

Economy Signal Generator SME03E – Universal signal source for digital mobile radio



Economy Signal Generator SME03E and SME-K2 Windows application software for generation of TDMA bursts

The newly launched Economy Signal Generator SME03E (FIG) from Rohde & Schwarz offers everything you want from a signal source for digital mobile radio: it generates all kinds of standard signals used in today's digital mobile networks and the whole range of analog signals as well. And all this for unrivalled price/performance.

The only differences between SME03E and the other members of its family – SME02 to 1.5 GHz, SME03 to 3.0 GHz and SME06 to 6.0 GHz – are that it has no list mode, which is only required for highly specialized applications, and that its frequency range is limited to 2.2 GHz. Consequently a particularly favourably priced model has been created that is exactly tailor-made for most applications. Typical uses of SME03E are in production and development of digital radio mobiles, base stations and paging receivers, and propagation measurements in mobile-radio networks. SME03E can be remotely controlled on an IEC/IEEE bus, so it is easily integrated into automatic production environments.

A particular benefit for the user is the wide range of options available for individual configuration of SME. On the one hand the customer only has to pay for functions he really needs, on the other the generator is absolutely future-safe, as new features can be

added at any time. The underlying concept of the options was chosen such that SME can be upgraded to a universal generator for digital modulation but also for analog applications.

All types of digital modulation are ready integrated in the basic model of the generator, and the most important mobile radiocommunications standards are covered by its frequency range 5 kHz to 2.2 GHz. What makes SME03E a class of its own is its high spectral purity, which is indispensable for high-grade receiver measurements. The generator's favourable price in no way entails any trade-offs with regard to key performance data, and this makes it stand out clearly when compared to competing products. Other unique characteristics are its highly accurate level and excellent RF shielding, which make for precise sensitivity measurements.

SME03E offers the digital modulation types GMSK, GFSK, $\pi/4$ DQPSK, 4FSK and FSK/FFSK, which enable measurements to the digital standards GSM, DCS1800/1900, NADC and PDC as well as TETS, TETRA and paging standards ERMES, POCSAG and FLEX. Generation of standard TDMA bursts as stipulated by GSM and DECT, for instance, is made possible by a pulse modulator with the required dynamic range.

The analog characteristics of SME03E are just as excellent. The generator comes with AM as standard, while an FM/ ϕ M modulator is available as an option. Further options are the pulse modulator mentioned above and a pulse generator for radar applications as well as an AF generator to 500 kHz for sinusoidal, rectangular, triangular and noise signals. In addition to the signals generated by the AF generator, the optional multifunction generator provides stereo multiplex signals and VOR/ILS modulation signals to 1 MHz and enables use of SME03E as a high-grade test transmitter for FM stereo and navigation receivers.

Although highly complex measurements can be performed with SME03E, it is nevertheless surprisingly simple to operate. The settings for each function are grouped in a mask on the large LCD, while help text is available at a keystroke. Operation is further simplified by the SME-K1 and SME-K2 software tools (see p 32 of this issue), which support generation of data signals in compliance with major mobile-radio standards.

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