

# **Suzuki Aftermarket Application**

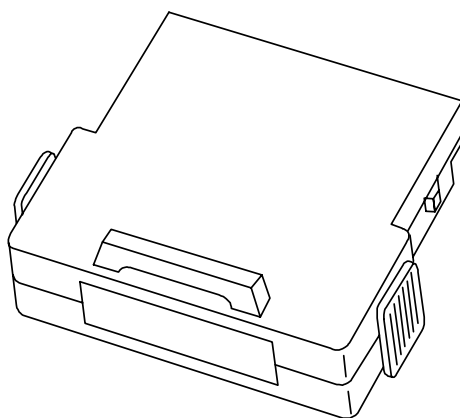
**ECM (OBD II)**

**ECM (OBD I)**

**BCM**

**ABS/Airbag**

**Operator's Manual**



 **Vetronix Corporation**

**Vetronix Corporation**

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Manual P/N 08002589

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## Some Things You Should Know

### CAUTION!



When performing any checks with the engine running in an enclosed space such as a garage, be sure there is proper ventilation. Never inhale exhaust gases; they contain carbon monoxide, a colorless, odorless, extremely dangerous gas which can cause unconsciousness or death.

### CAUTION!



Always set the parking brake securely and block the drive wheels before performing any checks or repairs on the vehicle.

## Disclaimer

The Tech 1, Tech 1A, and MTS 3100 testers are designed for use by trained service personnel only. The testers have been developed for the sole purpose of diagnosing and repairing automotive electronic systems. Every attempt has been made to provide complete and accurate technical information based on factory service information available at the time of publication. However, the right is reserved to make changes at any time without notice.

## FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## Using This Cartridge With A Tech 1 Or Tech 1A Tester

The TECH 1A tester is an updated version of the TECH 1 tester. In addition to already proven TECH 1 diagnostic power, the TECH 1A has on-board RS232, Instrumentation Port, and DC Power Jack capabilities. You can identify a TECH 1A by the phone-style jacks on both sides of the tester.

Note that the TECH 1 and TECH 1A require a different DLC cable, DC Power cable, and vehicle adapters. When using this manual to diagnose a vehicle, take the time to determine the type of tester that you have, and be sure you are using the correct cables and adapters. Doing so may prevent misuse of application cartridges and incorrect vehicle diagnosis.

The hardware required to connect a Tech 1A tester is described in Chapter 2 of the application manuals that follow.

On some vehicles power to the cigarette lighter is controlled by the ignition switch. When testing these vehicles with a TECH 1 or TECH 1A, it is best to connect the tester directly to the battery with the optional Battery Adapter Cable (P/N 02001636), which is available from your TECH 1A distributor.

## Using This Cartridge With The MTS 3100 Tester

In addition to the TECH 1/TECH 1A, this cartridge can also be used with the MTS 3100 tester.

The operation of the cartridge and the vehicle identification screens, test menus and data screens are as described in this manual. The cartridge can be used with the MTS 3100 tester in conjunction with a program card, which allows viewing of data list screens in full-screen Enhanced Mode displays. Refer to the Enhanced Mode operating instructions in the Multi-Function Tester Program Card Operator's Manual for further details and examples of Enhanced Mode displays.

How to connect the MTS 3100 tester to a Suzuki vehicle is described in Chapter 2 of the application manuals that follow.

### Introduction

The Suzuki application cartridge is compatible with the TECH 1, TECH 1A, and MTS 3100 testers. Applications described in this Operator's Manual include:

- Engine Control Module ECM (OBD II)
- Engine Control Module ECM (OBD I)
- Body Control Module BCM
- Anti Lock Brake/Airbag ABS/AIRBAG

When diagnosing a specific Suzuki system, be sure to reference the correct system application section in this manual.

