

You can update your card by downloading the new Update software by going to the **Support>Firmware** link at [www.cobaltdigital.com](http://www.cobaltdigital.com). Download "Firmware Update Guide", which provides simple instructions for downloading the latest firmware for your card onto your computer, and then downloading it to your card through Dashboard™.

**Software updates are field-installed without any need to remove or disconnect the card/device.**

The table below lists released software versions and describes the corresponding functions additions, improvements and/or corrections.

**Note:** Date ranges are approximate.

**Note:** ImmediaTV ("ITV") has been acquired by Cobalt Digital Inc ("CDI"). The supplier name and model numbers for the ITV EN460 series have changed. (9223 and 9223-SA are CDI versions of ITV MVN-EN460 and ITV-EN460, respectively. 9990-ENC-H264-IP and BBG-1090-ENC-H264-IP are CDI versions of ITV MVN-IP360 and ITV-IP360, respectively.) This change is backward-compatible with archived configurations. SNMP MIBs have not changed, except to support the new features introduced in this release. This change does not affect the OEM versions of this product.

Software Version (Date)	Description
Release 3.1.0 (11/1/2018 – present)	<p><b>Additions / Improvements:</b></p> <ul style="list-style-type: none"> <li>• <b>For broadcast encoders only</b> (9923 and standalone variants, or streaming encoder upgraded to broadcast encoder), adds support for RIST (Reliable Internet Stream Transport) protocol and licensing of this option (<b>+RIST/ARQ-ENC</b>). Cobalt's proprietary RTP/ARQ method of transmission over the Internet has been replaced by the Reliable Internet Stream Transport protocol, as per the Video Services Forum TR-06-1. While interoperability between RIST and RTP/ARQ is possible, users are encouraged to upgrade all links to <b>+RIST/ARQ-ENC</b> where RTP/ARQ was previously used.</li> <li>• Adds support for negative manual audio A/V sync offsets for the additional audio channels.</li> <li>• (BBG-1123/BBG-1190-ENC-IP only) Adds the ability to turn off the front panel screen saver.</li> <li>• Some off-the-shelf network scanners incorrectly report a number of security vulnerabilities in previous versions of the firmware. Even though none of the reported vulnerabilities are real, some internal components have been updated to avoid these issues.</li> <li>• 9990-ENC-H264-IP/BBG-1090-ENC-H264-IP/BBG-1190-ENC-H264-IP encoders can now be upgraded to the respective broadcast version with a license key.</li> </ul> <p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• Fixes possible A/V sync issues with Dolby pass-through if the input audio disappears and comes back.</li> <li>• Fixes ancillary data extraction that was not working as expected for SD-SDI signals.</li> </ul>
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<b>Software Version (Date)</b>	<b>Description</b>
Release 3.0.0 (7/24/2017 – 11/1/2018)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>• Support for inserting generic ancillary data packets in the transport stream using SMPTE-2038, with frame accuracy. Up to four DID/SDID pairs can be supported.</li> <li>• Support for the RTP/ARQ protocol, for video transport over the Internet (license required). This protocol can be combined with the following features:               <ul style="list-style-type: none"> <li>- Ancillary data: Closed-Captions, AFD, SCTE-104 to SCTE-35 conversion, and SMPTE-2038.</li> <li>- Additional MPEG-1 Layer-II audio channels.</li> <li>- Support for a multi-angle feature in dual-channel encoders. This allows the creation of a transport stream with two synchronized video PIDs.</li> </ul> </li> </ul> <p><b>Note:</b> RTP/ARQ functions and licenses are supported only on 9223, 9223-SA, and BBG-1123 models.</p> <ul style="list-style-type: none"> <li>• Support for the following input signal types (on HD-SDI):               <ul style="list-style-type: none"> <li>- 1920x1080p25, 1920x1080p29.97, 1920x1080p30</li> <li>- 1280x720p25, 1280x720p29.97, 1280x720p30</li> </ul> </li> <li>• Adds ability to filter out SMPTE-334M 608 and/or 708 Closed-Captions instead of including them all. Useful for SDI signals that have both types of captions included.</li> </ul> <p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>• Update the SCTE-104 to SCTE-35 conversion function to the 2015 version of SCTE-104 and 2014 version of SCTE-35 by adding support to the following operations:               <ul style="list-style-type: none"> <li>- insert_tier_data</li> <li>- insert_time_descriptor</li> </ul> </li> <li>• Automatic faster DashBoard startup over long latency links for the BBG-1000 and BBG-1100 standalone versions. This mode is compatible with all versions of DashBoard.</li> </ul> <p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• Fixes minor user interface cosmetic issues.</li> </ul> <p>Updated manuals (v3.0) are available and should be used to properly use the new features described here.</p>
Release 2.6.0 (2/14/2017 – 7/24/2017)	<p>This is a maintenance/manufacturability release which adds support for -A8 versions of the encoder. Upgrade to this release for current users is not required.</p>
