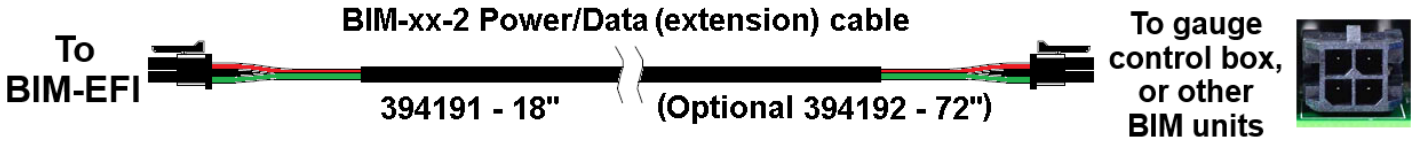
BIM-EFI-1

Bridge Module for EFI Systems



The BIM-EFI-1 Bus Interface Module enables Dakota Digital instrument systems to receive and display CAN data from popular ECUs and EFI systems. The Bluetooth-enabled setup menu allows for easy configuration using the Dakota Digital app for Android and iOS.

Depending on the make and model of EFI, the BIM-EFI-1 is capable of supplying up to 14 readings to the instrument system. Refer to your EFI system's setup section for a list of available readings.

Either of the two interface (I/O) ports can be connected to the instrument system or to another module, allowing BIM-EFI-1 units to be daisy-chained with other BIM modules.

A GPS-50-2 CANNOT be linked (daisy chained) to a BIM-EFI-1 with a BIM cable.
The two units cannot talk to the display control box at the same time.

EFI adapter harnesses are available to connect the BIM-EFI-1 to the compatible EFI systems:

Harness P/N	EFI Type
394241	Holley HP, Dominator, Terminator, Terminator X, Sniper 1, MSD Atomic 2
394212	Holley Dominator (early versions) – special order
391205 + 394298	Holley Sniper 2
394211	FAST XFI and EZ-EFI 2.0
394210	MSD Atomic 1
394238	AEM and Edelbrock Pro-Flo 4
394252	MegaSquirt, MaxxECU, MoTeC, and J1939 (unterminated leads)
394270	Haltech
394304	Aces
394287	FiTech
394314	HPTuners CORE

Table of Contents:

Using the Dakota Digital App:

The Dakota Digital app for iOS and Android can be used for easy configuration and setup of the BIM-EFI-1, and for firmware updates. The BIM-EFI-1 is supported by app versions 2.5.0 and newer.

To connect to the BIM-EFI-1:

- Place the BIM into setup mode by holding the switch on BIM-EFI-1 while turning the key on
- Open the app and it will begin to scan for Dakota Digital devices
- The BIM-EFI-1 will appear as a DDBE device in the app
    - The last 4 characters of the device name unique for each BIM.
- Tap the DDBE-xxxx button in the device list to connect to the BIM-EFI-1.

Bluetooth

DDBE Name:

Use the text box to enter a user-defined name to make the current BIM easily recognizable in the Select Device screen. The name is stored on this phone/tablet only.

Disconnect:

Press the 'Disconnect' button to disconnect from the BIM-EFI-1. This will take you to the Select Device screen to connect to another device. The BIM will remain in setup mode.

Information

Lists additional app info and provides a link to this manual.

Diagnostics

Provides BIM channel and firmware version information. Firmware updates may be started under the BIM Updates submenu.

BIM Updates:

To perform a firmware update, you must have an active cell or wi-fi connected device:

- Enter the "Diagnostics" menu in the app
- Tap "Firmware Updates" at the bottom of the screen
- Two options will be available: "Product Update" and "Custom Updates"
- For regular updates, tap on "Product Update" and then "Check For Updates" on the next page.
- If a newer regular software version is available, selecting "YES" at the continue prompt will restart the BIM-EFI-1 into update (bootload) mode.
    - If you have a custom update already installed, this will return the software back to the latest release version.
- If we've created a custom software version for you, you'll receive a security code via email.
    - In "Custom Updates", you will have a window to enter a security code received in your email
    - Enter the security code to validate and start the custom install

After the app reconnects to the BIM, press the Start Update button to begin the firmware update. During the firmware update, the app and BIM display will show the percent completion of the update.

Once the update is complete, press and hold the button on the BIM to go back into setup mode, or turn the key off and on to enter normal operation.

During the update process, the BIM display will show the current status:

- nOt: Not initialized
- Int: Initializing
- UPd: Ready to connect to the app
- Con: Connected to the app, ready to start the update
- 0 - 100: Update percent completion
- UPd don: Update Done

Setup EFI

Allows the user to change EFI related settings.
****Note:** Not all menu items will be shown, depending upon the current EFI system selected.

EFI System:

Selects the manufacturer of EFI system.

System Type:

(Holley and MSD only) Selects the model of EFI system.

Speed Mode:

(Aces only) Mode 1 sets the BIM's speed scaling to work with older versions of the Aces ECU firmware (before September 2024). Mode 2 is used for current Aces firmware. If gauge speed reads off by 10x, change this setting.

AFR Channel:

Enable or Disable the AFR BIM channel.

MIL (Check Engine):

Enable or Disable display of the check engine light.

Oil Temp Channel:

Enable or Disable the Oil Temp BIM channel.

Fuel Pressure Channel:

Enable or Disable the Fuel Pressure BIM channel.

Oil Pressure:

(MegaSquirt only) Choose "Sensor 1" to read oil pressure from Generic Sensor Input #1, or "Sensor 2" to read oil pressure from Generic Sensor Input #2. The reading may also be disabled.

Boost Reading:

For EFI systems that support both boost and MAP, this setting selects between displaying MAP (absolute) pressure, and boost (gauge) pressure. Negative boost pressures are displayed in inHg.

Boost/MAP Channel:

For EFI systems that support either boost or MAP (not both), this channel can be enabled or disabled.

Gear Position:

Enable or Disable the Gear Position display.

Bus ID Autoset:

Re-assigns the enabled BIM bus channels to unused slots. This may help resolve channel conflicts if other BIM-xx-2 units are daisy-chained with the BIM-EFI-1. If the BIM-EFI-1 is the only BIM connected to the instrument system, there is no need to perform an Autoset.

View Bus IDs:

View the BIM channel IDs currently used by the BIM-EFI-1.
Note that Boost/MAP, AFR, Fuel Pressure, and Oil Temp are the only readings that require the use of extra channels. If the current EFI system doesn't support one of these readings, it will remain disabled.

Factory Reset:

Resets all options to their factory default value.

Exit Setup

Exits setup mode on the BIM-EFI-1 and disconnects.

EFI System Setup:

The BIM-EFI-1 is programmed with 13 preset modes allowing compatibility with a wide range of aftermarket ECU/EFI systems:

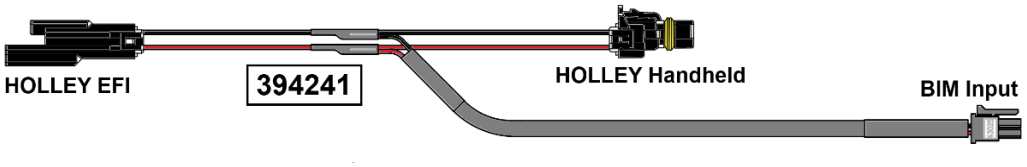
EFI Mode	EFI System	Page number
F01	Holley	6
F02	FAST	11
F03	MSD	12
F04	AEM	13
F05	MegaSquirt	14
F06	Edelbrock	17
F07	Haltech	18
F08	Aces	20
F09	FiTech	21
F 10	J1939	23
F 11	MaxxECU	25
F 12	HPTuners CORE	27
F 13	MoTeC	29

Certain brands of EFI system have additional setup steps that must be completed alongside the BIM-EFI-1 setup. Please refer to your system's setup procedure below.

Holley System Setup:

Terminator X and X Max

Readings that should be available: RPM, Engine coolant temp, Intake air temp, MAP/boost, A/F ratio.
Readings that are model and add-on dependent: Vehicle speed, Oil pressure, Fuel pressure, Trans. Fluid Temp.



Attach the Holley Y-harness (P/N 394241) to your ECU and BIM.

Normally, nothing needs to be done with either Terminator X or X Max to get readings.
If you have problems with readings, one can verify that the two CAN settings are set to “Holley Standard.”
Those settings are adjusted through Holley’s PC software.

Speed Readings:

Terminator X Max - Speed input to the must be on the on pin **B18 of connector J4**.

- Normally, nothing needs to be setup in the Terminator X / X Max models
- Verify in the BIM-EFI-1 setup, under (InP), that it is elected to (USS)
- OR, If using the app – set *Speed Input* to “TRANS VSS”

Terminator X - Speed can be configured two different ways

- A VSS signal from a transmission can go direct to the dash control box if desired
- If the VSS speed signal is going to the Terminator X a few steps must be taken
- **Connect VSS speed signal to Input #1 on J1A, pin A12:**
  - In the Holley **I/O ICF**, Input #1 must be labeled as **Speed**, & type must be set to “**DIGITAL SPEED/FREQ**”
    - The spelling of speed must be exactly “Speed” with a capital S
  - In the **Configure** menu for Input #1, the Type option must be set to **Miles/Hour**
  - If needed, pulses per rotation and tire diameter may be adjusted in this menu also

  - In the Holley **PIN MAP** menu, the **Speed** input must be assigned to Pin A12, Input #1 (Connector J1).

