New Features

- Added Manual Proxy Recording for HDMI encoders
- Low Bitrate Mode – significantly improves video quality at lower bitrates
- Enabled 480p and 576p output for HDMI decoders
- Added support for special characters in wireless passwords

Changes

- Deinterlacer is enabled by default
- Redesigned Decoder Settings page
- Reorganized Encoder Settings page
- Generic RTMP included by default
- Analog audio controls enabled on all Cubes with HW version 1.5 or later

Improvements

- RTMP compatibility/stability improvements
- Quickview stream uses low bitrate mode, frame rate and resolution adjust for 25/50Hz inputs
- Decoder restart monitoring
- Improvements for timestamp sync with 59.94Hz video inputs

Bug Fixes

- Fixed possible video latency drift present in 5.2.x firmware
- Fixed missing audio settings on Cube 500 series models
- Fixed Livestream verification with Bond connected
- 480i (NTSC) was SDI not detected properly

New Features – 5.2.2 Release

- Added support for Verizon USB55L 4G modem

Changes – 5.2.2 Release

- Remove ‘Compatibility mode’ for RTMP
- Simplified Sputnik configuration in web UI

Improvements – 5.2.2 Release

- RTMP broadcast start/stop improvements
- Stability improvements

Bug Fixes – 5.2.2 Release

- Fixes to custom modem modes
- USB LED sometimes displayed orange while connected to Bond
- Changing decoder’s caching value did not restart decoder

New Features – 5.1.3 Release

- Added HDMI support for 1080p @ 23.98
- Cube Decoder supports RTSP Streams from AXIS IP cameras

Changes – 5.1.3 Release

- Default transport stream listening port on decoder changed to 9710

Bug Fixes – 5.1.3 Release

- Red Epic camera HD-SDI source resolution was not properly detected
- Frame rates for 1080p23.98/1080p24 input modes were reset to 24 when restarting the encoder
- Ethernet MTU value could not be changed
- Separated Telstra BigPond Ultimate and BigPond 4G USB modem configurations
- USB LED operation on older hardware was incorrect

Bug Fixes – 5.1.1 Release

- Strict CBR setting could not be enabled through web UI
- Some decoder settings not displayed/applied correctly (caching, jitter buffer)
- Changing the host name did not update link-local host name
- Red One 720p50 resolution no longer reports resolution mismatch
- WiFi LED now reports Ad Hoc status correctly

Improvements - 5.1.1 Release

- Service advertisements are available more quickly on boot up

New Features – 5.1.0 Release

- Faster Boot time – Video stream available over Configurable 'Primary Interface' in approximately one minute (selectable on Dashboard or Network Configuration page)
- Added FMLE-style authentication and user agent setting to RTMP streaming mode
- Additional rate control options added to Encoder Settings page
- Additional settings added to Decoder adaptive bitrate settings
- Added selectable input resolutions and autodetection for 720p59.94, 1080p23.98, 1080p29.97, 1080i59.94
- Added 1080PsF support (limited number of sources tested)
- Added support for 720p50 HDMI output from RED One
- Added 720x576 (576p) scaling option
- Added 256kbps audio bitrate option

Bug Fixes – 5.1.0 Release

- Fixed Interlaced (i) versus segmented frame (PsF) detection
- Fixed issue where codec would hang when restarted
- Fix issue where Bonjour service advertisements stop intermittently
- Fixed

Improvements – 5.1.0 Release

- Improvements to video/network disconnection handling on encoder and decoder
- Various Transport Stream adaptive bitrate stability improvements
- USB Modem connection times have been reduced

Known Issues – 5.1.0 Release

- Ad Hoc LED may sometimes stay red when successfully connected

New Features – 5.0.3 Release

- Compatibility mode added to Generic RTMP stream mode. May improve connectivity with some streaming servers

