ZEN SERIES: SOFTWARE RELEASE NOTES

UPDATE		NOTES	
Version	LV5600 / LV7600	LV5300 / LV5350	LV7300
5.7	 [SER26] Improved so that the NMOS display can be added from the LAYOUT. [SER32] Improved so that IP TSG function can be registered and controlled(IS-04/05) in the NMOS. 		
	 ● [SER01/SER02/SER02A] Improved so that the splice_request_data of SCTE-104 can be analyzed and displayed and logged in the picture and status. ● [SER01/SER02/SER02A] Improved the color gamut error in the status so that the event log now shows whether the error is due to the upper threshold or the lower threshold for each of R, G, and B. ● [SER01/SER02/SER02A] Improved the level error in the status so that the event log now shows whether the error is due to the upper threshold or the lower threshold. 	be analyzed and displayed and logged in the picture and status. • Improved the color gamut error in the status so that the event log now shows whether the error is due to the upper threshold or the lower threshold for each of R, G, and B. • Improved the level error in the status so that the event log now shows whether the error is due to the upper threshold or the lower threshold.	1 ' '

UPDATE		NOTES	
5.5	New features: Interval Variation has been added to the Event Log function when using LV5600-SER05/ LV5600-SER06/LV7600-SER05/ LV7600-SER06 IP option. Improvements: The name of Loss Stream has been changed to Video RTP Sequence in the Event Log when using LV5600-SER05/ LV5600-SER06 IP option.		
5.4	Improvements: ● NMOS Hostname is selectable(Valid or invalid) as PRE-SET RECALL when using LV5600-SER05/ LV5600-SER06/LV7600-SER05/LV7600-SER06 IP option.		
5.3	New features: NMOS DNS-SD is now supported when using the LV5600-SER05/ LV7600-SER05 or LV5600-SER06/ LV7600-SER06 IP option. Improvements: Closed captions (EIA-608/708) in the PICTURE mode now includes CONTENT ADVISORY information, when using the LV5600-SER01 or LV5600-SER02 SDI Input option. Input signal from NMOS is switchable to 2K or 4K when using the LV5600-SER05/LV7600-SER05 or LV5600-SER06/LV7600-SER06 IP options. PTP correction field is correctable when using the LV5600-SER05/LV7600-SER05 or LV5600-SER06/LV7600-SER06 IP option. SDI out PID Insert is selectable among from ST2110-40, NMOS (SDP) or Manual when using the LV5600-SER05/LV7600-SER05/LV7600-SER06/LV	Improvements: • Closed captions (EIA-608/708) in the PICTURE mode now includes CONTENT ADVISORY information, when using the LV5300-SER21/ LV5350-SER21 CLOSED CAPTION option.	Improvements: • Closed captions (EIA-608/708) in the PICTURE mode now includes CONTENT ADVISORY information, when using the LV7300-SER21 CLOSED CAPTION option.

UPDATE		NOTES	
5.1	New features: NMOS STATUS is indicated when using the LV5600-SER05 and LV5600-SER06 IP option. Improvements: Leave/Join response of IGMP has been quicker in the LV5600-SER05 /LV7600-SER05 or LV5600-SER06/ LV7600-SER06 IP option. AV PHASE value can be displayed by remote commands (Telnet/ SNMP) in the LV5600-SER03/LV7600-SER03 Audio option. Measured data and Tab menu setting can be controlled by SNMP command when using the LV5600-SER05/LV7600-SER05, LV5600-SER06/LV7600-SER06 or LV5600-SER32/LV7600-SER32 IP option.	(Telnet/ SNMP) in the LV5350 or using the LV5300-SER20 Audio option in the LV5300.	Improvements: ● AV PHASE value can be displayed by the remote commands (Telnet/ SNMP) when using the LV7300-SER20 Audio option.
5.0	New features: • Multiple audio IP Flows are possible as part of the SMPTE ST2110-30 standard, when using the LV5600-SER06 or LV7600-SER06 IP INPUT option. You can select 1, 2 or 4 IP Audio flows per input. Improvements: • SR Live Metadata analysis, which is available from the STATUS menu, now supports SR Live Metadata Ver.1.00, when using the LV5600-SER01 or LV5600-SER02 SDI option.	Improvements: ● SR Live Metadata analysis, which is available from the STATUS menu, now supports SR Live Metadata Ver.1.00.	Improvements: ● SR Live Metadata analysis, which is available from the STATUS menu, now supports SR Live Metadata Ver.1.00, when using the LV7300-SER01 or LV7300-SER02 SDI options.

