

Line Powered Telephone Hybrids

CM-TBU Line Powered Telephone Balance Unit
CM-TLL Line Powered Telephone Line Listen Unit



Manufacturers of Audio Products for AV,
Installed Sound, Broadcast Radio & Broadcast TV

SONIFEX

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This handbook is for use with the following product:
CM-TBU Line Powered Telephone Balance Unit
CM-TLL Line Powered Telephone Line Listen Unit
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Artwork: AW10915B

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Made in the UK by **SONIFEX**

SONIFEX Register Online for an Extended 2 Year Warranty

Product: _____

Serial No: _____

www.sonifex.co.uk/register

Product Warranty - 2 Year Extended

As standard, Sonifex products are supplied with a 1 year back to base warranty. In order to register the date of purchase and so that we can keep you informed of any product design improvements or modifications, it is important to complete the warranty registration online. Additionally, if you register the product on the Sonifex website, you can increase your product warranty to 2 years. Go to the Sonifex website at: www.sonifex.co.uk/register to apply for your 2 year warranty.

Sonifex Warranty & Liability Terms & Conditions

1. Definitions

'the Company' means Sonifex Ltd and where relevant includes companies within the same group of companies as Sonifex Limited.

'the Goods' means the goods or any part thereof supplied by the Company and where relevant includes: work carried out by the Company on items supplied by the Purchaser; services supplied by the Company; and software supplied by the Company.

'the Purchaser' means the person or organisation who buys or has agreed to buy the Goods.

'the Price' means the Price of the Goods and any other charges incurred by the Company in the supply of the Goods.

'the Warranty Term' is the length of the product warranty which is usually 12 months from the date of despatch; except when the product has been registered at the Sonifex website when the Warranty Term is 24 months from the date of despatch.

'the Contract' means the quotation, these Conditions of Sale and any other document incorporated in a contract between the Company and the Purchaser.

This is the entire Contract between the parties relating to the subject matter hereof and may not be changed or terminated except in writing in accordance with the provisions of this Contract. A reference to the consent, acknowledgement, authority or agreement of the Company means in writing and only by a director of the Company.

2. Warranty

a. The Company agrees to repair or (at its discretion) replace Goods which are found to be defective (fair wear and tear excepted) and which are returned to the Company within the Warranty Term provided that each of the following are satisfied:

- i. notification of any defect is given to the Company immediately upon its becoming apparent to the Purchaser;

- ii. the Goods have only been operated under normal operating conditions and have only been subject to normal use (and in particular the Goods must have been correctly connected and must not have been subject to high voltage or to ionising radiation and must not have been used contrary to the Company's technical recommendations);
- iii. the Goods are returned to the Company's premises at the Purchaser's expense;
- iv. any Goods or parts of Goods replaced shall become the property of the Company;
- v. no work whatsoever (other than normal and proper maintenance) has been carried out to the Goods or any part of the Goods without the Company's prior written consent;
- vi. the defect has not arisen from a design made, furnished or specified by the Purchaser;
- vii. the Goods have been assembled or incorporated into other goods only in accordance with any instructions issued by the Company;
- viii. the defect has not arisen from a design modified by the Purchaser;
- ix. the defect has not arisen from an item manufactured by a person other than the Company. In respect of any item manufactured by a person other than the Company, the Purchaser shall only be entitled to the benefit of any warranty or guarantee provided by such manufacturer to the Company.

b. In respect of computer software supplied by the Company the Company does not warrant that the use of the software will be uninterrupted or error free.

c. The Company accepts liability:

- (i) for death or personal injury to the extent that it results from the negligence of the Company, its employees (whilst in the course of their employment) or its agents (in the course of the agency);
- (ii) for any breach by the Company of any statutory undertaking as to title, quiet possession and freedom from encumbrance.

d. Subject to conditions (a) and (c) from the time of despatch of the Goods from the Company's premises the Purchaser shall be responsible for any defect in the Goods or loss, damage, nuisance or interference whatsoever consequential economic or otherwise or wastage of material resulting from or caused by or to the Goods. In particular the Company shall not be liable for any loss of profits or other economic losses. The Company accordingly excludes all liability for the same.

