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R&S® QPS201 QUICK PERSONNEL SECURITY SCANNERS

Scan. Detect. Secure.



AT A GLANCE

The R&S®QPS is a state-of-the-art millimeterwave security scanner that automatically detects potentially dangerous items carried on the body or in clothing. The scanner is used for security checks at airports, for property protection, for security at public events with a high threat potential and for access control at security-related facilities.

The R&S®QPS201 security scanner offers highly precise and efficient security screening while providing an unobtrusive, hassle-free process for scanned persons. It consists of flat panels with thousands of transmit antennas that emit extremely low-power millimeterwaves in very rapid succession and an equal number of receive antennas that record high-resolution 3D information. The persons to be scanned stand between the panels as if facing a mirror with the arms held slightly away from the body.

To find conspicuous objects (regardless of material) the detection software uses algorithms based on artificial intelligence. The scanner searches for anomalies that indicate unusual objects, enabling it to find unknown and novel threats. The R&S®QPS was designed to protect the privacy

of the person being scanned. Rather than generating images, it evaluates physical information. The locations of the detected objects are marked on a symbolic graphic of the human body.

The R&S®QPS does not pose any health risks. It uses frequencies similar to those of a vehicle distance warning system. The transmitted power at the scanned person's location is almost undetectable and several orders of magnitude lower than mobile phone emissions. In just a few milliseconds, the person is scanned, and the operator sees the results within a few seconds. During the actual scan, the person to be scanned stands in a comfortable position between the panels.



DETECTION CHARACTERISTICS

- ▶ Detection of all types of potentially dangerous objects (metallic, ceramic, plastic, liquid, organic)
- ▶ Outstanding body coverage; complete head, shoulder and leg illumination
- ▶ High system resolution, bandwidth and dynamic range for high detection performance and minimum false alarms
- ▶ Certified by the European Civil Aviation Conference (ECAC), Transportation Security Administration (TSA) and other supervisory authorities

BENEFITS

For operating companies

- ▶ Short process time for the highest possible throughput
- ▶ Slim, easy-to-install device with flexible setup options
- ▶ No calibration during operation necessary
- ▶ Open escape route thanks to a large walk-through area
- ▶ Low fire load
- ▶ Reliable, quiet, continuous operation
- ▶ Insensitive to temperature fluctuations
- ▶ Low maintenance costs due to stable calibration and no moving parts
- ▶ Rail-mounted panels for trouble-free service access
- ▶ Integration into local networks possible via the R&S®QPS Server solution
- ▶ Future-proof through software updates
- ▶ Idle mode to reduce power consumption when not in use

For screeners

- ▶ Intuitive touchscreen operation
- ▶ Unobstructed view of approaching people
- ▶ Direct access to persons prior to and during the scanning process
- ▶ Barrier-free entry and exit for wheelchair users

For scanned persons

- ▶ Welcoming, open scanning space; no booth
- ▶ Comfortable body position; not necessary to raise the arms
- ▶ Extremely short scan time in the millisecond range
- ▶ Easy-to-hold position, no need to change position

Remote resolution stations

The system can optionally be equipped with follow-up resolution stations. These stations can be connected to the scanner via LAN (PoE) and can significantly increase throughput.

SPECIFICATIONS

- ▶ Frequency range: 70 GHz to 80 GHz
- ▶ Multistatic operation with thousands of transmit and receive antennas per panel
- ▶ Transmit power: approx. 1 mW
- ▶ Data acquisition time: approx. 32 ms per panel
- ▶ Fully electronic; no moving parts
- ▶ Dimensions (W × H × D): 1750 mm × 2320 mm × 1433 mm



TYPICAL APPLICATIONS



Passenger-friendly security screening at airport checkpoints



Screenings at large-scale events such as sporting events or exhibitions



Protection of intellectual property or valuable goods at corporate facilities and data centers



Reliable entry control and contraband detection at correctional facilities



Loss prevention at logistic centers, warehouses and industrial facilities



Secured access to data centers to prevent data loss or breach



Protection of critical infrastructure such as power plants or military compounds



Screening solutions to enhance VIP security



Border entry customs screening to prevent smuggling

OPTIONS

Additional hardware and software options are available on request.

HARDWARE OPTIONS

- ▶ Clip-on frames in a choice of RAL colors allow the R&S®QPS to easily match the look of existing designs
- ▶ Light barriers trigger alarms when persons pass through without being scanned
- ▶ Indication lights serve as a traffic light for the scanned person
- ▶ Signal light for mounting on top of the panel displays the light barrier alarm or scanning results for the screeners

SOFTWARE OPTIONS

- Available software options are optimized for the various applications of the R&S®QPS201:
- ▶ ECAC and TSA certified algorithms with excellent detection performance and a high pass rate for aviation safety
 - ▶ Proven and approved detection algorithms especially for correctional institutions
 - ▶ Specialized detection algorithms for asset protection and loss prevention with adjustable sensitivity for individual requirements and an optional second posture to maximize detection rates



R&S®QPS SERVER SOLUTION

The R&S®QPS Server enables improved security, the best operational efficiency and outstanding passenger experience in the following segments:

- ▶ Security improvements
 - Measure alarm rates/pass rates
 - Identify areas of increased alarms
 - Understand potential improvements in workflow/passenger preparation
- ▶ Operational efficiency
 - Enhance throughput (pax/h)
 - Manage peak demand
 - Perform real-time equipment monitoring
 - See availability of devices
- ▶ Passenger experience
 - Reduced queuing, faster processing
 - Alarm analysis to minimize physical searches

Managing users and assets through central user management, device configuration and real-time monitoring as well as integration into airport infrastructure.

The R&S®QPS Server optionally allows data integration from third-party devices, e.g. for metal detectors and barcode scanners. Finally, the R&S®QPS Server enables shared data use via REST APIs and other open architecture APIs.

The R&S®QPS Server is a centralized management solution for the R&S®QPS security scanners. It includes:

- ▶ Data acquisition for statistics, log and performance data
- ▶ Status overview of all R&S®QPS security scanners in the network
- ▶ Analysis and display tools for performance and statistics
- ▶ Central user and group administration/authentication
- ▶ Data protection through the use of the latest cybersecurity standards
- ▶ Comprehensive interfaces for flexible integration into existing customer infrastructures and applications



Rohde & Schwarz

The Rohde&Schwarz technology group is among the trail-blazers when it comes to paving the way for a safer and connected world with its leading solutions in test & measurement, technology systems and networks & cybersecurity. Founded 90 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

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