

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-234
Relating to Exemptions Under Section 27156
of the Vehicle Code

JONES ELECTRONIC TECHNOLOGIES
PERFORMANCE CHIP

Pursuant to the authority vested in the Air Resources Board ("ARB") by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-5;

IT IS ORDERED AND RESOLVED: That the installation of the performance chip manufactured by Jones Electronic Technologies ("performance chip") has been found not to reduce the effectiveness of required motor vehicle pollution control devices and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for 1987 to 1991 model year General Motors truck applications listed in Exhibit A, which is attached hereto and incorporated herein.

This Executive Order is valid provided that installation instructions for this performance chip will not recommend tuning the vehicle to specifications different from those submitted by the device manufacturer.

Changes made to the design or operating conditions of the device, as exempted by the ARB, that adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of this device using an identification other than that shown in this Executive Order or marketing of this device for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board. Exemption of a kit shall not be construed as an exemption to sell, offer for sale, or advertise any component of a kit as an individual device.

This Executive Order does not constitute any opinion as to the effect the use of this device may have on any warranty either expressed or implied by the vehicle manufacturer.

This Executive Order is granted based on results from emissions tests conducted in accordance with Cold-Start CVS-75 Federal Test Procedure. However, the ARB finds that reasonable grounds exist to believe that use of the performance chip may adversely affect emissions of motor vehicles when operating under conditions outside the parameters of the previously prescribed test procedures. Accordingly, the ARB reserves the right to conduct additional emission tests, in the future, as such tests are developed, that will more adequately measure emissions from all cycle phases. If such test results demonstrate that the performance chip adversely affects emissions during off-cycle conditions (defined as those conditions which are beyond the parameters of the Cold-Start CVS-75 Federal Test Procedure), this Executive Order shall be effectively rescinded as of the date the test results are validated. Further, if such test results or

other evidence provides the ARB with reason to suspect that the performance chip will affect the durability of the emission control system, Jones Electronic Technologies shall be required to submit durability data to show that the durability of the vehicle emission control system is not, in fact, affected and/or that the add-on or modified part demonstrates adequate durability.

In addition to the foregoing, the ARB reserves the right in the future to review this Executive Order and the exemption provided herein to assure that the exempted add-on or modified part continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 2222, et seq.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF JONES ELECTRONIC TECHNOLOGIES'S PERFORMANCE CHIP.

No claim of any kind, such as "Approved by the Air Resources Board" may be made with respect to the action taken herein in any advertising or other oral or written communication.

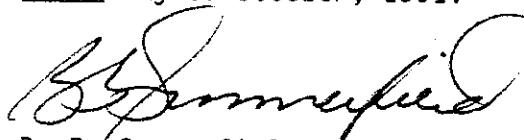
Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

Section 43644 of the Health and Safety Code provides as follows:

"43644, (a) No person shall install, sell, offer for sale, or advertise, or, except in an application to the state board for certification of a device, represent, any device as a motor vehicle pollution control device for use on any used motor vehicle unless that device has been certified by the state board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as a certified device which, in fact, is not a certified device. Any violation of this subdivision is a misdemeanor."

Any apparent violation of the conditions of this Executive Order may result in its rescission or submission to the Attorney General of California for such action as he deems advisable.

Executed at El Monte, California, this 3rd day of October, 1991.



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF JONES ELECTRONIC TECHNOLOGIES' PERFORMANCE
CHIP FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF
THE CALIFORNIA CODE OF REGULATIONS

October 1991

State of California
AIR RESOURCES BOARD

EVALUATION OF JONES ELECTRONIC TECHNOLOGIES' PERFORMANCE
CHIP FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF
THE CALIFORNIA CODE OF REGULATIONS

by

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(This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.)

