

# WHAT'S NEW AT DAYTON 2009

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An expansion of the material presented in July 2009 *QST*; page 61

## HF Transceivers

### AMSAT/TAPR

Collaboration between AMSAT and TAPR has made available new modules for their progressive High Performance Software Defined Radio (HPSDR) project. The new modules include the Mercury, a high speed direct sampling front end, the LPU power regulator board and the Pandora custom enclosure kit. All hardware and firmware is open source allowing modification by the experimenter. The modules operate via PC control using a special version of *PowerSDR* software. With the modules currently available, the setup can operate as a 1/2 W high performance transceiver from dc to 60 MHz.



AMSAT/TAPR HPSDR

### FlexRadio

FlexRadio Systems has added a new model to their line of high-performance software defined radios. The new Flex-3000 HF and 6 meter transceiver is a compact 100 W transceiver nicely sized to pair with a laptop PC. This makes a great combination for travel or a compact home setup. The '3000 shares the software and performance of the larger Flex-5000, but doesn't have the cabinet capacity to be expanded with accessories such as a second receiver. For more information see [www.flex-radio.com](http://www.flex-radio.com)

In addition to new hardware, FlexRadio Systems has developed a new more visually appealing version of their *PowerSDR* radio operating software.



FlexRadio 3000

FlexRadio 3000 open



FlexRadio *PowerSDR* radio operating software

### ICOM

ICOM introduced their new IC-7600 HF and 6 meter transceiver, a radio that brings a number of enhancements borrowed from the very successful up-market IC-7700 and '7800. The IC-7600 uses the virtual meter that stunned us on the '7700 and '7800. In addition, it offers improved near-in dynamic range through the use of three roofing filters, the narrowest at a width of 3 kHz.



ICOM IC-7600



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## VHF Base or Mobile Transceivers

### Elecraft

Elecraft announced a new 2 meter transverter module, the K144XV, shown on the bottom edge of the photo. This 10 W output transceiver fits entirely within the K3 HF and 6 meter transceiver, on top of the optional second receiver. The K144XV covers the full 144-148 MHz frequency range supporting all operating modes. If the K3 includes the optional second receiver, the K3 can simultaneously monitor a local 2 meter repeater while operating on HF. With the K144XV installed, the K3 becomes a 160 to 2 meter all mode transceiver.



Elecraft K144XV

### ICOM

ICOM unveiled a new D-STAR capable 50 W dual band transceiver, the ID-880H. It has a removable faceplate to allow easy mobile mounting and offers wide-band receive including WFM and AM in addition to transmitting on the 2 meter and 70 cm bands.

ICOM ID-880H



### Yaesu

Yaesu announced two new 2 meter mobile FM transceivers. The FT-1900R is a rugged 55 W single band set with 3 W of audio output, while the FT-2900R ups the ante to 75 W of RF output. For those who want 2 meter and 70 cm capability, Yaesu offers the new FT-7900R that provides 50 W output on 2 meters and 45 W on 70 cm, and it has a removable front panel.

Yaesu FT-1900R



Yaesu FT-2900R



Yaesu FT-7900R

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## VHF Handheld Transceivers

### Alinco

Alinco introduced its new tri-band handheld transceiver. The DJ-G7 covers the 144, 430 and 1200 MHz bands with up to 5 W out on the lower bands and 1 W on 1200 MHz. The wideband receiver covers from 530 kHz to 1299 MHz, with the usual exclusions.



Alinco DJ-G7



ICOM IC-80AD

### ICOM

ICOM unveiled a new D-STAR ready dual band handheld transceiver, the IC-80AD. It is designed to work together in networks with the new dual-band ID-880H D-STAR capable mobile or base transceiver.

### Yaesu

Yaesu introduced two new handhelds. The FT-270 is a 5 W, 2 meter transceiver that is submersible to 3 feet for 30 minutes and is said to be built to commercial standards. The FT-250R



Yaesu hand held transceivers



is also a 5 W, 2 meter transceiver that has the display screen on top of the unit, rather than in the middle of one side.

## HF Power Amplifiers

### ACOM/Array Solutions

Array Solutions is now offering the ACOM power amplifier line and has introduced the ACOM 2000A automatic self tuning HF linear amplifier. The amplifier puts out 1500 W PEP or continuous carrier on all bands with 60 W drive from 160 through 10 meters. It will automatically select antennas and tune those with an SWR less than 3:1.

### Alpha Radio Products

Alpha Radio Products unveiled a new legal limit HF amplifier, the Alpha 8410. This amplifier is rated for 1500 W output with 50 to 55 W drive and covers 160 to 10 meters. This manually tuned amplifier uses an enhanced version RF deck based on the earlier Alpha 99 and features two 4CX1000 tetrodes. The 8410 also includes vacuum relay full break-in (QSK), extensive fault protection, improved screen grid regulation and provision for remote monitoring and performance data logging via USB and serial ports.

