SPECTRUM 2025

News Magazine - Special Edition Broadcast

LS telcom
Smart Spectrum Solutions

// High-Performance Wireless Solutions for a Changing Spectrum

Sennheiser Commissions Nationwide PMSE Spectrum Study from LS telcom

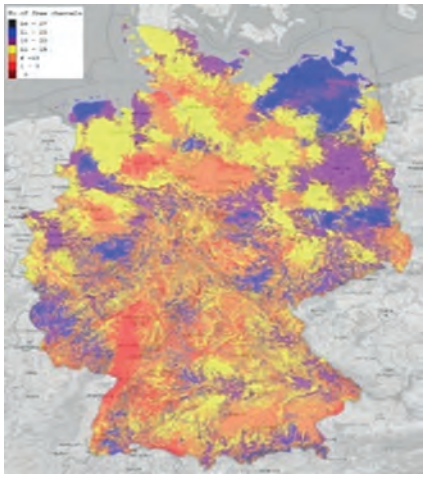
In the world of professional audio, reliable wireless transmission is essential, whether in TV studios, for live events, or major productions. To ensure continued access to usable frequencies for wireless microphones, in-ear monitoring systems, and other PMSE (Programme Making and Special Events) applications, Sennheiser has partnered with LS telcom for a comprehensive spectrum availability study across Germany.

The study focused on the 470–690 MHz UHF band, which PMSE systems share with DVB-T2 terrestrial broadcasting. This overlap presents challenges for spectrum planning, especially as the demand for both broadcasting and mobile services continues to grow.

Using its advanced CHIRplus_BC broadcast planning software, LS telcom analyzed the current DVB-T2 landscape throughout Germany and adjacent regions. The study evaluated network coverage, frequency usage, and technical parameters to determine where PMSE devices can operate without experiencing interference.

The outcome is a detailed PMSE capacity map, showing spectrum availability by location. This provides Sennheiser with a solid data basis for product planning, customer support, and engagement in spectrum policy discussions.

This forward-looking initiative underscores Sennheiser's commitment to ensuring high-performance wireless solutions in a changing spectrum environment. With the increasing importance of efficient spectrum use, particularly ahead of international decisions made at WRC-27, the insights from this study are a strategic asset both for Sennheiser and the broader PMSE community. ■



PMSE Capacity Map

// Strategic Evolution for Hellas Sat

DVB-T2 Network Optimization in Cyprus: Hellas Sat Relies on LS telcom Expertise

Hellas Sat, a leading Greek provider of satellite communications, is expanding its portfolio by entering the terrestrial broadcasting market. After being awarded a license to operate a DVB-T2 network in Cyprus, the company is now taking a major step toward enhancing digital television services.

To ensure a smooth and technically sound rollout, Hellas Sat partnered with LS telcom to plan and optimize the new network. LS telcom conducted a detailed coverage analysis to determine the ideal transmitter locations and configurations. The goal: maximum coverage, minimal interference, and compliance with international standards.

Our team used advanced simulation tools and local data to deliver a reliable and efficient network design tailored to Hellas Sat's requirements.

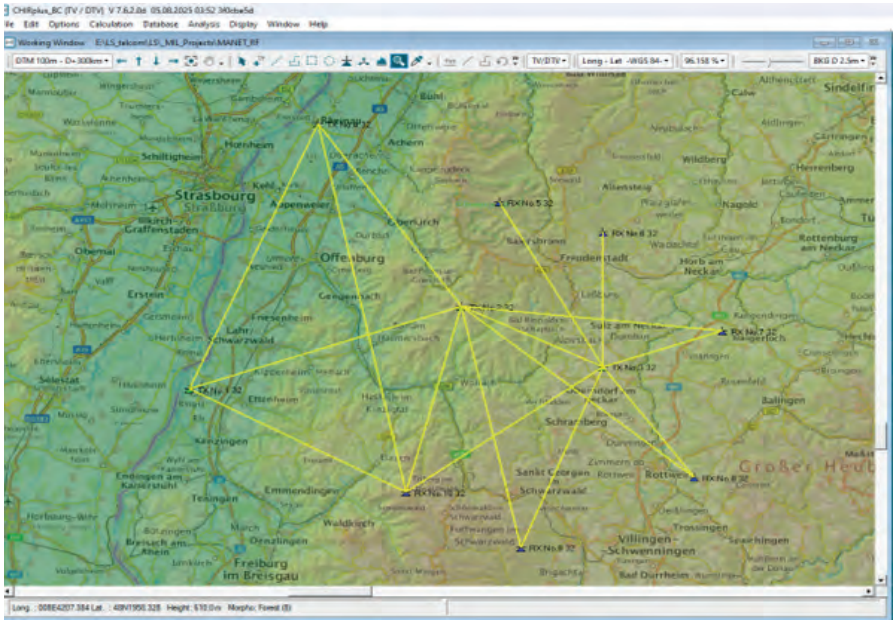
This project marks a strategic evolution for Hellas Sat, bridging its core satellite expertise with terrestrial transmission. The new DVB-T2 network will offer Cypriot viewers improved picture quality, higher capacity, and future-ready broadcasting services.

