



Version
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System devices

- ◆ Switch units for RF and IF signal distribution
- ◆ GSM communication unit for GSM-based data and voice communications
- ◆ GPS receiver with reference frequency generator
- ◆ Station monitoring unit for monitoring of remote stations
- ◆ Antenna control units for rotator control plus RF and IF signal distribution



Modern radiomonitoring systems primarily consist of “large” equipment such as antennas, receivers or direction finders. To combine these individual components into an effective system, “little helpers” known as system devices are needed. A typical task for these devices is to ensure that always the antenna with the appropriate frequency range and polarization is switched to the receiver input.

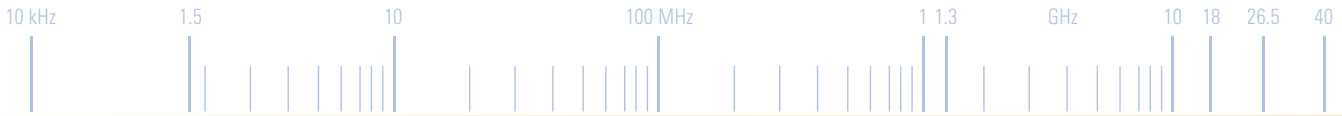
If a measurement requires that a directional antenna be brought into a precisely defined position, system devices ensure that the antenna is aligned exactly as needed in all three degrees of freedom (azimuth, polarization and height). This is necessary, for example, when performing measurements on analog TV transmitters. The corresponding ITU guideline recommends that the antenna be 10 m above ground, that it has the correct polarization and that it points exactly in the direction of the transmitter.

Knowing the exact equipment position is especially important with mobile and transportable measurement systems. Such cases also call for the use of system devices that – by implementing GPS – not only provide the exact position but in addition supply an extremely precise reference frequency.

If systems are to be operated by remote control, an appropriate communications link is required. The wireless transfer of data and audio via GSM is made possible by the system devices.

In the case of unattended, remote-controlled stations, it is important for a control center to know the exact status of the remote station. This is achieved by using system devices that monitor a large number of sensors of different types. These sensors can signal information such as temperature, humidity, smoke emission, the opening of doors and windows, and the detection of motion. If a sensor detects that a user-defined threshold has been exceeded, an alarm is automatically and immediately sent to the control center.

Although these units were originally developed for use in radiomonitoring systems, they can be used for any application. In principle, any receiving antenna can be switched in the frequency range from DC to 3 GHz (or 26.5 GHz with a special option) regardless of the purpose it is being used for. Even GSM communications systems for audio and data transmission can be used for a wide variety of applications. If necessary, several modules can then be used to increase the available data rate through channel banding and integrated into a transport- and weather-proof box. Station-monitoring units are not only able to monitor the state of measurement stations – their flexibility also permits a wealth of different types of sensors to be integrated.



Switch Units R&S® ZS 129x

The Switch Unit Family R&S® ZS 129x is a cost-effective and reliable approach to RF and IF signal distribution. Its flexible concept allows adaptation to system requirements by adding optional extensions.

The family covers the following models:

- ◆ R&S® ZS 129A1
- ◆ R&S® ZS 129A2
- ◆ R&S® ZS 129A5

The R&S® ZS 129A1 has been designed as an indoor RF and IF switch unit for stationary, transportable and mobile systems. The standard models are available with 1-out-of-6 switch to 1-out-of-12 switch.

The Switch Unit R&S® ZS 129A2 has been designed as an outdoor unit for mounting on top of masts close to receiving antennas. The length of the RF cables between the antennas and the switch unit can be minimized, and only one RF cable and one control cable need to be routed to the equipment inside the station.

The configurable R&S® ZS 129A5 is ideal for a wide variety of indoor RF and IF switching applications. Its flexible concept allows adaptation to system requirements by adding optional modules. The unit is of modular design. Various switches, power splitters and DC feeds can be integrated into an empty prefabricated enclosure to meet specific requirements.



GSM Communication Unit R&S® GC 128

The GSM Communication Unit R&S® GC 128 is the ideal solution for wireless TCP/IP-based communication links between monitoring or RF measurement systems.