  - In the BIM-EFI-1, the speed input setting (InP) must be set to (In I)
  - OR, If using the app – set *Speed Input* to “INPUT 1”

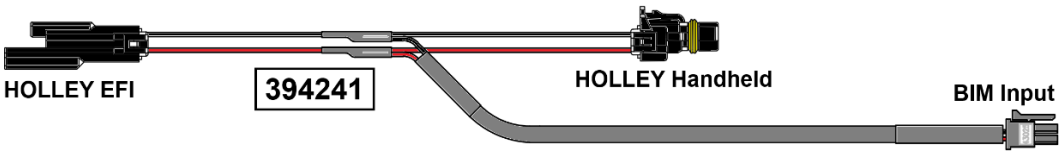
After the new settings are synced to the ECU, speed will available on the Holley CAN bus for the BIM to read.

Holley Setup Continued:

Sniper and Sniper 2:

Data that should be available: RPM, Engine temp, Intake/manifold temp, MAP/boost, A/F ratio.

Sniper Harness



For the Sniper, attach the Holley Y-harness (P/N 394241) to your ECU and BIM input.
No configuration within the Sniper EFI system or software is required.

Sniper 2 adapter and harness

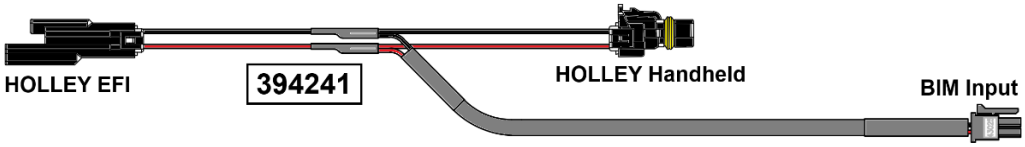
- Attach the Holley CAN1 M8 connector to the pass-through box (P/N 391205)
  - The CAN1 connector will fit, but may need a bit of pressure to push in before threading
- Attach the Holley M8 handheld connector to the opposite port on the pass-through box
- Connect pass-through cable (P/N 394298) to BIM input of BIM-EFI-1

No configuration within the Sniper EFI system or software is required.

Holley Setup Continued:

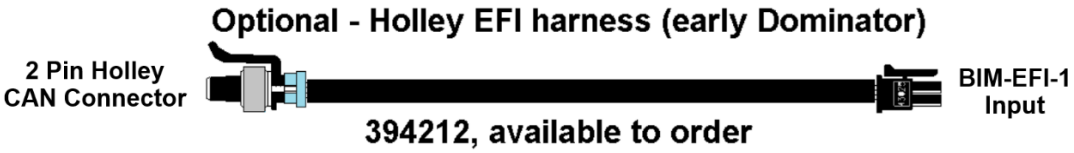
HP, Dominator, and Terminator (original):

Readings that should be available: RPM, Engine coolant temp, Intake air temp, MAP/boost, A/F ratio.
Readings that are model and add-on dependent: Vehicle speed, Oil pressure, Fuel pressure, Trans. Fluid Temp.



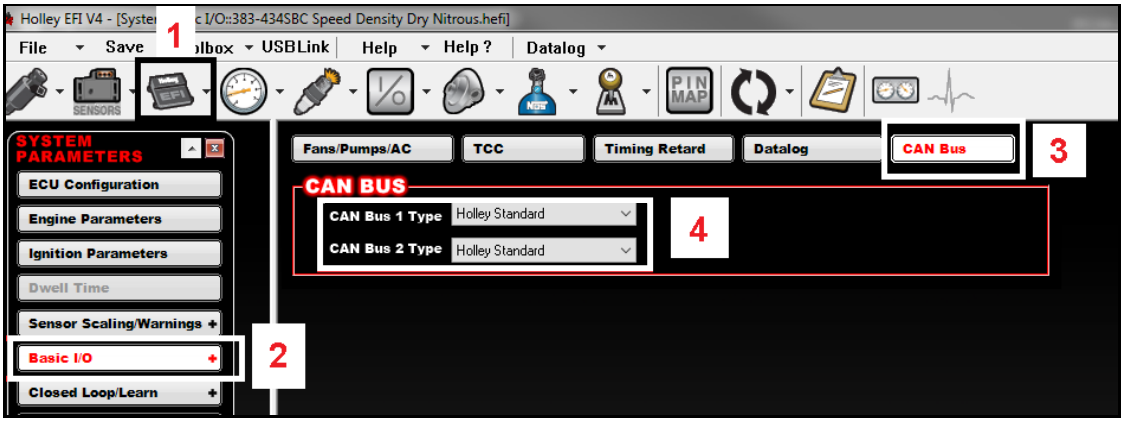
Attach the Holley Y-harness (P/N 394241) to your ECU and BIM.

Early Dominator systems may require a two-pin adapter to plug into one CAN output.



For the BIM-EFI-1 to function correctly with these systems, ensure the Holley CAN settings are set to “Holley Standard.” These settings are adjusted through Holley’s PC software.

1. Select ‘System ICF’ tab along the top icon menu.
2. Then select ’Basic I/O’ on left menu.
3. Then select ’CAN Bus’ on the right to show ’CAN Bus 1 Type’ and ‘CAN Bus 2 Type’.
4. Select the dropdown and select “Holley Standard” for both CAN types.



Speed Setup:

Vehicle speed wiring

Dominator:

- The default Dominator VSS input is on **Input #39 of J4, Pin B18**
- Verify in the BIM-EFI-1 setup, under (InP), that it is elected to (USS)
- OR, If using the app – set *Speed Input* to “TRANS VSS”

Terminator (original) / HP:

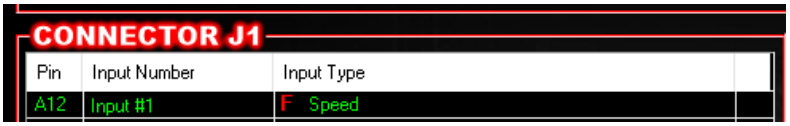
- Original Terminator or HP used **Input #1 on J1A, pin A12**
  - ***This also an alternate input for the Dominator***

Holley Setup Continued:

If the speed signal is connected to Input #1 on J1A, pin A12:

- In the Holley **I/O ICF**, Input #1 must be labeled as **Speed**, and type must be set to "**DIGITAL SPEED/FREQ**".
  - The spelling of speed must be exactly "Speed" with a capital S
- In the **Configure** menu for Input #1, the Type option must be set to **Miles/Hour**. Pulses per rotation and tire diameter may be adjusted in this menu, if needed:

- In the Holley **PIN MAP** menu, the **Speed** input must be assigned to Pin A12, Input #1 (Connector J1).



- In the BIM-EFI-1, the speed input setting (*InP*) must be set to Input #1 (*In 1*).
- OR, If using the app – Set *Speed Input* to "INPUT 1"

After the new settings are synced to the ECU, speed will available on the Holley CAN bus for the BIM to read.

Holley Setup Continued:

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with Holley ECUs, the EFI mode must be set to F01.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F01. Press and hold the button to put the BIM into Holley (F01) mode.

Below are the BIM settings available in Holley mode:

SYS (System) menu:
- Select Std for Holley Terminator X, Terminator X Max, HP, Dominator, and Terminator (original) models
- Select SPr for Holley Sniper and Sniper 2 models

InP (Speed input) menu (not available for Sniper systems):
- Select In1 to read speed from Input #1 on J1A, pin A12
- Select vSS to read speed from the Trans. VSS input (J4 pin B18)

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the fuel pressure reading
- Select oFF to disable the fuel pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

ACh (Auto channel assignment):
- If a channel conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EFI (EFI mode) menu:
- Select F01 to set the EFI mode to Holley

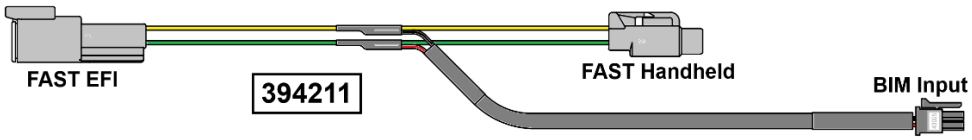
End:
- Press and hold the button to exit the setup menu

FAST Setup

Readings that should be available:
RPM, engine temp, Fuel pressure, A/F ratio, Oil pressure, Intake air temp, Boost.
Readings that are add-on dependent with the EZ-TCU: Gear position, Speed.

FAST System Setup:

This unit is plug-and-play compatible with FAST XFI and EZ-EFI 2.0 systems, as well as TCI EZ-TCU systems. Original EZ-EFI systems are not compatible.



Attach the FAST Y-harness (P/N 394211) to your ECU and BIM. No further setup is required with the FAST EFI itself.

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with FAST systems, the EFI mode must be set to F02.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F02. Press and hold the button to put the BIM into FAST (F02) mode.

Below are the BIM settings available in FAST mode:

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the fuel pressure reading
- Select oFF to disable the fuel pressure reading

bSt (Boost) menu:
- Select on to enable the boost pressure reading
- Select oFF to disable the boost pressure reading

9-P (Gear position) menu:
- Select on to enable the gear position display
- Select oFF to disable the gear position display

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EFI (EFI mode) menu:
- Select F02 to set the EFI mode to FAST

End:
- Press and hold the button to exit the setup menu

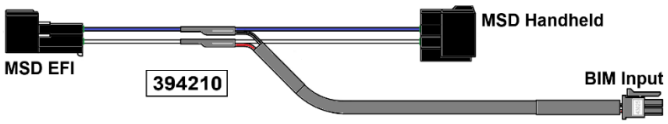
MSD Setup

Atomic 1 reading compatibility:
RPM, Engine temp, MIL (Check Engine) light, Intake/manifold temp, Fuel pressure, A/F ratio, MAP/Boost.

