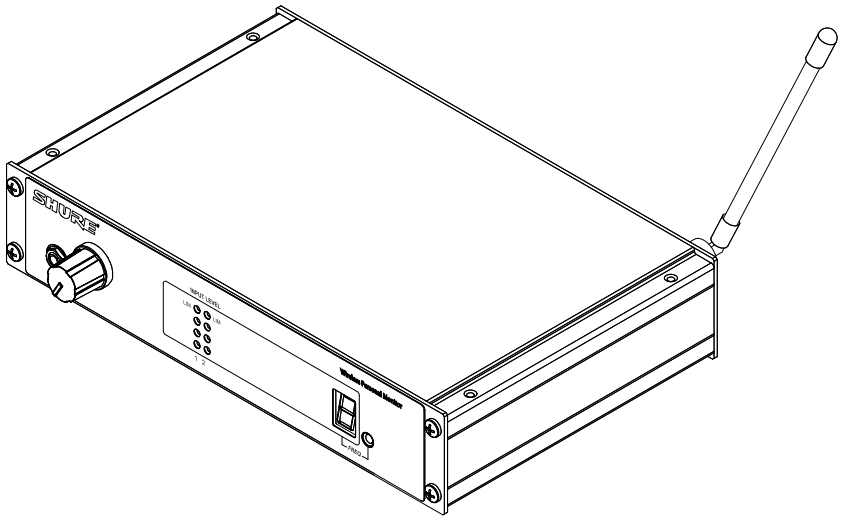
SHURE
LEGENDARY
PERFORMANCE™

Model P4T
User Guide



P4T Transmitter
for use with the PSM® 400 Wireless Personal Monitor System

Émetteur P4T
à utiliser avec le système de retour personnel PSM 400

P4T-Sender
Zur Verwendung mit dem individuellen Monitorsystem PSM 400

Transmisor P4T
para uso con el sistema de monitor personal PSM 400

Trasmettitore P4T
da usare con il sistema di monitoraggio individuale PSM 400

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27D8712 (Rev. 7)

Printed in U.S.A.

ENGLISH **3**

FRANÇAIS **8**

DEUTSCH **13**

ESPAÑOL **18**

ITALIANO **23**



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 $^1/_2$ 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 earphones 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 earphones 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 there are important operating and maintenance instructions in the literature accompanying this unit.

LICENSING INFORMATION

Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate the equipment. Licensing of Shure wireless microphone equipment is the user's responsibility, and licensability depends on the user's classification and application, and on the selected frequency. Shure strongly urges the user to contact the appropriate telecommunications authority concerning proper licensing, and before choosing and ordering frequencies.

THIS RADIO EQUIPMENT IS INTENDED FOR USE IN MUSICAL PROFESSIONAL ENTERTAINMENT AND SIMILAR APPLICATIONS.

NOTE: THIS EQUIPMENT MAY BE CAPABLE OF OPERATING ON SOME FREQUENCIES NOT AUTHORIZED IN YOUR REGION. PLEASE CONTACT YOUR NATIONAL AUTHORITY TO OBTAIN INFORMATION ON AUTHORIZED FREQUENCIES FOR WIRELESS MICROPHONE PRODUCTS IN YOUR REGION

Licensing: Note that a ministerial license to operate this equipment may be required in certain areas. Consult your national authority for possible requirements.

Shure Transmitter Model P4T may be used in the countries and frequency ranges listed in Table 1 on page 28.

