Using a Garmin® PND with CTM-200

Model	CTM - 200
Revision	Rev 2.0

3066 Beta Avenue | Burnaby, B.C. | V5G 4K4

Revision Control

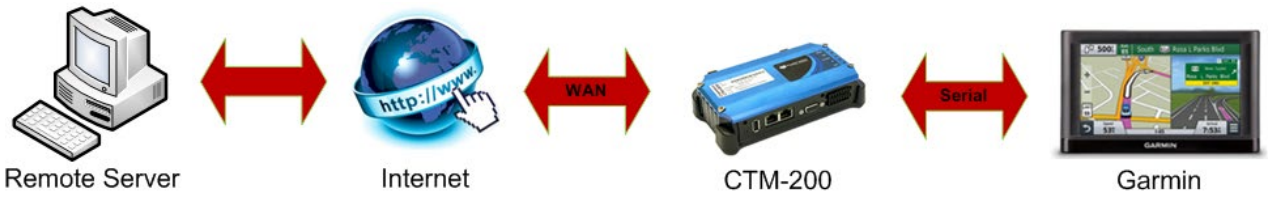
Description	Revision	Date
Limited Release	Rev 1.0	08-July-2010
Updated for Chameleon Gateways	Rev 1.1	09-June-2011
Updated document to reflect new firmware features	Rev 1.2	19-Sept-2011
Updated to reflect new command structure and improved wording	Rev1.3	06-Oct-2011
Added details on cable for Garmin® to CTM200	Rev1.4	07-Oct-2011
Added new message structure containing IMEI	Rev1.5	10-Nov-2011
Modified CTM200's configuration	Rev1.6	23-Feb-2012
Added requirements for null modem adapter, external power to Garmin® device, and public IP for sending messages/jobs from Remote Server	Rev1.7	27-Nov-2013
Added notes about CTM200 configuration when using GpsGate Server and when changing between Garmin® modes	Rev1.8	05-Dec-2013
Added wiring pinouts for Garmin® FMI cable	Rev1.9	16-Dec-2014
Updated and compressed content	Rev2.0	06-Jan-2016

Contents

1.Overview

The CTM-200 supports Garmin® products that support the Fleet Management Interface (FMI). When connected to the CTM-200 via serial link the CTM-200 manages the local connection between the Garmin® and the CTM-200 and the wireless link between the CTM-200 and the remote server. The CTM-200 notifies the remote server when the Garmin® is connected or disconnected.

The CTM-200 support for the Garmin® product uses a modification of the standard PAD (Packet Assembly Disassembly) feature of the CTM-200.



2.Requirements

- CTM-200 running firmware R2.0.4-2441 and above.
- Garmin® device with firmware that supports the Garmin® Fleet Management Interface Control Specification. (FMI revision 2.1 and later)
- RS-232 serial to mini USB (type B) cable to interface between Garmin® and CTM-200. Garmin® Part # 010-11627-00 or 010-11628-00 or 010-11259-00 (See wiring details below)
- External power applied to Garmin® device via the Garmin® custom cable
- Remote Server application that is capable of sending and receiving Garmin® Fleet Management Protocol messages. In this application note we are using GpsGate, but other server applications will work with this setup as well.

3.Garmin® Fleet Management Interface Cable

For Garmin® FMI cables the RXD, TXD and GND lines need to be properly connected to the mating connector on the CTM-200. The primary serial port on the CTM-200 is a DB-9 and the secondary (optional) serial port is a 3 pin GPIO connection.

3.1 Connecting a DB-9 male serial connector

To connect a DB-9 male serial connector to the Garmin® FMI cable as a null modem connector that you can connect directly to the CTM-200's primary serial port, connect the following wires:

- Brown wire: Pin 5 (signal ground)
- White wire: Pin 2 (RXD)
- Yellow wire: Pin 3 (TXD)

Because the CTM-200 cannot provide power and ground via the DB9 port, you can connect an external power supply connector to the remaining wires

- Red and black wires: Power and ground

3.2 Complete FMI Cable Assembly with Signal and Power Wires Connected

4.CTM-200 Configuration

Garmin® PND interface uses PAD mode, so it may operate in 3 modes: server, client, or both.

1) Server mode – CTM200 will not automatically establish connection. It will wait for external Garmin® application(s) to initiate communication with CTM200 at port 5005 (default).
2) Client mode – CTM200 will automatically establish connection with external Garmin® application at a preconfigured IP. The IP can be reconfigured later on, but port must still use 5005 (default).
3) Client/Server mode: CTM200 will act as both server and client, automatically connecting with external application if possible, as well as accepting incoming client connections.

* When using GpsGate Server as the external Garmin® Remote Server application, the CTM-200 must be configured in Client mode (**cmd mode 18**).

4.1 Command Line Interface

See link to the CTM200 command reference for more details on any commands:
http://www.cypress.bc.ca/documents/Command_Ref/CTM200/

Below are explanations of CTM200/Garmin® configuration setups:

cmd mode 19 X X configures the Garmin® for the primary serial port (CTM is always the server)
cmd mode 18 X X configures the Garmin® for the primary serial port (CTM is always the client)
cmd mode 17 X X configures the Garmin® for the primary serial port (CTM can be both server/client)

Below is an example of how to configure your CTM200 to communicate between your Garmin® device and GpsGate Server:

```
cmd mode 18                 # Garmin® client mode
cmd pad ip x.x.x.x          # IP address of remote GpsGate Server
cmd pad port xxxx           # Garmin® port of remote GpsGate Server (default 5005)
cmd port 1 9600 8 N 1 0     # Configure primary serial port baud rate for 9600
cmd pad svct 0              # TCP session will never timeout
cmd save                    # Save configuration
cmd pwrmode 2               # Power cycle CTM200 to apply changes
```

Notes:

- **cmd pad ip** must be reconfigured when changing between Garmin® modes (**cmd mode 17**, **cmd mode 18**, or **cmd mode 19**).
- Garmin® can only be used on serial ports 1 and 2, see examples below:

```
cmd mode 18                 # Garmin® uses DB9 primary serial port (typical setup)
cmd mode 2 18               # Garmin® uses 3 pin secondary serial port
```

5.GpsGate Configuration

The following GpsGate link has steps on how to configure **Chat** and **Dispatch** on GpsGate Server if you plan to use GpsGate as the server application with your Garmin® device:

http://gpsgate.com/garmin

6.Initialization Steps

- Garmin® device will display the disconnect icon on the top right of the screen until you are properly connected to the CTM200. Once the icon disappears, the physical link between the CTM200 and Garmin® has been established.
- You can now use the **Chat** and **Dispatch** features of your Garmin® device assuming that the CTM200 has an IP address and is configured correctly for remote communication to the remote server.
- CTM-200 and remote server will communicate bi-directionally using TCP.

7.Links

Supported Products:
http://www8.garmin.com/solutions/pnd/supportedproducts.jsp

Garmin® Developer:
http://developer.garmin.com/

Technical Support

Cypress Solutions Service Support Group
1.844.462.9773 or 778.372.4603
9.00am to 5.00pm PST
support@cypress.bc.ca