Bug Fixes – 5.0.3 Release

- Mobile streaming when using Livestream with RTMP was not working correctly
- Default analog audio output level on Cube decoders was too loud
- Auto configuration for decoder sometimes used incorrect output settings
- Fix for HDMI output hotplug detection (Cube 4xx series)
- Stereo/Mono settings not being displayed for 5xx series Cubes
- Manual client port configuration for decoder did not apply

Changes – 5.0.3 Release

- Change default ad hoc network channel from 1 to 3 to avoid the commonly crowded channel
- Change all 512 kbps bit rate listings to 500 kbps to avoid incompatibility with Livestream free channels. Bitrate can still be specified manually on Encoder Settings page
- Warning message on Livestream configuration page allows users to automatically configure their encoder for compatibility with Livestream free channels

New Features – 5.0.0 Release

Livestream

- RTMP streaming is now the default mode for Livestream broadcasts sent directly from Cube, and provides improved streaming performance. RTSP streaming is still available as an option

Generic RTMP Publish (Optional License)

- Generic RTMP / Flash streaming has been added to Cube and allows the following:
  - RTMP Streaming: Cube can publish directly to a server (e.g. Adobe Flash Media Server, Wowza Media Server) or CDN (e.g. Justin.tv, UStream, etc.)
  - RTMP Server: web pages can pull video directly from the Cube
- This streaming method requires a license to activate; contact support@teradek.com with the serial number and Ethernet MAC Address of your Cube to request a license

Proxy Recording (Optional License)

- Proxy Recording support for the ARRI Alexa

USB Wireless Broadband Modems

- Support for the following modems and carriers has been added:
  - T-Mobile: Jet 2.0 (Huawei e366)
  - Telstra: BigPond Ultimate (Sierra Wireless Aircard 312U)
  - Verizon: Pantech UML290

Video/Audio

- De-interlacer to improve streaming quality from interlaced video input sources
- 480pH and 576pH HDMI input support
- Adaptive Frame Rate support
- Added option to change aspect ratio
- Audio bitrate can be changed on the fly
- Audio output volume control for newer-model Cube Decoders

RTSP/RTP

- Advanced features have been added to the default RTSP/RTP streaming method in

Cube:

- Authentication (username/password) can be added to require viewers to enter a username and password to view the stream from Cube
- The RTSP server port may be changed from the default of 554 to accommodate firewall or advanced network setups
- Limit to the number of clients allowed to connect to the RTSP server may be set
- Multicast TTL may now be specified for RTSP/RTP multicast streams

RTP Push (Optional License)

- RTP Push is now a separate streaming type from RTSP/RTP
- Configurable RTP Push options for the secondary Quickview stream

RTSP Announce (Optional License)

- Added auto start broadcast option to RTSP Announce

Transport Stream (Optional License)

- Cube's MPEG Transport Stream is now compatible with Wowza Media Server
- Jitter buffer was added to buffer video for lossy/unreliable connections (Internet streaming)
- Adaptive Bitrate support
- Enable/disable PCR option for improved performance with some 3rd party STBs

Quickview

- Quickview stream mode is now independent of the primary streaming mode

Web Interface

- Major changes have been made to the web page layout:
  - Button to show / hide all advanced settings (settings hidden by default)
  - Consistent location for "Apply" and "Cancel" buttons
  - Stream Settings page reorganized for clearer layout
  - Decoder Settings page will allow pairing with any Encoder, and will display a

warning if the Encoder's current stream type is not supported

- "Home" icon added to navigation bar

- Web server port may be changed from the default of 80 (HTTP) or 443 (HTTPS) to accommodate firewall or advanced network setups

Wireless Networking

- Option to enable wireless roaming between access points with the same SSID.

Improvements – 5.0.0 Release

- Under-the-hood system performance improvements

Bug Fixes – 5.0.0 Release

- 576i aspect ratio was incorrectly set
- Improvements to encoder/decoder stream connecting
- Hotplug of video display on the HDMI Decoder output (Cube 4xx) was not always detected
- Cubes with single band (2.4 GHz) radios displayed unusable (5 GHz) Wi-Fi channels
- Fixed issue with multiple search domains or DNS server entries received from some DHCP Servers