

# CarChip®, CarChipE/X, CarChipE/X With Alarm



8211  
8221  
8225

## OBDII - Based Vehicle Data Logger and Software

CarChip and CarChipE/X record vehicle trip and performance data to provide a detailed history of driving performance and vehicle operation. Recorded data includes trip start and end times, vehicle speeds, rates of acceleration and braking, and any detected OBDII trouble codes. CarChipE/X also provides additional vehicle monitoring capabilities including the logging of additional engine data parameters and more detailed "accident" data for all sudden stops. The CarChip E/X with Alarm (8225) emits an audible beep whenever a driver exceeds user determined speed limits. Using the included CarChip software, you can see the logged data in summary, record, plot or table formats and also export it to other applications.

CarChip and CarChipE/X plug into your car's OBDII port and are compatible with most passenger cars and light trucks with model years 1996 and later.

## Specifications

### Physical

|                                       |  |
|---------------------------------------|--|
| Operating Temperature                 | ..... -40° to +185°F (-40° to +85°C)   |
| Primary Power, Connected to Vehicle   | ..... 12 VDC, 25 mA  |
| Primary Power, Connected to Computer  | ..... USB powered  |
| Backup Power                          | ..... Internal battery, 10-15 year life in normal use  |
| Memory                                | ..... 128KB for CarChip, 512KB for CarChipE/X  |
| Data Logging Capacity, CarChip        | ..... 75 hours   |
| Data Logging Capacity, CarChipE/X     | ..... 300 hours max., 42 hours min., depending on the number of optional data parameters selected and thier logging intervals. |
| Time & Date                           | ..... Accurate to +/- 2 seconds per day  |
| Mounting                              | ..... 16-pin OBDII connector   |
| Computer Interface                    | ..... USB  |
| Computer Cable Length                 | ..... 5' (1.5m)  |
| Indicator Lamp                        | ..... LED, flashes to indicate CarChip status.   |
| Dimensions for CarChip and CarChipE/X | ..... 1.334" x 1.875" x .982" (35 mm x 48 mm x 25 mm)  |
| Dimensions for CarChip with Alarm     | ..... 1.429" x 1.875" x .982" (35 mm x 48 mm x 25 mm)  |
| Weight                                | ..... 0.9 oz. (25g)  |

### OBDII Compatibility

|                              |  |
|------------------------------|--|
| Supported Protocols          | ..... J1850-41.6, J1850-10.4, ISO9141, KWP2000 (ISO 14230) CAN (Control Area Network ISO 11898)  |
| CarChip-Compatible Vehicles: |  |
| US Market                    | ..... Most domestic and import vehicles model years 1996 and later.  |
| European Market              | ..... Some vehicles model years 1996 - 1999 and most vehicles model year 2000 and later vehicles compliant with the supported protocols listed above.  |
| Elsewhere                    | ..... Undetermined. 1996 and later vehicles that are compliant with the supported protocols may or may not be CarChip Compatible.  |
| Incompatible Vehicles        | ..... CarChip meets and complies with most of the supported protocols used with US market vehicles. Despite this, incompatibilities still exist. Review the Incompatible Vehicle List to see the known exceptions, exclusions and anomalies. |

### Software System Requirements

|                  |   |
|------------------|---|
| Operating System | ..... Windows 98SE, ME, NT4.0, NT2000, XP |
| Disk Space       | ..... 5 MB free disk space                |
| Display          | ..... Windows-compatible VGA minimum      |

### Data Display

|                       |  |
|-----------------------|--|
| Trip Log Summary View | ..... Start date and time, duration, distance, max speed, time in top speed band, number of hard braking events, number of extreme braking events, number of hard acceleration events, number of extreme acceleration events, vehicle ID.  |
| Trip Log Report View  | ..... Vehicle ID, CarChip data logger ID, start time, end time, duration, time spent at idle, time spent in first speed band, time spent in second speed band, time spent in third speed band, time spent in fourth speed band, distance, average speed, maximum speed, number of hard braking events, number of extreme braking |