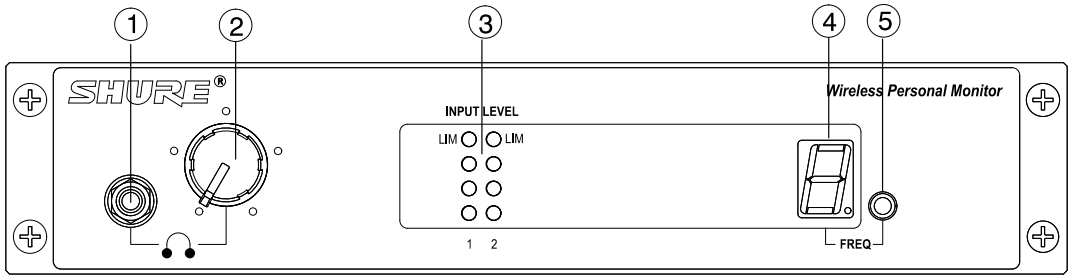
INTRODUCTION

Thank you for buying the P4T Transmitter. The P4T is a component in the PSM® 400 family of wireless personal monitors. When used with a P4R Receiver, it provides the many advantages of an in-ear monitoring system, including:

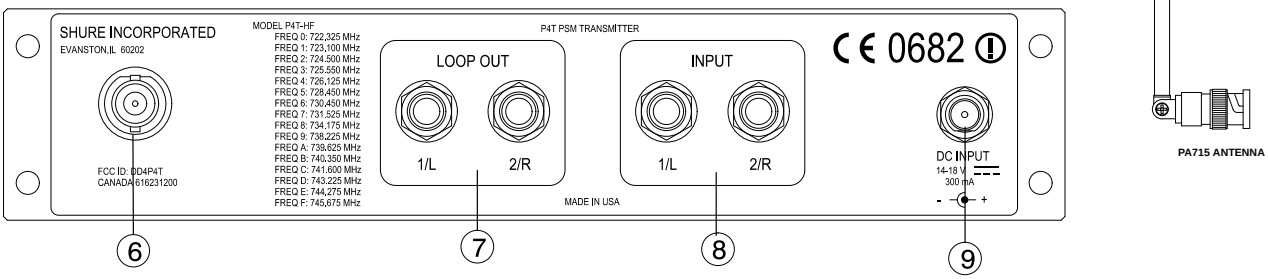
- **Improved Sound Quality** - high fidelity without the risk of feedback,
- **Increased Mobility** - your mix moves with you,
- **Personal Control** - through volume adjustment and MixMode®.

For further information on the PSM 400 system, see the PSM 400 Wireless Personal Performance Pack User's Guide, available on the web at **www.shure.com**.

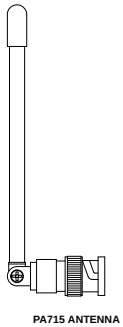
P4T TRANSMITTER FEATURES



TRANSMITTER FRONT PANEL



TRANSMITTER BACK PANEL



1. **Local Earphone Output Jack (1/8 inch)**: Connects to 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 display the status of the signal from channel 1 and the four LEDs on the right display 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. **Transmission Frequency LED:** This indicates which of the 16 channels (0-9 or A-F) is transmitting.
5. **Frequency Select Button:** This recessed button changes the transmission channel. (Use a 1/4" plug to press this button.)
6. **Antenna Connector 50 Ω, BNC type:** This connects to the antenna to transmit UHF signals to the receiver.
7. **LOOP OUT Jacks:** Two 1/4" TRS jacks allow the audio signal to pass through the transmitter to other devices, including other transmitters, tape recorders, or amplifiers.
8. **INPUT Jacks:** Two 1/4" TRS switching jacks are line level audio inputs.
9. **DC INPUT Connector:** Input for PS40 power cord.

SET UP AND OPERATION

Follow these directions to set up the transmitter for operation.

1. Plug the power cord into the transmitter's DC INPUT power connector. Plug the other end of the power cord into a wall outlet.
2. Attach the antenna to the ANTENNA OUT BNC connector.
3. Connect line level outputs of an audio source into the audio INPUTS of the transmitter. Use both of the input jacks for a two-channel source. Use either input jack for a mono source. The P4T transmits in MixMode/stereo if both inputs are used, but automatically transmits in mono if only one input is used.

   NOTE: All inputs are phantom power protected up to 50 VDC.

