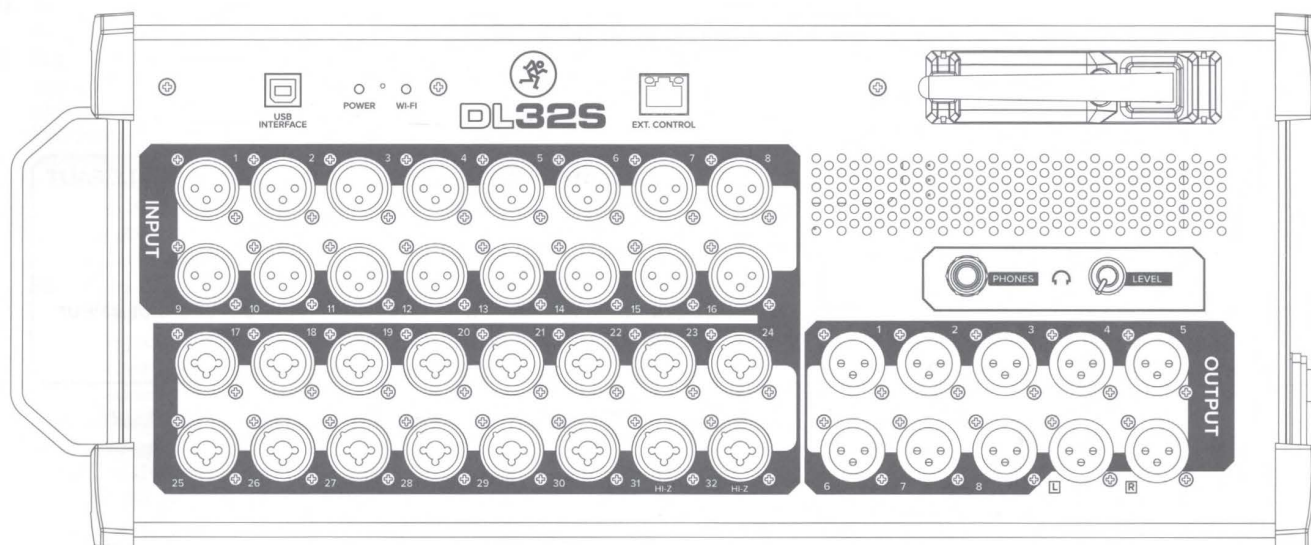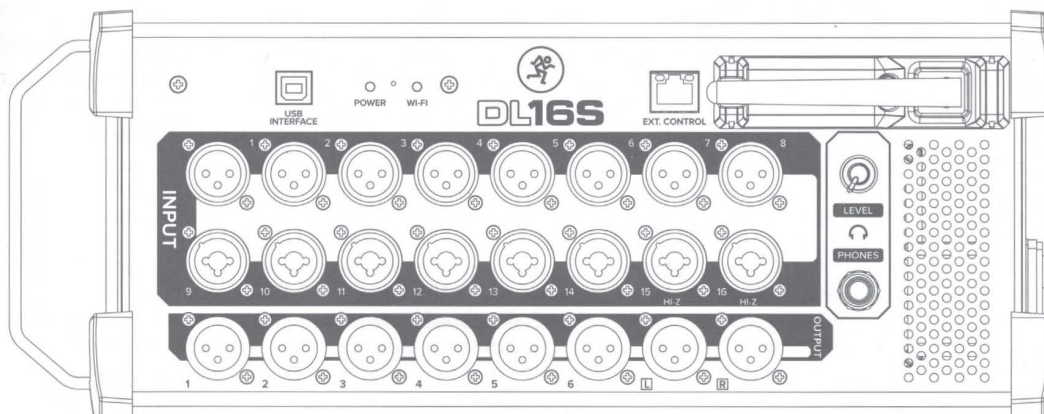# DL16S
DL32S

QUICK START GUIDE

EN Do you plan on using the built-in Wi-Fi on your new DL16S or DL32S? Take a look at the instructions below to get started. It's also the resource you'll want if you need to perform a factory reset for any reason. So... keep it safe.

Wi-Fi SETTINGS:
- Default Wi-Fi Name - **Mackie DL32S**
  or
  Mackie DL16S
- Default Wi-Fi Password - **MixWithMackie**
- For security, we recommend changing your Wi-Fi password in the Master Fader app.

NEED TO RESTORE DEFAULT Wi-Fi SETTINGS?
- Power up the unit and wait 30 seconds.
- Press and hold the recessed reset button for 5 seconds. (Found between the front panel Power and Wi-Fi LEDs)
- The Wi-Fi name/password will revert to the defaults listed to the left.

ES ¿Piensa usar el Wi-Fi interno de su nuevo DL16S o DL32S? Échele un vistazo a las instrucciones siguientes para saber cómo hacerlo. También le serán de ayuda si necesita realizar un reset de fábrica por algún motivo. Así que... manténgalas en un lugar seguro.

AJUSTES Wi-Fi:
- Nombre de la Wi-Fi por defecto - **Mackie DL32S**
  o
  Mackie DL16S
- Password de la Wi-Fi por defecto - **MixWithMackie**
- Para mayor seguridad, le recomendamos que cambie el password Wi-Fi en la app Master Fader.

¿NECESITA RESTAURAR LOS AJUSTES Wi-Fi POR DEFECTO?
- Encienda la unidad y espere 30 segundos.
- Mantenga pulsado durante 5 segundos el botón reset que está encastrado. (Lo podrá encontrar entre los pilotos Power y Wi-Fi en el panel frontal)
- El nombre/password de la Wi-Fi volverán a los valores por defecto indicados a la izquierda.

FR Vous souhaitez utiliser l'interface Wi-Fi intégrée de votre nouveau DL16S ou DL32S ? Dans ce cas commencez par lire les instructions ci-dessous. Elles vous indiquent également comment réinitialiser les paramètres d'usine, au cas où vous en auriez besoin. Alors... conservez-les bien !

CONFIGURATION Wi-Fi :
- Nom Wi-Fi par défaut : **Mackie DL32S**
  ou
  Mackie DL16S
- Mot de passe Wi-Fi par défaut : **MixWithMackie**
- Pour des raisons de sécurité, il est recommandé de modifier le mot de passe Wi-Fi dans l'application Master Fader.

RÉINITIALISATION DE LA CONFIGURATION WI-FI PAR DÉFAUT
- Mettez l'appareil sous tension et patientez 30 secondes.
- Maintenez enfoncé le bouton reset pendant 5 secondes. (Situé dans un renfoncement entre les LEDs POWER
- et Wi-Fi de la face avant)
  Le nom et le mot de passe Wi-Fi sont réinitialisés à leur valeur par défaut indiquée ci-contre.

DE Möchten Sie das integrierte Wi-Fi mit Ihrem neuen DL16S oder DL32S verwenden? Lesen Sie bitte zunächst die folgenden Anleitungen. Sie beschreiben auch, wie man nötigenfalls ein Reset auf die Werkseinstellungen durchführt. Bewahren Sie die Anleitungen sicher auf.

Wi-Fi EINSTELLUNGEN:
- Voreingestellter Wi-Fi Name - **Mackie DL32S**
  oder
  Mackie DL16S
- Voreingestelltes Wi-Fi Passwort - **MixWithMackie**
- Aus Sicherheitsgründen sollten Sie Ihr Wi-Fi Passwort in der Master Fader App ändern.

Wi-Fi WERKSEINSTELLUNGEN WIEDERHERSTELLEN?
- Schalten Sie das Gerät ein und warten Sie 30 Sekunden.
- Halten Sie die eingelassene Reset-Taste 5 Sekunden gedrückt. (Angeordnet zwischen den vorderseitigen Power- und Wi-Fi-LEDs)
- Wi-Fi Name/Passwort werden auf die links angegebenen Werkseinstellungen zurückgesetzt.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

> PORTABLE CART
> WARNING

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This apparatus shall not be exposed to dripping or splashing, and no object filled with liquids, such as vases or beer glasses, shall be placed on the apparatus.
16. Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
17. This apparatus has been designed with Class-I construction and must be connected to a mains socket outlet with a protective earthing connection (the third grounding prong).
18. This apparatus has been equipped with a rocker-style AC mains power switch. This switch is located on the side panel and should remain readily accessible to the user.
19. The appliance coupler is used as the disconnect device, so the disconnect device shall remain readily operable.
20. **DL32S NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
    - Reorient or relocate the receiving antenna.
    - Increase the separation between the equipment and the receiver.
    - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
    - Consult the dealer or an experienced radio/TV technician for help.

    CAUTION: Changes or modifications to this device not expressly approved by LOUD Audio, LLC could void the user's authority to operate the equipment under FCC rules.
21. **DL16S NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

    WARNING: Operation of DL16S in a residential environment could cause radio interference.

22. This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body.
23. This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION — *Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant las limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le réglement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.*

24. This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) *l'appareil ne doit pas produire de brouillage, et*

(2) *l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

25. Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a period of time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible noise level exposures shown in the following chart.

    According to OSHA, any exposure in excess of these permissible limits could result in some hearing loss. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels use hearing protectors while the equipment is in operation. Ear plugs or protectors in the ear canals or over the ears must be worn when operating the equipment in order to prevent permanent hearing loss if exposure is in excess of the limits set forth here:

Duration, per day in hours	Sound Level dBA, Slow Response	Typical Example
8	90	Duo in small club
6	92	
4	95	Subway Train
3	97	
2	100	Very loud classical music
1.5	102	
1	105	Chaz screaming at Troy about deadlines
0.5	110	
0.25 or less	115	Loudest parts at a rock concert

> **CAUTION**
> RISK OF ELECTRIC SHOCK! DO NOT OPEN!
>
> CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the prescence of uninsulated "dangerous voltage" within the product's enclosure, that may be of significant magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the prescence of important operating and maintaining (servicing) instructions in the literature accompanying the appliance.

WARNING — To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.

Apparatet stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.

Apparatet må tilkoples jordet stikkontakt.

Apparaten skall anslutas till jordat uttag.

Correct disposal of this product: This symbol indicates that this product should not be disposed of with your household waste, according to the WEEE directive (2012/19/EU) and your national law. This product should be handed over to an authorized collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, or your household waste disposal service.

Hookup Diagrams • Diagramas de conexión
Schémas de câblage • Anschlussdiagrammes

Typical Live Sound System
Sistema típico para sonido en directo
Système de sonorisation pour concert
Typisches Live-Sound-Setup
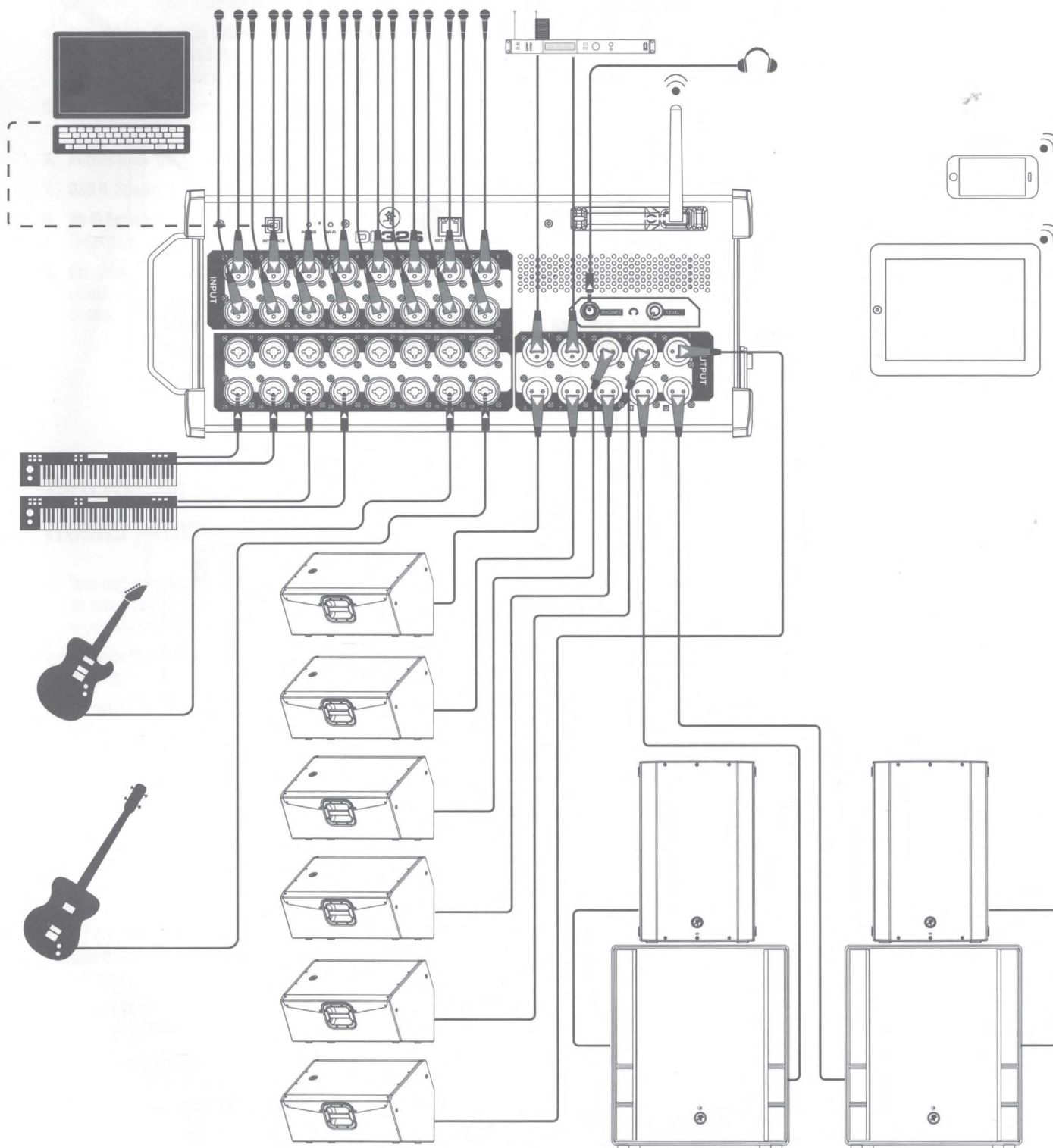
Personal Monitor Mixing
Mezcla de monitorización personal
Mixage de retour personnel
Individuelle Monitormischung
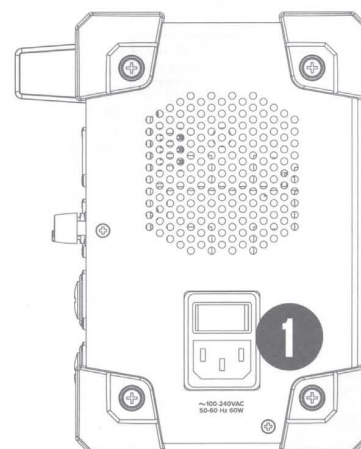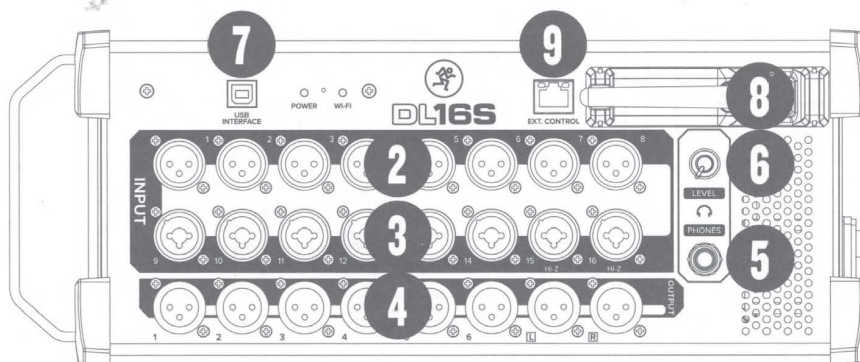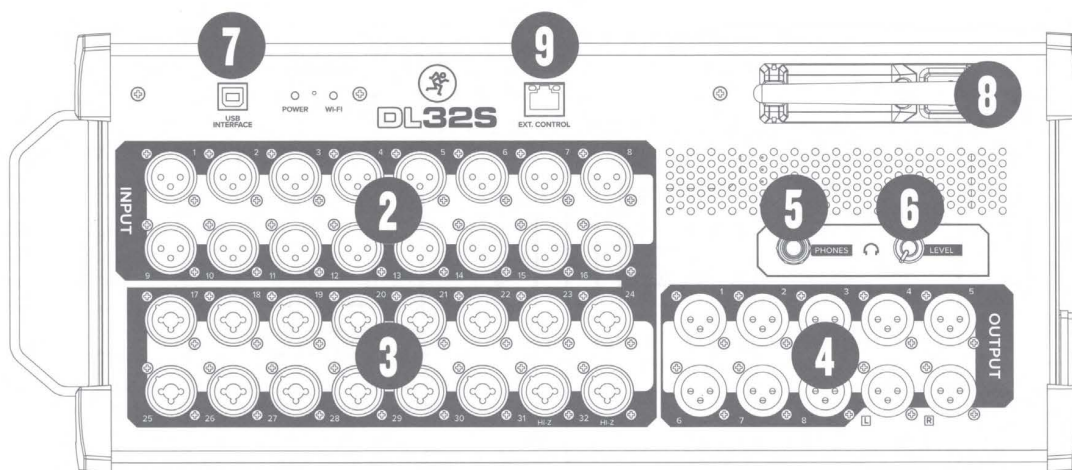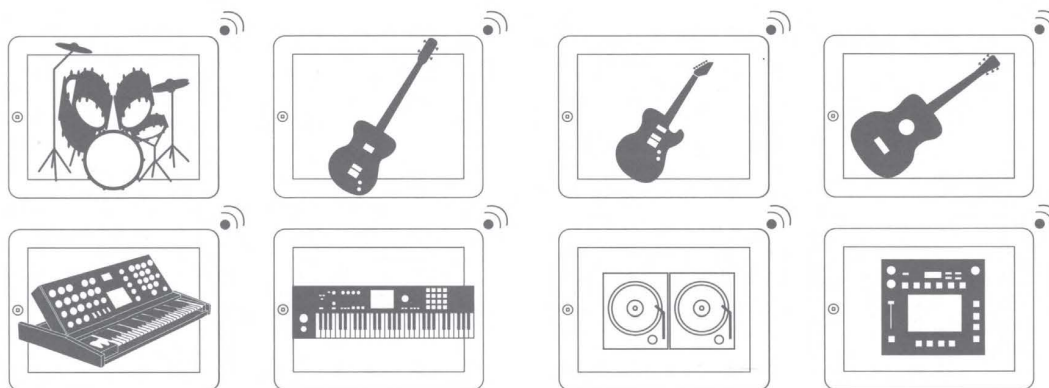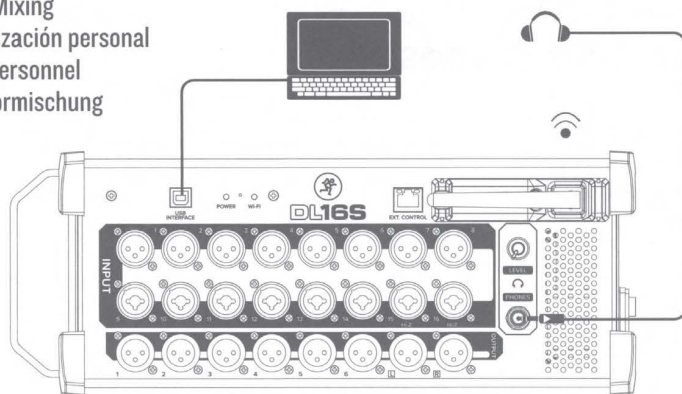
Front & Rear Panel Descriptions – EN

1. **Power Connector & Switch** Connect the supplied AC power cord to this IEC jack. The power switch turns the mixer on and off.

