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Tait Enable

Preface

Please read before using this product catalog.

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Scope:

This product catalog outlines the Tait product range.

Custom product and non-standard equipment is not listed. Please contact your Tait representative if you require information on any product not listed within this book.

Product Status:

Every care has been taken to assure that the products meet the respective regulatory requirements. However, Tait does not warrant that all products meet specific country requirements.

If you have any questions regarding product suitability please contact your Tait representative.

Terms and Conditions of Sale:

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Update and Changes:

The information within the product catalog is subject to change without notice and shall not form part of any contract. This information is issued for guidance purposes only. Please note that not all frequency bands and power outputs are available in all markets.

Tait EnableFleet

Overview:

Tait EnableFleet is an integrated solution to manage your radio fleet by providing a workflow tool to apply firmware updates, device configuration and, device personalisation. For your organisation Tait EnableFleet provides operation efficiently, cost savings and, version surety while simplifying the management of a devices individual configurable items.

Key Features and Benefits

▶ Centralized radio configuration and firmware management

▶ Accurate and reliable fleet information

▶ Consistent installation results

▶ Cost-effective, easy in-field programming

▶ Easy delivery of updates using client application or Over The Air Programming (OTAP) for DMR, P25 and WiFi networks

▶ Automated client server updates and fleet status display

▶ File attachment support for installation auditing

▶ Optional additional protection for radio configuration (with EnableProtect TASK)

▶ Securely manage your fleet from anywhere (using cloud hosting)

▶ Flexible server-side hosting options

▶ Scalable to suit small to large fleets

ENABLEFLEET CORE DELIVERY OPTIONS

▶ SaaS Licencing Model using Tait's Cloud Service. There server are managed and maintained by Tait Services

▶ On Premise Server

▶ Recommended Additional Options

    o Tait EnableProtect Advanced System Key

ARCHITECTURE

EnableFleet has a number of parts to provide either updates to the device using a wired connection or OTAP if the device has that capability. The EnableFleet Manager and Client are provided from the EnableFleet Core. The OTAP Agent can be provided by Tait's Hosted Service and/or On Premise installation, depending on the types of devices to be OTAP'ed, contact Tait for further information

ENABLEFLEET COMPONENTS:

ENABLEFLEET CORE

Centralised database in which fleet data is stored architecture, also provide the web service for the management webUI, and a link to download a client for wired connections operations.