UPDATE		NOTES	
4.9	New features: RS-FEC feature has been added to the LV5600-SER06 IP INPUT option. Improvements: A PACKET JITTER Graph has been created by looking at the actual measured Min (minimum) and Max (maximum) Packet Arrival Interval Time values, when using the LV5600-SER05/LV7600-SER05 or LV5600-SER06/LV7600-SER06 IP INPUT option.	Changes: ● The tab description "REMOTE LABEL INPUT" has been changed to "REMOTE LABEL" for the LV7290, in the SYSTEM SETUP.	Changes: ● The tab description "REMOTE LABEL INPUT" has been changed to "REMOTE LABEL" for the LV7290, in the SYSTEM SETUP.
4.8	New features: SCTE-104 packet information is displayed on the SCTE-104 Packet screen, the picture and in the Event Log with the LV5600-SER01 or LV5600-SER02 SDI input options.	New features: • SCTE-104 packet information is displayed on the SCTE-104 Packet screen, the picture and in the Event Log of LV5300 and LV5350.	New features: • SCTE-104 packet information is displayed on the SCTE-104 Packet screen, the picture and in the Event Log with the LV7300-SER01 or LV7300-SER02 SDI input options.
4.6	New features: Grand Master information has been added to the PTP display with the LV5600-SER05/LV7600-SER05 or LV5600-SER06/LV7600-SER06 IP INPUT options. SMPTE ST 2110-21 Buffer Measurement feature has been added to the LV5600-SER06 and LV7600-SER06 IP INPUT option. SMPTE ST 2110 Packet Error insertion feature has been added to the LV5600-SER32 and LV7600-SER32 TSG option. SMPTE ST 2110 Packet Jitter insertion feature has been added to the LV5600-SER32 and LV7600-SER32 TSG option. SMPTE ST 2022-6/ST 2110 Lip Sync pattern has been added to the LV5600-SER32 and LV7600-SER32 TSG option. LV5600-SER31 and LV7600-SER31 COLORIMETRY ZONE option is now supported.	Improvements: ●English, Spanish and Portuguese are now supported in the EIA-608/708 closed captions display with the LV5300-SER21 or LV5350-SER21 Closed Captions option ●Error logging is now available for MAX FALL/MAX CLL levels with the LV5300-SER23 or LV5350-SER23 HDR option.	Improvements: • English, Spanish and Portuguese are now supported in the EIA-608/708 closed captions display with the LV5300-SER21 or LV5350-SER21 Closed Captions option • Error logging is now available for MAX FALL/MAX CLL levels with the LV7300-SER23 HDR option.

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4.6	Improvements: ● English, Spanish and Portuguese are now supported in the EIA-608/708 closed captions display with the LV5600-SER01 or LV5600-SER02 SDI input options. ● Payload ID from a SMPTE ST 2110-20 source is added to the IP to SDI output even if it is not present in the SMPTE ST 2110-40 packet with the LV5600-SER05/LV7600-SER05 or LV5600-SER06/LV7600-SER06 IP INPUT options. ● SMPTE ST 2110 PACKET JITTER, PTP STATUS and TIMING COMPARISON measurements are displayed for both port 1 and port 2 with the LV5600-SER05/LV7600-SER05 or LV5600-SER06/LV7600-SER06 IP INPUT options. ● Event Log with PTP time is now available with the LV5600-SER05/LV7600-SER05 or LV5600-SER06/LV7600-SER06 IP INPUT options. ● SMPTE ST 2110 AUDIO and ANC measurements are now displayed as part of the packet jitter measurement feature with the LV5600-SER05/LV7600-SER05 or LV5600-SER06/LV7600-SER06 IP INPUT options. ● SMPTE ST 2110 IP STATUS, PACKET JITTER, PTP STATUS, TIMING COMPARISON, and PATH DELAY data graphs can be stored as a csv file on USB memory with the LV5600-SER05/LV7600-SER05 or LV5600-SER06/LV7600-SER05/LV7600-SER06 IP INPUT options. ● Error logging is now available for MAX FALL/MAX CLL levels with the LV5600-SER23 and LV7600-SER23 HDR option.	
4.4	New features: Capturing data in the PCAP format is now supported with the LV5600-SER06 and LV7600-SER06 IP INPUT option. SMPTE ST 2022-6 is now supported with the LV5600-SER06 and LV7600-SER06 IP INPUT option. NMOS (IS-04/05) is now supported with the LV5600-SER06 and LV7600-SER06 IP INPUT option. Phase difference display of PTP-BB is now supported with the LV5600-SER05, LV7600-SER05, LV5600-SER06 and LV7600-SER06 IP INPUT option.	

