

R&S®CMWS: increased efficiency in wireless device production

Shorter production times and lower costs are critical as the complexity of wireless devices continues to grow. The right solution: the R&S®CMWS advanced RF switch matrix. Together with the R&S®CMW500 wideband radio communication tester, it helps to considerably boost productivity in manufacturing environments.

Reducing the test time

As more and more tests are required on wireless devices, test time must be minimized as much as possible in order to manage the costs generated in production. In terms of the required time for transmitter tests, the savings potential has already been largely exploited, although further optimization is possible with the multi-evaluation list mode option (R&S®CMW-KM012) for the R&S®CMW500 wideband radio communication tester.

It is much more productive to concentrate on receiver tests, especially on bit error ratio (BER) measurements. They can be shortened by performing the measurements simultaneously on as many devices under test (DUTs) as possible. The key is the new R&S®CMWS advanced RF switch matrix: It simultaneously distributes the test signal from the R&S®CMW500 via its 24 RF ports in non-signaling mode to up to 24 DUTs (Figs. 1 and 2).

Suitable for production: versatile and straightforward

The R&S®CMWS ideally adapts to the user's production and test run requirements. Two different RF switch boards are available as options and – depending on the actual requirements – one to a maximum of three of these units can be integrated into the switch matrix. The R&S®CMW500 directly controls the R&S®CMWS. The main benefit is straightforward operation when using all the tester's non-signaling features. Moreover, everything runs automatically and in realtime since control of the R&S®CMWS is integrated into the software of the R&S®CMW500.

Suitable for production: easy to calibrate

Mobile phone production is mass production, involving intensive use of test instruments along with space shortages and



Fig. 1 Boosting efficiency in production: the R&S®CMW500 wideband radio communication tester with the R&S®CMWS advanced RF switch matrix. The R&S®CMWS simultaneously distributes the test signal from the R&S®CMW500 via its 24 RF ports to up to 24 DUTs.

significant wear and tear on cables and adapters, which results in increased calibration requirements. The R&S®CMWS advanced RF switch matrix is ideal for this environment as it supports convenient calibration of the entire system. The paths the RF signals follow from the R&S®CMW via the R&S®CMWS and the cables to the mobile phone adapter can be calibrated individually in a frequency-dependent manner (Fig. 3). This simplifies regular use and provides the benefits of high measurement accuracy and high yield in production.

Summary

The R&S®CMWS advanced RF switch matrix helps to significantly boost the productivity of the R&S®CMW500 wide-band radio communication tester in wireless device production. Adaptation of multiple DUTs to an R&S®CMW500 using changing setups with discrete RF components or plain RF switching matrices is now a thing of the past.

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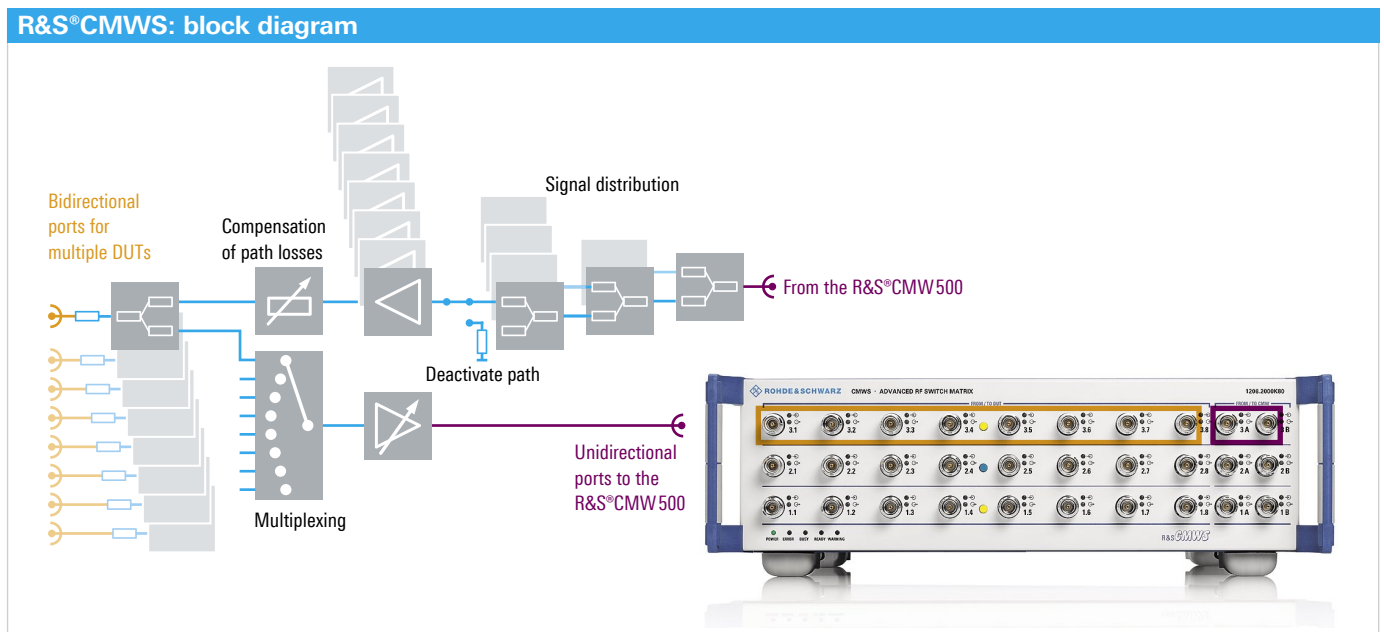


Fig. 2 Operating principle of the R&S®CMWS advanced RF switch matrix.

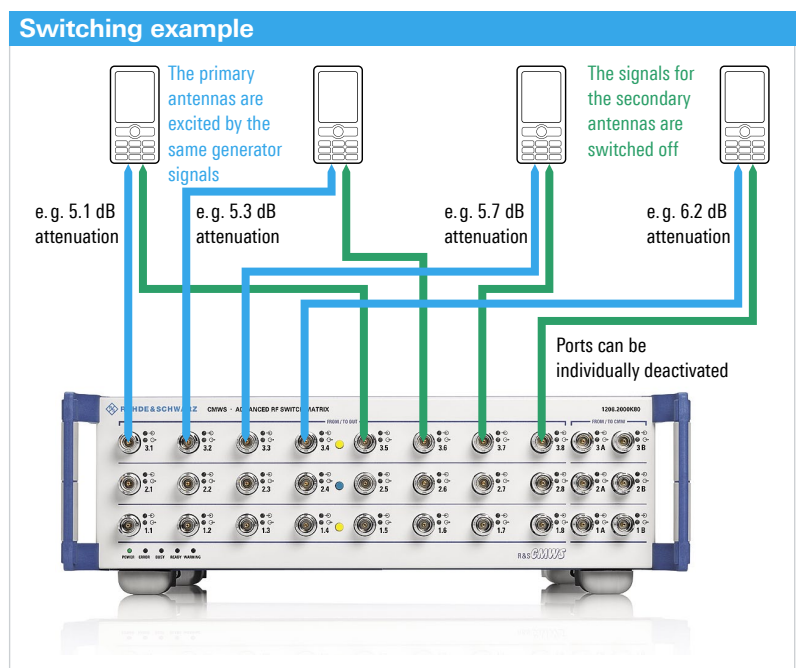


Fig. 3 Four mobile phones on one R&S®CMWS-B81A RF switch board. Path losses are individually compensated.