2. **XLR Inputs** Connect a balanced mic or line-level signal using an XLR connector.

3. **Combo Inputs** Connect a balanced or unbalanced mic or line-level signal using an XLR or 1/4" connector.

4. **XLR Outputs** Connect balanced line-level signals to the inputs of amplifiers, powered speakers, or a system processor/external effects processors using an XLR connector.

5. **Phones Jack** Connect stereo headphones using a 1/4" connector.

6. **Phones Knob** Controls the headphones level.

7. **USB B** Stream multichannel audio to and from a computer.

8. **Wi-Fi Antenna** Built-in Wi-Fi for wireless control via Master Fader from iOS, Android and PC / Mac.

9. **Ext. Control** Connect to a network or Wi-Fi access point via shielded network cable that is Cat5e or better for external control of the mixer.

Description des faces avant et arrière – FR

1. **Embase d'alimentation et interrupteur marche/arrêt** Connectez le cordon secteur fourni à cette embase CEI. L'interrupteur permet de placer l'enceinte sous/hors tension.

2. **Entrées XLR** Permet de connecter un micro symétrique ou une source niveau ligne équipée d'un connecteur XLR.

3. **Entrées combinées** Permettent de connecter un signal niveau micro ou ligne symétrique ou asymétrique avec une fiche XLR ou Jack 6,35 mm.

4. **Sorties XLR** Permettent la connexion de signaux symétriques niveau ligne aux entrées d'un amplificateur, d'enceintes actives ou d'un processeur système/d'effets externe avec un connecteur XLR.

5. **Sortie casque** Connectez votre casque à cette embase Jack 6,35 mm.

6. **Potentiomètre Phones** Permet de régler le niveau du casque.

7. **USB B** Permet d'envoyer/de recevoir un signal audio multicanal vers/depuis un ordinateur.

8. **Antenne Wi-Fi** Dispositif Wi-Fi intégré pour contrôle à distance sans fil par l'application Master Fader sur iOS, Android et PC / Mac.

9. **Ext. Control** Permet la connexion à un réseau ou un point d'accès Wi-Fi avec un câble réseau blindé de catégorie 5e ou supérieure pour contrôle externe de la console de mixage.

Descripción del panel frontal y trasero – ES

1. **Interruptor y toma de corriente** Conecte el cable de alimentación incluido a esta toma IEC. El interruptor le permite encender y apagar la mesa.

2. **Entradas XLR** Conecte una señal de micro o nivel de línea balanceada usando una toma XLR.

3. **Entradas Combo** Conecte un micro o señal de nivel de línea balanceada o no balanceada usando una toma XLR o de 6,3 mm.

4. **Salidas XLR** Permiten la conexión de señales balanceadas de nivel de línea a las entradas de amplificadores, monitores autoamplificados o un procesador de sistema/procesadores de efectos externos usando un conector XLR.

5. **Toma de auriculares** Conecte unos auriculares estéreo usando una toma de 6,3 mm.

6. **Mando Phones** Controla el nivel de los auriculares.

7. **USB B** Permite la codificación de señal audio multicanal a y desde un ordenador.

8. **Antena Wi-Fi** Conexión Wi-Fi interna para control inalámbrico a través del Master Fader en iOS, Android y PC / Mac.

9. **Ext. Control** Conecte esta toma a un punto de accesso Wi-Fi o red por medio de un cable de red con blindaje de tipo Cat5e o superior, para el control externo del mezclador.

Vorder- & Rückseite – DE

1. **Netzanschluss & -schalter** Verbinden Sie das mitgelieferte Netzkabel mit diesem IEC-Anschluss. Schalten Sie den Mischer mit dem Netzschalter ein/aus.

2. **XLR-Eingänge** Hier schließen Sie symmetrische oder unsymmetrische Mikrofon- oder Line-Pegel-Signale über XLR- oder 6,35 mm Klinkenstecker an.

3. **Kombi-Eingänge** Hier schließen Sie symmetrische oder unsymmetrische Mikrofon- oder Line-Pegel-Signale über XLR- oder 6,35 mm-Klinkenstecker an.

4. **XLR Outputs** Schließen Sie an diesen Ausgängen XLR-Kabel an, um die symmetrischen Line-Pegel-Signale zu den Eingängen von Verstärkern, Aktivboxen oder System- bzw. externen Effektprozessoren zu leiten.

5. **Phones-Buchse** Zum Anschließen von Stereokopfhörern über einen 6,35 mm-Stecker.

6. **Phones-Regler** Steuert den Kopfhörerpegel.

7. **USB B** Streamt mehrkanaliges Audio von und zu einem Computer.

8. **Wi-Fi Antenna** Integriertes Wi-Fi zur drahtlosen Steuerung mit dem Master Fader von iOS, Android und PC / Mac.

9. **Ext. Control** Stellt eine Verbindung mit einem Netzwerk oder Wi-Fi Zugangspunkt via abgeschirmtem Netzwerkkabel des Typs Cat5e oder besser her, um den Mixer fernzubedienen.

Getting Started – EN

1. Read and understand the Important Safety Instructions on page 3.

2. Establish a connection to your iOS, Android, PC or Mac.

3. Download the Master Fader app.

4. Plug signal sources into the mixer, such as:
   • Microphones plugged into the mic inputs.
   • Line-level sources such as keyboards, drum machines, or MP3 players plugged into the line-level inputs.

5. Connect XLR outputs 7 and 8 (DL16S) / 9 and 10 (DL32S) to powered speakers (or to an amplifier connected to passive speakers).

6. Push the line cord securely into the IEC connector and plug the other end into a grounded AC outlet.

7. Turn the DL16S / DL32S on.

8. Turn the powered speakers (or amplifiers) on.

9. Launch the Master Fader app and connect to the DL16S / DL32S.

10. Set the volume of the source input, starting with channel one.

11. Adjust the channel's mic pre gain until the meters on that channel bounce between green and yellow. Engage phantom power if needed.

12. Drag the channel's fader up to the 0 dB mark.

13. Slowly drag the master fader up to a comfortable listening level.

14. Repeat steps 10 to 12 for the other channels.

Puesta en marcha – ES

1. Lea y tenga en cuenta las Instrucciones importantes de seguridad de la página 4.

2. Establezca una conexión con su iOS, Android, PC o Mac.

3. Descárguese la app Master Fader.

4. Conecte fuentes de señal al mezclador, tal como:
   • Micrófonos conectados en las entradas de micro.
   • Fuentes de nivel de línea como teclados, cajas de ritmos o reproductores de MP3 conectados a las tomas de nivel de línea.

5. Conecte las salidas XLR 7 y 8 (DL16S) / 9 y 10 (DL32S) a unos monitores autoamplificados (o a un amplificador conectado a unos altavoces pasivos).

6. Introduzca completamente el cable de alimentación en las tomas IEC y el otro extremo a una salida de corriente alterna con toma de tierra.

7. Encienda en esta DL16S / DL32S.

8. Encienda los altavoces autoamplificados (o los amplificadores).

9. Ejecute la app Master Fader y conéctela al DL16S / DL32S.

10. Ajuste el volumen de la fuente de entrada, comenzando con el canal uno.

11. Ajuste la ganancia del previo de micro del canal hasta que los medidores de dicho canal se muevan entre la zona verde y la amarilla. Active la alimentación fantasma si es necesario.

12. Suba el fader del canal hasta la marca 0 dB.

13. Suba el fader master hasta conseguir un nivel de escucha cómodo.

14. Repita los pasos 10 a 12 con los otros canales.

Mise en œuvre – FR

1. Lisez les instructions importantes sur la sécurité page 5 et assurez-vous de les avoir bien comprises.

2. Etablissez une connexion avec votre iOS, Android, PC ou Mac.

3. Téléchargez l'application Master Fader.

4. Connectez vos sources à la console, par exemple :
   • Des micros branchés aux entrées micro.
   • Des sources niveau ligne comme un clavier, une boîte à rythme ou un lecteur de MP3, connectés aux entrées ligne.

5. Connectez les sorties XLR 7 et 8 (DL16S) / 9 et 10 (DL32S) à des enceintes actives (ou à un amplificateur connecté à des enceintes passives).

6. Poussez complètement le cordon secteur dans l'embase CEI et connectez l'autre extrémité à une prise de courant reliée à la terre.

7. Mettez la console sous tension.

8. Mettez les enceintes actives (ou les amplis) sous tension.

9. Lancez l'application Fader Master et connectez-vous au DL16S / DL32S.

10. Réglez le volume de la source d'entrée, en commençant par la voie I.

11. Réglez le gain micro de la voie jusqu'à ce que les afficheurs de la voie oscillent entre vert et jaune. Activez l'alimentation fantôme si nécessaire.

12. Montez le Fader de la voie jusqu'à 0 dB.

13. Montez le Fader principal jusqu'à obtenir un volume d'écoute confortable.

14. Répétez les étapes 10 à 12 pour les autres voies.

Erste Schritte – DE

1. Lesen und beachten Sie die „Wichtigen Sicherheitshinweise" auf Seite 6.

2. Stellen Sie eine Verbindung zu Ihrem iOS, Android, PC oder Mac her.

3. Laden Sie die Master Fader App herunter.

4. Schließen Sie Signalquellen an den Mischer an, zum Beispiel:
   • Mikrofone an die Mic-Eingänge
   • Line-Pegel-Quellen wie Keyboards, Drumcomputer oder MP3-Player an die Line-Pegel-Eingänge.

5. Verbinden Sie die XLR-Ausgänge 7 und 8 (DL16S) / 9 und 10 (DL32S) mit Aktivboxen (oder mit einem Verstärker und Passivboxen).

6. Stecken Sie das Netzkabel fest in den IEC-Anschluss und schließen Sie das andere Ende an eine geerdete Netzsteckdose an.

7. Schalten Sie den DL16S / DL32S ein.

8. Schalten Sie die Aktivboxen (oder Verstärker) ein.

9. Starten Sie die Master Fader App und verbinden Sie diese mit dem DL16S / DL32S.

10. Stellen Sie die Lautstärke der Eingangsquellen ein, beginnen Sie dabei mit Kanal I.

11. Stellen Sie die Mikrofon-Vorverstärkung des Kanals so ein, dass sich dessen Anzeige zwischen grün und gelb bewegt. Bei Bedarf Phantomspannung aktivieren.

12. Schieben Sie den Kanal-Fader auf die 0 dB-Marke hoch.

13. Schieben Sie den Master-Fader auf einen angenehmen Abhörpegel hoch.

14. Wiederholen Sie die Schritte 10 bis 12 bei den anderen Kanälen.

Technical Specifications / Especificaciones técnicas
Caractéristiques techniques / Technische Daten

	DL16S	DL32S
Digital Specifications **Especificaciones digitales** **Caractéristiques numériques** **Digitale Spezifikationen**	Sample Rate: 48 kHz • A/D/A Bit Depth: 24-bit • System Latency: 1.5 ms Frecuencia de muestreo: 48 kHz • Profundidad de bits A/D/A: 24 bits • Latencia del sistema: 1.5 ms Fréquence d'échantillonnage : 48 kHz • Résolution A/N/A: 24 bits • Latence du système: 1,5 ms Samplerate: 48 kHz • A/D/A Bit-Tiefe: 24-Bit • Systemlatenz: 1,5 ms	
Frequency Response **Respuesta de frecuencia** **Réponse en fréquence** **Frequenzgang**	XLR inputs and outputs: ±0, −1 dB, 20 Hz – 20 kHz XLR entradas y salidas: ±0, −1 dB, 20 Hz – 20 kHz XLR entrées et sorties: ±0, −1 dB, 20 Hz – 20 kHz XLR Eingänge und Ausgänge: ±0, −1 dB, 20 Hz – 20 kHz 1/4" inputs: ±0, −3 dB, 20 Hz – 20 kHz 6,35 entradas: ±0, −3 dB, 20 Hz – 20 kHz 6,35 entrées: ±0, −3 dB, 20 Hz – 20 kHz 6,35 Eingänge: ±0, −3 dB, 20 Hz – 20 kHz	
Noise Characteristics **Características de ruido** **Caractéristiques du bruit** **Geräuschkennwerte**	EIN (150 Ω termination): −128 dBu EIN (terminación 150 Ω): −128 dBu EIN (termination 150 Ω): −128 dBu EIN (150 Ω Terminierung): −128 dBu	
Dynamic Range **Rango dinámico** **Plage Dynamique** **Dynamikbereich**	One channel and main fader at unity, A−weighted: 111 dB Fader de un canal y principal en unitario, medición A: 111 dB Fader principal et d'une voie à l'unité, pondéré A : 111 dB Ein Kanalfader und der Hauptfader auf Unity, A−bewertet: 111 dB	
Signal-to-Noise Ratio **Relación señal-ruido** **Rapport signal-bruit** **Geräuschspannungsabstand**	ref +4 dBu, one channel and main fader at unity, A−weighted: 93 dB ref +4 dBu, fader de un canal y principal en unitario, medición A: 93 dB ref +4 dBu, Fader principal et d'une voie à l'unité, pondéré A : 93 dB ref +4 dBu, ein Kanalfader und der Hauptfader auf Unity, A−bewertet: 93 dB	
Input Type **Tipo de entrada** **Type d'entrée** **Eingangstyp**	Female XLR−1/4" balanced / unbalanced XLR−6,35 mm hembra balanceado / no balanceado XLR−6,35 mm femelle symétrique / asymétrique XLR−6,35 mm-Buchse symmetrisch / unsymmetrisch	
Output Type **Tipo de salidas** **Type d'sorties** **Ausgangstyp**	Female XLR balanced / 1/4" Stereo [Phones Jack] XLR hembra balanceado / 6,35 mm Estéreo [Toma de auriculares] XLR femelle symétrique / 6,35 mm stéréo [Sortie casque] XLR-Buchse symmetrisch / 6,35 mm Stereo [Phones-Buchse]	
Maximum Levels **Niveles máximos** **Niveaux maximums** **Maximalpegel**	XLR inputs • Entradas XLR • Entrées XLR • XLR-Eingänge: +21 dBu 1/4" inputs • entradas de 6,3 mm • Entrées Jack 6,35 mm • 6,35 mm-Eingänge: +40 dBu XLR outputs • salidas XLR • Sorties XLR • XLR-Ausgänge: +21 dBu	
Simultaneous Control **Control simultáneo** **Contrôles simultanés** **Gleichzeitige Steuerung**	20 Devices 20 dispositivos 20 appareils 20 Geräte	
Power Requirements **Alimentación** **Alimentation** **Spannungsbedarf**	Universal Supply, 100 VAC – 240 VAC, 50 – 60 Hz, 40 W [DL16S]	60 W [DL32S] Fuente de alimentación universal, 100 VAC – 240 VAC, 50 – 60 Hz, 40 W [DL16S]	60 W [DL32S] Alimentation universelle, 100 VAC – 240 VAC, 50 – 60 Hz, 40 W [DL16S]	60 W [DL32S] Universal-Netzteil, 100 VAC – 240 VAC, 50 – 60 Hz, 40 W [DL16S]	60 W [DL32S]	
Operating Temperature **Temperatura de funcionamiento** **Température de fonctionnement** **Betriebstemperatur**	32 – 104 ˚F 0 – 40 ˚C	
Size (H × W × D) **Tamaño (A × L × P)** **Dimensions (H × L × P)** **Abmessungen (H × B × T)**	5.6 × 14.1 × 5.8 in 142 × 358 × 147 mm	7.3 × 17.6 × 5.8 in 185 × 447 × 147 mm
Weight **Peso** **Poids** **Gewicht**	6.2 lb 2.8 kg	8.8 lb 4.0 kg

All specifications subject to change
Todas estas especificaciones están sujetas a cambios sin previo aviso
Les caractéristiques peuvent être modifiées
Technische Änderungen und Ergänzungen vorbehalten

EN WARRANTY AND SUPPORT

Visit **WWW.MACKIE.COM** to:

- Identify **WARRANTY** coverage provided in your local market.
  Please keep your sales receipt in a safe place.
- Retrieve a full-version, printable **OWNER'S MANUAL** for your product.
- **DOWNLOAD** software, firmware and drivers for your product (if applicable).
- **REGISTER** your product.
- **CONTACT** Technical Support.

ES GARANTÍA Y SOPORTE TÉCNICO

Visite la página web **WWW.MACKIE.COM** para:

- Conocer la cobertura en periodo de **GARANTÍA** correspondiente a su país. Le recomendamos
  que conserve su recibo de compra o factura en un lugar seguro.
- Conseguir una versión completa e imprimible del **MANUAL DE INSTRUCCIONES** de este aparato.
- **DESCÁRGUESE** lo último en software, firmware y drivers para este producto (cuando sea aplicable).
- **REGISTRAR** este aparato.
- **PONERSE EN CONTACTO** con el departamento de soporte técnico.

FR GARANTIE ET ASSISTANCE TECHNIQUE

Consultez **WWW.MACKIE.COM** pour:

- Connaître la couverture de la **GARANTIE** dans votre région. Merci de conserver vos factures dans
  un lieu sûr.
- Récupérer une version complète imprimable du **MODE D'EMPLOI** de votre appareil.
- **TÉLÉCHARGER** le logiciel, le firmware et les pilotes de votre produit (le cas échéant).
- **ENREGISTRER** votre produit.
- **CONTACTER** le département d'assistance technique.

DE GARANTIE UND SUPPORT

Besuchen Sie **WWW.MACKIE.COM**, um:

- Die **GARANTIE**-Bedingungen für Ihr Land zu finden. Bitte bewahren Sie Ihren Kaufbeleg gut auf.
- Ein ausführliches druckbares **BEDIENUNGSHANDBUCH** für Ihr Produkt zu finden.
- Software, Firmware und Treiber für Ihr Produkt (falls anwendbar) **HERUNTERZULADEN**.
- Ihr Produkt zu **REGISTRIEREN**.
- Den Technischen Support zu **KONTAKTIEREN**.

