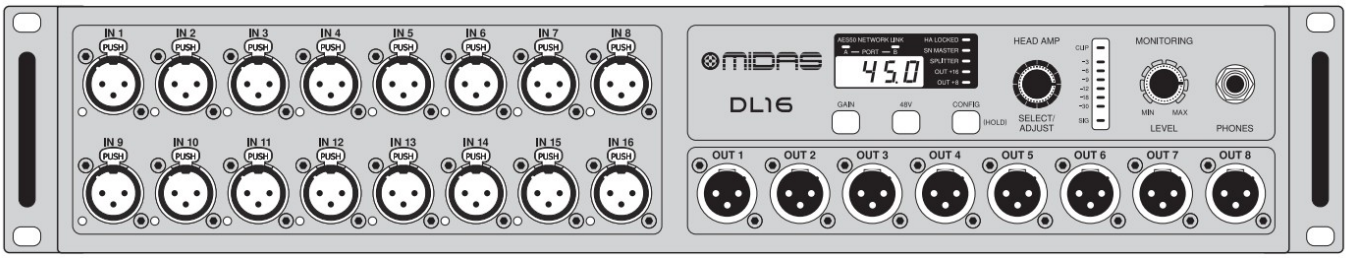
Midas DL16 16 Input 8 Output Stage Box User Guide

DL16 16 Input 8 Output Stage Box
User Guide



DL16
16 Input, 8 Output Stage Box with 16 Midas
Microphone Preamplifiers, ULTRANET and ADAT Interfaces

Contents

Important Safety Instructions

Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock. Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modification should be performed only by qualified personnel.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure – voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

Caution

To reduce the risk of electric shock, do not remove the top cover (or the rear section).
No user serviceable parts inside. Refer servicing to qualified personnel.

Caution

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Caution

These service instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

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 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. Use only attachments/accessories specified by the manufacturer.
12.  Use only with the 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.

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. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
17.  Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling 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 efficient use of natural resources.
    For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.
18. Do not install in a confined space, such as a book case or similar unit.
19. Do not place naked flame sources, such as lighted candles, on the apparatus.
20. Please keep the environmental aspects of battery disposal in mind. Batteries must be disposed-of at a battery collection point.
21. This apparatus may be used in tropical and moderate climates up to 45°C.

