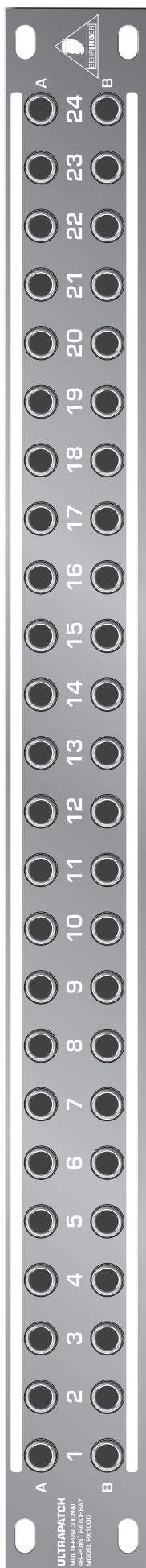


ULTRAPATCH

PX1000



www.behringer.com

User's Manual

Version 1.2 May 2003

ENGLISH



ULTRAPATCH PX1000

Welcome to the BEHRINGER family!

Thank you very much for expressing your confidence in BEHRINGER products by purchasing the ULTRAPATCH PX1000. The PX1000 is a multi-functional balanced 48-point patchbay for studio and stage applications.

A patchbay allows you to patch the audio signals of most components in your studio from a central point and send them to other units, making your entire cabling better structured and optimally suited for professional work. If you want to use your studio as effectively as possible, it is preferable to use a complete patchbay wiring scheme, but even smaller studio configurations will benefit from less complex patchbay configurations.

1. PATCHBAY CONFIGURATION

The majority of commercially available patchbays include two rows of 24 phone jacks in a single 19" rack panel. On the rear, either a corresponding number of phone jacks or contacts for soldering signal leads can be found. Each group of four phone jacks forms one module. The configuration of some patchbays can be changed by inserting jumpers or turning individual modules.

As an owner of our ULTRAPATCH PX1000, you have at your disposal a 48-plug patchbay featuring only balanced TRS connectors. It is very easy to use and can be operated in 5 different modes. Based on the kind of connections you are using, you can decide how individual operating modes function. You should always ask questions such as what happens when I connect a signal with the connector (A) at the rear? Where can I take the signal? Does an additional signal, such as the signal connected to the connector (B) at the front, change the signal flow? The following chapters focus on the PX1000 operating modes.

1.1 Mode 1

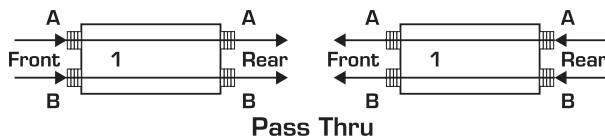


Fig. 1.1: Pass Thru configuration (Mode 1)

When you connect a stereo signal (or two mono signals) to both connectors at the front (A and B), the adjacent audio signals A and B are separately routed from the front to the rear of your patchbay. The same is true vice versa: if both connector A and connector B have a signal connected to them at the rear, each of these signals is separately routed to the front. For example, you may use this mode to connect mixer outputs to compressor inputs or compressor outputs to tape inputs.

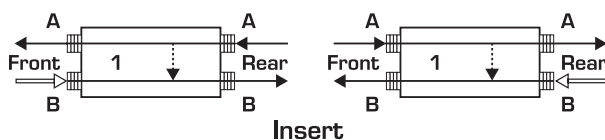


Fig. 1.2: Insert configuration (Mode 1)

Fig. 1.2 illustrates how inserts are wired. Let's say, a signal is connected to the upper rear connector (A). This signal is now routed to the front via the connector (A) and routed to the rear via connector (B). Only when the lower front connector (B) is used, the sketched signal flow is interrupted so that both upper connectors and both lower connectors have contact. This operating mode is what we call "input break". It also functions vice versa (see fig. 1.2), whereby the signal flow is interrupted as soon as connector (B) at the rear has a signal connected to it. Mode 1 is for example suitable for connecting the master inserts of your mixing console to the in/outputs of your compressor.

Similarly, channel inserts can be connected to the in/outputs of your equalizer.

