TRACS-TDMA

Channelisation Format:
TDMA (Time Division Multiple Access)

Range:
Line of sight operating ranges with integrated power output options of up to 10W. Range extended by the use of static or dynamic repeaters.

Frequency Bands:
VHF 136 - 174MHz
UHF 440 - 512MHz

Number Of Channels:
The transceivers are configured to use any 10 channels in the band with the system configuration software

Transmitter Power Output:
10mW, 500mW or 2W software selectable, optional 10W integral PA

CCIR Emission Designator:
25KOF1D/12K5F1D

Error Correction:
Byte level Hamming (12,8) code, correcting 1 bit per byte, interleaved into blocks of 20 bytes

Antenna:
Cybit Combined GPS/VHF antenna
Any commonly used VHF/UHF/GPS antenna systems

GPS Receiver:
Typically Trimble SKII
Septentrio AsteRx1
Sepentrio AsteRx2

Electrical interfaces
RS232 Command Port
Two RS232 Serial Ports
3 TTL inputs
1 TTL outputs
Emergency input

Power Supply:
9V to 36V DC. Load dump protection to 250V

Power Consumption Maximum:
Transmit (2W P.A. 100% duty cycle) 12W
Transmit (10W P.A. 100% duty cycle) 40W
Receive 4W
Typical:
Transmit (2W P.A. 1 report/sec) 5W
Transmit (10W P.A. 1 report/sec) 7W

Temperature:
Operating -30 ºC to + 60 ºC
Storage -45 ºC to + 70 ºC

Waterproofing:
Tracs-TDMA and antenna IP 67 compliant. Dust proof with short term immersion to one-metre
GeoPod IP 68 compliant. Dust proof with immersion to ten metres

Dimensions And Weight:
TDMA:
L 246mm W 140mm H 95mm, 3kg
GeoPod:
L 603mm Diam 90mm, 4.5kg
Excluding connectors with cables

Type Approval:
TDMA:
ETS 300 113-2 V.1.1.1 for spectrum usage
EN 300 828 (1998) for EMC (VHF unit)
EN 300 489-5 V1.2.1 for EMC (UHF unit)
EN 60950:2000 for LVD and saety
CE Approved
Compass Safe Distance 0.3m

GeoPod:
Meets UK MPT 1329 band 458.5

Tracs-TDMA technology is applied in the maritime environment for vessel monitoring including coastal security and awareness, fisheries, EEZ Management (Exclusive Economic Zone) ports and harbour management, off-shore mineral and hydrocarbons exploration and production, oilrig security, inshore and ocean race management.

On-land the solution is proven in harsh operating environments from deserts to arctic areas and is deployed on seimic exploration vehicles, airport air-side vehicles, ski slope profiling vehicles, and in emergency service fleets. It is used widely in specialist applications in the mining and exploration industries.

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Tracs-TDMA

Advanced Data Network for Asset Tracking and Positioning

- Proven Technology Designed for Uncompromising Environments
- Integrated Unit Tracking and Precise Positioning
- Configurable Data Transfer Rates
- Proven Installations in Many Applications Globally Including Maritime & Mineral Exploration Environments
- Installed On a Broad Range of Specialist Vehicles & Vessels

Tracs-TDMA ADVANCED FEATURES

Tracs-TDMA is an intelligent data network system which operates at VHF and UHF frequencies, permitting continuous real-time tracking, precise positioning and messaging for a wide variety of applications. Operating on a Time Division Multiple Access principle the system is extremely flexible in configuration, giving the mobile data system integrator complete control over messaging rates and content, with the advantage of fully integrated positioning up to RTK accuracies.

Cybit Positioning Solutions dynamic repeater technology enhances communication reliability and significantly extends the operational range of the Tracs system beyond the normal line of sight restrictions. Tracs-TDMA is ideal for real-time tracking applications allowing the reporting of integrated GPS position back to a control centre display system. At the same time, differential GPS corrections, including RTK, can be broadcast through the network for precise positioning applications requiring up to centimetric accuracies.