SUMMARY

Jones Electronic Technologies (Jones Electronic) has applied for an exemption from the prohibitions of Vehicle Code Section 27156 for their Performance Chip for installation on 1987 to 1991 model year General Motors trucks listed in Appendix A. Jones Electronic has submitted a completed application and all the required information, as well as exhaust emissions test data performed at Automotive Testing & Development Services which show that the Performance Chip does not have any adverse effect on the exhaust emissions of the affected vehicles.

Based on the submitted information and the results of the emissions tests performed at Automotive Testing & Development Services, the staff concludes that the installation of Jones Electronic Performance Chip will not adversely affect exhaust emissions on the specified vehicles.

The staff recommends Jones Electronic Technologies be granted an exemption as requested and that Executive Order D-234 be issued.

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EVALUATION OF JONES ELECTRONIC TECHNOLOGIES' PERFORMANCE CHIP FOR
EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE
WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS

I. INTRODUCTION

Jones Electronic Technologies of 7602 Talbert Avenue, Huntington Beach, CA 92648, has applied for an exemption from the prohibitions of Vehicle Code Section 27156 for their Performance Chip for installation on 1987 to 1991 model year General Motors trucks listed in Appendix A. Jones Electronic has submitted a completed application and all the required information, as well as exhaust emissions test data performed at Automotive Testing & Development Services on a 1991 5.7 liter Chevrolet full size truck.

II. CONCLUSIONS

Based on the submitted information and the results from exhaust emissions test performed at Automotive Testing & Development Services, the staff concludes that Jones Electronic's performance chips will not adversely affect exhaust emissions from vehicles for which the exemption is requested.

III. RECOMMENDATION

The staff recommends that Jones Electronic Technologies be granted an exemption as requested and that Executive Order D-234 be issued.

IV. PERFORMANCE CHIP DESCRIPTION

Many computer controlled vehicles are equipped with an electronic control unit (ECU) which is programmed using a prom. Signals detected by the vehicle's sensors are fed directly into the ECU where they are analyzed and compared to the operational data programmed inside the prom. The prom

The results of the exhaust emissions test performed at Automotive Testing & Development Services are shown in Table 1.

Table 1

Exhaust Emissions Test Results from
Automotive Testing & Development Services
On The Chevrolet C1500
Exhaust Emissions (gm/mi)

<u>Test Mode</u>	<u>HC</u>	<u>CO</u>	<u>NOx</u>
Device	0.332	2.864	0.661
Standards	0.500	9.000	1.000
Deterioration Factors	1.035	1.026	1.000
Difference	-0.168	-6.136	-0.339

The emissions test results at Automotive Testing & Development Services indicate that exhaust emissions of the vehicles with the Jones Electronic Performance Chip installed are well below the emission standards for that engine family. This demonstrates that the installation of the Jones Electronic Performance Chip on the applicable vehicles will not adversely affect the exhaust emissions.

Jones Electronic submitted all the required information and fulfilled the requirements for an exemption.

sends out appropriate adjustments in the engine operation in response to any changing conditions. For example, a prom will adjust timing and fuel delivery when a vehicle is subjected to additional load. Thus, by modifying data in the prom, spark timing and fuel delivery can be adjusted.

Jones Electronic Performance Chip modifies the ignition advances and fuel curves of the original equipment manufacturer's (OEM) prom under full throttle operation. Therefore, the performance chip monitors and modifies the vehicle operation under open-loop modes. Jones Electronic claims these modifications translate to an increase in torque and horsepower. No modifications have been conducted on the Performance Chip that would affect throttle response and driveability, under closed-loop conditions (normal day-to-day driving). The manufacturer claims that modifications under full-throttle operation offer enhanced performance and acceleration. Jones Electronic does not recommend the use of any particular fuel to obtain optimum performance or avoid knocking which may be caused by advanced or retarded timing. Installation instructions, included with the chip, is shown in Appendix B.

