

# Qualis Test Systems

## High Performance Audio Switching Matrices



### Overview

The QTS family of high performance audio switching matrices provide expansion of two channel audio test equipment to multiple channels of input and output. They are available in three basic models, each available with a choice of connector types. The QTS-12X2 interfaces up to twelve outputs of a device under test to the two inputs of an audio test system. The QTS-2X12 interfaces the two outputs of an audio test system to as many as twelve inputs of a device under test. Up to sixteen of each unit may be used to interface as many as 192 input channels and 192 output channels of device under test. The QTS-2772 interfaces up to seven outputs and simultaneously interfaces up to seven inputs of a device under test to the two inputs and outputs of an audio test system.

### Performance

The Qualis Test Systems QTS-12X2, QTS-2X12 and QTS-2772 are the highest performance devices of this type available anywhere. Extreme care has been taken in the design and layout to reduce crosstalk to almost unmeasurable levels, unmatched by any other switching matrix on the market. The internal circuit routing, ferrous enclosure and external power supply eliminate interfering mains hum from both internal and external sources.

### Convenience

The Qualis Test Systems switching matrices have been designed to eliminate common application errors. Channel selection is clearly indicated by colored front panel LEDs. Address selection switch settings are labeled on the product itself, eliminating the need to consult the manual. The QTS-2X12 output switching matrix connections to the generator are on the left while the QTS-12X2 input switching matrix analyzer connections are on the right; both are aligned with the usual locations on the test equipment.

Two pin sockets are provided on each channel for termination and back termination purposes. With output switching matrices, these allow back-termination of unselected DUT inputs with any desired source resistance. Units are factory fitted with 600 Ohms. On input switching matrices, these allow termination of unselected DUT signals with any desired load. No input terminations are installed at the factory.

The unit is isolated from mains ground to reduce ground loops. A chassis ground screw is provided on the rear panel.

The QTS series switching matrices are supplied with rack ears and rubber feet as standard accessories. This allows rack mounting or desktop use without purchasing any additional accessories.

### Compatibility

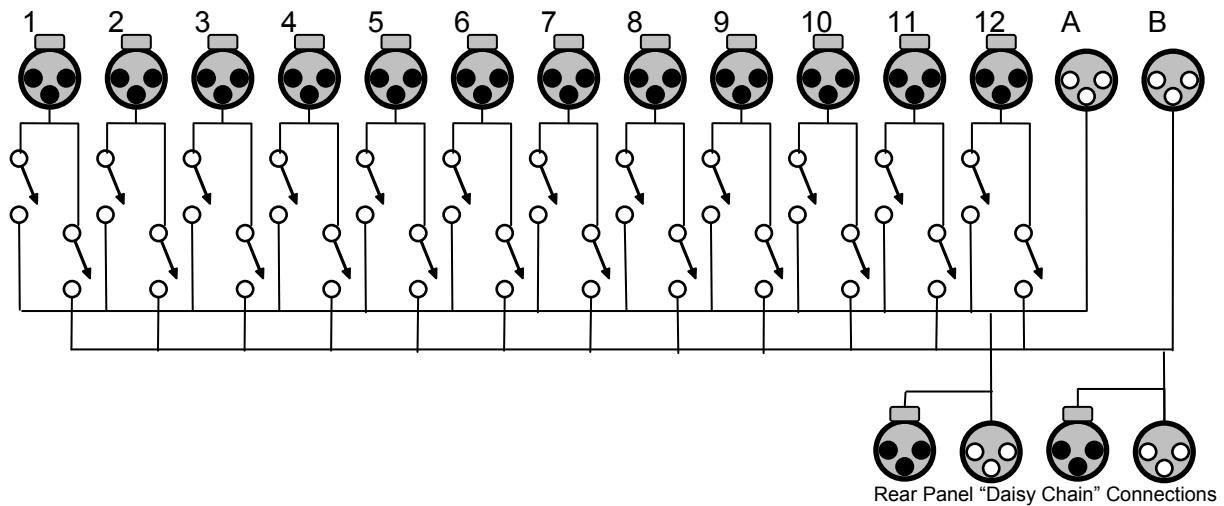
The Qualis Test Systems QTS-12X2 and QTS-2X12 have been designed to functionally replace competitive products. They do not require any changes to test set-ups or automation scripts in such applications.

