

Leader



LVB440

IP ANALYSZER

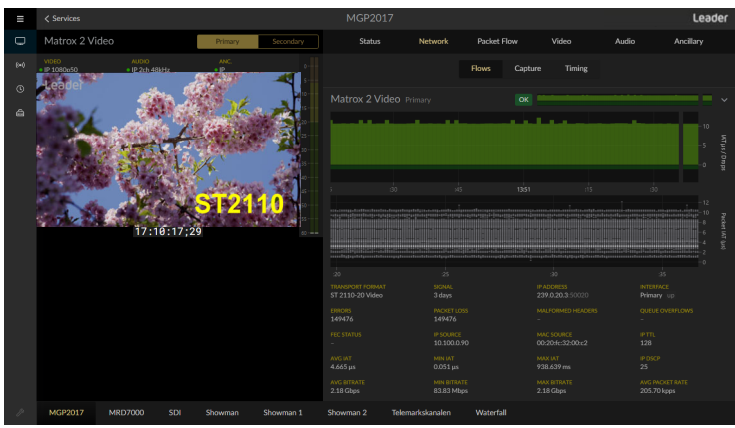


/ General

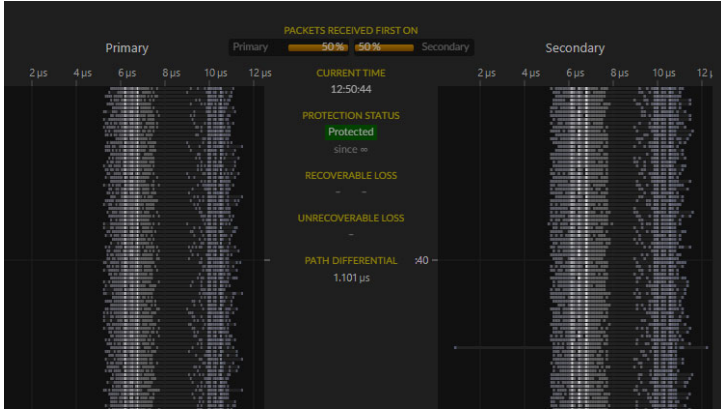
The LVB440 High Bit Rate IP Packet Monitor provides revolutionary monitoring and analysis capabilities for IP media traffic found in outside production, broadcast studios and master control centre's allowing for quick troubleshooting and quality improvement. The LVB440 supports ST2110, and ST2022-6 flows at dual 40 Gbps bitrate, and dual 60 Gbps with additional options. Streams from SD to 4K (UHD) can be monitored, with 8K monitoring configurations available. The LVB440 offers familiar visualization tools such as vector scope, picture monitor, audio pairs, and waveform monitor allowing broadcast and production crews to easily manage real-time analysis and troubleshooting of IP-based network audio and video streams. Packet analysis of uncompressed video and audio is available with microsecond accuracy. In addition, up to eight clients can view the analysis data in a standard web browser at the same time for simplified remote operation.

/ Features

- 8 users can access the LVB440 simultaneously, remotely (via web browser / HTML5).
- Video can be confirmed with a minimum delay of 2 frames.
- ST2110 and ST2022-6 IP standard compatible.
- Supports dual SFP 10G, 25G, 40G, 100G.
- Dual 40 Gbps support; dual 60 Gbps analysis bandwidth with additional options.
- Check packet loss and jitter on both primary and secondary network lines.
- IP Jitter allows you to visualize changes in arrival time between two adjacent IP packets.
- Comprehensive error logging for up to 4 days, including packet loss.
- Check PTP lock status, grandmaster information, Clock Identity, time delay, ANC.
- Easily verify video stream available on the network.
- Various error settings such as freeze error, color freeze error, silence error, phase shift voice error FEC packet loss, RTP packet loss, synchronization error, etc. are possible.
- Multiple packets can be monitored at the same time.
- Primary and secondary video streams can be checked by simply alternating tabs.
- Network status history recorded and displayed graphically for ease of troubleshooting.
- NMOS compliant for simplified automation and integration.
- Video, audio, and ANC packet status can be verified at a glance.
- Key statistics and alarming available including.
- Video format, number of errors, bit rate, packet rate, angle of view, frame rate, and color system compatible standards.
- Video frame and packet capture function, up to 50 video frames and up to 10,000 packets.
- Measure primary and secondary packet delays.
- Visual alarm summaries.