DL16S
DL32S
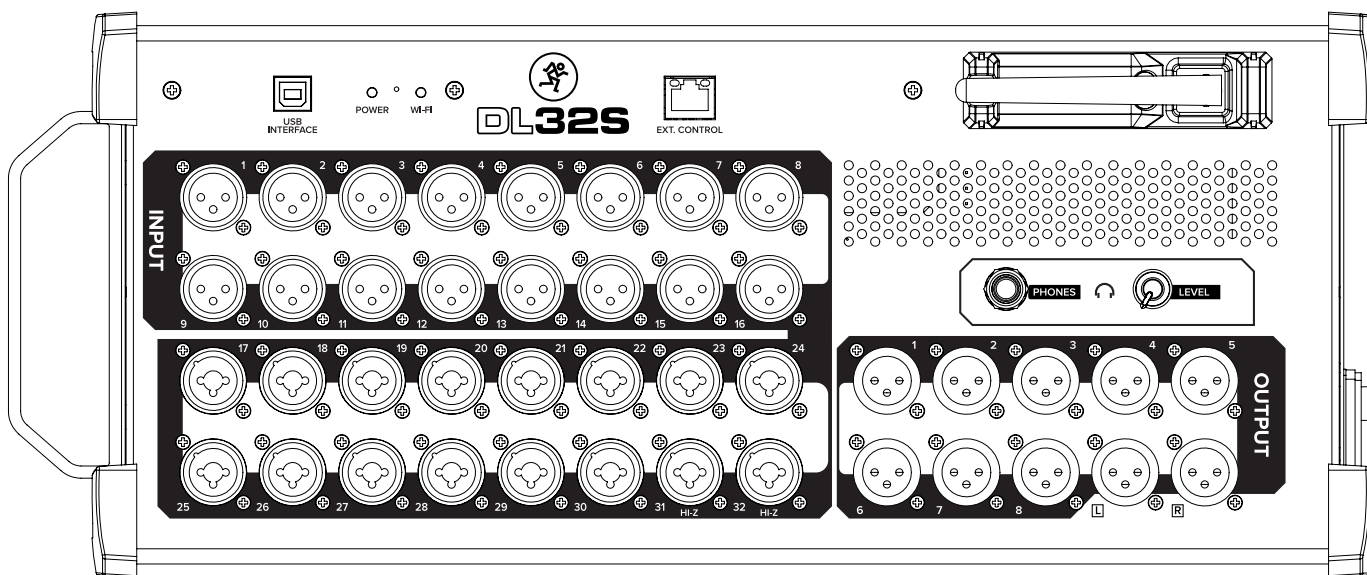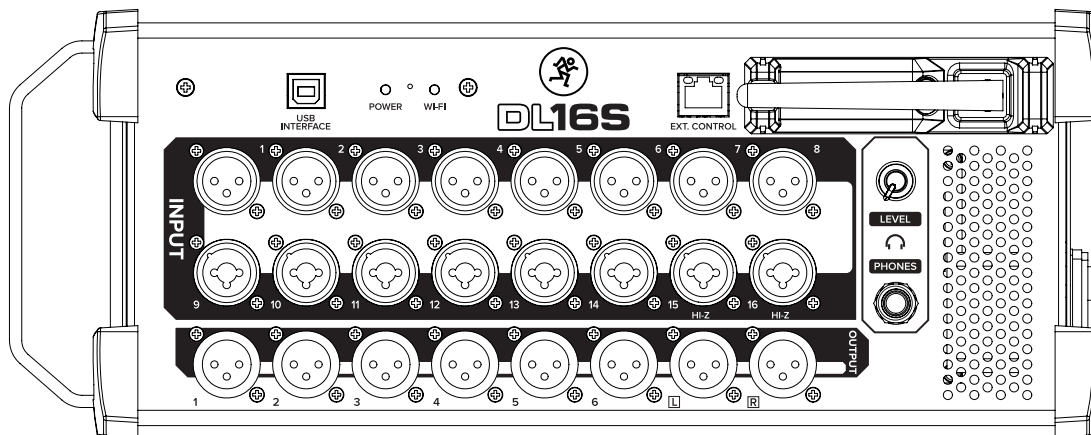
Important Safety Instructions

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this apparatus near water.

6. Clean only with a dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

PORTABLE CART WARNING

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

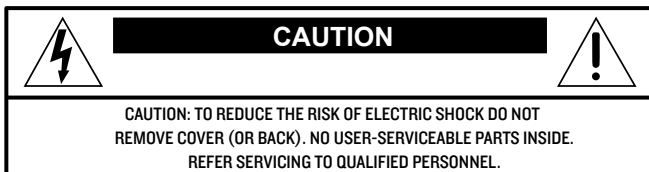15. This apparatus shall not be exposed to dripping or splashing, and no object filled with liquids, such as vases or beer glasses, shall be placed on the apparatus.

16. Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

17. This apparatus has been designed with Class-I construction and must be connected to a mains socket outlet with a protective earthing connection (the third grounding prong).

18. This apparatus has been equipped with a rocker-style AC mains power switch. This switch is located on the side panel and should remain readily accessible to the user.

19. The appliance coupler is used as the disconnect device,so the disconnect device shall remain readily operable.

CAUTION

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of significant magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the prescence of important operating and maintaining (servicing) instructions in the literature accompanying the appliance.

20. **NOTE:** The DL32S has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

   - Reorient or relocate the receiving antenna.
   - Increase the separation between the equipment and the receiver.
   - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
   - Consult the dealer or an experienced radio/TV technician for help.

   CAUTION: Changes or modifications to this device not expressly approved by LOUD Audio, LLC could void the user's authority to operate the equipment under FCC rules.

21. **NOTE:** The DL16S has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

   WARNING: Operation of a DL16S in a residential environment could cause radio interference.

22. This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body.

23. This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION — *Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant las limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le réglement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.*

24. This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

   (1) this device may not cause interference, and

   (2) this device must accept any interference, including interference that may cause undesired operation of the device.

   Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

   (1) l'appareil ne doit pas produire de brouillage, et

   (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

25. Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a period of time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible noise level exposures shown in the following chart.

   According to OSHA, any exposure in excess of these permissible limits could result in some hearing loss. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels use hearing protectors while the equipment is in operation. Ear plugs or protectors in the ear canals or over the ears must be worn when operating the equipment in order to prevent permanent hearing loss if exposure is in excess of the limits set forth here:

Duration, per day in hours	Sound Level dBA, Slow Response	Typical Example
8	90	Duo in small club
6	92	
4	95	Subway Train
3	97	
2	100	Very loud classical music
1.5	102	
1	105	Ryan screaming at Troy about deadlines
0.5	110	
0.25 or less	115	Loudest parts at a rock concert

WARNING — To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.

Apparatet må tilkoples jordet stikkontakt.

Apparaten skall anslutas till jordat uttag.

Table of Contents

Chapter 1 : Welcome

Hello everyone! This is the DL16S • DL32S Owner's Manual...we hope you like it!

Instead of one massive document containing detailed information about the hardware and software, we have divided them into separate manuals. Simply decide if you need assistance with the hardware or software and dive on in. The water here is warm and crystal clear.

The following pages describe the hardware side of things and should remain relatively unchanged throughout the life of your product. The software, though, is another story. The Master Fader app is always being updated...even right now this very minute! This means frequent updates to the Reference Guide, firmware and more. With each major release comes an updated Reference Guide.

So there you have it. Again, we hope you like it. If you have any questions or comments about this Owner's Manual, please contact us at: www.mackie.com/support

About This Guide

This guide is designed to be accessible, with subsections as complete as practical to minimize having to electronically leaf back and forth looking for the whole story. This guide provides the following resources:

- A general overview of the DL16S • DL32S's facilities and features.

- Dissection-by-dissection description of each input and output.

- Hookup diagrams depicting some of the more common setups.

As the saying goes, "a picture tells a 1000 words". With that thought in mind, we added quite a few illustrations, screen shots and other images throughout to accompany the text.

VERY IMPORTANT This icon marks information that is critically important or unique! For your own good, read and remember them...it is a good idea to pay special attention to these areas in the Owner's Manual marked with the "VERY IMPORTANT" hand icon.

A CLOSER LOOK There's an illustration of a microscope, so, of course, you're going to get more detailed information when you see this little guy. There are explanations of features and practical tips listed here.

NOTE It's a good idea to pay attention to text displayed next to a note icon, as this icon draws attention to certain features and functions relating to the usage of the mixer.

Need help with the DL16S or DL32S?

- Visit www.mackie.com/support to find: FAQs, manuals, addendums, and other documents.

- Email us at: www.mackie.com/support-contact

- Telephone 1-800-898-3211 to speak with one of our splendid technical support chaps (Monday through Friday, normal business hours, Pacific Time).

Chapter 2 : DL16S and DL32S Side and Rear Panels

Introduction

The side panel of each DL16S and DL32S is outfitted with a power connector and power switch, while the Kensington Lock resides on the rear panel.

Power Connector

This is a standard 3-prong IEC power connector. Connect the detachable power cord (included in the packaging) to the power receptacle, and plug the other end of the power cord into an AC outlet.

VERY IMPORTANT Make sure that the AC power is matched to the AC power indicated on the side panel (below the IEC receptacle).

VERY IMPORTANT Warning: Disconnecting the plug's ground pin is dangerous. Don't do it!

In fact, it's a bad idea to remove anything from – or add anything to, for that matter – the line cord. Again, don't do it!
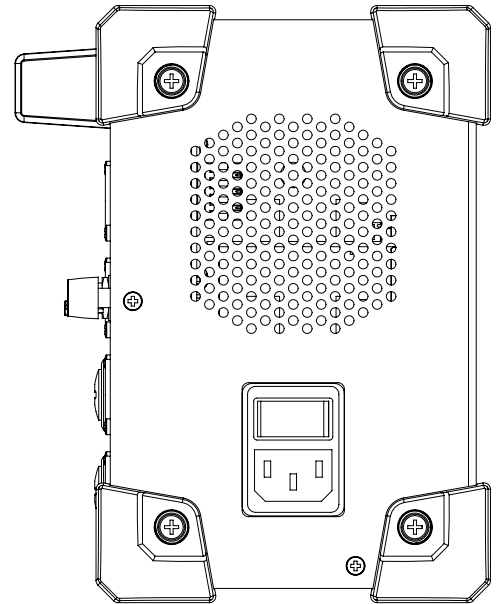
Power Switch

Press the left side of this rocker switch in to turn the DL16S or DL32S on and press the right side of this switch to turn the mixer off.

A CLOSER LOOK As a general guide, the DL16S • DL32S should be turned on first, before any external power amplifiers or powered speakers. As such, it should also be turned off last. This will reduce the possibility of any turn-on or turn-off noises in the PA.

Kensington Lock

An optional Kensington Lock provides an extra level of security should the mixer be left alone, unwatched. There are a wide variety of cable apparatuses to choose from to secure your mixer via the Kensington Lock security slot. Feel free to decide on what type works best for you by perusing the Kensington website: http://www.kensington.com/

VERY IMPORTANT While the Kensington cable and lock provide some level of security, it is NOT foolproof or guaranteed protection. LOUD Audio, LLC. is not responsible for the loss, theft, damage or destruction of your mixer whether a Kensington Lock has been used or not.
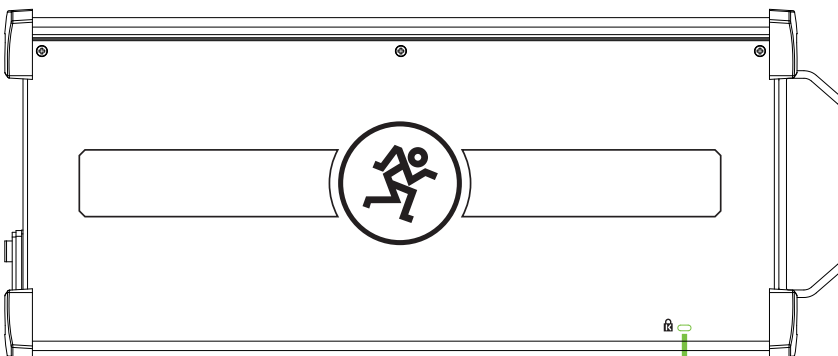
Chapter 3 : DL16S and DL32S Front Panel

Introduction

Each DL16S and DL32S mixer is outfitted with one 1/4″ phones output jack (and corresponding phones knob), a USB interface slot to stream multichannel audio to and from, an external Ethernet connector slot, a built-in Wi-Fi antenna and power and Wi-Fi LEDs.

The DL16S has 8 XLR input jacks, 8 combo input jacks and 8 XLR output jacks, while the DL32S has 16 XLR input jacks, 16 combo input jacks and 10 XLR output jacks. Let's take a look at each of these features, starting with the inputs.
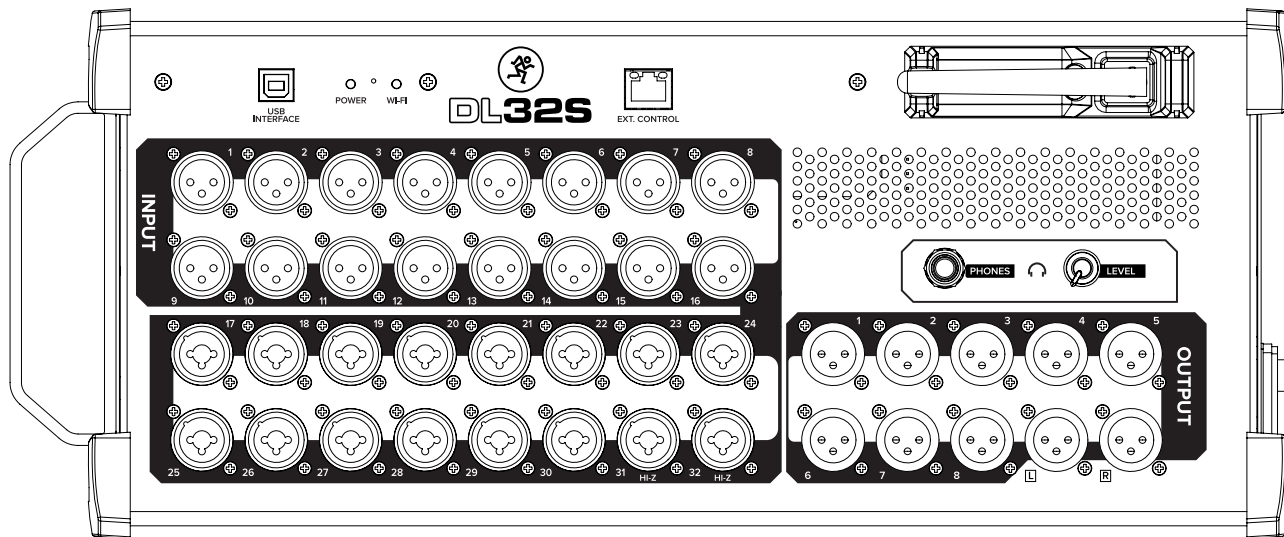
XLR and 1/4″ Inputs

All channels may accept a balanced mic or line-level signal using an XLR connector.
They are wired as follows, according to standards specified by the AES (Audio Engineering Society).
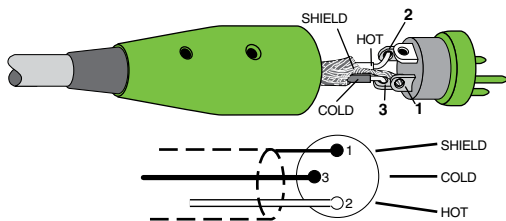
XLR Balanced Wiring:

Pin 1 = Shield (ground)
Pin 2 = Positive (+ or hot)
Pin 3 = Negative (− or cold)

In addition to accepting balanced mic or line-level signals using an XLR connector, channels 9-16 [DL16S] • channels 17-32 [DL32S] may also accept 1/4″ line-level signals driven by balanced or unbalanced sources.

To connect balanced lines to these inputs, use a 1/4″ Tip-Ring-Sleeve (TRS) plug. "TRS" stands for Tip-Ring-Sleeve, the three connection points available on a stereo 1/4″ or balanced phone jack or plug. TRS jacks and plugs are used for balanced signals and stereo headphones and are wired as follows:
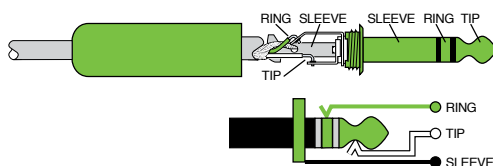
1/4″ TRS Balanced Mono Wiring:

Sleeve = Shield
Tip = Hot (+)
Ring = Cold (−)

To connect unbalanced lines to these inputs, use a 1/4″ mono (TS) phone plug, wired as follows:
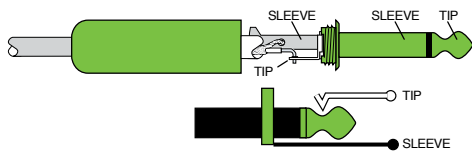
1/4″ TS Unbalanced Mono Wiring:

Sleeve = Shield
Tip = Hot (+)

XLR Outputs

These male XLR connectors provide balanced line-level signals that represent the end of the mixer, where the signals enter the real world. Connect these to line-level inputs of your main PA system, stage monitors, external effects devices, headphone amplifiers, and/or whatever else you desire. The PA/monitor speaker system could either be passive (powered by external amplifiers) and/or powered (with built-in power amplifiers). You may run separate mixes since all outputs are independent of each other and are completely routable via the Master Fader control software. Pretty cool, huh?!

They are wired as follows, according to standards specified by the AES (Audio Engineering Society):
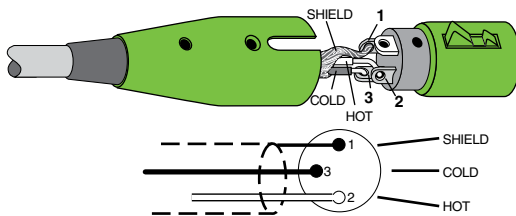
XLR Balanced Wiring:

Pin 1 = Shield (ground)
Pin 2 = Positive (+ or hot)
Pin 3 = Negative (– or cold)

Phones Output Jack

This 1/4″ TRS connector supplies the output to stereo headphones. The volume is controlled with the phones knob located near the output jack.

The phones output follows standard conventions:
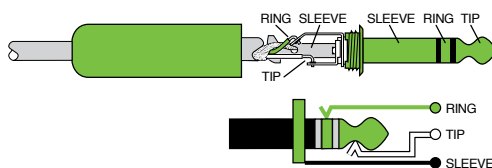
Tip = Left channel
Ring = Right channel
Sleeve = Ground

Phones Knob

This knob is used to adjust the volume from the phones output jack, from off to maximum gain (max). The phones knob is an analog control, and is therefore NOT recallable.

Warning: The headphone amp is loud and could cause permanent hearing damage. Even intermediate levels may be painfully loud with some headphones. BE CAREFUL! Always turn the phones knob all the way down before connecting headphones, soloing a channel or doing anything new that may affect the headphone volume. Then turn it up slowly as you listen carefully.

Power LED

For the most part, this LED will illuminate solid green when the mixer is powered on and funtioning normally. However, this LED has several other identifiers, as well. Please refer to the table in Appendix D for all possibilities.

Wi-Fi LED

For the most part, this LED will illuminate solid green when Wi-Fi is functioning normally and a tablet or computer connection is established. However, this LED has several other identifiers, as well. Please refer to the table in Appendix D for all possibilities.

Force Update / Network Reset Button

The force update / network reset button is conveniently located in between the power and Wi-Fi LEDs. In a perfect world, this button would just sit there without a care in the world, umbrella drink in hand, beach, surf and sun on a daily basis. In all likelihood, this button will live his / her dream out, while the rest of us can only dream of such a life.

The DL16S, DL32S and Master Fader app do a great job at letting you know when either (or both) the software and firmware need updating, but this button here forces a complete firmware update if the need ever arrives.

Force Update: Here's how to force a firmware update: first, turn the mixer off. Now, with a bent paperclip, poke the force update button, then power up the mixer with the button depressed. The mixer will boot and you will be prompted with an update bubble the next time a tablet or computer with the Master Fader app is turned on.