UPDATE		NOTES	
4.1	Improvements: ■ IGBP version setting menu has been added to the LV5600-SER05/LV7600-SER05 and LV5600-SER06/LV7600-SER06 IP options.		
4.0	Improvements: • SFP reset menu has been added to the LV5600-SER05/ LV5600-SER06/ LV7600-SER05/ LV7600-SER06 IP options.		
3.9	New features: SR Live Metadata analysis display has been added to the STATUS for LV5600-SER01 and LV5600-SER02 SDI Input options. Improvements: Marker display supporting the color bars in the color area BT.709 of ARIB STD-B66 and ARIB STD-B72 has been added to the LV5600-SER01 and LV5600-SER02 SDI Input options. English closed captions (EIA-608/708) are supported for the 4K-6G system for the LV5600-SER01 and LV5600-SER01 and LV5600-SER02 SDI options.	New features: SR Live Metadata analysis display has been added to the STATUS. Improvements: Marker display supporting the color bars in the color area BT.709 of ARIB STD-B66 and ARIB STD-B72 has been added. English closed captions (EIA-608/708) are supported for the 4K-6G system.	New features: SR Live Metadata analysis display has been added to the STATUS for the LV7300-SER01 and LV7300-SER02 SDI Input options. Improvements: Marker display supporting the color bars in the color area BT.709 of ARIB STD-B66 and ARIB STD-B72 has been added to the LV7300-SER01 and LV7300-SER02 SDI Input options. English closed captions (EIA-608/708) are supported for the 4K-6G system for the LV7300-SER21 Closed caption option.
3.8	Improvements: LV5600-SER06/LV7600-SER06 supports 25G single mode and an SFP test signal output (LV5600-SER32/LV7600-SER32)		

UPDATE		NOTES	
3.6	Improvements: Assigned address is indicated when DHCP is selected in the NETWORK section of the SYSTEM SETUP English closed captions (EIA-608) are supported for the following formats (HD DUAL/3G-A/3G-B-DL/4K Dual/4K Quad/4K 12G) for both the LV5600-SER01 and LV5600-SER02 SDI options Assigned address is indicated when DHCP is selected in the SYSTEM SETUP of the LV5600-SER05 /LV5600-SER06 /LV7600-SER05 /LV7600-SER06 IP options	 Assigned address is indicated when DHCP is selected in the NETWORK section of the SYSTEM SETUP English closed captions (EIA-608) are supported for the following formats (3G-A/3G-B-DL/4K Dual/4K 12G) if the LV5300-SER21 or LV5350-SER21 license option is enabled. 	Improvements: • Assigned address is indicated when DHCP is selected in the NETWORK section of the SYSTEM SETUP • English closed captions (EIA-608) are supported for the following formats (3G-A/3G-B-DL/4K Dual/4K 12G) if the LV7300-SER21 license option is enabled.
3.5	New features: LV5600-SER06/LV7600-SER06 now supports 25G IP INPUTS LV5600-SER32/LV7600-SER32 now supports 25G IP TSG		
3.3	Changes: ■ Auto measurement value, (when the LV5600-SER02 Eye Pattern eye is closed due to the extended distance of the cable transmission), has been corrected ■ When using the LV5600-SER02 Eye Pattern option, if the Or/Of value is greater than 20%, it is indicated as ">20%". ■ "LOUDNESS AUTO MEASURE" and "MARK AND GATING LAMP" for the LV5600-SER03 and LV7600-SER03 Audio options, has been added.	 Auto measurement value, (when the LV5300 Eye Pattern eye is closed due to the extended distance of the cable transmission), has been corrected When the Or/Of value is grater than 20%, it is indicated as 	Changes: • Auto measurement value, (when the LV7300-SER02 Eye Pattern eye is closed due to the extended distance of the cable transmission), has been corrected • When using the LV7300-SER02 EYE pattern option, if the Or/Of value is grater than 20%, it is indicated as ">20%"