### Overall Vehicle Coverage

YEAR	MODEL	ENGINE
1995-99	Esteem	1.6L I4 MFI
1991-94	Sidekick	1.6L I4 TBI
1992-98	Sidekick	1.6L I4 MFI
1996-98	Sidekick	1.8L I4 MFI
1992-94	Swift	1.0L I3 TBI
1996-99	Swift	1.0L I3 MFI
1995-99	Swift	1.3L I4 MFI
1999	Vitara	1.6L I4 2.0L I4 2.5L V6
1996-98	X-90	1.6L I4 MFI

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# **ECM (OBD II) Application**

## **Operator's Manual**

# 1. SUZUKI ECM (OBD II) APPLICATION DESCRIPTION

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The SUZUKI ECM (OBD II) Application is used to diagnose and troubleshoot the Engine and Emission Control systems used on 1996 and later Suzuki vehicles. It takes full advantage of advanced diagnostic features introduced in these vehicles.

The SUZUKI ECM (OBD II) Application and the Vetronix tester team up to become a diagnostic tool which is both powerful and easy to use. With the Vetronix tester, you can select test modes which let you:

- Read engine data parameters.
- Diagnose intermittent problems by capturing and storing multiple samples of system data BEFORE AND AFTER THE PROBLEM OCCURS, then examining the data to determine the problem. This data is saved in the tester memory for at least 24 hours even if the power is removed from the tester!
- Control engine functions such as RPM (except CARB mode).
- Control various solenoids, and valves on or off to check for proper operation (except CARB mode).
- Read ECM configuration information (SUZUKI mode only).
- Print data and vehicle information.
- Read A/T data parameters (vehicle equipped with PCM).
- Read diagnostic trouble codes (except SUZUKI mode).
- Clear diagnostic information (except SUZUKI mode).
- Read freeze frame data (except SUZUKI mode).
- Read the status of various on-board tests (except SUZUKI mode).
- Read pending diagnostic trouble codes (except SUZUKI mode).

## VEHICLE COVERAGE

The Suzuki ECM (OBD II) Application is capable of monitoring and diagnosing the Suzuki engine and emission control systems on all models equipped as follows:

YEAR	MODEL	ENGINE SIZE	FUEL SYS. TYPE	TRANS. TYPE	ECU TYPE	ECU MFG.
1996-97	ESTEEM (SY416)	1.6L	MFI	MT	ECM	DENSO
				4AT		
1998 -	ESTEEM (SY416)	1.6L	SFI	MT	ECM	DENSO
				4AT		
1996 -	SWIFT (SW310)	1.0L	TBI	MT	ECM	DENSO
1996-97	SWIFT (SW413)	1.3L	TBI	MT	ECM	DENSO
				3AT	PCM	
1998 -	SWIFT (SW413)	1.3L	SFI	MT	ECM	DENSO
				3AT	PCM	
1996	SIDEKICK (SE416)	1.6L	SFI	MT	ECM	MITSUBISHI
				4AT		
1997-98	SIDEKICK (SE416)	1.6L	SFI	MT	ECM	MITSUBISHI
				4AT	PCM	
1996	X-90 (SZ416)	1.6L	SFI	MT	ECM	MITSUBISHI
				4AT		
1997-98	X-90 (SZ416)	1.6L	SFI	MT	ECM	MITSUBISHI
				4AT	PCM	
1996	SIDEKICK 1800 (SV418)	1.8L	SFI	MT	ECM	HITACHI
				4AT		
1997-98	SIDEKICK 1800 (SV418)	1.8L	SFI	MT	ECM	HITACHI
				4AT	PCM	
1999 -	VITARA (SQ416)	1.6L	SFI	MT	ECM	MITSUBISHI
				4AT	PCM	
1999 -	VITARA (SQ420)	2.0L	SFI	MT	ECM	MITSUBISHI
				4AT	PCM	
1999 -	GRAND VITARA (SQ625)	2.5L	SFI	MT	ECM	HITACHI
				4AT	PCM	



YEAR	MODEL	ENGINE SIZE	FUEL SYS. TYPE	TRANS. TYPE	ECU TYPE	ECU MFG.
1999 -	ESTEEM (SY418)	1.8L	SFI	MT	ECM	HITACHI
				4AT		
2001 -	XL-7 (JA627)	2.7L	SFI	MT	ECM	MITSUBISHI
				4AT	PCM	

## DIAGNOSTIC MODES AVAILABLE

### CARB MODE

The CARB (California Air Resources Board) Mode of operation provides standardized testing of emission related components.