Network Reset: Press the button for 5 seconds and release to reset the network settings to its default. This is useful if you're not sure of the current configuration, if the mixer isn't being discovered by Master Fader or can't connect. It resets the mixer to access point mode using the default network and password. Additional information regarding default configuration is discussed in greater detail on the next page.

Network Reset+: Press and hold the button for 30 seconds, then release. Like Network Reset above, Network Reset+ resets the mixer to access point mode using the default network and password, but it also completely reloads the firmware in the Wi-Fi module (leaving all other firmware intact). Use this if Network Reset doesn't solve the network related problem or if instructed by support.

Now that you know how to force an update and reset the network, here's a friendly reminder that you should let the button remain peaceful, calm and tranquil, only forcing a firmware update if instructed by Tech Support. Thank you for listening!

Save any current show to your tablet or computer before forcing an update or you may lose it. The show and your sanity!
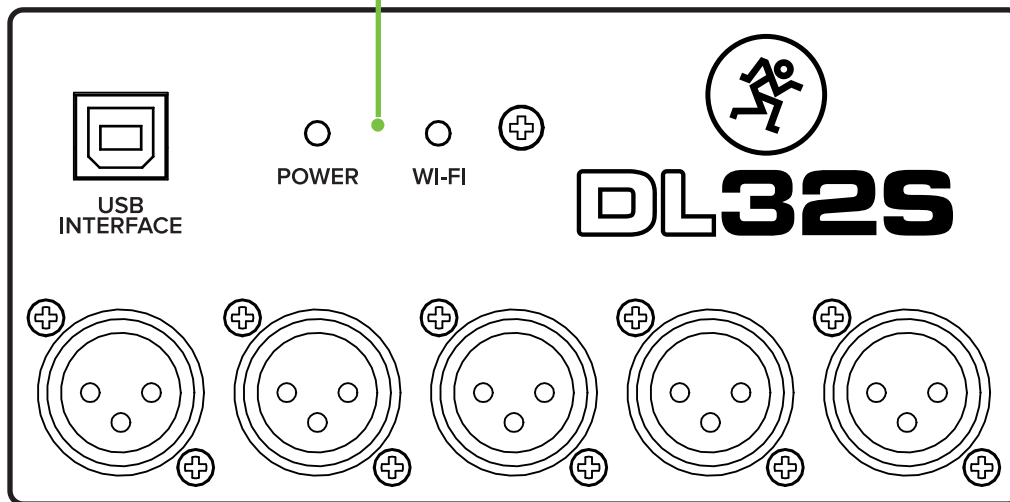
USB Interface

The USB type B connector allows multiple channels – 16x16 [DL16S] • 32x32 [DL32S] – of recording and playback to a connected computer over USB 2.0 by presenting the DL mixer as an audio class 2.0 compliant device. What this means is that connecting it to a Mac should work automatically with no additional drivers. Windows drivers will require separate installation, but this is included. Simply download it from our website!

Any combination of channels or outputs may be selected as the record source and playback destination.

More information about recording and playback may be found on page 10.

Wi-Fi Antenna

The DL16S and DL32S both feature built-in Wi-Fi for wireless control via Master Fader from iOS, Android or Mac/PC.

By default, your mixer will use the built-in Wi-FI (Access Point mode). There are no changes necessary; it is ok to leave all settings as-is. Gently remove the antenna from its "clasp" and rotate it 90° **CLOCKWISE** so it points straight up. On your device running Master Fader, go into the Wi-Fi settings and look for the default SSID (Mackie DL16S or Mackie DL32S). Connect and enter the default password (MixWithMackie). You should be good to go!

Wi-Fi SETTINGS: • Default Wi-Fi Name - **Mackie DL32S** or **Mackie DL16S** • Default Wi-Fi Password - **MixWithMackie** • For security, we recommend changing your Wi-Fi password in the Master Fader app.	**NEED TO RESTORE DEFAULT Wi-Fi SETTINGS?** • Power up the unit and wait 30 seconds. • Press and hold the recessed reset button for 5 seconds. (Found between the front panel Power and Wi-Fi LEDs) • The Wi-Fi name/password will revert to the defaults listed to the left.

If not using the built-in Wi-Fi, there are two other options that may be configured with Master Fader.

In External Router mode, you can connect your mixer to an external router using a cable plugged into the mixer's Ethernet port. See below for more detail.

Another option is using Wi-Fi Client mode to connect wirelessly to an existing Wi-Fi access point. In this mode, a router is not physically connected to your mixer. Instead, the venue runs a dedicated (and protected) Wi-Fi access point for their internal use. If using this mode, there are a few steps necessary to get dialed in. These are settings in the Master Fader control app and more detail can be found in the Master Fader Reference Guide.

Utilizing the built-in Wi-Fi will satisfy most users. Only those with very specific Wi-Fi requirements (extra-wide range demands, integration with existing network, etc.) would need to use the External Router or Wi-Fi Client modes.

Only one networking mode may be selected: (1) Access Point, (2) External Router OR (3) Wi-Fi Client. Complete directions for choosing and configuring these modes may be found in the Master Fader Reference Guide.
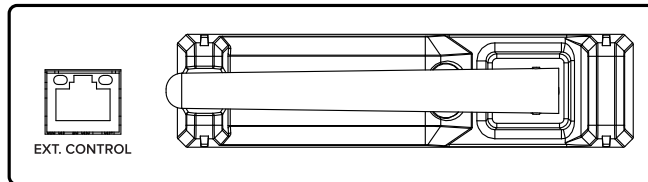
EXT. CONTROL

Ext. Control Connector
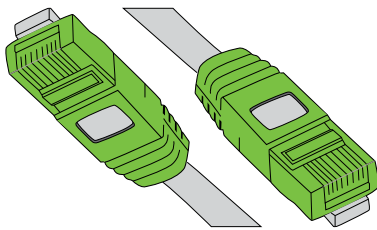
The purpose in life of this 100 Mb network connector is to connect the mixer to an external Wi-Fi router via CAT5 Ethernet cable, thus enabling wireless control.

Plug one end of the CAT5 Ethernet cable into the mixer's network connector [Ext. Control] and the other end of the CAT5 Ethernet cable into a LAN port on the router, NOT a WAN port. Most routers allow the use of either a straight-wired cable or crossover cable, but if you have a choice, a straight-wired CAT5 Ethernet cable is the way to go to ensure smooth operation with any router.

Utilizing the built-in Wi-Fi will satisfy most users. Only those with very specific Wi-Fi requirements (extra-wide range demands, integration with existing network, etc.) would need to use the External Router or Wi-Fi Client modes.

Do NOT connect an external router when using Access Point mode. This can create an unstable network causing some devices to stop operating properly. When configuring for External Router, change the settings with Master Fader, then connect the external router.

Only one networking mode may be selected: (1) Access Point, (2) External Router OR (3) Wi-Fi Client. Complete directions for choosing and configuring these modes may be found in the Master Fader Reference Guide.

Chapter 4 : Recording and Playback

Introduction

As mentioned a couple of pages ago, recording and playback is possible when a computer is connected to the DL16S or DL32S via the USB type B connector. No additional drivers are required to work with macOS. Windows will require the installation of the Mackie USB driver.

Any combination of channels or outputs may be selected as the record source and playback destination.

Getting Started

Recording and/or playback with a DL16S or DL32S is possible from a DAW application or from other applications such as iTunes, Windows Media Play, Spotify or other programs.

NOTE All of the necessary connections have been outlined in great detail on the previous pages. We urge you to re-read these sections before venturing into recording territory. That said, if you've already been there, done that, and are ready to record, here's a quick primer on getting started.

1. PC users: install the latest driver from the Mackie website. Installation instructions are included with the download.
   Please follow the directions listed on that document for setting up the mixer's USB driver settings.
   Mac users: no driver required.

2. Turn down all knobs.

3. Disengage all switches.

4. Plug signal sources into the mixer, such as:
   • Microphones plugged into the mic inputs. (Engage phantom power if needed.)
   • Line-level sources such as keyboards, drum machines, or MP3 players plugged into the line-level inputs.

5. Connect cords from the L/R outputs to powered speakers (or to an amplifier connected to passive speakers).

6. Push a USB cable securely into the mixer's USB connector and plug the other end into any open USB port of the computer.

7. Turn the mixer on.

8. Turn the computer on.

9. Turn the powered speakers (or amplifiers) on.

10. To set the DL16S or DL32S as the default playback or recording device, open the Sound preferences on the computer and select the DL16S or DL32S.

11. If using the DL16S or DL32S with a DAW application, open the DAW and navigate to the DAW sound preferences.
    Select the DL16S or DL32S as the input and output device. Please refer to your DAW reference guide for additional details.

13. Be sure that the volume of the input is the same as it would be during normal use.

14. Slowly bring up the master fader to a comfortable listening level.

NOTE Playback from iTunes or other music apps occurs via the return channels on Master Fader.

NOTE Several hookup diagrams are available on the next few pages. These help visually explain the text listed here.

Appendix A : Hookup Diagrams

Live Sound: House Engineer
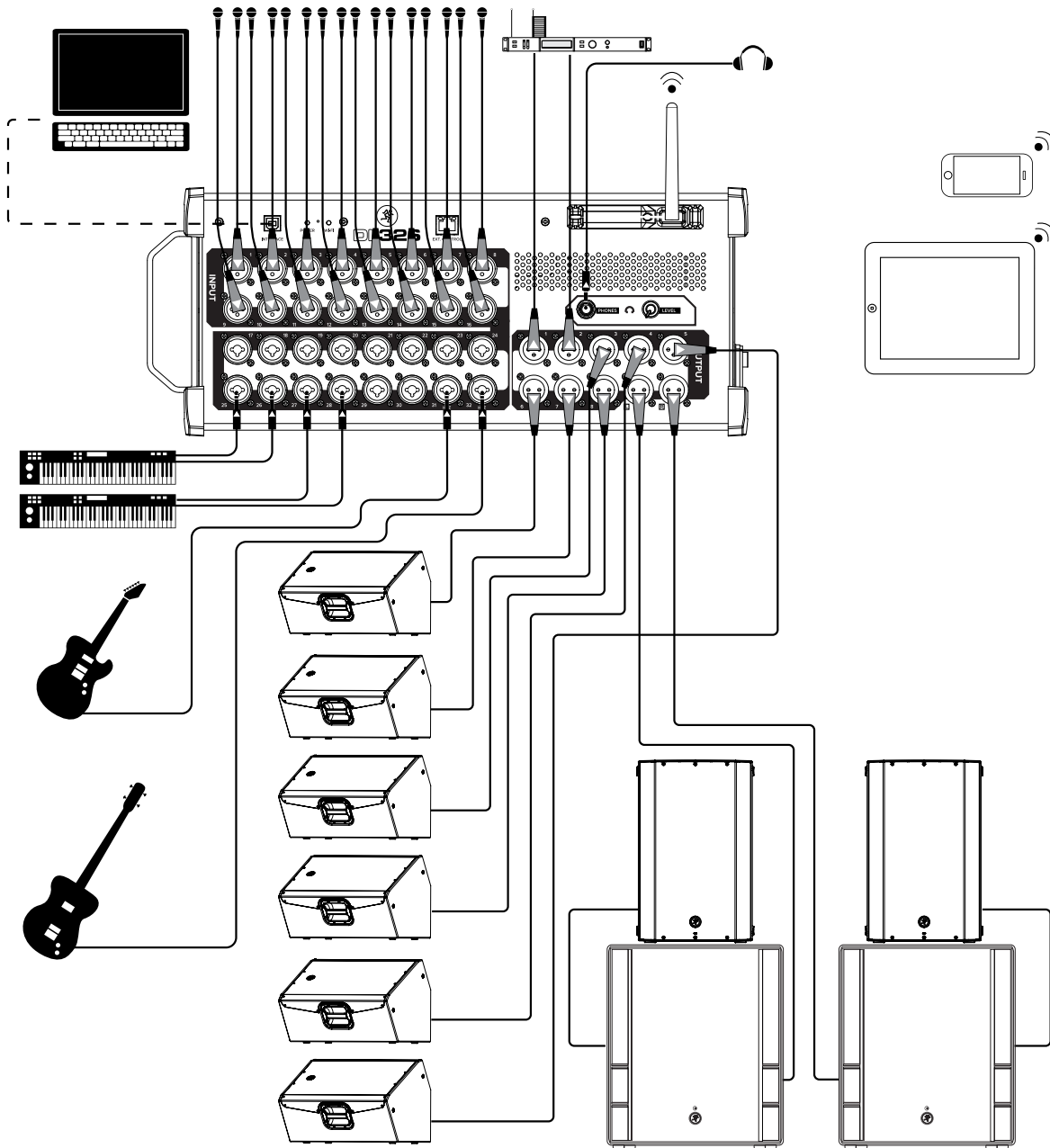
Here's a pretty common setup utilizing the DL32S. Mics are connected to input channels 1-16 which may be used to mic up a drum set, guitar and bass cabinets, acoustic guitar, lead and background vocals, a horn section, etc. A pair of synthesizers are connected to channels 25-26 and 27-28 and a couple of axes into inputs 31 and 32, all via 1/4" input jacks. And there are still an additional 10 unused inputs available for extra mics!

Outputs 9-10 are assigned as the L/R main outs [default]. These connect directly to a pair of Thump18S powered subwoofers which are connected to a pair of Thump15BST powered loudspeakers. Outputs 3-8 are assigned as aux sends 1-6. These are sent to six separate Thump12A powered loudspeakers set up as monitors for the band. Outputs 1-2 are sent to transmitters for in-ear monitors.

The house engineer will set the LR main mix, as well as get the multitrack recording of the band's live show utilizing the multi-platform device of his/her choice.

Live Sound: Self-Engineered
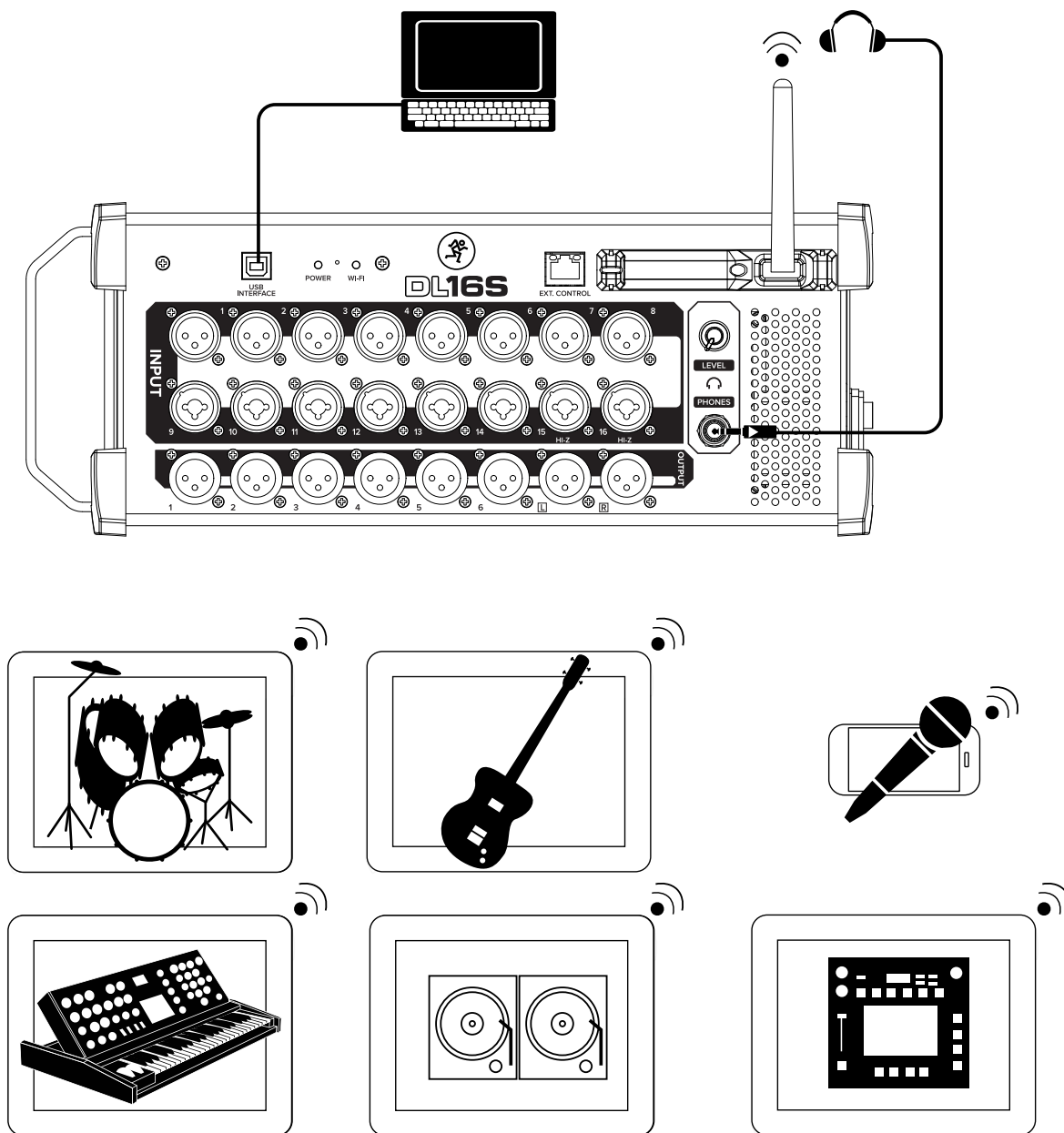
Here's a setup for all the musicians out there who whine for "more me" in the mix. Set up and connect each musician's instrument, the PA and monitors just like they would be in any other live situation.

The house engineer's multi-platform device of his/her choice is at the bar (right next to a shot and a beer, of course – unseen in the illustration above; after all, it is a good-sized venue) where he/she will set the LR main mix, as well as get the multitrack recording of the band's live show.

Up to 20 devices may be connected to the DL16S • DL32S. As such, each band member may control their own mix from their own "station". As seen in the illustration above, the drummist, bassist, vocalist, keyboardist, DJist and samplerist each have a device. Six musicians, six devices, six-plus outputs (configured as auxes). Coincidence? We think not. Whining problem solved!