Data Communication Between Units

As well as position reporting to a control centre and the distribution of RTCM or RTK correction data from an integrated reference receiver, messages can be routed from one mobile to another. Selective or group messaging is possible from the control centre as is the facility for units to be configured dynamically over air. Voice radio traffic can be reduced and communications in crowded frequencies made faster as a result.

Auto Adaptive Repeater Mode

As well as using conventional repeaters, any Tracs-TDMA unit in a system can operate intelligently as a repeater. Each mobile unit monitors the communications status of other units in its local area, and should the path between two other units be obscured, the unit will automatically identify which path is blocked and undertake to pass on the message during the next slot allocated to the originator of the message. In this way messages can be re-broadcast to circumvent radio line of sight limitations or to relay messages made from beyond the network's normal radio range. This technique significantly increases the network coverage area.

System Capacity

Transmission of data within a cell is via a single radio channel. Each unit's access to the network is configured during initial set-up. A typical mobile reporting interval would be 10 seconds, depending on priority, which would allow spare capacity to be allocated to fast mobiles and any dedicated repeaters. The frequency of position reports from mobile units can be changed by the control centre enabling it to focus on units involved in critical activities.

About Cybit Positioning Solutions

Cybit Positioning Solutions Ltd is a world leader in telemetry, tracking precise positioning. By integrating advanced data communications with positioning technologies Cybit Positioning Solutions Ltd has developed a range of technically advanced tracking solutions for applications ranging from fisheries management through vehicle tracking and farming.

There are no constraints on how our systems and products can be used to create custom solutions. Our technical sales team will happily help to design and configure a system to meet your needs. We offer solutions based on GPRS and satellite, in addition to the UHF and VHF intelligent networks described.

Cybit Positioning Solutions Ltd uses state-of-the-art systems and applications to provide quality services tailored to the individual needs of each customer. The company's end-to-end solutions are complemented by a strong commitment to developing long-term relationships and providing world-class support for clients wherever they are, whenever they need it.

Cybit Positioning Solution - part of the Cybit Group – a global leader in the use of tracking and telematics equipment, software and services in the mobile resource management marketplace.

www.cybit.co.uk www.bluefinger.com www.cybitpositioningsolutions.com

Accessories and Options

GPS Modules And Configurations

Tracs-TDMA integrated positioning is available with either standard (2-4 metres) or precision (better than one meter) accuracy, and centimetric accuracy using RTK. Reference and mobile GPS receivers are built into the units, so separate GPS units are not required.

Display Systems

A range of mapping and display systems, including Cybit's established Saffire Client Server or Saffire On-Line web-based systems are available depending on the application and functionality required. Alternatively, assistance can be provided for the integration of Tracs-TDMA data into existing customer mapping display and control systems.

Emergency Alarm Facility

Mobile units are fitted with an alarm button that causes the system to transmit an emergency position and status report with minimum delay. Emergency transmissions can be detected and acknowledged by adjacent mobiles as well as the control centre.

GeoPod Unit

The Tracs-GeoPod Unit is a variant of the system designed for extremely hostile environments or conditions, such as marine seismic gun arrays or tail buoys. The unit is designed for the rough handling that can be experienced in high shock environments and is waterproof to ten metres.

System Software and User Interfaces

Several packages are available for planning, configuring and operating the network depending on the client's requirements.

Network Planning and Configuration Software

This is used to design the network and assign transmission slots to mobiles to meet their perceived requirements for data capacity. The configuration file is then passed to the configuration software, which enables the units to be set up as required according to the network plan via a serial cable from a PC. Units retain the configuration in memory until reprogrammed.

Tracs Communications Controller (Tracs-CC)

Data can either be extracted directly from a Tracs-TDMA unit by the application software or Tracs-CC software can be used to manage the Tracs-TDMA data in more complex networks. This software is of particular benefit when larger systems are being used which include several base stations and repeaters.

Control Centre Software

PC software to manage a database of the position reports and a graphical display of mobile locations is available. In addition, the software can provide message scheduling, co-ordinate conversion, system monitoring and network control functions for inclusion in either simple, single base station systems or multiple base/frequency systems.