## QTS-12X2 High Performance Input Switching Matrix

The QTS-12X2 allows connection of up to 12 output channels of a device under test to the two input channels of common audio measurement equipment. Any one of the 12 channels may be routed to each of the two analyzer inputs.



The QTS-12X2 operation may be understood by examining the simplified schematic shown below.

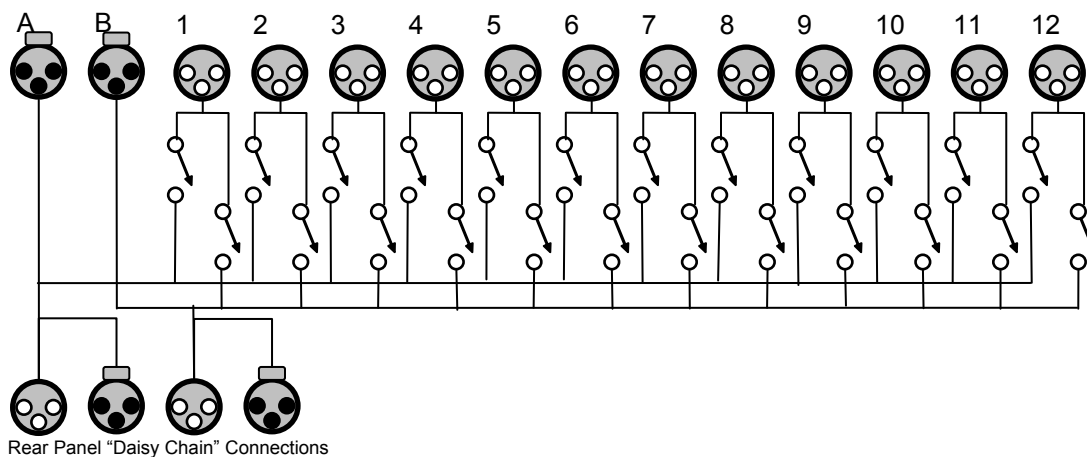


## QTS-2X12 High Performance Output Switching Matrix

The QTS-2X12 allows driving up to 12 input channels of device under test from the two output channels of common audio measurement equipment. Any one of the 12 channels may be driven from either of the two generator outputs.



The QTS-2X12 operation may be understood by examining the simplified schematic shown below.



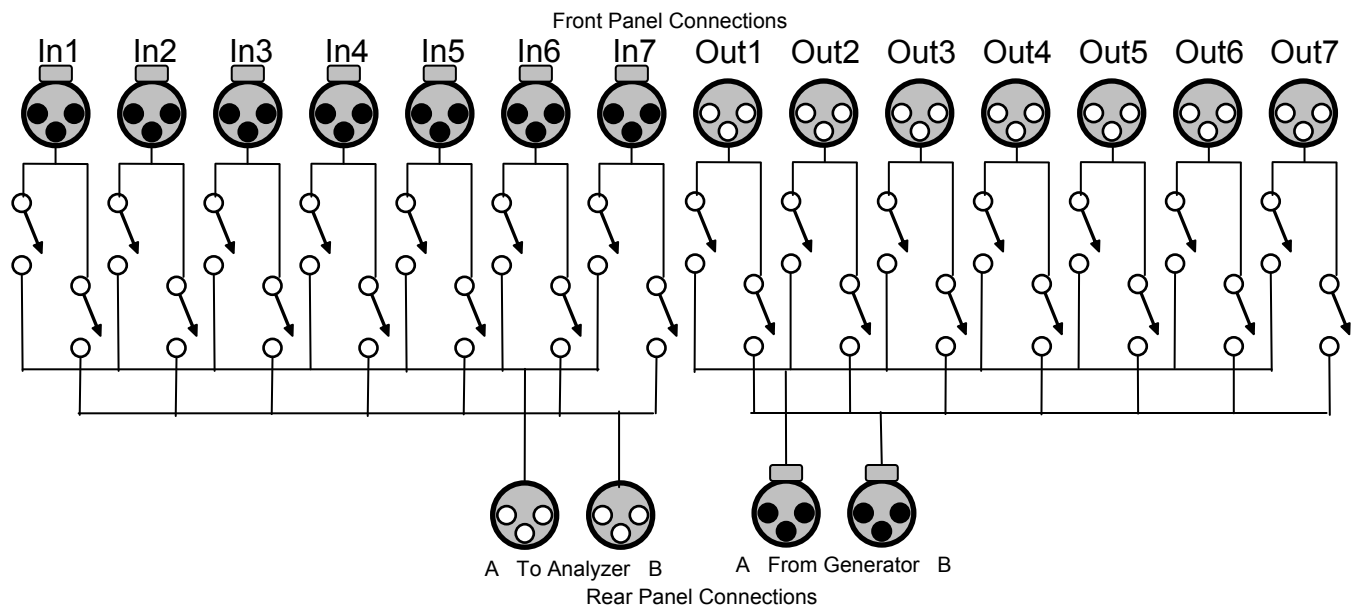
## QTS-2772 High Performance Switching Matrix

