



Audemat-Aztec FMX480

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We are embarking on a complete upgrade to our 15-year-old analog facilities in preparation to transmit an HD Radio signal. Part of this work is preparing the artist and song data to be transmitted. Station management and programming requested the ability to scroll song titles and artists, along with call sign identification for our country station, KSON-FM. We also needed to convert our composite digital STL to one that would accommodate an AES digital stream as well as the RBDS data. I have always preferred to have the audio processing at the studios, so to accomplish the task I needed a stereo generator and RBDS encoder at the transmitter site. These

input to our exciter. We are not using the other features of the device at this time.

When we first received the unit, we elected to operate it on the bench for two weeks, while observing the output on a Tektronix 2710 spectrum analyzer. We downloaded the upgraded software and installed it while the unit was running to see if it would cause any glitches in the audio while processing the new data. It ran flawlessly. Setup and programming of the RBDS and stereo generator functions was straightforward, though somewhat complicated. The manual is 125 pages and full of information. Certain functions and input commands are highlighted in yellow to indicate critical information. There is a front-panel display to select various programming functions and parameters of the unit, but you really must use a serial port from your computer to properly program the device. You



Performance at a glance

- Clear, well written manual
- Easy to set up and program
- Multi-function device in 1RU
- Good factory support
- Easy access to input/output connections
- Attractive design

needed to accept the AES signal being sent from the studios. In speaking with other engineers and vendors, the FMX480 was highly recommended as the solution to the problem.

The FMX480 is a 1RU device that includes an RBDS encoder, DARC encoder, stereo generator, multiplex optimizer and multiplex limiter. It will accept analog left and right audio as well as an AES digital stream. We feed the AES output of our STL directly into the digital input of the FMX480, along with the serial data stream from our DAD-Pro32 storage and playback system. The FMX480 generates the stereo composite signal and encodes the RBDS data for the

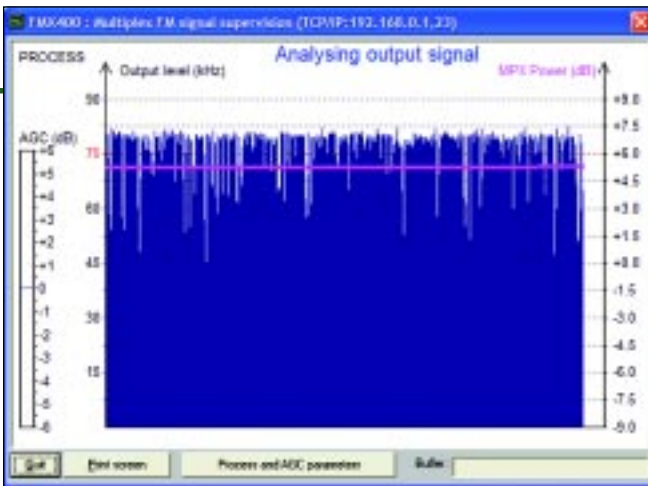
can do this with a direct connection to the unit, as well as through full remote access via its embedded Web server supported by TCP/IP/Telnet and FTP. The manual provides good and clear details on the various programming functions, as well as instructions on interfacing your automation to provide scrolling data. Along with the thorough manual comes quick setup instructions to get you started.

When programming the scrolling data, you have the option of running eight characters at a time for a predetermined period of delay, or of running whole word text so that one full word (up to eight characters) will appear at a time. We chose the latter. Typically, you'll see something to the effect of "The (scroll) Dance (scroll) by (scroll) Garth (scroll) Brooks (scroll) on KSON." This presents a nice, clean image for the listener to see on his receiver.

In operation


Audemat-Aztec uses kilohertz deviation when referring to injection levels as opposed to percentages. This takes a little getting used to, but is simple once you grasp the concept. For instance, pilot injection is referenced as being deviated at 6.8kHz, which equals 9 percent injection level. All levels are referenced in this manner, and are easily adjustable to match your system.

One of the best features of the device is an active graphical representation of total and average modulation when connected to a PC or laptop. The display is much like a spectrum analyzer working in real time, but it shows peaks and averages as the audio moves across the screen.



of finger room to get to the various input and output connectors. The rear panel includes a ground post for a solid connection, which is a nice feature.

Factory support has not been an issue, as we had no problems with the programming or installation of the unit. I was contacted by the company almost immediately on receipt of the unit with updated software and suggestions for use of the eight digital inputs for remote control and e-mail alarm functions using the embedded SMPT server. The updated software allows the word scrolling to be programmed.

The FMX480 has proven to be an excellent solution to getting the AES stream on the air for KSON-FM, while allowing the audio processing to remain at the studio location. The artist and title scrolling works beautifully. I look forward to using this system on our other three FMs in the San Diego market. 

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This is certainly useful for comparing against the readings shown on your modulation monitor, as well as for adjusting your audio processing.

Having pre-programmed and observed the unit in operation on the bench, installation was simple. Plug it in, make the connections and adjust the levels. That was it. The stereo field is excellent in listening tests. I haven't made measurements yet, but my ears tell me that it's good.

Serviceability is an issue in that it is such a complex device contained in such a small package, that a component failure would most likely involve the replacement of the troublesome board, or return for repair. Our unit has operated flawlessly since installation, but I have backup systems in place.

Ins and outs

It is an attractive unit aesthetically. The front panel design is clean and uncluttered, and the rear panel offers plenty

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Originally appeared in the August 2004 issue of Radio magazine.

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