Atomic 2 reading compatibility:
RPM, Engine temp, Intake/manifold temp, MAP/boost, A/F ratio.

MSD System Setup:

The BIM-EFI-1 is plug-and-play compatible with MSD Atomic and Atomic 2 systems.



Attach the Y-harness (P/N 394210 or 394241) to your ECU and BIM. No further setup is required with the MSD EFI itself.

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with MSD systems, the EFI mode must be set to F03.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F03. Press and hold the button to put the BIM into MSD (F03) mode.

Below are the BIM settings available in MSD mode:

SYS (System) menu:
- Select At 1 for MSD Atomic 1 models
- Select At2 for MSD Atomic 2 models

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu (Atomic 1 only):
- Select on to enable the fuel pressure reading
- Select oFF to disable the fuel pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

EnG (Check Engine) menu:
- Select on to enable Check Engine (MIL) monitoring
- Select oFF to disable Check Engine (MIL) monitoring

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EF I (EFI mode) menu:
- Select F03 to set the EFI mode to MSD

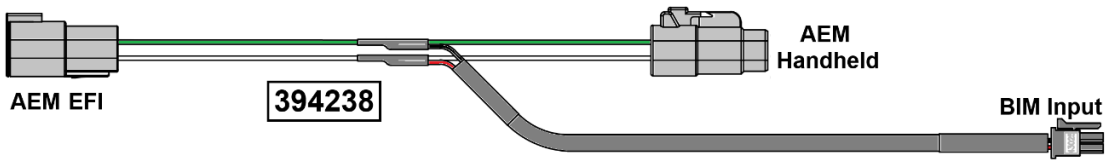
End:
- Press and hold the button to exit the setup menu

AEM Setup

Data that should be available: engine RPM, vehicle speed, engine coolant temperature, intake/manifold air temperature, oil pressure, fuel pressure, A/F ratio, MIL, trans temp, MAP/boost.

AEM System Setup:

The BIM-EFI-1 is plug-and-play compatible with AEMnet enabled ECUs. These include Infinity, Series 2 EMS, and EMS-4 systems.



Attach the Y-harness (P/N 394238) to your ECU and BIM. No further setup is required with the AEM system.

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with MSD systems, the EFI mode must be set to F04.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F04. Press and hold the button to put the BIM into AEM (F04) mode.

Below are the BIM settings available in AEM mode:

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the fuel pressure reading
- Select oFF to disable the fuel pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

EnG (Check Engine) menu:
- Select on to enable Check Engine (MIL) monitoring
- Select oFF to disable Check Engine (MIL) monitoring

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EFI (EFI mode) menu:
- Select F04 to set the EFI mode to AEM

End:
- Press and hold the button to exit the setup menu

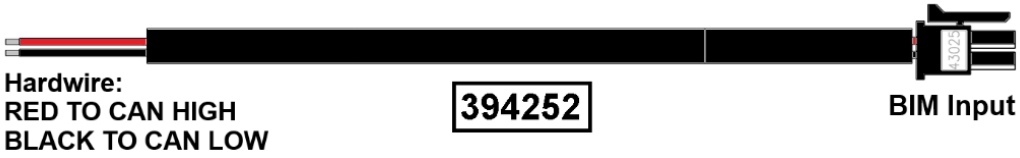
MegaSquirt Setup

Compatible readings: Vehicle speed, Engine RPM, Engine temp, Intake/manifold temp, Fuel pressure, A/F ratio, Oil pressure, MAP/Boost.

MegaSquirt System Setup:

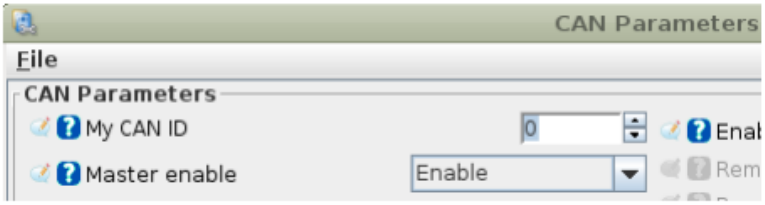
The BIM-EFI-1 is compatible with:

MSPNP2	MicroSquirt		MicroSquirt-module based ECUs with firmware MS2/Extra 3.4.x or later
MegaSquirt-II	Megasquirt-3		
MS3-Pro	MSPNP-Pro	MS3-Gold	MS3-Pro module-based ECUs with firmware MS3 1.4.x or later



See MegaSquirt documentation for CAN-H and CAN-L wire colors on the ECU harness.

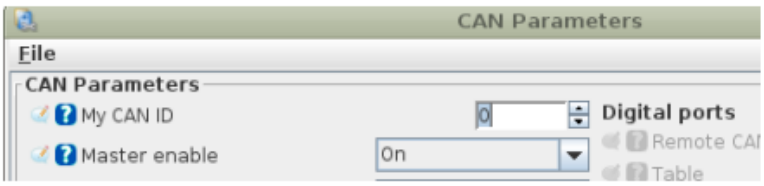
User configuration in MegaSquirt-II, MicroSquirt and other MS2 based ECUs
In the TunerStudio software, the following settings are in the CAN-Bus/Testmodes menu:



- CAN-Bus/Testmodes -> CAN Parameters
  - Set: Master enable to "**Enable**"

- CAN-Bus/Testmodes -> Dash Broadcasting
  - Set: Enable to "**On**"
- Ensure Configuration is set to **"Automatic"** setting.

User configuration in Megasquirt-3, MS3-Pro, MS3-Gold and other MS3 based ECUs
The settings are on the CAN-Bus/Testmodes menu:



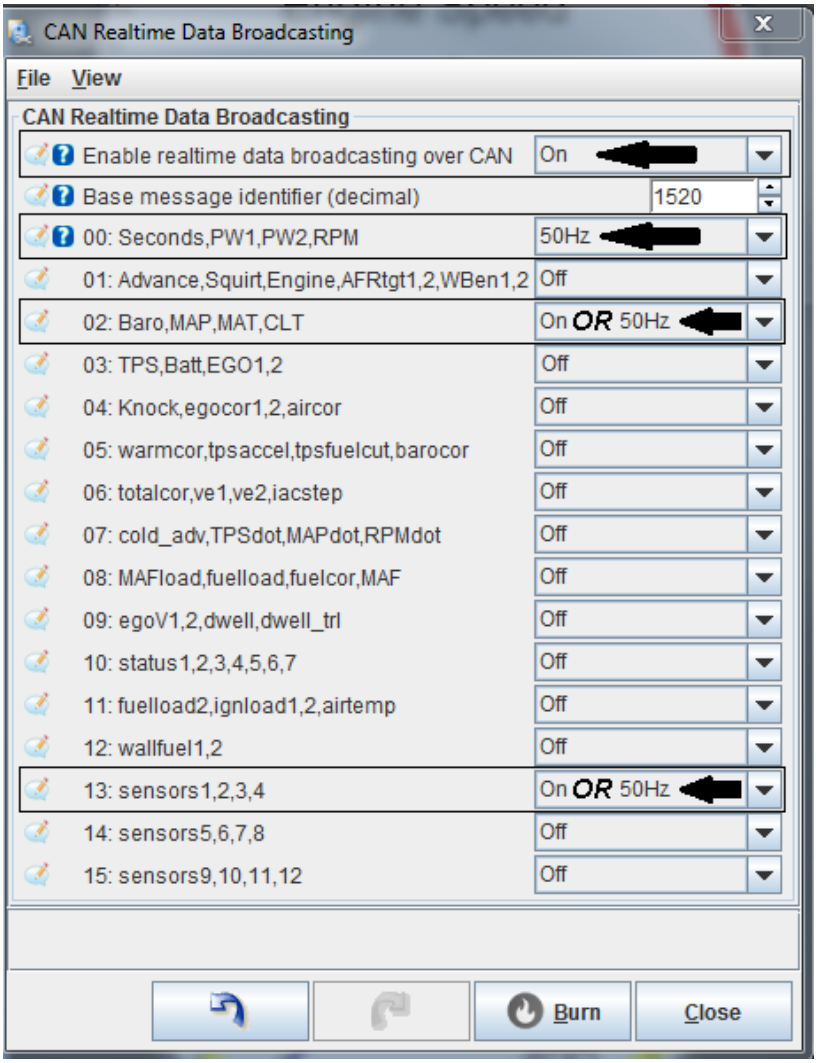
- CAN-Bus/Testmodes -> CAN Parameters
  - Set Master enable to **"On"**

MegaSquirt System Setup Continued:

- CAN-Bus/Testmodes -> Dash Broadcasting
  - Set Enable to "**On**"
- Ensure Configuration is set to "**Automatic**" setting.

*****Optional******Enable engine oil pressure and boost/vacuum**

- To monitor engine oil pressure, you must have a pressure sensor connected on either 'Generic sensor input 1' or 'Generic sensor input 2'.
- Boost/vacuum pressure is measured from the MAP sensor reading.



- CAN-Bus/Testmodes -> CAN Realtime Data Broadcasting
- Set Enable Realtime data broadcasting over CAN to "**On**"
- Set RPM send frequency to 50Hz
- To enable boost CAN output, set:
  "02: Baro, MAP, MAT, CLT" to: "**On**" for MS2, or
  "**50Hz**" for MS3.
- To enable engine oil pressure CAN output, set:
  "13: sensors 1,2,3,4" to:
  "**On**" for MS2, or
  "**50Hz**" for MS3.

