

Stealth Tracker



POLICE

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Part 1. Stealth Tracker Traffic Radar

This Manual details the features and operation of the "Stealth Tracker - S", and "Stealth Tracker - M" Traffic Radar Units..

1. Functions

The Stealth Tracker is designed for remote speed measurement of vehicles to monitor and assist in enforcement of established speed limits.

The "Stealth Tracker - M" model is capable of operating in both stationary measurement mode, and the moving measurement mode.

The "Stealth Tracker - S" model is intended only for operation in the stationary measurement mode.

When operating in the stationary mode, the Stealth Tracker measures the speed of the fastest vehicle in its range moving in the direction selected by the operator.

When operating in the moving mode, the Stealth Tracker simultaneously measures the speed of the patrol vehicle and the speed of the fastest vehicle within its range moving in the direction selected by the operator.

2. Key Features

- Operating frequency - 10.525 ± 25 GHz.
- Speed measurement range in the stationary mode is 10 to 150 mph.
- Speed measurement range in the moving mode (for the "Stealth Tracker - M" model only) is 20 to 150 mph (at patrol vehicle speeds of 20 to 100 mph with the Stealth Tracker in the same direction mode, the speed of a target vehicle must exceed the patrol vehicle speed by a minimum of 5 mph).
- Speed measurement error in the stationary mode is ± 1 mph.
- Speed measurement error in the moving mode, for the "Stealth Tracker - M" model only, is ± 2 mph.
- Radar range when targeting an average size vehicle is not less than 0.25 mile (not less than 0.125 mile for the "Stealth Tracker - M" model in the moving mode when measuring the speed of vehicles moving in the same direction).
- The Stealth Tracker provides target selection by speed if the speed difference is not lower than 5 mph.
- The Stealth Tracker provides vehicle selection by level of echoed signals if their ratio is not lower than 1:10.
- The Stealth Tracker allows for target selection by driving direction.
- The Stealth Tracker allows for direction selectivity (vehicle approaching or moving away).
- The Stealth Tracker allows for incremental range adjustment.
- The Stealth Tracker allows the operator to lock the last measured speed.
- The Stealth Tracker has audio Doppler sound level selectivity.
- Average microwave radiation power does not exceed 5 mW, pulse radiation.
- The Stealth Tracker operates on a supply voltage of 6.6 to 16 volts, either from a vehicle 12 volt negative ground system, or from the optional battery pack.
- Power consumed by the Stealth Tracker from a power source is not greater than 1.5 W.
- Stealth Tracker operation time when powered from the battery pack:
 - In transmitting modes with minimum audio volume level is approximately 8 hours.
 - In transmitting modes with maximum audio volume is approximately 4 hours.
 - In hold mode approximately 24 hours.
- The Stealth Tracker has an internal self-diagnostic program.
- The Stealth Tracker has display and keyboard backlighting feature for operation in darkness.
- The Stealth Tracker has a microwave signal "ON" indicator light.

3. Operating Conditions

The Stealth Tracker maintains the indicated performance standards under the following conditions:

- ambient temperature - minus 30 to plus 60°C.
- relative humidity - 98% at temperature of 25°C.
- atmospheric pressure from 60 to 106.7 kPa (460 to 800 mm Hg).

4. Complete Set

The Stealth Tracker complete set includes: Traffic Stealth Tracker

Power Cable
Operating Manual
Carrying Case

Optional Accessories:
Battery Pack
Universal Charger
Shoulder Belt
Mounting Bracket
Remote Control

