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Make ideas real



SPECTRUM REVOLUTION

Malaysian regulator MCMC boosts spectrum monitoring with Rohde & Schwarz technology

AT A GLANCE

- ▶ **Customer:** Malaysian Communications and Multimedia Commission
- ▶ **Challenge:** Set up a nationwide system of fixed spectrum monitoring stations with remote control, advanced monitoring, direction finding, emitter location capabilities and other capabilities compliant with International Telecommunication Union (ITU) recommendations with minimal infrastructure requirements for maximum site selection flexibility
- ▶ **Solution:** The R&S®UMS300 compact monitoring and radiolocation system and R&S®ARGUS spectrum monitoring software enable advanced monitoring, direction finding and emitter location capabilities
- ▶ **Key benefits:** The system can be controlled from national and regional headquarters, optimizes spectrum use and detects interference sources

Situation and requirements

The Malaysian Communications and Multimedia Commission (MCMC) required an upgrade to its national radio frequency spectrum monitoring system. The existing system was commissioned many years back and due for upgrade to keep up with technological advancements.

The MCMC wanted a nationwide system of fixed monitoring stations remotely controlled from a national headquarters and five regional centers. Key requirements included accurate and reliable RF spectrum monitoring, advanced direction-finding (DF) capabilities compliant with ITU recommendations and minimal infrastructure requirements for flexible site selection.

The system's software needed to be user-friendly International Telecommunication Union (ITU) operators of varying experience levels, supporting optimized spectrum use and the continued growth of Malaysia's telecommunications sector.

Solution

The heart of the system is the R&S®UMS300 compact monitoring and radiolocation system, which features a new combined monitoring and DF antenna that incorporates multiple features, including an active/passive switch for adapting to different environments as well as horizontal and vertical polarization in line with ITU recommendations.

The system also includes R&S®ARGUS spectrum monitoring software, which provides advanced monitoring, direction finding and emitter location capabilities as well as remote control of all monitoring sites from regional offices and a national headquarters.



For more information, visit
www.rohde-schwarz.com

R&S®UMS300

- ▶ Wide frequency range from 9 kHz to 6 GHz (direction finding from 300 kHz to 6 GHz)
- ▶ Fast scan with up to 12 GHz/s across the entire frequency range
- ▶ IF spectrum and demodulation up to 20 MHz
- ▶ Multichannel DDC signal extraction within real-time bandwidth
- ▶ Integrated GPS with high-accuracy timestamp for TDOA applications
- ▶ Fast, reliable direction finding due to high DF accuracy
- ▶ In line with ITU requirements and recommendations



The R&S®UMS300 is a compact, outdoor solution offering ITU-compliant monitoring and direction finding. Interconnecting two or more stations enables emitter geolocation, while minimal infrastructure requirements maximize site selection flexibility.

R&S®ARGUS software features a user-friendly interface, facilitating operation for both experts and less experienced users. It supports direct measurements, interactive routines, and automated procedures, delivering powerful spectrum monitoring with ease and efficiency.

Benefits

Implementation of the Rohde&Schwarz solution has provided the MCMC with:

- ▶ Efficient radio frequency spectrum monitoring
- ▶ Accurate interference detection and identification
- ▶ Optimized spectrum utilization

This ensures a robust and reliable wireless communications infrastructure. The system's advanced capabilities have improved the regulator's ability to quickly detect and resolve spectrum-related issues. Its ITU compliance aligns spectrum management practices with international standards. The flexible deployment enabled by minimal infrastructure requirements further enhances operational effectiveness.

User-friendly software made it easier for staff of all expertise levels to operate the system. Overall, the Rohde&Schwarz solution has enabled the Malaysian regulator to optimize spectrum use, improve spectrum management, and support the growth of the country's telecommunications sector.

Results and achievements:

The MCMC significantly enhanced its spectrum monitoring capabilities by awarding Rohde&Schwarz a contract for a nationwide system of fixed monitoring stations. The solution provides an advanced comprehensive approach to monitoring and managing the country's radio frequency spectrum.

This successful deployment represents a significant milestone in Malaysia's efforts to strengthen its spectrum monitoring capabilities and validates the effectiveness of the Rohde&Schwarz solution. The new system is critical for efficient frequency planning and utilization, enabling interference detection, new frequency assignment, and spectrum optimization.

The advanced features and capabilities of the Rohde&Schwarz solution support the continued growth and reliability of Malaysia's wireless communications infrastructure.

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Spectrum Revolution
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