Monitor packets



Packet loss and jitter on the primary and secondary flows in ST.2022-7 operation

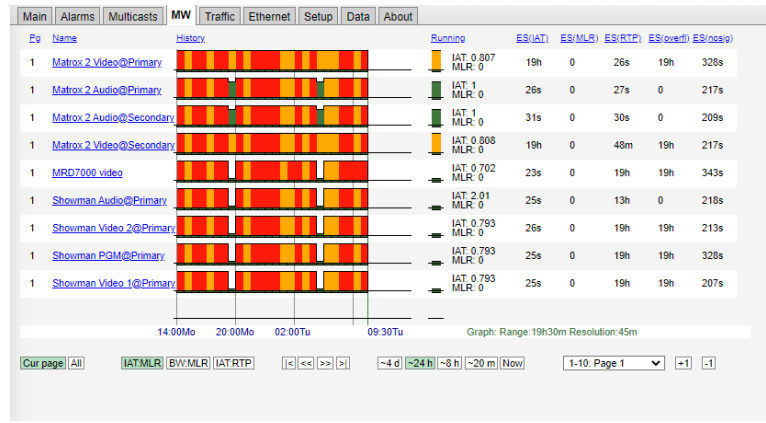
Status	Network Interface	Speed	Receive Bitrate	PTP State
up	Internet-facing Management (em1)	1 Gbps	17 kbps	
down	em2			
up	p6p1	100 Gbps	16.07 Gbps	Slave
up	Secondary (p6p2)	100 Gbps	16.07 Gbps	Slave

Domain	Preference	Grand Master	Clock Identity	Vendor	Time Delta	Time Source
127	1	00:09:0d:ff:fe:00:df:20	24:8a:07:ff:fe:7e:3e:c8	Mellanox Technologies, Inc.	0.2 μs	GPS (32)
127		00:09:0d:ff:fe:00:df:20	24:8a:07:ff:fe:7e:3e:c8	Mellanox Technologies, Inc.	0.2 μs	GPS (32)

PTP lock status, grandmaster information, Clock Identity, time delay, ANC Information

Disc Audio Nor	3 days	ST 2110-30 Audio
Disc Video	35 days	ST 2110-20 Video
Matrox 2 Audio@Primary	35 days	ST 2110-30 Audio
Matrox 2 Audio@Secondary	35 days	ST 2110-30 Audio
Matrox 2 Video@Primary	35 days	ST 2110-20 Video
Matrox 2 Video@Secondary	35 days	ST 2110-20 Video
Matrox 4 Anc@Primary	35 days	ST 2110-40 Anc.

Flow displays



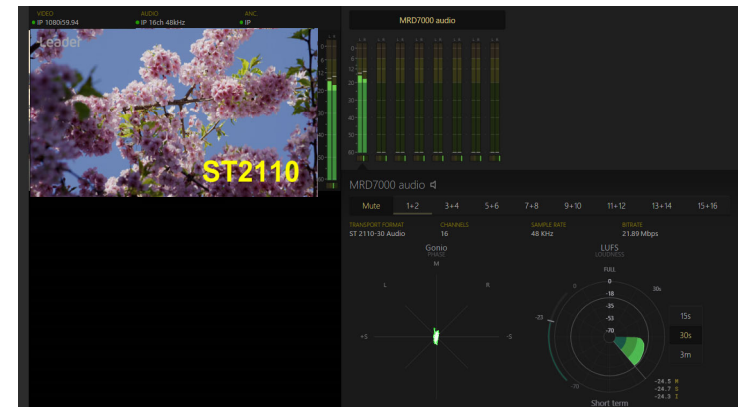
Display errors that occurred in chronological order