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Software Version (Date)	Description
Release 2.5.0 (12/13/2016 – 2/14/2017)	<p><b>Additions / Improvements:</b></p> <ul style="list-style-type: none"> <li>• Adds support for fast DashBoard startup on high latency links. If there is a high-latency link between the computer running DashBoard and the device (or the frame housing the device), this feature will make the startup time (when DashBoard first connects to the device) as fast as when connecting over a local network. Note that this support requires DashBoard version 8.2 or later.</li> <li>• ASI outputs configured for Auto bit rate will turn themselves off (no ASI signal at all) if the encoder channels connected to it are not running. The same applies for UDP/RTP outputs.</li> <li>• The SCTE-104 to SCTE-35 injection function is now frame-accurate.</li> <li>• Improved RTMP compatibility with some CDNs. This version implements the Akamai requirements for Flash Metadata.</li> <li>• Adds support for scaling 1920x1080i inputs to 1920x1080p at half frame rate (e.g., 1920x1080i59.94 to 1920x1080p29.97).</li> <li>• (ITV 360d “deluxe” models only) Adds support for a Factory Configuration Reset operation from the front panel.</li> </ul> <p><b>Note:</b> Many of the feature enhancements above were initiated by user comments. If the additional MPEG-1 Layer II audio pairs are being used, this release is recommended. Some users have requested for the ASI output to turn itself off when the encoder has no signal. Users preferring this functionality should upgrade to this release. Finally, Akamai has made some changes to their CDN rendering version 2.4.0 no longer compatible with their service. Users that use Akamai <b>must</b> upgrade to version 2.5.0.</p> <p><b>Corrections:</b></p> <p>This release resolves the following issues:</p> <ul style="list-style-type: none"> <li>• Fixes occasional spontaneous DashBoard full refreshes when changing a parameter.</li> <li>• Fixes variations in A/V sync point for the additional audio channels: if the encoder was licensed for additional audio channels, every time it was stopped and started the A/V sync point for these channels would change by up to 20 milliseconds.</li> <li>• Fixes A/V sync drift exhibited under the following configuration:             <ul style="list-style-type: none"> <li>• Dual-channel encoder, licensed with two additional MPEG-1 Layer II audio pairs</li> <li>• The two additional audio pairs assigned to one of the encoder channels (i.e., one channel with 3 pairs and another with one)</li> <li>• Unsynchronized video feeds to each of the encoder channels</li> </ul>             In this situation, either the second or the third pair assigned to the channel with three pairs would experience a slow A/V sync drift.           </li> <li>• For some parameter combinations, when configured for Baseline Profile, the encoder was ignoring this configuration and generating High Profile.</li> </ul>
Release 2.4.0 (3/21/2016 – 12/13/2016)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>• Adds a cross-domain.xml file to the encoder's internal web server to allow Flash-based HLS clients (such as JWPlayer) hosted on another server to play content from the encoder's internal server.</li> </ul> <p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>• Support for SCTE-104 to SCTE-35 conversion. For SDI signals, the encoder will accept SCTE-104 triggers in the VANC and insert them into the outgoing transport stream as SCTE-35 PIDs with the appropriate table signaling. This feature is available only for ASI and UDP/RTP output modes.</li> <li>• Closed-captioning support for reduced frame rate output modes. In previous versions, closed-captioning only worked if the frame rate and interlace mode of the output were the same as the input. As of this version, the encoder automatically reformats the closed-captions so they will work for any combination of input/output frame rates and interlace modes.</li> <li>• (9223-SA, BBG-1090-ENC-H264-IP only) DashBoard download link was updated in the control port web pages generated by the device.</li> </ul> <p><b>Corrections:</b></p> <p>This release resolves the following issues:</p> <ul style="list-style-type: none"> <li>• Corrects some rare RTMP startup and reliability issues.</li> </ul>
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Software Version (Date)	Description
Release 2.3.0 (5/29/2015 – 3/21/2016)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>• Adds a cross-domain.xml file to the encoder's internal web server to allow Flash-based HLS clients (such as JWPlayer) hosted on another server to play content from the encoder's internal server.</li> </ul> <p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>• RTMP outputs can be directed to a specific network output port.</li> <li>• In RTMP, it is now possible to specify independent publishing points for both primary and backup, as well as independent network interfaces.</li> <li>• Improved RTMP compatibility with some CDNs (Edgecast and others).</li> <li>• In automatic mode, the ASI output rate will be kept stable across encoder restarts.</li> <li>• Automatic recovery of corrupted firmware images.</li> <li>• (9223-SA only) DashBoard download link was updated in the control port web pages generated by the 9223-SA.</li> </ul> <p><b>Corrections:</b></p> <p>This release resolves the following issues:</p> <ul style="list-style-type: none"> <li>• Corrects incorrect transport rate computation when two additional audio channels are enabled. In transport rate mode, this caused the encoder to generate a transport rate slightly higher than configured.</li> </ul>
