

# *autotech* *daily*<sup>™</sup>

THURSDAY  
AUGUST 24, 2006

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## DIGITAL RADIO SET TO TAKE OFF

The HD Digital Radio Alliance of broadcasters plans to complete its initial rollout by next spring when it says multicast high-definition digital radio will be available in America's top 100 markets. The alliance, which added 18 markets this month, is two-thirds of the way to reaching that goal. It says 600 member stations now broadcast HD programming, which requires special radio receivers.

At the same time, prices of digital receivers are coming down, and aftermarket conversion units are being introduced. OEM availability is expected to jump from three vehicles (all BMWs) to 18 models next year—including some non-luxury installations—and to 49 models from nine automakers in 2009.

BMW currently charges \$500 for its factory-installed HD option. Although the alliance declined to reveal sales volumes, it says take rates are running higher than initial projections. The price of aftermarket receivers, once as high as \$1,000, has been steadily falling. It says RadioShack is expected to offer a \$199 system during the holiday season.

For about the same price, a new converter is due to bow in early November. It will allow users to receive HD broadcasts over standard in-vehicle audio systems and even over competing satellite radio receivers. The converters will be produced by Dice Electronics LLC, of Lake Tahoe, Nev., and South Korea's Kiryung Electronics Co., which will market them through dealerships and electronic retailers. About half the buyers of the converters are expected to install the devices themselves.

Developed by iBiquity Digital Corp., HD technology piggybacks digital signals on existing analog transmissions. The format purportedly makes AM digital broadcasts sound like traditional FM and gives FM audio quality similar to a CD. A 96kB FM signal can be split into two 48kB channels for multicast programming, which the alliance calls HD2. Talk stations could potentially offer 24kB multicasts, but the quality isn't high enough to support music formats. Radio stations and manufacturers license the technology from Columbia, Md.-based iBiquity, which is owned by a coalition of investors and broadcasters.

As with satellite radio, HD radio allows for specialized news and traffic reports and can display information about the song being played. Other features include surround sound, the ability to display graphics and a TiVo-like rewind and play capability (of up to 45 seconds initially). In the future, the system will be able to coordinate with a vehicle's navigation system to overlay traffic and weather data onto a real-time map.

To date, the alliance has spent \$80 million of a \$200 million budget to promote the technology. One of the biggest selling points: Users don't have to pay monthly subscription fees as they do with satellite services. For now, there are no plans to go after high-profile on-air personnel such as Howard Stern, who switched from terrestrial radio to Sirius Satellite Radio this year. All HD2 channels are commercial free through next June.

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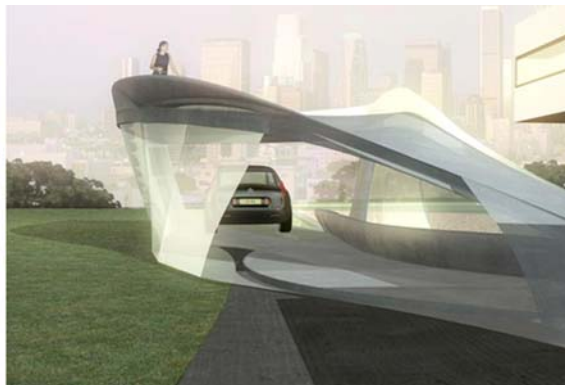
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### BUY CAR, PARK IN STYLE!

For an extra \$200,000—three times the price of the vehicle itself—buyers of PSA Peugeot Citroen's new Citroen C6 can get an extra spiffy spot to park it. The so-called designer garage was designed by Neutral, a London-based architectural firm.

Drawing inspiration from the pronounced stance of the C6 itself, the swoopy garage is formed by a three-piece frame that looks like a ramp from one side. Sliding transparent panels allow the vehicle to enter from either the front or the rear. The panels are



constructed of reinforced polycarbonate sheets. When switched to a privacy mode, colored LCD layers in the sheets become opaque.

The 540-sq-ft structure stands about 10 ft tall at its highest point. The roof can double

For \$200,000, buyers of the Citroen C6 can display their car in style.

as a terrace, according to the designers. No word yet on how many C6 buyers have opted for the zoomy structure.

### CORRECTION: DUPONT "GREEN" MATERIAL IS SORONA

DuPont Automotive's new material made in part from renewable resources is called Sorona. We incorrectly identified it as Sonora in yesterday's issue. DuPont plans to make the engineering plastic, which has 37% renewable content, at a plant in Tennessee and debut its first application about a year from now.

### NISSAN REVS UP NEW V-6 ENGINES

Nissan Motor Co. this fall will launch two new V-6 engines for rear-wheel-drive vehicles. Featuring more rigid rudder-frame engine blocks, the 3.5-liter VQ35HR and 2.5-liter VQ25HR engines overhaul the automaker's high-volume VQ family that has been lauded by the press since its introduction 12 years ago.

