





# TurboXS DTEC-FC

A New Piggyback Fuel Computer Emerges

Story **Arne Toman** Photos **Ivan Phipps**

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**N**ow that you have purchased your new PSP, you are probably getting ready to throw that old Game Boy Advance on eBay. Hold that thought because the newly released TurboXS DTEC-FC can turn your Gameboy into a powerful electronic fuel computer and boost controller for many different vehicles.

If you have modified your vehicle, then the factory ECU is probably not delivering the ideal amount of fuel. You probably already know that when you increase the fuel flow or fuel pressure to your engine, you'll need a way to dial back that fuel electronically. Just like other piggy-back systems the DTEC intercepts the factory MAP/MAF signal and fools the vehicle's PCM into thinking you're feeding less boost/air flow into the engine. The DTEC fuel computer adjusts the Air/Fuel Ratio by modifying the air-flow meter/MAP

sensor signal against engine load and RPM. By tuning to the proper air fuel ratios you can prevent the factory ecu from retarding timing or hitting "fuel cut" that can occur from maxing out the factory MAP/MAF sensors. The TurboXS DTEC supports hot-wire MAF (Mass Air Flow) sensor, Karman Vortex Air flow meter, Vane type air flow meter and MAP (Manifold Absolute Pressure) sensor applications. In layman's terms it will work on pretty much every car out there that is worth modifying.

Unlike most piggy-back systems The DTEC-FC gives you the ability to save four different fuel maps for different boost pressure and fuel type settings. In each map you get four programmable points of throttle position/MAP to

scale the amount of fuel at 18 programmable RPM ranges. Having four throttle points to tune for gives you much more control over drivability than the competition. With the ability to have different maps you can drive everyday on your pump gas map, then switch to a second map at the track when you fill up with the race gas.

The DTEC fuel computer not only has the ability to fine tune your air fuel setting, but also gives you real time vehicle sensor gauges such as TPS/MAP (load), RPM, Knock Count, Injector Duty Cycle, EGT (with optional EGT sensor), and Wideband Air Fuel (with optional

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Shown here is a typical DTEC map layout. From here you can add or subtract values.



This DTEC-BC-PRO allows everything from simple single level boost control to advanced settings like closed loop, gear dependant, RPM, and throttle positioning.

Tuner box). If that isn't enough for you the DTEC will also datalog all of these sensors for fine tuning.

With the DTEC-BC-PRO Boost Controller option you get what may be the finest boost controller out on the market. Capable of controlling boost pressures in excess of 60psi, the DTEC-BC-PRO allows everything from simple single level boost control to advanced settings like closed loop, gear dependant, RPM, and throttle position based programming. Advanced features include the ability to store and switch between five different boost maps; scramble mode; over-boost protection; "start boost" feature to speed turbo spool up; and gain control. These are features you will only find on high end boost controllers. All the boost settings coincide with

each of your fuel maps too, making for easy changes from pump gas to race gas settings. Changing your fuel map will automatically change to the boost level you set up with that map. It can't get any easier than that.

Another option available is the remote mounted KnockLite. With the appearance of a miniature shift light, it is a completely programmable device to alert you of slight to severe detonation with different colored LED flashes. The KnockLite will detect even minor, inaudible detonation and flash the multicolored LED to alert you to the knock so that you can get off the throttle before it's too late. The KnockLite can wire into either your factory knock sensor or into a alternate knock sensor (sold separately) that is bolted to your engine. Get this, it also doubles as a programmable shift light! You can also program your shift points with the KnockLite to have your own built in shift light.

So let's recap what this thing does. It allows you to adjust your air/fuel ratio, it enables you to have four different maps for fuel and boost settings, it doubles as a powerful and advanced boost controller, it can incorporate a nifty little knock/shift light, it handles all



Locked and loaded was the test mule a 1991 Mitsubishi Galant VR-4.