Studio Recording
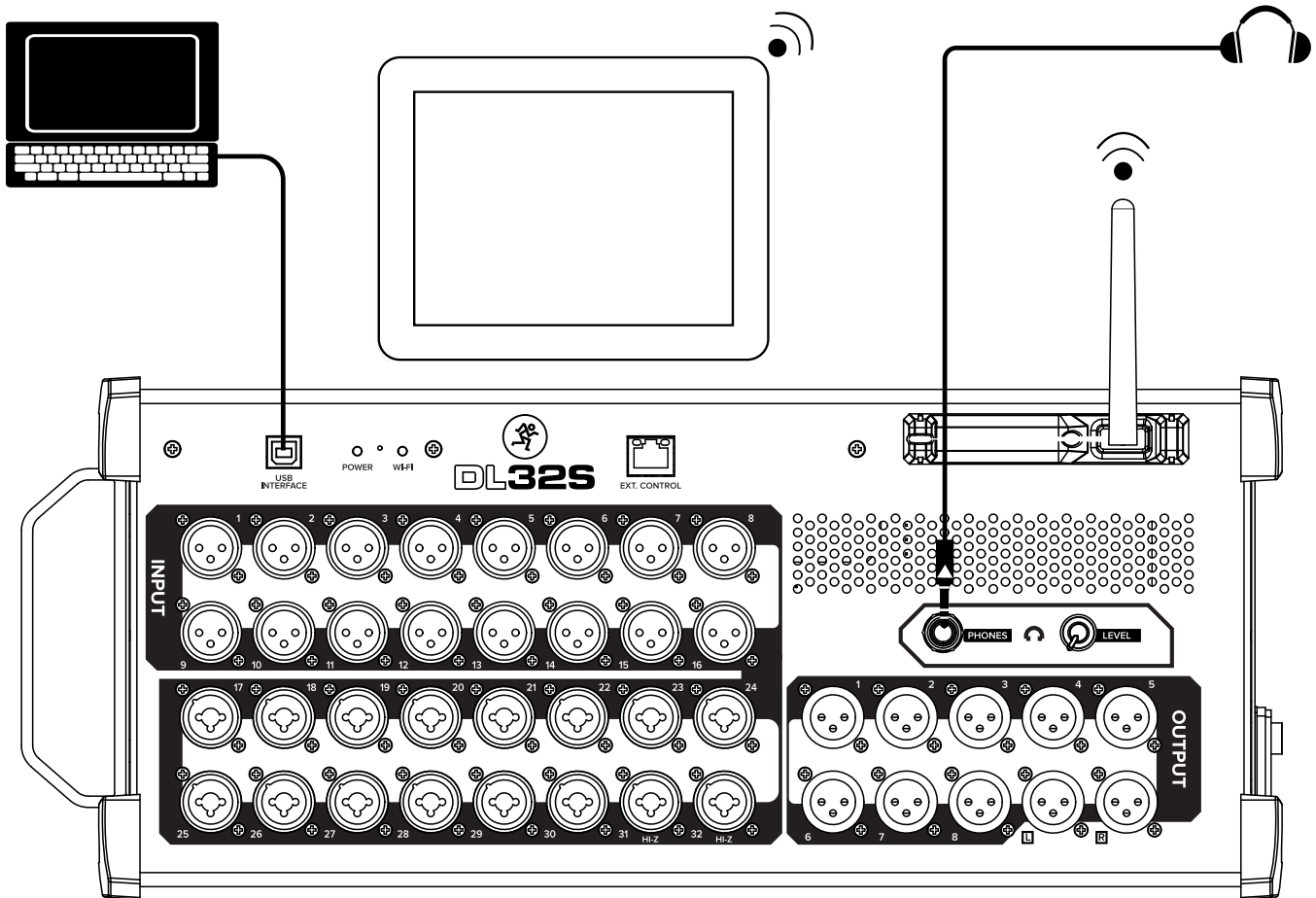
In addition to being live mixers, the DL16S • DL32S also make great mixers for studio recordings.

Start by simply setting up and connecting all the necessary mics, instruments and other inputs.

Next, set the levels and create the mix you desire.

A computer – Mac or PC, your choice! – is connected to the USB connector on the front panel for recording up to 16x16 channels (DL16S) or 32x32 channels (DL32S).

Now listen to your masterpiece via headphones (connected to the phones output jack).

Voilà, you just recorded and played back up to 16x16 or 32x32 channels while sittin' in your underwear...the only way to write and record!

As much as we like to write and record in our underwear (and urge you to do the same – it's comfortable!), please save it for the studio. No one's interested in seeing you play a live gig in your Fruit of the Looms®. Trust us, we did it...once.

Appendix B : Technical Information

Specifications

General Digital

Sample Rate: .... 48 kHz

A/D/A Bit Depth: 24-bit

System Latency

    Analog Input > Main Bus > Analog Output: ....1.5 ms

0 dBFS Reference:...+22 dBu

Frequency Response

XLR inputs and outputs:.. ±0, −1 dB, 20 Hz to 20 kHz
1/4" inputs:...±0, −3 dB, 20 Hz to 20 kHz

Distortion

THD+N, XLR mic input to XLR output, unity gain (1 kHz, +21 dBu signal; 30 kHz bandwidth): .... <0.005%

Noise / Dynamic Range / Signal-to-Noise Ratio

EIN (150 Ω termination):.. −127 dBu, A-Weighted
Crosstalk

    Analog XLR adjacent inputs: ....<−105 dB @ 1 kHz (unity gain)

    <−65 dB @ 1 kHz (max gain)

    Analog XLR adjacent outputs: .... <−95 dB @ 1 kHz
Signal-to-Noise Ratio (ref +4 dBu, 1 kHz. Mic Input > Main Bus > XLR Output, unity gain):.....................................>92 dB, un-weighted
Output Noise, XLR output (DSP muted):...<−90 dBu RMS
Dynamic Range

    Mic Input > Main Bus > XLR Output, unity gain: ....>110 dB, A-Weighted

    XLR Mic Input to USB Output:..>113 dB, A-Weighted

    XLR Output from DSP (Oscillator): ....>113 dB, A-Weighted
CMRR − XLR Mic Input (ref +20 dBu, +45 dB Gain):...>75 dB @1 kHz

Specifications Continued...

Analog Inputs

Connectors:..1-8: XLR Balanced, 9-16: Combo XLR / TRS Bal-Unbal

(plus Hi-Z via unbalanced instrument cable on inputs 15-16) [DL16S]

1-16: XLR Balanced, 17-32: Combo XLR / TRS Bal-Unbal

(plus Hi-Z via unbalanced instrument cable on inputs 31-32) [DL32S]

XLR Mic Pre:... Onyx+

Input Impedance:

DL16S:.. XLR, channels 1-16: 3 kΩ, balanced

1/4″ Line, channels 9-14: 30 kΩ, balanced

1/4″ Hi-Z, channels 15-16: 1 MΩ, unbalanced

DL32S: .... XLR, channels 1-32: 3 kΩ, balanced

1/4″ TRS Line, channels 15-30: 30 kΩ, balanced

1/4″ TS Hi-Z, channels 31-32: 1 MΩ, unbalanced

Max Input Level: .... XLR: +22 dBu

1/4″: +30 dBu

48V Phantom Power (XLR): .... 48 VDC nominal voltage, unloaded

14 mA maximum current supplied to any single input

5mA minimum current supplied to all inputs simultaneously

Digital on/off control for each individual input

Analog Outputs

Connectors:.. XLR Balanced

Output Impedance:... 300 Ω

Max Output Level: ....+22 dBu

Analog Headphone Out

Connector:...1/4″ TRS Stereo

Max Output Level: .... +20 dBu into 600 Ω, each channel

+22 dBu max into 100 kΩ, each channel

Specifications Continued...

USB

Connection:..USB 2.0 High Speed (as a device)

Connector:...USB-B

Supported MS Windows [Driver installation required]: ....Windows 10

Supported Mac OS [Audio Class 2.0 Compliant, no driver required]: .... macOS 10.13, 10.14

Audio: ....16 in / 16 out, 48 kHz, 16/24-bit [DL16S]

32 in / 32 out, 48 kHz, 16/24-bit [DL32S]

Networking

Connection:...100 Mb Ethernet

Control: ....Complete

Simultaneous Control:..20 Devices

Antenna:... External, SMA Connector, 50 Ω

Access Point, Number of Clients: .... Max. 20 (Wired or Wireless)

IEEE 802.11 b/g Standard: ....2.4 GHz

WLAN Channels:...1 - 11 (with auto-channel select option)

Access Point Security:... WPA2

Supported Operating Modes: .... Access Point,

External Router,

Wi-Fi Client

Devices and OSs

Android and iOS

System Requirements: .... • Android: v6.0 or higher required

(requires Google Play Store access to install)

• iOS: v11.0 or higher required

Control Application: .... Master Fader App for Android[1]

Master Fader App for iOS[2]

[1] https://play.google.com/store/apps/details?id=com.mackie.masterfader5 – Android

[2] https://itunes.apple.com/us/app/mackie-master-fader-5/id1393186048?ls=1&mt=8 – iOS

Specifications Continued...

DSP

DL16S

16 input channels with 4-band PEQ + HPF, gate, compression and RTA/Spectrograph

   16 stereo-linkable input channels

13 output busses with 4-band PEQ + HPF/LPF, 31-band GEQ, comp/limiter, alignment delay and RTA/Spectrograph

   6 stereo-linkable aux sends

   6 stereo-linkable subgroups

   Main L/R bus

6 VCAs and 6 mute groups

4 stereo FX processors featuring great built-in FX like reverbs, delays, choruses, flangers,

   and many more with dedicated sends and returns

Full I/O routing with A/B sources per channel

Assignable oscillator including pink/white noise and sine waves

Modern and Vintage options for comp/gate and EQ

DL32S

32 input channels with 4-band PEQ + HPF, gate, compression and RTA/Spectrograph

   32 stereo-linkable input channels

15 output busses with 4-band PEQ + HPF/LPF, 31-band GEQ, comp/limiter, alignment delay and RTA/Spectrograph

   8 stereo-linkable aux sends

   6 stereo-linkable subgroups

   Main L/R bus

6 VCAs and 6 mute groups

4 stereo FX processors featuring great built-in FX like reverbs, delays, choruses, flangers,

   and many more with dedicated sends and returns

Full I/O routing with A/B sources per channel

Assignable oscillator including pink/white noise and sine waves

Modern and Vintage options for comp/gate and EQ

Specifications Continued...

Power

Power Requirements: .... 100 VAC – 240 VAC, 50 – 60 Hz, Universal Supply

Line Cord: .... User-replaceable IEC

Power Consumption: .... 40 W [DL16S]

60 W [DL32S]

Operating Temperature [extended ambient temperature]:... 32 – 104 ˚F / 0 – 40 ˚C

Dimensions

DL16S

Height: .... 5.6 in / 142 mm

Width:... 14.1 in / 358 mm

Depth: .... 5.8 in / 147 mm

Weight:... 6.2 lb / 2.8 kg

Rack:... 3U Rack Spaces

DL32S

Height: .... 7.3 in / 185 mm

Width:... 17.6 in / 447 mm

Depth: .... 5.8 in / 147 mm

Weight:... 8.8 lb / 4.0 kg

Rack:... 4U Rack Spaces

About

Part Number, Rev and Date: .... SW1240, Rev C, October 2018

DL16S Dimensions

12.9
[329]

14.1
[358]

5.8
[147]

4.4
[113]

1.2 [30]

0.2 [4]

1.0 [25]

3.8
[96]

5.2
[132]

5.6
[142]

0.2 [4]

1.5 [38]

4.8
[122]

0.6 [15]
0.2 [5]

0.6
[14]

0.5 [13]

2.9 [74]

0.2 [6]

1.5
[37]

12.2
[310]

0.9
[22]

1.8
[46]

4.3
[109]

0.4
[10]

Weight
6.2 lb / 2.8 kg

DL32S Dimensions

5.8 [147]

4.4 [113]

0.2 [4]

1.2 [30]

1.0 [25]

6.9 [176]

7.3 [185]

5.6 [143]

0.2 [4]

1.5 [38]

4.8 [122]

16.5 [419]

17.6 [447]

0.6 [15]
0.2 [5]

0.6 [14]

0.5 [13]

3.3 [84]

1.1 [28]

Weight
8.8 lb / 4.0 kg

1.5 [37]

15.7 [400]

0.9 [22]

1.8 [46]

0.9 [24]

5.0 [126]

0.4 [10]

Appendix C : Rack Ear Installation Instructions

Introduction

Each DL16S and DL32S mixer arrives with one pair of rack ears set into the packing foam, visible upon opening the box.
It allows the mixer to be mounted in a standard 19″ rack. A manual Phillips screwdriver is the only tool required for installation.

Procedure

(1) — Turn off the mixer and disconnect all cords. Place the mixer front side up / rear side down on a soft and dry flat surface.

(2) — Using the Phillips head screwdriver, remove the four screws, washers and corner pieces as shown below
and keep them in a safe place. You don't need them now, but you may need them again someday.
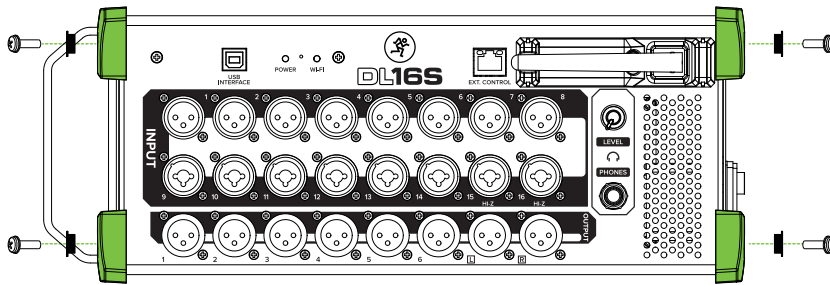
(3) — Using only the new screws supplied, secure the rack ear brackets to each side of the mixer as shown below.
Hand-tighten the screws securely.
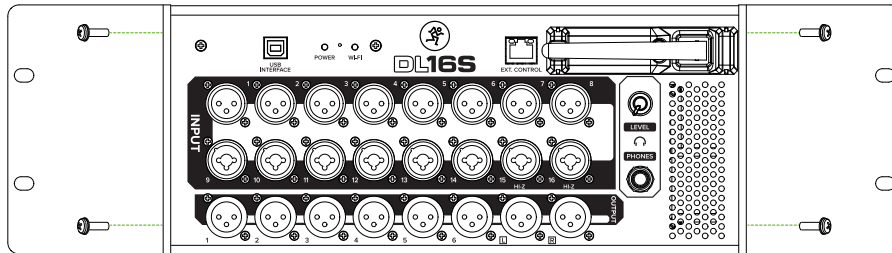
VERY IMPORTANT As seen above, the rack ears on the DL16S are the same size and interchangeable. In other words, both rack ears work on either side of the mixer. The rack ears on the DL32S, however, differ in size. It is pertinent that you place the "smaller" rack ear on the left-hand side of the mixer (mixer front facing you); the "bigger" rack ear allows extra space for the power cord and should be attached to the right side of the mixer.
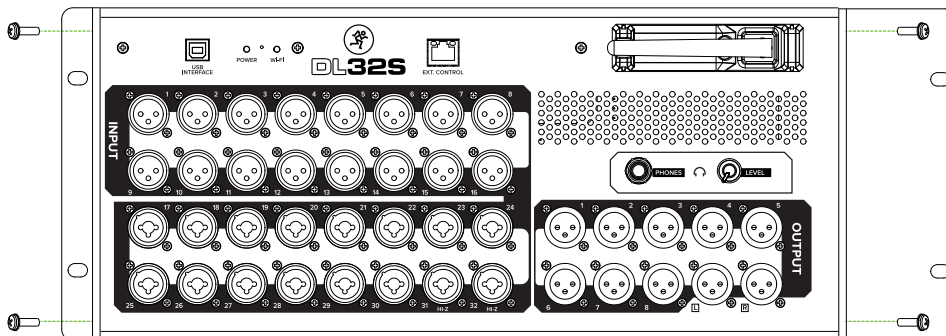
VERY IMPORTANT Since we're still discussing the DL32S, you should know that the side handle needs to be removed, as well. This allows enough space for the mixer to be rack-mounted. Simply use the Phillips head screwdriver to remove the two screws and keep them (and the handle) in a safe place. Like the screws and corner pieces from step 2, you don't need them now, but you may need them again someday.

(4) — Offer up the mixer to the rack and secure it in place with four rack screws (not supplied).

Appendix D : Power and Wi-Fi LEDs States

Power LED State	Wi-Fi LED State	Description
Off	Off	Unit off.
Solid	Slow Flashing	Mixer ready and waiting for Computer, tablet or phone connection.
Solid	Solid	Mixer has good connection to at least one computer, tablet or phone. Go mix!
Solid	Rapid Flashing	Mixer is booting or updating/resetting network configuration. Do NOT turn off power during this phase.
Slow Flashing	Solid	Mixer is being force updated (see page 8).
Slow Flashing	Slow Flashing	Firmware update in progress. Do NOT turn off power during this phase.
Rapid Flashing	Any	Error. Some problem with the hardware processing or mixer. Turn the mixer off, wait 30 seconds, then power back up. Contact Technical Support if this issue persists.

Appendix E : Service Information

Troubleshooting

If you think your DL16S • DL32S has a problem, please check out the following troubleshooting tips and do your best to confirm the problem. Visit the Support section of our website (www.mackie.com/support) to get some ideas or contact our technical support heroes. You may find the answer to the problem without having to send your DL16S • DL32S away.

Here are three useful tips that could correct any of the issues outlined below (or possibly any other issue that we haven't yet discovered):

(1) — Restart the tablet, phone or computer. Don't just restart the Master Fader app. Restart the tablet, phone or computer! Completely power it down, then power it back up.

(2) — Restart the mixer. This is especially useful after firmware and software updates where the mixer and tablet or computer aren't quite on the same page. A simple reboot can sometimes work great wonders.

(3) — Restart the external router (if connected). Internet disconnectivity got you down? Unplug and re-plug the router. This may resolve any connection issues.

There are no user serviceable parts. If none of these tips work, please refer to "Repair" on the next page to find out how to proceed.

No Power

- Our favorite question. Is it plugged in? Make sure the AC outlet is live [check with a tester or lamp].

- Our second favorite question. Is the side panel power switch in the ON position?

- Are all the lights out in town? If so, contact the local power company to get power restored.

No Sound

- Are all the connections good and sound? Make sure all of the connecting cables work and are securely connected at both ends. Try the same source signal in another channel, set up exactly like the suspect channel.

- Is the signal source powered on? Is it working (and making union scale)?

Noise / Hum

- Are all the connections good and sound? Make sure all of the connecting cables work and are securely connected at both ends. Try the same source signal in another channel, set up exactly like the suspect channel.

- Are you using unbalanced cables? Swap them out with balanced cables to see if that fixes the problem.

- Turn the input gains down one-by-one. If the offending noise disappears, it's either that input or whatever is plugged into it. If you unplug the whatever-is-plugged-into-it and turn the input gain back up and the noise is gone, it's from your whatever.

- Is phantom power required for the microphone?

- Sometimes it helps to plug all the audio equipment into the same AC circuit so they share a common ground. Make it so.

- Has the band been together long?

No Interwebs

- Read the chapter titled "Wireless Setup" in the Master Fader Reference Guide. This section is very important and reading it cover-to-cover is the best troubleshooting.

- Is your tablet, phone or computer connected to the correct wireless network? Ensure that it didn't hop onto to a different wireless network.

- Did you select the correct mixer from the tools > devices screen?

- Are you running the latest and greatest Master Fader and DL Series firmware? Go to Google Play, App Store or Mackie website to check for an update.

- If using an external router, did you connect the Ethernet cable to the correct port? Be sure to use the LAN port and not the WAN port.

- If using an external router, did you connect and power on the router BEFORE turning on the mixer?

- Force quit the Master Fader app.

- If using an external router, try another Ethernet cable.

- If using an external router, try another router.

Repair

For warranty service, refer to the warranty information on page 31.

Non-warranty service for our products is available at a factory-authorized service center. To locate the nearest service center, visit www.mackie.com/support. Service for our products living outside the United States can be obtained through local dealers or distributors.

If you do not have access to our website, you can call our Tech Support department at 1-800-898-3211, Monday-Friday during normal business hours, Pacific Time, to explain the problem. Tech Support will tell you where the nearest factory-authorized service center is located in your area.