Release 2.3.0 (cont.) (5/29/2015 – 3/21/2016)	<ul style="list-style-type: none"> <li>• Fixes issue wherein if the encoder was configured for one of the OTT protocols (where additional audio is not available), the additional audio enable checkboxes would not appear once the encoder was taken out of OTT mode.</li> <li>• Fixes issue wherein if the encoder were set to Video Auto-Detect mode, in some situations the analog/embedded audio selection would not persist across reboots. This version fixes the issue, but it will still happen the first time the unit boots version 2.2.5. When the setting is manually corrected, it will be retained on subsequent boots.</li> <li>• When configuring the encoder out of secondary audio mode, the Encoder 2 channel will now revert to the 480x270 resolution to avoid licensing issues.</li> </ul> <p>This upgrade is recommended for users that either wish to use the new features or are experiencing any of the issues corrected in this version.</p> <p>A new Product Manual describing these new functions and settings is available, and can be downloaded from the 9223 or 9223-SA web page. Users who do not need the new features and whose configurations do not expose the issues listed above do not need to upgrade.</p> <p><b>Note:</b> Unrelated to this firmware version is availability of hardware version 4, which supports balanced analog audio inputs (instead of the normal unbalanced RCA inputs). This is available as a rear module option for HW version 4 9223 openGear models and versions of the 9223-SA modular unit.</p>
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Software Version (Date)	Description
Release 2.2.5 (12/22/2014 – 5/29/2015)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>• Adds support for down-conversion from 1920x1080i to 1280x720p at the same frame rate:             <ul style="list-style-type: none"> <li>• 1920x1080i60 can be converted to 1280x720p30</li> <li>• 1920x1080i59.94 can be converted to 1280x720p29.97</li> <li>• 1920x1080i50 can be converted to 1280x720p25</li> </ul> </li> </ul> <p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>• Fast Restart allows faster re-establish of encoder restart upon video signal loss/re-acquire; up to 2 seconds quicker than previous versions (depending on the duration of the signal outage).</li> <li>• If RTMP mode is selected, this version will force GOP mode to Closed GOP, for better compatibility with some CDNs (such as YouTube).</li> <li>• (9223-SA only) Additional consistency checking performed when setting IP addresses. The unit will not allow the user to set the same IP address in the streaming and control ports.</li> </ul> <p><b>Corrections:</b></p> <p>This release resolves the following issues:</p> <ul style="list-style-type: none"> <li>• Corrects the setup level on composite video.</li> <li>• Fixes issue wherein if Additional Audio was enabled, and the PID changed from its default value, the new setting would not persist across encoder reboots.</li> <li>• Fixes issue wherein if the encoder were set to Video Auto-Detect mode, in some situations the analog/embedded audio selection would not persist across reboots. This version fixes the issue, but it will still happen the first time the unit boots version 2.2.5. When the setting is manually corrected, it will be retained on subsequent boots.</li> <li>• Includes minor DashBoard GUI aesthetic and editorial fixes.</li> </ul> <p>This upgrade is recommended for users that either wish to use the new features or are experiencing any of the issues corrected in this version.</p> <p>A new Product Manual describing these new functions and settings is available, and can be downloaded from the 9223 or 9223-SA web page. Users who do not need the new features and whose configurations do not expose the issues listed above do not need to upgrade.</p>
Release 2.2.0 (9/23/2014 – 12/22/2014)	<p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>• Significantly reduced latency in normal usage (in some cases with Ericsson encoders of up to a 60% improvement). A Coding Delay control has been added to allow fine-tuning of the latency/quality trade-off. The coding latency control can be set to any value between 100 milliseconds and 500 milliseconds. The total encoder-side latency of Release 2.2.0 is 150 milliseconds plus the coding delay setting (i.e., resulting in total delay between 250 and 650 milliseconds).</li> <li>• Added support for overriding the default aspect ratio in the H.264 bitstream (<i>aspect_ratio_idc</i> in the Video Usability Information), for decoders that do not support AFD. This can be used to signal wide-screen for anamorphic SD feeds.</li> <li>• More robust video input lock mechanism, to better support situations where the encoder is downstream from a frame synchronizer or a video source whose clock is marginal.