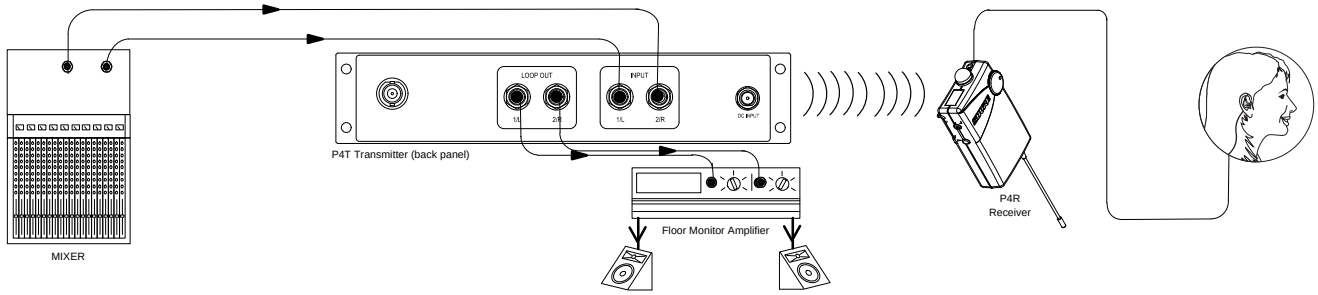
4. Select an operating frequency using the Frequency Select Button. Push the button repeatedly until the LED displays the desired channel. The display flashes. Push and hold the button until the flashing stops to confirm the change (use a 1/4" plug to press the button).

   IMPORTANT: Never set more than ONE transmitter to the same operating frequency.

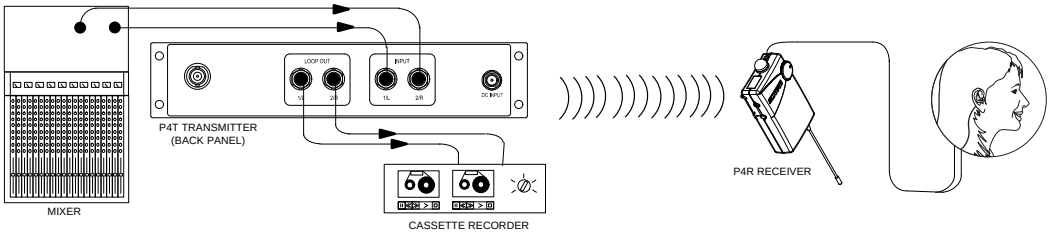
5. Once the P4T transmits audio, observe the input level LEDs. If the LEDs consistently illuminate red, decrease the output level of the audio source until the red LEDs flicker occasionally.
6. Set up the P4R receiver as directed in the P4R user's guide. Make sure that the frequency selected on the receiver matches the frequency selected on the transmitter.

LOOP APPLICATIONS

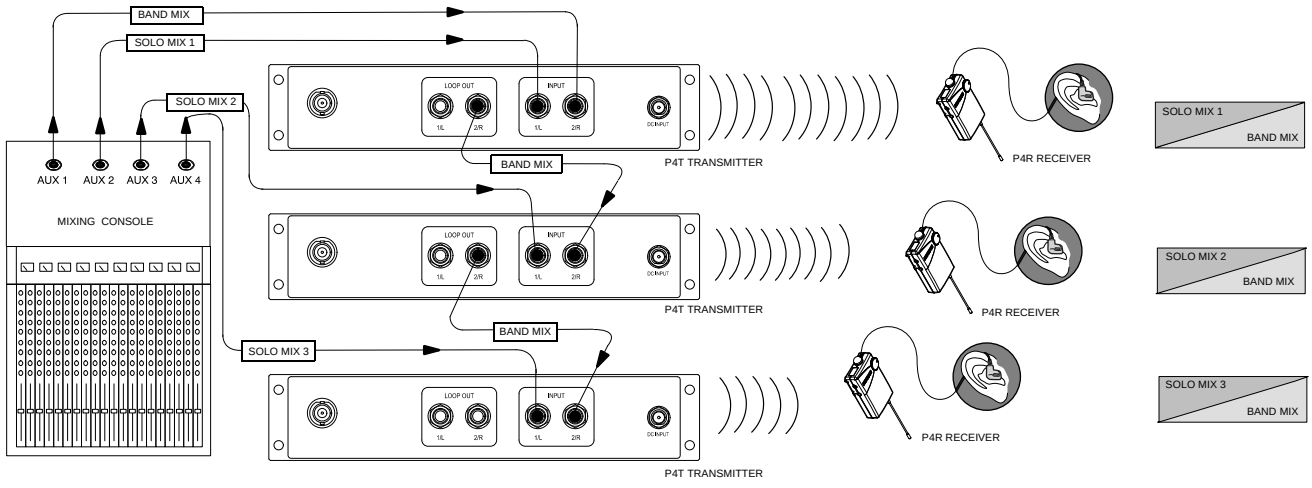
The LOOP OUT 1/L and 2/R outputs route the transmitter's incoming signal to other devices. Use the loop feature of the transmitter in any number of applications, such as the following:



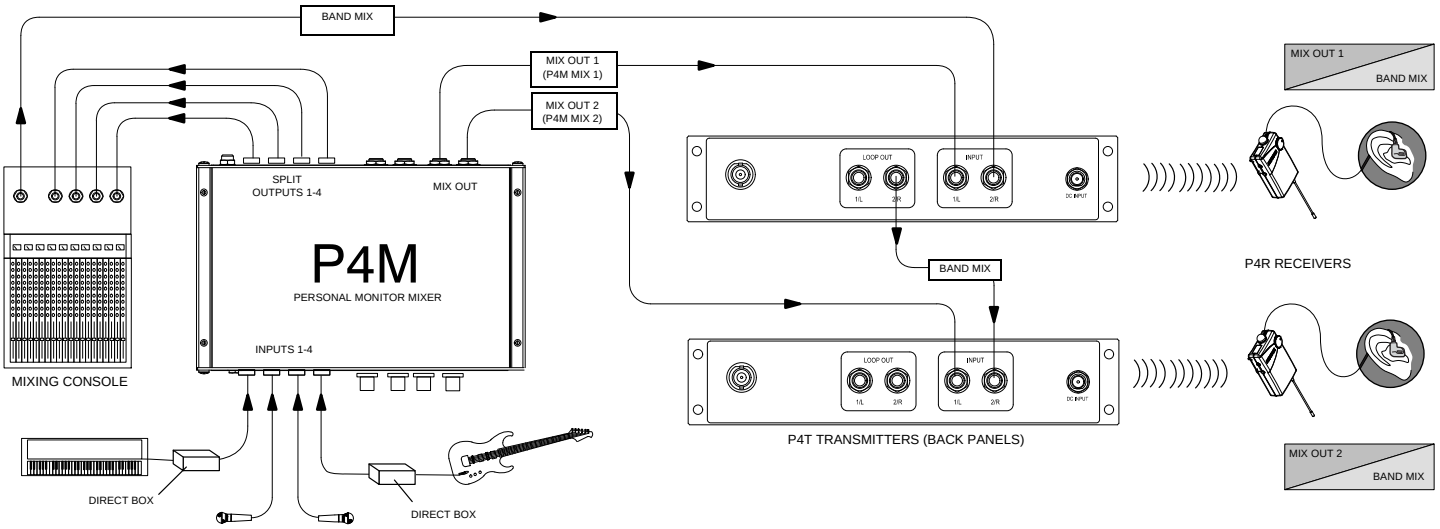
Operating Floor Monitors Through a P4T Transmitter: Send an audio signal through the LOOP connectors to a floor monitor amplifier. In this set up, the receiver and the onstage monitors reproduce the same audio.



Making a Recording Through a P4T Transmitter: To record a performance, connect the LOOP outputs to the inputs of a tape deck, DAT, or other recording device.