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with MegaSquirt systems, the EFI mode must be set to F05.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F05. Press and hold the button to put the BIM into MegaSquirt (F05) mode.

Below are the BIM settings available in MegaSquirt mode:

EoP (Engine oil pressure) menu:
- Select oFF to disable the Engine Oil Pressure reading
- Select In1 to read oil pressure from "Generic sensor input 1"
- Select In2 to read oil pressure from "Generic sensor input 2"

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the Fuel Pressure reading
- Select oFF to disable the Fuel Pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EFI (EFI mode) menu:
- Select F05 to set the EFI mode to MegaSquirt

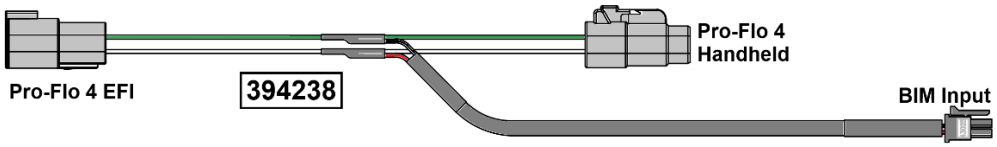
End:
- Press and hold the button to exit the setup menu

Edelbrock Setup

Compatible readings: Engine RPM, Engine Coolant Temperature, Intake Air Temperature, Fuel Pressure, A/F ratio, MAP/Boost.

Edelbrock System Setup:

The BIM-EFI-1 is plug-and-play compatible with Edelbrock Pro-Flo 4 EFI systems running firmware version v53 or later.



Attach the Y-harness (P/N 394238) to your ECU and BIM. No further setup is required with the Edelbrock system.

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with Edelbrock systems, the EFI mode must be set to F06.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F06. Press and hold the button to put the BIM into Edelbrock (F06) mode.

Below are the BIM settings available in Edelbrock mode:

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the fuel pressure reading
- Select oFF to disable the fuel pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EF I (EFI mode) menu:
- Select F06 to set the EFI mode to Edelbrock

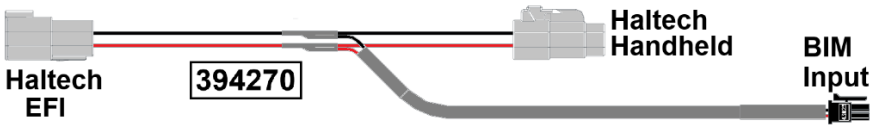
End:
- Press and hold the button to exit the setup menu

Haltech Setup

Compatible readings: Engine RPM, Vehicle Speed, Engine Coolant Temperature, Intake Air Temperature, Oil Pressure, Fuel Pressure, A/F ratio, MAP/Boost, MIL (Check Engine), Trans. Fluid Temp, Fuel Level, Gear Position.

Haltech System Setup:

The BIM-EFI-1 is plug-and-play compatible with Haltech Elite and Nexus series ECUs.



Attach the Y-harness (P/N 394270) to your ECU and BIM. No further setup is required with the Haltech system.

Quick tip: to enable the following gauge readings, ensure the Haltech ECU has the following sensors enabled:

Gauge Reading	Haltech Sensor	Notes
Gear position	Gear Selector Position	Park, Reverse, Neutral, Overdrive, Drive, Low, Manual mode 1-9
Transmission Temp	Gearbox Oil Temperature Sensor	
Air Fuel Ratio	AFR Wideband Sensor #1	

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with Haltech systems, the EFI mode must be set to F07.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F07. Press and hold the button to put the BIM into Haltech (F07) mode.

Below are the BIM settings available in Haltech mode:

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the fuel pressure reading
- Select oFF to disable the fuel pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

9-P (Gear position) menu:
- Select on to enable the gear position display
- Select oFF to disable the gear position display

EnG (Check Engine) menu:
- Select on to enable Check Engine (MIL) monitoring
- Select oFF to disable Check Engine (MIL) monitoring

Haltech Setup Continued:

ACh (Auto channel assignment):
If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EF I (EFI mode) menu:

- Select F07 to set the EFI mode to Haltech

End:

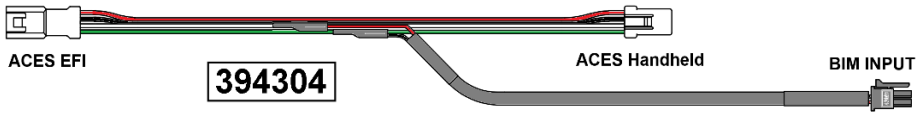
- Press and hold the button to exit the setup menu

Aces Setup

Compatible readings: Engine RPM, Vehicle Speed (with Jackpot Pro or QuickDraw TCM), Engine Coolant Temp, Intake Air Temp, Fuel Pressure, Oil Pressure, A/F ratio, MAP/Boost, and Trans. Fluid Temp.
Availability of each reading depends on the EFI model and attached sensors.

Aces System Setup:

The BIM-EFI-1 is plug-and-play compatible with all Aces ECU systems with the 4-pin CAN connector.



Attach the Y-harness (P/N 394304) to your ECU and BIM. No further setup is required with the Aces system.

Quick tips:

If the Aces handheld is connected to the bus, viewing live data or sensor values will cause the Aces ECU to stop transmitting certain readings (Coolant Temp, Fuel Pressure, Oil Pressure, and Air/Fuel Ratio) to the BIM. To resolve, disconnect the Aces handheld or navigate to a menu without live data.

Older versions of Aces firmware (before Sept. 2024) use a different scalar value for Vehicle speed. If vehicle speed reads incorrect, change the BIM-EFI-1 speed mode from SP2 to SP1 or vice-versa.

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.
To configure the BIM-EFI-1 to communicate with Aces systems, the EFI mode must be set to F08.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F08. Press and hold the button to put the BIM into Aces (F08) mode.
Below are the BIM settings available in Aces mode:

SPd (Aces Speed) menu:
- Select SP1 to scale speed for older Aces firmware (before Sept. 2024)
- Select SP2 to scale speed for current Aces firmware

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the fuel pressure reading
- Select oFF to disable the fuel pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EFI (EFI mode) menu:
- Select F08 to set the EFI mode to Aces

End:
- Press and hold the button to exit the setup menu

FiTech Setup

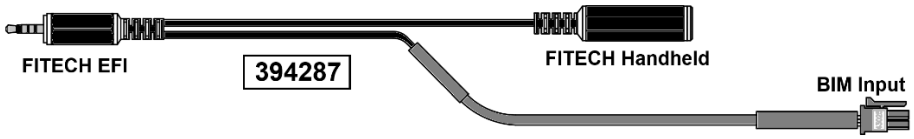
Available readings:

CAN Bus Data	SPEEDOMETER	TACHOMETER	COOLANT TEMP	BOOST PSI	AIR/FUEL RATIO	INTAKE AIR TEMP	TRANS TEMP	GEAR POSITION
FiTech LS	✓	✓	✓	✓	✓	✓	✓	✓
FiTech TBI	✗	✓	✓	✓	✓	✓	✗	✗
FiTech TCU	✓	✓	✗	✗	✗	✗	✓	✓

Availability of each reading depends on the EFI model and attached sensors.

FiTech System Setup:

The BIM-EFI-1 is compatible with FiTech LS, TBI, and TCU systems with the 2.5mm TRRS CAN bus jack.



Plug the 394287-adapter harness into the FiTech ECU and the BIM, and follow the instructions below.

ALL **FiTech CAN Outputs must be enabled**
(Required for operation, and if the vehicle battery is disconnected or the FiTech ECU firmware is updated)

- Connect the FiTech handheld to the ECU through the 394287 adapter harness.
- Enter the “FiTech Initial Setup” menu:
  - 

- Enter the “CAN OUTPUT” menu:
  - 

FiTech Setup Continued:

- For each CAN output, change the “val” field to On, then press the “Send to ECU” button to turn the output on.
  - 

  - **NOTE:** The “Send to ECU” button will only enable the currently highlighted CAN output. This step must be repeated for every CAN output that you wish to enable.
  - If the CAN output for a respective reading is not enabled, the BIM-EFI-1 will not receive these readings from the FiTech bus.

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with FiTech systems, the EFI mode must be set to F09.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F09. Press and hold the button to put the BIM into FiTech (F09) mode.

Below are the BIM settings available in FiTech mode:

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

bSt (Boost) menu:
- Select on to enable the boost pressure reading
- Select oFF to disable the boost pressure reading

EnG (Check Engine) menu:
- Select on to enable Check Engine (MIL) monitoring
- Select oFF to disable Check Engine (MIL) monitoring

G-P (Gear position) menu:
- Select on to enable the gear position display
- Select oFF to disable the gear position display

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EFI (EFI mode) menu:
- Select F09 to set the EFI mode to FiTech

End:
- Press and hold the button to exit the setup menu

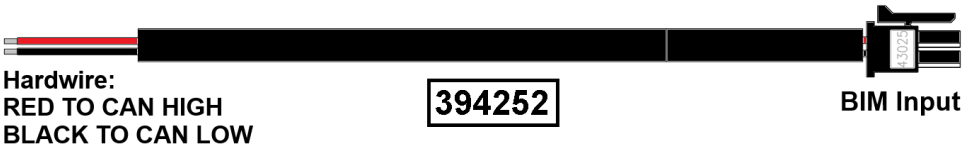
J1939 Setup

Compatible readings: Engine RPM, Vehicle Speed, Engine Coolant Temperature, Oil Pressure, Oil Temp, Intake Air Temp, Ambient Air Temp, Fuel Pressure, A/F ratio, MAP/Boost, Gear Position, Trans. Fluid Temp, MIL (Check Engine), and Fuel Level

Due to the various factory and modified ECM's, additional data (including Speed, Intake Temp, Transmission Temp, Ambient Air Temp, Oil Pressure, Fuel Pressure, Boost, Air/Fuel Ratio, Fuel Level and Gear Position) may be available, but will vary from application to application. Dakota Digital cannot guarantee the presence or accuracy of the Temperature, Boost/MAP Pressure Air/Fuel Ratio, Fuel Level or Gear Position displays since this is a function of the ECM and matching OEM functional sensors.

