Technical Support

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TECHNICAL NOTE

Technical Note TN-NSC074
Direct Connect GPS Receivers

18 September 2003

This technical note applies to GPS receivers that are fitted to Tait Direct Connect GPS radios

GPS RECEIVER TYPES & DIRECT CONNECT GPS CONNECTION DETAILS

T2002-A00 (TA1220B) 13.8 V GPS RECEIVER

(White GPS with Tait Logo)

DESCRIPTION	WIRE COLOUR	DIRECT CONNECT DB 9 MALE
SUPPLY 13.8 V	RED	PIN 6
GROUND	SHEILD	PIN 5
GPS TRANSMIT DATA	WHITE	PIN 3
GPS RECEIVE DATA	YELLOW	PIN 2

930-00179-00 13.8V NAVMAN GPS SENSOR INTENAL MOUNTING ONLY

(Black GPS with Navman Logo)

DESCRIPTION	COLOUR	DIRECT CONNECT DB 9 MALE
SUPPLY 13.8	RED	PIN 6
GROUND	BLACK	PIN 5
GPS TRANSMIT DATA	GREEN	PIN 3
GPS RECEIVE DATA	BROWN	PIN 2

RADIO MODIFICATIONS FOR 13.8V GPS RECIVERS

This modification will be required when converting a standard data ready radio to the direct connect GPS version and the GPS requires 13.8V supply to operate.

1. Connect a red wire from the options connector S14 pin 1 on the T2000 logic board to Pin 6 of the DB9 connecter at the rear of the radio. This will provide a 13.8V supply that is required for the T2002-A00 and Navman IVN GPS receiver.

2. The radio firmware will need to change to one of direct connect versions listed below. Please check the software matrix that is available at support.taitworld.com for the latest direct connect GPS firmware version. The versions listed below are current as of 18 September 2003.

T2040-523-C49	V6.17 GPS
T2035-523-C49	V4.17 GPS
T2030-523-C49	V4.18 GPS

T2003-A00 5V GPS RECEIVER INTERNAL MOUNTING ONLY

(Small Green GPS no Logo)

DESCRIPTION	COLOUR	DIRECT CONNECT DB 9 MALE
SUPPLY 5.0 V	RED	PIN 4
GROUND	SHEILD+BLACK	PIN 5
GPS TRANSMIT DATA	GREEN	PIN 3
GPS RECIEVE DATA	WHITE	PIN 2

RADIO MODIFICATIONS FOR 13.8V GPS RECIVERS

This modification will be required when converting a standard data ready radio to the direct connect GPS version and the GPS requires 5V supply to operate.

1.   Connect a red wire from the options connector S14 pin 2 on the T2000 logic board to Pin 4 of the DB9 connecter at the rear of the radio. This will provide a 5V supply that is required for the T2003-A00 GPS Receiver.

2.   The radio firmware will need to change to one of direct connect versions listed below. Please check the software matrix that is available at support.taitworld.com for the latest direct connect GPS firmware version. The versions listed below are current as of 18 September 2003.

            T2040-523-C49   V6.17 GPS
            T2035-523-C49   V4.17 GPS
            T2030-523-C49   V4.18 GPS

GPS RECEIVERS SPECIFCIATIONS

The NMEA sentences that are required by Tait Direct Connect GPS radios are:

$GPGGA is the NMEA sentence that provides information required for a position poll

$GPVTG is the NMEA sentence that provides required for a velocity poll.

Please note the Direct Connect GPS radio will return a FAILED poll result when the $GPVTG NMEA sentence is not present if the radio is polled for position and velocity at the same time.

This will occur in the GPS units that are sourced directly from OEM suppliers as the $GPVTG string is not enabled as standard.

GPS PROGRAMMING LEAD

Below are the wiring details on how to make a GPS programming lead

PC COMM PORT	GPS RECEIVER	DESCRIPTION
DB9 Female	DB9 Female	
Not Connected ---------------- Pin 6-------------------------------------		13.8V Supply
Pin 5 --------------------------- Pin 5-------------------------------------		GND
Pin 3 --------------------------- Pin 2		GPS RX Data
Pin 2 --------------------------- Pin 3		GPS TX Data
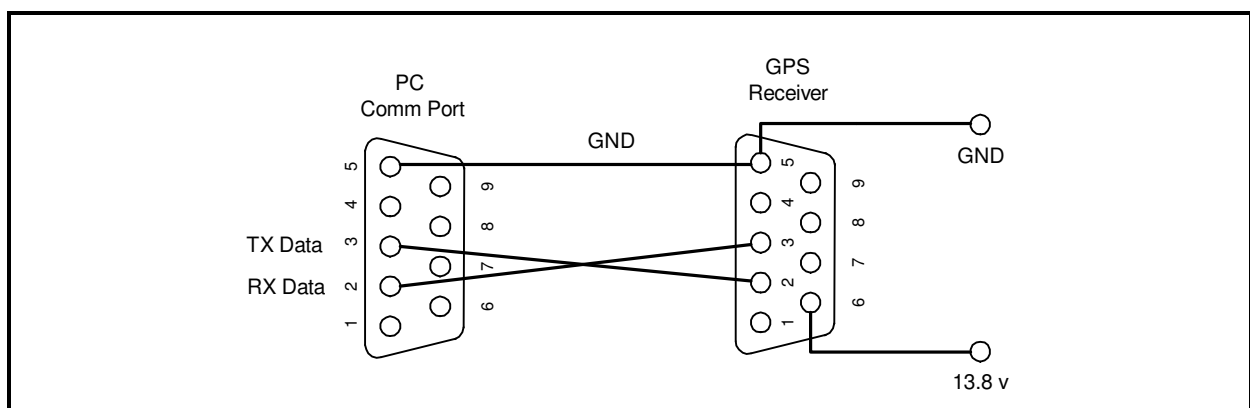
HOW TO ENABLE THE VTG NEMA STRING IN THE T2002-A00 GPS AND THE NAVMAN IVN GPS SENSOR ONLY

This will only be required if the Data application returns failed polls for Velocity and Position. The GPS Lab Mon programming software is available from the National Support Centre.

Enabling the $GPVTG NMEA String.

1. Start the Lab Mon programming software and connect the GPS receiver to the programming lead and you should now see NMEA sentences coming in.

2. Press shift and F3 at the same time to add the VTG string.

3. Type VTG for message ID

4. Type C, connect

5. Modify timing = Y

6. Message trigger = T (Time)

7. Message interval = 1 (second)

8. Message offset = 0

The Lab Mon program will then send a command to the receiver to add the VTG sentence.

Wait for 20 seconds before removing the supply from the GPS receiver. This will allow enough time for the Non Volatile Ram to save the programmed data.

To check that the VTG String has been enabled at the bottom of screen you will see the $GPVTG string appear every one second.

If you require any clarification or further information please contact the National Support Centre on 0800 MOBILE (0800 662453).