CarChip ®, CarChip E/X, CarChip E/X With Alarm

OBDII - Based Vehicle Data Logger and Software

CarChip (8211)and CarChipE/X (8221) record vehicle trip and performance data to provide a detailed history of driver 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 CarChipE/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.

General

Operating Temperature	-40° to +185°F (-40° to +85°C)
Primary Power, Connected to Vehicle	-9 to 16 VDC, 25 mA
Primary Power, Connected to Computer	USB
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 their logging intervals.
Time & Date	Accurate to +/- 2 seconds per day
Mounting	16-pin OBDII connector
Computer Interface	USB
Computer Cable Length	6' (1.8 m)
Alarms (8225 only)	Audible alarm for exceeding speed, acceleration, and deceleration limits
Status LED	LED, flashes to indicate CarChip status.
Dimensions	
For 8211, 8221	1.875" x 0.982" x 1.334" (48 mm x 25 mm x 35 mm)
For 8225	1.875" x 0.982" x 1.429" (48 mm x 25 mm x 36 mm)
Weight	
For 8211, 8221	0.8 oz. (23 g)
For 8225	0.9 oz. (25 g)

Software System Requirements

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

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 General CarChip Exclusions List to see the known exceptions, exclusions and anomalies.

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 . . . . 4 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 possible as supported by vehicle, 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 CarChip E/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^2	0.03 G, 0.3 m/sec^2

Included with CarChip and CarChip E/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 (up to 8 monitored)	0 to 1.275 V	0.005 V
Ignition Timing Advance	-64° to 63.5°	0.5°
Short Term Fuel Trim (up to 2 monitored)	-100% to 99.22%	0.8%
Long Term Fuel Trim (up to 2 monitored)	-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.

Package Dimensions

Product #	Package Dimensions (Length x Width x Height)	Package Weight	UPC Codes
8211 8221 8225	10.00" x 6.00" x 2.00" (254 mm x 152 mm x 50 mm)	7.0 oz. (.198 kg)	011698 00674 8 011698 00675 5 011698 00676 2
8211 (4-pack) 8221 (4-pack) 8225 (4-pack)	10.00" x 6.00" x 5.00" (254 mm x 152 mm x 127 mm)	2 lb. 1.9 oz. (.962 kg)	3011698 00674 9 30011698 00675 6 3011698 00676 3