

Kestrel TSCM[®] Professional Software

Introducing Kestrel Central Visualizer (KCV)[™] and Distributed Remote Radio Management (RRM)[™]

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Kestrel Central Visualizer (KCV)[™]

The Kestrel TSCM[®] Professional Software can be deployed standalone in support of a TSCM or SIGINT role; in a multiple radio environment; and within a multiple location environment for Remote Spectrum Surveillance and Monitoring (RSSM)[™] applications. Perhaps the most important development to date is the implementation of the Kestrel[®] single radio, dimensional geo-location heat mapping propagation modelling capability realized, with the recent introduction of the Tap Capture Plot (TCP)[™] feature. This essential TSCM capability is designed to capture all of the RF energy present within a standards-based Operator Defined

Target Area (ODTA)[™] and into the extended Functional Target Area (FTA)[™] to expose and immediately geo-locate the source of all active energy from emitters regardless of the source. This is powerful new industry technology developed by Professional Development TSCM Group Inc., specifically for use within the Kestrel TSCM[®] Professional Software.

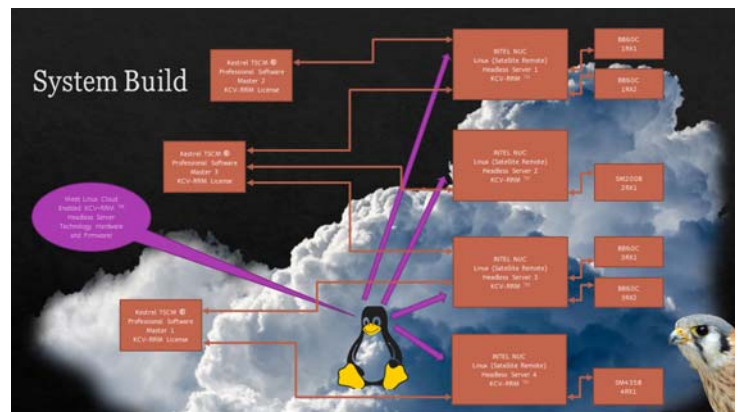


Remote Radio Management (RRM)[™]

The next logical step in the Kestrel TSCM[®] Professional Software innovation process cycle, includes the ability to access remote network satellite radios and establish full C2 connectivity and analytical processing across all of the standard-included and optional Kestrel[®] software features.

Remember, in a Moving Target Threat Model the Technical Operator is the Spectrum Analyzer...

The new Kestrel Central Visualizer (KCV)[™] | Remote Radio Management (RRM)[™] feature brings this unique capability full circle. Our standards-based **Kestrel-net**[™] business model and methodology has paved the way for a powerful working component in the development process of building a low cost global spectrum monitoring platform. The KCV-RRM[™] option consists of one or more master instances running a KCV-RRM[™] satellite license; enabled on a Kestrel TSCM[®] Professional Software platform. The KCV-RRM[™] licensing model includes an enterprise master license with a fixed number of satellite licenses for full scalability. For example; as an enterprise-level licensing package, resources include 5 scalable platforms with the following end-user options; (1 master | 5 satellites); (1 master | 10 satellites); (3 masters | 25 satellites); (5 master | 50 masters); (10 master | 100 satellites).



Master | This capability allows multiple master instances of the software that share access to a distributed set of remote satellites, providing exceptional operator platform management across a transportable enterprise licensing structure.

Satellite | One or more Kestrel[®] instances running with a Remote Radio Management (RRM)[™] license, which for simplicity is part of the same enterprise licensing structure as the rest of the KCV-RRM[™] platform. The satellite knows the users who are authorized for remote access. Users can be manually added to the system. User credentials are part of a transportable file and can be duplicated across satellites and edited, as required by the administrator. The existing Network Addresses mechanism within the Kestrel[®] application is utilized to add one or more satellites. A Kestrel[®] satellite can be operated autonomously as a standalone collection resource, or can provide full operator-assisted remote C2 capability.

Kestrel TSCM[®] Professional Software

Professional Low Cost Headless (Linux) Remote Satellite Server-Based Computer (SBC) Solution for RF Monitoring Applications

Professional Development TSCM Group Inc.