Operating Multiple PSM Wireless Systems Under MixMode Control: Send a band mix from a mixer to a P4T transmitter, then send the band mix on to other transmitters using the P4T's LOOP OUT feature. Also send independent monitor mixes or direct outputs to the second channel of each transmitter. The entire band receives the same band mix, while each individual player also hears a solo mix of their own. Use the MixMode control on the P4R receiver to adjust the level between the solo mix and the band mix.



Operating Two PSM Wireless Systems Under MixMode Control From a P4M Mixer: Send a band mix from a mixing console to a P4T transmitter, then send the band mix to a second transmitter using the P4T's LOOP OUT feature. Create an individual mix for each transmitter using the P4M mixer. Send the mix to each transmitter using the P4M's MIX OUT 1 or MIX OUT 2 outputs. Use the MixMode control on the P4R receiver to adjust the levels between the band mix and the P4M mix (for more information on the P4M Personal Monitor Mixer, see the P4M User's Guide or the PSM 400 Wireless Personal Performance Pack User's Guide, available at **www.shure.com**).

SPECIFICATIONS

RF Frequency Range
722 to 952 MHz (country dependent)
Operating Range
300 feet (environment dependent)
RF Output Power
50 mW (+17 dBm) typical conducted (country dependent)
Modulation Limiter
Internal peak limiter (>10:1 compression)
Antenna
External whip, 50 Ω BNC connector
Power Requirements
Operating voltage 14-18 Vdc
Supplied with one of the following external power supplies:
- Model PS40: 120 Vac, 60 Hz input.
- Model PS40E, Model PS40UK: 230 Vac, 50/60 Hz input.
- Model PS40AR: 220 Vac, 50 Hz input.

Current
250 mA maximum

Dimensions
219.2 mm X 43.6 mm X 136.5 mm (8.63 in. X 1.718 in. X 5.375 in.)
Net Weight
907.2 g (2 lbs., 0 oz.)

CERTIFICATION

P4T: Certified to FCC Part 74, FCC ID DD4P4T. Certified in Canada by IC under RSS-123.
EP4T: Meets essential requirements of European R&TTE Directive 99/5/EC, eligible to bear CE mark: CE 0682 ⓘ . Type approved to EN 300 422 Parts 1 and 2. Meets requirements of EMC Standard EN 301 489 Parts 1 and 9.
PS40: Conforms to applicable U.S. and Canadian electrical and safety standards.
PS40AR: Conforms to Safety Standard IEC 60065. Certified TÜV Rheinland Argentina, S.A. No. RA2681022.
PS40E/PS40UK: Conforms to European low voltage directive 72/23/EEC. Eligible to bear CE marking.

Furnished Accessories

1/4 Wave Transmitter Antenna.....PA715: 518-752 MHz
.....UA400 (95B8699): 774-952 MHz
Bulkhead Adapter.....95A8994
22 inch BNC Cable.....95A2035
Single Mount Rack Bracket..... 53C8484
Dual Mount Rack Bracket.....53B8484
Straddle Bars.....53A8443
AC Adaptor
PS40 (120V), PS40E (230V), PS40UK (230V), PS40AR (220V)

Optional Accessories

Antenna Combiner.....PA770 (120 VAC)
..... PA770E (240 VAC)
Unidirectional Antenna..... PA705
10 ft Coaxial Antenna Cable (BNC connector) PA725

CONNECTORS

P4T Audio Inputs (1/L and 2/R)

Connector Type:	1/4-inch jack (female) TRS
Configuration:	electronically balanced
Actual Impedance:	20 kΩ
Nominal Input Level:	-10 dBV/-7.8 dBu
Maximum Input Level:	+15 dBu
Pin Assignments:	Tip = hot ring = cold sleeve = ground
Phantom Power Protection?	Yes. Up to 50 VDC

P4T LOOP Outputs (1/L and 2/R)

