

TM8100 Direct Connect GPS

Introduction

Tait Direct Connect GPS is a software feature provided as standard within the TM8100 mobile radio. This allows for the connection of an external GPS antenna/ receiver via one of the three serial ports on the TM8100 radio.

Direct Connect GPS allows retrieval of location information from other radios.

One application of GPS is Automatic Vehicle Location, or AVL. The TM8100 supports direct connect GPS functionality, enabling the radio to be quickly and easily connected to a GPS device.

GPS information is transported over radio systems using the built in 1200 baud modem in the TM8100 radio.



Example of GPS receiver that can be used with Tait Direct Connect GPS: Garmin -35 combined GPS receiver and antenna *

Direct Connect GPS Features

Direct Connect GPS provides the following conventional AVL feature set.

- Transfer of GPS information received from a NMEA 0183 GPS receiver using a special compressed CCDI SDM format.
- GPS information on PTT press or release
- GPS information on emergency activation
- GPS information when polled
- Transfer of last known position

Direct Connect GPS Benefits

The benefit of Tait Direct Connect GPS is the ability to use the TM8100 and an off the shelf GPS receiver without an expensive processing " box" or additional modem between the radio and GPS receiver.

This provides customers with the ability to take the first step towards AVL without precluding the addition of a more sophisticated feature set at a later date.

This provides the complete mobile end of an AVL solution.

GPS (Global Positioning System)

The Global Positioning System (GPS) is a worldwide system formed from a constellation of 24 satellites and their ground stations.

A GPS receiver uses these satellites to calculate positions accurate to a matter of tens of metres.



* GPS receiver not supplied

Please note: GPS polling and mapping software are not supplied. The TM8100 Direct Connect GPS feature gives you the freedom to choose from a range of third party software options.

Utilising Direct Connect GPS

The Direct Connect GPS feature set provides you with the flexibility to choose your own local AVL solution provider.

Your local Tait office can recommend a supplier in your area.

To assist your chosen application supplier Tait can provide the following:

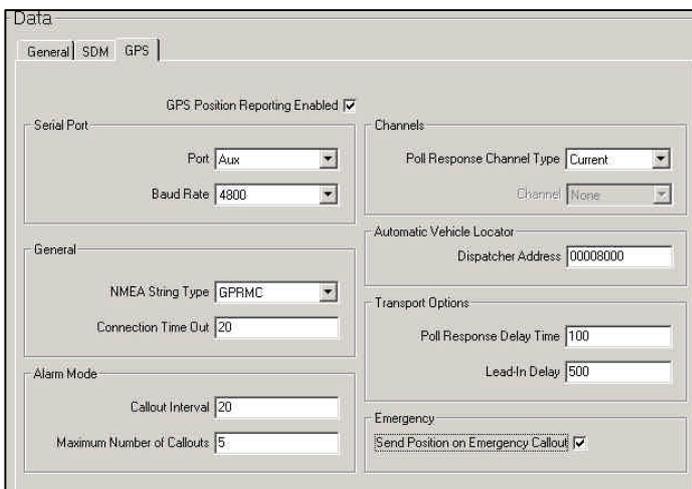
- CCDI Protocol Manual, available on the 3DK Resource CD.
- TM8100 Direct Connect GPS Overview that provides technical details on programming the radio and interfacing off the shelf GPS receivers.
- Direct engineering support. Please note that this may be charged for.

Applications

Direct Connect GPS can be used for dispatch applications that address the requirement to know where a vehicle is located at a particular point in time.

For example:

- Small Taxi Companies
- Road Contractors
- Security – location report if alarm is activated
- Local government maintenance vehicles
- Dispatch and delivery vehicles



Getting Started

To get started using Direct Connect GPS you will need the following:

- Two TM8100 radios
- Example radio programming files
- TM8100 Direct Connect GPS overview document
- GPS receiver/antenna
- TM8100 example polling application (non map based)
- Leads:
 - ❑ For connection via the microphone connector of a TM8115: TMAA20-02 and T2000-A19
 - ❑ For connection to a TM8105 (front 9-way): TMAA20-02, TMAA20-04 and T2000-A19
 - ❑ For connection to the rear of a TM8105/8115: TMAA30-03 and TMAA20-04 and T2000-A19

Minimum requirements for a GPS receiver/antenna

- 12 or 5 * volt GPS receiver
- NMEA 0183 specification
- RS232 or 3v3 CMOS output
- NMEA 0183 \$GPRMC sentence

* A 5 volt GPS receiver will require the addition of the TMAA01-05 options extender interface board, 12 volt receivers can be supplied directly from the auxiliary port of the radio.

Typical Systems Components



Desktop PC running an AVL application

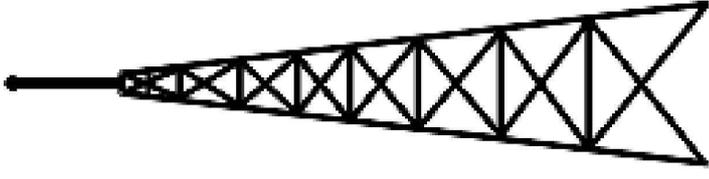


1. TM8105 or TM8115 Conventional Mobile
2. TMAA12 Power Supply
3. Programming cable *

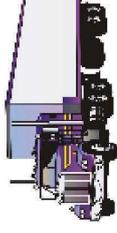
* For connection via the microphone connector to a TM8115: TMAA20-02 and T2000-A19

* For connection to a TM8105 (front 9-way): TMAA20-02 and TMAA20-04 and T2000-A19

* For connection to the rear of a TM8105/8115: TMAA30-03 and TMAA20-04 and T2000-A19



Conventional Radio System/Channel



1. TM8105/15 Conventional Mobile
2. GPS Receiver/Antenna