#	Status	Col	Time	Type	Stream	Description
1	Active	Yellow	Aug 30 02:01:46	ETH	JPEG XS@Primary	Bitrate overflow (1307.4 >= 50)
2	Active	Yellow	Aug 30 01:57:10	ETH	JPEG XS@Secondary	Bitrate overflow (1307.4 >= 50)
3	Active	Red	Aug 30 01:47:20	ETH	NC_SC_AN_2	No signal
4	Active	Yellow	Aug 30 01:47:12	ETH	NC_SC_AN_1	No signal
5	Active	Yellow	Aug 30 01:46:44	ETH	NC_SC_V_2	Bitrate overflow (1307.4 >= 30)
6	Active	Yellow	Aug 30 01:46:32	ETH	NC_SC_V_1	Bitrate overflow (1307.4 >= 30)
7	Active	Yellow	Aug 30 01:35:29	ETH	NC_LV5600_V_2	Bitrate overflow (1305.8 >= 30)
8	Active	Yellow	Aug 30 01:35:29	ETH	NC_LV5600_V_1	Bitrate overflow (1305.8 >= 30)
9	Active	Yellow	Aug 30 01:34:31	ETH	NC_Newt_A_2_2	Bitrate overflow (9.6 >= 1)
10	Active	Yellow	Aug 30 01:34:31	ETH	NC_Newt_A_1_1	Bitrate overflow (9.6 >= 1)
11	Active	Yellow	Aug 30 01:34:31	ETH	NC_Newt_A1@Secondary	Bitrate overflow (9.6 >= 1)
12	Active	Yellow	Aug 30 01:34:31	ETH	NC_Newt_A1@Primary	Bitrate overflow (9.6 >= 1)
13	Active	Yellow	Aug 30 01:34:31	ETH	NC_Newt_V_2_2	Bitrate overflow (1307.4 >= 50)
14	Active	Yellow	Aug 30 01:34:31	ETH	NC_Newt_V_2_1	Bitrate overflow (1307.4 >= 50)
15	Active	Yellow	Aug 30 01:34:31	ETH	NC_Newt_V1@Secondary	Bitrate overflow (1307.4 >= 50)
16	Active	Yellow	Aug 30 01:34:31	ETH	NC_Newt_V1@Primary	Bitrate overflow (1307.4 >= 50)
17	Event	Grey	Aug 30 02:45:44	SYS		Ethernet CRC Errors on interface e
18	Event	Grey	Aug 30 02:05:15	SYS		Ethernet CRC Errors on interface e
19	Event	Grey	Aug 30 02:02:08	ETH	JPEG XS@Secondary	RTP Packet drops 629
20	Cleared	Green	Aug 30 02:00:55	ETH	JPEG XS@Primary	No signal (Aug 30 01:55:54 - Aug 3
21	Event	Grey	Aug 30 01:57:02	SYS		Ethernet CRC Errors on interface e
22	Cleared	Green	Aug 30 01:57:00	ETH	JPEG XS@Secondary	No signal (Aug 30 01:55:59 - Aug 5

Error log

Line	DID	SDID	Spec	Application	Packets	Words
9 - 11	80h		ST 291	Packet Marked for Deletion	2	51
9	61h	01h	ST 334-1	Closed Captioning (CEA-708)	1	43
9 - 10	60h	60h	ST 12-2	Ancillary Time Code	2	32
10	41h	01h	ST 352	Payload Identification Codes ST 292-1 720-line video payloads on a 1.5 Gb/s SDI Payload ID: 84h Interlaced Transport Progressive Structure Picture Rate: 59.94 Sampling: YCbCr-4:2:2 10-bit	1	4

