LA2Xi AMPLIFIED CONTROLLER FOR INSTALL

- **4 x 4 architecture in AVB, AES/EBU, Analog**
- **Milan-AVB seamless redundancy**
- **Compact (1U)**
- **Matched power for small loudspeakers**
- **Reduced power for larger loudspeakers**
- **Bridge mode at full power for larger loudspeakers**

LA2Xi is a four-channel amplified controller dedicated to permanent installations. It is primarily designed to power L-Acoustics small-format loudspeakers. LA2Xi also supports larger loudspeakers in applications that require lower sound pressure levels (SPL) in a 4 x 4 single-ended mode or full SPL capacity in 4 x 3, 4 x 2 or 4 x 1 bridged modes.

Packaged in a 1U chassis for efficient use of rack space, LA2Xi incorporates features tailored for integration applications. Its streamlined and elegant front panel hides the same DSP engine as the flagship LA12X amplified controller, with features for loudspeaker management, protection and monitoring as well as a comprehensive set of tools for system adjustment and calibration. The Milan-certified LA2Xi offers AVB inputs with seamless redundancy as well as analog and AES/EBU inputs. The rear panel offers terminal connectors for analog inputs, AES/EBU and loudspeakers outputs, as well as four GPIO and a 24 V DC backup power for the DSP card, enabling external control and monitoring, and ensuring fast recovery in case of power loss. LA2Xi is remotely controlled and monitored by LA Network Manager.

The flexible LA2Xi is ideal for background music systems in leisure venues, distributed fills, studio monitors and private auditorium systems.

I/O

LA2Xi provides four analog inputs with passive links, four AES/EBU inputs with active links and failsafe relay on terminal connectors and one Milan-AVB input stream with up to 8 channels on etherCON™. Automatic fallback functions from Milan-AVB to AES/EBU and AES/EBU to analog make the creation of redundant audio paths possible.

With Milan-AVB seamless redundancy as standard, if there is a connection loss on the primary network audio will continue from the secondary network with no audible artifacts. If non-redundant network mode is selected the two Milan-AVB ports can be used to daisy-chain units, reducing the need for additional AVB switches.

Routing inputs to outputs can be managed within LA Network Manager or supported third-party AV control systems.

With a flexible output channel architecture, LA2Xi adapts to the needs of various applications, allowing for a 4, 3, 2 or 1 output channel configuration. The single-ended mode provides matched power for smaller loudspeakers and scaled power for larger loudspeakers, while the bridge mode offers maximum SPL capabilities for all supported loudspeakers.

Additional option: The LA2Xi I/O-CON mounts onto the LA2Xi rear panel and covers the original terminal blocks. It offers an alternative connectivity solution based on fast-locking Neutrik® connectors, offering four XLR female connectors for AES/EBU and analog inputs, two XLR male connectors for AES/EBU and analog link and two 4-point speakON™ female connectors for loudspeaker outputs.

DSP

All L-Acoustics amplified controllers integrate powerful DSP resources gathering loudspeaker management, protection for transducers and electronics, and a comprehensive set of tools for system adjustments to create a natural, transparent, and realistic sound experience. The LA2Xi DSP engine is divided into three blocks.

System alignment:

The first block provides tools to create a coherent system by setting optimal summation of each element:

- Gain, polarity and up to 1 second of delay for each output channel
- The Autoalign tool, available as part of the M1 measurement suite, enables quick and easy alignment of an entire system

System tonal balance:

The second block provides advanced tools to maintain a consistent sonic signature between arrays in the system and from one venue to another:

- The Autofilter tool is used to linearize the full frequency response of the entire array across the audience space on a per amplifier channel basis
- The adjustable IIR & linear phase FIR filters are used to fine-tune the system to a specific venue or configuration
- The Array Morphing tool is a simple and yet efficient means to adjust the sonic signature of line sources to meet the program material needs
- The Autoclimate and Air Compensation tools are used to adjust the system response in relation to atmospheric conditions while preserving driver resources

Loudspeaker management:

The third block is the system parameters that unify loudspeaker response and system protection through specific loudspeaker presets developed in-house. It integrates the proprietary L-DRIVE system, providing over-excursion, over-voltage and thermal protection, to maximize output power and minimize nonlinearities. L-DRIVE's optimum protection ensures durable performance and preserves sonic transparency in the linear and nonlinear domains.
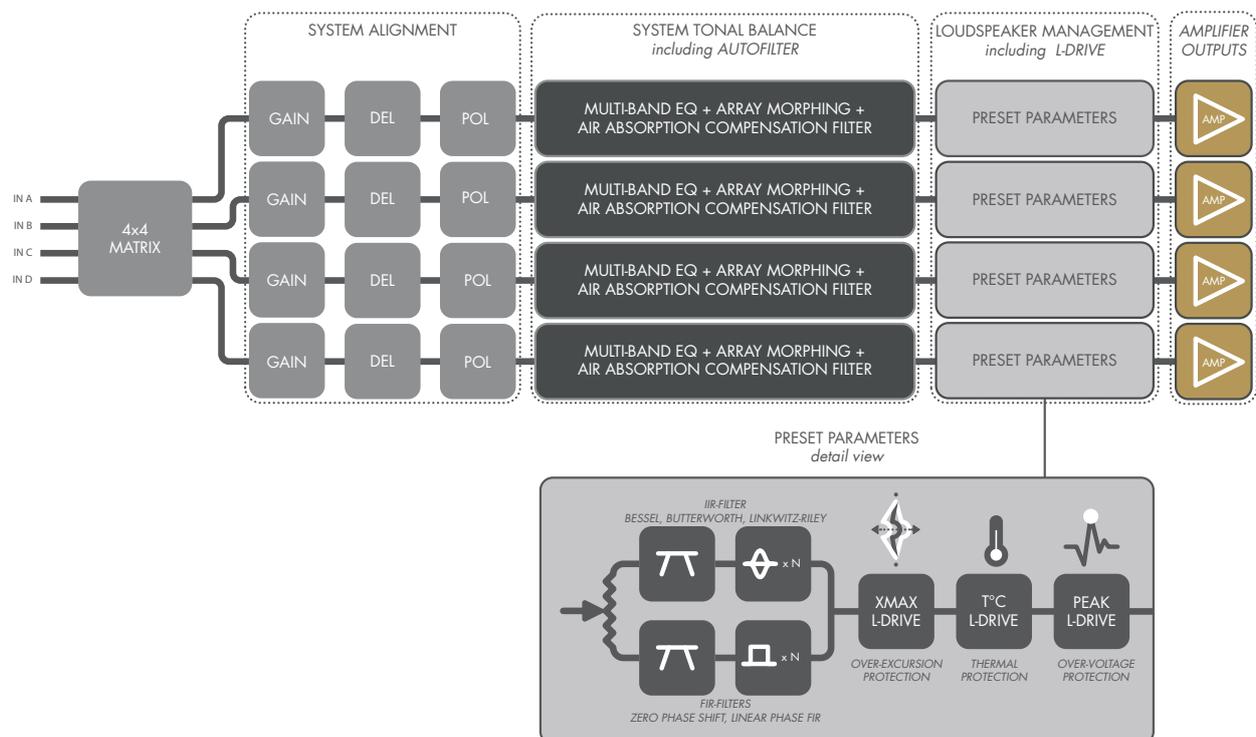
GREEN POWER

The latest generation of L-Acoustics amplified controllers relies on universal switch-mode power supplies (SMPS) for mains voltage from 100 V to 240 V +/- 10% (50 - 60 Hz). The SMPS is equipped with a power factor correction (PFC) to maximize the amplifier efficiency taking advantage of nearly 100% of the electrical power available with a very high tolerance to unstable mains. The combination of PFC and class D amplification leads to high energy-efficiency, low heat dissipation and electrical power requirements (cable gauge, power conditioning, etc...).

From a single 230 V / 10 A line LA2Xi delivers 4 x 640 W RMS power at 4 Ω with record hold times. L-Acoustics amplified controllers are designed to hold high power over a long period of time, typically 200 ms, yielding the best performance for loudspeaker systems, especially in the low frequency domain.
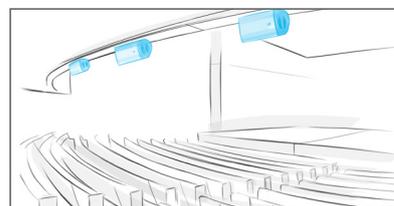
APPLICATIONS