ENABLEFLEET MANAGER

Web User Interface for viewing and working with fleet data

ENABLEFLEET CLIENT

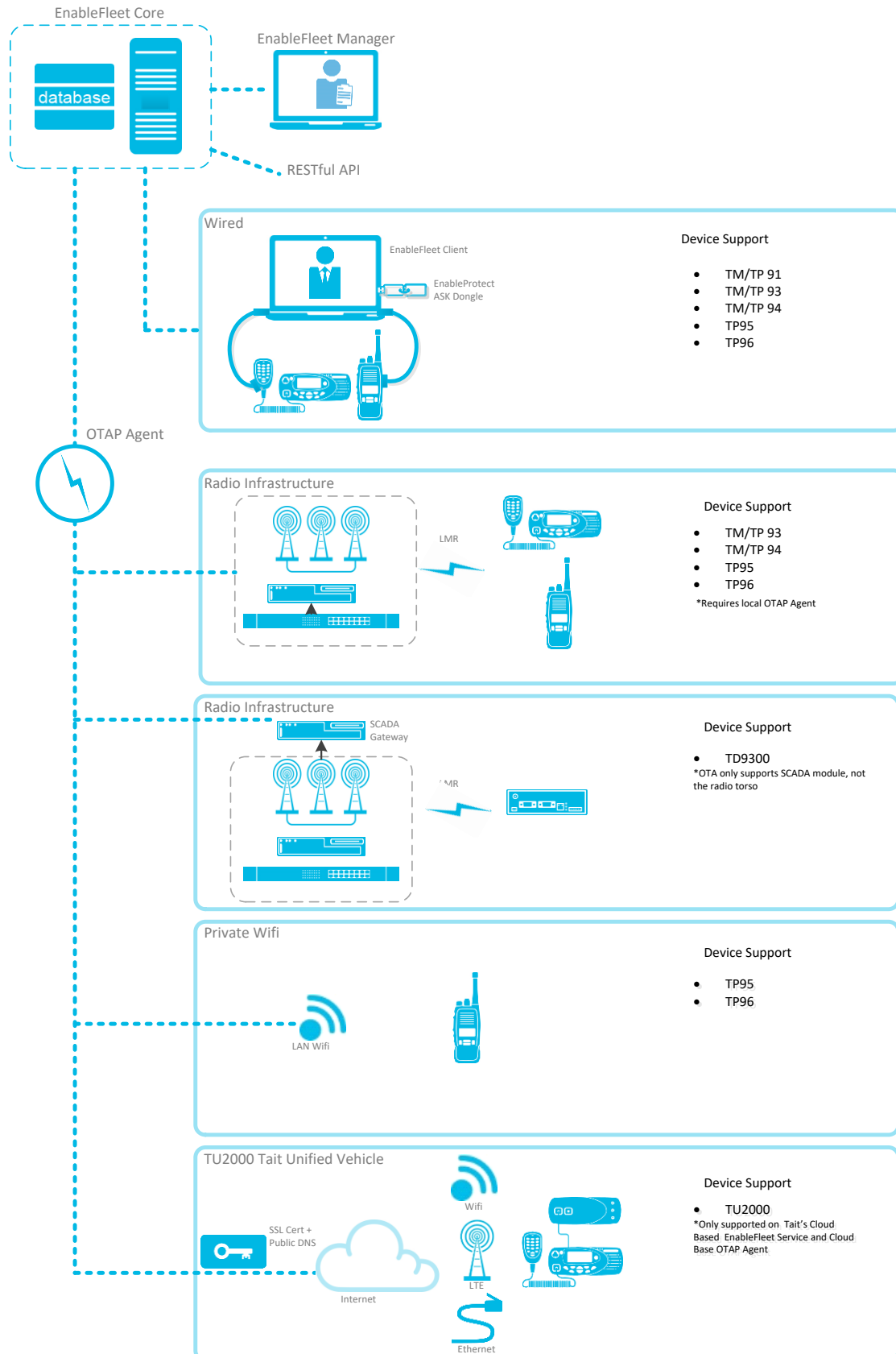Provide the means to update a radio using a programming cable

OTAP AGENT

Provides Over-the-Air-Programming Service. The OTAP Agent is the link between the EnableFleet Core and various mediums. The mediums are:

▸ Radio Network Infrastructure

▸ Private Wifi

▸ Internet (OTAP Agent requires a SSL Certificate and a DNS mapping)

▸ SCADA Gateway For Tait Gridlink Devices

PICTORIAL OVERVIEW

The image on the next page shows how the various components relate to each other, and the devices supported by each medium. Tait is actively increasing the means and number of devices Tait EnableFleet can manage – if your device is not shown, contact Tait.

EnableFleet Core

database

EnableFleet Manager

RESTful API

OTAP Agent

Wired

EnableFleet Client

EnableProtect
ASK Dongle

Device Support

- TM/TP 91
- TM/TP 93
- TM/TP 94
- TP95
- TP96

Radio Infrastructure

LMR

Device Support

- TM/TP 93
- TM/TP 94
- TP95
- TP96

*Requires local OTAP Agent

Radio Infrastructure

SCADA Gateway

LMR

Device Support

- TD9300

*OTA only supports SCADA module, not the radio torso

Private Wifi

LAN Wifi

Device Support

- TP95
- TP96

TU2000 Tait Unified Vehicle

Wifi

SSL Cert +
Public DNS

Internet

LTE

Ethernet

Device Support

- TU2000

*Only supported on Tait's Cloud Based EnableFleet Service and Cloud Base OTAP Agent