UPDATE		NOTES	
3.2	Improvements:	Improvements:	Improvements:
	Upon external synchronization of the waveform display, the input signal	Not only the current value but also the PEAK HOLD value	Not only the current value but also the PEAK HOLD value
	format is indicated as same as the "EXT REF PHASE" indication for LV5600-	on the audio level meter can be displayed by making a	on the audio level meter can be displayed by making a
	SER01 and LV5600-SER02 SDI options.	selection in the menu of the LV5300-SER20 and LV5350-	selection in the menu of the LV7300-SER20 Audio option.
	Not only the current value but also the PEAK HOLD value on the audio level	SER20 Audio options.	
	meter can be displayed by making a selection in the menu of the LV5600-SER03		Changes:
	and LV7600-SER03 Audio options.	Changes:	DDR3 and scaler initializing have been added in case the
	Packet list is now automatically updated in the IP STATUS for LV5600-	DDR3 and scaler initializing have been added in case the	measuring display is not indicated after start up.
	SER05 and LV7600-SER05 IP options.	measuring display is not indicated after start up.	TRS error and line number error have been fixed during
	PATH DELAY and Timing Comparison are now supported in the user layout	TRS error and line number error have been fixed during	SDI signal detection for the LV7300-SER01 and LV7300-
	with the LV5600-SER05 and LV7600-SER05 IP options.	SDI signal detection.	SER02 SDI options.
	LV5600-SER05 and LV7600-SER05 now supports Telnet and SNMP		
	LV5600-SER05 and LV7600-SER05 now supports IGMPv3-SSM		
	Changes:		
	DDR3 and scaler initializing have been added in case the measuring display		
	is not indicated after start up.		
	TRS error and line number error have been fixed during SDI signal		
	detection for the LV5600-SER01 and LV5600-SER02 SDI Input options.		
	NMOS control response speed has been improved for the LV5600-SER05.		

UPDATE		NOTES	
3.0	Improvements:	Improvements:	Improvements:
	• 1080/48P(1080/47.95P) is now selectable in the MONITOR OUT.	• 1080/48P(1080/47.95P) is now selectable in the	• 1080/48P(1080/47.95P) is now selectable in the
	AV PHASE is now selectable at each layout in the STATUS with the LV5600-	MONITOR OUT	MONITOR OUT
	SER26 and LV7600-SER26 Layout option.	AV PHASE is now selectable at each layout in the STATUS	AV PHASE is now selectable at each layout in the STATUS
		with LV5300-SER26 and LV5350-SER26 Layout options	with the LV7300-SER26 Layout option.
	Changes:		
	F3:AV PHASE SETUP menu in the AV PHASE for LV5600-SER01 and	Changes:	Changes:
	LV5600-SER02 SDI options.	F3:AV PHASE SETUP menu in the AV PHASE	F3:AV PHASE SETUP menu in the AV PHASE for the
	• F6:INPUT SELECT menu for LV5600-SER01 and LV5600-SER02 SDI Input	F6:INPUT SELECT menu	LV7300-SER01 and LV7300-SER02 SDI Input options.
	options.		F6:INPUT SELECT menu has been added to the LV7300-
	When ST2110 signal is input, Freeze, Black, Gamut and Level Y/C error		SER01 and LV7300-SER02 SDI Input options.
	detection are now supported for the LV5600-SER05 and LV7600-SER05 IP		
	Input.		
	Receiving Buffer of ST2110 signal has been extended to support big packet		
	interval of fluctuation for the LV5600-SER05 and LV7600-SER05 IP Input.		
	PTP has been included in ST2110 signal redundancy for LV5600-SER05 and		
	LV7600-SER05 IP Input.		