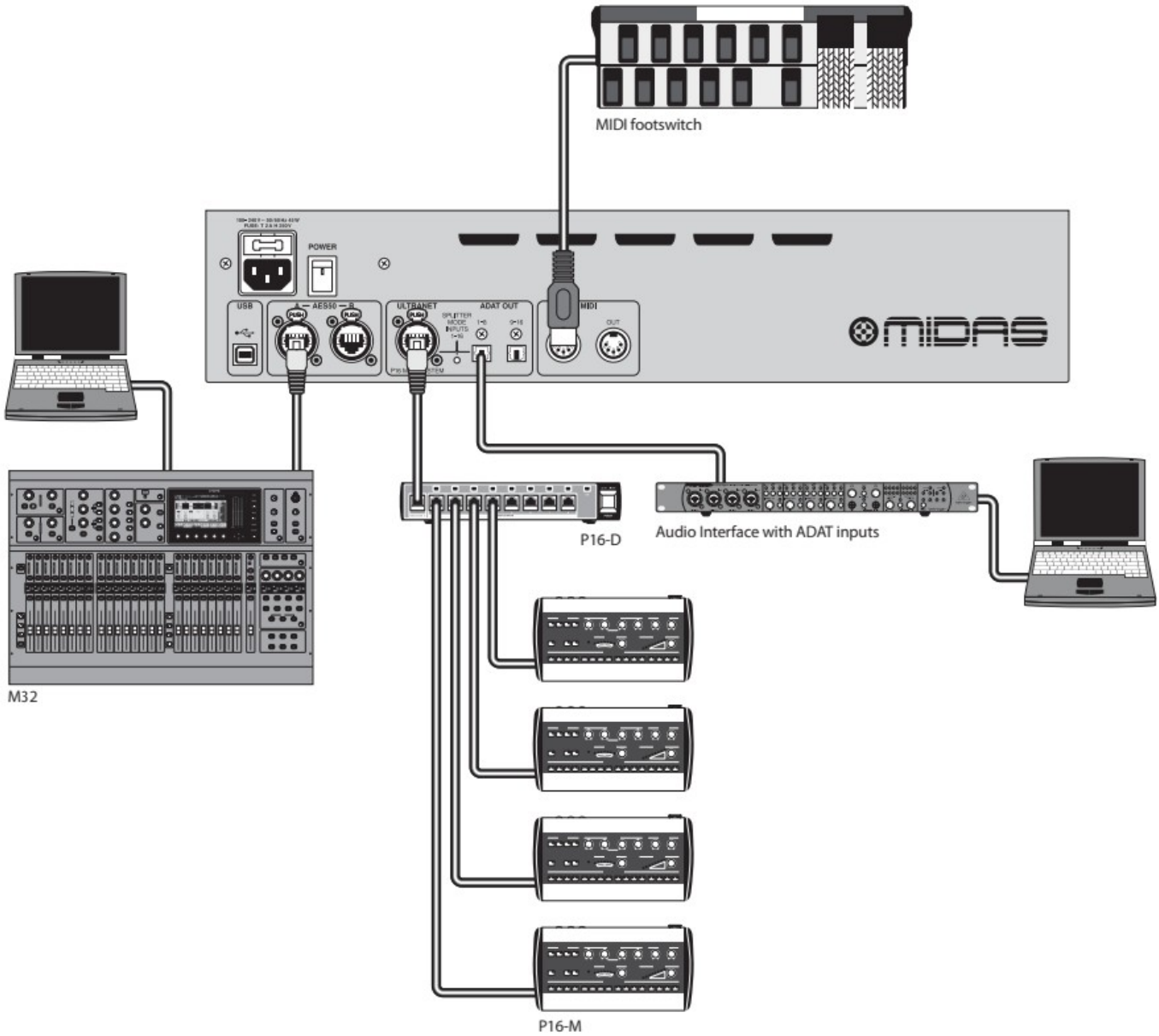
LEGAL DISCLAIMER

Music Tribe accepts no liability for any loss which may be suffered by any person who relies either wholly or in part upon any description, photograph, or statement contained herein. Technical specifications, appearances and other information are subject to change without notice. All trademarks are the property of their respective owners. Midas, Klark Teknik, Lab Gruppen, Lake, Tannoy, Turbosound, TC Electronic, TC Helicon, Behringer, Bugera, Aston Microphones and Coolaudio are trademarks or registered trademarks of Music Tribe Global Brands Ltd.

LIMITED WARRANTY

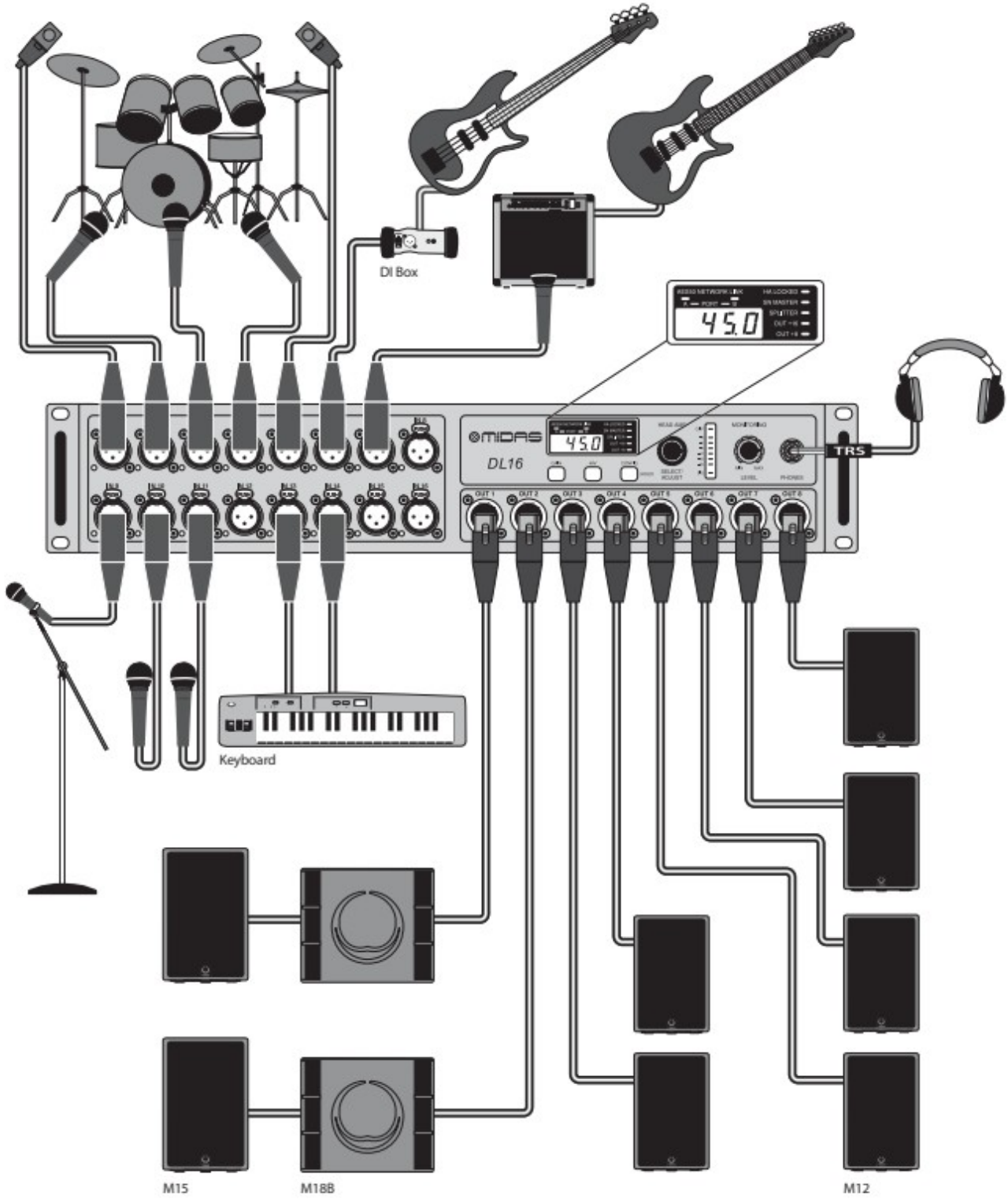
For the applicable warranty terms and conditions and additional information regarding Music Tribe's Limited Warranty, please see complete details online at **community.musictribe.com/pages/support#warranty**.
Hook-Up

