The Role of Software Defined Radio (SDR) for TSCM and Remote Spectrum Surveillance and Monitoring

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Software Defined Radio (SDR) hardware has not only dominated, but revolutionized the Technical Surveillance Countermeasures (TSCM) industry during the past number of years, as extremely sophisticated and highly reliable, low cost SDR hardware and advanced software options, have been introduced worldwide.

SDR based systems have now become the first choice for many private security organizations, corporate security teams, spectrum regulatory agencies, governments, law enforcement, military and others, as operational requirements and budget pressures have redefined the quest for new technology, and innovation.

Another notable factor is the global shift in deployment methodology, to maintain pace with a changing threat environment, due to world events such as the growing threat of international terrorism, criminal activity, and targeted espionage.

Software Defined Radio (SDR) has clearly redefined the technical security industry, so much so, that the market share is shifting dramatically, as many organizations clearly see and appreciate the full potential and benefits of operating low cost, high versatility SDR hardware and industry leading TSCM software.

It is now possible to equip an entire team with dedicated sweep kits, and build redundancy with equipment resources, rather than budgeting for an expensive, shared single box solution.

The benefits are clear! Increased Probability of Detection (POD), with enhanced technical operator familiarity, improved field deployment confidence and efficiency.

Direct benefits include, innovative deployment flexibility, and system scalability, with multiple receiver support, across numerous manufacturers SDR products.

When the assignment calls for a typical electronic sweep to be performed, or remote spectrum surveillance and monitoring is required, SDR systems offer many advantages, features and deployment options.

The ability to quickly locate hostile emitters, confirm friendly signals, conduct real-time analysis and / or post analysis and review, of collected spectrum data, perform signal analysis, generate detailed technical reports, capture evidence, and facilitate secure data storage.

SDR technology is versatile, flexible, adapts well to changing deployment requirements, and travels without complication.

Industry leading Signal Intelligence Support Systems, such as the Kestrel TSCM ™ Professional Software, instantly transforms SDR hardware, into a powerful resource for operator assisted, fixed antenna location collection assignments, mobile operations, walk-around emitter locates, and may be used to facilitate advanced Radio Direction Finding (RDF) scenarios.

The features and advantages of SDR hardware are significantly enhanced by the capability of deployment ready software, that is TSCM specific, and operator centric.

This hardware and software combination turns a powerful SDR spectrum analyzer into an even more powerful TSCM specific equipment resource.

Key Benefits

Operator Control - Kestrel TSCM ™ Professional Software provides the technical operator with full and unrestricted control over essential features such as the Resolution Bandwidth (RBW).

Versatility - Lower cost of ownership, system scalability, TSCM specific software, and support for multiple manufacturers hardware products, depending on the specific end-user requirements.

Future Proof Investment - SDR hardware is field replaceable, upgrades are easily managed, additional receivers can be added to the system at anytime, and can be operated across multiple laptops, as needed in the field and in the office.

Software Defined Software (SDR) is the Future of Technical Surveillance Countermeasures (TSCM)

Professional Development TSCM Group Inc.

Multiple Deployment Roles - SDR based systems can be deployed as a signal receiver, stand-alone RF collection platform, or utilized in multiple receiver combinations to meet more complex counter-espionage requirements.

Dual Role Sophistication - Spectrum analysis software is delivered with many of the industry leading SDR receivers and analyzers, providing advanced Test and Measurement capability for a wide range of applications in the field, lab, and classroom.

Kestrel Support Profiles (KSP) - Many government organizations have already invested in professional products, such as those manufactured by Rohde & Schwarz, Anritsu, Tektronix, Signal Hound, ThinkRF, and CRFS, and can continue utilizing these familiar products without the need to invest in new or additional hardware, realizing long term budgetary benefits, without the need to purchase additional hardware.

Dual / Multiple Receiver - The power of multiple receiver hand-off is a key operational consideration in meeting the requirements of modern threat modeling, and new deployment methodology, with the ability to analysis and review Signals of Interest (SOI) without interrupting the data collection process.

Travel Friendly - SDR based systems are run on a laptop computer, with receivers that vary in size and style, but are typically very small and light weight, with the entire system easily carried in a laptop bag.

System Configuration Myths - The typical deployment platform includes a suitable laptop, or tablet computer, one (or more) SDR receivers, and a suitable wideband antenna.

Antenna Considerations - TSCM is a near-field function, and virtually any antenna consistent with the receiver Range of Interest (ROI) will work adequately, without the need for antenna switches, or the complexity of multiple antennas.

Radio Direction Finding (RDF) - Walk about emitter locates are easily accomplished with a tablet computer and a Signal Hound BB60C, USB 3.0 powered SDR receiver and a log-periodic antenna, while your laptop and primary receiver continue uninterrupted collection at a fixed location.

Innovation is Simply the Beginning
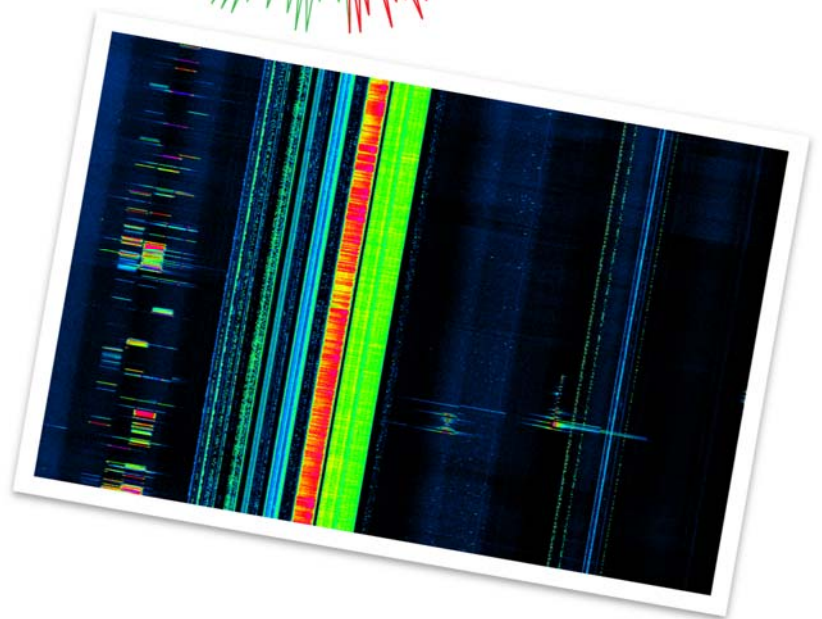
Kestrel TSCM ^{TM} Professional Software is innovative industry leading, disruptive technology, now sold in 20 countries worldwide.