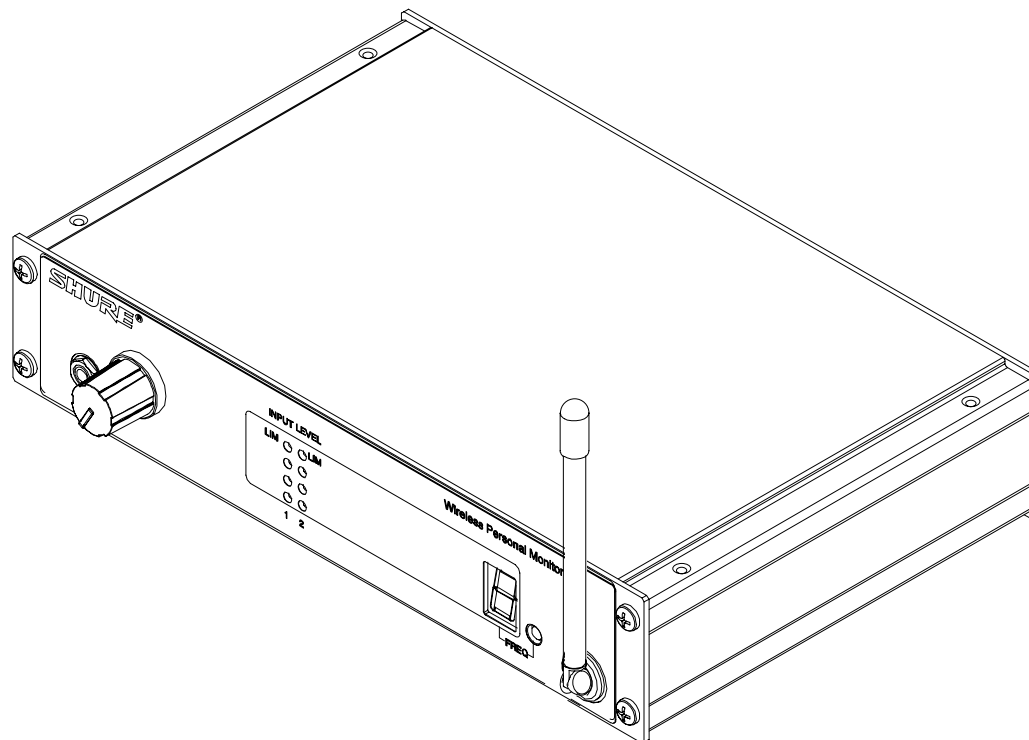




Shure Incorporated
222 Hartrey Avenue
Evanston IL 60202-3696 U.S.A.

Model P4T Transmitter User's Guide



P4T Transmitter



WARNING!

**USING THIS SYSTEM AT EXCESSIVE VOLUMES CAN CAUSE PERMANENT HEARING DAMAGE.
USE AS LOW A VOLUME AS POSSIBLE.**

In order to use this system safely, avoid prolonged listening at excessive sound pressure levels. Please use the following guidelines established by the Occupational Safety Health Administration (OSHA) on maximum time exposure to sound pressure levels before hearing damage occurs.

90 dB SPL at 8 hours
95 dB SPL at 4 hours
100 dB SPL at 2 hours
105 dB SPL at 1 hour
110 dB SPL at $\frac{1}{2}$ hour
115 dB SPL at 15 minutes

120 dB SPL — avoid or damage may occur

It is difficult to measure the exact Sound Pressure Levels (SPL) present at the eardrum in live applications. In addition to the volume setting on the PSM, the SPL in the ear is affected by ambient sound from floor wedges or other devices. The isolation provided by the fit of quality earpieces is also an important factor in determining the SPL in the ear.

Here are some general tips to follow in the use of this product to protect your ears from damage:

1. Turn up the volume control only far enough to hear properly.
2. Ringing in the ears may indicate that the gain levels are too high. Try lowering the gain levels.
3. Have your ears checked by an audiologist on a regular basis. If you experience wax buildup in your ears, stop using the system until an audiologist has examined your ears.
4. Wipe the ear molds with an antiseptic before and after use to avoid infections. Stop using the earphones if they are causing great discomfort or infection.



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

FCC Statement. The P4R Receiver complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device does not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Licensing Statement. A user license may be required for operation. Contact the communications authority in your country for more information.

Modifications to Approved Equipment. Changes or modifications not expressly approved by Shure Brothers Incorporated could affect compliance with telecommunications standards, thereby voiding the user's authority to operate this product.