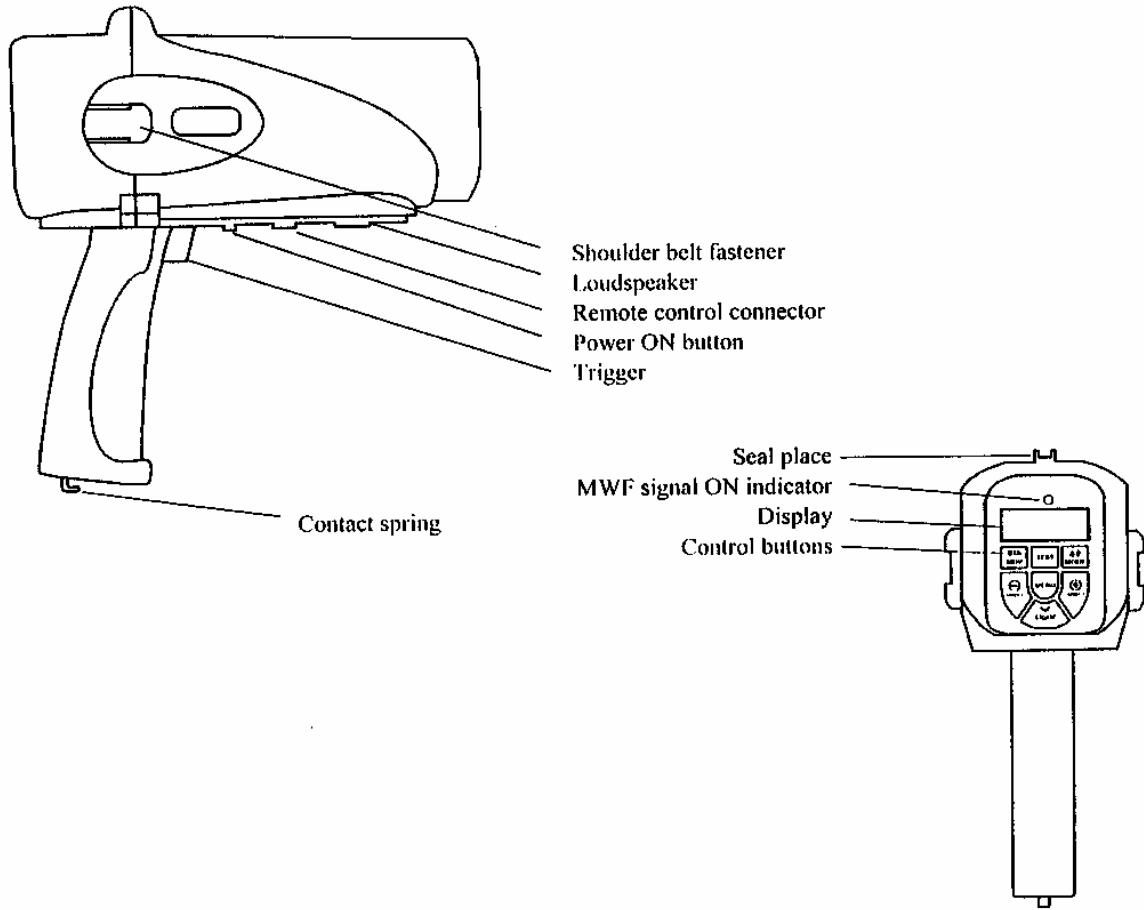
5. Operating Modes

The Stealth Tracker uses the following operating modes:

Mode	Stealth Tracker - M	Stealth Tracker - S
Setup	X	X
Stationary measurement	X	X
Moving measurement	X	-

6. Control and Indication

The Stealth Tracker functions are selected by using the buttons located on the front panel. Selecting a feature by pressing a button causes the desired change and is accompanied by a confirming short audio sound. The buttons should not be pressed more than once during 0.5 sec. The Stealth Tracker does not respond to a selection if the buttons being pressed do not operate in the appropriate mode.



Power "ON" button.

The power ON button turns power on and off to the Stealth Tracker.

"▼/MODE" button.

In the setup mode this button reverses the controlled driving direction.
This button does not function while transmitting..

"STA/MOV" button.

Operates only in the "Stealth Tracker - M" model.

In the setup mode selects the stationary or moving measurement mode.

This button does not function while transmitting.

"TEST" button.

