

R&S® ATCMC8

Air Traffic Control Multicoupler

Active VHF/UHF multicoupler for 8-port ATC signal distribution



75 Years of
Driving
Innovation


ROHDE & SCHWARZ

R&S®ATCMC8 Air Traffic Control Multicoupler At a glance

The R&S®ATCMC8 is a multicoupler specifically designed for ATC receivers from Rohde & Schwarz.

The R&S®ATCMC8 saves space while optimally supporting conventional ATC system installations by means of eight receivers operated in parallel on one antenna.

Alternatively, the R&S®ATCMC16 multicoupler features simultaneous signal distribution to up to 16 receivers.

The multicoupler's integrated, steep-sided filters reliably suppress interference from high-power VHF FM and TV signals.

To maximize the operational reliability of the ATC receiving system, a single point of failure is avoided in the amplifiers owing to the intelligent switching concept of the R&S®ATCMC multicoupler family. To handle any interruptions in the AC supply voltage, the R&S®ATCMC8 features automatic switchover to the DC input provided for an emergency power supply.

The internal operating state of the R&S®ATCMC8 can be monitored and evaluated by R&S®Series4200 radios via an alarm contact.

Key facts

- Suppression of adjacent signals from high-power transmitters
- Band-selective in the VHF or UHF ATC frequency range
- 1-to-8 distribution
- Automatic emergency power switchover
- Overvoltage protection
- Floating alarm contact
- Customized filter frequencies on request



R&S® ATCMC8 Air Traffic Control Multicoupler Benefits and key features

Suppression of adjacent high-power signals

The R&S®ATCMC8's integrated bandpass filtering considerably improves the reception conditions for the connected receivers. Adjacent signals such as high-power FM signals in the VHF band or TV signals in the UHF band are suppressed. To offer optimized filtering for any application, the R&S®ATCMC8 is available as either a VHF or a UHF model. The R&S®ATCMC-B1 option is offered for cases where customized filter frequencies are needed.

Available as 1-to-8 or 1-to-16 model

In ATC, the parallel operation of eight or 16 receivers on one antenna each is very common. The R&S®ATCMC multicoupler family can easily handle this challenge and is therefore available as either an 8- or 16-port model. To prevent the connected receivers from affecting each other (e.g. due to local oscillators and synthesizers), both models feature high port-to-port isolation.

Integrated automatic emergency power switchover

The R&S®ATCMC8 is ideal for operation with either AC or DC power. The integrated electronic switchover mechanism automatically detects interruptions in the AC power supply and immediately switches to the DC supply without any signal interruption. Thus, the emergency power supply systems with 24 V DC voltage that are common in ATC can be used.

Reliable protection against large signals

The integrated protective circuits at the RF input protect the R&S®ATCMC8 against large signals and reliably prevent damage to the connected receivers.

Remote monitoring through floating alarm contact

Featuring an integrated alarm contact as standard, the R&S®ATCMC multicoupler family offers impressive capabilities for the remote monitoring of the internal operating state. If a malfunction occurs, the R&S®ATCMC8 immediately switches the floating contacts of a relay in order to indicate the modified operating state. All internal supply voltages of the amplifiers are monitored. In conjunction with R&S®Series4200 radios, this alarm contact offers the capability to automatically report the operating state of the R&S®ATCMC8 to the user.



Specifications

R&S® ATCMC8 VHF		
Standard frequency range ¹⁾		112 MHz to 144 MHz
Impedance	input/output	50 Ω
RF input	1 ×	N female
VSWR	input	<1.5:1, typ. 1.2:1
VHF FM band suppression	7-pole elliptical highpass filter referenced to 127 MHz	<-25 dBr for f < 103 MHz
UHF TV band suppression	3-pole Chebyshev lowpass filter referenced to 127 MHz	<-30 dBr for 470 MHz < f < 1 GHz
Max. input power		+15 dBm
RF outputs	8 ×	N female
VSWR	output	<1.5:1, typ. 1.2:1
1 dB compression		>+15 dBm, typ. +19 dBm
Decoupling between two outputs		>27 dB, typ. 34 dB
Intermodulation suppression IP3	output	>+33 dBm, typ. +36 dBm
Gain		2 dB ± 1.5 dB
Noise figure		<7 dB, typ. 4.5 dB
Reverse decoupling		>34 dB, typ. 38 dB

R&S® ATCMC8 UHF		
Standard frequency range ¹⁾		225 MHz to 400 MHz
Impedance	input/output	50 Ω
RF input	1 ×	N female
VSWR	input	<1.5:1, typ. 1.2:1
VHF band suppression	5-pole Chebyshev highpass filter referenced to 310 MHz	<-17 dBr for f < 100 MHz
UHF band V suppression	5-pole Chebyshev lowpass filter referenced to 310 MHz	<-17 dBr for 650 MHz < f < 1 GHz
Max. input power		+15 dBm
RF outputs	8 ×	N female
VSWR	output	<1.5:1, typ. 1.2:1
1 dB compression		>+15 dBm, typ. +18 dBm
Decoupling between two outputs	directly adjacent	>23 dB, typ. 26 dB
	not directly adjacent	>23 dB, typ. 30 dB
Intermodulation suppression IP3	output	>+32 dBm, typ. +35 dBm
Gain		2 dB + 2 dB/-1.5 dB
Noise figure		<7 dB, typ. 5 dB
Reverse decoupling		>33 dB, typ. 38 dB