1.2 Mode 2

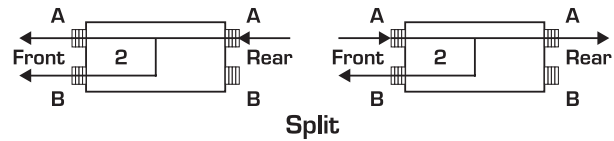


Fig. 1.3: Split configuration (Mode 2)

If a signal is connected to the upper rear connector (A) (whereby connector (B) at the rear has to remain free in this case), the signal is routed to both front connectors (A and B). However, you can also feed a signal to the (A) connector at the front in order to take this signal at the upper rear connector (A) and at the lower front connector (B). This way, a signal can be split to feed two amplifiers or two recorders.

1.3 Mode 3

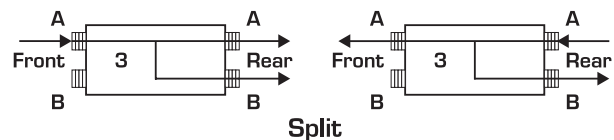


Fig. 1.4: Split configuration (Mode 3)

This mode is very similar to mode 2. In this case, the signal is also being split, but here it can be taken at the connector (B) on the rear. Thus, in this case you can also split a signal to feed two amplifiers, but you decide if you prefer mode 2 or mode 3.

1.4 Mode 4

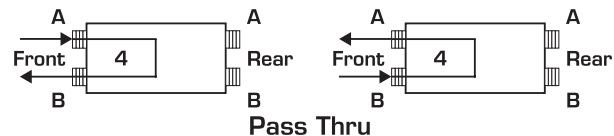


Fig. 1.5: Pass Thru configuration (Mode 4)

Here, the contacts of the connectors A and B at the front are connected to one another. Prerequisite: both of the connectors at the rear remain free. What this practically means is that one of the front connectors (A or B) receives the signal, and the remaining front connector serves as its output.

1.5 Mode 5

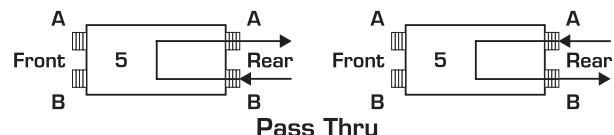


Fig. 1.6: Pass Thru configuration (Mode 5)

Here, the contacts of jacks A & B on the rear are interconnected. The configuration is the same as in mode 4. However, in contrast to mode 4, this mode is usually deployed for equipment in a fixed installation. For example, most recording studios have the mixer's outputs connected to the recorder's inputs most of the time. It is very convenient to have the signal path through the patchbay in this manner, with the permanent connections made at the rear. This also allows you to intercept, divert or replace the signal easily at the front of the patchbay in a number of ways by inserting a plug into one of the front jacks (A or B).

2. LOOMING PROBLEMS

Loom wiring is an art in itself, and it is worth the time to get it right. First, it is important to avoid ground loops (a looped wire acts like an antenna, picking up hum and electromagnetic radiation). Think of a tree. Every part of that tree is connected to every other part, but only by one route. That's how the total grounding picture for your entire studio should look. Don't remove the ground connection of your mains cable plug to reduce audible 50/60 Hz mains hum. Instead, you should disconnect the signal shield somewhere (one or several audio cables) in the signal chain.

It is good practice to ensure that all screens are commoned at the patchbay, in which case all equipment would be grounded from this point via a single screen (more than one route = an earth loop), while mains-earthed equipment would have all screens cut at the equipment end.

Some equipment has an independent signal and mains grounding. In this case, at least one screen should ground the equipment. Sometimes, the only way to find out is "suck and see".

Please assure that using the patchbay does not disturb the studio's grounding architecture. Always use patch leads that are as short as possible with the screen connected at both ends.

After removing the mains hum from the system, make up your cable looms from the patchbays outwards, and use cable ties, flexible sheaths, multicores, etc. to keep the back of your racks orderly.

3. CAUTIONS

Avoid routing digital signals near a patchbay because the pulse signal used for the transmission of such signals causes heavy interference in analog signals. Additionally, normal patchbays change the impedance of the digital cable route, which causes interference in the digital path. Use the BEHRINGER ULTRAMATCH PRO SRC2496 specifically designed for this and other digital signal-related functions.