UPDATE		NOTES	
2.8	New features: • Video noise meter is now supported with the LV5600-SER30 /LV7600-SER30 Video Noise Meter options.		
2.6	Dolby is now supported for the LV5600-SER04 and LV7600-SER04 Dolby	New features: TSL protocol is now supported for the LV5300-SER27 and LV5350-SER27 Tally options. Improvements: Visibility of the marker line in the picture marker display. The line is now thicker and broken into sections to be easier to see. DCI white dot marker has been added to the chromaticity diagram for LV5300-SER22 and LV5350-SER22 CIE Chart display options.	Tally option. Improvements: Visibility of the marker line in the picture marker display. The line is now thicker and broken into sections to be easier to see with the LV7300-SER01 and LV7300-SER02 SDI Input

UPDATE		NOTES	
2.5	Improvements: ■ Waveform color is now selectable when the capture function is in the Held mode. ■ Waveform display of the external synchronization signal in 4K system is now available for the LV5600-SER01 and LV5600-SER02 SDI Input options. ■ Composite variable scale in the vector and waveform displays is supported with the LV5600-SER01 and LV5600-SER02 SDI Inputs. ■ Guide display can now be turned on/off when the LV5600-SER01 or LV5600-SER02 is used in the vector display mode. ■ Eye Histogram has been added to the LV5600-SER02 SDI Input option. ■ EYE/JITTER waveform display in the 4K-6G system is now supported for the LV5600-SER02 SDI Input option. ■ ST2110-40 (ancillary data) is now supported with the LV5600-SER05 and LV7600-SER05 IP options. ■ Phase graph indication of PTP with Video, Audio and Ancillary data has been added to the LV5600-SER05 and LV7600-SER05 IP options. ■ PTP packet capture function has been added to the LV5600-SER05 and LV7600-SER05 IP options. ■ Packet capture has been increased to 1M for the LV5600-SER05 and LV7600-SER05 IP options. ■ Packet capture has been increased to 1M for the LV5600-SER05 and LV7600-SER05 IP options. ■ Interlocking mode with payload ID for SDR, HLG and PQ has been added to the LV5600-SER23 and LV7600-SER23 HDR options.	Improvements: Waveform color is now selectable when the capture function is in the Held mode. Composite variable scale in the vector and waveform displays is supported. Guide display can now be turned on/off in the vector display mode. Eye Histogram has been added to the LV5300. EYE/JITTER waveform display in the 4K-6G system is now supported for LV5300 Interlocking mode with payloard ID for SDR, HLG and PQ has been added to the LV5300-SER23 and LV5350-SER23 HDR options.	Eye Histogram has been added to the LV7300-SER02 SDI

UPDATE		NOTES	
2.3	New Functions:	SER24 and LV5350-SER24 Test Signal Generator option (works with SER23 HDR option) • 6G-SDI system is now supported for the LV5300-SER28 and LV5350-SER28 4K/12G-SDI options. Improvements: • Web server access port (port no. 8080) indication has been added to the NETWORK setting tab. • HEX indication on the payloard ID detection display has been added to the STATUS. • CLog/Log-C is now supported with the LV5300-SER23 and LV5350-SER23 HDR options.	New Functions: Vector variable scale function has been added to the LV7300-SER01 and LV7300-SER02 SDI Input options. HDR (HLG) color bar has been added to the LV7300-SER24 Test Signal Generator option (works with SER23 HDR option). GG-SDI system is now supported for the LV7300-SER28 4K/12G-SDI options. Improvements: Web server access port (port no. 8080) indication has been added to the NETWORK setting tab. HEX indication on the payloard ID detection display has been added to the STATUS of the LV7300-SER01 and LV7300-SER02 SDI options. CLog/Log-C is now supported with the LV7300-SER23 HDR option. 4K 3G dual link is now supported with LV7300-SER28 4k/12g-SDI option.
	Improvements: Web server access port (port no. 8080) indication has been added to the NETWORK setting tab. HEX indication on the payloard ID detection display has been added to the STATUS of the LV5600-SER01 and LV5600-SER02 SDI options. 720p format is now supported with the LV5600-SER05 and LV7600-SER05 IP options. CLog/Log-C is now supported with the LV5600-SER23 and LV7600-SER23 HDR option.		