

Powerful and favorably priced test transmitter for use in manufacturing

Breathtaking: It is small in size and fail-safe, consumes minimum power, provides high signal quality for all relevant broadcasting standards and is favorably priced. These key features enable the new R&S®SFE100 to set new standards in manufacturing environments.

R&S®SFE100: developed for use in centralized transmitter room systems

Manufacturing facilities for panels, LCD TVs or mobile TV receivers and their components include several production lines. These production lines are run in parallel to produce devices for handling different TV and sound broadcasting

standards, as required. As this involves multiple test signals for different transmission standards on various frequencies and different contents, a central multisignal generation system is often more economical than a solution consisting of standalone instruments. Signal generators required for such systems are normally accommodated in a centralized transmitter room system. All RF output signals are combined in



FIG 1 Minimum space requirements and low power consumption — just two of the benefits that make the R&S®SFE100 test transmitter indispensable in manufacturing.



a coupling network and distributed to the individual test stations in the factory via cable, sometimes over considerable distances. And this is the very environment for which the R&S®SFE100 test transmitter (FIG 1) was developed.

Quality, efficiency and reliability in manufacturing

Available in various models, the R&S®SFE100 single-standard test transmitter covers all relevant analog and digital TV and sound broadcasting standards. Owing to the transmitter's intelligent implementation, the latest standards such as DTMB — the new Chinese terrestrial transmission standard — can easily be covered. Other models for handling DVB-SH and CMMB are currently being prepared. The R&S®SFE100's very good RF characteristics with regard to frequency range, output power, phase noise and dynamic range are reflected by a modulation error ratio (MER) of >40 dB, which is excellent in this class.

A further unique advantage is the compact design of the R&S®SFE100: Besides the RF modulator, a baseband generator and a 0.5 W power amplifier are accommodated in a cabinet that takes up only one height unit. Still, the overall power consumption of 70 W is surprisingly low, and it is only 100 W if a built-in power amplifier is included. Comparable products often require six or more height units in a 19" rack because they are designed as standalone instrument solutions to handle baseband generation, modulation and amplification. Their overall power consumption is two to three times greater than that of the Rohde&Schwarz solution.

As the number of RF channels in such centralized transmitter room systems typically amounts to several dozen, adequate air conditioning is a must. The higher the dissipated power of the instruments, the more powerful the air-conditioning system must be, thus driving up costs considerably. The R&S®SFE100 helps the customer rein in these costs: Owing to its low power consumption and reduced cooling requirements, it offers a lower cost of ownership than feasible with existing solutions. Considering the long life of the overall system, the R&S®SFE100 quickly pays for itself.

Just as versatile in the baseband

Rohde&Schwarz offers transport stream libraries for its baseband generators to meet the requirements of various standards. Each generator comes with a factory-installed base library to cover the most common standards. Moreover, libraries for HDTV, H.264, ISDB-T, DVB-H and ATV are available. The list of supported standards is really impressive: Analog standards such as PAL, NTSC and SECAM as well as digital standards such as MPEG-2, H.264 (MPEG-4/AVC), (HE-)AAC and Dolby AC-3 are covered. And since user-specific test scenarios often vary widely, transport streams can of course be adapted correspondingly.

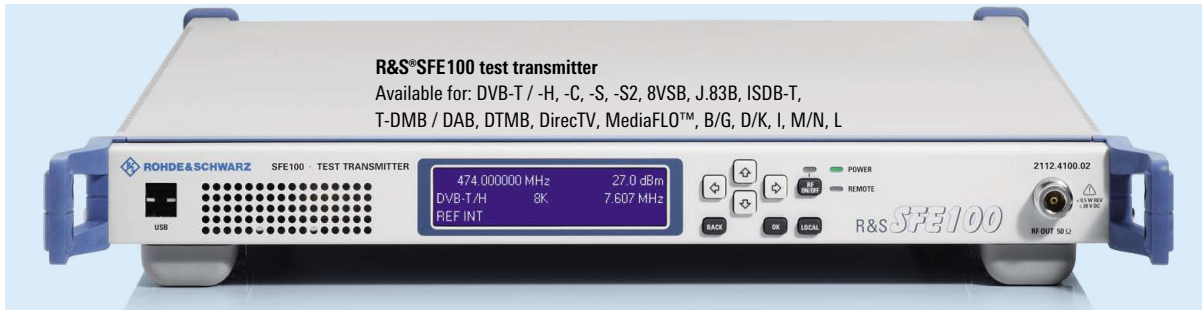
System solutions from a single source

The seamless integration of all instruments into the overall system is crucial for smooth and trouble-free manufacturing. Rohde&Schwarz customers have a distinct advantage here: They obtain instruments and system solutions from a single source (FIG 2). The Rohde&Schwarz sales and service network, which covers virtually the entire world, provides fast and reliable support that includes consulting, integration and service.

The compact passive solutions for coupling networks from Rohde&Schwarz help ensure low-loss signal combination while providing high signal quality in manufacturing environments — harmonics, intermodulation and interference



System configuration

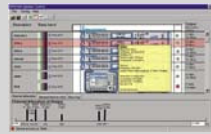


User-specific baseband signals and control software

Test patterns and live video

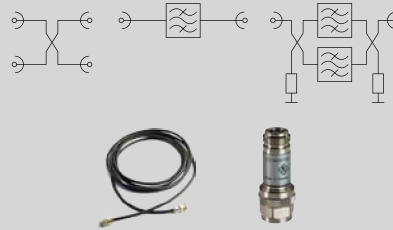


Remote control and configuration



Components for coupling networks

Couplers, filters, racks, cables, connectors, matched loads, etc.



Redundancy solution

Spare instrument: R&S®SFE with corresponding options
Optional: service contract

FIG 2 Rohde&Schwarz offers and installs turnkey centralized transmitter room systems from a single source.

signals pose no problem at all. Another crucial asset in manufacturing is that the overall system can be quickly reconfigured to meet constantly changing requirements. Reliable configuration management is also indispensable for comparing the quality of finished components and instruments over extended periods of time by using T&M tools. All this is handled by the system's integrated control software, which stands alongside the already remarkable remote control features offered by the R&S®SFE100.

Summary: strong trio in broadcast testing

As far as quality and performance are concerned, the R&S®SFU broadcast test system has been unrivaled in research and development for four years. Manufacturers of TV receivers and components therefore regard it as a de facto standard. At the end of 2007, the R&S®SFU's little brother was introduced — the R&S®SFE, a multistandard generator at an attractive price. Now, the new R&S®SFE100 test transmitter is joining the two instruments to form a strong and powerful trio. Specifically designed for use in manufacturing, the R&S®SFE100 offers a level of performance and efficiency never before seen in this field.

Harald Gsödl