ORDERING CODES

HOSTED SERVICE PROVIDED BY TAIT CLOUD

HOSTED SERVICE - WIRED WITH OTAP

DMR	P25	Description
TEFC100	TEFC120	EnableFleet Cloud Yearly Fee for Wired and OTAP 100 Devices
TE1001041103000000	TE1001041102000000	EnableFleet On Prem OTAP Agent Mid Level server AC*
TT0006-0001		IP Home Agent Router*

*Depending on devices used this item may not be required

HOSTED SERVICE - WIRED ONLY

DMR	P25	Description
TEFC110	TEFC130	EnableFleet Cloud Yearly Fee Wired Only 100 Devices
T03-00118-0101		TP81/93/84 Programming Adapter (Portables ONLY)
T03-00118-0601		USB to RJ11 Programming Cable (Mobiles and Portables)

ON PREMISED

ON PREMISE - WIRED WITH OTAP

DMR	P25	Description
TE1001020103112G00	TE1001020102111A00	EnableFleet On Prem High Level Server AC, with up to 500 Device Licenses and OTAP Capability
TE1001020103122H00	TE1001020102121B00	EnableFleet On Prem High Level server AC, with up to 1000 Device Licenses and OTAP Capability
TE1001020103132J00	TE1001020102131C00	EnableFleet On Prem High Level server AC, with up to 3000 Device Licenses and OTAP Capability
TE1001020103142K00	TE1001020102141D00	EnableFleet On Prem High Level server AC, with up to 5000 Device Licenses and OTAP Capability
TT0006-0001		IP Home Agent Router

ON PREMISE – WIRED ONLY

| DMR	P25	Description
TE1001020103110G00	TE1001020103140K00	EnableFleet On Prem High Level server AC, with up to 500 Device Licenses
TE1001020103120H00	TE1001020102120B00	EnableFleet On Prem Level server AC, with up to 1000 Device Licenses
TE1001020103130J00	TE1001020102130C00	EnableFleet On Prem High Level server AC, with up to 3000 Device Licenses
TE1001020103140K00	TE1001020102140D00	EnableFleet On Prem High Level server AC, with up to 5000 Device Licenses
T03-00118-0101		TP81/93/84 Programming Adapter (Portables ONLY)
T03-00118-0601		USB to RJ11 Programming Cable (Mobiles and Portables)

ON PREMISE – MAINTENANCE FEES

These are required for each year beyond the 1st year of operation

DMR	P25	Description
TEFMC110	TEFMC100	EnableFleet Support and Maintenance Fee (Up to 500 Devices)
TEFMC111	TEFMC101	EnableFleet Support and Maintenance Fee (Up to 1000 Devices)
TEFMC112	TEFMC102	EnableFleet Support and Maintenance Fee (Up to 3000 Devices)
TEFMC113	TEFMC103	EnablFleet Support and Maintenance Fee (Up to 5000 Devices)
TEFMC114	TEFMC104	EnableFleet Support and Maintenance Fee (Up to 10000 Devices)
TEFMC115	TEFMC105	EnableFleet Support and Maintenance Fee (Up to 15000 Devices)

TAIT ENABLEINSIGHT

OVERVIEW

Tait EnableInsight is a data driven solution offering customers real-time performance management and live reporting capabilities, with the objective of monitoring and improving Audit, Compliance, and Capacity of the network's performance. Tailored access to the combination of Tait expert insight on alerts right through to full expert analysis and network performance optimization for managed services customers provides the best analysis & visualisation tools on the market.
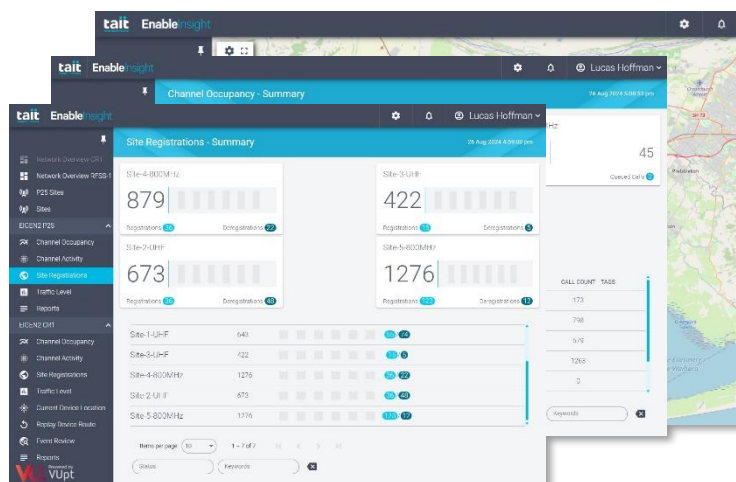
Tait EnableInsight analyses call activity on the customer network in near real-time and presents the users with information about current site loading, call queuing, and registration activity, as well as providing trend information over a range of timescales.