e. At the request and expense of the Purchaser the Company will test the Goods to ascertain performance levels and provide a report of the results of that test. The report will be accurate at the time of the test, to the best of the belief and knowledge of the Company, and the Company accepts no liability in respect of its accuracy beyond that set out in Condition (a).

f. Subject to Condition (e) no representation, condition, warranty or other term, express or implied (by statute or otherwise) is given by the Company that the Goods are of any particular quality or standard or will enable the Purchaser to attain any particular performance or result, or will be suitable for any particular purpose or use under specific conditions or will provide any particular capacity, notwithstanding that the requirement for such performance, result or capacity or that such particular purpose or conditions may have been known (or ought to have been known) to the Company, its employees or agents.

- g. (i) To the extent that the Company is held legally liable to the Purchaser for any single breach of contract, tort, representation or other act or default, the Company's liability for the same shall not exceed the price of the Goods.
(ii) The restriction of liability in Condition (g)(i) shall not apply to any liability accepted by the Seller in Condition (c).
- h. Where the Goods are sold under a consumer transaction (as defined by the Consumer Transactions (Restrictions on Statements) Order 1976) the statutory rights of the Purchaser are not affected by these Conditions of Sale.

Unpacking Your Product

Each product is shipped in protective packaging and should be inspected for damage before use. If there is any transit damage take pictures of the product packaging and notify the carrier immediately with all the relevant details of the shipment. Packing materials should be kept for inspection and also for if the product needs to be returned.

The product is shipped with the following equipment so please check to ensure that you have all of the items below. If anything is missing, please contact the supplier of your equipment immediately.

Item	Quantity
Product unit	1
A3 Folded Handbook	1

Repairs & Returns

Please contact Sonifex or your supplier if you have any problems with your Sonifex product. Email technical.support@sonifex.co.uk for the repair/upgrade/returns procedure, or for support & questions regarding the product operation.


CE Conformity

The products in this manual comply with the essential requirements of the relevant European health, safety and environmental protection legislation.

The technical justification file for this product is available at Sonifex Ltd.

The declaration of conformity can be found at:
<http://www.sonifex.co.uk/declarations>

WEEE Directive

 The Waste Electrical and Electronic Equipment (WEEE) Directive was agreed on 13 February 2003, along with the related Directive 2002/95/EC on Restrictions of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS). The Waste Electrical and Electronic Equipment Directive (WEEE) aims to minimise the impacts of electrical and electronic equipment on the environment during their life times and when they become waste. All products manufactured by Sonifex Ltd have the WEEE directive label placed on the case. Sonifex Ltd will be happy to give you information about local organisations that can reprocess the product when it reaches its "end of use", or alternatively all products that have reached "end of use" can be returned to Sonifex and will be reprocessed correctly free of charge.

Atmosphere/Environment

This apparatus should be installed in an area that is not subject to excessive temperature variation (<0°C, >50°C), moisture, dust or vibration.

This apparatus shall not be exposed to dripping or splashing, and no objects filled with water, such as vases shall be placed on the apparatus.

1. CM-TBU Line Powered Telephone Balance Unit



Fig 1-1: Front and Rear View of the CM-TBU Line Powered Telephone Balance Unit

The CM-TBU line-powered telephone balance unit provides a high degree of separation between send and receive signals, enabling 4-wire communications systems to interface with the telephone network. In telephone IFB applications, the high drive capacity at the 4-wire output enables a presenter's earpiece to be connected directly to the unit without an external amplifier.

Features

- Isolated, full-duplex 4-wire interface to non-digital telephone direct exchange lines (PSTN).
- The unit is line powered, requiring no battery or external power.
- Simple optimization of sidetone rejection with any country's telephone system.
- LED's indicate "ring" and "off hook" conditions.
- Input level control with line-sensing limiter and limit indicator.
- High drive output with level control for direct feed to presenter's earpiece, etc.
- Loop-through RJ11 line sockets provide universal connection to line and telephone set.
- Connection to the telephone set is maintained while the unit is in use.
- Small, rugged metal case with XLR3 male & female 4-wire connectors.

