



## Audemat-Aztec FMB80

By Jeff Littlejohn

The Audemat FMB80 is a feature-rich RBDS generator that is fully compliant with the CENELEC EN50067 standard and the RBDS standard. It comes in a 1RU package. In addition to the basic features found in almost any RBDS generator, the FMB80 includes a few functions that make it unique.

The first such feature is communications with the device. Connections are made via serial through the front panel connector or via IP/10base-T Ethernet through an RJ-45

name), TA (traffic announce), TP (traffic program), AF (alternate frequency), RBDS output level and output phase. Once everything is set, press the update button and the settings take effect immediately.

The generator's RBDS signal is digitally synthesized so no calibration is required. Only the level needs to be set. However, you may want to synchronize the RBDS frequency with the frequency of the station's stereo pilot. This is accomplished automatically by connecting an MPX sample to the MPX In/Sync connection. For additional control, the specific phase relationship between the two subcarriers can be set in six-degree increments.

The functionality of the generator is determined in firmware, which can be flashed via FTP. I used this capability to update the firmware on the unit a couple of times as features

were added. With this sort of flexibility, there's no reason to worry about getting stuck with out-of-date equipment.

### Top marks

The most unique function of the FMB80 is the ability to scroll PS messages automatically. One limiting function of the RBDS standard has been the size of the display. With only eight characters to display, it's tough to use for more than displaying call letters. While radio text allows for a message of as many as 64 characters in length, most car radios will not display radio text. Audemat has solved this problem by allowing a longer mes-

### Performance at a glance

- Easy set up via internal Web server
- Can be used to generate scrolling PS
- Synthesized RBDS generator
- No calibration required
- Automatic synchronization with stereo pilot
- Firmware updates available

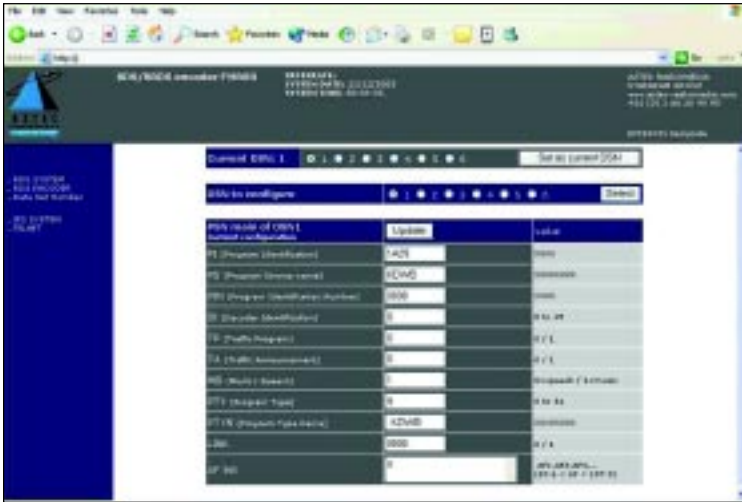
connector. Telnet, TCP/IP, FTP, HTTP, SNMP and SMTP are all supported.

Using the serial connection, the user can connect to the device with HyperTerminal. While all of the device's functionality can be reached in this manner, it is typically used only to set up the IP address. The preferred way to communicate with the Audemat FMB80 is via IP, using either Telnet or the built-in Web server.

The basic setup and adjustment was simple. With a Web browser, I was able to easily make changes by inputting settings and options into a Web form. Settings include PS (program service name), RT (radio text), PI (program identifier), PTY (program type), PTYN (program type



Figure 1. Scrolling is simulated by transmitting strings of text in shifted sets. The string above would display "BEATLES - LET IT BE."



The FMB80 setup screen provides access to all the operating parameters.

sage to be stored in the generator, then dynamically updating the eight-character PS setting every few seconds to provide a pseudo-scrolling functionality.

Clear Channel is using this feature in its top 50 markets to display the title and artist of the current song across the RBDS display. Both the speed of the update and the number of characters that are indexed can be set. Through some experimentation, we found that a three-character index and a two-second refresh rate worked best. For example, if the song being played conveyed the text "BEATLES - LET IT BE," the radio would display the title by shifting the text by three letters every two seconds. While this works well, some people complained that the updating was too jumpy. Audemat has since updated the firmware so that scrolling PS can recognize words and more intelligently update the display. With the new firmware, this

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same song would display "BEATLES," then "LET IT," then "BE" as shown in Figure 1.

The device did have a few shortcomings. First, the internal Web interface tended to lock up and needed to be reset. This reset could be accomplished remotely via Telnet, but it was an extra step that shouldn't have been necessary. However, I'm told it has recently been fixed with a Web server update. Secondly, there

are no front-panel controls. Everything, including the output level, requires a computer to be adjusted. This may be problematic if your toolkit does not include a laptop computer. All things considered, I am impressed with the quality, functionality and features of the Audemat FMB80.

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