MINI CUB

USB Headphone and Microphone
interface

PRODUCT DETAILS

6 BROOKS PLACE, MAIDSTONE, KENT, ME14 1HE. ENGLAND.
Visit our Website at www.glensound.com
TEL: +44 (0) 1622 753662
FAX: +44 (0) 1622 762330

Glensound Electronics Ltd

Thank you for choosing a new Glensound product.

All rights reserved.

Information contained in this manual is subject to change without notice, if in doubt please contact us for the latest product information.

If you need any help with the product then we can be contacted at:

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Maidstone
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ME14 1HE
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EMAIL ADDRESSES

General enquires: office@glensound.com

Technical enquires: techinfo@glensound.com

Sales enquires: sales@glensound.com

IMPORTANT SAFETY INSTRUCTIONS

Read this safety sheet prior to installation or initial use. This generic safety sheet covers multiple product configurations across our range. The full operating & installation manual and model-specific technical specifications are available online at: www.glensound.com

DANGEROUS VOLTAGE: This symbol is intended to warn that dangerous voltages within the product are present and constitute a risk of electric shock.	IMPORTANT INSTRUCTIONS: This symbol is intended to highlight that there are important operating, installation, and maintenance instructions in the literature accompanying this unit.
THIS UNIT MUST BE EARTHED (Class I Mains Models): English: This symbol highlights that the equipment must have a valid earth connection with the protective earthing conductor. Danish: *Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.* Finnish: *Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.* Norwegian: *Apparatet må tilkoples jordet stikkontakt.* Swedish: *Apparaten skall anslutas till jordat uttag.*	**CAUTION – SHOCK HAZARD: DISCONNECT ALL POWER SOURCES:** This symbol warns that the product can be energised simultaneously from more than one power source (e.g., dual AC mains supplies, external DC power, and/or PoE). Care must be taken if accessing internal components. Ensure that ALL connected power supplies are fully disconnected.

1. Read & Keep Instructions: Read these instructions, keep these instructions, heed all warnings, and follow all instructions.

2. Indoor Use & Moisture: Unless otherwise specified in the model-specific manual, this product is intended for indoor use only. Do not use this apparatus near water, and do not expose this product to rain or moisture.

3. Ambient Temperature: The intended ambient operating temperature of this product is 0°C to 40°C (or 0°C to 50°C where specified in the model-specific technical specifications in the online user manual).

4. Cleaning & Heat Sources: Clean only with a dry cloth. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

5. Cable & Cord Protection: Protect all power cords and network cables from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

CAUTION
RISK OF ELECTRICAL 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 SERVICE PERSONNEL.

WARNING:

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

6. Attachments & Lightning: Only use attachments/accessories specified or supplied by the manufacturer. Unplug this apparatus during lightning storms or when unused for long periods of time.

7. Servicing & No User-Serviceable Parts: The product contains no user-serviceable parts and must not be disassembled or modified in any way. Doing so could result in personal injury and/or product failure. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when a 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.

8. Professional Environment: This equipment is not suitable for use in locations where children are likely to be present.

POWER SUPPLY & DISCONNECT INSTRUCTIONS (APPLICABLE BY MODEL CONFIGURATION)

9. Simultaneous / Redundant Power Sources (Mains, DC & PoE): Depending on the model, this product may be powered by a single source or simultaneously by multiple redundant power sources (dual AC mains inlets, an AC mains inlet, an external DC power input, and/or Power over Ethernet [PoE]). Disconnecting a single power lead will NOT isolate the unit if another power source remains connected. To completely de-energize the equipment, unplug ALL connected AC mains cords, DC barrel jack/external DC connectors, and PoE RJ45/etherCON network cables.

10. AC Mains Disconnect Devices (Single or Dual IEC Inlets): Where AC mains inlets are fitted, the mains plug(s) and rear-panel IEC appliance coupler(s) serve as the disconnect device(s). On dual-mains models, both mains' cords must be unplugged to isolate the unit from AC mains power. The socket-outlet(s) used for mains power must be installed near the equipment and be easily accessible.