With the planning and optimization phase complete, the network is ready for rollout, showcasing the value of strong partnerships and cutting-edge engineering in shaping the future of broadcast. ■

// Faster, More Agile, and Ready for What's Next with CHIRplus_BC

Smarter Planning, Smoother Workflows: What's New in CHIRplus_BC

With the upcoming release of CHIRplus_BC Version 7.6.2.0, LS telcom continues to raise the bar for modern broadcast network planning. The next update brings a strong focus on usability, performance enhancement, and expanded macro functionalities, while maintaining full alignment with international regulations and data standards. From more intuitive GIS capabilities to new database formats and macro commands, this version is all about making your daily work faster, more flexible, and more future proof.



Dual Map Mode

Enhanced Usability & Performance

- **Dual Map Mode:** Visualize two map layers simultaneously, perfect for comparing topographic and WMTS background data in one view.
- **Extended Cursor Functionality:** Enjoy improved visual guidance with crosshairs that reach the map edges and an optional zoomed-in preview around the cursor position.
- **Color Picker for Thresholds:** Adjust color thresholds quickly and easily with a new graphical interface — no more manual entries.
- **New Geometrical Buffer Function:** Now supports points and polylines in addition to polygons, offering greater flexibility in GIS contour analysis.
- **3D Vector Format Support:** Add a new dimension to your planning with support for longitude, latitude, and height coordinates.
- **Support for GPKG (GeoPackage):** Both vector and raster data in this standardized format can now be imported and exported.

Smarter Tools, Extended Functionality

- **New Set of Macro Commands**: Includes multi-value input dialogs, multi-checkbox selections, and advanced array sorting — designed to speed up repetitive tasks and increase automation potential.
- **Improved Support for Other Services:** Now includes automatic channel assignment, enhanced frequency scan capabilities using frequency plans, and a more intuitive transmitter database editor layout.
- **More Powerful Antenna Management:** Expanded NSMA antenna format support with dual polarization, detailed mechanical parameters, and better cross-polarization handling.
- **Groundwave Model:** The HF module now supports a groundwave propagation model for more accurate short-distance prediction.

Future-Ready & Standard-Compliant

- **New BRIFIC and ITU XML Notification Formats:** Stay current with international spectrum regulations through full compatibility with the latest ITU data structures and WRC-23 decisions.
- **Updated IDWM Digital World Map:** Incorporates the latest ITU digital world map data from April 2025.
- **Migrated to C++20 and DevExpress 24:** For enhanced performance, updated 2D graphics, and faster data processing.
- **Improved GIS Backend:** Thanks to the integration of GDAL 3.10.0 and PROJ 9.5.1, CHIRplus_BC now supports the latest raster/vector import and export functionalities.
- **5G Broadcast Ready:** Support for LTE-based 5G Terrestrial Broadcast and NR-MBS according to ETSI TS 138 211 V18.6.0 (2025-04), ensuring compatibility with real 5G broadcast applications.

Customer-Centric Development

Several new features, including UI shortcuts and overlay enhancements, were implemented based on direct customer feedback. LS telcom remains committed to evolving CHIRplus_BC with and for its user base! ■

// From Upgrade to Expansion: LS telcom Delivers in Africa

LS telcom Innovative Broadcast RF Transmission Solutions

LS telcom's story in Africa began in the early 1990s with broadcast planning services tailored to the continent's needs. Since then, the company has steadily broadened its role, evolving into a trusted partner for broadcasters and signal distributors by delivering complete turnkey transmission solutions.

We acquired some broadcast equipment agencies for certain African countries which allows us to offer high quality, reliable and value for money solutions. We appointed engineering personnel to design the broadcast transmission system for the various transmission sites. We can define and order the transmission equipment, prepare the site complete with equipment housing, perform the equipment installation and finally perform the equipment acceptance testing.

Broadcast Transmission, Site Preparation and Implementation

LS telcom has the capability to perform RF transmission system designs complete with drawings for any of the technologies described above. We can design and build 1+1 or N+1 transmission systems to fulfill the client's requirements and to ensure that the necessary system availability is achieved. We have access to different equipment

Broadcast Transmission Site

suppliers in order to integrate the different components to build a tailored transmission network. Our designs start at the audio or video sources, continue through the transmitter and combiner, and extend up to the antenna, which transmits the signal to listeners and viewers.