Outcome Focused

Potential for improvement exists in virtually any network, so Tait EnableInsight as an outcome focussed application, can be utilised in a range of industries, including Transportation, Utilities, Public Safety, and Mining. If you have a tangible, identifiable problem, Tait EnableInsight can facilitate the solution.

Timeliness of Insights (Real-time data)

Real-time data is in our DNA. It makes sense that the quicker that areas for improvement can be identified, the quicker the benefits can be realised; therefore, real-time data is a fundamental building block of the Tait EnableInsight solution.

Tait EnableInsight is optimised for monitoring, diagnosing, viewing & analysing the live operational performance of virtually any real-time data stream. Delivered via the Tait DataAPI, Tait EnableInsight analyses call activity on DMR Tier3 and P25 Trunked radio networks in real-time and presents the users with information about current site loading, call queuing, traffic levels, and registration activity, as well as providing trend information over a range of timescales.

As a real-time data processing and analysis framework, Tait EnableInsight also includes temporal data management concepts to provide ultimate flexibility and performance, matched to the requirements of the application.

- Data & Processor Plug-Ins – Tait EnableInsight is an extensible framework, utilising custom plug-ins to perform the capture, processing, analysis and display of data.
- Communications Framework – Tait EnableInsight supports inbuilt enterprise-wide message bus management with configurable message routing using SignalR, an adaptive cutting edge REST based communication transport technology. SignalR optimizes connection strategies per client and manages the lifetime of each connection.
- Alert Notification – Tait EnableInsight has an extensible alert notification system that allows system activity to be routed to e-mail. Administrators can configure a number of alerting functions according to their operational policies, including severity and performance threshold monitoring for alerts.
- Security, Authentication, Authorisation, Role Management - Access to the system or parts of the system is strictly controlled via 'role based' management and user access control.

- Audit Capability - An extensible auditing system logs all user interaction within the system to create a detailed audit trail.

Visualisations

Rich web-based outputs offer high visual impact, high performance, and flexibility in design. Tait EnableInsight provides real-time visualisations of data driven problems and displays can be tailored to meet specific outcomes required by clients. A virtually unlimited range of components and techniques for visualising insights held in the data can be provided, such as:

- Graphs
- Charts
- Sparklines
- Map-based representations

Many displays benefit from the real-time nature of Tait EnableInsight, whilst retaining flexibility to define time ranges where appropriate to visualise trends in data. Automation can also be applied to displays where the resulting action does not require human intervention.

Reporting

Tait EnableInsight provides user access to a number of pre-packaged reports, which are broadly grouped as follows:

- Call Activity
- Mobility Reports
- Usage Summary Reports
- Raw Call Reports
- Mobility Event Reports

Users can select a number of parameters and filtering options before running the reports, and reports can be exported in a variety of file formats, including PDF, Excel and CSV, allowing further analysis and presentation if required.