In the setup mode this button starts a display test.

In transmitting modes it starts a functions test.

"MENU" button.

Pushing this button once in the setup mode displays the volume control setting. Pushing this button twice displays the Stealth Tracker range setting.

For the "Stealth Tracker - M" model, the radar range adjustment is only possible in the stationary mode. In the moving mode the maximum radar range is set automatically.

This button does not function in transmitting modes.

"+" and "-" buttons.

In the setup mode these buttons increase and decrease incrementally the Doppler audio volume, or target range. When pressing and holding down the button, this value automatically increases (decreases).

These buttons do not function in the transmit modes.

"LIGHT" button.

In all modes this button turns on and off the display and keyboard backlighting.

Trigger.

Turns on and off the transmit mode.

Setup indicators.

Moving measurement mode indicator. Available only in the "Stealth Tracker - M" model.



Stationary measurement mode indicator.



Controlled driving direction indicator. In the stationary measurement mode — only speed measurement of vehicles approaching to the operator; in the moving measurement mode (for the "Stealth Tracker - M" model) — only speed measurement of vehicles moving in the opposite direction.



Controlled driving direction indicator. In the stationary measurement mode — only speed measurement of vehicles moving away from the operator; in the moving measurement mode (for the "Stealth Tracker - M" model) — only speed measurement of vehicles moving in the same direction.



100% range indicator (maximum range).



75% range indicator.



50% range indicator.

25% range indicator.

Supply voltage indicators.

Normal supply voltage indicator.



Maximum permissible supply voltage indicator.

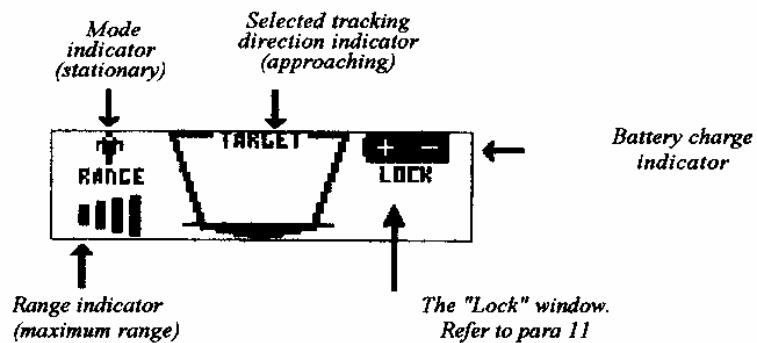


Insufficient supply voltage indicator.

7. Preparation for Operation

Visually inspect the unit to insure there is no damage to the Stealth Tracker housing and the power cord. Plug the Stealth Tracker power cord into the lighter socket of a vehicle power supply system.

Press the power ON button. The Stealth Tracker will test the display and enter the setup mode. At this point a short audio signal will be heard and the display will appear as follows.



The supply voltage indicator should indicate a full charge. Otherwise you should check the vehicle power supply system voltage.

8. Testing the Display

The Stealth Tracker automatically performs the display test when the unit is powered up. The display test may be activated manually by pressing the "TEST" button while in the setup mode. During the test the display screen changes its state several times. While watching the display during the test check to see that all display segments are working correctly.



"Stealth Tracker - M". Display testing.



"Stealth Tracker - M". Display testing (image inversion).



"Stealth Tracker - S". Display testing.



"Stealth Tracker - S". Display testing (image inversion).

9. Function Test

The function test is a self test of the internal circuits. To start the test, point the Stealth Tracker in a direction free from moving objects (for example, upwards), pull the trigger and press the "TEST" button at the same time. If the unit is functioning correctly, the Stealth Tracker display will indicate a speed of 30 mph along with the appropriate Doppler audio sound.



Function test in the stationary mode



Function test in the moving mode

In case of abnormal Stealth Tracker operation or indication of an error message such as "Ex" where x=1...9, contact your local service center.