- ◆ Data rate 9.6 kbit/s per GSM channel
- ◆ Up to two additional GSM modules available for multilink
- ◆ Further optional GSM module for use as telephone
- ◆ Operable with GSM 900 and GSM 1800
- ◆ Minimum interference with RF measurement equipment in vehicles, permitting simultaneous RF measurement and GSM transmission
- ◆ Ideal for transportable or mobile RF measurement and radiomonitoring systems
- ◆ Wide power supply range from 9 V to 30 V DC

GPS Receiver R&S® GPS 129

- ◆ GPS receiver and reference frequency generator combined in a single unit
- ◆ High precision due to GPS-based operation
- ◆ Compact design: 19" rackmount with just one height unit for integration into system racks
- ◆ Suitable for stationary, transportable and mobile applications
- ◆ Available with AC or DC power supply
- ◆ Remote-controlled operation for optimum integration into monitoring systems, especially Spectrum Monitoring and Management System R&S® ARGUS-IT or Coverage Measurement System R&S® ARGUS-FMTV





Station Monitoring Unit R&S® SA 129

The R&S® SA 129 provides extensive capabilities for the supervision of remote stations.

Various sensors are available for monitoring temperature, relative humidity, smoke detection and power supply as well as the opening of windows or doors. The sensor messages are automatically transmitted to the station monitoring unit in the central station and output to an LCD display or printer or displayed by an optical or acoustic signal.

The monitoring units in the remote station and the central station can be connected via analog telephone lines (model R&S® SA 129) or a local area network (LAN) (models R&S® SA 129C and R&S® SA 129R).

Another application of the R&S® SA 129 involves reinitializing a remote-controlled system by interrupting the power supply, the system process controller being shut down beforehand to prevent data loss.

The status of the remote stations can also be retrieved via an Internet browser. After connection to the R&S® SA 129C, the information about all remote stations is displayed in a very user-friendly way.

Antenna Control Units R&S® GB 127x

The family of Antenna Control Units R&S® GB 127x is a cost-effective and reliable solution for controlling antenna rotators and distributing RF and IF signals. Its flexible concept allows adaptation to system requirements by adding optional extensions.

The R&S® GB 127x family offers the following outstanding features:

- ◆ Suitable for stationary and mobile applications
- ◆ Tried and tested in various systems
- ◆ Compact design
- ◆ Split concept for stationary applications with remote Rotator Control Unit R&S® RD 127 mounted close to the antennas, thus minimizing cabling
- ◆ Manual operation and remote control for optimum hardware and software interworking
- ◆ Additional outputs for controlling additional switch units via the same control interface
- ◆ Antenna controllable in all three degrees of freedom (azimuth, polarization and height)





Ordering information

Designation	Type	Order No.
Switch Unit (for indoor use, control via USB, RS-232-C or TTL interface and manual operation)	R&S®ZS 129A1	
1-out-of-12, DC to 3 GHz		3026.3012.02
1-out-of-6, DC to 3 GHz		3026.3012.06
1-out-of-8, DC to 3 GHz		3026.3012.08
1-out-of-12, DC to 3 GHz, unused inputs terminated into 50 Ω		3026.3012.12
1-out-of-6, DC to 3 GHz, unused inputs terminated into 50 Ω		3026.3012.16
1-out-of-8, DC to 3 GHz, unused inputs terminated into 50 Ω		3026.3012.18
2-out-of-2, DC to 3 GHz		3026.3012.22
Switch Unit (for outdoor use, control via R&S®ZS 129A1, R&S®GB 127S or R&S®GB 127M)	R&S®ZS 129A2	3023.2015.02
1-out-of-8, DC to 3 GHz, with one DC feed		
Base module of configurable Switch Unit (for indoor use, control via R&S®ZS 129A1, R&S®GB 127S or R&S®GB 127M)	R&S®ZS 129A5	3023.2515.05
Communication Unit for data transfer via one GSM/GPRS 900/1800 link	R&S®GC 128	3027.8518.02
GPS Receiver with reference frequency generator (including GPS antenna)	R&S®GPS 129	
100 V to 240 V AC operation		3026.1010.02
19 V to 35 V DC operation		3026.1010.04
Station Monitoring Unit	R&S®SA 129	3024.4011.02
	R&S®SA 129C	3029.9511.02
	R&S®SA 129R	3030.0266.02
Antenna Control Unit (for indoor use, control via RS-232-C interface and manual operation)		
With external rotator control	R&S®GB 127S	3022.2011.02
With integrated rotator control	R&S®GB 127M	3022.2511.02

For detailed information, see related data sheets and technical information.



More information at
www.rohde-schwarz.com
(search term: ZS129, GC128, GPS129,
SA129, GB127x)



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