Trunked Radio Analysis

▸ Standard KPI wallboard (Call Breakdown, Capacity, Compliance) enabled

▸ Standard Geo Wallboard (Stats, PI for sites), configurable enabled

▸ Extensive tool tips

▸ Dynamic moving displays enabled (15-minute window)

▸ Numeric and graphic displays Channel Occupancy Views

▸ Channel Activity Views

▸ Site Registration Views

▸ Traffic Level Views

Usage Reports

▸ Daily Channel Occupancy: Channel occupancy by site and day

▸ Grade of Service: Grade of service by site and day

▸ Forecast Capacity: Data for capacity charts

▶ Weekly Call Volume Summary: Summary of call volume

▶ Site Summary: A monthly summary of site call activity

▶ Six Month Growth Trend: Growth of radio network over six months

▶ Weekly Call Statistics Summary: Summary of call statistics over a period

▶ Weekly Talkgroup Usage: Network usage per talk-group

Call Activity Reports

▶ Call Activity by Call Type: Call activity by call type

▶ Call Activity by Site: Call activity by site

▶ Call Activity by Unit: Call activity by unit

▶ Call Activity by Talkgroup: Call activity by talk-group

▶ Comms Centre Utilization: Utilization report for specific groups

▶ Queueing - Monthly Summary: Summary of queued calls for the month
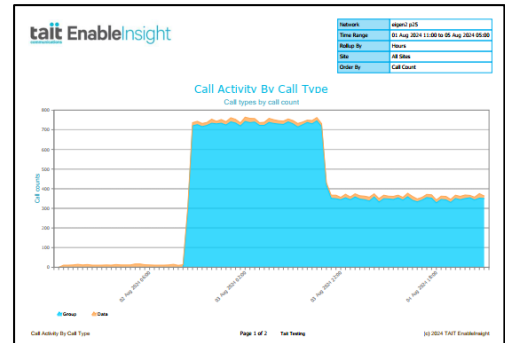
Mobility

▶ Site registrations by Site: Site registrations broken down by site

▶ Site registrations by Unit: Site registrations broken down by unit

▶ Talkgroup Affiliation: Talkgroup affiliations broken down by unit
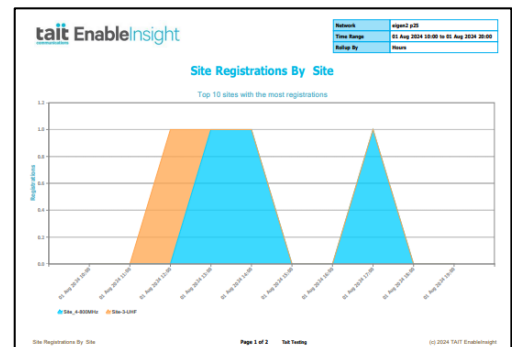
Raw Data Reports

▶ Raw Call Events: Unaggregated view of call events

▶ Mobility Events: Unaggregated view of registration and affiliation events

Tait EnableInsight is suitable for P25 and DMR Tait Radio Networks and is built using Tait DataAPI.

LICENSING

Licenses are available for On Premise and *Software as a Service* (SaaS) options. Please contact Tait for further information.