Technical Security Branch (TSB)

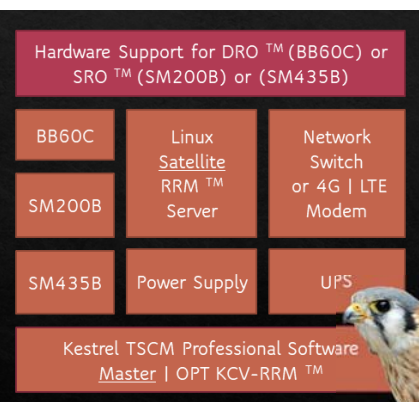
A satellite will accept a valid user login and will report all of the available resources (radios) and their individual status.

Kestrel[®] Scientific Research and Innovation

This latest Kestrel TSCM[®] Professional Software development adds an essential component in deploying a low cost, full featured remote monitoring platform with advanced end-user capability that has never before been included in a low cost full-featured, TSCM specific application.

Mobile and Fixed Station Deployment

Kestrel[®] Central Visualizer (KCV)[™] provides Remote Radio Management (RRM)[™] across a complex network of master and satellite access points that are fully integrated with the Kestrel TSCM[®] Professional Software application. The KCV-RRM[™] platform provides the ability to securely access one or more remotely managed satellite embedded server-enabled radios that are connected to an end-user provided platform, or a custom-provided pre-configured Linux-based, headless server hardware, forming the basis of a powerful Remote Radio Management (RRM)[™] resource. The KCV-RRM[™] platform



supports mobile and fixed-station deployment as a standalone collection platform or a powerful remote C2 resource. The KCV-RRM[™] platform advantages existing Kestrel TSCM[®] Professional Software features and a small form factor computing technology such as the

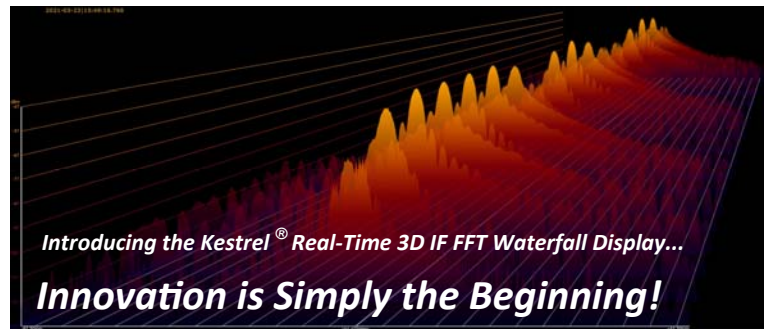
INTEL NUC (i7 + 32 GB RAM + 1TB M.2 SSD) configured to operate as a powerful remote collection system with single (or dual radios) on a Linux-based headless server, without the need for a local user-interface. The KCV-RRM[™] server host-computer provides encrypted network-based connectivity to other configured administrative computers and their authorized users via a master | satellite (enterprise) KCV-RRM[™] licensing structure. The remote system satellite operates independently as a remote-resource supported by an array of powerful TSCM specific Software Defined Radio (SDR) technology.

System Configuration

The Kestrel[®] headless-satellite, is a Linux enabled Server-Based Computer (SBC), connected to a local single or dual radio configuration. The Signal Hound (BB60C), (SM200B), and the anticipated (SM435B) SDR radios are considered to be ideal hardware options for use as remote-satellite resources. The radio-hardware resources are designed to function as part of an embedded Remote Radio Management (RRM)[™] solution for TSCM, RSSM[™], SIGINT, ELINT, and an array of other RF intelligence-based applications that benefit from real-time and historical, actionable RF intelligence. The Signal Hound BB60C and SM200B are recommended for most (RF | PL) sub-6 GHz and sub-20 GHz surveillance applications.

TDOA Implementation

Phase II of the KCV-RRM[™] implementation will introduce additional advanced capabilities such as distributed synchronized sampling to provide a TDOA solution. Time Difference of Arrival (TDOA), is a well-established method utilized for geolocation heat mapping of radio-frequency emitters across a remotely managed radio-based network. The technique of utilizing three (or more) synchronized radios, permits algorithmic control software to correlate and localize the source of the emission. This is accomplished by accurately processing the different times of arrival at each radio, which are located at different geo-graphical locations and distances.



Visionary Software Beyond the Technology Limitations...

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Kestrel TSCM[®] Professional Software is innovative industry leading, disruptive technology, sold in 50 countries worldwide!