factor to consider. When doing a security survey, it is vital to be able to quickly pick up the spectrum analyzer and walk around an environment to compare RF signal strength in different locations.

Figure A illustrates traces being captured in three different locations relative to a transmitting signal. Figure B depicts those signals captured on the OSCOR. Trace 3 shows the strongest RSSI and the approximate location of the transmitter. In order to narrow down the location of a transmitter, mobility is essential.

The great benefit of changing locations is based on the physics of transmitting RF energy and locating the source of that energy. Because of the expanding radiation pattern, energy

levels being transmitted from a single source will decrease based on the inverse square law. This means that energy level decreases as a function of the range squared from the source of the transmission. Therefore, when comparing RF energy 20 feet from a target versus one foot from the target, the power level of the shortest distance increases by a factor of 400 (or 26 dB). By simply walking around, you can increase the sensitivity of your search by a very large factor.

It is worth commenting on many of the new SDR approaches to spectrum analyzers. In an SDR system, a laptop is used to control a stand-alone tuner module (or other spectrum analyzer, antennas). An SDR system creates a real mobility issue because it is very difficult to simply carry the various components of the system which may include a PC, a tuner, one or more antennas, an antenna controller, and possibly an external A/D digitizer and processor. These types of systems may prove useful for an in-place monitoring system, but they are not user-friendly when searching a building for a specific RF signal.

When comparing a spectrum analyzers for security purposes, REI recommends the following test: hold the spectrum analyzer in question in your hands, and walk around for at least 25 minutes while taking RF measurements throughout your facility. Try this with different units. Regardless of specifications, you will definitely have a favorite system when this test is completed!