11. Plug Grounding & Polarization (AC Mains Models): Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has 2 blades with one wider than the other. A grounding-type plug has 2 blades and a third grounding prong provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

12. Approved Detachable Earthed Mains Cords (Class I AC Mains Models): Use only approved detachable 3-core earthed mains cords (minimum H05VV-F 3G0.75 mm² with IEC 60320-1 C13 connector) rated for the country of installation: • United Kingdom: Use a BS 1363-1 approved molded plug fitted with a 5 A ASTA-approved BS 1362 fuse. • European Union: Use a CEE 7/7 (Schuko/French) earthed plug. • Denmark: When connecting to wall socket-outlets in Denmark, use an approved 3-pin earthed plug complying with DS 60884-2-D1 (Standard Sheet DK 2-1a) to ensure protective earthing is maintained. • USA/Canada: Use a UL-listed / CSA-certified 3-conductor grounding power cord [minimum 18 AWG, SVT/SJT] with a NEMA 5-15P plug. • All other regions: Use a nationally safety-approved 3-core earthed mains cord rated for the country of installation.

13. Internal Primary Fusing & Neutral Fusing Warning (AC Mains Models – Service Personnel Only): Internal primary fuse(s) are located between the Live terminal of the IEC inlet and the Live input of the power supply and should only be changed by a qualified service

engineer using a correctly rated replacement as specified in the product handbook. WARNING – Neutral Fusing: Because the AC mains plug may be reversible in some electrical distribution systems, the internal primary fuse may be located in the neutral conductor. Always disconnect all AC mains power cords completely from the IEC inlet(s) to de-energize all phase conductors before opening the enclosure or servicing the unit.

14. Power over Ethernet (PoE) Models: Unplugging the RJ45 / etherCON network cable disconnects PoE power from the unit. The Ethernet cable intended to be connected to the unit is for indoor building routing only and must not exit the building structure without appropriate primary surge protection.

15. External DC / USB Power Input Models: Connect only the manufacturer-supplied AC/DC power adaptor (where provided), or a safety-approved external DC or USB power supply complying with BS EN IEC 62368-1 (classified as ES1 and PS2/Limited Power Source [LPS]) that matches the voltage, minimum current rating, and pin polarity marked adjacent to the DC/USB input connector or specified in the product manual. The external power adaptor plug and the DC/USB input connector serve as the DC disconnect devices and must remain readily accessible; unplugging the DC/USB connector disconnects external DC power only and will not isolate the unit if AC mains or PoE remains connected.

INSTALLATION, THERMAL, MECHANICAL & OPTICAL SAFETY (APPLICABLE BY MODEL CONFIGURATION)

16. Ventilation & Sealed Heatsink Enclosures: Do not block any ventilation openings; install in accordance with the manufacturer's instructions. On models where the aluminum enclosure acts as the units heatsink, do not cover the unit or speaker grille with soft furnishings, cloths, or curtains, and allow free airflow around the housing.



17. 19-Inch Equipment Rack Installation (Rack-Mount Models): Rack-mounted models are designed for stationary installation in a standard 19-inch equipment rack. Secure the unit to the front rack rails using all four mounting holes on the integral rack ears with appropriate rack screws (e.g., M6 screws and cage nuts). Ensure that ventilation openings on the chassis are not obstructed by rack walls or cabling.

18. Carts, Stands, Brackets & Tip-Over Hazard: 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.

19. Optical SFP Transceiver Modules (Where fitted): Any optical SFP transceiver modules installed in this product must be certified Class 1 Laser Products in accordance with IEC/EN 60825-1. Do not look directly into open optical ports or fiber-optic cable ends while the equipment is energized.



Disposal (WEEE): the crossed-out wheeled bin symbol means this product must not be disposed of with household waste. Take it to an approved electrical and electronic equipment recycling point, or contact Glensound for advice.
Declaration of conformity: Glensound declares that this product complies with the applicable UK and EU legislation. The full declaration of conformity is available at www.glensound.com.
Manufacturer: Glensound Electronics Ltd, The Design Buildings, 6 Brooks Place, Maidstone, Kent, ME14 1HE, UK · Tel: +44 (0)1622 753662 · Email: sales@glensound.com · www.glensound.com

PRODUCT WARRANTY

All equipment is fully tested before dispatch and carefully designed to provide you with trouble free use for many years.