The "HR" designation stands for high revolution and high response. Nissan describes the new engines as having a smooth power band that tops out at a best-in-class 7,500 rpm. The engines are designed to be 10% more fuel efficient than their VQ predecessors. Output for the larger powerplant is expected to be 300 hp, and the new engines will cut a full second off 0-62 mph acceleration. Nissan says vehicles fitted with the engines will qualify for a super ultra-low emission vehicle rating.

Changes from the current VQ engines include the addition of continuously variable intake valve timing and electromagnetic exhaust valve timing. Other enhancements include an isometric manifold with a symmetrical exhaust system and a symmetrical twin intake system and straight intake port to help reduce intake resistance.

Weight and friction have been cut via a new piston skirt configuration—and an industry-first, hydrogen-free carbon coating—while piston side forces have been reduced by a longer connecting rod. Advanced emissions-reducing technologies include a new catalyst

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Hampton AutoBeat LLC,  
Box 33068

Bloomfield Hills, MI  
48303-3068

**Bill Hampton,  
Publisher**

(248) 540-2530  
bill@autotechdaily.com

**SUBSCRIPTIONS:**

Paula Doan  
(888) 771-6430  
paula@autotechdaily.com

**ADVERTISING:**

Dan Keelan  
(248) 455-7252  
DKeelan@cbs.com

**NEWS:**

Steve Plumb  
(610) 917-2276  
steve@autotechdaily.com

substrate with ultra-low heat mass, a "super-ignition" iridium sparkplug and fast light-off oxygen sensor control.

The new 3.5-liter engine will bow this fall in the all-new Infiniti G35, which is sold as the Nissan Skyline in Japan. The engines then will spread to other rear-drive vehicles, including the Japanese model Fuga sedan. The engines will be made at Nissan's plant in Iwaki, Japan. Annual output is expected to reach 200,000 units in fiscal 2008. Nissan has produced more than 5.5 million VQ engines since launching the powerplant in 1994.

**STUDY SHOWS WIDE DISPARITY IN HYBRID COSTS**

It will take owners of hybrid-electric vehicles in the U.S. between 2.1 and 15.5 years to recoup cost premiums for the "green" technology, depending upon which model they buy, according to Edmunds.com, the online automotive research Web site.

Its analysis assumes \$3 fuel prices, 15,000 miles of driving per year and fuel economy equal to federal estimates. Those who drive 25,000 miles per year reduce their payback period by 60%. Edmund.com's calculations also take into account average transaction prices, differences in repair and insurance costs and current tax credits offered to hybrid buyers.

The study says premiums for hybrids range from \$1,200 to \$7,000. Annual fuel savings vary from \$294 for the Ford Escape Hybrid to \$671 for the Toyota Prius.

The shortest payback of just over two years is for the Prius when its performance is compared with the Camry LE. But it would take 13.6 years to recoup costs with a Prius compared to the less expensive Corolla LE.

Of hybrid models with direct gasoline-only counterparts, the Escape has an industry-best 2.9-year breakeven point. No other hybrid pays for itself in less than 5.7 years, and five models need more than 11 years to do so. The costliest model evaluated is the hybrid version of Toyota's Highlander SUV, with a payback period of 15.5 years.

But Edmunds.com notes that the breakeven period for some hybrids may soon get longer. That's because federal tax credits phase out as unit sales of the fuel-efficient vehicles rise, thus raising the net cost of the vehicle to its owner. Thus the \$3,150 federal credit for buyers of the Prius will be cut to \$1,575 in October. The credit will be cut again in April and eliminated entirely in October 2007.

	<u>Years to Break Even</u>	
	@15,000 mi/yr	@30,000 mi/yr
2007 Saturn Vue / Vue Greenline	5.7	3.4
2007 Ford Escape XLT / Escape Hybrid	2.9	1.7
2007 Mercury Mariner / Mariner Hybrid	7.8	4.7
2006 Honda Civic EX / Civic Hybrid	6.1	3.7
2006 Honda Accord EX V6 / Accord Hybrid	11.3	6.8
2006 Toyota Corolla LE / Prius	13.6	8.2
2007 Toyota Camry LE / 2006 Prius	2.1	1.2
2007 Toyota Camry XLE / Camry Hybrid	5.8	3.5
2007 Toyota Camry LE V6 / Camry Hybrid	8.2	4.9
2006 Toyota Highlander Ltd / Highlander Hybrid	15.5	9.3
2007 Lexus RX 350 /2006 RX 400h	13.6	8.2
2006 Lexus GS 430 /2007 GS 450h	15.1	9.1