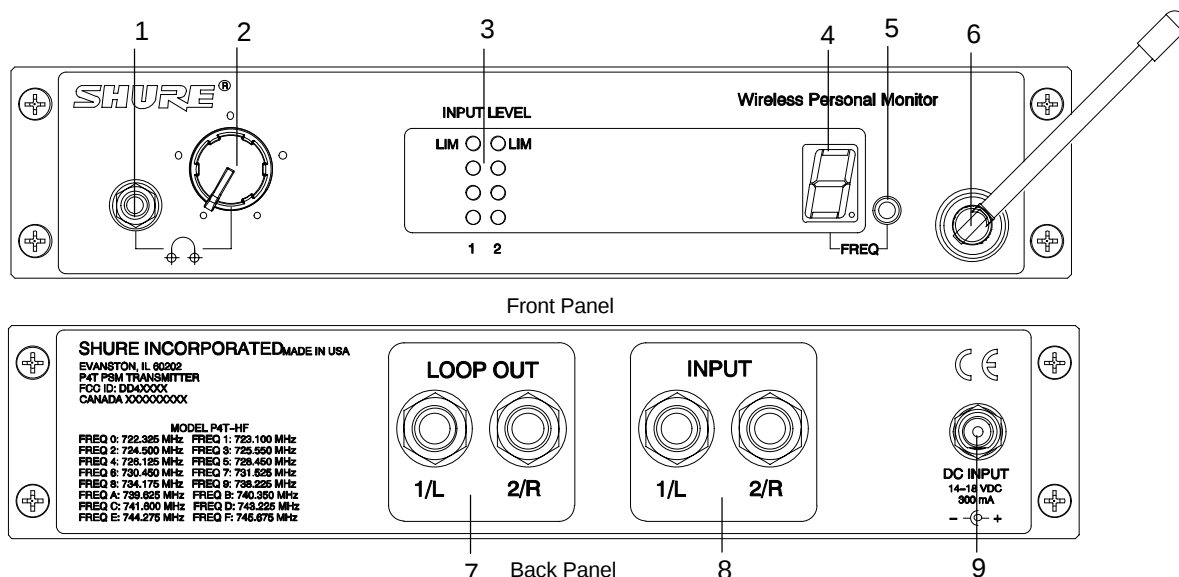
Introduction

Thank you for buying the P4T Transmitter. The P4T is a component in the PSM400 family of wireless personal monitors. When used in conjunction with a P4R Receiver, it provides the many advantages of an in-ear monitoring system, including:

- Improved Sound Quality - high fidelity without the risk of feedback,
- Increased Mobility - your mix moves with you,
- Personal Control - through volume adjustment and MixMode.

This user's guide covers the use and features of the P4T Transmitter. For further instruction on the use of the PSM400 system, see the PSM400 system user's guide, available on the web at www.shure.com.

P4T Transmitter Features



1. **Local Earphone Output Jack (1/8 inch):** Connects to E1 or E5 earphones.
2. **Local Earphone Level Control:** This knob adjusts the volume of the local earphone jack's amplifier. Always listen at low levels.
3. **Input Level LEDs:** Two vertical strings of four LEDs display the input level of the left and right input channels. The four LEDs on the left displays the status of the signal from channel 1 and the four LEDs on the right displays the status of the signal from channel 2:

LED	Signal Status
RED (top)	Limiter Active
YELLOW (middle)	Nominal Level
GREEN (bottom two)	Signal Present

4. **Frequency Select LED:** This indicates which of the 16 Channels (0 - 9 and A - F) is selected.
5. **Frequency Select Button:** This recessed button allows the transmission channel to be changed. To use, hold down the button until the desired channel number is displayed in the LED. Release the button and the number will flash. Quickly push and release the button again to confirm changes.
6. **Front-Mounted Antenna:** The unit's antenna is permanently attached and break-resistant.
7. **Loop Out Jacks:** Two 1/4" TRS jacks allow the audio signal to pass through the transmitter to other devices, such as other transmitters, tape recorders, or amplifiers.
8. **Input Jacks:** Two 1/4" TRS Switching Jacks for line level audio inputs. If only one input is used, the signal will be routed to both sides of the modulator for Mono operation. If both Jacks are used, the signals will be transmitted in Stereo/MixMode.
9. **12VDC Locking Connector:** Input for PS40 Power Cord.

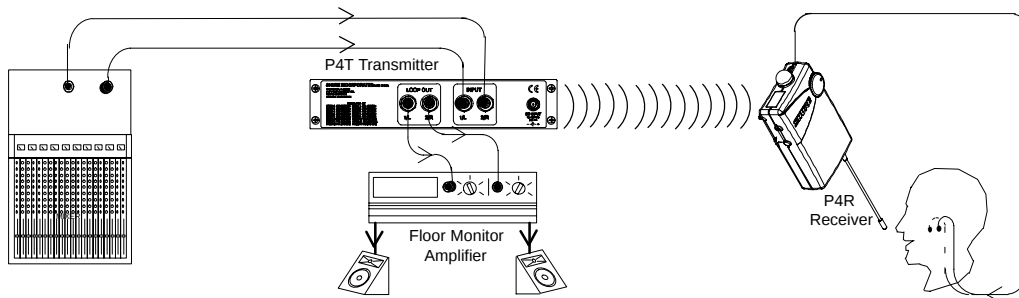
Set Up and Operation

Follow these directions to set up the P4T for operation.

