

# RDK TV

## Overview

**RDK TV** is a smart TV profile powered by **RDK Video stack** that brings all your favorite apps, live channels, and On Demand contents together in one place.

- [Overview](#)
- [Features](#)
- [Architecture](#)
- [TV Specific Components](#)
- [Hardware Porting Guide](#)
- [Hardware Deployment Guide](#)
- [Available Devices](#)
- [User Interface](#)
- [References](#)

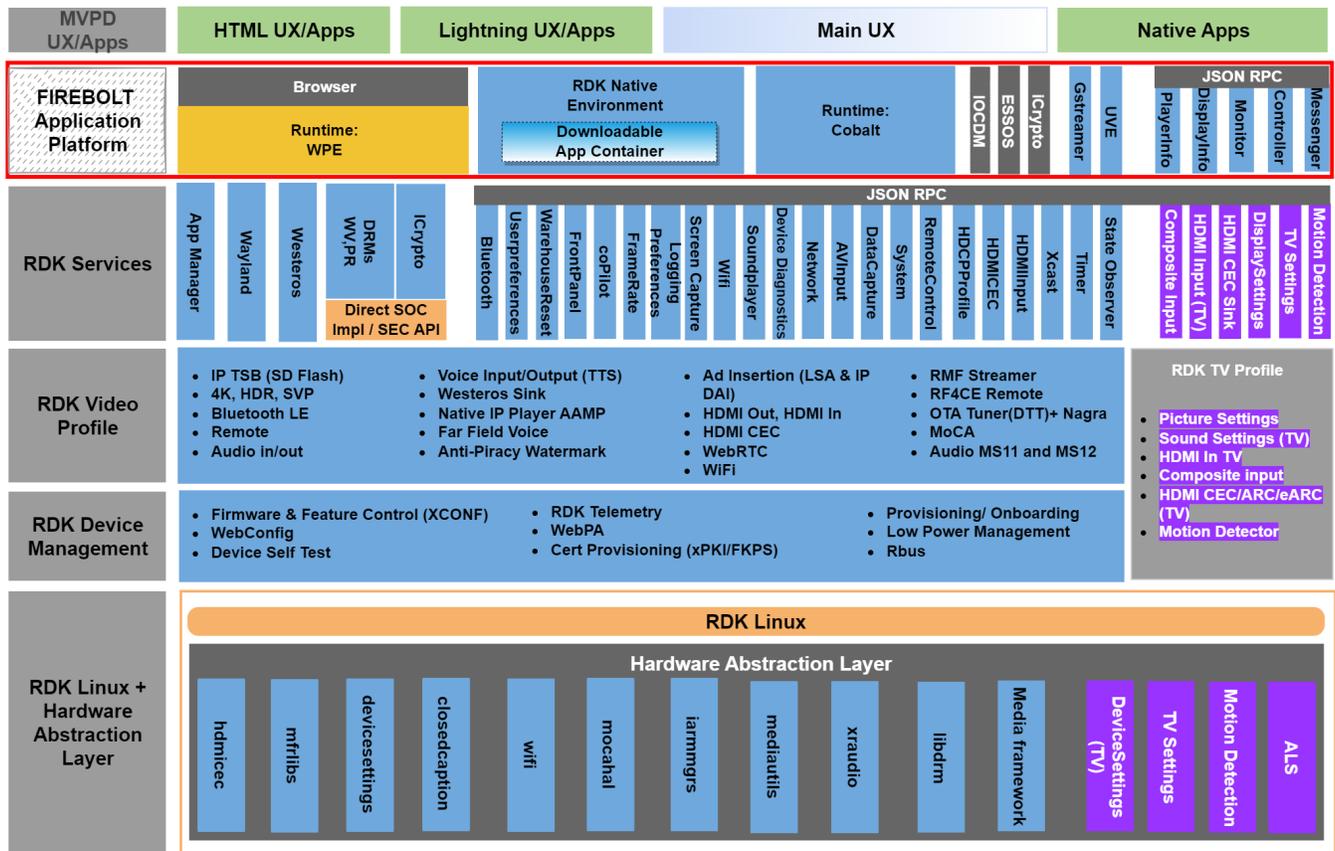
## Features

Below list is targeted to specific RDK TV features. RDKV generic details are available at - [RDK Video Documentation](#).