10. Setting up the Stealth Tracker

When the power supply is turned on, the following are the default settings:

- Stationary mode.
- Controlled driving direction - approaching.
- Maximum target range.

These settings can be changed only in the setup mode.

Selecting the mode setting

The mode is selected with the "STA/MOV" button. The moving mode is only available in the "Stealth Tracker - M" model. When setting this mode, please keep in mind that the patrol vehicle speed must be between 20 to 100 mph to ensure correct readings. The stationary mode is used when the operator is remaining stationary.



Selecting driving direction.

Controlled driving direction is selected with the "v/MODE" button. The Stealth Tracker measures the speed of vehicles moving in one direction only: either vehicles approaching to the operator or those moving away from him.

In the moving measurement mode (the "Stealth Tracker - M" model) only the speed of vehicles moving either in the opposite or same direction can be measured. At the same time the speed of vehicles moving in the same direction must exceed the patrol vehicle speed by a minimum of 5 mph.



Changing accompanying sound signal volume.

Accompanying sound signal volume can be changed after the "MENU" button is pressed and the "VOLUME" caption appears on the display. The volume control is carried out using the "+" or "-" buttons. Pressing the "+" or "-" button once increases or decreases accompanying sound signal volume by one graduation respectively.



Changing traffic Stealth Tracker range.

Stealth Tracker range can be changed after the "MENU" button is pressed twice and the "RANGE" caption appears on the display. The radar range adjustment is carried out using the "+" or "-" buttons. Pressing the "+" or "-" button once increases or decreases the radar range by one graduation respectively. The Stealth Tracker uses four ranges for operation in the stationary measurement mode. When turning on the Stealth Tracker, the stationary measurement mode and maximum range are set automatically. Minimum range is approx. 25% of the maximum range. Actual maximum range is approx. 0.4 mile and can be decreased to 0.1 mile.



For the "Stealth Tracker - M" model, the range adjustment is only possible in the stationary measurement mode. In the moving measurement mode the maximum range is set automatically.

11. Stationary Speed Measurement

Set the stationary measurement mode. To measure speed, direct the Stealth Tracker to the controlled road section and pull the trigger. The MWF signal ON indicator will be blinking. In this mode the speed of a vehicle moving in the selected direction at maximum speed is measured.



If a vehicle moving in the selected direction is within the Stealth Tracker coverage, its speed value will be indicated on the display. The speed measurement will be confirmed by a sound signal the frequency of which is proportional to the measured speed.



To stop measurements, release the trigger.

Locking measured speed value.

When the trigger is released, the last measured speed value appears in the "LOCK" window and remains there until a new measurement starts or Stealth Tracker settings are changed.



To display the current speed value in the "LOCK" window and continue measurements, it is necessary to release the trigger during the measurement for a short period (less than 2 seconds) and then pull it again. The speed value indicated on the display at the moment when the trigger was released for a short period will be displayed in the "LOCK" window. After the measurement is finished, the speed value locked by the trigger release will remain in the "LOCK" window.

If it is impossible to measure the speed (for example, due to strong electromagnetic disturbance or the availability of a large-sized vehicle located at distance of a few meters from the Stealth Tracker), the display will appear as follows.



Any setting can be changed before the next measurement starts.

12. Speed Measurement in Motion

Enter the moving measurement mode. In this mode the speed of the patrol vehicle and a vehicle moving in the selected direction at maximum speed are measured. The patrol vehicle should be driven at speed of 20 to 100 mph; when measuring the speed of vehicles moving in the same direction, the patrol vehicle speed should be lower than the speed of the vehicle being measured by 5 mph at least. It is recommended to avoid hard braking and fast acceleration. The patrol vehicle speed value is continuously displayed on the display.



The operation should be started only after the patrol vehicle makes not less than 20 mph. To measure speed, direct the Stealth Tracker to the controlled road section (through the windshield) and pull the trigger. The MWF signal ON indicator will be blinking. The higher the Stealth Tracker is located in the passenger compartment, the greater its range. If a vehicle moving in the selected direction is within the Stealth Tracker range, the display will indicate its speed value.