The QTS-2772 high performance switching matrix provides both input and output functions in one package. It allows driving up to 7 input channels of device under test from either of the two output channels of common audio measurement equipment. It also allows connection of 7 output channels of a device under test to either of the two input channels of common audio measurement equipment. No provision is made for expansion using multiple units.

The DUT connections are on the front, the test equipment connections are on the rear, as shown below.



The QTS-2772 operation may be understood by examining the simplified schematic shown below.



## Audio Connections

### XLR versions (QTS-12X2F, QTS-2X12M, QTS-2772X)

DUT input and output connections appear on 3-pin "XLR" or "Canon" connectors located on the front. Test equipment connections are also XLRs.

### BNC versions (QTS-12X2B, QTS-2X12B, QTS-2772B)

The DUT input and output connections appear on standard BNC connectors. Test equipment connections are also BNCs. RCA connections to the DUT can be accommodated by BNC to RCA cables or adapters on the DUT connections.

## Specifications (All Models, All Versions)

Crosstalk (maximum between any two channels)	
Balanced 600 $\Omega$ load	-145 dB @ 20 kHz -130 dB @ 100 kHz
Unbalanced 600 $\Omega$ load	-123 dB @ 20 kHz -110 dB @ 100 kHz
Allowable applied voltage	200 Vpk, 160 Vrms maximum
Allowable load current	200 mA maximum
Allowable load power	5 W maximum
Series resistance	< 0.3 $\Omega$ , each side, typical
Shunt capacitance to ground	< 90 pF, each side, typical
Operating temperature range	+5 C to +40 C
Humidity	80% RH, non-condensing
Altitude	-500 to +2500 m
Power requirements	95-250 Vac, 50/60Hz, 10 VA
Power module output	5Vdc, 1A
Dimensions (w, h, d)	42.55 x 4.45 x 19.05 cm 16.75 x 1.75 x 7.5 inches
Weight	2.8 kg (7 lbs), without accessories

## Supplied Accessories

- 25 pin, EMI shielded, computer interface cable
- Rubber feet for tabletop use
- Universal input power supply

## Optional Accessories

- Rack ears

## Warranty

Qualis Test Systems warrants its instruments to be free from defects in materials and workmanship for a period of three (3) years from the date of shipment. During the warranty period, we will, at our option, either repair or replace any product that proves to be defective. Send the product, transportation prepaid, to the indicated service facility. Repairs will be made and the product returned, transportation prepaid. Repaired or replaced products are warranted for the balance of the original warranty period, or at least 90 days.

## Pricing

QTS-12X2F, QTS-2X12M	\$1175.00
QTS-12X2B, QTS-2X12B	\$1225.00
QTS-2772X	\$1425.00
QTS-2772B	\$1475.00

## Qualis Test Systems

PO Box 731 Lake Oswego, OR 97034

Fax (503) 635-3851 [www.qualistest.com](http://www.qualistest.com) [sales@qualistest.com](mailto:sales@qualistest.com)