

Coming to
Your Inbox:
US Tech
Digital Version

Send us your news
releases for our:

**Atlantic
Design/MDM**
Product Preview

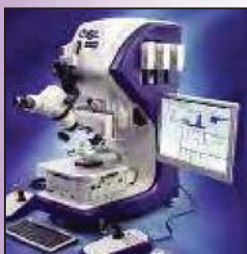


VOLUME 26 - NUMBER 5

THE NATION'S LEADING HI-TECH ELECTRONICS PUBLICATION

May, 2011

Inspection Gets Even Better



EM Products are kicked off this May issue by Nordson DAGE's new 4000Plus pad cratering inspection system, which starts on . . .

Page 22

Keeping a Lid on Quick-Turn Costs

Providing lower cost hybrid service with a simplified project launch plus a simple prototype ordering option helps customers save time and money at Screaming Circuits.

Page 18

Special Focus on Components and Distribution

Several different views on the hit taken by the supply chain in Japan's triple disaster, and how to keep up with business as usual in the face of mounting difficulties.

Page 50

Giving UAVs High Power, Wide Bandwidth

By Meppalli Shandas, VP Technology & Business Development, dB Control, Fremont, CA

In the late 1950s, the U.S. Air Force began planning critical missions for reconnaissance without putting military personnel in the line of fire. That marked the beginning of the era of unmanned aerial vehicles (UAVs).

Today, the Air Force has a fleet of 250 UAVs, and USAF Chief of Staff

Gen. Norton A. Schwarz is projecting that number to increase to 450 or more over the next several years. As threats to national security elevate, long-range UAVs are vital to military operations because they can remain in the air for up to 35 hours at altitudes of more than 65,000 feet while being controlled from a secure base.

In addition to defense, UAVs are used for disaster management, wildfire detection, law enforcement and pollution monitoring. In fact, the USAF Global Hawk was used to acquire images of damaged nuclear reactors in the aftermath of Japan's recent earthquake and tsunami.

Besides not needing a pilot onboard, UAVs are valued for their

Continued on page 8



The MQ-9 Reaper can remain in the air for 35 hours at altitudes of more than 65,000 feet.

IPC Back to Schaumburg, ATE Moves to McCormick

Chicago, IL — Canon Communications has decided to move its multi-headed Midwest extravaganza from Rosemont's Stephens Convention Center to Chicago's McCormick Place for the September 2011 event. This move came after the IPC obtained an annulment to its brief marriage with Canon's show, having decided to move IPC Midwest 2011 back to the Schaumburg Renaissance, where it will hold forth on Wednesday and Thursday, September 21 and 22, overlapping the shows in Chicago.

Only about one in every four exhibitors at IPC APEX questioned by *U.S. Tech* knew about the change.

The reasoning behind the move: McCormick Place is an "ideal" type of hall — it's a perfect square, making access much easier for both exhibitors and attendees. The Stephens Center in Rosemont, while in a great location, is noted for having a hodgepodge, tacked-on layout, with many nooks, crannies, and remote corners where exhibitors could often become "lost" and rarely found by attendees. Add to this the fact that downtown Chicago's union rules were expected to change to benefit exhibitors, and it looked like a win-win situation. That is, until a judge ruled against the new rules, and costs went back to square one. But by then, it was too late for Canon to change back.

NIST: Smart Grid Standard Gets Closer

Gaithersburg, MD — Is a "smart" electric grid finally going to become a reality? It's beginning to look that way, since the governing board of the public-private Smart Grid Interoperability Panel (SGIP) has voted in favor of a new standard and a set of guidelines — standards that have been much needed and missing until now.

The documents address the need for wireless communications among grid-connected devices as well as the ability to upgrade household electricity meters as the Smart Grid evolves.

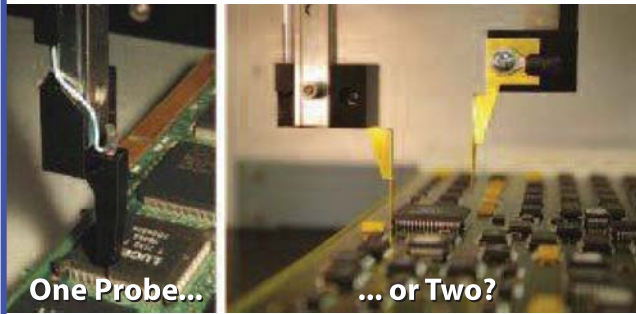
The SGIP identified "Guidelines for Assessing Wireless Communications for Smart Grid Applications" and "Meter Upgradeability Standard" as critical needs for realizing an energy-efficient, modern power grid with seamlessly interoperable parts. They are now among 17 other standards development projects called "Priority Action Plans," or PAPs.

The National Institute of Standards and Technology (NIST) created the SGIP, a group of public and private organizations, to coordinate

Continued on page 6



Huntron's Transmogrification

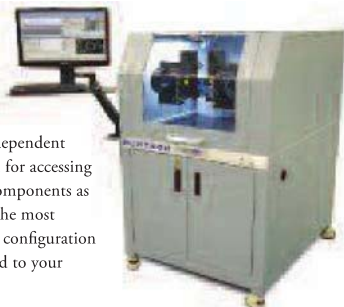


trans-mogri-fi-cation (trns-mgr-f-kshn) n.
tr.v. trans-mog-ri-fy, trans-mog-ri-fied, trans-mog-ri-fy-ing, trans-mog-ri-fies
To change into a different shape or form, especially one that is fantastic or unique.
[Origin unknown.]

