



PRESS RELEASE

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THE WORLD'S FIRST SHOWING OF HDTV & MOBILE TV IN A SINGLE 6 MHz CHANNEL SERVICE

DVB-T Demonstration Illustrates How Spectrum And Investment Can Be Shared Through The Use Of Hierarchical Modulation.

Las Vegas – 16th April 2007 – At this year's NAB, in a 'world's first', DVB is transmitting a dual service of HDTV and mobile TV in a single 6MHz DVB-T channel. The demonstration shows how employing the technique of hierarchical modulation allows a single DVB-T multiplex to be used to broadcast a high definition television program alongside a number of DVB-H mobile TV services.

The demonstration, for which the transmission headend is located on the RRD booth (C7824), utilises a single 6MHz channel in UHF to deliver a total bitrate of 19.3Mbit/s. The Low Priority (LP) stream is used to deliver high definition video encoded using the latest H.264/AVC technology, along with Dolby Digital audio. The total bitrate for the LP stream is 13.8 Mbit/s. The High Priority (HP) stream, with a total bitrate of 5.5 Mbit/s, is used to deliver mobile TV services using the DVB-H standard. Both the DVB-H services and the HDTV DVB-T services can be viewed on the DVB booth (C2239).

"These broadcasts underline the undeniable capability of the DVB-T standard. Where there is a public demand for HDTV services, DVB standards deliver. At this year's NAB we are proud to be showing how DVB standards can be used to provide both HDTV and mobile DVB-H 6MHz services in a single channel and show how spectrum and investment can be shared to deliver a truly economical solution for broadcasters. The rapid deployment of digital television, new business models and the generation of new services to attract and satisfy the consumer is what DVB is all about," remarked Peter MacAvock, Executive Director, DVB Project.

Franco Ferri, General Manager, RRD went on to say "RRD is pleased to take part in this demonstration that shows the high potential of the DVB standard for digital TV. Thanks

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to this innovation, mobile operators and broadcasters now have the chance to transmit, in the same frequency, HD and SD channels for both fixed and mobile TV. A single DVB network can thus enable several digital TV businesses with a consequent higher return on investment.”

DVB acknowledges the support and active participation of the following companies: RRD, Tektronix, Humax, Dolby, Heinrich-Hertz-Institut, V One Multimedia, LG, Panasonic and Zentek. Broadcast content is courtesy of the BBC and Turner Broadcasting System, Inc.

Background

The DVB Project

The Digital Video Broadcasting Project (DVB) is an industry-led consortium of over 250 broadcasters, manufacturers, network operators, software developers, regulatory bodies and others in over 35 countries committed to designing global standards for the delivery of digital television and data services. The DVB standards cover all aspects of digital television from transmission through interfacing, conditional access and interactivity for digital video, audio and data. The consortium came together in 1993 to create unity in the march towards global standardisation, interoperability and future proofing.

To date, there are numerous broadcast services using DVB standards. There are hundreds of manufacturers offering DVB compliant equipment, which is already in use around the world. DVB dominates the digital broadcasting world. A host of other services is also on-air with DVB-T, DVB-S and DVB-C including data on the move and high-bandwidth Internet over the air. Further information about DVB can be found at: www.dvb.org.

DVB-T (Terrestrial)

The DVB-T system specification for terrestrial digital television was approved by ETSI in February 1997. The first DVB-T services were launched in 1998 in Europe with subsequent deployments throughout the world. As with the other DVB standards, MPEG-2 sound and vision coding forms the basis of DVB-T. Other elements of the DVB-T specification include: a transmission scheme based on Coded Orthogonal Frequency Division Multiplexing (COFDM), which allows for the use of either 1705 carriers (usually known as '2k'), or 6817 carriers ('8k'); concatenated error correcting. The '2k' mode is suitable for single transmitter operation and for relatively small single frequency networks with limited transmitter power. The '8k' mode can be used both for single transmitter operation and for large area single frequency networks.

DVB-H (Handheld)

DVB-H is defined as a system where the information is transmitted as IP datagrams. Time-slicing technology is employed to reduce power consumption for small handheld terminals. IP datagrams are transmitted as data bursts in small time slots. The front end of the receiver switches on only for the time interval when the data burst of a selected service is on air. Within this short period of time a high data rate is received which can

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be stored in a buffer. This buffer can either store the downloaded applications or playout live streams. The achievable power saving depends on the relation of the on/off-time. If there are approximately ten or more bursted services in a DVB-H stream the rate of the power saving for the front end could be around 90 percent. Information on DVB-H can be found at: www.dvb-h.org.

Hierarchical Modulation

In hierarchical modulation, two separate data streams are modulated onto a single DVB-T stream. One stream, called the "High Priority" (HP) stream is embedded within a "Low Priority" (LP) stream. Receivers with "good" reception conditions can receive both streams, while those with poorer reception conditions may only receive the "High Priority" stream. Broadcasters can target two different types of DVB receivers with two completely different services. Typically, the LP stream is of higher bit rate, but lower robustness than the HP one. For example, a broadcaster could choose to deliver HDTV in the LP stream, while delivering an independent DVB-H service in the HP stream.

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