</li> </ul> <p><b>Corrections:</b></p> <p>This release resolves the following issues:</p> <ul style="list-style-type: none"> <li>• Fixes occasional audio/video data corruption with RTMP at higher bit rates.</li> <li>• Fixes frame rate reported in the RTMP metadata that was incorrect in some situations, when the encoder was scaling the input.</li> <li>• Fixes rare cases where the input video had SMPTE-334M closed-captioning switching between EIA-608 and EIA-708, with the encoder stopping to insert closed-captions in the bitstream even though the captions were available at the source.</li> <li>• Includes minor DashBoard GUI aesthetic and editorial fixes.</li> </ul> <p><b>Note:</b> Reducing the Coding Delay to reduce latency will have implications in the video quality, depending on the configured bit rate. In particular, if the Coding Delay is too low for the bit rate, the image will present a periodic "pulsation" (i.e., the quality will degrade once or twice a second). The solution to this is to either increase the Coding Delay or increase the video bit rate. For example, at 1920x1080i59.94, this artefact will be seen when the Coding Delay is set to the minimum of 100ms and the video bit rate is set to less than 12 Mb/s. In Video over IP applications to set-top boxes, it is recommended that the use of VBR video with the NULL packet padding be turned off in the IP Output.</p>

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<b>Software Version (Date)</b>	<b>Description</b>
Release 2.2.0 (9/23/2014 – 12/22/2014) – cont.	<p><b>Note:</b> This firmware upgrade is recommended for the following users/usages:</p> <ul style="list-style-type: none"> <li>• All encoders configured for RTMP.</li> <li>• Encoders installed downstream from frame sync/video switcher combinations.</li> <li>• Users requiring lower latency or any of the other new features.</li> </ul> <p>A new Product Manual describing these new functions and settings is available, and can be downloaded from the 9223 or 9223-SA web page. Users who do not need the new features and whose configurations do not expose the issues listed above do not need to upgrade.</p>
Release 2.1.0 (5/16/2014 – 9/23/2014)	<p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>• Adds support for encoding 1280x720p inputs at half frame rates, required by some CDNs (e.g., YouTube). This includes converting 720p59.94 to 720p29.97, 720p50 to 720p25, and 720p60 to 720p30.</li> <li>• Adds support for manual specification of the H.264 level.</li> <li>• In the IP Outputs, the RTP and SMPTE 2022 status and configuration parameters have been moved from the Advanced settings to the Basic settings.</li> <li>• The Advanced IP Output status table now reports the overall Ethernet Line Rate, including both the RTP/UDP/IP/Ethernet protocol overhead, and the SMPTE 2022 FEC overhead.</li> <li>• The RTMP performance for high-latency server connections has been greatly improved. The RTMP output can now sustain the maximum supportable rate on links with a round-trip delay of hundreds of milliseconds.</li> <li>• Adds improvements in RTMP session responsiveness when the encoder loses connectivity to the server, or the server is slow to respond.</li> <li>• Where licensed for SMPTE 2022 FEC, this release brings the FEC controls to the basic configuration window, and the advanced IP output window shows the overall line bit rate.</li> </ul> <p><b>Corrections:</b></p> <p>This release resolves the following issues:</p> <ul style="list-style-type: none"> <li>• In single-channel encoders with the additional MP2 audio enabled, the audio source selection was occasionally unavailable and set to analog when the encoder was set to video auto-detection.</li> <li>• Under certain circumstances, the additional MP2 audio source selection (analog/embedded) would not persist in single-channel encoders.</li> <li>• The RTMP output would not connect to a Wowza server when username/password authentication was enabled in the server.</li> <li>• RTMP was not working correctly with video input auto-detection. Some types of video input signals caused audio overflows.</li> <li>• An RTMP session would not use an updated DNS value that was entered in the GUI after the session was created.</li> <li>• Closed-captions and AFD were not working correctly with video input auto-detection.</li> <li>• Direct HTTP may stop accepting connections if subject to a very high rate of connections/disconnections.</li> <li>• When a default gateway was configured for a streaming interface, the encoder would use this gateway for all communication in that subnet, even for local packets. If the gateway did not exist or would not forward to the same interface, communication with the encoder port was not possible.</li> <li>• The ASI 1 output would not work in 204-byte packet mode, only in 188-byte packet mode. Selecting 204-byte packet mode would cause the port to turn off.</li> </ul> <p>A new Product Manual describing these new functions and settings is available, and can be downloaded from the 9223 or 9223-SA web page. Users who do not need the new features and whose configurations do not expose the issues listed above do not need to upgrade. This upgrade is recommended for:</p> <ul style="list-style-type: none"> <li>- Users who need any of the new features.</li> <li>- Cases where firmware 2.0.0 is being used in single-channel encoders and using the additional audio feature from embedded sources.</li> <li>- Cases where using video auto-detection with RTMP and/or closed-captioning and/or AFD.</li> </ul>
