

KC5202

JAYCAT
 ELECTRONICS

First published by Silicon Chip magazine March 1985, revised June/July 1989.

PROGRAMMABLE ELECTRONIC IGNITION KIT FOR CARS

Thousands sold!

Take command of your engine's performance with this engine management system. Program the advance angle, dwell angle, vacuum advance, rev limit and more! Being microprocessor controlled, you can program two sets of data and pull up either set with the engine still running - ideal for cars with dual fuel systems. To use this kit you must already have our KC5247 Ignition kit. This kit is supplied with PCB, pre-programmed microprocessor, keypad plus all electronic components. Supplied with revised, comprehensive programming and construction details.



PROGRAMMABLE IGNITION

This project was first introduced in the March 1986 issue of SILICON CHIP and it has proven to be very popular: there are now thousands of units in use.

This article updates the project and clarifies the installation.

Since its introduction, the design and software of the Programmable Ignition Timing module have gone through a number of changes to improve performance and the High Energy Ignition system was also updated in the June 1988 issue.

These revisions have led to some confusion as to how the system should be connected and operated and this is why we have decided to update the

project and completely re-present it.

The Programmable Ignition Timing module is a small PC board comprising just two ICs, a handful of other components, a keypad and a small display.

The simplicity and ease of construction of the circuit is made possible by using a PIC 16F84 microcontroller. Programming is simply a matter of entering data with the keypad while monitoring it on the display.

Nine parameters can be programmed into the module:

- The RPM at which ignition advance begins
- Mid stage RPM
- Mid stage advance

- RPM limit
- Rev limit advance
- Dwell angle
- Vacuum advance
- Number of cylinders
- A 2-digit security code

To make the module even more useful, the second stage advance can be either positive or negative and you can store two sets of data which can be alternated while the engine is running.

The benefit of this is that you can accommodate an engine that runs on petrol or LPG and quickly change the timing for these two fuels to get the best possible performance.

Please note that while this project