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Questions, comments, suggestions, or to add someone to the REI Quarterly Newsletter mailing list, please e-mail:

newsletter@reiusa.net

OSCOR 5.0: Trace Analysis & RF Mapping

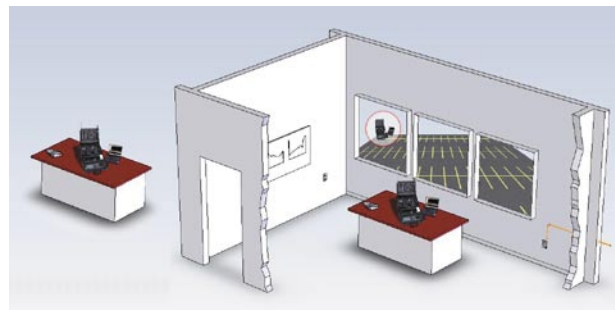
The new OPC OSCOR 5.0 software was specifically designed for sophisticated RF trace analysis and RF mapping.

The ambient frequency spectrum continues to be a dynamically changing environment. From small towns to big cities, new signals are appearing almost daily. These signals include intermittent analog signals such as police and taxi radios, digital pagers and mobile phones such as GSM, CDMA, PCS, etc.. Wi Fi wireless LANs, blue tooth, and new technologies such as Ultra-Wide Band (UWB) are on the way. In order to address this changing RF spectrum, REI has developed a new methodology and new software. The new OPC OSCOR 5.0 software and USB Interface provides real-time download of all frequency step data from the OSCOR TSCM Spectrum Analyzer. This means that as the OSCOR sweeps across the Whip Hi, Discone, and MDC antennas (5MHz to 21GHz) the spectrum comprising of 120,000 data points is transferred to the PC for high-resolution display and storage.

This provides the capability to store spectrum trace analysis data from multiple locations or from different times in order to perform detailed high-resolution trace analysis comparisons. In other words, you can capture RF spectrum trace data from a friendly location such as the parking lot or outside of the target sweep area, and from multiple locations from within the target building.

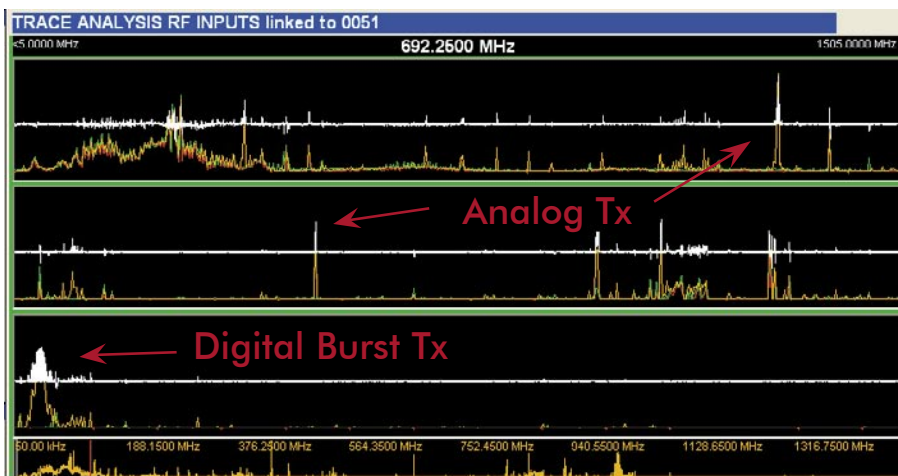
Then, these trace spectrums can be compared to determine if transmissions are emanating from

certain locations within a building, and thus provide an accurate RF map of a facility. Furthermore, the OPC software provides the ability to capture trace data in the same location at different times. For example, you can compare the Peak Trace data that was captured last month with a current Peak capture to see if any new signals have been brought into the environment.




Trace analysis is done primarily using Peak Trace data, which ensures that if energy has been encountered from an intermittent transmitter such as a Frequency Hopper or a Burst (packet) transmitter, then the evidence and signal level of these transmissions is easily captured and compared using a difference spectrum.

The new trace analysis functionality built into the OSCOR and OPC 5.0 Software provides a new level of comparability to rapidly identify very sophisticated transmissions, and provides an accurate indication of whether a transmission is emanating from within an area of concern. **REI**



REI's TSCM TRAINING CURRICULUM

REI's Center for Technical Security is continuing to expand its curriculum. REI has always had a philosophy that the equipment is only as good as the operator; we believe our unique training facilities and experienced training staff provide unparalleled TSCM training opportunities. With an emphasis on both classroom training, as well as hands-on training exercises where students track down threats in real-world environments, students gain a practical working knowledge of TSCM equipment & procedures.