DL16 rear panel connection

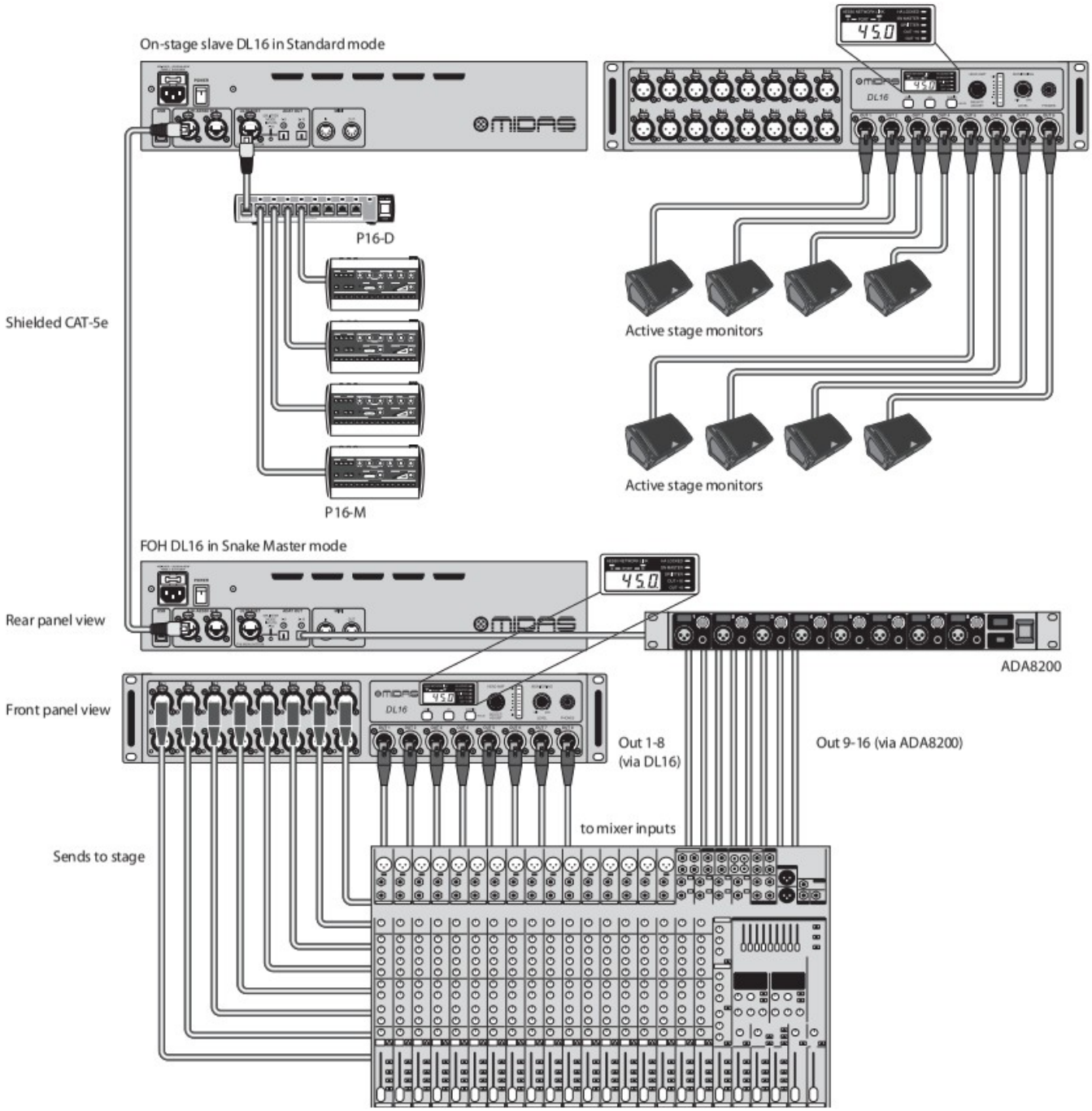


Cabling for all AES50 connections between M32 and DL16 stageboxes:
– Shielded CAT-5e, Ethercon terminated ends
– Maximum cable length 100 meters (330 feet)