Appendix F : Glossary Of Terms

The glossary contains brief definitions of many of the audio and electronic terms and acronyms used in discussions of sound mixing and recording. If you would like more information, we recommend the following:

The Audio Dictionary — Glenn White
Tech Terms — Peterson & Oppenheimer
Handbook For Sound Engineers — Glen Ballou
Pro Audio Reference — Dennis Bohn
Sound Reinforcement Handbook — Gary Davis

A/D Converter — Analog-to-digital converter. A device that transforms incoming analog signals into digital form.

AFL — An acronym for After Fade Listen, which is another way of saying post-fader solo function.

Attenuate — To reduce or make quieter.

Aux — Short for auxiliary.

Auxiliary — Long for aux. In sound mixers, supplemental equipment or features that provide additional capabilities to the basic system.

Aux Send — A mixer bus output designed to send a signal to an auxiliary processor or monitor system.

Balanced Input — An input consists of two leads, neither of which is common to the circuit ground. This is a "differential pair", where the signal consists of the difference in voltage between the two leads. Balanced input circuits can offer excellent rejection of common-mode noise induced into the line.

Balanced Output — In a classic balanced audio circuit, the output is carried on two leads (high or + and low or −) which are isolated from the circuit ground by exactly the same impedance.

A symmetrical balanced output carries the same signal at exactly the same level but of opposite polarity with respect to ground.

A special case of a balanced output carries the signal on only one lead, with the other lead being at zero voltage with respect to ground, but at the same impedance as the signal-carrying lead. This is sometimes called impedance balanced.

Bandwidth — The band of frequencies that pass through a device with a loss of less than 3 dB, expressed in Hertz [Hz] or in musical octaves. Also see Q.

Channel — A functional path in an audio circuit: an input channel, an output channel, an FX channel and so on.

Channel Strip — An audio channel consisting of a long, vertical strip.

Clipping — A form of severe audio distortion that results from peaks of the audio signal attempting to rise above the capabilities of the amplifier circuit. Seen on an oscilloscope, the audio peaks appear clipped off. To avoid clipping, reduce the system gain in or before the gain stage in which the clipping occurs. Also see headroom.

Compressor — This is a dynamic processor used to smooth out any large transient peaks in an audio signal that might otherwise overload your system or cause distortion. The amplitude threshold and other parameters such as attack time, release time, and tire pressure are adjustable.

Condenser — Another term for the electronic component generally known as a capacitor. In audio, condenser often refers to a type of microphone that uses a capacitor as the sound pickup element. Condenser microphones require electrical power to run internal amplifiers and maintain an electrical charge on the capacitor. They are typically powered by internal batteries or phantom power supplied by the mixer.

Console — Another term for mixer. DL32S mixer = DL32S console.

D/A Converter — Digital-to-analog converter. A device that transforms incoming digital signals into analog form.

dB — See decibel.

Glossary Of Terms Continued...

dBu — A unit of measurement of audio signal voltage in an electrical circuit, expressed in decibels referenced to 0.775 VRMS into any impedance. Commonly used to describe signal levels within a modern audio system.

Decibel (dB) — The dB is a ratio of quantities measured in similar terms using a logarithmic scale. Many audio system parameters measure over such a large range of values that the dB is used to simplify the numbers. A ratio of 1000:1 = 60 dB. Since dB is a unitless quantity, it doesn't matter if it's volts or dollars. (Just try asking the chief engineer for a 3 dB raise). When one of the terms in the ratio is an agreed upon standard value, such as 1.23 V, 1 V or 1 mw, the ratio becomes an absolute value. For example, +4 dBu, −10 dBV or 0 dBm.

Delay — Delay "delays" the audio signal for a short period of time. Delay can refer to one short repeat, a series of repeats or the complex interactions of delay used in chorusing or reverb.

Dipping — The opposite of peaking, of course, used in audio to describe the shape of a frequency response curve. A dip in an EQ curve looks like a valley, or a dip. Dipping with an equalizer reduces a range of frequencies. (See guacamole).

Doubling — A delay effect where the original signal is mixed with a medium (20 to 50 ms) delayed copy of itself. When used carefully, this effect can simulate double-tracking [recording a voice or instrument twice].

Dry — Dry means without effects. It is just the signal alone; no reverb, no delay, etc.

DSP — Digital Signal Processing accomplishes the same functions found in analog signal processors, but performs them mathematically in the digital domain, with more precision and accuracy than its analog counterpart. Since DSP is a software-based process, parameters and processing functions are easily changed and updated be revising the Master Fader app.

Dynamic Microphone — The class of microphones that generate electrical signals by the movement of a coil in a magnetic field. Dynamic microphones are rugged, relatively inexpensive, capable of very good performance and do not require external power.

Dynamics Processor — A type of processor that only affects the overall amplitude level of the signal (sometimes as a function of its frequency content), such as a gate, compressor, or limiter.

Dynamic Range — The range between the maximum and minimum sound levels that a sound system can handle. It is usually expressed in decibels as the difference between the level at peak clipping and the level of the noise floor.

Echo — The reflection of sound from a surface such as a wall or floor. Reverberation and echo are terms that are often used interchangeably, but in audio parlance a distinction is usually made: echo is considered to be a distinct, recognizable repetition (or series of repetitions) of a word, note, phrase or sound, whereas reverberation is a diffuse, continuously smooth decay of sound.

EIN — Equivalent Input Noise. A specification that helps measure the "quietness" of a gain stage by deriving the equivalent input noise voltage necessary to obtain a given preamp's output noise. Numerically, it's the output noise at a given gain setting minus the gain. EIN is usually measured at a maximum gain and typically ranges from -125 to -130 dBu.

EQ — Short for equalization.

EQ Curve — A graph of the response of an equalizer, with frequency on the x (horizontal) axis and amplitude (level) on the y (vertical) axis. Equalizer types and effects are often named after the shape of the graphed response curve, such as peak, dip, bell and shelf.

Equalization — Long for EQ. Equalization refers to purposefully changing the frequency response of a circuit, sometimes to correct for previous unequal response (hence the term, equalization), and more often to boost or cut the level at certain frequencies for sound enhancement, to remove extraneous sounds, or to create completely new and different sounds.

A lot of how we refer to equalization has to do with what a graph of the frequency response looks like. A flat response (no EQ) is a straight line; a peak looks like a hill, a dip is a valley, a notch is a really skinny valley, and a shelf looks like a plateau (or shelf). The slope is the grade of the hill on the graph.

Fader — Another name for an audio level control.

Glossary Of Terms Continued...

Filter — A simple equalizer designed to remove certain ranges of frequencies. The high-pass filter attenuates frequencies below its cutoff frequency.

FOH — Front Of House. See house and main (house) speakers. No engineer ever goes to the BOH because there's never enough time to drink beer.

Frequency — The number of times an event repeats itself in a given period of time. Generally, the time period for audio frequencies is one second, and frequency is measured in cycles per second, abbreviated Hz, honoring Dr. Heinrich Hertz (who did not invent the rental car company). One Hz is one cycle per second. One kHz (kilohertz) is 1000 cycles per second.

The audio frequency range is generally considered to be 20 Hz to 20,000 Hz (or 20 kHz). This covers the fundamental pitch and most overtones of musical instruments.

Gain — The measure of how much a circuit amplifies a signal. Gain may be stated as a ratio of input to output voltage, current or power, such as a voltage gain of 4, or a power gain of 1.5, or it may be expressed in decibels, such as a line amplifier with a gain of 10 dB.

Gain Stage — An amplification point in a signal path, either within a system or a single device. Overall system gain is distributed between the various gain stages.

Gate — A dynamics processor that automatically turns off an input signal when it drops below a certain level. This can reduce the overall noise level of your mix by turning off inputs when they are not in use. Threshold, attack time, hold, and release time are some of the adjustable gate parameters.

Graphic EQ — The graphic equalizer uses sliders for its boost / cut controls, with its operating frequencies evenly spaced through the audio spectrum. In a perfect world, a line drawn through the centers of the control shafts would form a graph of the frequency response curve. Or, the positions of the sliders give a graphic representation of boost or cut levels across the frequency spectrum.

Ground — Also called earth. Ground is defined as the point of zero voltage in a circuit or system, the reference point from which all other voltages are measured.

In electrical power systems, ground connections are used for safety purposes, to keep equipment chassis and controls at zero voltage and to provide a safe path for errant currents. This is called a safety ground. Maintaining a good safety ground is essential to preventing electrical shock. Follow manufacturer's suggestions and good electrical practices to ensure a safely grounded system. Never remove or disable the grounding pin on the power cord.

In sensitive electronic equipment, tiny currents and voltages riding on the ground (so it's not truly zero volts) can cause noise in the circuits and hamper operation. Often a ground separate from the power ground is used as the reference point for the electronics, isolating the sensitive electronics from the dirty power ground. This is called a technical ground.

Quality audio equipment is designed to maintain a good technical ground and also operate safely with a good safety ground.

Ground Loop — A ground loop occurs when the technical ground within an audio system is connected to the safety ground at more than one place. This forms a loop around which unwanted current flows, causing noise in the audio system. Never disable the safety ground in an attempt to solve hum problems.

Guacamole — A delicious dip comprised mostly of avocados. Speaking of dips, refer to dipping.

Hertz — The unit of frequency, equal to 1 cycle per second. 1000 Hz equals 1 kHz.

House — In audio-land, the house refers to the systems (and even persons) responsible for the primary sound reinforcement in a given venue. Hence, we have the house mixer or house engineer, the house mix, house mix amps, main house speakers, etc.

Hz — Short for Hertz.

Glossary Of Terms Continued...

Impedance — The A.C. resistance, capacitance, and inductance in an electrical circuit, measured in ohms [Ω].
In audio circuits (and other AC circuits) the impedance in ohms may often be much different from the circuit resistance
as measured by a DC ohmmeter.

Maintaining proper circuit impedance relationships is important to avoid distortion and minimize added noise.
Our input and output impedances are set to work well with the vast majority of audio equipment.

Knee — A knee is a sharp bend in a compressor gain curve, not unlike a sharp bend in your leg.

Level — Another word for signal, voltage, power, strength or volume. Audio signals are sometimes classified according
to their level. Commonly used levels are: microphone level (−40 dBu or lower), instrument level (−20 to −10 dBu),
and line level (−10 to +30 dBu).

Line Level — A signal whose level falls between −10 dBu and +30 dBu.

Main (House) Speakers — The main loudspeakers for a sound reinforcement system. These are usually the largest and loudest
loudspeakers, positioned facing the audience; the sound is typically delivered from the stage. This is also called the PA.

Mains — Short for main or house speakers in a sound reinforcement system.

Master — Me. I am your master. Obey! The master on the Master Fader app, though, refers to the master fader.
It affects the total level of the selected output in which one or more signals are mixed together.

Mic Amp — See Mic Preamp.

Mic Level — The typical level of a signal from a microphone. A mic level signal (usually − but not always − coming from
a microphone) is generally lower than −30 dBu. With a very quiet source [a pin dropping?] the signal may be −70 dBu or lower.

Some microphones, notably vintage or vintage-style condenser mics, deliver a higher signal level than this for the same sound
pressure level. A "hot" mic output level isn't necessarily a measure of the microphone's quality; it's just an option that the
designer(s) chose.

Mic Pre — Short for Mic Preamp.

Mic Preamp — Short for microphone preamplifier. An amplifier whose job is to bring the very low microphone level signal
up to line level, or in the case of a mic preamp built into a mixer, the mixer's internal operating level [approximately 0 dBu].

Mic preamps often have their own volume control, called gain, to properly set the gain for a particular source.
Setting the mic preamp gain correctly is an essential step in establishing good signal-to-noise ratio and sufficient headroom.
The DL Series mixers are outfitted with Onyx mic preamps.

Mixer — An electronic device used to combine various audio signals into a common output. Different from a blender,
which combines various fruits and alcohol into a common libation.

Monaural — Long for mono. Literally, pertaining to or having the use of only one ear.

In the audio field, monaural describes a signal or system which carries audio information on a single channel with the intent
of reproducing it from a single source. One microphone is a mono source; many microphones mixed to one channel is a mono
mix; a stereo (or − to be picky − a two-channel) mix of many microphones panned left and right is a stereo mix of mono sources.

Monaural listening, and therefore mono compatibility of a stereo mix, is more important than you might realize.
Most people hear television audio and clock radios in mono.

Monitor — In sound reinforcement, monitor speakers [or monitor headphones or in-ear monitors] are used by performers to hear
themselves. In the video and broadcast world, monitor speakers are often called foldback speakers. In recording, the monitors
speakers are those used by the engineer and   production staff to listen to the recording as it progresses. In zoology, the monitor
lizard is the lizard that observes the production staff as the recording progresses. Keep the lizard out of the mixer.

Mono — Short for monaural (and mononucleosis for that matter).

Glossary Of Terms Continued...

Mute Groups — Mute groups allow you to quickly mute (and unmute) multiple channels and/or outputs with a single tap. There are a multitude of possibilities in which to assign and enable mute groups: productions featuring a rotating cast of musicians, theater productions, a house of worship and more. It is also great for muting all inputs during song breaks or in-between sets. You may create as many as four separate mute groups with Master Fader.

Noise — Whatever you don't want to hear. This could be hum, buzz or hiss; or it could be crosstalk, digital hash, or your neighbor's stereo; or it could be white noise, pink noise or brown noise. It's also how your parents describe your band. After all, it's what they don't want to hear.

Noise Floor — The residual level of noise in any system. In a well-designed mixer (such as the DL Series mixers), the noise floor will be a quiet hiss, which is the thermal noise generated by electrons bouncing around in resistors and semiconductor junctions. The lower the noise floor and the higher the headroom, the more usable dynamic range a system has.

Nyquist Sampling Theorem — This theorem states that, when an analog signal is converted to a digital signal, it must be sampled at a frequency that is at least twice the highest audio frequency present in the analog signal. If the audio frequency should exceed one-half the sampling frequency, aliasing may result. Thus, if an analog-to-digital converter is sampling at 44.1 kHz, the audio signal should not exceed 22.05 kHz.

PA — Acronym for Public Address. Today, people who work with PA systems like to say they're working in "sound reinforcement". See SR.

Pan — Pan sliders are used to position (or even dynamically move) a monaural sound source in a stereo mixing field by adjusting the source's volume between the left and right channels. Our brains sense stereo position by hearing this difference in loudness when the sound strikes each ear, taking into account time delay, spectrum, ambient reverberation and other cues.

Peaking — The opposite of dipping. A peak is an EQ curve that looks like a hill, or a peak. Peaking with an equalizer amplifies a band of frequencies.

PFL — An acronym for Pre-Fade Listen. Broadcasters call it cueing. Sound folks call it being able to solo a channel with the fader down.

Phantom Power — A system of providing electrical power for condenser microphones (and some electronic pickup devices) from the microphone input jack. The system is called phantom because the power is carried on a standard microphone audio wiring in a way that is "invisible" to ordinary dynamic microphones. The DL Series mixers use a standard +48 volt DC power, switchable on or off.

Generally, phantom power is safe to use with non-condenser microphones, as well, especially dynamic microphones. However, unbalanced microphones, some electronic equipment (such as some wireless microphone receivers) and some ribbon microphones can short out the phantom power and be severely damaged.

Phase — The time relationship between two signals, expressed in degrees around a circle. 0˚ and 360˚ represent an in-phase relationship. Both signals change in the same way at the same time. Anything else is out of phase.

180˚ out-of-phase is a special case which, for a continuous waveform, means that at any given time the two signals have the same amplitude but are opposite in polarity. The two legs of a differential output are 180˚ out-of-phase. The polarity invert button (found in the EQ view) reverses the signal polarity.

When out-of-phase signals are mixed, there will be some cancellation at certain frequencies, the frequencies and the degree of cancellation being a function of the amount of phase shift and the relative amplitude of the signals. Attention to mic placement and careful listening will allow you to use this effect creatively.

Post Fader — A term used to describe an aux send (or other output) that is connected so that it is affected by the setting of the associated channel fader. Sends connected this way are typically (but not always) used for effects. A post-fader output from a mixer channel is usually post-EQ.

Glossary Of Terms Continued...

Pre DSP — Pre DSP is ideal when using the auxes for monitor mixes and you want compression and other effects in the main mix, but not the monitors. Pre DSP is available in all auxes, but not the FX.

Pre Fader — A term used to describe an aux send (or other output) that is connected so that it is not affected by the setting of the associated channel fader. Sends connected this way are typically (but not always) used for monitors.

Q — A way of stating the bandwidth of a filter or equalizer section. An EQ with a Q of .75 is broad and smooth, while a Q of 10 gives a narrow, pointed response curve. To calculate the value of Q, you must know the center frequency of the EQ section and the frequencies at which the upper and lower skirts fall 3 dB below the level of the center frequency. Q equals the center frequency divided by the difference between the upper and lower 3 dB-down frequencies. A peaking EQ centered at 10 kHz whose −3 dB points are 7.5 kHz and 12.5 kHz has a Q of 2.

Reverberation, Reverb — The sound remaining in a room after the source of sound is stopped. It's what you hear in a large tiled room immediately after you've clapped your hands.

Reverberation and echo are terms that are often used interchangeably, but in audio parlance, a distinction is usually made: reverberation is considered to be a diffuse, continuously smooth decay of sound, whereas echo is one or more distinct, recognizable repetitions of a word, note, phrase or sound which decreases in amplitude with every repeat.

Highly reverberant rooms are called live; rooms with very little reverberation are called dead. A sound source without added reverb is dry; one with reverb added is wet.

RFI — Radio Frequency Interference. High frequency radiation that often results from sparking circuits. This may be manifested in a number of ways in audio systems, but is usually evident as a high-frequency buzz or harsh sound.

RMS — An acronym for root mean square, a conventional way to measure the effective average value of an audio signal or other AC voltage. Most AC voltmeters are calibrated to read RMS volts, though on many meters that calibration is accurate only if the waveform is sinusoidal.

Sampling Frequency — This is the rate at which an analog signal is sampled during the analog-to-digital conversion process. The sampling rate used for CDs is 44.1 kHz, but professional recordings are often sampled at higher sample rates.

Send — A term used to describe the output of a secondary mix of the input signals, typically used for monitors, headphone amp or effects devices. These are the aux sends on the DL Series mixers.

Shelving — A term used to describe the shape of an equalizer's frequency response. A shelving equalizer's response begins to rise (or fall) at some frequency and continues to rise (or fall) until it reaches the shelf frequency, at which point the response curve flattens out and remains flat to the limits of audibility. If you were to graph the response, it would look like a shelf. Or more like a shelf than a hiking boot. See also peaking and dipping.

Signal-to-Noise (S/N) — This is a specification that describes how much noise an audio component has compared to the signal. It is usually expressed in dB below a given output level. The S/N of the DL Series mixers is 92 dB.

Solo — Italian for alone. Solo allows you to listen to individual channels singly or in combination with other soloed signals.

Sound Reinforcement — A system of amplifying acoustic and electronic sounds from a performance or speech so that a large audience can hear clearly. Or, in popular music, so that a (hopefully) large audience can be excited, stunned, or even partially deafened by the tremendous amplification. Sound reinforcement means essentially the same thing as PA [Public Address].

Spaghetti — That mess of wires and cables in the back of your rack and/or console. You really can tame this beast.