To install DTEC-BC (boost controller) you should first mount the boost solenoid, any solid mounting point away from extreme heat will do. Next determine if your turbo wastegate is external or internally gated, hook up the vacuum lines as directed in the installation guide per your wastegate application. Run the boost solenoid harness to the back of the DTEC unit and Map sensor. If you plan on using gear dependent boost settings you will also need to connect a wire from the DTEC-BC harness to the vehicle speed sensor.

Last but not least is the KnockLite. The KnockLite requires power, ground, knock input and tach signal. TurboXS gives you the choice to either tap in to the factory knock sensor wiring or run a separate Bosch type knock sensor. Set-up requires a few steps to set up knock sensitivity and shift lite rpm points.

After following the directions to set-up the DTEC-FC/BC to work in our Galant VR4 we strapped her down to the dyno.

## OUR TEST VEHICLE

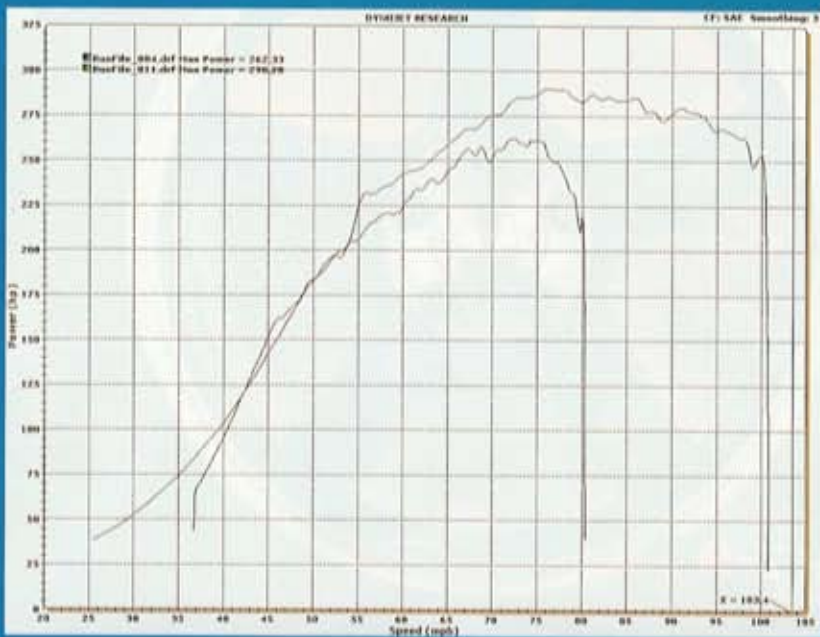
- 1991 Mitsubishi Galant VR4
- Stock Engine
- Garrett GT3071R Turbo
- 3-inch Exhaust
- EVO III Front Mount Intercooler
- PTE 680cc injectors
- Walbro 255lph Fuel Pump
- 2G Mass Airflow Sensor

Base runs found the car running extremely rich (10:1) only making 260awhp. This was far below the potential of the car, hindered by way too much fuel. By slowly dialing back the fuel at the richest points in the rpm range the horsepower began to come up. Slowly we brought the air/fuel ratio at wide open

We brought the air/fuel ratio back up from 10:1 up to a steady & safe 11.5:1 on 93 octane finally netting us 290awhp.

throttle back up from 10:1 up to a steady and safe 11.5:1 on 93 octane finally netting us 290awhp.

Be warned though, the TurboXS DTEC like all other tuning devices makes it really easy for YOU to damage your engine if you're not careful. It is important that large amounts of fuel are not removed too quickly. Use a wideband O<sub>2</sub> meter and be sure you understand what adjustments you are going to make and why you are making them. ■



An impressive 30AWHP was found using the DTEC-FC.



DTEC Boost Solenoid, small yet very powerful.

## SOURCEBOX

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DTEC-FC  
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**AutoMotoSports**  
Install & Tuning  
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URL: [www.amsperformance.com](http://www.amsperformance.com)