Should a customer require pre-installed broadcast transmission solutions for quick deployment, we can provide such a solution. We have the capability to pre-install equipment into a container/shipping container and deliver such a system to site. The antenna deployment for such a solution can also be designed in line with the coverage requirement.

In addition, LS telcom has the capability to provide a full remote monitoring system that allows the network operator to view all specified parameters at a central monitoring location via mobile or satellite networks. Transmitter status is visible centrally and transmitters can be reset under certain fault conditions. This brings along a huge saving on OPEX and informs the operator on the system status at any time.

We also offer drone services and solutions to perform antenna pattern and ERP measurements, ensuring that the system is optimized to provide adequate coverage for the entire target audience. LS telcom has therefore become the one stop shop to perform broadcast network extensions and upgrades where required. ■

// FeMBMS Plays a Critical Role

FeMBMS: Bridging Broadcast and Broadband in the 5G Era

FeMBMS (Further evolved Multimedia Broadcast Multicast Service) is an advanced technology that enables broadcast and multicast transmission over LTE and 5G networks. As traditional ways of accessing linear broadcast content continue to evolve, and as pressure grows to reallocate valuable broadcast spectrum, this technology is gaining increasing relevance.

For broadcast service planners, the need to understand FeMBMS is more urgent than ever. It is essential to grasp both the similarities and distinctions between FeMBMS and traditional broadcast systems, especially in terms of network architecture, topology, and planning methodology.

While adoption of FeMBMS is still in its early stages, the potential use cases are compelling. Beyond conventional broadcasting, FeMBMS can play a critical role in areas such as public safety messaging, live event streaming, over-the-air (OTA) software updates, and even in the Internet of Things (IoT) and Machine-to-Machine (M2M) communications.

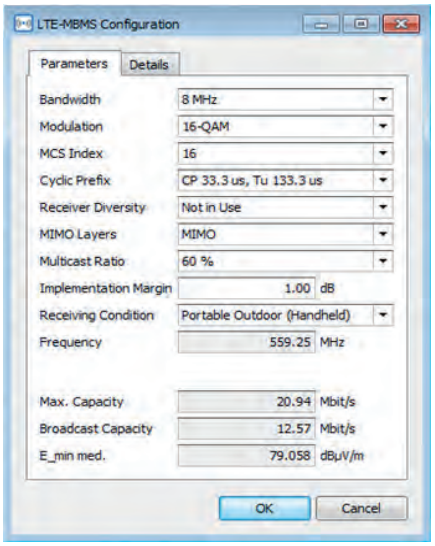
Designing and planning these networks to a high standard requires engineers to have a solid understanding of LTE and 5G physical layer components, Single Frequency Network (SFN) principles, and the fundamentals of COFDM-based transmission. Equally important is expertise in established digital broadcast technologies such as DVB and DAB.

To meet these evolving requirements, LS telcom continues to enhance its CHIRplus_BC software, ensuring compatibility with the latest standards and innovations in mobile broadcast.

In addition, the LS telcom Training Academy has developed a dedicated 5G Broadcast training program, tailored both for users of CHIRplus_BC and for professionals across the industry. The course introduces the core concepts of FeMBMS alongside existing DVB standards, LTE, and 5G (NR) networks, with a focus on broadcast-specific requirements.

The training has already attracted strong interest in 2025, with several sessions completed and more scheduled into early 2026.

As the lines between traditional broadcasting and broadband technologies continue to blur, LS telcom remains at the forefront, supporting its customers with the tools, knowledge, and training to succeed in this fast-changing environment. ■



LTE-MBMS Configuration

// Allocation of FM Frequencies in Flanders

LS telcom Supports Flemish Media Authority in FM Licensing Process

Efficient and transparent spectrum management is a cornerstone of successful broadcasting policy. In Flanders, LS telcom plays a key role in supporting the Flemish Media Authority VRM (Vlaamse Regulator voor de Media) in the licensing of FM radio frequencies for private broadcasters.

As part of the FM licensing process, applicants submit detailed technical documentation to VRM outlining their proposed broadcasting setup. This includes parameters such as transmitter location, antenna characteristics, and intended coverage. LS telcom evaluates these submissions and prepares the technical data in ITU TerRaSys, the internationally recognized standard format for frequency coordination and analysis.