We have a policy of supporting products for as long as possible and guarantee to be able to support your product for a minimum of 10 years.

For a period of one year after the goods have been despatched the Company will guarantee the goods against any defect developing after proper use providing such defects arise solely from faulty materials or workmanship and that the Customer shall return the goods to the Company’s works or their local dealer.

All non-wear parts are guaranteed for 2 years after despatch and any defect developing after proper use from faulty materials or workmanship will be repaired under this warranty providing the Customer returns the goods to the Company's works or their local dealer.

CE

EU DECLARATION OF CONFORMITY

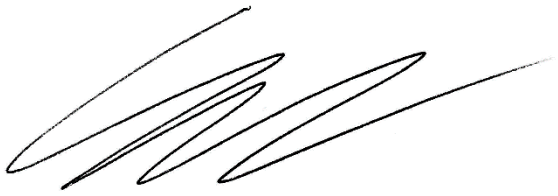
MINI CUB

This declaration of conformity is issued under the sole responsibility of the manufacturer.

This equipment is manufactured by Glensound Electronics Ltd of Brooks Place Maidstone Kent ME14 1HE is CE marked and conforms to the following Union harmonisation legislation:

Emissions:	BS EN55032:2015
Immunity:	BS EN55035:2017

Signed for and on behalf of Glensound Electronics Ltd.



Gavin Davis, Managing Director
Maidstone, Kent, England

Date: 08/06/2017

RoHS DIRECTIVE

RoHS 2 Directive 2011/65/EU restricts the use of the hazardous substances listed below in electrical and electronic equipment.

This product conforms to the above directive and for these purposes, the maximum concentration values of the restricted substances by weight in homogenous materials are:

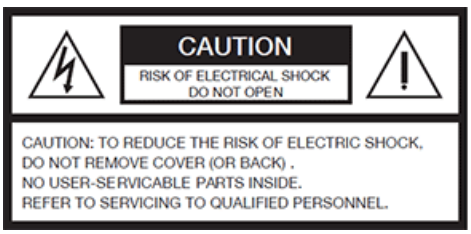
Lead	0.1%
Mercury	0.1%
Hexavalent Chromium	0.1%
Polybrominated Biphenyls	0.1%
Polybrominated Diphenyl Ethers	0.1%
Cadmium	0.01%

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 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 2 blades with one wider than the other. A grounding type plug has 2 blades and third grounding prong. The wider blade or the 3rd 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/ supplied 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. Do not attempt to modify this product. Doing so could result in personal injury and/ or product failure





WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT REGULATIONS 2006 (WEEE)

Glensound Electronics Ltd is registered for business to business sales of WEEE in the UK our registration number is:

WEE/JJ0074UR

GLENSOUND MINI CUB
HANDBOOK CONTENTS

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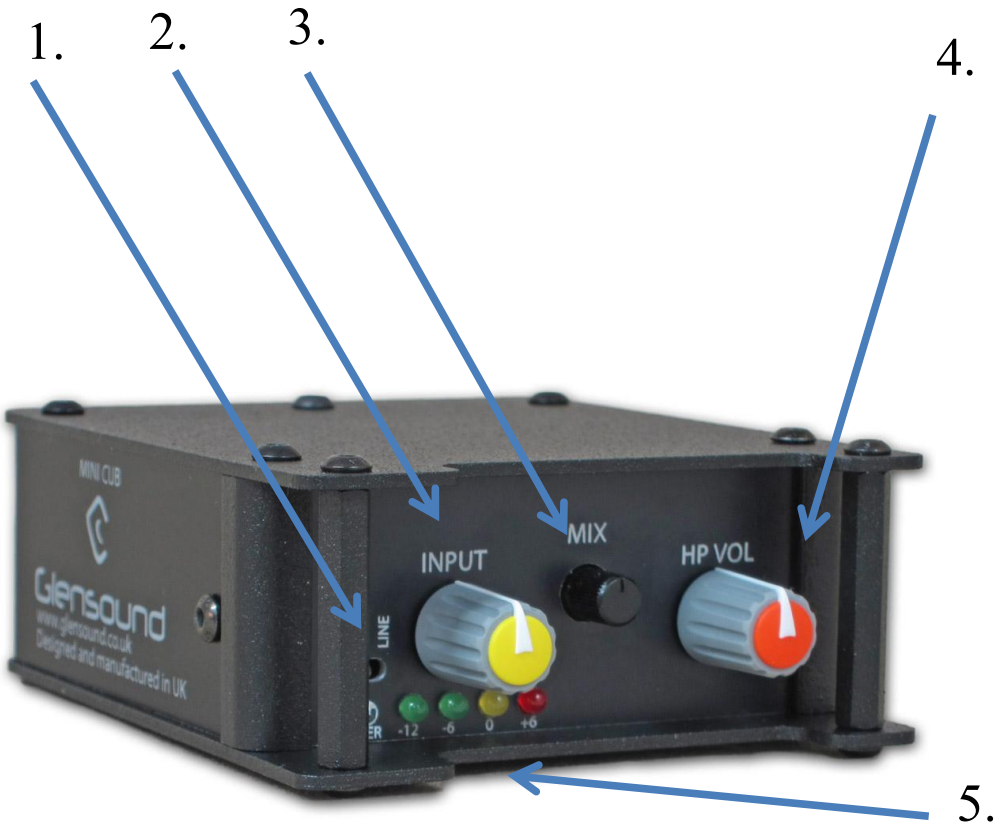
OVERVIEW

The Mini Cub is a small USB audio interface for PCs and Macs that provides high quality audio interfacing for audio ingest to the PC whilst at the same time being able to monitor the stereo return audio.

The Mini Cub is built for broadcast, in a heavy duty housing, with audio specifications to match. It has internal digital signal processing and micro controllers for system control, with the digital audio at 24bit 48kHz, and an equivalent input noise (EIN) of 121dB at maximum gain.

There is a 3 pin XLR input. This is selectable from line, mic, or mic with 48V phantom power. The input features Glensound's Referee compressor/limiter system to avoid any input clipping. There is a front panel pot for adjusting input level control and a 4 segment LED indicates the incoming signal. This single input is delivered to both channels of the USB connection.

MINI CUB FRONT PANEL LAYOUT



1. **Input Line, Mic and Mic+PH**
   This 3 position toggle switch is used to switch between input modes
   1. MIC+PH
   2. MIC
   3. LINE

2. **Input gain control knob**
   This knob is used to control the gain applied to the Line/Mic Input of the MINI Cub

3. **Mix control knob**
   This control knob allows the user to mix there PC output and side tine levels that are then sent to the Headphone output.

4. **Headphone Level control knob**
   Controls the output level of the Headphone Jack

5. **Level indicator**
   Displays the Microphone level in dBu from -12 to +6

MINI CUB REAR PANEL LAYOUT



1. **Lockable mini USB - Bulgin PX0441**

   This USB connector is used to communicate with your PC as a Sound Card and is also used for Updates

2. **Quarter inch stereo headphone jack**

   Supports Headphones with impedances from 30 to 100 Ohms

3. **XLR input**

   This port Can be used for MIC and Line Signal Levels and also supports Phantom Power to drive Active Microphones.