Tait EnableMonitor

Tait EnableMonitor watches the health of your Tait network and associated equipment using SNMP.
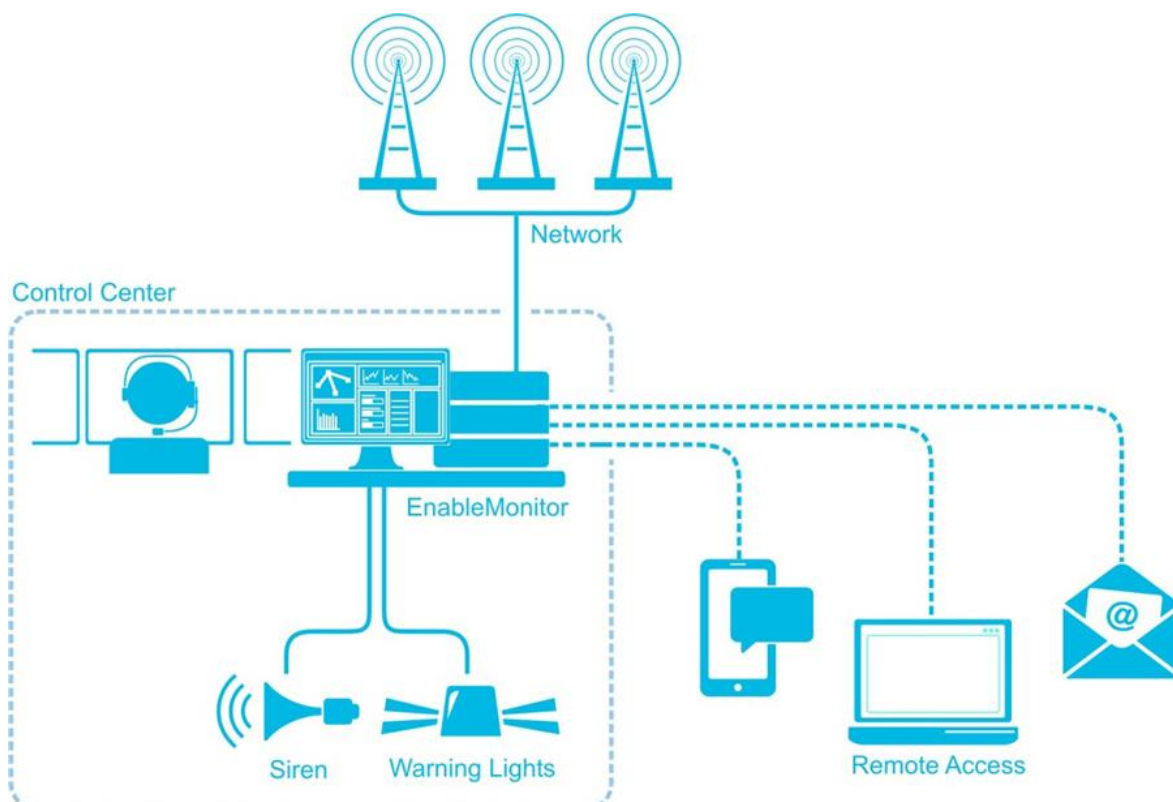
OVERVIEW

Tait EnableMonitor helps you to anticipate and resolve issues before they threaten the communications that your business depends on.

As one part of the Tait Enable Suite, Tait EnableMonitor provides you with all the tools you need to monitor the health of your radio network and reduce downtime.

KEY FEATURES AND BENEFITS

▸ Real-time system health status for early issue diagnosis

▸ Proof that your network is operating correctly

▸ Alerts and alarms when there is an issue

▸ Secure access to performance data anywhere, anytime

▸ Automatic discovery and configuration for easy setup

▸ Standards-based technology for interoperability

▸ Redundancy options for guaranteed performance

ARCHITECTURE

TAIT ENABLEPROTECT

OVERVIEW

Security is an important consideration for P25 networks and Tait has made security management and enforcement easy with these three important tools. Each of these tools can be used alone, or together to provide complete security for radio configuration and communication.

There are three aspects to EnableProtect

Tait EnableProtect Key Management Facility (KMF), which manages encryption for your fleet with confidently and efficiently yet flexible and powerful features.

Tait EnableProtect Key Fill Device (KFD), provides an efficient and error-free as possible means to encrypt digital radios Also, ensuring that encryption specialists and radio technicians can manage their workflow with ease.

Tait EnableProtect Advanced System Key (TASK) utilizes specially-configured USB Prime and Pass keys to safeguard P25 radio networks against unauthorized radio programming and use.

TAIT ENABLEPROTECT KEY MANAGEMENT FACILITY (KMF)

Manage encryption across your fleet confidently and efficiently with the flexible and powerful Tait EnableProtect Key Management Facility.

The user-friendly Tait EnableProtect Key Management Facility (KMF) brings management of your P25 encryption into one central location, making it easier to manage and update the encryption keys used across your organization. A complete set of diagnostics across all devices allows crypto officers to troubleshoot and resolve problems remotely, saving technician time if issues occur.

The Tait EnableProtect Key Management Facility (KMF) uses industry standard cryptographic systems for OTAR. As part of a Tait conventional or trunked OTAR infrastructure solution, the efficient and easy-to-use KMF utilizes DES/AES security, which provides increased confidence in the system, and greatly reduces both RF traffic and user requests to rekey.