J1939 ECU Setup:

The BIM-EFI-1 is plug-and-play compatible with systems that use the J1939 protocol, such as J1939 enabled Mercury Racing engines, Cummins R2.8, BIGStuff EFI, MAST Motorsports ECUs, and other ECU's that are capable of sending J1939 CAN data.



To connect the BIM to the ECU, splice or attach the 394252 unterminated BIM harness to the ECU's CANH and CANL wires (ECU harness colors may vary).

- BIM 394252 harness colors:
  - CANH: Red
  - CANL: Black

Reading breakdown:

Reading	J1939 PGN	SPN	Data Position	Resolution	Offset
RPM	61444	190	Bytes 4,5	0.125 rpm per bit	0
Vehicle Speed	65265	84	Bytes 2,3	1/256 km/h per bit	0
Engine Coolant Temp	65262	110	Byte 1	1 ºC/bit	-40 ºC
Oil Temp	65262	175	Byte 3,4	0.03125 ºC/bit	-273 ºC
Engine Oil Pressure	65263	100	Byte 4	4 kPa/bit	0
Intake Air Temp	65270	105	Byte 3	1 ºC/bit	-40 ºC
Ambient Air Temp	65269	171	Bytes 4,5	0.03125 ºC/bit	-273 ºC
Air Fuel Ratio	61454	3217	Bytes 3,4	0.000514 %/bit	-12 %
Gear	61445	524	Byte 1	1 gear value/bit, negative values are reverse gears	-125
Fuel pressure	65263	94	Byte 1	4 kPa/bit	0
Boost (MAP)	65270	102	Byte 2	2 kPa/bit	0
Trans Fluid Temp	65272	177	Bytes 5,6	0.03125 ºC/bit	-273 ºC
Check Engine (MIL)	65226	1213	N/A (Transport Protocol)	N/A	N/A
Fuel Level	65276	96	Byte 2	0.4 %/bit	0

J1939 Setup Continued:

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with J1939 systems, the EFI mode must be set to F10.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F 10. Press and hold the button to put the BIM into J1939 (F 10) mode.

Below are the BIM settings available in J1939 mode:

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the Fuel Pressure reading
- Select oFF to disable the Fuel Pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

o-t (Oil temp.) menu:
- Select on to enable the Oil Temperature reading
- Select oFF to disable the Oil Temperature reading

EnG (Check Engine) menu:
- Select on to enable Check Engine (MIL) monitoring
- Select oFF to disable Check Engine (MIL) monitoring

G-P (Gear position) menu:
- Select on to enable the gear position display
- Select oFF to disable the gear position display

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EF I (EFI mode) menu:
- Select F 10 to set the EFI mode to J1939

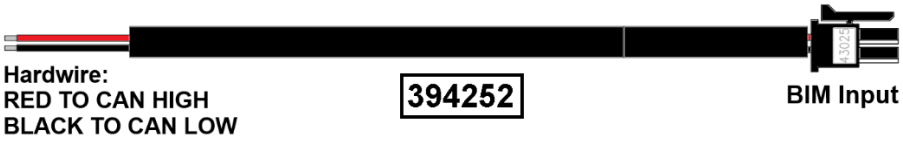
End:
- Press and hold the button to exit the setup menu

MaxxECU Setup

Compatible readings: Engine RPM, Vehicle Speed, Engine Coolant Temperature, Engine Oil Temp, Engine Oil Pressure, Intake Air Temperature, Fuel Pressure, Trans. Fluid Temp, A/F ratio and MAP/Boost.
Availability of each reading depends on the ECU model and attached sensors.

EFI System Setup:

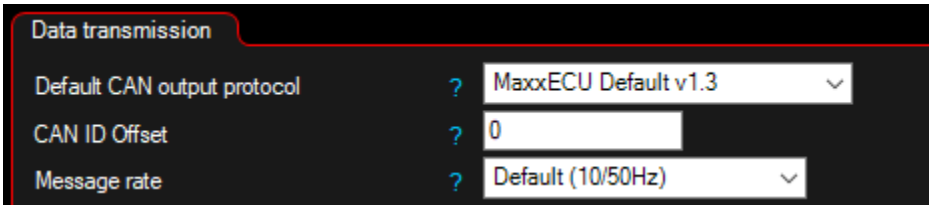
The BIM-EFI-1 is compatible with all CAN-enabled MaxxECU systems that support the MaxxECU Default 1.3 CAN protocol (firmware version 1.135 and newer)

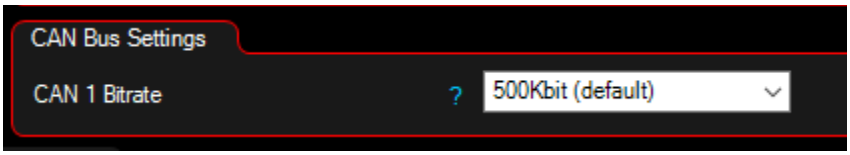


Splice the unterminated CANH and CANL wires of the 394252 harness into the MaxxECU CANH and CANL wires.

MaxxECU harness colors:	394252 harness colors:
CANH: Grey	CANH: Red
CANL: Pink	CANL: Black

In the MaxxECU MTune software, under the CAN Bus -> CAN settings -> Data transmission menu, “Default CAN output protocol” must be set to “MaxxECU Default v1.3”, and “CAN ID Offset” must be set to 0. CAN Bus Settings -> CAN 1 Bitrate must be set to 500Kbit:





BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with MaxxECU systems, the EFI mode must be set to F11.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F11. Press and hold the button to put the BIM into MaxxECU (F11) mode.

Below are the BIM settings available in MaxxECU mode:

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the Fuel Pressure reading
- Select oFF to disable the Fuel Pressure reading

MaxxECU Setup Continued:

bSt (Boost) menu:

- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

o-t (Oil temp.) menu:

- Select on to enable the Oil Temperature reading
- Select oFF to disable the Oil Temperature reading

ACh (Auto channel assignment):

- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EFI (EFI mode) menu:

- Select FII to set the EFI mode to MaxxECU

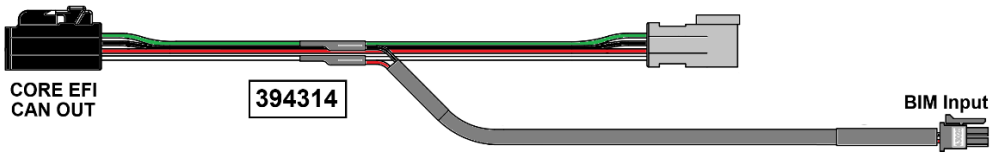
End:

- Press and hold the button to exit the setup menu

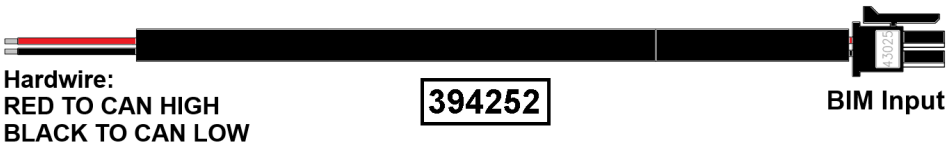
HPTuners CORE Setup

Compatible readings: Engine RPM, Vehicle Speed, Engine Coolant Temperature, Engine Oil Pressure, Intake Air Temperature, Trans. Fluid Temperature, Gear Position, MIL (Check Engine), Fuel Pressure, Fuel Level, A/F ratio, and MAP/Boost.
Availability of each reading depends on attached sensors.

EFI System Setup:

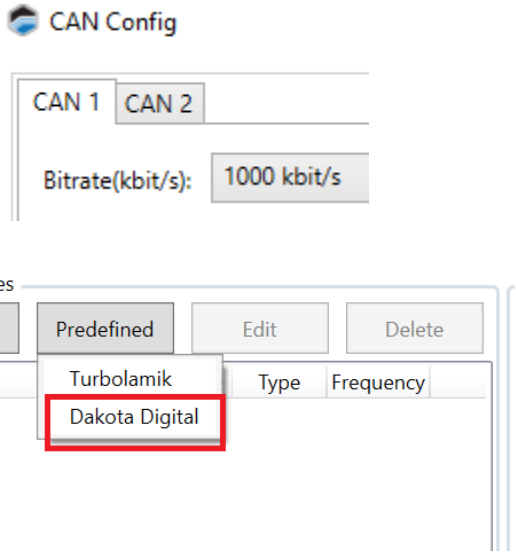


If using a terminated HPTuners harness, attach the CAN Y-harness (P/N 394314) to your ECU and BIM.

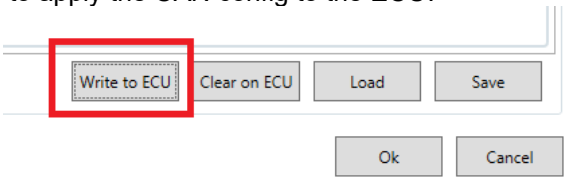


If using a flying lead harness, splice the 394252 unterminated BIM harness into the ECU's CANH and CANL wires (ECU harness colors may vary).