The speed measurement will be confirmed by a sound signal the frequency of which is proportional to the measured speed.
Locking measured speed value.



When the trigger is released, the last measured speed value appears in the "LOCK" window and remains there until a new measurement starts or Stealth Tracker settings are changed.



To display the current speed value in the "LOCK" window and continue measurements, it is necessary to release the trigger during the measurement for a short period (less than 2 seconds) and then pull it again. The speed value indicated on the display at the moment when the trigger was released for a short period will be displayed in the "LOCK" window. After the measurement is finished, the speed value locked by the trigger release will remain in the "LOCK" window. If it is impossible to measure the speed (for example, due to strong electromagnetic disturbance or the availability of a large-sized vehicle located at distance of a few meters from the Stealth Tracker), the display will appear as follows.



If the patrol vehicle speed is lower than 20 mph, speed measurement is not carried.
Any setting can be changed before the next measurement starts.

13. Shutdown

Turn off the Stealth Tracker by pressing the power ON/OFF button. The display will go out.

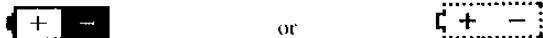
Part 2. Optional Accessories

1. Battery Pack

To use the battery pack, insert it into the Stealth Tracker handle with the "+" marking inward until it is fixed with the contact spring.

Press the power ON button.

The charge indicator should be completely highlighted. If the appropriate symbol is displayed, the cassette should be charged.



2. Universal Charger

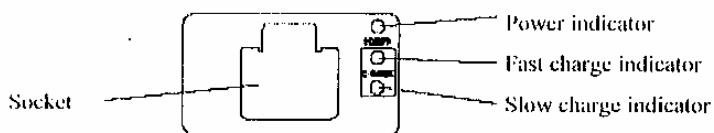
Preparation for operation.

Connect the universal charger to the vehicle power supply system or 110 V mains.

The power ON indicator will be lit.

Charging the battery package.

Insert the battery package into the universal charger socket with the "+" marking inward until it is fixed. The fast charge indicator will be lit.



Caution: The universal charger automatically disables the battery charging (the charge indicator is off) at ambient temperature lower than 0°C. To remove the interlock, unplug the universal charger from the power supply. After 1.5-2.5 hours elapse, the fast charge indicator will go out and the slow charge indicator will be on. The battery package has been charged.

Remove the battery package and unplug the universal charger from the mains.

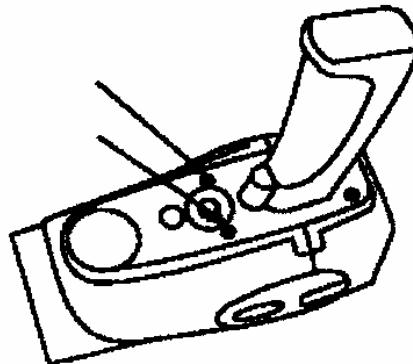
To increase the battery package lifespan, it is recommended to perform a regenerating charging cycle after 10-20 fast charging cycles. To do this, insert the battery package into the universal charger for 10-12 hours. First the fast charging takes place (the fast charge indicator is on), then the universal charger changes over to the low current charging (the slow charge indicator is on). Overcharging in such a mode does not represent a danger to the accumulator cassette. To recover strongly discharged batteries or off-capacity batteries, the battery package should be charged for longer time (about 24 hours).

3. Shoulder Belt

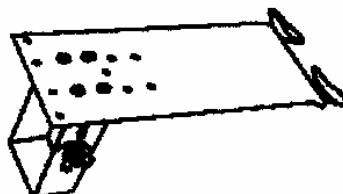
To fasten the Stealth Tracker on the belt, align the belt clip with the shoulder belt fastener on the Stealth Tracker housing and push it until fixed.