FEATURES

▶ **Dashboard** A customizable dashboard allows you to track key update tasks, common key references, groups and devices that you are interested in.

▶ **Diagnostics** The KMF has a comprehensive diagnostics tool that has been designed specifically to establish the state of devices on the network. You can check to see if a device is on the system, verify the keys it has and update all the keys, as well as perform a number of other diagnostic tests.

▶ **Key Update Tasks** With the Tait EnableProtect KMF messages are sent only to radios specified by the key update task, without needing to address the entire fleet. You can schedule key update tasks to occur at any time. This is automated so is more secure and saves bandwidth.

▶ **Problem Devices** This unique feature makes it easy to track devices that can be contacted but cannot be updated. The Problem Device indicator is highlighted if there is any change to the list of problem devices.

▶ **Redundancy** The KMF offers multiple levels of redundancy. This feature gives users real peace of mind because they are protected against hardware and power failures with virtually no downtime.

▶ **Sectors** To make devices easier to track, they can be assigned to sectors. A sector can be a region or an agency.

▸ **Unique Key Encryption Key (UKEK)** Most agencies use a common provisioning key (sometimes called a "shop key") for the UKEK in all radios. The Tait P25 Tait EnableProtect KMF can automatically generate a truly unique UKEK for every radio. These can either be exported to a KFD for use when commissioning new radios in the shop, or the KMF can replace the Common Provisioning Key with a unique UKEK the first time a radio goes on the network.

▸ **Authorisation** With the KMF, owners can be assigned to keys and groups, whose contact information is stored in the KMF. This helps crypto officers contact those responsible for the keys and groups if a problem arises.

KEY MANAGEMENT FACILITY (KMF) ORDERING CODES

The KMF solution is available in the below AC variants

SERVER ORDERING CODES

Item Code	Description
TN9121-0000-10	KMF Server Package AC PSU
TN9122-0000-10	KMF Standby Server Package AC PSU

LICENCE ORDERING CODES

Item Code	Description
TKAS101	KMF SFE Key - 1-150 Devices
TKAS102	KMF SFE Key - 151-1000 Devices
TKAS103	KMF SFE Key - 1001-4000 Devices
TKAS104	KMF SFE Key - 4001-10000 Devices
TKAS106	KMF SFE Key - KFD Interface

Note: KMF server licenses are cumulative, for example if the fleet has 3000 devices that need keying TKAS101, TKAS102 and TKAS103 would be needed

ACCESSORY ORDERING CODES

Item Code	Description
005-00590-00	Spare Encryption Smart Card

TAIT ENABLEPROTECT KEY FILL DEVICE (KFD)

The Tait EnableProtect Key Fill Device (KFD) makes encrypting digital radios as efficient and error-free as possible, ensuring that encryption specialists and radio technicians can manage their workflow with ease.

Tait's comprehensive range of P25 radios, base stations/repeaters and systems gives Public Safety organizations the ability to choose a solution that best meets their needs. Our versatile encryption options are designed to improve the safety and security of first responders.

The Tait KFD enables you to speed through repetitive rekeying tasks with easy-to-use commands, shortcuts for frequently used functions and automatic connection to the radios

Features of the KFD include

▶ Standard Key Fil

▶ Easy to use device, with simple screens and menus making key inventory and management simple

▶ Automatic or manual generation of AES and DES keys, zeroes keys, and changes active keyset

KEY FILL ORDERING CODES

KEY FILL DEVICES ORDERING CODES

Ordering Code	Description
TE1002DA000000AAAA	Tait EnableProtect KFD Winmate Standard Key Support 1yr
TE1002DA000000ABAA	Tait EnableProtect KFD Winmate Fast Key Fill Support 1yr
TE1002DA000000ACAA	Tait EnableProtect KFD Winmate Standard & Fast Key Fill Support 1yr

KEY FILL DEVICE LICENCESE ORDERING CODES

Ordering Codes	Description
TKAS030	Key Fill Device SFE – Fast Key Fill
TKAS032	Key Fill Device SFE – Standard Key Fill