### Ameritron

Ameritron was showing off their new ALS-1300 HF linear amplifier. This unit, big brother to the ALS-600, provides 1200 W output using FET devices in a no-tune configuration covering 160 through 10 meters. It operates from 50 V dc, available from the companion power supply shown.

### Command Technologies/Palstar

Command Technologies has been acquired by Palstar, manufacturer of antenna tuners, RF test equipment and a compact HF communications receiver. They now offer two redesigned and improved versions of the Commander HF-2500 legal limit HF linear that use a pair of Eimac 3CPX800A7 ceramic metal triodes. Both achieve 1500 W continuous carrier output with nominal 50 W of drive on 80 through 10 meters. In addition, they offer the Commander VHF-1200 for 6 meter operators that delivers 1200 W PEP, 700 W continuous carrier output with 40 W or less drive and the Commander II 2 meter, 1000 W SSB linear. The redesigned RF deck of the 2 meter amplifier is shown to the right.



ACOM 2000A

Alpha AP8410



ALPHA RADIO PRODUCTS



Ameritron ALS 1300



Command Technologies HF-2500



Palstar 2 meter RF deck

# Antennas and Antenna Components

## DX Engineering

DX Engineering announced a number of new antennas including a traditional hexagonal five band Yagi, the HEXX BEAM.

They have expanded their tilt-over vertical antenna line to include full-size units for both 80/75 and 160 meters. For those using their popular 43 foot verticals, or those from other manufacturers, they now offer an integrated remote tuner assembly that mounts at the antenna base. The DXE-MBVE-1-3ATP includes the 43 foot antenna, an MFJ-927, 200 W IntelliTuner, power injector, a feed line current choke and all required mounting hardware. The components are also available separately.



DXE Tuner

## LUSO Tower

LUSO Tower introduced a line of heavy duty power tilt over crank-up towers. These massive hot-dip galvanized towers are offered in a range of sizes, starting with a raised height of 72 feet.

LUSO tower



## Palstar

Palstar introduced a new manual antenna tuner, the AT5Kplus. This tuner, adapted from a special order automatic government model, is rated at 4500 W from 1.8 to 52 MHz.

## SteppIR Antennas

SteppIR Antennas introduced a pair of their adjustable length Yagis with enhanced performance on 30 and 40 meters. The Dream Beam 18 series adapts a 49 foot 30/40 meter folded element dipole into two or three element Yagis, providing gain on 40 through 6 meters. One version, the Dream Beam 18, has two elements on 30 and 40 meters (three on higher bands), while the other, the Dream Beam 18E, offers three elements on 30 through 6 meters and two elements on 40. Both have a boom length of 18 feet.

Also announced is an 80/75 meter rotatable dipole option that can be added to either the Dream Beam or their MonstIR Yagi. This dipole is positioned above the boom, is relay switched into service, and uses the end elements for capacity hat loading.



Palstar AT5Kplus

## Ten-Tec

Ten-Tec showed off the latest version of its TT-238 series antenna tuner. The '238-C has a newly designed front panel offering improved metering. Included is a dual-needle wattmeter simultaneously showing forward and reflected power along with selectable peak power reading capability.

Ten-Tec TT-238C





## Accessories

### Array Solutions

Array Solutions introduced a number of new products including an enhancement to their single port vector network analyzer. The new VNA is a two-port device. Port A, by itself, works in a manner similar to a one port, or antenna, analyzer. The added port allows measurement of transfer function through devices such as filters or amplifiers. The provided software provides swept display of amplitude and phase in a linear display, or impedance in a Smith chart format.

The dynamic range is 100 dB to 50 MHz and 80 dB to the top of its operating range, 160 MHz.

Array Solutions also introduced an  $8 \times 2$  matrix coax switch. This switch allows any of up to eight antennas or other loads to be switched to either of two radios.



Array Solutions VNA



Array Solutions coax switch.

### Elecraft

Elecraft introduced a new wattmeter, the W2. This unit operates with up to two remote sensors, available optimized for HF through 54 MHz at 200 and 2000 W levels or for 144 to 450 MHz at 200 W maximum. The W2 is available fully assembled, or as a no-soldering semi-kit. It provides power and SWR readings including peak or peak hold measurements. Control features are provided to allow disabling an amplifier, for example, if normal measurements are exceeded.



Elecraft W2 wattmeter

### Heil Sound

Heil Sound introduced the Quiet Phone Pro, a headset that utilizes active noise canceling circuitry. As its microphones listen to the outside ambient noise, as well as the receiver audio, out-of-phase background noises are said to be greatly reduced, particularly at frequencies below 400 Hz. Blower noise, jet engine noise, outside car traffic, ambient room noise or the TV in the next room, will all be reduced below the level of the audio fed from the operator's receiver.

