SPECTRUM MANAGEMENT, LLC

Spectrum Tracking Systems, LLC
Tarpley Road
Carrollton, Texas 75006

ELECTRONIC TRACKING SYSTEMS ®
A SPECTRUM MANAGEMENT COMPANY

TPC2 Operating Instructions

Warning RF Exposure Compliance

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm (7-7/8 inches) from all persons and must not be co-located or operating in conjunction with any other antenna of transmitter.

Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

This device may not interfere with TV reception or Federal Government radar.

User FCC Compliance

This transmitter is authorized by rule under the Low Power Radio Service (47 CFR part 95) and must not cause harmful interference to TV reception or United States Navy SPASUR installations. You do not need an FCC license to operate this transmitter. This transmitter may only be used to provide: auditory assistance to persons with disabilities, persons who require language translation, or persons in educational settings; health care services to the ill; law enforcement tracking services under agreement with a law enforcement agency; or automated maritime telecommunications system (AMTS) network control communications. Two-way voice communications and all other types of uses not mentioned above are expressly prohibited.

Device Preparation, Standard Firmware

1. Device preparation should be completed in a location where there is cellular coverage; i.e., outside screen-room or anechoic chamber.

2. Remove the device from its ‘host enclosure’, and place device onto the Mag-Plate.

3. While maintaining device on Mag-Plate, connect the battery leads.

4. Observe the device. After a few seconds the on-board Green LED should illuminate, indicating that the cellular module has powered up. The ‘installation’ message sequence requires approximately one minute for completion. The device has returned to its Dormant-Standby state after the Green LED extinguishes. The ‘installation’ message sequence includes: CDMA/PCS network registration, DNS look-up, location-fix receipt, and bi-directional UDP data communication with the WebTracker Server. The VHF transmitter remains OFF.

5. Insert the device into its 'host enclosure' while maintaining device in close proximity to the Mag-Plate. This isn't critical, but it minimizes the possibility of inadvertent activation.

Device Operation, Standard Firmware

1. It is assumed that the device is on the Mag-Plate and is in Dormant-Standby state. Separate the device from the Mag-Plate by at least 6 inches. The device will activate after approximately 5 seconds (time integration).

   Upon activation, the VHF transmitter starts and continuously outputs signal; the cellular module simultaneously powers up (as evidenced by the Green LED).

   The VHF carrier frequency, RF power output level, and ASK modulation are fixed and continuous.

   The cellular module's 'activated' sequence includes: CDMA/PCS network registration, DNS look-up, and initial notification messaging to WT Server via UDP. The device then enters a location loop which successively receives location-fix updates and messages them to the WT Server.

   If the cellular network is not available to the device, it will repeatedly attempt cellular module restart/registration while it remains activated. The VHF transmission continues independently.

2. After test completion, place the device back onto the Mag-Plate. De-activation will commence after approximately 5 seconds, as evidenced by termination of the VHF signal. The device will complete its current pass through the location loop, transmit a shut-down message to WT Server, and secure the cellular module (Green LED extinguishes). Thus, a return to Dormant-Standby state requires 30 to 60 seconds for completion.

Device Repacking, Standard Firmware

1. While maintaining the device in proximity with the Mag-Plate, remove it from its 'host enclosure'. This isn't critical, but it minimizes the possibility of inadvertent activation.

2. While maintaining the device in proximity with the Mag-Plate, disconnect the battery leads.

Device Preparation, VHF Test Firmware

1. Remove the device from its 'host enclosure', and place device onto the Mag-Plate.

2. While maintaining the device on the Mag-Plate, connect the battery leads.

3. Observe the device. The Green LED should immediately begin flashing at a 1 Hz rate. The duty-cycle of the flashes is 12% (mostly off) while the device remains on the Mag-Plate, and is 88% (mostly on) while the device is separated from the Mag-Plate. VHF transmission is OFF while the device remains on the Mag-Plate, and is ON while the device is separated from the Mag-Plate.

4. Insert the device into its 'host enclosure' while maintaining device in close proximity to the Mag-Plate. This isn't critical, but it minimizes the possibility of inadvertent activation.

Device Operation, VHF Test Firmware

1. It is assumed that the device is on the Mag-Plate and is in Dormant-Standby state. Separate the device from the Mag-Plate by at least 6 inches. The device will activate immediately (no integration).

   Upon activation, the VHF transmitter starts and continuously outputs signal. The duty-cycle of the flashes is 12% (mostly off) while the device remains on the Mag-Plate, and is 88% (mostly on) while the device is separated from the Mag-Plate. VHF transmission is OFF while the device remains on the Mag-Plate, and is ON while the device is separated from the Mag-Plate. The cellular module remains OFF at all times.

   The VHF carrier frequency, RF power output level, and ASK modulation are fixed and continuous.

2. After test completion, place the device back onto the Mag-Plate. De-activation will occur immediately as evidenced by termination of the VHF signal. Note that the Green LED continues flashing even when the device is secured.

Device Repacking, VHF Test Firmware

1. While maintaining the device in proximity with the Mag-Plate, remove it from its 'host enclosure'. This isn't critical, but it minimizes the possibility of inadvertent activation.

2. While maintaining the device in proximity with the Mag-Plate, disconnect the battery leads.