SR — An acronym for Sound Reinforcement, which refers to the process (or a system for) amplifying acoustic and electronic sounds from a performance or speech so that a large audience can hear clearly. Or, in popular music, so that a (hopefully) large audience can be excited, stunned, or even partially deafened by the tremendous amplification. Sound reinforcement means essentially the same thing as PA [Public Address].

Glossary Of Terms Continued...

Stereo — Believe it or not, stereo comes from a Greek word that means solid. We use stereo or stereophony to describe the illusion of a continuous, spacious sound field that is seemingly spread around the listener by two or more related audio signals. In practice, stereo often is taken to simply mean two channels.

Tinnitus — The ringing in the ears that often results from prolonged exposure to very loud sound levels.

TRS — Acronym for Tip-Ring-Sleeve, the three parts of a two conductor (plus shield) phone plug. Since the plug or jack can carry two signals and a common ground, TRS connectors are often referred to as stereo or balanced plugs or jacks.

TS — Acronym for Tip-Sleeve, the two parts of a single conductor (plus shield) phone plug. TS connectors are sometimes called mono or unbalanced plugs or jacks. A 1/4" TS phone plug or jack is also called a standard phone plug or jack.

Unbalanced — An electrical circuit in which the two legs of the circuit do not have the identical impedance to ground. Often one leg is also at ground potential. Unbalanced circuit connections require only two conductors (signal "hot" and ground). Unbalanced audio circuitry is less expensive to build, but under certain circumstances is more susceptible to noise pickup.

View Groups — View groups allow you to see only the channels that you want to view, hiding the rest. This improves organization and allows for faster navigation. You may create and assign as many as four separate view groups with Master Fader.

Volume — The sound level in an audio system. Perhaps the only thing that some bands have too much of.

VRMS — Acronym for Volts Root Mean Square. See RMS.

Wet — A signal with added reverberation or other effect like echo, delay or chorusing.

XLR Connector — Three-pin connectors now universally used for balanced microphone connections. Also known as Cannon, as Cannon was the original manufacturer of this type of connector. In sound work, a Cannon connector is taken to mean a Cannon XLR-3 connector or any compatible connector. You can tell who the audio geezers are when they refer to XLR connectors as Cannon connectors.

Z — The electrical symbol for impedance.

Zymurgy — The science of brewing, an important part of our technology and history. We needed something other than just a plain 'ol "Z" to end the glossary.

Warranty Statement

Please keep your sales receipt in a safe place.

This Limited Product Warranty ("Product Warranty") is provided by LOUD Audio, LLC ("LOUD") and is applicable to products purchased in the United States or Canada through a LOUD-authorized reseller or dealer. The Product Warranty will not extend to anyone other than the original purchaser of the product (hereinafter, "Customer," "you" or "your").

For products purchased outside the U.S. or Canada, please visit www.mackie.com to find contact information for your local distributor, and information on any warranty coverage provided by the distributor in your local market.

LOUD warrants to Customer that the product will be free from defects in materials and workmanship under normal use during the Warranty Period. If the product fails to conform to the warranty then LOUD or its authorized service representative will at its option, either repair or replace any such nonconforming product, provided that Customer gives notice of the noncompliance within the Warranty Period to the Company at: www.mackie.com or by calling LOUD technical support at 1.800.898.3211 (toll-free in the U.S. and Canada) during normal business hours Pacific Time, excluding weekends or LOUD holidays. Please retain the original dated sales receipt as evidence of the date of purchase. You will need it to obtain any warranty service.

For full terms and conditions, as well as the specific duration of the Warranty for this product, please visit www.mackie.com.

The Product Warranty, together with your invoice or receipt, and the terms and conditions located at www.mackie.com constitutes the entire agreement, and supersedes any and all prior agreements between LOUD and Customer related to the subject matter hereof. No amendment, modification or waiver of any of the provisions of this Product Warranty will be valid unless set forth in a written instrument signed by the party to be bound thereby.

GPL Statement

This product includes software code developed by third parties, including software code subject to the GNU General Public License ("GPL") Version 2. Where such specific license terms entitle you to the source code of such software, LOUD Audio, LLC. will provide upon written request via email or traditional paper mail the applicable GPL source code files via CD-ROM for a nominal cost to cover media, shipping and handling charges as allowed under the GPL.

The GPL code used in this product is distributed WITHOUT ANY WARRANTY and is subject to the copyrights of one or more authors. For details, see the GPL code and the terms of the GPL. For a copy of the GPL please write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

Please direct all GPL Source Requests to the following email/address.

Attn: GPL Source Request
LOUD Audio, LLC.
16220 Woodinville-Redmond Rd. N.E.
Woodinville, WA 98072

or

www.mackie.com/support-contact

Correct disposal of this product: This symbol indicates that this product should not be disposed of with your household waste, according to the WEEE directive (2012/19/EU) and your national law. This product should be handed over to an authorized collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, or your household waste disposal service.

MACKIE.

FEATURES:

■ 16-CHANNEL WIRELESS DIGITAL MIXER
- 16 Onyx+™ recallable mic preamps
- 8 fully-assignable XLR outputs plus headphone output
- Industry-leading Master Fader control app
- 16x16 USB recording
- Ditch the snake – Place it anywhere on stage or in a rack

■ WIRELESS MIXING
- Complete control via iOS, Android, Mac, or PC
- No set FOH position – mix from anywhere
- Supports up to 20 separate devices at once
- Multiple engineers can work from a single mixer

■ POWERFUL PROCESSING AND SIGNAL ROUTING
- 16 input channels with 4-band PEQ + HPF, gate, compression and RTA/Spectrograph
    - 16 stereo-linkable input channels
- 13 output busses with 4-band PEQ + HPF/LPF, 31-band GEQ, comp/limiter, alignment delay and RTA/Spectrograph
    - 6 stereo-linkable aux sends
    - 6 stereo-linkable subgroups
    - Main L/R bus
- 6 VCAs and 6 mute groups
- 4 stereo FX processors featuring great built-in FX like reverbs, delays, choruses, flangers, and many more with dedicated sends and returns
- Full I/O routing with A/B sources per channel
- Assignable oscillator including pink/white noise and sine waves
- Modern and Vintage options for comp/gate and EQ

■ MULTI-TRACK RECORDING & PLAYBACK
- 16x16 USB 2.0 audio interface for Mac or PC
- Record the show for later mixdown
- Play back intermission music, backing tracks and more directly into a dedicated stereo return channel
- Perform a virtual sound check
- Amazing low-cost, high channel count studio recording solution
- Utilize Mac or PC audio plug-ins in a live environment

DL Series mixers are compatible with iOS 11 or later, Android OS 6 or later, macOS 10.2 or later, and Windows 10 or later

DL16S

The Mackie DL16S delivers 16-channels of proven DL Series digital mixing in an all-new Built-Like-A-Tank™, stage-friendly design.

Get mixing right out of the box with built-in Wi-Fi networking and full multiplatform support on the industry-leading Master Fader™ control app.

Fully loaded with DSP on each of the 16 Onyx+™ mic preamps and 13 busses plus 4 FX processors, the DL16S delivers the mixing power you need to sound great every night.

Create stunning multitrack recordings via 16x16 USB I/O and even play them back into each channel for an effortless virtual sound check.

The Master Fader app delivers extremely intuitive control over everything on up to 20 devices simultaneously, including the ability to digitally recall each and every setting for incredibly fast setup.

Take command of your live mix with the Mackie DL16S.

APPLICATIONS:

Band rehearsal and performance PA systems, regional touring acts, small to mid-sized sound companies, theater production, conference room PA, singer-songwriters, mobile recording studios, houses of worship, music education and many, many more.

DL32S

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Fully loaded with DSP on each of the 32 Onyx+™ mic preamps and 15 busses plus 4 FX processors, the DL32S delivers the mixing power you need to sound great every night.

Create stunning multitrack recordings via 32x32 USB I/O and even play them back into each channel for an effortless virtual sound check.

The Master Fader app delivers extremely intuitive control over everything on up to 20 devices simultaneously, including the ability to digitally recall each and every setting for incredibly fast setup.

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FEATURES:

- **32-CHANNEL WIRELESS DIGITAL MIXER**
  - 32 Onyx+™ recallable mic preamps
  - 10 fully-assignable XLR outputs plus headphone output
  - Industry-leading Master Fader control app
  - 32x32 USB recording
  - Ditch the snake – Place it anywhere on stage or in a rack

- **WIRELESS MIXING**
  - Complete control via iOS, Android, Mac, or PC
  - No set FOH position – mix from anywhere
  - Supports up to 20 separate devices at once
  - Multiple engineers can work from a single mixer

- **POWERFUL PROCESSING AND SIGNAL ROUTING**
  - 32 input channels with 4-band PEQ + HPF, gate, compression and RTA/Spectrograph
    - 32 stereo-linkable input channels
  - 15 output busses with 4-band PEQ + HPF/LPF, 31-band GEQ, comp/limiter, alignment delay and RTA/Spectrograph
    - 8 stereo-linkable aux sends
    - 6 stereo-linkable subgroups
    - Main L/R bus
  - 6 VCAs and 6 mute groups
  - 4 stereo FX processors featuring great built-in FX like reverbs, delays, choruses, flangers, and many more with dedicated sends and returns
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DL Series mixers are compatible with iOS 11 or later, Android OS 6 or later, macOS 10.2 or later, and Windows 10 or later

DL16S • DL32S SPECIFICATIONS

General Digital

Sample Rate:	48 kHz
A/D/A Bit Depth:	24-bit
System Latency Analog Input > Main Bus > Analog Output:	1.5 ms
0 dBFS Reference:	+22 dBu

Frequency Response

XLR inputs and outputs:	±0, −1 dB, 20 Hz to 20 kHz
1/4″ inputs:	±0, −3 dB, 20 Hz to 20 kHz

Distortion

THD+N, XLR mic input to XLR output, unity gain (1 kHz, +21 dBu signal; 30 kHz bandwidth):	<0.005%

Noise / Dynamic Range / Signal-to-Noise Ratio

EIN (150 Ω termination):	−127 dBu, A-Weighted
Crosstalk Analog XLR adjacent inputs:	<−105 dB @ 1 kHz (unity gain) <−65 dB @ 1 kHz (max gain)
Analog XLR adjacent outputs:	<−95 dB @ 1 kHz
Signal-to-Noise Ratio (ref +4 dBu, 1 kHz. Mic Input > Main Bus > XLR Output, unity gain):	>92 dB, un-weighted
Output Noise, XLR output (DSP muted):	<−90 dBu RMS
Dynamic Range Mic Input > Main Bus > XLR Output, unity gain:	>110 dB, A-Weighted
XLR Mic Input to USB Output:	>113 dB, A-Weighted
XLR Output from DSP (Oscillator):	>113 dB, A-Weighted
CMRR − XLR Mic Input (ref +20 dBu, +45 dB Gain):	>75 dB @1 kH

Analog Inputs

Connectors:	1-8: XLR Balanced, 9-16: Combo XLR / TRS Bal-Unbal (plus Hi-Z via unbalanced instrument cable on inputs 15-16) [DL16S]
	1-16: XLR Balanced, 17-32: Combo XLR / TRS Bal-Unbal (plus Hi-Z via unbalanced instrument cable on inputs 31-32) [DL32S]
XLR Mic Pre:	Onyx+
Input Impedance DL16S:	XLR, channels 1-16: 3 kΩ, balanced 1/4″ Line, channels 9-14: 30 kΩ, balanced 1/4″ Hi-Z, channels 15-16: 1 MΩ, unbalanced
DL32S:	XLR, channels 1-32: 3 kΩ, balanced 1/4″ TRS Line, channels 15-30: 30 kΩ, balanced 1/4″ TS Hi-Z, channels 31-32: 1 MΩ, unbalanced
Max Input Level:	XLR: +22 dBu 1/4″: +30 dBu
48V Phantom Power (XLR):	48 VDC nominal voltage, unloaded 14 mA maximum current supplied to any single input 5mA minimum current supplied to all inputs simultaneously Digital on/off control for each individual input

Analog Outputs

Connectors:	XLR Balanced
Output Impedance:	300 Ω
Max Output Level:	+22 dBu

Analog Headphone Out

Connector:	1/4″ TRS Stereo
Max Output Level:	+20 dBu into 600 Ω, each channel +22 dBu max into 100 kΩ, each channel

DL16S • DL32S SPECIFICATIONS CONTINUED…

USB

Connection:	USB 2.0 High Speed (as a device)
Connector:	USB-B
Supported MS Windows [Driver installation required]:	Windows 10
Supported Mac OS [Audio Class 2.0 Compliant, no driver required]:	macOS 10.13, 10.14
Audio:	16 in / 16 out, 48 kHz, 16/24-bit [DL16S]
	32 in / 32 out, 48 kHz, 16/24-bit [DL32S]

Networking

Connection:	100 Mb Ethernet
Control:	Complete
Simultaneous Control:	20 Devices
Antenna:	External, SMA Connector, 50 Ω
Access Point, Number of Clients:	Max. 20 (Wired or Wireless)
IEEE 802.11 b/g Standard:	2.4 GHz
WLAN Channels:	1 - 11 (with auto-channel select option)
Access Point Security:	WPA2
Supported Operating Modes:	Access Point, External Router, Wi-Fi Client

Devices and OSs

Android and iOS

System Requirements:	Android: v6.0 or higher required (requires Google Play Store access to install) iOS: v11.0 or higher required
Control Application:	Master Fader App for Android Master Fader App for iOS

DSP

DL16S:

16 input channels with 4-band PEQ + HPF, gate, compression and RTA/Spectrograph

16 stereo-linkable input channels

13 output busses with 4-band PEQ + HPF/LPF, 31-band GEQ, comp/limiter, alignment delay and RTA/Spectrograph

6 stereo-linkable aux sends

6 stereo-linkable subgroups

Main L/R bus

6 VCAs and 6 mute groups

4 stereo FX processors featuring great built-in FX like reverbs, delays, choruses, flangers, and many more with dedicated sends and returns

Full I/O routing with A/B sources per channel

Assignable oscillator including pink/white noise and sine waves

Modern and Vintage options for comp/gate and EQ

DL32S:

32 input channels with 4-band PEQ + HPF, gate, compression and RTA/Spectrograph

32 stereo-linkable input channels

15 output busses with 4-band PEQ + HPF/LPF, 31-band GEQ, comp/limiter, alignment delay and RTA/Spectrograph

8 stereo-linkable aux sends

6 stereo-linkable subgroups

Main L/R bus

6 VCAs and 6 mute groups

4 stereo FX processors featuring great built-in FX like reverbs, delays, choruses, flangers, and many more with dedicated sends and returns

Full I/O routing with A/B sources per channel

Assignable oscillator including pink/white noise and sine waves

Modern and Vintage options for comp/gate and EQ

DL16S • DL32S SPECIFICATIONS CONTINUED...

Power

Power Requirements:	100 VAC – 240 VAC, 50 – 60 Hz, Universal Supply
Line Cord:	User-replaceable IEC
Power Consumption:	40 W [DL16S] 60 W [DL32S]
Operating Temperature [extended ambient temperature]:	32 – 104 ˚F / 0 – 40 ˚C

Physical Properties (product)

DL16S:

Height:	5.6 in / 142 mm
Width:	14.1 in / 358 mm
Depth:	5.8 in / 147 mm
Weight:	6.2 lb / 2.8 kg
Rack:	3U Rack Spaces

DL32S:

Height:	7.3 in / 185 mm
Width:	17.6 in / 447 mm
Depth:	5.8 in / 147 mm
Weight:	8.8 lb / 4.0 kg
Rack:	4U Rack Spaces

Physical Properties (packaged product)

DL16S:

Height:	9.8 in / 249 mm
Width:	17.0 in / 432 mm
Depth:	9.5 in / 241 mm
Weight:	10.2 lb / 4.6 kg

DL32S:

Height:	9.8 in / 249 mm
Width:	20.5 in / 521 mm
Depth:	11.3 in / 287 mm
Weight:	13.8 lb / 6.3 kg

Options

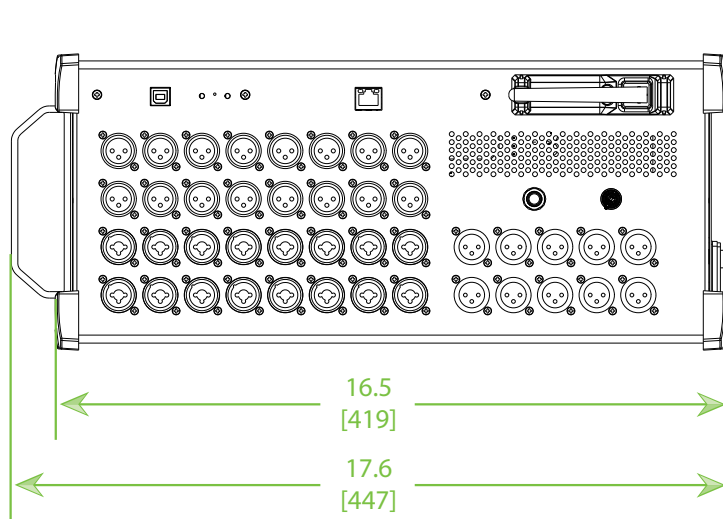|	
DL16S Bag:	P/N 2036809-46
DL32S Bag:	P/N 2036809-47

Ordering Information

DL16S 16-Channel Wireless Digital Live Mixer, US	P/N 2048990-00
DL16S 16-Channel Wireless Digital Live Mixer, EU	P/N 2048990-01
DL16S 16-Channel Wireless Digital Live Mixer, UK	P/N 2048990-03
DL16S 16-Channel Wireless Digital Live Mixer, AU	P/N 2048990-04
DL16S 16-Channel Wireless Digital Live Mixer, CN	P/N 2048990-05
DL16S 16-Chnl Wireless Digital Live Mixer, BZ ~120V	P/N 2048990-06
DL16S 16-Channel Wireless Digital Live Mixer, AR	P/N 2048990-07
DL16S 16-Channel Wireless Digital Live Mixer, KR	P/N 2048990-08