Category	Feature	Description	Dependency (If any)
Conditional Access	Conditional Access	CI++	Device Dependency/Region dependency
	DRM	Playready	
		CDMi with Widevine v14 integration	
	Device Security	Run applications in a secure container	
Secure bootloader			
Ports /Peripherals	Video Input ports	HDMI, Component, Composite	
	Audio	HDMI, SPDIF, Composite Ready	
	User Input	IR Remote	
		BLE Remote	
	USB	USB Filesystem Support	
		USB Hot-plug	
		USB Camera Support Ready	Device Dependency
	HDMI	HDMI Out, HDCP Enforcement, HDMI In	
		HDMI Consumer Electronics Control (HDMI-CEC) Power Sync	
		HDMI Switching (Combine CEC and HDMI Input features to enable advanced switching)	
Apps	Premium Apps	Netflix, Youtube, Amazon Prime	
	Lightning/HTML Apps		
	Appstore		
TV Settings	Power, Standby		
	LED		
	Zoom, aspect ratio		
AQ/PQ	QoS		
Firmware Upgrade			

<b>Casting</b>	Application Casting & control	DIAL	
		Chromecast	
		Airplay	
		Matter	
		Miracast	
<b>Gaming</b>	Epic Game Mode		
	HDMI-CEC DAL - Dynamic Auto Lipsync		
	Low Latency Game Mode for HDMI Input		
	Game Mode, Auto Low Latency Mode		
	AQ/PQ		
<b>Voice support</b>	Voice enabled Bluetooth remote		
	Alexa		
	SoundHound		

## Architecture



## TV Specific Components

RDK TV has all the [components](#) that are part of RDK Video profile plus its own TV specific components mentioned in below table.

TV Specific Component Name	Description	RDK Component wiki page
HDMIInput /CompositeInput	<p>The HdmiInput plugin allows you to control the HDMI Input on a set-top box. The CompositeInput Plugin allows you to control the composite input source on a device.</p> <ul style="list-style-type: none"> <li>• RDK extensions added to handle HDMI/Composite input ports</li> <li>• Start, stop and set video rectangle for HDMI/Composite inputs</li> <li>• Get EDID details, SPD information and supported game features for HDMI inputs</li> <li>• Supports hotplug, input signal changes, input status changes events for HDMI/Composite</li> <li>• Video Mode and ALLM change events for HDMI</li> </ul> <p><u>Thunder API documentation:</u></p> <p><a href="https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/HdmiInputPlugin.md">https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/HdmiInputPlugin.md</a></p> <p><a href="https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/CompositeInputPlugin.md">https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/CompositeInputPlugin.md</a></p>	<a href="#">RDK TV HDMIInput /CompositeInput</a>
MotionDetection	<p>The MotionDetection plugin allows you to control the motion sensors that are available on a set-top box.</p> <ul style="list-style-type: none"> <li>• Motion Sensors provide more flexibility to power management and enhance user experience.</li> <li>• Power saver modes can be configured based on user presence.</li> <li>• New thunder plugin and RDK HAL added for Motion Detection</li> <li>• Provides APIs to, <ul style="list-style-type: none"> <li>◦ Activate, Deactivate Motion Detection</li> <li>◦ Get Motion Sensor details</li> <li>◦ Control the active and inactive time period for Motion Detection</li> <li>◦ Adjust sensitivity of Motion Detection</li> </ul> </li> </ul> <p><u>Thunder API documentation:</u></p> <p><a href="https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/MotionDetectionPlugin.md">https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/MotionDetectionPlugin.md</a></p>	<a href="#">RDK TV MotionDetection</a>
TV Audio settings	<ul style="list-style-type: none"> <li>• Displaysettings provides application interface to manage TV Audio output ports , TV Audio modes and TV Audio settings</li> <li>• RDK Devicesettings manages the persistence and settings initialization.</li> <li>• Open source RDK Thunder documentation of the interface: <a href="https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/DisplaySettingsPlugin.md">https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/DisplaySettingsPlugin.md</a></li> </ul>	<a href="#">RDK TV Audio settings</a>