Ancillary Data and SCTE-104



Audio monitoring

Measurement Items

- RTP error average, minimum / maximum per flow
- Average CRC error, minimum / maximum per flow
- IAT average, minimum / maximum per flow
- Bitrate average, minimum / maximum per flow
- PTP delay average, minimum / maximum per flow
- Average packet rate
- DSCP QoS parameter settings per flow
- Packet TTL per flow

Corresponding standard

- ST 2110-20/21/30/31/40, ST 2022-6
- ST 2110-22 Compressed (option)
- ST 2022-7 Redundant stream via dual interface
- OP-47/SMPTE RDD 8, CEA 608/708 Subtitling
- PTP v2 SMPTE 2059 / IEEE 1588-2008
- NMOS IS-04/05/07 & 09

Monitoring band

- Monitoring bandwidth LVB440 standard
- Dual configuration PORT-A: 40G, PORT-B: 40G
- Single configuration PORT-A only: 40G

- Monitoring bandwidth LVB440 + 40G-OPT
- Dual configuration PORT-A: 60G, PORT-B: 60G
- Single configuration PORT-A only: 80G

Options

■ List of hardware options

Model Name	Function
	High-Performance appliance for Instrument View Analytics of ST 2110 and ST 2022-6, capable of dual stream analysis of complete ST 2022-7 redundancy analysis.
LVB440-APPLIANCE	<ul style="list-style-type: none">• Dual 100G-QSFP interface for 10G, 25G, 40G, 50G and 100G connectivity• 40Gbps data rate• Eight simultaneous Instrument / Widglet View users.
LVB440-SER21	Additional 40Gbps, for total of 80 Gbps data rate.
LVB-SW3	Software Maintenance. 3-year software maintenance and version upgrade support.
LVB-SW5	Software Maintenance. 5-year software maintenance and version upgrade support.
TBC	19" 4RU iPad Pro rack mounting kit with PoE (Power over Ethernet).
TBC	SMPTE ST 2110-22 – Compressed JPEG-XS support

www.leader.co.jp/en

Leader Electronics Corporation

2-6-33 Tsunashima-higashi, Kohoku-ku, Yokohama 223-8505 Japan
Tel: +81-45-541-2123 Email: sales@leader.co.jp

Leader Instruments Corporation Area: USA and Canada
Phone +1-201-355-4850 Email: info@leaderamerica.com

Leader Europe limited (UK) Area: Europe and Africa
UK Tel: +44-7826-178-752 Germany Tel: +49-174-3977799
Email: sales@leadereurope.com

JiaLong Leader (Beijing) Trading Co., Ltd. Area: China
Unit 08,20F Jialong International Tower, No.19 Chaoyang Park Road,
Chaoyang District, Beijing, P.R.China Zip Code 100125
Beijing Tel: +86-10-8511-8606 Email: beijing@leadercorp.com.cn
Shanghai Tel: +86-21-6275-6905 Email: shanghai@leadercorp.com.cn

Leader Korea Co., Ltd. Area: South Korea
#R1110, 11F, Gangdong Green Tower Bldg., 1139, Cheonho-daero,
Gangdong-gu, Seoul, 05355
Tel: +82-10-6245-7311 Email: jhlee@leaderkorea.kr

Leader Singapore Branch

Area: South East Asia, Oceania
Tel: +65-9429-0237 Email: ishihara.m@leader.co.jp
Area: India, Middle East
Tel: +91-98111-06956 Email: Umesh@leaderindia.in

Leader Taiwan Representative Office

Area: Taiwan, Hong Kong and Macau
14F, No. 51, Sec. 2, Keelung Rd., Xinyi Dist., Taipei City, 112, Taiwan
Tel: +886-933-800-188 Email: chen.p@leader.co.jp

Latin America Branches

Area: Mexico, Central America, Colombia, Ecuador and Venezuela
Email: armando.perez@leadermx.com
Area: Argentina, Bolivia, Brazil, Chile, Peru and Uruguay
Tel: +55-11-2863-3822 Email: ishimaru@leaderamerica.com