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FIELD REPORT



Audemat-Aztec Goldeneagle FM/HD

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In the beginning there was analog. It was easy. There were plenty of choices for monitoring, with modulation monitors and AM/FM tuners being standard fare. Then HD Radio came along and turned the way we think about signal monitoring upside down.

With HD Radio, stations at minimum need to monitor the main channel audio. In the good old days we accomplished that by connecting an HD Radio car receiver to a power supply. Done.

Not quite. Now there's multicasting, PAD and

an optional spectrum analyzer board that turns the GEHD into a capable spectrum analyzer for monitoring occupied bandwidth and the analog-to-digital ratio.

Down to business

Out of the box, it is obvious that this is a serious piece of hardware. It's essentially a rack-mount computer with a small touch screen on the front. Setup is straightforward; there is a picture of the backplane with a diagram to show where each cable is connected. To get started, most people will simply plug in a network cable and connect the antenna.

That's about the only real easy part to it. No slight intended, but a new user needs to understand that, like a TDR or spectrum analyzer, this is a piece of high-end test equipment that in experienced hands is a powerful tool.

There is a quick start setup guide, but I strongly suggest that a user read the entire manual before diving in. This box is very complex and does a lot of things.

Once the system is booted (it runs on Linux), the home screen is displayed. The first time the system is booted, this screen will be blank except for a menu bar at the bottom of the screen. Once configured, stations to be monitored appear as

Performance at a glance

Monitors analog and digital

Notifications via e-mail, voice interface or contact closure

Displays MPS, PSD and RBDS

Optional spectrum analyzer

Embedded Web server and software for remote monitoring

Balanced analog and digital audio outputs

funny initials like DAAI and QI that tell volumes about the signal. The big question is how to acquire all of that data.

I've had the Goldeneagle HD (GEHD) for quite a while now—it fills my need for a monitor that not only monitors analog parameters, but many HD Radio parameters as well.

The stock model monitors analog and HD Radio FM signals in real-time. The receiver can be configured to scan from one to several preset stations, and log any number of parameters. Additionally, thresholds can be set for each parameter of each station and alarms can be sent via e-mail, SNMP traps or even phone calls. There is also

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green or red buttons that show at a glance if there are any alarm conditions on any monitored station.

One operational aspect of potential confusion is the setup. Some setup can be done using the touch screen itself, while other parts are configured using the included Java application, and still more items need the Web interface. No one single interface does everything. I would like to see this changed to eliminate confusion in the setup. To the company's credit, a table is included that shows which interface does what.

There are a few ways to set up stations to monitor. The first way is to enter them one-by-one. Enter the frequency, name and which parameters to monitor. There are too many parameters to list here, but here are some highlights:

- Analog parameters: analog signal level, modulation, pilot level, RBDS injection level and filtered audio level
- Digital signal parameters: HD Radio signal level, quality index, PAD, and audio level on main and sub-channels

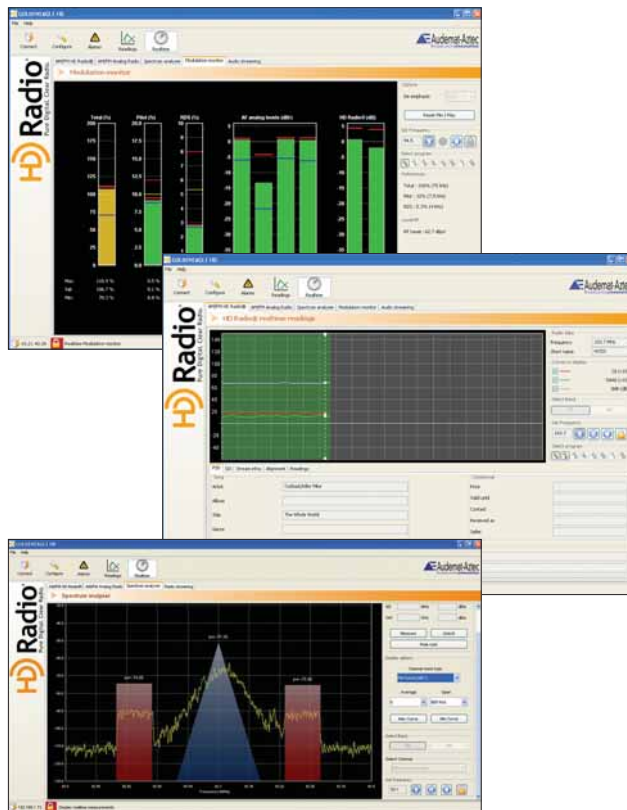
Another way to set monitored stations is to run a market scan. Press the scan button and the tuner will scan the band and log what it finds. Then click the stations that you want and add them to the monitor list.

Once a station is added to the list it is possible to set up what is monitored, the alarm threshold for each parameter, and whether or not notification should be sent on an alarm. It's important to note that alarms can be set to have a delay before alarm and an intermittent delay where an alarm will be sent if a condition crosses a threshold several times.

Beyond the market

Market monitoring is only one use for the GEHD. The second is actual transmission monitoring. Connecting an RF sample to the unit makes the GEHD a powerful piece of test equipment.

A modulation screen shows total modulation, pilot level, RBDS level, L+R, L-R, L, R and digital L and R all on one bar graph-filled screen. In addition, with the spectrum analyzer option, occupied bandwidth can be checked. At a glance, the NRSC mask can be viewed and digital and analog carriers and ratios can be verified. While this requires an RF sample



The GEHD screens, top to bottom: mod monitor, signal acquisition, spectrum analyzer.

to be accurate, it works as a quick confidence check when attached to an external antenna.

The unit has a built-in streaming server so a station can be monitored in real-time in analog, digital or split-mode (analog left/digital right) to check time-alignment.

A quick word about support: I had initial difficulties getting support through the Audemat-Aztec website. I would leave a message using the contact us form and never hear anything back. I finally tracked down Tony Peterle and I was assured that the company is going to take care of the problem. E-mails sent directly to Peterle were answered very quickly.

It's certainly not your father's modulation monitor. 

Tarr is the director of engineering for Entercom's radio stations in Milwaukee and Madison, WI.

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