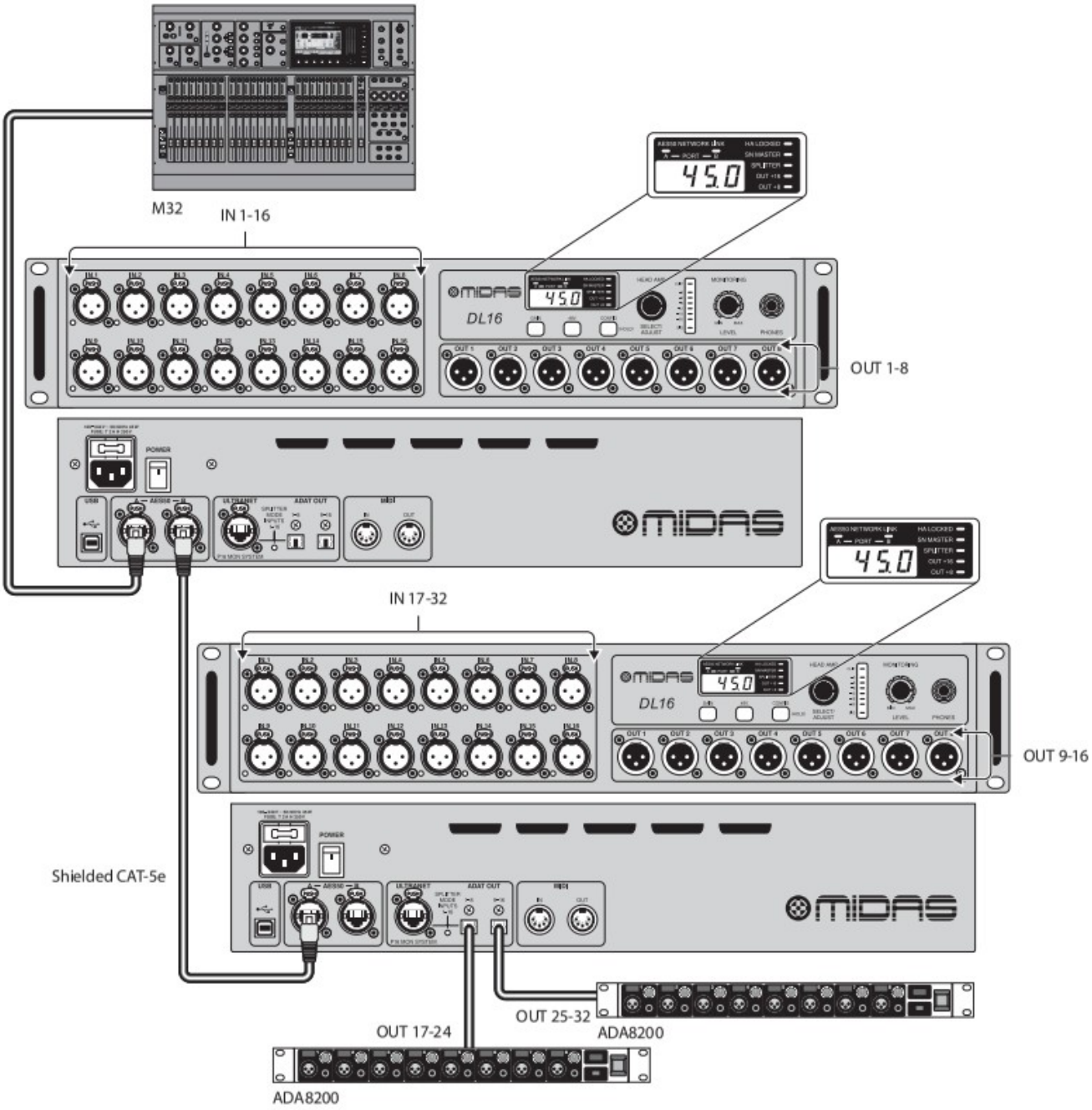
DL16 common connections



DL16 as standalone snake

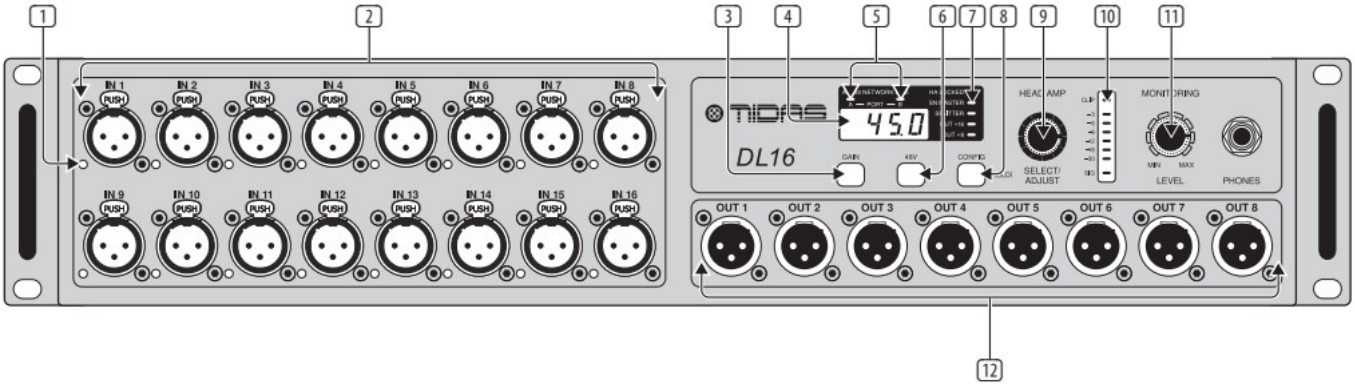


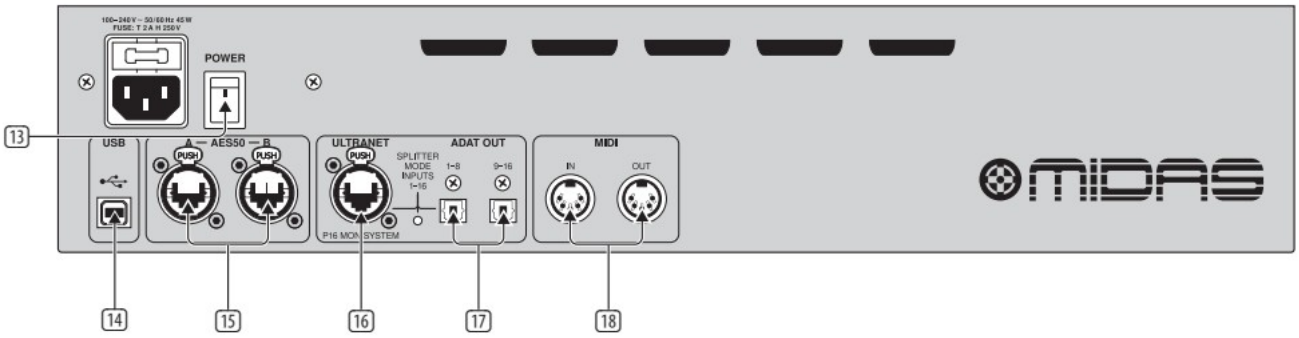
Linking two DL16 units



Note: The signals on both DL16 units (Out 1-8 and 9-16) and both ADA8200 units (Out 17-24 and 25-32) are fully defined on the M32's 'Routing/AES50 Output' page. The second DL16's outputs must be set to Out +8 on the unit itself.

DL16 Controls





Controls

1. PHANTOM LEDs light when the 48V button is engaged for a particular channel.
2. Midas PRO mic/line inputs accept balanced XLR male plugs.
3. GAIN button, when pressed and held, displays the currently selected mic input's gain setting, which may then be adjusted using the SELECT/ADJUST knob.
4. DISPLAY shows the selected channel number, its gain setting, or the sample rate in Snake Master configuration.
5. NETWORK LINK LEDs light red to indicate the AES50 ports are connected but not synchronised, and light green to indicate they are connected and synchronised.
6. 48 V button sends phantom power to the currently selected mic input, indicated by a lit button when active.
7. STATUS LEDs show the operation mode of various features. See the Operation Mode Chart for details. The HA LOCKED LED indicates that preamp gain adjustment has been blocked by the controlling M32.
   To unlock, open the M32 Setup/Global page and un-check the General Preference 'Lock Stagebox'.
8. CONFIG button, when pressed and held, allows the device's operation mode to be adjusted by the SELECT/ADJUST knob. See Operation Mode Chart for details.
9. SELECT/ADJUST knob scrolls through the 16 channels, adjusts the gain of the currently selected input, and changes the operating mode. Push repeatedly to scroll Inputs, Outputs, P16 channels, ADAT outputs, and Stage (only in Snake Master mode).
10. LED METER displays the signal level of the currently selected channel.
11. MONITORING LEVEL knob adjusts the level of the PHONES output.
12. XLR outputs accept balanced XLR female plugs.
13. POWER switch turns the unit on and off.
14. USB input accepts a USB type-B plug for firmware updates via PC.
15. AES50 ports A and B allow connection to a SuperMAC digital multi-channel network via shielded Cat-5e

Ethernet cable with terminated ends compatible to Neutrik etherCON.

NOTE: The clock master, typically the digital mixer, must be connected to the AES50 port A, while additional stage boxes would be connected to port B.

