

How to Buy Test Equipment

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Test and measurement equipment is critical to quality control and the ability to pinpoint issues that threaten both the integrity of the on-air product, as well as the broadcaster's compliance with industry guidelines and regulations. In working with video, for example, test and measurement systems can determine whether or not closed captioning is present and accurate within video. In managing audio signals, test and measurement can confirm, for instance, that the phase between a pair of channels is correct, that surround sound is placed correctly, or that audio levels fall within new guidelines for loudness control.

Across all applications and digital broadcast facilities, the need to deal with metadata has made test and measurement a more complicated undertaking. Broadcasters must not only be able to see and hear all variety of signals coming through their facilities, but also find a way to look at the metadata — contained within the signal — describing that media. Furthermore, in the face of a challenging economic climate, broadcasters must invest in cost-effective systems that offer broad utility in helping to maintain compliance with accepted industry standards. As a result, the first feature to look for in new test equipment is its ability to accept any type of signal, whether AES, SDI, or analog, with the flexibility to port in different signal types.

Robust input support allows test equipment to be deployed throughout the broadcast chain, rather than remain locked in a closet. As a result, a single device can be relied upon to test signals throughout the facility. The integration of logging functions into the test system further simplifies operations, enabling the broadcaster to deploy an unattended monitor and, when time and resources allow, go back and analyze, identify, and resolve issues with the stream. Test systems that are configured to match internationally accepted standards are essential in that the data they generate have meaning outside the broadcast facility and that their readings or measurements can be compared effectively against recommendations or specific industry targets.

Ease of use is another key factor within broadcast operations, as it adds time savings (and much-appreciated convenience) to use of test equipment and other systems. Local access to device control allows operators to walk up to a unit and work with it directly, rather than needing to log onto a computer and navigate menus via a mouse. The design of the system's user interface also contributes to convenience, facilitating fast configuration and making it easier for operators to evaluate and/or confirm specific parameters or metadata.

As broadcast standards continue to evolve, a system intended for long-term use should support easy updates through a firmware port. Modular test and monitoring systems offer broadcasters a straightforward solution for getting just the right functionality now and, going forward, for extending the value of equipment with the addition of new capabilities.

While good design enables ease of use, it also facilitates deployment of test equipment across the facility or even in the field. Robust design and rugged construction — including high immunity to variations in power, temperature, and humidity — in a compact and lightweight box enable incorporation of test equipment into mobile crash carts that can be moved easily around a facility or even taken on the road.

High integration, among the foremost advances demonstrated by today's test equipment, brings much greater versatility to the testing of streams throughout the facility. Whereas a complete test and measurement system might once have required six pieces of equipment, solutions today provide broadcasters with a single box and single interface for looking at all associated video and audio levels, as well as any metadata associated with video or audio. The inclusion of features such as waveform monitors and vectorscopes further consolidates monitoring capabilities and improves value by reducing the cost, complexity, and clumsiness of earlier solutions.

Virtually every digital broadcaster today works with multiple digital streams, and the proper selection of test equipment for monitoring these streams can streamline an otherwise difficult task. By investing in the right mix of feature and capabilities, ensuring the GUI will be easy for staff to learn, and examining the durability and reliability of the test system, the broadcaster can make a smart investment in test equipment that serves the entire facility and its operations.