|   |  |
|---|--|
|   | events, number of hard acceleration events, number of extreme acceleration events, list of logged parameters (vehicle speed only for CarChip, vehicle speed plus up to 4 optional data parameters for CarChipE/X), comments. |
| Trip Log Plot View . . . . .                          | Line graph for vehicle speed only for CarChip. Line graph for vehicle speed plus line graphs for up to 4 optional data parameters for CarChipE/X.  |
| Trip Log Table View . . . . .                         | Elapsed time for trip and speed every 5 seconds for CarChip. CarChipE/X also logs up to four optional engine data parameters.  |
| Activity Log Summary View . . . . .                   | Date and time, CarChip ID, description of event.   |
| Activity Log Event View . . . . .                     | Date and time, CarChip ID, description of event, and comments.   |
| Accident Log Summary View (CarChipE/X only) . . . . . | Date and time, CarChip ID, maximum speed in log.   |
| Accident Log Stop View (CarChipE/X only) . . . . .    | Date and time, CarChip ID, maximum speed in log, comments.   |
| Accident Log Plot View (CarChipE/X only) . . . . .    | Date and time, line graph of vehicle speed for 20 seconds prior to stop.   |
| Accident Log Table View (CarChipE/X only) . . . . .   | Vehicle speed for each of the 20 seconds prior to the stop.  |
| Trouble Log Summary View . . . . .                    | Date and time, vehicle ID, trouble code, problem description.  |
| Trouble Log Problem View . . . . .                    | Date and time, vehicle ID, CarChip ID, trouble code, problem description, comments, OBDII freeze-frame info (parameters included in freeze-frame vary from vehicle to vehicle).  |

### Data Options

|   |  |
|---|--|
| Supported Unit Systems . . . . .                    | U.S., Metric, S.I., Custom (mix of U.S., Metric, and S.I.)                 |
| Vehicle Speed Logging Interval . . . . .            | 5 seconds  |
| Vehicle Speed Bands . . . . .                       | Four user-configurable bands identify normal vs. excessive vehicle speeds. |
| Calculated Data . . . . .                           | Hard and extreme braking, hard and extreme acceleration.                   |
| Number of Optional Engine Data Parameters . . . . . | 23 total, up to 4 can be selected at a time.                               |
| Optional Parameters Logging Intervals . . . . .     | 5, 10, 20, 30, or 60 seconds, user selected.                               |

### Included with CarChip and CarChipE/X

| Parameter                           | Range *                                  | Resolution *                   |
|-------------------------------------|--|--------------------------------|
| Vehicle Speed                       | 0 to 158 mph, 0 to 255 km/h, 0 to 70 m/s | 0.6 mph, 1 km/h, 0.3 m/s       |
| Trip Distance Traveled              | 0 to 10,000 miles, 0 to 16,000 km        | 0.1 mile, 0.1 km               |
| Acceleration/Deceleration Threshold | 0 to 3 G, 0 to 30 m/sec <sup>2</sup>     | 0.03 G, 0.3 m/sec <sup>2</sup> |

### Included with CarChipE/X Only

| Parameter                | Range *                              | Resolution *            |
|--------------------------|--------------------------------------|-------------------------|
| Engine Speed             | 0 to 16,384 rpm                      | 1 rpm                   |
| Throttle Position        | 0 to 100%                            | 0.1%                    |
| Coolant Temperature      | -40° to +420°F, -40° to +215°C       | 2°F, 1°C                |
| Engine Load              | 0 to 100%                            | 0.1%                    |
| Air Flow Rate            | 0 to 8714 lb/min, 0 to 655.35 gm/sec | 0.1 lb/min, 0.01 gm/sec |
| Intake Air Temperature   | -40° to +420°F, -40° to +215°C       | 2°F, 1°C                |
| Intake Manifold Pressure | 0 to 75 in. hg., 0 to 255 kPaA       | 0.3 in. hg., 1 kPaA     |
| Fuel Pressure            | 0 to 110 psiG, 0 to 765 kPaG         | 0.5 psiG, 3 kPaG        |
| O2 Sensor Voltage        | 0 to 1.275 V                         | 0.005 V                 |
| Ignition Timing Advance  | -64° to 63.5°                        | 0.5°                    |
| Short Term Fuel Trim     | -100% to 99.22%                      | 0.8%                    |
| Long Term Fuel Trim      | -100% to 99.22%                      | 0.8%                    |
| Battery Voltage          | 6 to 16 VDC                          | 0.01 VDC                |

\* Range and resolution of sensor measurements only. Accuracy is dependent on the accuracy of the vehicle's sensors.