

KHAI Puts Multidyne TS12 to the Test

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HONOLULU

I have been a transmission engineer on a fair share of television remotes and field productions, and I have spent a lot of overnight shifts working on TV transmitters.

It seems there is always a need for a handy Video/Audio test source that is never available when and where you need it. Often, a test signal is jury rigged from whatever piece of gear is handy.

EYE CATCHER

At NAB '92, however, my eye was caught by the Multidyne Electronics TS12 test signal generator, a hand-held, battery operated model.

The TS12 can be carried anywhere on remote with no difficulty. It is smoothly designed and rugged, with no toggle switches or other projections that could get broken by a casual toss into an equipment pile or cable box. Even the BNC output connectors are recessed into the case and protected by the case rim.

The case itself is made of rugged steel and extruded aluminum and can stand up to having a large, heavy piece of equipment accidentally set on top of it.

Inside, the TS12 is a masterpiece of solid-state engineering and efficiency, from the fly-back switching DC-to-DC power supply to the VLSI programmable gate array ICs that generate the test signals to RS-170A standards. It is well-built with a minimum of components, all high quality.

Some test generators will give you one or two video signals, and a single audio tone for continuity and level checks. The TS12 has enough signals to test and troubleshoot a stereo broadcast television system.

Stereo audio outputs are available at 400 Hz, 1 kHz, and 8 kHz, allowing spot-checks of a pre-emphasis curve response. The right channel has a 1 Hz click to identify it in the pair.

12 SELECTIONS

The video test output has twelve selections available, including the standard SMPTE color bars, FCC multiburst, modulated stairs, NTC-7 composite, NTC-7 combination, red field, crosshatch, pulse and bar, multipulse, 5 MHz line sweep, sin x/x, and others.

However, there was one signal missing from the original design. I have spent many nights at the transmitter trying to do a power-meter calibration with the FCC required sync-

and-blanking only waveform modulation to measure the RMS power on a wattmeter. Obtaining this waveform sometimes required unusual hookups from the station sync generator, or using the output of a 3/4-inch U-matic machine with no tape loaded.



Multidyne's TS12 signal generator in hand-held and rack-mount versions

I contacted Multidyne and explained the need for the sync and blanking only signal for transmitter power calibrations. Multidyne's engineers believe it can be programmed into the TS12 without too much trouble, and they have agreed to produce a unit for my evaluation.

The TS12 also provides another service for an overnight transmitter engineer: station identifications. The unit has 16 separate message pages, each with two lines of 16 characters, that can be superimposed with a black background strip or no background. The character generator messages have battery-backed memory to store them when the unit is turned off.

For a mini-remote, the TS12 supplies a separate black burst signal in addition to the test video. It can easily function as a portable sync generator or genlock source for a small system and still provide selectable test signals.

As for stability, the TS12 does not include an ultra-stable ovenized reference, but I found that the crystal oscillator may be trimmed to exactly match the station subcarrier reference. The test set at room temperatures will easily keep the subcarrier frequency within the required 10 Hz for broadcast.

For field production, stability is not a problem. For systems using an automated test set, such as the Tektronix VM700, the TS12 may be ordered with a VITS option that will put test signals on the vertical interval lines.

Although I have not yet worked with the latest version of the TS12, I understand Multidyne has added a number of features, not the least of which is that it is now capable of 12-hour operation on only four AA batteries. In addition, lip-sync audio and video sync signals have been added, as have three frequen-

cies of stereo audio tone with mic and line levels and a vertical interval ID. A rack-mount version is also available.

The TS12 is remarkably inexpensive for any class of test set. In fact, I purchased one for my own personal test gear.

The TS12 offers a lot of bang for the buck, and it gets carried along with my tools and remote kit whether I go to the transmitter or out on a microwave remote. It is rugged, and gives me an instant black source, video, ID, and audio where I need it. ■

Editor's note: Henry Kaul is an SBE certified senior TV engineer with more than 20 years of experience in radio and television.

The opinions expressed above are the author's alone. For further information on the TS12, contact James Jachetta at Multidyne (Phone: 516-671-7278; FAX: 516-671-3362).

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