1. Plug the power cord into the P4T's 12 VDC locking power connector. Plug the other end of the power cord into a wall outlet.
2. Connect line level outputs of an audio source into the audio inputs of the P4T transmitter. Use both of the P4T's input jacks for a two-channel source. Use either input jack for a mono source. The P4T Transmitter will transmit in MixMode/Stereo if both inputs are used, but will automatically transmit in mono if only one input is used.
NOTE: All inputs are phantom power protected up to 50 VDC.
3. Select an operating frequency using the Frequency Select Button. The selected frequency will be displayed in the LED.
IMPORTANT: Never set more than ONE transmitter to the same operating frequency.
4. Once audio is being transmitted by the P4T, observe the Input Level LEDs. If the input signal is consistently causing the red LED to illuminate, decrease the output level of the audio source until the red LED only flickers occasionally.
5. Set up the P4R receiver as directed in the P4R user's guide, making sure that the frequency selected on the receiver matches the frequency selected on the transmitter.

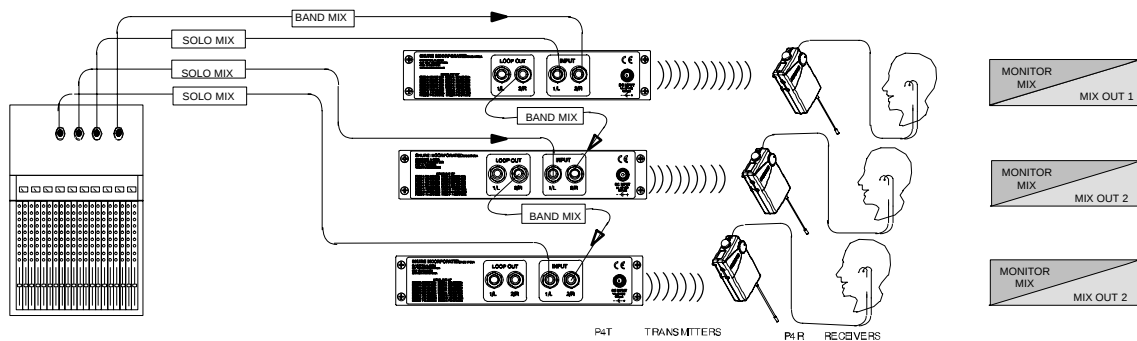
LOOP Applications

The LOOP OUT L (left) and R (right) outputs allow the signal going through the P4T to be routed to other devices. The LOOP feature of the P4T can be used for any number of applications. Shown here are only a few examples of how it can be used.



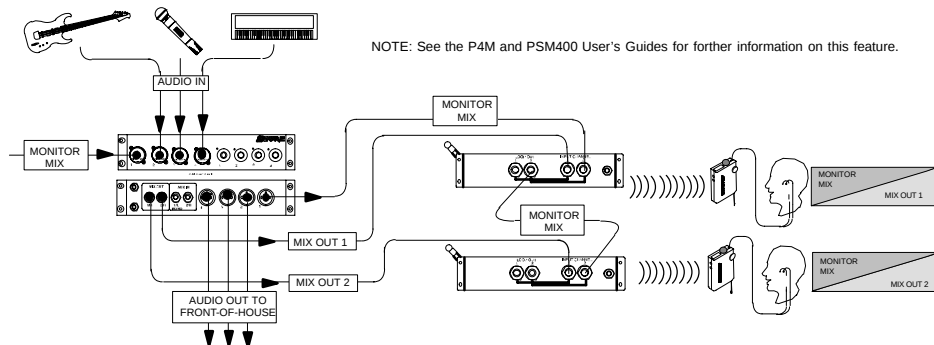
Running Floor Monitors Through a P4T Transmitter

An audio signal can be sent through the LOOP connectors to an amplifier for an onstage monitor system. When setup this way, the P4R and the onstage monitors will reproduce the same audio.