LA2Xi supports a wide variety of near-field installed applications, powering main or fill systems in theaters, studios, private auditoriums, conference halls and other leisure venues.
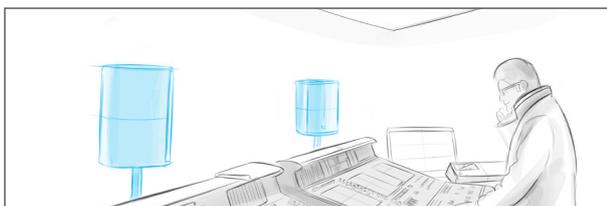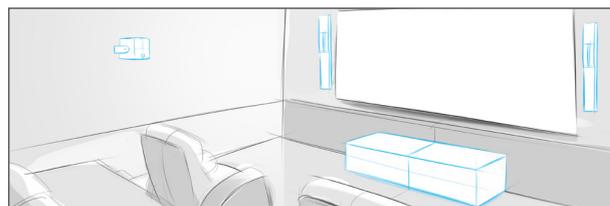

Background music in restaurant with X4i
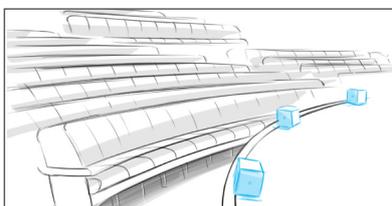
Front fills with 5XT

Under balcony fills with X8

Studio monitors with X8 - Bridged mode

Private auditorium with Syva and Syva Sub

ENCLOSURE DRIVE CAPACITY

| Categories - Series	Reference	Single ended mode		Bridge mode (Max SPL)
		nb of enclosure per LA2Xi	Max SPL reduction (dB)	nb of enclosure per LA2Xi
Short throw X Series	X4i	16	0	-
	5XT	16	0	-
	X6i	8	- 1^	2
	X8(i)	8	- 4^	2
	X12	4	- 5	2
	X15 HiQ	2	- 5	-
Medium throw S Series	Soka	4	- 2^	2
	Syva	4	- 7	2
	Syva - Syva Low	4	- 6	-
	Syva Low	4	- 6	-
	Syva Sub	4	- 5	2
Medium throw A Series	A10(i) Wide/Focus	8	- 4	2
	A15(i) Wide/Focus	4	- 5	2
Long throw* - **K Series	KIVA II	8	- 5	4
	KARA II(i)	4	- 5	-
Subwoofers	SB6i	4	0^	-
	SB10i	8	- 2^	2
	SB15m	4	- 6	2
	SB18 (IIi)	4	- 5	2
	KS21(i)	4	- 7	2
	KS28	4	- 7	1

^ Value given for the default preset. Max SPL can vary slightly with other presets, please refer to the Owner's Manual for full details
* L Series is only supported by LA7.16(i) amplified controllers   ** K3(i), K2, K1 & K1-SB are not supported by LA2Xi

SOFTWARE AND NETWORK

NM **LA Network Manager** is designed to efficiently take users through the workflow process of Setup, Tuning, and Live. The tools required for each task are available on the dedicated page for each step of the control and supervision process. An advanced network engine allows automatic discovery of connected units, multiple-group assignment, real-time monitoring with event logging, and includes numerous productivity tools.

Our proprietary Ethernet based L-Net protocol is used to configure and monitor all L-Acoustics amplified controllers. Thanks to its high-speed data transfer capability of 1 Gbit/s, up to 253 units can be controlled and monitored in real-time by LA Network Manager, a proprietary software available for both Windows and Mac operating systems. All amplified controllers are fitted with two Ethernet ports allowing daisy-chain topologies, star topologies or a hybrid of the two, using standard CAT5e U/FTP cables.

