



Version
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R&S® ASDU02 Antenna Signal Distribution Unit

Active multicoupler for antenna signal distribution in the HF and VHF/UHF band with maximum dynamic range

- ◆ HF module from 10 kHz to 30 MHz
- ◆ VHF/UHF module from 20 MHz to 3 GHz
- ◆ 1-to-4 distribution in each module
- ◆ Combination of max. two modules in robust 19" enclosure of 1 HU
- ◆ Amplifier with wide dynamic range
- ◆ High port-to-port isolation
- ◆ BITE option

Brief description and overview of functionalities

At a glance

The R&S®ASDU02 is a multicoupler for distributing signals from one antenna to multiple receivers. The built-in broadband amplifiers have a wide dynamic range over the entire frequency range. Protective circuits at the inputs prevent damage, such as caused by overvoltage.



Combination of max. two modules in robust 19" enclosure of 1 HU

The stable enclosure of the R&S®ASDU02 accommodates up to two coupler modules. Its low height (only 1 HU) allows space-saving integration of the R&S®ASDU02 in a rack.

Functionalities

Modules in the HF and VHF/UHF bands

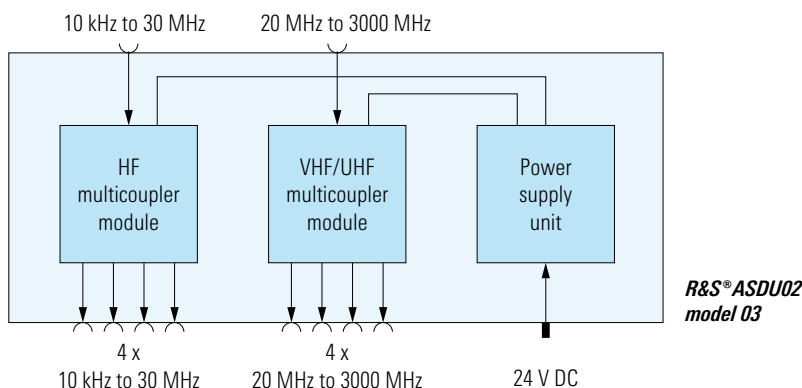
To create optimal receiving conditions for the specific application, two multicoupler modules have been developed for the R&S®ASDU02. They are optimized for use in their specific frequency band:

- ◆ HF module, frequency range from 10 kHz to 30 MHz
- ◆ VHF/UHF module, frequency range from 20 MHz to 3 GHz

1-to-4 distribution in each module

Each multicoupler module first amplifies the signal at the antenna input by using broadband low-noise amplifiers with wide dynamic range. As a result, the distributed input signal is made available at the four outputs of the multicoupler module without any loss in level.

All inputs and outputs are provided with N female connectors.



The R&S®ASDU02 comes in various models with different voltage supply capabilities. It is possible to combine the HF and VHF/UHF modules and also add the BITE option.

Amplifiers with wide dynamic range

The amplifiers in the multicoupler modules have an extremely wide dynamic range. This makes it possible to linearly amplify even extremely weak signals whose frequencies are close to signals with extremely strong levels. The R&S®ASDU02 is therefore ideal for use in radiomonitoring applications.

High port-to-port isolation

To prevent the connected receivers from mutually influencing each other (e.g. via local oscillators, synthesizers), the multicoupler modules of the R&S®ASDU02 feature very high port-to-port isolation.

