FOR IMMEDIATE RELEASE

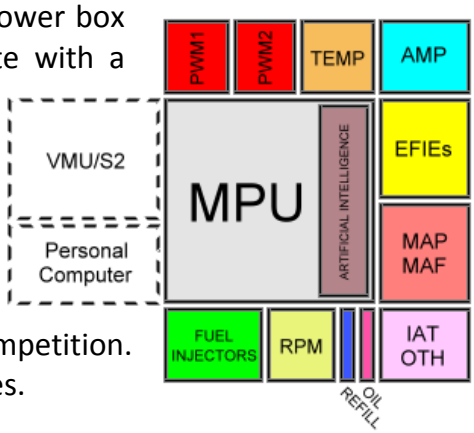
March 30, 2009 – This is an announcement of the availability of the next generation electronic modules from Hydroxy Technologies Corporation (HTC). HTC continues to lead the industry in design and capabilities, culminating with today's announcement of the *first* Third Generation Hydrogen On Demand System and the Power Box Version 3.

POWER BOX GAINS ENHANCED FEATURES

The new **Power Box Version 3 (Black)** from HTC is now in full production. Some of the features are without precedent in the industry. Some features, like a pulse width modulator (PWM) and slave box connection are carried over from the Power Box Version 2 (Red) but are greatly improved. The new power box has these new features:

- **Current monitoring with AutoAmp:** Last year, HTC began to experiment with a current sampling feature as an option inside some power boxes. With this experience HTC has now introduced the AutoAmp feature.

- **8-Core CPU, memory, and new interface:** The new power box is not just an extension of the VMU and its processor. There is now a brain inside the power box which can maintain settings, log data, and communicate with a laptop computer for maintenance.



- **Passive RPM monitoring with Smart Adjust:** In 2008, HTC revolutionized the monitoring of engine rpm with the OBD-II interface option for the VMU. Now, there is passive monitoring of vehicle rpm using a clever technique that will almost certainly be copied by the competition. Various sensors can be adjusted in 4 stages as RPM changes.

- **Pump duty cycle adjustments:** With the recent introduction of the M-Cell (which is a type of cell known to some as a "dry cell"), HTC needed a way to reduce the speed of the circulation pump when conditions warrant a low flow rate. With this capability, the new power box can help the M-Cell run at its most efficient temperature rather than allowing it to get too hot or too cold. This feature uses a separate PWM circuit.

- **Pressure and tank sensors:** The M-Cell also includes a reservoir which holds makeup water and electrolyte for the entire system. A sensor can monitor the level in the tank. The system is designed to run at ambient pressure except for the small pressure generated by the circulating pump. If a high pressure condition appears, the system will detect it and shut down.

- **Direct and remote error condition notices:** If the new power box is operated with a VMU Series 2, the driver can monitor all parameters with the LCD screen. If the driver has no VMU and therefore no LCD, a simple LED can be mounted inside the vehicle for a quick status check by the driver.

- **Operation and setup with or without a VMU:** The new power box has a JTAG interface port used by dealers and installers to make adjustments, troubleshoot, and update the firmware of the power box. This connection interface means that the VMU would be redundant during the setup phase. For customers, it means some cost savings, because this power box is autonomous. If a customer prefers the advanced capabilities and display functions of the VMU, **HTC is the world leader in electronic vehicle management units and displays.**

- **Split EFIE adjustments:** The new power box can be programmed to adjust multiple oxygen sensors, up to 4, with each sensor receiving its own independent adjustment. Up to 4 independent channels are also available for adjusting a MAP or MAF sensor.

- **Intake Air Temperature and Coolant Temperature adjustments:** There is a total of 6 general purpose digital resistors in the Power Box Version 3, two of which are intended for auxiliary sensor adjustment. Unlike any system before, the new power box includes the provision to adjust other resistance-based sensors, such as IAT and ECT, which helps to ensure that installers can manage the toughest of vehicles to improve their mileage.

  Multiple Cell Current Sampling: Since the first Hydrogen Cell was conceived by HTC, there has always been a consideration given to customers needing multiple cells. The Power Box Version 3 has set a new standard by including current monitoring and PWM adjustment for up to 3 slave power boxes. This means that up to four hydrogen cells can be controlled and monitored by the new power box. Each slave box sends its temperature sensor information to the master, and the master commands the PWM of each slave.

- **Fuel Injector Cut-Off (FICO):** As an option to the Power Box Version 3, users can experiment with a feature that shuts off fuel injectors to the engine when maximum fuel savings is desired, typically when driving on the freeway. Up to 4 injectors can be turned off once the vehicle reaches cruising speed. While some auto makers design this into their latest cars, the Power Box Version 3 is the **world's first computerized aftermarket FICO system**.