V. DISCUSSION OF THE PERFORMANCE CHIP

A 1991 Chevrolet C1500 full size truck with the 5.7 liter (350 CID) V-8 gasoline engine and TBI, was selected as the test vehicle to evaluate the effect of the Performance Chip on tailpipe emissions. This vehicle (5.7 liter Chevrolet C1500) was chosen because of its popularity to the consumer. It is also subjected to more stringent emissions standard when compared to the 454 CID GM trucks. The test program consisted of one FTP CVS-75 (cold start) test on the test vehicle in the modified configuration and evaluated against the standards.

APPENDIX A

GENERAL MOTORS TRUCK APPLICATIONS

1987

Part No.	Application
28701	305 T.B.I Auto 3 spd.
28702	305 T.B.I Auto w/od
28703	350 T.B.I Auto 3 spd.
28704	350 T.B.I Auto w/od
28705	350 T.B.I Manual
28706	454 T.B.I Auto 3 spd.
28707	454 T.B.I Manual

1988

Part No.	Application
28810	305 T.B.I Auto 3 spd.
28811	305 T.B.I Auto w/od
28812	305 T.B.I Manual
28813	350 T.B.I Auto 3 spd.
28814	350 T.B.I Auto w/od
28815	350 T.B.I Manual
28816	454 T.B.I Auto 3 spd.
28817	454 T.B.I Manual

1989

Part No.	Application
28909	305 T.B.I Auto 3 spd.
28910	305 T.B.I Auto w/od
28911	305 T.B.I Manual
28912	350 T.B.I Auto 3 spd.
28913	350 T.B.I Auto w/od
28914	350 T.B.I Manual 4 spd.
28915	350 T.B.I Manual 5 spd.
28916	454 T.B.I Auto 3 spd.
28917	454 T.B.I Manual

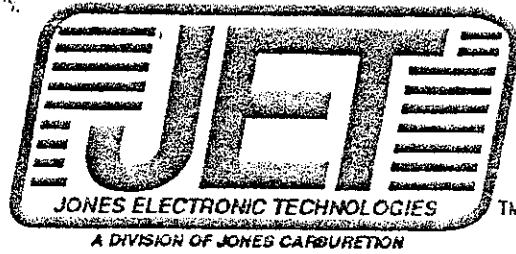
1990

Part No.	Application
29001	305 T.B.I Auto 3 spd.
29002	305 T.B.I Auto w/od
29003	305 T.B.I Manual 4 spd.
29004	305 T.B.I Manual 5 spd.
29005	350 T.B.I Auto 3 spd.
29006	350 T.B.I Auto w/od
29007	350 T.B.I Manual 4 spd.
29008	350 T.B.I Manual 5 spd.
29009	454 T.B.I Auto 3 spd.
29010	454 T.B.I Manual
39011C	305 T.B.I Auto w/od
39012C	454 T.B.I Auto
39013C	454 T.B.I Auto

1991

Part No.	Application
29101	305 T.B.I Auto 3 spd.
29102	305 T.B.I Auto w/od
29103	305 T.B.I Manual 4 spd.
29104	305 T.B.I Manual 5 spd.
29105	350 T.B.I Auto 3 spd.
29106	350 T.B.I Auto w/od
29107	350 T.B.I Manual 4 spd.
29108	350 T.B.I Manual 5 spd.
29109	454 T.B.I Auto 3 spd.
29110	454 T.B.I Auto w/od
29117	454 T.B.I Auto w/od
29118	454 T.B.I Auto w/od