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Release 2.0.0 (1/20/2014 – 5/19/2014)	<p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>Input video auto-detection allows encoder to detect input format and self-configure for it. Auto-detection includes signal type (SDI or composite), resolution, frame rate, and progressive/interlaced configuration. A limited number of scaling options is also offered together with auto-detection.</li> <li>Additional audio encoding capable of supporting additional MPEG-1 Layer II stereo or mono encoding instances without any additional hardware. (License <b>+2A</b> is required for this feature.) Each +2A license allows adding a mono/stereo audio PID. See the table below for more information and examples.</li> </ul> <table border="1" data-bbox="532 474 1495 877"> <thead> <tr> <th colspan="3">Single-Channel Encoders 9223-S (9223-SA-S)</th> </tr> <tr> <th>Base</th> <th>One +2A License</th> <th>Two +2A Licenses</th> </tr> </thead> <tbody> <tr> <td>1 Stereo PID</td> <td>2 Stereo PIDs</td> <td>3 Stereo PIDs</td> </tr> <tr> <th colspan="3">Dual-Channel Encoders 9223-D (9223-SA-D)</th> </tr> <tr> <th>Base</th> <th>One +2A License</th> <th>Two +2A Licenses</th> </tr> <tr> <td>2 Stereo PIDs</td> <td>3 Stereo PIDs (Added PIDs per licensing can be applied to Encoder 1 or Encoder 2 channels)</td> <td>4 Stereo PIDs (Added PIDs per licensing can be applied to Encoder 1 or Encoder 2 channels as desired, also including configuring the device as single-channel with 4 total Stereo PIDs in one encoder channel)</td> </tr> <tr> <td colspan="3"> <b>Note:</b> • Maximum of two (2) +2A licenses can be added to single-channel (-S) or dual-channel encoder (-D).            • For Dual-Channel Encoders, added +2A audio channels can only be sourced from de-embedded SDI.         </td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>Audio A/V sync adjustment: allows up to 100 milliseconds of manual A/V sync adjustment.</li> <li>Additional resolutions to support scaling SD inputs to 640x480p29.97 and 528x480p29.97 (640x576p25 and 528x576p25 for PAL). These progressive resolutions are ideal for computer displays.</li> <li>Any over-temperature events are logged by the unit.</li> <li>A new Support tab has been added to the user interface in DashBoard. It includes the customer support e-mail address, as well as a single button to generate all the support information (which includes both the log and the current configuration). This avoids having to go to two places in Dashboard to obtain all required support information.</li> </ul> <p><b>Corrections:</b></p> <p>This release resolves the following issues:</p> <ul style="list-style-type: none"> <li>A/V synchronization issue when the output of the encoder is being decoded by Ericsson RX8200 IRD with some specific firmware releases. (This is actually a workaround for an Ericsson issue.)</li> <li>In a dual-channel encoder with secondary audio enabled, the A/V sync of the second audio channel was off by a value that is configuration-dependent. As of release 2.0.0, in secondary audio mode, the output resolution of Encoder 2 is no longer configurable as a result of this bug fix.</li> <li>If the video input source to the encoder is the SDI output of an Upcom IRD, the encoder would not recognize SMPTE-334M captions in the input signal, depending on the firmware version loaded in the Upcom IRD. This has been corrected.</li> </ul> <p>A new Product Manual describing these new functions and settings is available, and can be downloaded from the 9223 or 9223-SA web page. Users who do not need the new features and whose configurations do not expose the issues listed above do not need to upgrade.</p> <p><b>Note:</b> Due to a bug in the frame controller firmware, the DataSafe feature of the openGear chassis will not work with Release 2.0.0 for the following controller firmware versions:</p> <ul style="list-style-type: none"> <li>- MFC-8310-N and MFC-8320-N: version 2.65 or lower.</li> <li>- MFC-8322-N: version 2.77 or lower.</li> </ul> <p>It is strongly recommend that the frame controller be updated if openGear-based encoders are updated to version 2.0.0.</p> <ul style="list-style-type: none"> <li>- This card is not compatible with the -S version of the frame controller (MFC-8320-S and MFC-8322-S).</li> </ul>	Single-Channel Encoders 9223-S (9223-SA-S)			Base	One +2A License	Two +2A Licenses	1 Stereo PID	2 Stereo PIDs	3 Stereo PIDs	Dual-Channel Encoders 9223-D (9223-SA-D)			Base	One +2A License	Two +2A Licenses	2 Stereo PIDs	3 Stereo PIDs (Added PIDs per licensing can be applied to Encoder 1 or Encoder 2 channels)	4 Stereo PIDs (Added PIDs per licensing can be applied to Encoder 1 or Encoder 2 channels as desired, also including configuring the device as single-channel with 4 total Stereo PIDs in one encoder channel)	<b>Note:</b> • Maximum of two (2) +2A licenses can be added to single-channel (-S) or dual-channel encoder (-D). • For Dual-Channel Encoders, added +2A audio channels can only be sourced from de-embedded SDI.		