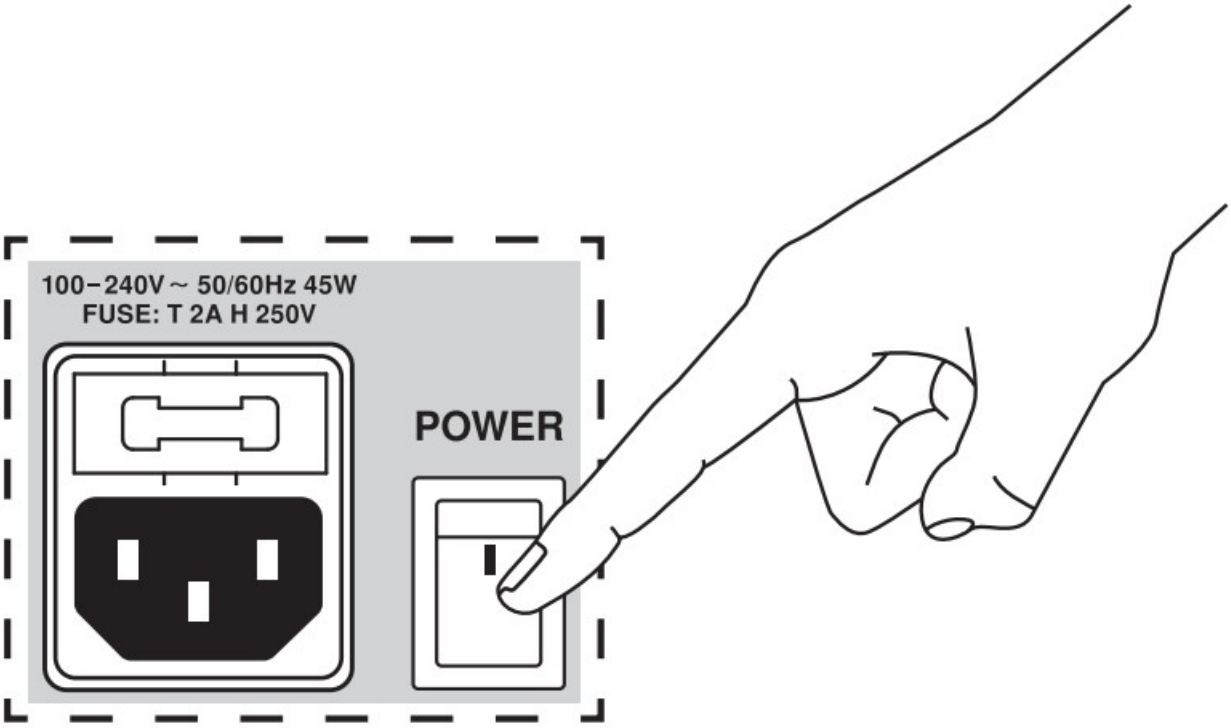
16. ULTRANET port sends 16 channels to a Behringer P-16 personal monitoring system.
17. ADAT OUT jacks send AES50 channels 17-32 to external equipment via optical cable, or split the local 16 inputs for direct ADAT recording.
18. MIDI IN/OUT jacks accept standard 5-pin MIDI cables for MIDI communication to and from an M32 console.

Midas DL16 Operation Mode Chart

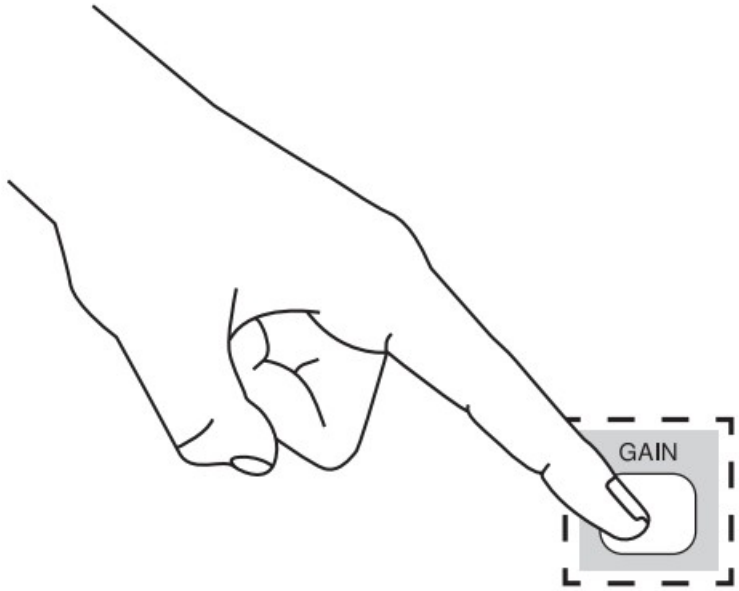
Seq.	**LED SN MASTER**	**sync clock**	**LED SPLITTER**	**LED OUT +16**	**LED OUT +8**	**XLR analogue out 1-8**	**ADATout 1-8**	**ADATout 9-16**	**P-16 Ultranet out 1-16**
1 (default)		AES50(console)				= AES50-A,ch01-ch08	= AES50-Ach17-ch24	= AES50-Ach25-ch32	= AES50-A ch33-ch48
2		AES50(console)			on	= AES50-Ach09-ch16	= AES50-A ch17-ch24	= AES50-A ch25-ch32	= AES50-Ach33-ch48
3		AES50(console)		on		= AES50-Ach17-ch24	= AES50-Ach17-ch24	= AES50-Ach25-ch32	= AES50-Ach33-ch48
4		AES50(console)	on			= AES50-A,ch01-ch08	= Local In 01 – 08	= Local In 09 – 16	= Local In 01 – 16
5		AES50(console)	on		on	= AES50-Ach09-ch16	= Local In 01 – 08	= Local In 09 – 16	= Local In 01 – 16
6		AES50(console)	on	on		= AES50-Ach17-ch24	= Local In 01 – 08	= Local In 09 – 16	= Local In 01 – 16
7	on	48 kHz (int)				= AES50-A,ch01-h08	= AES50-A,ch01-ch08	= AES50-Ach09-ch16	= AES50-Ach01-ch16
8	on	44.1 kHz (int)				= AES50-A,ch01-ch08	= AES50-A,ch01-ch08	= AES50-Ach09-ch16	= AES50-Ach01-ch16
9	on	48 kHz (int)	on			= AES50-A,ch01-ch08	= Local In 01 – 08	= Local In 09 – 16	= Local In 01 – 16
10	on	44.1 kHz (int)	on			= AES50-A,ch01-ch08	= Local In 01 – 08	= Local In 09 – 16	= Local In 01 – 16