BITE option

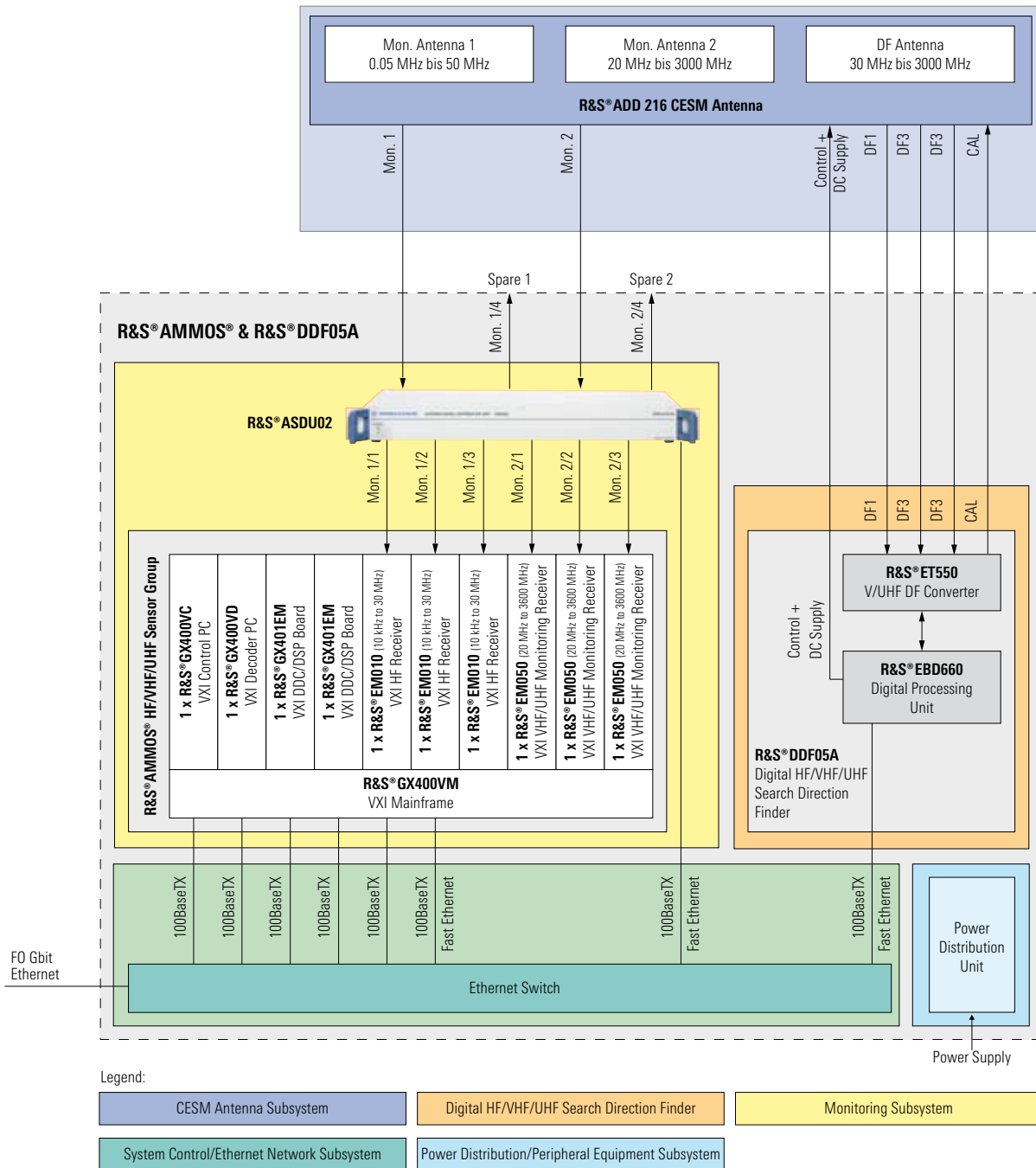
The BITE option allows the hardware status of the R&S®ASDU02 to be monitored. For this purpose, all internal voltages in the multicoupler modules and the power supply unit are measured. As an additional highlight, the operating points of the broadband amplifiers are monitored. The measurement results of the BITE option are output on the rear of the device at one Ethernet interface (TCP/IP) per module.

Protection

The input of the R&S®ASDU02 is protected against overvoltages (caused, for example, by a lightning strike to the antenna).

Applications

The R&S®ASDU02 is ideal for antenna signal distribution in all radiomonitoring systems from Rohde&Schwarz. The figure below is an example of a radiomonitoring system that is based on an R&S®AMMOS sensor group and a digital HF/VHF/UHF search direction finder.