Below are brief descriptions of the current courses offered. Course dates and schedules are available on our website. For more information or to register for a course, please e-mail sales@reiusa.net 

Technical Security Equipment Course Number: TSE 101

Prerequisite: None

Three (3) day course designed to introduce & familiarize the technical security specialist with countermeasures equipment & basic security sweep procedures. Course topics include:

- Purpose, use, & methodology of various TSCM equipment,
- Broadband RF receivers, Non-Linear, Junction Detectors, & Spectrum Analyzers,
- Complex transmitters and their detection,
- TSCM exercises in "live" target rich environments.

Technical Security Countermeasures Course Name: TSCM 201

Prerequisite: TSE 101

Five (5) day course focused on procedures to conduct a technical security investigation. Course topics include:

- Indications of information loss,
- Technical threat overview,
- Physical search procedures,
- Signal modulation and analysis,
- Advanced equipment procedures,
- TSCM exercises in "live" target rich environments.

Advanced TSCM Concepts Course Name: ATC 301

Prerequisites: TSE 101 & TSCM 201

Five (5) day course that provides advanced instruction of RF signal analysis & theory that includes:

- The relevance of Inverse Squares Law, Frequency Domain and Time Domain,
- Wavelength versus Frequency,
- Modulation Schemes,
- RF Environment Mapping.

The course covers various equipment including RF receivers, oscilloscopes, spectrum analyzers, & harmonic receivers. All course concepts are reinforced with hands-on exercises.

Equipment Certification Course Course Number: ECC 240

Prerequisites: TSE 101 & TSCM 201

Five (5) day course includes 2 days advanced TSCM concepts, & 3 days practical equipment skills testing for certification on the following equipment:

- OSCOR & Microwave Down Converter,
- ORION Non-Linear Junction Evaluator,
- CPM-700 Countersurveillance Probe/Monitor.

Upon successful completion of the testing exercises, students are granted R.E.C. (REI Equipment Certified) credentials, valid for one year.



NEW PRODUCT: VIDEO POLE CAMERA VPC-64



REI is pleased to add another tool to the suite of technical security equipment: the NEW Video Pole Camera, VPC-64, for security inspections and tactical applications.

The VPC-64 is a self-contained, light-weight pole camera for inspecting hard to reach or dangerous areas. The VPC-64 is excellent for examining drop-ceilings, in or around un-movable objects or tight areas for potential security risks or security breaches.

The expandable pole goes from 20 inches to over 6 feet with no external cables and without changing configuration giving the typically user reach of well over 10 feet. The VPC-64 weighs just over 3.5 lbs and the complete system fits inside a small case slightly larger than a standard brief case.



The removable Color Camera Head has built in variable white-light illuminators providing crisp color images even in dark or low light situations. An optional Low Light Black and White Camera head with infrared illuminators is available for tactical or covert applications.



Black & White Camera,
Infrared LEDs



Color Camera,
White LEDs

All controls are configured on the large (6.4 inch diagonal) color TFT monitor providing a quick and easy to use inspection system right out of the case. The display monitor also provides a video output for other uses. Rechargeable battery packs and charger are included; typical run time is about 2 hours per fully charged battery pack.

For more information or to place an order for the new VPC-64, contact REI at sales@reiusa.net



TSCM Tips

Keeping your skills sharp:

To keep your OSCOR, CPM, and ORION skills sharp, periodically test yourself by having a friend hide a simulated sweep target transmitter, and then test your skills in locating and identifying the test transmitter. Below are some examples of easily obtainable devices that make excellent test transmitters to practice using your TSCM equipment:

- Wireless presentation microphones and common baby monitors (good analog audio test transmitters),
- Commonly available 2.4GHz cordless phones (can be spread spectrum and even frequency hopping),
- Newer 5.8GHz cordless phones (typically only the base station transmits at 5.8GHz) good for MDC and BMP users,
- Wireless internet access points (802.11) make good frequency hopping digital test transmitters,
- Wireless cameras are easily available (check e-Bay) and are good for video test signals.

ESD Precaution:

For OSCOR & CPM-700 users, remember that electro-static discharge (ESD) is much more prevalent during the winter months and can damage your equipment. To prevent ESD on the CPM, use caution when using the chrome, telescoping standard RF antenna (50kHz-3GHz); alternatively use the "hardened" all black European probe which is ESD protected. When using the OSCOR, make sure the OSCOR is plugged into a grounded outlet and touch the chassis of the OSCOR to discharge any potential static energy.

If you have TSCM sweep tips that you would like to share, please send them to support@reiusa.net