The NEW Huntron Access DH

Huntron is proud to introduce our fourth generation Robotic Prober - the Huntron Access DH. The dual head Access DH Prober has an open architecture design that allows you to automate Huntron Tracker® ASA technology or other main line test instruments.

Huntron Access Prober DH is a fixtureless platform designed for economical, automated testing of CCAs. The open architecture platform combined with two independent heads provides a flexible solution for accessing densely packed surface-mount components as well as through-hole devices on the most complex boards. The probe head configuration is designed to be easily configured to your test requirements.



Huntron Access DH

True Point-to-point Testing



The Access DH can be used with traditional Huntron Tracker products or be configured to work with conventional test instruments (oscilloscopes, spectrum analyzers, LCR meter, etc.) and specialized test cards such as Boundary Scan. The Access DH design allows for a plug and play approach to automating manual guided probe applications.

Applications -

- Huntron Power-off ASA
- RF Near Field Signature Analysis
- Boundary Scan
- Guided Probe Measurements
- Point-to-point Component Measurements
- Stimulus/Response Measurements
- Multiple Probe Arrays
- and more...

Adaptable by Design

The ability to customize the Access DH probe head assemblies combined with software created using the Huntron Workstation SDK provides many integration and customization opportunities.

The probe head design includes pre-wired interconnections for adding built-in USB, Firewire or Ethernet instrumentation at the head.



Huntron's transmogrification, 34 years and counting...

Call or click, 800-426-9265 or www.huntron.com.

HUNTRON
Access Explore Discover

UAV Power / Bandwidth

Continued from page 1

ability to transmit near real-time, full-motion images of objects on the ground using Synthetic Aperture Radar (SAR) systems like the Lynx SAR/GMTI onboard General Atomics Aeronautical Systems' MQ-9 Reaper (originally the Predator B) UAV. To transmit accurate images from these platforms, the radar systems need a reliable, efficient source for high power that is also compact and light-weight.

Compact, High-Power

When specifying an amplifier that can achieve high power without adding weight or real estate, the first solution that comes to mind might be a solid-state device because it is smaller and lighter than a traveling wave tube (TWT) amplifier. But even the most impressive gallium nitride (GaN), silicon LDMOS, or GaAs RF power transistors produce at most just over one kilowatt of peak RF power, and then only at comparatively low frequencies. Although some solid-state devices have achieved a wide frequency range of 2 to 18GHz, their output power maxes out at about 20 Watts. In comparison, TWTAs have no problem meeting requirements for high microwave frequencies of up to 100GHz and very high power levels over a broad bandwidth.

When both size and weight of the high-power components is a concern, the ideal solution is to exploit the inherent advantages of both solid-state and tube technologies by specifying a microwave power module (MPM). An MPM contains small, high-power amplifier components in a common form factor that operate from low-voltage DC power supplies. It uses a solid-state driver amplifier based on MMICs or discrete RF power transistors to drive a mini-TWT. With RF outputs up to about 300Watts CW or 2kW pulsed, and at frequencies as high as 50GHz, high-power MPMs are used extensively in ECM, radar, and communication systems.

MPMs manufactured by dB Control power the radar systems onboard several UAVs, such as the Lynx SAR/GMTI radar system

onboard the MQ-9. The reliable high power amplifier enables the UAV to transmit accurate, near real-time, full-motion images of objects on the ground, with resolutions as fine as 4-in. (101.6mm). These images can be captured from an altitude of 6 miles (9.65km) above, in total darkness, through clouds and rain. Equipped with advanced sensors and cameras, the UAV can detect a moving person from 32,000 feet (9753m) above ground.

Hi-Freq R&D Program

DARPA, the Defense Advanced Research Projects Agency of the U.S. Department of Defense responsible for the development of new military technology, has a high-frequency integrated vacuum electronics program (hiFIVE) focused on the development of a 5 to 220GHz, 50-Watt high-power component with greater than 5 percent efficiency. A first-stage MMIC driver circuit is integrated into the overall amplifier, along with cathode, electron-beam, interaction and collection structures. Since these structures are incredibly tiny, the device will be produced using microfabrication technologies such as reactive ion etching, along with advances in material, device, and circuit technologies. This high-power component is predicted to be able to operate without degradation for more than 100 hours in a high-bandwidth tactical communications link and provide a throughput comparable to optical fiber — a very appealing feature for tomorrow's extremely small unmanned aircraft. Considering the intense R&D being invested to extend power levels and frequency range while reducing the size and weight of high-power amplifiers, it's safe to assume that even as the electronic warfare and commercial environments change, high-power components will be able to adapt. Powerful TWT amplifiers and compact MPMs will continue to meet these needs for decades to come.

Contact: dB Control, 1120 Auburn Street, Fremont, CA 94538
☎ 510-656-2325 fax: 510-656-3214
Web: www.dBControl.com □



One link to every link!

Throughout every *U.S. Tech* issue are advertisements, product news releases, and other information items important to the electronics manufacturing industry.

Nearly all these items conclude with a [www](http://www.us-tech.com) link for more information. In our new page-turning DIGITAL EDITION, all the links are **HOT**.

So all the information, including additional web-loaded information, is available at your fingertips.

Subscribe Today!
www.us-tech.com