<p><b>RDK TV CEC &amp; ARC /eARC</b></p>	<p>The HdmiCecSink plugin allows you to manage HDMI Consumer Electronics Control (CEC) sink for connected devices.</p> <p><b>TV CEC Features:</b></p> <ul style="list-style-type: none"> <li>◦ One Touch Play</li> <li>◦ Routing Control</li> <li>◦ System Standby</li> <li>◦ Power Status</li> <li>◦ System Audio Control</li> <li>◦ ARC Control</li> <li>◦ Remote Control Passthrough</li> </ul> <p><b>TV ARC/eARC Functionalities:</b></p> <ul style="list-style-type: none"> <li>◦ Audio device type detection</li> <li>◦ Audio device power state synchronisation</li> <li>◦ Audio routing control</li> <li>◦ Digital Audio output mode configuration</li> </ul> <p><u>Thunder API documentation:</u></p> <p><a href="https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/HdmiCecSinkPlugin.md">https://github.com/rdkcentral/rdkcentral/blob/main/docs/api/HdmiCecSinkPlugin.md</a></p>	<p><a href="#">RDK TV CEC &amp; ARC /eARC</a></p>
<p><b>Picture Settings</b></p>	<ul style="list-style-type: none"> <li>• RDK TV Picture Settings feature is implemented via RDK TV Settings thunder service which provides TV applications an interface to change TV picture settings.</li> <li>• RDK TV Settings provides configurable options to change TV Picture settings based on viewing /picture modes and content format.</li> <li>• Persists the picture setting values changed by TV applications in a non-volatile area and re applies them on every bootup.</li> <li>• Provides default values for all picture settings.</li> <li>• SoC picture quality drivers are responsible for handling content format change, source change and picture mode change events. Apply appropriate picture settings in response to these events</li> </ul> <p><a href="https://code.rdkcentral.com/r/plugins/gitiles/rdk/components/opensource/tvsettings/+/refs/heads/rdk-next">https://code.rdkcentral.com/r/plugins/gitiles/rdk/components/opensource/tvsettings/+/refs/heads/rdk-next</a></p> <p><a href="https://code.rdkcentral.com/r/plugins/gitiles/rdk/components/opensource/tvsettings/stubs/+/refs/heads/rdk-next">https://code.rdkcentral.com/r/plugins/gitiles/rdk/components/opensource/tvsettings/stubs/+/refs/heads/rdk-next</a></p>	<p><a href="#">RDK TV Picture Settings</a></p>

<p>TV Settings</p>	<ul style="list-style-type: none"> <li>• RDK TV Settings like any other thunder module is initialized at cold bootup by the RDK thunder framework.</li> <li>• Upon initialization it reads and applies the last set picture mode and associated picture settings following customization rules as specified in /etc/tvproduct_config.ini file.</li> <li>• Once initialised RDK TV Settings thunder module activates itself providing an interface to TV Application for changing picture setting parameters.</li> <li>• For any changes to picture setting parameters, the TV Application invokes the set thunder APIs and passes the values to be set as parameters. RDK TV Settings thunder module follows the rules set in /etc/tvproduct_config.ini file to apply the value.</li> <li>• The last set value for any picture setting parameter can be queried by the TV Application using get thunder APIs. The returned value will always be for the current content format being played and current picture mode selected.</li> <li>• If TV Application decides to reset to default, the corresponding reset APIs can be invoked and TV Settings module will use default values for the product and apply them following the rules set in /etc/tvproduct_config.ini file.</li> </ul> <p><a href="https://code.rdkcentral.com/r/plugins/gitiles/rdk/components/opensource/tvsettings/+/refs/heads/rdk-next">https://code.rdkcentral.com/r/plugins/gitiles/rdk/components/opensource/tvsettings/+/refs/heads/rdk-next</a></p> <p><a href="https://code.rdkcentral.com/r/plugins/gitiles/rdk/components/opensource/tvsettings/stubs/+/refs/heads/rdk-next">https://code.rdkcentral.com/r/plugins/gitiles/rdk/components/opensource/tvsettings/stubs/+/refs/heads/rdk-next</a></p>	<p>RDK TV Settings</p>
--------------------	--	------------------------



## Hardware Porting Guide

If you are a SoC or OEM trying to get RDK TV running on your device/platform, please refer the following hardware Porting guide

[Porting Guide](#)



## Hardware Deployment Guide

If you are an Operator/CE manufacture trying to make an RDK TV deployment-ready, please refer the following deployment guide

[Deployment Guide](#)



## Available Devices

For details of available SoC reference platforms, White labeled boards and Accelerator devices with RDK TV ported on them, please follow the below link

[Available Devices](#)



## User Interface

To know about the details of RDK TV User Interface(UI) and how to integrate UI on your device/platform, please follow the below RDK TV UI link

[User Interface](#)

---

## References

- [Technology Summit - RDK TV Architecture and TV Settings](#)