Tait Unified Vehicle
SPECIFICATIONS

tait
communications

Much more than a radio. A mobile applications platform.

Supercharge the performance of your existing or new Tait mobile radio with the Tait Unified Vehicle platform.
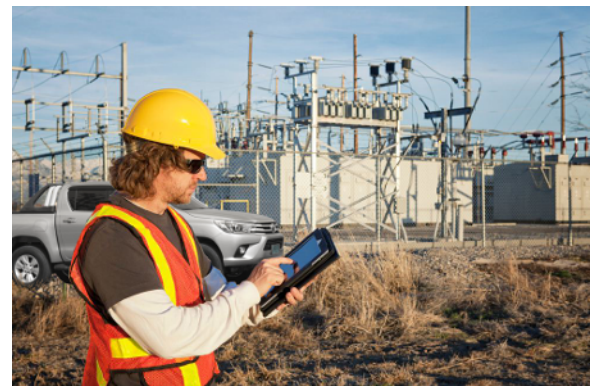
Tait Unified Vehicle loads your mobile with more computing power, WiFi, wireless broadband, and more. Increase productivity and safety with more connectivity, and powerful new applications.

It's time to re-imagine the mobile radio.

KEY FEATURES

- Powerful applications platform
- P25 and DMR mobiles supported
- 3G/LTE Cellular connectivity with Dual SIM Capability
- Broadband connectivity options and sharing (tethering)
- Create a network of networks
- Applicable to new and existing mobiles
- Improved voice and data support
- Embedded Applications include:
  - PTToX (Push-to-talk over LMR, WiFi, Cellular and Ethernet), where bearer selection can be
    - Manual
    - Automatic (configurable priority)
    - GeoFenced
  - AppBuilder
  - OTAP over WiFi and Cellular networks
  - Voice Recorder
- Multiple bands, regions and carrier approvals (i.e. FirstNet/B14)

lte WiFi DMR P25

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SPECIFICATIONS

FEATURES AND BENEFITS

Unifying critical communications

As technology convergence increases complexity and puts added demands on your communication system, consider the Tait Unified Vehicle platform to keep you connected. Ensure your people can continue to communicate simply, regardless of the bearer, when they need it most.

For both new and existing mobiles

Improve the performance of both new and existing Tait radios. Simply add the Tait Unified Vehicle platform option to the TM9300 or TM9400 to increase their capability.

Improved voice and data support

Gain increased business efficiency by connecting your voice network with your data network. Get the right information to the right people and equipment by using the fastest and most reliable methods available.

Broadband connectivity options

Today there are many wireless options that deliver increased bandwidth. The Tait Unified Vehicle platform is designed to support short range high bandwidth technologies like WiFi, as well as longer range services such as 3G and LTE.

Increased coverage

External WiFi and cellular antenna options deliver a coverage boost to devices in and around the vehicle.

AppBuilder

This application provides a more user-friendly way of creating customized communications solutions. Behavior-based and graphical programming formats can be used. AppBuilder has access to a number of APIs that can control the LMR radio, external interfaces or functionality on the Tait Unified Vehicle.

Integration capable

The mobile already supports a number of integration ready features which include the following:

- APIs with radio control
- Space for integration boards
- Access to digital IO lines
- Access to analog signals
- Software defined interfaces
- Status SDM, Packet and IP data

Voice recording

With voice recording and playback, you gain increased security and safety for your people and vehicles.

Ready for OTAP, Fleet Management

The Tait Unified Vehicle WiFi and cellular connection can be used to program your Tait mobile radio with configuration updates and new firmware when used with Tait EnableFleet, an industry leading configuration management tool.

PTToX service

This new Push-to-talk provides crystal clear voice communications with LMR like features and robustness. It offers an alternative voice service over WiFi, cellular or Ethernet to further extend your communication needs where LMR coverage is not available.

The selection of network can be manual or automatic based on networks.

PTToX service allows a seamless user experience (currently only with Tait DMR Tier3 networks). Field workers can focus on their job knowing that they will remain connected to their team wherever they are.