A further description of the CARB Mode and instructions for operating the CARB Mode test procedures are included in [Chapter 6](#).

### SUZUKI MODE

The Suzuki Mode provides tests specifically designed for Suzuki vehicles. The operation is included in [Chapter 5](#).

## DIAGNOSIS OF THE SQ SERIES, SY418, AND JA627

Operation of tests designed for the SQ series, SY418, and JA627 are described in [Chapter 7](#).

ACTIVE KEYS	
<b>YES &amp; NO</b>	Answer questions asked on tester display and select data parameters to monitor.
<b>ENTER</b>	Move to next screen. Activate menu selection.
<b>EXIT</b>	Return to previous step.
<b>↑ &amp; ↓</b>	Scroll through test mode selection menus and control display of captured data.
<b>F0 - F9</b>	Select and control test mode.
<b>F7</b>	Toggles between Metric and English units.
<b>F8</b>	Print Data List parameters.

## 2. GETTING STARTED

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### SETTING UP THE TESTER

The proper Data Link Connector (DLC) adapter or adapter cable for the vehicle being tested must be connected to the tester DLC Cable in order to connect the tester to the vehicle.

The following Vehicle Adapter Chart identifies which adapters and cables are required to connect each type of tester to the various Suzuki vehicles.

All adapters, cables, and any other hardware required to connect the tester to the vehicle are listed in the chart. The figure number in the chart refers to the adapter and cable illustrations on the following pages.

SYSTEM	TESTER	ADAPTER DESCRIPTION	FIGURE
Engine System with 16-Pin Connector (OBD II)	MTS 3100	Type 3 16/14-Pin (P/N 02001969)	<a href="#">Figure 2-1</a>
	Tech 1A	Type 3 16/14-Pin (P/N 02001969)	<a href="#">Figure 2-2</a>
	Tech 1	OBD II VIM (P/N 02001808) 16/14-Pin VIM Adapter Cable (P/N 02001744)	<a href="#">Figure 2-3</a>

