



## **RiksTV PVR Specifications**

**Version 2.0 – July 1st. 2009**

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## 1 Introduction

This document specifies the RiksTV PVRs for use in the Norwegian DTT network. The document is part of the validation service and approval labelling for the Norwegian DTT network (please see [www.rikstv.no/validation](http://www.rikstv.no/validation) for details).

All PVRs shall in addition to comply with this specification also also fulfil the requirements in “Basic IRD specifications - DTT Norway” [1] and Nordig Unified Specifications [2], including the requirements for HDTV and PVR. Products that include MHP middleware shall also comply with MHP\_Specifications\_DTT\_Norway [3].

New requirements compared with version 1.0.1 of this specification (and referenced documents) are given a grace period until January 1<sup>st</sup>. 2010. All product testing and approval activities after this date will be based on this specification.

The word “Shall” is used for mandatory requirements in this specification. All mandatory parts shall be implemented.

The words “Should” and “May” are used for optional requirements. It is highly recommended that the optional parts are implemented.

### 1.1 References

Ref-#	Title
[1]	Basic IRD specifications - DTT Norway” version 1.2
[2]	Nordig Unified Specifications version 2.1, available at <a href="http://www.nordig.org">www.nordig.org</a> .
[3]	MHP_Specifications_DTT_Norway v2.0
[4]	EN 61672-1:2003 – Electroacoustics - Sound level meters.

### 1.2 Revision History

Abbrev.	Explanation
1.0	Initial version
1.0.1	Changes to section 2.1: - Description of security requirement updated to match Conax profile requirements  Changes to section 3.2.2: - Allow for a programme to be recorded successfully even when the start time is brought forward by up to 15 minutes - Requirements for determining start and stop time for recording has changed
2.0	Specification is aligned with the Nordig specifications. Most if the requirements from earlier version of this specification are now included in the Nordig Unified specifications [2]. This document specifies additional requirements to the Nordig PVR. All mandatory requirements in the Nordig specifications are mandatory for the RiksTV market.  A number of requirements that were optional in previous version are now mandatory.

## **2 Hardware**

### **2.1 Security**

Security related requirements are included in the Basic IRD specification [1].

### **2.2 Internal / External HDD**

All requirements in this document are valid independent of if the location of the HDD (internal or external).

### **2.3 Interfaces**

The PVR shall have a minimum of two RF tuners/demodulators. The tuners shall share the same RF input connector to simplify installation.

All RF inputs shall comply with Basic IRD specifications [1] and Nordig Unified Specification [2]

### **2.4 Remote control**

The remote control shall in addition to the keys specified as mandatory in the “Basic IRD specifications - DTT Norway” [1] and Nordig Unified Specifications [2] include keys to control the following:

1. Direct access to recorded content
2. Trick modes (Playback, FF, fast FF, REW, fast REW, Pause and Stop)

Functionality for the PVR related keys are specified in the Nordig Unified Specifications [2].

### **2.5 Audible noise**

The PVR shall not generate loader acoustic noise than 23dB(A), measured at 1meter distance in any direction from the PVR. Measurements and weighting shall be as defined in International standard for Electroacoustics - Sound level meters [4].

Please see Basic IRD specifications [1] and Nordig Unified Specification [2] for additional hardware requirements.

## **3 Functional requirements**

### **3.1 Pause and time-shift**

It shall be possible to:

1. Pause a live program by pressing a single button at any time, and it shall be possible to continue watching from the point where the broadcast was paused by pressing a single button (time-shift). This means that the IRD shall be capable of recording a service and at the same time play the same service (time-shifted) back from the HDD.

Please see Nordig Unified Specification [2] for additional requirements.

### **3.2 Recording**

The PVR shall be able to utilise all available tuners and provide the following functionality to the users:

It shall be possible to:

1. Watch one service while recording another, independently of which frequency/mux the services are broadcasted.
2. Use pause/chase playback while recording another service, independently of which frequency/mux the services are broadcasted (please see section 3.1).
3. Record two events on different services simultaneously.
4. Play one event (from HDD) while recording from two live services.

Please see Nordig Unified Specification [2] for additional requirements.

#### **3.2.1 Recording initiation**

It shall be possible to initiate recording in the following ways:

1. Selected from EPG by selecting an event or a series of events.
2. Manual timer recording.
3. Daily/weekly/weekend/weekday timer recording.
4. Instantly by pressing a record key. The recording shall include parts of an event that are stored in the "pause buffer" when the recording is started. This means that if the IRD has been tuned to a service during the whole event, the IRD shall be able to store the complete event even in the case that the recording is initiated some time into the recording.

Please see Nordig Unified Specification [2] for additional requirements.

#### **3.2.2 Change in start/stop time – accurate recording.**

Please see Nordig Unified Specification [2] for requirements.

#### **3.2.3 Conflict handling**

Please see Nordig Unified Specification [2] for requirements.

### **3.2.4 Series recording**

Please see Nordig Unified Specification [2] for requirements.

### **3.2.5 Split recordings**

Please see Nordig Unified Specification [2] for requirements.

### **3.2.6 Alternative instance**

Please see Nordig Unified Specification [2] for requirements.

## **3.3 Presentation of recorded events**

Presentation of the recorded events shall be integrated in the EPG or presented in a separate PVR-list with direct access from a button on the remote control (or both).

## **3.4 Playback**

Please see Nordig Unified Specification [2] for requirements.

### **3.4.1 Parental control**

Please see Basic IRD Specification [1] for parental control based on EIT information. The requirements for parental control apply to recorded content as well as live television.

## **3.5 Deletion of content**

Please see Nordig Unified Specification [2] for requirements.

## **3.6 Software update**

Please see Nordig Unified Specification [2] for requirements related to recordings during software updates. Software update functionality shall be as specified in the Basic IRD specifications [1].

## **4 Content identification**

The content identification defined in Nordig [2] is used to support series links, alternative instance and split recordings.