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<b>Software Version (Date)</b>	<b>Description</b>
Release 1.3.0 (10/1/2013 – 1/20/2014)	<p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>• A mode has been added whereby the user can specify the desired final transport rate instead of the video bit rate. The encoder will automatically compute the appropriate video bit rate to match the desired transport rate. This mode is useful for links with a constant capacity such as microwave or satellite links.</li> <li>• New supported output resolutions:               <ul style="list-style-type: none"> <li>- Scale to 720x480/576 progressive from all input resolutions. This is useful for Internet streams intended for playback on computer screens.</li> <li>- Scale to 640x360 progressive from all input resolutions. This is useful to create low bit rate Internet streams from 16:9 wide-screen sources.</li> </ul> </li> <li>• In all previous releases, the 9223 or 9223-SA accepted 100/1000Mb/s full-duplex links in the streaming Ethernet ports. Release 1.3.0 will accept a 100Mb/s half-duplex link, but it will consider this a yellow alarm item. This change is being made since some WAN providers supply links that default to 100Mb/s half-duplex.</li> <li>• Improved RTMP compatibility with servers that use username/password authentication.</li> <li>• The 9223 and 9223-SA has been qualified to work over an extended temperature range of 0°C to 50°C. This release is required for reliable operation at these temperature extremes.</li> </ul> <p><b>Corrections:</b></p> <p>This release resolves the following issues:</p> <ul style="list-style-type: none"> <li>• In a dual-channel encoder, if both channels are routed to the same port, and video were removed and re-applied to one of the channels, this could sometimes glitch the other channel.</li> <li>• In a dual-channel encoder, if the second channel were licensed only for PIP/secondary audio and the encoder configured for secondary audio, selecting an unlicensed configuration for the second channel would cause an incomplete configuration of the system and unexpected results.</li> <li>• In a dual-channel encoder, if secondary audio were enabled, an invalid value (0x1FFF) for the audio PID would be shown in the Advanced tab in the second channel, even if audio were not included in that channel. Attempting to interact with this setting could lead to the generation of an invalid stream and overrun alarms.</li> <li>• 9223 card-based encoder would not come up in DashBoard when installed in chassis slot 1. (Note that this was only an issue in the obsolete 10-slot frame. In the currently shipping 20-slot frames, the encoder is always installed in an even slot.)</li> </ul> <p><b>Note:</b> This firmware upgrade is recommended for the following users:</p> <ul style="list-style-type: none"> <li>• Any users who are interested in the new features, or are experiencing any of the issues resolved in this version.</li> <li>• Any users who desire to operate the encoder in the extended temperature range. In particular, this release is required if the encoder is to be operated at low temperatures (i.e., around 0°C).</li> </ul> <p>A new Product Manual describing these new functions and settings is available, and can be downloaded from the 9223 or 9223-SA web page. Users who do not need the new features and whose configurations do not expose the issues listed above do not need to upgrade.</p>
Release 1.2.2 (4/4/2013 – 10/1/2013)	<p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• In very rare instances of previous releases, the ASI outputs may occasionally glitch. Also, some receivers may have trouble locking to the signal. This problem has been corrected in this release.</li> <li>• In some situations using previous releases, if the configuration of the encoder is completely cleared the Encoder 1/2 Status tab could incorrectly display the RTMP status GUI. These items would disappear as soon as the encoder is configured. This was a cosmetic issue only, and did not affect the operation of the encoder. This problem has been corrected in this release.</li> </ul>
Release 1.2.1 (3/1/2013 – 4/4/2013)	<p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• Using firmware 1.2.0, if connections are established between the encoder and ASI/UDP ports, these connections are not restored if the encoder is rebooted. Firmware version 1.2.1 corrects this defect and is recommended for users that have uploaded release 1.2.0 to an encoder. All functionality is otherwise identical to release 1.2.0</li> </ul>
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Software Version (Date)	Description
Release 1.2.0 (2/20/2013 – 3/1/2013)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>• Support for the Real-Time Messaging Protocol (RTMP). The encoder can operate as an RTMP client, and publish a real-time, live stream to an RTMP server. All variants of the protocol are supported (rtmp, rtmps, rtmpe, rtmpt), as well as the optional username/password authentication. Testing has verified using Justin.tv, Livestream, UStream, Akamai, and Standard Adobe Media Server sites.</li> <li>• HLS support for Android 4.1 (Jelly Bean). Note that HLS playback was fully functional in Android 4.0 (Ice Cream Sandwich), but the change to 4.1 broke several functions. This version includes some changes to make it more compatible, but in general it is now necessary to install third-party apps to achieve hardware-accelerated playback at SD and higher resolutions. The changes, which are compatible with Apple devices and VLC, are:               <ul style="list-style-type: none"> <li>- Playlists now have the .m3u8 extension. For backward compatibility, two copies of the top-level playlist are created, one with .m3u extension, and one with .m3u8 extension, and the same content.