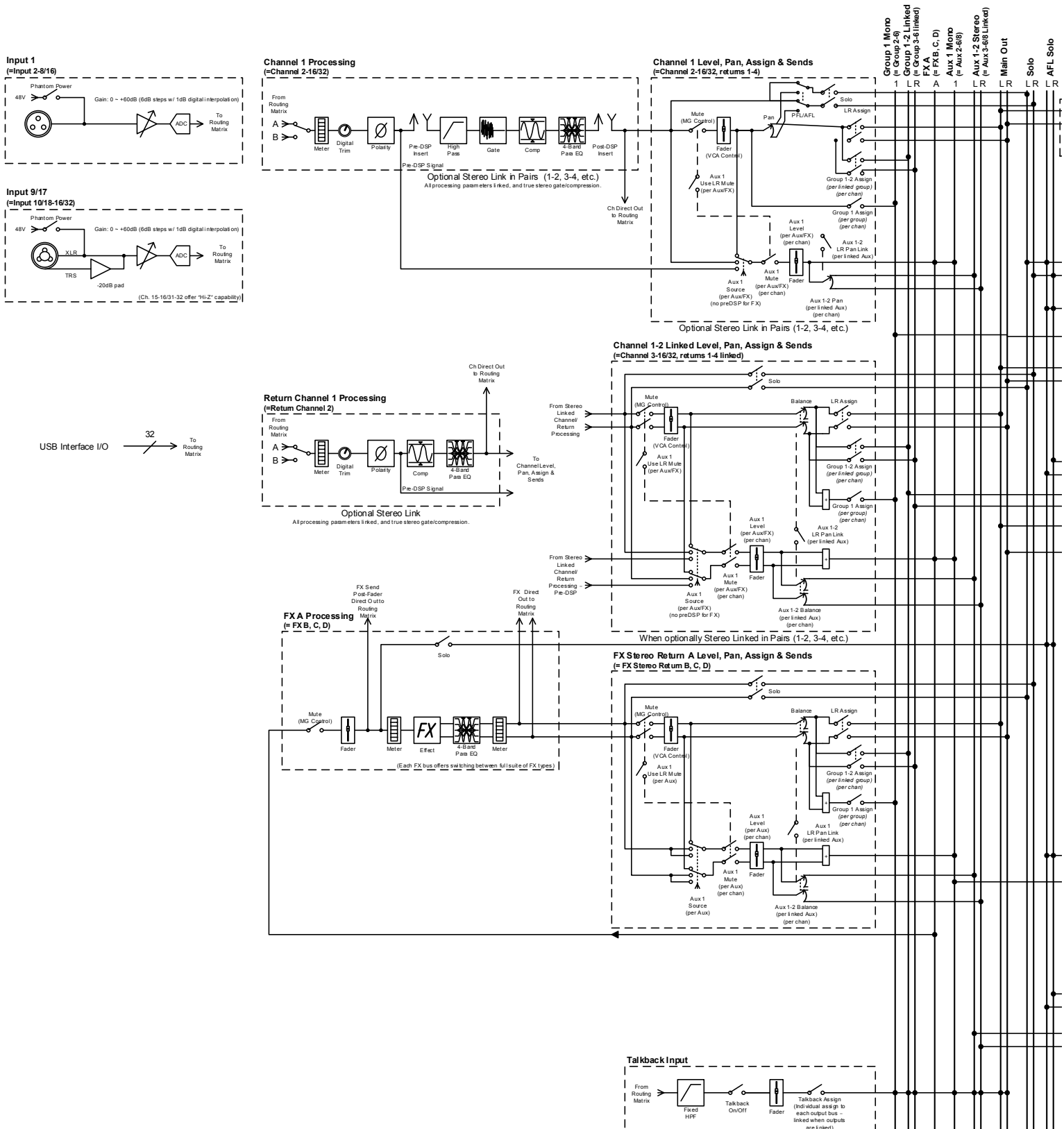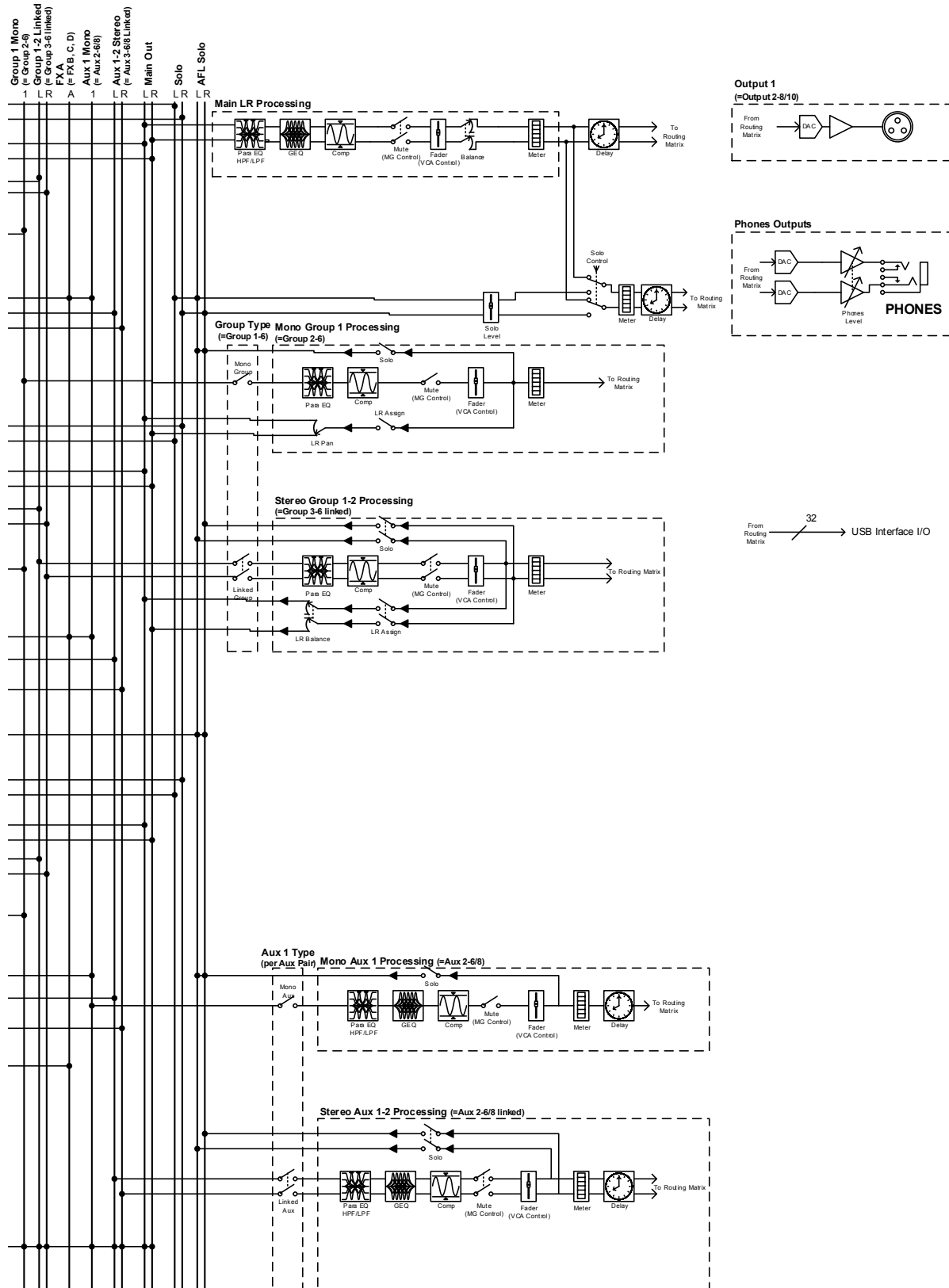|	
DL32S 32-Channel Wireless Digital Live Mixer, US	P/N 2049000-00
DL32S 32-Channel Wireless Digital Live Mixer, EU	P/N 2049000-01
DL32S 32-Channel Wireless Digital Live Mixer, UK	P/N 2049000-03
DL32S 32-Channel Wireless Digital Live Mixer, AU	P/N 2049000-04
DL32S 32-Channel Wireless Digital Live Mixer, CN	P/N 2049000-05
DL32S 32-Chnl Wireless Digital Live Mixer, BZ ~120V	P/N 2049000-06
DL32S 32-Channel Wireless Digital Live Mixer, AR	P/N 2049000-07
DL32S 32-Channel Wireless Digital Live Mixer, KR	P/N 2049000-08

DL16S DIMENSIONS

12.9 [329]

14.1 [358]

5.8 [147]

1.2 [30]

4.4 [113]

0.2 [4]

1.0 [25]

3.8 [96]

5.2 [132]

5.6 [142]

0.2 [4]

1.5 [38]

4.8 [122]

0.6 [15]
0.2 [5]

0.6 [14]

0.5 [13]

2.9 [74]

0.2 [6]

1.5 [37]

12.2 [310]

0.9 [22]

1.8 [46]

4.3 [109]

0.4 [10]

Weight
6.2 lb / 2.8 kg

DL32S DIMENSIONS

5.8
[147]

1.2 [30]

4.4
[113]

0.2 [4]

1.0 [25]

5.6
[143]

6.9
[176]

7.3
[185]

0.2 [4]

1.5 [38]

4.8
[122]

16.5
[419]

17.6
[447]

0.6 [15]
0.2 [5]

0.6
[14]

0.5 [13]

3.3 [84]

1.1 [28]

Weight
8.8 lb / 4.0 kg

1.5
[37]

15.7
[400]

0.9
[22]

1.8
[46]

0.9
[24]

5.0
[126]

0.4
[10]
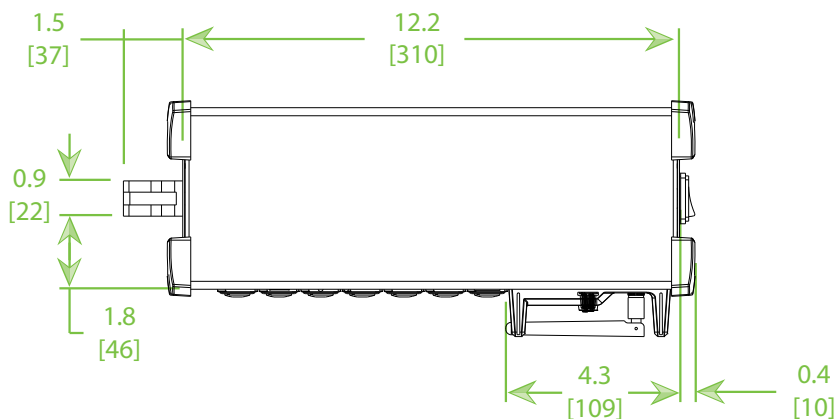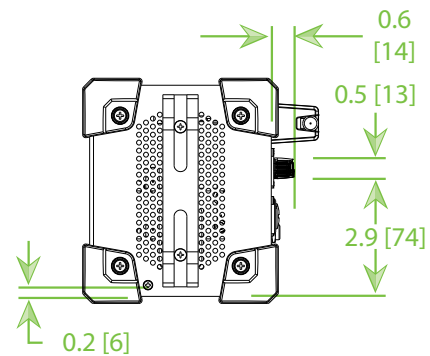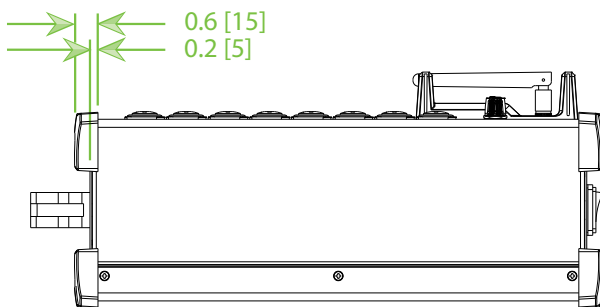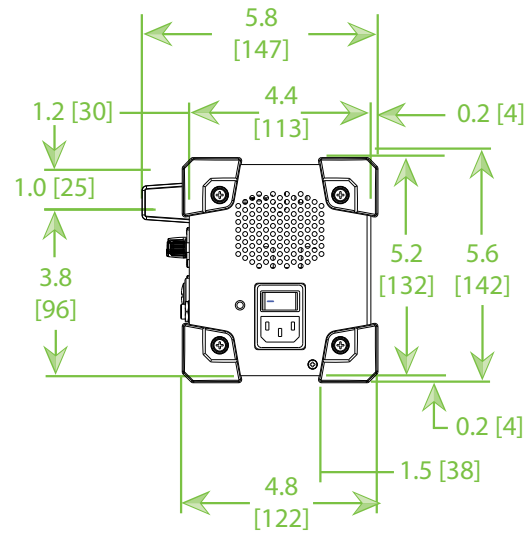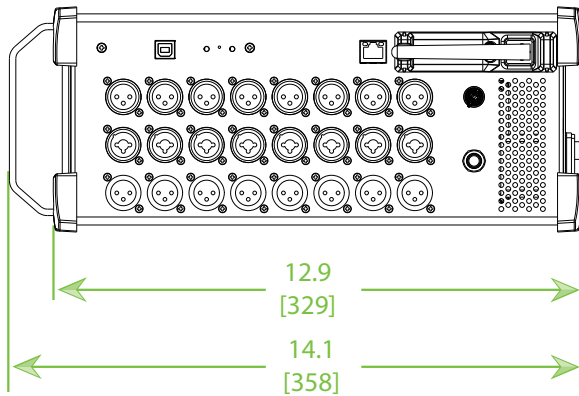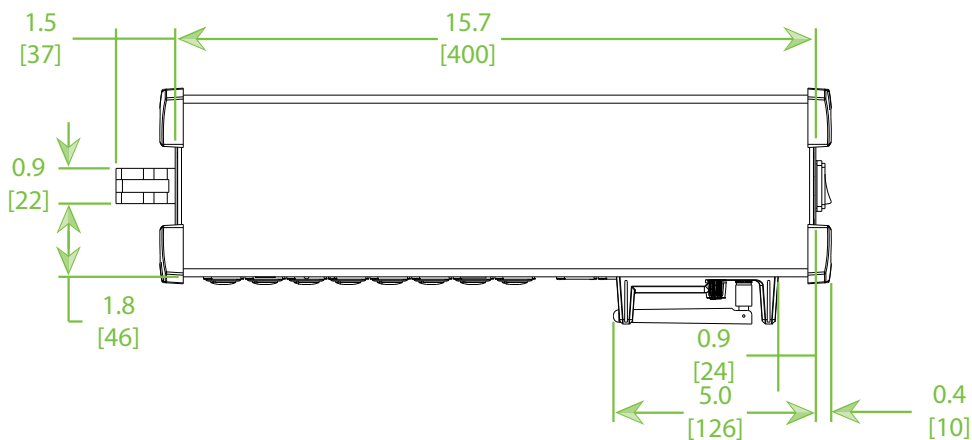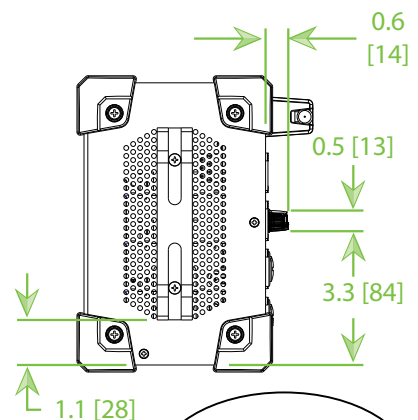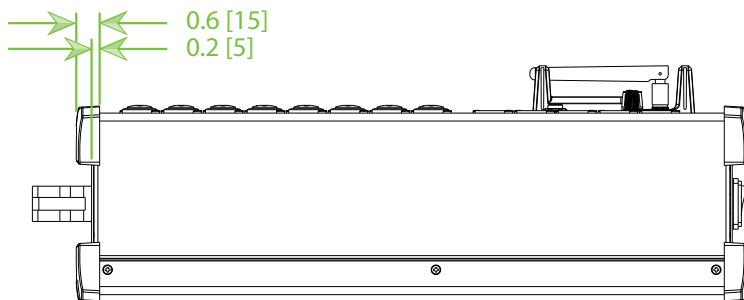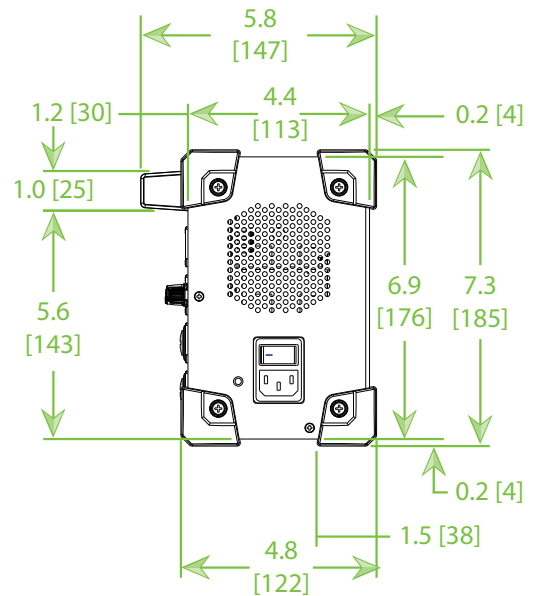
DL16S • DL32S BLOCK DIAGRAM

DL16S • DL32S BLOCK DIAGRAM

DL32S FRONT PANEL

USB INTERFACE POWER WI-FI DL32S EXT. CONTROL

INPUT

1 2 3 4 5 6 7 8
9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 HI-Z 32 HI-Z

PHONES LEVEL

OUTPUT

1 2 3 4 5
6 7 8 L R
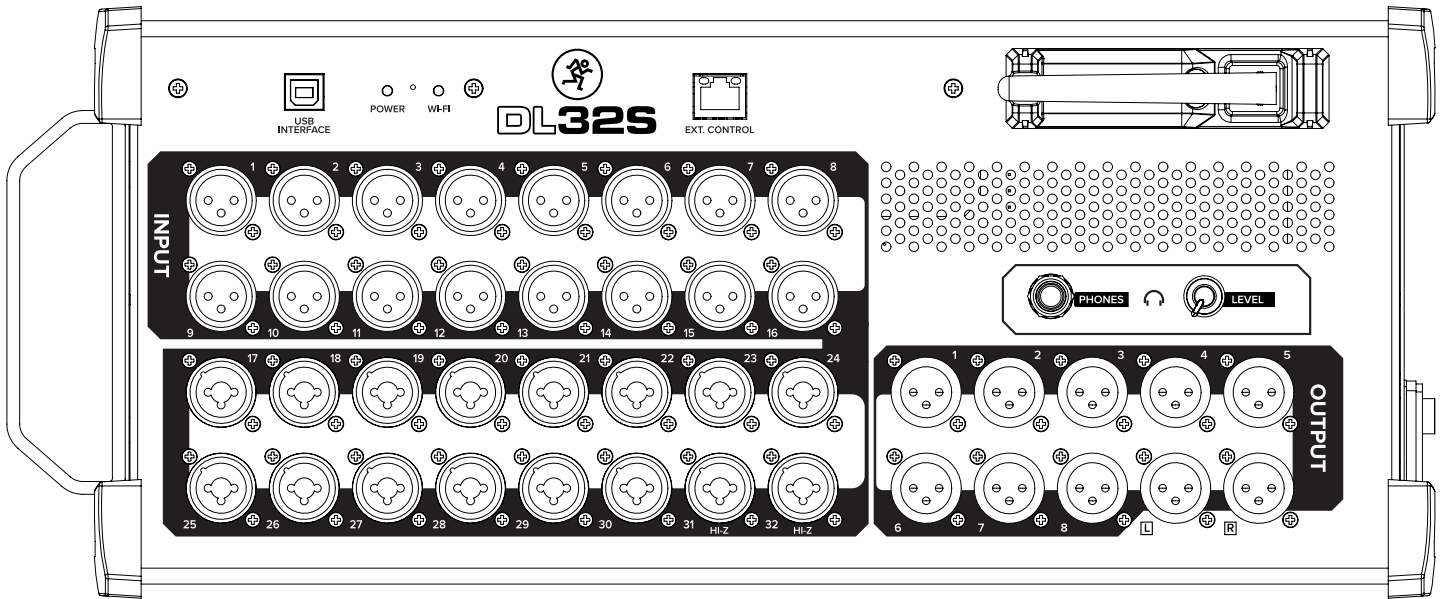
DL16S • DL32S REAR PANEL

DL16S • DL32S SIDE PANEL

Electronic files for this product are available at:
www.mackie.com

Specification Sheet	DL16S_DL32S_SS.PDF
Owner's Manual	DL16S_DL32S_OM.PDF

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