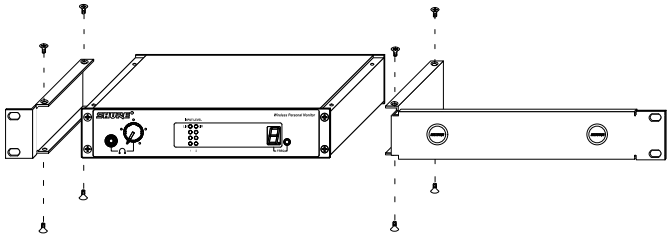
Connector Type:	1/4-inch jack (female) TRS
Configuration:	electronically balanced
Actual Impedance:	20 kΩ
Nominal Output Level:	-10 dBv/-7.8 dBu
Maximum Output Level:	+15 dBu
Pin Assignments:	Tip = hot ring = cold sleeve = ground
Phantom Power Protection?	Yes Up to 50 VDC

RACK MOUNTING THE P4T

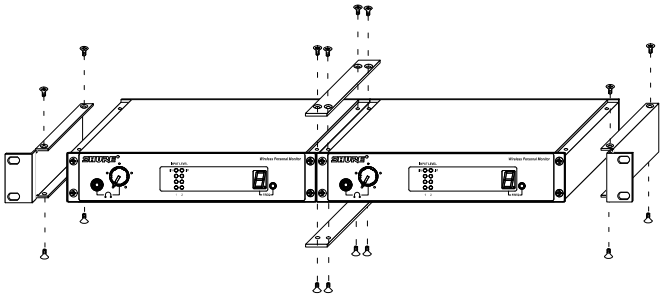
The P4T features a $^1/_2$-rack chassis specially designed for sturdiness. This eliminates the sagging and bending found in most $^1/_2$-rack designs. The brackets and straddle bars ensure that the units will be installed securely.

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

SINGLE UNIT

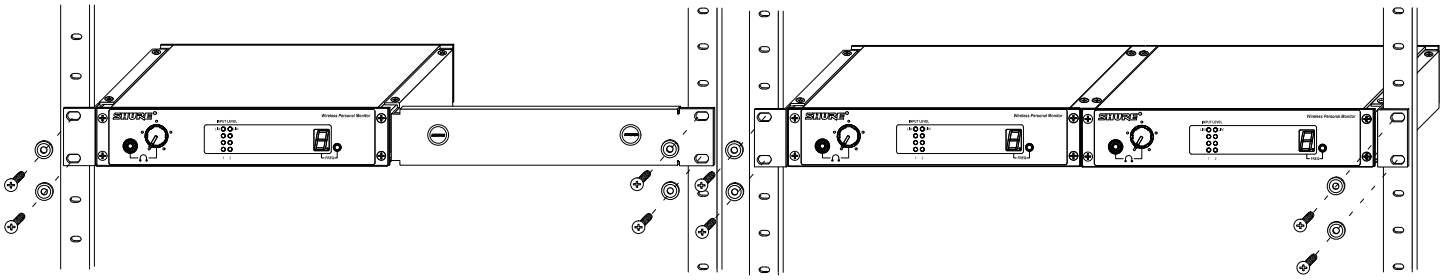


DUAL-MOUNTED UNITS



MOUNTING IN AN EQUIPMENT RACK

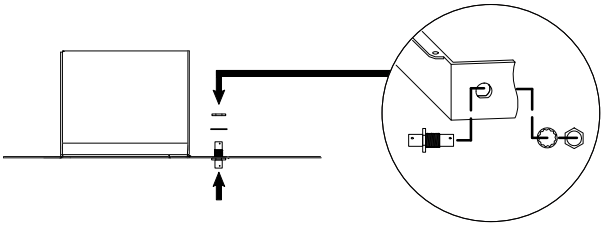
NOTE: Be sure to use both straddle bars when installing dual units.



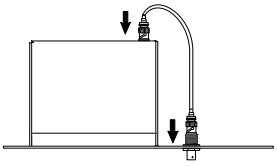
FRONT MOUNTING THE ANTENNA

The P4T transmitter comes equipped so the antenna can be front-mounted. Front-mounting prevents antenna cables from becoming entangled and greatly minimizes RF interference from other cables. When a unit is located in a rack, antennas should be either front- or remote-mounted.