*Next Issue: Remote Monitoring the OSCOR with POE*

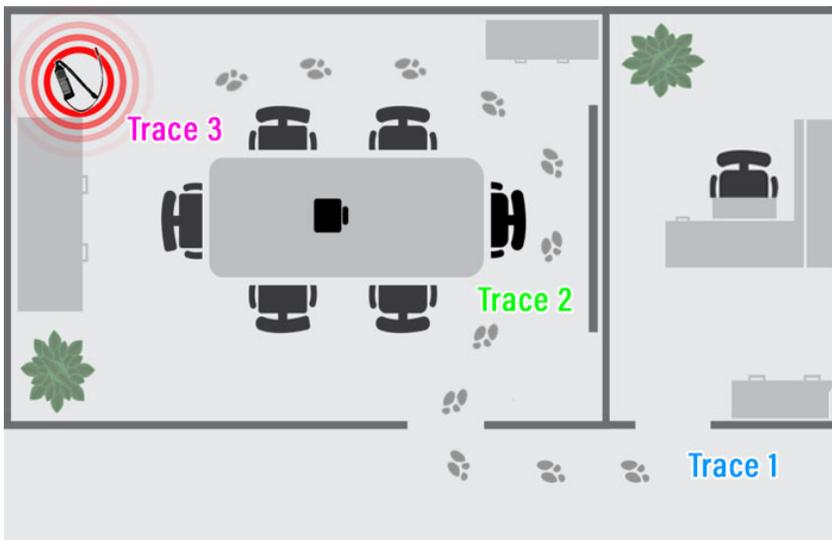


Figure A

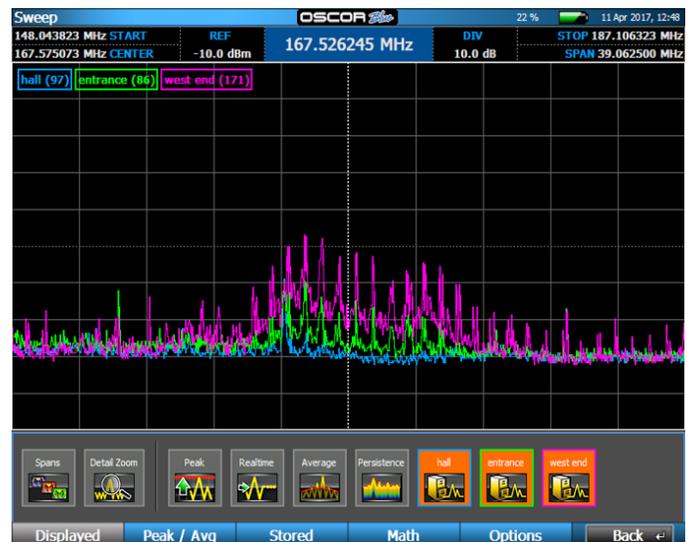


Figure B

# 2017 TRAINING CALENDAR

## Countermeasures Core Concepts Level 1

July 31 - August 4

## RF OSCOR Course Level 2

August 7 - 11

## TALAN Telephone Countermeasures Course Level 2

August 7 - 11

## RF Certification

August 14 - 18

## VoIP

August 14 - 18

## Countermeasures Core Concepts Level 1

September 11 - 15

## SPANISH COURSE PACKAGE

## Spanish RF OSCOR/TALAN Level 1 & 2

September 11 - 22

## RF OSCOR Course Level 2

September 18 - 22

## Advanced Equipment Use Level 3

September 25 - 29

## Countermeasures Core Concepts Level 1

October 2 - 6

## RF OSCOR Course Level 2

October 9 - 13

## TALAN Telephone Countermeasures Course Level 2

October 9 - 13

## TALAN Certification Level 3

October 16 - 20

## Countermeasures Core Concepts Level 1

October 30 - November 3

## RF OSCOR Course Level 2

November 6 - 10

## TALAN Telephone Countermeasures Course Level 2

November 6 - 10

## RF OSCOR Course Level 2

November 13 - 17

## Countermeasures Core Concepts Level 1

November 27 - December 1



CLICK HERE FOR COURSE DATES & REGISTRATION

# :// IN THE NEWS

## PANASONIC ACCUSED OF BUGGING BIZ PARTNER'S MEETING TO STEAL INFO

Source: New York Post

Article: <http://nyp.st/2lzQK4p>

## GERMAN DRUGMAKER STADA CEO'S CAR WAS BUGGED

Source: Reuters

Article: <http://reut.rs/2pn0ZeB>

## DUTCH ARREST MAN OVER SUSPECTED SPYING AT SIEMENS

Source: Reuters

Article: <http://reut.rs/2oSmU11>

## KHL COACH FINDS LISTENING DEVICE HIDDEN IN ROOM AFTER PLAYOFF GAME

Source: Yahoo! Sports

Article: <https://yhoo.it/2p52L8e>

## NYC INVESTIGATORS ACCUSE RIKERS ISLAND OFFICIAL OF SPYING

Source: ABC News

Article: <http://abcn.ws/2qjF6AW>

## HACKERS CAN STEAL LARGE AMOUNTS OF DATA USING ROUTER'S LEDS

Source: Hackread

Article: <http://bit.ly/2rZQdxL>

## YOU CAN'T BUG THE OVAL OFFICE (FOR LONG, ANYWAY)

Source: Wired

Article: <http://bit.ly/2r6cSq8>

## T-MOBILE AND HUAWEI MAKE CLOSING ARGUMENTS ON ALLEGED THEFT

Source: Geek Wire

Article: <http://bit.ly/2pRYyAN>

## TRADESHOWS & SEMINARS

### ESPIONAGE RESEARCH INSTITUTE INTERNATIONAL (ERII) CONFERENCE

August 17 - 20, 2017

Embassy Suites  
Alexandria, Virginia

<http://erii.org>

### DSEI

September 12 - 15, 2017

ExCeL Exhibitions & International  
Conference Centre  
London, UK

<http://dsei.co.uk>

### ASIS

September 25 - 28, 2017

Kay Bailey Hutchison  
Convention Center  
Dallas, Texas

<https://securityexpo.asisonline.org>

### MILIPOL PARIS

November 21 - 24, 2017

Paris-Nord Villeponte  
France

<https://en.milipol.com/>



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