THE NEXT GENERATION HYDROXY SYSTEM

The **Smart Adjust feature** of the new power boxes is a great bonus for many drivers. Many customers believe that Smart Adjust is the most sought-after feature ever conceived for fuel savings. In the past, hydrogen generators were capable of running at *full speed* or *off*. Those **"first generation"** HHO cells were fine for laboratory or limited automotive uses, but the industry soon improved upon this.

For the **second generation** HHO generator, an entire kit was developed that included a cell and a controller. The controller employs a *pulse width modulator* which adds two benefits: It pulses the DC voltage, increasing output, and it allows setting the duty cycle to something besides 100% full output. This lower duty cycle is needed when large HHO generators are used in small vehicles, and also when ambient conditions are too hot. An example of an advanced second generation HHO kit is the Alexis Cell, the VMU, and the power box. HTC has a lot of experience with this type of hydroxy system.

Today, we are introducing the third generation hydrogen on demand system. It goes a step further than what most of us understand to be a good system… to make it even better. Back in 2008, HTC developed two optional modules for the VMU to begin this third generation effort. The first module was an OBD-II interface, and the other was a GPS interface. Testing and market research indicates that the OBD-II system is superior, so I will explain how it works.

Virtually every small vehicle made since late 1995 has an OBD-II interface. Although required on gasoline vehicles only, many diesels have the same or similar interface. Each vehicle that is OBD-II compliant has a connector located near the driver's seat to which a diagnostic computer or, more typically, a "scanner" can be connected. With the OBD-II interface option, a VMU from Hydroxy Technologies Corp. can read vehicle parameters: speed, VIN, engine coolant temperature, Diagnostic Trouble Codes (DTCs), and the most important one… **RPM**.

After a number of trials and experiments, HTC determined that of all the parameters monitored from the OBD-II port, RPM is the one which makes the most sense for a third generation hydrogen generation system. This parameter is notably unavailable from a GPS module. But consider this: **engine rpm can be monitored in other ways, some novel**.

INTRODUCING PASSIVE RPM MONITORING

With the VMU Series 2, the option to add OBD-II monitoring was a relatively expensive and technical challenge to some customers. Let's now consider a cheaper and easier alternative.

Delving into the OBD-II interface and its myriad implementations, protocols, and inconsistent data stream is normally quite a challenge. HTC did an excellent job both in price and capabilities for achieving the third generation system back in 2008. But with that experience, we can move forward with **Passive RPM Monitoring** that requires no connection to the vehicle.

The principle is simple. A gasoline engine produces high energy sparks which ignite the fuel every other stroke. A sensor wrapped around a spark plug wire will register these spark pulses by electromagnetic induction. For a diesel engine which generates no spark, a similar effect can be obtained by a sensitive sensor wrapped around a fuel injector solenoid wire, or various other signals may be tapped into to provide the needed RPM pulse.

INTRODUCING THE AUTOAMP FEATURE

For diesel and large engines, many customers have tried to run their HHO systems at full output, or 100% duty cycle. This is because in many cases, the **more** HHO you generate and introduce into the engine, the **better** it performs. Such customers are stricken with the following problem.

1. The customer dials up the PWM to 100% believing this will enable the most fuel savings.
2. The customer inadvertently has too little electrolyte on cold days, so the customer adds more electrolyte to increase HHO output during cold weather.
3. When the weather heats up and the system gets hot, the extra electrolyte drives the cell to dramatic but excessive amounts of HHO, heating it up even further.

The end result is a damaged cell, a blown fuse, or if the VMU is used, persistent high temperature shutdowns of the cell (a safety feature). What the customer may not know (if he has not measured the current going to the cell) is that he is running the cell beyond its rated current level. The solution was originally to carry both a current meter in the vehicle and adjust the PWM manually to maintain a reasonable amount of current going to the cell. For example, the Alexis cell works best when it peaks no higher than about 21 to 25 amps when hot.

With the summer coming, and more diesel trucks using hydroxy system kits made by HTC, we felt that a final resolution to this problem could be made. And here is how it works…

Step 1: The user uses an excess amount of electrolyte, (a *little* extra for cold mornings)
Step 2: the user chooses a Max Amp value, and
Step 3: forgets about it!

When the AutoAmp feature is set, the Smart Adjust capabilities of the new power box ensure that whenever the Max Amp value is exceeded, the duty cycle of the cell is reduced until the Max Amp value is achieved.

The only critical thing the customer or installer will do is to add enough electrolyte to give the system good early-morning performance in cold weather. This will depend on your area, so follow the instructions in the manual to make this work.