To enable the transmission of CAN data on the CORE ECU, open the HPTuners VCM Live software and navigate to the ECU->CAN Config menu. Under the CAN messages section, click the "Predefined" button and select Dakota Digital in the drop down. Be sure to apply the CAN Config to the same CAN bus (CAN 1 or CAN 2) that you've attached the BIM Y-harness to:

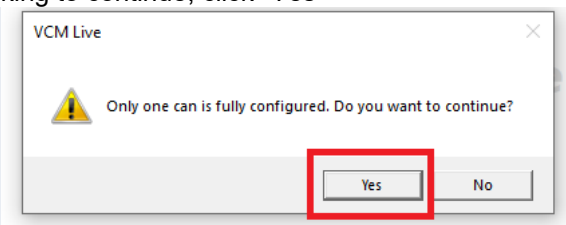


Then, click the "Write to ECU" button to apply the CAN config to the ECU:



HPTuners CORE Setup Continued:

If a configuration warning appears asking to continue, click “Yes”



BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with HPTuners CORE systems, the EFI mode must be set to F12. Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F 12. Press and hold the button to put the BIM into HPTuners CORE (F 12) mode.

Below are the BIM settings available in HPTuners CORE mode:

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the Fuel Pressure reading
- Select oFF to disable the Fuel Pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

o-t (Oil temp.) menu:
- Select on to enable the Oil Temperature reading
- Select oFF to disable the Oil Temperature reading

9-P (Gear position) menu:
- Select on to enable the Gear Position display
- Select oFF to disable the Gear Position display

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EF I (EFI mode) menu:
- Select F 12 to set the EFI mode to HPTuners CORE

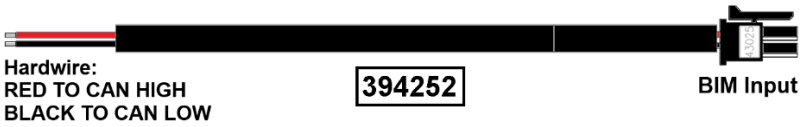
End:
- Press and hold the button to exit the setup menu

MoTeC Setup

Compatible readings: Engine RPM, Vehicle Speed, Engine Coolant Temperature, Engine Oil Pressure, Intake Air Temperature, Trans. Fluid Temperature, Gear Position, Fuel Pressure, Fuel Level, A/F ratio, and MAP/Boost.
Availability of each reading depends on attached sensors and MoTeC firmware type. Gear position is only available with GP-AT or other firmware that provide automatic transmission control.

EFI System Setup:

The BIM-EFI-1 is compatible with MoTeC M1 series ECUs that transmit the M1 General data stream (base ID 0x640) @ 1Mbps.



To connect the BIM to the ECU, splice or attach the 394252 unterminated BIM harness to the ECU's CANH and CANL wires (ECU harness colors may vary).

BIM-EFI-1 Setup:

Note: Settings may also be configured using the Dakota Digital app for Android/iOS.

To configure the BIM-EFI-1 to communicate with MoTeC M1 systems, the EFI mode must be set to F13.
Hold the button on the BIM-EFI-1 while applying power to enter the BIM setup mode. Tap the button to scroll to the EFI menu. Press and hold the button to enter the EFI menu, and scroll to F 13. Press and hold the button to put the BIM into MoTeC (F 13) mode.

Below are the BIM settings available in MoTeC mode:

A-F (Air/Fuel ratio) menu:
- Select on to enable the AFR reading
- Select oFF to disable the AFR reading

FPr (Fuel pressure) menu:
- Select on to enable the Fuel Pressure reading
- Select oFF to disable the Fuel Pressure reading

bSt (Boost) menu:
- Select on to display boost pressure in the instrument cluster (pos. values in PSI, neg. values in inHg)
- Select oFF to display MAP on the instrument cluster
- **Note:** When boost is enabled, baro pressure is calibrated using the MAP reading while the engine is off.

EnG (Check Engine) menu:
- Select on to enable Check Engine (MIL) monitoring
- Select oFF to disable Check Engine (MIL) monitoring

G-P (Gear position) menu:
- Select on to enable the Gear Position display
- Select oFF to disable the Gear Position display

ACh (Auto channel assignment):
- If a channel ID conflict with other BIM-xx-2 modules is suspected, press and hold the button to automatically re-assign the BIM-EFI-1 channels to unused channel slots.

EF I (EFI mode) menu:
- Select F 13 to set the EFI mode to MoTeC

End:
- Press and hold the button to exit the setup menu

Dakota Digital Display Setup:

VFD3 / VFD3X Setup:

****Only VFD3/3X systems with a plastic case support adding BIMs****

Note: Readings listed below will only be available to display if supported by your EFI system. Refer to your EFI system's setup section for a list of available readings.

Entering the VFD3 setup is done by holding SW1 (I) and turning the ignition to "on", or "acc".
Once in setup, one can move between SPEED, TACH, VOLT, WATER, etc... by tapping SW1 (I).

Displaying speed from the BIM-EFI-1

- Hold the SW1 switch from the instrument system control box while turning the key on.
  - The speed display will show SEt and the message display will show SETUP.
- Release SW1. The displays should show SEt and SPEED, respectively.
- Press and hold SW1 until SEt changes to "-". The message display will show SENDER.
- Press and hold SW1 until SEt changes to "-". The speed display will show the current setting.
- Tap SW1 until SEt and BUS are displayed.
- Press and hold SW1 until SEt and DONE are displayed.
  - NOTE: The AUTO, auto calibration, is removed.
  - Speed can only be fine-tuned with the ADJUST mode at a standstill.
  - ADJUST alters the percentage of speed by +/- 25%.
    - Drive a known speed and calculate how far off the speed is in percentage.
      - GPS speed / displayed speed x 100
      - Sample - [60/50=1.2] [1.2x100 = 120] **120%**
    - Enter setup and go to ADJUST, tap SW1 to increment from 100% up to 125%.
    - After 125% the values will fall back to 75% and increment up again.
    - When the desired percentage is reached, hold SW1 until SEt changes to "-".
- Tap SW1 until SEt and DONE are displayed.
- Press and hold SW1 until "-" and DONE are displayed.

Displaying RPM from the BIM-EFI-1

- Hold the SW1 switch from the instrument system control box while turning the key on.
  - The speed display should show SEt and the message display should show SETUP.
- Release SW1. Tap SW1 until SEt and TACH are displayed.
- Press and hold SW1 until SEt changes to "-". The displays should show SEt and T CAL.
- Press and hold SW1 until SEt changes to "-". The speed display will show the current setting.
- Tap SW1 until SEt and BUS are displayed.
- Press and hold SW1 until "-" and DONE are displayed.
- Tap SW1 until SEt and DONE are displayed.
- Press and hold SW1 until "-" and DONE are displayed.

Displaying engine coolant temperature from the BIM-EFI-1

- Hold the SW1 switch from the instrument system control box while turning the key on.
  - The speed display should show SEt and the message display should show SETUP.
- Release SW1. Tap SW1 until SEt and WATER are displayed.
- Press and hold SW1 until SEt changes to "-". The displays should show SEt and SENDER.
- Press and hold SW1 until SEt changes to "-". The speed display will show the current setting.
- Tap SW1 until SEt and BUS F (Fahrenheit) is displayed.
  - Tap SW1 once more for SEt and BUS C (Celsius) if desired.
- Press and hold SW1 until "-" and DONE are displayed.
- Tap SW1 until SEt and DONE are displayed.
- Press and hold SW1 until "-" and DONE are displayed.

Displaying oil pressure from the BIM-EFI-1

- Hold the SW1 switch from the instrument system control box while turning the key on.
    - The speed display should show SEt and the message display should show SETUP.
- Release SW1. Tap SW1 until SEt and OIL are displayed.
- Press and hold SW1 until SEt changes to "-". The displays should show SEt and SENDER.
- Press and hold SW1 until SEt changes to "-". The speed display will show the current setting.
- Tap SW1 until SEt and BUS are displayed.
- Press and hold SW1 until "-" and DONE are displayed.
- Tap SW1 until SEt and DONE are displayed.
- Press and hold SW1 until "-" and DONE are displayed.
-

Displaying fuel level from the BIM-EFI-1

- Hold the SW1 switch from the instrument system control box while turning the key on.
    - The speed display should show SEt and the message display should show SETUP.
- Release SW1. Tap SW1 until SEt and FUEL are displayed.
- Press and hold SW1 until SEt changes to "-". The displays should show SEt and SENDER.
- Press and hold SW1 until SEt changes to "-"
- Tap SW1 until SEt and BUS are displayed.
- Press and hold SW1 until "-" and DONE are displayed.
- Tap SW1 until SEt and DONE are displayed.
- Press and hold SW1 until "-" and DONE are displayed.

MAP/Boost, Air/Fuel Ratio, Fuel Pressure, Gear Position, Intake Air Temp, Engine Oil Temp, Trans. Fluid Temp, Outside Air Temp, and Check Engine will appear in the Message Display(s) of the instrument if available.

VHX Setup:

Note:
Readings listed below will only be available to display if supported by your EFI system. Refer to your EFI system's setup section for a list of available readings.

