

R&S® CMW-Z10/-Z11 RF shielding box and antenna coupler

The new standard in shielding and coupling



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ROHDE & SCHWARZ

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At a glance

The R&S®CMW-Z10 RF shielding box and the R&S®CMW-Z11 antenna coupler clearly set new standards: Offering excellent shielding effectiveness and superior coupling characteristics, both devices can be used for frequencies up to 6 GHz. These outstanding features combine with a modular options concept to make the R&S®CMW-Z10 and R&S®CMW-Z11 indispensable for any radiocommunications tester.

Modern mobile phones and PDAs usually do not have an external antenna connector. Connection to a radiocommunications tester must therefore be made over the air. The link between the device under test (DUT) and the test equipment should be reliable and path losses kept to a minimum. Interference from external radio sources should be prevented as far as possible. The R&S®CMW-Z10 RF shielding box and the high-quality R&S®CMW-Z11 antenna coupler together perfectly meet these requirements.

The R&S®CMW-Z10 shielding box is made of solid aluminum. It is firmly closed by means of a lever handle with a defined stop. The bottom and cover will not distort under normal conditions. This ensures uniform compression of the sealing cords provided around the entire box – an important prerequisite for effective RF shielding. The cover is lined with absorber material, which minimizes reflections.

The antenna structure on the R&S®CMW-Z11 antenna coupler board has been optimized to enable an excellent radio connection between the DUT and the tester. The highly broadband spiral antenna allows a wide variety of applications. Further highlights of the R&S®CMW-Z11 include low coupling attenuation and the ability to place the DUT at any desired position inside the box without affecting attenuation caused by reflection.

Key facts

- Frequency range up to 6 GHz
- Excellent shielding characteristics
- Broadband spiral antenna allowing a wide variety of applications
- Optimized antenna structure for extremely good RF coupling
- Ergonomic closing mechanism



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Benefits and key features

Large area allows optimum positioning, even for large DUTs

DUTs can be placed at virtually any position inside the RF shielding box. This means that even large DUTs, such as development PCBs, can be accommodated. It also provides ample space to position DUTs so that the coupling attenuation between the DUT and the tester is minimized.

Designed for harsh, continuous duty and ergonomic operation

The R&S®CMW-Z10 RF shielding box and the R&S®CMW-Z11 antenna coupler are designed to withstand the harsh conditions encountered in servicing. The hinges and dampers are extremely robust. The aluminum case offers high resistance to distortion, ensuring precise closing of the box over a long term. The closing mechanism has been optimized for ergonomic use. This ensures fatigue-proof handling while providing high-quality results.

Wide frequency range up to 6 GHz

Both the R&S®CMW-Z10 RF shielding box and the R&S®CMW-Z11 antenna coupler are suitable for applications up to 6 GHz. This covers all common wireless standards such as GSM, UMTS, WLAN, Bluetooth® and GPS. The R&S®CMW-Z10 RF shielding box offers high shielding effectiveness, so that the effects of external interference are reduced to a minimum. The R&S®CMW-Z110 RF cable also provides excellent shielding for frequencies above 4 GHz.

Ultra-low reflections

The cover of the R&S®CMW-Z10 RF shielding box is lined with absorber material in order to minimize reflections. Strong reflections would cause a significant variation in attenuation as a function of the DUT position. With the R&S®CMW-Z10 RF shielding box, the DUT can be positioned anywhere on the R&S®CMW-Z11 antenna coupler with virtually no effect on attenuation caused by reflection.

Modular options concept and flexible assignment of modules

The R&S®CMW-Z10 RF shielding box has four module slots for different optional modules. Available options currently include a D-Sub feedthrough (R&S®CMW-Z12), a USB feedthrough (R&S®CMW-Z13) and a twin N connector (R&S®CMW-Z14). All modules are optimized so that their effect on shielding characteristics is kept to a minimum. The module slots are identical, allowing each module to be inserted into any slot. The optional connectors can thus be flexibly assigned. It is also possible to insert customer-specific modules.

R&S®CMUgo freeware Compensating attenuation

The R&S®CMUgo freeware from Rohde & Schwarz makes it easy to measure and manage attenuation values.

When carrying out RF measurements via the air interface, it is necessary to compensate the RF attenuation between the antenna coupler and the mobile phone. Each mobile phone has a specific RF characteristic. Specific attenuation values must therefore be considered for each phone when performing RF measurements using the R&S®CMW-Z11 antenna coupler. The R&S®CMUgo software enables the easy measurement and management of attenuation values.

After a mobile phone has registered with the R&S®CMU200 system simulator, the attenuation values previously stored for this specific type of phone are automatically loaded and taken into account in the measurements. Attenuation values are technology- and frequency-dependent. The R&S®CMUgo attenuation value database therefore includes reference values for various frequencies and technologies, which are automatically set during the test run. This facilitates measurements with the RF shielding box especially in service applications. Errors are avoided, and reproducibility and throughput are enhanced.

The perfect solution for service applications: the R&S®CMW-Z10 with the R&S®CMU200 universal radio communication tester and the R&S®CMUgo test sequencer software for automated measurements.



Specifications in brief

Shielding effectiveness		
Including R&S®CMW-Z11, R&S®CMW-Z12, R&S®CMW-Z13, R&S®CMW-Z14	0.4 GHz to 4 GHz	> 80 dB
	4 GHz to 6 GHz	> 60 dB
Weight		9 kg (19.8 lb)
Outer dimensions	width × height × depth	320.9 mm × 267.5 mm × 527.7 mm (12.6 in × 10.5 in × 20.8 in)

Ordering information

Designation	Type	Order No.
Base unit		
RF Shielding Box	R&S®CMW-Z10	1204.7008.02
Options		
Antenna Coupler up to 6 GHz	R&S®CMW-Z11	1204.7108.02
D-Sub Feedthrough	R&S®CMW-Z12	1204.7208.02
USB 2.0 Feedthrough	R&S®CMW-Z13	1204.7308.02
Twin N Connector	R&S®CMW-Z14	1204.7408.02
RF Cable up to 6 GHz	R&S®CMW-Z110	1204.7608.02
Test sequencer software for R&S®CMU200	R&S®CMUgo	freeware (can be downloaded from Rohde&Schwarz website)

For data sheet, see PD 5214.0601.22 and www.rohde-schwarz.com

Your local Rohde&Schwarz expert will help you determine the optimum solution for your requirements and will be glad to provide you with a customized quotation.

To find your nearest Rohde&Schwarz representative, visit www.sales.rohde-schwarz.com

Service you can rely on

- | Worldwide
- | Local and personalized
- | Customized and flexible
- | Uncompromising quality
- | Long-term dependability

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.

Environmental commitment

- | Energy-efficient products
- | Continuous improvement in environmental sustainability
- | ISO 14001-certified environmental management system

Certified Quality System
ISO 9001

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