APPENDIX B



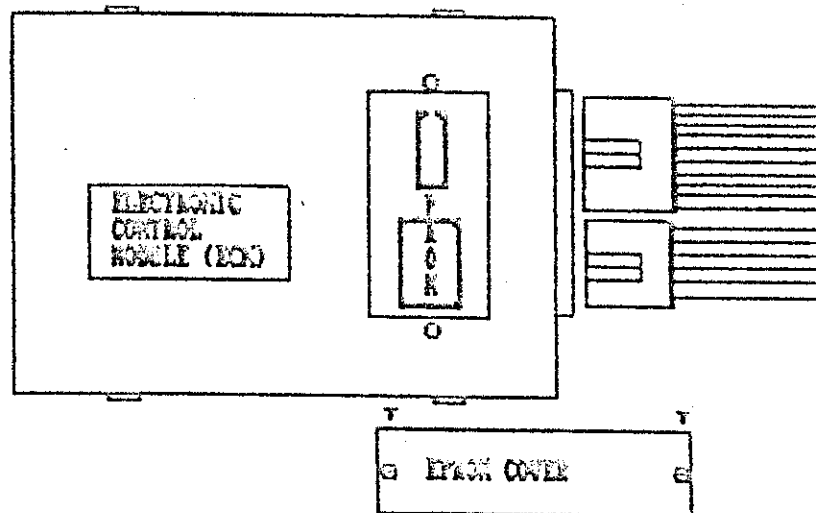
INSTRUCTION SHEET COMPUTER CHIP REPLACEMENT

EPROM REPLACEMENT PROCEDURES

1. Locate ECM and Disconnect Leads
 2. Remove Access Cover, Remove The Factory Eprom
(Noting The Notch Direction In The Carrier)
 3. Plug In Replacement EPROM.
- Reverse Removal Procedures And You Are Finished!!!

ECM LOCATIONS

Trucks - Behind glove compartment



NOTE: This product is not legal for street use in CA or where prohibited by law and is for off-road use only.

Exhibit A

GENERAL MOTORS TRUCK APPLICATIONS

1987

Part No.	Application
28701	305 T.B.I Auto 3 spd.
28702	305 T.B.I Auto w/od
28703	350 T.B.I Auto 3 spd.
28704	350 T.B.I Auto w/od
28705	350 T.B.I Manual
28706	454 T.B.I Auto 3 spd.
28707	454 T.B.I Manual

1988

Part No.	Application
28810	305 T.B.I Auto 3 spd.
28811	305 T.B.I Auto w/od
28812	305 T.B.I Manual
28813	350 T.B.I Auto 3 spd.
28814	350 T.B.I Auto w/od
28815	350 T.B.I Manual
28816	454 T.B.I Auto 3 spd.
28817	454 T.B.I Manual

1989

Part No.	Application
28909	305 T.B.I Auto 3 spd.
28910	305 T.B.I Auto w/od
28911	305 T.B.I Manual
28912	350 T.B.I Auto 3 spd.
28913	350 T.B.I Auto w/od
28914	350 T.B.I Manual 4 spd.
28915	350 T.B.I Manual 5 spd.
28916	454 T.B.I Auto 3 spd.
28917	454 T.B.I Manual

1990

Part No.	Application
29001	305 T.B.I Auto 3 spd.
29002	305 T.B.I Auto w/od
29003	305 T.B.I Manual 4 spd.
29004	305 T.B.I Manual 5 spd.
29005	350 T.B.I Auto 3 spd.
29006	350 T.B.I Auto w/od
29007	350 T.B.I Manual 4 spd.
29008	350 T.B.I Manual 5 spd.
29009	454 T.B.I Auto 3 spd.
29010	454 T.B.I Manual
39011C	305 T.B.I Auto w/od
39012C	454 T.B.I Auto
39013C	454 T.B.I Auto

1991

Part No.	Application
29101	305 T.B.I Auto 3 spd.
29102	305 T.B.I Auto w/od
29103	305 T.B.I Manual 4 spd.
29104	305 T.B.I Manual 5 spd.
29105	350 T.B.I Auto 3 spd.
29106	350 T.B.I Auto w/od
29107	350 T.B.I Manual 4 spd.
29108	350 T.B.I Manual 5 spd.
29109	454 T.B.I Auto 3 spd.
29110	454 T.B.I Auto w/od
29117	454 T.B.I Auto w/od
29118	454 T.B.I Auto w/od