4. Traffic Stealth Tracker Mounting Bracket

Before the first Stealth Tracker installation on the bracket, replace the two screws on the Stealth Tracker base by M4 screws taken from the dash panel mounting bracket parts set, leaving 3-5 mm spare.



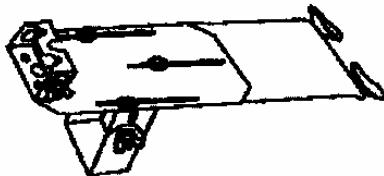
If the selected attaching point on the dash panel has an inclination, use four flush mounting M6 screws with four nuts to secure the adjustable support on the bracket base, choosing small or large holder. Support attaching point is selected depending on the distance to the windshield. If the dash panel has no inclination, the adjustable support is not used.



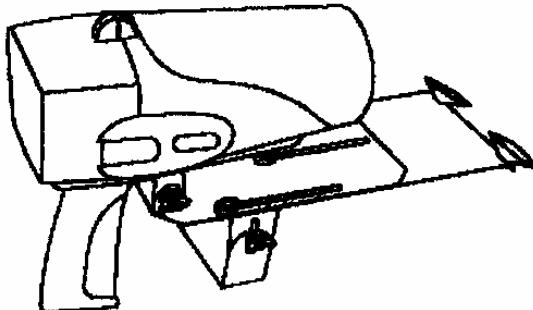
Using three M6 screws with washers, join the base to the movable cleat of the bracket.



Using M6 bolt with square guide, washer and wing nut, join the movable cleat to the Stealth Tracker holder. The holes in the cleat and the holder must coincide.
Install the bracket, using vacuum chucks (for windshield) and adhesive tape (for dash panel).



Adjust the support height, trying to locate the bracket horizontally as far as possible.
Install the Stealth Tracker on the bracket by inserting the M4 screws in the Stealth Tracker holder slots. Tighten the screws with a screwdriver.



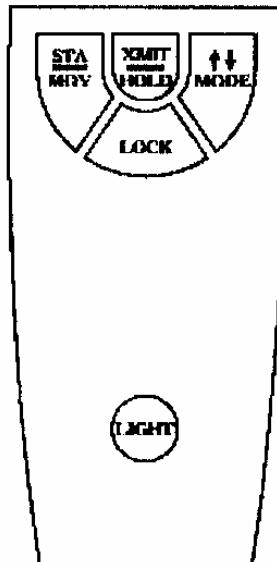
Direct the Stealth Tracker in the required direction and tighten the fasteners.

5. Remote Control

If the Stealth Tracker is mounted on the bracket, it is more convenient to operate it via the Remote Control. To connect the remote control, connect the remote control cable to the remote control connector on the Stealth Tracker. The remote control is automatically powered when turning on the Stealth Tracker.

The control via the remote control is carried out using the buttons located on its face panel.

The buttons should not be pressed more than once during 0.5 sec.



Buttons functions

"STA/MOV" button:

In the setup mode this button selects the stationary or moving measurement mode (for the Stealth Tracker - M" model only). This button does not function in the measurement modes.

"^v/MODE" button:

In the setup mode this button changes the controlled driving direction. This button does not function in the measurement modes. "XMIT/HOLD" button:

In the setup mode this button changes the Stealth Tracker over to the measurement mode. In the measurement modes this button changes the Stealth Tracker over to the setup mode.

"LOCK" button:

In the measurement modes this button sets the current speed value in the "LOCK" window of the Stealth Tracker.

This button does not function in the measurement modes.

"LIGHT" button:

In all modes this button turns on/off the back lighting of the Stealth Tracker display and keyboard and the remote control keyboard.

When the remote control is connected to the Stealth Tracker, the Stealth Tracker keypad will function in full scope in parallel with the remote control keypad, therefore accompanying sound signal volume and, maximum radar range of the Stealth Tracker are adjusted via the Stealth Tracker keypad.

To disconnect the remote control from the Stealth Tracker, disconnect the remote control cable from the remote control connector.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.