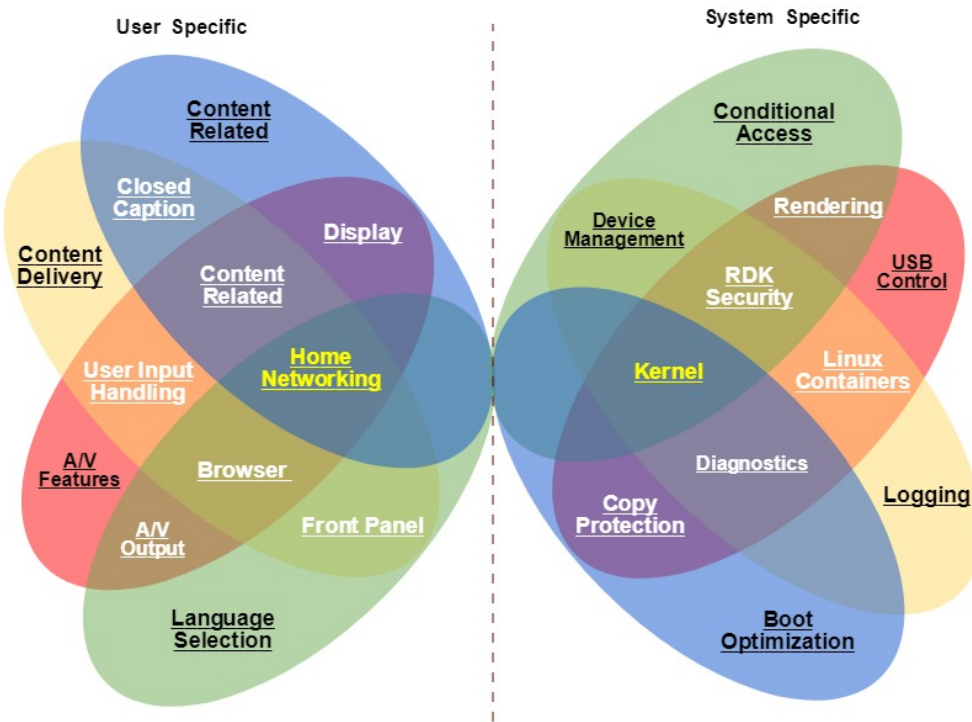


RDK-V Features

RDK is a community-based project that allows developers, vendors and cable operators to use a defined stack of software on one layer in order to provision set-top boxes and gateways. Unique features of RDK such as **commitment to open source, speed** and **flexibility** of RDK-based devices makes it stand out from the conventional settop software stacks.

The RDKV standardized stack provides a common method to manage complex video and management functions such as rendering, content, content security, device management, networking, & peripherals.

The RDKV Feature List is categorized by the below functions, Enhancements and new features are developed and contributed asynchronously by members of the RDK Community.



Existing Features

- [Conditional Access](#)
- Content Related
- Content Delivery
- Rendering
- Device Management
- RDK Security
- Networking
- Display, Audio & Video Output
- User Input Handling
- USB Control
- Closed Caption
- Copy Protection
- Diagnostics
- Front Panel
- Language Selection
- RDK Logging
- Output Settings - Audio/Video

Upcoming Features

- Upcoming Features

Licensee Features

- [RDK-V Features for Licensee User](#)

Conditional Access

Feature Category	Feature details
Conditional Access	Containerization of key processes in support of European CA requirements (DBUS, RMF, container for remaining processes)
Selectable Output Control	Disable analog output for individual programs
DRM	DTCP integration
	Microsoft PlayReady with RDK Security API integration

Content Related

Feature Category	Feature Details
Adaptive Bit Rate	HLS
	MPEGDASH (gstreamer plugin)
	HTML5 Video (MSE/ESE)
Codecs	MPEG2, H.264, VP8
	High Efficiency Video Coding (HEVC) (H.265/MPEGH Part 10)
	HDR 10 Bit (HEVC HLS) for IP settop
Video Input Formats	MPEG2, H.264, VP8
Video Output Resolutions	480i, 480p, 720p, 1080i, 1080p
	Advanced High Dynamic Range (HDR)
Audio Input Formats	MPEG, MP3, AAC, LPCM
Audio Output Formats	Stereo
	Dolby Digital
	Dolby ATMOS
	Dolby Digital Plus (7.1 Channels)
	Split HDMI and SPDIF audio outputs
	Bit stream Passthrough
Audio Tracks	SAP, DVS
Captions	608, 708
DVB	Teletext, Subtitles
	InBand System Information
EAS	QAM EAS, IP EAS
Song Identification	Create Audio Tracks for song recognition services

Googlecast	Streams content from mobile/laptop to settop via Chromecast built-in to display on TV
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Content Delivery

Feature Category	Feature Details
SDV	Dynamically switch video services on and off based on usage
Video over WiFi	
VOD	VOD auto discovery and asset aquisition. QAM VOD and IP VOD
iPPV	IPPV purchase via CableCard for requested program

Rendering

Feature Category	Feature Details
Advertising Impressions/ Ad Watermarking	Monitor primary tuner for ETV Ad Data, report upstream
Ad Insertion	Client Side Ad Insertion (Linear Segmented Advertisement)
APIs	ServiceManager
Browser Engine	QT WebKit 5.1.1
	WebKit Pure Embedded integration
Connection Security	SSL/TLS
Graphics	DirectFB, OpenGL ES
Plugins	WebRTC
Rendering	QT 5.1.1
	Westeros Wayland Based Compositor
	pxscene (node.js JavaScript engine)

