



polytip expander

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Credits

Designed in Bristol, UK by Archaea. Many thanks to Michael Gray (Attiph) for beta testing.

MADE IN THE UNITED KINGDOM

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First of all, thank you for purchasing this module from Archaea! We hope this provides you with a fun and useful way of integrating Exchange into your [TipTop Audio ART system](#) or other [Polytip](#) enabled modules.

Overview

The Exchange Polytip Expander is an add-on to the [Exchange](#) module for bringing patch chain signals out to Polytip connectors on the front panel. This allows Exchange modules to interface to Polytip-compatible modules directly by converting each 8-channel patch chain connection to a single Polytip connection. Four Polytip and four corresponding patch chain connections are provided, giving a total of 32 channels.

Polytip Expander modules can be connected to the chain inputs or outputs of the Exchange module. The Polytip Expander also allows bulk connections between Exchange modules with a single Polytip cable within a rack, or between racks. Two Polytip Expanders can be connected together directly using the patch chain to pass Polytip signals between two points in a rack, eliminating the need for cables to criss-cross the front panel.

Note: Polytip connectors are not compatible with standard USB-C cables. They must be used with Polytip cables.

Front Panel Connections

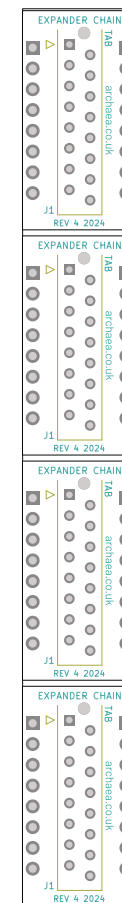
The front panel of the Polytip Expander is shown in the diagram to the right, **Front Panel**. There are four Polytip sockets which connect to four patch chain connectors on the rear of the module. Each Polytip socket can be used independently as either an input or an output, depending on how the module is connected to other modules via the corresponding patch chain connector.

Front Panel



Polytip Connectors
The four Polytip sockets on the panel can be connected to ART modules using Polytip cables. The Polytip sockets can be used independently as either inputs or outputs. Note, these sockets are not compatible with USB-C cables.

Rear Panel



Patch Chain Connectors
The patch chain connectors correspond from top to bottom with the four Polytip sockets. They provide the 8 signal lines of each Polytip to the chain connector. They are connected using patch chain cables to the signal chain connectors on an Exchange module, or an Exchange compatible module.

IMPORTANT: When connecting patch chain cables, take care to align the tab on the cable with the hole in the board where the receiving connector is mounted. The stripe orientation on a chain cable is indicated by a solid line on the board.

Rear Panel Connections

The rear panel, shown in **Rear Panel** above, has four patch chain connectors corresponding from top to bottom with the four front panel Polytip sockets. Patch chains are the 8-way connections between Exchange modules (see the [Exchange manual](#) for more details). A patch chain is formed by connecting a series of modules together with cables attached to these rear connectors.

Polytip Expander ships with a 20cm patch chain connector cable. Additional patch chain cables of various lengths are available from archaea.co.uk. Polytip Expander is a passive module and requires no power connection.

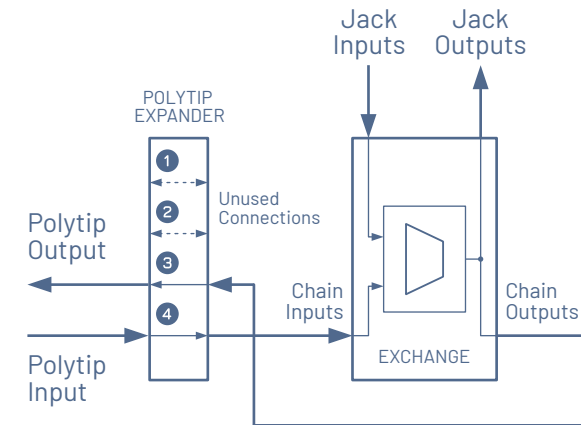
IMPORTANT: When connecting chain cables or the terminator, take care to align the tab on the cable or terminator connector with the hole in the board where the receiving connector is mounted. The stripe orientation on a chain cable is indicated by a solid line on the board.

Using Polytip Expander with Exchange

Polytip Expander can be used to access the chain inputs or outputs of an Exchange module. This allows the 8 signals in a Polytip cable to be connected to the 8 inputs or outputs of Exchange with a single front panel connection. The Polytip Expander allows Exchange to process signals entering or leaving Polytip-enabled modules, or process the signals between Polytip connections. This can include muting, swapping, 'multing', injecting, or extracting channels.

The diagram to the right shows an example connection of the Polytip Expander with Exchange. Polytip socket 4 is used as the input to the Exchange module, and socket 3 as the output. When no jacks are inserted into the jack inputs of Exchange, or the chain inputs are selected, then the Polytip input signals are fed into the Exchange switching matrix. The outputs from the matrix go to both the jack outputs and the chain outputs, and then onto the Polytip output.

Using Polytip Expander with Exchange

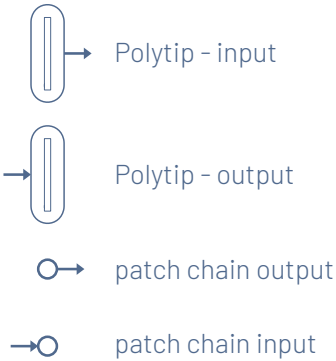


Note: The arrows in the diagram represent all 8 connections.