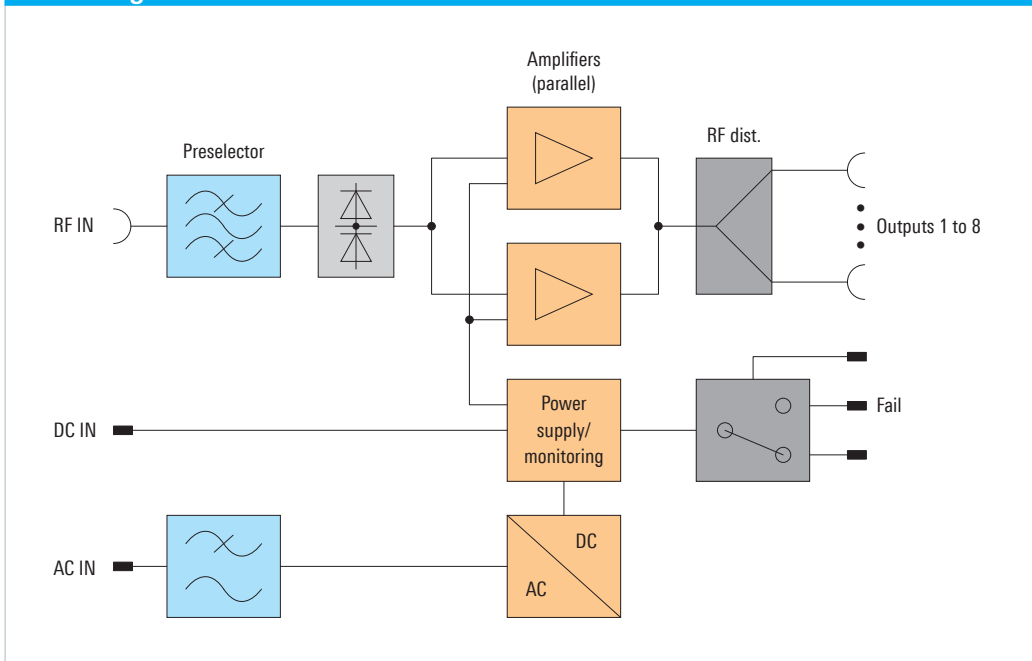
General data		
Dimensions	(W × H × D)	482.6 mm × 43.8 mm × 145 mm 19 in × 1.72 in × 5.71 in (19", 1 HU)
Temperature	operating temperature range	-20°C to +55°C
	storage temperature range	-40°C to +70°C
Weight		approx. 2.6 kg, approx. 5.73 lb
Primary power supply	AC	90 V to 250 V/50 Hz to 60 Hz; IEC connector
Energy consumption		≤8 W
Emergency power supply	DC (fully automatic switchover)	19 V to 32 V, typ. 0.3 A
Alarm contact	maximum switching current	≤1 A
	maximum switching voltage	≤42 V
Connector type	emergency power supply, alarm contacts	CA 6 GS (6+PE)
Electromagnetic compatibility		EN55011 class B and EN61326

¹⁾ Other frequency ranges on request.

Ordering information

Designation	Type	Order No.
VHF frequency range		
Air Traffic Control Multicoupler VHF, 8 outputs	R&S®ATCMC8 VHF	5201.7960.10
Air Traffic Control Multicoupler VHF, 16 outputs	R&S®ATCMC16 VHF	5201.7960.20
UHF frequency range		
Air Traffic Control Multicoupler UHF, 8 outputs	R&S®ATCMC8 UHF	5201.7990.10
Air Traffic Control Multicoupler UHF, 16 outputs	R&S®ATCMC16 UHF	5201.7990.20
Option		
Customized Filter Frequencies	R&S®ATCMC-B1	5201.7954.02

Block diagram of the R&S®ATCMC8 VHF/UHF



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- | No hidden terms

About Rohde & Schwarz

Rohde & Schwarz is an independent group of companies specializing in electronics. It is a leading supplier of solutions in the fields of test and measurement, broadcasting, radiomonitoring and radiolocation, as well as secure communications. Established 75 years ago, Rohde & Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

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Certified Quality System
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Certified Environmental System
ISO 14001
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PD 5213.9563.32 | Version 02.01 | January 2009 | R&S®ATCMC8
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*0.14 €/min within German wireline network; rates may vary in other networks (wireline and mobile) and countries.