Ten and Two
Travel Time Data

OPERATIONS & SOFTWARE GUIDE
Version 1.1

Contents

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Distributed by

L2 Data Collection
and GPS Fleet Management Solutions

Ten and Two
Travel Time Data

UPON RECEIPT

Upon receipt, please locate the Delivery & Shipping Log in the camera bag and and inventory the contents. Contact L2 Data Collection immediately if there are any missing items. Please include the Delivery & Shipping log when returning the equipment. The contents value for return shipping insurance is $800.00.

DELIVERY & SHIPPING LOG
Upon receipt and return, please confirm and initial that all the items listed below are included:

Item	Received	Returned
Camera Bag		
Camera & Battery		
SD Card (in camera)		
Mini SD Card Reader	SAMPLE	
Windshield Mount		
Car Accessory Plug Adapter		
Battery Charger – Wall Outl		
USB/Mini USB Cable		
Extra Battery		

Please return this log with the equipment. Questions? Call L2 Data Collection @ (208) 860-7554

PLUG IT IN!

The camera battery may have drained in transit. Using the Battery Charger-Wall Outlet, please charge the camera for at least 2-hrs prior to recording video. The Car Accessory Plug Adapter can maintain and charge the battery, but the camera does need battery power for the initial set-up.

CONTACT:
Lori Vawdrey
L2 Data Collection
P 208.860.7553
E LVawdrey@L2DataCollection.com
F 208.247.5747

RETURN SHIPPING ADDRESS
L2 Data Collection
1770 West State Street #204
Boise, Idaho 83702

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CAMERA SCHEMATIC

Battery

Power

Lock/Unlock

Memory Status

Lens Ring

Leveling Lights

GPS Status

Record Bar

Record Status

VIDEO CAMERA OPERATION.

Note: In order to secure an accurate GPS lock, turn the camera power on when you are at the location where the data collection will begin. If the camera has travelled a long distance since the last GPS lock, removing and replacing the battery may enable the camera to more quickly secure a GPS lock. Please call L2 Data Collection at (208)860-7554 prior to removing the battery.

1. Slide the Record Bar on top of the camera to the off position (Record Status Light is covered).
2. Push and hold the Power Button for 3 seconds. Camera will pause, lights will flash and the camera will beep once.
3. The GPS Status Light in the front of the camera will flash green while the camera attempts to get a GPS lock. While getting the lock, which may take several minutes, the camera should be outdoors with unobstructed access to the sky. Do not cover the top of the camera with your hand as this can block the receiver. The GPS Status light will turn solid green when the GPS is successfully locked.
4. Place the camera in the Windshield Mount. Place the mount on the windshield, push down on the button that says "PRESS" and lift the latch up over the "Press" button. Make sure the mount is SECURELY attached before driving. If it is not possible to secure the Windshield Mount to the dash, mount the camera outside on either the windshield or the hood of the car (wherever the Car Accessory plug will reach).
5. The Level Lights are used to ensure the camera view is horizontally balanced. It is not necessary to use the level lights if the camera is mounted on a level surface and the three arrows next to the lens ring are at "9, 12 and 3'o clock".
6. Plug the Car Accessory Adapter into the mini USB jack in the back of the camera and also in to the car accessory plug.
7. When you are ready to record, slide the Record Bar forward and the Record Status light will turn from green to red. If the Record Status turns yellow while recording, the memory on the SD card is full and the camera is not recording.
8. To check the memory status while recording, unplug the Car Accessory Adapter and close the camera back door. Press and quickly release the power button. The Memory Status light will show Green >50%, Yellow 20-50% and Red <20%. Open the back door and plug the Car Accessory Adapter back into the camera. (Make sure you have sufficient battery power to operate the camera for a few minutes.)
9. To stop recording, pull the Record Bar back over the Record Status light.
10. To turn the camera off, push and hold the Power Button for 3 seconds.

Error Conditions:
Low Battery: 3 beeps, Battery Status flashes red and powers down.
No SD Card: 3 beeps, Memory Status flashes yellow.
Memory Full: 3 beeps, Memory Status flashed red.
SD Card Unformatted: 3 beeps, Memory Status flashed yellow and red

Card Format: Call L2 Data Collection for instructions. (208) 860-7554

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TRAVEL TIME FIELD LOG   Video Name(s):_____

Project: _____ Driver: _____ Day/Date: _____

Street: _____City, County, State: _____

Run #	Direction	Start Time	End Time	Notes

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TRAVEL TIME RUNS AND FIELD LOG.