SMART ADJUST FEATURES

To complete the set of features for a third generation hydrogen system, the new power box includes **Smart Adjust**. With it, vehicles which were incompatible with HHO are now supported. Every sensor is monitored by Smart Adjust. Whenever a set point or parameter exceeds a threshold, the power box generates less hydrogen until that condition is cleared.

I. **RPM:** The most important indicator of load is the rotational speed of the engine. Although this is not a perfect measure of the fuel consumption rate of an engine, it roughly translates to how fast the fuel is being used. In fact, when a fuel-injected engine coasts down a steep hill, some engines shut off fuel completely, and our passive measure of rpm goes to 0 even as the engine turns faster. That means that the new passive rpm monitoring will work well during downhill coasting. Many customers, especially those driving small gasoline cars, will want greater HHO production at high RPM.

II. **Temperature:** Inside a hydrogen cell, electrolysis takes place. But if the electrolyte is very cold, the impedance will be much higher than when hot. Additionally, an overheated cell needs to either be cooled faster or it needs to be shut down to prevent damage. We monitor temperature so the system does not exceed its upper threshold of safety.

III. **Amperage:** The amount of current being used by the hydrogen cell must not go beyond a maximum value.

With those parameters being watched tenaciously by the power box, the following adjustments are made in **real-time** to match what the sensors indicate.

REAL-TIME ADJUSTMENTS

Cell Duty Cycle: With the PWM and Smart Adjust, the Cell's duty cycle can be reduced for a number of different reasons.

1. The user may set a **manual threshold duty cycle**. Some small engines can't accept too much HHO, even at high RPM.
2. When the system overheats, **duty cycle is automatically lowered in stages** until a moderate temperature is achieved.
3. When the **Max Amp setting is reached** or exceeded, the duty cycle is lowered. This helps avoid blowing a fuse if too much electrolyte was added.
4. When the user wants less HHO output at lower RPM, the duty cycle can be lowered in stages as rpm goes down. The idle rpm could even be set for 0% duty cycle.

Oxygen/MAP/MAF Sensor Offsets: These sensor adjustments are automatically compensated for cell duty cycle:

1. The user must set a manual threshold for each oxygen/MAP/MAF sensor.
2. When the system overheats, the oxygen/MAP/MAF sensor offset changes in response to a lower duty cycle of the cell.
3. When the AutoAmp feature is activated, the oxygen/MAP/MAF sensor offset changes in response to a lower duty cycle of the cell.
4. When the user wants less HHO output at lower RPM, the oxygen/MAP/MAF sensor offset changes in response to a lower duty cycle of the cell.

Pump Duty Cycle:

1. When the hydrogen generator is cold, a low flow is programmed by using a low pump duty cycle. This saves electricity and allows the cell to heat up. Some flow is always necessary to obtain accurate temperature readings.
2. As the temperature of the cell increases to its operating temperature, the pump duty cycle increases in stages as does the flow rate. During cold weather, the pump may not ever speed up.

Power Box Grouping:

Customers and installers can manage **up to 4 hydrogen cells** with the Power Box Version 3. Whenever the PWM of the master cell is set, some users may want the capability to set a slave box to run at a different setting. This capability is provided by using Power Box Grouping. There are two groups to set, and each group could have up to two cells. Each Power Box Group actually has its own Smart Adjust working for it!

This means that if the MaxAmp setting for the master is 20 amps, then any slave in the same group will have the same MaxAmp setting. Another group of 2 cells in the same system could be set for just 15 amps. The Master Power Box automatically adjusts each group independently by communicating these controls to each slave box.

SAFETY FIRST. SIMPLICITY SECOND.

One of the great testaments to the design of HTC systems to date is that there are essentially no new safety features in the new power box except for the high pressure cutoff needed for the new M-Cell. This is because every system made by HTC has been designed with safety in mind from the first day. We still employ an oil pressure sensor and features which prevent the production of hydrogen unless the engine is running.

But one major goal in this new power box is **simplifying the user interface**. There are essentially no parameters to constantly watch and adjust now that the power box manages the entire system. Perhaps the new power box is just a "***VMU Lite***" – a lighter version of a vehicle management unit?

Indeed, you can think of it that way. The next time you order a system from HTC, try ordering a power box without the VMU… **just don't forget the USB cable!**

Remember: the new power box still needs a way to adjust the parameters. But since it has no color display and no buttons to push, we recommend that only dealers and very advanced users attempt to use the JTAG interface. Once setup and adjusted with a laptop computer, the customer is free to drive, without being encumbered by real-time monitoring. It is like pulling the plug! This is the simplicity that many of our customers, dealers, and regulatory agencies will prefer.

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