Location service is available and other supplementary data services are planned.

All these services fully inter-work with LMR networks. Refer to the dedicated PTToX service brochure for more details.

SUPPORTED NETWORKS AND FEATURES

LMR Components	LMR Network Vendors	Tait Networks	Any network Vendor					
	LMR Network Types	Tait DMR Trunked Tier 3	DMR Trunked Tier 3	DMR Conventional Tier 2	MPT	Analog Conventional	P25 Trunked	P25 Conventional
	Tait Mobile Radio Type	TM9300	TM9300	TM9300	TM9300	TM9300/TM9400	TM9400	TM9400
Broadband Data	Cellular/WiFi/Ethernet	✔	✔	✔	✔	✔	✔	✔
Native Applications	Voice Recording	✔	✔	✔	✔	✔	✔	✔
	Remote Application	✔	✔	✔	✔	✔	✔	✔
	OTA updates over Cellular/WiFi/Ethernet	✔	✔	✔	✔	✔	✔	✔
	AppBuilder	✔	✔	✔	✔	✔	✔	✔
Tait PTToX Service	Manual network switching	✔	✔	✔	✔	✔ (TM9300)	Future	Future
	GeoFenced network switching	✔	✔	✔	✔	✔ (TM9300)	Future	Future
	Automatic network switching	✔	✔	✖	✔	✖	Future	✖
	LMR interworking	✔ (Full)	Future	Future	Future	Future	Future	Future

Tait Unified Vehicle
SPECIFICATIONS

GENERAL	
Supported Devices	TM9300, TM9400 (in hand-held control head or remote head configuration only)
LAN (Ethernet)	mDNS, DNS Proxy DHCP Server DHCP Client 10/100Mbps
WLAN	2.4 GHz IEEE 802.11 b/g/n SISO 20 MHz 5 GHz IEEE 802.11 a/n SISO 20/40 MHz Access point/station/direct (simultaneous or independent use), supports up to 5 clients
Client security modes	Open WEP-40/128 PSK 802.11i Draft/RSN/Mixed PSK with CCMP/TKIP/CCMP+TKIP cipher 802.11i Enterprise TTLS/PEAP with CCMP/TKIP/CCMP+TKIP cipher
AP security mode	802.11i Mixed PSK with CCMP cipher
Host interfaces	10/100 Base-T RJ45 Ethernet port Serial Port on DB-15 Connector (on radio unit) RS-232 optional (on radio unit) 3 SMA antenna connectors (Primary, Secondary/Diversity(cellular), WiFi)
Serial port	Optional TTL level with up to 115200 baud (serial input will support RS-232 levels)
GPS/Location	Optional add-on, via LMR Radio connectors
Input/output (GPIOS)	Up to 3 configurable GPIs and 4 GPIOs on DB15 connector (on radio unit) Up to 7 additional configurable GPIOs on optional interface board (on radio unit) Ref to the 3DK Hardware Developer's Kit Application Manual MMA-000110-03 for more details
Power consumption	Ignition Sense and Power Management Low-power mode triggered on timer delay (ignition sense), or periodic timer Supply voltage (via LMR terminal) 10.7 – 16.0 VDC additional power consumption compared to LMR radio 180mA standby - 500mA active. Note: the LMR radio can consume 100mA on standby to receive, 1 amp on receive at full volume and6.5A transmit (25W 470MHz)
Input voltage range	10.7 to 16.0 VDC (via LMR terminal)
Audio Codec Support	
Input	Radio microphone and LMR radio (mono)
Output	Radio speaker and LMR radio (mono)
Support and warranty	1-year standard warranty
Dimensions and environmental ratings	Refer to TM9300 and TM9400 specifications.

