

## Test signals with analog and digital modulation for vehicle information systems

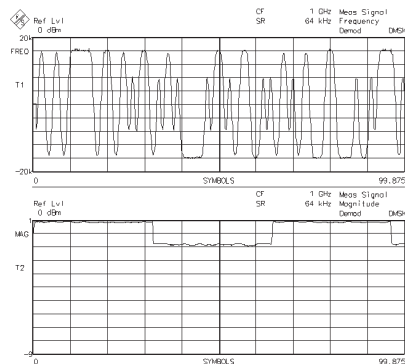
With more and more cars on the road, intelligent traffic control and management systems are gaining in importance in keeping the traffic flow going, especially in cities and on highways. The first, large-area system for complete traffic management was introduced in Tokyo and its surrounding areas in 1996 under the name VICS (vehicle information and communication system). VICS collects traffic information (for instance about traffic jams, road blocks or car park occupancy) in an area of about 500 km<sup>2</sup>, processes these data in a control center and passes the information on to the car drivers via microwave transmitters, infrared transmitters and VHF FM sound broadcasting. In

the cars, the data are processed by a navigation system and indicated on a display.

**Signal Generator SME03** with its versatile digital and analog modulation characteristics is an ideal source for the development and production of VICS components – in particular microwave transmitters and receivers. The microwave transmitters operate at a frequency of about 2.5 GHz. The data supplied by VICS are GMSK-modulated onto the carrier with a data rate of 64 kbit/s. This digital modulation is superimposed by analog amplitude modulation (modulation index 10%, modulation frequency 1 kHz), which is analyzed for position determination. The test signal on the right shows the frequency deviation and the amplitude of the modulated carrier signal versus time as furnished by SME03. SME03 fully satisfies the exacting requirements of VICS regarding modulation quality and synchronization of analog and digital modulation.

Mathias Leutiger

## Test hint



Reader service card 154/08