</li> <li>-The MIME-type for .m3u and .m3u8 files returned by the internal web server has been changed to “application/vnd.apple.mpegurl”. This is required for some third-party apps.</li> </ul> </li> </ul> <p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• In HLS mode, any changes that required PSI table changes were not propagated to the stream. This includes any audio changes, or any PID changes. If the encoder were rebooted, the tables would again reflect the stream state.</li> <li>• Corrects minor GUI cosmetic (non-content) bug fixes.</li> </ul> <p>An upgrade to this release is not required RTMP is required, or unless using HLS and having issues with Android 4.1 clients. A new Product Manual describing the added RTMP functions and settings is available, and can be downloaded from the 9223 or 9223-SA web page.</p>
Release 1.1.11 (11/27/2012 – 2/20/2013)	<p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• Video auto-detection incorrectly reporting sources with field/frame rate of 59.94 fps as 60 fps when using video input 2 has been corrected (video input 1 was not affected).</li> <li>• SDI inputs sometimes not locking to valid sources has been corrected.</li> <li>• The log message for embedded SDI audio error has been removed. If an openGear chassis with a large number of encoder channels configured for SDI were power-cycled, the DashBoard control system was sometimes not able to display the GUI. Removing this message reduces the control traffic and avoids this problem. (The embedded audio error indicator in the encoder status tab is still active.)</li> </ul> <p>It is recommended that devices using firmware version 1.1.9 be upgraded to this version. This upgrade does not affect user controls and therefore the current product manual is valid for this release.</p>
Release 1.1.9 (11/13/2012 – 11/27/2012)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>• Adds video signal format detection. If the encoder can recognize the signal present at the input, it will report what the format is. For analog composite signals, it will identify the system (e.g., PAL, NTSC). For HD-SDI signals, it will report the resolution and frame/field rate (e.g., 1920x1080i59.94). (The user still has to configure the encoder video input as before.)</li> </ul> <p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• Corrects excessive PCR jitter on the transport stream outputs depending on the stability of the video input source. Since PCR jitter is only meaningful for ASI outputs, this issue should only affect professional decoders connected using ASI. However, this fix may apply to some professional decoders receiving over Ethernet, depending on their IP de-jitter implementation.</li> <li>• The MIME-types indicated by the internal web-server for HLS content have been updated to match the recommended values. Note that HLS clients found in Apple, Android and PC devices do not generally care about MIME-types.</li> <li>• Corrects a condition wherein if SMPTE-2022 FEC is enabled in an interface, and subsequently the unit's configuration is cleared (or a new configuration is loaded), it would not be possible to re-enable FEC on that interface until the unit was rebooted. <b>Units in the field do not need to be updated unless a professional decoder being used is experiencing an occasional video error.</b></li> </ul> <p>An updated manual describing the new GUIs related to video signal format detection is available. Download the manual (pdf) from the card Product page or at Cobalt&gt;Support&gt;Documents&gt;Product Information and Manuals.</p>
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Software Version (Date)	Description
Release 1.1.7 (10/2/2012 – 11/13/2012)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>Adds support for 1280x720p60 (which is used by some cameras).</li> </ul> <p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>Corrects condition wherein if the encoder is configured for SDI input (either SD-SDI or HD-SDI) with embedded audio, and the embedded audio source is out of spec in relation to the audio/video clock locking, the encoder may lose sync with the embedded audio and start encoding only silence. This will not happen with source that are in spec. If the encoder loses sync with the audio, it will not be recovered until the encoder is rebooted. Note that version 1.1.7 will accurately log embedded audio errors in this situation, while previous versions will ignore them.</li> </ul> <p><b>Units in the field do not need to be updated unless 1280x720p60 support is desired, or if non-compliant embedded audio feeds described above have caused the encoder to stop processing audio.</b></p>
Release 1.1.2 (9/4/2012 – 10/2/2012)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>Adds support for 1920x1080i60 (which is used by some cameras).</li> </ul> <p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>Corrects condition wherein if the encoder is configured for SD-SDI input with embedded audio, and the SDI feed is marginal, has noise, or is corrupted, there is a possibility that the encoder will lose sync with the embedded audio. If this happens, the audio bitstream will either have silence or noise. This issue persists until the encoder is rebooted and only affects SD-SDI signals; it does not affect HD-SDI or 3G-SDI signals.</li> <li>Corrects condition found in version 1.0.3 where loading one of the five saved configurations or one of the five pre-defined templates may not work, with recovery only via rebooting the device. <b>If using version 1.0.3, it is recommended to upload this upgrade.</b> (Versions earlier than 1.0.3 do not contain this error.)</li> </ul>