DAISY CHAIN TOPOLOGY

HYBRID TOPOLOGY

MILAN REDUNDANT TOPOLOGY*
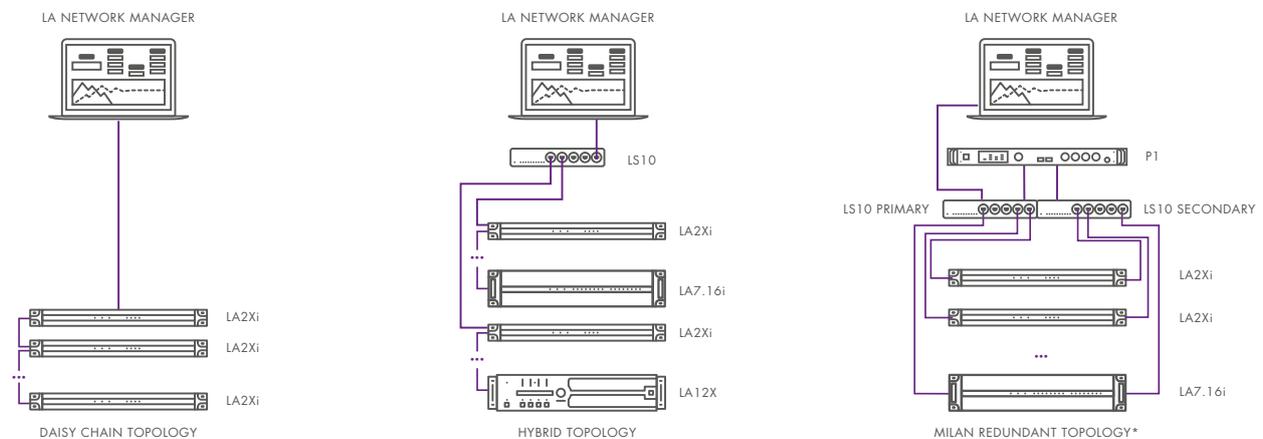
*Milan redundant topology is not available for LA4X.

AVB is the only protocol that guarantees deterministic and synchronous network behavior, ensuring on-time delivery of time-sensitive data. Milan is the application layer on top of AVB, independent from any private entity, that ensures seamless interoperability between any Milan-certified device. The Milan initiative developed agreed-upon standards for media stream format, media clocking, seamless redundancy, and more so that no IT expertise is required to set up a reliable and deterministic AVB network with Milan-certified devices.

Milan-AVB is an evolving, long-term, viable, and durable network developed by the industry for the industry.

SYSTEM MONITORING

L-Acoustics amplified controllers integrate system supervision functions that monitor amplifier and loudspeaker status, behavior, and continuity. The amplified controllers can monitor input and output signal integrity, levels, temperature, voltage values, and a power amplifier fault status. Any malfunction is reported in real-time within LA Network Manager control software or third-party control systems.

The Load Checker feature verifies the output cabling and validates that the preset loaded matches the expected load and number of enclosures in parallel.

LA2Xi monitors the output circuits using a combination of real-time load presence and periodic silent tests. Providing comprehensive status monitoring via the control network interfaces, including amplifier channel, and PSU status reporting. In addition to Milan-AVB seamless redundancy, options for automatic fallback and backup of input signals are available.

USER INTERFACE
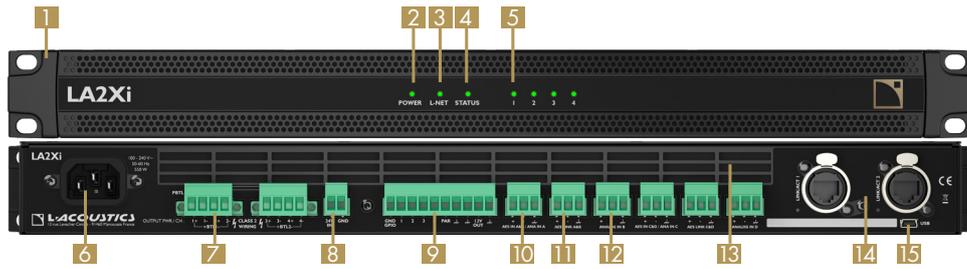
1	1U chassis	6	IEC V-Lock compatible power supply inlet	11	Analog or AES/EBU terminal link connector
2	Power LED	7	Loudspeaker outputs on 4-point terminal blocks	12	Analog terminal input and link connector
3	L-NET control network LED	8	24 V DC External DSP backup voltage input	13	Fan grill
4	Status LED	9	General Purpose I/O (GPIO)	14	etherCON™ 1 Gb/s Ethernet connectors
5	Signal, limit, clip LEDs	10	Analog or AES/EBU terminal input connector	15	USB port for IP address configuration