Microphone inputs operate at a level several orders of magnitude lower than line levels (+4 dBu or -10 dBV). Therefore, they should never be routed via a patchbay. In any case, patching in a field with +48 V DC (phantom power) is to be avoided at all costs. It is best to plug mics directly into the mixing console or via special XLR type wall boxes connected to the mic inputs of the console using good quality balanced multicore cables.

4. LABELLING

With so many patch points in use at any one time, you will probably never be able to keep track of them without labelling. Your BEHRINGER ULTRAPATCH PX1000 features white labels above the upper jacks and white labels below the lower jacks for the purpose of labelling. When labelling, it is advisable not to use permanent markers as you may want to re-label, if you decide to re-configure your patchbay signal routing again.

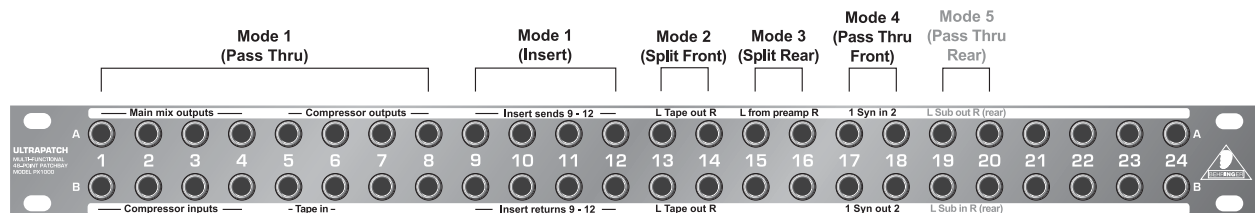
5. PATCHBAY ORGANIZATION

Attached is an example configuration that shows how you can use your patchbay. This is only an example to illustrate the use of your PX1000. Depending on your application, you may need several PX1000s. It should be noted that patchbays should be placed one below the other in such a way that the patch cords don't hang carelessly over the patchbays.

6. SPECIFICATIONS

Height	1 3/4" (44.5 mm)
Width	19" (482.6 mm)
Depth	2 3/4" (69.3 mm)
Weight	approx. 1.3 kg (2 7/8 lbs)
Connectors	1/4" TRS balanced

BEHRINGER is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or shown.



ULTRAPATCH PX1000

7. WARRANTY

§ 1 WARRANTY CARD/ONLINE REGISTRATION

To be protected by the extended warranty, the buyer must complete and return the enclosed warranty card within 14 days of the date of purchase to BEHRINGER Spezielle Studioteknik GmbH, in accordance with the conditions stipulated in § 3. Failure to return the card in due time (date as per postmark) will void any extended warranty claims. Based on the conditions herein, the buyer may also choose to use the online registration option via the Internet (www.behringer.com or www.behringer.de).

§ 2 WARRANTY

1. BEHRINGER (BEHRINGER Spezielle Studioteknik GmbH including all BEHRINGER subsidiaries listed on the enclosed page, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 3 and 4, BEHRINGER shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts.

2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.

3. Warranty claims other than those indicated above are expressly excluded.

§ 3 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER (see enclosed list) during normal business hours **BEFORE** returning the product. All inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.

2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by BEHRINGER.

3. Shipments without freight prepaid will not be accepted.

§ 4 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement by BEHRINGER under the terms of this warranty will be repaired or replaced within 30 days of receipt of the product at BEHRINGER.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, potentiometers, keys/buttons and similar parts.

4. Damages/defects caused by the following conditions are not covered by this warranty:

▲ improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals.

▲ connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.

▲ damages/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER.

5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.

6. If an inspection of the product by BEHRINGER shows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer.

7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. BEHRINGER will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, BEHRINGER will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

§ 5 WARRANTY TRANSFERABILITY

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of BEHRINGER.

§ 6 CLAIM FOR DAMAGES

Failure of BEHRINGER to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of BEHRINGER exceed the invoiced value of the product.

§ 7 OTHER WARRANTY RIGHTS AND NATIONAL LAW

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

* Customers in the European Union please contact BEHRINGER Germany Support for further details.

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BEHRINGER Spezielle Studioteknik GmbH, Hanns-Martin-Schleyer-Str. 36-38, 47877 Willich-Münchheide II, Germany

Tel. +49 2154 9206 0, Fax +49 2154 9206 4903