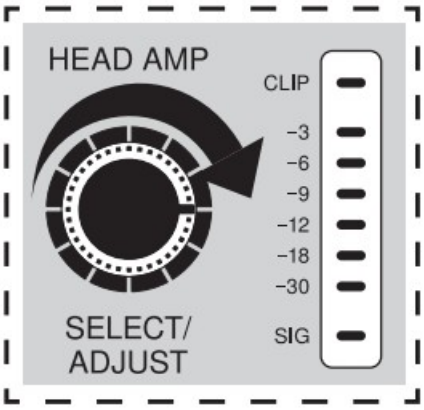
Getting started

1. Before powering the unit on, make all audio and digital connections.
2. Turn on the power.



3. The default configuration is active when all status LEDs above the CONFIG button are off (see Seq . 1 in Operation Mode Chart). If your application requires a different output setup, press and hold the CONFIG button to enter configuration mode. While pressing the CONFIG button, turn the SELECT/ADJUST knob to scroll through the items. You can select from the following options:
   • Engage the SN MASTER function to designate the master unit when using two DL16 units in a standalone snake application. This is available in 4 modes, 44.1 kHz and 48 kHz, each with Splitter mode engaged or disengaged.
   • Engage the SPLITTER function to send the 16 local input signals directly to the ADAT OUT and P16 jacks. When the SPLITTER function is disengaged, the ADAT OUT jacks carry AES50 channels 17-32 and P16 carries channels 33-48.
   • Select whether the OUTPUT jacks 1-8 carry the AES50 channels 1-8 (LEDs off), 9-16, or 17-24 by engaging the OUT +8 or OUT +16 function.
4. Release the CONFIG button to exit configuration mode. See the Operation Mode Chart for more details.
5. Repeatedly press the SELECT/ADJUST knob until the left side of the display shows “In”. Turn the SELECT/ADJUST knob to select one of the inputs 1-16.
6. Press the 48 V button to toggle the selected channel’s phantom power on/off, if necessary.
7. Press the GAIN button. The button will light, and the gain can now be adjusted with the SELECT/ADJUST knob. Turn the knob to the right until the loudest peaks in your speaking or playing cause the -9 dB LED to light briefly in the meter.





8. With headphones connected to the PHONES jack, turn the adjacent MONITORING LEVEL knob up to a comfortable listening level.

NOTE: Please verify that your specific AES50 connections provide stable operation prior to using the products in a live performance or recording situation. The maximum distance for AES50 CAT5 connections is 100 meters (330 feet). Please consider using shorter connections where possible for gaining safety margin. Combining 2 or more cables with extension connectors can reduce the reliability and maximum distance between AES50 products. Unshielded (UTP) cable may work well for many applications, but entails an additional risk for ESD issues. We guarantee, that all our products will perform as specified with 50 m of Klark Teknik NCAT5E-50M, and we recommend using cable of similar quality, only. Klark Teknik also offers the very cost-effective DN9610 AES50 Repeater or DN9620 AES50 Extender for situations where extremely long cable runs are required.