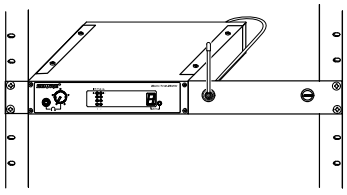
1. Insert the bulkhead adapter through either hole of the mounting bracket and secure it from the back using the supplied hardware.



2. Connect the transmitter antenna output to the bulkhead adapter with the supplied RF cable.



3. Install the antenna on the bulkhead adapter.



NOTE: The PA715 antenna, which comes supplied with the P4T, cannot be remote mounted. Use a PA705 antenna for remote mounting.

TABLE 1 TABLEAU 1 TABELLE 1 TABLA 1 TABELLA 1

Country Code Code de Pays Lander-Kurzel Código de país Codice del Paese	P4T-HF (722 - 746 MHZ)	P4T-P3 (722 - 746 MHZ)	P4T-MN (800 - 830 MHZ)	P4T-KE (842 - 952 MHZ)
A	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
B	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
CH	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
D	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
E	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
F	*	722 - 746 MHZ *	*	*
GB	722 - 746 MHZ *	*	*	842 - 952 MHZ *
GR	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
I	722 - 746 MHZ *	*	*	863 - 952 MHZ*
IRL	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
L	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
NL	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
P	722 - 746 MHZ *	*	800 - 830 MHZ *	842 - 952 MHZ *
DK	*	*	800 - 820 MHZ *	863 - 952 MHZ*
FIN	*	*	800,1 - 819,9 MHZ *	863 - 952 MHZ*
N	*	*	800 - 820 MHZ *	863 - 952 MHZ*
S	*	*	800 - 814 MHZ *	863 - 952 MHZ*
All Other Countries Tous les autres pays Alle anderen Länder Demás países Tutti gli altri Paesi	*	*	*	*

*Please contact your national authority for information on available legal frequencies for your area and legal use of the equipment.

*Se mettre en rapport avec les autorités compétentes pour obtenir les informations sur les fréquences autorisées disponibles localement et sur l'utilisation autorisée du matériel.

*Für Informationen bezüglich der für Ihr Gebiet verfügbaren gesetzlich zugelassenen Frequenzen und der gesetzlichen Bestimmungen für den Einsatz der Geräte setzen Sie sich bitte mit der zuständigen örtlichen Behörde in Verbindung.

* Comuníquese con la autoridad nacional para obtener información en cuanto a las frecuencias legales disponibles y usos legales del equipo en su área.

*Rivolgersi alle autorità competenti per ottenere informazioni relative alle frequenze autorizzate nella propria regione e alle norme che regolano l'uso di questo apparecchio.

EU DECLARATION OF CONFORMITY

We, Shure Incorporated
of 5800 Touhy Ave
Niles, Illinois, 60714-4608 U.S.A
(847) 600-2000

Declare under our sole responsibility that the following product

Model: P4T Description: Personal Stereo Monitor Transmitter
PS40E, PS40UK

to which this Declaration relates

are in conformity to European Low Voltage Directive 73/23/EEC
are in conformity to European EMC Directive 89/336/EEC
are in conformity to European R&TTE Directive 1999/5/EC
are in conformity to European CE Marking Directive 93/68/EEC

The product complies with the following product family, harmonized or national standards:
P4T: EN 301 489 Part 1 and 9, ETSI 300 422-1 and ETSI 300 422-2
PS40E, PS40UK: EN60950, EN61000-3-2, EN 61000-3-3

Manufacturer: Shure Incorporated

Signed Craig Kozokar Date October 27, 2003
Name, Title Craig Kozokar
EMC Project Engineer, Corporate Quality, Shure Incorporated

European Contact: Shure Europe GmbH
Wannenacker Str. 28, 74078 Heilbronn, Germany
Phone: 49-7131-7214-0, Fax: 49-7131-7214-14

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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