1. In order to accurately separate the GPS data into individual runs, it is important to keep an accurate and complete Field Log. To more closely match the satellite time, run start/stop times should be recorded using a cell phone and not a watch or vehicle clock. Data recorded on the log includes Run # (1,2,3,...); Run Direction (NB,SB,..); Start Time / End Time (14:40 – 14:45) and any notes that may be helpful for analysis (fire truck delayed traffic).
2. Data collection should begin and end when the vehicle is parked in a safe environment, i.e. a parking lot near the start of the first run. It is not necessary to turn the camera off or to stop recording between runs, however, you must come to a complete stop for 1 minute between the end of a run and the beginning of the next run. Do not make U-turns to start and end runs or there will not be a clear division between the runs.
3. The completed Travel Time Field Log should be faxed or emailed to L2 Data Collection at (208) 247-5747 or L2DataCollection@gmail.com.

VIDEO UPLOAD.

Note: If you use the USB/USB Mini cable adapter to upload the video file to your computer, the computer may attempt to launch the camera manufacturer's website and create an additional folder for storing videos. The preferred method is to eject the MicroSD card from the camera and use the provided USB adapter to upload the video.

1. Turn the power to the camera OFF. Eject the MicroSD card from the camera and insert it into the USB adapter. Please be cautious in handling the SD card and do not touch the gold bars on the bottom of the card. Insert the USB adapter in to your computer.
2. The video files will be stored on the MicroSD card in a directory called X:\L2DATA GPS\DCIM\100MEDIA. Video files are .mov files and, depending upon the length of the video you recorded, there may be more than one .mov file per video. The file naming system begins with FILE000X and subsequent video files are FI0X001, FI0X002, etc.
3. Open the Ten and Two software and select the option Set-Up and Features. Under Default Paths, select to Edit the SD Card Reader Path. Browse to and select the folder on the MicroSD card reader containing your .mov video files and select OK. By default, the .mov video file will be renamed and copied into the X:\ProgramFiles\TenandTwo\Video Files folder. Please note the video files can be quite large (4000mb) and, depending on your system, you may need to redirect the Video Files Path to a location that can accommodate a large file. Renaming and copying the video can take several minutes. Select OK to return to the Main Menu.
4. Safely remove the MicroSD card from your computer. If you do not have additional video to record, please leave the MicroSD card in the USB adapter for shipping. A 32gb MicroSD card will accommodate 3-4 two hour videos. It is not necessary to delete the video files from the MicroSD card.
5. After the GPS data has been extracted in the Ten and Two software, the video files can be compressed into a smaller .mov format. (This feature is not yet included in the Ten and Two software, but will be in a future release.) If you are not familiar with video compression software, please contact L2 Data Collection for video compression options and instructions.

TEN AND TWO SOFTWARE.

The Ten and Two camera records time-stamped HD video and GPS coordinate data; including time, speed, heading, latitude, longitude, and satellite reception data. Ten and Two software will extract the GPS data from the video. L2 Data Collection will convert the GPS data into travel time run statistics.

The Ten and Two software has % primary areas:

Set-Up and Features: Adjust default settings for file paths; email settings; time zone; and run statistics.
Upload and Rename Video File; Rename .mov files and copy them onto your computer.
Process Video and Extract GPS Data: Select and review video(s) for processing; extract and email GPS data file(s).
View Video, Tracking and Stats: View synchronized run video, aerial map and statistical data.
View Video with Asset Tracking: Select and Record coordinate locations in the video to create a CSV database.

1. Set-Up and Features: When the Ten and Two software was installed on your computer, folders were created for Data, Map and Video Files. The Default File Paths will automatically be directed to these folders. Select the appropriate Time Zone for your area and make any adjustments to the Run Statistic Default Parameters. (Run Statistics can be adjusted at anytime.)
2. Upload and Rename Video File: See Video Upload section.
3. *Process Video and Extract GPS Data:* Select the Process Video and Extract GPS Data button. Select and open the .mov file that is to be viewed and processed. Verify that this is the correct video and that the video quality and view is acceptable. Select Reset and then select Extract GPS.   Depending upon the length of the video, it can take up to 15 min to extract the GPS data. If the Time in the extracted data is not correct, select Adjust Hr to change the time to your specific time zone. Select Save GPS and then Email GPS. The extracted GPS data file will be sent to L2 Data Collection.
4. Data and Map Files Upload: Using the start/stop times recorded on your Field Log, L2 Data Collection will process the GPS data and return it to you via email or DropBox. The data will include a folder with individual run files (.rd2 files) and a folder containing GIS map files for your specific area.   Copy and paste the .rd2 run **files** into the folder X:\Program Files\TenandTwo\Data Files Copy and paste the map **folder** (filename will be specific to your area) into the X:\Program Files\TenandTwo\Map Files folder.
5. View Video , Tracking and Stats: On the Set-Up and Features screen, select to Edit the Map Files Path. Select the sub-folder with your specific Map Files and select OK and then select OK to exit. Select View Video, Tracking and Stats and choose the .rd2 run file that you want to view.
6. View Video and Asset Tracking: This feature is under development and will be available in a future release.

Questions, Suggestions or Issues?
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