

Optimize the data traffic generated by IoT and mobile devices

Integrated end-to-end data solution with IP traffic analysis and protocol statistics allows detailed analysis of data traffic generated by IoT and mobile devices.



Your task

Mobile devices such as smartphones and tablets are superseding traditional desktop PCs as the primary medium for accessing the Internet. The rising popularity of third-party applications, i.e. mobile apps, contributes to the heavy increase in data volume in wireless communications networks. Soon the Internet of Things (IoT) will determine everyday life, for example through home automation, wearables and connected cars, creating additional, difficult-to-control data traffic in an operator's network.

Faulty apps on a mobile device or an incorrectly configured IoT device can produce excessive IP data traffic and drain device batteries, even when the devices are not actively used.

Users and operators experience high data volumes or rapidly discharging batteries. However, they generally cannot detect the cause. It can take the device vendor or the network operator a very long time to find the real cause of such effects.

Up to now it has not been easy to analyze the communications behavior of mobile apps and IoT devices. Analyzing IP data traffic under fully controlled non-cellular and cellular network conditions has been quite challenging.

T&M solution

Rohde & Schwarz links wireless communications testing with the IP world. The R&S®CMW500 wideband radio communication tester, in combination with the R&S®CMW-B450 data application unit and R&S®CMW-KM051 IP traffic analysis option, makes it possible to perform application-based end-to-end tests, including data traffic and protocol analysis, at the IP level.

The R&S®CMW500 is a realtime tester that supports all common mobile communications standards such as LTE and WCDMA as well as wireless connectivity standards such as WLAN. For the test, the R&S®CMW500 simulates the relevant radio network and establishes a connection with the mobile device. The integrated data application unit handles the IP configuration and provides services such as web server, file transfer server and IMS server. With the appropriate configuration and Ethernet connection, it can also access the Internet.

At the application layer, the R&S®CMW-KM051 option captures the IP data packets that are sent or received by the mobile device. The IP data packets can be assigned to individual applications. Various evaluation functions allow detailed, reliable IP analysis:

- List of active IP connections
- List of protocols used
- Data volume statistics by application
- Data volume statistics by protocol
- Trigger on IP events
- TCP throughput analysis

This makes it possible to systematically detect error sources (such as faulty app software) that are active in the background.

Use case 1

On an IoT device, a faulty software implementation that is active in the background unnoticeably produces a large amount of data that is of no added value. If many devices are using the software, the high data volume generated can have a negative impact on network utilization. The R&S®CMW-KM051 option enables network operators and IoT device vendors to analyze the data traffic generated by IoT devices.

Use case 2

A faulty app active in the background puts an excessive strain on the hardware resources, such as the mobile device's battery. From the user's perspective, the mobile device is defective. By taking the IP level and the available trigger functionality on IP events into account, the device manufacturer can use the R&S®CMW-KM051 option in combination with the R&S®RT-ZVx multichannel power probe and the R&S®CMWrun test sequencer software to examine how an app impacts battery consumption under controlled network conditions.

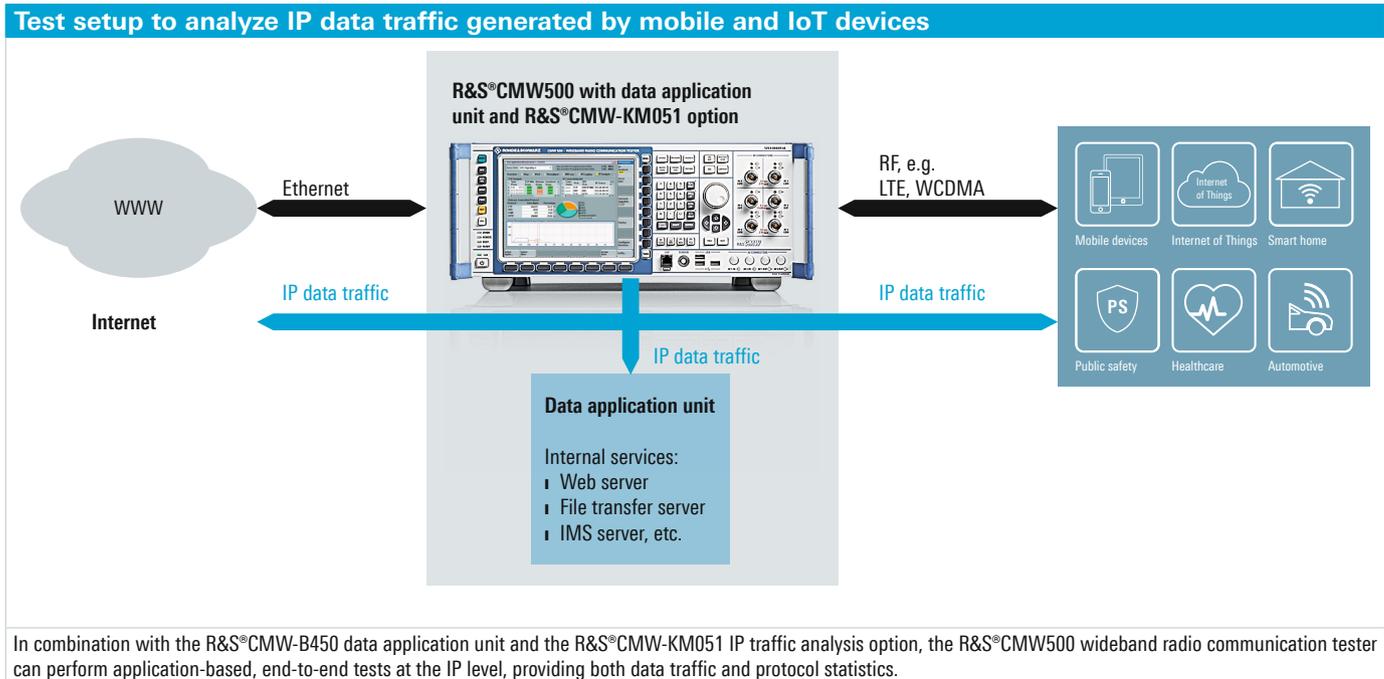
Summary

Equipped with the R&S®CMW-KM051 option, the R&S®CMW500 detects and analyzes the IP data traffic at the application layer in realtime. The software adds powerful IP traffic analysis and protocol statistic functions to the wide range of wireless communications measurement functions provided by the R&S®CMW500.

This unique combination makes it possible, now also at the IP level, to test and analyze in detail any mobile application, such as an app, or the software implementations on IoT devices. The R&S®CMW-KM051 helps network operators optimize their networks and supports developers in improving the interplay of hardware and software to minimize data traffic in the network and ensure long battery life for the mobile or IoT device.

See also

www.rohde-schwarz.com/CMW



Rohde & Schwarz GmbH & Co. KG

Europe, Africa, Middle East | +49 89 4129 12345
North America | 1 888 TEST RSA (1 888 837 87 72)
Latin America | +1 410 910 79 88
Asia Pacific | +65 65 13 04 88
China | +86 800 810 82 28 | +86 400 650 58 96
www.rohde-schwarz.com
customersupport@rohde-schwarz.com

R&S® is a registered trademark of Rohde & Schwarz GmbH & Co. KG

Trade names are trademarks of the owners

PD 3606.8214.92 | Version 02.00 | May 2017 (as)

R&S®CMW-KM051; Optimize the data traffic generated by IoT and mobile devices

Data without tolerance limits is not binding | Subject to change

© 2013 - 2017 Rohde & Schwarz GmbH & Co. KG | 81671 Munich, Germany



3606821492