This ITU-compliant file is then shared with CJM, the Flemish coordination authority, which reviews the compatibility of the proposed frequencies with existing services. Once coordination is complete, CJM delivers its findings to VRM, and LS telcom integrates this feedback into a final dataset. VRM then communicates the results to the applicants.

Through its software tools and technical expertise, LS telcom ensures that every step of the licensing process, from application to coordination, is handled efficiently, accurately, and in line with international best practices. This ongoing collaboration supports the fair and transparent allocation of FM frequencies in Flanders, while also promoting interference-free broadcasting across the region. ■

// USERgroup & Spectrum Summit 2025

Broadcast Planning & Coordination USERgroup 2025 – Held Digitally this Year

The LS telcom USERgroup Conference is an annual event that brings together users of our hardware and software solutions. It provides a valuable platform to exchange experiences, learn about the latest developments, and engage directly with LS telcom experts. This year, the conference was held in a digital format for several reasons: to reduce travel efforts and costs, to encourage broader international participation, and to allow for a more flexible and focused agenda. Despite being held online, interest remained very high.

Once again, the broadcast community was strongly represented, with around 142 participants from 47 countries! The first part of the event focused on a review of recent CHIRplus_BC releases and provided a preview of the upcoming version 7.6.2.0. After a short break, participants joined an open discussion session where they could share their ideas, feedback, and feature requests. Several new features were also demonstrated live within the software.

The USERgroup Conference was held alongside the digital Spectrum Summit – a key industry event offering in-depth discussions on spectrum management, wireless networks, emerging technologies, and innovation.

Once again, the USERgroup Conference underscored the importance of direct dialogue with our users in driving the ongoing development and enhancement of our solutions. ■

LS telcom USERgroup

// Level up your Skills!

LS telcom Training Academy

Visit our LS telcom Training Academy website! Whether it's online training, classroom sessions, e-learning modules, or free webinars, we have something for everyone! Even a customized training program tailored to your needs is no problem – just ask! The LS telcom Training Academy has expanded its offerings through a new partnership with Wray Castle, providing our customers with access to their industry-leading telecoms training. This collaboration allows us to offer even more specialized and advanced training solutions, ensuring that professionals stay at the forefront of industry developments.

Contact: IGaertner@LStelcom.com
Download the Training Calendar from our website:
https://www.lstelcom.com/en/ls-training-academy

Upcoming Broadcast Training courses:

- FM, DAB, TV and 5G Broadcast Antennas, 03.11.2025
- DVB-T2 – 2nd Generation Digital Video Broadcast, 04. - 06.11.2025
- DVB-T2 – Measurement Technology in Theory and Practice, 06. - 07.11.2025

For more information on products and solutions, please visit our website at www.LStelcom.com or contact us:

LS telcom AG
Im Gewerbegebiet 31-33
77839 Lichtenau
Germany

+49 7227 9535 600
+49 7227 9535 605
Info@LStelcom.com
www.LStelcom.com

Find us on

LS telcom
Smart Spectrum Solutions

Our worldwide subsidiaries:

Colibrex GmbH, Winnipeg Avenue B 112/A5, 77836 Rheinmünster, Germany | **LS telcom UK Limited**, Dowgate Hill House, 14-16 Dowgate Hill , London EC4R 2SU, UK | **LS telcom Australia Pty Ltd**, Suite 2A, 39 Brisbane Avenue, Barton ACT 2600, Australia | **LS of South Africa Radio Communications (Pty) Ltd.**, 131 Gelding Ave, Ruimsig, Roodepoort, 1724 Johannesburg, South Africa | **LS telcom SAS**, 13-15 boulevard de la Madeleine, 75001 Paris, France | **LS telcom Limited**, 1145 Hunt Club Road, Suite 100, Ottawa, ON K1V 0Y3, Canada | **RadioSoft Inc.**, 194 Professional Park Drive, Clarkesville, Georgia 30523, USA | **LST Middle East FZ-LLC**, Office 2118 (21st Floor), Dubai Media City, Dubai, United Arab Emirates | **Vision2Comm GmbH**, Im Gewerbegebiet 33, 77839 Lichtenau, Germany | **NG Networks Co., Ltd,** Room 1001, Buildung 3, No. 209, Zhuyuan Road, 215011 Suzhou, China | **LS telcom AG MKK,** Köztársaság út 11-13, 2600 Vác, Hungary | **LS Spectrum Solutions PVT Ltd.,** 515, Palm Spring Centre, Link Road, Malad (W), Mumbai- 400064, India | **Smart Spectrum Solutions Providers S.A.L.,** Office C83, Palm Plaza Center, Mtayleb – El-Maten, Lebanon

 Editor: Harriet Arneodo **Layout:** Sabrina Kautz