Running Multiple PSM Wireless Systems Under MixMode Control

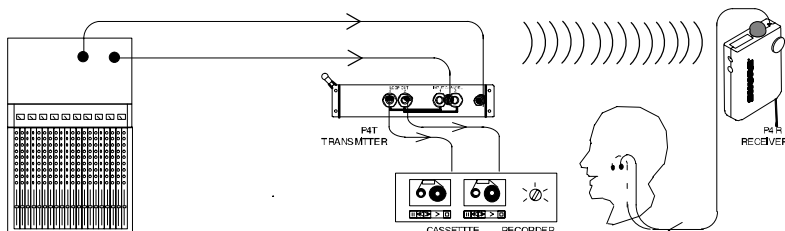
A single mono monitor mix can be sent to multiple P4T transmitters, then independent monitor mixes or direct outputs can be sent to the second channel of each. This will allow an entire band to hear the same monitor mix, while giving each individual player a separate mix of their own. Each player can then use the balance control to adjust the levels between their own mix and the main mono monitor mix.



NOTE: See the P4M and PSM400 User's Guides for further information on this feature.

Running Two PSM Wireless Systems Under MixMode Control From a P4M Mixer

When using the P4T in conjunction with a Shure P4M Mixer, a single mono monitor mix can be sent unaltered to two P4Ts. Each P4T can also receive a separate Mix Out signal, providing each P4T with a common monitor mix and a custom mix created by the P4M. The balance control on the P4R receiver is used to adjust the levels between the monitor mix and the P4M mix.



Running a Recording Device Through a P4T Transmitter

If you would like to make a recording of a performance, the LOOP outputs can be connected to the inputs of a tape deck, DAT, or other recording device.

SPECIFICATIONS

RF Output Power
50 mW (+17 dBm) typical conducted (country dependent)

Modulation Limiter
Internal peak limiter (>10:1 compression)

Antenna
1/4 Wavelength, semi-rigid, PCB Mount

Power Requirements
Table-Top AC Adaptors
P4T: (Input: 120 Vac, 60Hz, 14w; Output: 15 Vdc, 600 mA, 9w)
EP4T: (Input: 230 Vac, 50 Hz/60Hz; Output: 15 Vdc, 600 mA, 9w)

Current
220 mA maximum

Dimensions
219.2 mm X 43.6 mm X 136.5 mm (8.6 in. X 1.7 in. X 5.4 in.)

Net Weight
907.2 g (2 lbs., 0 oz.)

CONNECTORS

P4T Audio Inputs (LEFT/CH.1 and RIGHT/CH.2)

Connector Type:	1/4-inch phone jack (female) TRS
Configuration:	electronically balanced
Actual Impedance:	XX kΩ
Nominal Input Level:	−XX dBV (−10 input level)
Maximum Input Level:	+X dBu (+4 input level) +XX dBu (−10 input level)
Pin Assignments:	Tip = hot ring = cold sleeve = ground
Phantom Power Protection?	Yes Up to 60 VDC

P4T L/R LOOP Outputs (IN and OUT)

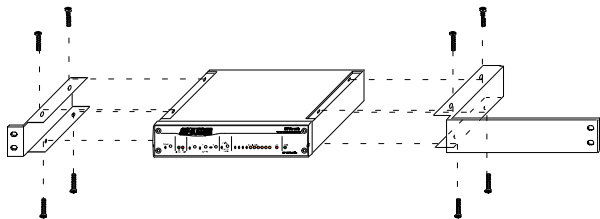
Connector Type:	1/4-inch jack (female) TRS
Configuration:	electronically balanced
Actual Impedance:	XX kΩ
Nominal Input Level:	−XX dBV (−10 input level)
Maximum Input Level:	+XX dBu (+4 input level) +XX dBu (−10 input level)
Pin Assignments:	Tip = hot ring = cold sleeve = ground
Phantom Power Protection?	Yes Up to 60 VDC

RACK MOUNTING THE P4T

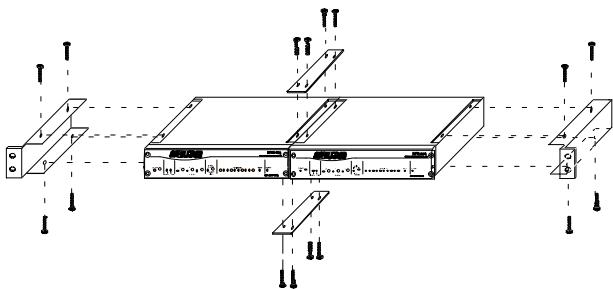
The P4T features a 1/2-rack chassis specially designed for sturdiness. The sagging and bending found in most 1/2-rack designs is eliminated — the brackets and straddle bars are designed to ensure that the units will be installed securely.

WARNING: Do not torque the screws too tightly, or the chassis may be damaged.

Single Unit



Dual-Mounted Units



NOTE: Be sure to use both straddle bars when installing dual units.

Mounting in an Equipment Rack