Entering the VHX setup is done by holding SW1 (I) and turning the ignition to "on", or "acc".
Once in setup, select **SPEED**, **TACH**, **VOLT**, **WATER**, etc…. by tapping SW1 (I)

Displaying speed from the BIM-EFI-1

- Hold the SW1 (I) switch from the instrument system control box while turning the key on.
  - The message display should show **SETUP**.
- Release SW1 (I) - LCD1 should show **SETUP SPEED**.
- Press and hold SW1 (I) until **SPEED SENDER** is displayed.
- Press and hold SW1 (I) until **SENDER** is displayed.
- Release the switch and the current setting will be displayed.
- Tap SW1 (I) until **SENDER BUS** is displayed.
- Press and hold SW1 (I) until **DONE** is displayed.
  - NOTE: The **AUTO**, auto calibration, is removed.
  - Speed can only be fine-tuned with the **ADJUST** mode at a standstill.
  - ADJUST now only alters the percentage of speed by +/- 25%.
    - Drive a known speed and calculate how far off the speed is in percentage.
      - GPS speed / displayed speed x 100
      - Sample - [60/50=1.2] [1.2x100 = 120] **120%**
    - Enter setup and go to ADJUST, tap SW1 (I) to increment from 100% up to 125%.
    - After 125% the values will fall back to 75% and increment up again.
    - When the desired percentage is reached, hold SW1 (I) until **DONE** is displayed
- Tap SW1 (I) until **SPEED DONE** is displayed.
- Press and hold SW1 (I) until a big **DONE** is displayed.

Displaying RPM from the BIM-EFI-1

- Hold the SW1 (I) switch from the instrument system control box while turning the key on.
  - The message display should show **SETUP**.
- Release SW1 (I) - LCD1 should show **SETUP SPEED**.
- Tap SW1 (I) until **SETUP TACH** is displayed.
- Press and hold SW1 (I) for at least 3 seconds until **TACH ENGINE** is displayed.
- Press and hold SW1 (I) for at least 3 seconds until **ENGINE** is displayed.
- Release the switch and the current setting will be displayed.
- Tap SW1 (I) until **ENGINE BUS** is displayed.
- Press and hold SW1 (I) until **DONE** is displayed.
- Tap SW1 (I) until **TACH DONE** is displayed.
- Press and hold SW1 (I) until a big **DONE** is displayed.

Displaying engine temperature from the BIM-EFI-1

- Hold the SW1 (I) switch from the instrument system control box while turning the key on.
  - The message display should show **SETUP**.
- Release SW1 (I) - LCD1 should show **SETUP SPEED**.
- Tap SW1 (I) until **SETUP WATER** is displayed.
- Press and hold SW1 (I) for at least 3 seconds until **WATER SENDER** is displayed.
- Press and hold SW1 (I) for at least 3 seconds to enter the Sender menu.
- Release the switch and the current sender setting will be displayed.
- Tap SW1 (I) until **SENDER BUS F** (Fahrenheit) is displayed.
  - Tap SW1 (I) once more for **SENDER BUS C** (Celsius) if desired.
- Press and hold SW1 until **DONE** is displayed.
- Tap SW1 (I) until **WATER DONE** is displayed.
- Press and hold SW1 (I) until a big **DONE** is displayed.

Displaying oil pressure from the BIM-EFI-1

- Hold the SW1 (I) switch from the instrument system control box while turning the key on.
  - The message display should show **SETUP**.
- Release SW1 (I) - LCD1 should show **SETUP SPEED**.
- Tap SW1 until **SETUP OIL** is displayed.
- Press and hold SW1 (I) for at least 3 seconds until **OIL SENDER** is displayed.
- Press and hold SW1 (I) for at least 3 seconds to enter the Sender menu.
- Release the switch and the current sender setting will be displayed.
- Tap SW1 (I) until **SENDER BUS** is displayed.
- Press and hold SW1 (I) until **DONE** is displayed.
- Tap SW1 (I) until **OIL DONE** is displayed.
- Press and hold SW1 (I) until a big **DONE** is displayed.

Displaying fuel level from the BIM-EFI-1

- Hold the SW1 (I) switch from the instrument system control box while turning the key on.
  - The message display should show **SETUP**.
- Release SW1 (I) - LCD1 should show **SETUP SPEED**.
- Tap SW1 until **SETUP FUEL** is displayed.
- Press and hold SW1 (I) for at least 3 seconds until **FUEL SENDER** is displayed.
- Press and hold SW1 (I) for at least 3 seconds to enter the Sender menu.
- Release the switch and the current sender setting will be displayed.
- Tap SW1 (I) until **SENDER BUS** is displayed.
- Press and hold SW1 (I) until **DONE** is displayed.
- Tap SW1 (I) until **FUEL DONE** is displayed.
- Press and hold SW1 (I) until a big **DONE** is displayed.

MAP/Boost, Air/Fuel Ratio, Fuel Pressure, Gear Position, Intake Air Temp, Engine Oil Temp, Trans. Fluid Temp, and Outside Air Temp will appear in the Message Center(s) of the instrument if available.

To enable display of these readings, enter the Setup>>Displays>>Location menu and select a message center to display the reading in.

HDX and RTX Setup:

****HDX/RTX systems can be configured with the Dakota Digital app for Apple and Android devices****

Note:
Readings listed below will only be available to display if supported by your EFI system. Refer to your EFI system's setup section for a list of available readings.

HDX and RTX Operations

- **HDX:** With the ignition key already on, press and hold both switches to enter SETUP, release when instructed.
  - If using the external rocker switch, hold SW2 (II) while turning the ignition on.
  - Release the switch when SETUP is shown.
  - Left switch on display is SW1, and right switch on display is SW2
- **RTX:** With the ignition off, press and hold SW2 (II) while turning the ignition key on to enter SETUP
  - Release the switch when SETUP is shown.
- **BOTH:** When holding for an option, release the button when the screen says **"RELEASE"**
- **BOTH:** You may skip to whichever reading you'd like to configure below; they do not need to be done in order.
- **BOTH:** After making a selection, tap a switch and select BACK to save and return to the main menu, then select EXIT SETUP to return to normal operation.
- **BOTH:** SWI (left) moves up ↑ the menu list, SWII (right) moves down ↓ the menu list

Displaying speed from the BIM-EFI-1

- Tap SWII (right) switch until **SPEED** is selected. Press and hold SWII (right) switch to enter the **SPEED** menu.
- Tap SWII (right) switch until **INPUT** is displayed. Press and hold SWII (right) switch to enter the **INPUT** menu.
- **SIGNAL** will be displayed. Press and hold SWII (right) switch to enter the **SIGNAL** menu.
- Tap right switch until **BIM** is displayed. Press and hold SWII (right) switch to select **BIM**.
- When **SIGNAL** is displayed again, tap switch until **BACK** is displayed, then hold to return to **INPUT**.
- When **INPUT** is displayed again, tap switch until BACK is displayed, then hold the switch to exit.
  - **NOTE**: The AUTO CAL, auto calibration, is not accessible.
  - ADJUST now only alters the percentage of speed by +/- 25%.
    - After the engine is running, enter setup and go to ADJUST.
    - While driving a known speed, SWI and SWII (left/right) can adjust speed.
      - *Percentage can also be adjusted without driving.*
    - Tap SWII (right) to increment up to 125%.
    - Tap SW1 (left) to decrement down to 75%.
    - The speed will be displayed in the LCD along with the percent chosen.
    - Once the speed is correct, hold either switch until RELEASE is displayed.
    - You may now continue to exit the setup menu.
  - The Dakota Digital Automotive app can also be used to calibrate speed.

Displaying RPM from the BIM-EFI-1

- Tap SWII (right) switch until **TACH** is selected. Press and hold SWII (right) switch to enter the **TACH** menu.
- Tap SWII (right) switch until **INPUT** is displayed. Press and hold SWII (right) switch to enter the **INPUT** menu.
- Tap SWII (right) switch until **CYLINDER** is displayed. Press and hold SWII (right) switch to select **CYLINDER**.
- Tap SWI (**left**) switch until **BIM** is displayed. Press and hold SWII (right) switch to select **BIM**.
- When **INPUT** is displayed again, tap until **BACK** is displayed, then hold the switch to exit.

Displaying engine temperature from the BIM-EFI-1

- Tap SWII (right) switch until **WATER** is selected. Press and hold SWII (right) switch to enter **WATER** menu.
- Tap SWII (right) switch until **INPUT** is displayed. Press and hold SWII (right) switch to enter **INPUT** menu.
- Tap SWII (right) switch until **BIM** is displayed. Press and hold SWII (right) switch to select **BIM**.
- When **INPUT** is displayed again, tap until **BACK** is displayed, then hold the switch to exit.

Displaying oil pressure from the BIM-EFI-1

- Tap SWII (right) switch until **OIL** is selected. Press and hold SWII (right) switch to enter **OIL** menu.
- Tap SWII (right) switch until **INPUT** is displayed. Press and hold SWII (right) switch to enter **INPUT** menu.
- Tap SWII (right) switch until **BIM** is displayed. Press and hold SWII (right) switch to select **BIM**.
- When **INPUT** is displayed again, tap until **BACK** is displayed, then hold the switch to exit.

Displaying fuel level from the BIM-EFI-1

- Tap SWII (right) switch until **FUEL** is selected. Press and hold SWII (right) switch to enter the **FUEL** menu.
- Tap SWII (right) switch until **INPUT** is displayed. Press and hold SWII (right) switch to enter **INPUT** menu.
- Tap SWII (right) switch until **BIM** is displayed. Press and hold SWII (right) switch to select **BIM**.
- When **INPUT** is displayed again, tap until **BACK** is displayed, then hold the switch to exit.

MAP/Boost, Air/Fuel Ratio, Fuel Pressure, Intake Air Temp, Engine Oil Temp, Trans. Fluid Temp, and Outside Air Temp will appear in the group display(s) of the instrument if available.

