ATSC Mobile DTV
High-definition reception at home | Robust mobile reception anywhere

ATSC Mobile DTV has been designed to provide a reliable digital TV signal, that can be received by mobile devices (laptops, portable media players or navigation devices) whether the consumer is on the highway, on the green, in a shopping mall or even at home. The broadcaster can offer localized services, such as news, traffic information or weather, to offer viewers the content they want, when they want it.

ATSC Mobile DTV (A/153) includes and enhances ATSC A/53 and is therefore fully backwards compatible. It shares the same RF channel as the standard ATSC broadcast service described in ATSC A/53 and is coupled with a chain of extremely complex FEC mechanisms (Reed-Solomon and turbo codes) and training sequences for the receiver equalizer.

The standard is optimized for stationary reception of high-quality services at home on the one hand and robust mobile reception on the other. In total, a data rate of 19.39 Mbps is available for dual transmission. The video content is compressed using efficient H.264 (MPEG-4 AVC) video and HE AAC v2 audio coding. The video format is fixed to 416 pixel x 240 lines (16:9) to meet the requirements for mobile devices. Mobile data is transported by means of the Internet protocol (IP) mechanism.

The existing ATSC transmission chain has to be upgraded for the new mobile services. Audio and video signals for these services have to be inserted into a mobile TV MPEG-4 encoder. The data related to such additional mobile services will be provided by an optional OMA BCAST ESG via IP.

The ATSC-MH emission multiplexer, which is placed between the ATSC multiplexer and the transmitter, restructures the main ATSC transport stream (TS), generates ATSC-MH specific signaling, multiplexes IP streams for mobile services and main ATSC TS into ATSC-MH TS.

The transmitter has to be upgraded with an ATSC-MH capable software or exciter, which can also be synchronized with other transmitters to build a single frequency network (SFN).

Rohde & Schwarz offers a complete product portfolio for this new mobile DTV standard – from signal generators, demultiplexers and analyzers via encoders, multiplexers to transmitters.

**Example configuration:**

- **MPEG-4 encoder**
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(FIC/TPC/SMT/ESG)

**Parade:** 4.58 Mbps

Main ATSC:** 13.9 Mbps

Rohde & Schwarz broadcast equipment for ATSC Mobile DTV

**R&S®BTC Broadcast test center**
Reference signal generator with audio/video analysis functions

**R&S®ETL TV analyzer**
The universal multistandard platform for the analysis of TV and mobile TV signals

**R&S®ATE100 ATSC-MH emission multiplexer**
Complete solution for upgrading to ATSC Mobile DTV

**R&S®AVS264 mobile TV audio and video encoder**

**Rohde & Schwarz TV transmitters**
Complete range of ATSC Mobile DTV compliant transmitters, fully SFN-enabled

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