Device Management

Feature Category	Feature Details
Download	TFTP (CDL), HTTP
	Download Enhancements (% download, Log timestamps)
Initialization & Resets	Remote Reboot, Warehouse Reset, Factory Reset
	Detect & log absence of RF signal within 30s of boot (Thermo)
	Boot Time Optimization
Local Diagnostics	HTML Diagnostics
	Tuner Reservation Diagnostics
Logging	TFTP Log Upload, HTTP Log Upload
	Additional logging parameters

	Additional logging triggers
Remote Management	SNMP, TR069
	SNMP v3
	WebPA (IP Clients)
	WebPA (QAM Clients)
	ssh (secure shell into the device)/
	reverse ssh (send trigger to have device initiate ssh)
	Feature Control (Remotely enable/ disable individual features on devices without new code deployment)
Telemetry	TR181 Object Telemetry
	Bluetooth Diagnostics & Telemetry Enhancements
	IP Video Telemetry
Power	Standby, Light Sleep
	Deep Sleep on IP Clients
	Power Save Expansion (Deep Sleep on Hybrid Video Gateway)
Self Test	Self Test App
	Hardware Self Test via WebPA
Self Healing	Thermal Monitoring and Shutdown
Tools	DOCSIS Spectrum Analyzer
Security	Intrusion Detection
	Intrusion Detection Enhancements
Implementation	Converge RDKV and RDKB Messaging Bus
Kernel	Linux 4.9
Build	Yocto 2.1 Krogoth on Raspberry Pi Reference Platform
	Yocto 2.2 Morty
Image Compression	Brotli Firmware Image Compression

RDK Security

Feature Category	Feature Details
Intrusion Detection	Monitoring processes
Containerization	Keep privileged processes separate from others
Linux Hardening	Measures taken to make the RDK STB more secure and closed of the security gaps and common Linux security vulnerability.

Networking

Feature Category	Feature Details
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DLNA	VidiPath (DNLA CVP2)
DSG	DOCSIS ready
IP Direct	IP Direct support on DOCSIS devices
LAN IP	Auto IP, DHCP, Dual Virtual
WAN IP	eCM IPv4/IPv6, eSTB IPv4
	IPv6 for IP clients
WiFi	Onboard/Recovery SSID (Lost+Found) Ready
	Home Network QoS Ready
	WPA Enterprise (IP settop to use WiFi 802.1x authentication) Ready

Display, Audio & Video Output

Feature Category	Feature Details
Audio Output Ports	HDMI, SPDIF, Composite Ready
	Bluetooth Audio Output Ready
HDMI	HDMI Out, HDCP Enforcement, HDMI In
	HDMI Consumer Electronics Control (HDMICEC) Power Sync
	HDMI Switching (Combine CEC and HDMI Input features to enable advanced switching)
Video Output Ports	HDMI, Component, Composite

User Input Handling

Feature Category	Feature Details
User Input handling	FP USB slot for UI navigation using keypad.
	IR, RF or keyboard input handling, RF Remote with Automatic pairing
	RF4CE pairing
	Routing of IR to different applications based on focus rules
	Voice Remote (RF4CE Based)

USB Control

Feature Category	Feature Details
USB	USB Port Detection and Control

Closed Caption

Feature Category	Feature Details
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Closed Captioning	Closed captioning pass through to Component and Composite outs.
	Changed the config.properties key string for the Closed Captioning attributes background value.
	Enable/disable closed caption rendering
	608/708 closed captioning
	Selection of various Closed captioning font and display parameters
	Using separate graphics plane or sharing graphics plane with other GUI elements based on device capabilities

Copy Protection

Feature Category	Feature Details
Copy Protection	Analog encryption setting (based on the incoming Streams APS value delivered in CCI) on Analog Outputs like RF , Component and Composite ports.
	Setting Analog and Digital copy protection setting on output ports like Analog Video ports (RF, Component, Composite) and Digital outs like IP stream out (like MDVR, VPOP etc) from the stored CCI value during recording.
	HDCP
	DTCP-IP

Diagnostics

Feature Category	Feature Details
Diagnostics	Boot-up Diagnostics
	Boot screen with graphical indication of boot progress
	Mini Diagnostics using Boot Manager
	Log rotation.
	Local and remote core dump analysis with support for mini dumps
	Invoking of diagnostics application using special key sequence
	Display of critical diagnostics parameters using the On screen diagnostics app
	SNMP agent with sub-agents for all required OpenCable SNMP MIBs
	Instrumentation for all OpenCable SNMP MIB parameters

Front Panel

Feature Category	Feature Details
Frontpanel	LED management for various functionality such as IR reception, recording etc
	LEDs managed by application

Local time display using LED

LED messages during boot up and critical system functionality such as CDL, ABL, resets, etc.

Language Selection

Feature Category	Feature Details
Language	Audio language selection

RDK Logging

Feature Category	Feature Details
Logging	Dynamically configurable logging system
	Uploading of logs based on configuration
	Capturing of logs based on configuration

Output Settings - Audio/Video

Feature Category	Feature Details
Output settings	Video output resolution selection
	Video output aspect ratio selection
	Audio output configuration
	Support for HDMI, Component, RF or composite output
	Auto-select for HDMI output resolution
	HD or SD output for Graphics/video
	Configuration for aspect ratio conversion
	Reverting to safe resolutions based on special key sequences