Rear view of the R&S®ASDU02

Specifications in brief

Module-specific data

HF multicoupler module		
Frequency range		0.01 MHz to 30 MHz
Impedance	input/output	50 Ω
Connectors		
Antenna	1 \times input	N female
Receiver	4 \times output	N female
Gain	$f > 0.025$ MHz	3.0 dB \pm 2.5 dB
Noise figure		<8.0 dB, typ. 7 dB
Second-order intercept point IP2 (output)	$f > 1$ MHz	>+67 dBm, typ. +75 dBm
Third-order intercept point IP3 (output)	$f > 1$ MHz	>+35 dBm, typ. +43 dBm
1 dB compression		>+18 dBm, typ. +22 dBm
Decoupling between two outputs	$f > 1$ MHz	+26 dB, typ. 30 dB
Decoupling between output and input	$f > 1$ MHz	+30 dB, typ. 35 dB
Max. input level (CW)		+20 dBm
Protective circuit at signal input		0.5 kV in line with EN 61000-4-5

Slight variation of performance features at frequencies below 500 kHz.

VHF/UHF multicoupler module		
Frequency range		20 MHz to 3000 MHz
Impedance	input/output	50 Ω
Connectors		
Antenna	1 \times input	N female
Receiver	4 \times output	N female
Gain		3.0 dB \pm 2.5 dB
Noise figure		<8.5 dB, typ. 7.5 dB
Second-order intercept point IP2 (output)	20 MHz to 1 GHz	>+45 dBm, typ. +56 dBm
	1 GHz to 3 GHz	>37 dBm
Third-order intercept point IP3 (output)	typ. 1 GHz	>+21 dBm, typ. 25 dBm
	typ. 2 GHz	>+17 dBm, typ. 19 dBm
	typ. 3 GHz	>+14 dBm, typ. 15 dBm
1 dB compression		+8 dBm; typ. +10 dBm
Decoupling between two outputs		>35 dB; typ. 43 dB
Decoupling between output and input		>55 dB; typ. 65 dB
Max. input level (CW)		+20 dBm
Protective circuit at signal input		0.5 kV in line with EN 61000-4-5

Slight variation of performance features at frequencies above 1 GHz.

General data of the R&S® ASDU02

Electromagnetic compatibility	in line with EN 61326	EMC Directive 2004/108/EC
Electrical safety		in line with EN 61010 part 1
Temperature	operating temperature range	-10 °C to +55 °C
	storage temperature range	-40 °C to +70 °C
Weight	with two multicoupler modules	3 kg (6.61 lb)
Dimensions (W × H × D)		482,6 mm × 44,45 mm × 270 mm (19", 1 HU) (19.06 in × 1.75 in × 10.63 in)
Power consumption		22 W
Input voltage		24 V DC ±3 V DC
DC voltage connector		XLR
MTBF		>60 000 h
MTTR		0.5 h

All values without tolerances are approximate values. Subject to change.

Ordering information

Designation	BITE-Option	Order No.
R&S® ASDU02 with 1 × HF module + 1 × V/UHF module	no	5200.6754.03
R&S® ASDU02 with 1 × HF module + 1 × V/UHF module	yes	5200.6754.04
R&S® ASDU02 with 1 × V/UHF module	no	5200.6754.10
R&S® ASDU02 with 1 × V/UHF module	yes	5200.6754.11
R&S® ASDU02 with 2 × V/UHF module	no	5200.6754.20
R&S® ASDU02 with 2 × V/UHF module	yes	5200.6754.21
R&S® ASDU02 with 1 × HF module	no	5200.6754.30
R&S® ASDU02 with 1 × HF module	yes	5200.6754.31
R&S® ASDU02 with 2 × HF module	no	5200.6754.40
R&S® ASDU02 with 2 × HF module	yes	5200.6754.41
Options for V/UHF modules		
R&S® ASDU-B1 (additional 3 dB gain)	for 1 V/UHF module	5201.7525.02
R&S® ASDU-B2 (additional 3 dB gain)	for 2 V/UHF modules	5201.7525.03
Recommended extra		
R&S® ASDU-Z1 (external power supply)	100 VAC to 240 VAC	5201.7548.00



For more information see
www.rohde-schwarz.com
(search term: ASDU02)



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