KEY FILL ADAPTOR ORDERING CODES

Ordering Codes	Description
TPA-SV-020	TP/M9100 TP/M9400 TB9100 Encryption capable Motorola KVL Adaptor
T03-00059-AAAA	Tait KFD to TIA Radio Adaptor
T03-22009-AAAA	TP9300 IS Programming Adaptor[1]
T03-22009-ADAA	TP9400 IS Programming Adaptor[1]
T03-00040-0005	Tait KFD adaptor kit for Motorola XTS5000 HHCH

Note 1: Required for wired connection from KFD to IS Portables

KEY FILL DEVICE PHYSICAL DIMENSIONS

▸ Environmental: Fully Rugged Design tested to Military Standards MIL-STD-810G and IP65

▸ Dimensions: 3.4 x 6.4 x 0.9 inches (85.9x 163.2x 22.5mm)

▸ Weight: 11.1 ounces (0.315kg)

ACKNOWLEDGEMENTS

▸ This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit, refer to http://www.openssl.org/

▸ This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)

TAIT ENABLEPROTECT ADVANCED SYSTEM KEY (TASK)

Tait EnableProtect Advanced System Key (TASK) utilizes specially-configured USB Prime and Pass keys to safeguard P25 radio networks against unauthorized radio programming and use.

Tait EnableProtect Advanced System Key for your organisation enables

▸ Read/write protection to stop unauthorized users from accessing or modifying the configuration data stored in radios. Users must have a USB pass key to program the radio.

▸ Trunking protection for large state-wide radio systems that prevent unauthorized use of a P25 trunking network. Users must have a USB pass key to program any P25 trunking related settings.

▸ Provide two factor authentications to compliment the use of Tait EnableFleet.

The Tait EnableProtect Advanced System Key solution includes the following additional features:

▸ **USB keys** Physical device to provide extra protection against unauthorised programming

▸ **Prime key** A prime key is provided pre-configured from Tait with an expiry date. The only function of the prime key is to Tait Enable configuration of pass keys, using the Pass Key Configuration Utility.

▸ **Pass key** A pass key, depending on its configuration, authorizes a user to program particular trunking system information and may also be used to control reading and programming of Tait Enabled radios.

▸ **USB key expiry** Both prime keys and pass keys have a real- time clock, and support a programmable expiry date (optional for prime keys, mandatory for pass keys) to force replacement of keys. Pass keys support a limit on the number of times it can be used to program radios. Prime & Pass Keys have an internal battery which requires the keys to be replaced every 4 years to ensure they are operational when required.

▸ **Configuration Security** Read/write protection protects the radio asset. It guards against re-purposing a radio (for example, if stolen), and against misuse of a radio in an organization (for example, re-programming a radio with additional channel frequencies)

▸ **Trunking protection** Trunking protection guards against a radio being programmed with trunking settings that would allow it to operate illegally on a trunked network.

ADVANCED SYSTEM KEY

Tait EnableProtect Advanced System Key is available as a starter kit which includes everything needed to start using the solution. Further prime and pass keys can also be ordered. Note: Keys must be replaced every 4 years. Due to the secure nature of the TASK solution there is a strict ordering process, your Tait representative can assist you with this.

ADVANCED SYSTEM KEY STARTER KITS ORDERING CODES

Ordering Code	Description
TMAA23-03	Tait EnableProtect Advanced System Key Starter Kit - x 1 Prime Key x3 Pass Keys
TMAA23-04	Tait EnableProtect Advanced System Key Prime Key
TMAA23-05	Tait EnableProtect Advanced System Key Pass Key

SOFTWARE SYSTEM KEY (SSK)

For trunked networks where security is less of a concern an SSK can be used to restrict radios being programmed to join the network.

Tait recommends that Tait EnableProtect Advanced System Key, not SSK, be used in any network where security is a consideration. Due to the nature of the SSK there is a strict ordering process, your Tait representative can assist you with this.

SOFTWARE SYSTEM KEY (SSK)

Tait will supply a Free Of Charge Electronic File via Email upon request – please contact your Tait representative for further information.