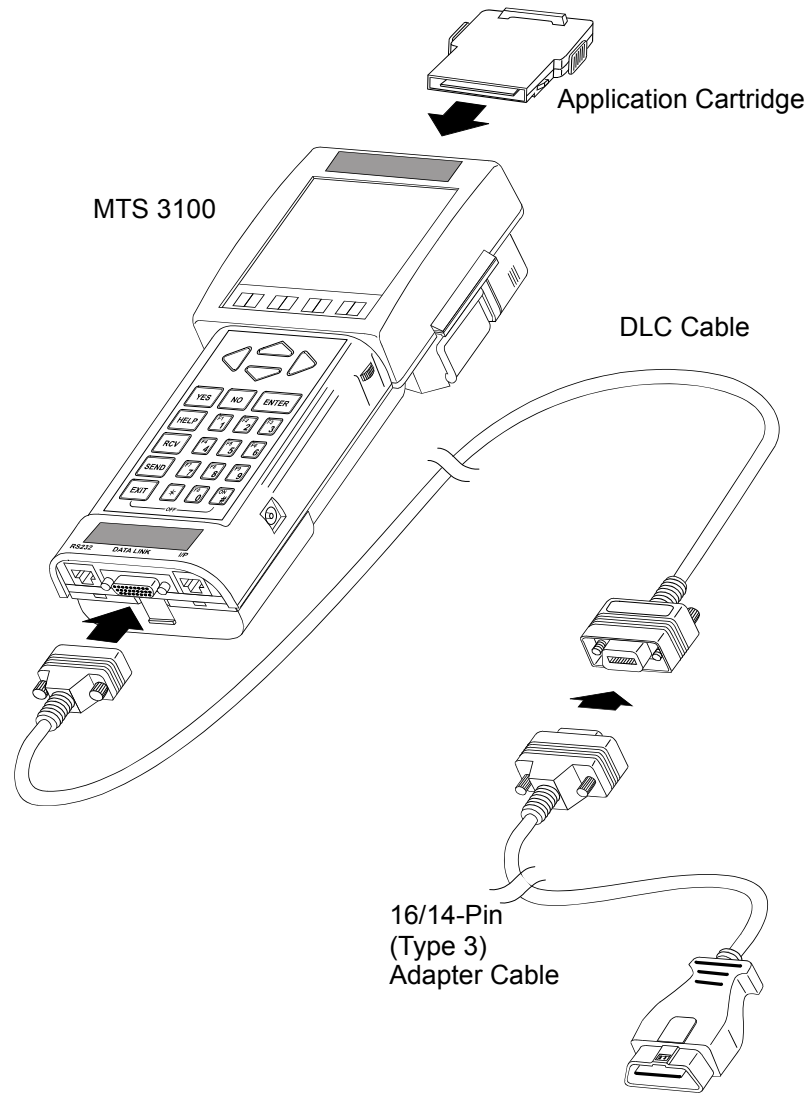


FIGURE 2-1. MTS 3100 Adapter and Cables

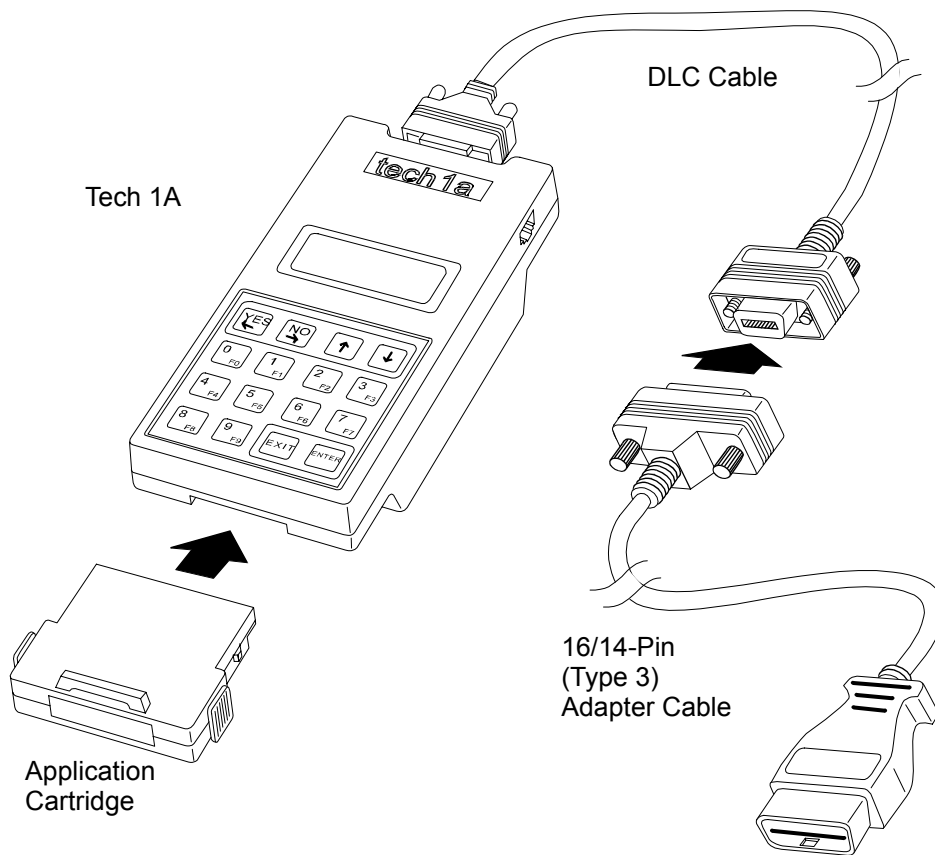


FIGURE 2-2. Tech 1A Adapter and Cables Using the 16-Pin DLC Type 3