Specifications

Processing	
A/D converters (8-channel, 24-bit @ 44.1 / 48 kHz)	114 dB dynamic range (A-weighted)
D/A converters (stereo, 24-bit @ 44.1 / 48 kHz)	120 dB dynamic range (A-weighted)
Networked I/O latency (stagebox in > console processing* > stagebox out)	1.1 ms
Connectors	
XLR inputs, programmable mic preamps	16
XLR outputs	8
Phones outputs, 1/4″ TRS	1 (mono)
AES50 ports, SuperMAC, NEUTRIK etherCON	2
P-16 connector, Ultranet (no power supplied)	1
MIDI inputs / outputs	1/1
ADAT Toslink outputs (2 x 8 Ch)	2

USB type B, rear panel, for system updates	1
Mic Input Characteristics (Midas PRO)	
THD + noise, @ unity gain, 0 dBu out	< 0.01% unweighted
THD + noise, @ +40 dB gain, 0 dBu out	< 0.03% unweighted
Input impedance XLR, unbal. / bal.	10 kΩ / 10 kΩ
Non clip maximum input level, XLR	+23 dBu
Phantom power, switchable per input	48 V
Equivalent input noise @ +40 dB gain, (150R source)	-125 dBu, 22 Hz – 22 kHz unweighted
CMRR, XLR, @ unity gain (typical)	> 70 dB
CMRR, XLR, @ 40 dB gain (typical)	> 90 dB
Input/Output Characteristics	
Frequency response @ 48 kHz sample rate	0 to -1 dB 20 Hz to 20 kHz
Dynamic range, analogue in to analogue out	107 dB (22 Hz – 22 kHz unweighted)
A/D dynamic range, preamp and converter (typical)	109 dB (22 Hz to 22 kHz unweighted)
D/A dynamic range, converter and output (typical)	110 dB (22 Hz – 22 kHz unweighted)
Cross talk rejection @ 1 kHz, adjacent channels	100 dB
Output level, XLR, nom./max.	+4 dBu / +21 dBu
Output impedance, XLR, unbal. / bal.	50 Ω / 50 Ω
Phones output impedance / level	40 Ω / +21 dBu (mono)
Residual noise level, out 1-8 XLR, unity gain	-86 dBu, 22 Hz – 22 kHz unweighted
Indicators	
Display	4-digit, 7-segment, LED
Front status LEDs	AES50-A, red/green AES50-B, red/green HA Locked, red SN Master, green Splitter, orange Out +16, orange Out +8, orange
Meter	Sig, -30 dB, -18 dB, -12 dB, -9 dB, -6 dB, -3 dB, Clip
Rear panel	Splitter mode, orange
Power	

Switch-mode autorange power supply	100-240 V (50/60 Hz)
Power consumption	45 W
Physical	
Dimensions	482 x 225 x 89 mm (19 x 8.9 x 3.5″)
Weight	4.7 kg (10.4 lbs)

*incl. all channel and bus processing, excl. insert effects and line delays

Other important information

Important information

1. **Register online.** Please register your new Music Tribe equipment right after you purchase it by visiting musictribe.com. Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.
2. **Malfunction.** Should your Music Tribe Authorized Reseller not be located in your vicinity, you may contact the Music Tribe Authorized Fulfiller for your country listed under “Support” at musictribe.com. Should your country not be listed, please check if your problem can be dealt with by our “Online Support” which may also be found under “Support” at musictribe.com. Alternatively, please submit an online warranty claim at musictribe.com BEFORE returning the product.
3. **Power Connections.** Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.

FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION
Midas…… DL16
Responsible Party Name:……. usic Tribe Commercial NV Inc.
Address:…… 122 E. 42nd St.1, 8th Floor NY, NY 10168, United States
Email Address:…… **legal@musictribe.com**

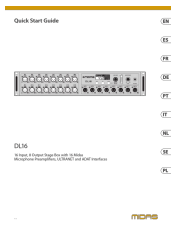
DL16
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment 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.
This equipment complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

Warning: Operation of this equipment in a residential environment could cause radio interference.
Important information:
Changes or modifications to the equipment not expressly approved by Music Tribe can void the user’s authority to use the equipment.

CE Hereby, Music Tribe declares that this product is in compliance with Directive 2014/35/EU, Directive 2014/30/EU, Directive 2011/65/EU and Amendment 2015/863/EU, Directive 2012/19/EU, Regulation 519/2012 REACH SVHC and Directive 1907/2006/EC.
Full text of EU DoC is available at https://community.musictribe.com/
EU Representative: Music Tribe Brands DK A/S
Address: Gammel Strand 44, DK-1202 København K, Denmark
UK Representative: Music Tribe Brands UK Ltd.
Address: 6 Lloyds Avenue, Unit 4CL London EC3N 3AX
United Kingdom

Documents / Resources

	Midas DL16 16 Input 8 Output Stage Box [pdf] User Guide DL16 16 Input 8 Output Stage Box, DL16, 16 Input 8 Output Stage Box, 8 Output Stage Box, Output Stage Box, Stage Box

References

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