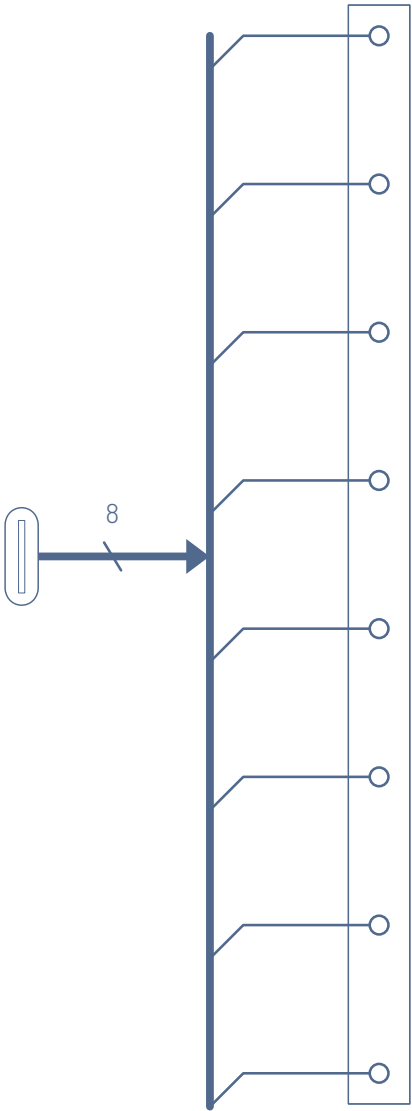
Exchange can switch the 8 signals of the Polytip input to the 8 signals of the Polytip output, allowing for muting, swapping and multing. Additionally, by connecting a jack to an Exchange jack input, the corresponding Polytip signal is replaced by the jack signal. This injects an individual signal into the Polytip connection. An individual signal can be extracted by connecting a jack to an Exchange output.

Any of the four Polytip connections can be used with the chain connections. A single Polytip Expander can provide Polytip connections to the chain inputs and outputs of up to two Exchange modules.

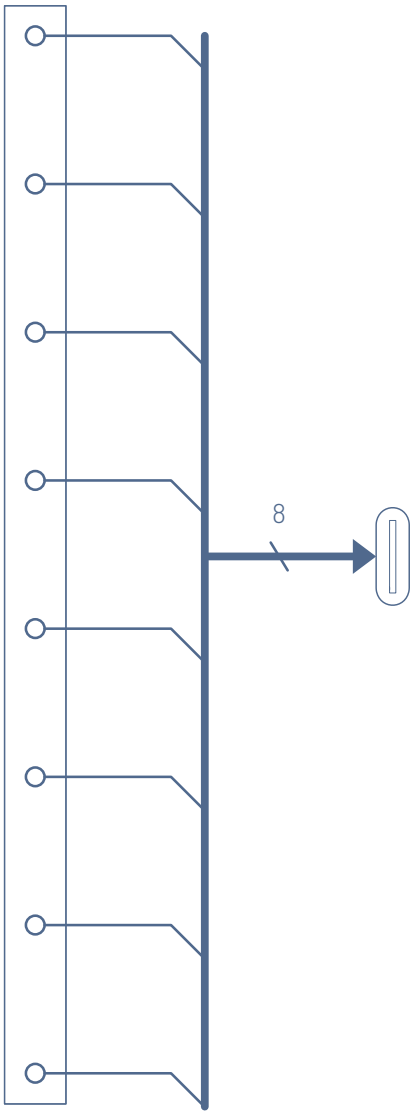
Note: If a Polytip cable is removed from an Expander connected to an Exchange, then the chain inputs to the Exchange will 'float', they will not have a defined level. To prevent the Exchange outputs floating also, it is recommended to set the Exchange outputs as not patched to the inputs.



INPUT POLYTIP CONFIGURATION



OUTPUT POLYTIP CONFIGURATION





Features

- 4 Polytip sockets, each with 8 channels, giving 32 channels in total, usable either as inputs or outputs
- 4 patch chain connectors for connecting to Exchange patch chains (on module rear)

Measurements

Width	3HP (15mm)
Height	3U (Eurorack, 128.5mm)
Depth requirement for skiff/rack	24mm (including patch chain cable)
Current requirement	Passive, no power consumption

Safety Instructions

1. Keep this equipment away from water.
2. Clean only with a dry cloth.
3. Keep away from sources of heat, such as radiators or other apparatus that produces heat.
4. Operating temperature range 5° to 45°C (41° to 113°F).

This product is not designed or intended to be used by children.

Warranty

Archaea Modular Synthesis Ltd warrants this product to be free of defects in materials or workmanship and to conform with the specifications at the time of shipment for two years from the date of purchase. During that period, any malfunctioning or damaged units will be repaired, serviced, and calibrated on a return-to-factory basis. This warranty does not cover any problems resulting from damages during shipping, incorrect installation or power supply, improper working environment, abusive treatment, or any other obvious user-inflicted fault. For more information contact support@archaea.co.uk quoting the serial number, which can be found on the reverse of the product.

Disposal



This product must NOT be disposed of with household waste. It should be taken to a recycling centre licensed for the recycling of waste electrical and electronic equipment (EEE). Please contact your local city office for more information of where you can take waste equipment.

Legal Disclaimer

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