



DRM Consortium
Digital Radio Receiver Profiles

Date: 11th September 2009

Summary

The DRM Digital Radio Receiver Profiles are designed to help create a vibrant digital radio market across the world by defining minimum functionality for different classes of digital radio receivers that use the DRM system. This provides broadcasters with confidence that the services they plan will be receivable, and manufacturers that their technology investments will be supported by services. The consumer gains from knowing that the product they have chosen contains the necessary features to provide them with a consistent quality of experience and assured levels of interoperability across their region and beyond.

Products designed to meet the DRM Receiver Profiles will decode all audio services, along with other features depending on the complexity of the receiver. The profiles were developed by DRM with the aid of member experts representing silicon manufacturers, consumer device manufacturers, radio broadcasters and other experts from across the industry. The composition of the profiles takes into account consumer experience, manufacturing issues, broadcaster requirements and other market aspects.

Scope

The DRM Digital Radio Receiver Profiles define the minimum functionality requirements of products within each profile.

The Receiver Profiles are composed of **mandatory features** which must be implemented and **recommended features** which offer enhancements with wide appeal.

Manufacturers may offer additional features in order to differentiate their product from others.

Products conforming to the DRM Receiver profiles will provide a step change in usability over analogue radios, with service selection by station name from a list built up automatically by the receiver. Manufacturers are free to choose how to compile the station list according to market need, for example by evaluating AFS and EPG information, offering frequency scanning, evaluating service lists provided by other broadcast systems (if applicable), etc. DRM service tuning by frequency should be available to the user, but never be the primary option for selecting services.

The DRM Receiver Profiles describe minimum functionality; the implementation of each feature in conformance with the relevant ETSI standards is best determined by each manufacturer and is not proscribed. In-car products are subject to the normal safety related conditions, for example limitations for scrolling, access to services while driving, image per second limitations, etc, according to regulators or OEM requests.

Products which do not meet the minimum requirements of the profiles may be manufactured on a market-specific basis.

Regulators may use the Receiver Profiles to develop strategies and policies for digital radio broadcasting within national boundaries or with reference to trans-national and harmonised markets.

The DRM Receiver Profiles reflect receiver design issues and broadcaster capabilities appropriate for the current period and for the foreseeable future. Future changes and additions to the ETSI standards defining the DRM system¹, technology advances and market developments will be reviewed and may lead to revision of these Receiver Profiles.

The DRM Digital Radio Receiver Profiles focus on features of the Digital Radio Mondiale system. However the profile definitions are designed to support the easy co-integration with other digital and analogue broadcast systems in multi-standard receivers; in particular we recommend that all receivers should include analogue AM-AMSS and FM-RDS reception.

The DRM Consortium will globally publicise the DRM Digital Radio Receiver Profiles and actively encourage its members to adopt them.

¹ As defined in ETSI ES 201 980 V3.1.1

Receiver Profile 1 – Standard Radio Receiver

This is an audio receiver with at least a basic alphanumeric display.

Spectrum	<p>DRM reception in the MF (530 kHz to 1720 kHz), HF (2.3 MHz to 27 MHz) and international FM (87.5 to 108 MHz) bands is mandatory in all territories.</p> <p>DRM reception in other broadcasting bands is mandatory on a regional basis according to the licensed service plan².</p> <p>DRM reception in all broadcasting bands below 174 MHz is recommended.</p>
Channel decoding	<p>Decoding of all defined channel band-widths is mandatory.</p>
Audio	<p>Stereo decoding (including Parametric Stereo) is mandatory if a stereo capable output is provided.</p>
Emergency warning	<p>Implementation of the emergency warning/alert feature is mandatory.</p>
Text	<p>Service label (station name) display is mandatory.</p> <p>Text message display is mandatory on products with a 2-line display or better (except for in-car products).</p> <p>Journaline³ presentation is recommended.</p> <p>Support for regional character sets is recommended according to the region the product will be manufactured for or sold into.</p>
EPG	<p>Electronic Programme Guide⁴ presentation is recommended.</p>
Traffic & Travel	<p>For in-car products, TPEG⁵ and TMC⁶ decoding is recommended.</p>
Service following	<p>DRM to DRM service following (automatic frequency switching) is mandatory.</p> <p>For products that include analogue service decoding (e.g. AM-AMSS⁷, FM-RDS⁸), DRM to analogue service following is mandatory.</p> <p>For products that include other digital radio systems, DRM to digital service following is recommended.</p>

² In ITU region 1 this includes LF (153 to 279 kHz)

³ As defined in ETSI TS 102 979; decoded from packet mode including FEC

⁴ As defined in ETSI TS 102 818 and TS 102 371; decoded from packet mode including FEC

⁵ As defined in ISO TS 18234

⁶ As defined in ETSI TS 102 668

⁷ As defined in ETSI TS 102 386

⁸ As defined in ISO EN 62106

Receiver Profile 2 – Rich Media Radio Receiver

This is an audio receiver with a colour screen display of at least 320 x 240 pixels.

All Receiver Profile 1 functionality, *plus*:

Audio	Surround Sound decoding ⁹ is recommended.
Text	Journaline ¹⁰ presentation is mandatory.
EPG	Electronic Programme Guide ¹¹ presentation is mandatory. Decoding of the advanced EPG profile is recommended.
SlideShow	SlideShow ¹² presentation is mandatory.

⁹ Discrete multi-channel output and/or binaural rendering on stereo headphone output.

¹⁰ As defined in ETSI TS 102 979; decoded from packet mode including FEC

¹¹ As defined in ETSI TS 102 818 and TS 102 371; decoded from packet mode including FEC

¹² As defined in ETSI TS 101 499; decoded from packet mode including FEC