THIRD-PARTY INTEROPERABILITY

L-Acoustics has developed several modules and plug-ins which facilitate integration with many popular media control systems, allowing interoperability between the L-Acoustics ecosystem and third-party platforms. Permitting centralized monitoring and management, via a customized interface, of L-Acoustics electronics products alongside other types of devices. This includes continuous monitoring where voice alarm integration is a requirement.
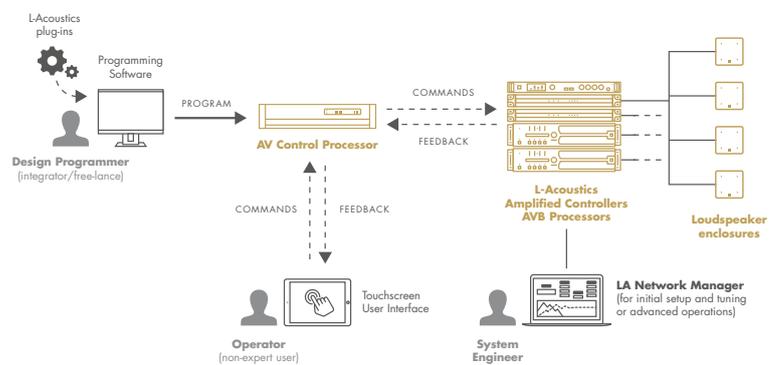
Supported AV control solutions: Q-SYS TECHNOLOGY PARTNER   Control4   SAVANT   HTTP   CRESTRON CERTIFIED Integrated Partner

AMPLIFIED CONTROLLERS – THE RANGE

All members of the latest generation of amplified controllers share similar architecture with extremely powerful DSP. The main differentiators between amplified controllers are gathered in the following table:

Specifications	LA7.16(i)	LA2Xi	LA4X	LA12X
Touring / Install	Touring / (i) Install	Install	Touring / Install	Touring / Install
Multi / Four channel	Multi-channel	Four-channel	Four-channel	Four-channel
In x Out	16 x 16	4 x 4/ 4 x 3 / 4 x 2 / 4 x 1	4 x 4	4 x 4
Output power 12 dB Crest Factor, sine burst, 1 kHz, 2 ms	16 x 700 W (at 16 ohms) 16 x 1300 W (at 8 ohms) 16 x 1100 W (at 4 ohms)	4 x 190 W (at 16 ohms) 4 x 370 W (at 8 ohms) 4 x 710 W (at 4 ohms)	4 x 560 W (at 16 ohms) 4 x 1100 W (at 8 ohms) 4 x 1400 W (at 4 ohms)	4 x 1400 W (at 8 ohms) 4 x 2600W (at 4 ohms) 4 x 3300W (at 2.7 ohms)
All channels loaded CEA-2006/490A, Sine burst , 1 kHz, 20 ms, THD < 1%, all channels loaded	16 x 580 W (at 16 ohms) 16 x 920 W (at 8 ohms) 16 x 1000 W (at 4 ohms)	4 x 190 W (at 16 ohms) 4 x 360 W (at 8 ohms) 4 x 640 W (at 4 ohms)	4 x 1000 W (at 8 ohms) 4 x 1000 W (at 4 ohms)	4 x 1400 W (at 8 ohms) 4 x 2600 W (at 4 ohms) 4 x 3300 W (at 2.7 ohms)
Nominal current requirements for 200 - 240 V / 100 - 120 V	16 A / 30 A	10 A / 20 A	10 A / 20 A	16 A / 30 A
Input channels	16 x AVB** 1 x Analog / 2 x AES/EBU	4 x AVB* 4 x Analog / 4 x AES/EBU	4 x AVB* 4 x Analog / 4 x AES/EBU	4 x AVB* 4 x Analog / 4 x AES/EBU
Noise level (20 Hz - 20 kHz, 8 Ω, A-weighted, digital input)	< - 79 dBV	< - 77 dBV	< - 70 dBV	< - 75 dBV
Front panel	TFT Colour Touch Screen (i: LED's only)	LED's only	LCD display with rotary encoder, power and mute keys	LCD display with rotary encoder, power and mute keys
Height	2U	1U	2U	2U
Weight	15.8 kg / 34.8 lb (i: 14.5 kg / 32 lb)	4.40 kg / 9.70 lb	11.3 kg / 24.9 lb	14.5 kg / 32 lb

* 4 channels from one AVB stream of up to 8 channels   ** 16 channels from up to 16 AVB streams of up to 8 channels

LA2Xi AMPLIFIED CONTROLLER

LA2Xi is a four-channel amplified controller dedicated to permanent installations. Designed to match the power of small-format loudspeakers, LA2Xi can also be used to support larger loudspeakers at lower SPL capability (4 x 4 single-ended mode) or at full SPL capability (4 x 3, 4 x 2 or 4 x 1 bridge mode).