The headset offers a selection of optional microphone boom assemblies. Removing the small rubber plug above the ON/OFF switch exposes a brass insert that allows attaching one of five available boom assemblies with different mic elements.



Heil Quiet Phone Pro

### Helios Electric

Helios Electric offers a self-contained solar back-up power system available through Array Solutions. This modular unit includes solar panels, charge controller, storage batteries and an inverter. It is expandable by adding solar panels — starting with two panels at 380 W capacity. It can be tied into a commercial powered system for backup service, or used as a stand-alone unit at portable or emergency locations. In addition to 120 V/60 Hz, 12 V dc can be made available for battery type loads.



Helios solar power back-up

## MFJ

MFJ may have had a record number of new products to show at Dayton this year. Some we thought might be of special interest are listed here.

The MFJ-706 is a portable enclosure that turns an ICOM IC-706 into an emergency communications center. By putting an IC-706 series radio into the box, you end up with 100 W SSB or CW HF transmitter by plugging its power cord into a vehicle cigarette lighter socket or a light-duty 10 to 15 A, 12 V dc power supply. The unit delivers the required peak power through the use of several Farads of capacitance built in to the box. The enclosure also includes a built in, full range automatic antenna tuner that can be used with antennas as simple as a random piece of wire. An optional antenna mount provides the ability to screw on a loaded whip for long range HF communication or VHF/UHF antenna for local links. A compartment stows the microphone and other small accessories so you are always ready for emergencies or vacation trips. Versions for other similarly sized radios will be released in the future.

The MFJ-828 digital SWR/wattmeter includes all of the features of the MFJ-826B 1.8-60 MHz, 1500 W digital SWR/wattmeter /frequency counter, with an added lighted cross-needle SWR/wattmeter and amplifier bypass control.

In addition, MFJ introduced an automatic version of its giant SWR/wattmeter, the MFJ-868, radial plates — the MFJ-2815 (stainless) and a stainless steel license plate bracket antenna mount, the MFJ-2820.

## Vibroplex

Vibroplex introduced a new light weight version of its Code Warrior iambic key. This unit provides a full size platform, however. With its highly polished aluminum base, it is significantly lighter than the standard Code Warrior, making it convenient for portable operation.

## West Mountain Radio

West Mountain Radio has added some variations to their RIGrunner dc power distribution systems, including new models for 24 and 48 V systems. Other new offerings include:

The TOUCHkeyer Model P1, an electronic touch keyer that has non-moving paddles that respond to a finger touch. The keyer speed can be adjusted from 5 to 50 WPM. There's a built-in sidetone for listening or practice, an output for your own speaker and connections for traditional paddles. The keyer can be powered from your station's 13.8 V dc supply, or you can install a 9 V internal battery.

New Voice Shaper software for their RIGblaster pro allows operators with a modern computer to adjust the frequency response of their transmit audio to suit band conditions or voice characteristics.

The PWRguard voltage monitoring system protects a radio, power supply and battery from damage due to high or low voltage. It is inserted between a power source and the radio load. It switches off if the voltage rises above 15 V or drops below 11.5. It switches up to 40 A using an FET rather than a relay. The unit can be set to switch back automatically, or it can wait for the operator's command. The photo shows the PWRguard installed between a PWRgate charge controller/UPS and a newly announced RIGrunner version, the 4008H, designed for horizontal mounting with eight connectors on the side rather than the top. A five terminal version, the 4005H, is also available.

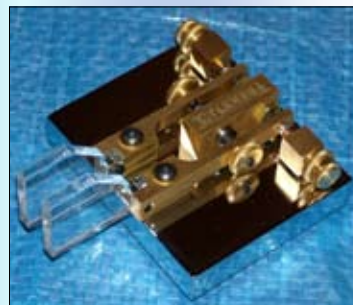


MFJ 706

MFJ ENTERPRISES



MFJ 828

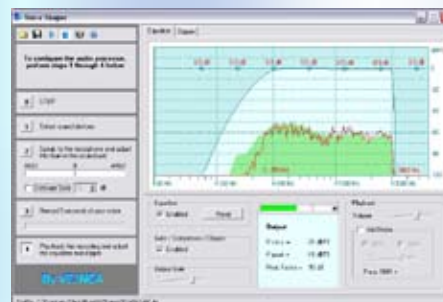


Vibroplex Code Warrior Light



West Mountain P1

WEST MOUNTAIN RADIO



West Mountain Voice Shaper

WEST MOUNTAIN RADIO



West Mountain PWRguard