SPECIFICATIONS

Line Input

Impedance 20k+
Line up level 0dBu
Gain range 35dB
Noise Max gain (300r A weighting 22hz - 22Khz)
-73 dBu
Noise Min gain (300r A weighting 22hz - 22Khz)
-79 dBu
Freq response +- 1dBu 20Hz - 22Khz
Distortion +8 relative 100hz 1Khz 10Khz
0.017% 0.012% 0.007%

Microphone Input

Impedance 2K4
Line up level -54 dBu
Gain range 35dB
Noise Max gain (300r A weighting 22hz - 22Khz)
-55 dBu
Noise Min gain (300r A weighting 22hz - 22Khz)
-73 dBu
Freq response +- 1dBu 40Hz - 22Khz
Distortion +8 relative 100hz 1Khz 10Khz
0.027% 0.09% 0.007%
Limiter checks at Line up.
-60dBu -54dBu -48dBu -44dBu -40dBu -36dBu -30dBu -26dBu -21dBu
-5.6dBu 0dbu 5.9dBu 9.0dBu 11.4dBu 12.9dBu 14.7dBu 15.7dBu clip

Microphone Phantom Power (48v 6.1mA)

Impedance 2K4
Line up level -35dBu
Gain range 35dB
Noise Max gain (300r A weighting 22hz - 22Khz)
-67 dBu
Noise Min gain (300r A weighting 22hz - 22Khz)
-72 dBu
Freq response +- 1dBu 40Hz - 22Khz
Distortion +8 relative 100hz 1Khz 10Khz
0.011% 0.010% 0.008%

Headphones

Headphone Volume 60dB range
(Noise taken in Microphone condition at line up 300r A weighting 22hz - 22Khz)
Noise Max gain
-74 dBu
Noise Min gain
-93 dBu
Freq response +- 1dBu 20Hz - 22Khz
Mix pot off at each end, -3dBu both inputs mixed together at mid point with 256 adjustments across pot range.

PINOUT

XLR

1. Ground/Shield
2. Positive/Hot
3. Negative/Cold

Headphone

1. Tip (Left +)
2. Ring (Right +)
3. Sleeve (Ground)

USB

1. +5V
2. Data -
3. Data +
4. N/C
5. GND
6. N/C
7. N/C
8. N/C
9. N/C
10. N/C
11. GND

UPDATING FIRMWARE

Equipment needed

- A windows-based PC
- USB Type A to Type mini B cable
- A copy of ‘DfuSe Demo’ software

Instructions

1. **Download and install DfuSE Demo**

   ‘DfuSE Demo’ is a firmware updating tool that is required for loading new firmware on to the STM32 Device.

   It can be downloaded from the STMicroelectronics website found here: https://goo.gl/AbzhsA. It is the file named “STSW-STM32080”.

   Once you have downloaded this file you will need to extract the .exe “DfuSe_Demo_V3.0.5_Setup.exe”, then run and install it.

2. **Download firmware**

   The latest firmware for the MINI CUB can be found on the Glensound website, under the respective product page. Once you have downloaded the file, place it in a folder or location of your choice.

3. **Connect To A PC**

   Connect the MINI CUB to the PC via the USB cable. The USB connector is located on the rear of the MINI CUB

4. **Firmware update preparation**

   To prepare the MINI CUB for a firmware update;

   1. Make sure the device is connected with USB
   2. Press and hold down the UPDATE button
   3. Power on the unit
   4. Release the UPDATE button after a few seconds

   Your PC should make an audible sound when this process is successful as windows is detecting a new USB device.

5. **Loading the firmware**

   Now open DfuSe Demo.

   If the MINI CUB successfully entered DFU mode then it will appear as ‘STM Device in DFU Mode’ under the ‘Available DFU Devices tab’.

   Now the .dfu file needs to be selected so that DfuSe Demo knows the correct firmware to put on to the MINI CUB

   Click choose and then select the .dfu file that you downloaded from the Glensound website. This will be located in your downloads folder by default.

   If the file loads successfully then it will read along the bottom ‘File correctly loaded’

6. **Upgrading firmware**

   The firmware is now ready to be put on to the MINI CUB, Tick the ‘Verify after download’ box first and then click ‘Upgrade’.

   Click yes to proceed.

   The progress bar along the bottom will show the status of the operation.

   If the operation was successful, DfuSe Demo will report that “Targery 00: Verify Successful!”.

   You may also see that it will report how much data was successfully transferred.

7. **Final steps**

   Now click “Leave DFU mode” to finish the procedure.

   You may now disconnect the USB cable and continue to use the MINI CUB with the freshly updated firmware!