The streamlined and elegant 1U front panel hides a powerful DSP engine with features for loudspeaker management, protection and monitoring as well as a comprehensive set of tools for system adjustment and calibration. In addition to analog and AES/EBU, LA2Xi integrates AVB signal inputs with Milan seamless network redundancy. The optional LA2Xi I/O-CON offers an alternative connectivity solution based on fast-locking Neutrik® connectors widely used in professional audio applications. Four GPIO and a 24 V DC backup power for the DSP card offer external control and improved reliability. The flexible LA2Xi is ideal for background music systems in leisure venues, distributed fills, studio monitors and private auditorium systems.

SPECIFICATIONS

Amplification and power supply

	4 channels at 4 Ω	4 channels at 8 Ω	4 channels at 16 Ω	2 channels at 8 Ω	1 channel at 4 Ω
Output power, all channels loaded					
Peak output power 12 dB Crest Factor, Sine burst, 1 kHz, 2 ms	710 W	370 W	190 W	1400 W	2750 W
Output power 200 ms, Sine burst, 1 kHz, < 1 % THD	640 W	360 W	190 W	1260 W	2550 W
Amplification class	High efficiency class D				
Power supply model	Universal Switched Mode Power Supply (SMPS) with Power Factor Correction (PFC)				
External DSP backup voltage input	24 V DC / 0.5 A on 2-point terminal block				
Mains rating	100 V - 240 V ~ ±10%, 50-60 Hz				

Audio specifications

Frequency response (20 Hz - 20 kHz, 8 Ω load, 60 W output power)	± 0.25 dB
Distortion THD+N (20 Hz - 20 kHz, 8 Ω load, 60 W output power)	< 0.1%
Output dynamic range (20 Hz - 20 kHz, 8 Ω, A-weigthed, Digital input)	> 113 dB
Noise level (20 Hz - 20 kHz, 8 Ω, A-weigthed, Digital input)	< - 77 dBV

DSP

Digital Signal Processor (DSP)	Dual SHARC 32-bit, floating point, 96 kHz sampling rate
I/O routing	4 x 4 routing and summation
Per output channel	Built-in EQ station with 8 IIR, 4 FIR EQ filters Array morphing (LF contour, zoom factor), Air absorption compensation filters
	Internal IIR and FIR EQ algorithms for speaker phase linearization and improved impulse responses
	Output delay from 0 to 1000 ms

Technologies

Loudspeaker Management	L-DRIVE advanced system protection (excursion, temperature and over-voltage)

Circuits protection

Mains and power supply	Over and under voltage / over temperature / overcurrent / inrush current protection
Power outputs	Over current limiting / DC / short circuit / over temperature

Inputs / Outputs

AVB input with support of Milan seamless dual networking	4 channels 48kHz / 96 kHz from 1 stream of up to 8 channels
AES/EBU inputs (3-point terminal blocks shared with analog A & C)	4 channels (2 x AES/EBU, 44.1 - 192 kHz sampling rate) With active link outputs and bypass relay on 3-point terminal blocks
Analog inputs (3-point terminal blocks shared with AES/EBU A & C)	4 channels
Loudspeaker output	2 female 4-point terminal blocks
Additional option: LA2Xi I/O-CON	Rear mounted connector panel which adds 6 Neutrik® XLR and 2 speakON™ connectors

Control and monitoring

Network connection	Dual-port Ethernet Gigabit interface etherCON™ I/O
General Purpose Inputs / Outputs (GPIO)	4 GPIO, isolated optocoupler inputs, isolated relay contacts
Third-party control solutions	Q-SYS® / Crestron® / Control4® / Savant® / HTTP API

Operating conditions

Temperature	Room temperature from 0° C / 32° F to +50° C / 122° F

Physical data

Dimensions W x H x D	483 x 44.45 (1U) x 265 mm / 19 x 1.75 (1U) x 10.4 in
Weight	4.4 kg / 9.7 lb