Description

This extremely compact unit is powered from the telephone line and provides an interface to a 4-wire circuit with separate level control of send and receive signals. Optimum rejection of the input signal on the 4-wire output is achieved in a bridge circuit by adjusting three elements which simulate the complex line impedance. This can be used to compensate for local line variations or to adapt to the telephone systems of other countries, where line characteristics may differ. Optimization of the sidetone rejection does not involve the use of any test equipment and can be easily carried out while the system is in use.

Although the signal level being sent to the line can be manually adjusted over a wide range, the level control is followed by a limiter which senses the available DC line voltage to ensure that the line signal is not distorted. The limiter drives an LED to indicate the onset of limiting.

Although the output stage can drive a presenter's earpiece in a telephone IFB application, the level control may not be accessible to the presenter, who will normally be situated some distance from the unit. The presenter may then require to have local control of the earpiece signal level, this should be provided by the use of a headphone belt pack unit. ▶

To enable communication between the 4-wire circuit and the telephone network, the 4-wire and line connections are made to the unit and the "hook" switch is pressed to power the unit from the line. This will be indicated by the ON LED, and can either be done after an outgoing call has been dialled on a telephone set connected to the unit, or to answer an incoming call after the RING LED is seen to flash, (a telephone set is not required for incoming calls unless an audible ring is required). If the sidetone level at the 4-wire output is found to be excessive, the outgoing signal level should be reduced or the balance controls adjusted to minimise it. In addition to the RJ11 line sockets there is a cable set including converters for British Telecom standard UK telephone connectors as necessary.

Technical Specifications CM-TBU

4-Wire Input

Input Impedance: 10k Ω , transformer coupled on XLR3F connector.

Input Level Range: -10dBu to +4dBu before limiting, with average line.

4-Wire Output

Output Impedance: 150 Ω , transformer coupled on XLR3M connector.

Output Level Range: -10dBu to +6dBu, for average line level.

Sidetone Rejection 30 to 40dB average on a tone, depending on line characteristics.

2-Wire

Off-Hook Voltage 8V minimum 12V average.

2-Wire Connectors 2 x RJ11 (American).

Physical

Case Extruded aluminium natural anodised.

Dimensions: 43mm (H) x 78mm (W) x 95mm (L).

Weight: 270g.

2. CM-TLL Line Powered Telephone Line Listen Unit



Fig 1-2: Front and Rear View of the CM-TLL Line Powered Telephone Line Listen Unit

The Sonifex CM-TLL provides a professional level audio output from a telephone line. The line-powered unit is compatible with all analogue direct exchange lines, and includes LED indication of incoming calls and line connection. The unit is intended to be used with an earpiece amplifier to receive an audio feed by telephone from the studio.

Features

- Audio interface from analogue direct exchange lines to receive audio with electrical isolation from line.
- Line powered - requires no battery or external power.
- Indicator LED's show "ring" and "in use" conditions.
- Loop-thru line sockets provide in-line connection with existing telephone.
- Line connections via RJ11 connectors.
- Existing telephone remains connected when the unit is in use.
- XLR3 male audio connector.
- Small, rugged metal case.

Description

The line and telephone set are connected to the unit in order to make an outgoing call. A telephone may not be required if calls are only incoming, as telephone line ringing is indicated by a flashing LED built into the unit. In either case, the "LINE CONNECT" switch is pressed to make the line connection. The ON LED then indicates that the unit is powered and that the audio circuit is routed to the line via the output XLR plug. If needed, suitable adaptors can be connected to either of the RJ11 line sockets to enable the unit to be used with the public telephone system in any country.

Technical Specifications CM-TLL

Audio Output

Output Impedance 150 Ω (nominal), transformer coupled on XLR3M connector

Output Level Nominally 0dBu transformer coupled on XLR3M connector

2-Wire

Off-Hook Voltage 8V minimum 12V average.

2-Wire Connectors RJ11

Physical

Case Extruded aluminium natural anodised.

Dimensions: 43mm (H) x 78mm (W) x 95mm (L).

Weight: 220g.