CELLULAR WAN		
LTE Cat	1	4
Uplink	Max 5Mbps	12Mbps
Downlink	Max 10Mbps	20Mbps
Support	Rx Diversity and MIMO DL 2x2	

Region	Module Type (LTE Category)	Regulatory Compliances	Supported Frequency Bands	Carrier Approvals (In progress)
North America & Canada	NA (Cat4)	PTCRB, FCC, IC	- 4G/LTE: B2, B4, B5, B12, B13 - 3G: B2, B5	USA: Verizon, AT&T
	NF (Cat4)		- 4G/LTE: B2, B4, B5, B12, B13, B14, B66, B71 - 3G: B2, B5	USA: AT&T, FirstNet Canada: Bell Canada
Europe	EU (Cat4)	ETSI, CE	- 4G/LTE: B1, B3, B7, B8, B20, - 3G: B1, B8 - 2G: B3, B8	UK: EE/ESN
Asia Pacific	AP (Cat1)	ETSI, RCM	- 4G/LTE: B1, B3, B5, B8, B28 - 3G: B1, B5, B8	Australia: Telstra, Optus New Zealand: Vodafone, 2 Degrees, Spark Japan: Jade/Telec for NTT Docomoto

COMPUTING PLATFORM	
Hardware Processor	AM3352 Sitara, ARM Cortex A8 32 bit 600MHz
Memory	RAM 512 MB DDR3 plus SD card slot fitted with 16GB, non-volatile memory
Storage	1 GB of SLC NAND Flash
Operating System	Linux (OpenEmbedded LTS)

Tait Unified Vehicle

SPECIFICATIONS

EVENTS ENGINE

General	Custom event triggers and reports
	Configurable interface, no programming
	User notifications
Event/Action Types	GPIO, LMR Messages, Timer, Modbus, SMS, Email, TCP/ UDP (Binary, XML, CSV), Serial Port, HTTP/HTTPS, Security Alarms, GPS location, Cloud Integration, MQTT Client, Status Messages

APPLICATIONS

PTToX service	Push-to-talk client over any IP bearers (WiFI, Cellular, Ethernet networks)
Voice Recorder	Accessible via local web interface, records can be exported
Remote App	On connected smartphone (Android, and IOS coming soon), to remotely place and receive calls
Tait Unified Vehicle AppBuilder	With Visual and Script capability
Customization	Ability to load new applications locally

MANAGEMENT INTERFACES

Web-Based User Interface	Network configuration
	User access configuration
	Firmware updates
	Application installation
	Voice recording configuration
Extendible web-based user interface	For applications. SFTP for audit log access and audio files, Device Configuration Templates, Over-the-air software and radio module firmware updates. Optional SSH access
Over-the-air (OTA) with Tait EnableFleet	Firmware, configuration, and application updates

NETWORK & ROUTING

General	Network Address Translation (NAT)
	Port Forwarding
	NTP
IP routing	WiFi-to-Cellular, Ethernet-to-Cellular, Ethernet-to-WiFi

SECURITY

Firewall	Inbound and Outbound Port Filtering
Client security modes	Open
	WEP-40/128 PSK
	802.11i Draft/RSN/Mixed PSK with CCMP/TKIP/CCMP+TKIP cipher
	802.11i Enterprise TTLS/PEAP with CCMP/TKIP/CCMP+TKIP cipher
AP mode	802.11i Mixed PSK with CCMP cipher
Web user interface	HTTPS

INDUSTRY CERTIFICATIONS

Safety	IECEE Certification Bodies Scheme (CB Scheme) UL 60950
Vehicle Usage	ISO7637-2, EMark
Environmental	RoHS, WEEE, IP54

TAIT COMMUNICATIONS

Tait has taken every care in compiling this specification sheet, but we're always innovating and therefore changes to our models, designs, technical specification, visuals and other information included in this specification sheet could occur. For the most up-to-date information and for a copy of our terms and conditions please visit our website www.taitradio.com.

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Tait International Limited facilities are certified for ISO 9001:2015 (Quality Management System), ISO 14001:2015 (Environmental Management System) and ISO 45001:2018 (Occupational Health and Safety Management System) for aspects associated with the design, manufacture and distribution of radio communications and control equipment, systems and services. In addition, all our Regional Head Offices are certified to ISO 9001.

Authorized Partners

Quality Management ISO 9001

Environment Management ISO 14001:2015

Occupational Health & Safety Management ISO 45001:2018