Release 1.0.0 (6/14/2012 – 7/11/2012)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>Adds support for 1920x1080p23.98 inputs.</li> <li>Adds support for a local HTTP Live Streaming server – a limited number of HLS clients can now connect directly to the encoder.</li> </ul>
Release 1.0.3 (7/11/2012 – 9/4/2012)	<p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>Corrects condition where encoder may fail to start or operate if either one or both of its streaming ports are connected to a network with a high volume of flooded multicast (i.e., 50 Mb/s or higher). (Note that the encoder never joins any multicast group, so this will not happen on a managed, multicast-enabled switch.)</li> <li>(9223-SA only) Corrects condition on boot where the encoder may not completely load the persisted configuration until a PC running DashBoard connects to it.</li> </ul> <p><b>Note:</b> • If using a <b>9223 openGear® card</b>, this upgrade is recommended only if the multicast issue described above is causing problems.</p> <p><b>Note:</b> • If using a <b>9223-SA standalone encoder unit</b>, this upgrade is recommended in all cases.</p>
Release 0.9.37 (4/10/2012 – 6/14/2012)	<p><b>Corrections:</b></p> <p>This release corrects conditions that may apply to specific use cases:</p> <ul style="list-style-type: none"> <li>If you are using embedded channels 3/4 of <b>any</b> group, it is <b>strongly</b> recommended to upgrade to avoid the 9223 encoder being in a continuous alarm state.</li> <li>It is recommended to update to this release if:             <ul style="list-style-type: none"> <li>You are transmitting NULL packets.</li> <li>You are set for Automatic rate (on IP or ASI).</li> <li>Your current transport rate is 5 Mb/s or less.</li> <li>Bandwidth constraint is such that a few hundred kb/s is significant.</li> </ul> </li> </ul> <p>General corrections are:</p> <ul style="list-style-type: none"> <li>This release significantly reduces the NULL packet bit rate (included in the transport rate) when lower bit rates are being used. This may be useful in constrained bit rate links that require NULL packets due to the presence of a professional decoder.</li> <li>This release fixes a bug with embedded audio status reporting. When the encoder was configured to use Channels 3-4 of any group, it would flag an error status due to an incorrect ancillary data CRC calculation.</li> </ul>

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<b>Software Version (Date)</b>	<b>Description</b>
Release 0.9.36 (3/22/2012 – 4/10/2012)	<p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• Correction to GUI. When Encoder 2 is configured to use embedded audio, previous release GUI was erroneously showing the analog mute and gain controls in the Advanced tab. These controls were inoperative as they do not affect the embedded audio. This version removes these controls.</li> <li>• Corrections related to A/V sync when using Dolby® pass-thru:               <ul style="list-style-type: none"> <li>• Corrected the behavior that resulted in 100 msec A/V sync offset when encoder was started without SDI input, and SDI input applied at a later time.</li> <li>• Corrected the behavior where A/V sync could be affected in cases where the SDI input is unstable or disappears for a short time.</li> </ul> </li> </ul>
Release 0.9.33 (3/5/2012 – 3/22/2012)	<p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• Channel swap between left and right audio channels on encoded stream can occur on earlier releases. This is corrected in this release as follows:               <ul style="list-style-type: none"> <li>• When using card <b>unbalanced analog audio inputs</b> as audio source, L/R channel swap could occur on power-up and persist unless card is rebooted. This has been corrected in this release.</li> <li>• When using <b>selected embedded group/channel pair</b> as audio source, L/R channel swap could occur if the card loses and re-acquires SDI input lock. This has been corrected in this release.</li> </ul> </li> </ul>
Release 0.9.32 (2/24/2012 – 3/5/2012)	<p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>• Analog audio input attenuation range changed from <math>\pm 7.0</math> dB to <math>\pm 18.0</math> dB.</li> </ul> <p><b>Note:</b> Newer product has a Hardware Revision field in the DashBoard <b>Product</b> tab. Product using latest hardware revision 3 is delivered with Release 0.0.32 factory installed.</p>
Release 0.9.31 (2/8/2012 – 2/24/2012)	<p><b>Corrections:</b></p> <ul style="list-style-type: none"> <li>• Related to variable bit rate encoding, previous releases allowed incorrect bit rate combinations to be entered, which caused the encoder to continuously restart (and flood the logs with these events). This version will automatically correct entered items to keep them in range. Variable bit rate operation ranges have been clarified, as follows: the maximum bit rate must be between 1.5 and 2 times the average bit rate.</li> </ul> <p><b>Note:</b> Although the correction in this release requires this update be performed only if VBR is used or intended for use VBR, it is recommended to update to this version if release 09.30 is not already installed.</p>
Release 0.9.30 (12/20/2011 – 2/8/2012)	<p><b>Additions:</b></p> <ul style="list-style-type: none"> <li>• The following new functionality has been introduced for HTTP Live Streaming:               <ul style="list-style-type: none"> <li>• The number of segments in the playlist file, which was previously fixed at 4, can now be selected between 3 and 4.</li> <li>• The minimum segment size has been reduced to 1 second.</li> <li>• An option has been added to leave the segments in the server (i.e., not delete them when they fall out of the playlist).</li> </ul> </li> </ul> <p><b>Improvements:</b></p> <ul style="list-style-type: none"> <li>• Encoder GUI operations in DashBoard are faster.</li> </ul>