To enable display of these readings, enter the SETUP>>DISPLAYS>>GROUP SET menu and choose a group screen to display the reading in.

Gear position will display automatically below the Odometer if available.

GRAFIX Setup:

****GRAFIX systems can be configured with the Dakota Digital app for Apple and Android devices****

Note:
Readings listed below will only be available to display if supported by your EFI system. Refer to your EFI system's setup section for a list of available readings.

GRAFIX Operations

- With the vehicle stopped, tap the Control Knob to enter the Main Menu
  - The Main menu can be entered with the vehicle moving, but only the speedometer ADJUST menu will be available in the SETUP menu
- Twist the Control Knob clockwise until **SETUP** is highlighted. Tap the knob to enter the **SETUP** menu.
- You may skip to whichever reading you'd like to configure below; they do not need to be done in order.
- After making a selection, select **BACK** to save and return to the main menu, then select **EXIT** to return to normal operation.
- Twisting the Control Knob clockwise moves up ↑ the menu list, twisting counterclockwise moves down ↓ the menu list.

Displaying speed from the BIM-EFI-1

- Twist the Control Knob clockwise until **SPEED** is highlighted. Tap the knob to enter the **SPEED** menu.
- Twist the Control Knob clockwise until **INPUT** is highlighted. Tap the knob to enter the **INPUT** menu.
- **SIGNAL** will be displayed. Tap the Control Knob to enter the **SIGNAL** menu.
- Twist the Control Knob clockwise until **BIM** is highlighted. Tap the knob to select **BIM**.
- When **SIGNAL** is displayed again, twist the Control Knob until **BACK** is displayed, then tap to return to **INPUT**.
- When **INPUT** is displayed again, twist the Control Knob until **BACK** is displayed, then tap to return to **SPEED**.
- When **SPEED** is displayed again, twist the Control Knob until **BACK** is displayed, then tap to return to **SETUP**.
  - **NOTE**: The AUTO CAL, auto calibration, is not accessible.
  - To adjust speed, enter SETUP, enter SPEED, then enter the ADJUST menu.
    - While driving a known speed, twisting the Control knob clockwise/counterclockwise can adjust speed.
      - *Percentage can also be adjusted without driving.*
    - Twist the Control Knob clockwise to increment up to 125%.
    - Twist the Control Knob counterclockwise to decrement down to 75%.
    - Once the speed is correct, twist the Control Knob until BACK is displayed, then tap the knob.
    - You may now continue to exit the setup menu.
  - The Dakota Digital Automotive app can also be used either while driving or not driving.

Displaying RPM from the BIM-EFI-1

- Twist the Control Knob clockwise until **TACH** is highlighted. Tap the knob to enter the **TACH** menu.
- **INPUT** will be displayed. Tap the Control Knob to enter the **INPUT** menu.
- **CYLINDER** will be displayed. Tap the Control Knob to enter the **CYLINDER** menu.
- Twist the Control Knob counterclockwise until **BIM** is highlighted. Tap the knob to select **BIM**.
- When **INPUT** is displayed again, twist the Control Knob until **BACK** is displayed, then tap to return to **TACH**.
- When **TACH** is displayed again, twist the Control Knob until **BACK** is displayed, then tap to return to **SETUP**.

Displaying engine temperature from the BIM-EFI-1

- Twist the Control Knob clockwise until **WATER** is highlighted. Tap the knob to enter **WATER** menu.
- **INPUT** will be displayed. Tap the Control Knob to enter **INPUT** menu.
- Twist the Control Knob counterclockwise until **BIM** is highlighted. Tap the knob to select **BIM**.
- When **INPUT** is displayed again, twist the Control Knob until **BACK** is displayed, then tap to return to **WATER**.
- When **WATER** is displayed again, twist the Control Knob until **BACK** is displayed, then tap to return to **SETUP**.

Displaying oil pressure from the BIM-EFI-1

- Twist the Control Knob clockwise until **OIL** is highlighted. Tap the knob to enter **OIL** menu.
- **INPUT** will be displayed. Tap the Control Knob to enter **INPUT** menu.
- Twist the Control Knob clockwise until **BIM** is highlighted. Tap the knob to select **BIM**.
- When **INPUT** is displayed again, twist the Control Knob until **BACK** is displayed, then tap to return to **OIL**.
- When OIL is displayed again, twist the Control Knob until **BACK** is displayed, then tap to return to **SETUP**.

TIP: MAP/Boost, Air/Fuel Ratio, Fuel Pressure, Intake Air Temp, Engine Oil Temp, Trans. Fluid Temp, and Outside Air Temp will be displayed in a gauge if selected in the SYSTEM>>LAYOUTS>>GAUGES menu, or in a message group if selected in the SYSTEM>>LAYOUTS>>MSG GROUPS.

Gear Position will display automatically on the TFT display if available.

Quick Tips:

While the BIM is operating, the dot in the upper left corner indicates the communication status between the control box and the BIM. Flashing indicates that the BIM is communicating normally. On steady indicates it is powered up but not communicating with the control box.

If the display on the BIM shows "bUS", it is not receiving the expected data from the EFI system. Ensure that the EFI mode is set to the correct option for your EFI system.

To enter setup mode on the BIM-EFI-1, press and hold the button while turning the key on. While the button is held, the BIM display will flash the 4-character firmware version.

While the BIM is operating, press and hold the button to view the readings that the BIM is receiving. Note that if a reading is shown, it means the BIM is receiving reading data from the EFI system, but not necessarily that the reading is valid.

To cycle through the available readings that the BIM-EFI-1 is receiving, press and hold the button.
The first screen will show the current EFI ID, and the following screens will display the data that is available:

- tAC – Tach (RPM)
- SPd – Vehicle Speed
- ECt – Engine Coolant Temp
- IAt – Intake Air Temp
- EoP – Engine Oil Pressure
- AFr – Air/Fuel Ratio
- FPr – Fuel Pressure
- AAt – Ambient Air Temp
- bSt – Boost/MAP
- Eot – Engine Oil Temp
- G-P – Gear Position
- tFt – Transmission Fluid Temp
- FL I – Fuel Level Indicator

If you do not see any number of these listed, the data may not be transmitted for the BIM-EFI-1 to read.

Troubleshooting Guide:

Problem	Possible cause	Solution
No BIM data on instrument readout; BIM does not light up.	Power/data harness is not connected	Connect power/data harness between the Dakota Digital control box and the BIM.
	Power/data harness is loose	Ensure both ends of the power/data harness are seated securely.
	Power/data harness is damaged.	Inspect harness. Repair or replace any damaged areas.
	BIM module is damaged.	Return for service. (see service/repair instructions on next page)
No BIM data on instrument readout; BIM display shows "bUS"	EFI adapter harness is not connected	Connect an EFI adapter harness between the BIM's INPUT port and the EFI system/ECU's CAN bus.
	EFI mode is set wrong	In the BIM-EFI-1 setup menu, enter the EFI menu and select the correct EFI mode for your system (see pg. 5).
	EFI system/ECU is incompatible with the BIM.	Review compatibility list in the EFI System Setup section.
No BIM data on instrument readout; BIM has a steady dot lit.	Power/data harness is loose.	Ensure both ends of the power/data harness are seated securely.
	Power/data harness is damaged or connected improperly.	Inspect and re-seat or replace BIM harness.
BIM display shows "bL-"	Data cable is damaged or connected improperly.	Inspect and re-seat or replace BIM harness.
	Another module on the bus is damaged.	Inspect other modules on the data bus.

SERVICE AND REPAIR

DAKOTA DIGITAL offers complete service and repair of its product line. In addition, technical support is available to help you work through any questions or problems you may be having installing one of our products. Please read through the Troubleshooting Guide. There, you will find the solution to most problems.

For additional support, please visit www.dakotadigital.com. A "**Product Support**" link will be found at the bottom of the home page.

Should you ever need to send the unit back for repairs, please call our technical support line, (605) 332-6513, to request a Return Merchandise Authorization number.

- Package the product in a good quality box along with plenty of packing material.
- Ship the product by a common carrier with tracking abilities.
- Be sure to include the RMA number on the package.
- Include a complete description of the problem, with RMA number, your full name and address (street address preferred), and a telephone number where you can be reached during the day.
- Any returns for warranty work must include a copy of the dated sales receipt from your place of purchase.
- Send no money. We will contact you for payment.

Dakota Digital Limited Lifetime Warranty

DAKOTA DIGITAL warrants to the ORIGINAL PURCHASER of this product that should it, under normal use and condition, be proven defective in material or workmanship for the lifetime of the original vehicle it was installed in, such defect(s) will be repaired or replaced at Dakota Digital's option.

This warranty does not cover nor extend to damage to the vehicle's systems, and does not cover diagnosis, removal or reinstallation of the product.
This Warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse, neglect, or accident.
Dakota Digital assumes no responsibility for loss of time, vehicle use, owner inconvenience nor related expenses.
Dakota Digital will cover the return standard freight once the product has been evaluated for warranty consideration, however the incoming transportation is to be covered by the owner.

This Warranty is in lieu of all other expressed warranties or liabilities. Any implied warranties, including any implied warranty of merchantability, shall be limited to the duration of this written warranty. No person or representative is authorized to assume, for Dakota Digital, any liability other than expressed herein in connection with the sale of this product.

⚠**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

4510 W. 61st St. North
Sioux Falls, SD 57107
www.dakotadigital.com
dakotasupport@dakotadigital.com

Phone (605) 332-6513
Fax (605) 339-4106